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An Address

ON

THE HOSPITAL IDEAL AND ON THE CONCENTRATION OF EARLY MEDICAL STUDIES IN LONDON.

Delivered to the Students of St. Thomas's Hospital Medical School on the occasion of the Distribution of Prizes on June 24th, 1904.

By Sir THOMAS BARLOW, Bart., K.C.V.O., M.D.,
Physician, University College Hospital; Member of the Senate of the University of London.

I.—The Hospital Ideal in Private Practice.

My first duty is to congratulate those who have won and received this day the highest distinctions which your school can confer. You have a right to be proud of your success, and your teachers and fellow-students rejoice in it; but I can well believe that you will prize most of all the congratulations of the home circle, which are, indeed, fitly represented by the gracious presence of our lady visitors on this occasion. Let cynics inveigh as they will against the stale, the trite, and the commonplace, but the prize-giving day must always be a red-letter day to every succeeding generation of students, so long as they are made of good human stuff and still retain a store of generous enthusiasm. Now let me claim the privilege of years to say a few words to you arising out of the associations of the day. First of all, I trust that you will not put aside the examinations and the struggles which have led to your success. There must have been a certain amount of scientific knowledge which you have been compelled to formulate, to summarize, and more or less to criticize in preparing for these examinations. Be determined that some portions of that material shall be made the basis for further elaboration in your own way in the years to come. It is the charm of our occupation that we can all add something to the sum of useful and fruitful discovery. It may be a very humble contribution and may never see the light of publication, but it may be helpful to us in the study of the natural history of some common disease and in the practical relief of some human suffering. What I wish to drive home to you on the threshold of your active lives is that to have some line of inquiry always ready for fresh reading, observation and experiment is the way not only to get special knowledge on that line of inquiry but to educate your receptivity for fruitful knowledge in general.

I must say a few words to those who have striven in the competition but have failed to gain the prizes which have been distributed to-day. I beg you not to be discouraged, and on no account to shirk future examinations because you have failed in these. Many a man who has come off second best in anatomy or physiology has carried everything before him in medicine or surgery. Moreover, the first-prizemen in college are not always those who carry off the first prizes in active life. But whether you gain prizes here or elsewhere, I am sure that for the successful learning of your profession you must never shirk examinations, especially viva voce ones. In some of the early subjects of our curriculum there is an immense mass of what I may call brute facts, and one of the best ways of remembering them is to link them together by as many associations as possible. Do not even undervalue the painful association which arises from being gibbeted before your fellow students by a teacher who is merciless to inaccuracy and relentless to slipshod statement, whether of fact or inference. The desideratum is that you should make the most painstaking reviews of your failures and never forget them, and this is really the precursor of what you will find you have to do throughout your whole professional life. Once again, with regard to examinations, a venerated teacher of mine used to say that we have never finished with them, but that we are doomed to undergo them right through our lives—examinations by patients and by patients' friends taking the place of the ordeals which you have just survived. Remember that the capacity for terse and forcible speech and for lucid explanation are amongst the gifts which pre-eminently tend towards efficiency of life. Cobden used to say that the real test of oratory was whether it succeeded in persuading or not. If you wish to succeed in persuasion you must understand your auditor's point of view and the question which he has asked, or is ready to ask, and you must also understand exactly what you wish to say. Nothing helps to cultivate this faculty more than facing written and viva voce examinations. One of the greatest hindrances to a young doctor is self-consciousness. It is the foundation of much shyness, conceit, and brusquerie. One of the collateral advantages of viva voce examinations is that they help you to get rid of self-consciousness and compel you to think of the subject in hand rather than of yourself.

Gentlemen, some of you are here for the last time as students, and you are soon to enter on responsible professional life. I have already found myself trenching upon this, but I should like to say a few words to you about your future ideals of life and conduct in their relation to your student course. I assume that most of you have acquired your general education at a public school, and possibly at one of the universities, and, after working at your preliminary scientific and early medical studies, that you have gained your knowledge of practical medicine and surgery within the walls of the hospital and at the latter part of your course. It is very unlikely that any of you have entered upon the study of medicine by the old-fashioned apprenticeship system. There is much to be said about the merits of the old and the modern methods, but I will not discuss them. There are never wanting amongst our learned, grave, and reverend seniors those who are ready to play the part of *laudator temporis acti*. Many a young fellow just starting in practice has been discouraged by being told that he is quite ignorant of the art of managing patients, however learned he may be in modern methods of investigation. He is told that private patients are so very different from hospital patients, that elaborate examination is quite out of place, and that the first of all requirements is to relieve symptoms, and to be ready with prescriptions, and that the question of diagnosis is quite subsidiary. The patient must be pleased with the doctor and the friends must also be pleased. A careful study of likes and prejudices should be made, and these should be taken account of at every turn. The young doctor must never acknowledge that he has any doubts, he should never hesitate, or admit that he has made a mistake, and he should lose no opportunity of accentuating his own insight and foresight, especially if he can at the same time belittle some one or other of his professional brethren. To all this cynical advice of the Lord Chesterfield type I venture to

say that for you, trained in the hospital, there is a more excellent way. Worldly wisdom and *savoir faire* are not wholly to be despised. We cannot afford to dispense with them, but they are not the qualities which you should covet at the outset of your career. Leave them, I pray you, for the period of disillusionment which comes with middle life. Cherish rather the keen enthusiasm for knowledge which you have learned in the laboratory and the wards and the enjoyment which has come to you in taking a humble part in the successful results of surgical skill or in following the guidance of rational medicine. It is your *métier* primarily to learn and to know as the basis of intelligent action, rather than to please. Remember the lesson of the hospital, that diagnosis is nine-tenths of our work. For although it is true that the right lines of treatment are sometimes difficult, and now and then there is scope for divergence of opinion, yet in the vast majority of cases it is not so. The real crux is to find out what is wrong; then the treatment is pretty obvious. The variations of opinion as to treatment mostly depend on incompleteness of diagnosis. When from the nature of the case the diagnosis must be incomplete, a wise man will avoid heroic remedies and keep to simple therapeutics. House-physicians can be classified under many different categories, but the two fundamental types are the one who writes out a good present state of his patient and then waits awhile, and the other who fills the medicine sheet with elaborate prescriptions directly the patient is admitted and before it is possible to arrive at any judicial estimate of his condition. There is no doubt which of the two makes the best practitioner. But, with respect to treatment, it cannot be denied that you will have greater personal responsibility in private practice than you have had even as a resident in hospital. Much of the regulation of diet and of personal hygiene goes by rule in the hospital, and we have no necessity to intervene, as it is carried out by our good friends the sisters and nurses. We are apt to forget that much of this needs special direction on our part in private practice. Moreover, the hospital pharmacopoeia and the convenient abbreviations of the contents of ordinary mixtures are partly responsible for our ignorance about the dosage of many drugs. Never forget, in your ardour for investigation, that the smallest details for the relief of pain are worthy of thought and study, and that clothing, food, and exercise admit of scientific regulation as well as the quantity and combinations in medicines. Besides the actual body of facts and instruction in the modes of investigation which you learn from your teachers in hospital, there are some collateral methods of learning which, if you avail yourselves of them to the full, will prove of enormous value in your practice. Of these I should like first to refer to the systematic study and record of blunders. I have already referred to this in regard to examinations on the early subjects in which memory for brute facts plays so large a part. But I make no apology for referring to it again in regard to clinical work. Clinical blunders and the blunders of private practice are of two kinds —the inevitable and the avoidable. The inevitable blunders depend on the limitations of our knowledge, and these ought to get less if we keep abreast with the advancing tide of science. Of the avoidable blunders some depend on deficient skill, whether it be in investigation or in handicraft. These can be largely overcome by practice and by reflection. But the chief avoidable blunders arise from sheer carelessness and idleness, taking things for granted instead of going steadily through the present state, and reviewing and revising everything from day to day. We are often blamed unjustly for results which are beyond our ken and beyond our power to modify or prevent. On the other hand, we often receive credit for what we have not deserved. The *vis medicatrix Naturæ* is a kind friend to the doctor, condoning his faults, never jealous of reputation, but quite willing that he shall have all the praise for beneficent results. But rest assured, in the long run, careful and painstaking investigation will reap some reward, even when the results are not successful, for it is the safest and most legitimate foundation on which you will build up the confidence of your patients. One of the most striking differences between the life of the hospital and that of the young practitioner is in the comparative loneliness which he experiences in everything which concerns the process of investigation. Think of the all-embracing atmosphere of discussion, of friendly criticism, of verification and disproof, which is to be found within the clinical wards. Recall the mutual friendly gibes of physicians and surgeons with respect to the merits of expectancy or of early or late interference, and the genial and impartial anecdotes of the registrars concerning the divers errors of diagnosis, and the home thrusts of house-physicians and house-surgeons who will criticize the lines of practice of their respective chiefs but loyally deny to anybody else the privilege of criticizing them, and the keen and trenchant estimates made by the whole body of the students. More than all, remember the sure and gradual survival of the fittest as to the value of multifarious methods of treatment which emerges after a longer or shorter time. Think, again, of the valuable side-lights thrown upon cases by the new chemical, physical, and bacteriological methods, of the information imparted to physicians by cranial, thoracic, and abdominal surgery, of the help derived from the ophthalmoscope and other instruments of precision. Finally, remember the great arbiter and revealer of our work, the *post-mortem* room, where dogmatism and arrogance and carelessness and slovenliness receive their appropriate rebuke and enlightenment. In the hospital you are literally living amongst a crowd of witnesses who reckon up your work and continually bring it to the touchstone of truth and utility. Contrast with this the loneliness of early private practice. You have few chances of comparing notes with others who are better informed than yourself, many of your cases are trivial, and of those that are obscure or fatal you have but scanty opportunities of *post-mortem* verification. But remember that you will be subjected to criticism which, though unenlightened, may nevertheless be wholesome. If you have utilized your opportunities at the hospital you will recall that when you have done your best in the steady plodding of systematic case-taking, and are still in the dark, occasionally illumination comes from a casual remark of the patient or from some onlooker who approaches the case *de novo*. The man of wits is persevering in his own investigations, but he is ready to take a hint from the humblest of his fellow workers. So in private practice you will find, if you cultivate the frame of mind which listens to and weighs the observations of others, you will not only gain many a hint by the way, but you will disarm captious faultfinders and secure the adhesion of some who might be unfriendly.

Although there is nothing to compare with the advantage of hospital life in respect to the acquisition of knowledge from one's fellow workers, I urge you to utilize every chance, especially in the earlier period of your practice, of keeping up scientific intercourse with your brother practitioners. You will find that the generous give-and-take of friendly discussion is the best of all preventives of professional jealousy. I trust that you have learnt the difficult art of taking notes that are at once exhaustive and terse. All hospital notes tend sadly towards prolixity. I would like to see every clinical clerk when he has finished the ward reports make a concise abstract for his own use of his cases and carefully index them all, mentioning the salient lessons as to physical signs and *post-mortem* verification, and enumerating the features in which they bear out the textbook type and those wherein they diverge from it. In private practice, although you may not be able to keep extensive and detailed notes, if you have learnt the art of making concise abstracts, there is no reason whatever why you should not formulate valuable and extensive experience with very little expenditure of time. In the pursuit of your profession on these good old hospital lines you will gradually gain the confidence of your patients, and, as I have said, this confidence will be based on sound and solid foundations. In these days of faith healing, of Christian science falsely so-called, of hypnotism, of charlatanism of every kind, inside the profession as well as outside, there are some pitfalls into which the young practitioner may tumble. One of these is the exaltation of his own personality and undue influence over those whom he has to treat. In every calling of life, genuine sympathy and the determination to understand the outlook of others are enormous aids to success, and deservedly so; and there is no occupation in which a broad and enlightened charity is so appropriate as it is in ours. Nevertheless, I would remind you that in hospital practice there is a certain brevity, a businesslike straightforwardness, and a simplicity in dealing with people which are very wholesome, and which appear to be justified in their general result. I think the nearer we approach to that in private practice the better for us all. Let us not forget that, although subject to criticism, there is a considerable area in which we are independent, and we shall do well to guard that independence jealously. Let us not get too far away in our professional intercourse with people from the

plain, straightforward duty of finding out what is physically wrong and trying to set it right. That is our primary function and, if we keep it primary, the other parts of conduct may be trusted to find their proper places in the pattern of our lives. The perfect openness and outspokenness of the hospital rule is one of its perennial charms. No secret remedies, very few confidences, everything aboveboard, all out in the open. It makes one think of old Bishop Ken's lines—

> Let all thy converse be sincere,
> Thy conscience as the noonday clear.

Of course the conditions in private practice are different and it is impossible to act as though they were identical. What I am claiming is, that for you, trained and nurtured in this free and invigorating atmosphere, the ideal of conduct which should be to you the touchstone of your professional life is the hospital ideal. And you will be the first to deny the shallow and unjust accusation made by sentimentalists that the hospital tone is hard and unsympathetic. It is neither hard nor unsympathetic, and, let me add, it is neither mawkish nor maudlin.

I will conclude this part of my subject with an extract from one of the letters of the great Puritan physician, Thomas Sydenham :

"I continue, and will continue, to learn and to promote to the best of my powers the methods for the treatment of diseases, and to instruct others (if such they be) who have less skill in practice than myself. Meanwhile my fame is in the hands of others. I have weighed in a nice and scrupulous balance whether it be better to serve men or to be praised by them, and I prefer the former. It does more to tranquillize the mind, whereas fame and the breath of popular applause is but a bubble, a feather, and a dream. Such wealth as such fame gives those who have scraped it together and those who value it highly are fully free to enjoy, only let them remember that the mechanical arts (and sometimes the meanest of them) bring greater gains and make richer heirs."

II.—A PLEA FOR CONCENTRATION OF THE TEACHING OF THE EARLY MEDICAL STUDIES IN LONDON.

And now having finished these fragmentary admonitions, let me say a very few words on another subject which I think is of importance to you who are students of one of the most distinguished constituent institutions of what I venture to call the great London School of Medicine.

You are rightly proud of this your Alma Mater and of the place it has long held in the theory and practice of our art. But it is right for all of you to think also of the larger interests of the study of medicine in this metropolis. The real reason, I venture to think, why your teachers and my friends have honoured me by asking me to address you to-day is a growing conviction that it is imperative that there should be more solidarity between the medical schools of London, and that we ought to close our ranks and ask what we can do to further the study of medicine as a whole.

We are accustomed to say that London is the greatest clinical centre in the world, and so it is; but how badly organized and inadequately used for the purposes of instruction and for the solid advance of medical knowledge! With such an *embarras de richesses* how few of our students reap a tithe of the stores of the clinical wealth which is around them. I quite agree that the student's time is fully occupied up to the period of his qualifying examination. But between the period of taking the qualifying examination and that of the final medical or surgical degrees there is an interval which is partly occupied by resident hospital posts, but not entirely so. In this interval much might be accomplished by young and ardent workers in the elucidation of clinical and pathological problems under the guidance of their seniors and of special instructors in modern scientific methods. Let me remind you that St. Thomas's was one of the pioneers of hospital clinical laboratories, and that the first director of your laboratory, a distinguished student of this school, Dr. Louis Jenner, has lately been snatched away from us in the plenitude of his powers. He was a true martyr to science in that he lost his life in the performance of self-denying researches on important problems of medicine. He was so modest and retiring that his work was known to few beyond the circle of his teachers and colleagues, but they recognized his rare conscientiousness and fidelity to accurate investigation and the great loss which experimental pathology has sustained from his untimely death.

The clinical laboratory is a step in the right direction, but it is only a short step. If you wish to give the advanced student more opportunities for utilizing clinical and pathological material his advanced teachers must have greater opportunity for devoting time and labour to instruction and personal research alongside of their practical ward work.

Gentlemen, my address to you to-day has been a recurring panegyric of the hospital, its methods, its spirit, and its ideals, and I wish now to enforce upon you that the advance of scientific medicine will, I believe, be most effectively secured by the union and development side by side (1) of remedial practical work for the poor in the wards; (2) of the every-day instruction of the undergraduate students; and (3) of research of teachers and post-graduate workers under the self-same roof, or in close and active relations with the hospital. Valuable as separate pathological institutes may be, there is a virility, a renewal of youth, and a far-reaching reciprocal advantage in this three-fold union which the perfect hospital ought to supply like a great and beneficent republic of medicine.

And how can this ideal be made practical? Surely it will have to be recognized that clinical work, both in regard to advanced teaching and research, needs a much more complete organization than it has received hitherto in London. It is constantly stated that money is always forthcoming for the benevolent side of hospitals, but seldom for the endowment of advanced teaching and research; but I firmly believe if we ourselves rose to the occasion and were prepared with practical schemes the money would be forthcoming. Meantime, what can we ourselves do in the way of initial steps to hasten on this development? Let us accept the lessons of the time and see what can be accomplished in the way of combination. What a prodigal waste of time and effort we behold when we survey the practical working of our medical schools! We see so many men teaching early subjects of the curriculum which have no longer any relation to their active life work, and thus they are taken away from scientific inquiry of practical bearing to do what to them is drudgery, and which, morever, could be better taught by specialists.

Then there is the humiliating situation that when a man devotes himself to teaching one of these early subjects of the medical curriculum, relinquishing private practice, and endeavouring by research to advance the sum total of knowledge in that department, he is brought to a dead stop by the limited number of his class and the small remuneration which the absence of endowment involves. There is, moreover, the urgent necessity of providing and paying for efficient demonstrators in the practical departments, and again the expense in maintaining the apparatus and reagents necessary for adequate teaching. The constant advance of knowledge makes constantly increasing demands in these departments. Now let us realize that modern universities have grown up, especially in some of the great provincial cities, and that these can appeal to wealthy and liberal citizens in whom the municipal *amour propre* is blended with enlightened generosity. Is it strange that every medical school in London has lost one or more of its gifted special teachers? They have been tempted not only by emoluments, which are not one whit too great for the valuable work which they secure, but also by the generously equipped laboratories which afford abundant opportunity for original research without let or hindrance. How, then, should the concentration be brought about? Surely by combining together in certain centres the teaching of those early subjects which are quite independent of the hospital association. If this plan were adopted larger classes would be formed, and they could be more profitably worked than under present conditions.

It would then be possible to secure for the special subjects professors adequately remunerated, able and willing to give time to both teaching and research, and large laboratories and dissecting rooms properly equipped would require to be built. For a vast city like London, at least three such centres should be instituted. We trust that one of these may shortly be established at South Kensington; the nucleus of another will soon be available by reason of the forthcoming incorporation of University College with the University of London. Through the munificence of Sir Donald Currie this will be rendered possible by the complete severance from University College of the department for the later medical studies and its installation close to the hospital. It seems clear that a third such centre would be absolutely necessary on the south side of the Thames, and in such a centre St. Thomas's Hospital Medical School would naturally be greatly concerned.

What should be done with those portions of the school buildings which would become unoccupied in consequence of the removal of the chemical, biological, anatomical, and

physiological departments from any given school? A more generous equipment could be given for the teaching of medicine, surgery, and obstetrics, and space could be found for further development in the direction of pathology, pathological chemistry, bacteriology, and other allied branches. Then we might count not only on giving greater opportunities for practical instruction to undergraduates, but also for post-graduate research by our own men and by graduates from our colonial universities. What would become of the teachers at present concerned in the early studies, and who would be dispossessed by the above arrangement? The answer to this question is that, besides the professors, a considerable number of demonstrators will be required in the new centres, and that those who on patriotic grounds for the good of their school have given both time and labour to this work will be emancipated from drudgery, and will find opportunity for research and for giving instruction to advanced students in subjects which are cognate to their own life-work.

But will the severance of these early studies and their installation in central institutes weaken the attachment of students to their hospital school? Surely not. When young men come to London for their medical curricula they will enter at one or other of the centres as may be most convenient, and, having acquired the necessary knowledge of the preliminary and early subjects, they will then choose the hospital school which on the whole appears to them the most desirable. They will be in identically the same position as men coming from the old universities who have pursued their early studies in the medical department of either Oxford or Cambridge. Will anybody maintain that these old university graduates are less devoted to their hospital school in London than any other London students?

Depend upon it, anything which leads to economy of labour, to greater efficiency, to unification and consolidation of interests will very soon justify itself. The removal of anxiety as to the equipment of the preliminary and early studies in any given school will allow the teaching staff to concentrate its energy on the later study, and the existence in this town of three great centres for education in preliminary and early subjects, efficiently and generously equipped with professors, with demonstrators, and with laboratories, will go a long way towards establishing the foundations for supremacy of the medical education in London. When these foundations are laid, sure and strong, we may hope to cope successfully with the development of advanced studies and advanced research in every school hospital in this metropolis, and we may then look forward to London becoming in fact as well as potentially the greatest clinical school in the world. It would be most undesirable that these centres should be identical. Differences in method and equipment tend towards the survival of the fittest, and an honest rivalry can bring nothing but good to the medical body politic.

Finally, to sum up the arguments which I have submitted to you, what can be more fitting than that these centres should be established as constituent parts of the teaching University of London? In this way the best guarantees will be taken for permanence of equipment and management, and for breadth and liberality of view in future development.

Moreover, the intimate association of the great body of medical students of London in such a way would contribute the largest and most important contingent in building up the teaching side of the University, and the hospital medical schools would maintain their vital independence, and, freed from embarrassing and unbusinesslike obligations, would be able to make real advances in scientific medicine and in its teaching.

Gentlemen, whilst rejoicing with you in your individual successes this day, and exhorting you to cherish the good name and the fame of your hospital and school, I submit for your patriotic consideration the claim which I have imperfectly stated for the educational needs of medicine in London as a whole.

A French Code of Medical Ethics.—At the Congress of Professional Medicine held in Paris in 1900, it was decided that a committee should be formed for the purpose of drawing up a code of medical ethics. It was intended that this code should be handed to every one taking a medical degree on the day of the presentation of his inaugural thesis. The Committee has just published the result of its labours in the form of a pamphlet bearing the title *Avant-projet d'un Code de Déontologie Médicale*. The pamphlet consists of two parts, an introduction dealing with the principles of medical ethics and a code of 112 clauses.

A Clinical Lecture
ON
ACUTE MALIGNANT ENDOCARDITIS.

Delivered May 6th, 1904.

By Sir DYCE DUCKWORTH, M.D., LL.D., F.R.C.P.,
Physician and Lecturer on Clinical Medicine, St. Bartholomew's Hospital.

Gentlemen,—I propose to discuss to-day the case of a boy who was brought into Matthew Ward on April 20th, and who died after a fortnight's illness with some remarkable symptoms. H. E. M., aged 13, a schoolboy, was in his usual health on April 12th. His mother, a respectable and intelligent woman, gave us the following history: The boy attended school on that day, but had a fall from a lamp-post on his head, which appears to have stunned him. He was one of nine healthy children, and had had no important illnesses—certainly no rheumatic fever. He came home, feeling faint and poorly, and was put to bed, where he remained under medical care till April 20th, when he was admitted to the hospital. On the 18th he complained of pains in his limbs and general tenderness. There was constipation, but no vomiting. His temperature had varied from 101° to 103° before his admission. He was semi-comatose when brought in on April 20th. The family history was unimportant. The boy lay still in bed, but was tender all over when touched. His complexion was dusky red. He was fairly well nourished. There were numerous petechiae on the trunk and limbs, which appeared to be due to flea-bites. The temperature was 100.2°; the pulse 100, of moderate volume and low tension. Respirations 28, shallow. The conjunctivae were much injected, the pupils large and equal, reacting to light. No discharge or ill odour at either ear, and no swelling in the mastoid regions. The lips were dry; tongue dry and glazed, not furred. No injury to the scalp or skull could be detected. A few small glands were palpable in the neck. There were signs of bronchitis in the lungs, which did not expand very fully. The heart's apex beat was in the fifth left space, just outside the nipple. The dullness extended only to the left sternal line. Dr. Gould found, on admission, a slight murmur with the first sound at the apex; second sound natural. (This murmur was not recognized by me some two hours subsequently, and never on any succeeding day, although Dr. Gould heard it again on another occasion.) The abdomen was full, and moved little on respiration. No resistance or special tenderness over it. The spleen was palpable, the liver natural. The limbs were spare. No signs of arthritis or epiphysitis. The knee-jerks were natural. An ecchymosis was noted over the left internal malleolus. The urine was of sp. gr. 1010, and contained a trace of albumen.

The first impression was that the boy was probably suffering from enteric fever. On testing the blood for a Grünbaum-Widal reaction, this was found negative. The boy became almost comatose, and had to be fed by the nares with milk, beef-tea, and brandy, and the nitro-hydrochloric acid draught of the hospital was given. Fresh petechial rash appeared daily on the trunk and limbs, and the case now assumed many features of spotted typhus fever, save in respect of the large pupils. He passed urine under him constantly. On April 23rd the pupils were unequal, the right the larger. Some rigidity of the right leg was noticed, also some retraction of the head and slight arching of the trunk. There was thus evidence of some cerebro-spinal meningitis. The right optic disc was fairly natural, only some undue fullness of the veins being apparent. A little blood-stained discharge came from the right ear, but it came from outside the middle ear. Dr. Gee and Dr. Ferrier saw the boy with me on this date, and it was decided to examine the blood and the cerebro-spinal fluid for evidence of some special variety of toxaemia. Ten c.cm. of blood were removed from a vein in the right arm, and as much fluid from a lumbar puncture, both being kindly examined by culture by Dr. Horder. The boy gradually lost strength, his temperature ranging from 102° to 104.6°, became more comatose, had some blood-stained discharge from the nose, and died on April 25th, the fourteenth day from his first symptoms of illness.

It was clear that this case was one of acute toxaemia, though it was not easy to discover the exact nature of it. The condition of the blood showed a good proportion of xanthocytes—4,544,000—and some degree of leucocytosis—14,000—during life. The results of the cultures were only made known on

the day the boy died, and these revealed a copious invasion both of the blood and cerebro-spinal fluid by a variety of streptococcus, probably longus, according to Dr. Horder.

We come now to the necropsy made on April 26th, an account of which I will read to you. By the light thrown upon the case after death we can readily see that we were face to face with most of the symptoms now recognized as depending on toxaemia due to an arterial pyaemia starting from the mitral valve of the heart—to wit, pyrexia, haemorrhagic effusions, and visceral infarctions. Clinically there are several types of the malady, for it is apt at times to simulate enteric fever, acute general tuberculosis, and, as in some respects in this instance, even typhus fever. Hence the diagnosis is by no means always easy to make till some time has elapsed.

Necropsy Twenty Hours after Death.

Well grown, fairly-nourished boy. Many small petechial haemorrhages, specially over trunk and lower arms.

Head.—Cranial bones natural; a few subpericranial haemorrhages. Dura mater and sinuses natural. Arachnoid and pia mater: Over convexity a few small subarachnoid haemorrhages. Arteries: Larger arteries natural. Brain 54 oz. Puncta cruenta well marked. Spinal cord not examined. Eyes not examined. Ear: In right ear some blood-stained mucus; left natural.

Chest.—Oesophagus: A number of small subepithelial haemorrhages throughout length. In lateral wall of pharynx just behind the tonsil on either side an area the size of a shilling covered with thin yellow granular "membrane." Glands in neck natural. Larynx and trachea: A number of small petechiae. Lungs: Right 17 oz., left 18 oz. A few small subpleural haemorrhages on either lung. Both lungs congested. Heart, 8½ oz. A drachm or two of slightly turbid fluid in pericardial sac. Beneath visceral pericardium a few petechiae. Heart muscle pale with a few minute haemorrhages in its substance. Pulmonary, tricuspid, and aortic valves natural. The mitral valve was completely surrounded as to its free edge with a ridge of recent granulations about ⅛ in. wide and ⅛ in. high. The granulations were yellowish and soft in consistence. Aorta and vessels natural.

Abdomen.—Peritoneum natural. Stomach: Many small petechiae in mucous membrane. Intestines, a few petechiae. Liver, 54 oz.; very pale, large, no haemorrhages. Spleen, 10 oz., soft; two or three recent medium-sized infarcts. Pancreas natural. Abdominal lymphatics natural. Suprarenals natural. Kidneys, 6 oz. each. On the surface and in the substance of each were innumerable small haemorrhages. In the right one moderate-sized anaemic infarct and another larger recent one, of which only the middle third was anaemic, the outer third on either side of the central wedge being haemorrhagic. In the left kidney a similar appearance externally with another large haemorrhagic infarct. Ureters and bladder natural. Organs of generation natural. Joints natural.

Nature of Disease.—Endocarditis, malignant. Splenic and renal infarcts. Petechial haemorrhages in skin, all serous membranes, oesophagus, stomach, and trachea.

We now learned the cause of all the severe symptoms, and may fairly ask why we did not determine the true nature of the malady during life. I suppose the answer is that we were chiefly misled in consequence of finding no plain indications of endocarditis as evidenced by a cardiac murmur. I think we should have had no hesitation in our diagnosis if there had been a constant or a varying murmur. You will remember that Dr. Gould heard a murmur on the day of the boy's admission, and again three days later, but this was fleeting, and never heard again by me or by any of the clinical clerks. Yet there was another indication of cardiac disease. The heart's apex was a little displaced. Again, the condition of the spleen might have suggested infarctions, and had there been haematuria, which, strange to say, was absent, despite the haemorrhages and infarctions found in the kidneys, we might have been set on the right track. I take up this point, and consider it a little further. It is sufficiently recognized that the malady this boy suffered and died from sometimes runs its course without the occurrence of cardiac murmurs, and this fact must always add seriously to the difficulty of making a certain diagnosis in such a case. Yet we have to learn to suspect an endocarditis in the absence of valvular murmurs. This is one lesson. We have nothing in this boy's history pointing to any previous disease of his mitral valve. It is therefore very noteworthy that the lad was seemingly in good health till the day he sickened, and his illness became at once grave. We may next inquire as to the source of the streptococcal invasion. In many of these cases there is reason to believe that such infection occurs in the lymphatics of the throat, but there remains room here for further research into these matters. There was some granular membrane found in the pharynx in this case, as we have seen. We may take note again of the absence of signs of endocarditis in these cases, and bear the fact in mind when we are dealing with cases of obvious rheumatic fever and of chorea. Here, again, we are in the presence of an infection and a toxaemia, due also to a member of the streptococcal family, and we pay careful attention to the state of the heart and its several textures, are always on the alert to detect the earliest signs of inflammatory mischief, and always glad to find no evidence of it. But may we not sometimes be wrong in concluding that the absence of murmurs is a certain sign of immunity of the endocardium in such instances? I am inclined to think we are sometimes misled in this matter, and that such inflammatory changes actually exist without giving token of their presence, provided they are small, bead-like, and not grossly vegetative. These, then, are the chief lessons of this sad case. I think nothing further could have been done for this patient, or for any in like case when the malady is so virulent and overwhelming. Happily, there are degrees of intensity of all forms of toxaemia. Some of these cases of infective endocarditis last for months and even for a year. I have had such cases under my observation. In the chronic forms we now seek, as you know, to introduce antitoxic sera into the system by the skin or by the bowel, and sometimes with success. We may look forward to better results when the presence of particular strains of micrococci are recognized in the blood, and specific sera are manufactured to combat these. Hitherto there has generally been a negative result in blood cultures from these patients, but Dr. Horder tells me he believes this is often due to too small an amount of blood being dealt with. A finger-prick or ear-prick does not yield sufficient for an adequate examination, and blood should be taken from a brachial vein with due precautions. Dr. Kanthack was wont to say that if in any case the blood contained toxic particulate elements, the prognosis was unfavourable. We may now, however, hope for better results in the near future, and so be enabled to render less grave the prospects of this terrible malady.

A Clinical Lecture

UPON THE

EARLY MICROSCOPICAL DIAGNOSIS OF TUMOURS.

Delivered at St. Bartholomew's Hospital on June 29th.

BY C. B. LOCKWOOD, F.R.C.S.,
Surgeon to the Hospital.

I NEED not dwell for one single instant upon the importance of the early diagnosis of tumours. In the beginning the whole disease may be taken away with an abundant margin for safety; towards the end who can say whither it may not have spread?

Disabuse your minds of much of that which you have read or been told.

In books tumours are "innocent" or "malignant," but in Nature such distinctions do not exist. In a little while I shall tell you of tumours which seemed to be innocent and yet were malignant, and of tumours which seemed malignant and yet were innocent. Do not be misled by the positive air wherewith some assert the nature of tumours which they cannot see and have only felt with difficulty. The errors they fall into would be ludicrous were they not fraught with tragedy. It is, moreover, strange to see how soon these errors are forgotten. It is, however, an attribute of the human mind to remember the agreeable and forget the disagreeable. After guessing it is pleasant to be right; unpleasant to be wrong; so that the right guesses are remembered and paraded and the wrong forgotten.

I, too, once thought that the rules of art would enable me to tell clinically whether a tumour was innocent or malignant, but much has happened to shake my confidence. Some years ago I was asked to see a patient and remove an abdominal tumour. The abdomen of this unfortunate woman contained ascitic fluid in abundance, and masses of malignant disease. The liver, too, was enlarged and full of nodules. Naturally I looked for the primary growth. In the left breast was a globular tumour about an inch in diameter, and the axillary and subclavian lymphatic glands were enlarged. Sixteen years before a small cyst had been found in the left breast at the site of the tumour. The cyst had been tapped and injected with iodine. A lump remained and had slowly but steadily grown. As you are aware, cysts of the mammary gland sometimes contain an intracystic tumour growing from their walls. In the case which has just been narrated it was almost certain that the intracystic growth was sarcomatous. Those of you who are

very rightly cultivating your critical faculties may have thought me guilty of a flagrant inconsistency, for, as you may remember, I was very positive about the diagnosis of the abdominal tumours which I had not seen. But my theme is the *early* diagnosis of tumours. It is in their earlier stages that their diagnosis is impossible by ordinary clinical methods; in their later stages their diagnosis is easy, but by that time they are often beyond the reach of surgery. In its beginning no one could have diagnosed the mammary tumour by ordinary clinical methods. Every one might have known that it was a cyst, but no one that the cyst contained sarcoma until after its removal and examination with the microscope. Owing to improvements in surgery, a cyst would nowadays be unhesitatingly removed. The dangers of the operation would be inappreciable and the subsequent suffering comparatively slight. But who can tell the happiness of the patient to be freed from the sense of impending evil?

Here is another incident which should shatter your faith in the infallibility of the mere clinical diagnosis of commencing tumours; and remember it is futile to diagnose them when far advanced.

A girlish-looking woman, aged 29, had a small, hard, movable tumour in the right breast. On the strength of the clinical history and examination, it was said to be an innocent tumour—a fibro-adenoma—and the house-surgeon kindly removed it. It was sent to the pathological laboratory for examination and report. The pathologists pronounced it to be a cancer, and sent me a section which left no room for doubt. After consultation with my colleagues I removed the whole mammary gland, pectoral muscles, and axillary fat and lymphatics. My reasons for this severe operation were: first, a mere limited removal of a carcinoma is useless, because other islands of cancer may be present in the mammary gland. In this instance more cancer was found near the site of the original tumour. Secondly, the pectoral muscles were removed lest they, too, should contain carcinoma, and above all to give access to the lymphatics along the course of the axillary vein and of its main branches. Some of the axillary lymphatic glands were enlarged, although, as is the rule in the early stages, none could be felt. This patient was well two years after the operation. She was more fortunate than another young woman of 28, whose carcinomatous breast was removed in the same way. Hers relapsed within two years, but it was far advanced at the time of operation. She had lost one of her best chances of safety.

There is something rather mysterious about the invasion of the lymphatics in malignant disease. The other day a microscopical examination disclosed no carcinoma in the enlarged axillary glands, but plenty in others which were too small to be felt. I use the term malignant in order to include the sarcomas. There seems to be an idea abroad that sarcomas do not invade the lymphatics. I cannot think how such a gross error can prevail. In my experience the sarcomas do invade the lymphatics. And this fact ought always to be taken into consideration just as in cases of carcinoma. As a diagnostic indication the supposed presence or absence of lymphatic enlargement is not of much value. In stout women the lymphatic glands upon and beneath the costo-coracoid membrane cannot be felt although greatly enlarged, and the same remark applies to those in the axilla.

I would also advise you to be very sceptical as regards the naked-eye characters of young tumours. Had that carcinoma of the breast been judged by the naked eye a wrong conclusion would have been arrived at, and the patient would not have been as safe as she is. Over and over again I should have been wrong had I relied on the mere naked-eye characters of young tumours; sometimes the whole breast would have been removed for mastitis, and sometimes the breast would have been left with cancer in it. In their later and more hopeless stages the character of tumours can be roughly judged with the naked eye. For this purpose a complete incision through the tumour and its margins is necessary. You know how a malignant tumour grows into its surroundings. But do not be deceived by the presence of a capsule. I have removed a carcinoma of the breast which had a perfect capsule. A pedicle, too, may deceive especially in growths within the urinary bladder. I am sure that it is rash to rely upon the supposed innocency of a tumour. Recently you saw me with infinite labour remove a huge tumour growing from the horizontal ramus of the pubes on the right side. The stories told by patients are to be received with incredulity, but in this instance we had reliable medical evidence. The growth had grown very slowly for eighteen years, but for six months had increased rather rapidly. During the operation some enlarged lymphatic glands were found near the tumour, and others were felt enlarged upon the opposite side of the pelvis. The pathological report, with which I agree, says that "the cartilaginous portion is very cellular, suggesting malignant disease." The gland contains what I believe to be sarcoma. Now whatever may ultimately accrue, you will agree with me that the later stages of this so-called innocent tumour were most forbidding. Do not trust innocent tumours, remove them early. I have recently operated for carcinoma of the breast which had been seen by a medical man two years before. The tumour was adherent and on the point of ulceration. Unfortunately, such procrastination is not infrequent. Perhaps it is a survival of the days when there were no anaesthetics and no antiseptics.

There is some strange relationship between tumours which are labelled innocent and those which are labelled malignant. In April, 1899, I removed a small cystic fibro-adenoma from the right breast of a woman aged 45. At this time some of the lymphatic glands in the axilla could be felt slightly enlarged but soft and movable. In April, 1904, I removed the left breast, pectorals, and axillary lymphatics for carcinoma. Clinically the carcinoma was a small, hard, movable nodule, exceedingly like the cystic fibro-adenoma removed five years before. The lymphatic glands in the right axilla were still to be felt, and were perhaps larger than at the first operation. Some would call this occurrence a mere coincidence, but that would not convey much to a rational mind.

The fallacies and difficulties which pertain to the clinical and naked-eye diagnosis of young tumours are easily overcome by examining them with the microscope as soon as possible after their discovery. I strongly advise you to dismiss from your minds any lingering belief you may have in diagnostic infallibility and adopt this rule.

Nearly the whole of the examinations which I am about to narrate were made with the help of Mr. Ernest Shaw, to whom I am much obliged. The procedure is quite simple, but requires practice and a considerable experience of the morbid histology of tumours. When the patient has been anaesthetized an incision is made and a portion of the tumour is cut off and frozen on a Williams ether-freezing microtome. Sections are then cut and floated upon a slide, and stained with a solution of methylene blue, protected with a cover-glass, and examined.

Mr. Shaw has been able to show me exceedingly good sections within the space of five to seven minutes. Now and then a second piece of the tumour has been removed and examined. Presently you shall hear the results of our essays, but first I would refer to the obvious advantages of this method. Every one has very naturally a dread of anaesthetics. Besides the minute danger which attends their administration, it cannot be denied that they usually make the patient very sick and ill. Indeed, I cannot help considering our present methods of anaesthesia as being exceedingly crude, even in the most skilful hands. Well, the immediate histological examination of the tumour obviates the necessity for a second anaesthesia, with all its attendant discomforts and anxieties. Next, it is most reassuring to the patient to know that nothing will be left to chance. They become resigned when they realize that should the microscopical examination prove the tumour to be innocent it alone will be removed; but should the microscopical examination prove the tumour malignant, then whatever is necessary for ultimate safety can be at once accomplished. For my own part, I may say that I can proceed with greater confidence and persistency throughout a prolonged operation for malignant disease when I have clearly seen the cancerous tumour under the microscope. Not long since a small nodule in the breast of a very stout woman was seen to be colloid carcinoma, and this permitted of no half measures.

I also think the surgeon ought to see and judge for himself. In such an important matter the surgeon himself ought to be able to rely upon his own judgement. Some years since an elderly lady had an ulcer about an inch in diameter to the right of the urinary meatus. The clinical characters of the ulcer were dubious. The first two sets of frozen sections were pronounced by others to be inflammatory. After having seen a third I was convinced that the ulcer was an epithelioma of the most malignant type, and thereupon performed an extensive operation for its removal. Unfortunately this attempt was unavailing, for after the lapse of a few months the disease reappeared near the same spot, and a second attempt was equally unsuccessful.

It is obvious that differences of opinion may arise as to the correct interpretation of microscopical sections, and in that

case the surgeon should be prepared to accept the responsibility of deciding. A woman was sent with a hard tumour in the right breast, retraction of the nipple, and enlarged axillary glands. The tumour was adherent to the skin and to the pectoral muscles, and it looked like a desperate case of carcinoma. There was, however, one ray of hope. An ulcerated opening near the retracted nipple discharged a little thick, yellow, odourless pus, not at all like the thin, blood-stained, offensive discharge from a cancerous ulcer. I concluded, although others were doubtful, after the immediate microscopical examination that the tumour was tuberculous. The removal of the mammary gland and of the enlarged lymphatics was followed by a speedy recovery.

The value of an immediate histological examination was exemplified under the following difficult circumstances: A lady had a sanious discharge from an enlarged uterus, behind which a hard tumour could be felt in Douglas's pouch. In addition her abdomen was distended by a fluid swelling. It was difficult to say whether the fluid was all free or whether some of it was circumscribed. The question of carcinoma of the uterus was mooted and the assumption of its presence seemed to explain the symptoms. An unavailing attempt had been made to diagnose the condition with the aid of an anaesthetic. The patient was very averse to take another anaesthetic to obtain a specimen for a postponed histological examination, to be followed, perhaps, by a third anaesthesia. She agreed at once to take an anaesthetic to allow of an immediate microscopical diagnosis of the uterine condition, to be followed up by an abdominal operation if the result was favourable. Clearly, if the uterus was carcinomatous, it was of little use exploring the abdomen. Assisted by Dr. Hope Murray and Dr. Bolus I dilated and curetted the uterus. The substance removed was chronically inflamed endometrium. I then opened the abdomen. It was full of blood which continued to gush out freely. At first the flow was very dark-coloured, as though it had been long effused, but afterwards it became bright red. Guessing that this had escaped from a ruptured ovarian cyst, the hand was thrust into the pelvis and seized the pedicle of a ruptured ovarian cyst full of papillomatous growth which bled freely. After the cyst had been taken away, a large pedunculated fibroid had to be removed from the back of the uterus to allow of an inspection of the right ovary, which was healthy. The patient made a good recovery and remains well.

An immediate histological diagnosis was the prelude to an operation for the removal of gall stones. A lady had symptoms which pointed to cholelithiasis, but she had in addition most suspicious tumours in both breasts. Obviously if these tumours were carcinomatous it would not be worth while to begin with the gall bladder. I arranged to give an anaesthetic and effect an immediate microscopical examination of the tumours of the breasts, and if they proved to be innocent proceed forthwith to explore the gall bladder. In a few minutes we saw under the microscope very perfect sections of a chronically-inflamed mammary gland. The gall bladder was then emptied of a quantity of stones, and the mammary tumours slowly disappeared. These inflammatory tumours of the breast are by no means infrequent. Under the microscope they are easy to distinguish from carcinoma because the inflamed lobules and the little islands of gland tissue possess easily-seen branching ducts. This feature was clearly seen in a recent case, in which a cyst was likewise found in the centre of the inflammatory mass. Before the immediate microscopical examination, and after the naked-eye inspection of the cut surface of the mass, I myself would have given a verdict in favour of carcinoma. I wonder how often those who trust to the naked eye have mistaken chronic mastitis for carcinoma.

Chronic mastitis and carcinoma may co-exist. Two years ago great differences of opinion prevailed at consultations as to the nature of tumours in both breasts of a young woman whom I showed to my colleagues. On the right side one of the tumours felt a little harder than the rest and was ultimately found to be a carcinoma.

The immediate method of microscopical diagnosis is also applicable to tumours of the tongue. For instance, a gentleman had a small chronic ulcer upon the edge of the tongue. Its base was very hard and an enlarged lymphatic gland could be felt deeply situated beneath the jaw. Usually a piece of such a tumour is removed with the aid of cocaine, and prepared for postponed microscopical diagnosis. This method does not give very certain results, because the piece removed is sometimes too small, and does not include a sufficient depth of the base of the ulcer, which, after all, is the essential part. Now two points had to be considered with regard to this ulcer: first, if it were an epithelioma a wide removal was necessary for future safety; and, secondly, the gland beneath the jaw ought also to be removed, necessitating an incision in the neck. A general anaesthetic was given and a complete section of the ulcer showed that although no cell nests were present, nevertheless the most suspicious epithelial ingrowth was in progress, accompanied with much small-celled infiltration. After this had been seen the ulcer was freely removed, and afterwards the gland beneath the jaw was taken away, together with another which was unexpectedly encountered. As you are aware, we frequently remove suspicious lymphatic glands for postponed microscopical examination. A gland removed from the neck of a man who looked as though he had inoperable malignant disease proved to be tuberculous. An opportunity occurred of seing whether it was possible to ascertain the nature of enlarged glands by the immediate method. A woman with a very advanced ulcerating carcinoma of the left breast had an enlarged lymphatic gland nearly at the apex of the posterior triangle of the neck. A few minutes after it had been removed we saw that it contained carcinoma. Afterwards, at this woman's earnest entreaty, I removed the breast and pectoral muscles, and all the lymphatics from the apex of the posterior triangle of the neck down to the axilla. She made a very rapid recovery.

If desirable the characters of abdominal tumours can be immediately ascertained during the progress of the operation. A piece removed from a tumour of the liver proved to be a cylindrical-celled carcinoma. The primary growth was in the large intestine. A piece removed from the vicinity of a tumour growing within the small intestine proved to be inflammatory, but no more could be obtained for fear of a faecal leak. The tumour itself was not removed because the naked-eye inspection made us all quite sure that the tumour and the enlarged lymphatic glands were malignant. However, this guess was wrong, for the large tumour speedily disappeared, and not a trace of it could be discovered when the abdomen was examined in the *post-mortem* room. The patient died some weeks after the exploration from the effects of septic inflammation of the heart, pericardium, and lungs. The original seat was never discovered. Such cases as these explain the disappearance of many supposed malignant growths.

It is sometimes difficult to tell during the course of operations for the removal of tumours whether all the disease is being removed. For tumours of the breast the nitric acid method of Harold J. Stiles[2] gives instructive results. Few realize either the extent of the mammary gland itself or the ramifications of its carcinomata until they have tried Stiles's method. But for other kinds of tumours it is not applicable. Nevertheless, the question not infrequently arises during the removal of tumours whether the incision has been carried into healthy tissues. Here the immediate method of microscopical examination tells at once what we wish to know. Whilst removing that huge ossifying chondro-sarcoma about which I have told you, a doubt arose as to the nature of some of the tissues in its vicinity. A microscopical section was made forthwith, and showed that the suspected part was merely fibrous tissue.

This simple method of immediate microscopical examination ought to be particularly useful for the diagnosis of testicular tumours. Nowadays the testicle has oftimes to be removed, and then a postponed microscopical examination made. It is disconcerting when the tumour proves to be a gumma, which, as you know, can be cured by a course of potassium iodide and mercury. Doubtless this element of uncertainty has hitherto been a fair excuse for delay; but, whilst delaying, the growth may have invaded the spermatic cord, the lymphatics within the abdomen, or lungs, or other organs. Patients would submit to early operation if they felt sure that it would not lead to an unnecessary mutilation. The following cases illustrate the difficulties of the diagnosis of testicular tumours.

A young man, aged 24 years, had a small hard lump in the right epididymis. A senior surgeon of great experience at once concurred in the opinion that this was tuberculous and advised castration. After removal the section through the tumour showed many yellow opaque areas, also cysts, and growth which looked medullary. The microscope revealed a variety of carcinoma which is sometimes called malignant adenoma. To me the sections looked like the Wolffian body of an embryo pig or rabbit. Similar growths are met with in the kidney, and doubtless have a similar origin from the Wolffian body. Six years afterwards this patient had the opposite testicle removed for a malignant tumour.

On another occasion a patient was seen with a small elastic swelling near the head of the right epididymis. It felt like one of the cysts which are so commonly met with in that situation, but it was not translucent. A small trochar and cannula were used to empty the supposititious cyst, but only a little blood ran out, and the lumen of the trochar was partially blocked with a scrap of soft tissue. This was pronounced by the pathologist to be sarcomatous. The testicle was removed and a small sarcomatous tumour found in the body of the testis close to the head of the epididymis.

In conclusion, you will remember when confronted with a young and ambiguous tumour to assume an attitude of intellectual humility, and carefully eschew diagnostic omniscience and infallibility.

For knowledge is of things we see.

NOTE AND REFERENCE.

[1] I am told that Mr. Shaw has been timed to have the section ready in two minutes. [2] The Surgical Anatomy of the Breast and Axillary Lymphatic Glands, *Edinburgh Medical Journal*, June and July, 1892.

CONCERNING PADS UPON THE FINGER JOINTS AND THEIR CLINICAL RELATIONSHIPS.

By ARCHIBALD E. GARROD, M.A., M.D., F.R.C.P.,
Assistant Physician, St. Bartholomew's Hospital: Physician, Hospital for Sick Children, Great Ormond Street.

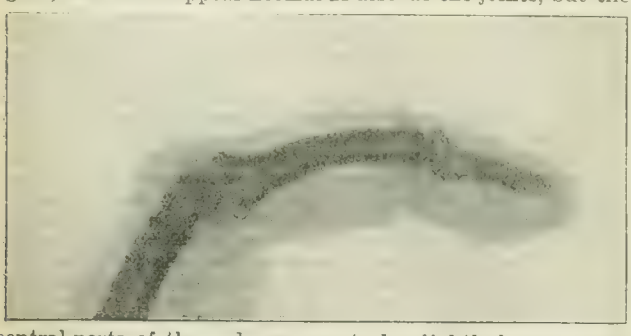
THE lesions which form the subject of the present communication are not in themselves serious, but it is desirable that those who practise medicine should be familiar with them, if only that they may distinguish them from other and more serious troubles which they simulate to some extent.

The pads in question formed the subject of a short paper, based upon the observation of three cases, which appeared in the volume of the *St. Bartholomew's Hospital Reports* for the year 1893 (vol. xxix, p. 157). Since that time I have met with other cases in which such pads or nodules were present, and as these additional cases throw some further light upon their clinical relationships, I venture to return to the subject.

They form excrescences which are almost confined to the dorsal aspects of the interphalangeal joints of the proximal row, and are only very rarely seen upon the terminal joints of the fingers. They are usually present upon the fingers of both hands, but in their distribution there is no striking symmetry. They vary considerably in size, and may be no larger than split peas, or may be as large as the halves of hazel nuts. Although usually central in position, they may incline to one or other side of the joint.

When the fingers are extended the pads are moderately soft, and can be moved, to some extent, upon the underlying structures, but when the fingers are flexed they become firm and hard and are no longer movable.

There are no indications of disease of the joints over which they lie, and such pain as is felt is referred to the pads rather than to the joints themselves. In a radiograph picture (see figure) the bones appear normal as also do the joints, but the



central parts of the pads are seen to be slightly less pervious to the Roentgen rays than the remainder of the soft structures of the fingers.

Sometimes the lumps are quite painless, but more often pain, of various degrees of severity, is complained of, especially when the fingers are flexed, and tenderness is elicited by the slight traumatisms which are unavoidable in daily life. Occasionally the development of them is attended by more severe pain, which may even shoot up the arm as high as the elbow.

The pads may make their appearance at any period of life, and when once formed they appear to be permanent. Patients who exhibit multiple pads usually state that they did not form simultaneously but at intervals. The growth is usually rapid and may occupy as short a period as a few weeks. In some cases the formation of each pad is attributed to some slight injury, such as may result from impact against a piece of furniture or a blow from a cricket-ball. In other instances no such cause is assigned.

I have had no opportunity of examining such a pad *post mortem*, and am therefore unable to give any account of their structure, but their clinical features recall those of thickened bursae, and it is difficult to doubt that they are mainly composed of fibrous tissue.

Of twelve cases of which I have notes, seven were in males and five in females. In five cases the pads appeared before the patients had reached the age of 20 years, and in three of these at an earlier age than 15 years. On the other hand, in one case they developed at the age of 60 years. In one case they were said to have been present for 42 years. Three patients gave clear histories of similar lesions in near kinsfolk.

The pain and swelling in the neighbourhood of the finger-joints is apt to excite apprehension of further developments, but there does not appear to be any connexion between these pads and any of the morbid conditions which are usually grouped together under the names of rheumatoid or osteo-arthritis. It should be mentioned, however, that two elderly patients had well-marked Heberden's nodes in addition to the pads.

Of the three cases described in 1893, the pads were associated with Dupuytren's contraction of a finger in one, and the father of a second patient was said to have that deformity.

The association thus suggested is much more clearly brought out by the larger number of cases now available, and it seems impossible to doubt there is an intimate connexion between the two conditions, or that they have a common cause. On the other hand, it is clearly the case that the pads usually develop at a much earlier period of life than does the contraction of the palmar fascia.

Of the twelve patients no less than six themselves exhibited Dupuytren's contraction. In most instances the puckering in the palm was well marked and the contraction was quite of the ordinary kind, but in one or two there was merely a fibrous thickening on the palmar aspect of a little finger, causing flexion, but without any obvious implication of the palmar fascia.

The fathers of three other patients, and also of one of the six already referred to, were said to have fingers so drawn down, and in one of the three remaining cases the occurrence of Dupuytren's contraction in the family was not inquired into. Thus in no less than nine out of the twelve cases there was a parental or personal history of such contraction, and the association in so large a proportion of the cases of two lesions, neither of which can be described as common, can hardly be fortuitous.

Dupuytren's contraction, although hardly a gouty lesion, is usually held to be connected with gout. It might perhaps be styled a para-gouty lesion. It is therefore of interest to consider the history of the twelve patients in this connexion. Only one patient had himself suffered from attacks of articular gout. In four cases there was a definite history of true gout in direct ascendants, in five the history was doubtful on this point, and in the remaining five neither family nor personal history of gout was forthcoming. The connexion with gout is clearly less obvious than that with Dupuytren's contraction.

I know of no plan of treatment which is of any avail in reducing the size of the pads or in causing them to disappear, and it is seldom that the pain and inconvenience which they cause is very serious. Beyond the fact that a patient who develops them in early life appears to be liable, as time goes on, to develop Dupuytren's contraction of the palmar fascia, they do not seem to possess any grave prognostic significance.

BEQUESTS TO HOSPITALS.—Under the will of the late Mr. William Riley, of Leamington and Birmingham, who died on May 1st, a sum of £3,050 is appointed to be held in trust, as to £800 for the Warneford Hospital, Leamington, as to £1,000 for the Queen's Hospital, Birmingham, and as to £1,250 to the General Hospital, Birmingham, in each case for the same purpose, namely, the establishment of a bed to be called after the testator.

A NOTE ON THE INTRAVESICAL SEPARATION OF THE URINE FROM EACH KIDNEY.

BY B. G. A. MOYNIHAN, M.S., F.R.C.S.,
Leeds.

THE need for some means of obtaining the urine from each kidney separately has long been recognized in surgical work. Of the importance of knowing the exact functional power of each kidney in any form of disease affecting the urinary tract every surgeon can speak. The methods of obtaining the urines from each kidney separately for examination are two, either by catheterizing the ureters, and obtaining the urine before it has entered the bladder, or by creating a septum in the middle of the bladder, in such manner as to secure that the urine from each ureter is confined to its own side of the bladder, from which it is drawn through a small catheter.



Fig. 3.—The urine separator of Cathelin.

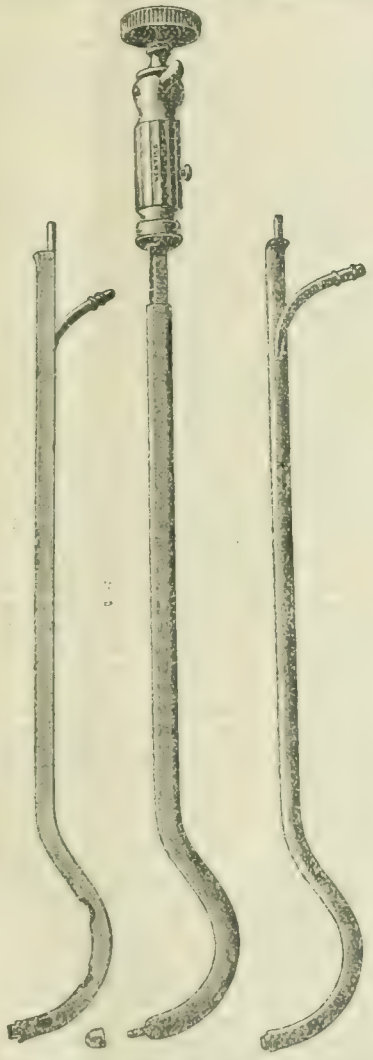


Fig. 1.—The three parts of Luys's instrument (Hartmann and Luys).

Catheterization of the ureters is not seldom a matter of difficulty, and is by no means unattended with danger. It requires for its adept performance much patient practice; it it is, indeed, so technical a procedure that the majority of surgeons do not make use of it. The creation of a septum in the bladder, adequately dividing it into two cavities, whose contents remain separate, is a problem that for several years past has engaged the attention of those working in this branch of surgery.

It is to Lambotte of Brussels that we are indebted for the first attempt in this direction. In 1890 he constructed an instrument which, though rude in conception, has been the forerunner of those which to-day are recognized as fulfilling perfectly their object. Lambotte himself soon abandoned the use of his instrument. Harris of Chicago and Downs of Philadelphia were the next to attempt, with greater success, to find a satisfactory method. Harris's instrument, known as the "segregator," depends for its action upon the lifting up of the base of the bladder in the middle line, by the pressure of an instrument introduced into the rectum. This instrument created a hillock or septum in the bladder, and the urine escaping from the ureter formed a pool upon its corresponding side of the bladder. From this pool it was drawn off by a small catheter. This instrument was most ingenious in construction, but in actual working was found not to be strictly reliable.

The first perfectly-efficient instrument was created after some modifications of the original pattern by Dr. G. Luys, of the Hôpital Lariboisière in Paris. It is shown in Figs. 1 and 2. It consists of three portions, a central portion within

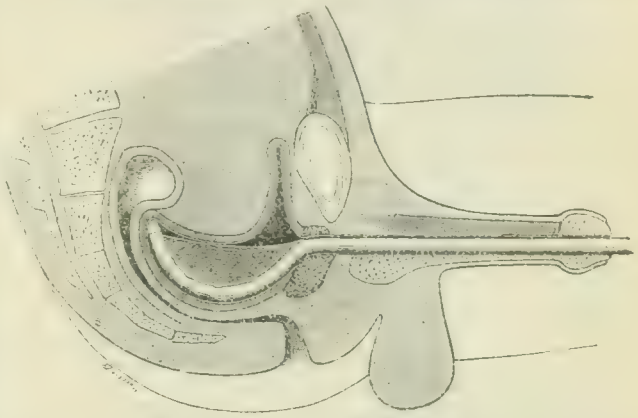


Fig. 2.—The separator of Luys (Hartmann and Luys).

which lies a chain attached at the handle of the instrument to a wheel. This portion, like the lateral parts, is straight to within about 2 m. of the end, where there is a marked curve forming almost the half of a circle. This portion is covered with a thin rubber sheathing. When the screw which works the chain is turned the chain is tightened, and instead of lying in the hollow of the curve of the instrument, it is raised up, forming a diameter instead of a part of the circumference of the circle. The indiarubber sheathing is also raised up, and in this way a septum is formed. The lateral pieces, fitting on to the sides of the central piece, consist of two catheters having several eyes. Each catheter drains its own side of the bladder after the septum has been created.

The whole instrument has somewhat the curve of a beniqué catheter. When viewed sideways, it is seen that the central portion is a little deeper than the lateral portions and can be seen to project a little beyond these both on the concave and on the convex side.

Another instrument with which perfectly satisfactory results may be obtained is that invented by Dr. Cathelin of Paris (Figs. 3 and 4). The shape of this model is very nearly the same as that in the ordinary bladder sound. There is a short, sharply-curved beak. The stem of the sound is hollow, and contained within it is the folded indiarubber leaf, which, on liberation, forms the septum dividing the bladder into two parts. The leaf or septum consists of indiarubber fixed on to a pear-shaped spring which forms its margin. This is attached to a rod which runs in the hollow of the sound. When this rod lies in the sound, being pushed home, the indiarubber septum projects from the end; when the rod is pulled upon, the septum is drawn up into the sound. It folds upon itself quite readily.

When the separator is passed, the rod bearing the septum is drawn out to its fullest extent. The instrument is passed, as a rule, without the smallest difficulty. When it is felt to be in the bladder, it is withdrawn until the beak is in close contact with the back of the pubes. The septum is then liberated by pushing home the rod which bears it. A little

water purposely left in the bladder is allowed to flow away through the instrument, and the urine is then collected from each side.

It is impossible, with the limited experience which I possess, to institute a true comparison between the two instruments. I have certainly found that Luys's instrument, though easy to use in the female, is decidedly difficult to pass in the male, until repeated practice has given one the knack. When the tip of the instrument lies in the bladder the handle should be well depressed at the same time that onward pressure is maintained. In this way it will be found easiest to overcome the undoubted difficulty of introduction. Professor Hartmann, however, has told me that he considers the instrument is easier to use in the male than in the female, and, with frequent practice, this may be so.

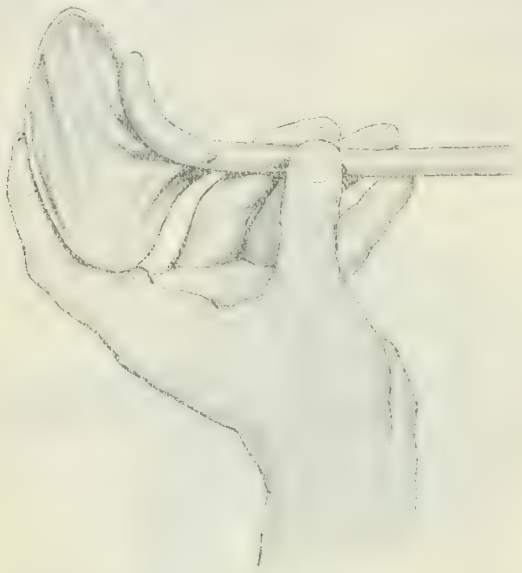


Fig. 4.—Cathelin's instrument, showing the septum.

Cathelin's instrument presents no difficulty in the introduction, but it is not quite an easy matter at first to know by touch alone that the septum fits the bladder well. If the bladder is small and the septum be pushed fully into the bladder it will twist to one side, and the partition will be defective. It is, therefore, necessary before using the instrument to ascertain roughly the capacity of the bladder. Various sizes of septa are now made; at first only one was provided.

Dr. Luys's instrument is of no value unless the bladder be fairly normal in size and position. If the base of the bladder is infiltrated with growth, spreading from the cervix of the uterus, for example, or if the bladder be distorted by the traction or pressure of a fibroid or an ovarian cyst, the curve of Luys's instrument cannot be made accurately to fit the bladder. In such circumstances it may be difficult to use Cathelin's instrument, but it is certainly less likely to be so.

My present opinion is in favour of the use of Luys's instrument for the female and of Cathelin's for the male, but I am prepared to admit that a more extended experience may modify my opinion.

There can be no doubt that both instruments are of great practical value. I propose shortly to publish a complete series of observations, but meanwhile I may call attention to two cases reported by me in the British Medical Journal for April 30th, in which great help was afforded by the separation of the urines.

A NOTE ON DR. CATHELIN'S URINE SEPARATOR.

By J. LYNN THOMAS, C.B., F.R.C.S.Eng.,
Surgeon, Cardiff Infirmary; Consulting Surgeon, Hamadryad Hospital, Porth Hospital, Bridgend Cottage Hospital, and Cardiff Provident Dispensary.

During the last quarter of a century the progress of urogenital diseases from a surgical point of view has been very great, but until quite recently a method for the separation of urine from each kidney had not been brought within the reach of the general surgeon, although one has recognized the circumstance that the surgeon who specializes in these diseases had a certain amount of success.

As far as I know, the first inspiration towards progress in determining the functionating value of a kidney was directed to tapping its efferent tube—the ureter. The inventive eye of the clinician seems to have been riveted to this field for many years. The outcome of having such a limited horizon has been the production of different types of ureteral catheters. In 1894 I procured from Leiter in Vienna a posterior cystoscope-ureter catheter. After many attempts I managed to introduce it into the ureter twice only. The Nitze's anterior cystoscope ureter catheter has one advantage over the posterior one in that the angle at which the catheter is projected from the cystoscope towards the ureteral orifice is much more favourable for its insertion into the ureter.

One objection which is often expressed against catheterizing the ureter is the danger of infecting a healthy one, but what appears to me the greatest objection to this method of diagnosis is the difficulty in carrying it out. "Something attempted but nothing done," would, I think, summarize the result of this method of diagnosis in a considerable number of cases.

Kelly's method of catheterizing the ureter is an excellent one, but unfortunately its utility is confined to one sex. Mr. Hurry Fenwick's attempt to collect urine by means of securing the mouth of the ureter in the bladder by sucking it into a properly-constructed catheter possesses the element of guesswork in finding the ureteral mouth, and on that account positive results alone can be of any value.

A great advance was made by widening the horizon so as to include simultaneously the two ureteral orifices for investigation in the construction of a suitable instrument.

The value of the cystoscope is not in the least diminished by the introduction of urine separators. Its use in quickly determining the presence or absence of the rhythmical movements of the vesical termination of the ureters, the side from which blood or pus comes, and the existence of growths or stones in the lower segment of the ureter, will ensure for the cystoscope a permanent place among our instruments for diagnosis. Some surgeons have displayed enthusiasm, as well as a certain degree of speculation, with regard to their being able to determine the working capacity of a kidney by observing the character in size, form, and colour of its corresponding ureteral orifice by cystoscopic examination, and Mr. Hurry Fenwick has recently described such an examination by the somewhat poetical expression of "ureteric meatoscopy." But however shrewd a guess can be made by this method of diagnosis, there is no doubt that the new urine separators or "segregators" will soon be a popular method in the hands of the general surgeon.

There are two other methods at our disposal for determining the existence of and the working capacity of the other kidney; but these are operative means, and therefore are of no use in our consulting rooms. Professor Kocher, whilst operating upon a diseased kidney from the loin, extends forward the incision so as to open the abdominal cavity in order to be able to palpate the other kidney. After this manœuvre is accomplished the peritoneal cavity is closed and the operation upon the kidney proceeded with. The other operative method is that of Dr. Steinthal. It consists of collecting urine from the bladder whilst a temporary ligature is placed upon the ureter near the diseased kidney.

It is almost impossible for surgeons to be able to form a correct estimate of the working capacity of a kidney which is distended from the presence of a calculus, or a kink of the ureter or other causes, and it is common experience to find urine pouring out of the loin in cases of drainage of diseased kidneys which showed but a mere membrane of secreting tissue lining their capsule. One of my colleagues last winter related to our Cardiff Medical Society such a case of extensive destruction of kidney from the presence of numerous calculi, and he considered it wise to remove an organ which apparently was practically useless. Subsequently the patient gradually developed uraemic symptoms and died. It was discovered *post mortem* that the other kidney was small and disorganized—that it possessed no working capacity. Surgical calamities of this character have occurred on many occasions, and the addition of a simple method of diagnosis by means of which similar tragedies can be avoided will be an invaluable boon.

Last February I procured Dr. Cathelin's instrument from Collin; its mechanism appeared to me to be better than that

of Dr. Luys, and the practical fact that Cathelin's urine separator can be used with the patient lying down has a distinct advantage over that of Dr. Luys. Since Dr. Bickersteth's interesting paper appeared[1] Luys's instrument is becoming well known in this country.

Cathelin's urine separator is shaped like an English lithotrite, and has a small catheter on each side of its stem and beak. Before the instrument is introduced into the bladder, the partitioning diaphragm is withdrawn into the stem, until the mark "o" on the carrying rod indicates that it is completely shielded; the other figures, graduated from 10 to 300, indicate that a globe that would hold one of the specified quantities in grams would be bisected through its middle by the diaphragm projected to that index. For example, when one leaves 40 grams of water in the bladder, the rod is pushed into the stem until the figure 40 is about to disappear, then the diaphragm fills and bisects the bladder into lateral halves.

In my practice I have had some very striking illustrations of the efficacy of the instrument in keeping unmixed the two urines in the bladder. In our consulting rooms I consider the use of the urine separator is less objectionable to females than that of the cystoscope. Ten to twenty minutes is long enough to collect sufficient urine for diagnosis. In one of Dr. Herbert Vachell's cases I left the instrument in a male patient's bladder for one hour and twenty-five minutes, with very little discomfort. This patient had pains—backache on the left side—and the left kidney secreted but one-fifth the quantity of the right kidney. I performed decortication of the left kidney with satisfactory results.

In this paper I do not propose to give reports of cases, but would venture to refer to one that is a most striking example of perfect partitioning of the bladder. In another patient of Dr. Herbert Vachell's at the Cardiff Infirmary, who had haematuria with a large palpatable tumour of the right kidney, Cathelin's instrument drew highly-coloured bloody urine from the right side, and clear urine containing albumen from the left. The coloured right urine was alkaline in reaction, whilst the left clear urine was acid. I was inclined to think the albumen on the left side might be due to a trace of the right urine escaping by the diaphragm. Five weeks ago I removed the kidney with the tumour (carcinoma); since then the urine has remained clear, but still contains albumen, as it did before removal of the diseased kidney.

For demonstration purposes urines can be fixed in test tubes by means of gelatine and formalin, and I have been much struck with the difference in colour of normal urine from the two kidneys; in some cases one kidney seems to possess greater affinity for extracting colouring material than the other.

I have once been saved from removing a tumour of the only functional kidney. An old lady had a large right renal tumour; I took her into the infirmary for operation. As I had just received Cathelin's instrument I used it, but to my surprise I could only get urine from the diseased side. I thought that this might possibly be due to the diaphragm not being placed in the middle of the bladder, and that it pressed on the left ureteral orifice. I made a second examination with the same result. A third examination under an anaesthetic gave exactly the same result, and I also found by cystoscopic examination that the left ureteral orifice was a thin U-shaped slit with no peristaltic movements. I injected water coloured with potassium permanganate through the left catheter, and it returned the same colour without affecting the urine from the right side. The mere fact of anaesthetizing this old lady gave rise to serious uraemic symptoms for a fortnight. In cases of renal calculus with albuminuria I have found non-albuminous urine on the sound side. From the above observations it seems clear we have at present reliable urine separators, and it is scarcely possible to bring forward a better illustration than the one briefly referred to, where the urine was alkaline on one side and acid upon the other, to show that we possess an instrument of very great value for diagnostic purposes.

REFERENCE.

Lancet, March, 1904.

THE LIGHT TREATMENT IN FLORENCE.—A committee, of which Professor Pellizzari is the chairman, has been formed to promote the establishment of a light institute for the treatment of lupus and other forms of cutaneous tuberculosis at Florence. The King of Italy has intimated his approval of the scheme, towards the execution of which he has contributed £120.

THE LEISHMAN-DONOVAN BODY IN ULCERATED SURFACES;

A POSSIBLE ROUTE OF ITS ESCAPE FROM THE HUMAN BODY.

BY

SIR PATRICK MANSON, K.C.M.G., F.R.S., and GEORGE C. LOW, M.B.,

London School of Tropical Medicine.

IN the BRITISH MEDICAL JOURNAL of May 28th we described the presence of Leishman-Donovan bodies in the lymphatic glands of the mesentery. In later work it has been found that the distribution of the parasites in the glands is not uniform, some containing none, some a few, others enormous numbers.

A careful examination of the intestine of the case before mentioned revealed a small ulcer about 12 in. above the ileo-caecal valve, three small punched-out ulcers at the splenic flexure, and two areas of atrophied mucous membrane, one 15 in. or thereabouts above the caecum, the other in the upper part of the ileum.

The mesentery presented numerous small nodules, somewhat resembling minute tubercles; similar nodules were present on the peritoneal surface of the small intestine, and also at the base of the small intestinal ulcer.

Microscopically the intestine exhibited areas of small-celled infiltration between the mucous glands, and in the submucous coat, the atrophied areas showing similar though more advanced changes, most of the mucous membrane having disappeared.

In the infiltrated areas of the small intestinal ulcer, and in one of the ulcers from the large intestine, Leishman-Donovan bodies, few in number, it is true, but unmistakable, were found; they were enclosed in cells. In the other areas no parasites were detected, but as the bodies were so few in the ulcers it is possible that they may yet be found here also.

In sections of liver, spleen, and lymphatic glands the position of those bodies is undoubtedly, in the majority of instances, intracellular. In many cases the protoplasm of the cell is swollen, the nucleus staining faintly or having disappeared.

We have never seen the parasites in the red blood corpuscles in sections or otherwise. Wright and James have found the Leishman-Donovan, or a similar organism, in ulcers of the integuments (Oriental sore), Christophers in intestinal ulcers. The foregoing note again records their occurrence in ulcers of the intestinal mucosa, and this is interesting in view of the fact that dysenteric ulceration is a very usual termination for kala-azar.

Failing the discovery of any other means of exit from the body, may it not be that the normal route of escape for the parasite is by an ulcerated surface? With this idea in view we lately produced by croton oil and liquor epispacticus slight ulcerating dermatitis in a patient with Leishman-Donovan bodies in his viscera, but failed to find the parasites in the discharges. This experiment cannot, however, be considered conclusive, as we were afraid, in the interests of the patient, to produce anything like deep ulceration.

The above observations confirm, then, the work of Christophers recently published in India, and are of interest in showing that these parasites may escape by the intestinal canal.

PRELIMINARY NOTE ON THE CULTIVATION OF ANAËROBES.

BY D. J. HAMILTON, M.B.,

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MOST of the instruments devised for the cultivation of anaërobes are faulty in design, in so far as they do not allow of the organism being examined from time to time, and while it is growing, without disturbing the whole anaërobic arrangements; another drawback to their use is the uncertainty of obtaining typical surface cultures. As in the excellent instrument planned by my assistant, Mr. A. R. Laing, M.B., Ch.B. (*Lancet*, February 20th, 1904, p. 515) their construction is generally based on the principle of substituting an atmosphere of hydrogen for air.

The method I am about to describe aims at the exclusion of any atmosphere whatever, and has proved remarkably efficient in the large experience I have now had of its employment. By means of it, cultures of anaërobes, such as the

bacillus tetani, can be started in a few minutes; samples of the organism can be withdrawn from time to time without endangering the anaërobic conditions; and surface cultures can be obtained with the greatest facility and certainty.

The majority of the anaërobic organisms which are pathogenic in the animal body pass through a sporing stage in their life-history, and this renders their isolation a matter of comparative ease. The greater the number of its spores, the greater is the chance of isolating a particular anaërobe from surrounding impurities. There are many aërobic organisms and a few anaërobic, such as that of tetanus, which will spore on almost any medium. The members of a group of anaërobes with which I have been experimenting lately, and which I shall describe in a future publication, are not in this case. They usually fail to spore on any of the known media; they grow luxuriantly upon many of these, but by fission, even when the morbid liquid or tissue from which they have been derived is rich in spores. The means which I have found to be never-failing in encouraging sporulation, is *to incubate* (37 38° C.) *the organism in the liquid upon which it is found growing naturally within the animal body.* Thus supposing the organism to be growing naturally upon the lymph of the tissues, and to be in the bacillary phase of its life-history, all that is necessary in order to enable it to spore is to draw up the liquid into a Pasteur's pipette, to seal this off, and to place the tube in the incubator for from twenty-four to forty-eight hours. By this time every second or third bacillus will have developed a spore, and multitudes of free spores will probably be found in the surroundings. The drawing up of a little air into the pipette along with the liquid, curiously, does not seem to prohibit the tendency to sporulation. I do not think sufficient importance has been attached to this procedure as a means of bringing about such a very desirable result.

Having obtained the organism in the sporing state, its isolation is a matter of comparative ease, for it is my experience that where one pathogenic anaërobe which spores is present in excess, it has a decided influence in destroying or inhibiting the growth of any others having a like tendency.

The medium I employ for the purpose of obtaining a pure culture is glucose-peptone-beef-tea. For the growth of members of the group of organisms just referred to, its reaction must be distinctly alkaline to phenolphthalein. Mere alkalinity to litmus is not sufficient; indeed, a frequent cause of failure to obtain a culture is to be traced to the medium being neutral or only faintly alkaline. It must be boiled and filtered until precipitation of phosphates ceases. If precipitation of these does occur on boiling, it ought to be allowed to stand for twenty-four hours, and be filtered when cold. If this method be followed, it is seldom that precipitation occurs a second time, provided that the alkaline reaction is such as to give a slightly pinkish tint with phenolphthalein. The reaction ought always to be tested immediately before use, as the boiling may affect the result.

The medium thus prepared is decanted into test-tubes or flasks, according to the amount of culture required for any particular purpose. Test-tubes should be filled to about three-fourths of their depth and flasks to the commencement of the neck. Sterile olive oil is next poured over the medium to a depth of one and a-half centimetre. The olive oil seems to constitute a perfect atmospheric valve.

In order to sterilize the medium, with its covering of oil, and at the same time to drive out any oxygen which may be in solution, the tubes or flasks are boiled after the usual fashion for three-quarters of an hour on the first day, and for a quarter of an hour on the second and third. They will remain anaërobic and ready for inoculating after this for weeks at a time, or, I believe, even longer, but in order to make perfectly certain, I generally boil them again for a quarter of an hour immediately before use, and cool them down rapidly thereafter in a running stream of water.

The ingrafting of the spores is accomplished by means of a pipette. A small quantity of the liquid in which they are contained is drawn up in a capillary Pasteur's pipette, and being plunged deeply into the beef-tea, a particle of liquid is blown out, care being taken to avoid emptying the tube, as air might thus find access to the medium.

The cotton plug is readjusted, and the inoculated beef-tea is heated to 80° C. in a water-bath for twenty minutes, in order to kill off any non-sporing contaminations. In the case of the organisms I have been working with, it is seldom, if ever, that I have failed thus to get a pure culture.

If the organism be contained in a tissue, a small piece of the latter is clipped of with sterile scissors and forceps and dropped into the tube or flask.

After retaining the medium at 80° C. for the specified time, it is cooled down again rapidly in a running stream of water, and incubated. Within twenty-four hours, as a rule, germination is in full activity, and any gas which escapes, of course, has free egress through the layer of oil on the surface. It is not necessary to cover the mouth of the test-tube or flask with a caoutchouc cap; indeed, I have generally found it preferable not to do so, for the gas generated may, if pent up by this means, burst the cap or even the vessel itself. The gas-bells sometimes accumulate as a froth on the surface of the oil, but this is unusual, and occurs only where the evolution of gas is excessive.

Should it be desired to examine the culture microscopically, a sterile pipette is introduced to the necessary depth and a little of the medium sucked up. Any oil which adheres to the outside of the pipette may be removed with blotting-paper before the drop required for examination is blown out on the slide.

Such is the method of obtaining the organism in pure culture. In making a surface growth, the medium which I have found most suitable is glucose-peptone-agar, but any other solid medium, not coagulated by heat, may be substituted. I do not make surface growths in test-tubes, but in round capsules having an inside diameter of seven centimetres, with a depth of two and a-half centimetres. They are provided with a flat ground flange one and a-half centimetre broad. The cover is made of plate-glass, and extends outwards to half the breadth of the flange, so as to leave a margin uncovered. It is ground to fit closely on to the flange.

The medium is introduced into the capsule for a depth, say, of one centimetre, and over this, as in the test-tube preparation, is poured sterile olive oil nearly up to the rim. The cover is adjusted, and the whole capsule and its contents are sterilized by boiling, any air contained in the latter being thus also effectually removed. The capsule is afterwards allowed to cool down.

The medium is inoculated with a sterile Pasteur's pipette, which, immediately before use, is drawn through a Bunsen flame so as to sterilize the outside. A small quantity of a pure culture on glucose beef-tea, made as before described, is drawn up into it, and with the point one or more streaks are scratched upon the medium below the oil. The plate-glass cover is readjusted, and the capsule placed in an incubator. The growth is usually abundant within twenty-four to forty-eight hours, but time should be allowed for it to reach the maximum.

Should it be desired to preserve the culture permanently, the procedure is as follows:—When the organism has grown to the necessary extent, the olive oil is carefully poured off. It is sometimes desirable to pipette off the superfluity of the oil, should the surface of the culture be easily disturbed, but the remainder is got rid of by inverting the capsule over blotting paper. In twenty-four hours the oil will be almost entirely removed by so doing.

The culture must now be killed either with formalin vapour, or, simply, by pouring the solution of formaldehyde into the capsule and allowing it to remain in contact for a day or more. The formalin is afterwards run off, and the capsule again inverted over blotting-paper, usually for thirty-six to forty-eight hours. By this time all superfluous liquid will have been absorbed, and the medium with the culture upon it now presents a comparatively dry surface and is ready for mounting.

Of all mounting liquids, as well from its optical properties as from its preservative action, I have found refined castor oil to be far the best. It is evidently an excellent preservative, when the organism has been killed by formalin, and is so transparent that instead of obstructing the view of the object, it enhances the lucidity of its demonstration. The oil is simply poured gently into the capsule, the lid adjusted, and the air driven out. The lid is thereafter luted with any appropriate cement, but before applying this, I generally run some pure collodion round the margin so as to absorb any castor oil which may be present.

GERMAN PUBLIC HEALTH ASSOCIATION.—The German Public Health Association will hold its annual meeting this year at Danzig from September 14th to the 17th. Among the subjects proposed for discussion are diarrhoea and its prevention; the technique of refrigeration for sanitary purposes; and the improvement and better organization of the *personnel* of attendants on the sick.

Observations

ON

THE VALUE OF SOME OF THE METHODS USED FOR TESTING DISINFECTANTS.

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THE usual method of testing and comparing disinfectants consists in exposing for a given time cultures or emulsions of a particular microbe to dilutions of the disinfectant. This, no doubt, is of value in comparing with one another various disinfectants or their dilutions, and although it affords a sufficiently reliable index of the efficacy and power of a given disinfectant in a definite dilution and for a definite time exposure, it cannot, for reasons to be mentioned presently, supply an absolute guide for the application of the disinfectant in actual practice. In practical life a disinfectant is applied by a surgeon, by the sanitarian, or by the nurse, not to an artificial culture or to an emulsion of an artificial culture, but to materials, such as excretions, secretions, morbid products, and morbid tissues, derived directly or indirectly from the human or animal bodies. The microbes to be acted upon by the disinfectant are embedded in, surrounded by, and mixed with various materials. This condition cannot obviously be compared with that of a microbe in a broth culture, or with a watery or salt emulsion of the growth taken from an artificial culture. The surgeon who wishes to disinfect a wound and to keep it antiseptic, has to apply the disinfectant to tissues and not to a watery emulsion; the nurse who is supposed to disinfect a typhoid stool with a given disinfectant is not acting on a watery or saline emulsion of a culture of the typhoid bacillus, but on materials of a highly-complex composition, and altogether of a different nature from the laboratory culture.

An illustration is sufficient to prove the difference between the one kind of disinfection and the other. Staphylococcus pyogenes aureus (of a recent and active culture) is justly considered one of the hardiest non-sporing microbes, at any rate as far as chemical disinfectants are concerned, and for this reason bacteriologists are in the habit of using this microbe in their laboratory tests.

Now, the staphylococcus aureus taken from a culture (broth or agar) and placed into a watery solution or distributed in a disinfectant, is by simple agitation in most cases readily emulsified; the fluid viewed under the microscope shows the microbes almost uniformly distributed as single cocci or as diplococci or as very small groups. Compare with this a microscopic specimen of the contents of an abscess or of the secretion of a wound or ulcer. Here you find, besides crowds of various tissue elements, leucocytes, débris, tissue fibres, fatty granule-cells, etc., large and small clumps of cocci and diplococci not only in the fluid menstruum, but within the protoplasm of leucocytes, within débris and within masses of fibres.

The disinfectant which is to act on the microbe so surrounded and lodged has a task to fulfil quite different from what it has when it is added to a broth culture or other uniform emulsion of the microbe. The same, *mutatis mutandis*, applies to diphtherial membrane, to sputum, to the typhoid stool, and other animal excretions. In the following experiments I wish to show by direct observation that in a number of tests which I have made in this direction, marked differences exist in the action of a certain disinfectant, with which I have been well acquainted for some years, to wit, izal, as applied to microbes, such as staphylococcus aureus, B. coli, B. typhosus, in different surroundings; in one case the microbes were taken from artificial cultures, and in the other were in their natural habitat. The izal used was the fluid sold as ordinary izal in the ordinary pharmacy.

METHOD.

1. In the case of pus of acute abscess, the pus and blood, immediately after collecting them from the abscess in sterile test tube, were diluted with sterile distilled water, 1 part of pus being added to 49 parts of water. From this dilution a control culture was made on agar, one platinum loopful of the mixture for one agar surface culture. The result of this control culture indicated the amount of staphylococcus present, and allowed the number of colonies in the control tube to be compared with those that appeared in the culture tubes after medication. To the above dilution of the pus was added a definite amount of izal direct as sold, and then well shaken up. The proportion of izal to the volume of diluted pus represented the strength of izal actually used in the experiment.

2. In the case of urine a definite amount of izal was added, well shaken, then after being kept for the required time, the necessary cultures were made on agar and in broth.

3. In the case of the typhoid stool only typical fluid (pea-soup) stools were used; of these a definite quantity was added to a definite quantity of sterile water. This was well shaken up; to it was added a definite amount of izal as in the other cases.

Also in the last two instances control cultures on agar with one platinum loop were made from the diluted materials previous to the addition of the izal, so as to be able to compare the actual number of microbes of the coli-typhoid type before and after exposure to the disinfectant.

After the addition of izal cultures were made at the desired periods from the medicated fluids on agar surface, and in broth, each culture tube receiving three platinum loops of the medicated material; these tubes were then incubated at 37° C. Inspection and notification were made after the tubes had been incubated for 3 or 4 days, for by this time all growth, if any, had become complete.

EXPERIMENTS.

First Series.—Pus of acute abscess.

Experiment 1.—Of pus and blood of an acute abscess of the female breast, 1 c.cm. was added to 49 c.cm. of sterile distilled water (1 in 50).

One platinum loop yielded about 100 colonies of staphylococcus aureus.

Added to diluted pus 0.1 c.cm. of izal well-shaken up. This made, therefore, 1 izal in 500.

Cultures were made with three platinum loops for each tube after 5, 15, and 30 minutes with this result:—

a. After 5 minutes: agar tube has 12 colonies of staphylococcus aureus. Broth tube uniformly turbid.

This broth-tube was subcultured, with the result that it proved a pure culture of staphylococcus aureus.

b. After 15 minutes: on agar two colonies of staphylococcus aureus. Broth-tube uniformly turbid.

Subculture proved this broth-tube to be a pure culture of staphylococcus aureus.

c. After 30 minutes: on agar two colonies of staphylococcus aureus. Broth-tube greatly retarded growth, only faintly turbid after 3 days' incubation.

Considering that a single loop of the diluted pus yielded before the addition of the izal about 100 colonies of staphylococcus aureus, whereas three loops (same loop as used in control) yielded after 5 minutes' exposure to the izal only 12 colonies, the process of disinfection must be considered already after this short space of time of a fair degree; this is well shown in experiment *c*, after 30 minutes' exposure, when three loops yielded only 2 colonies; that is to say, of 300 microbes only two had survived. The broth tube bears witness to this, since the broth showed greatly retarded and scanty growth.

The result of this Experiment 1 is, then, that izal 1 in 500 may for practical purposes be considered a fair, though not complete, disinfectant for pus of acute abscess (staphylococcus aureus) after 30 minutes' exposure.

Experiment 2.—The same pus as above was used; 1 c.cm. of the pus was added to 39 c.cm. of sterile distilled water (1 in 40), then 0.1 c.cm. of the izal was added (1 in 400), well-shaken, and cultures were made as above after 5, 15, and 30 minutes on agar and in broth, using three platinum loops for each tube.

The result was this:—

a. After 5 minutes' exposure: on agar 15 colonies of staphylococcus aureus. Broth uniformly turbid.

Subculture of this proved pure culture of staphylococcus aureus.

b. After 15 minutes: both tubes free of growth.

c. After 30 minutes: both tubes free of growth.

From this it follows that izal 1 in 400 completely disinfects in 15 minutes; in 5 minutes already the number of living microbes being greatly reduced (300 to 15).

Experiment 3.—Pus of an acute submental abscess (mixed with blood) was obtained; 1 c.cm. of the pus was diluted with 39 c.cm. of sterile distilled water (1 in 40).

With one loop of this dilution made control agar culture. In this about 12 dozen colonies came up; these were partly colonies of streptococci, partly colonies of staphylococcus aureus and albus.

0.1 c.cm. of izal was added to the diluted pus (1 in 400); after well-shaking it and keeping it for 5, 15, and 30 minutes, cultures were made on agar and in broth, using for each tube three loops. Incubated at 37° C. for 4 days.

The result was this:—

a. After 5 minutes: on agar 15 colonies of mixture of staphylococcus aureus and albus. No colonies of streptococci. Broth slightly turbid.

Subculture of the broth showed mixture of staphylococcus aureus and albus, but the great majority were those of staphylococcus aureus. No colonies of streptococci.

b. After 15 minutes: both tubes were free of growth.

c. After 30 minutes: both tubes were free of growth.

From this experiment it follows that izal 1 in 400 disinfects completely streptococcus in 5 minutes; that it reduces living staphylococcus aureus and albus in 5 minutes to a considerable degree (from 432 to 15) and that it completely disinfects them in 15 minutes.

The following table summarises the preceding results as regards the capability or incapability of izal to disinfect the microbes of pus of acute abscess.

TABLE I.

Sample.	Nature of Dilution.	Time of Exposure. 5 minutes.	15 minutes	30 minutes.
Pus No. 1	1 izal in 300	+ reduced	+ reduced	+ greatly reduced
,, ,, 1	1 izal in 400	+ reduced	—	—
,, ,, 2	1 izal in 400	+ reduced	—	—

Positive sign means growth, negative sign means absence of growth after medication.

Experiment 4.—This experiment is a control to the preceding experiments with staphylococcus aureus, and serves to compare the effect of the disinfectant when used on a culture of the microbe in watery emulsion.

Of a 48-hours' agar active culture of staphylococcus aureus added to sterile distilled water, sufficient to form slight but distinct turbidity

One loop of emulsion brought forth on agar an almost confluent mass of staphylococcus aureus.

a. To 50 c.cm. of the staphylococcus emulsion added 0.1 c.cm. izal, 1 in 500.

b. To 60 c.cm. of the staphylococcus emulsion added 0.1 c.cm. izal, 1 in 600.

c. To 75 c.cm. of the staphylococcus emulsion added 0.1 c.cm. izal, 1 in 750.

After 5 minutes' exposure made with three loops one agar and one broth culture, incubation at 37° C., with result as follows:—

a. 1 in 500, 5 minutes' exposure. No growth in either tube.

b. 1 in 600, 5 minutes' exposure No growth in either tube.

c. 1 in 750, 5 minutes' exposure. Agar shows 18 colonies.

Broth uniformly turbid with staphylococcus aureus.

Table II summarizes the preceding results.

TABLE II.

Sample.	Nature of Dilution.	Time of Exposure, 5 minutes.
Watery emulsion of culture of staphylococcus aureus	1 in 500	—
,, ,, ,,	1 in 600	—
,, ,, ,,	1 in 750	+ greatly reduced

From this it follows that for staphylococcus aureus of culture izal 1 in 600 is a complete disinfectant in 5 minutes. This result is in so far interesting as it shows that staphylococcus aureus of culture is disinfected quicker and with greater dilutions of izal than when it is acted upon in its natural habitat, that is, pus. It will be remembered that for pus izal 1 in 400, fifteen minutes' exposure, was the limit for completely disinfecting staphylococcus aureus, whereas for disinfection of this microbe in watery emulsion 1 in 600 izal for 5 minutes' exposure was sufficient.

This result emphasizes the importance of testing the disinfecting power of any given substance on the pus microbes while in their natural media, for only thus is an absolute index for practical guidance acquired.

Second Series.—Typhoid Stools.

Experiment 5.—Typical (pea-soup) typhoid stool (1) of a case of typhoid fever, 22nd day of illness.

This stool was tested in high dilutions by means of Drigalski Conradi plates, and was found to contain about 14 millions of B. coli, about same number or a little more of streptococci, and 3 millions of the B. typhosus per 1 c.cm. of original stool.

The disinfection experiment was made in the following manner:—

1 c.cm. of the stool was added to 49 c.cm. of sterile distilled water (1 in 50); this was well-shaken up till a fair and uniform emulsion was obtained. Control agar culture with one loop showed innumerable colonies of above microbes. To it was then added 0.1 c.cm. of the izal and well-shaken up; this made, then, a dilution of 1 izal to 500.

Cultures were made after 15 minutes, after 30 minutes, and after 1 hour exposure, three loops of the medicated fluid being added to each agar and broth tube.

The result was this:—

a. After 15 minutes: on agar one colony of streptococci. Broth slightly turbid.

Subculture of this broth showed colonies of streptococci only.

b. After 30 minutes: on agar no colonies. Broth very slightly turbid.

Subculture of this broth showed colonies of streptococci only.

c. After 1 hour: on agar no growth. Broth very slightly turbid. Streptococci.

From this experiment it follows that the microbes of the coli-typhoid type were completely disinfected in 15 minutes by izal 1 in 500, but the streptococci, although disinfected for agar in 30 minutes, were not quite disinfected for broth though very largely reduced in number in 1 hour.

Experiment 6.—The same stool (2) as in Experiment 5 was treated with izal 1 in 600, after exactly the same manner as described above.

Result:—

a. After 15 minutes; agar free of growth. Broth slightly turbid; B. coli.

b. After 30 minutes: both tubes free of growth.

c. After 1 hour: both tubes free of growth.

Experiment 7.—The same stool (3) treated with izal 1 in 750.

Result:—

a. After 15 minutes: agar showed five colonies (B. coli). Broth uniformly turbid (B. coli).

b. After 30 minutes: agar shows three colonies (B. coli). Broth very slightly turbid (B. coli).

c. After 1 hour; agar no growth. Broth no growth.

The result of these two experiments, 6 and 7, is then:—

Izal 1 in 600 completely disinfected the microbes of the coli-typhoid group in 30 minutes, but not in 15 minutes. Izal 1 in 750 completely disinfected these microbes in 1 hour, but not in 30 minutes.

Experiment 8.—Typical (pea-soup) typhoid stool (4) of a case, 10th day of illness, was treated in exactly the same manner as the stool in Experiment 5, namely 1 in 500, with this result:—

a. After 15 minutes: no growth on agar or in broth.

b. After 30 minutes: no growth on agar or in broth.

c. After 1 hour: no growth on agar or in broth.

In this case, then, izal 1 in 500 caused in 15 minutes complete disinfection of the microbes of the coli-typhoid type as well as of the streptococci. (Control experiments made of this stool in high dilution by means of Drigalski and Conradi plates showed: 16 millions B. coli, 2 millions B. typhosus, and about 10 millions streptococci per 1 c.cm.)

Experiment 9.—The same stool (5) as used in Experiment 8 was treated with izal 1 in 600.

Result:—

a. After 15 minutes: agar, no growth. Broth, no growth.

b. After 30 minutes: agar, no growth. Broth, no growth.

c. After 1 hour: agar, no growth. Broth, no growth.

From this it follows that izal as 1 in 600 completely disinfected in 15 minutes.

Experiment 10.—The same stool (6) as in Experiments 8 and 9, izal 1 in 750.

Result:—

a. After 15 minutes: agar shows two colonies (B. coli). Broth uniformly turbid (B. coli).

b. After 30 minutes: agar, no growth. Broth uniformly turbid (B. coli).

c. After 1 hour: both cultures free of any growth.

From this it follows that izal as 1 in 750 completely disinfected in one hour, but not in 30 minutes.

Experiment 11.—Semi-solid stool (7) of a case of typhoid, 10th day of illness. Added 1 gram to 50 c.cm. of sterile distilled water. (From this dilution, 1 in 50, made with one loop one agar culture, with the result that after incubation the agar surface was covered with innumerable colonies, in many places confluent). To the above dilution, 1 in 50, added 0.1 c.cm. izal, that is 1 in 500. Cultures from the medicated fluid were made after 15 and 30 minutes and after one hour, using for each culture tube three loops.

Result:—

a. After 15 minutes: agar shows one colony of sporing B. mesentericus. Broth tube turbid due to cocci and streptococci; no bacilli.

b. After 30 minutes: both tubes free of growth.

c. After an hour: both tubes free of growth.

In this experiment, then, izal 1 in 500 disinfected the microbes of the coli-typhoid group in 15 minutes, though not those of cocci.

Experiment 12.—The same stool (8) was used as above, izal 1 in 600.

Result:—

a. After 15 minutes: agar free of growth. Broth free of growth.

b. After 30 minutes: agar has one colony (B. coli)? Broth free of growth.

c. After 1 hour: both tubes free of growth.

From this it follows that izal 1 in 600 completely disinfected the microbes of the coli-typhoid group in 1 hour, but already in 30 minutes the reduction of all microbes was enormous, since only the agar tubes showed one single colony, but it was not quite clear whether B. coli or not. For practical purposes 30 minutes would therefore suffice.

Experiment 13.—The same stool (9) was used as above. Izal 1 in 750. Result:—

a. After 15 minutes: agar shows large number of coli-like colonies, Broth clear.

b. After 30 minutes: both tubes without growth.

c. After 1 hour: agar shows one colony of sporing B. mesentericus.

The following Table III summarizes the results of all experiments made with typhoid stools in respect of the microbes of the coli-typhoid group:—

TABLE III.

Sample.	Nature of Dilution.	Time of Exposure.		
		15 minutes.	30 minutes.	1 hour.
Typhoid stool (1)	1 in 500	—	—	—
,, ,, (2)	1 in 600	+ reduced	—	—
,, ,, (3)	1 in 750	+ reduced	+ reduced	—
,, ,, (4)	1 in 500	—	—	—
,, ,, (5)	1 in 600	—	—	—
,, ,, (6)	1 in 750	+ reduced	+ reduced	—
,, ,, (7)	1 in 500	—	—	—
,, ,, (8)	1 in 600	—	?	—
,, ,, (9)	1 in 750	+	—	—

Third Series.—Urine.

Experiment 14.—Turbid urine of a case of typhoid (end of second week). An agar control culture was made with one loop of the urine: it showed after incubation 36 colonies of various kinds of microbes, chiefly belonging to the coli-typhoid group. To 70 c.cm. of the urine (practically the whole of the urine obtainable) 0.1 c.cm. izal was added: this represents, therefore, 1 in 700.

Cultures were made, using three loops for each culture tube, after 5, 15, and 30 minutes, with this result:—

a. After 5 minutes: agar, no growth. Broth turbid.

b. After 15 minutes: agar, no growth. Broth, no growth.

c. After 30 minutes: agar, no growth. Broth, no growth.

From this experiment it appears that 15 minutes was sufficient for izal 1 in 700 to cause complete disinfection of this urine.

Experiment 15.—Normal urine was filtered and then sterilized by heating it for 10 minutes at 70° C. To the sterile clear urine added of a recent culture of bacillus typhosus sufficient to produce slight turbidity. One platinum loop of this was transferred to the surface of gelatine. It brought forth a very large number of colonies of the B. typhosus.

a. To 50 c.cm. of the typhoid urine was added 0.1 c.cm. of izal, this being equal to izal 1 in 50.

b. To 60 c.cm. of the typhoid urine was added 0.1 c.cm. of izal, this being equal to izal 1 in 600.

c. To 75 c.cm. of the typhoid urine was added 0.1 c.cm. of izal, this being equal to izal 1 in 750.

After 5 minutes' exposure, cultures were made on agar and broth, each tube receiving three platinum loops. Incubation 37° C.

The result was as follows:—

a. 1 in 500, 5 minutes' exposure. No growth in either tube.

b. 1 in 600, 5 minutes' exposure. No growth in either tube.

c. 1 in 750, 5 minutes' exposure. Good growth in both tubes, proved to be pure B. typhosus.

It follows from this that 1 in 600 for 5 minutes is the limit of izal disinfection for B. typhosus distributed in urine.

Experiment 16.—For control and comparison of the above experiments sterile distilled water was substituted for the stools and urine. In other respects all conditions remained the same, namely, of a recent culture of B. typhosus (same as used above) sufficient growth was added to the water so as to produce slight, though distinct, turbidity.

A single platinum loop of the watery emulsion yielded a very large number of colonies of B. typhosus.

a. To 50 c.cm. of the typhoid water added 0.1 c.cm. izal, 1 in 500.

b. To 60 c.cm. of the typhoid water added 0.1 c.cm. izal, 1 in 600.

c. To 75 c.cm. of the typhoid water added 0.1 c.cm. izal, 1 in 750.

After 5 minutes' exposure made cultures on agar and in broth with 3 loops. Incubation at 37° C. with the following result:—

a. 1 in 500, 5 minutes' exposure. No growth in either tube.

b. 1 in 600, 5 minutes' exposure. No growth in either tube.

c. 1 in 750, 5 minutes' exposure. No growth on agar, slight turbidity of broth due to B. typhosus.

This, then, agrees with Experiment 15 as to complete disinfection of B. typhosus by izal 1 in 600 in 5 minutes, but as regards izal 1 in 750, the typhoid watery emulsion appears to be more amenable to disinfection than the typhoid urine, for while in the latter good growth appeared in the broth tube, in the former the broth only showed retarded and diminished growth of the B. typhosus. That the slight turbidity of this broth was really due to B. typhosus was proved not only by subcultures but by the positive agglutination test, the bacilli becoming completely agglutinated by typhoid serum (of a typhoid protected rabbit) 1 in 200 in 5 minutes.

Comparing these experiments of watery emulsion of B. typhosus with those of the typhoid stool the difference becomes obvious; for while izal 1 in 600 completely disinfected the watery emulsion in 5 minutes, and even as 1 in 750 greatly reduced the number of bacilli in 5 minutes (no growth on agar, slight turbidity in broth), in the typhoid stool (2), izal 1 in 600 did not disinfect in 15 minutes, though it succeeded in doing so in 30 minutes; in another case (stool 9) izal 1 in 750 had no effect in 15 minutes, though it caused complete disinfection in 30 minutes.

EXPERIMENTS ON THE DISINFECTION OF BACILLUS TYPHOSUS WITH SANITAS, FORMALIN, AND CARBOLIC ACID.

BY DAVID SOMMERVILLE, B.A., M.D., M.R.C.P.Lond., D.P.H. Camb.

(From the State Medicine Laboratories, King's College, London.)

IN this age of numberless disinfectants it is impossible for the busy medical practitioner to ascertain the true value of many products claimed to be reliable germicides, and his faith in particular preparations is not reassured when he is informed, and rightly informed, that their chemical purity and strength may be everything to be desired, whilst as destroyers of bacteria they may be quite worthless.

In the present state of our knowledge of the manner of action of disinfectants—an action combining physical as well as chemical factors—the best method of determining the efficiency of a given disinfectant seems to be a bacteriological one, in which an appeal is made direct to its powers of germicidal work (quantitative as well as qualitative) on a given micro organism.

The following investigations were undertaken to discover the relative bactericidal values of "sanitas," "formalin," and carbolic acid, when applied to cultures of B. typhosus, and in line with a suggestion thrown out in a critique of a previous paper which appeared in the BRITISH MEDICAL JOURNAL of April 9th, 1904, more detailed information respecting the tests and the life-history of the bacillus used is now given.

Throughout this work, which was executed according to the method suggested by Rideal and Ainley Walker, extreme care was taken that, as far as possible, uniformity in the following conditions should obtain, so that the results in all three cases should be strictly comparable. The conditions are: Time of contact of disinfectant with microbe; age of culture of microbe used; constitution and reaction of medium upon which microbe is grown; vital resistance of species of microbe used; quantity of disinfectant added to culture; temperature of medication; temperature and time of incubation.

A virulent culture of B. typhosus, recently isolated from a typhoid spleen, was procured, and sown in broth prepared from "Lemco," after a formula constantly used in these laboratories. This broth, it may be noted, is rendered slightly acid to phenol phthalein (but neutral to litmus), the acidity being equivalent to 15 c.cm. normal NaOH per litre. One looplul of a 24 hours' culture was daily taken from a test-tube containing 10 c.cm. culture, and with this a second 10 c.cm. broth tube was inoculated. The latter in turn at the end of 24 hours yielded its quantum of seed for a third, and so on, throughout the period of experimentation. During this period no variations in the biological phenomena of the organism, as determined by motility, number of flagella, and Durham-Gruber reaction, could be detected.

A sample of phenol standardized by Br. supplied definite quantities of pure carbolic acid, and a 1 per cent. solution was found a convenient dilution with which to work.

A series of 30 test-tubes containing 5 c.cm. each of the bouillon was duly sterilized and placed in racks in six groups of 5 each.

The sample of sanitas to be tested was put in competition with 1 per cent. pure phenol, and was diluted in varying degrees with sterilized distilled water. (All vessels, flasks, pipettes,

Table I.—*B. Typhosus*, 24 *Hours' Broth Culture at* 37° *C.* (Room Temperature, 15 to 18° C.)

Sample.	Dilution.	Time culture exposed to action of disinfectant—minutes.						Sub-cultures.	
		2½	5	7½	10	12½	15	Period of Incubation.	Temperature.
Sanitas	1 in 1	—	—	—	—	—	—	48 hours	37° C.
.. ..	1 in 2	×	×	×	—	—	—	,,	,,
.. ..	1 in 3	×	×	×	×	—	—	,,	,,
.. ..	1 in 4	×	×	×	×	×	—	,,	,,
Phenol	1 in 100	×	×	×	—	—	—	,,	,,

Carbolic Acid Coefficient, $\frac{2\cdot5}{100} = 0.02$.

Table II.—*B. Typhosus*, 24 *Hours' Broth Culture at* 37° *C.* (Room Temperature, 15 to 18° C.)

Sample.	Dilution.	Time culture exposed to action of disinfectant—minutes.						Sub-cultures.	
		2½	5	7½	10	12½	15	Period of Incubation.	Temperature.
Formalin (40 per cent.) ...	1 in 10	—	—	—	—	—	—	48 hours.	37° C.
.. ..	1 in 20	—	—	—	—	—	—	,,	,,
.. ..	1 in 30	×	×	—	—	—	—	,,	,,
.. ..	1 in 40	×	×	×	×	—	—	,,	,,
Phenol	1 in 100	×	×	×	×	—	—	,,	,,

Carbolic Acid Coefficient, $\frac{40}{100} = 0.4$.

etc., used in making dilutions were previously rigorously sterilized.) Into four sterile test-tubes were put dilutions of sanitas of the several strengths of 1 in 1, 1 in 2, 1 in 3, 1 in 4, and in a fifth sterile test-tube a solution of phenol of the strength of 1 in 100. In each case 5 c.cm. were used.

Now into each of these five disinfectant solutions of 5 c.cm. content five drops of a 24 hours' bouillon culture of B. typhosus are allowed to fall at intervals of exactly 30 seconds, and the mixture in each case well shaken. Continuing the 30 seconds' interval, a loopful is removed in serial order from each of the medicated cultures and sown in a bouillon tube, care being taken that the platinum loop is thoroughly sterilized in the flame after each inoculation. This manipulation is continued until the last of the thirty tubes is inoculated. The tubes are held during inoculation, withdrawal and replacement of plugs, etc., in such an oblique position that any extraneous organisms floating in the atmosphere are excluded.

Table I shows that an undiluted sample of sanitas prevented the growth of the bacillus when the time of contact with the culture was 2½ minutes. A dilution of 1 in 2, however, was not able to prevent the growth of the bacillus until a contact of 10 minutes' duration had been effected. The same result exactly was attained by phenol diluted to 1 in 100. Thus is it seen that 1 in 100 pure phenol solution performs the same amount of bactericidal work as a solution of sanitas of the strength of 1 in 2. The carbolic acid coefficient of sanitas is therefore $\frac{2\cdot5}{100} = 0.02$ (See Table I.)

The bouillon tubes after inoculation, each with a loopful of the serial mixtures of antiseptics, were incubated for 48 hours at 37° C. The temperature of medication was 15 to 18° C. At the end of 48 hours each tube was individually examined for the presence of bacterial life. No adventitious organisms were at any time found.

Table II gives the results of experiments made in the same manner, and under exactly similar conditions with formalin (40 per cent. formic aldehyde in H_2O). (See Table II.)

By this it is seen that 1 in 100 phenol performs the same bactericidal work as 1 in 40 formalin.

The carbolic acid coefficient for formalin is therefore $\frac{40}{100} = 0.4$.

A friend informs me that in working, by the same method, with formalin of strength 39.2 per cent., he obtained a carbolic acid coefficient of 0.3. These figures strikingly demonstrate at once the accuracy and delicacy of this bacteriological test.

Scientific Grants Committee

OF THE

British Medical Association.

REPORT LXXXVII.

THE EFFECT OF CERTAIN DYES UPON THE CULTURAL CHARACTERS OF THE BACILLUS TYPHOSUS AND SOME OTHER MICRO-ORGANISMS.*

BY

E. W. AINLEY WALKER, M.A., D.M. Oxon. and W. MURRAY, M.B.Edin., D.P.H.Lond.

Fellow of University College, Oxford.

(From the Gordon Laboratory, Guy's Hospital, and the Pathological Department of the University of Oxford.)

In the course of a series of experiments upon the *intra vitam* staining of bacteria, which we began about 18 months ago, remarkable changes were observed in the cultural characters of the bacteria employed when they were grown in media to which certain small percentages of various dyes had been added. These changes we have found to occur with constancy, and they appear to possess sufficient interest to be worth recording.

Briefly, the change consists in the conversion of a normal short bacillus into a form which presents itself almost entirely or entirely as long filaments or threads. These may be twenty or more times the length of the ordinary bacillus, and often show no sign of segmentation. They frequently present the appearance of true branching when grown on solid media.

We have worked chiefly with a number of different strains of the bacillus typhosus, but have also obtained similar results with some other organisms, such as the bacillus coli and the cholera vibrio. The effect to be described has been produced in greater or less degree with all the following dyes: Grubler's methyl violet (6B), ordinary gentian violet, fuchsin,

* The expenses of this work were defrayed out of grants received by Dr. Walker from the British Medical Association and from the Scientific Grant Committee of the Royal Society.

methyl-green, and methylene-blue; but the most marked results so far have been obtained with the methyl-violet.

The media used were ordinary agar-agar, bouillon, and gelatine to which a definite quantity of methyl-violet had been added. And after numerous trials with varying strengths of the stain it was found that the best results with typhoid were obtained by the addition of 0·2 per cent. of a saturated alcoholic solution of methyl-violet (or an equivalent amount of an aqueous solution) to the culture medium. The media, which then possessed a strongly-violet colour, were tubed and sterilized in the ordinary way.

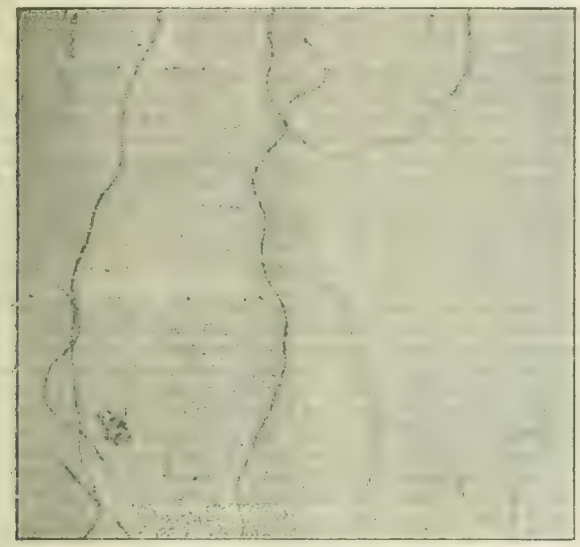


Fig. 1.—Film from a methyl-violet broth culture of the bacillus typhosus. × 1,000.

If a broth tube prepared as just described be inoculated from an ordinary typhoid culture, and examined after some five or six hours' incubation at 40° C., the subculture will be found to consist, not of typhoid bacilli of the usual appearance, but very largely or almost entirely of long filaments, actively



Fig. 2.—Long forms of the bacillus typhosus stained by Van Ermengem's method. × 1,000.

motile with a sinuous or undulating motion, which is well seen in hanging-drop preparations. Permanent preparations, stained preferably with methylene-blue or carbol-thionin-blue, exhibit long threads or filaments which show no evidence of segmentation in their length. In older cultures (24 to 48 hours old or more) segmented portions may be seen at one extremity or in the middle of a thread. The threads themselves are not infrequently of such a length as to extend beyond the limits of a field of a $\frac{1}{12}$ immersion lens. In other cases, and especially in old cultures, segmentations of the filaments may be present, or a condition of "beading;" while in stronger methyl-violet broth the filaments often assume in cultures some days old what may be spoken of as a coccoid form of the organism, having almost the appearance of a chain of cocci.

Subcultures from the methyl-violet broth into similar tubes of methyl-violet broth give similar appearances; but on transferring the organisms to ordinary unstained media it speedily regains its normal form, though individual long elements appear in the first and even in the second of such subcultures.

As the cultures in methyl-violet broth get older, the motility of the filaments gradually diminishes and is ultimately lost, but growth appears to continue for a considerable period, and what may reasonably be described as giant forms appear. These are of a relatively enormous length, and are much thicker than a normal typhoid organism.

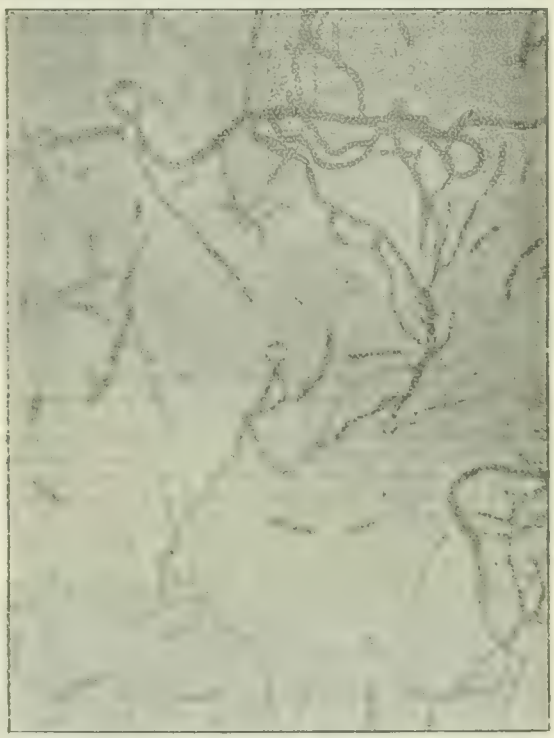


Fig. 3.—Film from a young methyl-violet agar culture of the bacillus typhosus. × 1,000.

Figure 1 is taken from a photograph of a film from a 48-hours' old methyl-violet broth culture of an ordinary specimen of typhoid.

Similar effects, though of a less degree, were obtained with the bacillus coli and with cholera. But they were not obtained with every strain of the bacillus coli tested in the particular strengths of stain which we have used.

As regards the naked-eye appearances of the broth cultures; in the case of typhoid the medium usually retains its violet colour almost indefinitely, although a heavy violet-coloured growth sinks to the bottom of the culture tube. But frequently with the bacillus coli most of the colouring matter is precipitated to the foot in about a week, leaving the medium only faintly violet. With cholera a thick scum of growth forms on the surface of the broth, and the pigment becomes concentrated on this layer, leaving an almost unstained layer of medium beneath.

Cultures upon methyl-violet gelatin do not require any separate description, since the results they yield do not differ in any important degree from those which we obtained on coloured agar.

The examination of young methyl-violet agar cultures of the bacillus typhosus reveals the fact that the long forms are

supplied with numerous flagella throughout their length. But it was found almost impossible to obtain successful preparations of very long forms with the flagella stain, owing to their great liability to become broken up in the manipulation necessary to procure a very thin film.

Figure 2 is from a photograph of a preparation stained by Van Ermengem's method.

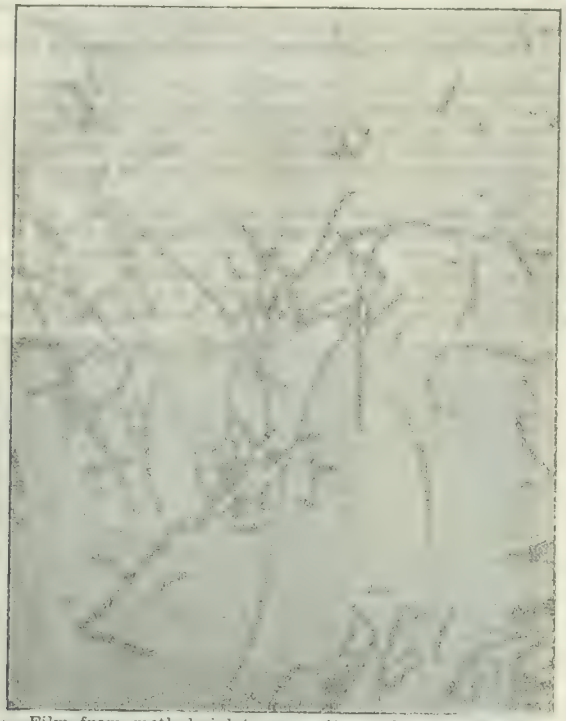


Fig. 4.—Film from methyl-violet agar culture of the bacillus typhosus, 4 days old. × 1,250.

Streak cultures on sloped methyl-violet agar give a profuse granular pigmented growth of the bacillus, and the colouring matter in the medium is rapidly abstracted from it, and concentrated in the growth, until the former is eventually almost altogether freed from violet. Similar facts are true of cultures of the bacillus coli and of cholera upon this medium.

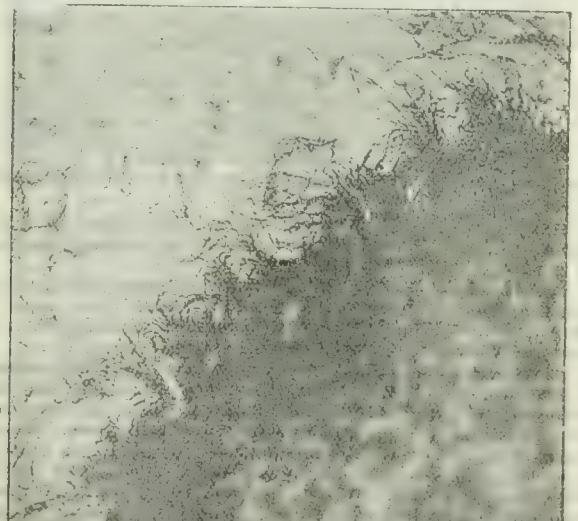


Fig. 5.—Impression preparation of a 24 hours' old typhoid colony from methyl-violet agar. × 200.

Cover-glass preparations of the typhoid growth show a densely felted network of long forms, which are usually entirely unsegmented and present numerous examples of dichotomy (true branching).

Figures 3 and 4 are photographs from methyl-violet agar cultures of the bacillus typhosus.

A comparison of ordinary agar plates of the bacillus typhosus with plates of methyl-violet agar showed that on the latter medium the colonies were somewhat smaller than on ordinary agar, each colony being deeply stained and possessing a well-marked central nucleus. The edge of such a colony, which has been somewhat spread out by gentle pressure on the cover-glass, is shown in Figure 5, which is taken from an "impression preparation" of a 24 hour-old colony, and exhibits the network of unsegmented wavy filaments.

When tested for the Gruber-Durham reaction in the ordinary way (dilutions of 5 per cent. and 0.5 per cent. serum) the "long forms" of the bacillus typhosus rapidly agglutinated.

One of our strains of typhoid entirely failed to produce "long forms" in the methyl-violet media which we were using at the time. Probably they contained too much stain. Altogether some ten strains of typhoid were tested. Three of them were strains which had been sealed up in agar tubes by one of us in Berne in 1899, and which had travelled to and fro a great deal in the interval through a range of temperature varying from that of the Swiss winters (twice) to that of an Italian summer, but they were found to be living when opened in 1903. Two other strains which had dried up owing to flaws in the tubes were dead.

We are not at present prepared to estimate the precise importance of the foregoing observations, and therefore restrict ourselves to a brief record of the main results obtained, omitting the description of a large number of minor variations, which we have found occurring with different organisms and with different strengths of methyl-violet. But we conclude that the form in which we ordinarily see the bacillus typhosus and some other bacteria in the laboratory is not the only form in which they may appear. Perhaps it may not even be the form in which by preference they exist as saprophytes.

Further experiments, which are now in progress, suggest the possibility of an unsuspected complexity in the life-history of these micro-organisms. Meanwhile particular attention may be drawn to the undoubted branching and the felted network which we find in our experiments.

The illustrations are from photomicrographs kindly prepared for us by Mr. Coventon in the Pathological Department in the University of Oxford.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

PNEUMOCOCCAL APPENDICITIS WITH PNEUMOCOCCAL PERITONITIS.

AN unmarried girl, aged 18, was admitted to Guy's Hospital on April 5th, 1904. She came of a very healthy family living at Datchet, and had suffered from no serious illnesses before. When in bed on the night of April 3rd, during a visit to some friends in London, she was suddenly seized with violent pain all over the abdomen, so severe as to "double her up." Early in the morning of April 4th she vomited; between then and her admission she vomited several times; and the very severe abdominal pain continued. There was frequent diarrhoea, but whether this was the result of purgation, or a symptom of the disease, could not be ascertained.

On admission she was too collapsed to allow of any complete examination. Her pulse was 120, almost impercceptible; her respirations 24, thoracic; her temperature 102° F. There was little abdominal tenderness or rigidity. Her condition was clearly one of extreme prostration, resulting from a very acute abdominal lesion. She was too ill to operate upon; she did not rally, and died a few hours after admission.

At the necropsy made by the medical registrar, the lungs, pleurae, pericardium, kidneys, liver, spleen, pancreas, suprarenals, pelvic viscera, brain, and meninges were all perfectly healthy. There was acute general peritonitis, with thick buttery lymph, and about one pint of pale turbid fluid in the peritoneal cavity. The lymph was thickest in the region of the caecum and vermiform appendix. The appendix was swollen, reddened, turgid, and buried in lymph; without adhesions, without visible perforation, and without signs of any local abscess cavity in its neighbourhood. On cutting

the appendix open there was free pus within its lumen, and the wall was infiltrated with creamy pus. There was neither enteritis nor colitis; and the condition seemed to the demonstrator to be a primary acute appendicitis with general peritonitis.

The interest of the case lies in the bacteriology of the pus. Cultures taken from the appendix and from the peritoneal lymph were found by Dr. Eyre to yield an almost pure growth of pneumococci. In a paper read before the Clinical Society this year, reports of some cases of pneumococcal peritonitis were presented, and in the discussion which followed Professor Howard Marsh suggested that some such were due to a primary pneumococcal appendicitis, but he knew of no case recorded. The present case is apparently one of primary pneumococcal appendicitis, associated with pneumococcal peritonitis, and therefore seems worth recording.

LAURISTON SHAW.
Guy's Hospital. HERBERT FRENCH.

ACUTE INTESTINAL OBSTRUCTION CAUSED BY AN IMPACTED GALL STONE.

THE following case possesses points of special interest and of somewhat rare occurrence which seem to warrant its publication:

History.—The patient, a stout lady, aged 68 years, had for two or three years complained of indefinite abdominal pains, at times very severe, and recurring at irregular periods. The most marked feature was extreme tenderness of the abdominal walls to the lightest touch; owing to this it was extremely difficult to make a very satisfactory examination. The abdomen was examined on numerous occasions, but it was never possible to make out any localized tenderness or lump which would assist in forming a definite diagnosis. There was no history of biliary colic or jaundice, or of any intestinal disturbance, except attacks of flatulence after meals and occasional constipation; the former was a very troublesome feature in the case. The patient at times complained of much pain in the rectum, and on passing water, but examination with the finger and sound revealed nothing. She had lost much weight during the past few weeks, and a month or six weeks ago had an attack of epistaxis, lasting about twenty-four hours and accompanied by a high-tension pulse. The bleeding was arrested by free purging and potassium iodide (gr. x every six hours). The urine was that of a gouty patient, that is, low specific gravity, cloud of albumen and diminished amount of urea excreted.

Final Illness.—On the morning of September 12th the patient was seized with vomiting, accompanied by severe abdominal pain referred to the left lumbar and umbilical regions. On examination there was found to be no distension, and the abdominal walls moved quite freely on respiration. The patient much resented palpation in the left lumbar and umbilical regions. The tongue was clean, but flabby. The pulse was 82 per minute, regular, and of fair volume. The temperature was subnormal. The conjunctivae were not jaundiced.

The patient was seen again a few hours afterwards, when a distinct change for the worse had taken place. The vomiting had continued and the vomited matter had a very unpleasant odour of faecal character. The pulse-rate had increased to 108 per minute; it was soft and rather small. The facial aspect was pinched. The abdomen was still flaccid and moved freely on respiration. She still referred the pain to the umbilical region and the left flank.

Operation.—Mr. D'Arcy Power saw the patient in consultation, and it was decided to operate at once, the supposition being that there was an obstruction situated high up in the small intestine. An incision, about 4 in. in length, being made in the median line above the umbilicus, the peritoneal cavity was opened and nothing abnormal felt in the hepatic, splenic or inguinal regions. On raising the great omentum a piece of collapsed small intestine presented itself; on examining still further for the cause of the obstruction a small piece of distended small intestine showed itself in the wound, and on tracing this downwards a few inches a concretion was found which was evidently the cause of the obstruction, as collapsed intestine was on the distal side. A small incision was made into the bowel and the concretion removed; it was found to be a gall stone, spheroidal in shape, measuring $\frac{7}{8}$ in. in its longest diameter, and facetted at one extremity. The bowel was sewn up with a double row of Lembert sutures, and the gut returned within the abdomen.

Result.—There was considerable shock after the operation, and in spite of free stimulation, inhalations of oxygen and saline injections, the patient succumbed twelve hours later.

REMARKS BY MR. D'ARCY POWER.—The age of the patient and the symptoms she presented were those usual in this somewhat rare form of acute intestinal obstruction. But the absence of any history of biliary trouble and the fact that she had been losing weight latterly led me to think that the obstruction was more likely to be due to a small cancerous growth in the splenic flexure of the colon, although I was unable to explain why vomiting of a stercoraceous character had come on so quickly and with so little abdominal distension. There was, too, some localized tenderness in the left hypochondriac region, though the thickness of the abdominal walls wholly prevented any satisfactory examination by palpation. The discovery of empty and contracted jejunum almost directly the abdomen was opened led to a systematic examination of the small intestine, and this was soon rewarded by the discovery of the impacted gall stone high up in the jejunum and at a point corresponding with the tender spot. The stone was firmly fixed, and would move neither backwards nor forwards, so I had no hesitation in cutting it out and afterwards suturing the hole in the intestine. The operation from beginning to end did not last more than half an hour, and there was no great disturbance of parts, so that we entertained good hope of a successful issue, which was, unhappily, destined to be disappointed.

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London, S.W. M.R.C.S.Eng.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

KENT AND CANTERBURY HOSPITAL.

CASE OF SPINA BIFIDA SUCCESSFULLY TREATED.

(Under the care of T. WHITEHEAD REID, M.D., Senior Surgeon to the Hospital.)

[Reported by WILFRID A. ALDRED, M.R.C.S., House-Surgeon.]

W. F., a female child, aged 4 months, was admitted to the hospital on April 15th, 1904, suffering from spina bifida.

History.—Its mother stated that the midwife noticed, immediately after birth, that there was "a loose flap of skin over the lower part of the back," and, further, that "there was a watery discharge coming from under it." The discharge soon stopped and a swelling began to form, which lately had rapidly increased in size. No other swelling about the head or back had been noticed. The child has never had any "fits."

Condition on Examination.—The child was healthy and well-nourished; its head was somewhat larger in the vault than natural, and gave an impression of slight hydrocephalus. The anterior fontanelle bulged, but the sutures were not widened: the eyes were depressed. Over the lower lumbar and upper sacral regions there was a large swelling the size of a good-sized orange. The skin over it was extremely thin and delicate, the smaller vessels ramifying over it as in a tense hydrocele. In the centre of the tumour there was a slightly puckered scar. With illumination it was seen to be translucent, but no shadow, such as would be cast by the cord crossing it, could be made out. On palpation it was obviously fluid in character and very tense. A distinct impulse was felt when the child cried, and fluctuation could be detected between it and the anterior fontanelle. There was no paralysis of the legs, and as far as could be made out in a child so young, none of the sphincters; the feet, however, were in a position of marked talipes calcaneus. There was a small naevoid condition of the skin about 2 in. above the swelling.

Operation.—Under chloroform, with the child in a semiprone position and with its head low, an elliptical incision was made round the base of the swelling: in so doing it was accidentally punctured, and cerebro-spinal fluid escaped with a gush. The patient became very faint, but soon recovered. A sponge was quickly passed into the opening, and the incision was completed with the scissors. It was then seen that the aperture in the spinal canal was a small one, just admitting the tip of the little finger; a sponge was packed into it so as to stop the further escape of the cerebro-spinal fluid. The cauda equina crossed the cavity, being adherent at one place to the "sac," and was with some difficulty stripped off. The sac, formed of the spinal membranes, was then dissected up to the opening with some of the surrounding fibrous tissue, and the redundant tissue cut away. The edges were then brought over the hole in the canal and stitched by two layers of silk put in as a continuous suture. The skin was then brought together with some undercutting, and sutured with silkworm gut, the tension being relieved by two silver-wire sutures. A collodion and gauze dressing was applied.

Progress.—Recovery was uninterrupted, the temperature remaining normal after the first two days, when it varied between 99.6° and 101.2°. The sutures were removed on the eighth day. Slight eczema was present from the collodion, but it soon cleared up on discontinuing that dressing. An oval piece of sheet lead, shaped to the part, was then applied and kept in position by strapping and a binder, and the child left hospital on April 30th.

REMARKS.—The interesting features in this case may be summed up as follows: 1. The history of the discharge of cerebro-spinal fluid at birth. The tumour may possibly have been ruptured during the passage of the child. 2. The healing of that opening and the escape from sepsis. 3. The great success afforded by excision, a practice condemned by many as being an unjustifiable operation in a patient so young. 4. The after-results. Will the very slight condition of hydrocephalus present be aggravated by shutting up the safety valve—namely, the aperture in the spinal canal?

STOCKTON HOSPITAL.

A CASE OF CYST OF THE ORBIT.

(By G. Victor Miller, M.D., Ophthalmic Surgeon to the Hospital.)

M. W., a boy aged 6, residing at Wolverston, near Stockton-on-Tees, was admitted into Stockton Hospital on October 15th, 1903, suffering from marked proptosis of the right eye. He was very healthy, and his mother stated there had been no illness or injury to account for it. The condition of his eye had been coming on for the past five months.

State on Examination.—The right eye was very much more prominent than the left. It looked forwards and outwards. Its movements were fairly good. Ophthalmoscopically the eye was healthy and apparently possessed good vision. At the inner side of the orbit a large cystic swelling was to be felt extending backwards somewhat deeply into the orbit behind the eye. A cyst of the orbit was diagnosed. From the position and history the possibility of encephalocele was thought to be excluded.

Operation.—The swelling was tapped with a large hypodermic syringe and a quantity of almost clear fluid drawn off. This was examined for hooklets but nothing found in it. The swelling was reduced in size by the tapping, but soon filled up again. On October 22nd I incised the conjunctiva at the inner side of the globe, between the internal and inferior recti muscles, and dissected backwards along the eye. Then I passed in a finger and came upon the cyst wall; this was ruptured and the finger entered the cavity of the cyst. Using the finger-nail as a scraper, I had the satisfaction of seeing the cyst wall come away as a white opaque membrane like the lining of egg-shell. This when filled with cotton wool was of about the size of a pigeon's egg. The cavity was washed out with weak perchloride of mercury lotion, the conjunctival wound closed, and dressing applied.

Result.—For a considerable time there was much oedema of the conjunctiva due to pressure changes in the surrounding circulation. This gradually disappeared and the boy made a most excellent recovery, the eye recovering its normal position, normal movement, etc. All that was to be seen was a little thickening of the conjunctiva at the inner side of the eye. The patient left the hospital on December 3rd, 1903, quite well.

Remarks.—This cyst in all probability was congenital and very small at first; for some reason or other it took on a sudden expansion, or possibly it was the result of the distension of some fetal remains.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

Border Counties Branch: Scottish Division.—At a meeting held at Stranraer on June 18th, a discussion on irregularity of the heart's action and its association with epileptoid attacks was introduced by Dr. F. H. Clarke. He stated that though the condition was not often met with, when it was it proved difficult to manage, and was the cause of much anxiety to patients, friends, and the medical attendant. Two kinds of irregularity were associated with such attacks—(1) bradycardia, and (2) tachycardia. In both the phenomena were the same, namely, failure of the radial pulse, followed almost immediately by pallor of the face, a loud cry, twitching of the muscles of the face, eyeball, limbs of one side, and, if severe, of the muscles of the trunk also, and complete loss of consciousness. Cases illustrative of both slow, and rapid, and irregular pulses were given, and sphygmographic tracings shown. The general conclusions were: (1) No fit occurred in such cases unless the radial pulse was lost for five or six beats, though one might "threaten"; (2) the severity of the fit was proportionate to the length of time the pulse beat was absent; (3) though indistinguishable from attacks of *petit mal*, these never occurred without irregularity of the heart's action; (4) the condition, though not generally fatal, was frequently associated with degenerative changes in the heart and blood vessels. All the members present took part in the discussion.—Dr. George R. Livingstone read notes of a case of hydrocephalus obstructing labour.

REPORTS OF SOCIETIES.

Medico-Legal Society.—At the last ordinary meeting of the session, held on June 14th, Sir William Collins, M.D., President, in the chair, Mr. Henslowe Wellington discussed the fallacy, "Suicide whilst temporarily insane." "Suicide"—a word coined about 1650—meant self-murder, not merely self-killing; hence the verdict was a "pious perjury" on the part of a jury who resented the pristine posthumous penalties consequent upon a verdict *felo de se*. The last case of burial at the cross roads was in 1823. Dr. Claye Shaw, as an alienist, believed nearly all suicides were the result of strain and stress, culminating in mono-ideaism, the fatal act often being the first patent sign of the onset of insanity. Mr. J. Troutbeck affirmed that juries considered the social side of the case, and strove to soften the blow to relatives, and in so doing ignored technicalities.—Dr. William McCallin read a note on the reasons for the different methods by which the insane are certified for detention; the relative clinical condition of the patient was quite ignored by them all. Earl Russell suggested that the position of the insane under confinement needed safeguards, which were imposed mainly on behalf of the well-to-do. Mr. Troutbeck and Dr. Claude Taylor criticized the practice of the Metropolitan Asylums Board in treating demented senile paupers apart from the provisions of the Lunacy Acts.—Earl Russell read a paper on "The Weight to be attached to Medical Evidence." The authority of skilled testimony had largely increased, *pari passu* with the intrinsic advance of the knowledge and capacity of scientific witnesses, and with the general intellectual development of modern jurors. The value of all medical certificates must finally be judged by medical men. Judges and juries puzzled by the opinions of conflicting experts should be aided by medical assessors.

REVIEWS.

DIAGNOSIS OF KIDNEY DISEASES.

The translators of Drs. Casper and Richter's *Functional Diagnosis of Kidney Disease*[1] have done signal service, for we know of no more satisfactory summary of the work done abroad in the investigation of the permeability of the kidneys than the volume published by Drs. Casper and Richter some two or three years ago. The German authors devote the earlier part of the book to the statement of the case in favour of devising some more reliable method by which the functional activity of the kidneys or of one of them may be estimated. Of late years very much interest has been shown in the direction of endeavouring to establish the degree of functional activity of the kidneys or, in cases of unilateral disease, of one kidney, by cryoscopic examination of the blood and urine. The older methods by means of which an attempt has been made to discover the degree of functional activity of the kidneys are passed in review, and much of interest will be found in Chapter III, in which the value of the estimation of the nitrogen balance is severely criticized. Von Noorden and Ritter have shown that the elimination of nitrogen in cases of chronic nephritis is periodic, and that these periods merge into one another at times abruptly, at times slowly and gradually, so that we are not justified in arguing that, because at any particular time the nitrogen balance is normally maintained, the kidneys may therefore be considered normal. The authors then turn to a consideration of the value of the newer methods of cryoscopic examination of the blood and urine, of the methylene-blue test of Achard and of the phloridzin test for estimating the functional activity of the kidney, and it is well shown that, for ordinary medical diseases, if we may use such a term, even these newer methods have not placed in our hands a certain method of diagnosis. Drs. Casper and Richter are able, however, to tell us that in surgical diseases of the kidney these processes are of great value in estimating the functional activity of the total kidney substance left uninjured when, say, part or whole of one kidney is disorganized by neoplastic growths, by suppuration, or other cause. The authors obtain urine from the two kidneys separately by catheterization of one or both ureters, a difficult manœuvre which will probably be given up in favour of the instruments

[1] *Functional Diagnosis of Kidney Disease, with especial Reference to Renal Surgery.* By Dr. Leopold Casper and Dr. Paul F. Richter. Translated by Dr. R. C. Bryan and Dr. H. L. Sanford. London: Rebman, Limited. 1903. (Crown 8vo, pp. 233. 7s.)

devised by Luys, and described by Mr. Moynihan and Mr. Lynn Thomas elsewhere in this issue.

We have already noticed the first edition of Dr. OGDEN'S *Clinical Examination of the Urine*.[2] In the second, as in the first, the volume is divided into two parts, the first dealing with the study of normal and pathological urine, the second with a consideration of the various clinical manifestations of disturbance of renal action. The reader will find the volume of great service, for it contains references to most of the recent Continental investigations, and in most cases the information is so complete that there will be little need to refer to the original articles. The section dealing with the cryoscopic examination of the urine, however, is somewhat disappointing; we are not told the author's own experience of the use of this method of investigation. Turning to the part of the volume dealing with the clinical aspect of the subject, English readers will experience something akin to a shock by finding that "Bright's disease" is not referred to as such. The author, dominated by the views of Councilman, has traversed the subject of renal disease in an entirely modern method. We recommend the section to our readers, for despite a little wounding of our insular pride in the generalization which we owe to Dr. Bright, it will soon be evident that the views put forward in this book will appeal to those in sympathy with modern inquiry; it may, however, be difficult to agree with the author in the wisdom of the change he has made in the name of the condition described by Virchow as "chronic parenchymatous nephritis"; Dr. Ogden has substituted the term "subacute glomerular nephritis." The eleventh chapter is devoted to a study of "the urine in diseases outside of the urinary tract," as a result, for example, of diphtheria, scarlet fever, etc. We cannot help wondering, as we close this volume, why Dr. Ogden has not taken the opportunity of being still more radical in his treatment of the subject of renal disease; why, in fact, he has not followed the idea enunciated by Semmola of looking upon most disorders of the renal function as due to what may be called some "prerenal" disturbance; probably Dr. Ogden felt that he had gone quite far enough for the present, in what must be considered an attack upon the older conceptions of the meaning of renal disease.

Dr. SUCKLING read a paper six years ago at the annual meeting of the British Medical Association in Edinburgh on the subject of movable or dropped kidney. Apparently Dr. Suckling's paper did not meet with the widespread acceptance that he thinks his views deserve, and it may be doubted whether the present pamphlet on *Movable or Dropped Kidney*[3] will strengthen his position. He finds mental depression, hypochondriasis, acute melancholia, migraine, Dietl's crises, etc., are cured by stitching up one or other kidney. He has to admit that the above symptoms may occur without either kidney being movable, and from a perusal of his pamphlet we can but feel that some of his reported cures may be largely due to suggestion, and that the "post hoc" fallacy applies to others. While the view that local pain can be cured by operation may be accepted, Dr. Suckling does not appear to have proved that widespread nervous affections such as he describes yield to this operation. We would call the attention of our readers to the following paragraph, the last in this pamphlet: "In many cases the attacks of severe pain just before or during the period (uterine crises), often accompanied with vomiting and faintness, are produced by a dropped right kidney falling on the uterus." Well may Dr. Suckling exclaim, "What an immense field in medicine is opened up in this subject!"

SCIENCE AND RELIGION.

TRUE it is that the religious sense seems to be a constant element in the composite man, for, even though religious claims may be banished from the field of intellect, they yet remain in the subconscious man—in the man of emotion and conscience. Dr. GREVILLE MACDONALD, in his book, *The Religious Sense in its Scientific Aspect*,[4] would explain its presence and its constancy on a theory of evolutionary development, seeing its rudiments, as he thinks, in the lowliest organisms. The religious sense, he says, like other human attributes, is an inheritance from small beginnings, because, if not, man is a special creation, which he cannot allow. Its germ is the acceptance of law's demands of service beyond the immediate needs of the individual or community. This is the main idea of the book, and it is elaborated in three chapters, each of which formed the substance of a lecture given before students of the several departments at King's College, London, in June, 1902. In the first lecture, entitled the Religion of Service, he philosophizes on the spongilla colony in which, as many would hold, by division of labour each individual best serves itself by serving the colony. Dr. Macdonald's view is, however, that it serves at once itself, the colony—to some extent we suppose he would have us believe religiously, in his sense of the word—and the unknown. In the second lecture, entitled the Religion of Renunciation, he tells what he sees both in the ox-eyed daisy, with its pistillate ray florets, and in the wild guelder rose, with its neuter ray florets, each as an example of the religious instinct which sacrifices fertility to communal usefulness and as its guerdon acquires beauty. The third lecture, entitled the Religion of Freedom, is an elaboration of the Baconian paradox that freedom is not gained except by obedience to law. Freedom, Dr. Macdonald eloquently says, is the final outcome of growth in the religious sense, and all movement in progress has come because some have been strong enough to justify their faith in ideals that transcend advantage. Considering the book as a work of art, nothing but praise can be given; in its insight it is not too much to say that it is worthy of the gifted son of a gifted father; but on the scientific side it is not convincing. The intuitions of a poet-philosopher could hardly perhaps be expected to convince the intellect. Its botany is indeed weak, as is evidenced in such a small matter as reference to "stamens and anthers." This leads him, as we think, to push the idea of renunciation in regard to the ox-eyed daisy much too far. He says that the florets of the disk are independent and self-contained workers in procreation, but this is not the case, for the compositae are protandrous flowers, the anthers shedding their pollen long before the stigma of the same floret is open to receive it, and so it might be argued that the pistillate ray florets were at an advantage rather than the opposite in being still further protected from self-fertilization. Moreover, if this idea were developed as a part of evolution it would mean, it seems to us, the gradual disappearance of the religious instinct by a *quasi*-voluntary extinction of the religious. Imagine what would happen to a community whose religious instinct was so developed as to enjoin a universal celibacy. We cannot but commend the spirit of the book, especially in its impartial mental detachment; but religion is surely, in the ultimate analysis, a matter of the will actuated by conscience, and this can hardly be predicated of the lower organisms. Darwin himself, in speaking of "spontaneous variation," was careful to define the phrase as variation of which the causes were not obvious; and it is of interest to notice that even so thorough an evolutionist as M. Metchnikoff would admit leaps in Nature, and conscience, which we take to be the essence of the religious instinct, may itself have been the result of a leap such as it was for long believed that Nature never made.

Doubts about Darwinism,[5] by a semi-Darwinian, may be termed a borderland-book, finding a place between the realms of science and theology. It is in effect a criticism of the evolution theory as an all-sufficient hypothesis. The first part of the book discusses destructively the theory of spontaneous generation; the later parts state doubts as to the adequacy of natural selection to account for certain essential features of evolution, such as the production of new organs and structures, the faculty of reproduction, the origin of maternal and paternal instincts, and the origin of consciousness. The position the author takes up and it is a well-recognized position—is that in the past the ordinary course of events has been left to run on without interference, but that a higher personal intelligence has intervened at certain stages of progress, first to "initiate the evolution by bestowing life on the primaeval creatures," and "afterwards by causing animal life to take a new departure where one was required." He quotes the difficulties centring round questions of instinct such as that of the sphex which kills insects for its yet unborn young, the difficulty of highly complex organs such as the electric organs of the torpedo and the

[2] *Clinical Examination of the Urine*. By J. Bergen Ogden, M.D. Second edition. Philadelphia, New York, and London: W. B. Saunders and Co. 1903. (Demy 8vo, pp. 418; coloured plates and illustrations. 12s. 6d.)

[3] *On Movable or Dropped Kidney: Its Relation to Diseases of the Nervous System*. (Second paper.) By C. W. Suckling, M.D.Lond., M.R.C.P. London: H. K. Lewis. 1903. (Demy 8vo., pp. 13. 1s.)

[4] *The Religious Sense in its Scientific Aspect*. By Greville Macdonald, M.D. London: Hodder and Stoughton. 1903. (Crown 8vo, pp. 262. 10s. 6d.)

[5] *Doubts about Darwinism*. By a Semi-Darwinian. London: Longmans, Green, and Co. 1903. (Demy 8vo, pp. 121. 3s. 6d.

gymnotus, and other stock difficulties; he utilizes Huxley's suggestions as to the formation of new organs by large advances or leaps, and the limitations to the law of natural selection associated with the name of Wallace. From the quotations we have already made it will be apparent that the author is not a biologist or even a scientist; indeed we gather that he does not wish to be so considered. He is, however, a man of imagination, as evidenced, for example, by his saying that consciousness was at first present in a rudimentary state as in the amoeba, which shows it "by protruding a part of its substance to seize a nutritious particle when it is hungry." The author is a logician, and his conclusions suffer mainly because of the inadequacy or inaccuracy of his premisses. The book is a temperate statement of the difficulties of the evolution theory by one who has a bias to the design argument, and it is to be welcomed as an addition to the already considerable body of evidence that theology and natural science are coming not only to tolerate each other, but the one to appreciate the position of the other.

THE OXFORD AND CAMBRIDGE YEAR BOOK.

The Oxford and Cambridge Year Book,[6] which appears for the first time this year, is issued in two parts—I. Oxford, II. Cambridge. It belongs to a class of books whose utility and value are self-evident. By its compilation Mr. HOLLAND has supplied, with considerable success, a need which has been growing more imperative every year. At the present time, when unfortunately it is becoming more and more the usual practice of a large proportion of Oxford men to "remove their names" from the College books when they "go down," it is no longer possible either to trace them or to address them through their former Colleges. A register and book of reference, such as the present, was on this account increasingly desirable, and its appearance will be widely welcomed. In a compilation of this character the essential requirements are completeness and accuracy. But in the present case the difficulties to be overcome in the collection of the necessary material must have been unusually great. The degree in which the editor has achieved success in the part dealing with Oxford is sufficient evidence both of the care and of the labour which have been bestowed on its preparation; and it offers an assurance that no means will be neglected to ensure increasing accuracy and completeness in its future issues. It must, indeed, be confessed that even a cursory examination at once reveals errors and omissions neither few nor unimportant. And especially as regards the profession of medicine much better results might be obtained by a more liberal use of such an obvious source of information as the *Medical Directory*. Not a few names now absent, and a large number of distinctions, details, and correct addresses are readily accessible in the pages of that book. On the whole, however, we find the Oxford Part is well and carefully prepared and are convinced that it will prove invaluable as a book of reference for Oxford men. It was much needed; and, now that the enormous labour of a first issue has been brought to a conclusion, the task of completion and correction in succeeding years should be comparatively easy.

The object of the *Year Book*, it should be said, is to give particulars of the degrees, together with any other distinctions, present occupation and address of "all now living who have graduated or who are entitled to graduate at either Oxford or Cambridge." The difficulties of getting together these particulars are great and obvious, but the editor estimates that he has procured them in the case of some 90 per cent. of his entries. We have tested the Cambridge volume over a wide field within our own knowledge, and though we find that a large proportion of the information collected is sufficiently full and accurate, we should not place the percentage so high as the editor does. By a curious oversight a whole class of "living graduates" are omitted, namely, those who have been admitted to the complete M.A. degree without first taking the B.A. The result is that, in the medical and science faculties alone, there is no mention of Sir R. S. Ball or Sir M. Foster, of Professors Macalister, Woodhead, Marsh, Dewar, Ewing, Middleton, and Lewis, of Drs. Hopkins, Nuttall, Rivers, and Ruhemann. Many of these are Fellows of their Colleges, and all are graduates of distinction. Notwithstanding such omissions, and a large crop of misprints—for example, Catherine's for St. Catharine's, Supervisior for Supervisor, *Athabasca* for *Athabasca*—the *Year Book* promises to grow into a very useful and handy work of reference.

[6] *The Oxford and Cambridge Year Book*. Part I. Oxford. Part II. Cambridge. Edited by A. W. Holland, sometime Scholar of St. John's College, Oxford. London: Swan Sonnenschein and Co. 1904. (Crown 8vo. 3s. 6d. each Part.)

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

An Aseptic Operating Cap.—Mr. A. BURGESS, F.R.C.S., Visiting Surgeon, Manchester Union Hospital, writes: The annexed figure represents a cap designed for use during aseptic operations. It is made of white holland, and can be readily sterilized along with the aprons, towels, etc. Covering the whole of the head, with the exception of the eyes and the area just around them, it is kept *in situ* by strings of tape tied behind the neck. By its use all possible contamination of the wound by such means as dandruff falling from the hair, or perspiration from the brow is avoided, while the current of expired air is directed into the lower part of the cap and away, therefore, from the wound. Hearing and speech are very little affected while it is being worn, and the only drawback I have noted being that one's head feels distinctly warmer, chiefly owing to the warm expired air. If the risk of contamination from the breath be considered negligible, then the V-shaped piece covering the mouth and nostrils may be omitted, while the other advantages of the cap are retained. It has been made for me by Messrs. Arnold and Sons, West Smithfield, London.

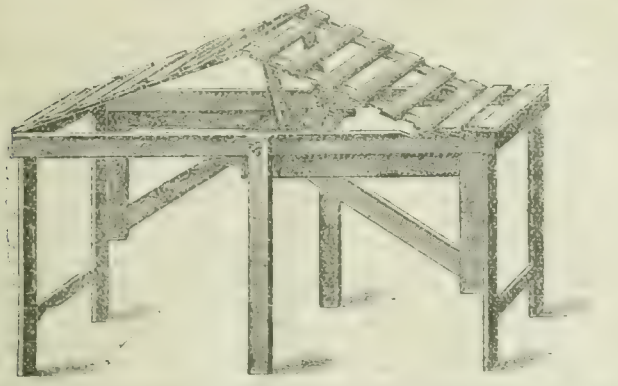


A Nasal Dilator.—The annexed woodcut represents a nasal dilator which has been made upon the specification of Dr. THOMAS LUMSDEN, Registrar of the Central London Throat Hospital, by Messrs. Arnold and Sons, Smithfield. It is self-retaining, and intended to be worn at night, and for a few minutes also by day, if and when convenient, by those who suffer from nasal obstruction due to swelling of the mucous membrane covering the nasal bones. Nasal respiration during the use of the instrument is quite free, and it is possible to clear the passages of all discharge by sniffing air backwards. This advantage is not merely temporary, for the removal of discharge and the free inlet of air tend to lessen the mucous congestion upon which the symptoms and discomfort of nasal stuffiness depend. Its use, even for a few minutes, Dr. Lumsden finds, allows the nose to be properly cleared, and relieves symptoms brought about either by simple rhinitis or by bending the head for a long time over work.



Portable Operating Table.—Mr. J. LIONEL STRETTON, Senior Surgeon, Kidderminster Infirmary and Children's Hospital, writes to say that the operation table described below has been made for him by Messrs. Arnold and Sons, and that after twelve months' use he finds it very satisfactory. It is, he writes, so constructed that it can readily be adjusted to the usual positions required, it is thoroughly substantial and rigid in each position, and capable of supporting a weight of 20 stone; it can be folded into a comparatively small compass for carrying in a canvas case or satchel; it always folds up accurately, and there is no likelihood of its being strained or bulged. When it is in its case it is not too heavy to move

about with one hand. Its mechanism is so simple that it can be placed in the desired position or folded and put away in less than two minutes. It can be made in wood, polished or enamelled, or in metal, nickelled or enamelled, and is comparatively inexpensive. It consists of a horizontal frame



hinged in the centre; the legs and struts are also hinged, and the cross laths of the table are so constructed that the whole falls accurately together. The Trendelenburg position is secured by lifting the table in the centre, as shown in the drawing, and is maintained by a strut secured with thumb screws. By a rack arrangement the portion corresponding to the upper position of the body can be raised to any position from the horizontal to the erect. If desired, a pair of crutches for the lithotomy position can be affixed to the lower end.

Blood Examinations.—Mr. E. HORDER, F.R.C.S. Edin (London), sends a description of a case for haemometric work, which, besides Gowers's haemoglobinometer and Oliver's haemacytometer, contains all the apparatus necessary for examining the blood according to the methods of Strong and Seligmann, Thoma, and Durham. He says: "The objects in introducing such a case were two—compactness and economy. The worker can now purchase the required apparatus complete in one case, at less than half the usual cost. Messrs. Charles Baker, of 244, High Holborn, London, W.C., have spared no trouble in making a most compact, useful, and inexpensive case.

Couch for Consulting Room.—Dr. ARCHIBALD CAMPBELL (Newcastle-upon-Tyne) has designed, and Messrs. Arnold have made, a folding consulting-room couch, which Dr. Campbell thinks will be found convenient when space is limited, as it only occupies a space of about 7 in. deep and folds against the wall. The body of the couch, which resembles the ordinary couch in use (with tilting head rest), is attached by hinges to a framework, which in turn is secured by screws to the skirting board. If the skirting board is a deep one, say about 10 in., no other fixing is necessary; but, if smaller, the framework can be further secured by two screws to the wall. The front legs, which fold underneath the body, enable it to fall flat downwards by its hinge attachment against the wall. When wanted the couch is easily lifted up and the front legs pulled down into place, when the weight of the couch itself keeps them in position. Dr. Campbell finds the couch steady and secure, and extremely convenient. Within certain limits the dimensions of the couch may vary, but probably the most convenient size is about 5 ft. 6 in. by 1 ft. 10 in.; it should stand 22 in. or 24 in. high.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA

DURING the weeks ending May 21st and 28th the deaths from plague in India numbered 28,219 and 20,484 respectively. The principal figures were: Bombay City, 203 and 129; Bombay Districts, 1,086 and 798: Calcutta, 134 and 90; Bengal Districts, 215 and 200; North-West Provinces and Oudh, 1,069 and 653; the Punjab, 24,853 and 18,086; Rajputana, 195 and 166; Kashmir, 74 and 73; and Karachi, 77 and 62. The diminution in the number of plague cases is satisfactory in every district except the Punjab, where of 28,219 deaths recorded during the week ending May 21st, no fewer than 24,853 occurred in the Punjab.

SOUTH AFRICA.

Cape Colony.

Port Elizabeth.—During the weeks ending May 28th and June 4th the fresh cases of plague numbered 0 and 1; the deaths from the disease, 0 and 0. On June 4th, 6 cases remained under treatment.

Transvaal.

During the weeks ending June 11th and 18th the fresh cases of plague numbered 3 (1 white) and 4 (2 whites); deaths from the disease numbered 0 and 1. Total of suspected and proved cases since the commencement of the outbreak 145 (27 whites).

MAURITIUS.

During the weeks ending June 16th and 23rd the fresh cases of plague numbered 2 and 5, and the deaths from the disease 2 and 4 respectively.

HONG KONG.

During the weeks ending June 11th, 18th, and 25th the fresh cases of plague in Hong Kong amounted to 47, 53, and 44 respectively and the deaths from the disease to 46, 52, and 40.

THE CARE OF THE EPILEPTIC AND FEEBLE-MINDED.

NATIONAL SOCIETY FOR EMPLOYMENT OF EPILEPTICS.

THE eleventh annual meeting of Governors was held on June 20th at the offices of the Society, 12, Buckingham Street, Strand. The chair was taken by Mr. E. MONTEFIORE MICHOLLS, and the reports of the Executive Committee and the honorary medical staff for the year 1903 were received and adopted. In the former report attention was called to the fact that the Society was now prepared, as soon as funds were forthcoming, to undertake the care of young epileptic children. This had from the first been one of its principal objects, but in consequence of its objections to certain conditions unduly limiting the size of homes for epileptic children contained in the Elementary Education (Defective and Epileptic Children) Act, 1899, it was felt necessary to postpone undertaking this work until the clauses objected to were repealed; this was done by a measure promoted by the Society, and passed last session. It is anticipated by the Society's medical advisers that the care of young children will eventually prove to be the most fruitful branch of the Society's work, and the importance of commencing it at the earliest possible date is strongly urged. The report recorded various extensions made at the Chalfont colony during the year, including the erection of a home for 24 Hampshire cases, and the commencement of an administrative building. The report of the honorary medical staff stated that, while there had been no special features of a novel kind from the medical aspect, the experiences of the year had fully confirmed previous reports as to the success and usefulness of the colony system and methods in the care, treatment, and management of epileptics.

From the tables accompanying the annual report we learn that there were on December 31st, 1903, 114 male and 57 female "colonists" at Chalfont, 8 being between 13 and 16 years of age, 42 between 16 and 20, 71 between 20 and 30, 35 between 30 and 40, 14 between 40 and 60, and 1 over 60 years of age; 241 have left the colony since its opening and 3 have died. The principal occupations at the colony are, for males, out-door work on the farm and garden, carpentering, plumbing, painting, bricklaying and smith's work; and, for females, laundry, house and needle work. Looking at the beneficial results of employment in the open air, we would suggest that some at any rate of the female colonists might have the advantage of light work in the garden, such as picking fruit, etc., and a share in weeding; and take part in dairy operations if not the milking of the cows, an occupation formerly, at any rate, thought most appropriate for women. The report of the honorary medical staff refers to the establishment of a home for convalescents, which seems to have been taken advantage of by only 10 cases, a small number considering that epileptics are usually excluded from ordinary convalescent homes.

A valuable paper by Dr. Aldren Turner is appended to the medical report, setting forth the mental condition in epilepsy, based upon observations from cases in the Chalfont colony. This consists, in fact, of a study of the interparoxysmal condition only, and on this basis the cases have been divided into four groups: (*a*) Those in which no mental impairment can be detected; (*b*) those who exhibit the first degree of mental enfeeblement (mainly defect of memory); (*c*) those who present the second degree of mental impairment, including also defective power of initiation and of capacity for work, with some mental irritability; and (*d*) those who show the third or most pronounced degree of dementia, presenting a very defective memory, confusion of ideas, poor capacity for work even under direction, absence of initiative, and a slow and dull comprehension. A total percentage of 13.6 is included in class (*a*), 31.6 in (*b*), 25.4 in (*c*), and 29.1 in (*d*). As regards hereditary predisposition, Dr. Aldren Turner traces paternal epilepsy in 13, and maternal epilepsy in 16, out of 88 cases, and family history of

insanity in 10. He concludes that a family tendency to either epilepsy or insanity increases the risk of supervention of dementia.

National Association for Promotion of the Welfare of the Feeble-minded.

The annual meeting of this Association was held on the afternoon of June 24th at the residence of Lady Frederick Brudenell-Bruce, President, who occupied the chair. In opening the proceedings she said that the Association had made fair progress during the year, as shown by the annual report presented to the meeting. A number of subcommittees—for example, a Legislative Committee, a Case Committee, an "After-Care" Committee (to look after those who had passed through the London special schools), a Finance Committee, and, finally, a "Half Crown" League, with a view of gathering in small subscriptions—had been organized. Branches in various provincial centres were being formed, and the Executive Council earnestly appealed for more helpers and subscriptions.

Mr. C. S. Loch, Secretary of the Charity Organization Society, in moving the adoption of the report, said that the work of the Association was going on at a swifter rate, and that it was attaining considerable influence and usefulness. The difficulty was that the work of ameliorating the condition of the feeble-minded was at present under a variety of authorities—educational, poor-law, philanthropic and voluntary institutions for imbeciles, which also included feeble-minded persons under their charge. There was evidence of a widespread desire to combat the forces of deterioration and to secure an improvement in the physical, mental, and moral condition of the people. He believed that by a co-ordination of authorities, and the mutual co-operation of workers, crime, vice, street mendicity and disorderliness might be lessened. The Government had promised a Royal Commission to inquire into the condition of idiots, imbeciles, and "defective" or feeble-minded persons, and he believed this would be very useful if the reference were made broad enough.

Mr. Thomas Holmes, police-court missionary, seconded the adoption of the report, and remarked that it was strange that the authorities neglected those who most needed help. The powers of magistrates were sadly limited in this respect, for no reformatory or industrial school would receive a boy or girl who was physically or mentally incapable. He hoped that steps would be taken to remedy this, for the defective juvenile delinquent, if neglected, would surely grow up into the hardened adult criminal.

The report having been adopted and the officers reappointed, Dr. Shuttleworth proposed a vote of thanks to the two gentlemen who had attended to speak, and incidentally mentioned the good work done at the homes maintained by the Association, especially at one he had recently visited, Upshirebury, where feeble-minded boys over school age were trained to garden and farm work, with very satisfactory results.

Miss McKee in seconding, referred to the home for the care of feeble-minded young women and their infants, which the Association had established at Shepherds Bush.

The proceedings closed with a vote of thanks to Lady F. Brudenell-Bruce, proposed by Dr. Fletcher Beach.

THORNE DEFENCE FUND.

We are informed that the following subscriptions have been received on behalf of this fund, in addition to those already published:

	£	s.	d.		£	s.	d.
Amount previously subscribed	112	16	0	Mr. James Cantlie	1	1	0
Mr. Crichton Stuart ...	10	10	0	Dr. Agatha Porter	0	7	6
Miss Crichton Stuart ...	2	2	0	Dr. Ada Browne	1	1	0
Miss A. Crichton Stuart ...	1	1	0	Mr. C. J. Symonds	2	2	0
Dr. F. W. Willway	1	1	0	Dr. G. Danford Thomas ...	1	1	0
Dr. John D. Rice	1	1	0	Dr T. Wakefield	1	1	0
Dr. Louisa Atkins	2	2	0	Dr. A. de Steiger	1	1	0
Dr. Mary Murdoch	1	1	0	Dr. Samuel Welch	1	1	0
"Vox Clamans"	3	3	0	Mr. T. Jenner Verrall ...	1	1	0
Rev. and Mrs. Septimus Buss	5	0	0	Dr. Annette Benson ...	1	1	0
Dr. Katharine McGuvie ...	1	1	0	Dr. Helen Hanson	0	10	6
Dr. Auguste Boyes	1	1	0	Dr. Alexander Foulerton	1	1	0
Dr. Heywood Smith ...	1	1	0	Dr. Marie Sharp	1	1	0
				Dr. Elizabeth Courtauld...	1	1	0
				Mr. W. D. Spanton	0	10	6

In the list published last week, p. 1511, the subscription of the Dowager Lady Jenner was printed as £1 1s. instead of £3 3s.

Dr. Tate informs us that the amount required has now been fully subscribed, and the fund is therefore closed.

THE IMMUNIZATION OF OPERATION WOUNDS.

The Cavendish Lecture of the West London Medico-Chirurgical Society.

Professor von Mikulicz Radecki, of Breslau, delivered the Cavendish Lecture before the West London Medico-Chirurgical Society on June 24th in the Town Hall, Hammersmith. He took as his subject, "Experiments on the Immunization against Infection of Operation Wounds, especially of the Peritoneum," and referred to the fact that his lecture rested upon two discoveries made in Great Britain during the last century, namely, vaccination by Edward Jenner and the antiseptic treatment of wounds by Lord Lister. Surgeons of the present day practically used preventive inoculation in only two kinds of infections of wounds: the first was inoculation against rabies, and the second was inoculation against tetanus. Experiments in regard to the immunization of operation wounds against the commoner causes of wound infection had been carried out by various investigators for over ten years. The difficulty of finding a practical method of inoculating against pyogenic micro-organisms was, in a large measure, due to the multitude of varieties of those organisms which might infect the wound. It had also to be remembered that the majority of wounds were efficiently guarded from infection by antiseptic treatment. At the present time the result of this treatment of wounds was so sure and certain that the graver complications were practically quite excluded. The principles of antiseptics, however, became useless when the affected organs, owing to their physiological properties or their pathological conditions, were invaded by pathogenic micro organisms. He referred especially to the injuries to and the operations on the stomach and intestines, with which, since the danger of infection was the same, he grouped certain operations on the liver and gall bladder and on the female genital organs. The minute care with which surgeons sought to exclude the relatively harmless bacilli in the skin or the germs suspended in the air contrasted sharply with the incomplete protection of the peritoneum against the bacteria of the intestine in most of the operations on the stomach and intestines; out of the smallest perforations of the intestine the bacteria spread with remarkable speed upon the serous surface, and were found not only in the immediately concerned peritoneal area, but also in neighbouring areas. The great power of resistance against pathogenic bacteria possessed by the peritoneum had a limit, and an overwhelming number or too great a virulence of the invading bacteria resulted in the various forms of peritonitis. Professor Mikulicz then quoted statistics to show the gradually increasing danger of post-operative peritonitis according to the opportunity for the extrusion of bacteria from the stomach and intestine afforded by the extent of the openings into them, the position of the field of operation, and the duration of the operation itself. At the head of the list stood resection of the stomach and resection of the intestine for malignant disease performed at one sitting. The Professor then proceeded to discuss the possibility of producing a general increase in the power of resistance to bacterial invasion. One means of effecting this was by an artificial hyperleucocytosis. Whether the bacteria were destroyed by active phagocytosis alone, or whether the leucocytes gave rise to alexines which killed the bacteria outside the cell body, or whether those two processes worked together, were questions he could not decide; but general leucocytosis must, in his opinion, play a very important part in the struggle against bacteria which had penetrated the tissues. The most recent experiments corroborated Metchnikoff's teaching upon phagocytosis, and Kisskalt found that in every case of bacterial invasion into the tissues there was formed after so short a time as two hours a wall of leucocytes around the bacteria which prevented their spreading further. If the throng of bacteria was comparatively small, and if the chemical substances that detached themselves from them were not of a high degree of virulence, then there was only a stimulating effect upon the leucocytes which pressed forward to the bacteria and enveloped them. Phagocytosis then took place by which the bacteria were destroyed. On the other hand, if the mass of bacteria was overpowering, or if the toxins from the bacteria, as was always the case in specific pathogenic bacteria, were of exceptional virulence, then from the intense poisoning a weakening of the leucocytes ensued causing their destruction, so that they were of little or no avail as a protection against the process of infection. By the injection of albumoses, especially spermine, into animals, a hypoleucocytosis occurred first and then later a hyperleuco-

cytosis. If infection was brought about during hypoleucocytosis the animals died, but when the infection was introduced after a hyperleucocytosis had occurred, and was still increasing, then the course of the disease was influenced in the most favourable way.

Experiments showed that it was possible by subcutaneous injection of nucleic acid to raise the resistance of the peritoneum to such an extent that even a considerable quantity of intestinal contents could be placed in the peritoneal cavity without causing damage.

Professor Mikulicz concluded by stating that after subcutaneous injection of neutralized nucleic acid, not only in animals but also in man, a hyperleucocytosis occurred in the blood, preceded during the first hour or so by a hypoleucocytosis. From experiments on guinea-pigs it was concluded that the optimum hyperleucocytosis for nucleic acid was reached seven hours after the injection, but it seemed to occur in man considerably later. Professor Mikulicz had therefore recently fixed the interval between the preventive injection and the time of operation at twelve hours, and he believed that in following out this rule he succeeded in operating at the time of the rising tide of leucocytosis. In this treatment by preventive injection, out of 45 laparotomies in which the abdominal cavity was exposed to infection by the contents of the stomach or intestines, or by some other infectious secretion, 38 patients recovered, and in none of the 7 fatal results was peritonitis the cause of death. Professor Mikulicz said that he was unable to form a definite judgement upon how far the immediate object of the injection of nucleic acid was attained until he had a longer experience so as to permit him to give an unguarded reply.

THE HEATHERSIDE SANATORIUM.

THE Heatherside Sanatorium of the Brompton Hospital for Consumption, which was described in the BRITISH MEDICAL JOURNAL of June 25th, page 1495, was formally opened by the Prince and Princess of Wales on Saturday, June 25th.

An address, read by Lord Cheylesmore, the Chairman of the Committee of Management of the Hospital, gave a brief history of the hospital, and stated that the Committee had felt it necessary, in order to maintain the position of the Brompton Hospital as a national institution, to erect an open-air sanatorium in a healthy locality. The cost of erecting and furnishing the building would amount to approximately £70,000, and would entail an increased annual expenditure of some £10,000 for maintenance.

After a religious service conducted by the Bishop of Southampton, the Prince of Wales replied to the address as follows:

My Lord Cheylesmore and Gentlemen,—The Princess and I thank you sincerely for your kind welcome. It gives us great pleasure to be present here to-day to assist in the inauguration of the Sanatorium and Convalescent Home of the Brompton Hospital. We trust that our presence may be considered as evidence of a desire to preserve that connexion which has existed between our family and the hospital ever since the first stone of the original building was laid by my grandfather, the Prince Consort, sixty years ago. We are also glad to be present at the opening of another institution for the open air treatment of tuberculosis. For though the death-rate from tuberculous affections in England and Wales has decreased, the dread disease is still one of the principal causes of death in the United Kingdom. Nor do the number of deaths from consumption, amounting to upwards of 60,000 a year, represent the terrible havoc which it produces in the population. For, alas! being a chronic disease, many persons pass a lingering existence through its different stages, and, being mostly incapacitated from work, are a burden to their families and the State. And it was with an earnest desire to alleviate the sufferings of his thus afflicted subjects that the King recently devoted a large sum of money, which was handed over to His Majesty for charitable purposes, to the founding of a home and sanatorium for the open-air cure. The aim of the treatment in this and similar institutions is to raise the standard of the resisting power of the patients by supplying them with abundant sunshine and fresh air on a dry soil, with good and suitable food, with exercise adapted to individual requirements, and with skilled medical supervision in daily life. This work, which has been so courageously undertaken by the authorities of the Brompton Hospital, will entail not only a large capital, but an increased annual expenditure for maintenance. Bearing in mind that its object is for the treatment of the poorest classes, I earnestly trust that it will meet with the hearty and liberal support of the public. I have now much pleasure in declaring the buildings open; and the Princess and I join with you in the prayer that Divine Providence may bless this institution and prosper the work of those now or ever connected with it.

The Prince and Princess of Wales then inspected the building, which will be used both as a sanatorium for consumptive patients and as a convalescent home for persons suffering from other forms of chest disease treated at Brompton.

CONTRACT MEDICAL PRACTICE.

NORTHUMBERLAND.

WE learn that the difficulty which has for some time existed with regard to the fees paid by the miners to the colliery medical officers in Northumberland has entered upon a new and acute phase. For some sixty years it had been the rule that the miners paid 6d. a fortnight for medical attendance on their families, with a small additional sum, varying in different localities, for grown-up sons and lodgers. Four years ago the Northumberland and Newcastle Medical Association was formed, and took the matter of fees and certain other abuses, which had crept into the management by committees, in hand; the Association was successful in removing many abuses, and the fees were raised to a minimum of 9d. a fortnight. Recently agitation has been fomented in one or two districts, and the leaders have succeeded in inducing the County Miners' Union to take the matter up. At the request of the Miners' Union Mr. Rutherford Morison and Drs. Cromie, Ruddock, and Bunting representing the Northumberland and Newcastle Medical Association, met representatives of the Union, who pointed out that since the medical fees have been raised wages had fallen 40 per cent. of the percentage above the miners standard wage, and it was contended that on this ground the medical fees should be reduced. The medical representatives maintained that the increased fee had not been fixed because the miners' wages were temporarily high, but for the following reasons:

1. That for sixty years the medical fees for attendance upon miners had been 6d. a fortnight. During this time wages in all occupations except medical had largely increased.
2. That sixty years ago a medical degree could be obtained with less than three years of study; now the least time possible was five years. The time occupied and the expense of obtaining a qualification to practise were double.
3. That four years ago it was made illegal for medical men to employ unqualified assistants, consequently all assistants must now be qualified, and it was difficult to get them into colliery practice and expensive to keep them there. The attendance now given being entirely by qualified men is of more value than that formerly given.
4. That the increased cost of drugs, instruments, dressings, etc., added materially to the expense of practice.

The miners' representatives contended that many serious cases were now sent to hospitals, and that it was unusual to perform operations at the houses of patients, but the medical representatives showed that the advance in medical science had made hospital treatment necessary in many cases and that for these no fees were received. The miners, however, contended that in most colliery districts the medical practitioners were assisted by trained nurses maintained by the workmen. After careful consideration, the medical representatives advised the Northumberland and Newcastle Medical Association as follows:

That in our opinion it is impossible to obtain and retain the services of qualified medical men of ability and good character for colliery districts at less than the fee of 9d. a fortnight, which was fixed upon as a minimum; that a reduction of the present medical fees would tend to lowering of the standard of medical work, and defeat the endeavour of our Association to increase the usefulness and the skill of our members.

The Miners' Association, however, has resolved to take steps to bring about a reduction of 50 per cent. in the fees now paid, the figures of the proxy voting being as follows: For, 141; against, 30; majority in favour, 111.

It therefore becomes a matter of imperative importance that medical men should refrain from taking appointments of any description in the County of Northumberland without first inquiring from Mr. Garforth Drury, of 95, Pilgrim Street, Newcastle-upon-Tyne, Secretary, Northumberland and New-

castle Medical Association, or from Dr. Cox, Gateshead, Honorary Secretary, North of England Branch, British Medical Association.

PREVENTION OF CONSUMPTION.

VOLUNTARY NOTIFICATION IN BIRMINGHAM.

THE Health Committee of the Birmingham City Council has decided to recommend the Corporation to adopt a system of voluntary notification of phthisis. For a considerable time placards have been attached to the street lamp posts and placed on the trams and other public conveyances, pointing out the danger of expectorating in public places; but beyond this very little has been done in the city to combat the malady. The new proposals are that medical men should voluntarily report to the health authorities any cases of phthisis which come under their professional notice, provided the patients have no objection. If this recommendation of the Health Committee should be accepted the usual fee of half-a-crown for each notification would be paid to the medical practitioner. It is probable that in this way the health authorities would be informed of many of the bad cases of phthisis which develop in the lower quarters of the city and which are so largely responsible for disseminating the disease. It is estimated that there are between 3,000 and 4,000 cases of phthisis in the city, many of which, if they had been taken in hand in the early stages of the disease, might have been considerably benefited or even permanently cured; at any rate, they might have been so treated and instructed as not to be such a large source of danger to other people. The voluntary notification of phthisis will cause the public generally to become better educated as to the conditions which favour the spread of the disease, and, by letting them see how earnestly medical men are working to check its progress, may be expected to make them understand how important are the precautions which are being taken.

MEDICAL NEWS.

THE Gaskell Park, St. Helens, presented by Surgeon-Lieutenant Colonel Gaskell, V.D., J.P., was opened by him on June 23rd, in the presence of the Mayor and Corporation.

PATHOLOGICAL SOCIETY OF LONDON.—We are asked to mention that members of the Pathological Society of London who propose to visit the farm of the Lister Institute, Queensberry Lodge, Elstree, this day (Saturday), should travel by the train which leaves St. Pancras at 1.50; they can return by the train leaving Elstree Station at 6.23, and reaching St. Pancras at 7 p.m.

THE first annual meeting of the supporters of the Queen Alexandra Sanatorium, Davos, Switzerland, established to secure sanatorium treatment in an alpine climate for English-speaking people suffering from curable forms of pulmonary disease unable to bear the entire expense of treatment was held on June 29th at 11, Chandos Street, W., under the chairmanship of Lord Balfour of Burleigh. A site of about 5 acres, 300 ft. above the level of Davos sheltered from north and east has been secured, and funds are required for the erection of a building at a cost which it is hoped will not exceed £300 a bed, a separate room being provided for each patient. The Treasurer, Dr. Theodore Williams, said that the sum so far received was about £6,400, and that the site had cost about £6 000. Further contributions were therefore urgently needed.

THE Congress of the Royal Institute of Public Health will be opened at Folkestone on Thursday, July 21st, at 11 a.m., when the President, the Earl of Radnor, will deliver an inaugural address. Some of the sections will begin work on the same afternoon at 2 p.m. In the Section of Tropical Medicine Professor W. J. Simpson will deliver an address on preventive work in tropical medicine, the President of the Section of Comparative Pathology, Bacteriology, and Chemistry, Dr. E. Klein, will give an address on Friday on the aim and scope of bacteriological analyses of water and shellfish with reference to sewage pollution. A report of a committee appointed to inquire into the standardization of methods of bacteriological analyses of water will be presented by Professor R. T. Hewlett, and a discussion will take place on sewage and sewage disposal. On Monday, July 25th, a discussion will take place on the collection and transit of milk from the bacteriological point of view. The Women's Section, under the Presidency of the Countess of Radnor, will meet on Friday, July 22nd, and Monday, July 25th. Among the subjects to be discussed on Friday is infant life protection, and on Monday the State registration of nurses.

POST-GRADUATE COLLEGE, WEST LONDON HOSPITAL.—What may be described as the festival of the Post-Graduate College, West London Hospital, took place at the end of last week. On Friday evening Professor von Mikulicz delivered an address on the immunization of wounds, a short account of which is published at page 24, and subsequently a *conversazione* was held. On the following evening the annual dinner was held at the Trocadero Restaurant, under the chairmanship of Dr. J. Barry Ball. The dinner was well attended, the number of guests amounting to over 122. After the usual loyal toasts Dr. E. A. Saunders proposed "The Imperial Forces." He mentioned that the toast had a peculiar interest on that occasion on account of the large number of officers in the navy and army who attended the post-graduate courses at the West London Hospital. He stated that out of 120 gentlemen who had recently been at the Post-Graduate College more than half belonged to the navy. The toast was responded to by Fleet Surgeon Welch and by Lieutenant-Colonel E. M. Wilson. The Chairman then proposed the toast of "The West London Hospital and the Post-Graduate College," and in the course of his speech referred to the progress that had been made by the College during the past year. During 1903 the number of those entering was 250, as compared with 150 the year before. He also observed that the establishment of the Pathological Laboratory was a further step in the advances made by the institution. Mr. L. A. Bidwell, the Dean of the College, in reply to this toast, stated that the particular direction in which the College had developed during the past year was in the rearrangement of the school so as to provide small classes on special subjects. He was convinced that what was required in post-graduate teaching was attendance on the ordinary hospital practice combined with steady work in small classes of not more than six or eight men devoted to various special subjects. Dr. Nolan also responded to this toast, and was followed by Mr. C. B. Keetley, who in his usual witty and humorous manner gave the toast of "The Visitors." Professor von Mikulicz replied to this toast, and was received in the most enthusiastic manner. In a short speech he conveyed his appreciation of the very hearty reception accorded to him, and in a few well-chosen words thanked the members of the West London Hospital and Post-Graduate College for their courtesy and hospitality. Mr. H. Percy Dunn discharged the pleasant task of submitting the health of the Chairman, and after this had received a suitable acknowledgement the proceedings terminated.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity and Life Assurance Society was held on June 24th, at 429, Strand, London, W.C., Dr. de Havilland Hall in the chair. The Committee examined the usual statement of accounts and the claims. In the annuity and life assurance branches no new risks have been taken for many years, and until recently very few claims had been received in respect of contracts of this description. But many of those who in the early days of the Society secured these benefits are now reaching the age at which they can realize them, and for some time to come the disbursements under these headings must be expected to increase. By far the greater part of the payments made consist of sickness benefits, and the amount annually disbursed in this way has steadily grown until, in the current twelve months, it is estimated to exceed £10 000. Not only have the claims grown in number and amount, but many questions now arise in connexion with them which were unknown twenty years ago. In particular the increase of facilities for foreign travel has greatly added to the natural tendency of men in weak health to try the effect of a short tour abroad in a more congenial climate, and the Committee considers it necessary to use considerable discrimination in deciding how far they can allow sickness pay under such circumstances. Several of the members whose state of health precluded all hopes ever of resuming work have died during the early months of this year, but there is reason to fear that their places have been filled up by others who have become permanently incapacitated, and that the "chronic" list must still be expected to grow. Prospectuses and all information on application to Mr. F. Addiscott, Secretary Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

BRITISH MEDICAL ASSOCIATION.

Subscriptions to the British Medical Association for the year 1904 are now due and should be forwarded by postal order or cheque to the amount of 25s. to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, JULY 2ND, 1904.

DIPHTHERIA CONTACTS.

THE method of combating outbreaks of diphtheria by the systematic examination of all contacts, and their isolation when bacteriologically infected, forms a subject of great interest and practical importance. In a recent article[1] Dr. Graham-Smith brings forward evidence of considerable weight in favour of this plan. There are many people who believe that the true diphtheria bacillus is not infrequently present in the throats of healthy persons who have not been in contact with any one actually suffering from the clinical disease. On this view the distribution of the bacillus is wide and uncertain, and it would therefore obviously be futile to attempt to eradicate the bacterial cause of the disease by an examination confined to those who had been in actual contact with the infection, and their detention when virulent diphtheria bacilli were found in their throats. Dr. Graham-Smith does not accept this view, but believes that in the mouths of the normal population virulent diphtheria bacilli are very rarely present. In the examination of 1,511 healthy persons who had not at a recent date been in contact with diphtheria cases or infected contacts virulent diphtheria bacilli were found only twice. These observations, taken in conjunction with the similar experience of other investigators, afford a very reasonable ground for believing that the infection is in the vast majority of cases, if not invariably, due to actual contact, and that the best way to suppress an epidemic is to discover the contacts and isolate those proved bacteriologically to be infected, the supervision being maintained until three successive throat cultures give negative results. This method has proved eminently successful in recent outbreaks both at Colchester and at Cambridge.

The subject is, however, complicated by a bacteriological difficulty. We do not propose to enter into the technicalities of the question, but, in view of its practical hygienic importance, it may be useful to recall the main points at issue. Like most pathogenic micro-organisms, the diphtheria bacillus varies very considerably in its virulence. Its toxicity may be great or small although its bacteriological characters remain those of the ordinary, typical diphtheria bacillus. Furthermore, there are many types of bacilli which, while bearing many morphological resemblances to the true diphtheria bacillus, differ from it in some of their cultural characters. The best known of these types is the pseudo-diphtheria bacillus of Hofmann.

It is especially important, from the standpoint of public health, to consider, in respect of their distribution and their liability to cause clinical disease, these three types of bacilli: (1) Virulent, true diphtheria bacilli; (2) non-virulent, true diphtheria bacilli; (3) the pseudo-diphtheria bacillus of Hofmann. The first is obviously a source of grave danger, and it is now generally admitted that this bacillus may be found in the throats of healthy persons who have been in contact with diphtheria cases, and that such persons, though remaining well themselves, may convey to others clinical diphtheria. The question whether these virulent bacilli may not have a still wider distribution and occur in persons who have had no chance of communication with diphtheria cases or diphtheria contacts is not yet absolutely settled: but it is important to note that Dr. Graham-Smith, following Dr. Cobbett and other well-known authorities on diphtheria, answer this question in the negative.

The distribution, also, of non-virulent, true diphtheria bacilli, was specially studied by Dr. Graham-Smith during the outbreak of diphtheria at Cambridge in the spring of 1903. He found them in from 1 to 2 out of every 100 persons examined, the proportion being the same in non-contacts as in contacts. There was no evidence that non-virulent bacilli ever gave rise to virulent organisms, but there were on the other hand interesting cases in which non-virulent bacilli after transference from one person to another still remained non-virulent. There was thus a noteworthy correspondence between the failure of these organisms to produce clinical diphtheria and their absence of virulence when inoculated into guinea-pigs. This parallelism, Dr. Graham-Smith holds, tends to show that diphtheria bacilli which are non-virulent for guinea-pigs are also non-pathogenic to man. The clinical interest of these observations will readily be recognized; and if it can be thoroughly substantiated that the non-virulent true diphtheria bacillus, which appears to be much more widely distributed than the virulent form, is not likely to be transformed into the latter, the prospects of permanently stamping out the disease will be distinctly more encouraging.

Thirdly, Hofmann's pseudo-diphtheria bacillus is a very widely distributed organism, especially amongst children of the poorer classes. There are still some authorities who hold that this bacillus is a modified diphtheria bacillus which is capable of recovering its pathogenic properties and producing true diphtheria. Dr. Graham-Smith agrees with those who hold the contrary opinion that the Hofmann bacillus is entirely unrelated to the diphtheria bacillus and is innocuous to man. The scientific considerations on which this view is based have been put to a practical test in the treatment of the Cambridge outbreak which he describes. Persons whose throats contained the Hofmann bacillus alone were regarded as harmless and were not isolated, and indeed their number was so large that isolation, if it had been thought desirable, would no doubt have proved impossible; only those persons were isolated whose throats contained virulent diphtheria bacilli, and this measure proved sufficient to stamp out the epidemic.

These matters are both of scientific interest to the bacteriologist and of direct clinical importance to the practitioner. Bacteriologically, the views so ably advocated by Drs. Cobbett and Graham-Smith are not universally accepted, but they certainly appear to be steadily gaining ground. Clinically, it is already possible to draw sound and useful corollaries from what has been satisfactorily established.

The practitioner in dealing with cases of diphtheria or suspected diphtheria often finds it necessary to appeal to

[1] *Journal of Hygiene*, April, 1904, p. 258.

the bacteriologist, and, as we know from the inquiries we receive from correspondents, he sometimes finds a difficulty in interpreting the bacteriologist's report. If the report runs, "True diphtheria bacilli are present," the only safe course would seem to be to persist in antiseptic treatment and to send further swabs for examination from the throat or nose until the bacteriologist can assure him that these bacilli have disappeared. This treatment may take a long time, and the patient, possibly feeling in perfectly good health, may become impatient. The practitioner ought then to ascertain if the bacilli discovered are virulent for guinea-pigs. If they are, the person from whom they are derived is undoubtedly a danger to the community and ought to be isolated. If they are not, it is still desirable to get rid of them, but the public danger is much less. If the bacteriologist reports "Hofmann's bacillus alone is present," the practitioner must decide for himself on the proper course to take. If he accepts the extreme view that Hofmann's bacillus may be productive of true diphtheria, he must adopt correspondingly rigorous preventive measures: if he is inclined to the belief that the Hofmann bacillus is innocuous, he may find satisfaction in the assurance that a considerable weight of scientific opinion, though not the whole of it, is in his favour.

THE CONTROL OF MEASLES.

Though the absolute prevention of measles may be impracticable, the great mortality from this disease is certainly controllable. It is not sufficiently realized by the public that, if proper care be not exercised, measles may be a very serious disease, especially in very young children, and that it actually causes annually in England and Wales a death-roll of 13,000 in round numbers. A not unimportant part of the duties of a medical officer of health is to educate the people in matters relating to health, and the recent discussion by the Incorporated Society of Medical Officers of Health on the control of measles tends to illustrate how great is the need for such education if preventive measures are to be carried out with success. The disease chiefly attacks children during the third, fourth, and fifth years of life, and most of the fatal cases are in children under 5 years of age, and amongst the poorer members of the community. The main factor in the spread of the disease is the intermingling of children in schools; the chief cause of mortality appears to be connected with the unhygienic conditions of life of the poorer classes.

The measure for the checking of an epidemic on which reliance has hitherto chiefly been placed is the closure of the public elementary schools. This procedure is, however, clumsy and unscientific. It is inefficient, for the death-rate from measles does not appear to have appreciably diminished during the last fifty years. Something further is evidently required, but exactly what is needed can hardly be decided without some fuller information as to certain points in the etiology of the disease. Further information is needed as to the infective stage of measles—when infection begins and when it ends—and as to how the infection may be conveyed. This knowledge is necessary to allow of definite precautions for prevention being formulated. That we may be able to diminish the mortality we require reliable information as to the prime causes of death, and the period of the attack at which death occurs. It is generally believed that the mortality is largely due to neglect of proper precaution during the later stages of the illness, or to want of care during convalescence. If, however, as stated by one speaker in the discussion, the majority of deaths occur within the first week of illness, this would suggest some cause other than exposure.

The notification of cases of measles would make it possible to collect much information in the required direction, and would facilitate the disinfection of clothing and rooms if such were required, in addition to giving the medical officers greater control over an epidemic. It was very generally held by those who took part in the discussion that notification was desirable. But notification to be useful must be followed by energetic action, and the exact nature of this action formed the chief subject of debate. The value of notification in making preventive measures more efficacious was illustrated by some figures given by Dr. M. K. Robinson, Medical Officer of Health for the East Kent Combined District. Seven years ago the town of Dover obtained the sanction of the Local Government Board to add measles to the list of notifiable diseases. In the seven years prior to notification the deaths from measles were 180, whilst in the seven years following the deaths from this disease were only 81.

Another point on which most if not all of the speakers were agreed was that the infant schools were those chiefly responsible for the spread of measles. It is not obvious what advantage children under 5 years of age derive from attendance at school, and from the public health point of view it would certainly be an advantage if children of this tender age were excluded from school. The raising of the school age to 5 years, however desirable from consideration of public health, is nevertheless a matter which must be looked at also from other points of view. There can, however, be little doubt as to the necessity of closing the infant schools in the presence of an epidemic of measles. As to the closure of the whole school under such circumstances, it was very generally agreed in the discussion at the Society of Medical Officers of Health, that if those children who had not already had measles were excluded, the remainder could safely continue to attend. Since it is estimated that about 75 per cent. of children over 5 years of age attending the voluntary schools have already had measles, the interference with the school work, except in the infants' classes, would then be very slight. This is a curious example of arguing in a circle. Obviously, if the precaution suggested proved effective at first, it must eventually fail, and the greater its primary success the more complete its eventual failure. We should have supposed that the opinion that measles was infective at a very early stage had been completely established, and if this be so the only way of effectually checking the prevalence of measles must be the exclusion from school of children reasonably suspected of being in the prodromal stage. Clearly this cannot be done by the medical officer of health or by the medical officer to the education authority, for it would involve a daily visit of a medical officer to every school at the beginning of the school day. Every elementary school then must have a medical officer, and this work would no doubt fall upon general practitioners residing in the immediate neighbourhood; this plan is working well in many American cities and also in Germany, and we venture to express the opinion that it is well worthy of consideration in this country at the present moment, when the new education authorities are setting their houses in order. During the discussion at the Society of Medical Officers of Health it was admitted that susceptible children

were liable to be exposed to infection at home, and created a serious difficulty, and it was urged that some control of the children who were not attending school was desirable. Dr. Garstang gave his experience of a method of checking measles epidemics, which in rural districts or in small towns may be of considerable value. School closure being insufficient because of the intermingling of children at home, Dr. Garstang employed an inspector to visit the affected homes and persuade the parents to keep the children who were ill in bed, and the other children (contacts) within their own premises. The effect of this very simple measure was not only to shorten the epidemic, but also to keep down the mortality. In this connexion attention was drawn to the value of lady sanitary inspectors and health visitors, since women are better able than male inspectors to approach the mothers and to convince them of the wisdom of the precautions advocated.

On the subject of the necessity for disinfection after measles there was no consensus of opinion, some of the speakers considering disinfection desirable and others expressing the view that the benefit to be derived was not worth the cost involved. This latter conclusion certainly seems somewhat surprising, and the difference of opinion on this question shows the necessity for obtaining further information regarding the infectivity of measles.

Dr. J. Howard Jones, medical officer of health for Newport, Mon., who opened the discussion with a paper on the Control of Measles, pleaded for united action amongst medical officers of health. There is little doubt that when the various local authorities realize that the large body of medical officers of health throughout the country are agreed as to the measures which are desirable for the control of measles they will show little of the hesitation in carrying them out which seems to have marked the action of some of these authorities hitherto.

THE NATURE OF THE LEISHMAN-DONOVAN BODY.

We received on June 29th the following telegram from Captain Leonard Rogers, I.M.S., dated Calcutta, June 29th: "Trypanosoma developed in cultures of Leishman bodies. —Rogers." We communicated the telegram to Major Leishman, Professor of Pathology, Royal Army Medical College, who has favoured us with the following observations: Until the details of Captain Rogers's experiments are published, it would be idle to enter into a lengthy discussion on this important observation, but, in view of the interest attaching to the nature and significance of these bodies, I may perhaps be permitted a few brief comments. Presumably, the "cultures" referred to in the telegram were prepared on principles similar to those by which Novy and McNeal succeeded in cultivating trypanosomata *in vitro*, namely, by inoculating the condensation water in tubes containing a medium composed of nutrient agar and defibrinated blood. Captain Rogers's success in obtaining cultures of the "bodies," whether by the above method or by one of his own devising, marks a very important advance in the investigation of their nature and significance, and should greatly facilitate experimental research in determining the conditions under which the parasite exists outside its human host and the channels by which it enters and leaves the body. In the paper which I have in preparation for the opening of the discussion on these bodies at the forthcoming meeting of the Association at Oxford, I intended to bring forward some additional facts in support of the theory of their Trypanosomal or, at least, flagellate origin which I put forward in my original description of the bodies, founded chiefly on a study of the involution forms of Trypanosoma brucei. Some of these facts were demonstrated by Schaudinn in his striking work upon the changes of form of Trypanosoma noctuae, and appeared to me analogous to the changes I conceived to take place in the new parasites. Captain Rogers's report that trypanosomata have actually developed in cultures from the new parasites gives an added importance to this analogy; and I think it probable that the bodies, as we see them in the protoplasm of the large mononuclear cells of the spleen and the liver, and in the neighbourhood of the intestinal ulcers are, as I have already suggested, "resting forms" of trypanosomes, and are probably similar in their origin and nature to the "resting forms" of Trypanosoma noctuae described by Schaudinn. Like them they are most likely capable of direct division inside the cells, but under other and more favourable conditions, probably simulated in the cultural method employed by Rogers, they are capable of developing extracellularly into a true flagellate or trypanosomal form. Schaudinn's graphic description of this remarkable alternation of a non-flagellated intracellular stage, with a flagellated extracellular stage in the case of Trypanosoma noctuae, furnishes, I think, a close parallel with the facts so far recorded in the case of the new "bodies." In conclusion, a recent observation of Bentley's, read in the light of this trypanosomal theory, suggests many interesting possibilities. He records the finding of trypanosomes in 100 per cent. of a particular species of mud fish in the ponds adjoining a village in Assam which had been attacked by kala-azar, while fish of the same species, in other parts of Assam and in unaffected portions of the same district, were entirely free from the parasites.

ENGLISH AND WELSH INTER-UNIVERSITY STUDENTS' CONGRESS.

The establishment of universities on a broader foundation, with the creation of new universities in the great centres of industry, has inevitably reacted upon student life, and the signs of the awakening of the students to their new responsibilities are to be seen on all sides. The students in old days in the oldest universities were represented not only in their "Nations," but they elected the "Rector," and indeed they do so still in the Scottish universities. Students' representative councils are potent factors for good in academic life, more especially in those universities where the students are non-resident in the university itself or its colleges, and where the academic life is necessarily less intimate. The Students' Representative Council of Manchester University, with which Owens College has now been formally incorporated, has issued a programme in connexion with a new movement, "The English and Welsh Inter-University Students' Congress." The first Congress will be held in Manchester, and students from all the Universities in England and the Principality are to assemble and discuss academic matters and such questions as will promote the general interests of the students and advance social and academic unity. Thus the great changes in the recent Universities are reacting favourably on those who have the greatest share in these institutions. It is hoped that a congress will be held annually at the seat of each University in turn.

POPULAR SCIENCE.

An innovation at this year's annual meeting is to be a popular lecture upon some scientific subject based in a general way upon the lines of those delivered for so many years at the Royal Institution. The Association every year receives a great deal of hospitality and kindness from the townspeople of whatever locality it chooses for the great meeting of the year, and a scientific entertainment of a sort likely to be appreciated by laymen will form a kind of practical recognition of its obligations by the Association. The first person to be charged with the task of delivering the lecture is Dr. G. B. Ferguson of Cheltenham, President of the Association in 1901, and additional interest therefore attaches to a lecture which he delivered before the Cheltenham Science Society last March. Upon that occasion he chose as his subject Disease Germs, and

in the course of an hour managed to give a very clear outline of the whole subject, illustrating it by lantern slides. He began by showing the difference between a plant and a fungus, described the general division of the fungus family into budding fungi or yeasts, weaving fungi or moulds, and fission fungi or bacteria, and then passed on to a more detailed consideration of the latter, among which the majority of recognized disease-causing organisms are found. He sketched the history of their study from the time of their first observation by Leeuwenhoek in 1675, then gave a description of the methods by which their life-histories, variety, and capabilities are studied to-day, and concluded this part of his subject by brief accounts of what is known of the diphtherial, plague, typhoid, and other disease-causing microbes. He did not omit to throw into special relief the great value of the work done in this direction from the point of view of the public health, or to punctuate the general lessons which laymen may derive from an intelligent application of the broad facts of bacteriology in the care of their own households. Before concluding he drew attention to the work which has been done towards combating malarial and yellow fevers, showing that both depended upon preventable causes, and pointing out that the former disease, like several others now in course of investigation, depended upon the life-processes of an organism of a different type to that of any variety of fungus. Lectures of this character have a very decided value beyond that of affording an evening's entertainment. The lay papers and periodicals nowadays are full of science gossip and of more or less garbled accounts of progress in medicine and science: it is as well, therefore, that from time to time clear and accurate statements of things as they really are and of the lessons to be gained from them should be made in simple language and addressed to the public from an authoritative source. This is desirable not only for the avoidance of error but still more because real progress in sanitary and allied matters must depend upon the extent to which the public can be led to appreciate the principles which underlie the courses which are from time to time urged for their adoption either by individual medical men or by those who are responsible for the promotion of legislation.

PROVIDENT DISPENSARIES AND HOSPITAL OUT-PATIENT DEPARTMENTS.

The Metropolitan Provident Medical Association aims at relieving the crowded hospital out-patient departments by establishing provident dispensaries throughout London and assisting them with grants until, by a system of co-operation, the dispensaries become self-supporting. The number of persons enrolled on the books of the Association is over 30,000 and the income is £6 000, averaging about 6s. a head per annum. The annual general meeting of the members was held on June 28th, at 67, Eaton Square, under the chairmanship of the Duke of Argyll, who, in his opening remarks, drew particular attention to a letter from Sir William H. Broadbent. After expressing his regret that he was unable to attend the meeting Sir William stated that he had long taken an interest in the work, and regarded the plan of provident dispensaries as affording the true solution of the difficulty in securing medical attendance for the self-respecting working man. "The club system of providing medical treatment by way of insurance," he continued, "is open to serious abuse on both sides, and it would be a very good thing if the great benefit societies could affiliate themselves with the Provident Medical Association. As regards the working classes and hospitals, while working men and their families ought to have a first claim on hospitals as in-patients, where operations are required and in case of very serious illness, I think it very sad when they are compelled to attend out-patients' departments, with the waste of time which this involves and the association and contact with the filthy and vicious who often crowd the waiting rooms. I think there ought to be an organic connexion between the provident dispensary of any part and neighbouring hospitals, by which a member of the dispensary should, on the recommendation of his medical man, be entitled to prior consideration and consultation at the hospital. I am quite sure that the physicians and surgeons would agree to this, and I believe that most of them would be ready to see provident-dispensary patients at home in consultation with the medical officer in attendance at reduced fees." The Duke of Argyll stated that the charge made by the Association for a husband and wife was 6s. per annum, and in addition there was a fee of one penny for each prescription made up. That, he said, was not pauperizing people, but assisting the poor to help themselves. Mr. W. Bousfield, in moving the adoption of the annual report, mentioned that the greatest success had been obtained at the Dispensary in Whitechapel, opposite the London Hospital. Sir Arthur Clay, who seconded the motion, which was duly carried, urged that poor people should pay something for medical attendance. Mr. Francis Buxton moved, and Mr. C. Montefiore seconded, a resolution which was carried in favour of providing more provident dispensaries to supply the class between the well-to-do and the very poor with medical attendance.

MADNESS IN ARMIES IN THE FIELD.

Dr. Paul Jacoby, Physician-in-Chief to the Provincial Asylum of Orel, Russia, strongly urges the necessity of a special psychiatric service for soldiers on campaign. The privations and fatigues of active service, the nervous tension caused by ever-present danger, the frequent mental shocks, alcoholism, and wounds, all predispose to madness. In the Franco-Prussian war Dr. Jacoby was struck by the number of cases of mental disorder, mostly degenerative forms and psychical traumatisms, which came under his observation. Inquiry among Russian medical officers who served in the war with Turkey in 1877-8, showed that a large number of acute psychoses occurred among the troops. Such diseases were also very common among the Russian soldiers in the war with China in 1900, and many men who had gone mad were shot that they might not fall into the hands of Chinese torturers. During the present war many cases of delirium have been observed, especially in the garrison of Port Arthur. On board the *Manchuria*, when taken by the Japanese, there were found fourteen insane soldiers who were being sent back to Russia. Let us try, says Dr. Jacoby, to imagine the condition of these unhappy men after a six weeks' voyage spent entirely in the hold of the ship. In European wars the need for special provision for the care of lunatics during war does not make itself acutely felt, for there are always asylums of some kind within reach. But in warfare in uncivilized countries, where distances are extreme and there are no railways to shorten them, where the food supply is scanty and precarious, and where the climate adds to the general misery of things, the lot of such unfortunates is truly wretched. There are, according to Dr. Jacoby, no lunatic asylums of any kind in Manchuria; the "departments for the insane" of the provincial hospitals of Siberia are "simply appalling" and they are full to overflowing. To transport sufferers from nervous or mental disturbance a distance of 10,000 kilometres in time of war by a railroad encumbered with military trains would deprive them of all hope of cure. The novelty of the conditions under which modern warfare is conducted adds greatly to the strain on the nervous system of the combatants. Dr. Jacoby compares the sinking of ironclads by the explosion of torpedoes and mines to earthquakes and volcanic eruptions which, it is well known, are accountable for much mental disorder. He thinks it likely that these new forms of shock will produce new forms of neurosis and mental disorder. Medical officers have already more than enough to do in looking after the sick and wounded, and there are grave objections to placing insane patients among the ordinary occupants of the military hospitals. Dr. Jacoby thinks that if arrangements could be made for the immediate treatment of insane soldiers in separate tents under special care they would have a good chance of recovery. He is of opinion that the crimes of violence, rape, etc., which are so common among soldiers in the unbridled licence of war are largely due to

mental disorder, and that such cases would be more effectually and more justly dealt with by medical ministration to the mind diseased than by court-martial.

DEATHS IN BATTLE DURING LAST CENTURY.

THE genial and learned Professor of Physiology in the Faculty of Medicine in Paris, Professor C. Richet, once wrote a novel and made a forecast of the probable condition of the world a hundred years hence. An ardent lover of peace on earth and an eloquent apostle and advocate of the doctrine of goodwill among men, Professor Richet has been "looking back" over the past century and reckoning the death toll due to wars during the enlightened nineteenth century. He estimates the grand total to be about 14,000,000, made up as follows: Napoleonic wars, 8,000,000; Crimean wars, 300,000; Italian war, 300,000; American Civil war, 500,000; Franco-German war, 800,000; Russo-Turkish war, 400,000; civil wars in South America, 500,000; various colonial expeditions in India, Mexico, Tonquin, South Africa, etc., 3,000,000. If to these who died in the "stricken field" we add the number of "broken" disabled soldiers, the widows and the children who suffered, we have indeed a huge budget of slaughter, a record of Christian activity, that almost makes one despair. The new century seems to have started as if it intended to maintain the record.

GUARDIANS AND TUBERCULOSIS.

UNDER this heading we called attention in our last issue to a paper by Dr. Lionel A. Weatherly which had been reprinted from *Tuberculosis*. We have since received a copy of a report on the subject made on May 26th by Dr. A. Sheen to the Cardiff Workhouse Visiting Committee. Dr. Sheen agrees with Dr. Weatherly that Boards of Guardians should do what they can to help in the crusade against tuberculosis, and recommends two main courses of action. In the first place, he advises the guardians to disseminate among the rate-supported poor information such as that contained in the leaflets of the National Association for the Prevention of Consumption, or similar information, perhaps in a briefer form, and to follow this up by appointing a trained inspector, acting under the medical officer, to visit the houses of poor persons suffering from consumption; he adds that in Cardiff, where consumption is notifiable, a female inspector is already employed under the direction of the medical officer of health. The second main course of action which we recommends has to do with the treatment of cases; he advises that cases of consumption in the workhouse hospital should be isolated as far as possible, and that cases in which there is hope of recovery should be treated in a suitable situation in the country. Some years ago, on Dr. Sheen's recommendation, a large tent was erected in the grounds of the hospital where cases were treated for some months with benefit. The plan was not sufficiently perfect to be made permanent, and the ground was hardly suitable for treatment with a view to cure; the tent was therefore abandoned, and one ward on the male side was used for the treatment of consumptive cases. This arrangement, however, was somewhat imperfect, and Dr. Sheen now recommends that a suitable ward on the first floor should be reserved, which should be provided with an outside verandah and some French windows. The building operations about to be undertaken will prevent the same plan being adopted for women. Dr. Sheen, however, goes on to recommend a more extensive plan, and advises the Board to acquire land at Pentyrch, and to erect there, as a preliminary measure, some shelters for a limited number of male and female consumptives under the supervision of the workhouse medical officer; he considers that Pentyrch is admirably situated for carrying out such a scheme.

FOREIGN MEDICAL PRACTITIONERS IN GERMANY.

GERMANY is generally recognized to be in the van of scientific progress, and it is therefore not surprising that its intellectual workshops supply a considerable amount of medical talent to the rest of the world. England should, we suppose, be grateful for the privilege which it possesses of being one of the dumping grounds for the excessive production of German doctors. If they occupy positions —for instance, as pathologists— to which native talent might perhaps have aspired, we must comfort ourselves with the reflection that at any rate it is an honour for us to be able to provide spheres of work for superior persons who are good enough to come among us to enlighten our darkness. Even if perchance a public institution established under august auspices were to be placed under the direction of a German specialist whose name is unknown to the medical profession of this country, we should doubtless accept the appointment with humility born of our "consciousness of each other's unworthiness." On the other hand our German brethren who know themselves to be the chosen people of science, naturally view with disfavour the importation of inferior intellectual produce into the Fatherland. An instructive illustration of this patriotic attitude has lately been brought to our notice. In 1896 Dr. H. Newton Heineman, an American physician, wishing to practise at Bad Nauheim, applied to the Hessian authorities for permission to present himself for the *Staats-Examen*. This was refused. On applying again six months later, however, permission was granted, but the Royal Chancellor at Berlin, whose sanction was said to be necessary, declined to give it. Dr. Heineman then received a hint from an influential quarter that it would be well for him to obtain the degree of M.D., which would enable the local and State authorities to recognize him to a certain extent. Accordingly he proceeded to the University of Munich, where, in 1898, after examination, the degree was conferred *summa cum laude*. Armed with this diploma, he returned to Nauheim, but found it necessary to keep up a system of matriculating twice a year in the Medical Schools of Hessia and Bavaria, and to take out tickets for courses, which he managed to attend for a few weeks. Having in this way put in an attendance amounting to nine semesters, our persevering American in 1900 sent in a third petition, and after a long struggle, in the course of which an attempt was made to force him into German citizenship, the objections of the protectionist Reichsamt der Inneren were overcome by the combined efforts of the American Ambassador and the Hessian Ministers at Darmstadt, who instructed their representative at Berlin to do all in his power. How hard the fight was may be gathered from the fact that it lasted three years. At last in 1903 the desired permission was extorted, and Dr. Heineman went to Giessen, where he passed an examination which extended over twenty-eight days. When at last he emerged triumphant from the long struggle he was congratulated by one of the leaders of the profession in Germany, who said, "You have had many difficulties and many intriguers to overcome." It is a strange eventful history, the moral of which seems to be that our Teutonic friends, while looking upon the whole world as open to their medical enterprise, regard Germany as holy ground not to be profaned by the foot of an intruder.

THE CLASSICAL ASSOCIATION OF ENGLAND AND WALES.

THE British Medical Association is not the only learned body to meet in the ancient University city of Oxford in the present year. The end of May saw a gathering there of a newly-founded association with whose objects many of our readers will doubtless be in sympathy. Under the presidency of the Master of the Rolls, some two hundred teachers and scholars of mark assembled in the examination schools to give the Classical Association of England and Wales its fair start in life. According to the prospectus, the objects of the Association are to promote the development and maintain the well-being of classical studies, and in particular: (*a*) To impress upon public opinion the claim of such studies to an eminent place in the national scheme of education; (*b*) to improve the practice of classical teaching by free discussion of its scope and methods; (*c*) to encourage investigation and call attention

to new discoveries; (*d*) to create opportunities for friendly intercourse and co-operation between all lovers of classical learning in this country. Membership of the Association is open to all persons of either sex who are in sympathy with its objects. Members are not pledged to any opinion on pending University controversies. It will be seen, therefore, that the Association is founded on a broad and liberal basis, and its aims are conceived in no spirit of hostility to other studies. The subscription is five shillings annually, with an entrance fee of five shillings, which is not required of those who join in the present year. The honorary secretaries, who will give further information, are Professor T. P. Postgate (Cambridge), and Professor E. A. Sonnenschein (Birmingham). Prospectuses may be obtained also at the meeting of the British Medical Association in Oxford this month.

PITFALLS OF TECHNICAL TERMINOLOGY.

Tom Hood's advice—"Never go to France, unless you know the lingo," was sound as a general maxim, and finds a special application in the domain of technical terminology. The youthful pharmacist who translated the instruction *pro re nata*, which he found on a prescription "for the thing born," with disastrous results to the internal comfort of a healthy baby, merely betrayed his want of familiarity with Latin idiom; but when Mr. Stephen Coleridge by charging doctors with using patients in hospitals as "clinical material," sought to convey the idea that they practised vivisection on human beings he showed himself ignorant of the meaning of a harmless technicality. A more amusing instance of the misinterpretation of a technical term is given in a recent issue of the *Boston Medical and Surgical Journal*. A member of the Medical staff of the Boston Dispensary received a note from a teacher in a public school asking him to examine a boy's hand, as she thought a bone was out of place. The note was endorsed by the surgeon: "There seems to have been a 'green-stick' fracture of the metacarpal," and sent back to the teacher by the scholar. In due time it was brought back to the surgeon by the scholar, with this addendum from the teacher: "I can't quite understand the chirography. Is that 'queer stick' or 'green stick'? In either case I am happy to say that the learned M.D. is mistaken as to the cause. Little 'Abie' loves his teacher, and his teacher reciprocates to the extent of 'sparing the rod' in this particular case. All masculines are not exempt, however." The last sentence was perhaps a veiled threat to other M D 's.

NATIONAL HEALTH SOCIETY.

Princess Christian, President of the National Health Society, was present at a crowded meeting of that Society on June 28th, held in the Egyptian Hall of the Mansion House. After the Princess Christian had distributed the diplomas, medals, and certificates of the Society to the successful candidates, the Earl of Derby, President of the Council, then addressed the meeting, and explained how the Society instructed poor people in regard to the preservation of health. The Bishop of Stepney moved a resolution that the Society was deserving of national support, and in his remarks emphasized the importance of preventing the alarming increase in infant mortality. Dr. George Newman, Medical Officer of Health for Finsbury, in seconding the resolution, which was carried, observed that the number of inhabitants in towns had increased from 16 per cent. to practically 60 per cent. Wherever there were vast aggregations of population, there arose fresh problems of public health calling for new methods of treatment. In order to keep the death-rate low, attention should be given to the administration of Acts of Parliament by the local authorities, and it was most important to foster and educate a healthy public opinion on the matter. There was a great deal of work, however, to be done which no Act of Parliament could touch, and that was the education of the poor in their homes. It was in the home life of the people that the real public-health problems had to be faced, and a public-health conscience created. Sir J. Knill moved a vote of thanks to Princess Christian, which was seconded by Sir James Crichton-Browne and carried. Sir James described how Carlyle would have passed his benediction on the Society as he smoked his pipe in the little drawing room at Cheyne Walk, and in this he would have been joined by his friend and disciple Ruskin. There was another direction in which the attention of the Society might be appropriately engaged, and that was to encourage people to use hygienic furniture in their homes. Not only had physical degeneration occurred, but there was also, according to Sir James Crichton-Browne, evidence of furniture degeneration, and he denounced as insanitary the small cramped room with its walls hung with porous paper, its floor spread with spongy carpet, and furnished with stuffed chairs and sofas, mere receptacles for the harbouring of dust. Sir William Church, in moving a vote of thanks to the Lord Mayor for the use of the Mansion House, said that in the City perhaps the Society was not so well known as it might be, for which reason they were especially grateful to the Lord Mayor for letting them hold their meeting at the Mansion House. It was not possible to make sanitation perfect by legislation, and moreover, legislation could not be much in advance of the general knowledge of the community. The great need was to bring home to the minds of the matrons of the nation the few homely truths which formed the basis of all true sanitation. After this vote of thanks had been duly seconded and carried the Lord Mayor briefly acknowledged it, and the proceedings terminated.

AN AMERICAN BOARD OF HEALTH ON THE TREATMENT OF PNEUMONIA.

Ignorance and superstition are too prevalent in this country to make it safe for us to point the finger of scorn at any other. Even our public bodies cannot all be regarded as enlightened in their corporate capacity, and not seldom individual members of all of them, from the august Mother of Parliaments down to the smallest parish council, share the mental infirmities of the most ignorant and superstitious of their constituents. It is not often, however, that the ignorance and superstition find expression in the public acts and utterances of such bodies. Although sanitary authorities are frequently apathetic and sometimes positively obstructive, we do not remember a case in which they have issued recommendations in regard to the public health such as are attributed by an American contemporary to "a back-country Board of Health somewhere in New Jersey." This sapient body recommended the following treatment for pneumonia, which was exceptionally prevalent during the winter in some parts of the United States: "Take from six to ten onions, according to size, and chop fine; put in a large spider over a hot fire; then add about the same quantity of rye meal, and vinegar enough to form a thick paste. In the meantime stir thoroughly, letting the mixture simmer five or ten minutes. Then put into a cotton bag large enough to cover the lungs, and apply to the chest as hot as the patient can bear it. In about ten minutes apply another, and thus continue by repeating the poultices, and in a few hours the patient will be out of danger. Usually three or four applications will be enough, but continue always until the perspiration starts freely. The remedy was formulated many years ago by one of the best physicians of New England." As to which, by way of comment, we can only say, with Dominie Sampson, "Prodeegious!"

CASES WHICH BONESETTERS CURE.

The boom of the Blantyre bonesetter still goes on merrily. Hundreds of patients are waiting their turn to be admitted to the shrine of the healer, who is said to be exhausted by his labours in undoing the handiwork of the doctors. But already through the din of the journalistic brass band, faint notes of discord are making themselves heard. It was announced a few days ago that among the countless letters which every post brings to the bonesetter, was one from a gentleman living in Regent Square, London, stating that he would like to have his left leg straightened and offering a fee of £10,000 as the guerdon of success. The cautious bonesetter refused to promise a cure if the bone

had been cut or tampered with by doctors who, according to his simple etiology, are the cause of all bone trouble. With the austere declaration that millionaires like miners must wait their turn, the man of art showed the letter to a journalist—not, as able editors say, necessarily for publication, but as a guarantee of good faith. Wild interviewers could not drag the name of his correspondent from him. For this reticence there are doubtless many reasons as good as the eighteen which the French Mayor had for not firing a royal salute in honour of the King. The first of these was that he had no cannon, on hearing which the monarch excused him from rehearsing the rest. The moral of which story lies, as Jack Bunsby would say, in the application of it. A representative of the *Daily News* made an exhaustive search among the denizens of Regent Square and failed to find any one who had offered £10,000 to have a crooked leg made straight, or who could have offered such a sum to be cured of anything. We should have been quite prepared *a priori* to say, as Betsy Prig did to Sairey Gamp in reference to Mrs. Harris, "We don't believe there's no sich person." As a wise youth who has made it his business to inquire about wonderful cures which find their way into the papers told the representative of our contemporary, "It's all bogey"; in his experience the patients can never be run to earth. Yet if one may judge from the detailed recital of their sufferings given, together with names and addresses, in advertisements, a retiring disposition is scarcely their most conspicuous characteristic. In the case of the mythical millionaire of Regent Square, the invention passes the limits of ordinary impudence; it would be as strange to discover a millionaire living in that classic but malodorous region as to see the name of the "collier surgeon" on the staff of a London hospital. A correspondent of the *Manchester Daily Dispatch* states that he paid a visit to Rae in 1903. He had badly twisted his knee some time before and went to the bonesetter as a last resource. He failed to cure it, as it again slipped out whilst he was walking about shortly afterwards. The same correspondent, who signs his letter with the initials "J. C. B.", adds that Howarth, the Blackburn Rovers' half-back, and Barnes, who used to play cricket for Lancashire, also visited Rae, and both had trouble with their knees afterwards. These failures could doubtless be multiplied by the hundred, if it be true that the Blantyre bonesetter numbers his clients by hundreds. It would be foolish, however, to assume that he always fails. As Sir James Paget pointed out in a lecture first published in this JOURNAL, bonesetters, by the rough wrenching and pulling which is the whole secret of their "healing touch," do reduce a certain number of dislocations and loosen adhesions. They also occasionally are able by a lucky jerk to replace a slipped tendon—an accident which causes great pain and inconvenience. Internal derangement of joints also sometimes yield to the rough hand of the bonesetter, and injured joints that are held stiff by involuntary muscular action, as may happen after fractures and sprains, are occasionally made supple by his manipulations. The bonesetter, like other quacks, may triumph in cases of hysterical joint, either by the faith which he inspires or the pain which he inflicts. The whole art of bonesetting is well set forth in Dr. Wharton Hood's book on the subject, which was published in 1871. On the principle *Fas et ab hoste doceri*, he went among them and learnt all there was to be learnt, and described the movements practised, and indicated the cases to which they are applicable. The secret of the successful bonesetter may be told in two words—judicious violence. Where skilful surgeons fail he may succeed by reason of his very ignorance. As "fools will rush in where angels fear to tread," he restores the mobility of a stiff joint, breaking down adhesions by the use of force which any one who knows the anatomy of the part would be afraid to employ. Of course, fearful damage is done in many cases, but one patient cured will sing the praise of the healer while the ninety-nine who have got no benefit will be ashamed to publish their folly. It is a new version of the old story of Bion, who was shown the votive offerings hung in a Greek temple by those who had been saved from shipwreck by prayer. "But where," said the philosopher, "are the names of those who have been drowned?"

THE INFANT ORPHAN ASYLUM, WANSTEAD.

WE have received from the Treasurer of the Infant Orphan Asylum, Wanstead, a copy of a letter which he has addressed to the subscribers to this institution in reference to the simultaneous resignation of the consulting medical staff. He asks us to publish it in our columns, and, in spite of its extreme length, we should be disposed to do so did its publication seem in any way calculated to clear the Managing Committee from the grave suspicion under which it at present rests. This, however, is not the case, and upon those who read the letter with any care only a most unfavourable impression could be made. There is no attempt to meet the real issue, which is that there are no proper arrangements for the isolation of infectious cases, and that the trained nursing staff has been abolished, and much of the letter is taken up partly by descriptions of the sanitary reforms which have been urged, and to some extent adopted, in the past, and partly by an appeal *ad misericordiam* on the ground of the Committee's past good service. An account is also given of "the nursing staff" of the institution. This is stated to consist of seventeen persons, but upon inquiry at the offices of the institution we learn that these "nurses" are simply ordinary children's nurses. To refer to them, therefore, as the "nursing staff" in connexion with a medical matter is somewhat misleading. The rest of the letter makes it perfectly clear that a surmise made in an annotation upon the subject in the BRITISH MEDICAL JOURNAL of June 11th was perfectly correct. This was that the attitude taken up by the Committee or by those who manage its affairs was due to the recent introduction of some personal equation. This appears to be the case, for reference is made in the letter to friction between the permanent ordinary medical officer of the institution and the secretary (who is a retired commander in the navy and a new-comer), and resentment is expressed that the medical officer should have "appealed to" one of the consulting medical staff. This we find upon inquiry at the office really means that the medical officer reported to the consulting physician that the arrangements previously introduced upon his recommendation had been overthrown, and that isolation was not to be provided. The letter also talks about the responsibilities of the Committee, says that it "cannot be dictated to," and a good deal else to the same effect. The same attitude of mind appears to prevail at the offices of the institution, so it is to be feared that the future prosperity of a valuable public charity is likely to be seriously compromised. A letter in the *Times*, it may be noted, has disclosed the fact that last year there were nearly 500 patients treated in the infirmary attached to the asylum, of whom over 200 were suffering from infectious disorders. Obviously, therefore, the need for proper medical arrangements is very great, and the statements not only of the consulting medical officers who have just resigned, but also those of the medical officer of health for the district to which we drew attention on June 11th, make it certain that the present arrangements are bad.

THE LATIN-AMERICAN MEDICAL CONGRESS.

OUR correspondent in Buenos Aires writes that the chief end of the Latin-American Medical Congress held in Buenos Aires this spring was undoubtedly achieved, in that it has contributed to uniting together scientifically and medically the Latin-American republics both north and south of the isthmus. Delegates from all the republics freely admitted that the city of Buenos Aires itself was a great object lesson to them all, and it is believed that many South American Governments will take the capital of the Argentine Republic as a model for hygienic reform in their own capitals. The work done by the sanitary authority, ably and fully backed up by the Argentine Government, will, he says, form a very interesting and

valuable chapter in the history of hygiene. The Congress had eight sections; many papers were read and many speeches delivered, but the actual outcome does not seem to have been of an epoch-making kind.

MEDICAL DIPLOMATES' SOCIETY OF LONDON.

The Medical Diplomates' Society of London, which has been formed with the object of gaining London diplomates admission to an examination for degrees in medicine, has issued a circular letter, signed by its President, Dr. F. J. Smith, Physician to the London Hospital, inviting an expression of their views from the members of the staffs of the London medical schools. The letter points out that many old students of the London schools of medicine holding diplomas of the English Conjoint Board are anxious to obtain admission to a final examination in medicine, which shall entitle them to a medical degree, but that no such examination, except that of Durham, is open to men in the active practice of their profession. They consider that this is a hardship. It is, we think, a matter of regret that the suggestion has not been more sympathetically received by the Royal Colleges themselves and by the University of London. Although the new regulations of the University are in some respects disappointing to those who hoped that it would give an ordinary degree in medicine open to all London students, it must be admitted on all hands that the position of London students who obtained their diplomas before the reconstitution of the University is a special case, and we hope it will have the consideration which it merits.

VISIT OF FRENCH MEDICAL MEN TO LONDON.

We announced a fortnight ago that a number of French medical men who take an interest in English medicine and surgery propose to visit London next October, and that an influential Committee has been formed in Paris to organize the party. A meeting was held at the Royal College of Physicians of London on June 23rd under the chairmanship of Sir William S. Church, Bart., K.C.B., President of the College, when a number of representatives of the staffs of the London hospitals and medical schools attended. Sir William Church explained the object of the proposed visit, and on the motion of Dr. Frederick T. Roberts, seconded by Mr. Thomas Wakley, junior, an Executive Committee was appointed with Sir William Broadbent, Bart., as Chairman, and containing representatives of the principal hospitals and laboratories in London; Sir Thomas Barlow, Bart., and Dr. J. Dundas Grant were elected Joint Treasurers, and Dr. Dawson Williams and Dr. Jobson Horne undertook to discharge secretarial duties. A guarantee fund was formed, and subscriptions were promised by those present. A meeting of the Executive Committee was held, under the chairmanship of Sir William Broadbent, at the Examination Hall, Victoria Embankment, on June 27th. It was resolved to invite the medical school committees in London to appoint small subcommittees to arrange for the French visitors at their respective hospitals, and to nominate representatives on their active staff to join the Executive Committee. It is understood that the French visitors desire especially to observe the system of clinical teaching and study in London, and it is hoped, also, to arrange for visits to the Royal College of Surgeons, to the Lister Institute, and the laboratories on the Embankment. After a discussion of the kind of hospitality which would be likely to be most appreciated by the visitors it was resolved, in accordance with British custom, to invite them to a banquet on one of the evenings which they are to spend in London.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.

The sixty-third annual meeting of the Medical-Psychological Association of Great Britain and Ireland will be held at 11, Chandos Street, London, W., under the presidency of Dr. R. Percy Smith, on Thursday and Friday, July 21st and 22nd. At 2 p.m. the President will deliver an address, and papers by Dr. Shuttleworth on the educational treatment of young epileptics, and Dr. C. Hubert Bond on the study of the body weight and its relation to mental disease will be read. On Friday two sessions will be held at 10 and 2 o'clock respectively, when other papers will be read. The annual dinner will take place on Thursday evening at the Whitehall Rooms, Hôtel Métropole, and on Friday afternoon the President and Mrs. Percy Smith will give a party at the Botanical Gardens.

The Physical Deterioration Committee met on Monday, Tuesday, and Wednesday this week to consider its report.

The Council of the Society of Arts has awarded the silver medal of the Society to Dr. Robert Jones, Medical Superintendent of the Claybury Asylum, for his paper on physical and mental degeneration read before the Society and published in its Journal of March 4th.

As already announced, the Executive of the annual meeting at Oxford have arranged for an excursion to Leamington and Warwick on Saturday, July 30th. We understand that the Countess of Warwick has arranged to be present at Warwick Castle in order to receive her guests at the garden party which she will give there during the afternoon.

Dr. C. J. Cullingworth, whose term of office as Obstetric Physician to St. Thomas's Hospital was extended three years ago—so that he has served the hospital altogether for 16 years—has recently, on his retirement from the active staff, been appointed Consulting Obstetric Physician and a Governor of the hospital.

The attendance at the annual session of the American Medical Association, held at Atlantic City June 4th to 11th, was the largest ever recorded. The total number of members registered was 2 890. At the meeting in 1900 the number was 2,019; at that held at St. Paul in 1901, 1,806; at that held at Saratoga Springs in 1902, 1,425; and at that held at New Orleans in 1903, 2,006.

A conference of public vaccinators will be held at the Queen's Hotel, Leeds, on Friday next, July 8th, at 4 p.m., in connexion with the special general meeting of the Association of Public Vaccinators of England and Wales. Leeds has been selected as the place of meeting on account of its excellent railway facilities, and public vaccinators not members of the Association of Public Vaccinators, who wish to become members, are invited to be present. Dr. Cope (London) will open a discussion on the best methods of performing the operation of vaccination. A dinner will be held at 6.30 p.m. and evening dress will not be required. Further particulars can be obtained from Dr. Arthur Drury, Landon House, Halifax, Honorary Secretary of the Yorkshire Branch of the Association of Public Vaccinators. London members who propose to attend the meeting should communicate with Mr. Charles Greenwood, Secretary, 1, Mitre Court Buildings, Temple, E.C.

MEDICAL NOTES IN PARLIAMENT.

Beri-beri in South Africa.—The outbreak of beri-beri has occupied the attention of Parliament a good deal recently. The subject was raised by the Marquis of Ripon in the House of Lords at the close of last week, and a short debate followed. The object of the discussion was to find out the details of the outbreak and the steps taken by the authorities on the spot to check the spread of the disease. Lord Lansdowne, who replied for the Government, was unable to give much information, as the Colonial Secretary had not received any official reply to his telegrams asking for information. He said the Government fully recognized the dangerous character of the disease, and would take all possible steps to prevent its spread. Lord Tweedmouth doubted if it were not necessary to do more than leave matters in the hands of the authorities in South Africa. The ships bringing the coolies might be infected with the disease, and precautions should be taken to avoid this source of danger.

Lord Stanley of Alderney and Lord Cadogan also spoke, the latter referring to the outbreak of the disease in Dublin some years back, and the success of the measures which were promptly taken to check its spread. The matter then dropped. On Tuesday Sir Walter Foster called the attention of the Colonial Secretary to the tendency of the disease to infect a place or locality and asked that the Chinese coolies should be isolated so as to prevent infection of the mines and compounds. Mr. Lyttelton was unable to give any information as he had received no replies to his telegrams to Lord Milner. On Wednesday, however, in answer to Mr. Herbert Samuel, the Colonial Secretary said that Lord Milner had telegraphed as follows: "*Tweedale* arrived with 40 cases of beri-beri. Three deaths took place at sea from this cause, and five at Durban. Remaining cases were sent back to China at once in *Tweedale*. Since arrival of labourers on Rand 25 cases have occurred and 1 death from heart failure. All remaining cases isolated in lazaretto and likely to recover. Neither medical officers nor labourers themselves have smallest anxiety about the outbreak, and former express opinion that general health of this batch is surprisingly good Full report on arrival, landing, and distribution will go to you by next mail. I will keep you fully informed as to their health." In answer to a further question, the Colonial Secretary said that the *Tweedale* arrived at Durban on June 18th. He was not aware of the date on which the disease broke out, but only that 3 deaths occurred at sea.

Cigarette Smoking.—There was an amusing discussion in the Committee on the Budget last week, when Sir Walter Foster moved his amendment to leave out the duty of 1s. a pound on foreign cigarettes. In arguing against the duty the hon. member incidentally referred to juvenile cigarette smokers, and expressed the opinion that the habit was pernicious for the very young. This excited the ire of Mr. Labouchere, who defended cigarette smoking. He said it was a mistake to suppose there was something injurious to the constitution in smoking. In Spain, South America, and other parts of the world children smoked cigarettes perpetually, and his belief was that this made their systems proof against injurious microbes. Doctors when one fell ill ordered one to discontinue smoking, but they smoked themselves. Did the Member for Ilkeston smoke? When a nod of assent was elicited, Mr. Labouchere went on to say his hon. friend seemed in a pretty fair state of health, and his intelligence had not been affected by this habit, which he understood was acquired in his earliest childhood. This called forth an emphatic denial, but the Member for Northampton continued his amusing speech and argued against the notion that the rising generation would be injured by smoking. He believed crime was lessened in the country in proportion to the amount of smoking. Alcohol excited a person and made him violent, but when he smoked a cigarette it calmed his nerves. He was always glad to see the poor man and the poor child smoking, for not only was he preparing himself for a happy old age, but he was not likely to swell the list of the criminal classes, because when he was carried away by his passions, instead of avenging himself on some one, he simply smoked a cigarette and it all went off. The House was greatly amused, and the hon. member concluded by saying he did not know how he should vote, but would go off and have a cigarette. After his departure the debate continued on more serious lines, and the tax was only carried by a narrow majority of 32.

Beer in Workhouses.—Mr. Lough asked the President of the Local Government Board, whether his attention had been drawn to the proceedings of the medical officer of the Docking (Norfolk) Board of Guardians, who had declined to accept the decision of the Board in favour of the withdrawal of beer from the inmates of the workhouse, and to the fact that the doctor had given a fresh order for three pints of beer a day to be given to sick inmates since this order was issued; and, if so, would he state under what authority the doctor had acted; and whether the Board proposed to take any, and, if any, what steps in the matter. Mr. Long answered that his attention had been drawn to the case referred to. One of the regulations in force in the Docking Union required that the medical officer should prescribe proper dietaries for the sick inmates of the workhouse. It was, however, provided that no allowance of fermented or spirituous liquor given by his direction to a sick inmate should be continued for more than eight days, unless before the expiration of that period it was renewed for a further period not exceeding eight days by his direction in writing. Subject to the regulations in force it was for the medical officer to determine the dietary of the sick inmates, and he could not undertake to interfere with his discretion in the matter.

Tuberculosis in Clonmel.—Sir Michael Foster asked the Chief Secretary to the Lord Lieutenant of Ireland whether the Local Government Board for Ireland was taking the necessary steps towards remedying the insanitary conditions of the Clonmel district, to which the prevalence of tuberculosis in that district had been attributed. Mr. Wyndham replied that the Board's medical inspector directed attention in 1901 and 1902 to the insanitary condition of this district, and the Board impressed upon the district council the duty of taking all such steps as were necessary to put the district in a satisfactory sanitary condition. The inspector would make another report at an early date, and this report when received would be communicated to the local authority. The Board could not compel the local authority to take action in the matter unless in pursuance of a complaint made to it in pursuance of the 15th Section of the Public Health (Ireland) Act, 1896. No such complaint had yet been made to the Board.

The Registration of Nurses.—At the conclusion of the business on Friday afternoon last week, Sir Acland Hood moved that a Select Committee be appointed to consider the expediency of providing for the registration of nurses. The motion was agreed to, and Dr. Ambrose, Major Bagot, Sir Michael Foster, Mr. Arthur Henderson, Mr. Lyell, Mr. Malcolm, Viscount Morpeth, Mr. Pierpoint, Sir John Stirling Maxwell, Mr. Tennant, and Sir John Tuke were made members of the Committee, with power to send for persons, papers, and records, with five as a quorum.

Small-pox at Belfast.—Mr. Joseph Devlin asked the Chief Secretary on Wednesday for particulars of the cause and extent of the outbreak of small-pox in Belfast, and suggested a more efficient exercise of the powers of the Corporation under the Public Health Acts. Mr. Wyndham said that the total number of cases admitted to the Small-pox Hospital was 93. Two had died, 55 had been discharged, and 36 remained under treatment. The disease was supposed to have been introduced from Scotland. The Belfast Corporation, in the opinion of the Local Government Board, efficiently discharged the duties devolving on it as the sanitary authority. Every effort was being made to prevent the spread of the disease. No complaints had been made to the Board as to the alleged dumping of refuse or as to the overcrowding of cottages.

Fees to Public Vaccinators.—Mr. Runciman asked the President of the Local Government Board whether he had received any protests against the amount of the minimum fees payable to public vaccinators under the Vaccination Order of the Local Government Board of 1898; whether he was aware that in the Gateshead Union there were during the four years previous to the passing of the Act 6,378 primary and 230 revaccinations by public vaccinators, in respect to which fees were paid amounting to £753 12s. 6d., and during the four years since the passing of the Act there had been 10,574 primary vaccinations and 1,048 revaccinations by public vaccinators, fees paid to them amounting to £3 637 5s. 6d.; whether a Departmental Committee, which was appointed to inquire into and report on the subject of the costs and expenses borne by Poor-law guardians in connexion with vaccination, had yet completed its inquiry; and, if so, whether any suggestion had been made likely to abate the burden imposed on Boards of Guardians by the existing fees. Mr. Long answered that he had received representations on the subject of the fees payable to public vaccinators, and was aware of the fees paid in the case of the Gateshead Union. It was in consequence of the representations made that he appointed the Departmental Committee referred to in the question. The Committee had now made their report, and their recommendations were receiving consideration.

The Revaccination Bill.—In the report of the speech made by Lord Lansdowne on the Revaccination Bill in the House of Lords published in the BRITISH MEDICAL JOURNAL last week, p. 1,507, there is an error of some importance. It should have been reported that Lord Lansdowne said that evidence showed that in Germany in twelve years there were only 607 deaths in a population of 56,000,000.

Scotland.

Aberdeen University Quatercentenary.

In connexion with the proposed celebration of the Quatercentenary, a conference was held on Wednesday, June 22nd, at Marischal College, between the University authorities and representatives of the Aberdeen Town Council, at which a report stating what had been done was submitted by Principal Lang on behalf of the Committee appointed at the last conference of the two bodies to make arrangements for the fitting celebration of the Quatercentenary of the University. The report recommended that the celebration should not take place until the autumn of 1906, as the new buildings at Marischal College might not be finished before that time. The Conference unanimously adopted the Committee's report and recommendation, and appointed General Committees to make all the necessary arrangements for the celebration in 1906.

The new buildings have been rising rapidly during the past few weeks. The handsome arch leading to the quadrangle has been completed, and the greater part of the front has reached the height of the third floor. Already the buildings are attracting the attention and admiration of visitors, and the Rev. Dr. Gordon, of Boston, who is connected with Harvard University, U.S.A., at which it is intended to erect a new medical school, recently made a visit of inspection to Marischal College. After leaving the city, he wrote to a friend remarking in the course of his letter that no building for academic purposes that he had seen anywhere surpassed it in its noble impressiveness. He added that he would be happy to be able to report to the Building Committee charged with the erection of the new medical school in Harvard University.

The Education Bill.

Aberdeen University Petition.

The following is the petition of the Aberdeen University Senatus to the House of Commons on the Education Bill:

Your petitioners recognize that some provisions of the Bill may, with advantage, be modified by your House in Committee, as, for example, the widening of the areas for school boards in other than the enumerated districts. But they believe that in virtue of its main proposals, the Bill, if it becomes law, will tend to unify educational administration, to improve the position of teachers, and the quality of the instruction imparted in schools, and to develop an harmonious and co-ordinated system of national education from the elementary school up to the university. Your petitioners are especially interested in the clauses of the Bill that refer to the Universities of Scotland. They observe with satisfaction that, in Clause 43, it is provided that each of the four Provisional Councils whose establishment is contemplated shall consist, to the extent of not more than one-fourth of its members, of persons elected by the Senatus Academicus of one or more of the four Scottish Universities. Your petitioners are assured that an adequate representation of the universities in any council or councils which may be established will be greatly for the benefit of education in general and of the cause of higher education in particular. With regard to Clause 52 defining the conditions on which, with the consent of the Department, endowments constituted under any scheme, provisional order, deed, or instrument, and any schools connected therewith, may be transferred to the school board of the Education district, the school board, if they accept such transfer, becoming henceforth the governing body of such endowments, your petitioners, whilst approving of facilities for the transferences indicated, would deeply regret the severence of the connexion which has for long existed between the universities and some important endowments. They have more immediately in their view the cases of Robert Gordon's College in Aberdeen, of the Dick and the Milne Bequests, and of the Educational Trust of Aberdeen. In all the governing bodies of these endowments, the University of Aberdeen is represented, and as the University has no representation on the school board which, in the event of a transference being effected, would be the sole governing body, its relation to the endowments would thus be terminated. This, it seems to your petitioners, would be a serious educational loss, and they trust that it may be found possible to insert such words in the Act as shall secure the continuance in some form of a relation which has been a source of benefit to the University and to education in the North of Scotland. Your petitioners approve of the regulations in Clause 53 as to examinations for bursaries or scholarships with a view to bringing the educational test determining the award of such bursaries or scholarships into conformity with the general system of educational tests which may at the time be in use at universities or other central institutions in Scotland. Your petitioners respectfully urge that the training of teachers is a subject of vital importance to national education. Impressed with the need of making more adequate provision for it than at present exists, they regret that no explicit proposals relative to it is contained in the Bill, and they hope that the subject will receive the attention of your House before the Bill becomes law.

Aberdeen Royal Infirmary.

Under his will the late Sir William Henderson, of Devanha, has bequeathed £1,000 to be invested for the purpose of endowing a bed in the ward which bears his name.

Chalmers Hospital, Edinburgh.

The Directors have appointed Mr. D. C. A. McAllum, M.B., C.M., Anæsthetist to the hospital; and they have also appointed Mr. Henry J. Dunbar, M.B., Ch.B., to be Resident Medical Officer for six months, both appointments to run from October 1st, when the hospital will be reopened after structural alterations.

Edinburgh and Glasgow Obstetrical Societies' Joint Meeting.

The Council of the Edinburgh Obstetrical Society has arranged for a conjoint summer meeting with the Fellows of the Glasgow Obstetrical and Gynaecological Society, to be held on Wednesday, July 13th, in the Caledonian Station Hotel, Edinburgh, at 5.15 p.m. The subject for discussion, which will be opened by Professor Kynoch (Dundee), is "The Use and Abuse of the Midwifery Forceps." After the meeting the Fellows will have an opportunity of dining together at 7 p.m.

Ireland.

Small-Pox in Belfast.

Unfortunately, several fresh cases of small-pox have developed, all from the county Down side of the town; there are now 39 cases in the hospital at Purdysburn, and over 90 suspects in the intercepting hospital. No revaccinated cases have occurred, and the disease is of a mild type; two deaths have taken place, one in an unvaccinated person, and one in an alcoholic subject. The military authorities have issued an order forbidding soldiers of either the Belfast or Holywood garrisons to visit Ballymacarrett. A meeting between a Special Committee of the Board of Guardians and the Health Committee of the City Council was held, and it was decided to make every effort to accommodate cases amongst the poor at Purdysburn, and not force them into the workhouse hospital, which is in a thickly-populated district. A case has been discovered in Newry, nearly forty miles from Belfast.

THE BIRTHDAY HONOURS.

The birthday honour which will, we apprehend, have created most interest in the medical profession is the knighthood conferred on Dr. Holman. As Treasurer of Epsom College, Vice-President of the British Medical Benevolent Fund, and President of the Surrey Benevolent Medical Society he has done work which has made his name a household word throughout the profession; while as Secretary, and afterwards President, of the South-Eastern Branch, as a member of the Central Council for many years, and as Treasurer, he has rendered services to the British Medical Association which can never be forgotten. The proof now given that the King is not unmindful of such life-long labours for the good of the profession will be a source of gratification to every one of its members; and we are sure that we are only giving utterance to the general hope when we wish Sir Constantine Holman many years in which to enjoy his new honour and to continue his beneficent exertions.

Dr. Thomas Stevenson, upon whom a like honour is conferred, is well known to two professions and to the public as Senior Scientific Analyst to the Home Office, and to many generations of Guy's men as Lecturer on Chemistry and on Forensic Medicine.

Sir Kendal Franks, who has received the honour of knighthood, is well known in this country. He was a scholar of Trinity College, Dublin, and took his degree in Medicine in the University in 1875. Soon afterwards he was appointed Surgeon to the Adelaide Hospital, Dublin, and in 1878 he became a Fellow of the Royal College of Surgeons in Ireland. His surgical work was of a very high order, and he rapidly achieved success in private practice. In 1896 he was elected Vice-President of the College of Surgeons in Ireland for a period of two years, Sir William Thomson being the President. At this time unfortunately Mr. Franks's wife was an invalid in South Africa. He went out twice to see her, and finding that it was impossible for her to return, he resolved to abandon Dublin and go to Africa. He was entertained at a banquet by the profession before he

left, and was also the recipient of many presentations. In Johannesburg he has attained a very distinguished position. At the outbreak of the Boer war he was appointed one of the Consulting Surgeons, and for his services the C.B. was conferred upon him by the Queen. Later he was employed in visiting and reporting upon the concentration camps. He has troops of friends, who all rejoice that he is the recipient of a new honour.

Deputy Surgeon-General J. H. THORNTON, who became a Companion of the Bath in recognition of his services during the Suakin expedition in 1885, is now nominated a Knight Commander of the Order. He graduated M.B Lond. in 1855 and entered the Indian Medical Service in 1856; he saw much active service, some of which he described in a work entitled *Memories of Seven Campaigns*, a record of thirty-five years' service in India, China, Egypt, and the Soudan.

Surgeon-General EDMOND TOWNSEND, who was made a Companion of the Bath in recognition of his services as Principal Medical Officer of the First Division of the Tirah expeditionary force, is now made a Knight Commander of the same Order. He graduated M D. in the Royal University of Ireland in 1866, and entered the army in the following year. He served in the Abyssinian campaign of 1868, in the operations in the Malay Peninsula 1875 6, in the Zulu war of 1879, in the Egyptian war of 1882, with the Burmese expedition of 1885, in the Ashantee expedition 1895-6, and with the Mohmund field force in 1897 8. He was Principal Medical Officer of the First Division in South Africa 1899-1902, when he was dangerously wounded and received the C.M.G. in recognition of his services; he is at present Principal Medical Officer at Netley.

Colonel HENRY HAMILTON, who is made C.B., graduated M.D. in the Royal University of Ireland in 1875, entered the Indian Medical Service in the following year, and is now Principal Medical Officer of the Lahore District. He served in the Afghan war of 1878-80, and accompanied Sir Frederick (now Lord) Roberts in his famous march to Candahar; he also served with the Mohmund field force in 1897, with the Tirah expeditionary force, and with the flying column of the Kohat field force.

Surgeon-General W. J. FAWCETT, who is also made a Companion of the Bath, is now P.M.O. of the 3rd Army Corps (Irish Command). He graduated in the University of Dublin in 1870, and entered the army in the following year. He served in the Soudan campaign of 1885, and with the Hazara expedition of 1888.

The C.B. (Civil Division) is conferred upon Honorary Colonel J. E. SQUIRE, late commanding Home District R.A.M.C. Volunteers, in recognition of his services to the London companies. He was one of the founders of the corps and acting adjutant until it was officially enrolled; he became commanding officer in 1898, was granted the honorary rank of colonel last year, and retired in March this year. He was at Suakin during the campaign of 1885, as senior medical officer to the Red Cross Society. He received the Volunteer decoration eight years ago, and is well-known for the active part he has taken in the Volunteer organization during the last twenty years. Dr. Squire is Physician to the Mount Vernon Consumption Hospital, Hampstead.

An interesting reminder of the events of fifty years ago, is contained in the list of honours given in connexion with the jubilee of the Crimean war. Among those who received the C.B., Military Division, is Surgeon THOMAS LIGERTWOOD, who served through the campaign, and was present at the battles of Alma and Inkerman, and at the siege and fall of Sebastopol. For many years he was physician and surgeon, with the local rank of colonel, to the Royal Hospital, Chelsea.

Mr. ROBERT EDWARD BREDON, who receives the honour of K.C.M.G. in recognition of his services as Deputy Inspector-General of the Imperial Maritime Customs, China, graduated M.B., C.M. in the University of Dublin, and entered the Army Medical Service in 1867. He retired in 1873, the year in which he joined the Chinese Customs Service.

The Imperial Service Medal is conferred on the Honourable BOLTON G. CORNEY, M.R.C.S., Chief Medical Officer of Fiji, and Member of the Legislative Council. His association with Fiji began in 1876, and he has been Chief Medical Officer since 1887. He has written on epidemiological subjects, and is the Honorary Secretary for Polynesia of the Epidemiological Society.

DR. WALLACE, who is relinquishing practice at Stonehaven, was on June 23rd presented with a handsome piece of silver plate in token of the high esteem in which he was held by the citizens of Stonehaven.

THE RISKS TO LIFE IN LONDON.

THE deputation to the Police Committee of the Corporation of the City of London, to which reference was made in the BRITISH MEDICAL JOURNAL on June 18th at page 1447, was received by the Chairman of that body, Mr. Alderman ALLISTON, on Wednesday, June 29th.

The deputation consisted of representatives both from the Metropolitan Street Ambulance Association and from the St. John Ambulance Association. As representatives of the former body were present the President, Mr. Reginald Harrison; the Treasurer, Mr. Anthony Bowlby; Sir William Church, Sir E. Cooper Perry, Surgeon-General Keogh, Sir Dyce Duckworth, Sir Stephen Mackenzie, Messrs. Langton, Raymond Johnson, Cuthbert Wallace, Mansell-Moullin, Dr. H. D. Rolleston, and the Honorary Secretary of the Association, Dr. Arthur James. Those attending on behalf of the St. John Ambulance Association were the Marquess of Breadalbane, Sir Richard Temple, Sir Joseph Fayrer, Surgeon-General Hooper, Sir C. H. Perrott, and Inspector-General B Ninnis, M.D., R.N.

Mr. REGINALD HARRISON, after a brief allusion to the nature of the associations represented, said that in dealing with this subject it must be remembered that of the large number of accidents and medical casualties which daily occurred in the city, many were in connexion with steam and electric machinery. The latter was frequently and increasingly the cause of what could only be described as the most frightful injuries and lacerations that could be conveyed through the streets. The deputation was specially desirous upon this occasion to urge upon the Committee the necessity for providing with as little delay as possible a more rapid and efficient service by the addition of horse ambulances to the existing appliances. By these conveyances, not only would prompt and skilled attendance be brought to and applied on the spot where the accident occurred, but, if necessary, as often happened in serious haemorrhage and wounds, whilst the patient was in course of transit to the hospital. There would, he anticipated, as in other places where horse ambulances had been used for some years, be no difficulty in efficiently and economically manning them by advanced students of hospitals.

Dr. ARTHUR JAMES said that medical men who came in contact with cases of accident and sudden illness, either as they occurred in the streets or as they arrived in hospitals, were painfully aware of the fact that under present conditions not only did people die who might have been saved, but that some lost their lives entirely through the faulty methods of their removal; many others had their injuries and their sufferings greatly aggravated from the same cause. This condition of things was all the more to be deplored because the remedies were so simple and their efficiency so thoroughly proved in other cities. It was sometimes said that the expense to the community of providing an efficient ambulance service in London would be too great, but it must be apparent that the cost of all this unnecessary loss of life and prolonged disablement and treatment was enormously in excess of what would be required to remedy it. All these points had been thoroughly discussed in New York thirty-five years ago, with the practical result that a well-organized horse-ambulance service had been established. The advantages of that service had been so obvious that almost every large city in America had followed that example, and that gradually since then most of the best-regulated cities of the world had adopted similar methods. It was noteworthy that many of the cities that now had horse-ambulance services, at first, from motives of economy, had tried to manage with litters, but that these had soon been found to be inadequate and unsatisfactory, as was the case in London. He concluded by pointing out that the extensive experience of other large cities had proved beyond question that for the successful working of an efficient ambulance service the following provisions were essential:

1. That the police should be kept efficiently trained in first-aid work.

2. That by means of telephones easily reached from the scene of any accident it should be possible to summon an ambulance, adequately equipped with the necessary appliances and in charge of a skilled attendant.

3. That the ambulance should be stationed in a convenient place in touch with the hospitals; ready to start at very short notice, and able to reach the scene of an accident, accompanied by the skilled attendant, within a few minutes.

4. That the vehicle should be so constructed that the attendant could remain close to the patient, and able to watch and administer

treatment if necessary during the entire journey to home or hospital.

Brief statements in support of the need for the organization of a horse-ambulance system within the City were made by Sir Dyce Duckworth, Sir Joseph Fayrer, Sir Richard Temple, Sir William Church, Mr. Golding-Bird, Mr. Bowlby, and others, and the deputation then withdrew.

Those who brought about this interview between the two Associations concerned and the Police Committee, in whose hands the matter rests as far as the City is concerned, are understood to be quite satisfied with the way in which representations made were received and to be hopeful that a good result will follow.

LITERARY NOTES.

Messrs. P. Blakiston's, Son, and Co., of Philadelphia, have in the press a volume by Professor William Osler, of Baltimore, entitled *Essays and Addresses*.

According to the *Athenæum*, the Peniarth (previously known as the Hengwrt) Library, which was recently described by Dr. Gwenogvryn Evans as "undoubtedly the premier collection of Welsh MSS., both in extent and in quality," has been acquired by Sir John Williams, M.D., who in 1899 also purchased the Welsh portion of the Shirburn Castle Library. He has made definite provision for the eventual transfer of these as well as of his own private collection to a Welsh national library if it be established at Aberystwyth, or, if not, to the library attached to the University College of Wales in that town.

The Librairie Hachette of Paris has, we learn, undertaken to publish an international scientific monthly review in Esperanto. The Editor is M. H. Fruictier. Among the members of the Committee of Patronage are Dr. Zamenhof, the inventor of the new lingua franca, Professors d'Arsonval, Becquerel, Berthelot, Bouchard, and Poincaré, Sir William Ramsay, and others.

The *Health Resort* for June contains, among other interesting matter, articles on the sulphur baths of Japan by Geo. H. Rittner; on golf at Ostend, Homburg, Dinard, and other Continental resorts by Mr. Garden G. Smith; and on the Carlsbad treatment by Dr. S. A. Arany. The journal is, as usual, excellently illustrated.

Dr. S. Weir Mitchell, who, in addition to his great reputation as a neurologist has won fame as a poet and as a novelist, has now turned his versatile pen to the writing of history, or rather historical romance. He is telling in the *Century Magazine* the tale of the youth of George Washington in the form of an autobiography. This of course involves an attempt to imitate Washington's style, a somewhat difficult undertaking.

Messrs. Smith, Elder, and Co. will issue immediately a new third edition of Dr. Ralph W. Leftwich's *Index of Symptoms*, thoroughly revised by the author and considerably enlarged. The last edition had a somewhat severe appearance owing to the multitude of unbroken columns. This has been remedied by breaking up the last chapter on methods of diagnosis, and inserting its different parts under their respective headings. Much new matter has also been added.

M. Paul Otlet, Secretary of the Brussels International Bibliographic Institute, estimates that since the invention of printing till the present year some 12,713,000 separate works have been published. Of this number 3.44 per cent. relate to the natural sciences, while 12.18 per cent. deal with applied science. The same laborious statistician puts the number of periodicals issued since the date of Guttenberg's invention at between 15,000,000 and 18,000,000.

Rush Medical College, Chicago, has established a museum in which will be preserved and exhibited objects of interest and value in the history of medicine. Special attention will be given to obsolete instruments and appliances for the diagnosis and treatment of disease. The late Professor Fenger bequeathed his instruments to the museum, and it was his wish that his gift should be the foundation for a collection that would show the development of surgery. The College has set aside a commodious room in the newly-opened Senn Hall for the permanent use of this museum.

The *Annali dell' Istituto Maragliano*, the first number of which is before us, appears to be intended to serve as a medium for the publication of the research done in the Istituto per lo studio della Tuberculosi e delle Malattie Infettive which was established in 1900 in connexion with Professor Maragliano's clinic in the University of Genoa. The contents include a paper by Drs. E. Marzagalli and F. Figari on the formation of specific tuberculous antibodies in animals treated by watery extract of living bacilli; one on a new method of serum diagnosis of tuberculosis by Dr. Marzagalli; and a contribution to the question of the identity of bovine and human tuberculosis by Professor Angelo Cipollina.

British Medical Association.

SEVENTY-SECOND ANNUAL MEETING AT OXFORD.

Vice-Chancellor's Soirée.

The Vice-Chancellor and members of the University will give a *soirée* on Wednesday evening, July 27th, and members of the Association who may have exhibits of exceptional scientific interest and are willing to show them are requested to communicate as early as possible with Mr. G. H. Nagel, Trinity College, Oxford.

Golf Match.

It has been decided to hold an International Golf Match during the meeting between teams representing England *versus* the Rest. Residence, not birth, will be the qualification for inclusion in the teams. English and Irish players may send in their names with their club handicaps to Dr. Proudfoot, 43, St. Giles, Oxford, while Dr. Norman Walker, 7, Manor Place, Edinburgh, will receive names and handicaps from Scotch players. Professor Symington, Queen's College, Belfast, is also prepared to receive the names and handicaps of Irish players.

Special Railway Arrangements.

To members and their friends attending the annual meeting at Oxford the railway companies of the United Kingdom will grant return tickets, on payment at the time of booking, at a single fare and a quarter. To secure this concession each passenger must produce a special voucher, and these may be obtained on application to the General Secretary, 429, Strand, London, W.C. The reduced fares will be available from July 22nd to August 2nd, both dates inclusive.

Members attending the annual meeting, but staying at places outside Oxford, may, on production of cards of membership, obtain return tickets at a single fare and a quarter (minimum charge 1s.), from Oxford to London or to any station not more than fifty miles distant to which through bookings are in operation; these tickets will be available to return on the same or following day. Members availing themselves of this privilege should use the original return ticket for the first journey to and the last journey from Oxford. The member's ticket, which is obtained at the Reception Room when registering attendance, will enable members to get the reduced fares from Oxford to London and to places within the fifty-mile radius for any intermediate journeyings.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A Meeting of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday next, the 6th of July, at **2 o'clock** in the afternoon.

The following Committees will also meet:

Tuesday, July 5th, 1904. — Premises and Library Committee, 3.30 p.m.—Scientific Grants Committee, 4.30 p.m. *Wednesday, July 6th, 1904.*—Journal and Finance Committee, 10.0 a.m.

June 28th, 1904. Guy Elliston, *General Secretary.*

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: CENTRAL DIVISION.—Notice is hereby given that a general meeting will be held at the Medical Institute, Edmund Street, at 4 P.M. on Thursday, July 14th. Business: (1) The consideration of a suggested new rule for Division. (2) To consider and instruct the Representative upon various reports of the Medico-Political Committee. (3) General. Members are particularly requested to make a note of this meeting, as individual notices will not be sent out on this occasion.—E. D. KIRBY, 106, Hagley Road, Birmingham, Honorary Secretary.

DORSET AND WEST HANTS BRANCH: BOURNEMOUTH DIVISION.—A meeting of this Division will be held at the Medical Society's rooms, Shaftesbury Hall Chambers, Bournemouth, on Monday, July 4th, at 3.15 p.m.—Agenda: Cases, if any. Instructions to delegate of Division at Oxford meeting. Dr. Snow will open a discussion on Obesity. Members having papers to read or cases to communicate are requested to notify the Honorary Secretary as soon as possible.—C. H. WATTS PARKINSON, St. Margarets, Wimborne, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH: MANCHESTER AND LIVERPOOL DISTRICT.—*Oxford Meeting:* Arrangements are now being completed with the Great Western Railway Company to attach a special car to the 12 o'clock noon train for Oxford on Monday, July 25th, from London Road, Manchester. Members will leave Liverpool Great Western about 11.30 a.m. to join the party at Crewe about 1 p.m., due at Oxford at 5.45. The car will be attached to the train leaving Oxford at 6 12 p.m. on Saturday, picking up members at Leamington or Warwick who have availed themselves of the invitation by the Corporation of Leamington and the Countess of Warwick, as mentioned on pages 168 and 169 of the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of June 11th. Members intending to join this party should send word as early as possible to Dr. Bagley, 229, Clowes Street, Manchester, S.E., so that he may know how many will be going.

NORTH WALES AND SHROPSHIRE BRANCH.—The annual meeting will be held at Shrewsbury on or about the 7th day of July.—W. JONES MORRIS, Portmadoc; H. JONES ROBERTS, Penygroes; H. H. B. MACLEOD, Clive House, Shrewsbury, Honorary Secretaries.

SOUTHERN BRANCH.—The annual meeting of this Branch will be held at the South Western Hotel, Southampton, on Thursday, July 7th. The President kindly invites the members to luncheon at the hotel at 1 p.m.; the general meeting will be held at 2 p.m. The following resolutions will be moved from the chair:—(1) That each candidate for election to the Association by the Council of the Southern Branch (excepting officers of the army, or navy, or Indian Medical Service on the Active List) shall furnish a certificate from two members of the Association, to whom he is personally known. (2) That a donation of 5 guineas be made to the Epsom College. N.B.—This donation will entitle the Branch to vote at the next election of pensioners and foundation scholars. Dr. Ward Cousins will move: "That, as the Midwives Act of 1902 contains no provision for the payment of medical practitioners, the members of the Southern Branch hope that the Council of the Association will take steps to promote an amendment of the Act for the purpose of providing fair remuneration for medical men called to assist midwives in cases of danger and difficulty." Papers will be read as follows: Mr. Childe: Three Cases of Abdominal Hysterectomy. Dr. Ward Cousins: The Treatment of Post-nasal Adenoids. Dr. Purvis: Remarks on Three Recent Cases of Malignant Disease of the Tongue. An address will be delivered by Mr. J. F. Bullar, M.B., President. After the address visits will be paid to places of interest in the town and neighbourhood. Tea will be served at the hotel from 4.30 to 6. Members intending to be present at luncheon are requested to communicate with Dr. Wade, 28, Carlton Crescent, Southampton, not later than July 6th.—H. J. MANNING, Laverstock House, Salisbury, Honorary Secretary and Treasurer.

ULSTER BRANCH.—The annual meeting of this Branch will be held in Belfast on Wednesday, July 20th. Any member having any communication to made or any business to bring before the meeting should kindly inform me on or before July 12th.—WILLIAM CALWELL, M.D., 1, College Square North, Belfast, Honorary Secretary

BEQUESTS TO HOSPITALS.—Under the will of the late Mrs. Harriet Colville, of Macclesfield, £500 has been bequeathed to the Macclesfield Infirmary.—The late General Sir Fowler Burton, of Devonport, has left £200 to the Plymouth Royal Eye Infirmary, and £100 each to the Royal Albert Hospital, Devonport, and the South Devon and East Cornwall Hospital.—The late Mrs. Mary Gillow, of Hereford, bequeathed £100 to the Hereford General Hospital.

The membership of the Union of the Medical Practitioners of Germany for the defence of their professional interests was returned on June 6th as 16 026.

WE have received a cutting from the *Natal Mercury* of May 30th containing a copy of a register of unemployed. In the list we find one doctor, two qualified chemists, and one dispenser.

SPECIAL CORRESPONDENCE.

PARIS.

A Statistical Study on Cancer Mortality by Dr. Foucault, of Fontainebleau.—Dr. Barbier on Diphtheria Cases at the Hérold Hospital.—Address by Professor Blanchard on Tropical Medicine.—Sleeping Sickness.—M. Marchais on the Treatment of Varicose Veins by Walking Exercise.—Dr. Roux appointed Director of the Pasteur Institute.

M. CHARLES PERIER has presented to the Académie de Médecine, in the name of a commission composed of Professor Brouardel and himself, a report on a statistical study on cancer mortality by Dr. Foucault, of Fontainebleau. Dr. Foucault, being much impressed by the part attributed by some writers to the neighbourhood of forests and the moisture of the soil in the generation and spread of cancer, undertook an inquiry to ascertain what truth there was in the hypothesis as far as concerned Fontainebleau, a town of 14,000 inhabitants, which admirably fulfils the required condition, being situated almost mathematically in the centre of a forest which has a circumference of fifty-five miles. Dr. Foucault studied (1) the topography of Fontainebleau; (2) the general mortality and the ratio of the cancer mortality to the general mortality; (3) the distribution of these mortalities by as far as possible natural zones, according to the topography of the town; (4) the street and house distribution in each zone of the cases of cancer notified in the municipal statistics during the last forty years. During the forty years from 1861 to 1901, 11,048 deaths occurred in Fontainebleau, 759 being due to cancer, which gives a cancer mortality of about 7 per cent. Dr. Foucault concludes as follows:

Certain houses seem more pernicious than others. Is this chance heredity or direct transmission? Heredity seems to have but little influence: on inquiry into the origin and the relations of persons dying of cancer, traces of heredity were only rarely found. As to direct transmission, there is but very slight evidence. The houses described as multicancerous are generally houses with numerous apartments. The great number of the inhabitants may suffice to explain the greater number of cases of cancer. It remains to be proved that one apartment in such an apartment house was more prolific of cancer than the others. A striking fact is that the cancer mortality increases in proportion to the lowness of the site and the humidity. Nearly all the multicancerous houses are badly ventilated, generally with little exposure to sun, and dampness is kept up, not only by the building materials, but also by the bad drainage for slop and rain water.

Dr. Foucault, comparing the Fontainebleau figures with the statistics for Paris, takes the mortality in Paris for the first eleven weeks of 1904—that is, 11,604 deaths (556 more than at Fontainebleau during 40 years), among which 627 deaths were due to cancer (132 less than Fontainebleau)—that is, a difference of 11.2 per cent. in favour of Paris, which means that for 13 cancer deaths at Fontainebleau there were but 11 in Paris. Thus relatively there are more cases of cancer in Fontainebleau than in Paris, which fact is confirmed by M. Jacques Bertillon for the years 1900 to 1903 inclusive, the cancer deaths varying between 3,000 and 3,200 for a population of 2,660,500 inhabitants.

Dr. Barbier, Physician to the Hérold Hôpital, recently communicated to the Société Médicale des Hôpitaux, the diphtheria statistics of his wards from April, 1902, to the end of 1903. Estimating the cases in which death occurred within twenty-four hours after arriving in hospital the statistics are as follows:

1902	...	345 cases	...	33 deaths
1903	...	386 "	...	38 "
		731		71

A net mortality of 9.7 per cent.

Dr. Barbier considers his cases under separate headings from the clinically pure and mild forms in which all the patients recover, to the various suppurative and septic forms with a mortality of 23 per cent., or the haemorrhagic forms with a mortality of 52 per cent. Diphtheritic croup concomitant with measles is particularly fatal, having a mortality of 59.4 per cent. There were also 9 cases of second attacks. All recovered, but in four the disease took the slow prolonged type, requiring tubage. The interval between the first and second attack varied from one to eleven months. In prognosis the age of the child is especially important, and diphtheria is always to be dreaded under 2 years of age. Scarlatina, influenza, and especially measles are grave complications. Leaving aside the secondary infection, the explanation of grave cases must be sought in the delay in inoculation. With the exception of three or four among the

700 odd cases, Dr. Barbier did not observe a case mild on admission change in type after inoculation. More than 60 per cent. of grave cases only came to hospital after the fourth day of the disease. Serious cases always occurred in the first member of a family to be attacked. When the brother and sister were brought together, one or two had already false membranes in the throat, and the disease was one or two days old. All were inoculated, and if a child died it was always the first which had fallen ill. Dr. Barbier gives the serum not in proportion to the age of the patient, but according to the type of the disease, never giving less than 30 c.cm. in the grave forms.

Professor Blanchard recently gave an interesting address on Medicine in the Colonies, in which he called attention to the necessity for methodical instruction on the diseases of the tropics in the faculties of medicine, the prosperity of the colonies being largely dependent on the exact knowledge of the climatic conditions and of the diseases which threaten the white settler. Professor Blanchard concluded by asking that the Government, or rather each colony from its own revenue, should create research laboratories, free as much as possible from military or administrative control. The Institute of Colonial Medicine and other similar bodies turn out annually a number of young qualified men capable of directing such laboratories.

During last summer Dr. Brumpt, Professor of Tropical Pathology in the Medical School of Algiers, was sent by the Minister of Public Instruction at the request of the Administrative Commission of the Institute of Colonial Medicine, on a special mission to the French Congo to study sleeping sickness. At a recent meeting of the Académie de Médecine Professor Blanchard read a report on the work of Dr. Brumpt, and laid before the Académie his following conclusions, which were adopted:

1. Considering the progressive extension of sleeping sickness and the probability of the spread of trypanosomiasis in man by the *Glossina fusca* and other species of *Glossinae*, it is urgently necessary to organize missions, composed of naturalists and medical men, to study the pathogenic action of the different *Glossinae* in the French colonies of tropical Africa. Should this inquiry show that the *Glossinae* of East and South Africa are not pathogenic for man (white or black) there would be no necessity to prevent communication between these countries and infected areas.

2. While awaiting the results of this inquiry a first prophylactic measure is imperative. Soldiers, carriers, and natives should be prevented from passing into healthy regions from infected areas: and, inversely, individuals living in non-contaminated areas should be forbidden to pass into infected regions.

3. Local governments should advise both Europeans and natives of the danger they run in exposing themselves to the bites of flies in general, and of the tsetse fly in particular, and of the necessity of establishing houses, factories, and villages beyond the region they frequent. These mixed commissions of naturalists and doctors, mentioned in paragraph 1, should be instructed to indicate the regions free from recognized dangerous *Glossinae*, and the administration should then indicate sites where village chiefs thus disturbed should come to create new centres of population.

4. Diseases caused by the trypanosoma in cattle should likewise be studied in order to determine by what stinging diptera they are transmitted. This study is especially important for the Soudan, Algeria, and Tunis, where the disease is spread by other diptera than the *Glossinae*.

5. Trypanosomiasis in man in Algeria deserves particular attention. A systematic study of the disease should be made as quickly as possible. For this purpose a single parasitologist or a commission of two or three should be appointed.

6. Considering the existence in different countries of trypanosomes which appear to be transmitted by the *Tabanides* and stinging flies (*Stomoxes*) which are met with equally in Europe, and considering the possibility of the introduction of these parasitic diseases, it is advisable to prohibit or to draw up stringent regulations about the importation into France and her colonies of animals from regions where these trypanosomes abound.

M. Marchais, in a paper on the treatment of varicose veins by walking presented to the Académie de Médecine, expressed the opinion that the oedema, fatigue, ulcerations, and pain in those affected with varicose veins are due to periphlebitis caused by venous hypertension. By acting on the circulation and accelerating it, this hypertension disappears, and if the varicose veins are of recent origin they disappear, while if the veins are already sclerosed accidents are prevented. Walking may be employed according to rules, since physiology teaches us that walking has a good effect on the venous circulation in the lower limbs. But owing to oedema and atrophy of their muscles the patients soon feel tired. If by massage these lesions are cured, then the patients are able to take a "walking cure," walking with a good step for one, two, or three hours daily. M. Marchais included in his papers twenty-two cases.

Dr. Roux has been appointed Director of the Pasteur Institute, to fill the vacancy caused by the recent death of M. Duclaux. M. Metchnikoff and M. Chamberland have been appointed Subdirectors, with direction of the scientific and administrative departments respectively.

BERLIN.

Return of Professor Koch.—A Behring Antitoxin Company.—Professor Schweninger.—Hospital Practice.—International Congress of Women.—The Nomenclature of Diseases.—Post-graduate Instruction in Prussia.

AFTER an absence of nearly eighteen months Professor Robert Koch has returned to Berlin from South Africa, having completed the investigations which, as will be remembered, he commenced early in 1903 at the request of the English Government. While in Africa Koch's chief efforts were centred on the coast fever of cattle, a devastating disease very complicated in character. Thanks to an immunizing process worked out by him, which has now been in general use for some time, the ravages of the disease have been reduced by more than half. Koch also devoted much time to the study of the horse disease (*Pferderterbe*) which proved so fateful to the British cavalry horses during the Boer war, and which is a constant scourge in the German South African colonies; and he succeeded in finding a method of immunization which is said to be thoroughly efficacious. Koch's homeward voyage was not without mischance; the steamer carrying his luggage foundered, and the cases containing the entire scientific material collected in Africa were completely submerged for some time. Luckily no damage of any importance was done. The cases have been unpacked in Berlin, and all the contents found unharmed. A number of medical celebrities and public men interested in popular hygiene have formed themselves into a Committee for the purpose of arranging a banquet in honour of Koch. It is expected that on this occasion Koch will give some account of his work during the last eighteen months. Virchow's vacant seat in the Berliner Akademie der Wissenschaften has been given to Robert Koch on his return to Germany; and, in accordance with his own wish, he has been released from his position as Director of the Royal Institute for Infectious Diseases, while he retains an honorary professorship in the Berlin University. Thus Koch will be free from the trammels which bind other university teachers, and like the chemist van t'Hoff, and the astronomer Auwers, who enjoy similar freedom, will be able to lecture only if and when he likes to do so. Koch's own laboratory in the Institute for Infectious Diseases will be kept for his use; he is therefore free to continue his scientific researches for the good of his fellow-men.

A limited liability company is in process of formation—or has been formed probably by this time—which is to bear the name *Behringwerk*. Its object is the production and sale of Professor von Behring's inventions—antitoxins, serums, etc., The company proposes to begin operations by the production of diphtheria antitoxin, which it intends to sell at a price much lower than the present.

The district hospital (Kreis-Krankenhaus) at Lichterfelde, a suburb of Berlin, has been the subject of much medical gossip ever since it was placed under the direction of Professor Schweninger. Curious stories have been circulated about Schweninger's methods of treatment, which, as he himself took every opportunity of publicly declaring, were in contradiction with the principles laid down and recognized by modern medical science and of his notorious opposition to the German vaccination law. As a consequence of this long-continued medical nihilism the Prussian Minister of Education has excluded the Lichterfelde district hospital from the list of institutions which students of medicine are at liberty to select for the purpose of serving the "year of practice" incumbent on them before taking their degree.

The great International Congress of Women has come and gone. Its official proceedings lasted five days, and embraced all the problems and aspirations to which we are accustomed under the comprehensive title of the "woman's movement." Naturally, medical women took their share in the debates; and in the Scientific Professions Section, over which Miss Agnes Bluhm, M.D., presided, some able and remarkably temperate papers were read on women and the medical profession. Altogether, the whole Congress was marked by an absence of exaggeration, by an attitude of

calm determination that spoke forcibly for the wisdom of its organizers and presiding committees. The meetings were held in the Philharmonie, a huge building containing four halls and an abundance of smaller rooms and wide corridors. The general arrangements were admirably practical, while, on the other hand, artistic decorations and home-like fittings and furniture were found in the corridors, lounges, and withdrawing rooms, plants and beautiful flowers on every platform and all the tables; above all, the graceful summer dresses and flowery hats of the members (against which the few affected "masculinities" had no manner of chance) gave a note of womanliness and refinement to the Congress that could not but rouse admiration from the other sex; and, as regards the physical development of these representatives of the "new woman," one could not but remark how great was the proportion of comely faces and finely developed bodies among them, while many of the less well favoured were redeemed from plainness by the assured grace of their bearing and gesture, and the light of intelligence and determination in their eyes.

After long and wearisome labours, after collation of proposals from all the authorities, after many changes and alterations, the revised official *Nomenklatur der Todes-ursachen u. Krankheiten*, the official list of names for the causes of death and for all kinds of diseases, has been made public by the Prussian Ministry of Education in conjunction with the Ministry of the Interior. It is understood that all the Federal States of the German Empire will follow Prussia in adopting the list, thus establishing a uniform basis for medical statistics throughout Germany. Among the medical experts whom we have to thank for this much-needed systematization are: Kirchner, Moeli, Orth, Hirschberg, Gutstadt, Dietrich, Fraenkel, v. Hansemann, Reuvers, and many other distinguished specialists.

The Central Committee for post-graduate instruction in Prussia held its annual meeting in the building of the Prussian Ministry of Education recently. Ministerial-Direktor Althoff, with numerous members of his official staff, v. Leuthold, Chief Surgeon-General of the Army, and the local and foreign members of the Central Committee, took part in the proceedings. Professor v. Bergmann presided, and in his opening speech reported progress as regards the building operations connected with the so called "Kaiserin-Friedrich-Haus," which is to be the future home of Berlin post-graduate teaching. Professor Kutner read the annual report. Twenty-five Prussian towns have taken up the movement, which is spreading likewise throughout Germany. The Government collection of apparatus for medical instruction is being steadily enlarged and completed, and a catalogue has been published. Space for the reception of the collection is to be set apart in the "Kaiserin-Friedrich-Haus," which will also contain lecture theatres, with latest improvements in the apparatus for showing photographs on the screen, working laboratories for chemical, bacteriological, and microscopic investigations, a permanent exhibition of technical appliances for therapeutic and medical purposes, board rooms, etc. Professor Kutner concluded by stating that the Government collection of teaching apparatus is not to be a "show" merely, but that each piece will be freely lent to teachers of post-graduate classes.

MANCHESTER.

Defects of the Merchants Shipping Act.—Cost of Clearing New Site for Infirmary.—Spread of Small-pox.

THE Medical Officer of Health to the Port Sanitary Authority, in his annual report, states that the number of cases of sickness investigated during the year was 124, including two suspected cases of small-pox and six of enteric fever. With regard to the sanitary condition of the ships themselves, he points out that out of a total of 2,385 ships inspected, no fewer than 916 showed one or other insanitary condition. The insanitary conditions discovered amounted altogether to 1,876, and a considerable number were actual contraventions of the provisions of the Merchants Shipping Act. The Act, as administered, seems not to have effected all that is possible for the accommodation of the seaman; indeed, the Local Government Board are advised to treat it as a failure.

It appears that the sum of £980 is required to pay for the clearance of the Stanley Grove site within four months. The Building Committee of the new infirmary have had a number of consultations with the architects, with a view to modifying the plans in various points, so as to reduce the cost by the largest possible sum without diminishing the efficiency of the building.

There is an alarming increase of small-pox cases at Stockport. At the present time there are 29 cases in hospital; within the last ten days or so 21 cases have been admitted. These all originated from a child which was supposed to have measles. The neighbours visited the child, and from this one case it is stated that 20 persons contracted the disease.

CORRESPONDENCE.

A COLLEGE OF MEDICINE FOR CHINESE IN HONG KONG.

SIR,—In 1896 I was promoted to the rank of Surgeon-Colonel in the R.A.M.C., and left to Hong Kong Station as Principal Medical Officer of H.M. Troops in China. I arrived in the Colony on May 12th in that year.

The Colony was then suffering from the second outbreak of the bubonic plague, and I was personally greatly concerned for the well-being of the garrison—European and Indian, and specially felt the death of a soldier of the Rifle Brigade in the Colony from this disease, as a deplorable event. In the endeavour to make myself familiar with the conditions amidst which the European soldier lived, I visited from time to time the horrible slums in which the Chinese working classes lived, and I have already in the *Daily News* of March 25th, 1904, summed up these conditions in the single word "Hell." It is the only word in my opinion, that at all defines the conditions I found.

In studying the influences at work in the island towards betterment of these insanitary conditions I found there existed a weakly-organized but still working organization called the Chinese School of Medicine. It was practically a missionary undertaking, although originally started by Sir Patrick Manson, then Dr. Manson of Hong Kong, and greatly helped and aided by Mr. Cantlie's sympathy and support. It had no connexion with the Colonial authorities, and was not viewed, so far as I could see, with any sympathy by the representatives in the colony of the Colonial Medical Service. As I had already served twenty years in India and was acquainted with the Indian methods of dealing with medical education I took a very early opportunity of placing my views before the then Governor of Hong Kong, His Excellency Sir William Robinson, G.C.M.G. I pointed out that in my opinion it was the duty of the Colonial authorities—quite apart from all missionary efforts—to start in Hong Kong an official medical college under the control of the State and officered and controlled by the local officers of the Colonial Medical Service—that is to say, to copy the methods of the Indian Government in India. Sir William Robinson accepted these ideas, I consider, in a thoroughly sympathetic manner, and in a very short time a committee was convened to draw up a scheme for such an official college.

I now enclose you a copy of the report of that Committee. I consider that had it been acted upon it would have well repaid England and the Colony in attracting towards it the thoughtful minds of that most virile Chinese race destined, I have no doubt, to play an important part in the world's history in the future.

For various reasons nothing seems to have been done, and I think it would be a splendid duty for the Colonial Medical Service to undertake this great labour for the sake of China. I remember Sir William Robinson one day saying to me, "Colonel Evatt, you belong to a very conservative profession." The more I think of the want of progress in founding this greatly needed college, the more I see the truth of the Governor's remark. One of the very best ways to kill out the plague in Hong Kong would be the foundation of a medical college on sound principles in Hong Kong, and to take steps to invite the Governors of Kwantung, Kwangsi, and the Southern Provincial Governors of China to found scholarships in the college for non-colonial Chinamen desirous to become medical men. England might, in this extremely cheap and philanthrophic manner, do something to win back her position in China which for many years past has, I consider, failed to make real progress.—I am, etc.,

GEORGE J. H. EVATT,
Junior U.S. Club. Surgeon-General late Army Medical Staff.

REPORT OF COMMITTEE APPOINTED BY HIS EXCELLENCY THE GOVERNOR TO ENQUIRE INTO AND REPORT ON THE BEST ORGANIZATION FOR A COLLEGE OF MEDICINE FOR HONG KONG.

Laid before the Legislative Council by Command of His Excellency the Governor.

Hong Kong, July 15th, 1896.

The Committee appointed by His Excellency the Governor to inquire

into and report on the best organization for a College of Medicine for Hong Kong have the honour to submit to His Excellency's consideration the results of their deliberations. They respectfully offer the following recommendations:

1. That the title of the proposed College be "The Hong Kong College of Medicine."

2. That a Governing Body be appointed, consisting of seven members:
The Colonial Surgeon,
The Principal Medical Officer of Her Majesty's Forces,
The Deputy-Inspector-General of Royal Naval Hospital,
The Superintendent of the Alice Memorial and Nethersole Hospitals,
and three others nominated by His Excellency the Governor; and that the Colonial Surgeon be President of the Governing Body.

3. That the Colonial Surgeon be *ex officio* Principal of the College.

4. That the Government secure the services of a medical man specially qualified to teach Anatomy and Physiology, who shall be a member of the Medical Department of the Colony, be Lecturer on the subjects named, and act as Superintendent and Secretary of the College.

5. That the Lecturers on other subjects be appointed by His Excellency the Governor on the recommendation of the Governing Body, and that they each receive an honorarium for their services. The sum of one hundred dollars per annum is suggested as a suitable honorarium.

6. That the minimum period of study be five years; and that before commencing study all candidates be required to pass an entrance Arts examination, not lower than that of the sixth standard of the new Educational Code (Hong Kong, 1893).

7. That all professional examinations be conducted by independent examiners appointed by the Governing Body, assisted by the lecturers on the subjects under examination.

8. That qualified students be given the title of "Licentiate in Medicine and Surgery of the Hong Kong College of Medicine," to be contracted "L M S.H," and be registered as qualified to practise under this title in the Colony.

9. That qualified students of the existing College of Medicine for Chinese be permitted to register, if they desire it, under the new Ordinance; and that present students of that College be received into the proposed College without preliminary examination, and given credit for such time as they may already have devoted to medical study.

10. That regulations for matriculation, curriculum of study, professional examinations, sessions, fees, etc., be remitted to the Governing Body, when it has been formed.

11. That the Government Civil Hospital, Lunatic Asylum, Fever Hospitals, etc., be thrown open to the College for purposes of clinical instruction; and that the Authorities of the Military and Naval Hospitals, and of the Alice Memorial and Nethersole Hospitals, be requested to similarly place these institutions at the disposal of the College.

The Committee, having examined the plans for a College building prepared by Honourable E. R. Belilios, C.M.G., in connexion with his generous offer to the present College of Medicine for Chinese, consider that such a building would be admirably adapted to the requirements of the proposed College, and that no better site could be obtained than that which he has offered, on account of its proximity to the Government Civil Hospital.

Finally, the Committee have estimated that an annual grant of 5,600 dols. would be required to meet the expenses of the proposed College, as follows:

3,600 dols. as salary of Superintendent, who would probably be provided with quarters in the College building.

1,000 dols. to provide honoraria for ten lecturers at the rate suggested.

1,000 dols. to cover laboratory expenses, the wages of coolies, and other incidental outlay.

PH. B. C. AYRES,
(With reservations attached),
Colonial Surgeon, Chairman.
GEORGE J. H. EVATT, M.D.,
Surgeon-Colonel A.M.S., P.M.O., H.M. Troops, China.
HO KAI.
J. M. ATKINSON,
(With reservations attached).
JOHN C. THOMSON.

Reservations by Dr. Ayres and Dr. Atkinson.

Having signed the report of the Committee appointed by His Excellency the Governor to inquire into and report on the best organization for a College of Medicine for Hong Kong, dated July 15th, with reservations, we have to point out that we differ from the opinions set forth in paragraphs 7, 8 and 9.

We are of opinion that if "The Hong Kong College of Medicine" is to be founded that the conditions as to entrance, examinations, and course of study should be as far as practicable in accord with the conditions obtaining in England, otherwise the proposed Licentiateship will give a false impression of the qualifications of its holders and the credit of the College will, in the course of a few years, suffer in consequence.

It must also be borne in mind that if the College is successful after the first five years it is most probable that many of the men leaving annually will have to seek employment elsewhere than in this Colony, it is therefore equally to the advantage of the individual that the highest standard of efficiency should be adopted.

The sixth standard of the new Education Code (Hong Kong 1893) does not include in its subjects either Latin or Euclid, and is therefore below the minimum standard required by the General Council under the Medical Act of 1886.

The proposal to allow lecturers on the subjects under examination to assist in such examination is a course not likely to commend itself generally.

It is doubtful whether as a rule the facilities afforded in this Colony with the addition of a Lecturer in Anatomy and Physiology are sufficient to enable students to obtain during a five years' course the standard of efficiency required by the General Council under the Medical Act of 1886.

It must be borne in mind that one of the chief tendencies of Chinese partially trained in Western medicine is the wholesale use of narcotics.

The title of Licentiate in Medicine and Surgery, Hong Kong College of Medicine, will be liable therefore in many cases to convey a false impression, and many of its holders will not be sufficiently qualified to practise medicine and surgery without supervision.

It appears desirable that two qualifications should be founded, namely, "native apothecaries" and "Licentiates in Medicine and Surgery." The qualifications, or rather conditions, for the latter being not less than those required by the General Council under the Medical Act; and that the proposed prospectus be referred to the Privy Council in order to ascertain whether they consider it sufficiently comprehensive.

Dr. Thomson admits that 'the present course of study and examination at the College of Medicine for the Chinese is not equal to the standard required by the general Medical Act of 1886, nor have all the students been required to pass any examination in Arts previous to their admittance to the College, and we would here remark that the College, as at present constituted, does not appear to us a "college" within the meaning of Section XIII of Ordinance 6 of 1884.

Qualified students of the existing College should therefore be required to pass the usual examinations before being allowed to register the qualification, and the present students desirous of continuing their studies in the new College should be required to pass the necessary entrance examination.

PH. B. C. AYRES,
Colonial Surgeon.
J. M. ATKINSON,
Superintendent, Government Civil Hospital.

Hong Kong, July 20th, 1896.

THE LEISHMAN-DONOVAN BODY IN DELHI BOIL.

SIR,—Dr. Leonard Rogers, in an additional note to his paper in the BRITISH MEDICAL JOURNAL of May 28th, states that it has been pointed out by the editor of the *Scientific Memoirs of Army Medical Officers* that the bodies recently described by Majors Leishman and Donovan were first recognized by Colonel D. D. Cunningham as occurring in Delhi boil as long ago as 1885. Colonel Cunningham possibly observed these bodies, but he had not the advantage of modern histological technique, and it is difficult from his descriptions and plates to recognize them as such. A more recent description of the bodies found in Delhi sore is given by Dr. J. H. Wright in a paper entitled Protozoa in a Case of Tropical Ulcer (Delhi Sore), published in the *Journal of Medical Research*[1] A study of Dr. Wright's description of these bodies and of the beautiful plates which accompany his article would lead one to believe that the micro-organisms found by this observer are closely similar if not identical with the Leishman-Donovan bodies.

The following is Dr. Wright's account of the bodies found by him in smear preparations from a Delhi sore:—"They are generally round, sharply defined in outline, and 2 to 4 micromillimetres in diameter. A large part of their peripheral portions is stained a pale robin's egg blue (they were stained with Romanowsky's fluid), while their central portions are unstained or white. A very prominent feature is the presence in each of the bodies of a larger and a smaller lilac-coloured mass. The larger mass is about one-fourth or one-third the size of the body, is of variable shape, but always forms a part of the rounded periphery of the body. The smaller mass in some instances is round, in others is rod-shaped, and in the latter case is of a deeper lilac colour than the larger mass. It is usually situated near or at the blue stained periphery of the body. The blue peripheral portions of the bodies are usually sharply defined from the central unstained portion, and sometimes show small unstained areas. A few of the bodies are oval or elongate in form. This is thought to be due to distortion in making the preparation, because in thin sections of the tissue such forms are not apparent."

Although Dr. Wright makes no suggestion as to the resemblance between the bodies found by himself and the Leishman-Donovan bodies, it is quite obvious that there is such resemblance. The dimensions, the morphological characters, and the staining properties are identical.

[1] Boston. Vol. x, No. 3, pp. 472. December, 1903.

In sections Dr. Wright found that the micro-organisms were situated almost exclusively within large proliferated endothelial cells, many cells containing twenty or more micro-organisms closely packed together throughout their cytoplasm between the nucleus and the cell membrane. Here the bodies presented the same morphological structure, their principal portion remaining unstained while the larger and smaller masses described in the smear preparations stained deeply with methylene blue and gentian-violet.

The bodies described by Cunningham were of larger size, namely, from 6.4μ by 6.4μ to 12.8μ by 25.6μ, and Dr. Wright is of opinion that they were these endothelial cells packed with micro-organisms, and which Cunningham regarded as plasmoidia in process of sporulation.—I am, etc.,

London. H. G. ADAMSON.

THE SO-CALLED PANCREATIC REACTION IN THE URINE.

SIR,—The account given by Dr. F. G. Bushnell in the BRITISH MEDICAL JOURNAL of June 18th, of a case in which he had the opportunity of examining the urine during life, and of ascertaining the condition of the pancreas after death, is interesting further evidence of the clinical value of the "pancreatic" reaction. The condition of general interlobular fibrosis—that is, damage due to past pancreatitis—found at the necropsy is what one would have expected in a patient whose urine gave a positive "A" and "B" reaction during life, assuming, of course, that the crystals had not the characters of those I have described as associated with malignant disease. The slight and comparatively unimportant evidences of active inflammation discovered microscopically were probably indicated in the urine by the difference in the amount of the deposit yielded by the "A" and "B" methods which, I understand from Dr. Bushnell's letter, was noticed. The inferences, therefore, to be drawn from the examination of the urine were fully borne out by the necropsy.

It has long been known that the reducing power of some apparently normal urines is increased by prolonged boiling with a mineral acid. It is consequently not surprising that a slight reaction should be obtained by the methods I have described with a certain number of specimens derived from persons in an apparently healthy condition. My experience is, however, that with a reasonable amount of care such specimens are not likely to cause any serious difficulty. The results yielded by typical pancreatic cases are so well marked that they are readily distinguished, and it must moreover be remembered that the test, as at present performed, is not claimed to be pathognomonic of disease of the pancreas; it is only suggested as an aid to diagnosis. The reaction given by the urine is but one of a group of symptoms, and, in making a diagnosis, must be considered in conjunction with those other signs of pancreatic disease which Mr. Mayo Robson has recently summarized in his Hunterian lectures.

The list of cases given by Dr. Gruner in his letter published in the BRITISH MEDICAL JOURNAL of June 25th is an interesting record of the varying results he has obtained in his application of the test, but as the condition of the pancreas is only mentioned in 3 of his 13 cases, and in 2 of these the diagnosis is queried, I cannot see that it has much bearing on the subject under discussion. In one case, however—No. 8—where a definite diagnosis of carcinoma of the pancreas is made, he failed to obtain a reaction. I am sorry that he should have been so unfortunate, but as I cannot profess to hold myself responsible for experiments I have not personally conducted, nor suggest an explanation of results obtained under conditions upon which I have no information, I am afraid I must leave the matter as it stands. I may say, however, that in an experience now extending to between 400 and 500 examinations I have only met with four specimens derived from cases of undoubted disease of the pancreas that have not yielded crystals, and as three of the cases gave a positive reaction on a subsequent occasion the fault was probably my own.—I am, etc.,

London, W., June 27th. P. J. CAMMIDGE.

SIR,—In connexion with this reaction it appears there are two distinct sets of crystals, which both resemble more or less closely, according to the physical conditions of the experiment, those of the osazones. One of these consists, as we have pointed out, of a lead compound, presumably a combination with phenyl-hydrazine, and this crystallizes either as beautifully regular rosette-like sheaves of sharp needles or as less regular plumose tufts; these latter, characteristic of a slowly-deposited crystallization from a not too-concentrated solution, especially resemble those of osazones. It is these crystals, we feel certain, that Dr. Cammidge found when using lead carbonate as a neutralizing agent in "reaction A." They frequently occur in carrying out the reaction as described by Dr. Cammidge, and almost without exception do so on concentration. Since Dr. Cammidge does not refer to them or show in what way they differ from "pancreatic crystals," or in fact describe in any but the loosest of terms the "pancreatic crystals" themselves, it is evident that he was unaware of any other disturbing element to the accuracy of the reaction beyond that due to the presence of dextrose in glycosuric urines. What other conclusion can we come to, then, than that in the test as originally described Dr. Cammidge confounded lead compound crystals with those of a specific reaction?

The second type of crystals to which we would refer are, however, not due to the presence of a lead compound.[1] They are the ones that Dr. Cammidge obtained on neutralizing with barium carbonate. They differ from the lead compound crystals in appearing—we speak with diffidence on this point, our experience being, so far, confined to but a few examinations of them—usually as rosettes and rarely as plumose needles, in being frequently obscured by yellowish amorphous masses, and in being smaller though proportionately broader and less sharply pointed. We encountered these crystals on several occasions during our critical examination of "reaction A" as originally described, but the fallacy in connexion with lead being so apparent we paid little attention to them in refuting the test. We have not found them occurring as "a more or less abundant flocculent deposit," as do the lead compound crystals; as far as our observations go, they depend in no way on pancreatic disease, and are equally easily obtainable from healthy as from pathological urines. We understand that other observers are at work on the subject, and are investigating their true nature.

As written descriptions are apt to convey an erroneous idea as regards minute differences in form and size, might we suggest to Dr. Cammidge the value the medical public would attach to published photographic delineations of the crystals of "reaction A" (as originally used, with lead carbonate as the neutralizing agent) and of the crystals obtained by the barium process? By this procedure, also, we shall know exactly what Dr. Cammidge does mean by the vague term "sheaves and rosettes of crystals," and also have a fixed and undeviating standpoint for further discussion, if such be necessary.

Even were any value to be attached to "reaction A," may we be allowed to point out the empirical methods, without any scientific foundation as far as we can see which mar other parts of Dr. Cammidge's work? Take, for instance, the extraordinary information that a solution of mercuric chloride will inhibit the formation of the crystals in "reaction B," if their original source is from acute inflammation of the pancreas, whilst it will not inhibit their formation if such source be malignant disease, the crystals in both instances being presumably identical in nature. Again, we are expected to believe that the source of origin of the crystals obtained by the A reaction has an influence on their solubility in sulphuric acid, those derived from acute inflammation dissolving quickest, more slowly those from chronic pancreatitis, and slowest of all those from malignant disease. Yet these crystals, again, are presumably the same in character! It is as if the crystals of phenyl-glucosazone derived from cases of glycosuria due to hepatic disease, or to cerebral tumour, or to pancreatic disease, had different rates of solubility in sulphuric acid—their size being constant—according to the disorder giving rise to the glycosuria, though the nature of the crystals be identical in each instance.—We are, etc.,

CHAS. E. HAM,
J. BURTON CLELAND.

Pathological Institute, London Hospital, June 23rd.

THE METRIC SYSTEM.

SIR,—In reply to C. M. H.'s letter on the metric system, why seek to introduce a system that is practically much less useful than the present? For the present division of the drachm into 60 grains or minims enables it to be divided exactly by 2, 3, 4, 5, 6 and 10, and nearly so by 7, 8 and 9, yielding approximately 9, 8 and 7 minims or grains respectively. Why, therefore, seek to oust so convenient a division

[1] Pavy, *Jour. of Phys.*, 1898.

with which everybody is so thoroughly conversant, and which yields exact divisions for six out of the first ten numbers, for one which is only exactly divisible by 2, 4, 5 and 10, or merely four out of the first ten numbers? Divisions of doses to suit the ages of patients is a far more important operation than multiplication in dispensing, and the fewer the remainders the less trouble in carryingo ut the operation accurately. No doubt—

Multiplication is vexation,
Division is as bad,
And the rule of three does puzzle me,
But *fractions* drive me mad!

—I am, etc.,

June 27th. C. L.

THE PATENT MEDICINE SYSTEM ON THE CONTINENT.

SIR,—It may be of interest to some of your readers to have some authoritative information with regard to the system pursued by the authorities in France and Germany.

The following notes have been kindly furnished me by the courtesy of the Foreign Secretary (Lord Lansdowne). They appeared for the first time in the *Medical Guild Quarterly* for April, 1903.

With regard to the sale of patent or quack medicines in France the law of July 14th, 1810, prohibits the sale in France of all secret remedies the composition of which is not published in the official *Codex*. In point of practice, however, this prohibition is not strictly carried out, for many French patent medicines are sold by chemists in France with the tolerance of the authorities. As regards foreign patents the French Customs Tariff states that the importation of all which do not appear in an official pharmacopoeia is prohibited. Then again, however, a certain tolerance is shown and there is no difficulty in obtaining in France most of the foreign patent medicines provided they do not contain any poisonous substance. The usual practice for persons asking to import these medicines is to address themselves to the Ministry of Commerce, sending at the same time a statement of the composition of the medicine, and should it contain no noxious matter its importation is often authorized.

With regard to Germany, the following is the memorandum. The following regulations are here in force with regard to the trade in patent and quack medicines. According to Section 11, No. 9, of the Imperial Trade Regulations, drugs and quack medicines may not be sold or offered for sale by hawkers. Medicines including these quack remedies that are to be regarded as medicines must not be offered for sale or sold except in chemists' shops in accordance with the Imperial Decree enclosed of October 22nd, 1901,[1] respecting the trade in medicine in so far as they belong to the preparations or materials enumerated in Sections 1 and 11 of this decree. Furthermore, in accordance with the regulations put into force simultaneously in all the Federal States respecting the dispensing of stringent medicines, patent and quack medicines, in so far as they contain drugs or preparations of the kind enumerated in the notice in question, may be dispensed on a physician's preparation, dated and signed.

In the year 1895 the public advertising of quack medicines intended for the prevention or cure of venereal diseases in men was forbidden in all the Federal States by uniformly worded police regulations. There are besides in force in the Federal States a number of other older local regulations whose wording differs from another with regard to the trade in medicines and quack remedies. But there is no special authorization given to the trade in patent and quack medicines within the Empire based on any previous examination, nor does any stamping of them for this purpose take place. A general uniform rule to be observed in the trade in patent and quack medicines is now being prepared. The proceedings in regard to this have not yet been completed. The regulations will be published as soon as the notice in question has been decided on in the Federal Council.

Perhaps, Sir, some of your foreign correspondents will be able to inform us what the purport of the new regulations is.—I am, etc.,

Cardiff, June 24th. T. GARRETT HORDER.

MISSIONARIES AND MEDICINE.

SIR,—I was rather surprised to note the attitude you took in your article "Missionaries and Medicine," in this week's BRITISH MEDICAL JOURNAL, when you say that the missionaries trained in the Livingstone College "take advantage of the confidence which the native....shows in the white man as a doctor," and that "they buy the confidence of the native with coin which he believes to be gold, but which is really base metal." In making such statements you show yourself to be culpably ignorant of the methods adopted by missionaries who are trained in first-aid and elementary medicine; they never try to deceive the native as to the extent of their medical knowledge, but, on the contrary, often explain that they are not "white medicine men," but will do what they can to relieve them, and experience has shown that the patients are greatly benefited; and often saved from the cruelties of the native "doctor."

I consider that you owe an apology to "missionary enterprise" as you call it, in general and Livingstone College in particular for your unsympathetic, and in some points, untrue article.—I am, etc.,

Belfast, June 20th. H. NORMAN BARNETT.

*** Our correspondent's representation of our remarks is quite inaccurate, and his heated defence of Livingstone College uncalled-for. The general issue to which reference was made was whether the policy in respect of medicine and missionaries of those who direct missionary work was right or wrong. Into this question Livingstone College enters only indirectly, and we further protected that institution by a statement to the effect that its past students were probably more aware of their own limitations than ordinary irregular missionary practitioners of medicine. We said this because we have reason to believe that it is a point to which the lecturers at the College give special attention. The general subject we discussed at considerable length a year ago, when we asked a number of pointed questions to which no answers have ever been supplied, other than those suggested in the course of the article itself. Those interested in the matter should refer to the BRITISH MEDICAL JOURNAL of June 20th, 1903, p. 1454. As to the action of those individual missionaries who from one motive or another, and with less or more knowledge, attempt to meet the wishes of the natives around them for relief from suffering, we say nothing. The remarks which we have made referred solely to the chiefs of missionary organizations. Our correspondent, however, assumes considerable responsibility when he pledges himself that individual missionaries never do this or never do that; and though it is obviously an assurance which no one man can possibly be in a position to give, we should perhaps be impressed by it had we any reason to suppose that our correspondent had any experience of missionary work himself or any knowledge of it other than what he may have gained as assistant honorary secretary to a missionary society in Ireland or from missionary acquaintances.

THE INTRODUCTION OF COD-LIVER OIL INTO MEDICAL PRACTICE IN THIS COUNTRY.

SIR,—On page 1454 of the BRITISH MEDICAL JOURNAL of June 18th is a statement by Dr. Somerville attributing to John Hughes Bennett the introduction of cod-liver oil into medical practice in this country.

I fear that the statement is incorrect, as cod-liver oil was used by my great-grandfather in the treatment of consumption in his practice in Galloway, prior to 1770.

In my grandfather's time it was in common use in many parts of Galloway, in Cantyre, and in Skye, in which two latter places particularly it had been used by the fishermen for generations in the treatment of consumption and other wasting diseases. I can find no definite record of when cod-liver oil was first introduced into medical practice in this country, but I think it must have been used to a considerable extent in Galloway and Dumfriesshire in the early part of the eighteenth century as my grandfather used to talk of his grandfather giving it to some of Prince Charlie's sick soldiers who were entrusted to his care in Dumfriesshire during the retreat from England in the '45.

I cannot speak with absolute certainty, but, if my memory does not play me false, in the second edition of a medical work entitled *A New Theory of Consumptions*, published in London in 1722, cod-liver oil is mentioned as being used in the treatment of consumption, as are a host of animal extracts not so palatable as those prepared nowadays for the treatment of various diseases. I think the idea of the use of cod-liver oil then was that it built up the body to resist what was then known as the "animalcule," which caused consumption.—I am, etc.,

Bedlington, June 20th. R. S. TROTTER, M.D.

[1] *Reichsgesetzblatt*, p. 380.

OBITUARY.

CHARLES KELLY, M.D., F.R.C.P.

By the death of Dr. Kelly the Public Health Service has lost one of its most distinguished members. He had not contributed much to medical literature, but those who were favoured with his friendship knew what a wide and philosophical grasp he had of his life-work, the light which, in discussion, he could throw on problems relating to it, and his readiness to advise and help in circumstances of difficulty and doubt.

Dr. Kelly had a distinguished career as a student, being University Scholar in Medicine and Midwifery at the M.B.Lond. Examination in 1866, and obtaining the gold medal at the M.D. Examination in 1867. For some time afterwards he was connected with King's College Hospital, and had he remained there he would undoubtedly have made his mark in consulting practice. He, however, preferred the greater certainty, though relatively modest pecuniary prospects, of the post of Medical Officer of Health to the Combined Districts of West Sussex, which he obtained in 1874. Its duties formed his main life-work. For many years he was also Professor of Hygiene at King's College, and during two terms of five years he was Examiner in State Medicine to the University of London. In the latter capacity he became well known to a number of candidates, who could not but recognize that in him they had at once a searching practical examiner, determined to ascertain whether they knew essential facts and understood essential principles, and one who, all the same, was free from examiners' fads, and had little respect for mere textbook knowledge.

For many years Dr. Kelly issued valuable annual reports dealing with the vital statistics and sanitary problems of one-half of Sussex, and in these reports are buried many contributions to the science and art of public health which are well worthy of a wider publicity. West Sussex comprises a large number of both urban and rural districts in one of the most beautiful districts of England, and includes in its area health resorts like Worthing and Littlehampton, and historical towns like Horsham and Arundel, with a total population in 1901 of 122,604.

Dr. Kelly's two chief scientific interests were vital statistics and meteorology. On the former point it is a striking testimony to his acumen, and still more to his courage as medical officer of several health resorts, that in his annual report for 1896 he should make the following remarks:

> Much harm has been done in past years by those who have led the public to believe too much in low death-rates, when the mere fact of a district having such rates ought rather to make one suspect that some source of fallacy must be present. Such sources are to be found readily enough, and they are most frequent in those places which owe some of their prosperity to the common belief. . . . . It is always well to distrust a very low death-rate, and careful inquiry should be made into the age and sex-distribution of the population before coming to a conclusion. In contrasting the figures year by year for the same district, the comparison may be made readily and correctly, but, when other districts are contrasted one with the other, such a comparison may be fallacious, unless due allowance be made for age and sex distribution.

The meteorological station that Dr. Kelly started at Worthing was most completely organized, and he laid great stress on the influence of meteorological factors in favouring the spread of disease. Thus, in explaining the epidemic of enteric fever from which Worthing suffered in 1893, he arrived at the conclusion that the growth of the Eberth bacillus in the public reservoir, favoured by the extreme heat in the middle of June, caused a recrudescence of the epidemic. We believe he was alone among medical officers of health in employing "accumulated heat" in the horticulturist's sense as a better test of temperature as affecting health than either air or earth temperature or sunshine. This test avoids the fallacies which may arise if inferences are drawn from the hours of sunshine, as very sunny weather may be associated with a cool temperature.

The Worthing outbreak of enteric fever in 1893, which attacked 91 per 1,000 of the males and 72 per 1,000 of the females in the borough, and which caused altogether 188 deaths, was the subject of an elaborate report by Dr. Kelly, which for clearness of exposition and for logical forcefulness has seldom been surpassed.[1] It is not necessary here to rediscuss the problem whether this terrible outbreak was caused by leakage from a disused sewer into a fissure in the chalk adit connected with the contaminated well, or by fouling of the adit by the workmen engaged in it when the sudden inrush of water caused their precipitate retreat. Dr. Kelly clearly showed that both sources of possible contamination were present. Worthing's calamity led to other districts putting their houses in order, and led Worthing itself to establish its water supply on an irreproachable basis. This epidemic had an interesting off-shoot in an outbreak of enteric fever in West Worthing, which was supplied with water from a source different from that supplying Worthing. Dr. Kelly was able to show that the cases occurring in West Worthing originated in streets which were watered by water from Worthing, which was used for this purpose for economical reasons. He also showed that West Worthing was on an intermittent supply of water, that the hydrants in the street allowed mud to enter into them, that the valves in these were of a defective type, and that the water had thus become contaminated.

Dr. Kelly's name will be associated with an important investigation into the prevalence of diphtheria and phthisis in urban and rural districts, and on soils of different density. If the value of these investigations is diminished by the fact that it was impracticable to apply due corrections for variations in age and sex distribution of population, this is a failing which is equally shared by the more widely-known researches on the same point by Buchanan in this country and Bowditch in the United States. The figures in which Dr. Kelly summarized his results are worthy of reproduction here, and particularly so, as they have been almost completely lost sight of.

West Sussex is a district which covers an area of 335,492 square acres, or about 524 square miles, with a population in 1887 of 105,520. The different soils found in this district are (1) pervious soils, which include the upper and lower greensands, the chalk and the lower Tunbridge Wells sands; (2) the retentive soils, which include the Weald clay, the clayey beds of the lower greensand and the gault; and (3) moderately pervious soils, sloping from the sea to the South Downs, where the chalk is covered for a depth of 15 to 50 feet with loam and brick-earth.

Nature of Soil.	Population.	Death-Rate per 1,000,000 Living at all Ages from Phthisis.	Lung Disease.	Diphtheria.	All Causes.
Pervious	33,820	1,514	2,131	127	14,852
Moderately Pervious	29,640	1,467	1,892	216	14,463
Retentive	23,530	1,542	2,583	454	14,642
West Sussex ...	86,990	1,506	2,172	246	14,741

These figures show that the mortality from diphtheria and lung diseases is much higher on retentive than on pervious soils, while that from phthisis and from all causes is very nearly the same on each variety of soil.

The late Sir R. Thorne-Thorne, in his address on Preventive Medicine in the Victorian Era, alluded to the above results, and endeavoured to minimize their importance by the statement that agricultural as well as urban land has been very largely drained during the last half century. It can scarcely have been so drained as to make its condition equal to that of pervious soils. Dr. Kelly's results throw some measure of doubt on Bowditch and Buchanan's induction, and leave the subject still open for further investigation. The contrast between phthisis and other lung diseases in the above table is very striking. In the same table is shown a great excess of diphtheria in populations living on retentive soils.

The preceding short summary of some of Dr. Kelly's work is by no means exhaustive. It may, however, suffice to remind others of the importance of the investigations which can be carried out in rural as well as in urban, in sparsely as well as in densely-populated districts, when intelligence and insight are combined with devotion to work and a determination to face problems and diligently investigate them.

Dr. Kelly was only in his 59th year when he died. He was buried at Broadwater Cemetery on June 20th. He leaves a widow, two daughters, and two sons, one of whom is already serving his country in South Africa after a distinguished student's career.

Dr. G. E. SHUTTLEWORTH writes: My recollections of Charles Kelly date from his early student days, when we resided together at Bayswater, and attended lectures at King's. His father was a practitioner at Market Deeping

[1] The greater part of this report, illustrated by charts, appeared in *Public Health*, vol. vi, p. 396, and vol. vii, p. 21.

Lincolnshire, and Charles early showed a bent for the medical profession. At King's he soon made his mark, his marvellous powers of memory enabling him without effort to take a high place in the class lists. He had, moreover, much originality and force of mind, and an intense hatred of humbug in all its forms. His outspoken sentiments, indeed, sometimes disconcerted his friends, and he was a most formidable antagonist in argument. His earliest medical work was a prize essay on *Clinical Thermometry*, written in 1866, when the subject was still in its infancy; and in this he embodied much original observation gathered when House-Physician to King's College Hospital. His brilliant successes in the London University examinations, culminating in the gold medal at the M.D. degree, placed him conspicuously in the first rank of rising physicians, and there is little doubt but that he would have taken a distinguished place amongst metropolitan teachers and consultants had he not been allured by what he considered the more exactly scientific attractions of the public health service. Of the value of his work in this department of the profession your readers will have testimony from those more conversant with it than myself, but I am glad to be allowed to record my recollections of his sterling worth as a firm friend and a typically honest man.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Emile Demange, Professor of Forensic Medicine in the Medical Faculty of Nancy; Dr. Ludwig Liersch of Cottbus, well known in Germany by his writings on medico-historical and anthropological subjects, aged 74: Dr. Vorster, Medical Director of the Stephansfeld Lunatic Asylum, near Strassburg, as the result of an injury inflicted by a patient; Dr. John Milton Duff, of Pittsburg, Clinical Professor of Gynecology in the West Penn Medical College and President of the Section of Obstetricians and Gynecologists at the meeting of the American Medical Association held at Pittsburg; Dr. Carlo de Vincentiis, Professor of Ophthalmology in the University of Naples, and author of numerous contributions to the literature of his special province of surgery, in the 55th year of his age; Dr. Ralph Nelson Isham, one of the founders of Lind University, now the North-Western University Medical School of Chicago, in which he was for many years professor of surgical anatomy, operative surgery, and surgery, aged 73: Dr. Thomas Murray Drysdale, one of the founders of the American Gynaecological Society, twice President of the Philadelphia Obstetrical Society, and Consulting Gynaecologist to the Medico-Chirurgical Hospital of that city, aged 72; Dr. F. Savary Pearce, Professor of Nervous and Mental Diseases in the Medico-Chirurgical College of Philadelphia, author of a *Practical Treatise on Nervous Diseases*, aged 36; Dr. H. Downer Ingraham, sometime Professor of Practice of Medicine in the University of Buffalo, aged 62: Dr. F. C. Leber, Professor of the Theory and Practice of Medicine in the Kentucky School of Medicine, Louisville, aged 70: Dr. E. Galliard Mason, for a number of years editor of *Galliard's Medical Journal*, and Vice-President of the New York County Medical Society, aged 39: Dr. L. de Reynier, of La Coudre, near Neuenburg, the oldest medical practitioner of Switzerland, aged 95; Dr. Le Roy des Barres, of Saint Denis (Seine), author of work on *Anthrax, Arsenical Poisoning, Typhoid Fever, and Tetanus*: Dr. Frederick C. Schaefer, Professor of Clinical Surgery in the Chicago Post-Graduate Medical School and Surgeon-in-Chief to St. Hedwig's Hospital in that city, aged 55: and Dr. Ladislas Niemilowicz, Professor of Forensic Medicine in the University of Lemberg, aged 41.

The funeral of Mr. Trimmer took place on Thursday, June 23rd, at Putney Old Cemetery. There were present: Mrs. Trimmer, attended by her sisters; Colonel Augustus Trimmer, brother of the deceased; Dr. Clarence Cooper, cousin of the deceased; Mr. Francis Fowke, Mr. F. G. Hallett, Mr. V. G. Plarr, Dr. Andrew Duncan, and Mr. Alban Doran.

The Russian Society for the Cure of Consumptives recently held its first meeting at St. Petersburg. The Society has a membership of 200, but its funds are still quite insufficient for the work which it has undertaken.

The well-known Russian author, Anton Tchechoff, who is a member of the medical profession, volunteered for service as a medical officer at the front, but has been disabled by illness.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL ARMY MEDICAL CORPS.

Parkes Memorial Prize.

The triennial award of this prize, consisting of 75 guineas and a bronze medal, has been made to Major R. Caldwell, R.A.M.C., for the best essay sent in upon "The prevention of disease amongst armies engaged in active operations in the field, with special reference to the sanitary organization of a field force." The essays submitted by Majors E. C. Freeman and F. Smith, D.S.O., of the Royal Army Medical Corps, were highly commended by the assessors.

The subject of the next prize is "On the sanitary requirements of naval and military units in peace and war, with suggestions for complete schemes of sanitary organization suitable for both the navy and army." The competition is open to officers of the Naval, Army, and Indian Medical Services. Essays should be submitted to the Secretary of the Parkes Memorial Fund, Royal Army Medical College, Examination Hall, Victoria Embankment, London, W.C., on or before December 31st, 1906.

Indian Medical Service.

The transfer to the temporary half-pay list of Lieutenant-Colonel W. A. Mawson, of the Bengal Establishment, has received the approval of the King, June 1st. Lieutenant-Colonel Mawson joined the department as Assistant-Surgeon, March 31st, 1876, and was made Surgeon-Lieutenant-Colonel twenty years thereafter. He was in the Afghan war of 1878-80, being present at the capture of Ali Musjid, the battle of Charasiah, and the operations at and around Kabul in December, 1879 (mentioned in dispatches, medal with three clasps). He was also with the Tochi force in the campaign on the North-West Frontier of India in 1897-8 (medal with clasp), and with the Waziristan expedition in 1901-2 (mentioned in dispatches).

The undermentioned gentlemen have been appointed Honorary Surgeons to the Governor General of India, from May 1st: Surgeon-General Sir B. Franklin, K.C.I.E., Director-General Indian Medical Service: Surgeon-General D. Sinclair, C.S.I., M.B., Madras: Colonel S. H. Browne, M.D., C.I.E., Bengal: Colonel J. T. B. Bookey, C.B., Bengal: Lieutenant-Colonel F. F. Perry, Bengal; Lieutenant-Colonel W. G. H. Henderson, Bombay.

Captain Hugh Myddelton Moore, Bombay Establishment, died at Bombay, of plague, on June 3rd. He joined the department as Surgeon-Lieutenant, July 28th, 1897, and was made Surgeon-Captain, July 28th, 1897. He had nearly completed his 36th year.

Lieutenant-Colonel P. H. Benson, M.B., Madras Establishment, is appointed to officiate as Principal Medical Officer, Madras District.

Surgeon-General William Thom, late of the Bombay Establishment, died in London on June 11th, aged 85. He entered as Assistant-Surgeon, January 5th, 1841, becoming Surgeon-General on retirement, February 28th, 1874.

Pay, Prospects, and Work.

Two Undeceived write: "Sardam," in the British Medical Journal of April 9th, only mentions a few of the disadvantages of the I.M.S. as compared with the R.A.M.C.

1. As regards I.M.S. civil pay, the figures are generally nearer those given in the first column by "Sardam" than the second. It is not generally known that on entering the Civil Department a medical officer's pay is reduced by Rs. 100 for the first three years, and after that by Rs. 50, nor that the stations one is sent to are much worse than most of those for native troops, and that these latter compare very unfavourably with those occupied by British troops where R.A.M.C. officers serve.

2. In the I.M.S. regimental subscriptions amounting to from 2 to 5 per cent. are deducted from one's pay.

3. When comparing R.A.M.C. and I.M.S. rates of pay, one should not lose sight of the fact that it is practically necessary for one's health to take a year's furlough to England in every five years. This has to be done at one's own expense (for a bachelor at least Rs. 1,200 second class). The furlough pay the military I.M.S. officer draws out of India is barely sufficient for a bachelor's maintenance and quite insufficient for a married man. In this connexion it should be noted that a subaltern in the Indian army (age about 25) gets the same furlough pay as a junior major I.M.S. (age above 37).

4. In the cavalry, when marching from one station to another, medical officers are not allowed transport by rail for their families or baggage. In the infantry, in which a charger is practically necessary, neither horse allowance nor carriage by rail for a horse when transferred is allowed.

5. The original idea in fining officers for obtaining civil employment involving more professional and congenial work was that they could largely increase their incomes by private practice. This is an old delusion. In only 5 to 10 per cent. of the civil appointments is any remunerative practice open to civil surgeons, this being the result of the presence of numerous local medical practitioners in all fair-sized towns.

6. Last but not least, the wretched inadequacy of the medical and surgical equipment—nearly all out-of-date—allowed to native troops hospitals and about 80 or 90 per cent. of the civil hospitals in the country, requires notice. The necessity of such surgical appliances as kettles (or substitutes for them), stoves for boiling water, sterilizers, Hagedorn's or any other needle holder of modern pattern, etc., is obvious, though, in the case of some of these articles it was not so evident to the (R.A.M.C.) members of the Hospital Stores Committee who, in 1900, signed a report on the shortcomings of military hospitals in India. In justice, however, to these officers it should be stated that they recommended the supply of some of these articles and of Murphy's

buttons to the head quarters of military districts as "district loan equipment," so that, when urgently required for out-stations, they can be applied for and obtained, if not required at head quarters, after a delay of two to six or more days! A fact that is characteristic of the very defective state of native military hospitals in times of peace is that not a single operation theatre has yet been provided for them in the whole of India. Field hospitals, also, it is well known, are no better equipped. Though in the China expedition of 1900-1 the state of these was found to be extremely defective and unworthy of a civilized country, nothing has, up to now, been done to remedy it. The field medical and surgical equipment of the Japs and of all the European Powers who sent armed forces to China in 1900 was acknowledged by our medical officers to be much superior to ours. It will be seen from the list of drugs supplied to native military hospitals that a considerable number, many of them frequently used, have been abolished on the recommendation of the 1900 Hospital Stores Committee. To make up for this loss, they recommend that the purchasing allowance of medical officers be increased. This has been done by altering the monthly allowance for local purchase of drugs from Rs. 5 to Rs. 2½! The following is a copy of the paragraph in which they make their recommendation:

Report of the Hospital Stores Committee (1900), paragraph 168.

To enable executive medical officers to make the purchases mentioned in the last paragraph, it will be necessary to increase their present purchasing powers. They are now authorized to meet any emergent circumstances by purchasing when practicable the medicines required up to a limit of five rupees for each purchase, and up to an annual limit of fifty rupees for each hospital (Army Regulations, India, Vol. VI., paragraph 918). Fifty rupees a year is assigned to hospitals, irrespective of size. The Committee think that the increased allowance which will be required, if the proposed cutting down of the authorized list of medicines is carried out, should be arranged on a sliding scale, according to the number of beds authorized for each hospital. The scale proposed is:

Size of Hospital.	Purchase Limit.	Annual Limit.
Up to 50 beds	... Rs. 2½ ...	Rs. 25
Over 50 and up to 100 beds....	... Rs. 5 ...	Rs. 50
,, 100 ,, 200 ,, ...	... Rs. 10 ...	Rs. 100
,, 200 ,, 300 ,, ...	... Rs. 15 ...	Rs. 150

and so on, rising five rupees (6s. 8d.) in the purchase limit, and fifty rupees (£3 6s. 8d.) in the annual limit for every additional 100 beds or part thereof.

7. From the foregoing remarks intending candidates for the Indian Medical Service ought to realize that only by exceptional good fortune can they expect to obtain creditable or remunerative employment in the Service, and then only when they have attained to seniority in the Civil Department.

ROYAL NAVAL VOLUNTEER RESERVE.

JAMES J. MARSH, M.D., L.R.C.S., L.R.C.P., is appointed Surgeon, and is attached to the London Division, June 27th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

LIEUTENANT E. B. DOWSETT, the Woolwich Companies, to be Captain, June 18th.

WILLIAM C. MURRAY, M.B., to be Lieutenant in the Argyll and Sutherland Bearer Company, June 25th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

SURGEON-LIEUTENANT J. S. MILNE, M.B., 4th Durham, to be Surgeon-Captain, June 25th.

ROYAL ENGINEERS (VOLUNTEERS).

SURGEON-LIEUTENANT F. S. EDWARDS, East London (Tower Hamlets), to be Surgeon-Captain, June 25th.

VOLUNTEER RIFLES.

SURGEON-LIEUTENANT J. S HUDSON, 13th Middlesex (Queen's Westminster), to be Surgeon-Captain, June 25th.

Surgeon-Lieutenant F. N. GUNNING, 2nd Volunteer Battalion the Northumberland Fusiliers, is borne as supernumerary whilst commanding the Tyne Volunteer Infantry Brigade Bearer Company, June 25th.

Lieutenant J. A. C. ROY, 2nd Volunteer Battalion the Lancashire Fusiliers, resigns his commission, and is appointed Surgeon-Lieutenant, June 25th.

EVAN J. T. JONES, M.D., to be Surgeon-Lieutenant in the 3rd Volunteer Battalion the Welsh Regiment, June 25th.

Surgeon-Lieutenant V. GRAHAM, 2nd Volunteer Battalion the York and Lancaster Regiment, to be Surgeon-Captain, June 25th.

IMPERIAL YEOMANRY.

THE following announcement is substituted for that which appeared in the *London Gazette* of June 3rd: ALEXANDER G. LOVETT-CAMPBELL, M.B., to be Surgeon-Lieutenant, May 28th.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

Degrees.—At the Congregation on June 21st—the last of the academic year—the following medical and surgical degrees were conferred:—*M.D.*: S. Squire Sprigge, Caius. *M.B.*: J. E. Pellow, St. John's; E. A. A. Beck, Clare; W. H. Hills, Pembroke; J. S. Cooper, Jesus; G. S. Colt, Sidney Sussex; J. B. Dunlop, Sidney Sussex; A. R. Brailey, Downing. *B.C.*: A. W. D. Coventon, W. L. Cripps, H. M. Davies, E. Harrison, and R. H. Robbins, Trinity; D. H. Fraser, Caius; J. S. Cooper, J. Goss, and B. H. Stewart, Jesus; R. A. Clapham and R. O. Lee, Emmanuel; G. H. Colt and J. B. Dunlop, Sidney Sussex.

During the academic year the degree of M.D. had been conferred on 19 candidates, M.C. on 3, M.B. on 72, and B.C. on 80.

UNIVERSITY OF LONDON.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.

Distribution of Prizes.—There was a large attendance at St. Thomas's Hospital Medical School on June 24th on the occasion of the distribution of prizes to the successful students by Sir Thomas Barlow, whose interesting address will be found printed in full in this number of the JOURNAL (p. 1). The medallists were as follows: In practical medicine, the Mead Medal was gained by K. Takaki; the Wainwright Prize and the Seymour-Graves-Toller Prize by A. G. Gibson: in surgery and surgical anatomy, H. A. Kisch secured the Cheselden Medal: in anatomical and physiological research, the Grainger Testimonial Prize was won by A. E. Boycott; for reports of surgical cases, H. R. Dean received the Solly Medal and prize; and for general proficiency and good conduct H. Takaki was awarded the Treasurer's Gold Medal. The Treasurer of the Hospital, Mr. J. G. Wainwright made some remarks on the progress of the Medical School, and he was also able to announce that the new Nurses' Home, designed to accommodate 185 nurses, would soon be ready for occupation. Accommodation for 32 children had been secured by means of the addition of two children's wards to the hospital. In regard to the out-patients' department more space was required, and he expressed the hope that before they met together again for another distribution of prizes the governors would have had submitted to them a scheme to provide increased accommodation.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.

The Lord Chief Justice of England presented the prizes to the successful students of St. Mary's Hospital Medical School on June 29th. The open scholarship in Natural Science, £145, was taken by G. E. Oates: J. E. L. Johnston and D. W. Daniels each received an open scholarship of £78 15s., and H. L. Barker was awarded one for £52 10s.: two University scholarships of the value of £63 were gained by E. Beaton and W. A. E. Dobbin.

Lord Alverstone, in addressing the students, said he was proud to know that the medical students of the present day brought to the prosecution of their studies, a determination that they would be worthy of their profession and conduct themselves as gentlemen; there was no profession in which gentlemanly feeling and high principles of honour were more essential; further, there was no profession which brought out more and proved more the good qualities of a man, provided it was approached and laboured in with energy and with the determination to do the best that was possible in any difficulties that might occur in the course of practice. Referring to the daily work of a medical man, Lord Alverstone observed that he must rely to a large extent on his own powers of diagnosis and his own judgement in regard to treatment, but the one thing of all others that was most necessary for the proper discharge of his duty was the possession of the power of concentrating his mind on the particular case before him. If a medical man were content to proceed in his work with superficial knowledge, if he were satisfied with simply getting along somehow, trusting to avoid mistakes which could be readily discovered, that man was not likely to achieve any great success. It was because the course of studies the medical schools offered and the principles on which students were advised to carry on their studies inculcated the absolute necessity of thorough work that he was able to congratulate students of medicine on having entered their profession. Concentration of the mind on the particular problem presented for consideration would not prevent the observation of interesting facts worthy of investigation on some future occasion. In that way concentration of mind would not be in any way inconsistent with practising powers of observation. In regard to athletics, Lord Alverstone said that he spoke as one who had always advocated active healthy exercise for young men: but he had always contended that athletics ought not to be made the aim and object of life, but should be regarded merely as the means of securing health so that a man should be able to do his life's work better.

After Lord Alverstone had received a cordial vote of thanks, the company adjourned for the inspection of the wards of the hospital and the laboratories of the medical school.

UNIVERSITY OF EDINBURGH.

Degrees in Medicine and Surgery.

THE following candidates have passed the final examination:

M.B., C.M. (Old Regulations).—H. C. Gibson, G. Munro.

M.B., Ch.B. (New Regulations). R. G. W. Adams, D. I. Anderson, W. W. Anderson, J. W. H. Babington, R. B. Barnetson, W. P. Beattie, D. Bell, L. H. I. Bell, J. Bentley, A. R. Berrie, J. M. Beyers, A. S. L. Biggart, D. W. Boswell, F. T. Bowerbank, D. Brown, W. S. M. Brown, H. C. Buckley, V. T. Carruthers, Mildred M. L. Cathels, R. A. Chambers, D. M. C. Church, G. S. Clark, A. C. Coullie, T. E. Coulson, G. Cunningham, M.A., J. M. Dewar, R. Donaldson, M.A., A. M. Dryden, T. H. Easton, C. G. Edmonston, E. J. Elliott, N. C. Fische, J. M. R. Flament (with distinction), W. H. Forsyth, L. Fourie, A. N. Fraser, W. J. Fraser (with distinction), F. H. Gibson, A. G. Glass, M.A., A. M. Gloag, H. V. Goldstein, J. P. Gordon, J. M. Graham, W. W. Greer, E. J. Griffiths, T. M. Guthrie, P. A. Harry, E. Henderson, M.A. (with distinction), A. W. Hogg, G. S. Husband, K. U. A. Inniss, J. Jardine, S. A. Johnstone, J. Kirk, G. F. S. Landon, S. W. S. Leary, A. J. Lewis, J. Lochhead, M.A., B.Sc. (with distinction), C. D. Lochrane, J. B. Lockerbie, Isabella Logie, A. D. McCallum, H. M'Callman, M.A., W. M'Conaghy, J. P. M'Gowan, M.A., H. R. Macintyre (with distinction), N. D. Mackay, B.Sc., R. J. Mackessack, M.A., Amy M. Mackintosh, Elspeth M. Macmillan, A. MacRae, M.A., A. Malseed, M. M. Mamourian, D. P. Marais, Aimée E. Mills, M.A., B.Sc., L. S. Milne (with distinction), G. I. Moriarty, T. R. Mouat, W. W. Munby, D. S. Murray, A. Oliver, C. D. O'Neale, A. Pampellonne, W. J. Patterson, W. Patten, B. Pickering, Florence M. S. Price, Labbhu Ram, C. Reece, A. E. C. Rees, B.A., H. S. Reid, C. H. G. Ritter, Margaret H. Robertson, W. J. D. Robertson, J. Robinson, B.Sc., Sheila M. Ross, C. S. Ryles, J. Saffley, J. G. B. Shand, J. I. Shepherd, M.A., F. R. Sinton, C. J. Smith, G. M. Smith, W. A. W. Smith, P. Steel, F. H. Stewart, M.A., B.Sc., H. A. Stewart, A. C. Strain, K. A. M. Stuart, S. H. S. Taylor, B.A., H. M. Thompson, R. S. E. Todd, M.A., B.Sc., G. H. Ussher, R. M. Walker, R. W. L. Wallace, R. H. Watt, J. H. D. Webster, D. P. D. Wilkie, F. A. Wille, W. B. Wishart, A. C. T. Woodward, C. H. Wright, B.A., T. Wright, Margaret C. W. Young, M.A.

UNIVERSITY OF MANCHESTER.

INCORPORATION OF OWENS COLLEGE IN THE UNIVERSITY.

THE Royal assent has been given to the Bill entitled Victoria University

of Manchester Act, 1904, whereby Owens College is incorporated with the University of Manchester. The College will cease to exist as a "separate corporation," and all its property (real and personal) and its liabilities are transferred to and vested in the University. Owens College as a College now disappears, so does its Senate, Council and Court as such. The term Owens College is retained for the buildings to mark a historic name and a period, while the arms of the new University remain the same as those of the College, with the motto *Arduus ad Solem*. Those of Victoria University disappear. All the professors and other members of the teaching staff of the College, and all the paid officers and servants will hold "as nearly as practicable the same offices and places" in the University as they held in the College. The rights of the College to appoint or nominate a member of the governing body of any educational, charitable, or other institution will be transferred to the Council of the University, and any such rights which have been expressly conferred upon the Senate of the College will be transferred to the Senate of the University. Any will, deed, or other document, whether executed before or after the passing of the Act, which contains a bequest, gift, or trust in favour of the College will be read and have effect as if the University were named in it and not the College. Under the Act the Duke of Devonshire, who has been the President of Owens College since the death of his father in 1891, becomes the President of the Manchester University, and is empowered to preside at meetings, and to confer degrees in the absence of the Chancellor (Earl Spencer).

Degree of M.D.—The following applications for the degree of Doctor of Medicine have been approved. The subject of the dissertation is given in brackets: J. Butterworth [The action of arsenic on cardiac and skeletal muscle and fat]; W. W. Clemesha, with commendation [Plague from a sanitarian's point of view]; J. B. Cook [Artificial feeding in causation of infantile diarrhoea]; R. J. Ewart [X-ray therapy]; A. W. Latham, recommended for gold medal [Changes in organs in connexion with secondary tumours]; Alan M'Dougal, with commendation [Study of chlorides and bromides of alkalies and alkaline earths]; F. E. Tylecote [Pharmacology and therapeutics of uranium].

SOCIETY OF APOTHECARIES OF LONDON.

Pass List, June, 1904.—The following candidates passed in:

Surgery.—C. C. Bernard (Section I), Royal Free Hospital; L. S. Dudgeon (Sections I and II), Thomas's Hospital; J. A. Renshaw (Section II), Manchester; N. O. Roberts (Section II), Cambridge and St. Mary's Hospital; G. W. Rogers (Sections I and II), Cardiff and St. George's Hospital; J. P. B. Snell (Section II), Middlesex Hospital.

Medicine.—P. S. Cooke, Charing Cross Hospital.

Forensic Medicine.—J. P. E. Henery, St. George's Hospital; E. R. Neukirch, Copenhagen; E. E. Tucker, Royal Free Hospital.

Midwifery.—P. F. Howden, Bristol; E. R. Neukirch, Copenhagen; E. E. Tucker, Royal Free Hospital; R. W. L. Woods, Leeds.

The diploma of the Society was granted to L. S. Dudgeon, J. A. Renshaw, N. O. Roberts, and G. W. Rogers.

MEDICO-LEGAL AND MEDICO-ETHICAL.

A REGRETTABLE MISUNDERSTANDING.

At the last meeting of the Committee of Management of the Limerick County Infirmary a letter was received from the house-surgeon charging one of the visiting surgeons with "rude and unprofessional conduct" towards him. Both gentlemen were present, and we regret to say made charges and counter charges against each other, most detrimental not only to the interests of the hospital but also to the profession to which they belong. It is perhaps impossible to carry on an institution without occasional friction between the members of the staff; but for a house-surgeon to charge one of the visiting staff with having "muddled an operation," and when the visiting surgeon, not unnaturally, spoke sharply to him for a subsequent neglect of duty, for the house-surgeon to have stated in the presence of reporters that his superior officer did so "to cover his own blunders and lack of surgical skill," is simply intolerable. It appears to us, who can only form an opinion from the published reports of the proceedings, that the house-surgeon entirely misunderstands his position; that if the action of the visiting surgeon in reproving his subordinate in the presence of the patient and nurse was indiscreet, it in no way justified or condoned the subsequent conduct and observations of the house-surgeon. At the commencement of the proceedings one of the Committee wisely deprecated the presence of the press, on the grounds that "the washing of dirty linen should be done in private." We entirely agree with him, and regret that both medical men did not take his advice, and so avoid a grave professional scandal; and we have little doubt that upon seeing in print the verbatim report of what they said, they must agree that our opinion will be that of the profession at large.

"AN ABOMINABLE OLD WOMAN."

The *Morecambe Chronicle* of June 24th contains an account of an inquiry before the magistrates into two informations sworn against Charlotte Barber for performing illegal operations. The evidence given was to the effect that she had given pills containing sufficient lead, if taken according to the directions given, to produce acute lead poisoning, and had also used an instrument to produce abortion. There were two distinct cases, and the prisoner was committed for trial in each of them. She bears the same name as the woman whose conduct at a recent inquest at Morecambe, of which an account was given in the British Medical Journal on June 25th, page 1518, led to her being addressed by the coroner as "an abominable old woman."

THE ADVERTISING OF MEDICAL PRACTITIONERS AT FOREIGN HEALTH RESORTS.

We have received two copies of a circular issued by the editor of the *Daily Messenger*, which calls itself the leading Anglo-American paper, and is published in Paris. The circular announces that in the forthcoming Christmas number there will be a series of articles dealing with health resorts in Europe and Northern Africa, and that the editor desires to include sketches of the local English or American medical practitioner. He adds: "Might we count upon you to send us your photo for reproduction as well as some notes concerning yourself, and anything concerning your locality which you deem of special interest?" We can see no objection to the name of the medical practitioner being given, or to his supplying a few notes on the class of cases for which the health resort in question is suitable, but we quite agree that such a proposal opens the way to much objectionable personal advertisement, and that the request for a photograph and biographical notes should not be entertained.

CHARGE AGAINST A PUBLIC VACCINATOR.

On Thursday, June 23rd, Hugh Stanley Revill, Medical Officer and Public Vaccinator for the Wandsworth and Clapham Union, surrendered to his bail at the Central Criminal Court on a charge of having given certain false certificates under the Vaccination Acts.

Mr. Avory, K.C., and Mr. Bodkin appeared to prosecute; Mr. Dickens, K.C., Mr. Matthews, and Mr. Theobald were for the defence.

The prisoner having pleaded guilty, Mr. Avory stated the facts.

Mr. Dickens having addressed the Court in mitigation of sentence, the Recorder postponed judgement until next session.

THE CORONER FOR SOUTH-WEST LONDON AND THE MEDICAL PROFESSION.

The following correspondence, which speaks for itself, has been forwarded to us for publication by Dr. Bateman, Secretary of the Medical Defence Union:

[*Copy of Letter sent to Mr. Troutbeck.*]

June 24th, 1904.

Dear Sir,—I was called in this morning to a child in St. Alban's Buildings named Brewood. The child was dead, and had been dead for at least two hours before my arrival. In the ordinary routine I sent a notice to your officer informing him of the death and of my inability to grant a certificate.

This afternoon he informed me that the *post-mortem* examination was to be performed on your order by another medical man.

As this is the fourth time in succession in which I have been passed over by you and not even called to give evidence as to the condition under which the body was found, I wish to ask you the reason why you have previously asked me to perform *post mortem* operations, and, so far as I know, you have always been perfectly satisfied with the result, as the examination has always been properly conducted and faithfully carried out in detail by me.

For the last fifteen years I have performed *post-mortem* examinations for the late Mr. Braxton Hicks and for Mr. Wyatt before him, and I cannot understand why I should be so completely ignored now as compared with the past.

Yours faithfully,

(Signed) Robert G. Reid.

176, Lambeth Road, S.E.

[*Copy of Reply to Dr. Reid by Mr. Troutbeck.*]

21, Great Smith Street,
Westminster, S.W.

Dear Sir,—In reply to your letter to me of yesterday's date, the question as to whether it is necessary for the purpose of ascertaining the cause of death, to call in a medical man, who has never seen the person in life, must depend on the particular circumstances of the case. It is not possible to finally say what evidence may be required.

This depends on what is said at the inquest. If the jury is then satisfied that the objects of the inquiry have been fulfilled no further evidence would be called.

I cannot discuss the personal questions referred to by you. Those matters are not settled without reasons, and it would be inappropriate for me to discuss them with you.

I need only point out that in the fulfilment of these public duties, a Coroner cannot bring personal considerations of any kind to bear in exercising his judicial discretion.

Yours faithfully,

(Signed) J. Troutbeck.

INQUESTS AFTER OPERATION.

Disgusted writes that he was recently attending a young woman suffering from appendicitis when symptoms of collapse suddenly supervened. After consultation with two other practitioners, an operation was performed; the patient regained full consciousness, but died two hours after. A death certificate was given in the following terms: "Appendicitis, acute peritonitis, incision and drainage, collapse." The registrar accepted this certificate, issued a burial order, and the interment took place. Our correspondent states that the coroner subsequently sent a constable to each of the three medical attendants asking a series of questions relative to the operation and the effects of the chloroform. Our correspondent expresses much surprise at these proceedings. On expostulating with the coroner, he was informed that it was necessary to obtain an independent statement from each medical man, and that, if a patient died under chloroform or from the effects of the operation, it was necessary to state it on the certificate, when the registrar would communicate with him, and that he should be bound to hold an inquiry.

*** In the annual report of the Coroners' Society of England and Wales, 1902-3, the following occurs:

"*Deaths after Operation and when under Anaesthetics.*

"Several letters have been received and important questions asked in connexion with these matters during the past year, in one instance the correspondence reaching twelve letters and extending over six weeks.

"It is an important subject, and without going into the details of each case submitted, it may be well to state that the coroners were advised that inquests should be held in all deaths occurring whilst under the influence of an anaesthetic, irrespective of whether the friends and those specially concerned in the administration of the anaesthetic and the operation were satisfied in every way. In cases, however, where the patient had recovered from the effects of the anaesthesia, and the death was due to a necessary operation or the disease for which the operation was performed, an inquest is not required, provided always that there is no allegation of neglect, serious rumours, or presumed want of skill

on the part of the operator, or that the friends of the deceased do not request an inquest for their satisfaction.

"Subdistrict registrars occasionally have to report to the coroner cases of death occurring after operation and the administration of an anaesthetic.

"In such cases coroners should have preliminary inquiries made.

"In the event of the certificate of the cause of death given by the medical practitioner being in similar terms as:

"Cancer of the liver.

"Operation.

"Shock.

and it is confirmed by the coroner's inquiries, an inquest would not be necessary. On the other hand should the certificate record:

"Cancer of the liver.

"Operation and administration of chloroform.

"Shock and syncope,

an inquest should be held."

MEDICAL EVIDENCE AND PROFESSIONAL SECRECY.

JUVENAL.—A medical witness is entitled to decline to answer any question which may disclose information communicated to or obtained by him professionally unless the judge orders him to do so. A medical witness will be protected legally in every way in giving such evidence.

MEDICAL ETIQUETTE.

JUSTITIA.—A. and B. are near neighbours in a large town. B. having only recently started (without buying) has practically no patients, and on going away for a summer holiday asks A. to see any one that may happen to turn up. A., not wishing to be unneighbourly, consents. (1) Are any new patients that have not before been attended by either A. or B., but who are sent on to A by the servants at B.'s house, to be considered as B.'s and treated on his behalf? (2) Are the fees for such attendance usually considered as due to A. or B? (3) Is A. morally restricted from attending such patients as his own at any future time and for a different illness? If A. is so restricted he obviously suffers for his neighbourly action in consenting to act for B., especially as the proximity of his house makes it likely that the patients would have gone on to A.'s house on finding B. away, whether sent on or not. Both A. and B. are anxious to act correctly in the matter, but both are in the early struggling stage, and have to consider what is due to themselves as well as what is due to one's neighbour.

*** (1) They should be considered as B.'s patients and treated on his behalf. (2) The fees should be divided unless A. intends to ask B. to act for him on some future occasion, when it may be worth while to allow the whole of the fees to go to B. on the understanding that this rule will hold good when B. does A.'s work. (3) A. would not be prevented from attending such patients in future illnesses; but this is always subject to the desirability of avoiding friction between medical neighbours who find it better not to take one another's patients without at least a little friendly explanation. We think that neither A. nor B. will suffer by treating the other as he would himself like to be treated.

A CORRESPONDENT writes: A. and B. are in practice in the same place, A. being senior in point of years and residence in locality. B. falls ill and calls in A. The ailment is slight, but A. takes occasion to place himself in communication with B.'s family, finally proposing an interview. On hearing this, B., not wishing to have his affairs canvassed in this way by A., requests that he will refrain for private reasons. There is no question as to B.'s moral conduct. A., however, persists in communicating anything and everything of his opponent's affairs that he may have become acquainted with, from his, A.'s, point of view, the result being that B.'s friends, by withdrawing financial support, prevent B. from continuing work in the locality. (1) Has A. committed a breach of professional decorum? (2) What is B.'s remedy?

*** If A. revealed facts with which he had become acquainted through his professional attendance upon B. he undoubtedly committed a breach of professional ethics.

M.B.—Having carefully considered all the circumstances of the case as stated by our correspondent, we do not consider that he would be justified in refusing to have any further professional relations with the brother practitioner who gave the certificate.

TENACULUM.—A principal cannot employ an agent to make a contract for him and then repudiate it, unless he has a very good reason for such action. We are advised that our correspondent's only remedy is to demand from the principal a week's salary and railway expenses: if refused, the amount might probably be recovered in the county court.

PRINCIPALS AND ASSISTANTS.

A. goes down into the country to take an assistantship. On arrival he decides not to stay, but consents to undertake the duties for a short time while the principal looks out for another assistant. At the end of three weeks another is found, and A. is paid for the three weeks at the rate of £100 per annum, which was to have been the assistant's salary. But the principal refuses to pay his railway fare. Is A. entitled to his railway fare?

*** Under the circumstances it is doubtful whether A. is legally entitled to his railway fare; but it would have been more becoming on the part of the principal to have paid it, considering the obligation he was under to A. for acting temporarily as his assistant.

MEDICAL ADVERTISING.

C. W. C.—Reports of accidents are sure to get into the press, and it is difficult to prevent the name of the medical man called in from appearing. We do not think it is fair to assume that he is in any way responsible for the notice.

RELATIONS WITH AN UNREGISTERED DENTIST.

DENS writes that in his town the only dentist is unregistered, and that this man has been engaged to make a set of false teeth for one of our correspondent's patients, but that it is necessary to remove some teeth under gas, and that the gas apparatus belongs to the dentist in question. He wants to know whether it would be considered covering the dentist if he borrows the gas apparatus and the extraction takes place at his house, he and his son, who are both qualified medical practitioners, administering the anaesthetic and operating? Our correspondent's difficulties are increased by the fact that the unqualified dentist is a patient, and that he may offend him as well as the patient whose teeth require extraction, and may "thus probably suffer pecuniary loss."

*** We think our correspondent's relations with the unregistered dentist are undoubtedly risky, and we agree that he is on the horns of a dilemma. We should advise him to purchase a gas apparatus for future use, even if he borrow on this occasion.

THE RELATIONS OF MEDICAL OFFICERS OF HEALTH WITH THEIR PROFESSIONAL COLLEAGUES.

SPERO writes: I am attending and have notified to the medical of health a case of typhoid fever. On the seventeenth day of the disease (spots still on abdomen and stools containing blood) the medical officer of health of this district visited the patient in my absence and examined him: he said it might not be typhoid fever at all but only "gastric," and wanted the patient to send for me then and there to take some blood to be sent off for the Widal test I suppose. As they either would not or could not send he left the usual apparatus for me to draw the blood at the next visit. On my visit the next morning I found the patient's temperature 103 to 106° F., that a considerable quantity of blood had come away in the stools, and the patient was altogether worse than when I left him. He and his wife were both considerably alarmed at the prospect of blood being withdrawn. I immediately assured them that I should do nothing of the kind as there was no doubt as to the disease. I desire your opinion on two points, namely (1) Has a medical officer of health the right to intrude on a patient and examine him in the absence of the regular medical attendant? (2) Is it any part of the duty of a medical officer of health to throw doubt on the regular attendant's diagnosis, and is this conduct becoming to a professional man or a gentleman?

*** (1) A medical officer of health has no right to intrude upon a patient and examine him except with the patient's consent, but the consent or presence of the regular medical attendant is not necessary, although we have repeatedly expressed the opinion that the medical officer of health should give notice of his intention to visit the patient, so that the regular medical attendant may be present if he choose. (2) It is no part of the duty of the medical officer of health to throw doubt on the diagnosis except by communicating with the medical practitioner in charge of the case.

"THE PEOPLE'S MEDICAL ADVISER" AND "THE MESSENGER OF HEALTH."

R. C. C.—The first of these publications appears to be a volume of domestic medicine, and the second is an eight-page paper, both issued by the World's Dispensary Medical Association of 3, New Oxford Street, London, W.C. They are apparently intended to advertise the nostrums recommended by an unregistered practitioner styling himself Dr. R. V. Pierce or R. V. Pierce, M.D., as he signs his portrait which adorns the front page of the Messenger of Health. As he offers to treat patients who desire to consult him, either personally or by letter, the latter being apparently preferred by him, there seems to be little doubt that he is infringing the Medical Acts. We have referred the case to the Medical Defence Union.

THE METHODS OF SOME SPECIALISTS.

W. G. D. writes: I fancy that the methods of Dr. Blank Dash of Piedish Square must be fairly well known, as he sent a precisely similar notice to a patient of mine. In this case, however, the proceeding was even less defensible than in your correspondent's, as I had originally recommended the patient for consultation.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,509 births and 3,867 deaths were registered during the week ending Saturday last, June 25th. The annual rate of mortality in these towns, which had been 14.6, 14.2, and 13.8 per 1,000 in the three preceding weeks, further declined last week to 13.2 per 1,000. The rates in the several towns ranged from 4.7 in Willesden, 7.0 in King's Norton, 7.1 in Aston Manor, 7.4 in Wolverhampton, 7.8 in Wallasey, 8.0 in East Ham and in Stockton-on-Tees, 8.3 in Hornsey, and 8.6 in Walsall and in Smethwick to 17.8 in Liverpool and in Warrington, 18.3 in Stockport and in Oldham, 18.6 in West Bromwich, 18.9 in Middlesbrough, 20.0 in Sunderland, 22.0 in Bootle, and 22.3 in Birkenhead. In London the rate of mortality was 12.8 per 1,000, while it averaged 13.4 per 1,000 in the seventy-five other large towns. The mean death-rate from the principal infectious diseases in the seventy-six towns was 1.5 per 1,000; in London this death-rate was equal to 1.4 per 1,000, while among the seventy-five other large towns the rates ranged upwards to 2.9 in Brighton, 3.0 in Liverpool, 3.1 in Hull, 3.4 in Oldham, 4.1 in Birkenhead and in Burnley, 4.6 in Warrington, and 4.7 in St. Helens. Measles caused a death-rate of 1.1 in Oldham, 1.4 in Liverpool and in Manchester, 1.5 in Halifax, 1.7 in Brighton, in Wallasey, and in Bootle, 2.3 in Hull, 2.7 in Birkenhead, 3.5 in St. Helens, and 3.6 in Burnley; scarlet fever of 1.5 in Warrington; and whooping-cough of 1.1 in Middlesbrough, 1.3 in Gateshead, 2.0 in Blackburn, 2.2 in Huddersfield, and 2.3 in Warrington. The mortality from diphtheria, from enteric fever, and from diarrhoea showed no marked excess in any of the large towns.

One death from small-pox was registered in London, one in Walthamstow, one in Stockport, and one in Newcastle-on-Tyne, but none in any other of the large towns. The Metropolitan Asylums Hospitals contained 83 small-pox patients on Saturday last, June 25th, against 96, 95, and 80, on the three preceding Saturdays: 16 new cases were admitted during last week, against 10, 21, and 7, in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1,673, 1,674, and 1,630 at the end of three preceding weeks, had further declined to 1,629 at the end of last week; 199 new cases were admitted during the week, against 207, 193, and 206, in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending June 25th, 1,049 births and 526 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 18.1, 16.2, and 17.0 per 1,000 in the three preceding weeks, further declined last week to 15.9 per 1,000, but was 2.7 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 12.3 in Leith and 14.6 in Aberdeen, to 18.0 in Paisley and in Greenock, and 21.1 in Dundee. The death-rate from the principal infectious diseases in these towns averaged 2.2 per 1,000, the highest rates being recorded in Dundee and Perth. The 235 deaths registered in Glasgow included 13 which were referred to whooping-cough, 9 to diarrhœa, 5 to measles, 2 to diphtheria, and 1 to small-pox. Five fatal cases of whooping-cough, 4 of measles, and 2 of diarrhœa were recorded in Edinburgh; 7 of diarrhœa, 3 of whooping-cough, and 2 of "fever" in Dundee; 2 of whooping-cough and 2 of diarrhœa in Aberdeen; 2 of whooping-cough in Paisley; and 2 of diarrhœa in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, June 25th, 660 births and 319 deaths were registered in six of the principal Irish towns, against 483 births and 362 deaths in the preceding period. The mean annual death-rate in these same towns, which had been 29.1, 18.4, and 20.1 per 1,000 in the three preceding weeks, fell to 16.4 per 1,000 in the week under notice, this figure being 3.2 per 1,000 above the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 12.6 in Londonderry and 13.6 in Waterford to 19.2 in Cork and 20.5 in Dublin. The death-rate from the principal zymotic diseases during the same period and in the same six Irish towns averaged 0.7 per 1,000, or 0.2 lower than during the preceding week, the highest figure, 1.0, being recorded in Belfast, while Limerick and Waterford again recorded no deaths under this heading at all. Whooping-cough was still the leading cause of death, but fell considerably. From small-pox, scarlet fever, typhus, and simple continued fever no deaths were registered in any part of Ireland, but measles caused 2 deaths in Belfast, 1 in Dublin, and 1 in Galway. To diphtheria were ascribed 2 deaths in Dublin and 1 in Londonderry. Only 2 deaths were registered from enteric, both in Belfast.

DUTIES OF PUBLIC VACCINATOR.

ALPHA writes: I am a public vaccinator in the centre of a large town and live on the edge of my district. There has recently been a small-pox scare in the town, and the names of the different public vaccinators have been posted about the town. Many people in my immediate locality, although out of any regular district, have both come to my surgery for revaccination, and also sent for me to their homes to either vaccinate or revaccinate. Am I right in vaccinating or revaccinating such cases and entering them in my register, or should I refuse to do so?

*** The Vaccination Act, 1867, Section 11, reads: "Where a district shall have been or shall be assigned to a public vaccinator he shall not be entitled to be paid a fee in respect of the vaccination or revaccination of any child or other person resident out of his district, except in the case of a vacancy in the office of vaccinator in any adjoining district, or of the default of the vaccinator therein, of which default notice shall have been given to him in writing by the guardians, or when a relieving officer of his union or parish shall in writing refer any child to him for vaccination." The best method of dealing with the difficulty our correspondent mentions is to get postcards printed, with the addresses of the various public vaccinators for the surrounding districts, and either give or send them to the applicants for vaccination from the respective districts. During the London epidemic the Local Government Board made special allowances in respect of the revaccination of persons employed in factories, workshops, and offices in a public vaccinator's district, though not actually living in the district, but this was only on formal application by Boards of Guardians. The guardians can pay for printing of such postcards.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—House-Surgeon, resident. Salary £75 per annum.

BRECON AND RADNOR ASYLUM, Talgarth.—Assistant Medical Officer, resident. Salary, £140 per annum.

BRIGHTON THROAT AND EAR HOSPITAL, Church Street. Non-resident House-Surgeon. Salary at the rate of £75 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Assistant House-Surgeon, resident. Salary, £60 per annum.

DOWNPATRICK: DOWN COUNTY INFIRMARY.—House-Surgeon, resident. Salary, £61 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell.—Pathologist and Registrar. Honorarium, £100.

FARRINGDON GENERAL DISPENSARY, 17, Bartlett's Buildings, E.C.—Resident Medical Officer. Salary, £120 per annum.

GRAVESEND HOSPITAL.—House-Surgeon, resident.—Salary, £100 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Surgeon Dentist.

HUDDERSFIELD INFIRMARY.—Junior House-Surgeon, resident. Salary, £40 per annum.

HULL ROYAL INFIRMARY.—Casualty House-Surgeon, resident. Salary, £50 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead Road.—Resident Medical Officer. Salary, £200 per annum.

LONDON THROAT HOSPITAL, Great Portland Street, W.—House-Surgeon. Honorarium at the rate of £50 per annum.

MANCHESTER: VICTORIA UNIVERSITY.—Junior Demonstrator in Physiology.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officer for the Asylum at Darenth, resident. Salary £150 per annum, rising to £170.

NEW ZEALAND: SEACLIFFE LUNATIC ASYLUM, Dunedin.—Assistant Medical Officer, resident. Salary, £350 per annum.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road.—Assistant Surgeon.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary, £160 per annum.

QUEEN'S JUBILEE HOSPITAL, Richmond Road, S.W.—House-Surgeon (Locum Tenens), resident. Honorarium, 2 guineas weekly.

ROYAL ORTHOPAEDIC HOSPITAL, Bolsover Street, W.—House-Surgeon and Registrar. Salary at the rate of £200 per annum.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington.—Demonstrator of Biology. Salary, £70 per annum.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon. Salary commencing at the rate of £70 per annum.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon, resident. Salary at the rate of £40 per annum.

THROAT HOSPITAL, Golden Square, W.—Honorary Anaesthetist.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Two Assistant Resident Medical Officers. Salary, £100 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House-Surgeon. Salary, £50 per annum.

WINCHESTER: ROYAL HANTS COUNTY HOSPITAL.—House-Physician, resident. Salary, £65, rising to £75 per annum.

APPOINTMENTS.

BEARDS, Ernest J., M.R.C.S., L.R.C.P.Lond., Public Vaccinator, Parish of Balsall Heath, King's Norton Union.

CRUICKSHANK, A., M.B., C.M.Aberd., Certifying Factory Surgeon for the Stonehaven District, Kincardineshire.

DINGLE, C. V., M.D.Durh., B.Hy., D.P.H., Medical Officer of Health, River Tees Port Sanitary Authority.

FARQUHARSON, D. A. R., M.B., C.M.Aberd., Certifying Factory Surgeon for the Washington District, Durham.

HEBD, R., B.A., B.C.Camb., L.S.A., Medical Officer of Health, Hevsham Urban District.

JOHNSON, F. W., M.B., Ch.B.Vict., Certifying Factory Surgeon for the Bawtry District of the Counties of York and Nottingham.

KEENAN, J. F., M.B., B.Ch.R.U.I., Certifying Factory Surgeon for the Ballinalee District, Longford.

KERWIN, P. J., L.R.C.P. & S., Surgeon to the Hospital and Government Medical Officer Port Douglas, North Queensland.

LENTAIGNE, John, F.R.C.S.I., Medical Referee under the Workmen's Compensation Acts for the county and city of Dublin.

MAYOR, George A., M.A., M.B., Ch.B.Aberd., Resident Medical Officer to the Aberdeen City (Fever) Hospital, *vice* William E. Taylor, M.B., Ch.B., resigned.

MAW, G., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Ulceby District, Lincolnshire.

MOSSMAN, F. V. H., L.S.A., District Medical Officer of the Wortley Union.

NESBITT, R. G., L.R.C.P. & S.Irel., Medical Officer of Health, St. Just Urban District.

PARSONS, John Herbert, B.S., D.Sc., F.R.C.S., Ophthalmic Surgeon to the Hospital for Sick Children, Great Ormond Street.

PRYCE, H. Vaughan, F.R.C.S.Eng., M.A., M.B., B.C.Cantab., Honorary Medical Officer to the Brighton, Hove, and Preston Dispensary.

SHORT, T. Sydney, M.D.Lond., M.R.C.P., D.P.H.Cantab., Honorary Physician to the General Hospital, Birmingham.

SIMPSON, Lilian G., M.D.Brux., L.R.C.P. & S.Edin. Senior Resident Medical Officer to the Canning Town Medical Mission Hospital and Dispensary.

WAUGH, R. J., M.R.C.S., L.R.C.P., Third Resident Assistant Medical Officer, Bethnal Green Parish Infirmary.

WILLIAMS, W., M.A., M.D., Examiner in Preventive Medicine in the University of Oxford.

WILSON, J. S., M.B., C.M.Aberd., Medical Officer of Health, Brierfield Urban District.

DIARY FOR NEXT WEEK.

WEDNESDAY.

Obstetrical Society of London, 20, Hanover Square, W., 8 p.m.—Specimens will be shown by Dr. Lewers, Dr. Purslow, Dr. Sikes, Dr. Tate, Mr. Alban Doran and Dr. Herbert Williamson, Dr. Victor Bonney, Dr. Handfield-Jones, and Dr. Frank Taylor. Short Communication: Dr. Robert Boxall: Case of Inverted Uterus—Spontaneous reposition. Paper: Dr. Pembrey (introduced by Dr. Amand Routh) and Mr. G. Bellingham Smith: On Sacs containing Fetuses and lying free in the Peritoneal Cavity of a Rabbit.

THURSDAY.

Roentgen Society, 20, Hanover Square, W., 8.30 p.m.—Annual general meeting.

FRIDAY.

Ophthalmological Society of the United Kingdom, 11, Chandos Street, Cavendish Square, W., 8 p.m.—Paper: Mr. George Coates. Lantern demonstration on Cases of Thrombosis of the Central Vein. Cases by Mr. E. J. Smyth and Mr. Rayner D. Batten. Annual meeting after ordinary meeting.

POST-GRADUATE COURSES OF LECTURES.

Charing Cross Hospital Thursday, 4 p.m.—Surgical Cases.

Hospital for Consumption and Diseases of the Chest, Brompton, Wednesday, 3 p.m.—Varieties of Pulmonary Tuberculosis.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Lecture on Anaemia in Childhood.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—Demonstrations will be given at 4 p.m. as follows: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Eye. Lectures will be delivered at 5.15 as follows: Monday, Observations on Diet; Tuesday, the Evolution of Sanatorium Treatment of Consumption; Wednesday, the Treatment of Common Nerve Injuries; Thursday, Obsessions and their Treatment by Suggestion.

Mount Vernon Hospital for Consumption and Diseases of the Chest, 7, Fitzroy Square, W., Thursday, 5 p.m.—Diagnosis of Early Pulmonary Tuberculosis (illustrated by cases).

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Lectures will be delivered at 3.30 p.m. as follows: Tuesday, Syphilitic Diseases of the Nervous System.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered at 5 p.m. as follows: Monday, Suppuration of the Accessory Sinuses of the Nose, with lantern slides; Tuesday, Suppuration of the Accessory Sinuses of the Nose, with lantern slides; Wednesday, Practical Medicine; Thursday, Practical Surgery; Friday, Treatment of Dilated Stomach.

St. John's Hospital for Diseases of the Skin, Leicester Square, W.C.—Thursday, 6.15 p.m., Diseases of Hair.

St. Peter's Hospital, Henrietta Street, W.C.—Lecture-Demonstrations will be given at 3.30 p.m. as follows: Tuesday, Surgical Diseases of the Kidneys; Saturday, Diagnosis in Urinary Disease.

Samaritan Free Hospital for Women, Marylebone Road, N.W.—Thursday, 3 p.m.—Lecture on Pelvic Cellulitis.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 5s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

MARTIN.—On June 23rd, at Eastbourne, the wife of Antony A. Martin, M.D.Lond., of a son.

TROTTER.—At Redlington, Northumberland, on June 25th, the wife of R. S. Trotter, M.D., of a son.

WALKER.—On June 29th, at Oakwood Grange, Roundhay, Leeds, the wife of H. Secker Walker, F.R.C.S., of a son.

MARRIAGES.

BELLAMY—ALDRED.—On June 23rd, at St. John's Church, Chester, by the Rev. T. J. Evans, M.A., Henry Key Bell Bellamy, surgeon, eldest son of J. H. de C. Bellamy, of Oak Hill Park, Liverpool, to Isabel, third daughter of Bold Aldred, of Kelsall, Cheshire. At home Grenhill House, Stockport, August 10th and 11th.

SHAW—ROBSON.—On June 16th, at St. Cuthbert's Church, Darlington, by the Rev. F. W. Mortimer, Vicar of the Parish, Raymond Henry Shaw, M.B., B.Ch. (Great Yarmouth), son of Benjamin Shaw, B.A., Newcastle-upon-Tyne, to Katharine, daughter of James Hutchinson Robson, of Elm Villas, Darlington.

SOWRY—CADDICK.—On June 23rd, at St. George's Church, Newcastle, Staffs., by the Rev. S. O'Conor Fenton, M.A., Vicar of the Parish, and the Rev. Heywood Harris, M.A., George H. Sowry, M.B., B.S.Lond., F.R.C.S.Eng., younger son of T. A. Sowry, of Leeds, to Stella, eldest daughter of John Caddick, Brampton Lodge, Newcastle, Staffs.

DEATHS.

GRAHAM.—On Sunday, June 19th, at his residence, Laurel Bank, Hilldrop Road, N., Thomas Graham, M.R.C.S.Eng., L.S.A.

MURPHY.—On June 28th, at 6 Thornhill Crescent, Sunderland, the residence of her son, Sarah Murphy, widow of William Chapman Murphy, M.D., aged 80.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London. Letters concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone, unless the contrary be stated.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THE JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the EDITOR at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is Editorship, London. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is Articulate, London.

TELEPHONE (National):—EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

GEORGIUS wishes to know whether *A System of Anatomical Plates, Dedicated to King George IV. by John Lizars, F.R.S.E.*, is valuable on account of its merit as a work of art or as a rarity.

TREATMENT OF LARGE MOLE.

H. M. R. would be glad to receive any suggestion as to how best to treat or remove a somewhat extensive mole on the chin of a baby 6 months old. Its appearance was not noticed until six weeks after birth, when it appeared as a slight brown staining of the skin, but is now getting much darker. Its dimensions are about 1 in. by 1 in. Is the application of radium of use and free from risk of serious dermatitis?

PROPOSED STERILIZATION OF CERTAIN DEGENERATES.

DR. R. R. RENTOUL (Liverpool) writes: I shall be much obliged if you will allow me, through the BRITISH MEDICAL JOURNAL, to try to obtain any statistics showing the number of (*a*) unmarried, (*b*) lunatic, (*c*) epileptic, or (*d*) feeble-minded females who were confined last year in England and Wales. It will be noticed I refer to the unmarried and insane. I have lately called attention to the statement made by the Local Government Board inspector for Yorkshire, where he states that in one workhouse five unmarried feeble-minded females had been confined of fifteen children; and to the statement of Dr. Craddock, Medical Superintendent, Gloucester County Lunatic Asylum, who refers to a statement made where an idiot female married a partially idiot male, and where she had been confined nine times. If any practitioner will kindly oblige me with similar facts I shall be deeply obliged. I may add that so far my proposal to sterilize such persons is receiving a wide support, even from Canada, America, and Australia. Let us hope that soon this country will find the electorate so educated as to give it their support.

ANSWERS.

W. W.—The aniline dyes, such as aniline orange, quoted in druggists' price lists, are practically without medicinal action in such doses as would be used for colouring mixtures. Our correspondent will probably find solutions of 1 in 1,000 to 1 in 10,000 answer his purpose.

CLASSIFICATION OF ORCHIDS.

E. C. F.—The following books may be recommended: *Annals of the Royal Botanic Garden, Calcutta*, vol. v, part 1., A Century of Indian Orchids, by Sir J. D. Hooker, £2 10s. (about). H. N. Ridley, An enumeration of all Orchideae hitherto recorded from Borneo, *Journ. Linn. Soc.* (Botany), vol. xxxi, p. 260, etc. Price 9s. for the part. H. N. Ridley, The Orchideae and Apostasiaceae of the Malay Peninsula, vol. xxxii, of same publication, pp. 21-415. Price 24s.

ENFADADIZA.—Our correspondent's description is not quite clear, but if the child, as would appear, is practically an imbecile we would suggest that he should communicate with the Secretary of the Midland Counties Asylum, Knowle, near Birmingham, asking the lowest terms at which such a case would be taken.

CONCRETE MOSAIC OR TERRAZZO.

I.M.S.—We are indebted to Mr. T. W. Cutler, F.R.I.B.A., for the following information as to the method of preparing a terrazzo floor. A rough concrete foundation is first laid, and levelled within five-eighths of an inch of the finished surface line, to receive the plastic marble mosaic. The marble and cement is gauged in the proportion of 2 of marble chips (which vary in size from one-sixteenth of an inch to a quarter of an inch, or larger), to 1 of cement, and laid flush with screeds, laying and beating it in position with a long wood hand-float. The surface is then ironed with a laying trowel until it is smooth and fair. If the marble does not show equally, the bare parts are filled in with marble by hand, care being taken that the chips are equally distributed, also that their flat surfaces are uppermost, and that the matrix and chips are perfectly solid and free from ridges or holes. The floor is then left until it is perfectly set and hard, and it is then fit to polish. This is done by means of a stone polisher, water and marble dust, or fine slag powder. The stone polisher is a piece of hard stone from 8 in. to 12 in. square, and about 3 in. thick, into which an iron ring is inserted and secured with lead. A wooden handle from 4 ft. to 6 ft. long, with an iron hook at one end, is inserted into the ring, so that the handle is firm on the stone, yet has sufficient play to be moved freely backward and forward. The polishing should not be attempted until the stuff is thoroughly set, otherwise the polishing will destroy the face of the cement, and cause a vast amount of extra labour in grinding the surface down until free from holes. In England the marble chips are obtained from Italy, and the work is done by Italian workmen. The cost in London is about 8s. 6d. a square yard. Granolithic which is also largely used for the floors of passages in hospitals, is made in a similar way, but the top is filled in with granite chippings; with use, and in time, a fairly good polished surface is obtained. An objection to terrazzo is that it is apt to crack where iron joists are used. Mr. Cutler informs us that this may be avoided by laying over the joists imbricated slates before applying the bed of concrete.

LETTERS, NOTES, ETC.

AUTOMOBILES FOR MEDICAL MEN.

THE DURYEA COMPANY (Coventry) writes: We have been interested in reading the article published in the BRITISH MEDICAL JOURNAL of June 25th, concerning automobiles for medical men, but we think you are hardly fair to those gentlemen whose experiences were given in the *Autocar*, or to the subject itself, when you imply that all those who have written and expressed themselves in favour of motor vehicles for use are enthusiasts, and therefore not to be taken too seriously. Undoubtedly it is a serious matter for a medical man with none too large an income to decide upon, and we do not think that there would be a gain financially for the one-horse man. Where, however, a practice is sufficient to call for the use of two or more horses, then an automobile will commence to assert itself. Doubtless, it costs some men more than others to use horses. We know very little about horses ourselves, but we had a letter last week from a medical man in the Channel Islands who gave us as his experience that the cost of keeping three horses for his practice was not less than £300 per annum. Now, quite apart from enthusiastic or *exparte* statements, it has been proved over and over again by careful records of expenditure, that, according to the type of car and care taken by the user, the cost of running such a motor car as would be used by a medical man in his practice—that is, one of the medium class, and not one of the 30-horse power £1,000 articles—works out at from 4d. to 6d. per mile. In some cases less, in few cases more. This figure, including cost of fuel, tyres, repairs, coach-house rent, and charge of man or boy for cleaning purposes, as well as 20 per cent. depreciation on the value of the car. Taking the average distance covered by a man with a good country practice, such as would call for the use of a motor car, and reckoning that he uses it only for his professional purposes, we presume 30 miles per day, on an average of say 350 days, would be about a fair calculation, or say 10,500 miles per annum, which, on the higher computation, would work out at £262 10s., whilst at the lower figure the expenditure would be £175 only. We take it that few medical men spend less than this upon their horses, allowing for depreciation, interest on capital, and such other items; so that considered purely from the £ s. d. comparative point of view, the motor vehicle will in many cases show an actual advantage, and in few cases the expenditure will be more. Entirely ignoring the saving of time, which, after all, is the most important item which the medical man has to consider, we have no hesitation in saying that, without any attempt at hard driving or "scorching," with a decently-powered car, two-thirds of the driving time would be saved. This in itself is alone worth the expenditure—at least we imagine so—and then to this is thrown in the enjoyment of a new form of healthy recreation and a new interest in life. We are afraid you are rather hard on the automobile, and really not altogether—though unintentionally—fair.

*** Our correspondents have entirely misunderstood the object of the articles published in this JOURNAL if they suppose that there is any wish to discourage the use of automobiles by medical men. It is very probable that in a few years' time automobiles will be found largely to have replaced horses and carriages in medical work, and that their introduction is destined to have a far-reaching effect in many directions. The number of medical men who are employing them with satisfaction to themselves is already considerable, and the investigations which we made last winter suggest that the estimate of expense made by our correspondent is in no way understated. We fully admit, too, the very great advantage of the saving in time to which allusion is made. The initial expense, however, is considerable, and the question of change from horses to cars is one to be approached with much caution, especially by a man who already has a well-equipped stable and no superfluous working capital. The question is one each man must decide for himself according to the

nature of his practice and the state of his banking account; and, when considering the matter, he should as far as possible remain uninfluenced by the enthusiasm of his acquaintances. If their enthusiasm were based upon financial considerations alone there would be less to be said against it; but motoring is a distinctly pleasurable occupation in itself, and those who are able to indulge in it are apt to be less influenced by the purely business aspect of the question than should be the man who has still to take the plunge.

The Irish Poor Law and the Profession in Ireland.

Dr. Saml. Agnew (Lurgan) writes: The agitation in the Irish Poor-law Medical Service for the redress of grievances has evoked much sympathy amongst the profession in England, as testified to by the resolutions passed by the British Medical Association last year at Swansea. The most powerful lever we can use to move the Local Government Board will be the dearth of candidates for vacant dispensaries, and in order to discourage young medical men from applying for such vacancies, might I suggest that those practitioners who were so fortunate as to escape from the allurements of the Irish service and settle in England during the latter half of the last century should give us their experience, and contrast the possibilities of the prospects of success in each country? I know myself probably a score such, and I do not believe that any single one of them has ever had reason to regret the change he made. Indeed, I believe all such with whom I have been acquainted have been able to invest very largely out of their savings, whilst their brethren on this side of the channel have been struggling to make ends meet. I would further suggest that when they require assistants or *locum tenentes* our brethren in England might ask some of the heads of the colleges here to recommend young men who would be willing to accept the appointments. They would be certain to get good reliable men, who would be thoroughly up to date. The salaries given would command the very best, and be a greater attraction than the miserable fees they would receive if engaged in dispensary practice.

Erratum.—The number of cases of small-pox under treatment at Bristol on June 21st was 3, and not 37, as printed last week.

The Obstetric Bag.

Dr. John R. Hamilton (Hawick) writes: In the British Medical Journal of June 4th Dr. Ballantyne, of Edinburgh, in a very careful article on asepsis, concludes by pointing out the danger of the midwifery bag—the danger dreaded by him being the harbouring of different varieties of bacteria in and about the bag. No doubt bacteria will rest on the bag—as they do on glass, on the walking-stick, on the umbrella, and on a variety of odds and ends about a room. Young obstetricians forget that parturition is a natural process, ending satisfactorily if not over-meddled with. It can hardly be compared with surgery, which deals with the abnormal. Absolute aseptic midwifery is an impossibility. I believe, with Dr. Ballantyne, that the bag of to-day is dangerous, but the danger lies in its size. It can hold too many instruments of offence—more potent to damage than the most subtle germ, and at the same time being the germ's true friend. I would recommend all young practitioners to procure a very small leather bag if they desire to be successful obstetricians. They will find in the course of twenty-five years few mishaps if they keep their hands clean and do not fuss too much.

Old Pharmacy.

Dr. Thomas Tuckey (Par Station) writes: I have an old Delft jar exactly like No. 3 in Dr. Plowright's interesting article; it is white glaze, with the usual scroll, and angel with spread wings; on the scroll is printed stom. c. v. gym. p. Will any reader kindly tell me what old pharmaceutical preparation it is?

It is not R "Recipe" take of. This is proved by the ingredients being in the genitive case in a well-written prescription. For example: R Succi pomorum agrestium libram dimidiam; syrupi de Rubo Idaeo unciam unam. Fiat gargarisma. Opera Thomae Sydenham. Sydenham Society, p. 503.

General Registration of Hours of Birth.

M.R.C.S., L.R.C.P. writes: It has occurred to me that it might prove very useful and interesting if the Registrar-General instructed the registrars of births throughout the country to obtain the hours of birth as well as the days of the week on which they take place, and published a well-digested statistical record of the results, arranging them in individual town and country groups. The record should be at least an hourly one, and if carried out very completely for a year or two, if not permanently, might perhaps lead to the discovery of some lunar cycle, or the effects of social customs in different districts that the local medical men could best interpret.

Raising Subscriptions.

Torquinian writes: There is no organized system in our profession for raising subscriptions: recently £250 was asked for and I doubt if it is got yet, whereas if we had an organized system for collecting, five thousand subscribers of only 1s. each would bring in the sum without any one feeling the weight.

Early Pregnancy.

With reference to a case recorded in the British Medical Journal of June 18th, at p. 1472, of pregnancy in a girl of 12 years, a correspondent has forwarded a copy of the *York Herald* for October 19th, 1881. This contains a reference to a case in which a child of 8 years of age only was found enceinte at Rillington, Yorks, in 1880. Early in the pregnancy the case appears to have been reported by a Dr. Dodds to the police of the locality, who, however, neglected for some months to take any action. When they did so the father, a young man of the neighbourhood, fled to America. Owing to this miscarriage of justice the Home Secretary held an inquiry and addressed a letter to the Chairman of Quarter Sessions for the East Riding of Yorkshire. It is in an account of the proceedings of the Sessions at which this letter was considered that a reference to the case is contained, no material details being furnished, beyond the fact that the girl's age was 8 and that she was delivered of a male child in March, 1881.

Letters, Communications, Etc., have been received from:
A A. S. N. C.; Mr. R. A. Anderson, Dublin; Dr. S. Agnew, Lurgan; A. B.; Aqua; Alpha. **B** Mr. E. S. Bishop, Manchester; W. T. Brooks, M.B., Oxford; British-American Co., Manager of, Coventry; Dr. E. R. Bowen, Cardiff; J. E. Blomfield, M.B., Sevenoaks; Mr. A. F. Bradshaw, Oxford; Dr. H. Barnes, Carlisle; Dr. J. R. Bradford, London; Dr. E. A. Boyd, London; Mr. L. A. Bidwell, London; British Gynaecological Society, Secretary of, London; Mr. W. M. Beaumont, Bath; Boomerang. **C** Dr. A. Crombie, C.B., London; W. J. Cale, M.B., Bury St. Edmunds; Mr. R. C. Chicken, Nottingham; Dr. J. B. Cleland, London; Mr. L. Cullingworth Nottingham; Mr. C. W. Cunnington, London; Messrs. T. Christy and Co., London; Mr. C. A. Collins, Danbury, Conn.; C. L.; Mr. P. J. Cammidge, London. **D** Disgusted; Dens; Mr. J. T. Dodd, Oxford; Dr. H. Davy, Exeter; T. A. Dukes, M.B., Croydon. **E** Mr. F. C. Evill, High Barnet; Ethics; Mr. J. F. Elliott, Verulam, Natal; "Electrical Review." Editors of the, London; Mr. G. Y. Eales, Torquay. **F** E. R. Fothergill, M.B., London; Mr. C. Fay, St. Helens; Dr. R. Fielding-Ould, London. **G** Georgius; O. C. Gruner, M.B., Leeds; Dr. W. Gosse, Sittingbourne; Surgeon-Major J. W. T. Gilbert, Folkestone; Mr. R. Girvan, Maybole; G. P.; Dr. H. Grey, Kingsbridge. **H** Mr. J. Hutchinson, London; Dr. M. L. Heyburn, Lowestoft; Mr. T. G. Horder, Cardiff; Messrs. Holden Bros., London; H. M. R.; Mr. J. Hill, London; Mr. C. B. Hill, Haywards Heath; F. G. Haworth, M.B., Darwen; Dr. A. R. Henchley, Canterbury. **J** Mr. H. Jones, Hereford; Justitia; Dr. R. Jones, Woodford Bridge; Juvenal; Dr. G. P. Johnson, Stoke-on-Trent; Messrs. T. C. and E. C. Jack, Edinburgh. **K** Mr. G. M. Keevil, London. **L** Dr. A. E. Laking, Folkestone; F. H. Low, M.B., London; Dr. T. Lumsden, Oxford; G. R. Livingston, M.B., Dumfries; K. F. Lurd, M.B., London. **M** M.D.; C. A. Mercier, M.B., London; Mr. H. J. Manning, Salisbury; Mr. J. MacAlister, Manchester; G. B. Muriel, M.B., Whitehaven; J. K. Murray, M.B., Whittlesea, C.C.; N. Macvicar, M.B., Lovedale, C.C.; M.R.C.S., L.R.C.P.; Dr. E. L. McSheehy, Wimbledon; Dr. W. F. MacCarthy, Bristol; Mr. E. Merck, Darmstadt; Mr. J. O McCreery, Whickham; Sir W. Macewen, Glasgow; W. McLean, M.B., Fortrose. **N** Nepos; Mr. R. G. Nesbitt, St. Just. **O** Dr. J. Oliver, London. **P** Puzzled; Provincial; Dr. F. G. Proudfoot, Oxford; Mr. N. Porritt, Peel, Isle of Man; Perplexed; Mr. E. L. Pope, Dover; Captain A. E. H. Pinch, London; Post Virtutem Curro. **R** Dr. J. Ritchie, Oxford; Mr. J. F. Rey, Fleet; Miss A. E. Railt, London; J. D. Russell, M.B., London; Dr. S. J. Ross, Bedford; R.A.M.C.; Dr. W. Ramsden, Oxford; Dr. R. R. Rentoul, Liverpool; Dr. W. F. Robertson, Edinburgh. **S** Mr. H. B. Symors, Cheltenham; Dr. F. M. Sandwith, London; Spero; Dr. J. Stewart, Glasgow; Messrs. Spottiswoode and Co., London; Mr. P. M. Short, London; Mr. G. B. Stocker, London; E. Stainer, M.B., London; Dr. D. Sommerville, London; Dr. F. W. Samuel, Louisville; Dr. W. H. Symons, Bath; Dr. A. Sheen, Cardiff; Messrs. Smith, Elder and Co., London; Mr. A. F. Sieveking, London. **T** T. Tuckey, M.B., Par Station; Dr. W. Tate, London; Tenaculum; Mr. W. H. Theobold, London; Dr. J. M. Taylor, Philadelphia; W. A. Taylor, M.B., Perth; Dr. A. W. Thomas, Boscombe; Dr. S. Taylor, London; Dr. J. R. Thomas, Exeter; Torquin an. **V** G. H. Vos, M.B., London. **W** Mr. F. W. Willway, Grimsby; Dr. W. Wingrave, London; Mr. C. G. Watson, London; Dr. J. Wishart, Dudley; Mr. H. Wilson, London; Mr. C. H. Warren, London; Dr. Weiss, Basle; Messrs. J. Wiley and Sons, New York; Dr. Weyll, Langensohwalbach; W. G. D.; Dr. F. Willcocks, London; Mr. C. J. Wright, Leeds. **X** X. Y. Z.

BOOKS, Etc., RECEIVED.

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Remarks
ON
THE PREVENTION OF VENTRAL HERNIA AS A SEQUEL TO ABDOMINAL SECTION.

BY E. STANMORE BISHOP, F.R.C.S.ENG.,
Honorary Surgeon, Ancoats Hospital, Manchester.

ALTHOUGH it is fortunately true that in the great majority of instances no hernia follows abdominal section, and that every variety of incision and method of closure can count its successful results by hundreds, yet it is equally true that post-operative ventral hernia does occur at times in a small percentage of cases, and one of the greatest disappointments that can fall to the lot of any abdominal surgeon is to find that after a successful operation upon some of the internal structures, the outer wall of the abdomen, which had apparently perfectly united, yields soon after the subject gets about again, or during the next few years, and his patient returns later with a large ventral hernia. The discomforts arising from this discount heavily the advantages obtained from his work, and unless the primary operation was performed for something which was evidently risking the life of the sufferer, or making that life unbearable, she is apt to consider that the last stage is infinitely worse than the first, and to wish that she had never consulted a surgeon at all. Such an occurrence does much to mar the reputation not only of the operator but of the operation itself, and to dissuade others whose condition requires it from having recourse to the benefits it is otherwise able to confer.

It is difficult to get any clear idea of the relation between successful and unsuccessful cases of union of the abdominal wall. Unsuccessful cases, as Owen says, are apt to be quietly interred, and one hears nothing of them. But my friend, Mr. Rutherford Morison, estimates the number occurring in his own very large practice at about 2 per cent., and in my own list of over 350 abdominal sections I can find 4, a little over 1 per cent. Every abdominal surgeon will, I think, admit that he sees them from time to time. Allow me to mention briefly the details of these cases.

CASE I.

Mrs. H., aged 29, who in 1892 was operated upon in another town by another surgeon, who removed an ovarian cyst. As soon as she began to get strong she suffered from a hard, dry cough, which persisted for a long time. This continued, according to her account, more or less for over two years. No yielding of the scar was noticed until the middle of 1895, about three years and a-half after the first operation. This went on slowly for six months, when she presented herself at Ancoats Hospital. At that time—January, 1896—there was yielding of the lower two-thirds of the scar: there were present two or three openings in the fascia through which the internal contents, consisting chiefly of omentum, could be felt protruding beneath the skin, one slightly to the left and about midway between the pubes and umbilicus being larger than the rest.

On January 23rd the skin was divided by a straight incision parallel to and to the right of the old scar. The patient took the anaesthetic very badly, and the operation was therefore hurried. After freeing and removing the omentum the fascial edges were approximated by buried silkworm-gut sutures, the skin by horsehair. There was continuous vomiting for four days, nevertheless firm union apparently resulted, and the patient was discharged on February 8th, that is, in sixteen days after the operation. She was firmly strapped up.

In March, 1897, that is, fifteen months later, she presented herself again. She said that in the previous June, whilst travelling by train, she was assaulted by some man, and as soon as the train stopped she jumped out of the carriage. In doing so she fell on her knee, and was aware of some yielding of the abdominal wall, which had since increased. She was found to have two medium-sized herniae, rather outside the median line, one above the other, the highest being about 1 in. from the umbilicus. This time she took the anaesthetic better, and both sacs were carefully dissected free from the edges of the openings, and removed with some extruded omentum. The fascial edges were split, after Grieg Smith's method in umbilical herniae, so as to obtain a wider union, and united by buried silkworm gut. She was discharged on March 24th, three weeks after operation, apparently firm. She was again firmly strapped up.

Once more she returned in 1899. This time no apparent reason had existed for the reappearance of the hernia, but again three distinct spaces were to be felt, each more or less in the line of the scar, and each containing omentum. This time frayed-out bands of fascia were found in the coverings of the herniae, partially subdividing them. The whole scar was excised and all the spaces thrown into one. The fascia was very carefully bared above on one side, and below on the other for a distance of 2 to 3 cm. on either side. Mattress silkworm gut sutures were placed in such a way as to draw one layer of fascia over the other and to fix it there. These sutures were buried and the skin united over all. She was kept on her back for two months. Twelve months later the union was still firm and secure, and, as nothing further has been heard of her, it may be supposed that the hernia has not again recurred. Five years have now elapsed.

CASE II.

Mrs. B., aged 31, a heavy, phlegmatic woman, with great development of fat, enteroptosis, and prolapsus uteri, was operated on for ventrifixation on May 22nd, 1900, apparently successfully, and she was discharged well on June 15th, three weeks after operation.

The next year, February 7th, 1901, she appeared with a large median ventral hernia, which I have operated upon three times since, always without lasting success, and she has now a large hernia, which can only be supported by a heavy belt.

CASE III.

Mrs. K. H., aged 33, in July, 1893, had a parovarian cyst removed, and, as was the custom at that time, a Keith's drainage tube was inserted into Douglas's pouch. The peritoneum was united around this with catgut, and the skin and muscles, including the fascia, by through-and-through sutures of silkworm gut. The tube was removed on the third day, and a small amount of omentum plugged the opening. She recovered apparently completely, and left the hospital with the wall firm two months after operation.

Four years later she returned with two small gaps in the line of incision. Omentum was found adherent to their edges and was freed all around. The edges of the fascia were brought together and united by buried silkworm gut sutures. Two days later, there having been almost persistent vomiting, the abdominal wall gave way, and a loop of intestine could be seen below and between the skin sutures, which were cutting into it. The loop was washed and returned, and the muscular wall reunited by silkworm gut sutures which passed through them, the fascia and the peritoneum; the skin and subcutaneous layer was left open, to permit of free exit to any discharges. Healthy granulations being present seven days later, the outer layers were drawn firmly together by strapping. She left the hospital one month after the operation apparently soundly healed and was seen a month later still, when she was perfectly firm. This was in 1897.

Once more she returned in 1903, that is, six years after the last operation, and ten years after the first. This time there was a large ventral hernia, extending over very nearly the whole extent of the scar. She could give no very definite reason for its reappearance, but said that it had gradually opened up, and had been present for at least a year—it might be more. She was never very clear in her statements. This time the operation took a long time. Adhesions were plentiful and firm, omentum and large intestine were adherent to the edges of the opening, especially near its upper end, and the latter had to be separated with much care. The outlying cavities of peritoneum seemed never ending: when one was cleared out, a small tag of omentum led into another, which in its turn had to be opened up: and when at last the whole tangle was straightened out, and the muscular wall properly united, the patient was much collapsed. Transfusion was done on the table during the operation, 20 minims of liq. strych. and 10 minims of adrenalin were injected subcutaneously, but the length of exposure and the severity of the operation itself were too much for her, and she died within twenty-four hours.

CASE IV.

H. F., aged 47. A large fibroid uterus was removed by the abdominal route on November 23rd, 1897. The fascia was united by buried silkworm gut mattress sutures. Suppuration occurred around one of these, and a sinus formed. From this, on the 31st, the suture was removed and the sinus healed. She was discharged on January 15th, 1898, seven weeks after the operation. She remained perfectly well until 1902, that is, for four years. She was then nursing a sister; the scar began gradually to yield, and a hernia appeared. This slowly increased, and on her return to hospital in May, 1904, there was a circular opening in the fascia about 2 in. in diameter; through this, bowel and omentum had escaped, and formed two bluntly acuminated masses separated by the firm, thick, skin scar, which stretched like a tough cord above and between them. On operation omentum was found firmly adherent to the edges of the opening and spreading widely in peritoneum-lined cavities above the fascia in the subcutaneous tissues.

It is too early to say anything as to the result in this case, but of the three others it will be seen that one was apparently cured, one is still uncured, and one ended in death. Such occurrences make one, as the French say, furiously to think.

Many abdominal operations are not of a simple kind. A firmly adherent double pyosalpinx cannot be removed safely in a few minutes, whatever the advocates of extreme speed may say. When small and large intestine are adherent above and behind, when adherent omentum covers in the whole mass, when the tubes themselves are tense and thin, separation must, if it is to be safe, also be quietly, slowly, patiently carried out, and such patient work takes time. An intraligamentous fibroid cannot be enucleated with safety at express speed. It is therefore inevitable that when all the primary and essential work is done, the patient will be feeling the shock of the operation, and that the surgeon, possibly urged thereto also by remarks from the anaesthetist, will take the readiest means possible of closing the abdominal

wall, and risk the possibility of this not being the one most likely to ensure a satisfactory and permanent union.

So forcibly had this impressed some surgical minds that some years ago there was a strong current in favour of doing all pelvic operations in women by the vaginal route. Incisions in the upper half of the abdominal wall are by no means so likely to be followed by hernia as are those in the lower half. Very rarely indeed are operations upon the gall bladder or stomach succeeded by ventral hernia, and of course this might have been anticipated. The main weight of the abdominal viscera rests upon the lower half of the abdomen; the structures found there—the small intestinal loops—are more movable, and are more likely to undergo variations in size owing to distension, than those found in the upper half, and therefore the internal tension upon this segment alters more rapidly, more frequently, and more forcibly. In the lower segment, moreover, is found the free extremity of the omental curtain, and experience has shown that this structure has a most perverse tendency to insinuate itself into any opening which may have been left, and that when once it has gained an entrance it gradually but persistently tends to widen this, pushing the peritoneum before it, and to burrow amongst and between the superjacent structures.

Any one who has operated upon a few ventral herniae knows how far more extended they are in the subcutaneous fat than was apparent before the skin was divided; that outside the apparently rounded and defined limits of the protrusion as felt through the skin will be found small loculi of peritoneum, each occupied by its own little omental tag, evidently the outposts and pioneers of the ever-invading structure of which they are the extremities. When once this process has gained any ground, nothing appears to stand before it. Peritoneum is expanded, fat is absorbed, muscular fibres pushed aside, even the resistant fascia will be found frayed out over the mass, or with some few more obstinate bands stretched tautly between adjoining lobes. If, then, internal pelvic viscera could be reached and dealt with from the vagina, leaving the abdominal wall intact, much after-misery would be avoided. And, greatly to the satisfaction of workers in this direction, many other advantages have been proved to be gained in surgical work by this route. Shock is very materially lessened, after-recovery is more rapid, peritonitis is evidently not so great a danger, and many more operations turn out to be practicable through this canal than *a priori* would have appeared possible. But some things still remain in treating which it is most convenient and safest to adopt the abdominal route. Ovarian cysts, even if multilocular, may be evacuated and removed through the vagina: but when these are adherent, and no pre-operative signs exist by which the extent of these adhesions can be estimated, it is wiser to attack them from above. Some adhesions, such as those to the lower end of the omentum, can be detached from below, but adhesions to the transverse colon, to the outer borders of the broad ligaments, to the sigmoid flexure, etc., are almost impracticable without a free entry through the abdominal wall. Ectopic pregnancies have been removed through the vagina, but cases are on record where the ovarian artery has slipped from the ligature placed upon it under tension from below, when once that tension has been removed, and rapid and very dangerous haemorrhage has followed. Abdominal section, then, is the only means by which the vessel can be secured, and this has to be carried out immediately under very unfavourable conditions. Fibroid tumours have been frequently removed with or without the uterus per vaginam, but if the tumour is subperitoneal, if it is calcified, if the entire tumour is larger than a child's head, or if it is adherent to any extent, the advantage of being able to see and reach the whole working area afforded by abdominal section, especially when performed in the Trendelenburg position, completely counterbalances by its safety the advantages which belong to the vaginal route.

Surgical opinion, therefore, without denying the force of the manifest arguments in favour of vaginal section, recognizes that abdominal section has, and must continue to have, a distinct place in pelvic surgery, and the problem of how best to reunite the abdominal wall after an abdominal operation presses once more for a solution.

It could scarcely be said until lately that of all the many ways in which this had been done there existed one method which was ideally perfect. Methods which were rapid were not secure, and those which give a demonstrably secure result were not rapid. As has been pointed out above, the temptation to sacrifice all else to rapidity when the operator had reached the stage at which this had to be done was very great indeed.

Various opinions are held as to the cause of sequent hernia: of these, two appear to be most worthy of consideration. Although nowhere definitely stated, so far as I know, the idea of the importance of the action of the recti muscles would appear to underlie the practice of some surgeons. The incision must not lie in the linea alba; it must separate the muscular bundles of these muscles, or the incision in the skin must not be directly over that in the deeper fascia, whilst that must not coincide with the line of separation of muscular fibre, or the muscle must be dragged to one side, and the deeper incision through the transversalis fascia must be on another plane than that which had opened the muscular sheath. If the muscular fibres are separated they are to be sewn together again. One surgeon makes a crescentic cut through the skin, with its convexity towards the pubes; then turning up the flap thus formed of skin and subcutaneous fat, he makes a vertical incision through the rest of the abdominal wall into the peritoneal cavity. Those who advocate the first three of these plans evidently trust to the presence of the more or less bulky mass of the rectus muscle and to its contractions for a restraining force; those who advocate the last to the support of a flap of skin and subcutaneous fat as a reinforcement to the divided and reunited tissues below.

But any one who will study these cases will readily recognize that these openings increase in size primarily in a lateral direction and not vertically. The muscular fibres of the rectus have a vertical pull; they cannot antagonize to any degree a force acting in a transverse direction. Moreover, it is of little use suturing parallel muscular fibres together. Such fibres never unite to form a resistant scar. It is hardly necessary to point out the futility of relying upon such essentially yielding tissues as skin and subcutaneous fat for the supply of a force sufficient to hold in check the burrowing tendencies of omentum or the pressure of internal abdominal tension.

The alternative opinion would appear to be founded on sounder principles and to offer the really true basis for action.

Surrounding the recti muscles above the fold of Douglas and passing entirely in front of them below this fold is the deep fascia of the abdomen. The name is misleading, since this structure is in no sense a fascia, such, for instance, as is the fascia lata of the thigh. It is a tendon, broad and flattened out: the combined tendon of the external and internal oblique and transversalis muscles. It arises from these muscles on one side, and is inserted at the linea alba into the tendon of the muscles of the opposite side. When this insertion is intact the two opposing sets of muscular fibre antagonize one another. Should the one side only contract it pulls the linea alba—the line of insertion—with the inclosed rectus over towards its own side, but it cannot pull it far owing to the resistance of the opposite set. If both contract they draw the linea alba closer to the spine. If, however, this combined tendon is divided, as it is in ordinary laparotomy in the median line, or in Langenbusch's line on either side, each set of muscles, so far as their tendon is free, pulls its segment further and further away from its fellow of the opposite side until the normal tension is taken off their fibres, so leaving a gap which any further contraction of these fibres still further enlarges. That the true gap through which a hernia escapes is in this layer and formed by this structure can be demonstrated easily in any ventral hernia which will allow of the entrance of a finger. The firm string-like edge of the gap can be traced all round, with no resistance from any other tissue, peritoneum, skin, subcutaneous fat or muscle, except outside this fascial ring. The fingers easily depress all other tissues before them, and enter the abdominal cavity. On operation everything which has escaped from that cavity is found to be within this ring, and not to pass beyond it until having reached the looser tissues above, these intra-abdominal contents spread out widely and apparently without hindrance in the easily-yielding subcutaneous tissues. Although the skin does not give way it stretches enormously, so that on reduction of the hernia once more through the fascial gap, such skin lies in loose redundant folds, and may be largely removed without being missed. The skin and subcutaneous tissue have evidently been no restriction to freedom of escape of the abdominal contents; nor, it is equally demonstrable, have the recti muscles. The rectus of either side has simply been deflected from the middle line and lies outside the edge of the gap. If this edge is divided the recti fibres

will be seen curved around outside. They are never found spread over the hernia itself. The integrity of the recti muscles themselves and their power of contraction have been no bar to the post-operative hernia.

It is, of course, perfectly well known, though practically the importance of the fact would appear to be usually ignored, that normal muscular fibre contracts at once if the tendon to which it is attached is divided, and that if such division is allowed to continue the muscular fibre itself becomes shortened as time elapses. Reunion of the tendon becomes progressively more and more difficult owing to this; if the statements previously made and their obvious corollary be admitted, this is a very strong reason for early interference in any ventral hernia, but, putting this aside for the moment, it naturally follows from what has been said that the most important structure in the abdominal wall from the standpoint of the surgeon is this so-called deep fascia, this tendon of the lateral muscles; and that the risk of or security from post-operative hernia depends entirely upon the thoroughness with which this has been reunited after division.

Although peritoneum will and does yield to a surprising extent when once its outer support has given way, there can be no doubt that a gap in it enables the omentum to find an exit and so to exert its wonderful power of burrowing amongst the tissues of the abdominal wall. Therefore next in importance to the security of the fascial union must rank the importance of complete closure of all gaps in the peritoneum: other reasons, of course, exist for this procedure, but this is from this particular point of view the most important. This closure is in this region usually very easily done. When this is complete and the fascia also firmly united, the muscular fibres of the rectus then assist in the only way they can, by their bulk as a pad between the two, to reinforce the pressure from without, and to fill any dead spaces which might otherwise exist.

The essential thing then is to unite the tendons of the oblique and transversalis muscles in such a complete manner as once more to restore their mutual antagonism and to keep them firmly united long enough for firm organic union to take place between them—a process which, according to Macewen, takes six weeks, but which some observations of my own tend to show is sufficiently firm in a month—by some material which can be trusted to do this, and to remain firm and strong for that period. If at the end of that time all foreign material can be eliminated or removed from the tissues, the ideal method, so far as permanency is concerned, will be attained. If this is not possible the material used should be such as to cause no after-discomfort. It will be seen that this is by no means the simple problem that earlier operators suggest, nor the least important that the surgeon has to consider when planning an abdominal operation.

The ideas which dominate an operator's mind with reference to the structures with which his operation deals can be fairly deduced from the steps of the operation he performs. Judged in this way, the earliest operators must have looked upon the abdominal wall as practically a homogeneous layer of tissue, which, when union of any sort had taken place, would be equally strong in all its parts.

Sutures were introduced through all the tissues, and these were simply drawn and held together for a certain length of time, which appeared mainly to depend upon the time required for the union of the skin. This method even yet is often adopted for the sake of speed. It is no doubt the quickest and readiest method, but it will be seen that the union of the definite layers of this covering must be merely a matter of chance. Peritoneum will unite to anything to which it happens to be apposed to fat, or muscle, fascia, or connective tissue. In most hernias of any duration, the union between the fascial edge and the peritoneum is very intimate; the thin covering which alone exists between the external world and the peritoneal cavity in an old ventral hernia is composed exclusively of skin and peritoneum, with perhaps a few strands of frayed-out fascia near its periphery.

These unions are not merely useless to prevent escape of intra-abdominal contents, but they are distinctly harmful, as rendering impossible the union of the more resistant structures until they are once more freed. Union of skin to skin is frequently one of the most rapid of all; and it has not been an infrequent experience to find that this skin union has had to be broken through again to permit of the exit of banked-up blood, serum, liquefied fat, or pus which has collected in some space between deeper tissues which have been some distance apart. Such a method stands theoretically and practically self-condemned from the point of view of permanency, however it may appeal to the surgeon from the point of speed.

Spencer Wells was the first to point out the necessity of union of peritoneal surfaces, but he only laid stress upon this. The importance of such union has been emphasized by other writers since, for other reasons, notably by Clark, on the score of the advisability of once more producing a closed peritoneal cavity, so as to favour peritoneal currents by means of which bacteria and other foreign material in the abdominal cavity may be carried into the lymphatic spaces; and to prevent adhesions between internal viscera and connective tissue outside this layer; but the other structures of the abdominal wall were still treated as though they all were of equal importance.

It is curious to note the swing of the surgical pendulum between this method of "laissez faire" and the opposite extremity in a method lately advocated in some of the surgical journals. In this latter every layer has its own continuous suture. Not only peritoneum, fascia, and skin, but parallel muscular fibres, and even the subcutaneous fat are each united by a continuous silk thread. It is difficult to see the use of this. Parallel muscular fibres do not unite, however long they are apposed to one another. If they did, every muscle in the body would soon become rigid. As to fat, it is of all tissues the most lowly vitalized; the cells which contain it are most easily crushed, and free fat exudes. The passage of a thread through them opens up a way for the exit of their contents, the thread itself becomes soaked in this oily fluid, now practically dead material, and can then only act as an irritant, sooner or later requiring elimination from the living structures. If the intention is to bring the divided fatty surfaces together, and to prevent dead spaces, this can be done equally well by the pressure of the united more solid structures above and below, owing to the elasticity of the material between, which now will not have been crushed or bruised, nor will it contain any dead foreign substance. A dead space is none the less a dead space because it is filled by dead fluids, such as exuded oil.

It is thus demonstrable that the only tissues as to the union of which the surgeon need interfere are the peritoneum, the fascia, and the skin. If these are secure, all the rest fall naturally into their own place, and are far better left untouched.

The union of peritoneum offers no difficulty. The rapidity of its union and its powers of absorption permit of the use of fine catgut, which is readily eliminated as soon as its work is done—as it is within forty-eight hours—and this has never given rise to any evil results.

The union of the skin is equally simple. Sutures or Michel clamps are readily applied and as easily removed when this layer is united. But the union of the combined tendon of the lateral muscles is by no means such a simple matter. Some material must be used which shall be strong enough to resist not only the natural pull of the three strong muscles attached to this tendon on either side, but any extraordinary strain which may be placed upon them by chloroform or other vomiting, by cough, or by movements of the patient. Incidentally, it will be recognized how futile it is to depend upon the pressure of strapping, binders, or belts, as a counter force to this internal muscular contraction. They are useful for the purpose of keeping external dressings in place, or for the feeling of support and comfort which they undoubtedly supply; but the force they can exert does not, and cannot, effectively act in a contrary direction to the muscular contraction of the obliques and transversales.

And this material must remain strong and firm for a month or six weeks. It is not sufficient to claim for it, as is often done for chromicized gut, that it is not absorbed for that length of time. Long before any material is absorbed it has ceased to have any restraining power. It has become soft, frayed-out, and powerless. It may have held the tissues safely enough for a fortnight, but at the end of that time the patient may cough or strain in urination or defaecation, the lateral muscles contract strongly, perhaps suddenly; the weakened suture stretches or snaps, and the plastic material between the uniting edge of the tendon yields slightly. A repetition of the strain occurs, or several repetitions, and a weak yielding gap between the rigid fascial edges is the result. It needs only some increase in abdominal tension from flatus or other cause to start a small hernia, which will steadily increase from that time onwards.

But any material which will remain strong and firm for six weeks will, on the other hand, probably remain unabsorbed during the life of the patient. Silver wire, bronze aluminium

wire, Pagenstecher's thread, celloidin thread, silkworm gut, are all capable of withstanding the strain, but they are all totally unabsorbable, and sooner or later are almost certain to give evidence of their presence. Pricking, stabbing pains, especially when the recti muscles are in action, slow movement towards the surface, accompanied or not by suppuration around them, have been frequently observed. Buried sutures, therefore, are to be avoided if possible. If, however, a suture must be buried, nothing appears to serve so well as plain silver wire, the ends of these being twisted, and pressed flat against the surface of the fascia.

Since this was written, however, I have had the pleasure and advantage of watching Mr. Rutherford Morison operate on several cases. He uses chromicized catgut of unusual thickness—No. 8 for uniting the fascia—and claims for it that it does remain effective for a sufficient period. I notice, however, that in a very valuable paper contributed by him to the *Edinburgh Medical Journal* this year he says that in a certain percentage of cases ventral hernia is inevitable, and that the evidence of a surgeon who says that he never sees it may safely be put aside, for he does not care for the after-history of his patients. It occurs, he says, most frequently in very fat and very thin persons. I cannot agree that this condition should be deemed inevitable, even in a small percentage. The word itself suggests that surgeons should be content to accept it as such, and to make no effort to eliminate its possibility. It is with a hope of doing something towards so desirable a result that I have brought forward this subject for discussion. Dr. Macnaughton-Jones also uses this material for this purpose, and so doubtless do others. I am very anxious to obtain their evidence as to its reliability.

I have used glass stretchers for preparing gut and silk. When silk or catgut is used after having been sterilized on reels, I have usually found that it is very apt to become entangled or kinked, so that for a long time I have sought for some means by which a perfectly straight thread might be obtained. With these glass stretchers, made for me by Messrs. Woolley, Sons, and Co. of Manchester, I have been able to obtain them. The silk or gut is fastened securely to one end, and then wound upon them so as to obtain only one layer; the opposite end is again securely fastened. Threads of the same material are then tied around, enclosing the sutures at each of the two points where notches have been cut in the uprights, and where the frame has been strengthened by crossbars of glass. If the material is silk, it can easily be boiled, frame and all, in an ordinary sterilizer. If catgut, it requires to be boiled under pressure in cumol or xylol, and must be enclosed in some watertight receptacle, such as the gun-metal cylinders of Mayo Robson. But those cylinders will not take these stretchers, and I have had a rectangular one made by the same firm which supports the glass frame in such a position that the sterilizing fluid can act upon every part of the suture. This is indeed one of the main advantages of using these glass frames. All parts of the suture—that turned to the frame, as well as that outside—are equally exposed. When a suture is wound upon a wooden or glass plate, the side next to the plate is to some extent protected; it is not so in these open stretchers. Glass has been used because it is so easily cleansed, and will itself resist the action of boiling fluids. When sterilization has been done, the threads are cut across at one end of the stretcher, and each double thread can be drawn off from the other end without disturbing the rest. After they have been cut, the advantage of the two cross threads which keep them in place against the stretcher will be appreciated. The stretchers are then kept in wide-mouthed bottles—silk in Bergmann's solution, catgut in absolute alcohol with ½ per cent. sterile glycerine.



One-third of actual size.

The way in which the sutures are placed is of importance. Inasmuch as they have to resist a constant and persistent pull, it is essential that they should not cut through the tissues and so become loose. If applied in the ordinary way this is very likely to happen, especially when the material used is wire of any kind. Moreover, if the fascial edges only are approximated the area of union is but a thin line, and is consequently stretched or torn through with comparative ease. Noble, whose example I have followed for a considerable time, carefully clears the upper surface of the fascial layer for a distance of 2 to 3 cm. on one side, and the under-surface of its opposite for a similar distance, from all fat, and then places mattress sutures in such a way as to draw one side of the fascia beneath the other and fix it there, so obtaining a broad double union, which is correspondingly stronger, and more likely to be permanent.

But a method which leaves behind foreign material in the living tissues which cannot be absorbed cannot be considered ideal, and it would be a great advantage if at the end of six weeks this could be removed without reopening the wound. Lately, three or four ways in which this may be done have been proposed and carried out with success. In the first the two ends of the wire sutures placed as above described in the fascia have been made to penetrate the skin and superficial fascia above, and have been twisted over the bridge of skin between; or, better still, since such wires tend to cut through the skin, over a pad of gauze placed between them; but in some cases, where the subcutaneous layer of fat is very thick, it is useless to attempt to fix the wire outside, the pressure exerted by the pad being rendered nugatory by the consequent absorption of this layer, the wire loop becoming loose and permitting the fascial layers to separate once more, omentum to insinuate itself between them, and the hernia again to recur. In such cases two courses are open: first, to tighten the loop from time to time; or, secondly, to apply the wire suture in a figure-of-eight fashion, allowing the lower loop simply to grip the fascial layers. Of the two methods the latter is often to be preferred. It seems impossible accurately to gauge the rate of absorption of the fatty layer; the loop may possibly be left too long untightened, and if once omentum has gained a foothold between the fascial edges, it will continue to enlarge the—often minute—opening thus formed.

If the figure-of-eight method is used, the wire is introduced through the skin on one side, penetrating the subcutaneous fatty layer in an oblique manner and emerging in the wound

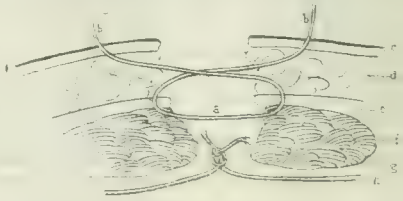


Fig. 1.

just above the fascia. It is then carried to the opposite side, reversed and made to pierce the fascia of that side from above downwards about a centimetre from its edge. Both layers of fascia have previously been cleared of fat on their lower surface for that distance. Passing beneath this, the needle is carried through the fascia on the original side from below upwards at a point the same distance from its edge. The needle is again reversed, and carried through the subcutaneous tissue and fat obliquely upwards to emerge through the skin at a point corresponding to that by which it first entered but on the opposite side of the wound. By pulling upon both ends of the wire in a direction from the wound,

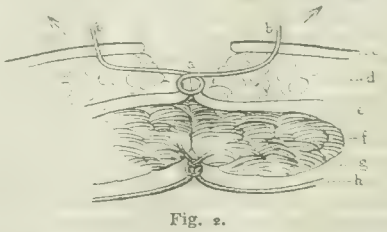


Fig. 2.

the two fascial under surfaces are brought together and held firmly opposed to one another. The skin edges are then adjusted, a layer of gauze laid over them, and the ends of the wires are brought together over this and twisted together, so closing the skin wound and bringing the divided subcutaneous tissue surfaces in contact. When it is required to remove the wire this is slightly pulled out on one side and

divided close to the skin. A steady pull upon the other end draws it out. Thus in Figs. 1, 2, 3, *c* marks the skin, *d* the subcutaneous fat, *e* the fascia, *f* the rectus muscle, *g* the subperitoneal fat, *h* the peritoneum. In Fig. 1 the peritoneum is united; the wire sutures are placed but not drawn up. In Fig. 2 the fascia is drawn together by tightening the loop *a*, by pulling upon both ends of the wire in a direction obliquely from the wound as indicated by the arrows. In Fig. 3 the

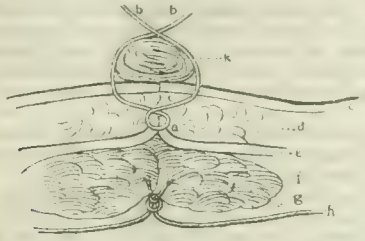


Fig. 3

loop *b* is completed, and by tightening this over the pad *k* the skin and subcutaneous fat are thus approximated. It will be noticed that the tightening of loop *a* has approximated the muscular layer *f* and the transversalis fascia *g*.

With this method it is evident that absorption of the fatty layer enclosed in the loop *b* will have no influence upon loop *a*, which will still remain tight, owing to the rigidity of the silver wire. Silkworm gut is not so effective, as with it the firmness of the loop *a* will depend on the tension in both loops. This method is probably the quickest of all those which permit removal of the foreign material uniting the fascia, and therefore will be preferred by many surgeons, and probably by all in cases where the rapid closure of the abdominal opening is important. But the removal of these wires is sometimes painful, and another method has lately been introduced by Milton of Cairo, which is neater, and renders after-removal less painful. The central idea of his method is the use of the lock-stitch, and he uses it in the following way, which Fig. 4 may help to render clearer. Two threads are

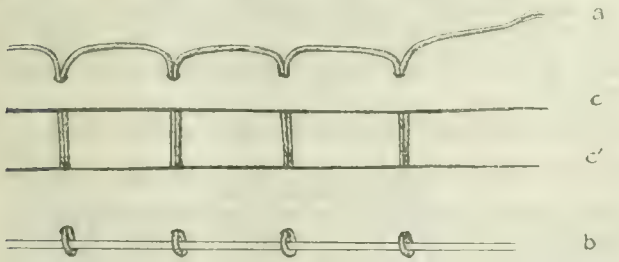


Fig. 4.

used: *a*, the primary thread; and *b*, the secondary thread. In the figure, which represents the wound looked at from above, *c c'* represent the two edges of the fascia which are to be united. A sharp-eyed needle carrying a long silk thread is carried through fascia *c* on one side from above downwards, and through the fascia *c'* on the other side from below upwards; as it protrudes on this side, a loop of silk is pulled out and the needle is withdrawn, still carrying the thread. This is again carried through both layers of fascia in the same way a third of an inch further on, a loop drawn out and so on. Through each loop the secondary thread *b* is passed; when all the loops are placed they are drawn up in turn, so tightening around the secondary thread and approximating the two under surfaces of the fascia. At each end of the wound the respective ends are brought up through the skin, and the end of *a* is tied to the corresponding end of *b*. When it is desired to withdraw the threads, the ends of both are cut through close to the skin at one end of the wound, and the secondary thread *b* is drawn out; this sets free all the loops, and traction upon the end of the primary thread will draw it also out of the wound, leaving in this way no buried suture.

This is a very admirable method, but it has certain drawbacks. I have found that however tightly both ends may be held, during the process of tightening up, the secondary thread is almost unavoidably bent at the points embraced by the primary thread. When the time comes to withdraw the threads, it is evident that if applied as Milton advises the secondary thread must be first removed in order to set free the other. If the secondary thread is silver wire this is almost impossible; the slight kinking produced is sufficient to render it extremely difficult to release the wire from the bite of the primary thread; if it is of silkworm gut this is apt to break at these points, and so a foreign body is left behind, and the main object of the method—the removal of all buried foreign bodies when deep union is complete—is not obtained. In order to avoid this I have modified the plan in the following way, so as to be able to remove the primary thread first, so setting free the secondary, which can then be easily drawn out.

The secondary thread *b* may be either wire or silkworm gut; the latter, I think, is preferable. The primary thread *a* is interrupted, and made up of several silkworm gut threads introduced as single loops by means of an eyed needle. Each loop is passed through the skin, subcutaneous tissue and fascia of the right side of the wound, emerging in the wound below the fascia of that side; it is carried onwards below the fascia on the left side, and penetrates this layer from below, emerging on its upper surface; the secondary thread is passed through each loop. When all the loops are in place, and the skin wound united by other sutures, the secondary thread is held tight at each end, to prevent kinking, whilst each loop is drawn taut, the two ends of it which emerge from one opening on the right side of the wound are separated, a gauze pad *k* placed between them, and they are then tied over this pad.

The pressure of the secondary thread on one side is thus opposed by the pressure of the pad on the skin above, and the two surfaces of the fascia are drawn together and held in position by them.

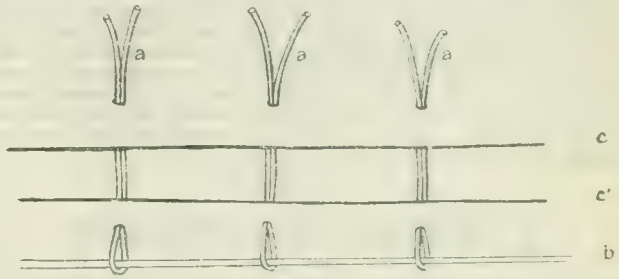


Fig. 5.

Fig. 5 shows the position of the wound and threads; looked at from above, *c c'* are the two edges of the divided fascia, *b* the secondary thread, *a a a* the interrupted loops of silkworm gut. Figs. 6 and 7 represent a vertical section through the abdominal wall, the various layers of which are lettered as before. In Fig. 6 a loop is placed *a a'*, and through its



Fig. 6.

extremity is seen the cut end of the secondary thread *b*. In Fig. 7 it is tightened up, and a pad *k* is placed between the



Fig. 7.

two ends of the looped thread; when tied it brings the two under surfaces of the fascia firmly together.

The same objection holds good with this modification in cases where the fatty layer is thick and may become absorbed, so loosening the grip of the loops. In all such cases it will be advisable to use Milton's original plan of application,

but in cases where this layer is thin I have found the modification easy of performance, and giving a perfect result. The loops should be applied at distances of one-third of an inch from each other, and should so pierce the fascia as to bring together a corresponding width of fascia on both sides. Removal is easy; one thread of each loop is divided close to the skin beside the gauze pad; pulling on the other end quickly releases it, and it is drawn out. When once all the loops are free, the secondary thread is easily withdrawn, whether slightly kinked or not. Care must be taken in all cases to carry the suturing for at least half an inch at each extremity beyond the line of fascial division, so as to produce a fold in the yet undivided tissue.

By the use of one or other of these plans it will be evident that we possess means by which the all-important tendinous expansion known as the deep fascia may be reunited safely and permanently, and that the latter methods also enable us when organic union is firm to remove all foreign material from the interior of the wound.

Something more might be said as to the different behaviour of the tissues in different parts of the abdominal wall: especially as to the difficulty experienced in the reunion of peritoneum near the epigastrium as compared with the ease of this manœuvre below the umbilicus, and certain modifications which thereby become necessary, but this paper is already too long, and they must be left for future statement.

When a large hernia has to be closed, and the fascial edges are widely separated, the method adopted by both Dr. Macnaughton-Jones and Mr. Rutherford Morison of placing stay sutures so as to embrace the whole rectus muscle, and so obtain a firmer and more comprehensive grip of the tendon on either side, is an admirable one, but does not, in my opinion, dispense with the necessity for obtaining a broad union of the actual opposing portions of this tendon such as is produced by the Noble method. It is an accessory of very great use, but not the primary requisite. Dr. Macnaughton-Jones uses strong silver wire: Mr. Rutherford Morison strong chromicized gut. After all, these are measures for the cure, not for the prevention of post-operative hernia.

A Clinical Demonstration
ON
THE RADICAL CURE OF HERNIA.

Given at the Post-graduate College and Polyclinic, London.

By MAYO COLLIER, M.S.Lond., F.R.C.S.Eng.,
Senior Surgeon, North-West London Hospital.

Gentlemen,—I have brought for inspection to-day two cases both quite simple of diagnosis, but about which there are many points to discuss and much to say.

Radical Cure of Hernia.

The patient, as you see, is apparently a strong, healthy fellow, who comes to the hospital with the most absolute belief and faith that I can perform some simple operation on what he says is a rupture in the left groin, so that he will never have to wear a truss again, and never be troubled with a return of his complaint. In short, he wants me to perform the radical cure in the belief that the radical cure will do all for him that he thinks.

This is the general belief among the lay public on the subject of the operations for the relief of rupture. I need hardly tell you that this view is incorrect; and the approximate truth on the subject of the radical cure for hernia I shall endeavour to put before you to-day.

Now, the first question you must be prepared to answer is this, Why an operation at all? Why not a comfortable and well-fitting truss? This question must be answered from several points of view, and first, there are seven classes of cases where a truss cannot be relied upon and an operation is most certainly indicated, namely:

1. Cases of irreducible hernia.
2. Cases of strangulated hernia.
3. Cases where the hernia is not controlled by a truss.
4. Cases of hernia with ectopia testis.
5. Cases where rupture unfits for the public service.
6. Hernias in incompetent and ignorant people.
7. Very large hernias hampering the movements of the patients, and threatening personal comfort seriously.

In all these cases it would be your duty to prefer and advise an operation rather than outside mechanical supports. In other cases it is quite certain that hundreds of thousands of persons pass through their lives with comfort and safety with the assistance of a well-fitting truss, but I most certainly would not refuse to perform the radical cure for a person who was anxious to be relieved of his truss, and who, from a sentimental point of view, objected to the mechanical support.

Now before you could honestly take upon yourself the responsibility of advising and operating on a patient for the cure of hernia, you must satisfy yourself and your patient in some cases as to the following facts, and you must be prepared with more or less exact knowledge on the subject.

1. And first of all. Can you assure him that the operation is a safe operation so far as his life is concerned, as well as his testicle.
2. Secondly, does the term "radical cure" mean radical cure in the sense of permanency of cure? Is the operation a real cure or only a temporary palliative?
3. Should very young people be operated upon, and if not, at what age should the operation be performed?
4. Should a truss be worn after the operation, and if so, for how long, and if not, should any support or precaution be taken to prevent return?
5. You must satisfy yourself as to the best material for suture, and lastly, but assuredly not least, the best form of operation to perform.

You see from the list of questions that you must either answer to the patient or yourself that the procedure is not quite so simple as the public believe, and not quite so lightly to be undertaken as some would teach.

Safety of the Operation.

I think we may most certainly answer this question in the affirmative and say "the operation is perfectly safe, provided it is done by a skilled, competent operator with experience." Out of 104 cases in one practice there were only 2 deaths, both from zymotic diseases, and in America Dr. Coley lost 1 case out of 160 operations from pneumonia. These are just a few examples illustrating the freedom from trouble after this operation.

Is the Testis in any Danger from the Operation?

It most certainly is in the hands of the unskilled surgeon who endeavours to pull and drag and rend the layers of fascia covering the hernial sac, instead of cutting straight down to the sac and gently peeling it from its nearest covering.

Atrophy of the testis and inflammation with abscess and sloughing have followed this operation in careless hands.

How Far does the Operation bring about a Complete or Radical and Permanent Cure?

Please always safeguard your own reputation and that of surgery in general by telling your patients that many of the best and most promising cases lapse, that the hernia returns and requires a second operation or a truss. Tell your patient that only in some cases does the patient never require further assistance or treatment, but also tell your patient that "an operation will most certainly improve matters, and that after an operation a patient is better off than he was before, and that most certainly it gives immunity to a certain number for a certain time."

As a matter of fact, it is fair to say that in 25 per cent. of the cases operated on the hernia returns and requires a second operation or the assistance of a truss before eight years.

What is the Earliest Age at which an Operation should be Undertaken?

It is a matter of common knowledge that quite a number of male children below 1 year have inguinal hernia, and that quite a large percentage of these get well with the use of properly-fitting trusses. On these grounds a truss should in most cases be recommended in preference to an operation up to, we will say, the 4th year, and in some cases longer. Of course, complicated cases where there are no contraindications should be submitted to operation as early as 2 years.

The Use of a Truss After Operation.

This recommendation will depend not only on the state of the patient before operation, but on his condition and duties after the operation. Speaking generally, favourable cases with small sacs, sound tissues, and well-formed abdominal walls, if allowed to rest for at least two or three months after operation, will not require a truss. *Per contra*, large sacs, weak abdominal walls, pendulous abdomens with much fat

are better supported with a broad, flat truss. The same applies to all patients who after operation will have to perform heavy and arduous work, or who suffer from chronic bronchitis, asthma, or chronic engorgement of the portal system. Again, patients going abroad where skilled surgical assistance is not available are better if provided with the safeguard of a light, broad, well-fitting truss to be worn on all occasions when in the erect position.

A point of considerable importance in the after-care of patients who have undergone the radical cure has been completely overlooked, so far as I know, by all writers on this subject. It is this: The method and position and preparation for the act of defaecation. "Straining at stool." How often have we who have been house-surgeons, or those in large practices, heard this suggested by the patient afflicted with rupture as the cause of the accident. The act of defaecation as Nature intended us to perform it is performed in the natural position, with the extremities and trunk all flexed to an acute angle; the thighs flexed on the abdomen so that the knees shall be in contact with the chest; the back of the leg touching the ham and the arms folded round the knees. No pressure that was ever exerted in this attitude could affect the inguinal or femoral openings. They are completely shut off and supported. The modern artistic watercloset imposes the necessity of sitting with the body erect and the thighs at a right angle to the trunk. In this attitude the inguinal and femoral openings stand the whole pressure of the abdominal contents in straining during defaecation.

Therefore, after, if not before, the operation for radical cure, direct your patient to return, so far as the act of defaecation is concerned, to *fera natura*. There is no doubt that the civilized position of the act of defaecation is responsible for a large percentage of ruptures. I most certainly should advise all persons who have a tendency to hernia or weak abdominal walls to stand upon the seat of the watercloset, not sit upon it—this is a point of the utmost importance in the prevention and cure of hernia.

What is the best Material for Suture and Ligature?

Every surgeon of any experience must have been disappointed to find some five or six weeks after the operation that his patient presents himself with a small discharging sinus in the site of the ligature surrounding the neck of the sac. This is the recorded experience of some of the best surgeons of the day when prepared silk has been used.

Many substances have been recommended—catgut, kangaroo tail, silkworm's gut, silver wire, and Chinese plaited silk, such as is used for fishing lines. The ideal ligature of course is one that is perfectly reliable, strong, easily rendered aseptic, that will be innocuous and non-irritating to the tissues.

Each of the above in turn has been tried and each has its advocates, but for general use, ease of application, freedom from becoming undone, and reliability, plaited Chinese silk seems to be the favourite.

American surgeons speak most highly of kangaroo tail, others use silver wire, and many colonial surgeons prefer catgut. The feeling of security that Chinese silk affords at the time of operation, as well as the experience of its use in other parts of the body, more especially in the suture of tendons, has lent some considerable support to its use in this operation, but still this ligature is constantly the cause of suppuration weeks and months after the operation, delaying convalescence and bringing discredit on the operation and the surgeon who performs it. The cause of this is not apparent.

The same ligature placed on a tendon or round the femoral artery would not suppurate. It may be due to the site of the ligature in its relation to the larger bowel, where foul gases may exhale and pass into the tissues, rendering this lifeless ligature septic where a living structure would resist the infection. To sum up, this accident is liable to occur, and in the operation a perfect ligature has yet to be found.

Of the other ligatures, kangaroo tail is difficult to obtain, catgut is liable to soften too easily and be absorbed too soon, and wire cuts through and is liable to be painful and irritating.

The Choice of Operation.

You will either admire the ingenuity of man or deplore the unsettled state of surgical opinion when I tell you that there are at least ten well-recognized surgical procedures for the relief of rupture in the inguinal regions.

You will one and all pardon the liberty I am taking when I say that no man who is not perfectly at home with, and acquainted with, the anatomy of this region in every detail should undertake this operation.

With your permission, I will just remind you of a few salient points in the anatomy of this region. And first of all this rupture is situated in the inguinal canal. Now what is the inguinal canal? It is an oblique passage in the layers of the abdominal wall situated at the lower and inner part of the abdomen. It extends for some 2½ in. to 3 in., and is bounded externally and internally by what are known as the external and internal abdominal rings—the upper and lower limits of the canal. The internal ring is situated midway between the anterior superior spinous process of the ileum and the spine of the pubes, 1 in. above Poupart's ligament. It is oval in shape, and extends for about ¾ in. from above downward, and ½ in. from side to side. This ring in its essence is formed by the margin of junction of the infundibuliform fascia with the transversalis fascia exactly in the same way as where the finger of a glove joins the body of the glove. It is covered over on its inner aspect by peritoneum with subperitoneal fat, and gives passage to the cord with its arteries, veins, and nerves, these being of course outside the peritoneum. The outer limit of the inguinal canal is the external abdominal ring. This is situated immediately above the spine of the pubes. It is triangular in shape, with its base below, and its apex pointing upwards and outwards. It is about 1¼ in. from base to apex, and about 1 in. across its base. The two sides of the triangle are known as the pillars of the ring.

In order properly to understand the anatomy of the pillars of the ring, an exact knowledge of the formation and attachment of Poupart's ligament is requisite. Poupart's ligament is the lower thickened border of the aponeurosis of the external oblique. It is attached externally to the anterior superior spinous process of the ileum, and internally has three attachments, which please note carefully, as the key to the surgery of both femoral and inguinal hernia rests with a knowledge of these. The three attachments are:

1. To the spine of the pubes, forming the external pillar of the ring.
2. To the ilio-pectineal line for about 1¼ in., forming Gimbernat's ligament.
3. To the linea alba, forming the triangular ligament or fascia known as Coll's ligament.

Practically speaking, after Poupart's ligament has become attached to the spine of the pubes it spreads in two directions, horizontally to form Gimbernat's ligament, and vertically to form Coll's ligament.

Now we are in a position to refer again to the external abdominal ring with its pillars. The external pillar of the ring is formed by Poupart's ligament, it is round and cord-like and nearly horizontal in position. The internal pillar of the ring is thin and tendinous, straight and sharp, and is formed by fibres of the tendon of the external oblique that pass to the front of the pubes and here interlace with those of the opposite side. The base of the triangle is formed by the crest of the pubes and extends from the spine of the pubes to the symphysis pubis. The apex of the triangle is acute and traversed by well-marked fibres, passing from one pillar to the other, known as inter-columnar fibres.

Having dealt with the two extremities of the passage we now come to the boundaries and structures forming this passage, and in order to do so I will just remind you how the abdominal muscles comport themselves in this region. You will remember the general disposition of these three muscles. Two are oblique and one is transverse. The external one is oblique from above downwards and the next in order is oblique from below upwards and inwards, and the innermost has its fibres passing almost transversely inwards. The upper attachment of these muscles does not concern us. We have seen how the external oblique bridges over the groin in the form of a thickened band of fibrous tissue known as Poupart's ligament, and how this is attached externally to the superior spinous process of the ileum, internally to the spine of the pubes and ilio-pectineal line and linea alba. The internal oblique also arches over the groin in the same way as the external oblique, but only towards the inner half of the groin from the inner third of Poupart's ligament to the ilio-pectineal line. Its outer fibres are thick and muscular, and are attached to the outer two-thirds of Poupart's ligament, and after covering the outer half of the inguinal canal dip downwards and inwards to be inserted into the ilio-pectineal line internal to Poupart's ligament, internal and posterior to the inner half of the inguinal canal. The internal oblique, then, is anterior to the canal in its outer half and posterior in its inner half. The transversalis muscle also arches at its lower border over the groin. It has much the same disposition as the internal oblique, but having a r

less extensive attachment to Poupart's ligament (only to its outer third), passes inwards and arches downwards to join the tendon of the internal oblique, and to be inserted with it into the ilio-pectineal line forming the conjoined tendon, about which you will hear so much during the operation for the radical cure of hernia. The transversalis, passing above the internal ring, has no anterior relation to the inguinal canal, but in passing to its attachment as the conjoined tendon is in a position posterior to the inner half of the canal.

Internal to the transversalis muscle we have the general lining membrane of the abdomen just as an egg has its general fibrous lining. This membrane receives various names in various places; when lining the transversalis muscle it is known as the transversalis fascia. In the pelvis it is known as the pelvic fascia, and when lining the diaphragm would be known as the diaphragmatic fascia. The internal ring is an opening in this fascia caused by the bag-like pouch that is carried down by the testicle on leaving the abdominal cavity. The very term "hernia" is derived from the Greek word ἔρνος, which means a branch, and it is this protrusion forwards through the abdominal wall by the testis that favours the subsequent protrusion of the peritoneal wall and the formation of hernia.

[We are now completely in possession of the facts in the anatomy of these parts that relate to the operation, and we know that the canal has only in front of it external and internal oblique muscles and behind the internal oblique muscle and transversalis muscle as conjoined tendon, and behind this the transversalis fascia. You know also that the deep epigastric artery runs upwards and inwards from the iliac artery and passing between the transversalis fascia and peritoneum, skirts close to the inner margin of the internal ring. In operating you must always keep the exact position of the artery in mind.

An oblique inguinal hernia, then, is a protrusion of any of the abdominal contents through the entire length of the inguinal canal, and would have for its covering representatives of each of the normal layers of the abdominal wall in anterior relation to the canal. First, we should have skin, and then superficial fascia, the external oblique representative or intercolumnar fascia, then internal oblique or its representative cremasteric fascia, then transversalis or infundibuliform fascia, and lastly subperitoneal fat and peritoneum. The tranversalis muscle, not being in anterior relation to the canal, escapes being pushed in front of the descending testis.

The few anatomical facts having just refreshed our memories we are now in a position to undertake the operation for the radical cure of hernia.

Now of the ten surgical procedures I foreshadowed to you all have the same object in view, namely, to get rid of the sac of peritoneum up to and as far as the internal abdominal opening, and to close the passage in the layers of the abdominal wall by readjusting these.

These objects are attained by various methods. [The lecturer then related and described the ten operations for the radical cure of inguinal hernia and expressed a predilection for Mr. Barker's operation.]

Mastoid Abscess and Adenoids.

The next case that was exhibited was that of a boy, aged 18, with a discharging sinus in the right mastoid region in the site of a scar of a previous operation. It was a case of suppuration in the tympanomastoid cavities that had been operated on some years ago. The trouble in the mastoid had recurred, and no wonder.

If those present would examine the patient they would see that the boy was afflicted with adenoids as well and most pronounced nasal occlusion, and it was quite hopeless to expect to cure the mastoid disease before clearing the post-nasal space and ventilating the nose. The *fons et origo mali* was still there. The antrum had been opened and drained, but it was quite impossible to clear out all the corners and recesses and bring the parts into a healthy condition, unless the passage of the Eustachian tube was freely maintained and the other tissues kept free from congestion.

Puncture of Right Ventricle.

Mr. Collier next exhibited a heart with a punctured wound of the right ventricle. It was a case of malignant endocarditis where the heart had become suddenly acutely dilated. This state had not been without reason mistaken for inflammation in the pericardium. An aspirating needle had been used and the ventricle punctured. The curious point was that through so small a puncture 24 oz. of fluid passed in one minute, filling the pericardium to distension and causing the immediate death of the patient.

TRAUMATISM AND HERNIA.

By WILLIAM SHEEN, M.S.Lond., F.R.C.S.,
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A working man becomes the subject of hernia.[1] He refers it to some antecedent injury, such injury being either "straining" the abdominal muscles as in lifting a heavy weight[2] or being a blow upon, or squeeze of, the abdomen. The man, as a rule, is not attempting to deceive: the association of cause and effect is a natural one to him, particularly when he is introduced to that unfortunate term "rupture" by the first doctor who sees him.

Can a hernia result suddenly from a single trauma? and what are the conditions which must be fulfilled to associate the hernia with the trauma? If the hernia is wholly acquired (sac and contents), one cannot imagine it resulting suddenly from a single trauma, because the peritoneum will not stretch suddenly—it tears. This statement hardly requires amplifying. "Abrupt stretching of the membrane leads to certain rupture of it."[3] Every abdominal surgeon knows how readily the peritoneum tears when traction has to be made upon it in closing a laparotomy wound. I have tested peritoneum from the living and dead body in various ways and find it very inextensile. Professor Haycraft has kindly tested its extensibility for me in the Physiological Laboratory, University College, Cardiff, on an apparatus of his own devising,[4] and his conclusion is that peritoneum will not stand sudden extension.

Those, therefore, who regard a hernia as wholly acquired naturally agree with Tillmanns's view when he says: "The supposed sudden development of a true hernia is in my opinion always due to a mistake in observation."[5] Even on the supposition of a wholly acquired origin there is, I think, one possible exception to this view, although a direct hernia would be a more likely result than the form under discussion, namely, sac and contents resulting suddenly from a "strain" in an individual who has been losing flesh rapidly and in whom there is weakness and atrophy with bulgings of the muscles of the lower part of the abdominal wall. Then, lax peritoneum and weakened abdominal wall might conceivably permit a portion of the peritoneum to be carried into the inguinal canal, probably not by a localized bulging but by a slipping down of the parietal peritoneum all round the widened internal ring. Such an event, however, would be impossible in an ordinary healthy adult with a normal musculature.

Under ordinary circumstances, then, the only explanation of the initial sudden appearance of a hernia lies in the existence of a preformed sac. Is this preformed sac congenital or acquired? As regards hernia in infants the view is gaining ground (Hamilton, Russell,[6] Stiles,[7] Deanesly[8]), that the hernia takes place into the processus vaginalis, which has become obliterated below, but not above. This view is borne out by the fact that the majority of these herniae in infants are on the right side,[9] the side on which the funicular process is later in closing. Russell and Deanesly go further and consider that all oblique inguinal herniae (and in a later paper[10] Russell extends the proposition to femoral herniae) depend for their existence upon the presence of a congenital sac. Other writers support this view, but not with the same thoroughness. For example, "Inguinal hernia . . . . is due either to the congenital patency of the vaginal process . . . . or to a secondary protrusion of the peritoneum."[11] "This hernia—that is, hernia into the funicular process—possibly forms the majority of the cases of inguinal hernia."[12]

Can we distinguish a congenital from an acquired sac? In my opinion, with a congenital sac the relations of the cord to the sac are more intimate than when the sac is acquired, and this appears to me to be the only difficulty in regarding the sac of an ordinary hernia as arising from the unobliterated funicular process. Sachs, however, quoted by Macready,[13] says that there is so much variation in the relation of the vas deferens and the spermatic vessels to the posterior wall of the processus vaginalis that the position of these structures cannot be used as a test for hernia into the funicular process.

It is, however, I think, accepted—and such is my own experience—that in the ordinary "congenital" hernia, where the gut occupies the tunica vaginalis, considerable difficulty

is experienced in separating cord from sac, and not infrequently a portion of the sac has to be left behind with the cord. Another point against the sac being derived from the funicular process would be the occurrence of an ordinary hernia lying in front of one of the congenital type. These considerations make it somewhat difficult to accept the view of the origin of the sac from the funicular process. There are other possible explanations of the preformed sac which may now be considered.

The view that there is a difference in origin between the hernia of infancy and that of adolescence and later life is supported by the fact that there is a gap in the ages between infancy and early adolescence during which hernia is very infrequent. Macready[11] writes:

> The extraordinary frequency of hernia in the first year in males, and to a less degree in females, is in strange contrast to the small number which develop in the years immediately succeeding.

May not hernia in infancy be due to the presence of a congenital sac, not, however, derived from the funicular process, but being a second peritoneal sac formed in connexion with the gubernaculum testis? This would not, of course, explain the preponderance of hernia on the right side in infants unless the appearance of the second peritoneal sac has any connexion with the later closure of the canal on that side.

With regard to hernia in later life, is it not possible for there to be an acquired preformed sac? Such an idea seems to be in Ziegler's mind when he writes, as quoted above, of a "secondary protrusion of the peritoneum." One knows the readiness of the peritoneum to form little pouches. On occasions possibly these may be attributed to the dragging influence of small sub-serous lipomata. May not the peritoneum become engaged in the top of the inguinal canal, over which it is normally depressed, and form a small pouch in the canal? Some time ago I operated on both sides of a patient. On the left side there had been no protrusion, but the canal appeared slightly larger than normal. I found there a small empty peritoneal sac, the size of a large marble, lying in front of the cord and easily separable from it. The operation did not show (and one notes the same fact in operating on small buboneceles) any obvious widening of the musculo-aponeurotic boundaries of the canal. Similar observations have been made by others,[15] who have looked upon these small sacs as patent funicular processes. I think that the possibility should also be entertained of their being acquired preformed sacs.

Having now arrived at the conclusion that, granted a preformed sac, hernia may occasionally result suddenly from traumatism, we must by no means think that the simple *post hoc* line of argument is correct. Certain conditions must be fulfilled before the trauma can be regarded as the cause of the hernia. These conditions may be thus tabulated:

1. The trauma must be of a certain character, either a sudden general muscular contraction compressing the abdominal contents, as in lifting too heavy a weight or in resisting a blow, or possibly a general abdominal squeezing as in a buffer injury. A localized blow on one part of the abdomen (as by the end of a stick) cannot cause a hernia.
2. The hernia must be quite small at first.
3. The hernia must appear immediately after the accident.
4. The development of the hernia must be accompanied by acute pain and tenderness at the site of the hernia and by the formation of a small tender lump there.
5. The symptoms must be so acute as to compel the patient at once to leave his work and seek medical aid.

These are the grounds for associating hernia with trauma which I have given when consulted recently on the medico-legal aspects of certain cases of hernia. Subsequently I have found corroboration of my opinions in at least three quarters:

1. *The German "Manual of Accident Insurance"* [16].—To justify the payment of insurance the hernia must be developed suddenly and be accompanied by intense pain . . . The sudden development of a hernia invariably causes pain of a character so intense as to be almost unbearable, to which the affected individual involuntarily gives expression, and which obliges him to interrupt his work and to consult a physician at once . . . If no proof of this kind is forthcoming it is to be presumed that the work during the performance of which the descent of the hernia occurs furnishes the occasion for the same but does not act as its cause, and is therefore to be regarded as the cause leading to the discovery of the condition not as the cause of the hernia itself.

2. *Carless*[17] *quotes Sultan*,[18] who will only admit the title of traumatic hernia in cases (*a*) where there is definite evidence of the occurrence of a sudden effort which would raise the intra-abdominal pressure; (*b*) where it is certain that no hernia existed beforehand; (*c*) if the onset of the trouble was associated with pain so great that the patient had to leave work, and where examination by a surgeon elicited tenderness and pain.

3. *Dr. Sole*[19] suggests that the following points should be borne in mind in determining the association of hernia with violent muscular effort—(*a*) Past history, particularly any recent illness calculated to reduce strength; (*b*) nature of effort, muscular effort in a constrained or unnatural attitude being particularly liable to produce hernia; (*c*) accidental hernia, always very small and the pain not vague, but sudden and so intense as to immediately unfit the patient for any other effort.

We have therefore a collection of independent opinions all pointing in the same direction, and want of fulfilment of the conditions indicated should make it clear to every medical man that the hernia he has under consideration has not been suddenly developed from a single traumatism.

A few other points require mention. If the case is one of hernia into the tunica vaginalis, the hernia may reach the scrotum as the immediate result of the traumatism. The existence of a double hernia is against traumatism. This opinion is confirmed by Golebiewski[20] and Carless.[21] Apart from other considerations, it is most unlikely that the gut will enter the two inguinal canals at the same moment as the result of a single "strain."

In some cases deception is undoubtedly practised by the patient, as where a large irreducible scrotal hernia with thickened sac and adherent omentum is attributed to recent injury.

Operation at times may afford additional information of medico-legal value. The English courts of law hold that there is no obligation upon a man to undergo an operation to fit him for his occupation again, even if that operation is practically devoid of risk. An opposite view is taken by the Scottish courts.

When a hernia exists prior to the trauma, the trauma may determine such a change in the hernia as to unfit the man for his work. To determine the association of change in the hernia and trauma we must apply similar tests to those tabulated above for the initial onset of a hernia. Thus straining may determine strangulation in a hernia.

Care must be taken in examining a case to distinguish an oblique inguinal hernia from other forms. Carless[22] quotes a case related by Guermonprez of Lille[23] in which a rupture formed in the right inguinal region as the result of a direct blow there. The hernial aperture was not identical with the inguinal canal, a bridge of tissue about 12 mm. thick separating them.

Finally, it must be recognized that the association of hernia with traumatism is exceptional. No exact rules can be laid down, and every case must be judged separately.

Considerations of space have prevented my quoting illustrative cases, and for the same reason no reference has been made to the association of traumatism with other forms of hernia.

Conclusion.

To sum up: Granting the existence of a preformed sac, oblique inguinal hernia may occur suddenly as the result of a single trauma, such trauma being usually an abdominal "strain." It is doubtful whether the preformed sac is congenital or acquired. For the trauma to be the cause of the hernia, certain conditions, which have been enunciated, must be fulfilled.

Notes and References.

[1] The term "hernia" is used in this paper to mean the oblique inguinal form unless otherwise stated. [2] "Excessive straining" must be regarded as an "accident." Vide Lord Macnaghten's judgement, BRITISH MEDICAL JOURNAL, August 20th, 1903, p. 470. [3] Treves, *Surgical Applied Anatomy*, 3rd Edition, p. 321. [4] An account of this apparatus will shortly be published in the *Journal of Physiology*. [5] Tillmanns, *Textbook of Surgery*, 1898, vol. iii, p. 180. [6] *Lancet*, November 18th, 1899. [7] BRITISH MEDICAL JOURNAL, 1901, vol. ii, p. 599. [8] Ibid., 1903, vol. i., p. 1487. [9] Stiles, loc. cit. [10] *Lancet*, 1902, vol. i, p. 1519. [11] Ziegler, *Special Pathological Anatomy*, 1897, Secs. ix to xv, p. 643. [12] Moynihan, *Encyclop. Med.*, vol. iv, p. 500, Art. "Hernia." [13] Macready, *Treatise on Ruptures*, 1803, p. 40. [14] Loc. cit., p. 10. [15] Deanesly, loc. cit. [16] Quoted from Golebiewski, *Diseases Caused by Accidents*, translated by Pearce Bailey, M.D., 1900. [17] *Practitioner*, February, 1904, vol. lxxii, No. 2. [18] *Münch. med. Woch.*, February 3rd, 1903. [19] Quoted in BRITISH MEDICAL JOURNAL, December 5th, 1903, p. 1482, from *Presse Médicale*, October 29th, 1903. [20] Loc. cit., p. 229. [21] Loc. cit., p. 260. [22] Loc. cit., p. 259. [23] *Gaz. des Hôpitaux*, July 21st, 1903.

AMERICAN GYNAECOLOGICAL SOCIETY.—The American Gynaecological Society has amended its constitution in the direction indicated by the italicized words in the following sentence: "The objects of this Society shall be the promotion of knowledge in all that relates to diseases of women, to obstetrics, and *to abdominal surgery*."

THE Italian Obstetrical and Gynaecological Society will hold its tenth annual meeting at Palermo next October.

THE SURGICAL ANATOMY OF THE NORMAL AND ENLARGED PROSTATE,

AND THE OPERATION OF SUPRAPUBIC PROSTATECTOMY.

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I.—The Normal Prostate.

The following points are found to be of importance in examining the normal prostate. The pelvic fascia provides a complete sheath for the prostate, which envelopes it except at its basal attachment to the bladder and at its extreme apex. This fascia under the microscope shows wavy layers of fibrous tissue, which, while they are in many specimens loosely arranged, can be readily dissected and traced without a break as a definite strong membrane.

The base of the prostate lies beneath the bladder base. The outer longitudinal layer of bladder muscle is attached to the posterior border of the prostatic base, and many fibres become incorporated with the true capsule of the gland. The sphincter vesicae, which in some of my sections appears as a broad distinct mass readily distinguished from the rest of the circular coat, lies immediately upon the base of the gland; and above this the bundles of the internal longitudinal layer of bladder muscle stream towards the urethra and pass into the wall of that tube. This inner layer is strongly reinforced by two bands of muscle which pass down from the ureters and meet on the posterior wall of the vesical outlet.

A circular layer of striped muscle completely surrounds the apex of the prostate for about a quarter of an inch. This muscle is continuous below with the constrictor urethrae. Passing upwards from the apex the fibres are attached laterally to the fascia, and cover only the front of the gland for a short distance. Further upwards this striped muscle insinuates itself between the anterior layer of the sheath and the capsule of the prostate, and passes up the front of the prostate between the sheath and the capsule as far as the base of the gland, uniting these two structures firmly together along the middle line.[1]

The veins of the prostatic plexus course upwards in the anterior layer of the sheath to the base of the prostate and then backwards around the junction of the prostate and bladder forming a Y with a vertical stem and horizontal arms. These veins lie between the layers of the sheath and are everywhere separated from the prostatic capsule proper by a layer of this sheath.

The capsule of the prostate corresponds to the capsule of other glands. It is an integral part of the connective-tissue framework of the gland, directly continuous with the stroma, and is, indeed, merely the outer margin of this. As such, the capsule is inseparable from the organ by dissection. It varies in thickness not only in different glands, but also at different parts of the same gland. At some points gland-tubules approach the surface so nearly as to leave only a very narrow margin of tissue, at other parts the gland-tubules lie far back from the surface, and a relatively broad band of fibro-muscular tissue represents the capsule.

Two bands of prostatic tissue unite the lateral lobes behind the urethra, one above the ejaculatory ducts and the other below them. The upper limit of the gland is thus in the form of a horseshoe open in front.

The connexion between the prostate and the urethra at the level of the veru montanum and above this eminence is intimate from the presence of prostatic ducts, but below this level the two structures merely come into relation with one another.

The seminal vesicles lie along the upper border of the posterior aspect of the prostate and take a transverse direction not a vertical one as is described. They curve upwards at their extremities.

II.—Changes in the Enlarged Prostate.

Some of the changes which take place in the prostate and its surroundings in enlargement of the organ have an important bearing on the operation of prostatectomy. The sheath of the enlarged prostate is a densely woven envelope of considerable thickness.

Mr. Freyer has already insisted upon the "shaking free" of the prostatic mass from its surroundings. The difficulty in enucleating the normal prostate and the ease with which the enlarged organ shells out will be apparent to any observer who makes the attempt.

Another striking change takes place in the relations of the enlarging prostate and its sheath. The upper part of the posterior surface already lies in a corner between the bladder muscle and the lower border of the seminal vesicles. As enlargement of the gland proceeds this wedge insinuates itself between the bladder wall and the vesicles, so that these structures become more and more separated. The vesicles are pushed back, and are at the same time stripped from the bladder wall, until finally they lie behind the upper part of the gland instead of above it. They thus form the upper part of the posterior wall of the sheath. This occurs in the majority of cases, but in a few the seminal vesicles retain their normal relation to the bladder base.

Very frequently nodules of the enlarged prostate intrude themselves within the bladder cavity, and are only covered by bladder mucous membrane. This is brought about by a portion of the enlarging prostate forcing its way through the lumen of the vesical sphincter, which becomes more and more widely dilated.

The bundles of the internal longitudinal bladder muscle which still cover these intruding nodules become separated, and the nodules appear immediately beneath the bladder mucous membrane.

The well-known middle lobe of the enlarged prostate is formed by the protrusion of a nodule between the two bands of muscle which pass into the trigone from the ureters, and unite on the posterior wall of the prostatic urethra.

As the enlarging prostate begins to project through the lumen of the vesical sphincter it drags up the urethral mucous membrane with it into the bladder, and this probably explains the frequency of micturition which is so characteristic of enlargement of the prostate.

The elongation of the urethra which takes place in these cases affects that portion of the canal lying between the bladder and the veru montanum, and hardly at all the part in front of this. There is also a backward sinking of the posterior wall of the urethra, so that it occupies a position at the posterior surface between the two lobes, with little or in many cases no gland tissue behind it. This is most marked at the veru montanum, and is probably due to the backward drag of the ejaculatory ducts and the tissues surrounding them when the seminal vesicles are stripped backwards from the bladder wall.

III.—The Parts Left Behind after Prostatectomy.

I have collected *post-mortem* specimens from four cases in which prostatectomy had been performed during life. Death occurred in these cases in from nine hours to ten days after the operation.

I shall describe one specimen (Fig. 1), adding to the description the points of similarity or difference exhibited by the others.

At the upper part is the trabeculated bladder (Fig. 1 A), and below this the cavity left behind after removal of the prostate (Fig. 1 D). The vesical sphincter (Fig. 1 C) is a large, well-defined muscular band, and can be seen to surround an aperture of considerable diameter. This aperture represents the calibre of the opening through which the intravesical portion of the prostate entered the bladder, and if the prostate from this case be examined it will be found that a groove marks the junction of the intravesical and extravesical postions. This groove is produced by the pressure of the muscle just described.

In relation to the prostatic cavity it is necessary to examine:

1. The remains of the urethra.
2. The walls of the cavity.

1. *The Remains of the Urethra.*

From the apex of the trigone of the bladder a tongue of tissue hangs downwards for six-eighths of an inch, and the lower end of this comes in contact with another process of tissue slightly shorter, which projects upwards into the cavity from the centre of its floor.

These processes prove on examination to be the remains of the prostatic urethra and represent the whole length of that canal.

In the second specimen the portion of the urethra between the veru montanum and the membranous urethra was left behind. In Specimens III and IV the entire prostatic urethra was removed.

2. The Walls of the Cavity from which the Prostate has been Removed.

The space from which the prostate has been removed is a single cavity with an incomplete roof in a flattened posterior wall, and rounded anterior and lateral walls which pass into each other. Indications of the bilobed form of the prostate which occupied the space can be seen, especially at the upper part of the cavity. The posterior part of the cavity is partly roofed over by an overhanging ledge, which is formed by the muscular wall of the base of the bladder and the mucous membrane of the trigone. From the centre of this ledge hangs the portion of urethra already described. The lining of the cavity is comparatively smooth. Around the upper part there is a circular arrangement of fibres, continuous with the under-surface of the circular fibres of the sphincter. Around the entrance of the urethra at the lower part, there is also an arrangement of fibres in circular manner. Between these sets of circular fibres the wall is smooth. Springing from the posterior wall in the median line, rather nearer the floor than the roof, is a tuft of tissue a quarter of an inch long (Fig. 1 F). This projects forwards into the cavity and almost meets the upper extremity of the lower urethral segment. This is formed by the ejaculatory ducts and the surrounding connective tissue. In Specimens III and IV no trace of the ejaculatory ducts could be found.

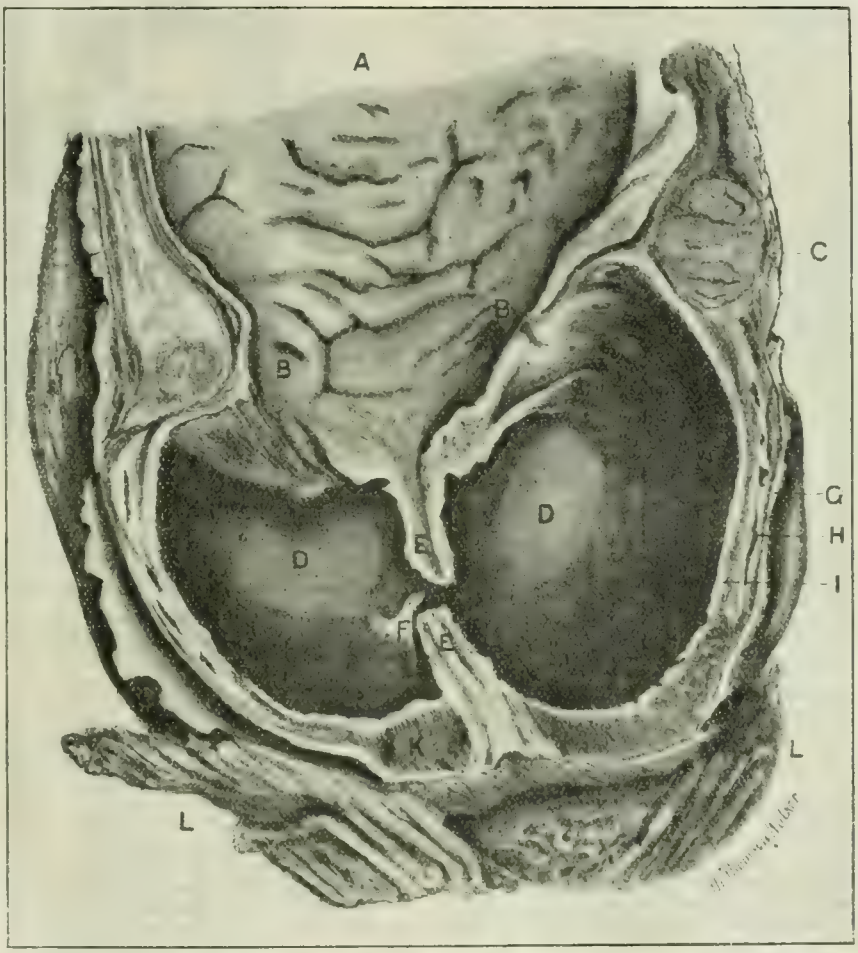


Fig. 1.—*Post-mortem* specimen. Death eight hours after prostatectomy. A, bladder; B, B, ureters; C, sphincter vesicae; D, D, cavity left by removal of prostate; E, E, prostatic urethra; F, ejaculatory ducts; G, I, layers of sheath; H, prostatic plexus; K, constrictor urethrae; L, L, levatores ani.

On dissection of the posterior wall it is found that the upper part, including rather more than the upper half, is formed by the seminal vesicles and the lower ends of the vasa deferentia. These are enclosed within the layer of recto-vesical fascia, and this fascia, continued downwards below the vesicles, forms the lower part of the posterior wall and the floor. From within the cavity, however, it is necessary to dissect away a thin circular layer of muscular tissue before reaching the anterior surface of the upper part of the vesicles. This layer thins off rapidly, as its passes down, and does not reach the middle of the cavity. It is present at the upper part of the lateral wall, and is also found anteriorly. At the cut edge of the specimen, that is, in the middle line anteriorly, these fibres may be traced upwards to the middle layer of bladder muscle with the unaided eye. On microscopic section (Fig. 2 K) the continuity of these fibres with the middle layer of bladder muscle, their muscular structure, and their extent are corroborated.

It is to be noted that the peritoneal sac (pouch of Douglas) maintains its normal relation to the seminal vesicles, and thus comes to be a posterior relation of the extra-vesical portion of the enlarged prostate. The lateral walls of the cavity are thinner than the anterior and posterior walls. Here the surface exposed is smooth and is formed by the prostatic sheath—that is to say, the downward prolongation of the visceral layer of pelvic fascia over the side of the prostate. Outside this is the levator ani muscle (Fig. 1 L). The anterior wall consists of the anterior part of the prostatic sheath. This is formed by a strong layer of fibrous tissue passing in front of the prostate and uniting the lateral layers which pass away from the prostate round the anterior borders of the levatores ani.

Between the layers of fibrous tissue which form this part of the sheath the large veins of the prostatic plexus pass upwards (Fig. 1 H). With the unaided eye it is readily recognized that these veins are protected on the side of the cavity by a strong layer of fascia (Fig. 1 I). On the floor of the cavity around the point of entrance of the urethra circularly arranged fibres are found. These circular fibres may be traced outwards from the urethra over a small area of the floor.

On microscopic section they are found to consist of striped muscle fibres loosely arranged. This is the remains of the voluntary muscle, which has been described as surrounding the apex of the normal gland. A microscopic section in the saggital plane through the wall of the sheath from bladder to urethra (Fig. 2) shows the layers of the bladder wall, and, passing down from this, the sheath of fascia composed of densely-packed fibres arranged for the most part vertically.

Several large veins of the prostatic plexus (Fig. 2 F) are seen passing up between the layers, and it is to be noted that they are protected on their inner side by a strong layer of fascia. At the lower part of the section the continuation upwards of the constrictor urethrae alongside the urethra may be seen (Fig. 2 H), and the manner in which this striped muscle insinuates itself within the sheath, and then spreads out for a short distance in its inner aspect, is readily appreciated (Fig. 2 I).

At the upper part, the circular muscle of the bladder is continued down on the inside of a sheath in a thin layer which tails off and disappears about half-way down (Fig. 2 K). At the lower part the striped muscle just described passes up for a short distance. Between these two muscular layers the bare sheath is exposed. At one point there is a small nodule of prostatic tissue the size of a pin's head adhering to the wall. The structure and relations of this nodule deserve careful consideration. The prostatic tissue consists of a single oval nodule. The gland alveoli are oval, round, or irregular, and show the usual epithelium and intra-acinous projections. The alveoli are not flattened or atrophied. Outside the nodule is a well-marked layer of tissue, which is evidently a portion of the proper capsule of the prostate.

This nodule, with the disc of prostatic capsule between it and the sheath, has been torn away from the surface of the prostate during the operation, and left adhering to the wall

of the sheath. It is particularly worthy of note that there is no layer of compressed gland tissue between the nodule and the sheath.

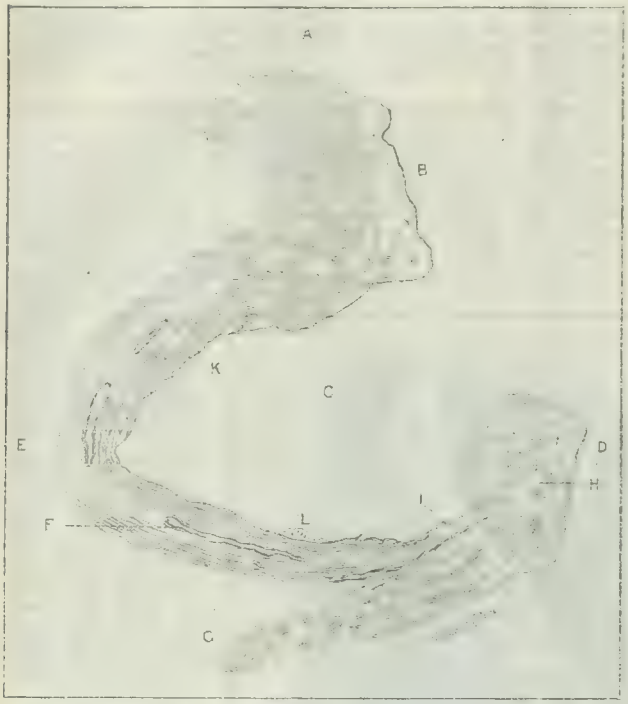


Fig. 2.—Vertical section of wall of cavity after prostatectomy. A, bladder wall; B, bladder mucous membrane: C, cavity from which prostate was removed; D, urethral mucous membrane; E, wall of cavity; F, vein of prostatic plexus; G, constrictor urethrae; H, striped muscle on wall of urethra; I, striped muscle in sheath; K, prolongation of bladder muscle; L, nodule of prostatic tissue.

Sections of the lateral wall corroborate the facts already stated in the description of the specimens. The veins of the prostatic plexus are, of course, not represented at this part. No other nodules of prostatic tissue were found. In Specimens II and III no portion of prostatic tissue was found after careful search. In Specimen IV one part of the lateral wall showed dense infiltration, which, on microscopic examination, proved to be carcinomatous.

IV.—The Structures Removed at the Operation of Prostatectomy.

The material on which the following observations are based consists of seventy-three prostates removed by Mr. P. J. Freyer.

The prostates vary in size and weight within very wide limits. The largest weighs 10½ oz. and the smallest but ¾ oz., while the average weight is a little over 3½ oz.

I have classified these prostates in two groups, on anatomical and on operative grounds. In one group I have placed those prostates which have, previous to the operation, been entirely contained within the prostatic sheath. The other group consists of those prostates which were partly contained within the prostatic sheath, but which had so far intruded their bulk within the vesical cavity that they consisted of two distinct portions, an intravesical and an extravesical. The relative size of the prostates does not coincide with these divisions so closely as one would expect on theoretical grounds. Among the specimens which were totally excluded from the bladder are prostates weighing 2¾ oz., while among those which possessed an intravesical portion specimens weighing as little as ¾ oz. are found.

1. *Prostates which Protrude into the Bladder Cavity.*

A typical example of an enucleated prostate which has protruded into the bladder will first be considered (Fig. 3), and the points of similarity and difference between this specimen and others of the same class then pointed out.

The intravesical and extravesical portions are readily distinguished. At the junction of these two parts a deep groove (Fig. 3 E) exists, and I have already pointed out that this results from the pressure of the hypertrophied sphincter of the bladder.

The portion which has been contained within the prostatic sheath (Fig. 3 A, B) demands first consideration, for in most points the description of this covers also the characters of the second class, the entire bulk of which was extravesical. The two lobes are distinguished without difficulty. They are wrapped around by a coating of circular bundles of tissue, which surrounds the whole mass. This coat is complete except at one point, where a small transverse tear has exposed a subjacent nodule of prostatic tissue. The circular bundles in this specimen are of comparatively fine texture, and the general surface is smooth and regular.



Fig. 3.—Enucleated prostate. A, B, right and left lobes; C, catheter in urethra; D, ridge of striped muscle; E, E, groove between intravesical and extravesical portions; F, median lobe; G, G, grooves containing remains of longitudinal bladder muscle.

At the lower end of the specimen—that is, the part which abutted on the triangular ligament—the lower pole of each lobe is indicated, and between these is the opening of the lower end of the prostatic urethra. The fibres of the capsule dip in here and pass up along the wall of this canal. Posteriorly the capsule uniting the lobes passes down to their extreme limit. At the upper part of the extravesical portion of the specimen there is a well-marked thickening of this capsule, which is most apparent in the deep groove on the right side of the specimen.

In the middle line, anteriorly, is a vertical strand of fibres, which have been torn across (Fig. 3 F). These fibres, which extend for about ¾ in. between the two lobes, have evidently formed a band of adhesion with the tissues that have been left behind. The intravesical portion of the specimen is marked off from the rest by a deep groove most marked on the right side. This intravesical portion surrounds the opening of the urethra behind and on each side, only a small amount of prostatic tissue appearing in front of the opening.

In the middle line posteriorly is a large rounded nodule representing a middle lobe (Fig. 3 F), and this is separated from the lateral portions by grooves in which bands of tissue can be traced downwards into the wall of the urethral tunnel. These bands of tissue have evidently been torn across at their upper ends. The appearance presented is that of a median and two lateral intravesical lobes. The capsule which surrounds the extravesical portion is continued up over the intravesical portion also, but is here much thinner.

A section at right angles to the urethra at about the middle of the extravesical portion (Fig. 4) shows two well-marked lobes. A compact capsule surrounds the whole mass (Fig. 4 A). This capsule is thickest in front. The opening of the urethra is situated between the two lobes with only a small wedge of tissue separating it from the posterior surface. Each lobe consists of numerous nodules of adenomatous prostatic tissue.

Between the lobes in front of the urethra is a firm fibrous

wedge corresponding to the anterior commissure (Fig. 4 B). A section at the level of the deep circular groove shows that the right lobe is not represented, but the left lobe forms a large mass of adenomatous tissue on the left side of the urethra. The capsule is here represented by a much thicker

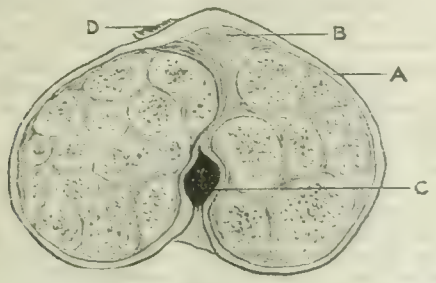


Fig. 4.—Section at middle of extravesical portion of enucleated prostate. A, capsule; B, anterior commissure; C, urethra; D, striped muscle.

band of circular fibres which, on the right of the urethra, forms a broad dense mass of tissue. A section through the intravesical portion (Fig. 5) shows that the urethra is still further forward, and that it is surrounded on each side and behind by a continuous collar of adenomatous tissue. The gland tissue is, as elsewhere, completely surrounded by a firm capsule.



Fig. 5.—Section of intravesical portion of enucleated prostate. Note horseshoe-shaped mass of prostatic tissue posterior and lateral to the urethra, and thick capsule surrounding this.

It is, therefore, evident that the right lobe in this specimen is wholly extravesical, and that the intravesical portion is formed by the upward continuation of the left lobe, which has become bent round the opening of the urethral canal in the form of a horseshoe. Microscopic sections of the bands of tissue which pass down the grooves on each side of the apparent middle lobe show that they consist of plain muscle-fibre. These bands represent the internal longitudinal layer of bladder muscle which passes into the urethral wall.

A microscopic section through the entire mass at a level just above the middle of the extravesical portion shows the following points of interest:—The two lobes are well-defined, the left being larger and more distinctly outlined than the right. The whole mass is surrounded by a capsule, which is of great thickness in front but thinner laterally and behind. This capsule is composed of circular layers of densely-packed, unstriped muscular fibre. The fibres are long, and their characteristic nuclei well stained and distinct. Here and there a blood vessel is found with sometimes some peri-vascular round-celled infiltration, and some of these vessels show hyaline changes in their walls.

In a few sections it is possible to find at some part of the circumference an isolated flattened gland tubule, or a group of these lying among the layers of the capsule. This is exceptional, however, and the capsule is formed for the most part of dense layers of unstriped muscle. Each lobe is sub-divided into numerous lobules by rings of fibrous tissue, and these lobules show the usual cystic adenomatous formation found in enlarged prostates. Between the lobes anteriorly is a mass of unstriped muscle and fibrous tissue. This represents the anterior commissure. It shows an isolated nodule of gland tissue embedded in its substance. From the urethra a line of cleavage passes forward but does not reach the surface. It is apparent that a slightly greater degree of force at the time of the operation would have burst the two lobes asunder in front, leaving the anterior commisure attached to the right lobe. The urethra is elongated antero-posteriorly, and is displaced some distance to the right of the middle line owing to the greater bulk of the left lobe.

At one part on the posterior surface of the right lobe the capsule has been torn open and the subjacent lobule of gland-tissue exposed. Attached to the front of the capsule, slightly to the left of the middle line, is a tuft of striped muscle-tissue (Fig. 4 D). This corresponds to the vertical band of torn fibres seen on examining the anterior surface of the specimen. It represents the continuation upwards of the striped muscle of Henle between the sheath and capsule of the prostate. The muscular wall of the urethra is relatively thin as compared with that of the normal organ. The layers of which it is composed are, however, more distinctly defined from the stroma of the gland. The epithelium lining the tube in this specimen has not suffered from the elongation of the urethra which has taken place. In other specimens, however, the epithelium is thinned out, and in some parts is merely represented by a single layer of cubical cells. The veru montanum is represented in this section unchanged in appearance and structure, and the ejaculatory ducts are seen passing backwards, having been torn across at a very short distance from the urethra. The whole length of the prostatic urethra is represented.

While the specimen just described is typical of the group of prostates which have protruded into the bladder, the size and form of the various members of this group varies within wide limits. Many of the prostates are extravesical, with the exception of a single small nodule projecting through the sphincteric ring. In others the intravesical equals, and closely resembles, the extravesical portion, being only defined from it by the deep circular groove of the sphincter, or again the intravesical portion may greatly exceed in size that portion outside the bladder.

The form which the intravesical portion takes shows an almost endless variety. The following figures relate to 54 specimens examined with a view to detecting the origin of the intravesical projection:

Median lobe alone	9
Median and lateral lobes—	
Three lobes distinct	2
Fused collar...	12
Median and left	2
Median and right	2
Lateral lobes, both	15
Left only	0
Right only	3
	54

In the smallest specimens the only cause for prostatic symptoms appeared to be the extension upwards through the vesical sphincter of a collar of prostatic tissue or of nodules from the median portion. The median projection when arising from the median portion of the prostate was in most instances small. The larger outgrowths from this portion were either pedunculated or fused with intravesical lateral lobes. There were three very remarkable specimens in which the left lobe projected alone into the bladder and formed a collar-like mass around the urethral opening.

In one case the intravesical nodule had evidently burst through the floor of the trigone instead of passing through the lumen of the sphincter, for a distinct band of circular muscle fibres was found behind the urethral opening and in front of the intravesical nodule.

2. *Enlarged Prostates which are Extravesical.*

These form a smaller group than the previous one. The description of the extravesical portion of the prostate already given applies in all respects to this group. There is, of course, no deep circular groove, as the prostate has not projected through the ring of the sphincter. The upper poles of the lobes are covered by the capsule, and at the junction of the urethral wall with the bladder, especially on its posterior aspect, the longitudinal fibres of the bladder which join the urethral wall are found torn across.

It is now necessary so examine certain points which may apply to specimens in either of these groups. In a few specimens it is evident that something more than merely the capsule has been removed with the prostate. In one specimen the torn edge of the mucous membrane and muscle of part of the trigone is seen adhering to the upper part of the specimen. In other specimens which have had an intravesical collar or

nodule, there may be observed adhering to the posterior or under-surface of this numerous transverse fibres, which evidently have been torn from the floor of the bladder immediately adjacent to the vesical outlet. When these fibres are traced downwards they are found to pass into the circular layers of the capsule, and some of them split off and pass round each side of the intravesical nodule into the wall of the urethra.

In many specimens the capsule and the anterior commissure have given way, and allowed the two lobes to separate anteriorly. These open prostates form the great majority of the specimens. In 59 enucleated prostates 51 were open anteriorly, and only 8 closed. In three of the specimens a prominent adenomatous nodule was found in the middle line posteriorly. The ejaculatory ducts were torn across just above the nodule, which therefore represented an enlargement of the portion of prostatic tissue in the middle line immediately below these ducts.

It was evident in a few specimens that portions of the capsule on the surface of the lobes were wanting; the adenomatous nodules of the prostate are exposed at these parts, and it is not unlikely that a small nodule may have been torn off at the time of the operation and left behind.

An examination of the condition of the urethra in these specimens of enucleated prostate and the *post-mortem* specimens already described showed that in certain cases the entire prostatic urethra was removed. The prostates in which this occurs are nearly all of the closed variety. In a few the whole prostate urethra was left behind, and in these cases the prostate after removal was almost invariably of the open variety. In such cases a portion at least of the tube would probably slough. In some cases the part of the urethra between the bladder and the veru montanum was removed, and the part between the veru montanum and the membranous urethra was left behind. It seems probable, from the large proportion of these latter specimens, that this is what usually happens.

V.—Observations upon the Operation of Prostatectomy.

It is now possible to discuss the anatomy of the operation of prostatectomy. Is this operation a complete removal of the "entire prostate within its capsule," or is it merely a shelling out of adenomatous nodules from within the prostate itself as some would have it? Much confusion has arisen in discussing this question owing to the indefinite use of terms denoting the true capsule of the prostate and the envelope provided by the pelvic fascia. This has in the main, I believe, resulted from a want of clearness in the descriptions of our anatomical textbooks. Both those layers have been described without distinction under the term "capsule," although they are structurally distinct.

Sir Henry Thompson many years ago supplied a term which amply fulfils all requirements, and distinguishes the envelope of pelvic fascia as the "sheath" from the outer margin of stroma which is the "capsule," and corresponds to the capsule of other glands. Definition of these terms has become necessary, for it has been sufficiently evident that by some at least their meaning has not been thoroughly grasped.

When the evidence of completeness or incompleteness of the operation is considered, it is found that a small nodule was described adhering to the wall of the sheath after removal of the prostate. Further, it was noted that in the microscopic section the capsule was torn open at one part, and a nodule of prostatic tissue exposed, and on examining the total number of enucleated prostates the appearance of one or two of them would lead one to expect that some part of the capsule or a shred of prostatic tissue had been left behind. It is therefore apparent that in a few cases portions of the enlarged prostate have been left behind. Is it to be inferred from this that this operation of prostatectomy is an incomplete one? I think not. It is evident that in the vast majority of these specimens there is no question of nodules of prostatic tissue being left behind, and further, in two of the *post-mortem* specimens no prostatic conditions could be found. The accidental tearing away of such a nodule as was found in one *post-mortem* specimen from the main mass during the operation does not, in my opinion, affect the general question as to whether this operation is a total or a partial prostatectomy.

The question which really arises for discussion is not whether a shred of prostatic tissue is left behind in two or three of over seventy operations, but whether the line of cleavage of the operation passes between the prostatic capsule and its sheath, or whether it passes along some plane within the capsule, or even within the gland.

The material I have brought forward and discussed in detail shows that the mass of tissue removed at the operation represents the whole of the enlarged prostate, whether it is in the form of two entirely extravesical lobes, or whether there is in addition a small or large intravesical portion; that this mass is surrounded by the thickened prostatic capsule, and in a few specimens portions of the bladder muscle are also removed. Further, that the parts left behind consist of the prostatic sheath, between the layers of which lie the prostatic plexus of veins.

The plane followed by the enucleating finger is therefore as follows: After scraping through the mucous membrane covering an intravesical projection, the finger meets the capsule of the prostate and passes along outside this, stripping the mucous membrane from off it. Keeping always to the capsule, the finger now passes through the lumen of the vesical sphincter, and is guided by these structures between the prostatic sheath and the prostatic capsule.

The finger can now be swept round each lobe, and the following structures must be torn through before the prostatic mass lies free in its sheath: The ejaculatory ducts, the vessels which pass out from the upper part of the postero-lateral horns, the vertical band of the muscle of Henle, and the urethra. Variations in the treatment of the urethra have already been described in detail. The strength of the anterior commissure, and to a less extent of the urethral wall, determine the fate of that tube, and the desire of the surgeon to leave it intact must be subservient to these factors.

If no intravesical portion be present, the finger must tear through the muscle of the bladder base before reaching the prostate, but this manœuvre is rendered easier than in the normal condition by the increased bulk of the prostate, over which the muscle fibres are stretched.

It is not to be supposed that in every case this operation is absolutely faultless. I have already shown that in a few cases a shred of prostatic tissue is left behind. But I submit that the operation represented by these specimens is a complete prostatectomy, and that small portions of prostate left behind are accidents of the operation, and not proofs of its incompleteness.

NOTE.

[1] This muscle was originally described by Henle (*Handbuch d. Eingeweidlehre*, 1866).

CHLORIDE OF ETHYL AND A METHOD OF ADMINISTERING IT.

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THE latest addition to the list of general anaesthetics seems likely to keep its place. Chloride of ethyl is pleasant in action, does not cause cyanosis, is taken readily by children as well as adults; its effects pass off almost with the rapidity of their induction; as it has few or no after-effects there is no preliminary preparation of the patients as in the case of chloroform and ether; it may be given with the patient sat up; as a preliminary to other anaesthetics it shortens the tedious interval which sometimes elapses before the patient is ready for operation: and, most important of all, it is, within the limits for which it is indicated, probably safer than any other anaesthetic, with the exception of nitrous oxide.

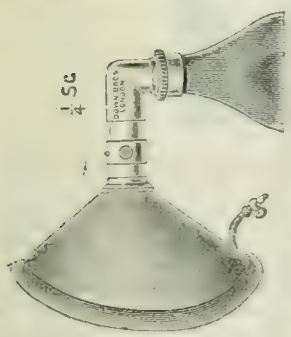
Chloride of ethyl has the advantage of giving an anaesthesia lasting twice as long as that obtained with nitrous oxide, whilst the deep anaesthesia is followed by a degree of analgesia sufficient to allow the painless completion of a short operation. In one of my own cases 8 c.cm. of the drug sufficed for the removal of a lipoma. Although a 5-in. incision, requiring six sutures, was made, and two vessels had to be tied, the patient had no recollection of the operation, and when she came round asked when I was going to begin.

The rapid and complete recovery with little or no vomiting, which, even if it does not pass into dangerous excess, is always unpleasant, and often a great tax upon nurses and attendants, should prove as great an economy of time and labour in hospital as it will be helpful in private work. One defect of the drug must be borne in mind. It does not always overcome muscular resistance. Within a short period I had two cases of displacement of one of the semilunar cartilages of the knee. But whereas in the first case—that of a working man who

came to the hospital—ethyl chloride was used with success in order to manipulate the limb, in the second case—that of a maiden lady of good physique, over 50 years of age—it was necessary to supplement the ethyl chloride with a few drops of chloroform before muscular relaxation was secured. It will be well, therefore, until further experience teaches us how to eliminate this uncertainty, to be prepared with a general anaesthetic when ethyl chloride is administered for conditions requiring muscular relaxation.

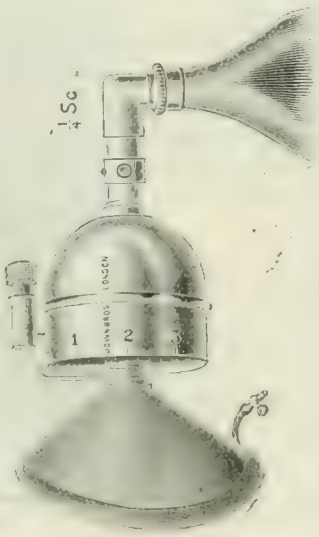
The method of administering the drug, if the contrivance I describe is used, is both simple and efficient. This consists essentially of a tube one end of which fits either the face-piece or ether chamber of Clover's ether inhaler; the other end fits the bag. A fragment of lint sufficient to line the tube for three parts of its circumference, and cling closely to the side in tubular form so as to leave a clear air-way, is placed in the tube. In the tube is a hole which can be opened and closed at will by a revolving collar. This hole serves four useful purposes. Through it the anaesthetic is sprayed into the apparatus; by keeping the hole open for the first few inspirations until the patient is accustomed to the anaesthetic, the unpleasant taste and choking sometimes experienced when a strong dose is suddenly given are obviated; it provides a supply of air at any time during the administration, should the inflation of the bag be ineffective; while it is a valuable adjunct during ether administration following chloride of ethyl. A diaphragm of gauze at the bottom of the tube prevents the lint being sucked into the patient's mouth.

The accompanying illustration shows the tube interposed between the bag and face-piece of Clover's inhaler. This constitutes a complete chloride of ethyl inhaler. The tube is far from the mouth of the patient, if freezing takes place. In my own hands, during the last few months, as well as in the hands of two of my colleagues in the town and of the house-surgeons at our infirmary, the appliance has been used with every success.



If it is desired to follow the chloride of ethyl with ether, the chamber of Clover's inhaler is charged with ether in the usual way, and the tube interposed between it and the bag. As soon as the patient begins to breathe the chloride of ethyl, the ether should be gradually turned on, so that the mixed vapours are inhaled.

As the illustration shows, the tube makes but a slight addition to Clover's inhaler. The tube remains in position throughout the inhalation, and adds a distinctly advantageous feature to Clover's inhaler. As soon as ether narcosis is established, the hole in the tube is opened. Then with each respiration, whilst part of the air goes to and from the bag, another portion passes in and out of the hole in the tube. Hence the patient breathes a much purer air than the carbonized mixture in the closed bag. I have used the ordinary rubber bag supplied with Clover's apparatus without drawback, but at Mr. Down's suggestion I have used one made of the material called Mosetig Batiste. This is better still, it is much lighter than rubber, is unaffected by the vapour, it can be reversed, as well as sterilized by boiling.



With this device I have experienced none of the disadvantages of the ethyl-ether sequence when ethyl chloride is placed in the Clover's ether chamber, as described in the BRITISH MEDICAL JOURNAL of April 23rd by Mr. Bampfylde Daniell, whose article I did not see until my method had been in successful use some time. With this tube in the box of his Clover's inhaler, the anaesthetist has not only a complete chloride of ethyl inhaler, but a simple and efficient ethyl-ether inhaler. It should be possible with increased experience to secure an anaesthesia without any break between the ethyl chloride and the ether narcosis. In one of my cases this was effected in ninety seconds. With chloroform, in my experience, there has always been a recovery between the chloride of ethyl and the chloroform narcosis, whilst the after-vomiting and distress have been greater and more prolonged than when ether followed the ethyl chloride. In a case of Tredelenburg's operation for varicose veins, although the house-surgeon found it necessary to follow the ethyl chloride by ether, the patient on getting back to the ward showed little sign that she had had an anaesthetic, and had a good tea with the rest of the patients about two hours later.

With the apparatus I describe the mixture of A.C.E. or of ether and chloroform can be substituted for ether, and with the hole in the tube open the bag may be kept in position. I have only to add that my thanks are due to the makers of the tube, Messrs. Down Brothers, for suggestions in the details of the apparatus, after I had proved in practice with a home-made model its feasibility and success.

A MODIFICATION OF HAMMOND'S SPLINT FOR THE TREATMENT OF CERTAIN FRACTURES OF THE MANDIBLE.[1]

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THERE are so many splints and modifications of splints in use for the treatment of fracture of the mandible, that I almost hesitate to bring forward another.

The splint that I intend to bring under your notice is a modification of Hammond's splint, which I have found very useful in two cases, the notes in which I will read to you presently.

Hammond made his splint of iron wire, but iron wire is far too soft, and it does not solder very easily, and its taste is rather against it. I have used dental alloy, which is an alloy of platinum and silver, to make this splint. Hammond's splint, as you know, consists of a stout wire which is bent right round the arch of the teeth inside and outside, fitting closely the necks of the teeth, and the two ends of the wire soldered together. This is placed over the teeth and held in position by binding wires passed between the necks of the teeth at various points.

In my opinion there are various objections to Hammond's splint. In the first place it takes a considerable time to make, and it is a most annoying thing to make, for the reason that as you bend it at one place to get it close to the neck of a tooth, it is very apt to be bent out of position at another place.

Another objection is that it is difficult to apply. A patient suffering from fracture of the mandible is not as a rule able to open the mouth very widely. This makes the application of the furthest back ligatures, say, round the first molars on either side, difficult, and the manipulation necessary for their application causes the patient a considerable amount of pain.

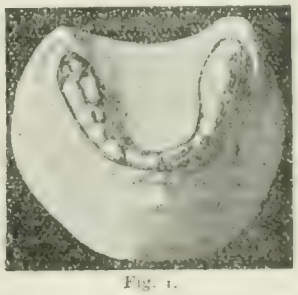


Fig. 1.

Another great objection is that unless the furthest back teeth on either side are well erupted so that the wire can fit down snugly behind them, when the patient closes his mouth,

[1] Read before the Aberdeen Branch of the British Medical Association.

he bites on the splint at the back, and so tends to drag it up in front.

These objections to Hammond's splint are well exemplified in this case. This was a case in Dr. Booth's ward. (Fig. 1).

The patient was a boy, aged 14, who had his mandible fractured by a kick from a horse. It was some days after the accident before he came into hospital, and there was great swelling of the face, and the boy could only open his mouth a very little way, and the parts were extremely tender when handled. The fracture was between the right lateral and canine.

The impressions were taken with difficulty, and as the teeth were sound and steady, a Hammond splint seemed to be suitable.

As you can see from the model, the second lower molars are not fully erupted, so that the splint when made lies over their crowns. Owing to the patient's inability to open the mouth very widely, there was great difficulty in applying this splint, and its application gave great pain to the patient, and when it was applied and the mouth closed, the upper molars came down on the back of the splint and gradually dragged the front of the splint up, and although we ultimately got a good result, it was at the expense of a great deal of trouble and worry and pain to the patient, because every few days we had to religature the splint in position.

In order to overcome these difficulties I have modified Hammond's splint, the modification being applicable to all cases of fracture occurring towards the front of the mandible, and the majority of cases of fracture of the mandible which are suitable for treatment by Hammond's splint occur towards the front.

The cases that are suitable for treatment by Hammond's splint of course are those where the teeth are comparatively sound and steady and there is more than one tooth on either side of the fracture or fractures. The splint consists of a stout flattened wire of dental alloy fitted round the arch of the teeth in front, and another similar wire fitted round the arch of the teeth behind. Collars of No. 4 or No. 5 thickness of dental alloy plate are then fitted three-quarters round the back and sides of the second bicuspids or other suitable teeth on either side, and the ends of the wires soldered on to these collars with gold solder. The fracture having been reduced, the splint is placed in position and held in place by ligatures of binding wire passed between the necks of the teeth at suitable points. If the teeth are very close together it is necessary to use a dividing file in order to allow the collars to slip on easily. This splint can be made very quickly and very easily, in less than a quarter of the time it takes to make a Hammond. The easiest and quickest way to make the wires is to hammer them up between a zinc cast and counter. It is very easy to apply, and the patient experiences little or no pain during its application, and when applied, it holds the fragments very firmly in position and has no tendency to slip.

I have only had the opportunity of using it in two cases as yet, but the results have been all that could be desired.

I will now read you the notes on the two cases:—

CASE I.—*D. R., aged* 17. *Paper Worker. Compound Fracture of the Mandible.*

The family and previous history have no bearing on the case.

History of the Accident.—On February 19th, 1902, patient was pushing a hand-cart with a load of paper on it, when one of the wheels stuck in a hole in the floor. He gave the cart a sudden push to get it out of the hole, with the result that the load rolled off, the front of the cart came down, and patient fell forwards, striking the left side of his lower jaw, just below the chin, on a horizontal iron bar that ran across the back of the cart. He felt a sharp pain at the time, but this soon passed off, leaving a dull ache in the part. There was no shooting pain. There was a good deal of haemorrhage, the oozing continuing for about twelve hours. He went home and tried to take dinner, but found he could not eat on account of the fragments of his lower jaw moving about. There was very little swelling of the face and no dribbling of saliva. He came into hospital next day and was admitted to Dr. Riddell's ward.

Dr. Riddell asked me to see the case, and I saw the case on February 24th.

Physical Examination.—Patient is an under-sized slightly-built youth. There is a small skin wound below the chin not connected with the fracture. He can open his mouth fairly well, but doing so causes pain. On looking into the mouth, a wound is seen running between the left lower lateral incisor and canine, and extending to the lip furrow in front and to the floor of the mouth behind. It runs obliquely downwards and inwards, and the mandible is fractured in the line of the wound, the alveoli of both the canine and the lateral incisor being involved in the fracture, but both teeth are quite steady and not periostitic. The smaller fragment is displaced slightly outwards and forwards, and it is about a quarter of an inch higher than the larger fragment. This is not very evident on the model on account of the jaw being held up into the impression material. The fragments are freely movable and crepitus is easily made out. The fracture is easy of reduction, but the fragments do not stay in place. There is no loss of sensation and no dribbling of saliva. The teeth are fairly good with the exception of the first left lower molar which is very much decayed and painful.

Treatment.—Impressions of both upper and lower jaw were taken fairly easily, cast, the lower sawn through at the line of fracture, and articulated to the upper in the usual way, and then a splint of the kind I have described made, with the collars round the back of the first lower bicuspid on the right side and the second lower bicuspid on the left (Fig. 2).

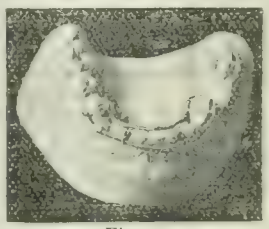


Fig. 2.

Next day (February 25th) the carious first left lower molar was extracted, the fracture reduced, and the splint applied. Fortunately there was a space behind the right first lower bicuspid so that the collars slipped on easily. Ligatures of binding wire were then passed between the necks of the teeth round the first left bicuspid and the right lateral incisor. A boric dressing was placed over the wound below the chin and held in place by a bandage. The patient was told to keep his mouth shut and speak as little as possible for a few days. He was ordered liquid diet, the mouth to be frequently irrigated with warm boric lotion.

The splint kept the fracture in excellent position.

On March 2nd I removed the splint, because I thought it looked rather dirty, cleaned it, and replaced it as before. The wound below the chin had healed.

On 7th March the wound of the mucous membrane had healed and there was good fibrous union of the fracture. The patient was put on soft food.

On March 14th he was put on ordinary food, but told to avoid hard and tough substances for a little time.

On March 19th he was sent out to the convalescent hospital for a week, the jaw being apparently quite firm, but the splint was not removed in case of accident.

He returned on March 27th, and had the splint removed, the fracture being quite firm and the articulation perfect (Fig. 3).

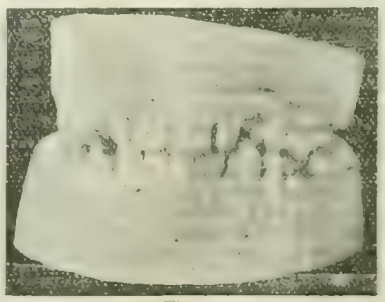


Fig. 3.

CASE II.—*G. D., aged* 35, *General Dealer. Compound Fracture of the Mandible.*

The family and previous history have no bearing on the case.

History of the Accident.—On March 22nd G. D. was standing

on the golf links behind a man about to hit a golf ball. The up-swing of the club hit him below the chin slightly to the left side. He felt a sharp pain at the time which soon passed away. There was slight bleeding into the mouth, and he felt his lower front teeth had been loosened.

He did not think much about it, and, being interested, followed the players round the links and saw the finish of the match. He then went to his lodging to tea, but found that he could not eat anything on account of the fragments of the lower jaw moving about, and he had great difficulty and pain on attempting to swallow fluid. By this time there was considerable swelling of the lower part of the face, especially on the left side, and owing to the difficulty in swallowing saliva dribbled from his mouth.

He went to the infirmary next day, where a house-surgeon told him his jaw was broken, and bound the teeth on either side of the fracture (the lower centrals) together with binding wire, gave him a piece of cork to bite on, and ordered him a mouth-wash of Condy's fluid.

He attended the infirmary for a week as an out-patient, during which time the swelling of the face subsided, and he was again able to swallow without pain, so that the dribbling of saliva stopped.

He then went home to Aberdeen, and came up to the hospital as an out-patient to Dr. Gray. Dr. Gray removed the wire, which was loose, and the left central which was necrosed, and dispensed with the cork. He put the jaw up in a four-tailed bandage, and told the patient to come up again and see him. The patient did not come up again for ten days, when Dr. Gray turned the case over to me.

I saw the case on April 10th.

Physical Examination.—The patient is a strongly-built, healthy-looking man. On examining the mouth, which can be fairly-well opened, a wound is seen running vertically downwards between the right lower central incisor and the socket of the left, extending down to the lip sulcus in front and to the floor of the mouth behind. The mandible is fractured in the line of the wound. The socket of the left central is opened into by the fracture. The right central is steady and not periostitic. The wound is suppurating freely. There is slight displacement about an eighth of an inch downwards and outwards of the right fragment and the patient cannot close his mouth properly. Movement of the two fragments is free and crepitus can easily be made out. The fracture can easily be reduced but does not stay in place. There is no pain except slight pain on moving the fragments. There is no loss of sensation and no dribbling of saliva. The teeth are sound, strong, and very close set.

Impressions were taken without difficulty, cast, and the lower sawn through at the line of fracture and articulated to the upper in the usual way, and a modified Hammond's splint made in the way I have described, the collars going round the backs of the second lower bicuspids (Fig. 4).

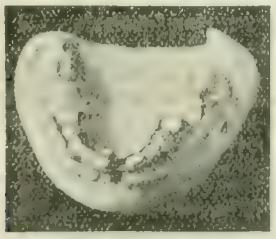


Fig. 4.

Next day (April 11th) the fracture was reduced and the splint applied. Owing to the closeness of the teeth a dividing file had to be used to allow the collars to be applied. Ligatures of binding wire were put on round the first bicuspids on either side and the right lateral incisor. A bandage was put on to aid the patient in keeping his mouth shut. He was told to keep his mouth shut and speak as little as possible for a few days, to take liquid food and come up daily to have his mouth irrigated.

At the same time he was given a boric mouth-wash.

The splint kept the fragments in excellent position, but owing to the free suppuration from the socket of the left central, healing was rather slow.

On April 24th a small sequestrum of bone was removed from the wound, and by that time there was fairly good fibrous union, and the patient was put on soft food.

On May 8th the splint was removed, the fracture being quite healed and the articulation perfect (Fig. 5.) There was still some discharge from the socket of the left central. The patient was put on ordinary diet.



Fig. 5.

On May 12th another small sequestrum was removed and after this the discharge disappeared in a few days, and I last saw the patient on May 16th, when he told me he had a steak to dinner the day before, and ate it with comfort and relish.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

AIR IN THE HEART.

Perhaps some reader may be able to suggest the source of the air in the right side of the heart in the following case: A woman, aged 60 years, was found dead in an open field on the bank of a little spring. The body was in the genu-pectoral position, and it is believed the woman died in the act of climbing up the bank after drinking water at the stream. She was seen alive within twenty-four hours of the necropsy, the result of which may be summed up as follows:

A well-nourished, rather stout, coloured woman. No external sign of violence or injury. Thorax: Right lung distinctly congested throughout, but no consolidation; left lung much paler and rather emphysematous. Old pleuritic band of adhesion to lower ribs on right side anteriorly. Pericardium bulging, especially over the right ventricle, and seemingly filled with the heart; nothing in pericardial sac. Heart rather fatty, and its muscle pale and brownish. Right side of heart distended with air or gas, which hissed out on incision being made, leaving nothing but dark frothy blood in right cavities. Left ventricle empty, except for small *post-mortem* clot; its wall moderately hypertrophied. Valves competent and healthy, except for calcareous deposits in aortic cusps. Nothing to be discovered abnormal in air passages or large vessels at root of the neck. Abdominal organs all healthy, except for kidneys, which were in a state of granular degeneration. The uterus and appendages were healthy. The brain and spinal cord were not examined.

It was difficult to make a satisfactory dissection in the open field a long way from home, and I found it impossible to trace the source of the air in the right heart, which I am quite satisfied was the cause of death. I shall be very glad of any suggestions that may assist in furnishing an explanation of this very rare condition.

Jamaica. P. O. Malabre, M.B., C.M.

CASE OF CRYPTOPHTHALMOS.

On March 10th, 1904, a Mohammedan woman brought her daughter, aged 6 months, to the mission dispensary. The eyeballs were completely covered over with skin; over the right eyeball there was a horizontal scab ½ in. long, the result of a *hakim's* interference. There were no eyelashes. The eyeballs were prominent and under the control of muscles.

Under chloroform a horizontal incision ¾ in. long was made over the left globe. The conjunctival sac was very imperfect, being fairly complete only in the direction of the lachrymal gland and in the internal and lower segment. The cornea was covered by a loosely-attached membrane. This was dissected off, but no pupil was to be seen. Four sutures were put in, joining skin and mucous membrane.

When the eye was dressed on the third day the cornea had assumed a ground-glass colour except at the upper margin, where there was a clear area the size of a pin's head, but the final result I am unable to state as the mother took the child away on the tenth day, and although pleased with the small

result obtained has not brought it back as requested. The child also had webbed fingers. It was not syphilitic, was born at full term, and had no relatives similarly affected.

SOMERTON CLARK, M.B., F.R.C.S.E.,
Junior Mission Surgeon, Dera Ismail Khan, N.W.F.P.

SCARLATINA: MEASLES: URAEMIA: VENESECTION: RECOVERY.

THE following case, which occurred in South Africa under the charge of Civil Surgeon H. Cory, M.R.C.S., and myself, may be of interest in connexion with the subject of hyperpyrexia and measles:

Sergeant N., Imperial Yeomanry, was admitted to hospital on September 11th, with a sharp uncomplicated attack of scarlatina, his temperature reaching 105°, and falling to normal on the fifth day. His progress was quite satisfactory, and no trace of albumen was found, although the urine was examined regularly.

On September 28th—eighteen days after admission—he developed measles, with a very pronounced rash. His temperature at once rose to 106°, but fell four days later to subnormal. It was unregistrable with any thermometer at hand for three days, and continued subnormal till October 8th. During this time the patient, who was feeling well, was on a liquid diet, the bowels and kidneys were acting well, and there was no albumen in the urine. On the date mentioned the patient had a typical uraemic attack—convulsions, vomiting of large quantities of watery fluid, involuntary passage of faeces and urine—which became almost solid when tested with nitric acid—and coma, with muscular twitchings between the fits.

After unavailing attempts with baths, etc., to make the skin act, 20 oz. of blood were removed from the left median basilic vein. The patient, who had had ten fits prior to venesection, and also a very severe one during its performance, began almost immediately to improve, having no more fits, and becoming conscious in less than an hour's time, with profuse sweating.

The temperature rose to 102° at night for several days, and the urine contained albumen until October 22nd, by which time the patient was convalescent.

Although this case occurred in a fairly large epidemic of scarlatina, no source of infection with measles could be discovered.

The case appears of interest on account of the complications, the high and low temperatures, and the uraemia, which occurred, with no previous albuminuria, a month after the original scarlatinal attack, and a week after the fall of temperature after the measles attack.

Sutton Coldfield. C. J. CADDICK, F.R.C.S.E.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL VICTORIA HOSPITAL, BOURNEMOUTH.

TWO RECORDS FROM THE POST-MORTEM ROOM.

(By GEORGE MAHOMED, M.R.C.S., Pathologist to the Hospital.)

I. *Pancreatitis and Appendicitis.*—C. L., aged 12, was admitted April 18th, and died three days later.

History.—This boy was sent in by me. He was at school till April 15th, and on the 17th I saw him at his home. He had slight fever, tenderness at McBurney's point, vomiting, and offensive breath. As he was no better by next evening he was sent to hospital, and was admitted under Dr. Muspratt. On the following day an operation was performed, and a stercolith and gangrenous appendix found and removed. During the following night he vomited blood twice, once nearly a porringer full, became restless, and complained of pain at the epigastrium. He was given ⅛ gr. of morphine and fed by nutrient enemata. During April 20th he had a saline injection per rectum and seemed better for it, but continued to have pain and tenderness at the epigastrium. His pulse became faltering. The bowels acted once. He had nutrient enemata and was given ice to suck. On April 21st his pulse failed more and he was transfused about 3 p.m. with a pint of normal saline and given brandy, but he died about 4.30. His mouth was full of altered blood when he died.

Necropsy.—The caecum and its neighbourhood were in a good state, and showed no unfavourable appearance; but the ileum about 3 ft. away from the caecum was acutely congested; then came more healthy bowel, and then another patch almost black. The part of the duodenum which embraces the head of the pancreas was attached to it by adhesions. It contained slightly altered blood; the head of the pancreas was very congested, and at one point posteriorly was becoming green. The rest of the gland was hardened and red.

II. *Sarcomatous Growth: Excision: Treatment of Scar by Roentgen Rays: Prostration and Death: Tuberculous Disease of Suprarenals discovered Post Mortem.*—E. G., a girl aged 19, had a small fungating growth on the nose which was thought to be sarcomatous. It was excised and the site treated by *x* rays for about three weeks. She then become suddenly prostrate, suffered from sickness and was admitted to the hospital under Mr. Ramsay on May 18th.

History in Hospital.—During the time she was in hospital, three days in all, the prostration continued without any apparent cause. Her pulse was nearly imperceptible and was recorded as 106, 160, and 198, while her temperature ran up from 99° to 102°—103.4° the day before she died. She was slightly cyanosed and her face assumed a brownish tint particularly in the lower part. She remained conscious but complained of abdominal pain and hyperaesthesia. No distension. Vomiting recurred and she rapidly collapsed and died on May 21st. Twelve hours before death the optic nerves appeared slightly blurred. Urine 1015, clear, amber-coloured.

Necropsy.—The body was well nourished and fat. The nipples were pigmented, presenting the colour of unpolished walnut wood. Montgomery's tubercles were not developed. There were two oval pigmented patches in the scapular region, which the mother stated she had only noticed quite recently when, owing to the patient's increasing weakness, she had to wash her. The wound on the nose appeared to be granulating healthily. The liver was rather fatty. Uterus small and firm. Kidneys small. Heart small. Lungs normal. The stomach was ecchymosed in lesser curvature. Pancreas normal. Each suprarenal body was enlarged; yellow masses could be seen to project from their contour. The tissues over them were engorged. On section the centres of the bodies were hollowed out; the cavity filled by yellow pultaceous material, and lined by a granulating surface. They had assumed a roughly globular shape and each was about the size of a lime fruit.

REMARKS.—In neither of these cases was the brain or cord examined. It requires some diplomacy to gain consent to an examination in this locality, and I am therefore unwilling to cause any more disfigurement than is necessary to arrive at a conclusion as to the cause of death. The interest in the first case centres round the relation of the pancreatitis to the appendicitis. Did it exist before the appendix troubles, or is it a complication to be reckoned with in operation? The boy came of a healthy stock. He had had no illness except "pain and wind" coming on about half an hour after food for about three weeks before his illness. I rather expect that now and again a bacillary explosion takes place in the bowel; that such explosions and all their concomitant toxins are, in the case of healthy peristalsis, swept on and out; but in the case of sluggish intestinal action they are not cleared out, but invade blind alleys, such as the appendix, and occasionally the duct of the pancreas. The latter body is much more vascular, and resents the intrusion; whence inflammation and haemorrhage.

In Case II the interesting point is, Did the treatment by Roentgen rays set up, expedite, or in any way affect the disease of the adrenals? I think myself it did not. It was merely the "long arm of coincidence," though possibly disease of the adrenals may have caused the growth on the nose. Another curious point is this: The destruction in the suprarenal bodies seemed to be due to infection by tubercle bacilli. Those bacilli, if airborne, had the chance of anchoring anywhere in the respiratory tract; if foodborne, anywhere in the oro-intestinal tract. What made them choose such an out-of-the-beaten-tract sort of location as the suprarenal bodies?

NEWPORT COUNTY HOSPITAL.

A CASE OF PHANTOM TUMOUR IN THE MALE.

(Under the care of Mr. O. E. B. MARSH, Senior Surgeon.)

[Reported by B. G. FIDDIAN, M.B., B.S., House-Surgeon.]

X., a man of 33 years, came to the hospital on September 9th, 1902, for attacks of severe gastric pain, accompanied by sickness, but without haematemesis. He had had these attacks for some two years, and the pain was generally excited by taking food, coming on almost directly after a meal. He had a clear history of syphilis some ten or twelve years before, and one of his testicles had been removed, apparently on account of gummatous disease.

Progress.—He was treated as a case of gastric ulcer for some days, and under the usual routine he gradually improved. The bowels were fairly regular. But on September 16th he had a rise of temperature, and in going over the systems to discover the cause it was found he had several of the signs of tabes: knee-jerks absent, Romberg's sign present (slight), Argyll-Robertson pupil, and lightning pains in the legs. He continued to have slight rises of temperature, and on September 23rd vomiting returned, and a definite mass was felt in the abdomen. It was situated in the epigastrium and left hypochondrium, was fairly hard, had a definite lower edge, and moved with respiration. The left rectus was much contracted, and, as far as was possible to say with so much rigidity, there was a definite mass underneath it, connected with that mentioned above. There was no blood in the vomit, which came up in small quantities, and seemed to have little relation to food. The swelling was watched for several days, during which time it increased

in size and became more definite. The man's general condition was so bad that some of those who examined him thought he would not survive a laparotomy. Various diagnoses were proposed, including faecal impaction, though this last was negatived by the fairly good action of the bowels and the doughy consistency of the swelling.

Operation.—On October 2nd the patient was anaesthetised for laparotomy, but when the belly came to be examined with the patient under the anaesthetic the lump had completely disappeared. It was felt, however, that it might have receded under the rib margin, and it was decided to open the belly. A median incision was made above the umbilicus sufficient to introduce the hand. Nothing abnormal, however, was met with, though the stomach with its pyloric end, the kidney, spleen, colon, omentum, and mesentery were each carefully and individually palpated. The stomach was drawn out into the wound and carefully examined, but no sign of ulcer could be made out.

Progress.—The patient complained of a good deal of pain after operation, similar to what he had had before. A week later he had retention of urine lasting for two or three days, a few days of voluntary micturition, then a period of retention lasting for a few days. Since then he has had no return of this symptom. On November 7th he again complained of shooting pains in the legs. On November 14th he had pain in the left knee, with quite sudden effusion of fluid into the joint—the cavity filled in about twenty-four hours. He had a rise of temperature along with it, but it was confined to the one joint, and disappeared spontaneously in a fortnight. On November 17th the abdominal pains returned, along with the abdominal swelling. The bowels were freely open during the whole time it was present, and there was no accumulation in the sigmoid. There was a good deal of sickness, but no blood was present. This group of symptoms disappeared, along with the swelling, on November 27th. He left the hospital able to walk on November 29th.

After-history.—He is at the time of writing an inmate of the Newport Union Infirmary, where Dr. Macormack kindly allowed me to see him. His history since leaving hospital in 1902 is as follows: He has had five or six attacks similar to those he had in hospital. The belly has become very distended and tympanitic, but the bowels have been quite regular and there have been no other symptoms referable to the abdomen. The knee-jerks are absent, Romberg's sign is absent, whilst the pupils are unequal, the left being larger and irregular; they react to accommodation, but only very sluggishly to light. There is no fluid in either knee. He was taken into the Union Infirmary for symmetrical multiple "abscesses" about the shoulders. These turned out to be multiple softened gummata, which disappeared spontaneously under potassium iodide. They originated in bone—the clavicles and acromia of each side, the sites being marked by irregularities of the bone besides by the skin scars. The remaining testicle is swollen and has lost all testicular sensation. There is no hydrocele, and the cord is thickened—I suppose a case of tertiary epididymitis with orchitis.

REMARKS.—The case does not seem quite to fall in with a tabes case. The appearance of the nervous signs—pupils, Romberg, lightning pains (?), gastric crises (?), Charcot—along with such active gummatous disease and an epididymitis is, to say the least of it, unusual. The phantom tumour, again, is not a common manifestation of the disease. The testicular condition is also unusual. Though an epididymitis is described and fairly frequently met with as a secondary manifestation, I think I am right in regarding it as unusual in the tertiary stage, especially associated with an orchitis.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

CEYLON BRANCH.

Ceylon, Friday, February 19th, 1904.

H. MARCUS FERNANDO, M.D., in the Chair.

Sleeping Sickness.—Professor ALDO CASTELLANI, M.D., read a paper on sleeping sickness. At the beginning of last century missionaries returning from the West Coast of Africa used to speak of a curious disease called by the natives "*mtansi*," signifying "to sleep." The first scientific description was given by Winterbottom. Later the disease was studied by Dumontier, Santelli and Corre. In 1891 Mackenzie published the record of a case which was under his care in the London Hospital, and in 1900 Manson gave a very complete description of two cases sent to London from the Congo. The pathology of these two cases was thoroughly worked out by Mott, who was the first to point out that the lesions found were of the nature of a meningo-encephalitis. Lately much attention had been paid to the disease by Marchaux, Le Dantec, Broden, Cook, Hodges, Moffat, the members of the Portuguese Commission, and quite recently by the first and second Commissions sent out by the Foreign Office and Royal Society in 1902 and 1903. Very important also were the researches of Brumpt and Blanchard. Until a few years ago sleeping sickness was limited to some parts of West Africa and a few districts of the Congo. Lately it had begun to spread very widely up the Niger and the Congo, and had suddenly appeared in East Central Africa. Its ravages in Uganda had been appalling. Sleeping sickness had been looked upon as a disease of the negro race exclusively, but Manson and Low had proved that it might occur also in Europeans. In regard to etiology, the disease had been considered by some old authors to be a peculiar kind of malaria, a variety of beri-beri, an intoxication, a form of sunstroke. According to Le Dantec the disease was due to the anguillula intestinalis, according to Ferguson to the ankylostoma duodenale. Manson suggested that filaria perstans might be the cause of the disease. There was no doubt that this theory had many points in its favour, especially as it explained the long incubation period, but the epidemiological researches of Low and Christy had demonstrated that filaria perstans could not be the direct cause of the disease. Many observers favoured a bacterial origin, and different forms of germs had been described by Cagigal and Lepierre, Marchaux, Braden. The members of the Portuguese Commission believed they had found the cause of sleeping sickness in a diplo-streptococcus, called by them hypnococcus. According to Dr. Castellani's experience there could not be a doubt that in a number of cases of sleeping sickness a streptococcus infection was frequently present in the very last stage of the malady, but he had come to the conclusion that this streptococcus infection was simply a secondary one. The real cause of sleeping sickness in his opinion was the trypanosome. Since November, 1902, when he began to use a special technique for the examination of the cerebro-spinal fluid, he frequently observed in it a trypanosome. To obtain good results one must adopt the following technique: By means of lumbar puncture at least 15 cm. of the cerebro-spinal fluid were drawn off; it was better to reject the first few cubic centimetres, as they were apt to contain blood. When the fluid came away clear 10 c.cm. were collected and centrifuged for fifteen minutes. At the end of this time there was found at the bottom of the tube a slight deposit of whitish sediment, and in some cases also a minute trace of blood. The liquid above the sediment was poured off and the sediment examined under a moderately low power of the microscope. As the trypanosomes were at first fairly active they were easily detected. Of 34 cases of sleeping sickness examined Dr. Castellani found trypanosomes in the cerebro-spinal fluid during life in 20, giving a rate of a little less than 70 per cent. On two occasions he also examined in the same way fluid obtained *post mortem* from the lateral ventricles, and in both cases found the same parasites. In the blood among the few cases tested for this purpose he found the trypanosomes once with certainty. In the blood as well as in the cerebro-spinal fluid he had observed several times peculiar bodies which he considered developmental stages of the trypanosome. In 12 cases of ordinary disease the cerebro-spinal fluid was taken during life by lumbar puncture, but in no case did it contain trypanosomes. His results had been amply confirmed by Blanchard, Bruce, Brumpt, and Nabarro. Sambon, as soon as he knew of his results, started the hypothesis that the trypanosome of sleeping sickness might be carried by the *Glossina palpalis*, a species of tse-tse fly. This hypothesis had been proved to be right by the very important experiments of Bruce, Brumpt, and Nabarro. In regard to the clinical features of sleeping sickness, Dr. Castellani had based the following brief description of the disease on the observations of Low and himself, published in the Reports of the Royal Society, No. 2, page 14. Sleeping sickness presented three stages. In the first there were not very characteristic symptoms—only a slight change in the former mental attitude of the patient, and an apparent disinclination to work might be noticed. A symptom, the importance of which in the early diagnosis of the disease was first pointed out by Low and himself, was the presence of fever. The temperature showed very frequently an intermittent type, reaching in the evening 101° to 102°, falling to subnormal in the morning. The pulse was generally of very low tension, and frequent, the number of beats varying from 90 to 130 per minute. The second period might be called, from the most characteristic feature, period of tremor. The tremor was best seen in the tongue and in the hands. It was in this stage that the patient showed the characteristic heavy, stupid look, and sometimes drowsiness. The patient complained of headache, and vague pains all over the body. There was slowness in answering questions, and when

speech did come it was often mumbling and thick. Sometimes he sat down, his eyes closed, and he remained in this drowsy condition until again asked some questions. The gait was best expressed by the word "shuffling." In this stage as well as in the first the spleen was enlarged. Several lymphatic glands also might be enlarged. It was difficult to say whether this enlargement of spleen and glands was to be considered a feature of sleeping sickness or not; Low and himself had noticed a similar enlargement in many natives apparently in good health. In the second and third stage of the disease anaemia in varying amount was constant. The number of the large mononuclear leucocytes was increased. In the third period, which lasted only from two to four weeks, the pyrexia was no more present, the temperature was often subnormal, emaciation and general weakness became pronounced: the knee-reflexes, which were at first somewhat exaggerated, became diminished; the motions were passed involuntarily in bed. Saliva often dribbled from the mouth. Drowsiness gradually deepened, and the patient could only be roused with difficulty. The patient died generally in a complete state of coma. In regard to the pathological anatomy, Dr. Castellani said that macroscopically there was practically nothing to be noted with the exception that the pia-arachnoid was slightly opaque and that the cerebro-spinal fluid was in some cases increased. Microscopically the most characteristic feature was a perivascular infiltration of mononuclear leucocytes in the brain, as shown by Mott and Low. The leucocytic formula of the cerebro-spinal fluid was also mononuclear. The diagnosis in some instances might be exceedingly difficult—especially in early cases. In such cases the simplest way to arrive at a diagnosis was to perform lumbar puncture and examine the cerebro-spinal fluid for trypanosomes by the method already described. The disease always terminated fatally. All the patients in the hospital at Entebbe died, and they were never able to satisfy themselves as to rumours of people recovering. Passing to the cure and prevention, Dr. Castellani said that all sorts of drugs had been tried, but so far no reliable treatment had been found. As regards prevention this might be attained by avoiding the bite of the *Glossina palpalis*. Their efforts should tend to destroy this fly. The jungles near the native villages, where these flies were met with in swarms, should be cleared. The fly-zones should be avoided in building new villages and European settlements. These were the most practical means to prevent sleeping sickness. Another means would be to try—with all due prudence and after complete laboratory researches—the immunization of natives who had not yet caught the disease. Koch, Laveran, Mesnil, Rabinowitch-Kempner, and others had tried immunization against various forms of trypanosomiasis in the lower animals—in some cases with fairly good though never very brilliant results. The principle was to pass a strain of trypanosome through different races of animals until it lost a certain degree of its virulence. Koch made the following experiment: He took some blood from an ox affected with surrah and inoculated a rat with it. The rat died. With this blood a dog was inoculated; he also died. With the blood of the dog Koch inoculated some other dogs, some rats, and two calves. The dogs and rats died. The two calves were ill for a certain time, showing trypanosomes in their blood; but after a time they recovered, and were immune against any new inoculation of infected blood. Following the same principle, the trypanosome of sleeping sickness might be passed through many species of animals until it had lost the most of its virulence. Then immunization of monkeys might be tried, and if the results were good the immunization might be tried on human beings also.

Colombo, Saturday, March 26th, 1904.

The Hon. Dr. W. G. Rockwood in the Chair.

Placenta Praevia.—Dr. M. Sinnetamby read a paper on placenta praevia. During the seven years ended 1903 they had had 34 cases of placenta praevia in the Lying-in Home, of which 1 was central, 3 partial, 20 marginal, 3 lateral, 7 unknown. This classification referred only to the condition before labour as a central one might become converted into partial, partial into a marginal, and marginal into a lateral after dilatation of the os. Discussing the etiology, Dr. Sinnetamby said that in his series of cases multiparity and history of abortion were predominating factors. All his cases occurred in multiparae, and in 15 there was distinct history of abortion. He showed a specimen of a placenta with a velamentous insertion of the cord. In this case the placenta was laterally inserted and the velamentous vessels extending over the internal os, vasa praevia. When he saw the patient he found that the os admitted only two fingers, the membranes were ruptured, and the cord prolapsing. There was slight haemorrhage, and the placenta could be felt on the left side. In this case the ovum burrowed in the compacta downwards until it reached the lower segment. Recapitulating the modes of formation, Dr. Sinnetamby said placenta praevia might be due to: (1) The formation of a reflexal placenta of a normally-implanted ovum; (2) the formation of a serotinal and reflexal placenta of a normally-implanted ovum; (3) the formation of a serotinal placenta extending to the cervical zone with or without reflexed placenta due to the burrowing downwards of the ovum between the layers of the compacta; (4) low implantation of the ovum due to delayed fertilization. The treatment was fully discussed. The following objects should be attained: (1) Preventing and counteracting shock; (2) checking haemorrhage; (3) promoting uterine contractions; (4) facilitating dilatation of the cervix; (5) expediting delivery after sufficient dilatation of the cervix. The various treatments advocated in this abnormality were: (1) Rupture of the membrane; (2) dilatation of cervix; (3) *accouchement forcé*; (4) turning; (5) Sympson's method of delivering the placenta first; (6) separation of the placenta; (7) forceps; (8) plugging; (9) ergot and adrenalin chloride; (10) Caesarean section. It had been recommended to temporize if the haemorrhage occurred before the seventh month. For himself he followed Herman's dictum, "as soon as ever placenta praevia is found out, be the bleeding great or little, labour ought to be brought on." He practised rupture of the membranes only when the placenta praevia was lateral and when the haemorrhage came on after partial dilatation of a soft cervix with the head presenting and pains strong. Under these circumstances the placenta retracted with the retracting portion of uterus and the head came down, pressed on the bleeding points, and effectually checked it. The case might be left to Nature if the pains were strong, there was no haemorrhage, and progress was rapid. If the progress were slow forceps might be applied and delivery expedited. Such cases were rare. Turning he seldom practised, and only in the absence of Champetier de Ribes's bag, when he knew that the child was dead or premature, and when the cervix admitted two fingers or a hand. When the patient was first seen, if the os admitted two fingers, he performed Braxton Hicks's bipolar version, brought down a foot, and left the case to Nature. If the cervix admitted a hand he performed internal podalic version. He also performed version if the head was small for forceps after full dilatation of the cervix. He never hurried on labour after bringing down a foot. If there was slight oozing he made gentle traction on the foot, which generally controlled the haemorrhage. Ergot and adrenalin chloride were worthy of trial if the pains were feeble after the introduction of a bag. He had reserved dilatation of the cervix by Champetier de Ribes's bag and other means to be considered last. Unfortunately in that country they seldom or never saw patients with this abnormality in the early stages. In the type of cases seen in hospitals the os was sufficiently dilated to admit one or two fingers or more, at least sufficiently large to put in a Champetier de Ribes's bag. If the os admitted two fingers, the Champetier de Ribes's bag was introduced at once after rupturing the membranes, which ought to be done without exception. If this precaution were not taken, the arrest of the haemorrhage was not complete, and there was always a tendency for further separation of the placenta, resulting in asphyxia of the child. This was produced by the bag lifting up the membranes and effecting a separation of the placenta, which, when the membranes were ruptured, would retract with the dilating cervix, thereby ensuring a complete compression by the bag. If the placenta was marginal or lateral, the membranes could easily be reached, but, if central, the placenta should be pierced through before reaching the membranes. In the incomplete variety the edge might be reached by pushing the finger towards the side of the uterus corresponding to the abdomen of the child. In this way he had nearly always succeeded. The bag might be left alone if the pains were strong, and if there were no bleeding until expelled by natural means, when forceps might be applied and delivery effected. If there were slight oozing, traction or a weight might be applied to the bag. This should be supplemented by a firm abdominal binder. He had reserved to the last the discussion of the sheet anchor in the treatment of placenta praevia—namely, saline transfusions. One often got a case in which there had been a good deal of

haemorrhage, the os being half dilated, the haemorrhage absent, and the placenta partially detached, pulse feeble and frequent. The first impulse of the practitioner was to deliver the patient at once by the traditional treatment of version: if this was done, the result would be disastrous. At least such had been his first experience, which had made a great impression on him. Sudden emptying of the uterus after severe haemorrhage produced such a severe shock as to defy all known restoratives. He now counteracted this fatal collapse by early saline rectal injections or transfusions under the armpit, according to circumstances. His matron had instructions to wash out the bowels promptly, and give a saline rectal injection in every case of haemorrhage without waiting for him. Nearly four pints of saline were generally given, two per rectum and two under the cellular tissue. During the seven years ended 1903 they had had 34 cases of placenta praevia with 7 deaths: and during the last three years, 1901, 1902, and 1903, when the treatment above detailed had been strictly carried out, they had had 22 cases with no deaths, and the key to their success had been early saline transfusions, Champetier de Ribes's bag, and patience.

REPORTS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF LONDON.

Laboratory Meeting at the Lister Institute, Elstree.

Sir John Burdon Sanderson, Bart., M.D., F.R.S., in the Chair.

Saturday, July 2nd, 1904.

Demonstrations.

The following demonstrations were given:—Dr. Craw: Physico-chemical experiments in relation to agglutination and toxin antitoxin combination. Dr. Dean: A disease caused by an acid-fast bacillus in the rat; a method of estimating the diffusion of toxin by the haemolysis set up in gelatine-holding blood; a demonstration of precipitin reaction with plague toxin and plague immune serum. Dr. Petrie: Culture of trypanosoma. Captain Douglass: Phagocytosis in connexion with plague.

Spermatogenesis and the Cytology of Malignant Growths.

Mr. Charles E. Walker communicated a note on the above subject, which was taken as read. Since his communication with Professor Farmer and Mr. Moore at the Pathological Society in May last, he had had the opportunity of studying in the human testis the cytological changes occurring during spermatogenesis. A brief sketch of the changes gone through by the cells of the testis, and a comparison with those occurring in malignant growths, showed that these, the most recent observations of the authors named, had an important bearing on what they had previously stated. Broadly speaking, spermatogenesis in man occurred as follows: (*a*) Somatic divisions upon the periphery of the tubules; (*b*) synaptic figures, that is the cells show the chromatin in the nucleus arranged in the peculiar manner which always precedes the heterotype division; (*c*) patches of heterotype division figures; (*d*) homotype division figures, also distributed in patches; (*e*) conversion of spermatids into spermatozoa. The phases included under (*a*), (*b*), (*c*), (*d*), all corresponded with what the authors had seen in malignant growths. There seemed, however, evidence to show that in the latter a number of post-homotype generations were substituted, though at present this could not be asserted in a very positive manner. Further very important points of resemblance between malignant growths and normal gametogenic tissue were: The nuclei not infrequently divide without the cytoplasm dividing, so that cells with multiple nuclei, and consequently pluripolar division figures, or cells containing two or more independent division figures, were not uncommon; divisions which might readily be construed into the hypo-chromatosis and hyper-chromatosis of Von Hansemann; and figures in which some chromosomes are apparently being thrown off. The authors did not, however, think that the last-named figures can be truly interpreted in this manner, as there seems to be very good evidence, after a careful study of cells exhibiting these figures, that these chromosomes which are apparently being thrown off are simply a few which have approached the centrosomes a little earlier than the rest, and are retained in the resulting daughter cells.

Society for the Study of Disease in Children.—At a meeting on May 27th, Mr. Walter Edmunds in the chair, a case of a tumour occupying the left half of the abdomen in a girl of 6 years was shown by Mr. Francis Jaffrey. She had suffered from pain in the left side of the abdomen, haematuria, and difficulty in micturition. The tumour was smooth and elastic, did not fluctuate, and was fairly movable. He was of opinion that it was a case of sarcoma of the left kidney.—A case of status lymphaticus was described by Mr. Hunter Tod. An infant of 6 months had been the subject of laryngeal stridor and died suddenly. Dr. Walter Emery showed the organs from this and another infant affected with the status lymphaticus. There was an enlargement of practically all the lymphoid tissues of the body, including the thymus, the glands (especially the mesenteric), the solitary follicles and Peyer's patches in the intestine, the tonsils, and the adenoid tissue of the naso-pharynx. The spleen and tongue were normal, the latter not showing enlargement of the circumvallate papillae, which had sometimes been described as of diagnostic value. The thymus gland weighed almost exactly an ounce in each case, but there was no evidence of direct pressure on the vagus, the trachea, or the heart. He drew special attention to the marked thickening in parts of the intestinal wall from the overgrowth of lymphoid tissue. Dr. E. P. Baumann had seen two fatal cases, one an infant of 3 months and the other aged 9 months. The first infant was brought to the hospital in a state of great respiratory embarrassment, cyanosed, and uttering peculiar respiratory sobs. Death soon ensued, and the thymus was found to weigh 4½ oz. It lay chiefly on the right side, pressing on the heart, and it might also have pressed on the trachea, causing death directly from suffocation. Mr. Thomson Walker said this was a very important subject, not only from the medico-legal point of view, but also from the surgical. One writer had collected 10 cases in which death had occurred at the commencement of chloroform administration, or during it, or immediately after the operation. In addition to the other changes mentioned, a hyperplasia of the arteries had been noted, leading to narrowing of the lumen.—A paper on a case of perforated gastric ulcer in a boy aged 13 was read by Mr. Watson Cheyne and Dr. R. H. W. Wilbe. The patient had enjoyed good health until the onset of the illness, which was marked by severe abdominal pain about the umbilicus. He rapidly became worse, and after consultation the same evening it was decided to operate. The appendix was found to be diseased, although not actively, and was removed. As the signs pointed to some rupture, the rest of the abdomen was explored, and over the front of the stomach some turbid fluid was found, and gas bubbled up. On further searching, a small, round perforation was found on the anterior surface of the stomach about 1 in. from the cardiac end, from which gastric juice and gas were escaping. The ulcer was treated in the usual way, and the boy made an uninterrupted recovery.

REVIEWS.

APPENDICITIS.

Dr. Mahar's *Monograph on Appendicitis*[1] is for the most part a discussion on the indications for operative interference; he has elicited opinions on this matter from a considerable number of well-known surgeons, and has endeavoured by this means to construct a consensus; his statements and arguments are supported by records of individual cases and by collected statistics. The first point of importance which he makes is that early operation—within the first forty-eight hours of the commencement of an attack—has given results equal to those of the operation during quiescence. The surgeon has, however, rarely the opportunity of operating at this stage; when it is offered it should be taken. After the second day the time to operate should be decided by the course of each particular case; in the absence of symptoms pointing to an unfavourable course statistics favour delay, and several surgeons who at one time advocated immediate operation at all stages are now opportunist in practice. There are, however, a variety of conditions which may negative delay, and the study of the signs and symptoms accompanying these conditions is of the highest moment. The time for operation after an attack will also be chosen according to the progress of each case, the longer the delay within reasonable limits the more favourable are the conditions. The views put forward

[1] *Traitement de l'Appendicite Aigue, Indications Operatoires.* By Dr. V. Mahar. Paris: J. B. Bailliere et Fils. 1904. (Demy 8vo, pp. 121. Frs. 3.)

by Dr. Mahar are those held by the majority of surgeons today; the practice of operating "as soon as the diagnosis is made" has not at any time been widely advocated and there are few who now follow it. The "danger-signals" of the disease have been determined with a considerable degree of accuracy, and it is these which govern operation in the intermediate period; in the absence of them the rule is to operate either late or early.

DR. LANDAU has published an interesting essay on *Inflammation of the Appendix and Disorders in Women*.[2] He lays great stress on errors of diagnosis and reproduces the surprisingly long list of conditions mistaken for appendicitis published by Spelissy in the *Annals of Surgery* two years ago. Bone abscesses, suppuration of the gall-bladder, calculous pyonephritis, and perforating gastric ulcer have all been diagnosed as inflamed appendix amongst a large number of other abdominal diseases, objective and subjective. Spelissy's list avowedly excludes all gynaecological conditions which may lead to the same error. Dr. Landau shows how closely appendicitis is simulated by torsion of a dilated tube or an ovarian tumour, inflammatory disease of the appendages, pelvic abscess, extrauterine pregnancy, ovarian neuralgia, and pain associated with uterine displacements. He further reminds us how several of these disorders may be like appendicitis, acute and dangerous, whilst most of them demand operative interference. Active treatment saves the patient, and should the surgeon operating on a woman with acute pain in the right iliac fossa find not the diseased vermiform appendix which he expects but a ruptured tubal sac, he will know what he ought to do. The moral of the main argument in this essay is that in all cases of doubt exploratory incision is demanded. In conclusion, the author expresses the opinion that we should turn attention to another segment of the intestinal tract. There is such a disease as sigmoiditis, and the affected structure lies very close indeed to the internal genital organs, so that there may be as much to say about the connexion between sigmoiditis and gynaecological lesions as between appendicitis and the same group of diseases.

VENEREAL DISEASES.

MR. ARTHUR H. WARD'S *Clinical Studies in Syphilis*[3] commences with a chapter on the "Microbe-Toxin Theory" of Syphilis. Although he seems to be unconscious of it, he is evidently a student of the Vienna School, and a follower of the toxin theory first advocated by Finger. Nowadays the after-effects of syphilitic infection are generally explained by the toxins of the missing germ, but, like all bacteriological theories of syphilis, they are at best only scraps of evidence taken from other infectious diseases. The discovery of the specific organism of syphilis will doubtless advance our knowledge of this protean disease, and settle much which at present remains doubtful, in the same way as Koch's discovery has added to our knowledge of tubercle. The theory advocated by Mr. Ward appears to explain what is known by the name of "Colles's law," but he seems to forget that there are many exceptions to this so-called law. It is therefore not quite possible to agree with him, when he says that "the extreme simplicity of the microbe-toxin theory may be its greatest strength, since it has already explained many facts of experience hitherto dark." Mr. Ward's Chapter III on the diagnosis of the disease is excellent. He points out the necessity of being accurate as regards this point before any constitutional treatment is commenced, and adds that "a delay of a week or two can make but little difference to the success of the treatment," whereas, if it is begun too soon the patient "will begin to question if he really has had syphilis," and being in doubt, will probably stop all treatment. The book is certainly one which will be useful to the general practitioner.

In a recently-published book[4] Dr. GEORGES THIBIERGE deals with the subject of syphilis from the standpoint of medical ethics, or, more strictly speaking, perhaps, he reviews the duties of the medical man in regard to this disease in a variety of circumstances. In the first place, it may be stated that the work is based on French law—namely, the Napoleonic Code. The author in a preliminary chapter insists on the importance of silence on the part of the medical man in the case of venereal disease, although as a social unit he may feel inclined to speak out and prevent future suffering of the innocent, or be the means of bringing a criminal offence to light. In addition to a reference to the Hippocratic oath, Dr. Thibierge cites the following concise passage on the point from the statutes of the Paris Faculty of Medicine: *Aegrorum arcana visa, audita, intellecta eliminet nemo.* The monograph contains a number of instructive chapters on the difficulties which crop up in connexion with syphilis, such as the necessity of withholding the diagnosis from the patient in some cases—as when a married woman is concerned, for instance; or, again, how to deal with minors, male and female, and also with their parents and guardians. An important chapter is devoted to the question of the marriage of syphilitics. In it the author deals with a number of practical points on which the medical man must advise. Here it is necessary to say that Dr. Thibierge accepts apparently as facts certain conclusions with regard to the transmission of syphilis which are open to criticism. Heredity in syphilis is a subject about which there is a diversity of opinion, and about which we are really very ignorant. This applies to heredity in general. The matter cannot be dealt with here, but the reader is referred to a discussion introduced by Dr. Matzenauer before the Medical Society of Vienna (*Wien. klin. Woch.*, 1903, No. 7, etc.), in which the speaker questioned the probability of the paternal heredity of syphilis, that is by the spermatozoon; indeed, he was forced to the conclusion that such a thing was impossible. Other chapters of Dr. Thibierge's book are concerned with syphilis before and after marriage, syphilis and divorce, syphilitic infants and wet nurses, syphilitic workmen, syphilitic servants, syphilitics in hospitals, etc. He also touches on syphilis and provident clubs, and concludes with some judicious remarks on accidental syphilis in medical men themselves. Altogether, the work contains much that is useful and instructive, but it is perhaps a little too much drawn out. Some of the advice may be found somewhat difficult to carry out unless the medical man is endowed with a certain amount of histrionic talent. As usual in French books, there is no index. The next edition should be provided with one.

In deciding to present his lectures on the *Pathology and Treatment of Gonorrhoea*[5] to the medical profession, Dr. SCHOLTZ states that he has been chiefly influenced by the fact that no similar work representing adequately the views of Neisser and his followers had hitherto been published. Of the twelve lectures of which the book is made up, the first two are mainly devoted to the gonococcus, its discovery, its morphology, its identification, and its pathogenic properties. The next seven lectures deal with the nature and treatment of acute and chronic gonorrhoea, and the last three with the various local complications of gonorrhoea, neurasthenia, and prophylaxis. The account of the gonococcus and all that relates to it is full and satisfactory. The description of the several phases of gonorrhoea, their diagnosis, treatment, and local complications is clear and detailed, and the important question of marriage in patients who have suffered from gonorrhoea recently or in the past is fairly and judiciously treated. The ideal remedy for a fully-established gonorrhoea remains to be discovered, though Dr. Scholtz states that he has repeatedly been successful in aborting the disease in the rare cases in which the patient comes under observation during the first two or three days after infection and before the discharge has become fully purulent. For the acute stage of gonorrhoea Dr. Scholtz prefers protargol as an injection, the strength of which is varied according to the circumstance of the particular case. In chronic cases silver nitrate finds its place as one of the most effective remedies, and drugs such as sandal oil or copaiba are also given internally whenever they seem to be indicated. The important statement is made that about 90 per cent. of the patients who come under proper medical treatment within a week after infection, and who faithfully carry out the instructions of their medical adviser, escape extension of the disease to the posterior portion of the urethra. Still, it seems that even under the most favourable conditions the patient must not expect to be cured in less than from four to six weeks. The book is not so comprehensive as Finger's larger work on the same subject, as Dr. Scholtz does not deal with gonorrhoea as it affects

[2] *Wurmfortsatzentzündung und Frauenleiden.* Von Dr. Theodor Landau. Berlin: Hirschwald. 1904. (8vo, pp. 82.)

[3] *Clinical Studies in Syphilis.* By A. H. Ward, F.R.C.S. London: The *Medical Times*, Limited, 1904. (Crown 8vo., pp. 156. 3s. 6d.)

[4] *Syphilis et Déontologie* [Syphilis and Medical Ethics]. Par le Dr. Georges Thibierge. Paris: Masson et Cie. 1903. (Demy 8vo, pp. 296 Fr. 5.)

[5] *Vorlesungen über die Pathologie und Therapie der Gonorrhoe des Mannes.* Von Dr. W. Scholtz, Königsberg. Jena: G. Fischer. 1904. (Demy 8vo, pp. 144: 1 plate, 18 illustrations. M. 3.)

women, nor with the general complications, such as gonorrhoeal rheumatism; but, within its limits, it is decidedly one of the best of the recent works on the subject.

NEUROLOGY.

A LENGTHY and elaborate, but somewhat diffuse, memoir is published by NISSL[6] on the subject of the neuron doctrine, which has been the centre of contention of neurologists and histologists of the last decade. Firmly established at first as an induction as well as a deduction by the labours of Golgi, His, Forel, and Ramon y Cajal in neurology and embryology, doubt was cast on the strict acceptance of the doctrine of the integrity of the neuron (in the higher vertebrata) by Apathy and by Bethe, both of whom based their conclusion on the results of study of the nervous system of crustacea and other invertebrates. In this memoir Nissl gives a fairly full, and, on the whole, impartial account of the history of the question, dealing minutely and critically with the methods of research and of technique, the finer structure and connexion of the "dendrites" of nerve cells, and especially the subject of the nerve fibrils, collaterals, and pericellular "basket-works" on which Cajal has founded so much of his theory of nerve action. There is a plentiful intercalation of other subjects in the course of this elaborate review of the neuron theory, and prominence is naturally given to Nissl's own discovery of the chromatic bodies, which, however, as every observer now knows, has really little or no bearing on the neuron theory proper and the question of the inter-relation of the neurons to one another, though it has much to do with questions of rest and activity and the storage of pabulum of resting and exhausted nerve cells. The reader who has the patience to go through this tedious discussion, inadequately illustrated only by two semi-diagrammatic plates, will have gained a clear idea of the minutiae and intricacies involved in this difficult question of the neuron, which can be of interest only to neurologists and advanced workers. While in no sense a contribution of facts to settle the question, Nissl has done much to clear the atmosphere of obscurity, and for this the book may be read by those interested in the subject. But for the reader who wishes to gain a clear and accurate as well as comprehensive knowledge, the recent memoirs of Ramon y Cajal (published since his Croonian Lecture of 1894) are indispensable, and are the most trustworthy guide to the higher problems of neurology.

The second American edition of Professor OPPENHEIM'S *Diseases of the Nervous System*,[7] which has been translated from the third German edition, and edited by Dr. Edward Mayer, of Pittsburg, is to be cordially welcomed. We welcome it most of all because we hope it will mean that an invaluable book will be introduced to a yet wider circle of English-speaking medical practitioners. It would, however, be too much to say that for readers in the home country the actual wording of the translation leaves nothing to be desired, for it contains many instances of unusual use of language, such as that the prognosis of a certain condition is "earnest," and that children should be protected from all injurious "moments"—meaning, we imagine, in this particular instance, predisposing causes. It bears evidence, also, that the verbal translation was made by a native German. But such faults, if faults they should be called, do not affect the very high opinion which we have formed of the book in its original form; and, for the rest, the translation before us appears to be a sound representation of that original.

The author of the *Manuel pour l'Etude des Maladies du Système Nerveux*,[8] M. MAURICE DE FLEURY, frankly states that it is not meant for neurologists, but is intended as an attractive exposition of the science for students of medicine and medical men other than specialists. But even as such we are unable to recommend it, for although it is simple enough its simplicity seems to depend mainly on an evasion of difficulties; the author has, in fact, attempted to make quite easy a subject essentially difficult, and the result is not altogether a success. From the preface we gather that its subject matter is based on Professor Oppenheim's book, but this we should never have guessed from any internal evidence, unless it were from the development of the part dealing with the functional neuroses being especially strong. The first chapter, which extends to over 100 pages, describes an unwisely elaborate method for the clinical examination of nervous diseases. Except that it gives suggestions for a minute examination of a small part of the nervous system, there is little to compensate for its unwieldiness; and although so elaborate, it yet leaves some highly-important subjects almost untouched. For example, it dismisses ophthalmoscopic examination in a sixth of a page, and says not a word about the need for estimating the degree of swelling or changes in the vessels in papillitis. On the other hand, it gives a page and a-half to the method for sleep disorders, and suggests inquiries as to whether dreams were pleasant, indifferent, or terrifying. The second chapter deals with medical anatomy of the nervous system, and the rest of the book with its diseases in series. To take one section as a sample—that of *Epilepsie Bravais-Jacksonienne*, or, as we should say, Jacksonian epilepsy; it occupies 5 pages out of close on 1,000. The discussion of symptomatology shows no grasp of the subject, and that of diagnosis is hardly to the point; for instance, it is said that hysterical attacks may be distinguished by the absence of stigmata of the neuroses and the absence of signs of a cerebral lesion, which is begging the question; and uraemic convulsions by the absence of albuminuria and by the presence of the clinical picture of "Brightism"; but what if cerebral tumour and Bright's disease co-exist in the same case? If this, as we fear it is, is a fair sample of the rest, a more extended notice is unnecessary. Although there are nearly 1,000 large pages, there is no subject-index.

The excellent series of Lehmann's *Medical Hand Atlases* is enriched by the work of Dr. SEIFFER[9] which is one of distinct usefulness to the neurologist. The first part deals with the general diagnosis of nervous diseases. It is a fairly exhaustive treatise, well illustrated with figures and coloured plates, on neurological methods of testing, on the clinical features of paralysis of cerebro-spinal origin, on neuro-muscular reactions and anomalies of reaction to galvanic and faradic stimuli, on disturbances of speech and of handwriting, on myotonic reflexes, on vasomotor, secretory, trophic, and visceral disturbances of nervous origin, and on the stigmata (physiognomy) of degeneration. This occupies 270 pages and is illustrated with 220 figures and 25 coloured plates excellently executed. The pictures have a photographic life-likeness and are very accurate. The second part deals with the general therapeutics of nervous disease. A number of careful and judicious remarks on the prophylaxis of nervous disease—a subject demanding more attention than it has received at the hands of neurologists—are introduced at the outset, and the discussion then takes up successively such matters as hydrotherapy and balneotherapy, climatology, electrotherapy (briefly), graduated exercises, massage and mechanical movements, the orthopaedic surgical side of nervous disease, dietetics, the surgical operation of cerebral and spinal growths and other operable lesions, the special use of narcotics, hypnotics, and other specific drugs in the treatment of nervous disorders, and, finally, suggestion and hypnotic treatment. In the small compass of 380 pages the author has managed to convey with clearness and accuracy a vast amount of knowledge which will be helpful to the neurological student and practitioner. The *Atlas* can be recommended for its excellence, while its price (12 marks) is very moderate.

NOTES ON BOOKS.

THE first volume of the fourteenth series of *International Clinics*[10] is, from the point of view of original matter, distinctly mediocre. Its stronger parts are concerned with therapeutics. The five earlier papers are on treatment, and include one by Drs. Widal and Javal of Paris on the treatment of parenchymatous nephritis by the reduction of the chlorides taken in the food, and another on the applications of colloid silver, also by two Parisian physicians, Drs. Netter

[6] *Die Neuronenlehre und ihre Anhänger* [The Neuron Doctrine and its Significance]. By Dr. Franz Nissl, Professor in the University of Heidelberg. Jena: Gustav Fischer. 1903. (Demy 8vo, pp. 484. M.12.)

[7] *Diseases of the Nervous System.* By H. Oppenheim, M.D., of Berlin. Translated and edited by Edward E. Mayer, M.D., of Pittsburg. Second American edition. London: J. B. Lippincott Company. 1904. (Demy 8vo, pp. 953. 21s.)

[8] *Manuel pour l'Etude des Maladies du Système Nerveux* [Manual for the Study of Nervous Diseases]. Par Dr. Maurice de Fleury. Paris: Felix Alcan. 1904. (Roy. 8vo, pp. 995. Fr. 25.).

[9] *Atlas und Grundriss der allgemeinen Diagnostik und Therapie der Nerven-Krankheiten* [Atlas and Outlines of the General Diagnosis and Treatment of Nervous Diseases]. Von Dr. W. Seiffer. Munich: J. F. Lehmann. (Crown 8vo, pp. 360; 26 plates, 204 illustrations. M. 12.)

[10] *International Clinics.* Edited by A. O. J. Kelly, A.M., M.D. Philadelphia. Vol. i, fourteenth series, 1904. London: J. B. Lippincott Company. 1904. (Demy 8vo, pp. 314. 10s. 6d.)

and Salomon. There is a paper on adenidin which is entirely clinical, and two on the treatment of neurasthenia. The feature of the volume is, without doubt, an essay on the progress of medicine and surgery during the year 1903. Of conspicuous merit is the section describing advances in the surgery of the stomach and pancreas, its special excellence being largely due to a well-executed series of illustrations. The remainder of the volume is occupied with papers on medicine proper, including one on nephritis of gastro-intestinal origin, on surgery, and on gynaecology, none of which calls for special comment.

Dr. Robert Hutchison has reprinted the lectures on *Patent Foods and Patent Medicines*,[11] an abstract of one of which was published in the British Medical Journal of December 26th, 1903. The lectures, though short, contain a great deal of information upon matters regarding which general practitioners are not infrequently asked by their patients who have been tempted by the advertisements which appear in every newspaper and magazine. The tables showing the constitution of various infant foods, and of many so-called patent medicines, will be found exceedingly valuable for reference. In the fight against quackery Dr. Hutchison thinks that the profession has two main weapons. The first is to educate the public, for, as he truly says, quackery is not confined to any particular section of the community, but is as rife—or more rife—in Belgravia than it is in Bethnal Green. The other weapon is that it should never be possible for a patent medicine vendor to say with truth that he has succeeded in curing a case where a medical man had failed, and this means that the profession must give more attention to the treatment of disease, and particularly to that of minor ailments. The value of Dr. Hutchison's pamphlet is not to be estimated by its size, and it is not likely to be the less useful because its thesis can easily be understood by an intelligent layman.

The dimensions of Dr. Melland's *Pocket Book of Clinical Methods*[12] preclude anything but a very brief account of the clinical examination of such materials as the sputum, gastric contents, faeces, urine, pus and other fluids and blood. The book is designed as a guide to students at work in a clinical laboratory, and so far as it goes it is a correct guide; we trust, however, that most students will make reference to much more comprehensive works than this.

CENTRAL MIDWIVES BOARD.

A meeting of the Central Midwives Board, with Dr. Champneys in the chair, was held on June 30th, at 6, Suffolk Street, Pall Mall.

Constitution of the Examination Board.

Dr. Cullingworth moved that "a list of examiners, both for London and the provinces, shall be prepared by the Central Midwives Board from those who are willing to serve and to act, when required, by the Board."

Dr. Ward Cousins moved an amendment that the examiners should be registered medical practitioners. He pointed out that the working of the Midwives Act, 1902, depended on the co-operation of the medical profession. It appeared to him that it was a necessary part of the duty of the Board to work in harmony with the medical profession. Surely if the teachers under the Midwives Act were qualified medical practitioners it stood to reason that examiners should be also. He was convinced that the medical profession felt very strongly on the point. On sanitary questions and in regard to the feeding of infants they must have medical men to examine.

Mr. Parker Young said that it would be a retrograde movement to appoint any but qualified practitioners to the post of examiners. The examiners ought to be men of the highest attainments in whom the public would have confidence.

Miss Wilson said that it was not a retrograde movement because the Central Midwives Board demanded knowledge of nursing from the candidates, and very few medical men undertook to teach the details of nursing. A matron of a hospital or a midwife would be a good addition to the examiners.

Dr. Cullingworth said he was rather of Miss Wilson's way of thinking, though he did not suppose that at the present time any but registered practitioners would be appointed.

Dr. Sinclair said that the time had arrived for the Central Midwives Board to make it clear to all who wished to go in for the examinations that they would be examined by duly-qualified practitioners. He pointed out how unfitted a matron of a hospital and a midwife were for the post of examiners.

Dr. Ward Cousins said that nursing and the teaching of nursing was a medical matter, and should be regulated by the best possible medical teaching. He asked how any woman taught merely under the flimsy rules of the Central Midwives Board could undertake the duties of an examiner which required a properly-qualified practitioner.

The Chairman said that a well-trained midwife might give valuable assistance to a Board of Examiners.

Dr. Ward Cousins then asked the Chairman if he was in favour of a qualified examiner being asked to take part in examining together with an unqualified examiner; to which the Chairman replied that he could imagine there were midwives with whom he would have no objection to serve as an examiner.

Dr. Sinclair observed that the result might be that one of the examiners might be a highly-gifted chambermaid.

The amendment was then put to the vote and lost, Dr. Ward Cousins, Mr. Parker Young, and Dr. Sinclair voting in its favour; and Dr. Cullingworth, Miss Wilson, Miss Oldham, and Miss Paget voting against it.

Dr. Cullingworth's proposal that a list of examiners for London and the provinces should be prepared by the Board from those who were willing to serve and to act when required, was then put to the vote and carried.

The Board then agreed to the regulation that no examiner should examine his own pupils.

After some discussion it was decided that every examination should be partly oral and partly written, and should be conducted by two examiners, and it was agreed that the first examination should take place in May, 1905.

The Board next proceeded to discuss when and where the examinations should be held after May, 1905, and it was decided that they should be held twice a year—or more often if necessary—in London and the provinces simultaneously on the same papers, the Board reserving to itself the right to appoint one or more qualified medical practitioners as visitors of the examinations, both London and provincial, when it appeared desirable. The first provincial centres were fixed as follows: Bristol, Manchester, and Newcastle-on-Tyne. The remuneration of an examiner was, after careful debate, directed to be at the rate of 7s. for each candidate examined.

It was decided that each examiner should receive a paper of directions on being appointed, and amongst these directions it was agreed that the following should appear:

The paper shall consist of not fewer than six questions, and the time allowed for answering shall be three hours. A note shall be taken either by the examiner himself or by his colleague of the subjects upon which the candidate is questioned in the oral examination. Fifteen minutes shall be considered an average period for the oral examination of each candidate and examiners should avoid questioning candidates as to where and by whom they were trained so as to avoid any suspicion of bias.

Midwives Roll.

After consideration of applications for certificates the names of 829 women were passed under Section 11 of the Midwives Act, and ordered for entry on the Roll.

The following list shows the separate numbers of the various qualifications at present appearing on the Roll, the total enrolled amounting to 6,159; Royal College of Physicians of Ireland, 2; Obstetrical Society of London, 1,638; Rotunda Hospital, 70; Coombe Hospital, 32; Queen Charlotte's Hospital, 122; Liverpool Lying-in Hospital, 64; British Lying-in Hospital, 4; Glasgow Maternity Hospital, 76; St. Mary's Hospital, Manchester, 97; Manchester Maternity Hospital, 12; City of London Lying-in Hospital, 19; Royal Maternity Hospital, Edinburgh, 17; Salvation Army Maternity Hospital, 5; National Maternity Hospital, Dublin, 5; Women in bona fide practice, July, 1902, 2,998.

The Board then adjourned to July 14th.

[11] *Patent Foods and Patent Medicines.* By R. Hutchison, M.D., F.R.C.P. London: John Bale, Sons, and Danielsson. 1904. (Fcp. 8vo, pp. 45. 1s.)

[12] *A Pocket Book of Clinical Methods.* By Charles H. Melland, M.D.Lond. Bristol: John Wright and Co. 1903. (Fcap 8vo, pp. 88. 1s. 6d.)

The Council of the Society for the Study of Inebriety has resolved to form a reserve fund to further the work of the Society. Members and Associates, and all interested in the scientific study of inebriety, are invited by the Council to forward contributions to the Honorary Treasurer, Surgeon-Major Poole, M.D., 21, Sylvan Road, Upper Norwood, S.E.

CANCER MORTALITY.

DR. ALFRED WOLFF, who last year contributed to the BRITISH MEDICAL JOURNAL a series of articles entitled "A Comparative Study of Cancer Mortality," has continued to pursue the same line of research, and has embodied the results of his more recent work in the following communication:

Last year an attempt was made to ascertain whether the mortality from cancer, known to vary greatly in different countries, showed equally-marked differences when the several parts of the same country were compared. To this end the official statistics of nearly every State which published trustworthy figures were examined, and it was found, as might have been expected, that in most of them well-marked areas of high and of low cancer mortality existed.[1]

The conclusions arrived at from the last investigation were so interesting and apparently promised to throw so much light on the conditions of life under which cancer is most likely to occur that it became evidently desirable to carry the inquiry a step further and to attempt to ascertain whether the regional distribution which was found to occur in one year repeated itself subsequently.

Official figures on which calculation could be based are at present only obtainable for three of the principal European countries for the year next to the one last examined, namely, in the case of England and France, 1901, in the case of Germany the year 1900. It is hoped that the statistics for some other countries may be available for a subsequent article.

ENGLAND AND WALES.

The death-rate per 100,000 living in England and Wales from cancer during the year 1901 [2] was 69.1 for males and 98.5 for females, the rates in the different counties being:

—	Males.	Females.	—	Males.	Females.
England and Wales	69.1	98.5	Dorset	74.9	100 6
London	79.4	106.5	Kent	78.4	100 5
Hereford	91.9	137.7	Nottingham ...	62.6	100.1
Cambridge ...	95 1	133.0	Leicester	59.6	98 0
Huntingdon ...	96.4	130.0	Lincoln	76.2	98 4
Shropshire ...	63 9	128.4	Surrey	69.5	97.0
North Wales ...	98.1	120.0	Northumberland	73.4	96.4
Somerset	78.5	115.0	Rutland	126.1	96.1
Cumberland ...	72.0	114.4	Yorkshire (East Riding)	70.8	96.0
Norfolk	87.9	113.2	Yorkshire (West Riding)	66.3	94 3
Cornwall ...	69.5	112.6	Worcester ...	70.9	94.1
Devon	81.8	112.1	Derby	51.9	93.2
Cheshire	70.1	112.0	Essex	56.6	90 8
Oxford	100.6	112.0	Lancashire ...	59.3	90 5
Herts	83.2	112.0	Yorkshire (North Riding)	77.3	90 4
Berks	88 3	111.3	Westmorland ...	98.3	88.6
Hants	84.2	108.8	Middlesex ...	60.8	82 8
Sussex	79.4	107.4	Durham	49.7	80.4
Warwick	72.8	103 7	Stafford	48.2	80.2
Suffolk	79.0	103.1	South Wales ...	57.7	79.8
Bucks	83.8	101.6	Monmouth ...	57.6	78.9
Wilts	66.4	101.3			
Gloucester ...	83.4	101.0			
Northampton ...	73.0	100.9			

It will be seen that the districts showing high and low cancer mortality respectively were much the same as those of the previous year; Cambridge, Huntingdon, and North Wales giving high figures, while the lowest rates are again to be found in Monmouth, South Wales, Stafford, and Durham. The little county of Rutland, as has frequently been the case previously, exhibits a curious anomaly, having the unexampled rate of 126.1 for males, while that for females—96.1—is a shade below the average. It may be mentioned that the mortality from cancer was low in this county in 1900.

Westmorland also gives the very high figure of 98.3 for males, while among females the rate—88.6—is greatly below the average.

The most remarkable difference is found in the county of Hereford, in which the mortality was about the average in 1900, but in 1901 was exceptionally great for both sexes—91.9, 137.7. Shropshire, also, has a high rate for females—128.4—although that for males is below the average—63.9. In Oxfordshire and Westmorland the male rate is high, 100.6 and 98.3 respectively.

Material for a fuller investigation of the various degrees of cancer mortality in different parts of England, with complete correction for age and sex distribution, will no doubt be available in 1905, when the Registrar-General's report for the decennium 1890-1900 may be confidently expected.

[1] BRITISH MEDICAL JOURNAL, April-May, 1903.
[2] Registrar-General's Report for 1901.

FRANCE.

In the towns of France[3] the cancer mortality in 1901 was less generally than in the previous year, the rate per 100 000 living in all towns having more than 5,000 inhabitants, being only 90 as against 104, and in Paris a rate of 107 contrasts with one of 120. As in the previous year, however, the rate was proportionately greater in the larger towns.

—	Proportion of Deaths from Cancer and Tumour to 100 Deaths from all Causes at all Ages.
Paris	107
All towns having from 500,000 to 100,000 inhabitants ...	107
All towns having from 100,000 to 30,000 inhabitants ...	94
All towns having from 30,000 to 20,000 inhabitants ..	81
All towns having from 20,000 to 10,000 inhabitants ...	78
All towns having from 10,000 to 5,000 inhabitants ...	63
All towns having above 5,000 inhabitants	90
Chefs-Lieux d'arrondissement having under 5,000 inhabitants	69

Departments in the Towns of which the Highest Mortality from Cancer was shown in 1901.

Department.	Death-rate from Cancer and Tumour per 100,000 living at all Ages.	Proportion of Deaths from Cancer and Tumour to 100 Deaths from all Causes at all Ages.	Proportion of Deaths from Cancer and Tumour to 100 Deaths from all Causes of Persons of 40 and upwards.
Eure et Loire ...	205	7.0	13.0
Loire et Cher ..	164	6.3	10.1
Rhône	151	7.0	12.3
Seine Inférieure ...	145	5.1	10.2
Côte d'Or	136	7.1	10.4
Indre et Loire ...	134	5.0	9.1
Seine (excluding Paris)	130	4.8	8.3
Marne	128	6.0	10.9
L'Isère	127	6.3	10.2
Loiret	124	5.9	9.4
Somme	117	6 0	10.4
L'Aisne	117	4.8	9 0
Seine et Oise ...	113	4 7	8.6
Seine et Marne ...	102	5.2	8.2
L'Oise	97	4.4	7.6
Nièvre	97	4.9	7.0
Loire Inférieure ...	92	4 [illegible]	7.9
Nord	90	4.7	10.0

Departments in the Towns of which the Lowest Mortality was shown in 1901.

Department.	Death-rate from Cancer and Tumour per 100,000 Living at all Ages.	Proportion of Deaths from Cancer and Tumour to 100 Deaths from all Causes at all Ages.	Proportion of Deaths from Cancer and Tumour to 100 Deaths from all Causes in Persons of 40 and Upwards.
Gironde	73	3.6	5.6
Côtes du Nord	72	3.2	5.3
Calvados	69	2 7	4.4
Cher	64	3 9	6.1
Manche	64	2.8	5.0
L'Aude	61	2.7	4.3
Vosges	59	3.1	6.0
Hérault	59	2.4	4.0
Allier	58	3 7	4 8
Bouches du Rhône ...	48	2.1	4.1
Finisterre	39	1.9	4.2

On examining the mortality in different departments it is seen that those showing high rates in 1901 are the same as those of the previous year, although there is some difference in the order in which these stand. The departments which had low death-rates from cancer in 1900 also had low rates in 1901. It is therefore to be noted that again in 1901 there was in France a compact area of high cancer mortality extending

[3] *Statistique Sanitaire des Villes de France*, 1901.

from the country in the north-east bordering on the Channel through Paris, and along a strip extending west from that city to the Bay of Biscay. There were also, as in 1900, two well-marked areas in which the deaths from cancer were well below the average, one of these covering the greater part of Brittany and the other in the south-east bordering on the Mediterranean.

GERMANY.

In Germany the rates for 1899 were last given, and these are to be compared with those obtaining in 1900.[4] In this last year the mortality from cancer was slightly lower in the whole empire, while it was about the same in Prussia, and distinctly higher in the Kingdom of Saxony.

—	Death-rate from Malignant Growth per 100,000 Living, all Ages.	Proportion of Deaths from Malignant Growths to 100 Deaths from all Causes at all Ages.	Proportion of Deaths from Malignant Growths to 100,000 Living between Ages of 15 and 60.	Proportion of Deaths from Malignant Growths to 100,000 Living aged 60 and Upwards.
German Empire ...	71	3.2	62	459
Baden	101	4.5	79	640
Bavaria	98	4.0	81	594
Bavaria (right of Rhine)	—	—	84	599
Bavaria (left of Rhine)	—	—	62	553
Kingdom of Saxony	95	4.1	82	669
Hesse	93	4.7	69	646
Wurtemburg... ...	03	4.0	73	—
Alsace Lorraine ...	78	3.6	57	469
Prussia	59	2.7	53	376
Reuss	—	—	86	—
Brunswick	—	—	70	—
Saxe Altenburg ...	—	—	64	—
Anhalt	—	—	58	—
Schwartzburg Soudenhausen... ..	—	—	58	—
Lippe	—	—	53	—
Saxe Meiningen ...	—	—	50	—
Waldeck	—	—	48	—
Saxe Coburg Gotha..	39	2.0	25	238
Schaumberg Lippe...	—	—	33	—

Baden, Bavaria, the Saxon Kingdom, Wurtemburg, and Hesse show rates far above those prevailing in the Northern States, thus exhibiting a mortality a long way above the average for all Germany. This is precisely the same as was shown to be the case in 1899. A remarkable piece of evidence, distinctly proving that the distribution of cancer which has been pointed out in the German empire is not peculiar to any one or two years, is supplied by a table lately published showing the average annual mortality from cancer in persons of 60 years and upwards calculated from the deaths in each of the years from 1892-1900. Prussia is thus proved to have an average cancer mortality well below that of the country generally, while Baden, Hesse, and the Kingdom of Saxony head the list, being closely followed by Bavaria.

—	Average Annual Rate of Death from Cancer per 100,000 Living of 60 Years of Age and Upwards during Nine Years, 1892-1900.	Proportion of Deaths from Cancer to 100 Deaths from all Causes in Persons 60 Years of Age and Upwards. Annual Average 1892-1900.
German Empire	416.3	6.3
Baden...	661.0	8.3
Kingdom of Saxony ..	647.6	9.4
Hesse	624.0	9.2
Bavaria	553 6	8.1
Alsace Lorraine	499.8	6.0
Wurtemburg	463.9	7.2
Prussia	331.0	5.2
Saxe Coburg Gotha ..	256.8	3.5

The indication afforded by the figures given above that in three of the chief countries of Europe the distribution of cancer mortality varies but little from year to year is very noteworthy. When in addition the great gap is observed which exists between the rates of mortality in the high and low areas it becomes evident that, however it may be explained, geographical conditions play no small part in determining the occurrence of the disease. The distribution of cancer in England has always been somewhat patchy, and it is perhaps for this reason that the local incidence has not received the attention it deserves. The cause of this tendency for areas of high cancer-rates in England to be dotted about somewhat irregularly all over the country is difficult of explanation; it may, however, be suggested that the small size of the kingdom, involving considerable similarity in the conditions of life and in the distribution of natural features such as wood and water, may have some influence in this direction. A somewhat similar patchy distribution of cancer obtains in Holland. It is far otherwise when France is considered, where the districts of high cancer mortality are almost entirely comprised within an area consisting of adjoining departments which together constitute almost the whole of the northern third of the country. It may be noted here that the Loire Valley, which in 1900 had only an average mortality, now shows several districts in which the cancer-rate was markedly high.

Both in France and in Germany the thickly-wooded and well-watered regions continue to show a heavy death-rate from cancer, and in England it may be observed that the orchard county of Hereford, as might have been expected, is now to be found among those in which the mortality from this cause is greatly in excess. Altogether the present statistics go to confirm the view before expressed that a combination of woods with much water, whether running or stagnant, constitutes an environment in which a great development of cancer may be expected, although the mode of life of the population is not without its influence in this respect.

The low death-rates from cancer exhibited almost everywhere along the shores of the Mediterranean (the rate in Marseilles—52—is extraordinarily low) seem to suggest that an equable temperature may have some influence in preventing the occurrence of the disease, but it is possible that some other explanation may be found for this phenomenon.

[4] *Medizinal-statitische Mittheilungen aus dem Kaiserlichen Gesundheitsamte*, 1904.

PREVENTION OF CONSUMPTION.

PROPOSED CONSUMPTION SANATORIUM FOR MIDDLESEX.

AT a conference of Middlesex authorities held on June 20th, under the presidency of Mr. Montagu Sharp, Vice-Chairman of the Middlesex County Council, a scheme for the erection of a sanatorium for the county was, after considerable discussion, adopted. It is proposed that the sanatorium should provide accommodation for 100 patients, 50 of either sex, and that at least half the beds should be maintained by borough and local authorities. It is hoped that funds for the maintenance of the remainder will be obtained by public subscriptions from traders, Friendly Societies, and private individuals. It was announced that all the authorities in Middlesex with the exception of eight concurred in the scheme, and that the county council would send three representatives to the governing body. It is believed that the cost of erection would be about £300 per bed, and the maintenance about 30s. per week per head.

AMERICA.

National Tuberculosis Association.—A National Association for the Study and Prevention of Tuberculosis has just been formally constituted in the United States. The objects of the new society are: (*a*) The study of tuberculosis in all its forms and relations; (*b*) the dissemination of knowledge concerning the causes, treatment, and prevention of tuberculosis; and (*c*) the encouragement of the prevention and scientific treatment of tuberculosis. The following are the officers of the association: President, Dr. E. L. Trudeau; Vice-Presidents, Drs. William Osler, Hermann M. Biggs; Executive Committee, Drs. J. N. Hurty, E. O. Otis, E. Klebs, M. P. Ravenel, and Mr. E. T. Devine. Dr. Osler was made chairman of a committee of five to represent this association at the Paris International Convention. The opening meeting of the association, which was held at Atlantic City on June 6th, was attended by some 500 medical practitioners representing every part of the United States.

Government Sanatorium for Consumptive Seamen.—The report of the United States Public Health and Marine Hospital Service for 1903, which has recently been issued, contains an account of the working of the Sanatorium for Consumptive Seamen at Fort Stanton, New Mexico. During the fiscal year ending June 30th, 1903, there were admitted 169 new patients, making with those already resident in the institution at the beginning of the year 274 under treatment for various periods. In only 34 of the 169 admitted during the year was there a history of tuberculous

heredity. At the time of admission 22 were in the first stage. In only 28 of the total number of cases were tubercle bacilli found in the sputum. Other organs than the lungs were affected as follows:—Larynx in 16 cases, intestines in 3, testicles in 2, vertebrae in 2, ribs in 1, lymph glands in 4, lower jaw in 1, rectum (with fistula in ano) in 4; of 124 cases in which the result is stated, death occurred in 48 and 76 were discharged—12 apparently cured, 54 improved, and 10 not improved.

THE MIDWIVES ACT.

ATTENTION has been drawn at various times to the work thrown upon medical men by the Midwives Act and to the fact that, although the Central Midwives Board in virtue of the powers given to it by the Act, has enumerated a number of circumstances under which medical assistance must be summoned by midwives and has prescribed the form in which the summons is to be sent, nothing is said as to what the fees to medical men under such circumstances ought to be nor as to who ought to be responsible for their payment. These questions have been debated in many quarters, and among others in the Stratford Division of the Metropolitan Counties Branch of the British Medical Association. The latter part of the question cannot be settled by medical men alone, but as regards the amounts which ought to be paid the Division in question recently resolved to recommend to the Council of the Branch the amounts detailed in the following list:

MINIMAL FEES FOR WORK DONE IN RESPONSE TO THE SUMMONS OF A MIDWIFE.

(*a*) In the case of a pregnant woman:	
(1) Where she (the midwife) suspects a deformed pelvis; (2) where there is loss of blood; and (3) where the pregnancy presents any other unusual features (as, for example, excessive sickness, persistent headache, dimness of vision, puffiness of face and hands, difficulty in emptying the bladder, incontinence of urine, large varicose veins, rupture), or where it is complicated by fever or any other serious condition	Opinion and advice: day call, 3s. 6d.; night call, 7s. 6d.
(*b*) In the case of a woman in labour:	
(1) In all presentations other than the uncomplicated vertex or breech	£2
In all cases of breech presentation in primiparae	£1 10s.
In all cases of flooding and convulsions ...	£2
Also whenever there appears to be insufficient room for the child to pass or when a tumour is felt in any part of the mother's passages	£2
(2) If the midwife when the cervix has become dilated is unable to make out the presentation	Opinion and advice: day call, 3s. 6d.; night call, 7s. 6d.
(3) If there is loss of blood in excess of what is natural, at whatever time of the labour it may occur	Up to £2
(4) If an hour after the birth of the child the placenta has not been expelled and cannot be expressed (that is, pressed out), even if no bleeding has occurred	Manual removal, 10s. 6d., in addition to the day or night fee of 3s. 6d. or 7s. 6d. Instrumental, £2. Operation £1 1s. in addition to the day or night fee of 3s. 6d. or 7s. 6d.
(5) In cases of rupture of the perineum or other serious injuries of the soft parts	
(*c*) In the case of lying-in women and in the case of newly-born children. Whenever after delivery the progress of the woman or child is not satisfactory but in all events upon the occurrence of the subjoined conditions in:	
I. The mother:	
(1) Abdominal swelling and signs of insufficient contraction of the uterus	Day, 3s. 6d.; night, 7s. 6d.
(2) Foul-smelling discharges	£2
(3) Secondary *post-partum* haemorrhage... ...	£1 1s.
(4) Rigor	£2
(5) Rise of temperature above 100·4° F. with quickening of the pulse for more than 24 hours	£2
(6) Unusual swelling of the breasts with local tenderness or pain	Day, 3s. 6d.; night, 7s. 6d. Operation and dressings, £1 1s. in addition.
II. The child:	
(1) Injuries received during birth; (2) obvious malformations or deformities not inconsistent with continued existence; (3) concealed malformations, incapacity to suck or to take nourishment; (4) inflammation to even the slightest degree of the eyes, eyelids, and ears; (5) syphilitic appearance of the skin in certain parts; (6) illness or feebleness arising from prematurity; (7) malignant jaundice (icterus neonatorum); (8) inflammation about the umbilicus (septic infection of the cord)	Opinion and advice: day, 3s. 6d.; night, 7s. 6d.
In all cases of the death of a woman during pregnancy, labour, or lying-in	Inspection: day, 3s. 6d.; night, 7s 6d.

Anaesthetist, if required, not being the assistant or employer of the medical man attending, to be paid according to the time detained—thirty minutes and under, 10s. 6d.; over thirty minutes, £1. In country districts mileage to the nearest available medical man to be taken into account.

This scale was adopted by the Division from one put forward in the course of a paper read before the Plaistow and Canning Town Medical Society by Mr. Percy Lord, Representative of the Stratford Division on the Council of the Metropolitan Counties Branch of the British Medical Association. In considering the scale in detail, some of the statements which Mr. Lord made when he put the scale forward may be quoted. They were to the following effect:

Midwifery work in conjunction with a midwife was commonly declined in the past, but now it was less dangerous to the reputation of the medical man summoned, because, owing to the supervision exercised over the modern midwife and to her training, the medical man who helped her upon occasion would not be so liable to be involved in the discredit of a case which had gone wrong owing to incompetence and neglect. Nor under present circumstances would it for many reasons be easy for a medical man to decline to attend a midwife's case when his services were requested. The public, through the law, guaranteed that the midwife was competent, and ordered her under certain definite circumstances to summon medical assistance, and after so doing to forward, within twelve hours, a copy of her requisition to the local supervising authority, which was again the representative of the public. The medical man would feel bound to attend, and it was for the public through the local supervising authority to see that he was paid for performing the duty thrust upon him. A medical man informed in accordance with the prescribed form that his attendance was required at once could not wait to make arrangements about payment; the latter could not be exacted from the midwife nor could the relatives of those who commonly employed midwives afford the extra fee, nor would they be inclined to pay it even if really able to do so: the parish medical officer again could not take over such work except at his own risk since time for receipt of a Poor-law relief order would be lacking. No pre-existing machinery would meet the case and if the Act were not to prove a failure the public and the medical profession must work together, the former ensuring the payment of fees through the local supervising authorities created by the Act and medical men charging fees in accordance with precedence and common sense. The nearest precedents were the fees paid by the police for accidents, etc., and those paid by Poor-law authorities for midwifery work done under relief orders. In considering what a fair scale would be it was to be remembered that midwifery calls were imperative emergency calls to abnormal cases: visits, therefore, should be regarded as "special" and the fees higher than for cases normal and abnormal taken together as in Poor-law work. In some cases the fees in the scale might seem to be easily earned, but in others covered by the same descriptions much higher fees would be but poor payment. A distinction was also made in the scale between those cases in which the patient had time to make other arrangements for the care of herself or child, and those in which immediate treatment was required. In the first class of case payment for a single opinion and advice was asked for, and in the second a larger fee, up to £2, was put down, and included, of course, attendance up to the tenth day.

THE STEAMBOAT DISASTER IN AMERICA.—On North Brother's Island, where the burning steamboat, *General Slocum*, was run ashore, is situated the New York Health Department's Riverside Hospital for Contagious Diseases; there is also a tuberculosis hospital on the island. Dr. Darlington, the President of the Health Department, was early on the scene of the disaster and gave a vivid account of what he saw. The following extract from his description may be interesting: "The patients in the contagious wards, especially in the scarlet fever wards, went wild at the things they saw from their windows, and went about screaming and beating at the doors, until it took fifty nurses and physicians to quiet them. Along the beach the boats were carrying in the living and dying and towing in the dead. We wrapped the living in blankets and gave them milk and whisky. We used a barrel and a half of spirits to good purpose in reviving the sufferers and keeping the rescuers from getting so chilled that they could not go on with their work. One hundred and fifty doctors and nurses worked over the injured and remained at their posts all night, women and men alike. They did the work of heroes, and did it well." Efficient aid was also given by a number of the convalescents and tuberculosis patients.

THE HOLMAN TESTIMONIAL FUND.

The Treasurer of this Fund acknowledges the following further subscriptions:

	£	s.	d.		£	s.	d.
E. C. Arnold, Esq., M.B. ...	1	1	0	Jas. Hewetson, M.B., C.M....	1	1	0
Mr. G. H. Barton	0	2	6	Clement Godson, M.D. ...	1	1	0
C. Dorrington Ball, M.B., J.P.	1	1	0	Mr. C. S. Carnes	2	2	0
Mr. C. F. Wakefield	0	10	6	Balance at disposal of South-Eastern Branch of British Medical Association, per Mr. T. J. Verrall	35	11	9
I. D. Malcolm, M.B.	1	1	0	J. Mitchell Bruce, M.D. ...	2	2	0
Bransby Roberts, M.D. ...	1	0	0	J. F. Goodhart, M.D. ...	3	3	0
Mr. E. Noble Smith	1	1	0	Sir John Puleston	2	0	0
Alfred Winkfield, M.A., F.R.C.S.	1	1	0	R. M. Miller, M.D.	1	1	0
Mr. T. H. Martin	1	1	0				
Mr. E. G. A. Walker	1	1	0				

The amount now subscribed is £422 16s. 9d., and an additional £100 is required to carry out the proposed scheme of erecting an Art and Reading Room at Epsom College. A further, and it is to be hoped a final, list will be published in a month's time. Subscriptions of any amount will be received by Dr. John H. Galton, Chunam, Sylvan Road, Norwood, S.E.; or by Mr. W. A. Berridge, Oakfield, Redhill.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Council Election.

This election took place on Thursday, and the result was—

	Votes.
Mr. Gilbert Barling	**400**
Mr. A. A. Bowlby	**327**
Mr. F. S. Eve	**313**

Mr. Golding-Bird	295
Mr. J. Bland-Sutton	251
Mr. Bruce Clarke	212
Mr. Harrison Cripps	170

The President declared Messrs. Barling, Bowlby, and Eve duly elected. He further announced that on this occasion the largest number of votes ever polled had been recorded—namely, 817—801 were sent by post (1 invalid, 3 too late), 16 Fellows only voted in person.

The total number of Fellows is 1,302, which includes 15 addresses lost, 1 Fellow not entitled to vote, and 182 in the army and navy scattered over the empire.

MEDICAL NEWS.

The Prince of Wales has consented to become a Patron of the Royal Meteorological Society.

Medical Magistrate.—Mr. James E. H. Mackinlay, of Redcar, has, on the recommendation of the Lord Lieutenant, been appointed to the Commission of the Peace for the North Riding of Yorkshire.

At a meeting of the governors of the Windsor Royal Dispensary and Infirmary, held on July 4th, it was decided to rebuild the infirmary on a new site, and a Site Committee, including among others Prince Christian, was appointed.

The Wightman Lecture of the Society for the Study of Disease in Children will be delivered by Mr. R. Clement Lucas, B.S.Lond., F.R.C.S., at the Victoria Hall, Hotel Cecil, on Friday, July 15th, at 6.30 p.m. The title of the lecture is The Hereditary Bias and Early Environment in their Relation to the Diseases and Defects of Children. The lecture is open to all members of the medical profession.

Congress of Social Hygiene.—A Congress of Social Hygiene is to be held at Arras, in France, July 17th to 20th. The Congress has been organized by a Committee of which Professor Calmette is a President. The following questions are proposed for discussion: (1) The disposal of waste waters, to be opened by Dr. Calmette and others; (2) puericulture, including the supervision of the supply of milk for infants, and the organization of medical aid for nurslings, *gouttes de lait*, etc. M. Bordas, Assistant at the Collège de France, will deal with milk and its adulteration; (3) the question of tuberculosis.

Scotch Diplomates.—A new medical body was brought into existence last month under the title of the "Association of Medical Diplomates of Scotland," membership of which is limited to those holding the diplomas of the Royal Colleges of Physicians and Surgeons of Edinburgh and of the Faculty of Physicians and Surgeons of Glasgow. Its promoters consider that the holders of these diplomas labour under certain disadvantages, especially in respect of certain public appointments, which they believe to be unjust and which they hope may be removed by a strong and representative association of the diplomates in question. The first officers of the association are as follows: President, Mr. St. Aubyn-Farrer; Treasurer, Mr. W. Bell; Honorary Secretary, Dr. M. E. Leicester (16, Kildare Terrace, Bayswater, W.). Nine members of Council have also been appointed. Applications for membership may be addressed either to the Treasurer or to the Honorary Secretary. The annual subscription is 10s. 6d.

The Association of British Postal Medical Officers.—The annual dinner of the Association of British Postal Medical Officers was held at the Whitehall Rooms, London, on July 1st, under the chairmanship of Dr. Walter Browne (Belfast). After the usual loyal toasts the President gave the "Health of the Postmaster-General," which was acknowledged by Lord Stanley, who said that since his appointment to office he had seen the number of postal medical officers increased from 663 to 888, and had that very day appointed 33 more. The toast of "The Imperial Forces" having been drunk and acknowledged, that of "The Secretary and other Executive Officers of the Post Office" was given by Mr. Thomas Roe, M.P., and Mr. H. B. Smith, Secretary, replied. Mr. E. Wason, M.P., in proposing the toast of "The Association of British Postal Medical Officers," said that it had existed for nearly eleven years; the medical officers of the Post Office had responsible duties, for not only did they care for those who through ill-health were unable to serve the State, but they also had to see that there was no shirking. He believed that as long as the members of the Association continued to perform their duties as they had done in the past without fear or favour and without regard to politics the Post Office would prosper. The President said that the Association strove to promote the best interests of the postal service, and paid a deserved tribute to Dr. Giddings for his services as Honorary General Secretary.

A Medical Jubilee.—An interesting event took place at a recent meeting of the Parish Council of Maybole, N.B., when the Chairman referred to the fact that Dr. Robert Girvan had completed fifty years in the service of the Parochial Board and Parish Council, having been appointed to his present position as Medical Officer to the Parish Council on June 7th, 1854. During the fifty years Dr. Girvan had acted without a break, and had performed his duties in an admirable manner. Cholera broke out in Maybole in the year of his appointment. The Chairman, after some complimentary remarks on the thorough and conscientious manner in which Dr. Girvan had performed his duties, offered him the sincere congratulations of the Council on the occasion of his jubilee as medical officer. Dr. Girvan, in reply, drew a contrast between the condition of the town when he was first appointed and its improved condition at the present time. We may congratulate Dr. Girvan on having completed fifty years of public service with so much credit to himself and advantage to the town of Maybole. Dr. Girvan was also for thirty-eight years in the 2nd Volunteer Battalion Royal Scots Fusiliers, from which he retired as Surgeon-Lieutenant-Colonel, after having been awarded the Volunteer Officer's Decoration.

Bequests to Hospitals.—The late Mr. Charles Hemery, of Gladsmuir, Hadley, bequeathed £100 each to the Westminster Hospital, the Royal Free Hospital, the London Fever Hospital, the City of London Hospital for Diseases of the Chest, and the Barnet Cottage Hospital. The late Mr. C. H. Long, of Whitehill, Caterham, governor and almoner of Christ's Hospital, expressed in his will the desire that within five years of his death such sum as should be sufficient to endow permanently a bed in the Incurable Ward of the Westminster Hospital should be paid to the hospital. He bequeathed £100 each to the Samaritan Fund of the Westminster Hospital and to St. John's Convalescent Home at Brighton, and £50 each to the Hospital for Incurables at Putney and the Sussex County Hospital. By the will of the late Miss Esther Steel, the Western Ophthalmic Hospital, Marylebone Road, is to receive the sum of £1,000.

BRITISH MEDICAL ASSOCIATION.

Subscriptions to the British Medical Association for the year 1904 are now due and should be forwarded by postal order or cheque to the amount of 25s. to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, JULY 9TH, 1904.

MEDICINE AND THE EMPIRE.

THE increasing appreciation which statesmen in the front rank are beginning to show of the immense importance of sanitation in its widest sense is a most encouraging sign, and if their words at present go beyond their deeds we can only hope that at no distant date their convictions will find practical realization in Acts of Parliament. Mr. Chamberlain when at the Colonial Office showed not only that he realized the importance of sanitation as one of the means for consolidation of the Empire, but proved the strength of his convictions by his official acts. Five years ago he made a memorable speech at a public dinner held in London to promote the interests of the London School of Tropical Medicine then recently founded. He then showed that he had a grasp of main principles, and such a familiarity with their application to administration as could only have been gained by a close personal study. He has now at the dinner given to him by the Royal Institute of Public Health last week paid with all the eloquence and insight which distinguishes him in his happiest moment a generous tribute to preventive medicine and to scientific research. It was more than a tribute to work done, for it was an appeal for more work in the future, and a vindication of the place of medicine in the social scheme.

Men not very far advanced in middle age can well remember the ridicule with which politicians and many political newspapers greeted Mr. Disraeli's speech in which he spoke of sanitary reform as the foundation of every other reform. A statesman of to-day who gave utterance to such a sentiment would be secure from ridicule, though he might run some risk of an accusation of insisting on the obvious unless his words were justified or followed by action. Mr. Chamberlain admitted that he was among those who laughed at Disraeli with his paraphrastic *Sanitas sanitatum omnia sanitas:* but he has more than expiated his indiscretion by the appreciation which he, above all living British statesmen, has shown of the real place of sanitation in all the great social reforms with which the public mind is now happily no longer preoccupied. Mr. Chamberlain said as truly as trenchantly that preventable disease is at this moment a great agent for filling our workhouses, raising taxes, weakening the fibre of the people, and preventing us from competing successfully in the eternal struggle for existence among the nations. A profession convinced by the discoveries of science and by the practical experience of its every-day work of the truth of this proposition may be pardoned if it feels some irritation when it sees the time of Parliament so frittered away that no time can be found even for the introduction of weighty measures of prime importance to the public health and to the consolidation of the Empire, and when it is categorically informed by a Treasury Committee that the consideration of public health questions does not involve "the decision of great questions of policy."

We may take the evidence of Mr. Balfour himself, who, on the same occasion, said that by the unconquerable laws of economic destiny the urban must be an ever-increasing proportion of the whole population, since it was scarcely possible to divorce manufactures on a large scale from life in great centres of population. The question whether this change in the distribution of the population involved inevitably some falling off in our ancestral vigour was, he said, the practical problem so far as domestic matters were concerned, with which preventive medicine has chiefly to deal. No member of the British Medical Association will be likely to disagree with the Prime Minister on this point, but will conclude with him that it is a national duty to see that there shall be no deterioration in the health and stamina of the people, which, as he said, "must be the physical basis of every great national and Imperial aspiration." Neither Mr. Balfour nor Mr. Chamberlain, then, agrees with the Treasury Committee's opinion that public health questions are not "great questions of policy." We hope that they may be able to convert their followers, and there are some signs that the politicians are being educated. Sir Mountstuart Grant Duff tells in one of the earlier of the many volumes of his reminiscences a story of how he once foregathered with Lord Farrar in a railway carriage, and how they discussed the iniquities of the Disraelian Government, the whole lament being summed up by the exclamation—To think that this Government which has done such frightful things (in its foreign policy) should come near to be wrecked on a Water Bill! This conversation would hardly have taken place at the present day, for even the most hidebound politicians are beginning to perceive that a sanitary measure affecting the health of the people at the heart of the Empire, and the development of their children, may be of as much importance as for instance the terms of indenture of coolies in the Transvaal in which the House of Commons has displayed such disproportionate interest.

PROPOSED ALTERATIONS OF BY-LAWS.

THE Annual Representative Meeting at Oxford at the end of this month will have before it several notices of motion by the Central Council and by Divisions of the Association for amendment of existing by-laws, or for the adoption of new by-laws.

In accordance with the regulation of the Association, which requires that three months' notice shall have been given, through the BRITISH MEDICAL JOURNAL, of any motion for the alteration of by-laws which is to come before the Annual Representative Meeting, these notices appeared in the JOURNAL for April 23rd last. They were also printed in the SUPPLEMENT of May 7th, in order to be available in a convenient form for the use of members who wish to take part in the discussion upon them at meetings of Divisions.

Such discussion by Divisions is the object of the three months' notice prescribed by the regulations, and in this manner it is placed within the power of every member who takes an interest in the work of the Association to express his opinion by speech and vote, upon the important regulations which are contained in the by-laws.

During the discussion of the new regulations it was

pointed out that the power given to Representative Meetings to make or alter by-laws furnished a convenient machinery whereby the regulations of the Association could, at the will of its members, constantly be adapted to those needs which experience might bring to light.

The proposals which have to be considered by the Annual Representative Meeting at Oxford relate to the following subjects: The election of new members; the determination of the membership of Divisions and Branches; the financial relations between Branches and the Association; the appointment of substitutes at Representative Meetings; the mode of voting at Representative Meetings; the mode of election and annual reports of the Council, and the duties of one of the Standing Committees.

Those members who may not have found time to make the careful study of the existing by-laws which is necessary in order fully to appreciate the bearing of the various changes proposed, may find a concise statement of the purport of each acceptable.

The first motion standing in the name of the Council of the Association relates to the mode of election of new members by Branch Councils.[1] At present the election of new members who reside within the area of a Branch rests with the Branch Council, and it is required that before an election each member of the Branch Council shall have had one month's notice of each candidate proposed. In this way each representative of a Division on the Branch Council is given time to ascertain the suitability of those candidates for election who reside within the area of the Division which he represents. Some Branches, however, have found so long a notice inconvenient and unnecessary, and it is therefore proposed by the Central Council that in future the length of notice required in each Branch shall be in its own discretion, provided that it shall not be less than seven days. It will be observed that the Folkestone Division has given notice of a motion relative to the same subject, which, though not stated in the technical form of an alteration of by-laws but simply as a declaration of principle, would doubtless, if approved by the meeting, lead to a subsequent alteration of the by-laws in the direction indicated. The proposal is to take the election out of the hands of the Branch Councils and entrust the duty to the Divisions. This would certainly have the effect of strengthening the conception of a Division as essentially an autonomous local medical society, and would to that extent be in harmony with the Constitution. Those who take a special interest in the matter will find the counter arguments, in favour of the principle which underlies the present regulations, stated in the proceedings of the Constitution Committee.

The alteration of By-law 15, proposed in paragraph (3) of the Council's proposals, and the new by-law, proposed in paragraph (8), are interdependent as affecting the membership of Divisions and Branches, and the allotment of the annual capitation grants, the amount of which is regulated by membership. Under Article IV of the Articles of Association the membership of Divisions and Branches is determined solely by the residence of members, and, in the absence of any special provision, a member who changes his residence from one Division or Branch to another immediately changes his membership from one to the other. It is proposed by the new by-law that an annual register of members shall be made up on a fixed date; that changes of residence between one period of making up the list and another shall not be regarded as affecting the membership of Divisions and Branches; and that the electoral rights of Divisions and Branches, as regards election of Representatives in the Representative Meeting and Central Council respectively, and the capitation grants made to them from central funds, shall be determined on the basis of the annual register. The date proposed for making up the register is April 30th, for the reason that, as most elections in the Association take place in May and June, they will thus be held on a fresh register. Special provision is made with respect to new members who may be elected after the making up of the register in each year.

There are two motions for the alteration of the regulations affecting Representative Meetings, the Council proposing a new by-law (paragraph 9) relating to the composition of the meeting, and the Walthamstow Division bringing forward a proposal to amend the existing By-law 18 concerning the mode of voting. In accordance with instructions from the Annual Representative Meeting last year, to provide for a difficulty then experienced, the Council proposes a by-law enabling a Division to lay down by its own rules the manner in which a substitute for a representative unable to attend the annual meeting shall be appointed. The alteration suggested by the Walthamstow Division is designed to meet a point which was discussed pretty fully at the annual meeting at Cheltenham on the report of the Constitution Committee. Under the present Constitution proportional representation is aimed at by the provision that, while each constituency, whatever its size, has only one representative, such representative may, under certain conditions, exercise a voting power equal to the number of members in the constituency which he represents. At present a vote by card must be taken if a majority of the meeting by a show of hands so decide. It has been maintained that this system is defective, because, if the voting were likely to be close, a party which believed that it would have a majority by a show of hands but would be defeated on a vote by card, might prevent the taking of a vote by the latter method. To meet such a possible contingency the Walthamstow Division proposes that a vote by card shall be taken if a demand be made by twenty of the representatives present.

Three of the notices of motion have reference to the mode of election of members of the Central Council.

The Wandsworth Division proposes that the nomination of a candidate may be made, not only, as at present, by a certain number of individual electors, but also by a Division, and would further empower a Branch to require that a nomination not made by a Division should be signed by a larger number of members than three, as at present.

The object of the amendment to By-law 28 is to prevent what is regarded as the unnecessary expenditure entailed upon Branches by the requirement that a member of the Central Council to fill a casual vacancy shall be elected in the same way as the annual election is conducted—by voting papers sent to all members of the Branch by post. It is proposed that each Branch should in future have the power to determine for itself the manner in which such vacancies should be filled.

Among the recommendations of the Constitution Committee of 1901 was one suggested by a distinguished member of the Army Medical Service, who was a member of

[1] See SUPPLEMENT for May 7th, p. 118, para. 1.

the Committee, providing for the election of direct representatives on the Central Council of officers of the medical service of the Navy, Army, and India. It has been found that the regulations of these services render the arrangement then proposed impracticable. It is felt, however, to be desirable that the Council should include past or present members in order that they may be able to advise on the important matters affecting the services which from time to time arise: and, direct election being precluded, it is now proposed that the Council should itself annually select, for membership of the Council, three persons deemed to be representative of the three services named.

In paragraph 6 the Council proposes an alteration of the by-law under which it reports to the Annual Representative Meeting. Under the existing By-law (32) the Council is required annually to present a report to the Representative Meeting, which must be published in the JOURNAL not less than two months before the date of meeting. The legal effect of the by-law as at present worded has been held to be that the Council is debarred from presenting any subsequent or supplementary report, and in this way the proceedings of the Council in the interval between the issue of the annual report and the date of the annual meeting cannot be brought before the meeting for review. To remove the obvious inconveniences resulting from this restriction it is proposed that the Council shall be expressly authorized to present such supplementary report as may be deemed necessary.

The proposal of the Council in paragraph (7) is designed to enlarge somewhat the scope of the Public Health Committee. As at present worded, By-law (39), section (iii) may be held to tend to direct the work of this Committee—which is one of the standing Committees appointed under the by-law—too exclusively to questions affecting the public health service. The Committee has recommended that it is expedient that the definition of its functions should be wide enough to cover every aspect of public health with which the Association may see reason to deal.

The amendments proposed by the Council in paragraph 2 as to By-law 10, and in Sections (A) and (B) of paragraph 4, as to By-law 20, will be observed to be purely formal matters. A word of explanation, however, may be helpful to those who have not followed the history of recent constitutional changes. At the time of the adoption of the new Constitution it was found necessary to make temporary provisions as to certain matters, especially the rules of Divisions and Branches and the composition of the Council, such provisions to apply during the period while the local reorganization of the Association was being carried out. These temporary provisions, having now served their purpose, have ceased to have any meaning, and it is proposed that they should be deleted.

IS INFANTILE PARALYSIS AN INFECTIOUS DISEASE?

FOR nearly forty years after the disease known as acute anterior poliomyelitis or infantile paralysis was first described by Heine in 1840, its causation was considered to be mainly connected with exposure to cold and traumatism, but about the year 1878 it was pointed out (probably in the first instance by Sir Thomas Barlow, and shortly thereafter by Dr. Sinkler, of Philadelphia) that it developed more usually not in cold but in hot weather. For a considerable time this association was hardly recognized elsewhere than in America and in England, but within more recent years the occurrence of definite epidemics has been recorded from many European countries. In 1887 Cordier published in the *Lyon Médical* an account of 13 cases which developed during June and July in a population of 1,500 souls, among whom the disease had previously been very rare. In 1889 Medin of Stockholm reported an epidemic of the disease in that town, in which 44 cases occurred during the months of August, September, and October. In 3 of these cases a pathological examination confirmed the diagnosis of anterior poliomyelitis. A smaller epidemic was reported in 1881 from the Swedish town of Umea, and others of like dimensions in 1890 from Mundal in Norway by Leegard, in the summer of 1895 by Pieraccine from near Florence, and in the same year a second Stockholm epidemic by Medin. A more extensive epidemic, also in 1895, was described by Caverley in the neighbourhood of Rutland, Vermont, U.S.A., in which 144 cases, differing among themselves in severity, occurred during the period from July 20th to September 20th.

At page 97, in the letter of our Special Correspondent in Sydney, will be found a reference to the most recent of these epidemics. It has existed in certain parts of New South Wales for several months, not apparently the hottest months of the year, and has involved widely-separated parts of the State. It is noteworthy, moreover, that even in infected districts the cases occurred in scattered houses, and infection by direct contact seems to have been excluded. Speedily fatal cases presenting all the symptoms of an acute infection of the central nervous system were observed, and among them were cases classified as Landry's paralysis or as epidemic cerebro-spinal meningitis. Epidemic meningitis, although generally recognized as an infectious disease, has been called heteroinfectious, and Landry's paralysis would seem to be still more deserving of this hybrid descriptive term, so that it is not unlikely that in the New South Wales cases a toxic agent, or more than one acting in the same subject, may have affected differently different persons.

While it is true that by the inoculation of animals with micro-organisms Bianchi, Crocq, Henriquez, and others have produced spinal lesions similar to those of infantile paralysis, yet, taking Landry's paralysis as an illustration of what possibly or even probably obtains in anterior poliomyelitis, a multiplicity of ultimate causes may probably with safety be postulated. In a case of Landry's paralysis described by Curschmann, typhoid bacilli, from which pure cultures were obtained, were found in the spinal cord; in another case Baumgarten found anthrax bacilli in the blood and tissues, in others Eisenlohr described several kinds of bacilli, including varieties of staphylococci, and other cases might be quoted in which, in a sense, conflicting observations were made as to the bacteriology of the condition, and of which it at least may be said that no one is adequate to exclude the rest.

The two outstanding facts in regard to this crippling disease of children, as far as present knowledge seems to warrant, are that it occurs at special times of the year and in epidemics; these facts strongly suggest—though they do no more than suggest—that it is an infectious disorder.

DR. HENRY BARNES, Vice-President of the British Medical Association, and President in the year 1896 when the annual meeting was held in Carlisle, has been unanimously elected at a recent large meeting of county magistrates in Carlisle chairman of the justices acting for the Cumberland ward.

HYGIENE AND TEMPERANCE.

It will be remembered that a petition to the Central Education Authorities of the three kingdoms asking them to take steps to ensure that every child in our national schools should receive instruction in the rudiments of the simpler rules of health and temperance was circulated to members of the medical profession early this year. It received over fourteen thousand signatures; that is to say, it was signed by more than half the medical profession resident in the United Kingdom. This very remarkable expression of the sentiments of individual members of the medical profession was supported by a resolution of the Council of the British Medical Association pointing out that it was urgently important that elementary scientific instruction in health subjects, including temperance, should be provided in all the primary schools by the education authorities, in order that the conditions which lead to deterioration of the national physique may be understood, and as far as possible prevented. The original petition was prepared by an influential committee including, among other leading members of the medical profession, the President and Chairman of Council of the British Medical Association, the President of the General Medical Council, the President of the Royal College of Surgeons of England, the President of the Royal College of Physicians of Edinburgh, Sir William Broadbent, Sir Thomas Barlow, Sir Samuel Wilks, Sir Victor Horsley, Sir William Macewen, Sir Henry Littlejohn, Sir William Thomson, and Mrs. Garrett Anderson. This Committee has now received an intimation that Lord Londonderry, President of the Board of Education, will receive a deputation to present the petition at 12.30 on Monday next, July 11th. The Committee, while regretting that the hour is one not usually convenient to professional men—a point upon which the choice was not in their hands—yet hopes that the deputation will be representative and influential, and requests members of the deputation to assemble at the Privy Council Office at 12.20. Communications should be addressed to the Secretary of the Distribution Committee, Dr. E. Claude Taylor, Eland House, Rosslyn Hill, Hampstead, N.W.

THE ANNUAL MEETING AT OXFORD.

The President-elect has informed the Council that the number of invitations to the garden parties and evening entertainments which will be given by the Vice-Chancellor, the Colleges, and by individual hosts during the annual meeting at Oxford must necessarily be limited. The regulations of the Association provide that a member may expect to receive an invitation for a lady by whom he is accompanied, and at Oxford it will probably not be possible to issue invitations to more than one lady. He further stated that it is hoped that academic gowns will be worn by members at the religious service in Christ Church Cathedral on Tuesday, July 26th, on the occasions when general addresses are given to the Association in the Sheldonian Theatre, at the Vice-Chancellor's soirée on Wednesday, July 27th, and at the Mayor's soirée on Friday, July 29th. The University will confer honorary degrees at 2 p.m. on Wednesday on the distinguished members of the Association whose names are given on p. 104, and it is hoped that members who attend this ceremonial will wear academic costume. Beyond this there will be no sumptuary regulations and members of the Association may follow the Oxford habit of wearing tweed and a light hat, or adhere to broadcloth and top hat as may seem good to the individual. The Oxford Union Society will place its club rooms at the disposal of members during the week of the meeting. The Union possesses all the accommodation usually found in a club. The Council has resolved to ask the Association at the annual meeting to elect certain gentlemen who have taken a deep interest in the Oxford meeting to be Honorary Members of the Asssociation. By a happy coincidence two of these gentlemen have interesting family relations with the medical profession. The first is the Vice-Chancellor of Oxford University, Dr. Munro, the descendant of those Munros who had so large a part in the foundation and development of the Edinburgh Medical School in its early days, while Dr. J. F. Bright, Master of University College, who will preach the annual sermon in Christ Church Cathedral, is a son of Dr. Bright of Guy's Hospital, whose name and researches are so familiar to every medical man. The other distinguished persons proposed for election are the Dean of Christ Church, the head of the most famous College in Oxford, and Mr. Vernon Harcourt, F.R.S., late Reader in Chemistry in the University, Vice-President of the Chemical Society, and a member of the Special Chloroform Committee of the British Medical Association.

FEES TO MEDICAL WITNESSES.

We have on several occasions recently drawn attention to the unsatisfactory working of the new scale of fees in some places owing to the discretion, left nominally to the court, but practically to the clerks of sessions and assizes, who rarely, if ever, consult the court on the subject.[1] The letter of Dr. Hartill, which we print elsewhere, again draws attention to the subject. He states that his partner, instead of being allowed the 2 guineas a day, which the Home Secretary's order says "may be" allowed, was paid only 1½ guinea a day; he further points out the difference between "may be" and "shall be," to which we also referred when first commenting on these new rules.[2] Dr. Hartill's suggestions, coming as they do from a practitioner with over thirty years' practical experience of the subject on which he writes, deserve, and will no doubt receive, the fullest consideration from the Medico-Political Committee: but before deciding to take any steps in the matter at present the Committee may probably find it necessary to have more evidence as to the general working of the rules, which have been barely six months in operation, and do not seem to be fully understood everywhere. Thus we have recorded cases at Birmingham and Chesterfield of an unsatisfactory kind, while in the Wells district the full fee of 2 guineas a day has been allowed. We should be glad to receive and publish any facts illustrative of the way in which the courts in various districts carry out the new rules."

THE INDIAN MEDICAL SERVICE.

We may remind officers of the Indian Medical Service who are members of the British Medical Association that Lieutenant-Colonel Drake-Brockman, I.M.S.(Ret.), is a member of the Royal Naval and Military Committee of the Association, and the representative of the South Indian and Madras Branch on the Central Council. Colonel Drake-Brockman's address is 14, Welbeck Street, Cavendish Square, London, W. The Council at its meeting on July 6th resolved to make representations to the Secretary of State for India, pointing out that the conditions laid down in the recent Order of the Government of India with regard to fees for private patients might necessitate the violation of professional secrecy, and deploring this improper interference between the patient and his medical attendant. The Council also resolved to forward a copy of its resolution to the medical corporations, and to invite their attention to the terms of the Order.

OLD AGE.

In a paper reprinted from the May number of the *Practitioner* Dr. Guthrie Rankin deals with the subject of old age in a manner less sensational but more scientific than Professor Metchnikoff. He offers no modern equivalent of the elixir of life in the form of revitalizing serums; nor does he promise us immortality in exchange for our large intestine. So far from holding up for our emulation the length of days assigned to the patriarchs of the Old Testament, he tells us with uncompromising frankness that "comparatively few even reach the traditional limit of three score years and ten." He shows how time, the subtle thief of youth, leaves his mark on our arteries and tissues, and how age steals upon us *sensim sine sensu*, as Tully hath it, till some day we are suddenly forced to

[1] British Medical Journal, March 26th, p. 741, April 2nd, p. 795, 1904.
[2] Ibid., January 2nd, p. 34.

recognize the characters of age writ large upon us. Dr. Guthrie Rankin traces with remorseless pencil the degenerative changes wrought in the heart, the brain, the kidney, and the lung. He indicates the many paths along which old age travels. He points out that the prospect of life and health varies with the stage which arteriosclerosis has reached at a given time, with the organ or tissue most markedly affected, and with the previous history and present habits of the individual. If high arterial tension is recognized early, and if measures are taken to counteract it by a suitable regulation of the diet and the general mode of life, much may be done to postpone or prevent the occurrence of structural changes in the vessel walls. But once these are established, no treatment can restore elasticity to the rigid arteries. If the patient can banish the anxieties and shun the pleasures of the world, he may for a long time stave off the evil day; but the degenerative process goes on, though it may be *pede claudo*, and must sooner or later overtake its victim and strike him down by a blow at the weakest point in his vital armour. In Dr. Rankin's scheme of treatment the leading indication is to maintain the nutrition of the body and to limit the daily demands on the physical and mental energy as far as is necessary to obviate the risk of stress. The following general principles are laid down: The patient must lead an absolutely quiet and uneventful life, curtail his business responsibilities, and avoid every form of dietetic excess. Where there is a tendency to gout, red meat, beef-tea, and meat-essences are best avoided, and the dietary should consist of farinaceous foods, white fish, chicken, game and clear thin soups. Wines and malt liquors are contraindicated, but a small quantity of fully-matured and well-diluted brandy or whisky may be allowed with luncheon and dinner. Gentle exercise should be taken in the open air every day, and at least ten hours out of the twenty-four should be spent in bed. Rest on the sofa for an hour or more during the late afternoon is also to be recommended. Measures must be taken to provide for the daily evacuation of the bowels. The constitutional vigour will be promoted by the periodical administration of simple tonics, such as quinine, arsenic, strychnine, iron, or the mineral acids. To many of us unfortunately some of these recommendations are counsels of perfection which the *duris urgens in rebus egestas* make it impossible to put in practice. But if we cannot all spend ten hours a day in bed or make it our custom ever of an afternoon to rest on the sofa, or live quietly and uneventfully in the country, we can at least lead a regular life free from unwholesome excitement, abstain from alcohol and tobacco, eat sparingly of nitrogenous food, limit our public and private ambitions, and do such work as we are able to do "for ever in our great Taskmaster's eye." We cannot prevent the oncoming of old age but we can postpone it, and when it is upon us we can make it tolerable and even happy by cheerful submission to the inevitable.

ENTERIC FEVER AND FRIED FISH.

IT will be remembered that in 1900 Dr. W. H. Hamer, the Assistant Medical Officer of Health to the London County Council, furnished a report on certain localized prevalences of enteric fever in London in September of that year, attributable apparently to the consumption of fried fish which had become, in some way not known, infected with the virus of enteric fever. We have now received a copy of a second report dealing with a somewhat similar state of affairs in December, 1903. In the week ending December 5th, Dr. Bond, the Medical Officer of Health of Holborn, raised a question as to the occurrence of certain cases of enteric in Holborn apparently due to fried fish sold in the district. Similar cases occurred in Westminster and Southwark. These localized outbreaks were on a smaller scale than in 1900, but it was not clear that they represented the whole of the cases due to distribution of infected fish from October to December, 1903. In his report Dr. Hamer discusses the topographical distribution of the cases, and furnishes maps and tables in illustration. He discards the hypothesis of the relation of these small localized outbreaks to the occurrence of flood in the Thames, and adopts the infected fried-fish hypothesis, which he finds to be consistent with the facts of the case. It must be admitted that the matter is largely one of hypothesis, and no direct evidence is furnished as to the channel of infection. It must further be admitted, as Mr. Shirley Murphy has pointed out, that the whole question of how fried fish can be capable of conveying the infection of enteric fever is one to which no answer can at present be given. The matter has to be judged for the present on general considerations by the elimination of other likely causes. It appears that the three outbreaks attributed to the consumption of fish were characterized by two features to which Dr. Hamer draws special attention, namely, the occurrence of multiple attacks in houses, and abnormality of age incidence, persons at the ages of 3 to 25 inclusive being attacked with special frequency. Communication of the disease from person to person has been set aside as not a likely means of infection in these cases. The simultaneous occurrence of an abnormal number of cases in somewhat widely-separated areas suggests some food supply as being at fault, whilst the exceptional age-incidence, although partly explicable on the ground of the character of the population invaded, was specially marked in particular instances examined at the times of exceptional prevalence, and is consistent with a food hypothesis. The value of Dr. Hamer's report lies largely in its suggestive nature, indicating possibilities and probabilities rather than ascertained facts. He considers that fried fish may possibly act as a channel of infection more frequently than is generally supposed. We gather, however, that he admits that the whole subject is *sub judice*, and in this opinion we concur. At the same time the facts obtained indicate the importance of making careful observation of such outbreaks, and of exercising vigorous sanitary control over fried fish shops and similar places.

THE PLAGUE IN JOHANNESBURG.

WE publish in another column an abstract of a report presented as it would appear to the Rand Plague Committee, a body called into existence to combat the recent outbreak, by Dr. W. C. C. Pakes, Transvaal Government Bacteriologist, who was acting for Dr. Charles Porter, M.O.H. Johannesburg, unfortunately incapacitated at that moment by an attack of enteric fever. As will be seen from that report, we were right in assuming[1] that the sanitary officers of the Transvaal, aware of the risks which the Colony ran from the existence of plague in certain other parts of South Africa, had in no way relaxed their vigilance. It would appear also that pneumonic plague had existed in the Transvaal for some undetermined period before the explosion which took place in the Coolie Location on or about March 18th. We think that it was also clear that there was no attempt on the part either of the municipality of Johannesburg, or of the Government of the Transvaal, to conceal the facts, and that the diagnosis of plague was made public as soon as it was made. The steps taken to prevent the further spread of the infection were of the most drastic kind and were remarkably successful. The Honorary Secretary of the Transvaal Medical Society informs us that at the general meeting of the Society held in April the following resolution was unanimously adopted:

> That this Society desires to place on record its keen appreciation of the work done by Dr. Charles Porter, M.O.H., Johannesburg, in organizing the machinery, by Drs. W. C. C. Pakes and R. P. Mackenzie in perfecting it and carrying out the work in connexion with the outbreak of plague in Johannesburg, and further desires to congratulate them and all those associated with them on the success which has so far attended their efforts in controlling the spread of the disease. In the opinion of this Society, their promptness and energy have undoubtedly led to the saving of many lives.

We are sure, however, that Dr. Turner, Dr. Porter, and the other members of the Public Health Departments of the Transvaal and Johannesburg fully appreciate that the danger of a recurrence cannot by any means be neglected. Apparently the infection was imported into the Transvaal

[1] BRITISH MEDICAL JOURNAL, March 26th, 1904, p. 745.

by rats in forage, and even if domestic rats and other domestic animals are not still infected the risk of further importation cannot be ignored.

SANITATION IN WALES.

Dr. Richard Jones, of Blaenau Festiniog, has printed as a pamphlet the address which he gave on national health and sanitation at the inaugural meeting of the Cymmrodorian Section at the recent Welsh National Eisteddfod at Bangor. Dr. Jones, in making an appeal, which of necessity was largely addressed to laymen, for a higher standard of national health, lays emphasis upon those elementary principles which are so frequently ignored. "So long," he writes, "as our children are reared artificially by means of the feeding bottle—with its poisonous tubes—so long will the rate of infant mortality remain high. To remedy this modern tendency we must educate the people and the mothers—enforce cleanliness and proper dieting, and, if possible, popularize the natural method of rearing infants. This is one of the most important questions we have to deal with from a health and sanitary point of view. What with a falling birth-rate throughout England and Wales, and the wanton and cruel destruction of life in the first year of existence, it becomes imperative upon all who have the welfare of the public at heart to spare no effort in removing the causes that are so quietly but surely at work in this direction." Another subject naturally claiming consideration is the prevalence of phthisis in Wales and the remarkable fact of the low rate in the coal-mining districts. Dr. Jones attributes this to the daily ablutions of the South Wales collier on his return from work. This custom appears to be so characteristic that it is possible that it has an important bearing upon the non-susceptibility to phthisis of these colliers. But what strikes us as most opportune in Dr. Jones's address is the insistence with which he urges sanitary authorities to bestir themselves, and the importance of education of children and girls in personal and domestic hygiene. The history of many towns and villages in Wales is similar to that obtaining elsewhere in this country. Years are spent, for instance, in arriving at a definite plan of water supply or of drainage after repeated warnings from the medical officer of health; resolutions are passed; engineers are selected; plans are prepared and much money laid out in consultations and counter opinions; the Local Government Board holds an inquiry; the whole scheme has to be remodelled; then, perhaps, it is left in abeyance for twelve months or more until an epidemic again awakens the sanitary authority to the urgency of the question, or the County Council interferes and further inquiries are instituted. This chain of events is constantly recurring. The supineness of sanitary authorities in respect of sanitary matters is sometimes beyond belief; this is particularly the case in relation to water supplies, the control of the milk supply, isolation hospital provision, and drainage and sewage treatment. It is not too much to say that many sanitary authorities do very little during the year except obstruct the action of their medical officers of health, and when such bodies do undertake sanitary works the delay and the expense are almost as annoying as the previous inaction. It is matter for great regret that such a condition of things should exist. It arises, we believe, in the main from the failure of members of these bodies to study the questions of sanitation in their own district for themselves, and if the outcome of Dr. Jones's address is to stimulate these bodies to a wise activity great good would be done.

THE THERAPEUTIC USE OF NOSE-PULLING.

Readers of *Pickwick* will doubtless remember the highly-complicated situation which followed Mr. Jingle's appearance at the Rochester ball in a coat with the famous club button invented by Mr. Winkle. The abortive duel between that gentleman and Dr. Slammer, of the 97th Regiment; the reconciliation, and the subsequent introduction of the medical duellist, his second, and the redoubtable Dr. Payne, of the 43rd, to Mr. Pickwick and his companions, and the catastrophe which brings their newborn friendship to so speedy and tragic an end, form an epopee unique in literature. This is an age in which old texts are interpreted in new senses, and the application of the higher criticism would doubtless reveal many unsuspected meanings in the doings and sayings of the immortal Pickwickians. We venture to think that we ourselves have found one instance in which the true significance of a passage has been generally misunderstood, and we think it right to make public what we believe to be the correct exegesis, more especially as it concerns the character of a member of the medical profession. When the officers are taking their leave, Dr. Payne is reported to have delivered himself to Mr. Pickwick to the following effect: "And allow *me* to say, sir, that if I had been Tappleton, or if I had been Slammer, I would have pulled your nose, sir, and the nose of every man in this company. I would, sir, every man." A superficial reading of these remarkable words would assuredly give the impression that Dr. Payne intended them to convey a threat to inflict a personal outrage on the venerable person of the founder of the Pickwick Club and his friends. This interpretation might even seem to be confirmed by the fact that Dr. Payne is explicitly described as "irascible." But a judicial review of all the circumstances, aided by a very small amount of the ingenuity which has yielded such striking results in Biblical criticism, will, we think, lead the impartial inquirer to a very different conclusion. Mr. Pickwick, it will be remembered, was in a state of excitement which in a man of his age and habit of body might easily have had serious consequences. He is said to have "stood transfixed to the spot, gazing on vacancy." It may fairly be assumed that his followers were in much the same condition. We submit, therefore, that Dr. Payne, perceiving the danger to which they were exposed, was acting on the humane instincts of his profession and offering them the advantages of his professional skill. Nose-pulling has recently been shown by Dr. Panyrek, of Prague,[1] to be an effective method of treating loss of consciousness. "Rhythmical and very energetic" movements of the nose upwards and downwards repeated several times will, says the Bohemian physician, revive asphyxiated persons in one or two minutes. Aged persons respond less readily than the young, and therefore require more vigorous treatment. Dr. Panyrek attributes the effect of the method to reflex excitement of the vasomotor nerves of the cerebral cortex and the respiratory and circulatory centres following the sudden stimulation of the sensory nerves. He suggests that it would prove useful as a means of first aid in fainting and similar conditions. It is probable that Dr. Payne, from the large practice in nose-pulling for which the manners of his day must have given a man, admittedly irascible, abundant opportunities, had discovered empirically the beneficial effects of the procedure which he was so anxious to apply to Mr. Pickwick.

MODERN MISSILES AND NERVE LESIONS.

There is a good deal that remains obscure in regard to the pathology of nerve lesions due to the cone-pointed and mantled projectiles now commonly used in warfare; and some cases recorded by Major S. F. Freyer, C.M.G., in the *Journal of the Royal Army Medical Corps* for June, throw some light on the questions at issue. In three cases in which nerve trunks were exposed by operation not very long after the receipt of the original injury, the nerve was found to be not divided, but simply perforated, and that by a missile of much larger calibre than the nerve itself. In each of these cases the nerve examined was replaced in its bed without further interference, and the paralysis which had followed the injury eventually passed away. Although this curious lesion was only observed upon a few occasions Major Freyer surmises that a good many similar cases may have passed through his hands, because these first cases occurred quite early in the war, and, owing to the success of the policy of non-interference, he abstained afterwards from attempting

[1] Sbornik Klinicky (*Arch. Bohèmes de Médecine Clinique*) t. v., fasc. 4, 1904.

to remove by operative measures symptoms of paralysis occurring in cases in which the original wound had healed by first intention. He considers that the great prevalence of nerve complications in the South African as compared with earlier wars was apparent and not real, being due to the fact that in an ordinary Mauser wound which heals by first intention an injured nerve is left behind the other tissues in the race for repairs, with the result that symptoms due to its incompetence come into notice more prominently than would otherwise be the case. As regards the mechanism by which it becomes possible for a clean hole to be drilled through a nerve by a body larger than itself, Major Freyer suggests that the former may either spread out like a ribbon on impact of the bullet, or be split longitudinally; he inclines, however, to the former belief. Another observation which he makes is that the paralysis following a Mauser bullet wound which has healed by first intention is never complete. He saw no case in which some part or other of the nerve below the lesion did not retain its normal function. The direct evidence of the possibility of a perforating lesion of a small nerve trunk which the cases narrated by Major Freyer supply is of decided interest. In what proportion such lesions occur it is impossible to say, but the supposition that they occur frequently would seem preferable to theories of nerve "concussion" sometimes pressed into service in order to account for symptoms obviously not due to a gross lesion such as total division of a nerve. The theory of concussion has never been very satisfactory from the point of view of physiology as applied to a nerve trunk however defensible it may be in the case of a nerve centre. Major Freyer draws attention also indirectly to the distinction which should be made between nerve lesions due to wounds which have healed by first intention and those which persist after the termination of septic processes. It may likewise be suggested that the distance from which a wound has been received is also probably of importance, and that information on this point should if possible be supplied by all those who cite cases in the course of attempts to clear up the pathology of a very interesting class of injury.

RECENT PROGRESS IN SYPHILOLOGY.

PROFESSOR FINGER (*Wien. klin. Woch.*, No. 19, 1904) gives an account of progress of the study of syphilis during the last twenty-five years. He points out that Ehrmann showed that the initial effect of syphilis begins in the lymphatic capillaries, from which it extends to the lymphatic glands and eventually enters the blood. That Ricord's division into three stages was untenable was shown by Virchow. The limit of the period of contagion was put by Ricord at two years, but more recently it has been stated that contagion may take place as late as seventeen years after infection. The objection to this statement is the possibility of reinfection. During the last ten years visceral syphilis has received attention, especially with regard to the liver and kidney. Engel Reimers states that jaundice occurs in 2 per cent. of all cases, being usually of a transitory nature, but occasionally leading to acute yellow atrophy of the liver. Fournier has drawn attention to early affections of the nervous system, and it would appear that these are more commonly observed in France than in England. The histological differences between syphilis and tubercle have been studied by Neumann and others, who have described giant cells in papular syphilides as well as in gummata; and Jadasohn has found in syphilomata giant cells, epithelial cells, a reticulum, and caseation. The only differences from miliary tubercle are the absence of the tubercle bacillus and the more uniform nature of the caseation in tubercle. The relation of syphilis to aortic aneurysm has been studied by Welch, who found certain syphilis in 17 and probable syphilis in 8 out of 34 cases. Also in 56 cases of fatal syphilis there was disease of the aorta in 60 per cent. Ensor has reported the case of a married couple both syphilitic and both the subjects of aneurysm. Also, necropsies have revealed aneurysm together with visceral gummata, and miliary gummata in the walls of the aorta have been described by Dohle and others. With regard to the syphilitic origin of tabes and general paralysis, this was maintained by Erb and Fournier, but denied by Charcot and Virchow. The proportion of syphilis in tabetics is given variously by different authors; Fournier puts it at 93, and Erb at 90 per cent.; while Westphal only gives 14 per cent. In support of the connexion between tabes and syphilis it is asserted that both are in relative proportion in the countries where both are common. In Russia and Roumania, for instance, syphilis is prevalent and tabes common; while among the Jews, where syphilis is uncommon, tabes is also rare. On the other hand, it has been stated that in tropical countries, in spite of the rapid spread and incomplete treatment of syphilis, tabes is seldom seen. In necropsies on tabetic patients Westenhofer found evidence of syphilis in 15 out of 64 cases. Virchow, an opponent of the syphilitic origin of tabes, remarked that amyloid disease, which is so often found in necropsies of old cases of syphilis, is generally absent in tabes: also that the anatomical changes in tabes do not correspond to those of syphilis. Yet Finger points out that the pathological anatomy of tabes may begin in changes in the meninges leading to neuritis of the posterior roots and secondary degeneration of the posterior columns: and that the process may be syphilitic. This would put tabes in the class of syphilitic and not parasyphilitic affections, which is the doctrine of Fournier. The negative reaction of tabes to antisyphilitic treatment is no argument against parasyphilis, since this is one of the characteristics of the so-called parasyphilitic affections. However, more recently Leredde, and other authors, maintain that early energetic treatment may cause the arrest or cure of tabes. The same arguments, for and against, apply to the question of the syphilitic origin of general paralysis. Here again the figures vary, according to different authors. Regis finding a syphilitic history in 94, and Mendel only in 18 per cent. In the tropics there is said to be little general paralysis, but much syphilis. In Asia Minor Brun observed that general paralysis was common among Europeans, but rare among the natives. Here again the anatomical characters are not those of syphilis, and experiments have been made showing that the subjects of early general paralysis may acquire syphilis. Nevertheless, Finger remarks that the disease may be parasyphilitic. He concludes that the relationship of aneurysm, tabes, and general paralysis, are the most important problems raised lately in the pathology of syphilis, and that these still wait for solution.

THE BICYCLE AND THE UTERUS.

MUCH has been written about the possible evil effects of the bicycle on the uterus. To the literature of the subject must be added a remarkable case of malignant disease of the cervix in a girl, where the symptoms dated from a bicycle accident, although there can be little probability that the new growth was the result of the misadventure. Lovrich[1] reports that he recently had under his observation a girl aged 16 who had fallen off her bicycle two years previously. Uterine haemorrhage set in at once and lasted for a fortnight. Within a year her family doctor operated eleven times, removing polypoid structures, which steadily recurred with greater rapidity and increased in bulk. On the last occasion a portion of the anterior lip of the cervix was excised. Lovrich found the vagina filled by a racemose mass, made up of oedematous, transparent, berry-like bodies, which bled when detached. The whole mass proceeded from a pedicle which passed out of the cervical canal; the uterus was of normal size, anteflexed, and quite movable. The uterus was removed, and the patient recovered. The tumour was of the variety known as sarcoma colli hydropicum papillare, according to Spiegelberg. The advent of the bleeding—a necessary result of the development of a tumour of this class—was clearly hastened by the accident. The case must remind us that there is danger in making inferences about uterine

[1] *Sarcoma Colli Uteri Hydropicum Papillare.* Report of meeting of the Royal Hungarian Medical Association, *Zentralbl. f. Gynäk.*, No. 24, 1904, p. 779.

disease in association with the history of bicycling: yet, on the other hand, we know little about the causes of malignant disorders, so that it may be that accidents play some share in their development, if not in their origin.

INJURIES OF THE WRIST IN CHAUFFEURS.

M. Lucas-Championnière has recently[1] communicated to the Academy of Medicine of Paris a description of an injury to which motor chauffeurs are especially liable, and which, he believes, throws new light on the pathology of fractures of the lower end of the radius, and presents some points of both theoretical and practical interest. The injury occurs just at the starting of the motor, when the chauffeur is working the starting handle, which is moved from left to right. If a premature explosion occur at this time, the starting handle will be suddenly and forcibly reversed. In such case, the chauffeur usually disengages his hand, but if he be slow or careless, the hand may be forced back by the handle from right to left. From this accident may result, one or other of various injuries, from simple sprain to fracture. Attention has been directed by other surgeons to fracture near the lower end of the radius as an occasional injury in chauffeurs, and six cases have been published by Dragon. Lucas-Championnière questions the correctness of the explanation that has been given of the mechanism of this injury. The fracture, he holds, is not directly due to the impact of the handle on the chauffeur's hand, but is the result of forcible hyperextension of the wrist, the styloid process and the lower end of the radius being torn away from the rest of the bone by the strong ligaments of the wrist. This fracture, he holds, differs from the common form of fracture near the wrist in the fact that there is no impaction, and that, consequently, the characteristic deformity of Colles's fracture is absent. Allusion is made to another form of fracture of the radius met with in chauffeurs, due not to forcible stretching of the hand, but to a blow on the forearm near the wrist by the reversed starting handle. In this form of fracture, which is produced higher in the forearm, there is also very little displacement, but more mobility. It is a similar injury to that occasionally produced in jockeys and cyclists by a fall on the outstretched hand. The prophylaxis of these "motor" accidents is very simple. Premature explosion at the time of starting may be readily avoided, and the chauffeur should take care not to grasp the starting handle too tightly. The treatment of either form of fracture is simple. There is no necessity, the author states, to effect reduction, and with massage and early mobilization of the limb, without the application of any splint, a cure will rapidly result.

[1] *Revue de Chirurgie*, No. 6, 1904.

HUMAN BONES AS ARTICLES OF COMMERCE.

The Italian police have recently discovered that the ancient and famous city of Padua is the centre of a brisk trade in human bones. Acting on what their English brethren call "information received," they seized at the railway station a case addressed to Signor Corimo Cherubini, assistant in the Superior Institute of Florence, which was found to contain twenty human skulls. The sender proved to be an attendant in the Medical School of Padua. The police are said to have discovered that the trade in skeletons has been going on for many years, a fact which makes their sudden outburst of activity somewhat surprising, for there seems to have been little or no attempt at concealment. Letters were found which showed that the trade extended to France; indeed, there seems reason to believe that Italy supplies bones throughout the world. Three medical students have been arrested on suspicion of being implicated in the matter. Padua is famous in the history of anatomy as the school where Vesalius taught, and where—unless he is much belied—he sometimes took an active part in the "resurrection" of likely subjects. When a student at Louvain he procured skeletons from the gibbet, and in the great cemetery of Montmartre in Paris he fought starving dogs for the possession of bones. At Padua, too, our own Harvey learnt anatomy from Fabricius ab Aquapendente, who showed him the valves in the veins, an observation which was to fructify with such splendid result in the young Englishman's mind.

THE PALAEOCHEMISTRY OF THE OCEAN.

The origin of life is a fascinating subject for speculation and has engaged the attention of Professor Macallum of Toronto, who discusses in a recent article[1] the primitive determination of protoplasm by the chemical constituents of the first formed oceans. He finds from geological evidence that in the ocean of the earliest period the relative proportions of the elements sodium, potassium, calcium and magnesium approximated to those found in river discharges or in fresh water shed from areas covered with archaean rocks. This condition must have continued until living forms made their appearance in the ocean, when the gradual elimination of the magnesium, and particularly of the potassium and calcium, began. The living forms were in all probability unicellular, and "as the period must have been of great duration the organisms and their protoplasm acquired a fixed relation to the four elements. In the transition from the ocean of the more ancient composition to that of the present, the unicellular forms became multicellular, and developed circulatory systems, the vascular fluids of which were at first simply modified sea water. Professor Macallum lays stress on the resemblance between the blood plasma of vertebrates and sea water as regards the relative proportions in which sodium, potassium, and calcium are present, and considers this similarity to be due to heredity, "the proportions of the saline constituents of the plasma being a reproduction of the proportions which obtained in sea water when circulating plasmata were developed." He thinks the same general principle holds good for protoplasm as well, and maintains that both animal and vegetable protoplasm derive their relations to the elements sodium, potassium, calcium, and magnesium from the composition of sea water which obtained when all forms were unicellular. Professor Macallum's ingenious speculations make interesting reading, even though they may not always carry absolute conviction.

[1] *Transactions of the Canadian Institute*, 1903-4, p. 181.

THE KING AT ST. BARTHOLOMEW'S HOSPITAL.

The King laid the foundation stone of the new wing of St. Bartholomew's Hospital on July 6th. His Majesty, who was accompanied by the Queen, was received at the Hospital by the Prince of Wales, President of the Institution. With the Prince of Wales was the Princess of Wales, and amongst those present to receive the King and Queen were Dr. Gee, the Senior Physician to the Hospital, and Mr. John Langton, the Senior Surgeon. The ceremony of laying the stone took place in an enormous marquee holding 3,000 spectators. As the Royal party appeared on the dais they were accorded a loyal and enthusiastic reception. The Prince of Wales as President of the Hospital then read an address to the King and Queen, in the course of which he mentioned that the students working daily within the walls of the hospital averaged about 500, and in the great school attached to it more than 6,000 students had received medical education during the last half-century. The rapid advances of medical science during recent years had compelled the Governors to carry out rebuildings and additions. The King, in replying, recalled the lively satisfaction which he had felt in holding the presidency of the hospital for so many years, and said that he would continue to take the deepest personal interest in its work and fortunes. The names of the famous men educated at the hospital proved that an institution of that kind was not merely a refuge for the suffering, but that it was also a school for the advancement of science and practice of medicine. In that way the influence of that and other great hospitals of the country extended beyond merely a local limit to foreign countries and the colonies and dependencies of the Empire. The King then, at the invitation of the Treasurer, Sir Trevor Lawrence, performed

the duty of laying the foundation stone, and declared it well and truly laid. After this, the Queen, having consented to receive her "charge" as a Governor of the Hospital, listened attentively to the ancient formula spoken by Mr. W. H. Cross, the Clerk of the Hospital. The Queen accepted from the Treasurer a miniature Governor's staff, after which "God Save the King" was rendered by Madame Albani, and then the Royal party retired, passing through the great quadrangle of the hospital on their return journey, where a number of the patients who had been brought out in their beds into the open air evinced their appreciation of the visit with as great enthusiasm as their condition permitted. The King has contributed the sum of £1,000 towards the building fund of the new wing of the hospital, which will stand on part of the land purchased from Christ's Hospital, and will contain the out-patient and casualty departments, the special departments, the resident medical officers' quarters, a common room and luncheon room for students, rooms containing ten beds for patients who remain only a few hours in the hospital, the hospital kitchen, and the dispensary. The special departments to be provided for in the building are those of diseases of women, of the eye, of the skin, of the ear, of the throat; and the orthopaedic, dental, and electric departments.

THE CHAIR OF HYGIENE IN BERLIN.

Our Berlin correspondent writes: Professor Georg Gaffky, hitherto Professor in the University of Giessen, has accepted a call to occupy Robert Koch's vacant chair in the University of Berlin. The selection is a singularly happy one, for Gaffky was Koch's earliest assistant, and his companion during the cholera expedition of 1883-4, and it was Koch's wish that Gaffky should succeed him as director of the Berlin Hygienic Institute, the so-called "Koch Institut." Gaffky was born in 1850; he studied at the Army Surgeon Academy (now called "Kaiser Wilhelm's Akademie) in Berlin, and began his career as a military doctor. In 1880 he was told off to work under Koch in the Imperial Board of Health (Kaiserliches Gesundheitamt), and took part in the bacteriological researches which were to give a new basis and new direction to modern hygiene. After a few years he—as has been said above—accompanied Koch on the celebrated expedition to Egypt and India, the chief result of which was the discovery of the comma bacillus. In 1888 Gaffky was appointed Professor of Hygiene and Director of the Hygienic Institute in Giessen, and during the cholera epidemic of 1892 he exercised the function of hygienic adviser to the Hamburg authorities. In 1897 he was placed at the head of the expedition sent out by Germany for the study of bubonic plague in India. The greater part of his researches are experimental, and are connected with the bacteriology of typhoid fever, cholera, plague, anthrax, sausage poisoning, etc., and with the problems of disinfection.

MEDICAL AND SURGICAL NURSING HOMES, LIMITED.

In the British Medical Journal of January 2nd we commented upon the Memorandum of Association of this company, one clause in which set forth the purchase or other acquirement of the business of physicians, surgeons, dentists, chemists, etc., as amongst the objects of the company. Since then a prospectus has been issued asking for public subscription of £50,000 in order to establish nursing homes, the first to be in Mandeville Place, London, W., at which patients can be taken in at lower charges than prevail at private nursing homes, the proposed tariff ranging from £2 2s. to £4 4s. a week, half of the rooms being upon the highest scale, and only a small proportion (one fourth) at the lowest. These terms are inclusive. It is proposed that medical men shall have entire charge of their patients as if in their own homes, but a qualified medical man will be in residence to act under their directions or in case of emergency, and no patients will be admitted except on the recommendation of their medical adviser. Thus if the terms of the prospectus be rigidly carried out the most objectionable features of the Memorandum of Association (which is printed on the back of the prospectus) appear to be eliminated. In the list of directors no medical qualification is appended to any name; we learn, however, that one of these gentlemen, who has long been devoted to colonial politics, in which he has won distinction, does actually hold a medical qualification. But its omission from the prospectus leads to the inference that in appointing him as a director little or no importance was attached to it, so that we can hardly consider his presence upon the Board as an adequate safeguard, nor as a recognition of the importance of such an institution being controlled by registered medical practitioners. Nor do the names of any medical men appear in the long list of "patrons" published.

THE PREVENTION OF VENEREAL DISEASES IN AMERICA.

It is proposed to form a society of sanitary and moral prophylaxis in the United States. The object of the society will be the study of means of every kind, sanitary, moral, and legislative—excepting the legalization of prostitution—likely to be effective in preventing or diminishing the spread of venereal diseases. The society is to be composed of medical men, representatives of the clergy and the law, public teachers, sociologists, and generally all who take a serious interest in the subject. The project has received the unanimous endorsement of the New York County Medical Society.

The Physical Deterioration Committee met on July 5th and 6th for the further consideration of its report.

Among those who received the honour of Knighthood from the King at the investiture on Tuesday were Sir Constantine Holman and Sir Thomas Stevenson.

MEDICAL NOTES IN PARLIAMENT.

[From our Lobby Correspondent.]

The Licensing Bill and the Closure have occupied most of the week, and the debates have not produced any points of medical interest. Sir Walter Foster presented a somewhat remarkable petition against the Bill, signed by over 100 qualified medical women resident in all parts of the United Kingdom. In the course of the debate on the closure resolution, which was very fiercely resisted by the Opposition, Dr. Hutchinson made a speech which interested and amused the House. He said that fifteen months ago he had been returned for the Rye Division with a licence to take part in the debates of the House, and now his licence was to be withdrawn. (For misconduct? Laughter.) No, not for misconduct; and where was his compensation? If ever a Bill required deliberate consideration it was this Licensing Bill. Many sections of opinion had found expression: the clergy, the trade, the lawyers, the temperance reformers, but one small but important section of the community had not been heard: the medical profession. This reference excited much amusement, but the speaker retorted: Hon. members might laugh, but to every man in that House a time would come when he could do without Prime Ministers and Secretaries of State, but not without the medical man. There were some well known lines, he continued (cheers and laughter)—

> God and the doctor men adore
> When sickness comes, but not before;
> When health returns, and ills are righted,
> God is forgotten, and the doctor slighted.

Certainly the Bill dealt with a subject on which the opinion of the profession would not be out of place.

Police Fees for Medical Services.—Dr. Robert Ambrose asked the Secretary of State for the Home Department whether his attention had been called to complaints made by medical practitioners within the metropolitan area of the inadequacy of the fees paid by the police for medical services, and the difficulty and expense incurred before obtaining those fees; and, if so, whether, in view of the time involved in these police calls, which were generally cases of injury or poisoning, he could arrange that the fees should be increased

and should be paid on demand at the local police station from which a medical man was called. Mr. Akers-Douglas answered that this matter had not yet come before him, but he understood that the Commissioner of Police had received representations with regard to the amount of certain fees paid by the police for medical services, and that these representations were now receiving his consideration.

Irish Dispensary Districts and Medical Report Books.—Mr. Jordan asked the Chief Secretary to the Lord Lieutenant of Ireland if his attention had been drawn to a report by Dr. M'Carthy on May 30th to the Local Government Board in reference to six dispensary districts composing the union of Enniskillen, namely, that the medical officer's attendance and report books, and the medical relief register of cases and the midwife's register, were not sent to the guardians for examination, and that no arrangement had been made for the examination of the dispensary records; was he aware that the guardians, in view of the importance of such examinations, in the interest of the poor and for the due discharge of the Medical Charities Acts by all officials concerned, on August 12th, 1902, requested the Local Government Board to sanction the appointment of local committees, to meet monthly, examine the doctor's books, and report to the Boards of Guardians; and, if so, would he, in view of the fact that the doctor's books had not been examined since the passing of the Local Government Act of 1898, take into consideration the necessity of devising some plan by which an effective examination of the doctor's books might be performed with the least tax on guardians' time. Mr. Wyndham said in answer that Section XXX of the Act of 1898 abolished Dispensary Committees and transferred the business to the Boards of Guardians, consequently the Local Government Board was unable to sanction the arrangement proposed in August, 1902. It was open to the guardians under Article 10 of the Dispensary Rules to appoint a small committee of its members for the purpose mentioned in the question. In the majority of cases the guardians themselves examined the books. Elsewhere the duty had been delegated to a committee of the guardians with satisfactory results.

The Army Medical Report.—Mr. Charles Hobhouse asked the Secretary of State for War what was the cost of preparing the annual report of the Army Medical Department; at what date the report was generally presented; what was the cause of the delay in its presentation to Parliament; and whether it would be possible to expedite it in future. Mr. Arnold-Forster answered that the cost of the printing and paper of the Army Medical Department report fell upon the Stationery Office Votes. It naturally depended upon the size of the report, and he had ascertained that the cost of the report recently published might be taken as about £180. The report was generally presented eighteen months after the year to which the returns referred. It was explained to the hon. member last year, in reply to a question, that many of the returns did not reach this country till the late autumn owing to the labour of compilation, and that a considerable period was required for the elaboration of the report from these returns. He was afraid, therefore, that it was not practicable to expedite its publication.

Calves and the Vaccine Lymph Supply.—Mr. Field asked the President of the Local Government Board whether the Government hired live calves for the purpose of vaccinating for lymph; whether he could state at what cost and how long those calves were kept; what became of them after being returned to the owner; whether this class of meat was sold as veal for public consumption; whether he had any reports on its fitness for human food by local medical officers of health; and whether it was identified when being sold as lymph veal. Mr. Field, in a second question, inquired how many calves were kept and how many were sold as food every year. Mr. Long replied that calves were hired at a cost of from 20s. to 25s. a week for the purpose mentioned. The number of calves used varied. At present the average number was approximately 15 weekly. The calves were kept for about two weeks. After the lymph had been collected from them they were slaughtered, and their carcasses were thoroughly examined by a veterinary expert. Sound carcasses were delivered to the contractor by whom the animals were supplied to be disposed of as he thought fit. The concern of the Department in the matter then ceased. He was not aware that any medical officer of health had made a report on the subject, but he was advised that when the carcasses were found to be sound there was no reason why they should not be sold for food. He had no information as to the practice with regard to the sale of the carcasses as meat. The number of carcasses delivered by the contractor in 1903-4 was about 1,000. This was above the average.

Ankylostomiasis and Notification.—Mr. John Wilson (Durham) asked the Secretary of State for the Home Department whether he had taken or would take steps to ensure that, in the event of a case of miner's disease (known as ankylostomiasis) arising in any coal or metalliferous mine, a notification thereof should be forthwith sent to the medical officer of health and the mines' inspector of the district in which such mine was situate, and that the isolation of cases that might arise should be secured; and whether, if the administrative powers of the Home Office be not adequate for the purpose, he would introduce the necessary legislation. Mr. Akers-Douglas said that he had not yet learned the results of the conferences between the owners and men which were to be arranged in each district to discuss the subject generally, and, until he did so, any statement as to the precise steps to be taken for the prevention of the disease would be premature. He doubted whether, from the nature of the case, it was practicable to require notification and isolation of every case of the disease. He was glad to say that no case had yet been found in a coal mine.

Beri-beri in the Port of London.—Colonel Legge asked the President of the Local Government Board last week, whether his attention had been called to a statement made by Sir Patrick Manson, in an address delivered at St. George's Hospital on October 1st, 1897, that beri-beri was very common in the Port of London, especially among the lascars and seedy boys who in many instances form the bulk of the crews of the large steamers trading to the East; whether he could state how many cases were treated annually at the Seamen's Hospital; and what precautions were taken to prevent the spread of the disease. Mr. Long answered that his attention had been drawn to the statement referred to in the question. He was informed that the number of cases of beri-beri treated annually in the Seamen's Hospital in the ten years ended in 1900 averaged twenty-four. The disease was not regarded by the medical officer of the Port of London as infectious in the ordinary sense, and no special precautions were considered necessary.

Beri-beri in South Africa.—There was quite a lively time over questions on Monday in connexion with the beri-beri outbreak in South Africa. Major Seely, after several other points had been raised, inquired whether under the Natal Immigration Restriction Act, the master of a vessel and the owners were not liable to heavy penalties for landing any person suffering from a loathsome or a dangerous contagious disease, and whether the master and owners of the *Tweedale* had been subjected to these penalties for landing Chinese coolies suffering from beri-beri. Mr. Lyttelton said he had received the following reply to his telegram:—"My Ministers suggest that you give the following reply to question: It is customary in Natal to subject persons to penalties after they have broken the law, not before. The *Tweedale* did not infringe the Immigration Restriction Act. No British ships are liable to penalties for engaging in this traffic, namely, the conveyance of Chinese immigrants, under a scheme approved by the Government of Natal. Both shipmasters and the Transvaal Government have been duly informed of our law and of the requirements themselves." Mr. Lyttelton added that it would be observed that the Natal Administration do not consider beri-beri to be a loathsome or dangerous contagious disease. Sir Walter Foster asked, in another question, that the *Tweedale* should not be used for bringing more Chinese to South Africa, seeing that 43 cases of beri-beri arose in her during her voyage, and that she had been sent back to China with 35 cases on board. Mr. Lyttelton, in reply, said that he had no doubt the medical advisers of the Natal Government would duly consider the matter.

The Registration of Nurses.—The Select Committee as appointed has already been modified, as it is proposed to put on Mr. Charles Hobhouse and Mr. Mount in place of Mr. Lyell and Mr. Malcolm.

Scotland.

The Installation of the Chancellor of Aberdeen University.

In accordance with a requisition submitted to him, Lord Strathcona and Mount Royal, Chancellor of Aberdeen University, has called a special meeting of the General Council of the University for his installation as Chancellor. The ceremony will take place at Marischal College at noon on Wednesday, July 20th, the day of the Summer Graduation in Medicine. The Business Committee of the General Council at a recent meeting unanimously agreed that the Chancellor should be entertained at dinner by the University on the evening of the day of his installation, and circulars have already been issued by the convener intimating this fact. It has been arranged that the installation will precede the graduation ceremony; the Principal will preside at the outset and administer the oath to the Chancellor, and will then vacate the chair in his favour.

Military Training of Students.

At a meeting of the Senatus of Aberdeen University, on June 28th, a report was submitted from the Inter-University Committee appointed to consider the new scheme for the instruction and selection of University candidates for commissions in the army, a number of commissions having been set free for this purpose. The Committee recommended that a Board of Selection, representing the four Scottish Universities, should be appointed, and that a lecturer on military subjects should be attached to each University when it came into the scheme. The lecturer, who would be a military expert, appointed either by the War Office or by the University Court, would instruct the candidates in the purely theoretical part of the teaching of military subjects, drill and practical training being given in connexion with the University Volunteer companies, or otherwise in connexion with the reserve force. Candidates who did not belong to the Militia and Yeomanry should serve for three years in the ranks and non-commissioned officer ranks in a recognized University or other Volunteer Corps, in addition to the period of service in a regular unit required by the War Office regulations for university candidates. The theoretical instruction would extend over three winter sessions, the subjects being military history, strategy, and tactics, military topography, engineering, law, and administration. The Committee also recommended that these courses of instruction should be open to Volunteers and members of the Militia and Yeomanry who might not be university candidates, or even candidates for commisions in the regular army at all, but who desired merely to improve their military knowledge, and that the War Office be requested to hold out inducements to Volunteer, Militia, and Yeomanry officers to take the courses of instruction in military subjects, to be organized at the universities, as it was believed that in this way great improvement might be effected in the efficiency and standing of the reserve forces. The report was approved. There is good reason to anticipate that such courses of instruction would be largely taken advantage of in these parts, for the interest in volunteering has been well kept up in contrast to the great falling off which has been experienced in many parts of the country.

Edinburgh Royal Society.

At a meeting of the Royal Society of Edinburgh, on July 4th, Professor Zeikie presiding, Professor Cunningham read an obituary notice of Professor Wilhelm His, Leipzig, of whom he said that in almost every branch of anatomy he had left his mark, and that during the last thirty years no one had done so much to advance our knowledge of that subject.

Edinburgh Company R.A.M.C. Volunteers.

The eighteenth annual dinner of this company was held on June 29th in the Carlton Hotel, Edinburgh, when a presentation, subscribed for by past and present members, was made to Surgeon-Major Hepburn, Professor of Anatomy, University College, Cardiff, the former commanding officer of the company. Between 70 and 80 members and guests were present. Amongst the latter were Colonel G. A. Hughes, D.S.O., R.A.M.C., Principal Medical Officer Scottish District; Major Scott, R.A.M.C.; Mr. Cathcart, and other officers and friends. The chair was taken by Lieutenant Waterston, the commanding officer, who made the presentation to Surgeon-Major Hepburn. In doing so he referred to the warm feelings of regard entertained towards their late commanding officer by the past and present members of the company. The list of subscribers was world-wide, including former members in India, Burmah, Australia, Canada, and the West Indies.

In acknowledging the presentation, which took the form of a gold watch, Surgeon-Major Hepburn expressed the sincere regret he had felt in severing his relations with a company with which he had so long and so pleasant a connexion. Several others spoke, including Mr. Cathcart, F.R.C.S., who was the first commanding officer of the company. An excellent musical programme was another feature of what was to all a most enjoyable evening.

Education Rate on Teaching Hospitals.

At the weekly meeting of the managers of Edinburgh Royal Infirmary, on July 4th, Mr. Caw, the treasurer, reported that a letter had been received from the Scottish Office in reply to a memorial presented by the managers asking that a clause should be inserted in the new Education Bill exempting hospitals and infirmaries which were maintained by voluntary contributions from assessment for educational purposes. The Scottish Secretary replied to the effect that, after careful consideration of the memorial, he regretted he could not undertake to propose or to support an exemption clause of the kind suggested.

Female Sanitary Inspectors for Scotland.

At a meeting of a Subcommittee of the Public Health Committee of the Edinburgh Town Council, held on June 28th, it was agreed to recommend the appointment of two female sanitary inspectors at a salary of £80 a year.

Edinburgh and the Tuberculosis Compensation Bill.

A Subcommittee of the Lord Provost's Committee of the Town Council, at a meeting on June 28th, had under consideration the Tuberculosis Compensation (Scotland) Bill. It was agreed to recommend that the Bill be opposed, and Mr. Hunter, the Town Clerk, and Mr. Lang Todd, Convener of the Public Health Committee, were requested, if necessary, to give evidence before the Select Committee in charge of the Bill.

Fire at the Edinburgh Royal Infirmary.

A somewhat serious fire occurred in the *post-mortem* department of the Edinburgh Royal Infirmary on July 4th, soon after mid-day. While the pathologist, Dr. Shennan, was performing a necropsy he and his students were disturbed by molten lead dropping from the ceiling. This led to the discovery of fire in the roof of the upper flat of the building, which is quite detached from the main infirmary structure. The alarm was quickly given, and the infirmary brigade, which consists of thirty men, had four lines of hose directed towards the scene of the fire; but the supply and pressure of water was quite inadequate, and the City Fire Brigade had to be summoned from the closely-adjoining central fire station. By this time the roof of the building was in flames. A cistern placed in the top part under the slates, when its supports were burned, crashed through the floor of the first flat and fell to the floor of the ground flat. In an hour's time the fire was extinguished. The fusing of an electric wire is suggested as the cause of the fire, and the damage has been roughly estimated at £1,000. Many valuable pathological specimens, collected during many years, have been destroyed.

At the usual weekly meeting of the Board of Managers held in the afternoon, strong complaint was made as to the defective pressure and supply of water. It was pointed out that there was no scarcity of water in the Edinburgh reservoirs at present, that it was a very serious matter that there should be lack of pressure in an institution of the kind, that the results might have been vastly more disastrous, and that the Board was entitled to demand an explanation from the Water Trustees. Possibly the insurance companies involved may, too, have something to say on this matter.

It was reported that Dr. Noel Paton had placed the laboratory of the Royal College of Physicians at the disposal of the infirmary till their own laboratory was restored.

The Sidlaw Sanatorium, Dundee.

Through the munificence of Provost Moncur, Dundee possesses a sanatorium for the treatment of consumptives which has already accomplished most satisfactory work; but it appears that the advantages of the institution, however much these may be recognized by the patients, have not been appreciated by the public. At the annual meeting of the subscribers, held in the Town

Hall, Dundee, on June 28th, it was stated that the accounts for the year showed a deficit of £245, in spite of an anonymous subscription of £500. The remaining subscriptions together only amounted to £492. The present state of the finances compelled the Committee to fix a minimum charge to patients of £1 a week, which for the working classes was practically prohibitive. Dr. Sinclair endorsed the appeal for the necessary funds to carry on the work satisfactorily, and referred to the excellent record shown by the medical report. From this report it appears that 87 patients had been admitted to the sanatorium; in 40 per cent. the disease was arrested and in another 20 per cent. there had been considerable improvement. One point brought out in the report was that the period of residence of patients at the sanatorium was too brief. Dr. Sinclair called attention to the necessity on the part of the community of guarding against consumption, and spoke of the evil of spitting, which was peculiarly prevalent on the pavement at the piazza of the Town House. It was not necessary to go far to see some directions in which the Municipality might show a good example to the general public.

It was agreed to change the name of the institution to the Sidlaw Sanatorium for Consumption, for, as the Chairman, Mr. F. B. Sharp, remarked, when outsiders read of the Dundee Sanatorium "there sprang up in their minds the vision of a splendidly-equipped institution with jute mills on three sides and a marmalade factory on the fourth."

Small-Pox in Scotland.

During the period from June 16th to June 30th inclusive, 80 cases of small-pox were intimated to the Local Government Board. These were distributed over six counties, and occurred at nineteen different places. Glasgow had 47 of the cases and Edinburgh 3. For the first time this year the disease appears at six new points. During the week ending Saturday, July 2nd, just when Edinburgh was believed to be safely clear of the disease, two new cases were notified to the Public Health Authorities. There remain three cases in the small-pox pavilion of the City Hospital at Colinton Mains.

Ireland.

Ulster Medical Society.

Annual Meeting.

The annual meeting of the Society was held in the Medical Institute, Belfast, on June 30th; the President, Dr. John Campbell, occupied the chair. The reports of council showed a very satisfactory condition; a large amount of clinical and scientific work had been done during the session, and although the membership somewhat fell off, yet the Treasurer was able to show a credit balance of £152 14s. 3d.; in addition to this, £50 had been invested, and a special fund of £109 8s. had been raised from a few of the members to establish a lending library. The following officers were elected for the ensuing session:—*President:* Professor Lorrain Smith. *Vice-Presidents:* Dr. Hadden (Portadown), Dr. J. B. Moore (Belfast). *Council:* Drs. Gaussen (Dunmurry), McKinney (Belfast), J. R. Davison (Belfast), Story (Belfast), J. S. Morrow (Belfast), R. Hall (Belfast). *Pathological Secretary:* Dr. Lorrain Smith. *Honorary Treasurer:* Dr. McQuitty. *Honorary Librarian:* Dr. Leathem. *Honorary Secretary:* Dr. Thos. Houston. A rule was passed as to the admission of new members to the Society during the summer, and Dr. J. C. McCarroll (Carrickfergus) and Dr. Wm. Mair (Belfast) were elected.

Portrait of the late Professor Gordon.

Immediately after the formal meeting, Sir William Whitla presented to the Institute, on behalf of Mrs. Gordon Stallard, a portrait of her father, the late Professor Gordon. Mrs. Stallard was prevented from attending, so the painting was unveiled by Mrs. Campbell, and the reception was acknowledged by the President. Professor Sinclair moved, Dr. Nelson seconded, and Dr. O'Neill supported, a cordial and hearty vote of thanks to Mrs. Stallard for her gift. His true simplicity of character, unswerving truthfulness in all departments of life, constant inward criticism in all scientific work, and never-failing kindliness had endeared him to his pupils, and rendered him an example to be imitated, however feebly, by all who had the advantage of knowing him. His surgical work and records were founded on forty years of close and unremitting investigation at the bedside and in the *post-mortem* room.

Health of Belfast.

Small-pox and Vaccination.

At the monthly meeting of the City Council on July 1st, the Medical Superintendent Officer of Health reported that 208 cases of zymotic disease had been notified and 78 deaths registered during the month; of these there were 41 typhoid, 38 simple continued fever, and 23 small-pox; there were 1,126 births and 670 deaths registered. The annual death-rate from all causes, 19.5. Of the 23 cases of small-pox, 14 occurred in Newtonards Road district, and were all traced to the first case, where the patient died and a wake had been held in the house. During this epidemic 94 patients have been admitted to the Small-pox Hospital at Purdysburn; 59 have been discharged, 3 have died, and 32 remain in hospital; only 3 cases were admitted last week against 12 the week before, and the City Council has drawn attention to the section of the Public Health Act which forbids holding wakes on those who have died from an infectious disease. Of 40 contact cases, 39 were revaccinated and did not take the disease; the remaining 1 was not revaccinated and contracted the disease. Of the whole sanitary staff, all had been revaccinated except one, who managed to dodge the operation; all those revaccinated, although practically daily exposed to the infection, escaped; but the clever officer, although he managed to evade vaccination, did not evade the disease.

Antivaccinators in Belfast.

Antivaccinators are happily few in Belfast, and this perhaps has something to do with the fact that, although case after case has been introduced from Glasgow and Liverpool during the last few years, each successive outbreak has been promptly suppressed. One councillor at the last monthly meeting of the city council, however, expressed strong views against vaccination, and said that the cause of small-pox was defective foundations of houses, insufficient supply of pure water, and bad ventilation, and that what was wanted was not revaccination, but thorough isolation. This gentleman is also a member of the Board of Guardians, and at a recent meeting of that Board he lamented the withdrawal of a certain inhalation in the treatment of consumption, as the drug was not on the regulation list; he had visited the consumptive wards, he said, and was dismayed at the increase of cough and expectoration, and the high temperatures that immediately ensued on the withdrawal of the drug as compared with a previous inspection. Therapeutic effect is acknowledged to be one of the most difficult problems in all science; the effect of vaccination as regards the incidence of small-pox on a people is one of the surest results in statistics, yet this councillor and guardian has no doubt about the one and denies the other.

LITERARY NOTES.

In a second edition of Corbin and Stewart's *Handbook of Physics and Chemistry*, published by Messrs. J. and A. Churchill, a section on light has been added. This subject was originally omitted, because when the new edition was put in hand it was not included in the curriculum. The new section contains twenty-five illustrations.

The Toirac Prize is awarded annually by the French Academy to the author of the best comedy produced during the year. This year no award has been made, a circumstance which has caused a good deal of excitement in the dramatic circles of Paris. Some of our readers may be interested to learn that the founder of the prize was Dr. Toirac, who was the son of an army surgeon, and was born at San Domingo in 1791. He took his doctor's degree in Paris in 1823, but practised as a dentist. He acquired a considerable fortune, and was able to indulge his love for the theatre and for artistic and literary society. He was, like Horace, an epicurean, and wrote verses which may perhaps be read when those of the Augustan poet are forgotten—but not till then. Toirac contributed several monographs to dental literature, and invented some appliances. Among his clients was Sainte-Beuve, the famous critic. Toirac died in 1863, leaving to the Académie Française a sum sufficient to found a prize of £160 to be awarded as already stated.

In the June number of the *Journal of Nervous and Mental Disease* (New York) Dr. Weir Mitchell describes the "evolution of the rest treatment." The first indication he ever had of the great value of mere rest in disease was during the Civil War, when there fell into the hands of Drs. Moorhouse and Keen and himself a great many cases of what they called acute exhaustion. The men were tired by much marching, and gave out suddenly after some unusual exertion, and

remained for weeks, perhaps months, in a pitiable state of what would be called to-day neurasthenia. Complete rest and plentiful diet usually effected a cure. In 1872 Dr. Mitchell had charge of a man who had locomotor ataxia with extreme pain in the extremities, and in making some unusual effort he broke his right thigh. This confined him to bed for three months, and the day he got up he broke his left thigh. This involved another three months of rest. At the end of that time the ataxia was better, and the man was free from pain. Later, in a case of extreme neurasthenia in a woman on whom all the resources of medicine had been exhausted, Dr. Mitchell was led to try rubbing as a substitute for exercise. Afterwards he hit on the idea of giving electric passive exercise. With this treatment was combined entire rest—friends, relatives, books, and letters being kept away. The symptoms passed away one by one, and the patient was soon able to take a liberal amount of food. Dr. Mitchell had learned that by a combination of seclusion, massage, and electricity, he could over-feed the patient until he brought her back to perfect health. In two months she gained 40 lb. in weight, and the cure was permanent. Dr. Mitchell points out that simple rest as a method of treatment had been suggested before, but not in the same class of cases. Massage used by Orientals for ages was employed by Ling in 1813.

It never attained perfection in the hands of the Swedes, nor do they o-day understand the proper use of this agent. It was over and over ecognized in Germany, but never generally accepted. In France, at a ater period, Dreyfus, in 1841, wrote upon it, and advised its use, as did Recamier and Laine in 1868. Two at least of these authors thought it useful as a general agent, but no one seems to have accepted their views, nor was its value as a tonic spoken of in the books on therapeutics or recommended in any textbook as a powerful toning agent.

Dr. Mitchell first mentioned the treatment in print in 1875 in the *Seguin Lectures*, vol. i, No. 4, "Rest in the Treatment of Disease." In 1877 there appeared an address delivered before the Medico-Chirurgical Faculty of Maryland, and in the same year a monograph, entitled *Rest Treatment*, was published. For a long time the treatment was received with incredulity and denounced as quackery. It seems incredible, says Dr. Mitchell, that any man who was a member of the British Medical Association could have said that he would rather see his patients not get well than have them cured by such a method. It was several years before it was taken up by Professor Goodell, and it was a longer time in making its way to Europe, when, by mere accident, it came to be used by William Playfair.

At a meeting of the Sociedade de Medicina e Cirurgia of Oporto on June 6th, Professor Maximiano Lemos read a communication in which he discussed the scientific work of Amatus Lusitanus. Amatus was born near Coimbra in Portugal in 1511, of Jewish parents, who were brought into the fold of the Church on the *Compelle intrare* principle. On the title page of one of his works he calls himself "Joannes Rodericus Castelli Albi," the last two words indicating the place of his birth, Castel Branco, while the first two were probably borrowed from Christian nomenclature, by way of disguise. He studied medicine at Salamanca, and after taking his degree practised in various cities of Portugal. In 1535 there was a great exodus of Hebrews from Portugal, and Amatus went with his people to Antwerp, where he remained for six years. He then accepted an invitation to the Chair of Medicine in the University of Ferrara. In 1547 he moved to Ancona, where he lived till 1555, when he fell under suspicion of crypto-Judaism. For some years he wandered about, finally finding in 1558 a resting place at Salonichi, where, under the protection of the Turkish Government, he ended his days in peace. The year of his death is unknown. His two principal works are an elaborate commentary on Dioscorides (1553), in which he shows a wide knowledge of botany, and his *Curationum Medicinalium Centuriae Septem*, published at intervals from 1551, the last bearing date "Salonichi, August, 1561." Professor Lemos pointed out that Amatus had checked the descriptions given by Dioscorides by careful comparison with the actual plants, and in his *Centuries*, wherever it was possible, he makes the results of anatomical research throw light on his clinical records. He claimed for the Portuguese physician that he was the first to describe the valves in the azygos vein. Amatus may be taken as the highest type of practitioner of the healing art in the sixteenth century. He was an accurate clinical observer, and from the operations which he describes it is clear that he was a bold and skilful surgeon. Botanist and anatomist, as well as physician and surgeon, he was also learned in philology, and a man of general culture. Amatus is an interesting figure in the history of medicine, for he was one of the leaders of the scientific Renascence.

THE OUTBREAK OF PLAGUE IN THE TRANSVAAL.

WE have received a copy of a report on plague made by Dr. Walter C. C. Pakes, who at the time was acting for Dr. Charles Porter, M.O.H. for Johannesburg, who was unfortunately suffering from an attack of enteric fever, from which we are glad to hear he has since entirely recovered. This report is in parts rather confusing owing to the absence of dates, but it was apparently presented to the Rand Plague Committee on or about April 24th. It is divided into five sections, which we will take in order.

1. *Previous Precautionary Measures.*

In view of the fact that plague existed on the south and east coasts of South Africa, the M.O.H. for the Transvaal, Dr. George Turner, and the M.O.H. for Johannesburg, Dr. Charles Porter, and the Government bacteriologist, Dr. Walter C. C. Pakes, made the following arrangements:

(*a*) The M.O.H. for the Transvaal appointed a special plague officer at Volksrust, the first town on the Natal line of the Transvaal, and established an observation camp at Vereeniging and a general supervision of Asiatics and natives.

(*b*) The M.O.H. for Johannesburg in February, 1903, circulated to the medical profession in that town extracts from the plague memorandum dated September, 1900, issued by Mr. W. H. Power, F.R.S., medical officer Local Government Board, England. These extracts contained an account of the symptoms of plague and directions for obtaining and forwarding for bacterioscopic examination material from suspected plague cases. Further, on Dr. Porter's advice, the Johannesburg Town Council organized a Plague Camp within the Government lazaretto at Rietfontein for the reception of suspicious cases.

(*c*) The Government laboratories were developed in order to enable the Government bacteriologist to undertake the bacteriological diagnosis of the disease even on a large scale. In January, 1903, the General Manager of the Central South African Railways was requested to issue instructions to all employés to look out for dead rats and to ask responsible officials to send them to the Government laboratories for diagnosis. The Johannesburg Town Council appointed a rat-catcher and all dead rats found by him were sent to the laboratories for examination.

In April, 1903, a dead rat sent to the laboratories from Johannesburg was shown to have died of plague, and between that date and the outbreak of plague in Johannesburg 13 rats were proved to have died of plague. As no connexion could be traced between any two spots from which dead rats were obtained, the conclusion was drawn that the animals had been imported singly from the coast in grain or forage. Other domestic animals were examined, and one cat was found to have died of plague.

2. *Previous Pneumonia.*

The Government laboratories had received a grant from the Chamber of Mines for the investigation of pneumonia with special reference to deaths among the coloured population; this investigation was carried on at the same time as the examination of the rats. It was found that the cases of pneumonia which in 1903 gave origin to a scare of plague were due either to streptococcal or pneumococcal septicaemia. The death returns showed that immediately preceding the outbreak of plague there was a slightly increased mortality in the Coolie Location and the adjacent district of Burgersdorp from what was certified as pneumonia, but no suspected case of plague was reported to the M.O.H. for the Transvaal or Johannesburg before the epidemic was in full swing. Upon this the report observes:

The outbreak in the Coolie Location is now accepted by the authorities as evidence that some at least of the cases certified as having died of pneumonia were really cases of plague, and as Mrs. Marais and three of her children died of plague, there can be no reasonable doubt that Dr. Marais himself died of plague and not of pneumonia, even although the two medical men who attended Dr. Marais were convinced that he had all the signs of pneumonia and none of those of plague. A statement to this effect appeared in one of the Johannesburg papers from the medical men in question on March 21st, and this was at a time when they knew that there was a serious outbreak in the Coolie Location.

3. *The Epidemic of Plague.*

Late on the evening of March 18th the acting M.O.H. for Johannesburg was informed that there was a number of sick Asiatics, apparently suffering from pneumonia, in a house in the Coolie Location. Early on the following morning the

house was visited by the district surgeon, the acting M.O.H. for Johannesburg, and the assistant bacteriologist, who found 5 corpses and 12 sick persons in a four-roomed house. The persons still living were either dying or desperately ill, and were removed to a temporary hospital in the Government entrepôt close by the Coolie Location. The necropsy showed patchy pneumonic consolidation of the lobular type; neither the glands nor the spleen were enlarged, and there were no ecchymoses, but in 3 cases microscopical examination of the lungs showed organisms morphologically identical with the plague bacillus, and the same bacillus was found in the sputum of a coolie in the Johannesburg Hospital suffering from pneumonia.

Owing to the insanitary condition of the Coolie Location, which had been condemned time after time by the M.O.H., and to the unknown but large number of cases in that Location, it was decided to put a cordon round the whole area, and this was formed early on the morning of March 20th, the sick being conveyed to the Plague Camp at Rietfontein. On the same day a house-to-house inspection within the insanitary area was instituted; further deaths had occurred, raising the number to twenty-six; all presented symptoms of pneumonia, and all showed the presence of plague bacilli. On the same day a Mohammedan died of plague, with inguinal buboes, in the Malay Location.

On March 21st the medical inspection of all sick invalids and natives was undertaken with the co-operation of the Asiatic and Native Affairs Departments. Additions were made to the staff of rat-catchers, and negotiations were opened with the M.O.H. for the Transvaal for the transfer of certain medical officers who had had previous plague experience.

On March 22nd the Government published plague regulations, and constituted the Rand Plague Committee, composed of ten members from Johannesburg, and representatives from the local authorities within the Witwatersrand area. This Committee met on March 23rd, and appointed an M.O.H., a special plague officer, and other officials, and authorized them to engage such staffs as they considered necessary. Certain members of the sanitary staff of the municipality were taken off that duty to act as chief inspectors under the Plague Committee, being replaced by other inspectors; a large staff of special inspectors and disinfectors, the majority of whom had had recent plague experience in Natal and Cape Colony was appointed. The plague staff was therefore separate from, and in addition to, the ordinary sanitary staff of the municipality.

One of the first acts of the Plague Committee was to transfer, on March 30th, the whole of the population cordoned in the Coolie Location to a segregation camp; 3,100 people, that is to say, 1,600 Asiatics, 1,358 natives, and 142 coloured people, were thus transferred. One death from plague occurred during the incubation period of the disease, but no other cases followed up to the date of the report twenty-four days after the transfer. After an interval of twelve days the inhabitants of the segregation camp were allowed to come and go under nominal restrictions imposed to prevent them from returning to Johannesburg and causing overcrowding.

The Coolie Location was surrounded by a galvanized iron fence; various animals which were in it and which had not been previously caught were killed, and the whole place burnt to the ground. It had long been intended to remove this insanitary area, which was recognized to constitute a serious danger to the community, but various difficulties arose, and it was not until September 26th, 1903, that the Town Council became the owner of the Coolie Location; even after that date the Council was deterred from taking active measures owing to the difficulty of finding another and more suitable site.

4. *General Measures.*

The Rand Plague Committee followed generally the recommendations of the Durban Congress. Contacts were not segregated, but as far as possible kept under observation; suspects were isolated in a suspect camp adjoining the plague camp. Early notification, removal, and complete disinfection of all suspects and observation of contacts have been the means relied upon. All employers of native labour are required to have every sick native medically examined within twenty-fours of his falling sick; no Asiatic is allowed to travel by rail unless he receives a clean bill of health from the medical examining officer. In the period from March 29th to April 19th, 14,010 natives came under medical inspection, and 1 case of plague and 7 suspects were detected.

The local authorities in the Witwatersrand area outside Johannesburg each appointed a special plague committee, and on a case of plague being notified a special plague officer from the Rand Plague Committee is dispatched to co-operate with the local M.O.H., but there is only one plague camp within the area (Rietfontein). Efforts are being made to exterminate rats and other vermin throughout the whole of the area.

5. *Origin of the Epidemic.*

The origin of the epidemic has not been discovered, but the following facts are held to be established:

1. There has not been up to the present moment anything approaching an epizootic.
2. It is unlikely that there were more than one or two bubonic cases preceding the epidemic for the reasons above mentioned, unless there had been unrecognized cases of pestis minor.
3. That the disease might not have been diagnosed for many days after March 18th had there not been a sudden explosion.

The suddenness of the explosion is attributed to the fact that in many of the early cases there was evidence of true double infection. It is held that the fact that the bubonic form was not found until after the occurrence of the pneumonia serves to prove that plague had not been in existence in Johannesburg for any considerable period before March 18th.

We quote the following passage which, as the report is not dated, we find it difficult altogether to understand:

Knowing, as they well knew, that the infectivity and the case mortality of the pneumonic form were both greater than the bubonic form, the authorities realized from the first moment that they had an extremely serious task to perform, and this realization is proved by their action in cordoning contacts against the recommendations of the Durban Plague Congress, whose recommendations they are now carrying out. After the first cases of pneumonic plague, there began to appear first isolated cases of the bubonic form and at the present moment the cases of bubonic plague are more numerous than those of the pneumonic type.

The concluding passages of the report contain the following:—

As regards the steps to be taken subsequently, the authorities are, from their own past experience in this country, well aware of certain difficulties which only those who have lived and worked in the Transvaal can possibly be acquainted with, namely, that we are entering upon the season of pneumonia, and that both natives and Asiatics are particularly susceptible to the ravages of this disease, and that clinically and pathologically (excluding bacteriologically) acute pneumonia in the Asiatic or the native has features which very closely resemble pneumonic plague in the same or similar individuals. In view of this the Rand Plague Committee is taking steps in conjunction with the Government laboratories to have every case of pneumonia examined bacteriologically until such time as plague has proved to be non-existent.

It may be fairly claimed, therefore, that the Rand Plague Committee has realized the seriousness of the present epidemics, do realize the seriousness of future developments, is alive to the fact that the disease may become endemic, and that every method both for diagnosing and for combating the disease is being and will be adopted to that end. It may also be claimed on behalf of the methods adopted that up to date all the cases which have occurred outside the Coolie Location, and subsequent to the cases among direct contacts in the Coolie Location have been single cases unfollowed by second cases in the same area. At the beginning of the epidemic this was not so, because more than once cases followed from the same places, traced directly to contact in the Coolie Location.

THE annual meeting of the Metropolitan Association for Befriending Young Servants was held on June 29th in the Church House, Westminster, Mr. G. C. Whiteley in the chair. The Princess Christian, President of the Association, attended, and Lord Stanley of Alderley delivered an address. The Association was founded in 1874 for the purpose of befriending young girls placed in domestic service from the various metropolitan Poor-law schools, and other girls needing help. The girls befriended are of two classes; first, those who come from large institutions and know nothing of the temptations they will have to face outside; and, secondly, those who come from poor homes and have had too little discipline, and perhaps too much knowledge of the world. The Association has five training homes in which girls are taught their duties as domestic servants, and twelve lodging-houses in or near London to which girls can go in the critical periods when they are out of places, or to obtain help and advice from the matron at any time. Over 6,000 girls between the ages of 14 and 20 are under the care of the Association, and more than 4,000 places have been found for girls through the Branch Registry offices. Archdeacon Wilberforce delivered an address, and the Princess Christian presented certificates for good service to those girls who had been three years and upwards in their situations with good characters.

British Medical Association.

SEVENTY-SECOND ANNUAL MEETING AT OXFORD.

EXCURSIONS.

Excursion to Leamington and Warwick.

On Saturday, July 30th, an excursion, 300 in number, will visit Leamington and Warwick. A special train will leave Oxford at 10 a.m., arriving at Leamington at 10.55. The party will be met at the station and conducted to the Royal pump rooms and baths. Here they will be received and welcomed by the Mayor and Mayoress (Alderman and Mrs. Flavel). After the reception they will be conducted by members of the Committee over the establishment, which has recently been brought up to date and modernized, and now comprises: Aix massage douches and Vichy douche, current from the main, high frequency, and *x*-ray applications, radiant heat and light baths, Turkish and swimming baths (for ladies and gentlemen), douches eccoisse, vibratory massage, and an anthromotor for lesions, stiff joints, etc. Special attention is drawn to this instrument, which, driven by a one-horse power motor, embodies in simple form many similar appliances to those used so successfully by Zander. Afterwards the various parks and pleasure grounds will be open to the delegates and the municipal orchestra will play in the Pump Room Gardens. At 1.30, by invitation of the Mayor and Corporation, the delegates will meet at the Town Hall for luncheon. The chair will be taken by the Right Honourable Alfred Lyttelton, K.C., His Majesty's Secretary of State for the Colonies, and the member for the parliamentary borough of Warwick and Leamington.

After the luncheon carriages will be provided to take the delegates to Warwick Castle, by invitation of the Earl and Countess of Warwick. The Countess has kindly invited the visitors to afternoon tea in the Castle grounds. In the evening the Jephson Gardens will be illuminated and a concert will be given by the Municipal Orchestra, to which the Corporation invites the delegates. To secure tickets for the above excursion application should be made without delay, in writing, to E. C. Bevers, Esq., 117, Woodstock Road, Oxford. Such tickets will be reserved until not later than 2 p.m. on Wednesday, July 27th, and can be obtained on application at the Reception Rooms. Any tickets that remain over, or reserved tickets not applied for before the time mentioned, will be distributed to applicants at the Reception Rooms, but the list will be closed finally at 7 p.m., Wednesday, July 27th. The cost of ticket (1st class return, 10s. 9d., single, 9s. 0d.; 2nd class return, 7s. 8d., single, 6s. 6d.; 3rd class return, 6s. 5½d., single 5s. 6½d.) will include railway fare to and from Leamington and conveyance to and from Warwick Castle. The return journey will be made by the 8.23 train from Leamington.

River Excursions.

A steamer, reserved for members of the British Medical Association and their friends, will leave Folly Bridge on Wednesday, at 3 o'clock, for Nuneham, reaching Oxford, on the return journey, at 6.30. Fare 1s. 6d. On Thursday and Friday it will leave at 2.30 for Abingdon, arriving at Nuneham at 3.30 and Abingdon at 4.10, leaving Abingdon for the return journey at 4.30 and Nuneham at 4.55, arriving at Oxford at 6.30. Those desiring to do so can disembark at Nuneham, the grounds having been thrown open by the kindness of Sir William Harcourt. Fare for the double journey 2s. There will be accommodation for 150. Tickets should be obtained before 10 o'clock each morning at the Reception Rooms. If any tickets remain after that hour application should be made to Messrs. Salter, Folly Bridge, either directly or by telephone (No. 121). There will be a telephone at the Reception Rooms.

River Excursion to Reading.

On Saturday one or two steamers reserved for members of the British Medical Association and their friends will leave Folly Bridge at 10 o'clock, arriving at Wallingford (for lunch) at 2.10 and Reading at 6.15. Fares: Wallingford, 3s. 6d.; Goring, 4s. 6d.; Pangbourne or Reading, 5s. There will be accommodation for 150. Tickets can be obtained at the Reception Rooms at any time until 2 p.m. on Friday, when the list will be closed.

Messrs. Salter Brothers, Folly Bridge, have also undertaken to reserve 50 punts, 50 rowing-boats, and 30 Canadian canoes. These may be obtained by application each morning before 10 a.m. at the Reception Rooms. No boats will be reserved after that hour, but application can be made at any time, either directly or by telephone (No. 121) to Messrs. Salter. The price by day will be: For punts, 2s.; for rowing-boats, 1s. for two and 6d. for each extra person; for Canadian canoes, 1s. for two and 6d. for each extra person.

Special Railway Arrangements.

To members and their friends attending the annual meeting at Oxford the railway companies of the United Kingdom will grant return tickets, on payment at the time of booking, at a single fare and a quarter. To secure this concession each passenger must produce a special voucher, and these may be obtained on application to the General Secretary, 429, Strand, London, W.C. The reduced fares will be available from July 22nd to August 2nd, both dates inclusive.

Members attending the annual meeting, but staying at places outside Oxford, may, on production of cards of membership, obtain return tickets at a single fare and a quarter (minimum charge 1s.), from Oxford to London or Birmingham or to any station not more than fifty miles distant to which through bookings are in operation; these tickets will be available to return on the same or following day. Members availing themselves of this privilege should use the original return ticket for the first journey to and the last journey from Oxford. The member's ticket, which is obtained at the Reception Room when registering attendance, will enable members to get the reduced fares from Oxford to London and to places within the fifty-mile radius for any intermediate journeyings.

ASSOCIATION NOTICES.

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

Guy Elliston, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

Birmingham Branch: Central Division.—Notice is hereby given that a general meeting will be held at the Medical Institute, Edmund Street, at 4 P.M. on Thursday, July 14th. Business: (1) The consideration of a suggested new rule for Division. (2) To consider and instruct the Representative upon various reports of the Medico-Political Committee. (3) General. Members are particularly requested to make a note of this meeting, as individual notices will not be sent out on this occasion.—E. D. Kirby, 106, Hagley Road, Birmingham, Honorary Secretary.

Dorset and West Hants Branch.—The summer meeting will be held at the Grand Hotel, Swanage, on Thursday, July 14th, at 3.30 p.m. Agenda: Dr. Lush will move: "That John Ward Cousins, M.D., F.R.C.S., and Sir Constantine Holman, M.D., be elected Associate Members of the Branch." Place of the autumn meeting. Consideration of the proposed transfer of Shaftesbury from this Branch to the Southern Branch. Mr. Hosker, one of the Vice Presidents, will open a discussion on Epilepsy. Luncheon at the hotel at 2.15 p.m.; price 3s. 6d. each. Members intending to be present are requested to communicate with Mr. Hosker, Kirkleatham, Boscombe, Bournemouth, by Monday, July 11th.—William Vawdrey Lush, Weymouth, Honorary Secretary.

Lancashire and Cheshire Branch: Manchester and Liverpool District.—*Oxford Meeting:* A reserved special car will be attached to the Great Western train leaving London Road, Manchester, at 12 noon on Monday, July 25th; Crewe 1.3. Train from Liverpool Central 11.44, Landing Stage 11.40, Birkenhead Woodside 12, and Chester 12.40 will join join the Manchester train at 2.38 at Wellington, Great Western Railway. The car will return on Saturday: Oxford 5.23, Leamington 6.30, Warwick 6.35, to take up those members who have availed themselves of the invitation of the Mayor of Leamington and the Countess of Warwick. (See the first column of this page.) Only those members travelling by the Great Western route can do this.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—An ordinary general meeting of the City Division will be held at the London Institution, Finsbury Circus, E.C., on Thursday, July 14th, at 4 p.m. Agenda: Minutes. Correspondence: (1) Letter from Exeter Division of South-Western Branch; (2) letter from Branch Secretary *re* alteration of Branch Rules; (3) other letters. Report of Medico-Political Committee on the Nomination of Candidates for the General Medical Council; to instruct representative on this matter (see SUPPLEMENT to the BRITISH MEDICAL JOURNAL of October 31st, 1903, p. 204, and January 30th, 1904, p. 5). Nurses' Registration: to consider principle of registration and details of scheme and instruct representative thereon (see SUPPLEMENT to the BRITISH MEDICAL JOURNAL of May 7th, p. 106). Report on Information supplied by Medical Men to Coroners; to instruct representative thereon (see SUPPLEMENT to the BRITISH MEDICAL JOURNAL of May 7th, p. 100). Revised Medical Acts Amendment Bill; to instruct representative thereon (see SUPPLEMENT to the BRITISH MEDICAL JOURNAL of May 28th, p. 125). Report on Parliamentary matters affecting the profession (see SUPPLEMENT to the BRITISH MEDICAL JOURNAL of May 7th). Any other business that may arise. N.B.—Members are requested to bring with them the numbers of the SUPPLEMENT of the BRITISH MEDICAL JOURNAL referred to above, and are reminded that a quorum of 12 is necessary to transact business at a general meeting.—E. W. GOODALL, M.D., The Eastern Hospital, Homerton, N.E., Honorary Secretary.

ULSTER BRANCH.—The annual meeting of this Branch will be held in Belfast on Wednesday, July 20th. Any member having any communication to make or any business to bring before the meeting should kindly inform me on or before July 12th.—WILLIAM CALWELL, M.D., 1, College Square North, Belfast, Honorary Secretary.

SPECIAL CORRESPONDENCE.

PARIS.

Professor Grancher on the Prevalence of Tuberculous Glands in Paris School Children.—M. Toulouse on the Influence of Salt with or without Bromide in Treatment of Epilepsy.—Inauguration of Monument to Professor Panas.—Dr. Roger appointed Professor of Comparative Pathology.—Monument to Pasteur.

PROFESSOR GRANCHER, being struck by the fact that the majority of children who come into the hospital wards, and then die of any disease whatsoever, show *post mortem* the presence of tuberculous enlargement of the tracheo-bronchial lymphatic glands, thought that, by diagnosing this disease in the children attending the primary schools, and giving appropriate treatment, a great number would be preserved from the disease which threatened them. Professor Grancher grouped round him twelve of his former pupils, who from November, 1903, to May, 1904, have systematically examined all the children attending the school in the fifteenth arrondissement, which was selected as being a good example of the average population in Paris. The boys were first examined, as to their weight, height, chest measurement, and specially as to the presence of tubercle of lungs or latent tubercle of glands; 312 out of 438 were found healthy on the first examination, 126 being kept for further control examinations. As a final result, 62 boys, that is, about 14 per cent., were found affected with suspicious or actual tuberculous lesions. The parents of these 62 children were asked to submit to examination, and of those who came more than half were affected with tubercle. The following was the condition of these 62 boys:

One had an advanced pulmonary lesion and had to leave the school for hospital. Fifteen were seriously affected although the lesion still was closed. Life in the country or in a sanatorium would suit them admirably. Forty-six slightly affected especially with enlargement of the tracheo-bronchial glands may be allowed to continue school attendance but with a preventive treatment of cod-liver oil and meat powder, and under the eye of a physician.

As these children very often improve in hospital with a little hyper-alimentation, Professor Grancher asked for £60 from the Caisse des Ecoles, so that the children either attacked or with suspicious signs might have for one year the necessary cod-liver oil and meat powder, this, with additional meat, being given at the school. On the girls' side of the school, out of 458 pupils, 79 were found to be actually affected, that is, 17 per cent. This gives a total of 141 children affected out of 896 boys and girls examined. Professor Grancher and his collaborators have commenced the examination of a third school, and intend to continue in the hope that the Municipal Council will help them in this search for nascent tubercle in children general in all the Paris schools, and will help also in giving preventive treatment to those children who are threatened with phthisis. The Assistance Publique is at present overwhelmed with the number of adult cases of phthisis which it is unable to help, whereas by taking the offensive and making a healthy young generation with a minimum expense a maximum result would be obtained. The City of Paris should have for all these children who are candidates for consumption, and who number from 20,000 to 25,000, schools in the country where life in the open air, judiciously associated with their studies, would cure the majority of them. The communication of Professor Grancher was greeted with applause at the Académie de Médecine, and was handed to the permanent Commission on Tuberculosis for consideration.

Before the Société Médicale des Hôpitaux M. Toulouse recently read a paper describing a research to ascertain if salt given in excess or left out of the dietary had any effect on the course of the disease in epileptic patients not treated with bromides, but put some on ordinary diet, others on a milk diet. Salt was given daily in quantities of 20 grams to 25 grams in alternating periods when all the other conditions remained identical, and had absolutely no effect on the frequency of the attacks. These results are important, as they show the absence of salt from the dietary simply increases the sensibility of the tissues to the action of bromides, and that there is no modification of the osmotic equilibrium, and thus of the general nutrition of the organism.

On June 28th the monument to Professor Panas, who was the originator of the Ophthalmological Clinic in the Hôtel Dieu and of special instruction in this subject in the Faculties of Medicine throughout the country, was unveiled in the Clinic, where for more than twenty years he taught. M. Chaumié, the Minister of Public Instruction and Fine Arts, presided at the ceremony, Professor Guyon handing over the monument to the care of the Assistance Publique. The monument—by the sculptor André Boucher—represents the Professor seated in the Consultation Hall stretching out his hand ready to examine a blind child standing at his side.

The Faculty of Medicine has proposed Dr. Roger to fill the vacant chair of Experimental and Comparative Pathology, Professor Chantemesse, the previous incumbent, having been appointed Professor of Hygiene. On the second ballot Dr. Roger obtained the majority of votes with 17, Dr. Widal being second with 13 votes.

The inauguration of the monument erected to Pasteur in the Place de Breteuil in Paris will take place on July 16th, at 9.45 a.m., in the presence of the President of the French Republic.

SYDNEY.

Sydney Water Supply.—The Bubonic Plague.—Epidemic of Infantile Paralysis.—The Coast Hospital.—The Women's Hospital.

DR. T. M. KENDALL has furnished an important report to the Water and Sewerage Board dealing with his recent inspection of the catchment area. The area inspected comprised 23,332 acres, and it carries a population of 1,027 people and 6,495 animals. He states that the large increase in the population on this area since the last report cannot be viewed without anxiety. The danger arising from the presence of human beings and their dwellings on catchment areas is very considerable, as through them there is great danger of pollution of neighbouring streams. As no amount of dilution will altogether prevent the multiplication of disease germs in water, the amount of purification taking place in running water after a few miles of flow is comparatively limited as far as the disappearance of disease germs is concerned. The number of animals on the area was greatly increased last year in consequence of the presence of starving stock removed from the drought-stricken interior, but this year, even when the same cause is not at work, there has been an increase in the number. Dr. Kendall points out the serious danger to the water supply which results from the fact that these animals have easy access to the streams, frequently wade in them, and not infrequently are found lying dead in them. Although much has been done in the way of improving the cleanliness of the catchment area, Dr. Kendall states that it is the imperative duty of the Board to acquire full control over the whole area, to divert and close up all public roads, clear away all human dwellings and all animal life, and prevent decaying vegetable matter being carried into the water supply during times of flood. In view of this report the minute written by Dr. Kendall dealing with the analyses of the water supplied during the month of April is of interest. The quality was very good; taking 0.05 parts of combined ammonia per million as the highest standard of purity, the analyses showed that a very potable water had been supplied. Expressed in terms of combined

ammonia, the sample from Crown Street reservoir was 60.4 per cent. better than during the previous month, from Basin Head at Prospect, 40 per cent. better, and from North Sydney, Pott's Hill, and Prospect inlet, 23.2 per cent. better. The samples from Hurstville, Liverpool, and Camden exhibited no deviation from their usual high state of purity, and the various other samples showed only a small shade of impure difference from samples analysed during March.

After a period of quiescence, during which we were beginning to congratulate ourselves on the cessation of plague, some more plague-infected rats were discovered in a suburb of the city not previously infected in this recent epidemic, and shortly afterwards a case of plague in a man who had been engaged at work in the first infected area of the city was reported to the Board of Health, and the patient was promptly removed to the plague ward at the Coast Hospital. No further case has been reported up to date, but in view of the apparent spread of infection among the rats, some further cases will probably occur before long. The Board of Health is keeping a close watch upon the rat population, and the destruction of rats is going on as fast as it can be accomplished by the combined efforts of the Board of Health and the Health Department of the Sydney City Council.

For several months past an epidemic of infantile paralysis has been in progress in different parts of this State. Groups of cases have occurred in widely-separated districts, and even in the districts affected competent medical men affirm that the cases occur in scattered houses, in which infection by direct contact cannot have occurred. It is of interest to note that apparently in all these centres of "infection," in addition to those cases which present the well-known clinical history of infantile paralysis, others have occurred which have been considered to be instances of Landry's ascending paralysis, or as cerebro-spinal meningitis, cases in which death has occurred in the course of a very few days, with all the symptoms of an acute infective lesion of the central nervous system. Unfortunately, so far no reports of any necropsies on this class of case are forthcoming, but at the last meeting of the New South Wales Branch of the British Medical Association two papers on the subject of the epidemic, dealing with the matter from the clinical aspect, were read. It is a matter of regret that the Board of Health has not had the opportunity of investigating the disease from the pathological point of view, but it is hoped that some attempt will be made.

Although the matter has been discussed on several occasions, and various suggested sites have been mentioned, yet so far no infectious diseases hospital exists in Sydney. The hospital which is used for this purpose is the Coast Hospital at Little Bay, which is situated some miles from Sydney on the southern coast line. This was originally built as a temporary hospital for small-pox patients during the threatened epidemic in 1881, but has since been added to and improved in various ways. A detached portion of this hospital is used for the accommodation of scarlet fever, measles, and plague patients, but the larger part of the hospital is used as a general hospital for more or less chronic cases, both medical and surgical. This institution is a purely Government one, and is controlled by the Department of Public Health. On a recent occasion the members of the Board of Health inspected the hospital and found the wards and all the accessories in first-class order and thoroughly clean, and the medical men outside the officials concerned were well satisfied that the hospital was being conducted on the most approved lines.

The Benevolent Society of New South Wales has for many years conducted a maternity hospital as a part of its work. Some two or three years ago the site occupied by the building was required by the Railway Commissioners for the new Sydney railway station, and the work of the society was then divided. The Board secured a suitable site in Paddington for a hospital for women, and another site for the buildings for infants. The maternity work has been carried on in a temporary building on the site referred to, but recently plans have been completed for a fully-equipped women's hospital, and one wing of this new building is now in course of erection. When fully completed 200 beds will be available for maternity and general gynaecological cases. An out-patient department has just been opened, and the full staff of this institution is as follows: Honorary Surgeons, Messrs. W. H. Crago, J. Foreman, Sir James Graham, and Charles McLaurin; Honorary Physicians and Anaesthetists, Drs. C. B. Blackburn and E. W. Fairfax; Honorary Assistant Surgeons, Messrs. C. V. Bowker, J. C. Windeyer, and John Harris; Honorary Pathologist, Dr. A. A. Palmer.

MANCHESTER.

Graduation Ceremonial.—Facilities for Clinical Instruction.—Opening of the Schunck Chemical Laboratories.—Butchers and Compensation Bill.

The post-graduation ceremony of the University of Manchester took place on July 2nd, when the Vice-Chancellor presided, and conferred honorary degrees on Dr. Ludwig Mond and Dr. W. H. Perkin, sen. Ordinary degrees were also conferred. The total number of students in the University last year was 1,208; and of these, 367 (including 13 women students) belong to the Faculty of Medicine.

In the deed of transfer of the College Hospital estate to the Royal Infirmary provisions have been inserted securing that requisite facilities for clinical instruction shall be provided for the Medical School of the University in the New Infirmary. The authorities of the new Southern Hospital, also, have entered into covenants for securing facilities for instruction in gynaecology, obstetrics, and diseases of children in the new Southern Hospital, which is in course of erection. It is confidently expected that there will soon be in the immediate neighbourhood of the University ample provision for the students of the Medical School to receive clinical instruction under most favourable circumstances. It is expected that the new Public Health Laboratories will be open for work next session.

After the meeting of the Court of the University of Manchester on July 1st, the Schunck Laboratory for Chemical Research, presented by the late Dr. Schunck, was opened by Dr. Perkin, sen. The laboratory has been removed from Kersal and erected just as it was in Dr. Schunck's lifetime. Along with the laboratory was given to the University the library of technical works and periodicals dealing with chemistry and a fine collection of chemical specimens relating more particularly to "that department of chemistry which embraces the colouring matters" with which Dr. Schunck's researches were mainly concerned. The laboratory will be used entirely as a research laboratory. A fine medallion portrait of Dr. Schunck was presented by his widow.

In the Tuberculosis Compensation (Animals) Bill now before Parliament provision is made for the payment of compensation to butchers on the confiscation of meat which they have for sale. The compensation is to come out of the local rates. The Sanitary Committee of the Manchester Corporation is opposed to the rates being the source of the compensation. A deputation of the Manchester and District Butchers' Association waited on the Sanitary Committee, and urged the Committee not to oppose the Bill. It was contended that if compensation were not granted the butchers would be thrown more and more on to the dead-meat market, to the benefit of the foreigner and the disadvantage of the British agriculturist.

BIRMINGHAM.

General Hospital Appointment.—Care of the Feeble-minded.—Midwifery Training.

At a meeting of the Election Committee of the General Hospital held on June 24th, Dr. Thomas Sydney Short was elected Honorary Physician to the hospital in the place of Dr. Edwin Rickards, who has resigned after thirty years' service. Dr. Short has been associated with the institution for seventeen years, and has been Assistant Physician to the General Hospital and Visiting Physician to the Jaffray Branch Hospital for thirteen years, and was previously Resident Medical Officer of the General Hospital and Resident Medical and Surgical Officer at the Jaffray Hospital for periods of two years each.

The adjourned conference of representatives of the Birmingham, Aston, and King's Norton Unions was held on June 24th in Birmingham to consider the advisability of joint action being taken between the Poor-law unions situated wholly or partly within the city of Birmingham and the Education Committee of the City Council, in reference to the care of epileptics and feeble-minded persons. At the first meeting, which was held in February, it was agreed that it would be advantageous to combine for the provision and maintenance of a colony of homes for the treatment of epileptics and feeble-minded persons, provided that there was a reasonable proof of the necessity for such a colony. The next meeting was held in May, and it was reported that there were 52 children under 16 years of age who were likely to be improved or who were

suitable for detention in a colony. At this conference it was thought desirable that the Birmingham Education Committee should provide accommodation at the boarding schools, which they had decided to erect, for all children suitable for admission and belonging to parishes within the city, whether chargeable to the rates or not. At the present conference a scheme was submitted for the provision of homes affording accommodation for 200 feeble minded and sane epileptics, 110 by the Birmingham Board, 50 by the Aston Board, and 40 by the King's Norton Board. The cost of the scheme was estimated at £30,000, reckoning each bed at £150. Towards this sum Birmingham would contribute £16,000, Aston £7,000 and King's Norton £6,000. The scheme was approved, and the conference decided to recommend their respective Boards to join in an application to the Local Government Board for the issue of a special order constituting a joint committee for the management of the homes.

A meeting of ladies was held on June 30th to consider the best means of carrying into effect the provisions of the Midwives Act. The Lady Mayoress, who presided, expressed a hope that the scheme already put forward by the Lying-in Charity would be supported; it contemplated the foundation of a maternity institute, at which nurses could be trained, and a site had already been purchased. Mrs. Wallace Bruce related some of the pitiable tragedies disclosed at inquests as the result of the present ignorance of midwives, and spoke of the extent to which blindness occurred owing to negligent treatment at birth. Miss Gibson, Matron of the City Infirmary, urged that what was needed in Birmingham was not monthly nurses but midwives, to train whom no local facilities at present existed. A number of subscriptions in furtherance of the Lying in Charity's scheme were announced, as well as a gift from an anonymous lady of £500. Everything, therefore, points towards this scheme, for which a fund of £5,000 is required, being successfully carried through.

LIVERPOOL.

Degrees Conferred by the University.—Annual Report of the M.O.H.: Improvement of the Public Health.

ON July 1st degrees were for the first time conferred by the University of Liverpool. The ceremony was witnessed by a large and distinguished gathering in St. George's Hall. Lord Derby, Chancellor of the University, received the only honorary degree conferred, that of LL.D. Degrees were conferred on about 300 individuals of both sexes, the majority being already graduates of Victoria University, who were entitled under the charter to take an equivalent or a higher degree in the University of Liverpool.

The report of the Medical Officer of Health for the year 1903 is a volume of 238 pages. It contains much interesting matter and indicates a general improvement in the health of the city and an amelioration in the conditions of life among the poorer part of the population. The area of the city is 23 square miles, and the population last year was estimated at 716,810. The death-rate was 19.8 per 1,000, against 21.6 in 1902, being the lowest yet recorded, and there were 1,080 fewer deaths than in 1902. In the Sefton Park district the death-rate was only 9.0, suggesting the rate in a health resort rather than a district of a great commercial centre. In the same district the birth-rate was 19.8. There were 2,032 cases of small-pox with 141 deaths. The compulsory notification of chicken-pox led to the discovery of 54 cases of small-pox which had been mistaken for the less serious disease. Typhus fever appears still to be far from extinct, 272 cases with 57 deaths having occurred. There were 4,053 cases of scarlet fever with 201 deaths, and 27,289 of measles with 132 deaths. Whooping-cough is credited with 318 deaths, but doubtless led indirectly to a much higher fatality. Dr. Hope advocates hospital treatment for the disease. Zymotic diarrhoea is accountable for 657 deaths, 461 among infants. The deaths from phthisis were 1,258 against 1,347 in 1902; 170 deaths were due to alcoholism, being an increase of 1 on the previous year. The Health Committee is endeavouring to abolish the use of ashpits, and there are already 19,000 removable bins in use. One of the most interesting parts of the report is that relating to the supply of milk, of which the daily consumption is 30,000 gallons. The lower death-rate is attributed almost entirely to the measures taken for the prevention of infantile diseases. The death-rate of infants was 159 per 1,000; during the preceding three years it was 178; 6,295 infants have been fed on the milk supplied from the sterilized milk dépôts and with the most satisfactory results, for although these children were, to begin with, below the average in health, the death-rate among them was only 78 per 1,000.

CORRESPONDENCE.

TRYPANOSOMES AND THE LEISHMAN-DONOVAN BODIES.

SIR,—With reference to the interesting paragraph in the BRITISH MEDICAL JOURNAL of July 2nd, regarding the possible connexion between these organisms, I think it may be useful to guard against a possible source of confusion. In his original paper[1] in which he first described the bodies named after him, Major Leishman clearly upheld the view that they are degenerated trypanosomes—that is, are trypanosomes which have died in the dead host and have subsequently undergone disintegration. This hypothesis did not prove very acceptable to myself and others, because (*a*) no entire trypanosomes or their flagella could be observed in preparations containing the Leishman-Donovan bodies; (*b*) because the form of the bodies was too compact and regular to suggest disintegration; and (*c*) because the micro-nucleus of the body appeared to be more elongated than that of trypanosomes. The suggestion now made by Captain Leonard Rogers is practically to the effect that the Leishman-Donovan bodies are young trypanosomes, or at least are bodies which ultimately may develop into trypanosomes.

This is evidently quite a different matter to the original suggestion of Major Leishman; and I may add that pending the determination of the complete life-history of these organisms, it is a hypothesis which cannot be—and apparently has not been—contested by any one. In fact, as will be seen from the BRITISH MEDICAL JOURNAL of February 6th, 1904, p. 303, I have previously suggested that the Leishman-Donovan bodies may be connected with the flagellate parasites called "cercomonads," my grounds for this supposition being principally that cercomonads are often found in superficial ulcers and in the intestines, in both of which sites the Leishman-Donovan bodies occur.

It is unfortunate that Captain Leonard Rogers's telegram is somewhat ambiguous, the word "culture" applying either to cultures *in vitro* or in animals.—I am, etc.,

University of Liverpool, July 2nd. RONALD ROSS.

FEES TO MEDICAL WITNESSES.

SIR,—Under the Home Secretary's Order, dated November 12th, 1903, medical witnesses at county sessions or assizes, not being residents of the assize town, may be allowed two guineas a day for attending to give evidence, irrespective of the number of cases they may have to give evidence about.

My partner has just been paid one and a-half guinea a day for attending at Stafford sessions to give evidence, 16 miles away. I was under the impression, when the Order of 1903 was made, all medical witnesses would be allowed two guineas a day, but there is a difference between "may be" and "shall be" allowed.

It therefore seems to me the Parliamentary Committee of our Association should strive:

1. To secure uniformity of pay throughout the country.
2. To secure a minimum fee of two guineas a day at county sessions or assizes.
3. To insist that if we are called upon to give evidence in two or more cases at county sessions or assizes, we are as much entitled to a fee in each case as any barrister who holds briefs for two or more clients in separate actions.
4. To secure a minimum fee of one guinea for attending to give evidence at petty sessions in his own town.
5. To secure a considerable increase in the amount usually paid for making a necropsy by order of a coroner. Having regard to the objectionable nature of the examination in the majority of cases in which it is considered necessary, to the need in nearly every case for skilled assistance, and to the wear and tear of instruments, I think three guineas, instead of the usual one guinea, would be a most reasonable remuneration.—I am, etc.,

Willenhall, June 30th. JOHN T. HARTILL.

MISSIONARIES AND MEDICINE.

SIR,—The suggestion which you make in your last issue that some reply is desired to your comments of a year ago with reference to the above subject leads me to offer you some

[1] Leishman: BRITISH MEDICAL JOURNAL, May 30th, 1903, p. 1252.

remarks on this important matter. And in the first place let me draw attention to my letter which was published in the JOURNAL of July 4th, 1903, which dealt with at least some aspects of the problem. As, however, this will not be within the memory of your readers, I venture with your permission to quote the following statement which I have recently drawn up to explain the position of missionaries who by the necessities of the case are rendering simple medical help to the suffering natives of non-Christian lands:

Missionaries who go to uncivilized lands have a very serious responsibility to the ignorant natives by whom they are often surrounded. Christianity and sanitation must go hand in hand, and the missionary who allows the people around him to die like flies without raising a finger to save life or to mitigate suffering, could not certainly be regarded in any true sense as a Christian. This is almost a self-evident proposition, though it is not always sufficiently understood. If, however, we realize that in thousands of mission stations there is no qualified medical help of any kind available, and no possibility of such help being forthcoming, it is clear that if anything is to be done the missionaries themselves must do it. In cases of epidemics of plague, small-pox, cholera, sleeping sickness, as well as the innumerable distressing wounds and ulcers from which the people are suffering, the missionary is the only person who can possibly render any assistance. Can we blame him because he uses what knowledge he can to help the people as regards bodily ailments to whose souls he is called to minister, and is there any ground for suggesting, as has recently been done, that missionaries who do their best with limited knowledge to save the lives of the people are imposing upon them because they have no medical qualifications? We cannot see how such a view can be upheld. We have endeavoured with all our might to guard against the abuse of medical knowledge, and every student at Livingstone College binds himself not to assume the position of a qualified medical man. We believe, however, that this work is not only justifiable, but imperatively demanded by the needs of the case.

I think you will allow, sir, that I have some right to express an opinion on this subject, when you realize that my old students are in almost every important country in the world, that I have served for more than ten years on the Committee of the Church Missionary Society and on its Medical Board, and that I am now physician to that Society.

Not only so, but as Principal of Livingstone College I have been brought into close contact with the administrators of the other leading missionary societies.

I do not wish to contend that the societies are by any means faultless in their method of dealing with medical matters, and there may be instances where they have expected too much from a medical point of view from some of their missionaries, but many of these things are receiving attention now such as they did not receive some few years ago.

Perhaps the greatest step forward has been in the formation of medical committees with medical secretaries to deal with professional questions. This was first set on foot by the Church Missionary Society, the system of medical organization being designed by Dr. Herbert Lankester, this including not only the Medical Committee at home, but also medical conferences abroad, whose duty it is to advise on medical mission matters especially. Since the formation of the Medical Committee at home, the medical work being done by ordinary missionaries has been carefully scrutinized by this Committee, and where possible it is arranged that medical missionaries in the field should visit them. There is not, however, any idea of imposing on the natives as your article suggests.

May I also protest respectfully but emphatically against the idea that medical missions are intended merely to be a bribe to induce people to listen to preaching? Every true medical missionary believes that he has a mission to the body as well as the soul, and this is the essence of Christian teaching.

More recently the Baptist Missionary Society and the Wesleyan Missionary Society have formed medical committees, and in these lie the best hope of reform.

In conclusion, you may be interested to know that there has been formed an Association of Medical Officers of Missionary Societies. This is a private organization arranged in order to enable those who have the responsibility of advising missionary societies with reference especially to the health of candidates to confer on matters concerning their special department. I have little doubt that this Association would be glad to consider any suggestions which you might be good enough to make, but I think that they would need to be a good deal more tangible than the general hints you have thrown out, and should be supported by evidence as to the defects of the system which is being adopted, and the ways in which this could be improved.—I am, etc.,

Livingstone College, Leyton, July 5th. CHARLES F. HARFORD.

SIR,—Your article on this subject in a recent issue struck me as remarkable, alike for its scrupulous justice and its large-hearted sympathy. The whole case was put in a nutshell. While you showed absolute goodwill to every work which tries to alleviate human suffering, you clearly indicated the dangers which surround irregular medical practice. These dangers are real and pressing. A most useful and honourable work is done by men and women with some medical knowledge in the dark lands of the world, which have to the full their share of pain with none of the means for its alleviation. As things are, a work and a welcome awaits all such men and women of sense who know their limitations, and, here is the rub, have the courage to abide by them. The very success and usefulness of their work within their limitations is the danger which makes for their undoing. Instances are not wanting to show that they may be carried on by the pressure of their clientèle, despite themselves, and with the best of motives, into work which admits of no justification whatever.

I think I am right in saying that most churches and societies nowadays restrict the term "medical mission" to work done in accordance with modern standards under the charge of qualified men. The former Free (now the United Free) Church of Scotland led the way, though I fancy now the Church Missionary Society, with its Medical Mission Auxiliary, heads the list. The interest in medical missions is steadily increasing, and it is important medical men should realize the distinction between them and the work of non-qualified missionaries.

You have dealt with the letter of Mr. H. Norman Barnett. He has a zeal, but in this instance not according to knowledge. I am a medical missionary of many years' standing, and I think an apology is due—to you.—I am, etc.,

June 6th. M.D.

SIR,—In reply to your comments on my letter, I may say that my right to be heard on this subject, is derived from the fact that I have travelled in India, China, Japan, and Australia, and during that time studied missions and missionary methods, and took some little part in the work; this constitutes, I fancy, a fairly good right to combat your opinions as set forth in your article in the BRITISH MEDICAL JOURNAL of June 18th, which was practically an indictment against the policy of missionary societies. In stating that missionaries did not use their first-aid knowledge to deceive the native into the belief that they were doctors, I spoke of the policy of the missionary societies, especially the Church Missionary Society, and of the conduct of the great majority of their missionaries, and not of some individual case where the missionary may have gone too far in rendering assistance, or in making the native think he knew more than he did. Of such cases, however, I have never heard, but even if such existed, no Society could be held responsible, and I repeat that many of your statements are incorrect.—I am, etc.,

Belfast, July 2nd. H. NORMAN BARNETT, F.R.C.S.

*** These letters speak for themselves. Those of Dr. Harford and M.D. (who is a medical missionary of twenty-three years' standing) constitute a very good answer both to the letter from Mr. Norman Barnett, which was published last week, and to that which now appears, while the details which Mr. Barnett gives of his own career do not appear to us to justify his pretensions to be considered a person of special experience whose opinions should outweigh those of our other informants. The point of real interest, however, is not the conduct of individual missionaries, which we have always carefully excluded from the scope of our remarks, but that of the general attitude of the chiefs of the missionary world towards medicine in connexion with missionary enterprise. This, we are glad to be assured by Dr. Harford, is now undergoing active revision. We were aware that a movement in this direction had been in progress, and our desire was and is to help it on. We have reason to believe, however, that the movement is not quite so promising as might possibly be gathered from Dr. Harford's letter, and that a considerable amount of *vis a tergo* may still be required. We are entirely in favour of qualified medical missionaries, but we cannot approve of missionaries with just enough knowledge of medicine to make them dangerous practising as doctors among natives. We contend that the missionary societies are not justified in sending men to live in the backlands of the tropics without first securing for them some such instruction as to the safeguarding of their own health as that now given at Livingstone College. These are the points which we

should like to see urged by the medical committees of which Dr. Harford speaks. We should also like them to consider the point which we raised last year—namely, Are medical men already in the employment of missionary societies properly distributed, or is an undue proportion of them employed in centres which have hospitals and which already contain lay practitioners of Western medicine?

THE DETERIORATION OF VISION DURING SCHOOL LIFE.

SIR,—The very fully-worked-out facts submitted by Dr. Ettie Sayer in the BRITISH MEDICAL JOURNAL of June 18th leave no possible room for doubt as to the detrimental effect upon the national eyesight of our present educational methods, and I earnestly trust that her paper will attract the attention it deserves. Of this there is perhaps some hope, for Dr. Sayer has the support now of Dr. James Kerr, a factor of importance, owing to his position as chief medical officer to the London School Board.

In 1897 I made similar investigations at the instance of the Tottenham School Board, and in February, 1899, you published my tables of statistics and conclusions, with which those of Dr. Sayer are practically identical.

Dr. James Kerr then scouted the idea, writing in the JOURNAL of March 11th, 1899, that my "results were practically worthless," and that "there seems little reason for supposing that the elementary school has much to do with deterioration of vision."

"The conversion of Dr. James Kerr" reads like the title of some popular novel; but his position makes it of real importance; and though, with the becoming modesty of a convert, he refrains from personally announcing his altered opinions, but allows Dr. Sayer to make them known, I feel that it is incumbent on me to secure for this conversion the full blaze of publicity, and so to further the good cause which we all three have at heart.—I am, etc.,

London, E.C., June 30th. A. OGIER WARD.

THE EFFECTS OF DYES ON THE CULTURAL CHARACTERISTICS OF THE BACILLUS TYPHOSUS.

SIR,—The communication of Drs. Walker and Murray on the Effects of Dyes on the Cultural Characteristics of the Bacillus Typhosus and other Micro-organisms, is extremely interesting and valuable, especially to me.

In June, 1902, after working at scarlet fever for some time, I sent to the University of Birmingham a thesis on the bacteriology of scarlet fever, in which I showed that the commonest micro-organism found in scarlet fever is a mobile bipolar bacillus: that to study this germ it must not be fixed and stained in the usual way; but that it took up fuchsin (I used carbol-fuchsin for my work) and was then seen to be not a coccus, micrococcus or a streptococcus, but an acid-producing motile bacillus staining when killed and fixed like a diplococcus.

I also showed that this bacillus varied in form according to the alkalinity of the media: if the media remains alkaline, the polar bodies are large and homogeneous; these are especially seen in the throat before the rash, and in the urine in the hazes preceding the nephritis, in the early part of the disease.

If the media becomes acid, or on gelatine, the bacilli could not be seen to be motile, except by adding carbol-fuchsin to the colonies or broth, or by running carbol-fuchsin under a cover-slip on which a small portion of the colonies had been streaked. The minute motile bacilli I showed were only found in scarlatinal throats, and never in streptococcal tonsillitis or uncomplicated diphtheria; and are seen in the urine and blood by mixing with carbol-fuchsin, which the bacilli take up and are rendered visible. I contended that scarlet fever might be diagnosed before the outcome of the rash, by taking a swab from the tonsils, streaking a cover-slip with this, then running under carbol-fuchsin; the bacilli during life take up this stain and are quite characteristic. This germ is present in the desquamation, but not in those cases where the peeling is very fine; but always when the peeling is concentric.—I am, etc.,

Walsall, July 2nd. TOM LONGMORE.

VOYAGES D'ETUDES MEDICALES.

SIR,—For the past two years I have taken part of my summer holiday early in September in France with a society named as above, and analogous to our British Balneological Society, but eminently more practical, as it organizes and conducts trips to the various sanatoriums and watering places, which are far more numerous on the Continent than in this country; and by means of these voyages the medical fraternity is made acquainted by personal observation and by demonstrations of the therapeutic and general utility of these sanatoriums and watering places which they visit. I have recently received from the Secretary in Paris the programme for this year's trip, which comprises the stations of the centre of France and of the Auvergne, and includes some well-known watering places known as La Bourboule, Mont Dore, Royat, Vichy, etc., and will start on September 3rd, and last for members from this country exactly a fortnight, and the total expense of travel, hotel, etc., will be practically covered by £1 a day.

Last year I wrote a letter to the BRITISH MEDICAL JOURNAL asking if there were any members wishing to join the trip to the Eastern Pyrenees, and I received rather tardy responses from about a dozen members as would-be voyagers, but unfortunately they were too late, as the list was closed. The trip will be as before under the personal scientific direction of Professor Landouzy, of Paris, and if any medical men wish to be present (they can bring their wives or daughters with them) I think I can guarantee their inclusion in the trip this year if I hear before the end of July of their wish to join; and having been to two different trips organized by this Society of a similar nature, I can confidently recommend it as an inexpensive, interesting, and instructive holiday.—I am, etc.,

Ealing Common, June 28th. BOYD JOLL.

THORNE DEFENCE FUND.

SIR,—We beg to enclose final list of subscriptions. The taxed costs, which are less than were originally expected, amount to £177 9s. 1d. This sum, added to the £25 damages which were awarded, bring the total expenses to £202 9s. 1d. The amount raised by subscriptions is £219 2s. It has been decided to divide the balance of £16 12s. 11d. equally between the New Hospital for Women and the Royal Free Hospital. It is hoped that this distribution of the surplus will meet with the general approval of the subscribers.—We are, etc.,

WALTER S. A. GRIFFITH, M.D.,
WALTER TATE, M.D.,
DOUGLAS DREW, F.R.C.S.

London, W., July 6th.

Amount previously subscribed ... £208 12s. 0d.

	£ s. d.		£ s. d.
Dr. W. A. Wills	1 1 0	Dr. Jane Walker	2 2 0
Dr. Janet Gray	1 1 0	Dr. Raymond Crawford...	1 1 0
Dr. Caroline Sturge ...	1 1 0	Dr. Jessie MacGregor ...	1 1 0
Sir Thomas Smith, Bart. ...	2 2 0	Dr. Beatrice Harrison ...	1 1 0

Total £219 2 0

Erratum.—In list published July 1st "Mr." Crichton Stuart should be "Mrs." Crichton Stuart, £10 10s.

OBITUARY.

ALEXANDER O. MACKELLAR, M.D., F.R.C.S.,

Late Surgeon to St. Thomas's Hospital and Chief Surgeon to the Metropolitan Police.

ALEXANDER OBERLIN MACKELLAR was born on December 29th, 1845, at Berbice, New Amsterdam, British Guiana. He was a posthumous child; his father who was a missionary having died of yellow fever six months before his birth. At the age of six months he was brought to England, and lived with an uncle who looked after his early training until the age of ten. He was educated at Silcott's Grammar School and Owens College, Manchester. His medical school was at Owens College and the Royal Infirmary, Manchester; but he also studied at Queen's College, Belfast; University College, London; Paris; and Vienna. He took the diplomas of L.S.A. and M.R.C.S.Eng in 1867, and graduated as M.D. and M.Ch., Royal University of Ireland in 1869.

After some time spent in travel he served in 1868-9 as medical officer in charge of military and naval invalids from China, East Indies, Mauritius, and the Cape. He served as ambulance surgeon in the Franco-Prussian war of 1870-1. It was there he met the late Sir William MacCormac, and formed a friendship which had a very important bearing on his future career. He was present at Metz, Sedan, Coulmier, Orleans, etc. At the close of the war he was selected by Surgeon-General Langenbeck to accompany him on his tour of official inspection of the military hospitals throughout Germany and the parts of France occupied by the German troops. For the important services he rendered he was made a Knight of the Military Order of Merit of Bavaria.

In February, 1872, he was appointed Senior Resident Medical Officer to the Royal Free Hospital. In 1873, having taken the Fellowship of the College of Surgeons of England, he was elected Resident Assistant Surgeon at St. Thomas's Hospital, which post he held until February, 1876, when he was elected Assistant Surgeon. He acted as Surgeon-in-Chief of the English Ambulance during the Turco-Servian War of 1876, being present at nearly all the important general actions of that campaign. For this service he was made a Knight of the Gold Cross of Takovo. In the next year he had further opportunities of adding to his already extensive experience of military surgery, for he acted as consulting surgeon to the 5th ambulance of the Red Crescent, operating in Plevna and on Plevna lines. He was made a Knight of the Order of Medjidieh in connexion with this war. His courage and intrepidity in attending to the wounded excited the admiration of all those who worked along with him. The late Mr. Archibald Forbes graphically describes his fearlessness. One day a fragment of a shell came through the roof of the room and narrowly missed him as he was operating. He turned round, and saying that was a close shave, went steadily on with his operation as if nothing had happened.

Mackellar's promotion at St. Thomas's was exceptionally rapid. At the age of 41 he became full Surgeon, and when 48 he was Senior Surgeon on the staff. He held the posts of Lecturer on Practical Surgery and Teacher of Operative Surgery for twenty-two years, and for many years was Lecturer on Forensic Medicine. He was an excellent teacher and a skilful operator. He was Examiner in Surgery and Clinical Surgery in the University of Glasgow. In 1885 he succeeded Mr. Timothy Holmes as Surgeon-in-Chief to the Metropolitan Police, which appointment he continued to hold at the time of his death. He threw himself heart and soul into the work of this post. The esteem in which he was held at Scotland Yard is shown by the following memorandum which the Chief Commissioner has issued concerning his death:

The Commissioner desires to place on record his sense of the great loss which the Metropolitan Police has sustained by the death of their Chief Surgeon.

Mr. A. O. Mackellar joined the service nearly twenty years ago with the reputation of being a most skilful surgeon, and with much war service in charge of ambulance hospitals in the Franco-Prussian, Turco-Servian, and Russo-Turkish wars, and the value of the work he did was recognized by the decorations bestowed by the German, Turkish, and Servian Governments.

The experience he had gained by his connexion of twenty years with the Metropolitan Police rendered him invaluable as an adviser to the Commissioner on medical questions affecting the force.

(Signed) E. R. Henry.

Mr. Mackellar had a very severe attack of acute pneumonia in the winter of 1895, and since that time he never enjoyed robust health. Last year he gave up his house in London and retired to Pinner, where he died after a short illness on June 15th at the comparatively early age of 58. He will be missed by a large circle of friends, who will remember him as a kind warm-hearted man and genial companion. He leaves a widow to deplore his loss.

NATHAN SMITH DAVIS, M.D., LL.D.,

Chicago.

Dr. Nathan Smith Davis, one of the founders of the American Medical Association, died on June 17th, at the age of 87. He took his degree at the College of Physicians of Surgeons of the Western District of New York, Fairfield, in 1837. He first practised his profession in Broome County in the State of New York, and almost from the first he took a leading part as a medical reformer. A resolution which he introduced at a meeting of the Medical Society of the State of New York in 1845, calling for a national convention to discuss medical education, was the starting-point of a movement which ultimately led to the foundation of the American Medical Association. He was often called the "Father of the American Medical Association," and for many years his force of character enabled him to exercise a kind of *patria potestas* over that body. Nathan Smith was also one of the founders of North-Western University, the Chicago Academy of Sciences, the Chicago Historical Society, the Illinois State Microscopical Society, the Union College of Law, and the Washington Home for Inebriates. He was a physician as well as a medical politician. He was appointed Professor of Physiology and Pathology in the Rush Medical College, Chicago, in 1849. At Chicago he remained for the rest of his life. His professional reputation was not confined to Illinois, for he was held in high esteem by his brethren throughout the United States.

In 1855 he became editor of the *Chicago Medical Journal*. In 1859 he took a prominent part in organizing the Medical Department of the North-Western University, Chicago, of which he was Dean for many years. He was on the staff of Mercy Hospital, Chicago, for forty years. In January of 1860 he started a new magazine, and called it the *Chicago Medical Examiner*, which he continued as an independent journal until 1873, when the two publications were merged in the *Chicago Medical Journal and Examiner*. In 1883 he was chosen Editor of the *Journal of the American Medical Association*. Dr. Davis was a frequent contributor to periodical medical literature. He was the author of a textbook of agricultural chemistry, used in district and public schools, and of a history of medical education and institutions in the United States, from the settlement of the British Provinces to 1850. Dr. Davis was President of the International Medical Congress held at Washington in 1887.

We regret to announce the death of Professor Angelo Scarenzio, which occurred suddenly on June 30th, at the age of 73. Professor Scarenzio's name was known to the medical profession throughout the world in connexion with the treatment of syphilis by the subcutaneous injection of calomel, of which he was the initiator. It is only a few weeks since that, on the occasion of his professional jubilee, a medal struck in his honour was presented to him by a number of prominent members of the medical profession in Italy. Born at Pavia in 1831 Scarenzio took his degree at the University of his native city in 1854. He began his professional career as assistant to the well-known surgeon, Porta, but he soon turned aside from surgery, and in 1861 was appointed Professor of Dermatology and Syphilis in his Alma Mater. He continued to discharge the duties of this Chair till his death. Dr. Scarenzio was the author of numerous contributions to the literature of his special province of medical science.

Dr. W. L'Heureux Blenkarne (Worthing) writes: As a personal friend of the late Dr. Charles Kelly I should like to add my quotum as to the great loss which the medical profession, especially in this town (Worthing) and neighbourhood have sustained by his death at a comparatively early age. He was one of the most original, clever, and genial men I ever met. It was always a great treat to me—nay, even a privilege—to have "a walk and a talk" with him, which not infrequently happened, and I never parted from him after one of such conversations without feeling the better and the wiser. He was a real friend to all of us doctors in Worthing, and ever ready to give his valuable opinion and advice (albeit in a most modest way) whenever it was asked of him. There was never the slightest friction between him and the members of the medical profession in this town, which is, perhaps, the highest encomium which I can bring forward in his favour. Dr. Charles Kelly not only gained the affectionate regard and esteem of us doctors but of the Mayor and Corporation of Worthing likewise, for at the council meeting at which a vote of condolence to his widow and children was unanimously passed, it was said of him that "Dr. Kelly was like a good pilot—he never lost his head, no matter how great the difficulty or emergency which presented itself to him." *Requiescat in pace!*

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE ARMY MEDICAL REPORT FOR 1902.

Like its predecessors this annual report presents the usual admirably-arranged statistics and summaries on the health of the army, together with some new features, such as the addition of charts, showing the sickness and mortality from certain zymotic and other diseases in various commands, and four new tables, or abstracts, showing the ratios of sickness, mortality, and invaliding, etc., for the purpose of facilitating statistical comparisons.

As the war came to an end in 1902, South African returns are included in this volume for the seven months from June 1st to December 31st.

The Effects of the South African War.

It may be broadly stated that the sickness and mortality in the army during 1902 compared favourably with the ratios for the decade 1892-1901, but invaliding from abroad, and the dis

charge as invalids, showed very considerable increase, as an after-effect, no doubt, of the war. Indeed, the direct and indirect effects of the war seem to be have been widespread, for a serious epidemic of enteric fever in Bermuda had very probably a South African origin, and an increase of the same disease in India, after years of steady decrease, is partly attributed to the arrival of men fresh from active service at the seat of war.

General Health of the Army.

In all stations and commands at home and abroad, outside India, the health of the army in 1902 was fairly normal.

The same may be said of India, where, however, there was an increase of mortality. Nearly one-half of the total admissions from all causes in that country continues to be due to malarial and venereal diseases; and as nearly 4,000 of the 60,000 European troops were constantly non-effective from sickness it follows that if these two classes of diseases could be much reduced or eliminated it would mean an increase of effective fighting strength of about two infantry battalions. The "latrine fly," as a carrier of enteric infection, is engaging special attention in India.

We once more observe that the ratios of admissions, invaliding, constantly sick, average time sick, and duration of cases, continues remarkably smaller in Scotland than in England or Ireland; while the mortality is greater, and no explanation vouchsafed. We notice the incidence of venereal diseases is much less in Scotland, and also, curiously enough, that of "alcoholism."

Enteric in South Africa.

The report affords much useful and interesting information concerning South Africa; but, of course, there are no statistics affording comparison of ratios as yet, all being in a transition stage. There is a specific statement, awaiting elucidation, that, "it is difficult if not impossible to ascertain how far water supplies have influenced the incidence of enteric fever among the troops in South Africa." In the larger stations the troops use the water supplied to the town, which is less likely to be contaminated than that derived from shallow wells; but there are other centres of danger. Lieutenant-Colonel Macpherson, R.A.M.C., who was sent out as a sanitary expert, strongly condemns, as little less than criminal, the unpurified water laid on at railway stations, even at such important stations as Kroonstad and Standerton, which forms a positive danger to the travelling public and to troops.

We congratulate the Medical Statistical Branch of the War Office on the excellence of this report.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Harold Huskinson, M.B., Staff-Surgeon, to the *Vivid*, for Portsmouth Dockyard, June 22nd; Alexander T. Wysard, Surgeon, to the *Albion*, as interpreter in German, undated; Johnson H. Acheson, Fleet Surgeon, and Gerald M. Eastment, Surgeon, to the *Majestic*, July 15th; Ernest A. Shaw, Staff Surgeon, to the *Egmont*, additional, July 4th; John C. G. Reed, Staff Surgeon, to the *Vulcan*, July 4th; Lawrence Bidwell, Staff Surgeon, to the *Media*, July 4th; Octavius W. Andrews, M.B., Fleet Surgeon, and Frederick Cock, Surgeon, to the *Magnificent*, July 16th.

ROYAL ARMY MEDICAL CORPS.

Lieutenant P. G. Hyde is promoted to be Captain, June 22nd. His first appointment dates from June 22nd, 1901.

Lieutenant A. McMunn is also promoted to be Captain, June 25th. He was appointed Lieutenant, June 25th, 1901.

Colonel G. A. Hughes, M.B., D.S.O., has been appointed Principal Medical Officer, Bombay and Nagpore Districts, *vice* Colonel G. D. N. Leake, who proceeds to Lucknow, to take up the appointment of Principal Medical Officer, Oude and Rohilcund Districts.

Lieutenant-Colonel A. P. O'Connor, C.B., now at Gibraltar, has been appointed Principal Medical Officer, 3rd Division, 1st Army Corps.

ARMY MEDICAL RESERVE.

Surgeon-Major E. J. Hunter to be Surgeon-Lieutenant-Colonel, June 14th.

Surgeon-Major F. K. Pigott to be Surgeon-Lieutenant-Colonel, June 21st.

Brigade-Surgeon-Lieutenant-Colonel W. P. Whitcombe, Worcester and Warwick Volunteer Infantry Brigade, to be Surgeon-Major, July 6th.

Surgeon-Lieutenant L. A. Avery, Suffolk Imperial Yeomanry, to be Surgeon-Lieutenant, July 6th.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel G. S. Griffiths, Bengal Establishment, is permitted to retire from the service from June 1st. He was appointed Surgeon, September 30th, 1876, and Surgeon-Lieutenant-Colonel, September 30th 1896. He was in the Afghan war of 1878-80, including the engagement at Baghao (medal), with the Zhob Valley expedition in 1884; with the Sikkim expedition in 1888 (medal with clasp); and with the Waziristan Field Force in 1894-5.

Pay and Prospects.

I. M. S. writes: It is as well that intending candidates for the Indian Medical Service and their advisers in the medical schools should thoroughly realize that there is no adequate compensation, in pay or otherwise, for doing all their service in India; in fact, as pointed out by "Sardam," after ten years' service, instead of getting enhanced pay for doing duty in a bad climate, less pay is given, as compared with the corresponding British service.

There is no concealing the fact that—in the senior ranks, at any rate—the I.M.S. is still seething with discontent and chafing under the feeling that whilst doing their entire service in India they draw for a large portion of their service less pay than other medical officers who do part of their service at home and in better climates.

This is a very real and pressing grievance, and one hopes the Naval and Military Committee of the British Medical Association will do all in their power to redress it, as no other Indian service fails to receive adequate pecuniary compensation for entire service in India and to draw enhanced pay, as compared with a corresponding British service.

The professional keenness of those in civil employ is imposed on and taken advantage of to delay indefinitely the raising of the pay in civil employ to correspond with that in military; and this in these days of practical absence of private practice for the civil surgeon in most stations is severely felt.

Until adequate pecuniary compensation in all ranks for continued Indian service is made, and the pay in civil employ raised in proportion to that in military, young newly-qualified men should hesitate well before entering, and the authorities at medical schools before advising a career in a service entailing continuous duty abroad in a bad climate without compensating advantages. The granting of a free passage home and out when on sick leave would seem only fair to a service involving continuous duty abroad when granted to a similar service not involving such continuous duty.

It is generally thought that the redressing of these grievances would speedily turn a discontented service (and such a service is by no means the most efficient) into a most contented one—and this especially so if the status of the head of the service could be raised—and thus prevent a service with such grand traditions from going downhill, and possessing in its ranks the worst selection from the medical schools.

The Station Hospital System.

Captain, I.M.S., writes: With much that your correspondent of April 16th, p. 930, has written regarding military employment in the I.M.S., I find myself in most cordial agreement, especially those paragraphs referring to cantonment hospitals and furlough pay, but to many of his statements under the heading "Station Hospitals," I must venture to take serious exception. I am emboldened to do this by the fact that you have previously asked that the subject of "station *v.* regimental" hospitals might be ventilated in the British Medical Journal.

Your correspondent makes the very sweeping statement that "so far as I know all I.M.S. men in military employment, with the exception of the very junior ones, are anxious for the introduction of the station hospital." I may say at once that my own experience has been diametrically opposed to this. I speak neither as a "very junior" nor as a very senior officer, and as one who has been at considerable pains to ascertain the true sentiments of his brother officers on this important question, I venture to think that, broadly speaking, senior officers (say those of and above the rank of major) are in favour of station hospitals, while juniors (subalterns and captains) decidedly favour the regimental system. Presuming this to be a fair estimate, those in favour of the existing regimental system are very much in the majority, as in most of the commands the seniors actually serving with regiments at the present time might be counted on the fingers of one hand. As long as the I.M.S. is constituted on the present lines there is no doubt that this will remain so, there being so many other branches of the service open to the ambitious officer which will exercise superior attractions, that few will ever care to remain in military employment after at the most ten or twelve years' service. I therefore contend that the majority of officers serving in regimental employ are fairly content with it as it stands, though doubtless looking forward to other employment later on in their careers, and I am certain that a change to the station hospital system would create a serious amount of discontent, though doubtless the prospects of the few seniors would be improved thereby. I cannot agree with your correspondent that the scope for professional work would be any greater, as the clinical material available would be exactly the same; possibly a somewhat better equipment might be made available, but of this we have no guarantee.

As regards messes, I know of no cantonment in India where more than two or three I.M.S. officers are ever gathered together for purposes of duty, and of these at least one may be put down as married, nor is it likely that under the station hospital régime, matters would be improved in this respect, as one of the chief advantages claimed for the system is that it is "more economical in medical officers." This being so, messes may, I think, be dismissed as impossible under the station hospital system, and I fear that your correspondent (can it be that he is married and therefore takes but a faint interest in such sublunary matters?) has dismissed this important detail with less consideration than it deserves.

As regards less liability to frequent changes of station, I think your correspondent again takes a somewhat rosy view of the possibilities of a new order of things, as the great majority of moves are caused by the frequent mobilization of field hospitals for service, etc., and the drafting off of men into civil or other billets. These causes appear to be unchanging, and I cannot see that station hospitals would act as a prophylactic.

To turn to the "reverse of the medal," the advantages of the present system, at any rate to the individual, always provided he is not too senior, are, to my mind, many and various. Take pay, to begin with: all extra allowances for charge of other regiments, which are now frequently a blessing to the hard-up officer, would vanish under the proposed system. Again, he is one of a corporate body, and has a share in the *esprit de corps* of his regiment: if he is a sportsman, he perhaps plays in the polo or hockey team; he is a member of the mess, with (as your correspondent neatly phrases it) its "camaraderie and hospitality." He knows the men of the regiment, and takes an interest in their physical welfare in a way that he could never do under a station hospital system. The regiment know this, from the commanding officer

down to the latest joined recruit, and hence comes the major part of that rooted dislike to the station hospital system which is so marked in the Indian army, though possibly the more mercenary reasons connected with mess subscriptions, alluded to by your correspondent, may also play their part.

To sum up, I am strongly of opinion that the regimental system suits the service as at present constituted better than the station hospital system could possibly do. Any change would benefit the seniors, who are very few in number, at the expense of the juniors, who are in the vast majority.

MAJOR E. CARRICK FREEMAN, R.A.M.C., writes: "Dr. Sahib" in the BRITISH MEDICAL JOURNAL of May 14th objects vigorously to station hospitals for native troops in India, because they will make, he thinks, his social life less happy and his professional life not worth living. He is also afraid of "medico-military discipline." He gives apparently not one thought to the advantages that the station hospital system would bestow on the sick native soldier both as regard his treatment and the comfort of his surroundings. He says not a word of the advantages to medical research which would accrue from a station hospital system. It is obvious that small and numerous regimental hospitals, constantly moving with their units, cannot offer the accommodation and appliances nowadays considered necessary for the treatment of the sick. That such is actually the case no one who has had experience of hospitals for native troops will for a moment deny. Exceptions may possibly be found here and there, but as a rule the buildings and their equipment are quite inadequate when compared with even the smallest and worst of station hospitals, and accommodation for research there is none. Possibly "Dr. Sahib" thinks that native troops will really be better off treated in their present regimental hospitals, in which case it would be better had he said so, and not so naively expressed his desire to keep to the regimental system to bolster up "his visit," and make his "social life" happy. This is the sort of thing which brings the medical profession into contempt, and I am sure very few I.M.S. or R.A.M.C. men either will be pleased with "Dr. Sahib's" views. The question of station or regimental hospitals is one to be argued on larger and higher grounds than the personal comfort of the doctor.

IMPERIAL YEOMANRY.

THE appointment of Surgeon-Lieutenant F. F. MACCABE, M.B., bears date July 30th, 1903, and not as stated in the *London Gazette* dated September 18th, 1903.

ROYAL ARMY MEDICAL CORPS (MILITIA).

CAPTAIN J. E. O'CONNOR, M.B., resigns his commission, July 2nd.

Supernumerary-Lieutenant S. G. MCALLUM, M.D., to be Captain, June 4th.

VOLUNTEER RIFLES.

SURGEON-CAPTAIN W. SANDEMAN, M.B., 2nd Volunteer Battalion the Highland Light Infantry, is promoted to be Surgeon-Major, July 2nd.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

MAJOR J. MACK. BOOTH, M.D., the Aberdeen Company, resigns his commission, retaining his rank and uniform, July 2nd.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE PUBLIC AUTHORITIES PROTECTION ACT.

ON Monday, July 4th, the case of Polley *v.* Fordham was heard by the Divisional Court (Lord Chief Justice Alverstone and Justice Kennedy). The case came before the Court on appeal from a judgement which was entered for the defendant, one of the metropolitan magistrates, in an action which was brought against him for damages for issuing a distress warrant in default of payment of fines imposed by him upon the plaintiff on a conviction for an offence under the Vaccination Acts.

It appeared that on February 11th, 1903, the plaintiff was summoned before the defendant for neglecting to have two of his children vaccinated. It appeared upon the face of the summons that the children, being twins, were at the date of the summons eighteen months old; but as the learned magistrate did not read the summons, and the plaintiff, who appeared in person, not having pointed out that this was the case, was convicted and fined £1 and costs in each case. The plaintiff having failed to pay the fine and costs, a distress was put in upon his premises. He then brought an action in the county court against the magistrate for illegal distress. The defendant in the first instance successfully pleaded the Public Authorities Protection Act. The Divisional Court having ordered a new trial, the learned county court judge left it to the jury to say whether the want of jurisdiction or the age of the children had ever been brought to the notice of the magistrate. He also asked them to assess the damages (if any). The jury found that the want of jurisdiction had never been brought to the magistrate's attention, but they assessed damages (provisionally) at £10. On these findings the county court judge gave judgement for the magistrate. On appeal to the Divisional Court this judgement was set aside. In giving judgement the Lord Chief Justice said it was clear on the face of the summons that the magistrate had no jurisdiction. In fact, it did not appear from the magistrate's evidence in the county court that he contended that he had any jurisdiction to make the order. Judgement was accordingly entered for the appellant with £10 costs.

INSURANCE AGAINST MEDICAL ACCIDENTS.

A CASE which Dr. Eyre, bacteriologist of Guy's Hospital, recently had occasion to bring against the Scottish Accident, Life, and Fidelity Insurance Company, Limited, is of interest, not because it introduces a new principle, but because it draws attention to the care with which medical men who take out insurance policies with accident companies should scan the terms of their agreement. Dr. Eyre's case, after some correspondence between himself and the company, was eventually decided by an arbitrator appointed by Mr. Justice Ridley. The grounds upon which the arbitrator gave an award against Dr. Eyre were not stated by him, so it is impossible to discuss them, even if it were of interest to do so. The real point of the matter is that the company disputed a claim for an accident against the financial effects of which Dr. Eyre had reason to suppose himself to be fully insured. The policy which he accepted contained the term septicaemia (blood poisoning), which the agent assured him verbally was intended by the company to cover all *post-mortem* and laboratory infections. Shortly afterwards Dr. Eyre, in the course of some experiments infected himself with Malta fever, and reported the same to the company. The latter at first denied that Malta fever came within the meaning of blood poisoning as used, but subsequently appeared to waive this point, and asked Dr. Eyre to fill up the ordinary claim form. In doing this, and in explaining in a precise way the manner in which he became infected, Dr. Eyre used the term "inhaling," since it was while using a pipette that he infected himself. Thereon the company refused to pass the claim upon the ground that it was specially exempted by the terms of the policy from paying for accidents incurred by swallowing or inhaling anything. Dr. Eyre then explained that although the term "inhaling" was used, there must have been some breach of surface by which infection was incurred, but the company persisted in its refusal to pass the claim, with the result already stated. Few men will care to pay premiums unless they have full assurance that fair claims will be met promptly, without splitting of straws, and without litigation. To medical men the lesson is, first, that they should consider carefully whether the printed terms of the policy handed them really cover every contingency which they themselves have in their minds, and, secondly, that they should not accept any explanations given to them verbally by agents of the company when such explanations are intended to satisfy them that the printed words used mean more than they appear to.

THE RELATIONS OF MEDICAL OFFICERS OF HEALTH TO THEIR PROFESSIONAL COLLEAGUES.

DR. A. G. BATEMAN writes: In an editorial reply to a correspondent in the issue of the BRITISH MEDICAL JOURNAL, dated July 2nd, page 49, you state "A medical officer of health has no right to intrude upon a patient and examine him except with the patient's consent, but *the consent or presence of the regular medical attendant is not necessary.*" May I, in reference to this last statement which I have italicized, point out to you that in dealing with the question of personal visitation of the medical officer of health on persons notified as suffering from infectious disease, the Local Government Board has laid down the following order for the guidance of medical officers: "In the majority of instances in which cases of infectious disease are notified there is no need for a medical officer of health to personally inspect the apartment for the treatment of the sick person, and that in the remaining instances where such a visit may become necessary, it should be remembered that apart from the cases to which Section CII of the Public Health Act, 1875, may be applicable, this can only be done with the consent of *those having charge of the patient*, and that the co-operation of the medical practitioner in charge of the case should be secured if possible." (Local Government Board Order, March 23rd, 1901.) Again, in numerous letters issued by the Local Government Board, medical officers of health have been directed to remember "the customs that usually govern the relations of medical practitioners to each other." In another circular order issued October 1st, 1890, writing on the same point the Local Government Board states: "It must be remembered that this" (visiting the patient) "can only be done with the *consent of the patient or those having charge of the patient*, and that the medical practitioner in charge of the case should always be communicated with, and his co-operation secured if possible." A visit, therefore, cannot be made except under a magistrate's order, without the consent of "those having charge of the patient." The medical practitioner in attendance undoubtedly is "in charge" of the case, and therefore surely it follows that his consent to visit the patient must be obtained before such visit is made, under the regulation of the Local Government Board? The importance of medical officers of health acting in strict conformity with the above regulations, and also in accordance with the ethical rules of the profession, is clearly shown by the case quoted upon which your reply is based.

*** We are much obliged to Dr. Bateman for quoting these orders of the Local Government Board, and we are glad to be reminded that the Board expresses so strongly the need for co-operation and communication with the regular medical attendant, which we have always urged as a duty incumbent upon medical officers of health who visit patients under the care of other practitioners. We may point out, however, that Dr. Bateman's reading of the words "those having charge of the patient," as including the medical attendant, is contradicted by the fact that in each instance the circular speaks of co-operation or communication with the practitioner, as something distinct from the consent of the patient or those having charge of him. As we understand the reference to those having charge of the patient, the persons indicated are the family or household where the patient is lying ill.

SCHOOL CERTIFICATES IN SCOTLAND.

DR. WILLIAM BRYCE (Glasgow).—We are advised that the enactments more especially applicable to the subject are Sections IX and XI of 46 and 47 Vict. cap. 56. It is by these sections laid down that if the parent of any child, without any reasonable excuse, neglects to provide efficient elementary education or fails to secure the regular attendance of his child at some public or inspected school the Board may prosecute him in a court of summary jurisdiction. It is further laid down that the following, among other reasons, shall be "a reasonable excuse," namely, that the child has been prevented from attending school by sickness. The position of matters accordingly is this: That if the child is withheld from school, the Board is entitled, and it is its duty to prosecute unless the parent is in a position to put forward and substantiate one or other of the "reasonable excuses" mentioned in the statute. In other words, the parent is prima facie a defaulter, and the onus rests upon him of displacing this prima facie presumption, and this his mere word, uncorroborated by medical testimony, would not be sufficient to do. The contention could not be accepted or allowed to prevail that the parent discharges the legal onus resting upon him by merely alleging an excuse, leaving it to the Board to go to the expense and trouble of verifying it. This opinion as to what is necessary to transfer the onus is, of course, not based upon any specialities of the Education Acts but upon principles of legal construction.

MEDICAL ADVERTISING.

DURHAM sends us a newspaper paragraph announcing the approaching marriage of a young lady, the daughter of a medical practitioner, who is marrying a member of the medical profession. In consequence of the marriage an exchange of practices is to take place, and the paragraph has been copied into another local paper, in which the newcomer is spoken of as having the reputation of being "a clever practitioner." Our correspondent protests against this as being "pure and simple advertising of the worst kind, and a direct breach both in the letter and spirit of professional etiquette," and he further expresses the opinion that it is "very desirable that some effective means be adopted to prevent such conduct."

*** We have repeatedly expressed our opinion respecting the undesirability of newspaper notices of medical practitioners, but marriages and other social matters are legitimate news for a local newspaper. The Ethical Committee has addressed a circular to the principal newspapers in London and the provinces, drawing attention to the professional view of newspaper notices of medical men, and it is believed that this has done a good deal to modify the practice of editors. We are by no means assured of the sympathy of the general public or of the editors of newspapers with our views, and it is only by exercising discretion in the selection of cases of which to complain that we shall be likely to effect any improvement in the conditions to which the profession takes exception.

RENT OF PREMISES USED BY PARTNERS.

R. M. asks: A. and his assistant B. are desirous of going into partnership in equal shares. The work of the practice is done at a cash surgery where B. lives in rooms, while the ground floor is used as a waiting room, consulting room, and dispensary. A. says B. must pay the whole of the rent of this house, including surgery, etc., while A. only pays the rent of his private residence, about a quarter of a mile away. A. sees a few patients at his house, the receipts from whom go into the general fund. Is A. right in asking B. to pay the whole rent of the house he lives in, seeing that the ground floor is used for the general work of the practice?

*** It would be a fairer arrangement for the firm to pay a portion of the rent of both premises; the amount in each case ought to be based on the extent to which the premises are respectively used for the business of the firm.

MEDICAL FEES IN LEGAL CASES.

W. S. C.—Our correspondent's case is undoubtedly a hard one, but we fear he has no claim against the solicitors. If he knew beforehand that the plaintiff was impecunious, he should have refused to give evidence, or even to consult with the defendant's doctor, until his fee was paid.

THE DOCTOR IN FICTION.

DR. HERBERT MORGAN.—We do not think we are called upon to protest whenever a writer of fiction puts into the mouth of a medical practitioner expressions which we do not approve or sentiments which the majority of the medical profession repudiate. The reputation of the medical profession depends upon the lives and deeds of its members, which speak in words that come home to every household.

CONTRACTS NOT TO PRACTISE WITHIN AN AREA.

A. sells his practice to B., and agrees not to practise during the following twenty years under a certain penalty. In five years' time B. sells to C. Can C. prevent A. practising until the termination of the twenty years?

*** Speaking generally, No. B. would be the only person who could enforce this agreement. Whether C. could compel B. to enforce the agreement on his behalf would depend on two things: (1) The exact wording and legal effect of A.'s agreement with B. (2) The exact agreement made between B. and C. at the time of the sale of the practice to C. Our correspondent should consult his solicitor.

GROSS AND NET RECEIPTS.

AQUA wishes to know whether the "gross" or "net" receipts are usually meant by the term "one year's purchase" for a practice or a partnership.

*** When estimating the value of a practice or a partnership in this way the "gross" receipts are always implied.

EMPLOYER'S LIABILITY.

A CORRESPONDENT writes that he recently attended a farm labourer for an injury to his hand caused by a turnip cutter. He explained to the patient that he should hold him responsible for payment, and the latter promised to pay, but has since left the neighbourhood. He wishes to know whether it will be necessary to follow the patient and sue him, or can he recover from the employer, who, to his knowledge, has received insurance money on account of the accident?

*** Our correspondent's remedy is to sue his patient. He has no right of action against the employer.

FEES.

PERPLEXED is the best judge as to what he may charge for the services rendered. Speaking generally, considering the circumstances, two guineas for each visit would be a reasonable charge. Where the whole day or night was taken up the charge should be proportionately higher.

THE Austrian State Railways have opened an Austrian Travel and Information Bureau at 86, Piccadilly, London, W., where information as to travelling in Austria, spas, shooting, fishing etc., will be supplied on application.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

ANNUAL MEETING OF BRITISH MEDICAL ASSOCIATION: HONORARY DEGREES.

IN a Convocation to be held on Wednesday, July 27th, at 2 o'clock, it will be proposed to confer the degree of D.Sc., *honoris causa*, upon the following persons, on the occasion of the visit of the British Medical Association:—Thomas Clifford Allbutt, M.D., F.R.S., Regius Professor of Physic at Cambridge; Andrew Clark, F.R.C.S., Vice-President and Chairman of the Council of the British Medical Association; Thomas Dryslwyn Griffiths, M.D., President of the British Medical Association; Jonathan Hutchinson, F.R.S., late President of the Royal College of Surgeons; Sir William Macewen, M.D., F.R.S., Regius Professor of Surgery in the University of Glasgow; Sir Patrick Manson, K.C.M.G., M.D., F.R.S.; Sir John William Moore, M.D., late President of the Royal College of Physicians of Ireland; William Osler, M.D., F.R.S., Professor of Medicine at Johns Hopkins University, Baltimore; Thomas George Roddick, M.D., M.P. (Canada), late President of the British Medical Association.

M.S. Degree.—The following candidate has passed the Examination for the Degree of Master of Surgery (M.Ch.), Trinity Term, 1904: P. N. B. Odgers, B.M., Lincoln College.

Final M.B. Examination.—The following candidates have passed in Medicine, Surgery, Midwifery, Forensic Medicine, and Public Health: P. E. H. Adams, B.A., Exeter College; W. B. Billinghurst, B.A., St. John's College; A. F. Hertz, B.A., Magdalen College; A. C. Inman, B.A., Wadham College; A. E. R. Loosely, B.A., Pembroke College; R. D. MacGregor, B.A., Exeter College; P. A. Mansfield, B.A., Keble College; A. Shelley, B.A., Keble College; J. H. Thomas, B.A., Trinity College; A. R. Wilson, B.A., Wadham College.

UNIVERSITY OF CAMBRIDGE.

Long Vacation Courses.—During the months of July and August courses of lectures and practical instruction in Chemistry, Physics, Pharmaceutical Chemistry, Anatomy (including Osteology, Histology, Morphology, and Dissection), Physiology, Pharmacology, Pathology, Bacteriology, Public Health, Surgery, and Medicine will be given at the University Laboratories and the Hospital. Particulars are given in the special number of the *University Reporter* for July 2nd.

UNIVERSITY OF LONDON.

REGULATIONS FOR DEGREES OF M.S. AND M.D.

AT a meeting of the Senate on June 8th certain modifications were made in the regulation of the Faculty of Medicine which are of interest to candidates for the M.S. or the M.D. in medicine, pathology, mental diseases, and midwifery and diseases of women. The regulations which have been modified are those headed "Branches I.—IV." on p. 252 of the second volume of the *Calendar* and again on p. 268 of vol. iii together with the third subclause on p. 258, vol. ii, as repeated on p. 273, vol. iii. The alterations in the regulations are not very momentous and mainly consist in recasting their form so as to make their meaning more clear. The only real alterations are as follows: Candidates for the M.D. in medicine, or for the M.D. in midwifery and diseases of women, must now hold their six months resident or non-resident medical appointment at a hospital approved for this purpose by the University, while the six months' pathological appointment to be held by a candidate for the M.D. in pathology must also be one approved by the University. In the former regulations these stipulations as to approval were only made in the case of candidates for the M.D. in mental diseases. In the case, too, of candidates who desire to present themselves either for the M.D. or M.S. less than two years after taking the M.B., B.S., there is a slight alteration. Formerly one of the several grounds upon which exemption from the two-year rule could be claimed was that subsequent to taking the M.B., B.S., the candidate had had special experience approved by the University. This general ground of exemption is not abolished, but the nature of the experience demanded is now more clearly shown by the substitution of the term *such exceptional experience as may be approved* for the simple phrase *special experience*.

GUY'S HOSPITAL MEDICAL COLLEGE.

Biennial Festival Dinner.

The Biennial Festival was held at the Whitehall Rooms of the Hôtel Métropole on July 5th. Mr. Clement Lucas, Senior Surgeon to the Hospital, occupied the chair; and more than 200 former students with their friends assembled.

After the two loyal toasts, the Chairman proposed "Prosperity to Guy's Hospital and its Medical School," and compared the two members of the toast—the Hospital and the School—to the two wheels of a cart, "useless each without the other." He referred to the discoveries made by former Guy's men, and showed that they by no means ended when the names of Bright, Addison, and Hodgkin had been mentioned. Further, the honours attained by men educated at Guy's since the last Biennial Festival included five knighthoods—namely, those of Sir Alfred Fripp, Sir Cooper Perry, Sir A. Manby, Sir T. Stevenson, and Sir C. Holman. Guy's men might differ in many things, in their diagnosis and methods of treatment, for instance; but in one respect they were as one—in their love and affection for their Alma Mater, and in their desire for her permanent welfare and renown.

The Treasurer (Mr. Cosmo Bonsor) replied, and alluded to the glorious traditions of the staff in the past. He said, moreover, that the hospital was respectable because it was in debt, but that for the last eighteen months that debt had not been increased. In further response the company sang, with the usual fervour, "Auld Lang Syne."

Dr. F. Taylor proposed "The Consulting Staff," mentioning, amid a running fire of applause, the names of Birkett, Wilks, Bryant, Pavy, Goodhart, Howse, Savage, Purves, Bird, Galabin, and Pye-Smith, and, as members of the school who have retired, Dr. Debus and Mr. Groves. In speaking of Sir Samuel Wilks, Dr. Taylor said that he was now recovered, and was full of health at the seaside. It further appeared that he had telegraphed his "regret at his inability to meet his friends and show them a living example of the wisdom and skill of Guy's men, and that he sent to all present his affectionate regards."

Dr. Pye-Smith, in replying, alluded to Addison as the greatest of Guy's men, and said that he (the speaker) had heard one lecture delivered by

Addison which he would never forget. Addison expressed dissent from the diagnosis of the case which had been made outside Guy's, but strongly objected to any one making a capital of such difference of opinion, "One should draw a veil over the slip of a fellow practitioner." Curiously enough, Addison was opposed in his diagnosis by the last Guy's knight, Sir Constantine Holman, who was then clinical clerk; and it turned out eventually that the clerk was right. Addison at once acknowledged this, and in many other cases his generosity was exhibited. Dr. Pye-Smith summed up the characteristics of Guy's men as industry, hard work, and generosity, and respect and affection for one another. Long might such sentiments continue!

Mr. Arbuthnot Lane proposed the toast of "the Chairman": and alluded playfully to the influence which the Chairman, as his teacher in the dissecting room had had in shaping his (the speaker's) career. The toast was received with musical honours.

The Chairman, in replying, remarked that at the age of 60, the members of the staff were now kindly poleaxed off the staff lest they should lose their reputations. Before closing, he asked the company to drink to "the new Knights," but said if they should all speak, the rest of those present would be "benighted." He proposed the toast of Dr. G. N. Pitt, "the Honorary Secretary of the dinner," which was very cordially received.

Dr. Pitt, in reply, mentioned some of the difficulties with which the Secretary of the dinner had had to contend.

Prize Distribution.

On Wednesday afternoon, July 6th, the annual garden party and distribution of prizes took place at the hospital. The distribution of prizes took place in the new Physiological Theatre.

The Dean, Mr. H. L. Eason, in his annual report, mentioned that nearly fifty university degrees and sixty other medical qualifications had been obtained by Guy's men during the year, and proceeded to mention the various changes in the *personnel* and the courses of study. Particular attention had been paid by the Governors during the past year to the teaching of anaesthetics, and a scheme was in operation whereby upwards of ninety students annually were instructed in the administration of anaesthetics. During the year a new department for the treatment of lupus, cancer, and other diseases by light rays had been inaugurated by the Governors, and treatment would very shortly be commenced. A Governor of the Hospital, Mr. Robert Gordon, had generously promised to rebuild the Pathological Museum, and the Right Honourable A. J. Balfour had sent a donation of £30 to the Medical Research Fund. The Dean announced that notwithstanding the changes in the curricula of the University of London and the Royal Colleges of Physicians and Surgeons, the Medical School of Guy's Hospital was so thoroughly equipped that it had not been found necessary to increase either the laboratory accommodation or the teaching staff.

Lord Goschen then distributed the prizes and medals, and, addressing those present, spoke of the enormous advance which had taken place in science and treatment since he was at the Poor-law Board some thirty-five years ago. Now splendid buildings were considered necessary for the accommodation of the sick, and there was vast improvement in the standard and ideal of the medical profession. As to the future careers of the prize-winners and students, he asked them what was their goal. Was it a fine West End practice with a waiting-room full of fair women and impatient men, enabling them to rake in the bimetallic tokens, or was it a prospect of fame in making great discoveries; or a career of usefulness in fighting disease? With regard to research, everybody must admire the splendid progress made therein, though vastly more still remained to be done in opening up the mysterious hinterland which lay behind the present explored province of medical science. Research would open the purse strings of the country, perhaps, more than any other department of physical science. But all the students could not be researchers or specialists; and even in that temple of science he would say that they must also consider the general requirements of the nation. They must have an army of competent, scientific, energetic doctors; and it was the duty of Guy's and the other great hospitals to contribute regiments to that army. The country required professors of the art of healing as well as students of science. There must be general practitioners. He expressed the hope that the family physician would not entirely go out of fashion or vanish. Speaking of dentists, too, he said they were sometimes told that there was a new man they ought to go and see, but he preferred to go to a dentist to whom every tooth in his mouth was an old and intimate friend. Lord Goschen went on to speak of the nobility of the profession, and warned students against two dangers—one intellectual and one moral. The intellectual danger was that a man was from his earliest education and his work in the hospital dealing with hard physical facts, with material aspects of nature, with causes and results, and there must be some slight danger if he did not guard against certain materialistic influences. The moral danger was that he was constantly in contact with the serious side of human nature, with sin and crime and disease which were the result of drink and other vices. He advised medical students not to go through life as pessimists and cynics. They should keep their faith in human nature and hold to the belief that there were heroes and martyrs even amongst the suffering poor. He urged them to keep fresh the fount of their sympathy and to hold high the standard of honesty, sympathy, truth, and knowledge which characterized the profession upon the threshold of which the students now found themselves.

Dr. Frederick Taylor, who proposed a vote of thanks to Lord Goschen, said that there was no lack of men in the profession to do the nation's work, as well as that of the Empire in every department.

Sir Thomas Stevenson seconded the proposition, which was carried by acclamation.

Lord Goschen briefly replied.

Subsequently to these proceedings, the wards, school buildings, and nursing home were open to inspection by the visitors, and the band of the 1st Life Guards played to a large garden party in the hospital grounds.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

An extraordinary Comitia was held on Thursday, June 30th, the President, Sir William S. Church, in the chair.

Nominations.

The President announced the following nominations for the lectureships at the College for the year 1905: Goulstonian Lecturer, Dr. Bosanquet; Lumleian Lecturer, Dr. Allchin; FitzPatrick Lecturer, Dr. Norman Moore; Oliver-Sharpey Lecturer, Dr. Leonard Hill; Croonian Lecturer, Dr. Rivers.

Licences.

Licences were granted to Messrs. Eric Gardner and George Alick Soltau.

Communications.

Communications were received from:

1. The General Medical Council, conveying resolutions of the Council with regard to preliminary scientific education and examination, and rules with regard to diplomas in public health, both adopted in May last. This was referred to the Committee of Management for consideration and report.

2. The Secretary of the Royal College of Surgeons, reporting certain proceedings of the Council of the College on May 12th.

3. The same, reporting further proceedings of the Council on June 9th: communicating, also, a report of a Special Committee on the question of instituting a diploma in tropical medicine, and inviting this College to a conference on the subject. The invitation was accepted, and it was left to the President to nominate representatives to confer with those from the sister College.

Reports.

Reports were received from:

1. From the Representative of the College on the General Medical Council on the proceedings of the Council in May last.

2. From the Laboratories Committee, dated June 3rd, 1904, stating (*a*) that during the three months ending June 4th 5,495 doses of diphtheria antitoxin, each containing 3,000 units, have been supplied to the hospitals of the Metropolitan Asylums Board, making a total of 16,485,000 units; (*b*) that during the quarter further batches of antitoxin supplied by Messrs. Parke, Davis and Co. have been tested in the laboratory, and a certificate granted showing its strength, sterility, and freedom from excess of antitoxin; (*c*) that notice has been given to the Metropolitan Asylums Board that the Royal Colleges do not intend to renew the contract for the supply of antitoxic serum.

3. From the Committee of Management, recommending that the following institutions be added to the list of those recognized by the Examining Board in England for instruction in chemistry, physics, and practical chemistry, namely, Leeds Institute of Science and Art, Oundle School, and Highgate School; and also recommending that the North Eastern Hospital for Children be recognized as a place of study during the fifth year of the curriculum.

4. From the Examiners for the Licence on the results of the examinations in April last.

TRINITY COLLEGE, DUBLIN.

PREVIOUS MEDICAL EXAMINATION.

THE following candidates have passed the examinations mentioned:

Anatomy and Institutes of Medicine.—*J. C. P. Beatty, *F. R. Coppinger, *R. E. Wright, *T. J. Cobbe, *T. H. Peyton, *J. W. Tomb, C. T. Atkinson, R. Connell, R. G. S. Gregg, G. W. Thompson, T. C. Somerville, C. G. Sherlock, R. Holmes, T. L. de Courcey, H. D. Drennan, D. S. Torrens, E. C. Stoney, H. J. Wright, M. K. Acheson, W. Hutchison, R. B. Jackson, G. E. G. Vickery, F. Casement, F. W. H. Bigley, E. Jameson, E. D. Caddell, E. Evans, W. A. Nicholson.

Physics and Chemistry.—*R. P. Hadden, C. F. F. Davies, W. R. G. Atkins, E. C. Lambkin, D. P. Clement, J. C. Pretorius, R. V. Dixon, J. F. Clarke, D. M. Moffatt, R. G. Orr, W. E. Hopkins, F. A. Anderson, G. Mecredy, H. H. Ormsby, S. F. A. Charles, N. Jewell, C. W. Laird, J. D. Murphy, J. L. Phibbs, A. V. Richardson, H. S. Sugars, R. J. Attridge.

Botany and Zoology.—*R. T. Brooks, *A. H. Land, *E. C. Lambkin, C. F. F. Davies, R. P. Hadden, A. J. Stals, W. E. Hopkins, C. W. Laird, C. G. S. Baronsfeather, H. R. Kenny, J. C. Pretorius, D. P. Clement, F. N. Smartt, R. E. T. Tatlow, D. M. Moffatt, J. L. Phibbs, W. R. G. Atkins, T. P. S. Eves, W. Knapp, G. H. Stack, J. Brereton-Barry, G. A. Jackson, N. Jewell, A. H. Smith, A. S. Winder, J. Beckett, D. W. Knight, J. T. M'Donnell, K. Smith, C. Grene, F. C. Newland.

* Passed on high marks.

DIPLOMA IN PUBLIC HEALTH.

Part I: A. H. Marks. Part II: A. H. Marks.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

Annual Meeting.

THE annual general meeting of this Association was held at the Trocadero on Tuesday, June 28th, at 6.30 p.m.

Dr. Holder, of Hull, in the absence of the President, was voted to the chair. The balance-sheet for the year was duly presented to the meeting, and Dr. Gayton (Treasurer) commented on its flourishing condition. The present officers and council were unanimously re-elected for the ensuing year.

Dinner.

At 7.30 the members and their guests dined together, Dr. Holder presiding.

The Chairman, after proposing the Royal toast, alluded to the unavoidable absence of Dr. Farquharson on account of Parliamentary duties, and to that of Dr. Balding through illness. In proposing the health of the guests, he spoke of the great work done by Surgeon-General Evatt in the cause of Poor-law reform, especially his late report as to the condition of the Poor-law medical officers of Ireland. He expressed the pleasure the Association had in welcoming Dr. Gilbart Smith, Dr. Copeman, Dr. Dawson Williams, and

Mr. Battersby, the President of the London District of the National Poor-Law Officers' Association.

Dr. Gilbart Smith, in a humorous speech, returned thanks for the guests, and expressed his appreciation of the cordial manner in which the guests had been entertained by the Association.

Surgeon-General Evatt proposed the toast of "The Poor-law Medical Officers' Association." He gave a short account of the efforts of early Poor-law reformers, and pointed out how great a benefactor to the public the late Dr. Joseph Rogers had been, the present magnificent London Poor-law infirmaries being in a great measure the result of his work. He spoke of the advantages of union, and instanced the result obtained by combination in the Army Medical Department; he felt sure a similar result might be won in the Poor-law Service. He touched on the present condition of Ireland, and described the grievances he found rampant there in his recent tour of the country. He thought it was the duty of English Poor-law officers to help their Irish brethren by every means in their power.

The Honorary Secretary (Dr. Major Greenwood), in his reply, thanked Surgeon-General Evatt for the sympathy he had shown with their brethren in Ireland. He alluded to his able report in the British Medical Journal, and said that he had truly lighted a beacon in dark places, and deserved the gratitude of the legal poor in the sister kingdom. He denounced the action of Irish Boards of Guardians, when led away by political and denominational prejudice, instead of attending to the real wants of the poor.

Dr. Cope proposed the toast of "The National Poor-law Officers' Association," and spoke of the good work it had done in the past; he thought that all Poor-law medical officers should support it.

Mr. Battersby, in responding, thanked the Association for the courteous way in which they had entertained him, and for their appreciation of the merits of the Association which he represented. He gave instances of important services rendered by it to Poor-law medical officers in the past.

Dr. Lloyd Brown proposed the health of the Chairman, Dr. Holder. He commended his loyalty to the Poor-law Officers' Association, as shown by frequent journeys from Hull to London to assist in its work. He had ably carried out the duties of Chairman that evening, in spite of the difficulty arising from suddenly being called upon to take that post.

The Chairman suitably responded, and proposed "The Health of the Honorary Secretary," who he said was deserving of the best thanks of the Association. His legal knowledge was specially useful, as questions of law so frequently occurred in differences between Poor-law medical officers and their Boards of Guardians.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,643 births and 3,953 deaths were registered during the week ending Saturday last, July 2nd. The annual rate of mortality in these towns, which had been 14.2, 13.8, and 13.2 per 1,000 in the three preceding weeks, rose again last week to 13.5 per 1,000. The rates in the several towns ranged from 5.1 in Tottenham, 6.1 in Leyton, 7.0 in Handsworth (Staffs.) and in King's Norton, 7.1 in Hornsey, 8.2 in Reading, 8.5 in East Ham, 8.6 in Northampton, and 8.7 in Newport (Mon.), to 17.7 in Liverpool and in Bootle, 18.1 in Hull, 19.0 in Manchester and in Newcastle-on-Tyne, 20.0 in Great Yarmouth, 20.3 in Huddersfield, 21.6 in Wigan, and 22.8 in Hanley. In London the rate of mortality was 12.9 per 1,000, while it averaged 13.8 per 1,000 in the seventy-five other large towns. The mean death-rate from the principal infectious diseases in the seventy-six towns was 1.6 per 1,000; in London this death-rate was equal to 1.5 per 1,000, while among the seventy five other large towns the rates ranged upwards to 3.0 in Newcastle-on-Tyne, 3.2 in Salford, 3.3 in Manchester and in Huddersfield, 3.7 in Brighton, 3.8 in Rhondda, 4.1 in Hanley and in Birkenhead, 4.2 in Bootle, and 5.0 in Great Yarmouth. Measles caused a death-rate of 1.3 in Leeds and in Rhondda, 1.4 in Liverpool, in Manchester, in Salford, and in Hull, 1.6 in Hanley, 1.7 in Bootle, 2.7 in Birkenhead, and 3.3 in Brighton and in Huddersfield; scarlet fever of 1.7 in Bootle; diphtheria of 1.3 in Rhondda, 1.5 in West Hartlepool, and 1.6 in Hanley; and whooping-cough of 1.3 in York, 1.6 in Grimsby, and 5.0 in Great Yarmouth. The mortality from enteric fever and from diarrhoea showed no marked excess in any of the large towns. Two fatal cases of small-pox were registered in Gateshead, two in Newcastle-on-Tyne, one in London, and one in Oldham, but none in any other of the large towns. The Metropolitan Asylums Hospitals contained 74 small-pox patients on Saturday last, the 2nd inst., against 95, 80, and 83 on the three preceding Saturdays; 10 new cases were admitted during the week, against 21.7, and 16 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1,647, 1,630, and 1,629, at the end of the three preceding weeks, had risen again to 1,631 at the end of last week: 254 new cases were admitted during the week, against 193, 206, and 199 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, July 2nd, 968 births and 539 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.2, 17.0, and 15.9 per 1,000 in the three preceding weeks, increased again last week to 16.3 per 1,000, and was 2.8 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 10.8 in Perth and 13.0 in Leith, to 18.4 in Aberdeen, and 20.2 in Greenock. The death-rate from the principal infectious diseases averaged 2.3 per 1,000 in these towns, the highest rates being recorded in Dundee and Paisley. The 243 deaths registered in Glasgow included 2 which were referred to small-pox, 4 to measles, 4 to scarlet fever, 14 to whooping-cough, and 8 to diarrhoea. Five fatal cases of measles and 8 of whooping-cough were recorded in Edinburgh; 2 of measles, 4 of whooping-cough, 2 of "fever," and 2 of diarrhoea in Dundee; 2 of measles, and 4 of diarrhoea in Aberdeen; and 4 of whooping-cough in Paisley.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, July 2nd, 528 births and 303 deaths were registered in six of the principal Irish towns, against 660 births and 319 deaths in the preceding period. The mean annual death-rate in these same towns, which had been 18.4, 20.1, and 16.4 per 1,000 in the three preceding weeks, rose to 18.4 per 1,000 in the week under notice, this figure being 4.8 per 1,000 above the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 13.6 in Waterford and 14.4 in Cork to 20.2 in Londonderry and 27.3 in Limerick. The death-rate from the principal zymotic diseases during the same period and in the same six Irish towns averaged 0.6 per 1,000, or 0.1 lower than during the preceding week, the highest figure, 2.5, being recorded in Belfast, while Waterford, Londonderry, and Limerick registered no deaths under this heading at all. From small-pox no deaths were recorded in any part of Ireland. From whooping-cough 8 deaths were recorded in Belfast and 1 in Dublin. From enteric 3 deaths occurred in Belfast; from scarlet fever, 2 in Dublin; and from diphtheria, 1 each in Dublin and Belfast.

CAR HIRE OF SUBSTITUTE IN IRELAND.

Dr. Heron, of Downpatrick, having been requested by the Medical Officer of the Strangeford Dispensary District to attend a Poor-law midwifery case because the medical officer was in charge of a case of septicaemia, Dr. Heron agreed to do so for a fee of £2 2s. and 6s. car hire. The guardians, we gather, were willing to pay the fee of £2 2s., which is the fee approved of by the Irish Medical Association in such cases, but declined to pay the car hire. Dr. Heron took proceedings and was defeated, the County Court Judge holding that Dr. MacLaughlin, the medical officer of the district, had no power to enter into a contract for a sum in excess of that which the guardians had agreed to pay in such cases. Similar decisions have been given in other instances, and we think medical officers would be wise to refer the parties to the relieving officer in such circumstances, as the power given to them under the new regulations of summoning assistance was only intended for emergencies, and doctors called upon to act should ascertain before consenting what fees the guardians have agreed to pay, as even the relieving officer does not appear to have the power of offering more.

ASSISTANT'S POSITION ON DEATH OF PRINCIPAL.

A correspondent writes that he has been managing a branch practice for a principal, who has lately died. During the latter's illness, and up to the present time, he has attended to the general practice in addition to the branch. He wishes to know whether he is entitled to charge the usual four guineas a week in addition to his salary which must have been paid to a "locum" had he not done the work. He has now decided to buy the practice, and he would also like to know whether any notice on his part is necessary to terminate his present engagement, the original agreement being a month's notice on either side.

*** Our correspondent is not entitled to charge for the extra work. Under his engagement he was expected to devote his whole time to the branch practice, and presumably what time he gave to the general practice was lost to the branch. He might at the time have objected to undertaking other work than that for which he was engaged, and so have necessitated the employment of a "locum," but having practically agreed to vary the terms of his engagement, he cannot demand extra remuneration. If he purchases the practice, there will be no need of any notice, as his engagement will *ipso facto* terminate.

HOSPITAL AND DISPENSARY MANAGEMENT.

MONTROSE ROYAL ASYLUM.

Annual Report.

The report of Dr. John G. Havelock, Physician-Superintendent of Montrose Royal Asylum, for the year ending May 14th, 1904, has been issued, and contains much interesting matter. During the year 832 persons were under treatment. The total number resident on May 14th, 1904, was 692 (including 5 voluntary boarders). A total of 145 (58 male and 87 female) were admitted. Of these, 113 were new cases and 32 readmissions. The number discharged as recovered was 69—a recovery rate, as calculated on the total number of admissions, of over 47 per cent. The death-rate, calculated on the average number resident, was 7.68 per cent. On the causes of insanity Dr. Havelock says:

"There is a great temptation to class all cases where excessive drinking was the direct result of the nervous breakdown as if they were caused by drink. Without taking this last source of fallacy into account, but including all those cases where any history of alcoholic excess could be obtained, I find that in only 12 cases, or 8 per cent of the admissions, could this be stated as the cause of the mental disorder. This is, I think, specially worthy of mention, as in some of the asylums in Scotland, drawing patients from the large towns, excessive drinking has been credited with causing almost 50 per cent. of the admissions. There may be far less excessive drinking in the burghs and rural districts from which we draw our patients, or it may be that the nervous system of the town dweller is less able to resist the baneful effects of the alcoholic poison. It would be a most unfortunate matter for the insane if public opinion were so directed as to regard the inmates of asylums as a class who had in the main brought on their said infirmity by vice and drunkenness. If such were the case, we should regard the vast expenditure of money which has been given ungrudgingly to ameliorate their condition as worse than wasted. It is therefore necessary to

state in the most emphatic way that the experience of Montrose Asylum is that in only a small proportion of the inmates—certainly not more than 10 per cent—has insanity been produced by alcoholic and other vicious excess. I have no desire to minimize in any way the disastrous effects of alcoholic excess on a large section of the population, and the misery, vice, and improvidence so produced on the present and succeeding generations; but the insane have had enough unmerited opprobrium to endure in the past without being stigmatized to-day as if they were in the main drunkards, and steeped in all manner of vice. Those who are hereditarily predisposed to mental disorders must be strictly temperate in the use of alcohol; the majority perhaps should keep on the safe side and abstain entirely."

COUNTY BOROUGH OF MIDDLESBROUGH ASYLUM.

DR. G. STEVENS POPE, Medical Superintendent, County Borough Asylum, Middlesbrough, writes to point out that the remarks contained in the last six lines of the review of the sixth annual report of that asylum, published in the BRITISH MEDICAL JOURNAL of May 21st, p. 1234, are founded upon a printer's error; the number of deaths from empyema was 1, and not 11 as printed.

NATIONAL SANATORIUM FOR CONSUMPTION AND DISEASES OF THE CHEST, BOURNEMOUTH.

THE forty-ninth report of this institution shows that 225 patients were received into the institution during the year 1903, which, with those remaining in the sanatorium from 1902, brought the total number under treatment to 289. As with similar institutions the Committee comments on the number of cases unsuitable from their advanced stage. Recent extension of the institution has increased the accommodation from 61 to 71 beds, and accounts for a deficit in the balance sheet of £306. To wipe this off and to allow of some much-needed improvements the Committee makes a special appeal for funds.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

AYR COUNTY HOSPITAL.—Resident House-Surgeon. Salary, £70 per annum.

AYR DISTRICT ASYLUM.—Assistant Medical Officer, resident. Salary, £120 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House-Surgeon. Salary, £80 per annum and notification fees.

BIRMINGHAM; GENERAL HOSPITAL.—Assistant Physician. Honorarium, £100 per annum.

BIRMINGHAM INFIRMARY.—Assistant Resident Medical Officer. Salary, £104 per annum.

BIRMINGHAM UNIVERSITY.—Walter Myers Travelling Studentship. Value £150 for one year.

BRECON AND RADNOR ASYLUM, Talgarth.—Assistant Medical Officer, resident. Salary, £140 per annum.

BRIGHTON THROAT AND EAR HOSPITAL, Church Street. Non-resident House-Surgeon. Salary at the rate of £75 per annum.

CANTERBURY BOROUGH ASYLUM.—Assistant Medical Officer (Male), resident. Salary, £140 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park.—Two House-Physicians, resident. Salary at the rate of £30 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Assistant House-Surgeon, resident. Salary, £60 per annum.

DOWNPATRICK: DOWN COUNTY INFIRMARY.—House-Surgeon, resident. Salary, £50 per annum.

GRAVESEND HOSPITAL.—House-Surgeon, resident.—Salary, £100 per annum.

HEREFORD COUNTY AND CITY ASYLUM.—Senior Assistant Medical Officer. Salary £150 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Surgeon Dentist.

HULL ROYAL INFIRMARY.—Casualty House-Surgeon, resident. Salary, £40 per annum.

LEEDS INFECTIOUS DISEASES HOSPITALS.—Second Assistant Resident Medical Officer. Salary, £120, increasing to £150 per annum.

LONDON THROAT HOSPITAL, Great Portland Street.—Non-resident House-Surgeon. Honorarium at the rate of £50 per annum.

MANCHESTER: VICTORIA UNIVERSITY.—Junior Demonstrator in Physiology.

MANSFIELD: NOTTINGHAMSHIRE CONSUMPTION SANATORIUM.—Resident Medical Officer. Salary, £100 per annum.

NEW ZEALAND: SEACLIFFE LUNATIC ASYLUM, Dunedin.—Assistant Medical Officer, resident. Salary, £350 per annum.

NORTHAMPTON: BERRY WOOD ASYLUM.—Locum Tenens for three months. Terms 4 guineas weekly.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Assistant House-Surgeon. Honorarium, £25 at the end of six months.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Honorary Pathologist.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon. Salary at the rate of £70 per annum.

SOUTHWARK UNION.—Second Assistant Medical Officer at the Infirmary, East Dulwich Grove, resident. Salary, £100 per annum.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon, resident. Salary at the rate of £40 per annum.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—(1) Senior Resident Medical Officer. Salary, £300 per annum. (2) Two Assistant Resident Medical Officers. Salary, £100 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House-Surgeon. Salary, £50 per annum.

WEST SUSSEX COMBINED DISTRICT.—Medical Officer of Health. Salary, £650 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

APPOINTMENTS.

AUBIN, E. D., M.R.C.S., L.R.C.P., Health Officer for the Port of Thames, New Zealand.

BATEMAN, W. H., M.B., Ch.B.Vict., Medical Officer of Health to the Norden Urban District Council, *vice* D. B. Carse, M.B., C.M.Edin.

BUSHNALL, F. G., M.D., B.S.Lond., D.P.H.Camb., Pathologist to the proposed Hall Memorial Laboratories, Sussex County Hospital, Brighton.

CHAPPLE, Frederick, M.B., Ch.B., Medical Superintendent to the Adelaide Hospital, *vice* Dr. B. Smeaton, resigned.

CLAYTON-GREENE, W. H., B.A., M.B., B.C.Cantab., F.R.C.S.Eng., Supernumerary Surgeon in charge of Out-patients to St. Mary's Hospital, Paddington.

COURTENAY, P. W. E., L.R.C.P., L.R.C.S., etc., Medical Referee to Empire Guarantee and Insurance Corporation, Limited.

CRUICKSHANK, A., M.B., C.M.Aberd., Certifying Factory Surgeon for the District of Stonehaven, *vice* Dr. Wallace resigned.

DEY, Robert, M.B.Syd., Government Medical Officer and Vaccinator at Bourke, N.S.W., *vice* Dr. Charles H. Scott, resigned.

EMMERSON, A. T., M.D.Toronto, Clinical Assistant to the Chelsea Hospital for Women.

GIBB, James A., M.B., Ch.B.Aberd., Assistant Medical Officer to the Dorset County Asylum.

HATHERALL, R. R., M.R.C.S., District Medical Officer of the Abingdon Union.

HAY, Joseph F. S., M.B., C.M.Aberd., Inspector of Lunatic Asylums, Hospitals, and Licensed Houses in the Colony of New Zealand.

JERMAN, A. E., M.B.Lond., M.R.C.S.Eng., Medical Officer of Health to the Erith Urban District.

JOHNSTON, H. Mulrea, B.A., M.B., B.Ch., Chief Demonstrator of Anatomy in Trinity College, Dublin.

KELLY, W. R., M.B., B.S.Melb., Medical Officer at Croydon, Queensland, *vice* Dr. F. W. Webb.

LILLEY, J. H., M.D.Camb., M.R.C.S., Medical Officer of the Children's Homes of the Hereford Union.

LOCKYER, G. E., M.R.C.S., L.R.C.P., District and Workhouse Medical Officer of the Amesbury Union.

PALMER, Frederick S., M.D., M.R.C.P., Assistant Physician to the West End Hospital for Diseases of the Nervous System, Welbeck Street, W.

PHILIP, J. P., M.D.Aberd., D.P.H., Medical Officer of Health to the Morpeth Rural District Council.

READ, W. H., M.B., Ch.M Syd., Honorary Assistant Skiagraphist, Sydney Hospital, N.S.W.

ROTHERHAM, A., M.B., B.C.Camb., Medical Superintendent of Darenth Asylum.

ROWLETTE, Robert James, B.A., M.D.Dub., Anaesthetist to the Incorporated Dental Hospital of Ireland.

SASS, Wilfrid, M.R.C.S.Eng., L.R.C.P.Lond., Assistant Anaesthetist to the Cancer Hospital, Brompton, S.W.

STEPHEN, W., B.A., M.B.Toronto, Clinical Assistant, Chelsea Hospital for Women.

VAILE, W. B., M.R.C.S., L.R.C.P., Resident Assistant Medical Officer, West Ham Union Workhouse.

VINTER, S. G., M.R.C.S., L.R.C.P., D.P.H., Medical Officer of Health, Torpoint Urban District.

WAUGH, R. J., M.R.C.S., L.R.C.P., Third Assistant Medical Officer, Bethnal Green Infirmary.

WILLIAMS, D. J., M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent of the Lunatic Asylum, Jamaica, *vice* Dr. J. W. Plaxton.

DIARY FOR NEXT WEEK.

TUESDAY.

Society for the Study of Inebriety, 11, Chandos Street, Cavendish Square, W., 4 p.m.—William C. Sullivan, M.D.: The Criminal Responsibility of the Alcoholic.

WEDNESDAY.

Dermatological Society of London, 11, Chandos Street, Cavendish Square, W., 5.15 p.m.—Demonstration of cases of interest.

THURSDAY.

British Gynaecological Society, 20, Hanover Square, W., 8 p.m.—Specimens will be shown by Mr. Christopher Martin, Mr. Bowreman Jessett, and Dr. Macnaughton-Jones. Dr. Jervois Aarons: New Instrument.

Neurological Society of the United Kingdom, 11, Chandos Street, Cavendish Square, W., 8 p.m.—Exhibition of cases of Myelopathic Muscular Atrophy.

POST-GRADUATE COURSES OF LECTURES.

Charing Cross Hospital, Thursday, 4 p.m.—Surgical Cases.

Hospital for Consumption and Diseases of the Chest, Brompton, Wednesday, 4 p.m.—Demonstration of Unusual Specimens of Chest Disease from the Museum.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—The Treatment of Diphtheria, with especial reference to the Dosage with Antitoxin.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—Demonstrations will be given at 4 p.m. as follows: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Ophthalmic. Lectures will be delivered at 5.15 p.m. as follows: Monday, Some Practical Points concerning Colotomy; Tuesday, Cardiac Failure; Wednesday, Haemoptysis and its Treatment.

North-East London Post-Graduate College, Tottenham Hospital, N., Thursday, 4.30 p.m.—On the Choice of an Anaesthetic.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered at 5 p.m. as follows: Monday, Practical Surgery; Tuesday, Practical Surgery; Wednesday, Practical Medicine; Thursday, Ocular Injuries and their Treatment; Friday, Suppuration of the Accessory Sinuses of the Nose, with lantern slides; Lecture III.

St. John's Hospital for Diseases of the Skin, Leicester Square, W.C.—Thursday, 6.15 p.m., Ul-erythema.

St. Peter's Hospital, Henrietta Street, W.C.—Lecture-Demonstrations will be given on Wednesday at 4 p.m.—Cases in the Wards.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

AUSTIN ROBINSON.—On June 2nd, 1904, at the Sanatorium, Nottingham Road, Natal, the wife of Dr. F. Austin Robinson, D.M.O. Nottingham Road (née Lilian Rogers Jenkins), of a son.

CAIRD.—On July 3rd, at 13, Charlotte Square, Edinburgh, the wife of F. M. Caird, F.R.C.S.Ed., of a son.

HAIG.—On June 30th, at 80, Bondgate, Darlington, the wife of Douglas Vereon Haig, M.D., of a daughter.

MACKAY.—At Pelaw, Newcastle-on-Tyne, on June 26th, to Dr. and Mrs. J. W. Mackay, a son.

TORNEY.—On June 26th, at Bracebridge Heath, Lincoln, the wife of G. Parsons Torney, Medical Superintendent, Bracebridge Asylum, of a daughter.

MARRIAGE.

WHITWELL—BRANCKER.—On July 2nd, at St. Margaret's Church, Prince's Road, Liverpool, by the Rev. T. B.-B.-Cox, George Graves, the son of the late Francis Whitwell, of Shrewsbury, to Gladys Mary, the only daughter of the late Benjamin Brancker, of Fern Grove, Liverpool, and Mrs. Brancker, Summer Hill, Oswestry.

DEATHS.

ELLIOTT.—On May 7th, at Geraldton, Western Australia, Charles Bolton Elliott, M.R.C.S.Lond., L.R.C.P.Edin., for nearly thirty years District Medical Officer at Champion Bay, aged 58 years.

LEEPER.—On June 26th, suddenly, at Southsea, G. R. Leeper, M.B., T.C.D., L.R.C.S.I., third surviving son of the late Canon Leeper, D.D., Dublin.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

TELEPHONE (National):—
EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

WE would request correspondents who desire to ask questions in this column not to make use of such signatures as "A Member," "A Member B.M.A.," "Enquirer," and so on. By attention to this request much confusion would be avoided. Correspondents are asked to write upon one side of the paper only.

D. S. desires advice as to a portable substitute for the high-frequency treatment to be used for rheumatism.

ANSWERS.

MERCURIUS, who has omitted to enclose his card, is recommended to communicate with the Secretary of the Royal Asylum of St. Anne's Society's School, 58, Gracechurch Street, London, E.C.

J. T.—For general information on the subject and useful hints, see Leach's *Ship Captain's Medical Guide*, revised by Dr. Spooner (London: Simpkin Marshall, Hamilton, Kent and Co. 1874) and W. Johnson Smith's *Medical and Surgical Help for Shipmasters and Officers in the Merchant Navy*, Second Edition (London: Charles Griffin and Co. 1904. 6s.). The Third Edition of Quain's *Dictionary of Medicine* (London: Longmans, Green and Co. 1902. 21s.) contains a full and practical paper on Quarantine, by Shirley Murphy.

LETTERS, NOTES, Etc.

POLYPHARMACY.

A SCEPTIC writes: A perusal of "Nova et Vetera" in the BRITISH MEDICAL JOURNAL of June 11th reminds me of a valuable document in my possession, which I enclose for your inspection. It is a prescription written for a patient of mine in this enlightened twentieth century—a guaranteed genuine copy from the book of the dispensing chemist who made up the marvellous mixture. As compared with the sixty-one ingredients of Theriaca Andromachi it falls short, but its variety is charming, and allowance must be made for the interval of time betwixt the two applications of scientific pharmacy. On showing it to a surgical friend he characterized it as a mitrailleuse, and was kind enough to diagnose the case from its contents, as follows: (1) A little hysteria; (2) a slight epileptiform condition; (3) atonic dyspepsia; (4) chronic malaria; (5) hepatic congestion. When he had made out so much I took the prescription away from him. It is, indeed, an elegant preparation, but whether nice or nasty deponent sayeth not, for he does not know; yet he is confident the combination had no beneficial effect on the patient. R: Tr. valerian. m x. pot. bromid., grs. x, ext. gent., grs. v, tr. nuc. vom. m v, tr. lavand. co. m xv, liq. arsenicalis. m iii, tr. sumbul. m x, tr. aurant. m v, aq. chlorof. ad. ℥i. Mitte ℥viii, ℥i, t.d.s. Pil. eunonymin gr. ½. Mitte xii. One to be taken night and morning. Pil. podophylli. gr. $\frac{1}{12}$. Mitte. xii. One to be taken night and morning.

ETHER VAPOUR.

H. L. D., in explanation of his query in the BRITISH MEDICAL JOURNAL, May 28th, p. 1296, and referring to Mr. C. W. Krohne's remarks in the JOURNAL, June 18th, p. 1471, is of opinion that, with an apparatus such as he has devised, ether can be boiled and its vapour delivered into a patient's lungs with an exactness as to amount and time not obtainable when the ether is not boiled. Methods based on giving mixtures of definite proportions of the vapour and air are fallacious because the tidal air is beyond our control. His method does not exclude air; this is to be breathed as well as the vapour, but the quantity of ether is regulated, that of the air depends on the tidal volume. He does not anticipate trouble from the heat of the vapour, having often and for many hours together in the tropics breathed air of a much higher temperature with impunity. At any rate there would be no chilling of the respiratory surface. He has no means of trying his notion, but hopes others may do so and that the result may be good.

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BOOKS, Etc., RECEIVED.

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University of Manchester. Public Health Laboratory. Water in relation to Disease. Water Filtration in connexion with Public Supplies. Lecture delivered by J. C. Thresh, D.Sc., M.D., D.P.H., on May 11th, 1904. Manchester: Sherratt and Hughes. 1904. 1s. 6d.

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A Clinical Lecture
ON
PAROXYSMAL TACHYCARDIA.

Delivered at the Liverpool Royal Infirmary.

BY JAMES BARR, M.D., F.R.C.P., F.R.S.E.,
President, Liverpool Medical Institution; Senior Physician, Liverpool Royal Infirmary; and Lecturer on Clinical Medicine, Liverpool University.

GENTLEMEN,—I wish to draw your attention to a very interesting case of paroxysmal tachycardia. The patient has now been under our care in four attacks, and I hope that our observations may throw some light on the nature and treatment of this comparatively rare affection. Great frequency of the heart's action is a very common accompaniment of many morbid conditions, but the paroxysmal character of this affection, occurring in otherwise healthy subjects, at once marks it out as a particular entity, due perhaps to deranged physiological conditions rather than to any morbific influence. At the very outset I wish you to dissociate in your minds any connexion with the tachycardia of exophthalmic goitre, or with that which occurs after the removal of the parathyroids. Paroxysmal tachycardia has no connexion whatever with these morbid states, though you will occasionally find them all jumbled up together in textbooks. More anon of the distinctions between these very different conditions.

Regarding our patient, in a letter of mine on another subject in the BRITISH MEDICAL JOURNAL of February 20th, 1904, p. 458, I referred to his first two attacks in the following terms:

When I was away on my holidays a youth was admitted to my wards with tachycardia, the result of a kick or blow on his epigastrium at football. His pulse was over 250, and continued so for about a week. His abdomen was then much swollen, and an exploratory operation was decided on. It was not considered safe to give him an anaesthetic, so he had a large dose of brandy and a hypodermic injection of cocaine. Before the operation was commenced his pulse had fallen to 80. A large amount of fluid was evacuated but nothing else was found. On my return I found him quite well, and in reply to an inquiry from my house-physician I refused to express an opinion on a case which I had not seen, except that I thought the brandy caused the drop in the pulse.

On January 13th, 1904, he was sent in under the care of my colleague, Mr. Hamilton, supposed to be suffering from rupture of the stomach, the result of another injury to his epigastrium in the football field. I was asked to see him on the 16th, and found him in a very distressed condition—heart beats over 300 per minute, a small thready running pulse, not countable. With Oliver's haemadynamometer I found that the mean arterial pressure was 160, and obliterating pressure 190 mm. of mercury. The blood pressure was therefore very high, though the very small pulse from peripheral resistance felt compressible. The right auricle extended nearly to the right nipple, and the left ventricle was contracted; the second pulmonic sound was accentuated. Over the right ventricle the cardiac contraction looked like a quiver rather than a systole. His liver was large and tender. My diagnosis was that the injury had stimulated the inhibitory action of the vagus, and this led to paralytic distension of the right side of the heart and consequent tachycardia. As very little blood reached the left side the arteries contracted down rather more than was necessary, and consequently the arterial blood pressure rose; the high tension extended back through the lungs, as shown by the accentuated pulmonic second sound, and the right side did not get a chance of relieving itself. My house-physician suggested that I should adopt the remedy which I advocated, namely, bleeding from the liver; but my reply was that the patient was not now under my care; and, moreover, I thought simpler means would succeed. He got 5 gr. of calomel; nitrite of amyl inhalations; a hypodermic injection of $\frac{1}{6}$ gr. of atropine; and $\frac{1}{6}$ gr. of nitro-glycerine every two hours. In twenty-four hours he was practically all right, the pulse being 84, regular, full, and strong. On January 23rd he was discharged quite well with a level pulse-rate of 80.

In two subsequent attacks he found his own way into my wards, and I shall now give you a brief summary of his condition during these attacks.

E. J. F., aged 16, errand boy, readmitted February 20th, 1904, suffering from extremely rapid action of the heart. He is a strong, muscular, well-nourished, and well-built youth. He ascribed this attack to overstraining, carrying a heavy load of wood up several flights of stairs. He was of a pale livid colour, and had an anxious expression, lay flat on his back without any dyspnoea. He complained of throbbing in the neck, pain at the root of the neck and behind the manubrium sterni; there was some tenderness on palpation over the liver, which was enlarged, and reached half-way between the costal margin and the umbilicus; there was no pulsation detected in the liver. Heart: A distinct heaving was felt behind the body of the sternum, the apex was situated in the fifth intercostal space $\frac{1}{4}$ in. internal to the nipple line, the right margin extended $3\frac{1}{2}$ in. to the right of the mesial line. The percussion dullness did not alter between the recumbent and sitting postures. On auscultation the heart's action was very rapid, 210 systoles to the minute; sounds clear and retained their normal quality: the pulmonic and tricuspid sounds were louder and much more distinct than the aortic and apical sounds. When he was asleep it was noticed that his whole head quivered synchronously with the beating of his carotids. Pulse very rapid, small, firm, and artery full between the beats. With Hill and Barnard's sphygmometer the blood pressure in the brachial artery was estimated at 104 mean and 106 mm. of mercury systolic or obliterating pressure. Urine clear and good colour, specific gravity 1014, no deposit, a trace of albumen, no sugar, a large quantity of indican, urea 1.4 per cent. He got 5 gr. of calomel. liq. trinitrini mij. every two hours. A mustard poultice was applied over the praecordium. The following morning he got 1 oz. of sulphate of magnesium.

February 21st. This morning the heart beats reached 240, temperature 98° F.: respirations 28. In the afternon with Hill and Barnard's sphygmometer, there was a fair excursion of the needle at 102 mm. of mercury, but at 104 mm. of mercury it disappeared. Placing the patient in the sitting posture had no effect on the pressure. The temperature rose to 100° F. at 10 p.m., and remained at that level till 2 a.m. To-day he was put on the following mixture: R Liq. trinitrini. 1 p.c. mxxiv; liq. strychninae hydrochlor. mxxx, liq. atropin. sulph, mxvi., aq. chloroformi ad ʒvi. Sig. ʒss. every two hours. He was allowed very little fluid.

February 22nd. He was ordered to-day $\frac{1}{60}$ gr. of digitalin every four hours in addition to his mixture.

February 23rd. Hill and Barnard's sphygmometer gave a mean pressure of 100 mm. and an obliterating pressure of 120 mm. of mercury; this rise in the systolic pressure showed that the previously failing heart was gradually adjusting itself, and with the somewhat lessened peripheral resistance there was now a considerable surplus of expulsive power. On this occasion the heart did not respond so well to treatment; it was evidently failing when he came under observation. The pulse was less firm, and a great many beats did not reach the wrist; the blood pressure was lower, and the difference between the mean and systolic pressures was very slight, showing that the heart was failing, and there was scarcely any surplus of expulsive power left; the right side of the heart appeared to be more permanently dilated than on either of the previous two attacks. Hence, in addition to the agents for lessening the peripheral resistance, I ordered digitalin to improve the cardiac contraction.

February 24th. This morning the pulse fell to 80, quite regular, and the heart sounds were normal. Blood pressure in brachial artery, mean 110, and obliterating pressure 120 mm. of mercury; the right side of the heart has contracted, and now extends only $1\frac{3}{4}$ in. to the right of the mesial line.

February 25th. Right margin of heart only extends $1\frac{1}{2}$ in. to right of mesial line. Pulse 80, regular in time and force, good volume and fair tension.

March 7th. Pulse 66, full and regular. He was sent to-day to the Convalescent Home for two weeks.

Readmitted April 29th, 1904, suffering from the fourth attack of tachycardia, which began the previous day. At first he would not acknowledge that there was any cause for the attack, but subsequently he confessed that he had been "flying from the police:" and you can easily understand how a nimble youth like this would strain every muscle in his body to escape the clutches of a policeman. The symptoms in this attack have been in every respect like the former, but perhaps more pronounced, and not more than one-third of the cardiac pulsations reached the wrist. He was of a pale ashy-grey colour. He was anxious and restless, complained of throbbing in the neck and pain or distress in the praecordium. There was tenderness in right hypochondrium, and he vomited during the evening. He had 2 gr. of calomel.

April 30th. Cardiac dullness extended $2\frac{3}{4}$ in. to the right, 4 in. to the left of the mesial line, and $\frac{1}{2}$ in. above a line drawn from the suprasternal notch to the left mamilla, in direction of left auricle. He complained of throbbing in neck, pain in praecordium, and tenderness in right hypochondrium. The liver extended 2 in. below costal margin. He vomited frequently. With Hill and Barnard's instrument the mean blood pressure was 100, and obliterating pressure 130 mm. of mercury, not more than a-third of the pulsations reached the wrist. He was put on a mixture of nitro-glycerine and atropine, and had $\frac{1}{60}$ gr. of digitalin every four hours. His temperature was 101.2° F. in the morning and 98.8° F. in the evening.

May 1st. He had a fair night and no vomiting for twenty-four hours. His temperature was 100.8° F. in the morning and 98.8° F. in the evening. When I saw him in the afternoon there was a slight but not marked improvement. His heart beats were 250 to 300 in the minute, and only about every third beat was perceptible at the wrist, the artery was small and full between the beats. Blood pressure 100 mean, and 128 mm. of mercury systolic pressure. Heart sounds short and clear, especially so over the tricuspid and pulmonic areas. The nitro-glycerine mixture was continued, but for the digitalin there was substituted one of Nativelle's digitalin pilules every six hours. In the evening Dr. Hurter reported that the heart beats and pulse had fallen to 84.

May 2nd. The right cardiac border was only 2 in. in recumbent and $1\frac{3}{4}$ in. in sitting posture to right of mesial line, and left margin $3\frac{3}{4}$ in. Liver only 1 in. below costal margin. Mean blood pressure 100, systolic pressure 160 mm. of mercury, pulse and heart beats 90. In the evening pulse 56, temperature 97.4° F.

May 6th. He was allowed a fairly liberal diet, but the fluids still restricted. His nitro-glycerine mixture was stopped.

May 7th. Mean blood pressure 100, obliterating pressure 164 mm. of mercury.

May 8th. Put on common diet, without any restriction of fluids.

May 10th. You can examine him to-day, and you will find that he is practically all right. The right side of the heart, which at first I was afraid had become permanently dilated, as it did not respond well to treatment, has now apparently resumed its normal dimensions. His mean blood pressure is now 125 and systolic 170 mm. of mercury.

[This patient has since been under my care with a fifth attack. This was a mild attack induced by fright and only lasted four hours. It is well known that fear raises the blood pressure, or, to use the language of Dr. Schofield in the *Force of Mind*, "Fear can close in a moment miles of capillary vessels, which shame can as quickly open."]

So much, gentlemen, for this very interesting and instructive case, in our analysis of which there are many points which call for special consideration. I do not know that even now I can offer you a better explanation of the induction of the attacks than that which I gave in my letter in the BRITISH MEDICAL JOURNAL.

It seems to me that the very basis of these attacks, however induced, lies in a hyperdistension of the right side of the heart, a hyperdistension which would quickly terminate the life of the patient were not the musculature in a healthy condition. You all know that the right side of the heart, especially the auricular appendix, is much more sensitive to stimuli than the left, and the right auricle can be stimulated to contract for many hours after death from violence. The same thing happens in deaths from asphyxia. In cases of strangulation there is not merely a great rise in the venous pressure, but the arterial pressure is raised, and remains high until the heart begins to fail, and only a small volume of blood is thrown into the aorta at each systole, then the arterial pressure quickly falls, and with it the coronary circulation, and death rapidly ensues. In these cases of paroxysmal tachycardia there is only a very small volume of blood thrown into the pulmonary artery and aorta at each systole; and you might suppose, as Dr. Mackenzie of Burnley, who is an authority on the pulse, has supposed in a recent communication in the BRITISH MEDICAL JOURNAL on blood-pressure instruments, that this small volume of blood must be accompanied by a low arterial pressure, and therefore when the instrument recorded a high pressure forsooth the instrument must be wrong, and Dr. Mackenzie's preconceived idea as to how the circulation should behave under such circumstances must be right. It is well never to start with any preconceived idea, but first carefully observe your facts and then draw your inferences therefrom.

I must now enter a little into detail on the question of blood pressure, which may seem to pupils of Professor Sherrington a work of supererogation, but I can assure you if I did not consider it necessary for the elucidation of the problems which I have in hand, I would not thus trouble you. So far as clinical medicine is concerned, low and high blood pressures—and I am now speaking of arterial pressure—are, like heat and cold, purely relative terms; there is no absolute standard of pressure in health. In the same individual the pressure is constantly varying, and in different healthy individuals it varies within fairly wide limits. The degree of pressure chiefly depends on the peripheral resistance, and the greater the resistance the greater the pressure, provided the heart is able to overcome the resistance which it always does in health; when it fails we pass over the borderland from health to disease. I believe in estimating the blood pressure with your fingers, but in order to correct our observations I use one or other blood pressure instrument. For a good many years I have had two Hill and Barnard's sphygmometers and one Oliver's haemadynamometer in regular use, so I may claim to be fairly well acquainted with their employment. I have found them fairly accurate, and whenever I find any reason to doubt their accuracy I send them to the makers to get corrected. In the first observation in this youth I used Oliver's, and it gave a mean pressure of 160, and an obliterating pressure of 190 mm. of mercury. It is very probable that these records were too high, but the same instrument on the same day gave considerably lower mean pressures in perfectly normal individuals. Moreover, in this patient the small firm radial artery felt full between the beats, so whatever view we take of the instrument and its record there can be no doubt but that the relative pressure was high.

However small the amount thrown into the aorta at each systole, no greater amount was discharged through the systemic arterioles during each cardiac cycle, and so the tension was maintained.

On the two subsequent occasions the majority of the pulsations did not reach the wrist, and so Hill and Barnard's sphygmometer was used. This is not a very portable instrument, but I believe it is very accurate in all cases where the vessels are not rigid, and it is very easily applied. It gave a much lower absolute pressure, but undoubtedly the pressure was much lower on these occasions. However, the arteries were constantly full, thus the relative pressure was high, and the difference between the mean and systolic pressures was very slight, thus showing that the peripheral resistance was nearly as great as the heart under such conditions could overcome. The reserve energy had been taxed to its utmost capacity. When the vessel is small and consequently the excursion of the needle slight, and there is no great difference between the mean and systolic pressures, there is no difficulty in accurately noting the pressure, but the matter is quite different, say, in a case of aortic regurgitation, where the vessel is large and perhaps rigid, the excursion of the needle great, and a large difference between the mean and systolic pressures. Judging from my observations I should say in a healthy young adult with pliant arteries the mean pressure usually runs between 110 and 130 mm. of mercury, and you can add to this 40, 50, or 60 mm. for the systolic pressure. In cases of granular kidney you often get the mean pressure considerably over 200 mm., but in a case of paroxysmal tachycardia like the present one it is not, in my opinion, at all a question of absolutely high pressure, but one of relative pressure where the mean and systolic pressures approach each other, and there is very little surplus of expulsive power left in the heart. About a quarter of a century ago I carried out a series of experiments on the effects of overstrain, such as running and carrying heavy weights, on the circulation, and some of these observations were embodied in my work *On the Causes and Mechanism of the Cardiac Impulse*. I then found that when the heart was overtaxed the frequency of its action was considerably increased, and so long as it was able to meet the resistance the force was augmented; in short, a modified form of tachycardia was set up, but which of course subsided once the strain was removed.

Those of you who have watched this patient during the paroxysms have noticed that there was comparatively little cardiac distress, no anginal-like seizure, and no real dyspnoea: the patient could move about, and from his appearance no one would imagine that his heart was contracting over 250 times in a minute. If the heart were beating at this rate with a relatively low blood pressure the distress and dyspnoea would be great: the patient would be bathed in perspiration, and death would quickly terminate the scene, but fortunately the regulative mechanism of Nature maintains the blood pressure, and with it the coronary circulation, until the right side of the heart gets rid of its oppressive load. In this case there was no evidence of any distension of the left side of the heart, but the relatively high arterial pressure and the difficulty the left ventricle had to overcome was reflected back through the pulmonic circuit, and gave rise to a sharp, clear, ringing, pulmonic second sound. Moreover, the treatment, which was very successful, was directed towards lessening the peripheral resistance and equalizing the distribution of blood in the two sides of the heart.

In cases of rapid pericardial effusion the pulse becomes very small and irregular, the blood pressure is low, and if the pressure on the heart be not removed the patient gets into imminent danger, but here the blood is prevented from entering the heart, and there is no paralytic distension of any of the cavities.

Quite recently I inadvertently induced a very severe attack of paroxysmal tachycardia in a boy who previously never had any disturbance of the kind. As you are aware, for some time I have been injecting adrenalin chloride solution into the serous cavities to check effusion, and lately I have been trying to find out the maximum dose for each cavity. This little fellow whom I now exhibit is suffering from very large amyloid liver and spleen, and lately, after siphoning off a large collection of ascitic fluid, I injected 10 c.cm. of adrenalin chloride solution 1 in 1 000. This did not seem to have any immediate effect on the circulation, and unfortunately, without waiting a sufficient length of time, I injected 8 c.cm. more of the solution. These 18 c.cm. contracted all the arterioles of the arterial tree, perhaps more especially those of the splanchnic area: the general arterial blood pressure rose, the heart started off at a gallop, and in a few minutes its beats numbered about 200 in the minute. There was no dyspnoea, but the cardiac distress was great, and the little fellow said he was dying. He was freely treated with amyl nitrite, nitro-

glycerine, and atropine. Dr. Hay and Dr. Hunt watched him for two hours, and by that time the attack had passed away.

I cannot tell you in millimetres of mercury what the blood pressure was, as at the time I was otherwise occupied, but I can tell you that his little heart was taxed to its utmost capacity. In a case of tachycardia thus induced no one, I presume not even Dr. Mackenzie, would consider it an "absurdity" if Dr. Oliver's instrument had been used and had shown a raised pressure.

I have told you that this form of tachycardia is entirely different from that associated with exophthalmic goitre. Some years ago the surgeons invaded this territory of medicine, and treated the disease by the ablation of a lobe of the thyroid gland. I have seen some very successful cases, but I have also seen a few where death followed very severe tachycardia. This is now supposed to be due to removal of the parathyroids. In such cases the extreme rapidity of the heart's action is associated with low arterial blood pressure, the veins are engorged, and the patient bathed in perspiration. Happily the surgeons have again left the field.

In my explanation of this case in the BRITISH MEDICAL JOURNAL I associated the tachycardia with direct injury to the epigastrium, but in the light of the two subsequent attacks I am induced to ascribe the attacks to acute cardiac strain. In a scrimmage at football the respiratory muscles would be fixed and the arterial pressure would be raised; the same conditions would occur in carrying a heavy load upstairs, or in sprinting before a policeman. If in such conditions the chest were fixed in the state of expiration the respiratory pump would be thrown out of action, and no assistance would be thus given to the right side of the heart. It is easy to perceive how such acute strain would raise the blood pressure and lead to hyperdistension of the right side of the heart. The case of adrenalin tachycardia supports this view of the case. The right side of the heart and the great veins were distended with blood to their utmost capacity, so the cardio-splanchnic phenomenon of Abrams could not be elicited. The reserve force of the heart was drawn on almost to its utmost capacity, as shown by the slight difference between the mean and systolic pressures. The relatively high arterial pressure enabled the patient to walk to the hospital, maintained the nutrition of the heart, and prevented any risk of syncope.

TREATMENT.

Put the patient in bed, freely use such agents as amylnitrite, nitro-glycerine, etc., to lessen peripheral resistance and equalize the amount of blood in the two sides of the heart. Encourage the patient to take long, deep breaths, so as to aspirate the blood from the right side of the heart into the lungs, and thus give a better supply to the left ventricle. Counter-irritation might call into play the reflex cardiac contraction of Abrams. If, after the preceding measures have been carried out, the hyperdistended right ventricle does not properly contract, then the addition of digitalis or of digitalin and strychnine is required. A good brisk purgative to clear the portal circulation. The diet should be as dry as possible, so as to avoid the addition of fluid to the over-repleted veins and right side of the heart.

Professor Wood, of Nashville, Tennessee, informs me that he has a lady patient subject to tachycardia, whose attacks are cut short by vomiting or by passing a stomach tube. In neurotic cases many remedies will no doubt succeed. In our case vomiting had no such effect. In many cases after the injection of adrenalin into the peritoneal cavity the stomach contents are ejected.

THE SANITATION OF THE DWELLING-HOUSE. — The first International Congress on the Sanitation of the Dwelling-house, organized under the auspices of the French Society of Hygiene, will be held at Paris, October 15th to 20th, 1904, under the presidency of M. Janssen, Member of the Institute. Among the honorary presidents, in addition to the leading hygienists of France, are the Prime Minister, and the Ministers of Public Instruction, Agriculture, Commerce, and Marine. The object of the Congress is to study the sanitary conditions of the building and installation of dwelling-houses, to urge the reforms in these conditions that appear to be required, and to discuss the practical means of inducing municipalities, owners, architects, engineers, builders and tenants, to apply the principles of hygiene to the construction of dwelling-houses.

FURTHER FACTS IN FAVOUR OF AN INFECTIVE ELEMENT IN GOUT.

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IN the BRITISH MEDICAL JOURNAL of January 9th, 1904, I recorded the results of a *post mortem* examination of a fatal case of acute gout in a fowl. This record indicated that we had to deal with an acute general infective process. As acute gout is rare in lower animals, it may be some time before these observations are confirmed and extended. In the meantime the recorded facts indicate the importance of investigating anew the histological appearances of chronic gout. If the histological appearances in the acute disease point clearly to an acute infective process, the histological appearances in chronic gout ought similarly to point to a chronic infective condition. The following facts support the view that there is an infective element in chronic gout, and they show the importance of investigating the disease from the standpoint of a chronic infective disorder. It may, in the first place, be advisable to give a brief summary of the views at present held as to (*a*) the histological appearances in gouty tissues, and (*b*) their interpretation. The dominant opinions in this country are those of Sir A. Garrod, whose classical work on the subject was published in 1876. Garrod's views on these subjects may, I think, be correctly summed up in the following statements extracted from his work:

I. "It has long been known that changes in and around the joints occasionally take place in gout owing to the deposition of a chalk-like material, principally urate of soda."

II. "The other morbid appearances seen in joints affected with gout are comparatively unimportant, being similar to those observed after other forms of inflammation, as redness, thickening, and dryness of the synovial membrane, and occasionally effused blood."

III. "The establishment of the fact that gouty inflammation is invariably accompanied with the deposition of a peculiar salt is of the highest importance, inasmuch as it proves the inflammation to have a specific character and to differ entirely from other morbid affections of the joint."

IV. "I am of opinion that not only is the deposit of urate of soda constantly found in gouty inflammation, but that it stands to it in the relation of cause rather than effect: that is to say, the deposition of the salt first takes place in the synovial membranes, cartilages, and tendinous structures of the joint, and by its presence gives rise to inflammatory action."

The view that the deposit of urate of soda is the primary event (No. IV) has been stoutly opposed by Ebstein and other writers, who maintain that a necrosis of tissue is the primary incident and the crystalline deposit a later phase in the pathological process. Ebstein, however, agrees with Garrod in regarding uric acid as the primary irritant; the former believing that the uric acid causes the necrosis by its presence in excess in the tissues in the form of a soluble compound. In my opinion neither of the theories held by Garrod or Ebstein adequately explains the histological appearances as revealed by modern methods of examination.

The knowledge that we have of late years attained *re* bacterial influences, and the reaction of tissues to microbic infection, indicates that "the other morbid appearances seen in joints affected with gout" (No. II above) are of the highest importance for the correct interpretation of the appearances. This increased knowledge of bacterial processes in my judgement necessitates a modification of Garrod's views, marked I and II ante; on the other hand, it merely confirms his masterly deduction as to the "specific character of the inflammation No. III." In the following record the grounds for these opinions will be shortly stated. Little reference is here paid to the microscopic appearances of articular cartilages, as these have been very fully described by Sir A. Garrod and Sir Dyce Duckworth; attention is more particularly directed to certain histological changes, which appear to have received inadequate recognition.

Fig. 1 shows characteristic gouty deposits in the subcutaneous tissue of a phalanx in an untreated section. Fig. 2 is from the same section after treatment by ordinary staining methods. The chemical agents employed (haematoxylin and eosin) have effected the removal of the crystalline deposit, the complete absence of crystals being attested by the use of the polariscope. The gouty deposits are now seen in the form

of foreign bodies presenting a hyaline-looking appearance in their centre with striation at the periphery. This striated appearance is the result of separation of the crystals from the tissue in which they have been embedded. It is thus seen that uric acid is only one constituent of these foreign bodies.



Fig. 1.—Deposits containing urate of soda in the subcutaneous tissue. Untreated. (× 60.) *Cf.* Fig. 2.

The appearances of this tissue warrant the statement that we have no more right to assign etiological significance to uric acid than to other substances of an unknown nature present in the structureless material left after removal of the crystals.

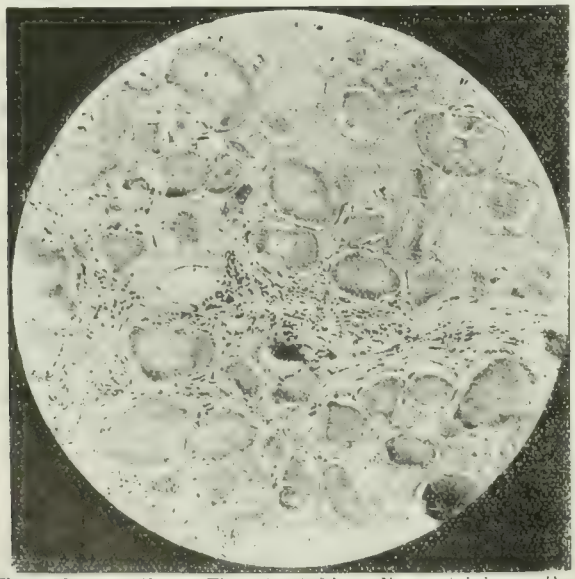


Fig. 2.—Same section as Fig. 1, treated by ordinary staining methods (haematoxylin and eosin), which have removed all traces of crystalline deposit. (× 60.) Note that the "foreign bodies" are of the nature of hyaline-looking tissue, in which the uratic crystals were embedded. Observe also the small cell invasion.

In connexion with these necrotic areas in extra-articular tissues, my observations lead me to accept Ebstein's teaching as to a necrosis of tissue preceding the deposit of crystals. There is, however, one point of importance *re* these deposits to which I wish to draw special attention. I find from examination of gouty tendons that the necrotic areas have a definite relation to the vessels of the part. The appearances in the tendons indicate that the necrotic areas are to be accounted for by an infection by the blood stream.

Fig. 3 is of special interest, as it is a section of the great toe-joint. On the left of the field the articular cartilages have disappeared and bony ankylosis is present. A study of these sections does not support the view that the uratic deposits *per se* are in any way responsible for the bony changes. In the articular cartilages on the right of the field crystalline deposits are seen a little distance from the surface of the cartilages—in the usual position as pointed out by Garrod. The erosion of cartilage is seen to be due not to the presence of the crystalline deposits, but to the action of small round cells of a granulation tissue type. In the centre of the field a pale area of myxomatous tissue is seen surrounded by uratic deposits in a cellular and vascular matrix.

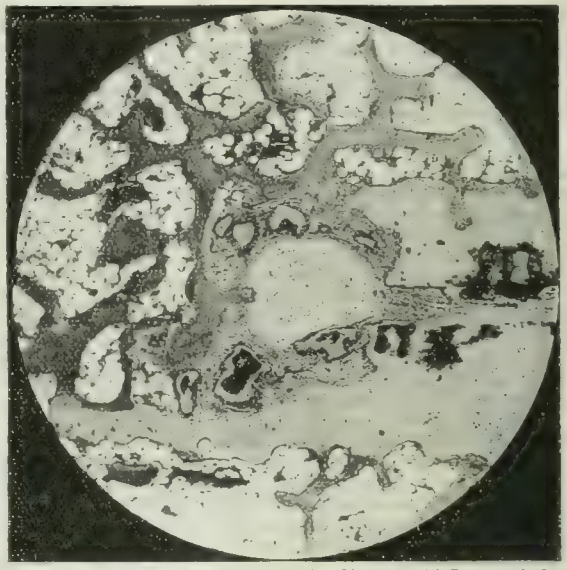


Fig. 3.—Great toe-joint in chronic gout. Observe: (1) Bony ankylosis on the left side. (2) Disappearance and erosion of cartilage. (3) In the centre of the field a pale area of myxomatous tissue surrounded by uratic deposits in a cellular and vascular matrix. (4) The opposing articular surfaces with crystalline deposits are seen to the right. (× 20.)

The special points to which attention is directed in Fig. 4



Fig. 4.—Section of phalanx in chronic gout. Note: (1) To the left of the field urate of soda in necrotic tissue. (2) A great accumulation of small round cells outside (1). (3) To the right of the field is seen bone (stained dark) and tendon. (4) The tissue between the necrotic tissue and the tendon and bone contains numerous large engorged blood vessels. (× 50.)

are: (1) The great accumulation of small round cells of a nature commonly associated with the action of bacterial toxins, and (2) the richness of the blood supply.

In connexion with Figs. 5 and 6, taken from sections of bone, the footnotes appended will suffice for description. It is advisable to state that we have clear evidence from the sections that the absence of crystals from different parts is not simply accounted for by a solution in course of preparation.

I have examined a large number of sections of soft tissues and of bone, and have found that in the former the crystalline deposits are readily removed by various chemical agents, for example, haematoxylin and eosin staining, alum, acidulated alcohol, etc.; in the latter the crystalline deposits were

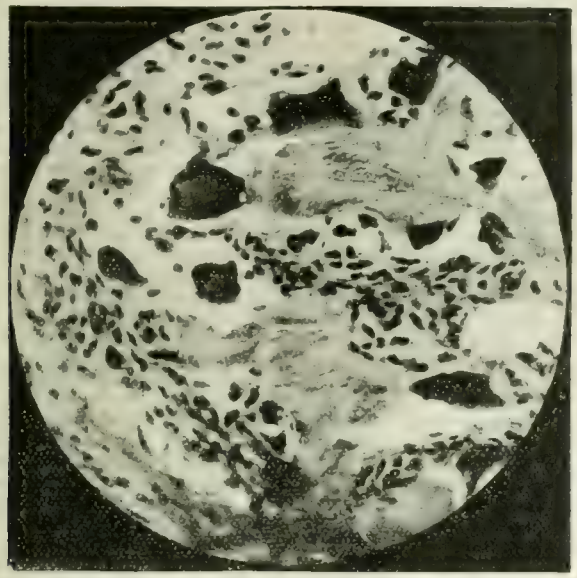


Fig. 5.—To show the manner in which some of the necrotic areas are produced. Note: (1) In the upper part of the field six giant cells are seen surrounding a necrotic area which contains a crystalline deposit in its centre. (2) Beneath (1) a second necrotic area is seen, in which the outlines of the nuclei of the degenerated connective-tissue cells are still visible. No deposit has yet taken place at this spot. (3) The large number of cells of an inflammatory type—proliferated connective-tissue cells—in the rest of the field.

unaltered by similar treatment. Reference has previously been made to the rich blood supply of parts of the affected tissue. Fig. 6 further illustrates this feature.

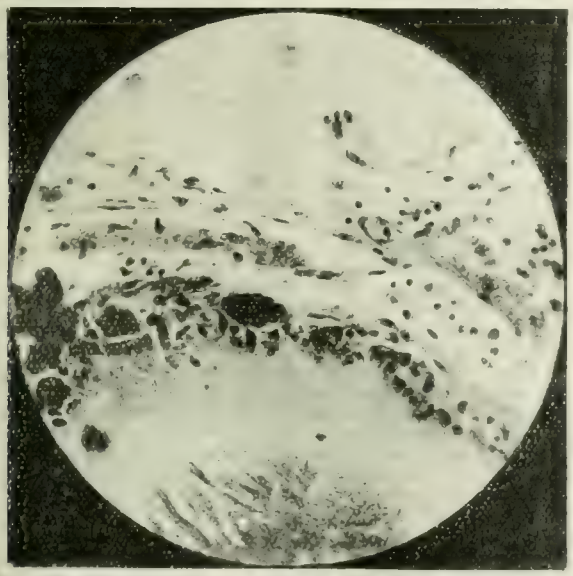


Fig. 6.—Necrotic area with a central deposit of crystals, surrounded by small round cells and giant cells. Observe two large capillaries full of blood immediately outside the giant cells.

Particular attention is directed to Figs. 7 and 8. It has long been known that gouty bones contain an excess of fat. Garrod writes on this point as follows: "Although I have not quantitatively determined the amount of fat in the bones of patients who have died from aggravated forms of gout, I am convinced that it often exists in large quantities, but whether this change is related essentially to the disease or is merely dependent on imperfect nutrition requires further observation and determination."

The histological appearances in Figs. 7 and 8 are a striking confirmation of the results obtained by chemical analysis. With reference to those changes it is of great interest to note that Ebstein claimed for bone marrow "an essential participation in the development of primary articular gout," this opinion being based on the theory that the marrow is a site of production or uric acid.



Fig. 7.—Section of phalanx to show the structure of the bone and marrow. (× 12.) Observe: (1) The bony trabeculae are very much thinned. (2) The "red" marrow characteristic of this bone has disappeared. *Cf.* Fig. 8.

I agree with Ebstein as to the probable importance of the bone marrow in gout, but on entirely different grounds, which may be briefly summarized as follows:

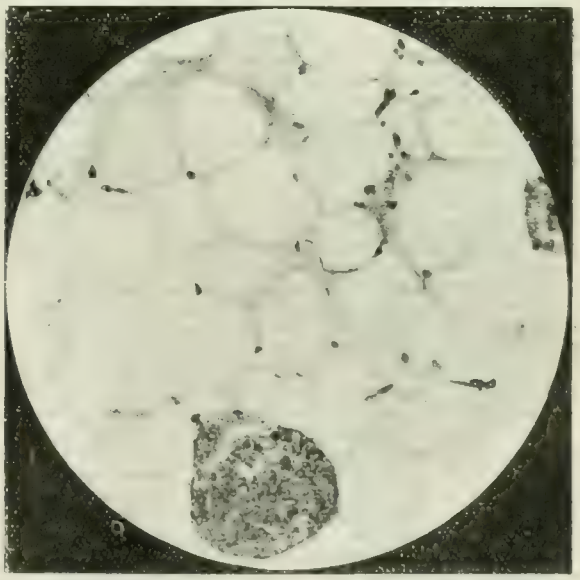


Fig. 8.—Higher magnification of marrow in Fig. 7. (× 200.) Observe: (1) Complete disappearance of the normal marrow cells, which are replaced by fat. (2) A distended vessel.

1. A study of the clinical features of an acute paroxysm of gout—the manner of onset, the temperature chart, the local appearances, liability to relapses, etc.—suggests an acute infective disorder: the paramount importance of the bone marrow in all acute infections is universally recognized.

2. In the BRITISH MEDICAL JOURNAL of January 6th, 1900, I recorded a striking change in the histological appearances of the blood (white blood corpuscles) in acute gout. While the interpretation of these changes was not clear, their existence confirmed in my mind the existence of an infective element causing a strain on the bone marrow function. In a later paper by Dr. W. Bain a similar appearance of the blood has been described.

3. In the course of an investigation on the comparative

pathology of chronic articular disease, involving the examination of over 200 subjects, I was impressed by the fact that the gross changes in the bone marrow exceeded in severity the lesions in the articulations.

The fuller consideration of these points is beyond the scope of the present paper, the main object of which has been to prove that the *tout ensemble* of the pathological picture of chronic gout is strikingly similar to that seen in chronic infective diseases. From this point of view the presence of uric acid is regarded as the feature which gives "the inflammation its specific character" (Garrod).

Let me, in concluding, draw special attention to the subject title of this paper, which I trust is sufficient to show that the author regards the bacterial element in the disease only as one of the factors in its production.

I have pleasure in acknowledging my indebtedness to Mr. Alexis Thomson, F.R.C.S.E., for the tissues which have formed the basis of this investigation; and also to Mr. Richard Muir for assistance in the examination of the sections, and for the reproductions from the microscopic slides.

ON THE DIACETIC ACID REACTION IN THE URINE.

WITH ESPECIAL REFERENCE TO GASTRIC ULCER.

BY

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and

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IT has long been known that, while the presence of diacetic acid in the urine may be of the gravest import in such diseases as diabetes and grave acid intoxication, it may also occur under certain other conditions without serious significance. Litten,[1] Lorenz,[2] Payne,[3] von Noorden,[4] and others have drawn attention to the occurrence of this reaction in conditions of gastro intestinal disturbance, gastric ulcer, and inanition and starvation. It is also known to occur in certain febrile diseases, and Windle[5] long ago described it in pneumonia. In this note we wish to deal specially with the occurrence of this reaction in cases of gastro-intestinal disturbance, and more particularly in gastric ulcer.

As a rapid clinical test for the presence of this body, Gerhardt's reaction, namely, the production of a port-wine colour on the addition of a solution of perchloride of iron to the urine, is extremely simple; a few drops of liquor ferri perchloridi are added to the urine, and in the majority of cases a whitish-grey phosphatic cloud forms. If diacetic acid be present, the urine assumes a port-wine colour, which is largely masked, however, by the phosphatic cloud. It is best, therefore, to filter this off and add a few more drops of the reagent to the filtered solution. The colour of the solution, if diacetic acid be present in appreciable amount, is a dark cherry-red when viewed by transmitted light. By reflected light it has more of a purplish tint. In some cases where the reaction is very marked the phosphatic cloud does not form. The colour is at once destroyed by the addition of a few drops of a solution of citrate of potash. Previous boiling of the urine, which converts much of the diacetic acid into acetone, diminishes the colour reaction, but boiling for half an hour is not sufficient to convert all the diacetic acid.

A somewhat similar colour reaction is produced when the solution of ferric chloride is added to the urine of patients taking salicylic acid, or any of the numerous compounds of this body, such as salol, aspirin, salicin, or diuretin. Ordinarily the colour thus produced, which is said to be due to salicyluric acid, is of a deep purple colour, rather than the cherry-red produced by diacetic acid. But by altering the degree of dilution or by increasing the amount of ferric chloride solution added to the salicylic urine a colour can be produced which is indistinguishable from that due to the presence of diacetic acid. The colour produced by salicylates is also entirely removed by the addition of a little citrate of potash. The distinction between the diacetic reaction and that due to salicyl compounds is, however, perfectly simple. Previous boiling for five minutes causes a great diminution in the colour, if dependent on diacetic acid, but the colour remains unaltered if due to salicylates. The detection of acetone, either by Legal's, or preferably by the iodoform test, is distinctive. To determine the presence of the diacetic acid in the urine of patients taking salicylates, etc., the urine must be boiled and then tested for acetone. The colour produced by diacetic acid is not likely to be confused with the brown or black colour following the addition of ferric chloride to urines containing melanin. The urines of patients taking sulphocarbolates, iodides, and phenacetin do not give this reaction. In a recent case of fatal carbolic acid poisoning the urine gave no reaction with ferric chloride. This agrees with a statement of Dr. Garrod's,[6] though the contrary is often stated. It may be pointed out that, although acetates are said to be excreted as carbonates, the urines of individuals, even when in ordinary health, may give a cherry-red colour after liquor ammonii acetatis has been taken, and that since this drug is often given to patients with a raised temperature, this factor must be borne in mind in estimating the significance of febrile diaceturia.

The observations to which we shall refer have been made on the urines of patients under our care during the last three years. Attention has been paid specially to cases of gastric ulcer, most of which have been treated by starvation or rectal alimentation. The occurrence of this reaction in diseases other than those involving the gastro-intestinal tract has been far from frequent, and it is evident that in any febrile case presenting this colour reaction in the urine the influence of practical starvation from non-absorption must always be borne in mind.[7] Care has, of course, been taken to exclude cases where the administration of salicylate compounds might be a source of error. Although the reaction has been present in several cases of diabetes—in two of them for prolonged periods, up to a year in one case—this subject will not be considered here, as its occurrence and significance are so well recognized.

GASTRIC ULCER.

The total number of cases tested was 44; of these, 3 were cases of perforated ulcer treated by operation and suture, and the remaining 41 were cases treated by purely medical measures. Of the 44 cases, 40 were women, including the 3 cases of perforated ulcer; the remaining 4 were men. As the incidence of the reaction shows well-marked differences in the two sexes we shall consider them separately.

Of the 40 female cases 2 only were allowed food by the mouth from the commencement of treatment, and the reaction was absent in these cases. In the remaining 38 food by the mouth was withheld for periods ranging from two to twelve days, and in all but five of these diaceturia was definitely present. Most of these 5 cases, in which the reaction was not obtained, were among our earlier cases, and the urine was not examined very systematically, so that it cannot be said that diacetic acid was constantly absent. In one case, however, in which careful daily examination was made it was absent throughout. It may be stated here that it appears to make no difference, so far as this reaction is concerned, whether the patient be absolutely starved or nutrient enemata be given, and for the sake of brevity we may refer to the period during which food by the mouth is withheld as the period of starvation.

The reaction usually appears quite early in these cases: in 19 cases in which the urine was tested regularly from the time of admission, it appeared on the day of admission in 2 cases, on the second day in 12, on the third in 1, and on the fourth in 4: it was found to be present when the urine was tested on the third or fourth day in several others. The average date of its appearance after the commencement of starvation would seem to be about the second or third day. The diacetic acid tends to disappear sooner or later after the return to mouth feeding, but the exact date of its disappearance is extremely variable. In our cases it varied from one day to a fortnight, the average being about five days. We have also been unable to establish any relation between the length of time of its persistence after the return to mouth feeding and the duration of starvation. One can only surmise that its disappearance coincides with the restoration of the balance of metabolism.

In the few cases of gastric ulcer in men this reaction either did not occur at all or only appeared after long periods of starvation. In one patient, who was admitted to hospital for chronic gastric ulcer on four separate occasions, it appeared on the first occasion on the ninth, on the second on the tenth day of starvation, and disappeared rapidly: on the third occasion there was a transitory reaction on the fifth day only, and on a fourth it was entirely absent. In a second patient with chronic ulcer we found it present on the eighth day of starvation only. In a third patient in whom food by the mouth was withheld till the ninth day, it was entirely absent.

In the fourth case, too, it was absent, but food was given by the mouth on the third day.

OTHER GASTRIC DISEASES.

We have studied this reaction in certain other gastric diseases, including gastritis, gastralgia, gastro-enteritis, carcinoma, and pyloric obstruction. We find that it is almost invariably absent when food by the mouth is administered. Short periods of starvation in cases of carcinoma ventriculi in men did not produce diaceturia. We obtained the reaction in each of three cases of alcoholic gastritis; it appeared early, on the second or third day of starvation, in all three cases. One of these cases occurred in a man of 33, and diacetic acid appeared on the third day, the earliest date at which we have ever found it in the male sex, but it was much more transient than in the female cases. It is possible that the perversion of metabolism in chronic alcoholism may specially dispose to the occurrence of diaceturia.

CAUSES OF DIACETURIA.

These results, then, show a special disposition on the part of the female sex to the development of diaceturia. In Litten's 81 cases of diaceturia there were 46 females and 35 males. The essential factor for its production is certainly starvation, for while patients are being fed by the mouth they do not tend to develop diaceturia. The question suggested itself as to whether the reaction might be associated with the acute ulcer, as this is commoner in the female than in the male, and this seemed to be supported by one of our cases, in which an extremely chronic ulcer in a woman of 42 (as verified at operation) was associated with absence of diaceturia, although the patient was starved for a period of five days. But on examining the ages of our female cases, we find that of the 40 cases, 13 were 30 years of age or over, 3 of them being over 40, and therefore presumably cases of chronic ulcer, and of these 13 cases, 11 gave the reaction. The reaction, moreover, appeared as early and was as marked in women over 40 as in women under 20. The only conclusion that can be drawn is that the determining factor is a matter of sex, and that neither the age of the patient nor the chronicity of the ulcer has any noticeable effect on the development of diaceturia.

Nor does the reaction appear to be determined by any actual lesion of the stomach itself; the direct cause is starvation. Thus in a woman under our care presenting the symptoms of epigastric pain, vomiting, and haematemesis, who was diagnosed and treated as a case of gastric ulcer, diaceturia was extremely marked and persistent, although the condition present was subsequently ascertained to be one of cholelithiasis and not gastric ulcer.

In other diseases where the brunt of the morbid process falls on the intestinal tract, females and children seem to develop diaceturia more readily than males. Thus in 7 cases of appendicitis the reaction was present in three children under 12, and in two females of 16 and 23, absent in two males of 23 and 30; and in 4 cases of enteric it was present in one female and absent in three males; in 4 cases of influenza it was present in two out of three females, absent in one male.

In pneumonia, on the other hand, we found there was no special tendency to its occurrence in female cases. The reaction was found to occur in a case of general tuberculosis, in a woman aged 22 years, associated with wasting, but it was transitory. We have also found it in cases of colitis, in mitral disease in children and young females, and in malignant disease, and generally in conditions associated with inanition. The reaction may be present after abdominal operations, involving a certain amount of temporary starvation, especially if the operation is followed by vomiting. But in all these cases there is a tendency for it to develop more readily in children and females. We have tested the urine in 9 cases of hepatic cirrhosis—of which 8 were in men—to ascertain whether the effect of grave hepatic disease on carbohydrate metabolism would influence this reaction, but diacetic acid was present in one case only.

Apart from diseases of the gastro-intestinal tract, we have examined the urine of patients suffering from various disorders in about 80 cases. The occurrence of the reaction in these cases was uncommon, being present in 9 only. The only cases in which it was present in men were in chronic nephritis (2 cases), herpes zoster, and pneumonia. We have never found it present in cases of morbus cordis in the adult male, although we have found it to occur, as already mentioned, in the case of mitral disease in children and young females.

THE INFLUENCE OF VARIOUS FACTORS ON THE APPEARANCE OF THE REACTION.

Feeding.—The exciting cause which determines the appearance of the reaction is starvation or defective absorption. As already mentioned, it apparently makes no difference whether the patient be absolutely starved or nutrient enemata be given. The question of the efficacy of rectal alimentation, on which much doubt has been cast, will not be raised here. Like von Noorden,[4] we have found that the addition of sugar to the water injections or nutrient enemata does not diminish the diaceturia. As a curiosity, it may be mentioned that, in the case of a man with gastric ulcer, the addition of sugar to the injections was followed by the appearance of the reaction, which had previously been absent. The administration of sugar by the mouth was, however, followed in most cases by a rapid disappearance of the diaceturia.

Drugs.—The administration of bicarbonate of soda should have a marked influence on the diaceturia. In a recent case of acute acid intoxication under the care of Sir Isambard Owen, transfusion with 4 pints of saline solution containing 1½ drachm of bicarbonate of soda to the pint was followed within an hour by almost complete disappearance of the acetone bodies from the urine. In some of our cases of gastric ulcer bicarbonate of soda in small doses of 20 gr. was given with the rectal injections, but did not produce any change in the reaction. In one case with persistent vomiting the same drug was administered in doses of 15 gr. by the mouth with the two-hourly feeds of milk, but it did not exert any appreciable effect on the diaceturia. The absorption of bicarbonate of soda is slow, and probably no noticeable effect would be produced unless it were administered in such doses as would tend to upset digestion. Morphine, which exerts a decided influence on metabolism, did not appear to influence the reaction, whether administered by the mouth, hypodermically, or in the form of suppositories.

Association with Vomiting.—In patients with severe or persistent vomiting there is usually an especially well-marked reaction.

It appears, then, that the development of diaceturia in cases of gastric ulcer is determined chiefly by starvation, and that it appears much earlier, persists longer, and is generally more marked in women than in men. Further, apart from this particular disease, diaceturia develops more readily in the female and in children than in the adult male. Grave acid intoxication appears, moreover, to be more frequent in the female. Drs. Dreschfeld and Moore[9] have recently published 3 cases, all in females; Kraus (quoted by Edsall[10]) 2 cases, both females. The case to which we have already alluded was in a female; while Edsall[10] records 1 case in a male.

The interesting question arises as to whether in women with gastric ulcer there is not some underlying condition of subacidosis to account for the marked tendency to diaceturia. It has appeared to us that in gastric ulcer vomiting as a symptom is more marked in the female, and persistent vomiting we have found to be always associated with marked diaceturia. May not an underlying condition of subacidosis be the primary cause of this vomiting? This is suggested by Edsall's[11] observation that the cyclic vomiting of children is associated with the appearance of diacetic acid in the urine, and that the attacks can be prevented by the administration of alkalies.

Thus, as this condition of subacidosis occurs more readily in females than in males, and as diaceturia has been found to be associated with cyclical vomiting, the speculation arises whether some cases which are usually regarded as gastric ulcer, but which Dr. Hale White[12] suggests may be "really suffering from a different disease," may not be reasonably explained on the hypothesis that subacidosis is the primary condition which sets up vomiting and disposes to haemorrhage. The acidosis associated with these cases of gastric ulcer must be slight in degree, and does not attain the proportions of the more advanced stage of acid intoxication, for none of our cases, although showing well-marked diaceturia, has ever exhibited symptoms of drowsiness or respiratory disturbance. Moreover, Dr. F. Golla,[13] who examined some of our cases, found that there was no appreciable diminution in the CO_2 contents of the blood, as there theoretically should be in grave acid intoxication.

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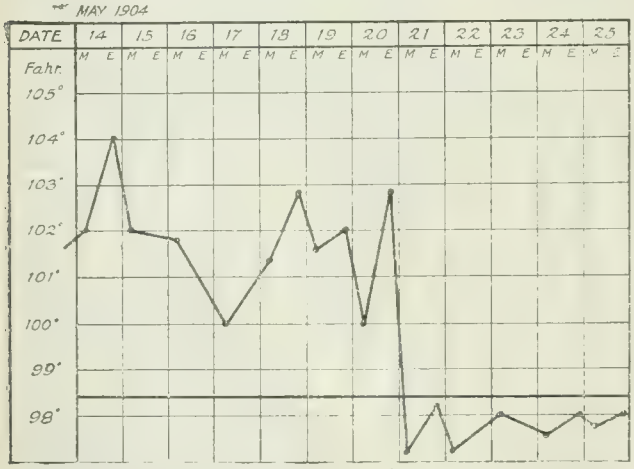
THE INCUBATION PERIOD OF PNEUMONIA.

By EUSTACE M. CALLENDER, M.D.Brux., L.R.C.P.Lond., M.R.C.S.Eng.

Although the pneumococcus (Fraenkel) does not conform to Koch's postulates, there is, I take it, little or no doubt in the minds of most physicians that it is the specific micro-organism of acute pneumonia. The same micro-organism is almost constantly found in the mouth, but seldom, if ever, in the nasal passages and cavities in health. In acute inflammatory affections of these passages and cavities it is, I believe, very generally present; in fact, it is probably the cause of many of these inflammations as well as of at least some cases of acute otitis media.

Several endeavours have been made to fix a more or less definite period of incubation in pneumococcus infections, and most writers appear to agree in believing such periods to be short. Mr. T. B. Franklin Eminson says: "It is the general opinion that the incubation period is very short—a few hours to a few days." Dr. Parsons says: "The length of the period of incubation is doubtful, but it appears to be short, from a few hours to two days."

The difficulty in fixing a definite incubation period in any disease must always be due in great measure to the difficulty in ascertaining the actual source of infection and the time of exposure. In the *Lyon Médical*, April 28th, 1889, is published an exceedingly instructive series of three cases in which the source of infection could be accurately ascertained and a definite time of exposure to infection ascertained. In these cases the incubation period was almost accurately forty-eight hours.



I venture to think that the series of cases now published is even more striking and instructive.

Case I.

P. M., female, aged 13 years, living at home with her parents, showed definite symptoms of a severe nasopharyngitis on the evening of May 8th, 1904. When first seen on May 11th her left antrum was full of muco-purulent secretion, and there was a profuse nasal discharge. Temperature was 102° F., and there was a very marked prostration.

Case II.

C. M., male, aged 49, father of Case I, was in good health on the evening of May 10th, but had a severe headache on rising the next morning (May 11th). He went as usual to his office in the morning, but returned home at 1 p.m., too ill to work. I saw him some two hours later. He had a typical left basal pneumonia. His illness was of the most severe type, and he died of toxaemia on the eighth day of the disease.

Case III.

Mr. B. had two conversations with the last patient (Case II) on the morning of May 11th, one in his private office, and one in another part of the same building. He was well on rising on May 14th, but had a sharp rigor during breakfast, and vomited two or three times during that morning. His illness was of a somewhat indefinite character, and ended favourably with a very definite crisis on May 21st, the eighth day of illness.

Case IV.

M. S., aged 28, female, domestic servant. This patient was for a short time on the mornings of May 12th and 13th in the sick-room of Case II. On the morning of the 14th she was too ill to work, and I was asked to see her. She was flushed and obviously ill. She complained of "sore throat" and very considerable dysphagia. Temperature was 102° F. There was marked prostration and very obstinate constipation. The fauces and pharynx were to the naked eye normal, but the patient complained of constant discomfort in the throat, which amounted to pain on deglutition. Pain was most severe on swallowing saliva, rather less on drinking, and least of all when swallowing solids. The reasons for detailing these symptoms will appear later. This patient's illness was not severe. She was ill for a week, becoming rapidly better during the seventh day. Her temperature was easily kept in check with quinine and diaphoretics.

Case V.

Mrs. W., aged 63, a relative of Mr. C. M. (Case II), was in the house during the whole of this latter patient's illness, but never entered the sick-room until the early morning of May 17th (1 a.m.). Having helped the nurses in their duties for a few minutes, she lay down on a couch at the foot of the sick bed, and fell asleep. She remained thus for about one hour, and then left the room. On May 19th she left London by a morning train, was taken ill in the train, and reached home in Worcestershire with a temperature of 103° F. She died of acute pneumonia on the morning of May 22nd.

Now granting that all these were cases of pneumococcus infection, they form, I think, a very instructive and remarkable series, and show a very fairly regular length of incubation period.

Of the nature of the disease in Cases II and V there can be no doubt. Case II was seen in consultation on two occasions by Dr. James Galloway. It was a typical case of virulent pneumonia. Case V I did not personally see, but there can be no doubt of the nature of her fatal illness. No one is likely to question her having become infected, in all probability, between 1 and 2 a.m. on May 17th by Case No. II.

Of the three remaining cases—I, III, and IV—can they be claimed as cases of pneumococcus infection? I believe that they can. With regard to Case I, I had a precisely similar illness myself in December, 1903. It commenced with marked prostration, obstinate constipation, and considerable dysphagia. The dysphagia exactly corresponded with that present in Case IV, and I was struck at the time with the fact that the fauces and pharynx appeared to be absolutely normal. After a few days there was a profuse muco-purulent nasal discharge, accompanied by very severe supraorbital and infraorbital neuralgia. I consulted my friend, Mr. Ernest B. Waggett, who found the left antrum full of muco pus.

Examined bacteriologically by Mr. G. Leslie Eastes, this muco-pus was found loaded with pneumococci. I now much regret that a similar examination was not made in Case I, but naturally I had no idea of the developments which were to follow. Still I do not hesitate, looking at all the facts, to attribute to this case the production of the others of the series. Was Case III a case of pneumococcus infection? I did not see this patient myself, but I have been favoured by his medical adviser, Dr. James Brown, of Tring, with the following account of the case:

Mr. B. got up feeling quite well on May 14th, but had a sharp rigor during breakfast, and was sick two or three times. He was seen in the course of the morning, his temperature being 102°, and his respirations rather hurried. He made no complaint of pain, but said he felt a little stiff over the right side of the back below the scapula. The bread sounds in that situation were rather feeble, but there was no dullness on percussion, and no abnormal sounds either there or over the rest of the chest. He did not look very ill, was not flushed, had a slight cough, bronchial in character, but no expectoration either then or at any time during his illness. I have not been able to give you a record of his respirations, as Mrs. B. unfortunately destroyed the chart . . . . . but it varied from 20 to 48, and never gave him any distress except when he was moved. On May 18th I thought I could detect a few very fine crepitations on the left side of the back at the angle of the scapula, and on May 20th there were a few on the same side in front about 2½ in. below the nipple, but they were not very marked in either situation. He had a marked crisis on May 21st, and has gone on well since, but there have been no sounds in his chest, and practically no cough. He has a slight rheumatic tendency, with a permanent systolic murmur. At the beginning of the attack this became much more marked and rougher in character, but it quieted down again about the fourth day.

The onset, the indefinite pulmonary signs, the very marked increase of frequency of respiration, the definite crisis at the end of the seventh day or the beginning of the eighth, I think more than suggest a pneumococcus infection, especially when we remember his two interviews with Case II on May 11th, who was then suffering from pneumococcus infection of a most virulent type. There only remains Case IV, a very indefinite case undoubtedly. Her symptoms, however, so exactly resembled those I suffered from myself, and

which were subsequently proved to be due to pneumococcus infection, that I do not hesitate to add the case to the others of the series. The patient was a strong, healthy woman. She was seen almost immediately after the development of her first symptoms, and vigorous treatment was commenced at once. No development of further symptoms occurred, but there was definite illness and prostration, which lasted until the seventh day.

In conclusion, it is interesting to note the length of the incubation period in each case. Of the source of infection in Case I we know nothing. She could not have infected Case II, as far as we know, before the night of May 8th. He recognized his first symptoms on rising on May 11th—roughly, say, fifty-eight hours. Case II and Case III were in contact for a short time between 10 a.m. and 1 p.m. on May 11th. The first symptoms were exhibited during breakfast on May 14th—roughly, sixty-nine hours. The earliest period of infection of Case IV appears to have been about 10 a.m. on May 12th, and her first symptoms appeared at 7 a.m. on the 14th—a period of only forty-five hours. This period is, however, open to question, as this patient had already run a distinct risk of infection by washing the infected handkerchiefs used by Case I.

Case V appears to be much more definite as regards incubation. I saw the patient constantly whilst visiting Cases I and II; she was in vigorous, good health. One one occasion, and one only, was she in the sick-room for anything more than a minute or two; we may, I think, reasonably take it that she became infected between 1 and 2 a.m. on May 17th. She began to feel ill about 9 a.m. on May 19th—a period of fifty-five hours.

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Remarks

ON

CHRONIC GASTRIC ULCER AND PYLORIC STENOSIS

AND THEIR TREATMENT BY GASTRO-ENTEROSTOMY.

Read before the Croydon Division (South-Eastern Branch) of the British Medical Association.

BY HERBERT F. WATERHOUSE, M.D.EDIN., F.R.C.S.ENG.,

Surgeon, Charing Cross Hospital.

GENTLEMEN,—When your President, Dr. Duncan, did me the honour of inviting me to address you this afternoon he asked me for a paper on some subject of practical importance. I had little hesitation in selecting as my subject "Gastro-enterostomy in Non-malignant Affections of the Stomach," and this for two reasons. First, because I am convinced that gastric disorders form a no inconsiderable proportion of the cases you are called upon to treat in your daily practice; and, secondly, because this operation has, during the past three years especially, afforded me results so gratifying and so far exceeding my most sanguine anticipations in the treatment of these chronic, painful, and too frequently mortal diseases that I am glad of this opportunity of trying to infect you with some fraction of my enthusiasm for this, in such disorders, almost ideal operation.

The time at my disposal is, however, so short that I can only refer to gastro-enterostomy in two of the many non-malignant gastric disorders, and I naturally choose those of which I have had the largest experience—namely (1) simple ulcer of the stomach, and (2) stenosis of the pylorus, with or without chronic gastric dilatation. Before proceeding to the special consideration of these two disorders I will bring under your notice briefly a few general statements.

In almost all lesions of the stomach there is present a certain degree of dyspepsia. And here let me enter my protest against the far too common practice of treating dyspepsia as if it were a definite disease. It is merely a symptom common to a multitude of gastric disorders. So far as I, as a surgeon, am concerned, when brought face to face with a patient who complains of dyspepsia, I ask myself this question: Is the dyspepsia due (1) to abnormal gastric secretion, or (2) to interference with the movements of the stomach, especially those which are concerned with the transmission of the food from the stomach into the duodenum through the pylorus, or (3) to these factors combined?

It is to be borne in mind that the function of the musculature of the non-pyloric part of the stomach is to move the gastric contents about so as to ensure their complete admixture with the gastric juice and not to transmit food from stomach into duodenum, this act being the function of the pyloric segment. Hence anything which mechanically hinders the contraction of the musculature of the pyloric segment tends to prevent the normal evacuation of the stomach contents into the duodenum: this also explains the fact that in the great majority of cases of pyloric stenosis the compensatory hypertrophy is limited to the pyloric segment of the stomach, a statement I have frequently verified *in vivo*.

Of the chemistry of the stomach I hardly dare to speak, as it is a subject upon which my knowledge is exceedingly small. I will content myself, therefore, with a few statements. The normal acidity of the gastric juice is due to free hydrochloric acid which is present to the extent of 0.18 per cent. It is this mineral acid which is the great microbe-destroyer and antiseptic of the stomach. When it is absent fermentative changes occur in the stomach occasioned by bacteria introduced with the food and give rise to the organic acids of decomposition, lactic, butyric and acetic. When HCl is present in excess, hyperchlorhydria exists—a condition frequently found in association with gastric ulcer. It is, of course, well known that free HCl is commonly absent in cases of carcinoma of the stomach. I have learned not to rely upon its absence as a sign of carcinoma unless three different examinations of the gastric contents after three test meals agree in proving that it is not present. A single examination has misled me more than once.

In the vomit in my cases of gastric dilatation secondary to non-malignant pyloric stenosis sarcinae ventriculi have always been found and yeast fungi have very frequently been present.

It may be mentioned as a matter of prime importance that seven and a-half hours after a moderate meal the normal stomach is quite empty of food and that the reaction of its mucus is neutral or nearly so. Should particles of food be present, especially in any amount, it may be assumed that the motor power of the stomach is seriously impaired. If in the morning I find that washing out of the stomach reveals the presence of distinct food particles taken at dinner the preceding evening, say twelve to thirteen hours previously, I conclude that I have to deal with pyloric stenosis. I do not deny that there may be some cases of atony of the stomach apart from pyloric obstruction, but I can definitely state that I as a surgeon have never met with such, and that reliance on this sign has enabled me, in many cases, to form a correct diagnosis whilst it has never misled me.

CHRONIC GASTRIC ULCER.

Though I am attempting to place before you the surgical teatment of gastric ulcer and of pyloric stenosis, no hard-and-fast line can be drawn between these two lesions, as in many cases the stenosis of the pylorus is not organic but spasmodic, and due to the presence of an ulcer, fissure, or erosion in the pyloric segment of the stomach, which may be of considerable size or so minute as to escape notice on hasty examination. Pyloro-spasm has been frequently present in my series of cases, and I have had two opportunities of observing in very emaciated patients that though the pylorus could be distinctly felt through the abdominal walls as a small hard tumour prior to the administration of the anaesthetic, this tumour became less palpable as the anaesthesia was in progress, disappeared entirely under complete anaesthesia, commenced to reappear after suspension of the administration, owing to respiratory embarrassment necessitating artificial respiration which allowed the patient nearly to come out of the anaesthesia, and disappeared again on the re-establishment of deep anaesthesia. I am as convinced of the existence of pyloro-spasm due to pyloric ulcer as I am of anal spasm caused by anal ulcer and fissure. From my experience I would consider pyloro-spasm almost as frequent a cause of pyloric stenosis as cicatricial contraction. In other words, I hold that, so far as non-malignant ulcers are concerned, an open ulcer is almost as frequent a cause of narrowing, spasmodic, I admit, but none the less real in its effect, as is a cicatrized ulcer.

The great indication for gastro-enterostomy in simple ulcer of the stomach is the occurrence of repeated haemorrhages. I have never operated for a first haemorrhage from the

stomach, though I have experience of four cases in which a really alarming first haemorrhage occurred. In one case a young man, previously in apparent health, vomited three pints of blood, and died two hours later, shortly before I arrived at his residence. On *post-mortem* examination an almost equal amount of blood was found in his stomach. All this enormous amount of blood had come from a tiny round ulcer, the size of a split pea, situated on the lesser curvature of the stomach, near the oesophageal orifice. In the three other cases I have found that absolute rest in bed, with an icebag over the stomach region, abstention for five days from all food or drink by the mouth, the injection under each breast (they were all women) of a pint of sterilized normal salt solution repeated several times, and feeding by means of nutrient enemata, sufficed to prevent any dangerous recurrence of the bleeding, and thus obviated the necessity for surgical treatment. In such cases I cannot speak too highly of the action of morphine in quieting the stomach, the circulation, and the fear-stricken patient's mind. Had in any of these three patients a second alarming haemorrhage broken out I would at once have opened the stomach, sought for the bleeding point, and had I been successful in finding it—a by no means certain event—I would have attempted to cast a ligature around the ulcer, as these lesions which cause fulminating haemorrhage are commonly superficial and their bases non-indurated. A few Lembert sutures would then have tucked in the peritoneal coat underneath the ulcer. Had the condition of the patient permitted it—an unlikely eventuality—a gastro-enterostomy would have been done with the view of giving rest to the stomach, helping to heal the ulcer present, and tending to prevent the formation of future ulcers. In such cases the ulcers (exulceratio simplex of Dieulafoy) are frequently multiple and are certainly caused by pyogenic micrococci, though the exact pathology of the condition is by no means clear.

Apart from these rarer terrific haemorrhages, let us consider the question of repeated haemorrhages, commonly small or moderate in amount, which are associated with the chronic simple ulcer (ulcus rotundum) with which we are all so familiar.

In my experience, by far the most frequent site of the chronic simple ulcer has been the posterior wall of the pyloric segment near the lesser curvature. I am convinced that though healing of the ulcer is by no means rare, it is far less frequent in the neighbourhood of the pylorus than on either surface of the remainder of the stomach. I am also certain that many gastric ulcers supposed to be cured are not in reality. They have only reached the chronic, painless condition seen so frequently in long-standing ulcers of the leg. I have known several apparently-cured gastric ulcers perforate without the least warning that the ulcerative process was extending. I have on several occasions been in considerable doubt, even when I had the stomach between my fingers, whether I had to deal with a chronic ulcer or a carcinoma, but in every case in which I was in doubt the result proved it to be one of non-malignant ulceration. It is possible for the lymphatic glands in the lesser omentum to be enlarged from infection from a simple gastric ulcer, and I have seen one case in which I considered it certain that a general septic peritonitis had its origin in the intraperitoneal rupture of a glandular abscess in this situation. I believe that gastric ulcers are multiple as often as one case in three. In an unfortunate case seen several years ago with my late colleague, Dr. Charles Arkle, I operated in Charing Cross Hospital for perforation of a gastric ulcer on the anterior wall of the stomach near the oesophageal orifice. The patient died on the third day of general peritonitis, and Dr. Arkle found at the necropsy a second perforated ulcer on the posterior surface of the stomach. Such cases are by no means uncommon.

I believe it to be impossible to estimate with exactness the mortality of simple gastric ulcer, the more so as in many of the slighter cases a gastric ulcer is assumed rather than proved to be present. I am, however, convinced, from personal experience during the last few years, that the mortality is far greater than the profession will allow, and I am bold enough to venture the statement that the mortality direct and indirect of gastric ulcer far exceeds that of the operation of gastro-enterostomy. I am convinced, moreover, that the transition of simple into malignant ulceration is a by no means uncommon event. The relation of gastric ulcer to hyperchlorhydria is uncertain. In the great majority of my cases hyperacidity has been present, but in a few the opposite condition has obtained.

In all but two of my cases of chronic gastric ulcer haematemesis was present and in every one melaena. Vomiting was a frequent but not constant symptom. I have been surprised at the number of duodenal ulcers I have encountered—eight during the past three years. On January 9th, 1904, I had the extraordinary experience of operating upon two cases in succession of perforated duodenal ulcer in young men—one in Charing Cross Hospital, a patient of Dr. Berrill, of Woodford, the other a patient of Dr. Gregory, of South Kensington.

When one bears in mind the serious, nay, frequently mortal, complications of the so-called simple gastric ulcer, its treatment becomes a matter of prime importance. Do not let me be misunderstood when I urge gastro-enterostomy for the cure of gastric ulcer. I urge it only for such cases as cannot be cured by medical means.

I firmly believe that a diet consisting solely of milk, of which four or five pints should be taken daily, a tumblerful every second hour, with, in cases in which much pain is present, the addition of lime water and a minimal dose of morphine, will cure a large number of recent gastric ulcers, the larger the greater the loyalty with which this treatment is carried out for weeks or even months. There remains, however, a very considerable number of gastric ulcers in which the physician's aid is of no avail. In spite of the most careful dieting and medication, symptoms, for example, frequently repeated vomiting, haemorrhage, and pain, indicative of progressive, or at least persistent ulceration, are found, accompanied frequently by anaemia, marked dyspepsia, hyperacidity, headache and wasting. Now, I maintain that the conscientious physician has no justification any longer to continue the treatment of the case which has demonstrated the powerlessness of purely medical remedies. The surgeon demands, and with unquestioned right, that he shall be given the opportunity of curing the patient before the sufferer be greatly exhausted, so that the operation of gastro-enterostomy may be performed with a minimal mortality. As to the time at which the physician should decide to hand over the patient to surgical treatment, it is difficult definitely to state a rule that shall apply to all cases. My own opinion is that unless definite improvement commence to be manifest after three months of medical treatment, or unless all serious symptoms have disappeared after six months' treatment, the case should be considered one for surgical rather than for further continued medical aid.

PYLORIC STENOSIS WITH OR WITHOUT DILATATION OF THE STOMACH.

I have met with several cases of pyloric stenosis with, and several apparently unaccompanied by, gastric dilatation. No doubt in general the longer the case lasts, the higher the degree of stenosis, and the weaker the patient becomes the greater will be the dilatation of the stomach. Organic pyloric stenosis is the most frequent cause of great gastric dilatation, but I am convinced that pyloro-spasm due to ulcer causes far greater suffering, though, owing to the hyperacidity of the gastric juice commonly present in such cases, fermentative changes are checked or prevented, and gaseous distension of the stomach leading to a high degree of dilatation does not so readily occur.

Personally I have no knowledge of dilatation of the stomach apart from pyloric stenosis, either organic or spasmodic. I need not draw any fine distinction between organic stenosis due to intrinsic causes (commonly the cicatrization of a pyloric ulcer) and the much rarer cases in which the pylorus is narrowed by extrinsic causes, such as dense adhesions, the result of cholecystitis, healed tuberculous peritonitis, etc. Should the stenosis be in the duodenum as the result of intrinsic or extrinsic causes the symptoms will be identical with those of pyloric stenosis, with the exception that should the stenosing agent be situated below the ampulla of Vater, bile and pancreatic juice will flow backwards into the stomach, appear in the vomit, and thus further add to the patient's distress. The treatment for all the above forms being gastro-enterostomy they may be considered together.

I have found that in pyloric stenosis vomiting is the most constant and definite symptom. It takes place, certainly in the dilated stomach, as a rule, once or twice a day, and commonly in the early part of the night. The amount vomited may be enormous, but I have rarely seen more than five or six pints at one time. The vomit is sour-smelling, contains much gastric mucus and a large portion of the food swallowed many hours, or even two or three days, previously. The appetite

is almost always very small, but the thirst is excessive. Owing to the excessive amount of fluid lost in the act of vomiting, many pints of liquid have to be taken daily, and in spite of this after vomiting of a large amount no urine may be secreted for several hours. Gastric distension with gases, chiefly carbonic acid, adds to the troubles of the patient, who however, does not in general complain of much pain, though in three cases the suffering was so great at times that it was hardly controlled by hypodermic injections of morphine. Rapid wasting soon occurs, but it is remarkable how long these patients live. One patient sent to me by Dr. Montague Murray had washed out his stomach every night for twelve years, and though a living skeleton managed to conduct his business satisfactorily. An invariable complaint I have found to be constipation, owing to the fact that little or nothing passes the pylorus from the stomach, and that therefore there is nothing to start peristaltic action. *Malaise*, headache, and in the last stages tetany, a symptom of bad omen, may be present.

As to medical treatment, something may be done to relieve the condition; nothing, however, to cure it. First and foremost is lavage of the stomach, which should be carried out every evening, using pint after pint of tepid normal salt solution until every particle of food débris be washed away and the fluid returns clear. Creasote and sulphocarbolates I have found of little service, but I have known real help derived from the administration of dilute HCl just prior to meals. This artificial gastric juice helps more than anything else in restraining the fermentative changes. The only rule of diet is the employment of easily-digested nourishment—for example, peptonized milk, Benger's food, clear soups, etc.—and the avoidance of all starches and sugars, as being prone to fermentative changes. In such a pitiable condition, in marked contradistinction to the failure of medical treatment, surgery is at its best, as it possesses a safe and reliable cure. The results which I have obtained in these cases by gastro-enterostomy have proved so eminently satisfactory that I urge the operation strongly. Let me mention one case only, as it illustrates well the advantages that can be gained by gastro-enterostomy.

Mr. T. H., aged 41, was operated upon by me on October 18th, 1903, with the assistance of Drs. Plumbe and Montgomery, his medical attendants. The man was emaciated to a terrible degree, his appetite was gone, pain occurred regularly two hours after taking any food, and, as the stomach became distended with gases of fermentation, the agony grew intense until he washed out his stomach, as he had done daily for thirteen years. He assured me that he had consulted more than twenty physicians, none of whom had afforded him any relief. He said he felt "played out," and wished to die. His weight when fully dressed was 6 st. 6 lb. Gastro-enterostomy was performed. In less than six weeks' time the patient, who had never once vomited since the operation, called to see me on his way to Eastbourne. He had put on 2 st. in weight, and had eaten beefsteak and kidney pudding for breakfeast that day with enjoyment and immunity from any untoward result. Six weeks later I again saw Mr. H.; his weight was then 9 st. 10 lb.—that is, an increase of 3 st. 4 lb. in less than three months. He reported himself in excellent health, he could eat anything, and said as he left my consulting room, "I am a resurrection."

This is a striking but by no means an uncommon result of gastro-enterostomy in non-malignant pyloric stenosis. Why is it, gentlemen, that you will not let us cure these patients? Many of you have doubtless such cases under treatment, but how many of you look upon gastro-enterostomy as the sole treatment of any avail in benign pyloric stenosis? Surgeons can show many such results, and our complaint is that you will not give us the chance of showing more.

The Operation.

As regards the operation itself I have employed five methods.

1. Anterior gastro-enterostomy.
2. Posterior gastro-enterostomy (Hacker).
3. Inferior antecolic gastro-enterostomy (Kocher).
4. Retrocolic gastro-enterostomy by the "Y" method of Roux.
5. Antecolic gastro-enterostomy by the "Y" method.

The last I consider to be the best. It has certainly yielded me results which leave nothing to be desired. I have thrice after gastro-enterostomy had the complication of vicious circle, that is, the entrance of bile and pancreatic fluid in large quantity into the stomach, whence they are ejected by vomiting. In two cases this occurred after posterior gastro-enterostomy, in one after the inferior antecolic method. The method which I now always adopt is the antecolic "Y" method, a modification of the well-known method of Roux. The jejunum is seized between two fine long-bladed forceps placed almost touching one another at right angles to the long axis of the gut and 14 in. to 16 in. below the duodeno-jejunal flexure, the bowel being then divided between the two forceps, the upper end of the distal segment is implanted into the anterior aspect of the stomach as near to the pylorus as possible and just above the attachment of the great omentum to the lower border of the stomach. This accomplished, the distal end of the upper segment is implanted after division of the mesentery at right angles to the long axis of the bowel, the mesentery into the antimesenteric border of the distal portion of the jejunum as far as possible (commonly 4 in. to 5 in.) from the gastro-jejunal junction already made. With a little practice this operation takes hardly longer than the simpler methods. It has the great advantage that vicious circle, the commonest cause of death after gastro-enterostomy, cannot occur. The fact that two junctions, (1) gastro-jejunal, the other (2) jejuno-jejunal, are made instead of one only is urged as a strong objection against the "Y" method, but as a matter of fact, leakage with subsequent peritonitis has never occurred to me in any of my cases of gastro-enterostomy. I fear vicious circle exceedingly, as I have had one death from this and two patients who came very near to dying, but were saved by the reopening of the abdominal incision and the formation of a lateral anastomosis between the afferent and efferent segments of the jejunum some 4in. below the gastro-jejunal opening. Both these patients made an excellent recovery, and one of them, who at the time of operation was in a very exhausted condition from continued vomiting of bile, owes her life in no small measure to the encouragement and valued help I received from my friend and colleague, Mr. Herbert S. Clogg, who has rendered me much assistance in many of these operations.

Whilst I do fear vicious circle I have no fear of leakage. I never insert more than two rows of sutures—an inner one involving all coats of the viscera, an outer limited to the peritoneum alone. Fine silk No. 00 or No. 000 is used on an ordinary sewing needle or special intestine needle. The sutures need not be inserted closer than five or six to the inch, but must be continuous; no interruption should be permitted. In cases where rapidity of operating is of prime importance I have contented myself with a single row of continuous suture involving all coats of the viscera, and have never seen any reason to regret having done so. In fact incisions into the stomach heal with wonderful certainty. I generally feed the patient by the mouth within twenty-four hours of the operation.

Results.

Let me now direct your attention to the results of gastro-enterostomy in gastric ulcer and pyloric stenosis, for this is the crucial point upon which it appears to me I have to satisfy you.

I can speak of an experience of 31 cases with 2 deaths, a mortality of 6.45 per cent.* I hold it to be unsportsmanlike to attempt to minimize one's mortality, but I think in justice to the operation I recommend to you I ought to say that one patient, an extremely emaciated man, whom I operated upon for my friend and colleague, Dr. F. W. Mott, F.R.S., and who died from exhaustion and vicious circle, was in a terribly emaciated and feeble condition when I performed gastro-enterostomy, to which he only consented three months after Dr. Mott had first urged it. The other, a young man, died of profuse haematemesis three hours after gastro-enterostomy performed for repeated haemorrhage from a gastric ulcer. He was intensely anaemic when I operated upon him, and on necropsy it was found that he had three gastric ulcers, one on the anterior gastric wall and two on the posterior gastric wall. From one of the latter, undiscovered at the operation, the fatal haemorrhage had occurred.

The subsequent history of the remaining 29 cases is as follows: 27 can eat anything that is placed before them; 2 state that they have to be careful in their diet, and one of these, a very neurotic lady, says that she still suffers much from indigestion; 28 have remained free from vomiting, 1 vomits a little bile every month or so. She has, however, no discomfort from the presence of bile in the stomach. She is very constipated, and vomits, as a rule, only after an enema is given.

With one exception in all the cases pain and the feeling of distension have entirely disappeared. In 26 no dilatation of the stomach can be made out. Three are too recent to enable a definite statement to be made on this point, but I may say that I have never known dilatation of even the most dilated stomach to persist for six months after gastro-enter-

* Since the above was written three additional cases have been operated upon successfully, thus reducing the mortality to 5.88 per cent.

ostomy. In many cases I have been disappointed to find that when the patients, three or four weeks subsequent to operation, passed from my care, the stomach still remained dilated, but in every case this symptom has disappeared by the end of the sixth month. In no case has hyperacidity persisted beyond five weeks.

In every case but one the bowels, almost always constipated prior to operation, have become normal in action. In all cases the general health has improved marvellously and weight has increased in every instance but one from 20 lb. to 66 lb. In the one exception, a highly neurotic maiden lady with retroverted uterus, only 12 lb. have been gained.

In no case operated upon for gastric ulcer has there been any return of haematemesis except in the one fatal case three hours after operation, that is, before the beneficial effect of the operation had had time to manifest itself.

Such, then, is the record of my cases. Is it sufficient to justify you in recommending your patients, victims of intractable gastric ulcer or pyloric stenosis, to submit themselves to surgical intervention? I have no fear of your answer.

Take then, gentlemen, your courage in both hands; tell your patients candidly of the perils of intractable gastric ulcer and of the hopelessness of the outlook in pyloric stenosis; ask them in no uncertain terms whether or no they are prepared to face the former or to resign themselves to the latter. Decide not rashly nor precipitately upon surgical intervention; but when once you have made up your minds that your treatment by medicinal means—potent and all-sufficient as I admit it to be in many maladies—is powerless in these disorders, then I ask you in the name of justice to hand over your patient to the surgeon, placing reliance upon one of the most beneficent, pain-saving, and life-preserving of operations—gastro-enterostomy—and not delay until the patient is a living wreck and the hour of dissolution is at hand, for such cowardly hesitation is unworthy of your calling, and gives surgery but small chance of demonstrating one of the greatest of its modern achievements—gastro-enterostomy.

HAEMORRHAGE FROM A CHRONIC GASTRIC ULCER: OPERATION: RECOVERY.

BY C. FIRMIN CUTHBERT, M.R.C.S.ENG.,
Gloucester.

IN a paper read before the Gloucestershire Branch of the British Medical Association in April, 1903, on the surgery of dyspepsia, I dwelt upon the importance of not accepting this term otherwise than as the name of a symptom. I also pointed out how often this symptom depended upon conditions which required surgical treatment. Further, that without a careful examination the real cause of the trouble might be overlooked. Affections of the teeth and of the alimentary canal, together with diseases inside and outside the abdominal cavity, were considered, especially acute and chronic ulcers, and pyloric obstruction due to simple adhesions or malignant disease. Some diseases of the kidney, and in particular movable or "dropped" kidney, accompanied by urgent gastric symptoms (described by Diethl as gastric crises) were alluded to, and in addition biliary colic, ovarian and uterine diseases, and diseases of the appendix. Special stress was laid upon gastric haemorrhage. I said that in no other condition was haemorrhage allowed nowadays to go on to such a narrow margin between life and death as in gastric ulcer, and I advocated that an operation should be undertaken to allay this haemorrhage. I detailed the case of a young man who nearly died of bleeding from the stomach, and upon whom I operated in December, 1901. He made a good recovery, and has been well ever since.

The following is another case of similar urgency:

I have known W.T.H. for about 17 years. When first seen he was 24 years old, and it was probable that he then had a gastric ulcer.

History.

During the past two-and-a-half years he has had four illnesses, with attacks of haematemesis and melaena. On the morning of August 10th, 1903, he vomited blood in his shop, and then walked about half a mile to his home, and I saw him about two hours afterwards. He had vomited a quart of blood. He was blanched, restless, and throwing himself about the bed.

The usual remedies, such as egotine, strychnine, and digitaline hypodermically were used, together with saline solution by the rectum, and turpentine capsules given by the mouth. He was fed by the rectum with peptonized milk, and saline rectal injections were also given. No bleeding ensued for four days. Feeding by the mouth with 2 oz. of peptonized milk every four hours was then commenced. This was followed in twenty-four hours by another serious haemorrhage.

The hypodermic injections were again resorted to, with the same temporary good result, but were followed in another twenty-four hours by copious haemorrhage, although nourishment by the mouth had been stopped. These recurrences of bleeding took place at intervals of two or three days, and it was very evident that they could not be allowed to go on. He was removed on the evening of August 21st to the Nursing Home about half a mile distant, with a view to operation. He had no haemorrhage that night or on the following morning.

Operation.

On August 22nd, at 3 p.m., the abdomen was opened in the middle line above the umbilicus. The stomach and omentum were adherent to the liver at the pylorus. The adhesions were soft and easily separated. The pylorus itself looked and felt healthy. The stomach was pulled well up into the wound, surrounded with hot sponge cloths, and freely opened by horizontal incision, commencing 1 in. from the pylorus, midway between the lesser and greater curvatures, and extending 4 in. towards the fundus. This gave a good view of the interior of the stomach, which was thoroughly washed out. The pyloric opening felt quite healthy, and the finger passed easily through it. Saline solution at temperature 110° was put into the abdominal cavity, and retained as well as possible for a few minutes. My assistant pushed up the posterior wall of the stomach by passing his finger into the foramen of Winslow. On the posterior surface of the stomach, quite at the upper curvature, close to the pylorus, was a deep-cut ulcer 1 in. in diameter, the edges of the mucous membrane overhanging it, and, as it were, standing out in relief. This ulcer had entirely penetrated the mucous membrane, and had extended well into the muscular wall of the stomach. The mucous membrane around it was swollen, but not much inflamed. The ulcer was situated beneath the adhesions to the liver, and perforation was prevented by the thickening of the peritoneal coats of the stomach. In the centre of the ulcer was a projecting papilla, with a small black point on it, which was evidently a clot plugging a vessel. The whole surface of the ulcer was seared with the actual cautery, and in doing this the suspected artery started bleeding freely. From the size of the vessel it looked as if it was the main branch of the gastro-epiploica dextra, and was obviously the source of the former haemorrhages. The ulcer was pressed well up into the wound, and thereby the bleeding was controlled. A purse-string suture of No. 2 silk was passed round, ½ in. from the centre of the ulcer deep into the tissues, and tied, and the pylorus allowed to fall back. It was then seen that the ligature was effectual, and the bleeding stopped, but in order to make certain, the ulcer was again pushed up into the wound. The mucous membrane was stripped back all round the ulcer, and another purse-string stitch put in, half an inch outside the first. The ulcer was by this means completely covered in, so that its seared surfaces came together. The mucous membrane of the stomach was then sewn together with a continuous suture of No. 2 silk, as I am of opinion that it is a great mistake to put in a small silk continuous suture, as it is so liable to break at the time, or afterwards tear out; No. 2 silk does no harm, is reliable, and the continuous suture saves time. The peritoneal surfaces of the stomach wound were then brought together by broad Lembert sutures and the abdominal wound closed with fishing gut.

After-history.

On the next day (August 23rd) I found that the patient had had a comparatively good night, and had vomited only some mucus, which was slightly tinged with blood, as if it had come from the cut edges of the mucous membrane of the stomach. He was fed by the rectum.

On August 29th he was going on well, and feeding by the mouth with peptonized milk and brandy was commenced. Hypodermic injections of digitalin and strychnine had been given periodically after the operation. He had had very occasional vomiting of clear mucus and gastric juice. On September 3rd the wound was quite healed, and all the stitches were removed. On September 11th he was going on well, and had a mutton chop for dinner. On September 24th he sat up in bed a little. Especial care was taken in feeding, so as to give the ulcer a good chance of getting quite sound. On October 6th he got up and sat in a chair, and on October 9th he went back to his own house, feeling very well, but still looking very pale and thin. On January 29th, 1904, he told me that he felt quite well, much better than for years.

The result of this case has been so satisfactory that I venture to publish it in support of the views which I hold, that haemorrhage from the stomach should be brought more often, and sooner, under surgical control. Mr. Mansell Moullin's excellent account of his operations in cases of erosive gastric ulcer, has done much to bring these cases into the hands of the surgeon, and has stimulated us to operate in cases which have hitherto been delayed. Although in ulceration of the strictly erosive character it is said that operation does not prevent the liability to further recurrence of haemorrhages, yet in such a case as the one I quote it gives reasonable hope of preventing such return. The treatment of gastric ulcer by gastro-jejunostomy, so as to ensure physiological rest and thereby healing of the ulcer, has been so strongly advocated, and carried out by Mr. Moynihan and other surgeons so successfully, that there is no doubt that

those hitherto unsatisfactory cases which extend over years, and eventually present themselves with the most alarming and urgent symptoms, will become greatly reduced in number, and when such a case as that which I have described again presents itself, I shall not hesitate to open the stomach and endeavour to find the actual cause of the haemorrhage. If it should prove to be of the "erosive" variety, one can ligature the several bleeding points; and if, as has been described in some cases, no actual bleeding point is discovered, then the mere fact of exposure and manipulation of the inner surface of the stomach, together with hot irrigation, may be expected to do good. With the greatly-improved methods of gastro-jejunostomy and the comparative rapidity with which this can now be done, and with the successes thereby obtained in the treatment of gastric ulcer, there will no doubt arise considerable difficulty in deciding whether gastro-jejunostomy, or attempting to find the bleeding surface, should be preferred, but each case will have to be judged on its own merits. It would be very disappointing after a gastro-jejunostomy had been done to find haemorrhage recurring, and this seems not altogether unlikely if such a large artery has been ulcerated as in the above case.

OZAENA (ATROPHIC FETID RHINITIS), A CAUSE OF GASTRITIS.

By ADOLPH BRONNER, M.D.,
Senior Surgeon, Bradford Eye and Ear Hospital; Laryngologist, Bradford Royal Infirmary.

One of the most characteristic symptoms of ozaena, apart from the offensive smell, is the peculiar pale, ashy, complexion of the patient. A bad taste in the mouth in the morning, with vomiting, and no appetite are other common complaints. These symptoms are due to the passing of the offensive nasal discharge full of bacilli into the stomach, and their deleterious action on the mucous membrane and on the contents of the stomach. We know that even the acid contents of a healthy stomach do not kill all the bacilli, as large numbers of them and their spores pass into the intestines unharmed. Bacilli frequently invade the mucous membrane of the stomach and set up extensive inflammation, which causes fatty degeneration of the glands and consequent incurable indigestion. They also act on the stomach contents, decompose them, and produce bodies which are extremely harmful and irritating, and in some cases they also cause putrefaction. We must remember that in cases of ozaena there is a constant trickling down of offensive mucus into the stomach, day and night for years, not only during the periods of digestion, when there is a plentiful supply of hydrochloric acid, but also between meal-times when there is very little HCl. to destroy the bacilli. It is not surprising that under these circumstances the stomach contents are in a very active state of fermentation and decomposition, and that the mucous membrane is in a condition of chronic inflammation. I have washed out the stomach in several cases of ozaena in the morning, and the offensive condition of the contents surpassed even my most vivid expectations.

For some reason or other (possibly due to the contamination of the air by the large number of mills and factories) ozaena is very common in the West Riding of Yorkshire, and yet how often is it overlooked, and even when diagnosed how carelessly is it treated? I recollect extremely well a correspondence I had not very long ago with a well-known physician. He had been treating a lady for some considerable time (and I may say unsuccessfully) for indigestion and vomiting. She consulted me for an offensive nasal discharge. I diagnosed ozaena, and, hearing that she was under treatment elsewhere, wrote to the physician and suggested that perhaps the ozaena might be the cause of the gastric trouble. I was told that it was ridiculous to think that this could be the case, and that specialists should confine themselves to their own specialities. Anyhow, the vomiting soon disappeared when the nasal discharge was cured. In another case a girl complained of offensive breath and vomiting. She had been treated for indigestion for some time, had had most of her apparently sound teeth removed, with no results. She was suffering from ozaena. I could relate numerous similar cases.

The methods of treating ozaena are often most remarkable. Some of the older surgeons seem to think that ozaena is due to caries of the nasal bones (generally syphilitic), and their treatment consists in scraping away as much of the contents of the nasal cavity as they possibly can.

I do not intend to discuss the various methods of treating ozaena; they are legion. In many cases one or more of the accessory cavities of the nose are affected, and until these are opened up and treated we can naturally not cure the ozaena. I have tried numerous local applications, and find that formalin, used as a spray or douche, is by far the most efficacious. It prevents the formation of crusts, and removes the offensive smell better than any other remedy I know of. I also in bad cases apply trichloracetic acid or the galvano-cautery to the diseased mucous membrane.

AN INSTANCE OF ADIPOSIS DOLOROSA IN TWO SISTERS.

By J. A. HAMMOND, M.B.,
Shanklin.

Dr. Chevers in the British Medical Journal for April 2nd, 1904, calls attention to a case of adiposis dolorosa occurring in a male whose father and sister both had the same disease. At the present moment I have under my care a case that also illustrates the fact that this disease may at times be a family one. The patient is a stout woman of 61 years. She has had six children and one miscarriage. There is a fairly strong alcoholic history. The disease started when she was 35 by the deposit of localized fatty swellings in both forearms. At the present moment they are also situated on the thighs and the abdomen. They vary in size from a small orange to that of a walnut. The hands, face, and feet are quite free.



Pain has all along been a marked and persistent feature. Associated with this is considerable tenderness when the swellings are touched. There have been no haemorrhages, but the skin is somewhat more pigmented than usual. There are no mental symptoms and she has never suffered from any form of fit. No change in the thyroid can be made out clinically. The accompanying photograph of the arms may give some idea of their appearance. Although I have not been able to see the patient's sister my partner has examined her. She is a woman of 40 years. She has had seven or eight children and several miscarriages, so there is possibly a specific history in this case. In this latter instance the disease started some years ago, in much the same manner, with local tumours in the arm, and fresh ones are gradually forming elsewhere. Here, again, pain has been a noticeable element.

The London School of Dental Surgery gave a *conversazione* on June 13th at the Royal Institute Galleries. Prizes were distributed to the successful students by Sir W. J. Collins. The Prince's Orchestra was in attendance, and exhibitions of electrical experiments, abnormal crystals, microscopic objects, and wireless telegraphy were given by Mr. Chisholm Williams, Mr. Charters White, Mr. J. Howard Mummery, and Mr. R. Kerr respectively.

Bequests to Hospitals.—Under the will of the late Mr. George Handyside, of Newcastle, £20,000 has been bequeathed to the Newcastle Infirmary, £10,000 each to the Whitley Convalescent Home and the Gateshead Children's Hospital, and £3,000 to the Newcastle Eye Infirmary. The late Miss Elizabeth Esther Gore, of Hove, left £100 to the Sussex County Hospital and £50 to the Brighton and Hove Dispensary. Mr. Samuel Baker Coates, of Stanton Drew, Somerset, bequeathed £200 each to the Bristol Royal Infirmary and the Bristol General Hospital.

Observations
ON
THE MIDWIVES ACT AND THE TEACHING OF MIDWIFERY TO STUDENTS.

Being Part of the Presidential Address delivered before the Yorkshire Branch of the British Medical Association.

By CHARLES J. WRIGHT, M.R.C.S.Eng., L.S.A.,
Professor of Obstetrics, University of Leeds; Senior Surgeon, Hospital for Women and Children, Leeds.

During the year 1902 an Act of Parliament became law which at least makes us feel that we are not now the only civilized country without some sort of State regulation to control the wholesale disaster in the practice of those who style themselves "midwives." The Midwives Act, as we know, has for years given rise to much controversy in the profession; in fact, to the discussion and want of accord which existed we may attribute the fact that the Bill was not made better than it is.

Whatever may be the views of the members of this Branch on the question—and I think events have already proved that the fears of the opponents were to some extent groundless—we may, I think, now do our best to face the situation and to work for the common weal. My own feeling has been for many years that nothing could well be worse than the condition of things as it has existed, and that consequently whatever was done must necessarily tend towards improvement, and that compulsory powers through Act of Parliament were not only necessary but imperative to prevent the dire results of obstetric practice by wholly incompetent females, whose only title to spread broadcast disease and death was a desire to earn a living on the strength of probably nothing but the personal experience of having had one or more children herself, with possibly—but by no means invariably—the additional experience of tending to the wants of a lying-in friend or neighbour. Our hospital out-patient departments are daily producing examples of the results of want of foresight and attention during labour, and of care and direction during the puerperal period. When the question is put: "Had you a doctor for your confinement?" the usual answer is "No, I had a woman," or, "Only a doctor when too late for treatment." The undiminished mortality from puerperal disease has been graphically described by Dr. Cullingworth, not only in the country districts, but in the poorer districts of the large cities, especially of London. The deaths from the "accidents of childbirth," as shown by the Registrar-General's returns, point to a condition of things which must be remediable, and by what other means can it be remedied than by legislation enforcing proper training?

See what enactment has done in Italy, where, as in many Continental countries, midwives are in far more general use than in Great Britain. The law of Government supervision was passed nearly thirty years ago. Obstetric schools have been instituted, and training for two years in an extern maternity, or one year and eight months in a maternity hospital required. Special regulations and instructions were issued in 1890. In 1887 there had been 2,504 deaths from puerperal fever, and 4,436 from other diseases of parturition and the puerperium, equivalent to 85 and 130 respectively to every million inhabitants. In 1902 the number amounted to 32 and 53 respectively, or a total of 85 per million, as compared with the 235 of the former decade. Yet the figures in our own country remain much the same as heretofore. The total deaths from puerperal fever and the accidents of childbirth amount, on an average for the last three decades, to 4.7 per 1,000 births—a large proportion indeed.

Taking the average of 54 years, in the West Riding of Yorkshire they were 2.1 and 2.9 per 1,000 births respectively, or a total of 5 per mille. In South Wales they reached a higher proportion—2.2 and 3 7, or 5.9 per 1,000. One year—1893—the general average was 6.51, the highest on record since registration was commenced. As Dr. Williams, Medical Officer of Health for Glamorganshire, has recently pointed out in his Milroy lectures, it is remarkable how the mortality from puerperal fever—as shown by the Registrar-General's returns—has remained without diminution for many years, and that in spite of the advances of aseptic and antiseptic precautions, and the better equipment of maternity hospitals and charities. We look upon "puerperal sepsis" as a preventable disease, and the "accidents of childbirth" as controllable. "If then," as Dr. Williams asks, "preventable, why not prevented?"[2]

Let us, then, by every means in our power, give the existing law our support, if not our entire approval. We may not all agree as to the best means to obtain our ends. An ideal is generally unattainable, and the Act may fall far short of what many have desired; but it is at least an attempt to do something. The Central Midwives Board is a strangely-constituted body. Its members are, no doubt, in earnest in an endeavour to act each from their own point of view, and may, in course of time, wipe out the untrained and uneducated commodity which has worked so much havoc in times gone by. But what a curious combination is this Board, consisting of nine members, of whom three must be non-medical women. Four out of the nine now are non-medical members. No wonder that some of their decisions are the result of incongruous majorities, as has been recently pointed out.[3] As was the case with the Dentists Act, and, I presume, with the Medical Act of 1815, provision has to be made for those who have been some years practising as so-called midwives; but as years roll on these will gradually drop out and be superseded by those who have at least some training.[4] The last return of those claiming recognition from being in "bona-fide practice, July, 1901," was 2,928. A minimum of three months' training is, indeed, absurdly small, and the absence of a general nurses' training will, I think, be felt more and more as time goes on; but if we cannot get all we think necessary, we must be thankful that at least a beginning has been made.

The new enactment, whilst carefully directing the Central Midwives Board to note the cases to which medical aid must be called, and "to regulate, supervise, and restrict within due limits the practice of midwives," has somewhat characteristically omitted altogether to note how and by whom the aid of a registered practitioner is to be paid for. Certainly practitioners cannot be expected to attend an urgent summons, and without even the usual obstetric notice, without at least some guarantee that they will be remunerated. Probably the local supervising authorities, who are organizing the lists of midwives, will confer with the Central Midwives Board as to some means of providing adequate sums for carrying out the Act. Section xv of the Act provides that "Any expense under this Act, payable by the Council of the County or County Borough, shall be defrayed out of the county fund or borough rate, as the case may be." Although this obviously, by the section which precedes it, is providing for the legal expenses for prosecution, etc., why should it not be utilized for medical expenses? I am told, however, on good authority that legal opinion has ruled that it cannot, and that nothing short of a new Act of Parliament—a Midwives Amendment Act—can supply this singular omission.

We have in Leeds within the last few weeks been able to remove a blot upon our city by providing in the new buildings of the "Hospital for Women and Children" a small maternity department. Hitherto, Leeds was one of the few large cities of England where no maternity hospital for poor lying-in patients existed. It is significant how few of these do go to the workhouse, where no voluntary provision is made. From figures which Dr. Allan has kindly supplied to me, I find that during five years—1898 to 1902—there were an average of only 80 cases confined in the Leeds Union Workhouse. Of these 80 only 29.4 per cent. were married women, the other 70.6 being unmarried. I am pleased to feel that in our New Hospital for Women we have been able to isolate a department for this purpose, and to equip five beds for cases of urgency and anticipated difficulty, and for other cases so far as accommodation permits. This is very far short of what was originally intended, but it is at least a beginning. If more is needed, it merely rests with the public to provide what our original plans included, a separate building with a much larger number of beds. The honorary medical staff cordially invite inspection and criticism of their arrangements. It may at present seem like a castle in the air, but we live in hopes that at no very distant future we may combine with our intern arrangements an extern maternity district, and that they may prove useful to one another; that we may, in Leeds, be able to provide the necessary training for midwives who may possibly be enabled to call upon a staff of medical officers, one or two to each district, who might have an honorarium attached to their office, the arrangement being self-supporting, the honorary medical staff of the hospital being called upon in case of need.

But, while doing our best to protect from the perils of labour those who cannot obtain, at first hand, the services of

a qualified practitioner, by educating, controlling, and supervising the midwives of the future, let us inquire whether the present arrangements for the teaching of obstetrics to our medical practitioners of the future is all that we can desire. As a teacher of this branch of medicine of twenty years' standing, I may say at once unhesitatingly and emphatically that it is *not*. I entirely agree with my "Victoria" colleague, Professor Sinclair,[4] who said recently in an admirable lecture, that "in England, at all events, the instruction of the medical student in practical midwifery remains simply deplorable," and is still a "most prominent defect in the medical education of the country." As members of a powerful Association, representing the bulk of the general practitioners of the British Empire, we are—or ought to be—all directly interested in this subject. Let us inquire what is the present position, and whether it can in the near future be in any way improved for the benefit of the community at large.

The regulations of the Examining Boards, which naturally guide a man, are most uneven, as the facilities for carrying them out vary widely in the different centres of medical education. Lectures, practical demonstrations, tutorial and conversational classes and theoretical teaching, combined with the use of excellent textbooks, are useful in part; but they should, as is the case in medicine and surgery, be combined with systematic bedside clinical teaching, with the aid of ripe experience. Imagine for a moment the position of things if medicine and surgery were taught in the same way as midwifery in our hospitals, by attending on out-patients, or on a limited number of patients in their own homes; the whole occupying a period of one month, sometimes less, of a student's long curriculum! Yet, our examining bodies are sending forth into practice, probably in a country district, miles away from skilled help, men who have attended just a few cases of labour, often all more or less normal, and who have their practical experience and the clinical details of abnormality to learn after they get into practice. They are well taught, by bedside training, the intricate phases of clinical medicine and surgery, and spend time upon the elaborate details of rare and interesting medical and surgical cases which they may hardly ever see again; or, if they do, have generally time to obtain the help of experts in case of need. Yet these men—the practitioners of the future—receive diplomas licensing them to practise, who may be face to face, single-handed, with the gravest case of obstetric danger and difficulty during the first twenty-four hours after putting up their door-plate.

As a University Examiner, I have often been impressed with the want of knowledge of clinical facts evinced by candidates, and I have been painfully conscious that it is not altogether their own fault. Practitioners, too, who employ as *locum tenens* a newly-fledged M.B. feel, I know, how imperfect he is in his means of treating an ordinary case, say, of abortion or abnormal labour. Our own University regulation (Victoria) is that a candidate for the final M.B. must show evidence of

(1) Having attended during three months the indoor practice of a lying-in hospital, or (2) of having attended not less than twenty cases of labour, at least five of which shall have been conducted under the direct supervision of a registered practitioner, and of having continued such attendance throughout the puerperal period.

If he can have the first, nothing is better: it is the ideal training which very few obtain. The second alternative is painfully unequal and insufficient.

In our own infirmary extern maternity a student has to give a month to getting in at least twenty labours, which often include hardly anything but normal cases, a certain number, I fear not too many of which, are supervised by the resident obstetrical officer (a recently-qualified man at the infirmary) so far as his time and opportunity will permit.

At Edinburgh University, owing to the number of candidates being far in excess of the number of labours available, twelve cases only are enjoined. Two students attend a case with two nurses, the latter being sometimes perhaps the better able of the two to meet the necessities of the case! Of course some enter for the practice of the maternity hospital, or go to the Rotunda at Dublin, where the clinical teaching is notoriously the best that can be obtained.

At a hospital with maternity beds in a neighbouring city I am told that for the twenty cases seen by each student the average attendance at the hospital is "under a fortnight"—namely, four or five in hospital and fifteen to sixteen outside. I remember the time when our own students had to go to Manchester and there be conducted by female midwives to see their cases, and I was thought to be somewhat revolutionary when, as Secretary to our old Leeds School of Medicine, I suggested that some provision for them might be attempted here. This was in 1879, six years before the extern maternity charity at the infirmary was matured. I trust that the day is not far distant when there will be opportunities for every student to see the in-patient and out-patient practice of a lying-in hospital, as they do now at the Rotunda in Dublin, in Queen Charlotte's Hospital in London, and at other hospitals.

Opportunities will be too limited here to attempt much for some time, but sooner or later it must come. Sheffield has already a notable provision in its new Jessop Hospital of fifty maternity beds. Birmingham, like Leeds, has hitherto been without, but hopes soon to possess some accommodation for lying-in cases. In London, the magnificent Guy's Maternity Charity, where I first attended midwifery, has recently added a maternity department of seven or eight beds for in-patients, and University College hopes to do the same ere long. Other hospitals are organizing a department with a ward for the diseases of pregnancy. But I hear it whispered that we must not throw open our wards in a semi-private hospital to students. Then, may I ask, how are the practitioners of the future, who are to tend and preserve the perineums and the lives of the coming generation, to be rendered capable of doing credit to their Alma Mater? There will, no doubt, be objections and difficulties, and we must at present mark time as to this somewhat delicate point, but it must ere long be faced boldly and fearlessly as a crying need of public importance.

I am aware that my protest is by no means new. In 1896 Dr. Herman wrote an able article in the *Practitioner*,[5] deploring the imperfect methods of teaching in London and elsewhere, and quoting the astonishment of Professor August Martin, of Griefswald, at what he had noticed during a visit to this country. The teaching of obstetrics in many Continental universities shows how far behind them we are in the methods of training and systematic detailed teaching. America also is trying now to remedy this grave defect in teaching. Quite recently, too, my friend and colleague, Professor Sinclair, has enlarged upon this theme with unflinching and characteristic vigour in an address to the students at Owens College. Since, too, much of the above was written, I have seen some able remarks on similar lines by Dr. Hellier,[6] who recognizes the same want, and who will, I know, aid me in my efforts to improve our system here.

As for a present way to meet the difficulty, I give Dr. Herman's own words in the article to which I have referred.

I suggest that an officer (or officers, according to the number of patients and of students) should superintend the outdoor maternity charity and teach midwifery practically to students. He should give his whole time to this work, and should receive sufficient direct remuneration to make the post attract a capable man. This officer should go to each case with the student appointed to attend it. He should let the student perform every manipulation, showing him how to do it, and then should correct or confirm the result of the student's investigation. The observations made should be recorded and preserved.

Roughly speaking, in about three-fourths of the cases natural delivery may be confidently expected. If so, the superintending officer should leave the student in charge. If he be fit to attend labour cases he may be trusted to tie the cord and express the placenta from the vagina.

If, on the other hand, the superintending officer finds that an abnormal condition is present, he should take the case under his own charge and treat it in the proper way.

The provision of an officer with such duties would secure the safety of the patients and the proper instruction of the students in practical midwifery. Such a system would not require of the superintending officer the waste of time in watching a natural process, which is the most irksome part of midwifery practice.

Such a system would recognize the essential fact of good midwifery practice, which is *that prevention is better than cure*. It would give the patients proper attendance, and I am sure that some such change would be welcomed by none more heartily than by the students. An intelligent student does not enjoy being left by the bedside of a patient comforted against dread of disaster only by the knowledge that most cases of labour would end happily if no doctor were there at all.

If medicine, surgery, and obstetrics are to remain as the "tripos" of medicine, something must be done—and that ere long—to render the teaching of the last named by no means so prominently the least attended to in the curriculum. Legislation is surely not here required to enforce an improved condition of things. Voluntary efforts on the part of the students and their teachers ought to produce, and that soon, what neither the suggestions nor stipulations of the General Medical Council, nor the regulations of the Examining Boards have hitherto grasped.

Gentlemen, I must apologise for these somewhat desultory remarks, and trust that I have not been too academical. I have only further to thank you for your attention, and once

more for the honour you have conferred upon me by placing me in this chair.

REFERENCES.

1 *Lancet*, January 9th, 1904, p. 113. 2 *Lancet*, Milroy Lecture, June 18th, 1904. 3 Dr. Sinclair's letter. BRITISH MEDICAL JOURNAL, June 4th, 1904, p. 1341. 4 Lecture on the Midwives Act, 1902, and the Teaching of Midwifery to Students of Medicine. Address at Owens College, April, 1903. 5 The Present Mode of Teaching Midwifery in London: G. E. Herman, vol. lvi, p. 391. 6 BRITISH MEDICAL JOURNAL, January 9th, 1904, p. 76.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

MITRAL STENOSIS IN ADVANCED LIFE.

As mitral stenosis at an advanced age is rare, the two following cases which have recently been noted in the Sick Asylum, The Hyde, Hendon, N.W., may be of interest:

The first case was that of J. M., aged 73, who was admitted on September 17th, 1903, complaining of pain in the left side, and dyspnoea. As she was very deaf the duration of the cardiac trouble was difficult to ascertain. Upon examination there was felt a slight apical thrill, and a well-marked presystolic murmur in the mitral area was audible. The patient gradually went downhill, and died on April 9th, 1904. At the necropsy an advanced degree of stenosis of the mitral valve—of the "button-hole" type—was found, and there was a row of pale vegetations on the edge of the orifice. There was an old infarct in the spleen. The left auricle was much dilated.

The second case was as follows: T. Y., aged 73, was admitted on March 21st, 1904, complaining of cough and emaciation. No murmur of the heart could be detected, but the lungs showed signs of general bronchitis. On May 29th signs of consolidation at the right apex were present. He grew rapidly worse, and died on June 6th, 1904. At the necropsy there was found a moderate degree of stenosis of the mitral orifice, of the funnel type, and a row of old vegetations at one part of the edge of the opening. The orifice was just wide enough to allow the little finger to pass through. Numerous tuberculous deposits were present in both lungs, with a few old cavities.

The second case is also interesting from the co-existence of pulmonary tuberculosis with organic mitral disease.

JOHN S. F. WEIR, M.B., B.Ch.(R.U.I.).

Sick Asylum, The Hyde, Hendon, N.W.

POISONING BY "FOOL'S PARSLEY" (AETHUSA CYNAPIUM).

ON July 1st, 1904, I received a message to attend E. W., aged 23, domestic servant, and found her to be suffering from severe abdominal pains with persistent vomiting and diarrhoea. The vomited matter was green stained. The patient was extremely collapsed. Surface cold, radial pulse absent, heart beating at the rate of 120 times a minute, heart sounds very feeble. The temperature was so subnormal as to be incapable of being registered by the ordinary clinical thermometer—the mercury not rising to the 95° F. graduation mark. On inquiry I elicited the fact that on the previous day the patient had eaten a considerable quantity of a herb gathered in the kitchen garden attached to the house, which she believed to be "mustard and cress." This proved to be "fool's parsley" (Aethusa cynapium) of very young growth. The symptoms of poisoning did not come on until some twenty hours after ingestion.

Morphine (for the pain) and stimulants were administered, and the patient made a speedy recovery.

Monkseaton, Northumberland. H. E. DAVISON, M.D.

DIPHTHERIA AND HOFMANN'S BACILLUS.

THE view appears to be gaining ground that Hofmann's bacillus and the true diphtheria bacillus are in no way related to one another, and it is right that pieces of evidence, however small, should be brought forward in order that this important point should be cleared up. I therefore venture to record the following memoranda of an outbreak of infection with Hofmann's bacillus, coincident with what appeared to be an isolated case of true diphtheria.

Three or four years ago I was resident at a London Children's Hospital where the excellent practice was observed of taking swabs of the throats of all patients admitted to the wards and submitting the same to the Jenner Institute for examination. On one occasion I admitted a patient from whose throat a culture of Hofmann's bacillus was obtained. From the throats of none of the other children at that time in the ward was either Hofmann's or the true diphtheria bacillus isolated. A week later a case of clinically true diphtheria, from which the true diphtheria bacillus was isolated, occurred in the ward. I then again took cultures from the throats of the other patients, of whom six, out of a total of eight, yielded cultures of Hofmann's bacillus. No further cases of diphtheria developed, and a few days later swabs again taken from the six patients proved to be sterile.

It would be interesting to learn if a similar sequence of events has been observed elsewhere, for coincidences are of such frequent occurrence in medicine, that unless repeated on several occasions no value can be attached to them.

Torquay. A. E. CARVER, M.D., M.R.C.P.

THE EFFICACY OF VACCINATION TESTED BY INOCULATION AND SMALL-POX.

DR. T. D. ACLAND, in an address delivered on March 22nd, 1902, on "Vaccination and Common Sense,"[1] states that the means which might be adopted for deciding the question as to whether vaccination protects against small-pox are:

1. By vaccinating first, and inoculating with small-pox afterwards, a test which cannot, of course, be made in the present day.
2. By observing the effect of vaccination on particular groups of persons exposed to the contagion of small-pox under more or less similar conditions.
3. By observing the comparative frequency with which small-pox attacks the vaccinated and unvaccinated in large communities, the degree of the severity of the attack in each of these classes, and the resulting death-rate.
4. By observing the effect of vaccination upon the age at which small-pox is most prevalent amongst those who have been vaccinated in infancy and among those who have not.

The present communication aims at supplying evidence mainly under the first head—a method of testing the efficacy of vaccination which is not available in countries where inoculation is forbidden by law. In Burmah, where I have been engaged in Government Medical Service for the past ten years, inoculation is freely practised outside the limits of municipal towns and is not forbidden by law. It is a common experience, where small-pox is epidemic, to find that the local *Saya* (medicine man) has been busy in a village inoculating all children who have not been protected by a previous attack of the disease. The method adopted is to select a mild case, pick off a few scabs from the pustules, grind these as fine as possible, mix the powder with water and inject some of the mixture into the forearm or rub it into punctures about 3 in. or 4 in. above the wrist.

In April, 1902, I received information that small-pox had broken out in a village called Leyamah, Pakokku District. On reaching the village I found that 59 persons had been attacked; that 22 of these, chiefly children, had got the disease by infection, and the rest—namely, 37 children—by inoculation. There were 5 deaths—1 man, who had been infected, and 4 children, who are said not to have been inoculated. The total population of the village was about 1,500. I also found that isolation had in no way been practised. The headman of the village informed me that not a single vaccinated child had been infected, and that the vaccinated children that had been inoculated were also free from the disease, but that all unvaccinated children had been inoculated successfully. After personal inspection of each child vaccinated in 1900 and 1901, and also of all those inoculated, I made the following notes:

Number of children successfully vaccinated in 1900 and 1901 ...	144
Number successfully vaccinated, inoculated without result ...	123
Number successfully vaccinated and have resisted infection, but were not inoculated	21

Thus not a single child successfully vaccinated a year or two previously got small-pox either by infection or inoculation. The headman further informed me—and I verified the fact—that his six children had all been inoculated, that four of these had been successfully vaccinated and resisted inoculation, and were free of the disease, while the remaining two that had not been protected got a mild attack of small-pox.

From Leyamah I proceeded to a village called Pyintha, where I found that there had been 8 cases of small pox, that all the vaccinated children (14) had resisted infection, and that one of these had been inoculated without effect.

In Burmah, as in some parts of this country, vaccination is not popular, and such was the attitude of the majority in the Leyamah village till the people had satisfied themselves by as severe a test as possible. The headman admitted that he was

[1] BRITISH MEDICAL JOURNAL, April 26th, 1902, pp. 1009-10.

fully convinced of the efficacy of vaccination, and that it was in many respects better than the method of inoculation practised by them. It was very gratifying to find that a poor, uneducated man, such as this, had common sense enough to weigh the evidence he had before him and to come to a right conclusion on so important a subject. His sense of justice was in striking contrast to that of a European lady, an antivaccinist, who had no arguments in support of her contention, but merely said to me that she did not believe in vaccination "because her brother Joe did not."

The facts detailed above have been abstracted from the Sanitary Report on the Pakokku District for 1902, written and submitted by me to the Sanitary Commissioner, Burmah. I have been induced to publish these notes, as every fact in support of vaccination should be recorded. I regret that owing to pressure of work I have not earlier given publicity to these notes, but the facts as detailed were reported officially early in 1903 to the Sanitary Commissioner.

LAWRENCE G. FINK, M.B., C.M.Edin.,
Barnhill, Broughty Ferry. Civil Surgeon, Burmah (on leave).

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

JERVIS STREET HOSPITAL, DUBLIN.

A CASE OF ACUTE SPREADING GANGRENE.

(By E. GLENNY, L.R.C.P. & S.I., Senior Resident Medical Officer.)

M. M., aged 27, a stout, well-developed woman, was admitted to Jervis Street Hospital at noon on Tuesday, March 11th, 1902.

State on Examination.—She was in a state of collapse and suffering from cardiac syncope. On examination I found her right leg greatly swollen, oedematous, and of a blue-black colour; there were numerous blebs of all sizes scattered over the surface, whilst in places the cuticle was rubbed off, leaving a raw moist-looking surface. This condition extended from midway between the ankle and knee up the leg and thigh, whilst the right groin and a small portion of the adjacent abdominal wall were similarly affected. She rallied somewhat in a couple of hours, but the gangrenous process spread rapidly, and travelled across the lower portion of the abdominal wall and on to the left groin, whilst there was extensive emphysema of the abdominal wall on either side above the gangrenous parts. Her temperature on admission was 98° F.

Result and Necropsy.—She died the same day at 4.15 p.m., four and a-quarter hours after admission, and I made a necropsy the same day. I found extensive moist gangrene of the right leg, thigh, and vulva, right buttock, lower portion of the abdominal wall, and left groin, which was beginning to extend into the left loin; the tissues being exceedingly soft and lacerable. On the right buttock, situated external to and between the vagina and anus, I found a small gangrenous patch, much darker in colour than any of the other gangrenous portions and about the size of a half-crown piece, with apparently a breach of surface in its centre. From this gangrenous patch a gangrenous track led through the deeper and healthy tissues into the neighbouring diseased parts. From the state of the limb due to the gangrene I was unable to detect any signs of trauma, had such occurred, and I could find no breach of surface other than I have mentioned. There was no thrombus in any of the vessels of the limbs, same being carefully dissected out as far as the junction of the common femoral. With the exception of the right ovary, which contained a small cystic cavity about the size of a hazel nut, containing a brownish fluid, all the other organs and viscera were in a healthy condition. No microscopic examination was made of the fluid which saturated the gangrenous tissues, but I have little doubt the bacillus of malignant oedema could have been found therein.

Inquest.—The evidence at the inquest showed that the deceased had been released from prison, where she had been confined for seven days for drunkenness, the morning of the day preceding her admission to hospital. He relatives said that in the afternoon she complained of some pain in her leg, and lay down to rest, but apparently was otherwise well, and looked so. That night she left the house of her relations and stayed at a friend's house; but she returned the next morning at 8 o'clock, complaining that she could not walk. She then looked extremely ill, in fact she looked as if she were dying, as a witness said. Her friends thought it might be some venereal disease she had, as she also complained of a swelling in the lower portion of her trunk, so they brought her to the Government Lock Hospital. There the doctor requested a nurse to take the patient's temperature, and, finding it 101°, he advised her friends to take her to Cork Street Fever Hospital. Not having the money to take a conveyance she proceeded to walk thither, but collapsed on the way after she had traversed about a quarter of a mile. She was then conveyed by ambulance to Jervis Street Hospital. The evidence of the prison medical officer showed that she complained of no sickness before leaving prison or during her detention, and that she had taken exercise regularly.

REMARKS.—Cases of spreading gangrene are not often encountered now, and this fact and the fearful rapidity with which death ensued after the first symptoms were noticed, together with the somewhat peculiar distribution of the gangrene, seem to make the case worth recording.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.

A CASE OF PNEUMOCOCCUS PERITONITIS.

(Under the care of Mr. WHIPPLE.)

[Reported by H. W. WEBBER, M.S.Lond., Assistant Surgeon.]

M. B., aged 6 years, was admitted on May 8th, 1904, at 7.30 p.m. with the following history:

She was quite well up to five days previously, when in the evening she complained of pain in the abdomen, vomited once, and had some diarrhoea. The next day she vomited several times, but the diarrhoea was diminished. During the next two days the symptoms improved, and the temperature, which had been up to 102° F., came down to 100°, but on the day previous to admission she vomited several times, and the temperature rose again.

State on Admission.—The temperature was 101° F. and pulse 130. She lay with the legs drawn up: the respirations were 62, but the colour of the face was good and pulse of fair volume. The abdomen was uniformly distended, very tense, and tender everywhere. Per rectum an indefinite soft fullness could be felt high up.

Operation.—At 9.30 p.m. the abdomen was opened through the right linea semilunaris, giving exit to turbid odourless fluid in considerable quantity. The coils of bowel were everywhere coated with a thick deposit of yellowish lymph, which caused weak adhesions between the coils. The fluid having been evacuated, the cavity was washed out with hot saline solution and the viscera examined for perforation or intussusception. Appendix, small intestine, and large intestine were inspected (as far as possible) in turn, and no lesion discovered. An incision was then made in the linea alba above the umbilicus, and the stomach and duodenum examined with negative result. The liver was normal, except for a thick deposit of the same yellowish lymph in the portal fissure. The epigastric incision was now closed, an iodoform gauze drain inserted to the bottom of the pelvis, and brought out at the lower wound, which was partly closed to prevent prolapse of intestines.

Result.—On May 9th she passed a loose dark-green motion at 3.30 a.m., and was sick: all the day she lay with the knees drawn up, restless, and in pain. The bowels moved three times more during the day. Temperature 99° to 101.2°. Five minims of liq. morph. hydrochlor. were given every four hours. At 8 p.m. the gauze drain was removed under an anaesthetic and a fresh one inserted. On May 10th the bowels acted four times. The temperature varied from 100.6° to 102.8°, and respirations from 20 to 35. She gradually became weaker and died about 10 o'clock. Subsequently to the operation no discharge came from the abdominal drainage wound, and it was found impracticable to obtain any material for bacteriological examination.

Pathological Report by the Pathologist to the Hospital, Dr. F. Bushnell.—An incomplete necropsy was made, a full one being unfortunately refused. The abdomen was opened, with aseptic precautions, between the two surgical incisions. The intestines were found distended and glued together in places with bright yellow lymph, between which were loculi of turbid yellowish serous fluid. Microscopic films of this fluid showed pus cells, diplococci, cocci, and a straight bacillus with terminal spore, on staining with carbol-thionin. Gram staining showed numerous capsulated elongated diplococci, occasionally forming short chains—the micrococcus lanceolatus. Cultures made on broth and serum agar (no blood agar being available) and in melted gelatine (after subculturing as recommended by Dr. M. H. Gordon, BRITISH MEDICAL JOURNAL, March 19th, 1904, p. 659) did not exhibit the typical growth of the pneumococcus. The film preparations were quite distinctive, and the other organisms found were of subordinate importance. I satisfied myself that there was no perforation of a hollow viscus: the appendix vermiformis was acutely kinked, but normal, and the pelvic organs were merely congested. A portion of both lungs showed broncho-pneumonia and pleurisy. In the lymph on its surface micrococcus lanceolatus was found, and sections of lung stained by eosin-Gram-Weigert method showed this organism, with bacilli straight or slightly curved, and staphylococcus pyogenes, together with broncho-pneumonic changes. The ears, heart spleen, etc., could not be examined.

A MEDICAL conference on the alcohol question was recently held at Bolton, under the chairmanship of Dr. J. Johnston, who pointed to the necessity of securing the sympathy and assistance of the medical profession in the fight against drink. He instanced the success of the British Medical Temperance Association and of the petition recently signed for presentation to the President of the Board of Education as proofs that the medical profession was disposed to take an active part. Dr. V. H. Rutherford gave a general account of alcohol, and the proceedings terminated by a general discussion.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH.

AT the annual meeting of this Branch on June 29th, Dr. LOWTHER in the chair, Dr. W. H. COUPLAND gave a demonstration of Hehner's test for formalin in milk.—Dr. W. O. BOWMAN read an interesting paper on the use of steam motors in medical practice. He went very thoroughly into the subject and gave many valuable statistics. A short discussion followed, and also various practical demonstrations in the use of the cars.—Dr. A. W. COLLINS showed two cases: (1) Separation of the recti abdominis throughout their whole length; the whole of the internal abdominal organs could be palpated with ease: (2) unusual form of diplopia following influenza. A good collection of radiographs was exhibited by Dr. J. W. ANDERSON and Dr. H. L. MUNRO.—The following specimens were on the tables:—Dr. P. F. STURRIDGE: Appendix vermiformis. Dr. J. AITKEN: Snail vomited by child. Mr. A. S. BARLING: (1) Parovarian cyst strangulated by torsion of the pedicle and removed by abdominal section; (2) breast illustrating Paget's disease; (3) malignant prostate.—Messrs. Arnold and Son showed an extensive selection of surgical instruments; Messrs. Cuxson, Gerrard and Co. exhibited a large number of surgical dressings; and Messrs. Saunders and Co. showed a number of new books.

REPORTS OF SOCIETIES.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—At a meeting on June 21st, Dr. H. ANGUS, President, in the chair, Dr. T. M. LEGGE, H.M. Medical Inspector of Factories, read a paper on Sclavo's serum treatment of anthrax in man. His attention had first been called to the matter by a letter from Mr. A. Webb, horsehair manufacturer of Worcester. Dr. Legge had since received from Dr. Sclavo, Professor of Hygiene in the University of Sienna, some sixty tubes of the serum, and had endeavoured to sift the evidence on which treatment by its means was based. Sclavo before 1895 had shown that sheep could be brought to a high degree of active immunity and made to furnish a serum active against anthrax, and that this serum showed prophylactic and curative powers against anthrax in rabbits. In order to obtain a more powerful serum he then instituted comparison between the efficacy of serum obtained from the sheep, goat, horse, ass and ox. It was from the ass that he obtained the most powerful serum, and in a recent communication to him (Dr. Legge), Sclavo stated that he still regarded the ass as the most suitable animal from which to obtain anti-anthrax serum. Sclavo then turned his attention to the treatment of external anthrax in man, and the first case treated by means of the serum was in June, 1897. In a paper dated 1903 Sclavo gave details as to age, occupation, situation of pustule, medical practitioner treating, verification and result of 158 out of 164 cases, all of which had been treated with the serum up to the time of reporting. The fatality in these 164 cases was 6·09 per cent. as compared with 24 per cent. for the figures published for the whole of Italy and 26 per cent. for 211 cases of industrial anthrax reported to the English Chief Inspector of Factories in the years 1899 1903. The figures above, Dr. Sclavo thought, did not give an accurate idea of the therapeutic value of the serum. In several instances the treatment was not tried until all hope from every other treatment had been given up and even in some of the fatal cases extraordinary improvement for a time occurred. Sclavo's present contentions are as follows: (1) The serum is innocuous even in large doses: (2) it can be well borne, even when introduced into the veins; (3) no case taken in an early stage and of moderate severity will be fatal if treated with the serum: (4) by its means some cases may be saved when the condition is most critical (he narrates one case in which a woman recovered after bacilli were found both in the blood and urine, and another in which they were present in the urine); (5) when injected into the veins it quickly arrests the extension of the oedematous process, so as to reduce notably the danger of suffocation which is present in many cases when the pustule is situated on the face or neck; (6) if used early enough it reduces to a minimum destruction of the tissues when the pustule is localized, and thus diminishes risk of deformity; (7) persons attacked appear to become convalescent almost at once. The dose of serum recommended in ordinary cases is 30 to 40 c.cm., subdivided into three or four injections, subcutaneously into different parts of the abdomen, and followed in twenty-four hours, if there has been no improvement, by further injection of 20 to 30 c.cm. In very grave cases he recommends intravenous injection, preferably into one of the superficial veins on the back of the hand, of 10 c.cm., followed in an hour or two, where no improvement is shown, by another similar dose.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—At a meeting of this Society held on Friday, July 8th, JOHN TWEEDY, P.R.C.S., President, in the chair, Mr. GEORGE COATES gave a lantern demonstration of the pathology of thrombosis of the central vein of the retina. He showed preparations from 5 cases. In four of these an organized thrombus was found in the central vein; in 3 of them complete obliteration of the vein in a portion of its course had occurred from this cause, and in one of them the manner of re-establishment of the lumen by the accession of collaterals from the trabeculae of the nerve was well shown. In the fourth case canalization of the thrombus and not obliteration had occurred. In the fifth no thrombus was found, probably because the optic nerve was cut longitudinally in the usual manner, and not transversely, as was desirable when a lesion of the central vessel was suspected. He also dealt with the changes found in the retinal vessels of these cases—namely, (1) endothelial proliferation, (2) thickening of the connective tissue of the walls, (3) hyaline degeneration (a change superimposed on the last), (4) secondary thrombosis. Various combinations of these changes might be found both in arteries and veins. The use of Weigert's elastic tissue stain in researches on vessel changes was also illustrated.—Dr. H. KNAPP (New York) made remarks on the clinical aspects of thrombosis of the retinal vein.—Card specimens were shown by Mr. MARCUS GUNN, Dr. RAYNER BATTEN, and Mr. SMYTH.

REVIEWS.

WOUNDS IN WAR.

WHATEVER may have been the success of the first edition of Surgeon-General STEVENSON'S *Wounds in War*,[1] he has been well advised in reviewing the subject matter by the light of experience gained in the South African war. When the first edition appeared in 1897, military surgery was in a stage of speculation as to how modern surgery and new firearms would modify the experience and practice of old methods of treatment and of warfare. The present volume shows that gunshot injuries of the chest, of joints, and perhaps in the abdomen, were less fatal in the late war than in former times, because the modern small-arm projectile produces less destructive effects in certain situations than the older bullets; the decrease in the death-rate following wounds in other regions was due entirely to the employment of modern surgical methods in their treatment. Recent experiences have confirmed the expectations of lower death-rates for all wounds, but some other forecasts have not been equally correct. Thus, many anticipated an enormous increase in the percentage of casualties, as a consequence of a greater rapidity of fire and an increased accuracy and range of the new weapons. The facts appear to be that we lost but 7.1 per cent. in killed and wounded in the Boer war, as compared with 15.1 per cent. lost in the Crimea, and 13.2 per cent. experienced by the Germans in 1870-1. Again, it was anticipated that the ratio of killed to wounded would be higher under modern conditions; on the contrary, the ratio is slightly lower, although the decrease is barely appreciable, or 1 to 4 as against 1 to 3·9.

A critical perusal of this volume indicates that the arrangement of the first edition has not been changed, although the size has been increased by nearly a hundred pages, and a number of illustrations added. The most notable changes are that the chapter upon wounds and injuries of the abdomen has been completely rewritten, while fresh chapters have been introduced dealing with traumatic aneurysms, anterio-venous communications and injuries of peripheral

[1] *Wounds in War: The Mechanism of their Production and their Treatment.* By Surgeon-General W. F. Stevenson, C.B., A.M.S. Second edition. London: Longmans, Green, and Co. 1904. (Demy 8vo, pp. 505; 127 illustrations. 15s.)

nerves, and also upon the use of *x* rays in war hospitals. Much of this latter section is by Mr. Mackenzie Davidson, who gives a lucid and concise account of localization of foreign bodies and stereoscopic skiagraphy. This chapter materially strengthens the value of the book, as the absence of an intelligible summary of this important technique is a common defect in many of the ordinary surgical textbooks. One of the best chapters in the book is that upon gunshot wounds of the joints, while that upon wounds of the head is characterized by sound common sense and dominated by the axiom that all cases in which there is evidence of actual fracture of the skull by a bullet require operation—a view quite in accord with general experience. It is, however, in the section dealing with wounds of the abdomen that we find most instructive reading. The majority of surgeons formerly held that diagnosis of mere penetration of the abdomen justified immediate operation, but practical experience both in the Boer and Spanish-American wars has demonstrated that this view must be abandoned, except it be in cases where it is apparent that death is threatening from internal haemorrhage. The reason for this attitude is mainly the fact that the conditions under which laparotomies can usually be performed on the field are absolutely inimical to operations on the abdomen. We confess to some doubt whether these conditions can be ever sufficiently amended to render aseptic abdominal surgery in the field the rule rather than the exception.

Surgeon-General Stevenson may be congratulated upon this edition of his standard work, which is likely to be as popular as its predecessor; it is a reliable and handy volume and thoroughly deserving perusal by all wishing to obtain a knowledge of this special surgical type of practice. For those in the naval or military services we consider it to be indispensable.

VACCINATION.

WE have received a copy of a reprint of a lecture on vaccination,[2] delivered by Dr. MONCKTON COPEMAN as part of a course on the prevention and control of infectious diseases, delivered last spring in the Public Health Laboratory of the University of Manchester. The lecture indicates the present views of one who has taken a prominent and valuable part in modern investigation of the pathology of small-pox and vaccination, and in introducing present-day methods of preparation of vaccine lymph. When Dr. Copeman states that it was certain fatal cases of erysipelas in Norwich in his boyhood which first turned his attention to the subject of the purification of lymph there is likely to suggest itself to the reader, a certain parallelism, at a sufficient interval, with Jenner's famous account of how his attention was first directed to the subject of small-pox prevention by hearing a milkmaid explain that she could not take small-pox owing to already having had cow-pox. The dangers of humanized lymph were always grossly exaggerated by opponents of vaccination, whilst medical men, having intimate knowledge of the facts, never had any hesitation in vaccinating themselves and their children from such lymph, knowing it to be in all but the rarest and most exceptional cases safe and reliable. It was most desirable, however, not merely that this antivaccination weapon should be taken out of the hands of those using it, but also that such risk as really did exist should be made infinitesimal. To this end the adoption by Dr. Copeman of the practice of mixing glycerine with animal lymph and his carefully-devised application of that practice to the specific purpose of freeing the lymph from extraneous organisms has been a most valuable improvement in vaccination work. It is interesting to learn that when Sir Richard Thorne and he visited the Continent several years ago they found Dr. Copeman's method of using glycerine already established there, though it had not yet been adopted in Britain. Evidently in these matters Germany is more willing to learn from England than England is from Germany. But though Government has not given us a Revaccination Act, the amount of primary vaccination under the law of 1898 shows a gratifying increase. The statistics given by the lecturer, of certificates of primary vaccination at all ages, are 676,807 for the year 1900, 710,785 for 1901, and 826 771 for 1902. Dr. Copeman says the conscience clause when first propounded was received with a storm of opposition, more particularly on the part of the medical journals. So far as concerns the BRITISH MEDICAL JOURNAL, and also, we think, as concerns our contemporary, the *Lancet*, this description of the reception of the clause is far from correct, but even now it is difficult to measure the effect of the provision for exemption, as the substitution of domiciliary for stational vaccination, and the substitution of calf lymph for humanized lymph, and the change of practice in the matter of prosecutions by vaccination officers, are factors of which the influence cannot be separated from that of the exemption clause. Nor can we altogether agree with the author in speaking of Dr. Green's method of removing extraneous organisms from lymph as a "modification" of Dr. Copeman's method. The purification of lymph in six hours by chloroform seems a process sufficiently distinct from its purification in as many weeks by glycerine, and other things being equal, the great saving in time will justify a great deal of extra labour, if small-pox outbreaks are to continue to make such emergency demands on lymph supplies as they have done within the last three or four years. Dr. Copeman's remarks on the relation of variola to vaccinia are most interesting, and there seems every reason to believe that his theory of the part played by the inoculated small-pox of milkers, in causing cow-pox in dairy cattle in Jenner's time is correct, and furnishes the true solution of a puzzling question. We have touched on only two or three points in a valuable lecture, but would recommend every public vaccinator to procure a copy for himself.

[2] *Prevention and Control of Infectious Diseases. Vaccination: its Pathology and Practice.* By S. Monckton Copeman, M.A., M.D., F.R.C.P., D.P.H., F.R.S., Manchester: Sherratt and Hughes, 1904. (Demy 8vo, pp. 21. 1s. 6d.)

GENITO-URINARY DISEASES.

Dr. LEOPOLD CASPER'S *Textbook of Urology*[3] is divided into two parts. The first or general portion deals with the anatomy and physiology of the genito-urinary tract and the various methods of examining patients, including, of course, the use of the urethroscope and the cystoscope—instruments which, as is well known, Dr. Casper has himself modified in several respects. Examination—physical, chemical, and microscopical—of the urine is also fully described, and the use of the Roentgen rays in diagnosis receives a brief notice. In the second and much larger part of the book the diseases and injuries of the various organs are dealt with in order, beginning with those of the penis and urethra, and ending with those of the ureters and kidneys. The affections of the bladder, prostate, scrotum, testes, and spermatic cord, and seminal vesicles are also included, and the book ends with a section on the functional disorders of the male sexual apparatus. In the treatment of gonorrhoea Dr. Casper is not so enthusiastic about the merits of the newer organic silver combinations as some of his countrymen. He thinks that on the whole the oldest antiseptic, namely, silver nitrate, is the best when used in sufficiently weak solution, and it is only when this causes undue irritation that he resorts to protargol. In connexion with this subject it is worth mentioning that Dr. Casper states that the mucous membrane of the urethra may be torn by irrigation without a catheter (Janet's method), if a very high pressure be used. The important subject of hypertrophy of the prostate is fully discussed. In the consideration of operative measures, when such are necessary, most space is given to Bottini's operation, which Dr. Casper has performed thirty times, with four deaths. He is not much in favour of any form of prostatectomy. Freyer's operation, which Dr. Casper does not seem to have tried, he looks upon as hazardous in spite of the good results reported. McGill's operation he has performed with varying results—good in some cases, in others not. At the present time it is still a question, in Dr. Casper's opinion, whether prostatectomy is not too severe and dangerous a procedure for the already enfeebled patients who require operative relief. The book forms a noteworthy addition to the literature of genito-urinary diseases, and will no doubt fully answer the main purpose which the author states he had in view when he wrote it, namely, to provide a suitable work covering the whole field of urology, in accordance with the widely expressed desire of the medical men who attend his annual course of lectures and demonstrations.

The considerable volume on *The Surgical Diseases of the Genito-Urinary Organs*,[4] by Dr. E. L. KEYES and Dr. E. L.

[3] *Lehrbuch der Urologie mit Einschluss der männlichen Sexualerkrankungen.* Von Dr. Leopold Casper, Privatdozent an der Universität, Berlin. Berlin und Wien: Urban und Schwarzenberg. 1903. (Royal 8vo, pp. 515; 187 illustrations. M.14.)

[4] *The Surgical Diseases of the Genito-Urinary Organs.* By E. L. Keyes, A.M., M.D., LL.D., and E. L. Keyes, jun., A.B., M.D., Ph.D. New York and London: D. Appleton and Co. 1903. (Demy 8vo, pp. 827; 174 illustrations; 10 plates. 21s.

KEYES, jun., is described by its authors as the "legitimate grandchild" of the well-known work on *Genito-Urinary Diseases and Syphilis* by Van Buren and Keyes, which was published in 1873. From the present work, however, syphilis has been—no doubt wisely—omitted, but gonorrhoea and its sequelae, being "so intimately associated with all the inflammatory disorders of the genito-urinary tract," receive more ample consideration than before. As regards the operative treatment of prostatic hypertrophy the authors look upon castration, vasectomy, and Bottini's operation as quite unjustifiable, and if the patient is doing badly under palliative treatment it is recommended that he should be cut in the perineum, in the hope that Chetwood's operation may suffice to cure him, and that if the obstacle is too large to be burned down, prostatectomy should be performed forthwith. Chetwood's operation, it may be mentioned, is a modification of Bottini's, and is described as follows: "A perineal cystotomy is performed, and through it the bladder is explored, and the obstructing lobes cauterized to precisely the proper extent to lower the urethral orifice." In varicocele, when any operation is required, subcutaneous ligature of the veins is practised by the authors in all cases except those in which the scrotum is much distended and elongated. For hydrocele the injection of pure carbolic acid is advocated. The surgical treatment of chronic Bright's disease by stripping the kidney is not dealt with, as the authors think that the evidence at present available is insufficient for trustworthy generalization. On the whole, the book can be commended to students and practitioners as as a safe and useful guide. It is certainly one of the best—perhaps quite the best—of the rather numerous books on the same subjects with which we have been favoured by the United States during the last few years.

The second edition of Professor POSNER'S small work on *The Treatment of Urinary Diseases*[5] was noticed in the BRITISH MEDICAL JOURNAL in 1899 (vol. i, p. 1168). The third edition, which has been thoroughly revised, is larger than its predecessor by fifty pages. The information which it contains has been brought up to date, and altogether the new edition may fairly be described as an excellent summary of the present-day treatment of diseases of the urinary and of the male genital organs, especially as it is carried out in Germany. Another work corresponding in size and arrangement to the present one, and dealing with the question of diagnosis, has also been published by Dr. Posner, and the reader would probably be well advised to take the two books as one and study them together. A drawback to the present work is that, like so many other German books, it is very badly sewn—indeed some of the leaves have escaped the needle altogether.

Mr. HERBERT T. HERRING'S book on *The Sterilization of Urethral Instruments*,[6] in so far as its contents are indicated by its title, is very good. The directions given for the sterilization and the use of instruments intended for the urethra and bladder are well worth the consideration of those, whether surgeons or patients, who have to use them, and if the rules here laid down were carefully observed, much no doubt might be done towards the prevention of many of the accidents and the amelioration of the discomforts and inconveniences of what has been called catheter life. Chemical antiseptics, it is pointed out, if strong enough to be effective, are always more or less irritating to the urethra, and their application, therefore, should be limited to the cleansing of the hands and the penis, the instruments themselves, as well as the lubricant, being sterilized by boiling. The details of the various methods of purification employed by the author are fully described, and the book also contains some useful suggestions as to the general mode of living and the regulation and quantity of fluids to be taken by those who are dependent on the use of the catheter. But in a medical book intended, as this appears to be, for non-medical readers it is wise, though perhaps difficult, to avoid saying too much, and one cannot help thinking that the considerable portion of the present work dealing with matters other than those already mentioned would have been better omitted. Some of the remarks, for example, on stricture and on gonorrhoea (of which disease, by the way, Mr. Herring must have had an unusually favourable experience if he has found it "generally limited to the first two or three inches of the urethra"), while too scanty to be of much use to the medical man, might possibly lead a certain class of patients further in the direction of self-treatment than would be to their own ultimate advantage or comfort.

[5] *Therapie der Harnkrankheiten.* Von Dr. C. Posner, A.O. Professor an der Universität, Berlin. Dritte Auflage. Berlin: August Hirschwald. 1904. (Demy 8vo, pp. 213. 10 illustrations.) M. 4.

[6] *The Sterilization of Urethral Instruments and their Use in Some Urinary Complaints.* By Herbert T. Herring, M.B., B.S Durh., M.R.C.S. London: H. K. Lewis. 1903. (Demy 8vo, pp. 176; 38 Illustrations. 5s.)

NOTES ON BOOKS.

IN *Passing Off*[7] Mr. J. CUTLER, K.C., has embodied a series of lectures delivered at King's College, London, in November, 1903. They are a clear and concise exposition of the well-known principle of law that nobody has any right to represent his goods as the goods of somebody else. It is sometimes assumed that a man must have a trademark if he desires to protect himself, but Mr. Cutler has made it plain, by reference to recent cases, that by long use a man may obtain what really amounts to an absolute property in the title under which he carries on his business. A good index completes a useful work.

Having profited by being connected with the cookery department of the London Hospital Nursing School, and also to some extent with the Brompton Hospital, the author of *Cookery for Invalids and the Convalescent*[8] has well grasped the food requirements of the invalid, and recognizes fully that variety and attractiveness are not incompatible with the use of simple materials. After some preliminary general remarks, with which we fully concur, a considerable number of recipes are given briefly; some of them we do not remember to have seen elsewhere, amongst others a number of drinks more or less nutritious. In addition, some specimen *menus* of dinners of various grades of solidity are provided, and, as a further guide, a week's diet is sketched out such as would be suitable for a gouty person, and similar weeks diets are set down for diabetic and consumptive patients. These will be found useful as examples of what can be done to give variety even under rigid restrictions as to material; while, as a whole, the little book is concise and practical, and likely to be serviceable.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

An Invalid's Bed Gown.—Messrs. J. and J. Cash (Limited), of Coventry, have registered the pattern of an invalid's bed gown, which the firm is now manufacturing, after a design prepared by a nurse. The object in view is to provide a garment which can be changed frequently with a minimum amount of disturbance of the patient, and which at the same time will permit of any desired part being uncovered for examination without exposure of the rest of the body. This is attained by arranging the garment so that it may be opened at will either from top to bottom down the front, from the neck to the shoulder, or down the back of each sleeve to the wrist. When all the openings are unfastened it can be put on or taken off with the same ease as a sheet can be changed—without, in short, the usual difficulty of passing a nightdress over the head and getting the arms into the sleeves. The garment, when closed, looks like an ordinary nightdress. It seems likely to prove useful in the case of invalids who cannot bear much moving. It is made in various materials and sizes and at various prices.

[7] *On Passing Off, or Illegal Substitution of Goods of One Trader for the Goods of Another Trader.* By John Cutler, K.C., M.A., Professor of Law at King's College, London. London: Gay and Bird. 1904. (Cr. 8vo, pp. 102. 1s.)

[8] *Cookery for Invalids and the Convalescent.* By C. Herman Senn. Third edition. London: The Food and Cookery Publishing Agency. 1904. (Demy 8vo, pp. 100. 1s.)

SUCCESSFUL VACCINATION.—Dr. Woodman Dowding obtained the grant for successful vaccination in the St. Newlyn East District of Cornwall.

THE MEDICAL PROFESSION AND THE TEACHING OF HYGIENE AND TEMPERANCE.

PRESENTATION OF THE PETITION SIGNED BY 14,718 REGISTERED MEDICAL PRACTITIONERS TO THE CENTRAL EDUCATIONAL AUTHORITY OF ENGLAND AND WALES.

AN influential deputation, consisting of leading members of the medical profession, attended at the Privy Council Office in Whitehall on July 11th to present to Lord Londonderry a petition signed by 14,718 registered medical practitioners to the Central Educational Authorities of the United Kingdom, to consider the possibility of including in the curricula of the public elementary schools, and encouraging in the secondary schools, such teaching as may lead children to appreciate at their true value healthful bodily conditions in regard to cleanliness, pure air, food, drink, etc.

The following is the Petition presented:—

PETITION.

WE, THE UNDERSIGNED MEMBERS OF THE MEDICAL PROFESSION, having constantly before us the serious physical and moral conditions of degeneracy and disease resulting from the neglect and infraction of the elementary laws of Hygiene, venture to urge the CENTRAL EDUCATIONAL AUTHORITIES OF THE UNITED KINGDOM (the Board of Education of England and Wales, the Scotch Education Department, the Commissioners of National Education in Ireland and the Intermediate Education Board of Ireland)

TO CONSIDER WHETHER

it would not be possible to include in the curricula of the Public Elementary Schools, and to encourage in the Secondary Schools, such teaching as may, without developing any tendency to dwell on what is unwholesome, lead all the children to appreciate at their true value healthful bodily conditions as regards Cleanliness, Pure Air, Food, Drink, etc.

In making this request we are well aware that at the present time pupils may receive teaching on the laws of Health, by means of subjects almost invariably placed upon the Optional Code. By this method effective instruction is given to a small proportion of the pupils only. This does not appear to us to be adequate. We believe that it should be *compulsory* and be given at a much earlier age than at present.

It may, perhaps, be useful to call attention to what is being achieved in this direction by English-speaking nations. In reviewing the steps taken it will be noted that one of the most prominent subjects with which the various countries have found it necessary to deal is the question of the nature and effects of alcohol.

In the ARMY SCHOOLS of this country and of all our foreign stations west of Aden, teaching in Elementary Hygiene is compulsory; such teaching including Temperance, Health, and Sanitation, special attention being drawn to the deleterious effects of Alcohol.

In CANADA, with the exception of two Provinces, Hygiene and scientific instruction on the effects of Alcohol are compulsory subjects in all Public Elementary Schools throughout the Dominion. In the two excepted Provinces (Quebec and Prince Edward's Island) teaching on Temperance is given. In the Protestant primary Schools of the Province of Quebec lessons upon Temperance and Health are compulsory, while in the Catholic Schools instruction in Hygiene is compulsory, beginning with the fifth year of school work. In the books on Hygiene authorized in the Catholic Schools the ill effect of the excessive use of Alcohol is mentioned, but no special prominence is given to Temperance instruction.

In VICTORIA (AUSTRALIA) teaching on Health and on the nature and effects of Alcohol, is placed on the list of compulsory subjects taught in all the Public Elementary Schools.

In SOUTH AUSTRALIA teaching of Temperance is regularly carried out.

In NATAL instruction is given in the Primary Schools on the laws of Health and Temperance, these being included in the list of Optional Subjects.

The whole question is dealt with still more completely in the UNITED STATES OF AMERICA. There the teaching of Physiological Hygiene, with special reference to the effects of Alcohol and other narcotics, is compulsory in all Schools under State or Federal control. About twenty-two million children are being educated under this system.

Thus we have shown that in many English-speaking countries definite attempts are being made to train the rising generation to appreciate from childhood the nature of those influences which injure physical and mental health.

Having regard to the fact that much of the degeneracy, disease, and accident with which medical men are called upon to deal is directly or indirectly due to the use of Alcohol, and that a widespread ignorance prevails concerning not only the nature and properties of this substance but also its effect on the body and the mind, we would urge the Board of Education of England and Wales, the Scotch Education Department and the Irish Education Authorities to include in the simple hygienic teaching which we desire, elementary instruction at an early age on the nature and effects of Alcohol.

We gladly recognize (1) the value of the teaching on this subject given in some schools in Ireland and in a proportion of the schools of Great Britain, by means of reading primers, moral-instruction talks, etc., and (2) the excellence of the occasional Temperance lessons provided in certain Schools by voluntary organizations: but until the four Central Educational Authorities of the United Kingdom include this subject as part of the system of National Education it appears to us that the mass of the pupils must fail as at present to receive that systematic teaching of Hygiene and of the nature and effects of Alcohol which alone we consider adequate to meet the national need.

Finally, we would venture to urge the necessity of ensuring that the training of all teachers shall include adequate instruction in these subjects.

The petition was signed by 14,718 registered medical practitioners.

The deputation consisted of Sir William Broadbent, Dr. T. D. Griffiths (President of the British Medical Association), Sir Thomas Barlow, Sir Victor Horsley, Sir Hugh Beevor, Sir Walter Foster, M.P., Sir Lauder Brunton, Dr. Mary Scharlieb, Dr. C. F. Hutchinson, M.P., Dr. Edward Thompson, M.P., Mr. Andrew Clark (Chairman of Council, British Medical Association), Dr. Mitchell Bruce, Mr. Mayo Robson, Dr. T. Buzzard, Professor Sims Woodhead, Dr. R. Hutchison, Dr. James Kerr, Dr. G. F. Still, Dr. Dawson Williams, Dr. T. N. Kelynack, Dr. G. E. Shuttleworth, Mr. J. Smith Whitaker (Medical Secretary of the British Medical Association), Dr. Annie McCall, Miss Alice Ravenhill, Mr. McAdam Eccles, Dr. Newman, Dr. A. F. Sutherland, Dr. E. C. Taylor, and Lady Biddulph (Vice-President, Children's Protection League).

Dr. R. FARQUHARSON, M.P., who said that he was present in his position as Chairman of the Public Health Committee of the House of Commons, observed that the unique deputation he had the pleasure of introducing to Lord Londonderry consisted of leading members of the medical profession, and might be described as being the concentrated essence of the 14,718 registered medical practitioners who had signed the petition. He hoped that Lord Londonderry would be able to give them some encouragement to expect that in the future better facilities would be provided in the elementary and secondary schools for the teaching of health, temperance, and sanitation. The popular notion in regard to teaching such subjects in elementary schools was that the teacher's words entered into one ear and went out at the other, but to prove that this idea was wrong he quoted an instance that occurred to him in connexion with one of his crofter tenants. He saw in the bedroom of this tenant a properly-ventilated window, and asked him where he got the notion from. The reply of the tenant was that his little boy had been taught the necessity of ventilation at school, and had given him no peace until he had arranged for the proper ventilation of the room. Dr. Farquharson then said that the following gentlemen regretted their inability to be present: Mr. J. Tweedy, President of the Royal College of Surgeons; Sir Felix Semon, Professor Clifford Allbutt, Sir Anderson Critchett, Sir Isambard Owen, Sir Michael Foster, Dr. Crocker and Dr. Mott.

Sir WILLIAM BROADBENT, as Acting Chairman of the Committee of Distribution of the Petition, said that the medical profession had shown an active interest in the development of education in hygiene and temperance to check disease and degeneration. Its importance was increased by the fact that it was entirely spontaneous. It was not the result of prolonged effort, the signatures to the petition had not been obtained through the influence of a few names; in short, it was an entirely spontaneous manifestation of opinion on the part of the medical profession. It was admitted that ignorance was the parent of much suffering, ill-health, and vice: ignorance was especially manifested concerning hygiene, ventilation, food, and the evil effects of alcohol, and tended to centre very much about the questions dealt with in the petition. In respect to alcohol it was not merely its direct influence that was so deplorable on those who consumed it; indulgence in alcohol meant that so much was withdrawn from the food supply of the family, for when a large proportion of a man's wages were spent in drink the wife and children were often left very badly provided. Further, not only ignorance but perverted ideas prevailed with regard to alcohol; it was erroneously supposed that stimulants of some sort were an absolute necessity. There could be no greater error; they were certainly not necessary, and so far from being a source of strength they were a drain upon the individual. It was, therefore, thought desirable that instruc-

tion on the matter should be compulsory, but it was not meant that there should be any examination in the subject or any further burden laid on the children. In his opinion the instruction would be interesting and almost amusing, and, moreover, as Dr. Farquharson had pointed out, the teaching would bear fruit in the improvement of family arrangements not only in regard to ventilation but also in teaching habits of restraint tending to prevent the pernicious form of self-indulgence in stimulants.

Dr. T. D. GRIFFITHS, President of the British Medical Association, said that the medical profession was deeply interested in the question which affected the physical and mental degeneration of a large portion of the population of the United Kingdom, more especially of those who lived in crowded cities and large towns. There was ample evidence of degeneration in the steady increase of idiocy, in the steady increase of insanity, in the increase in diseases of the nervous system, and in the diminishing birth-rate. The medical profession was strongly impressed with the apathy and ignorance of the public on questions of sanitation, and deeply interested in removing the popular prejudice against hygienic measures calculated to prevent increase of disease. Those were the reasons why the medical profession had used its best efforts in the spontaneous movement which had produced this petition. The signatories of the petition were of opinion—and they were supported in that by a long list of well-known names and by the British Medical Association—that much might be and could be done to guard against the dangers alluded to in the petition, and much could be done to counteract and to remedy the evil tendencies of modern civilization. They believed that important results would ensue by educating young children and teaching them the value of good health and how to preserve it. Dr. Griffiths then referred to the action of the British Medical Association which supported the present movement as a practical measure against national physical deterioration, and read the following resolution adopted by its Council on January 20th, 1904:

> It is of urgent importance that elementary scientific instruction in health subjects, including temperance, should be provided in all the primary schools by the educational authorities in order that the condition which leads to deterioration of the national physique may be understood and as far as possible prevented.

Referring to the importance of instructing children in temperance, health, and sanitation, he said that if the children were educated as suggested it would be found that the physical, mental, and moral development of the rising generation would be greatly improved. *Mens sana in corpore sano* was Nature's choicest blessing and health was the foundation of all happiness. Yet how often did they deny themselves that great blessing and denied it also to their children. The goddess Hygeia would secure health to them all provided they kept her commandments and followed the laws of Nature, observing cleanliness in all things, breathing pure air, drinking pure water, eating wholesome food, taking exercise in the open air, and living as much as possible in the sunlight, dwelling in sanitary houses, and being judicious in the matter of clothing, observing temperance, avoiding alcohol, avoiding tobacco, and guarding against infectious and contagious diseases. Hygeia was a very merciless goddess, for if they did not obey her commandments her punishments were severe; her punishments were ill-health, disease, and death, according to the gravity of the case, and sometimes the punishment was visited on the second, third, and fourth generation. Dr. Griffiths concluded by urging upon Lord Londonderry, in the name of the British Medical Association, the necessity of insuring that the training of all teachers shall include adequate instruction in the laws of health and temperance, and that these subjects shall be adequately taught in the schools. If the object of the petition were gained it would be a great step in the progress of the nation.

Sir THOMAS BARLOW said that they had been most anxious that Lord Londonderry should receive that deputation because they knew they were preaching to one of the converted. Lord Londonderry had taken the most sympathetic interest in all that concerned the physical improvement of school children. In consequence of the extreme importance laid by Lord Londonderry on this subject and in consequence of the way he had impressed the point on the inspectors of schools very considerable effects had followed in a short time. A child's nature was plastic and was remarkably amenable not only to physical education but also to careful instruction in every shape and form. It was true that hygiene was an optional subject in the school curriculum, but the number of schools adopting it was quite fractional. Those to whom that subject was very vital did not consider that merely making hygiene an optional subject in the school curricula was by any means an adequate treatment of an important matter. If from that Central Education Department with the authority of the name of Lord Londonderry it should go forth that at every stage of a child's teaching, not only for little children but in the successive stages of the school course and in the curriculum of the continuation schools, the subjects of hygiene and temperance must be made of national concern, then the effects of such an influence would soon become manifest in the country. Great Britain had been sadly remiss in that matter, and had been out-distanced by America, which had gone ahead in educational problems. They had also been left behind by most of the British Colonies. They all, however, believed in the truth of the words of the late Lord Derby, who had said that though England was late—very late—it was never too late.

Dr. C. F. HUTCHINSON, M.P., said that as one of the members of the Public Health Committee of the House of Commons it gave him great pleasure to support that deputation. They wished to impress upon Lord Londonderry the fact that the education they recommended should be given in every curriculum under the control of the Education Department. If the medical men would continue their efforts in the country the members of Parliament would back them up in the House of Commons. He urged Lord Londonderry in his position as President of the Board of Education to take the matter into his consideration and to do what he could to help the movement.

Professor SIMS WOODHEAD said that his work dealt in great measure with pathological conditions. He had to find causes for those conditions, and he was never more struck by the close relationship between cause and effect than when he was dealing with those diseases resulting from the action of alcohol. He wished to ask Lord Londonderry to take into consideration the importance of having the objects of the petition carried out in a thoroughly organized fashion from a central authority. Although there had been some success in America, that success would have been wider had it been possible to organize and centralize the work instead of having it carried out by different States. In this country fortunately they had the opportunity of centralizing the work, and the work would appeal to Lord Londonderry very strongly because it dealt with the subject on which the national prosperity rested. He urged that the matter should be dealt with from a central organization, and should not be left to individual efforts, which, however well meant, often went astray. Any scheme brought forward, therefore, must be managed by a central body and endowed with all the authority Lord Londonderry could give it.

Sir LAUDER BRUNTON said that the question was not merely national, but international. Both of the points brought forward were considered at the Fifth International Congress of School Hygiene held at Nuremberg in the beginning of April last. One of the speakers at that congress, in introducing the subject of alcohol and its action, stated that alcohol taken by children destroyed them—body, mind, character, and disposition. Every means should be taken to prevent that happening. Parents should be instructed in the action of alcohol so that they might not give to the children any alcoholic drink whatsoever. Children also should be instructed in the action of alcohol so that they might avoid it, and they should be induced to form Bands of Hope because it helped them to keep together in their common purpose. It was not, however, only in Germany that those views were accepted, but also in Switzerland they tried to teach the lessons which Professor Sims Woodhead had learnt from his pathological work, by instructing the children with pictures and models sent round the country to every school in succession. The question of teaching hygiene to teachers was also raised at the International Congress of School Hygiene, and it was felt that not only should the scholars be instructed, but that the teachers should be put through a severe examination, and that they should have ample and repeated opportunities of learning hygiene.

Dr. MARY SCHARLIEB said that women ought to take the matter up and recognize the hard fact that children are destroyed from want of knowledge in all ranks of society, for there was general ignorance concerning the effects of alcohol and the effects of improper feeding and inattention to subjects of hygiene. The closed windows in most of our public resorts showed how little people cared about pure air; if children were taught in the schools a good deal might be done for the future of the country. She would like to think that all

children, from the highest to the lowest, would be taught the principles of hygiene, and she trusted that the teaching would be from the positive side, instructing the children not only what to avoid, but also what to do. She wanted the children told what they should do in order to live.

Sir VICTOR HORSLEY said that this movement for educational reform had emanated from the medical profession, and had been specially fostered by the British Medical Association. It was an urgent request made by the medical practitioners of the United Kingdom to the Board of Education to help the medical profession in its sanitary work by making a definite alteration in the Educational Code. The request was proffered by men who in their daily work were brought into intimate contact with social requirements as well as the requirements occasioned by disease and degeneracy. Therefore, the one class of the community which knew intimately the causes of disease and degeneracy of the nation felt able to make this strong request. They had not simply contented themselves as a profession with pointing out the existence of those evils, and asking the Board of Education to remedy them, but they came forward with a petition embodying a scheme for the remedy. They were well aware of the relation of the Central Board of Education to the educational authorities, and they wished to press on the Government the necessity of urging upon the peripheral authorities the duty of carrying out the remedy proposed. This was that from the earliest stages of education the subject of hygiene should find a place. The mind of every child should be habituated from the earliest period to the absolute necessity of cleanliness of body and of clothing, of purity of air and of food. But of equal importance in their view was the need of freeing the coming generations from the terrible ignorance of the present day as regards the use of alcohol. The public at large should receive, through the early education of the individual, the teaching that alcohol was not a necessary of life, and was, next to the microbic world, the commonest cause of disease, of poverty, and of crime. The medical profession was brought more closely in contact with the social needs of the people than any other, and knew that alcohol caused endless social misery and physical and mental disease. Under those circumstances they considered that the subjects of hygiene and temperance must find an early place in the scheme of education. The medical profession was anxious that every individual in the community should be taught how to safeguard his physical health and the conditions of life, just as he learnt the elements of social morality and received the groundwork of general intellectual instruction. Upon those three principles of education rested the whole basis of useful and happy citizenship, but the Educational Code did not recognize that education in physical health and temperance was of import equal to each of the other two principles. It was the full recognition by the educational authorities of that fact that the medical profession sought to obtain by their petition. He used the term "full recognition" advisedly, for a certain recognition of the value of hygiene teaching was already given by a few educational authorities, but so far health as a subject of primary education had only found place in the optional code, and, as had been stated by a previous speaker had only been quite superficially adopted in the elementary schools. To give that degree of recognition was to deal tentatively with the all-important principle, and that in the opinion of the medical profession and the British Medical Association was a particularly fatal method of dealing with the interests and welfare of the nation because it conveyed an impression that something was being done, whereas nothing essential was really accomplished. Moreover, this optional teaching of hygiene in the schools was given at the wrong end of education. No body of men knew better than medical practitioners that it was undesirable to suggest the introduction of a new subject into the code to add to the many that taxed the growing brains of young children. They were not asking the Board of Education to put an additional subject into the Compulsory Code.

Mr. R. L. MORANT, Secretary to the Board of Education, said that there was no obligatory list.

Sir VICTOR HORSLEY said that there was a list that was generally recognized as obligatory. The proposal was only that the present order of subjects should be altered or partly transposed so that some subject of general education should be transferred to later standards, its place being taken by hygiene and temperance. To put it shortly, the point was that the teaching of hygiene should be begun in the earlier standards. They hoped that the Board of Education would accept the reform urged by the medical profession, and would energetically press upon the local authorities that health and temperance were of such paramount importance in social life that in the first place they must be taught among the earliest elementary subjects, and in the second place must be taught to all. Sir Victor Horsley concluded his speech by saying that it was fitting to draw the attention of Lord Londonderry to the final paragraph of the petition, because the medical profession considered it very important: "Finally, we would venture to urge the necessity of ensuring that the training of all teachers shall include adequate instruction in these subjects." There were many who thought that the present provision for the training of teachers in elementary schools was deficient, and for a nation of the magnitude of Great Britain was scandalously deficient. They wished to impress upon Lord Londonderry not only that there should be wider provision for the training of teachers, but that they should be all educated in the principles of hygiene and temperance. The medical profession suggested that in the interests of the people provision should be made for the prevention of disease and physical deterioration by the adoption of the proposals put forward.

Lord LONDONDERRY said, in reply, that when his friend, Sir Thomas Barlow, informed him that it was the desire of a representative gathering of the great medical profession to wait on him and put before him their views in regard to the deterioration of health, he told Sir Thomas Barlow that whether the time was convenient or not he would be only too glad to welcome a deputation whenever they chose to come. He felt that it was to the interest of the rising generation of this country that the Minister of Education should be brought into contact with those who knew so well the various details connected with the question of health. It was with the greatest interest that he had listened to the speeches that had been made. The deputation was a very important one, and, small as the room was, it contained men whose names were known far beyond the circle of the medical profession. He felt that the remarks he was making were to the world at large, and he was deeply sensible of the great responsibility that he had taken upon himself in endeavouring to reply to the speeches and to the petition. Turning to Sir William Broadbent, Lord Londonderry reminded him of the many deputations he had attended, and remarked that he had always felt that it would be very pleasant to be able to accede to their requests, but in regard to the present deputation he (Lord Londonderry) had pointed out some time ago to Sir Thomas Barlow that there were certain difficulties which would prevent him from giving any definite answer to the definite proposals of the deputation. He hoped, however, that they would not think that because he was not able to give them a definite answer that he did not heartily sympathize with their views. They had his sincerest sympathy in all that was put forward, and he wished that it was in the power of the Board of Education to carry out the proposals they had put before him. Though, however, he was not able to give them a definite answer he thought he would be able to show them that the Board was adopting action calculated to carry out their desires. In the measures they were considering the object the Board had in view was that their efforts should have the effect of spreading a knowledge of the laws of health throughout all parts of the country. He thought that Sir Victor Horsley had rather expressed the idea that the Board was not moving as rapidly as it might, and that the teachers were not teaching hygiene in the way they might or to the extent he would like to see. He was as anxious as Sir Victor Horsley to see that the teachers were carrying out those ideas, but he was bound to tell them that at the present time those teachers did not exist. Any one who had to give instruction should be first properly instructed himself. At the present time they were devoting themselves to the training of teachers and instructing them properly in hygiene. He trusted that as time went on their efforts, which could not take practical effect at the moment, would bear fruit in a short space of time. In regard to the Nuremberg Congress the Board of Education had had a representative there, and he had reported very fully on the proceedings. He assured them that the Board was fully alive to the action of foreign countries in regard to the teaching of hygiene. He thanked Sir Thomas Barlow for the kind allusion he had made to his efforts and the efforts of his colleagues in endeavouring to secure the health of the school children. Every year it was his habit to meet the inspectors of the schools, and he always emphasized on that occasion the im-

portance of considering the health of the children. Sir William Broadbent had kindly sent him the petition, and said that it called attention to "the serious physical and moral conditions of degeneracy and disease resulting from the neglect and infraction of the elementary laws of hygiene." He had no doubt whatever that that was the state of affairs, and it would be audacious for him to controvert such a statement. But he wanted to point out that if there was a serious decline in the general standard of the physical powers of the people, he was afraid that much as he thought the schools might do, it was impossible for the Board of Education alone to bring about any change which would rectify the present condition of things. If it proved to be the case that the deterioration which existed was confined to certain sections of the population and was distinctly traceable to certain social or economical conditions, then undoubtedly the Board of Education could do something, but they must recognize that the Board of Education did not stand alone in the matter; there were other departments with which they must co-operate if they were to arrive at any real practical remedy of the state of affairs described. Some time ago a Committee had been appointed to inquire into the alleged effects of physical deterioration. That Committee, he need hardly say, was a very competent one, but it had not yet issued its report. He had every reason to believe that the conclusions and advice of that Committee might be available at no distant date, and it was for that reason that he intimated to Sir Thomas Barlow that it might have been better for him to have received the deputation after that report had been made, when perhaps he might have been able to give them a better account of his views and of what the Government might be able to do. A very important part of the educational question was the question of hygiene, which was to the medical profession probably the most important question, but he thought that they would recognize that in his position he had to regard that question as part and parcel of the whole subject of the health and education of the rising generation of this country. If the report of the Committee to which he referred disclosed a state of things so serious as to demand action of an heroic character on their part, then he assured them that he would endeavour to go at once into the matter and take counsel with those other agencies which were concerned in the subject, perhaps even more, some might think, than the Board of Education. If, however, the report should prove that the evil was distinctly of a local character, then he hoped that the action the Department had taken during the past year would emphasize the importance it attached to instruction in the laws of hygiene. He hoped that their action would place the question everywhere on a proper basis in a comparatively short space of time. He hoped that what they were doing would commend itself to Sir William Broadbent and to his colleagues. He would ask them to allow him to read to them a statement of what had been done by the Board of Education. The course adopted by the Board would have the advantage of leaving those responsible free to concentrate their attention on the particular schools or the particular areas in which immediate action was urgently called for, whereas if they attempted immediately to insist that, no matter what the circumstances, instruction in hygiene must be compulsory in every school, then he feared that a great deal of not very satisfactory instruction would be given in those cases where special attention was really necessary at the present time. He would now point out what the Board of Education had done, and he hoped it would prove that the Board of Education was very far from ignoring that most important question, and that it realized its responsibility for contributing towards the production of a race that was strong in health and intellectually competent. He would take first the matter which was mentioned finally in the petition, namely, the training of teachers. That year for the first time the Board had issued in a convenient form its regulations for the training of teachers and for the examination of students in training colleges. In this pamphlet, on p. xiv of the prefatory memorandum, there occurred the following passage:

> The students ought to have an adequate knowledge of school hygiene. They should understand the general conditions necessary for making a building or a room healthy and for keeping it so, and they should be well acquainted with the rules of personal health, and so far as possible with the physiological principles upon which these rules are based. In the case of women students the nutritive value of food-stuffs in connexion with their cost in the market and in relation to the needs of young children should be known in outline, even though the student may not be specially qualified in domestic economy. Only thus will they know how to conduct the school as a whole with the greatest profit to the health and bodily development of the scholars, and how to adapt the instruction to the limitations which are imposed in some cases by the feeble health of the children or by the poverty or neglect of their parents.

The Board had gone further than this, for on pp. 34 to 37 of the same *Regulations* five alternative courses of study in the principles of teaching were described, each containing sections on hygiene, physical culture, or the principles of sanitation. So that by 1906 practically every student in a training college would be examined in one or other of these courses, and probably not a few papers would be set on the subjects in 1905. He hoped that what he had read would show how much the Board of Education was in earnest. It was quite indispensable, if such instruction as the medical profession desired to give was to be effective, that the training of teachers must include training in the required subjects. Sir Victor Horsley might ask him how they were going to get on between now and the time when there would be a sufficient number of teachers from the training colleges who had received this special training. He hoped he had convinced Sir Victor that to attempt with untrained teachers the instruction of children in hygiene would not be a wise movement. The Board were willing to give every encouragement to the inclusion of hygiene as a school subject, but it would be impossible to administer at all rigorously the requirement that in every school without exception instruction in hygiene must be given. What had been done was to place in a prominent position in the code of regulations for public elementary schools for 1904 the following instruction that the school must afford the children—

> every opportunity for the healthy development of their bodies, not only by training them in appropriate physical exercises and encouraging them in organized games, but also by instructing them in the working of some of the simpler laws of health.

The Board proposed to issue as soon as possible a volume of suggestions to teachers containing advice on various matters in regard to schools. The volume would contain a chapter dealing with the normally healthy children and with children in ill-health or below the normal standard of health. There would be chapters dealing with the lighting and heating of class rooms, with general questions of sanitation, and precautions to be taken when cases of infectious disease occurred. With regard to the direct instruction in hygiene the volume would contain the following passage:

> A course of instruction in hygiene should form part of the work for the two upper classes of every girls' school. Such instruction will naturally find its place in the existing curriculum where a course of household management is taken, and where this is not the case instruction under the head of knowledge of common things should develop in this direction in the later years of school life. Such instruction should comprise lessons applicable to the home circumstances of the children, dealing in an absolutely non-technical way with questions of feeding, clothing, rest, air, light, warmth, exercise, cleanliness, and the general care of health. In some cases it will be well to include in addition some instruction on the care of young children.

In regard to temperance, every remark made on the subject of alcohol had found an echo in his breast. The Board of Education was anxious by every means in its power to prove to the rising generation, and so through them to the world at large, the serious defects and miseries that accrued from the want of temperance in families. He could only say that it was doing its best to instruct the teachers to bring before the children, not by fear, but by moral power and persuasion, that it was to their advantage to be temperate. He had been doing his best to encourage the teachers to persuade the children to go in for healthy games in the open air, for by so doing he considered that the evil influences of drink might be counteracted. He felt deeply the honour conferred on him by the deputation. It was a privilege and an education for a Minister to come into contact with a deputation like the one before him, but his hands were tied through the fact that the Commission he had referred to had not yet reported, but so far as lay in his power and in the power of his department all that was possible would be done.

Dr. FARQUHARSON thanked Lord Londonderry, and the deputation withdrew.

FRENCH CONGRESS OF MEDICINE.—The seventh meeting of the French Congress of Medicine will be held this year at Paris under the presidency of Professor Cornil, October 24th to 27th. The following are the questions proposed for discussion:—(1) Arterial pressure in disease, to be introduced by Drs. Bosc and Vedel of Montpellier, and Vaquez of Paris; (2) mercurial injections, to be introduced by Drs. Lannois of Lyons and Balzer of Paris; (3) obesity, to be introduced by Drs. Maurel of Toulouse and Le Noir of Paris.

WILLIAM CADGE MEMORIAL.

THE following is a complete list of those who have subscribed up to the present time to the William Cadge Memorial Window to be placed in the Cathedral at Norwich:

LONDON—
Lord Lister
Sir William Broadbent
Sir Thomas Smith
Sir Anderson Critchett
Sir H. G. Howse
Sir Hugh Beevor
Sir Joseph Dalton Hooker
Sir Henry Thompson
Sir Victor Horsley
Sir Felix Semon
Sir Constantine Holman
Mr. Jonathan Hutchinson
Mr. Timothy Holmes
Mr. Reginald Harrison
Mr. Christopher Heath
Mr. Rickman Godlee
Mr. Pearce Gould
Dr. Robert Barnes
Mr. John Langton
Mr. Butlin
Mr. Mayo Robson
Brigade - Surgeon - Lieutenant-Colonel Keegan
Dr. Charlton Bastian
Mr. Alfred Willett
Mr. John Tweedy *(President, College of Surgeons, England)*
Mr. Edgcombe Venning
Mr. C. A. Ballance
Mr. Richard Barwell
Mr. J. H. Morgan
Dr. Sydney Ringer
Dr. J. Hughlings Jackson
Mr. A. E. Barker
Mr. H. Work Dodd
Dr. John H. Galton
Mrs. Garrett Anderson
Mrs. Scharlieb
Dr Frederic Roberts
Mr. Stephen Paget
Mr. Alban Doran
Mr. G. S. Makins
Mr. P. J. Freyer
Mr. H. Lambert Lack
Dr. S. Monckton Copeman
Mr. Douglas Harmer
Professor Ernest White
Dr. E. A. White
Dr. Duka
Mr. G. L. Bates
Dr. Frank
Mr. Dudley Buxton
Dr. Preston Lewis
Dr. Stamford Felce
Dr. F. J. Harvey Bateman

NORWICH—
Sir Peter Eade
Sir Frederic Bateman
Dr. Beverley
Dr. Barton
Dr. Burton Fanning
Dr. Long
Mr. Williams
Mr. Robinson
Mr. Burton
Mr. Donald D. Day
Mr. Ballance
Mr. W. H. Day
Mr. Charles E. Muriel
Mr. Joseph Allen
Mr. F. Long
Mr. Nance
Mr. Morse
Dr. Fielding
Dr. Watson
Mr. Preston
Dr. Cooper Pattin
Mr. H. F. White
Mr. E. W. Everett
Mr. H. Watson Turner
Dr. Andrews
Dr. Crook
Dr. Spowart
Dr. McWilliam
Captain Earnshaw, M.B.
Dr. Griffiths *(President, British Medical Association)*, Swansea
Mr. Mayo, Yarmouth
Mr. W. E. Wyllys, Yarmouth
Mr. W. J. Wyllys, Yarmouth
Mr. H. Wyllys, Yarmouth
Dr. Ryley, Yarmouth
Mr. Lettis, Yarmouth
Dr. H. Collier, Yarmouth
Dr. H. Blake, Yarmouth
Mr. Marriott, Swaffham
Mr. Perry, Reepham
Dr. McKelvie, Blofield
Mr. D. W. Hughes, Wymondham
Mr. Soffe, East Harling
Dr. Dyer, Brundall
Dr. Pembroke Minns, Thetford
Mr. Hugh Taylor, Wroxham
Mr. Fenn, Diss
Mr. Gillett, Brooke
Mr. W. Carr, Ditchingham
Mr. Harris, Thetford
Dr. Lowe, Wymondham
Dr. Mallins, Watton
Mr. Lack, Hingham
Mr. E. G. Ellis, Attleborough
Mr. Griffith Williams, Mattishall
Dr. Owens, Long Stratton
Mr. F. Clowes, Sutton, Stalham
Dr. Hamill, Burnham Market
Mr. Deacon, Hethersett
Mr. Prior, Loddon
Dr. Plowright, Lynn
Dr. John Bateley, Gorleston
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Dr. Berry, Lowestoft
Mr. Crowfoot, Beccles
Mr. Morris, Halesworth
Dr. Edgar Barnes, Eye
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Mrs. Mildred Sims, Ipswich
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Dr. Laurence Humphry, Cambridge
Mr. Joseph Griffiths, Cambridge
Dr. Carver, Cambridge
Dr. Walker, Peterborough
Dr. Saunders, Aynhoe
Dr. Charles Firth, Gravesend
Dr. J. Spencer Ferris, Uxbridge
Dr. F. Stroyan, Aldershot

FOREIGN—
Honourable Alan Herbert, M.D., Paris
Dr. Felix Guyon, Paris
Dr. Paul Segond, Paris
Dr. Hartmann, Paris
Professeur Lannelongue, Paris
Professor Pozzi, Paris
Professor Martin, Griefswald, Berlin
Dr. J. M. Berg, Stockholm
Professeur J. de Kosinski, Warsaw
Dr. E. Lambotte, Brussels
Dr. Thompson, Brussels
Dr. Michael Foster, San Remo
Dr. Keyes, New York
Dr. Bigelow, Boston
Dr. Beach, Boston
Professor J. C. Warren, Boston
Professor W. Osler, Baltimore
Professor W. W. Keen, Philadelphia
Dr. Roddick, Montreal
Lieutenant-Colonel F. P. Nichols, St. Lucia
Dr. Cawley, Adelaide

Subscriptions, limited to £1 1s., are still needed, and may be paid to Dr. Beverley, 54, Prince of Wales Road, Norwich.

THE MIDWIVES ACT.

IN the BRITISH MEDICAL JOURNAL of July 9th, page 79, an account was given of a schedule of fees which has been recommended by the Stratford Division of the Metropolitan Counties Branch of the British Medical Association for adoption by the Council of the Branch. This schedule was, as stated, adopted by the Division from one put forward in the course of a paper read before the Plaistow and Canning Town Medical Society, but the name of the author of that paper was incorrectly transcribed. The gentleman to whom members of the medical profession in general are indebted for this contribution towards the settlement of the very difficult question of what fees should be charged for work done upon the summons of a registered midwife is Mr. Percy Rose, President of the Plaistow and Canning Town Medical Society and Representative of the Stratford Division of the Metropolitan Branch of the British Medical Association.

LITERARY NOTES.

TILL beyond the middle of the eighteenth century the surgeon in France, as in most other countries, was an artisan, plying his trade in a shop and including the operations of shaving and hair cutting among the rites of the art and mystery which he professed. It was not till 1756 that the surgeons succeeded in cutting the barbers adrift. M. F. G. Boutineau enables us to form a good idea of the life of a French surgeon before that time in an article contributed to a recent number of the *Gazette Médicale du Centre*, based on materials extracted from the records of Tours. Jaques Perdereau was apprenticed to Pierre Mahiet. A contemporary author, Dr. Francois Joseph Hunauld, whose testimony, however, must be discounted by the fact that like most physicians of the day he looked upon surgeons as his natural enemies, gives the following picture of the life of an apprentice in the early part of the eighteenth century:

Hardly has the cock crowed than the apprentice gets up to sweep and open the shop so as not to lose the smallest profit that may be made out of a labourer who stops to get shaved on his way to his work. From that time till two in the afternoon he goes to comb the wigs of fifty people, waiting the convenience of his customers in an anteroom or on the stairs, putting the hair of some in paper, using the curling irons on others, and shaving all. Towards evening, if he be one of those who are eager to learn, he will take a book. But the weariness and disgust which study necessarily causes in those who are not accustomed to it soon throw him into a deep sleep which is occasionally broken by the sound of a little bell hanging over the door which warns him that some countryman has come to get shaved. . . . Never did man exact more respect from a servant, and never in the West Indies did a white man more greedily strive to make a profit on the money invested by him in the purchase of a nigger, than a master surgeon seeks to make all he can out of the bread and water which he gives his apprentices.

Hunauld says the physicians out of charity gave these poor lads lessons in surgery at four in the morning. "When the hair of the public does not engage their attention, they make charpie, set their razors and curl wigs." Evidently the lot of a young man destined for the practice of surgery in those days was neither very dignified nor very pleasant; nor was it of a kind that those who most regret the abolition of apprenticeship would care to see revived. Jacques Perdereau was clearly a good apprentice, for he married his master's daughter in 1721. He also held a fair position among his brethren at Tours, for he was the Treasurer of the Corporation and one of the four Administrators of the Company. From an inventory of his goods and chattels made with a view to a second mar-

riage, it may be gathered that he was a man of substance, but it is also clear that he was not a good man of business. So embarrassed were his affairs that his second bride—a widow and clearly a practical woman with no sickly sentiment about her—insisted, contrary, as the marriage contract sets forth, to the custom of the country, that there should be no community of goods between them. The marriage took place in 1744, but there is nothing to show how it turned out. Nor is there any record of Perdereau's professional life, except there is an indenture of apprenticeship dated about a year after his marriage, by which he secured a pupil whose father was in a position to pay well for the privilege.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA

DURING the weeks ending June 4th and 11th the number of deaths from plague in India numbered 13,770 and 7,762 respectively. During the two weeks the principal figures were: Bombay City, 82 and 74; Bombay Districts, 517 and 416; Calcutta, 70 and 36; Bengal, 129 and 133; North-West Provinces and Oudh, 420 and 229; Punjab, 12,219 and 6,491; Kashmir, 81 and 49; Rajputana, 60 and 55. During the week ending June 11th the deaths from plague in Central India numbered 21; Hyderabad State, 4; Mysore, 165; Karachi, 18. Plague has disappeared from Aden.

SOUTH AFRICA.

Cape Colony.

Port Elizabeth.—During the weeks ending June 11th and 18th the fresh cases of plague numbered 1 and 1; no deaths from the disease. Cases under treatment numbered 5 on June 18th. Plague-infected rats and mice continue to be found at Port Elizabeth, but at no other towns in the Colony.

Transvaal.

During the weeks ending June 25th and July 2nd and 9th the fresh cases of plague numbered respectively 2, 2, and 2; no deaths from the disease were reported.

HONG KONG.

During the week ending July 2nd, 38 fresh cases of plague were reported and 38 deaths from the disease.

FORMOSA.

During the first six days of May 345 fresh cases of plague were reported in Formosa. The total number of plague cases in the island since the outbreak of the disease in January, 1904, amounted on May 6th to 2,600.

MAURITIUS.

During the weeks ending June 30th and July 7th the fresh cases of plague numbered 2 and 1, and the deaths 1 and 1.

MEDICAL NEWS.

THE Royal Westminster Ophthalmic Hospital has received, under the will of Miss Steel, a legacy of £1,000.

DR. JAMES BARR, Physician to the Liverpool Royal Infirmary, has been elected a Fellow of the Royal Society of Edinburgh.

SMALL-POX IN EDINBURGH.—During the week ending midday of Saturday, July 9th, no fresh case of small-pox was notified to the public health authorities. There remained on that day only 2 cases in the City Hospital at Colinton Mains, as against 3 on Saturday, July 2nd.

KING'S COLLEGE.—Vacation courses in clinical pathology and practical and clinical bacteriology will be given at King's College in August by Professor R. T. Hewlett. Bacteriology will be taken in the morning and pathology in the afternoon. The courses commence on August 3rd and terminate on August 13th. If both courses be taken the inclusive fee will be £4 4s.

WE are informed by Mrs. Barnett, Honorary Secretary of the Hampstead Heath Extension Council, that the efforts to preserve Wylde's Farm and the view from the North-West Heath are likely to be successful. The London County Council has voted £8,000, the Hampstead Borough Council £5,000, the Middlesex County Council £2 000, and private persons and City companies have subscribed £18,500; the sum of £5,500 is still required. Hampstead is a unique piece of real country on the confines of a great city, and the new electric tube railway is likely to bring it within the reach of a still larger proportion of the poorer classes of London. The Treasurers of the fund are Sir Robert Hunter, General Post Office, and Mr. E. Bond, M.P., House of Commons.

BRUSSELS MEDICAL GRADUATES' ASSOCIATION.—The annual general meeting of this Association took place on July 5th at the Trocadero, Regent Street, at 6 30 p.m. The annual balance sheet was presented at the meeting, and officers and Council elected for the ensuing year. At 7 30 the members and their guests dined together, Dr. Major Greenwood, the President for the year, being in the chair. The President, in proposing "The Health of the Guests," said that the Association would complete its first quarter of a century next year, and that during that time many illustrious guests had dined at its table. He thought that Sir Isambard Owen, as Deputy Chancellor of the University of Wales, and Vice-Dean of the Medical Faculty of the London University, would sympathize with their academic aspirations. He eulogized Dr. Hall for the work he had done in connexion with the Medical Sickness Society, which had owed not a little of its success to the ability with which he had looked after its business as Chairman of the Executive Committee. He said that the fact that Dr. F. J. Smith presided over an association of the London diplomates of the Colleges of Physicians and Surgeons of London, who were asking that their diplomas should have the force of medical degrees, showed that the universities of the country were not doing their business in an altogether satisfactory manner: and he complimented Mr. Betham Robinson on the able manner in which he had promoted the welfare of the Metropolitan Branch of the British Medical Association by his work as Secretary. Dr. de Havilland Hall, in responding, said that it gave him much pleasure to dine with the Association. He had always held the greatest respect for their degree, and in his early days, when he was engaged in medical tuition, he was struck by the searching character of the examination. Sir Isambard Owen, in proposing the toast of the Association, said that the members had his entire sympathy; that with regard to the degree he had every respect for it, and thought it was quite equal to some English ones; that the university system in this country was by no means perfect, although decidedly better than formerly. He thought that the title "Doctor" was a rightful appanage of the profession, and he gave a quotation from Shakespeare, showing that it was a common term for a medical practitioner even in his days. He saw no objection to the registration of the degree as an additional medical title, and hoped that Brussels medical graduates would gain that right in the future. Dr. Walter Smith, who responded, thanked Sir Isambard Owen for the sympathy he had shown with them, and gave a brief history of the Association. He regretted that those of their members who had got their degrees registered took so little interest in the Society, and showed so little gratitude for what it had done for them. He spoke of the important work of the Council during the year, and said that it was kept informed of what took place at Brussels by an agent on the spot: and that matters were not infrequently referred to them by the University touching the interests of foreign graduates. Dr. Haydon, who proposed the health of the President, Dr. Major Greenwood, said that the Association owed him much for the work he had done for so many years as honorary secretary, while the whole profession was indebted to their President for the public work he had done for the profession; he referred to the numerous offices Dr. Greenwood held on well-known professional societies, and pointed out that he had just been elected a member of the Council of the British Medical Association. The President suitably responded. An excellent programme of music was performed during the evening under the direction of Dr. Haydon, who himself played several violin solos.

INDIA AND THE COLONIES.

GIBRALTAR.

THERE appear to be special difficulties surrounding the compilation of health statistics with regard to the civil population of Gibraltar, and Major Horrocks, the Medical Officer of Health, therefore returns most of his figures for the year 1903 in terms of the census population, taking no account of intracensal increase. They are, therefore, not very useful for comparison with those of other Colonies, and a further difficulty in examining them is introduced by various arbitrary divisions of the population under terms the precise significance of which is not very clear. It being useless, therefore, to quote the majority of the figures, it may be said generally that while the aggregate mortality in 1903 was comparatively low, the infantile mortality was very high, being within a decimal point of 180 per 1,000 registered births. From the figures given with regard to diphtheria, chicken-pox, and other infectious diseases it is apparent that the causes of this high rate must be looked for in those general conditions which affect the infantile mortality figure. Obvious explanations indeed may be found in the statements made as to close aggregation of houses on very limited areas, and the overcrowding of the inhabitants of individual tenements. There are also serious water difficulties to contend with, less as regards quality than quantity. No attempt appears to be made to eliminate the first of these causes of public ill-health, but many details in the report made it obvious that sanitary progress in other directions is being slowly effected, and that if it is not very rapid it is not for want of sound advice on the part of the medical officer of health.

BRITISH MEDICAL ASSOCIATION.

Subscriptions to the British Medical Association for the year 1904 are now due and should be forwarded by postal order or cheque to the amount of 25s. to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, JULY 16TH, 1904.

THE TEACHING OF HYGIENE AND TEMPERANCE.

THE reply which the President of the Board of Education made to the medical deputation which waited upon him on Monday was sympathetic if inconclusive. The deputation presented the petition of the medical profession in favour of the institution of regular and universal instruction in hygiene and temperance in elementary and secondary schools, and the speeches made by Dr. Farquharson, who introduced the deputation, by Sir William Broadbent, the Chairman of the Committee by which the petition was distributed for signature, and by all those who followed, were brief and to the point, so that the whole subject was placed fully before Lord Londonderry in a short space of time.

Sir William Broadbent insisted on the importance of the petition as an entirely spontaneous manifestation of opinion on the part of members of the medical profession, who, in the course of their work, had become impressed with the fact that ignorance was the parent of much suffering, ill-health and vice, and was manifested especially in respect of ventilation, food, and the evil effects of alcohol. Dr. Griffiths, President of the British Medical Association, informed Lord Londonderry that the Association supported the views expressed in the petition, considering it to be urgently important that elementary scientific instruction in health subjects, including temperance, should be provided in primary schools in order that the conditions which lead to deterioration of the national physique may be understood and prevented. He also, in the name of the Association, insisted on the necessity of ensuring that the training of all teachers shall include adequate instruction in the laws of health and temperance. Sir Thomas Barlow said that though Education Authorities were authorized to provide for instruction in hygiene and temperance, the number of schools in which such teaching was given was a small fraction of the whole. He referred to the fact that this country had been outdistanced by many British Colonies, and by America, and Sir Lauder Brunton spoke of the importance attached to the matter in the discussions at the recent International Congress of School Hygiene at Nuremburg. Dr. Mary Scharlieb observed that the matter was one which ought to be taken up by women of all ranks, since it was not only the children of the poor who suffered from ignorance as to the effects of alcohol, of improper feeding, and of inattention to hygiene. Sir Victor Horsley summed up the matter by saying that the medical profession was anxious that every individual should be taught in the earliest years of school life the means of safeguarding physical health, just as he learned the elements of social morality and received a groundwork of general intellectual instruction. The mind of every child should be habituated from the earliest period to the absolute necessity of cleanliness of the body and clothing, and of purity of air and food, and should be released from the incubus of the common belief that alcohol was a necessity of life.

A point of fundamental importance was raised by a remark with which the Secretary of the Board of Education interrupted Sir Victor Horsley when he said that medical practitioners did not wish to suggest the introduction of a new subject into the code to tax the growing brains of young children, and were not asking the Board of Education to put an additional subject into the compulsory code. Thereupon, Mr. Morant interjected the remark that there was no obligatory list of subjects. This statement could only be interpreted as meaning that the control previously exercised by the Board of Education had been relaxed, and that any elementary school could teach or omit to teach any subject it chose, or at the least that there was no distinction between the subjects of the curriculum as to their compulsory or optional character. Whatever may have been present to Mr. Morant's mind at the time, it is quite clear that this is not the conception which the public or Education Authorities have as to the present jurisdiction of the Board over the education of children in elementary schools.

The petition was signed early this year, and, of course, applied to the then existing code, and could have no reference to the new code of regulations to come into force on August 1st next, issued by the Board of Education on May 5th, 1904. But even leaving this point aside, we entirely fail to see that the terms of the new code justify the view which Mr. Morant appears to take. The prefatory memorandum to the code for 1904 states that "recent codes have contained a list of subjects which, as a rule, *must* be taught in all elementary schools, and a longer list of subjects which *may* be taught under appropriate circumstances. The Board have attempted in this year's Code to emphasize the essential character of a curriculum as a discipline or means of education; to exhibit, without undue elaboration, the course of instruction as a connected and coherent whole; and, where possible, to indicate the scope of the instruction to be given in its several branches." Now, in Article 1 we find it laid down that the education given in every public elementary school should be based on a graduated course of instruction in eight subjects, and it is further stated than one or more of these subjects may be partly or wholly omitted in any case in which the Board is satisfied that there is good reason for the omission. How the terms of Article 1 are to be reconciled with Mr. Morant's statement that there is now no obligatory list of subjects we do not at present see, more especially as in its control over the grants-in-aid the Board of Education has a most effective means of enforcing its wishes and exercising the strongest compulsion. Further, Article 2 lays down that the instruction given in the fundamental subjects enumerated in Article 1 must be in accordance with a syllabus to be submitted to the inspector, and to be modified on the requisition of the Board. Moreover, the subjects in Article 1 are contrasted with other subjects such as handicraft, gardening, cookery, and household management enumerated in Article 4 as subjects which may be taught in the upper classes, and for which special grants may be made. If these Articles do not mean that the Board of Education exercises jurisdiction over the teaching of the subjects enumerated, and is responsible for the co-ordination of elementary education in the country, we would respectfully ask what meaning they are intended to convey? As a matter of fact it appears quite clear that the new code promulgated last May, which is to come into

force next month, does not in any way alter the position of responsibility in which the Board of Education stands with regard to the control of elementary education in England and Wales.

From the connexion in which Mr. Morant's interruption occurred it might naturally have been inferred that the teaching of hygiene and temperance held a prominent place in some part of the code. This, however, is not the case; the subjects are not even mentioned in the index, and we can find no article dealing with them, although Lord Londonderry read out from a volume of suggestions to teachers, which he said was about to be issued, a paragraph to the effect that a course of instruction in hygiene should form part of the work for the two upper classes of every girls' school. This is very far indeed from the universal instruction, of boys and girls alike, from the earliest period of school life, in elementary hygiene and temperance desired by the medical profession. We understand that the Board considers that these subjects might be taught under paragraph 3 of Article 1, which runs as follows: "Knowledge of the common phenomena of the external world, with special reference to the formation of a habit of intelligent and accurate observation, and to the application of that habit—in conjunction with simple forms of experiment—in the daily life and surroundings of the scholars." If it is really the intention of this paragraph to enjoin the giving of instruction in hygiene and temperance it would surely have been better to have expressed this in terms more easily to be understood by persons of ordinary intelligence. As it is, it would appear that according to the official view hygiene and temperance are possible parts of one subject in a non-obligatory list. This certainly is not the place which in the opinion of the medical profession—and no profession is so well capable of judging in the matter—the instruction in matters of fundamental importance to health and welfare of the people should hold.

The President of the Board of Education, in his reply, very wisely setting aside technicalities as to obligatory and non-obligatory subjects, or as to the possibility of teaching hygiene as a part of the "knowledge of the common phenomena of the external world," frankly admitted that, important as the subjects of hygiene and temperance are, they are not being taught in public elementary schools. He excused this omission partly on the score, first, that the Physical Deterioration Committee appointed by the Privy Council has not yet reported, but mainly on the ground that teachers competent to give instruction in the subjects are not at present available. Both the President of the British Medical Association and the Chairman of its Medico-Political Committee had in the course of their remarks insisted on the need for training all teachers in hygiene and temperance, so that they might be able to give sound instruction in these subjects, but Lord Londonderry had to confess that the Board of Education has been so dilatory in realizing its responsibilities in this matter that it has only this year issued specific instructions as to teaching the elements of school hygiene to pupils in training colleges. Lord Londonderry throughout his reply expressed the most admirable intentions; indeed Sir Thomas Barlow said that many members of the deputation knew that in addressing him they were preaching to the converted. But good intentions do not always pave the way to a better environment, and while there was in Lord Londonderry's speech a clear note of personal conviction, there was all through an undertone official negation. In some of his remarks he seemed to be on the verge of dissociating himself from the department over which he presides, and to share the impatience with which men and women, impressed with the importance of prompt action to deal with a national emergency, receive the technical objections or bland assurances of official persons.

POST-MORTEM EXAMINATIONS FOR CORONERS.

The incidents related in the report of the sittings of the conferences between the Medico-Political Committee, the Medical Defence Union, the London and Counties Medical Protection Society, and the South-West London Medical Society, published in the Supplement to the British Medical Journal this week, form a remarkable if irritating chapter in the history of the relations of the medical profession to the State, and are not without interest to that large section of the public which resents the pretensions of minor officials, and is disposed to demand prompt and efficient attention to the public service, even from politicians in office.

The story goes back nearly two years, and is told very fully in the documents now published. The matter is one which especially interests metropolitan practitioners at the present moment, but the principle at stake concerns every member of the profession in active practice. It also has important bearings on the administration of justice. The coroner's court has come in for a good deal of ridicule, from the time of Dogberry downwards, but as a court of first instance, it is, when judiciously and judicially administered, a safeguard against crime and a convenient and rapid means of ascertaining whether a case exists for inquiry by a higher court. Its main function is to ascertain in cases of unexpected death in which a medical certificate cannot be given, whether the death was due to natural causes or whether there is ground for suspecting neglect or foul play. Coroners have always followed the common-sense rule, good both from the legal and the medical point of view, of calling as a witness the medical man who had attended the patient during his last illness, or who had seen the body immediately after death. It is obvious that he must always be in a position to give valuable evidence as to the symptoms which immediately preceded death, or as to the circumstances in which the body was found, and, as every book on forensic medicine teaches, observations made by a skilled person in the death chamber may prove of first-rate importance in cases in which a criminal charge is eventually made. The position is well put in the memorandum to the Lord Chancellor, where it is pointed out that medical evidence as to the cause of death is of two kinds: (1) Clinical, as to facts observed during life, and (2) pathological, as to facts observed by examination of the body after death. Where clinical evidence is available it may afford great assistance in arriving at a decision as to the true cause of death, and where a necropsy is ordered the medical practitioner who attended the deceased person during life should make the examination or assist in its conduct. It has always been recognized that cases of peculiar difficulty or special importance may arise in which it may be desirable to obtain expert pathological assistance, but this should be provided in addition to, and not as a substitute for, the evidence of the practitioner called to the case during life or immediately after death. This plan of procedure, which has been hitherto universally followed, is clearly in strict accord with the provisions of the Coroners Act.

Mr. Troutbeck, who was appointed by the London County Council Coroner for South-West London towards the end of 1902, has seen fit to depart from the principles which have hitherto governed the practice of the vast majority of coroners, and he did so apparently owing to a misapprehension of the intentions of the London County Council as expressed in a memorandum of its Public Control Committee made in December, 1902. This memorandum expressed by implication the view that it was desirable that *post-mortem* examinations should be entrusted to a skilled pathologist in all cases except those in which the coroner is "satisfied that the medical man connected with the case is competent to make a trustworthy *post-mortem* examination." Mr. Troutbeck denies that he was bound by it, and the point is of quite minor importance. The fact remains that Mr. Troutbeck was aware of the terms of the memorandum at the time of his appointment or very soon afterwards, and that, owing probably to the circumstance that he has not had the advantage of a medical training, he failed to understand them. They were still more clearly expressed in the letter of the Clerk of the Council (see SUPPLEMENT, p. 58), who wrote that "in the opinion of the Council it was desirable that *post-mortem* examinations in inquest cases of a special nature should be entrusted to a specially-skilled pathologist." We are not now discussing the policy of this plan, but would merely point out that Mr. Troutbeck's idea of carrying it out is to entrust 55 per cent. of all inquests, whether special or not, in one borough to a gentleman who is not generally recognized by the medical profession as a pathological expert.

Mr. Troutbeck, in his letter to the Lord Chancellor (SUPPLEMENT, p. 53), stated that in those cases in which he did not consider it appropriate to ask the medical practitioner in attendance before death to make the *post-mortem* examination "he would be summoned to give evidence at the inquest, even if his first attendance, as is frequently the case, were only a few minutes before death." So far from carrying out this plan, Mr. Troutbeck appears to have fallen into the habit of looking upon the medical practitioner who has the misfortune to be called in too late to render it possible for him to give effective aid as under suspicion of having compassed or accelerated death. If he will not put the medical man in the witness-box, the coroner will do his best to put him in the dock. He may send the medical practitioner a message, perhaps at the last moment, perhaps by telephone, while the inquest is actually in progress, to the effect that he may tender himself as a witness. If, acting well within his rights as a citizen, the medical men declines to recognize this slovenly and irregular procedure, Mr. Troutbeck is so blind to the obligations of his judicial office and to ordinary notions of justice and fair play that he will comment adversely on the fact that the medical man is not present.* We should like to hear, and Mr. Troutbeck would not like to hear, the observations of a strong judge of the High Court to a barrister who persisted in such comments. We imagine that they would end abruptly, and that the experiment would not be repeated. More than this, Mr. Troutbeck not only permits himself to make these improper animadversions, but actually allows juries to find verdicts, or add riders formally censuring the medical man who has not been summoned as a witness.

In May, 1903, a representative deputation brought the policy adopted by Mr. Troutbeck under the notice of the Lord Chancellor, who is supposed to exercise some constitutional control over coroners. Lord Halsbury transmitted the memorandum presented by that deputation to Mr. Troutbeck, who defended himself in a letter dated May 26th, 1903. In this letter he in part denied and in part justified the course of conduct attributed to him, and made grave charges of inaccuracy against members of the deputation. Thereupon a statement, illustrated by many instances in which all particulars were fully set out, was drawn up by the Conference and submitted on July 27th, 1903, to the Lord Chancellor, who has apparently found Mr. Troutbeck's policy indefensible. At any rate, he has not defended it, and from that day to this has made no reply beyond a formal acknowledgement through his secretary. Using judicial phraseology, the matter may thus be stated. Full evidence that a coroner has committed wrongful acts injurious to the public weal has been laid before the Lord Chancellor as the supreme judge in the land, and he has heard Mr. Troutbeck in his defence. Though all the procedure of a court of justice has been observed, the Lord Chancellor withholds judgement, and thereby deprives the medical profession—the complainant in this matter—from receiving its just due and right under the law. The matter cannot be allowed to rest here, and the Conference intends to ask for the interference of the Prime Minister, and to appeal also to the London County Council.

The whole story is a curious example of the way in which the business of the country is not done. In the mind of the true lover of the glorious British Constitution the idea of dignity is indissolubly associated with the office of Lord High Chancellor of England. Some Lord Chancellors have been dignified by their learning, some by their presence, or their robes, some by their eloquence; Lord Halsbury has chosen an easier part—he observes a dignified silence. He follows the tradition of the great days of Jarndyce and Jarndyce; he takes a year to consider the answer to a letter, and when the twelfth month is about to expire he is still unready to reply. It might have been supposed that a stickler for order so inveterate as to seek to exercise in the House of Peers a right of order which when challenged it appeared he did not possess, would have been instant to rebuke any departure from established recedent in a judicial officer under his jurisdiction.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

WE publish elsewhere an abstract of some of the more important parts of Dr. Kerr's report on the work of the medical department of the School Board for London now continued as the medical department of the Education Committee of the London County Council. The report deals with many matters of great interest at the present time, some of which we shall hope to treat more fully on a future occasion; but we may here express the satisfaction with which we have read Dr. Kerr's observations with regard to the medical supervision of elementary schools. He draws attention to the fact that as an institution the school doctor has been slowly taking root on the Continent for many years. Within five years in Germany 676 school doctors have been appointed in 234 towns and districts, the regulations for medical examination of school children having been approved by the Minister of Education. Much is also accomplished in Switzerland, Austria, and in Nor-

* Mr. Troutbeck on one such occasion is reported to have excused himself on the ground "that he had never forced, and never intended to force, anybody into the witness-box." We can hardly suppose that any officer presiding over a court of justice can have talked such nonsense.

thern European countries, and in America; but in England very little has yet been done. The London School Board appointed a medical officer in 1891, the Bradford School Board in 1893 a medical superintendent, part of whose duties was regular school visitation, and since then a number of the larger towns have appointed medical officers. The Board of Education, however, has appointed no medical advisers for its administrative work which, as Dr. Kerr rightly remarks, so far as the hygienic part of education is concerned, has hitherto been much neglected. There is something pathetic in the list of qualifications necessary to the teacher in elementary schools as set forth by Dr. Kerr in his report, pathetic from the children's point of view as from the teachers':—"The many things which are gradually being devolved on the teachers—the necessity of making the first selection of abnormal children, of deciding which should be submitted as candidates for admission to special schools, of excusing children from certain exercises and referring them to the doctor, of tempering corporal punishment in some cases, of testing vision, of eliminating the partially deaf, the mouth-breathers, those suffering from contagious or doubtfully incubating infectious diseases, of the debilitated, overpressed or chronically diseased, and, in fact, of knowing all the obvious cases likely to be harmed from school attendance, the proper use of school apparatus, the attitudes of the children, the provision of a clean and healthy schoolroom, require a knowledge of many things for which there is as yet but little provision in the training of teachers, and of which their certificates give no guarantee, and indeed of which the majority of teachers are comparatively ignorant." Either the teachers should be required to pass a stiff examination in medicine, or else the children should be safeguarded by medical supervision. It is an unjustifiable piece of false economy on the part of Education Authorities to expect teachers to undertake duties which a qualified physician is alone capable of conscientiously performing. Mrs. Watt Smyth has given a chapter in her recent work *Physical Deterioration* to medical inspection of schools, and has urged that the Boston system under which a local practitioner attends the schools for an hour every morning should be followed in this country. This method is useful in checking diseases of an infectious or contagious character, as well as being valuable in regulating brain work and physical exercise in the case of delicate or unfit children. A threefold gain would result: teachers would be relieved of duties with which the State has no right to burden them, and which they must perforce perform badly; children would have some chance of avoiding unnecessary disease, and of benefiting by compulsory education, while the nation would be saved the shame and expense of maintaining on the school benches those 60,000 children of whom Sir William Anson speaks as being unfit to benefit by education. By all means make a thorough knowledge of hygiene a compulsory subject for teachers, so that they may understand the importance of fresh air and other kindred subjects and teach it to the children under their charge. This is a teacher's work, but, to quote from the report of the Inter-departmental Committee on the Model Course of Physical Exercises, "no form of educational organization can be considered to be complete which does not make provision for the systematic reference of questions of school hygiene and the special treatment of individual scholars to medical experts."

THE PREVENTION AND TREATMENT OF CANCER.

We publish elsewhere a report of the annual meeting of the Cancer Research Fund, which will in future, as the Prince of Wales announced, bear the name of the Imperial Cancer Research Fund. The Report of Dr. Bashford, the General Superintendent, is, as may be judged from the abstract we publish, an exceedingly interesting document. With regard to etiology, the conclusion is that it is not permissible to seek the cause of cancer outside the life of the cell; this must be understood to mean that the inquiries and investigations made for the Fund down to the present time tend to negative the parasitic hypothesis. With regard to treatment the conclusion is that both the public and the profession should be alive to the necessity of early operative interference, even in cases which may not at the time appear to be malignant. The Committee of the Liverpool Cancer Research Fund also recognize the necessity of early diagnosis, and have recently instructed the Director, Dr. A. S. Grünbaum, to issue to the press throughout the kingdom, a letter, from which we extract the following:

> No specific cure for cancer is yet known; but, as with consumption, the earlier the treatment is commenced the greater is the chance for its success. Unfortunately, a large number of people put off seeking the advice of their doctor instead of going to him immediately they notice anything wrong.
>
> It may be pointed out that certain organs are more often affected than others. In men, cancer of the gullet, stomach, and intestines; in women, cancer of the breast and the womb account for about two-thirds of all cases of cancer. There are, of course, many other only slight ailments of these organs.
>
> The Committee feel that they cannot too strongly state how important it is that the disease should be recognized at the earliest possible moment. This recognition can only be attained by the patient going to his or her doctor for examination at the very beginning of illness.

The Liverpool Cancer Research Committee hopes that this warning may produce similar good effects to those described in the British Medical Journal of June 18th as resulting from Professor Winter's campaign against uterine cancer in the north of Prussia. The opinion as to the etiology of cancer expressed by Dr. Bashford to the Imperial Cancer Research Fund does not in any way diminish the force of the warning from Liverpool. If anything, it rather tends to emphasize the necessity for early diagnosis to be followed by appropriate operation. The results of early treatment where the operation can be thorough are becoming better year by year, and it is no exaggeration to say that at the present time many patients are thus cured of cancer whose condition a few years ago would have been regarded as hopeless.

THE WILLIAM CADGE MEMORIAL AND THE NORFOLK AND NORWICH HOSPITAL.

We publish elsewhere this week a list of those who have so far contributed to the fund for a memorial to the late Mr. William Cadge, of Norwich. The memorial will take the form of a stained-glass window to be placed in the Cathedral; the subject is Christ healing the sick, and the work is being carried out by Messrs. Burliston and Grylls, of London. We understand that the sum as yet received will not be sufficient to defray the whole of the cost, and Dr. Beverley, of Norwich, will be glad to receive further subscriptions, which are limited to the sum of one guinea. At the last quarterly meeting of the Governors of the Norfolk and Norwich Hospital, with which Mr. Cadge was so long connected, Dr. Beverley, as Chairman of the Board of Management, made two interesting announcements. He said that it had become necessary to organize an ophthalmic department, and that it was proposed to adapt the remaining wing of the old hospital for the improved accommodation of out-patients, and for the electro-therapeutic and ophthalmic departments. Towards the cost of fitting up an ophthalmic department the Duke of Norfolk, on the occasion of his marriage, had made the munificent gift of £1,000. The changes proposed will involve the displacement of the museum which owes its origin to the old surgeons and physicians of the hospital, Martineau, the Dalrymples, and the elder Crosse. As is well known, the museum contains an unrivalled collection of vesical calculi, and in other directions the efforts of the medical staff, past and present, have made it second to none in the provinces. Dr. Beverley said that he had brought the scheme under the notice of Dr. Robert Barnes, a native of the city, who had known Martineau, and the elder Dalrymple, and who was a pupil of one of the house-surgeons of the hospital, Richard Griffin, between 1826 and 1830. Dr. Barnes in a reply dated Eastbourne, July 3rd, said that his personal associations with Norwich were deep and dear, and that he would gladly contribute £500 to the reconstruction of the museum.

SEA-SNAKE VENOMS.

In a recent communication to the Royal Society Sir Thomas Fraser and Major R. H. Elliot, I.M.S., reported the results of their investigations on the physiological action of sea-snake venoms. They have found that *Enhydrina* venom has no direct action on the walls of the arterioles, or at least has no action in any strength of solution which could be present in the blood of a human victim of sea-snake bite. Experiments with the mammalian heart exposed *in situ* showed that this venom had no direct action on the vagal cardio-inhibitory centre. These results were in striking contrast with the condition observed in cobra poisoning, where there was a powerful tonic and stimulant action on the heart muscle or its nerve ends, and an equally powerful and direct stimulation of the cardio-inhibitory centre. On the vasomotor centre *Enhydrina* venom appears to have no action, but it has, however, a very important action on the respiratory mechanism. If large lethal doses are employed respiration falls rapidly, and a considerable rise of blood pressure, asphyxical in origin, may precede death. The heart-beat then quickly slows, and blood pressure falls with corresponding rapidity. As to the part of the respiratory mechanism that is affected by sea-snake venom, the rapidity with which respiration is affected, both when venom is injected into a vein and also when it is applied directly to the medulla oblongata, leaves no room to doubt that the respiratory centre is acted upon directly. The venom is also productive of a motor nerve-end paresis, which is an important factor in its toxicity.

MUSCULAR CONTEMPERATION.

We have chosen the above title, coined many years ago by Hughlings Jackson, as best conveying the meaning of the word "*Mitbewegung*" as used by Dr. Foerster in an interesting monograph[1] on the motor phenomena of healthy and mentally or nervously-diseased people. The term includes, but exceeds in connotation, that of co-ordination, on which the author's views are well known through his book[2] reviewed in the British Medical Journal of July 19th, 1902, p. 181. Dr. Foerster divides movements into purposeful and purposeless, and gives numerous examples of each class in voluntary and reflex acts in both normal and pathological conditions. It is unnecessary to mention the examples cited as explanatory of antagonistic and protagonistic action, or of the numerous purposeless movements in acquiring any new combination in the normal—the facial and other contortions of those learning to write spring to mind—nor, need we follow the author in his account of purposeless movements in many morbid states, peripheral palsies, tabes dorsalis, chorea, and some psychoses, for which the book itself may be consulted. The main interest lies in the support Dr. Foerster gives to Storch's conception of a centre for spacial representation, the so-called stereo-psychic field with its elements or stereons, each corresponding to a single and definite direction in space and connected by stereofugal and stereopetal paths with the respective sensory and motor projection field. Every voluntary movement, says Dr. Foerster, has for point of departure a definite spacial presentation of direction and range, on which does not depend the performance of the movement by any particular group of muscles or member of the body. Whether a cross, for example, is described by a finger, or the arm or the head, is, so far as the stereo-psychic field is concerned, all one. One stereon may thus be related to numberless different movements. With this as starting point, Dr. Foerster develops his theory of contemperation, and by connecting the morbid processes he discusses, with failure of function in one or more links in this neuronal hierarchy, he explains the origin of many motor phenomena. Amongst others we may mention compensatory action in various palsies, the total immobility which sometimes follows the attempt on the part of a tabetic to limit the range of a purposed movement, the involuntary persistence in some adults of bilateral movement in homologous groups, the Babinski toe-phenomenon, and face, tongue, and lip tremors. The essential principle underlying all muscular contemperation, following the hypothesis of a stereo-psychic field, is the initial innervation of widely different groups in any intended act and the gradual restriction, for economy of energy, of innervation to certain paths by the inhibition of inappropriate and aimless muscular actions, which latter in pathological states come again into action.

[1] Die Mitbewegungen bei Gesunden Nerven- und Geistes kranken (Associated Movements in the Sound and the Nervously and Mentally Diseased.) Von Dr. Olfried Foerster. Jena: Gustav Fischer. 1903. (Demy 8vo, pp. 53; 2 illustrations. M. 1.50.)

[2] Die Physiologie und Pathologie der Co-ordination. Dr. Foerster. Jena: Gustav Fischer. 1902. (Roy. 8 vo. pp. 316; 63 illustrations. M. 7.)

THE VALUE OF TESTIMONY.

The law of evidence, as seen in operation in the courts, is something of a mystery to laymen; to those, however, who have been trained in the methods of scientific observation it often appears a device not so much for the discovery as for the concealment of truth. One witness is held to be as good as another, unless he can be actually proved to be a liar; and even then if he happens to be a policeman his testimony will often prevail against that of the most intelligent private citizen. In M. Anatole France's charming story *Crainquebille*, the obviously impossible statement of a stupid policeman is accepted by the magistrate in preference to that of a hospital physician who had witnessed the whole incident which formed the subject of the charge; and the case is by no means without parallel in our own courts. Lawyers have given much attention to the cultivation of the art of sifting testimony so as to make it suit the particular purpose they have in view; indeed, the cross-examination is too often directed to the confusion of an honest witness. Categorical replies to questions are insisted upon, and a witness—especially if he be a medical man—who attempts to explain the precise bearing and necessary limitation of his evidence, is told by counsel not to make speeches, and browbeaten by the judge for not being more definite in his statements. All the tricks by which a witness can be entrapped into saying what he does not mean have been developed to a degree approaching perfection. But the psychology of the witness who, while wishing to tell the truth, is by the temper of his mind impelled to make positive statements on insufficient observation or imperfect recollection has been little studied. Yet it is only by a correct appreciation of the mental processes of such witnesses that the real value of human testimony can be estimated. It is the most difficult thing in the world to observe exactly what passes before one's eyes. The familiar story of Raleigh's witnessing a fight from his prison window, and hearing contradictory versions of it afterwards given by bystanders, all differing from his own impression, is an illustration of the doubtful character of human testimony, but the law courts will on any day supply equally good examples. The old lady in Molière's *Tartufe* was almost justified in refusing to believe her son's account of what he said he had *de mes yeux vu, ce qu'on appelle vu*, on the general principle that people as often think they see what they do not see as they fail to see what is under their noses. A medical practitioner of Frankfort who was recently summoned to give evidence in what English lawyers call a running-down case made the following declaration: "I can make a deposition only with the utmost reserve as to its subjective exactitude, for I am of opinion that no one can after a certain time describe with objective accuracy an incident which has unexpectedly happened before his eyes. There is produced a series of psychical under-currents, the effect of which is that internal representations, logical deductions, and subjective impressions become combined with the impression actually received, so as to form a new whole resembling in nothing the occurrence as it really took place." We are not informed how this declaration was received by the German Court, but we can easily conjecture how it would be treated by an English judge. Yet we take it to express nothing more than the simple truth. Doubtless, the catastrophe of a thrilling drama enacted before one's eyes will impress itself on the brain deeply enough to

make its main features unforgettable. But details are either not seen at all or are wrongly observed, and soon become mixed up in the memory into an amalgam of fact and fancy which resists the most powerful analytical solvent. This inherent fallibility of human testimony, taken in combination with the law's delay, makes it almost impossible to get at the exact truth in regard to any event, after the lapse of even a short time, by the evidence of eye witnesses.

A ROMAN CATHOLIC SCHOOL FOR EPILEPTIC CHILDREN.

A RESIDENTIAL school for epileptic children of either sex has recently been established by a Roman Catholic sisterhood at Much Hadham, Herts. It has been built in strict conformity with the requirements of the Act of 1899, has been certified by the Board of Education as suitable for 56 boarders, not under 7 and not over 16 years of age. The buildings stand on an elevated and healthy site of 54 acres, situated at a distance of about three miles from Hadham station on the Buntingford branch of the Great Eastern Railway. The whole of the buildings to be used by the boarders are on the ground level, the only staircase in the place being that leading to the private apartments of the Sisters. Two classes of pupils are received into the establishment, those paid for at 12s. 6d. a week by Poor-law guardians or educational authorities, and private cases whose parents are able to pay 1 guinea a week for somewhat more luxurious treatment than is required by the Act. At present there are only 14 children in residence, one or two of these being of the private class; but there is accommodation for 56 in all, there being 4 dormitories, each fitted with 14 beds of special pattern; there are arrangements for two sisters to sleep in contiguous rooms commanding these dormitories. The dormitories, being 40 ft. by 20 ft. and 11 ft. high, allows about 650 cubic ft. for each patient, and are well ventilated, warmed, and lighted. There are also cheerful day rooms and refectories; and an admirable schoolroom fitted with single desks. This room is also capable of being used in conjunction with the chapel, with which it runs parallel, and by an ingenious arrangement its occupants are able (themselves unseen by the other worshippers) to command a view of the altar. The institution, which is called the St. Elizabeth School for Epileptic Children, is, of course, primarily intended for Roman Catholic epileptic children, but others are admissible so long as no differential treatment is insisted on. The Sister Superior and the nurses on the staff have all been trained in the well-known Asylum for Epileptics at Unterrath, near Dusseldorf. Dr. Blundell Willans of Much Hadham is the medical officer, and much attention seems to have been given to sanitary details. There is a certificated teacher, and a school time-table framed in accordance with the regulations of the Board of Education, while there are ample facilities for out-door employment.

THE CLAIMS OF THE CHILD.

AT the annual meeting of the American Medical Association, recently held at Atlantic City, Dr. Kerley, Chairman of the Section of Pediatrics, delivered an eloquent address on the demands of the child by virtue of right. The address embodied impressions and thoughts which were the fruit of 16 years' observation of children. He dwelt on the importance given to the care of domestic animals. The mother is nourished and kept under conditions favourable to the production of healthy offspring, and the young animal is even more carefully fostered. It is only by so doing that the highest type can be produced. This principle is recognized by the United States National Department of Agriculture, which makes practical application of these facts in the rearing of domestic animals. The medical practitioner should, Dr. Kerley pleaded, realize the still greater importance of the necessity of exercising supervision over the conditions surrounding the unborn child, and the proper nourishment, cleanliness, and general environment of the growing child. Each year should produce its proper growth. Lost or retarded growth could never be made up in a later year; the results of such attempted compensation always became manifest in maturity. Instincts in animals told them what they should eat. It tells man nothing, but he may be taught, and the physician must be the teacher. In a series of observations made on children of the labouring classes of New York, only 20 per cent. were found normally developed. The large percentage of the poorly developed was attributable not to insufficient food, but to the wrong kind of food. Early management, and particularly early nutrition of the child, are of the greatest importance to the State, and the education of mothers in all that conduces to the production of healthy children, is a duty which the medical profession owes to the public, and which it should not shirk. One reason, said Dr. Kerley, why country children are generally stronger than city children, lies in the fact that country mothers more frequently prepare the food while the city mother depends upon food already prepared. Heredity is an important factor in the development of the child, but nutrition and cleanliness are of far greater importance. Many vocations now require a physical examination to prove the eligibility of the adult, and the public has a right to demand this; but the child also has an equal right to a proper preparation for this condition. From the lack of this proper physical preparation of the child criminals, degenerates, and weaklings have been produced. Dr. Kerley urges that a study of children in the New York Children's Court fully demonstrates the truth of this statement. Most of these were found to be under-developed, anaemic, and dirty, while not one-third of them had proper home surroundings. A merchant in New York City had, after physical examination, rejected 240 out of 250 applicants for positions requiring physical strength in young women. There is cause for fear of the mental degeneration of children in the future unless the tendency of present conditions can be checked. This Dr. Kerley holds should be done by the interference of the State to prevent overcrowding and unhealthy conditions such as are found in large cities. We agree with him that it is not only the right but the duty of the State to watch over the development of its future citizens. But it is a duty which it persistently neglects. The future of the race, therefore, rests largely with the medical profession.

SYPHILITIC DISEASE OF THE NERVOUS SYSTEM.

PERHAPS no department of medicine has benefited less by the general advance of modern medical science than syphilography. The literature of this speciality has grown to unmanageable dimensions, but the progress in real knowledge is sadly disproportionate. This fact was placed in a strong light by Dr. George Ogilvie in a lecture recently delivered before the Medical Graduates' College and Polyclinic.[1] The saying of one of the great masters that "syphilis is the key to pathology" has long ceased to be a truth. "With better right," Dr. Ogilvie remarks, "all the keys which pathology affords have been tried in vain, in order to unbar the locks behind which this protean disease hides its true nature." The hopes built on bacteriology have been altogether illusory, and the help afforded by histology is scanty and untrustworthy. With regard to the evidence of syphilitic disease of the nervous system, it is in the living practically *nil*, and on the *post-mortem* table, the Scotch verdict of "not proven" is by far the most frequent. Syphilis is a great mimic of other diseases, and the clinical picture which it presents is in no way characteristic. This is particularly true with regard to affections of the nervous system, whether organic or functional. It is a strange inconsistency that syphilis should have received the name of the "specific" disease *par excellence*. Speculation has naturally been rife as to the action of toxins of the missing germ. All bacteriological theories of syphilis are at present, as Dr. Ogilvie says, "only patchwork, made from scraps of evidence—

[1] *What is Syphilitic Disease of the Nervous System?* By George Ogilvie, B.Sc., M.B.Edin., M.R.C.P.Lond. The Medical Publishing Co., Ltd. 1904. (Demy 8vo, pp. 37).

clinical or experimental—taken from other infectious diseases." Such analogies are always doubtful, and frequently misleading. There remains, however, the statistical evidence. Nothing seems more telling than the language of numbers, yet it has long been recognized that statistics are a doubtful and double-edged weapon. Perhaps von Behring went too far when he said that "statistics never prove anything." Much depends on the manner in which they are arranged, but it is certain that their demonstrative power is frequently over-rated. Dr. Ogilvie points out some of the possible sources of error in Fournier's recent tabes-syphilis statistics. He also protests against the vague term "parasyphilis" which is often used, when frequently the only evidence is, that either the individual, or his ancestors, had at some remote period of their lives been accidentally in the way of acquiring the "specific" disease. On the whole, Dr. Ogilvie comes to the conclusion that by some—particularly Continental writers—the deleterious influence of syphilis on the nervous system has been much exaggerated. A faulty estimate in this direction may have serious practical consequences, as for instance in regard to life assurance. We agree with Dr. Ogilvie that to continue to rank syphilis as a surgical malady is irrational. Nearly thirty years ago Sir William Gull expressed astonishment that this disease had been so long "left to the tender mercies of the surgeon." Surely syphilis is as much part and parcel of internal medicine as small-pox—or, indeed, any other general infectious disease—and rarely, if ever, requires the handicraft of the chirurgeon. This classification is an example of time-honoured ignorance, and surgical syphilis should be relegated to museums of medical history for the information of the curious.

SANITARY INSPECTORS.

During the last eleven years returns have been presented to the Public Health Committee of the London County Council giving particulars as to the sanitary inspectors employed in the several metropolitan districts. The report for 1904 has now been issued by Mr. Shirley F. Murphy, the medical officer of health. Each return has shown an increase in the number of such officers employed. In 1893 there were 188 and in 1904 there are 313. Since the metropolitan boroughs were formed in 1900 there has been an increase of about 60, and since 1893 the number of inspectors has increased by some 66 per cent. During the last year there has been an increase of a dozen. Only three districts show any decrease, in each case by one. Of the 313 inspectors now employed in London, as many as 28 are women, working in 21 of the 28 districts, for the most part in the inspection of workshops in which women are employed, and in the routine work of the prevention of infant disease and death. Taking the County of London as a whole, it appears that there is now one sanitary inspector to every 14,494 persons. Many authorities consider that the proportion in London should be 1 to 10,000. Though occasionally unsatisfactory men are employed, and injudicious and perhaps even unfair action is taken by sanitary inspectors, yet on the whole it will be admitted that these officers perform useful and necessary work which results broadly in a more healthy and sanitary life for all. There are, however, two criticisms which we may offer to the medical officers of health in respect to sanitary inspectors. In the first place, it should be an invariable rule that sanitary inspectors, not being medical men, should never be permitted to take upon themselves the work of their chiefs. It is not the business of a sanitary inspector to express opinions on cases of infectious disease or to criticize the action of the medical man in attendance, or to examine even cursorily the physical condition of the patient, and any infringement of this rule should be visited with adequate reproof. The second point we would mention is one concerning administration; the medical officer of health should occupy his right position as superior of all his inspectors. We have heard of chief sanitary inspectors who seemed to be of opinion that they were medical officers of health. Any such usurpation of position is highly to be deprecated, and is generally the fault of the medical officer himself. Infringements of this rule have led to serious difficulty in more than one case on record. The medical officer, and not the chief inspector or any other official, is or ought to be the head of a public health department, and he is not doing his duty if he does not occupy his right position. We may add, further, that in our opinion the medical officer should furnish the whole of the annual report. The issue of a separate report on the sanitary inspectors' work by the senior sanitary inspector is to be deprecated, as it leads to a misunderstanding as to who is head of the department and who is responsible. If these two points always received the attention they deserve we should hear less complaint of sanitary inspectors overstepping their position.

THE SICK AND WOUNDED IN THE WAR.

A great many rumours as to the health of the Russian and Japanese armies in the field have reached this country during the last two or three months, but very little authentic information. It has been stated that the Japanese have suffered from cholera and the Russians from epidemic typhoid fever, but these statements have not been confirmed, and we have refrained from publishing rumours which we were not in a position to verify. A Reuter's telegram from St. Petersburg, dated July 12th, states, however, that the *Official Messenger* has published the following telegram from Ta-shi-chao regarding the health of the Russian troops in the field: "Up to June 26th the number of officers and men in hospital amounted to 7.136 per cent. and 3.943 per cent. respectively of the total forces. If the wounded officers and men already removed to the rear are included, the percentage is 10.24 and 6.51. After the beginning of the rainy season—on July 9th—the percentage of officers and men in the hospitals rose to 8.384 and 4.646 respectively, the proportion of patients suffering from infectious diseases increasing from 2.19 per cent. to 8.52 per cent., including a percentage of dysentery cases of 1.99." These statistics are not very clearly expressed, but assuming that the figures as to infectious diseases are percentages of the total number of sick they do not appear to point to any serious prevalence of epidemic disease down to July 9th.

MEDICAL RESEARCH IN THE UNITED STATES.

At the annual meeting of the American Medical Association held a week or two ago, Dr. John S. Billings gave an account of the work of the Carnegie Institution at Washington. The two objects, he said, were to promote individual research, and to find the exceptional man. Research was now being carried on in anthropology and in archaeology in Central Asia, Nubia, Babylon, and Assyria. The department in botany had a laboratory in the desert of Arizona, where the changes induced by the absence of moisture on certain plants were being studied. In chemistry unknown atomic weights were being sought. In biology evolution and heredity were being studied. Mosquitos in their relation to various diseases were being investigated. In physiological chemistry the nutritive values of foods were being examined as well as the action of certain drugs, such as adrenalin. About £2,000 had been contributed to the *Index Medicus;* the workers had the advantage of the books in the Surgeon-General's office. Dr. Billings pointed out that it was not the object of the Carnegie Institution to undertake work likely to be done by other institutions or such work as promised to be of commercial value. It was their endeavour to find the exceptional man, and to that end amounts of from £180 to £300 were allowed to some twenty men who might prove each year to be of exceptional capacity. In this way a few had been found, but there was still plenty of room for the exceptional man, and it might be a fitting task for the Institution to take up the study of the means by which he might be produced. Dr. L. Emmett Holt, speaking of the Rockefeller Institute, said Mr. Rockefeller had been interested in the story of the discovery of diphtheria antitoxin, and believing that

such work might be done in America, had by way of encouraging it founded the institute in 1901. The object of the Institute was the study of the causes, prevention, and treatment of disease. The new laboratory, which was being built in New York, would be equipped for work in bacteriology, pathology, physiology, chemistry, and pharmacology. A small hospital would also be erected adjoining the laboratory in order that clinical work might go hand in hand with laboratory research. Dr. Frank Billings, of Chicago, gave an account of the Memorial Institute for Infectious Diseases founded by Mr. and Mrs. McCormack as a memorial of their son who had died of scarlet fever. Already 125 cases of that disease had been treated and investigated. The scope of the Institute embraced all acute infectious diseases, except small-pox. Last year a site had been given with money enough to build a pavilion containing 50 beds. From a paper by Dr. Ernst it appeared that at Harvard there were in all 14 departments and laboratories, 91 instructors, and 128 places in which research work would be carried out. Only 5 of the departments, however, had funds for such a purpose. Dr. Alfred Stengel, of Philadelphia, described the William Pepper Laboratory of Clinical Medicine. The institution had been in existence for about ten years and could accommodate from 15 to 25 workers at a time. It was the first clinical laboratory established in the United States.

M. A. CHAUVEAU has been appointed Director of the Institut Marey, in succession to the late Professor Marey.

THE Physical Deterioration Committee has again met for three days this week to consider its report; it has now, we believe, occupied nine days on this part of its task.

WE stated a few weeks ago that cholera was spreading to a serious extent in North-Western Persia. The disease broke out at Teheran, at the end of last month, and in the first week of July several hundred fatal cases were occurring daily.

THE King visited Newmarket Workhouse on July 13th, inspected the hospital wards, and made the following note in the visitor's book: "It is nine years since I visited this Union and I find it vastly improved and in excellent order."

THE President of the Local Government Board, after consultation with the Home Secretary, has appointed a Departmental Committee on Vagrancy, consisting of the Right Honourable J. L. Wharton, M.P. (Chairman), Sir William Chance, Mr. J. S. Davy, C.B., Dr. Downes, Captain Eardley-Wilmot, Captain Showers, and Mr. H. B. Simpson, with Mr. F. L. Turner, of the Local Government Board, as Secretary.

THE Institute at New Cross founded by the Goldsmiths' Company in 1888 and recently presented to the University of London is to be converted into a day training college for about 400 students. Day classes, preparatory for the intermediate examinations up to the standard of those in arts and science, will also be instituted, and the double scheme will be carried out through the co-operation of the County Councils of London, Middlesex, Kent, and Surrey and the Borough Council of Croydon. If funds are available, evening classes in preparation for matriculation and in arts and science up to the pass degree standard will also be instituted.

DURING the past six months the remains of a remarkable number of well-known persons famous for their success in one or other walk in life have been cremated in accordance with specific directions left by them. These include persons so diversely distinguished as Mr. W. E. Henley, poet, reviewer, and editor of many magazines; Herbert Spencer, the philosopher; Madame Antoinette Sterling, the famous contralto; Sir Leslie Stephen, the well-known essayist; Sir Walter Sendall, a Colonial governor of standing and repute; Sir Edwin Arnold, the poet; and, most recent of all, Mr. G. F. Watts, the artist. As a man of great distinction the name of Sir Henry Thompson should not be omitted, but as president and founder of the Cremation Society the disposal of his remains by this method was to be expected.

MUCH dissatisfaction is felt by many members of the medical profession in South Wales with regard to the present condition of contract practice, and still more with various attempts which are being made to render it more unsatisfactory. We are glad to observe that a scheme, which would have still further compromised the independence of medical practitioners, was recently rejected at a meeting of 1,200 workmen employed by a company at Abertillery; the proposed alteration was supported by only 45 of those present.

MEDICAL NOTES IN PARLIAMENT.

[FROM OUR LOBBY CORRESPONDENT.]

Ballinasloe Asylum and the Medical Superintendent.—This case, which has been the subject of many questions during the session, was discussed at some length on the Irish Estimates last week. Mr. Sloan opened the debate, and said that for the vacancy caused by Dr. Fletcher's death there were two candidates, Dr. Mills, who had been acting superintendent for four months, and Dr. Kirwan, a junior officer. The Asylum Committee appointed Dr. Kirwan, and the Lord Lieutenant had sanctioned the appointment. It was understood that the Lord Lieutenant had asked for reasons for the appointment of the junior officer, but the Committee refused to give reasons. Dr. Mills, who had been passed over, was a Protestant, and 95 per cent. of the inmates were Roman Catholics, and this was put forward as a reason for the election of Dr. Kirwan, who was a Roman Catholic. Mr. Sloan stated that the first thing done by Dr. Kirwan on his appointment, was to advise that the British Crown should be removed from the buttons on the attendants' uniforms, and replaced by the harp and shamrock, and he had deleted "On His Majesty's Service" from the envelopes of the asylum, and substituted "On the Public Service." He moved the reduction of the vote by £100 as a protest. Colonel Nolan defended the appointment, and repudiated the contention that it was made on religious grounds. Colonel Saunderson took the opposite view, and said that Dr. Mills had prior claims by longer service, and by the fact that he had acted as Superintendent during the illness of Dr. Fletcher most satisfactorily. He declared that it was a case of gross injustice, and a slur placed on a public servant. It was part of a movement, in his opinion, to boycott Protestants. Mr. Craig also spoke at some length on the question. Mr. Wyndham in his reply referred to the sad aspect of these sectarian differences and denied for himself and Sir Anthony McDonnell any motive except the simple discharge of their duty. The Committee were empowered by statute to make the appointment of Medical Superintendent, and, although the Lord Lieutenant naturally might inquire why a junior officer was appointed over a senior, the spirit and letter of the statute did not allow any refusal to sanction the appointment of an officer duly qualified and properly elected. Full local government had been given to Ireland and a legislative gift of this kind could not be given with one hand and taken away by the other. Mr. Moore replied to Mr. Wyndham, and argued that the approval of the Lord Lieutenant was required by statute, and that he ought not to sanction an injustice by which a gentleman was by reason of his religion prevented enjoying the natural profits of his profession in the land of his birth. The Lord Lieutenant had a controlling power, he contended, which ought to have been exercised. The discussion continued till midnight on other matters, and so no vote was taken.

Irish Workhouses.—Dr. Thompson asked the Chief Secretary to the Lord-Lieutenant of Ireland on Tuesday if he was aware of the state of dirt and neglect to which the poor of Irish workhouses were exposed; that in many of these institutions there were no baths, waterclosets, water supply, or other sanitary conveniences; and whether, seeing that these institutions were inspected by non-professional inspectors, without any scientific attainments or special knowledge, he would direct that in future these institutions, and especially

the hospitals, should be inspected by medical and not lay inspectors. Mr. Wyndham answered that the poor in Irish workhouses were not in a state of dirt and neglect. They were much cleaner and were better cared for than the poor outside the workhouses. If, however, the honourable member would refer him to any workhouse in which it was suggested that the contrary was the case he should be pleased to cause an investigation to be made. The workhouses were visited periodically by experienced lay inspectors, and he was not aware that they discharged their duty less efficiently because they had no scientific attainments. The workhouse hospitals were inspected by two medical inspectors specially appointed for the purpose. In reply to a further question by Dr. Thompson respecting Glenties workhouse, Mr. Wyndham said that the water supply in this workhouse was defective. Basins and portable baths were, however, provided in the hospital. The Local Government Board inspector had repeatedly called attention to the necessity for a sufficient water supply, and the Board of Guardians some time ago obtained plans for the work as well as for water-closets and bath-room accommodation; but in view of the poverty and high rates in the district, the guardians decided to await the Report of the Poor Law Reform Commission before incurring the heavy expense of a better water supply.

Irish Poor-law Medical Superannuation.—Dr. Thompson asked the Chief Secretary to the Lord Lieutenant of Ireland if he was aware that the Irish Poor-law Medical Officers' Superannuation Bill had the support of nearly the whole body of Irish members; and if so, considering the importance of this Bill, would he consent to make it a Government measure and pass it into law this session. Mr. Wyndham replied that he was not aware that the fact was as stated. He had more than once expressed the opinion that he should be glad to see a Bill become law that was designed to effect a settlement of the question of superannuation upon a basis fair and equitable and acceptable to all parties proposed to be affected. But the Bill before the House would not attain these objects. In his correspondence with the Poor-law Association he had suggested the reconstruction of the measure upon a basis that would stand the test of actuarial criticism. Until this had been done the Government could not consider the question of providing facilities for the passage of the Bill.

Tuberculosis in Meat and its Detection.—Mr. Lundon asked the President of the Local Government Board whether he could state if the medical officers of health who were charged with the duty of judging meat alleged to be affected with tuberculosis had any special qualification for this position, or whether they had passed any examination in public health; and whether he would consider the necessity of issuing by-laws for their guidance with a view of protecting the private property of the traders in native meat and preventing the detrimental effect of unnecessary confiscation upon the producers of home meat. Mr. Long replied that he was advised that the training which every registered medical practitioner must have received as a student was sufficient to render him competent to detect tuberculosis in a carcass. As every medical officer of health must be a registered medical practitioner it was not necessary for the purpose mentioned that he should possess any special qualification. Circulars were issued by the Local Government Board in March, 1899, and September, 1901, drawing attention to the principles which should be observed in the inspection of tuberculous carcasses. He did not think that any further action was needed at present. In answer to another question, Mr. Long stated that since 1889, when the first model regulations respecting tuberculosis in animals were issued, 583 local authorities had adopted regulations for the most part based on the model of the Local Government Board. There was no power to compel local authorities to adopt the model regulations.

Infantile Mortality and Medical Relief.—Sir Walter Foster asked the President of the Local Government Board whether, in view of the rate of infantile mortality in many populous districts, he would issue a circular to Boards of Guardians in the large towns calling attention to the facts connected with infantile mortality, and pointing out that no difficulty should be made to discourage poor people from applying for early medical aid when they or their children were exposed to danger from epidemic diseases. Mr. Long answered that he was advised that the high rate of infantile mortality in large towns was to a considerable extent due to improper feeding, and was by no means confined to children of the pauper class. He was not aware that difficulties were made to discourage poor people who would be proper recipients of relief from applying for early medical aid in the circumstances referred to in the question, but if the hon. member was aware of cases of the kind, and would furnish particulars of them, he would be happy to make inquiry with regard to them. At present there did not seem to be sufficient ground for issuing a circular of the kind suggested.

Out-door Medical Relief.—Sir Walter Foster asked the President of the Local Government Board whether he would take steps to have a report made by the inspector now investigating the arrangements for outdoor medical relief in the metropolis on the number of unions, if any, in which medical relief is granted on loan in the first instance, and on the practice of requiring applicants for medical relief to attend before the Board or a committee with a statement of how long such practice has been in force and its effects on the number of applications. Mr. Long answered that he would take steps to give effect to this suggestion as far as might be practicable.

Expert Advice and Food Standards.—Sir Cuthbert Quilter asked the President of the Local Government Board whether, in pursuance of its powers, the Board proposed to take action on the lines recommended by the Royal Commission on Arsenical Poisoning in Part VIIIa of their report, by the appointment of a special expert officer, or otherwise, for securing better control over the purity of chemically prepared, preserved, or other foods liable to contain deleterious substances; and whether progress had been made in giving effect to the further recommendation of the Royal Commission, that the principle of officially prescribed food standards already enforced in the case of certain articles of diet should be applied to other foods and beverages. Mr. Long answered that he had not at present decided to appoint a special expert officer of the kind referred to. The consideration of the recommendations of the Royal Commission was being proceeded with, and in connexion with it the proposal with regard to the appointment of such an officer would receive attention. Effect, however, could not be given to the recommendations as to food standards without legislation.

Promotion in R.A.M.C.—Dr. Thompson asked the Secretary of State for War on Tuesday if he was aware of the dissatisfaction existing amongst the officers of the Royal Army Medical Corps at the recent promotions, whereby 12 senior officers were passed over in favour of a younger officer of less distinguished service than some of those whose claims were rejected; and if, in future, he would direct the Advisory Board to give their reasons for their selections, and communicate them if requested to the officers passed over. Mr. Secretary Arnold-Forster answered that the Secretary of State was not aware of the dissatisfaction amongst the Royal Army Medical Corps alleged in the question. Promotions were made by selection and after careful inquiry by the Advisory and Selection Boards. The standard upon which the Advisory Board based its recommendations was that of positive merit and suitability for the administrative medical staff of the army. It did not appear desirable that reasons for supersession should be communicated to the officers affected.

Professors in Queen's College, Belfast.—Mr. MacVeagh asked the Chief Secretary to the Lord Lieutenant of Ireland on Tuesday whether he could state whether any appointments, outside their professional appointments, were held by the Professor of English, the Professor of Chemistry, the Professor of Logic, and the Professor of Pathology at Queen's College, Belfast; whether he could state if their college work was limited to five months in the year; and whether he had received any representations as to the necessity for the appointment of assistants at the public cost. Mr. Wyndham answered that the Professors in question held no appointments other than the Examinerships. The Clark Lectureship conferred by the Trinity College, Cambridge, was also held by the Professor of English. So far from the work of the Professors being limited to a period of five months, the Professors in some cases were only able to obtain a vacation of six weeks. The reply to the last query was in the negative.

Ireland.

Salaries of Poor-law Medical Officers.

Proposed System of Annual Increment.

It is an old saying that "when things come to the worst they turn," and this adage applies even to a Local Government Board in Ireland when dealing with its medical officers. The ship of the Poor-law doctors in that distressful country has been frozen in in the icy seas of an unbending officialism for the past forty years. At last, however, the long-hidden sun seems to peep above the eastern sky, and if we are to judge by a letter written on July 1st by the Local Government Board authorities, some faint signs of sympathy are to be observed in the bearing of the Board towards the Irish medical officers. Replying to a letter from the Ballinasloe (co. Galway) Board of Guardians, the Board states that they

Are prepared to consider any reasonable scale of salary which may be formulated applying to the entire dispensary medical staff of the Union, such scale to provide a minimum initial salary, rising by increments of quinquennial periods of approved service to a fixed maximum, which might be allowed after say twenty-five years' good service.

Here, at any rate, is the germ of settlement put forward for consideration, and we trust that all concerned in the betterment of the Irish Poor law Medical Service will approach this difficult subject with open minds. The broad outline of the scheme is identical with that put forward in our recent report on the Irish dispensary system, and we await with interest the result of the proposal. It seems a pity that the Irish Local Government Board authorities did not themselves grasp the nettle and themselves formulate a scheme.

The Cork Board of Guardians has already outlined a scheme, and after the letter quoted above it is hardly conceivable that the Local Government Board will refuse its sanction. At the meeting of the Board of Guardians on July 7th the question of the salaries of the medical officers attached to the Cork Union was again under discussion, and after prolonged consideration the following resolution was carried by a large majority:

That, as in the opinion of the Board the salary of medical officers is insufficient, the salary of medical officers of over ten years' standing be fixed at £170 per annum, with yearly increments of £10 until it reaches £200 a year; officers of under ten years' standing be each paid a salary of £140, with increments until it reaches £200; all future appointments to be made at present salary, with yearly increments of £10 until it reaches £200, provided the Local Government Board agree to pay the usual proportion of salary, and that any resolution to the contrary be rescinded; providing the Medical Association agree, and providing that when a dispensary doctor becomes sick, they provide substitutes at the rate of £4 4s. a week during illness.

Ballinasloe Asylum.

At the meeting of the Board of the Ballinasloe Asylum on July 11th a letter was read from the Lord-Lieutenant in reference to the election of Dr. McKerley as Second Assistant Medical Officer. The letter stated that His Excellency was unable to give his statutory concurrence as Dr. McKerley was married and therefore did not comply with the requirements of the Privy Council rule. Several members protested, and it was stated that no advertisement for candidates for the vacant position would be issued until His Excellency sanctioned the new rules submitted to him. Dean Kelly referred at some length to the charges made against the Board in connexion with the recent appointment, and said that Roman Catholics had been systematically excluded from every position of emolument and influence in the country.

Catholic University Medical School.

On July 11th the governing body, professors, and students of the Catholic University Medical School, Dublin, made a presentation to Dr. Coffey (Professor of Physiology) and Dr. Ryan (Professor of Chemistry), both of whom are on the eve of marriage. Sir Christopher Nixon presided, and each recipient suitably acknowledged the good wishes so heartily expressed.

Coombe Lying-in Hospital, Dublin.

At the annual meeting of this hospital Dr. Stevens, the master, reported that the total number of cases attended in hospital and in the extern midwifery and dispensary departments amounted to 17 243 as compared with 15,712 in the previous year. A home had been opened for the nurses in training, and special thanks were given to the Countess of Meath for the interest she had taken in this work, and for the sums, amounting to £450, which she had given in aid from time to time. The students came from all parts of the world. He regretted to state that the subscriptions for the year amounted to only £300. The Lord Mayor, Sir John Moore, Sir C. Cameron, Mr. M. T. Moses, and Rev. Dr. Smylie advocated the claims of the hospital.

A Nonagenarian Dispensary Doctor.

The Board of Guardians at Birr have passed a resolution calling on Dr. Thomas Woods, medical officer of the dispensary and the workhouse hospital, to resign these appointments, and further declaring that he shall receive the full superannuation allowance. It was stated in the course of the discussion that Dr. Woods is in his ninety-fourth year, but he is in such vigorous health that he is able to ride a tricycle in visiting the patients in his district. No complaint has ever been made against him, and it was said by one of the guardians that the proposal was really a job in order that the appointment might be given to some one else. Dr. Woods certainly appears to have earned a rest. He began to practise in 1837, and he has filled the position which he now holds for over fifty years. The case is probably unique.

THE MEDICAL WORK OF THE LONDON SCHOOL BOARD.

The annual report of Dr. James Kerr, the Medical Officer of the late School Board for London, for the year ended March 25th, 1904, was issued a few days ago. It deals with a great many points of importance which are receiving much attention at the present day, and should be studied carefully by medical men who advise educational authorities, and we can give here only a brief summary of the more important points.

Examination of Candidates.

The staff of the medical department, now transferred to the Education Committee of the County Council, consists of the medical officer, four assistants (one giving full time, one half time, and two quarter time), six oculists (one giving half time and five giving quarter time), and six nurses. During the year the staff examined 2 846 candidates for posts as teachers, and received 247 references relating to the health of the teaching staff. The department had also received 335 references as to sanitation and school fittings, lighting, heating, ventilation, visual and mental conditions of children, various diseases, matters of cleanliness, and so on.

Physical Conditions of School Children.

A memorandum by the Medical Officer, dated October 19th, 1903, setting out a scheme of inquiry into the physical condition of children was fully discussed by the medical department subcommittee, but its adoption postponed, as it appeared that the cost would be about £700. We shall hope to refer to this subject at a future time.

Personal Cleanliness.—The report states that much of the disease and temporary, or even permanent, injury to health suffered by children is the result of personal uncleanliness.

School Nurses.—At the beginning of 1903, three nurses were appointed to visit schools and draw attention to ringworm and other conditions. The head teacher takes steps for exclusion or otherwise on the recommendation of the nurse as to the presence of ringworm or pediculosis. The nurses are supplied with the names of children absent from school from these causes, and visits the homes to give advice, to see whether anything is being done, or to secure the return of children who have become clean and healthy. The work of the nurses is educational for both scholars and teachers, since they direct attention to matters of cleanliness which the educational code neglects and most inspectors overlook. Further, it has been found that their visits have diminished absences for hospital attendance.

Ringworm.—Ringworm is seen most frequently in the boys' departments, and occurs occasionally in crops which suggests infection through barbers' shops. It is stated that for bad cases a ringworm school would almost seem to be required. Favus, which is occasional seen among aliens in the East End, would also be admitted to such a school.

Unclean Heads.—Unclean heads, generally in consequence of pediculi, have frequently been the cause of absence. These cases could be cured in a week or ten days, but are frequently allowed to run on untreated for months, the parents having found out that unclean heads are a safeguard against compulsory school attendance. A "cleansing scheme" has been put into operation in eight schools. The school nurse gives to a child with an unclean head a card to take home. The card calls attention to the state of the head, and gives directions

for cleansing. If this fails to produce the desired effect, a second card, more peremptorily worded, is sent: in it the parent is warned that if steps are not taken to cleanse the head within the next week the child will be excluded, and the parent will become liable to prosecution, and fined for not sending it in a fit state to school. In the interval children are kept to special seats on one side of the class room. The whole treatment was much resented by many mothers, but with tact and patient explanation their good sense asserted itself, and few children remained unclean. Only 21 children were proposed for exclusion, and only 5 prosecutions were instituted. The girls presented unclean heads much more frequently than the short-haired boys, while the boys suffered more often from ringworm. Infants held an intermediate place. Dr. Kerr adds that, much as parents object at first, they fall in with the scheme when it is evident that cleanliness is to be insisted on. It is also evident that they have no real objection to having the infected hair cut. The scheme appears to have been successful, inasmuch as the schools to which it was applied have been practically cleansed without any loss of attendance. In many cases, however, clothes and bodies are infested, and this applies to boys and girls alike. As houses and furniture must often also be infested, it is recommended that the provisions of the Cleansing of Persons Act should be enforced by municipal authorities.

INFECTION IN SCHOOLS.

The report contains the following passage on this subject:

Before 1891 there was no attempt on the part of the Board to prevent the spread of infectious diseases by precautionary measures being adopted in the school. The Public Health (London) Act, 1891, made it compulsory for the medical officer of health to send a copy of the notification relative to small-pox, diphtheria, erysipelas, cholera, membranous croup, scarlatina, scarlet fever, typhus, typhoid, enteric and relapsing fevers to the teacher of any school attended by children from infected houses, and the head master should receive a copy of the notification certificate within twelve hours of its receipt by the medical officer of health.

In order to minimize the clerical work of the head teachers, and to ensure the receipt of early information in regard to infection in the schools, it has been found necessary to rewrite and considerably simplify the code regulations and revise the notification forms.

On receipt of the notification from the medical officer of health the following action is taken:

(*a*) The head master sends the notice to the head teachers of the other departments.

(*b*) All affected children (whether suffering or coming from the home in which the disease exists) are excluded from school.

(*c*) Head teachers of all departments forward on the same day the names and addresses of all children affected by the notice to the Divisional Superintendent and the Medical Officer of the Board on a form specially provided for the purpose (S.M. 84).

(*d*) The notification is then filed at the school until the end of the school year.

In addition to the notifiable diseases there are the following non-notifiable diseases which are dangerous to school children—measles, mumps, whooping-cough, and chicken-pox. If a child shows symptoms of any of these diseases or comes from a home where such a disease is known to exist:

(*a*) The child is excluded.

(*b*) The head teachers of the other departments are informed.

(*c*) The head teachers of all departments forward on the same day the names and addresses of all affected children to the Divisional Superintendent, Medical Officer of Health, and Medical Officer of the Board, on S.M. Form 84.

One thousand of these forms (S.M. 84) relative to 3,300 children are received in this department each week. A record book is kept, and each school department is credited with the cases occurring therein.

School Closure.—There was no general outbreak of infectious diseases, notifiable or non-notifiable, during the year, and with the exception of one class room closed for measles and one closed for disinfection on account of scarlet fever, and one department closed for two days for disinfection on account of measles, all the closures were in infants' departments. The practice followed is stated to be a compromise in which the risks of disseminating disease are balanced against the benefits of school attendance.

The practice is to watch the incidence. Formerly it was only after a week or more that knowledge of these cases came to this department; now, by a rearrangement of forms, information as to a child's absence from illness sometimes comes in next day. If the disease is generally prevalent in the district closure is not as readily resorted to as it would be in a fresh incidence on the district. If two or three cases occur in one class in an infant school the class will probably be closed; if the cases are scattered in several classes closure is seldom adopted. In about half the cases where closure is adopted the disease appears to be arrested; on the other hand, in about half, where no closure is enforced, the disease does not appear to spread. In the case of scarlatina the effects of individual exclusion at the first signs of illness are marked, and if cases cropped up in succession in a class, the class would probably be inspected, and might be closed. Fortunately this question can scarcely be said to have occurred during the year. In the cases detected peeling in school, subsequent cases do not appear to point to school infection; it is not these peeling cases that are to be dreaded in school, but others—convalescents with discharging ears or nostrils. In several instances an uncomfortable suspicion of hospital "return" cases has arisen, and in others, cases which have gone into hospital with scarlatina have reappeared as diphtheria carriers; for scarlatinal cases with discharges from ears or nose a stay in a convalescent establishment away from the hospital before return to school would be an increased safeguard.

Diphtheria and Measles.—A report by Dr. Thomas on the steps taken to check the dissemination of diphtheria includes an account of some laboratory investigations, and we hope to refer to these at a future time, as also to an inquiry undertaken jointly by Dr. Thomas and Dr. Davies, M.O.H., Woolwich, as to measles.

VISION.

The system of examining the vision of school children was altered during the course of the year, and the number of ophthalmologists employed was reduced from eight to six; under the present system the teachers test the visual acuity and return a list of all children with bad vision, that is, V= $\frac{6}{18}$ or less, and in Standard V or above when V= $\frac{6}{12}$ or less. The report states that the teachers appear to be doing their part in the vision testing fairly well, although in some cases as many as one-fifth of the children returned as defective by the teachers were afterwards found normal by the ophthalmologists. Some of the results obtained were stated in a paper on The Deterioration of Vision during School Life, published in the BRITISH MEDICAL JOURNAL of June 18th, 1904, p. 1418.

SPECIAL SCHOOLS.

We extract the following from this section of the report:

A return from the schedules (384,003) of school children in London, shows that there were known:

	Mentally Defective.	Physically Defective.
In special schools ...	3,295 ...	532
In ordinary schools...	2,080 ...	717
Out of school	174 ...	863
	5,549 (0.64 per cent.)	2,112 (0.24 per cent.)

Blind.—The blind classes are regularly visited, and in the summer all the classes have a detailed examination, and report of each child made. By this means treatment is obtained in some cases where improvement is possible. A certain small number of the blind children, whose blindness is due to chronic eye changes, developing as the result of inherited disease, also develop deafness. This deafness, sometimes slight for a long time, will in the course of six weeks or two months progress very rapidly. Energetic hospital treatment has appeared to give relief in a few cases, and is worth early trial in all these cases. The new residential centre about to open at Stormont House will afford means of education for blind boys with combined defects either of deafness or mental feebleness.

Deaf.—The deaf classes are also visited regularly, but in this case the objective evidence is far less than in the case of blindness, and it is often quite impossible to ascertain the cause of the deafness. Here again every effort should be made to have discharging ears remedied. One case recently, after actual warning of what was likely to happen, some weeks later appeared to have influenza, when he really had developed serious results, which, in spite of operation, led to a fatal result within a week.

Combined Defects.—There is a considerable proportion with combined defects of blindness, deafness, mental feebleness, nervousness, or physical defect. A recent return by the teachers, which is only quoted here to show that 10 per cent. are known by them to have such defects, gives:

In the case of the blind children, the sense of touch appears to be very defective in some; how far this affects education it is impossible to say. The educated blind do not appear to have a better tactual sense than normal people, but their trained mental perception of what is felt is more correct. Touch and muscular sense require investigation and education in all defective children.

There is great need, in handling an enormous mass of children, of some central residential school, where certain children can be tested and examined from day to day by the most accurate and reliable means, so that the influence of all the factors on school life may be gradually worked out, and the possibilities of education in any doubtful case can be arrived at by quicker means than years of possibly misdirected energy in teaching.

VENTILATION.

The report states that the ventilation of class rooms is now the most important sanitary question connected with schools. The maximum carbonic acid impurity permissible for healthy conditions is taken to be 10 parts in 10,000, and judged by this standard the majority of school rooms show an excess. For the greater part of the year the means of ventilation used, such as open doors and windows, Tobin's tubes, or open fireplaces, are insufficient, and the schools are

Schools.	Number of Schools.	Number on Roll.	Number Reported by Teacher as having more than One Defect.	Nature of Additional Defect.				
				Blindness.	Deafness.	Physical.	Mental.	Minor Defects.
Blind	10	254	39	—	8	3	21	7
Deaf	12	560	57	4	—	7	12	34
Mentally defective ...	67	3,471	464	18	43	177	—	226
Physically defective ...	12	657	15	—	—	—	15	—

pervaded by a characteristic odour. The value of a thoroughly airing of all the class rooms in the intervals is insisted upon, and the following observations are made.

Many practical difficulties may occur to prevent such regular school perflation, but if the teachers realize its importance to their own health, to the vitality of the children, and therefore also to their mental impressibility, their capacities as scholars, they will endeavour to find ways of making the best of such means of ventilation as may exist.

The desired standard of purity cannot be obtained by any system of natural ventilation, and the following is given as a summary of the conclusions:

The conditions required for efficient school ventilation will only be attained by mechanical movement of partially warmed and sufficiently filtered and wetted air; 2,000 cubic feet per head per hour is desirable, entering the rooms at a rate not exceeding 5 ft. per second, and a duct area of 15 to 20 square in. per head. The chief part of the heat distribution in the rooms of the building should be by other means than the air. The movement of the air should be by large low-pressure fans running at low speeds, and it is desirable to have fans to pull on the outlet as well as to propel air in, so that the air pressure in the rooms may be kept as low as possible and short-circuiting avoided.

FURNITURE.

The use of dual desks is condemned, and a favourable opinion is expressed of the continuous so-called "Sheffield" desk of half a dozen places.

THE IMPERIAL CANCER RESEARCH FUND.

ANNUAL MEETING.

THE third meeting of the General Committee of the Cancer Research Fund was held at Marlborough House on July 8th, H.R.H. the PRINCE OF WALES, President of the Fund, in the chair. After certain preliminary business had been concluded, the PRINCE OF WALES called upon Sir WILLIAM CHURCH to move the adoption of the annual report in the absence of the Prime Minister.

Sir WILLIAM CHURCH, after expressing the regret of the meeting that Mr. Balfour had been unable to attend, reviewed the report which is appended below. He said that he was anxious that a statement therein as to the absence of statistical evidence of any increase of cancer should not be misunderstood. Cancer might or might not be on the increase, and the position taken up was simply that so far there was no statistical evidence of it. The returns collected showed that even under the most favourable circumstances, such as those which existed in London hospitals, many cases of cancer were not discovered before death. Cases, therefore, were still more likely to be overlooked under the less favourable circumstances, prevailing in some parts of the kingdom now and everywhere formerly, and it was impossible to compare the cancer-rate nowadays with the deaths attributed to cancer 30, 20, or 10 years ago. After referring to the transmissibility of cancer established by the Fund during the year, and to its discovery among fish, reptiles, and birds, he pointed out that it was improbable that climate or diet had anything to do with the production of the disease. As regards treatment early removal by surgical methods still gave the best chance of permanent cure.

Sir HENRY HOWSE, who seconded the motion for the adoption of the report, said that the establishment of the possibility of transplanting cancer in animals of similar species appeared to him as a surgeon to—by itself—justify the existence of the Research Fund.

The report was then adopted.

Mr. HENRY MORRIS then moved that Mr. W. Waldorf Astor be elected a Vice-President of the Cancer Research Fund. His contribution of £20,000 was only made after he had satisfied himself by personal investigation as to the businesslike management, comprehensiveness, and thoroughness of the scientific investigations being carried on.

The motion was seconded by Mr. S. NEUMANN, and carried unanimously.

Sir WILLIAM BROADBENT, seconded by Sir DOUGLAS POWELL, then proposed that Mr. Watson Cheyne, who under the rules retires this year from his position as representative of the General Committee on the Executive Committee, be re-elected. He pointed out his peculiar qualifications for the position, and the resolution was unanimously accepted.

A vote of thanks to the Chairman and members of the various Committees having been passed, Lord STRATHCONA, seconded by Mr. JOHN TWEEDY, moved a vote of thanks to the Prince of Wales for presiding at the meeting; the vote was accepted with acclamation.

H.R.H. the PRINCE OF WALES, after expressing his thanks for the manner in which the vote had been received, remarked on certain points brought out in the report, and drew attention to the way in which the work done in London was being seconded by various authorities in India and the Colonies, and to the hearty co-operation between the workers in London and similar bodies in America and the principal European countries. In view of the far reaching interest of the subject, and of the fact that to be successful its organization must be extended throughout the Empire, he was glad to be in a position to state that the King had approved of the Fund being known for the future as "The Imperial Cancer Research Fund." He concluded with the following words: "I am sure no words are required to plead the cause of this great national work, so important to the whole race of mankind. There are few of us, unfortunately, who have not had brought home to us the terrors of this fatal, mysterious disease; and does it not behove us, in the interests of humanity and science, to assist, to the utmost of our means, those who are giving much labour and valuable time to the organization of research, as well as to those who consent to devote their whole lives in endeavouring to determine what so far has proved to be one of the insoluble problems of human life?"

The proceedings then terminated.

THE ANNUAL REPORT.

The report is divided into three parts, which are signed respectively by the Secretary (Mr. F. G. Hallett), the General Superintendent (Dr. E. F. Bashford), and the Treasurer (Mr. Henry Morris).

SECRETARY'S REPORT.

The more important statements in the Secretary's report are to the following effect: The Executive Committee has met every month during the past year, and at each meeting the General Superintendent has submitted a report of the work in hand for its consideration. At the beginning of the year the appointment of an actuary for statistical purposes was authorized, and the laboratory staff increased to meet the demands of the work being carried out. The General Superintendent in October proceeded to Germany to be present at the meeting of the German Cancer Committee, and there took an opportunity of drawing attention to the importance of the biological side of the inquiry. Friendly relations have also been established with other institutions, and valuable interchange of opinions with individual workers obtained. Amongst the institutions are the Huntingdon Cancer Research, Boston, U.S.A.; the Cancer Research Committee of Harvard University, the Buffalo Cancer Research; while the individuals especially mentioned in this connexion are Professors A. Borrel, of Paris; C. O. Jensen, of Copenhagen; Welch, of Harvard; Adami, of Montreal; Geheimrath von Leyden, von Hansemann, and George Meyer, of Berlin; Coley, of Boston;

Woods Hutchinson, of Oregon and Roswell Park; Gaylord, of Buffalo, U.S.A.; and Mackenzie, of Toronto. In November the negotiations were concluded for the acquisition of a farm where animals suffering from cancer might be kept under observation for therapeutical and other purposes, and in the following month possession was obtained. In January was published the first scientific report of the Fund (details of this were published in the columns of the BRITISH MEDICAL JOURNAL, January 30th, page 209). A grant of £200 has been made to Professor J. B. Farmer, F.R.S., of the Royal College of Science, to enable him to continue his researches into the cytology of malignant and other growths, and in April Dr. W. Cramer, Ph.D., was appointed to carry out certain special biochemical investigations. The Pathological Subcommittee has met on many occasions during the year, when it has considered the evidence on which the conclusions of the investigators were based, as well as the various schemes proposed by them for experimental work and the various lines of inquiry arising therefrom. All the microscopical specimens were submitted for its inspection, and its advice was sought in regard to the subjects of investigation. The Statistical Subcommittee has also frequently met to consider the numerous returns received from various quarters. The completion during the year of organization of the work has led to research being carried on on a larger scale, and expenditure has, therefore, naturally increased.

THE REPORT OF THE GENERAL SUPERINTENDENT.

The General Superintendent, after drawing attention to the value of the farm for the larger kind of animals (accommodation was previously provided generously by a member of the Executive Committee), states that the comparative biological and experimental line of inquiry has proved to have the value predicted for it when the work was first begun, and that the discovery of a fertilization process in transplanted tumours explains much that has hitherto been absolutely obscure. He then divides his report into three subheadings:

Experimental Work on the Nature and Processes of Growth of Cancer.

The more interesting statements under this heading are as follows: With the official collaboration of the Board of Agriculture and the voluntary assistance of many members of the veterinary profession an extensive series of tumours from various domestic animals has been examined. Specimens of malignant new growths among the lower vertebrates, including 14 cases of carcinoma in fish, have also been obtained by the assistance of private persons at home and abroad. Among these were two to which special value attaches because they were derived from marine fish in a state of nature. Similarly interesting is a case of spheroidal-celled carcinoma in a wild mouse. These are the first fully authenticated cases of cancer in wild animals. Altogether upwards of 2,000 specimens have been examined during the year, and whenever possible they have been studied not from the histological point of view alone, but from the biological standpoint as well. The general results may be thus summarized:—Cancer has been discovered to pervade the whole vertebrate kingdom, and to present constant fundamental characters. External agencies, such as food, habitat, and conditions of life generally, have no causative influence. The histological characters, methods of growth, and absence of specific symptomatology, lead to the conclusion that it is not permissible to seek for the causative factors of cancer outside the life-processes of the cells. Proof of this has been sought by the experimental study of transplanted tumours. The latter arise by cell division from the tumour cells introduced, and present in all stages of their growth and in all generations the same uniform minute structural characters. Growth only takes place in the bodies of animals of the same species, and fails in even nearly related animals. Any agency which merely destroys the vitality of the cells renders the results of transplantation completely negative. The power of independent growth after transplantation is confined to the cells which are the characteristic feature of the tumours as distinct from the stroma. It is significant, too, that the minute features undergo no change, the cells of the transplanted tumour being identical in form and structure with those of the tumour from which it was taken. Certain cells of malignant new growths in man and animals have been found to present nuclear changes similar to those by which sexual cells are prepared for fertilization, and the fusion of nuclei in a manner which is equivalent to conjugation has been repeatedly demonstrated in transplanted tumours of the mouse; this fact has acquired increased significance from the discovery of the like phenomenon in a primary tumour from a human subject. Certain well-known characters stamp malignant new growths as independent organisms, and, should further investigations confirm the observations already made, the general establishment of cell conjugation in malignant new growths may afford a harmonious explanation of all their features, and at the same time explain the initiation of the cancer cycle. Under this assumption the superaddition of malignant growth to the processes of repair and inflammation, and to benign and congenital tumours, presents no difficulty. It may be that this discovery of cell conjugation in transplanted tumours indicates the problem which has to be faced in endeavouring to control their growth, and that elaboration of the experimental method along suitable lines may point out a definite direction along which the search for rational therapeutics should proceed. Steps are also being taken to extend the search for cancer to the invertebrate kingdom.

Experimental Investigations bearing upon the Diagnosis and Treatment of Cancer.

On this point Dr. Bashford says that an essential preliminary to the problems involved in attempting to modify the growth of cancerous tissue is the possibility of producing the disease in animals at will by transplantation in order to provide an adequate supply of tumours. This primary condition has been fulfilled in certain experiments, and by means of the experimental observations thus rendered possible, various procedures which legitimately may be conceived to modify the powers of growth of transplanted tumours, or to yield specific evidence of their presence, have been studied. Thus a serum has been obtained capable of acting upon the tumour cells in the test-tube. Attempts, however, to produce the same effects in actively-growing tumours in living animals have yielded negative results. This discrepancy between the test tube experiments and those in the living body is being further investigated. Artificially-propagated mouse tumour has now been disintegrated in a form suitable for the production in sufficient quantity of a highly potent serum. These experiments on the mouse have not yet yielded results of practical therapeutic value, but their theoretical importance should not be under-estimated, and they will also serve as a basis for formulating more extensive therapeutical investigations so soon as tumours can be transplanted in larger animals. The artificial transplantation of malignant tumours has been utilized to seek for specific evidence of their presence in an otherwise normal animal. The only apparent consequence of successful transplantation is the development of a lump at the site of inoculation. Subsequent microscopical examination is necessary to determine the nature of the lump. No specific constitutional symptom of the presence of a new growth has been observed, and the conclusion is drawn that cancer *qua* cancer in man and animals is without a specific symptomatology. Artificially-transplanted tumours also afford the most favourable means of testing the claims made on behalf of various reputed empirical therapeutic methods. Amongst these the action of radium bromide has been tested. Its investigation is not yet complete, but while various results have been obtained it is certain that the action of radium is not limited to cells of malignant tumours, and that there is no ground at present for predicting the curative effect of radium upon deep-seated primary tumours.

Statistical Investigation.

Five categories of statistical investigation are in progress—namely, hospital statistics; the occurrence of cancer in native races of the Colonies and outlying parts of the British Empire; statistics of assurance societies; the nature of the difference in the recorded cancer death-rate in Ireland and Great Britain; the bearing of the foregoing upon the reputed increase of cancer. From some of these no definite results have yet been obtained.

Hospital Statistics.—A plan whereby most of the great London hospitals place at the disposal of the Cancer Research Fund succinct accounts of all the cases of cancer which have been subjected to microscopic examination has been at work for nine months. It results in a card index recording all the important features of each case, provided by the registrars of the different hospitals. The total number of cards which have been received is 1,913. The point of immediate importance in connexion with these cards is the outcome of the comparison of the clinical manifestations with the results of microscopic examination of the tumours. In the last annual

report this comparison was made on the basis of figures obtained by the abstraction of 3,000 cases from the hospital records for previous years by officials of the Cancer Research Fund itself. The results were then summarized as follows:—

	With Characteristic Manifestations.	Without Characteristic Manifestations.	Simulating Malignant New Growth.
Accessible	399	43	28
Inaccessible ..	284	109	3

In the present report the same comparison is made from figures which have been provided by the hospital authorities, and refer to cases which have been under the personal observation of the officials making the returns, and in many cases themselves conducting the microscopical examination. The method by which the figures for deduction have been obtained therefrom differs essentially in the two cases, and the agreement in the general results obtained is all the more significant. This year the result of the analysis is as follows:

	*With Characteristic Manifestations.	Without Characteristic Manifestations.	Simulating Malignant New Growth.
Accessible	947	93	65
Inaccessible ...	251	164	23
Intermediate ..	282	49	39

* These include cases which have recurred.

The terms "accessible," "inaccessible," and "intermediate" refer to the site of the primary growth. The segregation of malignant new growths into those with characteristic manifestations and those without has proved instructive. It has revealed the relatively-frequent occurrence of conditions simulating malignant new growths, and therefore explains many reputed cures of cancer. The figures for this year magnify the contrast between groups which was made apparent last year. The cases devoid of characteristic manifestations are unequally distributed in the two groups for each year. In accessible sites they form a small but appreciable fraction of the whole, in inaccessible situations they form a much larger proportion, rising to 39 per cent. The simulation of malignant new growths is relatively prevalent in the three groups. This is due to the fact that malignant new growths are devoid of a specific symptomatology. The figures for this year, being based upon the experience of the actual observers of the cases, are probably a more accurate expression of the limits within which it is possible to recognize the presence of a malignant new growth than those for last year. The comparison of the opinions formed from the clinical manifestations with the facts ascertained at the pathological examination is of special importance in the interpretation of statistics based upon data of a different origin. The national mortality statistics are based upon the certificates of the causes of death. The figures compiled are therefore an enumeration of opinions and not of facts. The relation between the opinions and the facts in the case of cancer in hospitals is brought out in the above tables. The data obtained by tabulating cases of cancer in London hospitals probably represent as accurately as possible the limits within which cancer can be recognized under the most favourable circumstances during life. The error which obtains outside of hospitals, and in other hospitals less favoured than are those of London, must therefore certainly be greater. Another immediate practical result of compiling these hospital statistics is the proof afforded of the absence of specific clinical symptoms: from this it follows that both the public and the medical profession should be alive to the necessity of early operative interference in cases which may not at the time appear to be malignant. It is also pointed out that in spite of the proportion of cases simulating new growths which appear in the tables, it is the duty of a surgeon to treat all suspicious growths as if he knew they were malignant, while the investigations during the past year show that any delay in operative treatment in the hope that some means will be speedily found to replace surgical interference is totally unwarranted.

Ethnological Distribution of Cancer.—On this point it is stated that although it is too early to draw conclusions as to the relative frequency of cancer amongst various races of mankind, the idea that cancer is a disease practically limited to civilized races is already disproved. Within the short period during which the inquiries have been in progress in the regions where intercourse with civilized man is at its minimum, specimens of undoubted malignant new growths have been obtained. Apparent rarity may be due to various causes, and in the absence of definite information on the age constitutions of the native populations in the less explored parts of the earth, it is inadmissible to draw any conclusion from the relative number of cases of sarcoma and carcinoma which have thus far been recorded.

The Cancer Death-rate in Ireland.—By persistent inquiry it has been possible to obtain from most of the hospitals and dispensaries in Ireland data regarding the total number of in-patients and the total number of cases of cancer occurring among them. The returns from general hospitals give a total of 110,546 in-patients, and of 3,017 cases of cancer. There is thus one case of cancer in every thirty-six patients. The corresponding number of in-patients admitted to London hospitals give one case of cancer in twenty in-patients. The discrepancy between the recorded incidence of cancer in England and Ireland exists also in the extent to which cancer is recorded in the hospitals of the two countries. In the course of the inquiry, the fact has been ascertained that necropsies are performed with minimal frequency in Irish hospitals, whereas in London hospitals they are responsible for adding largely to the certified number of deaths from cancer. Further, in Ireland microscopical examination is scarcely carried out at all, and in London, together with the number of necropsies, is responsible for adding over 30 per cent. to the total number of cases of internal cancer recorded in hospital. A general review of the facts elicited on the diagnosis of cancer in London and Irish hospitals reveals the magnitude of the differences which may exist between the recorded frequency of cancer and its absolute incidence. Procedures which in London and England generally made the recorded frequency approximate more nearly to the absolute incidence are inoperative in Ireland. The discrepancy between the recorded frequency of cancer in London and Irish hospitals can be explained solely by the heavy disadvantages under which the search for cancer is carried out in the latter. The only conclusion possible is that among that proportion of the Irish population which does not have access to hospitals a still higher percentage of cases of cancer remains unrecorded, with the result that the relative frequency in hospital and the relative infrequency outside of hospitals together combine to give a lesser recorded cancer mortality throughout Ireland generally. In all probability if the more favourable conditions prevailing in England existed in Ireland they would quickly demonstrate there a cancer death-rate proportionately higher than that of England, in accordance with the higher age constitution of the Irish population.

Dr. Bashford's report concludes by a brief consideration of the results at present obtained upon the question of the reputed increase in the prevalence of cancer. He points out that cancer has now been discovered in animals formerly considered to be free from it, and that it has been shown to be relatively more frequent than hitherto recorded among uncivilized races. He concludes by stating that there is nothing in the statistical investigations which points to an actual increase in the number of deaths due to cancer.

Dr. Bashford's report is notable throughout for the desire evinced to give credit to whom credit is due, and for the number of persons and Government departments at home and abroad whose assistance he gratefully acknowledges.

The Report of the Honorary Treasurer.

The point of chief medical interest in this part of the report is that while the research must continue for years it is estimated that with the strictest economy the annual expenditure in the immediate future cannot be less than £3,000, and that so far the capital sum required to produce this income has not been received, in spite of handsome donations such as that last year of £20,000 by Mr. Astor. Only 328 individuals and 10 city guilds have contributed to the Fund. In default of contributors of large sums, it is suggested that smaller collections might be made by ladies interested in the conquest of a disease which affects so many of their sex, and by manufacturers, business firms, and colliery owners, so many of whose employés become

affected by cancer. The research should also appeal to the self-interest of insurance companies, and aid could legally and justifiably be rendered by municipal corporations throughout the empire.

British Medical Association.

SEVENTY-SECOND ANNUAL MEETING AT OXFORD.

SECTION OF DENTAL SURGERY.

Keble College.

President: EDMUND AUGUSTINE BEVERS, M.R.C.S., Oxford. *Vice-Presidents:* FRANK EARLE HUXLEY, M.R.C.S., L.D.S., Birmingham; JOHN HOWARD MUMMERY, M.R.C.S., L.D.S., London. *Honorary Secretaries:* KENNETH WELDON GOADBY, L.R.C.P., L.D.S., 21, New Cavendish Street, Cavendish Square, W.; JOHN MCKNO ACKLAND, M.R.C.S., L.D.S., 24, Southernhay, Exeter.

This Section will hold a discussion on oral sepsis on Wednesday, July 27th. The subject will be introduced by papers on oral sepsis in relation to general surgery, by Mr. J. Rickman Godleee; on its relation to general medicine, by Dr. William Hunter; and on its pathology, by Mr. Kenneth W. Goadby. The following have expressed their intention of taking part in the discussion:

Professor J. Arkövy, Mr. Morton Smale, Mr. J. Norman Bennett, Mr. Sidney Spokes, Mr. J. G. Turner, Dr. Dundas Grant, Sir Thomas Barlow, Bart., K.C.V.O.; Dr. StClair Thomson, Dr. H. Tilley, Dr. Dalton, Dr. G. Newton Pitt, and Dr. J. F. Goodhart.

The following papers are also announced:

Mr. J. G. TURNER: Growth of Bone in relation to Position of the Teeth.

Mr. W. R. ACKLAND: Some cases of Neuralgia.

Dr. SIM WALLACE: Physical Degeneration in Relation to the Teeth.

Mr. SIDNEY SPOKES: The Care of Children's Mouths.

Professor J. ARKÖVY: Clinical Observations on Caries Alveolaris Specifica.

Mr. J. HOWARD MUMMERY: Stereoscopic Methods of Examining Colonies of Bacteria.

[The publication of the programme of this Section has been delayed owing to a misunderstanding.]

PROGRAMME OF BUSINESS.

TUESDAY, JULY 26TH.

9 a.m.—Council Meeting.
10.30 a.m.—Service in Christ Church Cathedral.
10.30 a.m.—Special Mass at the Church of St. Aloysius.
12 noon.—Annual General Meeting, followed by Representative Meeting. Examination Schools.
8 p.m.—President's Address. Reception of Distinguished Guests. Sheldonian Theatre.

WEDNESDAY, JULY 27TH.

9 a.m.—Meeting of 1904-5 New Council.
9 a.m.—Service at Mansfield College Chapel and at Manchester College.
10 a.m. to 1 p.m.—Sectional Meetings. University Museum.
2 p.m.—Meeting of Convocation and conferment of Honorary Degrees in the Sheldonian Theatre.
Adjourned General Meeting, followed by Representative Meeting. Examination Schools.
8 p.m.—Address in Medicine by Sir William Church. Sheldonian Theatre.

THURSDAY, JULY 28TH.

9 a.m.—Meeting of Council.
10 a.m. to 1 p.m.—Sectional Meetings. University Museum.
2 p.m.—Address in Surgery by Sir William Macewen. Sheldonian Theatre.
3.30 p.m.—Representative Meeting (if business not already concluded). Examination Schools.
7.30 p.m.—Annual Dinner of the Association.
8 p.m.—Popular Lecture by Dr. G. Bagot Ferguson, F.R.C.S., M.Ch.Oxon. Examination Schools.

FRIDAY, JULY 29TH.

9 a.m.—Meeting of Council.
10 a.m. to 1 p.m.—Sectional Meetings. University Museum.
2 p.m.—Representative Meeting (if business not already concluded). Examination Schools.

PROGRAMME OF ENTERTAINMENTS.

WEDNESDAY.

Afternoon, 3.30.—Reception by the President (Dr. W. Collier, F.R.C.P.) and members of the Oxford Division, in Wadham College Gardens. Duelling and fencing exhibition. *Epée* contest between Oxford and Cambridge.

Evening, 9.15.—Soirée at the Museum, given by the Vice-Chancellor and members of the University.

THURSDAY.

Morning, 8.0.—The Annual Medical Temperance Breakfast, in the Assembly Room at the Town Hall.

Afternoon, 3.30.—Garden Party given by Mr. and Mrs. G. H. Morrell, at Headington (limited to 1,000).

3.30.—Garden Party by Dr. and Mrs. Neil at the Warneford Asylum (limited to 600).

Promenade Concert in St. John's College Garden.

Evening, 7.30.—Annual dinner in Christ Church Hall.

9.15.—*Ladies' Entertainment in New College Gardens and Hall.

FRIDAY.

Afternoon, 3.30.—Garden Party at Blenheim Palace. Invitations are being issued by the Duke.

4 to 6.—Boat-racing on the Isis.

Evening, 9.0.—Reception by the Mayor, Mr. E. A. Bevers, M.R.C.S., in the City Buildings.

SATURDAY.

10 a.m.—Excursion to Leamington and Warwick. The Corporation of Leamington provides lunch; the Colonial Secretary will take the Chair. The Countess of Warwick gives a Garden Party in the afternoon.

10 a.m.—River Excursion to Reading and Henley. Special Boat leaves Folly Bridge for Reading, arriving there at 6.15 p.m.

* In the event of a wet day the entertainment will be held at the Town Hall.

NOTICES BY THE OXFORD EXECUTIVE.

Service in Christ Church Cathedral.—Arrangements have been made for members to meet at the Town Hall, about 200 yards from the Cathedral, at 10.15 a.m. on Tuesday, July 26th, and to go in procession from thence to the Cathedral, where the service will begin at 10.30 a.m.

Roman Catholic Service.—We are requested to state that a Roman Catholic service will be held at the St. Aloysius Catholic Church, Woodstock Road, Oxford, on Tuesday, July 26th, at 10.30 a.m.

Academic Costume.—Gowns should be worn at the Cathedral service, at all meetings in the Sheldonian Theatre, at the Vice-Chancellor's *soirée*, and at the Mayor's reception. It is thought that the colour introduced by the various gowns will break the monotony of the ordinary evening dress at the evening entertainments.

Ladies accompanying Members.—Ladies will be admitted to the Sheldonian Theatre on Tuesday evening, July 26th, when the President (Dr. Collier) will give his address, and on Wednesday afternoon at 2 p.m., when honorary degrees will be conferred; they will also be admitted to the popular lecture by Dr. Ferguson at 8 p.m. on Thursday in the Examination Schools, High Street. Tickets for ladies for the various garden parties and entertainments must be obtained by members at the Reception Room. In consequence of the great demand for tickets and the limit of space at their command, the Oxford Executive will be reluctantly compelled to limit the distribution of tickets to one lady's ticket for each member who is accompanied by one or more ladies.

THE ANNUAL DINNER.

The number of applicants for the dinner is now so large that the space at the disposal of the Local Executive is almost filled. Members wishing for tickets are advised to apply without delay to the Local Secretary, Mr. H. A. Whitelocke, F.R.C.S., 6, Banbury Road, Oxford, as dinner tickets will be distributed in order of application.

GOLF.

We are requested to state that if members who intend to play golf during the meeting would communicate as soon as possible with Dr. Proudfoot, 43, St. Giles, Oxford, arrangements will be made to have vehicles ready to convey them to the links at a small charge per head. The course is four miles from the centre of the city. The University Golf Club has made members of the British Medical Association honorary members of the club for the week of the annual meeting. Sherlock, the professional in charge of the ground, is making special efforts to put the links into as good condition as possible, and it is believed that they will test the abilities of players to the utmost.

The international match will take place on Friday, July 29th.

GARDEN PARTIES.

Mr. and Mrs. G. H. Morrell will invite 1,000 guests to a

garden party at Headington Hill Hall on Thursday, July 28th; and Dr. Neil, the Medical Superintendent, with the Chairman and Committee of the Warneford Asylum, Headington Hill, are inviting 600 guests to a garden party on the same afternoon. The number of invitations to be issued for the Vice-Chancellor's *soirée* at the Museum on Wednesday evening, and to the reception given by Dr. Collier, the President, and the members of the Oxford Division in Wadham College Gardens on the same afternoon, must be limited to 2,000. Invitations to the Garden Party at Blenheim will be issued by the Duke of Marlborough personally.

ANNUAL PATHOLOGICAL MUSEUM.

As it is now known that a considerable number of members of the Association are to arrive in Oxford on Monday, July 25th, it is hoped that all exhibitors in the Pathological Museum will see that their exhibits reach Oxford, if possible, by the 23rd inst., in order that the Museum may be open for inspection on Tuesday morning, the 26th. The afternoon of that day is fairly free from business, and many members will like to take advantage of their leisure to visit the Museum.

OPHTHALMOLOGICAL EXHIBITION.

We are informed that, attached to the Section of Ophthalmology, an exhibition has been arranged in Keble College. It will include instruments, electric and other appliances, ophthalmoscopic pictures, optical and colour apparatus, pathological specimens, and other things of interest to ophthalmic surgeons.

A number of rare and interesting eye cases will be exhibited at the Eye Hospital, some seven minutes' walk from Keble College.

ACCOMMODATION FOR MEMBERS AT OXFORD.

A list of lodging-houses, with scale of charges, was published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL for June 11th, 1904, pp. 182-5, and July 9th, 1904, pp. 28-31.

SPECIAL RAILWAY ARRANGEMENTS.

To members and their friends attending the annual meeting at Oxford the railway companies of the United Kingdom will grant return tickets, on payment at the time of booking, at a single fare and a quarter. To secure this concession each passenger must produce a special voucher, and these may be obtained on application to the General Secretary, 429, Strand, London, W.C. The reduced fares will be available from July 22nd to August 2nd, both dates inclusive.

Members attending the annual meeting, but staying at places outside Oxford, may, on production of cards of membership, obtain return tickets at a single fare and a quarter (minimum charge 1s.), from Oxford to London or Birmingham or to any station not more than fifty miles distant to which through bookings are in operation; these tickets will be available to return on the same or following day. Members availing themselves of this privilege should use the original return ticket for the first journey to and the last journey from Oxford. The member's ticket, which is obtained at the Reception Room when registering attendance, will enable members to get the reduced fares from Oxford to London and to places within the fifty-mile radius for any intermediate journeyings.

Dr. John R. Hamilton, of Hawick, writes to point out that members from the West of Scotland and the Border Counties can travel via Carlisle and Birmingham direct to Oxford either by the Midland or the London and North-Western Railway route.

ASSOCIATION NOTICES.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

LANCASHIRE AND CHESHIRE BRANCH: CHESTER DIVISION.—A meeting of the members of the above Division will be held at the Chester General Infirmary, in the Board Room, on Tuesday, July 19th, at 4.30 p.m. Attendance of members is particularly requested. Agenda: Minutes of last meeting. To receive the Executive Committee's report, and to consider and to form resolutions upon the following subjects: (1) Some suggested alterations of the By-laws (see BRITISH MEDICAL JOURNAL, July 9th, 1904); (2) Scheme for British Medical Association Direct Representation; (3) Contract Practice; (4) Nurses Registration Bills; (5) Information to Coroners; (6) Life Insurance Fees; (7) National Deposit Friendly Society; (8) The *Revised* Medical Acts Amendment Bill; (9) A Memorandum of Parliamentary Matters. To transact any other business which may arise.—H. W. KING, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH: MANCHESTER AND LIVERPOOL DISTRICTS.—A special reserved saloon car will be attached to the Great Western train leaving London Road, Manchester, on Monday, July 25th, 12 o'clock noon: Stockport, 12.10; Crewe 1.3. The Great Western train leaving Liverpool Central 11.44, Woodside Birkenhead 12, Chester 12.40, joins the Manchester train at Wellington, 2 25, where tea will be served in the saloon. The Great Western route has been chosen so that the members travelling by it may avail themselves of the invitation of the Mayor of Leamington and the Earl and Countess of Warwick. (See BRITISH MEDICAL JOURNAL, July 9th, p. 95. The return car will be attached to the train calling at Leamington 6.30, and Warwick 6.35, on Saturday, July 30th. Members from outside places may join the train at most convenient station at the times named above. The railway company have issued special tickets from Manchester, which may be had from Dr. Bagley in the train. The saloon is now full, but another one will be supplied if a sufficient number send in their names before July 20th. It is hoped that every one who intends sharing the privilege of the arrangement will send a post-card forthwith to Dr. Bagley, 229, Clowes Street, Manchester, S.E., intimating their intention to join the party.

SPECIAL CORRESPONDENCE.

BERLIN.

Cancer Research and Cancer Hospitals.—Tuberculosis.—Lead Poisoning in Painters.

THE directors and architects of the new Charité buildings have been approached by the Committee for Cancer Research with a request that the new buildings may include a special department for cancer patients, this department to be under the direction of Professor von Leyden, Chairman of the Cancer Committee. It is understood that the request has been acceded to, and further, a movement has been set on foot, and funds collected by private subscription, for the establishment of "incurable" cancer hospitals, a form of charity which, strange to say, has hitherto been unknown in Germany.

Important deliberations on problems connected with tuberculosis have lately been held at the Imperial Board of Health. As regards the care of consumptive patients in general hospitals, it was unanimously concluded that advanced cases should be segregated, if possible, in special sanatoria built and arranged on modern principles, or where this was impossible, at least in separate departments of general hospitals. Another day was devoted to the question whether human and bovine tuberculosis could be considered as identical in character. Professors Robert Koch, von Leyden, Orth, B. Fraenkel, Krauss, Loeffler, and others were present, and after Regierungsrath Kossel had read his report on the year's experimental researches in the Board of Health, there was a debate, which ended, as might have been expected, without unanimity being reached.

Count Posadowsky, German Minister of the Interior, has submitted to the Federal Governments a schedule of "Regulations for the prevention of lead-diseases among house-painters, decorators, and varnishers." These regulations are to be binding on all employers in the house-painting and other similar trades, as well as on all industrial establishments where painters and varnishers are employed in connexion with other trades and manufactures—for instance, carriage factories, furniture factories, wharves, etc. The regulations do not forbid the use of white lead for social economic reasons. They contain detailed instructions for avoiding the dangers connected with the manipulation of lead colours mixed with oil or varnish, as well as with the process of rubbing or breaking away dry coats of lead colour. Medical supervision and the keeping of a special health book are to be obligatory, and each workman is to receive gratis a leaflet enlightening him on the dangers connected with the trade, and the best methods for escaping them.

MANCHESTER.

Proposed Ambulance Service.—Proposed Union of Hospitals.—A Convalescent Hospital.—Dearth of Patients for Lancashire Inebriate Reformatory.

A PRELIMINARY informal conference took place recently between the Infirmary authorities and the Watch Committee

of the Corporation with regard to the best methods of dealing with cases of sudden illness and accident, more particularly after the removal of the Infirmary to Oxford Road.

The statement is made that an agreement has been come to between the authorities of St. Mary's Hospital and the Southern Hospital for Women whereby these two institutions will form the units of a joint hospital. The details of the scheme have not been made public.

The David Lewis Trustees some time ago gave a site at Sandlebridge, on which a convalescent home has been built by an anonymous donor. The patients "took possession" on Saturday last. It is meant primarily for the convalescent patients of the Ancoats Hospital.

The Lancashire Inebriate Reformatory at Whalley, of which Dr. Ramsay is the Medical Superintendent, was inspected on July 7th by the Chief Constable of Lancashire Towns. Sir John Hibbert expressed the hope that a larger number of cases would be committed there. The success of the scheme was largely in the hands of the Chief Constable. During the first month the reformatory was open forty-two women eligible for committal to the institution were sent to the Manchester Prison and seventeen to Liverpool. These women would have been better in the reformatory. The institution was opened on April 14th, with accommodation for a hundred-and-twenty inmates, and within the last ten weeks it has received just seven cases from the numerous police-courts in the County Palatine. What many of these inebriates require is proper treatment and not prison for three or six months. The magistrates who send these people to gaol must be enlightened. The institution cost £84,000, and the total sum required for its up-keep is £10,875; this is contributed in certain proportions by cities and county boroughs, which in addition have to pay 10s. 6d. a week for each patient. The Act gives magistrates the power of committing a prisoner for three years, but the latter part of the period may be spent under licensed supervision, which means in practice under the care of friends who report from time to time to the authorities.

HONG KONG.

Report of the Government Bacteriologist for the Year 1903: Causes of Death: Small-pox: Enteric Fever: Sloughing Phagedaena: Acute Peritonitis: Cerebral Haemorrhage: Aneurysm: Liver Abscess.

DR. HUNTER, the Government Bacteriologist, has submitted his report of the work done in the Public Mortuary, Hong Kong, in 1903. It contains many facts of importance to those interested in tropical medicine. During the year the mortuary has been enlarged and improved and a suitable bacteriological laboratory will soon be built. The number of bodies examined during the year was 2,326, rather fewer than in 1902, owing to a mortuary having been erected at Kowloon. From a table showing the average number of bodies examined daily it is seen that in May 15 bodies and in June 12 bodies were examined daily. On several days during May, when the epidemic of plague was at its height, the daily average of bodies received into the mortuary was 30. A special report on plague will be presented. The following table shows the causes of death during 1903:

1.—Total general diseases		1,022
2.—Local diseases:		
Of the nervous system	12	
,, circulatory system	38	
,, respiratory system	205	
,, digestive system	38	
,, urinary system	10	
,, generative system	3	
		366
3.—Total injuries		1[illegible]
4.—Total decomposed bodies		[illegible]
		[illegible]

From a detailed list a few are selected as follows:

Small-pox			92
Plague—			
Bubonic plague	(58 per cent.)		529
Septicaemic type	(37 per cent.)		339
Pneumonic type	(5 per cent.)		49
Total plague, 917.			
Marasmatic conditions			200
Diarrhoea	69	Acute general tuberculosis ...	42
Beri-beri	160	Premature birth	[illegible]
Malaria	93	Still-birth	[illegible]

Local Diseases.—A few are selected from the list:

Apoplexy	5	Aneurysm of aorta	5
Acute broncho-pneumonia ...	90	Acute fibrinous pneumonia ...	78
Tuberculosis of lungs	50	Caseous tuberculous pneumonia	16
Intussusception	2	Acute gangrenous appendicitis	5
Liver abscess	3	Acute peritonitis	8
Rupture of the spleen	22	Tuberculous peritonitis ...	8

Twenty-two cases of small-pox were examined at the mortuary. All were infants, and the majority showed the haemorrhagic and confluent type of the disease. Dr. Hunter calls attention to the rarity of enteric fever amongst the Chinese, at least as far as concerns the bodies sent to the public mortuary.

Statistics for the last two years show a total of 5,142 *post-mortem* examinations performed, and amongst these only 8 cases of enteric fever. In regard to the prevalence of typhoid fever amongst the Chinese in Hong Kong, one fact must be borne in mind, that enteric fever is a disease, insidious in onset, and one which would allow the Chinese population, should they feel themselves gradually becoming a prey to some malady, to migrate to their own homes.

Sloughing phagedaena was met with in an adult Chinese male aged about 30. The penis, scrotum, and adjacent parts of the thigh were covered with ulcers. These varied much in size, shape, and depth. Many of them had apparently run together, producing large areas of broken surface. The ulcers on the penis had penetrated the corpus cavernosum deeply, while those on the scrotum were more superficial. The inner side of the thigh and groin was covered with deep ulcers extending into the muscular tissue. The floor of the ulcers was covered with bluish unhealthy-looking granulations which were bathed in foul-smelling pus, and capped with a considerable quantity of necrotic tissue. The edges of the ulcers were irregular and undermined. The surrounding skin was bluish and indurated. Death evidently took place from exhaustion and sapraemia.

Of eight cases of acute peritonitis examined, six appeared to be primary and two secondary to abscess of the liver. In the bacteriological examination of the six primary cases, one was found to be due to the streptococcus pyogenes, one due to bacillus coli communis, one due to staphylococcus pyogenes and bacillus coli communis, while three were caused by streptococcus pyogenes and bacillus coli communis.

Five cases of cerebral haemorrhage occurred in adults at various ages from 18 to 58, and in each case there was evidence of past syphilitic infection. The heart was normal in all the cases. In one the extravasated blood had forced its way by a process of cleavage through the centrum ovale into the lateral ventricles.

The following table shows the number of cases of aneurysm examined during the year 1903.

No.	Sex.	Age.	Vessel.	Variety.	Remarks.
1	M.	56	Aorta (asc. arch).	Saccular	Marked arterio-sclerotic condition of vessels throughout the body. Rupture into pericardium. Mitral stenosis.
2	M.	50	Do. (transverse arch).	Do.	Well-marked signs of syphilis. Rupture into pericardium.
3	M.	40	Do. (junction of asc. and transv. arch)	Do.	Do.
4	M.	40	Do. (asc. arch).	Do.	Do.

As a predisposing factor in these cases there may be mentioned "violent muscular exertion." The cases were amongst Chinese of the coolie class, who invariably have large hypertrophied hearts; and arterio-sclerosis is very prevalent amongst the Chinese. Its exact etiology is not clear. Probably syphilis has something to do with it. In connexion with this subject it may be mentioned that coarse cirrhosis of the liver and interstitial nephritis are frequently met with in the public mortuary.

The *post-mortem* appearances of five cases of liver abscess are given in detail. Dr. Hunter notes that in all of these cases no micro-organism was isolated which could reasonably be brought into causal relationship with the disease.

In the cases which ended by bursting of the abscess into the peritoneal cavity micro-organisms of the colon group were always found, but these, judging from what is now known in regard to the abdominal cavity, must be regarded as secondary and not as exciting agents of the process under discussion. Particular regard was paid to the examination of the walls of such abscesses owing to the prevalence of the

opinion that protozoa have to do with the production of the disease, but in each case a negative result was obtained.

In 1 case only were there evidences of dysentery. Two cases had multiple small abscesses, but no trace of dysentery was discoverable, though,

according to the general trend of opinion, large solitary abscesses occur idiopathically, while multiple small abscesses develop in conjunction with dysentery. . . . An interesting point is that two of these cases occurred in females—one in a female child aged about 3 years and the other aged about 10 years.

Again, the distinction generally made in regard to the number of abscesses present—that is, the solitary large abscess and the multiple small abscesses—would appear, Dr. Hunter says, "to be of little value."

CORRESPONDENCE.

THE CORONER FOR SOUTH-WEST LONDON.

SIR,—It would be interesting to know what "particular circumstances" make it "necessary for the purpose of ascertaining the cause of death to call in a medical man who has never seen the person in life." Recently I was called to see a woman who died before I arrived. The police accepted my statement that death was due to natural causes, and as a result no inquiries were made for about twelve hours, while the necropsy was postponed to the fourth day. The coroner never communicated in any way with me, but ordered a necropsy by Mr. Freyberger, "who had never seen the person in life," to ascertain the cause of death, which I was prepared to state without a necropsy. As a matter of fact, I had seen the person in life, but Mr. Troutbeck evidently did not arrive at that piece of knowledge.

The practice instituted by Mr. Troutbeck of having necropsies made to take the place of clinical evidence is most objectionable; it is unreasonable and unnecessary on either legal or scientific grounds, and without being in any way sentimental the public would justly express abhorrence at such mutilation of the dead.

The persistent intrusion of a non-qualified witness in Mr. Troutbeck's court is well known and the subject of much speculation. While the medical profession certifies 504,818 deaths in a year it can hardly be held to be incompetent to decide on causes of deaths, and while there are only 336 homicides among the 46,056 cases submitted to coroners, it seems somewhat ridiculous to assert the need for a specialist in 70 or 80 per cent. of these cases. A coroner's court should not be a pathologist's lecture room; its object, according to Blackstone, is to inquire in what manner the deceased came by his death, and with all due respect for Mr. Troutbeck's legal acumen one fails to see how he or his jury are made wiser to that end by an enumeration of the bones broken and the organs damaged by a collision with a railway engine or a brewer's dray, or how the public benefits by the enumeration being made by a specialist.

Apparently the only effective action in restraint of autocrats of Mr. Troutbeck's solitary type is in the direction of a reconstruction of the laws relating to death certification. Coroners and their courts are an anachronism and should be reformed by abolition, and in their place a medical officer of death should be appointed in each district, whose duties should include the verification of all certificates, the investigation of cases of sudden or uncertified deaths, the performance of necropsies and the public report at stated intervals before a magistrate of the results of his inquiries.—I am, etc.,

DONALD F. SHEARER, M.B.Oxon., F.R.C.S.

Putney, July 4th.

THE SO-CALLED PANCREATIC REACTION IN THE URINE.

SIR,—If the crystals obtained from the urine in cases of pancreatic disease by the hydrochloric acid method are essentially different in composition from those resulting from the action of sulphuric acid, as Drs. Ham and Cleland in their letter of July 2nd declare they are, it is a most remarkable coincidence that they should have the same melting point and that in a long series of comparative experiments I should have found that the results were strictly comparable. Repeated careful attempts on my part, during the last few weeks, to detect lead in the crystals prepared from pancreatic urines by the hydrochloric acid method have, however, only resulted in failure, and I can but conclude that if Drs. Ham and Cleland's experiments yield "lead salt crystals" their reagents or their methods of conducting the reaction must be different from mine. The varying concentration to which they refer points in the latter direction, for I find that the final fluid, when the test is carefully performed, always measures from 15 c.cm. to 16 c.cm. as it was designed to do.

The remainder of their letter calls for no comment from me, excepting that I may point out that photomicrographs of the crystals from urine in various forms of pancreatic disease were exhibited on the screen at my lecture.—I am, etc.,

London W., July 11th. P. J. CAMMIDGE.

THE DETERIORATION OF VISION DURING SCHOOL LIFE.

SIR,—Dr. Ward writes in the BRITISH MEDICAL JOURNAL that his statistics are practically identical with mine. They were criticized at the time of publication by Dr. Kerr as being "practically worthless for the purpose of comparison or collation with other results," and that statement must still hold. There can be no comparison, and, even if there could, the curve for good vision in the various standards obtained from Dr. Ward's work is entirely different from mine.

In Dr. Kerr's report on the work of the oculists on about 60,000 children it is noted that in Standard VII the percentage with normal vision reached 80—a contrast to Dr. Ogier Ward's "extraordinary percentage of failure in Standard VII (80.0)."—I am, etc.,

London, W., July 12th. ETTIE SAYER.

CRIMINAL RESPONSIBILITY AND DEGENERACY.

SIR,—It is with a chastened sorrow that I observe in the BRITISH MEDICAL JOURNAL of July 9th that, from the summary therein published of the address that I am to give at Oxford, on criminal responsibility and degeneracy, all reference to degeneracy has been editorially deleted. That the title does not denote any specific thing, I am free to admit; that it may mean anything the user pleases, I am painfully aware; that it is one of the verbal fetishes, current from time to time, to explain everything otherwise inexplicable, it is the object of my address to establish; but that it is morally so opprobrious that no mention of it may be made in your columns, I appeal to your past issues to refute. Had the reference to degeneracy in the summary been merely incidental; had it been relegated to a footnote or an appendix; and had it been of an inflammatory nature; then I could have understood the zeal of some surgical subeditor, practised in operating for appendicitis, in excising the peccant passage *en masse*.

But, so far from being inflammatory, it was marked by the same suavity that I am endeavouring to impart to this protest; and so far from being incidental, or appendicular, it was an integral and essential part of the argument. It is regarded as of such importance that Dr. Max Nordau is coming to Oxford on purpose to smash, pulverize and destroy it; and, now that the summary appears without this reference, I fear he may infer that the discussion of the subject is withdrawn from the programme, and that we may be deprived of the pleasure of welcoming a writer so distinguished. If the deletion was merely for the sake of brevity, and to save the valuable space of your columns, then, alas! it has been ineffectual, for this communication, which nothing but the direst necessity would have torn from me, will, to my great regret, occupy more space than the passage that you considered superfluous.—I am, etc.,

Catford, July 10th. CHAS. MERCIER.

*** The real answer to the problem which we appear to have raised is about the only one which this amusing consideration of possible motives does not happen to suggest. The true reason that the single mention of degeneracy in so many words was omitted from the summary, was because it was believed that thereby the central thread of a paper upon a somewhat abstruse matter would be rendered more clearly visible to the general reader. A good deal more of the summary was omitted with the same intent, and from his single mention of this point we are glad to conclude that the rest of the synopsis of a theory which Dr. Mercier is presently to develop and illustrate, meets with his approval. In the meantime, we may add for the information of Dr. Max Nordau that, to his specific contention that criminals as a natural species do not exist, Dr. Mercier added a kind of rider to the effect that if by "Degeneracy" is meant a peculiar diathesis or variety of man, distinguishable from other men by "stigmata," that is, by peculiarities of structure, or function, or habit, that are inborn; that are constant in individuals so stigmatised; that mark off the Degenerate from the normal man; then Degeneracy does not exist.

VOYAGES D'ETUDES MEDICALES.

SIR,—It seems a pity that Mr. Boyd Joll should have thought fit to include in his letter on the above subject a suggestion that the British Balneological Society, of which he is not a member, and of whose aims and work he presumably knows little, is less practical than some imaginary Continental society. I say "imaginary" because the Voyages D'Etudes Medicales, as anyone may see from the name, is not a society, nor is the scheme in any way the work of a society. These voyages were thought of, worked out and organized by one man, Dr. Carron de la Carrière, and for his success in thus introducing the value of French spas to a wider public, he has been very properly decorated by the Government of the Republic. So far from the membership of any society being a necessary qualification for taking part in these trips, medical men and their wives, and even medical students, from all quarters of the globe are made equally welcome.

But there is another point in Mr. Joll's letter which is deserving of special notice by those who have any intention of joining the party this year. In the closing paragraph appears the following passage: "If any medical men wish to be present (they can bring their wives and daughters with them) I *think* I can guarantee their inclusion in the trip this year if I hear *before the end of July*, of their wish to join." (The italics are mine.) On referring to the official programme of this year's voyage, which duly appeared in the BRITISH MEDICAL JOURNAL some weeks back, I find that the list is not closed until about fourteen days later than the date given by Mr. Joll. (Les inscriptions sont reçues jusqu'au 15 Aout, 1904, terme de rigueur.) For any one, therefore, who is doubtful as to his engagements it will clearly be an advantage to send his "adhésion" direct to Dr. Carron de la Carrière, 2, Rue Lincoln, Paris, who, so far as I have been able to ascertain, has no accredited agent in this country.

As one who has taken part in two of these *voyages*, I am glad to be able to endorse all that Mr. Joll has to say concerning their moderate price and their many enjoyable features.—I am, etc.,

London, W., July 19th. LEONARD WILLIAMS.

THE COLLEGE OF MEDICINE FOR CHINESE IN HONG KONG.

SIR,—With reference to my letter in a recent issue of the BRITISH MEDICAL JOURNAL as to my proposal to Sir William Robinson to form a State Medical College in Hong Kong for Chinese students after the Indian Government plan, I desire to say that the existing medical school there owes its origin entirely to Mr. James Cantlie's action when practising in that Island. Sir Patrick Manson was the first Dean of the College.—I am, etc.,

London, W., July 12th. GEORGE EVATT, Surgeon General.

THORNE DEFENCE FUND.

SIR,—May I express through the medium of the BRITISH MEDICAL JOURNAL my most grateful thanks for the chivalrous and practical sympathy which has been shown to me by colleagues and friends, known and unknown, in relieving me of the costs and damages awarded in the recent action in which I was the defendant? The sympathy has been most grateful to me, and has very much helped me to bear the strain and anxiety inevitable in a case where one's professional character has been assailed. I should also like to express my indebtedness to the Medical Defence Union and to Mr. Hempson, the solicitor to the Union, for the care with which this case was conducted.—I am, etc.,

London, W., July 12th. MAY THORNE.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE

INSPECTOR-GENERAL A. TURNBULL has been awarded the Greenwich Hospital Pension of £160, vacant by the death of Inspector-General M. Rodgers. Inspector-General Turnbull joined as Surgeon, August 12th, 1859, becoming Inspector-General, May 21st, 1896. He retired from the service March 9th, 1898. As Staff Surgeon of the *Bacchante* in 1880-2 he had medical charge of the two English Princes. Was Inspector-General at Haslar Hospital in 1897-8; proposed many reforms, including the provision of aseptic operating rooms, which were approved by the Admiralty, and effected; in 1898 their Lordships "fully recognized his services and able administration" at Haslar: he submitted, at Haslar, and subsequently, proposals for the reorganization of the course of instruction for surgeons entering at Haslar, for which he received the thanks of the Admiralty.

The following appointments have been made at the Admiralty: ADRIAN FORRESTER, M.B., Surgeon, to the *Pembroke*, additional, to be lent to Chatham Hospital, July 12th: HENRY W. G. GREEN, Staff Surgeon, to the *President*, for three months' hospital course, July 6th; HILARY C. ARATHOON, Surgeon, to the *President*, for three months' hospital course, July 13th.

Civil Practitioner W. R. GRAHAM has been appointed Surgeon and Agent at Leven, July 9th.

ROYAL ARMY MEDICAL CORPS.

MAJOR J. W. F. LONG retires on retired pay, July 9th. He entered the service as Surgeon-Captain May 30th, 1885, becoming Surgeon-Major May 30th, 1897.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL D. WILKIE, M.B., Bengal Establishment, to be Colonel April 2nd. He entered as Assistant-Surgeon April 1st, 1873, and became Brigade-Surgeon-Lieutenant-Colonel May 1st, 1899.

The promotion to be Lieutenant-Colonel of Majors J. H. T. WALSH, H. HENDLEY, and W. G. P. ALPIN, M.D., of the Bengal Establishment, and which has been already announced in the BRITISH MEDICAL JOURNAL, has received the approval of the King

Major H. E. BANATVALA, M.D., Bengal Establishment, is promoted to be Lieutenant-Colonel from April 1st. He joined as Surgeon, April 1st, 1884, and was made Surgeon-Major, April 1st, 1896. He served with the Burmese Expedition in 1886-7, receiving the Frontier medal with clasp.

Lieutenant-Colonel J. C. FULLERTON, M.B., Bengal Establishment, has retired from the service from June 25th. He was appointed Assistant Surgeon, March 31st, 1874, and became Brigade-Surgeon-Lieutenant-Colonel, March 31st, 1894. He was in the Afghan war in 1878-80, and was in the action at Sail-u-Deen and in the march from Quetta to the relief of Kandahar (medal): he was also with the Zhob Valley Expedition in 1890.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

MR. FRANCIS G. THOMAS and MR. CHARLES E. M. LOWE are appointed Surgeon-Lieutenants in the 1st Glamorganshire and 8th Lancashire Regiments respectively, July 9th.

VOLUNTEER RIFLES.

SURGEON-CAPTAIN W. LANGRAN, 3rd Volunteer Battalion the Devonshire Regiment, resigns his commission July 9th.

Surgeon-Lieutenant H. H. L. PATCH, 1st (Hertfordshire) Volunteer Battalion the Bedfordshire Regiment, to be Surgeon-Captain, July 2nd.

Surgeon-Captain S. MACVIE, M.B., 2nd (Berwickshire) Volunteer Battalion the King's own Scottish Borderers, to be Surgeon-Major, July 9th.

Brigade-Surgeon-Lieutenant-Colonel T. A. M'CULLAGH, 2nd Volunteer Battalion the Durham Light Infantry, resigns his commission, is granted the honorary rank of Surgeon-Colonel, and retains his uniform, vacating at the same time the appointment of Senior Medical Officer to the Durham Light Infantry Volunteer (Infantry Brigade), July 9th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

LIEUTENANT J. HARDIE, M.B., the Woolwich Companies, to be Captain, July 9th.

Captain A. W. SHEEN, M.D., is appointed to command the Welsh Bearer Company, July 9th.

MEDICO-LEGAL AND MEDICO-ETHICAL.

SIGHT-TESTING BY SPECTACLE MAKERS.

THE Ophthalmological Society of the United Kingdom has issued the following report:

The Ophthalmological Society of the United Kingdom, having had its attention called to the fact that the Worshipful Company of Spectacle Makers proposes to include the subject of sight-testing in the examination for its diploma, and to give certificates of efficiency therein, wishes to express its opinion that, while approving of any measures which tend to increase the efficiency of opticians in their technical work, it considers that it would be misleading and dangerous to the public to countenance any proposal to certify as competent to advise and prescribe for defects of vision any one who has not had an efficient medical and surgical training.

A diploma such as the Worshipful Company of Spectacle Makers proposes to grant may lead the public to believe that its possessor is competent to diagnose and treat diseases of the eye, and thus grave consequences might follow.

Errors of refraction often occur in association with diseases of the eye. The mere correction of the former by means of spectacles would ignore a condition which might destroy sight, or even leave the life of the patient in danger.

Moreover, many errors of refraction can only be accurately measured after the local use of a drug, which should only be employed or prescribed by a medical man, since its indiscriminate use is calculated to excite one of the gravest diseases to which the eye is liable.

Finally, on general grounds it is undesirable and dangerous to encourage the public in the belief that affections of any organ of the body can be safely treated by any one unacquainted with its anatomy and physiology, and with the various morbid conditions to which it is liable.

JOHN TWEEDY,
President.

July 8th, 1904.

DURNESS PARISH COUNCIL AND THEIR MEDICAL OFFICER.

IN the Edinburgh Court of Session on July 6th, Lord Kincairney was informed that the actions of suspension and interdict and reduction, which arose out of the alleged illegal dismissal by the Durness Parish Council of Dr. Macara from his office as medical officer and public vaccinator for the parish of Durness, Sutherlandshire, had been settled

extrajudicially, and joint minutes were lodged by the parties taking the cases out of Court. The following are the agreed terms of settlement of the action:

1. The Council to rescind their minutes of November 6th and 20th, 1903; to withdraw the threatened dismissal of Dr. Macara, and to reinstate him in his office. Although the Council cannot legally enter into any binding contract in regard to the future duration of Dr. Macara's tenure of office, it is honourably understood between all parties concerned that the Council will not seek to procure Dr. Macara's dismissal in consequence of anything that has hitherto transpired, and that the settlement now come to is bona fide intended to end all ill-feeling between the parties.
2. The Council to withdraw all charges made against Dr. Macara, and, in particular, their charge of "breach of duty" against him in respect of the dictated certificate regarding Barbara Macpherson, and to acknowledge Dr. Macara's bona fides in all his actings throughout the present dispute.
3. Dr. Macara to render quarterly an account for medicines and medical and surgical appliances supplied by him to paupers, and the same to be settled regularly by the Council.
4. The terms of settlement to be communicated to the *Scotsman* and *Glasgow Herald* newspapers, and the local press, and to the *Lancet* and BRITISH MEDICAL JOURNAL.
5. The Council to pay the account of expenses incurred to Messrs. Inglis Orr and Bruce, W.S., in connexion with these actions as between agent and client, or in the option of the said Inglis, Orr, and Bruce, the sum of £100 in full of all their said expenses.
6. The foregoing terms of settlement to be minuted verbatim in the minute book of the Council, and to be given legal effect to by formal resolutions of the Council. The minute book containing said minutes and resolutions engrossed therein to be exhibited to Dr. Macara, who may make copies or extracts therefrom.
7. On the foregoing terms being implemented both parties will consent to the action of suspension and interdict, and the action of reduction being dismissed by joint minute, and Dr. Macara will consent to waive his claim to damages against the Council in respect of his attempted dismissal.

The Medical Defence Union, of which Dr. Macara is a member, has acted for him in this matter.

THE RELATIONS OF MEDICAL OFFICERS OF HEALTH TO THEIR PROFESSIONAL COLLEAGUES.

DR. J. J. GORHAM, M.D., D.P.H. (London, S.W.) writes: As I am the person who elicited from the Local Government Board the order (a copy of which I enclose) laying down the relations of medical officers of health to their professional colleagues, may I be allowed to state that their ruling on the occasion referred to was understood to imply that the medical officer of health should ask the medical attendant for his permission to visit the case, and, if possible, to obtain his co-operation—that is, his presence—on the occasion? This was the reading given to it by the implicated sanitary authority to whom it was addressed, and from the date of the order, February 2nd, 1894, the stolen visits of the medical officer of health ceased, which was, in fact, the subject of my complaint to the Local Goverment Board.

[COPY.]

Local Government Board,
Whitehall, S.W., 2nd February, 1894.

Sir,—I am directed by the Local Government Board to advert to your letter of the 28th December last, with reference to the representations which have been made by Dr. Gorham, of Garstang, as to the action of the medical officer of health for the Garstang Rural Sanitary District in visiting certain of his patients. As regards the general question of the medical officer of health's duties in connexion with cases of infectious disease, I am to state that the Infectious Disease (Notification) Act, 1889, makes no difference in those duties, but merely extends his information as to the existence of cases of infectious disease. His duties as regards such cases are prescribed by Article 18 (6) of the Board's Order of 23rd March, 1891, of which a copy is enclosed.

It appears to the Board to be undesirable that the medical officer of health should in general undertake a personal diagnosis of the notified cases in order to test the accuracy of the certificates. In some cases, as, where there is reason to doubt the good faith of the certifier, or where the disease is one which in itself is, or owing to the attendant circumstances threatens exceptional danger to the community, it may be desirable that the medical officer should make a personal diagnosis, but it must be remembered that this can only be done with the consent of the patient, or those having charge of the patient, and that the medical practitioner in charge of the case should always be communicated with, and his co-operation, secured, if possible.

I am, Sir,
Your obedient servant,
(Signed) ALFRED J. ADRIAN,
Assistant Secretary.

J. Noble, Esq.,
Clerk to the Rural Sanitary Authority
of the Garstang Union.

FEES TO MEDICAL WITNESSES

DR. J. G. MOFFATT (Keighley, Yorkshire) writes: In answer to your invitation for facts relating to the manner in which his new scale of medical fees is being carried out, I beg to submit the following: In May of this year I had to attend at Leeds Assizes—20 miles from where I reside—to give evidence in a case of manslaughter. I was there two whole days, and was paid one guinea per diem. I also was allowed my railway fare. When I remonstrated with the taxing master he merely assured me that he never allowed a medical witness more than a guinea a day, and that the two guinea fee was only intended for very special cases. I may also add that he was unable to furnish me with an instance of what he meant by "very special cases."

AGREEMENTS WITH LOCUM TENENS.

C. E. C. L.—(1) The first matter is closed. As C. E. C. L. did not give his whole time during the principal's illness, three guineas a week was a reasonable payment. (2) C. E. C. L. cannot enforce the engagement, but if he failed to obtain employment during the time for which he was engaged, or if the remuneration he got was less than that to which he would have been entitled under the engagement, he might, if so advised by his solicitor, claim in the county court, a portion, or the whole of the latter, as damages for breach of contract on the part of the principal.

THE ADMINISTRATION OF ANAESTHETICS BY DENTISTS.

M.D. would be glad to know whether a Licentiate of Dental Surgery of the Royal College of Surgeons of England is entitled to administer nitrous oxide gas or any other anaesthetic for dental operations?

*** There is no law to forbid anyone administering an anaesthetic, but a coroner's jury might take a strong view of any one not being a registered medical practitioner who was so unfortunate as to lose his patient.

INSTRUCTIONS FOR TREATMENT AFTER VACCINATION.

F. W. F.—We can see no objection to our correspondent having the instructions printed and giving a copy to each of his patients, but he must take care that they are not used for any other purpose.

THE METHODS OF SOME SPECIALISTS.

W. W. S.—We do not think the BRITISH MEDICAL JOURNAL could publish the names of offending specialists without in the first place making an exhaustive inquiry into the facts and afterwards running the risk of legal proceedings.

RELATIONS WITH HOMOEOPATHS.

F. E. C.—We suppose times have changed since the period to which our correspondent refers; at any rate, for many years past consulting surgeons have been in the habit of meeting homoeopaths without incurring the fate of the distinguished surgeon alluded to by our correspondent.

OBITUARY.

JOHN BIRKETT, F.R.C.S.,

Consulting Surgeon, Guy's Hospital.

WE regret to announce the death of Mr. John Birkett, at his residence, Sussex Gardens, Hyde Park, London, on Wednesday, July 6th. He was in his 90th year, having been born on April 14th, 1815, at Hackney. He was the only child of John and Mary Birkett, and was educated at private schools, until his entry at the medical school of Guy's Hospital in 1831. After a course at Guy's and at Paris he became a member of the Royal College of Surgeons of England in 1837, and was elected to the Fellowship of the College in 1844. At the time of his death he and Sir John Simon were the two senior Fellows, and it is of pathetic interest that when this fact was mentioned by the President of the College at the Fellows' dinner on Thursday, July 7th, Mr. Birkett had already passed away.

He married in 1845 Miss L. M. Janson, of Stamford Hill, and had ten children, seven boys and three girls, of whom five sons and one girl survive. Mrs. Birkett died some years ago. Two of their sons played in the English football teams in International matches. Mr. Birkett was early attached as Demonstrator of Anatomy to Guy's Hospital, and in 1848 was living at Broad Street Buildings, in the City. He was at that time, also, Fellow of the Linnaean Society, and had edited von Behr's *Human Anatomy*. In that year, too, he gained the Jacksonian Prize for his dissertation on diseases of the mammary gland, male and female, and the treatment thereof. It was published as a book in 1850; and quickly brought him into repute as one of the highest authorities on the diseases of the gland. In 1855 he published a pamphlet on *Adenocele of the Mammary Gland*; and in 1870, in Holmes's *System of Surgery* appeared his essay on "Diseases of the Breast," probably about the best of the many which in some thirty years he wrote.

He gradually moved up the staff of Guy's Hospital. In 1854 he was already Surgeon to the hospital, and Lecturer on Anatomy in its medical school: Fellow of the Royal Medical and Chirurgical Society, and Corresponding Member of the Société de Chirurgie de Paris. He was then living at Wellington Street, Southwark, but removed to Green Street, Grosvenor Square, in 1856. He resided there for forty years, removing, after his retirement from practice in 1896, to Sussex Gardens. For years he was Joint-Lecturer on Surgery at Guy's; he retired from the active staff in 1875, at the age of 60, and was shortly afterwards appointed Consulting Surgeon.

At the Royal College of Surgeons, too, John Birkett had a distinguished career. He was elected a member of the Council in 1867; was Hunterian Professor of Surgery and Pathology in 1870-1; Vice-President; and finally President of the College in 1877. He also filled the post of Examiner in Surgery for many years; examined in the same subject at different times for the Royal College of Physicians and the University of London; and was for a while the Government Inspector of Anatomy. He was a Fellow of the Medical Society of London,

the Zoological, the Royal Horticultural, and the Botanical Societies, and was a member of the Medical Society of Copenhagen. He was, moreover, twice Master of the Ironmongers' Company.

In addition to the papers already mentioned he published about twenty others in the *Guy's Hospital Reports* and essays on Injuries of the Pelvis, and Hernia, in Holmes's *System of Surgery*. He also contributed several other papers to the *Medico-Chirurgical Transactions*.

Altogether Mr. Birkett was a man of wide culture, a careful and painstaking surgeon, a neat and dexterous operator, and well abreast of the surgery of his day. He was averse, however, to many of the bold operations which antiseptic surgery has since his day rendered possible and comparatively safe. Nevertheless, the cleanliness of his hands and instruments was such that his operations usually did remarkably well, and his excisions of very large breasts often united without suppuration. He was an excellent botanist, well versed in the names and classification of English plants, so that it was a delight to be his companion for a country ramble. In stature he was above the middle height; he was precise in speech and dress, of active habits and great industry, and gave one the impression that he was one of "Nature's gentlemen."

His death was due to an apoplectic seizure which occurred four days before his death, and he was buried at Highgate on Tuesday last.

We are indebted to Sir H. G. Howse, a colleague of the late Mr. Birkett, for the following appreciation:

By the death of Mr. John Birkett, at the advanced age of 89 years, the profession generally—and Guy's Hospital in particular—loses one more of its connecting links with the old pre-antiseptic days of surgery. He resigned the Surgeoncy of Guy's Hospital in 1875, at the age-limit of 60 years, so that we are carried back nearly 30 years in considering the condition of surgery when Mr. Birkett was an active practitioner of our profession. But even at that time he was considered by his colleagues and his students as the type of conservatism in surgery. Thus during the time of his connexion with Guy's Hospital he never recognized any of the newer developments of abdominal surgery, and even regarded ovariotomy as an unjustifiable operation. In joint surgery, though his natural conservatism led him to keep suppurating joint cases in his wards for many months, or even years, for a chance cure by rest and the natural processes, he would never perform an excision of a joint except in the case of the elbow-joint, which he has often told me he regarded as the only successful excision in surgery. All the joint cases in the lower extremity were treated simply by rest and opening abscesses when they appeared. Again, vein surgery was quite unknown in his wards. To say nothing of varicose veins of the lower extremity, even a simple case of varicocele, if sent into his wards, was discharged again immediately, with nothing done for the relief of the patient. The risk of some septic trouble supervening was regarded as too considerable in those days to justify any operative proceeding. It must be admitted that in much of this he was not different from his contemporaries, and though it may seem almost incredible to the younger surgeons of the present generation, yet much of what I have written merely marks the revolution brought about by the possibilities of aseptic surgery.

On the other hand in his own special subjects of study, Mr. Birkett was not only abreast, but sometimes even in advance, of his times. The subject of breast tumours was one of those in which he was greatly interested, and in which his opinion was sought by his contemporaries. Not only was his opinion of great weight, but he was also a remarkably successful operator in this class of case. Hernia and the surgery of the arteries were also subjects upon which he wrote, and in which he was interested. Indeed, hernia operations may be said to be the only form of abdominal operations which he thought justifiable. His paper in Holmes's *System of Surgery* on this subject will be remembered as a model of what such writing ought to be. In the subject of amputations he also took great interest, and although he never, during his surgeoncy at Guy's, could be persuaded that there was anything in antiseptic surgery, yet he had the great merit of believing in cleanly operative surgery. I have a very lively recollection, at the time of my house-surgeoncy, of watching Mr. Birkett personally scrub and clean up the limb for an amputation of the thigh he was about to perform. This was at a time when a very high mortality usually attended this amputation, and yet this case did perfectly well, though the ward itself was not in a satisfactory condition, as we should understand it nowadays. I could not help contrasting this case with another I had seen a few months before in which a surgeon had personally dressed a very foul stump just immediately before performing a hare-lip operation, with the natural result that the hare-lip took on a form of gangrenous inflammation, and the little patient's life was very nearly lost.

In breast surgery, Mr. Birkett was in some respects considerably in advance of his time. He always entertained the belief that much more could be done in the case of recurrences, even when severe, than was generally attempted. I recollect well, some years after his resignation, his sending to me an old case of his own in which he was greatly and personally interested. He took the trouble to see this patient several times after the operation, and his warm thanks and congratulations upon the result, which was much more favourable than had seemed possible, have left a very pleasant recollection in my mind, as coming from a man who was not generally easily moved to express his feelings.

As a lecturer and teacher Mr. Birkett was exact and methodical, and his note taking in the wards was a model of what such should be. His lectures, however, were minute to an extreme degree, in that respect very like the published lectures of Sir Astley Cooper, upon which they were no doubt modelled, and hence they became tedious, and failed to impress the students of his generation.

After his retirement Mr. Birkett retained for very many years his interest in science, and his was a familiar figure at the lectures of the Royal Institution until his increasing deafness made his attendance upon them no longer profitable.

He has passed away at a ripe age—a figure which will be long remembered by the older Guy's Alumni.

WILLIAM ALEXANDER McKEOWN, M.D.,

Senator of the Royal University in Ireland: Lecturer in Ophthalmology and Otology, Queen's College, Belfast.

THE news of the sudden death of Dr. McKeown was received throughout Ulster with sincere and widespread regret. Dr. McKeown had been in somewhat failing health latterly; some years ago he suffered from severe influenza. Last year he visited Canada in company with Dr. N. Barnett, of Belfast, and although he left in poor health, he rapidly regained his strength, and from morning to night during his stay his activity was immense—visiting schools, interviewing people—and the information gained was enormous. Apparently he had quite recovered, but during the last few weeks he had several syncopal attacks, and on the morning of July 9th one of these occurred and soon proved fatal.

William Alexander McKeown was a son of the late Mr. McKeown of Ballyclare, and was 60 years of age. At first he was intended for the legal profession, but entered as a medical student at the Queen's College in 1865. He had a most distinguished collegiate and university career; he was a scholar in his second and third year, and a double scholar in anatomy and in medicine and surgery in his fourth—a most unusual distinction. He graduated in 1869, securing the gold medal and first class honours. He then studied ophthalmology in Paris for a year. On his return to Belfast he began practice as a specialist, and was appointed Surgeon to the New Ulster Eye, Ear, and Throat Hospital, where he worked steadily till his death, although during the last few years he received considerable help in his hospital work from his assistants, Dr. Killen and Dr. Allen. His labours soon brought him full reward; his name became well known throughout the north of Ireland, and the original nature of his methods and brilliant results obtained him a high place among European ophthalmic surgeons. His first original contribution to eye surgery was the introduction of the magnet for the removal of steel particles from the interior of the globe, and many local medical men remember well the first rough but effective apparatus which Dr. McKeown used. His chief work in ophthalmic surgery was his treatment of unripe cataract; the method enabled many people to resume work and wage-earning without the dreary waiting for ripeness. Quite lately he published a *Treatise on Unripe Cataract and its Successful Treatment by Operation, with Tables of 152 Cases*. Contributions also from time to time appeared in the medical periodicals both on eye work and also on ear and throat surgery. The chief these are, Case of Oesophagotomy,[1] this was one of the first operations performed; New Method of Treatment of Relaxation of the Membrana Tympani[2]; Treatment of Cataract by Intraocular Injection.[3]

[1] *Transactions of the Clinical Society*, 1878.
[2] *Dub. Journ. Med. Sci.*, 1880-1.
[3] BRITISH MEDICAL JOURNAL, 1884.

Dr. McKeown's work has been appreciated by both home and foreign authorities. He was President of the Ophthalmology Section of the British Medical Association at the annual meeting in Belfast in 1884, of the Ulster Medical Society, and of the North of Ireland Branch of the British Medical Association; and when the Lectureship on Ophthalmology and Otology was created he was appointed to that post, and held it till his death. Men from all parts of the world have been found in the operating theatre of the Ulster Eye Hospital to watch the operation for unripe cataract. Quite recently he was informally invited to be present at Lucerne and demonstrate his methods by Dr. Haab's assistant, who visited him in Belfast and promised him a warm and hearty reception, and a few hours after his death a letter arrived from Dr. Reik, of Baltimore, regretting that Dr. McKeown could not be present at the meeting of the American Ophthalmological Association in Atlantic City in July, and asking him to address the Ophthalmic Society of Baltimore, and to operate in the Johns Hopkins Hospital. Attention was drawn to the value of his operation in India lately by Dr. Elliott, who published the results of 800 consecutive cases of cataract operation by the irrigation method with brilliant success.

Latterly, Dr. McKeown gave much attention to educational matters. He regarded education in all its branches, from primary to university, as the great question of the day; he had clear and pronounced opinions, and never wavered or hesitated in expressing them openly and decisively. He studied the national school system in Ireland, and exposed many of its glaring faults, urgently demanding complete freedom from all sectarian or clerical influence, and independence of the teachers from the clergy of all denominations, with more suitable and fuller recompense for their labours. His remarks brought him into conflict with ministers of various denominations. He strongly opposed the establishment of a Roman Catholic university, and condemned it as a retrograde measure, subversive of the best interests of higher education. When the Royal University Graduates' Association was founded some years ago to safeguard the interests of the university, Dr. McKeown was elected President, and held the post till his death.

In estimating Dr. McKeown's character and ability, one is impressed with the conviction that Nature narrowly escaped making a great man. Many believe he would have been a great man, if time and opportunity had been favourable. He was a man of strong personality and force of character; he could do nothing by halves. It is said that one day when the University question was at its height, he spent close on £5 in telegrams from his private purse. The Association for the Reform of Education has at present a Bill drafted dealing with the whole question of education in Ireland from the primary education of the national schools to university education in Trinity College and the Royal University, much if not all of it from Dr. McKeown's information and according to his ideas; it probably may never be adopted, but it will serve as a source of knowledge and a reference for many years to come. One secret of his success and failure was his intensity; he could not admit in practice that there were two sides to a question; there was a right and a wrong, and he unhesitatingly went for what he considered the right without delay or hesitation. In private life he was considerate and thoughtful.

He leaves a widow and one child, with whom much sympathy is felt, and a brother, Dr. David McKeown, who practises in Manchester.

We regret to see the announcement of the death at Zagazig, from bubonic plague, of Dr. Noel Unsworth, Assistant Inspector of the Sanitary Department of the Egyptian Government. Dr. Unsworth, who received his medical education at St. Thomas's Hospital, obtained the diplomas of M.R.C.S., L.R.C.P., in 1899, and went to Egypt as assistant surgeon to the Kasr-el-Aini Hospital, Cairo, and was actively employed during the cholera epidemic of 1902. More recently he had been engaged on plague duty in the Delta. He showed the first symptoms of the disease on July 7th, and died on July 10th.

We regret to announce the death of Mr. John Green, which took place at his residence in the Waterloo Road, Wolverhampton, on June 30th, at the age of 62. He was apparently in his usual health until five days before his death, and attended his patients up to that time, when he was seized with an apoplectic fit from which he never recovered. Mr. Green was well known in Wolverhampton and held in high esteem there, not only for his professional skill, but also for his great personal qualities. He was educated at Queen's College, Birmingham, where he won prizes in anatomy, physiology, medicine, and surgery. He took the diplomas of M.R.C.S.Eng. and L.S.A. in 1868. He was Medical Officer of Health for Heath Town, and was the Honorary Medical Attendant of the members of the Wolverhampton Wanderers' Football Club, in whose success he had taken great interest for over twenty years. Mr. Green was a widower and leaves one daughter.

UNIVERSITIES AND COLLEGES.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The Fellowship of the College.

Since the adoption of the method of voting for members of the Council by balloting papers sent through the post the number of Fellows attending the annual meeting for the election has gradually become much smaller, and it was felt that the Fellows were deprived of the many advantages to be derived from the meeting and from inspection of the additions to the museum which are yearly placed together for exhibition on that day. The Council consequently, acting on a happy suggestion of the President, Mr. John Tweedy, decided this year to revive the annual dinner of Fellows, which had been for some years past in abeyance, and to allow it to be held in the College itself.

The first dinner under this arrangement took place on July 7th, after the declaration of the results of the voting for the Council. It was held in the library; and more than 100 Fellows were present. Mr. Tweedy, who presided, was supported by, among others, Sir T. Smith, Bart., Sir Frederick Treves, Bart., Mr. Jonathan Hutchinson, Mr. Christopher Heath, Sir H. G. Howse, Mr. Henry Morris, and Sir Alfred Cooper. The result was so very satisfactory in every way that it is hoped the dinner will become an annual function. The toasts of "The King," and of "Queen Alexandra, the Prince and Princess of Wales, and the other members of the Royal Family," proposed by the President, were received with great applause; the Fellows not forgetting that His Majesty has always taken great interest in the College of Surgeons; and that the first time he went out after his illness two years ago was to go to that College and inspect the pathological specimens in the museum illustrating the disease from which he had been saved.

The President then rose and said:

"I have the honour to propose the toast of 'The Fellowship of the Royal College of Surgeons of England." In doing so I desire on behalf of my colleagues in the Council and myself to express our gratification in seeing so large a gathering of distinguished Fellows; and you will, I am sure, on your part join me in offering a hearty welcome to Sir Frederick Treves, who has just returned to us from his distant travels. On an occasion like this, it is especially agreeable to remember that the experience and skill of a Fellow of this College were instrumental, two years ago, in preserving to the nation the most valued life within the empire. As this is the first large gathering of Fellows since that momentous event, we avail ourselves of the opportunity to offer to Sir Frederick Treves our warmest congratulations on its happy issue. You are probably aware that of late years, in consequence of the option of recording votes for members of the Council through the medium of the Post Office, the personal attendance of the Fellows has steadily diminished. While it is easy to find an explanation of this it is itself a contingency which is to be regretted, and which it is desirable, if possible, to counteract. Many of you will remember that the meeting of Fellows at the annual election of members of the Council was a pleasant social function, bringing together old acquaintances, reviving agreeable memories, renewing old friendships, and serving as an occasion, sometimes perhaps, of reconciliation, always, I trust, of kindliness and goodwill. Nor were these meetings without a beneficial influence upon the College itself. The corporate and academic life was quickened, and the interest of the Fellows in the affairs of the College and in the ever-increasing treasures of the museum was stimulated, and the links which bind us to the College and to each other were multiplied and strengthened. These advantages we desire to preserve; and we also desire, by adding the power of harmony and numbers which your presence and sympathy supply, to enhance and

extend the authority and influence of the College in its relations both to the surgical profession and to the State. I would fain hope, therefore, that the festival which we inaugurate to-night may be continued and repeated year by year as long as the College itself and its Fellowship shall endure. *Esto perpetua!* To-day we may be said to celebrate the sixty-first anniversary of the Fellowship. All the original Fellows of the year 1843 have passed away, the last dying only last year at a ripe old age. Of the Fellows elected in the year 1844 only two remain, Mr. John Birkett[1] and Sir John Simon. The Order of Fellow has, therefore, now become historic. The great originators of the Order and many of those among its first members were men distinguished in their day and generation, and they have left behind them lasting memorials of high endeavour and of great accomplishment. Sir Benjamin Brodie, writing in his autobiography of the original purpose of the Fellowship, states: 'The object of this institution is to ensure the introduction into the profession of a certain number of young men who may be qualified to maintain its scientific character, and will be fully equal to the higher duties as hospital surgeons, teachers, and improvers of physiological, pathological, and surgical science afterwards.' You know as well as I how worthily our predecessors realized these great purposes, and you are yourselves living testimony to their reality and power. To maintain the scientific character of the surgical profession; to be equal to the duties of hospital surgeons; to become teachers and improvers of physiology, pathology, and surgery—what ambition could be more praiseworthy? To what nobler ends may any man devote the highest faculties of mind and body? Gentlemen, the Fellowship of our College has from the first been a beacon of surgical light and truth—a symbol of all that is greatest and best in British surgery. It is for you and for me, and for every Fellow of this College, to do all within our will and power to ensure that the Fellowship, as represented in and by us, and by those who shall succeed us, shall continue to be worthy of its origin and of our ancestors. We have a great inheritance. Let us guard it with a jealous pride, and let us ever be mindful of the honour and dignity of our Order and all that it implies of culture, of character, of knowledge, and of power."

Sir Thomas Smith, the senior Fellow present, replied on behalf of the Metropolitan Fellows.

Dr. Thomas Savage, replying for the Provincial Fellows, said that he thought the College stood for science, art, and charity, and that it had had a great share in the enormous advance in surgery which had occurred in recent years. But, though individual Fellows passed away, the College remained, and exemplified the motto of the sister college, "Life is short, art long, and judgement difficult." He proposed the toast of "The President," *primus inter pares*.

The President said, in reply, that the confidence and goodwill of the College as manifested towards himself had touched him deeply; and that the devotion to duty of the different members of the Council had always greatly impressed him. The success of the dinner was due to the Honorary Secretaries of the Dinner Committee, Mr. C. T. Dent and Mr. C. H. Makins, and he drank to their health.

Mr. Dent and Mr. Makins returned thanks. The company subsequently adjourned to the adjacent rooms in the College, where the chief additions to the museum during the past twelve months were on view.

During dinner the band of the Coldstream Guards, under the leadership of Lieutenant J. Mackenzie Rogan, performed a selection of music in the Gallery of the Library.

UNIVERSITY OF DUBLIN.

THE following degrees were conferred on June 30th:

Doctor of Medicine.—C. B. Benson, H. St. M. Carter, D. Gray, H. F. Johns, R. D. R. Sweeting, H. Crossle (*in absentia*).

Bachelor of Medicine, Surgery and Obstetrics.—H. M. L. Crawford, H. St. M. Carter, C. J. Coppinger, D. Gray, A. W. Goldsmith, H. T. Marrable, G. B. M'Caul, F. C. Newland, G. W. Wade, J. G. Wallis, T. Wilson.

ROYAL UNIVERSITY OF IRELAND.

THE following candidates have passed the First Examination in Medicine:

J. B. Aitkin, T. P. Carroll, J. K. P. Clarke, M. Connell, V. L. Conolly, Gertrude C. Corscadden, N. Cunningham, G. Deery, E. P. Dewar, C. Dickson, W. P. Dunne, B.A., M. P. Fitzgerald, H. J. Grant, E. J. Harty, J. Horan, J. C. Johnson, T. Kennedy, P. J. Keogh, J. Keyms, A. Kidd, W. C. M. Lewis, W. P. MacArthur, S. W. McCombe, T. C. MacGowan, M. J. McGrath, M. McNiff, H. H. MacWilliam, P. J. Mockler, K. F. Mulligan, U. J. G. Mulligan, D. F. Murnaghan, H. Newman, P. H. O'Connell, W. M. J. O'Connor, W. D. O'Kelly, W. F. O'Regan, A. Patton, J. F. Rahilly, A. H. Rentoul, R. H. Robinson, J. J. Sheil, J. A. Sinton, W. Speedy, R. S. Taggart, G. J. W. Tierney, W. Tyrrell, B. A. West, J. M. Williams, J. A. L. Wilson.

Of the above candidates the following qualified for the further examination for honours in the subjects set after their names. Those qualified in two or more subjects may present themselves for the Honour examination in all subjects: J. K. P. Clarke, Zoology; C. Dickson, Chemistry; W. P. Dunne, B.A., Zoology and Physics; M. P. Fitzgerald, Botany; H. J. Grant, Chemistry and Physics; J. C. Johnson, Botany, Chemistry, and Physics; J. Keyms, Physics; A. Kidd, Botany; W. C. M. Lewis, Chemistry and Physics; W. P. MacArthur, Chemistry; H. H. MacWilliam, Botany, Zoology, Chemistry, and Physics; K. F. Mulligan, Botany, Zoology, and Chemistry; P. H. O'Connell, Physics; W. D. O'Kelly, Botany, Zoology, Chemistry, and Physics; A. H. Rentoul, Botany and Zoology; R. H. Robinson, Botany and Chemistry; J. J. Sheil, Physics; J. A. Sinton, Botany, Zoology, and Physics; B. A. West, Botany and Physics.

Sanitary Science.—The following candidate has passed the examination for the diploma: D. J. Collins, M.B. B.Ch. B.A.O.

UNIVERSITY OF MANCHESTER.

DR. A. L. GRIFFITH has been appointed Lecturer in Clinical Ophthalmology.

End of the Summer Session.

The lectures and most of the practical work at the Medical School of the University came to an end on July 9th, and now there is the turmoil of examinations. The Universities of Manchester and Leeds will probably work together at this period in the purely medical examinations for the last time. A very large number of candidates—over six hundred—sat for the examination conducted by the Joint Matriculation Board of the three northern universities, Manchester, Liverpool, and Leeds.

UNIVERSITY OF BIRMINGHAM.

Congregation.

A CONGREGATION was held on July 9th in the Town Hall. The Principal, Sir Oliver Lodge, in a short speech, mentioned the cordial reception which had been accorded to a deputation from the Birmingham University and other universities and colleges in the country by the Chancellor of the Exchequer, and the promise that the endowment which had been raised privately and locally, in this and other great cities in the country, should be nationally recognized and supplemented by increased Government support. In October next a residental hostel for lady students and other ladies who lived away from home was going to be instituted. The money necessary to make a start had nearly all been subscribed, and a house in Hagley Road, Edgbaston, had been taken for this purpose. Miss Fry, daughter of ex-Justice Sir Edward Fry, had been elected Lady Warden. The Council had determined to erect on part of the Mason College site a club and recreation room for male students which should be worthy of the University. The work of clearing the site would be commenced during the summer vacation. The Council had guaranteed the sum of £2,000 towards the building, and £4,000 or £5,000 would have to be raised by private subscriptions. The club when once started would be a self-supporting institution.

Ingleby Lecturer.

Dr. James Kerr, Medical Officer of Health to the London Educational Authority (County Council) has been appointed Ingleby Lecturer for the year 1905, and will deliver two lectures during the summer of that year on the subject of Feeble-minded Children.

Special Lecturers.

The Council has decided to establish a class of special lecturers amongst the members of the Junior Staff. These appointments will be personal and not attached to any department or subject, but will be conferred upon those lecturers who have gained special distinction in any branch of their department. Such special lecturers will not be exempt from taking part in the general work of their departments under the direction of their professors. Amongst the names of those chosen for this distinction are those of two Lecturers in the Medical Faculty, namely, W. Wright, M.B., F.R.C.S., Special Lecturer on Osteology, and James Miller, M.D., M.R.C.P.Edin., Special Lecturer on Bacteriology. Both these gentlemen will be the recipients of the degree of Doctor of Science at the next Congregation, this distinction having been awarded to them after Thesis.

Demonstrator in Anatomy.

Mr. J. H. Watson, M.B., B.S., F.R.C.S.Eng., has been appointed Second Demonstrator in Anatomy, a post which has just been created.

Russell Memorial Prize.

This prize has been awarded to A. E. R. Weaver, who has also secured the Queen's Scholarship at the recent Final Examination for the degrees of Bachelor of Medicine and Bachelor of Surgery.

M.D. Examination.

The following new regulations have been approved, and will come into force after October 3rd:

Every candidate for this degree shall present a thesis embodying observations in one of the departments of the medical curriculum enumerated below, and in addition he will be required to pass a general examination in Principles and Practice of Medicine. It will be in the power of the Board of Examiners to exempt a candidate whose thesis is of exceptional merit from any part of these examinations. A thesis may be presented in any of the following departments of study: (1) Anatomy, including Comparative Anatomy; (2) Physiology; (3) Human or Comparative Pathology; (4) Bacteriology; (5) Pharmacology; (5) Therapeutics; (6) Medicine; (7) Mental Diseases; (8) Preventive Medicine or Public Health; (9) Toxicology; (10) Legal Medicine; (11) Midwifery.

The following is a list of the successful candidates at the June examinations in the Faculty of Medicine:

M.D.—*J. D. Stanley and J. Lloyd.

M.Ch.—*J. T. Hewetson and *†. Wilson.

M.B., Ch.B.—A. W. Nuthall, †T. W. Beazeley, †C. Y. Flewitt, S. C. Lawrence, †W. A. Loxton. Class I: A. E. R. Weaver (Scholarship). Class II: W. Cook, C. K. Gettings, and L. G. J. Mackey.

M.B., Ch.B., Fourth Examination.—Class I: N. J. L. Rollason, (Scholarship). Class II: R. W. Aitken, R. H. Astbury, E. L. Bunting, F. T.

[1] As will be seen by reference to p. 154, Mr. Birkett had died on the previous day.

* Official. † Past Student of Birmingham Medical School.

H. Davies, Helen G. Greener, L. L. Hadley, W. C. Horton, W. C. Houghton, H. B. Jones, T. H. Ravenhill, H. H. Warren, and F. Wilkinson.

Third Examination.—Class. I.—F. Wilkinson, (Scholarship). Class II.—R. W. Aitken, R. H. Astbury, J. S. Austin, E. L. Bunting, F. T. H. Davies, Helen Gertrude Greener, L. L. Hadley, L. C. Hayes, A. C. Hinks, W. C. Horton, W. C. Houghton, H. B. Jones, T. H. Ravenhill, W. R. S. Roberts, N. J. L. Rollason, S. G. Walker, H. H. Warren.

Second Examination.—Class II.—J. Dale, (Scholarship), J. Fenton, N. C. Penrose, D. P. Smith.

Passed in Part of the Examination.—E. J. Boome (Comparative Anatomy and Physiology), H. C. H. Bracey (Anatomy), E. T. Gaunt (Comparative Anatomy and Physiology), J. K. Gaunt (Comparative Anatomy and Physiology), A. C. Hincks (Comparative Anatomy), P. J. Mason (Comparative Anatomy and Physiology).

First Examination.—Class II.—J. Adams, Charlotte Bailey, H. G. Browning, J. S. Edwards, G. H. C. Mold, G. B. Moon, A. M. Pickup, J. L. Ritchie, H. H. Sampson, H. C. Terry, Ethel Annie Waldron, E. V. Whitby.

Bachelor of Dental Surgery.—H. P. Pickerill.

Diploma in Public Health.—Parts I and II.—T. Dawson.

TRINITY COLLEGE, DUBLIN.

THE following scholarships have been awarded to the persons mentioned:

Surgical Travelling Prize: J. S. Joley. Fitzpatrick Scholarship: J. G. Wallis. Medical Scholarships: (1) In Anatomy and Institutes of Medicine—T. O. Graham, Trinity College; F. O. B. Ellison (Stewart). (2) In Physics, Chemistry, Botany, and Zoology—A. J. Powell, Trinity College; G. F. Graham (Stewart). The Purser Medal has been gained by F. R. Coppinger.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE prize-winners for the summer session are as follows: Barker Anatomical Prize, £31 10s: C. Cooper. Mayne Scholarship, £15: A. N. Crawford. Carmichael Scholarship, £15: J. Prendiville. Gold and Silver Medals in Operative Surgery: Gold—J. S. Dunne: Silver—P. D. Sullivan and J. C. Murphy (equal). Stoney Memorial Gold Medal in Anatomy: J. Prendiville. Practical Histology: H. C. Carden, First Prize (£2) and Medal; D. Adams, Second Prize (£1) and Certificate. Practical Chemistry: R. H. F. Taaffe, First Prize (£2) and Medal: F. C. Warren, Second Prize (£1) and Certificate. Public Health and Forensic Medicine: M. Cohen, First Prize (£2) and Medal; T. H. Massey, Second Prize (£1) and Certificate. Materia Medica: F. C. Warren, First Prize (£2) and Medal; J. B. Kelly; Second Prize (£1) and Certificate. Biology: J. C. S. Day, First Prize (£2) and Medal; T. C. Boyd and H. W. White (equal). Second Prize (£), and Certificate.

CONJOINT BOARD IN IRELAND.

FIRST PROFESSIONAL EXAMINATION.—Candidates have passed this Examination as undernoted:

Honours.—T. C. Boyd, T. P. Cormack, J. C. L. Day, C. Hyland, G. Patton, W. G. Ridgway, A. Sheridan, H. W. White.

In all Subjects.—G. E. Beggs, G. Collins, J. J. Cuskelly, G. A. Finegan, J. A. J. Flannery, M. J. Hawkshaw, F. N. Holden, D. J. Hurley, H. W. Kay, W. J. P. Lilles, D. J. Lyne, T. J. Lyons, J. McHugh, J. T. McKee, P. Maguire, J. P. Morgan, T. N. Neale, E. Ryan, M. J. Saunders, H. B. Sherlock, J. M. Smyth, C. H. Stringer, W. C. Townsend.

Completed Examination.—S. W. Hudson, T. J. McDonnell.

APOTHECARIES' HALL OF IRELAND.

THE annual dinner of the Apothecaries' Hall of Ireland was held at the Gresham Hotel, Dublin, on June 25th. After the usual loyal toasts had been honoured, Sir Charles Cameron proposed prosperity to the Apothecaries' Hall of Ireland, which he said dated back to the year 1746, and now existed under a charter granted in 1701, by which it was bound to take none but the purest drugs. Both as an examining body and as a commercial enterprise it was, he said, doing good work, and was likely ere long to be still more prosperous. The health of the guests was proposed by Lieutenant-Colonel Adye Curran, and responded to by Dr. Royer, of Philadelphia.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

SEWAGE DISPOSAL.

STAFFORDSHIRE.

ABOUT two years ago works were constructed for treating one-sixth of the dry weather flow of the sewage of Hanley, in Staffordshire, on biological lines. We have now received from Dr. Reid, the county medical officer, a special report on the results obtained.

The object was to determine by experiment on a large scale whether the septic tank method followed by a single filtration would yield satisfactory results with the sewage in question. For many years past the method of disposal at Hanley has been by chemical precipitation, followed by land treatment. The land available, however, is of a clayey nature, most unsuitable for the purpose, and the area is quite inadequate. It was perfectly evident, therefore, that, if the present outfall was to be retained, all idea of land treatment, even as a supplement to other methods, must be discarded. An existing tank was therefore adapted to provide for twenty-four hours' storage of the sewage preparatory to its passage on to the filters at a rate of 200 gallons per yard for twenty-four hours. The total area of the experimental filters amounts to half an acre, consisting of a circular quarter-acre bed fed by the Scott-Moncrieff distributor, and a rectangular quarter-acre bed fed by the distributor designed by Mr. Willcox. The total depth of the filtering material in both cases is 4 ft. 6 in. Both the distributors were specially designed, and so adjusted that each yard of filter received its quantum of sewage at seven minutes' intervals. It should be added that, as regards the quality of the sewage, the analytical records indicate that it is an ordinary domestic sewage not of a very strong character, the dilution being accounted for by the discharge into the sewers of a considerable volume of mine drainage water, as well as a certain amount of stream water from a small tributary stream, which—having received some sewage from Hanley and the adjoining borough of Burslem—communicates with the outfall sewers.

Treatment in the "septic" tank effected a purification of 64 per cent. and 62 per cent. in the organic ammonia and oxygen absorbed figures respectively, while as regards the filter effluents these percentages varied from 94 per cent. and 91 per cent. in the case of the large grain section of the circular filter to 97 per cent. and 94 per cent. in the case of the finest grain section, the last-named figures being practically the same in the corresponding section of both filters. As regards the degree of nitrification effected, the results are practically the same in the case of all sections of both filters.

Dr. Reid illustrates his report by a graphic diagram, showing the degree of putrification as estimated by the reduction in oxygen absorbed and organic ammonia, and the amount of "nitric nitrogen" in the effluents, and he concludes "that in every case the degree of purification which has been effected is excellent." He adds, "the good quality of the work done exceeds that of any plant of which I have had experience, neither do I know of any published records from similar works, which will approach those of Hanley as regards the degree of purification effected."

BERKSHIRE.

Dr. Trew Cattell has made a study of the systems of sewage treatment in the rural towns of Berkshire, and has related the result in a brief pamphlet entitled, *Sewage Disposal in Berkshire*.[1] At Reading and Abingdon broad irrigation is alone used, the crude sewage being applied directly to the land; at Wallingford and Windsor the sewage is irrigated over the land and soaks in, and there is no apparent effluent. In the five remaining towns of Bracknell, Didcot, Maidenhead, Newbury, and Wokingham bacterial methods are in use. In these latter places septic tanks are the bacterial methods most favoured, and the results appear to be, on the whole, successful. Dr. Cattell discusses the advisability of settling tanks, and even mild precipitation where septic tanks are not used prior to passing sewage on to contact beds. The pamphlet contains a description of each sewage disposal works in the county, with analyses of the effluents, and the writer illustrates the importance of effectual and skilled management in order to secure good results. He concludes as follows:

> Where small communities are to be dealt with, and where land can be obtained at a comparatively small cost, irrigation should not be rashly given up before it has been thoroughly tried under a good manager. If it then fails it is time to think of other methods. On the other hand, when we deal with large cities, in the neighbourhood of which land is costly, difficult to obtain, and possibly of a nature not well suited for irrigation, then the bacteriological treatment of sewage is without doubt the best system to adopt. A rough analysis of sewage effluents should be made daily, and the result entered in a book kept for that purpose. We believe that these views would receive very general acceptance from those having experience of sewage treatment in rural districts.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,567 births and 3,948 deaths were registered during the week ending Saturday last, July 9th. The annual rate of mortality in these towns, which had been 13.8, 13.2, and 13.5 per 1,000 in the three preceding weeks, was 13.5 again last week. The rates in the several towns ranged from 2.6 in Handsworth (Staffs.), 3.2 in Hornsey, 6.3 in King's Norton, 6.9 in Tottenham, 7.1 in Leyton, 7.7 in Cardiff, 8.4 in Walthamstow, and 8.5 in Coventry to 17.7 in Gateshead, 17.9 in Manchester, 18.0 in South Shields, 18.2 in Liverpool, 19.1 in Oldham, 19.9 in Stockport, 21.1 in Burton-on-Trent, and 21.4 in Huddersfield. In London the rate of mortality was 12.9 per 1,000, while it averaged 13.7 per 1,000 in the seventy-five other large towns. The mean death-rate from the principal infectious diseases in the seventy-six towns was 1.7 per 1,000; in London this

[1] London: Phillimore and Co. 1904. (Demy 8vo, pp. 24. 1s.)

death-rate was equal to 1.5 per 1,000, while among the seventy-five large provincial towns the rates ranged upwards to 3.2 in Plymouth and in Blackburn, 3.5 in St. Helens, 3.6 in Burnley, 3.9 in Salford, 4.1 in Liverpool, 4.8 in Stockport, 5.4 in Birkenhead, and 7.7 in Huddersfield. Measles caused a death-rate of 1.4 in Walthamstow and in Plymouth, 1.6 in Salford and in Burnley, 1.9 in Oldham, 2.1 in Liverpool, 2.4 in St. Helens, 3.6 in Birkenhead, and 5.5 in Huddersfield; scarlet fever of 1.3 in Aston Manor and in York; diphtheria of 1.6 in Grimsby; whooping-cough of 1.4 in Birkenhead, 2.0 in Great Yarmouth; 2.3 in Warrington, 2.8 in Blackburn, and 3.0 in Burton-on-Trent; and diarrhoea of 1.3 in Gateshead, and 1.4 in Southampton. The mortality from "fever" showed no marked excess in any of the large towns. Five fatal cases of small-pox were registered in Stockport and one in Gateshead, but none in any other of the large towns. The Metropolitan Asylums Hospitals contained 71 small-pox patients on Saturday last, the 9th inst., against 80, 83, and 74 on the three preceding Saturdays; 10 new cases were admitted during the week, against 7, 16, and 10 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1,630, 1,620, and 1,031 at the end of the three preceding weeks, had further risen to 1,685 at the end of last week; 260 new cases were admitted during the week, against 206, 199, and 254 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, July 9th, 991 births and 524 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.0, 15.9, and 16.3 per 1,000 in the three preceding weeks, declined again to 15.8 per 1,000 last week, but was 2.3 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 12.3 in Perth and 13.0 in Aberdeen and in Leith, to 16.5 in Glasgow and 17.5 in Dundee. The death-rate from the principal infectious diseases in these towns averaged 1.9 per 1,000, the highest rates being recorded in Glasgow and Aberdeen. The 253 deaths registered in Glasgow included 2 which were referred to small-pox, 2 to measles, 13 to whooping-cough, 4 to "fever," and 10 to diarrhoea. One fatal case of small-pox, 6 of whooping-cough, 2 of "fever," and 2 of diarrhoea were recorded in Edinburgh; 3 of diarrhoea in Dundee; 4 of whooping-cough and 2 of diarrhoea in Aberdeen; and 2 of measles in Leith.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, July 9th, 549 births and 315 deaths were registered in six of the principal Irish towns, against 528 births and 303 deaths in the preceding period. The mean annual death-rate in these same towns, which had been 20.1, 16.4 and 18.4, per 1,000 in the three preceding weeks, rose slightly to 18.6 per 1,000 in the week under notice, this figure being 5.1 per 1,000 above the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 11.3 in Londonderry and 15.0 in Limerick, to 19.2 in Cork and 20.2 in Waterford. The death-rate from the principal zymotic diseases during the same period and in the same six Irish towns averaged 0.9 per 1,000, or 0.3 higher than during the preceding week, the highest figure, 1.6, being recorded in Belfast, while Limerick and Waterford registered no deaths under this heading at all. From small-pox no deaths were recorded in any part of Ireland, while the total deaths from whooping-cough fell to 6. From measles 2 deaths each were recorded in Belfast and Dublin; from scarlet fever, 2 in Belfast; from diphtheria, 1 each in Cork, Londonderry, and Belfast; and from enteric 3 deaths in Belfast.

SMALL-POX HOSPITAL ACCOMMODATION IN NORTH STAFFORDSHIRE.

DR. C. H. PHILLIPS, Medical Superintendent of the Infectious Diseases Hospital, Bucknal and North Staffs Small-pox Hospital, Bagnall, has prepared a brief memorandum on the requirements in the way of small-pox hospital accommodation in North Staffordshire. He states that at least 75 per cent. of the population over 10 years old have not been revaccinated, and that until the public accept vaccination and revaccination as the only remedy to stamp out small-pox, it will continue to prevail. It therefore becomes an imperative necessity to provide suitable hospitals for sufferers. In the case of the Bagnall Hospital, 350 small-pox cases have been admitted within the last twenty-six months, and patients have been continually under treatment except during eight weeks of the total period. The hospital is jointly owned by fifteen different sanitary authorities, urban and rural, and only one of these has not sent in any patients. Dr. Phillips advises that permanent instead of merely temporary arrangements should now be made. The structures which he recommends include an administrative block, a laundry block, an observation ward, a discharging block, a destructor, a mortuary, and a steam disinfector. All these recommendations are thoroughly sound under the conditions described by Dr. Phillips, and it is to be hoped that the sanitary authorities concerned will have the good sense to follow his advice.

HOSPITAL AND DISPENSARY MANAGEMENT.

ABUSE OF HOSPITALS.

WE are informed that the East London Medical Society, at a meeting held on May 17th, decided to memorialize various hospitals on the subject of the abuse of hospital charity. Deputations from the Society have met the House Committees of two of the East London hospitals. The matter was discussed, and it was promised that steps would be taken to diminish as far as possible certain abuses the existence of which was admitted.

The abuses that the Society complained of more particularly were:

1. The part payment system at hospitals.

2. The insufficiency of the scrutiny of patients to prevent treatment at hospitals of persons whose means render them unsuitable for relief at a charitable institution.

The Society also pointed out that the hospital authorities are almoners of the charitable public; that it is their bounden duty to see that the money entrusted to them is applied in relieving deserving cases; that to expend it otherwise is to commit a grave breach of trust, and that to expend it on those whose means render them unfit for such relief is a course calculated to pauperize the recipients and sap their independence of character. The Society contends that a proportion of the funds subscribed by the charitable public is wasted on unsuitable subjects, and they intend to press for reform at all institutions where these abuses exist.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

AYR DISTRICT ASYLUM.—Assistant Medical Officer, resident. Salary, £120 per annum.

BELFAST: MATER INFIRMORUM HOSPITAL.—House-Surgeon, resident. Salary, £50 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House-Surgeon. Salary, £80 per annum and notification fees.

BRIGHTON THROAT AND EAR HOSPITAL, Church Street. Non-resident House-Surgeon. Salary at the rate of £75 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park.—Two House-Physicians, resident. Salary at the rate of £30 per annum.

DORCHESTER: DORSET COUNTY HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Surgeon; (2) House-Physician. Salary, £20 for six months, and £2 10s. washing allowance for (1) and (2). (3) Surgeon Dentist.

MANCHESTER: VICTORIA UNIVERSITY.—Junior Demonstrator in Physiology.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Soho Square.—Honorary X-ray Specialist.

NORTHAMPTON: BERRY WOOD ASYLUM.—Locum Tenens for three months. Terms 4 guineas weekly.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon. Salary at the rate of £70 per annum.

STIRLING DISTRICT ASYLUM, Larbert.—Assistant Medical Officer, resident. Salary, £150 per annum.

STOCKPORT INFIRMARY.—House-Surgeon, resident. Salary, £100 per annum.

TOXTETH PARK TOWNSHIP.—Assistant Medical Officer of Workhouse and Infirmary. Resident. Salary, £100 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House-Surgeon. Salary, £50 per annum.

WEST SUSSEX COMBINED DISTRICT.—Medical Officer of Health. Salary, £650 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum

WORCESTERSHIRE GENERAL INFIRMARY.—House-Surgeon, resident. Salary, £80 per annum.

APPOINTMENTS.

BLAIR, Charles, M.D.Durh., F.R.C.S.Eng., Surgeon to the Western Ophthalmic Hospital, London.

DAWSON, E. N. de Vere, L.R.C.P. and S.Edin., L.F.P.S.Glasg., Additional Surgeon of Kimberley, Cape Colony, resident at Warrenton.

DICKIE, J. L., M.B., C.M.Aberd., Medical Officer and Public Vaccinator to the Fetteresso Parish Council.

GRIFFITH, Wynne, L.R.C.P. and S.Edin., Medical Officer for the Pwllheli District of the Pwllheli Union.

KIRBY, S. J. J., M.D.Brux., L.R.C.P.Edin., M.R.C.S.Eng., Medical Officer to the Oulton Broad Urban District Council.

KITCHING, C. A., M.R.C.S., L.R.C.P.Lond., District Surgeon at Mossel Bay, Cape Colony.

SHAW, F. C., M.B., M.Ch.Syd., Government Medical Officer and Vaccinator at Wyalong, N.S.W.

SUTHERLAND, William, M.B., Ch.B., Resident Surgeon, Tuapeka Hospital, Lawrence, N. Z.

SUTTON, C. S., M.B., Ch.B.Melb., Additional Anaesthetist, Women's Hospital, Melbourne.

TAYLOR, C. Gerrard, M.D.Cantab., D.P.H., Medical Officer of Health of the Urban District of Finchley.

VOELCKER, Arthur Francis, M.D., F.R.C.P.Lond., Examiner in Medicine, Society of Apothecaries.

WEBB, F. E. A., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Parish of Cambridge.

DIARY FOR NEXT WEEK.

POST-GRADUATE COURSES OF LECTURES.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Infantile Syphilis.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—Demonstrations will be given at 4 p.m. as follows: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical.

Mount Vernon Hospital for Consumption and Diseases of the Chest, 7, Fitzroy Square, W., Thursday, 5 p.m.—The Administration of Anaesthetics in Affections of the Respiratory System.

North-East London Post-Graduate College, Tottenham Hospital, N., Thursday, 4.30 p.m.—On Anaesthetic Difficulties, General and Special.

St. Peter's Hospital, Henrietta Street, W.C.—Lecture-Demonstrations will be given at 3.30 p.m. as follows: Monday, Cases in the Wards; Thursday, Electric Illumination of the Urethra and Bladder (Urethroscopy, Cystoscopy).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

CROCKER.—On July 13th, at Gort House, Petersham, Surrey, the wife of J. H. Crocker, M.D., of a daughter.

DIXON.—On July 12th, at Lynwood, Haven Green, Ealing, the wife of R. Halstead Dixon, M.B.Lond., M.R.C.S.Eng., L.R.C.P., of twin daughters.

MCCLINTOCK.—On July 9th, at The Chestnuts, Loddon, Norfolk, the wife of Lawson Tait McClintock, M.B., Ch.B., of a son.

WAY.—On July 9th, at Kenilworth Lodge, Southsea, the wife of Montague Way, M.R.C.S.Eng., L.R.C.P.Lond., of a son.

WILLIAMSON.—On July 9th, at Clerklands, Horley, the wife of Charles F. Williamson, M.R.C.S.Eng., L.R.C.P.Lond., L.S.A.Lond., of a son.

MARRIAGES.

CORY—KEANE.—On July 5th, at Cape Town, Harold Myrie Cory, M.R.C.S., etc., of Quthing, Basutoland, to Sibyl Fane Keane, of 20, New Street, West Bromwich.

SAUNDERS—BROOMHEAD COLTON-FOX.—At St. Peter's, Harrogate, on July 9th, 1901, by the Rev. Charles Ellis, M.A., Vicar of Wales, assisted by the Rev. F. Rothwell, Dean of Harrogate, Dr. M. B. Saunders, The Beeches, Wales, to Mildred Ethel Broomhead-Colton-Fox, of Wales Court, Sheffield.

DEATHS.

COGHILL.—On June 14th, at her residence, 4, Sunnyside, Prince's Park, Liverpool, Agnes Irene Sinclair Coghill, M.B., C.M.Edin., the beloved wife of Percy de G. Coghill, and youngest daughter of the late Dr. J. G. Sinclair Coghill, Ventnor, Isle of Wight. Also, on the same date, the infant son of the above, aged 14 days.

MANN.—On May 13th, at Kisumu, British East Africa, Harold E. Mann, M.R.C.S., L.R.C.P., D.P.H., Medical Officer, East Africa Protectorate, son of the late Major-General Gother F. Mann, C.B., R.E., and of Mrs. Gother Mann, "Seldown," Hamilton Road, Boscombe, aged 39.

VAUGHAN.—On June 30th, Alfred Ellis Vaughan, aged 41, L.R.C.P., L.R.C.S.Edin., L.F.P.S. and L.M.Glasg., of Crewe Cottage, Crewe, the son of Dr. William Wedge Vaughan, and grandson of Dr. Thomas Vaughan.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National)—
EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

INCOME TAX.

TAXPAYER writes: I have had a demand from the local surveyor of taxes to be furnished with my gross income for the last three years, together with details of my professional expenditure for the same period. Can he legally ask this? I have filled up and returned to him the customary forms.

*** The surveyor cannot, at the present stage, insist on the production of the details asked for. The commissioners, however, are not bound to accept our correspondent's return and, if they decide not to do so, and increase the assessment, it will be necessary to produce details of receipts and expenditure in order to obtain a reduction. "Taxpayer" would therefore be well advised to comply with the surveyor's request, as if he is satisfied he will doubtless advise the commissioners to assess on the figures submitted to him, and thus obviate the inconvenience attaching to an appeal.

ANSWERS.

H. E. B.—From inquiries we have made we fear that there is no institution other than the union workhouse where an idiot child of poor parents would be taken care of at so early an age as 2 years.

INCOME TAX.

ENGLISH is not entitled to be assessed on the three years' average on succeeding to a practice after being an assistant. The change operates to destroy the average, and his return should be based on the results of his first year in practice on his own account.

LETTERS, NOTES, Etc.

"FOUL CONVALESCENT HOMES."

MR. GEORGE PERNET (London, W.) writes: When I visited the Boserup Sanatorium (tuberculosis) near Roskilde (Denmark) a couple of years ago I noticed a very good way of keeping the ventilating top sashes of the windows open. They were opened by means of a detachable winder or handle, which could be used for all the windows in the usual way, but the winder was strictly in the keeping of the medical superintendent. It was found necessary to employ this method as the patients were in the habit of closing the ventilating squares, especially at night.

*** This method of securing that the windows used for ventilation are not tampered with exists in many hospitals and sanatoriums, but the key is generally found in the custody of the nurse.

HOW TO EAT BANANAS.

DR. A. H. BAMPTON (Ilkley) writes: The question more accurately stated would be "When are bananas in a wholesome condition to be eaten?" But the advice to which I take exception is that given by your expert correspondent to eat bananas when they are black! I have been in most parts of the world, and have always seen bananas plucked and eaten only when the fruit is a rich yellow. To eat bananas when they are black is to eat decayed fruit. I regard the eating of fruit in which putrefaction and decomposition is evident as most dangerous, especially in this hot weather. I have put the question to those of my friends who have had a long and varied experience abroad, and they concur with me that bananas should not and are not eaten when rotten and black in the countries where bananas are grown. The fruit rapidly turns black when ripened in the ill-ventilated and gas-ladened atmosphere of small shops. The most refreshing way of eating bananas is to crush them with a fork, squeeze orange juice and sprinkle sugar over them. That is the way we ate them in the West Indies. Many mothers give their children half-ripe plaintains as a cure for constipation, in ignorance of what a ripe banana is like or how it should be eaten. The consequence is that the child eats large lumps of the fruit, which produces catarrh and constipation of the bowels with other digestive troubles. A banana is more digestible and quite palatable if cooked in its jacket for ten minutes in a hot oven. To use a classic expression, they are allowed to "stew their own juice," and are then eaten, like an alligator pear, with a spoon.

POLYPHARMACY.

DR. JAMES HAMILTON (Chelsea) writes: Instead of taking up two inches of your valuable space in sneering at the complexity of a prescription, "Sceptic" might have learnt a lesson. The judicious combination of active principles and pleasant drugs was more known to the older practitioners, who had to prepare their own medicines, and knew the uses of each item to make an effective and palatable mixture than to the present-day doctors, who have to trust to manufacturing druggists. Good reason might, I think, be shown, for each ingredient in the prescription quoted—valerian sumbul and bromide to calm the nervous system; arsenic to prevent bromide rash, and also act as a nerve tonic; gentian and strychnine as a general tonic and contractor of stomach and intestines to prevent flatulency; lavender, orange, and chloroform water to make palatable to eye and taste, and also act as carminatives, and with advantage another item might have been added, namely, a flavouring syrup such as Henderson's or mori suc. Then the prescription would have been an ideal one for the nervous troubles of women at the climacteric—a charge of small shot or a mitrailleuse is your correspondent likes, but effectual. What are the old mixtures that have been handed down from generation to generation and have stood the test of time but just such combinations, chemically defective as many appear. Iron and digitalis are still used. Black draught in the original contained about twelve ingredients. Chlorodyne about as many. Parrish's syrup, McDade's mixture, P. cret aromat, and many others are as complicated, and are still largely prescribed. "The principle of prescribing several soothing medicines in one prescription is a good one," as an old surgical writer, whose work is still read and consulted, wrote many years ago.

LETTERS, COMMUNICATIONS, ETC., have been received from:
A Dr. A. G. Auld, London; Messrs. Andrus and Andrus, London; Dr. T. Clifford Allbutt, Cambridge; Messrs. Arthur and Co., London. **B** Dr. G. B. Batten, London; Mr. E. A. Bevers, Oxford; Dr. F. E. Batten, London; Sir T. L. Brunton, London; Messrs. R. and J. Beck, London; Surgeon-General A. F. Bradshaw, C.B., Oxford; Messrs. Burroughs, Wellcome and Co., London; Messrs. Baillière, Tindall and Cox, London; Mr. P. Bainbridge, Accrington; Mr. A. St. L. Burke, Dudley; Mr. H. N. Barnett, Belfast; Dr. E. Birt, Wakefield; Dr. H. Bramwell, Cheltenham; Dr. A. H. Brampton, Ilkley; Mr. A. S. Barling, Lancaster. **C** C. E. C. L.; Dr. A. E. Carver, Torquay; Dr. W. Collier, Oxford; Miss E. G. Cook, Ashford; Dr. S. D. Clippingdale, London; Dr. C. Coombs, Bristol; P. J. Cammidge, M.B., London; Dr. G. A. Charlton, Liverpool; Dr. J. W. Cousins, Southsea. **D** Dr. H. E. Davison, Monkseaton; Diabetic: Duryea Company, Manager of, Coventry; Dr. W. R. Dawson, Finglas. **E** Mr. J. F. Elliott, Verulam, Natal; Eyemes; E. A. W. English, M.B., Hounslow. **F** T. C. Fox, M.B., London; Mr. G. Ferguson, Sprucedale, Ont.; Dr. R. Fielding-Ould, London. **G** General Press Cutting Association, Manager of, London; Mr. G. L. Gomme, London; Mr. W. F. Goodrich, Watford; Messrs. Graham and Shepherd, Sunderland; Dr. A. Greenwood, Blackburn; Dr. B. J. Guillemard, Capetown; Dr. J. J. Gorham, London; General Practitioner; Mr. K. W. Goadby, London. **H** Dr. C. F. Harford, Leyton; Mr. C. C. Hartley, Stockport; Mr. F. Haydon, London; Mr. P. E. Hill, Cricklowell; Mr. F. Hallwright, Durban; Dr. J. Hamilton, London; Dr. J. S. Haldane, Oxford. **K** Messrs. F. Krasa and Co., London; Mr. C. T. Kingzett, London. **L** Messrs. Lee and Son, London; Lathina Mat Company, Managers of, Fleet; Dr. A. J. Laird, Crewe. **M** M. D.; Dr. H. C. Martin, Wroughton; Mr. W. Meakin, Leamington; Dr. D. McKenzie, Leytonstone; E. Malam, M.B., Oxford; Dr. A. W. Mackintosh, Aberdeen; C. A. Mercier, M.B., London; M.B., M.A.; Mr. W. J. Morton, London. **O** Dr. H. O'Neill, Belfast; Old Member of B.M.A.; Obstetrical Society, Secretary of, London. **P** Dr. H. G. Pesel, Fastby; Dr. H. B. M. Plummer, West Bromwich; Photographic Association, Secretary of, London; Mr. J. H. Potter, Porlock; Practitioner; Dr. W. A. Potts, Birmingham. **R** Dr. W. Ramsden, Oxford; Dr. W. B. Ransom, Nottingham; W. Robson, M.B., Sittingbourne; Mr. H. M. Raven, Broadstairs; Mr. C. C. Richards, Ogden, Utah; Mr. A. Roberts, Reading; Mr. H. Rainsford, Billingbay. **S** W. W. Sinclair, M.B., Ipswich; S. D. C.; Mr. H. P. Symonds, Oxford; Dr. T. Schott, Bad Nauheim; Dr. R. H. Steen, Chichester; Mr. W. D. Stevenson, Farnborough. **T** Dr. W. Tate, London; A. Thomson, M.B., Oxford; Mr. R. F. Tobin, Dublin; Tax-payer; Tyro; Miss M. Thorne, M.D., London. **V** Mr. W. Van Praagh, London; G. E. Vos, M.B., London. **W** Messrs. Wills, Limited, London; Dr. A. A. Warden, Paris; Mr. W. B. Winckworth, Taunton; Dr. B. C. A. Windle, Birmingham; Dr. R. F. C. Ward, Harrogate; Mr. E. L. Walford, London; Dr. E. W. A. Walker, Oxford; Dr. L. Williams, London; Dr. A. J. Whiting, London; Mr. C. W. T. Woods, London; Mr. F. E. A. Webb, Cambridge. **Z** Z.

BOOKS, Etc., RECEIVED.

Les Suggesteurs et la Foule. Par Dr. Pascal Rossi. Preface de M. le Professeur Henri Morselli. Traduit de l'Italien par M. le Professeur Antoine Gardair. Paris: A. Michaud. 1904. 3s. 6d.

L'Assassinat Médical et le Respect de la Vie Humaine. Par Fr. Guermonprez. Paris: Jules Rousset. 1904. 3s. 6d.

Über Luft und Lüftung der Wohnung und verwandte Fragen. Von Th. Oehmcke. München und Berlin: R. Oldenbourg. 1904. M.0.60.

The A.B.C. Instrument Check Book. Designed by A. C. S. Waters, M.R.C.S., L.R.C.P.Lond. March: Sharman and Co. 4d.

Municipal Shortcomings. A Series of Articles contributed to the "Liverpool Journal of Commerce." By T. Mydelton Shallcross. London: Elliot Stock. 1s.

Duryea Power Carriages: their History, Development, Construction, Management, and Care. Coventry: The Duryea Co. 1s

The Middlesex Hospital Reports of the Medical, Surgical, Obstetric, and Pathological Registrars for the year 1902. London: H. K. Lewis. 1904. 2s. 6d.

Die Fruchtabtreibung durch Gifte und andere Mittel. Von Professor Dr. L. Lewin. Berlin: August Hirschwald. 1904. M.10.

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Report
OF
SPECIAL CHLOROFORM COMMITTEE
OF THE
BRITISH MEDICAL ASSOCIATION.

THIRD REPORT OF PROCEEDINGS (1903-4).

(*For preceding Reports see (1901-2)* BRITISH MEDICAL JOURNAL, July 12th, 1902; *and (1902-3)* BRITISH MEDICAL JOURNAL, July 18th, 1903.)

INTRODUCTION.

1. The Committee, consisting of the PRESIDENT OF THE BRITISH MEDICAL ASSOCIATION, and CHAIRMAN OF COUNCIL *(ex officio)*, and Dr. BARR Dr. BRODIE, F.R.S., Dr. DUDLEY BUXTON (Honorary Secretary), Dr. H. RADCLIFFE CROCKER (Chairman), Professor DUNSTAN, F.R.S., Mr. A. VERNON HARCOURT, F.R.S., Sir VICTOR HORSLEY, F.R.S., Dr. W. J. MCCARDIE. Professor SHERRINGTON, F.R.S., was elected by a resolution of Council, July 30th, 1903.

2. The Committee was originally appointed by the Council at the annual general meeting of the British Medical Association, July, 1901 (BRITISH MEDICAL JOURNAL, July 20th, 1901). The following is the reference of the Council. Resolved:

That a Special Chloroform Committee be appointed to investigate methods of quantitatively determining the presence of chloroform in the air and in the living body.

The ultimate object laid before the Council of the British Medical Association by Sir Victor Horsley was to determine, if possible, what is the minimal dose of the drug which will secure an adequate anaesthesia for operations, and at the same time not endanger life.

3. The first work undertaken by the Committee (the results of which will be found in the two antecedent reports) was to examine critically the best-known methods of quantitatively measuring chloroform. Data will be found in these two reports for the quantitative determination of chloroform in air and liquids.

REPORT OF WORK DONE DURING 1903-4.

4. The Committee has met four times during the past year. As will be seen, the Committee has continued in the lines of last year, investigating the effects of small quantities of chloroform upon the isolated mammalian heart and the determination of chloroform in air and fluids.

5. Professor Sherrington and Miss Sowton (see Appendix I), pursuing their research initiated last session and reported in the BRITISH MEDICAL JOURNAL, July 18th, 1903, have during the past year arrived at further important results. Again, working with the isolated mammalian heart they have compared the effects produced by small doses of chloroform when perfusing the heart and exhibited in the following solutions. (1) In blood diluted less than 25 per cent. with "physiological saline"; (2) in blood serum, more or less diluted with physiological saline. (3) in blood diluted with upward of 25 per cent. of physiological saline; (4) in Locke's saline, that is, Locke's saline to which is added 0.1 per cent. dextrose; (5) in Locke's saline without the addition of the dextrose. As will be seen from the experiments of these observers chloroform when exhibited in blood produces a depressant effect on the heart less than one-twelfth of that produced when exhibited in saline in the same percentage strength. Two possible explanations are suggested for this remarkable fact: (*a*) Physiological saline solutions probably favour the heart's activity less than blood; (*b*) in equal quantities of chloroform dissolved in the two fluids the tension is greater in the saline than in the blood. Further, these observers record the important fact that when concentrations of chloroform are employed which produce permanent damage to the heart tissue, a very much lower concentration exhibited in saline inflicts the same degree of damage as a higher concentration of chloroform administered in blood.

6. Mr. A. Vernon Harcourt (Appendix II) has during the past year made a number of experiments and estimations with his inhaler. This inhaler has been employed by the Committee as furnishing a method of exhibiting chloroform in accurate percentage dosage. Mr. Harcourt reports that the valves now fitted are more reliable than those previously in use. He has further experimented to determine the exact shape and dimensions of the bottle to be used to contain the requisite quantity of chloroform. The one now adopted is conical; the pitch of the cone compensates with sufficient accuracy the change in level of the chloroform arising from its evaporation. As the depth of the fluid is lessened by evaporation the superficial area is increased, and therefore the same amount of chloroform will within a narrow error reach the patient. What this slight error is will be seen from Mr. Harcourt's report. Determinations of what variations result in the quantity of chloroform inhaled when the rate and depth of respirations are abnormal have also been made by Mr. Harcourt. These variations are shown to be slight. During rapid breathing, although more air passes over the surface of the chloroform, less weight of that anaesthetic is actually delivered to the patient. In slow and deep respiration the converse obtains. The practical importance of these determinations is obvious. It should, however, be noted that they do not affect the reading of the index of the instruction more than to the extent of 0.3 per cent. in the case of shallow breathing. This is self-compensated, as the patient takes in less of the anaesthetic.

7. Mr. Byles, Mr. Harcourt, and Sir Victor Horsley, in their report (Appendix III), deal with the estimation of chloroform dissolved in blood. In the course of their experiments the authors of this report found that, whereas chloroform could be recovered to the extent of from 95 per cent. to 100 per cent. when it was dissolved in water, in the case of blood or of blood in ureated solution, employed to keep the blood liquid, no such complete extraction was possible, even when heat was applied; in some of the experiments as much as 20 per cent. of chloroform being retained. Their observations appeared to indicate that blood possesses a specific power of retaining chloroform. To determine what constituent of blood acted in this manner a further series of experiments were undertaken, the method of peptonization being employed. It was then found that the corpuscular portion of the blood retains chloroform, but that to do so it is essential that the morphological integrity of the corpuscles be maintained. This, indeed, was shown by the fact that when the chloroform was added before "laking" it was retained, but if laking preceded the admission of the chloroform the recovery of the chloroform was approximately complete. The report concludes with an experiment, one of a series undertaken to determine the amount of chloroform in the blood of an animal in the various degrees of narcosis and at the instant of death from cessation of respiration. The amounts of chloroform recovered from blood withdrawn during the various degrees of narcosis are given. These correspond very nearly with the earlier observations of Pohl. The lethal dose was not more than double that requisite to induce anaesthesia. This, it may be remarked, is in exact accord with Snow's experiments made over half a century ago by methods which, of course, lacked the precision and accuracy of those employed by the authors of this report.

RESULTS OF WORK.

8. When it is considered how wide is the reference given and how difficult it has been proved to obtain absolutely accurate methods to be employed in their investigations, the Committee feels that although much has been already accomplished, yet there remains a great deal to be done in the future. To form any just idea of the importance of the results arrived at it is necessary to read the three reports already issued, both to obtain the sequence of the work and to see the direction in which it is trending. In the first place it may be said that the methods now being employed by the Committee have been fully tested, and may be accepted as accurate. A means has been found in Mr. Harcourt's inhaler to supply accurate percentages of chloroform to patients and for experimental purposes. The accuracy of the inhaler has been established by the determinations made during the past year. The actual effects of chloroform upon the tissues, certainly in the case of the heart, have been demonstrated, and the Committee thinks that the work of Professor Sherrington and Miss Sowton has increased our knowledge in many directions, especially in that they have shown how minute are the quantities required to bring about profound physiological effects.

It is probably not yet fully realized by the profession what extremely small quantities of chloroform are necessary to

produce adequate anaesthesia. In the second report this was stated to be from 1 per cent. to 2 per cent. of chloroform vapour in air. The experimental work of Professor Sherrington and Miss Sowton, supported as it is by the report of Mr. Byles, Mr. Harcourt, and Sir Victor Horsley, furnish experimental demonstration of this.

9. Work to be done. It is, however, impossible to avoid the recognition of the fact that much research has yet to be prosecuted. Professor Sherrington and Miss Sowton will, it is hoped, by pursuing their present methods, be able to ascertain the effects of chloroform when administered with such pathological blood conditions as occur in, for example, asphyxia, anaemia, leucocytosis, etc. A further and important part of the Committee's future work will consist of experiments to redetermine the amount of chloroform in the blood of animals in the different degrees of narcosis, including the moment of death (fifth degree) from ultimate failure of respiration. The first experiment of this series is recounted in the report presented by Mr. Byles, Mr. Harcourt, and Sir Victor Horsley.

DUDLEY W. BUXTON, Honorary Secretary.

APPENDIX I.

ON THE DOSAGE OF THE ISOLATED MAMMALIAN HEART BY CHLOROFORM.

BY C. S. SHERRINGTON, F.R.S., AND S. C. M. SOWTON.

PART II.

PERFUSION WITH BLOOD.

THE experiments we reported to the Committee twelve months ago on the action of $CHCl_3$ on the isolated mammalian heart dealt mainly with the exhibition of the drug in saline solutions. The experiments of the present report continue the previous series, but with the difference that their immediate object has been the determination of the effect of the chloroform when exhibited not in saline solution but in the blood itself.

METHOD.

The substitution of blood for saline solution has necessitated some modification of the arrangement for the delivery of the feeding fluid. With this reservation the method has remained as it was last year, essentially the method gradually elaborated by Newell Martin, Langendorff, Porter and Locke.

The blood used for perfusion can in our experience be perfused without detriment two or three times during the course of an experiment. A half litre will just suffice for a suitably prolonged perfusion. Under a pressure of 100 mm. Hg. and the conditions obtaining in our experiments an outflow of about 20 c.cm. per minute per 10 grams of heart muscle is above the average quantity.

We do not find either butcher's blood or the blood of the dog properly support the beat of the isolated heart of the cat. As our observations were to deal with dosage it was specially desirable that the heart beat serving as our test should be maintained under conditions as normal as possible. We have therefore supplied the test object—the cat's heart—with the blood specific to it—cat's blood.

The half litre of cat's blood was defibrinated when drawn, and then filtered several times through glass wool. Of this filtered blood a measured quantity—about 250 c.cm. was taken for the addition to it of a known weight of chloroform. The two portions of the filtered blood were then placed in two clean glass-stoppered vessels, A and B of Fig. 1, and these plunged in a water bath at 39° C., and there kept shaken by a machine driven by a motor, while the further preparations for the experiment were made and throughout the whole progress of the experiment itself.

Appropriate agitation of the blood to prevent sedimentation of its corpuscles was at first not successfully attained. The rocking and turning movements did not avail. Success was finally obtained by giving to a shaking frame on which the glass reservoirs were fixed a sudden jerk at each end of its excursion along a horizontal rail supporting it. With this apparatus the blood shows no trace of sedimentation during three hours.

The addition of chloroform to the blood has been made by adding to the freshly-filtered blood carefully measured quantities of 0.8 per cent. $CHCl_3$ in 0.8 per cent. NaCl solution. The perfusion fluid has therefore not been blood but blood diluted to a small extent, the actual extent in each case is given in the records. When the dilution with saline has not exceeded 25 per cent. we have in classifying our records dealt with the experiment as falling under the heading of perfusion with "blood." In the one case of the highest percentage of chloroform used in these experiments, namely, 0.5 per cent., the chloroform was added direct to the blood.

Fig. 1.

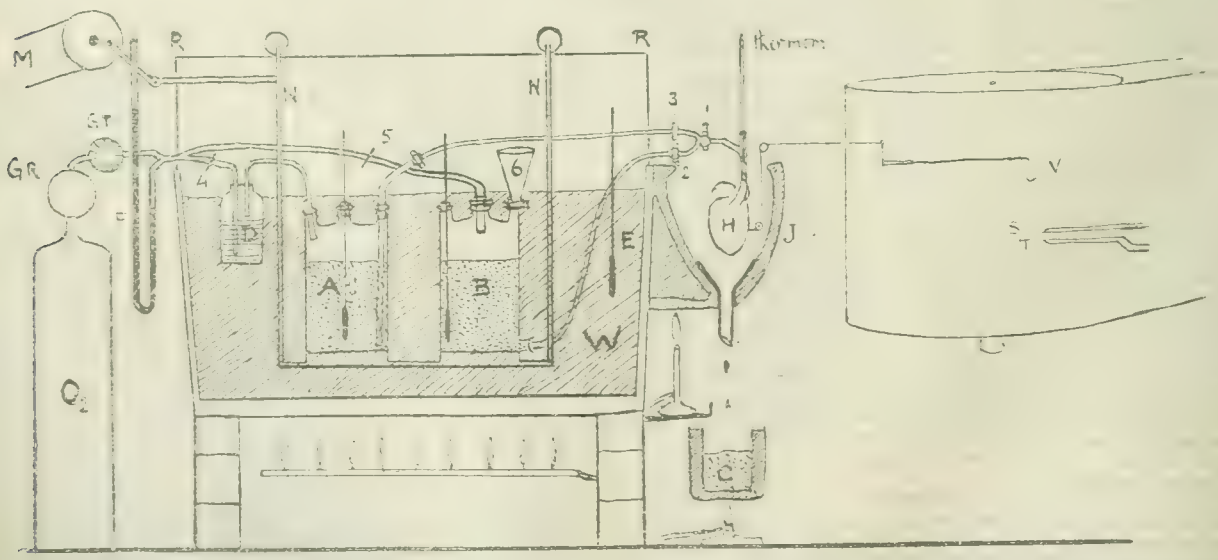


Fig. 1.—Disposition of apparatus for perfusion with blood and with blood and $CHCl_3$. A, flask containing defibrinated blood with known percentage of $CHCl_3$; B, flask containing defibrinated blood; C, collecting vessel for receiving blood perfused and keeping it warm; D, bottle containing $CHCl_3$ solution of same tension as that in A; E, thermometer in water bath; F, manometer showing pressure of delivery of the solution given to the aorta of the heart H; G R, gas regulator; G T, gas tap; H, heart; J, hot water jacket raising temperature of the moist air round the isolated heart; M, cord to motor, driving pulley to which the jointed rod fixed to the frame N N for shaking the blood reservoirs, A B, is attached by an eccentric; N N, the shaking frame; O_2, cylinder containing compressed oxygen; R R, the horizontal rail along which the shaking frame moves backwards and forwards; S, electric signal; T, electric time-marker, marking each fifth second; *thermom*, thermometer in aorta of heart, recording temperature of blood entering the coronary system; V, writing-point of ventricular lever; W, water in the water-bath warming the reservoirs A and B; 1, 2, 3, three-way taps; 4, 5, simple taps; C, funnel-shaped opening to the four-way bottle B, for returning blood to reservoir.

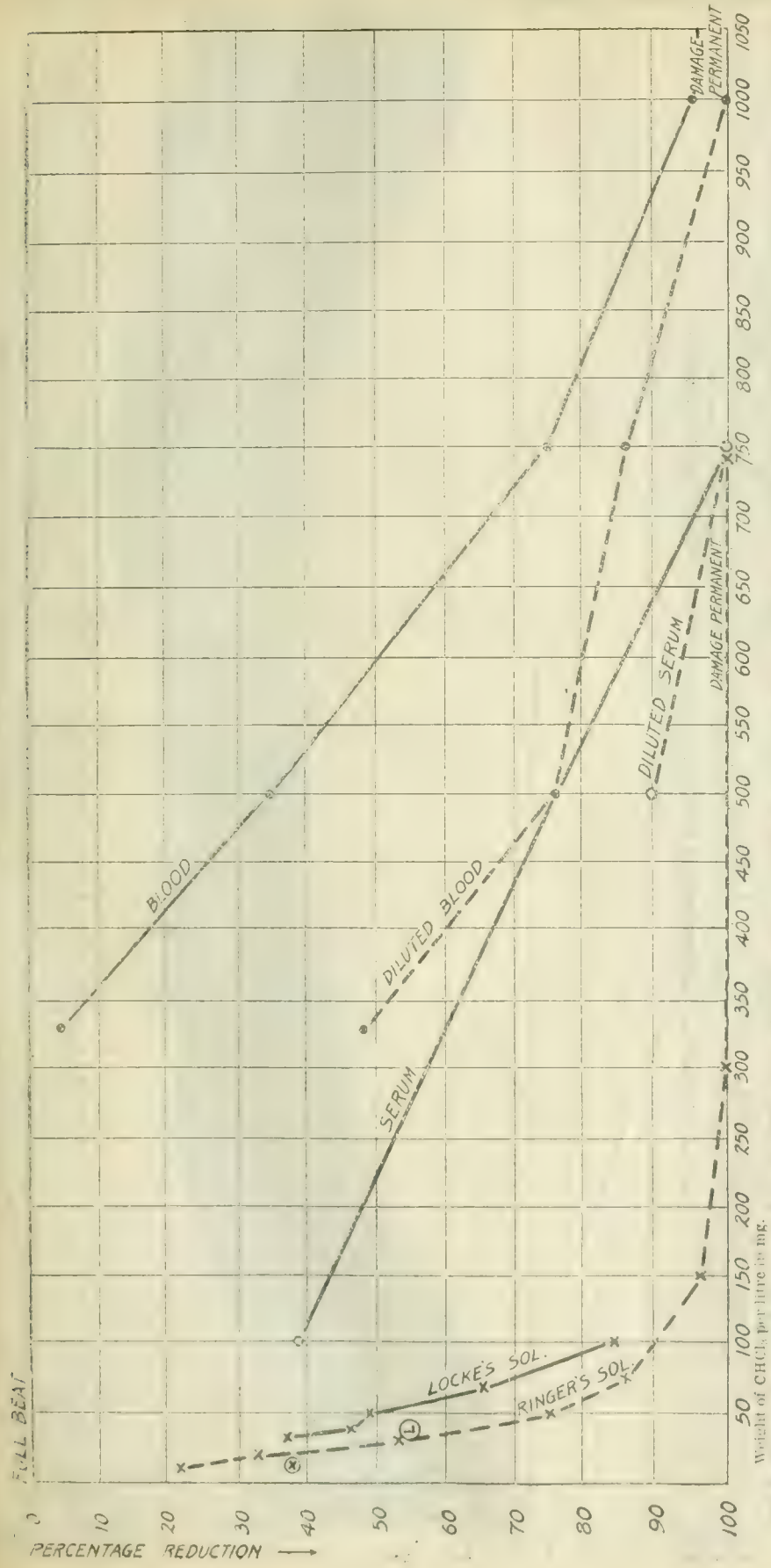


Fig. 2.—showing degree of depression of the heart's beat by various strengths of chloroform solution, made with blood, dilute blood, serum, dilute serum, Locke's solution, and modified Ringer's solution.

This was done by allowing the chloroform to drop direct into a weighed flask on the scale pan of the balance, the requisite weight of blood being also added on the balance. In this procedure a trace of precipitate is formed in that blood which first comes in contact with the pure chloroform; this trace of precipitation has not been found to embarrass the perfusion.

The admixing of the chloroform and blood has been made usually about 15 minutes before commencing the perfusion.

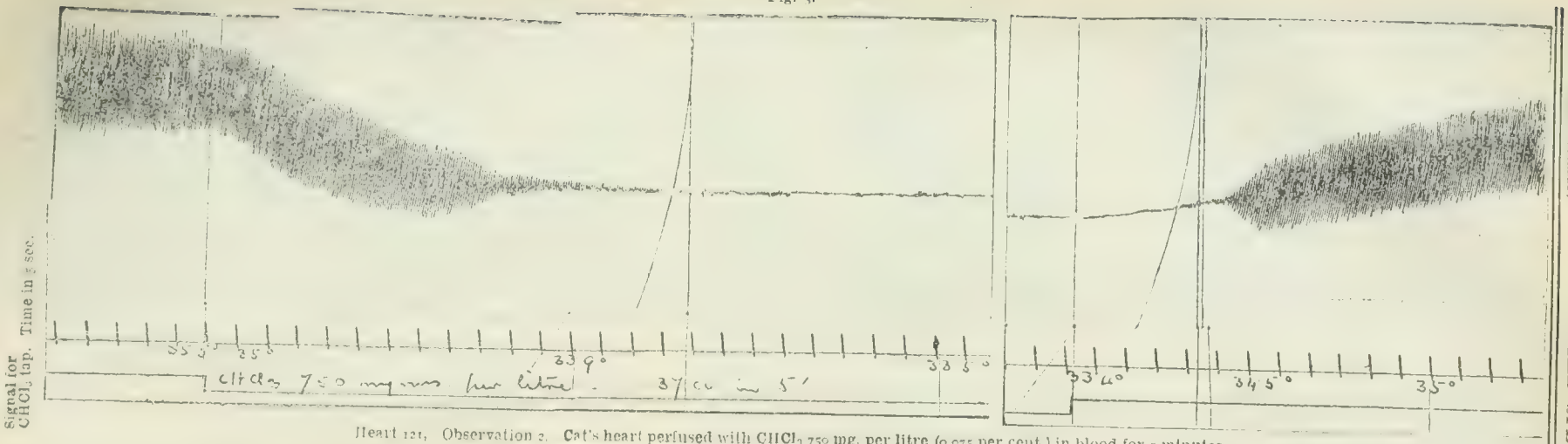
The plan of delivery of the blood to the heart is otherwise much the same as in the experiments reported last summer. The plan of the apparatus is shown in Fig. 1 (p. 162). The blood, both that containing chloroform and that without it, is exposed to oxygen in the reservoirs where it is shaken. It is thence driven into the coronary arteries under a pressure of 95 to 100 mm. Hg., the pressure being derived from the pressure in the oxygen cylinder. The temperature of the blood on delivery into the coronary system is always noted, and is usually 35° C. In its transit from reservoir to heart the blood containing $CHCl_3$ flows through tubing almost entirely glass, merely jointed with india-rubber. The heart is close to the supply, so that the capacity of the tube between the tap controlling the chloroform entrance and the aorta is now only two cubic centimetres. This reduces the subtraction necessary in estimating the latency of the $CHCl_3$ reaction.

The rate of flow of blood in perfusion through the coronary system is much slower than that of physiological saline solution under the same pressure and temperature. The suspended heart is for this reason more liable to cool when perfused with blood than with the saline solutions, since its protection from cooling, when isolated as in the experiments, depends largely upon the supply of warmth from the perfusing fluid. To obviate the fall of temperature the suspended heart has in the present series of experiments been surrounded by a warm chamber, as shown in the figure. From the funnel in the apical floor of the chamber the blood perfused was collected. The quantity flowing through the cardiac blood vessels in a particular period could thus be ascertained.

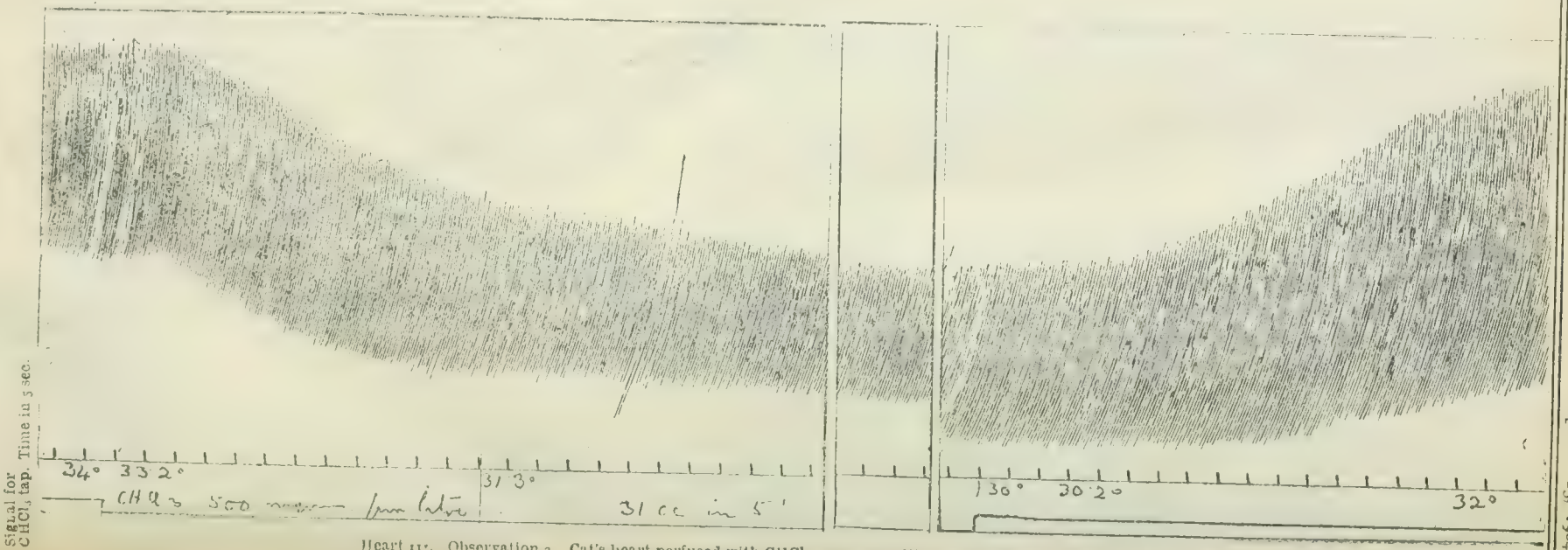
The records of beat have been taken in all cases from the ventricle (right).

The perfusions fall into 5 groups: (1) Those in which the chloroform has been exhibited in *blood* diluted less than 25 per cent. with "physiological saline"; we term these perfusions with "blood"; (2) those in which the chloroform has been exhibited in *blood serum* more or less diluted with physiological saline; (3) those in which the chloroform has been exhibited upward of 25 per cent. with physiological saline; we term these perfusions with "diluted blood"; (4) those in which the chloroform has been exhibited in *Locke's saline* solution, that is, his saline solution containing, as he recommends 0.1 per cent. dextrose; (5) those in which the chloroform has been exhibited in Locke's saline

Fig. 3.

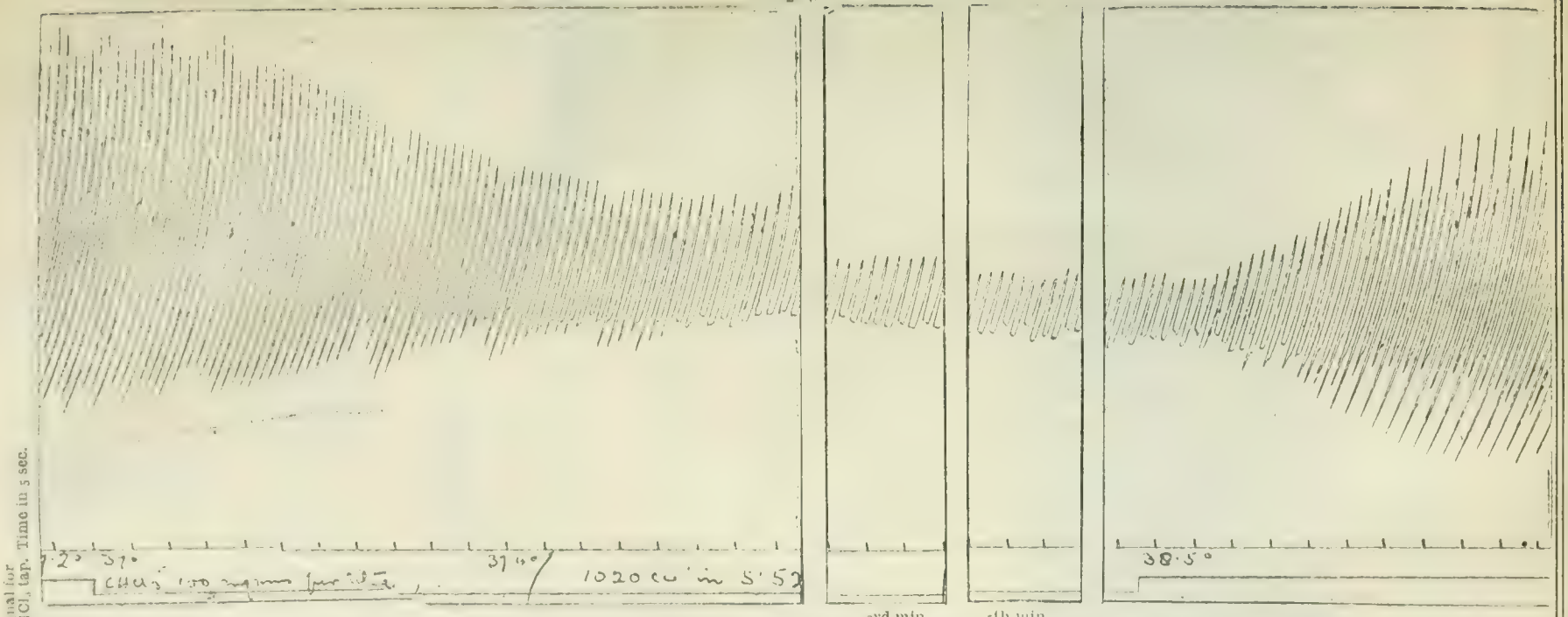


Heart 121, Observation 2. Cat's heart perfused with $CHCl_3$ 750 mg. per litre (0.075 per cent.) in blood for 5 minutes.

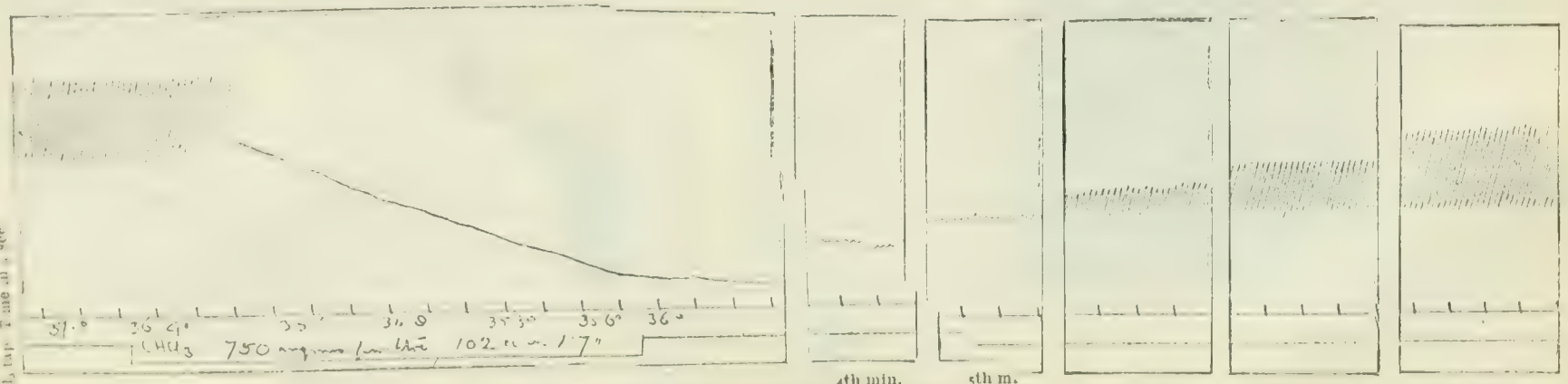


Heart 111, Observation 2. Cat's heart perfused with $CHCl_3$ 500 mg. per litre (0.05 per cent.) in blood for 5 minutes.

Fig. 4.

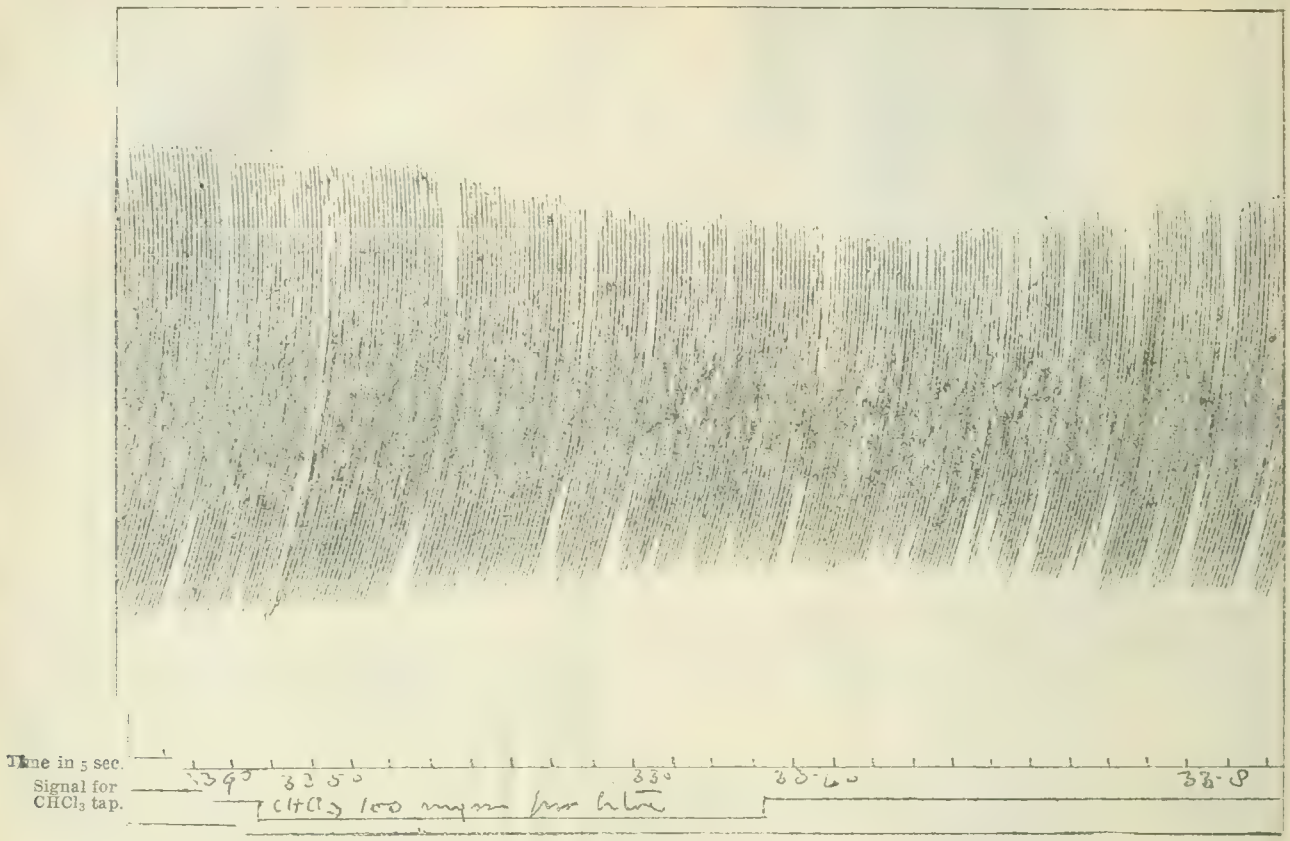


Heart 97. Observation 2. Chimpanzee's heart perfused with $CHCl_3$ 100 mg. per litre (0.01 per cent.) in Locke's solution for 5 minutes 52 seconds.

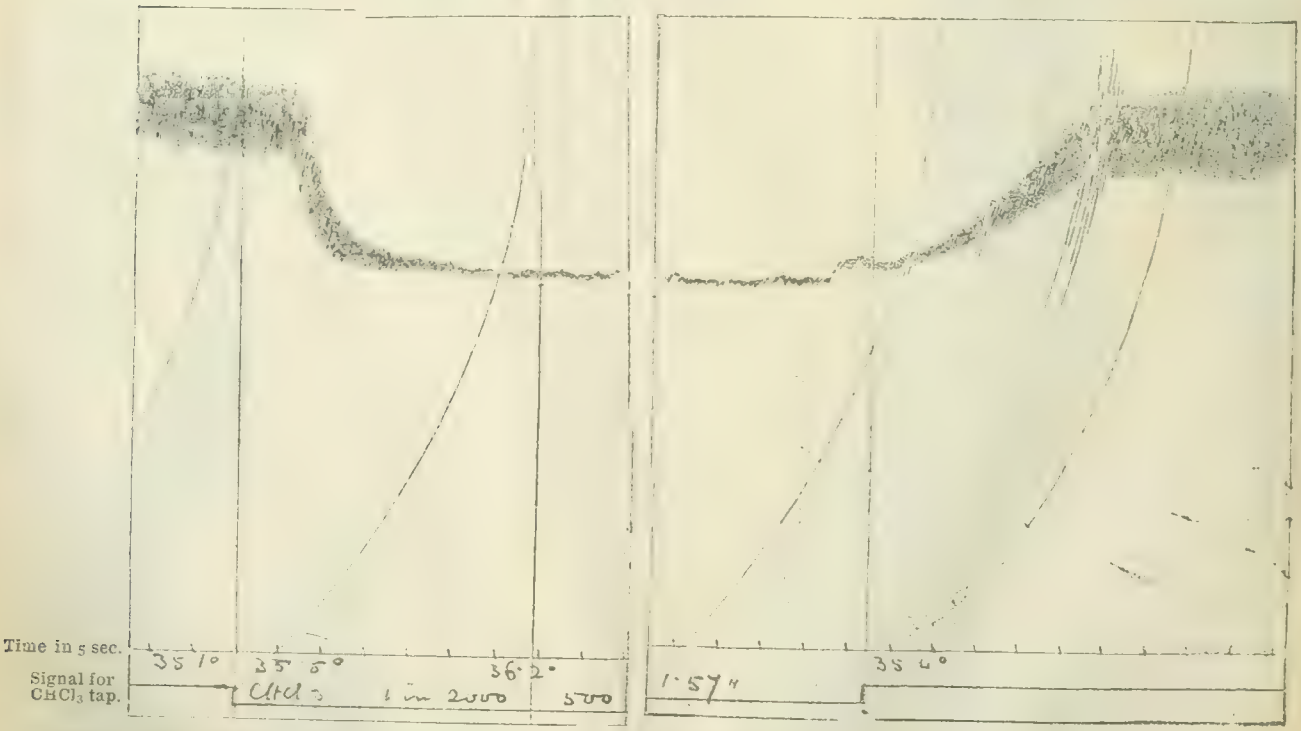


Observation 7. The same heart perfused with $CHCl_3$ 750 mg. per litre (0.075 per cent.) in Locke's solution for 1 minute 7 seconds.

Fig. 5.



Heart 104. Observation 3. Cat's heart perfused with $CHCl_3$ 100 mg. per litre (0·01 per cent.) in serum. for 1 minute.



Heart 93. Observation 1. Cat's heart perfused with $CHCl_3$ 500 mg. per litre (0·05 per cent. in diluted serum, for 1 minute 57 seconds.

solution without the dextrose. We will mention first the perfusions with "blood."

EXPERIMENTS OF GROUP I.

I. 5,000 *mg.* $CHCl_3$ *per Litre of Blood 0.5 per cent.* $CHCl_3$.—The beat was reduced to extinction in less than 1 minute. On continued perfusion with fresh blood, free from chloroform, the heart showed fibrillar contractions, which after 20 minutes of perfusion with the pure blood became a co-ordinated beat though feeble, slow, and of irregular frequence; this concentration, therefore, when perfused for more than 2 minutes 40 seconds effected some permanent damage to the cardiac tissue. When chloroform solution thus produces some permanent injury, preventing complete recovery, we term its effect "toxic."

II. 2,000 *mg.* $CHCl_3$ *per Litre of Blood.*—The beat was usually virtually extinguished in less than a minute. Recovery was always found possible even after perfusion with the chloroform was continued for more than 3 minutes. No permanent "toxic" action was found at this concentration.

III. 1,500 *mg.* $CHCl_3$ *per Litre of Blood.*—The beat was virtually extinguished though somewhat less rapidly than in the case of the 2,000 mg. solution. Recovery was complete and rapid after continued exhibition of chloroform for $3\frac{3}{4}$ minutes, but after continued exhibition for $4\frac{3}{4}$ minutes it took perfusion with normal blood for 10 minutes 40 seconds to recover the beat.

This concentration—namely, 1,500 mg. $CHCl_3$ per litre—was the highest concentration of $CHCl_3$ used in our experiments with Ringer's saline; the effect of this percentage of $CHCl_3$ in that fluid was much greater than in blood, for it permanently abolished the beat after perfusion for 60 seconds only.

IV. 1,000 *mg.* $CHCl_3$ *per Litre of Blood.*—The beat was very greatly depressed, the average of 13 observations being a reduction of the excursion of the beat by 95 6 per cent. Recovery was always rapid and complete, even when the administration of the $CHCl_3$ solution had been continued for 5 minutes 40 seconds. (See Fig. 3, p. 164).

V. 750 *mg.* $CHCl_3$ *per Litre of Blood.*—In six observations the mean reduction of the amplitude of the beat amounted to 75 per cent.; sometimes the beat was practically abolished, but recovery was rapid and complete in all cases, even after perfusion with the chloroform solution for as long as five minutes at a time.

VI. 500 *mg.* $CHCl_3$ *per Litre of Blood.*—In eleven observations the mean reduction of the beat amounted to 34.6 per cent. Recovery was full and rapid.

VII. 333 *mg.* $CHCl_3$ *per Litre of Blood.*—In nine observations the mean reduction of the beat amounted to 4 per cent. Recovery was rapid and complete.

EXPERIMENTS OF GROUP II ($CHCl_3$ IN SERUM).

I. 750 *mg.* $CHCl_3$ *per Litre of Serum with* 15 *per cent. of* 0.8 *per cent.* NaCl *Solution.*—Two observations: the beat was arrested in each case in less than 45 minutes; complete recovery ensued on discontinuing the administration of the $CHCl_3$.

II. 100 *mg. per Litre of Serum with* 2 *per cent. of* 8 *per cent.* NaCl *Solution.*—Seven observations: the mean reduction of beat observed was 34 per cent. Recovery always complete. (See Fig. 4, p. 165).

(Chloroform in Dilute Serum.)

III. 750 *mg. Chloroform per Litre of Serum and Saline, equal parts.*—Two observations: The beat was arrested each time in less than 20 seconds. After perfusion with this solution for 2 minutes 43 seconds recovery was incomplete.

IV. 500 *mg.* $CHCl_3$ *in Serum and Saline, equal parts.*—Two observations: The amplitude of the beat was reduced by 90 per cent. in each case in 35 seconds. Recovery complete and rapid; longest continuous chloroform perfusion 1 minute, 57 seconds.

EXPERIMENTS OF GROUP III. $CHCl_3$ IN DILUTE BLOOD.

I. 750 *mg.* $CHCl_3$ *per Litre of Blood diluted* 50 *per cent. with* 0.8 *per cent.* NaCl *Solution.*—In seventeen observations the mean reduction was 86.4 per cent. Recovery was always obtained.

II. 500 *mg.* $CHCl_3$ *per Litre of Blood diluted as in the preceding.*—In eleven observations the mean reduction of beat was 76.4 per cent. Recovery always complete.

III. 333 *mg.* $CHCl_3$ *per Litre of Blood diluted as in the preceding.*—In fourteen observations the mean reduction of the amplitude of the beat was 48 2 per cent. Recovery was complete. In one case, when the perfusion lasted for 8 minutes 50 seconds, there was observed the same phenomenon as was noted in the report of last year's work on saline perfusion, namely, gradual steady recovery of the beat during the continued administration of the chloroform. As we then pointed out, this is not due to any decline in the strength of the $CHCl_3$ solution administered. We termed the phenomenon a "temporary immunity."

EXPERIMENTS OF GROUP IV. $CHCl_3$ IN LOCKE'S SALINE.

100 *mg.* $CHCl_3$ *per Litre of Locke's Saline Solution, that is, including* 0.1 *per cent. Dextrose.*—With this strength of chloroform solution we have a number of observations on the monkey's heart as well as on the cat's. The mean reduction of the beat observed in the nineteen observations (including two auricular) on the cat's heart amounted to 84.3 per cent. Five observations on the chimpanzee's heart gave an average reduction of 92.3 per cent. (See Fig. 5, p. 166).

These experiments can be added to the experiments with Locke's saline solution, the results of which were published in our previous report.

EXPERIMENTS OF GROUP V. $CHCl_3$ IN LOCKE'S SALINE, WITHOUT DEXTROSE.

These experiments were for the most part recorded in last year's report. They are included in the tabular statement appended to this report, and their results in a condensed form are expressed in the chart exhibiting the mean of the observations plotted as curves (See Fig. 2, p. 163).

CONCLUSIONS.

From the observations it is clear that equal quantities of chloroform dissolved in physiological saline solutions, in serum, and in blood respectively exert on the heart very different degrees of depression. Administered in physiological saline—for example, Locke's solution—chloroform depresses the heart's beat much more powerfully than when administered in blood in the same percentage strength. The difference is shown in the accompanying chart. The effect of chloroform from 0.05 per cent. up to 0.1 per cent. in blood is to depress the heart beat only equivalently to chloroform solutions about twelve times less concentrated in physiological saline.

Two possible explanations for this difference at once suggest themselves:

1. The physiological saline solutions probably favour the heart's activity less than does blood even under the artificial conditions of these experiments. That this supporting action of the solution comes into play to some extent in this way is suggested by the fact that in our observations the $CHCl_3$ exerted a somewhat less powerful depressant action when administered in Locke's saline with sugar than when administered in Locke's saline without sugar. We have at present no actual measurements of the relative tensions exerted by equal concentrations of $CHCl_3$ in these two fluids; but it would seem hardly likely that 0.1 per cent. dextrose can appreciably affect that tension. On the other hand Locke has shown that the addition of this small amount of dextrose adds nutritive value to the saline solution for cardiac perfusion. Moreover, in our experience blood produces a more vigorous and more rapid beat from the excised heart than does the saline solution, giving a beat-frequence of more nearly normal rate. Further, in our experience blood has maintained the beat longer than has the serum of blood. The less depression of the organ by the same concentration of $CHCl_3$ when given in blood than when given in physiological saline we incline to attribute in part to the stronger nutritive condition of the organ when perfused with blood than with the saline.

2. The other factor which helps to explain the difference between the effectiveness of chloroform when administered to the organ in saline solution and in blood, is, we believe, the more important. For equal quantities of chloroform dissolved in the two fluids the tension (solution tension, osmotic pressure) is greater in the saline than in the blood. Our results reported last year indicated that the entrance of chloroform into the cardiac tissue, and its withdrawal from that tissue, follow closely within a wide range of dosage, the solution tension of the chloroform in the perfusing solution.

That equal quantities of $CHCl_3$, when added to equal quantities respectively of saline solution and of blood, pass into very different conditions in those two solvents is what might be expected, and has been shown by the

observations of Hermann and Schmiedeberg, and recently of Waller and Wells and of Moore and Roaf. Waller and Wells found that from air "with chloroform vapour at 17 per cent." blood absorbed more of the chloroform than did water. Conversely in a comparative experiment to recover $CHCl_3$ from the solvent they got by evacuation from whipped (bullock's) blood only 15 per cent. of the added chloroform (proximately 0.2 per cent. had been added), but from water they recovered about 97 per cent.

Moore and Roaf have measured the actual tensions of chloroform when added in various amounts to saline solution and to laked blood respectively. They find the tensions for equal quantities of $CHCl_3$ added to these two fluids to be much higher in the saline than in the blood. They regard the chloroform as forming an unstable chemical compound or physical aggregation with the proteids they experimented on, namely, those of blood. It is the lower tension which they find the chloroform exhibiting when in laked blood as compared with that it exhibits when in the saline solution that is of interest here. We showed in our last year's report to this Committee that the dilute solutions of $CHCl_3$ in saline exert their effect on the heart practically immediately they reach the cardiac tissue, maintain it just so long as the solution passes through the coronary system, and allow almost immediate remission of the depressant action directly the chloroform solution is replaced by the normal Locke's saline containing no chloroform. This effect can be repeated as often as desired, the grade of depression being proportional to the concentration of the $CHCl_3$ solution and without cumulative or permanently damaging effect up to concentrations of 0.03 per cent. After continuous perfusion for even 20 minutes with the chloroform solution, on returning to the normal solution the heart at once threw off the chloroform effect. These results indicated that the degree of depression was a function of the solution-tension of the $CHCl_3$ in the administered $CHCl_3$ solution, and that the $CHCl_3$ in the tissue actually paralysing it for the time being could be again withdrawn from the tissue almost immediately by reducing the $CHCl_3$ pressure in the fluid environment of the tissue.

The fact that the tension of chloroform in a given concentration is much less in laked blood than in Locke's saline solution offers, therefore, an important clue to the main result we record this year—namely, the much less effect on the heart's beat of chloroform in given concentration when exhibited in blood than when exhibited in physiological saline. The difference between the pharmacological effects is very great. Thus, 0.033 per cent. in blood depresses the heart less than 0.003 per cent. in saline solution, and 0.075 per cent. in blood less than 0.007 per cent. in saline. At the higher concentrations, which produce some permanent damage in the cardiac tissue, a concentration of 0.075 per cent. in saline inflicts about the same degree of damage as a concentration of 0.5 per cent. in blood.

In one case two different concentrations of $CHCl_3$ in saline solution were compared in their effect upon one and the same heart. The heart was that of a chimpanzee, which we owe to the kindness of Dr. A. S. F. Grünbaum. As this comparison avoids the difficulty offered by the existence of individual differences between one heart and another its results are of interest for application to the results which the tabular statement and chart express. The perfusion of saline containing 100 mg. per litre reduced the beat by 92 per cent., whereas the perfusion of saline containing 750 mg. per litre abolished the beat quickly, and after perfusion altogether for 2 minutes 37 seconds left the ventricle permanently impaired. In the small experience that we have had with the chimpanzee heart the power of revival *post mortem* and the long time that this heart can be maintained beating exceeds that of the cat. The heart of the cat has in our observations always been used as quickly after death as possible, but in one of the chimpanzee hearts the organ was removed fourteen hours after death, and then beat well when perfused with saline.

Table of Results.

Weight of $CHCl_3$ per Litre.	Perfusing Fluid.	No. of Hearts.	No. of Observations.	V. Beat Mean Reduction.	Minimal Effect.	Maximal Effect.	Recovery.
				Per cent.	Per cent	Per cent.	
5,000 mg.	Blood	1	2	100 00	100.0	100 Final arrest (toxic).	After second dose, recovery very imperfect, and only attained after long perfusion with normal blood—20 min. or more.
2,000 mg.	Blood	2	6	98.33	90.0	100	Recovery complete ultimately, though a delay in some cases, and a period of fibrillar contractions.
1,500 mg.	Modified Ringer's solution	1	2	100 00	100.0	100 Final arrest (toxic).	Fibrillar contractions only after second dose. No recovery.
1,500 mg.	Blood	3	7	100.00	100.0	100	Complete recovery in all cases, except in the last observation of Exp. 119, where the beats are somewhat irregular.
1,000 mg.	Diluted blood	2	2	100 00	100.0	100	No recovery. Fibrillar contractions only.
1,000 mg.	Blood	5	13	95 60	72.0	100	Complete recovery.
750 mg.	Modified Ringer's solution	3	12	100 00	100.0	100 Final arrest (toxic).	After perfusion for periods varying from 1 to 21 min., there is no recovery.
750 mg.	Diluted serum	1	2	100.00	100.0	100	Recovery good, but there is a gradual decline of the normal beat.
750 mg.	Serum	1	2	100.00	100 0	100	Recovery good, but the normal beat declines gradually.
750 mg.	Diluted blood	8	17	86.40	45 0	100	Recovery complete.
750 mg.	Blood	3	6	75.00	48 0	100	Recovery complete.
500 mg.	Diluted serum	1	2	90 00	90 0	90	Recovery complete.
500 mg.	Diluted blood	8	11	76.40	74.0	100	Recovery complete.
500 mg.	Blood	3	11	34.60	11.0	66	Recovery complete.
300 mg.	Modified Ringer's solution	2	9	100 00	100.0	120	Recovery complete.
333 mg.	Diluted blood	7	14	48 20	29.0	68	Recovery complete.
333 mg.	Blood	3	9	4 00	0.0	12	Recovery complete.
100 mg.	Locke's solution	13	17	83.90	43 4	100	Recovery complete.
100 mg.	Serum	3	7	38.60	14.0	75	Recovery complete.

APPENDIX II.

FURTHER REPORT ON THE FORM OF INHALER SUBMITTED TO THE COMMITTEE.

BY A. VERNON HARCOURT, F.R.S.

VARIOUS small improvements have been made in this instrument as the result of a more extended trial and of a large number of analyses of the mixtures of air and chloroform delivered under different conditions.

It was found that the celluloid valves first employed buckled under the influence of chloroform vapour. Thin plates of aluminium, so balanced as to rest lightly at an angle of 45° upon the ends of the inlet tubes, which are cut slantwise, prevent the passage of expired air into the stem of the inhaler, and are easy to observe when opening more or less to give admission to air and chloroform or air alone, and make a sufficient sound when they close to mark the beginning and the force of each expiration.

For the valve on the face-piece, which closes its opening against the admission of air, a disc of mica, which is unaffected by chloroform or moisture, has been substituted for celluloid, and the lid of the valve-chamber has been perforated. The short tubes entering the face-piece have been made similar, so that if it should for certain positions of a patient be more convenient to connect the stem of the instrument with the side of the face-piece the valve can be transferred to the apex. When the inhaler is placed in its stand or tied to the back rails of a bed, and is joined to the face-piece by about 2 ft. of ½-in. rubber tube, the side attachment is more convenient; the top of the face-piece provides the best hand-hold, and it is easier to avoid any kinking of the rubber tube.

The chief object of my further experiments was to settle the exact shape and dimensions of the bottle holding the requisite quantity of chloroform. Two-necked conical bottles were first used, the conical shape compensating for the increasing interval between the points of inlet and outlet of the air current, as the level of the chloroform sinks by increasing the surface from which evaporation takes place. But to provide against great variations in the proportion of air to chloroform when larger or smaller volumes of air are drawn through at each inspiration, it was found that the necks of the bottle must be close together, and the surface of the chloroform at least 1 in. beneath them. Moreover, each neck must have a diameter of not less than ½ in., and the diameter of the bottle an inch below the top must be very nearly 1½ in., or 37-38 mm. The temperature at which the chloroform should be kept, which is indicated by the sinking or floating of a pair of specific gravity beads, is 13°-15° C.

Many testings were made incidentally of the percentages of chloroform delivered when the level of the liquid in the bottle was higher or lower, and when breathing was deeper or less deep than usual.

The pitch of the cone now adopted compensates with sufficient accuracy for the change of level. With the stopcock fully on and a normal rate of breathing, about 5 litres a minute, the percentage of chloroform was found to be 2.01 when the bottle was filled to the waist, or top of the conical part, and 2.05 when only enough was left to float the beads. With shallow breathing, 3.5 litres per minute, the percentage of chloroform was 2.4 when the level of the liquid was high, and only 2.04 when the level was low. Another pair of testings at the same rate of breathing gave 2.1 per cent. when the bottle was filled to the waist and 2.15 when the chloroform was half an inch lower. Many similar results were obtained.

The effect of a variation in the depth of respiration, that is, in the rate of passage of air over the surface of the chloroform during inspiration, is shown by the following table. The stopcock in all cases was fully open on the chloroform side, so that all the air inspired passed through the chloroform bottle. In other positions of the stopcock the variations are less, since the greatest variations occur when the passage of air is more rapid, not when it is slower.

It will be seen that with normal respiration the proportion of chloroform which mixes with air drawn through the bottle, when the temperature is within the prescribed limits and the bottle is not shaken, is about 2 per cent. The amount of chloroform thus administered is about 0.5 gram per minute.

With deeper respiration the proportion of chloroform vapour to air is diminished, but the total amount of chloroform taken in is increased. It would be possible by a moderate lengthening of the bottle to keep the proportion of chloroform to air in the case of deep breathing more nearly the same as with normal breathing; but if this were done the disproportion in the rate of administration of chloroform would be increased.

When breathing is more shallow than usual the proportion of chloroform vapour to air is greater, but the total amount taken in is less.

The most important quantity for a knowledge of the power of chloroform as an anaesthetic is the mass of chloroform retained in the body. To estimate this quantity it is necessary that measurements should be made, at different rates of breathing, of the percentage of chloroform in expired air.

APPENDIX III.

ESTIMATION OF CHLOROFORM DISSOLVED IN BLOOD.

REPORT OF WORK DONE BETWEEN DECEMBER, 1903, AND JULY, 1904.

BY

D. B. BYLES, B.Sc., A.I.C., A. V. HARCOURT, F.R.S., AND SIR VICTOR HORSLEY, F.R.S.

THE first part of the work consisted in making control experiments with the apparatus* already described, using water instead of blood and weighed amounts of chloroform.

The chloroform was weighed out in a small stoppered tube, which was let fall into the flask containing the liquid, the stopper being removed when the tube was already within the neck. The flask was then corked and shaken from time to time till all, or nearly all, the chloroform was dissolved.

It was found that on passing air through while the temperature was kept at 70° C. for five hours, extraction was still incomplete. On raising the temperature to 100° C. for a short time from 95 to 100 per cent. of the weight of chloroform taken was accounted for. But the completion of the extraction by thus raising the temperature from 70° to 100° is not practicable with blood or even with the solution of urea which is added to keep the blood liquid when it is heated, since urea decomposes into ammonia and carbonic acid, very slowly at 70° but more rapidly at higher temperatures.

* See First Report of Special Chloroform Committee, BRITISH MEDICAL JOURNAL, July, 1902.

Normal Breathing.			Deep Breathing.			Shallow Breathing.		
Rate of breathing. (litres per min.)	Percentage in air breathed.	Mass inhaled. (grams per min.)	Rate of breathing. (litres per min.)	Percentage in air breathed.	Mass inhaled. (grams per min.)	Rate of breathing. (litres per min.)	Percentage in air breathed.	Mass inhaled. (grams per min.)
5	2.03	0.51	8	1.30	0.52	3.5	2.36	0.41
5	1.92	0.48	7.4	1.70	0.63	3.3	2.24	[illegible]
5	2.01	0.50	7	1.55	0.54	2.8	2.15	0.30
5	2.05	0.51	7	1.73	0.61	3.0	2.10	0.32
4.7	2.02	0.47	7	1.43	0.50	3.0	2.28	0.34
Mean 4.9	2.01	0.49	7.3	1.54	0.56	3.1	2.26	0.35

Consequently, use was made of the fact that the amounts of chloroform left in solution after equal intervals of time, the rate of passage of air and the temperature being constant, are in geometrical progression.

From this relationship a formula can be obtained by which the total amount in solution can be calculated. Thus, if x is the total amount of chloroform in solution expressed in cubic centimetres of alkali, and a, b, c, are burette readings made at equal intervals of time,

Then the amount left in solution when the reading is a is $x - a$.
" " " " " " b is $x - b$.
" " " " " " c is $x - c$.

$$\text{and } \frac{x-a}{x-b} = \frac{x-b}{x-c},$$

whence $(x-a)(x-c) = (x-b)^2$,

$$x^2 - ax - cx + ac = x^2 - 2bx + b^2,$$

$$x(2b - a - c) = b^2 - ac,$$

$$(1) \qquad x = \frac{b^2 - ac}{2b - (a + c)};$$

and if b' be put for $b - a$
and c' for $c - a$
we get, by substituting $b' + a$ for b, and $c' + a$ for c

$$x = \frac{(a+b')^2 - a(a+c')}{2(a+b') - (2a+c')}$$

$$= \frac{a^2 + 2ab' + b'^2 - a^2 - ac'}{2a + 2b' - 2a - c'}$$

$$= \frac{b'^2 + a(2b' - c')}{2b' - c'}$$

$$(2) \qquad = a + \frac{b'^2}{2b' - c'}.$$

which is the formula most convenient for calculation.

For the use of this method it is essential that the rate of passage of air and the temperature of the liquid should be constant within narrow limits. The rate of passage of air was fixed by drying the air which passed through a glass stopcock into an aspirator in which a constant head of water was maintained. The temperature of the water bath in which the flask was plunged was kept constant within a degree by means of Mr. Harcourt's thermostat, in which the gas supply is controlled by the expansion of oil. An experiment performed in this way gave a return of 99.84 per cent. of chloroform.

The next step was to test the estimation of chloroform in a solution containing urea. In the first experiment 50 c.cm. of water (representing the measure of blood in future testings) were added to 100 c.cm. of saturated urea solution. As it was found that urea decomposes slowly even at 70°C., a tube containing slaked lime, and another containing dilute sulphuric acid, were introduced between the flask and the combustion tube. A few drops of a solution of copper sulphate were added to the sulphuric acid to absorb any hydrogen sulphide the blood might give off and to give warning if at any time the acid became saturated with ammonia.

Two experiments on urea solution and water made in this manner gave as the percentage of chloroform recovered 99.59 per cent., and 99.95 per cent.

It having thus been proved that the method adopted was trustworthy, experiments were performed with blood as follows:

The etherized animal was bled into a solution of urea saturated at 35° C., and samples containing 100 c.cm. of urea solution and about 50 c.cm. of blood were used to dissolve a weighed quantity—about 0.1 gram of chloroform.

It was soon found that if the chloroform stood overnight in contact with the blood (that is, for about eighteen hours) not more than about 80 per cent. was recoverable.

The following are the actual conditions and results of such experiments:

1. 45 c.cm. blood, 100 c.cm. urea solution with 0.1641 gram chloroform: after 18 hours contact 81.71 per cent. was recovered.

2. 50 c.cm. blood, 100 c.cm. urea solution with 0.0918 gram chloroform; 79.5 per cent. was recovered after 17 hours contact.

3. 50 c.cm. blood, 100 c.cm. urea solution with 0.1047 gram chloroform; 78.0 per cent. was recovered after 18 hours contact.

It was next found that if the period of contact was lengthened to three or four days, no material change occurred in the percentage recoverable. For example:

(1) 45 c.cm. blood mixed with 100 c.cm. urea solution and 0.149 gram chloroform gave up 77.57 per cent. of the chloroform taken after 41 hours contact; (2) 40 c.cm. blood, 100 c.cm. urea solution, with 0.1376 gram chloroform, gave up 79.5 per cent. after three days contact; (3) 50 c.cm. blood, 100 c.cm. urea solution, with 0.0974 gram chloroform, returned 80.97 per cent. after four days contact.

It appears from these results that the mass of chloroform retained varies approximately with the amount of blood and of chloroform taken, as is shown by the following table:

Blood.	Urea Solution.	Time of Contact.	Chloroform Taken.	Chloroform Retained.	Retained per 100 c.cm. of Blood and 0.1 Gram of Chloroform.
c.cm.	c.cm.	Hours.	Gram.	Gram.	Gram.
45	100	18	0.1641	0.030	0.041
50	100	17	0.0918	0.019	0.041
50	100	18	0.1047	0.023	0.044
45	100	41	0.1490	0.033	0.050
40	100	72	0.1376	0.028	0.051
50	100	96	0.0974	0.019	0.038

In the following experiment only half the usual amount of blood was taken, together with an equal volume of water; the determination was begun an hour after the chloroform had been weighed in. The percentage of chloroform recovered was 97.66, a result which may be partly due to the smaller proportion of blood, and partly to the shorter time of contact, but chiefly—interpreting by the light of a later observation—to the dilution with water.

A similar experiment, in which extraction was begun soon after the chloroform had been brought in made with the full 50 c.cm. of blood gave the percentage 87 66.

This last experiment agreed with former results in showing that it requires a certain interval of time for the full 20 per cent. retention of chloroform to occur although little further retention seems to take place when the contact is prolonged beyond eighteen hours.

When double the quantity of blood and the ordinary amount of chloroform (about 0.1 gram) was employed, only 76.4 per cent. was recovered after half an hour contact.

In a similar experiment with eighteen hours contact only 56.25 per cent. was recovered. Thus the amount retained was 43 75 per cent., or approximately double the former proportion, again indicating that the retention varies directly with the quantity of blood.

Going still further, and mixing 100 c.cm. of blood and 200 c.cm. of saturated urea solution with a smaller amount of chloroform (0.0587 gram), only 44.6 per cent. was recovered after nineteen and a-half hours contact. The actual amount retained per 100 c.cm. of blood and 0.1 gram of chloroform is here rather greater, namely, 0 055 gram.

In these later experiments the chloroform was weighed out in a tube containing about $\frac{3}{4}$ c.cm. of absolute alcohol, by which means it was brought into instant solution in the blood.

As from the foregoing observations it appeared certain that blood has a specific power of retaining chloroform it was desirable to investigate if possible what constituent of the blood exerted this special influence. To this end it was determined to employ peptonization.

As a preliminary step the separation of the corpuscles from the plasma was effected and the first experiment may be described in full.

Experiment 1. Dog.—The animal was etherized, tracheotomized, and cannulae were inserted into the left jugular vein and carotid artery respectively. During half an hour peptone (Witte's) solution, 10 per cent. strength, warmed, was allowed to flow from a burette into the jugular vein to the amount of 4c.cm. per kilo weight of the animal. Blood from the carotid was then allowed to flow into the tubes of a centrifugalizer and immediately centrifugalized. The resulting plasma clotted slightly. The clear serum and unclotted plasma was siphoned off from the clot formed, which, together with the corpuscles, was put into twice its volume of urea solution. To the clear plasma was also added twice its volume of urea solution. After eighteen hours contact the estimation was made of the two portions. Of the chloroform added, 100 per cent. could be extracted from the serum-plasma, and but 79 71 per cent. from the corpuscles and clot mixture. In all, six estimations of the chloroform return from peptone-plasma and peptone-corpuscles respectively have been made. The results are shown together in the tables at top of p. 171.

Comparison of the two sets of columns shows very obviously the greater retaining power of the ureated solution containing the corpuscular elements of the blood than that of the ureated plasma solution.

In the consideration of all investigations on the blood the question of the breaking up of the corpuscles necessarily holds

Corpuscular Constituents.

Date.	Blood.	Urea Solution.	Water.	Chloroform Tkn.	Chloroform Found.	Found.	Notes.
	c.cm.		c.cm.			Per Cent.	
Mch. 24	30	60 c.cm.	—	0.0762	0.0608	79.71	
May 3	50	100 c.cm.	—	0.1077	0.0448	41.58	
May 5	50	100 c.cm.	—	0.1083	0.0582	53.72	
June 11	33	50 grams	66	0.0102	0.00569	55.78	
June 13	33	50 grams	66	0.0154	0.0104	67.8	Water was added about ten minutes before urea so that laking occurred.
June 16	33	50 grams	66	0.0110	0.00593	53.9	

Plasma.

ate.	Blood.	Urea Solution.	Water.	Chloroform. Tkn.	Chloroform. Found.	Return.	Notes.
	c.cm.		c.cm.			Per Cent.	
Mch. 23	30	60 c.cm.	—	0.0799	0.0806	100.90	
Apl. 29	47	100 c.cm.	—	0.1207	0.1099	91.09	Plasma slightly contaminated with corpuscles.
May 4	50	100 c.cm.	—	0.1137	0.1069	94.05	
June 10	30	50 grams	66	0.0125	0.01192	95.36	
June 11	33	50 grams	66	0.0117	0.0112	95.30	
June 22	33	50 grams	66	0.0113	0.00967	85.60	Plasma contain'd an appreciable quantity of corpuscles.

a prominent place. It was therefore thought well to make some observations on the chloroform-retaining power of blood, which had been treated by dilution with twice its volume of water containing ammonium oxalate.

The observations made are shown in the accompanying table:

Blood laked (by running into Ammonium Oxalate) before Addition of Chloroform.

Date.	Blood.	Solution. Amm. Oxalate.	Urea.	Chloroform. Tkn.	Chloroform. Found.	Per cent. Return.	Notes.
	c.cm.	c.cm.	grams.				
May 26	33	66	50	0.0089	0.0094	100+	Displacement error appreciable.
June 1	33	66	50	0.0119	0.0118	[illegible]99	
June 6	33	66	50	0.0117	0.0123	[illegible]100+	

Blood laked after the Absorption of the Chloroform.

Date.	Blood.	Solution Amm. Oxalate.	Urea.	Chloroform. Tkn.	Chloroform. Found.	Per Cent. Return.	Notes.
	cc.m.	cc.m.	grams.				
June 25	33	66	50	0.0104	0.00854	82.1	Peptonized blood used, ½ hour allowed for laking.
July 12.	35	70	60	0.0253	0.01853	73.0	
July 13.	31	62	50	0.0202	0.01461	72.3	Incandescence low.

Where the blood was laked (half an hour being given for contact) by the addition of the water before the chloroform was added the recovery of the chloroform was approximately complete. Where on the contrary the blood had received its charge of chloroform before the laking process was commenced the recovery was incomplete as before described.

The inference from these facts may justly be that the retaining power of the blood is also associated in some degree with the integrity of the corpuscles at the time of entry of the chloroform into the blood, and this bears directly on all methods of estimating chloroform in blood. As regards these latter experiments it is right to observe that in them the application of the charge of chloroform was modified as follows:

The small tube in which the chloroform had been weighed was suspended within the corked flask containing the fluid blood until the former had evaporated (usually about twelve to fifteen hours was given to this). The flask was then agitated to ensure as complete absorption as possible of the quantity vaporized, and the residual air was also drawn into the water used so as to ensure solution of the whole.

After having made some further observations with extremely small quantities of chloroform to obtain a closer comparison with the quantities that might be expected to be in the circulating blood, and having rendered the titration method more delicate, an experiment was made as the first of a series for redetermination of the amount of chloroform in the blood during anaesthetization, and at the moment of death from cessation of respiration.

The following table shows the facts of this experiment:

Anaesthetic Experiment on a Dog. Weight of Dog, 7.5 kilos.

Date.	Dose.	Minutes.	Urea Solution.	Chloroform Recovered.	$CHCl_3$ per 100 c.cm.	Notes.
June 16th	0.5 per cent.	5	—	—	—	
	0.4 ,, ,,	2	—	—	—	
	0.2 ,, ,,	12	—	—	—	
	0.4 ,, ,,	7	—	—	—	
	0.5 ,, ,,	5	—	—	—	
	0.75 ,, ,,	5	—	—	—	
	1.0 ,, ,,	6	—	—	—	
	Blood drawn 70 c.cm.					
	33 c.cm. 66 water		50 gram	0.01315	0.03945	Sample I.
	33 c.cm. 66 ,,		50 ,,	0.01324	0.03972	
	1.25 per cent.	5	—	—	—	
	0.5 ,, ,,	4	—	—	—	
	1.0 ,, ,,	2	—	—	—	
	Blood drawn 70 c.cm.					
	33 c.cm. 66 water		50 gram	0.01393	0.04179	Sample II.
	33 c.cm. 66 ,,		50 ,,	0.01353	0.04059	
	1.0 per cent.	2	—	—	—	
	0.5 ,, ,,	4	—	—	—	
	Blood drawn 70 c.cm.					
	35 c.cm. 66 water		50 gram	0.02183	0.06555	Sample III (taken immediately respiration stopped).

In the foregoing experiment the chloroform was inhaled by the animal through Mr. Harcourt's inhaler by means of a tracheotomy tube, on the side of which was placed the expiratory valve. It will be noted that the percentage of chloroform allowed to the animal had to be reduced from time to time in consequence of the respiration becoming irregular or shallow, but as soon as possible the index was raised so as to obtain the maximal rather than the minimal dosage. It is of interest to note further that the amount of chloroform in the blood during adequate anaesthesia (Samples I and II) corresponds very nearly to the earlier observations of Pohl; and, further, that in this case a fatal dose was not twice the amount required to produce unconsciousness to pain.

CONCLUSION.

Finally, in reviewing the work contained in the foregoing report it is very interesting to observe that the question of the retention of chloroform by the constituents of the blood has also been made the subject of recent investigation with positive results by Professor Moore, in collaboration with Dr. Roaf.[1] We understand that Professor Sherrington's and Miss Sowton's work on the isolated mammalian heart also demonstrates the existence of the same phenomenon, which would thus appear to be established by three independent lines of research.

Our work has been carried on in the Laboratory of Pathological Chemistry, University College, and our thanks are primarily due to Professor Vaughan Harley and Dr. F. W. Goodbody for their kind assistance, and we are also obliged to Mr. Wood for much help in making the final determinations.

[1] *Proceedings*, Royal Society June, 1904.

THE USE AND ABUSE OF MIDWIFERY FORCEPS.*

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My first duty is to thank the members of Council for the honour they have done me in inviting me to open this discussion on the Use and Abuse of the Midwifery Forceps. I am fully aware of my inability to do the justice to this subject which its importance deserves, but I trust you will grant to me the leniency due both to age and to youth, for I am here to-day representing the oldest University as well as the youngest centre of obstetrical teaching in Scotland.

No more opportune theme could have been chosen for discussion, threatened as we are by the nation's being deprived of 500 children per week, and at a time when the danger of a declining birth-rate is one of the problems of the day. Further, we have still to face the undesirable fact that serious evils exist, causing too high a death-rate from puerperal fever. The questions before us for discussion are: Whether is a frequent or a sparing use of the forceps desirable in midwifery practice, and what are the relative effects upon the fetal and the maternal mortality?

On the one hand, we have it urged by some authorities that the application of the forceps by the general practitioner is often too long delayed, resulting in a loss of fetal life which might be prevented by the timely use of the instrument. On the other hand, equally trustworthy authorities have described the forceps as the bloodiest of all obstetric operations, and as being responsible for many injuries which subsequently fall into the hands of the gynaecologist for treatment. No matter what view one holds as to the necessary frequency of the operation, all will agree that the forceps deserve the eulogy of Baudelocque, who described it as "the most useful surgical instrument ever invented." One can imagine what midwifery practice would be without the forceps, when the practitioner could only resort to Paré's dreadful hooks, involving certain death of the child and indescribable injuries to the mother.

For two hundred years this instrument was the mystery of the medical world. Since the days of the Chamberlen monopoly it has gradually undergone several modifications, as represented by the pelvic curve, and change of lock, suggested by Smellie, and the addition of the shanks and shoulders by Sir James Simpson, terminating in the most important development by Tarnier, who introduced the principle of axis traction. From this sprang the further improved and modified instruments of Professor Simpson and Dr. Milne Murray. I presume it is unnecessary for me at this time to contrast for purposes of discussion the ordinary double-curved forceps with those constructed to fulfil the function of axis traction. In favour of the latter one has only to mention the certainty with which one can direct traction in the axis of the brim without disturbing the ordinary mechanism of labour; less injurious compression upon the fetal head, and greater ease and comfort to the operator. Those advantages far outweigh the more or less imaginary defect of greater complexity urged against it by those who still favour the old pattern of forceps. Professor Simpson, writing upon the advantages of axis-traction forceps, says:

> If a practitioner accustomed only to the use of the old forceps will use the axis-traction forceps in one or two difficult cases, he will find that it works with so much safety to the mother and child that he will ever after use it in every case. There is no case, high or low, with presentation and position normal or abnormal demanding forceps delivery where the axis-traction forceps may not be applied. Since it came into use, the range of forceps application has been greatly widened, and the sphere of the competing operations, such as turning, embryotomy, and the induction of premature labour, has been correspondingly narrowed.

INDICATIONS FOR THE APPLICATION OF THE FORCEPS.

It is almost impossible to lay down a hard-and-fast rule as to the indications and contraindications for the forceps. Each case requires to be considered upon its own merits, and it must be to a great extent a matter for individual judgement. There can be little doubt that it is one of the truest maxims in midwifery that as long as the membranes are entire, and the liquor amnii present, no danger will accrue to mother or child by the continuation of labour—except, perhaps, by the occurrence of convulsions and haemorrhage. Rare conditions, such as certain cases of eclampsia, may demand the application of the forceps before full dilatation of the cervix. Should, however, further experience with dilators, constructed upon the model of Bozzi's instrument, prove that the cervix can be fully dilated without any serious laceration, then this indication for the application of the forceps will disappear. That the application of the forceps with the cervix undilated may be followed by disastrous results is fully proved by the not infrequent occurrence of vesico-cervico-vaginal fistulae, the result of direct laceration, as distinguished from fistulae the result of sloughing from delayed application of the forceps—now fortunately a vanishing lesion.

Statistics from the Rotunda Hospital further show that during Dr. Johnstone's mastership, when the forceps were applied in about 75 per cent. of the cases, in many of which the cervix was undilated, the result was a doubling of the maternal mortality as compared with the more favourable results attained by his more conservative predecessors and immediate followers. It must, however, be admitted that Dr. Johnstone's rate of infantile mortality was only 9 per cent. as contrasted with 53 per cent. under the mastership of Dr. Clark—a result probably accounted for by the substitution of the forceps for craniotomy. Nowhere are Schiller's words more appropriate:

> It is the curse of evil deeds
> That they give birth to further evils.

Here the "evil deed" is the untimely application of the forceps, the "further evils" being represented by deep cervical lacerations, parametritis, cicatrizations, and, as a consequence, one-child sterility.

By far the most frequent reason for the application of the forceps is the unsatisfactory advance of the head during the second stage of labour, as the result of feebleness of the pains or rigidity of the soft parts, especially in primiparous patients, or both combined. This is doubtless the class of case where the element of abuse is most likely to come in. Although it is perhaps undesirable that any time-limit should be taken as the basis for operative interference in this type of case, yet it seems to me that it is a tolerably reliable guide. If we take the average second stage in a multiparous patient as being one hour and a-half, and in primiparous patients as two hours and a half, then, I think, it is desirable—although perhaps not absolutely necessary—to put on the forceps if the second stage lasts over two hours in a multiparous patient, and four hours in a primiparous patient. By following this rule we obey the mandate of Sir James Simpson: "You should only wait till you see what Nature can do, not what she can endure," and the wise injunction of Boer that "everything is not to be taken away from Nature, neither is everything to be left to her." This would surely be a far safer time-limit in the interests of both mother and child, than waiting to fulfil Denman's rule, which was that the forceps should not be applied until the child's head had rested on the perineum for six hours—a rule which was scarcely mitigated by the additional injunction that no case was to be esteemed eligible for the forceps until the ear of the child could be distinctly felt.

This time-limit is not, however, accepted as a guide by some authorities. Winckel, for instance, teaches that weak pains never indicate the forceps, and that they should only be applied when distinct signs of danger to mother or child arise. He further expresses his belief that in general practice weak pains are more frequently diagnosed than they actually occur, and are thus employed as an indication for what he calls "an operation of convenience." Galabin, on the other hand, does not delay applying the forceps until the graver symptoms of protracted labour appear, and he thinks that by the modern practice of having recourse to forceps without great reluctance both maternal lives are saved and the lives of children who would have been stillborn from prolonged pressure. With regard to the abuse of the forceps in such cases, younger practitioners meet with the temptation to yield to the entreaties of the "uneasy gossips" and apply the forceps because in the friend's opinion the strength of a perfectly healthy young woman in the early stages of a normal labour is rapidly becoming exhausted. Perhaps Pajot's principle, which dominates all midwifery, would fulfil the requirements of such a case:

> The duty of the accoucheur is patience. One should not interfere without a decided indication. But as soon as ever that occasion is presented it must be attended to without delay, and it must never be forgotten that in midwifery methods of interference which will save two beings are at the right time easy, but become in a few hours dangerous, futile, and impossible.

* The introduction to a discussion at a conjoint meeting of Edinburgh and Glasgow Obstetrical Societies, held in Edinburgh, July 13th, 1904.

In minor degrees of contracted pelvis of the justo minor type the advantages of the forceps are generally recognized. It is not my intention to do more than touch upon the much-disputed question of the relative advantages of forceps and version as a means of extraction in minor degrees of flat pelvis permitting delivery of a living child by either method. In primiparous cases I am thoroughly convinced that with properly constructed axis-traction forceps delivery by this means is safest in the interests of the child, and in no way increases danger to the mother. In multiparous patients I believe that version has yet a field of usefulness. Many stillborn children, and many lacerations of the maternal passages are due to the too early application of the forceps before the head has had time to mould into what Litzman calls "the most favourable position of the head," which is well-marked Naegele's obliquity, the head being ready to enter the pelvic brim. Statistics, however, clearly show that with a timely and skilful application of the axis-traction forceps the infantile mortality is distinctly less than in cases extracted by version, and is not accompanied by greater risks to the mother, as some German obstetricians would lead us to believe.

In malpositions of the head, as represented by occipito-posterior cases, we know that with the aid of time, in the majority of cases the occiput rotates to the front without assistance. When within a reasonable time this does not take place, there can be no doubt, I think, that the application of the axis-traction forceps, provided the passages are in a fit state, by favouring descent and flexion of the head, promotes anterior rotation more surely than manual attempts at reposition, on account of the uncertainty of the permanency of the latter method. The successful use of the forceps in such cases depends on their efficiency. Although it gave Smellie "great joy" when he discovered that he could rotate the head with the ordinary forceps, yet we know that this could only take place at the risk of injuring the child's head and the maternal soft parts. The superiority of the axis-traction forceps in those cases was clearly pointed out by Sir Halliday Croom many years ago. More recently the late Dr. Milne Murray perfected the instrument by flattening the pelvic curve which insures a firm grasp of the head, increases flexion, and at the same time does not interfere with normal rotation. Although in persistent occipito-posterior cases labour is prolonged, and there is a greater tendency to perineal rupture, yet my belief is that such cases terminate spontaneously more frequently than is generally anticipated. This is corroborated by the experience of Varnier, who found that 30 out of 35 cases terminated within a reasonable time without any instrumental assistance.

In malpresentations of the head as represented by face cases, expectancy is the best treatment to adopt, as the majority of those cases terminate naturally. Should, however, anterior rotation of the chin be unduly delayed, the forceps are quite legitimate. In cases of persistent mento-posterior where immediate extraction is indicated, the forceps have in the majority of cases to give place to some other means of extraction. With regard to brow presentations, the forceps are only of use when the head is impacted in the pelvis, or when it is too late to convert it into a more favourable position. The application of the forceps to the after-coming head as recommended by Smellie should, I think, be reserved for cases where jaw traction is impossible from the mouth being inaccessible, or where the occiput is behind and the chin directed to the pubis. Further, as they are generally applied after failure of manual attempts at extraction, the chances of delivering a living child must be greatly lessened by such previous manipulations.

In cases of prolapse of the cord, ordinary methods of reposition failing, the best chances for the child, in multiparous patients, lie in rapid delivery with the forceps. In primiparous cases, on the other hand, where the condition of the soft parts does not permit of delivery rapidly enough to save the child, without the risk of tearing the maternal tissues, I believe that version is preferable, as this enables the breech to fill up the place previously occupied by the loop of cord.

In marginal placenta praevia, the os being fairly dilated, but the pains not strong enough to deliver the child quickly, the forceps should be applied chiefly in the interests of the child.

METHODS OF APPLICATION.

With regard to the technique of the operation, time does not permit me to enlarge upon that point beyond referring to the mode of grasping the head. There can be no doubt that previous to rotation of the occiput the cephalic application of the blades over the biparietal diameter of the child's head should always be attempted, although it is more difficult to do than merely introducing them in the transverse diameter of the pelvis without any reference to the child's head. By so doing there is less chance of the forceps slipping and thereby inflicting injuries to the mother and to the child. As to the mode of traction, our motto must be "*Non vi sed arte.*"

FREQUENCY OF APPLICATION AND MORTALITY.

When we come to consider the question of the frequency of the forceps operation, we find the percentage of cases much smaller in hospital than in general practice. Those who urge a limited use of the forceps in private practice quote in support of their plea the present tendency to the restricted use in Continental hospitals. Taking the practice of ten Continental maternities, I find that the average frequency of forceps cases is 3.6 per cent.:

Basle	(1887-93), 5.33 per cent.	Munich	(1884-90), 2.60 per cent.
Bonn	(1885-95), 4.39 ,,	Prague	(1891-4), 3.60 ,,
Dresden	(1889-94), 2.56 ,,	Paris Maternité	(1896-9), 6.00 ,,
Greiswald	(1887-96), 6.00 ,,	Wurzburg	(1889-95), 2.36 ,,
Halle	(1887-93), 4.84 ,,		
Marburg	(1885-97), 2.50 ,,	Average ...	3.60 ,,

This represents a rate of forceps cases where the conditions and indications are strictly limited and definite. The cervix must be fully dilated, the membranes ruptured, and the head already in the pelvis. The forceps are not applied until danger arises to mother and to child or to both. If we compare those figures with the statistics of maternity hospitals in our own country we find that our percentage of instrumental cases is slightly higher. This slightly increased rate is not accounted for by the indications being any less strict, or definite, but from the fact that cases of the high operation are much more frequent in this country, the axis-traction forceps not having yet received universal favour in German Clinics, where version is employed for cases which we would terminate with forceps. Another reason for our higher percentage is that our lying-in hospitals are smaller, and consequently a greater proportion of the cases admitted require operative treatment. This is apparent when we compare the percentage of indoor with outdoor cases. Thus, for example, in the Edinburgh Maternity Hospital of 300 indoor cases 32 were instrumental, equal to 10 per cent., whilst in the outdoor practice in 506 cases the forceps were applied 23 times, equal to 4.3 per cent. In Glasgow of 482 indoor cases there were 18 per cent. of forceps cases, equal to 1 in 5, whilst of 1,697 outdoor cases the forceps were applied in 6 per cent. of the cases, or 1 in 16. In the Dundee Maternity Hospital of 563 indoor cases there were 42 forceps deliveries equal to about 7 per cent., whilst in the outdoor department of 520 cases there were 29 forceps deliveries, or a little over 5 per cent. In Manchester there was 9 per cent. as contrasted with about 1 per cent. in the outdoor practice. The Rotunda report for last year gives 3.5 per cent. for the indoor and 1.5 for the outdoor department.

The maternal mortality in those hospital reports may be taken as *nil*, there being no case where the maternal death could in any way be attributed to the application of the forceps. When we come to consider the effects of the forceps operation on the infantile mortality, we are confronted with the difficulty that in many reports upon this point no reference is made to the important factor as to whether or not the child was alive when the forceps were applied. After deducting such a possible source of error, I find, from the following reports at my disposal, that the average infantile death-rate where the forceps *might* be responsible for the child's death comes out slightly over 6 per cent.

	Forceps Cases.	Children Dead Before Application.	Deaths Possibly Due to Forceps.
		Per cent.	Per cent.
Dresden	232	21	5.6
Halle	102	19	12.0
Wurzburg ...	66	27	4.5
Prague	106	21	3.7
			6.0

Satisfactory in every way as those hospital results are, the question of morbidity has to be considered. The difficulty in estimating the exact morbidity lies in judging to what extent the forceps, *per se*, were responsible for the lacerations

of the soft parts. Many of the less important injuries are wrongly attributed to the forceps, because such tears might as surely have occurred in non-instrumental cases. From the Dresden Klinik, for instance, Münchmeyer reports 85 p.c. of lacerations which he attributes to the forceps even scientifically applied. Schmidt of Basle found 84 per cent. of lacerations in the vaginal and perineal tissues in 132 forceps operations. Few will admit, I think, that the forceps were necessarily responsible for the lesser injuries included in those figures, or that those writers are justified from such results in supporting the opinion that has been expressed by Winckel that "even in the hands of an experienced operator the forceps is an instrument by no means devoid of danger."

When we turn now to private practice we find that even in Germany, where the strictly limited application of the forceps in hospital practice has been quoted as an example of what should be followed in our every-day practice, it is interesting to note that even there the indications become extended, so that the forceps are much more frequently employed in private practice than in the hospitals. As the Germans put it, the "*Schulen indicationen*" as practised in hospital need not necessarily be strictly adhered to in private practice. Now, although I know that it has been said, and perhaps truly, that statistics are sometimes misleading, yet I should like to quote from a paper which appeared in a recent number of the *Zeitschrift für Geburtshilfe und Gynaecologie*. In that paper Bockelmann, of Berlin, states that of 800 cases attended by him in private during a period of fifteen years the forceps were applied in 335 cases, equal to 40 per cent. They were divided as follows:

47 at the brim.
122 in the pelvis.
166 at the outlet.

Of the total, 283 were primiparae, 94 multiparae. There were three maternal deaths, the cause in each case being eclampsia, and thus in no way connected with the forceps operation. Such results are quite equal to the best hospital returns.

Of the children 319 were alive, and 16 died during the forceps delivery, equal to about 4.7 per cent.; of the 16, however, 6 were known to be dead before the forceps were applied, 3 were doubtful, leaving only 7 of the total where the forceps could in any way be responsible for the child's death. It is further of interest to note that of 61 cases in elderly primiparae Bockelmann, with the early application of the forceps, had an infantile mortality of 3.3 per cent., while Münchmeyer, dealing with the same class of patients in hospital, where the time-limit in the second stage of labour was more prolonged, had an infantile mortality of 30 3 per cent.

Recently Dr. Dewar contributed a paper on this subject to the Edinburgh Obstetrical Society. His conclusions may be taken as a fairly good average of careful midwifery in every-day practice. He contrasted his early experience of 700 cases with 300 cases at a later date. In the former group he applied the forceps in 11 per cent. of the cases. There were no maternal deaths. Of the children 20 died, and of those only 6 were delivered with forceps, giving an infantile mortality of 2.8 per cent. Of his second series—and with a larger experience—he applied the forceps in 35 per cent. of the cases. There was one maternal death from a cause quite unconnected with the obstetric operation, and an infantile mortality of only 1 6 per cent. Those figures of Bockelmann and Dewar show a gain in the infantile results as a consequence of a more frequent application of the forceps as contrasted with the results achieved by their more limited use in hospital practice. But we must take into consideration the fact that hospital cases are usually more difficult, and this would account for the higher infantile mortality. With regard to morbidity their results clearly show that severe perineal tears were more frequent in unaided cases, and that the convalescence after forceps cases compared favourably with non-instrumental deliveries.

It has not yet been proved that by a frequent application of the forceps a very large saving of fetal life is obtained. But the figures at our disposal show at least a slight saving, with equally good results for the mother. This being so, I think we are justified in maintaining that in the hands of a skilful operator, the condition being satisfactory for the application of the forceps, a moderately frequent use of the instrument is to be recommended. By so doing we shorten the patient's suffering, without increasing any risk to the maternal or to the fetal life.

Granted that the results of forceps deliveries in the hands of careful practitioners compare favourably with the results in lying-in hospitals where their use is much more restricted, how does it arise that the consequences of pelvic lesions following upon instrumental delivery form the etiological factor in many gynaecological cases? There can, I think, be but one explanation, namely, too little knowledge in the technique of the application of the forceps, and over-confidence in the safety of the abundant use of antiseptics. No one, of course, undervalues the enormous benefits to obstetric practice since the introduction of antiseptics, but the patient's safety depends not only upon such precautions but also upon how the instrument is used, for that which is "best administered is best." Until such time as clinical midwifery becomes a compulsory part of medical education, ranking in importance with clinical surgery and clinical medicine, we cannot but expect that many of the younger practitioners will meet with difficulties in the manipulation of the forceps. Till then we must bear the reproach of German obstetricians who have criticized our midwifery training as being "*Nur theoretisch*." Most important as it is for our students to be thoroughly equipped in the various branches of medicine and surgery, yet it has perhaps been said with some truth that our students learn surgery which they will never practise and practise midwifery which they have never learned. The abuse of the forceps will to a great extent disappear when our students are able to obtain a sound practical training in obstetrics. As we cannot regulate the time when midwifery cases occur, our students, in order to obtain the full advantage of the experience offered by our maternity hospitals, must reside in or near that institution. Herein lies the superiority of the method in Germany, where a few weeks' residence in a maternity is compulsory before the student presents himself for examination. It may, of course, be argued that he may not in the course of a few weeks' residence apply or even see the forceps applied, and he may not acquire that dexterity possessed by William Hunter, who boasted that "he could turn with one hand and eat bread and cheese with the other." But the student would at least learn such important details as the position of the child's head and methods of pelvimetry. This knowledge would at any rate prevent one frequent abuse of the forceps—namely, that cases of contracted pelvis would be diagnosed before their application, and not for the first time after futile attempts at extraction. Further, he would be impressed with the responsibility he incurs in assuming the care of parturient women, and he would recognize that his attendance at the maternity hospital was not merely to be regarded as a place where he can "look in to see what was going on," but that attendance at it would be one of the greatest advantages for his future success as an obstetrician. I am sure I echo the sentiment of all those interested in the progress of obstetric teaching in Scotland when I congratulate our Edinburgh colleagues in having almost realized this ideal state of obstetric teaching by the acquisition of a residency in connexion with the Simpson Memorial Maternity Hospital. We hope that directors and managers of lying-in hospitals throughout the country may follow this example, and that they will be convinced that whatever increases the teaching efficiency of a hospital, be it lying-in or general, increases at the same time the benefits to the patients. It is but fitting that this advance in the facilities for teaching obstetrics in Edinburgh should be associated with the name of Dr. Milne Murray, who in the short years allotted to him did so much not only to maintain but to enhance the reputation of the Edinburgh School of Obstetrics.

THE PRESENT POSITION OF RADIUM IN THERAPEUTICS: WITH A SUMMARY OF THE FINSEN LIGHT AND X-RAY TREATMENT.

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Finsen Light and X Rays.

In December, 1902, I had the honour of reading a paper before the Royal Academy of Medicine in Ireland on a year's experience of the light treatment, in which I described my method of applying both the Finsen light and *x* rays, and discussing in brief the conditions in each case which appeared to me favourable to the adoption of one or other or both the methods. I found it difficult then, and it would be much more difficult now, to discuss either method separately, for in the general routine of hospital non-selected cases the

two methods of treatment markedly overlap, and with best results.

Times beyond count the physician is confronted with the crux in a new case—Which method should I employ, the Finsen light or *x* rays? And frequently the question, founded on experience, irresistibly suggests the answer, Use both. In all such cases (and they are many, especially in lupus), it is needless to say, sentiment and hero-worship must be suppressed; and the best method, or a combination of the best methods only, must be employed in the interest of humanity. In the discussion that ensued on that paper it was suggested that I should again bring forward the cases then exhibited, and, in compliance with that suggestion, I have the honour of now submitting for inspection a few who were within easy reach. I have written replies of a reassuring nature from most of those who have returned to the provinces, where they are at present pursuing their avocations on terms of equality with other members of the community, some after a lapse of twenty-eight years.

Case I.—A woman, aged 24. Condition on admission to the Skin Hospital in May, 1902: She presented an extensive yellowish-dark incrustation, involving the alae nasi, tip and bridge of nose, the prominence of both cheeks and greater part of upper lip, the nasal cavity being much encroached upon by lupoid vegetation. The lupus was of four years' standing. She had been operated upon four times under chloroform prior to her admission to the light treatment. She received the Finsen light to the face and *x* ray exposures to the nose.

Case II.—A woman, aged 31. Condition on admission to the Skin Hospital in December, 1901: The lupus had involved both cheeks, with considerable destruction of the alae nasi and septum; connecting the patches on both cheeks, a band of ulceration, horseshoe in shape, was perceptible, involving the greater part of the bridge of the nose. The disease was of sixteen years' standing, and had been surgically treated twelve times before her admission to the light treatment, which included both the Finsen light to the face and *x* rays to the nose.

Case III.—A girl, aged 21. Condition on admission to the Skin Hospital in April, 1902: She presented a small well defined ulcer involving the right ala nasi and extending up the right nasal cavity, the mucous membrane of which was swollen, granular, and bled easily. The lupus was of five years' standing and had been operated on four times under an anaesthetic prior to her admission to the light treatment. She received both the Finsen light and *x* rays.

Case IV.—A boy, aged 13. Condition on admission to Skin Hospital in December, 1901: He presented a circular ulcer something larger than a shilling situated on left cheek: the edges of ulcer were infiltrated and its base contained typical apple-jelly nodules. The disease was of nine years' duration, and had been surgically operated on under an anaesthetic six times before his admission to the light treatment. He received the Finsen light only.

Of the foregoing cases presented for re-examination this evening whose histories were given in greater detail with illustrations in my former paper, no treatment has been given for nearly a year, with the exception of Case I, in whom the disease recurred in the mucous membrane of the nose, and to whom the high-frequency current is at present being applied.

Radium.

The foregoing summary of the light treatment brings me to the subject of my paper—radium, the latest therapeutic remedy upon which medical science has been called on to adjudicate. This remedy has already received so much notoriety in the lay press that I consider it both opportune and necessary that its therapeutic results should be recorded at once with accuracy by operators who have tried it and whose method of procedure has been open to the inspection and investigation of the profession. Public feeling may thus be spared the pain of disappointment so often the outcome of sensational exaggeration, while at the same time safeguard from disfavour and probably disuse a method I believe we are justified in assuming is potent of promise.

I shall not tire you with the history which led to the discovery of radium, and with which the names of Madame and Monsieur Curie are so inseparably associated. But what appears to me the most characteristic feature associated with it, and with most of the great discoveries of our own times, is the sequence with which the one led up to and followed the other, compelling Nature, as it were, to divulge her secrets, while at the same time serving as finger-posts to future research.

In 1882 Koch discovered the cause of consumption, and, eight years later, he declared he had found its cure by injecting tuberculin.

In 1894 Finsen, after years of patient experiment, proclaimed that by concentrating certain rays of the solar spectrum he could kill the bacillus which Koch had found but failed to conquer.

In 1895, Roentgen convulsed all Germany, and indeed the scientific world generally, by his statement that he had discovered rays which were not only curative but could render the human body transparent.

In 1896, Becquerel discovered that uranium emitted rays akin to the Roentgen rays, but weaker, and it was doubtless this important link in that chain which led to the discovery of radium by the Curies two years later.

I shall not dwell on the physical or chemical properties of this great metal excepting so far as they apply to practical medicine. The power possessed by radium of emitting rays which manifest different penetrative and therapeutic effects is the one property of all others which most strongly appeals to the physician. Whether or not these rays are identical with *x* rays is a matter upon which much diversity of opinion at present exists. I am indebted to Dr. Reginald Morton for a copy of a paper kindly sent me in which he discusses this difficult and important question most clearly and concisely.

An approximate knowledge of the penetrative power of radium rays may be obtained by the ordinary *x*-ray screen in a dark room. A specimen of 5 milligrams was all I could possibly procure last September of a reliable standard. This specimen, when held half an inch behind a bar of metal $1\frac{1}{4}$ in. thick, caused distinct fluorescence of the ordinary *x*-rays screen, and when held at a distance of 3 in. or 4 in. behind the screen, and the hand is then interposed between the radium and the screen, the general contour of the hand becomes manifest, but to a much lesser extent than in the case of *x* rays. These experiments are not only interesting but easy to perform.

Unfortunately the supply of radium is so limited that even in the out-patient department of large skin clinics much difficulty is experienced in procuring suitable cases for this method of procedure. Hence operators are precluded even now from dogmatizing on its therapeutic merits.

The method and duration of its application were additional difficulties which early workers had to encounter, and the difficulty in definitely fixing a period of application which will apply equally to all is well illustrated in the history of my cases given below. Different patients with like disease, similarly situated, had the same specimen of radium applied under like conditions to patches of lupus of equal size and depth, neither of which had been previously treated. In the one case twenty applications of ten minutes' duration were sufficient to establish a cure; while in the other twenty applications of ten minutes' duration were insufficient to produce any alteration excepting slight redness and itching.

It may be that personal susceptibility of the patient, so important a factor in the Finsen light and *x*-ray methods, may also have to be reckoned with in the treatment by radium rays.

Case I.—A man, aged 30, unmarried, clerk. Has been the subject of extensive lupus of the face for 20 years, during which time he has been applying nitrate of silver and other caustics weekly, and has been scraped under anaesthetics seven times. He is at present receiving both the Finsen light and *x* rays and is steadily yielding to this course. About two years ago he developed a patch the size of a sixpenny-piece over right eyebrow, close to the orbital margin and inner angle of the orbit. The patch was circular in shape, with irregular edges which were slightly raised above the surrounding skin and capped with yellowish crust in centre. The position at once suggested treatment by radium because of the extreme difficulty of applying either the Finsen light or *x* rays.

On December 16th, 1903, having removed the crust, I applied in close apposition with the patch 5 mg. of radium bromide in a vulcanite capsule with a circular window of mica, for the easy transmission of the radium rays.

From December 16th, 1903, to February 10th, 1904, he had in all twenty applications of ten minutes' duration: nothing perceptible had occurred in the progress of the case until the end of the fifth week, when the edges of the patch became more prominent, slightly redder, and an itching sensation was complained of with a slight discharge from the patch for the first time. The further treatment was persisted in, and five additional applications given of the usual duration and at intervals as before.

On February 10th, the date of the last application, the edges of the patch were more swollen and redder, and although the itching had practically ceased, the patient complained of stiffness of the muscles, which became more manifest on wrinkling the brow. The discharge referred to before meantime increased. The treatment was now stopped, swelling and discharge subsided, and three weeks later the patch, although still red, had assumed the appearance of a healthy scar. No external applications of any kind were applied prior to, during, or since the treatment above described.

Case II.—A girl, aged 16, was admitted to Skin Hospital, December 21st, 1903, suffering for about 7 years from a patch of lupus, the size of a sixpenny piece, of a reddish colour, with raised edges covered with

brianny scales. She suffered no pain. She sought treatment now only because she thought it was beginning to spread, and becoming more unsightly. On December 21st, 1903, 5 milligrams of radium bromide were applied in direct contact with the patch. There was no discharge from the sore in this as in the former case which could in any way diminish the radio-activity of the specimen employed. Between December 21st, 1903, and March 18th, 1904, sixty-one applications were given.

First month five applications weekly of ten minutes' duration, without manifesting any visible change, excepting a slight redness.

Second month twenty applications of thirty minutes' duration were given, the redness of margin becoming more pronounced, accompanied by itching, but no discharge. February 13th, the duration of the application was increased to forty-five minutes, of which fifteen such applications were given, with the result that the edges of the patch became swollen with the sensation of pins and needles in the part, and a discharge on pressure. Treatment was still continued, and six further applications were given of sixty minutes each, the last on March 18th, when the treatment was stopped. A week later the pain, swelling, and discharge had diminished. The base of the ulcer was clean and healthy-looking, but the edges somewhat raised. No treatment or external applications of any kind were applied prior to, during, or since the treatment mentioned.

REMARKS.

Radium, to be of practical use in the cure of disease or the alleviation of human suffering must be forthcoming in much larger quantities, of a recognized standard of activity, and at a very much cheaper rate.

From my own experience of the metal, I prefer detailing what I have already achieved, and how I achieved it, rather than expressing an opinion on its merits which might in any way circumscribe its sphere of application or prevent others from putting it to the test.

For diagnostic purposes it is very doubtful indeed if radium can ever be of much use. With the *x* rays we have much grounds for hope in both lupus and rodent ulcer, and, combined with Finsen light, the results recorded are becoming more universal and more reassuring.

In my previous paper I expressed the belief that the Finsen light for circumscribed superficial lupus had no equal. Now, after eighteen months' further experience, I am more convinced than ever of its efficacy, but it will be for you, ladies and gentlemen, to say whether or not I have claimed for the method more than my results justify.

SOME RESULTS OF TREATMENT BY *X* RAYS, HIGH-FREQUENCY CURRENTS, AND ULTRA-VIOLET RAYS,

WITH ILLUSTRATIVE CASES.*

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THE following paper is an attempt to reproduce the experience of the writer during the last twelve months in the treatment by these agencies of the diseases for which they are generally used. It is only by an accumulation of such material that their true value can be assessed, and the best method of technique in each individual class of cases ascertained.

Every endeavour has been made to keep an accurate record of each sitting, and the following cases contain as full details as are consistent with brevity.

The record book contains the following headings, so that most of the factors are given at once. The triple arrangement is convenient where two or more of the agencies are used in the same case or at the same sitting.

Name Address Age

Notes.

Date.	X rays... Tube ..... Distance H.F. ..... Method.. M. Amp. Light ... Lamp ... Medium	Primary Circuit.			Notes.
		Duration.	Amperes.	Volts.	Interruptions.

There is, of course, one important factor missing, that of the measurement of the activity of the *x* rays. I do not possess any of the radiometers in the market, and in any case their accuracy is doubtful. Under the heading "tube," however, I have denoted its identity by a letter and its parallel spark length by a numeral.

To avoid repetition, I will here summarize some of the elements that are common to most of the cases. The hospital coil has a 10 in. spark, and is worked from the 220 volts mains through a series rheostat. A motor dipping break has generally been used, but sometimes a Wehnelt, the latter especially for high-frequency work. My own coil has a 14 in. spark with a primary of four layers with variable self-induction. I have generally used the series parallel grouping. It has a Wehnelt break and is worked off the mains (220 volts) through a series resistance. I have recently adapted the switchboard, so that it can give either a series or shunt resistance. With the series resistance the throwing in or out of extra resistance barely makes any difference in the E.M.F. between the primary terminals. With the shunt resistance it can be varied within wide limits, and can be reduced to anything you please or even to zero.

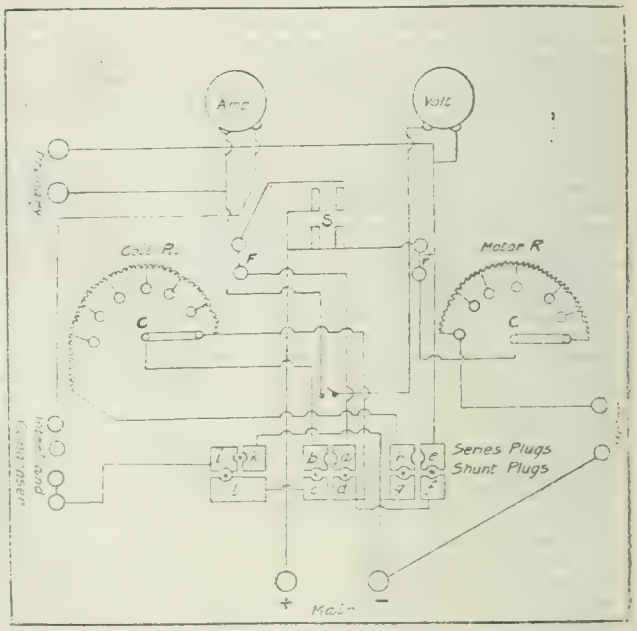


Fig. 1.—Diagram of switchboard arranged either for "series" or "shunt" resistance. For the former the three plugs in the upper row are inserted. For the shunt circuit the five plugs in the lower row are inserted. S, Interlocking switch for motor and coil. C, Crank, with regulating handle attached. The subjoined scheme will enable the reader to follow the circuits more easily. (Motor circuit omitted.)

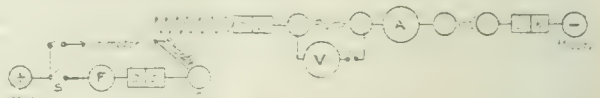


Fig. 2.—Series arrangement.

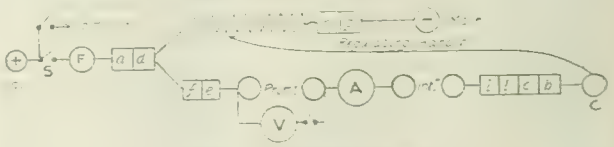


Fig. 3.—Shunt arrangement.

By using an E.M.F. of 50 or 75 volts between the primary terminals (or less with a motor interrupter) the life of the tube is greatly prolonged, and it does not so readily become blackened with platinum torn off the target. There is thus a great economy in tubes, and better definition is secured in radiography. There is, however, great waste of current, but this is a small matter compared with the saving in tubes, especially where a separate power meter is used.

Even with a low E.M.F. a fair current is obtained, so the heavy power element so necessary for good therapeutic work can still be obtained. It may, however, be found later that it is best to use inferior tubes with high voltage as well as heavy

* Read at a meeting of the Staffordshire Branch of the British Medical Association.

current with series resistance for therapeutic *x*-ray work, while keeping the new and best tubes with low voltage and shunt resistance for radiography and screen work. Certainly for high-frequency work we want all the E.M.F. and current we can get, and therefore want the series resistance, and not much of that. It is for this purpose I have designed this switchboard, so that the series resistance can be used for high frequency and the shunt resistance for radiography. Makers have hitherto either given purchasers a choice of one or the other arrangements, or have supplied one form to the exclusion of the other.

I have therefore given a diagram of the wiring I have devised, and any existing switchboard can be modified according to this plan, so as to give the twofold arrangement. For "series" put in the upper row of plugs, for shunt put in the lower row. The "weak" and "strong" ends of the collector are the same respectively in both cases.

It is important to emphasize the necessity of having the voltmeter connected across the primary terminals. One leading maker connects it across the mains, which renders it useless. If extra resistance is required for the shunt arrangement, it can easily be inserted between the plate *h* and the wire joining it, and another plug could be used to cut it out when necessary.

The distance of the diseased part from the target has generally been about 6 in. to 9 in. The current has generally been about 10 ampères.

Laminated lead screens, or masks covered with one or two layers of laminated lead, were used for the protection of the parts adjacent to the disease, a hole allowing the rays to pass through. In the breast case a Bavarian plaster case was made, with lead inside.

In the cases treated with high-frequency currents the usual method was to place the patient on the couch, connect the bottom of the resonator to the condensation plate and direct the effluve to the diseased part. Both Oudin's vertical and d'Arsonval's horizontal resonators were used. In some cases auto-condensation was given in addition and with the hospital coil 300 milliampères were obtained, with my coil 500 (the limit of the instrument) or more. Latterly I have been extensively using the two methods simultaneously, the length and density of the effluve is not lessened, nor is the milliampèrage of the condensation current diminished by the simultaneous employment of the other method.

The ultra-violet rays were obtained from a home-made lamp constructed according to the pattern devised by Mr. Hall Edwards, with a large quartz lens as compressor. Ice was not convenient to use with this instrument. In spite of its simplicity it is a very useful instrument, and in one case in particular excited a reaction when previous application of *x* rays had hitherto had no effect, and the cure speedily followed.

In making a study of high-frequency treatment I have endeavoured to keep to a few types of cases rather than seizing every case for which it is said to be useful, and trying it for them all. Lack of time would prevent selecting from a large out-patient practice every case that might benefit.

The chief class selected are myalgias and neuralgias of intractable or specially severe nature. Not every man with a pain in his back gets high-frequency, nor even every case of sciatica or tic douloureux. But those cases that have been under treatment for weeks or months before coming to the O.P. room, or cases that I have treated with drugs and other means for weeks without benefit, or cases that, though recent, are so crippled as not to be able to get about, or are sadly in need of the speediest means of ridding them of their pain, are the ones selected.

In the following series of cases some are described in detail, but most are compressed into the narrowest limits and some are described in groups. [A number of stereographs were prepared to illustrate some of the cases, but it has not been feasible to reproduce them as such. The use of these with Brewster's stereoscope showed up many details which otherwise could not be detected, especially surface irregularities and caverns.]

The first 11 cases were shown at the meeting. Photographs and stereographs of the next two cases were also shown.

CASE I.—E. C., female, aged 22. Lupus of nose and upper lip. Began six years ago in interior of nose, spreading to surface; scraped four years ago. Had Finsen light twelve months ago with improvement, but relapsed.

Treatment.—*X* rays, hard tube three times a week for ten minutes. Then one application U.V.R., followed by marked reaction. Few more *x*-ray applications afterwards; complete cure. Fig. 4, before treatment; Fig. 5, after. Nineteen sittings, total duration two hours ten minutes.



Fig. 4.—Before treatment.



Fig. 5.—After treatment.

CASE II.—M. H., female, aged 68. Rodent ulcer left eyelid, involving ciliary surface only. At first the middle of ulcer and growth healed, leaving hard nodules at ends; eventually these cleared up, leaving soft margin; no ectropion; excellent cosmetic result. *X* rays three times a week, ten mintutes; thirty-three sittings; total duration, five hours.

CASE III.—M. W., female, aged 19. Tuberculous disease left cheek. Had raised mass secreting serous fluid, too low for Stenson's duct. Treated at first with *x* rays and U.V.R.; very little effect produced. Then high-frequency effluve, sparking, and direct applications of saline

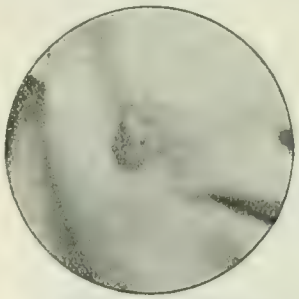


Fig. 6.—Before treatment.

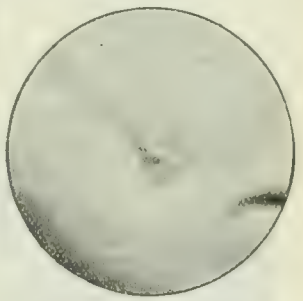


Fig. 7.—After treatment.

solution electrodes, occasional clipping of redundant edges under high-frequency anaesthesia. Thirty-three sittings; total duration, three hours forty minutes. Fig. 6, before treatment; Fig. 7, after.

CASE IV.—A. S., male, aged 22. Lupus of nose destroying cartilaginous septum and lower part of surface. Patch on upper lip. Has been scraped by Mr. Vincent Jackson and Mr. Cholmeley frequently. Before sending to me Dr. Deanesly put him on a course of Hg. and I. without

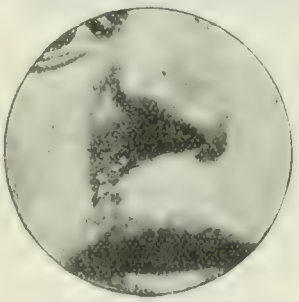


Fig. 8.—Before treatment.

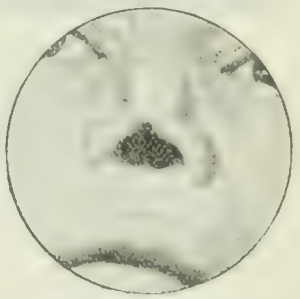


Fig. 9.—After treatment.

effect; *x* rays, then high-frequency electrode into cavity, then *x* rays again. Lip healed speedily, but interior of nose took longer. Eventually quite cleared up. Twenty-six sittings; total duration, three hours thirty-two minutes. (Figs. 8 and 9.)

CASE V.—J. H., male, aged 55. Rodent ulcer alae of nose, Fig. 10 showing ulcer, Fig. 11 showing cicatrization after treatment with *x* rays;

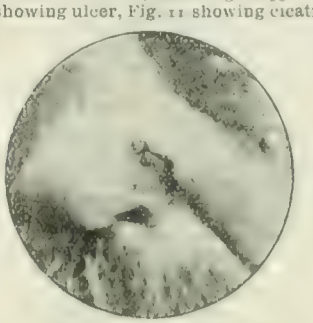


Fig. 10.—Before treatment.

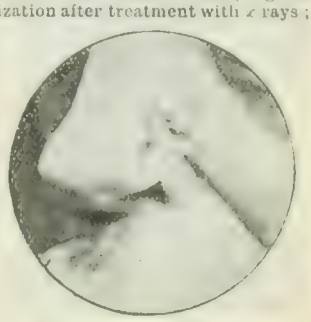


Fig. 11.—After treatment.

seventeen sittings; total duration, two hours. Fig. 9 also shows the effect on part of the moustache that has been insufficiently screened.

CASE VI.—T. M., male, aged 22. Rodent ulcer of alae of nose. A year ago had an ulcer on nose which healed; part of cicatrix broke down again; *x* rays and high frequency eleven sittings; total duration



Fig. 12.—Before treatment.



Fig. 13.—After treatment.

one hour twenty-six minutes. Fig. 12 showing ulcer and remainder of cicatrix of old ulcer. Fig. 13 cicatrization of ulcer. A minute patch has since recurred.

CASE VII.—P. W., male, aged 55. Epithelioma of lip involving whole of upper lip up to level of nose; hard enlarged submaxillary glands. Glands removed by Dr. Deanesly, also a piece of growth on lip. Both found microscopically to be epithelioma, then transferred to me because growth of lip was inoperable. *X* rays produced great slough



Fig. 14.

of centre of lip, which came away, edges became clean, and remainder of hard tissue became soft; now all growth gone, a notch resembling a hare-lip being the only deformity. Fig. 14 shows the condition immediately after the removal of the glands. The growth is outlined by fine dots. I have been unable to induce him to be photographed again. *X* rays twenty-five sittings; four hours forty-five minutes' total duration.

CASE VIII.—A. B., female, aged 21, acne indurata. Very numerous acne pustules, with great induration over the whole of the face; *x* rays; eyes shielded; pustules cleared up except where covered by shield. Then the shield was narrowed, and all cleared up. Twenty sittings; total duration, two hours and ten minutes.

CASE IX.—A. L., female, aged 75, rodent ulcer nose; complete destruction of whole of nose except bridge down to level of face; hard-raised edge; great ulceration of skin and mucosa. Perforation of palate, with hard edge surrounding it. Microscopical examination showed the disease to be rodent ulcer; *x* rays; edge became softer; ulcers healed; much healthier appearance; hole in palate has increased: edges still raised but softer; tried high vacum high-frequency electrode for palate, but she would not tolerate it. Still under treatment.



Fig. 15.

CASE X.—E. C., tuberculous disease of ear. Eight years' history. Has been scraped and excised on several occasions by Dr. Deanesly and Mr. Cholmeley; *x* rays, distinct reaction produced and great reduction in mass. Has quite healed up, but not early enough to get photographed again (Fig. 15).

CASE XI.—A. C., female, aged 15; severe warts; numerous large warts on both hands. Right hand so far alone treated. Figure shows left hand, but condition was similar on right. Treated by H. F. sparking. The resonator was tuned so as to give its longest spark. The pointed electrode was placed in contact with the wart, and continued there till

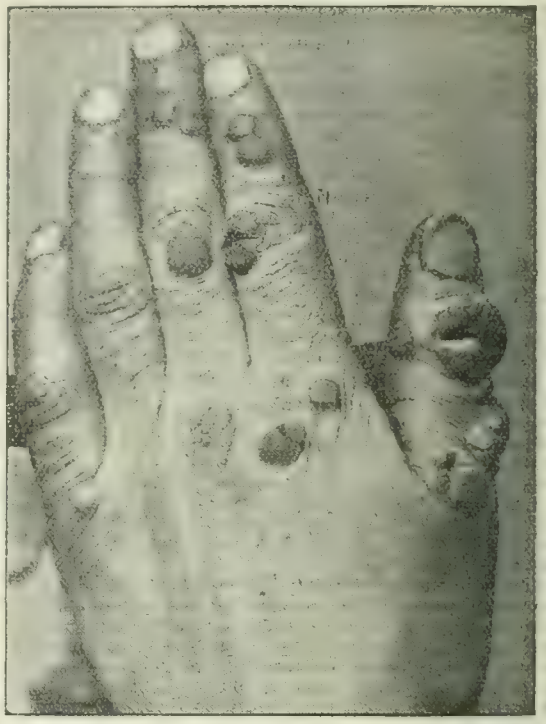


Fig. 16.

suddenly the whole wart glows with a rosy light. It is then found that a vesicle has dissected the wart from the underlying skin, and it may be snipped off. The procedure is painless. All the warts on the right hand are cured, except two or three very large ones that have escaped treatment at one edge. A subsequent application will get rid of these (Fig. 16).

CASE XII.—M. D., female, aged 49. Recurrent scirrhus of breast. The primary growth and the axillary glands were removed by Dr. Deanesly. Some weeks later a small nodule recurred, and in three weeks' time had grown to the size of a tangerine orange. At this time Dr. Deanesly asked me to undertake the treatment. It appeared to me that, though it was a forlorn case, there might be some chance if the growth were pared down to the level of the chest. Accordingly, Mr. G. Wright, the house-surgeon, did this, arresting the haemorrhage by actual cautery. The adjacent intercostal spaces were, however, full of growth. After a month's treatment a large central slough came away, leaving a hole leading down into the intercostal space, the bones and periosteum being denuded. In the third month a big cavern formed, and the growth appeared to have disappeared; suspicious pieces were removed, and no definite alveolar structure was found. Treatment was discontinued for a month, and during this time the cavern gradually filled up with material like granulation tissue, which on microscopic examination was suspicious. The treatment was resumed, and the growth again melted away under the rays, the bones necrosing and coming away piecemeal until a large cavern was left. The growth bounding the inner and lower aspect of the cavern, and the lung at its bottom, are well seen in the stereographs, which unfortunately cannot be reproduced here. For three weeks this growth was treated with direct application of high vacuum high-frequency electrodes, and as a result a large part of the growth disappeared. The cavity at this time was bounded above by the first rib, covered by growth, one nodule of which projects downwards, bounded outwards by a fragment of the second rib, inwards by the sternum, and downwards by the third rib. The growth also lined the inner and lower walls of the cavity; while at the base was the lung covered by visceral pleura. At end of sixth month glands developed in opposite axilla, and a month later it was seen that the treatment which at first gained on the growth at last failed to keep pace with it, and the patient became so weak that exposures were borne with difficulty. They were therefore discontinued. Though the treatment failed to effect a cure it is very instructive as showing how *x* rays can bore a great hole into the chest and keep pace for a long time with a very rapidly-growing, extremely malignant growth. Possibly had the patient been able to stand even more vigorous treatment, or had the growth been a little less malignant, cure might have been possible. As it is, I feel sure that the treatment has prolonged her life in almost complete absence of pain, except just at the last. I have just heard that she has died, in the tenth month since the beginning of my treatment.

None of the cases have had sufficient time to ensure against relapses or recurrences, but the cases of lupus and rodent ulcer show the marked superiority of these methods over excision and scraping, even though they may have to be repeated for relapses. The case of epithelioma (who will not sit for a second photograph) is a good example of their value in inoperable cancer.

CASE XIII.—A. S., male, aged, lupus vel syphilis of nose. In 1897 had epiphora. Dr. Lewis, of Nottingham, placed a tube in nasal duct. Later a swelling began at the junction of right cheek with nose. Nose scraped by Dr. Walker, of Peterborough, and healed up. He saw Mr. Nettleship later, who said the tube was not there, but it was found eventually by Dr. Sequeira by *x* rays. Dr. Sequeira treated with lotion, ointment, and medicine. Healed up in March: then tube was removed by Mr. Lack. In August, 1902, rash broke out again. Dr. Loxton, at the Birmingham Skin Hospital, ordered *x* rays three times a week; it improved up to its present state, but remained stationary since. Three weeks before seeing me he saw Dr. Sequeira, who ordered KI, Hg., and Sarsa. Admits buboes in each groin ten years ago, and an occasional rash like blood on thighs and legs after taking medicine. No other history of syphilis, which he denies. The condition in December last is shown by photograph (see Figs. 17 and 18). Destruction of tip of nose and cartilaginous septum, mucosa thick and mammillated. Considerable thickening on outer side of left ala. Palate shows signs of scarring, uvula gone. Larynx: Left ventricular band covers left cord except at front; mammillary projections in interarytenoid space. Brother died of phthisis at 21. Treatment: Pot. iod. gr. x, liq. hydrag. perchlor. 5j, inf. gent. co. 3ss. t. d.; ung. hydrag. iod. rub., half strength. January 5th, rash spread on to cheeks, now looks like batswing lupus. He practically made no progress, though both Hg. and I. were pushed: in fact, the redness on cheeks and nose became more angry. On March 3rd I began *x* rays and speedily attained reaction, since which there has been steady progress. Redness has disappeared from cheeks. Ulceration of nose is healing. Thickened mass on left ala is subsiding. It is now quite well except a small ulcer on the septum (see Figs. 19 and 20). Doubt still remains on the diagnosis. Dr. Sequeira cured it with Hg. and I. in 1902. The general aspect suggests syphilis. But Hg. and I. have failed in my hands, and the later appearance looked very much like the batswing type of lupus. There is no doubt as to the effect of *x* rays.

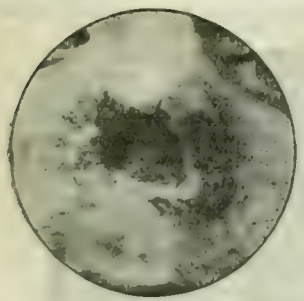


Fig. 17.—Front view, before treatment.

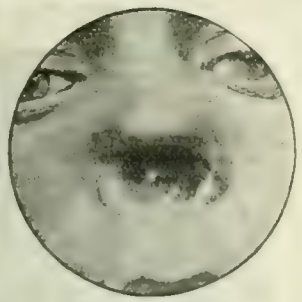


Fig. 19.—Front view, after treatment.



Fig. 18.—Profile, before treatment.



Fig. 20.—Profile, after treatment.

Yielding to *x* rays does not, however, exclude syphilis. It may be that syphilitic lesions will yield to this treatment.

The usual result in the cases of severe intractable lumbago, sciatica, or neuralgia is that the pain completely leaves him at the first sitting, he can walk and touch his toes, or move the hitherto painful part, without difficulty, and he feels quite well. During the course of that day or the day following the pain returns with diminished severity. As the treatment is continued the pain returns at longer intervals and with still further diminished severity until it ceases altogether and does not return. Occasionally it never returns after the first application; at other times it does not quite disappear. I have notes of 15 cases of refractory sciatica, lumbago, and facial neuralgia (4 in addition to above list), all of which were cured as far as I know; 4 ceased to attend prematurely, so their ultimate fate is in doubt. The only cases that have not been cured are some that ceased attending at an early stage after the first or second sitting.

The second case of tic douloureux calls for special comment. Twelve years ago had a fall, resulting in a miscarriage, with flooding afterwards. Five years ago had oöphorectomy for constant ovarian pain, with relief for six months. Seven years ago had severe facial neuralgia; had all her teeth extracted, without relief; went to Weston for three weeks and pain disappeared. Present attack began four weeks ago; severe pain over distribution of first and second branches of right fifth nerve, constant; no remission; much more severe than previous attack. Four days ago right side of face became stiff and intensely tender. Cannot masticate or move face at all. Had auto-condensation ten minutes, 480 to 500 milliampères, and effluve on face ten minutes. Complete relief of pain, which lasted till night. Had daily sittings, with same result, for first week. During second week the pain, when it returned, was of much less intensity and of shorter duration. In the third week paroxysms would sometimes last for an hour or consist only of two or three twinges. In the fourth week she was free for many days together, with an occasional return. Sittings on alternate days; auto-condensation and effluve simultaneously for ten minutes. Fifth week no return.

I have had 2 cases of tinnitus aurium that would not yield to other measures cured by high frequency, one after the second application: the other has since relapsed, but always feels much better for some days after an application. The last time I saw her she had had no return for some time. Two cases of anorexia nervosa with clean tongue and constant vomiting were cured. Another case got no benefit. One case of pruritus ani, 2 of haemorrhagic internal piles have been cured by the application of the salt-water electrode.

One case of partial hemiplegia and hemianaesthesia was almost completely cured by sparking him freely with resonator current. Powerful muscular contractions are thus evoked and sensation is speedily restored. The pain of this method would be too great if sensation was normal.

Two cases of diabetes mellitus were treated. Both were greatly benefited as regards symptoms, but neither lost their sugar. One has since been readmitted, but was not treated with high frequency; he developed albuminuria, uraemia, and died. They were among my earlier cases when I had not a high-frequency milliampèremeter, so that their dosage may have been insufficient.

I have not as yet seriously tackled phthisis, nor chorea, asthma or neurasthenic diseases, which in many capable and reliable hands have yielded brilliant results, but I propose to do so in a systematic manner shortly.

I heard a paper by Dr. Somerville, of Glasgow, in April, at the British Electro-Therapeutic Society's meeting in London, on the Durability of the Results of High-Frequency Treatment. He had kept a careful record of all his cases for two years or more, and they practically all were free from relapse. His paper in the May number of the *Journal of Electrology and Radiology* is well worth reading.

Whatever exaggeration may be found in the writings of some too sanguine advocates, I am convinced that high-frequency treatment has a very real value, in many cases exceeding that of any rival form of treatment, and in many cases succeeds where others fail.

For high-frequency treatment more energy is required than for *x*-ray work. For the latter a 10-in. coil is sufficient; for the former a 12-in. or 14-in. coil should be used; 12 ampères or even more in the primary circuit should be used, and the electrolytic interrupter is perhaps the best for this purpose. Large Leyden jars are to be preferred to the small ones usually supplied; they give a longer, denser, and more powerful effluve, and yield more milliampères with the condensation couch.

Finally, it cannot be too much insisted that in the use of these powerful agencies special study should be given both to thoroughly mastering the intricacies of apparatus and ascertaining their best output, and also to such questions as dosage and the indications for modification in the treatment shown by the reaction of the patient's tissues.

Unfortunately, many medical men who have not the time or inclination necessary for mastering the subject send their cases to laymen, who are no more competent to treat these cases than unqualified men generally are to treat ordinary medical and surgical cases. It is quite a different sphere to those of massage and balneotherapy, which are rightly relegated to nurses. In *x*-ray and high-frequency treatment there

is ample scope for the employment of all the powers of observation and trained skill of a medical man, and only in his hands will they yield the best results and be comparatively free from the accompanying harmful effects.

The following table summarizes the cases treated by high frequency alone.

Sex.	Age.	Disease.	No. of Sittings.	Total Duration of Sittings. Hrs.	Min.	Result.
M.	55	Diabetes mellitus	25	4	10	Greatly benefited, since relapsed.
M.	48	,, ,, ...	18	3	0	Greatly benefited.
F.	44	Tinnitus aurium	10	1	40	C.
M.	40	,, ,, ...	8		20	C.
M.	21	Anorexia nervosa	5		50	U—Ceased to attend prematurely.
F.	52	,, ,, ...	3		30	C.
M.	29	Refractory sciatica	9	1	30	C.
M.	53	,, ,, ...	12	2	0	C.
M.	27	,, ,, ...	2		15	R—Ceased to attend prematurely.
M.	40	,, lumbago ...	3		20	R— ,, ,,
M.	43	,, ,, ...	5		40	R— ,, ,,
M.	66	,, ,, ...	15	2	20	C.
F.	25	Tic douloureux	5		50	C.
F.	46	,, ...	31	9	10	C.
M.	28	Pruritus ani	10	1	40	C.
M.	25	Neuralgia of head	3		15	R—Ceased to attend prematurely.
F.	19	,, temple ...	5		25	C.
F.	20	,, supraorbital ...	9		45	C.
M.	30	Hemianaesthesia	13	2	10	R.
M.	28	Haemorrhagic piles ...	4		40	C.
F.	6	,, ,, ...	2		15	C.
F.	33	Recurrent lupus erythems. / Eczema	12	1	10	C. / R.

C—Cured. R—Relieved. U—Unrelieved.

COLITIS POLYPOSA.*

By FRANK POPE, M.D., F.R.C.P.,
Senior Physician, Leicester Infirmary.

THE following is a report of a case which presented a rare if not unique condition.

O. K., aged 21, was admitted to the Leicester Infirmary on January 16th, 1904. She was wretchedly emaciated, had suffered severely from syphilis, had had an illegitimate child about nine months previously, followed by a septic condition of the passages and suppuration of Bartholin's glands.

History of Illness.

For six months she had had pain in the abdomen, coming on shortly after taking food, and continuing for about one hour and a-half, and during these attacks frequently vomited. She had alternately diarrhoea and constipation, and occasionally passed bright red blood in the stools. She had never vomited blood. Recently the bowels were very constipated, menstruation scanty. She had palpitation, headache, and dyspnoea on exertion.

Condition on Admission.

On examination there was some pain and tenderness in the epigastrium and right hypochondrium. There was retraction of the abdominal walls, but the diaphragm descended fairly well on inspiration, and there was little or no muscular rigidity. Nothing was felt on palpation. Temperature 98.6°, pulse 70, very feeble. Mental condition weak, very emotional, but able to answer questions.

After-History.

The subsequent history may be summed up briefly by saying that she gradually sank, passed a good many small loosish motions, and at least one solid one. On January 20th had a fit of unconsciousness (attributed to cerebral anaemia); she rallied somewhat from this, but died on the 23rd, after twenty-four hours' further unconsciousness, apparently from asthenia.

Necropsy.

All thoracic organs and kidneys very pale, liver pale and fatty, stomach and small intestine normal. Colon full, but not over-distended; its walls appeared externally to be somewhat thickened. On opening it the mucous membrane was found thickly covered with more or less pyramidal polypoid excrescences varying from the size of small shot to that of a field pea. There was no sign of ulceration. The majority of the growths were black at the apex. The growths were largest in the transverse portion of the colon; they extended into the upper part of the rectum, where they were less thickly distributed and more shot-like. There were no secondary deposits to be seen in any of the organs, but in front of the bodies of the lumbar vertebrae was a chain of slightly-enlarged lymphatic glands pinkish on section.

* Read at a meeting of the Midland Branch of the British Medical Association.

Pathological Report.

Mr. J. H. Targett reported:

In the thickened part of the colon the mucous membrane is very rugose and villous, and the section shows that the cellular tissue of the mucosa and submucous coat is thickly infiltrated with small round cells. In consequence there is obstruction and dilatation of the gland follicles into small cysts filled with thick secretion. The surface epithelium is detached, but there is no evidence of malignant disease. Much hypertrophy of the muscular coat exists, probably due to the constant irritation of the bowel. This condition of the large intestine may be described as "colitis polyposa," and it seems to be the result of a chronic inflammatory lesion.

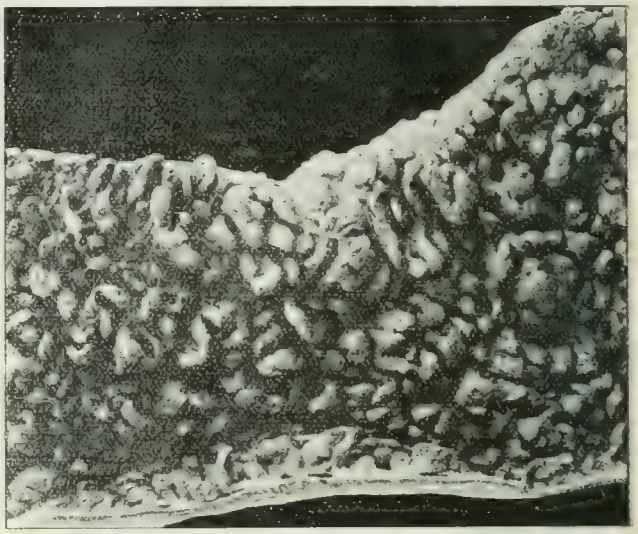


Fig. 1.—Naked-eye appearances; from a photograph taken at the Royal College of Surgeons of England by Mr. H. George.

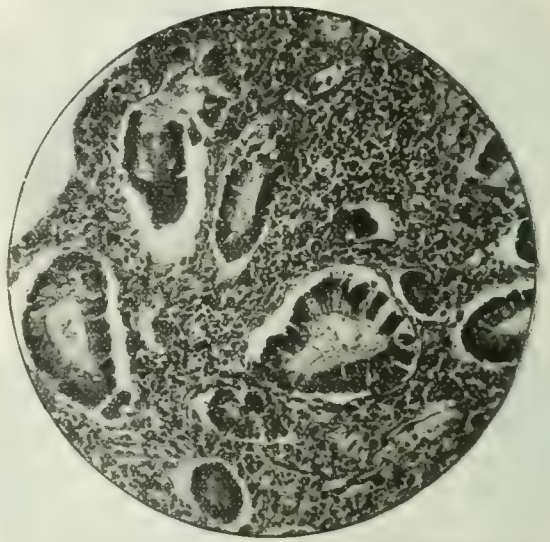


Fig. 2.—Microscopical section: from a photograph taken by O. T. Elliott, Leicester.

I have not been able to find any reported cases resembling this. Norman Dalton reported one[1] in which the tumours contained the elements of the mucous membrane in varying proportions, but there was no glandular proliferation. Cripps[2] reports a case from the Middlesex Hospital, and figures the growth. It somewhat resembles the present one, but the polyps are rather more pedunculated. Cripps considers these to be adenoid in character. He also figures a mass of polypi of still more pedunculated form from King's College Museum. It is interesting to observe that the Middlesex Hospital case occurred in a man who had long suffered from a phagedaenic ulcer of the leg. He adds[3] a most interesting account of similar growths in three members of one family, all young people; two of these had multiple adenomatous growths. The third, in addition to these, had developed a mass of adenoid cancer at the junction of the sigmoid flexure and rectum, from which he died. This is inter-

esting in view of its suggestiveness as to the transformation of new growths from an innocent to a malignant form. Mr. Bond's case shown here to-day appears to be one of multiple adenomata.

Assuming that the polypoid condition in the present case was a direct result of septic conditions, we must recognize that it is possible to have a hypertrophic inflammation of the mucosa as well as the more common atrophic and destructive conditions met with in dysentery and the more usual forms of ulcerative colitis, and that as this condition of hypertrophy is not likely to have been of rapid growth, it is probable that the other septic processes in the patient were secondary to the colitis. It is likely that some of the older cases regarded as adenomata were really of this nature, and three cases in one family rather suggest a common and infective origin.

I have little to say on the treatment. It must, I think, be mainly surgical, and colotomy and free washing out would be indicated were it not that the disease is not often recognized until the patient has almost succumbed to its effects. It is very desirable that all cases of this nature should be reported so that their diagnosis may be facilitated. Mr. Targett informed me of disastrous effects in two cases which were the subjects of abdominal section in whom unsuspected ulcerative colitis existed. Attention should be especially directed to the early symptoms, and pain on going to stool and unexplained haemorrhages extending over a long period should receive careful attention.

REFERENCES.

[1] *Lancet*, i, 1893, p. 146. [2] *Diseases of Rectum*, 2nd edition, 1890, p. 289. [3] Ibid., p. 291.

A FATAL CASE OF CYANOSIS WITH ENLARGED SPLEEN.

BY THEODORE FISHER, M.D., M.R.C.P.,

Pathologist, Bristol Royal Infirmary; Physician to Out-patients, Bristol Hospital for Sick Children.

ABOUT three years ago a case occurred in the *post-mortem* room of the Bristol Royal Infirmary to which, after the necropsy, the only heading that could be given to the notes was "Cyanosis, cause?" The cases mentioned by Dr. Osler in the BRITISH MEDICAL JOURNAL of January 16th, 1904, and previously brought by him before the notice of the Association of American Physicians, have recalled this case of cyanosis to my memory.

A few notes of the case may be of interest.

A woman, aged 36, was admitted under the care of Dr. H. Waldo, March 23rd, 1901, with cyanosis which was said to have existed for several years. It was stated at the time of the necropsy that her curious appearance rendered her an object of interest in the country district in which she had lived. Apparently she had, in spite of the cyanosis, enjoyed fairly good health, and, according to the clinical notes, suffered from nothing worse than attacks of bronchitis in the winter. She was married, but had no children. About a month before admission she first noticed marked shortness of breath, and soon after some swelling of the legs appeared. At the time of admission the patient is described in the clinical notes as "a heavy, obese woman, very blue in the face." There was some general oedema and the cyanosis affected the whole body. Some orthopnoea was present. On examination of the lungs *râles* and rhonchi were widely heard. There was some dullness at the base of the right lung. The cardiac impulse could not be made out "nor the precordial dullness elicited on account of the obesity." There were no murmurs. The pulse was regular, 90. Nothing is recorded as having been noticed in the abdomen except the large amount of fat present. The urine was of specific gravity 1022, acid; a trace of albumen was present. Soon after admission 20 oz. of blood were abstracted by venesection without relief to the cyanosis. The temperature remained normal until the day before death, when it ran up to 102.4°. She died on April 4th. The necropsy was made thirty hours after death, and although the weather was not mild the amount of decomposition was far greater than is usually the case after that lapse of time. Blebs were scattered abundantly over the very stout body and the chest was marbled by staining in the situation of the subcutaneous veins. In the right pleural cavity were 25 oz. of fluid and a smaller quantity in the left pleural cavity. In the lungs there was nothing noteworthy. They were free from emphysema. The larynx, trachea, and bronchi presented nothing abnormal. The aorta was quite healthy, but the intima was much stained by the colouring matter of the blood. The pericardium was healthy but contained 6 oz. of fluid. The heart was dilated and measured 5 in. across the ventricles. The tricuspid and mitral orifices were, however, of normal size and the valves healthy. The cusps of the pulmonary and aortic valves were also quite healthy. The foramen ovale was closed, but it may be added that had it been patent, that would have been a feature of no special interest, since a valvular patency of the foramen ovale is found in about one heart in every four that is seen in the *post-mortem* room. The coronary arteries were also free from disease and the cardiac muscle, so far as could be seen, was quite healthy, but unfortunately it was very much decomposed. The notes state that "although the patient is so very fat there is very little fat over the heart." By an unfortunate and most unusual oversight the weight of the heart has been omitted from the notes. Some hypertrophy was, however, present for which an explanation was not clear. The liver weighed 70 oz., was slightly congested, but except decomposition showed nothing noteworthy. The stomach was congested; the intestines showed nothing noteworthy. The adrenal bodies and pancreas, as well as the pelvic organs, were also healthy. The spleen was, however, enlarged and weighed 13 oz., but except for the enlargement showed nothing noteworthy. The kidneys were also much enlarged and weighed each 11½ oz. They are described as unfortunately being so decomposed as to be "useless for microscopical purposes." It is, however, added, "so far as could be seen there was nothing abnormal beyond their great size."

The special features of this case, as seen in the necropsy room, were therefore, in addition to the cyanosis and obesity, an unusual amount of decomposition, some dilatation of the heart, an enlarged spleen, and greatly-enlarged kidneys. In the last detail the case seems to differ from the three cases recorded in Dr. Osler's original paper, inasmuch as in none of those cases was great enlargement of the kidneys observed. It is, perhaps, unfortunate that the extreme decomposition of the kidneys and of the cardiac muscle in this case led me to decide that microscopical examination would be valueless, but I think it may safely be said that, as has been mentioned above, it it highly improbable that anything noteworthy would have been discovered that could not be seen with the naked eye.

In conclusion I have to thank Dr. Waldo for kind permission to record this case.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

ACUTE INTESTINAL OBSTRUCTION CAUSED BY AN IMPACTED CONGERIES OF GALL STONES.

IN the BRITISH MEDICAL JOURNAL of July 2nd, 1904, p. 19, Dr. E. C. Bridges communicates the case of a patient with "acute intestinal obstruction, caused by an impacted gall stone," in which Mr. D'Arcy Power operated. An experience of a somewhat similar case, with a similar result, occurred to a patient of Dr. C. H. Caldicott, of Chobham, Surrey, upon whom I operated.

History.—The patient, a man, aged 43, was siezed with sickness and vomiting and rather severe abdominal pains on June 21st, 1903, followed by a free action of the bowels; the pains continued until June 23rd, when Dr. Caldicott was called in and found the patient suffering from intestinal obstruction. On June 24th Dr. F. M. Haig, of Woking, was called into consultation, and during the night of the 24th the patient was so collapsed that his life was despaired of. On June 25th I saw the patient with Dr. Caldicott, and found that he had rallied; the tongue was clean, the temperature and pulse normal, the abdomen somewhat distended, and the pain elicited by palpation slight and indefinite. Vomiting had occurred of a bilious character at long intervals. During my visit the patient passed some flatus and faeces, and, as he had rallied, operation was deferred. On the following day, June 26th, I visited the patient, but an hour previous to the time appointed for operation, the patient passed flatus freely and some small faecal lumps. He continued to pass flatus, the general condition was fairly good, and operation, after consultation, was again deferred.

Operation.—On June 28th the improvement was not maintained, and laparotomy was decided upon. Assisted by Drs. Haig and Caldicott and Mr. P. L. Daniel, F.R.C.S., I opened the abdomen in the middle line below the umbilicus, and found the intestine distended as far as within some 18 in. of the ileo-caecal valve. A hard movable mass could be felt at the junction of the distended and collapsed portion of the intestine. The ileum was opened at this point; a rounded pear-shaped mass was removed and the intestine sutured, with but practically no disturbance of the abdominal contents. The calculus proved to be a conglomeration of small gall stones measuring 3½ in. in length and 1½ in. across at the blunt or lower end of the pear-shaped mass. There was no reason to anticipate a fatal issue, but, as in the case related by Dr. Bridges, the patient died in twelve hours after the operation.

REMARKS.—The symptoms in this case were interesting inas-

much as there was no history of gall stones: the intestinal obstruction was not complete, flatus and faeces passing, the former in considerable quantity: the vomiting was not alarming and the patient retained liquid food and champagne fairly well. The nature of the obstruction would seem to offer an explanation of the symptoms in this case. The pear-shaped mass when forced downwards led to complete obstruction from its size, and owing to its rounded end being downwards: but when owing to reverse peristaltic action the mass receded upwards into the distended intestine, flatus could pass along with some of the more fluid contents of the intestine. In fact the intestinal obstruction was never complete, but the mere fact of incompleteness led to the delay in operation. The death of the patient twelve hours after operation coincided in time with that related by Dr. Bridges, and the two cases present several features of importance from a practical surgery point of view.

London. James Cantlie, M.B., F.R.C.S.

PROTRACTED PREGNANCY: ANENCEPHALOUS FETUS.

A. S., aged 24, married, nullipara, had always menstruated regularly and sufficiently until three months after her marriage. The date of the end of her last period was July 5th, 1903, and she was confined on May 18th, 1904. Taking the customary data in calculating the probable duration of pregnancy, the confinement might have been expected on April 10th, 1904 being Leap Year. Or, making full allowance for the possibility of impregnation having taken place immediately before the following period was due, an allowance of 23 days according to Playfair and other authorities, May 3rd would have been the latest date at which pregnancy should have terminated. In the former case the duration of pregnancy was 318 days: in the latter, deducting 23 days, 295.

The patient was a strong young woman, but labour was characterized by an unusual amount of uterine inertia. Delivery of the head was easily effected with the aid of forceps, but there was much difficulty in extracting the shoulders, which were abnormally large. The child was anencephalous, but otherwise very well developed, and weighed 11 lb. 3 oz. The uterine inertia may have been due partly to the smallness of the head (vertex presenting) in comparison with the shoulders and the rest of the body, depriving the uterus of the stimulus caused by the pressure of the cranium on its lower segment. The vault of the cranium was absent, the short space between the prominent eyes, which lay on the flattened top of the head, and the occipital protuberance being occupied by a soft, red, cicatricial-looking mass which pulsated with every breath.

Two other features of the case are worthy of note. One is that the child lived for thirty hours, which is unusual in the case of anencephalous monsters: the other is that the parents were first cousins.

Barnet. F. C. Evill, M.R.C.S., L.R.C.P.

DETACHMENT OF THE CHOROID.

A lady, aged 59, consulted me recently for blindness of her right eye. She is healthy, and has no cardiac or renal trouble, but suffers from constipation. There is no history of a blow or injury of any sort to the eye, nor did it ever show symptoms of inflammation other than the ordinary redness from a cold. The patient, however, fell—not very violently apparently—on the back of her head, about eighteen months ago. She says quite distinctly that her right eye was always better than the left—for distance as well as for near work. She used to shut the left when threading a needle, etc., but one evening, about three months ago, she discovered that her right eye was blind. She was greatly frightened. Her sister at once took her in hand, and poulticed the eye with bread and water for a whole day and night without avail. The vision of the left eye = $\frac{6}{6}$ without glasses, and is raised to $\frac{6}{5}$ by a combination of − 1.5 sph. with − 0.25 cyl. The vision of the right eye is *nil*, though when full sunlight is directed upon it the patient thinks she sees something. Its appearance is normal, but the pupil, 4 mm. in medium light, is larger than the other. With the ophthalmoscope (direct method, that is, without any intermediate lens) retinal vessels can be seen when viewed from a distance of about 10 in. from the eye. With the indirect method the whole fundus is seen to be occupied by two large, bulging, abrupt prominences, separated from one another by a very deep furrow, nearly vertical, but slightly inclined towards the nasal side above. From the position of this furrow the optic nerve head would be situated in it, but it was not visible. The two large prominences were almost the colour of the ordinary normal fundus, but were slightly more yellow, and gave in places the idea of translucency. They were covered by the retina, the vessels of which were perhaps a little darker than normal. Besides these, however, the close characteristic network of the choroidal vessels could be seen without difficulty over the upper and also over the inner part of the nasal prominence, and they were situated in the same plane as the retinal vessels. I was unable to see any trace of choroidal vessels elsewhere. No undulatory movements of the prominences were visible when the eye moved like those seen in simple detachment of the retina. The tension was diminished (− 1). I could detect no disease of any visible part of the retina, but the walls of the retinal vessels were thickened. The anatomical condition in this case is evidently large detachment of the retina corresponding to the two prominences, with two small detachments of the choroid situated at the places where the choroidal vessels were visible. Detachment of the choroid following extensive loss of vitreous or injury is not very uncommon, but pure idiopathic cases such as the above are among the very rarest diseases of the eye.

Robert Dwyer Joyce, F.R.C.S., etc.,
Ophthalmic and Aural Surgeon, Richmond Hospital, Dublin, and St. Michael's Hospital, Kingstown.

PURPURA.

The following case of purpura came under observation in the casualty department:

W. R., aged 5 years, was brought to the hospital for a cut head on Tuesday, May 31st, 1904. He had fallen down and struck the back of his head against the bedstead. The wound was sutured and dressed, the child having his head hanging down and a handkerchief between its teeth to prevent screaming. On again looking at the child a purpuric eruption was noticed on the face. This was distributed around the hair margin and over the bridge of the nose, widening out on each cheek. The rash was only on the face. The mother was quite sure that this had appeared since the head was dressed. The child was otherwise quite healthy and cheerful. There was no history of haemophilia or rheumatism, or any similar previous condition. The wound healed perfectly, and the rash disappeared eight days later.

I showed the case to Dr. Phineas Abraham in the dermatological department, and he has asked me to record the case.

West London Hospital. Henry E. Barnes, House-Physician.

REPORTS OF SOCIETIES.

EDINBURGH OBSTETRICAL SOCIETY.

(Conjoint Meeting of the Edinburgh and Glasgow Obstetrical Societies.)

N. T. Brewis, M.D., F.R.C.S.E., President, in the Chair.

Wednesday, July 13th, 1904.

The Use and Abuse of the Midwifery Forceps.

Professor Kynoch read a paper, which appears at p. 172 in this issue of the British Medical Journal.

Dr. Dewar (Edinburgh) considered that the greatest abuse in the use of forceps occurred in "low" cases. The surroundings and the mental condition of the patient, especially of a primipara, often had to be taken into account in deciding on the use of the instrument. He advocated the use of forceps in inertia, in lingering cases, and in occipito-posterior positions of the head.

Dr. Ritchie (Edinburgh) deprecated the use of forceps either to save the time of the attendant or to spare the patient from pain. If the birth of the child was advancing the case should be left to the natural powers. He did not believe in a time-limit in determining the employment of forceps. The point to attend to was not to allow the patient to become exhausted.

Dr. McVie (Chirnside) thought convalescence was more rapid in cases in which forceps had been used.

Professor Cameron (Glasgow) considered that the application of forceps without previously ascertaining the length of the true conjugate of the pelvis was unjustifiable. In face cases which had been converted into vertex presentations forceps should be at once applied, otherwise the abnormal presentation recurred when the head had been brought through a narrow brim; in most cases the instrument should

be removed. Forceps should be used in cases in which the caput succedaneum had been born, but no further advance had been made. In these cases the pains were spasmodic and ineffective. He preferred version in lateral placenta praevia.

Dr. Kelly (Glasgow) thought forceps and chloroform were of the greatest value in preserving the perineum intact.

Dr. Reid (Glasgow) used forceps less and less in proportion as he employed chloroform more and more; he would restrict the use of forceps to those cases in which the natural powers had failed to deliver the child.

Society for the Study of Disease in Children.—At the provincial meeting at Bristol, on June 18th, Dr. Theodore Fisher, in the chair, Dr. D. S. Gerrish showed some remarkable examples of progressive muscular atrophy of the family type. He had been able to trace the disease back through five generations, and over forty members of the family had been affected. The usual history was that up to the age of 23 years the patients had been remarkable for their physique and muscular strength, but after that age the extensor muscles of the leg began to waste, chiefly the anterior tibials and the peronei. The condition slowly and steadily increased, and by the 50th year it had extended to the extensor muscles of the arms. Sensation had never been affected, but the reaction of degeneration was present. Although their hands were affected the patients retained their grip, but extension became very weak.—Dr. Bertram H. Rogers read the notes of a case of congenital stricture of the oesophagus. An infant about 2 years old began to suffer from vomiting, the condition getting rapidly worse, and being accompanied by emaciation. No definite physical signs of disease were present save much mucus in the lungs, and overdistension of the cervical veins on crying. Test meals showed that most of the food entered the stomach, but part seemed to be retained in the oesophagus. The use of x rays and an oesophageal tube threw little light on the nature of the case. The child died from an increase of the bronchial trouble with dyspnoea. At the necropsy there was found a fairly tight stricture about an inch from the lower end of the oesophagus. —Dr. J. Michell Clarke showed a case of hydrocephalus in which recovery had occurred. The illness probably began at the age of 6 months and the patient had been under observation for some years. Intelligence had never been affected, but there had been marked weakness of the muscles of the trunk and lower extremities. After three years improvement set in, and now the only traces of disease visible were the large size of the head and some signs of partial degeneration of the pyramidal tracts. The treatment had been by small doses of grey powder continued over long periods.—Mr. C. A. Morton read the notes of a case of hydrocephalus in which drainage of the ventricles into the subdural space was successfully established on the right side; nevertheless, the head went on increasing in size from internal pressure during the two months that the child survived. Its death occurred after a second operation on the opposite side. At the necropsy the brain was found to be lying about an inch from the cranium all round. There was no meningitis and the drainage tube originally introduced appeared to be acting well.

Dermatological Society of London.—At a meeting on July 13th, Sir Stephen Mackenzie in the chair, the following were some of the more important cases shown: Dr. J. H. Sequeira showed a man, aged 66, the subject of a marked and universal pigmentation. The patient was a native of Bedfordshire, and though he had been to South Africa had not suffered from any tropical disease. About three years ago his face and hands and then his body began to darken gradually. He suffered also severely from bronchitis and emphysema, and there was some enlargement of liver. The whole of the body and the limbs, the visible mucous membranes and the conjunctivae showed a purplish black pigmentation, and microscopical examination showed that the pigment lay in the normal positions, but was excessive. The hair had turned white in the usual way and the hyperpigmentation in no way affected it. The blood did not show the presence of any pigment and the urine was also free from pigment. The diagnosis offered was that of haemochromatosis.—Dr. H. Radcliffe Crocker showed (1) a man, aged 21 years, affected with xanthoma tuberosum of the knees and elbows, and a small plane patch on the right eyelid. There was a history of a similar affection in a brother who had died, and the disease had commenced in this patient at the age of 13 or 14. When shown, there were large cushion-like tumours on the extensor surfaces of both knees and elbows, the tumours being made up of yellowish nodes. It was interesting to note that, compared with a drawing made of him when first seen several years ago, there was a slight tendency to spontaneous involution in one of the patches. (2) A man, aged 28 years, who had served in South Africa as a soldier, and was now suffering from what was probably an early stage of mycosis fungoides. His history showed that he had suffered from so-called eczema for ten years, but during the last eleven weeks he had developed large infiltrated patches over the trunk and arms and legs. Some of these looked extremely like syphilides, but there was a large, slightly-moist area made up of circinate patches on the back, which was much more suggestive of mycosis fungoides. There were also the slightly infiltrated, brownish follicular masses so often seen in the latter disease.—Mr. Willmott Evans showed a woman suffering from herpes gestationis. Her history was that in the fifth month of her sixth pregnancy, three and a-half years ago, she was attacked by a bullous eruption which lasted until one week after confinement, when it disappeared spontaneously. Since then she had had two early miscarriages without any cutaneous trouble, and now in the fifth month of pregnancy she was attacked again. The lesions consisted of a fine gyrate erythema, in places arranged in concentric rings and associated with large bullae.—Mr. Charles Gibbs showed a man, aged 62, suffering from very widespread granulomatous lesions. The patient had suffered in 1869 from penile sores and buboes, but these had not been followed by any constitutional lesions, and he had married a year later and had had healthy children. Eight years later he had suffered from ulceration and swelling of the lips, and an eruption on the face, which had cleared up on mercurial treatment. Later again the penis began to swell, and two years after this an eruption appeared on the belly and buttocks. These later symptoms had proved resistant to large doses of iodide. When exhibited he showed an elephantiasic condition of the lips and penis, and a vast area on the buttocks and thighs, which was made up of a somewhat psoriasiform eruption deeply infiltrated, but with little scarring, while in places upon it were thick clusters of small cutaneous horns reaching an elevation of about half an inch. It could not be positively determined whether this eruption was of a tuberculous or syphilitic nature.

British Gynaecological Society.—At a meeting on July 14th, Dr. H. Macnaughton-Jones (Vice-President) in the chair, Mr. Christopher Martin reported a case of the removal of a bone crochet-needle 5 in. long from the abdominal cavity. It had been employed by the patient—a widow, aged 48—to procure abortion under the delusion that she was pregnant, had perforated the uterus and found its way into the left iliac fossa. It had caused little or no trouble, but the woman became alarmed, and had been brought to him a fortnight after the occurrence. She made a good recovery, but remained under the delusion that she would have to be confined, and also have to be punished for her attempt.—Mr. Bowreman Jessett reported a case of gangrene of the leg after abdominal hysterectomy for the removal of a giant myoma weighing 28.5 lb. The patient, with the aid of saline solution, rallied from the operation, but within two hours complained of pain in the leg, which was discoloured and cold. Under treatment her general condition improved, but a line of demarcation showed itself just above the patella, and a fortnight after the hysterectomy Mr. Jessett amputated the leg at the junction of the upper and middle thirds. She bore the operation well, suffering very little from shock, but gradually lost ground, and died on the fourth day after the operation. The abdominal wound was firmly healed, but there was some suppuration in the stump. There was a firm clot in the external iliac artery extending for about 1 in. downwards from its junction with the common iliac. There was extensive disease of the kidneys, which had not been expected, as the urine tested before the first operation had contained only a mere trace of albumen. The gangrene had been dry throughout. In the discussion which followed the prevailing view was that owing to the pressure of the tumour upon the arteries in the pelvis inflammation had led to the formation of a clot which had been dislodged in the unavoidable manipulation during the

removal of the tumour.—Dr. MACNAUGHTON-JONES read a paper on Accessory Fallopian Tubes and their relation to Broad Ligament Cysts and Hydrosalpinx, supporting the views set forth by Doran, Kosmann, Handley, Wells, Shattock, and Hamilton Bell, that neither broad ligament cysts nor accessory hydrosalpinx (sactoparasalpinx serosa) were derived from the Wolffian duct, but originated in the pronephric funnels of Müller's ducts. This view was illustrated by the projection of specimens with the epidiascope: the first showed cysts derived from the Fallopian tube or from diverticula of it; the fimbriae were absent, but were represented by two cysts. In a second specimen both the pedicle of the cyst and its wall were muscular, and it was lined with ciliated and columnar epithelium. In the third specimen there was a cyst in the free edge of the broad ligament, with two flattened cysts attached, while from the ostium to its attachment there were two small cysts and an accessory Fallopian tube. These cysts had not been examined microscopically, but when held up to a strong light the tubal plicae could be seen through the cyst wall.—Dr. HANDLEY, who had examined the specimens, considered the second to be undoubtedly an accessory Fallopian tube, and the cysts in the the third to be abnormal representatives of the pronephric funnels.—Dr. JERVOIS AARONS showed a new uterine mop he had had made to obviate the difficulty of removing the cotton wool from Playfair's probe after use. It consisted of a cap woven in absorbent material and fitting on to a sound, the end of which was of plated copper flexible enough to be bent to any desired curve.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.—At a meeting on Tuesday, July 5th, Miss WEBB, M.B., President, in the chair, Miss COCK, M.D., and Miss ALDRICH BLAKE, M.D., M.S., showed a case of hydatid of the lung. The patient, a married woman of 51, had had good health until Christmas, 1903, when she took cold and suffered from pain in the right side, cough, and expectoration. These symptoms continued to trouble her and she lost flesh and strength. On February 27th, 1904, when she was admitted to the New Hospital for Women, she was breathless on the least exertion, coughed considerably, and expectorated at intervals a quantity of tenacious, greenish, jelly-like material. The chest was resonant in front, but the right axilla was dull, and the right back markedly impaired from the third rib to the base. Over the impaired area breath sounds were faint and distant, but the heart sounds were well conducted. Pleural friction was present in the right axilla. Exploration showed that no pleural effusion was present. Examination with the *x* rays showed the presence of a dark shadow in the right lung, with a sharply-defined convex, dome-shaped upper border reaching to the lower border of the third rib. Examination of the expectoration showed the presence of hydatid hooklets in considerable numbers. Under light chloroform anaesthesia 3½ in. of the seventh and eighth ribs were removed, care being taken not to wound the parietal pleura, which was not adherent. A scalpel, followed by two fingers, was rapidly passed through both layers of pleura and condensed lung into the cyst. The fingers held the cyst firmly against the chest wall until the opening had been surrounded by a ring of sutures. The contents, consisting of 3 pints 18 oz. of daughter cysts with very little fluid, were removed with finger forceps, and at the end by gentle syringing. Some cysts coming from the lower part of the cavity were bile-stained. No hole into the liver could be felt, but the cavity was too large to be completely explored by the finger. Nothing like mother cyst was seen either at the operation or in the subsequent treatment of the case. (The possibility of the mother cyst being quite small with much exogenous growth was suggested at the meeting as an explanation of this.) Two large drainage tubes about 5 in. long were passed into the cavity. The patient's subsequent progress was uneventful. The cavity was syringed with sterilized normal saline. A few cysts continued to come away for about a week after the operation. After that none were seen. On the ninth day she began to sit up in a chair, and a month after the operation she could walk about freely and go up and down stairs. For two months after the operation, if the cavity were filled with saline, she coughed and complained of the salt taste in the mouth. This ceased at two months, and shortly afterwards the patient was discharged, to attend every two or three days for dressing, as the cavity, which had very rigid fibrous walls, though now very small, had not completely closed.

REVIEWS.

THE PURIN BODIES.

DR. WALKER HALL'S book on the *Purin Bodies of Food Stuffs and the Rôle of Uric Acid in Health and Disease*[1] forms one of a series of what are known as the Manchester Medical Handbooks. Part of its contents has already appeared in Dr. Walker Hall's report to the Scientific Grants Committee of the British Medical Association, published in the BRITISH MEDICAL JOURNAL, 1902, vol. i, p. 1461. Probably the latter part of the title of this book will arouse in many minds a feeling of distrust of a publication which deals with such a subject. The perusal of a few pages will, however, soon convince the reader of the author's scientific grasp of the subject. Dr. Walker Hall deprecates any attitude of overenthusiasm about the particular purin body known as uric acid, and calls our attention to the need of studying the whole group to which it belongs. The purins or alloxur bodies occur in food as xanthin, hypoxanthin, guanin, and the methylxanthins—caffeine and theobromine. Other purins, like uric acid, are met with in the urine combined with traces of xanthin and methyl-xanthin. This volume will be found to serve many purposes; not the least valuable parts are the very able summaries both in the text and in an appendix of the theories of the origin of purin bodies, and of the means by which they may be isolated and estimated. The purin bodies occurring in the urine are derived from two sources—the food and the body—that is, they are exogenous or endogenous in origin. Probably all purin bodies occurring in the urine are derivatives of substances containing alloxur or purin bodies. Vegetables as well as meat are capable of increasing the output of purin bases, not because the intake of purin is thereby increased, but because vegetables also contain nuclein. It has also been found that not all the exogenous purin bodies are excreted as such in the urine, but only about 50 per cent.; the rest is probably converted by the liver into urea, being first changed into intermediate bodies such as uric acid (trioxypurin), allantoin, and oxaluric acid.

The endogenous purins are partly derived from leucocytes, but mostly from cell changes which result in the maintenance of bodily functions. Probably the same proportion of endogenous purins (50 per cent.) escape as such in the urine, as in the case of the exogenous purins, the remainder escaping as urea, etc. Dietaries may be prescribed which are almost free from purin bodies—for example, eggs, milk, cream, and cheese; such purin bodies as are found in the urine of a patient so dieted would be endogenous in origin, and the amount of them might be used as a measure of the individual's metabolic activity; the onset of various disorders might then be anticipated, as shown by a fall of the endogenous purin bodies, and with further investigation into the subject we may in future find organic compounds which delay the precipitation of such purins as uric acid from its solution in the body fluids. If it is impossible to feed the patient on a purin-free diet, then by the use of tables supplied by Dr. Walker Hall the purin content of the food taken may be estimated; it only then remains to estimate the purin content of the urine and faeces, and the amount of endogenous purins may be calculated by subtraction. It is of use to gauge the metabolism of the body in terms of uric acid, but seeing that uric acid is merely one of a series of purins, and probably not a terminal one, it is far more satisfactory to discuss the problems of metabolism in terms of purin bases. Burian and Schur have modified and improved a process of purin precipitation by means of ammoniacal solution of silver nitrate; all the purin bodies present are thrown down at the same time. In conjunction with Burian, Dr. Walker Hall has improved on the method, increasing its accuracy (*Zeits. f. Physiol. Chemie*, Bd. 38, s. 336), and has further, by the introduction of the purinometer, made it possible for the clinician to estimate the purins of the urine quickly and easily.

Other interesting problems arise, such as the experimental study of the toxic effects of hypoxanthin injected into rabbits or the effects of drugs in the elimination of purins, and on all these points Dr. Walker Hall writes with authority, for he has made original contributions to this most important study, and his guidance may be safely accepted as to the trend of contemporary study in this direction.

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[1] *The Purin Bodies of Food Stuffs and the Rôle of Uric Acid in Health and Disease.* By I. Walker Hall, M.D., Assistant Lecturer and Demonstrator in Pathology, the Owens College, Manchester. Second Edition. London and Manchester: Sherratt and Hughes. 1903. (Cr. 8vo, pp. 214. 4s. 6d.)

THE THYROID HEART.

DR. MINNICH in his work *Das Kropfherz*[2] [thyroid heart] attempts a description of the effects upon the heart and circulation of the enlarged thyroid, dealing first with the mechanical pressure of the goitre upon the trachea, and secondly, with the effects produced by interference with the thyroid secretion. In order to demonstrate how pressure upon the trachea embarrasses the respiration and the action of the heart, the author minutely discusses the relationship between the normal respiration and the circulation, and demonstrates how this relationship becomes altered by obstruction causing, it may be, an inspiratory dyspnoea or an expiratory dyspnoea, or these forms combined. The question is dealt with very carefully both from the anatomical and physiological standpoint, and an attempt is made to apply the facts thus obtained to interpret the symptoms in patients suffering from goitre. It would be too much to say that he has been quite successful in this matter, but he has produced convincing proof that many patients who suffer from cardiac failure owe their trouble in a great part, if not entirely, to the mechanical obstruction of the respiratory passage. The influence of the altered secretions produces two types—one, simple hypertrophy, and the other characterized chiefly by tachycardia. The latter form is often referred to as a rudimentary form of Basedow's disease, but is in reality quite distinct. Numerous cases are cited by the author, and he makes his position very clear through their careful analysis. He examines minutely the possibility of such cases arising from mechanical pressure of the enlarged organ upon the nerves (sympathetic and vagus), and demonstrates in a very convincing manner the impossibility of such an occurrence. The relationship of the thyropathic heart to certain drugs is also dealt with, such as the intolerance in this condition to digitalis and atropine. Of great interest is the author's summary of the old discussions in regard to the influence of iodine preparations on the thyroid enlargement. While, on the whole, Dr. Minnich carries the reader along with him in the elaboration of his argument, we occasionally meet with vague and high-sounding terms, which are at times entirely meaningless or even distinctly misleading. It is not an uncommon thing for authors when they meet with a symptom they do not understand to veil their ignorance behind a magniloquent terminology. Thus our author refers to "endogenous and exogenous arrhythmia," but gives no information as to what is meant by such terms. Nowadays, when a great flood of light has been shed upon irregular action of the heart, it behoves authors to concern themselves more with a careful description of facts, so that if they do not appreciate the true significance of the symptoms, others with fuller knowledge may have the facts from which to give a correct interpretation. For instance, the author refers to hemisystole, and in proof of this he says the radial pulse was 60 per minute, while the heart was 120. It is now well known that this is no evidence of hemisystole, but of a very definite form of cardiac arrhythmia. The author has frequently to refer to the symptom of regurgitant waves being thrown back into the jugular veins, and he endeavours to draw conclusions from this symptom. But it is evident that he has a very imperfect knowledge of its meaning, and from the references he gives he is totally unaware of the great advances that have been made in recent years in the study of this subject.

CLINICAL SURGERY.

PROFESSOR LE DENTU'S volume of lectures on clinical surgery[3] is a type of publication more common a quarter of a century ago than to-day. It is refreshing to read pages in which not only is the matter of great interest, but the manner and style of considerable literary elegance, recalling the brilliant writing of Sir James Paget in our own language. The most striking quality of the lectures is the manner in which pathology and clinical observation are brought together, and their mutual relations studied and elucidated. In this manner Professor Le Dentu treats of many subjects, first of general anaesthesia relative especially to the comparative advantages of ether and chloroform. Next of some general subjects, shock, the contraindications to operation, the non-operative treatment of malignant tumours, the treatment of fractures. The subjects following these are somewhat irregularly arranged, but for the most part fall into three groups—affections of the head and neck, of the abdomen, and of the pelvis. In all the lectures number forty-seven: those which are most original in conception are on myositis, salivary calculus, and epiploïtis. In face of so great a variety of subjects the discussion of one or two would be unsatisfactory; we recommend the book as a whole most heartily: there is recreation as well as profit in the reading of it.

Mr. JAMES BERRY'S *Manual of Surgical Diagnosis*[4] is a useful addition to the clinical handbooks of the medical student. Such books are of course admittedly of limited utility, but if employed as a work of reference to assist the study of a clinical case, the student will find here the facts concerned in differential diagnosis carefully arranged and clearly set out. Mr. Berry admits the omission of the less common conditions, but perusal of the book has not shown these omissions to be many. Some, however, do not appear justifiable, for example, affections of the head, of the jaws, and of the thorax, and the extremities are somewhat ruthlessly cut off from discussion. A student might reasonably be disappointed to find no help on these matters. Nor will the practitioner find here much assistance in a difficult case; but after all that is not the purpose of the author, and no textbook can take the place of actual clinical experience under such circumstances. The introduction and first chapter on the general examination of the patient indicate in an admirable manner the proper method of "approaching" a case. The sections which follow are arranged according to regions, and interwoven with these are chapters on the interpretation of common signs and symptoms, inability to open the mouth, dysphagia, abdominal pain, pyuria, and haematuria. The third and last part is devoted to the diagnosis of injuries. The author's experience of clinical teaching is well shown throughout by the skilful way in which affections are grouped for discussion, and he has undoubtedly carried out the purpose of his book in a very satisfactory and accurate manner.

In his book on Methods of Surgical Examination,[5] Dr. MANZ has published a course of lectures dealing at full length and very methodically with the principles and details of general diagnosis. The greater portion of the volume is taken up by descriptions of the indications afforded in cases of injury and of surgical disease, on inspection of the intact surface of the body, and by a study of the changes produced in colour, external form, consistence, and functional activity under morbid and traumatic conditions. Much importance is attached by the author to careful and early training in the observation of external signs, which needs for its basis only some elementary knowledge of pathological anatomy. Such practical exercises as are here discussed are well adapted to excite in the student a lively interest in clinical work, and to lead him in course of time to exercise care and dexterity in the examination of patients, and to avoid aimless and annoying methods of investigation. Teaching of this kind, however, is more likely to be useful and efficient when given by actual demonstration in the ward and out-patient room than when made the subject of a formal course of lectures. Dr. Manz's book is full of instruction, but, although written in colloquial style, fails to keep up the interest of the reader by reason of diffusiveness and a somewhat pedantic treatment of its subject. The instruction it affords might have been well condensed into a much smaller and more readable volume.

[2] *Das Kropfherz und die Beziehungen der Schilddrusenerkrankungen zu dem Kreislaufapparat.* Von Dr. W. Minnich, Zurich-Weissenburg. Leipzig. und Vienna: Franz Deuticke. 1904. (Demy 8vo, pp. 166. M. 4.50.)

[3] *Clinique Chirurgicale.* Par A. Le Dentu, Professor de Clinique Chirurgicale a la Faculté de Médecine de Paris. Paris: J. B. Baillière et Fils. 1904. (Demy 8vo, pp. 634. 145 figures.)

NOTES ON BOOKS.

THE full title of Dr. SEARLE'S treatise on *Medical Tuberculosis*,[6] which is dedicated to philanthropists of all nations, promises much information. We certainly find in it much that we did not previously know. The writer says in his introduction: "Twenty years since I became acquainted by what means Nature is able to cure pulmonary phthisis at an

[4] *A Manual of Surgical Diagnosis.* By James Berry, B.S., F.R.C.S. London: J. and A. Churchill. 1904. (Cr. 8vo, pp. 363. 6s.)

[5] *Die Chirurgischen Untersuchungsarten. Einfurende Vorlesungen über allgemeine chirurgische Diagnostik* (Methods of Surgical Examination. Introductory Lectures on General Surgical Diagnosis). By Dr. Otto Manz. Vol. i. Jena: Gustav Fischer. 1904. (Demy 8vo, pp. 328; 20 illustrations. M. 6.)

[6] *Medical Tuberculosis: its Rational and Natural Cure: Its several Stages and Relationship to Cancer.* By R. B. Searle, L.R.C.P., M.R.C.S., L.S.A. London: The Scientific Press, Ltd. 1904. (Crown 8vo, pp. 40. 1s.)

advanced stage," and the chief object of the treatise appears to be to suggest a treatment for tuberculosis based on this discovery. Briefly, the treatment consists in inoculating the patient with the virus of typhoid fever. "The bacillus of tuberculosis, as a strong man armed, keepeth his house and goods in peace, but when a stronger than he, the bacillus of typhoid, cometh, he bindeth the strong man and taketh from him all in which he trusted." Perhaps as the treatise is written rather for philanthropists than for scientific men we must expect such modes of expression as that quoted above rather than any evidence in favour of the treatment advocated. Cancer, being a malignant form of tuberculosis, should be treated in similar fashion to consumption. The author expresses a very poor opinion of London medical men, who appear to him to be too theoretical and not sufficiently practical, but as Dartmouth is some distance from London it may be that this opinion is founded on hearsay evidence. It is, however, somewhat difficult for a London reviewer to express freely his opinion on much that this treatise contains, for it would merely amount to a *tu quoque*.

The scope of Dr. KELYNACK's pamphlet on the *Sanatorium Treatment of Consumption*,[7] which contains the substance of a post-graduate lecture, is best indicated by the headings of the different sections into which it is divided. We have the evolution of the sanatorium, the modern attitude towards them, the development of British sanatoriums, the educational aspect of sanatorium life, the principles of sanatorium treatment, including dietetic considerations. There then come some remarks on industrial colonies for consumptives, and the after-care of sanatorium cases. Whilst giving full credit to the work of German sanatoriums Dr. Kelynack utters a note of protest against slavishly following out German methods for English patients and also against the returns of "cures" which, as he points out, vary from 16.4 per cent. in public institutions to 85 per cent. in privately-conducted establishments. The lecture is very interesting, and contains a large amount of information which cannot fail to be useful to all who wish to know about the sanatorium treatment of consumption.

In her latest novel, *Olive Latham*,[8] Mrs. VOYNICH deals with the slightly trite subject of Russian tyranny and misgovernment, of official brutality and of the manner in which the lives of obnoxious subjects are suppressed. Olive Latham, who has become a hospital nurse, engages herself secretly to a man of "wrong opinions" who is in England for a year making plans of machinery for a firm in St. Petersburg. He has been two years in a Russian prison and has come out with lung disease, for the prisons are full of tuberculous infection. After he returns to his country Olive is sent for by his great friend, a doctor, who belongs to one of the "doomed families," to nurse him in pleurisy. When dealing with the pathological aspects of the case the author is at her best, but revolting as the scenes described are, they have not the merit of being convincingly revolting, and nowhere is the story great or soul stirring. One can read Kennan's *Siberia* and shiver with disgust and horror, but then Kennan saw with his own eyes the atrocities he wrote about. They were living breathing realities. But here the book gives a strong impression that the story is manufactured. The man Olive is engaged to dies and the inevitable follows: she marries his doctor friend. One cannot help regretting that a writer with Mrs. Voynich's power and gifts should spend them on a subject already done to death.

Dr. CULLINGWORTH has printed in a small volume the address on *Charles White, F.R.S.*,[9] which he delivered before the Medical Society of Manchester last October. The address, in spite of what has been written comparatively recently on the same subject, will remain one of the best memoirs both of the subject and of the times with which it deals. It records the working life and influence of White—one of the greatest, if not the greatest, amongst the medical worthies of Manchester—for it was White's *magnum opus*, Management of Pregnant and Lying-in Women, upon which his fame most firmly rests, which secured for Manchester a peculiarly honourable place in the history of obstetrics. The other works of White (enumerated in an appendix) have so recently in various ways come before our readers that those of them who wish to know more of the man, and of the times in which he lived, of his pen portrait by De Quincey, and of his exertions on behalf of the medical charities of Manchester, we must refer to the original address. Dr. Cullingworth has given us a full and faithful account—placed in a fine literary setting—of one of whom it can truthfully be said "that time has in no degree lessened the sense of our obligations to him, nor can it diminish the great respect that has ever been entertained for his high character as a surgeon, as an author, and as a man." The four excellent plates reproduce a portrait of White, White's house in King Street, the old Manchester Infirmary and Lunatic Asylum, and the Manchester Infirmary a hundred years after its foundation.

The Manual of Ambulance, by Dr. J. SCOTT RIDDELL,[10] has reached the fifth edition, which is a proof that its excellence has been appreciated. This edition has been thoroughly revised and has many additional illustrations. The chapter on ambulance transport and stretcher drill forms a notable feature of the book. It is fully illustrated, and extends over 50 pages. The numerous illustrations include 20 full-page figures from photographs showing the position of the bearers in removing patients by hand seats and stretchers. Another special chapter is that on the after-treatment of ambulance cases. As an advanced textbook on the subject of ambulance this *Manual* may be highly recommended.

We have received a copy of BARBER and SCHESTAUBER's system of book-keeping arranged for German druggists.[11] After laudable remarks as to the value of a well-ordered system of book-keeping, the authors proceed to discuss their single entry system, and to give a detailed view of one month's trading entered up in accordance therewith. The system is very thorough, but does not appear to possess many advantages over those usually employed in this country. Several points of interest to British pharmacists are noted, but their business is usually more varied in character than that of the German druggists. We are inclined to think that the former will continue to use such methods as have been proved by experience to best suit their special requirements.

MATERIA MEDICA AND PHARMACY.

Thoroughly practical text books on the subject are so rare that we welcome with pleasure Mr. WILLIAM KIRKBY'S *Practical Prescribing and Dispensing*.[12] The book is written by a pharmacist expressly for medical students, and the author has been most happy in conceiving its scope and arrangement. About one-half is devoted to practical exercises in the writing and dispensing of prescriptions for mixtures, pills, liniments, etc. This is of real educational value, a few examples being chosen to represent types instead of the student being confused with a number of "difficulties" such as seldom occur outside the pages of other textbooks on this subject. The other half is an alphabetical list of the official and the more important unofficial drugs, with brief notes on the manner in which they can be prescribed, their doses, solubilities, incompatibles, etc.; this part is evidently intended for reference only, and very complete lists of incompatibles given should be of great value to prescribers generally. We heartily commend the book to students of medicine.

Mr. MUIR's *Manual of Materia Medica and Pharmacy*[13] has afforded us a larger amount of amusement than is usually derived from a perusal of books professing to deal with this subject. The general information given is full of errors, the chemical notes being really funny in many cases, whilst the therapeutics are all "scissors and paste." To quote many extracts would be to give more space to the book than it deserves, but we cannot resist the temptation of giving a few, for example, under acetanilide we read, "Almost identical and can be used in place of antipyrin and antifebrin;" and

[7] *The Sanatorium Treatment of Consumption.* By T. N. Kelynack, M.D., M.R.C.P. London: The Scientific Press, Ltd. 1904. (Crown 8vo, pp. 27. 6d.)

[8] *Olive Latham.* By E. L. Voynich. London: W. Heinemann. 1904. (Crown 8vo, pp. 286. 6s.)

[9] *Charles White, F.R.S.* An Address by Charles J. Cullingworth, M.D. London: H. J. Glaister. 1904. (Demy 8vo, pp. 64. Four plates. 2s. 6d.)

[10] *A Manual of Ambulance.* By J. Scott Riddell, C.M., M.B., M.A. Fifth edition. London: Charles Griffin and Co. 1904. (Crown 8vo, pp. 227. 4s.)

[11] *Die Buchführung im Apothekenbetriebe nach einfachen System, angewendet auf mittlere und Kleine Apotheken.* Von Dr. Josef Barber und Valerian Schestauber. Nienmund. Leipzig: A. Hartleben. 1904. (Demy 8vo, pp. 72. M.2.)

[12] *Practical Prescribing and Dispensing for Medical Students.* By William Kirkby, some time Lecturer in Pharmacognosy in the Owens College, Manchester: At the University Press, Manchester, and London: Sherratt and Hughes. (Crown 8vo, pp. 180. 4s. 6d.)

[13] *Manual of Materia Medica and Pharmacy.* By E. Stanton Muir, Ph.G., V.M.D. Third edition. Philadelphia: F. A. Davis Company. 1904. (Demy 8vo, pp. 192. 2 dols.)

later, under antifebrin, "Antifebrin is used extensively on the human family, while acetanilid is more applicable to treatment of the lower animals, on account of the lower price of acetanilid." We learn for the first time that sodium bicarbonate is prepared "by purifying the commercial salt, which is obtained by lixiviating marine plants . . ." and sodium hyposulphite "by fusing together dry sodium carbonate and sulphur and stirring constantly. The sulphate formed is converted into a sulphite; this is then dissolved in water, boiled with sodium, and thus converted into a hyposulphite." The book may be recommended to those with enough knowledge to see its funny side, but we should advise students to give it a wide berth.

SPECIAL EDUCATION OF BACKWARD CHILDREN.

NOT the least interesting of the many questions dealt with by Dr. Kerr in his annual report, to which we referred last week, is that in which he discussed the intermediate or *Förderklassen* system of schools, instead of the special classes approved by legislation in England some five years ago. At present healthy intelligent children are kept back by those (at least 10 per cent. of all the children who are on the rolls in London) whose intelligence is below the average, or whose misfortunes have kept them back, while the work, if not actually wasted upon these defective or backward children, is in many cases harmful. For instance, the ophthalmologists' examinations have shown 10 per cent. in the standards to have visual acuity, only one-third the normal or worse ($V = \frac{6}{18}$ or less). It may also be taken that from 3 to 5 per cent. of children are so deaf that they are retarded through their whole school life by this defect. A very considerable number are debilitated. In some cases the debility is due to congenital causes, but more generally it is acquired in early life through bad nursing and improper feeding; to the effects of whooping-cough and measles also Dr. Kerr attributes much backwardness and debility. Then there are those children who, deprived of sufficient exercise sunshine and fresh air, have further to contend with illness after illness. On to the sequelae of the zymotic diseases tuberculosis is frequently grafted, the consequence being that by the age of 7 or 8 years a considerable number of children have fallen eighteen months behind the average of their fellows as regards knowledge and school attendance.

For the backward children, now crowded into the lower standards, some intermediate schools or departments of schools are required, the children to be classified according to their capabilities. The classes would be small enough to allow of individual attention. The children could have some extra feeding, more play, and would learn almost entirely by doing and saying instead of reading and writing. By this system many convalescents would regain strength and go back to their ordinary schools, some would remain throughout their school life, while the worst cases might have to pass into the special classes for the deaf, blind, or physically or mentally defective.

The experiment of intermediate schools has been tried for some time at Mannheim, and the following is the account drawn up by Mrs. F. M. D. Berry, M.D., of the statement made to the recent Congress on School Hygiene at Nüremberg by Dr. Sickinger, member of the Educational Board, and Dr. Moses, the medical officer.

"The main novelty in this system lies in the fact that, besides the classes of the ordinary schools and the classes for the mentally defective now found in all large educational centres, there is a third system of classes—the '*Förderklassen*' system. These are for children who, from various causes, are unable to keep up with the ordinary school work. The reasons which caused the Mannheim authorities to found this class system were:

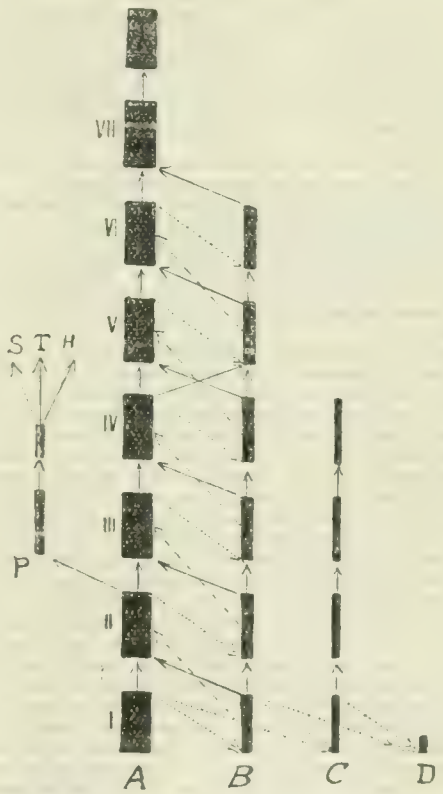
1. The capabilities of children of the same age are very various owing to physiological, psychological, pathological, and social reasons. It is impossible that all children in the elementary schools should follow the same course of instruction, and reach the same goal. A considerable number of pupils never reach the highest classes.

2. The old system by which backward children were left behind in a class when their classmates passed up, and had to go over the same ground again with younger companions, is found to have a discouraging and depressing effect. Such children, too, were liable to be neglected by teachers. It was considered that children who, from permanent or temporary causes, are below the average in their capacity for work, need special pedagogic and hygienic treatment in order that they might be developed as far as their powers admit, and may not suffer from school attendance.

3. The children of better capabilities benefit by the withdrawal of backward classmates, who act as a drag upon the rest of the class.

"These auxiliary classes, the '*Förderschule* system,' are run on similar lines to those of the ordinary school: they differ rather in the quantity than in the kind of work demanded. Instead of the seven or eight standards of the ordinary German school, the curriculum consists of only five or six. The number of children in a class is smaller, thirty-five being the maximum number allowed, hence greater individuality in the teaching is possible. Special facilities are afforded the children for participating in any hygienic adjuncts to the school, as baths, dinners, or holiday homes.

"These classes are found specially beneficial to the following groups of children—children of slow understanding, but who often are not without intellectual power—nervous, anaemic and debilitated children—children in a low physical and nervous condition, owing to unsatisfactory home surroundings, and children with defective sight or hearing, not severe enough to necessitate their being placed in schools for the blind or deaf.



SCHEMATIC REPRESENTATION OF THE MANNHEIM SPECIAL CLASS SYSTEM.

A. The Ordinary School Courses. B. The *Förderklassen* System. C. Special Classes for Mentally Defective. D. Imbecile Asylum. P. Preparatory Classes for Secondary Higher and Technical Schools. The arrows represent the course of children, continuous lines regular promotions, the interrupted lines those promoted during the school year, and the dotted lines those passed over for simpler education.

"The children are usually differentiated at the end of their first year, the backward ones being passed out into the second or third system of classes, according as they are merely backward or actually mentally deficient. One result of the formation of the auxiliary school is that only cases of definite mental deficiency are admitted to the centres for instruction of the mentally defective, and once admitted it is rarely considered desirable to pass them out. It will be seen by reference to the accompanying diagram that, whereas each year children are passing from B to A, there is no such passage from C to B."

Intermediate schools would become a necessity were medical examination of school children compulsory in elementary schools, for without a special school to send backward or deficient children to many of the advantages of medical examination would be lost. Properly worked, medical exami-

nation and intermediate schools in combination would in a short time save the State twenty times the preliminary expenses, and would assist the unfit to grow up into healthier and happier subjects.

CENTRAL MIDWIVES BOARD.

A meeting of the Central Midwives Board, with Dr. Champneys in the chair, was held on July 14th, at 6, Suffolk Street, Pall Mall.

Scheme of Examinations.

The first business of the Board was to continue the consideration of the scheme of examinations to be held under the Midwives Act, 1902. After prolonged discussion the following regulations were adopted:

"The examiners, both London and provincial, shall be invited to meet at the offices of the Central Midwives Board as often as may be necessary.

"The arrangements for the examinations shall be made by the Secretary of the Midwives Board with such extra assistance as may be necessary.

"The duties of the London examiners shall be:

"To consider examination questions suggested by provincial examiners.

"To set all the papers of examination questions both for London and the provinces. Two of the examiners shall undertake this duty in rotation with the assistance of one of the medical members of the Board to be appointed for the purpose. The remuneration of the two examiners for this duty shall be two guineas each.

"To conduct the examination, written or oral, of all candidates presenting themselves for examination in London.

"To report to the Secretary of the Central Midwives Board the result of each examination held in London.

"The examiners appointed by the Central Midwives Board to conduct the Board's examinations in provincial centres shall assist the Secretary of the Central Midwives Board in making the necessary arrangements for the examinations. One of the examiners shall be responsible for reporting the result of each examination to the Central Midwives Board."

In regard to the London examiners setting the papers of examination questions for London and the provinces with the assistance of one of the medical members of the Board to be appointed for that purpose, an interesting discussion took place, in which the proposal was put forward that the two examiners should be assisted by the Chairman of the Central Midwives Board. Mr. E. Parker Young at once pointed out that as the Board was at present constituted they might have the matron of an institution or a midwife occupying the chair, and Dr. Sinclair observed that it was necessary to have a medical man to assist the two examiners, because it would otherwise be found impossible to induce provincial medical men to become examiners. Dr. Cullingworth remarked that "practically the chairman would always be a medical man." This, however, did not satisfy Mr. Parker Young, who was of opinion that the Board could not be too careful in the wording of its regulations, and his suggestion that the two examiners should be assisted by one of the medical members of the Board to be appointed for that purpose was accepted.

The conclusion that the examiners were to report to the secretaries of the Board the result of each examination was intended to embody the principle that the decision of the examiners as to the passing or rejecting of candidates should be final. It was plainly the opinion of the Board that no sort of revision of the decision of the examiners should be undertaken by the Central Midwives Board. The phrase used by Dr. Ward Cousins in this debate was quite emphatic, and the Board concurred with him in condeming any idea that the findings of the examiners should be "overhauled." In the course of this discussion Dr. Cullingworth seemed to infer that a candidate might be examined and passed by a single examiner. This was undoubtedly contrary to the spirit of the resolution passed on June 30th last that every examination should be conducted by two examiners. Mr. Parker Young immediately expressed the opinion that the Board should never allow any candidate to be examined unless two examiners were present, and Dr. Sinclair and Dr. Ward Cousins had no difficulty in showing that such a course was the only possible one to pursue.

On the invitation of the Chairman the Board then reconsidered its resolution passed on June 30th last that after May, 1905, the examinations should be held twice a year or more often if necessary. Several of the institutions engaged in training midwives had expressed a strong wish that the examinations should be held by the Board every three months. Dr. Cullingworth entered in some detail into the reasons assigned by the various institutions for this proposed change, and after Dr. Sinclair had objected to facilities being given to women to go in for examination again a few months after being referred, on the ground that it would lead to a lowering of the standard of education, the Board decided that the resolution passed on June 30th should be altered as follows:

That the examinations shall be held four times a year in London and the provinces simultaneously on the same papers or more often if necessary.

Workhouse Infirmaries as Training Schools for Midwives.

Dr. Sinclair, in the course of a discussion on the question of the Central Midwives Board approving certain workhouse infirmaries as institutions for the training of midwives, said that he objected on principle to these places being accepted. It was not right, he urged, to do anything which would tend to increase the number of births in workhouses, and to turn union infirmaries into training schools for midwives would result in such an addition. No definite course for all cases of this kind was decided on by the Board, and each application will be judged on its merits.

The Board then proceeded to transact some more or less formal business and adjourned to July 21st.

CONTRACT MEDICAL PRACTICE.

The Durham Medical Union.

At the annual meeting of the County of Durham Medical Union on June 28th, after Drs. Jepson and Murphy had been re-elected President and Vice-President respectively, and Messrs. Graham and Shepherd, secretaries and solicitors, and other office-bearers for the forthcoming year had been appointed, the following resolution was passed:

That this meeting pledges itself to adhere rigidly to the resolution passed at a joint meeting of the Durham and Northumberland Unions refusing to recognize the National Deposit Friendly Society in any way, and that it further declines to allow its members to sign the certificates of entry to the Society.

Applications from certain miners' lodges for a reduction o the fortnightly subscription were also considered, and the following resolution was then put to the meeting:

That this meeting sees no reason to alter the determination of the Union previously arrived at that the sum of 9d. per fortnight is the least fortnightly subscription that can be accepted for colliery or family club practice.

The motion was duly seconded and was passed unanimously.

Colliery Contracts.

Selborne asks for assistance under the following circumstances: I have been asked by the Secretary of a Colliery Company's Accident and Burial Society in this neighbourhood to say for what annual sum I would undertake to attend all cases of accident (not sickness) among the members of the Society. The pits, seven in number, are scattered in three different valleys, and at an average distance of three to four and a-half miles from my residence as a centre. They are free from explosive gases. The following averages will give an idea of the work: (*a*) Average number (for four years) of workmen on the Society's books, =365 (last year, 389). (*b*) Average number of claims per annum (for four years) of one week and upwards for injury, =42. (*c*) Each workmen pays one penny per week to the funds of the Society. Perhaps some member with experience in colliery work would give me an idea as to what would be a reasonable amount to ask for such annual attendance.

*** We have referred the question to a correspondent having special experience, who writes: The amount charged must depend partly upon whether there is a hospital in the district where the serious accidents—such as fractures of the thigh or leg—are treated. If so, and the minor accidents only have to be provided for, from 40 to 50 guineas a year would be a fair charge. If there is no hospital, the sum of £10 10s. for each pit is one that has been usually accepted in one large colliery district.

LITERARY NOTES.

A work by Professor Windle, Dean of the Medical Faculty of the University of Birmingham, entitled, *Remains of the Prehistoric Age in England*, has just appeared. The volume, which is the second of Messrs. Methuen's series of "Antiquary's Books," gives an account of the present state of knowledge respecting the relics of prehistoric man in this country. Descriptions are also given of important discoveries made in other parts of the world. The book is freely illustrated.

The *Edinburgh Medical Journal* will shortly celebrate the centenary of its foundation. Although different medical periodicals had appeared from time to time both in London and in Edinburgh, there was (says our contemporary in its

current issue) no recognized medium of medical information. Preparation had been made during 1804 for the publication of a medical journal. The first number of the *Edinburgh Medical and Surgical Journal* appeared as a quarterly magazine, under the editorship of Andrew Duncan the younger in January, 1805. In 1827 Duncan was succeeded in the editorial chair by Robert Christison, in association with David Craigie, who, after Christison's resignation, continued to be sole editor until 1855. In January, 1841, a rival appeared in the shape of the *Edinburgh Monthly Journal of Medical Science*, the editor of which was John Rose Cormack. In September, 1841, the style and title of that periodical were altered to the *London and Edinburgh Monthly Journal of Medical Sciences*, which in 1846 became the *Monthly Journal of Medical Science*. Two and a-half years later Cormack, who had been assisted by John Hughes Bennett, resigned, and the volume beginning with July, 1848, bore the names, as joint editors, of George Edward Day, Alexander Fleming, and William Tennant Gairdner. From that time onwards the journal was anonymous, but Sir William Gairdner has informed the writer from whom we quote that in the early Fifties John Hughes Bennett was editor; he was assisted in the ordinary editorial work by William Robertson, William Sellar, and John Brown, while Andrew Douglas Macladan contributed "Colloquia" on various topics. In 1855 the *Edinburgh Medical and Surgical Journal* was amalgamated with its monthly rival, and on July 1st of that year the *Edinburgh Medical Journal* made its first bow to the medical world, the editor being Dr. (now Sir) Henry Duncan Littlejohn. After some time he was succeeded by Daniel Rutherford Haldane, who in turn was followed by George William Balfour. To him succeeded Joseph Bell, who reigned till the end of 1896. Since January, 1897, it has been in the able hands of Dr. G. A. Gibson and Alexis Thomson.

Now and again one comes across interesting medical facts in general literature. Towards the close of the eighteenth century there was published in Edinburgh a work (in 21 volumes) called *The Statistical Account of Scotland, drawn up from the Communications of the Ministers of the Different Parishes*, by Sir John Sinclair, Bart. In the twelfth volume (p. 107), which appeared in 1794, there occurs the following interesting note, under the statistical account of Dalry (in Ayrshire), then a parish of some 2,000 souls.

"Died in the parish, in 1789, a woman about 60 years of age. She had been thrice married. By her first husband she became pregnant, and her pains came severely upon her, about the ordinary time: but she was not delivered. She continued ever after to have the appearance of pregnancy. Her first husband dying, she was again married to a farmer, who also died in a few years. She was lastly married to another farmer about the year 1772. He died in 1788 and she survived him about nine months. She was of a full habit of body, and enjoyed good health, till about five months before her death, when she began to fall off much, was confined to her bed, and her legs swelled. Her pregnant appearance still remained, and she told some of her neighbours that about thirty-three years ago she expected to be delivered, and felt life and motion in the child. This excited the desire of the surgeons to have her body opened after her death. Leave was granted by her friends to a skilful surgeon in Beith to open her. But he not coming at the appointed time, two persons of small skill and experience performed the operation in a coarse manner, and could not give a proper account of the situation in which they found the fetus. They, however, did find a child come to maturity, and in a perfect state of preservation. It was immediately laid on the table before more than a dozen of people that were present. The operators were allowed to carry it away, and I saw it afterwards myself." (The writer was the Rev. Mr. John Fullarton.) "The incrustation round it was tough, and of a horny appearance when I saw it, and in laying the incrustation open, it appeared one of the child's arms had been harmed. I heard it was afterwards in the possession of the late Dr. William Hamilton and Mr. Monteath, surgeon, Glasgow, for some time, who took a drawing of it, as the persons who extracted it would not part with it, but at an extravagant price. I have also heard that some of the medical gentlemen at Edinburgh are in possession of it at this very time."

Although the evidence is incomplete, it would appear that this was a case of extrauterine fetation; death of the fetus occurred about the full term and then a lithopaedion, or, more correctly, a lithokelyphos (for the membranes alone seem to have been calcified) was formed. J. G. Clark (*Bulletin of the Johns Hopkins Hospital*, viii, 221, 1897) gives a good account of similar cases gathered together from literature, including Kuchenmeister's list of instances between the years 1582 and 1880.

The July number of the *World's Work* is largely devoted to the subject of holidays, towards which the fancy of weary men begins to turn longingly at this season of the revolving year. The editor, Mr. Henry Norman, discourses on the delights of camping out with a motor car. This, he says, is what it means: Carrying on your car a light complete camping outfit: travelling as little or as long as you like during the day: stopping at the most charming spot you can find; pitching your tent and cooking your supper: spending a quiet evening strolling about, or reading or chatting, going to some hill-top "to see the world turn," or enjoying that most exquisite mental and spiritual intoxication of simply contemplating the stars for an hour or two; sleeping the best sleep to be had in the world: and next morning packing up and away fifty or a hundred miles, to stop again in wholly different surroundings. Another writer describes how sand hills may be climbed in a motor car; Mr. E. A. Baker writes on home playgrounds for mountaineers; Mr. John Bickerdyke discusses angling and the popularity which it has gained in recent years among the mechanic classes and those just a rung above them on the social ladder. The allurements of the holiday hotel keeper form the theme of another contribution. Mr. F. A. Hunt thinks that holidays might be usefully employed in visiting industrial centres. He suggests that parties should be formed and pioneered by efficient guides "with letters of introduction to the heads of the commercial centre from which they wish to radiate." He is enthusiastic enough to believe that "living amongst the people, becoming associated with their institutions and their modes of life," and "watching the mighty thread of England's industry being woven before their eyes," would constitute "a holiday as instructive as it would be interesting and useful." So it would be for those who, in Lord Rosebery's phrase, can lunch on a biscuit and a Blue Book.

On the occasion of the unveiling of a monument erected by the American Medical Association to Benjamin Rush at Washington on June 11th, Dr. J. C. Wilson delivered an address on the life and career of "The first great American Physician." Rush was born in 1745 and died in 1813. He was descended from John Rush, who had been captain of a troop of horse under Oliver Cromwell, and had followed William Penn to the New World in 1683. After graduating Bachelor of Arts at Princeton in his fifteenth year, Rush studied medicine under a private practitioner in Philadelphia for six years. At the age of 21 he proceeded to Edinburgh, where he studied under Cullen for two years, taking his Doctor's degree in 1768 with a thesis "De Concoctione Ciborum in Ventriculo." He then worked for some months in the hospitals of London, and after a further period of study in Paris returned to America, where he was forthwith elected to the Chair of Chemistry in the College of Philadelphia. He was a successful teacher, but his duties were not so engrossing as to prevent his acquiring a large practice as a physician. He also found time to be an active politician. He became a member of the Continental Congress, and was one of the signatories of the Declaration of Independence. He was elected a member of the Convention of Pennsylvania for the adoption of the Federal Constitution in 1788, and in 1799 was appointed Treasurer of the United States Mint. Rush was elected Physician to the Pennsylvania Hospital in 1783, and continued to hold that office till his death. He was one of the founders of the College of Physicians of Philadelphia. When the Medical Department of the University of Pennsylvania was established, Rush was appointed to the Chair of Institutes of Clinical Medicine in 1797. As a thinker he was far in advance of his time, advocating civil and religious liberty, temperance, the abolition of slavery, the establishment of free schools, the higher education of women, the proper care of the insane, and international arbitration as a means towards universal peace. His account of a devastating epidemic of yellow fever which occurred in Philadelphia in 1793 attracted immediate attention throughout Europe, and was translated into three languages. His services to humanity during that period won for him numerous honours. He received a medal from the King of Prussia, a diamond ring from the Emperor of Russia, and the thanks of the King of Spain. Two medals were struck in his honour at the United States Mint. Rush was an indefatigable worker, reading widely with a pen in his hand, and writing copiously. His works comprise several monographs on medical subjects; a series of introductory lectures; essays, literary, moral, and philosophical, originally communicated to the periodicals of the day and subsequently collected and published in two volumes; and a number of political writings. Rush took all medical knowledge for his province, but in later life he devoted more and

more attention to the treatment of the insane. He held that the study of this department of medicine should form a necessary part of the curriculum. He also advocated the founding of institutions for the care of dipsomaniacs. He was an advocate of bleeding on a heroic scale that would have won the approbation of that sanguinary pedant, Gui Patin. Of a Spanish writer, Padre Feyfoo, who did good work in his day in dissipating the ignorance of his superstitious countrymen, it was said that a monument should be erected to his memory, at the foot of which his writings should be burnt. A like proposal might be made in regard to Benjamin Rush.

In the *Gazette Médicale de Paris*, M. L. Picard gives an account of Jehan de Paris, better know by the name of Perréal, who was painter, valet and surgeon in ordinary to three kings of France, Charles VIII, Louis XII, and Francis I. He was the son of Louis XI's valet, and appears to have been born at Lyons in the latter half of the fifteenth century. His name is found in a letter dated September 22nd, 1495, addressed by Charles VIII to the Aldermen of Lyons, in which he is described as a member of the royal surgical establishment and *varlet de chambre ordinaire* to the King, and it is directed that as such he is to be exempted from the payment of rates and taxes. Jehan de Paris is best known, however, as a painter and an architect, but though he has been the object of great research, and volumes have been written about him, there is a good deal of uncertainty about the authenticity of the paintings which have been attributed to him. In the *Cornhill Magazine* for July Mrs. Richmond Ritchie gives a most interesting account of the Exhibition of "Primitifs Français" now being held in Paris. She says that there are two pictures in the Exhibition attributed to Perréal, in each case with a questioning note attached to the name in the catalogue. Describing the pictures Mrs. Ritchie says the artist-valet has a charming gift for details, and in "The Mystical Marriage of St. Catherine" the eye dwells with real pleasure upon the dainty architecture, the delicate trimming of St. Catherine's robe, and all the other belongings of the holy company. The heads of the figures are admirable, but the painter seems to have been unable to realize the human body, and the figures of the Virgin and St. Catherine are weak and feeble. Another painting of the Virgin and two donors by Perréal is, according to Mrs. Ritchie, a disappointment; the Virgin is beautifully and wonderfully painted, but the donors so ill-executed that they spoil what would otherwise have been a remarkable work.

Messrs. T. C. and E. C. Jack, of Edinburgh, announce the forthcoming issue of an atlas of anatomy of a new kind, to be entitled the *Edinburgh Stereoscopic Atlas of Anatomy*, to be edited by David Waterston, M.A., M.D., F.R.C.S.E., F.R.S.E., Lecturer and Senior Demonstrator in the Department of Anatomy, Edinburgh University. The aim of the atlas is to bring within the reach of the physician and surgeon, as well as of the student, a complete series of views illustrating the most recent advances in topographical anatomy. The publishers have been enabled to do this through the kindness of Professor D. J. Cunningham, who has permitted the whole of the work in connexion with the compilation of this atlas to be carried out in the anatomical department of Edinburgh University, and has, in addition, allowed photographs to be taken of many of his own preparation, including an extensive series of formalin specimens. A series of special dissections have also been made for this atlas, and by these means a thoroughly complete set of preparations has been rendered available, illustrative of the position and relations of the viscera, of the anatomy of the central nervous system, of the course and relations of blood-vessels and nerves, as well as of the topographical and regional anatomy of the trunk and limbs. In order to give a realistic representation of the anatomy of different regions as displayed by dissection, the method of stereoscopic photography has been resorted to, so as to combine with an accurate surface view, a correct representation of the relative position of structures which lie at different levels from the surface. Photographs of this kind have been taken by a photographer who not only has given special attention to this kind of work, but also possesses considerable anatomical knowledge. Each photograph is accompanied by a brief description, and the photograph and description are mounted on one card, so as to facilitate reference from the one to the other, and no difficulty will be found in using the stereoscope, and, at the same time, following the description. These descriptions have been written by the editor. The photographs can be used with any ordinary stereoscope, and it is intended to issue the series in sections dealing with different regions of the body, each section being as nearly as possible complete in itself. The series will comprise 250 separate stereographs. The work will be issued at intervals in sections of about 50 stereographs. The first section will be ready during the coming autumn, and the publishers hope to complete the work early in 1905.

MEDICAL NEWS.

The King Edward's Hospital Fund for London has received a cheque for £1,000 from an anonymous donor towards the Endowment Fund, established to raise the permanent fixed income of the fund to £50,000 a year.

The Lee Conservancy Board has been successful in its prosecution before the magistrates at Stratford of the Walthamstow Urban District Council for allowing offensive matter to pass from their sewage farm into the River Lee or its tributaries. A penalty of £25 to include costs was imposed.

The Duchess of Saxe-Coburg, Patroness of the Hospital for Epilepsy and Paralysis, Maida Vale, accompanied by Princess Henry of Battenberg, paid a visit to the hospital and inspected the wards, which now contain thirty-four in-patients. The Royal party was received by representatives of the governing body of the hospital, including Canon Duckworth, Vice-President, and Dr. George Ogilvie, Senior Physician.

The Factory Girls' Country Holiday Fund, to which we drew attention last year, is again appealing for assistance. The fund has a number of cottage homes in the country, and to these it endeavours to send factory girls, who work in London all the rest of the year, for a fortnight when work is slack. The girls pay part of the expense themselves, and since when they have once been they want to go again, the fund fulfils the treble purpose of brightening their lives, improving their health, and teaching them to save their money. The Honorary Secretary is Miss Paget, St. Peter's Rectory Saffron Hill, E.C.

Society for Relief of Widows and Orphans of Medical Men.—A quarterly court of the directors of the Society was held on July 13th, the President, Mr. Christopher Heath, being in the chair. Two new members were elected, the deaths of 3 members were reported, and 2 gentlemen had ceased to be members of the Society. A fresh application for a grant was read from a widow, and a grant at the rate of £50 per annum was made. The deaths of 2 widows were announced; one, aged 81, had been in receipt of grants since January, 1877, and had received £1,540 from the Society; the husband had only been a member ten years, paying 20 guineas; the other, who had just entered her 101st year, had received £1,245, having been on the funds of the Society since January, 1882; the husband had paid 32 guineas subscription. The death of an orphan was reported who had been on the Copeland Fund since 1866 and had received £452. A legacy of £1,000 had been paid by the executors of Mrs. Du Pasquier. The expenses of the quarter amounted to £52 12s. 6d.

Society for the Study of Disease in Children.—This Society, which was only founded in 1900, has made remarkable progress in the short time that it had been established. Commencing with about 100 members, it has increased to over 300; many of them being provincial members. It has several members in Belfast, Dublin, and Cork; and in Scotland, Edinburgh, Glasgow, Aberdeen, and Stirling are represented. It was taken up with enthusiasm in Liverpool and Manchester, where the first two provincial meetings were held, and since then meetings have been held at Brighton and Clifton. The financial position, as shown by the Treasurer's statement, is in a most satisfactory state. Subscriptions to the amount of £346 7s. were collected during the past year. The invested funds amount to £228 13s. 6d. in Consols, whilst it has an endowed lectureship of £20 per annum. After bringing out its handsome illustrated annual volume of reports and paying all expenses, a balance of £149 9s. 10d. remains in the Treasurer's hands besides the invested funds. The annual general meeting was held on Friday, July 15th, when Mr. R. Clement Lucas delivered the first Wightman Lecture on the Hereditary Bias and Early Environment in their Relation to the Diseases and Defects of Children. A dinner afterwards took place at the Hotel Cecil.

BRITISH MEDICAL ASSOCIATION.

Subscriptions to the British Medical Association for the year 1904 are now due and should be forwarded by postal order or cheque to the amount of 25s. to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, JULY 23RD, 1904.

THE SAFETY OF CHLOROFORM.

THE third report of the Special Chloroform Committee of the British Medical Association is published this week, with appendices relating to experiments which have been made in the course of the inquiry which it has undertaken. The statement in this report which will arrest the attention of the majority of readers is that "it is probably not yet fully realized by the profession what extremely small quantities of chloroform are necessary to produce adequate anaesthesia." From the clinical standard this is of paramount importance, and if the labours of this Committee are to bear fruit of an abiding nature, it is necessary that they bring home by means of incontrovertible evidence that small doses of chloroform can induce adequate anaesthesia for surgical operations, and yet not endanger life. We gather that this is the true objective of the Committee's work, and when physiological discussions can be associated with the practical everyday work of the busy practitioner, and thus lessen his weight of responsibility by increasing his available knowledge of anaesthetics and their behaviour, a tangible proof is given of the value of such researches as those which are reported by the Committee. So much of what has been written in the past has been outside the range of practical anaesthetics that many have shut their eyes to the ever-increasing knowledge of the subject, and pursued the methods which have become habitual either because they were the methods taught them at the outset of their career, or because they were the simplest and always at hand. However, a perusal of the three reports[1]—for they are really continuous—must force upon all thoughtful men some most important and practical conclusions, although the work of the Committee is not complete, for it has not yet finished its task of telling us how we may employ chloroform safely and yet effectively. The picture of narcosis as it is now presented is a fuller canvas than that upon which our fathers looked, our knowledge is more exact, the gaps in it fewer and less incapable of being bridged.

When chloroform was first known it was accounted a safe and beneficent agent, easy to manipulate, its use requiring little special knowledge or training. But a time came when its dangers bulked perhaps unduly large owing to the frequent deaths associated with its everyday employment; the pendulum of opinion at least in England and the United States swung to the other extreme, and the use of chloroform was condemned because the conclusion, unwarrantable as we now know, was accepted that its dangers were inherent and controlled less by the ordinary laws of dosage than by caprice. It was known that the tripod of life itself was threatened when chloroform was inhaled; and, although many sound workers described safe methods, yet the underlying and all-important proofs—the clinical proofs—were yet to seek. It is true that Snow and Paul Bert had done valuable work, and had insisted upon the importance of dosage, but their researches only carried conviction to the few, and left the majority of busy practitioners unaided. The requirement of the man whose duty it is to administer chloroform at any moment to all sorts and conditions of men without special preparation is to have before him a clear picture of how the vapour acts and how to control its action. To admit that we have no power of controlling its effects, and are at the best only able to judge of them after their outward and visible evidence—failure of respiration or what-not—has shown itself, is to admit that we are using an agent which is our master and not our servant. However, even if we pass over a mass of literature with which we are not concerned at present, we think it is possible to paint a fairly satisfactory picture for the practical man from the reports before us. Even if its lights and shadows are not fully filled-in, there is every reason to believe that if the Committee continues its work this defect will be corrected in future reports. We have learned from the experiments of Professor Sherrington and Miss Sowton that quantities of chloroform below a certain strength, when introduced into the circulation, bring about well-marked results, always depressant, but the depressant effects are always obviated by the removal of the cause—the chloroform—and in the case of their experiments the heart recovers its normal vigour. Such doses in the case of the isolated heart do not accumulate; indeed, a species of tolerance shows itself. We see here the counterpart of the passing-off of the depressing effect of chloroform when carefully administered to a human being, the patient who, in the first portion of the induction appearing unduly depressed, gradually regaining circulatory vigour as the narcosis deepens and anaesthesia appears. The same observers, however, tell us that beyond such doses as those mentioned below, the depressant action becomes permanent, and damages and may destroy the heart. There is, however, a very definite line between such doses, and if we are provided with an inhaler which tells us to a nicety what strength of vapour the patient is inhaling, we can readily obtain the physiological effect of anaesthesia without that of permanent depreciation of tissue integrity. Such an inhaler the Committee suggests exists in the invention of Mr. Vernon Harcourt, who in the report for this year gives reasons for believing in the accuracy of the instrument. The Committee further advances, but we are not sure whether this is their final decision that 2 per cent., vapour of chloroform in air can produce adequate anaesthesia in all cases and is never dangerous. We have yet to learn what relation this figure bears to the doses given in the isolated heart, if indeed it is possible to institute a comparison. What, however, is of even greater interest is the statement contained in the reports of Professor Sherrington and Mr. Byles, Mr. Harcourt and Sir Victor Horsley that the blood itself is a most important factor in the problem.

Although, as is shown by the report, the deleterious powers of chloroform are less evident when that anaesthetic is given with blood rather than with a physiological saline

[1] BRITISH MEDICAL JOURNAL, 1902, vol. ii, p. 116; and SUPPLEMENT to the BRITISH MEDICAL JOURNAL, July 18th, 1903, p. cxli.

circulating fluid, yet we learn that blood tends to hold within itself no insignificant part of the chloroform. In the case of large doses given to human beings, we can readily see how such a retaining power might and probably does make for danger if not for death. We cannot pursue the question further. The gist of the matter may be summed up by saying that the whole work of the Committee goes to show, and in no uncertain manner, that danger lies in high percentages, absolute safety in certain low percentages. The Committee indicates that at present it has not had an opportunity of comparing the accurate percentages found in blood after the inhalation of known percentages in the respired air. This was attempted roughly by Snow, and must be accurately determined before our knowledge can be held to be complete. We therefore welcome the appearance in the report of the work of Messrs. Byles, Harcourt, and Sir Victor Horsley, of an experiment, one of a series undertaken to investigate this very point, and shall look with keen interest for the continuation of their work in this direction.

THE ANNUAL REPRESENTATIVE MEETING.

In the article published in the British Medical Journal of July 9th, p. 81, an attempt was made to indicate briefly the scope and object of the proposed alterations of by-laws to be submitted to the Annual Representative Meeting at Oxford next week. In the Supplement to this issue of the Journal will be found the annual reports of the Medico-Political and Ethical Committees, which will also be submitted to the Annual Representative Meeting.

The report of the Medico-Political Committee, even without taking into account the appendices, is a voluminous document, but a careful examination of it will convince members of the Association that owing to the enormous amount of work done by this Committee, and the great number of subjects which came under consideration, it would have been impossible to relate the story of the Committee's activities during the year in a shorter space. As will be seen from the table published at pages 66 and 67 of the Supplement, twenty-three separate subjects came before the Committee, and many of these had to be dealt with under several heads. Of these subjects several of the most important were referred to the Committee by the Annual Representative Meeting of 1903.

Among these the first in place, and perhaps in importance, is the subject of contract practice. Upon this the Committee is at present only in a position to present a preliminary report, founded in part upon the replies received in response to inquiries addressed directly to medical practitioners engaged in contract practice, in part upon inquiries made by the Medical Secretary in various districts, and in part upon reports published from time to time by individuals or committees, who have given special attention to the subject. The inquiry addressed to individual practitioners contained a set of questions under three heads, relating to clubs providing attendance for members only, to family clubs, and to private clubs. A great deal of valuable information has been received, and the Committee, while anxious to receive a still larger number of replies, has drawn up a special report[1] on the subject containing an analysis of the information sent in up to the present time. With regard to the remuneration actually received by the medical officers of the clubs in proportion to the amount of work done, a digest of the facts in the case of 200 clubs containing 31,702 male adults and juveniles, yields some very interesting results, which are set out in a table and diagram. The rate of subscription per member per annum varied from 2s. to 5s. a year and upwards, the average for the whole group being 3s. 7½d. per member, and it appears that the average number of attendances, that is visits and consultation with or without medicines, was almost exactly 4 per member, and the yield to the medical practitioner about 10½d. for each attendance, medicine included. The average in various classes, however, varied from 7¾d. when the annual rate of subscriptions was from 2s. to 3s., to 1s. 2d. when the annual rate was 5s. a member. The returns further bring out the interesting and instructive fact that with an increase in the amount of the annual subscription there is a tendency to a rise in the amount of attendance required, so that the yield to the practitioner does not increase proportionately to the increase in the annual subscription. It is pointed out, however, that too much reliance must not be placed upon these results, in the first place because the inquiry is not yet complete, and in the second place because the year 1903, to which all these statistics refer, was exceptionally healthy. A large proportion of the practitioners who have replied consider that the rates they now receive are inadequate, and the majority also recommend that a wage limit should be imposed. With regard to the third point of the inquiry, namely, the question whether it is desirable that private clubs should be continued, the replies received indicate that further information upon the subject is necessary before any decision is come to. The report as a whole throws so much light on a complicated subject that there can be little hesitation in assuming the Representative Meeting will wish the Committee to continue its inquiries. The matter is one which the profession has very largely in its own hands, and when the inquiry is complete and the whole information before the Association, it may be hoped that a united profession will find a remedy for existing evils which will redound to the benefit not only of medical men, but also of the clubs themselves.

Another matter to which the Committee has given attention during the year is the position of the Irish and Scottish Poor-law Medical Services. In the case of Ireland, the British Medical Association has presented a memorandum to the Chief Secretary for Ireland [2] in support of the Poor-law Medical Officers (Ireland) Superannuation Bill, and has circulated to members of Parliament and Boards of Guardians and others a pamphlet [3] containing the reports on the Irish Poor-law Medical Service prepared for this Journal by Sir William Thomson, C.B., by Surgeon-General Evatt, C.B., and by Miss Wood. It would appear that the most practical course open to the Association at the present time is to seek the reintroduction of the Superannuation Bill as a Government measure in the next session of Parliament. In Scotland the recommendations contained in the report of the Departmental Committee on Poor-law medical relief [4] has met with general approval, and the Scottish Committee of the Association has specially welcomed the official recogni-

[1] Supplement to the British Medical Journal, July 23rd, 1904, p. 70.

[2] Ibid., July 16th, 1904, p. 37.

[3] *Reports on the Poor-law Medical System in Ireland* (London; British Medical Association. 1904. 6d.)

[4] Supplement to the British Medical Journal, April 30th, 1904, p. 86.

tion of the necessity of security of tenure for parish medical officers. So far as we are aware, the Government has given no indication of its intention to legislate in accordance with the recommendations of the report, and it will probably be found necessary to jog its memory on the subject.

Another matter referred to the Medico-Political Committee by the Representatives' Meeting last year was the subject of vaccination law reform. Six proposals previously approved by the Council of the Association on a recommendation of the Medico-Political and Public Health Committees were referred to the Divisions in accordance with the instructions of the Annual Representative Meeting, and as it appeared that all the Divisions which replied were in favour of compulsory revaccination, the Committee was able to recommend the Council to support the Revaccination Bill, which has since passed through the House of Lords, and now awaits that consideration in the Commons, which, it is to be feared, it will not receive. A large majority of the Divisions approved of the proposals that the Vaccination Acts should be administered directly by a department of the Local Government Board: that no vaccination certificate should be accepted unless it contained a statement as to the number and area of the vesicles: that all lymph should be supplied by the Government or by private establishments under Government control: and that every private practitioner furnishing certificates satisfying a standard fixed by the Local Government Board should receive a suitable fee. Upon the remaining proposal, which dealt with the conscientious objector, there was no such approach to unanimity, though the majority of the Divisions were in favour of the proposal that both primary vaccination and revaccination should be subject to the same provisions for conscientious objection as in the present Vaccination Act, but that the procedure for exemption should be more strictly defined in any future legislation.

We cannot do more than mention the strenuous labours of the Committee in the re-drafting of the Medical Acts Amendment Bill, with regard to the improvement of the law of death certification and registration, with regard to the proposed amendment of the pharmacy law, and in the promotion of a Bill for the reform of the Local Government Board, preliminary to other reforms needed in public health law. In every case it will be found that no pains have been spared to place the facts fully before the Association.

The Report of the Ethical Committee, though a comparatively brief document, is proof of the very large amount of work which it has got through in the course of the year. We may take as an example of one among many matters, which have involved great labour, the consideration of the terms of a model rule which might be adopted by Divisions with regard to the circulation of notices declaring that in the opinion of the Division the conduct of a practitioner or practitioners has been detrimental to the honour and interest of the medical profession. Much of the time of the Committee is occupied in the consideration of individual cases brought before it by Divisions or members of the Association. In this way it has, during the two years which have elapsed since its formation, expressed upon many important questions opinions which when ratified by the Council and the Representative Meeting have become the findings of the Association. The Medical Secretary has therefore undertaken to add to his other arduous labours the task of collecting and arranging the decisions of the Committee in a form which may be useful for reference.

The Gateshead Division has given notice of motion to instruct the Council of the Association to take steps to obtain such an alteration in the Memorandum of Association as shall render it possible for it to take up medical defence should the verdict of the Association be in favour of that course. The Association now has before it the report of the Medical Defence Committee embodying a scheme for medical defence, a minority report dissenting from the scheme, and a further report from the Committee showing the results of the polling; the latter was published in the Supplement of July 16th, p. 43. The matter will therefore doubtless come before the Representative Meeting in some form, and a discussion would, it can hardly be doubted, clear the air, although it may not be possible this year to arrive at a definite conclusion.

LEUCOCYTES AND DISEASE.

The investigation of the changes in the blood corpuscles in disease continues to be carried out with the greatest vigour; it was considered to be a great advance when, following upon Ehrlich's generalization of the varieties of white corpuscles, a blood count was made to include an enumeration of the various forms of leucocytes. No account of the blood examination was of use unless this were done, for it would have been impossible to distinguish leucocythaemia from cases of leucocytosis in which the increase of white corpuscles was due to an increase of neutrophile cells.

It was soon found, however, that various infectious disorders produced leucocytosis and others leucopoenia, whilst still others produced little or no change in the total number of leucocytes: this knowledge has been turned to practical account in the differentiation of doubtful cases of infection; for example, typhoid fever was found to produce leucopoenia, and pneumonia, in those cases at least of hopeful prognosis, a leucocytosis: further it was found that leucocytosis may take place in some cases largely as a result of the increase of one particular group of leucocytes, as for example in scarlet fever, in which the eosinophiles are notably increased; and lastly, judging by the degree of increase in particular leucocytes, as for example the neutrophiles in pneumonia, some estimate might be made in a prognostic sense, even when ordinary physical signs failed to give the desired information.

Unfortunately, various authors have not been in agreement as to the exact degree of increase of any particular form of leucocyte in any particular infection, and this may well be explained by the fact that too often the observations have not been continuous, and occasional reports have been made without proper regard for the stage of the disease at which the observation was made. Considering the tedious nature of blood counts, this is hardly to be wondered at. Dr. Arneth, with an industry and patience that provoke the greatest admiration, places before us[6] a series of blood examinations which in their infinite detail will make all observers, except those who have unlimited time at their disposal, despair of ever carrying out similarly painstaking researches.

[5] Ibid., March 19th, 1904, p. 31.

[6] *Die Neutrophilen Weissen Blutkörperchen bei Infektions Krankheiten* [The Neutrophile White Corpuscles in Infectious Diseases.] By Dr. Joseph Arneth. Jena: Gustav Fischer. 1904. (Demy 8vo, pp. 200; 31 plates. M. 10.)

Dr. Arneth's main thesis is that observers have overlooked the great importance of paying attention to the numerical changes in the various forms of neutrophile leucocytes in infectious diseases. His observations are based on Ehrlich's views that the neutrophile leucocytes are developments from the simple myelocyte; the latter corpuscle is the youngest form of neutrophile leucocyte; in its development to the mature polymorphonuclear cell it passes through the familiar phases of leucocyte with a slightly or deeply indented nucleus—transitional neutrophiles—to cells containing two, three, four, five, or more small fragments connected or not (apparently) by fine filaments. He then divides all neutrophile leucocytes into several groups depending upon these morphological distinctions, and investigates various infectious diseases—as pneumonia, typhoid fever, etc.—from this point of view. Without attempting to follow his work in all its details, the general statement may be made that several infectious diseases—notably pneumonia—show a very marked tendency towards destruction of the more highly-developed neutrophile, so that the picture of the leucocyte count shows a preponderance of the less mature forms which have been introduced into the blood stream.

The increase of labour entailed in counting the number of the subdivisions of neutrophiles in pneumonia hardly repays the worker, because there does not appear to be any sharper diagnostic result than if the ordinary differential count of leucocytes was carried out. In typhoid fever, however, much more valuable results are obtained, as also in other infectious diseases, for with typhoid fever, which does not in uncomplicated cases show an increase of leucocytes, but rather a decrease, very much information may be deduced as to the degree of severity of the attack according to the degree of destruction of neutrophile cells of the maturer type.

The reader will find similar details with respect to tuberculins, measles, parotitis, etc. Dr. Arneth's volume contains much information on the observations of other authors on matters dealing with leucocytes, and one matter of great importance is his criticism of the view that the increase or decrease of leucocytes in various infectious diseases is due to a positive or negative chemiotactic action; as would be surmised, he interprets such changes rather as a result of the destructive powers of various toxins circulating in the plasma, leading in some cases to leucopoenia, with preponderance of unripe neutrophile cells (anisohypocytosis), and in others to leucocytosis with a similar preponderance of the same cells (anisohypercytosis). Dr. Arneth asks for a friendly acceptation of his views on account of the enormous pains he has taken during the last four years in compiling his observations. We are sure that his work will receive warm appreciation, not only for the practical value of its contents but because of the weighty criticism that his results will bring to bear upon the accepted views of the interaction of toxins and leucocytes in disease.

THE SCOTTISH POOR-LAW MEDICAL SERVICE.

The terms of the settlement by which the action raised by Dr. Macara against the Parish Council of Durness for alleged illegal dismissal from his office of medical officer and public vaccinator for that parish was withdrawn were published in our issue of July 16th, p. 153. They show that Dr. Macara has won a complete victory. Not only does the Parish Council rescind its minutes, and reinstate Dr. Macara in his office, but it undertakes that bygones shall be bygones, withdraws any charges of breach of duty made, and binds itself to pay all expenses. This is a most satisfactory result, and Dr. Macara is to be congratulated on fighting a battle which it is to be hoped will be to the advantage of the profession in the Highlands. At the same time it is to be deplored that in the Highlands of Scotland parish medical officers are subjected to such treatment. It is not necessary to go into the history of the proceedings which resulted in Dr. Macara receiving notice to quit. There is, however, this important fact—that apparently three members out of a council consisting of seven members could effect the dismissal of the medical officer, and that the Local Government Board of Scotland could not or would not interfere in the matter. We do not envy the position of the Rev. Mr. Gunn, Chairman of the Board, and his two supporters when the bill of costs is presented to the ratepayers for payment as a result of proceedings on their part which have turned out to be most uncalled-for. The ratepayers of this poor Highland parish will surely have something to say on the subject. If Dr. Macara had not agreed to withdraw his action and the case had gone to proof, the expenses would have been greatly increased. The question of the treatment of parish medical officers in the Highlands and Islands of Scotland does not alone concern the profession, it also affects the inhabitants of these districts. Medical men will not be subjected to such arbitrary treatment, and to have black marks put against their names which may seriously affect their prospects when they apply for appointments in other parts of the country. It is not surprising that there are few applicants in reply to apparently tempting advertisements inserted in the lay press. It is high time that the Government took the matter up, and put an end to a state of matters which may lead to serious results. This could be done by a Bill of a single clause giving security of tenure. In the meantime it is necessary for the profession to protect itself. All applicants for appointments in the Highlands should get full particulars from the Secretary of the Scottish Poor-law Medical Officers' Association, Dr. W. L. Muir, 1, Seton Terrace, Dennistoun, Glasgow, concerning any appointment they propose to apply for.

THE SELECT COMMITTEE ON THE REGISTRATION OF NURSES.

The progress which has been made thus far by the Select Committee of the House of Commons in collecting evidence shows the importance of the question and the amount of information that has yet to be gathered before any exhaustive report can be made. Thus far the hospitals have had their say, and though these institutions can contribute valuable information on the processes which are concerned in the turning out of the trained nurse, they are not competent to pronounce upon her in her relation to the public, or her adaptability to the varying spheres in which she may eventually carry on her profession. The evidence which up to the present time has been laid before the Committee is that with which the public is already familiar; it comes from the mouths of those who, for or against the scheme, have already taken the public into their confidence by means of the two manifestoes which have been sent round for signature. Every one knows that Mr. Sydney Holland regards the registration of nurses as false and misleading in the extreme, whilst, on the other hand, Mrs. Bedford Fenwick and those who think with her look upon it as the safeguard of all concerned. Between these two extremes there must be a large body of evidence which we trust the Committee will endeavour to secure; evidence representing the attitude of the public towards the nurses, the opinions of the great body of employers of nurses whether official or professional, the experience of those who live and work among the rank and file of the nursing profession, the knowledge of those who as agents, or responsible authorities, are engaged in catering for the needs of the sick, rich or poor. It is from such sources as these that the Committee will receive the most light and leading, and we trust that before it closes its sittings it will have heard what these people have to say.

"TIED" DAIRY FARMS.

THE article with the title "Are we Degenerating?" which Mr. Cantlie contributed the other day to the *Daily Chronicle*, should be read by all those interested in the upbringing of children. Mr. Cantlie has been a pioneer in this matter, and more than twenty years ago—before he went out to Hong Kong—gave a lecture, afterwards published as a pamphlet, in which he made an appeal to public opinion, at that time unfortunately without much success. During the past four or five years, however, public opinion has been aroused, and Mr. Cantlie believes that the question of physical degeneration among the poorer classes of Great Britain has gone beyond the field of debate. But he is not a pessimist, and in the following passage states very clearly a hopeful factor about which there is a good deal of confusion in the minds of many people. "Were the children," he says, "of even weakly folk taken in hand at an early age, the national health would recover in a single generation. A race of people naturally reverts to its normal type; and it only requires one generation of healthy homes to bring about a reversion to the normal. The normal physique of the people of these islands has no superior, and it requires but the recognition of the fact that all is not well with us to find ways and means for a remedy." One very serious aspect of the subject is that milk, the staple food of all young people, has become a luxury among the children of the agricultural labourer, and tea has taken its place. Many labourers cannot afford to buy milk, and not a few of those who can are unable to get it, for many of the farms are pledged to hand over their entire supply to the town agent. Mr. Cantlie says: "We hear much of the hardships accruing to tied public-houses, but the national evils likely to follow upon 'tied' farms threaten national decline. Absence of milk in the dietary of children means disease." He does not in the article to which we refer go into the question of milk in towns, nor does he analyse the question whether the sacrifice exacted of the country populations for their town brothers and sisters is justified by results. The pathetic part of the story is that by the time the milk of which the country children are deprived reaches infants in towns, it has, thanks to the absence of decent sanitary precautions, become putrescent and dangerous to life. The question is, seeing that nothing is done by the local authorities to guard against this public danger, whether the law should not limit the proportion of milk to leave the country for towns; thus, at any rate, the rural population would benefit, and the town children could hardly be worse off. If infants are to be reared into healthy useful subjects, mothers must be provided with wholesome, clean milk. Though the suggestion may smack of "This is the house that Jack built," it seems clear that the first step is to obtain legislation so that county councils may have power to compel rural authorities to oblige farmers to conduct their farms in a sanitary manner. There are wheels within wheels in the machinery which turns out our milk supply, and farms continue in a disgusting state under the very noses of the authorities by whom they ought to be controlled. Unfortunately, delicate hints, such as those set forth in the exhaustive series of articles we published last year on the Milk Supply of Large Towns, appear to have absolutely no effect on the local authority. The Legislature must therefore be asked to empower county councils to compel supervision of farmers by the local authority. As Mr. Cantlie says, all that is wanted is the machinery wherewith to start the process of alleviation. Mrs. Watt Smyth has, Mr. Cantlie says, in her recent work on *Physical Deterioration*,[1] "with judgement and accuracy of argument, brought home to us the picture of degeneracy, the consequences foretold, and the remedies indicated." On the public, and especially on the medical profession, lies the responsibility of aiding to check what Mr. Cantlie describes as the gravest calamity that ever threatened us—a danger to our very existence as a people. He says: "Those who desire to understand the physical condition of the people of England and Wales should read Mrs. A. Watt Smyth's book; it should be carefully studied by every one: it should be adopted as a textbook for teachers in our schools, and a knowledge of its contents made compulsory."

[1] London: John Murray. 6s. net.

PATHOGENIC TRYPANOSOMES.

WE have received from Dr. Llewellyn Phillips, Physician to the Kasr-el-Ainy Hospital, Cairo, a short paper, which we regret to be unable to publish at present in full, stating that he has found the Leishman-Donovan parasite in the pulp of the enlarged spleen of a Turk who had lived for a long time in Yemen in Arabia. He points out that as the Hedjaz is the place of pilgrimage of the whole Mohammedan world, the fact of the occurrence of the parasite in Yemen may be of great importance. He has since found the same parasite in a native of the Manufiah province of Egypt, and in another case in a native Egyptian. Captain Leonard Rogers, I.M.S., in a letter dated Calcutta, June 29th, informs us that he has been fortunate enough to get fully-developed trypanosomes, as well as a number of intermediate stages, in his cultures of blood obtained by spleen puncture in a case of Calcutta cachexial fever and in a case of kala-azar from Assam. The *Quarterly Review* for July contains an exceedingly interesting article by Professor Ray Lankester on sleeping sickness, in the course of which he discusses the relation of various trypanosomes to disease, and calls particular attention to the researches of Dr. Schaudinn, of Rovigno, who in Professor Lankester's opinion has established among other points the interesting fact that the spirochaete obermeieri of relapsing fever "is a phase of a trypanosome: that it has a large nucleus and a micronucleus or blepharoplast, neither of which is present in the spiral bacteria; and, further, that it alters its shade, contracting so as to present the form of minute oval or pear-shaped bodies, each provided with a larger and a smaller nucleus. These oval bodies are often engulfed by the colourless corpuscles (phagocytes) of the blood: and it is in the highest degree probable that in this condition they have been observed in some tropical diseases without their relation to the spiral forms being suspected. The corpuscles lately described by Leishman in cases of a peculiar Indian fever are very probably of this nature, as are also similar bodies recently described in Delhi sore. On the whole, it may safely be said that the researches of Dr. Schaudinn, of which only a preliminary account has yet been published, have widely modified our conceptions as to these blood parasites, and must lead to important discoveries in regard to diseases caused by them in mammals and in man."

THE ADVERTISING OF MEDICAL PRACTITIONERS AT FOREIGN HEALTH RESORTS.

DR. J. JOHNSTON LAVIS, who writes from Vittel (Vosges), sends us a copy of a letter he has addressed to the Honorary Secretary of the Continental Anglo-American Medical Society, in favour of acceding to the request of the *Daily Messenger* referred to in our issue of July 2nd, page 48, on the ground that the biography would not mention the practitioner's skill in treatment, and therefore would not be touting for practice, and that as it would give what he calls "a simple statement of their qualifications, their medical schools, their publications, posts they have occupied, their successes in art, science, politics, literature, etc.," we ought to welcome the proposal as not only "an honour to them (*sic*) but to ourselves, as showing the public we belong to a profession devoted to something more than money-making. The public, in fact, are more and more looking upon us as so many non-advertising automatic fee-collecting machines and esteem us accordingly." The course he has adopted is to inform the *Daily Messenger* that he will give the information required on condition that eleven other members of the Society allow their biographies to be published. The circular from the *Daily Messenger* states that "the sketches will not touch upon the capacities or qualifications" of their subjects, and if this be so, most of the detail which our correspondent thinks desirable to be made known to the public will be excluded. Is the average photograph calculated to enhance the public estimate of the

person represented? If the public regards any of us as automatic fee-collecting machines, the fault must lie with ourselves, for no one has a better opportunity of impressing a sense of his personal character and worth upon those with whom he is brought into contact than a medical man with his patients. We have already expressed our opinion of the limits within which the proposal may be accepted, and our correspondent's arguments do not convince us that these stand in need of modification, but the Anglo-American Medical Society is perfectly able to manage its own affairs, and we have no desire to press our opinion.

CHILD-LIFE PRESERVATION IN NEW ZEALAND.

THE Premier of New Zealand has issued a memorandum on the question of child-life preservation. Apparently much alarm has been caused in New Zealand and in Australia by the falling-off of the natural increase of the population as reported by the new South Wales Commission. The same evil is seen to exist in New Zealand, and the Premier's memorandum is the outcome of this alarm. Mr. Seddon believes it to be the duty of the State to take measures to save valuable lives. "It is worth mentioning," he says, "that, altogether apart from the humane side of the question which I have discussed, the capital value of every adult in this Colony is £300." The remedies suggested are: (*a*) That an Act be passed under which only those holding certificates should practise midwifery; (*b*) that in each centre there should be qualified midwives for the poor, the State paying the fee; (*c*) that maternity homes should be established under State control; (*d*) that to meet the difficulty of getting children into ordinary hospitals, foundling hospitals should be established at State expense; (*e*) that the State should provide nurses for the sick poor in their homes; (*f*) that apart from the nurses required absolutely for hospital work the Government should arrange with the trustees of the various hospitals to allow a number of girls to be trained in the hospitals, the State paying the board and lodging of these probationers; (*g*) that the lines laid down in the United Kingdom for the prevention of cruelty to children and the neglect of parents should be followed, and infant-nursing hospitals provided, as well as (*h*) day homes for children; (*i*) that a law should be passed preventing the insurance of children of tender years for any sum beyond that which would cover the cost of interment; it might be provided that no child under 10 years could be insured for more than £5; (*j*) that with regard to the maintenance of illegitimate children it should be rendered unlawful for any person to commute the weekly or monthly amount necessary for the maintenance of such a child, or to capitalize the allowance. The parties should be obliged to go before a magistrate and the child registered under the Destitute Children Act. Mr. Seddon thus has the courage to demand of the State the fulfilment of its obligations instead of, as is too often the case in this country, shifting the burden of the State on to the shoulders of the long-suffering philanthropist. No mention is made of infant feeding, and looking to to the thoroughness of the rest of the memorandum we are tempted to hope that the milk supply of New Zealand is in a more satisfactory state than that of Great Britain.

CONTROL OF THE MILK SUPPLY.

DR. ARTHUR R. REYNOLDS, Commissioner of Health reports that during the first eighteen days of June 96 milk dealers in Chicago were fined for selling milk below grade. He invites the co-operation of individual householders in obtaining an improvement in the milk supply. He states that any householder may bring a sample to the health laboratory at the City Hall, where it will be promptly analysed and the result communicated free of charge. The record of analyses made at the health laboratory are public and may be examined personally or upon application in writing. Moreover, information will be furnished as to the quality of milk supplied by any dealer. If by the last statement we are to understand that any person residing in Chicago can obtain from the Health Department information as to trustworthy milk dealers, we venture to think that the plan is worthy of imitation in this country.

A BISHOP ON HOME INFLUENCE.

THE Bishop of Manchester gave some excellent advice at the triennial festival of the Mothers' Union recently held in Manchester, and chose as his text Timothy v, 14, "I desire that the young widows marry, bear children, rule the household, give none occasion to the adversary for reviling." It appears that the adversary is the race of busybodies and gossips. The Bishop said that the teaching a mother gave her children sank more deeply into their hearts than any other, with the possible exception of a father's. The nobility of parentage was recognized by all right-thinking persons. No schools or teachers could take the place of the home in the child's life. Any community in which the children were neglected all day by their mothers could never make up for the neglect by building schools. There is more hope for the country from the improvement of our homes than from any other source. These utterances of the Bishop afford another reason why mothers, or rather why women, should be educated in all that relates to the physical and moral well-being of child life.

HINDU SURGERY.

THE President of the Ceylon Branch of the British Medical Association, the Hon. Dr. W. G. Rockwood, in his inaugural address, gave an interesting account of Hindu surgery. He said that at a very early period surgical practice reached a high degree of perfection among the Hindus and Greeks. It is believed by most writers that the Greeks got their medicine from the Hindus. The probable date of the Sanskrit compilations which contain reference to surgery among the Hindus, and which passed under the names of Charaka and Susruta, seems to be about 500 B.C., though some place it earlier. The high degree of medical and surgical knowledge and skill which the Hindus possessed, as can be gleaned from Charaka and Susruta, was not the result of their contact with western civilization after the campaigns of Alexander. Dr. Rockwood pointed out that there is considerable agreement between the Susrata and the Hippocratic collection, as in the section relating to the ethics of medical practice and the description of lithotomy; but in the latter no mention is made of some procedures, described in the Susrata, such as rhinoplastic operations which were of native invention. Of all the nations of the world the Hindus were the first who turned their attention to the study of diseases and their treatment. The most ancient of written records are said to be the Vedas, which are their holy books; they are held to have been revealed by Brahma, the creator, but they are known to have been compiled by tradition. The Ayurveda, or the science of life or medicine, is a section of the Vedas, and is said to have been revealed to Atri. It is the doctrine of Agniveca, a distinguished pupil of Atri, that Charaka seems to have collected into the work known by his name. It is divided into eight sections, each of which contains thirty chapters. These treat of the preservation of health, food and drugs, the mode of their administration, the qualifications of a physician, and diseases, general and local. Charaka says that he who duly observes the regulations laid down for the preservation of health may live more than a century. The principal subject treated in Susruta's great work is surgery. He divides his work into eight books. The first deals with the extraction of foreign bodies and the opening of boils by caustics and instruments; the second, with diseases of the ear, eye and nose; the third, with general diseases—fever, diarrhoea, insanity, leprosy, diabetes, etc.; the fourth deals with the alleviation by propitiatory rites of diseases caused by the anger of gods, yakshas or demi-gods, and rakshas or demons. The fifth treats of diseases of infants, their food and their nurses; the sixth of antidotes for animal poisons; the seventh of the means of prolonging life, and the eight of aphrodisiacs. The excellence of both the works

led succeeding writers and practitioners to look upon them as of divine origin and therefore beyond criticism. They therefore confined themselves to commentaries on the sacred text. As Susruta speaks of a single class of practitioners who undertook both surgical and medical cases it may be inferred that there were no specialists among practitioners as there were in ancient Egypt.

NAEVI AND MALIGNANCY.

AT the recent Medical Congress at Rouen, M. Denucé dwelt upon some observations made by Trélat in 1883, and complained that they had been largely plagiarized by other Continental authorities without acknowledgement. Trélat found that the presence of multiple small naevi on the skin of a breast affected with a tumour was an indication that the tumour was malignant. In 1899 Denucé recorded further observations on "Trélat's naevi," as he termed them, which were published in the *Revue des Maladies Cancéreuses*. He studied the subject histologically and clinically, and found that the naevi were to be seen not only on the skin of the breast in association with malignant tumours, but also in the integuments in the proximity of deeper tumours of the abdomen and pelvis, particularly ovarian new growths. When, says Denucé, these naevi are multiple, when they appear on the skin over the tumour, and when their appearance has coincided with the detection of the tumour or has followed it, they may be considered as a probable sign of malignancy. Denucé[1] read at Rouen some further observations in which the malignancy of ovarian tumours was detected by the appearance of naevi. Denucé's observations deserve consideration. The qualification that cutaneous naevoid dilatations of capillaries may follow the development of an abdominal or pelvic tumour is the point in Denucé's observations with which those who have clinical experience will be most inclined to agree. The naevi are not rarely seen on the skin of the abdomen in cases where the presence of a tumour is already evident, and its malignancy made only too clear by the presence of reliable and standard symptoms. It is of great importance that Denucé's experience of naevi coinciding with the appearance of a tumour should be rigorously investigated, as, if to any degree trustworthy, it would be a symptom of high clinical value.

THE MEDICAL PROFESSION AND THE PUBLIC SERVICES IN AMERICA.

AN interesting feature of the recent annual meeting of the American Medical Association was a general discussion of the mutual relations and duties of the Government medical services and the medical profession. Dr. Victor C. Vaughan gave a summary of the contributions to medical knowledge that had been the result of the work of surgeons in the United States Army and Navy. No better work could have been done than that by which, as a result of the labours of army medical officers, Havana was transformed from one of the dirtiest cities to a condition better than that of Philadelphia or New York. Scientific research should, he urged, be encouraged among medical officers of the army by giving them facilities for carrying on original work, and by breveting them for meritorious achievements in such work. Officers should be detailed to study in the best laboratories in the United States and in Europe. Special commissions for the army or mixed commissions for both the army and the outside profession should be appointed to study tropical diseases. The Naval Service should have a complete clinical laboratory. Speaking for the army, Major-Surgeon William C. Bordin said that to be successful in war they must be prepared beforehand, and this was as true of the medical corps as of any other department of the army. A medical corps that was insufficient to do the work of the army in peace could not be expected to do it in time of war. Victory or defeat might depend on the health of the army: therefore the necessity for an increase in the number of surgeons in the army could not be questioned. The medical profession should be the teacher and leader of the people, and should show them why this increase in the corps of surgeons was important, not only that they might have efficient services in times of war, but because there were many difficult sanitary problems to be solved in times of peace. A properly-trained reserve corps should be established to take the place of the contract surgeons, as apart altogether from professional fitness, a surgeon could not perform his duties efficiently unless he had rank. He added that this question was before Congress. In regard to the navy, Surgeon C. F. Stokes said that an increase in the navy had been provided for, and the medical profession could best serve the navy by acquainting its promising young men with the inducements which the service held out to them. The work in the naval hospital was superb, and the impression that a surgeon hibernated whole on board ship was very erroneous. The surgeons of the navy contributed but little to literature because of their onerous duties and their isolation, being, as they were, out of touch with all medical bodies. Speaking of the Public Health and the Marine Hospital Service, Surgeon-General Walter Wyman said that the Marine Hospital Service had been founded in 1798 and had grown until it now had 300 medical officers, 22 Government hospitals, and 125 relief stations and 37 quarantine stations in the United States. It made visual examinations of pilots and physical examinations of life savers and immigrants. It established detention camps in times of epidemics, delved into the causes of diseases in its laboratories, settled local disputes in diagnosis, and passed opinion on the purity of vaccine and serums. It prevented the side entrance of immigrants, and had stations all over the world where emigrants were inspected and quarantine administered. The medical profession could assist them by maintaining a high standard of professional excellence and by raising the standard of medical education in the colleges. Co operation with State Boards of Health officers associated with the Marine Hospital Corps would be of advantage to general sanitation. The profession could assist the Marine Hospital Service in its aspirations for a slumless country by aiding in education, in sanitation, and hygiene.

HEALTH IN HOT WEATHER.

THE relatively hot weather—for, after all, London with a temperature of 85° is cool compared with New York with 100°—has been assigned as the cause of a number of unexpected or sudden deaths, often, as it seems to us, on insufficient grounds. The truth is, that summer weather such as that with which England and Ireland have been blessed recently ought to do everybody who lives wisely a great deal of good. Sunshine is a good tonic, and warmth favours the regular action of most of the bodily processes. Illness attributed to the high temperature is only due to it indirectly. The imperfect ventilation of living rooms, offices, and restaurants is apt to be aggravated in hot weather, and therefore more easily produces loss of appetite, headache, and perhaps syncope: and hot, badly-ventilated larders and store rooms allow food, and especially milk, to become tainted rapidly. The most direct cause of serious illness in hot weather is alcohol, especially if taken in the form of brandy, whisky, or gin, and it is certain that over-indulgence predisposes to heat-stroke. The Paris newspapers have been publishing advice from a number of distinguished physicians, which, after all, comes to little more than this: that in hot weather people should eat less than in cold. There is a certain amount of physiological basis for this, but the fact probably is that most people habitually eat too much—too much meat in particular—and that if a man is at all predisposed to gout the increased difficulty in getting rid of the purin bodies by the ordinary channel may lead to trouble. It is therefore wise to decrease the amount of meat, and not to resist the desire to increase the amount of fluid imbibed. Iced drinks are a snare. They are grateful for

[1] Signes de Malignité (Les Naevi de Trélat) applicable aux Tumeurs Pelviennes, *La Gynaccologie*, April, 1904, p. 163.

the moment, but so far as their temperature makes any difference to digestion they tend to retard it; they should, at any rate, not be taken at meals. Their use between meals is a very doubtful good. If taken frequently they tend to produce a slight degree of inflammation (erythema) of the mucous membrane of the mouth, and thus produce that intense feeling of thirst which alpine wanderers call unquenchable. Unquestionably the fluid needed is best taken hot, and probably nothing is better than weak China tea. One other cause of illness prevalent in hot dry weather is dust, and this with a little attention might be abated. The usual practice of municipal authorities is still to sweep the perfectly dry and dust-laden streets in the small and early morning hours by means of powerful machine brushes, with the net result that the dust—at least its finer particles—is sent whirling into the air only to fall again; the particles are rearranged, not removed. The problem has been solved in the cities of London, Westminster, and Paris, and perhaps in others by washing the streets in the early morning and sweeping them afterwards if necessary. This ensures the removal of the dust without playing at the eternal Sisyphus-like task of stirring up over and over again the same dust particles, a sort of "scavenger's labour lost." With regard to country roads, the plan of applying a chemical substance greedy of water, such as calcium chloride, to the roadway, has been tried with advantage. "Westrumite," a combination containing this substance, has been used in many places with success so far as bicycles and motors are concerned. The hygroscopic body absorbs moisture from the air and thus keeps the roads damp. The question of the influence of such substances on horses' hoofs and on rubber tyres has still to be considered.

PRIMARY ABDOMINAL PREGNANCY.

ALL irregularities in gestation are matters of general interest to the profession, more especially when they concern that department of medicine which includes morbid conditions of the abdomen. A tumour liable, owing to its very nature, to rupture or to bleed, is a source of perpetual peril to the patient. Tubal-pregnancy sacs are of this class, but, thanks to the great advances in scientific gynaecology since the establishment of ovariotomy, we can fairly say that we know how to treat them. Indeed, as recent papers in the BRITISH MEDICAL JOURNAL on pelvic haematocele, haematoma, and tubal mole have shown, we now know that whilst sometimes immediate removal of the sac is imperative, under other circumstances rest in bed is the proper treatment. Until a few years ago it was considered certain that extrauterine gestation meant tubal gestation, but Mlle. Van Tussenbroek demonstrated in one instance primary ovarian pregnancy. A report of a very definite case of primary abdominal pregnancy has recently been published by Dr. Gutierrez of Santander, and translated into French by M. Cyrille Jeannin,[1] who reproduces a fine plate demonstrating the appearances seen at the operation. The patient was aged 34 years. Her last previous labour ended in May, 1900, and she suckled the child for two years. On June 13th, 1902, she aborted at the second month; on July 4th the period appeared for the last time, and a normal pregnancy seemed to develop. In April, 1903, eclampsia occurred; on April 14th she became comatose for a few hours. Uterine contractions, it was believed, could be felt. On recovering, the patient declared that she no longer felt the motion of her child. On May 9th menstruation occurred, and continued regularly until last autumn, when she came under the care of Dr. Gutierrez for a spherical tumour, which occupied the umbilical portion of the abdomen; there was resonance between its lower limits and the pubes; in consistence it was irregular, and no outline of a fetus could be defined. The uterus was free, there was no pelvic tumour, and the patient was in perfect health. On November 4th, 1903, Gutierrez operated. A big fetal sac of a dull green colour was exposed; it adhered firmly to the parietal peritoneum on the right towards the iliac fossa, and was nourished by the much-hypertrophied great omentum. The sac was detached from these connexions and from adhesions to the colon and small intestines, as well as from a kind of pedicle which bound it down to the brim of the pelvis on the right. During separation it ruptured, and a female fetus escaped, 19 in. long and weighing with the placenta nearly 7 lb.; the cord was 18 in. in length. This fetus was in an advanced stage of maceration. The pelvic viscera of the mother were found to be quite normal, the two Fallopian tubes were pervious to a fine sound and free from any sign of mole or rupture. The patient made a good recovery. The sac was of irregular thickness; the placenta had implanted itself on the great omentum. Gutierrez has furnished medical literature with a case of high importance. Supposing this form of gestation occurred in another woman and ruptured so as to cause death, the *post-mortem* appearances would be very perplexing. The doctrines of Lawson Tait and Taylor are still held by most gynaecologists; the former totally denied the possibility of primary abdominal pregnancy, whilst Mr. Taylor also ranks this form of abnormal gestation as secondary, terming it "tubo-abdominal." In Gutierrez's case, however, there was not only a well-formed child in an abdominal sac, but also a long umbilical cord inserted into a placenta, which was quite independent of either Fallopian tube. Still, we suspect that some authorities will yet maintain that the pregnancy began in the tube, but that the fertilized ovum was at a very early stage discharged with all its belongings out of the ostium and managed to get attached to the omentum.

[1] Gutierrez, *Revista Ibero-Americana de Ciencias medicas*. March, 1904; Jeannin, Grossesse Abdominale Primitive ayant Evolue jusqu'à Terme. *Revue de Gynéc. et de Chir. Abdom.*, May-June, 1904, p. 553.

THE SALE OF A HERMAPHRODITE.

"IT has been said that so many cases have been decided in the course of the administration of the law that it is a cause of wonder that any remain for decision. However, such is the complexity and ever-changing nature of human transactions that new facts or new combinations of fact will continue to present themselves, and that new questions, arising on those facts, or combinations of facts, will continue to exercise the minds of those engaged in the administration of the law." These were the opening words of the judgement of Lord O'Brien in the extraordinary case of Gill *v.* M'Dowell which recently came before the Irish Court of Appeal. The defendant sent three heads of cattle to a fair for sale—a bullock, a heifer, and an animal which from one point of view appeared to be a bullock and from another a heifer, and which was, in fact, a hermaphrodite. It had teats like those of a heifer, but its urinary organs had the outward appearance of those of a bullock. The defendant sent the animal to a fair at Barry, in the county Longford, for sale, together with two animals, a bullock and a heifer. The three animals were purchased in the fair by the plaintiff, a cattle dealer, at £10 5s. each. A warranty was not asked for or given. Nothing whatever was actually said at the sale as to the sex of the animals, but the plaintiff bought under the belief that he was buying either a bullock and two heifers, or one heifer and two bullocks. The plaintiff, to defendant's knowledge, would not have purchased had he known of the malformation of the animal the subject of the cause of action. By a careful and skilled examination, however, the defect could have been discovered, but in point of fact it was not discovered by the plaintiff until the following day, when he sent a notice or message to the defendant to take the animal back, which the defendant refused to do. The animal subsequently died in consequence of uraemic poisoning occasioned by the retention of urine, the result of swellings and abscess attributed to the malformation. The plaintiff sought to recover the price which he had paid. It was decided that, in all the circumstances of the case, there was no binding contract for the sale of the animals in question, the parties—to use a legal phrase—never having been *ad idem;* and that the plaintiff was entitled to recover the price paid.

The reason for this decision is that the plaintiff never contemplated that he was buying a hermaphrodite. He undertook to buy a bullock or a heifer; not an animal which had no gender, or both.

"A HEALER OF THE BLIND."

WE are surprised to find the London *Daily News* falling so quickly into the bad habits of the halfpenny press by publishing a queer farrago on a medical subject under the title of "Charles De Dion—Healer of the Blind." Mr. De Dion is known to some at least of the London ophthalmic surgeons as a most genial and pleasant old gentleman. He is not, and does not pretend to be, a medical man. He is a French Canadian, and in his early days had some slight medical training, but owing to ill-health he abandoned medicine and gave his mind to mechanical inventions. "I am," he has told the *Daily News*, "simply a student of science, learning as hard at the age of 76 as when I began experimenting sixty years ago. Nor is my method rightly described as 'eye massage;' it is more properly a gymnastic of the eye." It appears that it is little more than eight years since he commenced his treatment of myopia and of people who had been blind for years. During this time he claims to have treated about 2,000 persons, most of them successfully. "You see with your blood," says Mr. De Dion, "as well as with your optic nerve." His treatment is simplicity itself. It is only, we are told, a question of restoring the circulation of the blood in the optic nerve, and the sight is restored, provided the nerve is not injured by disease beyond recovery. If the eye does not work it requires more blood, and massage or some other means will restore the circulation, and with it the sight. In the case of short-sighted persons Mr. De Dion has an apparatus which he believes brings the back and front of the eye closer together, so that after some weeks of treatment the eyeball has regained and retains its shape. Spectacles "with all that old-world paraphernalia" are done away with, and any man may become his own oculist. He also claims that "cataract can be got rid of painlessly and expeditiously by my method." This is the outline of the treatment, and for sheer nonsense it requires much beating. Yet it is the sort of argument that appeals to many, and the British public love to be humbugged in matters medical. We are told that Mr. De Dion is coming to England at the end of the month, and very probably hundreds of people will flock to him, especially if other papers follow the lead of the *Daily News*, and publish similar articles. Possibly Mr. De Dion's methods may be harmless, and will not therefore have such unfortunate results as led to the prosecution of the "Indian oculists" some ten years ago, when, by their ancient and barbarous operations on the eye, they caused blindness to scores of people. But it is curious that a paper of the standing of the *Daily News*, which would scorn to publish nonsense about politics or law or engineering, thinks it worth while to depart from this salutary attitude when dealing with physic.

THE King has been pleased to approve the appointment of Sir William MacGregor, M.D., K.C.M.G., C.B., at present Governor of Lagos, to be Governor and Commander-in-Chief of Newfoundland, in succession to Sir Cavendish Boyle.

THE Home Secretary has appointed Mr. Clinton Thomas Dent, F.R.C.S., to the post of Chief Surgeon to the Metropolitan Police, vacant by the death of Mr. A. O. MacKellar.

THE first full session of the University of Leeds will be inaugurated by a graduation ceremony on October 6th, at which honorary degrees will be conferred by the Chancellor, the Marquis of Ripon.

THE epidemic of cholera in Teheran appears, according to reports from Russian sources, to be exceeding severe. It is stated that the mortality on some days reached a total of 900. Dr. Bom, of the Turkish Embassy, has died of the disease, and the Persian Cossack Brigade, which formerly numbered 2,000, has been reduced to 300. The disease is also present at Bagdad, where it is stated that 100 deaths are reported daily.

THE report of the Admiralty Committee—of which Mr. Shirley Murphy, M.O. of the County of London, was a member—on the humane slaughtering of animals recommends that all animals should be stunned or otherwise rendered unconscious before blood is drawn. It recommends that in the interests not only of humanity but of sanitation, order, and ultimate economy, it is highly desirable that private slaughterhouses should be replaced by public abattoirs. The Committee suggests model by-laws in substitution for those now commonly adopted by local authorities.

MEDICAL NOTES IN PARLIAMENT.

Coroners and Medical Evidence at Inquests.—Sir Henry Kimber asked the Home Secretary on Monday if he would grant a return of the inquests held during the last year, in which coroners had called in specialists to perform *post-mortem* examinations in place of the medical men specified in Section 21 of the Coroners Act, namely, the medical man in attendance on the deceased or some medical man in actual practice in or near the place where death happened, and a return of the coroners so acting; and whether he could take steps to insure a uniform practice by coroners in this matter. Mr. Akers-Douglas answered that he had no materials in his possession from which such a return could be framed, and he did not think he ought to ask the coroners throughout the country to make a return on the subject, which would involve much labour. He had no power, even if he thought it desirable, to require coroners to follow a uniform practice in this matter.

The Public Health Bill, which passed its second reading and Committee stage last week in the House of Lords, is a measure of one operative clause dealing with the sanitary regulations as to vessels arriving at any port and the prevention of the conveyance of infection by vessels. In moving the second reading the Marquis of Lansdowne said that in 1897 an International Sanitary Convention was signed by several Powers at Venice, which contemplated regulations for the prevention of the conveyance of infection should those countries be infected with plague. Some time afterwards there was a slight outbreak of plague in this country and the Government was asked whether it was prepared to carry out the terms of the Convention and to issue regulations. It was then found that there was no statutory power to issue such regulations as the Convention contemplated. More recently another Convention had been signed at Paris with the same objects, and it was found that the Government still lacked the necessary statutory authority to issue regulations. The Bill proposed to confer the necessary powers on the Local Government Board. The Committee stage was passed on Friday in last week, and as the Bill is a non-contentious one there is a good prospect of its passing the House of Commons.

The Teaching of Elementary Hygiene.—Dr. Thompson asked the Secretary to the Board of Education last week if his attention had been drawn to the recommendations of the deputation which waited on July 11th on the Marquis of Londonderry at the Education Office, on the importance of teaching elementary hygiene in the public schools of the country; and if, pending a comprehensive scheme of instruction in matters relating to public health, he would direct that the ten sanitary laws detailed by the President of the British Medical Association should be tabulated and hung up in a prominent place in each school in Great Britain and Ireland. Sir William Anson answered that the Board of Education was considering by what methods the satisfactory teaching of elementary hygiene might be best secured in the schools of the country. Amongst other things it was essential that the instruction should be given by properly-qualified teachers. He was doubtful as to the educational value of the method proposed by the honourable member, and must remind the honourable member that the powers of the Board only extended to England and Wales.

Experiments on Animals. Dr. Shipman asked the Home Secretary on Friday last week whether separate experiments

under Certificate B. or B. + E., E., or C., other than consecutive operations necessary for the due completion of one experiment, had been performed on the same animal during the last year for which statistics were available, and, if so, how many. Mr. Akers-Douglas replied that he had not given sanction for the performance of more than one operation on the same animal under the certificates mentioned, other than consecutive operations necessary for the due completion of one experiment; and with the exception of the facts connected with the case of Bayliss *v.* Coleridge he had no information on the subject. Dr. Shipman also asked in how many cases the licensed vivisector himself had been the only authority present at the operation, whose duty it was to see that anaesthetics of sufficient power to prevent pain were administered; and in a further question, how many experiments had been performed at each place on the register during 1903, and whether it could be ascertained how many separate experiments were performed on the same animal during that year; Mr. Akers-Douglas said he had no materials to enable him to answer these questions.

Irish Dispensary Medical Officers and their Salaries.—Mr. Hayden asked the Chief Secretary to the Lord Lieutenant of Ireland whether, in cases in which the salaries of Poor-law medical officers in Ireland had been increased since the passing of the Local Government (Ireland) Act, 1898, or might be increased in the future, the whole of the increase was to be borne out of the local rates, or whether, as used to be the case, half was to be borne out of the rates and half out of the Parliamentary grant in aid. Mr. Wyndham answered that under Section VI of the Local Government (Ireland) Act, 1902, the total amount to be recouped to the guardians of any union in pursuance of Section LVIII Local Government (Ireland Act, 1898 could not exceed the amount recouped in the year ending March 31st, 1902. The necessity for the provision was explained in the Committee stage of the measure. Dr. Thompson asked the Chief Secretary to the Lord Lieutenant of Ireland, if he would explain why the Local Government Board for Ireland had refused to sanction the increase of salary granted to Dr. Collins, of Ballinasloe, seeing that this officer had thirteen years' service without a complaint; that his salary was now £15 a year less than it was when he was first appointed; and that the Local Government Board had quite recently sanctioned a salary of £150 to a medical officer of a much smaller dispensary district in the same neighbourhood. Mr Wyndham replied that in answer to the first part of the question he referred to his reply to the similar question of Wednesday last by the honourable member for East Galway. Dr. Collins was appointed dispensary medical officer in 1891 at a salary of £112 a year. His present salary was £120 a year, together with a small annual payment as compensation for reduction of income arising out of the operation of the Local Government Act of 1898. The district referred to at the end of the question was wholly rural, and afforded small scope for private practice. Dr. Collins resided in the town of Ballinasloe, and had good opportunities for private practice.

Celibate Assistant Medical Officers in Asylums.—Mr. Hayden asked the Chief Secretary to the Lord Lieutenant of Ireland whether he would explain why one of the Privy Council rules for the regulation of lunatic asylums in Ireland prescribed as one of the qualifications for the office of assistant resident medical officer that he should be unmarried, in view of the fact that no such condition was prescribed in the case of the resident medical superintendent; and whether, if such a condition were not prescribed by any asylum committee of management which might make new rules, the Lord Lieutenant would insist upon its inclusion amongst such rules. Mr. Wyndham replied that the rule prohibiting a married man from being appointed to the position of assistant medical officer of a district lunatic asylum was of universal application throughout the United Kingdom. It was embodied in an order of the Lord Lieutenant in Council dated April 28th, 1898. The object of the rule was to secure for the position the services of men who were likely to devote their whole attention to learning the special duties of their office. A resident medical superintendent must be a man of experience, and must have served as assistant medical officer for at least five years. The rule had been adopted by every asylum committee in Ireland which had drawn up regulations save the Ballinasloe Asylum Committee. A departure from the rule would not be sanctioned in the case of that asylum.

Sewage Farm Vegetables.—Sir William Hart Dyke asked the President of the Local Government Board whether he was aware that the sale of vegetables or fruit to be eaten uncooked had been prohibited in France when they were grown upon sewage farms; whether the attention of any of the Board's inspectors had been called to the importation of such fruit and vegetables from France; and if he would consider the advisability of taking steps to afford some greater security to the English consumer who might purchase them. Mr. Long said that he had not received any representations as to the importation from France of fruit and vegetables grown upon sewage farms, and it appeared to him that there would be considerable practical difficulty in identifying any produce so grown. He was advised that, speaking generally, vegetables and fruit grown upon sewage farms would not be unfit for food, though uncooked, unless they had been allowed to be in contact with the sewage; and he understood that one of the model regulations issued in France last year would forbid the disposal of matters from cesspools or sewers on land on the surface of which were cultivated vegetable and fruit intended to be eaten uncooked.

The Ventilation of Factories.—Mr. Shackleton asked the Home Secretary what action he proposed to take to enforce the provisions of the Factory and Workshops Act, 1901, relating to humid cotton-weaving sheds; and whether, in view of the report of the tests of air in humid sheds, he would consider the advisability of reducing the amount of carbon dioxide allowed in each 10,000 volumes of air as fixed by the Act. Mr. Akers-Douglas answered that an undertaking was given by the manufacturers that, if the result of the inquiry to which the honourable member referred was to show that the statutory restriction upon the amount of carbon dioxide could be observed, they would accept the situation without further question and make every effort to comply with the requirement. The matter would continue to receive the attention of the chief inspector and his staff, but he had no reason whatever to doubt that that undertaking would be kept. The question of reducing the amount allowed by statute did not enter into the inquiry. There was no evidence before him pointing to the necessity of reduction, nor had that course been recommended by any of the expert committees which had inquired into the subject.

British Medical and Trade Interests in Madeira.—Sir Walter Foster asked the Under Secretary for Foreign Affairs whether the Foreign Office had received any communication from Funchal, Madeira, as to the disquiet produced among British traders and residents by the concessions granted to the German Sanatorium Syndicate; and whether in view of the fact that the reputation of Madeira as a health resort had been mainly built up by British capital and energy, he would take steps to secure for British interests equality of treatment in any matter of exemption or preference acquired by subjects of another Power. Lord Percy replied that he had received communications from Funchal, Madeira, and that the whole question was engaging the careful attention of his Majesty's Government, and his Majesty's Minister at Lisbon had been verbally assured that no vested interests would be injuriously affected. In answer to a further question, he said he was afraid he could not state the terms of the concession, which he thought had not yet been signed.

The Revaccination Bill has had a comparatively easy time in the House of Lords. It has passed its Committee stages without material amendments, and may shortly be expected to come down to the House of Commons. Its difficulties will then begin, and in the present congested state of business it is not likely to become law this session.

The All-night Sitting on the Committee stage of the Finance Bill, which began on Tuesday at two o'clock and ended on Wednesday shortly before four in the afternoon, caused a breakdown in the Parliamentary arrangements. It resulted in the abolition of the Wednesday's sitting, as the House adjourned on the conclusion of Tuesday's business till Thursday. In the early hours of Wednesday morning Mr. McCrae started the question of the differentiation of income-tax on incomes derived from professions and permanent investments. There was an interesting discussion, and logically the case for precarious incomes was triumphant, but the Chancellor of the Exchequer would have no differentiation, and so for the present the cause failed.

Scotland.

THE RECENT FIRE AT THE EDINBURGH ROYAL INFIRMARY.

At a meeting of the Edinburgh and District Water Trust on July 14th, a letter was read from the Managers of the Royal Infirmary, calling attention to the defective water pressure at the time of the recent fire, and pointing out that this deficiency of pressure had frequently been brought under the notice of the Superintendent of the Trust, but without any practical result. Looking to the nature of the institution, the managers felt that the subject was one of paramount importance, calling for immediate attention. They would accordingly be glad to have any explanation which the Trustees desired to offer, and to learn what steps it was proposed to take to remedy matters. The Superintendent of Works stated in reply that the pressure was the usual pressure at that hour of the day, and that the Infirmary knew, and had all along known, that it was too low a pressure to cope with fire in any high part of the institution. The pressure in the street mains was found by the Firemaster amply sufficient to cope with the fire. He thought this was a favourable opportunity for the Trustees to draw the attention of the Managers of the Royal Infirmary to the inadequate and unsatisfactory state of the whole fire service arrangements at the institution; their storage for their daily domestic requirements was much too small; and the present system of service pipes throughout the institution required serious consideration. When this letter had been read at the weekly meeting of the managers on July 18th, the Chairman said that he would like the public to understand that anything which was done in the institution so far as fire was concerned, was done under the advice and guidance of the Firemaster, who had supplied all appliances for the purpose. Further, they had three firemen continually employed. It was agreed to appoint a Special Committee to consider the whole question of the water supply, and also to inquire into the installation of electric lighting throughout the building.

SMALL-POX IN EDINBURGH.

The M.O.H. for Edinburgh reports that the last case of small-pox has been discharged from the hospital at Colinton Mains, leaving the city for the present entirely free of the disease. Since the beginning of the epidemic 177 cases have been admitted to the hospital. Of this number 168 were actual cases, while 9 were doubtful. This figure does not represent the actual number known to have had the disease, many having escaped detection till they were convalescent, and only been discovered by their having infected second, third, and even fourth cases. Of the total number treated in hospital 15 died, which is equivalent to a death-rate of something like 8 per cent. Not only is the hospital free from the disease, but no fresh cases have occurred since June 30th, so that the city is also free. During the epidemic, 276 persons have passed through the Corporation reception houses as contacts. These have remained in quarantine from one to sixteen days, and had to undergo isolation, revaccination, and complete disinfection.

EDINBURGH ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL.

At a meeting of the Directors on Monday last, July 18th, John W. Ballantyne, M.D., F.R.C.P.E., was appointed an Ordinary Physician; J. Lamond Lackie, M.D., F.R.C.P.E., and H. Oliphant Nicholson, M.D., F.R.C.P.E., were appointed Assistant Physicians; and H. Howard Roberts, M.B., Ch.B., and G. J. Favir, M.B, Ch.B., House Surgeons for the quarter beginning August 1st next.

INCORPORATED EDINBURGH DENTAL SCHOOL.

The summer meeting of this school was held on July 15th, when Dr. Guy, Dean of the Hospital, presided, and the prizes were presented by the President of the Royal College of Physicians (Dr. T. S. Clouston), who afterwards briefly addressed the students.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, EDINBURGH.

At a meeting of the Governing Board of the School of Medicine of the Royal Colleges, Edinburgh, the Secretary and Registrar, Mr. R. N. Ramsay, reported that the number of students attending the school during the Winter Session 1903-4 was 1,152, and during the Summer Session 1904 the number was 1,174.

THE QUATERCENTENARY OF ABERDEEN UNIVERSITY.

Principal Lang presided at a meeting of the University Court held on July 12th, at which a report was submitted on the proposed quatercentenary celebration of the University in 1906. The report stated that it was proposed that in September, 1906, there should be four days of celebration, and that invitations should be addressed to the universities, colleges, and learned societies in the United Kingdom, the dominions beyond the seas, the United States, and Europe. There would be a commemoration service to begin with, and thereafter, with the inauguration of the new buildings, a reception of delegates and presentation of addresses, the conferring of honorary degrees, orations, musical recitals, visits to King's College, festive occasions and excursions. For these purposes the conference recommended that there should be four committees appointed first, an executive committee to take general charge of all the arrangements; an invitations committee specially to deal with the invitations to academic bodies; a hospitality committee; and a publications committee. It was not thought desirable that there should be a meeting this year on the occasion of the installation of the Lord Chancellor, Lord Strathcona and Mount Royal, as at first contemplated, but that it should be deferred until the next year. The report of the Committee was cordially adopted.

R.A.M.C. (VOLS.) ABERDEEN.

The Aberdeen companies, R.A.M.C. (Vols.), and Gordon Brigade Bearer Company, to the number of 180, went under canvas at Netley on Saturday, July 16th. Captain Ashley Macintosh was in command, and the other officers present were Captains Kelly, Ogston, Fraser, Lieutenants Noble and Smart. They remained in camp a week together with the Glasgow companies under Major Somerville.

LEITH TOWN COUNCIL AND THE TREATMENT OF CONSUMPTION.

As part of the scheme for the treatment of consumption proposed by the M.O.H. for Leith, a few patients in the earlier stages of consumption are now undergoing open-air treatment at Leith Public Health Hospital, East Pilton. Some of the patients sleep in the open air, and have already derived benefit from the treatment. This is the first time the treatment of consumption in this way has been undertaken by a local authority in Scotland.

THE CARNEGIE TRUST.

The awards of Carnegie research fellowships, scholarships, and grants for the academic year 1904-5 under the Carnegie Trust for the universities of Scotland have recently been announced. Among the awards are the following:

FELLOWSHIPS.

Pathological: Carl H. Browning, M.B., Ch.B Glasg.; John C. G. Ledingham, M.A., B.Sc., M.B., Ch.B.Aberd.; S. A. K. Wilson, M.A., M.B., Ch.B.Edin.

SCHOLARSHIPS.

Physiological: John Stuart Rose, M.B., Ch.B.Aberd. *Pathological:* Charles M. Campbell, M.A., B.Sc., M.B, Ch.B.Edin.; Robert D. Keith, M.A., M.B., Ch.B.Aberd.; William George Rodger, M.B, Ch.B. Glasg.

GRANTS.

Anatomical: Edward B. Jamieson, M.B., Ch.B., Demonstrator of Anatomy, Edinburgh University. *Pharmacological:* Professor R. Stockman, Glasgow University. *Pathological:* James Kerr Love, M.D., Glasgow (second year); Edwin Bramwell, M.B., F.R.C.P.E., Edinburgh; Professor Carstairs; C. Douglas, B.Sc., M.D., Anderson's College Medical School, Glasgow (second year); Alexander H. Edwards, M.B., C.M., Edinburgh (second year); Alexander Goodall, M.D., Edinburgh (second year); J. M. Kirkness, M.B, Ch.B., Edinburgh; Professor Robert Muir, M.D., Glasgow University (second year); Peter Paterson, M.B., Assistant in Surgery, Glasgow University; W. B. Inglis Pollock, M.B., Ch.B., Glasgow; Benjamin P. Watson, M.B., Ch.B, Edinburgh; John M. Bowie, M.D., Edinburgh; James Scott, M.D., Edinburgh (second year); Douglas Chalmers Watson, M.D., F.R.C.P.E., Edinburgh.

THE CONTINENTAL ANGLO-AMERICAN MEDICAL SOCIETY.—The annual luncheon of this society will be held at the Clarendon Hotel, Oxford, on Thursday, July 28th, at 1 p.m. It is hoped that Professor Osler, one of the Honorary Presidents, will take the chair. Members who intend being present should communicate with Dr. D. W. Samways, Knowle, Topsham, Devon, or with Dr. StClair Thomson, 28, Queen Anne Street, W.

GIFTS TO HOSPITALS.—The Royal Southampton and South Hants Hospital has received a further gift of £3,150 from Mr. Andrew Barlow, thus making up a gift of £10,000 to the institution. The Cancer Hospital has received a donation of £1,000 from Mrs. Yerburgh.

Ireland.

THE PROVISION OF A CONSUMPTIVE SANATORIUM FOR BELFAST.

THE Health Committee of the City Council has printed a special report on the provision of a sanatorium for the treatment of consumptives. It commences by emphasizing the necessity of such an institution, as over 1,000 people die yearly of the disease in the city. The Edinburgh Victoria Hospital and Dispensary for Consumption are adduced as a model of what may be hoped for. In January the Committee was of the opinion that a sanatorium should be erected, that provision should be made for paying patients, that accommodation for 100 patients should be made, and that a site of about twenty acres in a suitable locality should be obtained, and that buildings of wood or iron, not of brick or stone, should be erected. As the Poor-law guardians had at the same time under consideration the proposal of establishing a sanatorium for the consumptive poor, the Committee had a conference with representatives of the Board of Guardians, and the Council directed the Health Committee to co-operate with the guardians in selecting a site, so as to avoid the expense of two sanatoriums. Finally, both bodies agreed to act upon the lines suggested in a letter from the Local Government Board, that the city council should erect a sanatorium chiefly for those offering a chance of cure, and that the Guardians should send, and pay for, those cases of the poor which answered this condition, but should retain in a separate sanatorium of their own the large number of hopeless cases that are ever drifting into their care. The report reminds the Council of its two previous recommendations—one to provide open-air day shelters in one of the public parks, and the other (in October) to enter into an agreement with the Forster Green Consumptive Hospital. Although both schemes commanded a certain amount of sympathy, both were thrown out by the Council as but touching the fringe of the question; they contained no broad and generous policy, and the attempts were condemned as mere tinkering at the subject. Now that a scheme which will commend itself, at any rate in principle, to all who desire to do battle against the scourge is put forward, it remains for the Council to undertake, no doubt a costly but still a highly desirable enterprise. It is sincerely hoped it will have the courage of its convictions.

HEALTH OF BELFAST.

Annual Report of the Medical Superintendent Officer of Health.

The annual report of the Medical Superintendent Officer of Health of the city of Belfast contains 54 pages and 3 charts; there are 4 pages of lists of streets where typhoid fever occurred, and 17 small tables of statistics. The deficiencies noted in previous reports—the want of maps, of an index, of a more scientific and graphic arrangement and classification, and of mention of several items of public interest and importance—are unfortunately still to be noticed. For many reasons economy might be practised in other civic departments with advantage, and a little more liberality allowed to the authorities having charge of the health of the community. The report is not commensurable with the importance of the physical well-being of a city of 358,680 inhabitants, which is the population according to the latest estimate of the Registrar-General. The Health Report for Liverpool for 1903 contains 238 pages exclusive of an appendix containing a map, several chart tables of statistics, an index filling six large pages—nearly 200 items; in addition four maps showing the incidence of small-pox by means of red dots during various seasons of the year, and a large map of Liverpool showing municipal boundaries, railways, tramways, etc., are given.

The Belfast report states that the total number of deaths from all causes has fallen to 7,169, which is less than the figures for the last six years. This is a death-rate of 20.0 per 1,000 as compared with 20.7 in 1902; and it is still, however, the highest but two of 78 of the large towns of England and Scotland; the deaths from zymotic disease numbered 792 as compared with 1,027 in 1902; the births numbered 11,488, but the numbers are not given for past years. These figures afford matter for congratulation, but it is highly desirable either that they should be so arranged as to facilitate reference, or that an index should be supplied. A glance at the index in the Liverpool report shows at once that on pages 3 to 8 the births and birth-rate will be found, and on pages 9 to 16, the deaths and death-rate, whereas seven minutes were required to find the few figures given above in the Belfast report.

It is also very satisfactory that a decline in typhoid continues; 847 cases were notified as compared with 2,530 in 1901 and 1,044 in 1902; and 590 of simple continued fever, as compared with 1,351 in 1901, and 730 in 1902; if the latter disease is looked upon as typhoid, we have, however, still a total of 1,432; of which 154 died, a mortality of 10.7 per cent.; in Liverpool 681 cases were notified and 108 deaths registered, a mortality of 13 per cent; if we take in Belfast the 842 cases of typhoid, with 136 deaths, omitting the simple continued fever, we find a mortality of 16.1 per cent. The drains of 707 houses where the disease occurred were tested and 334 were found to be defective.

Among the chief causes of mortality from zymotic affections should be noticed 125 deaths due to measles, 168 to whooping-cough, and 277 due to diarrhoea; all these show a diminution as compared with many previous years, yet it seems a lamentable waste of life; they are not included among the notifiable diseases, yet they together caused 570 deaths out of a total of 792 due to zymotic disease. The notifiable affections only caused 222 deaths.

The same anomaly appears again in this report as attracted attention in that of last year. District No. 3 is described as lying in a high part of the city with good wide streets, with many recent houses, and fair attention is given to sanitary arrangements, yet the zymotic death-rate is high, and typhoid fever prevalent; whereas District 7 is low-lying, the sanitary arrangements have been woefully neglected, and yet "there is, however, but little sickness in the district." No explanation is offered; in both the inhabitants are chiefly operatives.

The Medical Superintendent Officer of Health repeats once more his complaint that he can give no information as to the cause of death in 3,702 cases; his own words are emphatic enough:

> I know nothing of where any deaths take place except from the Registrar-General's returns, which merely state that so many deaths occur in a certain district.

That such a statement should appear year after year in the annual report of the responsible health officer is nothing less than a scandal; every one must bear witness to his earnest endeavours to get these specimens of the antique shelved to the museum of municipal curiosities; and so the blame must fall upon the accredited representatives of the people who continue to allow public health to be subservient to its own laws and regulations; the knowledge of the cause of nearly half the total numbers of death and of the place where each occurred would surely be of considerable value. The number of cases of small-pox notified during the year was 15, with no deaths; in all, except the imported cases, the infection was traced and prompt measures taken to stop the spread.

The infant mortality (under 1 year) was 134 per 1,000; this compares very favourably with most large English towns; but here, again, there is no means of ascertaining the social position in life in which the chief mortality occurs, as is given by Dr. Hill, of Birmingham. During the year there were 1,030 deaths from phthisis: no mention is made of other forms of tuberculous disease; this is the lowest for the last six years, but there has been no steady or marked fall, and the difference would be accounted for by the general improvement of a healthy year; in Liverpool with nearly double the population, there were only 1,258 deaths. It is very satisfactory to find that the medical officers of health of the various districts in Belfast voluntarily and without any remuneration notified in the latter half of the year some 148 cases; the houses in which these patients resided were all visited by the female sanitary inspectors. In addition, the name and address of those who died from the disease were obtained from the Registrars of Burial Grounds, and proper sanitary measures adopted. This is a great advance, and one for which the health authorities deserve much credit.

On the whole, considerable activity in health matters is evidenced by the report, yet it is too obvious that a complete break-away from past routine and vested interests is urgently needed before the department can be brought into line with those of the more advanced towns. A public indifference which receives with quiet complacency a death-rate higher than that of practically any large English town except Wigan and Middlesbrough deserves severe censure. Certainly heavy punishment is exacted; if Belfast had the same mortality as Leeds, about 1,288 more people would have been alive at the end of the year than actually survived; if the same mortality as Bristol, 2,000 lives would have been saved, besides an immense amount of non-fatal sickness.

The Medical Officer of the Auxiliary Asylum at Youghal.

At a meeting of the Board of Management of the Cork District Lunatic Asylum held on July 12th, the clerk read a letter from Dublin Castle stating that his Excellency the Lord Lieutenant had carefully considered the question of the appointment of Dr. M. Twomey as Visiting Physician to the Auxiliary Asylum at Youghal, and that as a result of his consideration of the rules on the point, together with the opinion of the law officers thereon, his Excellency could not sanction the appointment of Dr. Twomey on the grounds that the appointment must be regarded as the nomination of an assistant medical officer, and Rules 61 to 64 contemplate that the assistant medical officer shall reside in the asylum, shall give his whole time to the duties of his office, and shall not be more than 30 years of age. Dr. Twomey is over age and does not intend to devote his whole time to the work, and, in his Excellency's opinion, residence in the asylum by a medical officer who will devote the whole of his time to the duties of his office is most desirable. His Excellency directs that, should the Committee of Management still be of opinion that a non-residential medical officer devoting only part of his time to the asylum should in the circumstances be employed at Youghal, it will be necessary for it to reconsider its existing rules and regulations, and to prepare new rules for the consideration of the Lord-Lieutenant, under which effect may be legally given to their wishes. His Excellency adds that he is advised that no separate code of rules can be applied to the Youghal Auxiliary Asylum, as the latter must be regarded as an integral part of the Cork District Asylum.

The Rev. Dr. Kelly, Bishop of Ross, read a statement in which his lordship narrated the difficulties the Committee had had in bringing the Youghal Auxiliary Asylum to a successful issue, which the Subcommittee appointed to consider the letter agreed should be submitted to the full Committee in answer to the letter. It pointed out that, under Section LXXVI of the Local Government Act, by which provision was made for placing harmless lunatics in a vacant workhouse with sufficient staff of attendants to keep them clean and comfortable and properly fed, but without that expensive equipments of medical officers and other appliances that are necessary for the cure and care of the curable and acute insane, it would be possible in Youghal to carry out such a scheme, but the inspectors of lunacy confessed they disliked the 76th Section of the Act, and wished that all harmless lunatics should be drafted into the district asylum. According to Bishop Kelly, having undertaken the establishment of an auxiliary asylum against the wishes of the inspectors, the latter obstructed the Committee at every turn. Seeing the attitude of the inspectors the Committee in February, 1901, before the works at Youghal were undertaken, submitted a scheme of administration to his Excellency's predecessor, Lord Cadogan, with a request for his formal sanction. The scheme contained the following proposals, numbered as under, and set out in brief:

1. To set over the Youghal Auxiliary Asylum as resident manager, a layman and not a medical practitioner.
2. To appoint a physician resident in the town of Youghal, but not in the auxiliary asylum, to visit the institution, and be responsible for the health of the inmates.
3. To appoint nurses and attendants in sufficient numbers to attend these afflicted classes with conscientious care and tenderness.
4. In order to treat inmates to every reasonable comfort suited to their condition, to spend on their maintenance 5s. 6d. per head per week, which is 2s. in excess of cost contemplated by Section LXXVI of the Act, of which 3s. 6d. will fall on the rates and 2s. on local taxation account.

The formal sanction of these four propositions by his Excellency was notified to the Cork Committee in a letter from Sir David Harrelly dated March 22nd, 1901. Bishop Kelly contended that these rules, sanctioned as they were by Lord Cadogan, cannot have been laid before his Excellency when he decided that the appointment of Dr. Twomey as Visiting Physician to Youghal Asylum could not receive his Excellency's sanction. The statement pressed his Excellency to sanction the appointment, and gave full particulars as regards the management of the Auxiliary Asylum.

In connexion with the above appointment it may be pointed out that when the Cork medical profession heard that it was proposed to place a visiting physician in charge of the Youghal Auxiliary Asylum, they called a special meeting of the profession, which was very largely attended, and a resolution was drawn up calling the attention of the Board of Management to the danger there was in not appointing a resident physician to an institution where so many helpless inmates were to be housed, more particularly as the Auxiliary Asylum is more than a mile away from the town of Youghal, and hence from the nearest medical assistance. The Board resented the interference of the profession, and refused to adopt their resolution. Had they agreed to be advised they would not now be in the unhappy position of having Dr. Twomey's appointment challenged.

Canada.

Congress of French-speaking Physicians.

The second congress of French-speaking physicians of North America was held at Laval University, Montreal, on June 28th, 29th, and 30th, and the attendance was particularly good. Most of the delegates came from towns situated in the Province of Quebec, but there were a number of representatives from Western Canada and the New England States. In addition, Professor Pozzi, of Paris, the official delegate of the Académie de Médecine de Paris, was present, as well as a number of English-speaking physicians from Montreal and the neighbouring cities. Besides the regular work in the various sections, the congress was characterized by social functions of an elaborate character, including a reception at which Archbishop Bruchesi and Lieutentant-Governor Jetbé spoke, and a banquet which was attended by all the delegates. Professor Pozzi performed two operations, one at the Notre Dame Hospital and one at the Royal Victoria Hospital, when the amphitheatres were crowded by students and physicians.

The Ontario Medical Association.

On June 14th, 15th, and 16th the Ontario Medical Association held its twenty-fourth meeting at Toronto. The papers were of a high standard, but the attendance of medical men outside Toronto was small, twenty-eight out of forty-four papers coming from physicians in that city. Dr. Burt, of Paris, Ontario, was elected president for the ensuing year.

The American Medico-Psychological Association.

Dr. Burgess, of Montreal, has been honoured by being elected President of the oldest medical society in America, namely, of the American Medico-Psychological Association, which recently held its sixtieth annual meeting at St. Louis.

The Prevention and Treatment of Consumption.

At a meeting of the Executive Committee of the National Sanatorium Association, Toronto, a cheque for 3,000 dols. was received from the Hamilton Branch of the Association, to be devoted to the maintaining of a pavilion at the Muskoka Free Hospital for Consumptives, for poor patients from Hamilton and the county of Wentworth. A similar branch has been established at Ottawa, with the result that 2,000 dollars have been subscribed for a similar purpose. It is hoped that branches will soon spring up throughout the eastern portion of Canada to help on the Association in its splendid work among the consumptive poor.

At Kentville, N.S., about seventy miles from Halifax, a new consumption sanatorium has just been opened at the cost of 20,000 dols. the money having been provided by an Act which passed the Legislature of Nova Scotia in 1900.

The Canadian Association for the Prevention of Tuberculosis has instructed its secretary to visit the various provinces and to lecture with the view of establishing a large sanatorium in each province for the treatment of consumption. This Association is stirring up the whole country to a sense of the need of perfect organization if the battle against tuberculosis is to be successful. In Montreal the branch of the League is apparently doing more than any other body in Canada to attain this end. Several special committees have recently been formed; one is to look after the establishment of a dispensary for free advice; a second is to secure an institution for the incurable and another for the curable cases; a third is to obtain legislative measures to secure improved sanitation in schools, factories, etc., as well as to enforce notification and disinfection; a fourth is to urge the necessity of a Royal Commission to study the scientific and social aspect of the problem, as well as the best methods to be adopted for staying the progress of the disease. Laymen as well as physicians hold positions on these Committees; and, judging from the work which has already been accomplished, it will not be long before these branches of the Society will be in working order, especially as the aldermen and city Board of Health are doing their utmost to assist the Society in its schemes.

COST OF HOSPITAL MAINTENANCE.

At the second annual meeting of the Ontario Hospital Association, composed of representatives of Hospital Boards or hospital staffs, which has for its object the improvement of conditions affecting such institutions, the following resolution was adopted:

Whereas it has been observed by hospitals that it requires about 6.50 dols. per week to care for patients in hospitals, and provide food, medicines, dressings, nurses, etc.;

And whereas the rate paid by municipalities for their indigent poor does not exceed 40 cents per diem, and that paid by the Government has now fallen to 17 cents per diem, or a total of less than 4 00 dols. per week;

And whereas the income of hospitals is limited to these grants, benevolent donations and the payments made by private ward patients.

And whereas any deficiency in the municipal and Government grants for pauper patients must intrench upon the other sources of revenue, thereby interfering with the working of the hospitals and the comforts of the paying patients:

Therefore be it resolved, and it is hereby resolved, that in the opinion of the Ontario Hospital Association the municipalities and the Governments should take steps to provide more adequately for their indigent poor, which can be done as follows:

1. The municipalities should grant at least 50 cents per diem on their pauper patients.

2. That the Government should make its grant to all patients paying 3.50 dols. per week and less; and

3. That the Government grant should be raised above its present amount by the addition of 20,000 dols. to its present grant of 110,000 dols.

This resolution was carried unanimously, and presented to the Government by a deputation, and resulted in the passage of an Act in amendment to the Charity Aid Act, by which hospitals are enabled to collect from patients and municipalities 3.50 dols. a week, and also retain the Government grant. Last year this would have meant an increase in hospital income of 64,000 dols.

In accordance with the decision of the Ontario Hospital Association, rates have been advanced in all hospitals, in some cases as much as 50 per cent.

A HOSPITAL AT DAWSON CITY.

At the recent meeting of the General Assembly of the Presbyterian Church of Canada, the Rev. Dr. Pringle, of Dawson City, appeared to plead the cause of the Good Samaritan Hospital at Dawson. This is the only Protestant hospital in the district, and has been in existence for six years. There is a debt of 20,000 dollars, part of which is being met by local contributions. Dr. Pringle was recommended to the Church by the Assembly, and doubtless will receive hearty support.

CALCULUS WITH PARAFFIN NUCLEUS.

At the meeting of the Toronto Medical Association on May 19th, Dr. Webster reported a case of a man who while intoxicated had passed a piece of paraffin into the bladder. Later he had been examined by different surgeons, who advised operation for the supposed stone. Dr. Webster tried lithotrity, and brought away pieces of phosphatic material deposited on a substance that proved to be paraffin. Various solvents were tried but failed; finally the patient was advised to pass water when leaning over a table in such a position as to approach as near as possible to standing on his head. This was successful; the substance, being buoyant, passed out with the urine.

PUBLIC HEALTH.

According to the *Toronto News* the ship *Athenian* sailed from Hong Kong for Canada on May 1st, and shortly after leaving a second-class passenger, a Chinaman, became ill, and was put ashore at Tokio, Japan, where he died, the cause being diagnosed as small-pox. The ship went on her way, but thirteen days afterwards Captain Jenkins of the merchant service, who was returning to England, was taken violently ill. He was not kept apart, but, being a favourite, was visited by the other passengers. On reaching Vancouver he was taken to the city hospital, where he died of malignant small-pox. The passengers were not detained—it is doubtful if the ship was disinfected—and they proceeded on their way across the continent until they reached Ontario, when Dr. Hodgetts, Provincial Health Inspector, stopped the car and quarantined it until June 9th. The railway officials had gone so far as to keep a doctor on board the car *en route*, evidently fearing some outbreak.

A by-law has been passed in Toronto forbidding spitting upon side-walks or in passage-ways, stairways, or entrances to buildings used by the public, or in street cars or other public conveyances. The penalty for infringement is 1 dol. and costs.

Some impression of the difficulty attaching to the oversight of matters of public health may be gained from the fact that the last bulletin of the Public Health Department was published in five languages. The ignorance of many of the European emigrants and their superstition and fear of quarantine makes the treatment of contagious diseases difficult and unsatisfactory, and they are frequently attended with high mortality.

The vital statistics of the City of Toronto for the month of May are as follows: Births, 447; marriages, 173; deaths, 355; from scarlet fever, 2; diphtheria, 10; measles, 2; typhoid, 2; tuberculosis, 33.

UNIVERSITY NOTES.

At the celebration of the Jubilee of the University of Wisconsin, it was remarked that the representatives of British Universities were all members of the staff at McGill University. Oxford chose Principal Peterson, Cambridge Dr. Adami and Dean Bovey, London University Professor McBride, and Victoria University, Manchester, Dr. Adami.

The results at the various medical schools in Canada have now been published and the list is perhaps the largest on record. At McGill University 82 men received the degree of M.D.C.M., J. A. Nutter, of Montreal, winning the Holmes gold medal for the highest aggregate in all subjects of the medical curriculum. At Toronto University, with which is now incorporated Trinity College, some 95 men graduated, R J.P., McCulloch taking the Faculty gold medal. Some 40 candidates received the degree of M.D. at Laval University, and 10 at Bishop's College, while at Manitoba Medical College 14 graduated as M.D. In addition, a large number have passed the examination of the Colleges of Physicians and Surgeons. In Ontario 98, and in Quebec 50, were thus licensed to practise in these provinces.

Lord Strathcona has given 20,000 dols. to Manitoba University to be expended on the science department. A block of land sufficient to secure a large annual income will also be placed at the University's disposal.

The post-graduate course in medicine and surgery at the University of Toronto was attended by fifteen men. The instruction is given by the regular Faculty.

THE PREVENTION OF CONSUMPTION.

AMERICA.

Indiana.—The Indiana State Board of Health has decided that henceforward no one afflicted with tuberculosis shall be allowed to teach in the public schools of Indiana. Investigations made by the Board have shown that there are now 250 teachers in the public schools of the State who are suffering from tuberculosis.

CAPE COLONY.

A public meeting was held at Capetown on June 3rd, at which it was decided to found an association for the prevention of consumption to be affiliated with the National Society (of Great Britain) for the Prevention of Consumption and other forms of Tuberculosis. This step was the outcome of a resolution passed at the Medical Congress in Capetown in January last.

The meeting was presided over by His Excellency the Governor (Sir Walter Hely-Hutchinson), who was supported by many influential residents and officials of the Colony. The Governor, in opening the proceedings, expressed himself in thorough sympathy with the objects of the meeting, to forward which he intended to do everything in his power. His Excellency referred to the increase in the amount of consumption in South Africa, especially among the natives, and protested against the conduct of charitable people in England and elsewhere in Europe who make a practice of sending out to South Africa people in the last stage of the disease. Dr. Jasper Anderson (Medical Officer of Health for Capetown) moved the first resolution affirming the immediate need for organization for the prevention of consumption. In doing so he emphasized the gravity of the situation at the Cape due to the increase of the disease. Dr. Darley-Hartley seconded the resolution.

The resolution to form an association was proposed by the Very Rev. the Dean of Capetown. His Excellency the Governor was asked to become the patron of the association, and Dr. L. S. Jameson, Prime Minister, was elected President. Dr. Jasper Anderson was elected Chairman, and Dr. B. J. Guillemard, Honorary Secretary of the Provisional Committee.

ASSOCIATION NOTICES.

NOTICE OF MEETINGS.

1904 ANNUAL GENERAL MEETING.

The Annual General Meeting of the British Medical Association will be held in the Examination Schools, Oxford, on Tuesday, July 26th, at 12 o'clock noon, and Wednesday, July 27th, at 2 p.m.

ANNUAL REPRESENTATIVE MEETING.

The Annual Representative Meeting will take place in the Examination Schools, Oxford, on Tuesday, July 26th, immediately after the Annual General Meeting which will be held at 12 noon; on Wednesday, July 27th, after the Annual General Meeting at 2 p.m., and on Thursday, July 28th, at 3.30 o'clock in the afternoon, if required; also at 2 o'clock in the afternoon on Friday, July 29th, if required.

COUNCIL.

Meetings of the Council will be held in No. 1 Room (First Floor), Examination Schools, High Street, Oxford, on Tuesday, Wednesday, Thursday, and Friday, July 26th, 27th, 28th, and 29th next, at 9 o'clock in the forenoon of each day.

RECEPTION ROOM AT OXFORD.

Members are requested to register their arrival as soon as possible at the Reception Room, Examination Schools, High Street (within one mile of the G.W.R. and L. and N.W.R. stations; cab fare 1s.). The Reception Room will be open from 4 p.m. Monday, July 25th, until 9.45 p.m.; then daily at 9 a.m. Here only will be obtainable the Member's Card, copies of the Daily Journal, and Tickets for the Entertainments.

DORSET AND WEST HANTS AND SOUTHERN BRANCHES.

Notice is hereby given that the regulations of the Association having been complied with, Shaftesbury is transferred from the Dorset and West Hants Branch to the Southern Branch.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

By Order,

July 19th, 1904. GUY ELLISTON, *General Secretary.*

SPECIAL CORRESPONDENCE.

PARIS.

Inauguration of Pasteur Monument in Paris.—Académie de Médecine: M. Lancereaux on the Treatment of Aneurysm of Large Vessels by Subcutaneous Injections of Gelatine.—Inspection of Water Supply and Increase of Filter Beds.—Burning Down of Infectious Diseases Hospital at Aubervilliers.

THE monument to Pasteur in Paris was inaugurated on July 17th, in the presence of the President of the Republic, and was the occasion of an imposing international homage to the illustrious *savant*. Among those who came from abroad were Behring (Berlin), Bordet (Brussels), Percy Frankland (Birmingham), Paul Herger (Brussels), Von Ermanger (Gaud), Lydtin (who placed a wreath in the name of the German veterinary societies), and many others. In the official stand the President was surrounded by the Presidents of the Chambers of Deputies and of the Senate, M. Combes (the President of the Council), MM. Chaumié, Vallé, Rouvier, and other Ministers; Dr. Roux, Professor Chantemesse, Professor Brouardel, Dr. Chamberland, Dr. Metchnikoff, and most of the members of the Académie de Médecine and University. In the stand facing the official tribune was seated Madame Loubet beside Pasteur's widow; his son and other members of the family were also present. The international subscription soon reached £14 000, and the work was entrusted to the celebrated sculptor Falguière, and the plaster model of the monument was his last piece of work, the task being finished and carried out by Victor Peter. The monument is erected facing the dome of the Invalides in the Place Breteuil, on the site of the artesian well of Grenelle. The height of the monument is altogether nearly 23 ft., the pedestal being about 14 ft. high. Pasteur is represented seated. On the face of the pedestal is the single inscription: "Pasteur, 1822-1895. Erected by international subscription." The pedestal is surrounded by fine groups in high relief; at the front is the figure of a woman representing Humanity holding a child in her arms, imploring the help of him who was able to discover efficient arms against Death. On the other three sides of the pedestal are represented pastoral scenes, a shepherd playing a pipe while the sheep are feeding at his feet; a young oxherd leaning lazily against two powerful oxen; a reaper at rest in the harvest field, thus symbolizing agriculturists who, thanks to the discoveries of Pasteur, are able to live in security, protected from the scourges which devastated their vineyards, their harvest, and their cattle. The President arrived punctually at 10 a.m. and the ceremony, which included eleven discourses, lasted till nearly midday. M. Wallon, Senator, and Perpetual Secretary of the Académie des Sciences, in the name of the Committee handed over the monument to the City of Paris. M. Desplas, the President of the Municipal Council, made a speech in thanks. Then M. de Selves, Prefect of the Seine recalled the Jubilee of Pasteur on December 27th, 1902, when in the large amphitheatre of the Sorbonne, suddenly a door opened and President Carnot entered leading Louis Pasteur, the good genius of his age. He then recalled the moment when Lister gave to Pasteur the fraternal kiss of science, a homage of universal admiration. Among the other speakers were M. Mascart, President of the Académie des Sciences; Professor Chantemesse, in the name of the Académie de Médecine; M. Georges Perrot, Director of the Ecole Normale, where Pasteur entered as a student in 1843; Professor Grancher; Professor Errera, of Brussels, representing the foreign subscribers. Before leaving, the President walked across to where Madame Pasteur was seated in mourning, and with emotion presented to her his homage and pressed her hands.

At a recent meeting of the Académie de Médecine, M. Lancereaux made a communication on the treatment of aneurysms of the large vessels by subcutaneous injections of gelatine, the injections being made in the buttock. He gave the history of several cases, and showed some patients who had been treated by this method. The first effect felt by the patient was the diminution or even the cessation of all pain in aneurysms of the aorta, as if the retraction of the tumour had diminished the compression on the surrounding nerves. The aneurysm hardens and slowly diminishes in volume, and if the injections are continued for several months the aneurysm becomes filled with clot, only leaving a passage for the blood. This is the

natural cure of large aneurysms favoured by the injection of a substance whose coagulating property is only shown in parts where there is a tendency to the slowing of the blood stream and to the formation of fibrinous deposits. M. Lancereaux uses a solution of 5 grams of gelatine in 250 cubic centremetres of a sodium chloride solution at 7 per 1,000. To prevent accidents and especially tetanus the solution must be sterilized in an autoclave in water vapour under a pressure of 115 degrees for thirty minutes. One patient shown by M. Lancereaux had an aneurysm of the first part of the thoracic aorta, projecting in the second intercostal space, which hardened and receded within the thorax after fifteen injections of gelatine. He showed two other patients equally benefited. In 17 cases he has obtained the cessation of pain and the retraction of the sac and the patients have been able to resume their occupations. M. Gley, after researches carried out by himself and M. Richaud, is of opinion that the coagulating action is due to the presence in the gelatine of small quantities of calcium chloride, but M. Lancereaux thinks this insufficient to produce the phenomena he has observed. M. Gley says that small doses of calcium chloride increase the coagulability of the blood, large doses are useless or have an opposite effect. To prove the point it will be necessary to treat some patients with injections of calcium chloride in quantities equivalent to those found in gelatine and other patients with injections of decalcified gelatine.

At a recent meeting the Municipal Council voted a credit of 1,000 francs for the local control of the sources of Paris water, and the necessary credit for instituting chemical and bacteriological examinations at each source. The Council also voted nearly 3,000,000 francs to double the number of filter beds at Ivry, where the Seine water is filtered for the use of Paris.

The Contagious Diseases Hospital at Aubervilliers has just been made a bonfire of in the presence of the director, M. Mora, and the Prefect of Police. The hospital was hurriedly built of boards during the cholera epidemic of 1884, and although in a very dilapidated condition has continued in use ever since for infectious diseases, sometimes housing more than 300 patients. It was considered that fire was the best means of destroying the old building, and firemen were ordered to put cotton-waste steeped in petroleum in each room, and at 8 a.m. the wind being favourable, the bonfire was lighted, by mid-day only burning embers were left of what had become a byword for insalubrity.

MANCHESTER.

Adulteration of Food.—Annual Report of Sanitary Association.—The Responsibility of Nursing Associations.—Reports on Alkali Works and Cotton Weaving Sheds.

The City Analyst reports that after examining nearly 300 samples of the milk supplied in the city he finds that the general quality is low—indeed, very many of the samples barely reached the limit of poverty laid down by the Board of Agriculture. It seems very probable that many of these poorer milks are produced by artificial methods, by mixing and dilution. Arsenic was discovered in many samples of glycerine, and all came from one firm. China clay was found in appreciable quantities in pearl barley; it is used for facing or whitening the grains.

The annual report of the Manchester and Salford Sanitary Association affords evidence that this Association, in spite of its slender financial means, is strong in the faith and earnestness of its workers, not labouring in vain. The visitors' books show that improvements are gradually taking place. One of the most important steps is to reach the wife—the genius of the home and the trainer of the children; and this, perhaps, is best done by the influence of women on women. The society employs twenty-three paid health visitors, who live in the districts, and whose duty it is (1) to make systematic visits to mothers with babies, and to instruct the mothers in the feeding and care of their off-spring; (2) to give practical directions and instruction in cases of infectious diseases, special attention being paid to cases of consumption, and to see that the necessary precautions are taken; (3) systematic visitation of the houses in the district; (4) the distribution of leaflets on sanitary and other matters, and supplying lime, whitewash brush, sanitary powder, and carbolic soap to the people of the district. The greatest importance is attached to instruction as to the care of children. This seems absolutely essential in view of such facts as the following: In Manchester and Salford during 1903 there were respectively 4,534 and 1,911 deaths of children under 5 years of age, numbers which represent 42·7 per cent. of the total deaths of the year. There was a lamentable loss from diarrhoeal diseases in children under 12 months, almost all wholly preventable.

A very important issue has been determined by the Court of Appeal in the case of Hall and another *v.* Lees and others as regards the liability of nursing homes. The circumstances of the case were referred to in the British Medical Journal of January 30th, 1904, p. 282. The case was tried before Mr. Justice Jelf and a special jury. The jury found for the plaintiffs and awarded £300 damages. The defendants appealed as to whether or not they were in law liable for the acts of the nurses. A Mrs. Hall had to undergo two operations, and her medical man sent to the Oldham Nursing Association (of which defendants were the Committee) for two nurses to assist at the operation. After the operation it was found that a hot-water bottle had been left in contact with the patient whereby she was severely burned. At the trial at Salford the jury found that there had been negligence on the part of the nurses, and awarded the plaintiff £300 damages against the defendants, the Committee of the Nursing Association, who denied liability, and contended that it was not responsible for acts of negligence on the part of the nurses, as they had exercised all due care in selecting them. The Master of the Rolls drew attention to the public importance of the appeal. It is to be noted that the Association contended that it merely supplied the nurses, and the Master of the Rolls said that if the Association undertook to nurse the patients it was responsible for want of ordinary care and skill of the persons they employed; but if it only contracted to supply nurses to patients, and it exercised due care in selecting the nurses, its responsibilities were at an end. The Master of the Rolls was of opinion that the Association did not undertake to nurse, but to choose a competent person who would be able to nurse. Judgement was entered for the defendants.

The annual report of the Chief Inspector of Alkalis, issued recently, states that there are now 1,034 works registered under the Alkali Acts. Viewed as a whole, the conduct of the alkali and copper works has given little ground for complaint, though there have been a few instances where stringent measures had to be adopted to secure a good result. Complaints from landowners and farmers whose land lies to the west of Widnes are still made, especially when an east wind blows over the land. The Inspector reports that there is no marked improvement in the character of the atmosphere of Widnes. Less damage appears to have been done to the west of the town. The town's atmosphere has improved somewhat by the fact that irritating vapours from a vitriol factory are carried into a new and higher chimney. The persistent sulphuretted hydrogen nuisance, one of the standing drawbacks to the district, has not appreciably diminished. In a report on air tests in humid cotton weaving sheds just issued, the Chief Inspector of Factories states that under the strict requirements of the Order in 1898, now included in the Act of 1901, great improvements have been effected in the ventilation of humid cotton weaving sheds; some of these are now amongst the best ventilated factories, with, of course, corresponding advantage to the health of the operatives and to the efficiency of their work. The standard of purity of carbon dioxide is 9 per 10,000. It was contended by the manufacturers that while it was possible to conform generally to the standard, it is not practicable to maintain it at all times in every part of every shed. Certain sheds were selected by the Home Office, and, in all, 287 tests were made. Of these 282 compiled with the standard of 9 volumes of carbon dioxide per 10,000 volumes of air, and only 5 infringed this standard; one of the 5 just exceeded the limit 9.1.

BIRMINGHAM.

Hospital Sunday Fund.—Hospital Saturday Fund.—Health of the City of Birmingham.—Tuberculosis in Birmingham.—Health of Warwickshire.—The Training of Midwives.

Up to the present time the Hospital Sunday Fund has been given triennially to the different hospitals and charities—that is, one year to the General Hospital, another to the Queen's Hospital, and a third year to all the other hospitals participating in the Fund. It is now proposed that the collection should be divided every year among the whole of these institutions. The division of the collection will be in the same proportion as at present—namely, one-third to the General Hospital, one-third to the Queen's Hospital, and

one-third to the amalgamated charities. It is thought that this will be the best way of increasing the amount of the collection. A resolution to this effect has been sent to the committees of all the hospitals concerned, and in each case the committee has concurred with the proposal.

At an extraordinary meeting of the Board of Delegates in connexion with the Birmingham Hospital Saturday Fund, which was held on July 13th, it was shown that Hospital Saturday was as much appreciated as ever, since the total amount of collection up to date for this year was £18,078 18s. 10d. from 1,918 firms. This is about £200 less than for the corresponding date of last year; but when it is borne in mind that trade has not been so good this year as it was last it is wonderful for such a large sum to have been raised.

The annual report of the health of the city, just issued, has been compiled by Dr. Alfred Hill, who was Medical Officer of Health until September 30th, 1903, and his successor, Dr. J. Robertson. The population of the city, as estimated on June 30th, 1903, was 533 039. The death-rate during the year was the lowest on record, being 17.2 per 1,000, as against 18.0 in the previous year, and 20.0 for the previous ten years. This rate, as the report says, is probably lower than in any other year since Birmingham emerged in the distant past from the condition of a village into that of a small town. The prevention of small-pox has caused a considerable amount of anxiety, and although it has been repeatedly introduced into the city during the year, it has on no occasion been prevalent. The zymotic death-rate was 2.32 per 1,000, as compared with 2.60 in 1902. The birth-rate was 31.7 per 1,000; this is the lowest on record except in 1894, when it was 31.6. With regard to this continued decline in the birth-rate, it has been shown that it has very little relationship to the marriage-rate, and is associated only to a slight degree with the increasing number of persons marrying later in life than formerly. No arrangements have been made as yet for the curative treatment in sanatoria of patients of the poorer classes who are suffering from consumption. It is suggested in the report that, in addition to the sanatorium for the curative treatment, it may be necessary to provide accommodation for those cases of pulmonary tuberculosis which cannot be properly looked after at their homes, and which are in a highly infectious condition.

During the year 1903, out of 9,123 deaths from all causes, 1,025 were due to tuberculosis in some form or other. This shows how very prevalent the disease is in the city, since 1 death out of every 9 is due to this cause. Of this number of deaths from tuberculosis, 754 were due to phthisis.

The annual report of Dr. A. Bostock Hill, Medical Officer of Health to the Warwickshire County Council, has just been issued. Great stress is laid upon the diminishing birth-rate, which was 26.34 per 1,000, as compared with 27.07 and 27.84 in the years 1902 and 1901 respectively. The county rate was below the average of England and Wales, which was 28.4. The death-rate for the year was 13.69, which is slightly below that of England and Wales. There were 130 cases of small-pox notified, but they were very mild and only 3 deaths occurred from this disease. Dr. Hill especially calls attention to the fact that measles is the most fatal of the infectious diseases of childhood, and points out that more care should be taken to prevent the spread of the infection from one family to another. During the year, 1,197 deaths of children under 1 year of age were registered, which is equal to an infantile death-rate of 125 per 1 000. This is rather high, but when it is remembered that a large proportion of the population is employed in such occupations as mining, this rate is by no means unsatisfactory.

The Committee of the Lying-in Charity has applied to the Central Midwives Board for the recognition of the institution as a training centre for Birmingham and the district. As already announced, it is proposed to build a central home from which the work can be carried on, and a freehold site was procured last year in Loveday Street for this purpose. The amount necessary for the building and equipment of such an institution is estimated at over £5,000. There are over 200 women practising in Birmingham as midwives. Up to the present the Lying-in Charity has been restricted to home nursing, but in the proposed institution there will be accommodation for 24 cases, and it is hoped that efficient training may be given to at least 12 women annually. Many of the deaths of mothers in child birth and of the children are preventable, and a great deal of the blindness and impaired eyesight of children is due to the absence of proper treatment at birth.

CORRESPONDENCE.

A PESSIMISTIC VIEW OF THE FUTURE OF OBSTETRICS.

SIR,—The Midwives Registration Act has obviously been the cause of much emotional enthusiasm of late and always. The members of the medical profession have, however, to face a serious problem in connexion with the consequences of this legislation.

It will be well if serious consideration of the subject is commenced at once and not deferred until the College of Physicians is in a position to deal another serious blow at the well-being of the great mass of the profession.

It is not my intention in any way to traverse the conclusions at which the Midwives Board has arrived, but rather to suggest what steps can be taken and should be taken with a view of meeting the course of events before this course has run to its inevitable conclusion—that the practice of midwifery must be eventually in the hands of the midwives and of a few persons who practise midwifery as a special branch of their profession. No self-respecting practitioner will desire to undertake the work under the conditions which must eventually obtain in this country.

Such being the view taken, there does not appear to be any sound reason for the retention of the subject of midwifery as an obligatory subject of study. The majority of medical practitioners will no longer possess the material upon which to gain a sufficient experience to justify them in undertaking cases of labour which require first-class knowledge. It will be to the interest of all, if those who desire to practise midwifery are subjected to a special test of knowledge and that only those who obtain the certificate of being sufficiently able in the subject should be summoned to the midwives' assistance.

The very eminent collection of individuals who compose the Midwives Board would naturally command the confidence of both our own profession and the calling of midwives. I see no reason, therefore, why it should not be constituted as the Board of Examiners of the subject of midwifery, and why the universities and corporations should not be relieved of examining candidates for a subject which, except in its surgical aspect, is considered by this authority to be in sufficiently capable hands when the examination can be conducted with safety by those who are, to some extent, trained, but in a very small degree educated.—I am, etc.,

Hatfield, July 14th. LOVELL DRAGE.

THE CONSTITUTION OF THE CENTRAL MIDWIVES BOARD.

SIR,—My old friend, Professor C. J. Wright, of Leeds, in his interesting presidential address before the Yorkshire Branch,[1] has fallen into an error in regard to the constitution of the Central Midwives Board. He speaks of the Board as "consisting of nine members, of whom three must be non-medical women." There is no provision in the Act to this effect. It is not stipulated that there shall be even one non-medical woman. All the members of the Board *may* be, and four of them *must* be, registered medical practitioners. Eight out of the nine members may be either men or women; one member *must* be a woman, but the Act does not say that she shall be non medical. It happens that three of the present members of the Board are non-medical women, but this is by choice, not of necessity.—I am, etc.,

London, W., July 17th. C. J. CULLINGWORTH.

IS HYSTERECTOMY GENERAL SURGERY?

SIR,—As one specially interested in obstetrics and gynaecology, it was with some surprise that I read in your summary of the prospective proceedings of the various Sections at the annual meeting to be held at Oxford that the Surgical Section was to discuss the subject of the indications for, and methods of, hysterectomy; while in the Medicine Section a discussion is to be held as to the association of heart disease and pregnancy.

It seems to me that these subjects would be more appropriately discussed in the Section of Obstetrics and Gynaecology. Medicine and surgery have such an enormous pick of interesting subjects that it seems unnecessary they should trench on the domain of the infinitely smaller branches.

Doubtless the subject of heart disease and pregnancy is of interest and importance to the general physician, and his

[1] BRITISH MEDICAL JOURNAL, July 16th, p. 122.

opinion would be heartily welcomed by his obstetric brothers at such a discussion in their Section, but that the general surgeons should occupy their time in discussing a subject which should belong entirely to their gynaecological *confrères* should, I think, not be supported by our Association. If the example is followed, it will lay an axe at the root of specialism which, in the present vast state of medicine and surgery, is becoming more and more a necessity, and at the same time destroy the academic spirit essential to the well-being of our profession. Further, to come to the immediate work of the Association itself, during the discussion of these important subjects the Obstetric Section will be depleted of many of its most eminent members (at least I do not know who else can be expected to satisfactorily discuss these matters). This is surely unjust treatment to those entrusted with the opening of discussions in the Obstetric Section.

I do not know who is responsible for the general conduct of these meetings, but, if there is any committee of supervision, it would seem its duty to see that the individual sections keep "their ain fish guts for their ain sea-maws," and not allow the general surgeon to swallow more than he can already digest while his infant sister, the gynaecologist, is barely keeping soul and body together on the small amount of nourishment suitable for her.

To submerge gynaecology in general surgery is a retrograde step; gynaecology has as much grounds for separate existence as diseases of the other special organs. In an academic centre such as Edinburgh this is justly recognized, although in many larger cities the commercial spirit more predominates, and operative gynaecology is considered the legitimate practice of the all-absorbing surgeon. Surely in Oxford it seems incongruous that the latter system should be hall-marked in so far as these discussions are concerned.

Trusting that it may not yet be too late to amend the anomaly, I am, etc.,

Edinburgh, July 18th. F. W. N. HAULTAIN, M.D.

EARLY OPERATION IN CANCER.

SIR,—I have read with great interest your report of the "Imperial Cancer Research Fund," but I can hardly homologate what is contained in the paragraph on p. 148, which states that "Dr. Bashford's report is notable throughout for the desire evinced to give credit to whom credit is due," etc. When you state: "With regard to etiology, the conclusion is that it is not permissible to seek the cause of cancer outside the life of the cell. This must be understood to mean that the inquiries and investigations made for the Fund down to the present tend to negative the parasitic hypothesis." Now, any one reading this sentence would naturally conclude that this was the discovery of, or at least the conclusion, the Cancer Research Fund had independently arrived at, whereas if you refer to my book on "*Cancer: its Cause and Cure without Operation*," you will find this view of the etiology of the disease was published in January, 1903. I may here state that every reviewer of this book condemned me because I held it to be necessary to take the public into our confidence, and encourage those suffering from the disease in its early stages to consult their doctor without delay. But to be enabled to do this, they must of necessity have some information on the subject to guide them. Now I am glad to see the Cancer Research Fund has instructed Dr. A. S. Grünbaum to do what I was so short a time ago condemned for advocating.—I am, etc.,

London, W., July 15th. ROBERT BELL, M.D.

THE NEW SYDENHAM SOCIETY AND THE OXFORD ANNUAL MUSEUM.

SIR,—When a month ago I addressed to you a letter urging our members to contribute their treasures to the annual museum now in course of formation at Oxford, I forgot to say that I had myself an axe to grind. It is perhaps not quite too late to correct the omission. One of the reasons for my taking interest in the displays in these annual museums is that they supply opportunity for the selection of material for our New Sydenham Society's Clinical Atlas. We have already published a number of drawings which have been taken from those which were brought under our notice by these museums. In particular we have been indebted to Messrs. Jones and Morgan, of Liverpool, for valuable radiographs bearing upon the treatment of Colles's fracture, and in my last letter I especially referred to this fracture as well worthy of combined effort at its illustration in order to set at rest disputed points as to its treatment. For an exposition of those points I must refer to our last fasciculus, in which they are discussed in some detail. Our Atlas is, however, of the widest scope, and if those who possess valuable photographs or drawings will kindly bring them to Oxford next week I can assure them that several members of our Council will inspect them with interest in reference to their suitability for the object which I have named. The illustration of eruptions caused by stings and bites of insects and of those due to drugs will claim attention very shortly, and I may also name Raynaud's phenomena, the Exanthemata, and Vaccination as those respecting which assistance will be much valued.

Whilst writing will you allow me to add that the Council, encouraged by the success of the Clinical Atlas, has at its last meeting come to the important conclusion to continue its publication indefinitely and to appoint a large Committee to conduct it? It is also quite within reasonable hope that the funds for the current year may permit of the publication of a printed volume in addition to the usual four fasciculi of the Atlas. Our annual meeting at Oxford is mentioned in your advertisement columns (see page 14). It will be an important one. We much hope that all who take interest in our work will attend it, whether at present members or not. —I am, etc.,

JONATHAN HUTCHINSON,
London, W., July 19th. Hon. Gen. Sec., New Sydenham Society.

THE PROFESSION AND THE CORONER FOR SOUTH-WEST LONDON.

SIR,—It is satisfactory to find that Sir Henry Kimber has asked a question in the House of Commons on this subject; but the answer of Mr. Akers-Douglas leaves much to be desired. That a single coroner should be able to introduce an entirely new reading of the Coroners Act, materially affecting the interests of the public and the medical profession, without let or hindrance from those presumedly in authority, will come as a surprise to many. The fact that an inquiry "would involve much labour" does not seem an insuperable objection. The Coroners Act plainly allows but two alternatives. The coroner must call to his assistance, either the medical man in attendance on the deceased, or some other medical man *in actual practice in or near the place where the death happened*. Can it be properly said that Mr. Troutbeck's pathologist is a medical man in actual practice at or near the place where every death happens upon which an inquest is held in the South-West London district? That a contrary view is held by most coroners would seem probable, seeing that none have hitherto followed Mr. Troutbeck's example.—I am, etc.,

London, N.E., July 19th. MAJOR GREENWOOD.

"TESTING THE EYESIGHT OF A NATION."

SIR,—In his excellent letter, "Oculus" concludes with the following:—"If an authoritative opinion could be obtained for a guinea fee I feel certain we should hear less of the prescribing optician." It may be so, but my experience as a general practitioner who has always "done eye work," and has gained considerable local reputation for refraction cases, does not support this opinion, as the following letter received last night from an otherwise educated lady will show.

Dear Sir,—I beg to acknowledge your account received this morning and was surprised to note the amount (10s. 6d.) quoted thereon for my interview with you. If you remember I called upon you to consult concerning my eyeglasses, and you tested my sight and recommended me suitable glasses to wear. The whole interview did not last half an hour. Is it possible that there is a mistake? Otherwise I shall pay dearly for the mistake I made at the time, for I found that I could have procured the information gratis at the shop at which my glasses were made up according to your instructions. Awaiting your answer, yours fly., ——.

I called to-day and saw this patient, and told her I preferred to call, as if I had written to her probably my letter would have made her feel as cross as hers had made me. I explained matters to her, and told her that the "grey-haired, old, well-established optician" who had animadverted on my prescription had no more right to do so than had a chemist to impress on a customer who brought an ordinary prescription that he could have prescribed equally well for her for nothing. I told her no doubt opticians could afford, as an advertisement for their glasses, to give their advice for nothing, as indeed it might pay medical men to give a pound of tea to every patient who came to them, although it would not pay a tea merchant to do so. We parted amicably, and to-night I received my fee with the following letter:

I am sorry that I allowed myself to be misled by the apparent wisdom of the optician. I wish to recall my words in yesterday's note. Trusting that you will not refuse to see me should I again need advice about my eyes.—With kind regards, yours faithfully,

All's well that ends well; but vide the moral.—I am, etc.,

G. B. B., M.D.,
July 6th. Late Ophthalmic Assistant, Edinburgh Royal Infirmary.

THE OPERATION OF PROSTATECTOMY.

SIR,—I hoped to have seen some reference in the last number of the BRITISH MEDICAL JOURNAL to Mr. Walker's most admirable paper in the JOURNAL of 9th inst.

In these prosaic days a little further passage of arms on this absorbing subject would have been refreshing. I hope I am right in thinking that this silence is expressive of an altered feeling towards those who may have been prematurely judged, or perhaps misjudged; or must I construe the silence as evidence of theories as defunct as the Hittites?

I need not again request you to publish my own views, but from what I saw and knew of Mr. Freyer's specimens and wonderful operations, and further, from my own dissections of the prostate, and largely in many of the lower animals, where I found it greatly isolated from its fibrous sheath, I was prepared for a verdict which appears to be almost final.

Large ideas invite proportionate antagonism. Not long ago Bigelow's sensible propositions were met by extraordinary opposition in high places, but the man now who would propose to leave sharp fragments of stone in the bladder would rightly be thought more fit for Bethlem than for Oxford. The focus of light thrown by Mr. Walker on Mr. Freyer's operation is that the occasional presence of a bit of prostatic tissue left behind cannot militate against the claim of a complete operation.—I am, etc.,

London, July 9th. J. McM.

THREE MEDICAL REFORMS AND THE MEDICAL DIPLOMATES' SOCIETY OF LONDON.

SIR,—I should like to briefly draw attention to the following modifying suggestions and improvements on the all-important and far-reaching medical politics to be soon discussed at the forthcoming meeting of Representatives. In your columns of July 31st, 1897, I advocated that the British Medical Association should take up one part of medical defence against the larger attacks on the profession, under the Acts, or against quackery. I thought then, as now, that it would be better to leave the personal defence of members in the hands of the exterior organizations. The Representative Meeting might make this practical by dividing the two sides of medical defence, and arranging chiefly to take up the former. Then the Defence Committee of the Association, which would be formed for general defence, would make arrangements for the personal defence of members who desired it with the existing defence societies at reduced fees, and with the power to help and ensure good attention at any time if need be.

The Medical Acts Amendment Bill, strong as it has been made, ought, I think, to be made more complete with these particulars.

1. It would be a distinction to pioneer an era in English law-making by codifying the Medical Acts, incorporating and introducing the retained and new matter into *one* Medical Act.

2. As a doctorate position for medical practitioners was intended, a State diploma of doctor in medicine should be definitely stated; it would greatly stimulate university teaching, which, after all, counts far more for efficiency than any degrees. Besides, the model abroad, we must not forget, was founded long ago entirely and absolutely on the basis of a University standing; without it there can be little or no real reform.

3. Then if the majority of practitioners are not to upset the Bill, it must be made clearly retrospective for practitioners on the old register, and, if they so elect, must permit them to register the same State M.D. title as the new medical practioner who, otherwise, would be introduced entirely against the older interests. These two last propositions I placed before our Division, and they were carried by the meeting.

4. To get over the acknowledged excess of counter prescribing by chemists, which has not been adequately provided against, we should establish property in prescriptions, for we possess little enough else to offer in exchange for our medical work and professional deductions. In that way, to make it an offence under the act "to sell British pharmacopoeial drugs, in combination or made up or ready for medical treatment, except on the advice or prescription of a medical doctor," and to establish a legal right in such prescriptions, to be possessed by the whole medical profession as a body, or any medical practitioner of that body; and the Council to be given the power to uphold the property. A dose of many medicaments, or "something for the hair," etc., would not be prohibited if the effective drugs or combination did not coincide with those from the *British Pharmacopoeia*, so that no hardship would arise. The actual control of patent or stamped medicines must be excluded, unless derived solely from the *British Pharmacopoeia*; they could only be approached from a permissive, although perforce a regulated, point of view.

As to the great reform of the London Medical Colleges, I have wished to form a substantial society to promote this needed change, but on lines entirely opposed to the puny ones of the Medical Diplomates' Society, which has only the same aspirations as the defunct Members and Licentiates' Society, which simply pursued the selfish wish "for the immediate entrance to the examination of a university M.D." The Diplomates' Society's circular, sent broadcast to the staffs of the hospitals, carries its own refutation, for they are asking for support for the above old and stale purpose, which the staffs cannot possibly give, even if they wished. Besides, they have previously tried in every way to get this concession from the actual bodies concerned, when they deservedly failed. They feared to have their objects reported at their chief inaugural meeting, and a beginning of that kind does not deserve any public support whatever. They display no capacity for new reforms. Their only other whimsical object is for the "advancement of Licentiates." That sounds like boldly forming a society for the benefit of man.—I am, etc.,

Bognor, July 15th. H. ELLIOT-BLAKE.

THE GENERAL MEDICAL COUNCIL.

SIR,—Lest under the more pleasing interests of the Oxford meeting—Oxford redolent of Cromwell and Newman—the members of our Association should forget the greater interests of their congress, permit me to direct their attention to the "last phase" of the transactions of the General Medical Council.

The resolution of the Council to tax the students is adroit and well conceived in their own financial interest. In the interests, however, of the profession, whose students are being taxed to the conjectural figure of £1,700 per annum, upon a "low calculation," is it not a reasonable suggestion that, if such taxation takes place, as the price of our consent we insist upon an increased direct representation—say, 7 for England and 3 for Ireland and Scotland each? The proposed Bill must be run as a Government measure to have any hope of passing, and as such it is not improbable the dentists may see their way also to claim more than a unit of representation amongst the present 32 members of the General Medical Council.—I am, etc.,

Northampton, July 16th. S. WESLEY WILSON.

THE WILLIAM CADGE MEMORIAL WINDOW IN NORWICH CATHEDRAL.

SIR,—I have to thank you for publishing the complete list to date of the subscribers to the above memorial, as well as for your appreciative annotation on the same. As a result, Professor Crawford Renton, of Glasgow, writes:

"I have great pleasure in sending you a cheque for £1 1s. towards the memorial of the late Mr. Cadge. He was a great man and a great surgeon, and it is right that a permanent memorial in addition to all his splendid work should be placed in the cathedral."

Permit me to add that it has been decided to place in the two bays below the window an appreciative dedication written by one of Mr. Cadge's oldest professional friends; hence we require about £10 or £12 in addition to the sum already subscribed.—I am, etc.,

MICHAEL BEVERLEY,
Norwich, July 20th. Honorary Treasurer.

VOYAGES D'ETUDES MEDICALES.

SIR,—Although I am not a member of the British Balneological Society, I had not the least intention of treading upon Dr. Leonard Williams's corns by comparing it with the "imaginary continental society"—that of the Voyages d'Etudes Medicales; the work and aims of both fraternities I am fairly well acquainted with, but I manifestly prefer the work of the French Society, in being, as I suggested, more

practical in demonstrating the various localities, as well as the scientific description of their respective therapeutics.

The Society (whatever name Dr. Williams may please to call it) has been in existence some six years, under a very influential committee of patronage of French physicians, under the Presidency of Professor Brouardel, and Vice-Presidency of Professor Landouzy, who has always accompanied the annual trips, and given valuable lectures and descriptions of the various mineral water stations, to which many members go year after year for purposes of combined holiday trip and balneological research.

The other point in my letter to which Dr. Williams refers was, I thought, made sufficiently clear, that I thought it best for members wishing to join this year to secure their adhesion by making up their minds "*before the end of July*" (the italics are mine on this occasion), and I wish the more to emphasize the words, because last year I wrote on behalf of at least a dozen would-be voyagers more than a week before the date given as final in the official programme to Dr. de la Carrière, and was told that in consequence of the carriage difficulty in the Pyrenées Orientales he had already been obliged to refuse some thirty Continental applicants. I do not claim to be the "accredited agent" of the V.E.M., as it is now called in France, letters as familiar to medical men there as L.S.A. are here, but as a personal friend of Dr. Carron de la Carrière for some years he has asked me more than once to make the V.E.M. known amongst my compatriots, and for this end has usually sent me a bundle of official programmes, asking me to circulate them, and I still have a few in my possession which I shall be pleased to send to any intending "balneological tripper."—I am, etc.,

Ealing Common, July 18th. BOYD JOLL.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE NEW ARMY REORGANIZATION SCHEME.

THE new Army reorganization scheme, in spite of Mr. Arnold-Forster's long speech occupying some two hours in delivery and in spite of the elaborate memorandum subsequently issued (Cd. 1907), still presents many obscurities. It will be well to quote Mr. Arnold-Forster's summary of the evils which he hopes his scheme will specifically remedy.

1. The organization of the forces of the Empire for war will be improved and our system co-ordinated, as the result of the establishment of the Committee of Imperial Defence, presided over by the Prime Minister, attended by the representatives of the various great departments concerned, and furnished with a permanent and adequate staff.

2. The organization of the War Office will be put upon a more satisfactory basis, and greater amount of decentralization than has hitherto been possible will be introduced into the administration of the army.

3. The intelligence branch and the organization of the staff of the army will be greatly improved. The number of officers employed will be increased, and the work of the department will be better distributed than heretofore.

4. The linked-battalion system will be retained for the purposes of exchange, but abolished for the purposes of drafting.

5. It will be no longer necessary to maintain an exact correspondence between the number of units abroad and at home, a correspondence absolutely unsuited to modern conditions.

6. It will no longer be necessary to leave behind large numbers of men on mobilization, but the general-service battalions will be composed of fighting men, and will have an adequate reserve.

7. Organization will be provided for all reservists who are not called out with their regiments at the outbreak of war.

8. The uncertainty which has hitherto done so much harm to the reservists will no longer exist. The home-service reservist will know that he will only be called out in the extremity, and when the country is engaged in a great struggle.

9. The general-service infantryman will receive high pay, and will receive it directly he is qualified, instead of having to wait 2 years.

10. The home-service infantryman will serve at home under agreeable conditions, and at the end of that time will have the option of going abroad if he wishes to do so, or of going into the reserve, if he prefers that course.

11. In addition to the large amount of employment which is already found for the general-service soldier on discharge, a supply of very congenial employment will be furnished for all those who accept appointments as non-commissioned officers in the home-service battalions.

12. The falling off in the recruiting of the guards will be arrested, because the guards will again receive a small advantage, to which they are entitled owing to their additional length of service.

13. A striking force, for which the necessity was so clearly demonstrated at the commencement of the late war, will be provided.

14. A great improvement in barrack accommodation will be possible because battalions will continue to occupy the same barracks.

15. An improvement will be made in the organisation of the cavalry which will allow of the supply of recruits from dépôts, and will obviate the necessity which at present exists of linking cavalry regiments in pairs.

16. There will be an improvement of the militia, and if public opinion will allow, the amalgamation of the militia with the line, for the purpose of forming a true territorial army.

17. A great improvement in the Volunteers, involving:

(*a*) The discharge of ineffective and useless men.

(*b*) The granting of additional funds for those Volunteers who can give time for additional service.

(*c*) The easing of the terms of service to those Volunteers who are unable to comply with the extreme requirements of the War Office.

(*d*) Generally, the creation of a true Volunteer Army capable of expansion to almost any degree in case of war.

18. Assistance to rifle clubs. In other words, help to those who desire to serve the country, but who have not leisure or opportunity to enter the army or the Volunteers.

19. A contribution towards the expense of furnishing a volunteer transport, a most important element in time of war.

20. All the historical battalions of the line will be maintained intact.

21. Every existing battery of Royal Artillery will be maintained.

22. The infantry force for the first time will be truly localized, and the regiments will, for the most part, live in their own counties.

23. The 3-years' system will be abolished.

24. The men will enlist for 2 years, or for a longer term.

25. The War Office will no longer be dependent for its general-service soldiers upon the caprice of boys, who may or may not decide to extend.

26. The reserve will no longer be a substitute for, but will become a supplement to, the men serving.

27. A large number of thoroughly-trained junior officers will be added to the army.

28. An opportunity will be given to country gentlemen who cannot give up their whole time to army service to enter the line regiments, to train with them in peace time, and to serve with them continuously in time of war.

29. The cost of the army will be greatly reduced.

The proposed reorganization must interest the medical profession from two points of view—first, in its bearing on the army as a whole from the point of view of the physical development of the nation and of the general hygiene of the army, and, secondly, in any effect it may seem likely to have on the medical service of the army.

Both in his speech and in the Memorandum, the Secretary of State for War insists that the object which he has held in view is to secure an efficient army at a reduced expenditure. The considerations put forward by Mr. Arnold-Forster and the arguments upon which he relies are of a complicated character, and, before attempting to discuss them, it will be desirable to refer briefly to the conditions of enlistment in the British army before, during, and since the South African war.

In 1899, before the war, the term of enlistment was twelve years, and the enlisted might either spend seven years with the colours and five in the reserve, or three with the colours and nine in the reserve. During the South African war these terms of enlistment were continued, while in addition a large number of special enlistments for the period of the war were made. It has to be borne in mind that these special enlistments do not affect the present issue, inasmuch as that concerns only men who take up the army as a profession, though the increase in the number of this class down to the end of 1902 was undoubtedly due to the patriotic feeling which drew men into the army during a period of national emergency. The table on p. 211 shows the number of men enlisted during the five years before the war, during the war, and since, including those shown in a recent return as enlisted during the first nine months of 1903. It will be seen that the enlistments in 1903 (nine months) compare very favourably with the numbers enlisted during the five years before 1899.

In 1902 a new stage was reached, for in that year and since the bulk of the enlistments have been for three years with the colours. Upon this Mr. Arnold-Forster made the following observation in the course of his speech:

The policy which led to that practice was dictated by circumstances, and was probably necessary under those circumstances. They, however, have passed away, but the system has remained. It was found that under it, in the garrison and artillery alone, unless 100 per cent. of the men extended their term of service, it was impossible, at the end of two years, to furnish the drafts for the artillery; in the infantry battalions the drafts could not be furnished unless 75 per cent extended their service. But the average extension in the infantry was only 1[illegible] per cent. The system as now working had proved to be inconsistent with the maintenance of the defence of India and the colonies. Men who had only ten months to serve had been sent abroad in large num-

BRITISH ARMY.

TABLE I.—*Showing terms of Service of enlisted men and arms of the Service which they entered. The statistics for 1894-8 inclusive are taken from the Annual Report of the Inspector-General of Recruiting, 1899 (C. 9185), p. 8. Those for 1899-1903 inclusive from the General Annual Report on the British Army for the nine months—January 1st to September 30th, 1903—(Cd. 1904) p. 23.*

Terms of Service.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	First 9 Months of 1903.
12 years with the colours	1,708	1,809	1,638	1,985	2,485	1,670	2,107	2,004	1,894	1,524
7 ,, ,, ,, and 5 years in the Reserve	30,622	26,108	25,028	30,866	31,115	32,531	37,974	34,203	9,917	—
3 ,, ,, ,, ,, 9 ,, ,, ,,	1,368	1,576	1,866	2,164	5,949¶	5,966	7,619	8,950	38,942	27,556
2 ,, ,, ,, ,, 10 ,, ,, ,,	—	—	—	—	—	—	—	—	—	244
1 year ,, ,, or for the war, should it last longer	—	—	—	—	—	40*	24,449*	23,373*	10,573*	—
Re-enlisted { For one year	—	—	—	—	—	—	24,130§	655†	204‡	—
Re-enlisted { A.O. 106 of 1900	—	—	—	—	—	—	522‡	532‡	336‡	75
Royal Garrison Regiment	—	—	—	—	—	—	—	4,052	2,250	1,121
Colonial Corps (various terms)	—	—	—	—	—	2,493	1,560	1,882	924	506
West African Regiment	—	—	—	—	1,180	—	—	—	—	—
Total	33,698	29,583	28,532	35,015	40,729	42,700	98,361	75,651	65,040	31,026

Arms of the Service.										
Household Cavalry	135	131	195	150	121	145	370	201	149	50
Cavalry of the Line	3,108	2,387	2,769	2,426	3,778	4,793	8,335	6,397	6,189	358
Imperial Yeomanry	—	—	—	—	—	—	10,242	17,252	7,239	—
Royal Artillery { Horse and Field	5,003	4,552	4,433	6,357	6,533	4,005	9,667	7,024	8,663	2,422
Royal Artillery { Garrison	—	—	—	—	—	3,147	4,406	2,955	3,499	2,922
Royal Engineers	811	915	922	817	1,059	1,402	3,121	2,706	1,745	765
Foot Guards	1,026	1,173	1,263	2,062	2,283	2,155	3,112	2,307	1,837	1,144
Infantry of the Line	22,375	19,353	17,246	21,037	23,438	22,741	51,407	27,004	29,038	20,163
Royal Garrison Regiment	—	—	—	—	—	—	—	4,052	2,250	1,121
Colonial Corps	353	524	723	1,293	2,311	2,493	1,560	1,882	924	506
City of London Imperial Volunteers	—	—	—	—	—	—	1,664	—	—	—
Army Service Corps	415	381	522	522	466	957	1,923	1,115	1,922	727
Army Ordnance Corps	82	93	70	96	179	173	479	463	337	131
Royal Army Medical Corps	341	265	372	249	552	621	1,832	2,052	1,208	717
Army Pay Corps	—	—	—	—	—	—	8	2	—	—
Army Post Office Corps	40	9	17	6	9	68	235	239	40	—
Corps of Armourers	9	—	—	—	—	—	—	—	—	—
Total	33,698	29,583	28,532	35,015	40,729	42,700	98,361	75,651	65,040	31,026

¶ Including 3,515 for the Infantry of the Line. * Imperial Yeomanry and Volunteers, etc., enlisted for one year, or the duration of the war. † Imperial Yeomen re-enlisted for one year. ‡ Ex-soldiers, discharged on completion of twelve years' service, re-enlisted until attaining the age of 41, or until completing twenty-one years' total service, whichever happens first. § Royal Reservists.

bers, and, with some 24,000 drafts to find for India and the colonies, only some 900 men of the infantry at home have extended. The system had broken down, and some other plan must be found to replace it.

In 1903 all men were enlisted for three years with the colours and none for seven years. The numbers are given in the last column of Table I, which refers to a period of nine months only as compared with the full years shown in other columns. It must, moreover, be remembered that in 1903 enlistment for the cavalry was closed—that is to say, men desiring to go into the cavalry were refused admission; some no doubt accepted enlistment into other corps, but it was probable that the majority declined, so that the total number of enlistments was thus reduced.

It should be stated that the three-years' system was intended to increase the reserve and thus provide means for the rapid extension of the army in the event of war. Though it is true that a large reserve would result from such a system, on the other hand the period of foreign service is so considerable that with the reduced term of service with the colours it is under this system unable to feed the large proportion of the army which garrisons India and the colonies, so that Mr. Arnold-Forster finds that he cannot supply the necessary drafts to foreign service battalions by a system of three-years' colour service. To meet this point he said:

> The Committee of Defence had come to the conclusion that the duty of the army was to defend British possessions over sea—to hold India and the colonies. To reinforce such an army for war proper dépôts must be maintained at home and this he held was incompatible with the linked battalion system. At present the infantry garrison of India was 52 battalions and there were 37 battalions in the colonies. He believed that a portion of these battalions might be withdrawn; he assumed a maximum of 100 battalions, and proposed to reduce this number by absorbing 14 line battalions raised within the last three or four years and also the 5 garrison battalions created for the war. Further, he proposed to divide the regular army into two parts, a general service army serving both abroad and at home, both in peace and in war, and a home service army to serve at home in peace and abroad, if necessary, during an important war.

The average strength of the army at home in 1902 was, in England and Wales 93,680, in Scotland 6,160, in Ireland 25,494; total 125,334. In order to maintain the Indian garrison (paid for by India), the Secretary of State for War proposes to enlist men with the General Service Army for nine years, six months at a dépôt and eight years and six months with the colours, and three with the reserve. Recruiting for the General Service Army would be restricted to men of 19 years of age and upwards, and large dépôts would be established for the general service battalions on the model of the Guards, the artillery, the marines, and the bluejackets and stokers of the navy.

In the Home Service Army, excluding the Guards, he proposes to have about 40 or 50 battalions, the men being enlisted for two years with the colours, including three months at a dépôt, followed by six years in the first-class army reserve, the minimum age of enlistment to be 18. The peace strength of the Home Service Battalions would be 500, of whom 400 would be men serving two years at the dépôt and with the colours, while the remaining 100, principally the staff, would be either general service men, supernumerary to the general service battalions or general service reservists who had concluded their service with the colours. In this way a large number of billets would be provided for general service men who wished further employment. This scheme would give a force of some 52 battalions in India and of 52 serving at home and in the colonies. The force at home would include a so called "striking army" of some 15,000 men quartered probably at Aldershot, and ready for immediate service anywhere. It would seem here that under the scheme outlined the bulk of the general service men would have to spend the greater part, if not the whole, of their eight and a-half years with the colours either in India or the colonies (South Africa); the effect on health of continued service in India is shown in the tables on p. 212.

Table III shows not only that the rates of mortality and the invaliding during the first two years of service in India are heavy but also that both rates again become exceptionally heavy among men who have served more than five years in that country. We draw attention to the point, because politicians who are not also statesmen very commonly fail to perceive the practical importance of hygienic difficulties of this kind. "The best laid schemes of mice and men

Table II.—*Showing the Statistics, as far as available, of Sickness, Mortality, and Invaliding among the Troops in India according to Age.*

Age.	Average Strength.	Admissions.	Deaths.	Invaliding.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 20 years	1,851	1,891	14	24	1,021.6	7.56	12.66
From 20 to 25	30,821	49,115	515	1,106	159.3	16.70	35.88
,, 25 to 30	24,367	28,357	311	769	1,163.7	12.76	31.55
,, 30 to 35	5,234	3,555	75	138	679.2	14.32	26.36
,, 35 to 40	1,522	831	24	48	545.9	15.76	31.53
Forty and upwards...	414	226	12	23	545.8	28.98	51.80
Not stated	1,159	117	—	—	100.9	—	—
Total	65,368	84,092	951	2,108	1,286.4	14.54	32.24

Table III.—*Showing the influence of Length of Service in India on the Sickness, Mortality, and Invaliding among Troops.*

Length of Service in India.	Average Strength.	Admissions.	Deaths.	Invaliding.	Ratios per 1,000 of Strength.		
					Admissions.	Deaths.	Invaliding.
Under 1 year	10,176	16,757	235	254	1,646.7	23.09	24.96
From 1 to 2	9,910	14,460	168	300	1,459.1	16.95	36.32
,, 2 to 3	10,499	16,007	136	353	1,524.6	12.95	33.62
,, 3 to 4	10,280	11,284	114	322	1,097.6	11.08	31.32
,, 4 to 5	8,420	9,820	92	258	1,166.2	10.92	30.64
,, 5 to 10	12,616	14,681	189	483	1,163.6	14.98	38.28
,, 10 and upwards	2,350	1,413	189	82	601.2	13.19	34.89
Not stated	1,097	148	1	—	134.9	0.90	—
Total	65,348	84,570	1,124	2,112	1,294.1	17.20	32.31

The above tables have been compiled from similar tables in the Army Medical Department Reports for the years 1895 to 1897, 1899, 1901, and 1902. The years 1898 and 1900 have been omitted as the tables for those years contain no statement of invaliding.

gang aft agley," and Mr. Arnold-Forster may yet find his scheme upset by a trypanosome. It is a reproach to the office over which he presides that the death-rate of seasoned British soldiers of over five years' service in India should be nearly 15 per 1,000, and their invaliding-rate over 38. This point appears to have escaped his attention, for from the beginning to the end of his speech, and from the beginning to the end of his memorandum, he makes no mention of the large saving in *personnel*, and therefore in money, which might be made if the Secretary of State for War would turn his attention to devising means for the prevention of those fatal fevers of India which officers of the Army and Indian Medical Services have shown to be certainly due to parasites, and therefore to be preventable.

With regard to the home service army, a force composed of privates, without prospect of advancement to any but the lowest non-commissioned ranks, with a reserve of 87,000, deriving its principal non-commissioned officers from the general service army, very little need be said from the hygienic point of view, since they will be serving in their own country, except that we notice that Mr. Arnold-Forster attaches much importance to the improvement of barracks, the condition of which he finds to be not creditable to the country. The system of having permanent plans for barracks is to be abandoned, and the planning and alteration of barracks is to be conducted by a special department, at the head of which has been placed Mr. Meadows, the architect of great artizans' dwellings both in Birmingham and London.

We doubt neither Mr. Arnold-Forster's sincerity in wishing to improve the soldiers' barracks nor the sincerity of his wish to reduce the cost of the army, but we await with interest his explanation of how these two wishes are to be reconciled. He appears to rely to some extent on the goodwill of the counties to which the regiments belong, and we have no doubt that the counties will do a great deal for their territorial regiments when the local barracks have been provided, but it would not be a statesmanlike policy to place reliance upon such county patriotism to make the barrack accommodation suitable. The construction and repair of hospitals will also come under the direction of a new department, and we should like to have some clear indication of the intentions of the War Minister with regard to them. When the funds for the improvement of hospitals provided during Mr. Brodrick's term of office have been expended, will the able director of the building department find the financial means of exercising his gifts in the construction of adequate hospitals under a policy which seems to have the saving of money for its principal object?

It is necessary to call attention to this, for Mr. Arnold-Forster in his speech laid great stress upon the need for economy. His reversion to a system of enlistment analogous to that in force in 1899 will not save money, more especially as the general service man is to be attracted by good pay. Neither will his home service army be a saving of money, for the strength of its battalions if maintained at 500 men apiece will not be less than the average of the home service regiments of five years ago. If his scheme be carried out, he will therefore be driven to effect a saving in some other direction, if the estimates are to be permanently reduced. They may be reduced this year or next; estimates can always be pared down this year or next year, at the expense of later years. It has been done before, but that this expedient should not be resorted to on the present occasion at the expense of the upkeep of barracks and hospitals, is a point which we would press upon the attention of those who have a voice in the acceptance or rejection of this new scheme. The general sanitation of barracks and camps by which the health of the soldier is preserved, and the hospitals in which he is treated when sick, must not be allowed to suffer from the proposed economy. Mr. Arnold-Forster's troubles in providing drafts for foreign service, are due to a three-year system of enlistment which has increased the drafts required to maintain the strength of the units. The soldier's foreign service should, on grounds of health, be kept within limits not exceeding those of to-day. The remedy appears to be in the enlistment of a sufficient number of men for a term of seven or eight years to keep up the strength. There is no proof that the scheme will provide an appreciably larger army in the event of a great war, and it is questionable whether sufficient cause has been shown for upsetting the regiments which have only recently recovered from the changes of a generation ago. The scheme would provide an army smaller or very slightly increased with a less trained reserve and deficient in the higher ranks of non-commissioned and thoroughly trained officers.

Its effects upon the establishment of the Army Medical Service should not be appreciable. If the "striking army" at Aldershot is to be ever ready to undertake military operations at a day's notice, then every unit, and among them every medical unit, must be kept up to full strength and completely equipped. Every battalion must have its medical officer; the *personnel* and equipment of the field ambulances and of the medical units of the lines of communication, including stationary hospitals, must be complete; and the general hospital required at the base with their staff and material must be in readiness. This will make a very considerable call upon the establishment of the Royal Army Medical Corps. No mate-

rial reduction can be made in the number of medical officers in India nor, for the present at least, in South Africa, and the medical needs of the proposed big dépôts of the General-Service Army and of the territorial battalions of the Home-Service Army must be met. If the medical and sanitary work of the army abroad and at home is to be properly done, the establishment of the Army Medical Service cannot be reduced.

The Corps is still short of officers and men, and if the recommendations of the various Royal Commissions still possess the value attached to them when they were made the deficiency must be made good. We believe that neither the public nor the medical profession will be satisfied unless the reforms recommended are carried out, and carried out rather more speedily than we believe latterly has been the case. In the past, when the cry of economy has been raised, it has always been the medical service which has been the first to suffer. Already there are signs that it is to suffer now if Mr. Arnold-Forster has his way unchecked; no progress, for instance, has been made with the Royal Army Medical College, the plans for which were, as we announced at the time, sanctioned more than six months ago—the first sod has not yet been turned. When we find that the vital question of national defence is being considered on the basis of making reductions in the future, we feel bound to warn the authorities that such reductions cannot safely be made in the medical branch of the army, and that if they are attempted an appeal must be made to the people of this country to insist on the prompt execution of those measures which the late war showed to be essential for the efficiency of the Army Medical Services.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: HERBERT M. ELLIS, Inspector-General, to the *President*, for temporary service at the Admiralty, August 1st; HENRY F. ILIEWICZ, Fleet Surgeon, to the *Excellent* for the *Colossus* while guardship at Cowes, August 1st; HARDY V. WELLS, Surgeon, to the *Dwarf*, on recommissioning, undated; WILLIAM J. CODRINGTON, M.B., Surgeon, to the *President*, for three months' course of hospital study, July 25th; HUGH P. TURNBULL, Surgeon, to the *President*, for three months' course of hospital study, August 1st.

SOME GRIEVANCES.

A CORRESPONDENT sends us the following brief statement of grievances of the officers of the Royal Navy Medical Service. All have been discussed at length in our columns from time to time (we may refer, for example, to three articles published in the first volume of the BRITISH MEDICAL JOURNAL for this year, pp. 679, 965, 1386):

1. *Acting Appointments.*—In the case of the executive, paymaster, and engineering branches a junior officer appointed temporarily to do the work of a senior receives an "acting" appointment—lieutenant to "acting" commander, assistant paymaster to paymaster, etc. This entitles them to the pay of the higher rank whilst doing the duty. In the medical branch there are no acting appointments given; a junior has often to fill a senior's billet temporarily without any extra pay.

2. *Cabin Accommodation according to Rank.*—The regulations state that officers shall have cabins allotted to them according to their rank, the higher the rank the better the cabin. But, as a matter of fact, the cabins are all labelled in the dockyard before the ship commissions—"commander," surgeon, paymaster, etc.; and invariably the executive officers have the better cabins, and usually the medical the worst. There is a regulation which states that cabins are not to be altered after being so labelled. The first regulation is quite useless. Some time ago, when the pay was increased, a regulation stated that a medical officer should have a special cabin, but it still remains a "specially" bad one. Medical officers who have to read and do much work in their cabins should invariably have an upper-deck cabin.

3. *Appointments.*—Instead of appointments being, as at present, a matter of favouritism, a roster should be kept, and all medical officers go to sea in turn (according to their rank in regard to ships of various sizes). At present there are several junior officers who have held home appointments for five years or so. Exchanges should also be sanctioned.

4. *Jurisdiction.*—Medical officers should, as in the army, sit on court-martial of their own men. Medical officers in charge of large hospitals as Haslar, Plymouth, and Chatham—should have the powers of a captain in regard to punishments. At present accused and witnesses are sent on board the dépôt ship or the R. N. barracks, where the captain judges the case, probably not understanding it in the least, and therefore giving an inappropriate punishment. In addition, time is wasted in sending the people backwards and forwards.

5. *Specialists.*—Appointments as specialists in optics, throat and ear cases, and dentistry should be given to each squadron—Mediterranean, China, Australia, etc.—officers being given a chance of qualifying for these, and receiving extra pay. At present there are no officers in any squadron specially qualified in any of these specialities. It is impossible for every medical officer to be a specialist in all subjects, as under the present system he is supposed to be.

Every medical officer should have a three months' course at a London hospital after a commission abroad.

A CORRECTION: In the notice of the appointment of Mr. R. Balfour Graham as Surgeon and Agent at Leven, published last week, page 153, the initials were incorrectly printed.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Lieutenants to be Captains, dated June 27th: F. W. Lambelle, M.B., M. C. Beatty, M.B., T. F. Ritchie, M.B., A. W. Sampey, T. J. Potter, A. J. Williamson, M.B., E. V. Aylen, H. Rogers, M.B., W. Davis, D. J. F. O'Donoghue. Their first commissions are dated June 27th, 1901. Captain Beatty was in the South African war in 1901 (Queen's medal with four clasps); Captain Ritchie, South African war 1901-2, including operations in the Transvaal and Orange River and Cape Colonies (mentioned in dispatches); Captain Williamson, South African war, 1901-2 (King's medal with two clasps). The other officers mentioned have no war record in the Army List.

The undermentioned Lieutenants are confirmed in that rank: R. M. Ranking, F. J. Turner, G. F. Rugg, D. S. B. Thomson, M.B., J. Fairbairn, M.B., L. Bousfield, M.B., J. H. Douglass, M.D., A. S. Arthur, M.B., R. F. Lewis, A. L. Otway, M.B., C. H. Turner, D. Le Bas, E. C. Whitehead, M.B., W. F. H. Vaughan, R. B. Hole, M.B., F. C. Lucas, G. E. Cathcart, W. Wiley, M.B., H. Harding, M.B., J. A. Turnbull, M. F. Grant, D. P. Johnstone, E. H. M. Moore, M.B. Aberu, F. J. Garland, M.B., A. A. Meaden, R. J. Cahill, M.B., H. B. Connell. Of these officers Lieutenant Ranking was appointed on probation January 31st, 1903; Lieutenant Turner, August 31st, 1903; and all the others, January 30th, 1904.

Captain HENRY EVERED HAYMES died at Tong, Upper Egypt, on March 15th last. He was appointed Lieutenant, January 28th, 1899, and Captain, January 28th, 1902. He was attached to the Egyptian army, September 27th, 1899.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From.	To.
Colonel W. E. Saunders, C.B.	Poona	Meerut.
,, F. W. Trevor, M.B.	Scottish Dist.	Poona.
,, G. A. Hughes, M.B.	Dublin	Scottish Dist.
Lt.-Col. I. B. Emerson	Portsmouth	York.
,, T. F. MacNeece	Punjab	Cork.
,, A. P. O'Connor, C.B.	Gibraltar	Bordon.
,, W. Dugdale	Netley	S. Africa.
,, A. O. Geoghegan, M.D.	Chester	Bury.
,, J. H. A. Rhodes	Birmingham	Malta.
,, G. Wilson, M.B.	—	Chester.
Major W. C. Beevor, M.B., C.M.G.	Scots Guards	Home District.
,, J. R. Mallins, M.B.	Halifax, N.S.	Portsmouth.
,, C. L. Josting	—	Hong Kong.
,, J. M. Nicolls, M.B.	Buttevant	Malta.
,, A. P. H. Griffiths	Chester	Birmingham.
,, R. W. Wright	Beugal	Portsmouth.
,, J. W. Bullen, M.D.	Madras	Dublin.
,, J. W. Jennings, D.S.O.	Abyssinia	Chester.
,, T. J. Lenehen, M.B.	Dublin	S. Africa.
Captain A. F. Tyrrell	—	Bulford.
,, H. W. H. O'Reilly, M.B.	Limerick	S. Africa.
,, L. Addams-Williams	Bristol	,,
,, H. S. Taylor	—	W. Africa.
Lieutenant T. J. Wright	Woolwich	Dublin.

Surgeon-Lieutenant-Colonel G. S. Robinson and Major P. Connolly, retired pay, have been placed in medical charge of troops at Belfast and Eastbourne respectively.

The undermentioned Lieutenant-Colonels on retired pay have relinquished the medical charge of troops at the stations cited: J. E. Fannin, Eastbourne; J. O'Reilly, M.B., Guildford; E. A. H. Roe, M.B., Belfast; J. E. Nicholson, Fleetwood.

EXAMINATION OF MAJORS FOR PROMOTION.

AN Army Order just issued announces that for the year 1905 the special subjects for the examination of majors, Royal Army Medical Corps, for promotion to the rank of lieutenant-colonel, referred to in paragraph 5 (*a*), (*b*), and (*c*), Appendix VIII B, of the King's Regulations (inserted by Army Order 182 of 1903) will be:—Subject 5 (*a*): Medical history of more important campaigns. The medical history of expeditions in the Soudan and Nile Valley, as described in Army Medical Department Reports, vol. xxiv, 1882, Appendix I; vol. xxv, 1883, Appendix VII; and vol. xxvi, 1884, Appendices I, II, III, and IV. Subject 5 (*b*): A general knowledge of the Army Medical Services of other Powers. The medical organization of the Russian army as described in the Handbook of Medical Organization of Foreign Armies, and in Army Medical Department Report for 1889, Part III of Appendix IV; or the medical organization of a foreign army, selected by the candidate, described within similar limits. Subject (*c*): The laws and customs of war. Candidates will not be examined in this subject.

KING EDWARD VII'S HOSPITAL FOR OFFICERS.

THE following list of the Honorary Medical Staff for King Edward VII's Hospital for Officers, 9, Grosvenor Gardens, S.W., appointed by His Royal Highness the Prince of Wales, President, and His Royal Highness the Duke of Connaught, Vice-President, of the Hospital, the appointment being for five years from January 1st, 1904, has been approved by His Majesty as Patron:

Consulting Surgeons: Sir Thomas Smith, Bart., K.C.V.O., F.R.C.S., Sir Frederick Treves, Bart., K.C.V.O., C.B., LL.D., F.R.C.S.

Medical Officer: Dr. Charles A. Morris, C.V.O., M.A., M.C., F.R.C.S.

Physicians and Surgeons: Mr. Herbert W. Allingham, F.R.C.S., Sir Thomas Barlow, Bart., K.C.V.O., M.D., LL.D., D.Sc., F.R.C.P., Sir William Henry Bennett, K.C.V.O., F.R.C.S., Mr. Tom Bird, M.A., M.R.C.S., Mr. Anthony A. Bowlby, C.M.G., F.R.C.S., Sir William H. Broadbent, Bart., K.C.V.O., M.D., LL.D., F.R.C.P., F.R.S., Mr. Arthur H. Cheatle, F.R.C.S., Mr. G. Leuthal Cheatle, C.B., F.R.C.S., Sir Anderson Critchett, F.R.C.S.Edin., Dr. Alexander Cromble, C.B., Dr. David Ferrier, LL.D., F.R.C.P., F.R.S., Mr. P. J. Freyer, M.A., M.D., M.Ch., Sir Alfred D. Fripp, C.V.O., C.B., M.S., F.R.C.S., Mr. Rickman Godlee, M.S., F.R.C.S., Dr. James Frederick Goodhart, LL.D., F.R.C.P., Dr. Frederic William Hewitt, M.V.O., M.A., Sir Victor A. H. Horsley, B.S., F.R.C.S., F.R.S., Mr. George Henry Makins, C.B., F.R.C.S., Mr. Percy Lockhart Mummery, M.B., B.C., F.R.C.S., Dr. Frederick W. Pavy, LL.D., F.R.C.P., F.R.S., Sir Richard Douglas Powell, Bart., K.C.V.O., M.D., F.R.C.P., Dr. William Aldren Turner, F.R.C.P., Mr. Henry Roe Walker, M.R.C.S., L.R.C.P., Dr. William Hale White, F.R.C.P.

Mr. Arthur Blomfield, M.A., F.R.I.B.A., has been appointed architect.

ARMY MEDICAL DEPARTMENT.

ASSISTANT SURGEON CHARLES LONGMORE, late of the Army Medical Department, died at Market Harboro' on July 13th, aged 68 years. He

joined the department as Assistant Surgeon, September 22nd, 1858, and retired therefrom, November 8th, 1861.

ARMY MEDICAL RESERVE.

SURGEON-LIEUTENANT S. M. SLOAN, to be Surgeon-Captain, July 6th.

Captain H. E. DALBY, Royal Army Medical Corps (Militia), to be Surgeon-Captain, July 30th.

Surgeon-Lieutenant R. C. GAYER, Surrey Imperial Yeomanry, to be Surgeon-Lieutenant, July 30th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

MR. DUNCAN R. MACDONALD, is appointed Surgeon-Lieutenant in the 1st Midlothian Regiment, July 16th.

ROYAL ENGINEERS (VOLUNTEERS).

SURGEON-LIEUTENANT J. C. JACKSON, 1st London, resigns his commission, July 16th.

VOLUNTEER RIFLES.

SURGEON-LIEUTENANT J. A. JAMES, 1st Volunteer Battalion the Hampshire Regiment, to be Surgeon-Captain, July 16th.

Surgeon-Lieutenant-Colonel J. W. BLANDFORD, 1st Volunteer Battalion the Durham Light Infantry, to be Brigade-Surgeon-Lieutenant-Colonel, whilst holding the appointment of Senior Medical Officer to the Durham Light Infantry Volunteer Infantry Brigade, July 16th.

Surgeon Captain L. J. BLANDFORD, M.B., 1st Volunteer Battalion the Durham Light Infantry, is borne as supernumerary whilst commanding the Durham Light Infantry Volunteer Infantry Brigade Bearer Company, July 16th.

Surgeon-Lieutenant S. G. DAVIDSON, M.B., 4th (Donside Highland) Volunteer Battalion, the Gordon Highlanders, resigns his commission, July 16th.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL W. A. MAWSON, Bengal Establishment, is transferred to the temporary half pay list from June 1st. He was appointed Assistant Surgeon, March 31st, 1876, and became Brigade-Surgeon-Lieutenant-Colonel, January 2nd, 1901. His war record comprises the Afghan war of 1878-80, including the capture of Ali Musjid, the battle of Charasiah, and the operations at and around Kabul in December, 1879 (mentioned in dispatches, medal with three clasps), the campaign on the North-West Frontier of India in 1897-8 with the Tochi Force (medal with clasp), and the expedition to Waziristan in 1901-2 (mentioned in dispatches).

Captain HUGH MYDDLETON MOORE, Resident-Surgeon St. George's Hospital, Bombay, died at Bombay on June 3rd, at the age of 36. He entered as Surgeon-Lieutenant, July 28th, 1894, and was made Surgeon-Captain three years thereafter.

THE NEW ORDER AS TO PRIVATE PATIENTS.

LIEUTENANT-COLONEL I.M.S. writes: I have to point out that compliance with the latest order of Lord Curzon's Government, dealing with the relations between officers of the Indian Medical Service and certain of their native patients, will render such medical officers liable to have their names removed from the *Medical Register* for "conduct infamous in a professional respect," to wit, for betraying professional confidence to a third person—a civil political officer—and thus render the further retention of such officers in the service illegal and impossible. It is to be hoped that the General Medical Council will promptly take action on these lines on the very first opportunity, and that medical officers will take the initiative by reporting such cases for action to the General Medical Council.

INSTRUCTIONS TO MEDICAL OFFICERS OF BRIGADE CAMPS.

BRIGADE-SURGEON-LIEUTENANT-COLONEL PHILIP E. HILL, V.D., Senior Medical Officer of the South Wales Border Volunteer Infantry Brigade has issued instructions for medical officers of the brigade for the Brigade Camp at Salisbury Plain during July and August. These instructions are on the same lines as those issued by Brigade-Surgeon Hill for the Brigade Camp last year, which were favourably commented upon in the BRITISH MEDICAL JOURNAL (July 18th, 1903, p. 175). The details of the medical officers' duties, with references to the paragraphs in the King's Regulations and to the Army Forms required are very valuable in the Orders for an Instructional Camp.

MEDICO-LEGAL AND MEDICO-ETHICAL.

INFANTICIDE—INSANE OR NOT?

A WOMAN was tried at the last Devon Assizes before Mr. Justice Bigham for strangling her child, aged 16 days. The facts of the murder were not disputed. The defence raised was that the prisoner was insane at the time; and, as this plea was successful, it is medically interesting to review the facts.

The prisoner, when 19, had an illegitimate child. She was married at 24, and had a child within a year, soon after which event she became a widow. Then, at the age of 28, a second illegitimate child was born, the prisoner having been deceived and deserted by a married man. She had no medical assistance at the time of the birth. She had to tie the cord herself, and there was considerable flooding. A nurse attended her for only a week. The child was born at Paignton on March 9th. On March 25th the prisoner went to Teignmouth (about eight miles off), taking with her the baby and a tin trunk. On March 29th she went back to Paignton to fetch her furniture. She was asked about the baby, and said it was all right. Some circumstances aroused suspicion, and she was visited by the police. To their inquiries about the baby she replied that it was with a Mrs Johnson, who had answered an advertisement, but whose address she did not know. She was then asked if she would allow a search without a warrant. She gave in at once, and said, "The box is upstairs and the baby in it." The body of the infant was found in the box, strangled by a piece of cotton tied tightly round its neck. When arrested, the prisoner said she had done it because she "was worried"; and that she "thought the poor little thing would be out of misery." It was found that she had at the time £30 in the savings bank. It was stated that an uncle had died in a lunatic asylum: that the prisoner's mother had been "ill in her head" after a confinement, and had to have her baby taken from her; that the prisoner and several of her sisters had suffered from hysteria. The prisoner was a hard-working thrifty woman, fond of her children, including the one she strangled. She had made baby clothes and other preparations for its birth. After its birth it was said she had had very little sleep, dreadful dreams, and very bad headaches.

Two medical witnesses, Dr. Rutherford, Medical Officer of the City Asylum, and Dr. Raglan Thomas, of Exeter, were called for the defence. They both agreed that at the time of an interview which they had had with the prisoner she presented no sign of insanity; but that in view of the family history, the account of the flooding, sleeplessness, and headaches, and the trials she had gone through, they thought it possible she might have been insane at the time of the murder. This view was pressed upon the jury by the Counsel for the defence, who urged that there was no evidence of premeditation.

The Judge told the jury that the question for them was, "Did the prisoner, at the time she strangled the child, know that she was doing wrong?" The fact that she invented the story about Mrs. Johnson showed that she knew that she had done wrong. There was no evidence from those who saw her just before the murder to show that she was not in her right mind.

The Jury found the prisoner guilty, but temporarily insane at the time she committed the act. She will be detained in Exeter Prison during His Majesty's pleasure.

The case is chiefly interesting as illustrating the reluctance of a jury to find a verdict involving a capital sentence in a case of infanticide of an illegitimate child. They attached large importance to the shame and anxiety of a deserted woman, and accepted the doctor's conjecture that she might have been insane; for of direct evidence of insanity there seems to have been none.

UNQUALIFIED PRACTICE AND IMPERSONATION.

AT the Hants Summer Assizes on July 2nd, before Mr. Justice Ridley, Charles Henry Hustwick, alias Cormac, calling himself a surgeon, was tried for giving a false certificate of death. From the evidence it appeared that the prisoner, impersonating a medical practitioner residing in Ireland, practised at Shirley, for a long period using the title L.R.C.P. He had by misrepresentation obtained from the local registrar a book of the death certificate forms, which are supplied only to registered medical practitioners. Evidence was given that he attended a patient in labour, and that the child died about a month later. A certificate of death was made out by the prisoner on the usual form, and this was duly received by the registrar. Other instances of practice by the prisoner were given by witnesses. Evidence made it clear that the prisoner was not Dr. Charles Henry Cormac, whose name and titles he had assumed.

The prisoner stated in defence that he had taken the name and used it for eighteen years or more, that he was apprenticed to a medical man in 1866, and that he had acted as assistant to other medical practitioners in various parts of the country. He also stated that he had been surgeon to the West Kent Yeomanry Cavalry for five years, he had never been upon the *Medical Register*, and had often given medical certificates of death and "had had no unpleasantness." The Jury convicted him.

There were other counts of indictment against the prisoner, but they were not proceeded with. Evidence was then given by the police of a previous conviction for an illegal operation for which he had been sentenced to five years' penal servitude. The Judge, in sentencing him to eighteen months' hard labour, stated that the prisoner had carried on these frauds for some time. He would not now send him to penal servitude, as the offence was not so serious as that of procuring abortion, and in fixing eighteen months he took into consideration the fact that he had been waiting his trial for five months in prison.

This case again illustrates the comparative ease by which under the present system of medical registration impersonation can be effected. Here we have a medical practitioner practising in Ireland without the knowledge that another is using his name and titles and practising in England. If an annual fee for registration were instituted by the General Medical Council such an imposition could not run on for years, as it was shown this had without discovery. We commend this case to the notice of the Medico-Political Committee in view of their amendment of the Medical Acts now before the profession. We commend it also to the General Medical Council as one worthy of the notice of the Personation Committee.

THE PLEA OF GUILTY.

IN the case of R. *v.* Breeze, which was heard on July 16th, at the Durham Assizes, the prisoner, a pitman, aged 21, was charged with the wilful murder of a young woman named Annie Chisholm, at Seaham Harbour, on July 6th.

Mr. H. Hamilton and Mr. Trotter prosecuted: Mr. W. V. Ball (at the request of the learned judge) defended the prisoner.

When put on his arraignment, the prisoner pleaded guilty to the charge of wilful murder. The Judge then directed an issue to try whether the prisoner was fit to plead. Dr. Gilbert, Medical Officer of the Durham Prison, said that he had had the prisoner under observation since his arrest. In his opinion, the prisoner was now fit to plead and was able to appreciate the nature of the charge which had been preferred against him. The Jury then found that the prisoner was fit to plead.

The prisoner having renewed his plea of guilty, the learned Judge said there was only one course open to him. The state of the prisoner's mind at the time when the crime was committed would be inquired into. His Lordship then passed sentence of death.

The facts of the above case are somewhat extraordinary. It appears that the prisoner had been living for some time with Chisholm and his wife. The prisoner was very much attached to the wife, but he never made any improper overtures to her. On July 6th he strangled her when her husband had gone to work, and shortly afterwards gave himself up to the police, making a written confession, and expressing a desire to be hanged at once. The following is a copy of the evidence which Dr. Gilbert was prepared to give:

"George Breeze has been under constant observation in hospital here since his committal, and I have frequently and carefully examined him as to his mental condition now and at the time of the act. He has been unhappy for five months owing to deceased's marriage. He went to live with them to be near her, as he loved her dearly. On the night before he was sleeping fitfully, clenching and unclenching his hands. When he got up the woman was sitting in a chair at breakfast, when impulse came

over him and he seized her by the throat. He has read *Tales of Famous Crimes*, and *Dick Turpin* is his favourite book. He is fond of strong melodrama, and is anxious to see 'Stranglers of Pain.' He is very vain and grand in his ideas, and says he never had any difficulty in getting girls to go out with him. His sisters and brothers are excitable and neurotic. He laughs and shows no contrition for his act. In my opinion he suffers from impulsive insanity."

A "HOME" NOT LICENSED FOR THE RECEPTION OF LUNATICS.

A CASE bearing intimately on lunacy law occurred the other day. It was that of an insane female, who, after being placed in the charge of the proprietress of a nursing home not licensed for the reception of lunatics, was subsequently removed therefrom and sent to a public infirmary where she died. The case then came before a coroner's court where the facts were elicited. As the case may, possibly, be the subject of further proceedings we will confine ourselves, on the present occasion, to a summary of the observations of the coroner, Mr. Troutbeck, drawn from the columns of the *Morning Advertiser*.

The Coroner said that it was clear that the deceased was insane and that the insanity was recognized when she first called on her sister. He could well understand how reluctant the relatives were that the deceased should be certified as insane, but the whole policy of our law was to ensure that when persons were insane they should be treated by authorized persons, and that it should not be possible for an insane person to be spirited away to an unauthorized place, and attended by incompetent persons. As to the unauthorized home to which the deceased was taken, the medical attendant admitted that he did not know of the place until he was recommended to it, and there was no doubt that he was misled. The person keeping the home had had no training at all either as a nurse or lunatic attendant, and the young person, who was "a sort of a kind of nurse," had had no training in any way, except that she had once nursed an epileptic patient. This was not the kind of institution to which to entrust a person who was on the borderland. He also touched upon the treatment to which the patient was subjected at the home. She was extremely violent at first, and sleeping draughts were poured down her throat almost every night. This was the way in which she was kept quiet. From what the proprietress said in the witness-box one would have thought she would be only too glad to be rid of the patient, but when it came to a question of her leaving she clung to her and declared she was not fit to leave, and in the end objected to a stretcher being taken upstairs for the patient, on the ground that the neighbours might not like to see it.

The jury returned a verdict of death from natural causes, and added their opinion that further inquiry should be made into the case.

PRESS NOTICES OF MEDICAL MEN.

EXCELSIOR sends us a cutting from a newspaper published in Wales, headed "Brief Sketch of a Remarkable Young Doctor," in which, under the reproduction of a photograph, a somewhat high-flown description is given of the student career of a local practitioner who is stated to have just "obtained first-class honours in the M.D. Examination, and come out at the very top of the list of graduates." The same event is also celebrated in another Welsh paper. One curious feature of both these reports is that Professor Haycraft of Cardiff figures in one as Professor A. Croft and in the other as Professor A Craft. We thought the Welsh used aspirates, but perhaps this was a Cockney reporter. As we have frequently expressed our disapproval of such notices, and the Ethical Committee has undertaken to represent to newspaper editors the undesirability of publishing them, we have handed these papers to that Committee.

PRACTITIONER.—We think the local medical profession has it in its power to check such incidents. If the matter were brought before the Division or Branch and the local medical societies, and resolutions passed pointing out in suitable language the objections entertained by the medical profession to such notices, we believe that the editors of at least the more respectable papers would pay attention to the request. The Ethical Committee has issued a circular of this kind to the London press, and to some provincial papers; we will refer this matter to it.

FEES DUE FROM DECEASED PATIENT'S ESTATE.

A CORRESPONDENT asks whether a medical practitioner who attends a person during his last illness has any priority of claim for his fees over other creditors.

*** A medical practitioner has no priority over other creditors.

CERTIFICATE IN CASE SEEN BY A BONESETTER.

A CORRESPONDENT writes that he was recently consulted by a club patient for an injury to his shoulder. He told the patient there was nothing wrong beyond a sprain, but to make certain the latter thought it necessary to consult a bonesetter. Later on he came again to our correspondent to get his club certificate signed, and it is asked whether it is right for a medical practitioner to sign a club certificate under such circumstances.

*** Not if the patient is under the treatment of the bonesetter. If the bonesetter has merely been consulted, while the doctor's directions have been carried out, the better practice is to ignore the former altogether.

FEE FOR CONSULTATION WITH SOLICITOR.

Z.—A reasonable charge for a consultation with a solicitor at his rooms in the cases mentioned would be two guineas for each case.

HOSPITAL AND DISPENSARY MANAGEMENT.

WESTERN OPHTHALMIC HOSPITAL.

AT the Western Ophthalmic Hospital, Marylebone Road, a new out-patient Department has lately been built at a cost of £4,600. This was opened by the Marquis of Ripon, K.G., who was supported on the platform by the Mayor of Marylebone and by Mr Diggle, the Chairman of the Committee, Sir Reginald Hanson, the Honorary Treasurer, and Sir Anderson Critchett. This department, which is fitted up in the most improved style, will greatly facilitate the work connected with the out-patients. The Committee hopes before long to be in a position to rebuild the in-patient department, and so make the hospital complete in every way.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL COLLEGE.

Prize Distribution.

THE great hall of St. Bartholomew's Hospital was filled by the students and their friends on July 18th on the occasion of the distribution of prizes to the successful students by the Bishop of London.

The Warden of the hospital, Mr. W. D. Harmer, first read his report, which stated that the number of students who entered during the year was 133 as contrasted with 120 in the previous year. The total number of students who worked at the hospital was given at 601. A new departure has been made in the establishment of a department for teaching the diseases of children, which has been placed under the charge of Dr Garrod and Dr. Morley Fletcher. The title of "Secretary of the Medical School" has been changed to "Dean," and the first Dean of St. Bartholomew's Hospital is Mr. Waring. The new out-patient department, the foundation-stone of which was laid by the King a short time ago, will be erected on the new property purchased from the Governors of Christ's Hospital, and the building operations will not in any way interfere with the current work of the hospital and school. The new out-patient department will be ready for use in the course of about eighteen months. Mr. Harmer concluded his report with the gratifying announcement that the appeal which had been made for the rebuilding of the hospital had been very warmly supported by many St. Bartholomew's men. Up to the present time over £7,000 had been subscribed or collected by them, and in addition a special fund had been organized for a new pathological block, which was urgently needed to meet the requirements of modern science. A sum of over £850 had been already subscribed to the fund, and it was hoped that sufficient would be collected to enable this further addition to be made to the Medical School. The Brackenbury Scholarship in Surgery was awarded to A. Hamilton, the Brackenbury Scholarship in Medicine was won by A. R. Neligan, and the Lawrence Scholarship and Gold Medal in Medicine was taken by C. M. H. Howell.

The Bishop of London, in the address he gave the students after presenting the prizes, spoke of the essential unity and connexion between his and the medical professions, for were they not both in their own way searching after truth? In his opinion the members of the medical profession were just as much the priests of humanity as the men bers of his own profession. He ascribed the spreading of "Christian Science" to the slipping away of doctors from the sacred part of their calling

A cordial vote of thanks to the Bishop of London was proposed by Dr. Gee, seconded by Mr. Bruce Clarke, and passed with acclammation.

WESTMINSTER HOSPITAL MEDICAL SCHOOL.

The annual distribution of prizes to the students of the Westminster Hospital Medical School took place on the afternoon of Friday, July 15th. Colonel Sir Frederic Cardew, K.C.M.G., late Governor of Sierra Leone, who presided, after presenting the prizes spoke to the students of some of the problems that they might help to solve in their future career. One of the great national problems of the present time was the physical health of the people and its bearing on the manning of the army and navy. The teaching and experience of the medical profession must be one of the greatest determining factors in its solution and the help of the profession was required to settle the influences on physical health of town life, of alcohol, and of the ignorance on the part of mothers of the proper management of children,

Dr. Allchin, Senior Physician to the Hospital, proposed a vote of thanks to Sir Frederic Cardew, and in doing so welcomed the growing tendency of the Government departments to seek for skilled medical advice from the great colleges and universities when grappling with problems of national importance. He also emphasized the great work that was done by the hospitals in educating the practitioners in medicine, and pointed out that this was perhaps their most important work and constituted their greatest claim for monetary support.

The vote of thanks was cordially seconded by Colonel Sparkes, and carried by acclamation.

Prizes were presented to the following gentlemen: G. R. Ward, Scholarship of 110 guineas and Treasurer's Prize: H. Austin Smith, Scholarship of £60; A. Davies, Scholarship of £60; R. Brown, Scholarship of £40 and Prizes for Medicine and Surgery; C. F. Dawson-Smith, Scholarship of £30; H. Hingston, Scholarship of £60: R. Asplen, Scholarship of £40; G. F. Carr, Prizes for Practical Chemistry, Physics, and Biology; E. G. Foote, Prize for Practical Chemistry; L. White, Midwifery Prize; J. J. W. Evans, Histology Prize; C. Fletcher, Pharmacology Prize; R. S. Dollard, the Sturges Prize for Clinical Medicine, and the Forensic Medicine Prize; and G. G. James, Prizes for Anatomy and Physiology.

UNIVERSITY OF EDINBURGH.

FIRST PROFESSIONAL EXAMINATION.

THE following candidates have passed the First Professional Examination in the subjects undernoted:

Physics.—R. J. Allsopp, H. M. Anderson, A. Baldie, J. Black, F. A. J. Brodziak, E. S. Browne, R. W. Burton, J. T. Carson, J. J. P. Charles, P. H. Chauvin, Gladys H. Cook, H. S. Cormack, F. G. Gowan, W. S. Crauford, F. Dillon, Euphemia L. Farmer, F. P. Gibson, H. R. B. Gibson, J. Gilchrist, R. L. Girdwood, J. G. Gow, C. Grant, H. J. Guthrie, J. Hewat, E. B. Hoffman, A. E. Hucker, G. de C. Hugo, H. Hutson, K. R. K. Iyengar, A. Jamieson, W. P. S. Johnson, R. O. Jollie, C. L. Laurent, H. R. Lawrence, J. H. Lawry, J. S. Levack, H. A. V. Loots, J. C. Lorraine, G. H. Lowe, F. R. Lucas, R. Macdonald, D. L. McKenna, A. M'Nair, D. M'Nair, A. F. Miller, W. A. Miller, F. L. Moore, N. S. Neill, I. A. van Niekerk, W. J. Nisbet, H. O. O'Neill, J. J. Pace, T. G. Park, H. R. A. Philp, N. D. Pringle, F. W. Rayment, N. D. Rees, C. S. Sandeman, J. C. Simpson, E. W. Smerdon, N. G. Thornley, Mary M. M. Turpie, F. H. de Villiers, W. S. Watson, N. J. Watt, P. Wheeler, B. H. Willoughby, G. Wilson, R. C. Wuppermann.

Botany.—D. C. Adam, J. R. Adam, R. J. Allsopp, H. M. Anderson, Janet Armstrong, Alice E. M. Babington, Margaret W. Bartholomew, Lydia D. le T. Bateman, Elizabeth M. A. Baxter, A. R. Bearn, A. E. C. Beausoleil, B. J. W. Bennetts, W. M. Biden, J. Black, T. C. Borthwick, A. M. Bose, T. S. Bradburn, W. G. Brand, J. Brander, F. A. J. Brodziak, J. A. Browne, J. E. Brydon, W. F. Buist, A. W. Burton, Sarah E. Buyers, J. A. Campbell, E. Cansfield, G. J. Carr, J. T. Carson, L. L. Cassidy, J. Cathcart, Jean G. Cathels, W. D. Chambers,

J. J. P. Charles, P. H. Chauvin, W. F. Christie, W. G. Coltart, H. A. Cookson, D. G. Cooper, F. G. Cowan, N. A. Coward, J. C. Craig, W. S. Crawford, Emillie C Creaser, J. S. Crichton, J. M. Dalrymple, R. W. Davies, W. N. Davies, Jemima B. Dickie, J. K. M. Dickie, F. Dillon, J. W. C. Drover, F. A. Dufield, W. J. Duncan, A. H. Elmslie, A. C. England, Euphemia L. Farmer, Helen Forbes, W. C. Fragoso, E. L. Galletly, W. T. Gardiner, C. J. H. Gatchell, M. Gavin, A. Gibson, H. R. B. Gibson, A. I. Girdwood, A. S. Glynn, J. A. Gordon, W. E. Goss, J. G. Gow, A. T. Gowan, W. T. Graham, C. Grant, D. M. Grant, J. C. B. Grant, F. W. Greaves, W. P. Grieve, J. A. W. Hackett, A. G. Hamilton, R. H. Hamilton, R. Hannah, Julia V Henslow, J. Hewat, E. B. Hoffman, J. A. Hoyes, R. L. Hughes, J. D. Ingram, G. L. W. Iredale, W. H. Irving, K. R. K. Iyengar, F. E. Jardine, W. C. Jardine, W. D. S Johnston, R. O. Jollie, J. H. Jones, E. W. Kirk, R. Krause, Lina Kurz, J. Langwill, C. L. Laurent, R. D. Lawrie, H. R. Lawrence, J. H. Lawry, R. S. Lawson, L. Leslie, J. E. Levack, Margaret M. Lindsay, H. Lipetz, H. A. V. Loots, P. C. Lornie, J. C. Lorraine, H. F. Lumsden, J. F. H. Lutze, D. C. Macaskill, Margaret M'Cahon, A. D. MacCallum, J. C. MacCullam, J. R. M'Gregor, R. F. D. Macgregor, G. E. G. Mackay, A. S. Mackenzie, A. D Mackenzie, K. Mackenzie, D. Mackinnon, I. U. MacLennan, A. G. MacLeod, G. V. T. M'Michael, W. M. Macnab, A. Macnair, D. Macnair, D. M'Phail, R. C. MacQueen, A. J. Macvie, A. C. Mallace, J. Marshall, J. Malloch, Eva Meredith, E. L. Middleton, A. F. Miller, R. W. Miller, A. R. Milroy, J. A. Mitchell, L. M. V. Mitchell, V. P. Mondon, J. A. Mortimer, Anna L. Muncaster, N. S. Neill, I. A. van Niekerk, W. J. Nisbet, E. F. W. Nixey, A. C. Norman, H. O O'Neill, W. H. Pallett, H. F. Panton, C. A. Paterson, H. Paterson, R. J. E. Paterson, W. C. Paton, A. B. Pearson, J. H. Peek, Florence J. Pollock, A. R. Price, Laura W. Pugh, K. A. Rahman, M. D. Rees, J. Renwick, F. E. Reynolds, E. W. Richards, J. B Richardson, C. Robertson, D. Ross, S. Rowlands, Jessie A. Scott, J. Scott N. N. Sen, Wilhelmina Sievwright, W. K. Sim, K. Simpson, G. H. Sinclair, W. Skirrow, E. W. Smerdon, H. F. Smith, W. N. van Someren, J. E. Spence, J. D. G. Stewart, W. Stewart, E. A. Strachan, C. P. A. Stranaghan, L. B. Stringer, R. K. S. Sutherland, G. P. Taylor, H. W. Teague, J. J. Thomson, W. S. Thomson, N. G. Thoruley, R. Thorpe, R. Verel, F. H. de Villiers, A. A. Walbrugh, E. A. Walker, W. C. Walker, L. E. B. Ward, J. Ware, F. W. Waterworth, A. P. Watson, H. B. Watson, T. Welsh, H. L. W. Wemyss, J. P. Whetter, R. A. C. Wilkes, E. V. Williams, J. Wilson, D. W. Woodruff, R. C. Wuppermann, R. B. M. Yates, Margaret C. Young, W. A. Young.

UNIVERSITY OF ABERDEEN.

EXAMINATION FOR M.B., CH.B.

THE following candidates have passed examinations as under:

Second Professional Examination for the Degrees of M.B., Ch.B.—H. Begg, W. Begg, *F. J. Browne, *T. Chalmers, J. M. Clark, J. Donaldson, A. D. Fraser, J. F. Grant, A. P. Hall, G. F. J. Hendry, S. C. Howard, W. B. Keith, E. K Mackenzie, J. R. Mackenzie, †W. A. H. McKerrow, N. P. Macphail, D. J Marr, Sophie Jean Meiklejohn, A. N. E. Rodgers, G. E. Ross, H. Smit, R. Sturrock.

Third Professional Examination.—J. Adams, Mary E. Bisset, A. Brown, D. Coutts, W. Dalgleish, A. Dawson, A. M. Donaldson, F. W. Falconer, R. A. Forster, A. S Garden, C. B. Gerrard, A. W. Laing, J. S. McConnachie, J Macdonald, J. A. Milne, A. Mitchell, G. E. A. Petrie, J. Proctor, W. E. Reid, J. Sangster, J. Silver, D. T. Skeen, R. N. Thomson, F. H. Welsh, and G. Wilson.

* Distinction. † Much distinction.

UNIVERSITY OF GLASGOW.

THE following have been successful at the Final Examination for the degrees undernoted:

M.B., C.M.—S. Dunbar, E. M. Watkins.

M.B., Ch.B.—B. S. Alexander, A. C. Amy, H. G. Anderson, J. R. S. Anderson, R. D. Bell, M.A.; D Blackley, E. Brechin, C. Brown, G. Y. Caldwell, Roberta Campbell, T. M. Campbell, M.A.; P. Carrick, M.A.; R. B. Carslaw, M.A.; J. A. Cowie, B.A., B.Sc.; T. T. M. Dishington, C. M. Drew, M.A.; H. H. Fulton, J. Graham, B.Sc.; G. M. Gray, J. C. Henderson, J. R. Kerr, J. Kerr, Ethel M. Lochhead, P. Lowe, M.A., B Sc.; T. S. Macaulay, J. D. M'Callum, M.A.; D. C. M'Cormick, N. M'Dougall, J B. M'Ewan, T. D. M'Ewan, D. Macfadyen, J. M'Farlane, A. S M. Macgregor, J. M'Houl, R. Mackinnon, A. B. M'Pherson, J. R M'Vail, J. Marshall, A. Meek, Margaret W. Millar, D. R. Mitchell, J. Muir, J. Murdoch, A. H. Napier, G. C. Nielson, T. Orr, Charlotte R. Park, H. H. Patrick, J. C. Pickup, A. M. Pollock, J. Porter, W. M. Rae, W. Rankin, M.A.; D. R. Reid, B. H. Robertson, M.A., B.Sc.; L. D. Shaw, G. G. Smith, B.Sc.; Jessie M. Stewart, W. C Stewart, M. R. Taylor, W. Templeton, J. W. Thomson, W. Y. Turner, M.A.; H. F. Warwick, R. M. Wilson, Annie M. Yates, H. Young.

The following passed with distinction:

*†T. Orr, *‖R. B Carslaw, M.A., †Margaret Hardy, †A. Innes, †Ethel M. Lochhead, †D J McCallam, M.A., †G. G. Smith, B Sc., †R. M. Wilson, *R. D. Bell, M.A., *D. Blackley, *H. H. Fulton, *T. D. McEldan, *J. Murdoch, *H. M Pollock, *W. Rankin, M.A., *D. R. Reid, *W. Templeton, *W. Y. Turner, M.A., ‖F. Brechin, ‖P. Carrick, M.A., ‖L. L. Greig, ‖Margaret W. Miller, ‖D. R. Mitchell, ‖H. H. Patrick, ‖D. Penman, ‖W C. Stewart, ‖J. Unsworth.

* Practice of Medicine and Clinical Medicine. † Surgery and Clinical Surgery. ‖ Midwifery.

UNIVERSITY OF MANCHESTER.

A RESEARCH Fellowship in Sanitary Chemistry has been awarded to Dr. W. B. Ramsden. The Dauntsey Entrance Medical Scholarships were awarded to Marion Stocks and A. E. Woodall, and the Dumville Surgical Prize to Philip Talbot.

Proposed Abolition of Honours Classes.

At the recent inter-university meeting of students held at the Manchester University Professor Schuster moved the following resolution on the reform of University degree courses, which was carried: "That greater freedom should be given for the degree courses to allow more time for private study and research, and that the best means for securing the additional time required would be found in the abolition in the degree lists of all divisions into classes as the result of examination only." This is a far-reaching though not a novel proposal. If generally adopted it would have important bearings on the regulations for the degree for Doctor of Medicine. Some of the English and also the Scottish universities have altered the conditions to be fulfilled for this degree. Formerly in all the Scottish universities, as in all European universities, the degree was conferred after presentation of an approved thesis. Now this is greatly changed: in some cases a thesis must be presented to be supplemented by an examination on certain specified departments of medicine. Hitherto the Victoria degree has only been obtainable by presentation of a dissertation.

UNIVERSITY OF LIVERPOOL.

The Visit of the King and Queen.

ON the occasion of the visit of the King and Queen to Liverpool on July 10th, Dr. Dale, Vice-Chancellor, was introduced by Lord Derby, Chancellor of the University, and read a loyal address in which the gratitude of the University was expressed at the Royal Charter which had been granted to it. The King, in reply, said that it was a source of sincere gratification to him to have been able to grant a charter to the University. Though the period which had elapsed since the granting of the charter had been but short, the efforts made for the advancement of knowledge by the authorities were deserving of the highest eulogy, and would ultimately, he did not doubt, be rewarded by results worthy of so great a city. The King added that he was conscious that the development of all branches of literary and scientific education was of the greatest importance in furthering the high objects which all had at heart. He earnestly hoped that every success would attend the prosecution of the great work which had been entrusted to the University.

Post-Graduate Courses.

As announced in our Special Correspondence on June 11th, a post-graduate vacation course on recent methods of medical investigation will be given in the Faculty of Medicine, commencing on August 2nd and terminating on August 13th. Included in it will be ten lectures on the following subjects: Uric Acid and the Purin Bases, Anaesthesia, Acid Intoxication and Coma, Diabetes, Internal Secretion, the Ductless Glands and their Diseases, Disinfection and Sterilization, Immunity, the Malaria-Mosquito Cycle, Trypanosomiasis and Sleeping Sickness and Mode of Transmission, Diseases of the Blood, the Etiology of Cancer, the Clinical Applications of Bacteriology. These lectures will be given at noon, and be preceded (at 10 a.m.) and followed (at 2 p.m.) by practical work on Haematology, Bacteriology, Parasitology, Bio-Chemistry, Morbid Anatomy and General Pathology, Electrical Methods of Treatment, Ophthalmoscopy. A second course, to commence on August 16th and terminate on August 27th, will consist of lectures, accompanied by the clinical demonstration of cases, at the hands of teachers of the general and special hospitals of Liverpool, recognized by the University for such teaching. The fee for either course is £5 5s. Board and lodging during each course will be provided for a limited number of those attending the courses at the University Hall of Residence for £3 3s. The Dean of the Faculty of Medicine will also endeavour to obtain suitable quarters for other members of the classes, if early application be made to him.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council was held on July 14th, Mr. John Tweedy, President, in the chair.

Election on Council.

The President reported the results of the election for three members of the Council (these have already been published in the BRITISH MEDICAL JOURNAL of July 9th, 1904, p. 80). He stated that Mr. Eve, being third on the ballot, became substitute member of the Council for the late Mr. T. R. Jessop. The President added that 810 Fellows had voted, of whom 803 had sent their ballot paper by post, 1 ballot paper was invalid, and 5 arrived too late.

Votes of Condolence.

These were passed in regard to the decease of Mr. John Birkett, past-President and past-Member of the Council and of the Court of Examiners; and of Mr. Edward Trimmer, Secretary of the College from 1865 to 1901.

Recognition of Institutions.

The Committee of Management of the Royal Colleges recommended that the following institutions, which have been visited by a Member of the Committee and reported as fulfilling the requirements of the Board, be added to the list of institutions recognized by the Examining Board in England for instruction in Chemistry, Physics, and Practical Chemistry: Leeds Institute of Science and Art, Oundle School, and Highgate School. The Committee also recommended that the North-Eastern Hospital for Children be recognized as a place of study during the fifth year of the curriculum under the conditions of Clause 10, Paragraph XXI, Section II of the Regulations.

These recommendations were adopted by the Council.

Loan of Museum Specimens.

Applications from the University of London and from the Royal Army Medical College for the loan of museum specimens for examination purposes were granted.

Appointment of President, etc.

Mr. John Tweedy was re-elected President for the ensuing year: and Mr. A. W. Mayo Robson and Mr. H. T. Butlin were elected Vice-Presidents.

The following gentlemen were elected to be Lecturers, namely:

Hunterian Professors (three lectures each).—Clinton Thomas Dent, William Sampson Handley, John Percy Lockhart Mummery, Marmaduke Stephen Mayou.

Erasmus Wilson Lecturers.—Leonard Stanley Dudgeon (two lectures), Percy William George Sargent (one lecture).

Arris and Gale Lecturer (three lectures).—Donald John Armour.

Antitoxin Committee of the Lister Institute.

A letter, dated July 4th, was read from Dr. Charles J. Martin, Director of the Lister Institute of Preventive Medicine, stating that the Governing Body of the Institute had deemed it advisable to appoint a small Antitoxin Advisory Committee "to consider and report upon important questions concerning the value and standardization of various antitoxic and other sera," and inviting the President of the College to become a Member of the Committee. The President undertook this duty.

Date of Next Council.

This was fixed for July 28th.

Association of Members.

We are informed that an intermediate meeting of this Association was held in Manchester on July 8th, Dr. J. Brassey Brierley in the chair. Several members from London, including Dr. Danford Thomas, Dr Dickenson, and Dr. Bott, and a good number of local influential men, many of whom were elected Members and one of these denounced in unmeasured terms the policy of the Fellows towards Members.

The meeting determined to use every effort to deprive these gentlemen of their exclusive right to election to the Council. Mr. R. E. Smith was elected local Honorary Secretary.

CONJOINT EXAMINATIONS IN IRELAND.

SECOND PROFESSIONAL EXAMINATION.—Candidates have passed this examination as undernoted:

With Honours.—D. Adams, V. Clifford, J. D'Alton, P. G. M. Elvery J. B Hanafin, P. M. Keane, C. Sheahan, T Sheehy, G. F. Shepherd.

Pass in all Subjects.—P. Blake, H. C. Carden, W. Carroll, N. E. Cussen, D. J. Hanafin, F. M. Hewson, E. Montgomery, J. B. McGlancy, D. O'Sullivan.

Completed Examination.—R. J. Bonis, L. L. Davys, M. R. J. Hayes, J. Humphreys, W. St. L. Moorhead, F. J. Morris, D. T. O'Flynn.

SOCIETY OF APOTHECARIES OF LONDON.

PRIMARY EXAMINATION.

THE following candidates have passed in the subjects noted:

Part I.

Biology.—I. Pulteney, Royal Free Hospital; B. R. Shillitoe, University College.

Chemistry.—E. G. Brisco-Owen, Cardiff; G. F. C. Harvey, London Hospital.

Materia Medica and Pharmacy.—F. M. Cunningham, Royal Free Hospital; C. J. Evans, St. Bartholomew's Hospital; C. S. Spencer, Manchester.

Part II.

Anatomy.—A. E. Blythman, Charing Cross Hospital; R. B. Dawson, Guy's Hospital; W. P. Pinder, Leeds; S. K Poole, Guy's Hospital; W. E. N. Smith, Durham; C. J. Wolfe, Edinburgh.

Physiology.—A. E. Blythman, Charing Cross Hospital; R. B. Dawson, Guy's Hospital; R. J W. McKane, Leeds; C. J. Wolfe, Edinburgh; R. P. Wilde, Manchester.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

THE HEALTH OF CORNISH MINERS.*

OF the 6,059 tin miners working in Cornwall, according to the census of 1901, 3,676 were employed underground. The health of tin miners has for long been a disquieting subject. Forty years ago Dr. Farr reported that the annual death rate of tin miners per 1,000 living between the ages of 45-55 was 29 7, and between 55-65, 63.2. Compared with these the numbers for the Cornwall people generally, not miners, were for the same years 12.2 and 20, and for Durham coal miners 16 8 and 24.4. The death-rates for Cornish miners 1890 2 were for ages 25 35, 8 1; 35 45, 14.3; 45 55, 33.2; and for 55-55, 66.1; while for 1900 2 and for the same age-periods the numbers were respectively 13.4, 27.9, 39 85, and 68.8. For coal miners 1890-2 and for the same age-periods the numbers were 6.3, 9 6, 19.4, and 43.8. High as was the death-rate of Cornish miners above the age of 40 during 1890-2, it rose considerably between the ages of 25 and 50 during 1900-2.

The excessive mortality among tin miners in Cornwall compared with occupied males generally and especially coal and ironstone miners is entirely due to lung diseases. Until 1892 the excessive mortality only affected men above 40 years of age, but during the last few years the death-rate from lung diseases has risen particularly in younger men, aged 25 to 45, with the result that the total death-rate at all ages from 25 to 55 is considerably greater than for the last fifty years. In the early age-periods it has been eight to ten times greater than the corresponding death-rate among coal and iron-stone miners.

An interesting point revealed by this inquiry undertaken by Dr. Haldane and Messrs. Martin and Thomas is that the higher death-rate of recent years is mostly due to the effect of work in the mines of South Africa. The Cornish mines are all metalliferous and at the present time the principal production is tin. Formerly copper was also extensively mined. In the Dolcoath mine the men are working at a depth of from 2 000 to 3,000 ft. Cornish mines are as a rule ventilated by natural means only, and not by large fans or by furnaces as is the case with coal mines. In deep mines currents of air are induced by differences in the temperature in the mine compared with that at the surface, and owing to the currents thus created the ventilation is adequate. The ore is obtained mostly by means of explosives and by drilling. Since the excessive mortality of tin miners is due to phthisis one of the causes that suggests itself as probable is a vitiated state of the underground atmosphere. To this might be added strain during the climbing of ladders and exposure to rapid variations of temperature on leaving the mines and wearing wet and insufficient clothing. But neither can any of these nor metallic poisoning be regarded as a primary cause of miners' phthisis. Carbonic acid, for example, is hardly ever present in excess in the mine and there is no deficiency of oxygen.

The impurity present in the air of tin mines which is in all likelihood responsible for the principal part in the causation of miners' phthisis, is dust. While some of the dust is produced during blasting by explosives, and also by the use of hand drills, the dust thus generated is nothing when compared with that given off by the machine drills driven by compressed air. Taking the Redruth district alone, in which two-thirds of the total of the Cornish miners find employment, it was ascertained that during the years 1900, 1901, and 1902 142 machine-drill men had died, and of these 133 had succumbed to lung diseases. Of these 142 men 63 had worked in mines abroad, 41 had worked both in Cornwall and abroad and 38 in Cornwall only. The average age at death of these men was 37.2, while of 179 men who died and who had never worked machine drills 120 died from lung diseases, the average age at death being 53. The mortality among machine-drill men is thus not only greater than among men not working machine drills, but occurs at an earlier age. From respiratory diseases the death-rate among machine men was found to be fifteen times, and the total death-rate about eight times that for average occupied males in this country; or, to make another comparison, "the death-rate among machine men from respiratory diseases was about thirty times and the total death-rate about ten times as great as that among colliers or ironstone miners of the same age."

It is between the ages of 25 to 45 that the greatest mortality from lung diseases is observed in machine-drill men, whereas in Cornish miners who have not worked machine drills the highest death-rate occurs at a later age, 55 to 65. The increased death-rate in Cornish miners for 1900-2 is due, therefore, to the increased mortality among machine men, and of these the majority have worked rock-drills in other countries, principally the Transvaal.

The nature and causes of miners' phthisis is discussed at considerable length, and forms an interesting chapter in the report. The lung disease of machine-drill men is much more rapid and acute than among ordinary miners. They suffer from shortness of breath and wasting, but often definite signs of consolidation are present until the disease is well advanced. According to the experience of Drs. Hichens and Permewan, of Redruth, and of Drs. Telfer Thomas and Tonking, of Camborne, the earliest signs of consolidation appear at the base of the lungs. Dr. Ritchie, of Oxford, found tubercle bacilli in the sputum of 17 of the 23 men suffering from phthisis. Reference is made to the examination of the lungs of two ganister miners by Dr. Andrews, and of his having found a fibrotic condition complicated by tubercle; also to the opinions expressed by Dr. T. Oliver and Professor Hamilton as regards the pathology of the malady at the annual meeting of the British Medical Association at Swansea last year. The report just issued states that:

> So far as the Cornish miners are concerned, it seems evident enough that the stone dust which they inhale produces permanent injury of the lungs—gradually in the case of ordinary miners, and rapidly in the case of machine-drill men—and that this injury, while it is apparently capable of gradually producing by itself great impairment of the respiratory functions, and indirectly of the general health, also predisposes enormously to tuberculosis of the lungs, so that a large proportion of miners die from tuberculous phthisis.

The death-rates of machine drill men and of coal miners, printers and agricultural labourers are compared, and lengthy extracts from the Report of the Transvaal Commission on miners' phthisis based upon that issued by the Transvaal Medical Society are given.

How to prevent dust in the mines and thus obviate miners' phthisis is discussed at considerable length. This is an interesting chapter of the report, dealing as it does with the wearing of respirators, for example, and showing their doubtful value. The one effective remedy—as proved by experiments carried out at Dolcoath—is the use of jets of water made to fall upon the rock at the time the drills are being worked by compressed air.

This Report on the Health of Cornish Miners, while it does not claim to have altogether exhausted the subject, is

* Report to the Secretary of State for the Home Department. By J. S. Haldane, M.D., F.R.S.(Oxford), Joseph S. Martin, H.M. Inspector of Mines, and R. Arthur Thomas, Manager of Dolcoath Mine. London: Messrs. Eyre and Spottiswoode. 1904. (Price 1s. 2d.)

yet a valuable contribution to the knowledge of the causes of miners' phthisis. It is an excellent piece of work, and reflects credit upon the contributors.

VITAL STATISTICS OF LONDON DURING THE SECOND QUARTER OF 1904.

In the accompanying table will be found summarized the vital statistics of the metropolitan boroughs and of the City of London, based upon the Registrar-General's returns for the second, or spring, quarter of the year. The mortality figures in the table relate to the deaths of persons actually belonging to the various boroughs, and are the result of a complete system of distribution of the deaths in public institutions among the several boroughs in which the deceased persons had previously resided.

The 32,536 births registered in London during the three months under notice were equal to an annual rate of 28.1 per 1,000 of the population, estimated at 4,648,950 persons in the middle of the year; in the corresponding quarters of the three preceding years the rates had been 28.8, 27.7, and 29.0 per 1,000 respectively, the average rate for the second quarters of the ten years 1894-1903 being 29.3. The birth-rates last quarter ranged from 13.0 in the City of London, 16.8 in the City of Westminster, 17.4 in Hampstead, 19.1 in Kensington, 20.5 in Chelsea, and 21.6 in Stoke Newington, to 31.4 in Poplar, 32.1 in Fulham, 32.7 in Bermondsey, 34.7 in Bethnal Green, 36.5 in Finsbury, and 39.9 in Stepney.

The 16,546 deaths of persons belonging to London registered during last quarter were equal to an annual rate of 14.3 per 1,000, against 15.5, 15.7, and 14.2 per 1,000 in the second quarters of the three preceding years; in the corresponding quarters of the ten preceding years the mean rate was 16.1 per 1,000. The death-rates last quarter in the various metropolitan boroughs ranged from 9.6 in Hampstead, 10.8 in Paddington, 11.3 in Lewisham, 11.6 in Wandsworth, 12.0 in Greenwich, and 12.1 in the City of Westminster and in Stoke Newington, to 17.5 in Bethnal Green, 17.7 in Stepney, 18.2 in Holborn, and 19.0 in Finsbury, in Southwark, and in Bermondsey.

During last quarter 1,981 deaths were referred to the principal infectious diseases; of these, 12 resulted from small-pox, 930 from measles, 81 from scarlet fever, 163 from diphtheria, 505 from whooping-cough, 42 from enteric fever, 2 from ill-defined pyrexia, and 246 from diarrhœa, but not any from typhus. These 1,981 deaths were equal to an annual rate of 1.71 per 1,000, against an average rate of 2.11 per 1,000 in the corresponding quarters of the ten preceding years. The lowest death-rates last quarter from these infectious diseases were 0.48 in Paddington, 0.51 in Hampstead, 0.61 in the City of Westminster, 0.68 in the City of London, 0.81 in Lewisham, and 0.85 in Stoke Newington: while the highest rates were 2.19 in Shoreditch, 2.39 in Bethnal Green, 2.46 in Poplar, 2.52 in Stepney, 2.66 in Deptford, 3.25 in Bermondsey, and 3.74 in Southwark. Measles showed the greatest proportional fatality in Holborn, Bethnal Green, Stepney, Southwark, Bermondsey, and Deptford: scarlet fever in Islington, Finsbury, Bethnal Green, Poplar, and Woolwich; diphtheria in Hammersmith, Hackney, Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar; whooping-cough in Shoreditch, Stepney, Southwark, Bermondsey, Deptford, and Woolwich; "fever" in Paddington, St. Pancras, Islington, Holborn, and Bermondsey; and diarrhœa in Fulham, Finsbury, the City of London, Shoreditch, Stepney, and Battersea. Of the 12 fatal cases of small-pox, 3 belonged to Stepney, 2 each to Paddington, Bethnal Green, and Poplar, and one each to Kensington, Holborn, and Finsbury.

During the last quarter 1,815 deaths from phthisis were registered, equal to an annual rate of 1.57 per 1,000, against 1.57, 1.52, and 1.47 in the corresponding quarters of the three preceding years. Among the various metropolitan boroughs the lowest death-rates from phthisis last quarter were recorded in Hammersmith, Fulham, Hampstead, Battersea, Wandsworth, and Lewisham; and the highest rates in Holborn, Shoreditch, Bethnal Green, Stepney, Southwark, and Bermondsey.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 107 per 1,000. The rates of infant mortality during the quarter under notice were lowest in Paddington, St. Marylebone, Hampstead, Stoke Newington, Holborn, and Woolwich; while the highest rates were recorded in the City of London, Bethnal Green, Stepney, Poplar, Southwark, and Bermondsey.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,337 births and 4,019 deaths were registered during the week ending Saturday last, July 16th. The annual rate of mortality in these towns, which had been 13.5 per 1,000 in each of the two preceding weeks, increased last week to 13.7 per 1,000. The rates in the several towns ranged from 4.8 in Bournemouth, 5.8 in Hornsey, 6.0 in Smethwick, 7.1 in Bury, 7.5 in Walthamstow and in West Hartlepool, 8.5 in Wolverhampton, 8.6 in King's Norton, and 8.7 in Handsworth (Staffs.), to 18.7 in Salford, 18.8 in Stockport, 19.2 in Burton-on-Trent, 19.4 in Middlesborough, 19.6 in Liverpool, 21.3 in Rhondda, 22.5 in Huddersfield, and 26.2 in Bootle. In London the rate of mortality was 12.9 per 1,000, while it averaged 14.1 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.7 per 1,000; in London this death-rate was equal to 1.6 per 1,000, while among the seventy-five other large towns the rates ranged upwards to 2.9 in Walsall and in St. Helens, 3.2 in Stockport, 3.4 in Rhondda, 3.8 in Huddersfield, 4.1 in Birkenhead, 4.3 in Liverpool, and 8.4 in Bootle. Measles caused a death-rate of 1.4 in Brighton, 1.9 in Liverpool, 2.0 in Salford, 2.2 in Huddersfield, 2.4 in St. Helens, and 5.9 in Bootle; scarlet fever of 1.1 in Northampton; diphtheria of 1.4 in Merthyr Tydfil; whooping-cough of 1.4 in Birkenhead and 2.0 in Burton-on-Trent; and diarrhœa of 1.3 in Gateshead and in Aston Manor, 1.4 in Norwich, 1.6 in Willesden, in West Bromwich, and in Liverpool, 1.7 in Walsall and in Rhondda, and 2.5 in Bootle. The mortality from enteric fever showed no marked excess in any of the large towns. Two deaths from small-pox were registered in Newcastle-upon-Tyne, and one each in Tottenham, in Stockport, and Gateshead. The Metropolitan Asylums Hospitals contained 62 small-pox patients at the end of last week, against 83, 74, and 71 at the end of the three preceding weeks; 7 new cases were admitted during the week, against 10, 10, and 10 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,629, 1,631, and 1,685 at the end of the three preceding weeks, had further risen to 1,698 at the end of last week: 229 new cases were admitted during the week, against 199, 254 and 269 at the end of the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, July 16th, 980 births and 488 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 15.9, 16.3, and 15.8 per 1,000 in the three preceding weeks, further declined last week to 14.8 per 1,000, but was 1.1 per 1,000 in excess of the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-

Analysis of the Vital Statistics of the Metropolitan Boroughs and of the City of London after Distribution of Deaths occurring in Public Institutions during the Second Quarter of 1904.

BOROUGHS.	Estimated Population middle of 1904.	Births.	Deaths.	Annual Rate per 1,000 Living.			Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Typhus.	Enteric Fever.	Simple and Ill-defined Fever.	Diarrhœa.	Phthisis.	Deaths of Children under 1 year of age to 1,000 Births.
				Births.	Deaths.	Principal Infectious Diseases.												
COUNTY OF LONDON	4,648,950	32,536	16,546	28.1	14.3	1.71	1,981	12	930	81	163	505	—	42	2	246	1,815	107
Paddington	146,975	886	396	24.2	10.8	0.48	18	2	4	—	2	1	—	3	—	6	49	76
Kensington	179,236	853	571	19.1	12.8	0.86	39	1	18	1	4	5	—	2	—	8	55	121
Hammersmith ...	117,412	755	371	25.8	12.7	1.60	47	—	27	—	7	5	—	1	—	7	32	102
Fulham	152,482	1,220	521	32.1	13.7	1.76	67	—	26	2	4	19	—	2	—	14	42	114
Chelsea	74,329	379	289	20.5	15.6	0.85	16	—	3	—	1	11	—	—	—	1	36	103
City of Westminster ...	177,321	741	533	16.8	12.1	0.61	27	—	4	3	4	5	—	1	—	10	60	103
St. Marylebone ...	130,337	973	465	29.9	14.3	1.01	33	—	22	2	4	3	—	1	—	3	56	62
Hampstead	86,663	376	208	17.4	9.6	0.51	11	—	8	—	—	1	—	—	—	2	19	80
St. Pancras	235,936	1,552	855	26.4	14.5	1.67	98	—	34	6	10	34	—	3	—	11	80	101
Islington	341,044	2,287	1,109	26.9	13.0	1.42	121	—	75	10	4	19	—	5	—	8	110	95
Stoke Newington ...	52,445	283	158	21.6	12.1	0.85	11	—	3	—	2	4	—	1	—	1	23	85
Hackney	226,266	1,520	713	26.9	12.6	1.51	85	—	32	5	13	24	—	3	—	8	80	99
Holborn	57,161	388	259	27.2	18.2	1.68	24	1	16	—	1	2	—	2	—	2	30	75
Finsbury	98,958	900	468	36.5	19.0	2.06	51	1	17	6	6	13	—	—	—	8	48	109
City of London ...	23,482	76	101	13.0	17.3	0.68	4	—	—	—	—	2	—	—	—	2	10	132
Shoreditch	117,033	903	500	31.0	17.1	2.19	64	—	22	3	6	19	—	—	—	14	71	118
Bethnal Green ...	130,207	1,127	569	34.7	17.5	2.39	78	2	42	5	8	16	—	—	1	4	79	129
Stepney	303,791	3,024	1,339	39.9	17.7	2.52	190	3	86	8	16	52	—	3	—	24	176	125
Poplar	169,905	1,332	681	31.4	16.1	2.46	104	2	43	7	22	20	—	1	—	9	72	126
Southwark	207,937	1,607	987	31.0	19.0	3.74	194	—	122	5	8	45	—	2	—	12	126	136
Bermondsey	129,397	1,056	614	32.7	19.0	3.25	105	—	68	1	4	21	—	1	1	9	78	131
Lambeth	310,359	2,279	1,110	29.5	14.3	1.82	142	—	70	5	7	45	—	1	—	14	116	102
Battersea	175,465	1,181	561	27.0	12.8	1.38	1	—	25	1	3	12	—	1	—	19	52	119
Wandsworth	257,448	1,798	763	28.0	11.9	1.30	84	—	33	1	13	17	—	3	—	17	59	90
Camberwell	268,384	1,793	865	26.8	12.9	1.64	110	—	50	3	4	38	—	3	—	6	101	101
Deptford	113,509	814	429	28.8	15.2	2.66	75	—	47	1	1	19	—	—	—	7	36	122
Greenwich	101,651	642	305	25.3	12.0	1.66	42	—	25	1	4	15	—	1	—	6	34	104
Lewisham	140,401	914	396	26.1	11.3	0.81	26	—	1	2	2	14	—	1	—	8	34	93
Woolwich	123,416	877	410	28.5	13.3	1.69	52	—	23	5	7	24	—	1	—	6	51	83

rates ranged from 6.2 in Perth and 12.3 in Leith, to 16.1 in Paisley, and 17.5 in Dundee. The death-rate from the principal infectious diseases averaged 1.6 per 1,000, the highest rates being recorded in Glasgow and Paisley. The 234 deaths registered in Glasgow included 13 from whooping-cough and 13 from diarrhoea. Two fatal cases of "fever," and 1 of diarrhoea were recorded in Edinburgh; 2 of "fever," and 2 of diarrhoea in Dundee; and 3 of whooping-cough in Paisley.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, July 16th, 430 births and 308 deaths were registered in six of the principal Irish towns, against 549 births and 315 deaths in the preceding period. The mean annual death-rate in these same towns, which had been 16.4, 18.4, and 18.6 per 1,000 in the three preceding weeks, fell to 16.9 per 1,000 in the week under notice, this figure being 3.2 per 1,000 above the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 12.3 in Londonderry and 13.7 in Cork to 20.1 in Dublin and 21.4 in Waterford. The death-rate from the principal zymotic diseases during the same period and in the same six Irish towns averaged 1.8 per 1,000, or 0.9 higher than during the preceding week, the highest figure, 5.0, being registered in Londonderry, while Cork and Limerick recorded no deaths under this heading at all. From small-pox no deaths were registered in any part of Ireland, but measles caused 10 deaths in Dublin and 1 in Belfast. To diphtheria was due 1 death in Londonderry and 1 in Dublin; and to enteric 3 deaths in Londonderry, 3 in Belfast, and 2 in Dublin.

VACCINATION: DATE OF INSPECTION.

LEX writes: A child was vaccinated on April 29th and inspected on May 5th. The clerk to the guardians writes to the effect that inspection took place within six days, and that the fee must be disallowed. The terms of the contract are that the inspection must take place "not less than six or more than fourteen days" after the operation. Is May 5th of May 6th the earliest contract day for inspection? I say that the child having been vaccinated in the morning of April 29th the six days were completed at a corresponding hour on May 5th, and, therefore, the inspection in the afternoon was according to contract. Is not this so?

*** May 5th is the earliest contract day for inspection of a vaccination performed on April 29th. It is remarkable that a clerk to a Board of Guardians should not recognize that six days is one less than seven days, or a week, and that as May 6th would be seven days after the vaccination, May 5th would be six days after the operation. We have never heard of such a case being challenged before.

OBITUARY.

AFTER a prolonged illness, attended by much suffering, the death of Mr. GEORGE LEWIS RUGG, of Norwood, occurred on June 21st, in the house in which he had long resided with his father and sisters. Mr. Rugg was an Associate of King's College and a student at its medical school. He became in 1883 L.S.A., in 1884 M.R.C.S.Eng., and in the year following L.R.C.P.Lond. As a medical student he had the advantage of serving as a dresser to Lord Lister, and after leaving the hospital he became Assistant Medical Officer of Lambeth Infirmary, and remained there nearly four years. He then took up his residence in West Norwood, where he occupied the post of Medical Officer of the Lambeth Industrial Schools for fifteen years. He was elected a Member of the Society of Apothecaries and was a member of the Norwood Division of the South-Eastern Branch of the British Medical Association, of the Association of Medical Officers of Schools, and of the Society for the Study of Diseases in Children. Although a man of somewhat retiring disposition, he was successful in practice, as he possessed an engaging and kindly manner which won him many friends; by the poor, too, he will be especially missed. He is survived by his father, Dr. George Phillip Rugg, with whom, as with the deceased's sisters, great sympathy is felt throughout Norwood.

WE regret to learn that Dr. W. A. SKINNER, Honorary Secretary of the Natal Branch of the British Medical Association, and junior Assistant Physician to the Government Asylum, Pietermaritzburg, Natal, died recently from peritonitis. Dr. Skinner, who received his medical education at Edinburgh, graduated there as M.B., C.M., in 1896.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Victor Cnyrium, sometime Senior Physician to the Hospital of the Holy Ghost, Frankfort-on-the-Main, and a strenuous champion of medical reform, aged 73; Dr. Giovanni Maria Fiori, Professor of Clinical Medicine in the University of Sassari; Dr. Lacharias Hugo Oppenheim, Extraordinary Professor of Medicine in the University of Heidelberg; and Dr. Fürstenheim, of Berlin, a well-known specialist in urinary diseases, aged 68.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

AYR DISTRICT ASYLUM.—Junior Medical Officer, resident. Salary, £120 per annum.

BERKSHIRE ASYLUM, Wallingford.—Second Assistant Medical Officer, resident. Salary, £140 per annum, rising to £160.

BETHLEM HOSPITAL.—Two Resident House-Physicians. Honorarium at the rate of £25 each per quarter.

BRECON AND RADNOR ASYLUM, Talgarth.—Assistant Medical Officer, resident. Salary, £140 per annum.

BRIGHTON THROAT AND EAR HOSPITAL, Church Street. Non-resident House-Surgeon. Salary at the rate of £75 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum.

CHELTENHAM GENERAL HOSPITAL.—Junior House-Surgeon, resident. Salary, £50 per annum.

CHIPPING SODBURY UNION.—Medical Officer for the Third District. Salary, £32 10s. and extras.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £50 per annum.

GORDON HOSPITAL FOR FISTULA, Vauxhall Bridge Road.—House-Surgeon, resident. Honorarium 15 guineas for six months and £30 for one year.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway.—(1) Pathologist. Salary, 50 guineas. (2) Junior House-Surgeon, resident. Salary at the rate of £30 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Surgeon; (2) House-Physician. Salary, £20 for six months, and £3 10s. washing allowance each.

MANCHESTER: VICTORIA UNIVERSITY.—Junior Demonstrator in Physiology.

PLAISTOW: ST. MARY'S HOSPITAL FOR SICK CHILDREN.—Assistant Resident Medical Officer. Salary at the rate of £80 per annum.

POPLAR HOSPITAL FOR ACCIDENTS, E.—Assistant House Surgeon, resident. Salary at the rate of £80 per annum.

ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House-Surgeon, resident. Salary, £110 per annum.

SOUTH SHIELDS COUNTY BOROUGH.—Medical Officer of Health. Salary, £300 per annum, rising to £500.

SOUTHWARK UNION.—Second Assistant Medical Officer at the Infirmary, resident. Salary, £100 per annum.

STOCKPORT INFIRMARY.—House-Surgeon, resident. Salary, £160 per annum.

TEIGNMOUTH HOSPITAL.—House-Surgeon, resident. Salary, £70 per annum.

WEST HAM AND EAST LONDON HOSPITAL, Stratford.—Junior House-Surgeon, for six months, eligible for election as Senior. Salary, £75 and £100 per annum respectively.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

WORCESTERSHIRE GENERAL INFIRMARY.—House-Surgeon, resident. Salary, £80 per annum.

APPOINTMENTS.

BARTLETT, R. C., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Romsey District, Hants.

BOULEY, E. H., M.D., M.R.C.S., L.R.C.P., Clinical Assistant to the Chelsea Hospital for Women.

EDDISON, F. R., M.R.C.S., L.R.C.P., Medical Officer of Health, Bedale Rural District.

LEACH, J. Cemyns, M.D., B.Sc., D.P.H. Camb. and Lond., reappointed permanently Medical Officer of Health for the Sturminster District.

MCCAUGHEY, F. H., M.B., B.S.R.U.I., Resident Assistant Medical Officer for the Bradford Union.

MACKLIN, T. E., M.D., Medical Officer of Health, Clitheroe Rural District.

MEADE, C. G., L.S.A., District Medical Officer of the Southmolton Union.

MUMMERY, Percy Lockhart, B.C.Cantab., F.R.C.S.Eng., Assistant Surgeon to the North-Eastern Hospital for Children, Hackney Road.

NEAL, F. C., M.R.C.S., L.R.C.P., Clinical Assistant, Chelsea Hospital for Women.

PESEL, H. G., M.D., B.S.Edin., Resident Assistant Medical Officer at the Eastby Sanatorium of the Bradford Union.

PHILIP, J. P., M.D.Aberd., D.P.H., Medical Officer of Health, Morpeth Rural District.

PORTES, J. Houston, M.R.C.S., L.R.C.P., House-Physician to the London Hospital.

SANKEY, William, M.B., Ch.B.Vict., Surgeon for the B. Division of the Manchester City Police.

WALKER, H. J., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Brighton District, Sussex.

WILLIAMS, A. Walter, M.R.C.S., L.S.A., Surgeon for the A Division of the Manchester City Police.

DIARY FOR NEXT WEEK.

POST-GRADUATE COURSES OF LECTURES.

St. Peter's Hospital, Henrietta Street, W.C.—Lecture-Demonstrations will be given at 3.30 p.m. as follows: Tuesday, Surgical Diseases of the Kidney; Saturday, Diagnosis in Urinary Disease.

BIRTHS, MARRIAGES, AND DEATHS.

BIRTHS.

CROWTHER.—At Standford, Liphook, Hants, on Monday, July 11th, to Dr. and Mrs. Stanley Crowther, a son.

MCMASTER.—On July 13th, at 174, Drake Street, Rochdale, the wife of A. B. McMaster, M.D., R.U.I., of a son.

MILROY.—On July 20th, at 88, Seabank Road, Liscard, the wife of W. Cunningham Milroy, M.A., M.D.Edin., of a son.

MARRIAGES.

BENTLEY—HERRING.—On the 19th inst., at St. Michael's Church, Basingstoke, by the Rev. Dr. Cooper Smith, Vicar of the Parish, Joseph Reginald Bentley, M.B., C.B.Cantab., etc., of Limpsfield, Surrey, only son of Joseph Bentley, of Beech House, Barrow-on-Humber, to May M. Herring, youngest daughter of Henry Herring, of Tewkesbury.

ESMONDE—O'SULLIVAN.—On July 19th, at Our Lady of Victories, Kensington, by His Grace the Archbishop Scarisbrick, O.S.B., attended by the Rev. Canon Fanning, John Esmonde, only surviving son of the late James Esmonde, D.L., of Dromingh, Co. Tipperary, to Elly, fifth daughter of Dr. Daniel A. and Mrs. O'Sullivan, of 38, Matheson Road, West Kensington, formerly of Burnley.

LEGGATT—ANDERSON.—On July 13th, at St. Mary Abbotts, Kensington, by the Rev. Dr. Basil Speight, Vicar of St. John's, Sidcup, and the Rev. Dr. Redmond, Vicar of St. Peter's, Bayswater, Allen Worth Leggatt, son of the late H. Bethune Leggatt, to Lucy Hocken, second daughter of Dr. D. Anderson, M.D.Edin., of 2, Arundel Gardens, W., and formerly of Kingston.

M'DONALD—MASSIE.—At the Station Hotel, Inverness, on the 14th inst., by the Rev. Alan Cameron, M.A., Stuart M'Donald, M.B., C.M., F.R.C.P.Edin., to Kate, younger daughter of James Massie, Rockville, Harrogate, Head.

DEATH.

FREELAND.—On July 19th, at the residence of his son, Dalamere, Sneyland, Kent, John Baker Freeland, M.R.C.S.Eng., of Parham, Antigua, West Indies.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

H. S. asks whether there is any establishment in or near London where special baths such as Aix douche, etc., can be obtained.

DR. E. KOZOURELLI (Mytilene, Turkey) asks for advice in the treatment of a case of ichthyosis in which ordinary remedies have proved inefficacious.

Y. A. R. would be glad to hear where a female patient with very limited means could, free of charge, or at a small expense, have a growth of hair removed from the left side of her face, which developed at puberty, and which is a considerable deformity.

BRITISH HONDURAS.

F.R.C.S.E. asks for information regarding climate and the prevailing endemic diseases of British Honduras.

THE VALUE OF POLLANTIN IN HAY FEVER.

DR. WILLIAM HILL (London, W.) writes: I understand that there has been a large demand for pollantin both in London and the country during the present hay fever season. If it were possible to canvass those who have watched its effects some useful information might be forthcoming, especially from observation in those cases where pollantin has been used to the exclusion of intranasal and other methods of treatment. Although my own experience is open to the objection that I have merely used pollantin as an adjunct to other methods of treatment, yet I have been unable to resist the conviction that it is a valuable remedy as regards the eye symptoms, and, moreover, I should not be surprised to find ample evidence forthcoming that it is a fairly efficient palliative to the nasal symptoms also. I imagine it is in no sense a curative agent, nor is it likely to do away with the necessity for surgical measures where there are gross lesions in the nose. My object in writing is to elicit the experience of those who have used pollantin alone as a palliative in hay fever.

ANSWERS.

AN OLD MEMBER.—The Belgrave Hospital, Clapham Road, designed by Mr. Percy Adams, is one of the newest and best children's hospitals.

CYMRO.—Wales has, unfortunately, no institution for imbeciles, but if the boy be improveable he might be received at the Western Counties Asylum for Idiots, Starcross, Devon, on payment made through the Poor-law Guardians, to which the 2s. 6d. promised by the parents would be contributory. Particulars can be obtained from Mr. W. Locke, Secretary of Asylum (as above).

LARGE OVARIAN CYST.

DR. F. A. BALDWIN (Acting Senior Medical Officer, Bathurst, Gambia, West Africa) writes: I see in the BRITISH MEDICAL JOURNAL for May 28th, 1904, p. 1296, that Dr. Sidney H. Carr (China Inland Mission), Houan, asks for an ovarian cyst larger than the one from which he took 96 lb of fluid. If he will turn to the JOURNAL for July 14th, 1900, he will there see an account of a case I had when in practice in Manchester. In this case there were four cysts: one contained 114 pints of fluid, or 155½ lb. of fluid, the other about 35½ lb. of fluid; also two much smaller cysts. The picture of the tumour should interest him also.

LETTERS, NOTES, Etc.

LEPROSY AT THE INTERNATIONAL CONGRESS OF DERMATOLOGY.

MR. GEORGE PERNET, Assistant to the Skin Department, University College Hospital, desires to thank the numerous correspondents all over the world who have been kind enough to supply him with valuable details for his report on the Prevalence of Leprosy in the British Empire, etc., on the occasion of the Fifth International Congress of Dermatology meeting to be held in Berlin from September 12th to 17th.

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Mr. W. I. Addison, Glasgow; Association of Registered Medical Women, Secretary of, London; A B. **B** Mr. H. Bird, London; Mr. A. S. Barling, Lancaster; Mrs. S. A. Barnett, London; Lieutenant-Colonel C. A. Bourne, London Mr. F. J. A. Baldwin, Bathurst, Gambia; Mr. V. N. Bindley, Crewe; Brax Limited, Manager of, Needham Market; Dr. J. W. Bond, London; Messrs. R. and J. Beck, London; J. Burnett, M.B., Edinburgh; Dr. R. Bell, London; Mr. F. Boehm, London; Mr. P. S. Baker, London; Mr. E. A. Bevers, Oxford; Dr. W. F. V. Bonney, London: Mr. J. B. Blackett London. **C** Sir W. S. Church, Bart., K.C.B., London; Messrs. T. Christy and Co., London; Mr. R. W. Cameron, Wolverhampton; J. Cantlie, M.B., London; Dr. C. J. Cullingworth, London; Mr. A. S. Collin, London; Colonial; Dr. G. Crichton, London. **D** Mr. M. G. Davies, Penygroes; Duryea Company, Manager of, Coventry; Mr. H. L. Docovan, Birmingham; Dr. L. Drage, Hatfield **E** Dr. F. Edge, Wolverhampton; Mr. H. Fillot-Blake, Bognor; Excelsior; Mr. C. J. Evans, Northampton. **F** Dr. R. Fielding-Ould, London; Mr. G. L. Foley, Ramsgate; F.R.C.S.; Mr. C. Fraser, London; Mrs. Francis, Crediton; D. Fleck, M.B., Westbury-on-Trym; F.R.C.S.E. **G** Mr. J. G. Glass, Glasgow; Dr. A. S. Grünbaum, Liverpool; Mr. J. W. Gill, Cardiff; Mr. W. J. Greer, Newport, Mon.; Dr. E. W. Goodall, London; Mr. R. B. Graham, Leven. **H** Dr. J. S. Hamilton, Hawick; R. Harris, M.B., Southport; Mr. E. Horder, Ramsgate; Dr. W. Hill, London; Mr. A. Hands, Wolverhampton; Mr. E. Hill, Pietermaritzburg; Dr. G. A. Heron, London; Mr. J. Houston, London; Mr H. S. Hughes, Royston; Mr. J. Hutchinson, London. **I** Iverton; I.M.S. **J** Dr. H. J. Johnstone-Lavis, Beaulieu; Mr B. Joll, London; Mr W. Jones-Morris, Portmadoc. **K** Mr. S. Knaggs, Huddersfield; Mr. A. F. Kidson, Folkestone; Messrs. F. Krasa and Co., London. **L** Mr. J. H. Lawson, London; Lex; Live and let Live; L. E. P.; Dr. W. V. Lush, Weymouth; Lieutenant-Colonel I.M.S. **M** Dr. J. G. Moffat, Keighley; Mr J. MacMunn, London; A. A. McNab, M.B., Leeds; Mr. E. Merck, Darmstadt; Dr. J. J. Macan, Cheam; Mr. W. B. Mayne, Swindon; Member; Mr. B. Moore, Liverpool; Dr. E. C. L. Miller, Detroit. **N** J. H. Nicoll, M.B., Glasgow; Nunquam; Mr. R. B. Ness, Glasgow. **P** Provincial Member; Dr. F. G. Proudfoot, Oxford; E. Phillips M.B., Coventry; Dr. L. Phillips, Cairo. **R** Mr. H. Rainsford, Billinghay; Dr. J. Ritchie, Oxford; H. Rutherfurd, M.B., Glasgow; Dr. F. W. F. Ross, London; Dr. C. Riviere, London; Mr. R. W. Ransay, Edinburgh; Mr. J. T. Rae, London; Dr. Robson, Sittingbourne. **S** Miss E. Sayers, London; S. Stephenson, M.B., London; W. M. Smith, M.B., Stoke-on-Trent; Selbourne; Saube; H. Scofield, M.B., London; Messrs. Storey and Co., Leeds; Dr. G. A. Sutherland, London; Mr. J. E. Schon, Greenwood B.C. **T** Mr. E. H. Tweedy, Dublin; Mr. W. Tibbles, Nottingham; Mr. J. Tweedy, London; Dr. T. W. Thurstield, Leamington. **W** Dr. A. Whitfield, London; Mr. W. R. Williams, Clifton; Dr. A. O. Ward, London; Mr. S. W. Wilson Northampton; D. C. Watson, M.B., Edinburgh; Mr. E. E. Williams, London **X** X.K.F.

BOOKS, ETC., RECEIVED.

Victoria University of Manchester. Public Health Laboratory. Dwellings in relation to Disease. Defective Sanitary Appliances. Lecture by Francis Vacher, on June 23rd, 1904. Manchester: Sherratt and Hughes. 1904. 1s 6d

The Wisdom of the East Series. Edited by L. Cranmer-Byng and S. A. Kapadia. The Awakening of the Soul. Rendered from the Arabic by Dr. Paul Brönnle. London: The Orient Press. 1s 6d

Arhythmia of the Heart. By Dr. K. P. Wenckebach. Translated by Thomas Snowball, M.A., M.B. Edinburgh and London: William Green and Sons. 1904.

Clinical Lectures on Mental Diseases. By T. S. Clouston, M.D.Edin., F.R.C.P.E. Sixth Edition. London: J. and A. Churchill. 1904. 14s.

Report on the Causes and Continuance of Plague in Hong Kong, and Suggestions as to Remedial Measures. By W. J. Simpson, M.D., F.R.C.P. London: J. and A. Churchill. 1903. 10s.

Le Fond de l'Oeil dans les Affections du Système Nerveux. Par le Dr. Jean Galezowski. Paris: Felix Alcan. 1904. Fr. 5.

The Royal London Ophthalmic Hospital Reports. Edited by William Lang, F.R.C.S.Eng. Vol. XVI., Part I., June, 1904. London: J. and A. Churchill. 1904. 5s.

The Medical Chronicle. A Monthly Record of the Progress of Medical Science. Edited by E. M. Brockbank, M.D. Whole Series, Vol. XXXIX., Fourth Series, Vol. VI., October, 1903, to March, 1904. Manchester: Sherratt and Hughes. 10s. 6d.

Serums, Vaccines, and Toxines in Treatment and Diagnosis. By Wm. Cecil Bosanquet, M.A., M.D. Oxon., F.R.C.P. Lond. London: Cassell and Co., Limited, 1904.

Adolescence: its Psychology and its Relations to Physiology, Anthropology, Sociology, Sex, Crime, Religion, and Education. By G. Stanley Hall, Ph.D., LL.D. Vols. I. and II. London: Sidney Appleton: and New York: D. Appleton and Co. 1904. Two vols. 31s 6d.

The Badminton Library of Sports and Pastimes. Edited by Alfred E. T. Watson. Motors and Motor Driving. By Alfred C. Harmsworth. Third edition. London: Longmans, Green and Co. 1904. 9s.

The Surgery of the Head. By Bayard Holmes, B.S., M.D. London: Sydney Appleton. 1904. 12s.

A Practical Treatise on Nervous Diseases. By F. Savary Pearce, M.D. London: Sidney Appleton. 1904. 18s.

Medical Diagnosis. By Dr. Wilhelm v. Leube. Authorized translation from 6th German edition by Julius L. Salinger, M.D. London: Sidney Appleton. 1904. 25s.

Röntgen Ray Diagnosis and Therapy. By Carl Beck, M.D. London: Sidney Appleton. 1904. 18s.

Bognor as a Health Resort. By H. C. L. Morris, M.D. Bognor: Webster and Webb. 1904.

Mitteilungen aus der Königlichen Prüfungsanstalt für Wasserversorgung und Abwasserbeseitigung zu Berlin. Herausgegeben von Dr. A. Schmidtmann und Dr. Carl Günther. Heft 3. Berlin: August Hirschwald. 1904. M.12.

Trypanosomes et Trypanosomiases. Par A. Laveran et F. Mesnil. Paris: Masson et Cie. 1904. Fr.10.

Medical Monograph Series. No 9. Adenoids. By Wyatt Wingrave, M.D. London: Bailliere, Tindall and Cox. 1904. 2s 6d

Diseases of the Stomach and their Surgical Treatment. By A. W. Mayo Robson, F.R.C.S., and B. G. A. Moynihan, M.S. Lond., F.R.C.S. Second edition. London: Bailliere, Tindall, and Cox. 1904. 15s

A Manual of Practical Medical Electricity. By Dawson Turner, B.A., M.D., F.R.C.P. Edin., M.R.C.P. Lond. Fourth edition. London: Bailliere, Tindall and Cox. 1904. 10s. 6d.

University of Manchester. Public Health Laboratory. Air: Atmospheric Carbonic Acid, its Estimation and Variation. Lecture delivered by John Roberts, M.D., B.Sc., on June 8th, 1904. Manchester: Sherratt and Hughes. 1904. 1s. 6d.

The Shilling Library of Psychical Literature and Inquiry. II. Twenty Years of Psychical Research. By Edward T. Bennett. London and Edinburgh: R. Brimley Johnson. 1904.

An Index of Symptoms. By Ralph Winnington Leftwich, M.D. Third edition. London: Smith, Elder and Co. 1904. 6s.

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President's Address

DELIVERED AT THE

SEVENTY-SECOND ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION,

BY

WILLIAM COLLIER, M.D.CAMB., F.R.C.P.LOND.,

Physician, Radcliffe Infirmary, Oxford; and Litchfield Lecturer in Medicine, University of Oxford;

President of the Association.

THE GROWTH AND DEVELOPMENT OF THE OXFORD MEDICAL SCHOOL.

I HAVE chosen as the subject of my address this evening the growth and development of our Medical School. I was led to do so by remembering that since the last visit of our Association to this city in 1868 great changes have occurred, especially so far as the teaching of science is concerned in this University, and more particularly those branches of science connected with the early training of the student of medicine. New professorships have been established, a band of readers, lecturers, and demonstrators has been organized, buildings have been erected and fully equipped, with the object of encouraging students of medicine to join the University for their early scientific training. Again, I remembered that the members of this Association a quarter of a century ago keenly interested themselves in the Oxford Medical School, and took active measures to bring about the changes to which I shall refer.

Twenty-four years ago, in 1880, when our Association held its annual meeting at Cambridge, the then President, Sir George Humphry, in one of the most eloquent and forcible addresses ever given to the Association, used these words:

> Has there not through the whole period of our academic history been enacted a divorce, a most unnatural divorce, between body and mind—that is to say, between the nurturers of the one and the cultivators of the other? Has not Cambridge more than any University, with perhaps one exception, banished medicine from its walls and the men of medicine from its schools? Can good reason be shown why medicine has been allowed to profit so little by the accumulated liberality of many generations, which has given such impulse to art and literature, to classics and theology, mathematics and philosophy, to astronomy and logic?

He pointed out that originally the Faculty of Medicine had been placed on a par with those of Divinity and Law, and the provisions for teaching and graduating in all these faculties had been made alike.

A little later Humphry gave what was probably the correct answer to his inquiry. For he showed that the College of Physicians in London founded by the influence of Linacre, with the privilege of licensing practitioners throughout the kingdom, became in time the successful rival of the old Universities of Oxford and Cambridge. As London grew in size and importance the influence of its College increased, and in a short time little was left to the Universities beyond the function of giving a preliminary training to the few who could avail themselves of it. In no other European country are their competing corporations similar to our Colleges of Physicians and Surgeons, having power to grant licences to practise. In other countries the Universities are the only avenues to medicine.

THE REVIVAL OF A MEDICAL SCHOOL IN OXFORD.

Why should not the Universities of Oxford and Cambridge take their proper share in the training and education of medical students? This question had for some years previously occupied the thoughts and minds of many earnest men at both Universities. Science had already obtained a sound footing. At Cambridge the Honour School of Natural Science had been established as far back as 1851, at Oxford in 1853, while at Oxford the University Museum—the centre for scientific work—in which our Sectional meetings will be held this week, had been built thanks very largely to the influence and exertions of the late Sir Henry Acland.

A correspondence had been carried on in the BRITISH MEDICAL JOURNAL for a considerable period on the subject of the Oxford Medical School, under the title of "A Lost Medical School."

So long ago as January 5th, 1878, an anonymous correspondent, signing himself "A Member of Convocation," wrote a long and bitter letter complaining of the way in which the study of medicine was entirely overlooked at Oxford. As a medical school Oxford, he declared, had within the preceding quarter of a century entirely ceased to exist. No teaching in the preliminary subjects of medicine was being given, and the medical faculty had recently lost even its nominal existence, and now appeared under the head of physical science and mathematics. He attributed this decadence largely to the influence of the then Regius Professor of Medicine, and to the Professor of Physiology. They were ably defended by several of their old students, who showed how much the teaching of natural science at Oxford owed to their personal efforts. The controversy on medical teaching at Oxford was carried on with vigour for many months by many writers, and while all, or nearly all, were in favour of making adequate provision for the teaching of anatomy and physiology at the University, some were most anxious to establish a complete medical school, declaring that in many of the most illustrious medical schools in Germany the hospital population was not larger than it was at Oxford. Fortunately the subject was not allowed to remain simply a subject of controversy. Our Association took it up, and we find that the then Chairman of our Parliamentary Bills Committee, Mr. Ernest Hart, at a meeting of the Committee in 1879, read a memorial, which it was resolved to send to the Hebdomadal Council, to the House of Commons, and to the recently-appointed University Commission. It was published in the BRITISH MEDICAL JOURNAL[1] just a quarter of a century ago, and signatures were asked for.

This memorial, after pointing out all the advantages likely to follow the establishment of a medical school at Oxford, urged the immediate constitution of a thorough medical curriculum (on the same basis as the medical schools of other English centres) in the following subjects at least:

1. Human anatomy.
2. Physiology.
3. General pathology.
4. Materia medica.
5. Clinical medicine and surgery for beginners.
6. State medicine, including medical jurisprudence and public health.

The memorial was signed by upwards of 2,000 members including a large number of highly influential and well-known persons; it was forwarded in due course not only to the House of Commons, but also to the Hebdomadal Council of the University, and by them referred to a Committee which had been appointed to consider the subject of medical education.

A little later another petition was drafted on very similar lines by an entirely different body of men, and was sent to the Commissioners who were at the time engaged in investigating the affairs of the University. The petition was signed by a large number of London teachers. I will give you a few names: Lord Lister, the late Dr. Bristowe, Sir Wm. Broadbent, Sir Lauder Brunton, Sir Samuel Wilks, David Ferrier, and many others. Oxford graduates in medicine signed it, among others Dr. Southey, Dr. Payne, Dr. Corfield, Dr. Bridges, Dr. Long Fox. It was signed in addition by a very considerable number of the resident professors and graduates, many of whom, I am glad to say, are living with us in Oxford at the present time.

I have not been able to find that the University Commissioners ever published a report, though the evidence of witnesses was published in a voluminous Blue Book, but it is certain that they considered the petitions favourably.

In November, 1882, Professor Burdon Sanderson was appointed to the newly-founded Chair of Human Physiology and Histology at Oxford, a first step towards the establishment of medical education in Oxford on modern lines.

ITS DEVELOPMENT.

Having elected a Professor of Physiology, it was found necessary to build him laboratories and class-rooms for the purpose of teaching, and on June 5th, 1883, the members of Convocation were asked to grant a sum of £10,000 for this purpose. The resolution met with keen opposition, partly on the ground that vivisection would be practised, and partly on the ground that the expenses were beyond the existing resources of the University. The resolution was carried by the small majority of three votes.

On February 5th, 1884, a decree was submitted to Convocation to empower the Curators of the University Chest to

raise a sum not exceeding £10,000 to defray the cost of the erection of a laboratory and class-rooms for the Professor of Physiology. A circular had been sent round to those believed to be opposed to vivisection, and only to those, calling upon them to show by their votes their determination not to permit experimental researches in Oxford. There spoke in favour of the resolution Dr. Liddell, the then Dean of Christ Church, and the late Sir H. Acland, and against it the late Professor Freeman and the present Bodleian Librarian; placets, 188: non-placets, 149; and so the decree was carried. Having built the laboratories and lecture-rooms for the Professor of Physiology, it was found necessary to ask for an annual sum of £500 for three years to defray the cost of heating, lighting, water supply, the salary of a demonstrator of histology, and other incidental expenses. This was an opportunity not to be missed: the antivivisection party, who had loudly contended that the last vote was not representative, at once began an active campaign.[2] A circular headed "Vivisection in Oxford," signed by Mr. Ruskin, Professor Freeman, four heads of Houses, five professors, and a number of Fellows, was widely distributed, calling upon Convocation to forbid the establishment of a centre of vivisection in Oxford. This gave rise to a counterblast in the form of a circular, signed by the Dean of Christ Church, fourteen heads of Houses, the Regius Professor of Divinity, Professor Max Müller, and a large number of tutors and Fellows.

The question came before Convocation on March 10th, 1885. There spoke in favour of the grant Dean Liddell, Sir William Anson, and Sir Henry Acland; against the grant Canon Liddon and the then Bishop of Oxford, Dr. Mackarness. Others attempted to speak, but were not given a hearing. One enthusiast in all sincerity and with much earnestness introduced, I suppose, the most fantastic argument ever put forward in favour of vivisection, namely, that the Gadarene miracle sanctioned it, inasmuch as it was a well-known fact that swine in swimming crossed their forelegs, and in so doing cut their own throats. The question was then put to the vote, and was carried by a majority of 168 in a house of 656. Since this division the antiphysiological party, as they were called, have not, as far as I am aware, been in evidence in any meeting of Convocation.

In the same year, 1885, the Faculty of Medicine, which had been merged in natural science, was recreated, and Mr. Arthur Thomson, Senior Demonstrator in Anatomy in Edinburgh University, was elected Lecturer in Anatomy. It needed a man of resolution and fixed purpose to cope with the situation, for when he took up his work in Oxford Mr. Thomson found himself with three students and a small wooden shed in which to teach anatomy—a great contrast to his Edinburgh experience. A sum of money was immediately collected by members of the University interested in the development of the school, and a small temporary lecture room and a dissecting room were built. In the following year the Curators of the University Chest built, at a cost of £500, a temporary iron-roofed building with rather more accommodation. By 1891 the lecturer's class had grown from 3 to 67. A sum of £7,000 was now asked for and obtained from the University to provide a permanent home for the teaching of human anatomy, and the present excellent building, in which the Section of Anatomy will be held, was built. In a year or two, largely owing to the success of Mr. Thomson as a teacher, the lectureship was converted into a professorship.

In 1886 a most important statute was passed, by which students in natural science were exempted from the first public examination in classics known as Moderations. This measure enabled students of medicine after passing their preliminary examination known as Responsions, which might be passed before coming into residence, to devote their first year in Oxford to the study of the preliminary subjects in natural science, and so another and most important barrier to the establishment of a medical school disappeared.

In 1891 Sir Henry Acland, who had always interested himself in the study of pathology and bacteriology, inaugurated a new department in bacteriology, and appointed, first, Dr. Menge, of Munich, to take charge of it, and later, in turn, Dr. Bertram Hunt and Dr. Ritchie.

In 1895 Sir Henry Acland retired from the Regius Professorship, and Sir John Burdon Sanderson was appointed to succeed him, Professor Gotch, Professor of Physiology in the University of Liverpool, and formerly Lecturer in Physiology at this University, taking Sir John's chair.

In 1896 the new Regius Professor, in an open letter to the President of Magdalen, pointed out that the time had come when Oxford medical students should have the advantage of two new departments—pathology and pharmacology—both well within the scope to which Oxford had restricted itself in the building up of the medical school, and in the following year William John Smith Jerome was appointed Lecturer in Pharmacology and Materia Materia.

In May, 1898, in spite of the impoverished condition of the University Chest, Convocation passed without dissent a decree empowering the University to spend £7,500 in erecting new laboratories and lecture rooms for the joint use of the Professor of Botany and Comparative Anatomy, Sir William Anson showing that this expenditure was rendered necessary by the increase in the number of medical students.

In 1899 a generous medical student, Mr. Ewan Frazer, offered the University a sum of £5,000 towards the expenses of building a pathological laboratory. This sum was accepted, the University at the same time agreeing to supplement it with another £5,000, and to make an annual grant of £250 for upkeep.

Two years later, in October, 1901, the new Pathological Laboratory was opened, and at the opening ceremony Dr. Ritchie, Reader in Pathology, pointed out:

> That, in addition to giving those who were seeking degrees the opportunities of acquiring the necessary knowledge in pathology, it was the desire of the University to provide opportunities for those who wished after graduation to return to Oxford to prosecute researches in pathology and bacteriology, and to this end there had been provided a special room for experimental pathology. In view of the fact that much of the pathological work of the future must be in the direction of the chemical examination of the products of disease processes, a chemical research laboratory had also been provided.

Already the importance of our new Pathological Laboratory has been recognized, as a generous donor, Mr. Philip F. Walker, has quite recently endowed a studentship of the annual value of £200, the holder of which must devote himself to original research in pathology. Who can doubt that this studentship will result in the production of much good work, as we all know that many a man eagerly anxious and in every way fitted to carry on investigations of the utmost importance to mankind is prevented from doing so by want of means?

I must not omit to mention that in 1901 the Drapers' Company presented to the University the magnificent Medical Library, which you will find in close proximity to the Museum Buildings, and which will ever remain as a memento of their generosity.

In 1902 Mrs. Ogilvie gave to the University a sum of £7,000 for the purpose of creating a Readership in Ophthalmology, to be held by the senior surgeon to the Oxford Eye Hospital, and this Readership is now held by the President of the Section of Ophthalmology, Mr. Doyne, to whose untiring efforts for many years past we largely owe the excellent Eye Hospital which now exists in this city.

Its Present State.

You are now in a position to judge to what extent the desires expressed by the British Medical Association in 1879 have been fulfilled. It asked that at least human anatomy, physiology and general pathology, and materia medica might be properly taught. You will find that for many years past adequate provision and suitable accommodation and apparatus have been provided for the teaching of these subjects, and that at the present moment they are being taught by professors, readers, and lecturers whose ability and fitness for their important duties cannot be questioned. The Association desired that provision should be made for the elementary teaching of clinical medicine and surgery. In 1883 the existing Litchfield Clinical Professorship was split up into a Litchfield Clinical Lectureship in Medicine and one in Surgery, and from that date to the present students are taught in the wards of the Radcliffe Infirmary the bare outlines of clinical diagnosis in medicine and surgery, and are thus fitted to take immediate advantage of the most advanced teaching and the excellent clinical material they find awaiting them at the large metropolitan hospitals.

Yet it would appear from the questions so often asked that little is known by the general public of these important changes which have been carried out here during the past quarter of a century. Less than six years ago a member of our Association, living not much more than fifty miles from this city, was reported to have used these words in an address he was giving at the opening of a medical school in the West of England, "Oxford still misapplies its medical endowments and declines to reorganize its Medical Faculty." And again, in the same address, "You must go to either Oxford or Cambridge, where the demon of athletics reigns supreme,

and where professional studies are depreciated if not despised." Had he taken the trouble to inquire he would not have so glaringly displayed his ignorance, for he would have found that medical students at Oxford and Cambridge were as keen and as steady workers as any in the country, and that every possible facility and encouragement were being given them for the proper carrying on of their work. A further study of a list of prizes gained and important professional posts held during the last few years by past Oxford and Cambridge students would have proved to him that the time spent at these universities was not wasted.

The Makers of the Revival.

The building up of a modern medical school, the outlines of which I have very briefly sketched, will always be associated with the names of a few earnest workers. Time will only allow me to mention a few of the most prominent.

When Dr. Acland returned to Oxford in 1845 as Lees Reader in Anatomy, he found that in spite of the efforts of Buckland, Kidd, and Daubeny, and, too, in spite of the great men who had lived in and influenced Oxford thought during the two previous centuries, scientific studies at the University were almost extinct. The University had not a single laboratory for students of science, and indifference and even open hostility to all subjects connected with science marked this period. It is true that for a time Dr. Buckland had attracted large audiences to his lectures on geology, but in 1845 these classes ceased to exist. "Buckland," said Gaisford, Dean of Christ Church, "has gone to Italy, so thank God we shall have no more of this Geology." Two years later Acland first broached the subject he had at heart—the collecting together of all the departments of the natural sciences under one roof, and drew up a memorandum on the subject dated July 27th, 1847, which was signed by Charles Daubeny, Professor of Chemistry and Botany: P. B. Duncan, Keeper of the Ashmolean Museum; Robert Walker, Reader in Experimental Philosophy; and Henry Wentworth Acland, Lees Reader in Anatomy. This was the origin of the University Museum in which we hold our Sectional meetings during the week. Dean Buckland had been asked to sign, but refused. "Some years ago," he said, "I was sanguine, as you now are, as to the possibility of natural history making some progress in Oxford, but I have long come to the conclusion that it is utterly hopeless."

It is impossible for me to dwell on the struggle to which the suggestion gave rise or to the enormous amount of time and labour freely given by Acland in gaining over others to his way of thinking. It was not until June 20th, 1855—eight years later—that the foundation stone of the Museum was laid by the Earl of Derby, Chancellor of the University. Every one admits that Acland was the originator of the scheme for a Museum of the Natural Sciences, and was the life and soul of the movement. It is doubtful whether any other man in the University could have brought the same influence to bear as Acland, the friend of Dean Liddell, Dr. Pusey, and Mr. Ruskin. An admirable account of the struggle, with the names of many others who wrought and thought and toiled for the same end, may be found in Atlay's *Life of Acland*.

As Acland hoped, the building of the University Museum, furnished with proper apparatus, gave a great impetus to the teaching and study of the natural sciences in the University. Nor was the influence confined to Oxford. I have more than once heard Sir George Humphry say that Acland's success at Oxford gave an enormous impetus and encouragement to the study of the sciences at Cambridge and to the efforts then being made there to develop the medical school.

Professor Burdon Sanderson was appointed to the newly-founded Chair of Physiology in 1882. In the leading article in our Journal on his appointment these words were used:

> Dr. Sanderson has a grand opportunity. He has sacrificed much in order to take up the noble work of organizing a real school of medicine at Oxford. Success in such a work would be the worthy achievement of a lifetime. There will be a universal feeling of confidence that the man who has now put his hand to the plough will not turn back, but will finally surmount every difficulty to his own high honour and to the great gain of the profession of medicine.

All of us present this evening will be able to realize during the coming week, if we have not already done so, how fully Sir John Burdon Sanderson has repaid the confidence reposed in him, and how nobly and successfully he has carried out the work he took in hand some two-and-twenty years ago.

To Professor Thomson, who was appointed Lecturer in Anatomy in 1885, and who was at the time described as a consummate anatomist and a most gifted teacher, we owe a great deal, for I am sure that many generations of students would acknowledge that not only his skill as a teacher, but the friendly interest he has taken in them, has done much to encourage the pursuit of medical studies in the University. Great praise must also be given to Professor Gotch, who came first as a Lecturer on Physiology under Dr. Burdon Sanderson, and more recently succeeded to that chair. Many others there are connected with the teaching of the preliminary subjects in medicine whose names will be gratefully recalled by our medical graduates.

The school owes much, too, to others in Oxford interested in medicine, though not themselves medical men. I will recall the names of Dean Liddell, Dr. Jowett, Professor Bartholomew Price, and Mr. Alfred Robinson, all of whom are no longer with us. I will not attempt to enumerate the many good friends and supporters she has at the present time in Oxford, lest I omit some whose names I should least wish to pass unnoticed. Lastly, our school will always be under a deep obligation to those medical graduates in London who for many years have given up much-needed hours of their scanty leisure in order to attend the meetings in Oxford of the Board of the Medical Faculty. We all of us realize that their ripe experience as teachers and examiners, and as men engaged in the practice of their profession, must be of the greatest possible value in helping the Board to decide from time to time on its course of action, and I for one should much like to see our Board strengthened by a larger number of London teachers than it has at present.

The Influence of the School.

Now let us ask ourselves whether the advantages claimed more than a quarter of a century ago as likely to accrue by associating the Universities of Oxford and Cambridge with medical teaching have in any way been achieved.

For some years a considerable number of medical graduates have been passing forth into the larger world after spending three or four of the most impressionable years of their lives at one or other of the two Universities. Have they benefited? I cannot for one moment doubt that the majority of these graduates if appealed to would declare with no uncertain voice that they recognized fully that their mixing with men of their own age, who were taking up other subjects for their life-work, and interesting themselves in other mental pursuits, had done much to widen their own general culture, and to develop in them interests outside their own professional work.

Has the University benefited? I think so. The establishment of the medical school on a modern basis has introduced into the University a body of students starting their university career with a definite object in view, and compelled by the very nature of the case to lead a steady, strenuous life, for no student can hope to pass his professional examinations without a due amount of steady work.

But to my mind the greatest advantage to be noted has been the influence the university student has had on the other medical students of our great metropolitan schools. All of us are familiar with the Bob Sawyer type of medical student as depicted by Charles Dickens—that is to say, we are familiar with him in fiction—but I rather fancy as a living type he has for many years ceased to exist. Many of us can remember the time when any more than usually disgraceful outbreak of rowdyism in London was invariably attributed, rightly or wrongly, to medical students. But this is a matter of the past. The medical student of a quarter of a century ago undoubtedly bore a very bad character in the eyes of the public; he no longer does so. Why the change? I should attribute it, I believe with truth, largely to the influence of the university graduates who have come among them. These university graduates are older men, and have long passed their first experience of freedom from school discipline; have a more settled purpose in life; have a clearer and better idea of what is so difficult to define, but so easy to recognize—good and bad form. It is these older students who, in recent years, have largely dominated the standard of life at our London schools, and their influence has been all for good.

Lastly, let me point out that if the standard of general culture is distinctly raised by all the advantages of a university education, as we believe it is, then as the numbers of those participating in this education is increased the status of the medical profession is certain to be raised. There are some, I know, who do not wish to see a large medical school at Oxford. They argue that the standard should be a high one, and only men of quite exceptional

ability should be encouraged to seek the Oxford D.M. degree. Surely this is a somewhat selfish and exclusive policy. Every one would agree that the standard should be high. Some, and I trust most of us, would wish that it should not be too high for the man of average ability with the capacity for work well developed. To such men every encouragement should be given to participate in all the advantages to be gained by a few years' experience of university life.

Earlier Benefactors.

I pass now from Oxford of to-day to Oxford of the past, and will recall the names of a few of our greatest men, members of our own profession, who have been associated with the University.

I first mention Linacre, who at the age of 24, in 1484, was elected a Fellow of All Souls, and was incorporated a D.M. of the University on his Padua degree. While at Oxford he seems to have devoted most of his time to giving lectures in physic and to the teaching of Greek. Not only was he a profound scholar and a successful physician, but he was also a member of the clerical profession—indeed, the last few years of his life were entirely devoted to clerical work. His wealth was very largely acquired by his numerous ecclesiastical preferments. He bequeathed considerable sums of money to both Oxford and Cambridge for the purpose of encouraging the teachers of medicine, but unfortunately, owing to the imprudent management by his trustees, a good deal of this money was lost. We still have the Linacre Professorship of Comparative Anatomy to remind us of one of our oldest and most distinguished benefactors. It was mainly due to Linacre's efforts that the Royal College of Physicians of London was founded in 1518, he being elected the first President. It was probably due to his influence, too, that a statute was passed in Henry VIII's reign that no person should practise as a physician or surgeon until examined and approved by the bishop of the diocese in which he lived, who was to call to his assistance expert persons in the Faculty. This privilege of the bishops continued for a very long period.

For some years Harvey, the discoverer of the circulation of the blood, dwelt at Oxford, where he worked at anatomy and made many dissections. He was incorporated a D.M. of the University, and in 1645 by Royal mandate was made Warden of Merton College, but did not retain the post long, as the following year, after the surrender of the City to the Parliamentarians, he returned to London.

It was while Harvey was at Oxford that another great anatomist who studied under Harvey was preparing himself for future fame—Thomas Willis, well known to all of us by his description of the anatomy of the brain, and more particularly by the circle of Willis. Willis was born of Oxfordshire parents within a few miles of our city, and for many years practised his profession in a house opposite Merton College.

Associated with Willis was Christopher Wren, the architect of St. Paul's Cathedral. Born in 1632, Wren left school at the age of 14, and was engaged by Sir Charles Scarburgh to act as his assistant and demonstrator at his lectures on anatomy at Surgeons' Hall, London. Three years later, at the age of 17, he was entered as a fellow-commoner at Wadham, and at 21 was made a Fellow of All Souls, and at 28 Savillian Professor of Astronomy. It was while at All Souls that he made elaborate drawings to illustrate Dr. Willis's work on the anatomy of the brain.

In 1679 he made experiments which led him to the invention of a method for the transfusion of blood from one animal to another. It was at the age of about 30 he began to follow the profession of architecture, and one of his first works was this Sheldonian Theatre, the first stone of which was laid in 1664 and completed five years later. At the age of 9 he was capable of writing an elegant Latin letter to his father, but it was science and mathematics that attracted him. A splendid mathematician, a great experimentalist, always working out the most difficult scientific problems, a distinguished astronomer, and a famous architect all combined in one. No wonder that Barrow described him as a boy a prodigy, as a man a miracle, nay, even something superhuman. He died aged 91.

It was about this period that the Royal Society sprang into existence, largely, as is asserted, by the influence and co-operation of Oxford men. About 1648 Willis, Seth Ward, Robert Boyle and other members of the University distinguished in theology and science were accustomed to meet in the rooms of Dr. Wilkins, the Warden of Wadham, for the purposes of discussion. Ten years later the majority of them had left Oxford and taken up residence in London, where they organized the Royal Society in 1662.

I now mention our greatest benefactor, John Radcliffe, who was born in 1650 and died in 1714. At the age of 15 he became an undergraduate of University College, ten years later he took his B.M. degree and his D.M. at the age of 32. For nine years he practised as a physician in Oxford, and we are told that he incurred the anger of the older practitioners in the town because he paid so little regard to professional conventionalities. In 1684 he moved to London, and his apothecary tells us that he had scarcely been in town a year before he was earning more than 20 guineas a day. His lively conversation, it was said, soon made him the most popular physician in London. We are told that he succeeded more by his ready wit than his learning, for while at Oxford his library consisted of some phials, a skeleton, and a herbal. In 1692 he lost some £5,000 owing to the capture by the French of a ship in which he was interested. When his friends condoled with him he replied that it did not matter, for he had only to go up 250 pairs of stairs to make himself whole again. If this be true the physicians' fees in those days would seem to have been very much higher than at present. At any rate, we can admire his philosophical way of putting up with a financial loss—"a little more work will put me right again."

If it be true that his witty tongue helped him to succeed in his profession, it is also certain that it lost him many influential patients. Early in his London career he gave great offence to the Princess Anne by neglecting to visit her when sent for, and by saying that her illness was nothing but the vapours. I suppose in these days we should give the disorder a longer and more classical name. Later, he greatly offended King William III by telling His Majesty, after inspecting the King's swollen ankles, that he would not have the King's two legs for his three kingdoms; a remark so free that the King never saw him again. A few months before his own death he fell into great disgrace, because, when summoned to attend Queen Anne in her last illness, he delayed his visit, and was said to have replied that as he understood Her Majesty's case was desperate, it would be best to let Her Majesty die as easily as possible. This sounds rather brutal, but it was said in reference to the Queen's well-known great antipathy to him, and Radcliffe urged that he feared his presence would do more harm than good.

In 1695 the King offered him a baronetcy, which was declined. We are told that though rough in manner and fond of flattery, he was generous to those in need, a good friend, and a munificent patron of learning. He died in 1714, and lies buried in St. Mary's, our University Church. Although he was given an almost Royal funeral by the University which benefited so greatly by his bequests, his grave was left more than 100 years unknown and unnoticed. In 1819, during some alteration in the church, on disturbing the pavement his coffin was discovered, not even a slab marking the spot where he was buried. A simple engraved slab now marks the spot, near the north entrance. During his life he gave largely to his old College and to several charities, and at his death he left by will his Yorkshire estate to the Masters and Fellows of University College for ever, to be held in trust for the founding of two Radcliffe travelling Fellowships, the overplus being paid for the purpose of buying perpetual advowsons for the College. In addition he left £5,000 for the enlargement of the College and £40,000 for the building of a medical library. With money derived from his estates two other buildings were erected in this city by his trustees, the Radcliffe Infirmary and the Radcliffe Astronomical Observatory, and money was further granted towards the building of the College of Physicians in London.

The Radcliffe Library in Radcliffe Square, completed in 1747, is one of the most conspicuous buildings in this city, and doubtless will be visited by all of you.

It was in this building that your first meeting at Oxford was held in 1835, on your third anniversary. In it you will find a very pleasing portrait of Radcliffe painted by his friend, the King's painter Kneller. I cannot refrain from recording a passage of wit between these good friends. They lived in adjoining houses, and for the sake of convenience Kneller had allowed Radcliffe to make a doorway in his garden wall; in course of time this doorway became a source of great annoyance to Kneller, as Dr. Radcliffe's servants frequently used it to gain entrance to his garden and pick the flowers. At last, in a fit of anger, Kneller wrote to Dr. Radcliffe, and told him that if he could not control his servants he should be obliged to take the door away and brick the aperture up. Radcliffe at once sent his servant to Kneller to tell him that he might do

what he pleased with the door so long as he did not paint it. Kneller having received the message was equal to the occasion, and at once replied, "Go tell Dr. Radcliffe with my services to him that I can take anything from him but physic." Fortunately for Oxford Radcliffe was not happy in his love affairs, for we are told that after passing many years for a misogynist, the result of an early disappointment, he again in his old age fell in love with the daughter of a wealthy citizen, but the match was eventually broken off—a very short time before the appointed wedding day; had it not been we might well have lost our library, our infirmary, and our observatory.

Thomas Sydenham (1624-89), who has always been regarded as one of the chief masters of English medicine, was also connected with the University. His career at Oxford was certainly a chequered one. At the age of 18 he entered as a fellow commoner at Magdalen; a few months later he joined the Parliamentary forces and fought against the Royalists; four years later, 1646, when Oxford and the other royal garrisons surrendered, he resigned his commission, and was on his way to Oxford when he chanced to meet with Dr. Thomas Coxe, who was attending his brother, and who persuaded him to take up medicine. He then joined Wadham College, and the following year was elected to a Fellowship at All Souls. In 1648 he obtained his degree of B.M. in a very irregular manner, as he was created B.M. by command of the then Chancellor of the University without having taken a degree in Arts and with little knowledge of medicine. For a time he studied at Oxford under the Regius Professor of Medicine, whose lectures, we are told, consisted merely in reading the ancient medical classics. Again he joined the army, and became captain of a troop of Parliamentary Horse. On one occasion he was left on the field of battle among the dead, and lost, as he tells us, a great deal of blood. On another occasion he nearly lost his life at the hands of a drunken soldier, who broke into his bedroom at night and discharged a pistol at his breast. Fortunately the soldier's left hand was interposed and was shattered by the bullet, while Sydenham escaped unhurt. Having again retired from the army he studied medicine at Montpellier, and a year or two later began practice in London. In 1676, at the age of 52, he incorporated as M.B. at Pembroke College, Cambridge, on his Oxford degree, and immediately took the M.D. of that University. It is supposed there were political reasons for his not taking the Oxford degree. By his methods of studying disease and by his masterly description of diseases Sydenham is admitted to have made an epoch in medical science. In 1894 a life-sized statue of Sydenham was presented to the University Museum by Sir Henry Acland and others.

Time will not permit me to mention others who attained the highest positions in the medical world. I can only draw your attention to the fact that during the first century of the existence of our College of Physicians, of the 34 presidents whose names are recorded, 21 were graduates of the University of Oxford.

There are, however, one or two other benefactors whose names I must mention, such as Dr. Mathew Lee, of Christ Church, who, after practising some years in Oxford, went on to London, became a Fellow of the College and in turn Censor and Harveian Orator; was for some years physician to Frederick, Prince of Wales, and died in 1755. He bequeathed a sum of money to be held in trust by the Dean and Chapter of Christ Church for the purpose of paying a reader in Chemistry and one in Anatomy.

Lord Litchfield, by his will dated 1772, left money for the foundation of a Professorship of Clinical Medicine in association with the Radcliffe Infirmary. He stipulated that the Professor was to be elected by Convocation, that he was to visit his patients daily from November to March and was to read a lecture two days a week; and, further, he provided that if the Professor neglected his attendance he was to forfeit a year's stipend to the infirmary and to pay £5 to that institution for each lecture omitted. I am much afraid that this most wise stipulation was never really enforced. In 1883 this Professorship was converted into a Lectureship in Medicine and in Surgery.

Dr. George Aldrich, by his will dated 1803, left a sum of money for the endowment of a Professorship of the Practice of Medicine, which Professorship goes to increase the very inadequate stipend of the Regius Professorship.

THE FUTURE OF THE SCHOOL.

I have this evening spoken of the past benefactors to medicine in this University, and of those who in our own generation have helped to keep the lamp of medicine burning; but what of the future? We all of us realize that the provision which has to be made for a modern scientific education is of necessity a costly undertaking, involving the building and upkeep of museums and laboratories, in addition to the supply of costly apparatus; and lastly, and by no means least, the adequate endowment of professorial chairs, readerships, and lectureships. I should wish more particularly to emphasize this latter point, because for many years past the amount of work done in the way of lectures and instruction in the scientific departments of this University by some of our professors, readers, lecturers, and demonstrators for a totally inadequate remuneration is well recognized and much deplored by all who are interested in the teaching of science at Oxford. Fortunately, the urgent need for fresh endowments and the appeal to persons of wealth and position in this country has been made by the most influential men of the day. May I quote the words of the Patron of our Association—His Majesty the King? In his gracious reply to the loyal address of the sister University, on the opening of the new science buildings at Cambridge on March 1st of the present year, he made use of these words: "The older universities must receive new endowments, if education within my realm is to be kept at its proper standard of efficiency."

Quite recently a most influential deputation, on which both Oxford and Cambridge Universities were represented, waited on the Prime Minister to urge the Government to give substantial money grants to the various universities throughout the country. While receiving a sympathetic audience from both the Prime Minister and the Chancellor of the Exchequer, the members of this deputation were very plainly told by the latter that the Government would not be able to find them the money.

Our University owes its existence to generous benefactors in the past, and one can but hope that in the present and in the future these new endowments of which His Majesty spoke, and of which the University now stands in such urgent need, will be forthcoming. We have seen in the last decade large sums of money given or bequeathed for the endowment of education, in many of the big provincial centres, Liverpool, Manchester, Birmingham. One can admire and understand the local patriotism which incites such gifts, but one finds a difficulty in understanding how it is that a university such as this, with its noble traditions and its long roll of illustrious dead—a university which for many centuries has been, with the sister University of Cambridge, the acknowledged training school of the leaders of thought and action in this country—fails to appeal to those fortunate individuals who are in a position to do their country and education a service and to enrol their names in that imperishable record of benefactors whose memories we honour and extol. Surely the explanation must be that the needs, the urgent needs, of the University are not widely known and are insufficiently recognized.

PREVIOUS MEETINGS OF THE ASSOCIATION IN OXFORD.

In conclusion, let me turn from the subject of the Oxford Medical School to that of our own Association, and let me refer very briefly to past visits of the Association to the city. As most of you are aware, the Association was founded at Worcester in 1832, chiefly by the energy of Mr. (afterwards Sir Charles) Hastings. I am glad to note that at the first meeting Dr. Kidd, the Regius Professor of this University, was present and was elected a member of the first Council. Three years later the Association held its first meeting at Oxford under the presidency of Dr. Kidd; the Council met the day before and arranged all the details of the meeting, which was attended by 300 members.

The chief meeting was held in the Radcliffe Camera, the dome-shaped building to which I have alluded, and one or two incidents connected with this meeting are worth recalling. The Address in Medicine was delivered by Dr. Pritchard, and the University conferred on him the degree of M.D. Although this same Dr. Pritchard had studied in Oxford, he had been unable to take his degree because he was a Dissenter. The conferment of the degree in this way was taken at the time as a proof that a more liberal spirit was beginning to exist in the University. The Regius Professor pointed out that such a degree could not be procured by any ordinary medical student with less than eleven years' classical servitude and application—mark the words "classical servitude," as they imply that even in those days some students did not take kindly to the classics.

The chief attraction of the meeting was the public per-

formance of lithotrity by Mr. Costello before a very crowded audience in the Town Hall, the School of Anatomy not being sufficiently large for the spectators. You will notice that at that time a dissecting room seems not to have been thought an unsuitable place for a surgical operation.

It was remarked at the time that not a single Oxford graduate in medicine attended to support the Regius Professor of Medicine.

The second meeting of the Association at Oxford, which now numbered 1,630 members, was held in July, 1852. Dr. Ogle, the Regius Professor was the President, and the meetings, which extended over two days, were held in the House of Convocation. On this occasion the honorary degree of D.C.L. was conferred on three members, Sir Charles Hastings, the founder; Dr. John Forbes, of London; and Dr. John Conolly, of Hanwell. In the evening of the first day the Association was entertained in the Radcliffe Camera by Dr. Acland.

Another sixteen years passed, and in 1868 the Association visited Oxford for a third time. It had now grown to a total membership of 3,672, of which some 500 attended the meeting. Dr. Acland, the Regius Professor, presided, the general meetings being held in the Hall of Christ Church, while the Sectional meetings, of which there were five, were held in the University Museum. Among the Sectional Secretaries on that occasion I find the name of W. S. Church, M.A., B.M., now President of the College of Physicians, who has kindly undertaken to give the Address in Medicine to-morrow evening. I am glad to add that the three local Secretaries, Dr. Gray, Dr. Tuckwell, and Mr. Edward Chapman, now a Member of Parliament, are all living. The honorary degree of D.C.L. was conferred on the following members: Sir Charles Locock, the Rev. Samuel Haughton, M.D., Dr. Gull, Mr. James Paget, Mr. John Simon, and Mr. James Syme.

To-day our Association numbers over 19,000 members, and we are expecting more than three times the number who visited Oxford in 1868. More than this—and it is, I think, a matter for hearty congratulation—the influence of our Association has grown world-wide, for since 1868 Branches have been formed throughout India and in nearly all of our Colonies. This truly remarkable growth of our Association in magnitude, power, and influence has been due to the fostering care and unremitting labour of many workers. Into our hands they have entrusted a great inheritance, and it will be our duty to see that no negligence nor unwise and ill-considered action on our part tend in any way to jeopardize its further growth and development and power for usefulness.

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[1] April 26th, 1879. [2] Ibid., vol. i, 1885, p. 548.

Address in Medicine

At the Annual Meeting of the British Medical Association at Oxford, July, 1904.

BY

SIR WILLIAM SELBY CHURCH, BART.,

President of the Royal College of Physicians of London; Consulting Physician, St. Bartholomew's Hospital.

OUR SANITARY NEEDS, WITH SPECIAL REFERENCE TO THE NATIONAL HEALTH.

I FEEL very deeply the honour which your Council has conferred on me in requesting me to give the Address in Medicine at this meeting of the Association, and feel still more deeply the difficulty of the task—a difficulty which arises not only from my own incompetency but also from the vastness and complexity of the subject.

MEDICINE IN 1868.

Medicine having for its object the mental and bodily health of mankind is closely interconnected with the varying circumstances that bear on the conditions under which we live. The prosperity of the nation, the conditions under which the labours of the population are carried on, the state of commerce and of the arts and sciences, all react on the health of the people, and nothing which concerns the life of the nation is foreign to the subject. Every advancement in science and its application to the arts has a bearing on medicine. To pure science it is directly indebted for means by which the various organs of the body can be examined, the presence of disease demonstrated, the changes in our bodies accompanying disordered health recognized; and, perhaps more important than all, the exact methods of science point out the way in which the more complex questions presented in living bodies should be studied. It would occupy too much time, even if I were competent for the task, to trace a portion of the benefits which the exact sciences have conferred on clinical medicine during the years that have passed since the Association last met in this university city, a meeting at which addresses which still stand out as memorable among the numbers which have been given on similar occasions were delivered by Acland, Rolleston, and Gull, who will for many years yet to come be remembered not only as ornaments of our profession, but as having done much to promote medical and scientific knowledge—leaders to whom we can still look for guidance for the manner in which the different subjects they treated of should be approached.

The meeting of the Association in 1868 is for another reason of unusual interest, for it may be taken as marking the date of the parting of the ways. Up to that period our conceptions of the causes of morbid changes in the body had not undergone any great modification from the views held by the originators of pathology—Morgagni, Hunter, Baillie, Carswell, and others. Our knowledge of the infective processes leading to inflammation and suppuration may be said to have been at that time non-existent. The symptoms and course of the specific fevers as well as the circumstances under which they occur had been thoroughly recognized and worked out, but we were still ignorant of the true nature of the specific poisons on which they depended. Medicine remained open to the taunt to which Bacon two hundred years before had given utterance, "That it had rather professed than laboured and yet more laboured than advanced, as the pains bestowed thereon was rather circular than progressive, for I find great repetition and but little new matter in the writers on physic."[1]

It was in the year preceding the Oxford meeting that Lister read at Dublin his paper on the "Antiseptic Principle in the Practice of Surgery,"[2] founded on the results of his treatment of compound fractures, abscesses, and wounds[3] during the preceding three years. It was at this time also that the infectivity of tuberculous matter began to be generally recognized: twenty years before, Klencke[4] had produced tuberculosis of the lungs and liver in rabbits by inoculation with human tubercle, but he did not pursue his investigations, and his experiments attracted little notice, and it was not until Villemin's work in 1861,[5] and the account of his numerous and careful experiments published in 1868,[6] that attention was again drawn to the subject. Villemin's work was carried on by Sir J. Burdon Sanderson,[7] late Regius Professor of Medicine in this University, who explored and demonstrated the channels by which the tuberculous process is disseminated within the organism; yet many years had to elapse before Koch in 1882 demonstrated that the presence of the tubercle bacillus in all tuberculous degenerations was the essential element.

THE GROWTH OF BACTERIOLOGY.

I have thought it desirable to remind you thus very briefly of the position in which medical knowledge stood in 1868, before drawing your attention to some of the remarks made by Sir W. Gull, in his address on "Clinical Observation in Relation to Medicine in Modern Times," which he treated with the breadth of view and felicity of generalization which was characteristic of his mind and teaching. It was the adaptation of Pasteur's work and discoveries to medicine, and Koch's demonstration of the bacillus of tubercle in 1882, which led to the revolution which has taken place in our conceptions of the nature and cause of many forms of disease. Whilst I have no intention of attempting to review the changes that the last thirty-five years have witnessed, it may be nevertheless instructive as well as interesting to turn to some of the passages in Sir William Gull's address, and mark how great is the gulf which separates the medicine of the present day from that of our immediate predecessors. In speaking of fevers Sir William Gull[8] said: "In the consideration of these, small-pox stands first, since through vaccination we have clearly demonstrated, at least for one form of fever—and it seems but fair to infer the same for others—that recovery and subsequent immunity are produced by a process of impregnation and assimilation, and not, as is still maintained by some, of elimination"; whilst rejecting the theory of zymosis, by which he says "we are carried back to the days of ignorance when concoction and

maturation were made to explain whatever was obscure," he suggests that "what really constitutes the specific character of each fever is the attendant tissue change which, when completed according to the special poison, is followed by convalescence"—although, I think it is pretty clear that he contemplated by tissue changes an alteration in the solid tissues of the body, his words do not inaptly apply to the changes which we believe are undergone by the blood. In his Harveian Oration delivered two years later he again refers to the subject of infectious diseases, saying "that they spread by emanations from the sick must have been long known, and that such emanations are of a solid nature we may infer from the fact that they may be dried and conveyed from place to place, but in what state, whether as amorphous material or as germs, we know no more to-day than was known a thousand years ago."[9]

How different is the position now! Already we are acquainted with the specific organisms which are the *causa causans* of many of the febrile diseases, and can safely assume that the others, in which we have not yet discovered the micro-organisms, are due to similar agency. How much more hopeful is the outlook now than when Gull said, "It is now universally acknowledged that the art of medicine is all but powerless in controlling the large class of diseases called zymotic! It may be there do not exist nor may ever be formed by Art antidotes to their poisons. But should it be otherwise my duty at this moment still seems clear—that I ought not to stir up your minds to search for such secrets of Nature. Upon this search too much time has already been wasted, and an incalculable amount of life has been lost. Specifics will no doubt continue to be sought after, but preventive medicine will more largely obtain the suffrages of the best informed members of our profession."[10] Truly, as he says in another place, "the knowledge which seems exhaustive to-day may in the changing circumstances of the world be defective to-morrow." For it now seems probable that most, if not all, of these diseases, as we already know of some, bear with them their own antidote, and that as Sir John Burdon Sanderson has said, "Every injurious substance which is capable of being assimilated (in the physiological sense) by a living cell is also capable of exciting in it an abnormal reaction antagonistic to the first."[11]

I have not the requisite knowledge to enter into the most interesting but most difficult subject of immunization and the phenomena presented by the agglutinative, bactericidal, and haemolytic properties of the blood serum under certain conditions. The investigations which have been so actively carried on in recent years in these directions have greatly increased our knowledge of the blood and its component parts, and we trust they may lead to still further advances in the field of serum-therapeusis—a field which offers a hopeful prospect for enabling us to counteract the bad effects to which specific disease-producing organisms are capable of giving rise in the living body.

Internal Secretions.

Another most important step onwards in our physiological knowledge and its application to the treatment of disease was made when we became acquainted with the connexion existing between that group of symptoms which we now call myxoedema and disease of the thyroid gland. Sir William Gull himself, in 1873, was the first to draw our attention to the cretinoid state supervening after adult age,[12] but it was from the researches of Ord, Reverdin, Kocher, Horsley, and Murray that the existence of what are spoken of as internal secretions of glands was suspected and proved.

The brilliant results from the administration of the thyroid gland or its extract in myxoedema raised our hopes and expectations that we might, by the administration of other glandular extracts, obtain benefit in those morbid conditions in which it appeared probable that an internal secretion bears a part. As yet these expectations can hardly be said to have been fulfilled. Neither in diabetes nor in morbus Addisonii has the administration of the pancreas or the suprarenal glands been followed by any marked or constant beneficial effect on the disease. The researches of Schäfer and Oliver have proved the physiological action of the extract of the suprarenal glands to be both constant and powerful, and further researches may lead us to a better knowledge of the physiological functions of the internal secretions and enable us to make therapeutic use of them. Hitherto we have used these glandular extracts to supply the place of the normal secretions which we have inferred might be absent owing to disease being present in the secreting organ. Is it not possible—nay, probable—that it is not this simple absence but rather the presence of a vitiated secretion acting prejudicially on the organism which produces the evil with which we have to contend?

Further observations by Dr. Oliver[13] show the remarkable effects which are produced on the blood pressure by the administration of small doses of creatinin, uric acid and its compounds, glycogen, xanthin, and the purin bodies contained in food; while equally active depressors of arterial pressure are found in bodies so closely allied by chemical composition to those which increase it, as are creatinin, hippuric acid, and hypoxanthin.

Tropical Medicine.

In other lines of research the progress made is not less remarkable. The ancients were well acquainted with the commoner forms of intestinal worms, although they were ignorant of the remarkable phases presented in their development. They have left us full and accurate descriptions of the clinical symptoms produced by them and the means which should be adopted for their cure.[14] Until a very few years ago we could hardly be said to possess more knowledge than our predecessors of the part played by the animal kingdom in the dissemination and propagation of disease in man. It had long been recognized that man shared with animals the liability to be affected by certain maladies—for example, rabies and glanders—but no suspicion existed of the important part which the lower orders of creation play in the maintenance and diffusion of some of the most widespread and deadly of the diseases which affect man.

Slowly and gradually the natural history of malaria and yellow fever has been worked out. M. Laveran in 1880 first discovered and described the organism of paludism in the blood, and his discovery, like that of the tubercle bacillus by Koch in 1882, forms an epoch in the history of medicine. Laveran's observations were carried on by many others, of whom I must mention Marchiafava, Bignami, Celli, and Golgi, who together with many other distinguished Italian scientists, did so much to make us acquainted with one portion of the life-history of the malarial parasite, many years before its complete life-cycle had been discovered by the suggestions and reasoning of Manson, and the laborious and persevering investigations of Ross. Already the work done, mainly under the auspices of the Liverpool and London Schools of Tropical Medicine, has begun to bear fruit not merely by increasing our knowledge of malaria and certain other forms of tropical disease, but by having in the short space that has elapsed had a marked influence in diminishing sickness and mortality in places which were so deadly to European life, that trade could hardly be maintained with them. Nor is it only in these hot-beds of fever that beneficial results have been obtained, as Professor Boyce's account of antimalarial measures taken at Ismailia shows. The result of the sanitary work put in action by the authorities of the Suez Canal has been eminently satisfactory. The attacks of malaria in a population consisting of about 1,900 or 2,000 Europeans and 7,000 natives have fallen from 2,089 in 1897 to 209 in 1903, and the mortality has correspondingly lessened. These highly satisfactory results have been obtained at comparatively small expense, the Canal Company having expended £4,400 in filling up and draining the marshy ground, whilst the special antimalarial forces—the Drainage and the Petroleum Brigades—have together cost £720 a year, figures which contrast most strikingly with a previous "expenditure of £15,000 on works designed with the intention of improving the sanitary condition of the town and £13,000 in medicine and medical attendance,"[15] without the production of any beneficial results.

The mystery surrounding the sleeping sickness of Africa has been partially dissipated by the discoveries of Castellani, Bruce, and Nabarro, and the remarkable life-cycle of the trypanosoma is in a measure unravelled. A similar chain of events appears to occur in Texas fever, and probably in other morbid states the lower forms of animal life play a much more important rôle than is yet recognized. Recent investigations by Leishman, Donovan, Ross, and Christophers tend to show that the condition of chronically-enlarged spleen and cachexia we have been accustomed to ascribe to malaria is more probably dependent on another distinct micro-organism.

Interesting as is the connexion which we now know exists between the lower forms of life and the presence of disease in man, I must not occupy your time by further reference to it,

and I must pass by the additions to our knowledge of the nervous system and its disorders, of the blood, and of the application of electricity in its various forms to the diagnosis and treatment of injuries and disease, for it is not my intention to attempt to review the progress of medicine during the years that have elapsed since the Association last met here.

THE PRINCIPLES OF PREVENTIVE MEDICINE.

It appears desirable that I should remind you thus briefly of some of the more striking changes which have taken place in our conceptions of diseases, their causes, effects, and our means of opposing them, for events crowd so rapidly on our notice in these days that we are apt to forget how short a time has elapsed since the veil was raised and we began to see—dimly, it may be—the connexions which exist in disease as well as in health between man and his surroundings. Herbert Spencer's "environment" and Darwin's "survival of the fittest" depend to a great degree on forces which, when these phrases were first made use of, were not present to the minds of their inventors.

The exact knowledge, based on scientific research and demonstration, that we now possess of the cause and nature of disease has greater influence on preventive or State medicine than on clinical treatment. Recognizing the sources of our ills we are in a position to avoid and guard ourselves against them. To the general public the advances made are most palpable in the triumphs of modern surgery, which is in some danger of being led into excesses by the impunity with which operative measures can now be undertaken. This knowledge of facts in the place of the theories of former days leads me on to a consideration of the position in which medicine has stood in the past and that which it should now hold in relation to the public ond the State.

IN GREECE AND ROME.

It is to be regretted that we know so little of the position that the practitioners of medicine held in the State in the Greek and Roman worlds. In Greece, at the period of its highest intellectual activity, we know, from the references made to physicians by Plato and others, that they were men of learning, and possessed of considerable influence. From Plato also we learn that there were two or more distinct classes or grades of practitioners, for in the *Laws* the Athenian asks Cleinias: "You are aware that there are two classes of doctors?" *Cleinias:* "Yes, and did you ever observe that there are two classes of patients in States—slaves and freemen; and the slave doctors run about and cure the slaves or wait for them in the dispensaries....., but the other doctor, who is a freeman, attends and practises on freemen?" and the Athenian stranger goes on to describe the differences in the mode of practice of these two classes of doctors.[16]

From this passage, also, we learn that the Greek cities at that time possessed dispensaries—*ἰατρεῖα*—places where the slaves and probably the poorer citizens were wont to consult the doctors. From another passage in the *Gorgias* it appears that in the Greek cities there existed medical officers who were appointed by the municipality; for, when speaking of the power of rhetoric, Gorgias says "that if a rhetorician and a physician were to go to any city, and had there to argue in the ecclesia or any public assembly which of them should be elected State physicians, the physician would have no chance." *Socrates:* "You were saying, in fact, that the rhetorician will have greater powers of persuasion than the physician even in a matter of health." *Gorgias:* "Yes, with the multitude." *Socrates:* "You mean with the ignorant."[17] I fear we know to our cost that in matters of health the rhetorician and the politician is still not infrequently of more influence with the multitude than the physician.

Very little is known of the position of medical practitioners in Rome during republican times; the wealthier Roman families appear to have kept in their retinues slaves or freedmen who had received some instruction in medicine and surgery most probably in some of the Greek colonies in Italy, but in Imperial Rome we know that in medicine the larger cities possessed some municipal organization similar to, if not identical with, that which had been in force in earlier Greek times. Before the time of Antoninus Pius (A.D. 136) recognized medical practitioners were exempt from ordinary civil obligations and local taxation, but their numbers had so largely increased by his time that it became necessary to limit the number of recognized practitioners in each city who should enjoy this immunity; and Pliny, who seems to have had nearly as bad an opinion of our profession as Cato, complains that the law unduly safeguarded physicians, and that they alone could kill a man with impunity.[18]

The disorganization which after the fall of Rome affected every community in Western Europe envelops the subsequent position of medicine in obscurity. During these unsettled times the doctors appear to have been attached to persons rather than to communities; and this condition prevailed to a greater or less extent until comparatively recent times, and is even now perpetuated in the honorary posts attached to the royal families.

Time does not permit me to sketch, however briefly, the steps by which in this country the mediaeval guilds of barbers, barber-surgeons, and surgeons became gradually developed into the surgeons of to-day.[19] The better regulation of the profession in this country may be said to date from the institution of the Royal College of Physicians in 1518, which was entrusted with the general supervision of all persons not graduates of the two English Universities of Oxford and Cambridge who should practise physic throughout England, and to the granting of a charter by Henry VIII to the Barber-Surgeons twenty-two years later.

THE BRITISH MEDICAL ASSOCIATION AND MEDICAL LEGISLATION.

Sir John Simon, whose recent death should remind us of the debt of gratitude which this country and sanitary science owe to him for his many years of strenuous service in the cause of sanitation, has, in his most interesting work on English sanitary institutions[20] a chapter entitled "Growth of Humanity in British Politics." In it he traces the influence of the religious revivalism under the Wesleys, and the noble work of Howard in arousing among the better-informed classes a humanitarian spirit which has been one of the many factors, and perhaps the most powerful, which have led to the reformation of the Criminal Code, the abolition of slavery, the Factory and Sanitary Acts of the nineteenth century. During the earlier part of the nineteenth century it was gradually brought to the attention of thoughtful men that steps should be taken to regulate the education and the practice of medical men. The first result was the passing of the Anatomy Act in 1832, which was followed by the appointment in 1834 of a Committee of the House of Commons to inquire into "the laws and usages regarding the education and practice of the various parts of the medical profession in the United Kingdom." No report was presented by this Committee, although it took a great deal of evidence; part—that relating to Scotland and Ireland—was never printed, and is supposed to have perished when the Houses of Parliament were burnt. Mr. Warburton, who acted as Chairman of the Committee, introduced in 1840 a Bill into the House for the registration of medical practitioners, but found little support. Sir James Graham and Mr. Manners Sutton prepared and brought in a Bill, four years later, "for the better regulation of medical practice throughout the United Kingdom." The Government of the day declined to interest itself in the Bill, and no further action took place until this Association—then called the Provincial Medical and Surgical Association—under the leadership of Sir Charles Hastings, brought the subject under the consideration of Lord Palmerston in 1853, and of Sir G. Grey in 1855, in the hope that the Government would promote the Bill which the Association had prepared. Neither Minister would undertake to bring it in as a Government measure, and a private member—Mr. Headlam, M.P. for Newcastle—in 1855, and again in 1856, introduced a measure which represented the views of the Association. By the influence of Mr. Cowper, then President of the Board of Health, the House of Commons referred the Bill to a Select Committee—a proceeding which eventually resulted in the Medical Act of 1858, which has been productive of incalculable benefit both to medical education and to the public. This Association may well take pride in remembering that this was accomplished mainly through its influence and action.

POOR-LAW AND PUBLIC HEALTH LEGISLATION.

Contemporaneously with the awakening of public opinion to the necessity for a reform in the constitution of the medical profession, by which the public might be able to discriminate between those who were and those who were not legally qualified to practise, the need for increased legislative power for sanitary purposes was recognized. The public mind had been aroused by the ravages of cholera, which spread through the land in 1831-2 and to a less degree in 1848-9; whilst the revelations of the conditions under which the labouring poor were living contained in the reports of Drs. Neil Arnott, Kay, Southwood Smith, Mr. Chadwick, and others to the Poor-law

Commissioners appealed to all but the most thoughtless, and prepared the way for sanitary legislation.

I am not forgetful that from the earliest periods of civilization it has been recognized that large centres of population have necessitated laws and regulations for the prevention of nuisances and the removal of refuse. These were among the most important duties of the Aediles in Rome, and in the records of mediaeval London are constant references to the removal of nuisances, the cleansing of the streets, and the necessity for "avoiding the filthiness that is increasing in the river and upon the banks of the Thames to the great abomination and damage of the people."[21]

The dissolution of the monasteries and other religious foundations in the sixteenth century led to the whole country being flooded with pauperism, for however self-indulgent the ecclesiastics may have been, they had always exercised supervision over the poor on their estates, and administered relief as required to those who were in the employment of the religious houses or of their numerous tenants.

This deplorable condition of the nation gave rise in the early years of Elizabeth's reign to our present Poor Law, and during her reign, and that of her immediate successors, very stringent Acts of Parliament and municipal regulations were passed not only for the removal and prevention of nuisances, but also dealing with vagrancy and mendicity, and provision for the relief of pauperism and the care of the impotent poor. From that time onward numerous local Acts on a variety of subjects bearing on the national health were added to the statutes, but no comprehensive scheme was instituted until we come down to the Victorian Era, and the passing of the Public Health Act of 1848 may be taken as the date of the rise of a fresh branch of medicine—preventive or State medicine.

It was then that the State publicly recognized what Hobbes two hundred years before, when writing "of the Commonwealth," had indicated as the function of the governing power:

> The office of the sovereign (be it Monarch or Assembly) consisteth in the end for which he was entrusted with Sovereign Power, namely, the procuration of the safety of the people, but by safety here is not meant a bare Preservation, but also all other contentments of life which every man by lawful Industry without danger or hurt to the Commonwealth, shall acquire to himself.[22]

The health of the people, both bodily and mental, is the principal asset of the nation. Without a vigorous and energetic population no nation can make progress, and coincident with the cessation of progress is the commencement of decadence. We have heard of late very much about the deterioration and degeneration of our population. I cannot venture to express an opinion on such a complex and difficult subject, but I can safely say that there exist no standards by which our present can be compared with our past condition, and I greatly doubt if those who talk and write so volubly on the subject are acquainted with the reports made to the Poor-law Commissioners sixty years ago. The present state of our population is serious enough, and it behoves us all, doctors and laymen alike, to do what we can to ameliorate, if we cannot remove, the conditions which militate against the health and happiness of the population.

Steam and electricity have revolutionized the world, and the conditions of modern life are now entirely different from those prevailing during the first decades of the last century. The food, clothing, housing, and circumstances under which large numbers of our population work are very different now in both our rural and urban populations to what they were then. Are the changes calculated to benefit the physical and mental condition of the people? or have all our boasted improvements proved snares and delusions? These questions are fraught with the greatest importance to the nation: questions which in the absence of any known standards for comparison with the past it is difficult, if not impossible, to answer. I trust that the Committee of the Privy Council on the physical disability of recruits now engaged in framing its report may urge on the Government the desirability for a physical census of the nation being taken, and renewed from time to time; and that the physical condition of the children in our primary schools should be watched, recorded, and reported on as regularly and carefully as their educational progress. It is only by information of this sort, collected by competent persons and duly weighed by those capable of forming an opinion on the medical aspects of the question, that improvement can be hoped for.

THE CODIFICATION OF PUBLIC HEALTH LAW.

I have already alluded to the Public Health Act of 1848 as marking the introduction of preventive or State medicine. Since that date numerous Royal and other Commissions have been engaged in the investigation of a very large number of subjects bearing on the national health, with the result that from that time to the present the Legislature has been continually occupied in passing new measures for the furtherance of health or the amending of old ones.*

A certain amount of consolidation of the sanitary law was effected by the Act of 1875, but the mass of sanitary legislation and the involved nature of it prevents the public, and I might say the profession also, from being able to follow it. Its complexity in part arises from different departments of the Central Government being responsible for the means which are taken for safeguarding the public health.

Legislation at the present time appears to me to be in advance of administration, and it is not so much fresh legislation that is needed as the simplification and codification of the existing law. The administration of the law cannot be much in advance of the knowledge and feeling of the public; and while giving full credit to municipal and other sanitary authorities for the good work already done and the efforts they are now making, the medical officers of health throughout the country are painfully aware how great is the ignorance shown by the mass of the population of the principles on which the public health depends, and how great is the necessity for educating the general public to a proper appreciation of the elemental facts of sanitary science.

The all-important part that micro-organisms play in the putrefaction and decomposition of organic matter and in the production of disease was unknown when sanitation first seriously occupied the attention of the Legislature. The air, the earth, and the waters all teem with them; and although we recognize in some our deadliest foes, we must not forget that it is due to the beneficent action in their countless millions of other members of this group that we mainly owe both the purification of the water we use and the earth we live on: if it were not for their action we should be smothered by our own refuse. As a consequence, this increase of knowledge has rendered it necessary for those who hold important positions in connexion with preventive medicine to have special preparation for their work. The need for this was foreseen by Sir Henry Acland, who, in his address, remarks that:

> The Government will have to define the duties to be discharged by public health officers or other officers of public medicine, and the General Council of Medical Education will be able to direct the education of those who aspire to the performance of the duties so defined.

The General Medical Council and the educating bodies have fully acted up to this expectation of Sir Henry's, and the universities and diploma-granting corporations have established special courses of instruction and special examinations requiring a very high standard of professional knowledge from those who desire to qualify themselves for holding responsible posts in preventive or State medicine, which is now justly regarded as the highest branch of our art.

Does the large body of highly-qualified officers of health and do the medical officers of the Local Government Board possess the influence in the Government and in the country which they ought to own? I fear not; neither in the Government nor in the country do they hold the position they are entitled from their high qualifications and the importance of their duties to command. Your President last year directed your attention to the need for reform both in the central authority, that is, the Local Goverment Board and in the local authorities.

THE INEPTITUDE OF THE TREASURY REPORT.

During the past year your Council and its Medico-Political and Public Health Committees have been engaged in framing a Bill which it was hoped might be brought before the consideration of the Government. I am afraid from the nature of the Report of the Treasury Committee appointed to consider the position and duties of the Board of Trade and the Local Government Board there is not much prospect of the Public Health Department of the Board receiving any increase either of power or payment. The health of the nation, on which its success and prosperity depend, is thrust into the background with the remark that the President of the Board "has the advantage not only of the profes-

* Of these the most important have been the Act of 1858 by which the powers then vested in the Board of Health were, together with other powers, transferred to the Privy Council; that of 1871, when the Local Government Board was instituted, vesting therein certain functions of the Secretary of State and Privy Council concerning the public health and local government, together with the powers and duties of the Poor-law Board; the Public Health Act of 1875; the amendment of the Medical Act, 1886, and the Local Government Acts of 1888 and 1894.

sional opinion of the Medical Officer of the Board, but also of the general administrative experience of the permanent Secretary." In an article in the *Times*[23] upon the Report the writer remarks: "The commercial community cannot hope to exercise the influence due to its position in national life so long as its official representative is treated as of second-rate importance." These words appear to me to apply with even greater force to the Department of Public Health in the Local Government Board.

The Duties of the Local Government Board and Medical Officers of Health.

I do not think that there would be any advantage in my dwelling on the terms of the Bill your Council proposed, but there are certain points in connexion with it that should be continually pressed upon the attention of the President of the Local Government Board and the Government:

1. That whilst the administration of sanitary legislation must be left to the local authorities, the central authority should act as an advisory as well as a supervising authority.

2. That both in the Local Government Board and in the local authorities the medical element should have greater weight and authority than at present, and that the medical officers of health throughout the country should be responsible to the Local Government Board as well as to the local authority, and hold their office during the pleasure of the Local Government Board and not at the will of the local authorities.

3. That steps should be taken by which the medical officers of health and the Local Government Board, which at present is the department mainly charged with supervising the administration of the Sale of Food and Drugs Acts, should undertake further duties of supervision and watchfulness in relation to the purity and wholesomeness of articles sold for food.

Need for Supervision of the Sale of Foods.

The need for such increased supervision was forcibly brought to the attention of the Commissioners appointed to inquire into arsenical poisoning. At the present moment there are no means by which the officers, medical or other, of County, Borough, Urban or District Councils who are responsible for the local administration of the Acts relating to the sale of food can enter the premises and obtain information concerning the nature of foodstuffs or the process of their manufacture. At present the maker of a foodstuff sold under a fancy name—Grape Nuts, Force Food, etc.—is under no obligation to submit to any authority the composition of its ingredients. It is only after the foodstuff has been placed on the market that any control can be exercised by samples being taken for analysis, which, although showing the absence or presence of deleterious matter, gives but little guide to the suitability and value of the preparation as a food. The enormous bulk of these fancy and largely advertised foods on the market, both home-made and imported, renders it essential that further power in the supervision of food should be placed in the hands of the health authority.

Rural Hygiene.

The necessity for sanitary regulations being so much greater in large towns, with their dense populations, manufactures, and difficulty in disposing of their refuse, naturally led to the earlier efforts in the direction of improved sanitation being especially directed to their most urgent needs, and hence it has arisen that the methods of sanitation applicable to large towns have been accepted by the public as the only ones, and are imitated in rural districts to the great loss and harm of the community.[24] It is greatly to be regretted that Sir Edwin Chadwick's doctrine that not only domestic sewage but all sorts of refuse are best removed by the scour of running water has received such general adoption. Whilst the advantages of the present system of sewerage, although ruinously expensive, is undoubtedly very great in our large towns, and must perhaps be perpetuated, it is not in accordance with common sense that it should be recklessly applied throughout the country. The disposal of the liquid sewage not only of our large towns but of our villages, villa residences, and country gentlemen's houses, has become a most difficult problem for modern sanitarians. No one has any more justification in injuring his neighbour by wilful or culpable negligence of sanitation, or by the means he takes to protect himself from the evils he has created, than he has in appropriating his neighbour's goods or trespassing on his premises. "In rural and semirural districts the individual ought no more to ask others to keep him clean than he asks others to feed him or clothe him."[25] The conscience of the public and of the individual needs awakening to the immorality of injuring the public weal for private convenience. We daily see instances of small towns and villages expending vast sums of money in systems of sewers and sewerage works. A system of sewerage necessitates a constant water supply far in excess of the needs of the inhabitants for domestic use; it introduces a source of danger of pollution for the springs and wells of the locality, and renders necessary the introduction of waterworks to supply uncontaminated water—if, haply, such can be found—brought, it may be, from a distance, and entails a heavy and permanent charge on the locality. The interest of the money thus spent would in many instances provide for the necessary expenses which a proper system of scavenging would entail.

Urban Hygiene.

Is the Local Government Board, and are our urban and rural sanitary authorities, really guided by their sanitary officers? It is hard to believe it, for one sees around one in the metropolis, and in our provincial towns and rural districts numberless instances of divergence from the principles of sanitary science. The enormous value of land in London and our large cities has led to a remarkable change in the character of their buildings. At the very time that it became generally recognized that fresh and moving air was one of the necessities for healthy life, and whilst vast sums are being paid for securing open spaces and widening streets, the private speculator is allowed to erect huge piles of bricks and mortar which effectually block the currents of air which are required to freshen and vitalize the atmosphere of our crowded streets and thickly-populated courts. Is this wise? Is it in accordance with our present knowledge? The Tudor and Jacobean architects understood much better the principles necessary for healthy life; we can have no better examples than those around us here. The Colleges are laid out with spacious quadrangles freely admitting air and sunlight, surrounded by sets of rooms which are for the most part open to the air on both sides, and seldom more than three stories in height. The greatest enemies that the disease-producing microbe has are air and sunlight; some of them are deprived of vitality and their power of evil by a few hours' exposure to sunlight. What chance has the microbe of meeting these conditions in the piles of brick and mortar which are now built around central wells, into which a few rays of daylight struggle by means of glazed tiles, and to which the purifying and cleansing action of a brisk wind can never reach?

We see equally regrettable proceedings, although of a very different kind, going on in the outskirts of London and our large provincial towns, and, I regret to say, in many of our rural villages. Rows and rows of houses—what are often termed "workmen's houses"—are erected on the plan of third-rate London streets: no ground round them, no gardens: the minimum space allowed by the sanitary authority of the district is all that intervenes between them and a similar row, and unfortunately sanitary authorities in their by-laws have based them on ones which may be applicable to London but are calculated in suburban and rural districts to reproduce all the evils of the town. Sewers and waterworks are provided at the expense of the district, not for the benefit and advantage of the inhabitants, who would rejoice in a piece of garden ground and space around their homes, but to allow the landowner and builder to make more money out of the ground-surface at their disposal, to the hurt and damage of the district and the nation.

In the decennial supplement to the Registrar-General's Report for 1895, Table R shows that the rate of mortality in England and Wales is in proportion to the density of the population, the districts most densely populated having a mortality two and a-half times greater than those more thinly inhabited. The mortality per thousand living being 12.70 in districts with 138 persons to a square mile, and 33.00 in the most densely-populated having 19,584 to the square mile. The corrected death-rate for "Urban England" being 22.32, whilst that for "Rural" was 16.95. Infant mortality is by universal consent among sanitarians taken as a measure of the salubrity of a district, and an examination of Tables S and T of the Registrar-General's Report shows how excessive is infant mortality in "Urban England." Taking the report for 1901, we find the infant mortality of the whole country is 166 in every 1,000 births for males under 1 year of age and 136 in every 1,000 births for females of the same age, the urban death-rate being 180 for males and 149

for females, the figures for "Rural England" being 136 and 107 respectively.

Table Q shows the same in a still more striking manner; the agricultural counties of Herts, Huntingdon, Wilts, and Westmorland, in which there are no large towns and no crowded industries, stand lowest with an infant mortality not exceeding 100, whilst Northumberland (182), Durham and Lancashire (179), Nottingham (172), have the highest infant mortality of all our counties, London (149) and Middlesex (130) holding intermediate positions.

Other factors besides density of population undoubtedly have a share in producing these results; but there can be no doubt that density of population is one of, if not the most important of the causes producing this deplorable sacrifice of life.

Very interesting figures are given by Dr. Sykes in his Milroy Lectures, 1901, showing that whilst the general and infant mortality in the Peabody and Model Buildings in St. Giles's is much below that of London generally, as would be expected from the class of persons inhabiting them and the supervision to which they are subjected, the death-rate from certain infectious diseases was in excess of that of London, demonstrating the risk which is run by aggregating, even under favourable conditions, a large population under what may be considered one roof.

The phrase "back to the land" has of late been much in the mouths of many would-be philanthropists and politicians, and much has been written on this theme in the ephemeral literature of the day. I fear that as a remedy for physical deterioration or agricultural depression it must be regarded as utopian: even the powers of the Legislature cannot prevent the course of economic laws from taking effect; but the Legislature might, I venture to think, do much which would aid in preventing the continual growth of known and acknowledged evils. It is the province of the Legislature, as Hobbes said, to procure the safety of the community, even if it interferes with the freedom of individual action; it is done every day in connexion with infectious disorders and with the approval of the public. Our sanitary authorities, guided as they now should be, not by theories of disease, but by facts capable of scientific demonstration, should have the power to restrain both individuals and public bodies from perpetuating and increasing evils which threaten materially to injure our welfare and prosperity as a nation. Overcrowding, whether of houses or localities, should be more stringently dealt with, facilities should be afforded for the removal of certain trades and manufactures from crowded centres, and public money should be expended in affording ready means of access and communication with them.

Hitherto our modern facilities of locomotion, telegraphic and telephonic communication have had the effect of increasing rather than relieving the congestion of our central districts, whereas they might be used for the opposite purpose, and enable many of our trades and much of our business to be carried on outside the limits of our towns.

Rural sanitary authorities should be taught to shun, instead of imitating, those methods of sanitation which have been found by experience so costly, so difficult to manage, and so productive of harm.

I wish, Mr. President, that I had been able to bring before you the question of the national health in a manner worthy of yourself, this great audience, and the subject: it is one of supreme importance, far transcending the ordinary political issues of the day. I have endeavoured to point out the need there is for us all to use every means in our power to educate the public in this most vital question, to impress upon them that sanitation is no longer a matter of medical opinion, but is based on facts arrived at by the instrumentality of scientific methods and capable of being scientifically demonstrated. Legislation, however good, cannot be effective unless it has the willing concurrence of the people. Finally, I would urge that this powerful Association should use its influence to impress both the public and the Government with the desirability of a physical census of the nation being taken from time to time, and the necessity for the registration of the physical condition of our children, on whom the future of the country and the empire depends.

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Address in Surgery

At the Annual Meeting of the British Medical Association at Oxford, July, 1904.

BY

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MR. PRESIDENT AND GENTLEMEN,—My first duty is to thank the British Medical Association for the honour it confers by inviting me to give the Address in Surgery at its meeting in Oxford.

Several Points Concerning Cerebral Invasion of Pathogenic and Pyogenic Organisms.

Permit me to refer briefly to several points concerning cerebral invasion of pathogenic and pyogenic organisms. These points have previously been brought to the notice of the profession in various communications by me, especially in a work on *Pyogenic Diseases of the Brain and Spinal Cord*, published in 1893, and in the inaugural course of Lane Lectures given by me in San Francisco in 1896. Subsequent experience, though modifying somewhat, has mainly confirmed and emphasized previous observations.

Localization of Brain Abscess arising from Primary Pyogenic Cranial Lesions.

The first point refers to the localization of brain abscess. Prior to the advent of cerebro-spinal surgery in its later development, abscess of the brain was regarded solely as of a pyaemic nature, occurring by metastasis, and, owing to the aberrant manner in which abscess formed, its localization was regarded as impossible, except in the few instances where abscess happened to occur in parts which gave rise to functional manifestations. Even where abscess occurred as secondary to a primary pyogenic cranial lesion, some were inclined to believe that the brain abscess was equally due to a pyaemic manifestation, and accordingly could occur at any part of the brain, distant from, and without relation to, the primary lesion.

Such was the old view, but early observation showed that this view was untenable. It was seen that all brain abscesses arising from the foci within the cranium were, if not in direct contact with such foci, at least in contact with the infected path which lay between the primary focus and the abscess.

Knowing the primary cranial pyogenic focus, one could count upon the abscess being situated within a circumscribed radius of that point.

Subsequent experience has abundantly confirmed this view, and shows that in the great majority of instances in which abscess of the brain has formed from primary foci on the exterior of the skull, the brain abscess is situated in direct contiguity with the infected structures. Anatomical features, or the results of prior pathological processes, usually determine the particular direction in which the pyogenic organisms proceed from the primary focus to the brain.

If the cerebral abscess remains unrelieved and continues to grow, it may by extension implicate other regions of the brain distant from the primary external focus; even then the contiguity of diseased structure is generally traceable. So that, by way of illustration, if one takes intracranial abscess resulting from ear disease, one knows that such abscess will form within a limited area of the middle ear, the particular direction of the extension being determined by the anatomical condition of the parts and the direction of the prior pathological encroachments. The abscess will be found either within the temporo-sphenoidal lobe contiguous with the infected tissue round the sigmoid sinus or in the cerebrum in touch with the infected path from the tegmen antri or tympani, the

pathological processes having generally prepared the way and having left in most instances an easily traceable path. This being correct, it must be apparent in a case of abscess of the brain that the preliminary investigation is facilitated and the treatment simplified as access to the abscess in either position may be had by extension of the aperture already made in the mastoid.

The Determination of Abscess versus Meningitis.

Anatomical features are often secondary determining factors between abscess and meningitis, and in the latter case between localized and generalized lesions. If the access of the pyogenic organisms has been by way of the tegmen or the sigmoid, abscess of the brain or cerebellum is frequent: and if meningitis results, it is at least primarily localized, often the result of a soldering process, does not immediately involve vital structures, and is often amenable to prompt treatment.

Abscess does not Occur by Pyogenic Organisms Travelling by way of Internal Auditory Meatus.

If, on the other hand, the pyogenic organisms have travelled by way of the internal auditory meatus, they occasion leptomeningitis of a serious kind on account of its being basal, early involving the medulla and respiratory centres; and, secondly, on account of its inaccessibility. Abscess of the brain seldom or never occurs by pyogenic organisms travelling by way of the internal auditory meatus. My own personal observation has never shown me a single instance of such an occurrence, nor would it be likely to occur from the anatomical features of the parts. The brain is kept apart from the original pyogenic focus by the whole length of the internal auditory canal, while the expansion of the brain membranes which ensheath the nerves in the canal dip right into it. The leptomeningitis is thus set up in the canal, and from there spreads over the basal membranes. Collections of purulent matter are frequently in the meshes of the pia and arachnoid, and occasionally they produce a softening and ulceration of the brain surface, but not abscess of the brain.

Tubercle of Middle Ear extending to Brain—the Membrana Tympani remaining Intact.

Tuberculous meningitis has occurred in ten cases seen by me in which the middle ear was involved without perforation of the tympanic membrane, and in the majority without swelling over the mastoid.

In five the internal auditory meatus was the channel by which the tubercle spread from the middle ear to the membranes covering the cerebellar fossa and the basal ganglia, and these parts were so clearly and extensively involved that no attempt was made by way of operation to follow the disease after removing the primary focus from the middle ear and its adnexa. Those five succumbed to the tuberculous meningitis after various periods, some lingering for months.

In five other cases intracranial operations were performed, as the meningitis was unilateral, and it was hoped to be still localized and to have spread by way of the tegmen. In the first of these that hope was not realized, the disease having spread beyond the possibilities of recovery. In the second the disease had spread toward the base beyond the limits of what was deemed prudent to follow. In this case, though the disease had spread through the tegmen, antri, and tympani, it had advanced too far and radiated in many directions.

The patient improved after the operation, and lived in the possession of a fair amount of health, sufficient to enable him to resume work and have a limited enjoyment of life for three years, with two meningeal attacks of short duration in the interval. At the expiry of this time his health markedly declined, and he died in a fourth attack of typical basal tuberculous meningitis.

In the other three cases which came under observation at an earlier period of the disease, the meningitis was confined to the basi-membranes and lateral aspects of the temporo-sphenoidal lobe and were dealt with successfully, the patients not only recovering from the operation, but regaining strength and vigour. The mental capacity of one of these has been sufficient to enable him to gain a foremost place in a large public school.

Another instance of tuberculous meningitis (the eleventh) originating in a tuberculous lesion in the middle ear without rupture of the membrana tympani occurred in a gentleman who was only seen by me in the advanced stage of the disease, while comatose, and consequently when the usual avenues whereby information may be gleaned from the patient were closed. The only item of history that could be taken as connecting the ear with the disease was the fact that some months previously, while in Algiers, he had taken cold in the head and had complained of slight pain in his right ear, which passed off in a few days without occasioning any discharge through the external ear. When seen by me, the membrana tympani was intact, but somewhat wash-leather like, and slight wincing was elicited by pressure over the right mastoid region, while like pressure was tolerated over the left mastoid. There was just a possibility of affording relief by operation. The mastoid was found filled with tuberculous granulation tissue, and there was an erosion through the tegmen and the adjacent dura filled with tuberculous granulation tissue. From there the meningitis had spread, radiating over the temporo-sphenoidal lobe both laterally and basal, and extending beyond the limits of an extensive operation. Temporary relief was afforded, but the generalized meningitis became marked, from which the patient died.

No doubt in many of these cases the tuberculous meningitis would have been diagnosed, but the connexion between it and the original tuberculous focus in the mastoid might easily have been overlooked, especially as the membrana tympani was still intact.

Even on *post-mortem* examination, when extension to the membranes of the brain has taken place by way of the internal ear or the sigmoid sinus, a casual examination of the interior of the skull might easily overlook the channels of extension, and therefore the primary focus might remain undiscovered.

Patients affected with tubercle of the middle ear, with rupture of the membrana tympani, are subject to secondary pyogenic invasion, which runs a rapid course, the pyogenic organisms finding abundant pabulum for their development.

Miliary Tuberculosis from Middle Ear through Sigmoid Sinus.

Another mode by which tubercle of the mastoid may become a menace to life is by dissemination through the sigmoid sinus to other parts of the body. On many occasions tuberculous masses of granulation tissue issuing from the mastoid have surrounded the knee of the sigmoid sinus, and in a number the lumen of the sinus has been invaded by the tuberculous granulation tissue. In one of these tuberculous disseminations occurred in the lungs and afterwards in several epiphyses leading to joint disease. In a case of rapid illness from tubercle, resembling an acute infective disease in its rapidity and fatal termination, general miliary tuberculosis was found in the lungs and some of the other viscera. Both mastoids were filled with granulation tissue, but the right sigmoid sinus was penetrated and the aperture was in direct contact with caseating tubercle.

The Recognition of a Respiratory and Cardiac Reflex induced by Peripheral Impressions on the Pudic Nerve.

In 1870 a patient who was placed under the influence of an anaesthetic, to the extent of abolition of the reflexes, as tested by complete muscular flaccidity and absence of conjunctival reflexes, exhibited an alarming spasm of the glottis at the moment when the sphincter ani was stretched, preliminary to the removal of haemorrhoids. At that time it was thought that the anaesthetist was at fault in not having placed his patient sufficiently under the influence of the anaesthetic.

Further observation showed that, however deeply the patient might be placed under the influence of the anaesthetic consistent with safety, this reflex, though modified in degree, was still present, and could be induced not only by stretching of the sphincter ani but by painful impressions upon the external genitals, and to a less extent on the perineum and lower gluteal region.

No doubt impulses from almost every sentient surface may modify respiration, and so delicately sensitive is the respiratory centre to afferent impulses that stimuli too slight to produce any appreciable effect when applied to afferent nerves connected to an ordinary spinal reflex centre, may produce powerful impressions on the respiratory centre. It is also sometimes observed that violent emotions induced by erratic cerebral activity under the initial stages of anaesthesia may produce profound alterations in the character of the respiratory and cardiac movements. All the reflexes induced by such impressions are, however, rendered inactive by anaesthesia. But the reflexes arising from impressions on the peripheral distribution of the pudic and associated nerves persist

while the patient is "under" the influence of the anaesthetic.

In many, deep general anaesthesia greatly modifies, though it does not altogether inhibit, this pudic reflex, but in others the placing of the patient as deeply under the influence of the anaesthetic as is consistent with safety has no apparent inhibitory effect. The degree of anaesthesia is tested by complete muscular flaccidity, the abeyance of all ordinary reflexes, and the pupillary stable myosis. It has been observed that when any prior obstruction to respiration existed, such as to induce venosity of the blood, the respiratory centre becomes more easily affected by the pudic afferent impulses. While under the anaesthetic the pudic afferent impulse produces no response in the lumbar reflex centre, the anaesthetic seeming to have inhibited its action. On the other hand, the pudic peripheral impression produces an instantaneous response from the respiratory centre, inducing generally a prolonged tetanic inspiratory gasp, and sometimes a deep stridulous inspiratory effort each time the peripheral impression is repeated. The respiratory response follows—like touching the button of an electric bell.

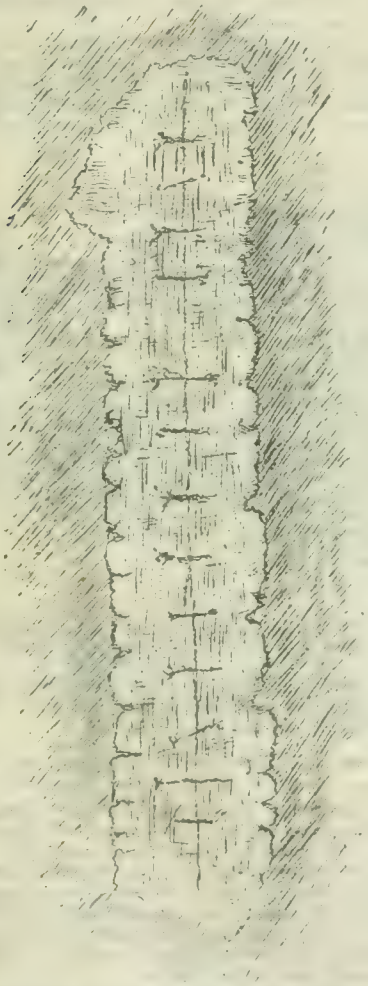


Fig. 1.—Drawing from photograph of film removed from healed laparotomy wound, fourteen days after operation. Portions of stitches external to the skin are here seen adherent to the film, having been detached by absorption from the remainder of the gut.

Though the heart participates in this reflex through the vagus, the effect upon it is seldom the prominent feature, and in the majority is so slight as to be either imperceptible or to pass unnoticed by the finger of the assistant on the pulse.

In some there has been marked weakening of the pulse, coincident with the manifestations of the laryngeal reflex. In a few the irregularity, the slowing, and the depression of the pulse have been marked, and have constituted the prominent feature, the effects lasting longer and being more serious than induced in the respiratory centre, and being accompanied by a livid pallor of the face.

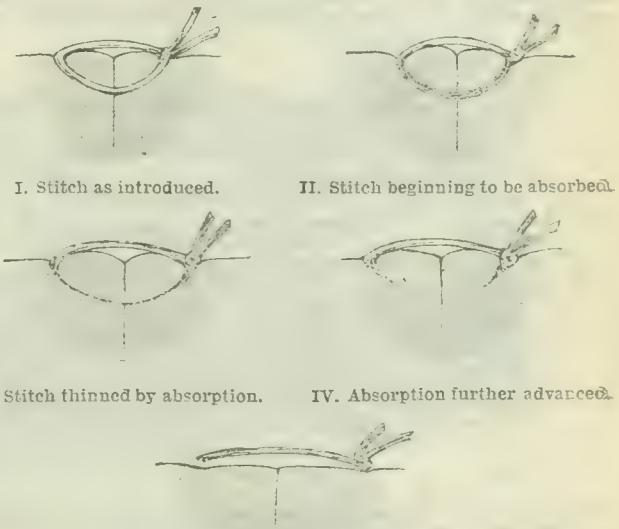
In the neurotic the cardiac effect is more pronounced.

Occasionally the persistence of a reflex under anaesthesia, after the ordinary reflexes have been allayed, is to be seen in highly-sensitive inflamed tissue. Parts whose reflex would normally be easily overcome by light anaesthesia still have their reflexes persisting. In certain stages of inflammation of a joint, where the whole of the nerves of the part are exquisitely supersensitive, the attempt at movement of such a joint after all the ordinary reflexes have been placed in abeyance induces a reflex spasmodic stiffening of the muscles of the limb, while all the other limbs are absolutely flaccid. In such a case, however, the deepening of the anaesthesia speedily relieves the reflex and renders the supersensitive part insensitive.

All these reflex phenomena occasioned by stimulation of the pudic nerve may be prevented or greatly lessened by local anaesthesia, induced shortly before the administration of the general anaesthetic. For small operations, local anaesthesia alone might suffice, but in the majority of instances the combination of local with general anaesthesia is safer, as the reflex is more completely controlled.

Opium has also an excellent effect, administered either hypodermically or by suppository.

Fig. 2.—Schema of absorption of catgut stitches.



This reflex is induced by painful impressions affecting the parts supplied by at least three spinal nerves—the second, third, and fourth—sacral, principally through the pudic nerve and the perineal branch of the fourth sacral.

This group of nerves is occasionally damaged by injury to the cauda equina or by the pressure of tumours within the spinal canal in the lumbar region, when there ensues paresis or paralysis of the muscles supplied by these nerves, and distressing want of sensation in the parts concerned.

Such patients, besides being affected with paralysis of the muscles, have anaesthesia over the lower gluteal region, the posterior aspects of the thigh, the perineum, scrotum, and penis, as far as its root. They generally complain of impotence and want of control over the bladder and rectum. The loss of control over bladder and rectum is somewhat variable in degree, depending upon the precise locality of the lesion in the sacral plexus, as well as upon the degree of pressure.

In several cases seen by me, the "want of control" was somewhat different from that which ensues in ordinary paraplegia. Though immediately following the injury the patient had no power to urinate or defaecate, his evacuations being quite involuntary. Owing to the want of the usual sensation there was no desire to evacuate, even when the viscera were distended. Hence there was overflow of urine of which the patients were unaware. After a time the patients learned that they could control those evacuations by careful watchfulness of new sensations, or at least of sensations which they

had not previously noticed, which guided them as to the desirability to evacuate to avoid mishaps. Prior to the injury which produced this localized paralysis the necessity for the evacuations was indicated by sensations, and was governed by reflex action stimulated by the presence of the contents. After the injury this local reflex was wanting as well as the sensation, and the patients had to regulate the evacuation by their intelligence and by observation of other phenomena indicating fullness, when by a voluntary effort they were able to produce evacuation. At the same time the evacuation was accomplished without any of the ordinary sensations, so that the patient was unaware of the evacuation until he saw the result. Thus, in this sense, it is not correct to describe this condition as "want of control." The patient regains control through the sole agency of intelligence and voluntary action, the previous guiding sensations and reflex action being in abeyance. The only want of control lies in his inability to voluntarily arrest the flow once it has started.

When such patients are placed under an anaesthetic stimuli applied to the pudic nerve distribution do not excite laryngeal spasm, as the conductibility of the afferent fibres is in abeyance.

The impotence in these cases was not due to testicular deficiency, testicular sensation being present and normal: but there was complete anaesthesia of the external genitals and loss of localized muscular power.

Operations were performed in two cases which came under observation of lesion in the lumbar region implicating the cauda equina. Both were affected with pudic paralysis, and in one the anaesthetic area extended to the back of the thighs and the soles of the feet, showing the further implication of the second and third sacral nerves. These operations resulted in the restoration of function of the bladder and rectum in both, and of sexual power in one and partial restoration of it in the second.

One of the cases was of injury of two months' duration, while the other was of six months, and in the latter the spinal canal was found partly filled with a fibrous tissue mass in which the cords of the cauda equina were adherent on their posterior aspects. It is not desired here to enter into detail concerning these cases further than to describe the phenomena elicited both before and during the operation relatively to the reflex between the parts affected and the larynx.

While under the influence of the anaesthetic the somewhat flaccid sphincter ani, when dilated, did not evoke the usual laryngeal reflex, the sensory peripheral parts being paralysed. After exposing the cauda equina, opposite the second and third lumbar vertebrae, and while removing the tumour-like mass of fibrous tissue—and consequently pulling on some of the cords of the plexus—the laryngeal reflex was induced, as evidenced by the prolonged stridulous inspiration and the tetanic-like inspiratory gasp. Later, it was seen that this reflex was elicited only when a special cord of the plexus was touched and along with the manifestation of the laryngeal reflex. On touching this special cord with the electrode there was a feeble response at contraction of the sphincter ani and perineal muscles. Another large contiguous cord when touched induced spasmodic contraction of the muscles of the lower limb supplied by the sciatic, but did not induce laryngeal reflex. None of the other cords on that half of the cauda equina caused respiratory spasm when stimulated, but the corresponding cord on the opposite side did.

Owing to the limited portion of the spinal canal exposed, and the close proximity of the other structures, the various strands of the cauda could not be definitely traced to their origin or distribution; but from the collateral circumstances and the physiological effect produced on the muscles supplied by the pudic, the cord inducing the laryngeal reflex no doubt received the afferent strands from the pudic nerve through the sacral plexus.

In two cases where the pudic nerve was affected in the manner described, among the minor defects attending their condition the patients asserted that their voice had altered since their injury. There was no available means of testing the accuracy of this statement, though one of the patients operated on remarked, some time after the restoration of the pudic functions, that his voice had regained its original "fullness." Doubtless the restoration of the bodily tone and vigour would have an effect upon the voice apart from any direct nervous influence through the vagus to the laryngeals. The assertion on the part of the patients, however, awakens the thought of the possibility.

The effect of early castration is well known to produce an imperfectly-developed larynx and a high-pitched voice. But the spermatic plexus is totally different in origin from the pudic, being derived from the sympathetic through the aortic and renal plexus. Is it possible that, among the fundamental changes induced by castration, the one affecting the larynx may pass through the pudic nervous mechanism, which must also suffer from the want of development?



Fig. 3.—Portion of chicken-bone drainage tube in process of absorption. Minute portion of chicken-bone drainage tube greatly disintegrated and lying in the midst of masses of cells, some portions of the drainage tube being quite detached. A new connective tissue had formed at the periphery, which is just indicated in the drawing.

The Choice of Suitable Material for Ligatures and Sutures, and the Requirements of the Living Tissue Relatively to Them.

Ever since Ambroise Paré introduced the ligature for the arrest of haemorrhage the choice of suitable material for both ligatures and sutures has been the subject of inquiry, and, judging from articles which appear in the medical press, still remains a desideratum. It might be thought *a priori* that this question would have been easily settled by direct experiment. At present most investigators content themselves by aiming at a sterilized material. This, though necessary, is only one of the factors.

Nature shows us in blood clot a material which performs its function of temporary occlusion of a vessel, and which thereafter is speedily removed; the initial disintegration, commencing within the blood clot itself, greatly facilitating this process. In animal tissues there are cells one of whose functions is to remove effete products from the economy. Use can be made of those cells to aid us in the disposal of the foreign bodies introduced as sutures or ligatures. In order to do this effectively the physiology of those cells must be studied. The extent of their power relatively to the removal of the material introduced is gauged and the time which they take to effect the purpose is noted.

On the other hand, it is essential to determine the period necessary to accomplish union between the various tissues

operated on so as to decide the length of time the suture ought to be able to resist the action of the living tissues before permitting itself to be absorbed. Attention is first directed to this question.

The object to be obtained by the ligature of a vessel is the occlusion of that vessel by living tissue. This may be attained in various ways; one of the most effective is by making a solution of continuity in the inner coat of the vessel which is attended by rapid regeneration of fixed tissue cells of the parts involved.

It has been suggested that organic occlusion can be accomplished in an artery by mere approximation of the walls of the vessel, so as to close the lumen without rupturing or in any way damaging the vessel wall. If the walls were left undamaged, proliferation of the fixed tissue cells would not result and the lumen of the vessel would become restored. It is possible, however, that without rupture of the vessel wall a solution of continuity due to absorption or to ulceration might be occasioned by the continued application of the constricting force which would induce tissue proliferation in the vessel wall, resulting in organic occlusion. This is an uncertain mode of attaining the end and cannot be relied on.



Fig. 4.—Portion of chicken-bone drainage tube in process of absorption. Another portion of the upper part of the drainage tube is seen, the cellular invasion and the erosion being much greater. Fresh connective tissue begins to appear at the lower side.

The ligature is applied to a vessel so as to rupture at least the internal coat, and from the wounded surfaces rapid proliferation ensues, especially as the apposed surfaces on rupture are maintained in close apposition by the ligature and the vitality of the vessel wall is little interfered with.

The material used to effect these two purposes—first the rupture of the internal coat of the vessel, secondly the maintenance of the walls of the vessel in contact at the part where the solution of continuity has taken place—is no longer of service after the living organic occlusion of the lumen has been accomplished, and if after that it persist in that position, it remains at best as a useless foreign body which the living tissue may exclude by shutting it off by the formation of an avascular connective tissue, which encapsules the foreign body and so lessens or altogether prevents its power of doing evil. The constricting force of the ligature, if continuous, may cause absorption of the vessel wall, or where the ligature is placed in parts subject to movement it may occasion irritation and be gradually extruded.

The aim in choice of a ligature should be to obtain one which would accomplish the first two objects—namely, to produce a solution of continuity of the internal coat of the vessel and to maintain the parts in apposition for a time sufficient to enable the living tissues to accomplish the organic union of the vessel wall; and, thirdly, having accomplished these two former objects, to permit itself to be speedily removed from the tissues without disturbance, its place being taken by a new formation of living connective tissue which would further strengthen the occlusion of the vessel at the part ligated.

Asepticity is by many considered the sole requirement in a ligature, otherwise mechanically suitable, but asepticity is only one of the requirements. A further requirement which a ligature ought to possess is that it will remain in the tissues for a time sufficient to effect its purpose, and which will then be capable of rapid elimination. The same desiderata are required for sutures.

A material capable of maintaining the tissues in contact, sufficiently strong to enable the tissues to proliferate and to effect a living union of the parts is required, and after this has been accomplished this suture material ought to become eliminated without disturbance of the parts. So that when the mission of the suture has been accomplished it should no longer remain in the tissues, a useless dead material capable of producing irritation, but should permit itself to be speedily removed.

Some conceive the idea that it would be good to have a material by the aid of which the parts could not only be brought together but one which would maintain them in permanent apposition. Such physical union is readily produced between two inorganic substances, such as two plates of metal, but it cannot be obtained between two pieces of living tissue. Living tissue can only be made to adhere permanently by a living bond of union. A suture of dead tissue can only secure coaptation of two living surfaces for a limited period—a period sufficient, in the majority of instances, to enable the living tissues to become united. When such union fails to be produced from any reason the living tissue gives way by absorption in front of the pressure exerted by the dead suture. This absorption goes on until there is no more traction by the suture—until a position of rest is obtained, when the suture lies loose in the tissues. When this stage has been reached the dead suture is of no further service—it remains at best a useless foreign body, which, if en-

capsulated, may be innocuous; but its presence among tissues subject to movement is often a source of irritation, and sometimes of danger, to the neighbouring parts (as in hernia). It is sometimes extruded from the tissues by a process of molecular disintegration occasionally associated with abscess formation.

Some surgeons have introduced a wire suture in the belief that they would be able to bring together, and to permanently maintain in apposition, the tendinous and aponeurotic structures in inguinal hernia. The futility of this latter hope may be gathered from the following:

Five cases, in which gold wire was used, which had been operated on by various surgeons, came at a subsequent period of their history under my notice, three for the relief of recurrent herniae and two for herniae which had become strangulated. Of the three former, the wire in two was found to be loose in the tissues and free from the aponeurosis which it had been introduced to maintain in contact, and therefore its continuation in the tissue was objectless; while the third was imbedded in a granulation mass lying so close to the surface that it was evidently in process of extrusion, having been entirely freed from the structures into which it had been originally introduced. In two cases of strangulation the loop of wire which had originally been introduced through the aponeurosis was found free and hung loose, and the bowel had passed right through this loop and had become entangled and constricted as if in a tight ring. In one of these cases perforation had already occurred at the point of constriction by the wire. Not only do the soft tissues, muscle, aponeurosis, etc., conform to this rule, but bone is likewise subject to it. In the case of bones, such as the head of the tibia and condyles of the femur, steel pins, introduced for the purpose of immobilizing the limb after excision of the knee, are so firmly fixed in the bone, immediately after introduction, and for days thereafter, that their removal presents great difficulties, and in order to accomplish this considerable force exerted through the medium of suitable instruments is necessary. These pins, however, become loose from fourteen to twenty-one days thereafter, and so free are they at the latter period that they can be easily lifted from their position by the fingers, the bone having become absorbed round the periphery of the pins. A wire suture, introduced into a hole in a bone just suitable to its size, commences about the same period to have a free space formed round its periphery, which increases in front of it by absorption until no more pressure is exerted by the wire. Once the wire lies loose, the space between the bone and the wire may again be filled with connective tissue.

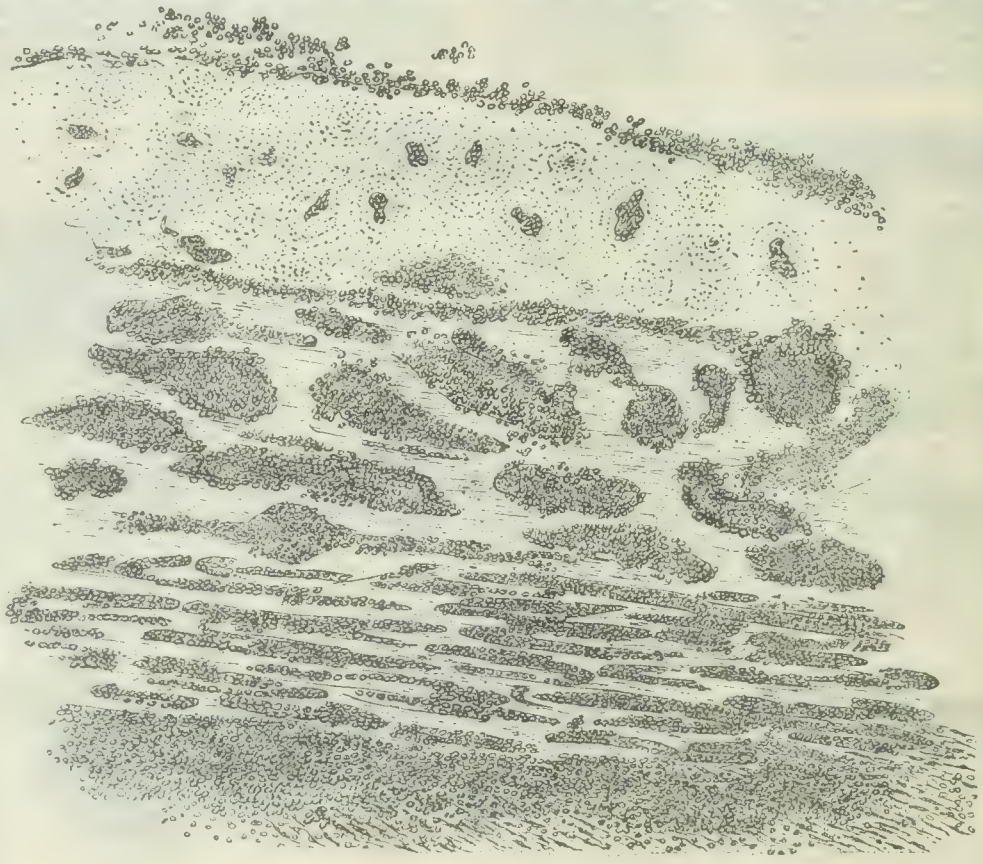


Fig. 5.—Portion of chicken-bone drainage tube in process of absorption. The lower part is filled with cells, and small portions only of the chicken bone remain. In the upper part the structure of the tube can be made out, though it is being perforated by cells, and at the periphery erosion is taking place.

How long do wounded tissues require to be maintained in contact by adventitious aid before sufficient healing takes place to enable them to do without artificial support? This depends upon the particular tissue involved and upon the conditions under which it is placed at the time.

In a healthy subject, an extensive aseptic wound of the skin brought into apposition without tension and upon which there is no traction, seven to fourteen days are generally sufficient, as the healing process is then well advanced. No doubt the wound may be superficially cicatrized before that time, but union is imperfect, and if the tender cicatrix be subject to traction it would yield. Even when the wound does not open it is liable at that early period to stretch and to leave a broad cicatrix. A cutaneous stitch in such a wound would be required to maintain apposition for a week or ten days. Should there be tension on the part a longer period may be required. In smaller cutaneous wounds, or those well supported by neighbouring tissues, a shorter time is all that is necessary.

In the case of divided muscles, tendons, or aponeurosis, a suture which would maintain them in contact for three weeks is necessary. In fourteen days there is considerable union, but it requires other seven days to enable sufficient firmness to be obtained in the cicatrix to enable it to do without the active support of the stitch. After a period of twenty-one days the continued traction of the suture causes the soft tissues to give way before it, and this goes on until the suture lies loose and functionless in their midst. It must be borne in mind that when union of aponeurosis or other like structures is dependent upon extensive fibrous tissue formation, such fibrous tissue after its formation is liable to stretch for fully six weeks, and therefore the parts during that time ought not to be subjected to strain.

Fractured or divided bone placed in favourable circumstances heals as readily as aponeurosis, though a longer period is necessary to allow of deposition and fixation of the earthy salts and to accomplish consolidation. Shafts of long bones subject to powerful leverage require longer fixation than shorter ones not subject to such strain. In many cases one would desire that sutures continue their hold on fracture surfaces for a longer period than four weeks, but at the end of the third week a softening process has begun at the point where the suture has exerted pressure on the bone, and this softening process continues slowly until the bone in front of the pressure is absorbed and the suture, lying loose and exerting no further traction on the parts, remains there a functionless foreign body.

Just how long is required for this loosening process to be accomplished depends upon the bone and the strain

that the osseous tissue is subjected to. When the living union of the bone has occurred and the stitch is completely relieved of strain, the metallic stitch may then become encapsuled, and if it lies close to the bone or remains entirely within it, so as not to prove an obstacle to the free movement of the muscles, it may remain innocuous indefinitely: but it no longer holds the bones together. Even in bone one cannot have a stitch which will permanently maintain the fragments in apposition. So that a suture acts in bone in the same way as it acts in the soft parts, only it takes longer in the former to attain a position of rest. The mere presence of a suture in a fracture, unless osseous union has occurred, will not prevent the separation of the fragments. In two cases of fractured patella, which had been seen by me some years after they had been operated on by others, the one had an extensive fibrous union between the osseous fragments, and the bone had freed itself from the wire, which was quite subcutaneous, but was not giving trouble further than irritation. The other fractured patella had healed likewise by fibrous union, and the wire was found free from the upper fragment, but was still adherent to the lower fragment of the patella.

From the foregoing it must be evident that the material to be used for ligatures and sutures, besides being physically fitted to perform its function, requires to be rendered aseptic, and, further, requires to comply with a physiological test. First, it must remain intact in the tissues until its object be accomplished; and, secondly, after that has been attained it must permit itself to be quickly removed by absorption. Sterilized silk is practically non-absorbable. It resists the action of the tissues for a very long period—years—and is frequently extruded. Silkworm-gut and hair are proof against absorption, and have been removed from the tissues five and seven years after their introduction, and were at the end of that period found to have preserved their smooth surface quite intact. Tendons of deer and kangaroo, though absorbable, resist the action of the tissues for many months. One knows how difficult it is to promote absorption of a sloughed tendon exposed in a wound. Long after the surrounding soft tissues are ready to unite, they are retarded from doing so by the presence of dead tendon.



Fig. 6.—Absorption of catgut. Fragment of catgut is seen in the midst of a mass of invading leucocytes. Erosion at the periphery and some penetration of gut.

Catgut is one of the best substances generally available for sutures and ligatures, but care ought to be exercised in choosing good material. For ligatures and sutures raw catgut ought to be selected, preference being given to such specimens as present the best physical properties and show that care has been bestowed on its manufacture. It must be evident that the subsequent preparation does not remedy physical defects originally in the gut, such as want of strength, or roughness.

When the catgut is selected it is then placed in a solution prepared for the purpose of increasing the resistance offered by the gut to the action of the living tissues.

As the resistance required varies according to the use to which the catgut is to be put, so the catgut is prepared with various degrees of resisting power, some hanks for rapid absorption and some capable of resisting the action of the tissues for longer periods.

The gut must not be hardened in such a manner as to prevent leucocytal penetration, otherwise it will be too resistant, and in this way may be no better than silk or wire.

Experiments have been made in many directions with the view of obtaining a suitable medium for the preparation of catgut so as to obtain the objects in view.

One of the best media which we have used is obtained by adding an aqueous solution of chromic acid to glycerine in definite proportions. This compound is found to act upon the catgut in the way of increasing its resistance to the action of the living tissue. Though producing a soft, pliable catgut, the degree of resistance imparted to the gut can be varied according to the time which the gut is immersed in the solution. The longer it is kept in the solution the more resistant it becomes. After it has thus been prepared it is stored in a carbolized glycerine solution. It is ready for use a fortnight after it has been introduced into the storage solution. When kept in this storage solution for a longer period — many months or several years—it becomes slightly more resistant to the tissues.

The catgut is prepared for surgical purposes by steeping it for definite periods in a mixture of chromic acid and glycerine, which renders it sufficiently resisting to the action of the tissues to answer the physiological tests. If the crystals of chromic acid be added directly to the glycerine, an explosion or violent ebullition ensues. In order to obviate this, an aqueous saturated solution of chromic acid is first made, and this is added to glycerine in definite proportions as follows: (A) *Solution.* — Chromic acid 1 part to 5 parts of water. Dissolve thoroughly and only use the clear solution. (B) *Solution.* — Take 1 part of A solution to 5 parts of glycerine. This gives rise to a dark greenish or brownish compound with the evolution of heat.* This compound is, immediately after preparation, poured over the loose catgut previously arranged in a suitable vessel, all air-balls which may be adhering to the gut being carefully removed. The catgut is completely immersed in this solution, and it is kept covered by it (being stirred occasionally) for a period sufficient for the end in view —one to ninety-six hours.

The catgut is then removed from this solution, rinsed in sterile water, to free it from the jelly-like compound; stretched and wiped with a sterile hard towel to remove any of B solution that may adhere to its surface. Otherwise the action of B solution would continue.

After the stretching the catgut is wound on rods at least

* This forms chemically a complex mixture, but Mr. Carrick Anderson, Assistant and Lecturer on Chemistry in Glasgow University, assures me that glyceric aldehyde $C_3H_6O_3$ is the principal reagent, and it is possible that traces of unchanged glycerine and chromic acid may both contribute to the effect produced

3 in. in length, and preserved in a storage solution made up of one part of carbolic acid to five parts of glycerine. The gut is ready for use after steeping for a fortnight in this storage solution. If the catgut is not for immediate use, but for service six months to one year afterwards, the storage solution could be made much weaker—say, one part of carbolic acid to twenty parts of glycerine. This retards the hardening that is apt to follow long storage in the strong carbolized solutions. Just before application of the catgut as a stitch or ligature, it is removed from the storage solution and dipped in absolute alcohol, which removes superfluous glycerine. Dipping in sterile water answers the same purpose, but it softens the gut, which is not desirable. By means of this solution the surgeon has it in his power to prepare ligatures and sutures possessing practically any degree of resistance to the living action of the tissues which he may deem proper for his purpose. Thus, for superficial sutures, in a part not subjected to tension, catgut No. 00 prepared in B. solution for one hour is used. Such sutures are capable of holding the tissues together from four to eight days. From ten to fourteen days after their introduction the portion of the suture which has been left on the outside of the skin is found to have become shed and lies loose on the surface—often along with some desquamated epithelium.

When it is desired to maintain in contact the deeper tissues such as muscles and aponeurosis for about a fortnight, it is usual to employ thicker catgut, such as Nos. 2 to 4, which has been kept in the preparation solution for forty-eight hours. When the parts are to be maintained in apposition for twenty-one days the gut—generally Nos. 3 to 6—are kept in the preparation solution for 96 hours, the gut slowly absorbing after that period.

Causes which Retard Absorption of Catgut Sutures.

There are some conditions of tissue which modify the rate of absorption of this sterile gut suture. The greater the vascularity of the part within the limits of health (exclusive of parenchymatous tissue) the quicker will the absorption be, while marked avascularity retards absorption. In youth and full adult life the rate of absorption may be regarded as normal, while in very old and weak people the absorption is appreciably retarded. The variation in the absorption within these limits, however, is not so great as to make a practical difference. There are several points which influence the duration of the suture in the tissue while still maintaining the parts in apposition. The first is over-tension of the tissues under the suture, either by over-contraction of the tissues themselves or by over-tightening of the suture at the time of introduction. Both of these retard the absorption of the gut as the compressed tissue acted on by the suture gives way in front of the suture, so that leucocytal penetration of the gut is obstructed. The phrase is used, "The stitches cut their way through." Secondly, the introduction of the gut into tissues deprived of their vascularity or whose vitality is otherwise lowered. The catgut suture remains for long periods unacted on in the midst of a slough, the leucocytes not being able to penetrate the tissue to reach the gut. Thirdly, repeated movement of a stitch after introduction breaks the connexion of the suture with the living parts, and prevents leucocytal penetration. So that, if the catgut thread be moved frequently in the tissues, the leucocytes cannot exert their living action in the gut, and therefore it remains unabsorbed. Fourthly, septicity in a wound retards absorption by weakening the tissues and by degenerating and destroying the leucocytes. When gut becomes infiltrated by pyogenic organisms and their ptomaines, as well as by pus corpuscles, it becomes more resistant to absorption and may ultimately be extruded. An impervious suture answers better in the midst of suppuration. It is evident that not only an aseptic suture must be used, but it must be introduced into an aseptic wound before one can secure the advantages of such gut.

If catgut or chicken-bone drainage tubes* be introduced into a collection of fluid in the midst of the living tissue such as blood, serum, or pus, they will remain for weeks macerated but still intact. If the gut or drainage tube should, however, come into contact with the living tissue at the side of such a collection, some erosion of the part of the foreign body in contact with the tissue would ensue.

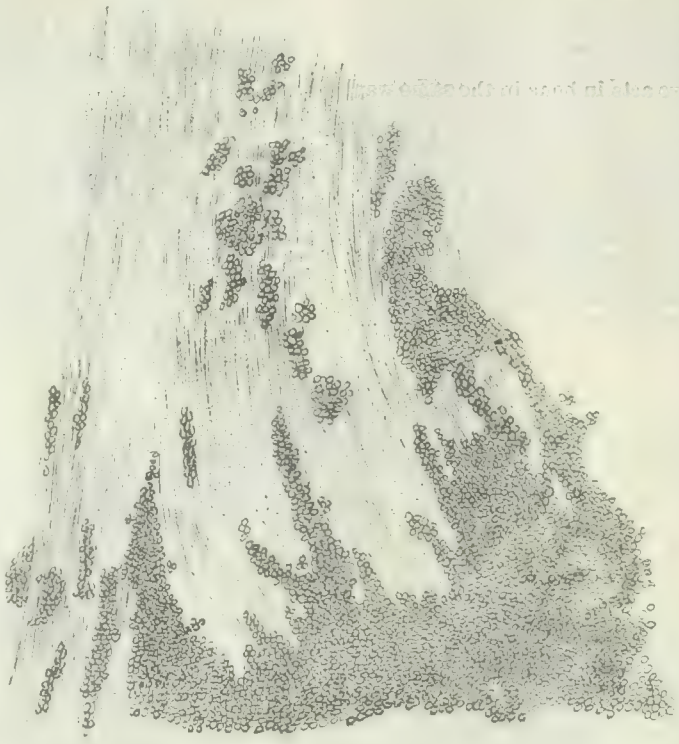


Fig. 7.—Absorption of catgut. Further process of absorption. The cells have penetrated further.



Fig. 8.—Absorption of catgut. Process of absorption still further advanced, many minute particles of the catgut being isolated by the cellular invasion.

* Although chicken-bone drainage tubes are here mentioned in relation to absorption, drainage tubes of any kind have not been used in my practice for many years. If drainage were required for any odd purpose, such as serous or other non-purulent oozing, the chicken-bone drainage tube would certainly be best.

It is evident that mere maceration in the tissue does not account for absorption of the catgut.

The Mode of Absorption of Catgut and Chicken-bone Drainage Tubes.

Twenty-four hours after the catgut has been placed in the tissues it is found to be surrounded by leucocytes which closely invest the gut, and thereafter sooner or later, according to its resistant power, gradually erode its surface and penetrate into its interior. The strands of gut in contact with these leucocytes gradually undergo erosion and appear rough and pitted on the surface. At the same time many of the leucocytes in the vicinity of the gut become swollen and take on the colour of the catgut. Between these swollen leucocytes and the strands of gut fresh leucocytes appear in the vicinity, gradually taking the place of the swollen cells. The swollen cells seem as if they had absorbed portions of the catgut and were in process of ingesting it. Such swollen cells, marked by their size and discoloration, may occasionally be seen at a considerable distance from the catgut, as if they had wandered from the scene, either by their own amoeboid action or were aided or pushed aside by the movements of the fresh cells going to the attack. Occasionally the swollen cells appear so bloated that a doubt arises whether for the time at least their amoeboid power had diminished or was in abeyance.

The principal invasion and erosion of the catgut thread is from the periphery, which results in the thinning of the thread, it being by-and-by attenuated to a mere film, which rapidly disappears. While this peripheral erosion is proceeding the absorption is further aided by the activity of the penetrating leucocytes, which surround and detach minute portions from the periphery, which are speedily devoured. The absorption of the catgut is due to the action of the living cells, and therefore dependent on their presence and on the facilities which are afforded them for acting on the catgut undisturbed.

After absorption of the catgut has proceeded for some time, and while the absorption of other parts of the gut is still proceeding, an infiltration of embryonic connective tissue cells begins to appear, which forms the nucleus of a new fibrous tissue, which in attenuated form ultimately remains marking the place of the foreign body.

The amount of connective tissue which forms depends somewhat on the vascularity of the living tissue and on the rapidity of absorption of the catgut. The more rapid the absorption, other things being equal, the less the connective tissue.

The use of material such as has been described is of service in facilitating wound healing. One puts into a wound just such foreign bodies as are absolutely required, and these, while being sufficient to effect the purpose for which they are intended, are afterwards speedily removed by the action of the living tissues. In aseptic wounds, before the patient comes out from the influence of the anaesthetic, the surgeon has done everything necessary to enable Nature to heal the wound. Its first and only dressing is applied. That dressing being of the simplest, a layer of dry sterile gauze or a film of translucent celloidin just overlapping the wound and rendering it impervious. At the end of the period deemed sufficient for wound healing, this dressing may be removed, or it may be allowed to remain until it is shed, when all the external portions of the sutures are found adhering to its surface. What a comfort to be able to say at the end of an operation that in all probability there is nothing further to be done by way of handling or touching the wound, which will not be looked at until it is thoroughly healed.

It is no longer necessary to disturb the patient by dressing in order to remove sutures, which, after they have served their function, will be silently and perfectly removed by the activity of the living cells in the patient's body. A wound which while being made is painless and remains so throughout, which heals without inflammation or the production of pus and under the dressing applied at the time of the operation, is ideally perfect.

Note.

The microscopic sections shown in the preceding pages were made for me by my late House-Surgeon, Dr. Potts. The drawings were made by Sister Douglas, partly from photomicrographs made by Dr. Thomas Reid and partly from drawings made directly from the microscopic specimens by Dr. Alex. Matheson Carnegie Research Scholar, Surgical Department, Glasgow University.

THE POPULAR LECTURE.

Disease Germs.

The first popular lecture given under the auspices of the British Medical Association at its annual meeting was delivered on Thursday evening, July 28th, in the Town Hall, Oxford, by Dr. Ferguson, of Cheltenham. There was a large and appreciative audience.

The Lecturer chose as his subject disease germs, and began by stating that they were practically all of them microscopic fungi, and of these the chief divisions were the budding fungi or yeasts, which accounted for a small number of diseases, for instance, thrush; the weaving fungi or moulds, such as caused ringworm; and the fission fungi or bacteria, which multiplied mainly by division, and which accounted for by far the greatest number of known germ-caused diseases.

The bacteria themselves were discriminated into short rods or bacteria proper, long rods or bacilli, spirals, and cocci. The credit for our present knowledge of the subject was stated to be due primarily to Weigert, who made bacteria more visible by staining, and to Koch, who devised the method of cultivation on and in solids.

After some description of the characters and distribution of the bacteria a long series of slides was shown, comprising not only nearly all the known and verified germs of disease, but pictures of the same growing *en masse* in and on culture materials.

Next followed a series of the malarial parasites which were shown as attacking and destroying the red blood cells; also specimens of the trypanosomata which have been recently proved to be the cause of the African sleeping sickness.

Then came some practical applications, while the necessity for the isolation of all, even minor, infectious diseases was insisted on, together with the importance of fresh air and light, of cleanliness and the exclusion of dust, of sterilizing milk and of boiling rather than filtering suspected drinking water. For disinfecting purposes actual boiling and boiling water were extolled beyond all chemicals, and the lecturer concluded as follows:

I must now speak of the more direct help that science affords against some of the most fatal germs of disease, and in so speaking I am thinking of the medical science of the future. The method of science is to utilize the principle that one attack of infectious disease protects against another; and how does it protect, unless by leaving in the system something hostile to the disease? It is the province of science to supply that substance to the patient, on whom it at once confers the immunity of a recent attack. This substance may be obtained in many ways. Pure cultures may be grown in a current of air which will so far attenuate them that when injected they will no longer give but only prevent the disease, and this is the method of Haffkine for the prevention of cholera. Or the disease may be rendered mild by passing its germs through an animal, as those of small-pox through the cow, whence vaccine lymph. Or the germs may be grown at a high temperature, which destroys their virulence, but not their protective power, as in Pasteur's method for the prevention of anthrax. Or the germs may be simply heated to 152° F., as in the preparation of Haffkine's prophylactic of plague. Or a diseased organ containing germs may be simply kept in the dark for fourteen days, more or less, and then made into an emulsion and injected, as in Pasteur's preventive treatment of hydrophobia. By that long keeping the germs will have been rendered powerless to harm, though potent still to help. Or the dead cultures themselves may be injected, as in Wright's antityphoid inoculations. Or last, not least, the serum of immunized animals may be injected, which is the plan employed against diphtheria. The immunization of horses is effected by injecting them with increasing doses of diphtheria toxin, to which they are naturally refractory. In fact, the horses seem but little the worse for their treatment. After a certain number of repetitions of the process the natural resistance of the blood and tissues will have occasioned the formation of a large amount of antidote or antitoxin, and this it is in the serum of horses' blood that is now used, throughout the world, for the prevention and cure of diphtheria. Here I may explain that a unit of strength in an antidiphtheritic serum means the amount that would neutralize enough diphtheria poison to kill 100 guinea-pigs. The common human dose, therefore, of 2,000 units would

procure immunity for no less than 200,000 guinea-pigs. There is no certain knowledge yet as to how these antitoxins act. It is enough to know that they do act as antidotes, and as directly as an alkali neutralizes an acid; and it is absolutely certain that whatever we may be doing in this direction at present, it is as nothing compared with what we shall soon be effecting towards the prevention and cure of diseases, by means of the disease germs themselves. It is like the old plan of swallowing a hair of the dog that bit you. It is needless for me to quote statistics regarding the efficacy of all these new protective and curative measures. It is enough to say that they are full of promise and that they represent the lines on which modern medicine is working in its ceaseless efforts for the happiness, comfort, and longevity of mankind and animal kind.

Before concluding, I would like to say a few words on the wonderful subject of immunity. If it was not for our immunity we should not be here to-night; for our germinal enemies surround us on every side, but thanks to our immunizing power, we, mostly, know nothing about them. By immunity I mean the power possessed by our blood and tissues of destroying the germs on their first onslaught. Immunity is a very complicated subject and is full of strange anomalies. It is not simply and solely, as Metchnikoff thought, that our white blood cells pursue the germs and literally devour them, but that these cells on irritation give off protective bodies, alexins and sozins, which are always present in the blood, in smaller or larger quantities, and which do poison the germs. Negroes have an immunity against malaria and yellow fever, but they are very prone to consumption. Man suffers from typhoid and cholera, but all the lower animals are immune in respect of these. Man and cattle are readily affected by tubercle, but the dog and the rat resist it. Man, cattle, and sheep, are prone to anthrax, but not so dogs and cats and rats. The hedgehog and the pig resist snake poison, and rats do not take diphtheria, though, like many other animals, they are very prone to plague. Young animals are more susceptible than old ones, and many diseases, mild with us, are most fatal to uncivilized races, as was measles to the Fiji Islanders.

Crocodiles, I am told, are never affected with lockjaw, though they are very susceptible to diphtheria, and I am sure that all here will sympathize with these afflicted reptiles and will hope that arrangements may be made at once for supplying all sore-throated crocodiles with at least 10,000 units of diphtheria antitoxin! Human milk possesses great immunizing power, and this is one reason why nursed children usually do better than bottle-fed ones. There is no such thing as general immunity, and immunity can be easily lessened, as by over-fatigue, or cold, or over-consumption of alcohol. On the other hand, by over-eating—though injurious in itself—we can distinctly increase our immunity against tubercle. Immunity is one of the most interesting studies in medicine, but I must not pursue the subject any further now. We are all born too soon, and the last hundred years in science have been worth all the thousands that preceded them, and I have not the slightest doubt that the next hundred years will mark the victory of medicine over numerous maladies which at present defy our means of cure. For those happy people who will be living a hundred years hence there will probably no longer be any dread of infection, for perhaps before then—thanks to radium and its congeners—we shall have exterminated all noxious bacteria, and our grandchildren will therefore all live to at least a hundred years or more. Already, within the last sixty years, the average length of life has been extended by about ten years. With the advance of medical science it is even conceivable that there may be no weaker organs hereafter; and if that is the case, the last act will consequently come to all quite suddenly and painlessly, when all our organs shall have equally worn out together; when all shall give and stop and crumble and dissolve together—just as it was with the celebrated "one-hoss shay"—and perhaps there will be no need of cremation furnaces in those days, but only of a broom and a vase, to sweep up and to hold the sad remnants of our mortality! Such, or something like it, may be the result of that far-off happy time devoutly to be wished for, though none of us here may live to see it, when disease germs shall have gone the way of the mammoth and the mastodon, of the black death and of the sweating sickness; when bacilli shall have ceased from troubling and when cocci shall no longer assail us.

[Ninety lantern slides in illustration of the disease germs referred to were shown during the lecture.]

CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH.

THE Congress of the Royal Institute of Public Health has this year been held at Folkestone, under the Presidency of the Earl of RADNOR. The Congress opened on Thursday morning, July 21st, with a reception in the Pleasure Gardens Theatre, the Mayor of Folkestone welcoming the delegates, after which Professor W. R. Smith, the President of the Institute, conferred its Honorary Fellowship on the Earl of Radnor, who accepted the Presidency of the Congress.

The Earl of RADNOR said he thought the work of the Institute might be extended in time to educate those who lived in the country districts, which were very backward in sanitary science. A pure milk supply was of the greatest importance to the community, but this could be attained only by improving the water supply and the sanitary arrangements of the farm buildings.

Sir EDWARD SASSOON, M.P., proposed a vote of thanks to the Earl of Radnor, which was seconded by Sir CHARLES CAMERON.

In the afternoon, the Section of Tropical Medicine met, and Professor SIMPSON, the President, delivered his address on preventive work in tropical medicine. He detailed the history of preventive medicine in the tropics so far as the British possessions were concerned, and pointed out that, as a result of improved sanitation, the death rate among the British soldiers in India had fallen from 80 to 16 per 1,000. He passed on to consider the remarkable discoveries connected with cholera, plague, Malta fever, filariasis, malaria, and yellow fever, and other diseases during the last twenty years that marked as great an epoch in the history of preventive medicine as did the earlier work of Pasteur. Suggestions were made with a view to improving the sanitary administration in the tropics.

Mr. CANTLIE read a paper on beri-beri.

In the Preventive Medicine Section, Dr. TYSON, the President, reviewed what had been done in the past with regard to preventive medicine, and looked forward to what might justly be expected in the future, after which

Mrs. GARRETT ANDERSON, M.D., read an instructive paper on the economic value of compulsory vaccination at school age, an abstract of which is given at p. 242.

In the evening there was a reception by the Earl and Countess of Radnor.

The annual meeting of members of the Institute was held on Tuesday, when Professor W. R. Smith, was re-elected President.

MILK SUPPLY.

The real work of the Sections commenced on Friday, and was continued throughout that day, and on Monday milk was the subject of a number of papers both in the Preventive Medicine and in the Bacteriological Sections. A discussion on a clean milk supply was initiated by Dr. NASH (M.O.H. Southend), who pointed out the filthy conditions so frequently obtaining in the cowsheds and in the handling of milk. No dairy should be permitted to continue without a refrigerating apparatus. The importance of covering over milk in order to prevent contamination by flies and dust had, perhaps, hardly been sufficiently realized. Recently the Southend Town Council had passed a regulation under Article 13 of the Dairies, Cowsheds, and Milkshops Order of 1885, which had been approved by the Local Government Board, and reads as follows:

> Every retail purveyor of milk shall cause every vessel containing milk to be protected from dust, flies, and other sources of contamination by means of suitable covers.

The Rev. Canon HORSLEY (Chairman of the Public Health Committee, Southwark) read a paper on the adulteration of milk, in which he discussed the statistics of adulteration and the workings of the various Acts, and gave it as his opinion that at least four samples from every dealer should be taken annually, in order to encourage the honest and discourage the dishonest traders.

Mr. Councillor SHELMERDINE (Liverpool) dealt with the distribution and sale of humanized and sterilized milk, and described the municipal dépôt at Liverpool and its administration. Among 4,453 infants coming promiscuously to the dépôts the average mortality was 78 per 1,000, as against a corrected rate of 159 per 1,000 generally for Liverpool.

Dr. HOPE (Liverpool) gave further interesting particulars.

Mr. SHORT (Bootle) pleaded for the municipalization of the milk supply, and claimed that while desirable in the interests

of the public health, there was no insurmountable obstacle to this end.

In the Bacteriological Section the collection and transit of milk was discussed, Dr. LISTER discussing and criticizing the methods employed by the railway companies, Dr. EYRE giving details of the bacterial content of milk at the points of origin and distribution, showing the enormous increase at the last-named; Dr. EASTES dealing with bacteriological technique; and Mr. SIDNEY VILLAR, F.R.C.V.S., urging the necessity for veterinary control of dairy herds.

HOSPITALS FOR INFECTIOUS DISEASES.

Infectious hospitals—their usefulness or otherwise—gave rise to an animated discussion.

Dr. KILLICK MILLARD (Leicester) introduced the subject, confining his remarks to scarlet fever. He pointed out that this was the disease that monopolized the majority of the beds in an infectious hospital, and it was not the dangerous one that it used to be. In Leicester matters had been brought to a head owing to the compulsory closing of the hospital, and Dr. Millard showed by means of a diagram that the incidence of scarlet fever after that event seemed to be actually less than while the hospital was open, judging by the notifications. He considered that a case had been made out for inquiry, and moved the following resoluton, which was seconded by Dr. FRASER (Portsmouth):

> That as the hospital isolation of scarlet fever has now been tried on a large scale for many years, and as some doubt exists as to whether the results obtained are commensurate with the cost, it is desirable in the public interest that a full and authoritative inquiry into the subject should be made.

Dr. BARLOW (Bootle) said that the crux of the whole question lay in the possibility and efficiency of home isolation, and that in towns where home isolation could not be depended upon infectious hospitals were indispensable.

Professor KENWOOD dissented from the views of Dr. Millard, though he considered that perhaps too many cases were removed to the hospitals. He emphasized the value of hospitals from the point of view of treatment alone.

Professor SIMPSON said that while he had attacked isolation hospitals and their administration, he was convinced of the necessity for isolation. He advocated the cubicle system as applied in Paris.

Dr. BEALE COLLINS (Kingston) agreed with Dr. Barlow, and stated that in Kingston, a town of suburban villas, it was only necessary to remove to hospital about 7 per cent. of the cases. Others having spoken in similar strain Dr. Millard's motion was put to the meeting and carried, 33 voting for it and 20 against.

The sanatorium treatment of phthisis, the administrative control of whooping-cough and measles, and the case for a Ministry of Public Health were other subjects dealt with in this Section.

THE BACTERIOLOGY OF WATER.

Dr. KLEIN, the President of the Section of Bacteriology, gave an address on the aim and scope of bacteriological analyses of water and shell-fish, with special reference to sewage pollution, in which he dealt with the various data to be obtained and their significance, and gave a scathing indictment of the methods and statements of the examiners of the London water supplies.

Professor HEWLETT presented the report of a Committee that has been considering the procedure to be adopted in the bacterioscopic examination of water. At the Congress of the Institute last year it was felt that the methods of bacteriological examination of water were carried out in a haphazard sort of way without any uniformity, and the present report embodied a number of recommendations which if carried out by analysts all over the country would conduce to a uniformity which was urgently needed. On the motion of Professor HEWLETT it was resolved that a copy of the report should be forwarded to the Water Board.

SEWAGE POLLUTION OF TIDAL RIVERS.

Mr. FOULERTON read a paper on the pollution of tidal waters by sewage. The paper was an elaborate one, dealing with the results of a number of analyses and with statistical data. As regards sea or brackish water, Mr. Foulerton considered that the chlorine and two ammonias were the best chemical guides, the oxygen absorbed, and nitrates, for sea-water at any rate being unreliable. In the open Channel he had never found more than 140 microbes per c.cm. He raised the question as to whether fish might convey, by their intestine, dangerous pollution to an unpolluted locality. Dr. SAVAGE (Colchester) and the PRESIDENT joined in the discussion.

STATE REGISTRATION OF NURSES.

In the Ladies' Section, presided over by the Countess of RADNOR, the State registration of nurses gave rise to some discussion, papers being contributed by Mrs. BEDFORD FENWICK, who in conclusion expressed the hope "that the nurses in the United Kingdom, and the sick whom they tended with so much devotion, might speedily benefit by the passing of a judicious Act of Parliament providing for their efficient education and granting them the legal status which was their due"; by Miss PLUM, and Miss BARLING, Matron of the Borough Sanatorium, Folkestone, who supported this view.

HYGIENE OF THE HOME.

Domestic hygiene and cooking came in for considerable attention. Miss CLARA FITTER gave a judicious summary of the principal points in connexion with air, water, and food, and the choice of a dwelling; and Miss JANET GRANT discussed diet, and emphasized the truism that "good cookery is the best economy," giving many useful hints on dietaries and the proper cooking of food. Mrs. SCHARLIEB, M.D., contributed a paper on the laws of health for girls during the years of adolescence at home and at school. Useful details were given as to the importance of fresh air, warmth, proper food, and exercise and rest. Lady HAMILTON and Mrs. STUART read papers respectively on the advisability of corporations instructing district visitors in house hygiene, and on a plea for women guardians.

CHILD STUDY AND SCHOOL HYGIENE.

In the Section on Child Study and School Hygiene, Sir GEORGE KEKEWICH, K.C.B., late Secretary to the Education Department, presided, and took as the theme for his address the physical education of our children. He said the subject comprised not merely physical exercises and physical training, but the conditions under which children lived both at school and at home. This was one of the best-attended sections, and the papers contributed were of a high standard both as regards matter and importance of the subject.

Dr. BUTLER HOGAN (Tottenham), in a discourse on school hygiene, put in a plea for the compulsory teaching of the principles of hygiene in all public schools, and outlined in brief what might be taught. He considered that intemperance would best be fought, not from the pulpit or the platform, but by teaching the children the awful consequences that follow alcoholic excess. The value of beans, lentils, oatmeal, and cocoa was insisted upon.

Dr. HARRY CAMPBELL contributed a paper on the evil effects of too soft a diet in children. He urged that the child should begin to take hard, solid foods at the seventh month, when he should be allowed to gnaw at chop bones and chicken bones, and to eat hard, leathery crusts, biscuits, sugar-cane, and certain fruits. In this way, he said, the instinct to masticate was afforded due opportunity to develop: when the child had learnt to masticate by instinct, and not till then, a limited quantity of the softer farinaceous foods may be permitted.

In a paper on school food, Dr. WHITEHEAD REID advocated the addition of such substances as chestnuts, banana, wholemeal, and oatmeals, clarified dripping as a substitute for butter, tripe and onions, vegetable and white soups, cheese, and macaroni cheese, dates and figs, with milk and fish soup.

Defective vision in children was the subject of papers by Dr. MENZIES and Dr. WILLIAMS FREEMAN. The former dealt with the influence of visual defects on education, the latter found from observations in nearly 1,500 children in West Hants that 64 per cent. showed normal vision, compared with 39 per cent. as observed by Mr. Bludenell Carter in London. The mental side of childhood was not overlooked, Dr. LEONARD GUTHRIE discussing mental overstrain in, and Dr. FLETCHER BEACH the diagnosis and treatment of, feeble-minded children. Mr. JOHN JACKSON pressed home, almost beyond reason, his thesis of the advantages of ambidexterity; and Mr. WARRINGTON HAYWARD described the aims and method of the Invalid Children's Aid Association and the useful work it is doing.

PHYSICAL DETERIORATION.

"Physical Deterioration" was the subject of a long paper by Lieutenant-Colonel DUKE, who advocated the universal enforcement of physical training. He considered that more care should be taken of nursing mothers, and is in accord

with the assertion of the Commissioner of the British Medical Association that the root of national deterioration lay in the health of the mothers during pregnancy and the feeding of infants during their earlier years.

ENGINEERING AND BUILDING CONSTRUCTION.

In the Section of Engineering and Building Construction (President, Mr. W. HARPUR, M.I.C.E., Borough Engineer, Cardiff) the papers were of a strictly technical character. Mr. MAXWELL (Tunbridge Wells) read a paper on the Conservation of Subterranean Water Supplies; Mr. WATSON (Leeds) discussed the disposal of refuse; and Mr. MARTIN made suggestions with regard to seaside sewage disposal.

TUBERCULOSIS.

On Monday the whole of the Sections joined in one meeting to listen to an address by Professor HUEPPE of Prague on Tuberculosis. Professor Hueppe said that phthisis was more prevalent in the towns than in the country; dust, bronchial catarrh, and lowering diseases being predisposing causes. Infection alone did not suffice to produce tuberculosis, there was also predisposition. The frequency of infection of children from tuberculous milk had been underestimated by Koch.

THE ECONOMIC VALUE OF REVACCINATION.

AT the Congress of the Royal Institute of Public Health MRS. GARRETT ANDERSON read a paper on this subject. She said that if any considerable section of society would not accept vaccination and revaccination, it would be necessary to fall back upon the second line of defence by trying to isolate every case of small-pox as it arose, and by surrounding every such case with persons made immune to the contagion by revaccination. There was no question in the mind of any one practically responsible for the control of small-pox epidemics of doing without vaccination and revaccination. Even at Leicester Dr. Millard properly insisted upon the absolute necessity of having all the small-pox hospital doctors, nurses, attendants, and servants protected by recent revaccination. Therefore the points to be considered were: "Can isolation of all infected persons, combined with a large amount of compulsory vaccination in the persons who attend them, be trusted to protect a community from severe epidemic small-pox? and, if it can, what will this method cost as compared with the general revaccination of the entire population at school age?" The risk of an epidemic being started in any community depended always on two factors, first—the presence of contagion, and, secondly, the presence of persons in the near vicinity of such contagion who were not immune through vaccination and revaccination. In civilized communities a large proportion of children and young people had been made immune by infant vaccination, the protection from which gradually wore out and required to be renewed. The risk of an epidemic was therefore equal to the number of the centres of infection multiplied by the number of unprotected or only partially-protected persons exposed to the contagion. If, for instance, ten cases of small-pox were imported into a village at one time and were located in ten different houses, no epidemic would result if all the people in that village were immune to the contagion—that is, if every child had been well vaccinated and every adult well and recently revaccinated, the village would be as secure as a small-pox hospital was with its much larger number of small-pox cases but with a staff of revaccinated attendants. But if only some of the inhabitants of the village were protected by vaccination and revaccination an epidemic would certainly result unless the unprotected part of the population could be rigidly isolated from the centres of infection. The question Mrs. Garrett Anderson wished to ask was: "Which plan would cost the least—to have every child in that village vaccinated in infancy and to have the protection renewed at or before 12 years of age, or to permit a large minority to remain ready to take the infection, but to provide isolation for all who fall ill as soon as the nature of the illness is recognized?" If the second plan were adopted a large sum was spent upon the vaccination and revaccination of part of the population, and then a further large sum for the cost of isolating the unprotected minority. The speaker asked her hearers to consider what was wanted for a hospital of only 50 beds if isolation were to be anything but a sham. There must be a site a mile or more away from other dwellings, and on this site a building capable of holding 50 patients. In addition there would be wanted: (1) An administrative block for the nurses and staff, with sitting-rooms and bedrooms, with kitchen for the cooking required for the patients and staff. (2) Laundry block. (3) An observation ward where patients could be isolated when necessary. (4) A discharging block, without which it is not possible to guarantee that patients are discharged free from infection. (5) Destructor to burn night soil and all refuse. (6) Mortuary and shed. (7) A steam disinfector and laundry machines. (8) Concreted sites ready for two future pavilions. (9) The cost of thoroughly enclosing the hospital ground. (10) The provision of water. (11) A complete system of drainage. (12) The provision of gas or electric light. (13) Storehouses for coal, wood, and supplies. (14) A shed for a cart. (15) Roads and paths. (16) Architect's commission. (17) Clerk of works' salary. (18) Underdraining of land, Local Government Board and legal charges, sundry extras. The North Staffordshire Joint Small-pox Hospital Board had lately made a contract for a small-pox hospital to contain 50 beds. The requirements mentioned were taken from their estimate of what was necessary, and the estimated price of each item was given. The total, including £4,000 spent previously on the wards, came to £12,000. Then there was the up-keep, servants both indoors and out, and nurses must all be there if the hospital was to be instantly ready for use. For this an expenditure of at least £500 a year would be required. In this case, therefore, the provision of isolation for, say at most, 900 people who would not have taken small-pox had they been revaccinated at school age, the community of which they formed a small part had to provide a capital outlay of at least £12,000, and an annual charge in a non-epidemic year of £500 and in an epidemic year very much more. In non-epidemic years very little use would be made of the hospital. Mrs. Garrett Anderson gave the following five examples of the actual cost of providing small-pox hospitals in the provinces:

Table showing the Cost per Bed of Small-pox Hospitals.

Place.	No. of Beds.	Cost per Bed.	Total Cost of Hospital.	Population.
		£	£	
Croydon and Wimbledon	46	770	35,655	236,081
South Shields	20	308	6,175	100,853
Preston and Fylde and Garstang	20	930	18,800	145,799
Sheffield	30	760	21,795	409,070
Guildford Joint Hospital Board	10	625	6,250 No site to pay for	62,122

The loans sanctioned by the Local Government Board to local authorities within the last ten years for purchase of land or the erection of buildings for the isolation of small-pox amounted to £371,199. In many cases the loan was sanctioned for site only, a temporary hospital having been previously put up, or permanent hospital buildings not having yet been erected, so that the sum given represented probably less than half that actually spent in providing small-pox hospital accommodation. In Germany there were, strictly speaking, no small-pox hospitals. Every one was vaccinated in infancy, and again at about 12 years of age. The male part of the population, other than cripples and defectives, was again revaccinated on joining the army. Each year a few cases of small-pox occurred in Germany, but they almost invariably came from one of three groups of people: (1) Foreigners who had come into Germany from countries where revaccination was either not part of the law or where it was easily evaded. (2) Young children below the age for infant vaccination which in Germany might be nearly two years. (3) People who had either been badly revaccinated, or who might be old enough to have outgrown its protection. Whenever a case of small-pox appeared in Germany the contacts were immediately revaccinated, and sometimes they were isolated till the danger of their developing small-pox had passed. In each large town a pavilion in a general hospital was kept always in readiness, though it was not usually kept empty, in case of being wanted for small-pox. In Berlin, twelve beds were provided for possible small-pox patients, in a population of nearly two millions. The absence of any necessity for hospitals for small-pox patients in Germany was entirely due to the universality of revaccination and to the efficient way in which revaccination was done. No town in this country could ever show results as good as those seen in Germany unless the whole population of the country were protected by revaccination as in Germany, and even

then the great ports of London, Liverpool, Glasgow, Bristol, and Hull would frequently have small-pox infection brought in from less well-vaccinated countries, and it would probably spread to some extent among unvaccinated and badly-vaccinated immigrants. Our large ports would always be as liable to the invasion of small-pox as the frontier towns of Germany. But the economic value of general revaccination was made clear by comparison of Berlin with London. In Berlin a strict revaccination law for all children of 12 years of age made a provision of 12 beds sufficient for a population of nearly two millions, and even these beds were usually applied to other purposes, and entailed no special outlay. In London, with infant vaccination, but with no compulsory revaccination, and therefore with a constant fear of invasion of small-pox, in a non-epidemic year—1900—the hospital ships, river ambulance service, and river medical service cost £18 400, or, adding a percentage of general expenses and of average "excess capital outlay," £30 000. This huge sum went upon the maintenance of a daily average of six small-pox patients. The expenditure in 1900 was not exceptional, the average for five years exceeded it, and the average of cases was about the same. For the daily average of six patients, 163 persons were employed in the hospital ships and ambulance service. Since 1900, £446 000 had been spent in building permanent small-pox hospitals to replace the ships. These figures were quoted from Sir John G. Craggs, a well-known actuary and accountant, and one of the honorary secretaries of King Edward VII's Hospital Fund; his figures had been published for some time, and Mrs. Garrett Anderson had not seen them disputed. Dr. Bruce Low in his recent report upon the provision of hospitals for small-pox cases in Germany said that everywhere he was met with the opinion that it was the universal vaccination and revaccination of the whole community that prevented small-pox from spreading, and that "without the practice in question the whole system of isolation of small-pox in Germany would have to be completely changed, which would involve enormous expense to the community." If one tried to ascertain what would be the cost of the systematic revaccination of all children soon after the completion of their twelfth year it was found that there were in London at Lady Day, 1904, a total of 544,341 children of all ages in the Board schools, and that the percentage of children between the ages of 12 and 13 was 6.25. The proportion of children of this age to all other children was likely to be pretty much the same everywhere, and it would therefore not be impossible to determine broadly what would be the number of children in England and Wales to be revaccinated each year. In the London County Council Schools (as they now were), which numbered 521, there would be about 34,000 children who would reach the age for revaccination each year, averaging about 65 children in each school. The cost of the required number of whole-time vaccination officers to overtake the work would certainly compare very favourably with the cost of the small-pox hospitals and of all that they involved.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

Annual Meeting.

The annual meeting of the Medico-Psychological Association of Great Britain and Ireland was held in London on July 21st and 22nd. The presidential address by Dr. Percy Smith dealt with the subject of paranoia, which he described as a primary form of insanity of a delusional character; the term was used by Kahlbaum, Mendel, and others nearly thirty years ago. Alienists in Great Britain had been slow in accepting the term "paranoia"; no mention of it was made in the older textbooks (Blandford, Savage, Bevan Lewis, Clouston), though in recent editions of the last two authors brief reference was made to this affection. Much confusion, said Dr. Smith, prevailed over the use of this term, some Continental writers including under it a host of acute mental affections (now recognized as hallucinatory delirium, collapse delirium, and acute mental confusion) which did not even belong to the class of "degenerative" psychoses, of which paranoia was a member. Thanks, however, to the labours and investigations of Krafft-Ebing, Magnan, Kraepelin, Spitzka, and others this confusion of terms had been gradually got rid of during the past decade. Cramer, who had written exhaustively on the historical growth of our knowledge of paranoia, pointed to the new and very important discoveries made by the French and German schools, whose work was being followed up eagerly by the alienists of Italy and America. British alienists had, however, tarried in the line of advance, and many still clung to views which were in this respect obsolete. The question whether paranoia proper was primarily a disorder of the affective side of mind—the sphere of feeling of organic emotions—or whether it was a primary intellectual disorder without affective basis, had been long debated. Dr. Smith was inclined to the former view, and referred to the statements of Krafft-Ebing and Kraepelin on this question, the latter author showing, from evidence of an almost indisputable character, that the former view must be upheld. Krafft-Ebing included paranoia in the great subgroup of psychical degenerations of the brain, alongside of *folie raisonnante*, katatonia, and periodic insanity. After referring to the paranoid form of dementia praecox (a rare affection), Dr. Smith summed up his conclusions to the effect that paranoia was a chronic disease of the mind (brain), characterized by a stage of systematized delusions of persecution or of exaltation; that it developed in youth, adolescence, and early life on a basis of morbid cerebral heredity; that the disorder was essentially and primarily one of the sphere of organic feeling and emotion; that it was clinically, etiologically, and in its evolution entirely different from the acute psychoses and deliria associated with mental confusion and hallucinations: and that it should never be confounded with the secondary states of fixed chronic delusion sequent to attacks of acute insanity.

Dr. G. E. Shuttleworth presented a paper on the educational treatment of young epileptics, and referred to the Act of 1898, which enabled local, municipal, and county authorities to provide schools and farm colony residence, and instruction for the same class of patients. In such institutions the patient could be made to lead a life of usefulness, to learn a handicraft and employ himself industrially, and thus to render himself a less serious burden financially to society than he otherwise would be. He referred to knitting and laundry work, needlework, basket-making, woodwork, and other farm and domestic industries, which could be taught in institutions for epileptics, and instanced the Chalfont Colony at Chalfont, Bucks, as a modern instance. Idleness was bad for the epileptic, and the children were drilled and taught physical exercise. Games in the open air were most beneficial to patients. Diet, regulation of the bowels, and bromides were the chief methods of treatment.

Dr. Savage said epileptics should not be kept at school or workshop lessons longer than three hours a day: they required judicious treatment both medically and dietetically.

Dr. Henry Rayner said that bromides were given habitually, and he thought too frequently. He deprecated their invariable use for every case of epilepsy.

Dr. Milson Rhodes, Dr. Robert Jones, and Dr. Lloyd Andriezen referred to the insufficient provision for epileptics in Great Britain as compared with America and Germany, and spoke of the value of bromides when rationally employed.

Dr. C. H. Bond read a paper on the body-weight in relation to mental disease. He had for some time adopted a chart (which he passed round) for systematic weekly records of the body-weight in selected cases, and he believed he found in the curve of variations available index to the condition of the patient, one having some prognostic significance.

This brought the first day's proceedings to a termination.

On the second day (July 22nd) Dr. A. W. Campbell gave an account of the histological characters of the human brain as illustrating the localization of cerebral functions. This was illustrated by a series of lantern slides, showing the naked-eye and microscopic characters of the various cortical centres, and including the "association centres" of Flechsig.

Dr. John Turner read a paper on the finer anatomy of the nervous system with reference to the doctrine of continuity of neurons, the paper being largely a restatement of his recent division of nerve cells into "dark cells" and ordinary cells. He claimed to show with the aid of photomicrographs the presence of a pericellular network, the physiological significance of which was, he said, quite opposed to the doctrine of independence of the neurons.

Dr. W. Stoddart read a paper (illustrated by diagrams) on the psychology of hallucinations, and propounded a scheme for the explanation of the same on physiological principles.

Dr. G. M. Robertson read a paper on the treatment of lunatics in modern asylums as contrasted with the conditions

of sixty years ago, and said that too much mechanical restraint and seclusion was still the rule of practice.

Dr. J. CARSWELL read a paper on the occurring lunacy in the Parish of Glasgow, and said he believed lunacy was actually decreasing.

Dr. MILSON RHODES read a paper on the provision of accommodation for chronic and incurable mental disorders, comparing the conditions on the Continent and those prevailing in Great Britain.

The proceedings then terminated.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held on July 21st at 6, Suffolk Street, Pall Mall.

DUTIES OF LOCAL SUPERVISING AUTHORITIES.

A letter was read from the Town Clerk of Brighton, enclosing a suggestion from Dr. Newsholme, Medical Officer of Health, on the working of the Midwives Act. The correspondence contained serious charges against two midwives admitted on the Roll. The suggestion submitted for the consideration of the Central Midwives Board was that the medical officers of health should be consulted before the names of midwives who produced evidence that at the passing of the Act they had been for at least one year in practice as a midwife, and that they bore a good character, were inscribed on the Roll.

Dr. WARD COUSINS observed that the Central Midwives Board were bound to administer the Midwives Act as it stood, and on his suggestion the Board decided to write to the Town Clerk of Brighton, quoting Section VIII of the Midwives Act, detailing the duties of every council of a county or county borough as local supervising authorities over midwives. It was evidently the opinion of the Board that the local supervising authority in the case of these two midwives should have suspended them from practice; and on the motion of Dr. Ward Cousins it was agreed that the Town Clerk of Brighton should be asked to procure a report to the Board of the circumstances attending the charges against the two midwives concerned.

Mr. PARKER YOUNG and Dr. WARD COUSINS both expressed the opinion that an inquiry into the charges against the midwives might result in the local supervising authorities becoming better acquainted with their duties under the Midwives Act.

INSPECTORS UNDER THE CENTRAL MIDWIVES BOARD.

Dr. WARD COUSINS moved:

That registered members of the medical profession only shall be eligible for appointment as inspectors under the Central Midwives Board.

He said that one of the duties of the inspectors under the Board would have reference to the regular training institutions for midwives. At the well-appointed institutions he alluded to, where there was a regular system of instruction with lectures, and where the midwives were taught by the principal midwife and by the medical staff of the institution all that was necessary for them to know in regard to disinfection and nursing, there was no need, in his opinion, for the same kind of inspection which was necessary in regard to the training of candidates as midwives who simply presented themselves for examination under the rules framed by the Central Midwives Board, which allow a candidate to be examined if she has a certificate signed by a resident medical practitioner that she has attended and watched twenty labours and attended a sufficient course of instruction. Dr. Ward Cousins contended that, if large, well-appointed institutions were inspected, it should be by qualified medical practitioners, but inspection by qualified medical men was much more necessary of the instruction given to candidates coming up for examination after attending twenty cases and a course of lectures certified by a general practitioner. These candidates would be instructed in the technical training in nursing and in midwifery duties by the gentlemen who delivered the course of lectures, but the lecturer would not be able to give his pupils the necessary practical instruction. The twenty labours, moreover, required by the Midwives Board would be "extern" cases. It appeared to Dr. Ward Cousins that the general practitioners in the country, when certifying the attendances of women on these cases, would not consider it necessary to attend the cases with these women and teach them the normal signs of labour, nor did he think it likely that the medical men certifying would attend the lying-in women during the ten days following labour with the candidate to see that the nursing was properly carried out, and give instruction in the way in which the child was to be looked after and fed. Dr. Ward Cousins asked the Board to consider what the general practitioner would do to satisfy the Board that these women in their twenty cases had been sufficiently instructed in ordinary midwifery and in nursing. What would happen would be that a large number of medical men would be glad to give these women the twenty cases, and if all went well the medical men would not go near these women. Dr. Ward Cousins wanted to know what was the inspection that the Board required. It seemed to him that for these women the best instruction would be received from qualified midwives who would undertake to attend the cases and give the candidates instruction at the case. He urged the members of the Board to consider that before the Board accepted the proposed certificates from the medical men in the country stating that these women had been properly supervised, the Board ought to have some definite understanding as to what amount of supervision and instruction those who signed those certificates ought to give these candidates.

Mr. PARKER YOUNG did not consider that all the inspectors should be registered medical men; and after some further discussion Dr. WARD COUSINS withdrew his motion, saying that he understood that the Board would expect that the doctors who signed the certificates for the candidates would guide, conduct, and help these women in their work. He feared, however, that these women would, as a matter of fact, not receive efficient instruction.

After the transaction of some formal business the Board adjourned to September 29th.

MEDICAL NEWS.

HIS GRACE THE DUKE OF FIFE, K.G., Lord Lieutenant of the County, has appointed Dr. Ralph Gooding, Chairman of the Blackheath Bench of Justices, a Deputy Lieutenant of the County of London.

RECURRENCE OF SMALL-POX IN EDINBURGH.—During the week ending Saturday last, July 23rd, two fresh cases of fairly severe small-pox came under the cognizance of the Public Health Authorities. They were those of tramps who had come into the city from an outside infected area.

THE SPITTING NUISANCE.—Moline, Illinois, has adopted an ordinance prohibiting spitting in public places, under penalties varying from 1 dol. to 5 dol. for its violation. Notices are to be posted to warn all persons, whether residents or visitors, against spitting on pavements.

THE STUDY OF TUBERCULOSIS AT JOHNS HOPKINS UNIVERSITY.—It is announced that the Johns Hopkins University is about to undertake systematic work on the subject of tuberculosis. With the help of a gift of £4,000 from Mr. Henry Phipps, of Pittsburg, it is proposed to erect a dispensary building so arranged as to combine the treatment of patients with adequate rooms for investigation.

MEDICAL MEMBERS OF PARLIAMENT IN PORTUGAL.—In the newly-elected Portuguese Chamber of Deputies there are ten members of the medical profession, namely, Drs. Clemente Pinto, Sabino Coelho, Sousa Avides, Moraes Carvalho, Almeida Dias, Agostinho Lucio, Egas Moniz, Lima Duque, Libanio Fialho and Moreira Junior.

CENTENARY OF SIR RICHARD OWEN.—It is always well to recall the memory of those who have by their researches advanced our knowledge. July 20th was the hundredth anniversary of the birth at Lancaster of Sir Richard Owen, where an inscription on a house in Thurnham Street records the place of his birth. Owen died in 1892.

THE TRAINING OF MIDWIVES.—A centre for the training of young women desiring to become midwives has been established in connexion with the Cardiff Medical School. Three courses of lectures and demonstrations are to be given each year, each course lasting three months. The Cardiff Corporation and the Glamorgan County Council are taking a keen interest in the training of midwives, and the former body has already voted a substantial sum towards the upkeep of the centre, and the Glamorgan County Council, in all probability, will vote a still larger sum for the same purpose. A deputation headed by Professor Hepburn, of University College, Cardiff, recently explained the scheme and its objects to the Monmouthshire County Council.

BRITISH MEDICAL ASSOCIATION.

Subscriptions to the British Medical Association for the year 1904 are now due and should be forwarded by postal order or cheque to the amount of 25s. to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, JULY 30TH, 1904.

THE OXFORD MEDICAL SCHOOL.

THE city of Oxford is of incomparable loveliness. It is also a seat of learning. Beauty commands a higher price than wisdom, and, unlike her sister, is regarded with even an undue attention when she crieth in the streets. Accordingly our President, fearful lest his flock should think only of Oxford's charms, turns our eyes to her merits.

And he has good reason. The torch which Acland lit in the Fifties has been taken up by other runners since; the building he began has been enlarged by his pupils and successors, until we have at Oxford now a medical school second to none within the four seas in the opportunities it offers for the early studies.

This has been but a part of a great movement. In the last fifty years the University has extended her teaching in many directions. Until 1853 there were only two final schools by which men could obtain a degree, Literae Humaniores and Scientiae Mathematicae et Physicae. In 1853 Scientiae Naturales and Jurisprudentia et Historia Moderna were added. In 1870 Sacra Theologia became a final school. In 1872 Jurisprudentia was separated from Historia Moderna. In the same year the degree of Baccalaureus in Jure Civili was given. In 1887 Literae Indicae, and in 1891 Literae Semiticae were added. In 1893 women first appeared in the class lists. In 1896 Semitic and Indian languages were united in the school of Literae Orientales, and in 1897 a school of Literae Anglicae was formed. Thus there are now nine avenues to a degree, eight of them with Honours, each of which implies a regular "disciplina," with professors, lecturers, and readers, in place of the two schools which existed fifty years ago.

But this is not all. During that time Oxford, by its University extension system, has passed beyond its own bounds, and has done much to realize the ideal of a great English education of which the Universities, with Oxford and Cambridge at their head, shall be the spirit and the guide. Everywhere the University has been active, and everywhere for good.

This is a proud record, and by so much the prouder that it has been carried out against all selfish interests. But in this it has gone even too far. It has transformed Oxford from a comfortable oligarchy into a large body of men who work so hard, and who earn so little, that they have not the leisure or the means to obtain the necessary nourishment of independent research. Her teachers are very poor, and slave their lives away in routine work. The tyranny of examinations is the great error of Western education. To reform this is the next great task of the chiefs of learning.

Yet a noble work has been already done, and well have they deserved of England who have played a part therein. Such men are education's saints, and none can wear his halo with a better right than our great representative, Sir Henry Acland, nor has any reform been more successful than the creation, the new creation, for such it truly is, of a medical school in Oxford.

The President reminds us of the history of this creation. Acland first took up the cause of natural science. He carried this to a successful issue, though men like Buckland had failed. He created scientific teaching in Oxford, made it a final school, and built the magnificent museum in which the Association has met this week. That was the first and the greatest step. Twenty-five years later a fresh advance was begun. It was claimed that the special medical sciences of anatomy and physiology should be recognized as subjects for the Final School of Natural Science. The movement was weakened by the cry of "a lost medical school," which the President justly calls a false issue, and by personal attacks which all now regret. Acland, thinking it better that a few should be very highly trained than that the many should be brought under the influence of the University, disapproved but yielded. Up to 1886 Moderations were still compulsory on students of science, but this bar was then removed, and since then undergraduates can devote their whole time at the University to the Preliminary Sciences, and to Anatomy and Physiology.

But this is not all. In 1883 the University used the Litchfield endowments to provide elementary clinical instruction which should fit a man to take his place at once in the practical work of a great hospital. It is pleasant to think that the students who come up to the London schools are passing through the hands of the President of the Association in his capacity as Litchfield Professor of Practical Medicine. And in the last few years, under the guidance of Sir John Burdon Sanderson, pathology was added to the subjects taught by the University. This is no place to dwell upon the slight differences of opinion which have of late arisen. In one thing all are agreed. All of us know how admirably the various branches of early medical education at Oxford are carried on, and all of us hope that means may be found to endow pathology as richly as the work already done proves that she deserves.

At this point the line has been drawn. It is curious to notice that in 1879 the reformers urged the University to teach Medical Jurisprudence, a subject which implies a thorough knowledge of Medicine, Surgery, and Midwifery, but from this as well as from any attempt to teach the later subjects Oxford has wisely refrained.

Upon one more point we should like to dwell. Medical education is governed by the Board of the Faculty of Medicine. In one direction, as the President points out, the Board is undeniably weak. It consists of twenty-five members. These rightly include the representatives of all the Preliminary Sciences, and of Anatomy, Physiology, and Pathology. But of the whole twenty-five, only nine are or have been practising physicians or surgeons, only four have been teachers in the great Medical Schools to which Oxford men go; and two of these, Sir William Church and Dr. Payne, are teachers no longer. The purpose of the Board is to frame regulations for the training and examination of students of medicine, and it is much to be desired that more weight should be given to the views of those who complete the teaching which begins at Oxford. The University should regard the course in Oxford and in London as one, and should give it a deeper meaning and a broader purpose by calling to her

councils more of those graduates who carry on the later stages of her work. Those who know what Medicine is are at least not less qualified to discuss the training of medical students than those who do not.

THE ADDRESS IN MEDICINE.

MEDICINE AND THE STATE.

> THE defiant, desperate battle which civilized man wages with Nature must go on; but man's suffering and loss in the struggle—the delay in his ultimate triumph—depend solely on how much or how little the great civilized communities of the world seek for increased knowledge of Nature as the basis of their practical administration and government.—*E. Ray Lankester.*

THE Address in Medicine which Sir William Church delivered to the Association on Wednesday evening will, we believe, have a far-reaching effect. It has come at the psychological moment, and will help to clinch the resolution of the British Medical Association, as the great representative body of the profession, to make a serious attempt to evolve order out of the present chaos of public health law and administration. Although he arrives at his conclusions by a different route, the principle which animates his address is seen to stand in natural sequence with previous action taken by the British Medical Association. One of the main objects of its founders was to organize the practitioners of medicine into a body of highly-trained men recognized as such by the State. It is difficult for us of the present generation to realize the state of things with which our predecessors three-quarters of a century ago were confronted. Except the special Acts and charters of the Corporations and the Apothecaries Act of somewhat wider scope there was no medical legislation, and no body of men recognized by the law as competent to advise the individual or the State in medical or sanitary matters—in the individual or collective struggle with disease. The first public work undertaken by the British Medical Association was to obtain such legislation, and the Act of 1858 was the result. The natural thing to have done would have been to have instituted a State examination and a State diploma, but the vested interests of corporations were too strong then, as they were again when the Medical Act of 1886 was passed; and both these Acts were the result of compromise. The defects in the Medical Acts, which become more evident every year, should not blind us to the fact that they were an immense step in advance, and that it was mainly through the efforts of the British Medical Association that they were placed upon the Statute Book. They at least enabled the State and the individual citizen to distinguish between those who were and were not fit to be authorized to practise medicine, surgery, and midwifery, and gave the profession valuable means for regulating the minimum standard of professional knowledge, and for maintaining discipline within its ranks. Sir John Simon perceived more clearly than any statesman of his time the fundamental importance of the Medical Act of 1858, not only for the medical profession itself, but for the welfare of the people, who by crowding into the towns were then beginning to raise those sanitary, social, and economic questions which are to-day absorbing more and more the attention of statesmen and politicians who can read the signs of the times. The Medical Act of 1858 gave to regular medical practitioners a defined position in the State and a recognized place in the Constitution. The State at once required that all medical men employed by it should be registered. The rapid growth of public health law soon created fresh necessities. The profession called into existence the Diploma in Public Health, and the Legislature eagerly took advantage of the further guarantee thus afforded.

When the dispassionate historian comes to write the history of the Victorian era he will not fail to call attention to the remarkable fact that all through the public health and social legislation for which that epoch will in future chiefly be remembered, it was the medical profession which sought from the Legislature greater powers to make its members efficient servants of the State and of the public, and not the Legislature which imposed more onerous tests upon the profession. The profession asked for registration, that the State and the public might know who were qualified to practise and who were not; the profession asked for a simple one-portal system, which is not yet granted; the profession asked for and obtained power to purge itself of men guilty of conduct infamous in a professional respect; the profession established and claimed State recognition for a Diploma in Public Health, and the profession now asks for an amending Medical Act that it may make itself still more efficient. Presently this Act will be wrung from an unwilling and apathetic Legislature, and the State and its individual citizens will benefit.

Sir William Church holds that at the present time public health administration lags behind legislation, and that the simplification and codification of the Public Health Acts would do much to render administration more effective. With the Medico-Political and Public Health Committees of the British Medical Association he deplores the inept conclusion at which the recent Treasury Committee arrived. "The health of the nation," he said, "on which its success and prosperity depends, is thrust into the background with the remark that the President of the Board 'has the advantage not only of the professional opinion of the Medical Officer of the Board, but also of the general administrative experience of the permanent Secretary.'" A more striking example of the shortsightedness which so commonly prevails among the so-called ruling classes on public health questions could hardly be found. Sir William Church advises that in pressing the Association's Bill for the reform of the Local Government Board upon the attention of the President and of the Ministry three points should be especially insisted on: first, that the central authority should act as an advisory as well as a supervising authority; secondly, that the medical element should have greater weight and influence both in the central and in the local authorities: and, thirdly, that the medical officers of these authorities should exercise more effective control over the purity and wholesomeness of articles sold for food. He drew attention also to the reckless way in which speculating builders in suburb and country are allowed to crowd on to limited areas rows of small houses without any curtilage, and without even broad roads. This is going on all over the country in hundreds of places which are within reach of large towns: it is profitable to the land speculator and the small builder, but in the long run it is wasteful of life, of health, and of public money, for the next generation will have to carry out costly improvement schemes in the new slums which we are allowing to come into existence. Lord Jersey and the Rip Van Winkles of the Treasury Committee, who blandly assert that public health administration does not involve "the main responsibility for the decision of great questions of policy" seem to carry

us back to the opinions which prevailed among politicians of a certain school a century ago. Men who are awake to the needs of the nation in this generation will agree with Sir William Church that the national health is a matter of supreme importance "far transcending the ordinary political issues of the day."

History, according to the proverb, repeats itself, and there is a curious sameness about the story of all sanitary reform which wearies some and irritates others. The medical profession becomes convinced, by the results of scientific research and practical experience, that a change is necessary, and makes its views known to the public. They are greeted with howls of derision: it is a medical fad, a scheme to put more money into the pockets of the doctors, a nefarious plan to interfere with the liberty of the subject to be as dirty and as careless as he chooses. This is the first stage. It is followed by years of argument, of fresh demonstrations, of object lessons costing thousands of lives, until we arrive at the second stage, when some more than usually persevering and courageous President of the Local Government Board contrives at the tail end of a session, when everybody else is at the seaside or on the moors, to pass another Public Health Act Amendment Bill. The third stage begins a few years later, when the public and the public press, having discovered the value of the reform, turns upon the medical profession and reproaches it: it is scandalous, they say; you have known all this for twenty, thirty, forty years, perchance for half a century, and you have only just now got the Act passed. Away with such a profession, and then *da capo*. However, all this does not matter very much, and we may be content, while biding our time, to say with Galileo, After all, it moves.

THE ADDRESS IN SURGERY.

IN the Address in Surgery published at p. 231 Sir William Macewen deals with three subjects. In the first place he dwells on certain points concerning cerebral infection, which his later experience has emphasized and somewhat modified. It had become clear that when a primary cranial pyogenic focus was known and localized, the paths along which secondary cerebral infection took place could be accurately estimated. In the great majority of instances in which abscess of the brain follows a primary focus on the exterior of the skull there is a direct continuity between the two processes, and the direction of extension is governed by anatomical facts. The character of the secondary focus is also influenced by the path of extension. When the latter is by way of the internal meatus a basal meningitis results; when the tegmen or the sigmoid is invaded a local meningitis or an abscess of the cerebrum or cerebellum follows. Sir William Macewen mentions ten cases of tuberculous meningitis following tuberculosis of the middle ear, in five of which intracranial operations were performed, as the meningitis was unilateral, and it was hoped that it was still restricted to an accessible area; in three of these this hope was realized and the localized disease was successfully dealt with. The primary focus in the middle ear may easily be overlooked in these cases, and the importance of its early recognition cannot be exaggerated; when the membrana tympani is perforated secondary infection occurs and the disease runs a rapid course.

From these matters Sir William Macewen passed to consider certain evidence for a respiratory and cardiac reflex induced by peripheral impressions on the pudic nerve. His attention was drawn to the question some years ago by the occurrence of glottic spasm at the moment of stretching the sphincter ani in a patient deeply anaesthetized. He found on further investigation that however deep the anaesthesia, this reflex was still present and could be induced by painful impressions on the external genitals, perineum and lower gluteal region, as well as by the anal stretching. The response to the impression usually takes the form of a prolonged inspiratory gasp, while the heart beat is weakened and may become irregular: the cardiac response is, however, much less in evidence than the respiratory. These reflex phenomena which are occasioned by stimulation of the pudic nerve may be prevented or greatly lessened by local anaesthesia induced shortly before the administration of the general anaesthetic. The group of nerves concerned—the second, third, and fourth sacral—are sometimes damaged by injury to the cauda equina with resulting anaesthesia of the corresponding region, and such patients do not exhibit the characteristic laryngeal spasm when the pudic nerve distribution is stimulated. On two such cases Sir William Macewen has operated, and he was able to demonstrate with electrodes that on stimulation of the nerve cord which gave contraction of the sphincter ani and perineal muscles, a central impulse also passed and gave rise to respiratory spasm. The nerves in these cases could not be traced to their origin or distribution, but from the collateral circumstances and the physiological effect on the muscles supplied by the pudic, it would appear that the cord by which the laryngeal reflex passed received the afferent strands from the pudic nerve through the sacral plexus. Sir William Macewen suggests that this organic relation between pudic nerve and larynx may have some connexion with the effect on the voice which follows early castration.

In the third place Sir William Macewen discusses anew the question of the choice of a suitable material for ligatures and sutures. He emphasizes the importance of using a material which, when it has accomplished its object, would allow itself to be speedily removed from the tissues without disturbance. It is necessary, however, that it should persist long enough for the production of sound union, but the idea of obtaining any permanent support from non-absorbable ligature and suture material is not based on critical observation, and is shown to be illusory by the examination of cases after operation. All forms of non-absorbable material become free and loose from their attachments within a short period after their application. One of the best materials available is catgut carefully selected, and so prepared that a series of specimens is obtained exhibiting a varying resistance to absorption. This preparation can be accomplished by the use of chromic acid added in different proportions to glycerine, and the details of this method of preparation were fully given by Sir William Macewen. By this method the surgeon has it in his power to prepare ligatures and sutures possessing practically any degree of resistance to the action of the tissues which he may desire. To illustrate these propositions the lecturer described at some length certain researches on the mode of absorption of catgut, and he used these to emphasize his contention that catgut properly prepared fulfils all the requirements of an ideal suture and ligature material.

These three subjects, each of much interest to surgeons, were placed before his audience by Sir William Macewen

in a characteristically lucid manner. With the first his name is historically associated, the second is an original observation of much clinical importance, and in dealing with the third he said almost if not quite the last word on a matter which has been much debated.

THE MALTA FEVER COMMISSION.

The Commission appointed by the Royal Society to investigate the etiology and pathology of Mediterranean or Malta fever has now commenced its work in Malta. The Commission consists of Colonel Bruce, F.R.S., R.A.M.C., chairman; Major Horrocks, R.A.M.C., Staff Surgeon Shaw, R.N., Dr. Zammit, Chemical Analyst and Bacteriologist to the Government of Malta, and Dr. Ralph Johnstone, of the Local Government Board. The Commissioners have the assistance of Captain Kennedy, R.A.M.C., and Surgeon Gilmour, R.N. The hospitals of Malta will unfortunately supply only too many cases for clinical investigation, and the experimental work is being carried on at the laboratories of the Naval Hospital, of the Army Station Hospital and at the offices of the Board of Health. The cost of the Commission will be defrayed jointly by the Admiralty, the War Office, and the Government of Malta, and the Royal Society has contributed £200 for apparatus from its Government grant. The disease is the cause not only of many deaths among sailors and soldiers, but also of much invaliding which is all the greater owing to the prolonged course which the disease commonly runs even in cases which ultimately recover. While it is known that the disease is due to a specific microbe, the micrococcus melitensis, very little has yet been certainly ascertained as to the mode in which the specific agent maintains its existence and how infection is contracted. A knowledge of these points in etiology is an essential preliminary to devising and enforcing effective prophylactic measures.

PHYSICAL DETERIORATION.

As the report of the Inter-departmental Committee on Physical Deterioration appears at a moment when our columns are full of the proceedings of the Association, we can only briefly touch this week upon the summary of the principal recommendations framed by the Committee. As we surmised, no recommendation for the appointment of a Royal Commission is put forward. What the Committee does emphatically advocate is the creation of an Advisory Council representing the Departments of State, within whose province questions touching the physical well-being of the people fall, and whose duty it would be to receive and apply information derived from the Anthropometric Survey and the Register of Sickness. They would advise the Government on all legislative and administrative points concerning public health in respect of which State interference might be expedient. The Committee thinks that a permanent Anthropometric Survey, with a view to the collection of definite data bearing upon the physical condition of the population, should be organized as speedily as possible. This survey should have for its object the periodic taking of measurements of children and young persons in schools and factories. Besides this, a more comprehensive and specialist survey, spread over a longer period, of the population of the country at large might be undertaken. It is considered in the highest degree desirable that a register of sickness, not confined to infectious diseases, should be established and maintained, and that overcrowding should be drastically dealt with. A standard should be fixed, and, after a given date, no crowding in excess of such a standard be permitted. There should be systematic practical training of teachers to enable them to give rational instruction in schools on the laws of health, including the physical evils caused by drinking. The Committee recommends that the minds of children should be opened to the resources and opportunities of rural existence. The teaching of cooking should be directed to the selection, economy, and preparation of the material best suited to the needs of the poorer classes, including the requirements of the young. The instruction should vary for urban and rural schools. But the county council should be empowered to act in default of the local authority, and, owing to the great importance of milk supply passing through as few hands as possible, milk dépôts should be formed in every town, obtaining their supply direct from the farms. These are a few among the fifty-three questions which the Committee considers should be inquired into, and it is confident that, if its recommendations are adopted, a considerable distance will have been traversed towards an amendment of the conditions it has described. "Complacent optimism and administrative indifference must be attacked and overcome, and a large-hearted sentiment of public interest take the place of timorous counsels and sectional prejudice." At a future date we will discuss in detail some of the interesting questions contained in the report. The Committee is to be congratulated upon the intelligent and conscientious manner in which it has tackled the social problems placed before it. It has ferreted out the gravest of the causes likely to cause deterioration, and it has not been afraid to point out remedies. The report is excellently drawn out, and it is earnestly to be hoped that the Committee on Physical Deterioration, behind which the authorities have for so many months shielded themselves when reforms were suggested, will be listened to, and its recommendations acted upon without delay.

THE SELECT COMMITTEE ON THE REGISTRATION OF NURSES.

It is somewhat difficult to follow the line of evidence which is placed before the Committeee, as the plan on which the evidence is being taken is not very clear. Mr. Sydney Holland has been exhaustively cross-examined, but his evidence has not contributed anything further to the elucidation of the question; it puts the case for the London Hospital with great precision, but there it ends. Dr. Norman Moore also followed on what may be termed the opposition side; he saw in the scheme for the registration of nurses a means for "the establishment of an imperfectly-trained order of medical practitioners," and the public might be tempted to employ the registered nurse instead of the registered practitioner. He also anticipated great difficulty in removing the name of any nurse from the register, judging by the experience of the General Medical Council. He did not approve of examinations, regarding them as expensive and as tending to encourage book-learning, which alone is of little value. Mr. Walshe, Managing Director of a Male Nursing Association which has three offices, in London, Manchester, and Edinburgh, gave evidence on July 21st. His point was the difficulty which surrounded the training of the male nurse, and the competition which his Association experienced from the untrained nurse. He was in favour of registration as indirectly tending to the better organization of the training of the male nurse and as giving his and similar Associations more efficient control over their nurses. He was very emphatic on the necessity of employing male nurses and of providing them with a complete hospital training. If an examining body had the power to demand a certain standard of proficiency before granting its certificate, it would follow that means would be forthcoming for the training of the male nurse. Miss Hobbs, Secretary of the Royal British Nurses' Association, was examined on the scope and intention of the Bill promoted by that Association. Miss Hobbs was especially examined on the opposition of the London hospitals, but she pointed out that certain of the hospitals had taken no part in it, and that, moreover, the opposition was on the part of the officials only; she was not aware that the opinion of the nurses had been ascertained by their matrons, nor that the matrons had authority to speak for their nurses.

THE ANNUAL MEETING.

A SPECIAL service was held in Christ Church Cathedral, at 10.30 a.m. on Tuesday. The Mayor of Oxford and certain members of the Corporation, the officers, Vice-Presidents, and Council of the Association, clad in academic dress, met in the Municipal Buildings, and walked thence in procession to the Cathedral, where seats were reserved for them in the chancel and centre of the building. The service began with the singing of hymn 193, "Jesu, Lover of my Soul." The special Psalm was the 139th; the lesson was Rom. viii, 18 to 31. The anthem was "Blessed be the God and Father" (Wesley); and the sermon was preached to a full congregation by the Master of University College (the Rev. J. Franck Bright, D.D.), who chose for his text, St. John's Gospel, v, 17, "My Father worketh hitherto and I work." He said that man's thoughts of God are restricted by man's limited capacities. One thing certain is that constant activity and energy and work of God, from which we primarily receive our knowledge of Him. In unending procession the Universe seems gradually working on towards the fulfilment of the design of its Creator; and the greatest of His works is man, gifted with powers far transcending those of any other thing or creature upon the earth: gifted with intelligence sufficient to use the lightning as his messenger, and to harness to suit his needs the vapour and the winds, and yet so weak that fourscore years bring his visible means of activity to an end. In some sort man is on this earth a fellow-worker with God; we men are the sons of God, and one with our Father. This participation in the nature of God is the crown and glory of manhood; it removes the contradictions of life, ennobles all the struggles of suffering, and fills our work with deep responsibility, which is no less than the honour it confers. We are thus bound to see that in doing our work we bring our wills into harmony with God, and honestly do our share in the great work. The Apostle roused the energies of his hearers to their highest pitch by bidding them walk worthy of the high vocation to which they were called. There is no surer means of securing the best work than to implant self-respect in the heart of the worker. As regards the medical profession, its nobleness is well known to every one. "Certainly to me, brought up from my childhood in the midst of it, its unrivalled worth, its grandeur alike of aim and practice, have been articles of a life-long faith." With self-devotion and self-forgetfulness the physician constantly gives himself to the care of his patients, and by acts of liberality and a helping hand held out to those whose means are straitened, renders the life of others more tolerable. Yet doctors are like other men. The needs of life have to be satisfied, the temptations of life have to be met and fought. Doctors, too, have temptations specially their own: the habitual study of the mechanism of the human form is constantly dragging them towards the view that it is mechanism only. The higher nature of man is apt to slip from the physician's view. But in no other class of the community are the duty and the delight of working together with God more emphatically exemplified than in the medical profession. To them is entrusted the future welfare of the greatest of all God's creations. It might be thought that the physician should confine himself to the healing of the body only; but the spheres of activity of the clergy and the doctors are not easily cut asunder. A word of timely and well-placed sympathy will often speak more of God than a didactic sermon; the alleviation of pain will rouse the mind to gratitude; the example of forgetfulness of self for the good of others comes home with most force by the sick bed; the dying man may gather strength and hope from the firm and tranquil faith of the sympathetic physician. Actions are after all to most persons more impressive than words. What purity of soul, what depth of sympathy with human weakness, what understanding of human needs, what cultivated intellectual grasp does the medical profession require. Single-hearted devotion, the will to work constantly hand-in-hand with God; such alone is the frame of mind that befits the noble calling. A collection was subsequently made on behalf of the British Medical Benevolent Fund and Epsom College.

CO-OPTION OF MEMBERS OF COUNCIL.

At the first meeting of the Council for 1904-5 it was announced that as the total number of representative members returned to the Council is 64, the Council was entitled, under By-law 29, to co-opt six members. A ballot was then taken, and the following were declared to be elected: Dr. H. Radcliffe Crocker, Mr. Edmund Owen, F.R.C.S., Dr. G. Bagot Ferguson, Professor R. Saundby, M.D., LL.D., and Dr. D. A. O'Sullivan, leaving one vacancy.

THE NEXT ANNUAL MEETING.

At the same meeting a deputation of representatives of the Midland Branch was introduced by Dr. Pope of Leicester, who said that the Branch desired to invite the British Medical Association to meet in Leicester next year, and would propose Mr. G. C. Franklin, F.R.C.S., Senior Surgeon to the Leicester Infirmary, as President-Elect. Mr. Franklin and other members of the deputation having addressed the Council, giving the invitation in the most cordial terms, the Chairman of Council thanked the deputation, which withdrew. A deputation consisting of Mr. I. H. Cameron, M.B., Professor Mackenzie, and Dr. Burnham (Toronto) and Dr. Courtney (Ottawa) was introduced, and invited the Association to meet in Toronto in 1906, or at some early convenient date. The Council having deliberated, the deputation from the Midland Branch was again introduced and informed that the Council would have great pleasure in recommending the General Meeting to accept the invitation to hold the Annual Meeting of 1905 in Leicester. The invitation from Toronto was favourably entertained, and it was determined to confer further with the deputation from Canada as to the most suitable date. The invitation to meet next year in Leicester was subsequently cordially accepted by the General Meeting.

THE ANNUAL MEETING, 1906.

The Council at its meeting on Thursday informed the deputation from Canada that it would recommend the Association to accept the invitation to hold its annual meeting of 1906 in Toronto.

PRESIDENT'S DINNER PARTY.

Dr. Collier entertained a large party at dinner at Balliol College on Monday evening. Among the guests were the Vice-Chancellor of the University, the Mayor of Oxford, the Masters of University and Trinity, and Dr. Clifford Allbutt, Regius Professor of Medicine in the University of Cambridge. Altogether some hundred and fifty were present, including many members of Council and officers of the annual meeting this year.

ELECTION OF HONORARY MEMBERS.

The generosity and cordiality with which the authorities of the University of Oxford have co-operated with the local Executive deserves the thanks of the whole Association, and the members present at the annual meeting have highly appreciated the hospitality shown by the Colleges in placing college rooms at the disposal of members. The debt was gracefully acknowledged by the election as honorary members of the Association of Dr. Monro, the Vice-Chancellor of the University, of Dr. J. F. Bright, Master of University College, who preached the annual sermon in Christ Church Cathedral, and of the Dean of Christ Church. The election of Mr. Vernon Harcourt, late Reader in Chemistry in the University, was a recognition of one who has not only held a distinguished place in the scientific faculty of the University, but has laid the Association under special obligations by the work he has done for the Special Chloroform Committee.

ANNUAL REPRESENTATIVE MEETING.

The Annual Representative Meeting held its first session on Tuesday afternoon (see p. 101). Sir Victor Horsley was unanimously re-elected Chairman, and on taking his seat announced that he would not accept nomination for a third time, on the ground that he did not consider it desirable that a chairman should continue long in office, as there

was a risk of ideas and methods becoming stereotyped. The representatives sat from 2 till 6 p.m., with an interval of a-quarter of an hour for tea, and, as will be seen from a detailed report published in the Supplement, got through a great deal of business. The reports on the question of the desirability of the Association taking up medical defence led to a prolonged discussion, and the principle of medical defence was referred back to the Medical Defence Committee, with instructions to state in the new scheme, which it was understood the Committee would prepare, in what way the amalgamation of the existing medical defence societies should be provided for. The Committee was also instructed to submit its scheme to the Divisions before March 31st, 1905.

Owing to the large amount of matter to be dealt with, we are obliged to hold over a full report of the further proceedings of the Annual Representative Meeting till next week. In the meantime the following summary, which must be taken as entirely unofficial, will serve to indicate the salient points of the discussions.

The Meeting resumed its sittings at 2.45 on Wednesday. The minutes of the previous day were amended, taken as read and signed as correct. The consideration of the report of the Medico-Political Committee was resumed and the principles formulated by the Committee on the amendment of the law relating to death certification and registration were discussed and referred back to the Committee for reconsideration and further report.

The memorandum in support of the Poor-law Medical Officers (Ireland) Bill was next taken, and Professor Byers (Belfast) moved a resolution approving of the action taken by the Medico-Political Committee and the Editor of the British Medical Journal for the furtherance of the reform of the medical administration of the Irish Poor-law system. He also expressed the thanks of Irish members of the Association to Surgeon-General Evatt for his very able report, which must have served to convince everybody who had read it that an Irish grievance was not always fictitious. The resolution was seconded by Dr. O'Sullivan, supported by Dr. Cremen (Cork), and carried unanimously. A resolution put from the chair was then unanimously adopted earnestly pressing upon the Government the urgent and immediate necessity of reforming the conditions of the Irish Poor-law Medical Service, inasmuch as the gravest sanitary evils and social distress followed from the present deplorable conditions of the Irish dispensary appointments. A copy of the resolution was directed to be sent to the Chief Secretary for Ireland and the members of the Cabinet.

The Chairman then explained the provisions of the Bill promoted by the Association for the reorganization of the Local Government Board, and the unsatisfactory nature of the report of the Treasury Committee presided over by Lord Jersey, and submitted the memorandum criticizing the Treasury report. This was unanimously approved, and a resolution was adopted urging the Government to appoint a Royal Commission to inquire into the whole matter of the organization of the Local Government Board, and instructing the Medico-Political Committee to refer the Memorandum to the Divisions, with the request that they would call the attention of local members of Parliament to the matter. The memorandum of considerations in favour of legislation giving security of tenure to medical officers of health prepared for presentation to the President of the Local Government Board was approved unanimously, on the motion of Dr. Groves, Chairman of the Public Health Committee.

The Chairman next drew attention to the memorandum and other documents as to the position of medical referees under the Workmen's Compensation Act, and the action of the Committee was unanimously approved.

The Chairman then explained the circumstances which had led to the Committee making the report on the desirability of consultation between medical witnesses in legal cases, and the meeting directed the report to be referred to the Divisions. The report and other documents on the law relative to coroners were next considered and approved, and the Chairman proceeded to give an account of the steps taken by the Conference between the Medico-Political Committee, the South-West London Medical Society, the Medical Defence Union, and the London and Counties Medical Protection Society with reference to the action of the Coroner for South-West London. The course followed was approved, and several Representatives expressed the opinion that the matter should be pursued, even if it should be necessary to petition the Crown—a view which evidently commended itself to the meeting.

After the presentation of the memorandum on the payment of medical men called in to assist midwives, Dr. Ward Cousins, who it will be remembered is a member of the Central Midwives Board, moved a resolution to the effect that as the Midwives Act contained no provision for the payment of medical men called in by midwives, the Association should take steps for the amendment of the Act in order to provide such remuneration. The Act compelled the midwife to call in medical assistance in every case presenting abnormality, and if the Act were not amended in the direction indicated it would become a dead letter. After the Chairman had stated that the Medico-Political Committee was making inquiries as to the course the councils of counties and county boroughs proposed to follow, the Committee was instructed to take steps to obtain amendment of the Act. Some discussion followed on the Nurses Registration Bills, which disclosed considerable difference of opinion, but a resolution approving the principle of the registration of nurses was eventually carried by a large majority, and directed to be sent to the Select Committee of the House of Commons, which is now considering the two Bills.

The Chairman explained that the meeting would be asked to approve the general principles of the draft Medical Acts Amendment Bill, but that the consideration of its details would be the task of a future meeting. He stated that after the replies had been received from the Divisions the Bill had been recast by the Parliamentary draftsman, and was now presented in a much improved form. He then moved that the meeting should approve Part I, dealing with the constitution of the General Medical Council, and pointed out that the representation of dentists was now included. Mr. Chance, representative of the Dublin Division and President of the Royal College of Surgeons, objected on the ground that the Bill would destroy the corporations in Ireland, a proposal which would be strongly opposed by members of the profession in Ireland, and eventually the Bill was referred back to the Committee to obtain the opinion of the Divisions on the Bill in its new form, with reference especially, as it appeared from the course of the discussion, to the fact that the Bill now includes dentists.

After dealing rapidly with some other matters the meeting discussed at some length the subject of the prescribing of glasses by opticians and chemists, and the advertisements issued by members of the Spectacle Makers' Company. The conclusion and recommendations of the Committee were accepted. The reports on the Pharmacy Law and on fees for examination for life assurance were approved, and the meeting then passed on to the report of the Ethical Committee, the adoption of which was moved by Dr. Bruce Goff. After a brief discussion the report was adopted, and the Chairman then called on Mr. Andrew Clark to move the adoption of the alterations of by-laws suggested by the Council. These were moved seriatim, and were all adopted without very much discussion.

A resolution from the Walthamstow Division of the Metropolitan Counties Branch providing that at a Representative Meeting a vote by card shall be taken if twenty of those present so demand was accepted. Resolutions, of which notice had been given by the Wandsworth Division, as to the mode of election of Representatives of a Branch on the Central Council, were also accepted. The first resolution empowers a Division to nominate a candidate, and the second gives power to a Branch to require that the nomination paper of a candidate not nominated by a Division shall be signed by such number of members exceeding three as the Branch

may deem expedient. The resolution from the Gateshead Division instructing the Central Council to take the steps necessary to obtain an alteration in the Memorandum of Association enabling it to undertake medical defence if that course be decided upon was accepted without a division, as were two riders, one empowering the Association or any Branch to make grants to any provident or benevolent society connected with the profession, and the other providing that the Association or any Branch or Division might expend money in the entertainment of guests. A series of resolutions from the Wandsworth Division as to the administration of hospitals was referred to the Hospitals Committee. Another resolution from the same Division, expressing the opinion that the time had come when the Central Council should take into consideration the advisability of forming a printing and stationery department, was referred to the Council. A further proposition from the same Division recommending that announcements of births, marriages, and deaths should be inserted in the JOURNAL free of charge for members of the Association was negatived amid some laughter. A resolution from the Birmingham (Central) Division to the effect that the representation of the medical profession in Parliament is inadequate, and should be increased in the interests of the public and the profession, was referred to the Council to consider how the end in view might be attained. A resolution from the Hampstead Division, expressing the opinion that every practitioner should be put on the same footing as public vaccinators in respect to the Government supply of vaccine lymph was agreed to, as was also a resolution from the Wandsworth Division, requesting the Central Council to draw the attention of the medical profession individually to the fact that by recommending by name certain drugs and certain preparations of those drugs, they are not only allowing themselves to be used indirectly as touts for wholesale druggists, but are also helping their patients to form, either in themselves or others, serious habits of drug abuse. The ballot for the election of six members of the Medico-Political Committee resulted in the re-election of Mr. Garrett Horder (Cardiff), Mr. Geo. Jackson (Plymouth), Dr. Leonard Kidd (Enniskillen), Dr. J. A. Macdonald (Taunton), and Mr. Messiter (Dudley), and the election of Dr. E. H. T. Nash (Accrington). The ballot for five members of the Ethical Committee resulted in the re-election of Mr. H. A. Ballance (Norwich), Dr. A. G. Bateman (London), Mr. G. H. Broadbent (Manchester), Dr. W. A. Elliston (Ipswich), Dr. E. Jepson (Durham). A vote of thanks to the Chairman, which was carried by acclamation, brought the business of the meeting, which had sat for five hours and three-quarters with a interval of quarter of an hour for tea, to an end, but before the meeting separated a strong appeal was made to Sir Victor Horsley to reconsider his decision not to permit himself to be nominated for election to the chair next year. The desire of the meeting was very plainly expressed, and Sir Victor Horsley finally said that he must place himself in the hands of the meeting, an announcement which was received with cheers and with singing "For he's a jolly good fellow."

RECEPTION OF FOREIGN DELEGATES.

The Vice-Chancellor took the chair at the meeting in the Sheldonian Theatre on Tuesday evening, July 26th, and the foreign delegates and guests were presented to him by the President, Dr. Collier. The Vice-Chancellor welcomed the Association to Oxford, and was followed by the Mayor, who extended a welcome from the city. The President of the Association also welcomed the members on behalf of the Oxford Division.

MIDDLEMORE PRIZE.

The President then presented the Middlemore Prize for the best original work on Ophthalmology during the past three years to Mr. J. H. Parsons.

PRESIDENT'S ADDRESS.

Dr. Collier then delivered his address, which is published at p. 221, and a vote of thanks to him was moved by Professor Clifford Allbutt, seconded by Professor Osler, and carried by acclamation. The address which was delivered in the Sheldonian Theatre on Tuesday evening held the attention of a large audience, and was frequently applauded. The general use of academic costume lent variety to the scene, and the occasion will be memorable in the history of the Association. A vote of thanks to the Vice-Chancellor of the University was adopted, on the motion of Dr. G. B. Ferguson (Cheltenham), seconded by Dr. Henry Barnes (Carlisle).

ADDRESS IN MEDICINE.

The Address in Medicine, which is published at p. 226, was also delivered by Sir William Church in the Sheldonian Theatre. A vote of thanks to him was moved by Sir John Moore, seconded by Dr. Markham Skerritt, and carried by acclamation.

THE RECEPTION AT WADHAM COLLEGE.

Half-past-three on Wednesday was the time fixed for the entertainment to be given in Wadham College Gardens by the President, Dr. W. Collier, and the members of the Oxford Division, and from the early morning things looked most unfavourable. The heavy rain of the previous day showed no definite sign of abating, and as an early precaution it was arranged that the *epée* contest and fencing exhibition should be given under cover in the Town Hall unless the weather altogether changed. This plan had to be carried out, for the weather, after a brief delusive interval about midday continued to be as heavy as ever, and it did everything it could to mar what should have been a most brilliant entertainment, and one which was in spite of everything a surprisingly successful one. The magnificent trees in the College gardens, together with the tea and other marquees afforded shelter to those who decided in favour of music and a chance of getting wet against the *epée* contest and four stone walls. The music, too, of the Royal Marine Artillery band was everything that could be desired, and the numerous guests present, both ladies and gentlemen, appeared to be thoroughly satisfied with their choice of a way to spend a wet afternoon. The hosts, therefore, had the satisfaction of feeling that their gallant efforts to carry things through were by no means a failure, inasmuch as they conferred a good deal of pleasure on those present. The *epee* contest and fencing exhibition, of course, did not suffer in any way from the dislocation of the original arrangements and its consequent divorce from the general entertainment. The two *epée* teams represented Oxford and Cambridge respectively. Those selected for Cambridge were Messrs. C. P. Clay, W. Duigan, F. M. Ogilvie, C. Newton Robinson, H. Ross, and A. Wills, who were opposed on behalf of Oxford by Messrs. P. E. H. Adams, T. W. Allen, F. C. Carter, R. W. Doyne, C. Hancock, and J. F. Haltoc. There were thirty-six bouts in all, and, as the opponents on either side were all veterans, they were not only in many cases well contested, but interesting to watch. The judges were Messrs. W. H. C. Staveley, J. Tawney, and H. Balfour, who in the end awarded the victory to Cambridge.

VICE-CHANCELLOR'S CONVERSAZIONE.

The *Conversazione* given on Wednesday night by the Vice-Chancellor and members of the University was attended by an enormous number of people, and proved a brilliant success, the Museum and its annexes lending itself particularly well to an admixture of sociability and science. An excellent band and a number of active hosts helped to keep things going. In addition to the permanent exhibits of general interest, to which special attention was drawn by the programme, a number of recent scientific discoveries and investigations were given by Dr. W. J. Smith-Jerome, Dr. Paul Chapman, Professor Haldane, Dr. H. Sankey, Dr. G. Mann, Dr. Farmer, Dr. Walker and Professor Vernon Harcourt; Messrs. Ford Robertson and Henry Wade; Professor W. Sollas, F.R.S., A. Tutton, F.R.S., and Professor Myers. Many of these were accompanied by lantern demonstrations. Among the most successful and interesting was that of Dr. W. Ramsden, who showed his experiments illustrating the formation of surface films.

MEMBERS PRESENT.

The number of members registered up to Wednesday at noon was 1,480; 800 ladies were also present.

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

THE character and scope of the work of the different Sections will appear from the following short summary of the proceedings. A full report of the discussions and of the various papers read in the Sections will be published in due course.

Wednesday, July 27th, 1904.

SECTION OF MEDICINE.

AFTER some informal introductory remarks by the President of the Section, a discussion on the Treatment of Chronic Renal Disease was opened by Dr. Hale White, who closely followed the outline already published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL for July 9th, 1904, p. 20. The pathology of the condition being uncertain, it was not possible to do more than either treat symptoms or treat the disease in accordance with theoretical views. Albuminuria was in itself unimportant, and its customary energetic treatment a mistake. In regard to the cardio-vascular system, the object of the treatment was to keep the blood pressure as near as possible to that of health and this without the use of drugs. Oedema was to be treated by posture, limiting the fluid drunk, purgation, diaphoresis, and puncture or other method of drainage. Diuretics were not to be relied on. Following theory, certain substances were withheld because they were believed to irritate the kidney; possibly diuretic drugs, certainly such substances as were eliminated slowly, as lead and mercury, often digitalis, while morphine should rarely be given. Alcohol in small quantities was permissible. A normal diet should be aimed at, seeing that the disease was a degenerative process. Excessive water drinking was bad. Uraemia was believed to be a toxic process, due probably to poisons formed in the body, and the object of its treatment should be to help all the excretory organs, in the hope that the poisons might be removed by one of them. Clothing and climate were of importance. Chloralamide was to be recommended for the sleeplessness. The published accounts of cases treated by decapsulation of the kidneys were not encouraging. Professor von Noorden referred to the needlessness of withholding meat from the diet in cases of Bright's disease, deprecated the large consumption of fluids, and recommended systematic muscular exercise. The combination of obesity with Bright's disease was a dangerous one, and any attempt to reduce fatness should be careful and slow. Sir J. W. Moore said the first object of treatment was to relieve the strain on the vessels, the second was eliminant, and the third to relieve strain on the heart. He advised the use of a fair amount of pure soft water, a sparing nitrogenous diet, and the avoidance of alcohol. Not only should elimination by the ordinary channels be encouraged, but also that through the lungs, and to this end the open-air treatment was to be recommended. Benzoate of sodium and urotropine were sometimes of value; for failure of the left ventricle, iron, arsenic, and strychnine; to relieve the right ventricle hot-air baths, bleeding, and occasionally pilocarpin, and to reduce the arterial tension, nitrites, iodides, and restricted diet. Professor Tyson confirmed from his own experience what had previously been said in regard to diet, the excess of water and drugs. Renal asthma was usually a form of cardiac dyspnoea and was best treated by nitrites. He had seen the operation of decapsulation of the kindey apparently prolong life. Sir William Broadbent also deprecated starvation, but advocated the ingestion of moderate quantities of water taken apart from meals. The specific gravity of the urine was a more valuable guide than the quantity of albumen. The most important guide to treatment was the arterial tension; it was nearly always too high, and to reduce it he especially advised mild mercurial aperients. For uraemic convulsions he believed bleeding to be a good method of treatment. Professor Saundby insisted on the mistake of supposing that nephritis was an incurable disease; its curability was well seen in the cases associated with pregnancy. Dr. Samuel West said that granular kidney cases, of all others, stood dieting badly. Meat extracts and alcohol in excess should be avoided, but otherwise a normal diet was indicated. He alluded to the use of renal extracts and the question of an internal secretion; also to diurnal oscillations in the arterial tension. If tension were low digitalis was indicated. For acute uraemia purgation, diaphoresis, possibly venesection and intravenous injection, and the inhalation of oxygen should be used. Dr. Rose Bradford thought the diet should be modified to reduce the work of the kidney as much as possible. The loss by albuminuria was of more importance that had been sometimes held, but it was often the relic of antecedent damage and not an index of active disease. If a prolonged milk dietary gave good results on the general health of the patient it should be employed, but not otherwise. For treating uraemia the bowel was the channel of excretion to be influenced, rather than the skin. There was no reason for admitting the existence of an internal secretion, and but little for the use of renal extracts. Dr. James Barr emphasized the importance of the preventive treatment of Bright's disease by diet, clothing, and exercise. Dr. D. Newman protested against indiscriminate decapsulation of the kidney, and alluded to the good effect of simple incision in some cases. Dr. Gore referred to the effect of the absorption of toxins from the bowel on the kidney. After the discussion Dr. McCrae read a paper on Five Cases of Leukaemia, and made some general observations in regard to the disease. Dr. West described a disseminated form of croupous pneumonia—a primary bronchopneumonia—in children; and Dr. Armstrong communicated a paper on Functional Albuminuria.

SECTION OF SURGERY.

THE President of the Section (Mr. H. P. Symonds), after making some introductory remarks on the historical aspect of the practice of asepsis, called upon Mr. F. Burghard to open the discussion on this subject. Mr. Burghard remarked on the identity of what were called aseptic and antiseptic methods in respect of the object aimed at. Wounds could be infected from the skin of the patient or surgeon, from the air and from substances and instruments coming in contact with it. To combat these, heat and chemicals were available; with regard to these, moist heat (that is, boiling) was to be preferred to superheated steam, and Mr. Burghard advocated the application of antiseptic chemicals to wounds. He used sublimate solution for the preparation of hands, patient's skin, instruments, and dressings. He preferred sponges to gauze swabs, and had never traced infection to their use. He considered that the strict "aseptic" method could be carried out only under exceptional circumstances, and that students should be taught the employment of antiseptic lotions rather than the attempt to exclude them from practice. Mr. Leedham Green stated certain conclusions which experimental observations on the sterilization of the hands had inculcated. After reviewing the results obtained by a variety of methods, he concluded that no method guaranteed sterility, and that impermeable gloves should be employed. Mr. Barling thought the most difficult matters to deal with were air infection and skin sterilization. He relied on mechanical cleansing, alcohol and biniodide of mercury for the skin; he did not think it necessary to use antiseptic lotions for wounds. Mr. Stiles thought that success depended on care in detail rather than upon any particular method. Air infection need not be feared; the surgeon's hands required very careful attention as to smoothness and freedom from excoriations. Mr. Monsarrat considered that just as the antiseptic method had been based on the work of a bacteriologist so methods to-day must be based on experimental bacteriological observations. These observations showed the necessity for wearing gloves. Air infection could be dealt with by mechanical washing with sterile saline; the mouth of the surgeon should be remembered and speaking, coughing, etc., avoided. Mr. Hamilton gave some details of the methods he employed; he handled his own instruments, threaded his own needles, and diminished the number of his assistants as much as possible. Mr. Bush did not employ antiseptic lotions in dealing with clean wounds. Professor Rodman considered that none of the hand disinfection methods were reliable; he therefore wore gloves. The soap poultice was of much value in preparing the patient's skin, and flushing at the end of an operation was also an important detail. Mr. Cathcart thought that there were difficulties in the way of the ordinary practitioner in employing the aseptic method; he employed antiseptic chemicals during operations, and considered that their use most easily overcame the risks of infection. Sir William Macewen did not consider the "aseptic" method in any sense complicated. He constantly controlled his methods by bacteriological examination; he never put antiseptic chemicals into wounds. Dr. Davies, Dr. Ward Cousins, Mr. Mitchell, Dr. Malcolm, and

Dr. Laurie also spoke, and described some details of their practice. Mr. Burghard replied. Mr. G. H. Edington (Glasgow) read a paper on Cysts in the Median Line of the Front of the Neck. He described and illustrated a number of cases on which he had operated, and the specimens from which had been examined by Dr. Teacher. He described the thyreoglossal cysts, the ranulae, dermoids, and the sebaceous cysts and exhibited drawings and photomicrographs of each. Dr. T. Eastes and Dr. Ward Cousins described cases of this nature which had come under their observation. The meeting then adjourned.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

The President (Dr. Francis H. Champneys), after a very few words, called on Sir Arthur Macan to introduce the subject chosen for the day's discussion—the Treatment of Accidental Haemorrhage. The introducer said that the haemorrhage called accidental was more often due to disease of the decidua, of the uterine walls, or of the blood (haemophilia, or scurvy), and was to a great extent dependent upon mechanical causes, owing to persistent membranes, the contraction ring causing separation of the placenta, short cord, twin or breech cases, or hydramnion. The diagnosis of accidental haemorrhage was particularly obscure when external bleeding was combined with internal, and practically depended on the disproportion between the severity of the symptoms and the amount of visible loss. Still every case of accidental haemorrhage was at first, at all events, one of internal haemorrhage. A certain amount of haemorrhage between the placenta and the uterine wall was by no means uncommon, and that many slight cases escaped diagnosis altogether. Once the diagnosis had been made, the indications for treatment were to arrest the haemorrhage, without emptying the uterus, if possible, or if not to empty the uterus in the way least likely to cause laceration of the soft parts and consequent shock and *post-partum* haemorrhage. The old method of plugging the vagina and applying pressure by an abdominal binder and perineal bandage, reintroduced by Dr. W. J. Smyly, was the most efficient way of treating all except the most severe cases, perhaps best even for them; when the uterus had to be emptied it seemed that Caesarean section was to be preferred to *accouchement forcé*; at all events, the haemorrhage could be absolutely arrested by compressing the neck of the womb directly the abdomen had been opened; but in *accouchement forcé* the bleeding went on or was even increased for an indefinite time. In the discussion which followed Dr. Galabin, Dr. Monro Kerr, Professor Byers, Dr. Oliphant Nicholson, Dr. Heywood Smith, Dr. Forbes Ross, Dr. John Campbell, and the President took part. On the whole approving of the treatment recommended, Professor B. S. Schultze (Jena) made some remarks on some diagrams of his used by Sir A. Macan to illustrate his introduction, pointing out that he had published improved diagrams more recent than those shown. Professor Olshausen (Berlin) read a paper on the Standpoint of the Operation for Cancer of the Womb in Germany, pointing out the excellent results that were to be obtained by vaginal operations, and that as yet only one operator had had even moderately good primary results from the abdominal radical operation. After remarks from Sir Arthur Macan, Dr. Helme, Dr. Forbes Ross, Dr. Edge, Mrs. Scharlieb, M.D., Professor Olshausen explained that he had been operating on 50 per cent. of all cases seen and had had 38 per cent. survivals for five years at least. Dr. Robert Kennedy read a paper on the Treatment of Birth Paralysis of the Upper Extremity by Suture of the Fifth and Sixth Cervical Nerves, and replied to remarks made by Dr. W. Harris, Dr. Dempsey and Dr. Robert Campbell.

SECTION OF STATE MEDICINE.

THE President (Dr. J. S. Haldane, F.R.S.) opened the Section by reading a paper on Standards of Ventilation. He discussed at the outset the effect upon the human system of poisonous gases and dust, pointing out that the deleterious effect of stone dust, as illustrated in Cornish miners, was much greater than coal dust. He considered that dust nuisances were best prevented by special means rather than by general increased ventilation; such means included water sprays and methods of reducing the production of such dust. The question of vitiated atmosphere in dwelling rooms was next considered, and Dr. Haldane discussed the effects of breathing air containing (*a*) a high degree of carbonic acid gas, (*b*) a deficiency of oxygen, and (*c*) an increase in organic matter. He held that the real pathological effects of such conditions were slight, although much unpleasantness might be caused. The ill-effects of atmospheric contamination were due in most cases, particularly in schools, to specific contamination, and even these conditions depended largely upon two factors, namely, temperature and air currents. He then discussed the somewhat controversial question of standards of ventilation, and defended the standard of 12 parts CO_2 per 10.000 recently proposed by himself and Osburn as the best practicable and attainable standard under all conditions of labour and climate in factories and workshops. The President's paper was illustrated by lantern slides showing methods of boring and death-rates of stone miners. Dr. Herbert Jones thought that coal miners' lower death-rates from lung disease might be due to the laying of the coal dust to prevent explosions, and some of the differences in age incidence to differences in the character of work done. He advocated that standards of ventilation should be raised rather than lowered. Dr. Oliver thought that there was a larger amount of phthisis among schoolmasters than in the past, and suggested that children with discharging tuberculous glands should not attend school. Watering dust in coal-mines no doubt tended greatly to reduce lung disease amongst these workers. Dr. M. Hay approved of the standards suggested by Dr. Haldane, as they were based on experimental work. Dr. C. J. Thomas, from investigations in schools, thought the pollution of air was due not to respiration but body pollution, and that bad smells did not arise until CO_2 had risen above 10 parts per 10.000. Dr. Symons thought there was some justification for the standard recommended by the Incorporated Society of Medical Officers of Health (9 parts per 10,000) as sanitation was advanced not by experiment only but by practical experience. Dr. Groves concurred and Dr. Haldane replied. Dr. Oliver (Newcastle) then read a paper on Caisson Disease, discussing the history of the study of the disease and the physiological and pathological effect set up by working in caissons. Professor Lorrain Smith discussed effect of increased blood pressure on the animal organism in relation to caisson disease. Dr. Haldane and Dr. Hugh Snell also spoke, and Dr. Oliver replied. Dr. McCleary (Battersea) then read a paper on the Increase of Premature Births, showing that much of it might be due to antenatal influences, including the food of the mother, especially alcohol. There did not appear to be any relation between the occupation of women and mortality from premature births, though a relation probably existed between the lowered birth-rate and prematurity. Dr. McCleary concluded his paper by showing the relationship obtaining between the question of prematurity and physical deterioration. During the sitting of this Section Dr. Herbert Jones moved a resolution asking the Council of the Association to arrange, if possible, for the printing of papers previously to their being read.

SUBSECTION OF FORENSIC MEDICINE.

IN welcoming the members, the Chairman (Sir Thomas Stevenson) reminded them that it was the first occasion on which forensic medicine had had a special place in the annual programme. He trusted that this would be the first of many successful gatherings. Dr. F. J. Smith's paper on Criminal Responsibility of Homicidal and Dangerous Lunatics was then read. He thought that capital punishment should be more frequently resorted to, but advocated the use of a lethal chamber instead of the method now in vogue. Women guilty of homicide while suffering from puerperal mania should be submitted to oöphorectomy. He would also sterilize all lunatics, who who were the victims of alcoholism or of drug habits, in order to prevent their procreating degenerates. Dr. Smith's views evoked much criticism, and it was generally considered that his suggestions were revolutionary and impracticable. The next item on the programme was an excellent lantern demonstration by Dr Harvey Littlejohn of photographs taken from cases of homicidal and suicidal cut-throat. He pointed out many remarkable differences in the injuries inflicted in individual cases, and how impossible it often was to decide from clinical appearances between homicide and suicide. Many of the signs mentioned in the textbooks, such as direction and digitation of the wound, were unreliable. Dr. Waldo next reviewed the chief points of interest in the notorious Chapman case of antimony poisoning. In the ensuing discussion it was agreed that coroners should have every assistance from experts in conducting their investigations, but that this should not preclude general practitioners

from giving evidence and being paid for their assistance. The Chairman added some interesting details of the case, and in particular mentioned the remarkable state of preservation in which the body of the woman Spink was found. Though buried for five years her features were perfectly recognizable, and the body was readily identified by a nurse who had known the deceased. He thought that expert assistance should be more frequently resorted to in doubtful cases. Dr. Willcox next introduced the subject of Infantile Mortality from Overlying. He showed that suffocation in bed exacted a heavy toll in the country generally but especially in London. Ignorance and alcoholic excess were the chief factors involved. He would like to see those responsible punished in some way as could be done in Germany. Educational methods should also be tried both in elementary schools and by means of health visitors or women inspectors. Dr. Waldo was inclined to think that the part played by alcohol had been exaggerated. Ignorance was, in his opinion, the essential cause in the majority of instances. The preponderance of deaths on Saturday nights was not necessarily due to alcoholic excess, but might be explained by the natural results of a hard day's work. Dr. Parkinson's paper on Rigor Mortis in Stillborn Children raised several points of practical interest in dealing with cases of suspected infanticide, but owing to the late hour discussion was impossible. In conclusion, a vote of thanks was passed to Sir Thomas Stevenson for presiding, and satisfaction was expressed with the recognition that his distinguished services to the State had recently received from his Majesty.

SECTION OF PSYCHOLOGICAL MEDICINE.

THE Presidential Address, which was delivered by Dr. Charles A. Mercier, dealt with the subject of Criminal Responsibility and Degeneracy. On this subject, said Dr. Mercier, there had been a long-standing difference between the professions of law and of medicine. The difference was largely due to difference of aim and standpoint, and the opposing views were capable of being reconciled. The views that the community should be protected against criminals, and that regard should also be paid at the same time to the individual peculiarities of the offender, were not necessarily antagonistic, but complementary. It was important to cultivate and increase the sense of responsibility in all citizens, but this aim was, said Dr. Mercier, prevented by the doctrine that criminals formed a special species or pathological variety of men distinct from other men. Dr. Mercier combated the use of the term "Degeneracy" as popularly adopted at present. "If by Degeneracy is meant a peculiar diathesis or variety of man, distinguishable from other men by 'stigmata'—that is, by pecularities of structure, or function, or habit, that are inborn; that are constant in individuals so stigmatized; that mark off the Degenerate from the normal man—then Degeneracy does not exist." The doctrine of degeneracy, continued Dr. Mercier, is unproved, and its consequences, if accepted, are pernicious both to the criminal and to the community. Dr. Mercier then proceeded to discuss the questions of punishment and responsibility of criminals from a medico-legal aspect, dealing psychologically with the problem of *animus nocendi*, the degree to which it occurs in criminal acts, the condition of the will immediately prior to the act, and the presence of insanity as an exonerating factor against the punishment of a criminal who was the subject of insanity. The discussion was continued by Mr. A. Douglas Cowburn, Drs. Claye Shaw, Savage, Yellowlees, Blandford, Hyslop, Conolly Norman, Robert Jones, Ernest White, and Shuttleworth. Remarks forwarded to the Secretary by Sir Herbert Stephen and Mr. Havelock Ellis, both of whom were unable to be present, but who wished to contribute to this discussion, were also read. Dr. Mercier then briefly replied to the questions raised by the various speakers in the discussion. A lantern demonstration with illustrative slides of photomicrographs was then given by Mr. David Orr and Dr. R. G. Rows on the degenerative lesions of the posterior columns of the spinal cord in general paralysis, with remarks on the point of origin of tabes dorsalis. It was pointed out that the distribution of the lesion, and the anatomical appearances, as revealed by the Marchi method, were consistent with the theory that the posterior nerve-roots were specially vulnerable at the point of their entry into the spinal cord, and that a toxic agent circulating in the blood was the probable exciting cause of the changes produced. But why one set of nerve-fibres (Lissauer's zone) of the posterior roots should almost wholly escape while the rest were involved was a question that still awaited solution. The proceedings of the day then terminated.

SECTION OF PATHOLOGY.

DR. JAMES RITCHIE, President of the Section, in his opening address reviewed briefly the history of theories of Immunity, referring gracefully to the impetus given to these inquiries by the genius of Ehrlich. He then outlined the available established facts and phenomena and indicated the present position of the problems awaiting solution. He referred to the importance of three pieces of work: that on the motor axon path of the tetanus toxin, the exchange of molecules between cells in contact, and the intracellular destruction of bacteria. Dr. Bulloch, Vice-President of the Section, read the first paper on Cellular Aspects of Immunity; he indicated the bearing of his own work on that of Büchner, Behring, and Metchnikoff, and the trend of opinion towards a return to the ideas of Metchnikoff. He regarded the following propositions as established: (1) That there are such bodies as alexins, but that their origin is not yet determined; (2) that whether or not cytases exist, an alexin is not of the nature of a digestive ferment; (3) it is not yet proven that leucocytes excrete alexins. Dr. Dreyer described the methods and results of his experiments on the relation of agglutinins to immunity, and in particular the effect of heat, of acids, and of alkalies on agglutination phenomena. Dr. Madsen read an extremely interesting paper in which he set forth the grounds upon which he based his divergence of opinion from Ehrlich's as to the complex nature of the diphtheria and other toxins. His results were of such mathematical precision that he observed neutralization curve for lysins of various kinds corresponded almost exactly with curves calculated from the results previously obtained with tetanus toxin. Professor C. J. Martin reviewed the subject of Snake Venoms in relation to Immunity: the work of Fraser, tending to indicate a chemical rather than physiological antidotism, was emphasized, and his observations as to the specificity of antivenene led up to the paper in which Dr. Noguechi demonstrated, not only the high degree of specificity *in vitro* and *in vivo* of antivenenes but also their great therapeutic value. Dr. Ruffer described the haemolytic and haemosozic phenomena observed when urine and bile are intravenously injected; his experiment went to show that the properties are not resident in the saline or simple albuminous constituents, but that the substance is susceptible of the influence of heat, of animal charcoal, and, in the case of bile, of absolute alcohol. The papers to be read were so numerous and the Section so well attended that the meeting was adjourned till the afternoon instead of to the following day.

SECTION OF PHYSIOLOGY.

THIS Section met in the Physiological Laboratory; the President, Professor Gotch, F.R.S., was in the chair. Dr. E. I. Spriggs gave an account of a joint research by Dr. Beddard and himself upon Some Points in the Metabolism of Diabetes with reference to Present-day Treatment. Daily estimations of the nitrogen, ammonia, sugar, sodium oxybutyrate, and acidity of the urine in cases of severe diabetes showed that the bad effects which followed a too rapid withdrawal of carbohydrate from the diet were associated with the same metabolic changes and symptoms of acid poisoning as those observed in diabetic coma. The most prominent result was a rapid rise in the proportion of ammonia in the urine; in one case the increase was from 7 to 29 per cent. in ten days. The administration of sodium bicarbonate produced the opposite effect. Professor W. H. Thompson and Dr. Ramsden joined in the discussion. A New Method of Staining Red Blood Corpuscles was demonstrated by Dr. Leonard Braddon. Fresh blood from a case of pernicious anaemia was treated with a little methylene blue in an alkaline solution of potassium citrate and showed under the microscope solid blue material in a few of the red corpuscles. Films of blood did not show this reaction if they had been dried before treatment with methylene blue. Dr. Warrington, Dr. Pembrey, and Dr. Ramsden joined in the discussion. Dr. R. Kennedy read a paper, illustrated by lantern slides, On the Histological Changes occurring in Ununited Divided Nerves. From the results of his experimental and clinical observations he concluded that young nerve fibres could be laid down by the neurilemma cells in the peripheral portion of the nerve, and that they remained in a resting stage until they were, on

connexion with the central nervous system, influenced by the outflow of nervous impulses. In the discussion Professor Gotch said that although the more primitive type of formation of axons, as seen in the tail of the lizard, might possibly be induced in mammals, it still seemed extremely doubtful whether the formation by this primitive process of axons possessing the true properties of nerve, excitability, and conductivity occurred in higher animals. Professor Wesley Mills, Dr. Warrington, and Professor Thompson also joined in the discussion. Dr. Warrington gave an account of a joint research by Dr. F. Griffith and himself on the Varieties of the Cells of the Spinal Ganglia and their Relationship to Axons of Different Distribution. He said that their observations were in agreement with Sherrington's law that nerve fibres of large diameter arose from large cells, and indicated the varieties of cell (according to Lugaro's classification) which give origin to axons distributed to tissues of different function. Professor Wesley Mills, Dr. Mackenzie, Professor Gotch, and Professor Thompson joined in the discussion. Dr. H. M. Vernon showed by a research on the Protective Value of Proteids and their Decomposition Products on Trypsin exposed to 0.4 per cent. solution of Na_2CO_3, that the hydrated proteids and their decomposition products were more protective than the native proteids. Egg albumen had a marked antitryptic power. Dr. Ramsden discussed the paper. The meeting then adjourned.

SECTION OF ANATOMY.

AFTER a few introductory observations from the President (Professor Arthur Thomson), Professor Patten (Sheffield) read a paper suggesting a method of mounting anatomical preparations for museum and dissecting-room purposes, and enumerated the following as its advantages: The specimen could be taken out at any time, and need not be handled; it was very suitably arranged for photographic purposes, and might easily be retinted and relettered. Professor A. Thomson showed, in support of the advantages of this method, a frozen section he had mounted in plaster-of-paris, readily examined on both sides. Dr. Bryce (Glasgow) made a contribution to existing knowledge of the origin of the embryonic leucocytes by detailing the results of his studies on the Histogenesis of the Blood of the Larvae Lepidosiren. Professor A. Robinson put certain questions arising out of the paper as to the localization of leucocyte formation and also as to the differentiation between mesenchyme and mesoderm. Professor F. Keibel (Freiburg) said that Dr. Bryce's researches on Lepidosiren confirmed his own and his pupils' researches into the origin of the spleen and blood in both lower and higher vertebrates. The next item was a discussion on Giants and Dwarfs introduced by Professor D. J. Cunningham. After critical reference to the giants whose size has been placed more or less accurately on record, Professor Cunningham turned to an examination of the skeleton of the Irish Giant, Magrath, and showed a number of slides which exhibited undoubted evidence of acromegaly in this skeleton. Other slides illustrating jaw growth in acromegaly at 25 years, 26 years, and 46 years were shown. Professor Cunningham regarded both gigantism and acromegaly as morbid processes, and stated that there were thirteen cases of giants on record which were undoubtedly acromegalic. Professor B. C. A. Windle believed that a number of dwarfs were pathological, suffering from cretinism or chondromalacia. He classified them in three groups: (1) Myxoedematous, (2) rachitic, and (3) achondroplasic. Dr. Hastings Gilford believed both giants and dwarfs were either natural or pathological, the former being either sporadic or racial. He described three forms of dwarfism due to disease or malformation, and illustrated his remarks with a most interesting demonstration of actual cases. The cause of all three conditions could as yet, he thought, only be conjectured, though he was inclined to believe that the pituitary body was the seat of the disorder. Dr. Gibson said that he regarded gigantism from the standpoint of acromegaly, and that it seemed probable that the pituitary body acted as a regulator of growth. Professor Dixon said he had found that in acromegaly there appeared to be a remarkable selection among the facial bones or parts of them, and this was the more interesting because of the fact that the anterior lobe of the pituitary body arose from the wall of the primitive mouth. Dr. Peter Thompson thought that some cases of giantism were not so clearly pathological as those cases in which there was undoubted evidence of acromegaly, and he referred more particularly to those cases of great stature which involved the lower extremities only, without affecting the trunk and head, a condition which was probably due to delayed union of epiphyses and diaphyses. Dr. Gustav Mann suggested that the condition of the sympathetic system ought to be studied, inasmuch as removal of the superior cervical ganglion on one side in newly-born animals produced overgrowth of head and ears on the same side. Dr. Gladstone agreed with Dr. Mann, and thought that some forms of gigantism were possibly secondary to a primary affection of the sympathetic system and was comparable to the enlargement of the thyroid gland in exophthalmic goitre. Professor R. J. Anderson said that the question of giants turned upon the inquiry whether men could grow very tall and yet retain their normal proportions, structures, and functions. Professor J. Symington supported the view that giantism was pathological, and said that there were extremely few well-verified examples of individuals, either excessively small or excessively large, that were really healthy. He also referred to congenital cretinism which he had described some time ago.

SECTION OF OPHTHALMOLOGY.

AFTER a short address from the President, Mr. Marcus Gunn opened the formal discussion on Retro-ocular Neuritis. He described the symptoms of the disease, and insisted on the importance of the movements of the pupil. All degrees of failure of vision might be met with; the light sense was always defective, as was the power of discerning colours. The influence of the blood supply on the development of the disease was alluded to, and the great rapidity of the failure of vision was noted. In many cases recovery was remarkably good, though more rarely the prognosis was bad. Great pain and tenderness indicates a severe lesion. Pallor of the disc was unusual, though it sometimes was but very slightly marked. One great source of difficulty was the rare opportunities we get of pathological examination. Dr. Berry thought that the defect of light sense was of the greatest importance, and he relied more on this than on the actual ophthalmoscopic appearance. In the cases due to influenza there was usually defect of taste and smell. Professor Uhthoff discussed the matter chiefly from the anatomical side. Mr. Higgens related a case of well-marked optic neuritis which was due to meningitis in a young lady, which proved fatal, and although the eye became blind before death no ophthalmoscopic changes were visible. The nature of the case was proved by a necropsy. Mr. Richardson Cross drew attention to the importance of the peripheral fields, and said that without this he should have great hesitation in diagnosing this condition; he described some cases. Professor Oliver described the methods he used for detecting the condition, and also gave details of some cases. Dr. Hill Griffith said that some cases were due to secondary scleritis. He thought that it was almost impossible to mistake a functional case for one of retro-ocular neuritis. He also mentioned some cases. Mr. Nettleship discussed various matters raised by other speakers. Mr. Miller read short notes of three cases. He thought that many were of rheumatic origin. Mr. Gunn replied. Professor Poulton read his conclusions as to vision of birds based upon a consideration of mimetic colour and the patterns on insects. His observations led him to believe that birds saw very much the same as we do, and the things which deceived our vision also deceived that of birds. Mr. McHardy read his paper on the Maturation and Extraction of Senile Cataract, and gave his conclusions as the result of many hundreds of cases: after maturation the cortex was never sticky and always came away easily. He strongly advocated a preliminary iridectomy. If posterior synechiae were present this was a contraindication to maturation. Mr. Higgens gave up maturation years ago, and he never found any difficulty in getting the lens away. He never did an iridectomy if he could possibly help it. Mr. Hill Griffith had performed the operation often, and thought it had no danger and much facilitated extraction. Mr. Tatham Thompson thought the need for artificial maturation had disappeared now McKeown's operation of washing out the lens was available. Mr. Grossmann and Mr. Frank Thomas spoke, and Mr. McHardy replied. Mr. Grossmann read a paper on Astigmatism with Varying Axes, and gave a lantern demonstration. Dr. Berry thought that the size and eccentricity of the pupil was the cause of varying axes of astigmatism. Dr. Bull thought that many cases were early ones of kerato-conus. Dr. Grossmann replied.

SECTION OF DERMATOLOGY.

THE proceedings of this Section were opened by the President,

Dr. T. Colcott Fox (London), who welcomed the visitors from abroad. Dr. Douglas Heath (Birmingham) showed a case of acne keloid in a man and gave a lantern demonstration of microscopical sections. Dr. Fox, Dr. Brook (Manchester), Mr. Gilchrist (Baltimore), Dr. McLeod (London), and Dr. Eliza Dunbar offered some remarks on the interesting case brought forward by Dr. Heath. Mr. Malcolm Morris then opened the formal discussion on the Treatment of Pruritus Ani. After a general review of the subject, he considered the details of treatment. Constitutional conditions (gout, diabetes) and disorders of the alimentary tract, as well as uterine and other disturbances, had to be dealt with by appropriate measures. Local troubles—piles, and so forth—were to be attended to upon ordinary lines. Mr. Morris recommended a bland and unirritating dietary, careful attention to the bowels, and insisted on the necessity of caution in the use of anodynes. Moral treatment was also of importance. There was no infallible remedy, but no case was to be regarded as incurable. Mr. Morris's instructive paper was discussed by the President, Dr. Radcliffe Crocker, Dr. Brookhouse (Nottingham), Dr. Freeman, Dr. Hartzell (Philadelphia), Dr. Eliza Dunbar, Dr. Norman Walker (Edinburgh), Mr. Pernet, Dr. Harrison (Clifton), Mr. Gilchrist, and Dr. Kenneth Wills. Dr. Freeman (Reading) showed cases of (1) leukokeratosis buccalis and (2) congenital pemphigus. The cases were discussed by Dr. Radcliffe Crocker (London), Dr. W. Gilchrist (Baltimore), Mr. Pernet (London), and Dr. Leslie Phillips (Birmingham). Dr. Hartzell (Philadelphia) read a paper on Benign Cystic Epithelioma and its Relationship to so-called Syringocystadenoma, Syringocystoma, and Haemangio-endothelioma. It was discussed by Dr. Brook (Manchester), who referred to his own original opinions on the subject, and also by Professor Gilchrist. Mr. George Pernet (London) next read a paper on Bacillus Pyocyaneus and Pemphigus Vegetans, in which he brought forward evidence that pyocyanic infection from sewage might lead to a condition clinically resembling pemphigus vegetans. The paper was discussed by the President, Dr. Douglas Heath (Birmingham), Professor Gilchrist, and Dr. Norman Walker. The Section was very well attended.

SECTION OF LARYNGOLOGY AND OTOLOGY.

THE President, Mr. Charles James Symonds, in a brief opening speech, extended a special welcome to the foreign visitors. Among these were Professor Onodi (Buda Pesth), Professor A. Rosenberg (Berlin), Dr. Donnellan (Philadelphia), Dr. Marcel Natier (Paris), Dr. Brady (Sidney); he trusted that they would take part in the discussions, and touched shortly upon the honourable position now held by laryngology in surgical practice. Dr. Urban Pritchard then proceeded to open the discussion on the Treatment of Non-suppurative Disease of the Middle Ear, and, in the absence of any generally pre-accepted division of the subject, separated it into five classes: (1) Treatment of acute non-suppurative otitis media; (2) treatment of the early stages of non-suppurative catarrh; (3) the treatment of advanced stages of chronic middle-ear catarrh; (4) the treatment of middle-ear adhesions of old standing; and (5) sclerosis of the middle ear. He discussed the treatment falling under these five heads at length, developing the views of which an outline was given in the SUPPLEMENT dated June 11th. He concluded by urging that everything that might do good should be tried for the patient's benefit. Dr. T. Barr (Glasgow), who also introduced this subject, spoke of the difficulty of knowing the exact pathological changes going on in the tympanum, and the consequent empirical treatment. The result of this could not be foreseen with certainty, and was to some extent experimental. He believed in politzerisation at intervals rather than continuously. In certain cases he had had good results from intratympanic injections of menthol and iodine. In the general discussion which followed, Dr. Bronner (Bradford) expressed his preference for the catheter instead of politzerisation in many cases. He emphasized the point that as the nose was a part of the body that general treatment should not be forgotten. Dr. Natier gave some interesting remarks upon treatment by means of tuning forks, illustrating them by a series of diagrams. Dr. Downie confined his remarks to the treatment of old-standing sclerosis and advocated Valsalva's method gently applied. He referred also to the difficulty of operative measures unless the external canal was straight and wide. Mr. F. Marsh (Birmingham) agreed with Dr. Pritchard in the treatment of classes 1 and 2, and strongly advocated the removal of any condition which interfered with free drainage and ventilation of nasal passages. He also advocated attention to any constitutional condition. Dr. Milligan spoke of the benefit to be gained by the formation of a pathological section for the further study of cases. He did not think much benefit accrued from high-frequency currents. Drs. Pegler, Scanes Spicer, Smurthwaite, Waggett, Cecil Shaw, Fagge, W. Hill, Brady (Sydney), Newcome, and Jobson Horne also spoke. Drs. Pritchard and Barr having replied, a translation of Professor Onodi's paper on the Disturbances of Vision and Development of Blindness of Nasal Origin induced by Disease of the Posterior Accessory Sinuses was read by the translator, Dr. Jobson Horne. An interesting and valuable series of diagrams illustrating the above were passed round the room for inspection. A vote of thanks was passed to Drs. Pritchard and Barr for their papers. The Section, which was attended by between 40 and 50 persons, then adjourned.

SECTION OF TROPICAL DISEASES.

DR. ALEXANDER CROMBIE, C.B., gave an introductory address upon the Fallacy of Finality. The discussion on Trypanosomiasis was opened by Colonel D. Bruce, F.R.S., R.A.M.C., in an interesting and suggestive paper; he stated that trypanosomal fever was in all probability the first stage of sleeping sickness, and that the *Glossina palpalis* was the medium by which the disease was transmitted. Dr. Nabarro, Dr. C. Christy, Sir Patrick Manson, F.R.S., and Dr. Sambon continued the discussion. A New Trematode of Man (Amphistomum Watsonii) was the subject of a paper by Dr. H. F. Conyngham, Demonstrator, London School of Tropical Medicine. The Treatment of Snake Bite was dealt with in a paper sent by Captain Leonard Rogers, I.M.S. Supplementary Notes on the Tsetse Flies (*Glossina Wildemann*) was the title of a paper sent by Mr. Ernest E. Austen, of the British Museum. Papers on Floor Maggots in the Congo Dwellings, on Trypanosomiasis and its Relations to Congo Sleeping Sickness, and on Cerebro-spinal Fluid in Sleeping Sickness, were read by Dr. C. Christy. Dr. E. Anderson (Paris) and Dr. T. J. Tonkin joined in the discussion.

SECTION OF NAVY, ARMY, AND AMBULANCE.

AFTER a few introductory remarks by the President, Surgeon-General A. Frederick Bradshaw, C.B., K.H.P., a paper on Camp Sanitation was read by Major E. C. Freeman, R.A.M.C., who observed that standing camps might have a maximum density of population in the infantry regiments of 226 men to an acre, which was greater than that of the most crowded part of Whitechapel. The medical authorities should be consulted on the sites of these camps, and ridge-pole tents should be used. If possible, a decent source of water supply should be secured. Kitchens, slaughter places, and latrines should not be close together. A paper by Surgeon Lieutenant-Colonel P. B. Giles, V.D., on Sanitation in Volunteer Camps and the Disposal of Refuse and Excreta, was read. Amongst other things, the author stated that a powerful factor against efficient sanitation in volunteer camps was that the general system of laying out the camp was left to the quartermaster and adjutant to the entire exclusion of the medical officer. He thought "all camps should be inspected and reported on by a medical officer before being actually laid out." He condemned the bell tents and believed that there were few more insanitary dwellings. The best treatment for all refuse was to burn it, and a small outlay would enable every camp to have a cheap but common-sense destructor. A communication was then read from Staff Surgeon J. Falconer-Hall, R.N., on Naval Dietary, and discussed by Surgeon-General Cuffe, Brigade-Surgeon Lieutenant-Colonel Elliston, Surgeon-General Evatt, Surgeon-Lieutenant-Colonel Curme, Dr. J. E. Molson, Colonel J. E. Squire, Major T. McCulloch, and Major E. C. Freeman. Then followed a paper by Major J. D. F. Donegan on the Duties of a Medical Officer with a Regimental Unit in the Field. Lieutenant-Colonel A. M. Davies, R.A.M.C., contributed a paper on Sterilization of Infective Discharges and Utensils on Field Service. The final item was a paper by Major W. C. Beevor, R.A.M.C., on the Recruiting Problem. It excited an animated and interesting debate contributed to by Lieutenant-Colonel Wilson, Deputy Inspector-General Preston, Surgeon-General Evatt, Surgeon-Major G. A. Hutton, Fleet Surgeon J. Lloyd Thomas, Major R. C. Lever, and Mr. G. Stevens Pope. The remarks made by Mr.

Pope attracted much attention; he said that it seemed to be implied that the general civil authorities did not employ discharged sailors and soldiers. This Mr. Pope denied. He had himself for years endeavoured to employ these men, but his experience had been most unfortunate. Though trained to discipline, he found them peculiarly restive under discipline—they were unsteady, frequently immoral, and broke leave. He had employed in the last seven years seventeen soldiers and sailors, and he regretted that most of them had to be discharged. He added that he had found marines more satisfactory. After Major Beevor had replied to the criticisms on his paper the Section adjourned.

DENTAL SECTION.

THE President, Mr. E. A. Bevers, M.R.C.S. (Mayor of Oxford), opened proceedings by an address in which he referred with satisfaction to the decision of the Council of the Association to instituting a Section in Dental Surgery as an important special branch of general medicine and surgery. The discussion on Oral Sepsis was opened by Dr. William Hunter, Physician to the London Fever Hospital, who in the course of his remarks emphasized the fact that frequently great care was taken to eliminate all sources of septic infection in other regions of the body, while the mouth, for some mysterious cause, was often entirely neglected. The term oral sepsis should be confined to the accepted surgical meaning of the term sepsis, that is, to those cases owing their origin to the pus cocci, while the term oral infection should be applied to the other and more general infections. Dr. Hunter then proceeded to the critical study of the effects of oral sepsis on (*a*) the region of the mouth; (*b*) the stomach; (*c*) the intestinal canal; (*d*) various organs (kidney, heart, etc.) Mr. K. W. Goadby gave a summary of a series of experiments made regarding the pathogenicity of the bacteria found in the more chronic varieties of oral sepsis, that is, gingivitis, progressive periodartitis, chronic acute alveolar osteitis. In a number of the cases the animals died, others only showed local lesions. Mr. Godlee noted how often in talking a little saliva escaped from the speaker's mouth, and urged mouth hygiene as of prime importance to surgeons. He referred to the disagreeable smell of pyorrhoea, which enabled him to suspect the disease in a dog, whose skull he exhibited—a very perfect example of the disease in the lower animals. He touched upon the improvement in the results of operations in and around the mouth due to greater care in regard to oral cleanliness in the patient, and showed a *post-mortem* specimen of necrosis of the whole mandible, starting from the socket, after extraction in a septic mouth. Before intestinal operations, especially on the stomach, the mouth should be carefully cleaned. He hoped that oral cleanliness would be practically taught in all schools. Dr. Dalton described two cases of malignant anaemia, associated with oral sepsis and suppuration in the upper jaw. The anaemia was of the type attributed by Dr. Hunter to oral sepsis. Dr. E. W. Goodall said that the condition of the children's mouths treated in the wards of the Eastern Hospital was extremely bad, both as regards their teeth and their general hygiene. Necrosis of the jaw rarely followed scarlet fever; ulcerative stomatitis of various sorts was frequent and often infectious. Dr. StClair Thomson agreed with Dr. Hunter, and was astonished that oral sepsis had received so little attention. He cited several cases of throat infection which were related to oral sepsis. Dr. Tilley confined his remarks to certain clinical manifestations which were shared by patients who suffered from chronic suppuration in the nasal accessory cavities, and cited illustrative cases. Professor J. Arkövy (Buda-Pesth) had read all Dr. Hunter's papers, and had been always interested in the question of oral infection; he suggested the accumulation of statistics regarding the chronic forms of oral sepsis. Dr. J. G. Turner thought oral sepsis was very common, and the earlier stages easily overlooked. He had never seen a profound oral sepsis in a child, and connected this with the rarity of pyorrhoea in children. A patient with a septic mouth might appear in perfect health, but was in fact always on the verge of a catastrophe. There were more fatal cases of infection from wounds in persons with septic mouths than was suspected. Mr. Norman G. Bennett related a case showing the practical cure of "fits" of epileptic nature by attention to mouth hygiene; and a case of what he considered acute pyorrhoea in a child of 9. Mr. E. Lloyd-Williams urged the infectivity of pyorrhoea, and Mr. W. Hern appealed for active employment of general preventive measures. Dr. Hunter briefly replied and the Section adjourned.

THE PATHOLOGICAL MUSEUM.

FROM time to time during the past year notices have appeared in the BRITISH MEDICAL JOURNAL with reference to the special efforts of the committees to secure a thoroughly representative museum. Oxford saw the institution of an annual museum, and Oxford has certainly set a new standard which in the interests of the meeting as a scientific gathering it is to be hoped will be maintained. The labour entailed upon the secretaries merely in the preparation of the catalogue has been very great, but there can be no manner of doubt that the result of their efforts in every direction is thoroughly appreciated. It may well be believed that the University authorities would not look askance at an offer from the exhibitors to leave some of their specimens in Oxford as a memento of the meeting, and of the hospitable reception accorded to the British Medical Association.

With a catalogue running to more than a thousand entries, and many of these actually representing several items, it is obviously impossible to do more than indicate the general scope whilst mentioning here and there specimens that attracted particular notice. Photography in its various branches received a large share of the space available; stereoscopic work was well represented, but the possibilities of the process, as demonstrated at Paris for example, were hardly realized here; colour photography was to the fore, and the demonstrations of method were even more instructive than the very beautiful examples of finished work. Amongst the very numerous morbid anatomy preparations to the extreme beauty of the Newcastle work must be gratefully acknowledged. The special demonstrations by Mr. Shepherd, Dr. Hall Edwards, Professor Wright, Dr. Salaman, Dr. Walker Hall, Mr. Cathcart and Mr. Noble Smith added not a little to the educational value of the museum.

In the department of Anatomy the photographs and radiograms to illustrate Dr. Gilford's paper on "Infantilism and Senilism" made a striking exhibit; Professor Cunningham showed casts of the cerebral hemispheres of an orang and a chimpanzee in contrast with a full-time human fetus and a microcephale. Dr. Keith's work on cardiac musculature was well illustrated. In the Section of Physiology the only exhibit was of microscopic slides to demonstrate the axon distribution of cells in spinal ganglia.

The feature of the pure Pathology exhibits was the microscopical demonstration of the cellular changes occurring in malignant growths. Professor Farmer and Dr. Walker showed specimens of excellent technique illustrating their most recent work. Dr. Bashford and Dr. Murray furnished specimens of carcinoma in various forms of life other than human, and showed slides of "cell conjugation," as occurring in transplated mouse tumour—appearances, however, which are unlike those which occur in vegetable cells. Dr. Poynton and others showed further specimens of experimental rheumatism. The photographs of ankylostoma, by Dr. Sandwith, deserve mention; Dr. Nabarro's trypanosome slides supplemented those of Dr. Low on sleeping sickness. A series of exhibits bearing on the condition of the liver in heart disease attracted attention; Mr. Gilford's specimen of endothelioma of the carotid body was one of the most interesting morbid anatomy preparations. Photomicrography in the hands of Dr. Miller, Dr. Albert Norman, and Dr. Waters was shown to have reached a high degree of perfection.

Under the heading of Medicine the preparations by Dr. Collier and Dr. Buzzard to demonstrate cerebral diplegia deserve special mention; the lantern slides by Dr. Gibson, of Acromegaly, made an excellent object lesson; whilst Dr. Stanley Green's radiographs of the thorax in pulmonary disease showed a perfection of penetration not often obtained. So many excellent drawings and photographs of dermatological conditions were shown that mention can only be made of Dr. Sequeira's treatment records, and of the great interest attaching to Mr. Jonathan Hutchinson's loan.

There can be no doubt that the morbid anatomy preparations in the Section of Surgery easily carried off the palm for excellence of technique. The series to illustrate the normal and comparative anatomy and diseases of the prostate by Mr. Richardson deserved and obtained much attention; Mr. Caird's preparations of pathological conditions of the stomach and intestines and their surgical treatment possessed great teaching value. Mr. Grey Turner's appendix series, in conjunction with those of Mr. Alex. Miles, form a very complete demonstration of the various diseased conditions to be met with.

A very large collection of radiographs of fractures, disloca-

tions and diseases of the bones and joints served to show the immense amount of attention devoted to radiography in this country and, in particular, the subject of congenital dislocation of the hip, and its treatment revealed the application and the limitations of the method. The question of the treatment of Colles's fracture has hardly been advanced as much as was hoped. The exhibit of Mr. Robert Jones and Dr. David Morgan deserves mention.

A sacculated aneurysm of the aorta treated by introduction of silver wire and electrolysis, shown by Mr. H. A. Ballance; a dissected specimen of von Recklinghausen's disease by Dr. Hewetson, and many preparations by Mr. Rutherford Morison, were noticeable amongst numerous others of interest.

In the Section of Obstetrics and Gynaecology a most instructive series of preparations, by various members, of chorion-epithelioma was the prominent feature; the morbid anatomy specimens were very representative. Mention may be made of the various examples of extrauterine gestation; especially of a case of tubal abortion, with a six weeks ovum hanging from the fimbriated extremity of the Fallopian tube, lent by Dr. Andrews.

The department of Laryngology and Otology had not many exhibits, but they were all extremely valuable. Dr. Gray's specimens of the humam membranous labyrinth, and Dr. O. C. Bull's beautiful drawings of the ear in disease could not be passed over.

In the Section of Ophthalmology exhibitions and demonstrations were arranged of "Tests for Colour Blindness," of colour photography, and of certain optical phenomena. The numerous exhibits by Mr. Doyne were perhaps most prominent, where every contribution was calculated to repay examination.

MEDICAL NOTES IN PARLIAMENT.

[From our Lobby Correspondent.]

The Course of Business.—During the week the Finance and Licensing Bills have occupied the time of the House, and the discussions have not raised any points of special medical interest. Next week Monday will be occupied by the vote of censure. On Tuesday the Prime Minister will make his statement as to the Bills he hopes to pass, and move the resolution taking the whole time of the House for the rest of the session. The following two days will be devoted to supply. Several Bills will have to be dropped if the session is to end, as is expected, before the middle of August.

Cancer Research and Vivisection.—Mr. Weir asked the Secretary of State for the Home Department last week whether he was aware that the report of the Director of the Cancer Research Fund showed that during last year 247 specimens of cancer derived from dogs were examined: would he state whether these dogs had been previously inoculated with cancer, and, if so, were such inoculations included in the annual returns of experiments on living animals. Mr. Secretary Akers-Douglas replied that the report, to which he understood the honourable member to refer, did not state that 247 specimens of cancer in dogs had been examined. He was informed that the 247 specimens consisted chiefly of growths and other pathological conditions occurring naturally. The remainder of the specimens were the result of inoculation experiments, and these were included in the annual return of experiments on living animals for the year ending December 31st, 1903.

Cancer and Frozen Meat.—Mr. Alfred Davies asked the President of the Local Government Board if he had now any official information showing that the stoppage of decomposition in meat during transit from abroad to the United Kingdom had any injurious effect upon those eating it; and if the Cancer Research Committee had reported on his communication to them in March last. Mr. Long answered that the answer to the first part of the question was in the negative. He had received a communication from the Executive Committee of the Imperial Cancer Research Fund, and he found that they believed the stoppage of decomposition in frozen and chilled meat during transit from abroad to the United Kingdom had no injurious effect whatever upon those eating such food. The Executive Committee further believed that the consumption of such food could not be held in any degree accountable for the increase in the recorded number of cases of cancer in this country.

Experiments on Dogs.—Colonel Lockwood asked the Secretary of State for the Home Department on Tuesday in last week if he had yet received any report from Professor Schäfer with regard to the experiments performed by him in connexion with the drowning of dogs; and, if so, would he state the result as it affected the advancement by new discovery of physiological knowledge, or of knowledge which would be useful for saving or prolonging of life or alleviating suffering. Mr. Secretary Akers-Douglas answered that the only report which he had as yet received was a copy of a paper by Professor Schäfer entitled "Description of a simple and efficient method of performing artificial respiration in the human subject, especially in cases of drowning." This was the outcome of the investigation made by Professor Schäfer on behalf of the Committee on Suspended Animation appointed by the Royal Medical and Chirurgical Society, and he would refer the hon. member to that paper for information in the matter. On the same day Mr. Akers-Douglas informed Dr. Shipman, in answer to a question, that the law for the payment of dog licences was enforced in the case of dogs kept for vivisection in places registered for that purpose.

Insanitation at Biggleswade.—Mr. Schwann asked the President of the Local Government Board if he had received the special report which he promised to have made into the insanitary condition of Sandy, Biggleswade, Beds; what was the result with regard to the frequent cases of dangerous infectious diseases; and what means did he propose to take to have a remedy applied by the local authority? Mr. Long answered that he had asked for a special report from the medical officer of health as to the occurrence of erysipelas and diphtheria in this district during the present year, but he had not at present received it. He would not lose sight of the matter.

The Parish of Bristol and the Sick Poor.—Mr. Herbert Samuel asked the President of the Local Government Board whether the Board regarded as adequate the accommodation provided for the sick in the Eastville Workhouse, belonging to the Bristol Board of Guardians; if he would state how many members of that Board of Guardians on a recent occasion voted for and how many against the provision of better accommodation; and whether he proposed to take any further action in this matter. Mr. Long answered that the accommodation for the sick poor of the Parish of Bristol was admitted by the guardians to be inadequate and unsatisfactory, and they had for a long time past been considering various schemes for providing better accommodation. That now proposed seemed to have been adopted by them at a meeting held on June 15th. From a newspaper account of the proceedings he observed that an amendment which appeared to have been supported by those who were not in favour of the particular scheme in question, was rejected by 26 votes to 23. The scheme had now been submitted to him, and he should shortly address a communication to the guardians with regard to it.

The Superannuation of Aged Poor-Law Medical Officers in Ireland.—Dr. Thompson asked the Chief Secretary to the Lord Lieutenant of Ireland if he was aware that several Poor-law medical officers in Ireland were over 75 years of age and still retained their appointments; and, if so, if he would authorize the Local Government Board to frame rules which would allow those officers to tender their resignations, subject to their being satisfied with the retiring allowance granted them by the local authorities. Mr. Wyndham answered that no doubt some of the Poor-law medical officers were advanced in years, but in the absence of a compulsory Superannuation Act it was not possible for the Local Government Board to compel them to resign, unless of course they failed to discharge their duties satisfactorily. The proposal that medical officers should be permitted to tender their resignations provisionally was not feasible. Under the Union Officers' Superannuation Act, 1865, a pension could only be awarded to an officer upon his resigning or otherwise ceasing to hold office.

Probationers in R.A.M.C.—Dr. Thompson asked the Secretary of State for War if he was aware that medical officers who were appointed probationers in the Royal Army Medical

Corps, between the years 1880 and 1885, were not allowed to count their six months' service at the Army Medical School at Netley as part of their Army service; and, seeing that this disqualification had been removed since the year 1885, would he direct that officers who served in the Army Medical School at Netley between the years 1880 and 1885 would be placed, as regards these years, on a similar ratio to officers appointed since the later date? Mr. Secretary Arnold-Forster answered that the honourable member had been somewhat misinformed in his data. In the first place, the probationary period at the Army Medical School was four months, and not six. In the second place, the change in the procedure took place in 1902, and not 1885, by which service while on probation and under instruction at the Royal Army Medical College and Dépôt Royal Army Medical Corps (for a period of five months) was reckoned. Under these circumstances he was not prepared to antedate the commissions in the manner suggested.

The Vision of Cadets and Recruits.—On Monday last Captain Norton asked questions respecting the indifferent shooting of recent batches of cadets, and inquired whether the cause was due to the standard of vision being too low. He also asked if the Committee had reported on the vision test for recruits. Mr. Secretary Arnold-Forster replied that the Commandant of the Royal Military College had reported that the shooting of the 4th Division of Cadets now passing out of Sandhurst was bad, but he did not attribute this to defective eyesight. Last year the question of the admission of cadets to the Royal Military College with defective eyesight was raised by a report from the Principal Medical Officer of the 1st Army Corps, and steps were then taken to ensure that all cadets admitted to the College or the Academy whose eyesight, although defective, was within the standard laid down by the regulations, and remediable by glasses, should be advised at the medical inspection to consult civil oculists to ascertain exactly what glasses they should wear. The Committee referred to had reported on February 15th, and the report had since been receiving very careful consideration. Effect had been given to some of the recommendations, of which the most important were the adoption of a uniform standard and the Snellen types.

The Professor of Pathology in Queen's College, Belfast.—Mr. McVeagh on Monday last again raised by question the employment of the Queen's College Professors in duties outside the College. Mr. Secretary Wyndham said, in reply, that the Professors of Pathology and Chemistry occasionally advised the Belfast Corporation on matters affecting the public health. He had no information to show whether fees were received for so doing. There was no objection to the employment of Professors in the manner stated if such employment did not interfere with the discharge of their College duties, and provided they had the consent of the College authorities.

Vaccination in Glasgow Prison.—Mr. Weir asked the Secretary for Scotland if he would state by whose authority prisoners in Glasgow Prison had recently been vaccinated; and whether they were given the option of refusing to undergo the operation. Mr. Graham Murray answered that when epidemics of small-pox had broken out in Glasgow, Dr. Chalmers, the medical officer of health, had suggested that prisoners should be vaccinated or revaccinated, and the Prison Commissioners had approved of this being done provided always that the prisoner did not object, and that the prison medical officer considered it necessary. No prisoner was required to be vaccinated or revaccinated without his consent.

The Study of Parasitic Fevers in India.—Sir Walter Foster asked the Secretary of State for War on Tuesday whether any steps were being taken to investigate the mode of infection in dum-dum and other allied parasitic fevers in India, with the view of preventing the heavy mortality and invaliding from these fevers among British soldiers in India, and so diminishing the annual drafts now necessary. Mr. Secretary Arnold-Foster replied that steps were being taken to investigate the mode of infection in dum-dum fever; but it would be some time before the investigation would be completed, and further evidence must be awaited before anything in the nature of special preventive measures could be intelligently formulated. Assuming that by other allied parasitic fevers malarial fevers were referred to, preventive measures had been adopted at military stations in India where such fevers were prevalent. It might be added that, as regards other fevers, a special commission was investigating Malta fever, the occurrence of which in India was becoming more recognized, and a Special Committee was investigating antityphoid inoculation.

Lectures on Public Health in Schools.—Dr. Thompson asked the Secretary to the Board of Education, if, in view of the results which follow from the prevailing ignorance of the laws of hygiene, he would consider whether some arrangement could be come to with the members of the medical profession resident in each school district, whereby occasional lectures could be given in the laws of public health in all the schools in Great Britain and Ireland. The Secretary to the Board of Education replied as follows: The Board of Education has no jurisdiction in regard to Scotland and Ireland. It would be glad of any assistance which could be obtained from the medical profession in this matter of hygienic teaching. But the number of public elementary schools in England and Wales is over 20,000; the public secondary institutions under the jurisdiction of the Board number over 3,000. There are also a very large number of private schools. Their number is not known, but they certainly number many thousands. I should have thought that it was open to doubt whether the medical profession could undertake to deliver courses of lectures in this immense number of schools in each year, even if the Chancellor of the Exchequer or the local authorities were prepared to find the large sum which would be needed to provide adequate remuneration for the proposed lectures.

Ireland.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.

THE summer meeting of the Irish Division of the Medico-Psychological Association of Great Britain and Ireland was held on July 5th at the District Asylum, Armagh. The members first visited the institution, where they were much impressed by the fine new hospital. Afterwards they were hospitably entertained at lunch by Dr. Lawless, the Resident Medical Superintendent. At the meeting which followed, some general business having first been transacted, Dr. Lawless read a short note on the history of the Armagh Asylum, in which he stated that the original building, completed in 1824, appeared to have been designed after the plan of a prison. The history of the institution illustrated the increase in the numbers of the insane, for whereas there had originally been accommodation for 104, to supply the needs of five counties, there were now over 500 inmates, all derived from one county. Furthermore, the relative numbers of the inmates and the general population of that county showed that whereas in 1871 there were 79·21 insane per 100,000, in 1901 there were 380·08 per 100,000, and probably over 400 at present. The patients came mostly from the agricultural population.

Dr. Conolly Norman thought that the model followed in the early asylums was rather that of a monastery, the original Bethlem having been a building of that kind. Later a worse model, that of a barrack, came to be adopted. Happily the Armagh Hospital and the villa system at the new Belfast Asylum were examples of a more modern plan. He thought, however, that the method of boarding-out patients would have to be adopted in Ireland to relieve the asylums.

Dr. Mills said he had been struck by the enormous increase in the numbers of senile dements, idiots, and epileptics in asylums. This he attributed to the increasing intolerance of the sane population towards such persons in their midst.

Dr. Lawless, in reply, said that the increase had been in his experience most marked in the adolescent class.

Dr. W. Graham read a paper on science and a future life. The desire for and belief in immortality was "implicit in the human soul," a fact which itself was to some extent an argument for a future life. This desire increased with the development of the idea of personality. At one point evolution ceased to operate zoologically, and trended to psychical development, and henceforth the psychic forces were the really important element of existence. The recognition that man's main object in life was not to reproduce the species constituted a further step in the advance which culminated in Christianity. Evolution did not explain all, for in man a

new element appeared acting directly contrary to "that which leads to success in the cosmic struggle for existence." In the first ages the belief in survival after death, which had grown with the growth of personality, was to some extent originated by the experience of dreams. Curiously, similar phenomena were nowadays appealed to by Mr. F. W. H. Myers as a proof of immortality. His argument depended on his theory of the "subliminal self," the alleged grounds for which broke down on examination. "The fatal objection from a scientific point of view to the marvels of spiritism were that they could not be produced at will, and that the senses were fallible;" such facts as had been ascertained were "merely extensions of our normal powers." Even if survival after death were so proved, it would not necessarily be eternal. The belief in the existence of a future life was not one which science could deal with, but depended on "our total view of the universe." The old crude materialism was dead. The brain did not "secrete" thought; we could not even say it "produces" it—it was probably merely transmitted. We might have certitude if not certainty of immortal life, our belief depending partly on emotional, partly on intellectual causes. "Belief in immortality is the correlate of belief in personality."

Dr. Dawson wished he could think that materialism was dead, but it was impossible to do so in view of the recently reaffirmed theories of Kronthal, according to whom there was no real central nervous system, and consciousness was merely the sum of the reflexes. However, his views, which were eccentric and slightly-founded, constituted a *reductio ad absurdum* of materialism.

Dr. Conolly Norman thought that the paper showed the trend of the times towards a modification of the original views of Darwin, whose doctrines had not the value once ascribed to them. Darwin had cleared away certain crude theories, but if there were any meaning in development the highest product of development—the ethical and moral feelings—must possess some significance, and this implied a purpose beyond the organized selfishness of the struggle for existence. Even in the lower forms of life such a purpose was manifest, as, for example, in the economy of the hive. If the whole human race cherished certain beliefs and assertions, it proved that those beliefs and aspirations had a purpose.

Dr. Graham replied; and the meeting terminated with a unanimous vote of thanks to Dr. Lawless for his kind hospitality.

A Locum Tenens Question.

Two medical officers of the Kinsale Union, Dr. Meade and Dr. O'Leary, applied for leave of absence, at the last meeting of the Board, and named their substitutes, who happened to be the neighbouring dispensary doctors. This has been the usual practice everywhere, because the *locum tenens* has also been entrusted with looking after the private patients of the medical men going on leave. The guardians, however, have insisted on selecting the substitutes in these two cases. As a result Dr. Meade and Dr. O'Leary have withdrawn their applications for leave of absence: and owing to the unjustifiable conduct of the Guardians have been deprived of their well-earned holiday.

The Nonagenarian Dispensary Doctor.

Dr. Thomas Woods, of Birr, to whose case reference was made last week, has resigned his position as medical officer of the Workhouse Hospital and of the Dispensary. At the last meeting of the guardians he attended, and said the matter had been sprung upon him. There was a good deal of misrepresentation about his age and his incapacity. It was not correct to say he was 96: he was not yet 90. But he supposed some one wanting to grab his position was getting impatient, and so he would vacate his offices on September 30th. No complaint had ever been made against him. Notice of motion was given to grant Dr. Woods the full superannuation allowance of two-thirds of the salaries and emoluments.

CONGRESS OF THE SANITARY INSTITUTE.

The annual Congress of the Sanitary Institute, which is held in Glasgow this year, was opened in St. Andrew's Hall on Monday, July 25th. Before the formal meeting a reception was held by the Lord Provost, Sir John Ure Primrose, which was largely attended.

President's Address.

The President, Lord Blythswood, delivered an address in which he said that if there were any members who were present at the last Glasgow Congress, in 1883, he was sure they would see the fruits of their labours in the improved sanitary arrangements of the city. He pointed out that it was only since the passing of the Registration Act in 1855 that they had been able to classify diseases and the causes of death. Among other statistics quoted, he stated that in 1837 the population of Glasgow was 253,000 and the death-rate was 31 per 1,000; and in 1847, with a population of 320,407, the death-rate had risen to 56. In 1893, with a population of 677,880, the death-rate was 23, and in 1903 the death-rate had decreased to 18.4. These figures indicated the wonderful work that had been done in the way of improved sanitation in this great city. One of the principal factors in this improvement was the introduction of water from Loch Katrine. Following upon that there arose the problem of the disposal of the city sewage. Drains were formed; but where did they think they went? They went into the river Clyde, which then became an open sewer. This rendered necessary improvements in other directions, and he trusted that under careful administration, when the new drainage scheme now in progress was completed, they would not only have again a pure river, but that they would be able to compel neighbouring towns and populous places in the Clyde valley to dispose of their sewage without polluting the river. Another great scheme of improvement which had to be undertaken was the prevention of the pollution of the atmosphere by smoke. From experiments which had been made it had been ascertained that the amount of mineral stuff and grease which fell upon the city was at the rate of 33.66 cwt. per acre per annum. On Tuesday, July 26th, the work in the various sections—sanitary science and preventive medicine, engineering and architecture, and municipal administration—was begun in earnest.

Municipal Section.

Infantile Mortality in Large Cities.—Councillor W. F. Anderson, President of the Section, in his opening address, said it was a disgrace to sanitation that the infantile mortality in our large cities was so great. In some cities the infantile death-rate was as high as it was thirty years ago. A person was prosecuted for bringing a puppy from Ireland to Scotland, and in his opinion our legislators devoted too great attention to animals. It behoved sanitarians to awaken our legislators to do something for our brothers and sisters. Improper and insufficient feeding of infants was the cause of much of the death-rate. The Glasgow Corporation had started a municipal dairy, with suitable appliances and machinery for preparing and distributing milk to all citizens who might desire it. The milk was sterilized in a modified way, and sold in sealed bottles for the use of the infantile population. It was most pathetic to see the babies who were brought by the mothers to these municipal dairies: some of the babies aged 5 months looked as if they were only 5 weeks old. The unfortunate thing was that some of the mothers, no sooner had they got their babies' constitutions built up with municipal milk than they reverted to the old method of feeding children with vile concoction called white fluid, which was certainly poisonous. They must do something to reduce the tremendously high death-rate among children. They were not to rest satisfied because the infantile death-rates of the United Kingdom and France were not so high as some foreign cities; and they must remember that the children were a national asset, and if they were to preserve their lives they would require to understand the meaning of the word sanitation.

Mr. William Whitaker, Chairman of the Council, said that, in his opinion, the way to decrease infantile mortality was by good scavenging and good cleaning. The women of the poorer class should be instructed in the way of bringing up children. The children, also, should be taught the elements of domestic health in the schools.

The Smoke Problem.—The Lord Provost of Glasgow, dealing with the smoke problem, said that each town should have connected with its sanitary department some means whereby the amount of smut in the air could be gauged and analysed. They would then be able to ascertain how the air of each town compared with the air of others, and as one town sought to emulate the other in the matter of lessening the death-rate, so the periodical publication of town smut-rates would in like manner arouse a healthy stimulus in the matter of clean atmosphere.

Housing of the Poor.—Dr. Robert Crawford (Glasgow) moved:

That it is necessary to the effective administration of the Public Health and Water Acts that the relative authorities be recommended

and empowered to require that the competency of the plumbers employed to execute or inspect plumbers' work under the regulations of those authorities shall be certified by the Plumbers' Company under the condition appertaining to the national registration of plumbers, or by such other body as may be set up by statute or by approval of the Local Government Board.

The resolution was carried unanimously.

Sir SAMUEL CHISHOLM, Bart., delivered an address on the municipality and the housing of the poor. He said it was the home influence which made or marred the physical and moral welfare of the people. Owners of insanitary houses should have their names published. There should be a crusade against not merely dirt on the street, in the closes and back courts, but in the dwellings themselves and on the person. The Corporation could build and borrow cheap money in order to build houses, and when it became imperative that such houses should be built and the Corporation neglected or delayed to act, it was preparing for itself a day of retribution which was not far off.

The Prevention of Diphtheria.—Dr. LOUIS COBBETT read a paper on the prevention of diphtheria. He said that the principal means of combating diphtheria was, after isolation of persons actually sick, the isolation or control of those who went about apparently in good health, yet carried in their throats or noses the diphtheria bacilli, and of convalescents from the disease, until diphtheria bacilli could no longer be cultivated from them. No doubt the satisfactory isolation of those healthy persons who carried about the bacillus would often prove impracticable. In such cases they should be warned that they were a source of danger to others, be induced to use antiseptic mouth washes and gargles, and be kept under observation. In the case of children and young people employed in large business houses, isolation would usually be practicable.

Medical Inspection of School Children.—Miss JESSIE M. MACGREGOR, M.D., who submitted a paper on medical inspection of school children, said Japan attained the record in respect of the inspection of school children, every school child being under medical supervision there. First aid was taught in the Japanese schools, as also school hygiene. Japan followed much the ideas of the Swiss system. There was a growing feeling in Scotland that the time had come for instituting a much more detailed examination of school children—the eyes, ears, throats, and teeth should be subject to examination.

SECTION OF SANITARY SCIENCE.

This Section met in the Medical Jurisprudence Classroom, where Professor J. GLAISTER, the President, delivered his presidential address, which dealt with a critical study of the prevention of small-pox.

Disinfection of Rooms Occupied by Consumptives.—Following upon the presidential address, a paper on practical disinfection in rooms and workshops occupied by sufferers from consumption, by Professor HENRY KENWOOD, of University College, London, and Dr. F. J. ALLAN, Medical Officer of Health for the City of Westminster, was read. It was pointed out in the first place that without doubt it was in the home and in the workroom that the bulk of the infection of phthisis was communicated, seeing that so many sufferers in the earlier stages of disease were unable to cease their work and were unwilling to enter institutions, and that so few in any stage of the disease were able to avail themselves of the miserably inadequate provision of curative institutions. In the country health officers recognized the necessity of exercising some supervision, and of rendering assistance to the poor or ignorant consumptive at home and in the workshop. The small room often continuously occupied by the patient must be regarded as exposed from day to day to a more or less general infection by the bacillus. The first importance was always attached to the destruction of the specific bacilli contained in the sputa coughed up by affected persons, and it was recommended that patients should spit into proper receptacles in which the sputum might be kept moist (preferably with a disinfectant agent) until its dangerous properties were destroyed. It was pointed out, further, that in this way there had to be provided for (1) the disinfection of the sputum; (2) the disinfection of handkerchiefs, pillow-cases, sheets, etc.; and (3) for the frequent collection and removal of dust gathering upon the retentive surfaces of the room. The paper afterwards dealt with various kinds of disinfectants, and gave the comparative results of experiments with such.

Notification of Phthisis.—Dr. EBENEZER DUNCAN moved:

That in view of the prevalence of phthisis pulmonalis in the working-class population of Great Britain, and of the suffering, pauperism, and death resulting from the dissemination of the disease, this Congress recommends the Council of the Sanitary Institute to memorialize the Local Government Boards of England and Scotland to allow local health authorities to add phthisis pulmonalis to the schedule of notifiable diseases.

Professor H. E. CLARK seconded the resolution.

Dr. NEWSHOLME moved the omission of the reference to the working classes, as it introduced the possibility of class distinction.

Dr. LAURIE (Derby) seconded the amendment. He did not think that the time had come when they could proceed on the lines of compulsory notification.

Dr. MOORE said that voluntary notification had been a failure in Huddersfield.

Councillor BIGGS explained that voluntary notification had been a great success at Leicester. Many of the dwellings of the lower classes were just hotbeds of disease.

Dr. DUNCAN afterwards agreed to the resolution being altered so that the memorial should be to the effect that local authorities should be allowed to make the disease notifiable on such conditions as might be approved by the Local Government Boards. The words "working classes" were also deleted.

Councillor BIGGS said that while local authorities had power to institute voluntary notification many of them did not exercise it. They should be recommended by the Congress to do so, as the best means of controlling phthisis, and of eventually reducing the present high mortality. He moved accordingly.

On a show of hands the resolution as amended was carried by 85 votes to 11 for Councillor Biggs's proposal.

LITERARY NOTES.

WE are requested to state that the publishing offices of *The Practitioner*, Limited, have been removed to 149, Strand.

Messrs. J. and A. Churchill have ready for publication the seventh edition of *The Practice of Medicine*, by Dr. Frederick Taylor. The work has been thoroughly revised, and considerable alterations and additions have been made. The subjects now introduced for the first time into the book are sleeping sickness and trypanosomiasis, family periodic paralysis, diseases of the conus medullaris and cauda equina, diseases of the thymus gland, arsenical poisoning, infective arthritis, myelopathic albumosuria, and some of the rarer diseases of the skin. The same firm are also about to publish two monographs on beri-beri, by Dr. P. N. Gerrard. They deal with the disease from a purely symptomatic standpoint.

Dr. Dan McKenzie writes, relative to an article on the therapeutic use of nose-pulling which appeared in the BRITISH MEDICAL JOURNAL of July 9th, p. 86:

Dr. Panyrek of Prague, and, may we say so, the irascible Dr. Payne, were forestalled by the folk-medicine of Shakespeare's time, for we read in *King Henry VI*, Part II, Act III, Scene 2, line 34, that when the King swoons Somerset ejaculates,

"Rear up his body; wring him by the nose."

And the result, according to Shakespeare, seems to have been immediate, for the King quickly recovers; but whether as a result of the actual nose-wringing or of the fear that the threat would be carried out the great William does not say.

Dr. Brennan Dyball (Exeter) writes with reference to the same subject:

In your issue for July 9th, the writer of the notice of The Therapeutic Use of Nose-pulling ably contends, on the evidence of a hitherto misunderstood passage in *Pickwick*, that the efficacy of this treatment in cases of temporary loss of consciousness was known to our profession, some fifty or sixty years ago; and in his concluding sentence he appears to credit Dr. Payne with its discovery. There can be no doubt that he is right regarding the first point, and it must be a great satisfaction to every English medical man to know that the honour of so important a discovery belongs, not to Bohemia, but to our own country; but I must point out that he is sadly in error in thinking that Dr. Payne was the originator of the method of treatment in question, which was well known and practised so long ago as Shakespeare's day. This is shown by a passage in *King Henry VI*, Part II, Act III, Scene 2. The King, overcome by the news of the Duke of Gloster's death, swoons: the court physician is apparently not at hand, but his absence is of no consequence, for the Duke of Somerset—evidently well up in first aid—is promptly to the fore with directions for the treatment of the royal patient. "Rear up his body: *wring him by the nose*," says the duke, and the efficacy of the treatment is shown by the fact that the king is immediately able to deliver [illegible] rous speech of nearly twenty lines. The light this throws on the passage in *Pickwick*, referred to above, leaves no shadow of doubt about the correctness of your suggestion as to Dr. Payne's motive in wishing to pull the noses of

Mr. Pickwick and his friends. It seems a pity that so simple and efficacious a method of treatment should have fallen into disuse, but this may possibly be due to its indiscriminate application to unsuitable cases at the hands of irascible practitioners of the type of Dr. Payne.

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ending June 18th, 25th, and July 2nd the deaths from plague numbered 5,929, 2,873, and 2,688 respectively. The principal figures during the weeks ending June 25th and July 2nd were: Bombay City, 48 and 53; Bombay Districts, 444 and 691; Calcutta, 22 and 0; Bengal Districts, 74 and 47; North-West Provinces and Oudh, 40 and 17; Punjab, 1,825 and 1,314; Rajputana, 8 and 6; Kashmir, 10 and 7; Karachi City, 3 and 1; Aden, 0 and 1; Central India, 2 and 2. Central Provinces: Hyderabad State, 8 and 23; Mysore, 264 and 311; Madras Districts, 136 and 201. There is an increase during the latter week in Bombay City, Bombay Districts, Hyderabad State, Mysore State, and Madras Districts; a marked decrease in all other parts.

South Africa.

Cape Colony.

Port Elizabeth.—During the weeks ending June 25th and July 1st the fresh cases of plague numbered 1 and 2; and the deaths from the disease 1 and 2 respectively. Three cases remained under treatment on July 1st. A cat and some rats and mice were found infected by plague. No plague in men or animals in other parts of the Colony.

Transvaal.

During the week ending July 16th the report from the High Commissioner is "No change."

Hong Kong.

During the weeks ending July 9th and 16th the fresh cases of plague numbered 24 and 20, and the deaths from the disease 21 and 20.

Mauritius.

During the weeks ending July 14th and 21st the fresh cases numbered 2 and 1, and the deaths from the disease 2 and 0 respectively.

SPECIAL CORRESPONDENCE.

MANCHESTER.

Conference and Proposals Regarding School "Leaving" Certificates.—Lock Hospital.—Unhealthy Electric Cars.—Honour to a Surgeon.—Plans of Royal Infirmary.

The step taken when independent Universities were recently founded in the North-West of England has already been justified, and additional evidence is forthcoming that these Universities are likely to exercise a salutary and directive influence on education generally. Already the three Northern Universities have a "Joint Matriculation Board," which conducts the matriculation examination common to all three Universities, and to all their Faculties. A further step in coordinating secondary education has been taken. At a conference held in Manchester on July 21st a scheme was submitted by which many, if not all, the so-called "leaving" examinations at secondary schools in Lancashire, Cheshire, and Yorkshire may be arranged for, and be of the same standard as the matriculation examination. The scheme is that there should be one comprehensive examination, and its certificate would be equivalent to the matriculation certificate, and admit to the professional study required for the professions and public offices. There can be no doubt that this scheme is on right lines, as anything that will diminish the "harassing multiplicity of examinations" is to be welcomed. The object of the conveners of the conference—the Vice-Chancellors of the Universities of Manchester, Liverpool, and Leeds—was unanimously approved, and resolutions adopted as to the methods of carrying it out. If carried out, the examination for "leaving" certificates will be handed over to a joint Board representing these three Universities, and Sheffield (when constituted) and the county and county borough educational authorities in the three counties. This will be a great boon to those preparing for medical studies. It must lead to more attention being given in secondary schools to the education along certain lines of those who are preparing for matriculation or preliminary examinations as the portals through which the study of medicine must be approached.

At the annual meeting of the Manchester and Salford Lock Hospital, which was held on July 20th, it was announced that Mr. Walter Whitehead had resigned his appointment as Surgeon. Mr. Whitehead was elected Consulting Surgeon. As in nearly all institutions depending upon voluntary contributions, the charity was behind in its finances.

It appears that, although it is three years since the Salford Corporation began running cars, one councillor stated that the method of ventilation was crude, and the inside of the cars contained a poisonous atmosphere, while the odour, especially in hot weather, was appalling. The following resolution was carried:

> That as the present imperfect ventilation of the electric cars is a source of danger to the public health, the Tramways Committee be instructed to forthwith furnish the cars with an efficient system of ventilation.

Surely the problem is a relatively simple one.

Mr. Frederic H. Westmacott, B.Sc.Vict. Man., F.R.C.S., has been elected an honorary associate of the Order of St. John of Jerusalem in England, under authority of the Prince of Wales, Grand Prior of the Order, for long service in ambulance work.

From the amended plan of the infirmary, which is to be submitted to the trustees, it may be gathered that a first provision will be made for 481 beds, with facilities for the addition of a further 108 beds when required. The official and administrative buildings are to face Oxford Road, and the patients entrances will be in Nelson Street. The accident ward question has still to be solved; at present the matter is one leading to a sharp division of opinion, the view being to provide a receiving house in the centre of the city, the other not to make any such provision. A third view has been put forward—namely, to proceed at once with the main portion of the new building, leaving the out-patient department as the last portion to be built. In two years public opinion will be, perhaps, more accurately focussed, and information will be forthcoming as to the movement of population and the value of ambulance appliances. If thought desirable, some suitable premises might be rented and fitted up as a temporary receiving house without going to the expense of acquiring land and heavy permanent administrative cost.

BERLIN.

Therapeutic Experiments on Hospital Patients.—Professor von Leyden.—Small-pox in Berlin.

At a recent meeting of the Verein für Inner Medicin, Professor Jacob, one of the Charité Physicians in Professor von Leyden's department, gave an account of a therapeutic method of "pulmonary infusion" in cases of consumption which he had carried out on several patients in the hospital. He said his method had previously been tried on rabbits. The animals were first tracheotomized, after which 20 c.cm. of liquid were infused through the trachea into the bronchial tubes. He next tried his experiments on goats and cows. He made use of creosote, methylene blue, tuberculin, pyoctanin, hetol, and salicylate of soda. Tuberculous cows reacted very strongly after infusions of tuberculin, and showed connective tissue-like encapsulation of the cavities and calcifications. Professor Jacob then tried his method on several human patients and gave a favourable report of its effects. Violent opposition, however, arose among those present at the meeting. First of all, Professor Wolff demonstrated specimens of rabbits' lungs. The animals had been treated with infusions of aniline blue according to Jacob's method, and the consequence in all cases was pneumonia and death. Then Westenhöffer, in round terms, accused Dr. Jacob of having given an untrue account of the necessity for the tracheotomy, which he performed on one of his patients before proceeding to the "infusion," and of having given a misleading and untrue report of his cases. Similar charges rained down from every side, and though Professor Jacob did his best to justify his words and actions, he did not succeed in satisfying his critics, and the meeting eventually became a scene of loud and violent invective. Of course the matter will not end here; it must and will be sifted to the bottom.

It is rumoured that Professor von Leyden contemplates retirement from his post at the Berlin University. He is over 70, and after a life of indefatigable labours well deserves repose. But up to the present he had given no signs of weariness, nor does he either physically or mentally show any symptoms of old age. These rumours have probably arisen in connexion with the Jacob affair, since Professor Jacob belongs to the medical staff of von Leyden's Charité department. As for Professor Jacob himself, long leave of absence has been granted him, and he will probably not return to the Charité at all, since his engagement—which, as it happens, will come to an end on October 1st—has not been renewed.

The cases of small-pox that have lately occurred in Berlin, have given rise to much unfair comment. The facts are shortly these: Of twins, aged a year and a quarter, one from its

birth had suffered from general eczema. The healthy child—a girl—was vaccinated, and was left in the same cot as her little brother. He became ill, and Professor Baginsky at once diagnosed the case as "vaccine generalisée," and sent the case to the infectious diseases department of the Charité. Such cases of contact-infection have been known and described before, and show that persons suffering from skin diseases should be protected from contact with vaccinated persons.

CORRESPONDENCE.

THE ASSOCIATION AND MEDICAL DEFENCE.

SIR,—Allow me to point out certain inaccuracies in the report of the Medical Defence Committee as given in the SUPPLEMENT to the JOURNAL of July 16th.

1. It is stated that 46 Divisions approve of the principle of medical defence by the British Medical Association, but only 45 are given in the report.

2. The membership of Divisions which approve is stated as 3,473, but on addition I make it 3,441, a difference of 32 against.

3. The Leeds Division, with a membership of 178 (about 15 of whom were present) voted unanimously against the principle and the scheme. No mention is made of this in the report.

4. The report states that the membership of the 46 Divisions which approve is 3,473. This might convey the idea that 3,473 members approve the principle, whereas it only represents the opinion of the 101 members who were present.

The conclusion to be drawn from the figures given is that only 10 per cent. of the members are willing to trust their professional reputations to a defence department of the Association, and it is to be remembered that the British Medical Association does not represent the whole profession.—I am, etc.,

Leeds, July 16th. A. A. MCNAB, M.B.

*** We have referred Dr. McNab's letter to the General Secretary, who informs us: (1) Dr. McNab is correct in stating that the number of Divisions which have expressed approval is 45, the number 46 was a clerical error; (2) the membership of Divisions which approve was correctly given as 3,473; (3) no return was received from the Leeds Division.

EARLY OPERATION IN CANCER.

SIR,—While it is satisfactory that the necessity for early operation has been brought more prominently before the public, it seems advisable at the same time that a plea should be put forward in favour of experimenting in the early stages of the disease, when an operation is not possible either from its anatomical position or from any other cause. Cancer of the liver is a case in point. Operations on the organ have certainly been reported, but unless we are to overthrow the surgical principle that the whole of the organ must be removed such operations are not likely to become popular. At the same time experiments when the liver is diseased have to be conducted with much greater caution than when the disease is in other parts of the body. It is surely not well to wait with folded hands in the belief that a cure can only be found after the cause has been discovered. In the past practical experience has usually come first, and it seems to be a pity that more use is not made of early cases where the patient has nothing to lose.—I am, etc.,

London, W., July 24th. SKENE KEITH.

THE METRIC SYSTEM.

SIR,—I was charmed with the first letter on this subject, giving a really practical hint on adopting the metric system, but I must say I am staggered at the argument of "C. L." that a drachm of 60 gr. divides so easily by 7, 8, and 9, that nothing better can be desired. "Why," he says, "seek to oust so convenient a division?" I must confess that I find 100 as easy to divide by 7, 8, and 9 as 60; and as the third of 100 need trouble no one, it seems to me that 6 is the only figure which goes into 60 more easily than 100, so differently do things look to different people; but when he winds up "but *fractions* drive me mad," it occurs to me that he has never tried the decimal system.

Let him take the following problem: the price of 1⅜ yard of silk at 11½d. a yard, and then consider the corresponding problem of 1.75 metres of silk at 24 cents., and he will find that the only fractions to trouble him are in that truly British system "with which everybody is so thoroughly conversant," and not in a modern, rational, up-to-date system which has shaken off the trammels of 5½ yards, one rod, pole, or perch.

What really frightens "C. L." are those terrible arrays of decimal noughts in a table of equivalents; but in practice the alarming statement that $\frac{1}{100}$ gr. = 0.0016 gram would never occur. In about three days one would learn to think in milligrams, and where you now give a grain more or less you would think of 60 or 70 milligrams. *Verb. sap.*—I am, etc.,

Gosforth. H. ALSTON.

SIR,—Judging by your columns there appears to be a good deal of misplaced admiration of the metric system. It would be good for all weights, measures, etc., to be systematically arranged on a uniform scale. But that scale should not be ten. We count by tens simply because primitive man counted on his fingers. But as man got civilized he found ten to be an awkward number for trade and measurement. Every natural method for measuring any kinds of things has consistently avoided any decimal system; while there is a distinct preference for duodecimal division. Not only is twelve commonly used (for example, pence, inches, hours, months, etc.); but the factors and multiples of twelve (2, 3, 4, 6, 24, 60,) continually recur in the tables, almost to the exclusion of all other scales; and concurrently there has arisen a method of thinking and counting by dozens. Ten is the scale of mere ignorant savages, while twelve is the scale of civilization and trade. Yet we see learned bigwigs, trying in the name of science to destroy that progress and to force upon us the methods of naked savagery! Is it for the greatest good of the greatest number that the House of Lords (which has no business with weights) should handicap the masses of the people with an awkward system of weights and measures? or that the General Medical Council, who do not do dispensing, should impose continual inconvenience upon the thousands of practical men by whom it must be done? Would it not be better to teach our noble lords and the heads of the profession to think and count by dozens, and to adopt a duodecimal system?

An ingenious correspondent recently has hit upon a method by which he can think in grains and minims and dispense in grams and c.cs. That gentleman, with an almost duodecimal coinage, buys his drugs by avoirdupois, thinks of and prescribes them by apothecaries' weight, dispenses them by decimal measures, and administers them by duodecimal intervals! He may fairly claim to have reached the acme of confusion.

Now, time must be divided duodecimally. The metric people tried to divide time decimally and failed completely. Therefore medicines must be administered duodecimally. Therefore it is only common sense to use duodecimal bottles. Therefore dispensing should be done duodecimally. Therefore prescribing should be done duodecimally. Therefore we should think and count by dozens and gross. And therefore we should advocate a uniform and universal duodecimal system throughout all departments of medicine, trade, and science.—I am, etc.,

Croydon. T. ARCHIBALD DUKES.

THE CONSTITUTION OF THE CENTRAL MIDWIVES BOARD.

SIR,—I am much obliged to Dr. Cullingworth for his kind correction of my misstatement that on the "Central Midwives Board" three out of the nine "must be non-medical women." Perhaps I ought to have said that probably at least three will usually be non-medical women, though not of necessity.

Whilst fully acceding that the "lay" element, male or female, should have representation upon the Board, it is, I think, unfortunate that the Act should render it even possible, as it undoubtedly does, for a majority in such a limited body to be non-medical.—I am, etc.,

Leeds, July 24th. CHAS. J. WRIGHT.

MEDICAL ASSESSORS.

SIR,—You published a letter from me under the above heading in your issue of April 30th, the letter advocating the appointment of medical assessors to assist the judge in "compensation cases." This letter has resulted in certain friendly communications between the members of one of the Divisions of this Branch and me, and I write now to assure them that the expressions used in the last paragraph of my former letter must be taken as having a perfectly general reference. In particular the expression "salaried works or colliery doctors who may be dismissed by the men at a month's notice" has no reference to their positions, but to appointments made

under the so-called "new system" by which medical men are appointed by the workmen at a fixed salary, are under the control of a workmen's committee, and have no security of tenure. A medical man so appointed is at the mercy of the workmen, and when called upon to give evidence in a "compensation case" often finds his position an exceedingly difficult one. Such a condition of things should not obtain, and is one of the many objections to this system of appointment.—I am, etc.,

Cardiff, July 25th. WILLIAM SHEEN.

CYLLIN IN TUBERCULOSIS.

SIR,—Dr. Rideal's paper on the disinfectant properties of cyllin (Sanitary Institute Congress, July, 1903) induced me to try its effects on cases of phthisis in my practice. I used it in strengths starting at 1 in 100, and am now using the pure cyllin inhalant, sprayed into the lungs, six times a day for ten minutes at a time, with very encouraging results, which can best be demonstrated by the two following cases, which I think may prove instructive.

1. J. E., male, aged 29. First haemorrhage, November, 1902. December, 1903, cavity at right apex. Crepitations over upper half of lung, copious expectoration, three spit cups per diem, night sweats, wasting, pain on breathing and moving arm, unable to work. Ventnor Sanatorium, February to April. Increase of weight whilst in the institution, but no decrease of pain or expectoration. April 29th. Started cyllin spray. Present condition: No expectoration for three weeks; last sputum practically bacillus-free. No pain, and is working as a groom.

2. F. H. I., male, 37. First haemorrhage, November, 1900; attended City Road Hospital in 1902, and went to Bournemouth Sanatorium early in 1903. Condition in December, 1904: Cavity at left apex, crepitations at right apex, considerable wasting, five spit cups full of expectoration, and half-a-pint at night, temperature, 101.3°. Ordered complete rest in bed, a cyllin spray, 1 in 500: slight improvement. April 2nd, spray increased in strength to 1 in 100; again diminution in expectoration and loss of evening temperature. April 29th, cyllin spray, pure, used. Present condition: One spit cup full of expectoration during both day and night, walks a mile without inconvenience, sputum nearly bacillus-free.

I should like to point out especially the diminution of bacilli in the sputum as a most important factor in the prevention of spread of infection. The only other method of direct treatment that I know of is that of Dr. Colin Campbell. I claim that my method of disinfecting the lung has the following advantages, namely: First, it can be used by the patient himself, and if necessary all day long. The instrument used, an Oppenheimer's improved aërizer, costs only 7s., and the cyllin inhalant lasts for a very long time (four cases have not yet used an ounce in two months). Also, that my treatment is that of a different drug, and a different mode of administration.—I am, etc.,

W. CHARROTT LODWIDGE,
M.R.C.S., L.R.C.P.Eng., D.P.H.Lond.

Walton-on-Thames.

THE SAFETY OF CHLOROFORM.

SIR,—Even more important than the statement announcing the discovery, by the Special Chloroform Committee of the British Medical Association, of the small quantities of chloroform necessary to produce anæsthesia, is the Committee's belated perception of the fallacies of the Glasgow Chloroform Committee of the British Medical Association, which were fully exposed fifteen years ago by the Hyderabad Commission on chloroform:—"The conclusion, unwarrantable as we know, was accepted that its dangers were inherent and controlled less by the ordinary laws of dosage than by caprice." In the leading article, from which this passage is quoted, eulogizing the work of the Special Committee, one result of which has been the invention of a new safety chloroform inhaler, there is one very strange omission: there is no mention whatever of the principle which is to be followed in the administration of chloroform by the new apparatus. The profession will naturally expect to be supplied by the Special Committee or its secretary, or by the writer of the leading article, with information on the following points. Is the pulse to be watched according to the teaching of Dr. Dudley Buxton, "I also watch the pulse?" or is it to be ignored as a factor in the inhalation in accordance with the principles of Syme, "You never see anybody here with his finger on the pulse while chloroform is given"? The former method spells accidental deaths under chloroform, whereas if the latter be followed the new inhaler is totally unnecessary, since the safety of chloroform can be guaranteed with any form of inhaler and with any concentration of chloroform vapour by any one who knows how to manage the patient's breathing properly.—I am, etc.,

London, W., July 26th. EDWARD LAWRIE.

THE CAUSATION OF CANCER.

SIR,—At the commencement of the twentieth century the great problem of the causation of tumours—like a gigantic sphinx—looms large on the medical horizon. Of this problem the genesis of cancer is but a part, although a large one.

In this connexion it is important to recollect that these growths are not peculiar to mankind, nor even to animals, for, as I have shown,[1] similar formations affect trees and other vegetable organisms. Indeed, it seems clear—as I long ago pointed out—that tumours may arise, under certain conditions, in any multicellular animal or vegetable being.

Another important consideration is that these abnormalities very rarely occur in organisms living in a state of Nature. It is almost exclusively among domesticated varieties, among those that have been kept long in confinement, or that have been otherwise abnormally circumstanced, that tumours are met with.

Savages and wild animals are very rarely thus affected.

In a general way it may be said that the animal world is much less prone to malignant and other tumours than humanity, and this appears to me to be due to the fact that animals have been much less extensively subjected to the influence of domestication, and such other abnormal conditions of existence as I have above referred to, than mankind. At any rate, it is remarkable that nearly all the examples of animal tumours hitherto reported—malignant and otherwise—have been met with in our common domesticated species; and it is significant that the dog is the animal most frequently affected.

Hitherto progress has been hindered by the want of clear conception as to the nature and affinities of the morbid process. Tumour formation has too commonly been regarded as an isolated pathological entity, having no connexion with other biological processes. Yet between tumour formation and morphological variation in general there is, I believe, real affinity; and, in ultimate analysis, both may be regarded as the outcome of the cumulative effects of changed conditions of existence. Of these conditions the most important are excess of food, changed environment, and—in the case of man and animals—want of proper exercise. As I have pointed out in my work on *The Principles of Cancer and Tumour Formation*, these factors play a leading part in the causation of cancer. Now that the fury of the microbic prepossession has somewhat abated, it is high time that these neglected factors received their due recognition.—I am, etc.,

Clifton, Bristol, July 15th. W. ROGER WILLIAMS.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: EDWARD P. G. CAUSTON, B.A., Surgeon, to the *Bedford*, July 22nd; WILLIAM H. DAW, Surgeon, to the *Wildfire*, July 29th; THOMAS H. VICKERS, Surgeon, to the *Wildfire*, for the *Immortalité*, July 25th; HUGH C. ROSS, Surgeon, to the *Wye*, July 25th.

ROYAL ARMY MEDICAL CORPS.

EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A MAJOR, R.A.M.C., nominated for service at Malta, desires to exchange places with an officer proceeding to India. Address, "Malta," 7, Trafalgar Place, Stoke, Devonport.

Major, R.A.M.C., for Bombay, end of trooping season, desires exchange. Home or Colony. Whole or part of tour. Address, giving dates and terms, "Traveller," care of Holt and Co.

ARMY MEDICAL RESERVE.

SURGEON-LIEUTENANT J. T. K. THOMSON, to be Surgeon-Captain, July 13th.

Surgeon-Captain C. E. L. B. HUDSON, F.R.C.S.Eng., to be Surgeon-Major, July 16th.

Surgeon-Lieutenant H. STALLARD, 4th Volunteer Battalion the Sherwood Foresters (Nottinghamshire and Derbyshire Regiment) to be Surgeon-Lieutenant, July 27th.

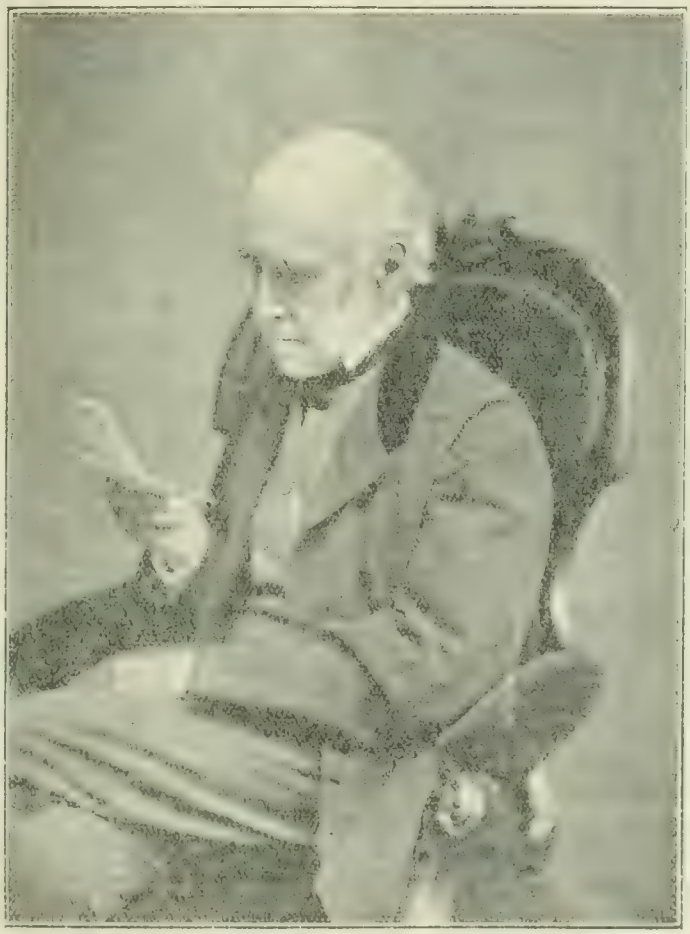
[1] *The Principles of Cancer and Tumour Formation*. London. 1888, p. 85, et seq.: also Vegetable Tumours in Relation to Bud Formation, *Trans. Path. Soc.*, London, vol. xxxviii, 1887, p. 460, and ibid., vol. xl, p. 446.

OBITUARY.

Sir JOHN SIMON, K.C.B., F.R.S.,

Formerly Medical Officer to the Privy Council: President of the Royal College of Surgeons of England, etc.

In Sir John Simon, who died on July 23rd, in the 88th year of his age, this country has lost one of the leaders in the great onward march of sanitary progress which will make the reign of Queen Victoria one of the most memorable epochs in human history. He has been so long withdrawn from public affairs that, though his name is a household word among sanitarians of every country, he has probably been numbered among the dead even by many members of the profession of which he was one of the chief glories. Sir John Simon was born on October 10th, 1816. Both his grandfathers were Frenchmen, but each, having emigrated to England, married an Englishwoman. His father, who was in early life a ship broker, became a member of the Stock Exchange and was for many years a leading member of the Committee of that body. He died in 1879 at the age of nearly 98, his wife following him to the grave three years later when within five days of completing her 95th year.



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Young Simon began the study of medicine in 1833, when he was a few days short of 17. As his father intended him to become a consulting surgeon, he was apprenticed, as was the fashion in those days, to Joseph Henry Green, Surgeon to St. Thomas's Hospital, and Professor of Surgery at the then recently established King's College. Simon thus enjoyed the privilege of being a student of both schools, attending lectures and dissections at King's College, and doing practical surgical work at St. Thomas's Hospital. Of his life as a student he has himself given the following interesting particulars:

"Almost from the time when my medical studentship began I had been obliged to live chiefly away from the Blackheath home. Even in the first winter session of 1833-4, when I had not yet begun to be 'dresser' at the hospital, the mere class attendances at King's College were hard to fulfil from the distance. On three mornings of the week, when I had to be at the College at 9 o'clock for chemical lecture, and when as yet there was no coach early enough to help me, I had to start from Blackheath at 7 o'clock for my walk of eight miles; having first (as the dining-room fire was not yet alight) eaten my bread-and-milk in the kitchen, with my dear father in his dressing-gown looking after me; and on three nights in the week, while Mr. Green used to lecture from 8 to 9 o'clock, I used not to reach home till nearly 11."

During the winter 1837-8, Simon acted under Dr. Todd as prosector for his physiological lectures. In 1838 he became a Member of the College of Surgeons, and immediately afterwards he was appointed joint Demonstrator of Anatomy with Francis Thomas (afterwards Bishop) Macdougal at King's College. On the establishment of King's College Hospital in 1840, Simon was appointed Senior Assistant Surgeon, the two surgeons being William Fergusson and Richard Partridge, and the other assistant surgeon being William Bowman. During the earlier part of the period of nine years, when he was Demonstrator of Anatomy at King's College, he for a while gave himself up to the study of metaphysics and Oriental languages, and to the print room of the British Museum; but, influenced by the example of Bowman, he came to see that initiative work was necessary to professional success. Accordingly he began to write and to make scientific researches. In 1842 he addressed a letter on medical education to the President of the Royal College of Surgeons; about the same time he contributed the article "Neck" to the *Cyclopaedia of Anatomy and Physiology*. In 1844 he gained the first Astley Cooper prize by a physiological essay of the thymus gland, which was published with additions in the following year. He also presented to the Royal Society a communication on the comparative anatomy of the thyroid glands, which won for him the Fellowship of the Society in 1845. In 1847 he presented to the Royal Medical and Chirurgical Society a paper on subacute inflammation of the kidney. In 1847 he was appointed Lecturer on Pathology, and, to use his own expression, "virtually" Surgeon to St. Thomas's Hospital.

His first lecture, which was delivered in December of that year, on the aims and philosophic methods of pathological research, expresses some of the thoughts with which he entered on the duties of his lectureship. Other indications will be found in a course of lectures published in 1850, on general pathology as conducive to rational principles for the diagnosis and treatment of disease, and in some of his clinical lectures published in 1850-2 in the *Lancet* and *Medical Times*.

In 1848 came a turning point in Simon's career. The Corporation of the City of London, which had long been exercising old-standing powers in the direction of improvement, applied to Parliament for powers adequate to the new conceptions of sanitary progress. The passing of the City Sewers Act was the result, and shortly after the passing of that Act, which gave power for the appointment of a Medical Officer of Health, Simon was appointed to the post.

Circumstances of time and place, as he himself states, combined to bring the appointment into considerable prominence. The fact that the appointment was metropolitan tended to give it importance in the public view; while even in the metropolis itself the City office was made conspicuous by the circumstance that hitherto none of the other sections of London were similarly officered. Then, just about the time the appointment was made, the newly-discovered aptitude of Asiatic cholera to recur epidemically in this country had prepared the public mind to observe with more than ordinary interest whatever was said or done with any sort of official authority in respect of precautions against dangers to the health of the public. Simon held the office for seven years, and the ability and earnestness with which he threw himself into the discharge of his duties marked him out for a larger sphere when the importance of public-health questions began to impress itself seriously on statesmen. In 1855, accordingly, when it was decided to create a Central Medical Officership, Simon was chosen as the fittest man for the post. The position made him virtually

adviser on all sanitary and medical matters to the Government. This office was held by him for nearly twenty-one years, but with differences from time to time in its departmental relations. At first, during the three years 1855-8, the office was attached to the General Board of Health, as modified by the successive Continuance Acts; during the thirteen years, 1858-71, it was under the Lords of Her Majesty's Privy Council; for the remaining period, 1871-6, it was in great part detached from the Privy Council, and was to that extent under the direction of the Local Government Board which an Act of 1871 had established.

In 1876 Simon found to his great regret that he could no longer hope to be of official use in the public service. The system established for sanitary government under the Acts of 1871-2, by Mr. Stansfeld, seemed to him not to consist with the constitution and proper working of his office as intended by the Act of 1858, and not to be for the public advantage. After giving it a full trial, therefore, he resigned his office. The decoration of C.B. was given to him on his retirement, and in 1887, on the occasion of the Queen's Jubilee, he was made a K.C.B.

Though Simon's public appointments made it necessary for him to give up private practice, he continued up to the time of his resignation of the post of Medicine Adviser to the Privy Council to hold the office of Surgeon to St. Thomas's Hospital. He was indeed devoted to surgery, and described himself as a hospital surgeon advising the Government. He was always anxious that it should be recognized that his career as a sanitarian was only half of his professional life; the other, practically the half that kept him alive for the performance of his duties as a public official, was the continuance of his surgical work.

He was the author of the article, Inflammation, in the 1860 and 1869 editions of Holmes's *System of Surgery*, and within the same period he published some addresses and essays on the reform of medical education. He also found time, amidst his manifold engagements, to write a biographical memoir of his teacher, Joseph Henry Green, as an introduction to the *Spiritual Philosophy* of that thoughtful surgeon, which was published in 1865. In 1876 Simon was appointed a Crown Member of the General Medical Council, a position which he continued to hold till 1895. He took a prominent part in the work of the Council, and at the same time he was active in literary labour in various directions. Towards the close of 1877, at the Birmingham Annual Meeting of the Midland Medical Society, he gave an address, which was published in the British Medical Journal of November 9th, on Some Points of Science and Practice concerning Cancer. Early in 1878 he wrote for Quain's *Dictionary of Medicine*, an article on Contagion; and later, in 1878, at the distribution of prizes in the Faculty of Medicine at University College, London, he gave an Occasional Address, which was published in the Calendar of the College; in 1881, as President of the State Medicine Section of the International Medical Congress, he delivered an address on Experiments on Life as Fundamental to the Science of Preventive Medicine, and as of question between Man and Brute. Early in 1890 he published his great work on *English Sanitary Institutions*, in which these institutions were reviewed in their development and political and social relations. In the British Medical Journal of November 1st of the same year, with a view to initiate an important constitutional amendment, which was carried in the succeeding summer, he wrote on the subject of Charitable Bequests Forbidden by Law; in 1892 he submitted to the legal advisers of the General Medical Council a Memorandum on the Claim asserted by the Royal College of Physicians that the College of itself, apart from any other examining authority, can grant such letters, testimonials, or licences in medicine, surgery, and midwifery, as shall be valid diplomas of qualifications in all those branches under Sections II and III of the Medical Act, 1886. In 1893 he contributed to Mr. Patchett-Martin's *Life of Lord Sherbrooke* a paper on the character and career of that statesman; and finally, in the spring of 1894, he contributed to the *Nineteenth Century*, by way of supplement to his *English Sanitary Institutions*, an article on Early Self-Government in Social Relations.

In 1887 Sir John Simon's official reports were republished in a somewhat abbreviated form under the auspices of the Sanitary Institute of Great Britain, Dr. Edward Seaton, son of one of Sir John's most valued colleagues, being the editor. Sir John Simon's fame will rest mainly on those *Reports* and on *English Sanitary Institutions*, which has taken its place as a classic in the literature of sanitary science. His aim was to trace the process by which preventive medicine has grown into scientific form and has given life to an important branch of civil government. But the work is much more than this. It has been well described as a philosophy of sanitary history, in which the manifold questions—political, economic, sociological, religious, and scientific, as well as medical—involved in sanitary evolution are discussed with a wealth and ripeness of knowledge, a largeness of view, and a fulness of practical wisdom, which make the work a mine of instruction for the statesman, the charity organizer, and the philanthropist, as well as for the professional hygienist.

The appreciation of Sir John Simon's work felt by his own profession, by the public, and by the State is shown by the long list of honours conferred upon him. In 1844 he was elected an Honorary Fellow of the Royal College of Surgeons of England, and from 1868 to 1890 he was a member of its Council; for two years, 1876-8, he was Vice-President, and during the year 1878-9 he worthily filled the office of President. At the beginning of 1845 he was elected a Fellow of the Royal Society, and in 1879-80 he was one of its Vice-Presidents. During some years following 1867 he served as Vice-President of the Medico-Chirurgical and Clinical Societies, and as President of the Medical Teachers' Association and of the Pathological Society. Later he was elected an Honorary Member of the Pathological Society and Honorary Member of the Clinical Society. In 1868 he received the honorary degree of D.C.L. from the University of Oxford; in 1872 he was made an Honorary *Doctor Medicinae et Chirurgiae* of the University of

Munich; in 1880 the University of Cambridge conferred on him the degree of LL.D., and in 1882 he received a like distinction from the University of Edinburgh; in 1887 he was made M.D. *honoris causâ* of the University of Dublin. In 1853-4 he was a member of the Royal Commission of Inquiry into the Causes of Cholera in Newcastle-on-Tyne, Gateshead, and Tynemouth: in 1854-5 he was a member of Sir Benjamin Hall's Medical Council; and in 1881 he was a member of the Royal Commission appointed to inquire into the constitution of the medical profession. In 1896 he was awarded the Harben Medal of the Royal Institute of Public Health, and in November, 1897, the Buchanan Medal of the Royal Society.

Sir John Simon's public career entitles him to be regarded as one of those who did the State most service in the Victorian era. In his private life he was as happy as such a man deserved to be. He had all that should accompany old age—honour, love, and troops of friends. He had spent a morning with Wordsworth in his garden and heard the poet read to him twice from his manuscript a sonnet which he had just written on Haydon's picture of Wellington revisiting Waterloo. He was on terms of intimate friendship with Arthur Helps, Charles Kingsley, Edward Burne Jones, John Ruskin, Charles Darwin, Robert Lowe; he was acquainted with Thackeray, Buckle, and, indeed, with all his contemporaries in various spheres of activity who were best worth knowing. He had travelled much, with sympathetic appreciation of all he saw, and his intellectual interests included Art as well as Nature and Science.

It has been said—and with too much truth—that the evil which men do lives after them, while the good is oft interred with their bones. Sir John Simon in his long life did nothing but good, and it is some consolation for the inevitable loss of such a man that the vast good which he did in laying the foundations of enlightened sanitary administration will last as long as civilization.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,565 births and 4,142 deaths were registered during the week ending Saturday last, July 23rd. The annual rate of mortality in these towns, which had been 13.5, 13.5, and 13.7 per 1,000 in the three preceding weeks, further rose last week to 14.1 per 1,000. The rates in the several towns ranged from 3.1 in West Bromwich, 5.5 in King's Norton, 7.1 in Willesden and in Leyton, 7.4 in Northampton, 8.3 in Hornsey, and 8.6 in Hastings, to 18.2 in Birkenhead, 18.6 in Bootle, 19.3 in Sunderland, 19.6 in Rhondda, 19.7 in Burnley, 20.0 in St. Helens, and 20.3 in Liverpool. In London the rate of mortality was 14.8 per 1,000, while it averaged 13.9 in the seventy-five other large towns. The mean death-rate in the seventy-six towns from the principal infectious diseases averaged 2.7 per 1,000; in London this death-rate was equal to 2.9 per 1,000, while among the seventy-five large provincial towns the rates ranged upwards to 4.8 in Stockport and in Wigan, 4.9 in Huddersfield, 5.1 in Leeds, 5.2 in Wallasey, 5.8 in Liverpool, 6.8 in Bootle and in Rhondda, and 7.8 in Aston Manor. Measles caused a death-rate of 2.0 in Leeds, 2.1 in Rhondda, 2.2 in Bradford, 2.4 in St. Helens, 3.2 in Birkenhead, 3.3 in Huddersfield, and 5.1 in Bootle; scarlet fever of 1.5 in Warrington and 6.1 in Hanley; whooping-cough of 2.0 in Blackburn and 4.0 in Burton-on-Trent; and diarrhœa of 2.6 in Rhondda, 2.7 in Birmingham, 2.8 in Tottenham, 3.1 in West Ham and in Liverpool, 3.5 in Wallasey, 4.3 in Stockport, and 7.1 in Aston Manor. The mortality from diphtheria and from enteric fever showed no marked excess in any of the large towns. Two fatal cases of small-pox were registered in Newcastle-upon-Tyne, and one each in London, Rochdale, and Gateshead, but none in any other of the large towns. The Metropolitan Asylums Hospitals contained 51 small-pox patients on Saturday last, July 23rd, against 74, 71, and 62 on the three preceding Saturdays; 6 new cases were admitted during the week, against 10, 10, and 7 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1,631, 1,685 and 1,698 at the end of the three preceding weeks, had further risen to 1,754 at the end of last week; 234 new cases were admitted during the week, against 254, 269, and 229 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, July 23rd, 1,000 births and 518 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.3, 15.8, and 14.8 per 1,000 in the three preceding weeks, rose again last week to 15.7 per 1,000, and was 1.6 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 11.0 in Leith, and 12.3 in Perth to 18.7 in Greenock and 21.1 in Paisley. The death-rate from the principal infectious diseases averaged 2.1 per 1,000, the highest rates being recorded in Glasgow, Paisley, and Greenock. The 243 deaths registered in Glasgow included 2 which resulted from small-pox, 2 from measles, 3 from scarlet fever, 13 from whooping-cough, 3 from "fever," and 10 from diarrhœa. Six fatal cases of measles, 2 of whooping-cough, and 4 of diarrhœa were recorded in Edinburgh. Two deaths from whooping-cough, and 4 from diarrhœa occurred in Dundee; 2 from whooping-cough and 3 from diarrhœa in Aberdeen; 2 from whooping-cough in Paisley; and 2 from measles in Greenock.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BRIGHTON THROAT AND EAR HOSPITAL, Church Street. Non-resident House-Surgeon. Salary at the rate of £75 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Assistant House-Surgeon, resident. Salary, £60 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £50 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Surgeon; (2) House-Physician. Salary, £20 for six months, and £2 10s. washing allowance each.

MANCHESTER: VICTORIA UNIVERSITY.—Junior Demonstrator in Physiology.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—Resident Medical Officer. Honorarium, £80 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR SICK CHILDREN.—Assistant Resident Medical Officer. Salary at the rate of £80 per annum.

ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House-Surgeon, resident. Salary, £110 per annum.

SALFORD ROYAL HOSPITAL AND DISPENSARY.—Honorary Physician.

WISBECH: NORTH CAMBRIDGESHIRE HOSPITAL.—Resident Medical Officer. Salary £100 per annum.

APPOINTMENTS.

ALLAN, John, M.B., Ch.B.Edin., House-Surgeon to the County Hospital, Ayr.

BAILEY, B. E. G., M.R.C.S., L.R.C.P., Medical Officer of the Workhouse of the Midhurst Union, *vice* A. E. Peters, M.R.C.S., L.R.C.P., resigned.

CLARKE, G. G., M.R.C.S., L.R.C.P., District Medical Officer of the Wakefield Union.

DONALD, C. W., M.D., F.R.C.S.E., Surgeon to Cumberland and Westmorland County Constabulary.

EAMES, E. S. B., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Ufculme District, Devonshire.

FARQUHARSON, D. A. R., M.B., C.M.Aberd., District Medical Officer of the Chester-le-Street Union.

FLOYD, S. G., M.D., M.R.C.S., Certifying Factory Surgeon for the Grays District, Essex.

FRITH, Walter S., M.B., B.C.Cantab., Resident Medical Officer to Felsted School and Head of the Junior House.

LONGDEN, E. W., L.R.C.P. and S.Edin., L.F.P.S.Glasg., District Medical Officer of the Luton Union.

LYALL, W. Leslie, M.B., C.M., reappointed non-resident Clinical Assistant to the Victoria Hospital for Consumption, Edinburgh.

MARAIS, David P., M.B., Ch.B., Resident Physician to the Victoria Hospital for Consumption, Edinburgh.

MAXWELL, William H., M.A., M.B.Camb., F.R.C.S.Eng., Senior Resident Medical Officer to the London Temperance Hospital, Hampstead Road, N.W.

OAKLEY, Adam L. H., L.R.C.P.Edin., Third Honorary Anæsthetist to the London Throat Hospital, Great Portland Street.

ROPER, G. L.S.A., District Medical Officer of the Chesterton Union.

TODD, C., M.D Cantab., Director of the Serum Institute of the Egyptian Sanitary Service, Cairo, Egypt.

TURNER, F. D., M.B.Lond., M.R.C.S., L.R.C.P., Medical Officer to the Post Office and Medical Examiner to the Board of Education at Huddersfield.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

MARRIAGES.

JONES—STEELE.—At St. Peter's Church, Blaenavon, Mon., on July 20th, W. Llewelyn Jones, M.D., F.R.C.S.E., of Mer hyr Tydfil, to Alice Mary, only daughter of Mr. and Mrs. H. C. Steele, Parkside, Blaenavon.

THOMAS—ATKINSON.—On July 20th, at St. Mary's Church, Handsworth, Yorks, by the Rev. Francis Atkinson, M.A., Rector of St. Mary's Birnam, N.B., uncle of the bride, assisted by the Rev. Cyril Walker, M.A., Curate of Averham, Notts., and by the Rev. James Mowat, M.A., Rector of the Parish, George Crewdson Thomas, M.D., M.R.C.P., of Sydenham, only son of George E. Thomas, of Swainswick, Bath, to Evelyne Mary, elder daughter of William Atkinson, The Birklands, Handsworth.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

TELEPHONE (National):— EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

B. R. would be glad to be directed to any book on kindergarten instruction for a child.

W.F.M. would be glad to hear of a home where a case of elephantiasis (female) could be admitted on payment of from 2s. 6d. to 5s. per week. Near Boston (Lincs.) preferred.

MEMBER asks for advice respecting anorexia in a boy, aged 4 years, living in pure, bracing country air; parents healthy. The child is never hungry, and for the past three years food has to be forced on him. He has been treated for worms, but apparently this is not the cause. All sorts of tonics, consisting of quinine, nux vomica, etc., have been tried, but without success. The child is growing fast, and is very thin; he dislikes milk, and has no fancy for the most appetizing food. He occasionally suffers from symptoms of subacute gastritis, cause unknown.

SALARY FOR DISPENSER AND BOOK-KEEPER.

T. J. J. writes: I am thinking of engaging a dispenser and book-keeper, and I write to ask if you will kindly inform me what salary I ought to give for a trustworthy person. The work is not much in a country practice like this.

*** A trustworthy outdoor dispenser and book-keeper, who would also be capable of performing the duties of surgery attendant (as allowed by the General Medical Council) would expect a salary of not less than £80 to £100 per annum. If the duties are strictly confined to dispensing and book-keeping (and other household arrangements permit) a well-qualified lady dispenser to live in the house with the family would be suitable at £25 to £35. Some of these ladies are qualified nurses and hold midwifery certificates.

INCOME TAX.

A. N. B. writes: After sending in my actual income to the surveyor of taxes, I have been informed that my "bookings" are required.....I should be glad if you could let me know if the above principle is a fact .....One's bookings are a different matter to income.....I was told I could recover for bad debts, but that appears to me likely to turn out tedious and complicated.

*** The principle laid down by the surveyor is correct, and the credit side of our correspondent's account should show his gross bookings, and not only cash receipts. Allowance can afterwards be claimed for bad debts as and when they are written off the books. In the special case of a medical practice, where bad debts are proportionately large, it is, however, not uncommon for the Commissioners to accept cash receipts as forming a fairer basis from which to calculate the assessment. This is a concession on their part, and, legally, cannot be insisted on. Probably a personal interview with the surveyor would facilitate a satisfactory settlement.

THE TREATMENT OF DIABETES.

R.A.M.C. asks for suggestions for treatment of a case of diabetes mellitus in a single lady, aged about 35. She is considerably under her proper weight; the duration of the disease is uncertain, but it was first diagnosed three weeks ago by pruritus, thirst, and wasting. The amount of urine is only about 30 oz. daily; the amount of sugar is constant but not great; there is a very faint deposit with 30 m. of urine added to one tabloid of sulphate of copper and one of potassium tartrate (B.W. and Co.). The patient is being strictly dieted. Hunger is not a symptom, and it is somewhat difficult to get sufficient nourishment taken. The question is whether it is necessary or advisable to keep her on an absolutely strict diet or whether one might allow a certain amount of bread.

*** So far as we can judge from the small amount of urine daily the probability is that the total amount of sugar excreted is under 1,000 gr., and that the patient would be able to take a limited amount of carbohydrate without bringing back any symptoms. We would suggest that she should be allowed in successive stages, with a few days' interval between them, to take a pint of milk, ½ lb. of potatoes, and 3 oz. of toast daily. The pint of milk contains about 400 gr. of sugar, ½ lb. of potatoes about 800 gr., and 3 oz. of toast about 950 gr., so that the total amount of sugar she would be getting after all these additions would be over 2,000 gr. Of this it is hoped she will assimilate a considerable proportion, but the effect of the diet can only be determined by periodical quantitative estimations of the urine, calculating the total amount of sugar passed in twenty-four hours, and comparing this with the amount of sugar-forming substances ingested.

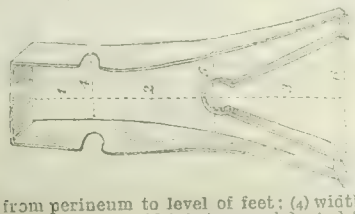
ANSWERS.

MR. R. H. SEBS, M.R.C.S. (Brighton), writes to recommend "Bandela" to obtain a copy of the pamphlet on Veronal, published by Mr. E. Merck, London office, 16, Jewry Street, E.C.

IN reply to several correspondents we may state that we are informed by Messrs. Armbrecht, Nelson, and Co., 71 and 73, Duke Street, Grosvenor Square, W., and Messrs. R. and J. Beck, 68, Cornhill, E.C., that they have stocks of radium bromide.

PHELPS'S BOX SPLINT.

J. E. M.—Phelps's box splint is a trough bisected below for the lower limbs. It is cut out at each side to accommodate the shoulders, and a horseshoe-shaped portion is also cut out at the perineum. Six measurements are necessary: (1) Top of head to level of axilla; (2) from axilla to



perineum; (3) from perineum to level of feet; (4) width at shoulders; (5) width at buttocks; and (6) width between abducted feet. It may be strengthened by a crossbar between the legs.

LETTERS, NOTES, Etc.

THE DESTRUCTION OF RATS BY DR. DANYSZ'S VIRUS.

A PAPER by Dr. J. Danysz, Director of the Laboratory of Agricultural Microbiology at the Pasteur Institute, Paris, on A Microbe Pathogenic to Rats (*Mus decumanus* and *Mus ratus*) and its Use in the Destruction of these Animals was published in the BRITISH MEDICAL JOURNAL of April 23rd, 1904, p. 947. We have received from Messrs. G. Haller and Co., 52, Leadenhall Street, London, E.C., a letter, dated July 21st, in which they state that they are authorized by Dr. Danysz to make arrangements in this country for a demonstration on a large scale to show the efficacy of the virus. Messrs. Haller continue as follows: The effect of the partial application of the virus to larger towns is, however, not easily demonstrable, especially if rats are abundant. The virus usually acts fatally in about eight or ten days after the rats have taken it, and during that time they gradually leave the place where they became ill, and finally die elsewhere. Meanwhile, however, fresh rats have taken their place, and thus apparently the virus has produced no result. We are therefore anxious to find a district or a small town of, say, 6,000 to 7,000 inhabitants infested with rats somewhat out of the ordinary, to which we would offer to supply, free of cost, a quantity of virus sufficient for applying it simultaneously to the whole of the town or district. It is considered that such an area would be sufficiently large to make a conclusive demonstration and yet offer the facility of well-defined limits for accurately estimating the results obtained. Dr. Danysz would be prepared to himself superintend and organize the experiment. The virus is harmless to other animals, as well as to human beings.

LETTERS, COMMUNICATIONS, ETC., have been received from **A** Messrs. Armour and Co., London; Mr. J. A. Angus, Newcastle-on-Tyne. **B** Mr. A. N. Brushfield, Halifax; Mr. T. G. Beckett, Northcote, Australia; B. R.; Dr. F. G. Bushnell, Plymouth. **C** Mr. W. Collier, Oxford; Dr. G. A. Charlton, Liverpool; Dr. F. L. Collie, London; Messrs. J. and A. Churchill, London; Mr. H. E. Counsell, Oxford; Dr. R. H. Coombs, Bedford; Dr. C. C. Caremont, Southsea. **D** Duryea Company, Manager of, Coventry; Dr. W. R. Dawson, Finglas; Dr. A. Duke, London. J. W. Duncan, M.B., Birmingham. **E** Dr. G. P. Elliott, Todmorden. **F** F. P. S. **G** Galen Manufacturing Company, Manager of, London; Dr. R. Gooding, London. **H** House-Surgeon; Messrs. G. Haller and Co., London; R. Howden, M.B., Newcastle-on-Tyne; Dr. J. F. Hodgson, Halifax; Mr. F. Haydon, London; Dr. P. Z. Hebert, London. **J** Janus; Miss M. F. Johnson, Manaton. **K** Mr. E. Kozourelli, Mytilene: Mr. C. T. Kingzett, London. **L** Leamington Spa, Mayor of, Leamington Spa; G. D. Logan, M.B., Harrogate; Dr. W. D. Lawrie, Birmingham; C. H. Leaf, M.B., London. **M** Member British Medical Association; W. H. Mills, M.B., London; Mr. T. I. Mills, Easingwold; Mr. F. Mignon, London; D. Matthews, M.B., Glenluce; J. S. Maynard, M.B., London; Mr. P. Michelli, London; Messrs. W. Martin and Co., London. Dr. C. F. Marshall, London. **O** Obstetrician. **P** J. Patrick, M.B., Glasgow; Dr. F. G. Proudfoot, Oxford; Mr. J. Percival, London; Puzzled. **R** Mr. E. L. Robinson, Guernsey; Mr. J. G. Rowell, Huddersfield; Mr. J. T. Rae, London; J. D. Russell, M.B., London; Mr. J. Robertson, Edinburgh; Mr. R. P. Ryan, Devonport; Dr. J. M. Rhodes, Didsbury. **S** Mr. H. P. Symonds, Oxford; Mr. R. B. Smith, Manchester; Mr. H. Smith, St. Heliers; Dr. D. W. Samways, Topsham; Student; D. F. Shearer, M.B., London; S. Keith, M.B., London; Dr. W. Sheen, Cardiff; Messrs. G. Street and Co., London; Mr. C. H. Senn, London. **T** Dr. StC Thomson, London. **V** Mr. W. M. Vardon, London. **W** Mr. H. A. Whitelocke, Oxford; Mr D. Wardleworth, Bourne; Wigan Medical Society, Secretary of, Wigan; Mr. R. M. Wood, Oxford; Mr. C. J. Wright, Leeds. **Y** Y. A. R., etc.

BOOKS, ETC., RECEIVED.

The Pocket Book of Temperature Charts. London: The Scientific Press, Limited. 6d.

The Advantages of Ambidexterity. A Lecture delivered before the Ambidextral Culture Society by the Honorary Secretary May 4th, 1904. London: The Ambidextral Culture Society. 1904. 6d.

International Clinics. A Quarterly. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia, U.S.A., and others. Vol. III, 14th series, 1904. London: J. B. Lippincott Co. 1904.

Dirr's Colloquial Egyptian Arabic Grammar for the Use of Tourists. Translated by W. H. Lyall, M.A. London: Henry Frowde. 1904. 4s.

Matriculation Directory. No. xxxvii, June, 1904. Cambridge: Burlington House. 1904. 1s.

Cold Sweets, Jellies, and Creams. Domestic Art Series. By Florence B. Jack. London: T. C. and E. C. Jack. 1904. 1s.

Entrées of Meat, Game, and Poultry, with Sauces. Domestic Art Series. By Florence B. Jack: London: T. C. and E. C. Jack. 1904. 1s.

Rückblick auf die Entwicklung der Röntgentechnik. Von Ingenieur Friedr. Dessauer und Dr. med. B. Wiesner. Wiesbaden: Otto Neurnich. 1904. 80 Pf.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Vol. I, March 1st, 1904; and Vol II, June, 1904. London: Rebman Limited. 1904. 12s. each volume.

Physiologie des Menschen. Von Dr. Luigi Luciani. Ins Deutsche übertragen und bearbeitet von Dr. Silvestro Baglioni und Dr. Hans Winterstein mit einer Einführung von Dr. Max Verworn. Zweite Lieferung. Jena: Gustav Fischer. 1904. M. 4.

Archives of the Middlesex Hospital. Vol. III. Third Report from the Cancer Research Laboratories. Edited for the Cancer Investigation Committee by W. S. Lazarus-Barlow, M.D., F.R.C.P. London: Macmillan and Co., Limited. 1904.

Das menschliche Skelett. Von D. v. Hansemann. Berlin: August Hirschwald. 1904. 80 Pf.

Beitrage zur Klinik der Tuberkulose. Herausgegeben von Dr. Rudolph Brauer. Band II. Heft 3. Würzburg: A. Stuber. 1904. Mk. 3.

The Evolution of the Graduation Ceremony. By D. J. Cunningham, F.R.S. Edinburgh and London: William Blackwood and Sons. 1904.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

Eight lines and under	£0 4 0
Each additional line	0 0 6
A whole column	2 0 0
A page	5 5 0

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SEVENTY-SECOND ANNUAL MEETING
OF THE

British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF NAVY, ARMY, AND AMBULANCE.

Surgeon-General A. Frederick Bradshaw, C.B., K.H.P., M.R.C.P., President.

PRESIDENT'S INTRODUCTORY REMARKS.

The President said: I congratulate you, and myself as well, on the existence of the rule which restrains a President from opening the proceedings of his Section with a formal address, as such an oration would probably be lengthy and very likely be found dull. But I am reluctant to pass direct to the business awaiting us without offering to all present a few words of welcome to this ancient city, so long made famous by its University—a renowned seat of classical, mediaeval and modern learning. Those who are visiting Oxford for the first time will find much to attract and more to remember; buildings, gardens, libraries, pictures, and museums are many, and around the Colleges cling historical associations and memories of great scholars, divines, and benefactors.

It was a happy inspiration, I think, which prompted the organizers of these important annual gatherings of the profession to arrange for the meeting together in conclave of as many members as can be assembled of the Navy and Army Medical Services. It is a real advantage to these members to be afforded opportunity for exchange of views and experiences, and for thus giving mutual support in their common duty, namely, that of promoting the health efficiency of those who man the first and second lines of defence of the Throne and Empire.

On these yearly occasions the privilege is enjoyed of personal communication with civilian *confrères* who take part in the Volunteer movement and in ambulance work. From them valuable hints are obtained respecting methods and means of sick transport among other things, and they in turn hear from naval and military doctors how striking is the benefit to mind and body derived by sailor and soldier recruits from the regulating under service conditions of their daily routine of life. To the pressing question as to how the alleged deterioration of the national physique can be successfully dealt with, the benefit referred to suggests a solution satisfactory enough so far as it goes.

Gentlemen, now to business, which it is expedient to further preface by the reminder that fifteen minutes is the period allotted for the reading of a paper, and ten minutes for the delivery of a speech. To these limits of time it is desirable that attention be paid with somewhat military precision.

CAMP SANITATION.

By Major E. C. Freeman, R.A.M.C.

The sanitation of camps is a subject of vital importance to all of us in this Section, as whether we belong to the Royal Navy, Army, or Volunteers, we are all certain sometimes to have sanitary charge of camps.

Camps in war time fall into two divisions: temporary and standing camps. The tendency nowadays is to replace temporary camps—that is, those occupied for twenty-four to forty-eight hours only—by bivouacs, doing away with tents altogether when on the march. As far as experience goes, at any rate in South Africa, the results of this procedure were good. The men seemed to get quickly hardened to the open-air life, while the relief to the transport was, of course, enormous.

We may be certain that with the increased celerity of movement demanded by modern tactics on the march the bivouac will in future always replace the camp.

All that can be done in these hasty encampments and bivouacs is to apply the principles of camp sanitation as far as time and means at disposal will permit. Owing to the shortness of the halt there is no great likelihood of infection arising, and if steps be taken to keep the source of the water supply clean, to prevent the actual ground occupied by the troops from being fouled, to dig a latrine trench and rubbish pit in a suitable position, and to cover in the trench and set fire to the rubbish on departing next day—that is as much as we can hope to accomplish If other troops following after occupy the same ground, danger arises, and great stress should be laid on the importance of using fresh sites wherever possible to encamp on. I would, in fact, go so far as to deprecate the extreme care taken to clean up the surface of an encampment when the troops leave it. The possibilities of infection are still there in the soil, the water, and the trenches, and if the ground were left in the rough succeeding detachments would see the advantages of choosing fresh sites.

The principles of camp sanitation find their chief application in the standing camps, which are a necessary and important feature of every campaign. It is here that sickness and epidemic disease usually break out—seldom among troops who are on the march.

Looking broadly at the problem we see that these camps are congested areas, often with populations of 20,000 to 30,000 inhabitants, and having a minimum density of population in the infantry regiments of 226 men to an acre, which is greater than that of the most crowded part of Whitechapel (Notter and Firth). This crowded community has no ready-made water supply, drainage system, abattoirs, or scavenging arrangements. The inhabitants are crowded in their tents to an extent never met with in civil life, and have but small facilities for personal cleanliness. They are often worn out by fatigue and privations, or wearied by home sickness and the deadly monotony of military routine. Is it to be wondered that when infectious disease breaks out in these circumstances it tends to spead like wildfire? And is not the necessity to devote all our energies to minimizing the risk of such outbreak evident?

Owing to the complexity of the problem the precautions called for must be somewhat elaborate, and it will be best to touch lightly on each point in succession, speaking in more detail on the questions which are the chief subject of this paper.

Sites.

The choice of camp sites would occupy a paper by itself, and I will only plead here that the medical authorities should be consulted on this important subject. If this were done many unsuitable spots, such as graveyards, swamps, or native locations, would be avoided.

Tents.

There is nothing to be said in favour of the bell tent, and a ridge-pole tent is now being introduced which seems better in every way. A similar form of tent has been adopted in India.

It is needless here to expatiate on the evils of overcrowding in the tents, and on the advantage of disposing the camp as widely as possible. Animals in camp should be picketed as far from the tents as circumstances will permit, as they of necessity foul the ground and attract flies. The usual arrangement with cavalry, artillery, etc., of having the horse lines in the centre of the camp may be necessary for military exigencies, but it is bad sanitation.

Water Supply.

This is a burning question on which I will not now provoke discussion. To put my own small experience briefly, the important point is to secure, if possible, a decent source of supply, and to take every care to keep it uncontaminated. This is far better than taking water at haphazard -very possibly with a dead camel or horse lying by- and trusting to boiling or filtration afterwards; for the more the water is handled the more likely it is to be infected, and the dirtier it becomes, while great care and supervision are required in its storage. Therefore I would not resort to boiling or filtration unless certain that the water was impure—and impure also from causes I could not remove.

To this rule I would, however, make one exception. Cholera is so greatly a waterborne disease, that if an outbreak of it were dreaded, as a precaution all the drinking water should be boiled or filtered. Of these two modes one would recommend boiling, as the Pasteur or Berkefeld filters are rather delicate mechanisms to handle in the field. Personally I would issue the boiled water as weak tea, which would soon become a fairly popular beverage.

In a standing camp a system of elevated cisterns can often be improvised, thus doing away with the frequent move-

ments of water-carts, and ensuring the maximum protection to the water.

FOOD.

The question of rations does not concern us here, but the field kitchens do, and much care is required to keep them clean and so to prevent a plague of flies. The great point is to teach the cooks to put all the fragments of food, etc., into empty tins, and not to throw everything on the ground and trust to sweeping it up afterwards. If this is allowed, the ground quickly becomes foul and a centre of attraction for flies. All organic rubbish must of course be burnt in the kitchen fires.

There is a curious tendency in camps, which we have to fight against, to put the kitchens and latrines close together. The medical officer must see that they are kept as far from each other as possible, otherwise flies of course pass from one to the other and the food is infected.

ABATTOIRS.

If the meat is killed at the camp, the slaughter-place must be at some distance away—half a mile or so at least—and all the offal burnt at once; very frequent inspection by the medical officer will be required to effect this. Plenty of dry earth should also be used to soak up at once all blood, etc.

LATRINES.

These are the crux of camp sanitation, especially when viewed in the light of recent discoveries as to the rôle played by flies in the spread of disease. In standing camps latrines are of two patterns, either the trench or the pail system. The latter is much to be preferred as trenches rapidly get filled up and fresh ones have to be dug, thus continually extending the danger area: while under the pail system the excreta are removed away from the camp altogether. This pail system can, of course, only be carried out in favourable circumstances and in camps of a fairly permanent nature. The buckets must be in good order and sufficient in number. The soil carts must be efficient and perfectly watertight, and the pits where the excreta are disposed of must be situated well away from the camp, and the water supply must be dug not too deep or too large, and be regularly filled in daily. An adequate staff of scavengers must be provided, and careful and regular supervision of all these details by a medical officer will be required. Unless all these requirements can be complied with the pail system is better not attempted, as the buckets will be foul, sewage will be dropped about the camp, and the night-soil pits will become a filthy morass. Many contrivances to drive flies away from the latrine trenches have been proposed, but most of them are outside the range of practical politics. The trenches should be placed as far from the camp as reasonable access will allow. The way to them should be marked by white-washed stones so as to be easily found by day or night, while a lamp should be lighted in them before dark. The seats should be semicircular in front and open behind; by these precautions fouling of the ground around the latrine trenches can be prevented. They should be dug 4 ft. to 6 ft. deep and a layer of dry earth from the excavated material thrown in four times a day, the trench being filled in altogether when three-quarters full. The earth acts as a deodorant, keeps off flies, and prevents paper, etc., blowing about. When filled in the trench must be marked so that the site may be avoided in future. If fresh chloride of lime is available, some may be thrown into the trench with the dry earth. It has bactericidal properties and its odour discourages flies. Lime is useless and all disinfectant powders. Pioneers must be detailed to take charge of the latrines, otherwise the trenches and their surroundings speedily become foul in the last degree. Screens must be improvised, not only for decency but also to prevent wind and dust storms blowing the dried excreta, etc., about the camp—a common and obvious source of infection in India and South Africa.

ABLUTION AND WASHING ARRANGEMENTS.

Ablution and washing arrangements come next in order. If the camp is beside a stream the men's ablution and bathing place should be above the spot where clothes are washed, to diminish the risk of infection. Both places must be well below the source of the drinking water. If there is no stream the water used for ablution must be got rid of by running it into shallow trenches radiating from a centre; these must be used in rotation so as to prevent the soil from becoming water-logged and foul. In most soils a considerable quantity of water can be got rid of in this way.

REFUSE.

Cook-house refuse should be burnt on the spot, as previously noted. Refuse from the tents should be collected daily—every tent getting hold of an old tin for a rubbish basket—and should be placed in a deep refuse pit outside the camp and set fire to. It will smoulder away, and when the pit is three parts full it must be filled in and another one dug. Dead animals should be promptly removed, cut open—unless cases of anthrax—and buried deeply. Surface burial is no use.

Small trenches or buckets for urinals should be placed near the tents, and attended to twice daily. But cleanliness in this matter is almost impossible to attain, and we must trust to the hospital authorities to treat all enterics and suspicious cases with a course of urotropin as a matter of routine before discharging them.

CONSERVANCY.

Four conservancy corps should be formed at the very outset of operations, and could well consist of natives under trustworthy N.C.O's. If arrangements of this kind are not made in advance we get a state of things such as we saw at Bloemfontein, where the air was being poisoned by innumerable dead carcasses, while staff and regimental authorities wrote letters to each other to inquire who was to remove them. Sanitary police must also be found by the regiments, and special sanitary officers detailed from head quarters.

Incinerators of various patterns have been proposed for camp rubbish and excreta, but it is not probable that any at all will be allowed to form part of the already too great impedimenta of an army. In the general hospitals where there is a daily output of specifically infected excreta a destructor is certainly required, but such elaborate machinery should not be necessary in a camp if its conservancy is properly looked after and filth not allowed to accumulate. A regiment with two water sterilizing machines, a portable destructor, and a load of fly-preventing metallic latrine seats might be healthy, but it would certainly cease to be mobile.

CAMPS IN PEACE TIME.

I should add a word about camps in peace time. When they are in manœuvre areas the preceding rules apply. But sometimes the space available is small and constantly in use, as at many rifle ranges and in artillery camps connected with coast batteries. These restricted sites require special precautions, otherwise the ground becomes foul without opportunity to recover itself and forms a nidus for pathogenic germs. These sites should be treated more as barracks than as camps; the latrines should be permanent structures with impermeable cement floors, and worked on the dry earth pail system. There should be a pipe water supply with fixed stand pipes, and iron ash-bins on concrete bases should be provided for refuse, so that there shall be no excuse for fouling the ground. A permanent ablution hut and a shelter for the kitchen are desirable, with fixed drainage channels for the waste water.

Every officer should be taught the elements of hygiene and every quartermaster on appointment should go through a short course of instruction in sanitation at Aldershot or other of the great military centres.

SANITATION IN VOLUNTEER CAMPS AND THE DISPOSAL OF REFUSE AND EXCRETA.

By Surgeon-Lieutenant-Colonel P. B. GILES, F.R.C.S., V.D.,
S.M.O. 30th Field Army Brigade; S.M.O. Volunteer Ambulance School of Instruction; Chairman S.M.O.'s Association.

A POWERFUL factor against efficient sanitation in Volunteer camps is that the general system of laying out the camp is left to the quartermaster and adjutant and to the entire exclusion of the medical officer, and so frequently the best sanitation is not secured.

It is quite true that Volunteer camps are only intended to be used for a short period by the various units camping; but as it so frequently happens favourite localities are used year after year more or less all the summer, and so get foul, and because the purpose of camping is to give practical instruction, it has always seemed to me that as the dangers of camp life to a great extent are the diseases that are preventable, the proper course would be to start with all the precautions that should be observed if the conditions were actual service against a foe.

I could give many examples of the practical difficulty of efficiently carrying out sanitation when mistakes have been

committed, it should be a *sine qua non* that all camps should be inspected and reported upon by a medical officer before being actually laid out.

An example: Our brigade had to take over camping ground that had been more or less continuously occupied for some months; as usual I went on before the camp commenced; years of camping have taught me the value of sanitation. I found a lovely site, pretty sloping grounds running into a little valley, some of the ground comparatively recently laid down in grass, with a little watercourse which it was evident a few hours rain would convert into a stream, and a day or two most of the flat into a morass.

It was a notoriously wet season, and I was told there had been a good deal of light sickness. In the valley I found two regiments, the hospital, and some latrines, and the entire surface showed evident signs that rain made it a veritable bog. I at once took the bull by the horns—there is one blessing in the service of seniority—and as my brigadier was a stranger and absent I trusted to his known qualities as a leader to pull me through, and at once had the two regiments placed upon sound old turf on the slopes, new latrines erected, and the hospital pitched on a small plateau. The wisdom of this was proved later, as though there was continuous wet for six days and the valley was converted into a snipe bog, we had no sickness.

The general and classic rules for selecting and laying out camps are so generally known to you all that I do not propose to burden you with a repetition of them, but rather to lay before you some of the experience I have gained in over thirty years in camps of from one week to five months' duration.

First, I consider any attempts to restrict and curtail the area of a camp are risky; cramping the area of a camp may not under other favourable conditions at once show anything unhealthy, but experience goes to amply prove that in all localities in which camps are formed, and continued, that certain diseases will sooner or later occur, generally in the inverse ratio of the period over which the ground is occupied, and therefore all attempts to curtail the area of a camp and so concentrate humanity will result in sickness.

Secondly, that the illnesses peculiar to camp are *de facto* such as are common to those who live in crowded and ill-ventilated localities—namely, diarrhoea, sore throat, rheumatism, conjunctivitis, pneumonia, dysentery, simple continued fever, enteric.

Thirdly, that the best way to prevent these diseases of camp is to obtain the best ventilation, cleanliness, disposal of refuse, disposal of excreta.

Ventilation.

The general idea that because one lives under canvas that the ventilation is sufficient is a fallacy. I believe that there are few more insanitary dwellings than bell tents; they have a cubic capacity of under 700 ft., with a population of 8, 10, or 12. Under rain, or even heavy dew, the canvas swells so that ventilation is *nil*, and with the tent door closed and the valance down the atmosphere is the reverse to what it should be; also it is a faulty conductor against sun and cold. This being the case in those used by troops to sleep in, and as such more or less empty from 6 a.m. to 8 p.m., what is their condition when continuously occupied as a hospital by four patients, all more or less feverish, exhaling virulent organisms, and frequently too helpless to perform the natural functions with any approach to cleanliness. Not only is the air foul but the soil inside the tent speedily becomes polluted, and a most insanitary condition is created, which the heat of the tent intensifies. The low rate of sickness in cold, wet weather, and the sudden rise in hot damp amply proves this.

The new double tent, if indeed improved in ventilation, has the drawback that it weakens the greatest of all camp germicides, that of the sun's rays. If what I urge is correct, it follows that the general health of a camp, particularly when it exists for any period, depends materially upon proper and efficient tent ventilation. To secure this all tents should when pitched be trenched round for the double purpose of dryness and ventilation. Directly the men turn out the tent door should be widely opened and the valance rolled up. As soon as the ground is dry all the bedding should be brought out, exposed, and the tent well brushed out, taking care that the refuse is placed into a receptacle, and neither brushed under the tent bottom nor upon the surrounding ground.

At least twice a week the tent bottoms should be brought out into the open, piled against each other, with the under surface exposed to the sun and fresh air, and any dirt removed. Once a week all tents should be struck and the boards dry-scrubbed, and the whole contents exposed to the sun's rays.

In any cases in which there is foulness of ground, or from any tents or lines from which any camp sickness can be traced, strike the tents and repitch on fresh ground. In wet weather, with a constant wet, the tent openings should be shifted so as to prevent the rain drifting into the tent. But, from a sanitary point of view, cold wet weather is better than hot damp. A rise in sickness always follows heat with wet—that I have noticed time after time.

Dust, again, is very prejudicial to a good sanitary state, and for that alone the greatest care should be taken with all refuse.

Clothing should generally be light and of wool. All linens are to be avoided, because, comfortable as they may be in the heat of the day, during cold nights, or after exposure to rain, they produce:

1. A chill with enteritis in the young.
2. Men who have acquired malaria are very often apt to get a chill and to develop their latent foe.

Hats for sun: there is nothing better than white drill slouch hats; they protect the face and neck.

Boots should be the regulation without toe-caps; woollen socks should be used and a fresh pair with boots put on after work. I always recommend a brigade foot parade the first morning and once a week afterwards, and strongly advise officers commanding companies to have similar parades after work daily, and call in the regimental medical officer if wanted. Before going to camp all will be well advised to walk regularly, and soak their feet in brine and soda, well dry, and then dust with boracic-acid powder and zinc. Boots also should be well dubbed and kept soft.

Food.

The rations should be well but not over-cooked, and varied as much as possible; particularly vegetables must be given, if not a few days will produce a number of sick with gastric symptoms: (1) diarrhoea, (2) constipation, (3) dyspepsia, absolutely caused by the monotonous diet. In each and all of these cases the best treatment is a mercurial purge; if associated with colic, then opium followed by two No. 9 does best, but for this form of diarrhoea lead and opium is a mistake.

A very little care and trouble will, from the bones, etc., produce a real good soup, which I much prefer to coffee either early or late. A good dry canteen with plenty of cakes, etc., should be in every camp.

Water.

In most camps water is laid on from mains, and should be above suspicion, and is an easy matter to find out; but in those cases in which it is obtained from a river or from ponds, after finding that it is safe and potable, it is often polluted during and in transport.

It is best, therefore, to have all water pumped into a tank, and the water-carts filled by a pipe; this not only saves the pollution on the spot caused by the horses getting into the water and from dirty buckets, but it also saves time. It is most essential that all water-carts should be carefully cleaned. In camps all water stands should have a tank, and cooking and drinking water drawn direct not ladled out of the tank. These tanks keep the waste and accompanying wet ground at a minimum.

Personally, I am against water bottles. Experience tells me they are difficult to keep clean; are used to carry beer; that ptomaine poison and enteritis is often traced to them; and those men who use them most are those least subject to thirst control, and frequently drink their pint at one draught when hot and tired, with the result that they get colic or looseness of bowels.

I believe the better plan in hot, dusty weather is to prolong the halt until the first fatigue has vanished, and then serve not more than a gill apiece of water, in which oatmeal has been boiled and lime juice added. That and the fact that our brigade had all had breakfast before marching on a long field day at Aldershot made the men come very successfully through it when other brigades were much distressed. It is better for health, comfort, and more economical to have separate large tents for meals, and not allow each tent squad to growl and mangle the rations in their respective bell tents.

Excreta.

All camps other than bivouacs should have earth pail

latrines. Trenches are dangerous; as to get the best destructive powers of the soil they can only be cut shallow, and are therefore inefficient. If cut deeper they frequently get a percolation of water into them, this water must go somewhere, and the danger of polluting a supply is great.

It has been proved, and I believe is generally accepted, that the enteric germ is a strong, long, and vigorous liver, and so that alone should put an end to any but shallow trenches. Earth pails should be well covered with dry earth, and should be removed as early as 3 a.m., before the men are astir; after breakfast and after dinner the contractor should go round and sprinkle earth in the used pails. At 3 a.m. a cart lined with at least a foot of dry soil should be sent round, and the buckets emptied into the centre, and then again covered and sprinkled with a disinfectant, so that no dust circulates during transit.

On no account should this mixing of latrines and earth be permitted on the ground near the latrines; I found that beastly practice had been allowed in the Isle of Man, and at once stopped it, though I was told it had the saction of previous senior medical officers.

Urine should be passed separately into troughs and carried into a barrel, the trough and barrel being filled with sawdust; this is an idea I learned from my old friend, Dr. Vivian Poore. I have tried it very extensively, and cannot speak too highly of its efficacy. The sawdust can be burned from time to time. Urine tubs should be placed outside the tents, and emptied and disinfected each morning.

No pains should be avoided to prevent men urinating near their lines, and if urine tubs are outside the tents even the most lazy will not pass their water against their neighbour's back and in the tent. In a militia camp I effectually cured a notorious offender; when certain of discovery he always went sick and came before the medical officer for incontinence; a liberal painting with liq. epispastica effected a cure, and he ever after rose and used the tub.

All excreta from the hospital should be burned. Paraffin is an excellent vehicle to place in the bed-pan, and the contents mixed with sawdust burns easily. I have described the process fully in the British Medical Journal.

Refuse.

All camp refuse can and should be burned; iron wire baskets in the lines will allow all the paper, etc., in the lines to be collected from time to time, taken to a pit 10 ft. by 6 ft., and that and all refuse mixed and burned; even tin cases do not come amiss.

At the conclusion of camp all pits are filled in and the camp left clean and to the satisfaction of all.

Practically I find it better to detail one medical officer as sanitary medical officer for the whole period of camp, by which one system prevails and one standard is adopted. Previously to introducing this system, and leaving it to the orderly medical officer I found it a question of "Quot homines tot sententiae."

As the S.M.O. is responsible for the sanitary state (par. 33) I always at a fixed time each day inspect the camp, meeting the regimental medical officer and quartermaster in their lines, and go thoroughly through their camp regiment after regiment. If I see anything wanting I mention it, and if it is not done by my next inspection, or if it is a matter that the sanitary medical officer has found fault with, I send it in to the orderly room in writing.

Daily I detail a N.C.O. and men of the bearer company to go round and report if the pioneers have neglected anything. By these methods the camps are generally in a sanitary state, and very little other than general requirements appear in brigade orders, and I am always in a position to answer any question of the Brigadier, G.O.C., or P.M.O. authoritatively.

The sick are paraded twice daily and treated by the medical officers on duty, and such as need are detained or admitted. The medical and surgical cases are treated in separate marquees, while a third is used for those detained. Cases of suspicion, such as throats, are isolated in bell tents, and the greatest pains to disinfect taken.

To sum up, the best treatment for all refuse is to burn it, and a comparatively small outlay would enable every camp to have a cheap but common-sense destructor.

NAVAL DIETARY.

By Staff Surgeon J. Falconer-Hall, M.B., R.N.

[By kind permission of the Medical Director-General.]

The new scale of dietary came into force on October 1st, 1903, and since then one has had time to form an opinion regarding it.

In discussing the question of naval dietary one has always to remember that compensation (or savings, as it is called) is allowed for certain articles of food that are not taken up, and much of this money is spent in the ship's canteen on various other foodstuffs.

I have drawn up a table showing on one side the old scale and on the other the new one. On looking at the table it will be seen that the following articles have been added: Preserved meat, ¼ lb., as a breakfast or supper ration; sugar, 1 oz.; tea, ⅛ oz.; fresh vegetables, ½ lb., with fresh meat; condensed milk, ¾ oz.; jam, 2 oz.; coffee, ½ oz.; raisins, ½ oz., with salt and preserved meat; and compressed vegetables, 1 oz., with salt pork or beef, and preserved meat.

The following articles have been reduced by ¼ lb. each per diem: Fresh meat, salt pork, and salt beef. Chocolate is also reduced by ⅜ oz. and preserved meat by 3 oz. per diem.

Scale of Dietary for Officers and Men.

Old scale.		New scale.
Daily issue—		
1¼ lb.	Biscuit	1¼ lb.
	or	
1½ lb.	Soft bread	1½ lb.
⅛ pint	Spirit	⅛ pint.
	Jam	2 oz.
	Coffee	⅜ oz.
2 oz.	Sugar	3 oz.
	Preserved meat	4 oz.
1 oz.	Chocolate ordinary	⅝ oz.
	or	
⅜ oz.	Chocolate soluble	½ oz.
	Condensed milk	¾ oz.
¼ oz.	Tea	⅛ oz.
Every four days—		
	Salt	1 oz.
Weekly—		
⅜ oz.	Mustard	⅜ oz.
⅛ oz.	Pepper	⅛ oz.
⅛ pint	Vinegar	⅛ pint.
3 oz.	Oatmeal	
Daily when procurable—		
1 lb.	Fresh meat	lb.
½ lb.	Fresh vegetables	lb.
When fresh provisions cannot be procured—		
Issued every other day—		Issued in rotation. First day.
1 lb.	Salt pork	½ lb.
½ lb.	Split peas	½ lb.
	Compressed vegetables	1 oz.
½ oz to every 8 lb. put in the coppers	Celery seeds	½ oz. to every 8 lb. put in the coppers.
On one alternate day—		Second day.
1 lb.	Salt beef	½ lb.
	Compressed vegetables	1 oz.
9 oz.	Flour	9 oz.
¾ oz.	Suet	¾ oz.
1½ oz.	Raisins	2 oz.
On the other alternate day—		Third day.
9 oz.	Preserved meat with either	9 oz.
with either	Rice	4 oz.
4 oz. preserved potatoes	Compressed vegetables	1 oz.
or	or	
4 oz. rice	Flour	6 oz.
or		
6 oz. flour	Suet	¾ oz.
¾ suet	Raisins	3 oz.
1½ oz. raisins	Compressed vegetables	1 oz.
or		
2 oz. preserved potato		
2 oz. rice		

The boys in sea-going training ships, and boy artificers, receive the above scale with the addition of ½ lb. fresh meat daily, and 8 oz. flour, 2 oz. raisins, and 1 oz. suet, twice a week, with fresh meat.

No savings are allowed for condensed milk, split peas, salt, and celery seeds. This is a specially good rule with regard to the condensed milk which can be used for tea, which is now issued to the messes, so that they can make their own tea as required, instead of all the tea being put in the galley copper and issued from there, this being very often a strong decoction instead of an infusion. A short review of the different articles of diet:

Soft Bread.—This is supplied at all the home ports, as well as most of the ports abroad, and is of a very good quality, though now and then, especially abroad, an increase in the amount of crust would be an improvement; two-thirds of the bread must be taken up.

Biscuit.—This ration is issued when the ship is at sea. The following table gives the composition:

	In 100 Parts.	In 1lb.	
		oz.	gr.
Water	10.2	1	277
Albuminoids	10.5	1	207
Other nitrogenous Compounds	0.4	0	28
Starch and dextrin	75.0	12	0
Fat	1.6	0	112
Cellulose	1.2	0	84
Mineral matter	1.1	0	77

The biscuit is a very popular ration, and from its composition it will be seen that its nutritious value is very high.

Fresh Meat.—The meat supplied to the service is of very good quality, being especially so at home ports. Where fresh mutton can be procured at a reasonable price, it may be issued as a change, if the men desire it. In any case, two-thirds of this ration must be taken up.

Fresh Vegetables.—The vegetables may consist entirely of one kind, or of various kinds. At home ports potatoes are very often supplied, with frequent changes to fresh green vegetables. Abroad the fresh vegetables issued depend almost entirely on the part of the world where the ship may be. This ration is only issued with fresh meat. In most ships potatoes are part of the canteen stock, where they can be purchased by the men.

Spirit.—An $\frac{1}{8}$ pint of rum is issued to warrant officers and men over the age of 20. This is served out immediately after dinner. Savings may be taken for this ration, or the following substitutes: (1) $\frac{1}{4}$ oz. tea, $\frac{1}{2}$ oz. soluble chocolate, and $1\frac{1}{2}$ oz. sugar; (2) $\frac{1}{4}$ oz. tea and $2\frac{3}{4}$ oz. sugar, or (3) $\frac{3}{4}$ oz. soluble chocolate, and 2 oz. sugar. The Admiralty also allow $\frac{1}{2}$ a pint of wine, or 1 pint of porter, as the equivalent of the $\frac{1}{8}$ pint of rum. Porter is usually only issued in ships on the West Coast of Africa.

Jam.—The jams supplied consist of the following descriptions, namely, strawberry, black currant, apricot, plum, gooseberry, and orange marmalade. Marmalade is issued at least on two days a week; the other days of the week the men have their choice, but only one variety is issued on any one day. In the ship one is in at present very little of the jam is taken up; but one is quite sure that on a foreign station nearly all of it would be taken up.

Condensed Milk.—This is of the unsweetened description. No savings are allowed for this article; this is a very good thing, as it can be used for tea, or to make puddings, etc.

Compressed Vegetables.—These consist of several kinds, namely, mixed vegetable, haricot beans, shredded beans, cabbage, carrots, onions, sliced potatoes, and spinach. These are to be issued as far as possible in the varieties that the men like. The following rules have been framed for the cooking of these vegetables. The vegetables are to be placed in a small-meshed net and taken to the cook the night before, who will soak them properly in hot water; this is a most important point, and the water should be changed several times during the process. The next morning the vegetables will be steamed by being placed on special gratings fitted to the coppers.

Preserved Potato.—This ration has been done away with, and a very good thing, as it was never palatable, and could really only be used for thickening soups.

Tea, Cocoa, and Coffee.—The new scale provides for one ration of cocoa, one of coffee, and two of tea. At present very little coffee is taken up; this will no doubt increase as the men get to know how to make it properly. At present tea is the most popular beverage; it is now issued to each mess, and the men can make it as required. Cocoa is always issued the first thing in the morning; the men are very fond of this ration.

Preserved Meat.—This ration, for dinner or supper, consists of corned beef, boiled beef, or boiled mutton. This is issued in the kinds preferred by the men as far as possible. Corned beef as a rule is the favourite.

Salt Pork.—This is a very popular ration, and all the issue is usually taken up.

Salt Beef is of a very good quality, but is not so much liked as the pork.

None of the other articles of dietary requires special notice. The naval dietary allowed to officers and men is a liberal one; it can be varied to a considerable extent, according to the men's wishes. It does not tend to become so monotonous as a soldier's diet (meat 12 oz., bread 16 oz., potates 16 oz., vegetables 8 oz., milk $3\frac{1}{4}$ oz., sugar $1\frac{1}{4}$ oz., salt $\frac{1}{4}$ oz., coffee $\frac{1}{4}$ oz., tea $\frac{1}{4}$ oz.).

In the newer ships refrigerating rooms are now supplied, and by this means fresh provisions may be carried, especially for short sea trips. As regards the nutrient value of the naval dietary, if one only takes the daily ration of beef, bread, vegetables, and sugar, each man is supplied with 291 gr. of nitrogen and 5 425 gr. of carbon; this, with the other ingredients of a sailor's dietary, comes well beyond the limit laid down by Parkes and Playfair of 307 gr. of nitrogen and 4,700 gr. of carbon, which an average man gives off in a day. It is also very much beyond the scale allowed to convicts doing hard labour (263 gr. of nitrogen and 5,003 gr. of carbon).

One has worked out the naval dietary to correspond with the following table, which will be useful for purposes of comparison:

*Diet.	Albuminoids.	Fat.	Starch and Sugar.
	oz.	oz.	oz.
Prisoner's diet (1lb. bread)	1.3	0.26	8.2
Prisoners for 7 days (1lb. bread and $\frac{1}{4}$lb. oatmeal)	1.8	0.50	10.7
Subsistence or famine	2.3	0.80	11.6
Prisoners, light labour	3.5	1.30	16.7
Prisoners, hard labour	4.1	1.60	18.9
Healthy adults, with moderate exercise ..	4.2	1.40	11.6
Hard-working artisan	5.1	2.90	22.2
Navvies, blacksmiths, and others working very hard	5.6	2.50	20.4
Naval dietary	4.1	2.10	20.2

**Food.* By A. H. Church, M.A., F.R.S.

Meal Hours.—Since October 1st, 1903, the Admiralty has recognized five meal hours, the aggregate time allowed being three hours thirty-five minutes, instead of two hours thirty minutes allowed by the old system for three meals. The meal hours are: An issue of cocoa on turning out at 5 a.m., breakfast at 8 a.m., dinner from 12 to 1.15 p.m., tea at 4.15 p.m., and supper at 7.30 p.m. These hours are very well arranged. In the tropics it is customary to have a two-hour dinner hour, with light work afterwards, the heavy drills being got through as a rule before breakfast.

Surgeon-General C. McD. Cuffe said that the whole question of sanitation in camps had been carefully considered in the regulations and the advice of the medical officers was given to commanding officers, and if carefully followed would usually result in prevention of sickness. The difficulty, however, was to get that advice carried out, and he believed the only way to obviate that was for the regimental or barrack medical officer of health to educate the commanding officer and his officers and men in elementary principles of sanitation by occasional lectures or even informal conversations on sanitary subjects. It should be impressed upon officers that an important point of their duty was to see to the personal hygiene and comfort of their men. Practical experience in those matters led to the belief that most of the evils of blistered feet, irregular toe-nails, unclean finger nails, unclean teeth, neglect of washing and bathing, could be provided against by making use of ordinary common-sense and of the material and appliances provided for the soldier. One, for instance, was frequently told on inspecting barracks that sufficient dinner-plates, soup basins, etc., were not provided for soldiers, but inquiry elicited the fact that supervision of officers concerned had not been exercised to replace articles of that kind as required. The same applied to kitchen cloths, cloths for washing plates and dishes, and various other obvious requirements for the comfort of the soldier which could be usually had, at least on home service, if asked for. He reiterated his belief that if the regulations of the army were intelligently carried out by all concerned, the comfort and efficiency of officers and men would be considerably increased.

Brigade-Surgeon-Lieutenant-Colonel G. Elliston said Major Freeman had made many valuable suggestions in his paper, especially in connexion with the site, water supply, and cleanliness in camps of instruction. He could endorse all Major Freeman had said as to protecting the surface of the ground from impurities of excreta, broken food, etc.; it harboured and encouraged flies, and in his experience flies were great carriers of infection, especially enteric fever. If pails were used in latrines they should be regularly and systematically emptied, otherwise they became a pestiferous nuisance. In Volunteer brigade camps tent bottoms or floors should be supplied to both officers and men; at present in the Eastern District this was not done even in wet seasons.

Surgeon-General G. J. H. Evatt said troops under canvas were allowed wooden tent bottoms if the P.M O. of the force recommended them. Officers had to pay 6d. a day for the hire of these tent boards from the State. He said that sanitary lectures were now given in the two army corps recruit departments.

Surgeon-Lieutenant-Colonel D. E. Curme said that in the Militia regiment to which he belonged—3rd Dorset Regiment—tent bottoms were not provided by Government for officers; the officers paid for them—and in fact they were the property of the officers' mess, and they paid a small annual sum for them.

Dr. J. E. Molson said he disagreed, as he understood the suggestion implied was that a light thin covering was necessarily a good thing for camps in all weathers, and carried out the idea of open-air treatment. In hot weather tents were very oppressive unless well ventilated.

Colonel J. E. Squire, C.B., said there was some danger at a meeting such as the present, where so many important points were raised in the valuable papers which they had just heard, that in the multitude of subjects discussed no one became sufficiently emphasized as to lead to practical results. There was one point in Major Freeman's paper which seemed to strike at the root of all efficiency in camp sanitation, and it seemed to him that it might be desirable to focus their attention on that. It was that the principles and practice of hygiene and sanitation should be taught to the officers, N.C.O.s, and men, for whose benefit sanitation was so carefully studied by the medical officers of the army. If those men understood the need for the sanitary regulations it would be less difficult to get them to carry them out. It might be useful if in all camps a non-medical officer—company officer or quartermaster—were detailed as well as the medical officer to supervise the sanitary condition of the camp. Detailed instructions as to the matters requiring attention should be drawn up for his guidance, and it would, of course, be better if that officer knew something of sanitation. Some few years ago Captain Hughes, who was then secretary to the principal medical officer at Aldershot, had given a course of instruction in sanitation and hygiene to the quartermasters of the different regiments quartered there. Colonel Squire had had the pleasure of examining those quartermasters at the termination of the course. He was much struck, not only with the practical value of the instruction but by the general excellence of the answers given in the examination.

Major T. McCulloch said as the facts did not appear to be generally appreciated, it might be pointed out that as far as the medical service was concerned a complete chain of sanitary responsibility existed, and it might be useful at that point to trace it. The principal medical officer of a force was attached to the staff of the general officer commanding-in-chief, to whom he was to give advice in reference to rations, clothing, shelter, sanitary arrangements, precautions for preventing disease, and on all other subjects bearing on the health and physical efficiency of the troops, and, with the sanction of the general officer commanding, he issued such instructions as he might consider requisite for the guidance of commanding officers, medical officers, and others. In the same way, principal medical officers of divisions and senior medical officers of brigades were the responsible sanitary advisers of the officers commanding divisions and brigades, while the chain was completed when it was stated that the medical officer attached to a regiment or other unit was the sanitary adviser of the officer commanding that regiment or unit. The regulations for the army medical services indicated the scope and aim of the sanitary duties which were directed to be carried out in connexion with troops in the field. The points dealt with in those regulations comprised sanitary inspectors of sites for camps and of buildings to be used as quarters, hospitals, or stables, examination into the sanitary condition of towns or villages about to be occupied and their neighbourhood, the care required in collecting, storing, purifying, and distributing water for drinking purposes, the position and regulation of latrines and slaughter-houses, the disposal of refuse, the burial of the dead, and the disposal of carcasses of animals. Daily sanitary inspections of camps were directed to be carried out. Recommendations were to be made, in writing if necessary, as to precautionary measures required for the prevention of disease. When any disease was unusually prevalent every effort was to be made to ascertain and, if possible, remove the cause, and a daily report of the progress or decline of the disease was to be continued so long as it might be necessary to do so. Those regulations also laid down that the principal medical officer of the field force was to be kept fully informed of the state of health of the troops and of the sanitary conditions of camps and other occupied places. The sanitary responsibility of the medical officer was entirely advisory in character. It was the duty of the Army Medical Service to detail the sanitary measures which should be adopted, but it was the duty of general officers commanding and of the officers commanding the various units in the field to take the executive steps to have the measures recommended carried out. With regard, therefore, to Major Freeman's point that the medical officer was seldom consulted when sites for camps were being selected, Major McCulloch said it would be observed, from what he had already said, that the matter was one which the regulations laid down he was to be consulted about, and when that was not done it was the medical officer's duty to represent the matter to the officer commanding the troops. In regard to the instruction of the regimental officer and the rank and file in the elements of sanitary knowledge, he wished to state that such steps were being taken. Lectures to the cadets at Sandhurst and Woolwich, who were to become their future officers, were now regularly given, while a more advanced course of lectures in military hygiene to officers at the Staff College was also provided. Specialist sanitary officers had been appointed for duty in England, and it was part of the duty of these officers to give special instruction in matters hygienic to officers, quartermasters, non-commissioned officers, and men.

Major Freeman said he had had the duty of giving lectures in elementary hygiene to the recruits at the R.G.A. Dépôt as laid down by Surgeon-General Evatt, and the results were certainly good both to the recruits and the N.C.O.'s. He understood that lectures would be given on hygiene by the Sanitary Officer at Colchester in the autumn, but he would urge the necessity of a single compulsory course of elementary hygiene for all quartermasters with an examination giving a certificate of efficiency which should be obtained before the quartermaster was eligible to take up his duties.

DUTIES OF A MEDICAL OFFICER WITH A REGIMENTAL UNIT IN THE FIELD.

By Major J. F. Donegan, R.A.M.C.

The distribution of medical officers in the field is, to say the least of it, a difficult problem and one which requires a great deal of thought and consideration. In the various returns which go in to higher authorities the allotment of these officers is referred to, and it is quite natural to suppose that a practical distribution may not appear to be a right one to officers far away in a high administrative capacity. For instance, suppose a medical officer with a force of two battalions of infantry, one regiment of cavalry, three batteries of artillery and details consisting of a bearer company and detachments A.S.C. According to the present system of mobilization there would be four regimental officers, one with each regiment and one with the R.F.A. If the S.M.O. were to show all four medical officers attached to the cavalry regiment, leaving the infantry and artillery without any, it is quite possible that his arrangements might be considered defective. From a practical point of view, however, they may be excellent, for the simple reason that the infantry and Royal artillery would always be in the vicinity of, and could be attended by, the bearer company, whereas the original regiment of cavalry may divide into squadrons and operate as such independently, and by this system each squadron would be provided for while detached, other arrangements being made in the event of their being formed into one unit. My point, therefore, is that the senior medical officer of a force should have power to utilize his medical officers as he thinks best, and to send them where they are wanted, instead of this present cast-iron allotment per regiment. I know there are many objections to this proposal, amongst others the comforts of the medical officer himself, who would naturally like to remain with the unit to which he was posted; but, on the other hand, the idea is to get the war over soon, to have the wounded attended to as quickly as possible; with these points in view, it is hard to arrange for the creature comforts of any one. The duties of a regimental medical officer in the field are as follows:

1. To be with his unit under fire in charge of regimental bearers.

2. To see the morning sick of his corps, and to send such

sick, other than those suffering from minor ailments, to the brigade field hospital.

3. To attend to the sanitation of the camp, as far as it pertains to his own unit.

Now, the first of these is, to my mind, the most important duty, therefore if the unit is not likely to be detached by itself it does not require a medical officer, as its sick could be seen by the nearest bearer company or field hospital, sanitation could be attended to by a brigade sanitary officer, and its actual wounded in the field could be looked after by the bearer company. My proposal is therefore the modified one as follows:—With an ample supply of medical officers when the establishment of bearer companies and field hospitals is complete, when casualties in either of these units are provided for, then to post to each unit a surplus medical officer on the understanding that his appointment is temporary and that he can be withdrawn the minute he is required elsewhere. As regards the equipment issued to these officers, it is at present excessive. Field panniers with operating cases are cumbersome, unnecessary, and useless, as assistance is always required before any operation can be done. As the hospitals or bearer companies are the places for operations there is no necessity for a single medical officer to carry regimentally the equipment necessary for amputation at the hip-joint, as the only thing he may ever have to do single-handed would be the ligature of an artery, and, perhaps, the relief of a strangulated hernia. If the present field panniers contain more than is necessary, the field companion (and its own companion the water bottle) is hardly enough. In my report on the 18th British Field Hospital in South Africa, I suggested that the regimental medical case should contain as follows: Modern tooth instruments, a surgeon's pocket case, some Spencer Wells forceps, retractors, tourniquets, ligatures in bottle, chloroform in capsules (as used by Boers), two waterproof sheets, two small dressing trays, some antiseptic tabloids, adhesive plaster, bandages and dressings, and syringes. For medical assistance the following may be added: Two thermometers, one aluminium stethoscope, one hypodermic syringe, with spare needles, a tabloid case of medicines, and a strong candle reading lamp, some spare bandages in waterproof bags, some surgical dressings, and some medical comforts would also be required.

These, then, conclude my remarks on the duties of a medical officer with a regiment in the field, and I have little doubt that they will lead to heated controversy.

Remarks on General Hospitals and Field Units.

When transport is not a question of vital importance, I consider that all that can be possibly done for the comforts of the sick and wounded should be done, the expense of so doing being quite a secondary consideration. Therefore I would place no restrictions on general hospitals at fixed bases, which cannot be shifted, such as seaport towns or embarkation stations. To such institutions the issue of permanent buildings, stone-floored operating rooms, and electric light are most suitable. I would suggest a base general hospital, which could never be moved in contrast to the ordinary general hospital, which may have to be shifted by rail to where it was more urgently required. In the former I would have everything; in the latter I would confine their housing to tents, and not allow electric light, permanent buildings, or anything that could not be shifted by rail and re-erected within two months. I do not for a moment propose that a general hospital should be equipped so that it could march at short notice, but still with some semblance of mobility and unlimited rail transport it may on occasions be brought within a hundred miles of active operations as absolutely immobile; it is likely with altered depositions of troops to be so far away from field operations that it becomes little more or less than a convalescent dépôt. A good example of my contention was the Mooi River General Hospital in South Africa. It was a splendid institution, with everything that a hospital could require. It was of paramount importance when fighting was confined to the Tugela Heights, but when the scene of operations shifted to the Devil's Knuckles (in the very north of the Transvaal), as can be understood, only those who were quite convalescent were able to stand the long railway journey, lasting days; therefore they arrived at the Mooi River almost cured. My contention is that if the Mooi River Hospital could have been moved it would have been of more use, and convalescent patients could have been accommodated in a far less elaborate institution. As regards the issue of drugs and appliances in a campaign, I consider that general and stationary hospitals should have everything which they require in any hospital in peace, provided that they can be moved by rail. When it comes to a consideration of requirements for the field, I am of the opinion that everything should be sacrificed to mobility. The equipment of the 18th British Field Hospital, which I commanded throughout the South African war, was divided into sections, and every section had the same equipment, which meant that there were four of everything. It was based on the idea that it could subdivide into four hospitals if necessary. The unit was a bearer company and hospital combined, so it carried in the field an enormous amount of requirements that were necessary to a hospital, but quite useless while it was continually trekking. In a rough and ready way I divide the equipment into three scales:

1. Ordinary equipment, which consisted of the hospital as it stood.

2. Modified equipment. This consisted of a practical reduction, leaving behind what did not appear to be urgently required.

3. Emergency equipment.

This was based on the idea that the question of reduced transport was of vital importance. With a few mules and horses we were able to manage, helped by hand transport by the natives. I think that this system could be introduced into all our field units. If a unit working with its modified or emergency equipment were expected to act as a hospital, it could have its requirements always forwarded to the nearest base under charge of a N.C.O., so that it could be collected at short notice. At present, in practice, we find that a general frequently says that a hospital transport must be reduced. Public opinion or perhaps the G.O.C. at a later date makes no allowances for this reduction, but expects the hospital to be just as capable and efficient as it was before the reduction of the transport was ordered. If, on the other hand, the commander ordered the medical unit to move on its modified or emergency scale he would have to make the same allowances as he would in the question of artillery if he left his heavy guns behind. He cannot expect field artillery to fire beyond its range, no more than he could expect a "Long Tom" drawn by oxen to gallop into position. Unfortunately anything calling itself a hospital in the field is supposed to combine both mobility and range, if I may use the expression. Our range after all is the range of possibility, and we should not be expected to operate outside of it as we are at present. It could never be the case if those in higher authority laid down the scale dividing it into ordinary modified and emergency allowances.

As regards medicines in the field, I consider that they should be all in tabloid form. Chloroform, the only liquid necessary, could be carried in capsules, each holding about 2 drachms. Glass bottles should be removed and replaced by tin or aluminium boxes; considerably more room should be given for packing in the equipment. It is one thing to put all the contents of a field pannier in its proper place in a medical store, but it is more difficult to do so in a retirement at night in the dark, surrounded by stampeding mules irritated by shell fire. These appliances would never have been made, as they are, consisting of so many nooks and crannies, if they were packed and equipped under conditions in which they are so frequently used. The removal of the capital case from the field pannier would provide room for spare articles.

I invented a field operating table some time ago. It is durable, simple in its construction, strong, portable, and with it are carried the present capital case, field sterilizer, also waterproof sheet and chloroform. Its legs are formed by equipment boxes, which are always available, and its exact weight with all equipment is 70 lb., half a mule load. Without equipment the table weighs 39 lb. It has the advantage of having all surgical appliances for an operation in one place, thereby obviating the necessity of looking in numerous boxes for essentials; its use also sets free spaces in the field panniers. This table has since been improved on; elevation which is not necessary has been sacrificed to a sliding plane, whereby chances of septic infection are reduced.

First Field Dressings.

I attach the greatest importance to first field dressings. On many occasions in modern war, on account of decentralization, a wounded soldier must rely on his own field dressing and the assistance of a comrade for primary aid, as it is impossible to provide a medical officer for advance scouts. At present the field dressing is supposed to be carried in a small pocket in the khaki jacket. In its position it causes annoy-

ance by bumping against the groin, and as the pocket in the coat is sewn with single machine stitch, when ripped at the upper border to allow of the introduction of the first field dressing it goes on ripping automatically, with the result that the first field dressing disappears. In South Africa during the heat of the day mounted men frequently took off their coats and, strapping them to their saddles, left their horses under cover and went into action, of course devoid of first field dressings. I do not think I have ever seen a man similarly situated who had sufficient forethought to remove his first field dressing from his coat and sew it up in his trousers or shirt. At present the first field dressing is, so to speak, no one's child except the medical officer's. As the fighting soldier does not care much about the offspring of the doctor the dressing is used for every conceivable purpose otherwise than as it was intended. I have seen it used as a handkerchief, a necktie, for patching clothes, as a stirrup leather, and I once was struck by hearing a warrior who was busily engaged loading frying-pans and other household articles on his weary charger remark to his comrade: "It's well I have my first field dressing, otherwise we could not tie on the things." Men cannot be made to understand the importance of being in possession of the dressing situated as it is, and, if annoyed by frequent inspections, they will remove it and pack the pocket in their coat with straw. This is also frequently done if the dressing happens to have been accidentally soiled in the act of micturition. My idea is to make the dressing part and parcel of the bandolier, and properly sealed up. It can be carried in a small pocket, which does not look unsightly, and it can in no way interfere with the comfort or efficiency of the wearer of the bandolier. My contention is that if the dressing is attached to the bandolier the British soldier will treat it with the respect due to a round of ammunition, which he never will do so long as it is sewn into his clothes. As far as the composition of the dressing goes, I would replace the present waterproof covering by lead foil. The pins may also be removed, as in time they rust and tell the age of the dressing as the teeth do that of a horse. When used by ignorant men they are frequently left on the pad gauze and clapped up to a wound, being covered with the waterproof sheet, making a kind of rusty pin poultice, which is not the desirable dressing for a healthy wound.

Remarks on Ambulance Arrangements in the Field.

Many opinions have been put forward regarding the different pattern of ambulance wagons, and efforts have been made to combine comfort, durability, and mobility. As far as I can see, all efforts to produce a suitable article have failed. As we have two classes of guns, so we must have two varieties of ambulance. A strong light article which can go anywhere when drawn by one horse, such as a strongly-made McCormack's stretcher. This wagon would simply be for use in the field and for getting wounded out of awkward positions. Pattern 2, or road ambulance, may be a motor car. It should be constructed on the understanding that it is for use on roads only, and that it is not expected to jump dongas. It should be capable of carrying as many as possible, and should be fitted with rubber tyres and everything suited for carrying lying down wounded, for days on end, with as little jolting as possible. Durability, lightness, and mobility should be subservient to comfort, whereas in Class 1 all ideas as to comfort must be sacrificed to mobility and durability. There is yet another matter to be considered with reference to medical transport. All transport in the field is divided into first and second lines. The first line, which consists of ammunition wagons for infantry and equipment wagons for R.E., is under the O C. of the unit.

All other transport wagons which convey men's kits and rations are under the orders of the Brigade Transport Officer. During the South African war ambulance wagons and wagons for medical equipment were ordered to be second line instead of first. This order, I may add, was never complied with in my brigade, with the approval of my G.O.C.

The A.S.C. contention is that they are in charge of transport, and that the medical officers are in charge of the sick and wounded. Make ambulance transport second line, and it is the Brigade Transport Officer, and not the S.M.O., who issues orders relative to it. The former officer would be quite within his right to refuse to permit an ambulance wagon to leave the column. He would have full power to take the healthy mules out of ambulance wagons, and distribute them amongst the brigade, replacing them by weakly animals hardly able to walk, with the result that the wagons so horsed cause misery to the inmates, delay to the column, and usually end in abusive letters to the papers regarding the inefficiency of the R.A.M.C.

Transport to a fighting unit means conveyance of baggage, kits, and rations; provided that these articles are not immediately required the unit is still effective. On the other hand, transport to a medical unit means everything, as without it it is powerless to be of the slightest assistance. Divided authority usually causes disputes, and the fact of having the medical transport under the Brigade Transport Officer, probably a captain (while the O.C. Bearer Company not below the rank of a major), is bound to lead to friction. My point therefore is that all ambulance wagons and medical equipment wagons should be directly under the orders of a medical officer, therefore first line, and that the wagons used for the conveyance of rations and kits of medical units should be, like all other regimental transport, under the Brigade Transport Officer, therefore second line.

ON STERILIZATION OF INFECTIVE DISCHARGES AND UTENSILS ON FIELD SERVICE.

By Lieutenant-Colonel A. M. Davies,
Royal Army Medical Corps.

The best mode of dealing with infective discharges, when on active service in the field, will probably vary according to circumstances; it will not be advisable to lay down one hard-and-fast rule to be of universal application. The four following methods are the only ones that are likely to be carried out in practice:

1. Burial in earth, either in deep or shallow trenches.
2. Treatment with disinfectants, followed by burial.
3. Sterilization by moist heat, followed by burial.
4. Destruction by fire—that is, incineration.

(1) Burial in shallow trenches (less than 24 in. in depth) is better than scattering the dejecta about on the surface of the ground, but is not to be recommended if it can possibly be helped. Burial in deep trenches (over 2 ft.) is not so likely to pollute the air, but will pollute the soil quite as much as burial in shallow trenches; indeed more so, and for a longer time; this, also, is not to be recommended.

(2) Treatment with disinfectants, and then burial, lessens the risk of polluting the soil and air; but it is difficult to ensure their thorough application to solid excreta, and the length of time required for the complete action of moist disinfectants (necessitating the retention of the excreta for perhaps some hours) causes great practical inconvenience. Although better than simple burial, this method is not to be recommended if it can be helped.

(3) Sterilization by moist heat—that is, boiling—is undoubtedly efficient. All pathogenic bacteria that come under practical consideration are entirely destroyed by a temperature short of boiling. Solid and liquid excreta, infected ablution water, utensils of all kinds that have been fouled (bedpans, urinals, spitcups, etc.)—in short, everything that is infective can be rendered innocuous by this method. Two points are to be borne in mind: (1) the quantity of fuel required is large; and (2) the material disinfected (or at any rate a considerable proportion of it) remains to be disposed of, by burial or otherwise.

(4) Destruction in a furnace, that is, incineration, also requires a considerable quantity of fuel; but the offensive matters are rapidly and completely destroyed, leaving nothing that needs to be removed for burial. This method is equally as efficient as the last mentioned, so far as it goes; and the choice between the two resolves itself into a comparison of (*a*) quantity of fuel required, (*b*) extent of applicability or degree of usefulness, and (*c*) ease and inoffensiveness of working in each case.

(*a*) The quantity of fuel required should be less in the case of a destructor or incinerator than in the case of a boiler, because dry rubbish of all kinds can be used as fuel for a destructor. The saving of fuel is, however, not so great as might be expected, because (1) the temperature to be attained in a boiler is only 212° F. (=100° C.) at the most, while in a destructor a temperature of at least 850° F. (=450° C.) must be reached in order to actually burn up the material. (2) The presence of even a small quantity of moisture in the substances to be burned adds largely to the quantity of heat required (that is, fuel necessary); for, whereas to raise a pound of water from the ordinary temperature (say 15° C.) to boiling temperature (100.0° C.) requires 100−15=85 units of heat, to

convert that pound of boiling water into steam (which, of course, is a necessary preliminary to incineration) requires 537 units of heat, making a total of 85+537=622 units of heat. (3) If incineration is attempted, the high temperature must be maintained until everything is burned up, which in practice leads to the consumption of a great deal of fuel, much more than the theoretical quantity required; in the case of boiling when the temperature is once reached, a very small amount of fuel is required to maintain any given quantity of water at that temperature. From these considerations it appears that the saving of fuel would be slight, if any, in the case of incineration.

(*b*) As regards extent of applicability, or degree of usefulness:—Boiling renders harmless (1) all infective discharges of whatever description, liquid or solid; (2) infected ablution water; (3) infective utensils; but it does not deal with (4) ordinary non-infective excreta; nor with (5) rubbish or dry refuse; and (6) the infected discharges and ablution water remain (after disinfection) to be taken away and buried, or otherwise disposed of. A considerable proportion, however, of the fluid is got rid of in the form of steam.

Incineration destroys (1) all rubbish and dry refuse matter; (2) solid excreta, both infective and ordinary; and (3) some proportion of the liquid excreta (the amount depending on the size of the apparatus); but it does not deal with (4) infective liquid discharges, urine, etc. (if large in amount); nor with (5) infected ablution water; nor (6) infected utensils.

Ablution water and slops must, however, necessarily be removed from the immediate neighbourhood of a properly-managed hospital, in any case; and it is certainly better that they should be removed in a disinfected than in an infective condition. It is true that liquid disinfectants might be used to render them innocuous: but disinfection by heat is safer, and where fuel is procurable is to be preferred. The same may be said in regard to utensils. Assuming, then, that liquid sulliage has to be removed in any case, the additional bulk of material to be removed if boiling be the method adopted (that is, solid excreta that would otherwise have been incinerated) is practically negligible. There remain the cost and labour of removing rubbish and dry refuse, and ordinary non-infective solid excreta; this has to be set against the cost and labour of their incineration.

(*c*) As regards ease and inoffensiveness of working: Indian experience is unfavourable to the use of incinerators for destruction of excreta: very numerous patterns have been tried during the last fifteen years, and in no case has a thoroughly satisfactory result been obtained. In South Africa, however, they were used with success in many instances. But the preponderance of medical opinion, derived from South African experience, appears to be in favour of boiling as compared with incineration.

In circumstances where fuel is scarce, any form of heat disinfection may be impracticable; in such cases, deep burial, after treatment with chemical disinfectants, is to be recommended for infective discharges, etc. But if fuel is available, moist heat (that is, boiling) appears to be, on the whole, preferable to dry heat (that is, incineration).

The apparatus that has been devised by Major H. A. Cummins, C.M.G., R.A.M.C., for disinfecting excreta and utensils by boiling, is convenient in form, portable, and easily worked. There is no smell during the process of disinfection. It is estimated to be capable of dealing with the excreta, slops, and bedpans of about 100 acute cases of enteric fever during the twenty-four hours. Its weight is 2 cwt. 3 qr. 24 lb. (say 3 cwt.), and its over-all dimensions are 3 ft. 6 in. by 4 ft. 9 in. Experiments have shown that in ordinary weather about 50 lb. or 60 lb. of coal suffices for a working day of eight hours; in windy weather about 80 lb. of coal is required. Wood or other fuel may also be used.

THE RECRUITING PROBLEM.

By Major W. C. Beevor, M.B., C.M.G.

The vital importance to Britain as a nation of an adequate supply of recruits for her army has at last roused the country to some degree of energy; but as scheme after scheme is propounded, each goes the way of all subjects which do not attract public excitement. Charities of every description are written up, responded to, and lavished with money, though little common sense is called into play to contract the areas of the human rôle which render charity necessary. One channel through which much of the charity supply might be deflected is Government employ. Already great strides have been made in this direction by those presiding over civil institutions, such as the postal and telegraph services, but practically no scheme has been carried out with regard to the army. A certain number of our population are rescued from degeneration by being enlisted as boys. The best of all organizations of this type is that of the Royal Navy and Royal regiment of artillery; the latter takes boys and trains them for its varied requirements. It appears to have escaped the observation of responsible authorities that other branches of the army might with advantage to the country, the army, and the recruiting classes of the community, absorb vast numbers of the young members of our poorer population—train them to become fine men, a credit to their country, and an example of rescue from our charity-fold. No one will deny that more than half of the young reared in the circle of our labouring population cannot be properly fed and educated on the earnings of their parents. What happens? Vast numbers of boys degenerate, both mentally and physically, and are thrown on charity—an encumbrance to the nation, a danger to our high-class civilization, and a burden to their parents.

It is with a view to alleviate this evil that I venture to bring before this meeting of thinking men a scheme whereby our army may be of widespread utility. The navy has from its start done so—why not the army? My scheme is that boys should be enlisted at the age of 14 years and upwards—each military unit to have its own cadet company—its members to be developed into manhood under a system of good feeding, sound education, and discipline. As they grow each will pay back his country's outlay by performing work which is now done by grown-up men on high pay.

The financial aspect, I am aware, is the point on which my scheme will be called in question; let me, therefore, discuss it first. There are many thousands of boys in this country whose parents are unable to culture either their minds or bodies—especially at the critical age of 14. If, however, they knew that a certain standard of each would ensure their being accepted as cadets in the army, much care would be bestowed with this object in view—more especially if they felt sure their offspring would be brought up with care, to learn trades, and that all-important element of a good man's character, discipline. This would relieve many poor people of financial responsibility which at present brings them on the poor-rates; hence the country would save large sums in this direction. Many Government schools would be relieved also, and, to come to the army estimates, I consider they would be decreased rather than burdened by cadet companies.

The most important item saved would be that now expended on useless recruits, and those invalided after short periods of service. Then, barrack expenditure on engineering, construction, and renovating could be greatly diminished by the cadet company performing duties now paid for by the State to outside contractors. Further, a boy 15, 16, and 17 years of age should be able to cook food, groom a horse, clean harness, guns, etc., manufacture details of barrack buildings, repair surgical instruments, splints, bandages, etc., and perform many of the fatigues that are at present done by our fully-developed soldiers or by civilian contractors. The cadets would thereby relieve the soldiers of numberless little duties, which under our present system interfere with their professional training. As at present constituted, the scientific soldier's curriculum is too short to make him efficient, and any arrangement whereby he might be relieved of some of his numerous fatigues would allow time for his more serious and useful studies.

No man is properly trained as a soldier in any mounted corps until he can shoe a horse and mend his own saddlery—if, then, they were brought up from boyhood in a cadet company, ample time would have been allowed for the attainment of such a standard.

The Royal Engineers could extend their utility in many ways, provided they had companies of lads in training upon whom they might call for carrying out the many constructive requirements in barracks, camps, and other stations. The Army Service Corps might raise a splendid class of men; adepts in the selection and preservation of the soldier's food, in book-keeping, in horse and general transport management. Not that this splendid corps is already unprovided with such men, but any one with experience in war or peace manœuvres will agree that it is greatly undermanned.

The Royal Army Medical Corps would be able to increase its efficiency to an almost incalculable degree if it had young lads to train for its various branches. Cadet companies of

this corps might save the State large sums in the manufacture of surgical appliances alone, and be of immense use to medical officers, by the construction of splints, instruments, etc. A workshop in each hospital or station, which we could depend upon for renovating instruments, would be a great comfort. That all-important question of hospital laundry work would be settled satisfactorily if each institution had its own laundry, and the work done, under supervision, by cadets. Think for a moment how beneficial it would be if each field hospital on active service had a portable workshop and laundry, to which the medical officers could send damaged instruments for immediate renovation, could fly with confidence for the manufacture of the many patterns of splints, and where hospital linen could be antiseptically washed. I maintain the State would save vast sums of money on this item alone; for thousands of sheets, blankets, instruments, bandages, etc., have at present to be destroyed on active service, for want of proper means of renovating them. As the cadets of this corps advanced in years, would they not make more efficient nurses and assistants, than those enlisted, at 18 years and upwards, from the ranks of our civil population, the majority of whom are imperfectly educated, and have to learn the elements of discipline before they can be taught these technical details upon which so often hangs the comfort, yea, the life, of sick and wounded soldiers?

A relation of mine in the General Post Office informed me that the army might obtain some grand material from the telegragh and messenger boys, and a lifelong experience in large racing stables convinces me that we lose many hundreds of splendid soldiers by refusing the boys, who either get too heavy for their special occupation or get into trouble, necessitating their discharge. Foreign lands and the Colonies year by year deprive our army of many good lads because their parents cannot maintain them until reaching the enlisting age of 18 years, and *pari passu* physical degeneration marches to the same defect. We do not make the best of our young manhood. Contrast batches of British manhood, aged from 18 to 20 years, drawn without special selection from our navy, with a similar number of our civil population equal in age, who congregate at our recruiting centres with the object of serving their country as soldiers. It is needless to compare details—the distinction is too obvious.

A member of our navy at the age of 18 is a man. From all time he has earned the name of "the handy man," a standard merely the outcome of education and good food. He has probably seen other lands and peoples, contrasted his own with the physical and mental state of others, and thereby found his level. Who would venture to say as much for the civil unit of equal age who is enlisted in the army? My object, therefore, is to raise the one to the standard of the other.

A class of men much wanted in our army is the young officer bred and reared to the profession of arms; but I much regret to say the British public seem to take very little interest in him—except when opportunity offers to join in a popular howl against his extravagant mode of life. Much better might their time and interest be employed in devising schemes for recruiting the commissioned ranks of the services upon which the trade and life of this country depend. It has always occurred to me that a slur is cast upon a people so justly praised for their charity when one hears almost daily of sad struggles for existence amongst the relicts of brave men, who have served and perchance died in maintaining the commercial existence of those who appear to be oblivious of this national responsibility. I say the army loses hundreds of splendid officers yearly because their parents are financially unable to educate them, or set them up in the army. They drift to the Colonies and foreign lands. So far, our much boasted army reform seems to me to have failed signally in making a "profession" of its existence, so far as the officer is concerned. Millions of money are given annually to educate and train up the children of the so-called labouring classes to the level of the so-called higher classes of English society—and scarcely a penny subscribed to maintain the children of those higher classes in the position in which they were born. No better examples than the army and navy—thousands of children of officers, their widows, or orphans, are supposed to be nurtured on the most slender means, in some cases officers' widows on a pension of Rs.250 to Rs.300 a month are cast upon charity; and their boys, born soldiers and sailors, lost to the services through inability of their parents to educate them; and blatant neglect on the part of those who perchance owe their very riches to the conditions of war, climate, etc., which have brought about the financial downfall of one of our staunchest classes. I say, gentlemen, such things should not be—and I humbly throw out a suggestion to my country to take seriously in hand the large class of officers' sons who are lost to us through inexcusable neglect. It is not so in other countries—where indeed do you see the national disgrace of the sons of distinguished soldiers and sailors cast upon charity? I know the reply will be that officers' cadet schools are only required where conscription is in vogue. I refute this argument, and maintain that the boys of all officers who have deserved well of their country should be brought up for the Services by the country, where definite proof is given of the parents' inability to do so. I wrote upon the subject of rescuing our young manhood, by enlisting boys in the army, last year; and some seem to have taken it that I suggested clearing out our poor homes and reformatories. Not at all—that system has failed in days gone by. The rescue I suggest is from the poorer classes of our population, be they free, or be they thrown upon charity.

Deputy-Inspector-General T. J. Preston, R.N., said in regard to the raising of soldier boys that parents should consent to entry at 14 years of age, and subsequently, after 18, to twelve years' continuous service. Boys should be removed from home surroundings and companions to definite army schools, wherein their general education should be continued and drills taught. He thought it was essential that the boys should thoroughly understand that they were to be trained as soldiers, and that such was to be their calling for life.

Surgeon-General Evatt said he objected to boys being taken in to train for soldiers, and considered that proper inducements should be given to encourage better recruits to join the service. He spoke of the boys in the navy being flogged.

Surgeon-Major G. A. Hutton said that this was a very large and costly question, so costly, indeed, that he was afraid it could not be carried out, but if it were entertained the only plan was to follow the same rules as obtained in the Royal Navy—the rules that had just been told to them by Deputy-Inspector-General Preston. Then, with regard to the remarks made by Surgeon-General Evatt, that the boys in the Royal Navy were not well treated—subject to flogging, etc.—he entirely disagreed. He believed those boys were generally very well treated, and he was quite sure that if there should be any ill-treatment public opinion was such in their country that that would soon be remedied.

Major R. C. Lever said the problem was how to get men. How would they themselves like to enlist for three years with the colours and join the Reserve and find at the end of that time it was difficult to get work. Every day they met with men on the Reserve unable to obtain work. He thought they should offer the same inducements as in civil life—permanent employment; or men might enlist if at the end of a period of years a pension were given.

Mr. G. S. Pope (Middlesbrough) said he was much interested in the paper, and the point he would like to take up was that the last speakers seemed to imply that the general civil authorities did not employ discharged sailors and soldiers. That he would like to deny, as he had for years endeavoured to employ those men; but his experience had been most unfortunate. Trained to discipline, he found them peculiarly restive under discipline; they were unfortunately unsteady, frequently immoral, and broke leave. He had employed in the last seven years seventeen soldiers and sailors, and he regretted that most of them had had to be discharged. He had found marines more satisfactory.

Major Beevor said he wished to thank so many gentlemen for contributing such valuable information for and against his scheme. It would take too much time to reply to all in detail. In regard to Colonel Wilson's objection to cadet battalions, he agreed with him; cadet battalions he did not propose, merely cadet companies of each unit. Increased barrack accommodation would not be necessary—at present they were very short—they would have room for many cadet companies. To Deputy-Inspector-General Preston he owed many thanks for his complimentary remarks; his statement that the best men came from the neighbourhood of London confirmed his (Major Beevor's) contention that young boys from the labouring classes would give them the best men. He objected to their cadets doing fatigues, but some one must do them. He could not see why such employment would interfere materially with the soldier-

like education of the cadets, and most fatigues were part of any soldier's professional career. Surgeon-General Evatt's dream of a national army was undoubtedly fine, but he feared it would never appeal to the British public, even so he opined that the parents would the more readily enter their boys for cadet education. He must say he did not think that would of necessity constitute a "class" army. A national army would be too expensive: they had had an example of it in South Africa. Each man was paid five shillings a day. It was equivalent in America. But he had read several works on the American army, and one and all complained that the semi-volunteer national soldier was the most unsatisfactory to deal with. He had seen some himself in South Africa, splendid fellows, but wanting in experience necessary for the maintenance of discipline and that useful knowledge of camp conservancy, etc.

(To be continued.)

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

Section of Medicine.

Thursday, July 28th.

On the second day of the meeting of the Section Professor William Osler introduced a discussion on the Treatment of Tuberculous Pleural Effusion and Pneumothorax. After shortly discussing the question of diagnosis and saying that in the absence of evidence in any case of pleurisy of a pneumonic or pyogenic origin it should be assumed, for the purposes of treatment, that it was tuberculous, he grouped his remarks under three heads: The value of early and repeated aspiration in acute cases; drug treatment, whether or not ever useful; and the local and general treatment of the condition. Of 22 cases recently under his care, 20 were treated by tapping; of these, 5 were chronic, 4 being discharged much improved, and 15 acute, all being discharged cured. The removal of fluid seemed to be in some cases directly curative, the fever at once falling. The greatest difficulty in the chronic cases was from the reaccumulation of fluid. He knew of no drugs that helped absorption, but blistering might. After the fever had fallen, respiratory exercises should be commenced and persevered in. After recovery from the attack the patient should be subjected to careful and prolonged general treatment. The treatment of pneumothorax was unsatisfactory from the associated lung conditions; if large it was better left alone; if acute and suffocative it should at once be operated on by incision of the trocar. If pus were present and the tubercle limited to one lung, resection of the rib might be done. Dr. George Gibson recommended in certain obstinate cases the use of tuberculin injections. In sudden pneumothorax recovery almost always occurred. Mr. Stanley Boyd advocated operation in the acute cases and for those occurring in the course of early phthisis not only occasional aspiration, but the open-air treatment, and in some cases an early, slow, persistent drainage. The danger of the method was that of establishing a pyothorax. Dr. Samuel West said that the aspirator was a dangerous instrument, the rapid removal of fluid might lead directly to rupture of the lung. Early paracentesis was not, in his experience, of special value as compared with late. Tuberculous empyemata had a worse prognosis than others, but they might be treated on general principles, washing out the chest freely if necessary. The routine incision of a portion of a rib was not necessary. The state of the cavity should be frequently ascertained by the probe. Erlander's operation was a dangerous one, and any modification of it an absurdity. If air alone were present, it might be left. If pus were present it should be removed, the side being washed out and treated on general lines. Dr. Nathan Raw advocated aspiration, and objected to incision from the risk of sepsis. Dr. R. W. Philip recommended the open-air treatment as a preventive of pleurisy in phthisis, and alluded to the good effect of diet, and especially raw meat, on it. Early tapping, little drug treatment, and careful after-care were the chief indications. Dr. T. D. Acland thought the difficulty came in when the fluid was purulent. If, in tuberculous cases, the process was chronic, and fluid small in amount, they should be left alone; but if pus were present as a part of a local but not a general tuberculosis, it should be removed. It was a good plan to substitute a mild antiseptic fluid for the pus withdrawn; also to aspirate the fluid and remove portions of the ribs, so as to allow the chest wall to fall in without opening the pleural cavity. Dr. Barr described his method of injecting sterilized air into the pleura after the fluid had been siphoned off. Dr. J. E. Squire thought that instances of danger from sudden pneumothorax were rare. After Professor Osler had replied, Dr. Nathan Raw read a paper on Human and Bovine Tuberculosis, in which he argued for the occurrence of both infections in the human subject, in the form of phthisis due to human tubercle in the adult, and in tuberclosis of bone and glands in children due to the ingestion of bovine tubercle in milk. Dr. Mitchell Stevens read a paper on the Clinical Features of Splenic Anaemia, and Mr. Hastings Gilford gave a Demonstration on Ateleiosis.

Friday, July 29th.

The first papers of the third meeting of the Section were on the Maternal Heart in Pregnancy and the Management of Cases of Pregnancy Complicated by Heart Disease, and were communicated by Dr. J. Mackenzie and Dr. H. O. Nicholson. Abstracts of them have already been published (Supplement, July 9th, 1904 p. 20). They were discussed by Dr. G. A. Gibson and Dr. Barr. A paper on Bradycardia was read by Dr. G. A. Gibson and discussed by Dr. Tyson. Dr. E. Goodall then opened a discussion on the Serum Treatment of Disease, limiting his remarks to antitoxic and antimicrobic serums in intoxications and infections respectively. An historical account was given of the serum treatment of the less amenable diseases, such as tuberculosis, pneumonia, anthrax, and shortly discussed, and of the more amenable diseases, which was dealt with in greater detail. In regard to diphtheria, the favourable experience of the Metropolitan Asylums Board's Fever Hospitals was advanced, showing a reduction of case mortality from an approximate maximum of 59 per cent. before the method was introduced to one of 9 6 per cent. last year. The increase in the number of paralysis cases was shown to correspond with the saving of patients who previously would probably have died. In regard to tetanus it was showed that the spasms were a late effect and comparable with the paralysis of diphtheria. Statistics indicated that every case should be treated with antitoxin, but the outlook was not hopeful. Reference was made to the serum treatment of snake-bite, hay fever, plague, typhoid fever, and the results shown to be encouraging if nothing more. Antistreptococcus serum was not likely to do any good in sapraemic cases, or in microbic cases other than those due to streptococci, and not in these unless from a particular strain. Allusion was made to the prophylactic use of serums, dosage, standardization and to the untoward effects of serum treatment, although it was maintained that there were no absolute contraindications. Professor C. J. Martin referred to Sir Thomas Fraser's experiments with antivenene, and confirmed them in regard to the observation that three times the amount of antivenene needed to produce neutralization *in vitro* was required when the poison and antidote were injected in different parts of the body, but only the same amount if injected into a vein. The rule he drew from this, which showed slow absorption of the antidote, was that if there were need for hurry in treatment the serum should be injected intravenously. Dr. F. F. Caiger discussed the whole subject of the antitoxin treatment of diphtheria in relation to his own experience. The untoward effects had no relation to antitoxic efficacy. Dr. Bulloch gave a classification of the known facts as to the mode of action of the different varieties of antitoxins. In regard to those microbic diseases in which an immune body and a complement were needed for protection—as those due to the pyogenic cocci—it was held that not only were serums unlikely to be of benefit but that they might even be harmful, in the way that immune bodies might be taken up by added complement, leaving the bacteria themselves unacted upon. The method for the future was probably that of vaccination for the different bacteria, so that the human subject might manufacture its own antitoxins.

Section of Surgery.

Thursday, July 28th.

Professor Bland-Sutton opened a discussion on Hysterectomy. The operation was called for in carcinoma of the uterus, in deciduoma malignum, and certain cases of tubal carcinoma, in sarcoma, and for fibroids under certain circumstances. In the latter condition it was called for when haemorrhage was profuse and persistent, when impaction in the pelvis was caused by the growths, when they were of rapid growth, and in certain circumstances in connexion with pregnancy. Generally speaking, he preferred supra-

vaginal amputation to panhysterectomy. Enucleation of fibroids was only possible in about 10 per cent. of cases, and sometimes it was a more dangerous operation than hysterectomy, and it gave no assurance against recurrence. Enucleation appeared to be indicated particularly in young women, but in over a hundred of such cases in his practice only four subsequently became mothers. In panhysterectomy the risk to the ureters was considerable; this was avoided by the supravaginal operation; but he followed no fixed rule, and adapted his procedure to the requirements of each case. In the supravaginal operation the stump must always be carefully examined. Other conditions for which hysterectomy was sometimes proper treatment were diffuse adenomyoma, uterine fibrosis, ectopic pregnancy, pyosalpinx where the uterus was septic, and perhaps puerperal septicaemia. Mr. Alban Doran read a case of successful removal of a large fibro-myoma of the mesentery; he had collected the histories of 13 cases, the mortality of which had been four. Mr. Cuthbert Lockyer narrated 2 cases of panhysterectomy for fibroids; the first was operated on two years after myomectomy. Dr. Shaw Mackenzie considered that many fibroids of the uterus were harmless and many yielded to medicinal treatment. He had obtained success with iodipin and also with benzoate of mercury. Mr Bowreman Jessett was able to record 177 cases of hysterectomy, for carcinoma, 5 of these were alive after a period of five years and 12 others were at present free, but had been operated on more recently. He preferred supravaginal hysterectomy, but performed panhysterectomy in some cases; he thought he had seen some cases of fibroid which had proceeded to sarcoma. Dr. Galabin thought it impossible to successfully remove all the glands along the iliac vessels. Where the vagina was narrow an incision in the ischio-rectal fossa was useful. Dr. Murdoch Cameron did not think that it had been shown that fibroids could be cured by drugs or electrolysis. He agreed as to the advantages of the supravaginal operation. Mrs. Stanley Boyd thought that by the abdominal method a more satisfactory removal was possible in carcinoma, and that this route was that likely to be followed in the future. Mrs. Scharlieb did not think the risks of panhysterectomy were appreciably greater than those of supravaginal amputation. Mr. Bland-Sutton replied. Mr. R. A. Bickersteth read a paper on Intravesical Separation of the Urines. He exhibited the two instruments of Luys and Cathelin and explained their mechanism. He gave his experience of the use of Luys's instrument, which he had found quite reliable. He considered that on account of the ease and simplicity of the method and the amount of information obtained it promised to be of great use and value. Dr. Blair suggested that in Luys's instrument the chain might interfere with its withdrawal. Mr. Bickersteth pointed out that no instance of the occurrence of this accident was on record. Mr. A. H. Tubby narrated a case of Paralysis of the Serratus Magnus, probably due to anterior poliomyelitis, in which he had grafted part of the pectoralis major on to the paralysed muscle with satisfactory functional results. The Section reassembled at the Radcliffe Infirmary at 3 p.m. Mr. W. H. Brown showed a series of patients operated on by plastic methods for the relief of deformities due to burns. Mr. H. Stiles read a paper on the Operation Treatment of Hernia in Infants based on 360 cases. He employed a simple method, and did not consider Bassini's operation suitable for infants. He found no difficulty in isolating the sac; two sutures of catgut were sufficient to close the sac. In the after-treatment he used no dressing except boracic powder, fixed the child in bed with the legs abducted, and found this the best safeguard against soiling of the wound. He considered the worsted truss useless, and thought that operation should always be recommended in preference to truss treatment provided the general condition was satisfactory. Mr. McAdam Eccles used trusses in some cases temporarily, where there were difficulties in the child's diet. Dr. Barnet thought that truss treatment could not be entirely given up; he found the wool truss useful, with the addition of a sponge. Mr. Mitchell agreed that the important element in the operation was the closure of the sac, and no elaborate method was necessary. Dr. Campbell thought truss treatment was useless. Mr. R. C. Lucas read a paper on Two Cases of Renal Calculus, in which *x* rays failed to indicate the presence of stone. In the one case a single small stone was present, and all the usual clinical signs were detected; in the second case a large branched phosphatic calculus was found; the first patient was stout, the second spare. Mr. Morton mentioned two cases—one renal, the other ureteral—in which the skiagraphic examination was negative. Mr. Jalland and Dr. Snow also discussed the subject. Mr. R. Kennedy read papers on the remote results of 100 operations for the radical cure of hernia, and the remote results of the operative treatment of varicose veins of the lower extremity. In regard to the hernia operations he described a method in which the inguinal canal was closed without slitting the external oblique. Of varicose veins he advocated extensive and radical removal. Mr. Mitchell employed multiple incisions. Mr. Stiles and Mr. Clement Lucas agreed with Mr. Kennedy that the failures of the operation were due to insufficient removal. Dr. Herbert Snow read a paper entitled Cancer Facts and Fallacies. He considered that there was much unnecessary confusion about this disease, and that an attempt should be made to distinguish and classify its different forms.

Friday, July 29th.

Professor J. Deaver read a paper on Hepatic Drainage. He considered it proved that ascending inflammatory processes did not account for all biliary infections, but that many originated by way of the portal circulation. The time for operation on gall stones was as soon as it was definitely known that they were present. Cholecystectomy should be looked on as an operation of necessity for gangrene, carcinoma, and chronic cystic duct obstruction; in all acute inflammations of the bladder cholecystostomy was the proper procedure, and prolonged drainage of the bladder was the salvation of the infective cases. Mr. Jordan Lloyd said that the propriety of cholecystostomy or cholecystectomy must be decided on the circumstances of each case; operation for gall stones was called for whenever they were giving rise to serious symptoms. Professor Rodman read a paper on the Surgical Treatment of Carcinoma Mammae. He had derived valuable information from the microscopic examination of doubtful cases during the operation, and had avoided errors thereby. He always removed the pectoral muscles and considered that only by so doing could proper access be gained to the whole axilla. When the cancer was situated in the upper part of the breast the superclavicular glands should be removed. He had collected statistics relating to 628 cases operated on by American surgeons; of these, 44 per cent. had passed the three years limit. Mr. W. S. Handley read a paper entitled Certain Defects in the usual Operation for Mammary Cancer. He showed microscopic preparations illustrating the spread of carcinomata along the planes of the deep fascia; he considered that the operation was usually insufficiently wide in a downward and inward direction. Certain statistics which he had collected as to the distribution of secondary bone deposits militated against the idea that these arose by conveyance by the blood stream. Mr. H. Stiles pointed out that removal of the pectorals did not limit the movements of the arm, if the arm were kept abducted; he considered that spread along the lymphatics was chiefly an embolic process. Mr. Hamilton considered that recurrence in the muscles did not occur; it was not possible to state rules regarding how far lymphatic extension should be followed out, and each case must be treated on its own merits. Mr. Monsarrat said that he removed the pectoral muscles in order to obtain proper access to the upper axilla; he always removed them from origin to insertion. Mr. Childe agreed that removal of the pectoral muscles was necessary in all cases. Professor Rodman and Mr. Handley replied on the discussion. Mr. Thomson Walker read a paper on the Anatomy of Freyer's Operation of Prostatectomy. The microscopic examination of specimens showed that the prostate was removed entire in its capsule. The capsule consisted of compressed non-striped muscular tissue; the recto-vesical fascia forming the sheath was of areolar tissue. Mr. Freyer had performed the operation in 57 cases during the last year; he showed specimens varying in weight from $\frac{3}{4}$ oz. to $14\frac{1}{4}$ oz. In the last unpublished series of 37 cases he had had 2 deaths from septicaemia. Mr. Herring read a paper of the Anatomy of Hypertrophy; it was a chronic inflammatory process. Mr. Jordan Lloyd considered that every prostatic enlargement was an adenoma. Mr. Daniel showed a series of photomicrographs illustrating the pathology of prostatic hypertrophy; he maintained that it was a chronic inflammatory process. Mr. Thomson Walker, Mr. Freyer, and Mr. Herring replied on the discussion. Dr. Blair Bell read a paper on Chronic Appendicitis, and showed illustrative specimens. He considered that this process usually preceded acute attacks and urged its early surgical treatment. Mr. Morton related a

series of cases of resection of malignant growths of the colon. Mr. J. Nicoll read a paper on the Surgical Treatment of Congenital Hypertrophic Stenosis of the Pylorus. Mr. T. G. Atkins read a paper on Gastro-jejunostomy Combined with Jejuno-jejunostomy for Chronic Gastric Ulcer and Dilatation with Adhesions.

Section of Obstetrics and Gynaecology.

Thursday, July 28th.

Dr. J. Singleton Darling read notes on the Removal of a Fibro-myoma of the Left Ovary 22.5 lb. in weight, and showed the specimen. Dr. Ewen Maclean and Dr. John Campbell suggested that the tumour should be referred to a committee for examination and report to the Section at the next sitting. Dr. F. J. McCann read a paper on Two Cases of Urethro-vaginal Fistula Treated by Operation. Owing to the extensive sloughing of the vesical wall in the first case, the capacity of the bladder was greatly reduced, but he had with some success managed to dilate the remaining portion by pressure of a solution of boracic acid under the force of gravity from a height of about 5 ft. Dr. Champneys (President) thought such high pressure was unnecessary. By inducing a patient to hold her water for increasing periods, marked by the clock, the bladder in such cases frequently would recover its capacity. Dr. Smallwood Savage, Dr. Christopher Martin, and Dr. Thomas Wilson each read communications upon cases of Chorion-Epithelioma, illustrated by photographs and by microscopical sections thrown upon a screen, and, on the expressed wish of the members present, Dr. Wilson also read a note upon the three cases by Professor Leith, Director of the Pathological Laboratory of Birmingham University. Professor J. W. Byers read some suggestions for the prevention of puerperal infection in private practice. He urged that students and midwives should be more thoroughly taught the causes of puerperal infection and the grave responsibility of all engaged in attending labours; the necessity of carrying out in private cases the details of antiseptic and aseptic methods so successfully employed in maternity hospitals; the risk of vaginal examinations, and the value and absolute safety of abdominal examination insisted upon so far back as 1886 by Credé; and, furthermore, the importance of examining the general condition of the gravid woman at an early period of her pregnancy (heart, kidneys, lungs), of ascertaining by abdominal examination a few weeks before term the presentation and position of the fetus, the amount of liquor amnii, the possible presence of an abdominal tumour or pelvic deformity; finally, the advisability of immediately repairing any laceration of the pelvic floor. Professor Byers's paper was received with the deepest attention and gave rise to a lively discussion, in which Dr. T. Wilson, Dr. Mowbray, Dr. W. G. Noble, Dr. E. T. Davies, Dr. Ward Cousins, and the President (Dr. Champneys) took part; and Professor Byers having replied, Dr. Monro Kerr read a paper on Cancer of the Cervix Complicating Pregnancy, with cases.

Friday, July 29th.

The President of the Section (Dr. F. H. Champneys) having been compelled to return to London to give evidence in a lawsuit, the chair was taken by Sir Alan Reeve Manby, M.V.O., M.D., one of the Vice-Presidents. Dr. A. A. Addinsell made A Further Contribution towards the Study of the Natural History of Tubal Gestation, advocating expective treatment when a patient had rallied from a first attack of haemorrhage and the bleeding presumably was not going on, but immediate operation, if the bleeding returned, or in case of a tubal pregnancy diagnosed before rupture or abortion, or if, though rupture or abortion had taken place, the fetus in the early weeks was still living; if a haematocele had formed it was well to wait for its absorption, but should such a haematocele become infected, it must be opened and thoroughly drained through the vaginal roof. After some remarks from Dr. Purslow, Dr. Heywood Smith, Dr. E. T. Davies, Dr. Inglis Parsons, Dr. Frederick Edge, and a brief reply from Dr. Addinsell, on the suggestion of Dr. J. B. Hellier, the Chairman asked Dr. G. E. Herman to open the discussion upon the So-called Ovarian Pain, its Causes and Treatment. An epitome of his introduction appeared in the Supplement to the British Medical Journal, July 9th, p. 21. Briefly he held that chronic ovarian pain was of four kinds: (1) Peritoneal (and not really ovarian at all); (2) neurasthenic: or (3) hysterical, which might exist without local disease; or (4) reflected pain from visceral disease—disease which some held might be ovarian, either sclero-cystic or cirrhotic. Sclero-cystic disease, however, was often present without pain, and cirrhosis could not be distinguished from senile shrinking, nor the cirrhotic condition associated with pain from that which was not so. He knew of no morbid change in a freely movable ovary that caused pain. The so-called chronic ovarian pain was either reflex, from some other cause than the ovary, due to neurasthenia, or a manifestation of hysteria. It was not curable by surgical treatment of the ovaries nor by their removal, though reflex pain due to dysmenorrhoea was cured by stopping menstruation. An animated discussion ensued, in which Mr. Bowreman Jessett, Dr. John Campbell (Belfast), Dr. Herbert Snow, Mrs. Stanley Boyd, M.D., Dr. Ewen Maclean (Cardiff), Dr. Heywood Smith, Dr. Cuthbert Lockyer, Dr. Inglis Parsons, Dr. Rabagliati (Bradford), Dr. Fothergill (Manchester), Dr. Hellier (Leeds), Professor Byers (Belfast), Dr. Forbes Ross, Dr. Edge, and Sir Arthur Macan took part. Dr. Herman, in reply, said that the subject allotted to him was chronic ovarian pain, and therefore he had not touched upon acute conditions as ovulation, which might possibly cause pain. Varicosities of the broad ligament had been suggested as a cause, on the analogy of varicocele in the male, but surgeons did not now attribute the aching testicle to the varicocele. Sclero-cystic ovaries might no doubt be properly removed because they were cystic, but not merely because they were painful. To demonstrate the effects of sclero-cystic disease and cirrhosis of the ovaries in causing pain the observation of cases not for a few weeks or months but for years, was necessary. With the reading of papers by Dr. Ewen Maclean on Some Cases of Ectopic Gestation, and by Dr. Hellier on a Lymphangioma of the Great Omentum simulating an Ovarian Tumour, and the report of the Committee on Dr. Darling's Ovarian Fibroid exhibited the previous day, the proceedings terminated.

Section of State Medicine.

Thursday, July 28th.

Dr. Newman opened the discussion on the Control of the Milk Supply, first dealing with the reasons why control was necessary, and secondly with the methods of control. The present condition of the dairy trade, the quality of milk placed on the market, and the increase in the import trade all indicated the necessity of reform. Further, if exceptional physicial deterioration were a fact some of it must be charged to the very low consumption of milk. Reform should come from the demand of the consumer and from the trade, and should aim at a supply of milk drawn in a cleanly fashion from cleanly kept and healthy cows, the milk being immediately cooled and refrigerated, as in a model farm described. The milk thus produced must be transported, sold, and distributed upon improved lines. Lastly, the supply of specialized and modified milk for infants was described as part of the work of general control. Dr. Henri de Rothschild (Paris) took part in the discussion, and urged the importance of milk control originating with the consumer and the trade, and the milk being sold at a price which the poor could afford. He stated that improvement of the milk supply of Paris was taking place every year owing to a more educated public demand. Dr. Drysdale, Dr. Hallows, Dr. Barlow, Dr. Laffan, and Dr. McCleary carried on the discussion. The last-named emphasized the importance of the municipalization of the milk supply. Mr. Stokes (a farmer) recommended a joint conference between medical men and farmers and veterinary experts. Dr. C. J. Thomas read a paper on School Diphtheria in the Metropolis, in which he suggested a number of points which require attention in reducing diphtheria outbreaks in schools. Dr. Barlow followed with a paper on the Teaching of Hygiene in Public Elementary Schools and the Influence on the Public Health of the Infants' Departments of such Schools. A discussion took place on both papers in which Dr. Davies (Woolwich), Dr. Richard Jones (Blaenau Festiniog), Dr. Molson, Dr. Herbert Jones, Dr. Meredith Richards, Miss Johnson, Dr. Lutoslawski, Dr. Macgregor-Robertson, and others took part. Dr. Elliot Smith (Cairo) spoke on Ankylostomiasis and its Mode of Infection. He stated that recent investigations in Egypt showed that the larvae could make their way through hair follicles of unbroken skin, and thence pass to any part of the body, including the lymph and blood vessels. Such larvae on reaching the lung vesicles passed through the bronchioles to the trachea, thus over the epiglottis to the oesophagus and duodenum. The parasite fed on epithelium, and the anaemia was possibly due to toxaemia. At the close of the work a resolution was moved by Dr. Barlow in favour of discontinuance of sending children under 5 years of age to elementary schools. This was seconded by Dr. McCleary, but not passed.

Friday, July 29th.

At its third meeting this Section devoted its attention to a consideration of poverty and alcoholism, and was fortunate in having papers from Mrs. Bernard Bosanquet and Mr. T. P. Whittaker, M.P. The latter was prevented by his Parliamentary duties from being present, but his paper was received and read. It dealt with the extent of alcoholism as measured by the expenditure of the nation and the social ravages of the drinking custom. The real interest of the Section was aroused by Mrs. Bosanquet's paper, which was concerned with the general principles. She urged that what is required in dealing with a problem the existence of which all admit is to make people care for right things, and this elastic phrase was defined as those things which directly concern "the healthy, capable, cleanly life below which they are a source of danger to themselves and others." Mrs. Bosanquet rightly urged that to obtain any satisfactory results it is necessary to have a definite policy of reform. She then discussed the two chief principles upon which methods of reform might proceed. They are based upon the different points of view from which people regard the uncleanliness, overcrowding, housing conditions, etc., under which the poor live. First, there are those who consider that all these conditions are due to poverty and to be solved by municipal or private charity. Secondly, there are those who hold that the problem is due to ignorance, lack of application—in short, personal character; and the problem is to be solved by education. It is obvious that these two schools of thought lead broadly to two somewhat different lines of action, although in practice there is often greater convergence than in theory. Mrs. Bosanquet believes that it is to education and the training of children and mothers, and the general stimulation of the dormant sense of responsibility, that we must look for real progress. In most persons there exists some sense of responsibility for, and interest in, self-preservation of themselves and families, and it is to this sense which we should do well to address our appeal. Mrs. Bosanquet illustrated her contention by describing various graphic instances from her experience of how to meet the problems of the poor, particularly emphasizing the need for voluntary health societies. Alderman Hugh Hall, M.A., B.C.L., of the Oxford City Council, contributed a paper to the discussion dealing with the housing question, in which he advocated many reforms, and Dr. G. A. Heron followed with a plea for a much more comprehensive system of hygiene training in elementary schools. Several other speakers addressed themselves to this matter, and a resolution to the following effect was considered by the Section:

It is highly satisfactory to the State Medicine Section to learn that the Council of the British Medical Association have exerted themselves to secure the education of public elementary school teachers in personal (including oral hygiene) and domestic hygiene, in order that every child in public elementary and secondary schools may be instructed in these subjects; and they beg to request the Council to continue their efforts in this direction.

This resolution was proposed by Dr. Groves, seconded by Dr. J. S. Haldane, and unanimously carried. Dr. Stewart, Miss Johnson, Dr. Wilson (Lanark), Dr. McCleary, Mr. McAdam Eccles, and Dr. Alice Drysdale took part in the discussion; and Mrs. Bosanquet replied. Other papers read in the Section dealt with Oral Hygiene (Dr. Goadby)—Dr. MacWalter and Dr. Bond took part in the discussion on this subject—and the Isolation of Tuberculous Patients among Factory Workers (Dr. Brasher), the latter being an epitome of the methods carried out in the cocoa works of Messrs. J. S. Fry and Sons at Bristol. Dr. A. E. Boycott gave a short lantern demonstration on the methods of recognition of ankylostomiasis.

SECTION OF PSYCHOLOGICAL MEDICINE.

Thursday, July 28th.

Dr. J. BEARD (Edinburgh) read a paper illustrated with lantern slides on Heredity as Viewed from the Biological Aspect. The phenomena of heredity, he said, was limited to the germ cells: they were germinal in nature. In the procession of life in animals and plants the germ-cells formed the line of continuity, the individual plant or animal being merely a lateral offshoot of this line. In this sense there was not, and could not be, anything handed on from parent (that is, plant or animal organism) to the so-called offspring. Whatever modification the parent form acquired during life did not concern and did not affect the germ-cell: therefore, such modification was not, and could not be, transmitted by the germ-cell to the offspring. "Acquired characters" were thus not transmitted or transmissible. Thus, for example, cutting off the tails of mice could not influence the offspring of the mutilated parents, and the offspring were born with normal tails. The recapitulation theory of the biologists stated that every animal in the course of its development "climbed up its own genealogical tree." This, said Dr. Beard, was merely an illusion of the imagination and without any basis in fact. The process of sexual conjugation of two germ-cells was the loose joining together, without blending, of two individualities, two complete sets of potential characters. But neither of the two (male and female) germ-cells had itself ever been a higher animal, and neither they nor their ancestors had ever formed parts—that is to say, been somatic cells—of an animal body. Darwin's theory of natural selection was a complete fallacy, while Weismann's theory of germinal selection was a purely mental concept, quite without connexion with the phenomena of development and "hanging entirely in the air." As defined by Weismann, the process of "germinal selection" would furnish great varieties of gametes or conjugating cells, so varied in their characters and qualities that the resemblances rather than the differences among the progeny would require explanation. In the line of development of the germ-cells from the egg of one generation to the egg of the next generation in many invertebrates there were but five cell-generations or less, thus demonstrating a practical continuity of the chain of germ-cells. In some vertebrates the intermediate cell-generations amounted to not more than ten, and in other vertebrates the number was probably not more. The determination of sex in a cell occurred at the time of "reduction" or "reducing division." Nature's method of causing variation was slow but sure. When she caused variation, she initiated it by altering the environment. While some members of varieties of a species might be able to adapt themselves to the new environmental conditions, others would fail in this, and these would be eliminated either as individuals, or—even if fertile with the favourable varieties—by germinal elimination. The giraffes in their evolution developed gradually necks of great length not because, as the Darwinians maintain, Nature favoured those individuals whose necks tended to be longer than their parents and eliminated those with shorter necks (natural selection of Darwin), but because Nature fostered in the germ-cells of the giraffe those characters which tended to the formation of a longer neck, and increased the value of those characters from generation to generation. Indeed he thought that the positions occupied by Darwin and Weismann were thus "completely and decisively outflanked and rendered untenable." Under the views advanced by Dr. Beard it is claimed that the words "parent," "ancestor," "offspring," and "reversion" became meaningless, and in the same way an "appeal to ancestry" (Weldon) was barred by the absence of any "ancestors" to appeal to. Much attention was at present being devoted to the statistical study of variation in the hope of increasing our knowledge. But in none of the investigations was due heed given to the influence of the environment. "For the modern biometrician the environment as a factor might be non-existent; in his published researches he ignored its influence altogether and 'slumped' somatic and genetic variations together." The discussion was continued by Dr. König, of the Daldorf Asylum, Berlin, who read a paper on the problem of Biology from the Psychiatrical Aspect. Three principal groups of heredity might be distinguished: (1) Homologous heredity, (2) dissimilar heredity, (3) mixed heredity. The questions discussed were: (1) Was there any clinical evidence of acquired mental abnormalities being transmitted to the offspring? (2) To what extent in insanity did environment influence the germ-cells, and under what circumstances did it affect the soma? From a vast number of cases collected and selected for the special purposes of this research (3,329 cases), and including various forms of mental and nervous affections, the following main conclusions were established: First, that adult general paralysis is an acquired disorder, which is not itself propagated to the offspring, but that in all individuals of neuropathic heredity the parental germ-cells may be adversely affected. In certain families there was an uncommonly high degree of predisposition to parasyphilitic sequelae. Secondly, among chronic alcoholics there was a large percentage who showed homologous heredity, the proportion of hereditarily untainted individuals was low, while the proportion of dissimilar heredity was intermediate. Thirdly, among the adult descendants of alcoholics were numerous habitual drunkards, many instances of essential paranoia, dementia praecox, and imbecility. There

was a very close relation between alcoholism and epilepsy. Fourthly, the majority of chronic inebriates had a neurotic history. While there was no transmission of the habit, or even of the craving for alcohol, clinical evidence favoured the view that the germ-cells were so modified as to render the offspring particularly liable to the injurious influence of intoxicants. Fifthly, idiopathic epilepsy was associated with a serious morbid variation of the germ-cells, and the predisposition was duly transmitted to the offspring and duly developed in them. Sixthly, the different types of functional psychoses showed a more or less powerful hereditary disposition to insanity and other nervous disorders. Hereditary modification of the germ-cells was in one respect of such a nature that (as in the case of essential paranoia) the morbid character would duly unfold itself in time, in spite of the most favourable environment, while in other cases environmental factors were necessary to awaken the dormant predisposition. Lastly, there was clinical evidence of acquired abnormalities being transmitted to the offspring. It was highly probable that the germ-cells were altered when potent changes occurred in their environment—and the environment of the germ-cell was the parental body. In the discussion which followed the reading of these two papers, the following gentlemen took part, namely: Mr. Straton, and Drs. Grünbaum, Edridge-Green, Lloyd Andriezen, Schofield, Drysdale, Robert Jones, James Stewart, Seymour Tuke, Blandford, Yellowlees, D. Berry, after which Dr. Mercier made a few remarks, and Drs. Beard and König briefly replied. A few written remarks sent by Dr. Archdall Reid on the subject were, in his absence, read by the Secretary. Letters of regret for inability to attend were received and read from Professor Max Nordau, Professor Weismann, Mr. Bateson, Mr. J. A. Thompson, and Dr. Leslie Mackenzie. The proceedings for the day then terminated.

Friday, July 29th.

Dr. Conolly Norman, of Dublin, opened a discussion on Dementia Praecox or the Premature Dementia of Pubescents and Adolescents. The existence, as one distinctive entity, of the groups of insanity known as hebephrenia, katatonia, and paranoid dementia praecox made so vast a congeries that the only connecting link between the items of the mass were their origin at the age of adolescence and their early termination in dementia. With regard to origin at the epoch of adolescence, the peculiarities present in such cases of insanity were largely the physiological characteristics of this period exaggerated and distorted by disease. Therefore, said Dr. Norman, they were not to be regarded as indications of a specific affection, dementia praecox. No changes had been demonstrated, continued Dr. Norman, of a definite degenerative character in the brain of adolescent dementia, the changes described by some authors being purely hypothetical. It might, however, be conceded that adolescent cases of insanity not recovering had a "special liability to run into dementia." In dementia praecox there was an ataxy of the mind, an inco-ordination not paralysis. Therefore dementia was, he argued, a very faulty term to use. "To call anything precocious merely because it occurs in early life is a perversion of terms, for 'precocious' implies too early arrival at an inevitable end." Dementia praecox was not absolutely incurable; it was, then, wrong to dub cases by a name which encouraged despair. The discussion was then taken up by Drs. Dawson, Ernest White, König, Bower, Shuttleworth, Andriezen, Tuke, Pasmore, and the President, after which Dr. Norman replied. Dr. E. S. Pasmore read a paper on How to Take a Family History, the object of which was to tabulate in the form of a diagram a record of the mental state of the ancestry and collaterals of the patient. At present, said he, there was not in our asylums any regular system or rule by which an accurate and trustworthy family history could be taken. The diagram (of which copies were passed round) showed very clearly how this could be done, the process being simple and easy to follow out. It was shown on the diagram that a family history could thus be traced for three generations. Dr. Pasmore concluded by saying that in asylum cases no history of a trustworthy character could be obtained beyond the third generation. Dr. A. T. Schofield read a paper on the Cure of Quackery. The quack, said Dr. Schofield, used or exercised his powers of "suggestion" on patients; he was often an adept at making a deep impression on the ignorant and the gullible. He thought physicians should pay greater attention to the fact of mental action in disease, and, above all, to the operations of the unconscious mind. Drs. E. Green, James Stewart, and Pope having made a few remarks, the proceedings of the Section for the year were brought to a close.

Section of Pathology.

Thursday, July 28th.

Professor Robert Muir read a paper on Haemolytic Serums, dealing particularly with the exact relationships of red corpuscles, immune bodies, and complements. He showed by his experiments that the theory of Bourdet was untenable in its present form, and, without speaking dogmatically, threw some doubt upon Ehrlich's conception of the immune body as an amboceptor. Professor Wright described the experiments in connexion with typhoid vaccination and staphylococcus infection, which led up to the discovery of opsinines, substances which act—or at any rate one function of which is to act—in preparation of the bacteria for phagocytosis. He mentioned the successful progress of the application of the principle to tuberculosis, and went on to show that the opsonic power of the circulating blood differed from that, for example, in the spleen. A discussion on The Rôle of the Lymphocyte was opened by Dr. Lovell Gulland, who dealt with the physiological aspect of the question in general. He described at length the various forms met with, and referred to the determining influence of the centrosphere in the development of simple to more complex forms, as well as to the structural interpretation of histological appearances. The source of the lymphocytes was in the main the bone marrow; the spleen was not a source, and derivation from endothelial cells unlikely. Professor Muir, enlarging upon the same theme but rather from the point of view of pathology, dilated upon the uncertainty of histological methods; he considered the origin of the leucocytes in their ontogenetic and philogenetic relations, pointing out that the oldest cells had the widest distribution. He was of opinion that non-granular cells, whilst owning defensive properties, were slow to exert them. Lymphatic endothelial cells did become phagocytic, but in the early stages at least it was quite possible to distinguish between hyaline cells and those of endothelial origin. Finally he referred to the lymphocytes of fibroses and cirrhoses as possibly involution forms, and touched upon the interpretation of mixed-celled leukaemias. Dr. Beattie's paper discussed the relation of the lymphocyte to inflammation, particularly with regard to the part played by the lymphoid tissue distributed throughout the vascular sheaths. Whilst the smaller forms of lymphocyte showed no phagocytic activity, the larger exhibited histological appearances capable of explanation on the supposition of some cellular secretion. He thought that lymphoid cells probably did not proceed to the formation of fibrous tissue. Dr. Drysdale introduced the clinical aspect of the question, and showed that at present observations of lymphocytosis could only be utilized empirically, whilst the danger of regarding blood-counts exclusively became evident in such a case as that of the group lymphadenoma, Hodgkin's disease, and lymphosarcoma, which this method left almost undifferentiated. Dr. Ferguson's paper gave a very careful and complete account of the lymphocyte and the part it plays in small-pox. Histological evidence went to show that the bone marrow and the germ follicles of lymphatic glands exerted a much greater influence than the spleen in the production of the lymphocytosis. Dr. MacCullum gave an equally exhaustive account of lymphocytosis in typhoid fever, basing his observations in the main upon a case particularly favourable for investigation, inasmuch as a meningitis supervened, and the cerebro-spinal fluid yielded a pure culture of the bacillus typhosus. Dr. Houston's observations were the outcome of comparisons between the lymphocytoses of widely different causation or association. He concluded that all cells of the lymphocyte group had their origin in lymphoid tissues; that, whilst the large mononuclears were amoeboid and phagocytic, the small lymphocyte was only slightly motile; medullary leukaemia might be simulated by acute sepsis, and the lymphatic type by acute pneumonia in a child—indeed, conditions which in the adult gave rise to a polymorph-leucocytosis, in a child caused lymphocytosis. After a short adjournment, Dr. Melland showed a series of lantern slides of blood films from cases of leucocythaemia to demonstrate the types of cells met with and their transition. Dr. Moorhead described his experimental researches upon the Etiology of Lymphatic Leukaemia; so far the limited supply of material to be obtained in Dublin had only permitted him to establish one

point—namely, that in affected glands there was a substance present not to be found in normal glands, and having a depressor action on the heart. In the late afternoon two valuable demonstrations were given. Professor Wright showed the method of making and calibrating his simple and "throttled" capillary pipettes for preparing accurate mixtures of minute quantities and large dilutions. He then demonstrated the application of this apparatus to the estimation of bactericidal power, opsonic power, the counting of corpuscles, the estimation of alkalinity and of salts. At the conclusion Sir John Burdon Sanderson expressed the thanks of the meeting to Professor Wright. Dr. Salaman gave a lucid demonstration by means of "three-colour" photomicrographic lantern slides and morbid anatomy preparations of the reservoir action of the liver in cardiac disease.

Friday, July 29th.

In opening the discussion on the Chemical Pathology of Gout, Professor Carl von Noorden epitomized the well-established facts already available, taking first the oxidizing energy of metabolism, and the variations in the metabolism of albumen in the gouty. As the other purin substances were of small importance in comparison with uric acid, he dealt at some length with the quantitative variations of uric acid in the urine; then, passing to the uric acid of the blood, he showed that neither its concentration in gouty blood nor alterations of alkalinity could be held responsible for the deposition of the uric acid in gouty foci. In discussing these foci he mentioned that the solution of urates was due to phagocytosis. His explanation of the facts adduced amounted to a combination of his own former theory with the more recent one of Minkowski, which adduces the occurrence of two distinct compounds of uric acid in the blood and tissues. Passing to treatment, he advised the choice of purin-free food, the avoidance of alcohol, and the administration of simple salines rather than alkalies. Dr. Garrod's paper set forth very fully the present position of pathological opinion as to the etiology and nature of gout. He referred to variations of metabolism as an expression of the individuality of the organism, and suggested that the element of heredity was of the nature of an inherited instability of metabolic equilibrium. He then turned to the association of gout with renal disease, insisting that the chronic interstitial form was not by any means an invariable antecedent, although recognizing that lack of symptoms did not exclude the existence of disease in the kinneys. He referred to the inadequacy of the quadrenate theory, and to its very limited acceptance. Dr. Walker Hall gave the results of his investigations of variations in the excreta of gouty patients, in constipation, in acute attacks, in relation to lymph flow, and to nervous condition. He demonstrated practically the use of his apparatus for the estimation of purin bodies in the urine. Dr. Smith-Jerome's paper was concerned especially with the variations in the normal constituents of the urine, and of their relative proportions, as determining factors in the precipitation of uric acid. Dr. Ringrose-Gore approached the question in the light of the clinical picture presented in articular gout, and argued that the causative toxin originated in the intestinal canal, to some imperfection in the secretions of which we must look for the ultimate explanation of the disease. Dr. Haddon and Dr. Eliza Dunbar also took part in the discussion.

Section of Physiology.

Thursday, July 28th.

The Section met in the Physiological Laboratory with Professor W. H. Thompson, one of the Vice-Presidents, in the chair. Professor Wace Carlier made a communication, illustrated by lantern slides, upon Some Changes Observable in Liver Cells during Activity. The microscopic appearances of the liver were compared in fasting and well-fed rats, the diet in one group of cases being proteid, in another fat, and in a third carbohydrate. In the fasting condition there was no vacuolation, but in the protoplasm were clumps of an apparently structureless material of unknown composition which stained deeply with eosin. During activity the most marked change in the cytoplasm was the rapid formation of vacuoles, which occurred in less than an hour after the meal and was not repaired for an hour or two later. The cause of this vacuolation was not apparent. About the sixth hour, or even earlier after a carbohydrate meal, the cells became swollen and exhibited vacuoles containing an abundance of glycogen. The next papers, Further Investigations on Accommodation and The Purkinje-Sanson Reflex Image of the Anterior Lens Surface, were communicated by Dr. Grossmann, and were illustrated by photographs and lantern slides. His observations showed that in the cat there must exist not only a very considerable amount of accommodation but also a high degree of astigmatism, but that the pupil contracted to a slit, the direction of which corresponded with the principal axis of the astigmatism, and so more or less completely corrected it. Lack of time prevented any discussion of these interesting papers, which will be published in a later number of the British Medical Journal. Professor MacWilliam then gave the results of a research dealing with Some Points in the Physiology of the Mammalian Heart. He finds that the spontaneous rhythm originates not only in the terminal parts of the venae cavae and pulmonary veins but also in the coronary veins. Strong vagus stimulation depresses the ventricular force but does not depress the direct excitability. The heart *in situ* after severance from its connexion with the central nervous system is remarkably insensitive to changes in blood pressure within wide limits, in marked contrast to the alteration which is readily induced in the force of contraction by such changes of pressure. There is no experimental evidence of reflex excitation of the cardiac augmentor nerves; nor does cerebral anaemia or asphyxial blood excite them. The peripheral efficiency of the vagus is not markedly affected by asphyxial blood or by changes in arterial and venous pressure, but is strongly affected by the readmission of air into the lungs after the process of asphyxia has reached a certain stage; the heart then becomes excessively rapid for a time. In the absence of Dr. Maclean, his communication on the Action of Muscarin and Pilocarpin on the Heart was given by Professor MacWilliam, in whose laboratory the research had been carried out. The results show that muscarin and pilocarpin in small doses act, not on the muscle directly, but upon the nerve endings of the inhibitory mechanism. Dr. Wace Carlier gave a paper on the Elastic Tissue of the Eyeball. He finds that birds, whose eyes are strongly accommodated for near objects, have much more elastic tissue in the eyeball than those whose eyes are used chiefly for vision of distant objects. All birds have more elastic tissue in their eyes than any other class of vertebrates, probably because their striped ciliary muscles are so powerful. The Section then joined the Anatomical Section for a discussion on the Thalamic Region, which, under the presidency of Professor Arthur Thomson and Professor Gotch, was opened by Dr. Gustav Mann, and continued by Sir Victor Horsley, Professor Gotch, Dr. Warrington, and Dr. Page May. The discussion, which was illustrated by numerous diagrams, specimens, and lantern slides, will be found reported under the proceedings of the Anatomical Section.

Friday, July 29th.

The anticipation that the discussion on Chloroform Anaesthesia would attract a large number of members was fully justified by the audience which gathered in the hall of Balliol College. The chair was taken by the President of the Section, Professor Gotch, F.R.S. The proceedings should have commenced with an introduction by Sir Victor Horsley, F.R.S., but in his absence, which was due to a meeting of the Council, Professor Moore described the results of experiments conducted in association with Dr. H. E. Roaf upon the formation of easily dissociable compounds or aggregates between chloroform and the proteids of the blood and tissues. By the formation of such aggregations the activities of the protoplasm were limited, and thus anaesthesia appeared to be produced. These combinations only existed so long as an adequate pressure or concentration of the anaesthetic was maintained; as soon as the pressure of the anaesthetic in solution fell the compound or aggregate dissociated and the cell became free to take up once more its normal activities. The relationship between the concentration of the vapour of chloroform in the inspired air and the corresponding pressure or concentration of the anaesthetic in the blood had been determined throughout a wide range, and it had been shown that with increasing concentrations of chloroform in the inspired air a more than proportional amount was taken up by the blood. Mr. Edie followed with a communication upon a closely-related subject, the Precipitation of Haemoglobin by Chloroform. In a solution of haemoglobin a precipitate is caused by 1.5 per cent. of chloroform, if the temperature be raised to that of the body; the precipitate is practically insoluble in water, but is readily soluble in sodium carbonate, and then yields the spectrum of alkaline haematin. The results of the research seem

to show that the compound between chloroform and proteid has a constant proportion of chloroform, and that it is more unstable than the combination of carbon monoxide and haemoglobin. The discussion was now reintroduced by Sir Victor Horsley, F.R.S., who showed how the work of the Special Chloroform Committee had originated from the attention drawn by Dr. Waller to the serious loss of life due to overdoses of chloroform. The main question was to determine the amount of chloroform in the inspired air and in the tissues during satisfactory anaesthesia. The most accurate method for the administration of known percentages of chloroform was that introduced by Mr. Vernon Harcourt. Professor Sherrington, F.R.S., continued the discussion by describing the results of the experiments which had been made by Miss Sowton and himself upon the effects of perfusion of the mammalian heart by saline solutions containing different percentages of chloroform. The amount of depression could be measured by the decrease in the amplitude of the beat of the heart, and the cardiac records yielded a measure of the tension or pressure of the chloroform. The discussion on the scientific side was continued by Dr. C. J. Martin, F.R.S., and Professor MacWilliam, and then the transition to the clinical side was brought about by Mr. Vernon Harcourt, F.R.S., who showed his apparatus for the administration of known percentages of chloroform, and also gave an account of his experiments upon the action of chloroform upon the blood. Details of some of this work have already been published in the British Medical Journal of July 23rd. Dr. Waller, F.R.S., followed with comments on the third report (1904) of the Special Chloroform Committee; he considered that Dubois's apparatus was the best method for the administration of known percentages of chloroform. On the clinical side Dr. Dudley Buxton stated that he had found 2 per cent. of chloroform vapour adequate for the production of anaesthesia, and he held that a higher percentage should only be used with a full recognition of the danger of the proceeding. The advantages of Mr. Vernon Harcourt's apparatus were described by Dr. McCardie, who claimed for the method a quiet and regular induction of anaesthesia, comparatively light, but at the same time efficient, anaesthesia, perfect control of narcosis, and a quick recovery and slight after-effects. Dr. Chapman, on the other hand, contested the principle of Mr. Vernon Harcourt's method, and showed Dubois's apparatus, which he maintained was a far superior method. Criticisms of Mr. Vernon Harcourt's apparatus were also given by Dr. Crouch and Dr. Levy. The time was now drawing to a close, and the President, after pointing out the impossibility of throwing open the discussion, called upon Sir Victor Horsley to conclude the proceedings by a brief reply.

Section of Anatomy.

Thursday, July 28th.

Dr. R. J. Berry and Dr. H. D. Shepherd gave a demonstration on Cranio-Cerebral Topography, illustrated by lantern slides. The guiding lines employed by them were drawn on the skull and all intermediate parts removed. The result was that the positions of the various fissures of the brain and their relations to the osseous bars indicating the guiding lines could be noted. After a critical review of the question they concluded that Hare and Thane's method was the most accurate and most generally applicable. Mr. J. W. Jenkinson gave an account of his researches into the formation of glycogen in the placenta of the mouse. He found that glycogen first appeared in the maternal cells which overlie the allantoidean portion of the trophoblast. Professor A. H. Young and Professor Arthur Robinson read a paper on the Development and Morphology of the Tail. Some of the main conclusions at which they had arrived were that the segments of the tail are not equivalent to the segments of the body, for their nervous portions are rudimentary or absent and they are devoid at all periods of a coelomic space. The posterior segments of the tail develop neither spinal nor sympathetic ganglia nor nerves, and their neuromeres never attain complete development. Many of the muscles of the tail are not supplied by the neuromeres and ganglia of their segments but by the nerves of more anteriorly placed segments. The blood vessels of the tail are not prolongations of the primitive blood vessels of the embryo, but of its segmental somatic branches. In opening the discussion on the Thalamus Dr. Gustav Mann drew attention to the division of the nervous system into two fundamental parts: one in front of the posterior commissure which he called the thalamus, and the other behind the commissure which he called the cord, but which included the mid and hind brains. The thalamus was primarily sensory, whereas the cord possessed both motor and sensory mechanisms, and he showed that the thalamus was connected with the cord through the red nucleus. As the history of the thalamus was traced, it became apparent that the olfactory and optic vesicles were simply parts of it. The thalamus later on became joined to the cord through the sense of touch by means of the fillet, and a motor mechanism was finally superadded in the cortex of the cerebrum and in the corpus striatum. After sketching the development of the thalamus along these lines, Dr. Mann proceeded to describe the division of the thalamus, that is, the dorsal and ventral parts separated by the falciform nucleus, and the various thalamic nuclei. One of these nuclei, the ganglion trabeculae, was shown to be developed in the taenia thalami, and as this persisted after removal of the cerebrum, he inferred that it was one of the oldest parts of the thalamus. Sir Victor Horsley agreed with the morphological conclusions of Dr. Mann, and then discussed the minute structure of the ventral division of the thalamus. He showed that the extremely restricted termination of the fillet axones as localized by the degeneration method was now confirmed by Ramon y Cajal. Finally he proposed that morphologically the plexus of fibres should not be dwelt upon for subdivision of the thalamus, but that the true morphological limit was the cell, and therefore the most minute descriptions of the nuclear collections of cells were necessary. Dr. Page May showed some lantern slides illustrating lesions in the thalamus in sixteen monkeys; he found that in a large number of the cases there was hemianaesthesia and hemianopsia of the opposite side of the body. In addition he found in half the cases there was a curious deviation of the head, so that the face was directed to the side of the lesion, with the opposite ear drawn down to the shoulder. Dr. Warrington and Professor Gotch also joined in the discussion.

Friday, July 29th.

The meeting on Friday was held in conjunction with the Anatomical Society of Great Britain and Ireland. Professor Fawcett (Bristol) gave a preliminary communication on the ossification of the lower jaw, in which he showed that the part of the jaw in front of the mental foramen was developed directly from Meckel's cartilage and also from a membranous ossification which was continuous with the so-called "dentary" centre. He doubted the existence of a splenial and angular centres. Dr. Low (Aberdeen) confirmed the observation that the dentary centre extended forwards as a plate of bone right up to the middle line in front. Dr. Mildred Sims described, in connexion with developing teeth, certain spherical epithelial masses lying to the labial side of the teeth and connected with the neck of the dental lamina, and showed lantern slides illustrating their presence in the dog, guinea-pig, and the human subject. Dr. Sims thought they represented vestiges of a previous dentition, and if this were so then the human fotus showed better marked vestiges of a pre-milk dentition than any other animal with which he was acquainted. Professor D. J. Cunningham gave a lantern demonstration on the varying forms of the stomach in man and anthropoids. The first part of his demonstration confirmed, and, to some extent, supplemented the observations of Professor His, as detailed in his paper published last year in the *Archiv. f. Anat.*, and then passed on to deal with certain physiological conditions of the stomach which were sometimes seen in formalin-hardened subjects. The condition specially dealt with was one in which the stomach presented a capacious cardiac part and a long narrow tube-like pyloric part. He did not agree that the condition was explained by tight lacing, for he had found it in two males, and in the fetus, as well as in females. Finally, he discussed the question of hour-glass stomach, and agreed with Mr. Moynihan that the cause might be either physiological or pathological, and it had yet to be shown that it ever was a congenital condition. An interesting discussion followed the demonstration, in which Dr. Keith, Dr. Elliot Smith, Dr. Bryce, Dr. Gustav Mann, Professor Dixon, Dr. W. Wright, Professor Robinson, and Professor Symington took part. Professor F. Kiebel (Freiburg) showed a number of models illustrating the development of the urogenital system, the liver, the pancreas, and the spleen of Echidua. Dr. Lickley (Manchester) read a paper on the Morphology of the Intertransverse Muscles, and showed that in the neck the anterior and posterior intertransversales were homologous with the internal and external intercostal muscles respectively; that in the dorsal region the intertransverse bands were homologous with the interarticulares; and that in

the lumbar region the mesial intertransversales were homologous with the interarticulares and the lateral intertransversales with the external intercostals. Dr. Cameron (St. Andrews) in a contribution to the Ontogeny of the Neuron in Vertebrates pointed out that the neuroblasts appear to be nuclei possessing no cytoplasmic envelope whatever, and that the axis cylinders arise in the form of protrusions from the nuclei. Dr. Alex. Low (Aberdeen) described some skeletons found in the North-East of Scotland. The mode of burial and the pottery found with the skeletons had characters usually assigned to the Bronze Age, but the skeletons themselves showed characters differing from those usually ascribed to bronze-age skeletons in Britain. Dr. Wright said the skulls were of the type named by Sergi, sphenoides tetragonus, and the race appeared to have been a purely brachycephalic one. The last paper of the meeting was an interesting communication by Professor O. Grosser (Vienna) on the Metameric Structure of the Skin in Vertebrates. In the evening the members of the Anatomical Society dined together, through the kind permission of the Vice-Chancellor, in the Hall of Oriel College.

SECTION OF OPHTHALMOLOGY.

Thursday, July 28th.

WORK began with the discussion on Intraocular Haemorrhage and Systemic Disease, which was opened by Dr. Hill Griffith. He related his experience of many cases, and emphasized the apparent rarity of these cases and the importance of blood changes in their production. Dr. Lucien Howe exhibited a specimen of a retinal haemorrhage. Professor Uhthoff showed sections and drawings of a subretinal haemorrhage. Dr. Risley and Professor Oliver related cases which occurred in patients suffering from blood changes and showed ophthalmoscopic drawings. Dr. George Carpenter had seen retinal haemorrhages in children in a number of different diseased conditions. Dr. Hill Griffith briefly replied and thanked the speakers. Professor Hirschberg made some practical remarks on Magnet Operations. He thought that the occurrence of pain on the application of the giant magnet was most deceptive, pain did not always occur even when metal was present, and it might draw it from a comparatively harmless position into the ciliary body. He urged the importance of the use of the sideroscope and *x*-ray photographs. He thought we were bound to remove the splinter if it were any way possible. Dr. Barkan advocated the improved sideroscope of Professor Hirschberg. Mr. McHardy advocated the use of the *x* rays before applying the magnet. Dr. Mackay urged the necessity of early removal of the foreign body. Professor Hirschberg replied, and insisted upon the great damage sometimes done by searching for a foreign body which might not even be within the eye at all. Dr. Rivers demonstrated the result of his investigation on the comparative visual acuity of savages and civilized people. He found that, apart from errors of refraction, there was hardly any difference of visual acuity, any difference there was being due to familiarity with the surroundings and education, and man all over the world had much the same vision. In tropical countries visual acuity failed rapidly after about 35 years of age. Dr. Berry read his Remarks on the Diagnosis and Nature of Glaucoma. He thought that the pathology of the disease was still obscure, and gave a summary of von Graefe's opinions on the subject. Dr. Berry thought that the use of myotics in simple glaucoma was useless, he had never seen sclerotomy do much good, and he had given up the performance of large iridectomies. Mr. Richardson Cross thought that in doubtful cases without inflammation cocaine should be used, and then arterial pulsation might be seen in true cases; should tension be present, operation was indicated, except in old and very diseased conditions. He thought that the continued use of myotics was certainly beneficial. Dr. Brailey thought that the use of myotics was useful, especially in early cases. Eserine irritation must be guarded against, and the earlier an operation was undertaken the better. Dr. Wherry and Professor Hirschberg made some remarks; the latter condemned the operation done on the two eyes together, and thought that the irritation following the use of eserine was due to septic solutions. Professor Uhthoff gave some statistics and Dr. Berry replied. Mr. Adams Frost read a paper on the Operative Treatment of Myopia. He rather tended to the opinion that retinal detachment was more frequent after the removal of the lens than before. He was averse to operating on the two eyes. Professor Landolt thought the removal of a clear lens was a dangerous procedure and that by no means had all the unsuccessful cases been published. He would operate on one eye only. Mr. Johnson Taylor thought that repeated small needlings were safer than free discission and letting out the lens. Mr. Frost replied. Mr. Ernest Clarke read a paper on Twenty Years' Treatment of Myopia. He advocated the full correction of myopia for all purposes. Dr. McGillivray discussed the Temperature of the Cornea and its Relation to Corneal Therapeutics, and advocated the use of oily solutions of cocaine to remove photophobia. The Section then adjourned.

Friday, July 29th.

The discussion on Keratitis Profunda was opened by Mr. W. T. Holmes Spicer. He found that overeating and drinking, with its accompaniments, were responsible for about three-fourths of the cases, and of those that were traced to the end the prognosis was good in all the slighter cases. The symptoms and pathology of the disease were then described, and with regard to treatment the use of atropine with hot fomentations advocated, unless the tension were high, when it should be used with caution: paracentesis was the most satisfactory operation for its relief. He had never found subconjunctival injections useful, but the treatment of the general condition was most important. Mr. Power related some cases, and Mr. Cyril Walker and Dr. Hill Griffith alluded to the close simulation of these cases to interstitial keratitis. The treatment was discussed by Mr. Grainger and Dr. Köller. Mr. Spicer replied. Dr. Köller read a paper on the Subconjunctival Injection of Cocaine in the Extraction of Cataract. He found that injecting a few drops of cocaine beneath the conjunctiva did far more to anaesthetize the eye than simply instilling it. Mr. Doyne said that he nearly always used it for enucleation. Dr. Lucien Howe demonstrated the results he had obtained from his inquiries into the time required for a normal eye to swing laterally through a given arc. The President, who had been working independently at the same subject, made some remarks, and Dr. McGillivray asked if observations had been made on cases in which advancement and tenotomy had been done. Mr. Hill Griffith thought it might be useful in cases of alcoholism to measure the movements of the eyeball, and Mr. Johnson Taylor asked if it had been used in cases of nystagmus. Dr. Howe said he had not used it on alcoholics. Mr. Watson Griffin demonstrated a modified suction syringe for the removal of the lens matter after the needling of a cataract. Professor Hirschberg went into the history of suction operations. Mr. James Hinshelwood related a case of pure word blindness with right homonymous hemianopsia, with pathological examination by Drs. McPhail and Ferguson. He also described a case of congenital word blindness. Mr. Bishop Harman said the condition of congenital word blindness was well known in the London schools. Mr. Stephenson did not think it was anything like so rare as was supposed, and he had himself reported 2 cases in boys. Remarks were made by Messrs. Wherry, the President, and Dr. Harris. Mr. Hinshelwood replied. Dr. George Carpenter related a case of retinitis in a child with large white kidneys. Mr. Bishop Harman read a paper on Follicular Conjunctivitis, and gave statistics he had obtained among school children. He drew attention to the influence of pediculi in the children's heads on the conjunctival condition. Dr. G. H. Burnham read a paper on Combined Treatment in Disease, especially of the Uveal Tract. This consisted of the hypodermic injection of pilocarpin and the internal administration of mercury and iodide. Dr. A. Bronner related a case of septic thrombosis of the cavernous sinus due to lateral empyema of the sphenoidal cells. The case had a fatal termination, and the results of the necropsy were given.

SECTION OF DERMATOLOGY.

Thursday, July 28th.

DR. J. H. SEQUEIRA (London) opened a discussion on the Comparative Value of Old and New Methods of Treatment of Lupus and other Skin Diseases. He dealt with the various means employed, such as excision, scraping, cauterization, etc., and then compared these measures with the recent therapeutic means, such as *x* rays, Finsen's method, high-frequency currents and radium. He reviewed their employment, limitations, and indications in lupus vulgaris, lupus erythematosus, rodent ulcer, epithelioma, and mycosis fungoides. The paper led to a very good debate, in which the following members took part: Dr. Brooke (Manchester), Dr. MacLeod (London), Mr. Hall-Edwards (Birmingham), Dr. Dore (London), Mr. Pernet (London), Professor Gilchrist (Baltimore), Dr. Graham (London), Dr. Hartzell (Philadelphia), Dr. Batten (London), Dr. Eddowes (London), Dr. Graham Little (London), Dr

Gamlin (West Hartlepool), Dr. William Martin (Newcastle), and the President. Mr. Hall-Edwards then showed a case of chronic *x*-ray dermatitis supervening on an acute dermatitis due to the same cause, and read a paper on the subject, limiting his remarks to the chronic condition. He described his own case, which resulted from repeated demonstrations of the *x* rays. He insisted on the pain, which had become very marked. The paper should be a warning to *x*-ray workers, who are apt to be careless as to frequency and duration of exposures to the rays, the possibility of epithelioma ultimately developing being a matter of great importance. The paper was discussed by Dr. Gamlin, Professor Gilchrist, Dr. Radcliffe Crocker (London), Dr. Norman Walker (Edinburgh), and Dr. Batten. A case was then demonstrated by Dr. V. Rutherford as an Urticaria Pigmentosa, the exhibitor showing microscopical sections.

Friday, July 29th.

Dr. E. Mallam demonstrated, for Dr. Martin, a patient suffering from Kaposi's multiple haemorrhagic sarcoma cutis. The case was discussed by Dr. Eddowes and the President. Dr. A. Whitfield introduced a discussion on the Relative Importance of the Bacterial and other Factors in the Causation of Skin Diseases. He dealt with the various diseases in which organisms are found, directing his remarks chiefly to the micro-bacillus, the bottle-bacillus and the non-liquefying coccus. The paper was illustrated by means of lantern slides. In the discussion which followed the following members took part: Professor Gilchrist, of Baltimore; the President; Dr. Leslie Roberts, of Liverpool; Dr. Eddowes, of London; Dr. Douglas Heath, of Birmingham; Dr. Dore, of London; Dr. Kenneth Wills, of Clifton; and Dr. Graham Little, of London. Professor Gilchrist then read a paper on Erysipeloid, and this was followed by one from Dr. Leslie Roberts on Non-parasitic Cutaneous Reactions and from Dr. Norman Meachen on the Influence of Peripheral Nerve Irritation upon Diseases of the Skin.

Section of Laryngology and Otology.

Thursday, July 28th.

The principal work of the day was the discussion on Non-Malignant Growths of the Larynx, which was introduced by Dr. Dundas Grant. He developed at length and illustrated by case records the general views indicated in the synopsis of his paper published on June 11th, and exhibited and compared critically a number of intralaryngeal instruments. He showed that the function of the anterior and middle third of each vocal cord was probably the spot most liable to disease. Voice rest and general treatment were capable of curing many cases of singers' nodules, and in conditions calling for removal by operation the oral route should be chosen, and extralaryngeal operations as a rule avoided. The removal, moreover, should be very complete. The instrument he preferred was a modification of that of Morell Mackenzie, and he used it usually with local anaesthesia produced by a 20 per cent. solution of cocaine. Dr. Jobson Horne then read a translation he had made of Professor Rosenberg's contribution, and the latter, who was present, illustrated it by specimens. The author, like Dr. Dundas Grant, preferred the endolaryngeal route for removal of growths, and showed how he overcame the difficulties sometimes experienced in dealing with children. In the general discussion which followed, Dr. Haring thought that the key to treatment lay in the recognition of the fact that many of the smaller growths in the larynx were of inflammatory origin, and that voice rest was an important adjunct to treatment. Dr. Greville Macdonald did not consider that spontaneous disappearance of papillomata ever took place, but that small growths such as singers' nodules frequently disappeared. Dr. Watson Williams laid stress upon the need for more exact knowledge of the pathology of benign growths, and considered that some of the conditions described as benign were really inflammatory or due to some infective micro-organismal causes. Dr. Scanes Spicer instanced a case illustrative of the microbic origin of papillomata, and expressed his belief in their occasional spontaneous disappearance. Dr. Tilley disagreed with Dr. Rosenberg in the anaesthesia of children, and considered that deep anaesthesia was necessary. Observations were also made by Drs. Waggett, Robinson, StClair Thomson, and Price Brown (Canada). After a brief reply from Dr. Grant, Dr. Bronner read a paper on the Local Application of Remedies to the Middle Ear, by means of a compressed air apparatus, which was followed by a discussion in which Drs. Milligan, Barr, and others joined. A paper upon Menière's Disease and its Operative Treatment was read by Dr. Milligan, and was followed by a brief discussion. Mr. L. A. Lawrence then read notes of a case of mastoid abscess after measles, and the work concluded with a paper by Dr. W. S. Syme on a case of Congenital Word Deafness, which was discussed by Dr. Barr.

Friday, July 29th.

The Section commenced its meeting with a paper by Dr. Greville Macdonald upon Asthma and Pulmonary Diseases and their Relation to the Nose, which was attentively listened to by a full audience, the attendance being equal to that upon the two previous days. He showed that many asthmatics were cured by nasal treatment, especially by cauterizing the upper portion of the triangular cartilage, quoting also the remarkable results of Dr. Francis, of Brisbane, in this relationship. Dr. Samuel West next read a paper in which he considered in detail the inter-relations of asthma with disease of any part of the body. He considered that many of the cases mentioned in general statistics were not true asthma; the latter he considered a neurosis of the respiratory system, and as such closely allied to epilepsy. He therefore considered it correct to treat any nasal disease or abnormality in cases of asthma in which other treatment was of no avail. Dr. Brady, of Sydney, mentioned some cases cured by nasal operation. Dr. Colin Campbell also considered nasal treatment valuable, and agreed with Dr. Macdonald in the treatment by cautery, and emphasized the need of tracheal treatment by injections when bronchial symptoms were marked. Dr. Downie thought that removal of polypi was effective when complete. Drs. StClair Thomson, Francis, Williams, and Pegler discussed the Etiology of Asthma, and Dr. Scanes Spicer expressed his belief in the value of intranasal treatment. Dr. Haring mentioned a case in which asthma was cured without any treatment as the result of a powerful mental and moral stimulus. Dr. Price Brown (Canada) described a method of preventing oral respiration during the night, and after some words from Dr. Tilley, Dr. Newcome (New York) narrated peculiar cases in which relief had been afforded by changes in external conditions. Dr. Downie read a paper on Paraffin Injections, illustrated by many excellent photographs, and replied to a number of questions as to precise technique. Owing to lack of time, only abstracts of the papers by Dr. Yonge and Dr. Pegler could be read.

Section of Tropical Diseases.

Thursday, July 28th.

The discussion on Malaria was opened by J. W. W. Stephens, M.D., who read a paper entitled the Prophylaxis of Malaria. Other communications on the subject were made by: Henry Strachan, C.M.G., M.D., whose paper consisted of Notes on the Prophylaxis of Malaria; S. P. James, Captain, I.M.S., and S. R. Christophers, Lieutenant, I.M.S., who dealt with the Success of Mosquito Destruction Operations; Major Ronald Ross, C.B., F.R.S., critically considered the Anti-Malaria Experiment at Mian Mir. The papers and the subject of malarial prophylaxis were discussed by Colonel Kenneth MacLeod, D. E. Anderson, M.D., Philip O. Malabre, M.B., C. E. Williams, Captain I.M.S., Louis Sambon, M.D., Fritz J. A. Beringer, M.R.C.S., L.R.C.P., T. McCulloch, Major R.A.M.C., Sir Patrick Manson, K.C.M.G., F.R.S., D.Sc., Professor W. J. Simpson, and Alex. Crombie, C.B., M.D. Papers were read by F. M. Sandwith, M.D., F.R.C.P., on Infectious Jaundice (Weil's Disease) by Major Mathias, R.A.M.C., on Jaundice in South Africa, and by Captain Sewell, I.M.S., on Epidemic Catarrhal Jaundice. In the discussion which followed the papers on Jaundice Colonel Kenneth MacLeod, M. A. Ruffer, M.D., D. E. Anderson, M.D., and Major Buchanan, I.M.S., took part. Specimens with description of the following diseases were communicated by James Cantlie, M.B.: (*a*) A Bacillus found in a case of Climatic Bubo from Mysore; (*b*) Scattered Subcutaneous Nodules in Limbs appearing with accompanying fever in a patient from Mysore.

Friday, July 29th.

The discussion on the "Leishman-Donovan bodies" was opened by Major W. B. Leishman in a paper entitled "The Nature and Significance of the Leishman-Donovan Bodies." The first case in which the parasites were found was that of a soldier invalided from Dum-Dum in 1900 with tropical cachexia and splenomegaly. Up to the present, cases of illness, in which the "bodies" have been obtained, are from three or four widely-separated districts in India, from China, Tunis, Algiers, Arabia and Egypt. Although originally found

in the spleen, the parasites have since been met with in the liver, mesenteric glands, the bone marrow, the kidney, and in ulcers involving the intestinal mucosa. The symptoms of the disease closely resemble kala-azar, and Bentley and Rogers have found the "bodies" in kala-azar cases. Laveran believes the bodies to be a species of piroplasma—a parasite of the red blood corpuscles. Major Ross considers them a new genus of the sporozoa. Leishman believes the "bodies" to be either a trypanosome or of some closely-allied member of the flagellata. Major C. Donovan, Indian Medical Service, communicated a paper on Human Piroplasmosis. Leonard Rogers, M.D., Captain, Indian Medical Service, sent a paper entitled Cachexial Fever in India associated with Cunningham-Leishman-Donovan Bodies, and submitted figures showing the development of the trypanosoma from the plasmodial forms of the Leishman bodies. Charles A. Bentley, M.B., sent a communication on Some Notes upon Kala-azar and the New Parasite. Aldo Castellani, M.D., Director of the Bacteriological Institute, Ceylon, sent a paper entitled, Leishman-Donovani in Ceylon. Llewellyn Phillips, M.D., F.R.C.S., sent a Note on the Occurrence of the Leishman-Donovan Parasite in Arabia and Egypt. S. R. Christophers Lieutenant I.M.S., wrote upon Tropical Splenomegaly and Oriental Sore. In the discussion which followed these papers on the Leishman-Donovan bodies the following took part: Sir Patrick Manson, F.R.S., D.Sc., Louis Sambon, M.D., Mr. Jonathan Hutchinson, F.R.S., Colonel David Bruce, C.B., G. C. Low, M.D., J. W. W. Stephens, M.D., Colonel Kenneth McLeod, Lieutenant-Colonel Crombie, C.B. T. J. Tonkin, L.R.C.P. and S.E., read a paper on Leprosy: a Curable Disease. Mr. Jonathan Hutchinson, F.R.S., and Mr. James Cantlie joined in the discussion on Mr. Tonkin's paper. P. W. Bassett-Smith, Fleet Surgeon R.N., sent a paper on the Fungus of Tinea Imbricata. Sir Patrick Manson spoke on the difficulty of obtaining scales free from other fungus form than those appertaining to T. imbricata. James Cantlie, F.R.C.S., read a paper upon An old case of Liver Abscess, followed by an Abscess in the Upper Lobe of the Right Lung. Colonel Kenneth MacLeod also spoke on liver abscess. Sir Patrick Manson and John Cato, M.D., described "a new nematode," the ova of which were found in various organs of the abdomen. Dr. Andrew Duncan's paper on the Prophylaxis of Malaria, deferred from the previous day, was also read at this meeting of the Section.

Section of Navy, Army, and Ambulance.

Thursday, July 28th.

On Thursday this Section commenced its labours with a discussion on Malta Fever, introduced by Colonel D. Bruce. He said that the fever sometimes lasted for years, and gave rise in the naval and military forces in the Mediterranean to an amount of suffering which was painful to contemplate. The Admiralty, War Office, and Colonial Government had joined in a determined effort, under the direction of the Royal Society, to investigate the nature of this disease. He gave an account of what was known of its etiology up to the present, and then referred to a telegram which he had received from Malta, signed by Major Horrocks and Captain Kennedy, saying: "Found twenty-six colonies micrococcus melitensis from one-third c.cm. urine." This proved one more mode of exit of the organism from the bodies of infected patients. A communication from Fleet Surgeon Bassett Smith on Some Points on the Etiology of Mediterranean Fever was then read. It gave a critical account of the various theories which had been put forward as regards the prevalence of the disease; the author said that there were no signs of any diminution at present. The meeting was then addressed by Professor S. Grech, M.D., of Malta, who was followed by Surgeon-Major G. A. Hutton. Major Clarkson, R.A.M.C., considered the disease not directly connected with sewage or insanitary surroundings. Deputy-Inspector-General Preston said the probable exit of the toxins of the micrococcus was through the liver. Colonel Bruce having replied, the President called on Fleet Surgeon J. Lloyd Thomas to read his Notes by a Naval Surgeon. Much interest was taken in the last part of these Notes, in which the author dealt with deafness from gun firing. He explained that most men kept the mouth slightly opened during firing operations, but this tended to intensify air concussions on the foramen ovale. No device had been found that sufficiently protected the ear from the violent concussions. The author had advised the use of vaseline for the purpose of weakening the intensity of the sound, but with doubtful results. Surgeon-Major C. R. Kilkelly then read a paper on the General Hospital in War and its Working and Staff, and Dr. S. Hamilton read a paper entitled Is the Widespread Slight Training in Ambulance Work Beneficial to the Community, or would it be Better to make the Training more Thorough at the Expense of Numbers? The Section then adjourned.

Friday, July 29th.

This Section opened on Friday morning with a small attendance of members, fully explained by the heavy rain. Gradually, however, as the weather cleared up sufficiently to allow of men venturing out without being drenched, the members interested began to appear, and the Section assumed its ordinary aspect. The meeting soon become absorbed in the communication of Colonel J. E. Squire on the Organization during Peace of Civil Medical and Ambulance Aid to ensure an immediate reserve of trained assistance on the outbreak of war. The aid under discussion could be divided into two kinds: (1) Surgeons, nurses, and orderlies temporarily employed by the military authorities, receiving pay through the War Office; (2) *personnel* and stores provided by voluntary subscription. Surgeons and nurses adequately trained in their professional work were to be obtained in sufficient numbers to allow of selection, but in order to obtain at short notice the best professional aid, the selection must have been made previously. Colonel Squire suggested that a list should be kept at the War Office of suitable persons who were willing to serve if required. A roll of men willing to serve as orderlies might be also kept. Hospital stores and equipment were needed in war greatly in excess of peace requirements, but by previous arrangement with large firms almost everything needed could be procured as required. There should be some organization with local branches throughout the country, by means of which individuals wishing to help when a war broke out could at once be brought into touch with a central body in direct communication with the War Office. Those local branches should be permanently established under some central organization, preferably not connected with the War Office, and with its head office in London. As the basis on which to build up the organization that was required they had the British Red Cross Society, various nursing associations, and the British Central Red Cross Committee. Colonel Squire suggested that the British Medical Association, with its branches all over the Empire, might well serve as a means of forming a truly Imperial Red Cross Society, with a central organizing committee in London forming a "buffer" committee bringing all the various societies into touch. Major E. C. Freeman, Dr. J. E. Molson, and Major T. McCulloch joined in the discussion. Surgeon-General Cuffe then spoke, and was followed by Deputy-Inspector-General Preston, R.N., who said that private firms were not to be implicitly relied on for suddenly supplying stores. The next speaker was Surgeon-General W. K. Van Reypen, who was described in the list of members as Rear-Admiral U.S. Navy. This gentleman is President of the American National Red Cross Society, and his account of the work of that organization, with its ladies who sometimes took receipts for money and sometimes did not, was instructive. Surgeon-General Keogh sent a communication, and hoped Colonel Squire's paper would awaken the medical profession into taking its due share in the administration of Red Cross work.

Section of Dental Surgery.

Thursday, July 28th.

Work began by the reading by the Secretary, on behalf of Mr. W. H. Battle, of a paper on a case of Melanotic Sarcoma in a Child of Three Months. Microscopically the tumour was an alveolar sarcoma. No recurrence had taken place since the operation two years ago. The specimen was exhibited. Mr. J. G. Turner, who saw the patient with Mr. Battle, discussed the case, the various points of which were also reviewed by Mr. Sidney Spokes and Dr. Hayman. Professor Arkövy (Buda-Pesth) then described a case of what he considered a new variety of alveolar disease—pyorrhoea alveolaris or Regg's disease, which should be more properly termed "caries alveolaris specifica." The case which Professor Arkövy described was an acute form which became superimposed upon the more chronic alveolar disease. Professor Arkövy went on to describe the various symptoms, as observed clinically, and suggested the term "caries alveolaris specifica floridia," on account of its fulminating character. He considered it as a neurotrophic disease, complicated with infection, probably a streptococcus. Mr. J. G. Turner,

F.R.C.S., said the case described resembled in some respects one narrated by himself some time ago, in which the jaw was hollowed out by abscesses. He was not familiar with such a series of associated symptoms as those described by Professor Arkövy. Mr. Sidney Spokes, Mr. W. A. Maggs, and Mr. H. Baldwin also took part in the discussion. Mr. J. G. Turner, Assistant Dental Surgeon, Royal Dental Hospital (London), read a paper on The Growth of Bone in Relation to the Position of the Teeth. Mr. Turner demonstrated that spaces occurred between normal temporary teeth and that crowding was associated with maldevelopment directly following adenoids. Mr. Maggs mentioned the development of the teeth of a fish which he thought was somewhat analogous to the development described by Mr. Turner. Mr. Sidney Spokes, Dental Surgeon, University College Hospital, read a paper on the Care of Children's Mouths, in which he advocated a more general and systematic treatment of the oral disease in young children and suggested measures to be adopted. Dr. Hayman, Dr. Buck, and Dr. Sim Wallace discussed the paper. Mr. Spokes replied. Dr. Sim Wallace, Assistant Dental Surgeon, National Dental Hospital, read a paper on Physical Degeneration in Relation to the Teeth, in which he discussed the prevalence of dental caries and oral diseases, and the many manifestations of physical deterioration, his suggested general lines of treatment embodying in the main a return to a more fibrous diet for both children and adults. The paper was discussed by Mr. Howard Mummery, Dr. Ernest Carter, Dr. J. Milligan, Mr. Kenneth W. Goadby, Mr. E. Lloyd Williams, Mr. H. Baldwin, Mr. F. J. Colyer. Dr. Sim Wallace, in his reply, made some suggestions relating to the dietary of children under 5 years of age. A vote of thanks to the President, Mr. E. A. Bevers, M.R.C.S., the Mayor of Oxford, terminated the proceedings of the Section.

CONGRESS OF THE SANITARY INSTITUTE.

(Concluded from p. 261.)

Section of Preventive Medicine.

Malaria and Consumption in the Tropics.—Sir Richard C. Temple (late Chief Commissioner, Andaman and Nicobar Islands) read a paper on some administrative measures taken against malaria and consumption in the tropics. The steps taken at Port Blair in 1902 were, first, to ascertain the simplest and cheapest methods locally applicable to prevent mosquitos from breeding, and then to create a strong convict mosquito brigade at all convict stations, to define its work in detail, to instruct the members, and to provide them with suitable tools. He advised that mosquito netting be abandoned, as the brigades were a sufficient remedy.

Sir R. Douglas Powell, Bart., said the modern view regarding communication of malarial fevers and how best to combat them was to prevent mosquitos from obtaining access to the victims, and this was effected by means of mosquito nets, etc. This did not allow enough fresh air. Whereas malarial fever diminished, there was a tendency for tuberculous infection to increase. He thought it right to revert to more general measures by improving the surroundings and removing all filth. He moved that:

In view of the fact that the penal settlement of Port Blair affords exceptional opportunities for effective experimental measures for checking the spread of malaria and consumption, it is recommended that the Council of the Sanitary Institute represent to the Government of India the value of communicating from time to time the results of the experiments inaugurated there in 1902.

This was seconded by the President, and agreed to.

Infantile Mortality.—A paper on infantile mortality: its causes and prevention, was read by Dr. Charles Templeman (Dundee). The conditions which influenced this mortality were, he said, social and economic as well as hygienic. Among the most important factors were insanitary surroundings, drunkenness, and deficient feeding on the part of the mother. The ignorance of many women regarding the elementary principles of infant hygiene was deplorable, and in nothing was this more evident than in the matter of infant clothing and feeding. It was difficult to convince many women that the only physiological food for an infant was the milk of its mother. Infant mortality was highest where a large proportion of married women went out to work. It was impossible for working mothers to suckle their children, and another factor for the mortality was early marriages. Such marriages led to the production of immature, unhealthy infants, who died soon after birth; while those who survived were often physical weaklings with little power of resisting disease. The mortality of breast-fed children was much lower than that of children brought up by the hand. To the contamination of milk was due zymotic diarrhoea, and it was remarkable that in most households so little pains were taken to preserve from contamination this liquid, which had such a power of absorption and was such a breeding ground for organism. In his opinion the chief agent in milk contamination was the house fly. Sunshine and fresh air were almost as essential to the proper growth and development of the children as food, and considering the conditions under which many of the children in the slums of our large cities were reared it was not surprising that the mortality amongst these was greater than amongst those who occupied a higher position in the social scale. Much good would result from the establishment of *crèches* in connexion with works where female labour was employed, so that even during working hours workers might be permitted at stated intervals to suckle their infants. Unfortunately ignorance or carelessness in this matter was not confined to the lower classes. Many mothers in the higher grades of society allowed their social enjoyment to stand in the way of this, their most obvious duty to their offspring. There was little hope of effecting any great reform with the present generation, and it seemed to him that the best hope of success lay in dealing with the rising generation, and the means of attaining it was to educate them seriously and properly in the subject of infant hygiene, and especially feeding.

In the course of the discussion Dr. Sykes gave particulars of schools established in France, in which girls were taught the duties of a mother and instruction given regarding the proper feeding of children.

The Sanitary Condition of Vessels.—Dr. William Wright (Medical Officer to Glasgow Port Local Authority) read a paper dealing with the sanitary condition of the mercantile marine. The minimum space provided by law for sailors' quarters was far too small. It was still not uncommon to find men occupying a forecastle in which the deck above was much less than 6 ft. from the floor, compelling them to remain in a bent posture whilst inside. In some of the larger liners reaching Glasgow it was not uncommon to see bunks placed in all available corners, absolutely dark, and little short of coffins. In the remainder of the forecastle the bunks were all in three tiers, the bottom of the lowest being only 2 in. or 3 in. from the floor, thus preventing the possibility of removing filth, which readily accumulated there. Ventilators were frequently absent, and when present were either stopped up with rags or were placed in positions apparently with little idea as to the purpose for which they were intended. He suggested that port local authorities should combine in one strenuous effort to take over into their own hands the sanitary supervision of ships, and displace the Board of Trade from a position which, up to the present, had been nothing short of a sinecure. The officers of the Board of Trade had no knowledge of the sanitary requirements of a ship; why not, therefore, transfer the power to those who were qualified to know? He considered there was no reason whatever why port sanitary administration should not reach the same standard as that which existed in Glasgow, one of the first cities of the empire in regard to public health.

Dr. Williams (Medical Officer of the Port of London) said his experience of forecastles was that they were dark, damp, and dirty. The atmosphere was often so heavy that one could lean against it. After further discussion the following resolution was adopted:

In consideration of the insanitary condition of the mercantile marine this Section is of opinion that the sanitary control of ships, both during and after construction, should be vested in port sanitary authorities, and that medical inspectorships for shipping should be created on the staffs of the Local Government Boards of England, Ireland, and Scotland to supervize all suggestions from such port authorities for the consideration and approval of the Board, and the Section recommend the Council of the Institute to bring the proposition under the notice of the proper authorities.

Section of Engineering and Architecture.

Sewage and its Disposal.—The President, Professor Henry Robinson, delivered an address in which he dealt with sewage and its disposal. The want of proper provision for dealing with storm water at outfalls was often a fruitful source of trouble. Where the results were unsatisfactory the failure was mainly attributable to the fact that the discharge at the outfall, through defective construction of sewers or otherwise, prevented whatever system of treatment was in operation from having a chance of suc-

cess. He pointed out the benefit of sedimentation tanks, and illustrated this by a reference to experiments carried out by the Massachusetts State Board of Health, and to investigations made at Birmingham, Huddersfield, and London. He suggested that a Royal Commission might bring into definite shape the lines which legislation should follow as to whether it would be advisable to have the country divided into drainage areas, forming natural boundaries coterminous with sanitary districts, so that the needs of the entire population within each area should be equitably dealt with.

Control of Water Supplies.—Dr. James R. Kaye submitted a paper on the supervisory control of water supplies. During the last five or six years the injustice of the present system of allocating water supplies had become increasingly apparent, and had given rise to numerous protests. The existing state of things was so unsatisfactory that there ought to be no further delay in dealing with it in a comprehensive manner. He therefore moved the following resolution:

That this meeting is of opinion that the whole question of water supplies demands investigation by a Royal Commission, appointed specially to deal with that subject, and that representations be made to Government accordingly.

Conference on Hygiene of School Life.

A conference on the hygiene of school life was held under the presidency of Professor John Edgar (St. Andrews). The President, in his opening address, said education was beginning to profit by the fruitful labours of science. A new conception of the meaning of education and the teacher's work was taking shape. The teacher must indeed have a thorough knowledge of subjects of instruction—but if he was to be an educator as well as an instructor, capable of guiding the growth of each individual pupil towards his highest social fitness, or of scientifically directing his process of adjustment, he must know in addition, and know theoretically and practically (1) the nature of the growing organism—the child, (2) the physical environment best suited to its health and growth. Such knowledge he considered necessary in some degree for every teacher, and it would, he hoped, become a fundamental part of his future professional outfit or equipment. The introduction of hygienic physiology into the sphere of the school meant that science and enlightened experience were now to take their proper place in education.

Glasgow School Children.—Dr. A. K. Chalmers (Medical Officer of Health for Glasgow) read a paper on the examination of school children in Glasgow. From a report prepared in the winter of 1902-3 he found that among one-seventh of the population—more than 100,000—living in one-room houses the death-rate was 33, among 350,000 living in two-room houses a death-rate of 21, and among 150,000 living in three-room houses a death-rte of 13. In all the other grades of houses the death-rate was correspondingly lower. It occurred to him that a death-rate graded in that form suggested that there were behind it more or less corresponding gradations in physical conditions. He gave details of the results of the examination of children in certain schools in Glasgow, including schools in districts where the death-rate was highest, others in which it was not so high, and others in which the children were of a better class. The total number of children examined was only 750. Dealing with the relation of height to weight, he gave the following statistics of children at the age of 6: In Glasgow the average weight was 39.1; in Edinburgh 43, the standard of the Anthropometric Committee, 44: and in specially-selected Glasgow schools, 44 7. At 7 years of age the corresponding figures were: 46 6, 46.8, 49.0, and 46 0. After the age of 9 was passed the Edinburgh children weighed more than the Glasgow children at corresponding ages, and the selected school children again were much in excess of the anthropometric standard. In Glasgow, at 9 years of age, the figure was 51.78, in Edinburgh 54.83, the Anthropometric Committee's standard was 60 0, and selected schools 63 0. The general conclusion was that in Edinburgh the average weight was greater at most ages, and that the Anthropometric Committee's standard was greater throughout, but that in the case of boys at a selected school it was greater than the anthropometric standard. In regard to height the position was reversed. The average height at most ages in Glasgow was greater than in Edinburgh; the Anthropometric Committee's standard was greater than the Glasgow standard, with the exception of the boys of the selected school. These results more or less confirmed the impressions which the Anthropometric Committee years ago made plain that in towns there were children of corresponding ages who were both smaller in stature and less in weight than children brought up in the country. Grading children according to the class of house in which they lived, it was found that the average height of girls from one-room houses was 43.4, two-room houses 49.2, and houses of three rooms and upwards 50. The average weight of girls from the same class of houses was 48.8, 56.0, and 58.0 respectively. In the case of boys the average height was 47.9, 49.0, and 50.0 respectively, and the weight 52.9, 56.0, and 59 6 respectively. This suggested that when they talked of one, two, and three-room conditions of living they were dealing with an economic standard—that just as they had people living in one-room houses so they had people clothed and fed, so to speak, in a one-room manner. He meant that these people were defective not only in house room but that they were defective in other respects, chiefly in the matter of food. He urged the necessity of an inquiry into the food conditions of the people. He found in many parts of Glasgow that the family budget, instead of being estimated or weighed in the more usual way in pounds weight of meat or number of loaves, was calculated in broken bread or meat parings. Many hundreds of families lived on that kind of thing—perfectly good in itself but away from the standard usually fixed on in estimating food quantities. If they were to have physical training for children in schools it was obvious that they must select the children or adapt the exercises to the children. They could not put children, simply because they had reached a certain age, to a given system of physical drill without knowing whether their hearts and lungs were in a good condition. He thought that the results obtained at least established a case for further inquiry both as to food and clothing.

In the discussion which followed Dr. Leslie Mackenzie (Edinburgh) said that scores of children were systematically underfed. It might be that uncleanliness was not confined to any particular class of house, but there was no doubt of the fact that shoals of children went filthy to school.

Dr. Kerr (London) said there was a lower depth than the one-room house. They had to find out how many families sometimes lived in one of these houses. They had to influence the home through the school, and they could only influence the home and the school by getting hold of the teachers. The present generation of teachers could only be expected to do their best. It was the future generation, both of teachers and children, that had to be regarded. They had to go beyond the teaching of the teachers. They wanted to teach the inspectors, and they wanted to educate even the Board of Education.

On the suggestion of the President, a resolution was adopted to the effect that it was desirable that there should be periodic and regular medical inspection of schools.

Physical Training.—Dr. Alan Tuke read a paper on physical training as a branch of school hygiene, in which he dealt specially with the effect on the health and physique of children attainable by systematic muscular exercise. This could be termed its physical effect. In working to produce the physical effect three distinct aims should be kept in view: (1) To raise the standard of health, and hence increase the power of resistance to the organisms of disease; (2) to assist in the treatment of distinctly pathological conditions; (3) to aid the development of the child in structure and function; to assist all teachers, professional and otherwise, to acquire a sound knowledge of physical training, he urged strongly the formation of a "Scottish Institute of Physical Training." Such a body could establish in various centres courses of lectures, and afford opportunities to both country and town teachers for acquiring a wider and deeper grasp of this subject. It would still further tend to raise the standard of teaching were such an institution, after examination both in the theoretical and practical work, to issue certificates of proficiency. He trusted that the day of the old drill sergeant was passed, and that in the future this work would be put in the hands of those able to appreciate it from a higher standpoint. The question of suitable clothing did not present any great difficulty. Boys required to take off jacket and waistcoat, and loosen the shirt at the neck, and ordinary boots must be replaced by gymnastic shoes. In the case of girls, gymnastic shoes were just as necessary. Stays should be renounced so as to insure the free play of the trunk muscles. A simple school costume, such as was used in Sweden, should be gradually introduced into all schools, consisting of a loose blouse, a skirt, and knickerbockers. For the purpose of physical training the skirt only was removed. Such a dress permitted complete freedom of movement, and hence the better carrying out of the exercise.

Dr. S. G. Moore (Huddersfield) held that simple elementary

hygienic facts ought in the first instance to be conveyed to the minds of all scholars.

Conference of Sanitary Inspectors.

A conference of sanitary inspectors was held under the presidency of Mr. T. F. Strutt (late Chief Sanitary Inspector, City of Westminster). The President devoted his opening address to the question of the insecurity of tenure of office of sanitary inspectors. He premised that his remarks did not apply to their brethren north of the Tweed, as he understood they had some security. How could a sanitary inspector, he asked, be expected to do his duty fearlessly when the Council which employed him was, as was commonly the case, composed of slum-property owners, house farmers, jerry builders, and their friends? What he proposed was that the sanitary inspector should have fixity of tenure in his office, with the right of appeal to the Local Government Board, and, if possible, superannuation. In conclusion, he advocated the establishment of a Ministry of Public Health, but he did not want one fashioned upon political lines, governed by a party ignorant of practical public health problems and science. In the absence of a Government department, he testified to the value of the work of the Sanitary Institute.

Insanitary Bedding.—Mr. Peter Fyfe (Glasgow) read a paper on this subject. After discussion, Mr. Kelso (Paisley) moved the following resolution:

> This conference of sanitary inspectors is satisfied that the manufacture and sale of common unwashed wool-flocks for bedding, furniture and cushion stuffing, should, in the interests of public health, be disallowed by statute, and they request the Council of the Sanitary Institute to take the whole question of the use of this unwholesome and filthy material into their most serious consideration, with a view to an early representation being made to Government on the subject in the hope that as early as possible the matter may be taken up and adequately dealt with.

The resolution was seconded by Mr. Anderson and unanimously adopted.

The Prevention of Tuberculosis.—On July 27th Sir Richard Douglas Powell, Bart., lectured to the members of the Congress on the Prevention of Consumption. He said that consumption was, and had been ever, a disease of civilization. The prevention of consumption involved a much wider issue than the circumvention of the bacillus, though that troublesome little microbe was at the root of the matter. It was doubtful whether they would be able to eradicate it; all they could do was to neutralize the conditions under which the bacillus flourished. In this connexion he mentioned overcrowding and defective milk supply, and urged the importance of physical training in schools, as well as adequate ventilation and cleanliness in dwellings. It was from the poor and crowded populations that the vast death-rate from consumption arose. It was from them that the great bulk of poisoned material emanated; yet measures for the treatment of consumption amongst the poor were as yet hopelessly inadequate. Local efforts on a microscopic scale were started here and there by benevolent people, but they must serve as the mere nuclei for larger efforts undertaken by municipal authorities throughout the kingdom before they could effect any notable improvement in the death-rate from consumption. In conclusion, he said that compulsory notification seemed to him impracticable.

Conference of Medical Officers of Health.

A conference of Medical Officers of Health was held under the presidency of Dr. Armstrong, Medical Officer of Health, Newcastle, in the unavoidable absence of Sir Charles Cameron.

Presidential Address.—The Chairman read the address prepared by Sir Charles Cameron, in which he gave an account of the status of the public health medical service in Ireland. Much of the milk supplied to towns, he said, came from farms the hygiene of which was very insufficiently inquired into. Nuisances of all kinds were to be found in the country as well as in the town. Many of the former could not be dealt with by the local medical officer of health. He could not get his petty local Board to deal with them, or perhaps he found it incompatible with his interests to take too energetic action as regarded them. A county medical officer and two or three sanitary inspectors, independent of local influences, irremovable except for misconduct, and entitled to a pension, would do more good than could ever be accomplished by the existing sanitary organizations.

Notification of Tuberculosis.—Dr. John Robertson (Birmingham) read a paper in which he said it was always difficult to appraise the value of notification, in so far as they had two well-marked agencies at work. General sanitation had reduced tuberculosis by nearly 50 per cent. throughout the country, and he thought that increased general sanitation, better food supplies, better conditions of work would go on reducing tuberculosis, so that any reduction that might follow in a town adopting general notification was not altogether due to the notification itself and the action taken. One objection to notification in the past had been the effect it would have on the individual suffering from tuberculosis. That, he held, should be strictly guarded. He remarked that while medical officer of Sheffield the local authority there got compulsory powers for the notification of tuberculosis, and it was confined to tuberculosis in the lungs, and so far had worked well.

Dr. Wilson (Newcastle), as a general practitioner, contended that tuberculosis, especially of the lungs, ought to be notified.

Dr. Vacher (Cheshire) said that in his county the Local Government Board would not sanction compulsory notification of phthisis, and voluntary notification had been a failure. If notification was to be of use it must be compulsory.

Dr. Goold (Bolton) said that in his district voluntary notification had been fairly successful, and the next step was for medical men and local authorities to combine together to get compulsory notification.

Dr. Harris contended that by compulsory notification they would ear-mark many families, and thus cause great hardship.

Dr. Laurie (Chairman of the Sanitary Committee of Derby) said that voluntary notification in his district had been successful.

Dr. A. Campbell Munro (Renfrewshire) said he was glad to hear a note of dissent as to compulsory notification. For twenty-one years he had been doing much in the way of looking into the ventilation of houses, and that had done good.

Dr. Pilkington (Preston) said that those who favoured compulsory notification had not sufficiently weighed the momentous issues that were at stake. That meant hospital isolation, inspection, and disinfection. His opinion was that the true remedy for phthisis was in general sanitation, the improvement of the conditions in which the people lived, better houses, and better ventilation.

Dr. Naismith and Dr. Redgrave Johnstone (Stoke-on-Trent) supported compulsory notification.

Dr. Butler (Willesden) said voluntary notification was essentially faulty, for at present notification could not be done unless the patient himself were a consenting party. Compulsory notification would be an exceedingly expensive piece of administration. No suggestion had been made to treat consumption in the same way as other infectious diseases. The utmost that was expected was to give instruction and to disinfect. At present instruction was given, and he would have disinfection not only at the close of the trouble, but even during the progress of the disease.

Professor Kenwood said that voluntary notification had done much good in London, but it had been disappointing, in that there had not been so many notifications as they would have liked, and that was one of the greatest arguments in favour of compulsory notification. One drawback, and what made them somewhat lukewarm in advocating compulsory notification, was that in a large percentage of cases the people would require to be removed to a sanatorium or an isolated hospital.

Dr. Skirving (Sheffield) said compulsory notification had worked well, and the cost was not more than £200 a year in Sheffield.

Control of Small-pox Contact.—Dr. Knight (Glasgow) read a paper on the control of small-pox contact. He explained the system adopted in Glasgow for the removal of patients in the poorer districts to the reception house, where the body and clothing of contacts were disinfected. Working men were not prevented from attending their work, because the clothing could be disinfected and returned within twelve hours. The greatest trouble had been to discover missed cases. He also referred to the model lodging-houses, which were practically made reception houses, and where the people were kept under observation.

Dr. Hill (Durham), Dr. Templeton (Dundee), Dr. J. C. McVail (Dumbartonshire), and others spoke in favour of the system adopted by Glasgow.

On the motion of Dr. Adam Wilson (Newcastle), seconded by the Chairman, the following resolution was unanimously adopted:

That this Congress is of opinion that the public health has suffered seriously through the transmission of small-pox by tramps, and recommend the Council of the Sanitary Institute to petition Parliament to take such measures as will place vagrants under control, and reduce the risk of their disseminating infection.

Scarlet Fever and Hospital Isolation.—Dr. F. H. WADDY read a paper on scarlet fever in relation to hospital isolation. It took the form of a report on the recurrence of scarlet fever in houses in Sheffield during the four years, 1900-3. He said that the return of cases which arose in a house shortly after the return from hospital of a previous case, although they constituted only a very small proportion, about 3 or 4 per cent., of all the instances of cases that went to hospital, were yet sufficient entirely to outweigh the advantages which accrued to a house by virtue of the protection afforded by the removal of the patient during the previous period.

Dr. ROBERTSON (Birmingham) said that if Dr. Waddy's statistics were accurate, the point that he had arrived at was that they did not know quite how scarlet fever was transmitted from one person to another. It was rather remarkable that one had to admit that after so many years of sanitary work.

Dr. BROWNLEE (Glasgow) remarked that it was only by consistent isolation for years that they could make an impression upon infectious disease.

Dr. VACHER (Chester) said that he hoped no statement made would lead the public or the junior members of the profession to doubt the utility and necessity of infectious hospitals, more especially for scarlatina. In his county, which was largely a dairying county, they simply could not do without them.

The CHAIRMAN said that repeated cases of scarlet fever were due to some circumstances which they had not yet perhaps ascertained. One of these was that there was scarlet fever of an unrecognized type.

Female Sanitary Inspectors.—A resolution referred from the Conference of Women on Hygiene was passed in the following form:

That, in the opinion of this Conference, no female sanitary inspector or health visitor should hereafter be appointed by a local authority who has not previously obtained one of the recognized qualifying certificates of a sanitary inspector, and recommends the Council of the Sanitary Institute to take such action in the matter as may be found desirable.

Registration of Plumbers.—It was moved by Dr. CRAWFORD (Glasgow), seconded by Alderman HIND (Stockton-on-Tees), and resolved:

That it is necessary to the effective administration of the public health and water Acts that authorities should be recommended and empowered to require that the competency of the plumbers employed to execute or inspect plumbers' work under the regulations of those authorities shall be certified by the Plumbers' Company under the conditions appertaining to the national registration of plumbers or such other body as may be set up by statute or be approved by the Local Government Board.

CLOSING MEETING.

At the closing general meeting, Mr. WHITAKER (Chairman of the Council of the Institute), who presided, said that the Congress had been a very successful one.

Mr. WHITE WALLIS (Secretary of the Institute) said the attendance at the Congress had been between 1,500 and 1,600. This year the Council had for the first time issued ladies' tickets for the Congress, and it was gratifying to know that 51 ladies had taken tickets, in addition to the lady members attending.

SECONDARY SCHOOL CERTIFICATES.

WE have received from the Board of Education a copy of certain suggestions which have been submitted to the Board by the Consultative Committee for a system of school certificates. In a covering letter from Mr. Robert Morant, Secretary to the Board, it is pointed out that these suggestions have been put forward by that Committee as the result of careful and prolonged consideration after conference with representatives of the English Universitives, of Associations of Teachers, and of professional bodies concerned with the question, and after consulting with persons specially conversant with the administration of similar examinations. The Secretary adds that in view of the capital importance of these proposals in relation to Secondary Schools, the Board of Education are anxious to obtain an expression of the views of the Universities, and of other bodies interested, upon the important issues raised in them, and upon the solutions suggested by the Committee for consideration. The bodies referred to are requested to take such steps as may seem to them best calculated to further the objects in view, and to favour the Board not later than December 31st, 1904, or earlier should it prove possible, with the outcome of such consideration as may be accorded to the scheme. In conclusion it is said that in issuing the Report as it has been received from the Consultative Committee, it must be clearly understood that the Board refrain from the expression of any view as to the desirability or feasibility of the proposals therein contained, and that they are not committed at this stage to any action in the matter.

THE BOARD OF EDUCATION'S REFERENCE.

Mr. A. R. Guest, Secretary to the Consultative Committee, in forwarding a statement in reply to the Board of Education's reference of March 20th, 1902, gives an account of what has taken place in connexion with that reference.

Towards the end of 1901 the Board of Education received a letter from the General Medical Council, forwarding a Memorial addressed to that Council by the Head Masters' Conference. The Memorial had also been sent to—

The Pharmaceutical Society,
The Incorporated Law Society,
The Royal Institute of British Architects,
The Institution of Civil Engineers,
The Institute of Actuaries,
The Institute of Chartered Accountants.
The Society of Accountants.

The object was to draw attention to the grave inconvenience and waste of time caused by the multiplicity of examinations for entrance into professions. It pointed out that five of the bodies named held examinations of this kind themselves, which, although substantially identical in standard, were altogether diverse in the details of their requirements. The effects of this diversity were very serious, not only to schools, by rendering it impossible for boys working for the different examinations to be taught together, but also to the education of the boys preparing for the examinations, by depriving them of regular class instruction during their preparation. It was also observed that although these five bodies, as well as the others which do not examine, publish lists of examining bodies whose certificates they accept, the relief given was very partial, as no two lists were the same. The Head Masters' Conference suggested the institution of a single examination, to be held at centres three times a year, also that, if possible, a list of equivalents to this examination should be arranged for, to be adopted in common by all the bodies. They proposed that a Conference should be held between representatives of the Councils concerned, of the Universities, the Board of Education, the Head Masters' Conference, and the Incorporated Association of Head Masters, for the purpose of devising a scheme to put their suggestions into effect. The Board referred the correspondence to the Consultative Committee for its advice. Some specific questions in relation to the reference were framed by the Board, and the Committee was asked to answer them. On an examination of the matter, after collecting the necessary information, the Committee found that it was impossible for it to answer the Board's questions in a really satisfactory way without formulating its views on the best method of testing the instruction given in a secondary school, as it appeared to it that this was at the root of the whole subject. On this account it appeared to the Committee that the first step required was to ascertain the general attitude of those whom a change in the present system would chiefly affect, namely, the Universities and the teaching profession, as well as that of professional bodies concerned. The Committee, therefore, suggested that the reference originally made to it might be extended so as to include the general question. The Board, after conferring with the Committee, authorized it to make all necessary inquiries. The Board promised to give their careful consideration to any scheme which might be drawn up as a result, only stipulating that it should be clearly understood and explained that they did not engage themselves to take any action, if action on their part was proposed, and must not be regarded as committed to an endorsement of any proposals made by the Committee. Although sympathizing in the desire of the Committee to reduce the number of examinations the Board were obliged to view the question not on its own merits alone but in connexion with the whole of their educational policy.

Under the Board's sanction the three following Conferences were arranged and held by the Committee during the year 1903:

1. Held on the 8th and 9th May with representatives of the following Universities:
Birmingham University,
Cambridge University,
Durham University,
London University,
Oxford University,
Victoria University.

2. Held on the 2nd July, 1903, with representatives of the following associations of teachers:
Head Masters' Conference,
Association of Head Masters,
Association of Head Mistresses.

3. Held on the 4th December, 1903, with representatives of the following professional bodies:
Society of Accountants,
Institute of Actuaries,
Royal Institute of British Architects,
Institute of Bankers,
Institute of Chemistry,
Institution of Civil Engineers,
Institution of Electrical Engineers,
Institution of Mechanical Engineers,
General Medical Council,
Pharmaceutical Society.

A representative from the War Office and one from the Civil Service Commission also attended this Conference.

At these Conferences a provisional scheme for the institution of school certificate examinations which had been drawn up by the Committee was used as a basis of discussion. The views expressed at the first Conference gave ground for making certain modifications in this scheme; the modified scheme was discussed at the two last conferences without alteration.

Two more conferences of a similar character were held in the early part of the present year:

4. On the 25th of February with representatives of:
The College of Preceptors.

5. On the 25th of February with representatives of:
The Private Schools Association.

The Committee also had the advantage of hearing the evidence of Mr. J. Struthers, of the Scotch Education Department, who gave it some interesting information relating to the working of the Leaving Certificate system of the Department. After careful consideration of the opinions expressed at these conferences and of the present circumstances of Secondary Schools in the country, it has drawn up a scheme containing proposals for a system of School Certificates for England. In framing the proposals due consideration has been given to the position of the various bodies by which the work of examination is now carried on both in relation to the present and to the future. The Committee has considered a very large number of minor points on which it does not here report, as it believes that a broad outline of its proposals not too much cumbered with details is, for the present at any rate, what is required. It submits these proposals in the confident belief that the adoption of the plan suggested would result in very substantial benefits to secondary and higher education in this country.

Proposals of the Consultative Committee.

The Consultative Committee is of opinion:

1. That, with the object of diminishing the multiplicity of examinations affecting secondary schools, and of providing a test of adequate general education which may be widely accepted, a general system of school certificates is desirable.

The well-known term "Leaving Certificate" has been purposely avoided because it is to some extent misleading and is not infrequently misunderstood.

2. That it is not desirable that examinations for such certificates should be conducted by means of papers set for the whole country from a single central organization.

This clause must be read together with clause (6). It will be found that it is not the intention of these proposals to ignore the influence of the State in the supervision of a general system of examinations. On the other hand, it is important to prevent the evils which would almost certainly arise from the State having the sole responsibility in the matter. The desirability of bringing the examining body into closer relation with the teacher being recognized, it is obvious that in dealing with a population of more than 30,000,000 and a large number and great variety of schools, this object can only be effectively attained by the establishment of more than one examining body. The success of the Scottish and Welsh systems seems to be largely due to the limited number of schools with which they have to deal.

3. That such examinations should be controlled by a recognized examining body, which should be either (1) a university, or (2) a combination of universities, or (3) an Examination Board representative of a university or universities and of the local authorities which are prepared to co-operate with them. It is desirable that whatever the examining body might be, teachers of schools should, where possible, be represented, and with regard to (3) that every such Board should contain a large academic element.

The proposal to form in some cases Boards representing local authorities and teachers in the schools as well as universities may afford an opportunity for making an important new departure. Those local authorities, especially which aid the schools and may, perhaps, pay the examination fees, may be glad to be associated with a neighbouring university. There is, further, a growing body of public opinion in favour of associating the teachers in the schools with duties of this kind.

No general rule can be laid down requiring a school to be examined by a particular examining body. It may often be desirable that a school should be examined by the University or Board of the district in which it is situate. On the other hand, a school may prefer to preserve or to create a connexion with one of the Universities of Oxford, Cambridge, or London. It is recognized that it would not be desirable, if it were possible, to disregard the non local character of these Universities, or the position which their examinations occupy all over the country. The proposals are based on the assumption that it will ultimately be best for the secondary schools which are maintained or largely aided by local authorities to look to provincial examining bodies for the organization of their examinations, and it is not improbable that local authorities may prefer their doing so; but in any case there will be a period of transition during which the new system and the existing University examinations will run side by side for all classes of schools, and the higher secondary schools will doubtless always retain complete liberty in the choice of their examining body.

4. That recognition of these examining bodies should mean recognition by the Board of Education, acting on the advice of the Consultative Committee.

5. That the following conditions should be required from schools which present candidates for school certificates:

(*a*) Periodical inspection. Whether this inspection be conducted by officers of the Board of Education, or by a University or other organization recognized under Section III of the Board of Education Act, 1899, the report of the inspection should be communicated to the examining body.

(*b*) The communication of the course of studies pursued in the school to the examining body.

That an examining body should be at liberty to decline to examine a school if the result of the inspection has not been, in their opinion, satisfactory; or if the course of studies is such as they are not able to approve.

It is considered that in this connexion inspection and examination should be treated as complementary one to the other. Inspection is required, in the first place, to enable the examining body to judge whether a school is fitted to be admitted to the benefits of the system: but it is also required to enable the examiners to understand the aims and characters of the different schools, and so, on the one hand, to prevent the examination from becoming mechanical and rigid, and on the other to check any tendency in the school to direct its efforts too exclusively to success in the examination.

6. That a Central Board should be established for England (excluding, for the present, Wales and Monmouth), consisting of representatives from the Board of Education and from the different examining bodies, whose duty should be to co-ordinate and control the standards of these examinations, to secure the interchangeability of certificates, and to consider and as far as possible to adjust the relations of the examining bodies and their spheres of external action.

Although absolute identity of standard between examinations conducted by different bodies in different places may be an impossible ideal, practical equivalence can probably be secured. Further, more than one combination of subjects may be held to represent a good general education. It will be the duty of the Central Board to see that a sufficient minimum standard is maintained in each subject, so that certificates including these subjects, wherever given, may possess a generally recognized and interchangeable value, and further, that these certificates represent in each case a good general education.

7. That the Board of Education should constitute this Central Board as soon as, in its opinion, a sufficient number of recognized examining bodies have signified their willingness to be represented thereupon, and should take all steps that may be necessary to procure the acceptance of the certificates by the professional bodies.

8. That since an examination held with the co-operation of the school in which a scholar has been taught is more likely to lead to a just estimate of the knowledge which he possesses than one held entirely by an outside body, the examination should be conducted in each school by external and internal examiners, representing respectively the examining body and the school staff.

9. That the course of the work pursued by a scholar during his school career should be recorded and reported on by his teachers, and that this school record and report should be

available for reference in deciding his fitness or unfitness to obtain a certificate.

The suggestion here is that an examiner, in any case in which he desires to do so, should be able to judge of the character of a candidate's school career. The school records and reports need not be of uniform pattern. What is required is that such materials shall be accessible as will enable an examiner to judge whether the scholar's school career has been satisfactory or not. These materials will include, at the least, the curriculum of all the classes which a candidate has attended, a note of the time he spent in each, and periodical reports of his industry, regularity, and progress.

10. That the head master or head mistress of the school should certify that the candidate has received instruction during the necessary period, and is, in his or her opinion, fit to enter for the examination.

11. That the external examiner or examiners should have control of the examination, and should have a veto on the passing of any candidate.

12. That the papers should be set by the external examiner, after consultation with the internal examiner.

This consultation does not necessarily involve a series of personal interviews previous to the examinations. Full information as to the courses of study pursued by the candidate would, in the first instance, be supplied to the examining body for the information of the external examiner. The books read, whether in English, classical or foreign literature, and the courses of history or geography studied the practical work done, etc., would thus be reported. The internal examiner, also, would suggest series of questions, or indicate points upon which, in his opinion, questions should be set: and, in general, the two examiners would correspond on the subject matter of the examination paper. The paper should, however, be finally made up by the external examiner on his own responsibility.

13 That the allocation of work in reading and marking papers should be determined by the examining body, provided that papers which are near the minimum pass mark should be considered by both examiners.

14. That oral and practical examinations should be conducted by the external and internal examiners acting in concert, who should, subject to Section XI, jointly assess the mark for each candidate in this part of any examination.

15. That in language examinations no special books should be prescribed, but that passages should be included from the books used in the school as well as unseen passages. That an oral examination should always be held in the case of modern languages.

16. That there should be a senior certificate for pupils who have received not less than four years' instruction in a school or schools accepted for examination under Section V.

That there should be a junior certificate limited to pupils under 16 years of age who have received not less than three years' instruction in a school or schools accepted for examination under Section V.

With reference to the number of years of instruction required it will be desirable at first to give some latitude to the Central Board.

17. That no certificates for honours or marks for special distinction should be given, but that it should be open to the examiners to recommend the award of scholarships within a school or group of schools, when called upon to do so.

18. That scholars who are in a school which, in the opinion of the Board of Education, is unable to conform to these regulations, might be allowed to enter for the examinations under special regulations approved by Central Board.

MEDICAL NEWS.

French Congress of Climatotherapy.—A Congress of Climatotherapy and Urban Hygiene is to be held at Arcachon, France, April 24th to 29th, 1905, under the presidency of Professor Renaud, of Lyons. Among the vice-presidents are Dr. Calmette of Lille, Professor Grasset of Montpellier, and Professor Pitres of Bordeaux. The General Secretary is Dr. Lalesque of Arcachon. Communications relative to the Congress should be addressed to Dr. Festal, Villa David, Arcachon.

International Exposition of Hygiene.—An International Exposition of Hygiene is to be held in Paris from August to November of the present year. It is under the patronage of the French Ministers of Commerce, Posts and Telegraphs, Marine, Public Instruction, War, Agriculture, and Colonies. Five Congresses will take place during the Exposition, namely: Life-saving, from August 25th to 31st; Public Health, from September 10th to 20th; Fisheries, from October 1st to 10th; Social Economy, from October 11th to 20th; Hygiene, from October 21st to 31st; and Tuberculosis at a later date. The Chairman of the Admission Committee of Class XI (Medicine and Allied Arts and Sciences) is Dr. M. Leprince, 62, Rue de la Tour, Paris.

Epsom College.—The School Committee decided that Founders' Day should not be held this year, as a few cases of scarlet fever of a mild type occurred during the last few weeks of term. Several of the boys went home beforehand. The prizes were distributed on July 22nd, when it was announced that no fresh case had occurred for thirteen days, owing to the strict measures of isolation, disinfection, etc., observed. The Works Committee has placed the sanitary works and disinfection of the College in the hands of the local sanitary surveyor, and the services of the College surveyor and contractor, who will be carrying out the usual repairs and cleansing of the College, will be at his disposal. In view of these precautions, and the interval since the last case occurred, with the free ventilation given during the period of nearly two months the building will be empty, there is the utmost assurance possible that the College will be free from all risk of taint in connexion with the recent outbreak.

The Continental Anglo-American Medical Society.—The annual luncheon of the Continental Anglo-American Medical Society was held at the Clarendon Hotel, Oxford, on Thursday, July 28th, when about forty members and their guests were present. The chair was taken by Professor Osler, Honorary President of the Society, who was supported by Dr. Griffiths, of Swansea (the retiring President of the Association), Dr. G. A Gibson, Dr. Price Brown (Toronto), Dr. Brady (Sydney), Mr. Charters Symonds, Dr. Dawson Williams, Sir Thomas Stevenson, Mr. Burghard, Dr. Savile, Professor Saundby, Dr. Doyne, Professor Onodi (Buda-Pesth), Dr. J. S. MacKendrick, Mr. Harvey Littlejohn, Dr. Livesay, and Dr. W. E. Fothergill. The members of the Society who were present at the luncheon were: Dr. StClair Thomson, Honorary President (London), Dr. Brock (Rome), Dr. Coldstream (Florence), Dr. Samways (Mentone), Dr. Leigh Canney (Assouan), Dr. Freeman (San Remo), Dr. Lishman (Orotava), Dr. Sandwith and Dr. Bentley (Cairo), Dr. Hamilton (Bordighera), Dr. Thomson (Brussels), Dr. Gairdner (Naples), Dr. Hobson (Helouan), Dr. Gubb (Algiers and Aix-les-Bains), Dr. Bull, Dr. Warden, and Dr. Leonard Robinson (Paris). Professor Osler proposed the toasts of "His Majesty the King," and "The President of the United States." Professor Saundby proposed the toast of "The Society," to which Dr. Samways replied. Dr. Leigh Canney proposed "The Guests," coupled with the name of Sir Thomas Stevenson, who replied. Professor Osler, speaking of the usefulness of the Society, suggested that a list of its members be sent by the Secretary to each member of the American Medical Association. The Oxford luncheon was a most successful and enjoyable meeting, and for attendance of members was the largest on record, no less than eighteen members and candidates for membership being present.

Association for the Oral Instruction of the Deaf and Dumb.—At the annual meeting of this Association held at 11, Fitzroy Square, under the presidency of the Rev. C. H. Parez, specimens of work by the children were exhibited, and demonstrations of methods of oral instruction of various grades of pupils were given. The Chairman, in moving the adoption of the report, referred to the excellent work done by the Association both in the oral instruction of deaf children and the training of teachers for this work. Dr. Eicholz, H.M. Inspector, had reported most favourably of the institution. The practising school was attended during the past year by 52 pupils, 27 girls and 25 boys, and the highest possible Government grant had been obtained (£150 1s. 3d). Funds were much needed for the extension of the school premises, and for equalizing the income and the expenditure, the annual excess of the latter being about £500. The resolution was seconded by Dr. Humphreys and carried unanimously. Mr. Van Praagh, the director, drew attention to the increasing demand for teachers trained in the oral system, and referred with regret to the lack of candidates—especially of male candidates—wishing to qualify for what was really an admirable and remunerative professional opening. The Training College had in the past sent out many competent teachers to all parts of the Empire, and it was a pity that candidates and funds in abundance were not forthcoming to enable them to extend their useful public work. Miss Amy Paget then distributed the prizes, and the meeting was brought to a close by votes of thanks proposed by Mr. F. D. Mocatta and others. From the report we learn that Mr. Wm. Adams Frost F.R.C.S., has succeeded Mr. Brudenell Carter as Honorary Ophthalmic Surgeon to the Association.

BRITISH MEDICAL ASSOCIATION.

Subscriptions to the British Medical Association for the year 1904 are now due and should be forwarded by postal order or cheque to the amount of 25s. to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, AUGUST 6TH, 1904.

THE ANNUAL MEETING AT OXFORD.

THE annual meeting at Oxford was, by the common consent of those who attended it, one of the most successful which the British Medical Association has ever held. In point of numbers the attendance was unusually large, for some fifteen hundred members registered their names, and the Association had the pleasure of welcoming many foreign guests. The scientific discussions in the Sections were well sustained and drew large audiences, while the friendly attitude of the University lent special distinction to the public and social functions.

In Dr. Collier the meeting had a President who, by his geniality, tact, and business capacity, did all that was possible to deserve success, and it must be a satisfaction to him and to his able coadjutors, Mr. J. Drew, F.R.C.S., Dr. W. Duigan, and Mr. A. P. Parker, F.R.C.S., who were the Local Honorary Secretaries, as well as to the other members of the Oxford Division, to know that their efforts were highly appreciated.

The addresses of the President, of Sir William Church, and of Sir William Macewen were published in the BRITISH MEDICAL JOURNAL of July 30th, and we are enabled to commence the detailed report of the proceedings of Sections this week. The amount of work done by the Sections was very large, and some of them departed from precedent by continuing to sit well into the afternoon or by holding an afternoon session. The completion of the publication of the full reports must therefore be a matter of time, but meanwhile the publication of brief summaries of the proceedings was commenced last week, and is continued in this issue.

Not only did the University extend a most cordial welcome to the Association as a whole and to individual members (who had the privilege of residing in college), but the City of Oxford also, through its Mayor and Corporation, hospitably entertained the members at a *conversazione* on Friday evening, and in other ways displayed its interest in the meeting.

THE ANNUAL REPRESENTATIVE MEETING.

THE Annual Representative Meeting sat for rather more than four hours on July 26th and for nearly six hours on the following day. The meeting by a majority decided at a comparatively early stage of the proceedings on July 27th to sit that day until the business was concluded. This was distasteful to some members, and there can be no doubt that before the conclusion the meeting was fatigued, so that it may probably be found desirable on a future occasion, when the agenda paper is equally long and contains as many subjects of first-rate importance, to arrange that the number of sessions shall be increased either by beginning on an earlier day or in some other way.

That the matters on the agenda were discussed and decided as fully and rapidly as they were was due, we take it, to three circumstances: First, that the whole of the business had been carefully prepared, and detailed reports on all the more important matters placed in the hands of Representatives beforehand; secondly, that the meeting had a Chairman in whom it placed complete confidence, and who was thoroughly conversant with the business: and, thirdly, that the Representatives as a body approached their task in a most businesslike spirit. There was little or no irrelevant talk, and no trace of obstruction; the closure was applied two or three times, but the motion was accepted by the Chairman only when the vote thereupon taken showed clearly that the great majority of the Representatives present had made up their minds, and were quite prepared to vote on the principle. If, therefore, a third session should be instituted in the future it will rather be to save the meeting undue fatigue than because important questions were not adequately discussed this year.

The question whether the British Medical Association should take up the work of medical defence of individual members—a subject which has excited so much interest throughout the Association—was keenly debated in the Representative Meeting, and in the end the principle of medical defence was referred back to the original Committee appointed by the Council. No direct vote was taken on the question whether the Association should adopt the principle of medical defence, and it is probable that the meeting was partly deterred from coming to a definite decision on the issue owing to the fact that the returns from the Divisions could not be completed in time for a full analysis to be submitted. Further, it was, we think, clear that many Representatives were disposed to suspend a decision until a further effort had been made to bring about an amalgamation with existing medical defence societies. Evidence of this was afforded by the adoption of a resolution instructing the Medical Defence Committee to state in the scheme which is to be submitted to the Divisions before March 31st next in what way the amalgamation of the existing medical defence societies can be provided for. The spectator of the proceedings gathered the impression that this is the crux of the position at the present moment, and that if it had had a clean slate the Representative Meeting would have written medical defence upon it, if not unanimously, at least by a large majority. If this impression be correct—and, as has been said, it is no more than an impression, for there was no direct vote on the point—then it may be permissible to point out that the executive committees of the existing medical defence societies will accept a grave responsibility if they do not enter into the further negotiations now proposed in a conciliatory spirit and with the desire to come to some equitable arrangement whereby the benefits of medical defence which they themselves have had the wisdom to secure may be extended to the whole body of the British Medical Association. A further indication of the feeling of the Representative Meeting was afforded by the adoption of a resolution moved by Dr. Cox on behalf of the Gateshead Division instructing the Council to take the steps necessary to obtain the alterations in the Memorandum of Association contained in what have been called the Birmingham resolutions. They were passed at an extraordinary general meeting at Birmingham on July 13th, 1896, confirmed at the annual general meeting at Carlisle

on July 28th, 1896, and registered on August 11th of the same year. They are printed in full in the SUPPLEMENT this week, page 123. The provision bearing on the present subject is contained in paragraph 2, which would authorize the expenditure of the funds of the Association "..... for the defence, promotion or maintenance of the honour or interests of the medical profession.....including, in particular taking or defending legal proceedings and promoting or opposing Bills in Parliament."

The discussion on the interim report on contract practice presented by the Medico-Political Committee was brief but significant. The propositions formulated in the report were approved and referred to the Divisions, so that a distinct step was made towards united action throughout the country to maintain the independence of the profession or to win it back where it has been lost or imperilled. Starting with the proposition that some system of contract medical service for the poor is inevitable under present conditions in some parts of the United Kingdom, the report went on to indicate conditions under which it may be equitably conducted. The propositions, taken together, and especially the third proposition, with the addition adopted by the meeting, appear to assume the establishment of local public medical services controlled by the medical practitioners of each district, and offering reasonable facilities for medical treatment to the working classes on the provident principle. The report does not, so far as we observe, say this in so many words, but it clearly points to the solution of the difficulty along these lines. The propositions will no doubt be fully discussed by the Divisions during the autumn and winter, and should the general opinion be in their favour it will be possible for the Committee to bring up a report next year, recommending definite action. The adoption of the propositions by the Association as a whole would have two important results: it would abolish or greatly diminish lay control of contract practice, which is at the root of most of the difficulties, and it would do away with private clubs—a fruitful source of misunderstanding between medical men and of disunion in the profession. It would put in the place of existing clubs a rational system which, while just to the working man, would be so conducted as to ensure the honourable independence of the profession.

The Representative Meeting this year again gave a most sympathetic hearing to the reports and speeches on the disabilities of the Irish Poor-Law Medical Service, and approved what has been done during the past year to explain the nature of these disabilities and to indicate the remedies which can be applied. Of these the institution of an equitable system of superannuation is not only most pressing, but also most immediately within the sphere of practical politics, since a Bill which would meet the difficulty has actually been introduced into the House of Commons by Mr. T. W. Russell, Dr. Thompson (Omagh), and Mr. Harrington. The medical profession in Ireland can need no further assurance that the British Medical Association is with them heart and soul, and we may therefore say, without risk of being misunderstood, that it is essential that our brethren in Ireland should use all that political influence to which Mr. Chance referred to impress the justice of their cause on members of Parliament. As practical men they cannot fail to see that there is little hope of any Government taking up the Superannuation Bill or any other measure to remedy the evils proved to exist in the Poor-Law Medical Service against the opposition of the Irish members. It is no doubt difficult for those not to the manner born fully to understand Irish problems; but we decline to believe that Irish politicians, if they can be induced to realize that the reforms demanded are for the benefit of what Surgeon-General Evatt called the ultimate Irish peasant, will withhold their support from any measure which promises to remove by equitable means one great obstacle to a more efficient service.

The memorandums on the need for the reorganization of the Local Government Board in England, and the Bill drafted to carry out this much-needed reform, were approved by the Representative Meeting. Dr. Griffiths, in his Presidential address at Swansea, directed particular attention to the defects in public health administration, central and local in England, and his interest in the subject has been untiring during his year of office; Sir William Church recurred to the matter in his Address in Medicine this year, and as the Representatives, speaking with special knowledge and experience in the name of the whole Association, have formally expressed the opinion that the constitution and status of the Board is gravely defective, we may hope that the Government will appreciate the necessity for appointing the Royal Commission asked for to report upon the whole question.

The attention of the meeting was called to a defect in the Midwives Act, which has, we understand, very seriously exercised the Central Midwives Board. The Act requires that should any abnormality arise in the course of any labour attended by a midwife she shall at once send for medical assistance, and the Board has issued instructions under this clause, but it is unable to make a rule providing for the payment of the medical man thus called upon to act under the statute. There is, we are told, in some districts a disposition to add this duty to those already placed on the shoulders of the Poor-law medical officer. This would not only be unfair to the medical officer and the profession generally, but also contrary to public policy, since the scope of a midwife's work is by no means confined to the class which is properly assisted under the Poor Law.

We cannot pretend on the present occasion to do more than draw attention to a few of the most salient features of this year's Annual Representative Meeting. As an institution the Representative Meeting has justified—or more than justified—the most sanguine anticipations of those who called it into existence. That this has been so is in large measure due to the tact and ability with which the Chairman has conducted its business. It is therefore a matter of congratulation that Sir Victor Horsley, yielding to the strong and spontaneous expression of opinion at the end of this meeting this year, consented to accept nomination for next year.

INTERDEPARTMENTAL COMMITTEE ON PHYSICAL DETERIORATION.

THE Physical Deterioration Committee, after a careful analysis of the evidence of the majority of witnesses who appeared before them, has come to the conclusion that general progressive deterioration does not exist. It is of opinion that physical deterioration is practically confined to the lowest and poorest strata of the people, and this it attributes to the fact that this particular class of the population has not taken advantage of opportunity for improvement when offered to it. "Laziness, want of thrift, ignorance of household management, and particularly the

choice and preparation of food, filth, indifference to parental obligations, drunkenness, largely infect adults of both sexes, and press with terrible severity upon their children." For this reason the Committee take a hopeful view, inasmuch as it is easier to deal with a concentrated than with a scattered evil. There is no doubt that in coming to the decision that there is no general progressive deterioration, the Committee has had to base its conclusions upon more or less fragmentary evidence. It admits the absence of trustworthy data for the purpose of comparing present and past conditions, and relies upon such evidence as the diminished death-rate, diminution of tuberculosis and other diseases, as well as definite improvement in sanitation.

That a concentrated evil is easier to deal with than a scattered one it is difficult to deny, and for this reason it is obvious that if the appointment of a Royal Commission would cause unnecessary delay in applying remedies which the Committee so earnestly recommends to be begun at once, then we are better without that cumbrous engine. The statement of the Committee to the effect that the alleged unfitness of recruits is accounted for by the fact that the calling of a soldier has ceased to attract the class of men who formerly enlisted, makes it all the more imperative that the moral and physical condition of the class from which the army of the empire is now drawn should be improved.

As has been over and over again set forth in these columns, no radical improvements will be attained until the health of infants and young children is first looked to, in order that they may be in a proper healthy condition to benefit by education when their time comes to spend nine of the growing years of their lives cramped up on school benches. It is therefore with deep satisfaction that we see that the Committee has understood this point, almost universally passed by, even by the most intelligent reformers. It has, as we have before them, struck at the root of the question—a clean milk supply—to obtain which county councils must be empowered to act in default of the local sanitary authority, and the establishment in every town of milk dépôts drawing their supply direct from inspected farms.

It appears to be the fashion in some public offices to discount medical recommendations for the reform of unhygienic conditions by the parrot cry that the medical profession is "impracticable." It will be interesting to see how soon these measures, set forth by a Committee on which only one member of the medical profession served, will be adopted, when recommendations identically the same, made by the medical press, have been ignored. It is something more than a coincidence that in a series of articles published in the British Medical Journal during the past year, entitled Physical Deterioration, which formed the basis of a work called *Physical Deterioration*, since published,[1] the necessity of dealing with almost all those points recommended in the Committee's report was urged, more especially the need for an anthropometric survey, medical inspection of school children, and the proper teaching of cooking and domestic economy in schools. Emphasis was laid on the necessity of teaching hygiene in elementary schools, of organizing games, of physical exercises in the open air, of a special education for rural children by which they would become attached to a country life, of dividing land into small holdings to discourage the rural population from migrating to towns; we dwelt on the necessity for sanitary dairy farms, and our remedies were exactly those recommended by the Committee—legislation and milk dépôts. It may be some satisfaction to the authorities when considering the recommendations of the Physical Deterioration Committee to know that they have on their side the approval and support of the medical faculty.

What we did not recommend, and what seems a good suggestion, is the creation of an Advisory Council, representing the departments of State. This Council would advise the Government on all legislative and administrative points concerning public health in which State interference might be advisable. The idea is apparently founded on Le Comité Consultatif d'Hygiène Publique in France, of which an interesting account is given in the report, and it is suggested that the Advisory Council be modelled to some extent upon that body. This organization would be of great assistance, "especially to the Local Government Board, and would be calculated to supply the knowledge and stimulus which are necessary in order to give to the public health side of the Board's adminstration a prominence which the multiplicity of its other functions may have tended to obscure, and to attract to its work that measure of public interest and support which has perhaps been lacking hitherto." Thus is Saul also found among the prophets. It is recommended that the Advisory Council should include members nominated by the medical corporations and others, and among these others should be some ladies who have shown themselves capable of taking a broad view of the question, for, if the reforms suggested are to be carried into effect, it must be with the co-operation and largely by the work of women. The duties of the Council would include the reception and application of the information derived from the Bureau of the Anthropometric Survey, "with the whole weight of Government authority and scientific prestige behind them."

Anything tending to give uniformity to the sanitary administration of the country would be a move in the right direction, if, as the Committee remark, "the best resources of the State in matters of public health are placed at the service of the humblest administrative unit." We sincerely hope that the suggestions for reform made by this Committee will not be allowed to rest in the pigeonholes of the Privy Council Office, but that that august body will be zealous in seeing that they are carried out. Since the Committee was appointed by the Government to meet a national demand the nation must insist that the Government shall carry out the recommendations.

[1] London: John Murray. 1904.

PRELIMINARY GENERAL EDUCATION OF MEDICAL STUDENTS.

We publish in the present issue (p. 292) a full summary of the report of the Consultative Committee of the Board of Education embodying a scheme of examinations for admission to certain professions including that of medicine. Certain proposals contained in it are most disquieting.

Under the scheme the evil of multiple examinations, although mitigated so far as set subjects are concerned, would be made vastly worse in respect of the much more serious matter of diversity of standard. When it is considered that separate papers are to be set for each school after a consultation between the school staff and the outside examiners, that the school staff is to take part in the examining and marking and that the bodies which are to arrange and control these examinations are to be multiple

and possibly widely different in constitution, the belief of the Committee that "practical equivalence can probably be secured" will be shared by few.

Further, it is recommended that the principle of retrospective inquiry should be introduced. The course of the work pursued by a scholar during his school career is to be recorded and reported on by his teachers, and this record is to be available for reference in deciding his fitness or unfitness to obtain a certificate. "The suggestion here is that an examiner, in any case in which he desires to do so, should be able to judge of the character of a candidate's school career." "What is required is that such materials shall be accessible as will enable an examiner to judge whether the scholar's school career has been satisfactory or not." This is a grave proposal. An examination for admission to a profession ought to be a test of the candidate's general knowledge, not an inquisition into his school-past. Such a system of retrospective inquiry is but too likely to have an injurious effect, by placing in the hands of the schoolmaster a power over the future of his pupils which few parents, we believe, will be disposed to tolerate.

When we turn to look for the proposals on the all-important points of scope and standard we find, to our amazement, absolutely nothing about them except the single statement that the junior certificate is to be for pupils under 16. Scope and standard can scarcely be described as "minor points," which the Committee say they have considered, but do not report on.

The general education test for admission to medicine must be of guaranteed impartiality, of reasonably uniform standard, and above all be what it professes to be. If reports on a candidate's school career should ever be required, these must be made separately and openly.

What is wanted in this country is what was suggested by the Head Masters' Conference, that is to say, a single examination to be held at centres. If we may be allowed to suggest to those who have made this wise proposal, we would say that the central examining body might consist of representatives of the Board of Education, of the Universities and of the head masters of schools; that periodical inspection of the schools examined, with inquiry into their courses of instruction, such as is now practised in the case of medical schools by the General Medical Council, might be undertaken by this central body; that there might be three standards of papers: an elementary for pupils under 16, a junior for pupils under 17, and a senior for pupils over 17; that the scope in each standard might reasonably include: (1) Languages (with no set subjects but with viva voce examination in the case of modern languages); (2) mathematics (including arithmetic, algebra, and Euclid); (3) English (including grammar, essay writing, and literature); (4) history: (5) geography; and (6) a branch of natural science.

In conclusion, we would protest against any measures which tend to render doubtful the impartiality of public examinations, and would express our belief that, if this scheme of the Consultative Committee should be adopted as it stands, a grave injury will be inflicted upon secondary education throughout the country.

CANADIAN MEDICAL ASSOCIATION.—The Canadian Medical Association will hold its annual meeting this year at Vancouver, August 23rd to 26th. Numerous papers will be read by men prominent in the profession, both from Eastern Canada, United States, and Great Britain. Mr. Mayo Robson will deliver an address on Surgery.

IMPERIAL FEDERATION AND AUSTRALASIAN REGISTRATION.

THE Australasian Branches will, we believe, have read with satisfaction the resolution adopted by the Council of the British Medical Association on the recommendation of the Colonial Committee recommending that only those qualifications registrable in the United Kingdom should be registrable in Australasia. This would include graduates of Australasian Universities, and would thus establish complete reciprocity between the great Southern Colonies and the Home Country, and would prevent the registration in Australasia of the graduates of Universities in foreign countries which do not grant reciprocal privileges to citizens of the British Empire. In this way the Australasian Colonies will obtain a control of the conditions of practice within their confines which they have not hitherto enjoyed. At the present time any medical man who is authorized to practise in his own country can claim registration in Australasia, although the foreign countries deny within their own confines and in their colonies like privileges to British practitioners. Australasia is thus exposed to the risk of becoming the dumping ground of the medical graduates of Germany and other foreign countries. The effect will be, we make no doubt, to maintain a high standard of attainment in the medical profession. Australasia has now reached a stage of development in which it is fully justified in taking a strong line in this matter, and in refusing to recognize the graduates of foreign countries which scornfully reject the claims of Australasian graduates. The attention of the Annual Representative Meeting at Oxford was called to the matter by the Chairman, Sir Victor Horsley, and the report containing the reference was adopted. We have no doubt that any assistance which the Association as a whole can afford to the Australasian members will be readily given.

THE LEASE OF THE LIVERPOOL MEDICAL INSTITUTION.

A FEW months ago our Liverpool correspondent gave a history of the relations between the Liverpool Corporation and the Liverpool Medical Institution. For many years the Corporation has manifested a friendly interest in the Institution, which since the year 1840 has held the land on which the building stands at a peppercorn rent, and a feeling of consternation arose when the Estates Committee announced that in order to obtain a renewal of the lease which would expire in 1915 it would be necessary to pay a fine of £817 4s. It was felt that when this decision was arrived at the Estates Committee had not taken into consideration the history of the Institution, the important public work which it carries on, and the fact that in the year 1881 the Corporation had been entirely in favour of granting a renewal of the lease free of fine. Consequently steps were taken to bring the true bearings of the case before the members of the Corporation, and it is satisfactory to announce that the Corporation has agreed to renew the lease for a period of seventy-five years from the present time on payment of a nominal fine of 10 guineas. Great credit is due to the Treasurer of the Institution, Mr. T. H. Bickerton, for the able manner in which he brought forward its claims.

UNITED KINGDOM POLICE SURGEONS' ASSOCIATION.

AT the annual meeting of the United Kingdom Police Surgeons' Association, held at Oxford on Thursday, July 29th, Dr. Henry Barnes, of Carlisle, was elected President for the ensuing year, and Mr. Frederick W. Lowndes, of Liverpool, one of the Vice Presidents. The Treasurer's accounts were passed and showed a balance in favour of the Association of £43 15s. 9d. The incoming President, Dr. Barnes, referred to the subject of medical witnesses' fees and urged that the question of the exercise of their discretion in this matter by magistrates' clerks, which in various districts has produced such widely-differing and sometimes unsatisfactory results, should be brought under the notice

of the Medico-Political Committee of the British Medical Association, and that it should be suggested that representations should be made to the Justices' Clerks' Society on the matter, the members of which Society usually exercise the discretion allowed by the Home Secretary's order to the Courts in which these gentlemen serve. It was agreed that this should be done, and after the transaction of some routine business, including the election of several new members of the Association, and a vote of thanks to Mr. Paul Bush, C.M.G., who presided, the meeting broke up.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

The summer general meeting of this Association was held on Wednesday, July 27th, at the University Museum, Oxford, the President, Surgeon-General Sibthorpe, C.B., in the chair. Among those present were Sir Charles A. Cameron, C.B. (Dublin), Lieutenant-Colonel Boileau, M.D., A.M.S. (Trowbridge), Dr. James Little (Dublin), Dr. Percy V. Dodd (Folkestone), Dr. William Douglas (Goudhurst), Dr. Robert Esler, Dr. T. Gelston Atkins (Cork), and the Provincial Honorary Secretary, Dr. James Stewart (Clifton). The following resolution, proposed by Dr. Atkins and seconded by Sir Charles Cameron, was passed unanimously: "That a copy of the two resolutions adopted at the special general meeting of May 25th be sent to the Chairmen of the various Boards of Guardians throughout Ireland, together with any additional statements the Council may think fit to forward with a view to strengthening the case of the Irish Poor-law Medical Officers." The meeting then adjourned.

BRITISH MEDICAL TEMPERANCE ASSOCIATION.

The annual breakfast of the British Medical Temperance Association was held, under the auspices of the National Temperance League, in the Assembly Room at the Town Hall, Oxford, on the morning of Thursday, July 28th, with Mr. W. McAdam Eccles in the chair. In a speech by the Chairman it was stated that for twenty-five years consecutively such breakfast meetings had been held in connexion with the annual meetings of the Association. It was being recognized by the medical profession that the use and abuse of alcohol was becoming a question of national and even imperial importance. The public needed educating in reference to this subject, and, as it had been said, it needed disabusing of the idea that alcohol was a necessity for the human frame. Allusion was made to the scientific study of the nature and action of alcohol, and it was urged that it should receive systematic attention as part of the curriculum of the education of medical students. Dr. William Collier, President of the Association, spoke as a life-long advocate of temperance. He appealed to the members of the medical profession, and especially the honorary staffs of the metropolitan and provincial hospitals, that they should take as much care in prescribing alcohol as they would in prescribing any powerful drug. A paper on the present position of the medical profession of Great Britain and Ireland in relation to the use and abuse of alcohol was read by Dr. T. N. Kelynack. Dr. William Odell proposed a vote of thanks to the National Temperance League, which, being heartily carried, was responded to by Dr. Murray, one of its oldest vice-presidents. Dr. Robert Jones proposed a vote of thanks to the Chairman, which was suitably acknowledged. The number of guests present (240) was largely in excess of the number at any previous breakfast given in connexion with the Annual Meeting.

AN UNPHYSIOLOGICAL PRECOCITY.

A valued correspondent writes: If the boy is the father of the man, then the girl must be the mother of the woman, and we must jealously guard her physique lest heredity stepping in with its invariable laws, transmit to the babe, born and unborn, an unstable constitution with which to fight the battles of the world. The whole question of physical deterioration is now floating freely in the air, and Mrs. Watt Smyth's admirable book, the report of the Departmental Committee, and endless papers and addresses and speeches are making us feel just a little bit uneasy about the future of our race. We cannot at this time go into the larger aspects of the case, but limit ourselves to a word of protest and warning in one specific direction, and that is the injurious strain imposed upon children by professional necessity or social custom. Under the first heading we include the "infant phenomena" who are rushed on to platforms before they are well into their second dentition, and are frantically applauded by the hysterical ladies of fashion. Immature violin scrapings, monotonous piano thumpings, and doubtfully intoned songs are received with rapture because the performers are young, and the younger the better. We have heard of an infant of 6 who is supposed to rival Paganini or Joachim, and the climax was surely reached when a little boy of 8 was announced to conduct a fully-equipped orchestra of forty or fifty performers. We do not deny that some of these prodigies play with skill and finish, but they should be judged solely on their merits and not by their age, and we can imagine nothing more depressing to the grown-up favourites of earlier days than to have to play to empty benches when enthusiastic crowds assemble to greet the appearance of some juvenile pretender from across the seas. We have no concern with this, however, for the public must look after themselves. *Caveat emptor* is a safe motto, and people must be allowed to spend their money as they please, and choose their own amusements. What we have to do with is the hygienic aspect of this modern craze and the health dangers to be feared. We do not need to be physiologists or physicians to see that it must be bad for little children to force them out of season, like potatoes or strawberries, to compel long and tedious hours of practice, followed by late hours, in hot rooms, with the excitement of success or the misery of failure, and the sleepless nights and irregular appetite, and nervous tension and relaxation which inevitably follow either. All this is injurious enough for those who catch the public ear and dip deeply into its purse, but for those who break down in training or are distanced at the post, what can be predicted but stunted growth and shattered health? The notoriety attained by a few is naturally envied by the many, and over-production follows as a matter of course, and by equally inexorable laws of Nature we will find that this system of prodigy-mongering will be responsible for a steady deterioration in the physical development of those who are compelled by parental cupidity or ambition to attempt tasks far beyond their strength. The imperious dictates of social custom are also responsible for some evil influence on growth and development. Little girls who ought to be playing in the open air by day, or sleeping peacefully by night, are now dressed up in attractive imitation of their elders, and sent off, fan and bouquet in hand, to their evening parties, four or five times a week, and sometimes twice a night. They have their flirtations and their champagne suppers, and all the paraphernalia of fashionable life—and after a season or two of this, they become as critical regarding the quality of the entertainment, and as *blasés* and used up as the smartest lady in their mother's circle, and in due time their appearances are noted and their costume described in the conventional jargon of the society press. All this is wrong and stupid. These poor little creatures have discounted the pleasures of life whilst standing on its very threshold, and have ceased to care keenly about things that delight those who have been more simply brought up, and it is not unjustifiable to assume that some of the nervous troubles that haunt the lives of the ladies of the present day, the morbid excitement and the succeeding depression, the hysteria and insomnia, and cravings for alcohol, and pick-me-ups, and morphine and cocaine may be due in part to over-social strain in early life, and by the precocious aping by the youth of the manners and customs of the old.

THE WORK OF THE HOSPITAL NURSE.

On July 23rd Sir Michael Hicks-Beach opened a home for nurses in connexion with the Gloucester County Infirmary,

and delivered an address. He said he could almost remember the time when trained nurses were unknown. The idea of a nurse was something, he thought he might almost say, of this kind: Any creature in female human shape—the older and uglier the better, and the less suited for anything else the better—was, by a kind of poetic glamour, presented to our predecessors as the ministering angel when pain and sickness racked the brow. The change began at the time of the Crimean war. Before that time the popular conception of a nurse might be found in the novels of the day in the shape of "Sairey Gamp" and "Betsy Prig." But with Miss Nightingale began a revolution which would, he hoped, last for centuries. Miss Nightingale taught people that a good nurse required many, he might say all, the best qualities of a lady—gentleness, patience, deftness, method, sympathy. With Miss Nightingale's work in the hospitals during the war began a movement which soon extended to the great institutions in this country, and had now gone throughout our private and social life. He did not think there was any need for him to dwell upon the value of the work of a trained nurse in all kinds of disease, whether medically or surgically treated. He supposed that no skilled operator would nowadays care to be without the aid of a trained and experienced nurse when carrying out an operation; and he was certain of this: that when the operation was over, when every symptom of the patient had to be watched and recorded, when medical and surgical directions had to be carried out carefully and exactly, when every change in the patient's condition had to be noted—that then they found the want of the experienced and trained nurse, who might do as much at least, and often more, to restore a patient to health than the best physicians or surgeons. With this great change in the nursing profession there had come a great need, and it was an attempt to meet that great need they had called them together that day. Even from the lowest point of view, in order to secure the best and most efficient work from the nurses, they must take care that they were properly lodged in healthy houses, that they had some means of quiet, simple comfort when they were off duty. What had been done in this direction at Gloucester was this: There had been provided a home, with rooms for the assistant matron, and bedrooms for eleven charge nurses, and, he believed, twenty-one probationers, with kitchen and domestic offices, and last, but not least, sitting and recreation rooms and places in which they could keep their bicycles, which might be extremely conducive to health and to enjoyment. The work had cost something like £10,600, to which the county had subscribed £7,500. The deficit of rather more than £3,100 would have to be found, and he did not think the county would permit any part of the charge for that necessary work to be a charge upon the capital funds of the Infirmary. He could not speak upon hospital management, as he had not had anything to do with work of that kind; but he had had something to do with finding money in another capacity. And he had found that if they worried people sufficiently they could extract money from them. Sir Michael Hicks-Beach concluded with a strong appeal for support for the Infirmary.

ACCIDENTAL ELECTROCUTION.

It has been said that the "exception proves the rule"—perhaps it would be better expressed as "probes" the rule. Exceptional cases so-called are often the test of the efficacy of a practical device. Now that electricity is playing such an important part, and is destined to play a still larger part in traction and generally for motor purposes, the recent cases of electrocution by the "live" wires of the Southport and Liverpool Railway raises the question whether the dangers attaching to the use of imperfectly protected "live" wires are sufficiently guarded against. The recent accidents seem to show that they are not. In few conditions is it more certain that circumstances alter cases than in all that applies to electrical contacts and resistance. Every physicist and physiologist knows the uncertainty of the quality of dry as against wet contacts. Railways are run at 500 to 600 volts, while 250 are used for domestic purposes. It was once thought that only very high voltages (2,000 to 3,000) would kill a man; but the fatal accident to a bather in one of the public baths in London, who with a wet hand touched a "live" wire, shows that a relatively low voltage may be fatal, provided the contacts are moist. Experience of the Southport rail shows that moist weather increases the risk. In the open country there is the added danger that cattle may stray on a line, be electrocuted, and their carcasses prove a source of danger to the next train. Professor Fleming advises, and we think rightly, that the "live" wires should be completely covered in with a wooden hood or shelter, in shape like an inverted ⅂. All that is necessary is to bend the "picker-up" of the motor, so as to pass under the hood of the shelter. This would offer sufficient protection both to man and beast. A recent case at the Manchester Assizes shows the necessity for enclosing all switches connected with high voltages.

CALEDONIAN MEDICAL SOCIETY.

The twenty-fourth annual meeting of the Caledonian Medical Society was held on July 22nd in the Eye Pavilion of the Edinburgh Royal Infirmary, Dr. George Mackay, the President, in the chair. The report stated that there was now a membership of 229, and financially the organization was in a satisfactory position. Dr. Stewart (Bacup), was appointed next president of the society. In his presidential address Dr. Mackay, after alluding to Mr. Andrew Carnegie's generosity to the Scottish Universities, said the little coterie of Highland fellow-students to whose Celtic enthusiasm they owed their union had expanded into a world-wide association of medical men, whose opportunities for personal acquaintance were rare, and whose years of graduation were separated by a generation as the human span was counted. It appeared to him that the time had come when they should endeavour to strengthen the bond which united them, and offer a fresh inducement to new members to join by co-operating in some definite piece of work which would perpetuate the traditions of their race. He suggested that this might be realized by the transcribing, translating, or at least rendering intelligible to their contemporaries such Gaelic manuscripts as had been preserved to them. Dr. Mackay proceeded to give an account of these manuscripts, and exhibited the originals of some and photographs of others. Some formal business was afterwards transacted. In the evening between sixty and seventy members of the Society dined together in the Caledonian Railway Station Hotel.

THE SELECT COMMITTEE ON THE STATE REGISTRATION OF NURSES.

Miss Amy Hughes, Superintendent of the County Nursing Association, affiliated to the Queen Victoria Jubilee Nurses, gave evidence before the Committee at its last sitting of the session. Miss Hughes's duties carry her among all sorts and conditions of nurses, and she has to inspect their work and equipment in rural and urban districts throughout the country, so that she was able to draw from a wide and varied experience. Miss Hughes was strongly in favour of registration by a central authority, and commented on the present chaotic condition of training, and of the certificates resulting therefrom. Whilst the number of applications for training at the great schools was largely in excess of the vacancies, it followed that the rejected applicants would go to the smaller schools, or obtain some of the irregular certificates that were so readily issued. Under the present system no record of nurses who had left was kept at the hospitals or institutions that was of any use for public reference, and it was often the case that the improper or insufficient training of the nurse was not found out until after she had experimented on the patient. Miss Hughes also pointed out that certificates make no mention of moral quality; there was great need of some outside authority or Board to whom this difficult question might be referred. Periodical revision of the register would be necessary, and nurses should be required to make notification at fixed times.

As to the removal of names from the register it would be possible for Parliament to meet that difficulty as it had already done in the Midwives Act. Voluntary registration in the opinion of the witness was not sufficient to meet the needs of the present conditions.

THE HUMANE SLAUGHTERING OF ANIMALS.

The main conclusions of the report of the Committee on the Humane Slaughtering of Animals to which reference has already been made are: (1) All animals without exception must be stunned or otherwise rendered unconscious before blood is drawn; (2) animals awaiting slaughter must be so placed that they cannot see into the slaughter-house, and the doors of the latter must be kept closed while slaughtering is going on; (3) the drainage of the slaughter-house must be so arranged that no blood or other refuse can flow out within sight or smell of animals awaiting slaughter, and no such refuse shall be deposited in proximity to the waiting pens; (4) if more animals than one are being slaughtered in one slaughter-house at the same time, they must not be within view of each other: (5) none but licensed men shall be employed in or about slaughter-houses. The power of regulating slaughter-houses by by-laws can be conferred by the Local Government Board on a rural district council, and the Committee express the earnest hope that rural authorities will take fuller advantage of these powers than they have done hitherto, and will take steps to adopt and enforce by-laws in harmony with those suggested. These are sensible and wise conclusions, for, in spite of what interested people say, there is no doubt that animals become painfully excited when they smell blood, and sheep and pigs more especially seem to have some premonitory suspicion of their approaching fate when they near the shambles. The emphatic pronouncement of the Committee in favour of universal public slaughter-houses is a step in the right direction, for the private institutions which are too commonly met with in small towns especially, are not only a nuisance to the locality in which they are placed, but being removed save on rare occasions from official inspection, they are not invariably conducted on the lines of decency and humanity. We should like to see them all swept away. In reply to a question by Dr. Farquharson, the President of the Local Government Board was unable to say at this early stage what he intends to do, but in reply to a supplemental query he indicated a wish to bring the matter under the notice of each local authority, presumably by distribution of the report.

MEDICAL NOTES IN PARLIAMENT.

The Lunacy Bill.—Dr. Farquharson asked the Prime Minister on Monday whether he intended to proceed with the Lunacy Acts Amendment Bill this session. Mr. Balfour said that unless this Bill should prove quite uncontroversial he was afraid it had little chance of passing this session. Dr. Farquharson said it was practically a non-controversial Bill, which embodied principles which were working well in Scotland and were much needed in England. (Laughter.) Mr. Balfour said he agreed with the hon. member. (Laughter.) The sooner England adopted that and many other Scottish Acts the better for England. But that did not get over the difficulty. Even though England might be panting to take the reform which had so long been adopted in Scotland, there might be a few recalcitrant English members who might wish to discuss it at length, and he was afraid that in that case lunacy must wait for another session. The Bill has since been dropped.

The Report on Physical Deterioration.—Mr. Cathcart Wason asked the President of the Local Government Board whether he proposed to take action on the report of the Departmental Committee on Physical Degeneration with reference to the recommendation that in all towns above a certain size the local authority should establish and maintain an accurate register of owners, and that this practice was one of the first desiderata towards dealing with slum property. Mr. W. Long replied that the report of the Departmental Committee on Physical Deterioration had only been issued within the last few days, and the evidence taken by the Committee had not yet been published. He had not at present been able to consider the recommendations made by the Committee, though of course he should do so. He might, however, say that the particular suggestion to which the hon. member referred was not a new one, and there would be considerable difficulty in giving effect to it.

Ankylostomiasis.—Mr. Markham asked the Secretary of State for the Home Department whether, in view of Dr. Boycott's report on the subject of the diagnosis of ankylostoma infection in mines and its recommendations, and of the fact that following his circular letter of March 10th to the county councils, the medical officer of health to the Derbyshire County Council issued a memorandum to the medical men in the county relating to the disease and the precautions which should be adopted to prevent the spreading of this disease, he would now furnish the Derbyshire County Council with the necessary powers under the Coal Mines Regulation Act to enable the medical officer of health to give practical effect to the recommendations of Dr. Boycott's report. Mr. Secretary Akers-Douglas answered that Dr. Boycott's report dealt simply with the mode of detecting ankylostoma infection by examination of the blood, and contained no recommendations as to precautions to be taken against an outbreak of the disease. It was true that amongst other steps, which as he had previously explained, he had taken in this matter, he had invited the co-operation of the county councils in the mining districts, with a view to their spreading information among miners as to the precautions to be observed, and also to their furnishing facilities at county laboratories for examination of infected matter; but there were no powers under the Coal Mines Act which could be conferred on county councils.

Experiments on Living Animals.—Mr. Tomkinson asked the Secretary of State for the Home Department whether his attention had been called to the increase in the numbers of medical and surgical experiments performed on living animals, amounting to 19,084 in 1903, as compared with 14,906 in 1902 and 11,645 in 1901, and whether he intended to take any steps to limit the number. Mr. Secretary Akers-Douglas answered that the increase pointed out by the hon. member in the number of experiments in recent years was almost wholly in those included in Table IV (B) of the annual return—that is, experiments of the nature of simple inoculations, hypodermic injections, and similar proceedings. It was pointed out on page 5 of the return that the increase was due mainly to the progressive importance attached to biological tests generally in practical medicine for the diagnosis, treatment, and prevention of disease, and to the more widely recognized need for such experiments on the part of those responsible for the care of the public health. It might be added that over 3,000 of the experiments performed in 1903 were made for Government Departments or for county or borough councils, and 1,313 were made for the Royal Commission on Tuberculosis. Every application for authority to perform experiments was carefully scrutinized, and he was not prepared to take action in the direction suggested.

The Advertising of Patent Medicines.—Mr. Tankerville Chamberlayne asked the Secretary of State for the Home Department whether he would consider the advisability of imposing some restrictions on the advertising of patent medicines with a view to protecting persons of the poorer classes. Mr. Secretary Akers-Douglas replied that he was not sure what class of patent medicines was meant. The question of legislation for the purpose of dealing with certain evils in this connexion had been considered, but there were many difficulties in the way of framing a measure which would be satisfactory and neither inoperative nor too wide in its scope.

The Central Midwives Board and Diplomas in Midwifery.—Dr. Thompson asked the Secretary of State for the Home Department last week if he was aware that the Central Midwives Board had appointed nurses to examine candidates for the diploma in midwifery; and, if so, would he direct that candidates for a midwifery diploma must be examined by qualified physicians and surgeons. Mr. Secretary Akers-Douglas replied that he thought this was not the case. He understood that the whole scheme of examination was still under the consideration of the Central Midwives Board. That Board was, however, left by statute free to exercise its discretion in

the appointment of examiners, and he had no power to give directions in the matter.

Infant Mortality and Medical Out-relief.—Sir Walter Foster on Monday asked the President of the Local Government Board whether, in view of the high death-rate amongst infants in populous centres and its connexion with improper feeding, he would direct the attention of the Poor law authorities to the importance of supplying out-relief children who were hand-fed, with pure milk and proper feeding-bottles when the parents was unable to provide them. Mr. Long answered that in the answer which he gave to the question put to him by the hon. member on June 16th he promised to bring under the notice of the inspectors his suggestion with regard to an allowance of milk in certain cases of out-door relief. This he had done. He will also draw their attention to the further suggestion now made by the hon. member.

Sanitary Regulations in Ireland and England.—Mr. J. F. O'Brien asked a question on Monday of the Chief Secretary to find out why the Cork Port Sanitary Authority could not make by-laws similar to those made by the Barry and Cadoxton Local Board with reference to small-pox and other infectious diseases. Mr. Wyndham, in his reply, said that the hon. member was under some misapprehension. The general regulations made by the Local Government Board in Ireland under Sections CXLVIII and CXLIX of the Irish Public Health Acts, 1878, which dealt with cholera, yellow fever, and plague, were identical with those made by the Local Government Board in England under the corresponding sections of the English Public Health Act, 1875—namely, Sections CXXX and CXXXIV. But the local authority in England had, under Section CXXV of the English Act, power itself to make regulations, to be approved by the Local Government Board, dealing with persons suffering from infectious or dangerous diseases brought within their district by any ship or boat. It was under this latter section that the regulations were made by the Barry and Cadoxton Board referred to in the question. There was not any section in the Irish Public Health Act corresponding with Section CXXV of the English Act conferring power on local authorities.

Parochial Medical Officers in Scotland. — Mr. Cathcart Wason raised by question on Monday the case of Poor-law medical officers in remote parts of the Highlands and Islands of Scotland, who are unable to have annual holidays on account of the difficulty and expense of obtaining substitutes to fill their places. Mr. Graham Murray, in reply, said that the revision of the rules for Poor-law medical relief in Scotland would be proceeded with as soon as legislative authority could be obtained, and due consideration would be given to the difficulty experienced by medical officers of remote parishes in procuring substitutes; but without legislation no alteration could be made in the existing rules. The question of holidays for medical officers had received the careful and sympathetic attention of the Local Government Board, as would be seen from its sixth annual Report, pages xxv-xxvi, but it had at present no authority to do more than it had there indicated.

The Parish Doctor of Durness.—Mr. Cathcart Wason asked the Secretary for Scotland if his attention had been drawn to the dismissal of the parish doctor by the Parish Council of Durness, Sutherlandshire, and to the fact that the doctor entered an action in the Court of Session, with the result that he was reinstated in his office and the parish involved in legal expenses amounting to over £200; that protests were lodged with the council against the doctor's dismissal by a majority of the ratepayers; and, if so, would he consider the advisability of taking steps to protect medical officers in crofting counties against such treatment, and to save the ratepayers from being burdened with legal expenses in similar cases in the future; and whether, seeing that this parish council disqualified two elected members of the council who were said to be friendly to the doctor, and replaced them by two others, one of whom was as similarly disqualified as the ejected members, steps would be taken to prevent the recurrence of such action. Mr. Graham Murray answered that he was informed that the Local Government Board for Scotland were aware that the medical officer of Durness was recently dismissed by his parish council, and that he entered an action in the Court of Session, with the result that he was reinstated in his office, and expenses adjudged against the parish council. But the medical officer was the servant of the parish council and not of the Board, and legislation would be required to make him removable from office only by the Board. As regards the latter part of the question, he had no reason to anticipate the recurrence of such action on the part of a parish council, and was not prepared to take any steps in the matter.

Assistant Medical Officers of Irish Asylums.—Mr. Hayden asked the Chief Secretary on Tuesday last whether he could state the total number of assistant medical officers of lunatic asylums in Ireland, and how many of these were married. Mr. Wyndham replied that the total number was thirty-five. Only unmarried men could be appointed, but he had no information as to marriages contracted subsequent to appointment. In answer to a further question, he said that they had a right to marry if they wished, and he could not get the information as to how many were married.

The Vacancy in the Senate of the Royal University.—Last week Mr. Charles Craig called attention by a question to the selection by the Royal University Graduates' Association of Dr. Leslie to fill the vacancy on the Senate of the Royal University caused by the death of Dr. William McKeown, and asked whether in view of the representative character of the Association the Government would appoint Dr. Leslie. Mr. Wyndham answered that representation had been made in favour of the appointment of Dr. Leslie to fill the vacancy and that they would be considered by the Government.

The Liverpool and Leeds Universities Bill.—These two Bills have passed the House of Commons as uncontroversial measures. Their object is to extend to graduates of the respective universities certain privileges and exemptions enjoyed by the graduates of all other universities of England and Wales. Such privileges and exemptions have been granted by various Acts of Parliament and by the regulations of public authorities. For example, persons desirous of becoming solicitors have to serve under articles for five years, but this period is reduced to three years in the case of graduates of an English or Welsh university.

Promotion in the R.A.M.C.—Dr. Thompson asked the Secretary of State for War if the Advisory Board of the Royal Army Medical Corps was solely responsible for recommending promotions in the corps; and whether, seeing that this Board was partly composed of civilians and partly of comparatively junior officers, who might themselves benefit by the supersession of their seniors, he would consider the advisability of altering the duties of the Advisory Board so as to leave the military responsibilities of promotions in the hands of the Director-General of the Royal Army Medical Corps. Mr. Secretary Arnold-Forster replied that the Advisory Board was not solely responsible for recommending promotions in the R.A.M.C. The Advisory Board sent forward the names of those officers whom it considered professionally qualified for promotion, and the Selection Board decided whether from a military point of view they were fit to be promoted. All promotions were finally approved by the Secretary of State for War. He might add that the junior medical officers of the Advisory Board did not give an opinion on the qualifications of officers senior to themselves.

The Massacre of the Innocents.—At a later date than usual, Mr. Balfour, on Tuesday last, made his announcement as to the Bills to be passed before the end of the session, which is expected to close about August 16th. No less than sixteen Bills have to be dropped, including the Public Health Acts Amendment Bill, the Lunacy Bill, and the Valuation Bill. He proposes to pass the Defaulting Authorities Bill, commonly called the Welsh Education Coercion Bill, the Shop Hours Bill, the Irish Land Bill, the Anglo-French Convention Bill, the Indian Councils Bill, and the Small Public Health Bill, which has already passed the Lords. (See BRITISH MEDICAL JOURNAL, July 23rd, p. 299.) In addition to these he read out a list of ten administrative Bills to be passed, and a round dozen of other Bills he hoped to pass if they were not much discussed. The general feeling of the House was that the hopes expressed were not likely to be fulfilled, and that beyond the necessary Treasury Bills and a few of the principal Bills named little could be passed in the fortnight left of the session.

Scotland.

Belvedere Fever Hospital, Glasgow.

The annual report by Dr. John Brownlee, the Physician-Superintendent of Belvedere Hospital, for the year ending May 31st, 1903 has just been issued. On that day there were 310 patients in hospital, and of 2,163 patients admitted during the year 265 had died. That gives a mortality over all of 12.2 per cent., which is higher than that of the preceding year, and which is due to the general severity in the type of disease. The average number of patients in hospital had been 301, and the average residence in hospital 50.7 days. During the year there was experienced an exceptionally severe type of diphtheria, more moribund cases being admitted than in any recent year. But after allowance has been made for this, the percentage of deaths among the cases that were admitted while there was still some prospect of successful treatment has been the lowest in the history of the hospital. During the spring of 1903 there was a small outbreak of enteric fever among patients and staff, seven nurses and eight patients being attacked, but even after a most careful examination of all possible causes the source of the infection was not ascertained.

To Dr. Brownlee's report there is added an interesting note on the influence of the concentration of the population on the mortality of infectious diseases. The complete figures from the annual reports of the Medical Officer of Health for the years 1898 to 1902 inclusive, relating to scarlet fever, diphtheria, and enteric fever are discussed. These diseases are chosen as being both abundant and also notifiable. Measles and whooping-cough might have been equally useful, but their notification is not compulsory and probably the numbers of known cases never exceed half the actual, so that it would be futile to draw conclusions from the statistics in relation to these diseases. The result of the investigation is to show that not only—as is well known—are scarlet fever, diphtheria, and enteric fever more numerous in the poorer districts of the city, but they are much more fatal. With regard to scarlet fever, the mortality in the poorer districts is twice that in the best; with regard to diphtheria it is six times. The increase in the latter case is more sudden, and seems to show how much more promptly antitoxin is used among the wealthy classes than among the poor. The difference in the mortality of enteric fever is not nearly so marked, and the rise is not nearly so uniform, the maximum of severity being attained when the concentration of the population has reached only a moderate amount. As scarlet fever and diphtheria are both diseases of children and enteric fever one of adults, these results afford interesting material for consideration. They seem to show that the vitality of children is much more powerfully depressed by unhealthy surroundings than is that of adults.

The report of Dr. R. S. Thomson, the Visiting Physician to the Small-pox Hospital, is appended, but as the report refers to a period previous to the beginning of the present epidemic there are very few cases dealt with. During the year there were only twelve admissions for small-pox, and these were received from various sources over a period of about eleven months, and did not constitute a limited epidemic. Statistical tables are given showing the condition of the patients in relation to vaccination.

Ireland.

Small-pox.

The outbreak of small-pox which was lately announced in the North of Ireland has gradually extended southwards. Some of the police who were last month drafted to Armagh to quell disturbances acquired the disease there. Now it is announced that there are six cases at Drogheda—within thirty miles of Dublin. The Local Government Board are trying to stamp out the disease, and Dr. Edgar Flinn, their Medical Inspector, has visited Drogheda to advise the local authorities as to the steps to be taken.

Chester General Infirmary.—A new operating theatre was recently opened in the Chester General Infirmary. It is the gift of Mrs. Tidswell, in memory of her husband, Mr. Richard Tidswell.

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 84.

Terms of Family Contract.

A correspondent writes that a gentlemen residing in his neighbourhood wishes to arrange for medical attendance on his household by a yearly contract. He sends details as to the members of the household and the distance of the patient's residence from his house. He wishes to know what amount he should charge per annum, and whether he could get a draft for an ordinary agreement for such contract work.

*** The annual charge should be based on the average receipts to be expected per annum for medical attendance on such a household when paid for on the ordinary terms. It would be impossible to lay down any definite charges; this could be done only by a medical practitioner thoroughly conversant with all the conditions of practice in that particular locality. We do not know of any draft forms for such contracts.

SPECIAL CORRESPONDENCE.

PARIS.

The Properties and Uses of Stovaïne.—Dr. Ronald Ross and Dr. Weir Mitchell appointed Foreign Corresponding Members. —Municipal Council: Disinfection of Schools and Tubercle.

At a recent meeting of the Académie de Médecine, Professor Pouchet gave a very complete pharmacodynamic study of stovaïne, the hydrochlorate of benzoic ether of dimethylaminpropanol, discovered a few months ago by M. Fourneau. It will, he thinks, take an important position among ordinary drugs on account of its considerable power as a local analgesic and its small toxicity. To bring into action its local analgesic power, the drug must be in direct contact with the nerve fibres. With very high doses, intoxication takes one of two forms: (1) An analgesic form with hypothermia without any paralytic symptoms, but often fatal; (2) the second form is accompanied by agitation, trismus, attacks which are at first convulsive, then toxic contractions which continue till the death of the animal. Stovaïne is a poison for the whole nervous system, experiments showing that it acts on the medulla, the cerebral hemisphere, the cerebellum, and the spinal cord without it being possible to say in what order they are affected; the parts most strongly affected seem to be the cord and cerebellum. Summing up, Professor Pouchet said that stovaïne may be classed in the group of local analgesics. In small doses it possesses also distinct antithermic properties. Its action is analogous to that of cocaine; it abolishes the vital properties of cells with which it comes in contact, and acts as a poison for the central nervous system. Its toxicity is much less than that of cocaine, it exerts a toxic action on the heart, which, with its strong analgesic power and its antiseptic properties make it a drug which will have a good therapeutic future. M. Huchard then spoke of the treatment of neuralgias with stovaïne. The results were very good, especially in sciatica. He has used the drug in three different manners:

1. The hypodermic injection. This gave no result, injections given too far from the nerve on which we wish to act have no analgesic action.
2. In deep interstitial injections into the intercostal muscle, and consequently close to the nerve. The results obtained were good.
3. In epidural injections for the treatment of sciatica. This always gave excellent results. One case with double sciatica for eighteen months after the fifth injection was able, with the aid of another patient, to go down from the first floor to the garden.

The dose given in epidural injections was 2 cg.

Dr. Ronald Ross and Dr. Weir Mitchell have been elected Foreign Corresponding Members of the Académie de Médecine, the other candidates being Mosso (Turin), Ehlers (Copenhagen), Unna (Hamburg), Pick (Prague).

The Municipal Council, on the report of M. Chautard, has decided that the administration is to be invited to proceed periodically for the disinfection of the schools. M. Chautard also laid before the Council the recent communication of Professor Grancher to the Académie de Médecine on the results of his search for tubercle among the school children in the XVth arrondisse-

ment. M. Ambroise Rendu asked that further medical examinations for tubercle be carried out in the largest possible number of schools, especially in thickly populated quarters of the city.

VIENNA.

Yearly Report from the Poliklinik: Clinical Results: Material Aid for Patients: English-speaking Students in Vienna: Solemn Farewell to Professor Vogl: Unveiling of Kahler's Monument.

THE Committee of Management of the Vienna General Poliklinik held its annual meeting at the beginning of July. This institution is one of the very few Continental hospitals supported by private benefactors; it is worth while mentioning its results. The report of the Director, Professor Monti, showed that upwards of 75,000 out-patients were seen for the first time during last year, whilst the number of in-patients amounted to 1,800, the number of beds being 120. The highest attendance was in the out-patient department for children, namely, 19,000, the districts surrounding the klinik being thickly populated. Amongst these children the mortality of infants under 1 year was 15 per cent., and the mortality from diphtheria 7 to 8 per cent., which compares very favourably with the figures given a few weeks ago for the whole country, namely, 10 to 14 per cent. This is due to the fact that every single case of diphtheria is immediately isolated and treated by injections of serum. The Financial Director informed the Committee that substantial gifts and donations had been received, and had enabled the Governors to establish a fund from which medicines could be provided for the poorer out-patients, and small sums of money handed over to some in-patients upon discharge. This year no fewer than 89 English and 92 American medical men attended post-graduate classes at the policlinic, the large number of foreign students sometimes inducing the lecturer to address his audience in English.

One of the ruling principles in force at the University is that any member of the teaching staff attaining the ripe age of 70 must retire. A few days ago the whole Senate of the University assembled to celebrate the birthday of Professor v. Vogl and to take formal leave of the Nestor of German pharmacologists. He was the founder of modern methods of experimental pharmacology, and his works on Pharmacodynamics, The Alkaloids, and Modern Research in Pharmacology induced the Government to secure him as editor of the *Pharmacopœa Austriaca*. He is President of the Society of Apothecaries, President of the Royal Council of Health and Sanitation, Examiner in Materia Medica at the University of Vienna. A vast number of professors, Government authorities, deputations from various learned societies, of students and former pupils, assembled in the Grand Hall, where a solemn farewell was given to this beloved teacher and profound student. His successor in the chair of Professor has not yet been named, but is certain to be chosen from amongst the number of Vogl's former assistants.

A monument was unveiled in the Vienna University a short time ago in memory of Professor Kahler, the head Physician of the General Hospital, who held his post about twenty years ago, and was responsible for many innovations in treatment of lung disease. The gathering present at the ceremony included his son, now Assistant at the Clinic for Laryngology, one of his former assistants, now Chief Physician at the Berlin Hospital, Professor Kraus, and many other professors and doctors. The Rector of the University accepted the monument on behalf of this institution.

MANCHESTER.

Central Receiving House for Cases of Injury.—First Female Medical Graduate in Manchester.

THE uneasiness which is felt in some quarters and expressed in the lay press regarding the question of a central receiving house for cases of severe injury and sudden illness will be allayed by a communication which has been made to the press by the Chairman of the Board of Management of the Infirmary. Various resolutions on the subject have reached the Board, but the Chairman points out that as some of the communications were from societies, and as no reply from the Board could come to the knowledge of the members of these bodies before the meeting of the trustees, he thought he ought to state that no decision had been arrived at by the Board with reference to the provision of a central receiving-house and out-patient department. Such decision when arrived at could only be a recommendation to the trustees, and must come before them for their consideration at a special or annual meeting of trustees before it could be carried into effect. The trustees could not take the subject into consideration at present because no meeting had been called for that purpose.

The Graduation Ceremonial of July 26th was remarkable as being the first occasion on which the University has admitted a woman to a medical degree. Women have been admitted to Owens College and to Arts and Science degrees for nearly twenty years, but it is only a few years since—in fact, only sufficiently long for a full medical course to be taken—that the Medical School was opened to women, although the charter of Victoria University conferred the right to admit both men and women to all its degrees. We, therefore, congratulate Miss Catherine Chisholm—the daughter of a medical man—on being the first woman to receive a medical degree in the Victoria University of Manchester. Manchester has led the way amongst the Constitutional Colleges of Victoria University in opening all its medical classes to women.

CORRESPONDENCE.

NATIONAL LEAGUE FOR PHYSICAL EDUCATION AND IMPROVEMENT.

SIR,—In the report which the Committee on Physical Deterioration have just issued they say (paragraph 426):

> In the carrying out of their recommendations for the rectification of acknowledged evils, the Committee do not rely upon any large amount of legislative assistance; the law may with advantage be altered and elaborated in certain respects, but the pathway to improvement lies in another direction. Complacent optimism and administrative indifference must be attacked and overcome, and a large-hearted sentiment of public interest take the place of timorous counsels and sectional prejudice.

What the Committee says is quite true: the law may do something, but it cannot do a great deal; and the right way in which the physique of the nation is to be improved is for every individual to develop a "health conscience," as Dr. Clouston put it in the BRITISH MEDICAL JOURNAL of July 11th, 1903, and to awake to the necessity of strenuous and continued efforts to bring the physique of *every* class and not of one or two classes only up to the proper standard. But it is as true now as it was when Æsop wrote his fable of the bundle of sticks, that individual strength is feeble compared with collective strength, and in order to obtain the strength afforded by co-operation a National League for Physical Education and Improvement is now in process of formation. I mentioned it in the BRITISH MEDICAL JOURNAL of July 18th, 1903, and on July 20th a number of men interested in the movement, amongst whom was the Editor of the BRITISH MEDICAL JOURNAL, met at the Athenaeum Club and discussed the subject. A notice of this meeting and a reprint of the draft scheme which they considered appeared in the *Manchester Examiner* of July 23rd, 1903. By a mistake certain parts of this, which were not intended for publication, were printed with the rest, but with the omission of these parts the following is the scheme:

PROPOSED NATIONAL LEAGUE FOR PHYSICAL EDUCATION.

DRAFT SCHEME FOR CONSIDERATION.

The objects of the proposed league are:

1. To co-ordinate the various agencies which are at present working independently of each other for the advancement of physical training.
2. To supply the information and assistance required to complete the work.

For these purposes it is proposed to unite all the bodies and individuals interested in the subject as members of one league, with an executive body consisting of president, vice-president, and council.

Vice-presidents might be found amongst the members of both Houses of Legislature and others interested in the subject, in the Law, in the Education Department, in the Medical Profession, and in the Press: Editors of chief journals.

Council: This must necessarily be very large, and out of it an executive council may be chosen. It should include clergymen, mayors of towns, chairmen of county councils, heads of schools of all sorts, town or country gymnasia, secretaries of cricket clubs, football clubs, cadet corps, boys' brigades, Church brigade, lads' drill associations, rifle clubs, girls' clubs, lecture associations, temperance associations, and last but not least, all editors of papers of every shade of political opinion, religious papers, papers for children, for boys, and for girls, and writers of books for children and youth.

SUGGESTIONS FOR CONSIDERATION.

I.—A. Before the various bodies or individuals who are trying independently to promote physical education can work together each must know what the others are doing.

1. A list should therefore be prepared of all these bodies, giving very shortly their names, localities, numbers, kind of action, and names of secretaries.

2. A monthly or weekly paper should be started to give information regarding appointments or changes, and form a means of communication. It might be called the "Physical Education News."

3. A larger publication might possibly be advantageous for longer papers on important topics. This might appear quarterly or monthly, and be called the "Physical Education Review."

B. The co-ordination of the various bodies might be of two kinds, (1) generic and (2) territorial.

1. All bodies of the same kind, schools, continuation classes, gymnasia, cadets, and volunteers, might learn from the "News" what others engaged in the same pursuits were doing, so that any improvement made by one body could be adopted by others and arrangements made for occasional meetings or contests.

2. The different bodies in each district, that is, the schools, young men's associations, schools for cookery and housework, girls' clubs, rifle clubs, volunteers, etc., might learn to work together and to co-operate with those of adjacent districts.

II.—The information wanted to complete the work may be obtained partly by voluntary effort, but more easily by Royal Commissions on the Housing of the Poor, on Intemperance, on the Hours of Labour amongst Children. Some of these have already reported, and that which is now proposed on the Causes of Physical Deterioration generally may report especially in reference to the hours of work in schools, the accommodation for play, the time for play, and the physical training of children, not only by exercises but by games to develop their bodies, along with a certain proportion of drill to increase their powers of attention and prompt action. The assistance needed would require to be of many kinds, for example—

To have the law so altered that the children should have shorter hours of work, and that their work should not be continuously mental. Every hour of study should be shortened to 45 minutes, which I believe to be the rule in Germany, or 40 minutes, which I believe to be the rule in Sweden. During this 15 or 20 minutes in each hour the windows might be thrown open and the room ventilated while the children play or have exercises, or have drill outside.

To provide playgrounds and playrooms under cover for the children.

To provide the necessary instructors for physical exercises.

It might be requisite to provide meals at school at a low charge, and in some instances free, in order that children underfed at home might be able to do their lessons or exercises or even to play properly.

The provision of cheap meals at schools would also be useful as affording larger opportunities for teaching cooking to the girls attending school than they could possibly have if no such meals were provided.

In cases where the mothers cooked badly the children might be allowed to buy food at school, for the purpose of taking home, at such a price as would fully remunerate the school and yet be cheaper for the mother than what she could prepare at home.

Classes for cookery amongst mothers might also be held, but in any case the girls at school, who will be the mothers of the next generation, will learn to cook.

Instruction should be given to all children, and especially to girls, regarding the nature and digestibility of foods and the general laws of hygiene, in relation especially to fresh air, clothing, abuse of stimulants (tea or alcohol), and avoidance of infection.

Provision requires to be made for places where girls and lads who have left school and are employed during the greater part of the day in various trades may spend their spare time with enjoyment and profit to themselves instead of wandering round the streets and getting into mischief.

For this purpose girls' clubs and boys' drill halls appear to be useful, but their use requires to be greatly extended. If proper arrangement were made for this purpose, the numerous premature marriages, which tend to increase a weakly population, might be lessened and the infant mortality would be diminished by the greater ability of the mother to suckle her infant and her increased knowledge of how to feed it afterwards.

It is obvious that to carry out the various schemes already mentioned, as well as many others connected with physical education, a great deal may be done by Royal Commissions and Acts of Parliament, but it is almost impossible that they can do it all, and in order to obtain physical improvement in all classes to the desired extent all classes in the nation must co-operate, and for this reason it is desirable to form a National Physical Education League.

By comparing this draft scheme with the recommendations of the Committee it will be seen that the work which the League proposes to do is very nearly that which the Committee recommends should be done. As the purposes of the League are closely connected with medicine it has been felt that it should be strongly backed by medical men before other classes of the community are asked to join. It is to be hoped that every medical man in the kingdom will become a member and that the Branches of the British Medical Association may become foci from which obedience to the dictates of a "health conscience" may spread all over the country. It has been thought advisable not to bring the League before the public until the scheme had been more thoroughly matured, but as it has been mentioned several times by the Commission in their report it may be advisable to mention now that it is proposed to bring it before the public towards the end of the year and to utilize the time before this is done in developing the details of the scheme and securing promises of support to the League. Already almost all the heads of medical corporations in the three kingdoms, and many of the most distinguished men in the medical profession, have agreed to act as Vice-Presidents, whilst the Churches are represented by the Archbishop of Canterbury, the Archbishop of York, and several bishops and the Chief Rabbi; the law by the Lord Chief Justice, the Attorney-General and some of His Majesty's judges, and science by the President of the Royal Society and the President of the British Association. One of the earliest to join was Sir Henry Craik, K.C.B., Secretary of the Education Department of Scotland. Several members of both of the House of Lords and the House of Commons have joined, and so have several masters of public schools, but regular application to these as well as to the Church, the law, and medical profession has yet to be made. When this is done there can be no doubt, judging from the success of applications already made, that the vast majority will become members of the League, and when it is fairly established it is to be hoped that every man, woman, and child in the three kingdoms will become directly or indirectly connected with it, and share the benefits it will confer.—I am, etc.,

LAUDER BRUNTON,
Interim Secretary of the National League for Physical Education and Improvement.

London, W., Aug. 3rd.

THE CONTROL OF MEASLES.

SIR,—I have just read your article on the "Control of Measles,"[1] and am delighted to think you have drawn attention to the matter. It ought undoubtedly to be a notifiable disease (say, the first case in every house if the expense be objected to). That this would do great good I am convinced. I have very recently been able to prove in a very striking way what can be done in a country district if one only sees the first case at a sufficiently early stage. A few weeks ago I saw two cases of measles—one in a country village, the other in another village about four miles distant. I ascertained that in both cases the children had been to a neighbouring town, where undoubtedly they contracted the disease, but most fortunately they had not been to school immediately prior to the appearance of the rash. In one case the child had not been well—indeed, she had gone to hospital as an out-patient, and there in all probability came in contact with the poison. In the other I happened to be in the house seeing someone else, when I was told the "boy" was not very well. I looked at him, and said it would be wiser to keep him away from school for a few days, though at the time I had no reason to suspect measles. A rash came out in a few days. Then, by careful isolation, and taking every possible precaution to guard against my orders being disobeyed, an epidemic was avoided and there has only been one fresh case (this I could not help as the child, a relative, slept with the boy the night before the rash appeared).

I watched these three houses very carefully as I was determined, if possible, to prevent an epidemic with probable closure of two schools at least, and, though the work was most disagreeable, I have had the intense satisfaction of knowing that I have done a good bit of work, and that my efforts for the first time in twelve years have been successful. I have never previously had a chance like this.

As to what you refer as a not unimportant part of the duties of a medical officer of health, namely, "the education of the people in matters relating to health," what if many medical officers of health require this education themselves? For example, I know of one whose views on scarlet fever are as follows: "It is only one of the diseases that all must get at some time or other." This I have in writing.—I am, etc.,

M.D.

July 4th.

[1] British Medical Journal, July 2nd, 1904, p. 28.

THE EFFECTS OF DYES ON THE CULTURAL CHARACTERISTICS OF THE BACILLUS TYPHOSUS.

SIR,—Drs. E. W. Ainley Walker and W. Murray have described in the British Medical Journal of July 2nd changes undergone by the B. typhosus characterized by increase in length and breadth on the addition of aniline dyes to the culture medium. The comparative frequency with which this phenomenon occurs is noteworthy. I have

observed it on several occasions after sowing an old laboratory culture in beef extract peptone broth, standardized by litmus solution to slight alkalinity (and not by the more exact method described by Dr. Eyre, using phenolphthalein as indicator), and incubating for twenty-four hours at 37° C.

Forms were seen in hanging drops extending far beyond the field of the $\frac{1}{12}$ oil-immersion lens of the microscope, and sinuously motile. Staining by methylene blue showed a dense felted network, but no segmentation nor branching in a twenty-four hours' old growth. The ease with which this phenomenon occurs is suggestive, as Drs. Walker and Murray say, of possibilities, as yet unknown, of the saphrophytic forms and life-history of the B. typhosus. It appears to be analogous in a sense in vegetative structures to the heterology of animal tissues as seen in neoplasms, and perhaps to depend on like factors.—I am, etc.,

Brighton, July 4th. F. G. Bushnell.

MICROSCOPICAL DIAGNOSIS OF TUMOURS.

Sir,—Mr. Lockwood, in his admirable lecture on the microscopical diagnosis of tumours published in the British Medical Journal of July 2nd, p. 5, says: "There is something rather mysterious about the invasion of the lymphatics in malignant disease." A lady who has been under my care lately is a case in point; she had a small hard mass in the upper part of the right breast, and several enlarged hard glands to be felt in the axilla on the same side, and a few in the opposite side. I amputated the breast, taking away the greater part of the pectoral muscle, and cleared out the axilla on the same side, but did not interfere with the left axilla. Sections were cut of the growth, and also of several of the glands; the growth was a diffuse scirrhus carcinoma, the cells were small and thickly dispersed throughout the tissues, and in places the cells were becoming swollen from colloid degeneration; yet this was no secondary growth in the glands, merely a hyperplasia of normal gland tissue.

I am glad I left the other axilla alone, but it is hard to reconcile the teaching of pathology with the conditions found in this case.—I am, etc.,

Broadstairs, July 6th. Hugh M. Raven, M.R.C.S., L.R.C.P.

IRRIGATION OF OPERATION WOUNDS WITH SOLUTIONS OF CHEMICAL IRRITANTS.

Sir,—The drift of Dr. C. H. Whiteford's letter in the British Medical Journal of June 18th, p. 1462, seems to be against ths use of antiseptics, which he calls "irritating chemicals," "under certain favourable circumstances known sometimes to act as germicides," etc., and though he limits the application of his remarks to "incisions through healthy skin into tissues prior to operation free from bacteria," his arguments seem to me to prove too much, and might be applied to septic wounds; so that one doubts the truth of his premisses.

No proof is given that bacteria "in spite of all precautions do usually gain access to such wounds," neither is any proof given of the assertion that "a chemical solution has no selective action or special affinity for bacteria, but when poured into a wound containing bacteria attacks impartially the tissues and the bacteria and fluids (*sic*) lying on these tissues." The *a priori* argument founded on these assertions somewhat reminds me of the paradox to prove the uselessness, nay harmfulness, of gunpowder in warfare. When the charge explodes a force of equal momentum is driven backwards by the stock, to that propelled forwards by the ball; as the former is received by the shoulder every time, whilst only a few of the latter reach their mark in the bodies of the enemy, it follows that the total effect of a volley should be more disastrous to the firers than to the fired upon!

In like manner after reading these arguments one is inclined to rub one's eyes and to wonder whether Lister won his triumphs by the use of agents far more destructive to the resistance of the tissues than to the invading hosts of bacteria!

No doubt it is advisable in clean wounds, indeed in all, to reduce to a minimum the irritating and injurious effects of antiseptics, and even of irrigation in some cases. Dr. Whiteford's remark that "In practice the surgeon regards the occurrence of primary union without inflammatory reaction as the working test of the relative success of his efforts," puts it admirably; but I maintain those efforts include, in most cases, the judicious use of antiseptics. Any one who has observed at a public dispensary the difference that a small bottle of carbolic lotion and some boric lint makes in cases of cut or even crushed fingers, whitlow or onychia, even when dressed by the patient, will not doubt their utility.

In conclusion, I have just been reading with great pleasure and profit the paper on the sterilization of hands by Dr. J. Rupert Collins in the previous number of the British Medical Journal. His observations clearly show the greater value of dilute antiseptics than plain water in practically sterilizing a living tissue—the epidermis. He notes that their frequent use—though some of us know its discomforts—render the hands more easily sterilized: which should be the reverse on the theory of lessening resistance; and also mentions the established fact that "some micro-organisms have relatively a selective tolerance for certain antiseptics," which—though the action is stated as coming from the living organism, not the dead chemical irritant—should make us pause in declaring that the antiseptic must "attack impartially" the tissues and the bacteria! At all events, we hear plenty about non-toxic, non-irritant germicides! Sunlight and oxygen also can hardly be said to reduce the vitality of our tissues.—I am, etc.,

Leeds, June 27th. J. Tregelles Fox.

CHANGES IN THE BONES IN GOUT.

Sir,—My attention has just been called to a paper in the issue of the British Medical Journal of July 16th, p. 111, on the histological changes of the bones in gout by Dr. Chalmers Watson; and I am glad to find therein an independent confirmation of the views which I published on the subject in the *Lancet*, December 16th, 1893, and the British Medical Journal, February 21st, 1895. Evidently my contributions have escapsed Dr. Chalmers Watson's notice. They were, however, sympathetically analysed by von Noorden in the *Fortschritte d. Medizin*, 1895, soon after their appearance, and are referred to by Ziegler in his *Pathological Anatomy* etc., while Mr. Silcock at St. Mary's and Mr. Shattock at St. Thomas's Hospitals have for more than ten years taught and demonstrated from my microscopic preparations what Dr. Chalmers Watson now brings forward as a novelty.—I am, etc.,

London, W., Aug. 2nd. J. B. Berkart.

OBITUARY.

JOHN JOSEPH CRANNY, M.D., F.R.C.S.I.,

Surgeon to the Jervis Street and the Orthopaedic Hospital, Dublin.

We regret to announce the death, on Wednesday, July 27th, of Dr. Joseph Cranny, of Merrion Square, Dublin, in his 59th year, after a very brief illness.

Dr. Cranny graduated in the University of Dublin in 1869 and began his professional life by acting as Assistant Physician at the Rotunda Lying-in Hospital. Soon after he became Surgeon to Jervis Street Hospital, where he was highly esteemed as a conscientious and painstaking surgeon. For some years he was a member of Council of the Royal College of Surgeons, and on one occasion he offered himself as a candidate for the Vice-Presidency, but he was not successful.

Dr. Cranny was of a kindly and retiring disposition, and he did not take an active part as a writer or debater on surgical subjects. He was a good business man, and he gave much attention to the affairs of the township in which he was largely interested. Those who knew him well held him in the highest esteem and as a man who in all his relations of life was above reproach.

Dr. Alfred Ellis Vaughan, of Crew Cottage, Crewe, who died recently, had been in failing health for some few months past, but the end occurred with unexpected suddenness. He was the son and grandson of surgeons, both of whom had practice in Haslington, and his death therefore removes from the locality a medical name which has long been familiar throughout Cheshire. Dr. Vaughan was a student of Owens College, Manchester, and became L.R.C.P., L.R.C.S.Edin., and L.F.P.S. and L.M.Glasg. in 1888, and as soon as he had completed his student career took up work in the family practice. He was Medical Officer and Public Vaccinator of the Haslington District of the Nantwich Union, Medical Officer of the Ancient Order of Foresters, and other Friendly Societies, and Medical Referee of the Prudential Assurance Company. He contributed several papers to the medical journals, and was a member of the British Medical Association, of the Manchester Medical Society, and of the Man-

chester Pathological Society. Most of his spare time, however, he gave up to horticulture. In this he took a keen interest, and endeavoured by his own example to interest his neighbours in it, and also to encourage cottagers and others in the district to improve their position by developing the horticultural possibilities of their holdings. He showed himself a true friend to his patients, and his opinions both on medical and general matters were highly esteemed in the neighbourhood. He will be greatly missed, and much sympathy is felt for his widow and her two young sons.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Professor Heisrath a well-known ophthalmic surgeon of Königsberg, aged 53; Dr. Giovanni Maria Fiori, head of the Medical Clinic of the University of Sassari, and author of numerous papers on Cerebral Syphilis, Atheroma, Albuminuria in Hysteria, etc.; Dr. J. P. Gabizo, Professor of Dermatology and Syphiligraphy at Rio de Janeiro; Dr. L. E. Isambard, Member of the French Chamber of Deputies, and author of some works of antiquarian interest; Dr. I. H. Knapp, a well-known ophthalmologist of New York and some time Extraordinary Professor in the University of Heidelberg, aged 72; and Dr. C. A. Gayet, Professor of Ophthalmology in the University of Lyons, and author of a work, entitled *Elements d'Opthalmologie à l'Usage des Médecins Praticiens*, published at Paris in 1893, aged 72.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE

The following appointments have been made at the Admiralty: Arthur H. H. Vizard, M.D., Staff Surgeon, to the *Excellent*, August 15th; Arthur R. H. Skey, M.B., Surgeon, to the Royal Marine Depot, Deal, August 15th; Reginald St G. S. Bond, M.B., F.R.C.S., Surgeon, to the Royal Marine Division at Plymouth, August 18th; Edwyn R Grazebrook, Surgeon, to the *Cambridge*, for the *Undaunted*, August 15th; Charles R. Nicholson, Surgeon, to the Royal Marine Division at Portsmouth, August 18th; Alfred Woollcombe, Surgeon, to the *President*, additional, to be lent to Yarmouth Hospital, temporary, August 16th: Richard Miller, M.B., Fleet Surgeon, to the *Terror*, or recommissioning, and for Bermuda Yard, undated; John C. Durston and George E. Duncan, Surgeons, to the *President*, for hospital course, August 17th.

Staff Surgeon Henry Scanlan died at Broadclyst, Devon, on July 31st aged 55. He was appointed March 30th, 1872, and Staff Surgeon, March 30th, 1884; retiring from the service March 22rd, 1885. He was with the Royal Marine Battalion at Suakin during the operations in the Soudan in 1884-5, receiving a medal with clasp and the Khedive's bronze star.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel G. T. Trewman, M.B., half-pay, retires on retired pay, August 3rd. His commissions are thus dated: Surgeon, July 30th, 1881; Surgeon-Major, July 30th, 1893; and Lieutenant-Colonel, July 30th, 1901. He was placed on half-pay on account of ill-health, March 17th, 1904. He served in the Soudan campaign in 1885, receiving a medal with clasp and the Khedive's bronze star.

Majors R. H. Clement, G. B. Russell, M.B., L. R. College, F.R.C.S. Edin., and S. Butterworth also retire on retired pay, August 3rd. Their commissions, which were simultaneous, were thus dated: Surgeon, August 2nd, 1884, Surgeon-Major, August 2nd, 1896. Their war records are as follow: Major, Clement—Soudan expedition, 1884-5 (medal with clasp, and Khedive's bronze star), South African war, 1900. Major Russell—Soudan expedition, 1885 (medal with clasp, and Khedive's bronze star); Burma campaign in 1891-2, with the Irrawaddy and North-Eastern Columns (medal with clasp). Major Colledge—Soudan expedition in 1885 (medal with clasp, and Khedive's bronze star); South African war, 1901-2 (Queen's medal with three clasps, and King's medal with two clasps). Major Butterworth—Soudan expedition, 1885 (medal with clasp, and Khedive's bronze star); South African war, 1899-1902, including the action at Talana and Lombard's Kop, the relief of Ladysmith, the battle of Colenso, and operations in the Transvaal and Orange River Colony (mentioned in dispatches, King's medal with two clasps).

The appointment of Colonel J. M. Beamish, M.D., to officiate as Principal Medical Officer, Bengal Command, with the temporary rank of Surgeon-General, has effect from March 25th.

Captain H. H. Norman, M.B., is placed on temporary half-pay on account of ill-health, July 25th. He joined the department as Lieutenant July 28th, 1899, and was made Captain July 27th, 1902. He was slightly wounded whilst serving in South Africa in the war of 1899-1902, during which he served in all parts of the theatre of operations (King's medal with two clasps).

Exchange.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A Captain R.A.M.C., sailing for India in February, would exchange position on the roster with Captain or Lieutenant sailing earlier.—Address, "A. B. C.," 44, Redcliffe Gardens, South Kensington.

A Captain R.A.M.C., returned from foreign service last trooping season, wishes to exchange to Gibraltar.—Address, "W. H. A." care of Messrs. Holt and Co.

A Field Officer R.A.M.C., ordered to Bombay next February, wishes to go by an earlier transport, and would also be willing to exchange to Bengal or Punjab.—Address, "A. B. C.," care of Holt and Co.

A Captain, nominated for service in South Africa, trooping season 1904-5, desires exchange to India, or a Colony.—Address, giving dates, etc., to "S. A.," care of Messrs. Holt and Co., 3, Whitehall Place, London, S.W.

ARMY MEDICAL RESERVE.

Surgeon-Captain W. A. Atkinson, M.D., to be Surgeon-Major, July 23rd.

Surgeon-Lieutenant J. R. Williams to be Surgeon-Captain, July 20th.

Captain A. R. Badger, Worcester and Warwick Bearer Company, Royal Army Medical Corps (Volunteers), to be Surgeon-Captain, August 3rd.

INDIAN MEDICAL SERVICE.

Colonel J. S. Wilkins, D.S.O., Bombay Establishment, Principal Medical Officer, Aden district, is granted combined leave for six months, including sixty days' privilege leave, out of India, on private affairs.

Lieutenant-Colonel John Manook Zorab, M.B., late of the Bengal Establishment, died at Calcutta on July 2nd. He was appointed Assistant-Surgeon, March 30th, 1872, and Surgeon-Lieutenant-Colonel, March 30th, 1892, in which year he retired from the service.

IMPERIAL YEOMANRY.

John T. Nisbet, M.D., to be extra Surgeon-Lieutenant in the Lancashire Hussars, under para. 30, Yeomanry Regulations, July 23rd.

Mr. Archibald H. Hogarth is appointed Surgeon-Lieutenant in the Oxfordshire (Queen's Own Oxfordshire Hussars), July 30th.

ROYAL GARRISON ARTILLERY (VOLS.).

Surgeon-Captain J. Ratcliff Gaylard, 1st Cornwall (Duke of Cornwall's) Regiment, resigns his commission and is appointed Captain, July 23rd.

Mr. Edwyn G. Andrew is appointed Surgeon-Lieutenant in the 1st Cornwall (Duke of Cornwall's), July 30th.

Surgeon-Lieutenant-Colonel G. G. Sparrow, 2nd Hampshire, resigns his commission, and is granted the honorary rank of Surgeon-Colonel, retaining his uniform, July 30th.

VOLUNTEER RIFLES.

Surgeon-Captain A. M. Hickley, 4th Volunteer Battalion the Queen's (Royal West Surrey Regiment), resigns his commission, July 23rd.

Surgeon-Lieutenant O. R. Owst, 1st Cadet Battalion the Royal Fusiliers (City of London Regiment), to be Surgeon-Captain, July 23rd.

Surgeon-Lieutenant E. R. Tweed 3rd Volunteer Battalion the Devonshire Regiment, to be Surgeon-Captain, May 15th.

Surgeon-Major E. Haydon, M.B., 5th (Hay Tor) Volunteer Battalion the Devonshire Regiment, resigns his commission, and is granted the honorary rank of Surgeon-Lieutenant-Colonel, July 30th; he retains his uniform.

Brigade-Surgeon-Lieutenant-Colonel G. S. Elliston, 1st Volunteer Battalion the Suffolk Regiment, is seconded whilst holding the appointment of Senior Medical Officer of the Harwich Volunteer Infantry Brigade, July 30th.

Surgeon-Captain J. E. B. Wells, 1st (Hertfordshire) Volunteer Battalion the Bedfordshire Regiment, resigns his commission, July 30th.

Surgeon-Lieutenant H. B. Emerson, 2nd Volunteer Battalion the Worcestershire Regiment, resigns his commission, July 30th.

Surgeon-Lieutenant F. Crown, M.B., 1st Volunteer Battalion the Duke of Cornwall's Light Infantry, to be Surgeon-Captain, July 30th.

Surgeon-Major F. K. Pigott, 1st Volunteer Battalion the King's (Shropshire Light Infantry), to be Surgeon-Lieutenant-Colonel, July 30th.

Surgeon-Major J. W. Hinings, 1st Herefordshire, resigns his commission and is granted the honorary rank of Surgeon-Lieutenant-Colonel, retaining his uniform, July 30th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Mr. Maurice W. Renton to be Lieutenant in the Woolwich Companies, July 23rd.

MEDICO-LEGAL AND MEDICO-ETHICAL.

CORONERS AND *POST-MORTEM* EXAMINATIONS.

A. B. asks the following questions: (1) When a medical man, at the suggestion of the police but with no coroner's order, makes a *post-mortem* examination on the body of a newly-born child found in a field, and finds that it is stillborn, and a report to that effect reaches the coroner, is it the duty of that official to hold an inquest? (2) If a coroner issues the usual order to a medical man to make a *post-mortem* examination, with the usual summons to attend and give evidence at inquest, and afterwards decides not to hold the inquest, has the coroner power to pay the medical man for making the *post-mortem* examination?

*** (1) It is clear that the medical man should have waited until he received the coroner's order before making the *post-mortem* examination, as the police have no authority to give one. It might have been wiser if the medical man had kept the result of his investigation to himself until he stated it on oath at the inquest. The coroner is not bound to hold an inquest on a stillborn child if he is quite satisfied that such is the case. (2) If the coroner orders a *post-mortem* examination, and afterwards declines to hold the inquest, he is personally responsible to the doctor for the payment of his services, although it will not be returned to him from the county funds.

ATTENDANCE ON DEMENT IN UNLICENSED HOUSE.

Janus writes: I have attended for some months a lady suffering from senile dementia in a private (and unlicensed) house. On July 6th I signed one of the two necessary medical certificates in lunacy, and a reception order was made out for a specified asylum. On account of the patient's state of health these certificates have not been acted upon, and have now lapsed. Is it lawful or expedient for me, in compliance with the wish of the friends, to continue my attendance on the patient whilst she remains in her present abode?

*** It would be lawful, but whether expedient "Janus" himself, knowing all the circumstances of the case, must judge.

MEDICAL ADVERTISING.

LIVE AND LET LIVE.—We cannot think that the publication of the list of the honorary medical staff of King Edward VII's Hospital for Officers should be regarded by our correspondent as advertising on the part of those gentlemen. The practice of announcing appointments to hospitals in newspapers is very general in this country, nor do we remember any case where even the "poorest of our brethren" has run any risk of being "knocked off the *Register*" on this or any similar ground.

RELATIONS OF MEDICAL OFFICERS OF HEALTH TO THEIR PROFESSIONAL COLLEAGUES.

M.O.H. writes: There is a further difficulty that often arises when the friends are most anxious that the medical officer of health should confirm or dissent from the diagnosis of the practitioner; this I never accede to. Another difficulty arises when the practitioner makes one visit, and states that he will call again if sent for. What is a doubting medical officer of health to do under these circumstances?

CONDITIONS OF PRACTICE IN REMOTE COUNTRIES.

ETHICS asks: Can a fully-qualified and registered medical man (London Conjoint) who is now in practice in a foreign country in the Far East, where there is no form of law respecting medical practice, and where natives, Europeans, Americans, etc., qualified and otherwise, practise freely, be connected with a dispensary that advertises patent medicines, etc., without any reflection on his character and with impunity?

*** By a dispensary we understand our correspondent to mean a drug store. The better way would doubtless be to have no connexion with such an establishment. But in the circumstances described this is perhaps a counsel of perfection.

RESIDENT MENTAL PATIENT.

L. T.—At present a case of mental disease, received for payment, should be under the usual order of a justice specially appointed for the purpose under the Lunacy Act of 1890, the other authorities therein mentioned rarely being willing to act. To him should be presented two medical men's certificates, the petition and statement of particulars, all these and the justice's order being on special statutory forms. Copies of these should be sent to Commissioners in Lunacy, and various statutory notices and reports from time to time, and statutory records in the proper books, according to the regulations of the Lunacy Acts.

MIDWIFERY ENGAGEMENTS AND THE QUESTION OF FEE.

T. J. J. writes: A patient of mine engaged me last January for her confinement. She went away to a village four miles off, and when the event came off her mother called in a nearer practitioner—two miles. Neither acquainted me of the fact. What is the best policy for me to pursue in this case? It meant my going not far away from home at and about the expected date. Am I entitled to the fee? Is there any form printed for patients to sign in order to seal the agreement?

*** Our correspondent should put before the patient's husband the inconvenience and loss which the engagement has caused him, appealing to his sense of justice, and asking for the fee or part of it. If he refuses our correspondent could sue him in the county court. If he could prove the engagement and if the judge were one who understood the customs of the medical profession he might recover the fee and his costs. But, looking at the possible difficulty of proving the engagement, the possible idiosyncrasies of the judge, the possible difficulties in getting the fee and costs if judgement were in our correspondent's favour, the possibilities of one-sided reports with uncharitable comments in the local papers, and the inevitable loss of time in attending the court, our advice would be to write off the fee as a bad debt.

RECOVERY OF FEES FROM PATIENT'S WIDOW.

J. W. G.—A medical man is in no better position than an ordinary creditor so far as obtaining payment of his fees is concerned. A widow is only liable for her husband's debts to the extent of assets received by her on administering his estate.

CHARGES FOR MEDICINES.

J. I. M.—We are advised that the matter is governed by Sections VI and XXIV of the Medical Act, 1886, the former of which sections expressly provides that a registered medical practitioner shall be entitled to recover in due course of law in respect of his practice any expenses, charges in respect of medicaments, or other appliances.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF EDINBURGH.

THE summer graduation ceremonial of the University of Edinburgh took place on Saturday, July 23rd, in the McEwan Hall, the Vice-Chancellor, Principal Sir William Turner, presiding. The honorary degree of LL.D. was conferred on Samuel Henry Butcher, D.Litt., LL.D., etc., lately Professor of Greek in the University of Edinburgh; on the Hon. Sir Walter Francis Hely-Hutchinson, G.C.M.G., Governor and Commander-in-Chief, Cape of Good Hope; on the Right Hon. John Morley, M.P., P.C., O.M., F.R.S., LL.D., D.C.L.; on Sir George Reid, D.L., lately President of the Royal Scottish Academy; and on Professor William Thomson, M.A., B.Sc., Registrar of the University of the Cape of Good Hope.

The following gentlemen were presented to the Vice-Chancellor by the Dean of the Faculty of Medicine, and had the degree of Doctor of Medicine conferred on them:

R. E. Adamson, M.B., C.M. (*in absentiâ*); *R. T. G. Aickin, M.B., Ch.B.; H. Bairy, M.B., Ch.B.; C. S. Brebner, M.B., Ch.B.; G. A. Brogden, M.B., Ch.B.; J. M. L. Brown, M.A., M.B., Ch.B. (*in absentiâ*); *J. Brownless, M.B., Ch.B.; †T. L. Bunting, M.B., C.M.; ‡J. Cameron, D.Sc., M.B., Ch.B. (with Second Class Honours); *H. G. Carlisle, M.B., Ch.B.; G. S. Carmichael, M.B., Ch.B. (with First Class Honours); *J. C. Carr, M.B., Ch.B.; *A. F. R. Conder, M.B., Ch.B.; *R. W. Cunningham, M.B., C.M.; *C. B. Dobell, M.B., C.M.; C. W. Donald, M.B., C.M.; A. Douglas, M.A., M.B., C.M. (with Second Class Honours); W. Eadie, M.B., Ch.B.; S. C. Ellison, M.B., Ch.B.; D. Findlay, M.B., C.M.; A. D. Fordyce, M.B., Ch.B.; C. Fraser, M.A., M.B., Ch.B.; J. D. Gilruth, M.A., M.B., C.M.; R. A. Glegg, M.B., Ch.B.; D. D. Gold, M.B., C.M.; St. L. H. Gribben, M.B., Ch.B.; R. A. J. Harper, M.B., Ch.B.; ‡J. P. Hay, M.B., Ch.B.; T. F. Johnston, M.B., C.M.; *R. King, M.B., Ch.B.; *E. S. Lewer, M.B., C.M.; G. R. Livingston, M.B., C.M.; R. M. Lyon, M.B., C.M.; P. N. M. Macdonald, M.B., Ch.B.; J. L. Marjoribanks, M.B., C.M.; J. K. Matheson, M.B., Ch.B.; *K. D. Melville, M.B., Ch.B.; †T. L. Morgan, M.B., C.M.; D. N. W. Murray, M.B., Ch.B.; E. F. M. Neave, M.B., Ch.B.; T. M. Ness, M.A., M.B., C.M.; *C. H. Nixon, M.B., Ch.B.; ‡W. H. Prentice, M.A., M.B., Ch.B. (with Second Class Honours); R. M. Rowe, M.A., M.B., Ch.B. (with Second Class Honours); *C. W. Saleeby, M.B., Ch.B. (with First Class Honours); † R. Seheult, M.B., C.M. (*in absentiâ*); J. F. Selkirk, M.B., Ch.B.; *H. M. Speirs, M.B., Ch.B.; *E. G. B. Starkie, M.B., C.M.; I. S. Stewart, M.B., Ch.B.; E. C. Thomas, M.B., C.M.; N. N. Wade, M.B., Ch.B.; *D. C. Watson, M.B., C.M.; A. W. Wilcox, M.B., C.M.; A. E. Williams, M.B., C.M.; A. M. Wood, M.B., Ch.B. (with First Class Honours); *T. Wood, M.B., C.M.; *D. Young, M.B., Ch.B. (*in absentiâ*); J. C. Young (B.Sc.), M.B., C.M. (*in absentiâ*).

‡ Awarded gold medals for their theses. † Highly commended for their theses. * Commended for their Theses.

Degrees of M.B., C.M.—H. C. Gibson, G. Munro.

Degrees of Bachelor of Medicine and Bachelor of Surgery.—R. G. W. Adams, D. I. Anderson, W. W. Anderson, J. W. H. Babington, †R. B. Barnetson, W. P. Beattie, D. Bell, L. H. I. Bell, J. Bentley, A. R. Berrie, J. M. Beyers, A. S. L. Biggart, D. W. Boswell, F. T. Bowerbank, †D. Brown, W. S. M. Brown, †H. C. Buckley, V. T. Carruthers, Mildred Margaret Lindsay Cathels, †R. A. Chambers, D. M. C. Church, G. S. Clark, M.A., B.Sc., A. G. Coullie, T. E. Coulson, G. Cunningham, M.A., J. M. Dewar, R. Donaldson, M.A., †A. M. Dryden, T. H. Easton, C. G. Edmondston, E. J. Elliot, N. C. Fiseher, ‡J. M. R. Flament, W. H. Forsyth, †L. Fourié, A. N. Fraser, W. J. Fraser, F. H. Gibson, A. G. Glass, M.A., A. M. Gloag, H. V. Goldstein, J. P. Gordon, J. M. Graham, W. W. Greer, E. J. Griffiths, T. M. Guthrie, P. A. Harry, *E. Henderson, M.A., A. W. Hogg, G. S. Husband, K. U. A. Inniss, J. Jardine, S. A. Johnston, J. Kirk, G. F. S. Landon, S. W. S. Leary, A. J. Lewis, *J. Lochhead, M.A., B.Sc.; C. D. Lochrane, J. B. Lockerbie, Isabella Logie, A. D. M'Callum, H. M'Calman, M.A.; W. M'Conaghy, *J. P. M'Gowan, M.A.; †H. R. Macintyre, N. D. Mackay, B.Sc.; R. J. Mackessack, M.A.; Amy Marion Mackintosh, Elspeth Mary Macmillan, A. MacRae, M.A.; A. Malseed, M. M. Mamourian, D. P. Marais, Eimée Eveline Mills, M.A., B.Sc.; L. S. Milne, G. I. Moriarty, T. B. Mouat, W. M. Munby, D. S. Murray, A. Oliver, C. D. O'Neal, A. Pampellonne, W. J. Patterson, W. Patton, B. Pickering, Florence Margaret Sarah Price, L. Ram, C. Reece, A. E. C. Rees, B.A.; H. S. Reid, C. H. G. Ritter, Margaret Helen Robertson, W. J. D. Robertson, J. Robinson, B.Sc.; Sheila Margaret Ross, C. S. Ryles, J. Saffley, J. G. B. Shand, J. I. Shepherd, M.A.; F. R. Sinton, C. J. Smith, G. M'C. Smith, W. A. W. Smith, P. Steele, F. H. Stewart, M.A., B.Sc.; H. A. Stewart, †A. C. Strain, K. A. M. Stuart, S. H. S. Taylor, B.A.; H. M. Thompson, R. S. E. Todd, M.A., B.Sc.; G. H. Ussher, R. M. Walker, R. W. L. Wallace, R. H. Watt, J. H. D. Webster, D. P. D. Wilkie, F. A. Wille (*in absentiâ*), W. B. Wishart, A. C. T. Woodward, C. H. Wright, B.A.; T. Wright, Margaret C. W. Young, M.A.

* Passed examinations with First-Class Honours.

† Passed examinations with Second-Class Honours.

Certificates in Diseases of Tropical Climates were awarded to D. I. Anderson, M.B., Ch.B.; J. W. H. Babington, M.B., Ch.B.; R. B. Barnetson, M.B., Ch.B.; J. E. H. Bennett, M.B., Ch.B.; A. R. Berry, M.B., Ch.B.; D. W. Boswall, M.B., Ch.B.; Mildred M. L. Cathels, M.B., Ch.B.; R. A. Chambers, M.B., Ch.B.; G. S. Clark, M.A., B.Sc., M.B., Ch.B.; R. Donaldson, M.A., M.B., Ch.B.; A. M. Dryden, M.B., Ch.; T. H. Easton, M.B., Ch.B.; E. J. Elliot, M.B., Ch.B.; J. M. R. Flament, M.B., Ch.B.; W. H. Forsyth, M.B., Ch.B.; A. N. Fraser, M.B., Ch.B.; W. J. Fraser, M.B., Ch.B.; J. P. Gordon, M.B., Ch.B., J. M. Graham, M.B., Ch.B.; P. A. Harry, M.B., Ch.B.; E. Henderson, M.A., M.B., Ch.B.; K. U. A. Inniss, M.B., Ch.B.; J. Lochhead, M.A., B.Sc., M.B., Ch.B.; W. M'Conaghy, M.B., Ch.B.; J. P. M'Gowan, M.A., M.B., Ch.B.; H. R. Macintyre, M.B., Ch.B.; Amy M. Mackintosh, M.B., Ch.B.; D. Mackinnon, M.B., Ch.B.; Elspeth M. Macmillan, M.B., Ch.B.; J. G. M'Naught, M.A., M.D., C.M.; L. S. Milne, M.B., Ch.B.; W. M. Mumby, M.B., Ch.B.; L. Ram, M.B., Ch.B.; A. E. C. Rees, B.A., M.B., Ch.B.; Margaret H. Robertson, M.B., Ch.B.; W. J. D. Robertson, M.B., C.B.; J. Robinson, B.Sc., M.B., Ch.B.; Sheila M. Ross, M.B., Ch.B.; F. H. Stewart, M.A., B.Sc., M.B., Ch.B.; A. C. Strain, M.B., Ch.B.; R. S. E. Todd, M.A., B.Sc., M.B., Ch.B.; J. H. D. Webster, M.B., Ch.B.

The following prizes and scholarships were awarded:—The Ettles Scholarship: J. Lochhead, M.A., B.Sc., M.B., Ch.B. The Allan Fellowship in Clinical Medicine and Clinical Surgery: W. J. Fraser, M.B., Ch.B. The Freeland Barbour Fellowship: J. Lochhead, M.A., B.Sc., M.B., Ch.B. The Buchanan Scholarship in Gynæcology: J. Lochhead, M.A., B.Sc., M.B., Ch.B. The James Scott Scholarship in Midwifery: E. Henderson, M.A., M.B., Ch.B. The Mouat Scholarship in Practice of Physic: H. R. Macintyre, M.B., Ch.B. The Stark Scholarship in Clinical Medicine: L. S. Milne, M.B., Ch.B. The M'Cosh Graduate's and Medical Bursaries: W. C. Morton, M.A., M.B., Ch.B. The Gunning Victoria Jubilee Prize in Surgery: L. T. Price, M.B., Ch.B. The Beaney Prize in Anatomy and Surgery: W. J. Fraser, M.B., Ch.B. The Pattison Prize in Clinical Surgery: J. P. S. Jamieson. The Conan Doyle Prize: L. Fourie, M.B., Ch.B. The Wightman Prize in Clinical Medicine: W. J. Maloney. The Dorothy Gilfillan Memorial Prize: Margaret Helen Robertson, M.B., Ch.B. The Ellis Prize in Physiology: A. N. Bruce, B.Sc.

Scholarships in Science: The Baxter Scholarship in Physical Science has been awarded to P. D. Innes, M.A., B.Sc.; proxime accessit, A. H. Gardner, M.A., B.Sc. The Baxter Scholarship in Natural Science has been awarded to J. A. Gunn, M.A., B.Sc. The Mackay-Smith Scholarship in Chemistry has been awarded to R. J. Nicholson, M.A., B.Sc.; proxime accessit, N. K. Pillai, B.A.

Professor D. J. Cunningham, F.R.S., Promoter of the Faculty of Medicine, then delivered the usual address to the new graduates, his subject being "The Evolution of the Graduation Ceremony." He described in detail the various symbols connected with the "capping" of graduates which had been employed in various countries from mediaeval times down to the present period.

At the conclusion of the graduation ceremony the honorary graduates were entertained at luncheon by the University Union, when Mr. John Morley replied for the guests. Sir Walter Hely-Hutchinson, Emeritus Professor Butcher, Professor William Thomson, Principal Sir William Turner, and Professor Annandale also spoke.

The following is the list of passes at the recent professional examinations in medicine and surgery:—

First Professional Examination.—J. Aiken, H. M. Anderson, A. H. T. Andrew, W. Bainbridge, A. Baldie, Christiana H. Barr, Margaret W. Bartholomew, Lydia De la T Bateman, Elizabeth M. A. Baxter, A. R. Bearn, J. Black, J. Brander, Sarah E. Buyers, E. Cansfield, J. T. Carson, Jean G. Cathels, P. H. Chauvin, D. G. Cooper, H. S. Cormack, F. G. Cowan, J. C. Craig, M.A.; W. S. Crawford, Emilie C. Creaser, J. M. Dalrymple, P. Davies, F. Dillon, A. E. Drynan, A. C. England, C. Gamble, T Gardner, M. Gavin, A. Gibson, M.A. (with distinction); J. Gilchrist, A. I. Girdwood, J. A. Gordon, A. T. Gowan, J. C. B. Grant, R. Hannah, J. Hewat, A. E. Huckett, P. F. Hugo, J. D. Ingram, K. R. K. Iyengar, A. Jamieson, J. A. Jamieson, F. E. Jardine, W. P. S. Johnson, R. O Jollie, E. W. Kirk, R. Krause, F. R. Laing, C. L Laurent, R. D. Laurie, H. L. Lawrence, D. C. Lee, Margaret M. Lindsay, V. D. O. Logan, G. H. Lowe, R. M'Adoo, Margaret M'Cahon, Alexandra B. MacCallum, R. MacDonald, R. F. D. MacGregor, D. L. MacKenna, K. Mackenzie, A. K. Maclachlan, W. M. Macnab, D. Macnair J. Malloch, J. Marshall (with distinction), Eva Meredith, W. A. Miller, A. R. Milroy, J. A. Mitchell, V. P. Mondon, F. L. Moore, Anna L. Muncaster, W. Murdie, M.A.; C. C. Murray, C. T. Newton, I. A. van Nickerk, A. C. Norman, C. A. Paterson, A. P. Pearson, J. H. Peek, H. R. A. Philip, Laura W. Pugh, F. W. Rayment, F. E. Reynolds, E. W. Richards, C. Robertson, B.A., Marguerite Ross, S. Rowlands, D. H. Russell, C. S. Sandeman, W. A. Scobie, J. Scott, R. L Scott, Wilhelmina Sievwright, B.A.; J. C. Simpson, J. T. Simson, E. W. Smerdon, T. Smyth, W. N. van Someron, J. E. Spence, R. H. Tait, J. J. Thomson, N. G. Thornley, R. Verel, F. H. de Villiers, A. A. Walbrugh, Dora M. Walker, E. A. Walker, W. O. Walker, L. E. B. Ward, W. H. te Water, F. W. Waterworth, A. P. Watson, M.A., H. B. Watson, M.A., N. J. Watt, H. L. W. Wemyss, E. V. Williams, G. Wilson, A. G. Yates, M.A.; W. A. Young.

Second Professional Examination.—G. P. Adshead, J. Alexander, M.A.; A. Arthur, A. F. Babonau, E Banks, F. Blamire, J. D. Bowie, H. F. Briggs, Alice M. Burn, E. Burnet, B.A.; W. P. Chrystall, J. A. Currell, J. S. Daniell, R. Davidson, J. D. C. Duncan, J. S. Edwards, Mary S. Finlayson, F. S. B. Fletcher, K. N. Ghosh, J. E. Gordon, E. R. Grieveson, B.A.; D K Henderson, W. M. P. Henderson (with distinction); Nettie D. Hendrie, J. M'A. Hill, A. S. Holden, S. Jackson, W. W. Johns, W. T. A. Jolly (with distinction), R. L. Jones, Beatrice Kippenberger, J H. Lamb, S. B. Legge, J. M'Cutcheon, A. T. M'Donald, G. M'Mullan, W. J. Macnab, A. S. Mactavish, L. R. H. P. Marshall, A. H. M. Maxwell, J. E. Murray, Janet M. Murray, M.A.; M. A. D. Naoroji, A. J. P. Nowell, A. S. Paterson, Edith G. Pycroft, G. Y. Richardson, W. R. Ridley, W. G. Rivers, G. Robertson, T. Robertson, W. O. Sclater (with distinction), H. L. Sells, S. C. Sen, E. D. Simson, R. St. C. Steuart, J. A. Taylor, E. W. Vaughan, A. S. Walker, F. E Wall.

Third Professional Examination.—M. A. Ansari, A. W. Atkinson, A. J. Beattie, E. J Black, N Black, J. Brennan, G. Britto, T. G. Brown, B.Sc.; J. S. Caldwell, T. Campbell, N. S. Carmichael, J. Chisholm, F. W. Cragg, Davidina R J. Davidson, E. G. Deverell, F. H. Dickson, M. G. Dill, J. Dundas, D. Eakin, H. F. Fenton, L. P. M. Gardner, H. S. Gaskell, E. G. Girdwood, J. A. Glover, M.A.; E. J. C Groves, J. T. Gunn, H. S. A. Hogg, G. H. Howe, J. H. Hume, J. F. James, J. R. Kerr, R. M. Liddell, J Lindsay, J A. Loughridge, P. M'Dermid, D. F. Mackenzie, W. Magill, W. J. Maloney, J. A. Mathers, F. C. Mills, M.A.; H. Mowat, R E. Moyes, E. B. Munro, R. E. U. Newman, R. H. Nolan, H. J. Norman, C. R. O'Brien, J. S. Orwin, J. L. Pearce, D. E. C. Pottinger, G. Rauchenheimer, D. G. Reid, H. D. Robb, T. E. Roberts, J. R. Robertson, H. M. Sauzier, J. O. Shircore, E. M. Simmers, A. Simpson, W. T Smith, W. J. Taggart, H. V. Taylor, J. H. du Toit, A. Wight, R. Wilkins, C. R. Wills, and J. T. Young. The following candidate passed in Pathology of the Third Professional Examination: F. J. G. Tocher.

UNIVERSITY OF GLASGOW.

Graduation Ceremony.

The medical graduation ceremony, which is always held at the close of the summer session, took on July 19th in Bute Hall. There was a large attendance of the friends of the graduates. The Very Rev. Principal Story, presided, and the following gentlemen were presented for their degrees by Professor Murdoch Cameron:

Doctors of Medicine (M.D.).—I. With Commendation.—E. A. Walker, M.A., M.B., C.M. (Thesis: Ten Successive Laparotomies: their History, Clinical Aspects, and Technique.) *II. Ordinary Degree.*—J. J. Boyd, M.B., C.M. (Thesis: Scarlet Fever from the Preventive Medicine Standpoint, with special reference to the position of Hospital Isolation in controlling its spread.) A. Girvan, M.B., C.M. (Thesis: Acute Eczema in Adults and Children.) J. M'Glashan, M.B., C.M. (Thesis: An Occupational Disease.)

Bachelors of Medicine and Masters in Surgery (M.B., C.M.).—S. Dunbar, E. M. Watkins.

Bachelors of Medicine and Bachelors of Surgery (M.B., Ch.B.).—I. Honours.—*R. B. Carslaw, M.A., G. M Gray. *II. Commendation.*—J. W. Thomson, W. Templeton, H. H. Fulton, J. D. M'Callum, M.A., T. D. M'Ewan, R. M'N. Wilson, G. G. Smith, B.Sc., A. M. Pollock, B. H. Robertson, M.A., B.Sc., D. R. Reid, J. Murdoch. *III. Ordinary Degrees.*—B S. Alexander, A. C. Amy, H. G. Anderson, J. R. S. Anderson, R. D. Bell, M.A., D. Blackley, C. Brown, G. Y. Caldwell, Roberta Campbell, T. M. Campbell, M.A., P. Carrick, M.A., J. A. Cowie, B.A., B Sc., T T. M. Dishington, C. M. Drew, M.A., J. Graham, B Sc., J. C. Henderson, J. R. Kerr, J. Kerr, Ethel M. Lochhead, P. Lowe, M.A., B.Sc., T. S. Macaulay, D. C. M'Cormick, N. M'Dougall, J. B. M'Ewan, D Macfadyen, J. M'Farlane, A. S. M. Macgregor, J. M'Houl, R. Mackinnon, A. B. M'Pherson, J. R. M'Vail, J. Marshall, A. Meek, Margaret W. Millar, D. R. Mitchell, J. Muir, A. H. Napier, G. C. Neilson, T. Orr, Charlotte R. Park, H. H. Patrick, J. C. Pickup, J. Porter, W. M. Rae, W. Rankin, M.A., L. D. Shaw, Jessie M. Stewart, W. C. Stewart, M. R. Taylor, W. Y. Turner, M.A., H. F. Warwick, Annie M. Yates, H. Young.

After the "capping" Professor McCall Anderson delivered a short address to the graduates. He began by congratulating them on becoming members of a noble and honourable profession, and went on to discuss the many different branches of the profession, and the special attractions which these might present to different individuals.

*Mr. Carslaw gains the Brunton Memorial Prize of Ten Pounds, awarded to the most distinguished Graduate in Medicine of the year.

UNIVERSITY OF LONDON.

London School of Tropical Medicine.

Of the 39 students who attended the above School during the session, May to July, 1904, the following have passed the examination at the end of the course with distinction:

J. Currie, Colonial Service; A. King, Colonial Service; E. Maples, Colonial Service; P. N. Gerrard, Colonial Service; C. A. Suvoong.

VICTORIA UNIVERSITY OF MANCHESTER.

Faculty of Medicine.

Miss Marion Stopes, B.Sc., Ph.D., has been appointed Junior Demonstrator in Botany. This is the first occasion in which a lady Demonstrator has been appointed in the University.

R. J. Ewart, M.D., M.Sc., F.R.C.S., formerly Holt Fellow of University College, Liverpool, has been appointed Junior Demonstrator of Physiology.

The autumn graduation ceremony was held on July 26th, when degrees were conferred by the Vice-Chancellor.

The following candidates have passed the examinations indicated:

Final Examination.—Part I.—H. Ainscow, F. Boothroyd, T. M. Bride, D. E. Core, C. M. Craig, J. S. Crawford, F. G. Dobson, W. R. Douglas, H. M. Fort, W. George, S. R. Gloyne, G. H. Hustler, T. E. Lister, W. Longley, J. D. Marshall, H. Ollerenshaw, W. C. Parkes, Ethel M. Phillips, R. B. Radcliffe, J. Rickards, G. H. H. Russell, A. L. Walker, Julia C. White, T. Whitehead, S. R. Wilson.

Part II.—J. W. Anderton, R. A. H. Atkinson, F. P. H. Birtwhistle, A. Boyle, W. E. Brierley, W. M. Calverley, Catherine Chisholm, E. Cundall, A. M. Deane, J. P. Garlick, W. P. Grant, F. W. M. Greaves, E. E. Hughes, H. Irving, C. E. Lea, T. W. P. Leighton, J. T. R. MacGill, H. Mackenzie, H. J. Macvean, H. E. Moore, F. G. Pell-Ilderton, R. N. Porter, F. G. Ralphs, F. Robinson, J. F. Smith, P. Talbot, H. Tomlin, T. W. Walker, F. J. Walton, S. H. West, W. D. Wilkins, A R. Wright, F. W. B. Young.

The following have been awarded honours:—*Second Class:* A. Boyle, W. M. Calverley, E. E. Hughes, P. Talbot, H. Tomlin.

Diploma in Public Health.—Part II.—J. R. Hutchinson, W. A. Newall, C. S. O'Neill, Isobel Tate, C. C. Webb.

B.Sc.—Final Examination: Second Division.—T. K. Brownson.

Second Examination.—Anatomy and Physiology.—J. P. Bibby, T. E. Dickinson, V. C. Hackworth, W. T. Hessel, C. G. Howlett, S. S. Mahamadi, W. P. Moffett, J. H. Nichol, F. R. Parakh, A. E. Quine, A. C. Turner, J. Whitehead, N. R. Williamson.

Materia Medica and Pharmacy.—J. Allen, J. W. Bride, G. W. Bury, D. J. Dakeyne, W. L. Dibb, A. K. Eatock, J. A. Fairer, F. Hall, W. D. Hamilton, F. Hartley, R. Lakin, J. L. Moir, P. Moran, W. Nightingale, J. A. Parkes, G. Rainford, G. S. Richardson, R. Robertson, D. Rodger, Elsie M. Royle, F. K. Smethurst, V. Southwell, J. V. Steward, T. W. Todd, G. B. Warburton, B. V. Ward, H. Whitehead.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

An ordinary quarterly comitia was held on Thursday, July 28th, the President, Sir William S. Church, in the chair.

Announcements.

The President announced that the Bradshaw Lecture would be delivered by Dr. Caiger on Tuesday, November 15th, instead of on November 3rd, as previously arranged. The President also announced that he had appointed Dr. Frederick Taylor as Harveian Orator for 1905. The Registrar announced that a reply had been received from the Emeritus Registrar, Sir Henry Pitman, thanking the Fellows for a congratulatory telegram on his attaining his 96th birthday.

Membership.

The following gentlemen were elected members of the College:—John Frederick Gordon Dill, M.A., M.D.Cantab.; Edward Henry Douty, M.A., M.D.Cantab., L.R.C.P.; Wilfrid Stephen Fox, M.A.Cantab., L.R.C.P.; Ernest Edward Glynn, M.A., M.B.Cantab., L.R.C.P.; Henry Lawrence McKisack, M.D.R.U.I.; Geoffrey Richard Slade, M.A., M.D.Cantab., L.R.C.P.; Thomas Grainger Stewart, M.B.Edin.

Licences.

Licences were granted to 115 gentlemen.

Diplomas in Public Health.

In conjunction with the College of Surgeons, diplomas in Public Health were granted to the following gentlemen: C. T. Blackwell (Major R.A.M.C.), M.D.Durh., L.R.C.P. and S.Edin.; D. Brewer, L.R.C.P., M.R.C.S.; J. Catto, M.B., B.S Aberd.; B. K Chatterjee, L.R.C.P. and S.Edin., L.F.P.S. Glasg.; S. C. Clapham, L.R.C.P., M.R.C.S., M.B., B.S.Durh.; J. M. Clements, M.B., B.Ch. (R.U.I.); W. E. L Davies, L.R.C.P., M.R.C.S.; T. S. Elliot, L.S.A.; N. Faichnie (Major R.A.M.C.), M.B.Durh., B.S.Durh.; H. W. Grattan (Captain R.A.M.C.), L.R.C.P., M.R.C.S.; J. W. Gromitt, L.R.C.P., M.R.C.S.; H. L. Jenkins, M.B., Ch.B.Vict.; J. I. Pratt, L.R.C.P., M.R.C.S., M.B.Toronto; M. J. Rees, L.R.C.P., M.R.C.S., M.B.Lond.; F. E. Rock, L.R.C.P., M.R.C.S., M.D Lond.; G. W. Simpson, L.R.C.P., M.R.C.S.; C. A. Spooner, L.R.C.P. and S.Edin., L.F.P.S.Glasg.; J. C. B. Statham (Captain R.A.M.C.), L.R.C.P., M.R.C.S.; J. R. Steinhaeuser, L.R.C.P., M.R.C.S., M.B. and B.S.Lond.; R. L. Thornley, L.R.C.P., M.R.C.S., M.D Lond.; P. Vickers, M.B., Ch.B.Edin.; W. McC. Wanklyn, L.R.C.P., M.R.C.S.

Communications.

The following communications were received: (1) From the Secretary of the College of Surgeons, reporting certain proceedings of their Council on July 14th: (2) From Mr. Edmund Gosse, Librarian to the House of Lords, asking leave to have photographed (*a*) the portrait of Dr. Radcliffe, and (*b*) his Gold headed Cane, in possession of the College. Permission was granted. (3) From Dr. Tyson, asking leave to have photographs taken of the portraits of Dr. Edward and Dr. Richard Tyson in the College. Dr. Tyson's request was acceded to.

Elections.

On the nomination of the President and Council the following elections were made:

Censors: Thomas Henry Green, M.D.; William Henry Allchin, M.D.; Norman Moore, M.D.; Frederick Taylor, M.D. *Treasurer:* Sir Dyce Duckworth, M.D. *Emeritus Registrar:* Sir Henry Alfred Pitman, M.D. *Registrar:* Edward Liveing, M.D. *Harveian Librarian:* Joseph Frank Payne, M.D. *Assistant Registrar:* Oswald Auchmuleck Browne, M.D. *Elected Members of the Library Committee:* Philip Frank, M.D.; Norman Moore, M.D.; William Henry Allchin, M.D.; Archibald Edward Garrod, M.D. *Curators of the Museum:* William Howship Dickinson, M.D.; Henry Charlton Bastian, M.D.; William Cayley, M.D.; John Abercombie, M.D. *Finance Committee:* George Fielding Blandford, M.D.; James Frederick Goodhart, M.D.; Sir Herbert Isambard Owen, M.D. *Examiners:* Chemistry and Chemical Physics: Harold B. Dixon, F.R.S.; John Millar Thomson, F.R.S.; Frederick Daniel Chattaway, Ph.D., D.Sc.; Alexander Mitchell Kellas, F.C.S.; John Addyman Gardner, F.C.S., F.I.C. Materia Medica and Pharmacy: Frederick Willcox, M.D.; Walter Essex Wynter, M.D.; Henry Albert Caley, M.D.; Francis Whittaker Tunnicliffe, M.D.; James Purves Stewart, M.D. Physiology: Ernest Henry Starling, M.D.; Bertram Louis Abrahams, M.B.; Leonard Erskine Hill, M.B. Anatomy: Bertram C. A. Windle, M.D.; Robert Howden, M.B. Medical Anatomy and Principles and Practice of Medicine: Samuel Hatch West, M.D.; Theodore Dyke Acland, M.D.; George Newton Pitt, M.D.; Sidney Philip Phillips, M.D.; William Pasteur, M.D.; William Collier, M.D.; Norman Dalton, M.D.; Frederick John Smith, M.D.; Francis George Penrose, M.D.; John Rose Bradford, M.D. Midwifery and Diseases peculiar to Women: Alfred Lewis Galabin, M.D.; Francis Henry Champneys, M.D.; George Ernest Herman, M.B.; William Rivers Pollock, M.B.; Edward Malins, M.D. Public Health: Part I. Arthur Pearson Luff, M.D. Part II. William Heaton Hamer, M.D.

Sir William Broadbent, who retired by rotation, was re-elected a representative on the Executive Committee of the Imperial Cancer Research Fund.

Admission to Membership and Fellowship.

An application from Mr George Lestock Thorton, L.R.C.P., praying that the membership which he resigned in January last might be restored to him was considered for the second time, and he was reinstated as a member of the College.

The Registrar proposed the enactment, for the first time, of the following By-law: That Dr. Edward Johnstone Jenkins, elected a Fellow on April 28th last, being resident in Australia, be admitted *in absentiâ*, any by-law to the contrary notwithstanding.

Reports.

The following reports were received:

1. From the Committee of Management, dated July 18th;
   (*a*) The Committee of Management, recommending that Felsted School, which had been visited by a member of the Committee on several occasions, and which is already recognized for instruction in Chemistry, Physics, and Practical Chemistry, be also recognized for the teaching of Biology. This was agreed to.
   (*b*) The Committee also recommended that St. Mary's Hospital, Manchester, be recognized as a place of instruction in Midwifery and Gynæcology under the conditions of Clauses 1(h), 2(c), and 7, paragraph 21, Section II of the Regulations. This was passed.
   (*c*) The Committee reported that they had considered the communication from the General Medical Council containing various resolutions in regard to the teaching and examination of the first year of the curriculum, and that such resolutions of the General Medical Council do not recommend anything which is not already included in the latest regulations of the Conjoint Board.
2. The quarterly report of the College Finance Committee, and the annual reports of the Library Committee and of the Curators of the Museum were received and adopted.

Library.

Books and other publications presented to the Library during the past quarter were received and thanks returned to the donors.

Dr. Payne called special attention to a valuable copy of the first edition of Celsus, dated 1478, in perfect preservation, which had been presented by Dr. William Osler. A hearty vote of thanks to Dr. Osler for his gift was carried with acclamation.

Newly-elected officers, examiners, and members of Standing Committees gave their faith to the College.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

At the July sittings of the Scottish Conjoint Board held in Glasgow, the following candidates passed the examinations indicated:

First Examination (Five Years' Course).—A. M'Murray, J. M'Kelvey, E. Gibson, W. G. Forde, H. W. Turner, O. R. Belcher, T. B. Ferguson, F. H. A. Kiddle, P. J. Taaffe, J. G. Buchanan, D. Welsh, and K. F. Gorer.

First Examination (Four Years' Course).—G. V. Edwards.

Second Examination (Five Years' Course.—J. R. C. Holtby (with distinction), J. A. Smith, F. G. Allan, J. M. Muir, J. H. Patterson.

Third Examination.—A. Brown, P. Henderson, J. Macnamara, J. M'Arthur, J. M. Moriarty, W. F. H. Ives, H. E. Bolton, J. B. N. Raphael-Tom, and J. H. Roberts.

Final Examination, and admitted Licentiates of the Three Co-operating Authorities.—J. B. Patterson, A. F. G. Spinks, R. Crothers, T. G. Campbell, W. A. Magill, G. H. Waugh, L. C. Nash, P. J. Thomsen, L.D.S., T. A. Fall, H. E. Strathy, R. W. Townley, M. A. L. dos S. Vaz, J. H. Fyfe, L.D.S., L. Gavin, and D. Haig.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on Tuesday, July 19th, Dr. Clouston (President) in the chair.

The late Dr. Peter Young.

The President made feeling reference to the loss which the College had sustained by the death of Dr. Peter Young, a Fellow of the College.

Introduction of New Fellow.

Harry Oliphant Nicholson, M.D., F.R.C.P.E., was introduced, and took his seat as a Fellow of the College.

Admission to the Membership.

On a ballot the following candidates were admitted to the Membership of the College after examination: James Cameron, M.D., Edinburgh; George Douglas M'Rae, M.B., C.M., Edinburgh; Alexandre da Fonceca Dias, L.R.C.P.E., L.R.C.S.E., Edinburgh; Theodore Charles Mackenzie, M.B., Ch.B., Edinburgh; and Thomas Garnet Stirling Leary, M.B., Ch.B., Castlederg, Tyrone.

Admission to the Licence.

The Registrar reported that since the last quarterly meeting thirty-one persons had obtained the Licence of the College by examination.

Curriculum and Examinations.

The regulations regarding the Single Licence and Membership and Fellowship of the College for the ensuing year, and the regulations for the Triple Qualification were approved.

Hill Pattison-Struthers Bursary.

The Hill Pattison-Struthers Bursary in Clinical Medicine, which is in the gift of the College, was awarded after examination to Mr. James Watson.

Proposed Academic Dress for Licentiates.

With regard to the proposed institution of an academic dress distinctive of Licentiates of the College, it was resolved to delay consideration of the matter.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have passed the examinations indicated:

First Examination (Four Years' Course).—W. Clegg-Newton.

First Examination (Five Years' Course).—J. Reid, R. B. M. Sullivan, G. H. Urquhart, G. W. Rundle, B. M. Lynam, O. Carlyle (with distinction), R. N. Coorlawala, N. G. Walshe-Davidson, W. R. Waddell, J. B. Kelso, A. B. Bateman, C. L. Stewart, M. C. Anderson.

Second Examination (Four Years' Course).—L. C. Webster, E. R. S. Hale.

Second Examination (Five Years' Course).—W. L. Watson (with distinction), G. E. Nash, R. K. Nisbet, W. C. Doughty, W. J. V. Curtain (with distinction), T. D. Murison, G. E. W. Henderson, A. M. Davie, K. F. C. H. Buchanan, A. McMillan, N. Moxon, J. S. Ward (with distinction), R. N. Coorlawala, A. Rae, G. Banks, R. M. Jones.

Third Examination (Five Years' Course).—A. McKendrick, A. C. Mackay, C. A. E. Ring, C. F. Fiaschi, Anna Mary Mulholland, A. C. Dhondy, S. C. Chuckerbutty, N. D. Sweetnam, D. J. Neethling, N. J. Rodrigues, D. Steele-Perkins, R. P. Hosford, R. T. A. Patchett, J. Coffey, B. W. Dakers, and F. W. Cooper.

Final Examination.—C. H. Thomas, W. H. Boalth, B. E. M. Newland, B. B. Westlake, E. V. Smith, B. Ingram, J. Watson, A. G. Thompson, F. C. Edwards, F. Etherington, E. K. Mumford, C. R. Whittaker, C. G. McGreer, A. K. Cyriax, D. M. Donovan, J. G. Cormack, W. Boyd, L. K. Rodriguez, Eileen Josephine FitzGerald, H. G. Campbell, D. D. Kamat, A. D. Fox, R. K. Dhuru, N. Oliphant, D. A. Hastings, V. D. Madgavkar, N. S. Sodhi, S. J. Bhathena, W. V. St. J. Sutton, and J. S. de Souza.

CONJOINT BOARD IN ENGLAND.

THE following gentlemen passed the Second Examination of the Board in the subjects indicated, viz.:

Anatomy and Physiology.—Messrs. E. M. Adam, Charing Cross Hospital; H. T. Ashby, B.A.Camb., Cambridge University; H. P. Aubrey, L.D.S.Lond., Guy's Hospital; W. J. Berne, London Hospital; R. N. W. Biddulph, University College, Bristol; R. G. Bingham, St. Thomas's Hospital; A. E. Blythman and F. Butler, Charing Cross Hospital; C. W. G. Bryan, St. Mary's Hospital; E. P. Carmody, St. Bartholomew's Hospital; E. V. Connellan, University College, Bristol; E. L. Councell, University College, Liverpool; G. H. Curtis, Westminster Hospital; C. W. De Morgan, St. Mary's Hospital; G. H. Dive, St. Bartholomew's Hospital; J. E. Ellcome, St. Thomas's Hospital; R. R. Elworthy and E. G. Foote, Westminster Hospital; A. A. Forty, A. L. Foster, and F. H. Fuller, Guy's Hospital; H. Gibson, London Hospital; K. F. Gordon, Middlesex Hospital and University College, New Zealand; A. Hanau, St. Bartholomew's Hospital; R. W. Ironside, B.A.Camb., C. E. M. Jones, B.A.Camb., Cambridge University; T. A. Killby, St. Bartholomew's Hospital; G. Ley, T. P. Lloyd, and R. Mugliston, London Hospital; P. V. G. Pedrick and J. T. Smalley, Guy's Hospital; C. H. L. Petch, St. Thomas's Hospital; A. Pfeiffer, Middlesex Hospital; L. St. Vincent-Welsh, St. Bartholomew's Hospital; P. L. Stallard, B.A.Camb., Cambridge University; T. G. Starkey-Smith, W. F. Sutcliffe, W. P. Tindal Atkinson, and W. G. H. M. Verdon, St. Thomas's Hospital; C. F. Strange, H. D. Thomas, and G. H. Watson, London Hospital; T. Timothy, University College, Cardiff; St. J. A. M. Tolhurst and J. N. Watson, Guy's Hospital; L. C. Wilkinson, St. Bartholomew's Hospital; C. L. Williamson, University College, Liverpool.

Anatomy only.—Mr. E. W. Lowry, St. Bartholomew's Hospital.

Physiology only.—Messrs. J. W. Heekes, Charing Cross Hospital; D. M. Keith, Michigan University and St. Bartholomew's Hospital; F. H. L. Marson, Middlesex Hospital.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates passed in the subjects undernoted:

Surgery.—A. Anderson (Section I), W. H. A. Elliott (Sections I and II), P. A. Hendley (Sections I and II), J. E. Jones, C. Kellgren (Section II), S. H. R. Welch (Section II).

Medicine.—A. A. Angelis (Sections I and II), L. F. Cope (Sections I and II), A. H. Hughes, C. Kellgren (Sections I and II), E. R. Neukirch, J. W. Rollings, R. W. Taylor (Sections I and II), J. R. R. Trist (Section I), E. E. Tucker (Sections I and II), T. R. Waltenberg (Section II).

Forensic Medicine.—A. H. Hughes, C. Kellgren, R. W. Taylor, J. R. R. Trist, A. Whitby.

Midwifery.—H. A. Browning, W. H. A. Elliott, A. G. Gamble, C. S. Ormsby, C. T. Pollow, A. F. Reardon, R. W. Taylor, W. V. P. Teague.

The diploma of the Society was granted to the following candidates, entitling them to practise Medicine, Surgery, and Midwifery: L. F. Cope, C. Kellgren, and T. R. Waltenberg.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,748 births and 4,723 deaths were registered during the week ending Saturday last, July 30th. The annual rate of mortality in these towns, which had been 13.5, 13.7, and 14.1 per 1,000 in the three preceding weeks, further rose last week to 16.4 per 1,000. The rates in the several towns ranged from 2.6 in Smethwick, 4.5 in Hornsey, 7.0 in King's Norton, 7.4 in Northampton, 8.0 in Rotherham, and 8.7 in Croydon and in Handsworth, to 22.1 in West Ham, 22.6 in Birmingham, 24.7 in Rhondda, 25.8 in Stockport, 27.1 in St. Helens, and 29.8 in Liverpool. In London the rate of mortality was 16.0 per 1,000, while it averaged 16.5 in the seventy-five other large towns. The mean death-rate in the seventy-six towns from the principal infectious diseases averaged 4.3 per 1,000; in London this death-rate was equal to 4.1 per 1,000, while among the seventy-five large provincial towns the rates ranged upwards to 7.3 in Nottingham, 7.5 in Leyton, 7.6 in Bootle, 8.1 in Birmingham, 8.6 in Stockport, 4.9 in St. Helens, 10.5 in West Ham, and 12.3 in Aston Manor and Liverpool. Measles caused a death-rate of 2.1 in Hull, 2.3 in Birkenhead, 2.4 in Hanley, 2.7 in Huddersfield, 3.5 in St. Helens, and 3.9 in Grimsby; scarlet fever of 1.0 in Great Yarmouth and 1.7 in Barrow-in-Furness; diphtheria of 1.4 in Reading; whooping-cough of 1.2 in St. Helens and 4.0 in Burton-on-Trent; and diarrhoea of 6.0 in Tottenham, 6.1 in Leyton, 6.3 in Nottingham, 6.8 in Bootle, 7.0 in Stockport and in Birmingham, 9.2 in West Ham, 10.2 in Liverpool, and 11.0 in Aston Manor. The mortality from enteric fever showed no marked excess in any of the large towns. Two fatal cases of small-pox were registered in London, and one each in Warrington, Manchester, and Newcastle-on-Tyne, but none in any other of the large towns. The Metropolitan Asylums Hospitals contained 46 small-pox patients on Saturday last, July 30th, against 71, 62, and 51 on the three preceding Saturdays: 7 new cases were admitted during the week, against 10, 7, and 6 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1,685, 1,698, and 1,754 at the end of the three preceding weeks, had further risen to 1,784 at the end of last week: 243 new cases were admitted during the week, against 269, 229, and 234 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, July 30th, 907 births and 466 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 15.8, 14.8, and 15.7 per 1,000 in the three preceding weeks, fell again last week to 14.1 per 1,000, and was 2.3 below the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 9.0 in Greenock and 10.8 in Aberdeen to 16.6 in Dundee and 19.9 in Paisley. The death-rate from the principal infectious diseases averaged 1.8 per 1,000, the highest rates being recorded in Dundee and Paisley. The 228 deaths registered in Glasgow included 2 which resulted from scarlet fever, 12 from whooping-cough, and 13 from diarrhoea. Four fatal cases of measles, 2 of diphtheria, and 3 of whooping-cough were recorded in Edinburgh. Two deaths from "fever" and 3 from diarrhoea occurred in Dundee; 3 from diarrhoea in Aberdeen; and 2 from whooping-cough and 2 from diarrhoea in Paisley.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, July 23rd, 573 births and 282 deaths were registered in six of the principal Irish towns, against 430 births and 308 deaths in the preceding period. The mean annual death-rate in these same towns, which had been 18.4, 18.6, and 16.9 per 1,000 in the three preceding weeks, further declined to 13.7 per 1,000, this figure being 0.4 per 1,000 below the mean annual rate in the seventy-six English towns for the corresponding period, a very uncommon circumstance. The figures ranged from 8.8 in Londonderry and 11.7 in Waterford to 16.2 in Belfast, and 18.0 in Dublin. The death-rate from the principal zymotic diseases during the same period and in the same six Irish towns averaged 0.0 per 1,000, or exactly half as much as during the preceding period, the highest figure, 2.1, being registered in Dublin, while Cork, Limerick, and Waterford recorded no deaths under this heading at all. From small-pox, typhus, scarlet fever, and simple continued fever no deaths were recorded in any part of Ireland, but measles caused 5 deaths in Dublin and enteric 4 in Belfast, and 2 in Dublin. To whooping-cough were ascribed 2 deaths in Belfast and 3 in Dublin.

BACTERIOLOGICAL DEPARTMENT OF THE UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.

During the past year 1,122 specimens have been examined in the Bacteriological Department of the University of Durham College of Medicine, Newcastle-on-Tyne, showing an increase of 184 over the previous year. The great majority of the specimens are examined for the various county councils and public institutions in the neighbourhood. Out of 650 specimens of sputum examined for tubercle bacilli, 30 per cent. were found to be positive. Out of the 223 cases of suspected diphtheria, 35 per cent. were found to be positive, whilst from 79 specimens of blood from suspected enteric 32 per cent. were positive. The Newcastle water was examined every month, also water for other public bodies. Ten specimens of blood were examined for anthrax with positive results in 5 cases. Tubercle bacilli were found in urine in 5 cases out of 39.

SMALL POX AT BRISTOL.

In a recent account of the number of small-pox cases under treatment in the city there was an error in the figures, 37 being substituted for 3. The state of the city as regards the disease is at present, that no case has been notified since July 1st, and that during the last six months 20 cases have come under observation. Some of the introductions were recognized at once, and consequently easily brought under control; but in two, owing to the mild form of the disease, there were difficulties in tracing the movements of the introducer. One of these came from some railway works in Gloucestershire, a family of nine persons, after staying in Bedminster and infecting three persons, departed, leaving no definite address. The problem of their whereabouts was solved in twenty-four hours, and as a result 9 cases in the country and 8 in the city were traced to have been infected from this source. The second introduction was by a tramp, who, arriving from the Newcastle district *via* Derby, Birmingham, and Gloucester, slept, about the end of May, in a common lodging-house in the city. He infected two men, one belonging to Bristol and one to Kingswood. The Bristol man had a well-marked, modified attack, but, the disease not being recognized at once, he infected other members of his household. The Kingswood case resulted in three others, and these are being treated in an isolation hospital at Kingswood erected under stress of this introduction. No death from small-pox has occurred in the city, and only one—an unvaccinated infant—in the country. Bristol is now free from the disease, and all the cases in hospital are convalescent and will be discharged shortly.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

BRIGHTON THROAT AND EAR HOSPITAL, Church Street. Non-resident House-Surgeon. Salary at the rate of £75 per annum.

BRISTOL ROYAL INFIRMARY.—(1) Resident Junior House-Surgeon and Anaesthetist. (2) Resident Casualty Officer. Salaries at the rate of £50 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Assistant House-Surgeon, resident. Salary, £60 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £50 per annum.

ESSEX AND COLCHESTER HOSPITAL.—Honorary Surgeon.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon, resident. Salary, £50 per annum.

HULME DISPENSARY.—House-Surgeon, resident. Salary, £150 per annum.

KENT COUNTY LUNATIC ASYLUM, Barming Heath.—Chief Medical Officer and Superintendent. Salary commencing £800 per annum.

LANCASTER: ROYAL LANCASTER INFIRMARY.—House-Surgeon, resident. Salary, £100 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—(1) Resident Medical Officer, Honorarium, £80 per annum. (2) Honorary Dental Surgeon.

RAINHILL: COUNTY ASYLUM.—Assistant Medical Officer, resident. Salary, £150 per annum, rising to £250.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House-Surgeon, resident. Salary, £75 per annum.

SOUTH SHIELDS UNION.—Assistant Resident Medical Officer at the Workhouse. Salary, £120 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House-Surgeon, resident. Salary, £50 per annum.

WISBECH: NORTH CAMBRIDGESHIRE HOSPITAL.—Resident Medical Officer. Salary £100 per annum.

APPOINTMENTS.

BAILEY, B. E. G., M.R.C.S., L.R.C.P.Lond., Medical Officer of the Midhurst Union, *vice* A. E. Peters, M.R.C.S., L.R.C.P.Lond., resigned.

BLACKALL, J. J., M.D., R.U.I., M.Ch., Certifying Factory Surgeon for the Killadysart District, co. Clare.

BURTON, H., M.D.Durh., M.R.C.S., Certifying Factory Surgeon for the Marple District, co. Cheshire.

DOWNE, Thomas A., M.R.C.S., L.R.C.P.Lond., Government Medical Officer at Levuka, Fiji.

DWAN, J. H., L.R.C.P. and S.Irel., Certifying Factory Surgeon for the Rathgormick District, co. Waterford.

FORBES, James Graham, M.A., M.D., D.P.H.Cantab., M.R.C.P.Lond., Assistant Physician to the Metropolitan Hospital.

GRAHAM, Robert Balfour, F.R.C.S., D.P.H etc.Edin., Medical Officer of Health for the Burgh of Leven; also Certifying Factory Surgeon for the District of Leven, Largo, and Newburn, under the Factory Acts.

HANDLEY, W. Sampson, M.S.Lond., F.R.C.S., a Hunterian Professor of Pathology in the Royal College of Surgeons.

KIRBY, S. J. J., M.D.Brux., L.R.C.P.Edin., M.R.C.S.Eng., Medical Officer of Health for the Mutford and Lothingland Rural District and Oulton Broad Urban District.

MCENIERY, D., L.R.C.P. and S.Edin., Certifying Factory Surgeon for the Ballamacarbery District, co. Waterford.

MCSWINEY, M., M.B., R.U.I., L.F.P.S.Glasg., Certifying Factory Surgeon for the Johnstown District, co. Cork.

MAGRATH, H. G., L.R.C.P. and S.Edin., L.F.P.S.Glasg., Certifying Factory Surgeon for the Cranborne District, co. Dorset.

MAGUIRE, Charles E., M.D., C.M.Aberd., District Medical Officer of Suva.

OUTRED, C. D., M.R.C.S., L.R.C.P.Lond., Medical Officer for the Grass District of the Orsett Union, *vice* C. W. Gilbert, M.R.C.S., L.R.C.P.Lond., resigned.

QUIRKE, J., L.R.C.P. and S.Irel., Certifying Factory Surgeon for the Piltown District, co. Kilkenny.

SPON, Harry James, M.R.C.S.Eng., L.R.C.P., D.P.H.Camb., Surgeon to the Surrey Dispensary, *vice* John Dixon, M.D., J.P., resigned.

WIGAN INFIRMARY.—The following appointments have been made:

Honorary Medical Officers.—John Blair, M.D., R.U.I., A. J. Greene, M.R.C.S., L.R.C.P.Lond., Ferdinand Rees, M.D.Glasg.

Honorary Surgeon Dentist.—Andrew Thom, L.D.D., R.C.S.Edin.

DIARY FOR NEXT WEEK.

POST-GRADUATE COURSES AND LECTURES.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered as follows: Monday, at 3 p.m., Demonstration in Surgical Wards; Tuesday, at 5 p.m., Cancer of the Uterus; Wednesday, at 4.15 p.m., Demonstration in Medical Wards; Thursday, at 5 p.m., Diagnosis of Cardiac Murmurs; Friday, at 5 p.m., Abscess of the Brain.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 2s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

GARDNER.—On July 31st, at 11, Rastell Avenue, Telford Park, Streatham Hill, the wife of Thomas Hudson Gardner, M.B.Lond., M.R.C.S.Eng., L.R.C.P.Lond., of a daughter (stillborn).

MARRIAGES.

PEREZ—CARNOCHAN.—On July 30th, at Our Lady of Victories, Kensington, by the Very Rev. Canon Fanning, George Victor Perez, M.B.Lond., M.R.C.S.Eng., eldest son of the late Don Victor Perez, M.D., of Puerto Orotava, Teneriffe, to Constance Maud Carnochan, youngest daughter of the late Thomas Hartley Carnochan, of Hirst Priory, Crowle, Lincs., and of Mrs. Carnochan, Avenue House, Hare-gate.

SMITH—RIGBY.—On July 29th, at Immanuel Church, Streatham, conducted by the Rev. H. F. S. Adams, Vicar, Lewis Albert Smith, M.D., son of the late Joseph Alfred Smith, of Chelmsford, to Ethel Gwendolen, only daughter of John Rigby, M.A., of Streatham.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

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AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

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IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National)—EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

ANSWERS.

THE TREATMENT OF OBESITY.

INQUIRER.—One of the most scientific treatises on the treatment of obesity is that of Professor Wilhelm Ebstein, of Göttingen. An English translation was published by H. Grevel and Co., 33, King Street, Covent Garden, London, W.C., in 1890, under the title *Corpulence and its Treatment on Physiological Principles.* Price 2s. 6d. The subject is also fully dealt with in Dr. Burney Yeo's work, *Food in Health and Disease* (chapter v), Cassell and Co., Limited, London. 1896, price 10s. 6d.; and in Dr. Robert Hutchison's *Food and the Principles of Dietetics* (chapter xxviii), Edward Arnold, 37, Bedford Street, Strand, London, W.C., 1902, price 16s.

LETTERS, NOTES, Etc.

FAIR PLAY has omitted to enclose his card.

EXCHANGE OF HATS.

LOST, at Blenheim Palace, on Friday afternoon, July 29th, a silk hat, by the City Cork Hat Company, Oxford Street Branch, with initials A. H. in gold letters inside. Kindly return to Dr. Arthur Haydon, 23, Henrietta Street, Cavendish Square, W., who has taken care of the one left behind, with a deep mourning band round it.

A WARNING.

DR. H. A. DES VŒUX (Buckingham Gate, S.W.) writes: On Monday, July 25th, a young man of German appearance was shown into my waiting room and said that he wished to make an appointment for me to see "Countess Reichenstein" either at my house or at a hotel in Kensington the next day. She had been recommended to me by a doctor in Southampton. The appointment was duly made. The same afternoon two pieces of silver were found to be missing from my room. The police are now searching for my friend! He is about 5ft. 7 in. in height, aged 22, pale, rather spotty face, clean shaven or light moustache; build slight; he wore a dark short coat, and a grey overcoat being on his left arm, and he carried two books under his right arm. He spoke with strong foreign accent. If any of your readers are visited by this gentleman they are requested to communicate with the police.

THE DISINFECTION OF B. TYPHOSUS WITH "SANITAS."

MR. C. T. KINGZETT, F.I.C. (Chairman, The "Sanitas" Company, Limited,) writes: We trust you will afford us this opportunity of pointing out that the results of Dr. David Sommerville's experiments which were published in the BRITISH MEDICAL JOURNAL of July 2nd, are not in accord with those of other investigations. He found that undiluted (ordinary) "Sanitas" Fluid prevented the growth of the bacillus when the time of contact with the culture was two and a-half minutes, whereas a one in two solution required a contact of ten minutes. Now, Mr. C. G. Moor, M.A., F.I.C., had previously determined that the undiluted "Sanitas" Fluid destroyed the same bacillus in an exposure of one minute, and that even a 10 per cent. solution destroyed the organism in ten minutes. Again, Dr. Eli Grimes (Bacteriologist to the Iowa State Board of Health) has reported that working with cultures on solid media (in which cases it takes some time for the disinfectant to penetrate), in no instance did the germs survive more than ten minutes, and where they were growing in very thin films, their destruction was almost instantaneous. Typhoid cultures in liquid media were killed by even a 5 per cent. solution of "Sanitas" Fluid in ten minutes. We may be allowed to add that there is nothing to prevent the use of undiluted "Sanitas" Fluid, when required, for measures of disinfection with respect to typhoid cases even for internal use, seeing that the liquid is absolutely non-poisonous.

THE INTRUSION OF THE LAYMAN INTO MEDICAL PRACTICE.

DR. P. A. NIGHTINGALE (London) writes: The discussion in your columns on the above subject has been raised none too soon. Several cases of medical treatment by electrical methods by laymen have lately come under my notice which are very instructive, especially in view of your editorial of July 7th.

A patient with Menière's disease of some years' standing was sent to me for treatment by the high-frequency current; he told me that he had paid £25 to an "Institute" for motor vibration of the ear; that the money was paid in a lump sum before the treatment began, that the ear was never even examined, and that he received no benefit from the treatment, in spite of the constant hopes held out to him. As I, unlike the "Institute," was unable to promise any relief, he soon deserted me.

Another patient suffering from neurasthenia with tachycardia, exaggerated reflexes, etc., was submitted to 150 electric baths on consecutive days, at a cost of nearly £200. Later on he had daily applications of the high-frequency current, sitting on the auto-condensation couch for periods varying from thirty to forty-five minutes at a time, with an electrode in one hand and a newspaper in the other! Finally, the abdomen was rayed several times, after which he completely broke down, and had to go into a nursing home for many weeks.

A "specialist in medical electricity" whom I visited lately was good enough to offer me 25 per cent. on the fees of all cases I sent him; he assured me that he was largely supported by "well-known" medical men, and significantly remarked that he always sent the cases back to them afterwards. He used no ampèremeter or milliampèremeter, did not hesitate to pass instruments into the vagina or rectum, and charged "large lump sums" for his valuable treatment.

The proprietor of a large bathing establishment in London advertises widely that "he will give his opinion and advice on any case through the post for five shillings in stamps." Some of his charges are: High-frequency treatment from 10s. to 20s.; electric-light baths from 10s.; "local applications of light treatment according to time."

The various institutes which flourish in our midst seem to owe their success to the wide support given them by our own profession, to their ubiquitous advertisements, to the "lump sums" charged, and to the unlimited faith which the gullible public place in the specious promises of certain "cures" held out by their unscrupulous owners and managers.

The legitimate practitioner who, at a large cost of time and money, makes a special study of electro-therapeutics, must needs be heavily handicapped against such unjustifiable competition, and surely merits the support of his brethren.

METRIC OR DUODECIMAL?

DR. JOHN T. FAULKNER (Stretford) writes: Why not make the duodecimal the metric system? It would only require two new symbols and new names for the figures 10 and 11, then the repetition would begin at 12—or 10 as it would then become. This would take every advantage of 12 as a convenient metre and a really improved metric system result.

LETTERS, COMMUNICATIONS, ETC., have been received from **A** Miss R. M. Allan, Edinburgh; A. M. W.; Dr. T. Clifford Allbutt, London. **B** Mr. W. H. Brooks, Leicester; B. W.; Mr. W. H. Bennett, Manchester; Dr. T. E. B. Brown, C.I.E., London; E. H. Barnister, M.B., Barbados; Mr. J. F. Blake, London; Dr. F. G. Bushnell, Brighton; Bengal; Dr. F. F. Burghard, London; Mr. L. A. Bidwell, London; Mr. J. R. Benson, Bath **C** Mrs. H. Cope, London. **D** B. Dyball, M.B., Exeter; Messrs. Down Bros., London; Dr. H. A. Des Vœux, London; Dr. A. F. Dimmock, Harrogate; W. B. Drummond, M.B., Edinburgh; A. Don, M.B., Dundee; Dr. E. G. D. Drury, Grahamstown. **E** Enquirer; East Anglian. **F** Fairplay; F.R.C.S.; Dr. J. T. Faulkner, Manchester. **G** Mr. J. Graham, Wakefield; Mr. W. E. Graves, Craven Arms; Messrs. Gray, Dunn and Co., Glasgow. **H** Mr. T. F. Hopgood, Sunderland; Messrs. Haller and Co., London; Dr. A. D. Hooges, Knebworth; Mr. E. Henry, Porth'even; N. B. Harman, M.B., London; H. T. Herring, M.B., London. **I** Isolation; Ignoramus. **J** Dr. T. Joyce, Cranbrook; F. W. Jones, M.B., Enfield; Juvenal. **L** E. Lawrie, M.B., London; Dr. T. Laffan, Cashel; G. D. Logan, M.B., Ecclefechan; E. W. Lewis, M.B., Jammalamadugu; Mr. C. Lege, London; R. C. Lucas, M.B., London. **M** Member of Eighteen Years' Standing; Mr. W. Mortimer, London; Mr. W. Meakin Leamington; R. J. Mills, M.B., Bad Langenschwalbach; M.B.; J. McKie, M.B., Glenluce; Member of B.M.A. **N** Dr. T. D. Newbigging, Abington. **O** Old Subscriber. **R** Mr. J. Robertson, Edinburgh; Dr. J. M. Rhodes, Didsbury. **S** Mr. J. Stewart, Clifton; Messrs. W. B. Saunders and Co., London; Mrs. Scharlieb, M.D., London; Mr. S. Suzuki, Tokio; Dr. B. C. Stevens, Lancaster; C. H. Souter, M.B., Balaklava, S.A.; Dr. H. Snow, London. **T** Dr. E. Thompson, M.P., London; B. C. Thurlow, M.B., Tunbridge Wells; Dr. W. J. Thompson, Dublin **V** Vass Chemical Company, Secretary of, Danbury, Conn.; F. J. de C. Veale, M.B., Mumbles. **W** W. F. M.; A. G. Wilkins, M.B., Ashton-under-Lyne. **X** X.K.F.

BOOKS, ETC., RECEIVED.

University of Pennsylvania. Contributions from the William Pepper Laboratory of Clinical Medicine. Philadelphia. 1903.

La Radiothérapie. Son application aux Affections Cutanées. Par le Dr. J. Belot. Préface de M. le Dr. Brocq. Paris: G. Steinheil. 1904. Fr. 15

Traité de Médecine Opératoire et de Therapeutique Chirurgicale, publié sous la direction de Paul Berger et Henri Hartmann. Chirurgie Orthopédique. Par le Professor Paul Berger et le Dr. S. Bauzet. Paris: G. Steinheil. 1904. Fr. 20.

Handbook of Meat Inspection. By Robert Ostertag, M.D. Translated by E. Vernon Wilcox, M.A., Ph.D With an Introduction by John R. Mohler, M.A., D.V.M. London: Baillière, Tindall and Cox. 1904. 15s.

The Fitz-Patrick Lectures for 1903. English Medicine in the Anglo-Saxon Times. By Joseph Frank Payne, M.D.Oxon. Oxford: The Clarendon Press. 1904. 8s. 6d.

An Atlas of Human Anatomy. By Carl Toldt, M.D., assisted by Professor Alois Dalla Rosa, M.D. Translated from the Third German Edition. By M. Eden Paul, M.D.Brux., M.R.C.S., L.R.C.P. 5th Section. F. Angeiology. London: Rebman Limited, and New York: Rebman Company. 1904. 13s. 6d.

Ueber die Grenzen der Uebertragbarkeit der Tuberculose durch Fleisch Tuberculoser kinder auf den Menschen. Von Stabsarzt Dr. M. Westenhoeffer. Berlin: August Hirschwald. 1904. M.1.

Practical Chemistry, including Simple Volumetric Analysis and Toxicology. By P. A. Ellis Richards, F.I.C. London: Baillière, Tindall and Cox. 1904. 3s.

. In forwarding books the publishers are requested to state the selling price.

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SEVENTY-SECOND ANNUAL MEETING

OF THE

British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF STATE MEDICINE.

J. S. Haldane, M.D., F.R.S., President.

DISCUSSION ON STANDARDS OF VENTILATION.

I.—J. S. Haldane, M.D., F.R.S.,

Lecturer in Physiology, University of Oxford; President of the Section.

Dr. Haldane said: It is well known that a high death-rate is a usual accompaniment of occupation or living in crowded or confined spaces. Country life is on the whole much healthier than town life, and agricultural employment out-of-doors is far healthier than average indoor employments. The difference in healthiness is certainly due, in part at least, to deficiencies in the quality of the air breathed by the persons who are employed indoors; and these deficiencies can be more or less completely remedied by increased ventilation. What standard of quantity, then, can reasonably be demanded in the air supply to confined spaces occupied by human beings? It is with the answer to this question that the present discussion is concerned. The answer must evidently depend, however, on the conclusions which we form as to what particular impurities or alterations in quality in air make it unwholesome. Apart from these conclusions we should be working altogether in the dark, for any practically attainable supply of fresh air might be adequate in one set of circumstances but totally inadequate in others. Moreover, we may be, and certainly are in many cases, able to attain our object far better by dealing directly with the source of some harmful alteration in the quality of air than by merely increasing the supply of air from outside.

Let me first refer to the cases in which the evidence is clearest as to the effects of vitiated air on health.

Poisonous or Unpleasant Gases and Vapours.

Poisonous gases are, of course, the cause of occasional accidents, but they seldom produce chronic and lasting injury to health or an appreciable influence on the death-rate among any class of persons. They can nearly always be dealt with at their point of origin far more easily than by general ventilation, and it is thus scarcely necessary to consider them in connexion with general ventilation.

Dust.

Of all impurities commonly present in air, none produces such well-defined deleterious effects as certain kinds of dust, particularly dust from the mechanical disintegration of hard stone and steel. Persons exposed to the inhalation of stone or steel dust become increasingly liable to lung disease in proportion to the number of years during which they have been exposed. As to the exact nature of this disease there is still a good deal of obscurity, and satisfactory clinical and pathological evidence on the subject is much needed. It is quite clear, however, that the deaths certified under the headings of "phthisis," "bronchitis," and other diseases of the lungs are greatly in excess in the case of persons who have been long exposed to stone and steel dust. This is clearly shown in the statistics of occupational mortality published in the Decennial Supplements to the Registrar-General's Annual Reports by Dr. Ogle and Dr. Tatham. I have been recently engaged in an inquiry for the Home Office into the effects of dust inhalation among Cornish miners. The facts elicited have brought out extremely clearly the deleterious effects produced by inhalation of stone dust. I may, perhaps, quote from our report the following statistics, all of which are compiled partly from Dr. Tatham's last Decennial Supplement to the Registrar-General's Report for, and partly from data specially furnished by, the General Register Office for the purposes of the inquiry.

Death-rates per 1,000 Living at Each Age.

Age.	Cause of Death.	Farm Labourers, 1890-92.	All Occupied Males, 1890-92.	Coal Miners, 1890-92.	Miners Living in Cornwall, 1900-2.
15—20	Lung diseases	0.5	0.95	0.9	0.7
	Other ,,	0.8	1.10	1.4	0.5
20—25	Lung ,,	1.9	2.60	2.0	2.7
	Other ,,	1.6	1.90	2.1	1.4
25—35	Lung ,,	2.5	3.80	2.1	17.3
	Other ,,	2.2	2.70	2.4	2.8
35—45	Lung ,,	3.7	5.90	3.5	33.2
	Other ,,	3.0	5.60	3.8	5.2
45—55	Lung ,,	4.8	8.50	7.8	32.2
	Other ,,	7.3	11.10	8.7	11.1
55—65	Lung ,,	7.6	13.00	18.7	42.6
	Other ,,	15.9	22.30	22.0	27.4

It will be seen that among miners living in Cornwall there is an enormous excess of deaths from respiratory diseases. Ten years ago this excess was sufficiently marked as compared with the deaths among colliers and ironstone miners, but recently the death-rate from lung disease at the age of 25 to 55 has risen enormously, and is about eight to ten times that among colliers and ironstone miners. All metalliferous miners working in hard stone, such as the Cornish granite or quartz reefs of gold mines, are exposed to dust inhalation; but the men who are by far the most exposed are those engaged in working boring machines acting by percussion. Inquiries made through the local registrars elicited the fact that the recent great rise in the death-rate is entirely due to the deaths of rock-drill men, although these latter form but a small proportion of the total miners in Cornwall. Out of 142 deaths in the Redruth district of Cornwall of men who had at any time worked rock-drills it was found that 122 had been returned as dying from various forms of phthisis, 11 from other lung diseases, and only 9 from all other causes. The death-rate among boring-machine men could not be exactly ascertained, but it is evidently about ten times that of colliers or ironstone miners of the same age. Their average age at death was found to be about 37. The majority had worked in the Transvaal or elsewhere abroad. Of 47 men who had worked boring machines in the Transvaal alone the average duration of rock-drill employment was only 4.7 years, and all but 1 had died of lung disease. With regard to the nature of the wasting lung disease from which these men died, a number of samples of sputum were carefully examined for us by Dr. Ritchie, of Oxford, who found that 74 per cent. of the samples contained tubercle bacilli. This result was somewhat of a surprise in view of prevalent ideas with regard to the pathology of lung disease induced by exposure to dust. It shows very clearly the importance of predisposing causes in tuberculous infection. Much further information on the subject of the effects of dusty occupations will be found in the very valuable work on *Dangerous Trades* recently brought out under the able editorship of Dr. Thomas Oliver.

Before I leave the table, however, I should like to draw attention to the mortality in one particularly dusty occupation—namely, coal mining. It will be seen that up to the age of about 50 coal miners are on the whole unusually free from lung diseases, but that above 50 they suffer more from lung disease—chiefly bronchitis—than average occupied males. Coal dust, by its relative harmlessness, presents an extraordinary contrast to hard-stone dust, but seems to have a distinct effect in the end; and there are a number of other relatively harmless kinds of dust which may probably be placed alongside of coal dust. They are far less harmful than stone dust, but nevertheless cause serious harm if breathed for a long period, and for this reason ought to be got rid of as far as practicable.

Non-poisonous and non-infective dust of all kinds, whether it acts rapidly, as in the case of stone dust in large quantities: less rapidly, as in the case of the dust inhaled by ordinary metalliferous miners, or potters, or grinders; or slowly, as is probably the case among colliers and many other classes, always seems to act cumulatively, and to cause lung damage which, so far as we know, is irreparable. It is largely for this reason that the prevention of dust diseases is such a very important matter.

Poisonous dust, such as that containing lead or arsenic, produces results which are so well known that I need scarcely refer to them. An extremely interesting variety of poisonous dust is the pollen which produces the ordinary forms of hay

fever in persons who have the misfortune to be susceptible to this disease. The recent researches of Dunbar have shown that as little as $\frac{1}{10000}$ of a milligrame of the toxic globulin which he found to be present in the pollen of a number of grasses, and some other plants, will produce the characteristic symptoms of irritation if applied in solution to the conjunctiva of a susceptible person.[1]

Another very important variety of ordinary dust is that containing infective micro-organisms. How much of the extra disease associated with the aggregation of human beings together in buildings and in towns is due to infective organisms inhaled as dust? We may at least be pretty sure that the proportion is very large.

Now, what I wish to point out clearly is that the prevention of evil effects produced by poisonous or infective dust can usually be brought about far more effectively by other means than increased ventilation. Let me take an example. The dust inhalation which has hitherto been associated with boring-machine work in Cornwall can be entirely prevented by using a jet or spray of water; and I am glad to say that the leading mine managers in Cornwall are not waiting for legislation in this matter, but have already to a large extent taken vigorous action for the prevention of dust inhalation by the miners. In the Transvaal mines also the matter is being dealt with actively. Dust in factories can usually be dealt with similarly at the point of origin; and where this is neglected it is very commonly the case that no practicable amount of general ventilation will remedy the evil. With many kinds of infective dust the same principle applies. For instance, a very great deal can be done towards keeping air wholesome by preventing expectoration on floors, by cleanliness, by isolation, and by dealing in various ways with infective material at its point of origin. The very important problem of dealing with dust including micro-organisms is thus in the main a different problem from that of ventilation, although there are exceptional cases where for want of more effective means dust needs to be dealt with by increased general ventilation. The standard of ventilation will depend in such cases on the harmfulness of the dust.

Chemical Products of Respiration.

I now come to the more difficult case of ordinary rooms and other closed spaces vitiated by the presence of persons and lights, but not by other special causes. Let us consider the chemical and physiological evidence as to the nature of the vitiation. In the first place, the percentage of carbonic acid is increased, and that of oxygen diminished by a corresponding but slightly greater amount. In elementary schools, where the vitiation by respiration is, so far as I am aware, greater on an average than in any other class of buildings in which human beings spend a large part of their time daily, the average proportion of carbonic acid found by Carnelley in 172 school-rooms with the ordinary "natural" ventilation, in the country and in towns (Dundee and Aberdeen) in Scotland, was 17.5 volumes per 10,000, and the maximum 38 volumes, or 35 in excess of the proportion usually present in outside air. What effects would such proportions of carbonic acid *per se* have on human beings? I think we can answer with the utmost confidence that the effects would be practically *nil*. This assertion may be inconsistent with some of the traditions which have been handed down to us from text-book to text-book; but I do not think that it can possibly be avoided, in view of the experimental evidence. The physiological effects of carbonic acid are extremely interesting, and I have recently been engaged along with Mr. J. G. Priestley in studying them more exactly than before. Our experiments, which are not yet published, have shown that the percentage, or, more correctly, the partial pressure, of carbonic acid in the alveolar air in man is kept constant for each individual with almost astounding precision. In other words, it is the partial pressure of carbonic acid in the alveolar that regulates the lung ventilation. At ordinary atmospheric pressure there is about 6 per cent. of carbonic acid in the alveolar air. If the air inspired contains, say, 3 per cent. of carbonic acid the alveolar will still contain about 6 per cent., as the lung ventilation is immediately so increased by the action of the respiratory centre as to bring the percentage to 6, and the person breathing will scarcely notice the change. If the inspired air contains 0.5 per cent. (or 50 volumes per 10,000) the change in the depth of breathing still occurs, but is quite inappreciable to the person breathing. A slight muscular exertion, such as that of walking at the rate of 3 miles an hour, would produce thirty times as much effect on the breathing. The effect of an increase of 0.5 per cent., or even 0.3 per cent., in the proportion of carbonic acid in the alveolar air would certainly produce marked discomfort if it were not so easily got rid of by a very slight increase in the depth of breathing; but it *is* got rid of in this way, and it is impossible to imagine that the very minute extra exertion involved could do any harm. Probably, indeed, it would be something to the good in most cases.

Of the deficiency of oxygen in the air of ordinary rooms we can say with just as much certainty that it can have not the slightest ill-effect. Certain popular traditions about oxygen and ozone in relation to ventilation are doubtless the expression of a wholesome tendency, but we can hardly say more for them.

Along with the carbonic acid there is always an increase in the aqueous vapour in the air of occupied rooms, and as a rule the percentage by volume of aqueous vapour increases about three times as much as the carbonic acid. Except in extremely close rooms and in warm weather, however, this increase is not sufficient to be unpleasant, and even in badly-ventilated rooms the relative humidity is usually lower inside than outside. Thus Carnelley found that in the case of 145 elementary school-rooms examined by him the air was on an average 71 per cent. saturated inside and 75 per cent. saturated outside, the average carbonic acid inside being 16.3 volumes per 10,000.

Organic Respiration Products.

I now come to a substance round which an air of deep mystery hangs—the so-called "organic matter" of air vitiated by respiration. The main facts with regard to this "organic matter" are (1) that air which is much vitiated by the presence of human beings has an unpleasant smell, and (2) that this air has also a very slight but variable reducing action on such substances as permanganate of potash. Mainly upon this foundation of fact has been built up the hypothesis that the "organic matter" is a volatile poison given off from the lungs, and capable of producing very serious effects on persons breathing it. The volatile poison is sometimes described as an albuminous substance, and this naturally adds greatly to the mystery, since no other volatile albumen is known to exist.

The bleaching action is evidently due partly to smoke or other products of combustion in the outside air, partly also to dust. There is no evidence to connect it definitely with the smell. Undiluted expired air has often less bleaching action than the outside air of a town. Many observers, including Lorrain Smith and myself, have endeavoured to obtain evidence of the existence of the volatile organic poison in expired air, but altogether in vain. We, for instance, injected into animals enormous doses of the water condensed from expired air. The effects were, however, only those of distilled water. We repeated other experiments which had been quoted by Brown-Séquard, and others, as affording experimental evidence of the existence of a volatile organic poison, but came to the conclusion that this evidence was absolutely worthless. The one definite fact with regard to effects produced by volatile substances in badly-ventilated rooms is that such air has an unpleasant smell and produces marked discomfort in many people, particularly those accustomed to fresh air. Does habitual exposure to these volatile substances predispose towards phthisis and the other diseases associated with indoor occupations? For an answer to this question one turns naturally to the mortality statistics of schoolmasters and teachers, most of whom in this country have to spend their working hours in rooms the air of which, as already mentioned, is very much vitiated by respiration. Now, the comparative mortality figure for schoolmasters in Dr. Tatham's list (for the years 1890-92) is extremely low, namely, 604, as compared with 1,000 for all males, 953 for occupied males, 821 for lawyers, 966 for medical practitioners, and 632 for farm labourers. Moreover, the comparative mortality figure of schoolmasters for phthisis and other respiratory diseases is still lower in proportion than the general death-rate. Making all allowances for circumstances which may tend to lower the general death-rate of those classified in the census returns as schoolmasters and teachers, I think that these figures tend to throw much doubt on the theory that constant exposure to volatile respiratory impurities has by itself a very great influence on health.

Impurities due to Illumination.

Besides the chemical impurities from respiration we have to consider those from lights burning. An ordinary flat flame gas jet consumes about five times as much oxygen and

[1] *Journal of Hygiene*, vol. iv, 1904.

produces about three times as much carbonic acid as an adult man, but under ordinary conditions neither of these facts is, for the reasons already stated, of much practical importance. All gas, however contains a certain proportion of sulphur, varying according to the degree of purification; and the sulphuric and sulphurous acids arising from this may make the air of a room decidedly unpleasant. If, however, the gas is fairly purified from carbon bisulphide, and particularly if incandescent mantles are used, no trouble should arise from this source provided the carbonic acid in the air does not exceed about 20 volumes per 10 000. My statement with regard to the importance of purification of gas from carbon disulphide is based on experiments which I recently published in the *Journal of Hygiene*. Since then a Departmental Committee of the Board of Trade has reported in favour of the abolition of purification of the London gas from carbon bisulphide. The evidence on which this Committee has based its recommendation is not yet published however. Meanwhile, I note with interest that one of the large gas companies to the South of London has resolved to set the existing law at defiance and to distribute gas not purified in any way from carbon bisulphide and of less than the statutory illuminating value.

Bacteria.

Besides chemical impurities the air of occupied rooms contains variable proportions of bacteria. As to the great importance of the presence of pathogenic bacteria in the air there is no room for two opinions; but can we attach very much importance to the mere relative numbers of bacteria of all kinds? I do not think we can. Non-pathogenic bacteria are *per se* of no importance. Their number in the air may be an index of the general cleanliness of a room or dustiness of the air, but there are other and much easier methods of judging as to these points. What we really want to have an index of is the number and nature of the pathogenic organisms present. On this point the ordinary methods of quantitative bacteriological examination of air afford us very little information. We can judge better as to risk of infection through the air by what we know as to the probable presence of disease among the persons present, and of the probability of their communicating it through the air. We know that persons who are coughing or talking will give off bacteria from the air-passages, whereas those who are only breathing quietly do not. In rooms where persons suffering from some infective disease such as phthisis are likely to be there will be much more liability to infection than in others. Probably we can account for the relative freedom of schoolmasters from phthisis, in spite of their exposure to foul air, by the fact that phthisis is mainly a disease of middle life, and that children are very little subject to it. The very low death-rate among children of school age, and the great diminution of this death-rate in recent times, is probably closely related to the low death-rate among schoolmasters and its marked diminution during recent decennial periods. To take another instance, public-houses are liable to be crowded with noisy persons of about the age at which phthisis is prevalent, and who habitually spit on the floors. The enormous mortality from phthisis among publicans and classes of persons who frequent public-houses is doubtless due largely to infection conveyed in the air. A marked feature about the mortality among publicans and their servants is that their relative mortality from phthisis and other respiratory disease in London, industrial, and agricultural districts runs parallel to the general phthisis and respiratory disease mortality among the general population, while there is no such parallelism in the case of their characteristic mortality from disease of the liver. The risks of tuberculous infection in public-houses have recently been clearly pointed out by Dr. Niven, of Manchester, and Dr. Davies, of Woolwich. It seems to me that there are clear reasons for demanding a far higher standard of ventilation in rooms where the risks of infection through the air appear to be specially great on a consideration of all the circumstances, and where these risks cannot be dealt with in other ways. This question of the relation of ventilation to the risks of infection conveyed directly through the air from person to person is, to my mind, probably the most important one in connexion with the whole subject which we are discussing, and for this reason I regret greatly that Dr. Gordon, who is at present investigating it, is unable, from causes outside his own control, to join in the discussion, as he had hoped. Determinations of the total micro-organisms in air throw no light on this subject. This follows clearly from the investigations which Carnelley and I made on the total micro-organisms in the air of schools. Again, what is the relation between the cubic space or floor space per person, the ventilation as indicated by the proportion of carbonic acid, and the general risks of direct airborne infection from person to person? We do not know, and we shall not know until we have adequate experimental data to go upon.

Air Temperature and Movement.

Apart from actual impurities in air there are two factors which are probably of great importance in relation to ventilation. One of these is temperature of air, and the other its motion. It is a matter of common observation that warm air, particularly if it also smells at all unpleasantly, is very oppressive. The warmth seems to aggravate very greatly the effects of the smell; but very warm air is liable to cause faintness, apart altogether from any smell. Stagnation and saturation with aqueous vapour naturally aggravate greatly the effects of warm, unsaturated, and moving air. The experience gained in the "open air" treatment of phthisis and other diseases seems to indicate that cool and moving air produces a marked favourable influence on health. At least I can hardly see how otherwise we can explain the effects of the open-air treatment. It is extremely difficult to suppose that purity of the air has anything whatever to do with the effects produced, in so far as they are due to air alone. The results of open-air treatment strongly suggest that if we could always live with windows wide open there would be far less liability to phthisis. In summer weather this is quite practicable, but during the greater part of the year, and with more or less sedentary indoor occupations, it is impracticable to most persons on account of cold. Sometimes one sees fans at work inside buildings for the purpose, not of ventilation, but of keeping the air in motion. The effects of open-air treatment rather suggest that methods of this kind might often be more beneficial than would at first sight be suspected.

Had time permitted I should have liked to discuss the statistical evidence as to the effects of indoor occupations on the death-rate. I can only, however, refer to one point, which is that, if we exclude the effects of alcohol, dust inhalation, and lead poisoning, many of the outdoor occupations in towns and industrial districts are more unhealthy than the indoor occupations. To take one instance: the mortality both from phthisis and from all other causes together among general labourers in industrial districts is considerably above the general mortality in these districts, and is about 50 per cent. higher than among those employed in the textile industries. Public-house infection has probably a great deal to do with this anomaly.

Looking at all the evidence as to the influence of vitiated air on health and comfort, I am led to the conclusion that the bad effects are due to specific causes which can to a large extent be dealt with one by one more effectively in other ways than by increasing indefinitely the supply of fresh air. We can, for instance, prevent the escape into the air of noxious or unpleasant gases, vapours, and dust. We can also to a large extent prevent the dissemination of infective micro-organisms. We ought still, however, to ventilate sufficiently at least to prevent the air from smelling unpleasantly; and the more fresh air and floor space per person we can get in addition, the smaller do we make the risks of infection. Under certain circumstances, where the risks of personal infection seem specially great, we ought probably to increase the ventilation or the floor space allowance far beyond the standard which we have to adopt under more ordinary conditions.

Standards of Ventilation.

I come now to a consideration of standards of air supply which have been actually proposed for ordinary buildings. I think, in the first place, that all are agreed that it is practically impossible in most cases to actually measure by anemometers the amount of air supplied from the outside into an ordinary building, and that a much more satisfactory method is to follow Pettenkofer's plan of basing the standard of ventilation on the proportion of carbonic acid in the air. The standard must also, almost of necessity, be a maximum one, since not only the number of persons present, but also the temperature and wind, will vary, and thus affect the proportion of carbonic acid present at any particular time. Finally, the maximum standard may be either legally compulsory or voluntarily adopted.

Several very different standards have been proposed by different observers. Pettenkofer proposed 10 volumes of CO_2 per 10,000 of air, as he had found that when this standard was exceeded the air usually began to smell unpleasant. De Chaumont proposed a standard of 2 volumes in excess of the

carbonic acid in outside air, as he had noticed that in the rooms examined by him (barracks) the air did not smell sensibly different from outside air when this percentage of carbonic acid was not exceeded. Carnelley, Anderson, and myself proposed as a maximum limit 13 volumes for schools and 10 for sleeping rooms during the night. We gave these limits, not as an ideal standard, but as what from our observations seemed to be practically attainable by proper methods and at not too great a cost. In consequence of the report in 1897 of a Departmental Committee under the chairmanship of Sir Henry Roscoe, the important step was taken several years ago of establishing a legal maximum standard of carbonic acid in a certain class of buildings—namely, those cotton cloth factories where the air needs to be humidified to a certain extent by the addition of aqueous vapour. The maximum prescribed is 9 volumes. Finally, a Departmental Committee, consisting of Mr. E. H. Osborn, of the Home Office, and myself, recommended in 1902 that a maximum legal limit of 12 volumes by day and 20 volumes by night, with gas burning, be established for factories and workshops generally, under the powers conferred upon the Home Secretary by the recent Factories and Workshops Act. We felt fully convinced that the establishment of these maximum legal limits would result in great improvements.

And now I fear I must plunge into a matter of controversy. In making our recommendation we had chiefly in our minds, first, the actual conditions of factories and workshops, and, secondly, such general improvement as appeared to be practically attainable by legislation without great expense and endless friction. Our report has, however, been vigorously objected to by various medical authorities on the ground that our proposed standard is much too lax; and the Council of the Incorporated Society of Medical Officers of Health has expressed these objections in a memorial[2] which was recently presented to the Home Secretary, and ends with the following words: "The Society therefore trusts that in the interest of public health a standard of ventilation for factories and workshops will be prescribed under Section VII of the Factories and Workshops Act, 1901, which shall not be lower than that enforced in humidified factories, namely, 9 volumes of carbonic acid in 10,000 volumes of air, or preferably 5 volumes of carbonic acid in excess of that in the outside air at one and the same time. Further, the Society also trusts that the standard adopted will not be lowered for gas (or oil) lighted factories and workshops in the way suggested by the Committee, such a lowering being entirely unnecessary in view of the fact that efficient means are at present known by which the products of combustion of gas (or oil) can be easily and readily removed by ventilating outlet tubes placed over gas-jets (or oil burners) and communicating directly with the outside air; indeed, the Society feels that the legalization of a standard so low as that suggested, namely, 20 volumes of carbonic acid in 10,000 of air in gas (or oil) lighted factories would practically render all attempts at securing efficient ventilation nugatory."

I should like to take this opportunity of making a few remarks on the memorial just quoted. First, as regards the night standard with gas burning, it appears to me to be impracticable to make no allowance for burning gas. In some buildings the products of combustion of gas can doubtless be removed readily enough by ventilating pipes, but in factories and workshops such systems are practically never used, and would be extremely troublesome and costly. Electric lighting can of course be adopted, but it is usually much more expensive than gas, and is often not available. As there must often be more than one light per person, and each light produces a good deal more carbonic acid than a person, an allowance of some kind must be made. I cannot call to mind any existing gas-lighted factory, however well ventilated, where the ventilation is such that a standard of 9 volumes could be maintained after dark in winter. Much can certainly be done by improved methods of gas lighting, and by better ventilation, to diminish the vitiation of air by lights—and we discussed this question in considerable detail in our report—but there is no use in asking for what is impossible, and when we specified 20 volumes as a maximum we were thinking of what appeared to be practicably attainable without too great expense under existing conditions.

With regard to a 9-volume maximum standard during day light, we did not recommend this, because we believed that for the present at any rate great friction and opposition would arise if the attempt were made to enforce it, and that probably more harm than good might result. At first sight it may appear as if such a standard were by no means stringent. The average of all our daylight analyses—mostly made during winter, and therefore under unfavourable conditions—was only 10.1 volumes. If the cases of very bad ventilation and gross neglect were eliminated this average would be considerably lower, and a 9-volume legal maximum might seem to be a reasonable requirement. The trouble, however, arises from the fact that all sorts of variations in wind and temperature are liable to make any ordinary system of ventilation very irregular in action, however much trouble is taken. To take one example, I found in the case of an extremely well-ventilated weaving shed that on the windward side the respiratory impurity, with the wind blowing gently in one direction, was on an average about two and a-half times greater on one side than on the other, the result in the centre being intermediate. With a change in direction of the wind this relation was reversed. In the same shed in the morning, when there was only a difference of two degrees between the inside and outside temperature, the carbonic acid on the windward side of the shed rose to a maximum of 7.9 volumes, and gradually fell during the afternoon to 4 volumes, or only 1.2 volume above the outside air. The difference of temperature between inside and outside was then 18°.

The ventilation was thus four times greater in the afternoon than in the morning. There was one 10 in. open ventilator in the roof to every three persons employed. This example shows very clearly that to keep within a given maximum of impurity at any part of a room, and in any weather, the ventilation must be sufficient to ensure an average standard far below the maximum standard. This is true even with very perfect systems of mechanical ventilation. It is found, for instance, that to keep within the maximum limit prescribed for humidified cotton cloth factories (in which mechanical ventilation is always used) the average standard must be far below the legal maximum. It was because we were very clearly aware of the enormous difference between a maximum and an average standard that we recommended what may at first sight appear to be the lax standard of 12 volumes. We had also in mind very clearly the conditions under which tests would probably be made. Factory inspectors have many important duties to perform, and are not likely to make tests of air except at places where the ventilation appears at the time to be defective. Using the methods we suggested in our report they can take samples at any time without the slightest warning or delay in small bottles easily carried in a pocket. Under such circumstances the standard ought not to be too stringent; and we felt that we could not recommend legal provisions which might give rise to well-founded complaint on the part of manufacturers and employers of labour, many of whom show great public spirit in matters relating to the health of their employés. While, therefore, I fully recognize the excellent intentions of the memorial I am sorry to disagree with it.

In another resolution carried at a recent meeting of the same society I most heartily concur however. It is one which was moved by Dr. Newsholme as a result of a paper read by Dr. Meredith Richards, who is with us to-day, and recommended the establishment of a standard of purity in the air of schools. So far as I am aware, the air in elementary schools is little better now than it was when Carnelley and I investigated it a few years ago. In these schools children are practically taught to tolerate air of the foulest description; and what is, perhaps, still more serious, they doubtless carry the lesson with them through life. The existing ventilation in elementary schools appears to be fully twice as bad as that of factories and workshops. It seems to me that a standard for schools ought to be at least as good as that for factories, and that if a 12 volume standard is enforced in factories it ought also to be enforced in schools, and the necessary, and, I fear, very considerable, expense incurred.

I have already exceeded my time and must leave many gaps. I trust, however, that they will be filled up in the course of the discussion, and that there will be a frank expression of opinion as to doubtful points. If part of what I have said should appear to be somewhat reactionary I can only say that this is not my intention, but that I am impressed by the necessity of trying to direct attention rather to existing conditions and to improvements that are practicable than to ideal conditions which are so far removed from actuality that we cannot at present hope to attain to them.

[2] *Public Health*, 1903.

II.—HERBERT JONES, L.R.C.S.I., D.P.H.,
M.O.H., Herefordshire Combined Districts.

MR. JONES supported the contention of the Incorporated

Society of Medical Officers of Health that the standard of ventilation in cotton cloth factories should not be lowered. He protested against the recommendation of Dr. Haldane, which it appeared to him had been made merely on account of the cost to be entailed on factory occupiers, and maintained that this was not in accordance with the traditions of the Home Office. He thought that the lower death-rate among coal miners might be due to the fact that in recent years the dust in collieries had been laid for the purpose of preventing explosions.

III.—T. Oliver, M.D., F.R.C.P.,
Professor of Physiology, University of Durham.

Dr. Oliver said that Dr. Haldane's paper was one which, when published, would appeal to a very large portion of the profession. Dr. Haldane was quite at home when dealing with gases, for that was a subject he had made peculiarly his own. If some of his views were revolutionary or reactionary they were on that account all the more interesting, especially the statement that a slight excess of carbonic acid in the air we breathe only tended to increase the depth and frequency of breathing, and thus left almost the same percentage of CO_2 in the pulmonary alveoli as before. As regard the organic matter in expired air, and how far such was a cause of phthisis, much might be said, although, on the whole, difficult to prove. Dr. Haldane had alluded to the low death-rate of schoolmasters from phthisis. As a physician in practice in Newcastle, Dr. Oliver had been consulted by schoolmasters and schoolmistresses for phthisis in larger numbers than he thought occurred a few years ago. It might only be an impression which he had as to greater frequency of the disease, and which statistics might not confirm, for the schools in the North compared favourably with those elsewhere. As regards school children, Dr. Oliver was also of the opinion that the children suffered little from the pulmonary forms of phthisis, but they suffered from tuberculous glands, which, when opened, kept discharging for years. It was to him a question how far such children, since they constituted a source of danger, should be allowed to mingle with other children. The part that had the greatest interest for Dr. Oliver was the effects of dust upon the lungs. Dr. Haldane had done good service by showing how liable to pulmonary phthisis the Cornwall tin miner is, and of indicating how this was largely the effect of dust inhaled. As far as coal miners were concerned, it was not so much coal or coal dust that did the damage, as the particles of stone associated with the carbon. That was evident from the statistics of coal mining in different parts of the country. Through the kindness of the President Dr. Oliver said he had had the opportunity of visiting a deep mine in Cornwall, and of seeing the rock drill at work. Rock drilling was an extremely dusty occupation, and as carried out in the Transvaal and in Cornwall it was a prolific cause of miners' phthisis. The effect of water when used at the same time as the percussion drill was at once apparent. The air became cool and clear of dust. The saving of life and health by the use of water in rock-drilling would, Dr. Oliver thought, well repay all mine owners for its introduction.

IV.—Matthew Hay, M.D.,
M.O.H., Aberdeen.

Dr. Hay thought that favourable consideration should be given to the recommendations of Dr. Haldane as to the maximum of carbonic acid in factories and workshops for the reasons so well put forward by Dr. Haldane. Progress should be made cautiously in such matters, involving extensive industrial interests, especially when the recommendations came from the highest authority in questions of ventilation in this country. Dr. Hay also called attention to the fact that the deeper respirations in a vitiated atmosphere which prevented the increase of carbonic acid or decrease of oxygen in the air-cells of the lungs might, however, be accompanied by the deleterious effect of allowing a larger amount of dust or germs or volatile organic impurity to be inspired.

V.—C. J. Thomas, M.B., D.P.H.,
Education Department, London County Council.

Dr. Thomas said what was complained of in London schools was the odour. That differed in different conditions of matter and in different schools. It was especially in dirty children that it was noticed, and came probably from the clothes. If cleanliness could be obtained, the solution of the problem of ventilation would be easier. The smell did not arise until the proportion of CO_2 arose to 10 per 10,000, and this was what was aimed at in London schools. With regard to death-rate from lung diseases of schoolmasters, the figures were questionable, since they were a picked class and also were discharged immediately on being found phthisical.

VI.—W. H. Symons, M.D.Brux., D.P.H.,
M.O.H., Bath.

Dr. Symons wished to justify the actions of the Council of the Incorporated Society of Medical Officers of Health in trying to keep up the standard of purity of air, and insisting upon the removal of impurities as far as possible by mechanical means. Most sanitary work had been undertaken without strict scientific experimental evidence; they had been striking out in the dark aiming at general improvement with good results. Dr. Koch, some few years ago, caused much alarm, tending to upset our general methods in dealing with tuberculosis, because he could not obtain experimental proof of communication of tuberculosis from cattle to man, and so Dr. Haldane's authority might be used in a way he himself would not wish.

VII.—W. L. Hunter, M.D., D.P.H.,
M.O.H., Pudsey.

Dr. Hunter could not understand Dr. Haldane's position with regard to school ventilation. On the one hand he proved by experiment that an enormous excess of CO_2 had no bad effect; that the same might be said of organic matter, and the products of gas combustion; also that school teachers, as a class, were exceptionally free from phthisis, and also the children were not liable to that complaint. On the other hand, in spite of these conclusions, he stated that the ventilation of schools was of the greatest importance and, even at great cost, should be attended to.

VIII.—J. Groves, M.B.,
M.O.H., Isle of Wight.

Dr. Groves said he had not the satisfaction of hearing Dr. Haldane's paper, and consequently he could not discuss it, but he wished to say that the object of the Council of the Incorporated Society of Medical Officers of Health was to obtain the highest reasonable standard of purity of the air in factories and such-like places, and it was necessary to take the amount of some particular substance as the standard. If some of the speakers properly represented the character of the paper it would seem that vitiation of the atmosphere in inhabited rooms did not matter very much. He instanced the absence of proper ventilation in public elementary schools as direct proof to the contrary; it was well known that the purer the air in schools the more successful were the teachers in their educational efforts.

DISCUSSION ON COMPRESSED-AIR ILLNESS, OR CAISSON DISEASE.

I.—Thomas Oliver, M.A., M.D., LL.D., F.R.C.P.,
Professor of Physiology, College of Medicine, and Physician, Royal Infirmary, Newcastle-on-Tyne.

Dr. Oliver said: In introducing this discussion on work in compressed air and caisson disease I shall confine myself mostly to the medical aspects of the question, leaving it to you, Mr. Chairman, and others who have worked in another direction to supplement my remarks by data gained by physiological experiment. When we speak of a caisson we mean an iron cylinder open at one end, and with chambers at the other called "locks," which are capable of being hermetically closed. When the cylinder or caisson is placed upright in a river and air is driven into it, the water is expelled from the lower end, which is free, so that, as in a diving-bell, men can work inside at considerable depths on the bed of the river. The workmen enter and emerge from the caisson through one of the "locks"; the other "lock" is used for the removal of material. Several of the large bridges built within recent times, while monuments of engineering skill and daring, only became possible by the employment of caissons. As in years to come it is more than likely that caissons will be increasingly used, it is desirable that medical men should know something of the dangers incidental to working in compressed air.

Although my remarks refer especially to work in caissons, they apply with equal force to all conditions under which

work is carried on at great pressures, as, for example, diving, where the men, while free to move about on the bed of a river, are, in consequence of the pressure inside their air-filled helmet, practically working under similar circumstances to men employed in caissons.

Experience has shown that when care is taken men can work at great depths and under enormous pressures with comparative safety for some hours at a stretch, so long as they are supplied with plenty of air and a sufficient length of time is given them on emerging from the caisson for decompression to take place. The pressure of air inside the caisson must be always a little higher than that of the water outside. As the work of excavation on the bed of a river proceeds and the cylinder by its weight keeps sinking, a greater degree of compressed air within the cylinder is required in order to keep out the water. "For every 10 metres, or 33 feet, a pressure of + 15 lb. to the square inch, or 1 atmosphere, is required to keep the water out of a caisson or diving-bell. At a depth of 100 feet a man would be exposed to + 3 atmospheres and at 200 feet to + 6 atmospheres."[1] The atmospheric pressure on the earth's surface is 15 lb. to the square inch.

Attached to each caisson or cylinder, as already mentioned, is a lock, or air chamber, which communicates by an iron-guarded door with the interior of the caisson. In order to gain admittance into a caisson, a workman enters the air lock and closes the outer door behind him. By means of a cock controlling a tube which communicates with the interior of the caisson filled with compressed air, there is allowed a gradual inrush of air from the cylinder into the lock, and when the pressure inside the lock comes to equal that in the cylinder, the inner iron door that guarded the entrance opens of itself, the workman enters the caisson and descends the ladder. During the short period the workman is in the air lock he is undergoing compression. Fresh air is constantly being pumped into the cylinder; the surplus air escapes by the open mouth of the cylinder, which is resting on the bed of the river. In the process of excavation no explosive gases as a rule escape from the strata, but occasionally, owing to the peculiar character of the soil passed through, very unwholesome gases are encountered. The men can therefore work inside the caisson with either the electric light or with naked lamps. Where naked lights are used, the products of combustion tend to render the air inside the caisson impure, but the danger from this source is materially diminished by the large quantities of air that are continually being pumped into the cylinder. When work is finished and the men wish to leave the caisson they enter the air lock already mentioned, close the iron door that separates these two chambers, and by means of a cock they allow the air in the lock to escape into the outer atmosphere gradually. Once the pressure inside the air lock equals that of the external atmosphere, the outer door can be opened and the men leave. During this their outward passage through the air lock the men are undergoing decompression. It is usually in consequence of the rapidity with which decompression is effected that men have suffered. When the outer door of the air lock opens a thick fog escapes and the temperature is icy cold. To the very low temperature in the air lock during decompression some of the symptoms of caisson disease may possibly be due.

It was in 1851 that caissons were first used in this country, the occasion being the bridging of the Medway at Rochester. Shortly after this, Brunel employed them at Chepstow and Saltash. At Saltash one man died soon after leaving a caisson, in which he had been working at a depth of 87 5 ft. below the surface, and at a pressure of +40 lb. This was the first fatal case in England. France preceded England in the use of caissons. The earliest account of the pathological effects of compressed air was written by two French surgeons —Messrs. Pol and Watelle—in 1854 Their experience was gained at Douchy, where of 64 workmen 25 were obliged to give up their employment, 2 of whom died. These observers attributed the symptoms to the blood being driven from the external to the internal parts of the body, and of causing congestion of internal organs, and for a while this opinion met with general acceptance. From the day that caissons were first employed, both in this country and abroad, workmen have exhibited serious symptoms, and fatal cases have been recorded. One of the greatest mishaps occurred during the sinking operations required for the building of a bridge at St. Louis, Mississippi. Of 600 men employed 14 died and 119 suffered. At the Brooklyn Bridge, New York, there were 110 cases of illness and 3 deaths. Although at the Forth Bridge several of the men exhibited rather serious symptoms, Hunter tells us that not one of the cases of compressed-air illness was fatal. During recent years, owing to larger knowledge and the exercise of greater care as to details, there have been fewer fatal cases of caisson disease. So long as ordinary precautions are observed during decompression men can work with considerable safety at great depths and under enormous pressures. The points to be remembered are that with each increment of depth and pressure the men inside the caisson should work at a stretch a correspondingly shortened time, and that the air supplied should be pure and abundant. Hill and Macleod have shown that at very great pressures the oxygen of the air supplied becomes of itself a source of danger through the pulmonary congestion it causes. In the sinking operations at present on the river Tyne, required for the piers of a high-level railway bridge, and at which 68 men are working under air pressure, the worst cases of compressed-air illness occurred when the men were digging through a layer of soft coal, which broke up readily and evolved a very foul gas, believed to have been sulphuretted hydrogen.

My knowledge of compressed-air illness has been gained on the two occasions during which large sinking operations have been conducted on the river Tyne, and in which caissons have been employed. The Cleveland Bridge and Engineering Company is at present carrying out a large contract in which, although the number of men employed on caissons ranges from 140 to 200, only 68 of these men are working under air pressure, 34 men by day and 34 by night. Although three caissons have to be sunk only one at a time is in use. The caissons on the Tyne are some of the largest ever employed; 30 to 40 men and more can work in one caisson at a time—the cubic capacity of which is 23,140 cubic ft. and the weight of the steel framework alone 700 tons, which with the hearting of concrete raises the weight above the men to nearly 10,000 tons. Into this chamber 750 cubic ft. of air per minute is being pumped, or about 1,320 cubic ft. per man per hour, and as the engines are pumping night and day without cessation, the air in the caisson during meal times is completely renovated, so that the men start work in a pure atmosphere. The number of hours worked by the men on the Tyne under compressed air varies. Up to 25 lb. pressure per square inch they work ten and a-half hours out of twelve: from 25 lb. to 30 lb., they are given longer time for meals and for rests and only work from seven and a-half hours to eight hours out of twelve; from 30 lb. to 35 lb., about seven hours. Beyond 35 lb. the time is regulated by the ability of the men to stand the pressure; the highest pressure used on the Tyne during present operations has been 33 lb. The time allowed for each set of men to pass through the locks is one minute for each 5 lb. of pressure, so that at 30 lb. six minutes would be taken in releasing the air. The Manager, Mr. Frank W. Davis, who has had fifteen years' experience of caissons without any of his workmen having died from compressed-air illness, is of the opinion that if a workman is nervous he not only becomes restless and impatient, but is apt to worry and become troublesome if decompression is carried on much beyond six minutes. There have been a few minor forms of caisson disease and of "bends," that is, muscular and joint pains, among the men on the Tyne, and one severe case in which paraplegia was complete for eight or nine months. This patient is only now recovering. The minor forms of the malady have always yielded when the men have been recompressed in the medical lock kept for the purpose, but this is not always possible, as the symptoms sometimes do not come on until the men have reached home.

I shall deal briefly with the physiology of compressed-air illness, leaving this part of the subject to be dealt with, for the most part, by others. Paul Bert was among the first to submit dogs experimentally to increased atmospheric pressures. On removing blood from the carotid artery of these animals and analysing the gases he found an increase in the amount of nitrogen in accordance with Dalton's law. Bert was of the opinion that when dogs were placed in compressed air, the blood pressure became higher and the respiration less frequent. Hill and Macleod's experiments, while supporting the statement of the French physiologist as to the increased absorption of nitrogen, showed that there was no alteration of the mean blood pressure or of the pulse-rate while the animal was in the compressed-air chamber, nor was any change observed in the calibre of the blood vessels or the rate of flow when the air pressure was quickly raised to + 20 and + 30

[1] Caisson Illness and Diver's Palsy. *Journal of Hygiene*, October, 1903. Hill and Macleod.

atmospheres. When rapid decompression, however, was brought about, bubbles of gas could be seen frothing off from the blood, as it circulated within the capillaries in a frog's web and a bat's wing. Apparently, therefore, rise of atmospheric pressure exercises no mechanical effect upon the circulation.

When persons enter a caisson for the first time it is not uncommon to find in them the pulse and respiratory rate quickened from nervousness. There is no difficulty of breathing, and only very occasionally is a sense of faintness complained of. Owing to a want of equilibrium in pressure between the middle ear and the external auditory canal, the tympanic membrane is driven in, causing unpleasant sensations of buzzing and even of acute pain in the ears. Men accustomed to work in caissons know how to prevent these symptoms by closing the mouth, compressing the nostrils and attempting to breathe forcibly, or with mouth and nostrils closed they make swallowing movements which separate the walls of the Eustachian tube and allow air to enter the middle ear. It is difficult to say what amount of atmospheric pressure men can endure with safety; how far, too, the length of time spent in the caisson, fatigue, also the humidity and impurity of the air, are individually or collectively the cause of symptoms. Experience has shown that as greater depths are reached and higher pressures are employed, the risk of caisson disease is increased. The presence of such poisonous gases as carbon monoxide and sulphuretted hydrogen must also play a part in causing symptoms, by reducing the vital resistance and depressing the energies of the men, thereby augmenting the dangers of decompression. In excavating for a foundation for the piers of the Forth Bridge, the men suffered most when they were removing certain kinds of silt from the bed of the river, and on the Tyne the worst cases occurred when the men, as I have stated, were passing through a stratum of soft coal that gave off gas. A similar condition of things was observed at Bordeaux while the men were digging on the left bank of the river Garonne. Many of them suffered from rather serious symptoms, which they attributed to a certain layer of clay, for the symptoms only occurred in passing through this particular layer.

It is recommended by Snell that from 6,000 to 12 000 cubic ft. of air per hour should be supplied to each workman, and that the percentage of carbon dioxide should not be allowed to rise too high. This, Mr. Davis says, is in ordinary practice unworkable. At the Tyne Bridge there are three engines each capable of supplying 750 cubic ft. of free air per minute, and on occasions, such as passing through coal beds when two engines had to be run simultaneously, this had to be done at meal times only, on account of the great draught this volume of air caused, and also on account of the dense fog caused by such a rapid escape of air under the bottom of the caisson. This recommendation, therefore, as regards 6,000 to 12,000 cubic ft. of air allows of a very wide margin; it is certainly much in advance of what is adhered to in practice, not only on the Tyne, but elsewhere. Beyond playing a mechanical part by frothing in the blood during and after decompression, the nitrogen gas of the atmospheric air is apparently harmless, but the same cannot be said of the oxygen. Paul Bert was one of the first to draw attention to the fact that oxygen in high tension acted as a protoplasmic poison, depressed the bodily temperature, induced convulsions and death. Lorrain Smith found that oxygen under these circumstances brought about inflammation of the lungs. A consideration of the toxic effects of oxygen scarcely comes under my province, but the experiments of Hill and Macleod show that the higher the oxygen tension the more rapidly did the animals succumb, and the less was the amount of carbon dioxide produced. Paul Bert says that "the absorption of oxygen and the elimination of carbonic acid diminish in proportion as the tension of the oxygen rises, and that an animal breathing pure oxygen at 2, 3, and 4 atmospheres is in the same condition as another breathing air at pressures of 10, 15, and 20 atmospheres." Hill and Macleod found as they increased the oxygen tension in their experiments that there was a corresponding increase in toxic effects, and that "high partial pressure of oxygen exercises a marked irritant effect on the lungs, producing at first congestion of the alveolar capillaries and afterwards haemorrhagic exudation and consolidation." A patchy pneumonia is set up, for the suffused redness of the lungs present in the early stages passes by degrees into a condition of hepatization. I am sorry that Mr. Leonard Hill is not able to be here to take part in this discussion. In writing to Mr. Hill the other day I asked him whether any bacteriological examination of the lungs had been made under these circumstances of death from pneumonia caused by high oxygen tension, and he replied that "oxygen produces inflammation of the lungs just like ether or any other irritant. There is no question of an organism, as the inflammation can be produced in one hour or two by sufficiently high pressures. Intense hyperaemia and haemorrhagic congestion can in fact be caused in a very short time." Apart from its injurious action upon the lung, oxygen appears to be a specific poison to the nervous system. Convulsions are induced by it, not so much in consequence of the total amount of oxygen in the blood as the tension of the oxygen in solution.

Symptomatology.

Beyond unpleasant sensations in the ears during compressions and afterwards, there are no symptoms exhibited by the men when in the caisson. They experience a difficulty in talking, and at high pressures the voice becomes thin and may be lost for the time being. The symptoms characteristic of caisson disease come on after the men leave the air lock, that is, after they have undergone decompression; these may be caused to disappear if the patient is at once put into the medical lock and recompressed. The symptoms are more likely to develop if, as stated, an insufficient length of time is spent in the act of decompression. What, it may be asked, constitutes a sufficient length of time for decompression? All observers agree that it is a process over which there ought to be no hurrying. François recommended six to eight minutes for each increment of pressure equal to one atmosphere, Foley one minute for each atmosphere, Barella ten minutes per atmosphere, while Triger recommended seven minutes for the whole act of decompression, irrespective of pressure. Bert was in favour of short shifts and extremely slow decompression, and recommended that the decompressing chamber should be warmed. At the works on the Tyne it is one minute for each 5 lb. of pressure. As Hill and Macleod are of opinion that by careful choice of men, regulation of the shift, and of the decompression period, work can be carried on without loss of life at such a great depth as 200 ft., that is, about seven atmospheres, or + 100 lb. pressure, they suggest as safe:

Atmospheres.	Lb.	Shift.	Decompressed Period.
+ 2	30	4 hours	30 minutes to 1 hour.
+ 3 to 4	45 to 60	4 hours	1 to 2 hours.
+ 5	75	1 hour	1 to 2 hours.
+ 6 to 7	90 to 105	½ to 1 hour	2 hours.

One of the principal complaints by the men shortly after leaving the air lock is pains in the limbs, mostly about the knees, occasionally in the arms or in the joints, and which the men call "bends." The pains are often very severe. There is nothing to be seen or felt by the medical examiner in the affected muscles. The pains may last for hours or a day or two, and may be of such an agonizing character as to require a hypodermic injection of morphine. The workmen themselves attribute "bends" to the presence of gas in the muscles, but Gavarret is of the opinion that it is due to the pushing asunder of small nerve fibres connected with capillaries that are distended by gases given off from the blood. I have never felt anything approaching emphysema in the painful muscles. In addition to "bends" the men may complain of giddiness, and may fall; they may have epistaxis, or they may bleed from the ears. There may be loss of power in the legs which may last some hours, a few days, or several months, and yet be ultimately recovered from. With the loss of power in the legs there is usually inability to empty the bladder. Accompanying these symptoms there may be loss of consciousness, on regaining which loss of sight may be complained of. Two or three of the patients admitted into the Newcastle-on-Tyne Infirmary were maniacal, and when seen by the Senior House-physician, Dr. Parkin, were suffering from delusions. The delirium generally took the form of acute terror, and was probably indirectly associated with the severity of the muscular pains. It subsided under the influence of morphine administered hypodermically. In some of the patients there was severe abdominal pain with vomiting; in others pain was referred to the spine. Frequently there was loss of sensation in the legs, the analgesia extended halfway up the limbs or was irregularly distributed. There was nothing constant in regard to the knee-jerk and plantar reflexes in the early stages; the urine was always normal, and there was nothing in the heart, lungs, and pulse calling for remark.

Physiologists hold that the symptoms of caisson disease are largely the result of too rapid decompression, and are due to the presence of gaseous emboli in the capillaries or to the escape of gas from the blood into the surrounding tissues with rupture of small blood vessels. Mechanical theories and the theory of congestion are no longer accepted, nor is that of Bouchard and Colin, who attribute the symptoms to sudden distension of the stomach and intestines pressing upon the abdominal parietes, which, by compressing the viscera, send the blood suddenly towards the nerve centres.

Symptoms of central origin, and referable to the nervous system, may be functional or organic. Cerebral symptoms, as a rule, are of temporary duration, and are both less frequently met with and are of shorter duration than those connected with the spinal cord. There may be disturbances of hearing, a sense of giddiness, loss of speech, delirium, and unconsciousness. The commonest symptoms of spinal origin are loss of power in the legs, with or without anaesthesia, a sense of numbness or formication in the limbs accompanied by retention of urine. The control of the bladder and rectum may not be regained for a considerable time. The paraplegia, while often lasting only a few days, may continue, on the other hand, for several months, during which the limbs may lie perfectly powerless, loss of sensation be complete, knee-jerks excessive, and ankle clonus well marked, while as an indication of the lowered vitality of the skin and diminished resistance to pressure, large ulcers may form on the heels and on the soles of the feet. When paraplegia lasts for several months, and is accompanied by the physical signs just mentioned, there must be softening of the spinal cord in and around small areas where in all probability there had occurred rupture of small blood vessels. Symptoms of peripheral origin are similarly explained by a sudden liberation of gas into the muscles and the tissues around joints. Ocular demonstration of the production of air embolism by Hill and Macleod has silenced any doubt that has hitherto existed in regard to the pathology of compressed-air illness. By exposing frogs and bats to a pressure of twenty atmospheres for ten minutes, and rapidly decompressing them, bubbles of air could be observed in the small blood vessels when the image was thrown on the lantern screen. These air bubbles could be seen plugging the blood vessels, and ultimately arresting the circulation through them. On recompressing the animals the gas was again driven into solution, the blood corpuscles anew took up their position in the vessels, and the circulation was re-established. When decompression was effected slowly it was shown that no gas bubbles appeared. Hill and Macleod have thus not only experimentally demonstrated what physiologists suspected, but have confirmed the teaching of experience—namely, the advisability of recompressing workmen suffering from symptoms after emerging from the caissons. Where large engineering undertakings are in progress there is usually a medical lock kept, in which men can be recompressed. There ought to be one at all works, for the relief to symptoms is so great that the men themselves ask to be recompressed.

Prevention of Caisson Disease.

All applicants for work should be medically examined. Men who are intemperate, or who are subject to colds in the head, to deafness and discharges from the ears, who are the subjects of lung trouble, heart disease, or albuminuria, should not be allowed to work in caissons. Men who are rather stout and tall do not stand the work so well as short and fairly thin men. Although older men should know of the dangers associated with working in compressed air, and be less impatient during decompression, there is the impression that younger men—men under the age of 25—stand the work best. Although men may work in caissons for several years without suffering, yet lengthened service in no way confers immunity. Caissons should be well ventilated. Snell asks for as much as 12 000 cubic ft. of air per man per hour, and is of the opinion that impurity of the air breathed has much to do with caisson illness. To him an increase of carbon dioxide from 0·04 to 0·1 per cent. may of itself be a cause of the malady. The longer the shift the greater is the danger of the body becoming saturated with gas; the longer under these circumstances therefore should be the time spent in the act of decompression. With higher pressures the shorter ought to be the shift. If the temperature of the air lock could be raised somewhat it would be well. At the works on the Tyne not only is there a medical lock, but on the island there is a large, warm, and comfortable dining room, into which the men go on leaving the air lock, and here they are supplied with hot coffee. A small booklet containing rules and instructions for compressed-air workings is given to each new man taken on, and every effort is made by the company to make the men comfortable, the work free from risk, and for emergencies to be dealt with as they arise.

II.—LORRAIN SMITH, M.D.Edin.,
Professor of Pathology, Queen's College, Belfast.

PROFESSOR LORRAIN SMITH brought forward evidence to show that the etiology of caisson disease included conditions subsidiary to that of setting free of nitrogen emboli in the plasma of the blood. It was difficult to explain the fact that the disease fell only on certain individuals working in caissons unless more than merely mechanical factors were included in the etiology. A further difficulty for the "effervescence of nitrogen" explanation was the localizing of the pains, etc., which characterized the disease. The chief factor to be considered was the toxic action of oxygen. Oxygen caused in mice a fatal pneumonia when the tension was 75° to 80° F., of an atmosphere. Men worked in compressed air at this tension habitually. It was also to be noted that in certain necropsies of cases of caisson disease distinct inflammation of the lungs had been recorded. It was probable that the congestion and swelling of the alveolar wall which resulted from the action of oxygen on the lung, also diminished the rate of transpiration of nitrogen and therefore increased the liability of the subject to suffer from decompression. There was some further evidence that oxygen at tensions which caused congestion of the lung had also a distinct effect on nerve cells in the brain and cord.

III.—E. H. SNELL, M.D.,
M.O.H. Coventry.

DR. SNELL had little to add to the excellent summary given by Dr. Oliver of what was known of that disease. He said that he desired to leave to physiologists the explanation of the various manifestations and peculiarities of the disease; and it appeared to him highly probable that Professor Lorrain Smith was right in suggesting that the solution of gases in the blood was not the only explanation of the phenomena of the illness; though one thing appeared quite clear, and that was that this theory was in the main the fundamental explanation. It was curious that ten years ago, at the time when he was engaged under the London County Council in medically supervising the compressed-air work at the Blackwall Tunnel, no English or American author had recognized correctly the value of Paul Bert's work on the effects of compressed air on the body and his theory, the dissolved gas theory, which he proved to be the correct explanation of the disease. That proof was available thirty years ago, and it was now rendered clear that Paul Bert's was the only theory which rationally explained the symptoms. What was known concerning this illness was now collated in the monumental work of Professors Heller, Magee, and Herman v. Schritter, published in 1900. For himself he was more particularly interested in the question of the prevention of the disease; and he was not at one with the physiologists on the importance of rapid decompression as a cause of the disease. He had no doubt that theoretically they were right, but practically—at the pressures usually employed—he had not found that rapid decompression was more liable than a slow decompression to produce the illness. At the Blackwall Tunnel the usual air-tap for men allowed decompression to take place in five minutes; there was also a large tap for material by which the decompression could be effected in from thirty to sixty seconds. He found that a few of the men made a practice, for their own convenience, of using the larger tap. He did not find that any of these men were more liable to be taken ill. On the point of the excessive ventilation of the compressed-air chamber, which he had found to be of such importance at Blackwall, that was often necessitated there on account of the escape of the air through the gravel bed of the river. The results of an excessive ventilation up to 12,000 cubic ft. per man per hour was so marked in preventing illness that he felt convinced that this was one of the essential factors to be borne in mind.

REPLY.

DR. OLIVER, in reply, said that at this late hour he would not take up the time of the meeting much longer. He was especially grateful to Professor Lorrain Smith for taking up the question of oxygen toxicity, as this was a subject to

which he had given attention, and therefore one upon which Professor Lorrain Smith could speak with authority. In the course of his remarks Dr. Oliver had alluded to other factors in operation than compressed air; such a toxic condition of things, for example, as the escape of unwholesome gases while the workmen were passing through a layer of soft coal. The toxicity of oxygen was an important and interesting fact, especially, too, since we have been informed of the existence of degenerated nerve cells in addition to the pneumonia which this gas caused. He thanked Dr. Snell not only for his remarks made at the meeting, but for the great assistance he had received from Dr. Snell's book on *Compressed-Air Illness*, written at a time when little, comparatively speaking, was known of the malady in this country. As an indication that there was probably more than rapidity of decompression in the causation of the symptoms, Dr. Snell had alluded to the fact that the men at the Blackwall Tunnel, knowing the dangers run, yet preferred to pass out by the material lock and be decompressed in half a minute than in five minutes. This was certainly an interesting fact, but it was a practice that physiologists would not encourage all the same. Dr. Snell's recommendation of the large quantity of air sent into the cylinder was, he was glad to see, based upon the peculiarly rapid escape of air from the caisson, for in actual practice it had been found impossible to carry out the recommendation of 12,000 cubic feet of air per man per hour.

THE INFLUENCE OF ANTENATAL CONDITIONS ON INFANTILE MORTALITY.

By G. F. McCleary, B.A., M.D.Cantab., D.P.H.,
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The causes of infantile mortality are sometimes classified as (1) preventable, and (2) non-preventable, the latter group consisting of conditions of definite antenatal origin, such as premature birth and congenital defects. This classification is unsatisfactory. The statement that a given pathological process or condition is non-preventable can only be made when the conditions upon which it depends have been ascertained and found to be beyond the scope of practicable administrative measures. It cannot be said that this has been done in the case of the antenatal factors in infantile mortality, for in no branch of medical science is our ignorance more profound than in antenatal pathology and hygiene. There appears to be a tendency to regard infantile mortality for all practicable purposes as a matter of improper feeding and lack of maternal care, and to disregard altogether the importance of the conditions affecting the infant before birth. Dr. Ballantyne's monumental work, however, has given an impetus to the study of antenatal hygiene, and there are signs that increasing attention is being paid to the subject. Dr. Chalmers, in his recent annual reports on the health of Glasgow, has discussed the significance of the antenatal factor in the problem of infantile mortality, and Dr. Leslie Mackenzie, in his work on the *Medical Inspection of School Children*, has also called attention to the practical importance of the question.

The whole question of infantile mortality, indeed, stands much in need of a more searching analysis. It is probable that fuller knowledge would emphasize the importance of the antenatal factors. Prochownick has brought forward evidence to show that the development of the fetus is definitely affected by the diet and mode of life of the mother during pregnancy. According to Ballantyne, "Prochownick and his followers believe that by altering the diet in pregnancy it is possible to influence the character of the confinement, of the puerperium, and of lactation, as well as the state of the fetus. Thus by dieting anaemic, chlorotic, or fat or weak women, it has been found possible to give them more normal obstetric experiences, and to give them back the power (which they had lost) of nursing their infants..... In cases of pelvic contraction between 3¼ in. and 4 in., Prochownick shows, by a series of forty-eight cases representing sixty-two confinements, that maternal diet can so influence the size, weight, and osseous development of the fetus, as to make it possible for it to be born at full term, whereas, in previous pregnancies, instrumental means or the induction of premature labour were necessary." Further evidence is afforded by Dr. Noel Paton's experiments on guinea-pigs. Dr. Paton found that whereas the average weight of the young of well-fed pregnant guinea-pigs was 0.35 gram per gram of the mother, the young of guinea-pigs kept on a low diet during pregnancy weighed only 0.24 gram per gram of the mother, and he holds that these experiments "warrant the conclusion that the size of the offspring depends very directly on the diet and nutrition of the mother during pregnancy." He thinks the high infantile mortality amongst the poor is to some extent explained by the fact that owing to defective antenatal nutrition the "infant starts life at a low level, and readily succumbs to the hardships to which it is too often subjected." The influence of alcoholism on infantile mortality has an important antenatal aspect. By experiments on animals and observations on the human subject, Nicloux has demonstrated that alcohol passes freely from the maternal to the fetal circulation, and he points out the importance of the toxicity of alcohol on an organism whose nervous system is in process of formation. It is evident that the province of preventive medicine must be extended so as to include intra-uterine puericulture. We must get rid of the expression "non-preventable" in relation to infantile mortality, and set ourselves to investigate the antenatal factors, and to bring them within the scope of our administrative measures.

In order to ascertain the relative importance of the various causes of infantile mortality I have compiled the following table from the annual reports of the Registrar-General:

Table I.—*England and Wales.—Deaths of Infants under 1 Year per 1,000 Births Registered.*

Year.	Measles.	Whooping-cough.	Pneumonia and Bronchitis	Tuberculous Diseases.	Convulsions.	Diarrhoeal Diseases.	Dentition.	Premature Birth.	Atrophy, Debility, and Inanition.	Atelectasis and Cyanosis	Congenital Defects.	Suffocation.	All other Causes.	All Causes.
1876	2.5	5.1	23.9	9.4	23.1	19.2	2.9	12.8	24.4	—	1.2	1.4	20	146
1877	2.2	5.0	23.1	9.4	21.6	13.0	2.6	13.0	22.7	—	1.3	1.4	20	136
1878	1.9	8.5	25.6	10.1	21.9	20.5	2.7	13.4	23.8	—	1.3	1.4	21	152
1879	2.1	5.9	27.1	9.0	21.3	9.0	2.5	13.5	22.2	—	1.3	1.5	20	135
1880	3.0	6.2	24.3	10.8	20.9	23.5	2.4	13.9	24.1	—	1.3	1.4	21	153
1881	1.7	5.2	21.7	8.6	20.3	12.2	2.7	13.6	21.3	1.5	1.3	1.5	18	130
1882	3.2	7.0	25.0	9.0	20.7	13.8	2.8	13.9	21.8	1.6	1.4	1.5	19	141
1883	2.1	5.0	24.1	8.6	20.5	13.0	2.8	14.4	22.9	1.5	1.3	1.6	19	137
1884	2.7	5.5	22.9	9.2	20.7	22.0	2.9	14.4	23.3	1.4	1.4	1.5	19	147
1885	3.3	6.4	26.3	8.3	20.2	12.0	2.9	14.4	21.1	1.7	1.4	1.5	18	138
1886	2.7	6.2	24.5	9.6	20.6	21.5	3.0	15.1	23.0	1.7	1.3	1.6	18	149
1887	3.8	8.3	24.9	8.7	20.1	18.9	2.6	15.8	22.9	1.6	1.4	1.6	17	148
1888	2.2	6.1	23.5	8.4	19.6	12.1	2.6	15.9	20.9	1.7	1.3	1.8	18	136
1889	3.5	6.0	25.4	8.8	20.3	17.4	2.7	16.3	21.0	1.7	1.4	1.8	18	144
1890	3.0	6.8	28.0	9.3	20.5	17.7	2.9	17.4	21.7	1.7	1.4	2.0	19	151
1891	2.9	6.4	30.6	8.6	20.4	14.2	2.8	17.9	21.3	1.8	1.4	2.1	19	149
1892	3.1	6.5	27.4	8.4	19.6	16.5	2.7	18.4	21.3	2.0	1.5	2.0	19	148
1893	2.6	4.9	23.7	9.2	19.6	30.0	2.6	18.8	22.0	1.9	1.6	2.0	19	159
1894	2.0	6.5	27.2	7.4	17.6	13.5	2.4	17.7	19.0	2.1	1.6	2.0	17	137
1895	2.7	4.7	26.7	8.2	19.0	30.3	2.6	18.9	20.6	2.1	1.5	2.2	19	161
1896	4.3	6.6	25.7	7.1	17.3	22.6	2.4	18.9	20.0	2.1	1.5	2.1	17	148
1897	3.3	5.9	24.7	7.4	17.3	33.1	2.4	19.2	20.4	2.1	1.5	2.0	17	156
1898	3.2	5.1	24.3	7.6	17.1	38.4	2.3	19.8	20.6	2.2	1.6	2.1	16	159
1899	2.4	5.2	24.6	7.1	16.8	41.7	2.2	19.9	20.6	2.3	1.6	2.0	17	163
1900	3.3	5.9	25.8	6.7	17.2	30.5	2.3	19.9	20.5	2.4	1.6	2.0	16	154
1901	2.2	5.3	22.4	6.4	16.6	34.5	2.2	19.9	20.0	1.2	1.3	1.8	15	151

Diarrhoeal diseases include diarrhoea and dysentery, infective and zymotic enteritis, enteritis, gastro-enteritis, English cholera, gastric catarrh, dyspepsia, and other diseases of the stomach.

Strictly speaking, practically every infantile death is the result of both antenatal and postnatal factors, but their relative importance varies in the different causes of death. Probably antenatal conditions account for many of the deaths certified as due to atrophy, debility, marasmus, inanition, and convulsions; and if due importance be attached to the soil as well as to the seed in considering the fatality of the infectious diseases, we must admit that even in such diseases as measles, whooping-cough, and diarrhoea, antenatal conditions affecting the nutrition and resisting powers of the patient have some influence on the result of the illness. But the causes of death which most definitely depend upon antenatal influences are premature birth, congenital defects, and atelectasis and cyanosis. It will be noted that Table I shows a distinct increase in the mortality from these causes since 1876, and, as premature birth is the most important, it is advisable to select it for fuller consideration.

It has been suggested that the rise in the mortality-rate from premature birth indicates merely an apparent increase, due to the transference to the death-registers of a number of infants who would formerly have been buried as stillborn. It is impossible to state definitely whether this has or has not been the case, for, unfortunately, stillbirths are not registered in this country. I have endeavoured to elicit such information as is available in the cemetery records, and several of my colleagues in London have kindly supplied me with statistics giving the total number of interments, and the number of stillborn infants buried per year in various metropolitan cemeteries during varying periods. This information is arranged in tabular form below:

TABLE II.—*Number of Interments in Four London Cemeteries during the years 1881-1900.*

Quinquennia.	Total Interments.	No. of Stillborn Infants Buried.	Percentage of Stillbirth Interments to Total Interments.
1881-1885	62,030	3,810	6.12
1886-1890	61,719	2,842	4.60
1891-1895	60,459	2,868	4.74
1896-1900	53,050	2,045	3.85

For the years 1894-1903 I have obtained additional figures from other cemeteries, and the total results for each year are set out in Table III.

TABLE III.

Year.	Number of Cemeteries.	Number of Interments.	Number of Stillborns.	Percentage of Stillborns.
1894	6	16,558	961	5.82
1895	6	17,338	945	5.46
1896	6	16,838	916	5.45
1897	7	18,022	1,073	5.96
1898	7	18,864	1,107	5.88
1899	7	19,051	1,017	5.35
1900	7	19,439	1,008	5.19
1901	7	17,346	928	5.36
1902	7	17,109	882	5.15
1903	7	14,722	832	5.65

Assuming that these figures indicate the proportion of stillbirths to deaths in the whole County of London, it does not appear that the increased mortality from premature birth can be explained, to any considerable extent, by a transference from the class of stillbirths. In Table II the number of stillbirths and their proportion to the total interments were higher in the years 1891-5 than in the preceding quinquennium, while, as Table IV shows, the mortality from premature birth in London rose from 15.3 in 1886-90 to 18.3 in 1891-5. It is true that in 1896-1900 the proportion of stillbirths fell considerably, but this may be partly explained by the fact that in the year 1890 in a certain London cemetery not included in these returns the fees for stillbirth interments were reduced, with the result that a larger number of stillborn infants were brought to that cemetery from other parts of London. I do not attach importance to these figures, there are obvious sources of fallacy, but I offer them as I think they indicate a line of inquiry which might be followed further with advantage in investigating this subject.*

For other reasons I do not think the increased mortality can be explained by the transference hypothesis. The increase is great, and it is found in all the districts whose records I have been able to examine. Table IV shows it in districts which vary considerably in other respects. Apart from the question of stillbirths it does not appear that the increase can be explained by a greater efficiency in diagnosis and certification, as seems to be the case in the cancer death-rate. The ability to certify that an infant has died from premature birth does not indicate the possession of a pathological equipment which was beyond the reach of the ordinary practitioner twenty years ago. In the absence of definite evidence to the contrary, we may, I think, accept the mortality-rates as representing a real increase, although possibly it is not so marked as the figures would appear, at first sight, to indicate.

Assuming the increase to be, to some extent at all events, a real increase, it may be due either to (1) a higher mortality of premature infants, or to (2) a relative increase in the number of premature infants born. The former alternative would imply the increased action of agencies specially inimical to premature infants. It is difficult to point to such agencies, and it is more probable that the second alternative contains the true explanation, namely, that out of a given number of infants born fewer reach full term than was the case some years ago. We have, therefore, to seek the causes of this relative increase in the number of premature births.

It has been surmised that the increase is due to the employment of a greater number of young married women in factories, but, so far as I am aware, not one particle of evidence has been adduced in support of this conjecture. Mr. Noel Humphreys some years ago pointed out that the mortality from premature birth was higher in Norfolk and Suffolk, where 20 per cent. of women were employed, than in the West Riding and Lancashire, where 37 to 43 per cent. of women were employed. I have ascertained the mortality from this cause since 1876 in four rural counties—namely, Dorset, Wiltshire, Norfolk, and Suffolk; in two mining counties, Durham and Northumberland; in three large towns, London, Liverpool, and Birmingham; and in two districts, Lancashire and the West Riding of Yorkshire, where women are largely employed away from home. In all these districts a considerable increase in the mortality from premature birth is recorded, and the mortality is distinctly higher in the mining counties and in Norfolk and Suffolk than in the West Riding or in Lancashire. There does not appear to be any relation between the employment of women in factories and a high infantile mortality from premature birth (Table IV).

It would seem that the best method of investigating this problem is first to ascertain the causes of interrupted pregnancy, and then to inquire whether any relation can be established between the increased action of these causes and the increased mortality from premature birth.

Edgar arranges the causes of interrupted pregnancy in the following order of frequency: (1) Diseased endometrium, (2) retrodisplacements, (3) syphilis, (4) kidney insufficiency and toxaemia, (5) criminal interference, (6) low insertion of placenta. The Registrar-General's annual reports do not show an increase in the death-rate from uterine diseases, but it is possible that minor uterine disorders not sufficiently

*The proportion of stillbirths should, of course, be stated per 1,000 births registered. In some districts it might be possible to give this information.

TABLE IV.—*Deaths from Premature Birth per 1,000 Births Registered.*

Years.	Dorset-shire.	Wiltshire.	Norfolk.	Suffolk.	Lanca-shire.	West Riding.	Durham.	Northum-berland.	Monmo'th-shire.	London.	Liverpool.	Birming-ham.
1876-80	11.2	12.0	13.7	15.5	14.0	16.4	15.3	15.1	10.0	10.6	11.4	12.1
1881-85	10.0	12.8	14.9	14.4	14.8	16.7	16.2	14.7	11.5	13.2	12.7	12.3
1886-90	13.3	12.8	16.5	17.3	16.4	18.1	18.6	18.0	12.5	15.3	14.7	16.2
1891-95	16.0	14.6	20.3	19.7	18.7	19.5	20.0	19.3	14.7	18.3	18.5	21.6
1896-1900	16.9	17.0	22.5	20.6	19.5	20.4	21.8	20.0	17.6	19.7	19.4	22.4
1901	14.9	16.5	23.0	20.6	20.7	21.6	22.6	22.5	16.2	19.1	20.5	20.8

serious to cause death may be now more frequent. There can be no doubt that the employment of artificial means to prevent conception has become more general, and there is trustworthy clinical evidence that such practices give rise to disorders of the endometrium and other uterine affections. There is probably a close association between the decline in the birth-rate and the rise in the mortality from premature birth.

It does not appear that syphilis is increasing in this country. There has been a distinct decline in the general death-rate and in the infantile mortality from it since 1876.

TABLE V.—*England and Wales.*

Years.	Deaths of Infants under 1 Year from Syphilis per 1,000 Births Registered.	Deaths at all Ages from Syphilis per Million Population.
1876-1880	1.77	8.5
1881-1885	1.87	8.3
1886-1890	1.74	7.3
1891-1895	1.58	6.9
1896-1900	1.32	5.8
1901	1.23	5.3

There has been a definite increase in the female death-rate from Bright's disease and albuminuria (see Table VI).

TABLE VI.—*England and Wales: Annual Death-rates to a Million Females Living in Groups of Years 1881-1900.*

Year.	Diseases of Uterus and Vagina.	Bright's Disease: Albuminuria.	Alcoholism.	
			Chronic Alcoholism.	Cirrhosis of Liver.
1881-1885 ..	49.6	194.4	27.4	102.2
1886-1890 ..	44.6	219.0	55.4	103.6
1891-1895 ...	45.0	229.0	45.8	102.2
1896-1900 ..	43.0	247.8	61.6	115.8

Of the toxaemias, alcoholism deserves the most careful consideration. Ballantyne holds that there is "a very considerable volume of opinion, with some statistics to strengthen it, that parental inebriety leads to sterility, to abortion, to premature labour, and to dead births." Brouardel and other French writers attach much importance to alcohol as a cause of interrupted pregnancy. Arrivé investigated 1,648 conceptions furnished by 402 poor working-class families in Paris. He arranged the families in three groups: (1) alcoholic, in which alcoholism was manifest in one at least of the parents; (2) tuberculous; and (3) *groupe indifférent*, in which no definite influence adverse to the progeniture could be detected. The percentage of premature births in Group 1 was 3.58, as against a percentage of 0.64 in Group 3, while the percentage of abortions was 11.54 in the alcoholic, 9.78 in the tuberculous, and 6.61 in the "indifferent" group. The opinion is prevalent that female intemperance has increased of late years in this country, and certainly a considerable rise in the female death-rate from chronic alcoholism has taken place during the last twenty years. Fuller knowledge, however, is necessary before a definite statement can be made on this subject.

In the absence of definite knowledge as to the causes of the increased mortality from premature birth, it is too soon to suggest preventive measures. Something, however, may be said for the prematernity hospital. Amongst the French, from whom we have much to learn in nearly all matters relating to infantile mortality, the *sanatorium de grossesse* is a recognized feature in the system of puericulture.

The mortality from premature birth, indicating, as it probably does, variations in the proportion of premature infants born, has an important bearing on the question of physical deterioration. Our birth-rate is decreasing, and if the proportion of infants born prematurely is increasing, it would appear that there is taking place a diminution in the quality as well as the quantity of our output of babies.

NAVY, ARMY, AND AMBULANCE.

Surgeon-General A. F. BRADSHAW, C.B., K.H.P., President.

DISCUSSION ON MALTA FEVER.

I.—Colonel D. BRUCE, F.R.S., R.A.M.C.

COLONEL BRUCE said: In opening a discussion on Malta fever in this Section, I need not dwell on the importance of this fever from a naval and military point of view. It is one of the most tedious and refractory of fevers, lasting in some cases for years, and gives rise in our naval and military forces in the Mediterranean to an amount of suffering, inefficiency, and waste which it is most painful to contemplate. Perhaps some gentleman joining in this discussion will give figures to illustrate this, but at present you may rest assured that this statement is not an exaggerated one. Little has been done for some years past to advance our knowledge of this fever, but I am glad to say that a determined effort is now being made. The Admiralty, War Office, and Colonial Government have joined forces, and under the direction of the Royal Society a research into the nature of this disease is now being prosecuted. Staff Surgeon Shaw and Surgeon Gilmour of the Navy, Dr. Zammit, of the Board of Health, Malta, Major Horrocks and Captain Kennedy, of the Royal Army Medical Corps, and Dr. Johnstone, of the Local Government Board, are all working at this subject.

For the purpose of this discussion I have divided the subject into:

1. The natural history of the micrococcus melitensis.
2. Mode of entrance of the micrococcus melitensis into man.
3. Mode of exit.

Turning to the first of these, the natural history of the micrococcus melitensis. This microbe, which was discovered in 1886, is undoubtedly the cause of this fever. I need not describe the micro-organism, as it is well known to you all. It is a difficult micro-organism to work with on account of its minute size, the slowness of its growth on artificial media, and the difficulty of separating it from other bacteria. Of its habitat outside the body little or nothing is known. It has not up to the present time been found in outside Nature unless placed there artificially. As to the conditions under which it can lead a saprophytic life nothing is known. We know from the statements of Bassett-Smith that cultures kept at 22° C. still retain vitality after fourteen months; that it lives in milk for some three weeks, and in tap-water for three days only. In ordinary sea-water it appears to die off almost immediately. In urine Bassett-Smith states it can live from three to five days, and Horrocks gives five or six days. In a dried condition it retains its vitality for much longer periods, and Horrocks has made the important observation that it can live in dust for at least 69 days, and on dried fabrics for a longer period. It has not, however, been found up to the present in the air or dust of infected places, but this point is receiving especial attention at present. No light has yet been thrown on the question as to the possibility of this micro-organism having under natural conditions hosts other than man; but if such an animal as the goat which crowds the cities and villages of Malta could grow it in their bodies and pass it out in the urine, a never-failing supply of infection would be present.

In regard to the best conditions for its artificial cultivation, Horrocks states that the additions of nutrose to the ordinary nutrient agar materially hastens its growth, and that a slight acidity as represented by + 10 of Eyre's system is the best reaction. Staff Surgeon Shaw, of the Navy, also reports that the addition of ascitic fluid also hastens growth. It grows extremely slowly at ordinary temperatures, such as 20° C. (52°F.). Its optimum temperature is blood heat; its thermal death point is 57.6 (Eyre). Exposure to the sun kills it in a few minutes. To separate it from other micro-organisms, probably spiral growths on the surface of nutrose agar in petri dishes is the best method, or the injection of the mixture into monkeys or rabbits.

I shall now pass on to the second part:

2. The mode of entrance of the micrococcus melitensis into man. This is a subject of which we are very ignorant. Does the micrococcus melitensis gain entrance by the alimentary canal, the lungs, tonsils, mucous membrane of nose or eye, or through the skin?

Feeding experiments on monkeys, carried out by Professor A. E. Wright and others, have been invariably negative. We know nothing of the effect of inhaling dust containing the micrococcus melitensis, but experiments are going on at present. One case of artificial inoculation in man is given, in which the conjunctiva is said to have been the point of entrance. We know that the smallest quantity of the virus introduced under the skin will give rise to the disease, as many accidental inoculations in the laboratory testify, and that brings up the question as to whether it is possible that this disease may be conveyed from the sick to the healthy by means of biting insects. Nothing is known at present on this interesting point, but experiments are being made. In my

opinion it is very unlikely that this is an insect-borne disease.

3. Mode of exit: The most important mode of exit would be by the urine, and naturally this has received a good deal of attention. Dalton, Gilmour, and Bassett-Smith, of the Navy, have all attempted again and again to separate it from the urine, but have always failed. I am glad, however, to be able to report that I received a telegram from Malta a few days ago, signed by Major Horrocks and Captain Kennedy, R.A.M.C., saying: "Found twenty-six colonies micrococcus melitensis from one-third c.cm. urine." This is an important observation, and may be considered in connexion with the retention of vitality for long periods of this micro-organism. Up to the present the micrococcus melitensis has not been isolated from the sputum, the expired air, the sweat, or the intestinal contents. One other mode of exit there is, and that is from the blood by means of biting insects. That the micrococcus melitensis exists in the blood has been shown by Gilmour and Shaw, of the Navy, and Dr. Zammit, the Malta Government bacteriologist. Gilmour, especially, has worked at this point, and he has repeatedly isolated the micro-organism from the blood. But up to the present the evidence goes to show that it is only found in very small numbers in the blood. According to Gilmour, not more than one or two micro-organisms per c.cm. can be found. This, if it proves to be invariable, would go against this disease being an insect-borne one.

II.—Fleet Surgeon P. W. BASSETT-SMITH, R.N.,
Lecturer on Tropical Medicine, Haslar.

THE ETIOLOGY OF MEDITERRANEAN OR UNDULANT FEVER FROM A NAVAL STANDPOINT.

FLEET SURGEON BASSETT-SMITH said: As the general question of the causation, etc., of Mediterranean fever has been introduced by Colonel Bruce, F.R.S., I think it may be of interest to bring forward some evidence of a purely naval character with regard to its epidemiology, and also some interesting points observed at Haslar, which will, I hope, in conjunction with the paper of Colonel Bruce, offer important subjects for discussion, this disease being one with which his name is so honourably connected, and one which affects the Army so closely.

The material has been collected during the last four years, during which time I have been able to study the disease from both its clinical and laboratory aspects, owing to the large number of cases invalided annually from the Mediterranean, spending a shorter or longer time at Haslar. In 1900 forms of questions were sent out, and were required to be filled in for every case occurring in the Mediterranean: this has been done to a great extent for the years 1901, 1902 and 1903, the results of which have been abstracted, and the main facts, most of which have been introduced into the Statistical Report of the Health of the Navy for those years, are herein condensed.

In 1901, the total number of cases thus received was 214 (with an average force of 14,000 men).

In 1902, there were 315 cases recorded (with an average force of 13,400 men).

In 1903, there were 302 cases returned to me.

This gives 831 cases in which separate data have been received in three years.

1. The first point of importance seemed to be to ascertain where the disease was most often contracted. Out of the total, 620 were attributed directly to Malta; of course this large number is to some extent accounted for by the presence of the fleet for such long periods in Malta Harbour, by the large hospital, dockyard, and the permanency of one or more ships there; of the remainder, 32 are said to have been contracted at Gibraltar, 30 at Corfu, 3 at Alexandria, and 129 from other ports, mostly Lemnos, Platea, Nauplia, Arancia Bay, etc. In some cases it is impossible to state definitely the place where the disease was contracted, but if the ship had been less than three weeks absent from Malta, the presumption is that it was contracted there, for the men have more liberty, and there the disease is very prevalent.

2. The second point was to find out if possible, whether there was any evidence of the ships themselves becoming infected. Though it was popularly believed that this was the case, particularly in H.M.S. *Ramillies*, there were no facts to bear out the statement, for each year the cases were fairly evenly distributed among the fleet, almost every ship returning some cases, but generally in proportion to size; the *Hibernia*, a stationary wooden ship, usually heading the list—this during the last two years returning 42 cases.

3. The relationship of age and rating is more interesting, as shown by the following table:

Age:	15 to 25	25 to 35	35 to 45	45 and above.
No.:	526	256	46	3

The number of men of susceptible age on the station is large and must be so; but there is no doubt that young adults are most predisposed to contract the disease. Again, the relation to rating should be noted; of the 831 cases, 173, or 20.7 per cent. of the total, were officers, and often these were junior or gun-room members (midshipmen, assistant paymaster clerks, etc.), on whom the fever has the most prolonged and debilitating effect; marines, stokers, and bluejackets seem to be about equally liable, if anything the marines suffering proportionally most.

One important etiological fact elicited is the large number of the sick-berth staff, in direct relationship with the sick, who became infected, especially at Malta Hospital. In 1901, out of 10 cases, 7 were attacked there; in 1902, out of 28 there were 22; and in 1903, out of 15 cases 11, or out of a total of 50 attacked among this class of men, 40 of them contracted the disease while serving in hospital.

4. Again, data were collected in the hope of detecting the likelihood of infection occurring while sleeping on shore at night, a time when we are most predisposed to contract so many diseases. Out of 831 cases only 122 had within three weeks of the onset of the attack remained out of the ship at night, and many had not been out of the ship for months, so that they must have received the infection on board.

5. Shore water was most universally employed at Malta for drinking and cooking purposes; very rarely were there any complaints of it, or of insanitary conditions of the ship itself and its actual surroundings, neither could I trace any connexion between high incidence of cases and the period of docking.

6. With regard to seasonal prevalence, a chart taken from the three years reports showed a gradual increasing frequency of cases up to July, in which month there was an abrupt drop; thus the disease appeared to be most common in the period following the spring rains when the ground was drying and the hot southerly winds were frequent. There was generally a secondary wave of less intensity in the autumn.

7. As to the evidence in favour of immunity from second attacks there is some difficulty. Here the question of whether it is a second attack or a relapse is not easy to decide. There is no doubt that a case may after apparent return to health for one or two years have another attack of fever, either on the station or at home, which is, I believe, a pure relapse, and not a reinfection (as demonstrated by the latter cases).

There is of course a great probability that when a man who is convalescent from the fever remains in the endemic area with an anaemic condition of his blood (reduction of red cells, white cells, and phagocytic power), he offers less resistance to the specific micro-organism; but if once completely recovered, there is evidence that on returning to the station he has obtained a considerable power of immunity, for of the 831 cases only 9 are stated to be second attacks, and it must be remembered that many men return for second and third periods to the Mediterranean Station.

It is well known that the micrococcus melitensis is found after death in the spleen and other organs of all cases dying from Mediterranean fever, and can be isolated in pure cultures if the proper procedure is carried out, and that it has been obtained from the spleen during life; we know now that it is present in the peripheral blood during the febrile attacks, as obtained by Gilmour and Shaw at Malta, and myself at Haslar; and we know, unfortunately, that the organism in a laboratory remains virulent for a long time, being particularly dangerous to work with, for almost all who have carried out investigations at Netley, Haslar, and London have been accidentally inoculated, and have suffered from the disease. The inoculation has occurred twice through the mouth (Eyre and Bassett-Smith), with an incubation of five and six days; once through the conjunctiva (Shaw), incubation five days; three at Netley, through the skin, incubation fifteen and sixteen days. There is, therefore, every evidence of the specific character of the organism and its inoculability.

Attempts to obtain the organism from the urine, faeces, etc., here and elsewhere have failed. I have in many cases during the febrile attacks drawn off the urine with all care through sterile catheters into sterile flasks, and then immedi-

ately transferred 3 c.cm. to broth, without success. Fluid from blisters has also in my hands given negative results, but Gilmour has obtained a growth from an effusion into the knee, and Eyre states that he has obtained a pure culture from an abscess.

With regard to the vitality of the organism in the laboratory, I found that in urine that had been sterilized and then inoculated, that subcultures on agar could be made for five days. In sterile tap-water it also survived for five days. In sterile sea-water, growths were obtained from two to seven days after.

In sterile milk it lived for three weeks or more without producing any change.

It seems to be always killed by a dry heat of 45° C. when exposed for fifteen minutes, but retains its vitality as a culture for very long periods at 22° to 30° C.; an agar streak kept at 22° C. could still be sub-cultured after fourteen months. Cold, though it inhibits growth, does not kill. I placed some cultures in full daylight for a month in a room where the temperature fell at times to 33° F. at night, but they still had growth. Direct sunlight was fatal after fifteen minutes, but on being *x*-rayed for that time on three successive days they were not killed.

Experiments were made as to resistance to drying, broth cultures were desiccated in the hot incubator, and for fourteen days in that condition retained vitality, but no longer. Tubes of sterile dust were next infected with broth cultures. In one case successful subcultures were made up to fourteen days, in a second for four days, and in a third for three days.

The organism appears therefore to be able to withstand a considerable amount of light, cold, and dryness, favouring the view that it may be disseminated in the dust by "sirocco" and other hot winds.

The most important etiological fact in connexion with this disease that has lately been made is the demonstration of the presence of the specific organism in the peripheral blood during the course of the fever.

The following method has been employed by Surgeon Gilmour, R.N., at Malta and at Haslar: Thoroughly disinfect the bend of the elbow as for operation (with spirit soap, ether, and bi-cyanide), then with an aseptic syringe—preferably one with a glass piston which has been autoclaved with a stoppered glass measure and carried in it to the bedside—puncture the median basilic vein, and draw off 3 c.cm. of blood; inject this at once into 60 c.cm. of nutrient broth, incubate at 37° C., and make agar sub-cultures with a platinum loop daily.

The following have been made at Haslar, and in no case were any contaminated.

Summary of Cultures from Blood and Results.

No.	Days of Disease.	Name.	Condition and Temperature.	Amount of Blood.	Results.
				c.cm.	
1	50	W.	Acute relapse. 102.4°	3	Positive, on 5th day.
2	142	T.W.	Slight relapse, 99.4°	2.5	,, 5th ,,
3	84	A.	Acute relapse, 102°	3	,, 9th ,,
4	117	,,	,, 103.4°	3	,, 6th ,,
5	92	F.	,, 102°	3	,, 9th ,,
6	23	N.	First relapse, 104°	3	,, 3rd ,,
7	34	W.	,, 103°	3	,, 3rd ,,
8	119	M.	Mild relapse. 101°	3	,, 3rd ,,
9	42	P.	Acute relapse, 102°	3	,, 7th ,,
10	90	W.	,, 102°	3	,, 4th ,,
11	167	G.	Acute relapse, 102.6°	1	Negative.
12	122	W. Case 1.	Convalescent	1	,, No relapse.
13	185	B.	Cachexia	3	,,
14	110	D.	Slight relapse, 101°	3	,,
15	165	,,	Convalescent	3	,,
16	159	A. Case 3.	,,	3	,,
17	130	F. Case 5.	Cachexia	3	,,
18	73	H.	Convalescent	3	,,
19	134	B.	,,	3	,,
20	120	F.	Cachexia	3	,,
21	1 year	D.	,,	3	,,

This is a total of 21 examinations of these, 10 gave positive results, all the patients at the time having marked fever; and 11 negative, two only with fever at the time, but in one only 1 c.cm. of blood was cultured; the remainder were either convalescent or suffering from secondary cachexia and neuritis.

5

Conclusions.

The deductions to be made from the inquiry are:—

1. That Mediterranean fever shows no sign of decrease in its incidence in H.M. Navy on that station.

2. That both officers and men suffer severely; but that the percentage of young officers and men in early adult age is proportionately great.

3. That all ships appear to be equally affected, according to the time spent by them at Malta harbour, the permanent harbour ships giving the most cases.

4. That it is very frequently the case that men contract the fever while in Malta Hospital when admitted for other diseases, and that the nursing staff in attendance on them there show a great tendency to develop the disease, but whether that is due to its endemicity or to direct infection there is no proof. (The same holds good, I believe, at other than the naval hospitals at Malta.)

5. That the greatest incidence of cases is during the months of May and June.

6. That in the fleet there is no evidence of infection being received from the shore, other than through the agency of wind-carried germs.

7. That the organism can retain its vitality for a considerable period when desiccated, but that it dies in about five days in sterile fresh and sea water and urine, but remains active long in sterile milk.

8. That the organism is very virulent in laboratory cultures, readily causing attacks when taken in by the mouth, or through accidental inoculation.

9. That the organism is present in the peripheral blood in all cases during the early stages and in severe pyrexial relapses, and that in the afebrile intervals, and following cachexia, it is not demonstrable, but that in no case is it very abundant.

10. That the disease may remain latent for several months, and relapses may occur for a period of two years at least, but that when once completely cured it gives an immunity from further attacks.

Finally, I think that though infection by means of blood-sucking insects is possible: "The evidence at our disposal would lead one to believe that in the presence of bad sanitation, where the disease is endemic, infection is probably conveyed in dust by winds, mostly in the hot dry months following the rains, and that it gains access to the patient through some breach of surface, probably in the throat, and that as a rule when perfect health has been established after an attack of the fever, an immunity is acquired against further infections."[1]

III.—Surgeon-Major G. A. Hutton, M.R.C.S., Leamington.

Surgeon-Major Hutton said that although he had not any experience of Malta fever as he had not been quartered there, yet he had been to Malta as a visitor. He might say that in the year 1866 he was a member of a mixed Commission appointed by the late Lord Carnarvon, then Secretary of State for the Colonies, to inquire into a severe epidemic of yellow fever in Demerara. As a question had been asked as to insanitary conditions being a cause of Malta fever, he would say that in Demerara they found insanitary conditions that had decidedly contributed to the epidemic of yellow fever on that occasion. As mosquitos were most prolific in Demerara, he would like to ask Colonel Bruce whether he had had any experience of the Demerara mosquito and its influence on the prevailing malarial fevers on that coast of South America?

IV.—Professor S. Grech, Malta.

Professor S. Grech said that although he came from Malta yet they must not expect from him anything new—that question was out of his sphere, but as a general practitioner he was glad to make a few remarks. First, he could not understand why such questions had been taken up by the Navy and Army Section, and not discussed in the Section of Medicine. Was it because it was so prevalent and so destructive to the health of the officers and men serving at Malta? If so, he did not consider that to be a sufficient reason, because the Maltese population were not immune, and were attacked as severely as the soldiers and sailors. Secondly, he wished to protest strongly against the nomenclature—Malta fever—that name was very improper and might give to Malta a bad name, which might keep away from their shores winter

[1] Bassett-Smith, *Health of the Navy*, 1901.

visitors. That same fever had been observed in Sicily, in Naples in the other towns along the Mediterranean. In his opinion, having regard to its clinical course, he would call it atypical infective fever, or, from its possible cause, sewer fever. The reasons why he connected its etiology with the sewers were the following: He had been twenty-four years in practice, and from his experience he might say that at the outset of his career, say twenty years ago, the number of typical enteric fever cases that used to come under his care was very great. The cause was traced to drinking-water which was contaminated by the cesspools running alongside the wells and sometimes found leaking into them—such a state of things called the attention of the sanitary authorities to the matter and a better drainage and water supply were provided. After the remodelling of the drainage and the introduction of a better system of water supply in the fortified towns enteric fever disappeared, and he might say that it was a disease of the past in Malta. With the cessation of enteric fever, older practitioners, as well as himself, had noticed the appearance of another clinical form of fever, never fatal, sometimes mild, but many times very obstinate in its symptoms and long in its course. That was the fever in question. Its cause was now admitted to be specific, and the existence of Bruce's micro-organism was there to prove it. Its entrance into the system, its action and its elimination were still obscure, and the fever was on the increase. He thought that the poison might be found in the air in and around large towns, which was full of putrid matter, more especially in the harbour, and various creeks and in the vicinity of ventilating shafts. The analysis of those places had never been done—it should be carried out—until this was done they would not know if Bruce's micrococcus existed in the air by itself or with other poisons. Mediterranean fever and enteric fever were very much alike clinically, and perhaps, the former might be a modified form of the latter under the influence of Bruce's micrococcus. He said "under the influence of Bruce's micro-organism," because De Renzi, of Naples, in explaining the pathogenesis of the same sort of fever which existed in Naples, admitted the co-existence of two infective germs—of which one, the most important and essential, was the typhoid, the other the malarial—modifying the form and course of the disease. Both those infective principles must be in a weak state of concentration and intensity. Could not the same theory be applied to the fever prevailing in Malta? The poison twenty years ago used to be ingested, at present it was inhaled in a less concentrated quantity. It might be objected that reports of the prevalence of that fever amongst the garrison and the fleet existed previous to the remodelling of the drainage and the water supply—well, such reports, he thought, only confirmed his argument. It was obvious that in those days men in the Army and Navy had the better supply of water, and did not ingest the poison in the majority of cases by drinking contaminated water, but were mostly exposed to inhale it more than the civil population. The air in the harbour was in those days saturated with putrid matter, the sea being the receptacle of all the refuse of the towns and the ships. The sea was a stagnant cesspool, the harbour and its surroundings the centre of infection to the men in the Army and Navy. He hoped the object of his remarks had been understood. What he wished to impress upon them was the importance of the analysis of the air in the towns, in the harbour, through which, he was afraid, the poison of the fever was conveyed into the lungs.

V.—Major T. H. F. CLARKSON, R.A.M.C.,
London.

MAJOR CLARKSON discussed the prevalence of Malta fever in new buildings, and the direct communicability of the disease from individual to individual. He considered the disease was not directly connected with sewage or insanitary surroundings.

VI.—Deputy Inspector-General PRESTON, R.N.,
London.

DEPUTY INSPECTOR-GENERAL PRESTON, R.N., said that he thought the term "Malta fever" objectionable on account of its being found in most subtropical climates. It might exist for some period in the system, with occasional pyrexial attacks, and then exhibit itself in full force. One attack seemed to confer immunity for many years. He thought the probable exit of toxins of micrococcus melitensis was through the liver.

Colonel D. BRUCE replied.

A NAVAL SURGEON'S NOTES.

By Fleet Surgeon JOHN LLOYD THOMAS, R.N.,
School of Naval Gunnery, Portsmouth.

IN the following brief notes I have attempted to give prominence to some points which concern the naval surgeon and are incidental to modern methods of big-gun firing at sea, and will first call attention to the conditions attendant thereon.

In modern battleships and, speaking roughly, the gun is inside a barbette, turret, or casemate, and in that way is housed in all around. In other ships there are guns mounted on the upper deck and not surrounded by steel walls.

It is a very moot point whether the men serving the gun inside the casemate or those working on the upper-deck battery suffer most from the effect of the firing, for there are two distinct factors to be taken into account. (1) The effect of the explosion at the muzzle of the gun, commonly known as the "blast"; (2) a violent shaking in the breech of the gun at the seat of ignition of the explosive, which shock is transmitted from the gun to the walls and roof of the casemate, and thence to the bones of the head, ear, etc. It is enough to remark, however, that they are so distributed that they would probably not damage the drum of the ear, although they do produce distinct concussions of the skull, spinal column, and the larger joints, and give rise to headache, tongue-bites, and general shock.

"BLAST" CONCUSSION.

The "blast" is the form of concussion which has far-reaching consequences upon those who come within its radius of disturbance, and it is only necessary to be on a level with the muzzle—on either side—and within a given distance to experience its unpleasantness (Fig. 1); to be in advance of

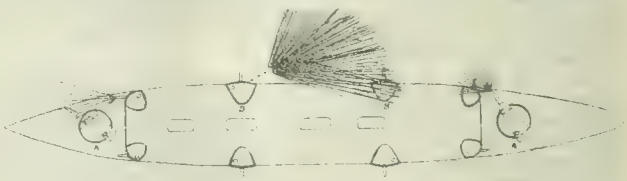


Fig. 1.

this plane intensifies the shock, and to stand over or be on one side of and in advance of the firing-point causes most painful symptoms. Examples of this are seen in the case of men standing close to any opening in the ship's side in the vicinity of the explosion, such as an open port, when the membrana tympani can be easily ruptured. Doors are wrenched from their hinges and iron stanchions bent.

Barbettes and turrets have sighting-hoods, consisting of armoured citadels, from which gun-fire is directed, and having a lifting roof so as to form a slot for taking observations—this in a line with the face. Much suffering may be experienced, whilst inside one of these or in a casemate, especially where a big gun is fired from aft, forward, or vice versa, close the ship's side and in her length.

The occupant suffers at first a feeling of much shock; in one instance the cap was jerked off the head, and even the silk scarf which the seaman wore under the collar was jerked from the shoulders, whilst cotton wool has been torn out of both ears. Officers who have been subjected to this say that in addition to the violent shaking there is a feeling of great depression at the pit of the stomach, followed by a tendency to be sick.

It is probable that while the missile is passing, and practically certain that when the air is forcibly displaced by it and by the gases which impel it, that a severe compression of the body surface takes place, the abdomen offering less resistance than does the chest with its cage in the form of ribs. A partial vacuum succeeds during an almost imperceptible period, and the effect produced must be one of suction. Briefly, the effect at first is one of compression, and secondly one of suction.

2. Modern guns tend to greater length than the older armament, and it will be obvious that for those men who are working at the rear of the gun the "blast" will have less disturbing effects.

3. Speaking generally, all ships' guns are fired at low levels, and there the air density is greatest and the intensity of air vibration is relatively increased accordingly. Again, concussions and air vibrations are known to be more violent over

water and flat surfaces than on rough and broken areas, so that under this head it would appear as proved that the "blast" in naval guns is greater than it would be in a similar gun on shore.

4. The actual shock or vibration (previously mentioned in contradistinction to the "blast") which is transmitted to the gun and its mounting at the moment of firing is not so great afloat as it would be on shore, because of the resiliency which the water lends to the platform from which the gun is fired.

Cordite.

This is the propellant *par excellence* of to-day, gunpowder having been superseded by this explosive, which is a chemical compound. Its chief superiority over the old black powder lies in the fact of its being semi-smokeless when ignited and under certain circumstances it gives higher velocities. It is complex and dangerous of manufacture and takes its name from the cord-like shape it assumes in the process. Its component parts are:

Nitro-glycerine	58
Gun-cotton	37
Vaseline (mineral jelly)	5
	100 parts.

Modern cordite has less nitro-glycerine.

The products of the explosion of cordite are permanent gases:

Carbon dioxide	24.8
Carbon monoxide	40.3
Hydrogen	14.8
Nitrogen	19.3
Methane	0.7
	100.0

55.8 per cent. of these gases are combustible, and with favourable conditions are always liable to give an after-flame. The conditions favourable are when the air is about two and a-half times the volume of the gases; the mixture becomes non-explosive when the air is as 7 to 1 of the gases. This after-flame or flash is called the "back flame," and may give rise to appalling accidents, such as the recent mournful catastrophe on board the United States battleship *Missouri*, where some thirty lives were lost. This form of accident is, however, fortunately of the rarest occurrence, although the gases which give rise to the "back flame" are ever present. Certain conditions favour the development of this flame, and the sudden inrush of air (especially when firing up wind) when the breech is opened is considered the chief one and the rapid passage of the ship through the air under like conditions of the muzzle is another, although it can occur at any time, as cases have been known even when firing down wind. The flash is a very temporary or passing one and, therefore, imparts little heat, and in the navy precautions are taken of having all explosives covered with a protective skin made of silk cloth. The actual results of the flash in an ordinary working day are seldom more serious than singeing of the hair, face, or clothing, and these are very exceptional.

The Telescope.

This instrument now plays a very important part in gun-firing. It is fixed to the gun mounting, and does not recoil. First, the telescopic sight assures an increased visibility of the object aimed at, although in this connexion it suffers some disadvantages:

A. The field of vision is limited, thus making the object difficult to find. B. When found, less easy to keep in that field, and this is exaggerated when the motion of the gun platform is great. C. There may be a difficulty, on account of the various concussions, of keeping the glass in position, and this applies more especially to the lighter mountings. The telescopes in use are of the ordinary terrestrial type, having an object glass at one end and an eye-piece, consisting of two plano-convex lenses, at the other. Two cross wires are placed in the field of vision, an india-rubber circular pad or guard is fixed to the eye-piece end primarily for the protection of the eye, and, secondarily, to exclude stray light.

Formerly the gun was laid by aligning 3 points at varying distances, namely: (1) The back-sight, (2) the fore-sight, and (3) the object. The normal eye, however, finds it impossible to accurately focus three objects at such distances, it being difficult to determine, without artificial means, when they are truly aligned.

The cross wires referred to are rigidly mounted in the principal focus of the eye-piece, and the point of intersection of the wires is made to coincide with the optical and mechanical axes.

The optical axis conforms to the line of sight and is finally adjusted parallel to the bore of the gun. In applying the telescope for sights the difficulty of different foci is overcome by placing in the same plane the picture of the true object and the intersecting point of the cross wires: consequently the eye sees both with the same degree of sharpness, and with the telescope properly adjusted it is only necessary to place the intersection of the cross wires on the object and the gun is properly laid. For sighting guns by telescope at night various devices are used, the object being to illuminate the cross wires, which is done by projecting a very minute ray of light on their point of intersection.

The telescope mounting admits of elevation and deflection movements, and thus can be adjusted for fixed, movable, and swinging objects, and the seamen are taught these manipulations.

The usefulness of this instrument is at once manifest, especially when it is remembered that long-range firing (8,000 yards, etc.) is now receiving every attention. Taken all round, the British naval seaman must have normal vision as a primary qualification, but there are instances where presbyopia, due to age, must be considered, especially in our gunnery warrant ranks, and in the telescope we have, for this condition, a sight corrector.

Its uses will be materially interfered with where smoke from one's own guns, smoke from the enemy's bursting shells, and spray intervene; but what of the naked eye under similar conditions?

The surgical interests attached to the use of the telescope, as already recited, are few, and the injuries caused are slight *per se*.

The causes of any hurt are to be found in the fixity of the instrument to the gun mounting and not to any actual recoil on the part of the gun itself, for, whilst the gun recoils on the same mounting as that to which the telescope is fixed, the latter does not partake of anything more than the shock communicated to it, through its mounting, by the gun. This shock is greater when small guns (12-pounders) are used, because the mountings of such are less substantial than those used for the 6-in. or 12-in. gun, and the explosion in the lighter gun is, by comparison, more violent than that of the heavier type.

Injuries are practically unknown where the latter are concerned and common with the former. The smaller type of gun is universally used in torpedo boat destroyers, but the great resiliency which offers in such craft when firing practically does away with the chance of injury.

A black eye, or perhaps a wound at the eyebrow, and which may require a couple of sutures, are what we are called to attend to, although there is generally a story of having been stunned or "knocked down," etc., with headache to follow. Although these may be trifling troubles, it is quite conceivable that in fighting times serious results might accrue if in the ship several layers of guns were even temporarily incapacitated, for of such men are the most valuable fighting units made up.

The Ear.

This delicate organ suffers more damage from big-gun firing

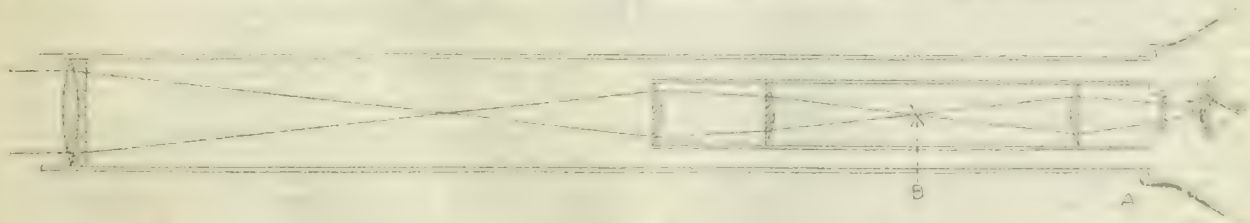


Fig. 2.

than any other part of the body, and we might very briefly consider the part each section of it plays in conveying air vibrations.

(1) *The Outer Ear.*—The irregular surface of the auricle collects the air waves, which fall upon it from all directions. These are reflected on to the lower wall of the external meatus, and thence thrown perpendicularly upwards on to the membrana tympani, which is concave and directed very obliquely downwards and inwards at an angle of 55 degrees to the axis of the meatus.

(2) *Middle Ear.*—The drum having received the vibrations in the most advantageous manner from the outside, transmits them across the middle ear by the chain of ossicles, which connects the convex drum surface with the fenestra ovalis, to the labyrinth. In this connexion it should be remembered that very highly-pitched sounds induce pain, and accordingly are resented by the terminals of the auditory nerve. Provision is made for diminishing the vibrations at the fenestra ovalis by the action of the muscle which relaxes the stapes. This result is associated with a tightening of the drum, making it more liable to rupture. The Eustachian tube acts as an air tube, and balances the pressure of air on the inner surface of the drum.

(3) *Internal Ear.*—In this part of the ear the peripheral end-organs of the auditory nerve are expanded upon a small sac containing fluid. In addition to the waves which reach the sac by the fenestra ovalis through the ossicles vibrations are communicated to this sac by the hard bony parts of the skull.

From this it will be seen that vibrations are conducted to the labyrinth in two ways, namely (*a*) via the outer and middle ear, and (*b*) through the hard bony parts of the skull.

When a sound ear is injured by gun-fire we generally look for (*a*) a ruptured membrana tympani, or (*b*) a permanent deafness due to repeated injury of the delicate nerve terminals in the internal ear, this being frequently spoken of as "gun deafness;" (*a*) may be said to be "curable;" curable, that is, if attended to at once and if the patient discontinues firing. In (*b*) the deafness may be termed "irreparable."

If a typical case of ruptured membrana tympani be seen immediately after the accident from gun-fire smart local pain is complained of and the auroscope reveals a minute fissure with red, raw edges and a drop of blood at its lower end.

If the ear be merely plugged with wool and boracic powder, the patient being, at the same time, sheltered from further concussion, the drum heals by first intention. Should this accident occur and the man neglect having the ear attended to, the consequences might prove serious. The seaman makes light of any pain, which he probably considers inseparable from all explosions; and there are many cases, without doubt, where he continues his routine work as a gunner. The loss of hearing, it should be remembered, is not, as a rule, much marked and the injury remains masked; a "header" from the ship's side some day reveals the trouble, and he comes to the doctor for the first time.

Ruptured drums must then be considered to be fairly common—out of 300 casualties amongst the Japanese at the naval battle of the Yalu in 1894, 19 such cases are recorded, and during the French manœuvres of 1897 "several" are recorded. For the reasons mentioned, I am disposed to think that our own seamen seldom treat the accident seriously. The sick-list, from whatever cause, robs a man of a certain amount of freedom, and at our big gunnery schools in England, where friends, home visits, etc., are interfered with, being placed on the sick list is felt to spell "punishment."

GUN-DEAFNESS.

"Irreparable deafness," commonly called "gun-deafness," is a condition regarding the pathology of which too little is known, and it is highly desirable that we should be better acquainted with it than we are to-day.

It exists with or without any visible sign, such as rupture of the drum, and both sides of the head are generally equally affected. Added to tinnitus, headache and general head discomfort may exist, but in the chronic case there is a marked loss of power of co-ordination of sound: the patient can keep up a conversation with one person by attentively watching him, but if a third person joins in the conversation he is not able to keep up in the discourse.

This gun-deafness is not uncommon amongst men who direct the trials of sporting guns (rifles or shot guns) at the various butts where intending purchasers test their weapons, and gun-headache is far from rare amongst sportsmen after a big day's shooting. The clavicle conducts the vibrations to the remainder of the bony framework, and so to the skull.

The outer ear reveals nothing, when the drum is intact. The Eustachian tube may be quite patent. The deafness varies in degree, but is seldom if ever complete, as seen amongst naval officers. The gunnery officer is, for obvious reasons, most liable to this form of deafness, and his life of greatest activity, in the close neighbourhood of big guns, lasts about nine or ten years, for, on reaching the rank of commander, his services are not confined to gunnery, and it is reasonable to suppose that, if the original cause, namely, constantly repeated violent concussions be removed, the progress of the disease will be arrested though not cured.

When one admits this condition to be incurable and when so little is known of its pathology it would appear superfluous to discuss it, but as an excuse I would submit that some good may come of a consideration of the causes with a view to a prevention of the mischief.

When discussing the "blast" due to the explosion at the gun muzzle we referred to another form of violent shaking which is transmitted from the seat of ignition, and I am disposed to think that whilst the former is the most likely cause of ruptured membrana tympani, the latter must be considered a potent factor in the causation of internal ear-deafness in which the drum and ossicles may be (and generally are) intact.

(*a*) The officer directing, and the man firing, the gun are close to the breech and very intent on the result and that implies rigidity of limbs, spine, and neck, and this condition is shared by the muscles of the neck and face, the latter showing this by a state of staring and fixity of muscles. It will be seen that all these would tend to accentuate any shock by conducting the vibrations as if along a rigid rod to the hard skull bones, and in that way violently shake the fluid of the labyrinth which bathes the sensitive terminal nerves.

(*b*) Where big-gun firing is conducted day in and day out (as in gunnery schools) the injury becomes permanent.

Most men keep the mouth slightly opened during firing operations, and, although this equalizes the air on the drum, it must tend to intensify air concussions on the foramen ovale, and therefore increase the agitation of the fluid in the labyrinth.

Prevention.—Up to the present it is to be regretted that no device has been found that will sufficiently protect the ear from the violent concussions caused by the modern gun. To protect the membrana tympani cotton wool is useful as diminishing the violence of the air waves proceeding in its direction, and for some time now a doughy substance has been largely used for plugging the external meatus; lastly, it is recommended to keep the mouth slightly open.

Experiment shows that if the irregularities of the auricle are filled with wax or oil, and so give it a smooth surface, that the intensity of sound is weakened, and I have advised vaseline to be tried for this purpose, but with doubtful results. Again, nipple-shaped india-rubber plugs have been used. The direction of the meatus externus to the source of sound is material. If the side of the head is directly opposite to an explosion the ear will suffer a more violent concussion than if the full face were opposed to it. A gun's crew, however, are so variously disposed that no definite lines can be laid down for observance.

Neither officers nor men take kindly to the use of artificial means—cotton wool, etc.—although the practice is more universal than it was a few years ago. The discomfort caused by the presence of a foreign body in the ear, added to the dullness of hearing produced, are the chief reasons for this, and the sailor considers it to be too much "coddling."

A short discussion followed, and in answer to Surgeon-Captain E. CALLENDER, Fleet Surgeon LLOYD THOMAS said that nausea, vertigo, and violent shock were constantly observed with the concussion from big-gun fire.

THE GENERAL HOSPITAL IN WAR: ITS WORKING AND STAFF.

By Surgeon-Major C. R. KILKELLY, C.M.G.,
Late P.M.O., Portland and Transvaal Imperial Yeomanry Hospitals.

WAR hospitals are of three kinds: The field, stationary, and general hospitals. Each of these in the last war was again subdivided into civil and military.

When an army takes the field it is in the first instance

accompanied by its field hospitals. A field hospital is essentially a mobile unit. It should be capable of being pitched or struck in an hour, whilst the whole of it can be packed into a few wagons. Its guiding principle is "evacuation." If a field hospital cannot evacuate its sick, it cannot move with its brigade. It becomes full of acute cases of illness, and not being provided with proper *personnel* and equipment it is not fit to deal with serious cases for a lengthened period. Hence the reasons for the establishment of general hospitals.

General hospitals are established to, at any time, receive all kinds of sick and wounded evacuated from field hospitals; to treat and care for them in accordance with the latest and best methods of modern science; finally, to restore to the ranks those who have recovered, and send to light duties or England the convalescents and invalids.

Stationary hospitals are improvised constructions scarcely deserving the name of hospitals. They are, although immovable, not properly staffed or equipped as hospitals. They are of the nature of rest camps, detained wards or converted field hospitals.

General hospitals are naturally situated at the various bases of operations and on the lines of communications at places selected from sanitary and strategical considerations, possessing a good water supply, with facilities for transport and sufficient space for expansion.

Organization of a General Hospital.

In organizing a general hospital there are certain important points to be taken into consideration. In the first place, it is impossible to predict what kind of cases or in what numbers sick and wounded will be sent to a general hospital. A general hospital must, therefore, be capable of expansion in all its parts, and capable of sorting and receiving the various groups of diseases in appropriate wards or specialized sections. Next, hospitals are often suddenly required at places where hitherto stationary hospitals have been established, owing to the outbreaks of epidemics, the formation of standing camps, or as a preliminary step to the formation of a general hospital. In order to do away with the necessity of an improvised stationary hospital as far as possible a general hospital should be able to detach one or more complete sections for work at such places, if within the region of its "sphere of influence." Again, for the purpose of keeping the general hospital free from convalescents and slight cases of illness, a convalescent camp for officers and men should be established. In size it should be at least as large as the general hospital itself, and organized and administered as part of that general hospital. Lastly, it is necessary to bear in mind a principle that applies to all business undertakings: that almost the same staff that is required to administer a 100-bedded hospital is able to administer a 500 bedded or a 1,000-bedded or even larger hospital. The increase that is necessary in enlarging a hospital occurs in its executive branches.

Therefore, in order to combine efficiency with economy we should organize our model general hospital on about a 550-bed basis (500 beds for non-commissioned officers and men and 50 for officers), capable of being doubled or trebled in size, divided up into appropriate sections and with a convalescent camp attached.

We now come to consider some of the principal details of organization.

A general hospital should be divided up into certain sections in order to decentralize and facilitate its working and to separate the various kinds of infections. A division into sections on some such lines as the following is suggested:

1. Administrative.
2. Medical: (1) Enteric; (2) dysenteric; (3) infectious: (4) general.
3. Surgical.
4. Convalescent.

The surgical and each of the medical sections should contain 110 beds, completely organized and capable of being at least doubled in size. The convalescent camp and officers' home should contain accommodation for 550 officers and men.

The administrative section is often popularly understood as the section for working out red-tape statistics and diagnosing diseases according to the official nomenclature, but I can assure you this is very far from being the case. The administrative section consists of a number of important departments directly controlled by the Principal Medical Officer. They are as follows: (1) Secretarial and financial; (2) discipline and statistics; (3) sanitary; (4) catering; (5) stores; (6) laundry; (7) transport; (8) workshops; (9) games.

In the first two departments the organization is merely a question of arranging proper offices with clerks where accounts, pay-sheets and ledgers are kept and all information and registration regarding patients, *personnel*, and equipment is carefully compiled just as in any well-conducted business office. A post-office and telephone connexion should also be established.

The sanitary department should be under a medical officer of health, with well-equipped bacteriological and chemical laboratories. Attention should be especially directed to the disposal of refuse. In the Imperial Yeomanry hospitals, as you have seen, a system of boiling all excreta from infectious wards was adopted, and modified biological filter beds were constructed for the disposal of bath and certain slop waters. The provision of sufficient baths is another necessity. Russian steam baths and the Turkish needle baths can be easily arranged for. The needle baths require but little water per head, and a large number of persons can bathe, soaping themselves from head to foot in a short space of time. It is curious why this form of bath has not been more adopted in the army and elsewhere. The floors of tents is another important point. I found the simplest and most effective method was to have the earth levelled, beaten down and covered with a layer of moist "ant-hill" earth rolled in. This floor was sprinkled daily or oftener with a 5 per cent. solution of izal from a watering can. A smooth, polished disinfected floor was the result. Every tent or ward should have two ten-gallon vessels with lids for receiving all dry refuse and slops respectively, and, in addition, in infectious wards a large thirty-gallon vessel containing disinfectant for infected linen and clothing. An arrangement for keeping urinals and bed-pans on shelves outside a tent is most essential.

In the catering department it is important to organize several centres for cooking, in accordance with the varying requirements and facilities for the distribution of food. Separate messes will be required for patients and staff, officers, sisters, non-commissioned officers, and men. It is, however, often beneficial for sick officers and the medical staff to mess together. Messing for those on night duties must be carefully attended to. For acute cases of illness pure "sick-room" cookery will be constantly required in the wards, and unless proper provision is made, nursing sisters will be found utilizing oil and spirit stoves in their tents for this purpose—a most dangerous, inefficient, and unwholesome practice. A simple method is to provide a series of small ranges and boilers, placed in charge of a man in each section. A nurse can go to these ranges and boilers (or special sisters may be told off for this purpose), and cook a bowl of arrowroot, boil an egg, or obtain boiling water whenever required by day or night. In close proximity to these ranges there should also be an abundant supply of Pasteur-filtered water maintained for drinking purposes. A scale of dietary must be drawn up, as it is essential for dieting and catering purposes.

The stores required for a general hospital are of various kinds, and chiefly comprise provision, linen, pack, and clothing stores, a canteen, and a dispensary. Each requires special organization with a clerk and storekeeper or dispenser. Accounts of receipts and issues must be carefully kept, and stock-taking carried out periodically on simple business principles.

The transport ought to be entirely in the hands of the Principal Medical Officer, and not obtained by repeated indents on the Army Service Corps, who always require twenty-four hours' notice. Certain special routine work, such as drawing rations, forage, etc., could be left to the Army Service Corps. A useful method is to obtain a supply of debilitated horses from the Remount Department, and, with plenty of food, they can do light work, which is all that is required of them, and they will soon again become fit for duty in the field. Thus the Hospital Transport Service would be of assistance as a remount convalescent dépôt.

The *personnel* required ought to consist of the following: For administration Principal Medical Officer, secretary, quartermaster, sergeant-major, matron. For medical staff One senior physician, one senior surgeon, two or three junior medical officers to each section, one bacteriologist, one chemical analyst. None of these should be removable to other appointments.

The nursing is best entrusted to a matron and sisters, one to every six or eight beds. Separate staffs should be appointed for day and night duties. Some of the sisters should undertake "sick-room cookery." Provision should be made for the treatment of sisters in the hospital when ill. Female servants

will have to be provided. Untrained ladies should be absolutely prohibited in the hospital except as visitors during visiting hours. High-class male nursing is not required except for special cases such as insanes. The best type of man to work in the wards under sisters is the disciplined soldier of good character. Of course, such men cannot be obtained unless unfit for duty in the field from causes such as defective teeth and hernia. First-aid work as at present taught is not of much use as qualifications for men in general hospitals. Men for employment as orderlies should have the nursing certificate, some practical experience in wards, and a knowledge of cooking.

A large number of men for general duties are required, especially cooks, sanitary inspectors, storekeepers, clerks, dispensers, masseurs, grooms and drivers for transport, scavengers, and so forth.

In regard to equipment, tents will always be required. I found the new pattern tortoise tent, 20 ft. by 24 ft., and the Indian pattern E. P. tent as the most suitable, and I can strongly recommend both kinds. The present hospital marquee is a most defective tent: it is heavy, of a bad shape, and is easily blown down by a gale of wind. The tortoise tent, if properly pitched, is most efficient. I found the addition of four two-foot long iron pegs, one at each corner, most effective in increasing its stability in soft ground.

The equipment generally should be carefully selected and constructed in "standardized" patterns. The Red Cross Committee could do useful work in this line by obtaining and annually exhibiting selected standardized patterns of equipment and arranging with firms to supply them at short notice.

The equipment must include, in an efficient general hospital, a destructor for burning refuse and utilizing the heat to generate steam in a boiler. The steam can then be utilized in a disinfector for disinfection by saturated steam under pressure, and also in a turbine engine and dynamo for electric lighting, *x*-ray work, cooking, baths, sterilizing milk, and so forth.

In conclusion, I would repeat that, in my opinion, (1) a general hospital should be large—that is, up to 1,500 beds—in order that it may be efficient and economical; (2) it should exercise its benevolence within a certain "sphere of influence" decided on by the natural lines of communication; (3) a convalescent camp should form one of its sections; (4) lists of equipment of standardized patterns and lists of *personnel* should be kept corrected up to date by the Red Cross Committee.

Such is, in brief outline, my ideal of a model general hospital in war, one that is capable of being considerably modified according to the nature of the campaign and climate in the country where it might be established.

For further information on this subject I would call your attention to the elaborate details worked out in the reports and appendices of the Portland and the Imperial Yeomanry hospitals in South Africa.

IS THE WIDESPREAD SLIGHT TRAINING IN AMBULANCE WORK BENEFICIAL TO THE COMMUNITY,

OR WOULD IT BE BETTER TO MAKE THE TRAINING MORE THOROUGH AT THE EXPENSE OF NUMBERS?

By S. HAMILTON, B.A., M.B., Ch.B.R.U.I.,
Newport (Mon.).

THE possession of a knowledge of rendering first aid by all sorts and conditions of men must be useful not only to themselves but to the community at large. On this point there will, I think, be no difference of opinion. The number of men and women who have acquired this knowledge is already large, and is increasing year by year. Such a result has only been attained by the active help of the medical profession, in giving gratuitous instruction and in furthering the work of the St. John Ambulance Association in every possible way, and none have rejoiced more than medical men at the rapid growth and success of so excellent an organization. But whilst recognizing the benefit to the public of such instruction, and whilst acknowledging many cases one has met with in medical practice of lives saved by the prompt rendering of first aid, it must have struck many practitioners as it has struck me that much of the first aid rendered by holders of ambulance certificates is feeble, imperfect, and of little practical value, and the question arises: "Would it be better to make the training more thorough at the expense of numbers?"

From observations I have made in my own practice, partly composed of men who work at docks, railways, ship repairing, and other trades where accidents are frequent, and as the result of inquiries I have made of medical men whose ambulance classes I have from time to time examined, and of other doctors practising in the same town as myself, I conclude that this inefficiency amongst ambulance certificate holders is extensive. Probably not more than 35 or 40 per cent. of them are efficient. Here are some examples of useless first aid that I have seen or heard of: A handkerchief applied loosely to the head in the form of a nightcap to stop haemorrhage from the arteries of the scalp; a bootlace tied round the calf of the leg to stop haemorrhage from the foot; a pad and bandage applied to stop haemorrhage from the arteries of the forearm—but the pad applied in the wrong place, causing compression of the ulnar nerve, whilst the haemorrhage was uncontrolled; a policeman wearing an ambulance badge came up to arrest haemorrhage in a street accident and fainted at the sight of the blood. He became himself a subject for first aid, and eventually was carried home on the stretcher intended for the injured man. These are cases of so-called first aid rendered by holders of certificates, and I know of many such instances.

From many years' experience as a lecturer and examiner of the St. John Ambulance Association I consider that this inefficiency is due to three main causes: Defects in (*a*) training, (*b*) examination, and (*c*) want of regular practice.

DEFECTS IN TRAINING.

The official textbook, written by Mr. Cantlie, I consider excellent and thoroughly useful, but candidates make the mistake of learning off and repeating sets of rules without applying them practically.

I often find a man repeat correctly the eight signs of fracture from the book and apply bandages and splints equally well, but when I ask him a question, such as the following: "In case of injury to a man's legs how would you set about finding whether he has a fracture or not?" the candidate seems struck dumb. Again, when I ask a member of a class how he would stop arterial haemorrhage, he will tell me quite glibly all about tourniquets, but he never thinks of mentioning or applying digital compression first. I frequently ask candidates: "What is your object in rendering first aid in fractures?" They will give me much information about splints and slings and bandages, but very few can give an intelligent reason why they use these appliances. When lecturing classes I always tell the members to imagine that the accident in question is actually before their eyes.

DEFECTS IN EXAMINATION.

Provided candidates answer a fair number of questions on the book and apply the routine bandages, an examiner does not care to "pluck" them, even should they fail to apply their knowledge practically. When he considers, too, that these men have spent their leisure time—perhaps after a hard day's toil—in mastering the contents of the ambulance book he is inclined to be indulgent. I think it ought to be an instruction to all examiners to refuse certificates where candidates are deficient in the practical application of first aid.

WANT OF PRACTICE.

Perhaps the most potent factor of all in causing inefficiency is the want of regular practice and stretcher drill amongst holders of ambulance certificates. The usual course of events is that after a man has obtained his certificate he has it framed and hung up for the admiration of his friends, his book is very carefully put away in a cupboard, and his hastily-acquired knowledge is just as quickly forgotten. Ambulance men have themselves confessed to me that some years after obtaining their certificate they had forgotten nearly all the first aid they once knew. When face to face with a serious accident such men are absolutely helpless. The only item of instruction which they still remember is "send for the doctor."

The small percentage of ambulance men who I find render good and intelligent first aid either belong to the St. John Ambulance Brigade or are members of classes which habitually compete for prizes or trophies. These men regularly meet for drill and practice, and so keep up and improve their knowledge. In the town in which I live there is a silver challenge cup presented by the borough M.P., together with medals and prizes to be competed for annually by ambulance

teams in the borough. In other towns in South Wales, where Eisteddfodau are regularly held, an ambulance competition is always part of the programme. Most of the great railways now offer shields or other prizes for excellence in ambulance work amongst their employés. I have found very perfect first aid in accidents rendered by members of these teams both successful and unsuccessful. The same remark applies to members of the St. John Ambulance Brigade. Inspector-General Woods, R.N., who has been organizing a royal naval sick berth reserve, tells me he obtains the best trained ambulance men from the brigade.

Suggestions.

In conclusion, I would make the following suggestions:

1. That it be an instruction to all examiners to make the examination more of a test as to the practical application of first aid.

2. That those interested in ambulance work be urged to organize divisions or corps of the St. John Ambulance Brigade in towns where none already exist. This would bring the certificate holders in these towns together for practice once a month and thus keep them efficient.

3. That the St. John Ambulance medallion be only given to those certificate holders who afterwards join the brigade and pass the annual examination, the service badge and the service medal of the St. John Brigade to be continued under the regulations at present in force.

4. That factory owners and large employers of labour in towns where ambulance classes are held be invited to offer challenge cups for annual competition. This would be a great stimulus to the various ambulance teams to keep in training.

If these suggestions were carried out their effect would be to slightly diminish the numbers of ambulance men: but when an accident occurred one would feel more confidence in their capability to recognize the nature of the injury and to render appropriate first aid. All ambulance men should be able to say, in the words of Queen Dido of old (with slight alteration): "Non ignara *traumatis* miseris succurrere disco."

Surgeon-Major Hutton said he had listened to Surgeon-Major Kilkelly's paper, and would only say that he entirely agreed with his remarks that the transport should be under the Principal Medical Officer of the General Hospital. With regard to first aid, the men holding those certificates should certainly be taught nursing, and, in fact, the duties of a hospital orderly.

Mr. Pope said he thought that the largest number of men possible should be trained in ambulance work; but the defect of the system appeared to him to be the ridiculous laxity of the examinations and examiners, who did not carry out the practical part of the examination thoroughly and who passed candidates too easily. He would be glad to hear from Major Kilkelly why, in spite of the excellent organization of the Yeomanry Field Hospital and its detailed arrangements, there was such an enormous amount of that scourge and reproach of armies in the field—enteric.

Dr. C. H. Milburn (late Deputy Commissioner St. John Ambulance Brigade) said that the subject ought to be carefully discussed from both the civil and the military standpoint, as the respective requirements were different. First, as to the military side he would like to have a public statement in that Section as to the opinion of those R.A.M.C. officers who had to do with the subsequent organization of the men of the St. John Ambulance Brigade after they were handed over by the brigade head quarters during the South African war. He had heard from both officers and men who had been patients and been nursed by those orderlies, and the reports were most satisfactory. But what he wanted to know was, was the efficiency of these men as a whole satisfactory, and had their training been on the right lines to make them useful to the R.A.M.C.? If not, then it was desirable they should be made acquainted with their shortcomings, and suggestions should be made as to their future training. Arising from that he thought that wherever a general hospital (no matter whether large or small) and a brigade unit existed in the same town, opportunities should be provided for giving the ambulance men, under, of course, proper control, instruction and practice in systematized general nursing and orderly work as far as was applicable. Difficulties of course would present themselves and therefore the rules arranged should be elastic enough to overcome obstacles in different localities. Then, again, were the men sent out the right sort? The detachment was drawn from different classes of men—in fact all "kinds and conditions" of men were sent. If there had been some who were in every respect desirable, then that class should be primarily looked after, and encouraged to keep themselves up to date and in training. Speaking of encouragement, he said, Would it not be as well if some authoritative announcement could be made, explaining to the men concerned the reason why South African medals and clasps had not been issued to all of them? He had heard only recently of some still unissued, and if the reason (no doubt a good and valid one) were explained it might relieve some of the soreness which undoubtedly existed. But the delay and reference on inquiry from one department to others was not the way to encourage men to volunteer for such arduous and exhausting work as was that of a hospital orderly. On the question of giving a large number of men a slight knowledge of first aid, or a smaller number a more thorough training and education in amulance work, Dr. Milburn thought that every recruit on joining the services should receive some first-aid instruction—but that the men of the R.A.M.C., who belonged to a more expert body, should have the most thorough and extensive education possible in that subject. The former was, in his opinion, most essential, seeing that in the more extended movements and the encouragement of individual initiations now in force, any individual might find himself dependent on his own resources in relieving the wounds or saving the life of a comrade or his own. With reference to civil ambulance training, he thought a great deal depended on the examination. If that were of a low standard the training would correspond. If the standard were raised the instruction would be better. He knew of districts where candidates had expressed their contempt of the easy examinations, and he also knew that resolutions from local centres had been sent up to the Central Executive Committee of the St. John Ambulance Association, asking that the examinations should be on a higher plane and worked to a standard the same throughout the country. There were many difficulties in the way of that most desirable reform, but he did not doubt that they could be overcome.

Deputy Inspector-General Preston said that the St. John Ambulance Brigade men were more efficient than Association men, as they kept up their work and were qualified in nursing. The Admiralty had at present preferred Brigade men as better trained.

Surgeon-Major C. R. Kilkelly replied.

THE ORGANIZATION OF THE TREATMENT OF SYPHILIS IN THE NAVY.

By F. H. A. Clayton, M.D., M.R.C.S.Edin.,
Staff Surgeon R.N.

From the point of view of the naval medical officer the importance of the treatment of syphilis can hardly be overestimated. Taking the last two yearly returns as an example, it is seen that 6 persons died, 207 were finally invalided from the service, and 4,426 were incapacitated from duty for 162,572 days from the constitutional effects of the disease alone. The ratio per 1,000 had risen from 13.27 in 1878 to 27.89 in 1898, and, although latterly slightly lowered, is still well over 20. Even this, however, does not take into account the large amount of sickness on which antecedent syphilis produces a distinct impress, the prevalence of parasyphilitic affections, and its remote influences on the health of families as well as of individuals.

Although the appropriate date for the commencement of mercurial treatment is a matter of opinion, two points are almost universally conceded: First, that early treatment lessens the severity of, and may possibly even prevent, constitutional manifestations; and, secondly, that to be effective it must be prolonged. Such is certainly my own experience.

Most medical officers will agree that under present conditions in the navy this thorough and continuous treatment is impossible. The reasons for this are partly the frequent shifting of men from ship to ship or to gunnery school or dépôt, and the interference with duty which attendance entails, but are mainly to be found in the victims themselves, the majority of whom, directly they are free from symptoms, adopt every expedient to avoid being considered sick and if transferred to another ship never dream of reporting themselves. This casual manner of regarding the disease results to some extent from the sailor's rooted distaste to taking drugs, unless he wishes to avoid some unpleasant duty

thereby as occasionally happens, but principally from fear of stoppage of grog or of leave and from ignorance of the nature of the complaint and of the necessity for treatment after the subsidence of symptoms. The legends, so rife on the lower deck, as to the disastrous results of taking mercurials also play their part.

To treat syphilis systematically therefore it is necessary first of all to combat this ignorance. By far the most satisfactory means of effecting this is to give to each patient a small paper of advice as to care of mouth and teeth and general hygiene, avoidance of infecting others, and, without unduly alarming him, giving him an idea of its serious nature and the necessity for continued treatment even in the absence of symptoms, coupled with an assurance of the harmlessness of mercury when given under proper supervision. A very short acquaintance with the sailor's recklessness and carelessness where matters hygienic are concerned will, however, prevent any great faith in the efficacy of advice alone, and it will be realized that constant supervision is also necessary. This involves the power, under the commanding officer, of demanding the attendance of these cases for observation and treatment. There are, of course, several ships in which this is already carried out, but it is not done universally or even generally, and I do not think it has been attempted in dépôts or shore establishments.

There is no special difficulty about carrying it out in any ship in commission, although there is occasionally some unpleasantness, and at rare intervals some fanatic refuses treatment. Even in this latter case, however, constant supervision for the protection of others can still be insisted upon, although I am bound to say that, never having seen an extragenital chancre in twelve years' service, notwithstanding the promiscuous use of mess gear and so on, I have come to look upon the infectiveness of certain lesions as somewhat exaggerated.

The system which I have carried out in ships is as follows: When a man is definitely proved to have syphilis he is given instruction about treatment and the various points already mentioned. A list of all syphilitics is kept and, as far as their duties permit, all attend twice a day for treatment, their attendances being noted. While manifestations are present they are seen each morning by a medical officer, and, as is customary in the service, their grog and leave are stopped.

While free from symptoms they are seen by a medical officer each Saturday after the dinner hour, when he notes their record of attendances and examines the mouth, anus, and other probable sites for unnoticed disease. Their weight is also taken and compared with that previously recorded, the general condition noted and the state of the gums and intestinal canal inquired into. Given regular attendance for three weeks and absence of symptoms, treatment is intermitted for a week.

In my present ship this has been carried out since shortly after I joined, a period of about ten months. During that time 32 men at different periods in the secondary stage of the disease (within two years of contraction) has been under treatment. This is about 5 per cent. of the ship's company. It has been necessary to treat three of these on the sick list since treatment commenced. In one case the sore appeared to be a chancroid, and treatment was not commenced till the onset of secondary symptoms. The others were on the list for six and ten days respectively. None of the 32 has been sent to hospital or invalided, and at present, although one or two are under treatment for minor manifestations, the general health of the large majority is good, their weight has not diminished, and the blood of five or six of the most severe shows no marked evidences of anaemia. In an ordinary ship in commission, therefore, systematic treatment presents no particular difficulty, but the case is very different in dépôts and other large shore establishments with a numerous and constantly changing body of men, and, above all, with men detached in tenders and depending on boat communication. In this latter case a weekly visit by men not on the sick list could, at most, be depended upon, and it is here that Lambkin's method of intramuscular injection of mercurial cream at weekly intervals (in general use in the army in Egypt, I believe) would be found particularly valuable. To ensure systematic treatment in these large establishments, it would be necessary, as is already often done, to detail medical officers and attendants specially for venereal cases, to keep accurate and systematic records of cases and attendances, and to have the matter made a part of the ship's routine, and the men properly mustered. Given this, there seems no reason why men should not parade daily for treatment, and once a week for observation, in their own time. They could be given the option of weekly attendance for injection in preference. Provided records were kept properly, their detachment for steam trials, navigation parties, etc., should not interfere with the continuity of treatment. Most commanding officers would realize that the expenditure of time and trouble would be amply compensated for; and should it have the improbable effect of increasing the tendency to concealment of disease a remedy can readily be found, while as soon as the patients understood that their leave depended on freedom from manifestations, and that continued treatment tended in this direction, any difficulties about attendance would diminish. In addition, however, to the actual lowering of the sick-rate from this cause, a yet more important effect might reasonably be expected. In holding a first inspection of syphilitics in a ship where routine treatment had not been carried out, I found that no less than a fifth of over twenty cases had actual specific lesions which they had either not noticed or had disregarded. It is evident that in similar cases is to be found a potent means of extension of the disease in a garrison town.

From the facts that men are frequently transferred to other ships, and that syphilitic patients cannot be trusted to report themselves, it is obviously necessary also, to ensure continued treatment, that the medical officer of the ship to which they are proceeding should be informed. The ordinary medical history sheet, although it now distinguishes between chancroid and hard sore, is of very little use for this purpose, since it only records time actually spent on the sick list, and gives no information as to duration of treatment or the nature and date of manifestations. This is frequently provided by the medical officer on his own responsibility, but there is no rule, and it is therefore suggested that a return should be kept in which these details and any other points worth noting could be recorded. In addition to being of use on transfer of patients, a series of such would provide valuable statistical information as to the effect of treatment.

Finally, an essential preliminary should be the thorough overhauling of the teeth by a properly-equipped and skilful dentist.

SUGGESTIONS.

To summarize, then, it is suggested: (*a*) That men who have contracted syphilis should have the consequences of their misfortune impressed upon them by giving them a small pamphlet of advice, and should as far as possible be prepared both for combating the disease and for preventing any ill-effects of mercury by proper care of the teeth, etc.; (*b*) that their attendance for observation and treatment should be made a part of routine both in ships and shore establishments, and proper records of attendance kept; (*c*) that such records should include the dates and nature of symptoms and treatment and any other points of value, in order that, to ensure continuity, the requisite information might be sent with the patient on transfer to another ship.

Major T. MCCULLOCH gave the outlines of the scheme which had been adopted in the army for the continued treatment of syphilis.

Lieutenant-Colonel W. J. JOHNSTON commented on treatment analogous to that already adopted in the army, and made suggestions as to the best method of following men up, especially those on furlough or at camps of exercise. He advocated the use of hyd. c creta if it were not possible to give injections of mercury.

ALCOHOLISM IN NEW YORK.—During the last nine years there have been 51,000 alcoholic patients in Bellevue Hospital, New York, not counting "repeaters." Of these patients 66 per cent. were between 30 and 49 years of age. A series of 125 cases has (according to the *New York Medical Journal*) been specially studied, and the result seems to show that as a rule male drunkards live longer than female. Seventy-five per cent. of all chronic alcoholics have fatty degeneration of the liver. Many have brown atrophy of the heart. The kidneys are never normal. Fifty per cent. of the drunkards have gastritis. By the coating of the tongue and the character of the tremor the duration of a "spree" can be accurately determined. The drunkard often "sees things," but his sense of smell is seldom impaired. Absinthe drinkers are especially liable to convulsions.

NOTE ON THE WOUNDED IN THE NAVAL WAR BETWEEN JAPAN AND RUSSIA, 1904.

We have received the following interesting communication from S. Suzuki, M.R.C.S.Eng., L.R.C.P.Lond., Deputy Inspector-General, Japanese Imperial Navy, Surgeon-in-Chief of the combined fleets, on the *Mikasa*, the flagship of Admiral Togo.

Inspector-General Suzuki says he has been moved to send us the communication as the timely publication of similar reports in the British Medical Journal when our country was carrying on war in South Africa gave him a great impression of British surgeons' sense of duty towards their profession, and then continues as follows:

On the night of February 8th, or rather in the early morning of the 9th, our torpedo destroyers made a desperate attack on the Russian fleet anchored off Port Arthur. In this action no one was killed or wounded, nor were any boats damaged. On the morning of February 9th our fleets made a demonstration, when the enemy began to fire both from ships and forts at rather long range, but we kept on until we were within a fair distance, when a great volley was delivered with a decided effect on the enemy's ships. One of the first shells struck the lower top of the mizzenmast of the *Mikasa*, the flagship of Admiral Togo, leading the line, and caused 7 casualties—3 officers and 4 men—but no one was killed. The injuries were: (1) Lacerated wound on the outer side of the left thigh, 4½ in. in length, 3 in. wide, and 1 in. deep, femur intact. (2) Three small wounds on the back of the left hand, metacarpals intact, a small blood vessel injured, spouting blood. In this case the man wore a leather glove, which prevented damage to the bones. (3) Scalp wound over the left parietal region. The outer plate was fissured; no cerebral symptoms. (4) Penetrating wound (size of 6d.) of the right leg through the middle of the calf. The fragment, which was stopped on the inner side of the tibia, was extracted by a counter-incision; the bone was intact. Another small wound in the upper part of the left arm ran downwards and inwards: a small fragment was felt, but could not be extracted, as it was imbedded in the muscular substance. After admission into Sasebo Naval Hospital the *x* rays showed clearly the seat of the foreign body, but it was so deeply buried in the muscle that it was left alone. The man came back to the *Mikasa* after a month in the hospital. He says the fragment travelled up the shoulder and down the back, and now lay somewhere in the left flank. The remaining three cases were slight wounds over the left orbit, caused by a small fragment—contused wound of the right thigh and leg, small wound in the left ankle. The injuries in these seven cases were inflicted by a 10-in. shell.

On the *Fuji* an 8-in. shell killed 1 gunnery lieutenant and 1 sub-lieutenant, and 11 men were wounded; by another shell of a 12 pounder, which did not burst, a midshipman was wounded. Of these 12 wounded 6 were serious cases, and in one of them immediate amputation of the right forearm, about the upper third, was performed. (1) Gunshot wound of the right leg, with loss of soft tissues. (2) Perforated gunshot wounds of the left knee and of the right leg; death five days after the injury. In this case conservative surgery was tried, but great shock and loss of blood at the instant of injury had greatly weakened the man. (3) Gunshot wound of the left thigh, with loss of soft tissues and blind wound of the right inguinal region; this wound was inflicted by a fragment of the size of an egg, weighing about 4½ oz. (4) Gunshot wound in the left shoulder, with fracture of scapula. (5) Lacerated wound of right forearm, which needed amputation, as above mentioned. (6) Gunshot wound of the right leg, with fractures: amputation at the upper third.

On the *Hatsuse*, 1 midshipman and 1 seaman were killed and 9 men wounded by a shell of about 8 in. or 12 in.; another shell of 6 in. caused 5 casualties.

On the *Shikishima*, 16 men were wounded by a shell, but no one was killed. A petty officer had the following wounds: lacerated wound of the left thigh; lacerated wound of the right thigh near knee, 2 in. in length, 1 in. wide, and 1 in. deep, with much loss of soft tissues, bleeding slight, no fragment; lacerated wound of the right calf; a small lacerated wound above the left knee; these wounds healed after seven weeks in hospital.

A signalman received a penetrating wound in the right shoulder; the point of entrance was behind the acromion measuring 1½ in. by 1 in., and the exit just in front opposite the point of entrance; the greater part of the fragment was exposed in the wound, and was extracted by enlarging the exit; the size of both the apertures was nearly equal, a piece of cloth filled the inside wound, the shoulder-joint was intact, the weight of the fragment was 2½ drachms, and its length 1½ in., width ½ in. flat and curving in shape.

On the *Yakumo* a fragment rebounding from the sea inflicted on a midshipman a blind wound in the right iliac region and another in the right thigh; from the first wound a fragment of shell and a piece of cloth were extracted after admission to hospital, and then grafts were applied to the second wound after a month.

It is very important to remember that a fragment of shell however small may carry with it a piece of the clothes into the wound, which may be left in after the extraction of the fragment. We have several times had experience of this, and on making careful examination a small piece of cloth was found which prevented speedy healing of the wound; the shell fragments may be sterile like rifle bullets, but not so pieces of dirty clothes. Hence it is advisable that clean clothes should be put on just before action.

On the *Iwate* 1 sub-lieutenant, 1 midshipman, and 3 men were wounded by the fragments of a shell which burst near the ship. The sub-lieutenant received a blind wound in the right hypochondriac region, which caused empyema. On February 24th the tenth right intercostal space was opened, and a fragment of shell was withdrawn together with a quantity of pus; after the operation he is reported to be progressing favourably.

A seaman received a perforated wound of the right arm and a blind wound in the right side of the chest, which was followed by empyema. On February 27th and March 19th resection of the ribs was performed in the Sasebo Naval Hospital; he is reported doing well.

The total number of the wounded in the battle of Port Arthur on February 9th was 55, of whom 29 were sent home; the rest, having slight injuries, were treated on board the respective ships. Of these 55 cases 34 were lacerated wounds, 13 penetrating wounds (blind wounds), 8 perforated wounds, 3 burns by the explosion of a shell; 11 shell fragments were extracted from the wounds immediately after the injuries on board the different ships. Amongst lacerated wounds compound fractures of the limbs and wounds with much loss of soft tissues are included.

Referring to these figures it may be noted that the lacerated wounds come highest, but perforating wounds are much fewer than blind wounds; this may be explained by the predominance of indirect shots, but it seems to me that some of the explosives in Russian shells are much less powerful, giving less penetrating force to the fragments; moreover, some of the shells did not burst at all, turning round like a top on the deck.

At the battle of Chemulpo on the same day our divisional squadron had no casualties at all, but the Russians suffered much. Twenty-four wounded Russians out of as many more were treated in the hospital at Chemulpo by the Japanese Red Cross Society.

At the first blockade of Port Arthur on February 24th, 1 man was killed and 3 wounded on the same ship; no one else was wounded. A stoker was letting down the starboard boat haul on a sinking ship when a shell exploded against either the bridge or funnel casing; by these fragments the boat was smashed. At that moment the man felt something strike him. He took no notice of this, but instantly ran to the port side and tried the boat on that side, but one of the boat hauls was cut by the fragment of shell, and as the remaining one did not easily let go he lifted his right hand to cut it down with a Japanese sword which he carried with him; at this time he felt pain about the elbow, but with the help of some others of the crew he hauled down the boat and entered it with all the others; then he pulled an oar for about an hour, but did not feel much pain when he was picked up together with others by our torpedo boat: then he felt a throbbing pain. He had a lacerated wound on the right side of his back penetrating the latissimus dorsi: also a small wound above the right elbow penetrating the triceps. The presence of fragments of shell in these wounds was not discovered on a casual examination. The man also suffered from various slight injuries on the right thigh, leg, and arm, on the left temple, and the right malar and buccal regions.

Another stoker was wounded in the right thigh by the same fragment; the wound penetrated the vastus externus, but the femur was intact. These two men were admitted into the hospital ship *Kobemaru* on the next day. The third case was that of a petty officer. At the moment of his letting go the

anchor of the sinking ship a shell burst against the anchor davit; he fell down on deck, but at once got up and discharged an important duty allotted to him, and then got into the boat and pulled an oar, when he felt pain in his head. He had a scalp wound over the left parietal region; from the bottom of this wound a small rod-like fragment was extracted.

On March 10th our torpedo destroyers engaged with those of the enemy off Port Arthur. In this action one of our destroyers sank one of the enemy's destroyers (the *Stelegustchi*) and captured 4 Russians, 2 of whom were wounded. Our casualties amounted to 9 killed and 14 wounded, of whom 7 were sent to the hospital ship *Saikyomaru*. This comparatively large number of killed and wounded was attributable partly to the fighting taking place at close quarters—it is reported that the sides of the destroyers almost touched—and partly to the fact that one of our destroyers suffered damage to an auxiliary pipe, letting off steam which severely scalded some stokers.

The condition of the two wounded Russians was as follows: A petty engineer named Heudol Eulieff had a large gunshot wound above the left knee, the femur was fractured at its lower third; there was another flesh wound above the right knee. A stoker named Ewan Helensky had several small wounds over the chest and back caused by fragments of a shell. The men were sent to the Sasebo Naval Hospital; they are very fond of raw eggs and weak tea.

At the second blockade action on March 27th Commander T. Hirose and a warrant officer and 2 men were killed; 1 lieutenant, 1 engineer, 1 sub-lieutenant, and 8 men were wounded, of whom three officers and two men were admitted to the hospital ship *Kobemaru*. It is reported that Commander Hirose went round his sinking ship under the storm of fire three times, to search for his warrant officer, in whom he had great confidence, and who specially accompanied him as his assistant. He reached the boat passing over the already flooded deck, when the men pulled off the boat. A shell struck the Commander on the head, and carried his body off into the sea, leaving only a small piece of his flesh on the boat as a memory of his gallant deed. The clothes of a man seated close by him and a chart were smeared with his brain substance and noble blood.

On April 13th another engagement between the destroyers took place off Port Arthur in which one of our destroyers sank one Russian destroyer (*Strashunoui*). Our wounded numbered 7, all men, and none killed; of the wounded, 2 men were admitted to hospital ship *Saikyomaru*. On this day the Russian battleship *Petropavlovsk* was sunk by our mine, carrying Admiral Makaroff and his officers and men to a watery grave.

The third blockade took place on May 3rd. In this action 1 lieutenant and 4 men were killed and 1 lieutenant and 19 men were wounded, 4 of whom were taken on board the *Saikyomaru*: moreover, 2 men were killed and 2 wounded among the crew of our torpedo boats, which under storming fire picked up those from the blockading ships.

These are brief notes of our experience up to the present (June 21st). The number of the wounded is not so great as compared with that of the enemy, but my experience during the several actions has led me to the following conclusions as regards the surgical arrangements on board the warships. I should like to describe things in detail, but circumstances prevent my doing this at present, but if I live through this war I hope to lay a full account before the profession.

1. First-aid dressings are very important if they are applied at all on the spots where men are injured, but nearly half or a little less of all the wounded are carried or come to the surgery without any dressing. The ambulance parties should be stationed at various parts of the ship. The practical and careful education of ambulance parties is essential to future progress in the treatment of wounds.

2. The first-aid packages used in navies of different countries are, it seems to me, folded too small, as the wounds inflicted by shell fragments are always larger than those made by small-calibre rifle bullets. These packages are intended chiefly for the army, where small size is essential for carrying purposes, but on board ship size does not matter much. In my experience 4 in. square sterile absorbent cotton wool with ½ in. or a little more thickness covered with gauze and stitched in a few places around, is a convenient size. To this pad the middle part of a gauze bandage of 8 ft. in length and 4 in. wide should be stitched and kept aseptic as usual. With this we may dispense with the well-established triangular bandage.

3. The modes of carrying the wounded must be various, as the size of ships varies as well as that of ladders and passages. As a rule, hand carrying is practised in small ships; in the battleships and first-class cruisers stretchers may be freely used if the surgeons impress on the bearers how to handle them quickly. We found a special stretcher made of bamboo and canvas, devised by Mr. Totsuka, of Sasebo Naval Hospital, very useful. No one form of stretchers, however ingeniously made, is suitable for all purposes on board ship.

4. Choice of place for the surgeries. I believe it is generally accepted that a surgery on board warships in action should be provided in more than one place. Even in cases where there is only one surgeon on board it is better to have two surgeries in different parts of the ship. It is desirable to choose a place below water line, but every ship does not allow surgeons to do this. I believe in the near future an ample provision for special surgery during action will be made by joint consultation of naval constructors and surgeons.

5. Slight protection may save serious injury to the body. There are many examples to show that a pocket notebook, knife, etc., have saved men's lives from shell fragments. We have had a few examples in the present war. I dare say that in time every combatant on board warships in action will wear some kind of protecting mask and jackets; a rifle-proof jacket was devised by the Germans some time ago. It is important to remember that in regard to the disposal of wounded men the non-firing side of a ship is more dangerous than the firing side, that is, the one exposed to the enemy, as the fragments of bursting shells are dispersed in a radiating manner.

6. Strict observance of aseptic surgery is essential in military as in civil surgery, but the performance of serious operations on board warships is incompatible with the good progress of cases; it is far better to transfer such cases as soon as possible to hospital ships. The surgeon-in-chief of fleets must take care to secure the fullest efficiency in the use of hospital ships as non-combatant steamers are desired to be left as far as possible behind the actual seat of war.

7. I am glad to hear that our wounded cases sent home are all progressing favourably.

PHARMACEUTICAL CONFERENCE.

WE are indebted to the courtesy of the Editor of the *Pharmaceutical Journal* for advance proofs of the presidential address, delivered on Tuesday, August 9th, by the President, Mr. T. H. W. Idris, J.P., L.C.C., Mayor of St. Pancras. In the course of his address Mr. Idris dealt with various matters of interest to the medical profession. An abstract of the views expressed on those subjects is subjoined.

UNOFFICIAL FORMULARY COMMITTEE.

Attention was called to a change of great importance to the Conference, for this year would probably see the finish of the work of the Unofficial Formulary Committee, which had been in existence for upwards of eighteen years. The work of that Committee had been of very great value to pharmacy, and had at all times been carried out by those pharmacists who have constituted the Committee as a labour of love, and without any recompense. It was interesting to recall that what appears to be the first suggestion for the publication of such a book was made by Dr. Symes in a paper read by him at the meeting in Swansea in 1880. The formation of an Unofficial Formulary Committee was proposed by the late Mr. Richard Reynolds at the meeting of the Conference in 1886, at Birmingham, who referred to the similar work that had been undertaken for some years by the Pharmaceutical Society of Paris, and there is no question that that Committee had carried out faithfully the work indicated in the resolution which he moved. This was:

> That in order to secure greater uniformity in composition and strength in non-official remedies, and also to enable the medical profession to prescribe them with definite knowledge of those qualities, and without indicating any particular maker, the Conference undertakes the preparation of a formulary of non-official remedies.

At that time there was considerable need for such a publication. A considerable number of years elapsed between the publication of the respective *British Pharmacopoeias*, and at that time there was a tendency to introduce new vegetable drugs which, during their period of probation, came to be prescribed by medical men. Uniformity in the preparation of such drugs thus became desirable. It was with considerable apprehension that one noticed to-day that the introduction of new vegetable products was extremely rare, and that the whole tendency of new remedies was in the

direction of synthetic chemicals, mostly produced, in consequence of fiscal conditions, in other countries than our own. A considerable part of the *British Pharmacopœia* Addendum of 1890 included the results of the labours of the Committee. As many as 2,250 copies of the Unofficial Formulary were sold in the first twelve months, and a very creditable profit annually resulted from the sale of that work.

Chemistry of Essential Oils.

Turning, briefly, however, to recent advances in the chemistry of essential oils, the President said that recent endeavours had been to a large extent directed to the production of synthetic bodies properly so called, on the one hand, and of artificially-made mixtures improperly called synthetics. In the first place, no one could seriously deny that the exact balancing of odours manufactured in Nature's laboratory was in general considerably superior to that turned out by art. But there was a tendency, due to ignorance and prejudice, to regard this as due to some inherent quality in natural products which was not present in artificial products. That, of course, was not so at all. Given chemically pure vanillin, for example, there could not be the faintest difference between samples of natural or artificial origin. If the natural body were contaminated with traces of some other compound, derived from the same natural source, it might truly be superior to pure vanillin; and herein lay the whole explanation of the general superiority of natural over artificial products. Artificial compounds reached, as a rule, a very high standard of chemical purity: the natural products contained traces of bodies which mellowed and rounded off the odour to its best advantage.

As an example of synthesis, properly so called, he mentioned the recently-published results of the work of Bouveault and Gourmand, who, by treating ethyl geraniate with sodium, had obtained rhodinol, the characteristic alcohol of oil of roses. The announcement of the synthetic preparation of camphor in America was made so fully and circumstantially in the *Scientific American Supplement*, 1903, that it excited great interest: but it was received with some surprise and a good deal of scepticism, which now appeared to be justified. When the famine prices of a few months back were prevailing, one expected to see the American article on the market, but so far it still appeared to be *in nubibus*, and one hardly knew whether artificial camphor was or was not being manufactured. A direction in which a considerable amount of work had again been going on this year was in the study of the influence of external conditions in the characters and composition of the essential oils yielded by plants. The obvious results of such work, if any were achieved at all, must be in the direction of modifying for the better the characters of such natural products as essential oils. But the President confessed that he was not convinced by the results published that sufficient had been done on which to base even the slightest generalization.

The Metric System in Prescribing.

One of the latest developments in connexion with the *B.P.* was the movement to make the metric system the one legal system in dispensing. It was significant that the columns of the medical journals a short time back were devoted to showing medical men how to write prescriptions in the metric system. The matter was advanced a stage further by the resolution passed at the last meeting of the General Medical Council, as follows:

> That the President (with the Chairman of the Pharmacopœia Committee) be requested to inform the Lord President of the Privy Council that, in the opinion of the Council, it is desirable that after a sufficient period, to be fixed by law, the metric system of weights and measures should become the one legal system for the preparation and dispensing of drugs and medicines; that the Council would view with favour the passing into law of a Bill such as that now before Parliament entitled the Weights and Measures (Metric System) Bill; and that in that event the Council would be prepared to take all necessary steps to give effect to the law by making the proper modifications in the *British Pharmacopœia*.

In order to minimize the inconvenience that must follow the enforcement of the metric system it behoved them all to make themselves familiar with its details. It was to be hoped that all quantities in the Pharmaceutical Society's proposed "Compendium of Medicines" would be given in terms of a decimal or metric system.

Pharmacy Legislation.

Although the introducer and supporters of the Pharmacy Bill had failed to obtain a hearing in the House of Commons this year, the present session had been one of almost unprecedented activity amongst chemists, both individually and collectively. The necessity for more active co-operation in order to obtain a more drastic enforcement of the intention of the Pharmacy Act, 1868, had been more fully realized. A number of members of Parliament, after acquainting themselves with the facts of the case, had expressed the opinion that the House of Lords decision in the London and Provincial Supply Association case was contrary to the original intention of Parliament, and that, being unjust, it was a perversion of law. They had also realized that the present state of the law was contrary to public policy. One of the chief objects of the Pharmacy Bill was to restore in some degree the principle of qualified ownership, to ensure that the sale of poisons and the dispensing of prescriptions should not be conducted otherwise that under the direct and absolute control of responsible men, whose experience and education had been guaranteed by examination. The chemist-servant of a company had not by any means a free hand. He might at times make a timid suggestion, but it was the director who controlled the procedure. The opinion of the qualified servitor was generally neither sought nor welcomed when volunteered. The education of the financially responsible vendor or director was the only safe foundation for poison legislation. The recklessness and audacity with which the agitation against the Pharmacy Bill had been conducted, and the manner in which it had been fostered by a few prominent dealers in proprietary poisons, had forced on chemists the necessity of united effort, not only for the preservation of their own status, but also for the protection of the public and the guidance of legislators. Of importance in this connexion was the recent Ordinance of the Orange River Colony, prohibiting a firm, co-partnership, or company, from dealing in poisons or compounding prescriptions, unless the business were managed by one or more partners or directors, all of whom were registered chemists, sleeping partners or directors not being deemed to manage a business. It had been stated by the Prime Minister that this Ordinance had been under the consideration of heads of departments in connexion with the proposed Government Bill amending the Pharmacy Act. There was great significance in the approval of this Ordinance, communicated to the Secretary of State by the General Medical Council through its Executive Committee.

The draft Ordinance, which had still more recently been introduced into the Legislative Council of the Transvaal, provided not only for the qualification of all the directors of a limited company carrying on the business of a chemist, for the management of every place of business, owned by a company, by a qualified person whose name must be conspicuously posted in such shop, and for the full protection of titles, but also for the establishment of a Pharmacy Board to have charge of pharmaceutical matters, with disciplinary powers to erase from the register persons guilty of improper conduct. Mr. Idris referred to the important action taken by the General Medical Council at its last session in regard to professional companies.

Poison Legislation.

In regard to poison legislation nothing had happened in the Legislature, since he addressed them last year, to overcome the contention of all experts—a contention prompted by knowledge of the dangers connected with the sale of sheep-dips and insecticides—that these articles should be kept out of the hands of the unqualified, untrained retailer. It was sincerely to be hoped, in the public interest, that the Government would not free the sale of poisons for use in agriculture and horticulture from the present restrictions. The consequences would be disastrous, and in these days, when the procuring of legislation was so difficult, not readily repairable. Grave reasons for not disturbing the present conditions—reasons which they all earnestly hoped, in the interest of public safety, would carry full weight with the Government departments—had been placed before the Lord President of the Council by the British Medical Association. That Council, in a memorial, expressed the grave misgiving with which those who were aware in the course of their professional duties of the dangers attending the retail sale of poisons in general, and especially in the case of arsenic and carbolic acid, must regard any violation of the salutary principle that those who retail poisons should have their practical knowledge proved by examination. Surprise was expressed in this memorial that no grounds were given in the report of the Committee for arriving at the

conclusion that the provisions of the Pharmacy Act could be relaxed without undue risk to human life; and the fact was emphasized that the evidence demonstrated the manner in which the technical training under the present law operates for the protection of the public. The agitation for free poisons in agriculture and horticulture continued with unabated vigour in a comparatively narrow circle, so far as its participants were concerned. It had extended to Ireland also, in consequence of prosecutions at Ballinasloe and elsewhere, but the Pharmaceutical Society of Ireland had checked at their fountain some of the false statements as to absence of facility for farmers in obtaining these substances.

The antirestrictionists had urged that chemists were unable to recommend for the horticulturists or agriculturists remedies suitable as germicides, insecticides, and sheep-dips. The statement was absurd and one which might be used with great disadvantage to those who were responsible for it, for not only could a chemist devise effective formulae for plant and animal diseases, but his long experience in the protection of the public led him, in the selection of his agents, to those of a non-poisonous character. That the desirability of a choice in that direction was recognized by leading authorities could be indicated by reference to some of the standard works.

DEATH CERTIFICATION.

Last year he quoted from the report of the Select Committee on Death Certification that: "So far as affording a record of the true cause of death and the detection of it in cases where death may have been due to violence, poison, or criminal neglect is concerned, the class of certified deaths leaves much to be desired." Since that time several cases had occurred illustrative of the correctness of these statements. Two cases of poisoning by arsenic had occurred this year, but in neither was poisoning suspected by the medical attendant or the giver of the certificate, and the suspicion resulting in inquiry was aroused only by circumstances relating to property after the burial of the bodies. The report of the Royal Commission on Arsenical Poisoning made several recommendations as to the part which should be played by the State with regard to the public health and safety, but when Mr. MacVeagh, M.P., asked the Prime Minister in the House of Commons on Monday, July 25th last, whether his attention had been called to the recommendation of the appointment of a special officer with suitable scientific knowledge and adequate laboratory assistance to make authoritative investigation when new risks to health were suspected, the Prime Minister was unable to say more than that the subject was under consideration.

While the Conference was sitting last year a woman was sentenced at Swansea for obtaining money from an insurance company by false pretences. She had obtained a certificate of her child's death from a doctor, although the child had not died. The doctor had seen the child when ill, but had taken the mother's word as to its death, and he assured the judge that it was the universal thing to give a certificate in such circumstances in the absence of any suspicion. The result of a local newspaper's inquiry among members of the British Medical Association (at the time meeting in the town) was that the doctor was justified in his action. This instances the weakness of the present regulations governing death certificates.

The London County Council through its Public Control Committee had kept the subject of death certification before the public, but it had not been possible for the Council to introduce a Bill, as any legislation must be by a general Act applicable to the whole country. In connexion with the metropolitan borough of St. Pancras, the President said he had had forcibly brought under his notice as Mayor this year the insufficiency of the present laws as to death certification. The borough council were large cemetery owners, and recently the London County Council called attention to the case of a child who had died without having been seen by a doctor within a fortnight of death, and was buried at the cemetery without the production of a certificate of registration, a certificate of death produced at the funeral being accepted as sufficient authority to bury the child. The County Council stated that it was informed this was not an infrequent practice, and having in view the great danger involved it had brought the matter to the notice of the borough council, and asked for an opinion on the points raised. The law did not require either notification or registration as a condition precedent to burial or disposal of a body. It merely required that the cemetery officials shall, subject to a penalty of £10, give notice in writing to the registrar of the district in which the death took place in cases in which a registrar's certificate or coroner's order of burial had not been produced. In the case referred to this was done on the day following the funeral, and no further responsibility rested on the St. Pancras Council. With reference to the statement of the County Council that the incident referred to was not an uncommon practice, it might be remarked that out of 2,000 interments at St. Pancras Cemetery during the six months ended January 31st last only sixteen cases occurred in which no certificate was delivered, which was far below the average for England and Wales, having regard to an answer to a question in the House of Commons that out of 670,000 interments during twelve months 10,000 took place without burial certificates. The report of the Chairman of the Baths and Cemetery Committee of the Borough Council states that "whilst being satisfied that so far as the Council are concerned all burials at the cemetery are carried out with careful regard to the law, the opinion was expressed that a more effective system of death certification is requisite, and the County Council were urged to petition the Government to bring in a Bill for that purpose in accordance with the Select Committee's report on death certification; and it was also suggested that all death certificates should be forwarded direct by medical practitioners to the registrar, and by him to the cemetery authorities, instead of being handed to relatives of the deceased."

DISPENSING BY MEDICAL PRACTITIONERS.

The President went on to recall that the dispensing of prescriptions should not be a function of medical men, but that it was necessary for the safety of the public that the prescribing and dispensing of medicines should be performed by separate individuals, the one specially qualified in diagnosing and prescribing, the other specially qualified in pharmacy. In the elaboration of this contention he pointed to:

1. The absence of any check on the accuracy of the dispensing doctor, greater safety to the public being insured when, by the passage of a prescription, the doctor and the chemist act as a check on one another.

2. Mistakes which had occurred in connexion with doctors dispensing. Those were either (*a*) the effect of inadequate training or a confusion of mental processes consequent on the exacting nature of the medical man's duties in diagnosing the disease and determining the remedy; or (*b*) the outcome of employing unqualified dispensers; or (c) the result of the regulations as to keeping, dispensing, and selling of poisons, which are binding on chemists, not being compulsory in regard to doctors' surgeries.

3. The impunity with which the criminal poisoner is enabled to carry on his or her operations.

4. The very slight protection to the public afforded by the present system of death certification.

The question of the proposed compulsory separation of dispensing from prescribing had been more prominently to the front since he put forward the above statements, and the discussions had brought nearer a more proper understanding between doctors and chemists. The medical press received the suggestions very favourably on the whole, although strong dissent was expressed in some cases. The public press gave very sympathetic consideration. When addressing the Conference at Bristol he gave lists of mistakes in dispensing in doctors' surgeries, chemists' shops, and public institutions, and from the consideration of those cases the deduction was said to be clear that greater safety was given to the public by medicines being dispensed in chemists' shops, the proportion of fatal mistakes in doctors' surgeries and institutions being not only much greater, but evidently due to the absence of systematic arrangements existing and imposed by law in chemists' dispensaries as compared with those in doctors' surgeries and public institutions. It was not necessary to dwell on all the events of the past year which supported his contentions, but it was necessary that he should refer to some of them.

In September, 1903, at a Hackney inquest on a child 14 days old, it was stated that the father was given, at the doctor's surgery, medicine for the child labelled "One tablespoonful to be taken every two hours." The nurse declined to administer so large a quantity to so young a child, and sent the father back, when the doctor admitted that he ought to have labelled it "One teaspoonful." In evidence the doctor accounted for the mistake by saying that he was in the middle of his surgery work at the time. This was a case which was only one of many that could be cited in establishing the fact that the doctor's other duties seriously interfered with the

proper discharge of his function as a dispenser. At an inquest held in Lancashire in June last, a man was found to have died from an overdose of morphine, and the jury expressed the opinion that the doctor who supplied the sleeping draught causing the death had been careless, and he was censured by the coroner. The instances enumerated last year show that this was no isolated instance of carelessness. They suggested that some doctors regarded dispensing as a "perfunctory formality," and it did not seem the proper thing that men who entertained such a view, and men whose training in pharmacy was admittedly inadequate, should be entrusted with so important a function and yet be the only parties entitled to sign a death certificate.

A recent inquest at Cambridge elicited the fact that a doctor's poisonous liniment was in a similar bottle to the medicine he supplied, and that the former had been mistaken for the latter with fatal results. This, of course, was only typical of the cause of a number of accidents through the absence of compulsory regulations regarding the dispensing, etc., of poisons. The rules of the Pharmaceutical Society, framed in accordance with the Pharmacy Act, provide that chemists must: (1) Keep poisons in bottles with a distinctive mark indicating that they contain poisons; (2) store poisons on one of three special systems designed to distinguish the poison bottles from others; and (3) send out liniments, embrocations, and lotions containing poisons in bottles distinguishable by touch, and with a label that the contents are not to be taken internally. That the risk of accidents would be considerably minimized were similar regulations binding on doctors' "closed" surgeries could hardly be gainsaid in view of the many sad mishaps enumerated by him last year.

It was an anomaly that chemists' dispensing should be governed by certain regulations, but that a doctor should be free to carry on the important function of dispensing in whatever fashion he might please. He went further, and said that not only should regulations as to the dispensing and storage of poisons be applied to the dispensing carried on at doctors' surgeries and all other places and institutions where medicine was dispensed, but that dispensing should be performed not by the medical man, but by a qualified chemist. The present system was dangerous to the public, and, in order that there might be reciprocal reform in the ranks of pharmacy, he thought prescribing by chemists should be abandoned. The draft Medical Acts Amendment Bill now before the British Medical Association aimed at checking the prescribing chemist. It appeared, therefore, as a rather one-sided arrangement that many members of the Association should be averse from changing the law as to dispensing in a manner that would conserve it to the pharmaceutical calling, and yet be anxious that Parliament should step in to prevent counter-prescribing especially when it was borne in mind that death certification by the doctor was a check on the mistake of a chemist, whilst there was no such check on the mistake of a doctor. There was, of course, a large section of the profession that would welcome the reform advocated, but, judging from discussions, there were many who would not enter into a voluntary local arrangement, let alone approve of any legislative interference. He believed, however, that although the time was not yet ripe for an appeal to Parliament, they should keep the matter well in the sphere of medico-pharmaceutical politics, as changes were apparent in the medical profession which, he thought, would react in their favour. There had been two meetings of doctors which had had a bearing—not, perhaps, of the first importance, however—on the subject. He could not say that these meetings were assisted in a temperate, impartial discussion of the question by the organ of the British Medical Association, which seemed to urge that, while the writing of prescriptions should be based on a sound knowledge of pharmacy, the dispensing of them should be undertaken by persons whose practical experience in dispensing was of the most elementary kind. This journal's idea of "dispensing" scarcely did it credit. "Given a prescription," it said, "which is capable of being read, nothing is easier than to measure out the desired quantities, and mistakes of a character likely to lead the dispensers into the presence of coroners' juries can occur only through the grossest carelessness, such as no amount of instruction or tuition would prevent."

It was dispensing of that kind that was the inevitable sequence of the lack of adequate pharmaceutical instruction at our medical schools, and it was the kind which they would like to see abolished, because they did not think it gave the best service to the public. It was the "bottle-filling" kind of dispensing; and implied stereotyped prescribing, departure from which courted accident. But this journal acknowledged that many medical men would be glad to be relieved of dispensing were there any convenient substitute for it. One might be forgiven a sigh in asking whether the chemist was not a convenient substitute. The Central Division of the Metropolitan Counties Branch of the British Medical Association had this year had a proposal under discussion by which it was proposed to amend the draft Medical Bill prepared by the Medico-Political Committee of the Association so as to prohibit any registered medical man from dispensing or supplying drugs or other medicants to any one. A heavy penalty was named, and exceptions enumerated covering army and ships' doctors, and the supply of emergency medicines in districts where both a doctor and a chemist could not be supported. These were, it should be noted, proposals *voluntarily brought forward from the ranks of the medical profession.* Although discussion on the additions to the Bill (which were not agreed to) showed a not inconsiderable measure of antagonism to the proposals, there were, most certainly, not lacking signs of a body of opinion in the profession favourable to the separation of pharmacy from medicine wherever practicable.

Dispensing in Institutions.

In the realm of institution dispensing there had during the year been important developments. Public bodies like the London County Council and the Prison Commissioners (both of which insisted on their dispensers holding at least the minor qualification of the Pharmaceutical Society) had given some financial recognition of their dispensing officers' services by increasing their rate of remuneration, and, in the case of the London County Council, by granting the distinctive title of "dispensing chemist." But there had been a terrible dispensing accident in an institution where there was no official dispenser, as such, and the dispensing was in the hands of the medical officers. Four lunatics were poisoned. The dispensary arrangements appeared to be loose, the head attendant being allowed to dispense under the supervision of the medical officers. The jury added to a verdict of "Misadventure" a rider that the dispensing should in future be performed by a fully-qualified person. Sir Albert Rollit mentioned this sad affair in the House of Commons, asking the President of the Local Government Board what steps would be taken to carry the rider into effect, and, more important still, whether the Local Government Board would cause regulations to be made requiring all dispensaries in public institutions to be in charge of persons registered under the Pharmacy Acts. From the answer it could only be gathered that communications were taking place between the Board and the Lunacy Commissioners. The Public Dispensers' Association had also taken the matter in hand by petitioning the Local Government Board, praying that only qualified chemists should be appointed, and the Dispensers' Committee of the Pharmaceutical Society was collecting information which he trusted would lead to early action with good result. The disaster at the Portsmouth Asylum more than ever emphasized the desirability of regulations similar to those of the Pharmaceutical Society regarding the keeping, storage, and dispensing of poisons being binding in all places where the work of dispensing was done. Dispensing in the army was still conducted in a very unsatisfactory manner, and among the numerous schemes of army reform which had been put forward nothing had been done or even suggested to place the system of "compounding" on a safe and proper footing.

The Repetition of Prescriptions.

Another phase of the dispensing difficulty had been considered by doctors. A movement was initiated in the medical journals by a discussion on the repetition of prescriptions, it being suggested that prescriptions should be endorsed with such terms as "not to be repeated." Arising from this correspondence a meeting was held this year by the Wandsworth Division of the British Medical Association, when it was resolved:

> That, with the view of checking the indiscriminate dispensing of dangerous drugs, the Central Council of this Association be requested to appoint a committee to investigate the subject of the repetition of prescriptions, either alone or in conjunction with the Pharmaceutical Society, and to report what steps should be taken to remedy the present grave defect of the law.

And the Medico-Political Committee of the Association has recommended certain proposals which have been adopted by the Council of the Association—namely:

1. That the prescriber should state on the prescription that "This prescription shall be dispensed ... times only."

2. That it should be made the duty of the dispenser to stamp each prescription, every time that it is dispensed, with the date of such dispensing.

3. That in every case in which a prescription shall, as shown by the date stamped thereon in accordance with the foregoing recommendation, have already been dispensed for the number of times indicated by the prescriber, and in every case in which the period indicated by the prescriber for the repetition shall have expired, it should be the duty of every qualified dispenser to whom such a prescription may be submitted for dispensing to refuse to dispense the same.

In the opinion of the Committee it would only be possible to carry out the foregoing recommendations by alteration of existing legislation. The Council of the Association had appointed Sir Victor Horsley, Dr. Greenwood, Dr. Heron, and Mr. Messiter as a Committee to confer with representatives of the Pharmaceutical Society, and he was glad to know that a conference had been arranged. For himself, he felt doubtful of the practicability of effecting by legislation any improvement of the kind suggested. Chemists were always willing to follow the directions on a prescription if they were clearly expressed, and he could not help thinking that medical men might safely trust to the honesty, the sense of responsibility, and the discretion which nearly every qualified chemist possessed, and was frequently called upon to exercise, rather than attempt to pass into law a provision which was doubtfully practicable. Another matter of interest to which allusion might be made was that at the Representative Meeting of the British Medical Association at Oxford last month a resolution was agreed to requesting the Central Council to draw the attention of the medical profession individually to the fact that by recommending certain drugs and certain preparations of those drugs by names of proprietors they were not only allowing themselves to be used indirectly as touts for wholesale druggists, but were also helping their patients to form serious habits of drug abuse.

The Preliminary Education of Chemists.

In conclusion, the President expressed his deep-felt conviction of the necessity of the chemist receiving such a general education as would enable him at any time, if he so desired, to proceed to the ranks of such allied callings as those of analytical chemistry and medicine, and to feel always that he stood on the same plane of intelligence and culture as members of those professions. It also seemed to him that they could best extract respect from the medical profession not only when they proved that they had exceptional knowledge in their own branch, but also when their students had a clear road to become medical men themselves. Preliminary education for pharmacists must be on as high a standard as that of the higher branches of the profession. Education was one of the greatest aids in effecting the reforms in medical practice advocated by him. And in regard to these reforms he had endeavoured to show that he did not wish to usurp the rights of medical men. Rather they desired to respect those rights, believing that by so doing they would secure their own rights, which were only those rights that were necessary for the safety of the public.

MEDICAL NEWS.

German Medical Temperance Association.—The ninth annual meeting of the German Medical Temperance Association will be held at Breslau on September 21st during the meeting of the Association of German Scientists and Medical Practitioners.

Bequests to Hospitals.—Under the will of Mr. Samuel Francis Glossop Bythesea, of Hove, who died on May 3rd, the sum of £1,000 is appointed to be paid to the Royal Alexandra Hospital for Sick Children, Brighton, upon the death of the testator's wife.

French Urological Association.—The eighth annual meeting of the French Urological Association will be held in Paris on October 20th, 21st and 22nd. The subject proposed for discussion is the indications and the therapeutic value of prostatectomy.

Austrian Balneological Congress.—The Central Union of the Balneologists of Austria will hold its fourth Scientific Congress at Abbazia in October of the present year under the presidency of Professor Winternitz. Among the papers to be read are the following: Dr. Rudolf Kolisch (Carlsbad), the Balneotherapeutic and Dietetic Treatment of Albuminuria; Professor von Jaksch (Prague), the Symptomatology of Increased Intestinal Decomposition: Professor Jul Glax (Abbazia), the Therapeutic Importance of Sea-Bathing on the Adriatic Coast: Dr. Hugo Frey, the Influence of Seaside Air on Diseases of the Ear: Dr. Leopold Fellner (Franzensbad), the Physical and Balneological Action of Treatment of Chronic Heart Disease; and Professor von Koranyi (Buda-Pest), Osmosis.

French Surgical Association.—The seventeenth Congress of the Association Française de Chirurgie will be held in Paris on October 17th and following days under the presidency of Professor S. Pozzi. The following questions are proposed for discussion: (1) The surgical treatment of cirrhosis of the liver, to be introduced by M. Monprofit, of Angers; (2) the semeiological value of examination of the blood in surgery, to be introduced by M. Tuffier; (3) traumatic detachment of the epiphyses, to be introduced by M. Kirmisson. Communications relative to the Congress should be addressed to the General Secretary, Dr. Walther, 21, Boulevard Haussmann, Paris.

A Sterilized Milk Dépôt in Lambeth.—In July, 1903, the Borough Council of Lambeth approved in principle of establishing an infants' sterilized milk dépôt near the Royal Waterloo Hospital, somewhat on the same plan as that which has proved so successful in Paris and some of our own large provincial towns. On July 14th last it was unanimously decided to establish a municipal milk dépôt, in accordance with the suggestion made by the Board of the hospital on May 8th, 1903, and special thanks have been accorded the Board for its action in the matter. Very shortly many thousands of the sickly and poverty-stricken children of these slums will have the benefit of this milk dépôt. It is hoped that it will be established at or close to the hospital, the rebuilding of which is now approaching completion.

A Humanitarian Shell.—A medical officer of the Austrian army has invented a humanitarian projectile in the form of a shell that on explosion distributes not fragments of lead and steel, but vast quantities of a gas which stupefies all who come within its sphere of influence. One shell is said to contain enough gas to place 2,000 men *hors de combat*. The nature of the gas is the inventor's "leetle segret" like the medicated bath which used to be prescribed by one of the greatest of German surgeons. Its humanitarian character is to be found in the fact that the stupefying effect is only temporary. This suggests that the shell might be found useful in dispersing disorderly assemblies. In the House of Commons, however, it would be superfluous, as that verbose body can generate for itself gas enough to stupefy all who venture within its walls.

Therapeutical Society.—An informal meeting of this society was held in the gardens of the Royal Botanic Society, Regent's Park, by permission of the Secretary, on July 27th. Dr. F. de Havilland Hall was in the chair, and fifteen Fellows attended the meeting. Dr. Brown, the Secretary, showed specimens of the seeds of the Sapota cedron sent by Mr. J. H. Hart, F.L.S., from Trinidad, and some Chinese medicinal roots from Miss Florence Cooper, of Lo'nguong City, Foochow, China, both being Corresponding Fellows of the Therapeutical Society. Mr. Bryant, Sowerby, showed various specimens of medicinal plants and drugs, and also a very fine Victoria Regia plant in bloom and numerous medicinal plants and trees growing in the gardens. The Fellows present afterwards had tea in the club in the gardens.

Metropolitan Hospital Sunday Fund.—A meeting of the Council of the Metropolitan Hospital Sunday Fund was held on August 9th, to receive the report of the Committee of Distribution, to order the payment of the various awards to hospitals and dispensaries, and transact general business. The accounts put in showed that the sums received amounted in the aggregate to a little over £60,000, this total including Mr. George Herring's initial instalment of £11,540. The total up to date appears to be somewhat under that received last year, but as the contributions come in intermittently and the fund remains open until October 31st, last year's total may still be reached and exceeded. The Committee of Distribution, in its report, recommended the immediate division of £56,371 among 157 hospitals and 58 dispensaries. The report was adopted and a vote of thanks moved and passed to Mr. George Herring for his generous contribution to the fund and continued interest in its welfare.

BRITISH MEDICAL ASSOCIATION.

Subscriptions to the British Medical Association for the year 1904 are now due and should be forwarded by postal order or cheque to the amount of 25s. to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, AUGUST 13TH, 1904.

CENTRAL PUBLIC HEALTH ADMINISTRATION.

In discussing the report of the Committee on Physical Deterioration in the last issue of the British Medical Journal the opinion was expressed that the suggestion of the Committee to the effect than an Advisory Council should be appointed was a good one. This opinion was founded on the paragraph in the report in which the suggestion is first made. The proposal therein contained is that "an Advisory Council might, with great advantage, be brought into existence, representing the departments of State within whose province questions touching the physical well-being of the people fall, with the addition of members nominated by the medical corporations and others, whose duty it should be to receive and apply the information derived from the labours of the [Anthropometric] Bureau with the whole weight of Government authority and scientific prestige behind them" (paragraph 64). The original conception of the Council then was a body of experts to receive the reports of the proposed Anthropometric Survey, and transmit them with indications of the way in which the information might be practically applied to, for example, the Home Office, the Local Government Board, and the Board of Education. It has been pointed out to us that later paragraphs of the report may be read as materially modifying the suggestion and greatly extending the scope of the Advisory Council. In the final Summary of Recommendations the Committee suggests that the Council should "advise the Government on all legislative and administrative points concerning public health in respect of which State interference might be expedient; and to them might be remitted for consideration and report all the problems affecting public health which the requirements of a complex social organization are constantly bringing to the front." If the problems referred to are such as concern the physical well-being of children in elementary schools the Council might serve a very useful purpose, but if it is meant that the proposed Advisory Council should take the whole field of public health law and administration for its domain, then the proposal is one which will require very careful consideration before it can be accepted. That this may be what is intended appears probable from a later passage, in which the opinion is expressed that the Council would be "of great assistance, especially to the Local Government Board, and would be calculated to supply the knowledge and stimulus which are necessary in order to give to the public health side of the Board's administration a prominence which the multiplicity of its other functions may have tended to obscure, and to attract to its work that measure of public interest and support which has perhaps been lacking hitherto."

Now, the British Medical Association has recognized that the Local Government Board does require stimulation if it is to discharge efficiently its duties as one of the most important departments of the State, and, as may be seen by reference to page 115 of the Supplement of August 6th, the Representative Meeting adopted unanimously a resolution urging the Government to show its recognition of the urgent necessity of reorganizing the Local Government Board by appointing a Royal Commission to report upon the whole question; at the same time the meeting approved the action taken by the Medico-Political Committee in drafting a Bill for the reconstruction of the Local Government Board on lines analogous to those on which the Board of Admiralty is constituted, that is to say, as a mixed board of politicians and experts.

The Association will no doubt be glad to learn that the Physical Deterioration Committee, which contained representatives of several important departments of State, agrees with it in considering that the manner in which the public health work of the Local Government Board is now done is not satisfactory, and does not agree with Lord Jersey's Treasury Committee, that all that is necessary is to raise the salary of the President. On the contrary, it was evidently rather horrified to be told by the Assistant Secretary to the Board, that in some spheres of the Board's possible activity the powers conferred are held "in permanent suspense," and to find that the pressure from above on local authorities, which it thinks is in many cases necessary, is "very intermittently employed." The Committee is too polite to say what it thinks about this, but it sees that the inefficiency of the Local Government Board is due to the failure of the President and secretariat to give due weight to expert opinion. The Committee's remedy is to create yet another Board or Council containing some expert members, but to give this body only advisory powers. A Council to tell the President of the Local Government Board what he ought to do does not seem the surest way of setting matters right; it partakes too much of the nature of that permissive legislation which has been the bane of sanitary administration. The alternative proposed by the British Medical Association is more businesslike and logical. It would give to the central administrative body—the body which possesses the power (though it does not always exercise it)—that knowledge and stimulus which the Physical Deterioration Committee agrees with the British Medical Association in believing that the Board so sorely needs.

THE ECONOMIC VALUE OF REVACCINATION.

In the British Medical Journal of July 30th we published a full abstract of a paper read at Folkestone by Mrs. Garrett Anderson on the Economic Value of Revaccination. It is a question to which public attention should be called at every suitable opportunity. Mrs. Anderson gave examples showing that in this country the erection of small-pox hospitals has cost from £300 to nearly £1,000 per bed. The amount of permanent accommodation provided shows great variation, but for a population of less than a million the cost is given at about £90,000, which would mean considerably over £4,000,000 for the United Kingdom. This, be it observed, is only for a permanent nucleus, and does not include temporary extensions in presence of epidemics, nor maintenance charges, caretaking, rates, insurance, and the like. The contrast between London and Berlin is very striking. The former, with its population of five millions, has spent £446,000 since 1900 in providing permanent small-pox hospitals to replace the hospital

ships. The latter, with its population of nearly two millions, has for its total small-pox accommodation a dozen beds in an ordinary general hospital, and even these are usually applied to other purposes. How many times greater the annual expenditure must be in London than in Berlin we do not attempt to calculate.

But obviously these are not all the facts that have to be kept in view in considering the economic value of revaccination. Indeed, they are the least important part of the case. The lives lost through small-pox, the personal disfigurement, the loss of work, the disorganization of trade in smitten towns, have all to be taken into account. In discussion of the subject at one of the meetings of the recent Sanitary Institute's Congress at Glasgow, attention was called to another disadvantage attending the absence of systematic revaccination in this country. In districts where small-pox occurs, not necessarily in epidemics, but even in scattered cases in rural localities near large centres of population where the disease prevails, practically the whole time of medical officers and their inspecting staff has to be devoted to the disease for months on end. Isolation arrangements, watching and vaccination of persons believed to have been exposed to infection, hunting after tramps and vagrants, disinfection or destruction of bedding and clothing, intercommunications between officers of adjoining local sanitary authorities, reports to the Local Government Board, and so forth, leave little or no time for work under the Housing Acts, the Food and Drugs Acts, the Factory and Workshop Acts, and the other statutes which have to be administered by the same officials. It is sometimes alleged by antivaccinationists that vaccination and revaccination are great hindrances to sanitary progress. As a matter of fact, sanitary progress is often paralysed during outbreaks of small-pox.

Yet, so far as we can make out, there is no immediate prospect of any essential alteration in the present utterly illogical position of affairs. The need for a Revaccination Act is recognized by all who have any real appreciation of the facts of the case. No one requires less persuasion to that effect than the President of the Local Government Board. But session after session passes, and the Bill is not introduced. Why it should be so long delayed we can only guess. Is the Government afraid of losing votes by passing such a measure? Very possibly it would lose some votes, but very likely it would gain others, and the spectacle of its present contemptible timidity on the subject is nothing short of deplorable. But even if we assume that votes would be lost, is that a sound reason for refraining from much-needed legislation? On the highest grounds of statesmanship, manifestly not. That point need not be argued. But even on the very lowest ground, is not the Government committing a gross blunder? If we read the political omens correctly, it appears not unlikely that the present Government will be turned out of office whenever the country gets the opportunity of expressing its mind. Why, then, can it not take heart of grace and pass a proper vaccination law so long as it has the power to do so? Such a law is really needed for the welfare of the country. Its immediate effect on votes will not matter one straw in the *débâcle* of the next general election. And later, by the time the pendulum is about to take another swing, a Revaccination Act would have amply justified itself, and the political party which had passed it would reap the benefit of its action. On every ground, therefore, alike of public necessity and of political expediency, the present Government should not go out of office without having given to the country this great national boon of systematic revaccination.

THE CONTROL OF DIPHTHERIA.

THE Medical Department of the London Education Committee, which is making a determined effort to check the dissemination of diphtheria in schools, has just issued a report by Dr. Thomas on the results of a year's work. This report is an excellent illustration of the importance of bacteriological investigation in coping with diphtheria. The method adopted was to keep the diphtheria returns from all districts under continuous observation, and as soon as there was any suspicion of school influence to pay a visit to the school in question, examine the attendance register, and pick out all the children who gave rise to suspicion, owing either to their exhibiting some clinical sign of mild diphtheria or to their possessing a doubtful history, such as residence in a recently infected house, return from hospital, or recent *malaise*. From the throat or nose of all these children bacteriological cultures were made: the cultures were examined fifteen hours afterwards, and, whenever diphtheria bacilli were found, the child was immediately excluded from school by telegram and the case was notified to the local medical officer of health. In this way 758 cases in 15 different schools were examined between July 17th, 1903, and April 12th, 1904, with the result that diphtheria bacilli were detected in 58 cases and pseudo-diphtheria bacilli in 211. As the result of excluding the diphtheria cases detected by this method, we are told that "from August, 1903, to March, 1904, it has not been necessary to close any class on account of diphtheria, and the spread of diphtheria in the schools of the Board has been arrested."

This is a highly satisfactory result, and there are many points of detail in the working of the method which deserve attention. In the first place, the method proved successful, although the bacteriological examination was confined to those children who either showed clinical symptoms of the disease or were under the suspicion of being possible contacts. This experience, therefore, lends considerable support to the view that pathogenic diphtheria bacilli are not widely distributed amongst the population as a whole, but are mainly confined to contacts, and that by the detection and isolation of these cases the disease can be suppressed. It is also noteworthy that by taking a bacteriological test as the criterion a very large diminution is effected in the number of cases which require isolation. In the present instance 758 cases were under suspicion of bearing the infection, and it was entirely due to the bacteriological examination that this number was reduced to 58, or 7.6 per cent. By the removal of suspicion from the rest it became unnecessary to impose on 700 children a needless loss of school attendance.

With regard to the significance of the pseudo-diphtheria bacilli, it is highly interesting to note that Dr. Thomas's experience coincides with that of Drs. Cobbett and Gordon-Smith. "All children found harbouring this bacillus," Dr. Thomas writes, "were at first excluded in order to err on the safe side, if at all; but it soon became evident that if this were carried out a large loss of school attendance would be necessitated. After a little while the exclusion of such children was omitted, and it has been found quite safe to ignore these organisms."

Diphtheria is essentially a disease which is spread by personal contact, and there are three main types of cases which lead to its dissemination in schools: (1) The "carriers," that is, perfectly healthy children who, owing to contact with a case of diphtheria or with another "carrier" harbour the diphtheria bacillus and transmit it to other children; (2) children suffering from mild diphtheria unrecognized as such; (3) children who after recovering from a recognized attack of diphtheria, are allowed to return to school before the bacilli have disappeared. In the details of the outbreaks upon which he reports Dr. Thomas provides instances of each of these three types, and very properly emphasizes the interest and importance of the "carriers" as being the most difficult to detect, the most likely to do mischief before they are discovered, and the most difficult to deal with after discovery. Since the ultimate source, at least in the majority of instances, from which the "carriers" derive their bacilli is a case of clinical diphtheria, success in the detection of the "carriers" depends to a large extent on the ability to secure an examination of all the contacts, and the increase in the number and dissemination of the latter is proportionate to the delay in the clinical diagnosis of diphtheria. Hence the importance for the practitioner in every case at all suggestive of diphtheria to establish an early diagnosis by resorting to bacteriological aid. The mild cases, again, present a difficulty, especially when the symptoms are so slight that it is not thought necessary to call in medical aid. But sooner or later they are sure to give rise to a case of unmistakable diphtheria, and then the knowledge that the latter must have originated from contact ought to stimulate investigation, and lead to the detection of the former.

The detection of "carriers" and of latent cases is admittedly difficult, and we must be prepared to admit for a long time to come that instances of the spread of the infection from these two sources may arise for which no person can be reasonably held to blame. But cases where the infection is due to convalescents from diagnosed diphtheria stand on a different footing. We do not expect the general practitioner to be an expert bacteriologist, but every practitioner ought to be aware that diphtheria is due to a bacillus, that this bacillus may sometimes survive for many weeks in the throat of a patient who has made a good recovery, and that the association of such persons with the community at large is one well-ascertained cause of the dissemination of the disease. Many instances are cited in Dr. Thomas's report in which cultures of virulent diphtheria bacilli were obtained from children returned from isolation hospitals or certified by private practitioners as being free from infection. It is, therefore, not as clearly recognized as it ought to be that a diphtheria patient ought not to be certified as free from infection until a careful bacteriological examination of the throat or nose has given negative results. It is true that in many parts of our empire, not excluding the metropolis, the facilities for such examinations are not as great as they might be; but the difficulty of obtaining a bacteriological examination does not relieve the medical attendant from the duty of pointing out its importance, still less does it justify him in asserting, on the ground of naked-eye inspection alone, that the throat of a diphtheria convalescent is free from infection.

The success of modern bacteriological methods in dealing with outbreaks of diphtheria affords very reasonable grounds for the expectation that at some future date diphtheria will be stamped out of the community. But it takes time for modern scientific methods to gain universal acceptance, and the old-fashioned belief is still prevalent in some quarters that after a case of diphtheria disinfection of the clothing and furniture is the only precaution which it is necessary to take. Until this view is reformed, and the danger of diphtheria bacilli lurking in the throats of convalescents and contacts is fully recognized and adequately dealt with, the hygienist's ideal of a diphtheria-free community will never be realized.

VISIT OF FRENCH PHYSICIANS AND SURGEONS TO LONDON.

As already announced, the profession in London hopes to welcome a party of French physicians and surgeons next October. At recent meetings of the Société Médicale des Hôpitaux de Paris, resolutions were adopted thanking the Organizing Committee in London, for the arrangements already made, and accepting the suggestion that the party should visit the various laboratories and hospitals in sections, according to the speciality in which the members were more particularly engaged. The London Committee proposes to invite the French visitors to a dinner at the Hotel Cecil on the evening of October 12th, under the chairmanship of Sir William Broadbent. The French Ambassador, who was invited to be present, has expressed his regret that he will probably be absent from London at that date, and has nominated M. Daeschner, First Secretary, to represent him.

BRITISH SCIENCE GUILD.

An organization is in course of formation, under the name of the British Science Guild, with the object of insisting upon the importance of applying scientific methods to every branch of the affairs of the nation. The movement has grown out of a suggestion made last year by Sir Norman Lockyer in his address as President of the British Association for the Advancement of Science. In detail the objects and organization of the guild, which will be entirely disconnected from party politics, are as follows:—(1) To bring together as members of the Guild all those throughout the Empire interested in science and scientific method, in order, by joint action, to convince the people, by means of publications and meetings, of the necessity of applying the methods of science to all branches of human endeavour, and thus to further the progress and increase the welfare of the Empire. (2) To bring before the Government the scientific aspects of all matters affecting the national welfare. (3) To promote and extend the application of scientific principles of industrial and general purposes. (4) To promote scientific education by encouraging the support of universities and other institutions where the bounds of science are extended, or where new applications of science are devised. The methods of attaining these objects are: (*a*) By publications, (*b*) by meetings, (*c*) by conferences and lectures, (*d*) by deputations. All British subjects, both men and women, are eligible for membership of the Guild. It is expected, however, that its members will be recruited principally from the following: The House of Lords; the House of Commons; Colonial legislatures; county, district, borough, and parish councils; municipalities; educational committees; scientific and literary societies and organizations; commercial and industrial chambers and organizations; the learned professions; universities, colleges, educational bodies and graduates of all British universities; representatives of labour. At a meeting of the promoters of the Guild held at the rooms of the Royal Society on April 20th, 1904, it was decided that the steps preliminary to the formation of the Guild should be taken by an Organizing Committee, of which the following were appointed members, with power to add to their number: Lord Avebury, F.R.S., Professor W. E. Ayrton, F.R.S., Sir George Sydenham Clarke, K.C.M.G., F.R.S., Captain E. W. Creak, R.N., C.B., F.R.S.

Mr. Clive Cuthbertson, Dr. William Garnett, Mr. Sidney Lee, Sir Norman Lockyer, K.C.B., F.R.S., Lady Lockyer, Mr. N. Maccoll, Professor Raphael Meldola, F.R.S., Professor J. Perry, F.R.S., Sir Gilbert Parker, M.P., Sir William Ramsay, K.C.B., F.R.S., Dr. W. N. Shaw, F.R.S., Professor S. P. Thompson, F.R.S., Dr. Augustus Waller, F.R.S., Sir Henry Trueman Wood. The Organizing Committee has elected Sir Norman Lockyer, President: Lord Avebury, Honorary Treasurer: Lady Lockyer, Honorary Assistant Treasurer; and Mr. C. Cuthbertson, Honorary Secretary. Among those who have signified their general approval of the objects and proposed organization of the Guild are Lord Alverstone, Sir Lauder Brunton, F.R.S., Sir William Church, Bart., K.C.B., The Hon. Sir John Cockburn, K.C.M.G., Dr. Ferrier, F.R.S., Sir Michael Foster, M.P., F.R.S., and Sir Archibald Geikie, F.R.S.

PHYSIOLOGY AT THE BRITISH ASSOCIATION.

THE British Association commences its meeting at Cambridge next week, and Section I, Physiology, promises to be especially numerously attended. Among foreign visitors to the Section will be Drs. Cannon (Harvard), Donaldson (Chicago), Edinger (Frankfort), Fano (Florence), Flechsig (Leipzig), van Gehuchten (Louvain), Kossel (Heidelberg), Minot (Harvard), Lombard (Ann Arbor), Munk (Berlin), Nicloux (Paris), Verworn (Göttingen), and Zuntz (Berlin). Canada will be represented by Professors Macallum (Toronto) and Wesley Mills (Montreal). Professor Sherrington's Presidential address will deal with the nervous system, and will, it is said, open up new ground. The Secretaries have arranged for two discussions, one on Oxidation and Function, opened by Sir John Burdon Sanderson, F.R.S., the other on Conduction in Relation to Structure in the Nerve Cell and Nerve Arc, opened by Professor Langley, F.R.S. Professor Atwater (Washington) will give an afternoon lecture entitled Calorimetric Experiments on the Dietary of Man. An unusual number of papers of interest have been promised, and the Psychological Society will visit Cambridge in connexion with the Section.

THE UNITED HOSPITALS CLINICAL SCHOOL, LIVERPOOL.

THE United Hospitals Clinical School of Liverpool, which is to commence its first session in October next, is the outcome of an attempt on the part of certain Liverpool hospitals so to arrange their clinical teaching that it may be used to the greatest possible educational advantage. Under the auspices of the University the staffs of three general hospitals and three special hospitals have drawn up and adopted a co-operative scheme whereby they design to place within reach of students the best clinical material and teaching which they conjointly possess. The hospitals participating are the Royal Southern Hospital, the David Lewis Northern Hospital, the Stanley Hospital, the Eye and Ear Infirmary, the Infirmary for Children, and the Hospital for Women; each of these institutions has been already individually recognized by the University for clinical teaching, and they have now been collectively accorded the same advantage. Such a scheme possesses an obvious utility provided due care is taken to regulate attendance and control the course of each student. This provision has been met by the school authorities by the appointment of common medical and surgical tutors, under whose control the students collectively and individually will in the first instance be: but, in addition to this, one member of the staff of each hospital has been made responsible for the supervision of all students attending his hospital, and these, together with others, form the executive Committee of the school. It is proposed that the student, during the period of surgical dressing and medical clerking, should be definitely attached to one general hospital, but that he may, if he desire, pass from one to another at the beginning of a session, though not during the course of such period. During the last year's hospital practice, however, he is to be permitted to attend clinical lectures, *post-mortem* examinations, out-patient clinics, operations, etc., at any or all of the general hospitals, and he is further to be encouraged to undertake clerkship in the special hospitals. In this way these six hospitals have combined to form virtually one. They contain in all 790 beds—650 in the general hospitals, 140 in the special hospitals, and their total number of in-patients during 1903 was 8,487, of out-patients 67,782. The elaborate system of electric cars throughout the city brings all the institutions within easy reach of the University and of the various railway stations, and the hours have been arranged to suit those of the systematic lectures at the University. The scheme is a new departure, which should prove to the advantage of clinical teaching, and the hospitals hope also, by an extension of the same co-operation, largely to increase in Liverpool the facilities for post-graduate study.

BRITISH DENTAL ASSOCIATION.

THE annual meeting of the British Dental Association was held this week at Aberdeen. Mr. Walter Harrison, of Brighton, the retiring president, delivered a valedictory address, in the course of which he stated that some Universities had decided to grant dental degrees, and it was possible that the Royal Colleges were considering some higher diploma for their licentiates. Although it might be doubted whether a dental graduate would be better fitted for his daily work or not, it might be confidently affirmed that extended knowledge must mean extended power for good. The Legislation Committee had secured for them a proper position in the British Medical Association Amendment Bill, and should it become law they would obtain all they desired. The more extended treatment of the poor was receiving attention, and a widespread interest was being aroused in the members, especially in relation to dental appliances being supplied on provident lines. The new president, Dr. W. H. Williamson, Aberdeen, then took the chair. Mr. Dolamore submitted the honorary secretary's report, which referred to the appointment of dentists in the army. The Association had also approached the Admiralty in regard to the appointment of dental surgeons for the navy, and Lord Selborne was taking the opinion of his medical advisers on the matter. The membership of the Association was now about 1,340. The honorary treasurer's report stated that owing to the increase of legal expenses in prosecutions for infringement of the Dentists Act there was a deficit on the year of £132. The Association had capital amounting to £2,700. It was agreed that the next meeting of the Association be held at Southport next May. Mr. T. Gaddes, Harrogate, was chosen president-elect for next year. Dr. Williamson, in his presidential address, referred to the report of the Commission on Physical Training in Scottish Schools. The views expressed showed, he thought, that their holders had the crude and theoretical notions with regard to the diseases of the teeth and their effect on the economy of the body that so many medical men held, and beyond which they seemed to find it impossible to get. The South African war was an object lesson that opened the eyes of the military authorities to the fact that numbers of men were rendered inefficient simply owing to the condition of their teeth. An officer who had been out there told him that in Kitchener's "drives" it was a common thing for men to be left behind in the blockhouses because they were unable to tackle the sort of rations provided on these forced marches. How many children, he asked, were disabled bodily and mentally for their school work by constant attacks of toothache? He had no doubt that many a child in Board schools was punished or sharply spoken to for listlessness or inattention arising solely from these dental causes. It was the duty of their profession to point out as strongly as possible, and to protest against the errors of commission and omission in the Commission's report, which deprived the dental part of meaning and value, and which was doubly serious going out as it did with the voice of authority that the bearing of the decayed teeth of the children upon physical education was an indirect one. It was designed for a confiding public, who would accept it along with other parts as the opinion of experts, or at any

rate of the men best qualified to give such an opinion. The voice truly was that of Jacob, but at any rate they recognized that the hands were those of Esau. It must be admitted that the task of providing proper dental attention in the national schools was a stupendous one, for it would necessitate the employment of paid dentists, whose sole duty it would be to attend to the needs of the children, exactly in the same way and for the same weighty reason that the army appointments had been made.

SKIPPING AS AN EXERCISE FOR ADULTS.

Skipping, the form of exercise so ably advocated by Dr. Bond, of Gloucester, received two benedictions at the recent meeting of the Sanitary Institute at Glasgow. One was accorded to it by Dr. Boobbyer, of Nottingham, who included it in the list of recommended exercises, appended by him to his reasoned and interesting consideration of the whole subject of physical culture. The other came from Professor Glaister, who lamented that skipping was no longer in vogue in girls' schools. Dr. Bond set forth the grounds of his faith in the hygienic value of skipping in a recent number of the *National Review*. In that article he addressed himself more particularly to the needs of the fully matured adult, and it is from that point of view that we consider his statements. Skipping, he holds, best fulfils a definition of the best form of exercise which he paraphrases from the old formula of catholicity, "*Quod semper, quod ubique, quod ab omnibus.*" He says "that exercise is best which can be practised most conveniently everywhere; which is most readily available at any moment; and which can be enjoyed by all, whether old or young, gentle or simple, tall or short; and last, but not least, whether spare or fat, at the smallest possible cost." To this general definition he adds the gloss that "the exercise which calls the largest number of muscles into play without straining any, which can be most accurately graduated to meet the requirements of various bodily conditions, and which specially promotes the full inflation of the lungs, is certainly not far from being the best." We are not quite sure, however, that all Dr. Bond's underlying premisses are unassailable. Although skipping may be the best form of exercise, we are not convinced that the axiom that exercise is essential to health, is really a positive truth and of universal application. That it is commonly accepted as such is certainly the case, but while not prepared definitely to deny it for ourselves, we are quite prepared to believe that the converse might be argued with at least much show of reason. By exercise in this connexion we, of course, mean muscular work deliberately undertaken with the object of increasing or maintaining physical health and mental well-being. A vast number of people sedulously avoid any physical exertion, other than that inevitably entailed by active participation in business, professional or social life, and yet apparently enjoy quite as good health as their neighbours. Nor is it a case of a short life and a physically lazy one, for many of them are splendid human machines long after middle age. Taking only public characters of well-known habits as examples, Mr. Chamberlain is a case in point; Mr. Labouchere, we believe, another. Besides, it is a familiar truth that a man is as old as his arteries, and when middle life is reached, those vessels probably age with a rapidity which is in direct ratio to the strain thrown upon them. The ultimate result of skipping like that of all other muscular effort may be lowered blood pressure, but the initial effect is certainly a bounding pulse decidedly in excess of that which results from much longer indulgence in many other exercises. Upon the whole, and apart from such reasons, the propaganda in favour of skipping seems likely to fail. It was a favourite pastime of children, has always been favoured by athletes in training, was idealized by a well-known actress upon the stage some twenty or more years ago, still has graceful exponents thereon, and for some years has been ably advocated by Dr. Bond himself, and yet the cult does not "catch on:" surely if everything that has been said in its favour were well founded this would not be the case.

ANTICIGARETTE LEGISLATION IN CANADA.

A bill to prohibit the importation, manufacture, or sale of cigarettes in Canada was introduced into the Dominion Parliament by Mr. Maclaren, of Huntingdon, and was read a first time on June 2nd. It has since been read a second time. The Bill provides that "No person, by himself, or by his clerk, servant, employé, or agent, shall, for himself or any one else, directly or indirectly, or upon any pretence, or by any advice, manufacture, sell, expose, keep, or offer for sale, or give away any cigarette, cigarette papers, or cigarette wrappers, or any substitute for such wrappers, or shall keep or own, or be in any way concerned, engaged or employed in owning or keeping, any cigarettes or cigarette papers or wrappers, or shall authorize or permit any of these things to be done. No cigarettes, cigarette papers or wrappers shall be imported into Canada or entered for consumption therein, and all cigarettes, cigarette papers or wrappers, or papers intended as such, shall be subject to seizure by any officer of Customs or Inland Revenue." It is further provided that "any person who, by himself or by another, contravenes the provisions of this Act in any manner, shall incur a penalty not exceeding 100 dollars and not less than 20 dollars for a first offence, and in default of payment shall be liable to one month, and for a second offence he shall be liable to imprisonment, without the option of a fine, for a term not exceeding one year and not less than six months." In other words, the Bill will make it a criminal offence for any one to have a cigarette in his possession. The Canadian Parliament is said to have agreed to treat the thing as a jest, but it is no joke that a legislature should make itself a laughing-stock to all persons of sense by even appearing to lend countenance to so absurd a proposal. It is said that the prime movers in the matter appear to be women, a circumstance which is scarcely calculated to strengthen the case for female suffrage. It will be noted that the proposal before the Dominion Legislature is very different from the one recently submitted to the House of Commons, which is aimed at the prevention of smoking by children under the age of 16. It may be questioned whether juvenile smoking can be put down by Act of Parliament, but there can be no doubt about the injurious effects on children of the habitual use of tobacco.

THE REPORT OF THE SELECT COMMITTEE ON TUBERCULOSIS AND COMPENSATION.

A Correspondent writes: The heavy mortality from tuberculosis, more especially among young children, and its undoubted increase, have set sanitarians at work to consider seriously what can be done to limit the spread of what is a contagious and, therefore, a preventable disease. Various remedies have been proposed. Some would like to see it included in the notifiable class, others favour penal regulations against spitting, whilst all are agreed that open-air treatment has been most successful, and that precautions must be taken to prevent the use of milk which has become the home of the microbe. A somewhat inconclusive debate in the House of Commons, founded on a loosely-framed Bill, led to the appointment of a Select Committee which sat many times under the able presidency of Mr. Grant Lawson and has now made its report. Its conclusions are as follows: A case, though not a very strong one, was undoubtedly made out for the butcher who buys in good faith a well-nourished and apparently healthy animal, which after death is found to be tuberculous and is condemned. Although the cases of real loss and hardship are not numerous, it seems an unnecessary grievance that he should be punished for a state of matters which he could not foresee, and the recommendation therefore is that following the example of pleuro-pneumonia and foot and mouth disease, he should be compensated up to one half the fair market value of the forfeited beast. It may of course be argued that means of diagnosis are available, and that the use of tuberculin will accurately discriminate between the sound and the healthy in any herd. But it is well known that this

generally reliable test fails when cattle have been worried and knocked about in a show yard, or in a train or on a hot and dusty road. Messrs. McLauchlan, Young, and Walker, in a very careful report presented to the Agricultural Department of the University of Aberdeen, thus sum up the results of experiments on 240 cattle: (1) Tuberculin loses its virulency when kept for any length of time; (2) when used with care and under proper conditions tuberculin is a reliable means of diagnosis of tuberculosis in cattle, except (*a*) when the tuberculous lesion is minute, or (*b*) when the disease has become generalized, especially in the case of aged and emaciated animals. The compensation is to be paid by the State, for it would clearly be unfair to make great gathering centres like Glasgow and Liverpool pecuniarily responsible for the quality of the beasts sent in from the localities surrounding their municipal area. Before he gets his compensation the butcher must prove to the satisfaction of a competent legal tribunal that the condemned animal had all the external appearance of health and was of fair market value and apparently fit for human food; and the difficulty naturally suggests itself, how this evidence is to be obtained. It can only be given by inspectors, who, although usually veterinary surgeons or qualified men in Scotland, are too frequently south of the Tweed decayed tradesmen and broken-down people in want of a job: and it is to be wished that the Committee had hardened their hearts up to recommending that no compensation should be paid unless the animals had been slaughtered in a public abattoir where they could be seen and certified both before and after death by competent officials. It is hoped that these regulations may encourage butchers of a less scrupulous order to declare every case of known tuberculosis, instead of smuggling it through the meshes of ignorant or interested inspection to avoid the penalty of detection, and more especially that it will check the practice of faking up worn-out dairy cows, which are usually infected up to 50 per cent. into a fictitious look of health, and palming them off on unwary customers. The butcher buys this class of animal with his eyes open, well knowing the danger he runs, and it is a question whether under these circumstances he is entitled to any compensation. It is much to be desired that some uniform scheme of procedure could be adopted by inspectors. Some condemn a whole carcass which contains only a small tuberculous nodule in the lung, whilst others allow the consumption of the flesh under these circumstances. The Germans, with the practical sagacity which distinguishes them, have an excellent arrangement by which the meat from a beast moderately affected is sterilized and sold at a low price for consumption by the poor, and in this way the waste of much nourishing animal food is prevented. Although the terms of reference did not allow the Committee to consider the best way of stamping out the disease, some evidence crept in which shows how tubercle is promoted in cows by the stuffy and often insanitary dairies in which they are penned, and in "feeding" beasts by the unphysiological practice of "finishing" them for the market in ill-ventilated byres where the absolutely sedentary consumption of nutritive material is carried on; and in this connexion reference may be made to the most interesting experience of Sir T. Gibson Carmichael, who eradicated tubercle from his valuable herd by care, inspection, rigid isolation, and free exposure to the air.

INTERNATIONAL OPHTHALMOLOGICAL CONGRESS.

As already mentioned in the British Medical Journal, the International Ophthalmological Congress will meet this year at Lucerne on September 14th and following days. We are informed that arrangements are being made to obtain special tickets at a reduced return fare for those who intend to be present at the Congress. In order to obtain the full reduction it is desirable that those gentlemen who wish to avail themselves of the privileges afforded by the railway and steamboat companies to members of the Congress should communicate without delay with Mr. W. H. Jessop, 73, Harley Street, London, W., stating in each case the number of tickets required. The purchase of these tickets does not involve the necessity of travelling in a party; each member will be free to choose the day and train which he may prefer.

INTERNATIONAL CONGRESS OF ARTS AND SCIENCE.

In connexion with the Universal Exposition to be held at St. Louis, an International Congress of Arts and Science has been organized for September 19th to 25th. According to the official programme the idea of the Congress has grown out of the thought that the subdivision and multiplication of specialities in science has reached a stage at which investigators and scholars may derive both inspiration and profit from a general survey of the various fields of learning, planned with the view of bringing the scattered sciences into closer mutual relations. The Congress takes for its province the whole field of human knowledge, which, for the purpose of discussion, is mapped out in twenty-four departments. Leading representatives of theoretical and applied sciences have therefore been invited to set forth the general principles and fundamental conceptions connecting groups of sciences, review the historical development of special sciences, show their mutual relations and discuss their present problems. General addresses will be delivered on main divisions of science and its applications, and these will be followed by two addresses on each of the great departments of knowledge, one of which will deal with the fundamental concepts and methods, while the other will set forth the progress made during the last century. The department of Medicine, of which the Chairman is Professor Osler, is subdivided into twelve sections, namely, Public Health (Chairman, Surgeon-General Walter Wyman, of the United States Marine Hospital Service); Preventive Medicine (Chairman, Dr. J. M. Matthews, President of the State Board of Health, Louisville, Kentucky); Pathology (Chairman, Professor Simon Flexner, Director of the Rockefeller Institute); Therapeutics and Pharmacology (Chairman, Dr. Hobart A. Hare, Jefferson Medical College); Internal Medicine (Chairman, Professor F. C. Shattuck, of Harvard); Neurology (Chairman, Professor Lewellys F. Barker, of the University of Chicago); Psychiatry (Chairman, Dr. Edward Cowles, of Boston); Surgery (Chairman, Professor Carl Beck, of the Post-graduate Medical School, New York); Gynaecology (Chairman, Professor Howard A. Kelly, Johns Hopkins University); Ophthalmology (Chairman, Dr. George C. Harlan, of Philadelphia); Otology and Laryngology (Chairman, Professor William C. Glasgow, of Washington University, St. Louis); and Paediatrics (Chairman, Professor Thomas M. Rotch, of Harvard). Among the speakers in the several sections are four representatives of British medicine, namely, Professor Ronald Ross, in the Section of Preventive Medicine; Sir Lauder Brunton, in that of Therapeutics and Pharmacology; Professor Clifford Allbutt, in that of Internal Medicine; and Sir Felix Semon C.V.O., in that of Otology and Laryngology.

ASSOCIATION OF GERMAN SCIENTISTS AND MEDICAL PRACTITIONERS.

The annual meeting of the Association of German Scientists and Medical Practitioners will be held this year at Breslau, from September 18th to the 24th. One of the three presidents is Dr. Chiari, Professor of Pathology in the University of Prague. The programme of the papers devoted to medical science is exceptionally long. Professor Chiari will deliver an address on congenital sacral tumours, and communications have been promised by Professors von Eiselsberg and Chrobak (Vienna), von Bokay (Buda-Pesth), Pick (Prague), and many others. The General Secretaries are Professors Wilhelm Uhthoff and Albert Ladenburg, of Breslau.

SCHOOL HOLIDAYS.

During the past month or three weeks the normal age and sex constitution of an enormous number of localities has been materially altered—in some cases by the efflux of the majority of the boy and girl school population, in others by the immigration of thousands of young people upon

visits of a few weeks. This is a point of much interest, and a recurring factor which annually does much to vitiate the health statistics alike of popular seaside resorts and of towns in which boarding schools are specially numerous. For the moment, however, we are more concerned with another aspect of the same question. This is the effect, mental and physical, upon the well-being of the impubescent population thus displaced and uprooted for the time being from its habitual soil and environment and placed temporarily under other conditions of life. The question which arises is, Do these young people, ranging, say, between the ages of 7 and 17, benefit or the reverse by the change in their existence? There is no room for doubt that, given reasonably fine weather, such young people as are fortunate enough to proceed during the summer holidays almost straight from school to the seaside benefit enormously. Though their sleeping accommodation may often be somewhat overcrowded, they have ample outdoor occupation and amusement, and the majority of parents are sufficiently wise to allow them to revert for the time being practically to the condition of healthy young animals. Doubtless, too, those young people whose parents live right in the heart of the country benefit not less. Given the free run of fields and meadows and access to streams and woods, they can and do pass their holidays in thoroughly healthy fashion, using their bodies much and their brains consciously but little; in short, they lead the sort of lives for which Nature probably designed them, and, while picking up a first-hand knowledge of things animate and inanimate, learn something of those joys of country life of which most of us have read so much and seen so little. Even, however, as regards these two classes there are material qualifications to be made of annually increasing weight. Visits to the seaside rarely last much over a month, and the energy of progressive municipalities and the prevailing "casino" spirit are together yearly diminishing the number of seaside places sufficiently primitive to allow of young visitors thereat leading really natural lives. So too with the country: many so-called country towns and villages are no longer country, the rights of property are strictly preserved, and high farming and other forms of agricultural progress have reduced much of the outlying countryside to a succession of fields little more accessible to young people and not much more interesting, to either old or young, than so many market gardens. Moreover, a vast number of young people, though possibly not the majority, neither return to homes in the country nor spend the major portion of their holiday at the seaside. Their parents live either in the suburbs of large towns or in towns which, though nominally "country," really offer no facilities for other than town amusements. There they spend the whole of their holidays, and how to keep them healthfully and pleasantly occupied must commonly be a task of great if not insuperable difficulty. The young people are deprived not only of the indoor occupations and healthy regularity of school life, but also of most of its amusements. They find themselves at home among companions either much older or much younger than themselves and not specially welcome as habitual guests at the cricket and other clubs of the locality. In practice they either loll about the house, and go for set walks with their elders or juniors, or are allowed to run about in the town and form more or less undesirable acquaintances. These young people doubtless benefit to some extent by a temporary change from the conditions of school life, but in this division of the school population the change is certainly too prolonged. In all probability it is also too long in the case of the other two classes to which reference has already been made, and it is, therefore, peculiar that at schools intended for the well-to-do the length of holidays should have materially increased of late years. So far from this being desirable it seems to us that it would be very easy to make out a strong case for a material decrease. If the pupils really require some thirteen weeks rest out of every fifty-two, the strain upon them during term time must be very much greater than it should be. We have no reason, however, to conclude that this is the case or that boys and girls in private schools lead any more strenuous lives than do those in Board schools. Nevertheless, the latter, in spite of less favourable surroundings, are not deemed to require more than an aggregate of a short eight weeks' vacation during the whole year, and it appears to us that a closer approximation to this length of change from the conditions of life in well-organized boarding schools would be in the mental and physical interest of the majority of their pupils, and that the time has come when it should be called for by the parents.

ARE THE DECIDUA OF TUBAL PREGNANCY ALWAYS EXPELLED?

Extrauterine pregnancy is a very grave matter, but fortunately our knowledge about the most common type, tubal gestation in all its various forms, has greatly advanced since the days of Parry. Not rarely it proves deadly at an early stage, yet, on the other hand, it undoubtedly may come to a quiet and innocuous standstill within a month or two after conception. The cardinal symptoms, amenorrhoea with atypical haemorrhages, pain, and the development of a tumour on one side, behind, or even in front of the uterus, are well known, but the expulsion of decidua from the otherwise empty uterine cavity—a recognied phenomenon in ectopic gestation—is most important for the confirmation of diagnosis. But the decidua are not always to be found expelled from the uterus, and the question of the precise value of such negative evidence arises. The membrane may be overlooked, that is certain, for nurses may be careless, and patients do not always choose to preserve discharges. It may be expelled in fragments; that fact is also certain, and it reminds us that we must be careful to see that all clots and sheds are preserved for examination. Supposing, however, that no entire deciduum is shed, and that no fragments are to be detected, are we to infer that they have probably not been overlooked, for the very simple reason that they have never been shed at all? This question may it appears be answered in the affirmative. The absence of decidua, entire or otherwise, does not necessarily signify carelessness, nor is it to be explained by assuming a molecular disintegration which can evade the most painstaking scrutiny; indeed the latter condition seems unknown. M. Pierre Cazeaux[1] has recently written a valuable article on the histology of the uterine mucosa in ectopic gestation. He finds that the expulsion of a triangular sac, a cast of the uterine cavity, is not constant in the evolution of this abnormal type of pregnancy. He carefully describes the precise structure of this sac. It consists of the superficial layer of the modified uterine mucous membrane and of that layer only. Now it happens that the layer in question cannot be always expelled, as the transformations incident on conception may cause it to adhere firmly to the deeper strata of mucosa which is never shed. We may add that M. Cazeaux dwells on the fact that the decidua may be shed at any stage of the pregnancy, but are usually cast off early, because the great majority of ectopic gestations end early. Their expulsion, however, does not always represent the death of the ovum, but it probably coincides with changes unfavourable to the vitality of the embryo. The extreme congestion of the altered uterine mucosa fully accounts for the irregular haemorrhages so familiar in cases of ectopic pregnancy.

THE NATURE OF THE LEISHMAN-DONOVAN BODY.

Under this title we published in the British Medical Journal of July 2nd, p. 29, a telegram from Captain Leonard Rogers, I.M.S., dated Calcutta, June 29th, announcing that he had succeeded in developing trypanosomes in cultures of Leishman bodies, together with some

[1] Des Modifications de la Muqueuse Utérine au Cours de l'Evolution des Grossesses Ectopiques, *Annales de Gynéc. et d'Obstét.*, February, 1904

interesting comments on the statement by Major Leishman, Professor of Pathology in the Royal Army Medical College. We sent a copy of the JOURNAL containing these communications to Professor Koch, who, writing from Berlin on July 26th, says: "On my return from a voyage I have just received your letter of June 29th. I thank you very much for the very interesting intelligence that Dr. Leonard Rogers has succeeded in observing the development of trypanosomes in Leishman bodies. With this the controversy as to the nature of these remarkable parasites is ended, and it remains now to discover the intermediate host, which it it is to be hoped Dr. Rogers will also succeed in doing."

THE SELECT COMMITTEE ON THE REGISTRATION OF NURSES.

THE Committee has closed its sittings and presented its report to the House. The substance of the report is to recommend the reappointment of the Committee next session; and, as a *précis* of the evidence is not presented, it may be assumed that the Committee is of the opinion that sufficient material has not yet been accumulated on which to base a report. The Committee has sat seven times and has examined eight witnesses; of these eight, three are opposed to State registration and five are in favour of it: three witnesses represented nurse-training schools, two were medical men, one gave evidence as the representative of a private nursing (male) agency, one was the Secretary of the Royal British Nurses' Association, and the eighth was the Superintendent of the Rural Nursing Associations affiliated to the Queen Victoria Jubilee Institute. This analysis of the evidence taken shows that whilst it included various phases of the subject it was not exhaustive, and it may have indicated to the Committee that the question entrusted to them for investigation had far-reaching issues much wider than the original scope of the inquiry suggested. As we cast our eye over the evidence laid before the Committee we are tempted to offer the suggestion that some classification is desirable; whilst making the task of the Committee easier, it would enable the public to follow the inquiry with more intelligent interest. There are the main divisions of nurses—hospital, private, district, and as employed by the State; there are the relations of nurses to the medical profession and the public, and there is the great question of training to be considered. Some such classification as this, whilst defining the class of evidence to be invited, would also indicate the varying circumstances which surround the nurse, and suggest in a limited way the contending interests among which it is the task of the Committee to thread its way.

AN UNUSUAL PROBLEM OF MEDICAL ETIQUETTE.

IT is an ancient custom in Hungary that when a medical candidate has passed his examinations with distinction and the doctor's degree is conferred *sub auspiciis regis*, he should receive from the Emperor of Austria (King of Hungary) a ring bearing the initials "F. J." set in brilliants. After a certain time he is admitted to present his thanks in person to the Sovereign. In connexion with this custom a curious problem recently exercised the mind of a young doctor who was serving his time in the army as a "one-year volunteer." Being invited to present himself before the Emperor he was greatly puzzled how to do so, for on the one hand, as a private soldier, he ought to wear his shako, while on the other, as a doctor of medicine, he should carry his hat under his arm. In his perplexity he sought counsel of his colonel who was at first equally puzzled. After careful consideration of the question he delivered himself of the following opinion: "If the Emperor speaks to you in German, which is the regulation language of the army, you must regard yourself as a plain one-year volunteer, and you will therefore keep your shako on your head. But should His Imperial Majesty address you in Hungarian, this means that he sees in you a doctor of medicine rather than a soldier, and you must therefore uncover your head." This military Solon has evidently a mind of the finest legal subtlety, which must be thrown away in the profession of arms. We do not know the colonel's prospects of promotion, but if they are not particularly brilliant we should be disposed to give him the advice embodied in a new reading of the poet's phrase, *Cedant arma togae*—Let him give up the sword for the gown.

A PROFESSIONAL DRESS FOR MEDICAL MEN.

CARLYLE has shown the deep meaning that the eye of the philosopher can discover in clothes. It is only the shallow thinker who affects to despise questions of professional costume. All who were privileged to be present at the recent meeting of the British Medical Association at Oxford must have felt how well academic robes expressed the hierophantic character of the medical profession. Our old English physicians in their periwigs and "subfusc" raiment, with their gold-headed canes, and the still older generation of French doctors who habited in long gowns, rode through the streets on mules—animals of almost sacred character as they were especially used by churchmen and doctors—were more stately figures than their descendants in the less ceremonious attire of the present day. Suggestions have more than once been made in our columns that the medical profession should revert to a distinctive garb, and, were it not that the trail of advertisement is over all in these suspicious days, there might be a good deal to be said for the proposal. Some of our readers may be interested to learn that in France medical men have the right to wear what may be called a professional uniform. By decree of the Republic one and indivisible dated 20 Brumaire of the Year XII, it is enacted that "simple doctors of medicine when they are invited to any public ceremony, and when they take an oath or present or confirm a report before the courts, may wear the following costume, to wit: A black stuff gown, with back and front of crimson silk bordered with ermine; black coat of the French fashion; flowing cambric cravat; crimson silk cap with gold lace. It is still within the lawful right of any French doctor of medicine to wear this chaste and elegant costume, for the decree has never been repealed. In our less favoured country neither legislators nor Court Chamberlains have, as far as we know, taken the trouble to devise an appropriate costume for doctors. This leaves the field open to artistic persons with a talent for the invention of dainty devices of sartorial art and appropriate schemes of colour.

AN EASY WAY OF STERILIZING DEGENERATES.

SOME time ago reference was made in the BRITISH MEDICAL JOURNAL to the method proposed by Dr. R. R. Rentoul of checking the increase of mental and physical degeneracy by making degenerates incapable of propagating their species. The plan is not altogether original, as may be gathered from a pamphlet of 1709 which bears the following title: "Reasons offer'd for a Law to enact the Castration or Gelding of Popish Priests, as the most infallible means to prevent the growth of Popery in England." It has also, we believe, been suggested by some advanced social reformers in America. But the method, though effective, is rather too severe for these days. We therefore commend to the attention of Dr. Rentoul, and others who may be interested in the subject, certain experiments made not long ago by Drs. Albers, Schönberg, and Friedel, a full report of which appeared in the *Münchener medicinische Wochenschrift*. These experimenters placed male rabbits and guinea-pigs in cages, the bottom of which could be traversed by rays from Crookes's tubes. After several exposures of fifteen to twenty-five minutes, females which had not been exposed to the *x* rays were placed in the cages. The couples were kept in the cages for periods lasting from a fortnight to five months, but no female became pregnant. The male animals showed no sign of ill-health or impaired vitality, nor had they lost sexual desire or the power of copulation. The cause of the sterility was discovered on necropsy, when it was found that the testicles were to a considerable extent atrophied; in many cases these organs had shrunk to one-half, in some to one-third, of their normal size. On microscopic examination it was seen that most of the cells lining

the interior of the tubuli seminiferi had disappeared, being replaced, though only in a few spots, by some retracted cells, the protoplasm of which was the seat of mucous degeneration. Not the slightest sign of spermatogenesis could be found, and no spermatoblasts were discoverable. Nor could any spermatozoa be seen in the fluid contained in the vesiculae seminales. The authors conclude that the *x* rays had caused rapid degeneration of the tubuli seminiferi, resulting in complete azoospermia. The experiments of Drs. Albers, Schönberg and Friedel will of course require to be confirmed by those of other observers before they can be held to be valid even for rabbits and guinea-pigs: and after that the question whether the results hold good for the human subject will remain to be decided. They seem, however, to offer a prospect of a harmless and painless method of sterilizing degenerates which might take the place of the severe surgical procedure proposed by Dr. Rentoul—when the measure suggested by him becomes law.

THE MEANING OF THE GREAT OMENTUM.

The great omentum is very familiar to the anatomist and surgeon, being a conspicuous object for its size and fattiness as a rule, and conspicuous for its extremely atrophic condition as an exception. Its precise use is not clear. There are authorities who hold that it is "no good," a vestigial relic or a necessary condition in the development of the peritoneal folds prejudicial rather than otherwise to the mature subject, and homologous in these respects to the vermiform appendix. Art, it is true, may make use of the omentum, as when it is sutured to the parietal peritoneum in cases of ascites, or when it is fixed to intestine or transplanted in order that it may assist in the repair of a visceral wound. Albrecht has recently discussed the question before the Gynaecological Society of Munich.[1] He denies that the omentum is meant to keep the stomach in its proper position. The signification of its fat, variable in proportion in different species and also in different individuals, is uncertain, and there is no clear evidence that the fat is the essential part of the omentum, or that the omentum is a regulator of temperature for the benefit of the viscera. Nor is it at all evident that the omentum is mainly a kind of ligament to hold the transverse colon in place: if so it often functions very badly. Albrecht contends that the portion between the stomach and the colon regulates the circulation in the large vessels which supply the stomach and are liable to variations in external pressure during the filling and emptying of that organ. In pathological conditions he thinks the omentum serves three protective purposes. It fills hernial sacs, absorbs fluid effusions in the peritoneum, and by adhesion limits inflammatory changes and so averts general peritonitis. The second and third objects of the omentum are clear to us all, but many of us will demur to the advantages of the first. In advanced stages, at least, of hernia the omentum in the sac is a direct source of grave complications. It is certain, however, that we have much to learn about the omentum.

The whole profession will learn with profound regret of the untimely death of Sir William Mitchell Banks, of Liverpool, which occurred suddenly a day or two ago on the Continent. The cause of death is stated to have been angina pectoris. The distinguished surgeon went abroad some three weeks ago by the advice of his physician. He was 62 years of age. A full obituary notice will appear in a subsequent issue.

We regret to announce the death of Sir Frederic Bateman, of Norwich, J.P. for Norfolk, which occurred on August 10th at the age of 80. We hope to publish an obituary notice in a future issue.

Sir Thomas Barlow and Dr. A. D. Waller have been appointed to represent the University of London at the International Medical Congress to be held at Lisbon in April, 1906.

[1] Ueber die Bedeutung des grossen Netzes. *Zentralbl. f. Gynäk.*, No. 26, 1904, p. 877.

The Berlin Cremation Society has sent to the Pope a petition, to which are appended 9,500 signatures, praying that the last rites of the Roman Catholic Church shall no longer be denied to persons who wish their remains to be cremated.

Professor von Esmarch, of Kiel, who was recently the victim of an accident which disabled him for a time, has now recovered and is able to take his customary walks in the environs of the town. The venerable Professor is in his 81st year.

Baron von Eiselsberg, Professor of Surgery in the University of Vienna, has declined an invitation to succeed Professor König in the corresponding chair at Berlin.

It is authoritatively stated that there is no foundation whatever for the report which has been freely circulated that Professor von Leyden intends to resign his professorship in the University of Berlin.

Dr. Anatole Meurisset, of Noyon, the old city on the Oise, which was the birthplace of John Calvin, recently entered on his 100th year. He has just brought out a life of St. Eligius, who was Minister of King Dagobert in the seventh century and Bishop of Noyon for some 20 years.

In consequence of representations made by Dr. Darlington, President of the New York Board of Health, as to the prevalence of pneumonia, unusual at this season of the year, the Board has made an appropriation of £2,000 to defray the expenses of a commission of experts, whose duty it shall be to investigate the matter and suggest means of checking the evil.

MEDICAL NOTES IN PARLIAMENT.

The Factory System, Disease and Death.—There was an interesting debate last week on the Home Office Vote. Sir Charles Dilke led off with a motion to reduce the vote, and he based his action on the understaffed condition of the women's department for the work it had to do. Women's labour was the greatest industrial question of the time, and the Home Office had only six inspectors for one and a-half million of women and girls in factories and workshops. The annual report of the department showed how complaints had to stand over on account of the shortness of the staff, and yet thirteen male inspectors had been appointed, but no additional woman inspector. He especially dwelt on the long hours worked in the fish curing trade at Yarmouth, and gave some pathetic cases of the effects of strain and long hours in the dressmaking business. In the china and earthenware trades he regretted to observe an upward tendency in the deaths from lead poisoning. He next referred to anthrax, and quoted the report of the Home Office as showing that it was six times as frequent in the horse hair trade as in the wool trade. He urged the importance of issuing rules as regards the disinfection of horse hair, and urged the Government to enter the International Labour Conference at Berne with a view to bring other nations into line as regards the protection of workers. Mr. Tennant, Sir John Gorst, and Mr. Shackleton followed, urging more attention to the setting up of by-laws under the Employment of Children Act, to the improved ventilation of factories, and to the references in the Physical Deterioration Committee's Report on infantile mortality and the employment of women before and after confinement. Mr. John Burns followed with a speech in which he pointed out the disproportionate time allowed for discussing the Army and Navy Votes, which occupied several days, while only a few hours were given to the conditions affecting the industrial population. He referred to the increase in accidents in factories and workshops, which had gone up from 63,000 in 1897 to 112,000 in 1903, while the deaths from accident were 596 in 1896 and in 1902 were 1,007. He specially called attention to sweating, and said the picture drawn in Mrs. Lyttelton's play, *Warp and Woof*, was an absolutely correct picture. He pointed to the decline of lead-poisoning cases from 1,258 in 1899 to 614 in 1903 as a proof of the usefulness of lady inspectors, and urged their increase. Mr. Asquith

made a strong speech in favour of increased inspection. He pointed out that for 16,000,000 workers we had only 150 inspectors, and, referring to the talk of over-inspection, said that we had only to take any other European country to find a more stringent law and more stringent inspection. Mr. Coghill, referring to lead poisoning, said that the figures given for the whole country were misleading. In the Potteries last year there were only 95 cases as compared with 200 in 1900, while the decrease of fatal cases was even more remarkable, as they had fallen year by year from 16 in 1899 to 3 in 1903. There were 46,000 people employed in the Potteries, and of these 4,700 were connected with lead work, and the three deaths of 1903 would compare favourably with the mortality in any dangerous trade in the country. After several other speeches, Mr. Akers-Douglas replied in a conciliatory speech, and said that during the last ten years the inspectorate had been increased from 100 to 150, and the lady inspectors from 3 to 8. He admitted the great benefit of the increase and promised to increase the women inspectors, who might, he thought, with advantage be required to have some experience in hospital work. As regards the fish-curing industry, much had been done as regards sanitation, and he would give attention to the other points raised by the discussion. When the division was taken, 271 members voted, and the reduction of the vote was rejected by a majority of 69.

Physical Deterioration and the Purity of Food.—Mr. Round asked the President of the Local Government Board, whether, in view of the alleged physical degeneration of the people, he would take steps to give effect to the recommendations of the Royal Commission on Arsenical Poisoning by appointing a special expert officer to inquire into and advise upon all questions affecting the purity of manufactured or prepared foods, whether of home or foreign origin. Mr. Long answered that he had not at present come to a decision on this subject. The recommendations of the Royal Commission were now receiving attention, and in connexion with them he should consider the proposal to appoint a special expert officer of the kind suggested.

Boric Acid as a Preservative.—Mr. Alfred Davies asked the Secretary to the Local Government Board if he could state the various methods by which decomposition was arrested in meat brought from abroad, and if he was aware that boric acid or boracic acid was frequently injected into the carcasses of animals at the time of killing for export, and that experiments had been tried, with the result that on arrival carbonate of soda was found to effervesce upon the meat so treated; and whether he had any official reports on the effect of the partaking of boric or boracic acid upon human beings; and if so, would he lay them upon the table. Mr. Long replied that he understood that the ordinary methods by which decomposition was prevented or arrested in meat coming from abroad were (1) cold storage, (2) salting, with or without drying, and (3) preservation in cans. According to the evidence given before the Departmental Committee on Food Preservatives, borax and boric acid (which is called boracic acid) were largely used for the preservation of bacon, hams, sausages, and other preserved meats, but not by means of injection into carcasses of animals at the time of killing. No evidence appeared to have been given to show that carcasses of butchers' meat were preserved in this way. He had no information as to the alleged experiments, nor had any reports been made to him on the effect of the partaking of boric or boracic acid upon human beings. The hon. member was probably aware of the report of the Departmental Committee to which he had referred. It had been laid before Parliament.

Medical Officers for Harris.—Mr. Weir asked the Secretary for Scotland whether he was aware that the return, Parochial Medical Officers (Scotland), was inaccurate in stating that the post of medical officer for Harris was vacant only once during the seven years prior to 1903, inasmuch as Dr. Macdonald was appointed to North Harris early in 1897, and during the end of 1898 Dr. Fletcher was appointed, in South Harris a Birmingham doctor was appointed to succeed Dr. Robertson in 1898, and Dr Fraser was appointed in 1900; and would he take steps to have the accuracy of the return tested in so far as Barra and South Uist were concerned. Mr. Graham Murray answered that the Local Government Board had communicated with the inspector of poor of Harris in regard to the return of medical officers furnished by him, and they found that, since July, 1896, there had been a change in the medical officership of South Harris five times, and in that of North Harris twice. It appeared that there had been some misunderstanding as to the meaning of the return. The inspector explained that he understood the inquiry to mean the number of times that the parish was without a medical officer, and did not regard as vacancies those occasions on which one medical officer succeeded another without an interval of time. The Board were inquiring into the details of the returns received from Barra and South Uist.

Anthrax and its Spread.—Mr. Macdona asked the Home Secretary whether he was aware that at an inquest recently held in Liverpool upon a man who had died from anthrax, it came out in the evidence that the deceased shortly before his death was shaved by a barber in Liverpool, who, at his request, cut open the swelling upon the deceased's face, thus causing a serious risk of anthrax being further spread; and if so, whether he would take steps to prevent a recurrence of such action. Mr. Akers-Douglas replied that he was informed that the facts were as stated in the first part of the question. The matter was entirely outside the scope of the Factory Act, and he had no power to take any action; but he might say that he was advised that the risk of anthrax being spread in this way would be small.

Scottish Estimates occupied the attention of the House in Committee of Supply on Tuesday. When the vote for the Local Government Board for Scotland was reached, Mr. Weir made a general critical statement on the subjects he had raised by way of questions during the session. He specially referred to the number of uncertified deaths in the Highlands and Islands, the want of more medical officers of health, the use of humanized lymph for vaccination, and the insanitary housing of the people. The Lord Advocate made a sympathetic reply, but said, while the attention of the Local Government Board would be given to these matters, the local authorities must act more efficiently in the first place. The insufficient supply of medical officers of health was due to the difficulty of getting able men for outlying districts, and, as regards vaccine lymph, they relied on a supply from the English Local Government Board, and did not propose a separate vaccine establishment for Scotland. Sir Walter Foster followed, and said that it was a scandal that so many persons were buried every year without proper certificates. The evil existed in England also, and he urged the two Boards to combine in a determination to legislate on the subject. As regards humanized lymph, he agreed with Mr. Weir that its use should be discontinued, and that an adequate supply of glycerinated calf lymph should be placed at the disposal of the profession in Scotland. In respect of the difficulty of obtaining medical officers of health for outlying districts, he suggested amalgamation of districts, so that, by having large districts, it could be made worth while for a good man to take up the work. No economy was more disastrous and wasteful than economy in health administration, and he urged the Local Government Board to keep local authorities up to their work, both as regards health administration and housing. The vote was then agreed to.

Kent Waterworks and Surface Drainage.—Mr. Pike Pease asked the President of the Local Government Board whether the Kent Waterworks Company, before giving up the control of their new pumping station at Darenth, Kent, had informed him that an experimental inquiry would serve to show whether and to what extent the water raised from the well might be derived from the adjacent land; and, if so, would he say when he would cause such inquiry to be made in order to ascertain whether water so derived was liable to pollution by surface drainage. Mr. Long answered that the experiment referred to was suggested by an adjoining owner with a view of showing that the well was liable to pollution by surface drainage from his land. The company, however, stated that they were advised that the experiment would only serve to show whether, and to what extent, water raised from the well might be derived from the adjacent land, and would not form any proof of the possibility of deleterious matter passing from such land into the well. The undertaking of the company had now been transferred to the Metropolitan Water Board, and he was in communication with that Board on the subject of the complaint. He had not at present decided to direct an experimental inquiry to be made.

Ireland.

Small-pox.

Three cases of small-pox have occurred in Dublin, and have been removed to the Isolation Hospital. The original case came from Drogheda, and infected the other two. The contacts have been isolated in the refuge, and all precautions have been taken to prevent any extension of the disease.

The Armagh sanitary authorities have given full authority to their medical officers to take all necessary steps to prevent the spread of small pox in the district. Only 2 cases have occurred in the city, but there can be no doubt that the disease has been spread to other towns by persons who have visited Armagh. In Drogheda no additional cases have been reported. In Mullingar Dr. Kelly, medical officer of health, has isolated 20 members of the constabulary who were recently on duty in Armagh. Revaccination has been carried out and isolation will be maintained for sixteen days. It is satisfactory that the people are presenting themselves in large numbers for revaccination.

The first case of the disease in Armagh was admitted to the Union Hospital, and has since died; 4 contact cases were at once put under observation, and 2 more cases admitted: on August 4th, 4 fresh cases were admitted, and 6 contacts were isolated. The small-pox wards, which had been closed for two years, were opened and fitted up, and vaccination and revaccination were put in force. The Local Government Board Medical Inspector, Dr. Clibborn, visited the city and a special meeting of the Board of Guardians convened.

Mallow Board of Guardians and their Medical Officers.

A deputation of the medical officers of the Mallow Union appeared before the Board on August 2nd, consisting of Drs. J. F. O'Connor, M. Corbett, M. Sheehan, and O'Hanlon.

Dr. O'Connor, as senior medical officer, acted as spokesman, and appealed to the Board to increase the salaries of the medical officers, pointing out that the grievances of the doctors were very real, and for the good of the service the guardians and Local Government Board should act fairly by them; otherwise the best men would in future go into the army and navy or seek employment abroad or in the Colonies.

After a formal discussion, in which it was acknowledged on all sides that the salaries paid to the doctors were entirely inadequate, the following notice of motion was handed in:

That this Board, considering the salaries of our very efficient and attentive medical officers, who have such laborious and responsible duties to perform, are entirely inadequate, do hereby increase the salaries of our three senior medical officers, Drs. Corbett, O'Connor, and Reardon, to £170 a year, with annual increments of £10 until it reaches £200; and the junior officers, Drs. Ryan, Sheehan, and O'Hanlon to £150, with annual increments of £10 to £200. That we request the Local Government Board, having regard to the duties of the said doctors, the great distances they have to travel at short notice, and at inconvenient times, day and night, requiring incessant toil, and the expenses necessarily incurred in the keeping of horses and attendants, to sanction the said increase.

The Poor-Law Medical Officer's Holiday.

The Mountmellick Board of Guardians have declined to pay £4 4s. a week to the substitute of the medical officer who had applied for a fortnight's leave of absence, but they agreed to a sum of £3 3s. a week.

Dr. Flinn, Medical Inspector, asked to have a letter sent by the Local Government Board on July 12th read. The letter suggested that the guardians should in future not only grant the full term of four weeks' annual leave of absence to their medical officers, but also pay the remuneration of their substitutes for the entire period.

The Chairman said the guardians had not the least objection to granting the medical officer a fortnight's leave and paying his substitute £3 3s. a week. The Medical Association, which insisted on £4 4s. a week, was, in his opinion, simply got up for the purpose of throwing discredit on the working of the Local Government Act.

Dr. Flinn said there was not a single Board in Leinster that now maintained the same position as the Mountmellick Board. If the several medical officers of long service in the Mountmellick Union claimed a holiday on the ground of overwork, he (Dr. Flinn) considered that they would be justified, seeing the manner in which they had been treated. He considered every dispensary medical officer entitled to his four weeks' annual leave. A special Act of Parliament had been passed securing recoupment to Boards of Guardians on the fees of medical substitutes. The Chief Secretary had then stated that if any cases of hardship were brought to his notice he would make the leave compulsory.

Mr. Edward Bell said the doctors' pay had increased by 35 per cent. and their duties had diminished by 52 per cent.

Proposed Memorial to the late Dr. W. A. McKeown.

A meeting was held in Belfast on August 2nd to consider the question of providing a memorial to the late Dr. McKeown. Mr. Glendinning was called upon to preside, and a large number of both medical and lay friends were present. Apologies for non-attendance were received from Professor Byers, Professor Sinclair, and Dr. Simpson. Dr. Brice Smyth, Belfast, moved:

That this meeting, recognizing the distinguished position won by the late Dr. McKeown in his profession, and his steadfast, enthusiastic efforts in promoting sound education in Ireland, considers that a suitable memorial should be raised to perpetuate his memory,

and expressed his great pleasure in doing so, and his high admiration of the deceased. This was seconded by Mr. J. F. W. Hodges and passed. Dr. MacCormac proposed, and Dr. Morrow seconded, that a committee be formed to carry out the object, which was carried.

Dr. Gibson, J.P., proposed that Sir James Henderson be appointed Chairman, Mr. R. G. Glendinning Honorary Secretary, and Mr. R. J. McMordie, Honorary Secretary of the Committee.

A subscription list was opened, and it was decided that the actual form of the memorial should be determined by the subscribers at a subsequent date.

Ulster Eye, Ear, and Throat Hospital, Belfast.

At a meeting of the Board of Management of this institution, held on August 4th, to consider the vacancy caused by the lamented death of Dr. W. A. McKeown, surgeon of the institution since its foundation, Dr. W. M. Killen, who for the past fourteen years had assisted Dr. McKeown, was unanimously appointed full surgeon, and Dr. Robert Allen was appointed assistant-surgeon.

Scotland.

Closing of Schools on Account of Epidemic of Infectious Disease.

The Scottish Local Government Board has issued a circular to medical officers of health on the question of the closing of schools on account of infectious disease. It points out that unnecessary closing of schools has been resorted to by certain local authorities in default of isolation, the use of houses of reception for contacts, disinfection, co-operation between the local authority and School Boards in promoting and procuring the observance of Section lvii of the Public Health Act, and other procedures which the local authority has the power and duty to adopt, and which are calculated to secure public safety with the least possible interference with public intercourse in school, trade, business, or otherwise. Alternative procedures are recognized: (1) The closing of the school, (2) the exclusion of individual scholars. It is pointed out that the closing of a school or a division of a school is not justified by the fact that the fall in the attendance threatens to affect the grant to a serious extent. Detailed instructions are given to medical officers as to the points to be considered in closing one or more classes or a department rather than the whole school, the period during which the closure should continue, the disease on account of which the recommendation is made, the measures adopted to prevent its spread, the grounds for believing that the disease is being propagated by school attendance, and the reasons for anticipating that the course proposed will have the effect of preventing or checking the spread of the disease, and that other or less stringent measures would not suffice.

Low Death-rate in Edinburgh.

During the week ending Saturday, July 30th, the death-rate of Edinburgh was 10 per 1,000, the lowest ever recorded in that city. In the week ending Saturday, August 6th, it was 12 per 1,000.

Small-pox in Scotland.

During the month of July 95 cases of small-pox were intimated to the Local Government Board. These were distributed over ten of the counties of Scotland. As regards towns, Glasgow stands out at the head of the list with 33 cases. Coatbridge Burgh had 7 cases, Kilmarnock Burgh 5 and Bathgate and Edinburgh each 4. During the month in question small-pox appeared at seven new points where,

prior to the period of this report, no cases had been intimated to the Board this year.

During the week ending midday of Saturday, August 6th, 2 further cases were notified to the Edinburgh public health authorities as having occurred in that city. There remained in the hospital at Colinton Mains 4 cases, the same number as on Saturday, July 30th.

THE MIDWIVES ACT.

LANCASHIRE.

IN a report to the Midwives Act Committee of the Lancashire County Council, dated July 8th, Dr. Edward Sergeant, Medical Officer to the Committee, states that considerable progress had been made in the certification of midwives during the previous three months. Fresh applications were received from 170 midwives, raising the total to 524. The Central Midwives Board granted certificates to 418 of the county applicants: in addition, notices of intention to practise were received from 39 midwives who have been certified direct by the Central Midwives Board, making the total enrolled to date 457. Of those who have received certificates 205 have complied with Section x of the Midwives Act in giving notice of their intention to practise within the area of the administrative county. Of the 418 midwives enrolled on the representation of the county council, 47 hold one or other of the following certificates: From the Obstetrical Society of London 19, Coombe Lying-in Hospital (Dublin) 2, Liverpool Ladies' Charity Lying-in Hospital 6, St. Mary's Hospital 16, and the Maternity Hospital (Manchester) 4, while 371 have been entered on the roll as having been in bona fide practice twelve months prior to July 31st, 1902. The qualifications of the 39 enrolled directly by the Central Midwives Board have not yet been ascertained. The large number of illiterates (86) found among the midwives certified as bona fide practitioners shows, says Dr. Sergeant, the limited education of those who have hitherto been mainly responsible for the carrying out of work of such importance to the community, and he thinks that much difficulty will arise when the rules are enforced as to the keeping of case-books, statement of particulars when a medical practitioner is sent for in case of the death of a woman during pregnancy, labour, or lying-in, records of administering any drug, and in regard to the notification of deaths, stillbirths, and puerperal fever and other infectious diseases. The rules framed by the Central Midwives Board for the observance of midwives are very stringent, and, in Dr. Sergeant's opinion, one of the first duties of the Supervising Authority will be to see that they are fully explained and understood by each illiterate midwife.

ANNUAL REPORT OF THE CHIEF INSPECTOR OF FACTORIES AND WORKSHOPS FOR 1903.[1]

IN response to instructions from the Home Secretary the annual report of the Factory Department has been presented to Parliament a little earlier this year than usual. There are many reasons why the report should be in the hands of members of Parliament before the Supplies for the Home Office are voted in the House of Commons. At the close of last year there were 102,939 factories and 144,148 workshops on the register: in these are included laundries, but not men's workshops, domestic workshops or factories, docks or warehouses. To the factory staff there have been added 8 inspectors and 5 assistants, raising the total to 116 inspectors and 36 assistants. Commander Hamilton Smith has been appointed Superintending Inspector for Dangerous Trades, a post for which he is specially qualified. At the end of 1903 there were 1,976 certifying surgeons in the United Kingdom. Of the 92,600 accidents reported in 1903, 1,047 were fatal as against 1,110 fatal cases for the previous year. The pottery arbitrations were completed last November, when Lord James of Hereford gave his final award. Since then upwards of 228 exemption certificates have been granted to manufacturers using leadless glaze, glazes of 5 per cent. of lead solubility, 2 per cent. of solubility and moist ware cleaning. Samples of glaze have been taken by the factory inspectors in potteries that had been exempted, and these were all found, practically speaking, to conform to the requirements. The opportunities offered by the Government laboratory of examining for a small fee samples of glaze for the manufacturers has been withdrawn, partly on account of having been seldom taken advantage of, and also because no standard of lead solubility is now legally required.

An interesting report on "Sores on the Hands of Fish-curers" is published as an appendix by Mr. A. Newlands, H.M. Inspector of Factories, Aberdeen. A large number of women and girls are employed in fish-curing, and these follow the fishing fleet round the island. Commencing in spring on the North-west Coast of Scotland the girls, after spending the winter months at home, come fresh to the curing from their domestic duties with their hands soft and, to some extent, unsuited for the rough work they are about to undertake. Soon afterwards the skin of their hands becomes irritable, abraded, and tender. It has been customary to attribute these sores to the action of the coarse salt, but as it appears that the girls suffer at some places on the coast more than at others, especially where there is landed a larger percentage of fish in a foul condition, this circumstance suggests that there must be some other cause in operation. There is still considerable mystery surrounding the migration of the herring, its habits and food, etc. While some writers maintain that herrings swim in one huge shoal round our coast, others hold that the fish simply come from deeper waters to those of a milder temperature for the purposes of spawning. Newlands states that owing to change in food and maritime conditions the herrings caught at different places on the coast look as if they belonged to different species. Compare, for example, a Yarmouth bloater with a Castlebay herring. As a probable cause of the soreness of the hands of fish-curers attention is directed to the "blue bagged" herring or one in a fouled condition. In the trade the term "blue bagged" is applied to fish which, when opened, show the bag or stomach to be of a dark blue, almost black colour instead of the pink which is characteristic of the healthy herring. Where "black soil" prevails, namely, a blue, black animalcule, probably a larval crustacean not a native of our coast, but one which has drifted to it, and upon which herrings are supposed to feed, the fish are generally blue bagged. When brought to land these fish smell badly. They are known in the trade as "torn bellies"; they fall to pieces if kept for a few hours and they rapidly decompose. Two factors are necessary to produce the sores on the hands of the workpeople: (1) An abrasion of the skin, and (2) entrance of poisonous material. The hard and rough nature of the work, the constant dipping of the hands into strong brine, the reducing influences of improper food and imperfect housing predispose the women to the entrance of poison from "blue bagged" herrings. Occasionally the ulceration of the skin is fairly extensive as well as painful, and is followed by inflammation of the lymphatics of the arms and enlargement of the glands at the elbows and in the axillae. Some idea may be formed of the difficulty of housing and feeding the large floating population of fish-curers when it is stated that into Baltasound, a village on the north-east corner of the island of Uist, which has normally a population of 250 inhabitants, the fishing brings annually an additional 8,000 to 9,000 men and women.

In the Lady Inspector's report attention is drawn to low and high temperatures in workshops and factories. In one instance a conviction was obtained against an employer for having a temperature of only 42°F. in his factory when sleet was falling outside. On the other hand, in cloth finishing works the temperature is frequently so high as to be extremely trying. In one starch factory the temperature was found to be higher than 125°F., and the work carried on therein was of rather an arduous nature. In laundries the risk of accidents to young girls is greater than for women owing very largely to the fact that too many young girls are set to feed dangerous machinery. It is interesting to note that the largest number of accidents in laundries occurs between 11 a.m. and 12 noon, and between 4 and 6 p.m. The increased risk between 11 a.m. and 12 noon is probably due to the fact this is the last tiring hour of a five hours' spell, while the hours from 4 to 6 p.m. are those of transition from daylight to artificial light.

As the space at our disposal will not permit of our dealing with the report of the Inspector of Dangerous Trades nor with that of the Electrical Inspector, we will at once proceed to the report of the Medical Inspector of Factories, Dr. T. M. Legge. The total number of cases of lead poisoning reported for 1903 was 614, as against 629 for 1902, 863 for 1901, 1,058 for 1900, and 1,258 for 1899. These figures speak for themselves. During 1903 no case of phosphorus poisoning was reported, 1 for 1902, 4 for 1901, 3 for 1900, and 8 for 1899. During 1903 there were 5 cases of industrial arsenical poisoning reported and 8 of mercurial. There were 47 cases of anthrax as against 38, 39, 37, and 55 of the previous years respectively. But for the fact

[1] Messrs. Eyre and Spottiswoode, East Harding Street. 2s. 10d.

of a still far too large number of cases of plumbism reported as occurring in coach and house painters and in plumbers, the statistics of lead poisoning for 1903 would have been more satisfactory and encouraging than they are. If anything were required to show to what extent lead poisoning has been diminished by Home Office rules, and the saving of human life thereby effected, it is only necessary to turn to the statistics of the white-lead industry, particularly in Newcastle-upon-Tyne. In 1898 there were reported in this industry 176 cases of plumbism, in 1902, 70, and in 1903, 54. A slight increase of lead poisoning, on the other hand, is shown to have occurred in 1903 in the china and earthenware trades. In 1902 there were 87 cases reported, in 1903 there were 97. The increase is largely made up from the tile-making and majolica departments. Reflecting, for the moment, upon the opposition raised by the male workers at the time of the arbitration to periodical medical examination, it is pleasing to see it stated that the medical inspection of adult males has done much good, and that the men themselves are becoming more careful and are giving greater attention to personal cleanliness. At two of the potteries the men still refuse to submit to the medical examination which is not compulsory. It is the older men who raise objections; many of these men are intemperate in their habits. Taking all the industries together there were 18 fatal cases of lead poisoning last year, all males.

Dr. Legge's report on anthrax is a carefully-prepared piece of work, and is a foretaste of what we may expect from him in the lectures he is announced to deliver at the Royal College of Physicians next year. By that time he will probably have had opportunities of trying the serum treatment of anthrax.

A joint report on the Brussels Congress of Hygiene in September, 1903, is presented by Miss A. M. Anderson, the principal lady inspector of factories, and Dr. T. M. Legge, in which an interesting review of the work done and a digest of the more important papers are given. In the appendices are notes on the Solvay Institute of Sociology, Brussels, by Miss Anderson, also translations of Dr. Zuntz's papers on Fatigue, as well as of the interesting communication on the same subject read at the Congress by Mlle. Joteyko, Head of the Psychological Laboratory at the University of Brussels.

The annual report for 1903 fully maintains the reputation of its predecessors. It is a record of painstaking and laborious work on the part of Dr. Whitelegge and his subordinates.

THE HOLMAN TESTIMONIAL FUND.

The Treasurer acknowledges the following further subscriptions:

	£	s.	d.		£	s.	d.
Edgar G. Barnes, M.D. ...	1	1	0	Mr. W. Bramley Taylor ...	1	1	0
Sir Thomas Stevenson, M.D.	1	1	0	W. Douglas, M.D.	1	1	0
Professor Clifford Allbutt, F.R.S.	1	1	0	Charles Drage, M.D.... ...	1	1	0
John J. Nason, M.D., J.P....	1	1	0	Mr. Reginald G. Hansell ...	1	1	0

Further subscriptions are still needed, and will be announced at the close of the vacation. Dr. John H. Galton, Chunam, Sylvan Road, Norwood, S.E., or Mr. W. A. Berridge, Oakfield, Redhill, will thankfully receive subscriptions of any amount.

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ending July 9th and 16th the deaths from plague in India numbered 1,910 and 1,995 respectively. The principal figures during the week ending July 16th were: Bombay City, 45; Bombay Districts, 972; Calcutta, 5; Bengal Districts, 141; North-West Provinces and Oudh, 39; Punjab, 115; Rajputana, 14; Kashmir, 1; Karachi City, 1; Hyderabad State, 62; Madras Districts, 183; Mysore, 417. In the Bombay Presidency plague is increasing, whereas in the Punjab a rapid decrease has taken place. Comparing the week ending July 16th with the corresponding week of last year the numbers are 1,995, against 2,284 in 1903.

South Africa.

Port Elizabeth.—During the weeks ending July 9th and 16th the fresh cases numbered 1 and 1; no deaths were reported; 3 cases of plague remained under treatment. No cases occurred elsewhere in the Colony, and in Port Elizabeth alone have rats and mice died of plague.

Transvaal.—Week ending July 9th, 2 fresh cases (1 white); no deaths. Weeks ending July 16th and 23rd, "no change." Week ending July 30th, "only change, 1 death."

To July 9th the report to date is 149 suspected and proved cases; 28 white, 121 coloured.

Hong Kong.

During the weeks ending July 23rd and July 30th the fresh cases of plague numbered 25 and 17, and the deaths from the disease 25 and 17 respectively.

Mauritius.

During the weeks ending July 28th and August 4th fresh cases 1 and :. Deaths from the disease 0 and 1.

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 83.

LITERARY NOTES.

The *St. Bartholomew's Hospital Journal* has issued a special number in honour of the occasion of the laying of the foundation of the new buildings by the King on July 6th. The ceremony is fully described and its various phases are excellently illustrated. The number forms an interesting record of an interesting event.

The French Société de Préservation contre la Tuberculose offers a prize of £20 for the best popular essay on the prevention of tuberculosis. The essay must not exceed from sixteen to twenty octavo pages in length. Information as to the conditions of competition may be obtained from the General Secretary, 33, Rue Lafayette, Paris.

Messrs. W. B. Saunders and Co. will in a few days have ready for publication a second edition of Pusey and Caldwell's *Roentgen Rays in Therapeutics and Diagnosis*. The first edition was exhausted in less than ten months. The new edition will be increased by about 100 pages, and the case-histories will be brought down to date. The same firm will also publish in the autumn an important new work on the *Vermiform Appendix and its Diseases*, by Dr. Howard A. Kelly.

Messrs. Cassell and Company announce for publication a series of monographs, in which all the available evidence on modern methods of treatment will be critically reviewed by writers whose practical experience enables them to form a judicial estimate of the value of the methods. The first of the series, *Serums, Vaccines and Toxines in Treatment and Diagnosis*, by Dr. Wm. Cecil Bosanquet, has just appeared. Among the other works in preparation are volumes devoted to treatment by animal extracts, by light and *x* says, by hot air, and to the open-air treatment of consumption. The Editor of the series is Mr. Malcolm Morris.

An American correspondent has written to point out that he has "observed quite a tendency to omit the final *al* from 'physiological,' 'biological,' and other similar words without retaining such distinction of meaning as is observed by careful writers between 'politic' and 'political,' 'historic' and 'historical.'" "One would expect," adds our correspondent, "such an omission to carry with it the omission of *al* from the adverbial form also, but it is retained in 'scientifically,' though the adjective is 'scientific.'" He asks for an expression of opinion on the subject. We referred the question to Dr. Henry Bradley, of Oxford, one of the highest authorities on such subjects, and we subjoin his reply: "The interesting question which you raise cannot be exhaustively treated within the compass of a letter, but I may make a few observations which perhaps you may find useful. Somehow it has long been an established rule in English that the adjectives in *-ic* form their adverbs not in *-icly* but in *-ically*, whether there happens to exist a relative adj. in *-ical* or not. *Politic* is an exception, because this adjective and *political* differ so widely both in sound (owing to the change of accent) and in meaning that they are not felt to be related words at all. The adverb *politically* is shown by its accent to belong to the adjective in *-ical*. To use it in the sense of "in a *politic* manner" would be too violent a proceeding. We are prevented from inventing an adverb *politically*, as analogy would suggest, by the fact that it would have to be spelt in the same way as the existing adverb with a different accent, and that would cause ambiguity in writing. Hence, if we must have an adverb corresponding to *politic*, we are compelled to say *politicly*; but the ending *-icly* is so unfamiliar that we feel the word to be awkward, and most people would avoid using it. *Public* differs in the character of its meaning from other adjectives in *-ic*, and an adjective *publical* if it existed would be felt to mean something quite different from *public*; and so no such adverb as *publically* has come into use. We sometimes hear such words as *terrificly*, but they are felt to be rather odd, and the forms in *-ically* are preferred. The origin of the rule is that most adjectives in *-ic* have, or once had, parallel forms in *-ical*, either synonymous or nearly

synonymous, and that where there is a slight difference in meaning it is usually the longer word that has the sense that is the more suited to give rise to an adverb. The rule generalized from such cases does sometimes work a little inconveniently where both adjectives survive with a clear distinction in meaning, and the sense of the shorter form is such that we should prefer to say 'in a -ic manner' rather than 'in a -ical manner.' But the rule is so firmly established in usage that to invent adverbs in *-icly* would seem eccentric. When there is a pair of related adjectives in *-ic* and in *-ical* they are usually in most contexts so precisely synonymous that the choice between them is left open, though usually one of them is more common than the other. But often there are certain particular contexts in which usage absolutely requires the one and not the other. In adjectives connected with the name of a science there is a tendency, by no means universal, to use the longer form to express the notion of 'pertaining to the science itself,' and the shorter form to designate things that are part of the subject matter of the science. Thus, we prefer to speak of '*geologic* periods' but of 'a *geological* treatise.' '*Historical* works' are works treating of history; if we said '*historic* works' we should be understood to mean works which were themselves facts in the history of the race. If there is to be any yielding to what you describe as the American innovation of substituting the shorter for the longer form, I think it would be well to try to follow the lines of the existing distinction above indicated. That is to say, if we do use *physiologic*, let it be used only to mean 'forming part of physiology considered as a body of fact,' and let us continue to use *physiological* when we mean 'pertaining to the science or study of physiology.' Thus we might speak of '*physiologic* phenomena' but of '*physiological* treatises or theories.' Of course, very often the two meanings so run together that on this principle it would not practically matter which word was used. Still, I can imagine that the establishment of such a distinction might occasionally tend to lucidity. I am not particularly recommending the American practice: I am only suggesting a way in which, if it becomes prevalent, it might perhaps be turned to useful account."

Dr. Symes Saunders (Eastbourne) writes:

In Dr. Collier's most interesting presidential address at Oxford reference is made to an amusing incident which occurred between Radcliffe and Kneller, and I venture to send you a variant of the same story by a, to me, unknown author:

On a Dispute Between Dr. Radcliffe and Sir Godfrey Kneller.

Sir Godfrey and Radcliffe had one common way
Into one common garden, and each had a key:
Quoth Kneller, "I'll certainly stop up that door,
If ever I find it unlock'd any more."
"Your threats," replied Radcliffe, "disturb not my ease;
And so you don't *paint* it, e'en do what you please."
"You're smart," rejoins Kneller; "but, say what you will.
I'll take anything from you—but potion or pill."

The second volume of Mr. R. Campbell Thompson's *Devils and Evil Spirits of Babylonia* (Luzac and Co.) is devoted to "Fever Sickness, Headache, etc." It contains a collection of transcriptions, with translations, of a series of cuneiform tablets from Assurbanipal's library at Kuyunjik, which are now in the British Museum. These, Mr. Thompson thinks, were originally written in the ancient non-Semitic or Sumerian language of Mesopotamia, and are at least 6,000 years old. The contents consist of spells against diseases of various kinds. The disease against which the spell is directed is first described, and its name or that of the demon causing it—which to the Assyrian was the same thing—is mentioned. The remedy, generally a ritual observance combined with a prescription of herbs or other medicines applied in the form a poultice, is next pointed out. Thus in the series entitled Asakku, we read:—

"Fever hath blown upon the man as with the windblast, it hath smitten this man, and humbled his pride. . . . The man can eat no food, no water can he drink, he cannot sleep, he hath no rest, his god hath let him be brought low. Marduk hath seen him, and into the house of Ea his father hath entered and spoken. 'Father, the fever (headache, etc.), from the Underworld hath gone forth.' Twice he hath said to him, 'What this man shall do he knoweth not whereby he may be relieved.' Ea hath answered his son Marduk, 'O my son, what dost thou not know, what can I add to thy knowledge? What I know, thou knowest also. Go, my son, Marduk. Take a white kid of Tammuz, lay it down facing the sick man, and take out its heart and place it in the hand of that man; perform an incantation of Eridu. The kid whose heart thou hast taken out is li'i-food, with which thou shalt make an atonement for the man. Bring forth a censer and a torch; scatter it in the street. Bind a bandage on that man. Perform the incantation of Eridu, invoke the great gods that the evil spirit, the evil demon, evil ghost, hag-demon, ghoul, fever, or heavy sickness, which is in the body of the man may be removed and go forth from the house.'"

In many places it is stated that a kid or pig is to be substituted for the patient and that the disease is to be transferred to the animal.

SPECIAL CORRESPONDENCE.

MANCHESTER.

The Inebriate Reformatory at Langho.—Pollution of the Mersey and Irwell.

As already stated in the British Medical Journal, a large certified reformatory for inebriate women was opened at Langho on April 14th, but it is almost tenantless. The Home Secretary has addressed to the Clerk of the Manchester City Justices a letter, of which the following is the purport. The Home Secretary in 1898 called the attention of the City Justices to the powers conferred on them by the Inebriates Act of 1898. Until recently the absence of facilities in the county has been a hindrance to magistrates who were desirous of sending habitual drunkards to certified inebriate reformatories. This is now no longer the case, and the Secretary of State "regrets to find that little use is made of the Langho institution, and that inebriates still continue to be sent to prison, whose committal to the reformatory would, he cannot but think, give them a greater chance of reformation." It appears that of 61 women who during two months had "qualified" for committal to a reformatory, so far as previous convictions are concerned, only 6 were committed to the reformatory. In these circumstances, and having regard to the great desirability of giving the Inebriates Act a thorough trial and a chance of reformation to convicted persons, it seems to Mr. Akers-Douglas desirable that the attention of the Bench should be drawn to the facilities now at their disposal for dealing with suitable cases under this Act.

The Subcommittee appointed by the Mersey and Irwell Joint Committee reports "a serious case of pollution by crude sewage from the outfall works of the Mossley Corporation on July 2nd. It appears that not only can the crude sewage be diverted direct to the river without going into the tanks for treatment, but there are also arrangements by which the tank effluent or sludge may be turned into the river—that is, the Mersey. The Mossley Corporation was required to build up these outlets at once, and unless this was done legal proceedings would be taken." It is strange that such "arrangements" for the tank effluent were allowed to pass the "Censor." The works of the Radcliffe Urban District Council were also found insufficient, for on June 3rd at midnight three inspectors found that seven out of the eight tanks were running off into the river full (Irwell), and the eighth was being filled. It would thus appear that the sewage of the day had been kept up as much as possible, and discharged at a convenient time. Similar offences were charged against the Whitefield Union. Both cases were adjourned by the Bury Court for two months, to give opportunities for preparing efficient schemes.

ASSOCIATION NOTICES.

NOTICE OF QUARTERLY MEETING OF COUNCIL FOR 1904.

A meeting of the Council will be held on Wednesday, October 19th, in the Council Room of the British Medical Association, 429, Strand, London, W.C.

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

Guy Elliston, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

East Anglian Branch.—The autumn meeting of the East Anglian Branch will be held at Kelling Open-air Sanatorium, near Holt, Norfolk, on Thursday, September 29th. Members wishing to read papers or show cases or specimens should communicate with Mr. H. A. Ballance, M.S., Norwich, Honorary Secretary.

CORRESPONDENCE.

HUMAN AND BOVINE TUBERCULOSIS.

Sir,—I venture to hope you will give a place in the columns of the British Medical Journal to the following extract from a letter I lately received from Professor Robert Koch.

I have asked and obtained Professor Koch's permission to send to you for publication this authorized translation of a part of the letter.

. . . It will interest you to hear that the experiments which were made at my suggestion in the Imperial Institute of Public Health, concerning human and bovine tuberculosis, are practically complete, and quite bear out my views.

These experiments were carried out on such a number of animals, and with so much care, that they are, I firmly believe, incontrovertible.

Besides this, these experiments were made during my absence (in Africa) and therefore were not influenced by me. They prove that bovine and human tuberculosis are different from one another. Cattle cannot be infected with human tuberculosis. In very rare instances can man be infected with bovine tuberculosis. This work will be published in detail in a few months.

The Congress on Tuberculosis held in London in 1901 is now chiefly remembered by the statement Professor Koch then made to the effect that human and bovine tuberculosis were different diseases. This statement was made by him because he believed its truth was proved by numerous experiments he had then recently completed and by certain facts he had observed. Before his statement about them was made in London these experiments had, at Professor Koch's request, been submitted for examination and report to a committee of experts whose fitness authoritatively to speak about them no one will call in question. The late Professor Virchow was one of the members of that committee, and he published his opinion that Professor Koch had proved his statement by his experiments. This was the opinion at which that committee arrived with Professor Koch's work before them.

I write this letter in the country without having access to references, but there was published in the *Times* a week or two after the close of the 1901 Congress a letter from me, in which note was made of Professor Virchow's statement and reference given as to where it was published.

In their interim report, lately published in your columns, the Commissioners appointed by our Government to inquire into this question relating to human and bovine tuberculosis stated their dissent from Professor Koch's conclusions. The evidence got by experiment on which our Commissioners based their opinion has not yet been published, nor, so far as the public know, has it yet been referred for examination to any committee of experts.

Those able to estimate the worth of evidence got by experiment can form no opinion as to the value of the experiments on which our Commissioners have founded their views of this important question, until the detailed report of those experiments is published, or has been reported on by a committee of experts. It is probable we shall, when that time comes, have additional important evidence for our guidance in coming to a definite conclusion, in the full report of those experiments, corroborative of his own work, to which Professor Koch refers in the above translation.—I am, etc.,

Carbis Bay, Aug. 10th. G. A. Heron.

THE LATE SIR JOHN SIMON.

Sir,—May I add a word or two to your able and interesting memoir of Sir John Simon in the British Medical Journal of July 30th, to recall his unique position in the General Medical Council? His opinion and advice carried the greatest weight in the deliberations of that body, and to those who sat in Council along with him it is pleasant to remember that they were privileged to have amongst them one of the greatest intellects of his time.

Like the most eminent living orator, Mr. Chamberlain, his words were invariably well chosen, and if for a moment he hesitated in his speech the result showed that the phrase he came to choose was in the highest degree appropriate. As a master of lucid English the records of the Council will, for all time, show not only the scholar but the man of business. In any line he would have strove, but in law more particularly he possessed the qualities of a great judge; and if he had chosen to follow that profession he would have doubtless risen to the very highest post, to the woolsack itself.—I am, etc.,

August 3rd. W. B.

THE CORONER FOR SOUTH-WEST LONDON.

Sir,—The question asked in the House of Commons by Sir Henry Kimber at my request was "edited" before it was allowed to appear on the Order Paper. A request to be informed of the reasons for the divergence of practice among coroners in different districts was omitted, and it was only after considerable opposition, I understand, that Sir Henry was allowed to put a question at all. By his good offices the Attorney-General considered a memorial which I addressed to him praying for leave to ask the High Court of Justice for a fresh inquiry; this request was refused, and I imagine that every attempt to get a definite decision on the practice of Mr. Troutbeck will fail for the sufficient reason that the authorities have no power to compel a coroner to administer the law in accordance with any views but his own. It is of no consequence that the Solicitor-General has stated that the expression "may" is always construed as giving direction, not discretion, that is, not binding on a coroner. And in order to compel a coroner to follow a given practice, an alteration in the law must be made, a procedure which will not commend itself to the present Government. Therefore it appears that the simpler course for the Government is to let Mr. Troutbeck go his own sweet way unchecked, and for the Lord Chancellor to keep a discreet silence, lest his only possible decision should be ignored by Mr. Troutbeck. Hence no doubt the disinclination to assist any inquiry arises in the minds of officials, and we receive from the Home Secretary a flat refusal to supply information which, if not in his possession now, can be obtained for the present year by adding a couple of columns to the forms used in the annual returns of coroners sent in in January. Mr. Akers-Douglas is possibly not aware of the interpretation to which his reply is open—namely, that he is shielding one coroner, inasmuch as the appearance of a specialist before the other coroners is so rare that it may be neglected. But whether the reasons at the back of their inaction be concerned with the pressure of other public business or dictated by a desire to avoid interference with a judicial officer, it is none the less a disconcerting fact that the executive lacks either the power or the inclination to compel the due administration of the statute law.

Now that the question has been raised in Parliament I trust that the British Medical Association will not let it drop till a promise is extracted of immediate legislation in order to put the subject of death certification on a modern and scientific basis.—I am, etc.,

Putney, July 24th. Donald F. Shearer.

HINDU SURGERY.

Sir,—In your commentary on Dr. Rockwood's address on Hindu surgery it is stated that "of all the nations of the world the Hindus were the first who turned their attention to the study of diseases and their treatment." This is very possibly true, but the evidence we have points to the Chinese as the oldest physicians of which we have any record. Dabry in 1863 published *La Médecine chez les Chinois*, in which he gave an account of Chinese medicine obtained from the writings of the Emperor Hoang-ty 2637 B.C. Here we learn that the Chinese treated syphilis by mercurial inunction, much as we do now. The Hindu *Ayurveda*, containing the writings of Susruta, dates back, according to Hessler, who translated it into Latin, about 1000 B.C. (*Ayurveda id est Medicinae Systema a venerabili Dhanvantari demonstratum, a Susruta discipulo compositum.*) Dhanvantari appears to have been looked upon as the god of medicine in India. One of the most interesting points in this book is the statement that small-pox was well known to the ancient Hindus, and was treated by vaccination, thus anticipating Jenner by many centuries. An account of these subjects may be found in Bisset's book on *La Syphilis aujourd'hui et chez les Anciens*.—I am, etc.,

London, W., July 25th. C. F. Marshall.

THE SCOTTISH POOR-LAW MEDICAL SERVICE.

Sir,—Your remarks regarding the Poor-law service are very much to the point. I think the medical profession will agree with me that the grievances as depicted in the Highlands and Islands of Scotland are not in the slightest degree different from the grievances of any other part of Scotland. The same attempts at coercion; the same refusal to pay the legitimate fees; the same imposing of duties that are not allowed under the Local Government Board rules, as signed by the Secretary for Scotland, are the same there as in our districts. Such being the case it is surely time that the Association, with the powerful means at its command, should take action, and call

the attention of the members of the Local Government Board for Scotland to the irregularities that are allowed to go on at present, and take steps to get these irregularities put a stop to. Failing in their efforts, they have the ear of a good number of M.P.'s, as well as that of the responsible head of the Board—the Secretary of State for Scotland.

It is quite illegal for any parish to refuse to pay lunacy fees to their medical officers, or to refuse to pay for visits to boarded-out lunatics.

The enforcing of such payments really rests with the Local Government Board, which says that the including these fees under the Poor Law make the parish liable to lose the medical relief grant.

A more powerful instrument could not be used to enforce the just payment of these fees to the parish doctors, who will have reason to thank the British Medical Association should it succeed in doing what is expected of it, in assisting to see that the rules and regulations at present legal be carried out by each parish, large or small, Highland or Lowland.—I am, etc.,

August 4th. FAIR PLAY.

THE CONTROL OF MEASLES.

SIR,—I am glad to see the letter of "M.D." in the BRITISH MEDICAL JOURNAL of August 6th, and to endorse what he has said on the importance of your article on this subject. During the early months of this year, in a district certainly not half a mile square, I have attended nearly 250 cases of measles amongst children of the very poor class, the severity of which can be gauged from the fact that nearly 50 of these cases were complicated with broncho-pneumonia. Naturally enough, in the crowded rooms of poor London dwellings—where not only are all the children of one family huddled together in one room, but where there are several families occupying the same house—it is quite impossible to adopt the measures which "M.D." has employed so successfully to check the spread of the disease, and I hardly know of any instance where it has been confined to one child in a particular house.

Sufficient attention has never yet been given to the sufferings of the poor during a large outbreak of measles, nor to the dangerous nature of this complaint when it affects children ill-clad, ill-fed, and ill housed. To quote one instance illustrating this point: During March of this year I was attending a family who lived in one room on the top floor of a house in a poor quarter of London. In opposite corners of the room were two children lying in "cots" improvised from orange-boxes, etc; each child was suffering from broncho-pneumonia following measles. In another part of the room was a third child with both measles and whooping-cough, whilst the only bed which the room boasted contained a fourth child with measles and the mother just confined! And yet, under present regulations, no fever hospital can relieve us, nor help to check this serious cause of infant mortality in large cities.—I am, etc.,

London Medical Mission, W.C., Aug. 9th. HAROLD BALME.

THE EFFECTS OF HIGH ALTITUDES.

SIR,—During a successful ascent of the Matterhorn on July 10th, I made a few observations as to the effect which the atmosphere produced on myself from 12,500 ft. as measured by my barometer to the summit, 14,700 ft. These, with a few hints as to clothing and provisions, may prove interesting to amateur climbers, like myself, in our profession.

At 12,500 ft., after ten minutes' rest, my pulse was 140, respirations 45, temperature 98°; I experienced some frontal headache, slight nausea, perspired freely, but did not experience fatigue.

At 13,500 ft., after ten minutes' halt, pulse 150, headache and nausea worse, great thirst, and a feeling of discomfort and slight pain in the bladder. I voided a small quantity of highly-coloured urine.

From this point to 14,000 ft. we halted for about one minute every ten minutes, and I vomited once; my guide informed me that he also felt sick.

From 14,000 ft. to the summit we had to stop more frequently; during one of the pauses my pulse was 200, respirations 56. I voided urine frequently, could hear only with difficulty, headache and nausea increased, but I did not again vomit. I did not experience any sense of muscular fatigue, however, and I never doubted my ability to reach the summit.

It is essential to take two thick woollen under suits, three flannel shirts, three pairs of thick woollen stockings, thick muffler, thick Norfolk jacket; boots bought and nailed locally are the best—but they must have been worn for some time, and kept on trees—"Balaclava" cap, sun hat, and well-fitting goggles, also an ice axe.

It is intensely cold frequently during the night at the hut, and from 2 a.m., when a start is made, up to 10 a.m.; then it may become very warm on a clear day.

As to provisions, the following articles will be found best: Hard eggs, sardines, sliced cold beef, McConachie's rations—for cooking at the hut, meat lozenges, chocolate, raisins, plenty of tea, white wine, and a little cognac. Cold tea can be carried up in bottles, and deposited on the way up, for future use.

During the ascent from the hut, which took us six hours, I ate nothing but chocolate; but I drank freely of cold tea, with a little white Swiss wine in it. This is a capital thing for the intense thirst.

The face should be smeared with lanoline, otherwise the lips may crack and the skin blister.

Some of the clothing can be left at the hut, which is about six hours from Zermatt, should the morning prove warm and there is little wind. The guides are the advisers in all these matters, however, and prove excellent fellows, not alone as guides, but as cooks and companions, most of them speaking English.

The eyes should be well protected by large dark goggles, which are best bought locally. An ice axe can be got in Zermatt for half the cost of one bought in London. A ruck sack is very handy. It is useless to take toilet articles to the hut, as one never washes on the mountain.

I would strongly advise other amateurs not to attempt the Matterhorn without a fortnight's hard training and the ascent of some two or three smaller mountains; longer than this is essential for any one over 35 years of age.—I am, etc.,

Devonport, July 24th. R. P. RYAN, F.R.C.S.I.

PHYSICAL DEGENERATION: PAST AND PRESENT.

SIR,—Following the discussion on national degeneration at the present I looked up the past and came across the London Bill of Mortality for 1745-6—that is, from December 10th of one year to December 10th of the next. In this year 28,157 are entered as the burials of the year:

Years of Age.	Died.	Years of Age.	Died.
Under 2	9,503	From 90—100	78
From 2— 5	2,611	100	4
,, 5—10	1,089	101	1
,, 10—20	895	102	0
,, 20—30	2,356	103	3
,, 30—40	2,728	104	0
,, 40—50	2,876	105	1
,, 50—60	2,243	106	
,, 60—70	1,699		
,, 70—80	1,444		
,, 80—90	625		28,157

Of these,

4,887 are said to have died of consumption.
3,236 ,, ,, small-pox.
250 ,, ,, measles.
7 were murdered.
20 ,, executed.
11 ,, starved.
51 ,, overlaid.

But the most interesting figures are those referring to the deaths under 5 years of age—9,503 added to 2,611 equal 12,114, nearly a half of the deaths occurred under 5 years of age. Looking back to the month of February in the same year I find the proportion the same, therefore the death-rate among the infants was not extraordinary for the period.

Compare these figures with those given for Huddersfield in 1891:

There were 1,572 deaths: Under 5, 529; 5 to 10, 52 10 to 20, 76.

That is,

In 1746 the deaths under 60 years of age were 13,203 out of 28,157.
In 1891 ,, ,, ,, 581 ,, 1,571.

After giving corresponding figures let me give corresponding paragraphs: Dr. William Hall quotes from the Committee on Physical Deterioration:

There is vastly more pleasure seeking, more desire for some sort of sensation in daily life, as amongst men in the betting ring, and as amongst women in tawdry finery and tendency to drink, than there was formerly, and there is a reckless disregard for infant life.

This is in August, 1904. In July 19th, 1746, Sylvanus Urban wrote:

Degeneracy of the People of England lamented money is an inferior God worshipped by the English in order to come to the superior deity pleasure; that which is practised in England is the study of pleasure by both sexes and almost every rank of people: the propensity to extravagance prevails among the most ordinary mechanics, their savings

are expended in debauch, hence the tears of the widows and the cry of the orphans.

No one denies that there is a deal of work before us if we are to continue to improve the race and enable it to hold its high position in the world, but one is reminded of the answer of the editor or contributor to *Punch*, when some one lamented that "*Punch* is not what it once was." "No" (he said) "it never was."—I am, etc.,

Herbert de Carle Woodcock, M.R.C.S.,
Surgeon B Division, Leeds Police; Honorary Physician, Consumption Hospital, Armley.

Leeds, August 2nd.

TRAUMATISM AND HERNIA.

Sir,—In Mr. Sheen's interesting communication to your Journal of July 9th, p. 60, he states that "the existence of a double hernia is against traumatism" as a cause, and furthermore he remarks that "it is most unlikely that the gut will enter the two inguinal canals at the same moment as a result of a single 'strain.'"

While it must undoubtedly be rare for such an accident to occur, yet a few months ago I met with one. A young woman was brought to me by her mother the day after hurting herself by lifting a heavy basket of firewood. She had immediately felt the "strain" in both groins, and a small swelling was at once noticed on both sides. I found a small inguinal hernia in each groin. The patient affirmed that there had not been any swelling in either locality previously.—I am, etc.,

A. B. Atherton, M.D., LL.D.

Fredericton, New Brunswick, July 23rd.

THE PREVENTION OF VENTRAL HERNIA AS A SEQUEL TO ABDOMINAL SECTION.

Sir,—Mr. Stanmore Bishop, in his instructive paper published in the British Medical Journal of July 9th, p. 53, has failed to appreciate the technique employed in the opening of the abdomen by the transverse incision. He writes:

> One surgeon makes a crescentic cut through the skin, with its convexity towards the pubes; then turning up the flap thus formed of skin and subcutaneous fat, he makes a vertical incision through the rest of the abdominal wall into the peritoneal cavity.

And again:

> It is hardly necessary to point out the futility of relying upon such essentially yielding tissues as skin and subcutaneous fat for the supply of a force sufficient to hold in check the burrowing tendencies of omentum, or the pressure of internal abdominal tension.

In a recently published article[1] I have described the transverse method of opening the abdomen by a slightly-curved incision with its convexity towards the pubes; I cannot, however, discover any authority who advocates the technique described by Mr. Stanmore Bishop.

The transverse incision, as performed by Continental surgeons, passes not only through the skin and subcutaneous fat but also through the deep fascia or abdominal aponeurosis, which is severed for the entire length of the skin incision; this latter structure is raised from the rawed surface of the recti muscles to an extent deemed sufficient by the operator. The division between the muscles is now clearly seen, and they are separated by the handle of the scalpel, and the abdomen opened in the usual manner. In closing the abdomen the peritoneum is first brought together by a continuous suture. The recti muscles are found to lie, as a rule, in close parallel apposition; should this not be so, a few interrupted sutures superficially placed in the muscles is all that will be necessary to accomplish this result. The thick flap consisting of aponeurosis, subcutaneous fat, and skin, is brought into position, and the deep fascia is united to its corresponding portion throughout its entire severed length. The skin is lastly sutured.

From this description it is evident that the fascia has received no injury throughout its vertical extent, and it can resist the cross strain to which Mr. Stanmore Bishop rightly attaches so much importance as a factor in the causation of ventral hernia. The line of severance in the fascia receives, moreover, direct support from the recti muscles which cross beneath it at right angles, and there remains but one minute part, where the united fascia crosses from muscle to muscle, that could even theoretically permit of hernial escape.—I am, etc.,

E. Hastings Tweedy,
Master, Rotunda Hospital.

Dublin, July 12th.

[1] *The Journal of Obstetrics and Gynaecology of the British Empire*, June, 1904.

OBITUARY.

T. GILBART SMITH, M.D., F.R.C.P.,

Physician to the London Hospital.

The news of the death last week of Dr. Thomas Gilbart Smith, Physician to the London Hospital, will be heard with great regret by a vast number of acquaintances, friends, and colleagues now absent from London, and past and present students of the "London" at home and abroad. He was only 56, and death came quite suddenly; at the time of its occurrence he was on a holiday in Devonshire, and at the moment bicycling with one of his sons; an attack of heart syncope suddenly came on, and in a brief space of time all was over.

Dr. Gilbart Smith was a son of the Reverend J. Denham Smith, a cleric widely known in Ireland during the Sixties, and in London during later years. After graduating in Arts and Medicine at Trinity College, Dublin, Gilbart Smith came over to England and continued a student career at St. Bartholomew's Hospital, and in Paris. It was not long, however, before he established himself in Harley Street, in the house which he continued to occupy throughout his career. Success came to him early, his path thereto being doubtless smoothed by the friendship of the late Dr. Habershon, who entrusted his patients to him when absent from home, or unable, through pressure of work, to see them for himself.

Sir Andrew Clark was also a firm and specially appreciative friend, and was long accustomed to entrust patients to his care during vacation times. In any case the Seventies had not expired, nor ten years from his first graduation elapsed before Dr. Gilbart Smith found himself in possession of an appointment upon the staff of a first-rate London hospital, having been selected for the newly-established post of sixth assistant physician at the "London." At the time of his death he was second of the Senior Physicians. He held too, of course, a large number of other medical posts of importance, and was an active member of many societies. Thus, in addition to his work at the London, he was Physician to the Royal Hospital for Diseases of the Chest and of the Patriotic Assurance Company of Ireland, a Consulting Physician of the Mildmay Park Cottage Hospital and Cripples' Nursery, and formerly a Physician of the Infirmary for Consumption and Diseases of the Chest, Margaret Street, of the St. Marylebone General Dispensary, and of the Lion Assurance Company. In 1885 he was elected a Fellow of the Royal College of Physicians, and in 1891 he was President of the Harveian Society. In the affairs of the Irish Medical Schools' and Graduates' Association he took a keen interest, and played an active part during the whole term of his membership, while he was also a Fellow of the Royal Medical and Chirurgical Society, of the Medical Society of London, and of the Clinical and Pathological Societies. Dr. Gilbart Smith was not a writer of books, nor a very active contributor to medical literature, nor, again, did he take much part in the affairs of the medical school of the London Hospital. It was at the bedside that he was at his best, and as a clinical teacher he was very popular with students. In private life he was a most cheery companion, an excellent *raconteur* and a humorous after-dinner speaker. A sympathetic appreciation of the man is contained in a letter written by Sir Frederick Treves when the news of Gilbart Smith's death reached him:

"You know what a sincere affection I had for Gilbart and how much I admired him. We had been fast friends for so many years. One of my chief pleasures in connexion with the London Hospital was my association with him, and every pleasant recollection in the past which hangs about the 'London' was associated with him.

"We all had the greatest admiration of his many splendid qualities, his absolute honesty, his loyalty, his unbounded kindness, and his genial and affectionate disposition. No pleasant enterprise at the Hospital was complete without Gilbart, and wherever he went his cheeriness took possession of everybody. He was a man of a very rare and very fine type, and the least that many of us can claim is that we appreciated him and valued every feature of his noble character.

"He will be terribly missed and very sincerely mourned, not only by every one of his friends but by the host of young students who were absolutely devoted to him and over whose lives he exercised so good an influence."

Dr. Gilbart Smith was buried on Monday, August 8th, in the family grave at West Hampstead, in the presence of a large number of friends; the ceremony which preceded the interment was of an extremely simple but graceful character, and to this additional pathos was added by the fact that in accordance with a remembered wish of the deceased, it was precisely that which he had selected himself when his only daughter died some three years ago. In addition to this daughter, Dr. Gilbart Smith had three sons, by all of whom he is survived, as well as by his wife, formerly a Miss Bewley, of the well-known Irish family of that name.

O. CHRISTIAN LOVEN,

Formerly Professor of Physiology in Stockholm.

We have to announce the death of Professor O. Christian Lovén, who was born in Stockholm in 1835, where he studied in the Caroline Institute under, amongst others, the famous A. Retzius. Lovén graduated in 1863 at Lund, and became Assistant in the Physiological Department, and there he remained for ten years. In 1874 he was appointed Professor of Physiology in Stockholm. In 1884 he was appointed Secretary of the Royal Swedish Academy of Agriculture. Both these offices he resigned some years ago. Lovén travelled in many lands, and pursued his studies, amongst others, under Ludwig, in Leipzig; in fact, he was one of his earliest Leipzig pupils. His well-known memoir, *Ueber Erweiterung von Arterien in Folge einer Nervenerregung*, was communicated by C. Ludwig in 1866 to *Sächsischen Gesellschaft der Wissenschaft*. It deals with the effect of stimulation of the central end of sensory nerves on the heart and blood pressure; the dilative effects produced by stimulation of the auricular nerves; the dilatation of the saphena artery reflexly by stimulation of the dorsal nerve of the foot; and, lastly, with dilation of the erectile tissue of the penis during stimulation of the nervi erigentes, which had recently been discovered by Eckhard.

Lovén early applied the capillary electrometer to the study of the electrical phenomena of muscle (1879), contributed to the *Festschrift* in honour of the quatercentenary of the Caroline Institute; also his important paper *Om Naturen af de Volontära Muskelcontractionerna* (On the Nature of a Voluntary Muscular Contraction) (1881), and an allied subject, which appeared both in Norwegian and German, but is best known from the German article on the muscle tone during electrical stimulation, as well as certain acoustical phenomena connected therewith. In 1881 there appeared his paper on strychnin-tetanus, in which he showed its discontinuous nature and that the rhythm of impulses which proceed from the central nervous system are much less than had hitherto been assumed. For several years there appeared *Mittheilungen vom physiologischen Laboratorum des Carolinschen Instituts in Stockholm*. These from 1881 onwards contained chiefly the well-known researches on muscle and nerve of Robert Tigerstedt, one of Lovén's most distinguished pupils, and who for some years was his successor in the Chair of Physiology. Only a few years ago Tigerstedt returned to his native country and became Professor in Helsingfors, to be succeeded in Stockholm by Professor Johansson.

Among Professor Lovén's best known contributions to histology are those on the Tastebuds, first published in Swedish, 1867, and translated and published in *Schultze's Archiv* for 1868, and *Om lymfvägarne i magsäckens slemhinna* (*Nordiskt Med. Arkiv, II.*), that is, the lymphatics of the mucous membrane of the stomach. The well-known illustrations are found in every textbook of histology. Lovén worked in many fields of physiology and extended his work even to comparative physiology. For several years before his resignation he had had but indifferent health.

Dr. W. G. Holloway, of Mayfair, who recently died at the age of 43 years, was educated at Sidney Sussex College, Cambridge, where he took his B.A. with a first class in the natural science tripos in 1883 and his M.B. with a first class in the second examination in 1886. He was a scholar of St. Mary's Hospital, London, in 1884-5, and was prizeman and scholar in several subjects in 1885-6. He was admitted a member of the Royal College of Surgeons, England, in 1885, and in 1890 he proceeded to the M.D. degree at Cambridge. After filling the offices of House-Surgeon to the St. Leonards and East Sussex Hospital and House-Physician to the General Lying-in Hospital, Lambeth, Dr. Holloway was subsequently for many years connected with the Central London Throat, Nose, and Ear Hospital, London, as Clinical Assistant, afterwards as Pathologist, Registrar, and Anaesthetist, and finally as Senior Assistant-Surgeon. He was a Fellow of the British Laryngological and Rhinological Association and a member of the Harveian Society of London and of the British Medical Association.

The late Sir John Simon.—At the funeral of Sir John Simon, which took place on July 27th, the Royal Society was represented by Mr. A. B. Kempe, the Treasurer of the Society. The following representatives of the Local Government Board were also present: Mr. John Lithiby, C.B., representing the secretariat; Mr. W. H. Power, C.B., F.R.S., the present medical officer of the Board, who now occupies the position once held by Sir John Simon; Dr. Franklin Parsons, assistant medical officer; and other members of the Medical Department. The staff of St. Thomas's Hospital was represented by Mr. Clutton, senior surgeon.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Surgeon J. C. Durston and A. H. Jeremy, M.B., B.A., are promoted to be Staff Surgeons, from November 24th, 1901. Their first appointment bears date November 14th, 1893.

Surgeons R. S. Bernard and M. H. Knapp are promoted to be Staff Surgeons from May 16th, 1902. They were appointed Surgeons May 16th, 1894.

Surgeon R. A. Ross, M.B., is promoted to be Staff Surgeon from November 12th, 1903. His first commission is dated November 12th, 1895.

ROYAL ARMY MEDICAL CORPS.

The following gentlemen were successful at the recent examination in London for commissions in the Royal Army Medical Corps:

Marks.	
500	William Byam, M.R.C.S.Eng., L.R.C.P.Lond.
586	Charles Ryley, M.R.C.S.Eng., L.R.C.P.Lond., D.P.H.Lond.
571	Harry Theodore Wilson, M.R.C.S.Eng., L.R.C.P.Lond.
567	Lionel Victor Thurston, M.R.C.S.Eng., L.R.C.P.Lond.
565	Walter Hyde Hills, M.B., B.C., and B.A.Cantab.
560	Patrick Dwyer, M.B., B.Ch., R.U.I.
556	Phillip Claude Tresilian Davy, M.R.C.S.Eng., L.R.C.P.Lond., M.B.Lond.
547	John Forbes Cook Mackenzie, M.B., B.S.Melb.
540	Arthur William Gater, M.R.C.S.Eng., L.R.C.P.Lond.
536	George Alfred Duncan Harvey, L.R.C.P.&S.I.
536	Harold Charles Winckworth, M.B.C.S.Eng., L.R.C.P.Lond., L.D.S.Eng.
534	James Campbell, M.B., B.Ch., R.U.I.
531	Richard Collis Hallowes, M.B., B.Ch., B.A.O.Dub., B.A.Dub.
530	Harry William Russell, M.B., B.Ch.Vict.
523	George Richard Painton, M.R.C.S.Eng., L.R.C.P.Lond.
523	Meurice Sinclair, M.B., B.Ch.Edin.
512	Evelyn John Hanaler Luxmore, M.R.C.S.Eng., L.R.C.P.Lond.
505	Kenneth Alan Crawford Doig, M.R.C.S.Eng., L.R.C.P.Lond.
503	Herbert Owen Marsh Beadnell, M.R.C.S.Eng., L.R.C.P.Lond.
500	Herbert St. Maur Carter, M.D., M.B., B.Ch.Dub., B.A.Dub.
499	Robert Harry Lucas Cordner, M.R.C.S.Eng., L.R.C.P.Lond.
494	John Patrick Lynch, L.R.C.P.&S.I.
490	Alastair Norman Fraser, M.B., B.Ch.Edin.
489	Nelson Low, M.R.C.S.Eng., L.R.C.P.Lond.
487	Percy Arnold Jones, M.R.C.S.Eng., L.R.C.P.Lond., B.A.Cantab.
485	Cecil Roy Millar, L.R.C.P.&S.I.
482	Agustine Thomas Frost, M.B., B.Ch., R.U.I
482	George Herbert Richard, M.R.C.S.Eng., L.R.C.P.Lond.
482	Harry Christopher Sidgwick, M.R.C.S.Eng., L.R.C.P.Lond. M.B.&B.A.Cantab.
477	John St. Aubyn Maughan, L.R.C.P.&S.Edin., L.F.P.&S.Glas.

Forty-nine candidates entered for the competition.

Promotions.

The undermentioned Captains to be Majors, dated July 27th: H. A. Hinge, J. G. McNaught, M.D., H. A. Bray, T. McDermott, M.B., E. W. Slayter, M.B., H. S. Thurston, L.R. More, M.B., C. O'C. Hodgens, Brevet-Major A. F. Tyrrell, T. P. Jones, M.B., W. D. Erskine, M.B., A. G. Thompson, M.B., G. A. Moore, M.D., R. C. Lewis, R. F. E. Austin, H. W. B. O'Reilly, M.B., N. Marder, E. H. Condon, M.B., G. S. Mansfield, M.B., F. G. Faichnie, H. W. K. Read, A. J. Chambers. They were appointed Surgeon-Lieutenants, July 30th, 1892, and Surgeon-Captains, July 27th, 1895. Their war records are as follows: Major Hinge—North-West Frontier of India campaign, 1897-8, including the capture of the Tanga Pass (medal with clasp); South African war, 1902 (Queen's medal with two clasps). Major McNaught—South African war, 1901-2, in the Transvaal, Orange River Colony, and Cape Colony (Queen's medal with five clasps). Major Bray, North-West Frontier of India campaign, 1897-8, with the Tirah Expeditionary Force (medal with clasp). Major McDermott—South African war, 1899-1902, including the defence of Ladysmith and numerous operations in Natal and the Transvaal (King's medal with two clasps). Major Slayter—North-West Frontier of India campaign, 1897-8 (medal with clasp); South African war, 1899-1900, including the actions at Elandslaagte, Rietfontein, and Lombard's Kop, and the defence of Ladysmith (Queen's medal with two clasps). Major Thurston—North-West Frontier of India campaign, 1897-8 (medal with clasp); South African war, 1902 (mentioned in dispatches, Queen's medal with three clasps). Major More—North-West Frontier of India, 1897-8, with the Tirah Expeditionary Force (medal with two clasps). Major Hodgens—South African war, 1899-1901, including the relief of Kimberley and operations in Orange River and Cape Colonies (Queen's medal with three clasps). Major Tyrrell—North-West Frontier of India campaign, 1897-8 (medal with clasp); South African war, 1900-2 as Orderly Officer to the Principal Medical Officer, South Africa (mentioned in dispatches, Brevet of Major, King's medal with two clasps). Major Jones—North-West Frontier of India campaign, 1887-8, with the Tirah Expeditionary Force (medal with two clasps); South African

war, 1900-2, including numerous operations in the Transvaal, Orange River Colony, and Cape Colony (King's medal with two clasps). Major Erskine—North West Frontier of India campaign, 1887-8, with the Tirah Expeditionary Force (medal with clasp); South African war, 1899-1902 in the Transvaal and on the Zululand Frontier of Natal (Queen's medal with three clasps, and King's medal with two clasps). Major Thompson—South African war, 1902, in the Orange River Colony (Queen's medal with two clasps). Major Moore—North West Frontier of India campaign, 1887-8, with the Tirah Expeditionary Force (medal with two clasps); South African war, 1899-1902, in the Orange River and Cape Colonies (King's medal with two clasps). Major Lewis—North West Frontier of India campaign, 1897-8 (medal with clasp); South African war, 1899-1900 (Queen's medal with three clasps). Major Austin—North West Frontier of India campaign, 1897-8, with the Tirah Expeditionary Force (medal with two clasps); South African war, 1901-2, in the Transvaal. Major O'Reilly—South African war, 1899-1900. Major Marder—North West Frontier of India campaign, 1897-8, on the Samana and with the Tirah Expeditionary Force (medal with three clasps); South African war, 1899-1901; in Natal, at the defence of Ladysmith, and in the Orange River Colony (Queen's medal with three clasps). Major Condon—South African war, 1900-1. Major Mansfield—South African war, 1900-1, including operations in Orange River and Cape Colonies (Queen's medal with four clasps). Major Faichnie—South African war, 1899-1902, including actions at Talana and Lombard's Kop, the defence of Ladysmith, action at Laing's Nek, and subsequent operations in the Transvaal (Queen's medal with four clasps, and King's medal with two clasps). Major Read—North-West Frontier of India campaign, 1897-8, on the Samana and at the Ublan Pass, also with the Tirah Expeditionary Force (medal with three clasps). Major Chambers—South African war, 1899-1902, including the relief of Kimberley and operations in the Orange River and Cape Colonies (King's medal with two clasps).

Captains F. M. Mangin, C. E. Pollock, W. J. Taylor, M.B., B. W. Longhurst, and J. H. Rivers are also promoted to be Majors, from July 30th. The following are their war records:—Major Mangin—North-West Frontier of India campaign, 1897-8 (medal with clasp); South African war, 1902, in Cape Colony. Major Pollock—North-West Frontier of India campaign, 1897-8, with the Tirah Expeditionary Force (medal with two clasps); South African war, 1902, in the Orange River and Cape Colonies. Major Taylor—North-West Frontier of India campaign, 1897-8, with the Tirah Expeditionary Force (medal with two clasps). Major Longhurst—South African war, 1899-1902 (Queen's medal with three clasps and King's medal with two clasps). Major Rivers has been serving with the Egyptian army since January, 1899, but otherwise has no war record.

Lieutenant W. B. Taylor resigns his commission, August 10th. He was appointed September 1st, 1902.

Lieutenant-Colonels G. F. A. Smythe, L. W. Swabey, R. H. S. Sawyer, W. L. Reade, W. W. Pike, D.S.O., J. D. T. Reckitt, E. H. Lynden-Bell, C. E. Faunce, R. J. Geddes, D.S.O., and G. Wilson are directed to proceed to India during the trooping season, 1904-5. Lieutenant-Colonels W. J. Macnamara, W. Heffernan, T. E. Noding, C. W. S. Magrath, and F. H. M. Burton are to proceed to South Africa.

INDIAN MEDICAL SERVICE.

The following is a list of the successful candidates at the Indian Medical Service Examination held on August 1st and four following days:

	Marks.		Marks.
1. Matson, H. S.	3,543	8. Macrae, I. M.	3,181
2. Steel, D.	3,319	9. Shaw, C. C. C.	3,060
3. Stewart, F. H.	3,283	10. MacGregor, R. D.	2,081
4. Dougan, H. A.	3,277	11. Babington, J. W. H. ...	2,979
5. Wells, R. T.	3,215	12. Skettle, F. B.	2,957
6. Proctor, A. H.	3,195	13. Peebles, A. S. M.	2,923
7. Cameron, A.	3,191		

Out of 43 who entered for the examination 33 (21 of whom had University degrees) competed for the 13 vacancies.

ARMY MEDICAL RESERVE.

Surgeon-Lieutenant-Colonel J. G. Saville, having resigned his Volunteer appointment, ceases to belong to the Army Medical Reserve.

ROYAL ENGINEERS (VOLUNTEERS).

Surgeon-Lieutenant G. H. Goldsmith, M.D., 1st Bedfordshire, to be Surgeon-Captain, August 6th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Brigade Surgeon-Lieutenant-Colonel C. Downing, the Welsh Bearer Company, is seconded whilst holding the appointment of Senior Medical Officer to the Welsh Volunteer Infantry Brigade, August 6th.

VOLUNTEER RIFLES.

Surgeon-Lieutenant G. R. Livingston, M.B., 3rd (Dumfries) Volunteer Battalion the King's Own Scottish Borderers, is borne as supernumerary whilst commanding the Scottish Border Volunteer Infantry Brigade Bearer Company, August 6th.

Surgeon-Captain W. H. F. Young, 4th Volunteer Battalion the East Surrey Regiment, resigns his commission, August 6th.

Messrs. Robert E. Lauder and Cyril S. S. Rigby are appointed Surgeon-Lieutenants in the 2nd Volunteer Battalion the Hampshire Regiment and the 2nd Volunteer Battalion the South Staffordshire Regiment, respectively, August 6th.

VOLUNTEER OFFICERS' DECORATION.

The King has been pleased to confer the Volunteer Officers' Decoration upon the undermentioned officers: Surgeon-Major C. Godson, M.D., 18th Middlesex Volunteer Rifle Corps; Surgeon-Major H. Habgood, M.D., 2nd Sussex Royal Garrison Artillery (Volunteers); Surgeon-Major G. B. Todd, 5th (Glasgow Highland) Volunteer Battalion the Highland Light Infantry.

A Women's League in Portugal.—A humanitarian league of ladies has been formed in Lisbon with the object of improving the conditions of life among Portuguese women. The first efforts of the league will be directed to secure a Government inquiry into the conditions under which women have to work in factories and workshops.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

The following candidates have passed the examinations indicated:

General Intermediate Examination for Internal Students.—Ella Mabel Barker, C. A. Basker, H. G. Bennett, Sylvia Rose M. Blackstone, Mary Alice Blair, H. Blackway, G. T. Burke, T. W. H. Burne, Angel Camacho, T. E. A. Carr, H. J. Cates, H. S. Chate, B. W. Cherrett, A. B. Coomber, H. R. Davies, K. H. Digby, R. L. E. Downer, S. F. Dudley, R. C. T. Evans, M. Fawkes, A. B. Fearnley, †W. S. Fenwick, Janet Marcia Fische, †‡A. Fleming, S. F. Fouracre, E. W. Giesen, S. W. Grimwade, Edith Mary Guest, J. Hadwen, E. H. R. Harries, H. J. Henderson, T. S. Higgins, J. E. Hodson, H. Howink, D. W. Hume, Mary Sophia Jevons, Elizabeth Herdman Lepper, C. A. L. Mayer, Marian Mayfield, Minnie Merrifield, Ethel Mary Morgan, W. P. H. Munden, F. M. Neild, *‡H. J. Nightingale (bracketed equal with C. A. Pannett for Scholarship in Anatomy), H. Nockolds, E. L. R. Norton, *†C. A. Pannett (Scholarship in Physiology and bracketed equal with H. J. Nightingale for Scholarship in Anatomy), W. Patey, Catherine Payne, A. F. Perl, A. J. S. Pinchin, E. J. Price, Mona Dew Roberts, R. C. Roberts, H. C. Samuel, W. O. Sankey, Marie Simpson, Eliza Macdonald Smith, H. J. Smith, G. F. Stebbing, A. K. B. R. W. Taylor, D. C. Taylor, A. C. F. Turner, J. R. H. Turton, Winifred Emmeline Watts, H. G. Webb, L. H. Wootton, C. E. Zundel.

* Distinguished in Anatomy. † Distinguished in Physiology.
‡ Distinguished in Pharmacology.

Intermediate Examination in Medicine for External Students.—L. Ball, S. H. Booth, E. F. Finch, R. A. Heldry, J. E. Middlemiss, E. S. Phipson, H. R. Rawlings, A. Toulmin, A. H. Turner, J. W. J. Willcox.

In addition, some 110 Internal and 50 External students passed a special examination in Organic Chemistry only.

UNIVERSITY COLLEGE, LONDON.

The Worshipful Company of Drapers has discharged the debt owed by University College, London, to the bankers to the amount of £30,000. The Treasurer has received from Messrs. Wernher, Beit and Co. their cheque for £10,000 promised to promote the incorporation of the College in the University. For the completion of the incorporation scheme there still remain £18,000 to be raised.

Professor Oliver has been reappointed to the Quain Chair of Botany. Dr F. J. Poynton has been appointed Sub-Dean of the Faculty of Medicine in succession to Professor Thane, resigned. The Council have sent the following resolution to Professor Thane: "That the Council desire to place on record their sense of the great services which Professor G. D. Thane has rendered to the College and to the Faculty of Medicine during the twenty-one years he has held the office of Sub-Dean to the Faculty of Medicine."

Mr. W. W. Seton, M.A., has been appointed Acting Secretary until the end of December.

The Session 1904-5 will begin in the Faculties of Arts and Laws and of Science on Tuesday, October 4th, in the Faculty of Medicine on Monday, October 3rd. The introductory lecture will be given by Professor J. N. Collie on October 3rd, at 4 p.m.

The new hospital will shortly be finished, and the whole of it will be available for clinical study for those entering in October.

LONDON HOSPITAL MEDICAL COLLEGE.

Distribution of Prizes.

The following is the prize list for the session 1903-4:—Price Scholarship in Science, £120, Mr. W. H. Palmer. Price Scholarship in Anatomy and Physiology, Scholarship, £60, Hon. Certificate, Mr. H. S. Souttar; Proxime Accessit, L. J. Austin. Entrance Science Scholarship, £60 Scholarship, Mr. J. B. Scudamore: £35 Scholarship, Mr. J. P. Johnson. Buxton Scholarship, Arts, £30 Scholarship, Mr. J. G. Watson: £20 Scholarship, Mr. G. S. Candy. Epsom Scholarship for Students of Epsom College, Mr. D. G. Evans. Clinical Medicine, £20 Scholarship, Mr. J. Lambert; Hon. Certificate, Mr. E. Ward. Clinical Surgery, £20 Scholarship, Mr. E. Ward, Mr. J. Lambert: Hon. Certificate, Mr. G. F. Bird. Clinical Obstetrics, £20 Scholarship, Mr. A. J. Walton; Hon. Certificates, Mr. J. E. Adler, Mr. A. S. Daly, Mr. J. Bryan. Andrew Clark Prize, £26 prize (biennial), Mr. A. J. Walton; Hon. Certificate, Mr. E. Ward. Letheby Prizes, Senior, £20 prize, Mr. G. S. Candy; Hon. Certificates, Mr. D. G. Evans, Mr. H. R. Davies: Junior, £10 prize, Mr. F. Hitch; Hon. Certificates, Mr. A. F. Evans, Mr. A. K. P. Scott. Sutton Scholarship, £20 Scholarship, Mr. A. J. Walton. Anatomy and Physiology, £25 Scholarship, Mr. R. C. Roberts; Hon. Certificates, Mr. S. J. A. Beale, Mr. C. M. Kennedy, Mr. C. E. Zundel. Anatomy and Biology, £20 Scholarship, Mr. J. P. Johnson; Hon. Certificates, Mr. D. G. Evans, Mr. W. H. Palmer. Minor Surgery Prizes, £10 prize, Mr. W. V. Field; £5 prizes, Mr. C. A. Ellis, Mr. J. E. Jackson. Practical Anatomy Prizes, £6 prize, Mr. J. Parkinson; £4 prize, Mr. H. F. Vellacott; Hon. Certificates, Mr. H. L. Morgan, Mr. T. H. C. Bevians. Anderson Prizes, Mr. H. Ramsbotham, Mr. H. W. Moxon, Mr. J. T. Macnab, Mr. G. M. Taylor, Mr. H. F. Warner, Mr. W. F. Denning, Mr. C. A. Ellis; Hon. Certificates, Mr. J. E. Adler, Mr. H. G. F. Spurrell, Mr. I. L. Matthews, Mr. F. R. Draper, Mr. T. A. Jones. Douro Hoare Prize, £5 prize, Mr. W. H. Palmer; Hon. Certificate, Mr. D. G. Evans.

Sports.

During the past year the London Hospital Medical College has had a particularly good record in sports. In the glass case in the lobby at the entrance of the hospital no fewer than ten cups and shields are to be seen which have been won this year, namely: (1) Rugby football cup, (2) boxing and fencing cup, (3) tennis, senior, cup, (4) tennis, junior, cup, (5) rowing, senior, cup, (6) rowing, junior, cup, (7) chess shield, (8) long jump shield, (9) athletics, 220 and 120 yds., open hurdles, (10) half mile race.

UNIVERSITY OF DURHAM.

At a meeting of members of the Durham University held in the Owens College Union Rooms on Monday, July 25th, it was proposed by the Rev. W. A. Parry, M.A., that a "Manchester and District Association of members of the University of Durham" be formed. The Rev. Geo. Hilton seconded the proposition, which was carried unanimously. R. Young, M.A., M.D., recorded the history of the Association of Durham Medical

Graduates, and proposed that the new organization should have a similar form to that Society, but should include all members of the University, and not medical graduates only. J. Braithwait, M.D., supported this motion, which was passed without opposition. The Rev. Edward Hicks, D.D., D.C.L., Vicar of Macclesfield, was elected President, and R. Young, M.A., M.D., and the Rev. D. Ellison, who acted as Chairman at the meeting, Vice-Presidents. It was decided that the President be elected annually, and that a distinguished Durham medical graduate should be asked to preside during the second year. Mr. W. H. Bennett, of Cheetham, Manchester, was appointed Honorary Secretary, and the Rev. J. W. Nicholson, M.A., Honorary Treasurer. The Committee elected was: The Revs. S. J. Baslow, M.A., B.C.L.; T. M. Oldfield, M.A.; J. Downham, M.A.; W. A. Parry, M.A.; F. C. Dearden, M.A.; and Geo. Hilton, B.A.; Nathan Raw, M.D., M.R.C.P.; Mr. G. P. Newbolt, M.B., F.R.C.S.; J. Braithwait, M.D.; Wm. Bennett, M.D.; Wm. Race, M.D.; and Mr. F. A. Pickup, B.A.

UNIVERSITY OF EDINBURGH.

UNIVERSITY COURT.

AT a meeting of the University Court on July 19th, a report by the Committee on the Medical Education of Women was submitted, and an application by the Scottish Association for the Medical Education of Women for continuance of recognition for next academical year of the Edinburgh Medical College for Women, Minto House, was granted. The Committee of the University Court appointed to take charge of the building, equipment, etc., of the John Usher Institute of Public Health submitted its report, narrating the steps which had been taken towards the completion of the building, its transference to the University Court, and its equipment, and giving an account of the arrangement come to with the Town Council in connexion with the bacteriological work of the City.

UNIVERSITY OF ABERDEEN.

INSTALLATION OF CHANCELLOR.

QUITE a unique interest attached to the graduation ceremony on July 20th. The installation of a Chancellor is an event which has not happened at Aberdeen for over forty years, and the arrangement that Lord Strathcona and Mount Royal, the recently elected Chancellor, should be formally installed and should cap the graduates lent exceptional interest to the ceremony in the Mitchell Hall on Wednesday, which was witnessed by a large and distinguished gathering of ladies and gentlemen. The initial proceedings, unlike the experience on many a former occasion of the kind, were marked by unexceptionable decorum and good order. The undergraduates, apparently, were determined to continue their boycott, as at the ceremony in April, on account of the stringent regulations laid down by the Senators. Previous to the arrival of the University dignitaries a delightful recital was given on the organ by Mr. Nisbet, the University organist. Punctually at noon the procession entered the Great Hall, the Lord Provost and city representatives leading the way; then came the University professors and lecturers, followed by Principal Lang, who had on his right the Chancellor and on his left the Lord Rector (Mr C. T. Ritchie, M.P.). The Principal occupied the chair at the opening and engaged in prayer. Thereafter he called on the Lord Rector to introduce the new Chancellor in order that the oath of office might be administered. In the course of his speech Mr. Ritchie enlarged on the great claims of Lord Strathcona for the high position for which he had been so unanimously chosen, pointing out how much he had done for university education both in this country and in Canada. He referred to his position as Chancellor of McGill University and to the fact that he had already been the recipient of honorary degrees from many important universities. The Principal then administered the oath to the Chancellor, who stood with his right hand on a volume of the Sacred Gospels, while the Principal read the oath and then welcomed the new Chancellor on behalf of the University's Council, Court, and Faculties to the high and dignified position. The Chancellor then took the chair, the audience standing the while. Lord Strathcona then expressed his gratification at the very high honour that had been conferred on him by the members of that old and eminent university, which had done so much for the education of the sons of Scotland, especially in the northern part of the kingdom. The graduation ceremony was then proceeded with. There were only three honorary graduates on this occasion, namely: The Right Hon. C. T. Ritchie, M.P., Lord Rector of the University; Mr. William Roland Dunstan, M.A., F.R.S., Director of the Imperial Institute; and Mr. George Robert Elsmie, C.S.I., late of the Indian Civil Service. On these was conferred the degree of Doctor of Laws. Ordinary medical degrees were conferred on the following:

M.D.—M. Connor, M.B., C.M., Montrose (Thesis: "Appendicitis, with special reference to Life Assurance") [Under old regulations.] J. Cran, M.B., C.M., Belize, British Honduras (Thesis: "Characteristics of Clinical Practice in British Honduras.") [Under old regulations.] H. Gibbons, M.B., C.M., Desborough, Market Harborough (Thesis: "Enteric Fever from a Public Health Point of View.") [Under old regulations.] E. K. Gawn, M.B., C.M., London (Thesis: "Notes on a Thousand Confinements.") [Under old regulations.] P. Harper, M.A., M.B., C.M., London. (Thesis: "A Thousand Consecutive Cases of Midwifery in Private Practice.") [Under old regulations.] *D. A. Hutcheson, M.B., Ch.B., Aberdeen (Thesis: "The Purifying Effects of some of the Different Methods for Sewage Purification: with a new method for estimating the Organic Matter.") †A. R. Lister, B.A., M.B., C.M., Aberdeen (Thesis: "On Roentgen Rays and Their Application in the Examination of the Chest." [Under old regulations.] ‡H. MacLean, M.B., Ch.B., Aberdeen (Thesis: "An Experimental Investigation of Certain Points in the Physiology of the Heart and Pulse") J. S. Purdy, M.B., C.M., Morpeth, Northumberland (Thesis: The Treatment of Syphilis by the Internal Administration, Inunction, Intramuscular and Intravenous Injection of Mercury.") [Under old regulations.] *A. Westerman, M.B., Ch.B., London (Thesis: "Histological Changes Brought About in the Nasal Mucous Membrane by the Application of the Galvano-Cautery.") *G. N. Wilson, M.B., C.M., Aberdeen (Thesis: "Measles, its Prevalence and Mortality in Aberdeen." [Under old regulations.] §C. M. Smith [with second class honours], Catherine E. Anderson, J. Anderson, W. R. Catto, W. G. B. Gunn, A. Hendry, T. C. Christie, H. W. Jeans, J. Jenkins, M.A., F. L. Keith, Helen McGlashan, R. Mackay, M.A., J. Reid, M.B., H. Ritchie, J. H. Thomson, R. J. B. Wright.

* Commendation for Thesis. † Honours for Thesis. ‡ Highest Honours for Thesis.

§ Passed the Final Examination with distinction.

After the graduation ceremony the Chancellor delivered an address, and in the evening was entertained to dinner in the Town and County Hall by the General Council of the University. There was a very large gathering, Principal Lang presiding, and many interesting speeches were delivered, the new Chancellor being received with much enthusiasm.

First Professional Examination (Part II).—The following candidates have completed the First Professional Examination for the degrees of M.B., Ch.B.:

W. S. Angus, Isabel M. Asher, J. C. Bell, A. A. Bissett, T. C. Boyd, J. Brown, D. Buchanan, R. W. Chalmers, J. B. Cruikshank, G. Davidson, J. D. Fiddes, *R. E. Flowerdew, J. Geddes, W. J. Gerrard, A. Gilchrist, H. Hargreaves, S. P. Hunter, Elizabeth J. Innes, W. K. Irwin, E. Johnson, W. G. Macarthur, Margaret C. Macdonald, W. G. Macdonald, Elizabeth M'Hardy, J. D. Mackay, A. Mackinnon, Elizabeth M. M'Taggan, G. M'Pherson, F. Macrae, A. Massey, J. A. Milne, J. G. Murerer, *T. B. Nicholls, I. Ogilvie, D. Porter, J. Rennie, W. B. Renvle, K. Ross, G. E. Shand, A. J. Shinnie, A. J. W. Stephen, R. Tindall, R. F. Twort, J. Watt, W. G. Watt, M. J. Williamson, *D. Wood, J. H. Yule.

* With distinction.

First Professional Examination (Part I.).—The following have passed the first portion of the First Professional Examination:

C. D. S. Agassiz, W. Anderson, J. S. Annandale, W. M. Baderoch, D. M. Baillie, J. A. Beattie, J. A. Blacklaws, A. J. D. Cameron, D. Craig, R. G. Davidson, W. Duguid, D. S. Garden, G. C. Grant, A. Gray, G. F. Hunter, J. Inkster, A. P. Jameson, H. G. R. Jamieson, J. Johnston, W. C. Mackay, C. M'Kerron, C. R. Macleod, R. M'Rae, B. W. Martin, J. L. Menzies, H. S. Milne, J. Mitchell, W. J. Pirie, D. C. Robertson, F. G. M. Ross, A. L. Smith, C. E. H. Smith, H. A. Smith, G. C. Souter, D. M. Spring, F. W. Stewart, W. Taylor, C. C. Twort, J. T. Watt, J. H. Will, and A. Wilson.

Diploma in Public Health.—H. Johnston, M.B., Ch.B. Aberd., W. Mackree, M.A., M.B., C.M. Aberd., have passed the examination.

Awards.—The J. Murray Medal and Scholarship has been awarded to J. Clark, M.B., Ch.B., and the Alexander Anderson Scholarship to B. R. G. Russell, M.B., Ch.B.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on July 28th; Mr. John Tweedy, President, in the chair.

The late Sir John Simon, K.C.B.

A vote of condolence was passed to the relatives of Sir John Simon, K.C.B., past President of the College.

Issue of Diplomas.

One hundred and fifteen diplomas of Membership were issued to candidates found qualified at the recent examination; and 22 diplomas in Public Health, conjointly with the Royal College of Physicians.

Report of the Finance Committee.

The general remarks made by the Committee at the conclusion of the report were as follows:

The balance of income over expenditure amounts this year to £2,794, a larger sum than any realized for some years past. During the year the investments of the College have been increased by the purchase of £1,000 Local Loans 3 per cent. Stock and £1,500 London County 3 per cent. Stock. A sum of £1,612 7s. 6d. has also been expended upon the redemption of the land tax on portions of the College property, the tax redeemed amounting to £53 14s. 11d. for the year ending April 5th, 1904.

Report of the Committee of Management.

The Committee which is representative of the two Royal Colleges made the following report, which was adopted by the Council of the Royal College of Surgeons:

1. The Committee of Management recommend that the following school, which has been visited by a member of the Committee on several occasions, and which is already recognized for instruction in chemistry, physics, and practical chemistry, be now recognized for the teaching of biology:

Felsted ... Felsted School.

2. The Committee also recommend that St. Mary's Hospital, Manchester, be recognized as a place of instruction in midwifery and gynaecology under the conditions of Clauses 1 (*b*), 2 (*c*), and 7, paragraph 21, Section II. of the Regulations.

3. The Committee have to report that they have considered the communication from the General Medical Council containing various resolutions in regard to the teaching and examination of the subjects of the first year of the curriculum, and that such resolutions of the General Medical Council do not recommend anything which is not already included in the latest regulations of the Conjoint Board.

Diploma in Tropical Medicine.

A report of the Delegates appointed by the Royal Colleges to consider a letter from the Colonial Secretary in reference to diplomas in Tropical Medicine was received and adopted by the Council of the Royal College of Surgeons. This report runs as follows:

1. That with the permission of the authorities of the School of Tropical Medicine, visitors be appointed by the Royal Colleges of Physicians and of Surgeons to attend the examinations of that school and to report upon the scope of the course of study and of examination, and that a request be addressed to the Naval, Military, and Colonial authorities to allow visitors appointed by the two Royal Colleges to attend their examinations in Tropical Medicine for a similar purpose.

2. That at the end of a year a report be addressed by these visitors to the Royal Colleges on the whole subject of Tropical Medicine.

Mr. K. J. Godlee was appointed as the visitor to represent the Royal College of Surgeons.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

AT a meeting of the College held on July 28th, the following gentlemen, having passed the necessary examinations, were admitted Fellows of the College: David Macrae Aitken, M.B., Ch.B., Edinburgh; Robert Gordon Bell, M.D., Sunderland: Chirabjiva Bharadwaja, L.R.C.S.E., Edinburgh; William Thomas Chenhall, M.D., Sydney; Frederick Gardiner, M.D., Edinburgh: Alfred Griffiths, M.B., C.M., Falkirk; Arthur Gwyther, M.B., C.M., Captain, I.M.S.; Thomas Dufour Halahan, M.B., Ch.B., Devonport; Claude Somerville Hawkes, M.R.C.S.Eng., Queensland: Edmund Moritz Illington, M.R.C.S.Eng., Captain, I.M.S.; James Frederick Merrillees, M.B., Ch.B.,

Melbourne: Thomas Mill, M.B., Ch.B., Cardiff; Philip Henry Mules, M.B., L.R.C.S.E., Edinburgh; Lionel Charles Peel Ritchie, M.B., Ch.B., Edinburgh; Oscar Bagster Trumper, M.B., Ch.B., Market Rasen, and Henry Woolmington Webber, M.D., M.R.C.S.Eng., Plymouth.

The medal and set of books forming the "Bathgate Memorial Prize" presented to the College by Colonel William Lorimer Bathgate, in memory of his late father, William McPhune Bathgate, Fellow of the College, were awarded to Mr. Robert MacNaught Glover, Carlton House, Dumfries.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE BARKER ANATOMICAL PRIZE.

This prize of 30 guineas, offered annually, and open to all students in any medical school in the United Kingdom, has just been awarded to Mr. Charles Cooper, a student in the Royal College of Surgeons, Dublin. This is the fifth year in succession that this open prize has been conferred on a student of the Dublin College.

FELLOWSHIP EXAMINATION.

Mr. C. W. H. Fleming, L.M. and S., Dublin University, having passed the necessary examination, has been admitted a Fellow of the College. Miss S. H. Commissariat, L.M. and S., Bombay University, has passed the primary part of the Fellowship Examination.

CONJOINT BOARD IN IRELAND.

CANDIDATES have passed in the examinations undernoted:—

FIRST EXAMINATION.—*Passed in all subjects:* P. J. Timoney.

THIRD EXAMINATION.—*Passed in all subjects:* T. A. Burke, M. Cohen, E. G. Condon, P. F. Foran, W. Gleeson, C. W. Greene, W. P. Kelly, T. H. Massey, M. O'Connor, J. R. Tobin, C. H. Wilson. *Completed Examination:* R. Calnan, C. J. R. Clarke, S. C. Clarke, T. W. Conway, J. Corboy, J. B. Dwyer, T. J. Golding, P. E. Hayden, R. F. Hayes, H. Hosly, A. E. S. Irvine, L. F. Kelly, M. J. C. Kennedy, F. F. McCaughey, T. J. Madden, R. V. Murphy, J. O'Donnell, W. D. Sammon, P. D. Sullivan, W. G. Wright.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE DEFINITION OF "QUACK."

DAKHYL v. LABOUCHERE.

THIS case came before the Court of Appeal last week upon an application by the defendant for a new trial. The action was brought to recover damages for an alleged libel which was published in *Truth* on April 2nd, 1903. The alleged libel was in the following form:

"Sundry inquiries have reached me during the last week or two respecting one Dr. H. N. Dakhyl, of 178, Holland Road, Kensington, who appends to his name the symbols 'B.Sc., B.A., M.D., Paris, etc.,' and describes himself as a specialist for the treatment of deafness, ear, nose, and throat diseases. Possibly this gentleman may possess all the talents which his alleged foreign degrees denote, but, of course, he is not a qualified medical practitioner, and he happens to be the late 'physician' to the notorious Drouet Institute for the Deaf. In other words, he is a quack of the rankest species. I presume that he has left the Drouet gang in order to carry on a 'practice' of the same class on his own account, and probably he is well qualified to succeed in that peculiar line."

At the trial, before the Lord Chief Justice and a special jury, in the King's Bench Division, evidence was called to show that the plaintiff really had a French degree, and that he was not responsible for what took place at the Drouet Institute. The jury eventually found a verdict for the plaintiff for £1,000. The defendant appealed.

Mr. Shee, K.C., and Mr. Hugh Fraser appeared for the appellant; Mr. J. F. P. Rawlinson, K.C., and Mr. Hansell for the respondent.

After a lengthy argument the court ordered a new trial. In the course of his judgement the Master of the Rolls said: "Objection has been taken that the verdict of the jury was given after a misdirection in point of law by the Lord Chief Justice, or at all events after a statement of the law in such a way as to mislead the jury. The action was one of libel, and the defence was that the article was fair comment on a matter of public interest. There was also a plea of justification. [His Lordship here stated the facts and continued.] The summing-up of the Lord Chief Justice is challenged, in the first place, because the question of libel, or no libel, being one for the jury, the Lord Chief Justice took upon himself to decide whether or not it was a libel, and the meaning of it. That is peculiarly a question for the jury to try. I find that more than once in the summing-up the jury were told the imputation was that the plaintiff was a quack, and in dealing with the plaintiff's connexion with the Drouet Institute the jury were told that he was not entitled to call the plaintiff a quack because he advertised, and the fact of the plaintiff having advertised and made up prescriptions and sent them to post had nothing to do with the case. He said, in effect, that the question for them was Aye or No. Was the plaintiff, who was an M.D. of Paris, a quack or not? This seems to imply that a qualified man cannot be a quack. If that is laid down, and so understood by the jury, it is a misdirection .....It is conceivable that a qualified man may be described as a quack if he carries on his practice by quack methods. In another place the jury were told that 'to call a medical man a quack of the rankest species means that he is not only incompetent, but that he is putting his incompetence before the public, or in other words, that he is pretending to medical skill which he does not possess.' Again, the jury were told, in terms, that to call a medical man a quack was libellous, and that it ought to be so, because although it was entirely for the jury, the understood meaning of a quack was 'a boastful pretender to medical skill which he does not possess.' I cannot be sure, after these repeated statements, that the jury were not misled into thinking that because the plaintiff was a competent medical man, however much they might disapprove of the methods of the Drouet Institute, they must award damages. As to the plea of fair comment, it is for the judge to say whether a matter is one of public interest or no.....An adverse comment upon an institution which cannot go on unless there are persons in it to carry it on, must be comment on one or more of those persons. Comment on one must necessarily be comment on the other, and the right to criticize one was as great as the right to criticize the other. So long as, in such a case, the writer keeps within the limits of fair comment, he is entitled to comment on the individuals who work the system. If in commenting upon the methods of the person who worked the institution, the defendant says that person was himself a quack, it is for the jury to say whether the comment is fair or not. In the circumstances there ought to be a new trial."

WHAT IS AN ACCIDENT?

IN an action tried at the recent Birmingham Summer Assizes before the Lord Chief Justice and a special jury, as reported in the *Birmingham Daily Post* for August 8th, Agnes Mary Jewsbury, widow of the late John Jewsbury, sued to recover from the British National Premium Life Association, Limited, the sum of £1,000, the amount of an insurance on the life of her deceased husband.

Mr. Vachell, who appeared for the plaintiff, said that the deceased ten years ago insured his life for £1,000. In September last year he took out another policy for £1,000 in the same company. On November 21st he sustained a severe burn on the arm at a Turkish bath, which caused blood poisoning and proved fatal. The company paid on the first policy, but refused to pay on the second on the ground that deceased had concealed material information in answering questions put to him in applying for the second policy. The questions were whether he had ever met with an accident or been medically treated? He answered "No" to these questions. It was alleged that this answer was untrue, because on one occasion he had sprained his thumb by trying to sit on a seat that was upturned in a theatre, and on another occasion had injured his knee by slipping on a piece of banana peel.

Mr. Hugo Young, K.C., for the defence, contended that the two occurrences were undoubtedly accidents, and must have been so regarded by the deceased, as he claimed and received compensation for them from two accident companies. He also contended that if it had been disclosed to the defendant company that the insured was liable to fall it would have influenced their minds as to the risks attaching to his life.

Dr. Drury, who attended the deceased in 1901 for a sprained thumb, and in July, 1903, for water on the knee, said that both injuries required treatment for a month, but that in neither case was the deceased confined to his house.

Dr. Reynolds, Medical Examiner to the Company, said that the two occurrences mentioned by Dr. Drury ought to have been disclosed as accidents, because a tendency to fall indicated a condition of the brain that was dangerous.

Mr. Vachell: Do you mean to say that if a man when in the theatre happens to sit on a seat that is turned up or puts his foot on a piece of banana skin that indicates a dangerous condition of the brain?—Yes.

The Lord Chief Justice: I must ask you to be careful and remember that you come here as an expert witness. If a man falls as the result of slipping on a piece of banana skin, do you, as a medical man, say that indicates a dangerous condition of the brain?—Taken in connexion with the sprained thumb I think it would.

Dr. Robert Saundby, Professor of Medicine at the University of Birmingham, said that he should certainly regard the two occurrences as accidents and should have considered it his duty to report them to the company, if he had been examining the deceased for insurance and had been told that he had sprained his thumb and injured his knee.

Mr. Vachell: Would you regard them as accidents that should be disclosed by applicants for insurance?—Yes, it looks better to state the facts fully.

Do you agree with Dr. Reynolds that to slip on a piece of banana skin indicates a dangerous state of the brain?—I would not go so far as that.

In summing up, the Lord Chief Justice reminded the jury that a policy of insurance depended on absolute good faith on both sides. What the jury had to decide was whether the deceased answered the questions correctly. In considering whether the two occurrences in question were accidents they should not pay much attention to the fact that the deceased described them as such to an accident insurance company, for in applying for compensation he could not describe them as anything else. If they thought the information as to the sprained thumb and injured knee was the sort of information the questions on the paper were intended to elicit, then they must come to the conclusion that they were incorrectly answered.

The jury, after retiring for some time, came to the conclusion that all the questions were correctly answered. His lordship reserved judgement for further consideration.

A FRENCH CODE OF MEDICAL ETHICS.

THE French Society for Medical Defence, which goes by the name of L'Association Générale de Prévoyance et de Secours Mutuels des Médecins de France, of which M. Brouardel is President, has published a code of Medical Ethics which is preceded by a brief argument setting out the grounds upon which its guiding principles have been reached. Dr. Lereboullet, who edits it, points out that it is only a preliminary sketch put forward for criticism and capable of modification; it will become binding only after it has been submitted to the profession and has received the approval of the majority. The Articles of this Code are arranged under certain heads and deal (1) with general conduct; (2) with the relations of medical men to one another; (3) with their relations to patients and patients' families; (4) with their relations to corporations; (5) with fees; (6) with illicit fees; and (7) with the recovery of fees. Under the second heading the question of consultations with homœopaths is dealt with in Article 23 in the following terms: "A physician called in consultation by a homœopath may meet him on condition that the result of the consultation shall follow the rules and principles of regular therapeutics; a homœopath should not be accepted as a consultant." There are the usual rules against advertising, giving and receiving bribes and receiving commission or profits on articles recommended to patients, against covering, regulating the conditions under which one practitioner may supersede another, formulating the procedure in consultation, and so forth. These follow generally the rules which obtain in this country. Article 18 says: "A physician called in consultation by one of his colleagues should never succeed him as medical attendant except for a subsequent illness and *with the consent of the first medical attendant.*" We have placed the last words in italics because in this country such a rule is found not to work well in towns where there is no consultant class. It is admitted that the practitioner called in consultation must not supersede the medical attendant in that particular illness, but it is held to be unreasonable to make the consent of the original medical attendant necessary for all future time. The leading medical practitioners in such towns often do a good deal of consulting work, and it is said if this rule were to hold good would find themselves shut out from the possibility of attending a

very large number of persons. Article 21 forbids a practice which seems to have grown up in France, and of which there are some traces in this country, where a specialist, generally here a dentist or an oculist, attends at certain towns on fixed days in the week or month to see patients. So far we do not know that any harm has come of it here, but we can quite believe that it may be worked in such a way as to give rise to the objections that seem to be entertained respecting it in France, and it may need watching. A good many articles deal with the vexed question in France of the partition of fees or dichotomy, as it is generally called. This objectionable proceeding to which Gyp drew attention in her tale, *Le Docteur Tant pour Cent*, is forbidden, but in order to remove the supposed grounds for its existence there are a number of rules regulating the mode in which consultants' fees should be paid and defining the right of the medical attendant to a remuneration bearing some proportion to the fee received by the consultant.

The section on illicit fees is of some interest as recognizing the existence of an evil state of things. The first Article prohibits all division of fees between medical practitioners or between physician and pharmacist, midwife, nurse, director of hydropathic establishments, dentist, hotel keeper or any other person engaged in any way in attending on the sick. The second forbids all medical practitioners in actual practice to take part in a business having for its object the manufacture, preparation, or sale of medicaments, dressings, instruments, mineral waters, etc. The next Article, while permitting a medical practitioner to derive profit from the sale of an instrument invented by him, forbids him to take any personal part in its sale so long as he remains in practice. Other Articles forbid attendance upon individuals or families for a fixed sum of money annually, the receipt of fees below the minimum tariff, the receipt of any fees from hospital patients, the publication of an article in favour of a special commercial product in the name of any physician who is a proprietor or editor of a medical journal or the publication in pamphlet form of such an article under his name by any medical practitioner. The Code as published would be much improved by an index and marginal headings. It is noteworthy that the Code expressly disclaims the right to fix a tariff. It only enjoins upon all medical practitioners the duty of charging a not less fee than would be usual under the same circumstances.

A CHARGE OF CRIMINAL ABORTION.

AT the last session of the Central Criminal Court, Mr. Frederick John Hicks, M.A., M.B.Oxon., M.R.C.S.Eng., a practitioner in Westminster, and a former resident medical officer at the Brompton Consumption Hospital, appeared to answer a charge of using instruments upon a young married woman with intent to procure abortion. Dr. Hicks, who elected to give evidence himself, stated that though the woman did eventually prove to have been pregnant he had no anterior knowledge of the fact, and had used a sound simply for the purpose of rectifying a curvature of the uterus. Evidence for the defence was also given by Dr. Champneys, Mr. A. J. Pepper, and Dr. Peter Horrocks, and the jury returned a verdict of not guilty.

A "HOME" NOT LICENSED FOR THE RECEPTION OF LUNATICS.

WITH reference to a paragraph which appeared under this heading in the BRITISH MEDICAL JOURNAL of July 23rd, p. 215, we have received a letter from the proprietress. The gist of the letter is contained in the passages quoted below:

Referring to evidence given by Dr. Needham before the coroner to the following effect: "The sleeping draughts were *all supplied* by Dr. Needham, were administered by him or on his orders," this evidence (says the proprietress) given on oath is all the basis for saying: "Sleeping draughts were poured down her throat." The patient having been already carried down in an armchair, with her sister's approval, there was no necessity for the stretcher, and she was "clung to" only out of sheer pity, not from the sordid motives the coroner suggested. "The sort of a kind of a nurse" had had over five years' experience in nursing, and your readers can readily judge of the fairness of Mr. Troutbeck in conducting the inquiry.

FEES DUE FROM DECEASED PATIENT'S ESTATE.

IN the BRITISH MEDICAL JOURNAL of July 23rd, p. 215, it was stated in reply to a query on this subject that a medical practitioner has no priority over other creditors. A correspondent in Scotland challenged the accuracy of this statement. The answer given is correct in regard to England. We are advised, however, that in Scotland, when a patient dies, his death-bed and funeral expenses form a first charge on his estate, and are therefore payable preferably to other debts. These expenses include physicians' and surgeons' fees and cost of medicines, which are accounted a necessary part of death-bed and funeral expenses.

PARTNERSHIP WITH A LATE ASSISTANT.

JUNIOR writes: In the entering into partnership of a late assistant with his principal, what is the custom with regard to remuneration, that is, what fraction of the gross takings is usually allowed?

*** The assistant's remuneration, when taken into partnership by his principal, will be the income arising from whatever share of the practice he takes as partner. In cases where the income arising from the said share during the first year would be too inconsiderable, a minimum is often guaranteed equal in amount to the salary he was receiving as assistant.

POLICE FEES FOR NIGHT CALLS.

F.R.C.S. asks whose duty it is to pay the night visit fee if a policeman during the night comes for a doctor to go and see a man at his home with a broken leg, previous to his removal to the union hospital. Can a district medical officer be expected to attend without being paid if the man is not in receipt of relief, and the police constable comes without the ordinary request paper from the relieving officer for parish attendance?

*** (1) It is undoubtedly the duty of the police authority employing the constable who summons a medical man during the night to pay the very moderate fee of 5s. asked for by our correspondent. In the Metropolitan Police District the fees for such services are fixed by police orders at 3s. 6d. per day and 3s. 6d. for night visits. (2) In some extra-metropolitan districts, unfortunately, the district medical officer is expected to attend to such cases without fee, but, as we think, quite unreasonably. We advise that representations should be made to the authority which appoints the chief constable as to his refusal to pay the fee, and that the example of the metropolitan force, given above, should be quoted.

PROFESSIONAL SECRECY.

PUZZLED.—There is no question but that the military obligations of an officer of the R.A.M.C. absolve him from the rule of professional secrecy in all service reports respecting the soldiers under his care. We do not express any opinion as to the wisdom of the regulation of which complaint is made, as it is rather a question for the Naval and Military Services Committee than for us.

MAIDA VALE.—It would be a violation of the rule of professional secrecy for our correspondent to disclose the facts to any person except with the consent of his patients.

PURCHASE OF PRACTICE WITH INTRODUCTION.

IGNORAMUS asks what is usually done when a practice is bought with an introduction for a fixed time. Where does the purchaser live as a rule, and how is the expense of his living met? Who takes the receipts of the practice and pays the expenses?

*** The purchaser usually resides with the vendor, and the receipts during the period of introduction, after deducting expenses, are divided equally between vendor and purchaser.

THE PRESCRIBING OF PROPRIETARY MEDICINES.

G. P. asks whether the profession is justified in prescribing any drugs which require a patent medicine stamp?

*** The Inland Revenue authorities insist upon chemists stamping all articles for the preparation of which any exclusive right is claimed, among which are included such well-known remedies as antipyrin, diuretin, and chlorodyne. The composition of these is well known, and it is possible to prescribe the same or similar drugs under other names, but where the makers have a reputation the original preparation may be preferred. Chemists can, however, buy these drugs for dispensing purposes without the stamp. We do not think that the prescribing of such preparations should be considered improper, but each case must be considered upon its merits; it is greatly to be regretted if medical practitioners prescribe nostrums of unknown composition.

CONTRACTS NOT TO PRACTISE.

A CORRESPONDENT writes that a late assistant signed a bond "not to start in practice within a reasonable time" of leaving his principal. He wishes to know what would be considered in the eyes of the law "a reasonable time."

*** Such a bond is wanting in precision. A definite time should have been stipulated. If such an agreement came before a court of law, its decision would be guided by the custom of the profession. Probably, from three to five years would be considered a reasonable time.

ATTENDANCE ON MIDWIFERY CASES BY DISPENSER.

DR. CONSIDINE.—Midwifery practice by unqualified dispensers has not yet been directly forbidden by the General Medical Council, but since the Midwives Act has come into operation, any unqualified person practising midwifery for gain would be liable to prosecution, and the employer of such person would run a great risk. A dispenser might be employed for normal cases, if a qualified and registered midwife.

PRACTITIONER AND *LOCUM TENENS*.

A CORRESPONDENT writes that he recently engaged a *locum tenens* for three weeks, and then went for his holiday. A week later he received an urgent summons home, and on returning found the *locum tenens* had gone, after having being drunk for two days. He has since written for money. He wishes to know if any damages can be recovered from the *locum tenens*.

*** The *locum tenens* can recover no payment under the circumstances, and might be sued for any damage due to his misconduct. In order to be successful in such an action the principal must be able to prove loss directly due to the *locum's* misconduct.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

ENGLISH URBAN MORTALITY IN THE SECOND QUARTER OF 1904.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

THE vital statistics of the seventy-six large towns dealt with in the Registrar-General's weekly returns are summarized in the accompanying table. During the three months ending June last, 112,230 births were registered in these towns, equal to an annual rate of 29.5 per 1,000 of their aggregate population, estimated at 15,271,287 persons in the middle of the year; in the corresponding quarter of the preceding year the rate had been 30.2 per 1,000. In London the birth-rate last quarter was 28.1 per 1,000, while it averaged 30.1 in the seventy-five large provincial towns, among which the birth-rates ranged from 16.8 in Bournemouth, 18.1 in Hastings, 20.0 in Hornsey, 20.2 in Halifax, 22.3 in Northampton, and 22.9 in Rochdale, to 35.7 in Sunderland, 35.8 in Hanley, 36.6 in Middlesbrough, 36.7 in Gateshead, 38.3 in Rhondda, 38.4 in St. Helens, and 38.9 in Merthyr Tydfil.

During the quarter under notice 58,411 deaths were registered in these towns, corresponding to an annual rate of 15.3 per 1,000 living, which was also the rate in the second quarter of last year. In London the rate of mortality was 14.8 per 1,000, while it averaged 15.6 per 1,000 in the seventy-five other large towns, and ranged from 8.6 in Willesden, 8.8 in Hornsey, 9.1 in King's Norton, 9.6 in Leyton, 9.8 in Handsworth (Staffs), and 10.1 in Walthamstow, to 18.8 in Birmingham, 18.9 in Liverpool, 19.0

Analysis of the Vital Statistics of Seventy-Six of the Largest English Towns during the Second Quarter of 1904.

Towns.	Estimated Population middle of 1904.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Infectious Diseases.	Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Fever.	Diarrhoea.	Deaths of Children under one year of age to 1,000 Births.	Rate per cent. of Uncertified Deaths.
76 Towns	15,271,287	112,250	58,411	29.5	15.3	1.73	6,618	67	2,424	393	583	2,144	273	734	180	1.1
75 Provincial Towns	10,622,337	79,694	41,240	30.1	15.6	1.75	4,127	55	1,492	312	419	1,636	228	485	124	1.5
London	4,648,950	32,536	17,171	28.1	14.8	1.71	1,991	12	932	81	164	508	45	249	109	0.8
Croydon	144,419	926	438	25.7	12.2	1.51	54	—	38	3	5	6	—	2	107	—
Willesden	132,566	1,105	283	33.4	8.6	0.51	17	—	6	—	4	5	—	2	76	0.4
Hornsey	81,221	404	179	20.0	8.8	1.33	27	—	14	2	—	10	—	1	79	—
Tottenham	112,981	907	312	32.2	11.1	1.00	28	—	18	—	2	7	—	1	90	0.3
West Ham	288,424	2,298	958	32.0	13.3	1.85	133	—	63	14	4	29	4	19	95	0.3
East Ham	116,902	974	300	33.4	10.3	1.45	42	—	20	4	3	9	2	4	90	0.3
Leyton	110,844	833	264	30.1	9.6	0.83	23	—	4	2	1	11	1	4	82	1.5
Walthamstow	111,282	905	280	32.6	10.1	2.31	64	1	32	2	10	15	1	3	91	0.4
Hastings	66,503	300	193	18.1	11.6	0.26	1	—	—	—	1	—	—	—	73	0.5
Brighton	126,286	738	520	23.4	16.5	2.77	87	—	64	1	1	15	3	3	114	0.2
Portsmouth	198,038	1,336	694	27.1	14.1	0.98	49	—	—	8	10	14	5	22	95	1.3
Bournemouth	64,645	270	230	16.8	14.3	0.37	6	—	—	—	1	3	2	—	104	0.4
Southampton	112,500	767	337	27.3	12.0	0.39	11	—	—	—	2	6	1	2	96	—
Reading	76,373	500	211	26.3	11.1	0.59	11	—	—	—	2	—	2	7	74	3.3
Northampton	91,146	567	285	22.9	12.5	0.48	11	—	—	7	1	—	—	3	116	1.4
Ipswich	69,805	476	224	27.4	12.9	0.69	12	—	4	—	1	2	1	4	113	1.8
Great Yarmouth	52,099	358	183	27.6	14.1	1.69	22	—	—	1	5	12	1	3	134	—
Norwich	115,538	744	503	25.8	17.5	2.25	65	—	50	—	1	7	2	5	169	0.8
Plymouth	114,003	719	442	25.3	15.6	1.32	37	—	7	8	1	11	5	5	114	—
Devonport	75,334	500	218	26.6	11.6	0.53	10	—	—	1	3	—	2	4	84	0.5
Bristol	343,204	2,421	1,193	28.3	13.9	1.10	94	1	7	6	30	33	5	12	107	0.4
Hanley	63,932	570	279	35.8	17.5	2.83	45	—	13	8	17	—	1	6	154	0.7
Burton-on-Trent	51,934	343	160	26.5	12.4	0.55	7	—	—	1	1	—	—	—	90	0.6
Wolverhampton	98,194	789	341	32.2	13.9	1.58	39	—	—	5	1	5	—	—	119	0.9
Walsall	91,432	787	320	34.5	14.0	1.76	40	—	2	1	—	27	2	4	148	0.3
Handsworth	59,634	363	146	24.4	9.8	1.21	18	—	2	1	1	30	1	6	168	0.3
West Bromwich	67,186	552	249	33.0	14.9	0.96	16	—	—	1	1	12	—	2	91	1.4
Birmingham	537,965	4,253	2,524	31.7	18.8	2.93	392	—	72	15	23	6	2	2	154	2.5
Kings Norton	66,667	470	152	23.6	9.1	1.26	21	—	4	2	—	241	12	20	154	2.5
Smethwick	60,691	509	170	33.6	11.2	0.66	10	—	—	1	—	13	—	2	88	2.0
Aston Manor	89,363	603	282	30.1	14.1	2.50	50	—	7	1	2	4	2	3	112	3.5
Coventry	73,904	504	262	30.6	14.2	1.47	27	—	—	2	2	34	2	4	133	0.7
Leicester	224,186	1,571	711	28.1	12.7	1.07	60	4	5	—	—	18	—	5	92	0.8
Grimsby	66,958	494	201	29.6	12.0	0.84	14	—	1	1	1	37	3	11	121	1.1
Nottingham	248,811	1,804	931	29.1	15.0	0.96	59	3	2	3	9	9	9	2	105	—
Derby	120,449	850	427	28.3	14.2	0.50	27	2	6	—	4	21	9	12	121	0.9
Stockport	97,008	707	384	29.2	15.9	1.39	34	5	13	4	4	10	2	3	125	0.2
Birkenhead	114,814	950	493	33.2	17.2	2.89	83	—	33	3	8	3	4	4	141	0.3
Wallasey	60,354	427	243	28.4	16.1	2.85	43	—	22	2	2	26	5	8	118	0.4
Liverpool	723,430	6,234	3,408	34.6	18.9	2.00	371	—	112	34	30	16	—	1	136	2.1
Bootle	61,755	459	258	29.8	16.8	2.07	32	—	4	5	4	121	17	57	135	3.1
St. Helens	88,545	847	401	38.4	18.2	3.32	73	—	51	5	4	18	1	—	137	2.7
Wigan	62,800	545	297	34.8	19.0	0.96	15	—	—	—	4	9	1	3	118	6.5
Warrington	67,331	564	323	33.6	19.2	5.01	84	—	9	18	2	7	6	9	143	—
Bolton	175,744	1,258	657	28.7	15.0	1.80	78	—	8	3	3	53	2	—	144	3.7
Bury	58,450	372	204	25.5	14.0	1.37	20	—	1	5	—	56	8	6	140	0.5
Manchester	557,938	4,425	2,779	31.8	20.0	2.59	414	5	189	19	21	14	—	—	165	2.0
Salford	228,983	1,849	1,053	32.4	18.4	3.29	188	—	54	11	22	121	19	40	165	2.2
Oldham	139,497	870	546	25.0	15.7	1.64	57	2	19	3	4	71	12	18	148	0.3
Rochdale	85,601	488	340	22.9	15.9	1.54	33	—	18	—	3	9	7	13	125	0.4
Burnley	100,569	668	453	26.6	18.1	2.87	72	—	52	2	3	8	—	4	115	1.8
Blackburn	132,134	814	507	24.7	17.2	2.99	99	—	15	1	2	7	3	8	171	1.5
Preston	115,055	849	454	29.6	15.8	0.82	24	—	—	3	3	65	5	11	182	2.3
Barrow-in-Furness	59,654	492	195	33.1	13.1	0.81	12	—	1	—	—	3	4	11	115	3.5
Huddersfield	94,925	548	386	23.2	16.3	2.07	49	—	30	1	3	3	3	8	104	1.0
Halifax	107,580	543	385	20.2	14.4	1.62	27	—	9	1	3	20	1	4	122	2.1
Bradford	285,089	1,702	1,214	23.9	17.1	1.79	127	3	7	7	2	4	1	1	107	2.3
Leeds	450,142	3,181	1,977	28.3	17.6	2.41	271	2	55	9	36	8	8	9	137	1.0
Sheffield	432,940	3,407	1,550	31.6	14.4	1.00	108	—	160	16	9	72	6	8	147	0.2
Rotherham	58,498	492	266	33.7	14.1	1.65	24	1	10	15	10	45	9	18	170	2.4
York	81,268	583	290	28.8	14.3	1.09	22	—	13	1	4	3	2	1	124	4.4
Hull	253,865	1,981	1,037	31.3	16.4	1.84	117	2	69	2	14	18	3	9	113	1.4
Middlesbrough	96,684	883	472	36.6	17.9	1.23	30	—	2	1	2	10	1	14	138	1.2
Stockton-on-Tees	52,192	399	199	30.7	15.3	1.54	20	—	1	1	8	8	1	1	128	1.5
West Hartlepool	69,251	560	244	32.4	14.1	1.10	19	—	1	1	8	9	—	—	86	0.8
Sunderland	151,157	1,345	676	35.7	17.9	1.63	61	—	18	1	7	20	8	7	111	3.3
South Shields	107,334	927	447	34.6	16.7	0.89	24	2	1	3	2	8	1	7	134	4.9
Gateshead	118,067	1,081	480	36.7	16.3	1.53	45	9	3	4	5	15	1	8	124	3.1
Newcastle-on-Tyne	225,362	1,726	1,067	30.7	19.0	1.91	108	7	24	3	12	54	3	5	144	0.3
Tynemouth	53,060	431	217	32.6	16.4	0.69	9	5	—	—	—	1	2	1	104	2.3
Newport (Mon.)	71,543	603	232	33.8	13.0	0.67	12	—	—	4	1	7	—	—	108	0.9
Cardiff	176,383	1,319	585	30.0	13.3	1.35	59	1	19	7	7	17	2	6	111	0.8
Rhondda	122,310	2,108	498	38.3	16.3	2.52	77	—	41	6	11	11	3	5	108	0.5
Merthyr Tydfil	72,745	705	282	38.9	15.5	1.16	21	—	—	2	4	8	4	3	109	0.4
Swansea	95,931	776	379	32.4	15.8	1.51	36	—	—	4	3	27	—	2	130	1.5

in Wigan and in Newcastle-on-Tyne, 19.2 in Warrington, and 20.0 in Manchester.

The 58,411 deaths from all causes in the seventy-six towns last quarter included 6,618 which were referred to the principal infectious diseases: of these, 67 resulted from small-pox, 2,424 from measles, 393 from scarlet fever, 583 from diphtheria, 2,144 from whooping-cough, 273 from "fever" (principally enteric), and 734 from diarrhoea. The death-rate from these diseases was 1.73 per 1,000 last quarter, against 1.55 per 1,000 in the corresponding quarter of last year. In London the death-rate from these principal infectious diseases was 1.71 per 1,000, while it averaged 1.75 in the seventy-five large provincial towns, among which the rates ranged from 0.06 in Hastings, 0.37 in Bournemouth, 0.39 in Southampton, 0.48 in Northampton, 0.51 in Willesden, and 0.53 in Devonport, to 2.93 in Birmingham, 2.99 in Manchester and in Blackburn, 3.29 in Salford, 3.32 in St. Helens, and 5.01 in Warrington. The 67 fatal cases of small-pox registered last quarter included 12 in London, 9 in Gateshead, 7 in Newcastle-on-Tyne, 5 each in Stockport, Manchester, and Tynemouth, and 4 in Leicester. The 2,424 deaths from measles were equal to an annual rate of 0.64 per 1,000; in London the death-rate from this disease was 0.80 per 1,000; while it averaged 0.56 per 1,000 in the seventy-five other large towns, among which measles showed the highest proportional fatality in Brighton, Norwich, Wallasey, St. Helens, Burnley, and Leeds. The 393 fatal cases of scarlet fever corresponded to an annual rate of 0.10 per 1,000; in London the scarlet fever death-rate was only 0.07 per 1,000, while it averaged 0.12 in the seventy-five large provincial towns, and was highest in Northampton, Plymouth, Hanley, Bootle, Warrington, and Bury. The 583 deaths from diphtheria were equal to an annual rate of 0.15 per 1,000; in London the death-rate from this disease was 0.14 per 1,000, while it averaged 0.16 in the seventy-five other large towns, among which this disease was proportionally most fatal in Great Yarmouth, Hanley, Salford, Bradford, Stockport, and West Hartlepool. The 2,144 fatal cases of whooping-cough corresponded to an annual rate of 0.56 per 1,000; in London the rate of mortality from whooping-cough was 0.44 per 1,000, while it averaged 0.62 in the seventy-five other large towns, among which the highest death-rates from this disease were recorded in Walsall, Birmingham, Aston Manor, Warrington, Bolton, and Blackburn. The 273 deaths referred to different forms of "fever" (principally enteric) were equal to an annual rate of 0.07 per 1,000; in London the rate was 0.04 per 1,000, while it averaged 0.09 in the seventy-five other large towns, among which the greatest proportional mortality from "fever" occurred in Wigan, Salford, Oldham, Barrow-in Furness, Sunderland, and Merthyr Tydfil. The 734 fatal cases of diarrhoea corresponded to an annual rate of 0.19 per 1,000; in London the death-rate from this disease was 0.21 per 1,000; while among the seventy-five large provincial towns the highest rates were recorded in Reading, Hanley, Liverpool, Oldham, Blackburn, Preston, and Middlesbrough.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 120 per 1,000; in London the rate of infant mortality was 109 per 1,000, while it averaged 124 per 1,000 in the seventy-five other large towns, and ranged from 73 in Hastings, 74 in Reading, 76 in Willesden, 79 in Hornsey, 82 in Leyton, 84 in Devonport, and 86 in West Hartlepool, to 154 in Hanley and in Birmingham, 165 in Manchester, 169 in Norwich, 171 in Burnley, and 182 in Blackburn.

The causes of 645, or 1.1 per cent., of the deaths registered in the seventy-six towns last quarter were not certified, either by a registered medical practitioner or by a coroner. The causes of all the deaths were duly certified in Croydon, Hornsey, Southampton, Great Yarmouth, Plymouth, Grimsby, Wigan, and York; while the highest proportions of uncertified deaths were registered in Reading, Smethwick, Liverpool, St. Helens, Warrington, Preston, Rotherham, Sunderland, South Shields, and Gateshead.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 7,740 births and 5,785 deaths were registered during the week ending Saturday last, August 6th. The annual rate of mortality in these towns, which had been 13.7, 14.1, and 16.4 per 1,000 in the three preceding weeks, further rose last week to 19.8 per 1,000. The rates in the several towns ranged from 6.5 in Southampton, 7.7 in Smethwick, 9.8 in West Hartlepool, 10.1 in Grimsby, 10.2 in King's Norton, 10.8 in Croydon, and 10.9 in Hornsey, to 25.0 in York, 25.5 in Manchester, 26.3 in Stockport, 26.8 in Birkenhead, 30.7 in West Ham, 32.1 in Bootle, 33.6 in St. Helens, and 39.6 in Liverpool. In London the rate of mortality was 19.6 per 1,000, while it averaged 19.8 in the seventy-five other large towns. The mean death-rate in the seventy-six towns from the principal infectious diseases averaged 7.0 per 1,000; in London this death-rate was equal to 7.1 per 1,000, while among the seventy-five large provincial towns the rates ranged upwards to 13.5 in St. Helens, 13.8 in East Ham, 14.1 in Walthamstow, 15.0 in Birkenhead, 15.1 in Stockport, 15.6 in Aston Manor, 16.1 in West Ham, 19.4 in Bootle, and 19.7 in Liverpool. Measles caused a death-rate of 1.6 in Bradford, 1.7 in Rhondda, 1.8 in Birkenhead, 2.1 in Hull, and 5.0 in Bootle; diphtheria of 1.5 in Bradford and in Halifax; and diarrhoea of 11.7 in Walthamstow, 11.8 in Bootle and in St. Helens, 12.5 in East Ham, 14.0 in Stockport, 15.4 in West Ham, 15.6 in Aston Manor, and 17.9 in Liverpool. The mortality from scarlet fever, from whooping-cough, and from fever showed no marked excess in any of the seventy-six towns. Two fatal cases of small-pox were registered in Stockport, and one case each in Gateshead, Liverpool, London, Manchester, and Warrington. The Metropolitan Asylums Hospitals contained 32 small-pox patients on Saturday last, August 6th, against 62, 51, and 46 on the three preceding Saturdays: 2 new cases were admitted during the week, against 7, 6, and 7 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1,698, 1,754, and 1,784 at the end of the three preceding weeks, declined again to 1,758 at the end of last week: 166 new cases were admitted during the week, against 229, 234, and 243 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, August 6th, 950 births and 483 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 14.8, 15.7, and 14.1 per 1,000 in the three preceding weeks, rose again last week to 14.6 per 1,000, but was 5.2 per 1,000 below the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 9.1 in Leith and 11.8 in Paisley to 15.3 in Dundee and 23.1 in Perth. The death-rate from the principal infectious diseases averaged 2.6 per 1,000, the highest rates being recorded in Paisley, Greenock, and Perth. The 233 deaths registered in Glasgow included 1 which resulted from measles, 15 from whooping-cough, and 32 from diarrhoea. Four fatal cases of diarrhoea, 3 of whooping-cough, and 1 each of measles, scarlet fever, diphtheria, and fever were registered in Edinburgh. Four deaths from diarrhoea, and 2 from whooping-cough occurred in Dundee; 4 from diarrhoea in Aberdeen; 4 from whooping-cough in Dundee, and 2 each from measles and from diarrhoea in Greenock.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, July 30th, 497 births and 275 deaths were registered in six of the principal Irish towns, against 573 births and 282 deaths in the preceding period. The mean annual death-rate in these same towns, which had been 18.6, 16.9, and 13.7 per 1,000 in the three preceding weeks, rose to 15.0 per 1,000 in the week under notice, this figure being 1.4 per 1,000 below the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 8.8 in Londonderry and 9.7 in Waterford to 18.7 in Dublin and 23.2 in Limerick. The death-rate from the principal zymotic diseases during the same period and in the same six Irish towns averaged 1.1 per 1,000, or 0.2 per 1,000 higher than during the preceding week, the highest figure, 3.1, being recorded in Belfast, while Cork, Limerick, and Waterford registered no deaths under this heading at all. To measles 4 deaths were ascribed in Dublin, and 2 in Belfast: to whooping-cough, 2 in Dublin, 2 in Belfast, and 1 in an outlying district. Only 2 deaths in all were ascribed to enteric, but diarrhoeal diseases accounted for 16 deaths in Belfast and 4 in Dublin.

During the week ending Saturday, August 6th, 495 births and 325 deaths were registered in the same six Irish towns, against 497 births and 275 deaths in the preceding period. The mean annual death-rate in these Irish towns, which had been 16.9, 13.7, and 15.0 per 1,000 in the three preceding weeks, rose to 17.8 per 1,000, this figure being 2.0 per 1,000 above the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 15.0 in Limerick and 15.8 in Belfast to 19.5 in Waterford and 22.2 in Dublin. The death-rate from the principal zymotic diseases during the same period and in the same six Irish towns averaged 2.5 per 1,000, a notable increase on the figures recently prevailing, the highest figure, 3.8, being recorded in Londonderry. The greater part of it seems to have been due to diarrhoeal diseases, but measles caused 3 deaths in Dublin, typhus 1 in Belfast, and whooping-cough 4 in Dublin and 2 in Belfast.

CHICKEN-POX AND SMALL-POX.

The London County Council has issued a notice that the notification of chicken-pox will be required for a further period of three months in the Administrative County of London, and that Mr. W. McC. Wanklyn, late small-pox referee to the Metropolitan Asylums Board and Medical Superintendent of the River Ambulance Service, may be consulted without fee with regard to the diagnosis of any doubtful cases of small-pox occurring in the county.

VACCINATION POSTPONEMENTS AND FORM "H."

A.O.S. asks: (1) In the case of children whose names appear on Form "H," but whose vaccination is postponed, should their names appear again on Form "H" when the period of postponement has expired? (2) If such names are rightly entered thereon a second or third time by the vaccination officer, ought the guardians to allow another "A" fee of 1s. to be paid to the public vaccinator in respect of such postponed cases? (3) Can postages be claimed by the public vaccinator in respect of postponed cases?

*** There is no authority for the introduction of the name of a child for a second time in the "H" list. It is not uncommon, however, for the vaccination officer to send to the public vaccinator periodic unofficial lists of children whose time of postponement is at an end, with a request that he will look them up again. This is not a duty of the vaccination officer, but simply a matter of convenience and arrangement between the two officers. (2) No second "H" list fee in respect of cases postponed is legal. (3) The clause of the Vaccination Order relating to postages distinctly provides that the "payments made to the public vaccinator in accordance with this article (Art. 4) shall be deemed to include any expense in respect of postage incurred by the public vaccinator, unless otherwise agreed between him and the guardians." If the guardians agree to pay the postages, any amount incurred in sending notices to cases of postponement could be claimed.

NOTIFICATION OF TWO DISEASES IN THE SAME PATIENT.

General Practitioner wishes to know if it is usual to pay for only one notification where two infectious diseases are present in the same person. The facts are these: A girl of 12 years was reported as having scarlet fever, and nine days after a swab from the throat (which was covered with much membrane) examined by the county bacteriologist was stated to have crowds of diphtheria bacilli. The local authority will only pay for the scarlet fever notification.

*** Such cases are, of course, exceptional, and we do not know that any general custom prevails. Probably each case of this kind must be judged on its merits.

QUARANTINE IN SCARLATINA AND DIPHTHERIA.

Isolation writes: In the rural sanitary districts here it has occurred that the medical officer of health, on discovering a case of small-pox, has isolated the house (cottage), kept the man of the house at home, paid his wages, and put a caretaker in charge to see that no one enters or leaves the infected house, and procures supplies for those detained inside. Is such a proceeding justifiable or usual in scarlatina or diphtheria cases?

*** Such proceedings are not usual in scarlet fever or diphtheria.

Medical Graduation at Harvard.—At the recent commencement exercises of Harvard University 130 students received the degree of Doctor of Medicine.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BATH: OPEN-AIR SANATORIUM FOR CONSUMPTIVES, Limpley Stoke.—Resident Medical Officer. Salary, £200 per annum.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

BIRMINGHAM: GENERAL HOSPITAL.—(1) House-Physician, resident; appointment for six months. Salary at rate of £50 per annum. (2) Casualty Assistant Physician. Salary, £50 per annum.

BOOTLE GENERAL HOSPITAL, Liverpool.—Senior Resident. Salary, £100 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Third House-Surgeon, resident. Salary, £50 per annum.

BRIGHTON THROAT AND EAR HOSPITAL, Church Street. Non-resident House-Surgeon. Salary at the rate of £75 per annum.

DOUGLAS: NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £81 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon, resident. Salary, £50 per annum.

HULME DISPENSARY.—House-Surgeon, resident. Salary, £150 per annum.

LANCASTER: ROYAL LANCASTER INFIRMARY.—House-Surgeon, resident. Salary, £100 per annum.

OXFORD: RADCLIFFE INFIRMARY.—Junior House-Surgeon, resident. Appointment for six months. Salary at the rate of £40 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—Assistant House-Surgeon, resident. Appointment for six months. Salary, at the rate of £60 per annum.

ST BARTHOLOMEW'S HOSPITAL.—Physician.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House-Surgeon. Salary, £50 per annum.

WISBECH: NORTH CAMBRIDGESHIRE HOSPITAL.—Resident Medical Officer. Salary £100 per annum.

APPOINTMENTS.

ARCHIBALD, R. G., M.B., Ch.B. Edin., Assistant Resident Medical Officer at the St. Mary's Hospital for Sick Children, Plaistow.

BLAIR, John, M.D.R.U.I., Honorary Assistant Medical Officer, Royal Albert Edward Infirmary, Wigan.

CRIDLAND, Arthur Bernard, F.R.C.S.Edin., L.R.C.P.Lond., Honorary Assistant Surgeon to the Wolverhampton and Midland Counties Eye Infirmary, and Honorary Ophthalmic Surgeon to the Royal Orphanage, Wolverhampton.

DALBY, J. F. Halls, M.A., M.B., B.C.Cantab., M.R.C.S.Eng., L.R.C.P.Lond., Senior Resident Medical Officer to the Royal National Hospital for Consumption and Diseases of the Chest, Ventnor, I.W.

DUPONT, J. M., M.B., Ch.B.Edin., an Assistant Resident Medical Officer to the Royal National Hospital for Consumption and Diseases of the Chest, Ventnor, I.W.

GREENE, Arnold J., M.R.C.S.Eng., L.R.C.P.Lond., Honorary Assistant Medical Officer, Royal Albert Edward Infirmary, Wigan.

KILLEN, W. Marcus, B.A., M.D., M.Ch., Acting Surgeon to Benn Ulster Eye, Ear, and Throat Hospital, Belfast.

LISTER, Thomas David, M.D.Lond., M.R.C.P.Lond., Honorary Consulting Physician to the Benevolent Fund of the National Union of Teachers.

MACCORMAC, Henry, M.B., Ch.B.Edin., Assistant Resident Medical Officer to the Royal National Hospital for Consumption and Diseases of the Chest, Ventnor, I.W.

MACDONALD, D. G., M.B., C.M., D.P.H.Aberd., Certifying Factory Surgeon for the Stornoway District.

MACLEAN, Ewen J., M.D., M.R.C.P.Lond., F.R.S.Edin., Lecturer in Midwifery (under the Midwives Act) to the University College of South Wales and Monmouthshire, Cardiff.

REES, Ferdinand, M.D.Glasg., Honorary Assistant Medical Officer, Royal Albert Edward Infirmary, Wigan.

ROBINSON, C. A., B.C., C.M.Cantab., Medical Officer of Health for the Godstone Rural District.

SHELDON, Hugh F., M.R.C.S., L.R.C.P.Lond., Civil Surgeon, Military Hospital, Potchefstroom, South Africa, *vice* J. H. Sheldon, resigned.

SHELDON, John H., M.B.Lond., etc., Medical Officer to the Globe and Phoenix and Gaika Gold Mining Companies, Lebakine, Rhodesia.

TARBETT, P. R., M.R.C.S.Eng., L.R.C.P., Certifying Factory Surgeon for the Stevenage District, County Hereford.

THOM, Andrew, L.D.S.Edin., Honorary Dentist, Royal Albert Edward Infirmary, Wigan.

DIARY FOR NEXT WEEK.

POST-GRADUATE COURSES AND LECTURES.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered as follows: Monday, at 8 p.m., Demonstration in Medical Wards; Tuesday, at 5 p.m., Middle ear Suppuration, with Lantern Slides; Wednesday, at 5 p.m., Investigation of Headaches, and their Treatment; Thursday, at 4 p.m., Demonstration in Surgical Wards; Friday, at 5 p.m., Malignant Disease of the Colon.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BURNET.—At Beechknowe, Crieff, N.B., on the 9th inst., the wife of Morton Burnet, M.D.Edin., of a son.

HORROCKS.—On August 6th, at Seven Kings, the wife of Oswald Horrocks, L.M. & S. Madras, L.R.C.P., F.R.C.S.E., of a son.

WILLIAMSON.—On Saturday, August 6th, at 83, Braid Road, Edinburgh, the wife of J. Rutter Williamson, M.D., Ch.B., etc., of a daughter.

DEATHS.

BEACH.—On July 6th, at Winchester House, Kingston Hill, Surrey, Emily Dora, wife of W. Dr. Fletcher Beach in her 46th year.

MORGAN.—At his residence, Montgomery, on July 2nd, Dr. Thomas Morgan, aged 80.

RUXTON.—On August 5th, at 4, Brighton Parade, Blackpool, Jean Ruxton, M.D.Aberd., Consulting Surgeon to the Victoria Hospital, Blackpool, and late of the 17th Leicestershire) Regiment.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Arundel Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

TELEPHONE (National):— GENERAL SECRETARY AND MANAGER, 2630. Gerrard.
EDITOR, 2631, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

SUPERFLUOUS HAIRS.

ELECTROLYSIS writes: A lady has a distinct moustache and a considerable quantity of hair on the chin. What would be the probable number of sittings required for treatment by electrolysis? Is it painful?

E. H. asks for any information concerning the treatment of digestive disturbances by a diet of nuts. Is there any institution where such treatment is carried out; if so, what are the results?

B. W. writes: A patient of mine has been impotent ever since a severe injury a year ago to his axilla, which involved the brachial plexus. Ordinary drugs have failed. What remedies can I use?

ANSWERS.

DR. H. RAINSFORD.—We have no knowledge of the local anaesthetic referred to.

BENGAL.—From the purely physical point of view, if the woman's orgasm is complete, although the appliance is used, it is not a source of danger.

INSTITUTION FOR FEEBLE-MINDED BOY.

DR. DUDLEY.—We are advised that the best plan would be to apply to the Secretary of the Midland Counties Asylum (for Imbecile Children), Knowle, near Birmingham, where charges for elected cases are very moderate.

METHODS OF VACCINATION.

DR. ERNEST J. BEARDS.—There is no satisfactory book in English dealing with modern methods of vaccinating. A brief outline of general principles is contained in *The Law relating to Poor law Medical Officers and Vaccination*, and some methods of applying these principles will be found in Vaccination Facts and Problems, the special reprint of the BRITISH MEDICAL JOURNAL of July 5th, 1902. The former book is published by Baillière, Tindall, and Cox, under the auspices of the Poor-law Medical Officers' Association.

LETTERS, NOTES, Etc.

COLONIAL has not supplied sufficient data for a definite answer to be given to his question. In particular, it is important that the foreign University granting the degree referred to should be specified.

NAVY, ARMY, AND AMBULANCE SECTION.

SURGEON-MAJOR G. A. HUTTON (RET.) writes: In the BRITISH MEDICAL JOURNAL of August 6th, at page 288, reporting the proceedings of the Navy, Army, and Ambulance Section on Thursday, July 28th, it is stated that the Section adjourned after Dr Hamilton's paper. This was not the case, for my paper followed and then the section adjourned. I am sorry that I was not able to attend the Section on Friday, as Colonel Squire's paper was of much interest and I could have spoken to the points he brought forward. I was engaged all that day on the Bench at Leamington and could not get away.

THE BLANTYRE BONESETTER.

DR. P. Z. HEBERT (Old Cavendish Street) writes: We are gravely informed by the *Daily Chronicle* that on Saturday, July 23rd, at Bolton, the Blantyre bonesetter dealt with 475 cripples and that several thousands more applied for treatment, but were unsuccessful in securing tickets. This raises two important questions in the medical world: (1) We must be out of all reckoning in our estimation of the proportion of cripples in the community. If we assume that Saturday to be an average day with the renowned bonesetter, and take it that several thousands means, say, 6,000, we have 6,475 cripples crowding around the bonesetter every day for twenty-three days that he was in Bolton, totalling a number of 148,925; which must be very nearly the whole population of Bolton. (2) To deal with 475 cripples in one day, and I suppose curing them, which we are left to infer, as a matter of course, assuming he worked eight hours, not counting meal time, would average one minute devoted to each patient, including gstoppages, to put it in railway language, leaving half a minute at the end of every hour's work to enable him to draw a long sigh, with one minute to spare in case of any hitch or emergency, and he could just about manage to give each patient three minutes if he did not trouble about such trifling matters as sleeping, eating, drinking, dressing, etc. Why, even Doyen's quickest record in performing vaginal hysterectomy did not reach below four

minutes. Talk of the modern rapid ways of machinery, they do not come within comparison of Rae's lightning method of expediting his cures. No wonder he wants a holiday.

A CONSULTING-ROOM THIEF.

IT seems worth while to reissue a warning published last week in respect of a very specious consulting-room thief, since, as London for the present is probably too hot for him, it see us not unlikely that he may elect to favour practitioners in the provinces with a visit. He is a man who has recently resumed work after a vacation spent in prison, his claims thereto having been cordially admitted as a reward for his attentions to medical men. The description given of him by a very recent victim who has communicated with us this week is as follows:—He passes as a German or an Austrian, is well dressed, most polite in manner, well read, and understands the game well. He is about 5 ft. 7 in. in height, about 21 years of age, fair, clean-shaven, not stout, well set up, and easily able to pass as a "foreign" gentleman. Upon this latest occasion he called ostensibly to make an appointment for a relative who lived in the country. Two days later he called again at an hour when he knew his victim would not be at home. He asked to be allowed to wait for the return of the doctor, as he could not go away and come back at a later hour. He was permitted to do so, but as soon as he had had time to secrete about his person whatever he could find of value he announced that he could not wait any longer and left. Our correspondent, it appears, had not seen the warning given in these columns, but those who have done so will notice that the two descriptions tally very closely. The thief, therefore, seems to be a man of sufficiently marked characteristics for his identity to be suspected, if not fully recognized, by those who read the descriptions given, if he chances hereafter to pay them a visit. He is now "wanted by the police," and if he can be induced to remain upon any excuse until communication can be sent to them by his temporary host there will be one further addition to the alien prison population.

THE METRIC SYSTEM.

C. L. writes: In reply to Dr. Alston's criticisms I would point out that 100 divided by 7, 8, and 9 yields approximately 14, 12, and 11 respectively, and they are certainly less easy and convenient to remember by association than by simply reversing their order, as occurs in the case of 60. Those "naked savages," the decimalists, want us in dispensing to substitute for one of our very practical and useful units—namely, the grain—60 to 70 units (or at least 6 to 7), and their more cumbersome multiples running into hundreds, and very few know the multiplication table beyond 144! Then for our other most useful unit, the fluid drachm, they want us to substitute approximately 3½ c.cm. And there is no advantage whatever, but the reverse, to be obtained by all the bother of substituting the one system for the other, to say nothing of the expense, though slight. The efforts of decimalists are as ridiculous as would be that of a Society of Left handers, who wanted to compel us by Act of Parliament to use our left hands where now we use our right—though an efficient degree of mere ambidexterity is very useful. But the serious point is how many times a hundred "accidental death" might not result from wrong dispensing during the confusion and doubts of a forced exchange, though no coroner would be the wiser or harder worked for them.

THE SCOTTISH POOR-LAW MEDICAL SERVICE.

JAMES F. D. MACARA, M.B., C.M. (Durness, Sutherlandshire, N.B.) writes: While thanking you for your very kind congratulations on the successful settlement of my actions against the Parish Council of Durness, I desire, with your permission, to put on record my high appreciation of the able and resolute manner in which the Medical Defence Union of London, and their solicitor (Mr. Hempson, London, and his Edinburgh agents, Messrs. Inglis, Orr, and Bruce, W.S.) have conducted this case to so satisfactory and successful a termination. It is, I believe, the first case of its kind in Scotland since the passing of the Local Government (Scotland) Act, 1894, which established parish councils in place of the parochial boards, and I trust that it may tend to hasten much-needed legislation which will amend the aforesaid Act by giving to the parochial medical officers of Scotland a right of appeal against capricious or unjust dismissal by their parish councils, so placing the Scottish Poor-law medical officers on a similar footing with their professional brethren in England and in Ireland. I also desire to express my thanks to Dr. W. L. Muir, the energetic Secretary to the Scottish Poor-law Medical Officers' Association, who writes to me as follows: "You are to be congratulated on the result, and the Medical Defence Union (London), of which you most fortunately are a member, are entitled to the thanks of the whole Scottish Poor-law medical staff.

THE HUMANE SLAUGHTERING OF ANIMALS.

MR. JOSEPH COLLINSON (Humanitarian League, Chancery Lane) writes: Will you permit me to draw your readers' attention to two points of great importance in the recently-published report of the Committee appointed to consider the humane slaughtering of animals? (1) The Committee has pronounced emphatically in favour of public as against private slaughter-houses. "In the interests not only of humanity," it says, "but of sanitation, order, and ultimate economy, it is highly desirable that, where circumstances permit, private slaughter-houses should be replaced by public abattoirs, and that no killing should be permitted except in the latter, under official supervision." (2) The Committee no less emphatically condemns the Jewish system of slaughtering as at present practised, and reports that "until some method is devised and adopted for rendering the animals unconscious, previous to the 'casting' and throat-cutting operations, the Jewish system of slaughtering cattle should not be permitted in any establishment under Government control." The Committee thus confirms what the Humanitarian League has been urging for the past ten years with regard both to private slaughtering in general and the Jewish method in particular. It is earnestly to be hoped that the London County Council and other public bodies will not allow the recommendations of this most valuable report to be neglected.

THE CAUSATION OF CANCER: EARLY OPERATION IN CANCER.

DR. HERBERT SNOW (London) writes: With every respect for their good intention, I submit that such letters as those of Mr. Skene Keith and Mr. Roger Williams in the BRITISH MEDICAL JOURNAL of July 30th, tend materially to prejudice the profession by imputing to it a wholly suppositious ignorance and impotence, and so playing into the hands of the quack. Moreover, that the remarks of these gentlemen are not warranted by the existing facts. The causation of "cancer" is assumed to be a mystery, hitherto unfathomed. One can hardly take up a lay newspaper without finding some paragraph or article in the same sense. Yet the gross causes of "cancer" are perfectly well-known and established. We can readily ascertain and formulate the circumstances which have generated malignancy in any and every individual instance. There is here no mystery whatever, except in the imagination of the popular journalist. The teleological factors of malignancy remain, of course, a matter for surmise and theory. But that remark would also apply to many other diseases than cancer—more or less in fact to all. Given the particular species of cancer, the general principle of causation is always the same, whatever may be the variations, more or less slight, in detail. Only it must be remembered that each species owns a distinct mode of causation—a fact hidden by the confusion of all under a single title. But the lay journalist does not deal in teleology; he tacitly assumes that we know nothing of the sources and origin of what he calls cancer, and therefore remarks in the medical press on the fictitious obscurity of its origin do so much harm. Mr. Roger Williams surely errs in confounding together the principles of cancer and of benign tumour formation. Any "lump" is popularly designated a "tumour," but a benign tumour, properly so called, usually proves on analysis to be a simple hypertrophy of tissue, or of some pre-existing tissue element. Now, in "cancer" we have to note the acquisition by normal cells of entirely novel vital qualities. That acquisition is shown by (*a*) the progressive erosion of surrounding tissues; (*b*) the transference of the altered cells to distant parts or organs, wherein they continue to grow exactly on the model of the particular organ whence they sprang. Nothing comparable to these phenomena occurs in benign tumours, nor, so far as I am aware, in the vegetable kingdom. I hardly think that Mr. Skene Keith's plea for "experimenting in the early stages of cancer" will commend itself to the patient unless he more precisely defines the experiments he contemplates. I presume that by "cancer of the liver" he means cancer of the gall bladder. Whether primary cancer ever attacks the liver is extremely doubtful. I could not find a really authentic and indisputable instance while searching all the records of the Pathological Society a few years since.

LETTERS, COMMUNICATIONS, ETC., have been received from

A A. D.; Dr. A. B. Atherton, Fredericton; Dr. T. Clifford Allbutt, Cambridge; Dr. B. Anningson, Cambridge; Dr. T. C. Askin, Woodbridge; Messrs. Arnold and Sons, London. **B** Dr. J. B. Berkart, London; N. T. Bond, M.B., Polesworth; Dr. W. Bruce, Strathpeffer Spa; Sir T. L. Brunton, London; A. G. Bateman, M.B., London; Mr. J. Benson, Shinrone; Mr. E. J. Beards, Wolverhampton; Dr. E. F. Bohn, Haarlem; Dr. J. W. Byers, Belfast; Mr. L. A. Bidwell, London. **C** Mr. H. E. Counsell, Oxford; P. B. Considine, M.B., Middlesbrough; Sir E. H. Currie, London; Mr. H. C. Crouch, London. **D** Director-General of A.M.S., London; Lieutenant-Colonel O. T. Duke, Folkestone; Messrs. Down Bros., London; Duryea Company, Manager of, Coventry. **E** Electrolysis; Mr. G. P. Elliott, Todmorden. **F** Messrs. D and J. Fowler, Limited, London; Major G. H. Fink, London. **G** Mr. K. W. Goadby, London; Miss E. Gill, Nottingham; General Practitioner. **H** Dr. W. J. Horne, London; Dr. W. S. Handley, London; Mr. A. Hudson, London; Mr. G. A. Hutton, East Ayton; F. G. Hack, M.B., Manchester; Mr. F. Hart, London. **J** Junior; Mr. P. A. L. Jones, Bedford. **K** Mrs. Knight, Bromley. **L** T. G. S. Leary, M.B., Castlederg: Mr. G. Lithgow, Farnborough. **M** Mr. J. J. MacInerney, Abertillery; Dr. C. F. Marshall, London; Dr. J. Mackenzie, Burnley; Dr. J. M. Moir, Inverness: Mr. B. Moore, Liverpool; Military Secretary of India Office, London; Dr. J. G. Moffat, Keighley; Messrs. Matthaei and Co., London; Mr. M. A. Messiter, Dudley. **N** Dr. W. G. Niall, Guildford; Dr. D. Newman, Glasgow. **P** R. H. Paramore, M.B., London; Dr. C. H. Phillips, Hanley; Mr. J. H. Parker, St. Louis; Messrs. Parke, Davis and Co., London. **R** T. Russell, M.B., Glasgow; Dr. H. D. Rolleston, London; Dr. W. Roper, Bridport. **S** Dr. S. Saunders, Eastbourne; Student. **T** A. Thomson, M.B., Oxford; Dr. J. M. Taylor, Philadelphia. **W** Mr. E. Weatherhead, Canterbury; Mr. H. de C. Woodcock, Leeds; Dr. F. J. Waldo, London; J. S. F. Weir, M.B., Farnborough; Mr. R. H. Wolstenholme, Salford; Mr. A. N. Wilkinson, Evandale; W. L. Watson, M.B., Wellingborough. **X** X. Y. Z.

BOOKS, ETC., RECEIVED.

Handy Newspaper List. 1904. London: C. and E. Layton. 6d.

La Séparation de l'Urine des Deux Reins. Par G. Luys. Paris: Masson et Cie. 1904.

Kompendium der Röntgen-Therapie. Von Dr. H. E. Schmidt. Berlin: A. Hirschwald. 1904. M. 1·20.

On the Development and Anatomy of the Prostate Gland. By W. G. Richardson, M.B., B.S., F.R.C.S. London: J. and A. Churchill. 1904. 10s. 6d.

A Pharmacopœia of Veterinary Medicine. By the late R. V. Tuson. Sixth Edition, revised and edited by J. Bayne, F.I.C., F.C.S. London: J. and A. Churchill. 1904. 7s. 6d.

On the Classification and Pathology of Beri-Beri. By H. Wright, M.D. London: John Bale, Sons and Danielsson. 1903. 3s. 6d.

The Cancer Problem in a Nutshell. By R. Bell, M.D., F.F.P.S. London: Bailliere, Tindall and Cox. 1904. 1s.

Specificity of Antivenomous Sera. By Captain G. Lamb, M.D., I.M.S. Second Communication. Calcutta: Office of Superintendent of Government Printing. 1904. 9d.

The Gold Coast: its Wealth and Health. By Francis Hart, F.A.S., M.A.I.M.E. London: Ereckson. 1904. 5s.

Eyestrain as a Cause of Headache and other Neuroses. By S. Snell, F.R.C.S.E. London: John Bale, Sons and Danielsson. 1904. 2s. 6d.

Bradshaw's Dictionary of Mineral Waters, Climatic Health Resorts, Sea Baths and Hydropathic Establishments. 1904. London: Kegan Paul, Trench, Trübner and Co. 2s. 6d.

*** In forwarding books the publishers are requested to state the selling price.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

Eight lines and under	...	...	...	£0 4 0
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A page	...	...	...	5 5 0

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Advertisements should be delivered, addressed to the Manager, at the Office, not later than first post on Wednesday morning preceding publication; and if not paid for at the time, should be accompanied by a reference.

Post-Office Orders should be made payable to the British Medical Association at the General Post-Office, London. Small amounts may be paid in postage-stamps.

N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

SEVENTY-SECOND ANNUAL MEETING
OF THE
British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF TROPICAL DISEASES.

Brig.-Surg.-Lieut.-Col. Alexander Crombie, I.M.S. (Ret.), C.B., M.D., President.

PRESIDENT'S ADDRESS.

THE FALLACY OF FINALITIES.

It is just ten years since I occupied a position similar to that which I have the honour to fill to-day. In my presidential address on that occasion, when opening the Section of Medicine and Pathology at the Indian Medical Congress of 1894, I selected "Indian Fevers" as the subject of my remarks, and I hope to be excused if I delay the commencement of the work of this Section to-day by a short review of some of the opinions expressed on that occasion, in the light of our present more advanced knowledge, and of the criticisms of which they have been the object. The criticisms I refer to have taken notice chiefly of my attempt to differentiate certain fevers of the continued type, and it is with this group that I intend to deal, very shortly, on this occasion.

The criticisms of clinicians have on the whole been favourable to the belief in the occurrence in hot climates of fevers of a continued type other than typhoid and malarial remittents, but the opinions of our laboratory *confrères* have been almost uncompromisingly opposed to it. In a conversation I had last year at Liverpool one expressed himself as having found no evidence of their existence, and Leonard Rogers in a paper which he read before the Medico-Chirurgical Society in May last year was still more emphatic. Quite recently, however, opinions have been expressed more in unison with clinical observation, and I think it would be profitable to examine the grounds on which the laboratory opposition rested.

I will first allude to my contention that, notwithstanding official returns to the contrary, which show an overwhelming majority of admissions for malarial fevers, "ague" is not the most prevalent type of fever in any of the parts of India where I practised my profession. The commonest type of fever is what I have elsewhere called a "single-paroxysm fever."[1] The paroxysm may be of a few hours' or a few days' duration, but it is a single paroxysm, and has no tendency to recur. If it lasts a few hours it is called "ephemeral fever," if a day or two it is called "febricula," if several days it is known as "simple continued fever."

These attacks of fever give no clinical evidence of periodicity such as is caused by the life-cycle of a parasite renewing itself at frequent intervals in the blood. I failed to find the malarial parasite in such cases, and they recovered without quinine. But since my paper was written these cases of a single pyrexial paroxysm have, nevertheless, been by many regarded as essentially malarial in their nature. Rogers sounds no uncertain note on this subject. He says they are all malarial, as shown by a microscopical examination of the blood and an analysis of the symptoms. Several of his cases, he says, had a typical tertian character, each of them showed the mononuclear increase of malaria, and they were each cured by quinine. But he does not say that he found the malarial parasite present in any of them, and if they had shown a typical tertian type I certainly would not have included them in this group. Neither is the fact that they each recovered after quinine evidence that they were malarial in nature, because they are essentially fevers of a single pyrexial paroxysm, and recover equally well without quinine as with it. There remains the one evidence of the mononuclear increase, but as this can no longer, I think, be held to be conclusive of recent malarial infection nothing remains to support the contention that these cases of fever of a single paroxysm are all of a malarial nature.

Quite recently James wrote as follows[2]: "It is certain that other fevers than malaria are often returned under the term 'ague.' In order to ascertain what proportion of the admissions were really due to malaria, a number of men admitted for this disease were examined in October, 1901, by Dr. Christophers" (that is, in Mian Mir, the most malarious cantonment in India, and at the most malarious season) "and in 40 per cent. of these malarial parasites were found. In the same way I examined a number of men admitted or detained for ague during September, 1902, before any quinine had been administered to them, and found malarial parasites in 45 per cent. of the cases examined. During this month also, through the courtesy of Major Gordon Hall, R.A.M.C., no quinine was administered as medicine to a number of cases in which I had not found parasites. All of them recovered in from one to three days, without any quinine treatment, and from this and the fact that several examinations in each case failed to show the presence of parasites, I conclude that these cases of fever were not due to malaria, though usually entered as such in the returns."

Similarly, writing in Bombay in February, 1904,[3] Mr. Arthur Powell bears testimony to the same effect. Thus he says: "Slight fever, for which no specific cause has been detected by me, is not uncommon in Europeans who have been a short time in the country. I have failed to find any malarial parasites in many such cases, and to test the theory that these are malaria, with a sparse infection, I have withheld quinine to see if a relapse would occur—no such recurrence has taken place."

We must, I think, therefore conclude that a large proportion of the febrile attacks of hot climates must still be included in the terms "febricula" and "simple continued fever," and that the evidence that they are all malarial is inadmissible.

I pass next to the consideration of a form of fever which I called "non-malarial remittent." This was a fever of considerable severity, duration, and mortality, lasting on an average six weeks, if not fatal at an earlier period. I was never able to find malarial parasites in such cases, and quinine sometimes pushed to the extreme dosage of 90 gr. a day (6 grams) was not only ineffectual, but obviously harmful. In the discussion that followed the reading of my paper at the Edinburgh meeting of this Association it was contended by the late Dr. Hughes—whose tragic death at Colenso we all deplore—and by Dr. Edmonston Charles, who was well acquainted with this form of fever in Calcutta, and who had also made a study of Malta fever, that this "non-malarial remittent" was in reality Mediterranean fever. I had seen some twenty cases of Malta fever in the wards of the General Hospital, Calcutta, landed from a man-of-war which had come straight from the Mediterranean, and their clinical picture was so different from that of the cases to which I now refer that I was unable to admit their identity. I confess that my confidence was somewhat shaken when it was announced about the time of the Edinburgh meeting that the sedimentation test for Malta fever had been successfully applied to cases of fever from Dugshai and elsewhere in Northern India, and even in cases from Calcutta; and a short time ago it was announced that agglutination occurred in every specimen of blood sent from fever cases in Assam, and that, in fact, kala-azar was epidemic Malta fever—a theory which, as you all know, has now been abandoned. I am glad to find that Rogers, as the result of his observations, agrees with me that Malta fever does not exist, or only rarely, in Lower Bengal.

What, then, is this form of fever which I described as occurring in India under the name of "non-malarial remittent"? Rogers in the paper I refer to came to the conclusion that it did not exist, although at the beginning of his investigations he believed in its existence, and was stimulated by my description to try to find its true cause. He was driven to the conclusion as the result of his study of continued and remittent fever, by modern blood tests that only two forms of fever exist in Lower Bengal, at any rate, of long duration, namely, typhoid and malarial remittents. A considerable portion of the cases could be distinguished, he said, by purely clinical methods, and the remainder by the serum test or by the differential leucocyte count, in all but a very few cases. The so-called "non-malarial remittent" in natives was, according to him, shown by the serum test to be nothing but typhoid fever.

Unfortunately for this pronouncement the ink with which it was written was hardly dry when Leishman made the discovery of the bodies, now associated with his name, in the spleens of cases of fever from Dum-dum which were neither

[1] *Cyclopaedia Medica*, 1902.
[2] Reports of the Malarial Committee, Royal Society, October 10th, 1903.
[3] *Indian Medical Gazette*, February, 1904.

malarial nor typhoid, and cases of identical character associated neither with malaria nor typhoid have now been reported from Sylhet, from China, from Tunis, from Egypt and the Soudan, from Madras, where they form 7 per cent. of the total native admissions to hospital, and kala-azar, which Rogers strove to prove to be a contagious form of malarial fever, is now shown to be a form of "non-malarial remittent" associated with the same bodies.

I do not bring these points before you as a parade of superior clinical sagacity. I make no such claim for two reasons: first, because the knowledge that we had from time to time to deal with cases which could be classed neither with typhoid nor malarial fevers was common property among clinicians of my day, before "modern methods" cast a doubt on the existence of what we habitually called "non-malarial remittent," and it was only my fortune to voice this conviction, and secondly because the clinical character of the cases associated with Leishman's bodies is very often apparently entirely different from that of the fever which in my address of 1894 I described under that name. My object is to point out the fallacies which lay in the way of investigators, and turn them aside from the path on which some of them set out with a clear object in view, and which would, if pursued with more imagination and stricter logic, have surely led them to the discovery of the existence of this class of fevers which they have hitherto denied.

The fallacy I allude to is the fallacy of finality, the fallacy that every step made in advance is final and that every fact of medicine must be brought into line with it for the reason that there is nothing beyond. It is a fallacy which has marred the progress of medicine ever since it started on its journey. To go no further back than the middle of last century we find that previous to that time there was only one kind of non-malarial fever, and that was typhus. In vain did clinicians and pathologists point out, and none more clearly than Scriven of the General Hospital in Calcutta, and Annersley of Madras in 1835, that there existed another type of fever of more insidious character and accompanied by ulcerations of the small intestine, which was clinically and pathologically distinct. It was not till fourteen years later, when Jenner's classical labours showed it to European practitioners, that they had ears to hear and eyes to see that the "typhoid" fever of the English, the abdominal typhus of the Continent, was a distinct pathological and clinical entity.

But it was thought this step was final: every fever that was not malarial must be either typhus or enteric, and Mediterranean fever had to be included in one or other of these categories, and we accordingly find even Laveran in the early editions of his great work on *Paludisme* classifying it in this way, notwithstanding its striking divergence clinically from either malarial or typhoid fevers. Then came Bruce to show us that it was as distinct bacteriologically as it was clinically and pathologically from either.

At last we had got to the end of everything, and every fever that was not malarial or typhoid was Malta fever, as was maintained at the Edinburgh Meeting, and in proof of this opinion came reports of serum tests from Upper India and Assam entirely corroborative of it, and it was clinched by the discovery of the clinical significance of the leucocyte count.

Rogers was the great apostle of the leucocyte count, and his whole argument in the paper he read last year was based on the opinion that "by this means alone, in the great majority of cases, a correct diagnosis can be arrived at by the examination of stained blood-films with an ordinary high power lens." He had arrived at finality; an increase of the percentage of lymphocytes indicated typhoid, and of the large mononuclears, malarial fever. The presence of the malarial parasite was of little comparative importance, and in fact he only found it in less than 25 per cent. of the cases he diagnosed as malarial by the differential leucocyte count. I am far from disparaging the value of this method of investigation, and I use it constantly, but I use it with caution, because it has been found that the presence of an increased percentage of mononuclears is not confined to malarial infection. It has been found in the spotted fever of the Rocky Mountains, in the fever of trypanosomiasis, in blackwater fever, and in that associated with Leishman's bodies. It has indeed been abandoned by Rogers himself, for in a recent communication he says that "if the new bodies are not a form of malarial organism, then it is evident that a large mononuclear increase is not diagnostic of malaria, but rather an indication of the presence of a protozoal as opposed to a bacterial invasion of the system," and his whole argument as to the non-existence of a "non-malarial remittent" fever crumbles before his own breath.

But that is not all. Even if we admit that it is evidence of a protozoal infection it is not incontrovertible evidence of an active or even recent protozoal infection. The question of the duration of the mononuclear increase after an attack of ague is one which is of the greatest importance in this relationship, and I have evidence that it may continue for a very considerable period. In a case of insomnia which I have now under observation the large mononuclears constituted 24 per cent. of the total leucocytes in October, 1903, and again in July, 1904, although the last possible malarial infection was at Delagoa Bay in April, 1902, so that, apparently, this phenomenon may continue for over two years, and possibly much longer, and cannot, therefore, be regarded in a malarial country as evidence of present, or even recent, malarial infection, putting aside the consideration that it occurs in other febrile conditions.

It may seem hypercritical to apply similar reasoning to the arguments which have been brought forward to prove that this so-called "non-malarial remittent" is nothing more than typhoid. I require something more than an increased percentage of lymphocytes, or even the Widal reaction, to convince me that enteric is a common fever among natives of Lower Bengal. It has yet to be proved that typhoid is the only fever in which an increased lymphocyte percentage occurs, and until that is done all argument founded on that assumption is a mere begging of the question, irrespective of Rogers's admission that it was absent in one-third of the cases so diagnosed by him. I must also demur to accepting a positive Widal reaction as conclusive of active typhoidal infection in any given case of fever in a native of Bengal. As with the mononuclear increase in malarial, or rather protozoal, infection, so the phenomenon of agglutination may occur under other conditions, and is often of long and indefinite duration. Though it is lost as a rule in a few months after an attack of typhoid, it may persist for twenty-five years, according to Horton Smith, so that any case of fever occurring within an indefinite period after recovery from this fever may give the reaction without any fresh infection by the bacillus of Eberth having occurred. It is even an unjustifiable assumption that a previous attack of typhoid fever is necessary for the manifestation of the reaction in natives of Lower Bengal who give no history of any fever which could be regarded as having been typhoidal.

This is a point on which Freyer of the R.A.M.C. was the first to sound a warning note. I am aware that the dilution he used was too low, and that healthy blood sometimes gives positive evidence of agglutination in 1 in 12. I am also aware of the negative results obtained by Lamb, of Bombay, who used the sedimentation test, but I think it desirable to put on record those which I obtained in examining the blood of healthy natives of India living in London.

I sent specimens of the blood of eleven such natives to Mr. Bokenham, Dr. Klein, and Captain Hayward Pinch of the Polyclinic, as I was in the habit of doing in ordinary clinical work unconnected with this inquiry. In six of these the result was entirely negative, but of these three were over 40 years of age, two were natives of the Punjab, and only one was a young Bengali. The remaining five were young natives of Lower Bengal or Assam, studying law or medicine in England. When not otherwise stated the dilution was 1 in 50. Of these two gave a marked reaction in twenty minutes; three gave the reaction slowly, showing many clumps in half-an-hour, two of them giving a marked reaction in dilutions of 1 in 30. In two instances the blood was re-examined after an interval of six months. In one there was "distinct partial clumping in thirty minutes, better still in one hour in a dilution of 1 in 20" (Klein). In the other there was no sedimentation with a typhoid culture, "but in a hanging-drop preparation made with the typhoid culture a distinct loss of motility—as contrasted with a control slide—was noticed in three hours and at the end of five and a-half hours all movement had ceased, but there was not the slightest attempt at agglutination. This certainly does suggest that the blood contained some substance inimical to the vitality of the typhoid bacillus" (Pinch).

None of these young men had a history of fever which could be regarded as indicating recent typhoid infection, and yet there were present in their blood substances which are regarded in ordinary laboratory work as indicative of present or recent typhoid infection, and I think we must therefore accept with reserve the opinion formed on the serum reaction

alone, that typhoid fever is a common form of fever in natives of Lower Bengal, in the face of these results and the experience of many medical officers who have regarded it as rare, an experience grounded not only on clinical observation, but on necropsy. We have it on record that one of Rogers's predecessors in the appointment of Pathologist to the Medical College Hospital, Calcutta, did not see the ulceration of the intestine which is pathognomonic of enteric fever in a native of Lower Bengal during the ten years of his tenure of office, and the absence of confirmation of his opinion by necropsy is a serious omission in Dr. Rogers's paper.

Whether the frequent presence of agglutinins or alexins in the blood of healthy young natives of Lower Bengal, which my observations seem to demonstrate, in sufficient quantity to cast doubt on a diagnosis formed on serum reactions alone, is a peculiarity of race, as in horses, or is a quality acquired by long-continued infection in small doses by the typhoid bacillus or in some cases by a previous attack of the disease I do not stop to inquire, but the fact of their existence in a certain proportion of the population necessitates, in any given case, corroboration by some other method, namely, the detection of the typhoid bacillus in the urine, or the demonstration of the pathological lesions in the intestine, before we can accept the dictum that every case of non-malarial remittent fever in a native of Lower Bengal may not be other than enteric fever.

One more word and I have done. In my address of 1894 I spoke of a continued fever, which ran the course of a mild typhoid, of from three to four weeks' duration, but which had none of the clinical symptoms of that disease. It had been recognized as a peculiar type in all the larger towns of India, where it was known by the local names of "Calcutta fever," "Bombay fever," etc. In the absence of specific evidence that it was no other than typhoid, we declined to give it this name, although we treated it as such. I provisionally called it "urban fever" in 1894, but am now prepared to regard it as a peculiar form of typhoid, and in my paper in the *Encyclopedia Medica* I have suggested the alternative name of "Bastard typhoid." My reasons for advancing it to this category are that in one case which I had an opportunity of examining before I left Calcutta I obtained the Widal reaction, and as this is a fever of Europeans, the same objection does not exist to accepting this evidence as it does in the case of natives. Rogers also states that he found this reaction in every case of continued fever in the wards of the European General Hospital. It would have been more satisfactory if he had sorted the cases clinically, so as to have been able to make it quite clear that his enumeration included cases of this type, for the fact that they conform to the serum reaction of typhoid fever in no way alters the fact that they exist as a distinct clinical type. It has been demonstrated that there are several types of enteric fever, and a form which does not give the serum reaction in any period of its course has been pointed out under the name of "paratyphoid." And I think that the distinct clinical type which is so well recognized in India, and which I have called "bastard typhoid," ought not to be dismissed because it gives the serum reaction, but its peculiar clinical features rather mark it for more exact research. My experience in connexion with the typhoid fever of the South African war, which showed several very distinct deviations from the ordinary classical enteric of the text-books, namely, the often copious eruption, the frequency of thrombosis and of muco-enteritis as a sequela, has led me to think that typhoid fever is generally a mixed infection, the symptoms and severity varying with the amount and quality of the mixture, and it is not impossible that the peculiar type which occurs in the large cities of India may turn out to be a pure infection with Eberth's bacillus, and may thus form the bed rock on which the more classical cases are built up by additions of other intestinal flora.

DISCUSSION ON TRYPANOSOMIASIS.

I.—Lieutenant-Colonel David Bruce, F.R.S., R.A.M.C.

In opening this discussion, it will be well to refer to the state of our knowledge of this subject at last year's meeting of this Association. At that time it was held:

1. That the trypanosome found in the blood of natives on the West Coast of Africa was different from that found in cases of sleeping sickness, and that, therefore, human trypanosomiasis and sleeping sickness were distinct diseases.

2. At this time last year it was considered that the native is immune to trypanosomiasis but that the European is not, this conclusion being arrived at on the analogy of the wild and domestic animals and nagana.

3. A year ago it was held that the prognosis of trypanosomiasis in the native was apparently good; in the European it was not favourable but certainly not necessarily bad.

4. At that time it was stated that the treatment of this disease so far had proved absolutely unsuccessful.

5. Another conclusion that was arrived at this time last year was that the trypanosome of sleeping sickness had other hosts in addition to man, and that the humbler mammals had probably a great deal to do with the endemicity of trypanosomiasis.

I think we may congratulate ourselves on the advance in our knowledge of this subject during the last year. Only one of the conclusions laid down at the last meeting of this Association can now be considered to be correct; I allude to the statement that treatment has proved unsuccessful. Now I am also going to lay down this year a series of propositions in regard to human trypanosomiasis or sleeping sickness, and it will be interesting to find out a year hence how many of these propositions still hold good.

Of the propositions laid down at this meeting last year, about 80 per cent. of them are now shown to be incorrect. I sincerely trust that the conclusions we lay down to-day will not show such a high rate of mortality.

The first proposition I would lay down is that the trypanosoma found in the blood of natives on the West Coast of of Africa and in Uganda, and those found in cases of sleeping sickness, are identical. The work on this subject has been mainly done by Laveran and Mesnil, by Dr. Thomas of the Liverpool School of Tropical Medicine, and by the Royal Society Commission in Uganda. We all came to the conclusion that morphologically, these trypanosomes could not be said to differ, and that their behaviour, when injected into various animals, was also identical. From these considerations, therefore, we consider that the trypanosoma gambiense (Dutton), found in the blood of natives in West Africa, and the trypanosome found in sleeping sickness, are identical.

2. The next proposition I would lay down is that the so-called "trypanosoma fever" is nothing but the first stage of sleeping sickness. The chief proof of this is that several of the natives we found with trypanosomes in their blood a year ago in Uganda, who appeared perfectly healthy and were going about their ordinary work without showing any symptoms of sleeping sickness, have now succumbed, or show decided symptoms of that disease. Captain Greig of the Indian Medical Service, and Lieutenant Gray, Royal Army Medical Corps, who are still working, I am glad to say, at sleeping sickness in Uganda, have again examined as many of these natives as possible, and have found that many of them have died of sleeping sickness. Again, we had in Entebbe some five natives with trypanosomes in their blood, whom we kept under close observation. I hear from Greig and Gray that Jordan Murgan, one of these natives, is now suffering from unmistakable symptoms of sleeping sickness. From these facts, therefore, we infer that the so-called "trypanosoma fever" is nothing but the first stage of sleeping sickness.

3. The next proposition is that neither the native nor the European is immune to this disease. If it is true that human trypanosomiasis and sleeping sickness are identical diseases, then this argument need not be pushed, as we are all aware that very many thousands of natives have succumbed to sleeping sickness during the last few years. A short time ago it was also asserted that the European was immune to sleeping sickness; this, of course, like many another loose statement of the same kind, is now proved to be wrong, as we know several cases of this disease which have occurred among Europeans.

4. The next proposition that I would lay down is that as regards prognosis instead of being favourable, so far as we know, the mortality is 100 per cent. in both coloured and uncoloured races; at the same time it may be proved later that some of the natives—at least a certain percentage of them who have trypanosomes in their blood, may kill off these trypanosomes before the disease has given rise to the pathological changes which constitute sleeping sickness. Greig and Gray in Uganda will have an opportunity of putting this to the proof, when they have examined all the natives we examined for trypanosomes at this time last year. In my opinion, however, I doubt very much if man ever kills off the trypanosome when once it has gained entrance to the circulation. The incubation period may last for years, but I think

in all probability it will be found sooner or later that the man dies of the infection.

5. The next proposition I bring before you is that up to the present no evidence has been brought forward to show that any of the the lower animals take any important part in the spread of human trypanosomiasis. This is a point upon which in all probability more light will be thrown within the next few years; all I can say is that there is no evidence, at present, that any of the lower animals take any part in the spread of the disease. It is quite true that many mammals besides man are capable of being infected artificially by this disease, and it is quite possible that this infection may take place sometimes under natural conditions, but when we think of the enormous number of infected natives in the sleeping sickness area, it is evident that there is no need to call in the aid of any of the lower animals to assist in the spread of the disease. Statements have been made that perhaps the trypanosomes live in the blood of fresh-water fish in the Victoria Nyanza. These fish are supposed to lie on the surface of the water, and some blood-sucking insect conveys the trypanosomes from the fish to the human subject. Others speculated in the same way as to the crocodile—which is very numerous in Lake Victoria—playing a part in the dissemination of this disease. These, ladies and gentlemen, are most ridiculous speculations, and are not worth a moment's consideration.

6. The next proposition is that human trypanosomiasis is conveyed from the sick to the healthy by means of a biting fly—the *Glossina palpalis*. I am sorry to say that no evidence is as yet forthcoming from the West Coast of Africa in regard to the truth of this statement. I believe, on the West Coast, Dutton and others have found it impossible, up to the present time, to prove that there is any connexion with the spread of this disease and the *Glossina palpalis*, but I think the evidence we brought forward in Uganda is overwhelming in this respect. We found the distribution of this disease to be most peculiar. Shortly, the disease was confined to a narrow strip of land running along the shore of the lake and to the many islands which dot the northern part of the lake. It was thought that this peculiar distribution must depend upon some peculiar factor, and that factor we found in the *Glossina palpalis*. The distribution of this fly and the distribution of sleeping sickness we found to be identical; where none of these flies existed there was no sleeping sickness. The evidence then, in Uganda, was so strong that I have no hesitation in asserting that sleeping sickness is conveyed, at least in Uganda, by that species of tsetse fly we know as *Glossina palpalis*.

7. It has, however, been proved that several members of this genus are also able to convey the virus from the sick to the healthy, and this constitutes a danger that this disease may spread into the British East African and other tsetse fly zones. The proof of the truth of this has been brought forward by Dr. Wiggins, of Nairobi, in British East Africa, who experimented with the three species of tsetse flies found in that locality. As Dr. Wiggins is present I shall leave him to describe more fully his experiments. I am also informed by Greig and Gray that *Glossina palpalis* is not only able to convey the trypanosome of sleeping sickness from the sick to the healthy, but that it is also able to convey the trypanosome of nagana, or a disease found in part of Uganda, which must be very closely related to nagana. If the *Glossina palpalis*, then, can carry more than one species of trypanosome, it is reasonable to believe that the other species of this genus will also be able to carry the infection of sleeping sickness. This then constitutes a real danger that this disease may become imported into British East Africa and spread southward and northward along the tsetse fly belts of the coast and large river valleys.

8. Although there is proof that the various species of the genus *Glossina* can convey this trypanosome, there is no proof that other genera of biting flies, such as *Stomoxys* and *Tabanus*, carry the infection under natural conditions. The arguments for the proof of this proposition are that Nuttall, of Cambridge, who experimented on the conveyance of the nagana trypanosome from sick to healthy animals by means of *Stomoxys calcitrans*, always had negative results. Greig and Gray inform me also that they have tried this experiment in Uganda, with *Stomoxys*, and have also failed. Experiments on a huge scale have been going on in South Africa for many years in regard to the spread of nagana or the tsetse fly disease; it is only where the tsetse fly, *Glossina morsitans*, or one of its allied species, *Glossina pallipides*, is found that this disease occurs. Outside that area there may be many other species of biting flies, but the disease never spreads beyond the zone of the tsetse fly. When in Africa I lived for two years on the top of a hill in Zululand, within a few miles of the fly country. I had many animals affected by tsetse fly disease living on the top of this hill and surrounded by healthy animals, but in no case was the disease conveyed from one of these sick animals to a healthy one, although there were numerous species of biting flies, other than the tsetse fly, to be found on the top of the hill. It has been said by Rogers that *Tabanus* can carry the trypanosome of surra; this may be true, but I must say that I have not been quite convinced that this experiment was carried out under the best conditions. It seems evident, if you place two animals beside each other, one affected with surra and the other healthy, if you proceed to shave the skin of both these animals, thereby causing a great deal of excoriation of epidermis and the infliction of small wounds; if you then take a cage containing *Tabanidae*, and allow them to bite the affected animal, and while so biting to suddenly have the cage transferred to the healthy one, is, to my mind, not a fair experiment; it stands to reason that any kind of biting fly would under these circumstances convey the infection to the small wounds and excoriated places which have been caused by the shaving. I do not think Captain Rogers himself places any great reliance on his own experiment; but, whether the experiment is true or not, the statement has been copied into hundreds of papers in many languages, and all I can say is that, if the statement is not true, it is a pity it has gained so much publicity.

9. I pass on to another proposition, which is that there is no proof that trypanosoma gambiense passes through any metamorphosis in *Glossina palpalis*, but that the transference of the parasites by this fly from one animal to another is purely mechanical. It has been said that the trypanosome undergoes a metamorphosis in the interior of the tsetse fly analogous to the metamorphosis which the malarial parasite passes through in the mosquito. The arguments in favour of the trypanosome being conveyed by the tsetse fly without any metamorphosis are: First, the fact that the fly is not able to retain, or does not retain, its infective quality for more than forty-eight hours. No one has been able to infect a healthy animal by means of the tsetse fly for a longer period than forty-eight hours, and my many attempts to convey the disease by means of the tsetse fly, three days after the fly had fed on trypanosoma blood, have always failed. If any metamorphosis analogous to that which the malarial parasite undergoes in the mosquito was undergone by the trypanosome in the tsetse fly, then we would expect that the tsetse fly would not become infective until some time had elapsed from the last time of feeding; the mosquito in yellow fever does not become infected for some twelve days, and in the same way the mosquito in malaria takes some days before it becomes infected. The next argument that no metamorphosis is carried on in the interior of the fly is that, although I have examined the internal fluids and organs of very many tsetse flies to find out if any such metamorphosis takes place, I have never found any signs of any such metamorphosis. Mr. Plimmer also informs me that preparations made of blood taken from the stomach of tsetse flies at various intervals of feeding showed no signs of any change. At the same time, after the work of Schaudinn on halteridium, it would be rash to say that no metamorphosis or development takes place in the interior of the tsetse fly. In all probability some development does take place, but I have no hesitation in asserting that this development will be found to be quite a different thing from the metamorphosis which has been prophesied, and which we know takes place in the case of the malarial parasite and the mosquito.

10. The present evidence goes to show that all the stages of the development of the trypanosoma gambiense take place in the human host. By this I mean that the trypanosome does not absolutely depend upon the intermediate host for its continuance. I am not sure that all the stages in the development of trypanosoma gambiense have been found in the human host, but I think I can say that most of them have been found, and that the probability is that the others also take place.

11. In regard to measures for the prevention of the spread of sleeping sickness: These should aim at preventing, as far as possible, the movement of natives from sleeping sickness areas into any part of the country where any species of tsetse fly is found. It was lately proposed to remove the Indian labourers from the British East African Railway and to replace them by native labourers from Uganda. One can easily

imagine how dangerous such a course might be. Many of these Uganda natives might have the trypanosomes of sleeping sickness in their blood, and so convey that parasite into the tsetse fly district of British East Africa, and spread the disease to the natives of that part.

Other measures would be the prevention, as far as possible, of the movement of healthy natives into sleeping sickness areas; the evacution, if possible, of those areas; the destruction of the breeding places of the tsetse fly, and of the fly itself, whenever possible.

II.—J. Everett Dutton, M.B.Vict., Walter Myers Fellow, University of Liverpool.

John L. Todd, B.A., M.D., C.M.McGill.

AND

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HUMAN TRYPANOSOMIASIS AND ITS RELATION TO CONGO SLEEPING SICKNESS.

[This was an abstract from the second progress report of the expedition of the Liverpool School of Tropical Medicine to the Congo, 1903. Written in April, 1904.][1]

The expedition arrived at Leopoldville on November 21st, 1903. Two of its members who had made a short tour through the Cataract Region arrived a week later. During their journey through this district, in which Congo sleeping sickness was said to be extremely prevalent, many cases, with very anomalous symptoms, but called sleeping sickness, were seen. As already stated in our first progress report,[2] trypanosomes were found in the peripheral blood of some of these cases. It therefore became necessary to commence a clinical study of human trypanosomiasis in order to see what relation it bore to Congo sleeping sickness.

Leopoldville offered particular advantages for such a study, and the members of the expedition decided to remain there for a few months. A large bungalow was placed at their disposal by the Congo Government, and, through the kindness of Dr. Grenade, the State Medical Officer, and Dr. Broden, Director of the Leopoldville Bacteriological Institute, the patients at the native hospital, a good proportion of whom were infected with trypanosomes, were given to the expedition to study. In addition to this, the presence of about 2,000 State employés—labourers, soldiers, etc.—afforded an easily-accessible healthy native population.

Later, the hospital for natives was found unsuited for a complete examination of the cases, and a new structure was built, and supplied with the necessary appurtenances, through the kindness of the local government. The members of the expedition have therefore for four months been in a position to keep patients under continued and careful observation.

Out of a total of 465 natives, coming from all parts of the Upper Congo, as well as the districts round Leopoldville, where they were examined, 54 were found to have trypanosomes in their blood, and out of 707 examined at Boma, Matadi, and in the Cataract Region of the Lower Congo, 49 were found to be infected with them.

In the British Colony of the Gambia only six cases of human trypanosomiasis were found among 1,043 natives.[3] These Gambia cases presented no definite symptoms of illness, and nothing abnormal was detected, with the possible exception of an occasional rise in temperature and increase of pulse frequency. In the Congo we have also seen examples of the mild Gambian type, but the majority of our cases have shown marked symptoms of illness. From a close study of the Congo cases, it becomes evident to us that there is no well-defined line of demarcation between these two forms of the disease, though, for descriptive purposes we here propose to consider them under three main headings, "A," "B," and "C."

Type A. Cases with no definite symptoms of illness.

Type B. Cases with few symptoms.

Type C. Fatal cases showing well marked symptoms, the the most notable being fever, lassitude, weakness and wasting.

It is significant to note that a large percentage—36 out of 44—of those cases under Types B and C were believed by their friends to be suffering from "sleeping sickness."

We have seen cases coming under Type C, in which no sleep symptoms were ever present, as well as cases in which some of the classical symptoms of sleeping sickness were noted. We therefore subdivide Type C into:—

1. Fatal cases showing no sleep symptoms.
2. Fatal cases showing sleep symptoms.

Here again no sharp division is possible between these two groups, still, we think it not inadvisable to separate them, since from our experience here, we believe that altogether too much prominence, as a diagnostic feature, has been given to what appears to us to be only a minor and inconstant feature of this disease, namely, sleep. The prominence given to this symptom has tended to disguise the true nature of Congo sickness which is, primarily at least, a trypanosome infection.

Type A cases, with no definite symptoms of illness, of which the following case is an example:

Case xciv.

K., male, aged 23.

History.—A Batetela man. Has been for two years in Leopoldville as State labourer. Patient says that he never had fever.

February 23rd, 1904. General condition: Is a well-nourished, intelligent man, answers questions quickly and well; has a stolid expression, but no dullness or vacancy whatever, and actions not markedly slow, oedema absent, no puffiness of face, skin smooth and glossy; lymphatic glands, all easily palpable, freely movable and hard; parotids enlarged: patient believes himself to be in perfect health; a careful physical examination reveals nothing abnormal in thorax or abdomen; co-ordination and sensation to touch and pain normal; reflexes, superficial and deep normal, pupils react to accommodation and light; no tremors.

March 31st. Physical examination repeated. With exception of a distinctly accentuated aortic second sound patient seems to be absolutely normal. He works willingly and well all day long.

Type B cases, intermediate between types A and C, showing very few signs of illness and not yet definitely believed by their friends to be suffering from sleeping sickness, of which the following case is an example:

Case lvi.

M'P., aged 17, male.

History.—Patient is a Lower Congo native. At the age of 13 he was admitted to the Baptist Mission Station at Wathen, Cataract Region. Here he was successively employed as garden boy, table boy, goat herd, and, at the age of 15, as cook. In December, 1902, he complained of fatigue while on the march, and was soon after dismissed because of untidy careless habits. His employers had at this time only a vague suspicion that these might be the prodromal symptoms of sleeping sickness. He was not seen again till November 13th, 1903, when, with another youth, he carried into the mission a sick child from a village four and a-half hours' distant. The only changes perceived in the lad were that much less care was taken of his personal appearance than formerly, and he was not so robust.

November 14th, 1903. General condition: Patient is thin, and has a certain apathetic stolidity or dullness of expression; oedema absent: skin is soft and clean but dry; lymphatic glands all considerably enlarged. Physical examination reveals nothing abnormal; pulse 96 to 110, respirations 20 to 24. Temperature, with the exception of an evening rise to occasionally 99.5° F., is almost normal. Patient was sent to England December 4th, 1903.

Type C cases showing well-marked symptoms. The following case illustrates subgroup I of this type—fatal cases showing no sleep symptoms.

Case lxxxii.

K., female, aged 8.

History.—Patient is a Lower Congo native, and comes from a village four hours' march from Leopoldville. When brought to Leopoldville three months back she was an orphan and destitute, and a fortnight ago was sent to hospital more through lack of friends to look after her than because of any suspicion of sleeping sickness.

December 20th. General condition. Patient is miserably thin, and has the appearance of being half starved. She is very weak, her feet are full of chiggers, and she can only walk with difficulty. She has a dazed expression, and is constantly trembling. Tremors are increased on the slightest exertion. Conjunctivae are congested and there is a slight purulent secretion. Intelligence is good, answers questions quickly and well. Skin, dry, imbricated and filthy. Lymphatic glands, all easily palpable and hard, save femorals which are much enlarged, soft and matted together. The child complains of backache, and insists that she has got sleeping sickness, but her condition is thought to be due mainly to starvation and ill treatment. Circulatory system, normal. Respiratory system, slight bronchitis. Liver, normal. Spleen, just palpable. Alimentary system, tongue heavily coated, teeth tartrous, gums healthy, appetite excellent, abdomen flat and hard. Nervous system, reflexes all increased.

January 8th. In spite of attention, cleanliness and better food patient is going down hill.

January 16th. Greatly emaciated, tremors increased, patient can hardly stand and cannot walk, speech is thick but coherent. There is no drooping of lids, but eyes are fishy and vacant; intelligence is now very dull, she whines and complains on being disturbed, eats little, is

[1] The full report, with its charts and other cases, is published in the Thompson-Yates and Johnston Laboratory Reports for July, 1904.

[2] British Medical Journal, January 23rd, 1904.

[3] Expedition to the Gambia, 1902. Thompson-Yates and Johnston Laboratory Reports, 1903.

seldom asleep, although she is always lying down, and passes faeces under her.

January 19th. Emaciation extreme, is too weak to rise, lies with wide-open mouth and eyes, whines, moans, or attempts to speak if touched.

January 20th. Spleen punctured, only a few parasites seen, although blood contained 100 to cover. Died during night.

January 21st. Necropsy commenced at 7 a.m., nine hours after death. Body much emaciated, no bedsores, no oedema, ringworm of scalp, mouth foul, pyorrhoea alveolaris, teeth irregular, second dentition. An incision was made from chin to pubis. Abdomen: Omentum drawn up and wrapped around spleen, small clot of blood between it and outer surface of spleen due to puncture. Peritoneum contained no fluid. Old adhesions between transverse colon and bladder. Diaphragm: Right side, fourth space; left side, fifth rib. Thorax: pleurae normal. Left lung normal. Right lung, old adhesions of upper and middle lobes. Pericardium contained 5 c.cm. of turbid yellow fluid in which no trypanosomes were found. Heart, dilated, both sides contained large, firm, white agonal clots. Valves normal. In left ventricle was small area of subendocardial petechial haemorrhage. Several pin-head calcareous nodules along cardiac veins. Lungs: Weight, right, 227 grams; left, 151 grams. Both show profuse subacute bronchitis, bronchi full of mucus. Liver: Weight, 628 grams: yellow, slight interlobular congestion. Gall-bladder full of dark-green semi-fluid bile. Spleen: Weight 228 grams, enlarged, anterior border very much notched, substance very diffluent and dark-red colour. One small spleniculus. Kidneys: Weight (together) 151 grams, normal; bladder normal, filled with urine. Genitals, normal, save for left tube bound down in Douglas's pouch by firm fibrous adhesions. Child has menstruated, remnants only of hymen. Intestines normal, few ankylostomes in ileum. Bone marrow (tibia), reddish orange in colour. Brain: Dura not adherent to calvarium or pia. Superficial brain vessels much congested, vessels of basal ganglia very much so. There was fair amount of colourless, slightly turbid, subdural and subarachnoid fluid. Similar fluid occurred in ventricles and escaped from vertebral canal. No trypanosomes were seen in these fluids. Lymphatic glands, generally much enlarged, often oedematous, usually greatly congested, and, in the abdominal and thoracic groups, haemorrhagic, sometimes excessively so. There were numerous patchy areas of dark, subcapsular pigmentation in the femoral and axillary groups.

The following case illustrates subgroup 2 of Type C—fatal cases showing sleep symptoms:

CASE LXXXIV.

M., female, age 24.

History.—Is a Kasai woman. Has been living for past two months near Leopoldville. Was sent to hospital January 12th as a case of sleeping sickness.

January 21st, 1904. Patient is a big well-made woman, no emaciation; her expression is dull, pained and stupid, almost vacant. She is continually making grimaces. She cannot walk, and lurches forward in a half drowsy condition during examination. Speech is thick and slow. Oedema of shins and feet, face and lips puffy. Indeed, the whole body is more or less puffy, and presents an appearance of plumpness. Skin dry and dirty. There is a very extensive cicatrix, from a burn, implicating the right arm, side, and thigh. Lymphatic glands, not enlarged. Circulatory and respiratory systems normal. Liver, normal. Spleen slightly enlarged. Alimentary system, tongue coated and moist; teeth and gums foul. Tip of tongue only, after much persuasion, protruded.

January 25th. Patient usually sits dozing over a small fire. She is occasionally found lying at full length, naked, on the floor, or asleep in an uncomfortable attitude on the board bed. She can be easily aroused by a touch, and can, by shouting, be persuaded to speak.

February 15th. Patient is almost lethargic, and is aroused only with some difficulty. She now eats nothing, and is becoming emaciated. Sensation is dulled; hardly flinched during lumbar puncture.

February 6th. Died early this morning. Necropsy six hours after death. The body of a massive but wasted woman. Rigor mortis present in masseters and extremities. Usual incision made. Panniculus in fair amount. Abdomen normal. Diaphragm, right side, upper border fourth rib; left side, fifth rib. Thorax, pleurae normal. Pericardium contained a small amount of yellowish fluid. Heart (weight 342 grm.) contained firm white agonal clots. Lungs (weight, right, 454 grm.; left, 335 grm.), slight bronchitis and hypostatic congestion. Liver (weight 1,591 grm.), light in colour, central lobular congestion, soft and friable. Gall bladder full of dark, thick bile. Ducts patent. Spleen (weight 345 grm.) measures 22 c.cm. by 10 c cm. by 4.5 c cm.; substance firm, slightly fibroid. Kidneys (weight, together, 338 grm.), normal. Genitals, with exception of chronic vaginitis, normal. Brain, vessels all much congested, subarachnoid fluid increased and turbid; microscopically, cerebro-spinal fluid showed pus cells but no trypanosomes. Lymphatic glands all much enlarged. Retrosternal and mesenteric glands slightly injected. Decomposition had commenced in retroperitoneal glands. Femoral and inguinal glands congested, and in one or two of the latter pus formation had commenced.

The following case is, we think, of interest, as illustrating the extremely rapid course the disease occasionally takes after symptoms have once developed.

CASE LXXXVI.

Y., female, aged 20.

History.—Patient was sent to us on January 7th, 1903, by native dispenser at a settlement near Leopoldville. She was said to have recently come from a district in which sleeping sickness was present. She was supposed to be in the "initial stage" of that disease. Patient was well dressed, clean, and neat. She seemed in good health. She had, however, a peculiar vacancy of expression, and answered questions in an excitable and voluble manner, making grimaces. She stated that she had sleeping sickness, but, as yet, not badly. Patient was kept under observation for two days, but nothing abnormal was noted save her expression and some display of irritability.

On January 24th she was carried into hospital in a listless, dazed, and sleepy condition, unable to walk and apparently unable to speak.

February 4th. General condition: Is a well nourished woman. Expression dull and vacant, manner apathetic and listless. Is able to walk with slow shuffling steps. Intelligence much dulled; tongue coated and moist; slight tremors; skin normal; glands all enlarged save posterior cervical; considerable oedema of shins and insteps; lips and eyelids puffy; appetite good. Patient munches her food in a slow way, peculiar to many advanced cases. She frowns continuously. Circulatory, respiratory, and alimentary systems normal.

February 10th. Sleeps a good deal, but is much better than she was; is not so apathetic, and can talk and laugh; appetite good.

February 16th. Vacancy of face is again marked. Patient is very weak and trembles all over. She speaks in weak voice only after much persuasion.

February 28th. Since last note patient's condition has not altered. She has been unable to get off her bed; passes motions into bed; has only been able to take liquid food, and that only with assistance; is usually wide awake and conscious of all her surroundings, and until now has shown no very marked signs of wasting. To-day temperature 102.4° F., profuse perspiration; crepitation and dullness of right lung.

March 3rd. Is now helpless, with sunken eyes and haggard face; body and limbs show marked wasting; oedema of shins and insteps and puffiness of face have disappeared; tremors, which were very marked, have ceased; she cannot take even soup; large bedsores have formed on either side of sacrum.

March 4th. Patient dying, but perfectly conscious, even acutely observant of all that goes on around her. Died at 2.30 p.m.

Necropsy (commenced 1½ hour after death).—Body warm; wasted, though not distinctly thin. Rigor mortis just commencing; pupils evenly and widely dilated. Usual incision. Tissues dry; panniculus fairly abundant. Muscles normal. Abdomen: pelvic peritoneum congested, and genitals firmly bound down by extensive fibrous adhesions. Liver and spleen adherent slightly by old fibrous adhesions to adjoining organs and parietes. Thorax: pleurae normal. Pericardium contained a few drops of fluid. Heart: weight 148 grams, small, muscles pale and firm. Mitral valve showed distinct, reddish, gelatinoid thickening. Lungs: there was slight bronchitis of both lungs, and marked hypostatic congestion, the latter condition marked in the right; vessels contain firm, stratified clots. Liver: slightly nutmeg. Gall bladder moderately filled with golden bile. Spleen, 17 by 9 by 5 c.cm.; upper lobe almost entirely divided by deep indentation from lower; substance dark, firm, friable. Kidneys normal. Pancreas and suprarenals normal. Alimentary canal normal. Bladder normal. Genitals: uterus small, non-parous, metritis with acute intense cervicitis: Fallopian tubes and ovaries bound down to uterus by old adhesions, acute vaginitis. Bone marrow (femur) reddish brown. Brain: superficial vessels congested, particularly over posterior half of hemispheres (patient lying on back for several days before death); relatively small amount, though increased, of subarachnoid fluid; no ependymal haemorrhages: about 30 c cm. cerebro-spinal fluid escaped on cutting tentorium. Cranial bone sinuses normal. Lymphatic glands: retroperitoneal and pelvic glands were enlarged, the latter group being congested; the remaining groups of glands were normal,

In this attempt to illustrate the course of sleeping sickness as found in the Congo, we have tried as far as possible to exclude from the illustrative cases those in which obvious secondary lesions were demonstrated *post mortem*. It will be seen that deep sleep, continued sleep, lethargy—symptoms described as characteristic of sleeping sickness—are not features of the Congo disease as observed by us up to the present.

Trypanosoma Gambiense as a probable cause of Congo (Sleeping) Sickness

A. As already indicated, in nearly every case in which sleeping sickness was diagnosed, or suspected trypanosomes have been found in either blood, cerebro-spinal fluid or both.

B. We have shown that there is a very evident clinical connexion between those cases which have only very slight symptoms (trypanosoma fever) and the advanced cases of "sleeping sickness" seen in hospital.

C. In Gambia there is an undoubted trypanosoma disease in horses which is characterized, in its first stage, by the absence of obvious symptoms; and later by fever, emaciation and weakness. The course of this disease may be chronic and death delayed for a long period.

D. The sleeping sickness of the Congo is known to have a long latent period. Symptoms are said to have developed in some cases two to five years after having left an infected locality. It is interesting to note that natives may be infected with trypanosomes for many months without showing signs of illness.

E. Europeans infected with trypanosoma gambiense show symptoms

which are quite comparable to those observed in uncomplicated trypanosome infections of Congo natives.

F. In Gambia, where cases of sleeping sickness are rarely seen (Dr. R. M. Forde, Principal Medical Officer at Bathurst, stated that perhaps one case a year came under his care) only six out of 1,000 odd natives were found to be infected, by the examination of fresh cover-slip preparations. In an almost exactly equal number of a similar class of natives examined in the same way in the Congo, forty-six have been infected. In Uganda, where the disease occurred in epidemic form, the percentage of infection among the general population was still higher.

We have not yet met with an epidemic of sleeping sickness in the Congo, although at least one has been recorded.

From the answers to inquiries, which we have received from State doctors and officials in different parts of the country, we do not think that the disease exists in any part of the Congo in a much more severe form than at Leopoldville, and certainly there is no epidemic comparable to that in Uganda.

It will be noted that the Congo type of case, as we have described it, bears a close resemblance to some of the cases described by Bruce and Nabarro on the Victoria Nyanza, at a time many months after the epidemic wave has passed eastwards, and at a place, Entebbe, situated at the extreme tail of the epidemic area. Moreover, one of us is able to recognize a similarity between many of the cases seen here, particularly those in which emaciation, lengthened period of illness, absence of sleep, are the main features, and many of the cases seen by him on Buvuma Island, also situated in Victoria Nyanza, and towards the tail of the epidemic area.

Course of the Disease.

Duration.—It has been impossible to decide for how long a period a native may be infected with trypanosomes and still show no definite signs of disease. One man already mentioned is known to have been infected for over a year and is still perfectly well. It would appear from one or two early cases which have been observed that the transition from this "latent" stage to one in which symptoms are noticed may be very gradual. We have only observed eight fatal cases of Congo sickness in which the necropsies showed no obvious secondary infection. The duration of the disease dating from the recognition, either by the friends of the patient or by ourselves, of obvious signs of ill-health, has been two to four months.

Recovery.—In our experience no native who has shown definite and constant signs of ill-health has recovered.

Since we have been in Leopoldville, we have frequently seen a case of trypanosomiasis in a European, reported by Dr. Broden and Sir Patrick Manson.

Mrs. M., a missionary stationed at Leopoldville, states that her illness commenced on October 1st, 1900, with a fever which lasted for three months, and was not amenable to quinine. Since that time she had not been free from constantly recurring fever, except for two periods in 1901 and 1902, each of three months' duration, up to March 19th, 1903. Since the last date she has been absolutely free from fever or other signs of trypanosoma infection up to the present (April, 1904). She is apparently in perfect health, and has increased in weight. The trypanosomes were found by Dr. Broden on February 7th, 1903, during an attack of fever which lasted for a few days. During the last year Dr. Broden has seen no parasites in the blood of this case.

Death.—We do not think that we have sufficient evidence to state that death is produced by the trypanosomes alone.

Secondary Infections and Complications.

Secondary bacterial infections seem to determine the fatal issue of many cases of Congo sleeping sickness. Thirteen out of twenty two necropsies performed at Leopoldville showed complications or obvious secondary infections. They were as follows:

Purulent meningitis	4
Purulent pleurisy and pneumonia	1
Pneumonia and localized tubercle of lung	1
Localized gangrene of lung	1
Enlarged cascating and breaking down glands in thorax and abdomen. No tuberculosis lesions in organs. (Tubercle bacillus in glands seen in one case.)	2
Dysenteric ulceration of large bowel (perforation in one case)	2
Universal adherent pericardium (recent)	1
Infiltration of pus in femoral, inguinal, and intestinal iliac glands (gonorrhœa)	1

According to the *post-mortem* reports of Colonel D. Bruce and Dr. Nabarro very similar lesions were observed in Uganda, where ten out of twenty necropsies on sleeping sickness patients showed obvious secondary infections, and in three instances purulent meningitis.

It will be noted that purulent meningitis has been the most frequent complication both in Uganda and in the Congo. The brain in these cases presents a very abnormal appearance. The convolutions, especially on the upper surface, are covered and glued together by a thick layer of tenacious lymph, and the vessels of the pia arachnoid are intensely congested.

It is evident that such morbid changes are explicable on bacteriological grounds, and we have found microscopically in all such cases an almost pure culture of a diplococcus occurring in small chains. These observations make us doubt whether the acute congestion of cerebral vessels, accompanied by an increase of pia arachnoid fluid containing pus cells, seen by us here, and described by others, as typical of sleeping sickness can be attributed except indirectly to the trypanosome. The Portuguese Sleeping Sickness Commission, Dr. Broden in Leopoldville, and Dr. Castellani in Uganda, have all described bacterial infections in a very large percentage of sleeping sickness cases examined before as well as after death. It must be noted that such purulent changes have not been described in animals dying from trypanosome infections.

Observations on the Parasite.

Periodicity and Frequency of Occurrence in the Peripheral Blood.—Frequent examinations of the finger blood of trypanosome cases has shown that the parasites may, to the ordinary methods of examination, be absent from the peripheral blood for varying periods. This periodicity is illustrated by the two following cases:

Case ci.—Oporanga. Regular observations were made about every third day, over a period of nearly three months, and on only three occasions for three consecutive days were parasites observed. This case shows comparatively long periods of absence.

Case cxxvii.—Ejoli. Under observation for twenty-one days before death. Parasites seen only twice on two consecutive days, sixteen observations.

Case ciii.—Belamo. Still under observation. Parasites not seen for thirty-eight days, seventeen observations. They have been seen in the blood of this case only by centrifuging.

The frequency with which the parasite is obviously present in the peripheral blood bears no relation to the severity of the symptoms.

Number of Parasites Appearing in the Blood.—The number of parasites seen in ordinary fresh cover-slip preparations is generally small, but in some patients very large numbers have been recorded. In two cases a large increase has occurred during the few days immediately preceding death.

Case lxxxvii.—Petesa. Admitted to hospital for acute dysentery. Under observation for four days preceding death. Parasites increased from 2 to a cover on the first day to 20 to a field on the day of death. There was no accompanying rise of temperature. Necropsy showed very extensive dysenteric ulceration of the large intestine. In the two following cases they were absent for some days before death.

Case lxxxix.—Kapinga. Parasites not seen for ten days preceding death. Six observations.

Case lxxvii.—Ejoli. Parasites not seen for nineteen days before death. Fourteen observations.

Sudden Disappearance of the Parasite from the Finger Blood.

The following are examples of cases in which the parasites have gradually increased from small to fairly large numbers (20 to cover-slip or more), and then suddenly disappeared on the day after their acme was reached.

Case xcix.—Mozao. At the end of the first examination on March 5th, 7 trypanosomes were seen to a field. On March 6th, 7th, and 8th none were seen.

Case cii.—Kondolo. On February 24th, 7 parasites were seen to a cover. On February 25th, none. A second similar acme and sudden disappearance was recorded in this case. On March 10th, 6 parasites were seen to a cover: on March 11th, 250, but on March 12th none were found.

Case lxvi.—Tenda. On February 23rd, 24th, and 25th the number of parasites recorded per cover was 4, 5, and 7 respectively; on the 26th, 70 to a cover; but on the 27th, and for fifteen subsequent days, none were found.

Symptoms associated with the Presence of the Parasites in the Blood.

From our observations we cannot make out any definite relation between the temperature and pulse and the appearance of the parasites in the peripheral circulation. A rise of temperature is not necessarily associated with an increase of parasites in the blood. It appears, therefore, that the number or constant presence of the parasites in the peripheral blood bears no relation to the severity of the disease.

Occurrence of Parasites in Serous Fluids.

On two occasions 10 c.cm. of fluid was drawn from a hydrocele and centrifuged. Parasites were seen each time, although they were absent from the blood to ordinary exami-

nation, and probably had been absent for some days previous to the second tapping. The cerebro-spinal fluid of this case was also examined on the same date as the first tapping, but no parasites were seen, although the deposit of the centrifugalized hydrocele fluid showed 14 to a cover. In another case (No. XCII), in which the penis and scrotum were very oedematous and there was a small right hydrocele, no parasites were seen in either oedema or hydrocele fluid, although the blood showed 30 to a cover. We have not found parasites in the urine (centrifugalized) in the few cases examined in which the blood showed many parasites.

The Occurrence of the Parasites in Tissues and Fluids after Death.

Our examination of film preparations of tissues and fluids taken at necropsies are not completed; but it is interesting to note here the frequency with which the parasites have been seen in the pericardial, pleural, and peritoneal fluids when examined fresh. In three cases parasites were seen without centrifugalizing in the pericardial or peritoneal fluid, one and a-half, two, two and a-half hours respectively after death. In two of these cases numerous longitudinal divisional forms were seen in the pericardial fluid. In three other cases actively motile trypanosomes were seen in the pericardial fluid after centrifugalizing fourteen, fifteen and a-half, twenty and a-half hours after death. In all these cases parasites were seen either the day before or a few days previous to death. In only one case has a trypanosome been seen in fluid from a lymphatic gland (omental); but in this case parasites were easily detected in the blood *post mortem*, and were very numerous in the pericardial and peritoneal fluids.

Occurrence of Parasites in the Cerebro-spinal Fluid.

As a rule, we have found that the parasites occur in extremely scanty numbers in the cerebro-spinal fluid, seldom more than 1 to 3 or 4, very occasionally from 10 to 20 to the cover-glass preparation of the sediment left after centrifuging.

As already stated, neither at Leopoldville nor anywhere on the Lower Congo, up to the present time have we met with a case of Congo sickness in which sleep has had a prominent place among the clinical symptoms, and in those few cases in which it has been noted a few days before death, or at irregular intervals during the course of the disease, it has not been describable as a deep or continuous sleep, but merely a drowsy or somnolent condition from which the patient was at once aroused by being touched, or perhaps, by being spoken to. On comparing the cases in which parasites were found in the cerebro-spinal fluid with those in which they were not found, we see that most of the few cases in which drowsiness was a feature, together with cases in which head symptoms, for example, mild mania, epileptic attacks, flexure contractions, and convulsive seizures were conspicuous are upon the positive side. On the negative side similar cases are also found, but it is noticeable that there are many of those cases which showed hardly any symptoms, and which, if no fatal complications intervened, lived on month after month in an advanced state of emaciation, retaining their faculties, speech and appetite, etc., almost to the moment of their death. It is therefore not improbable that the presence of the parasites in the cerebro-spinal fluid at a late stage in the disease may tend to increase the gravity of the case by predisposing to one or other of many complications, or in other ways hasten a fatal termination; but that this is not invariably so is proved by at least two of our cases, one of whom is the most sturdy patient under observation.

Animal Experiments.

We have infected rats, mice, guinea-pigs, rabbits, and monkeys with human trypanosomes taken from cases of Congo sleeping sickness, both in its early and its latest phases. As was stated in our first progress report the course of the infection in these animals has given us no reason to suppose that we are dealing with more than one species of trypanosome, or that the parasite is other than trypanosoma gambiense. All our inoculations have been made with small or medium doses (1 to 5 c.cm.) of infective material, either cerebro-spinal fluid or blood—diluted or no—in which, in almost every case, living trypanosomes, sometimes in enormous numbers, were demonstrated. About 50 per cent. of such inoculations have failed to infect. These failures seem to bear no relation either to the source of the material inoculated to the site of inoculation—subcutaneous or intraperitoneal—or to the approximate number of parasites injected.

No animals inoculated with material in which trypanosomes were seen taken *post mortem* from cases of trypanosomiasis have ever become infected. Parasites have been seen in the peripheral blood of infected animals only at more or less irregular intervals. Guinea-pigs have perhaps shown themselves the most satisfactory of ordinary laboratory animals, since, as a rule, when once infected parasites are constantly present in large numbers.

Death, in the small number of our infected animals which have died, can in no instance be certainly said to have been due to the trypanosome alone. These are all points in which the Congo trypanosome resembles trypanosoma gambiense. In addition, the "incubation period," that is, the period intervening between the inoculation of small or medium doses of infective material, and the detection of the parasite in the peripheral blood of the experimental animal, is much the same for both parasites.

	Congo Trypanosome.	Trypanosoma Gambiense.
Rat	5 to 20	7 to 20
Mice	3 to 16	6 to 7
Rabbits	17 to 27	21
Guinea-pigs	11 to 25	12 to 21

Monkeys of two different varieties, both belonging to the subfamily cercopithecus, have been infected. Only one has shown slight symptoms of ill health. On two occasions a slight rise in temperature and loss of vivacity has accompanied one of the irregularly appearing intervals during which parasites have been seen in the peripheral blood. This monkey has been infected for nearly three months. We have again failed, even with large doses of blood containing huge numbers of trypanosomes, to infect two dog-faced monkeys (cynocephalus).

Transmission Experiments.

We have attempted to repeat the transmission experiments made by Bruce, in Uganda, with the tsetse fly. These flies are rather numerous in the bush along the river banks on either side of Leopoldville, and a fair number are daily brought to the laboratory by a gang of boys supplied for the purpose by the local authorities. Practically all the flies brought in by them have been *Glossina palpalis* (native name, "mavekwa"). Unfortunately we have had the greatest difficulty in obtaining monkeys, and have only been able to use two for these experiments. Both in the Congo and in the Gambia experiments have shown that the guinea-pig is, perhaps, the laboratory animal most susceptible to trypanosoma gambiense. We therefore determined to employ it, lacking monkeys, in our transmission experiments. At the time of writing both experiments with monkeys remain unsuccessful, and only one—a direct transmission experiment with guinea-pigs, in which the flies were made to feed alternativaly on an infected and an uninfected animal,—has given a positive result.

III.—CUTHBERT CHRISTY, M.B., C.M.Edin.

(Expedition from the Liverpool School of Tropical Medicine to the Congo, 1903.)

THE CEREBRO-SPINAL FLUID IN SLEEPING SICKNESS (TRYPANOSOMIASIS): 104 LUMBAR PUNCTURES.

THE majority of the punctures recorded in the accompanying tables were performed whilst working with Drs. J. E. Dutton and J. L. Todd in the Congo Free State. All, with the exception of three, were performed by myself, either at Boma, Leopoldville, posts further up the Congo, or since returning to England. Some conclusions drawn from a number of them are published in our last conjoint report.[1]

Out of a total of sixty-four natives operated upon, the fifty-four in Table I were proved to be cases of sleeping sickness by the discovery of trypanosomes in the blood or cerebro-spinal fluid, or in hydrocele fluid, while in the remaining ten in Table II parasites were never found, although the majority of them were more or less suspicious cases, and all were in hospital at Leopoldville.

In thirty-four of the fifty-four sleeping sickness cases the parasites were found sooner or later in the cerebro-spinal fluid, whereas in twenty of them no parasites could be found, although in one case (17) the fluid was examined on five occasions.

[1] Second Progress Report of the Thompson-Yates and Johnston Laboratory Reports, August, 1904.

If, however, those punctures in which the cerebro-spinal fluid was mixed with blood, and in which the parasites were found by coverslip examination to be present in the peripheral circulation on the same day as the puncture, be excluded, then we find that the result is very different—namely, 49 cases only, in 25 of which trypanosomes were found in the cerebro-spinal fluid and 24 in which they were not found.

A reference to Cases 18, 20, 21 will show how important it is to exclude from all statistics those punctures in which the fluid contains trypanosomes with blood cells when the parasites are known to be in the blood stream. Cases 20 and 21 show clearly that when the fluid is mixed with blood the number of parasites appearing in it is closely in proportion, not only to the number in the blood, but to the amount of blood admitted by unskilful puncture. I therefore in this analysis have excluded from consideration all punctures in which the cerebro-spinal fluid and the blood both show trypanosomes when blood is admitted into the fluid. In the tables these are marked with an asterisk in the name column (Table I, pp. 374-6).

In studying the column in which is enumerated the number of days intervening between the puncture and the date of death, it will be seen that the probability of trypanosomes being found in the cerebro-spinal fluid tends to increase as one nears the fatal termination. This is shown by the following two tables compiled from the 49 cases under analysis:

TABLE III.—*Thirty-five cases known to have proved fatal at the date of compilation of Table I.*

Days before Death.	Number of Punctures.	Trypanosomes Present.	Trypanosomes Absent.
Within ten days	27	14	13
Between ten and thirty ..	19	8	11
Between thirty and one hundred and ten	11	4	7
Total	57	26	31

TABLE IV.—*Fourteen cases not known to be fatal at the time of compilation of Table I.*

Days before Death.	Number of Punctures.	Trypanosomes Present.	Trypanosomes Absent.
The majority are comparatively early cases, and presumably many days from death	17	6	11

A larger series of lumbar punctures in the earlier stages would be of the greatest interest.

In the Congo disease, as we have seen it, mainly at Leopoldville, there is an endless variety of types. In most cases sleep is absent, in some dullness and apathy are prominent, in others nervous symptoms and mania are conspicuous, while a proportion of cases have only progressive emaciation and fever. In classifying these symptoms it does not seem possible to definitely connect them with the appearance or non-appearance of trypanosomes in the cerebro-spinal fluid.

Cases 8 and 17, each of them punctured several times with negative results, except in one instance, were conspicuous for general absence of all symptoms except fever and emaciation. They each were able to walk and retain their faculties up to the time of death. Case 13 is in many respects similar to the foregoing two, but developed increased drowsiness some time before death, although showing no parasites in the cerebro spinal fluid.

On the other hand, we have Cases 20, 26, and 32 all showing trypanosomes repeatedly in the cerebro-spinal fluid, and all conspicuous for sleep or other head symptoms, more marked in the later days.

Examples of long-continued mild mania are not infrequent, of which class Case 33 is a good example. This man's blood was examined on many occasions, but no trypanosomes were found until the lumbar puncture revealed them in his cerebro-spinal fluid.

On the whole one cannot say more than that the presence of the parasite in the cerebro spinal fluid apparently tends to increase the gravity of the case, and predisposes to the more severe head symptoms and other complications likely to bring about a fatal termination. Only in such cases as 8 and 17 do I think the parasite can be said to be solely accountable for the death. In the vast majority of cases death is the result of complications, mainly bacterial.

As in the blood, where the appearance of a large number of parasites is frequently coincident with an unusually high rise of temperature, if the patient is not too far advanced in the disease to be irresponsive, so also the rare discovery of large numbers of parasites in the cerebro-spinal fluid is, I have found in several instances, coincident with an unusual rise in the temperature curve. This no doubt accounts for the occasional unexplained rises of temperature and aggravation of symptoms occurring where few or no parasites can be found in the circulation. An access of temperature is probably in these cases always coincident with the collection or the development of a crop of parasites in one or other of the organs or fluids of the body.

All cases punctured, whether with or without parasites in the cerebro-spinal fluid, had well-marked fever, characterized by an afternoon rise and a morning fall to near the normal, showing that no connexion can be traced between the commencement of the fever and the entry of the parasites into the cerebro-spinal fluid from the blood. Some of the cases in Table I died without ever having trypanosomes in their cerebro-spinal fluid, but showed, nevertheless, the characteristic temperature curve.

It would appear from Cases 26, 28, and 38, that just as in the blood, the parasites may come and go in the cerebro-spinal fluid irrespective of their presence or absence elsewhere in the system.

Case 23 shows that they may be in enormous numbers in the blood without appearing in the cerebro-spinal fluid, where, however, they do occur occasionally in large numbers as is seen in Cases 28, 38, 44, and 49, but in this fluid they are most frequently very scanty.

The amount of fluid drawn off is no indication of the total amount present. Occasionally the pressure is considerable, and in these cases very marked temporary benefit is often derived from the puncture.

Cerebro-spinal fluid with no admixture of blood or increase of white cells is as clear and limpid as distilled water. According to the amount of mixture with red or white cells, or both, I have here described it as clear, slightly cloudy, or cloudy. If with blood only the cloudiness has a pink tinge, but if with white cells only it has no pink tinge. It is invariably clouded almost immediately after death by excess of white cells. The colour and extent of the cloudiness is best gauged by looking down, and not through the centrifuge tube.

The fluid, as soon as drawn, should be centrifugalized gently for fully five minutes. It can then be poured off to the last drop into another tube, leaving only the resulting small deposit, which can then be picked up with a fine pipette, placed on a slide and systematically examined under a cover-glass well ringed with vaseline, with a one-eighth or one-sixth objective, and a No. 4 eyepiece. If centrifugalized violently for a length of time, the activity of the trypanosomes may be much decreased, and, consequently, the labour of searching for them more difficult, and if there is much deposit they may even be mutilated by the pressure of the cells. I have found it far better to centrifugalize the fluid a second time after the deposit from the first centrifugalization has been examined, for, owing to degeneration changes, which commence in the cells almost as soon as the fluid is drawn, it is best to examine it and fix some films without delay. It is imperative that the fluid should be centrifugalized a second or even a third time if possible, for, on two occasions at least, I have found trypanosomes in the second deposit and not in the first. If there is no deposit in the tube the lowest fluid should be pipetted without pouring off, for the parasites are easily poured away with the fluid.

TABLE V.

L.P.	Very Scanty.	Scanty.	Increased.	Much Increased.	Totals.
Tryps. present. ...	3	10	11	7	31
Tryps. absent ...	7	25	10	1	43
Total	10	35	21	8	74

With regard to the white cell elements, I have described them as "very scanty," "scanty," "increased," and "much increased,"

TABLE I.—*Sleeping Sickness Cases.*

\+ Indicates trypanosomes present. — Indicates trypanosomes absent. C.Cms. stands for cubic centimetres.

Those marked with an asterisk are excluded from statistics owing to blood appearing in the C.S.F. when trypanosomes are known to be present in the circulation. Centrif. stands for centrifugalization.

No.	Name.		Date.	Sex.	Age.	Trypanosomes in Finger Blood.	Cerebro-spinal Fluid. C.Cms. Drawn Off.	Days Before Death.	Trypanosomes.	Clear or Cloudy.	White Cells.	Red Cells.	Date of Death.	Remarks on Duration of Case, Prominence of Sleep, or Other Symptoms, etc., and Mode of Death.
1	Elombo ...		17-12-03	M.	40	— 1 cover examined	18	11	— 4 covers examined	Clear	—	None	28-12-03	Duration about five months. Extreme emaciation. No symptoms of sleep. Comatose from sun exposure when punctured. Complete revival after withdrawal of fluid.
2	Lisasi...	*	16-12-03	M.	20	+ 5 to cover	10	0	+ 7 to cover	Cloudy	—	Many	16-12-03	Always slightly drowsy, increased before death.
3	Salamo	*1	18-12-03	F.	24	+ 3 to cover	15	2	+ 4 to cover	Slightly cloudy	Increased	A few	22-12-03	Duration about three months. Seldom seen dozing till a few days before death. Many division forms of trypanosomes in C.S.F., pericardial fluid, and bone marrow one and a-half hour *P.-M.*
		2	20-12-03			+ 13 to cover	40	*P.-M.*	+ many	Cloudy	Increased	None	—	
4	Mokoko	*	19-12-03	M.	21	+	17	—	+ 3 to cover	Cloudy	Increased	Many	—	Few symptoms. After being two months in hospital was discharged by the medical officer as fit for duty. On January 5 his blood showed 1,000 trypanosomes to the cover.
5	Dysiki...	...	19-12-03	F.	26	— 2 covers examined	18	2	+ in 4 covers	Clear	Increased	A few	21-12-03	Emaciation but no sleep symptoms till day before death.
6	Samliki	..	19-12-03	M.	10	— 2 covers	6	6	— 1st centrif. 5 covers + 2nd centrif. 3 to cover	—	—	—	—	Extreme emaciation; slept a good deal, and was semi-comatose for three days before death. Bedsores.
7	Polulu	*1	21-12-03	M.	21	+ 1 in 2 covers	20	21	+ 1 in 2 covers	Cloudy	Scanty	Many	25-12-03	December 19 had severe left hemiplegic seizure. No sleep symptoms at any time. *P.M.*—extensive purulent meningitis. Cysticercus in triangularis.
		2	31-12-03			+ 3 to cover		11	— 1st centrif. 2 covers + 2nd centrif.	Slightly cloudy	Scanty	None	11-1-04	
8	Tenda	1	23-12-03	M.	30	— 2 covers	30	103	— 4 covers 2 centrif.	Clear and limpid	Very scanty	None	—	Duration about five months. Progressive emaciation. Frequently found dozing during January, but subsequently marked absence of nearly all symptoms. Retained faculties and was able to walk till hour of death. Pericardial and peritoneal fluids both showed active division forms twenty and a-half hours after death.
		*2	16-1-04			+ 6 to cover	3	79	+ 1 in 2 covers	Cloudy	Increased	A few	—	
		3	27-2-04			— 2 covers	25	37	— 4 covers 2 centrif.	Clear and limpid	Very scanty	None	—	
		4	31-3-04			— 2 covers	16	4	+ 1 in 2 covers	Clear	Scanty	A few	4-4-04	
		5	5-4-04			— 2 covers before death	47	*P.M.*	— 5 covers 13 hours *P.M.*	Slightly cloudy	Increased	None	—	
9	Manteka	1	24-12-03	M.	19	—	30	21	— 4 covers	Clear	Scanty	A few	—	Duration about three months. Rapid emaciation. Irritable and troublesome. Helpless, dazed, semi comatose condition for two days before death.
		2	5-1-04			+	15	9	+	Clear and limpid	Scanty	None	14-1-04	
10	Manga ..	*	26-12-03	M.	22	+	30	9	+	Slightly cloudy	Increased	A few	4-1-04	Duration about five months. Marked absence of symptoms till ten days before death, when sudden fit, followed by semi-comatose condition, great salivation, abolished reflexes, and erection of penis. Improved somewhat before death.
11	Kalenga	*1	26-12-03	M.	24	+ 1 in two covers	18	45	+ 2 to cover	Cloudy	Scanty	Many	9-2-04	Marked sleep symptoms, no emaciation. Death due to sun exposure; temperature 107°. Blood showed 100 trypanosomes to cover five hours before death.
		2	9-2-04			— 2 covers 1½ hour *P.-M.*	24	*P.-M.* 1½ hr.	— 4 covers 2 centrif.	Cloudy	Much Increased	None	—	
12	Maladina	*1	29-12-03	M.	18	+ 2 to cover	14	28	+ 36 to cover	Cloudy	Scanty	Many	—	Duration about four months. Had epileptic attacks, few sleep symptoms, simple minded condition. Six days before death, tremors of limbs, opisthotonos and semi-coma. *P.-M.* pneumonia and purulent meningitis.
		2	22-1-04			— 2 covers	18	4	— 3 covers 2 centrif.	Clear and limpid	Scanty	None	20-1-04	
13	Kabali	1	29-12-03	F.	27	— 2 covers	5	70	— 8 covers 2 centrif.	Cloudy	Increased	A few	—	Duration about five months. Progressive weakness, drowsiness, and emaciation from the first. No marked nervous symptoms. Bedsores.
		2	20-2-04	—	—	+ 6 to cover	32	17	— 5 covers 2 centrif.	Clear	Scanty	A few	—	
			7-3-04			— 2 covers	15	1	— 5 covers 2 centrif.	Clear	Scanty	None	8-3-04	
14	Molumba	1	7-1-04	M.	32	— 2 covers	14	—	— 5 covers 2 centrif.	Cloudy	Increased	Many	—	No marked symptoms, no drowsiness or dullness. Recurring attacks of dysentery.
		2	5-2-04	—	—	— 1 in 2 covers	22	—	— 3 covers 2 centrif.	Clear and limpid	Scanty	None	—	
15	Kondolo	1	8-1-04	M.	32	— 2 covers	20	8	— 5 covers 3 centrif.	Clear and limpid	Very scanty	None	—	Three months in hospital. Marked absence of symptoms except headache. Ten days before death headache severe. Suicide by drowning.
		2	14-3-04	—	—	— 2 covers	22	14	— 2 covers 2 centrif.	Clear and limpid	Very scanty	None	28-3-04	
16	Ejoli ...	...	7-1-04	M.	28	— 2 covers	8	19	— 3 covers 3 centrif.	Clear	Increased	None	—	Drowsiness. Great emaciation. Few symptoms. Conscious till hour of death.
17	Operanga	1	7-1-04	M.	18	— 2 covers	16	62	— 3 covers 2 centrif.	Clear and limpid	Scanty	None	—	Duration five or six months. Progressive weakness and emaciation from the beginning. Extreme emaciation at death. No dullness or marked symptom at any time except drowsiness during January, but less subsequently. Could walk, and retained faculties till hour of death. Trypanosomes in blood scanty and seldom seen.
		2	27-1-04			+ 3 to cover	20	42	— 7 covers 3 centrif.	Clear and limpid	Scanty	A few	—	
		3	11-2-04			— 2 covers	20	27	— 2 covers 2 centrif.	Clear and limpid	Scanty	None	—	

		4	23·2·04			— 2 covers	14	15	— 3 covers 2 centrif.	Clear and limpid	Scanty	None	—	
		5	2·3·04			+ 48 to cover	10	7	— 6 covers 2 centrif.	Clear and limpid	Scanty	None	9·3·04	
18	Kimfuta ...	15·1·04	F.	9		+ 8 to cover	16	5	+ many	Clear and limpid	Very scanty	None	20·1·04	Duration about two months only. Rapid emaciation, weakness, tremors, and vacancy. Sleep symptoms only present towards the end.
19	Banja...	*1	20·1·04	M.	20	+ 8m to cover	8	—	+ many	—	—	Much blood	—	Was admitted January 5 from prison, chained to two other prisoners, and charged with cannibalism. Emaciation due to starvation. By end of February quite well and putting on flesh. At end of April started for England, arriving apparently in robust health. Now fat and well, and is employed in Johnston Laboratory, Liverpool.
		2	8·2·04			+ 100 to cover	50	—	— 4 covers 2 centrif.	Clear and limpid	Scanty	None	—	
		3	26·2·04			+ 32 to cover	20	—	— 4 covers 2 centrif.	Clear and limpid	Scanty	None	—	
20	Ieri ...	1	20·1·04	M.	11	+ 2 to cover	20	19	+ 1 in 2 covers	Clear and limpid	Very scanty	None	—	Duration about four months. Progressive weakening and wasting interrupted by periods of partial recovery. Somnolence marked towards the close. Appetite voracious to within three days of death. Marked retraction of head and opisthotonos for several days before death. *P.-M.*—No signs of purulent meningitis.
		2	27·1·04			+ 4 to cover	10	12	+ 4 to cover	Clear and limpid	Very scanty	None	—	
		*3	5·2·04			+ 150 to cover	10	3	+ 40 to cover	Cloudy	Scanty	Many	—	
		*4	8·2·04			+ 250 to cover	15	0	+ 1 in 2 covers	Clear	Scanty	A few	8-2-04	
21	Moidi ...	1	21·1·04	F.	24	— 2 covers	6	16	— 3 covers 3 centrif.	Clear	Scanty	A few	—	Duration about three months. Drowsiness a marked symptom latterly. Very little wasting. Sensations much dulled. Lumbar puncture without cocaine.
		*2	25·1·04			+ 13 to cover	35	12	+ 3 in 4 covers	Clear	Scanty	A few	—	
		*3	5·2·04			+ 100 to cover	15	1	+ 20 to cover	Slightly cloudy	Scanty	Many	6-2-04	
22	Kapinga ...	23·1·04	F.	24		+ 1 in 2 covers	20	12	+ 1 in 3 covers	Slightly cloudy	Much increased	None	4-2-04	No drowsiness at any time. Progressive weakness, vacancy, and emaciation.
23	Patesa ...	3-2-04	F.	12		+ thousands 15 to field	10	0	— 6 covers 2 centrif.	Clear	Scanty	A few	3·2·04	Only four days under observation. Admitted for dysentery. Emaciation extreme. No drowsiness or vacancy. L.P. four hours before death. Spleen punctured at same time showed 80 trypanosomes to field.
24	Boyo	9·2·04	M.	19		— 2 covers	32	0	— 3 covers 2 centrif.	Slightly cloudy	Increased	None	9·2·04	Duration three to four months. L.P. soon after convulsive seizure, with high temperature and unconsciousness, due to sun exposure. Six hours before puncture, finger blood showed 100 trypanosomes to the cover.
25	Benjamin ...	9·2·04	M.	28		+ 2 to cover	13	1	+ 9 to cover	Slightly cloudy	Greatly increased. Early pus	None	10-2-04	Duration about three months. Progressive weakness and emaciation. Seldom drowsy. Tremors almost amounting to rigors before death, which was hastened by sun exposure. *P.M.*—Intense cerebral congestion.
26	Boyo Michel	1	11·2·04	M.	16	— 1 cover	18	103	+ 3 to cover	Cloudy	Increased	Many	—	Duration about five months. Drowsiness very marked. Extreme emaciation during last month on voyage to England. Died on the way to Liverpool.
		2	27·2·04			— 2 covers	16	99	— 4 covers 2 centrif.	Clear	Increased	None	—	
		3	31·3·04	—	—	— 2 covers	25	54	+ 1 in 2nd centrif.	Slightly cloudy	Increased	Many	—	
		4	23·5·04	—	—	+ 5 to cover	35	1	+ 1 in 5 covers	Clear and limpid	Scanty	None	24-5-04	
		5	24·5·04	—	—	— 1 cover	30	*P.-M.*	—	Cloudy	Increased	None	—	
27	Kabongo ...	13·2·04	M.	35		+ 4 to cover	4	—	— 4 covers 2 centrif.	Clear and limpid	Scanty	None	—	Very few symptoms. No drowsiness. Still under observation. On March 21st, hydrocele fluid negative, three covers examined; blood positive, 12 to cover.
28	Kikofi	1	20·2·04	M.	19	+ 10 to cover	30	—	+ 60 to cover	Slightly cloudy	Much increased	None	—	Still under observation. Nervous tremors and exaggerated reflexes on admission, but improved subsequently.
		2	25·3·04	—	—	— 2 covers	26	—	+ 1 in 1 cover	Clear and limpid	Scanty	None	—	
29	Yaiyai ...	1	24·2·04	F.	20	— 2 covers	42	9	— 3 covers 2 centrif.	Slightly cloudy	Increased	A few	—	Duration two months only. Rapid progressive weakness and wasting. Symptoms of drowsiness not marked. Extensive bedsores. Conscious till hour of death.
		2	28·2·04	—	—	— 4 covers	10	7	+ in 3 covers	Clear	Increased	None	—	
		3	4·3·04	—	—	— 2 covers	15	0	— 4 covers	Clear and limpid	Scanty	None	4-3-04	
30	Pekia ...	26·2·04	M.	27		— 1 cover	22	9	— 5 covers	Clear and limp	Scanty	None	4-3-04	Admitted February 2 for dysentery. No drowsiness. Great emaciation.
31	Bugwendi ...	2·3·04	M.	16		+ 48 to cover	25	19	— 5 covers 2 centrif.	Clear and limpid	Scanty	None	—	Duration about three months. Irritable, hysterical, and troublesome. March 16, wasting and inco-ordination of movements. March 20th, suddenly drank his urine from pot; then developed incoherent jabber, spasmodic contraction of arms, with athetosic movements of fingers, and picking at blanket. *P.-M.*—Lymph round cord, ventricles of brain distended, etc.
		21·3·04				— 2 covers	15	0	— 3 covers 2 centrif.	Slightly cloudy Straw colour	Scanty	Many	21-3-04	
32	Belambo	1	27·2·04	M.	26	— 4 covers	24	46	+ 1 to 4 covers	Cloudy	Greatly increased	Many	—	Duration about three months. Drowsiness at no time very marked, but nervous symptoms, tremors, and increased reflexes from day of admission. On March 19 developed spasmodic flexion of arms with convulsive movements of face and many muscles of body. No wasting. Appetite good, and conscious till hour of death. Reflexes nearly absent at death.
		2	9·3·04			—	18	35	+ 1 in 4 covers	Clear	Increased	None	—	
		3	30·3·04			— 2 covers	20	14	+ 80 to cover	Cloudy	Increased	Many	—	
		4	13·4·04			— 2 covers	40	0	+ 1 in 6 covers	Clear and limpid	Scanty	None	13-4-04	
33	Litali ...	...	29·2·04	M.	26	— 5 covers	18	2	+ 3 to cover	Slightly cloudy	Greatly increased	None	2 3 04	Admitted to hospital as a jabbering lunatic. Not suspected of sleeping sickness. Under observation for two months. Trypanosomes never found in blood. Slept a good deal latterly.

TABLE I.—*Sleeping Sickness Cases (continued).*

No.	Name.		Date.	Sex.	Age.	Trypanosomes in Finger Blood.	Cerebro-spinal Fluid. C.Cms. Drawn Off.	Days Before Death.	Trypanosomes.	Clear or Cloudy.	White Cells.	Red Cells.	Date of Death.	Remarks on Duration of Cases, Prominence of Sleep, or Other Symptoms, etc., and Mode of Death.
31	Mezao...	1	11-3-04	M.	16	+ 3 to cover	15	7	5 covers 2 centrif.	Clear and limpid	Scanty	None	—	No very marked symptoms, but extreme emaciation.
		1	15-3-04			— 2 covers	1	0	3 covers	Clear	Increased	None	18-3-04	
32	Bitanga ...		14-3-04	M.	27	— 2 covers	12	21	+ 2 to cover	Clear	Slightly increased	None	7-4-04	Duration about three months. Marked sleep symptoms Epileptic attack March 17. At L.P. pressure of fluid considerable. Improvement in symptoms after puncture.
36	Bandela	1	16-3-04	M.	10	2 covers	20	30	4 covers 2 centrif.	Clear	Increased	None	16-4-04	Duration five months. March 12, had appearance of bloated cretin, with marked sleep symptoms, which disappeared for several days after L.P. Salivation, no wasting. *P.M.*—Large quantity ventricular and sub-arachnoid fluid.
		2	16-4-04			1 cover from heart	50	*P.M.*	— 3 covers 8 hours' *P. M.*	Cloudy	Much increased	None	—	
37	Mengo ...		10-3-04	M.	24	2 covers	20		— 6 covers 2 centrif.	Clear	Scanty	A few	—	Admitted March 2 with very marked nervous symptoms; childish and irritable. One flick with finger on patella caused uncontrollable clonic movements of legs, and a light tap caused violent extension of whole body and legs, so powerful as to throw him off a chair yet able to walk about and do light work. Observations up to April 29, 1904.
	Hydrocele fluid		10-3-04			— 2 covers	—	—	14 to cover	Cloudy	Large quantity	None	*	
	Hydrocele fluid		25-3-04			— 2 covers	—	—	2 in half deposit	Cloudy	Large quantity	None	*	
														* Refers to hydrocele fluid only.
—	Tumba ...	1	26-3-04	M.	21	— 2 covers	35	4	20 to cover	Slightly cloudy	Scanty	Many	—	Duration about three months. Marked dullness and sleep symptoms. March 22, developed tremors and flexions of arms, which increased after L.P. on 26th. Conscious up to time of death.
			30-3-04			— 2 covers	31	0	— 4 covers centrif.	Clear and limpid	Scanty	None	30-3-04	
29	Molar ...	...	26-3-04	M.	14	— 2 covers	15	—	— 2 covers	Clear	Scanty	A few	—	Mission boy, only under observation for a few days.
40	Mokindi	...	2-4-04	M.	18	+ 4 to cover	20	—	5 covers 2 centrif.	Clear and limpid	Very scanty	None	—	An early case. Did not admit that he was sick. Marked dullness, but no sleep. Distension of belly.
41	Nakunyi	...	4-4-04	M.	17	+ 16 to cover	18	4	— 4 covers 2 centrif.	Clear and limpid	Very scanty	None	8-4-04	Admitted a month before death for dysentery. Great emaciation and weakness, otherwise few symptoms, and none of sleep.
42	Pania ...	...	6-4-04	M.	18	+ 4 to cover	18		— 5 covers 2 centrif.	Clear and limpid	Scanty	None		An early case. Few marked symptoms and none of sleep.
43	Kitambala	...	7-4-04	M.	13	— 4 covers	18	—	— 4 covers	Clear and limpid	Scanty	None	—	An early case. Marked dullness, but no sleep.
44	Katambue	...	14-4-04	M.	24	— 2 covers	16	—	+ 300 to cover	Slightly cloudy	Increased	A few	—	An advanced case. Only under observation for one day. Was doing duty up to February 17, 1904.
45	Kabola	...	14-4-04	M.	26	2 covers	20	—	16 to cover	Slightly cloudy	Scanty	A few	—	An advanced case. Only under observation for one day. Was doing duty up to February 25th, 1904.
46	Ekongo	...	18-4-04	M.	21	— 2 covers	22	—	+ 6 to cover	Slightly cloudy	Increased	A few	—	Advanced case seen on the march, and punctured under difficulties in the grass.
47	Mbeka	...	18-4-04	M.	19	+ 2 to cover	20	—	— 4 covers 2 centrif.	Clear and limpid	Scanty	None	—	An early case, with no symptoms.
17	Kitambue	...	21-5-04	M.	24	+ 4 to cover	18	17	+ 1 in 4 covers	Slightly cloudy	Much increased	None	1-6-04	Admitted to hospital beginning of March. Started for England April 29. Weakness increased during voyage and sleep a marked symptom. Admitted Royal Hospital, Liverpool, May 24. Slept almost continuously before death.
49	Somi ...	...	23-5-04	M.	17	+ 5 to cover	4	25	— 3 covers 2 centrif.	Clear and limpid	Slightly increased	None	—	Boy from Kinshassa Mission, Leopoldville. Duration of case about five months. No sleep symptoms. Progressive wasting and weakness.
			15-6-04			+	30	1	+ many 5 to field	Clear	Increased	None	17-6-04	
			17-6-04			+	45	*P.M.*	— 2 covers	Slightly cloudy	Much increased	None	—	
50	Nbela ...	...	9-10-03	M.	21	—	35	23	— many	Slightly cloudy	Much increased	None	1-11-04	An advanced case seen at Boma. Marked somnolence. Admitted August 1.
51	John Paka	...	26-10-03	M.	28	+ 2 to cover	10	—	— 6 covers	Clear and limpid	Very scanty	A few	—	An early case. A Sierra Leone boy seen at Boma. No symptoms and no complaint.
52	Louis ...	...	10-10-03	M.	16	+ 11 to cover	15	—	+	Slightly cloudy	Increased	A few	Died.	An advanced case in hospital at Boma.
53	Somi ...	...	13-10-03	F.	22	+ 6 to cover	20	—	+ many	Slightly cloudy	Increased	None	Died.	An advanced case in hospital at Boma.
54	Bulumbu	..	29-10-03	F.	16	— 1 to cover	10	—	+	—	—	—	Died.	An advanced case seen at Boma.

TABLE II.—*Doubtful Cases not Proved to be Sleeping Sickness.*

No.	Name.	Date.	Sex.	Age.	Trypanosomes in Finger Blood.	Cerebro-spinal Fluid. C.Cms Drawn Off.	Days Before Death.	Trypanosomes.	Clear or Cloudy.	White Cells.	Red Cells.	Date of Death.	Remarks on Duration of Case, Prominence of Sleep, or Other Symptoms, etc., and Mode of Death.
1	Mwandu ...	22-12-03	M.	21	1 covers	20	8	— 6 covers	Clear	Scanty	A few	31-12-03	Apparently a case of miliary tubercle. No symptoms of sleeping sickness.
2	Leubi...	24-12-03	M.	23		5	9	— 5 covers	Clear	Scanty	A few	2-1-04	Probably a sleeping sickness case. Extreme emaciation.
3	Sekabanda ...	30-12-03	M.	19		15	-	4 covers	Clear and limpid	Scanty	None	- -	Discharged as fit. No symptoms of sleeping sickness.
4	Saoka ...	7-1-04	M.	17		10	-	3 covers 2 centrif.	Clear and limpid	Very scanty	None		A doubtful case, with symptoms of dullness and childishness, admitted December 26 and discharged as fit March 23, 1904.
5	Lulsi ...	10-1-04	F.	24		14	0	— 5 covers	Clear and limpid	Scanty	None	10-1-04	A doubtful case, with marked emaciation and some sleep symptoms.
6	Kabubaki ...	22-1-04	M.	24	—	15	33	3 covers 3 centrif.	Clear and limpid	Scanty	None	25-2-04	A doubtful case, admitted for severe dysentery. Extreme emaciation but no dullness or drowsiness.
7	Sungula ...	5-2-04	M.	30	—	40	0	— 4 covers 2 centrif.	Milky	Large deposit of pus	None	5-2-04	Doubtful history of sleeping sickness; no emaciation. Retraction of head and convulsive movements of arms. Died a few hours after admission. *P.M.*—Purulent meningitis and ethmoidal sinuses full of pus.
8	Fatiala ...	8-2-04	F.	20	— 2 covers	24	4	— 3 covers 2 centrif.	Clear	Increased	A few	12-2-04	A septic case, with large collection of pus in arm when admitted.
9	Pougwe ...	16-2-04	M.	24	— 3 covers	15	0	— 1 cover	Greenish-yellow cloudy fluid	Pus	None	16-2-04	Semi comatose when admitted. Somewhat similar case to No. 8. Excessive continuous rigors, and pus oozing from nostrils. Violent spasmodic contraction of limbs.
10	Kabinda ...	27-2-04	M.	18	1 cover	25	-	— 2 covers 2 centrif.	Clear and limpid	Very scanty, almost none	None	- -	Only in hospital half an hour asking for treatment for craw-craw.

and I have assumed that "very scanty" is the normal condition. The difference between these various degrees is difficult to make out, and is apt to depend upon the amount of fluid allowed to remain with the deposit.

The majority of the punctures come under the headings of scanty or increased—namely, 46 per cent. under the former, and 26 per cent. under the latter, leaving about 13 per cent. for both very scanty and much increased.

One might conjecture that where the cellular elements are increased the examination would be positive for parasites, but Table V (p. 373) shows that this is not so evident as might be expected.

Case 32 shows that, although a large number of parasites were found at each puncture, there was an apparent decrease of cells in the fluid. In Case 17 no parasites were ever found in the cerebro-spinal fluid, and the cells were invariably scanty; and in the ten cases not proved to be sleeping sickness it will be seen that the cell elements of the fluid are almost invariably scanty. In the majority of the early cases, 19, 39, 40, 42, 43, 47, 51, whether positive or negative, the cells are scanty or very scanty.

In Case 28 the cells seem to have disappeared from the fluid in much the same proportion as the parasites. In Cases 44 and 49 a very large number of parasites was accompanied only by a comparatively small increase of cells.

For those who are not familiar with the operation of lumbar puncture I will describe the method I have found best.

The patient is placed on his right side, on a table if possible, with his knees drawn up to his face. After thoroughly cleansing his back with soap and water and again with alcohol or ether, cocaine is injected with a short, strong needle if the patient is a black man, both subcutaneously and deep into the muscles over the interspace above the last lumbar vertebra. This interspace is on a straight line drawn between the two iliac crests, and the needle should be passed half an inch to the left of the middle line, not midway between the two interspinous processes, but slightly nearer to the upper one. The next lower space between the sacrum and the last lumbar vertebra can be selected if for any reason it is desirable, but owing to the flattening of the canal in this situation the operation is not quite so easy to perform without drawing blood.

After waiting a few minutes for complete cocainization the knees are adjusted so as to be exactly opposite each other, and while the assistant secures the position of extreme flexion, the tips of the fingers of the left hand are placed firmly upon the left iliac crest, leaving the thumb to indicate by practice not only the interspace but the exact spot and direction as well.

The puncture needle is then passed through the skin, the precise direction again gauged, and the needle then passed on slightly upwards and towards the middle line. If the spot and direction have been well chosen, no bone is encountered, the passage of the needle point into the canal can easily be felt, and the clear fluid at once appears drop by drop. The syringe is then adjusted, and sufficient for examination is slowly drawn off. With a little practice and a docile patient no operation is easier, and I have performed it on the floor in native huts, in the open bush, in my tent, and in a canoe. Having learnt the exact spot and direction, the only difficulty is to gauge the depth to which the needle should be passed, for if the point is allowed to prick the cord or the membranes opposite, blood immediately appears, and the results of the operation are valueless for statistical purposes.

The needle selected should be as fine as possible, consistent with sufficient strength to withstand the grip of the back muscles, if in the early stages of the disease the patient is restless or insufficiently cocainised. It is important that the diagonal surface at the point should be as short as possible, and the actual point not too sharp. In no case should the syringe be used as a handle for the needle, but into the base of the needle should be screwed a metal handle, which, when the needle has been passed into position, can be substituted for a glass 10 c.cm. serum syringe with a short rubber connexion. The careful sterilization of all instruments is, of course, necessary. Although the skin may be cleansed as thoroughly as possible, it cannot be sterilized, but, in my cases, no introduction of septic matter has resulted from the operation. It would, however, probably be wisest, after the cocaine has been injected, to cauterize the site of the puncture with some small cautery made for the purpose.

Messrs. Burroughs Wellcome and Co. have made for me a very complete case, containing all the instruments that I

have found necessary for this operation, and embodying all the suggestions I have made.

With regard to anaesthetics, cocaine is the best. Cases of excitement or mania necessitate chloroform, but it is inadvisable to give chloroform in advanced cases, if it can be avoided, for, in at all events two cases, the struggle and subsequent exhaustion have, I believe, hastened a fatal issue.

In the cases of septic meningitis, pus is frequently found in the ethmoidal or other sinuses, and the infection cannot be traced to the lumbar puncture. In Cases 7 and 9, in Table II, and others in Table I, symptoms of meningitis were apparent before the puncture was made, and in other cases death occurred from the same cause without lumbar puncture. The discovery of purulent lymph round the cord in Case 31 might possibly point to infection introduced with the needle, but in this case the symptoms did not commence till a fortnight after the puncture.

These notes are the outcome solely of work done in connexion with the Congo disease.

The duration of the cases in Tables I and II is gauged chiefly by the date of the commencement of symptoms—that is, in many cases the date at which the patient finds himself unable to work, the actual duration probably being much longer. The disease can frequently be diagnosed by the intimate friends or fellow-workmen of the patient long before he himself realizes it.

The total number of cases here recorded is too few to permit of any very definite statements, but I think it is sufficient to allow of the following provisional conclusions:

1. That in many cases the trypanosomes never find their way into the cerebro-spinal fluid, and in those cases in which they do they are more frequently to be found towards the termination of the disease.

2. That the commencement of the fever or other symptoms is in no way correlated to the entrance of the parasites to the cerebro-spinal fluid.

3. That a large number of trypanosomes in the cerebro-spinal fluid is rare, but when it does occur there is usually an access of temperature.

4. That the parasites may come and go in the cerebro-spinal fluid as in the blood.

5. That enormous numbers may appear in the blood without appearing in the cerebro-spinal fluid, and, to some extent, vice versa.

6. That when trypanosomes are present in the cerebro-spinal fluid its white cell elements are apt to be increased.

7. That in cases where the parasites gain access to the cerebro-spinal fluid early in the disease, mania and other head symptoms are more likely to be prominent.

(Lumbar puncture case shown at the meeting.)

IV.—David Nunes Nabarro, M.D.Lond., B.Sc., M.R.C.S.,
Lecturer on Bacteriology, University College, London.

As I had had the privilege of working with Colonel Bruce in Uganda on the Royal Society Commission and of assisting with the joint report on sleeping sickness published by the Royal Society, I agree with many of the propositions enunciated by Colonel Bruce.

With regard to No. 1, "that the trypanosoma found in the blood and that found in the cerebro-spinal fluid in sleeping sickness are identical," in addition to the reasons given by Colonel Bruce, namely, that (1) morphologically they are the same in the blood of injected animals, and (2) they behave in the same manner on injection into animals, I think the following may be given. While working in Uganda after Colonel Bruce's departure, Captain Greig and myself immunized several monkeys against the blood and the cerebro-spinal fluid trypanosoma, and found that the animals were then immune against the cerebro-spinal and the blood try panosoma respectively, though not against the animal trypanosomata we met with in Uganda.

2. "So-called trypanosoma fever is the first stage of sleeping sickness." I do not think that, in the present state of our knowledge, we can say this with certainty, nor do I think that it will be found to be always the case. Possibly the trypanosoma may disappear altogether from the peripheral blood of a patient, just as it did in some of our experimental monkeys and dogs in Uganda. We may say with some degree of certainty that all cases of sleeping sickness, in the pyrexial or so-called first stage of the disease, suffer from remittent or intermittent fever, but the converse cannot be maintained with certainty, namely, that trypanosoma fever is always the first stage of sleeping sickness.

Proposition 3. "Neither the native nor the European is immune to this disease." That has now been abundantly proved unfortunately, and the number of cases recorded among Europeans is rapidly increasing. Recent observations in Uganda, West Coast of Africa, and the Congo Free State have shown that the prevalence of human trypanosomiasis is much greater than is usually imagined.

Proposition 4. "As regards prognosis, instead of being favourable, so far as is known the mortality is 100 per cent. in both coloured and uncoloured race." The remarks already made under Propositon 2 will apply to this proposition also. I think it is possible that man may become immunized after infection with trypanosoma, just as we found to be the case with monkeys, dogs, and other experimental animals. Colonel Bruce has told us that some of the natives in whose blood we found trypanosomata last year in Uganda, have died from sleeping sickness and that others are now suffering from the disease. He did not say, however, whether any of those natives who had the parasite in their blood last year failed to show it this year. A negative observation would, of course, require careful confirmation before being accepted. With regard to sleeping sickness, there I agree with Colonel Bruce that so far as we know, every undoubted case of that disease is fatal—usually in two or three months after the appearance of symptoms, but occasionally it may last a year or more, as it did in one of our cases.

Proposition 5. "Up to the present no evidence has been brought forward to show that any of the lower animals take any part in the spread of human trypanosomiasis." I think that, in the main, this is correct, but during our researches in Uganda we came across a disease in oxen, in Entebbe, associated with a trypanosoma which, if not identical with, closely resembles the human trypanosoma, and it is just possible that these infected cattle in Entebbe may serve as a subsidiary source, in addition to infected natives, whence the *Glossina palpalis* obtains its supply of trypanosoma. Captain Greig and I studied trypanosomata obtained from three other sources in Uganda and East Africa, a short account of which may be of interest to members of the meeting.

Trypanosoma III found in diseased oxen in Entebbe, Uganda. Infected animals get out of condition, go gradually downhill, and die. Often the superficial lymphatic glands are enlarged. *Post mortem* jelly-like material is found in the subcutaneous tissues and about the base of the heart. The disease is known locally as "Mukebi." The interesting points about this trypanosoma are: (1) It became very scanty in the blood of sick oxen towards the end of life, and, in one case, during the last six weeks, could not be demonstrated even by the centrifuge; (2) it was not pathogenic for dogs or a monkey, but unfortunately the strain of trypanosoma died out, and we were unable at the time to get a fresh supply to inoculate fresh dogs and monkeys.

Trypanosoma IV found in a herd of diseased cattle at Jinja. Symptoms: Animals are thin, but not markedly emaciated. Anaemia is marked. Slight enlargement of the lymphatic glands The animals die, often quite suddenly and in good condition. Sometimes they waste, dying for several days. Duration of disease probably two to three months. *Post mortem*, lymph glands enlarged, congested, and sometimes haemorrhagic. In some cases pericardial and pleural effusions. Jelly-like material at base of heart and often petechiae inside and out. Spleen slightly enlarged. Native name of disease "sutoks." Out of a herd of 210 cattle at Jinja, 81, or 39 per cent, had died within three months, probably all from this trypanosoma disease. We found it pathogenic for dogs, monkeys, oxen, guinea-pigs, rats, sheep, and goats.

Trypanosoma V occurring in a dog which contracted the disease naturally, while with the Abyssinian Boundary Commission, 1903. This Commission lost on their journey from a similar disease eleven Boran and Abyssinian ponies, several camels, and five English dogs. None of their donkeys or mules, which were Abyssinian, suffered from the disease. Also a native (Abyssinian) dog, which was the companion of the English dog, and had accompanied it throughout the expedition, remained healthy. The dog was very thin and quite blind from corneal opacity when he reached us. We found this trypanosoma pathogenic for dogs, monkeys, and rats. An inoculated bull, sheep, goat, and donkey failed to show trypanosoma in blood films.

Trypanosoma VI found in a dying mule in Entebbe; animal had fever and slight swelling of the glands. Trypanosomata were found in blood films but disappeard towards death. *Post mortem* no enlarged glands, no jelly-like material about heart; some petechiae on heart; spleen enlarged, also

liver. This trypanosoma was pathogenic for dogs, monkeys, rats, and jackals; guinea-pigs, sheep, goat, ox, donkey, and baboon failed to show it in films. Certainly most of these animal trypanosomata are different from the human, and further observations must be made before we can say whether the diseases in animals to which they give rise are already known, for example, nagana, surra, etc. I have placed specimens of these trypanosomata under microscopes which are on view in the Pathological Museum. It will be there seen that the "mule" trypanosoma (Trypanosoma VI) often exhibited marked deformity and vacuolation in the blood of one of the inoculated monkeys, as was also the case on one occasion in the blood of the mule itself.

Proposition 6. "Several of the lower animals are, however, susceptible to sleeping sickness by artificial inoculation." Colonel Bruce said nothing about this in his remarks to-day, though it appeared in the summary of his propositions in the Supplement to the British Medical Journal of June 11th. I think this is a very debateable point. Certainly several of our experimental monkeys died after being inoculated with blood and sleeping sickness trypanosomata but not with undoubted sleeping-sickness symptoms. Further, the brains of these monkeys in several cases did not show the typical naked-eye changes seen in sleeping sickness, nor was Dr. Mott, who examined several of these brains for us, able to find any traces of the perivascular lymphocytic infiltration, which is so prominent a feature of the human sleeping-sickness brains. I do not consider this to be an insuperable objection to the theory that the trypanosoma is the cause of sleeping sickness, for we find the same thing in the domain of bacteriology. Very few of us, for example, would deny the causal connexion between Eberth's bacillus and typhoid fever, yet under ordinary conditions it is impossible to produce in animals the pathological lesions seen in the human intestine in that disease.

With regard to Propositions 7, 8, 9, and 10, the researches of the Sleeping Sickness Commission in Uganda point to the fact that the trypanosoma of sleeping sickness can be conveyed from the sick to the healthy by the tsetse fly (*Glossina palpalis*). We did experiments in which an interval of eight, twenty-four, and forty-eight hours elapsed between two successive meals of the flies. In all these cases a positive result was obtained. Colonel Bruce had previously found in Zululand that the trypanosoma of nagana could be conveyed from sick to healthy animals after an interval of two days but not of three days. He therefore concludes that the tsetse fly acts simply as the carrier of the parasite.

It has been urged against this view, that if one waited for eight, ten, or twelve days after a feed of blood containing trypanosomata, and then allowed the flies to bite a healthy animal, one might get evidence of some metamorphosis of the trypanosoma in the body of the tsetse fly and of the presence of the parasite in its proboscis. Some of our feeding experiments were carried on for two months, and at the end of that time were negative, that is to say, the healthy animals upon which the infected flies were fed, remained free from trypanosoma. I think that rather tends to show that, in those cases at any rate, there was no metamorphosis of the trypanosoma in the *Glossina palpalis* with the formation of bodies analogous to the sporozoites of the malarial parasite in the mosquito. Greig and myself experimented with other biting flies, namely, *Tabanidae* and *Stomoxys*. The former were unsatisfactory, as they could not be got to feed in captivity; the latter fed well, but in no case conveyed the trypanosoma from infected to healthy animals.

With regard to the specificity of the *Glossina palpalis* for the human trypanosoma, our experiments tend to show that other species of *Glossina* can convey this trypanosoma. Greig and I also found that the *Glossina palpalis* could carry the "jinja" and the "mule" trypanosomata from infected to healthy experimental animals.

Dissection of flies at varying intervals after a feed yielded interesting results, which may be summarized as follows: The trypanosoma of sleeping sickness was found actively motile in the stomach contents of the fly seventy-one hours after the feed; the "jinja" trypanosoma (Tryp. IV) 100 hours after; the East African (Tryp. V) 5½ hours only; and the "mule" (Tryp. VI) twenty hours after. In *Stomoxys* the "jinja" (Tryp. IV) was found active twenty-four hours, the "East African" (Tryp. V) twelve hours, and the "mule" (Tryp. VI) thirty hours after a feed. Although motile so long after the feed the trypanosomata stain badly after a time, as will be seen in the specimen I have placed under the microscope in the Museum.

V.—Sir Patrick Manson, K.C.M.G. F.R.S., LL.D.Aberd., D.Sc.Oxford.

Medical Adviser, Colonial Office and Crown Agents of Colonies; Lecturer on Tropical Medicine, London School of Tropical Medicine.

If Colonel Bruce's contention is proved, the fact that trypanosoma gambiense is the cause of sleeping sickness is a matter of the highest importance; but if, on the other hand, it be not fully proved, to accept it as such, and to found on the supposition expensive prophylactic measures, would be a serious false move. Colonel Bruce's evidence is principally epidemiological not pathological. In none of his experimental animals did he produce the pathognomonic small-cell infiltration of the perivascular spaces of the brain, nor, so far as I know, have other experimenters been more successful. His epidemiological facts apply only to a very limited region, and it may well be, as with its predecessor filaria perstans, that the distribution of the trypanosoma will not correspond to that of sleeping sickness. Indeed, quite recently it has been stated that in the German territory at the south end of the Victoria Nyanza the entire population is infected with trypanosomes but sleeping sickness is unknown there. If this be true, then the trypanosoma cannot be the only cause, or even a cause, of sleeping sickness. Recent work seems to indicate that the trypanosoma is an element in the causation, but that the determining cause of the pathogenic condition causing the symptoms of sleeping sickness is bacterial, that is to say, that a combination of Castellani's first and last etiological views is the correct one. Colonel Bruce states that trypanosoma infection is always fatal. I know of one case which three years ago had all the clinical symptoms of trypanosomiasis, and in whose blood Dr. Broden, of Leopoldville, found the trypanosoma who is now quite well, in fact, in better health than she has ever been for years. Apparently she has overcome the infection.

VI.—Louis Sambon, M.D.Naples,

Lecturer on Parasitology, London School of Tropical Medicine.

Dr. Sambon remarked that he could not altogether agree with the statement that the tsetse fly (*Glossina palpalis*) was merely a mechanical agent in the transmission of trypanosomiasis, and, therefore, that all stages of development of the parasite took place in the human body. The tsetse fly no doubt served as an intermediate host. If the function of this fly was merely mechanical, why did not other biting flies, such as the *Tabanus* and *Stomoxys*, which were also prevalent in the sleeping-sickness areas, also help to transmit infection?

SECTION OF NAVY, ARMY, AND AMBULANCE.

Surgeon-General A. F. Bradshaw, C.B., K.H.P., President.

DISCUSSION ON THE ORGANIZATION DURING PEACE OF CIVIL, MEDICAL, AND AMBULANCE AID,

TO ENSURE AN IMMEDIATE RESERVE OF TRAINED ASSISTANCE ON THE OUTBREAK OF WAR.

I.—Colonel J. E. Squire, C.B., M.D., V.D., R.A.M.C.(Vols.).

Colonel Squire said: In a war of any magnitude it is necessary to supplement the military organization for the care of the sick and wounded by civilian aid. Such aid is essentially of two kinds:

A. Surgeons, nurses, and orderlies, who are temporarily employed by the military authorities, receiving pay through the War Office.

B. *Personnel* and stores provided by voluntary subscription.

Voluntary aid may be wasteful and embarrassing or may be misapplied if no statement of probable requirements and no regulations for their employment have been previously laid down. Organization during peace is essential to ensure the best provision and to avoid unnecessary waste in war. Both classes of aid have occasionally been employed with our troops—for example, in the Crimea, Zululand, Egypt, and the Soudan—but without previous organization and with consequent waste. The recent war in South Africa found us for the first time with the germ of an organization, not yet sufficiently developed to meet the requirements of a big campaign, but which nevertheless was of considerable practical value.

The Central British Red Cross Committee has been instituted as the organizing body for civilian aid with troops in war. Is it calculated to ensure what is required? To answer this question it is necessary to consider certain points, namely:

1. What is needed to supplement the Army Medical Service in war?
2. What means exist of supplying this need?
3. How can the means of supply come into touch with the Army Medical Department?

We can then consider whether the existing conditions are satisfactory or in what direction improvement is required. With regard to 1, we may consider (*a*) *personnel*, and (*b*) stores.

(*a*) *Personnel.*—Directly employed by the War Office.

Surgeons and nurses adequately trained in their professional work are to be obtained in sufficient numbers to allow of selection, but in order to obtain at short notice the best professional aid selection must have been made previously. A list should therefore be kept at the War Office or elsewhere of suitable persons who are willing to serve if required, who might be further classified according as they are willing to serve "at home only" or "wherever required," and "at any time" or on "national emergency." The list should be revised annually, so that inclusion in the list would entail liability for the year only. Such a list would represent a true army medical reserve.

Orderlies.—A roll of men willing to serve as orderlies might be kept in the same way, the special qualifications of each being entered against his name. Conditions of service and a scale of pay for the various duties should be laid down, and application to be included in any list would be made to imply acceptance of the conditions (including rate of pay) if called out for service.

For the *personnel* serving under some authorized voluntary aid society or committee the conditions of service and rates of pay would be drawn up by the body engaging their services, but would have to come within the terms of requirements previously formulated by the Central Red Cross Committee, and communicated to the body offering aid. It is desirable that all persons serving under contract with some voluntary aid society should wear a distinguishing uniform, so that they should not be mistaken for regular soldiers.

(*b*) *Stores.*—Hospital equipment, surgical stores, medicines, etc., are needed in war greatly in excess of peace requirements. Many of these are perishable, and cannot with advantage be kept in store. By previous arrangement with large firms, almost everything needed could be procured as required. What is necessary is a list, kept at the War Office, of firms able and willing to supply materials, detailed as follows: Name of firm; articles which can be supplied; number or quantity which can be delivered "at once" or "with notice"; agreed price. All absolute necessaries should be supplied by the military authorities. It should not be necessary to apply to voluntary organizations for hospital equipment, surgical and medical stores, or food for patients, as appears to have been occasionally done in South Africa.[1]

VOLUNTARY AID SOCIETIES' CONTRIBUTIONS AND GIFTS FROM INDIVIDUALS.

The supply of comforts both for the troops in the field and for patients in hospitals comes within the scope of voluntary aid. These include such things as Crimean helmets, housewives, books and papers, writing materials, sleeping suits, toilet requisites, as well as beef juice and special invalid foods. A list of articles which would be especially acceptable should be drawn up and sent to all applicants at the beginning of a campaign.

The organization of this department, the storage and distribution of these gifts, should be carried out by some authorized organization or society acting under the Central Red Cross Committee. This is provided for in the regulations of the Committee.

Supplementary hospitals, hospital ships and trains may be organized, equipped and maintained by voluntary subscriptions under regulations to be previously drawn up by the Central Red Cross Committee. Voluntary efforts should also provide assistance to the sick and wounded whilst journeying along the lines of communications and on arrival at the base or at home. Accommodation at suitable places should be arranged for convalescents at home.

All these matters require carefully arranging and organizing beforehand, and it is essentially the duty of the permanent voluntary aid societies—such as the Red Cross Society—to perfect such organization during peace.

It is very desirable that there should be some organization, with branches throughout the country, by means of which individuals wishing to help when a war breaks out could at once be brought into touch with a central body which is in direct communication with the War Office. These local committees should be permanently established under some central organization—preferably not connected with the War Office—with its head office in London.

As the basis on which to build up the organization that is required we have the British Red Cross Society (British National Society for Aid to the Sick and Wounded in War), the St. John Ambulance Association, the St. Andrew Ambulance Association, various nursing associations, and, since 1898 the British Central Red Cross Committee.

The British Red Cross Society, founded during the Franco-Prussian war in 1870, has supplied aid to several foreign countries and to the British troops in several campaigns; but it hibernates during periods of peace, and only wakes to activity when a war breaks out, instead of spending the leisure time of peace in organizing for war.

The St. John Ambulance Association, primarily originated to provide instruction in first-aid treatment in case of accidents in civil life, has comparatively recently considered the possibility of providing supplementary aid to the troops during war, but when the South African war commenced it had made no provision for training in the duties required by orderlies and nurses for military service. Nevertheless, the Association was able to furnish a large number of willing though imperfectly-trained men to the army in South Africa, the conditions of service and rate of pay being, perhaps, as moderate as could be expected, considering that the bargain with the War Office was made when the emergency was pressing. The St. John Ambulance Association being now officially recognized by the Central Red Cross Committee as a body from which hospital *personnel* can be obtained during war, it is to be supposed that regulations for training and a reasonable rate of pay have already been formulated by that Committee.

Where the present machinery for the organization of civilian aid seems to be faulty is in the chain of connexion between the War Office on the one hand and the public, which supplies the personal service, money and gifts which the War Office would utilize in war.

The British Central Red Cross Committee appears to be closely modelled on the German organization for voluntary aid, though the military and official systems of the two countries are widely different. In Germany the army is the nation, and the whole life of the people runs in official grooves. The Red Cross Society and the various orders of knighthood (St. John, etc.), are quasi-official units of the State organization.

With us the army forms but a small section of the community, and the official and social relations of the people are kept distinct, whilst the Red Cross Society and the various ambulance associations are private organizations independent of the State machinery. The public has not always been in exact accord with army methods of organization, and might possibly be more disposed to send money and gifts to the troops through some organization outside the army than through a committee directly connected with the War Office. So, too, though in Germany it may be wise to restrict the offer of aid to certain specified organizations, this seems hardly necessary or advisable with us.

The representation of certain organizations (Red Cross Society, St. John Ambulance Association) on the Central Red Cross Committee seems calculated to arouse that jealousy which, as is recognized by its founders, should be avoided. It would seem desirable that the Central Red Cross Committee—consisting of military and civilian members—should be advisory rather than executive; deciding on the requirements and drawing up regulations under which voluntary aid can be accepted by the army, but leaving it to a voluntary society to organize and provide the aid. The Committee of this Society would be the one and only means of communication between the various voluntary aid societies, and individuals offering aid, and the War Office. When war broke out the officials at the War Office, who have their hands full with the work of mobilization and all that this entails, would not then have their time occupied with the various suggestions and offers of help of the different societies, etc., but would be relieved of this by the Committee.

[1] *Vide* Report of the Central British Red Cross Committee, 1902.

The British Red Cross Society would seem to be the body which should organize the voluntary aid during peace, and it should establish local centres throughout the country. In war time it might well carry out the duties allocated to it by the Central Red Cross Committee in their present regulations, one of the most important of these duties being the collecting and distributing of funds.

The object of this discussion is not to emphasize the errors of the past nor any defects in the present organization, though it is necessary, in opening the discussion, to point out where these may possibly be found. What is desired is that suggestions may be brought forward which will ensure efficient organization in the near future.

It seems to me that the main thing required at the present time is the organization of local Committees throughout the country and throughout the Empire by means of which individuals and societies offering help in time of war may be brought into touch with the Central Red Cross Committee, representing the army.

The Central Red Cross Committee is, I believe, considering this matter. But to my mind the Central Red Cross Committee is not the best body to undertake this work. I consider that this Committee should be in communication with one other Committee only—not with many, which would multiply its work and correspondence when war broke out.

A single "buffer" committee, purely civilian, should stand between the Central Red Cross Committee and local committees or individuals.

The proper body to take this important position is obviously the British Red Cross Society, but if this Society is unwilling to undertake the work another body must be formed.

The British Medical Association, with its Branches all over the Empire, might well serve as a means of forming a truly Imperial Red Cross Society. Through the British Medical Association it would be possible to find a medical man in each county in England, and in different districts in India and the Colonies, who would act as organizing secretary for his district and form a local committee.

A central organizing committee in London would bring all into touch, and with representatives of the National Aid Society, St. John Ambulance Association, and similar bodies would form the direct communication with the Central Red Cross Committee. This latter Committee would decide upon the requirements; it would be for the new committee (Imperial Red Cross Society or Committee) to see that these were forthcoming when needed. One serious consideration is how to raise the necessary funds for the work of organization, but I have no doubt that for such a work both men and money can be found.

II.—Major E. C. Freeman, R.A.M.C.,
Colchester.

Major Freeman said that having had the honour of being Registrar of a general hospital for seventeen months in South Africa, where their whole staff except twenty men consisted of Volunteers and St. John Ambulance Brigade, he was very glad to have an opportunity of paying a tribute in that Section to the conduct of those men in the field—they worked quietly and unostentatiously (and died, too) in the cause of humanity, during those months of pestilence in Bloemfontein, and their work had received scant public recognition. The Volunteers were the most useful, because they stayed with them all through the campaign. The St. John men were perhaps better trained, but they stayed too short a time, and as soon as really efficient had to be sent home. That was a point which would have to be seen to in future—the men should be enlisted for a year at a time. Hospital treatment and nursing could not, he thought, be really taught to these men under peace conditions. First aid could, and he would urge that both Volunteers and St. John Ambulance men should be utilized in the bearer companies and field hospitals, where the work would be congenial to them, and that the general hospitals should rely on the hospital-trained R.A.M.C. orderlies. It was a terrible disappointment to their people that they were debarred from collecting wounded under fire, and relegated to base-hospital work. He would also like to draw attention to the necessity for providing men trained in other matters besides nursing. Cooks, carpenters, clerks, butchers, drivers, chemists, etc., were all absolutely necessary, and arrangements for their enlistment should be carefully provided for.

III. J. E. Molson, M.D.,
Chelmsford.

Dr. Molson made remarks on the difficulty that Volunteer medical officers experience in getting Volunteer stretcher bearers examined, or any encouragement to make them efficient.

IV.—Major T. McCulloch, R.A.M.C.,
Kent.

Major McCulloch said that he had listened with great pleasure to Colonel Squire's paper, and his views were in accord with those of Colonel Squire in regard to the general question, namely, the urgent need that existed for a thorough organization of the voluntary aid resources of the country. At the present time attention naturally turned to the great struggle which was going on between Russia and Japan. Both countries possessed Red Cross Societies, and Japan had a particularly well-organized one. The Red Cross Society of Japan had its origin in 1877, and, from a comparatively small beginning, it had steadily grown both in numbers and in resources till now it had a membership of over 900 000, which was equivalent to 1 in every 45 of the population, and its income during 1903 was over £300,000 sterling. In addition to that it possessed a large capital sum, as well as buildings and other immovable property. The organization which Japan had built up in time of peace must be of incalculable benefit to the country now that the heavy burden and strain of a great war had come. Was not that a great object lesson for them? Here they had Japan, another island kingdom, and one which had only quite recently taken a prominent place in the comity of nations, and yet it had built up for itself a rich, powerful, and widely-spread Red Cross organisation. Up to the beginning of the late war in South Africa, Great Britain possessed no definite Red Cross organization which aimed at being an active organizing body in time of peace. There never had been any lack of interest or sympathy on the part of the British public when the care and welfare of the sick and wounded in war was in question. Our previous experience had always been that in presence of a state of war, money subscriptions, donations in kind, and offers of personal services have been freely given. Our own and Continental wars had, however, afforded many valuable lessons of the necessity of having ready beforehand an organization capable of dealing with those voluntary offers, and so saving the recurrence of the misdirection of energy, failure of purpose, and waste of money and material that had occurred through want of such organization. Without organization, confusion, overlapping, delay and waste were the inevitable results. Experience had proved, moreover, that voluntary aid in time of war, unless properly incorporated with the military medical organization of the country, was not only a doubtful advantage, but it might even become detrimental—a hindrance instead of a help. An outburst of popular sympathy might always be relied upon, and should be reckoned with beforehand, so as to render voluntary aid a valuable supplement to the work of the Army Medical Service. On whatever system an army was organized, the system must have as a basis the possibility of rapid expansion. Government did not maintain, and, he thought, could not be expected to maintain, medical and surgical provision in time of peace on a scale sufficiently adequate to meet the great demands which might suddenly spring up on the outbreak of war. So in future, as in past wars, voluntary aid would find abundant opportunities for supplementing the resources of the regular service. In any scheme for extending Red Cross organization in England, the needs of the navy should also be kept in view. They had had no great naval war in recent times to stir up popular sentiment and sympathy by the arrival of large numbers of naval sick and wounded on their shores. But bearing in mind their position as a naval power, and the suddenness with which war conditions sometimes arose, the possibilities were such that preparations to cope with them should be organized beforehand on a well-considered and premeditated plan. The Central British Red Cross Council had fully appreciated the fact that, in organizing the voluntary aid resources of the country, the wants of the navy as well as of the army should be kept in view. The Admiralty was approached in the matter, and he was glad to see that Deputy Inspector-General Preston was with them at that meeting, as he represented the Admiralty on the Red Cross Council. The existence of the Central British Red Cross Council was perhaps not as widely known amongst members of the British Medical Associa-

tion as ought to be the case. The present time appeared to be a good opportunity of stating shortly its formation, constitution, and objects. In England the danger of the absence of any central organization of Red Cross Societies in touch with military requirements was clearly pointed out in the report submitted to the Secretary of State for War by the British official delegate to the Sixth International Congress of Red Cross Societies which was held in Vienna in 1897. As had been stated in that report: Voluntary aid, such as would be forthcoming in abundance in the event of their being involved in an international war, would come upon the military authorities in the form of a mass of unorganized and untrained elements, probably so unsuited to the actual requirements of the moment that, for a time at any rate, the administration of the regular Army Medical Service would be considerably hampered and embarrassed. After the publication of that report in 1898, a meeting of representatives of the National Society for Aid to the Sick and Wounded in War, of the St. John Ambulance Association, and of the Army Nursing Reserve was held, and it was resolved to definitely form a permanent Central Red Cross Committee for the British Empire and its dependencies, and to ask the Secretary of State for War to recognize the Committee officially. The Committee was started in January, 1899, with official recognition, and at the close of that year it had to organize the voluntary aid, which was at once and abundantly in evidence for the sick and wounded of the South African war. Lately the designation had be altered from Committee to Council. The Central British Red Cross Council had on it representatives of the National Society for Aid to the Sick and Wounded in War, of the St. John and St. Andrew Ambulance Associations, of the Army Nursing Service Reserve, of the Admiralty, and of the War Office. Its objects were to co-ordinate the help offered by the different voluntary aid societies, both at home and abroad; to extend Red Cross organization by the formation of local branches throughout the Empire; and to be the means of communication between those local organizations and the Admiralty and War Office. The first duty of the Council was to draw up a series of regulations defining the manner in which the voluntary aid resources of the country might be utilized to supplement the Army Medical Service in time of war. When first established it was intended to take steps for the formation of local committees throughout the country whose object it would be to organize in time of peace the voluntary aid resources of districts and towns. The outbreak of war in South Africa prevented any progress being made in this direction. The work had again been taken up, and the Council had now a scheme under consideration, of which the broad outlines were as follows: (1) It was suggested that in England there should be a district committee for each county, or, in the case of the larger counties, for a division of the county. (2) It would probably also be advisable to have separate branch committees in large towns (say in towns having a population of over 100,000). (3) All schemes authorized and prepared by district committees with a definite object, such as grants in aid, either in money or material, towards providing hospital ships, hospital trains, and other means of transport, auxiliary hospitals or convalescent homes, were to be submitted to the Central British Red Cross Council. (4) The extension of Red Cross organization would not stop short at the formation of local branches in this country. It was intended that branches should be formed on similar lines in India and the Colonies. In England arrangements had been completed for the organization of the St. John Ambulance Brigade into companies of stretcher bearers for service at home, and ten companies of fifty-eight men each were ready for mobilization. The St. Andrew Ambulance Association were also working in the same direction, and they had started a Red Cross branch, which was taking up the question of the establishment of local committees in the counties and principal towns of Scotland. It might be mentioned that a further important step was taken in 1902, when the Foreign Office intimated to all foreign Chancelleries that the Central British Red Cross Council was the only body authorized to deal with Red Cross matters throughout the kingdom and empire.

V.—Surgeon-General Cuffe, C.B., A.M.S.(ret.),
London.

Surgeon-General Cuffe said that the difficulty seemed to him to be to obtain trained male and female nurses who would be at all times available for home defence or war abroad. His experience was that though doctors were to be found in abundance, and many were registered for employment under the local military authorities when required, great difficulty was found in obtaining sufficient names of trained men and women nurses other than those in the hospitals and workhouse infirmaries. It was most objectionable to employ untrained persons, however willing they might be, and army medical officers very properly objected to such untrained voluntary aid. Whatever local organization of the Red Cross Society were established in various towns, an essential requirement must be an army and navy nursing reserve of skilled men and women, for home defence as well as service abroad, and willing to serve for at least a year if required.

VI.—Deputy Inspector-General T. J. Preston, R.N.,
London.

Deputy Inspector-General Preston remarked that too much reliance should not be placed on deliveries from contractors in national emergency. Medical stores for hospital ships were kept in readiness for immediate issue under Admiralty orders, and the Admiralty readily met the views of medical officers. There should be an organization of coast ambulance brigades for transport of wounded from men-of-war to local hospitals, and first-aid classes in mercantile marine as feeders to auxiliary stretcher-bearer reserve. He thought there should also be an initiation of a naval ambulance corps in conjunction with St. John Ambulance Brigade in Australia, and he hoped that Canada would do the same.

VII.—Surgeon-General W. K. Van Reypen, Rear-Admiral U.S. Navy,
President, American Red Cross Society.

Surgeon-General Van Reypen gave an account of the mode of the Red Cross of America during the war with Spain, and the proposed plan of reorganization. He also spoke of the methods adopted by the medical department of the United States Navy in caring for their sick and wounded in war.

VIII.—Surgeon-General A. Keogh, C.B.,
Deputy Director-General Army Medical Service.

Surgeon-General Keogh considered that Colonel Squire's sketch was on the right lines. If he offered any remarks by way of criticism they would refer rather to details than to matters of principle. He did not gather from Colonel Squire's sketch that he had prepared a scheme for the consideration of the Section, and he was of opinion that no very definite advance could be made until a scheme was submitted for approval or modification. He thought it was clear that the most urgent demand which the Royal Army Medical Corps would in the future make upon the voluntary aid organizations would be for trained *personnel*. It was not sufficient for them to provide lists of medical men who were prepared to afford professional aid to troops in time of war; it was essential that members of the profession who assumed the rôle of officer of the Medical Corps, should be able to perform each and all of the duties imposed upon that officer. Modern warfare placed upon his shoulders duties and responsibilities of a very varying kind, and it was therefore essential that the civil medical man should be prepared to perform and be taught what those duties were and how they were to be accomplished. Any scheme of voluntary aid which failed to provide that training in time of peace crippled efficiency from the very commencement. Similar remarks applied throughout the various categories into which the *personnel* might be divided. The Central British Red Cross Council represented the various societies in the country which had for their object the relief of the sick and wounded in war, and it was to his mind perfectly clear that that was a suitable body to define the direction in which efficiency could be secured, to co-ordinate the efforts of societies and individuals, and, after consultation with the War Office, to prepare for the demands likely to be made upon the various organized bodies during hostilities. He entirely agreed with Colonel Squire that organization and preparation should be carried on during peace, and he was convinced that not only the registration but also the training of the individuals in their spheres of duty should be a part of the work supervised by the Central British Red Cross Council. He would further assert that that could only be accomplished by the active co-operation of the general public. To attain the end in view was a costly

project, and it was a difficult problem, but the lines along which it should proceed were clearly defined. He could not agree with Colonel Squire that there were any errors in the past. The existing voluntary organizations took upon themselves duties which the emergency of the moment demanded, but for which their organizations were not intended. If any change were required now, that was not due to the commission of faults in the past, but to the experience which the late war had afforded, that the extension of the aims and objects of the St. John and St. Andrew Societies was desirable, and that new duties should be entrusted to the Central British Red Cross Council. If Colonel Squire could succeed in awakening their profession, not to a sense of the importance of that work, but to the necessity which existed for the medical profession to take its due share in the administration of Red Cross work, and thus to contribute to the military efficiency of the country, he would have done good. With regard to stores, the preparation in peace should include the provision of the more substantial objects coming under that head. Individual effort could provide wholly or in part ambulance carriages, rail or road, equipment of Red Cross ships, and other articles which experience had taught were always essential during great wars. But the first thing to be done was to organize the country and then to define the direction in which efforts should be concentrated. Lastly, he urged the amount of money required to provide for war would be large.

Reply.

Colonel Squire replied that he was much gratified to have started so very interesting a discussion as that to which they had just listened. There had been some tendency to discuss what he might call the Navy and Army Medical Reserve rather than the purely civilian aid which might be offered to the navy or army on the outbreak of war. The Volunteer force was purposely left out of his remarks, for that force on mobilization became part of the army. Surgeon-General Keogh had objected to his suggestion of past errors. The omission to organize aid in readiness for war was, to his mind, such a gigantic error as to entirely justify his reference to errors in the past. Previous organization would not only have made it possible to get men but to have ensured that all who were accepted should have been trained in the duties they would have to undertake. Previous organization would have provided that each hospital would have been supplied with artisans, butchers, etc., as well as nursing orderlies. Colonel Squire said that he was convinced that a purely civilian "buffer" committee to stand between the War Office and those who offered aid was essential; for the official representatives of the Admiralty and War Office on the Central Red Cross Committee would, when war broke out, have their hands full with other duties than the discussion of offers of aid as to the form which such aid should take. He had not brought forward a detailed scheme of organization for discussion at that meeting; it would have been out of place there and then. Before any detailed scheme could hope to receive acceptance or criticism the spirit which recognized its necessity and showed the willingness to carry it out were first required, and that spirit he hoped to arouse. If they were ready for a scheme and his attempt would be acceptable, he was willing to draw up a scheme of organization for civilian aid, or even to act as organizing secretary of such a "buffer" committee as he had suggested.

"FIRST AID" IN CIVIL LIFE IN THE TROPICS, AS ILLUSTRATED BY INDIAN EXPERIENCE.

By Colonel T. H. Hendley, C.I.E., V.D., I.M.S. (ret.),
Hon. Assoc. St. John of Jerusalem.

The subject of "first aid"—and I use the words in their fullest sense, as including some instruction in the elements of sanitation, hygiene, and the prevention of accidents and disease—has engaged my attention since 1873, when I wrote in the *Jodhpore Vernacular Journal* a series of simple articles on common injuries and accidents, as I had reason to believe, with some success. These papers were followed in 1880 by the delivery of two courses of ambulance lectures (too elaborate, as I now think) at railway centres, where there were volunteers; and as the conclusions to which I then came, but from which I have since had little occasion to differ, were stated in a communication which was read in 1883 before the General Assembly of the Knights of St. John of Jerusalem, I will commence by briefly condensing them now.

I observed that, although the number of hospital assistants and native doctors who were competent to treat, with a fair amount of skill, most cases of disease and injury, and who were therefore able to deal with emergencies, was increasing, it was almost impossible to provide such aid, or to open dispensaries in sufficient numbers, for the wants of towns, and much less so for the enormous number of villages in the great Dependency. It seemed to me, therefore, that it was absolutely necessary to teach the people to help themselves, at all events until skilled assistance could be obtained, by giving practical instruction to intelligent Europeans as well as natives. For Europeans I advocated, as a beginning, the training of volunteers, and, in large cities, also of women who were anxious to relieve suffering. I mentioned officials in the Customs and Forest Departments, planters, sportsmen, and railway servants as examples of those to whom the attainment of such knowledge would be especially useful. It was remarked that accidents with machinery, wounds in village quarrels, injuries from wild beasts, snakebite, sunstroke, and cholera outbreaks frequently occurred at long distances from a doctor, and that there was little chance of affording relief or of ensuring recovery without the aid of immediate, though it might be imperfectly skilled, agency. Illustrative cases were given, and reference was made to the value of such works as the *Government of India Manual* or *Medical Vade Mecum* of Sir William Moore. The danger of placing too much reliance upon such measures was not forgotten, but it was urged that this would be very small, whereas, if some slight training were given, life would not infrequently be saved, which would be lost if the friends waited for skilled assistance, which might be long in coming or never come at all. For the natives—although I thought that there was nothing to prevent them from going through a "first-aid" course—it seemed to me that most good would be effected by teaching the students in the public schools and colleges the elements of sanitation, hygiene, anatomy, and physiology, which might lead up to a wish to undergo some tuition in ambulance work at a later stage. Nevertheless, I suggested the practical training of certain native public servants, as, for example, the officers in charge of *tehsils* and *thanas*, or revenue and police posts, to which the public were in the habit of resorting for business purposes and in most difficulties. It was also proposed that short instructions for the immediate treatment of common emergencies should be posted up in such places.

The great importance of this subject may be illustrated by a few statistics. In six of the largest British Provinces of India—namely, Bengal, the Central and United Provinces, Bombay, Madras, and the Punjab—with an aggregate population of about 209 millions and an area of about 707,000 square miles, in the year 1901 there were 1 991 dispensaries, or one in 355 square miles, or one each for over 100,000 persons, at each of which there were actually treated annually an average of about 10 500 new patients. For some of these provinces the figures for police, mission, and railway institutions are included; and, in others, particularly in Bengal, there are numerous private dispensaries belonging to more or less qualified persons, who practise according to the Western systems of medicine. There are also ex-dressers, compounders, and vaccinators, with many of the followers of the indigenous systems of medicine, of a greater or less degree of ignorance from the surgical point of view; nevertheless, the above statistics, and the deductions from them are sufficiently near the truth for my present purpose. The difficulty may, however, be looked at from another point of view, thus for example if each of the dispensaries were at the centre of an equally accessible district, the most remote of the inhabitants would still be over 10½ miles from a medical man. In the native State of Jeypore the utmost we could do with the available funds was to try to place each individual within 15 miles of such assistance: in Jodhpore the radius was 28 miles: in Jaisulmer there was only one hospital in the State, namely, at the capital, the area being 16,000 square miles.

If we reflect upon figures such as these, I think that we must admit that it is necessary to supplement the regular channels of medical aid, and that this can only be effected by giving such a moderate amount of training as can be acquired with ease and safety by persons of ordinary intelligence, as for example, the headmen of the villages of the vast agricultural population of India. This training must, of course, be of the most practical kind.

Many examples occur to me of the mischief which has been done by ignorant efforts to relieve injured persons. I have been frequently called upon to amputate a limb which had

become gangrenous, because a ligature had been left on too long after it had been applied in a case of snakebite. In the native States many people are wounded by what Europeans speak of as Brahmani bulls, and perish from ill-judged interference of the bystanders. Drowning cases are very frequent in all Eastern lands, but in few of these is any attempt made to restore suspended animation. Bones have often to be refractured, or dislocated joints reduced, under great difficulties on account of malpraxis, ignorant treatment, or neglect. *Simple* are often converted into *compound* fractures, by careless or objectionable modes of moving the patient. In the last-named cases what suffering and damage would be prevented if the friends knew that the sufferer should be moved on an old door or on a plank, instead of on a loosely-strung cot, such as is almost the rule in India! How little instruction would have saved many sportsmen, who have bled to death from wounds received whilst engaged in following up large game. In many Indian hospitals the number of patients whose wounds have done badly whose limbs have been lost or whose lives have come to a premature end, to say nothing of those whose sufferings have been seriously increased by ignorant interference, by the application of filthy substances, or by neglect of ordinary cleanliness has been enormous. A widely diffused knowledge of the most elementary principles, such as could be conveyed even to children in primary schools, would suffice to remove most of these evils and to alleviate much distress. My remedies, it will be gathered, are mostly preventive, but I have always endeavoured to increase the number of even slightly trained persons in the East who could apply first aid and without bad results.

Amongst general measures, which were adopted in the State in which I served for nearly a quarter of a century (sufficient time to judge of their value), were the following: Our public vaccinators, who in the cold season operated throughout the country, were employed in turn in the hospital at the capital in the hot months as dressers, and thus were enabled to learn the system of first aid, which they could use with good effect when they again went on tour. These men also formed a reserve for the distribution of drugs in cholera and similar epidemics, and they were given sanitary primers to distribute and explain. Believing, further, that first aid in the treatment of animals was not unworthy of the attention of the physician, and that such aid would create confidence and respect amongst an agricultural community, I supplied all our dispensaries with short manuals on the diseases and injuries of cattle, camels, and other domestic animals, and encouraged our hospital assistants to help the people in cases of the kind. I had gratifying proofs of the utility of this measure.

In Bengal I had opportunities, with other officers, in carrying out some of these ideas on a larger scale, as well as of seeing, if that had been possible, the greater need of supplying first aid. About this time instances occurred on railways in which life had been lost from want of adequate assistance, and the need of supplementing the ordinary medical provision for great gatherings, such as at fairs and pilgrimage centres, had also been referred to in my Triennial Dispensary Report for 1895-7-8, in which, while noting that some departments were provided with medicine chests for use in cases of emergency, I drew attention to the value of systematic training in "first aid," and to the special advantage of teaching it to the police, and to officials on the railways and on the steamboats which ply on the great rivers of Bengal.

In December, 1899, I inquired officially from all civil surgeons whether anything was being done, or had been done, in these matters in their districts, and I also communicated with the railway and steamboat authorities. It was suggested that simple dressings and everything necessary for affording "first aid" should be provided (and also in some cases a few drugs) in trains and steamboats, and at all police stations which were not close to a dispensary, but special stress was laid on the uselessness of these arrangements if the persons in whose charge the articles were placed had not been instructed in the use of them. It was, therefore, proposed that a modified course of instruction in "first aid" should be given to railway guards, and, with the concurrence of the Inspector-General of Police, to police officers of the higher grades, and, perhaps, later on to intelligent head constables, and even to constables. It was suggested that the civil surgeons should endeavour to give the first course of lectures themselves, and that they should hereafter conduct the examinations, although they should allow the hospital assistants, who were in charge of the police hospitals, at a later stage, to carry out the actual work of instructing the men. The syllabus of instruction of the Ambulance Association of St. John was issued for general guidance, but, as it was considered that the course, in some respects, simple though it is, was too elaborate for our purpose, the points which were thought to be most important were printed in italics. Special attention was drawn to the practical work. Five lectures were to be given at not shorter intervals than a week, each of them was to last about an hour, and was to be followed by practical work for about half-an-hour. In all cases, after immediate assistance had been given, it was to be most strongly urged that the patient was to be placed as soon as possible under professional care, and in the classes the utmost stress was laid on not teaching too much.

At the end of 1900 I was able to report that, through the kind co-operation of civil surgeons and police officers, considerable progress had been made, and that some of the police in particular had shown considerable skill and zeal in the matter, and that during the year 300 of them had been instructed, of whom 153 had obtained the certificate of efficiency. On the railways and steamboats some provision was usual, but more general interest was being shown, and the Eastern Bengal State Railway management had even gone a step further by opening classes at different centres, and by arranging for all its guards and other employés to attend the lectures. Continuous progress has been made. Classes for the police have now been opened at nearly all head quarter stations, including the very important one at the Training School for Police Officers at Bhagulpur. In 1901 343 persons were instructed, of whom 164 were granted certificates, and in 1902 the numbers were respectively 546 and 151, the proportion of the latter being somewhat less than before, because many constables were prevented by duty from finishing the course during the period. At the Coronation Durbar, however, Captain Clemesha, I.M.S., the sanitary officer of our camp, instructed 220 men of the Bengal police.

So inadequate is the number of members of the medical profession, both official and non-official, in India to treat all classes of the scattered population in emergencies that it is necessary to use every agency to relieve suffering. For example, in Bengal the supply of medicine chests to village headmen was advocated, and some district authorities have carried out the idea. In other districts (sixteen out of forty-five in 1903) medical men visit large centres on market days. In one river district a travelling medical boat moves up and down the streams, and, as I have already remarked, medicines are distributed in great outbreaks of cholera, and wherever there is a large gathering or reports are sent in of serious epidemics, the local resources are strained to the utmost to cope with the difficulties. Under these circumstances a widespread, even if slight, knowledge of the modes of dealing with such emergencies is of the utmost value. Further, considering that prevention is better than cure, I hold that much of real "first aid" consists in the proper instruction of the young, and for this reason I co operated with the Director of Public Instruction and others in inducing the Senate of the University of Calcutta to encourage training in elementary sanitary science and hygiene by introducing the subject into examinations of all grades, and especially by adding it, unfortunately only as an optional one, to the entrance course. Further effect was given to the decision by preference being accorded, all other things being equal, in appointing teachers under the director, and in accepting youths as medical and engineering students who had passed in the subject. I assisted in drawing up a simple syllabus for this purpose and, at my request, Major Bedford, I.M.S., has prepared a practical manual for the course in which the illustrations are mainly drawn from Oriental sources and are applicable to the conditions of native life. Other manuals have been published from time to time in which consideration has been shown to the matters now under reference.

In 1901 Major (now Lt.-Col.) Yate, Hon. Commissioner of the Ambulance Association of St. John in India, lectured in Calcutta on this subject as part of his general organization scheme for that country. Considerable advance has now been made in Bengal, chiefly in Calcutta, on the well-known lines of that Association, and I am glad that the project seems likely to be put on a permanent footing under such a society, not only because the members of the services are already overworked, but on the ground that undertakings of this kind, which seem to be successful under individual, though zealous, effort, very frequently collapse when that effort is with-

drawn. I have very notably in my mind the success of the ambulance scheme in Bombay twenty or more years ago under the zealous guidance of the late Mr. Harold King, which was followed after his premature, and much to be regretted decease, by a period of inanition if not of complete breakdown. Other isolated efforts have been made from time to time, some of much passing value, such for example as the courses of lectures of Surgeons Bigg and Owen, but few of these have been followed up.

Connected with this subject is the provision of ambulance vehicles and of "first aid" for large cities, and with reference to this point I may add that a few days before I left Calcutta last year I presided over a committee which considered the best means of providing such assistance for that capital.

Here, again, official support is of much value, but I believe that the considerable amount of private zeal which accompanied our efforts will greatly assist in perfecting the scheme. I am rejoiced to find, from Colonel Yate's report for last year, that a good deal has been already done in British India for first aid, as well as in the native States, and that the educational authorities of public as well as of mission schools are sympathetic.

In educational circles it is usually urged that the children are already required to do too much; but I think that all thoughtful persons are of opinion that room should be found, in the very first place, and in all school grades from the very lowest, for practical subjects, and that one of the chief of these is the inculcation of simple knowledge which shall keep the body of the child in health, which shall preserve it when in danger, and which shall make it thoroughly fit for the strain of life. Much of this knowledge may be given in the ordinary reading lessons, with the aid of diagrams and pictures—such, for example, as those of Deyrolle, of Paris, and above all by practical example and teaching of intelligent tutors, who, if properly encouraged, can very soon themselves learn all that is required to enable them to impart useful instruction. I think I have sketched out true "first aid," and one of the first results of such simple, though thorough, training, will be a greater regard for skilled knowledge, and a more serious conviction of the need of resorting to it, thus disposing of another objection which has been advanced against widely spread instruction in the subject.

I conclude by observing that, if life is to be saved under the present conditions of India and the Colonies, we must have a very widely diffused knowledge of this most important matter, and that it follows that even slight knowledge is better than none at all, although there may be occasional mistakes, and therefore some risk of injury.

THE TREATMENT OF DENTAL DISEASE IN THE NAVY.

By Norman G. Bennett, M.A., M.B., B.C., L.D.S.

The influence of dental disease upon general disease is now widely recognized by the medical profession, and consequently the treatment of the teeth is considered a matter of far greater moment than it was but a few years ago. Such being the case, it may be advantageous to discuss the best means of dealing with the great amount of dental disease which exists in the navy. I must confess that, so far as this Section is concerned, I come before you as an outsider; but although a practitioner of dental surgery, I may meet you on common ground as a medical man, and if I venture to hope that I may put before you certain considerations from the dental point of view, I am also confident of gaining from you a more adequate knowledge of the particular requirements of the navy. By these means I think that combination may help to elucidate the problem.

Before proceeding to discuss the broad lines of treatment I may briefly remind you of a few facts in corroboration of my first statement. The general diseases traceable directly or indirectly to dental disease may be conveniently divided into:

1. Local affections within the oral cavity and pharynx.
2. Glandular affections.
3. Gastric and intestinal affections.
4. Affections of the blood.
5. Remote effects due to absorption of bacteria or their toxins.

It is clear that a tooth in which advancing caries has occasioned gangrene of the pulp is a source of septic infection placed in close proximity to an extremely vascular tissue which is unable to protect itself. In other parts of the body such a source of infection will be isolated by the ordinary processes of inflammation, and dealt with in ways to which I need not here refer. In the case of the tooth, however, although the supply of septic material is practically unlimited, the aperture of entrance is very small, so that there is a constant leakage into the very vascular tissue immediately surrounding the apices of the roots. This tissue, the periodontal membrane, is very susceptible to septic irritation, and consequently the tooth tender to the slightest touch is a very familiar object to the dental surgeon.

Should suppuration follow the course described, an alveolar abscess results. In the case of an upper molar, there is risk of infection of the antrum, and secondarily of other sinuses, as the apices of the roots of the teeth may be covered by little more than the lining membrane of the cavity. In the case of the lower jaw, the abscess may track down as far as the thoracic cavity, with disastrous results. Septic fever is no uncommon concomitant, and septicaemia or meningitis may result. Osteitis and necrosis are, of course, frequently associated with alveolar abscess.

Before considering the consequences of absorption into the lymph channels it is necessary to review briefly some other local effects within the mouth and pharynx. Such are stomatitis of various degrees of severity, glossitis, tonsillitis, pharyngitis, otitis, and even post-pharyngeal abscess and meningitis.

One occasionally sees out-patients in whom the septic condition of the mouth seems to have reached a stage in which the great power of resistance of the tissues is completely overcome. The teeth are covered with decomposing organic material, and wherever the mucous membrane comes in contact with them, deep red patches of inflammation appear or ulcers of considerable size. These are the cases that call for active antiseptic treatment, and they are attended with a certain amount of danger.

I now pass on to the second group, consisting of glandular affections. The glands directly affected are the parotid group, receiving lymphatics from the upper teeth, and the submaxillary and superficial glands of the anterior triangles of the neck, to which the lower teeth drain; the latter are the more frequently affected. Occasionally an acute inflammation results from absorption from a septic tooth, but a chronic condition is the more common, and enlarged glands, as every one knows, may be of very long standing. It must not be assumed that such lymphadenitis is always consequent on dental sepsis; enlarged glands occur in conjunction with a healthy dentition, and the absorption may take place through the tonsil. On the other hand, septic teeth are far more common even than enlarged glands in the neck. The chief importance of this subject is in connexion with tuberculous infection. I suppose that, apart from the apices of the lungs, the glands of the neck and the mesenteric glands are the most usual seats of tuberculous infection; they are also, especially the former, the glands which of all the lymphatic glands in the body are peculiarly liable to septic infection; I do not mean an infection sufficiently virulent to produce inflammatory reaction, but a constant slight irritation. The coincidence, if it be admitted, is at least suggestive of the theory that where tuberculous infection of those glands occurs it is most frequently in those whose resistance has been lowered by the effects of septic absorption.

This view receives confirmation by two cases recorded by Starck, and cited by Mr. J. F. Colyer in a recent paper. One of them was a youth, aged 18, previously healthy, who developed tuberculous glands in the neck. Carious molars were present. The glands were removed and the teeth extracted, and tubercle bacilli were found, not only in the glands but in the teeth themselves. In another patient, under the care of Mr. S. F. Rose, referred to by Mr. Stanley Colyer, there was a large abscess in the lower jaw. The suspected tooth was removed and a large abscess sac found attached to the root; at the same time some glands in the neck were removed. The sac was proved to contain tuberculous material and its walls were infiltrated with tubercle; the glands were similarly affected.

The most usual channel is a septic tooth with a dead pulp, but experiments and clinical investigations of Halle support the view that absorption may occur through a living pulp.

Gastric and intestinal affections constitute a very important group. In later life the relationship between various kinds of gastritis and an unhealthy condition of the mouth is so intimate and the effects of the two are so clearly reciprocal

that it is difficult to describe any one set of conditions as typical.

As regards the more remote portions of the alimentary tract, it should be observed that all the organisms—innocuous, beneficent, or pathogenic—found there have obtained access primarily through the mouth, and I think it will be agreed that certain forms of enteritis, especially those of an endemic or epidemic character, are sufficiently vague as to their causation to justify the suggestion that micro-organisms play an important part in their genesis.

No doubt the great prominence attaching to appendicitis in recent years is due largely to more frequent correct diagnosis and more frequent successful surgical interference than was the case fifteen or twenty years ago. At the same time, it is at least open to argument that the frequency of the disease has increased *pari passu* with the greater prevalence of dental disease consequent on the harmful methods of feeding that obtain under the conditions of modern civilization. This remark applies, I think, with peculiar force to children and young adults.

Affections of the blood and remote effects such as septic endocarditis are so far less definitely traced to dental disease; but I may refer you to the work of Dr. William Hunter, Dr. William Ewart, and others, to show that some causal connexion is more than probable. So far I have dealt with disease of septic origin, but there are other forms of a more surgical character such as dental cysts and tumours arising from errors in dental development. I trust, however, that I have said enough on this point to show that dental disease fulfils an important rôle in the origin of other morbid manifestations and to indicate that a considerable proportion of the diseases of the digestive system, and of diseases of a tuberculous character which loom so large in the annual statistics of the health of the navy are probably in part due to this cause.

Now what is the best means of dealing with this state of affairs? I am aware that every naval surgeon receives at Haslar a short course of instruction in dental surgery and that further instruction is received from time to time at general hospitals. These facts are tantamount to an admission by those in authority that dental treatment is necessary. It is impossible, however, to consider the instruction adequate, and I have no doubt that most of those who have received it would be the last to rate their knowledge or skill as being on a par with the possibilities of conservative dentistry at the present day. I may perhaps venture to say that extraction is almost the only dental treatment carried out in the navy. I should be sorry to appear to imply any condemnation of the action of naval surgeons in this respect. I wish rather to point out that effective treatment can only be carried out, as it is for the general public, by those who have received sufficient training to obtain a dental diploma—that is to say, by dental surgeons. Dentists are now appointed to many Poor-law schools, and ten have recently been appointed in the army on account of the value accruing from their services during the South African war. The number is inadequate, but the principle is sound, and there is no reason why the health of Britain's first line of defence should be neglected at its first and most vulnerable point of attack.

I can understand that naval surgeons may be rightly jealous of their privileges and might look askance at the institution of a new order of things or the curtailment of their complete control over the health of the navy, but I think there would be no occasion for friction under a reasonable scheme. It is not suggested that dental surgeons should be appointed to ships. The treatment by naval surgeons is no doubt fully adequate to meet the demands arising on board; but a staff of about twenty dentists appointed one to each of the ten base hospitals abroad, and the remainder to the home hospitals, would, I am sure, be found of great value and would lighten the labours of the naval surgeon, both directly and indirectly. There should, of course, be a system of supervision and inspection by some superior dental officer who would himself be answerable to the heads of the Medical Department. Such dental surgeons would in fact almost exactly fill the position occupied by dental surgeons attached to large general hospitals, and would doubtless work equally harmoniously with the general staff. As regards the hospitals abroad, I think the value of a dentist can hardly be gainsaid. The dilapidations arising in the teeth of naval officers during a three years' stay abroad are only too familiar to the civil dental surgeon. These dilapidations are, as it were, compulsory, for the victim would as a rule be only too glad to avail himself of dental assistance were such to be obtained. What the teeth of the average seaman must be like after a similar course one scarcely likes to think.

It may be held by some, even by those who admit that there is a large amount of general disease arising from neglected teeth, that a more thorough and efficient system of instruction in dental surgery for naval surgeons, and a more complete devotion to dental work on the part of a certain number of medical officers would meet all requirements. A naval surgeon, however, does not join the service to practise dental surgery only, and voluntary efforts on the part of a few, even if sufficiently trained, will never suffice to cope with the present evil. I believe the true remedy lies in the appointment of dental surgeons to base hospitals as I have suggested; there would probably be some difficulty in obtaining men for long periods, but a short-service system similar to that recently instituted for surgeons would almost certainly attract the small number required. I am convinced that the benefits to all branches of the service to be derived from such appointments would be far greater than is generally believed.

The British Dental Association has recently made representations to the Admiralty in favour of such a course as I have sketched, and it is expected that its labours will not prove fruitless; possibly I have not convinced you of the merits of such a scheme, but I hope to learn from the discussion something of the peculiar needs of the navy with which I may not be familiar, and trust also to have an opportunity of meeting such objections as may be raised.

THE VOLUNTEER BRIGADE MEDICAL UNIT:

ITS PERSONNEL, EQUIPMENT, AND TRANSPORT.

By Brigade-Surgeon-Lieutenant-Colonel P. B. GILES, V.D.,

S.M.O. 30th Field Army Brigade; S.M.O. Volunteer Ambulance School of Instruction; Chairman of the Volunteer S.M.O.'s Association.

As the largest volunteer unit is the brigade, it follows that the Volunteer Medical Service has to supply the needs of the three first lines of medical assistance, namely:

1. The regimental.
2. The brigade bearer company.
3. The brigade field hospital.

At present, as a matter of detail, the volunteer medical system has absolutely no provision for providing a *personnel* for a brigade field hospital, and so lines 2 and 3 have to be supplied by No. 2, namely, the brigade bearer company.

Some fifteen years' experience in volunteer brigade camps has convinced me that the idea I have been trying for years to drive into the War Office of having a brigade medical unit is not only the right one, but one which the War Office, after the experience of the late war, now seems inclined to adopt, and which they at the present moment are experimenting upon with the ultimate idea of organizing the relationship of bearer companies and brigade field hospitals in the field. How nearly they have been associated, and how red tape has kept them dual units apart paragraph 703 of Army Medical Regulations shows.

The fusion of these two units will greatly simplify medical arrangements.

For the Royal Army Medical Corps it is purely a matter of expediency.

For the Volunteers it is that of expediency and of finance.

Expediency for both Royal Army Medical Corps and Volunteers, because the fusion of the bearer company and the field hospital into a unit will be advantageous for these reasons:

1. It will lessen arbitrary divisions of almost identical duties.

2. It will place the hitherto second and third lines of medical assistance under one command.

3. It will enable more sick and wounded to be treated.

4. It can be so constituted that it will be available for the brigade as a compact unit, or it can be divided into three sections, each with full *personnel* and equipment pro rata to the force it is attached to, which is a very important point, as so frequently a regiment is detached from a brigade hitherto with no suitable medical *personnel* nor equipment. This difficulty can now be overcome, and the wounded now can be treated by its own brigade medical *personnel*.

5. Last, but not least, greater facilities will be given for the wounded man to be placed under appropriate cover and treatment at the earliest moment possible after being wounded.

All who have had experience in actual war or in the acci-

dents of civil life are unanimous that the ultimate success of treatment is in the ratio to the time the wounded or injured are exposed.

In plain English, though there are many wonderful instances of men with severe and multiple wounds making brilliant recovery after days of exposure upon the field of battle, still there is absolutely no doubt that the sooner the wounded are under cover the more speedily do they become convalescent.

The reason is twofold:

(1) The shock is more speedily got over when men are under cover and wrapped up, appropriate food given, and no secondary transport from a dressing station a long way to the rear to the field hospital.

(2) The moral support the man has when he finds himself in hospital and realizes he has not been left to fall into the enemy's hand, nor the horror of dying alone.

The financial point is most important for the volunteers, for, after fifteen years' experience of a bearer company up to its establishment with all the *personnel* efficient and its staff proficient, I can positively state that this full Government grant under the most favourable conditions is not even a bare living wage.

It is, therefore, not only a question with the volunteer of a *personnel* sufficient to efficiently discharge the duties of a brigade bearer company and field hospital, but it is a question of the actual existence of the Volunteer Medical Service that this brigade medical unit be sanctioned speedily; for at present the fatal *res angusta domi* prevents medical officers taking upon themselves the very heavy financial liability.

Neither do I see, provided they are modelled upon the same lines for the brigade entire and for subdivision when requisite, that the R.A.M.C. and Volunteers must be in peace identical in *personnel* and equipment, for I am certain that the Treasury, though it may fully equip the R.A.M.C. brigade medical units, will shirk keeping the *personnel* up to the establishment in the piping times of peace for these reasons:

1. Economy.

2. The late war proved that adoption of modern weapons much prolonged the front; the present Russo-Japanese attack, copied from the Continental systems of a long front, causes a greater number of casualties, and therefore more medical aid is required.

3. The greater comfort and facility with which the Australians carried their loaded stretchers with side handles cannot be ignored in the future, and to me it seems probable that the stretcher squads of the future will be supplied with these side handles, in which case extra bearers will be required, and we shall see five instead of four to each stretcher.

With this alteration the man in command of the squad can more profitably be better trained in first aid, and should not, except of necessity, act as a bearer. And this opens a point I have always argued for, namely:

That to each squad of regimental stretcher bearers during an action one of the bearer company should be attached, and his duties be the primary rendering of first aid.

All these reasons point to one end—namely, more men are required as bearers, and as bearers *per se* they do not require the careful, exact and expensive training the scientific needs of the R.A.M.C. demand.

The splendid work of Surgeon-General Sir T. Gallwey in Natal, in roughly training the destitute civilian to act as stretcher bearers will no doubt influence the authorities while they are of a thrifty mind to keep the brigade medical unit merely as a skeleton force, and to rely on active service to obtain the actual stretcher bearers from the reserves or from purely civilian sources.

In favour of reservists much can be adduced: former experience in the army, a true appreciation of their real position, and the associations of discipline.

Against the civilian and the improbability of in any future great war sufficient English-speaking men favourable to us, the entire absence of discipline, and the bad effect of paying civilians at a higher rate than the R.A.M.C.

For these reasons I most strongly advocate reservist, and condemn civilian aid to complete the skeleton *personnel* of peace up to war establishment.

But this skeleton *personnel* for the R.A.M.C. in peace does not affect in any material way the volunteer brigade medical unit, for as I have shown, the Treasury must be prepared to increase their *personnel* for these two reasons.

1. That at present there is absolutely no provision made for any *personnel* for brigade field hospitals.

2. Unless more money is provided from the public fund, even the present brigade bearer companies cannot exist, their establishment is too small. So either a larger *personnel* has to be given or a larger grant.

I would, therefore, recommend that the *personnel* of the volunteer brigade medical unit be as follows:

The regimental to consist of one medical officer, one sergeant, one corporal, one orderly, and two men per company, to be trained as at present, and to act in strict accordance with the Army Medical Regulations, Paragraphs 698 and 699, namely: "That in severe actions the regimental medical officer will only afford such temporary aid to the wounded as may be in his power until they are succoured by the bearer companies, and will not undertake any serious surgical operations. The regimental medical officer and the regimental bearers will never lose touch of their unit during an action, but will keep in close proximity to it, and will on no account attempt to carry back the wounded long distances, or in any case beyond or in rear of the collecting station formed by the bearer company."

Here I would strongly suggest two points:

1. That as the new drill regulations "extract from the manual" and "lay down that" No. 4 of each squad be warned that they will "be in command whenever their squad is acting independently" a man of the brigade medical unit be that man. This will ensure better first aid than can be given by regimental stretcher bearers, and will enable the succouring to go on during the time the bearers are taking any succoured man to the collecting station, or sufficiently far to the rear to come in contact with the bearer company.

2. That the regimental stretcher bearers be specially instructed to take all advantage of contour and cover, and made to understand the vital importance of not needlessly exposing themselves to fire. And that when the wounded are exposed to strong fire to either withdraw the patient to a less bullet-searched position, or try and erect some protection when having rendered first aid, and, if possible, having given some hot bovril and covered the wounded with a blanket, either lie down by the patient until he can with comparative safety be removed, or else, if required, succour other wounded.

3. That in all cases a blanket be attached to each stretcher.

4. That the corporal and private be supplied with a spirit lamp, bovril, and water, so as to be able at the earliest possible moment to feed the wounded.

The brigade medical unit having to perform the duties of the second and third lines as a bearer company and a field hospital will have their position and duties materially altered.

(1) As one object is to get the wounded under cover as quickly as possible, unless for some special reason, the field hospital will be brought to the wounded, not the wounded to the field hospital as heretofore, and therefore there will be no dressing station.

(2) That, as I have shown, the front of battle is more prolonged than formerly more stretcher squads are required.

(3) That the introduction of side handles necessitates more bearers, probably there will be five instead of four.

I would suggest that the stretcher portion of a brigade medical unit consist of three instead of, as at present, two sections, each section with a medical officer and a sergeant, that is, each section will have twenty instead of sixteen bearers. And that all stretchers be provided with a blanket and each No. 4 with a spirit lamp and bovril, in addition to the surgical haversack and water cart.

The new collecting stations have a medical officer, one sergeant, one bugler, and four men, with, in addition to the supply of bandages there shall be blankets, a good supply of bovril and a water cart. The four men are intended to load the wagons, and so allow the stretcher squads, either of the brigade medical unit or of the regiment, to return at once to the front.

The question of pitching a tent will be at the discretion of the medical officer at the collecting station. From the collecting station to the field hospital the wounded can be conveyed in ambulances, the medical officer at the collecting station seeing all dressings are correct, that there is no haemorrhage, that fractures are safe, shock treated, and will forward the wounded as he thinks the urgency of their injuries requires. He will, at the end of the action, make himself acquainted that no spot has been overlooked in the search; this, if he has a map, after consultation with the medical officers in charge of the stretcher sections, and the N.C.O. and such will not be difficult, and, all being to his satisfaction, he and his men retire upon their field hospital.

The field hospital of the proposed brigade medical unit will be brought as near the fighting area as possible with safety, close proximity to roads, and, if possible, water will permit. It is intended to serve as the rear of the old second line of assistance and to continue its old function as the third line as well. At this spot will be located the medical officer in command and a *confrère*, a quartermaster, sergeant-major, six sergeants, a bugler, and twenty-three men, who will generally be divided into three sections:

1. The operating.
2. The hospital.
3. The cooking and stores.

The first thing is to set up the operating tent complete, pitch one marquee and get ready soup for the wounded and a meal for the unit.

The question of whether all tents should be pitched or not cannot generally be laid down and must depend upon the magnitude of the action, the number of the wounded and the progress of the brigade.

Should the brigade advance or retreat or be divided into regiments, there must always be a portion of the brigade medical unit ready to follow and be ready for any eventualities.

It is for these reasons that the stretcher sections, the hospital part and the transport, are arranged in three parts which can be modified as circumstances require. Volunteer brigades, as at present constituted, contain no element equivalent to the Army Service Corps, and therefore until such a unit be authorized, the duties of transport must fall upon the unit requiring it, or civilian aid be adopted. So thoroughly unsatisfactory has this importation of civilian aid with its absolute ignorance of camp life, and its absence of any discipline proved, that in the 30th Field Army Brigade (of which I am S.M.O.) an entire company of one of the regiments, 1st V. B. Herefordshire, has been told off for transport and supply; the officers and N.C.O.'s have had a special course of instruction and the easy and efficient way in which they did their duties during the fortnight camp for the brigade, and also did the transport for a regiment of regulars which joined the brigade for some manœuvres, amply justified the experiment.

More recently we have had a Whitsunside route march, when the entire regimental transport, tents, and blankets were conveyed, and always ready at each camping ground.

This is a great advantage to the medical department, for instead of having to wait and take any transport a quartermaster may send, I had my horses and drivers detailed, and the hospital tent struck and packed and ready to march directly the advance sounded.

Still, as this paper is for the volunteer service and not for one brigade only, we must proceed upon regulation, and so in the *personnel* of a brigade medical unit I include those who will be required as drivers and to do the duties furnished to the R.A.M.C. by the Army Service Corps.

Bad and deficient as the equipment for the medical department of a volunteer brigade is, I have no doubt but that a considerable element in this deficiency is the result of indiscriminately asking for too much.

Directly the authorities understand that there is no real unity among the S.M.O.'s of brigades, and that equipment is requisitioned far more by the individual idiosyncrasies of the various S.M.O.'s than for what is either wanted or required, so soon do they stick up their backs and refuse all but the veriest minimum.

Under no circumstances during peace and at home can there be any necessity for all the equipment or transport required on active service abroad, and when S.M.O. after S.M.O. write asking for it, the authorities at once shut up their already very narrow purse strings. Also if there was an invasion the greater part of the volunteer transport must be that of country carts and wagons.

Again, the foolish manner in which unit after unit when refused what was actually requisite, instead of again and again returning to the attack, has collected funds and purchased their own, cannot but have induced the War Office to hold its hand.

I have always been hostile to private expenditure for equipment for instruction, and have seldom failed, when I pressed for needful and requisite articles, to obtain them.

The proper remedy is for all the S.M.O.'s to join the S.M.O.'s Association, and act concurrently and urge that a volunteer medical officer be placed at the War Office.

I have taken, so far, your time in laying down accurately and with reasons the *personnel*, duties, requirements, and adaptability of the brigade medical unit, so that the questions of equipment and transport shall be considered from an actual and definite standpoint.

The minimum equipment for a Volunteer Medical Brigade unit is:

Regimentally.—1 medical field companion, 1 water bottle, 4 surgical haversacks, 4 water bottles, 1 spirit lamp and kettle, 4 stretchers, 4 blankets.

Brigade.—(*a*) The stretcher sections: 12 surgical haversacks, 12 water bottles, 12 spirit lamps and kettles, 12 blankets; (*b*) the collecting station: 1 circular tent, 1 Soyer, 1 field fracture box, 1 field medical companion, a supply of blankets, directing pennons and poles.

Brigade Field Hospitals.—(*a*) 1 operating tent, 2 circular tents, 1 pair of medical and surgical panniers, 1 field fracture box, 1 antiseptic box, flag and posts; (*b*) 3 hospital marquees, 1 Soyer's boiler, 12 field hospital beds, blankets and palliasses, 12 rifles for splints, 150 triangular bandages, 3 cacolets, distinguishing flags and lamps, pole, 4 lanterns.

Transports.—3 ambulance wagons, 3 general service wagons, 3 water carts, 1 Maltese cart, 6 sets of double harness, 9 saddles, 3 pack saddles, 4 sets of single harness.

Horses should be provided for four parades each year, one of which should be the Principal Medical Officer inspection, and also the whole of the period in camp.

Duties: First, as the brigade medical unit is formed to place the second and third lines of medical assistance in the field under one command it is obvious that it will have to perform all the duties of a brigade bearer company and field hospital.

Secondly, as the increase of establishment provides for one to be detailed to each squad of the various regimental stretcher section during action they can be employed to teach first aid, bandaging, etc., and so help the regimental medical officer. Also, they should be detailed to supervise the removal of the regimental daily sick to the field hospital.

Thirdly, the duties of ward orderlies and other hospital requirements.

Fourthly, sanitation being, perhaps, the most important factor for the good health of booths in camp, non-commissioned officers and men should be detailed daily to supervise under the orders of the sanitary medical officer the general sanitary state of the camp, and see that the pioneers do their work efficiently and not in a perfunctory manner.

Practically so much value do I place upon this supervision for the general health that I have for years carried it out with the greatest benefit, and this coming winter course at the Volunteer Ambulance School of Instruction I have devoted a lecture on camp sanitation for the advanced class which consists of men who have obtained A.F.E. 596.

Constitution and Distribution of the Personnel of the Brigade Medical Unit.

Constitution.

Medical Officers	6
Quarter-Master	1
Warrant Officer, Serjeant-Major	1
Serjeants	10
Buglers	2
Men	107
Total	127

Distribution.	Officers.	N.C.O.	Men.
With Regimental stretcher squads	—	—	12
Brigade stretcher sections	3	3	60
Collecting station	1	1	6
On ambulance wagons	—	—	3
Drivers	—	—	4
Operation tent	2	2	6
Hospital	—	4	10
Cooking	1	1	3
Drivers of G.S. wagon batmen	—	—	5
Total	7	11	109

REMINISCENCES OF ST. JOHN AMBULANCE WORK DURING THE PAST 24 YEARS.

WITH SPECIAL REFERENCE TO VOLUNTARY AID FOR THE NAVY AND ARMY IN NATIONAL EMERGENCIES.

By Surgeon-Major GEORGE A. HUTTON, J.P.,
Honorary Organizing Commissioner, St. John Ambulance Association.

I AM well aware that the main object of our deliberations in this Section at our Annual Meeting is that suggestions should

be brought forward that will ensure, as far as possible, an efficient medical and ambulance service in the near future in time of war. But it is occasionally necessary to glance at what has been done in the past as an aid to our efforts in the future. Very briefly, then, I would relate what has been done during the past twenty-four years, in which I have had largely to do with the work of the St. John Ambulance Association. In the year 1880, on the recommendation of the late Sir T. Longmore, I was induced to accept an invitation from Sir Herbert Perrott, Chief Secretary of the Association, to assist in organizing St. John Ambulance work. My first visit was to Whitehaven—the centre of a wide mining district. The meeting was well attended, and having had in early life considerable practical experience of mining accidents in the North of England, and feeling that so little had been done to mitigate the sufferings of the injured by any first aid or ambulance help, I saw clearly there was a great field for useful work everywhere in the instruction under the St. John Ambulance Association. Shortly after this I had occasion to visit Wigan, in Lancashire—the centre of a large colliery and mining district—and there met several of the leaders of these great industries. The result of my visits were that a great number of ambulance classes were formed all over the district, and it was obvious to me that at this early period of our work some organization was needed to keep the ambulance men together and to assist them to retain the knowledge and practice gained in the ambulance classes. This had not been entirely overlooked by the authorities at St. John's Gate, for on the suggestion of that veteran in all ambulance work, Sir John Furley, a system of re-examination had been established extending to two years, when a medallion was granted to those who had passed two re-examinations. Still something more was required if the organization had to be healthily retained, and I then advocated the formation of local ambulance corps, and drew up short rules for their guidance, which were approved by the then Central Executive Committee at St. John's Gate, and which served for several years to regulate these local corps, which had been organized in many parts of the country, especially in our great industrial centres. So largely had these corps increased that in 1890 I was able, with the assistance of many excellent ambulance workers, to organize an ambulance gathering on a large scale in Woollaton Park, near Nottingham, kindly lent by Lord Middleton. Lord Wolseley came specially from London to inspect the various corps from some four midland counties; 1,612 men were assembled, with a contingent of women who had attended the nursing instruction under the St. John Ambulance Association. At the conclusion of the ambulance drill Lord Wolseley, in addressing the gathering, said: "This ambulance corps will, I feel, be of the greatest possible service to the army, and we shall look to the St. John Ambulance Association to help us in our hospitals in a national difficulty. The small corps we have belonging to the army would not be able to do the work, and we should look to you to help us in the army, knowing I am certain that you would do it well, not only so, but do it cordially, and render the assistance from a national point of view."

The work had so far developed that in May, 1893, we were able to take some 400 ambulance men, with a contingent of women nurses holding the nursing certificate of the St. John Ambulance Association, to Windsor for an inspection by our late beloved Queen—the good Queen Victoria—Her Majesty saying at the termination of the ambulance drill that the work had been "exceedingly well done." Yet, with the amount of hard work that had been done, it was imperative if the organization had to be lasting, and especially to be of service in war time, something more should be done, and on the initiation of Sir John Furley the St John Ambulance Brigade was formed, when the various local corps, or as many as liked to join, were united under more minute and extended rules. Various officials were appointed, and under the guidance of Sir E. T. Thackeray, V.C., who had been appointed Chief Commissioner of the Brigade, the country was mapped out into districts under Deputy Commissioners, and it was this organization that enabled the St. John Ambulance Association to supply the War Department with over 2,000 ambulance men to serve in the hospitals and hospital ships during the South African war. It has been said that these men were imperfectly trained, and in the sense of hospital orderlies and nurses for military service this was true, for they had never had any opportunity of acquiring these duties, but on all sides I have heard they performed the duties assigned to them, during the trying period of the war, extremely well, and the services rendered by them proved of the utmost importance to the Army Medical Department. In the report of the South African Commission on hospitals the Commissioners say, "the way in which the orderlies as a body discharged their duties has deservedly been the subject of high praise from many witnesses of experience. Many orderlies displayed great devotion towards their patients, and lost their lives in the faithful discharge of their work." In October, 1902, I submitted a short paper on the formation of an effective reserve of army hospital orderlies to the Central British Red Cross Committee. In this paper I suggested that arrangements might be made with the Army Medical Department for men of the St. John Ambulance Brigade to receive some practical instruction in the duties of hospital orderly in the military hospitals of the various garrison towns, and also that efforts should be made to induce men who had passed through the St. John training to join the Army Hospital Corps—that, in short, from the very large number of men, amounting to some hundreds of thousands, who had attended the St. John classes, I felt, if the ground was properly cultivated, we should become the recruiting medium for good and effective hospital orderlies. I also added that, as far as an additional reserve to fall back upon in a national emergency, such as the South African war, the St. John Ambulance Association might always be relied on to be of much useful service. In a reply which I received to my paper I was informed that the subject had been brought to the notice of the Commander-in-Chief, Lord Roberts, and that it would be taken up when the expansion of the service to meet the needs of war was considered. In 1901 I read a paper before the York Medical Society, and, alluding to this subject, said: "I hope future arrangements may be made with the Army Medical Department for St. John Ambulance men to receive some practical instruction in the duties of hospital orderly in the military hospital of the garrison."

In the early years of my ambulance work I took much interest in promoting first aid and ambulance instruction in our mercantile marine, and in Liverpool, South Shields, and other seaport towns, received considerable encouragement, but from the uncertainty of the service—the short time in port, and a variety of circumstances inseparable from a sea life, it is much more difficult to deal with seamen in giving the instruction than with landsmen. The present Chief Commissioner of the St. John Ambulance Brigade, Dr. Belgrave Ninnis, has drawn up some suggestions on this subject, which deserve careful consideration. Efforts have been recently made to form an auxiliary naval sick berth reserve for the Royal Navy, and Inspector-General H. C. Woods, late Surgeon of the Royal Yacht, was appointed to draw up rules for this service, and it has been laid down that the reserve is formed for the purpose of supplementing the Royal naval sick berth staff in hospitals and afloat in time of national emergency and maritime war by trained ambulance men. Such volunteers may be taken from the St John Ambulance Brigade and St. Andrews Ambulance Corps, and if these bodies are unable within reasonable time to provide the number of men required, then they may be taken from the certificated holders of the St. John Ambulance Association and the St. Andrews Ambulance Association, and also from any other source. In this case, unless the certificates of proficiency in first aid are thoroughly satisfactory, efficiency will be tested by examination. The same rules should govern the voluntary help in supplying hospital orderlies for our land forces in time of national emergency—the sole medium of communication with the War Department being through the Central British Red Cross Committee, and having its offices under the same roof as the Army Medical Department, would be in direct communication with the Director-General of the Army Medical Department.

Such then is a brief outline of what has been done up to the present time, by the St. John Ambulance Association towards contributing to promote first aid and ambulance work. It is a subject, replete with interest, and cannot fail if properly maintained, and it can doubtless be maintained by voluntary effort, to be of the greatest service both in peace and in war.

Professor Czerny has given a sum of £500 to the University of Heidelberg for the foundation of a prize in memory of his father-in-law, the distinguished physician Adolf Kussmaul. The income of the money will be awarded every third year on Kussmaul's birthday, February 22nd, for the best therapeutic work done during the previous three years and published in a German book or periodical.

BRITISH DENTAL ASSOCIATION.

At the annual meeting of the British Dental Association held at Aberdeen last week, a number of papers of interest to the medical profession were read. Abstracts of some of the more important of these are given here.

Physical Degeneration in Relation to the Teeth.

Dr. J. Sim Wallace (London) read a paper on this subject. He said there could be no doubt that the teeth of the present day were not at all equal to those of their ancestors, and the further they went back the more obvious was this truth. They might direct attention to the relation between physical degeneration and the teeth from three points of view. Was the unfortunate state of the teeth a result of general physical deterioration? Had they any substantial evidence that the ill-developed classes had teeth more susceptible to decay than those whose physical development was distinctly good? He ventured to believe that there was not any distinct evidence to support this view. It must, however, be admitted that some eminent authorities considered that vitiation of the oral secretions from general ill health was the chief predisposing cause of dental caries. It was not only by inducing caries, however, that the teeth might be injured. Their use and beauty might be greatly impaired by irregularity. Physical deterioration and irregularities of the teeth were necessarily intimately correlated, because the conditions which gave rise to imperfect development were almost invariably associated with prolonged malnutrition and emaciation. They could not expect physical development to go on satisfactorily so long as the teeth were decaying or were otherwise diseased. Dental caries was simply an outcome of oral indigestion. In addition to this, they must consider the caries cavities, their contents, and their consequences. They could hardly imagine that the products of the numerous bacteria associated with caries could be otherwise than detrimental. The harmful results of decaying teeth might also be brought about by the injury and inflammation inflicted on the gums. This might not be considered serious were it not that the inflammation was apt to spread backwards to the throat, and thus render it susceptible to be attacked by pathogenic micro organisms; it had at least been maintained that several diseases having a local manifestation in the throat were predisposed by such conditions. Diseases such as scarlet fever, diphtheria, whooping-cough, tonsillitis, etc., might be less frequently contracted if the mucous membrane of the throat had not its resistive power enfeebled by the chronic irritation and extension of inflammation engendered by decaying teeth.

With regard to the harmful effects of swallowing the septic products of dead and suppurating roots, physical development was not likely to be satisfactory so long as dead roots were left in the mouth. But the swallowing of septic matter was not the most seriously detrimental effect. It was the direct absorption of septic matter into the blood. This condition was common and chronic. He was probably within the mark in saying that 50 per cent. of growing boys and girls of the working classes in towns had one or more septic roots in their mouths prejudicially affecting their health. The class which was physically most degenerate really suffered more than the others from septic roots. It was true that the upper classes were more subject to dental caries than the lower classes, but they were much more careful to have their teeth attended to. On the other hand it was remarkable how few hospital patients had their teeth attended to regularly, and how few were without several septic roots. He had been struck by the marked superiority of the teeth of those who ate the least soft and refined food, and by the fact that those who had been brought up on and continued to eat natural unrefined food, had a much better digestion than those who ate the most refined and apparently physiologically digestible food. In other words he came to the conclusion that food which demanded efficient mastication was not only best for the teeth, but for the stomach and intestines also. Nothing could have been more natural than to advocate that the food should be refined, pulverized, or ground, so that the digestive juices could be more able to deal with it. It was not anticipated that this refinement would tend to make children swallow their food with little or no mastication. Nor was it expected that by habituating the child to swallow without mastication it would contract the habit of swallowing lumps, when these at times got into its food. Nor was it imagined that the teeth thus deprived of their natural function would decay and give rise to troubles, and that this interference with the first stage of digestion would disturb nutrition and consequent healthy development. It was not anticipated that this disturbance of the health and nutrition of growing children would lead to a craze for more nutritious food. It was not seen that this craze for nutritious food would lead to a still further elimination of the innutritious fibre which demanded mastication, and was commonly associated with natural and unprepared foods; nor that this would appear still further to necessitate refinement of the food, and make it seem a necessary accompaniment of civilization. The lowered vitality associated with weak digestion led to susceptibility to other diseases, one of the most common being adenoids. All possible theories might be advanced against feeding children with food which demanded much mastication, but the system had already been put to the test over and over again. Recently it had been put into deliberate practice in several parts of the kingdom, and from all he heard with the most excellent results. An interesting corroboration of his views was, he said, to be found in the well-known fact that children brought up in towns had generally a worse physique and much worse teeth than country-bred children. This, no doubt, arose from the fact that the town-bred child had meals largely consisting of or supplemented by the products of pastrycooks and confectioners. There was, however, no necessary connexion between town life and dental caries. Notwithstanding the general amelioration in the physical wellbeing and freedom from disease nowadays, there had been an appalling increase of those very diseases which had their origin in the soft, refined, and highly nutritious foods which neither stimulated the muscular activity of the jaws or stomach or intestine. Dental caries was once almost unknown, now, in England at least, it was the most prevalent of all diseases. Indigestion and constipation had become so common that they were almost looked upon as necessary concomitants of civilization. Increased mortality was caused by diarrhoea resulting from undue lodgement and consequent fermentation of food. Appendicitis, from the lodgement of faecal or other matters which the weak or sluggish intestine was unable to pass on, was alarmingly fashionable. Neurasthenia, arising from gastric and intestinal insufficiency, was now quite common, although a generation ago even the name of the disease did not exist. Adenoids had become so common that a new class of surgeons was kept busy with them. Lastly, anaemia and rickets, presumably from septic roots and malassimilation and oral sepsis, had increased. Yet, in spite of these terrible facts, the nutritious pap system of feeding children was daily advocated by intelligent and responsible physicians. The inspection of school children's teeth by a qualified dental surgeon would be of much use; but his belief in the complete success of such inspection as a means of preventing dental troubles was not very great. The teeth were most liable to be attacked by caries before the child went to school, and by the age of 5 many children were amply supplied with carious teeth and septic roots, which seriously jeopardized development, if, indeed, they had not already more or less ruined the constitution. Thus it was that the natural method of combating the troubles would always remain the most important. Mothers ought to know or learn how to rear, and more especially to feed their children. He did not seriously propose this, but he believed it would soon be seriously proposed that before women should be granted a certificate of marriage she would be required to pass an examination on hygiene and dietetics. Another point of importance was the formation of healthy ideals. At present the ideals were weak and unwholesome. A mother's intention or ideal nowadays was to avoid giving her children any food which it would be unable to digest, and so it was kept on what was essentially a milk diet for years after it should have been able to eat practically anything. Unfortunately, this ideal was often apparently encouraged by the medical practitioner. The continual increase of highly-prepared and nutritious foods was a matter to cause grave apprehension to any one who was convinced that it was a necessity to eat the more natural foodstuffs which the alimentary canal, from mouth to anus, had through countless generations become adapted. They knew quite enough of the physiology of digestion to warrant them in the emphatic condemnation of the pap system of feeding children.

Dental Examination in Schools.

Mr. Alfred MacLeod, Lecturer on Elocution in Aberdeen University, read a paper on the necessity of dental examination in schools. He said that numerous as were the instances of adults articulating badly from dental causes, in

the case of school children it was perhaps even more widespread. Speaking generally, one might say quite definitely that in few instances was a child of our Board schools even examined by a dentist until too late. It was his experience that when speech was imperfect in children from dental causes a condition had been reached which urgently demanded the aid of the dentist, and to his knowledge that condition existed in far too numerous instances, and yet nothing was done to amend it. One felt, however, that the main argument for school inspection must rest on the broader basis of the health of and comfort of the individual of the danger to the national life and welfare. In this regard the subject became one of the most important that could engage the attention. What could be more significant to every citizen than the facts lately laid before the country through the investigations of the Royal Commission on Physical Training? Dr. Leslie Mackenzie gave evidence before the Commission that of the 600 Edinburgh children examined only 5 per cent. used a tooth brush; 571 had decayed teeth of the first set and 110 had decayed teeth of the second set. Professor Hay found that of 600 Aberdeen children 12.5 per cent. professed to use a tooth brush daily, while 381, or 63 per cent., had decayed teeth of the first set, and 388, or 65 per cent., had decayed teeth of the second set. It was a matter for great regret that the investigation was not made by dentists, for no matter how eminent medical men might be, it was simply impossible for them to keep pace with the advance of science in dentistry. Among many other valuable statistics given were the results of the investigation made by the British Dental Association. Of 10,000 Poor-law children only 14 per cent. had teeth free from decay, while in high-class schools the state of matters in some respects was worse. A systematic general dental examination would no doubt reveal more exactly all the adverse circumstances and conditions now operating against the young, but it would inevitably lead to the means of alleviation and prevention of these evils. If nothing more were done than to inculcate and enforce cleanliness and the use of a tooth brush, an immense stride towards health would be made.

Referring to the cost of the undertaking, he said that for the inquiry itself it seemed advisable that the ratepayer should not be called upon, and the hope was that the dental profession would in every great centre be willing to undertake the labour involved, without fee. But any subsequent action in the way of amelioration or prevention must be put on a sound financial basis. School boards had already shown themselves alive to the interests of the children, and of the nation in making special provision for the blind and dumb of school age. They had also made provision for developing the physical as well as the mental faculties, and surely when the need of dental skill was clearly exhibited the necessary funds would be found.

International Aspect of Dental Hygiene.

Mr. George Cunningham read a paper on the international aspect of dental hygiene. He indicated generally the position dental hygienic matters occupied in the different countries on the continent of Europe and in America as compared with this country. He dealt with the dental treatment of children in primary and secondary schools, the care of the mouth and teeth of the poorer classes, the dental service in the armies and navies of the world, and the dental care of the working classes. In conclusion, he referred to the necessity of proper public attention being given to dental hygiene. When a dental question was taken up it should be dental experts who should be appointed in connexion with any investigation, and not medical experts. He thought that that association should follow the example of the British Association and the Sanitary Institute, and have popular lectures dealing with the care of the teeth in connexion with their annual meetings.

THE JAPANESE MILITARY MEDICAL SERVICE.

Last week there appeared in these columns a communication made to us by Deputy-Inspector-General Suzuki, Surgeon-in-Chief of Admiral Togo's fleet, in which was given a medical account of some of the naval operations now in course of progress outside Port Arthur. As an appendage to this we give below some extracts from a lecture dealing with the land operations of the Japanese forces in the war of 1894 delivered by Sir William Taylor, now Director-General of the Army Medical Department, upon his return from duty as Military Attaché. The lecture contains vivid descriptions of various incidents witnessed, but its value and interest at the present time lie chiefly in Sir William's able comments upon Japanese methods, and it is these passages which we select for reproduction. After a description of the dressing stations in action and of incidents observed therein, the lecturer said:

They were all in the very best working state of efficiency. There was no hitch anywhere. Every man knew what he had to do and how to do it; he knew where to find everything that he wanted or that he was expected to find when wanted. It was quite evident that each and every man was thoroughly familiar with the name, use, and whereabouts of every article of equipment, and that they had rehearsed many times before on the peaceful parade ground what they were doing now upon the battlefield. They had fully recognized the importance of the work they would some day have to do under difficulties, and they had been made, when its practice was easy, perfect in it. Here was shown the benefit of thorough training of all concerned, and of having been made familiar by frequent and regular practice with every article of equipment and every duty likely to devolve upon them.

After a description of a number of battle incidents illustrative at once of methodical coolness and of dashing courage, the lecturer went on:

But that spirit, which is common to the whole army, is not all that is needed to account for the behaviour of the medical department. It is necessary that the service on which the men are engaged should have the sympathy of others and especially of their comrades of the country. No matter what a man's calling, trade, or profession may be he wants to be encouraged and to feel he has others interested in his work and in sympathy with him, and so must the men of any service. There is nothing so devoid of excitement and interest as playing at being wounded or sick. It is not exhilarating in itself, and therefore requires all the more encouragement from others; but even in their ambulance drills the Japanese were in earnest, and the whole army interested and in sympathy with the medical department. The officers and men of the Japanese army have appreciated that fact, and they therefore give every encouragement to their medical department in learning and practising its duties. The biweekly drills of the bearer columns are perfect in that respect. I had the privilege of seeing several, and the last I saw was while the last force mobilized was waiting at Hiroshima to embark, it was hoped, for Pekin. It was the bearer column of the division of the Imperial Guards. A regiment was on parade and a regular field day and sham fight were gone through. The whole of the medical department of the division was there, the regimental bearers, the bearer column, and companies. Wounded fell here and there in the most realistic way, and were attended to on the spot, and either helped to walk to the dressing station or carried as the case required. The road to the dressing station was indicated by small flags. Here everything was laid out ready as for real service. All the three sections were in perfect working order, the instruments and materials were all ready, the former in sterilizing solution, the medical officers and attendants were in their white aprons; hot coffee, beef tea, and soup were ready, and everything was prepared for actual use. The wounded were brought in and dealt with as their wounds required, and were passed on to the field hospital, which was about 400 yards further on, the road to it also being indicated by direction flags. At the field hospital twenty beds were ready, the reception and operating sections were working, the form of operation was gone through, and the wounded dressed, and the drill was not considered complete until every wounded man had been put to bed, given food, and in some cases even medicine. The whole parade was watched with the greatest interest by officers of every rank, from the royal prince commanding the division to the last-joined third lieutenant. Of course only a few officers were actually on duty, but the others were interested and were voluntary spectators, not one of whom left until the whole thing was over. There need be, there should be, no jealousy between any part of an army and its medical department. There may be rivalry, which amounts to jealousy, among different regiments, but not between any part of an army and its medical staff.

In conversation with the Surgeon-General afterwards I asked whether it was not extravagance (waste) having all the equipment in use, and some of it, such as sterilizing solutions, etc., actually expended. He replied, nothing can be extravagant which is likely to lead to the saving of a Japanese soldier's life. I felt the rebuke. He also told me that it was only with frequent or constant use of the equipment, panniers, and their contents, that the familiarity which is so essential is attained, and moreover, he said, defects and deficiencies in equipment which would be serious if discovered only in the field were occasionally found out at these parades. The men too, he said, are tried, and if they are found not to be thoroughly acquainted with the equipment and efficient in their work, they are sent back to make themselves so, and some one is made to see that they do so.

The foreign officers who saw these parades were very much impressed with the thoroughness with which they were carried out, and the great interest taken in them by officers of every rank, corps, and department in the service at the place. Such interest will put any corps or department on its mettle. The Japanese civilians, as well as the army, are proud of their medical services, however, and they have reason to be. They have encouraged and fostered these services, and the result is what might have been expected. No false economy is allowed to interfere with the benefit to be derived from these drills and parades for instruction. There is no obstacle put in the way of using, and becoming

thoroughly acquainted with, every article of equipment. On the contrary, it is the duty of those in authority to see that every officer and man has daily opportunity of learning his work and of being made familiar with every article of the equipment he may some day have to use to save the lives of officers and soldiers, wounded while fighting their country's battles.

Only in one passage of the lecture is there any but entirely favourable criticism. After speaking of the way in which houses and buildings in captured towns and villages were converted into hospitals the lecturer says:

Notwithstanding their habits of personal cleanliness, their fondness for baths, and the spotless absence of dirt or dust that characterizes their houses in their own country, in the field the surroundings of hospitals were far from what they should have been in this respect.

The wards, operating and dressing rooms, and their furniture were perfectly clean, the instruments and materials aseptic, the aprons of the medical officers and attendants spotlessly white, yet in some cases the immediate surroundings, even the door steps by which the patients were brought into the operating room, were in the most insanitary condition. Here was the one great failure; yet even this, when later cholera appeared among the troops, was attacked most vigorously, and with a display of well directed energy so characteristic of the Japanese officials when the necessity for it is once recognized. Towns in temporary occupation, which were in such an insanitary condition as could only exist, I hope, in China, and were such as to ensure the prevalence of any and every disease due to dirt, were cleansed, drained, and put under such regulations as prevented the appearance of a single case of cholera, or other disease arising from want of proper sanitation. Speaking of cholera, it was not anticipated; certainly for months nothing was done to prevent its advent; even at places like Talienwan, which was the base in the occupied country of the armies in the Liao-tung peninsula through which all reinforcements passed to the army and all invalids were sent back to Japan. But when the disease did appear it was met in force, and a regularly organized establishment started, not only for the treatment of cases, but for the prevention and study of the disease. Many of us have seen how short-handed we have had to meet epidemics of cholera in India, where two or three (one or two I can say from personal experience) medical officers have been left to deal with an epidemic in which twenty to thirty men have died in seven or eight hours. That is not how things were done by the Japanese. When the disease appeared they put forth their strength to combat it at Talienwan. For dealing with cholera alone there was a regular department established, consisting of an administrative office with clerks for records and special reports, and statistics; an officer and staff of gendarmes for inspection and quarantine control; of bearers for carrying those attacked; medical officers for the examination of all suspicious cases, and for establishing quarantine lines and carrying out quarantine regulations on board ship as well as on shore; and besides all these, a bacteriological section for the special study of the disease and the accurate diagnosis of doubtful cases, presided over by an expert, a pupil of Professor Koch. And this all in time of war, in the enemy's country, and after all but the last divisions of the Japanese army had been mobilized and were in the field. One could not help wondering at what seemed to be the inexhaustible resources of the country, and admiring the spirit and quiet determination of its officers.

Sir William picked out a natural capacity for thoroughness as the keynote of Japanese character, and appeared to think that this, coupled with the fact that every Japanese child was brought by his mother to believe that the highest ambition he could attain was that of laying down his life for his country, fully accounted for all he himself had witnessed. It is obvious that whatever surprises the present war may have had for others, it can have had none for Sir William Taylor.

MEDICAL NEWS.

THE Italian Congress on Children's Diseases will hold its fifth meeting at Rome in October.

THE Paris Academy of Sciences has awarded the Le Compte Prize, of the value of £2,000, to M. Blondlot for his researches on the so-called *n* rays.

AMERICAN ELECTROTHERAPEUTIC ASSOCIATION.—The American Electrotherapeutic Association will hold its next annual meeting at St. Louis, September 13th to 15th, 1904, under the presidency of Dr. A. D. Rockwell, of New York.

PAPAL HONOURS FOR PHYSICIANS.—The Pope has conferred on Drs. Amici, Angeli, and Salvatori, of Rome, the Cross of St. Gregory the Great, in recognition of the zealous service rendered by them during twenty years as physicians to the dispensary of the Apostolic Charity Department.

MIDWIVES ACT.—On the request of the Sanitary Committee of the Salop County Council it was recommended that Miss E. L. Frith should be appointed Inspector under the Midwives Act and Lecturer for the Higher Education Committee at a salary of £120 a year and travelling expenses.

CAUSES OF DEATH AMONG MEDICAL PRACTITIONERS.—Recently published statistics show that in Austria heart disease is accountable for by far the largest proportion of deaths among medical practitioners, amounting to 44 per cent. of the whole number. Diseases of the nervous system are responsible for 20 per cent., and an almost equal proportion is attributed to morphinomania. Tuberculosis claims only 7 per cent., a fact which seems to show that medical practitioners practise their own precepts as to the prevention of disease in this particular field of pathology more strictly than in some others.

A CLASSICAL BANQUET.—The medical men of Bedford and neighbourhood recently entertained Dr. G. P. Goldsmith at a complimentary dinner on the occasion of his leaving the town to take up his residence in Norwich. Dr. Rowland H. Coombs was in the chair. The *menu*, with its explanatory commentary on the several dishes writ in choice Latin, gave a classic flavour to the banquet which, however, bore no resemblance to the famous "feast after the manner of the ancients," described by Smollett. We reproduce it for the benefit of collectors of such curiosities:

GEORGIO POCOCK GOLDSMITH.
MEDICINÆ DOCTORI
DUNELM:
MOX RUS DISCESSURO UT ISTA COMMORATIO
FELIX FORTUNATAQUE EVENIAT
PRECANTUR
VIRI EIDEM ARTI, CUI QUONDAM
PRÆFUISSE DEUS EPIDAURIUS PERHIBETUR,
DEDITI.

MENU.

HORS D'ŒUVRES.
Gustus in his.

Soups ... ... { JULIENNE. / TOMATO.
Et bene conditum jus apponatur.

Fish ... ... { SALMON. / TURBOT.
Nec te pæniceo rutilantem viscere, salmo,
Transierim.

Quamvis lata gerat patella rhombum.
Rhombus latior est tamen patella.

Entrée ... ... LAMB CUTLETS.
Vincere tu cupias varia fastidia cæna.

Joint ... ... FILLET OF STEAK.
Ingens accedit stomacho fultura ruenti.

Poultry ... ... { ROAST DUCKLING. SALAD. / ROAST CHICKEN. HAM.
Si Libycæ nobis volucres et Phasides essent
Acciperes, et nunc accipe chortis aves.

Sweets ... ... { DIPLOMATIC PUDDING. / STRAWBERRY CREAM.
Ocius hoc pueri! mellitas ferte placentas.

Jam de melle datur mollique siligine libum.
Nil non perficiet callidus arte cocus.

Carpite, non deerit concreti copia lactis.

Carpite naturæ dulcia fraga decus.

ICE PUDDING.
Solve Nives.

HADDOCK ON TOAST.
Post asellum diaria non sumo.

DESSERT.
En! bellaria sunt parata nobis.

COFFEE.
Ohe! jam satis est.

Hic ubi clara suum spectat Bedfordia pontem,
Luget et amissos celsa columna viros,
Hospitio noto (Cœnum dixere priores)
Excipimur plena læta caterva domo.

A U.C. bis millensimo sexcentesimo
quinquagensimo octavo.
A.D. XIX Kal: Sextil.

TOASTS.

"THE KING."
Ipse suis felix felicibus omnia præstet.
"Our Guest."
Justum ac tenacem propositi virum.

Et bene Messalam sua quisque ad pocula dicat.

Jam bene cœnatum est, nobis jam tempus abire

BRITISH MEDICAL ASSOCIATION.

Subscriptions to the British Medical Association for the year 1904 are now due and should be forwarded by postal order or cheque to the amount of 25s. to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, AUGUST 20TH, 1904.

MEDICINE AND PHARMACY.

A MONTH or two ago we had occasion to congratulate the Pharmaceutical Society of Great Britain upon the possession of a particularly happy spokesman in the person of Mr. S. R. Atkin, who took the chair at its last annual dinner. Similarly we are inclined to think that condolences are due to the Pharmaceutical Conference in view of the fact that this year brings to an end the term of office of a president who has always managed to be interesting even if not perhaps always discreet. The Pharmaceutical Conference is not, as the term might seem to indicate, simply a conference of pharmacists, but a society in itself, though what relationship it holds towards the Pharmaceutical Society of Great Britain and its branches and local analogues, we are not quite sure. In any case, however, its annual meeting is an occasion upon which a number of valuable scientific papers are read, and an address delivered by its president dealing with the principal events of the year, and with any other matters which do, or in the opinion of the speaker should, occupy a prominent place in the thoughts and aspirations of the general body pharmaceutic.

A full abstract of the address delivered this year was published in the BRITISH MEDICAL JOURNAL of August 13th, and those who remember the corresponding address last year at Bristol, will have noted that Mr. Idris did not break fresh ground. The dominant note of both addresses is an earnest appeal to chemists not merely to try to rise higher, but to fit themselves to rise higher by placing themselves, as regards general education, upon the same level as members of the professions of analytical chemistry and of medicine. From our own experience, it would not have occurred to us that any such appeal was particularly necessary, but possibly Mr. Idris is right, and at any rate there is never any harm in extolling the advantage of breadth of general knowledge in addition to depth in certain special subjects.

Upon the scientific side Mr. Idris completed the consideration of the subject of essential oils which he commenced last year. On that occasion he dealt mainly with intentional adulterations; this year he showed that it was to natural adulteration that natural essential oils owe what is, at present, their unconquerable superiority to the corresponding synthetic products. The latter have the defects of their virtues and fail by reason of their purity. In art, of course, and in some other provinces of human activity it has long been recognized that the defects of Nature constitute in certain ways its highest charm, but, as applied to any branch of science, the observation is comparatively new, and eventually may be found to have a profound bearing not only upon problems of pharmacology but upon those of medicine as well.

Mr. Idris also made reference to the vexed question of how the requirements of agriculturists in respect of insecticides are to be met without practically setting at naught the precautions against poisoning established by the Pharmacy Act: he seemed to be of opinion that an insecticide had been discovered which is at once effective and innocuous. The speaker who followed him, Mr. Robinson, the President of the Pharmaceutical Society, within whose province the matter perhaps more directly lies, did not seem disposed to confirm this view, so the problem must be considered one which still awaits solution. No objection, however, seems to have been raised to the views expressed by Mr. Idris with regard to the introduction of the metric system, so it is to be presumed that pharmacists as a body do not anticipate the difficulties in practice such as have been foretold by some of our readers.

The greater portion, however, of the time at his disposal the President devoted to pharmaco-political matters. With these perhaps Mr. Idris is better fitted to deal than with some of the other subjects that came within his purview. Mr. Idris has in his time played many parts, and, having, we believe, abandoned business as a retail chemist many years ago to become a successful manufacturer of table waters, he has of late years proved himself an equally successful politician and sits upon the London County Council as a Progressive. His experience of semi-political matters is therefore recent, and his interest therein so keen that it is natural that his summary of the present position of legislation with regard to pharmacy should be capable and interesting. He brought into review the existing proposals as to the restriction of the sale of poisons and for the protection of chemists from the unfair competition of drug companies only nominally managed by qualified men, and adverted at some length to the need for amendment of the regulations as to death certification. In all these matters the medical profession is in full sympathy with chemists, and is indeed working for reform hand in hand with those who represent them.

We therefore regret the more that Mr. Idris should have reverted to a question which he started, or rather which he thrust into such prominence last year. In making an attack upon the medical profession in respect of dispensing Mr. Idris, we have reason to believe, has on each occasion gone outside his brief in the sense that he has pressed upon his audience opinions which he happens himself to hold strongly rather than given public expression to views held in any marked degree by pharmacists as a body. As regards the latter, no doubt pharmacists would upon general principles be glad to see all dispensing done by members of their own body, but the more level-headed among them probably recognize, as we do, that abandonment of dispensing by medical men is not at present within the sphere of practical politics. If ever circumstances permit, it is certain that most medical practitioners will abandon dispensing with a great sense of relief; but in the meantime, as no advantage can be gained and the subject is a thorny one, its discussion might with advantage be left out of public addresses. Especially is this the case if it can only be approached upon the lines which Mr. Idris has hitherto pursued. No good can come of publicly accusing medical men of being incapable of practising with safety what is after all a very simple art, or of fostering that belief by arrays of picturesque narratives of crowners' quests more

or less irrelevant in regard to the thesis which they are intended to prove. It is very possible that the dispensing of medical men may not be all that it might be, but after all there are many matters in which pharmaceutical affairs stand also in need of amendment, and effective counter-charges might be made. A campaign of mutual recrimination would, however, be discreditable and in every way deplorable; in our opinion the interests of all, not excluding those of the public, are best consulted by leaving each profession to raise its own standards. Men of light and leading ready to cry "Excelsior" are never lacking.

For the rest the precise nature of the future relations between medical men and pharmacists still rests in the lap of the gods, and it is not easy to forecast them. Therapeutics are more than ever in the hot pot, and the something less than 300 years which have elapsed since any differentiation was first established between medicine and pharmacy have seen an enormous number of changes. At that time came into being the apothecaries, who afterwards developed into general practitioners. Less than a century ago came the chemists and druggists, and into what these will develop remains to be seen. Some of us are old enough to remember what they were 30, 40, and 50 years ago, and some of us may fortunately be young enough to see what they will be 50 years hence, while not forgetting what they are now. Notwithstanding the fact that chemists of to-day are, as a body, much more highly educated than their predecessors, the tendency seems to be to throw all real pharmaceutical work into the hands of a few great firms, and so convert the rest either into simple dispensers or into mere vendors of ready-made medicines and of those thousand and one toilet and other preparations with which the modern drug shop is stocked. This development is probably as inevitable as to many it may seem undesirable. The influence of serumtherapy, electro-therapeutics, and other modern forms of treatment has still, however, to make itself felt, and though it does not sound very probable, it may very well be that fifty years hence the public will have ceased to love to dose itself with drugs and the methods of orthodox therapy may have so entirely changed that the chemist of the day will be a very different person from what he is now.

SENSE AND SENSIBILITY IN BUMBLEDOM.

GUARDIANS, being human, have their weaknesses, but these are not generally displayed in the form of an over-refined sentimentalism. The ancient town of Hull is, however, privileged in having among its guardians several men of a high-strung sensibility in regard to the dead which seems to make them somewhat forgetful of the claims of the living. At a meeting of the Board on August 8th, a discussion took place on a resolution moved by Mr. Lawson to the effect that the custom of sending the unclaimed dead bodies of the inmates of the workhouse to the School of Anatomy at Cambridge should be discontinued. Mr. Lawson pointed out that during the past twelve months no fewer than fourteen bodies had been sent from the workhouse to Cambridge for dissection. He admitted that sentiment entered largely into the question, but if they took sentiment out of life then life would not be worth living. The Government would not allow the bodies of criminals to be so disposed of, and why should they, who were the guardians of the poor, allow the bodies of paupers to be treated in such an unseemly manner? The Governor, Mr. S. J. Gower, seconded the resolution. Mr. Farrell and Mr. Templeton urged that the medical school must have bodies from some quarter, and if they did not have the unclaimed bodies, where were they to get bodies from? They could only alleviate human suffering by allowing modern science to have full play. Alderman Cohen supported the resolution, remarking that he had proposed a similar resolution many years ago, and he was sorry it had not been passed. Mr. Runnacles made the inept suggestion that the bodies of suicides should be sent for dissection instead of the bodies of paupers. Mr. E. T. Sharp, J.P., stated that in passing through the infirmary at the workhouse he had seen an elderly man, and, in order to prevent his body being sent to Cambridge when he died, he claimed it, and consequently it was not sent away. The Governor stated that he wanted to be friend of the poor. They were there as the friends and protectors of the poor. Mr. Sharp had mentioned the case of one individual, but he (the Governor) wanted the guardians to be the friends of all the paupers, and thereby carry out the promises they made at election times. Many of the friendless paupers asked that when they died their bodies should not be sent to Cambridge. On a vote being taken, 8 were in favour of the resolution and 20 against.

We congratulate the guardians on not having allowed themselves be led away from the path of good sense by an appeal to a sentiment which belonged to a past age and has now degenerated into a superstition. It is curious to find any one at the present day speaking of the use of unclaimed bodies for dissection as if it implied disregard for the feelings of the poor. The same fallacy was used by the opponents of the Anatomy Act in 1832, and we advise those among the Hull Guardians in whom sense is obscured by sensibility to study the famous speech in which Macaulay exposed its absurdity. He showed that the proposed law was wholly for the benefit of the poor, for if English surgeons were prevented from acquiring a thorough knowledge of their profession it would be the poor, not the rich, who would suffer. "As long," he said, "as there is in France, in Italy, in Germany a single surgeon of eminent skill, a single surgeon who, to use the phrase of the honourable member for Preston [a Mr. Henry Hunt, who had attacked the Bill with great asperity], was addicted to dissection, that surgeon will be in attendance whenever an English nobleman is to be cut for the stone. The higher orders in Europe will always be able to procure the best medical assistance."

The orator went on to point out that if the education of a surgeon should become very expensive; if the fees of surgeons should consequently rise; if the supply of regular surgeons should diminish, the sufferers would not be the rich but the poor in country villages, who would again be left to mountebanks, barbers and old women, to charms and quack medicines. "The honourable gentleman," said Macaulay, "talks of sacrificing the interests of humanity to the interests of science, as if this were a question of squaring the circle or the transit of Venus. This is not a mere question in science; it is not the unprofitable exercise of an ingenious mind; it is a question between health and sickness, between ease and torment, between life and death. Does the honourable gentleman know from what cruel sufferings the improvement of surgical science has rescued our species? I will tell him one story, the first that comes into my head. He may have heard of Leopold, Duke of Austria, the same who imprisoned our Coeur de Lion. Leopold's horse fell

under him and crushed his leg. The surgeons said the limb must be amputated, but none of them knew how to amputate it. Leopold in his agony laid a hatchet on his thigh and ordered his servant to strike with a mallet. The leg was cut off—the Duke died of the gush of blood..... Why, there is not now a bricklayer who falls from a ladder in England who cannot obtain surgical assistance infinitely superior to that which the Sovereign of Austria could command in the twelfth century."

"I think," said Macaulay, in conclusion, "this is a Bill which tends to the good of the people, and which tends especially to the good of the poor. Therefore, I support it. If it is unpopular I am sorry for it. But I shall cheerfully take my share of its unpopularity. For such, I am convinced, ought to be the conduct of those whose object it is not to flatter the people but to serve them."

That speech has a lesson which the sentimentalists of Hull would do well to lay to heart. But it has also a lesson for others who, from motives equally respectable but equally foolish, are striving to hinder the advance of medical science by placing obstacles in the way of research. If they succeed in their misguided endeavour it is the poor, not the rich, who will suffer. The rich will always be able to seek counsel and assistance in countries where sense is not sacrificed to morbid sensibility. But the poor will be left to the mercies of an art divorced from science and therefore unprogressive. The attempt, in the name of philozoic sentimentalism, to divert public support from hospitals is an offence against humanity that must be utterly condemned by every man and woman in whom an excessive love of animals has not destroyed the sense of pity for the sufferings of the poor.

THE REGIUS PROFESSORSHIP OF MEDICINE AT OXFORD.

The King has been pleased to approve the appointment of Dr. William Osler, D.Sc., F.R.S., to be Regius Professor of Medicine in the University of Oxford, in succession to Sir John Burdon Sanderson, Bart. Professor Osler, who is descended from the late Edward Osler, merchant and shipowner, of Falmouth, was born at Bondhead, Ontario, on July 12th, 1849. He was educated at Trinity College School, Port Hope, and at Trinity University, Toronto. He began the study of medicine under the late Dr. Bovell of Toronto, and subsequently entered McGill University, Montreal, where he took the degree of Doctor of Medicine in 1872. He continued his studies at University College, London, and later at Berlin and Vienna. On his return to Canada in 1874 he was appointed to the Chair of the Institutes of Medicine in McGill University. In 1883 he was elected a Fellow of the Royal College of Physicians of London, and he delivered the Gulstonian Lectures at the College in the following year. In October, 1884, he was appointed to the Chair of Clinical Medicine in the University of Pennsylvania, Philadelphia. He held that post until 1889, when he became Professor of the Principles and Practice of Medicine at Johns Hopkins University and Physician to the Johns Hopkins Hospital, Baltimore. He was President of the Canadian Medical Association in 1885. Professor Osler has contributed largely to medical literature. He is the author of *The Principles and Practice of Medicine* (1892), a textbook which has run through several editions in a few years, and has already become a classic. Among his other works are *Cerebral Palsies of Children* (1889), *Chorea and the Choreiform Affections* (1894), *Lectures on Abdominal Tumours* (1895), and *On Angina Pectoris and Allied States* (1897). He is an LL.D. of McGill University, Aberdeen, Edinburgh, and Yale, and a D.C.L. of Trinity University, Toronto. A few weeks ago, on the occasion of the visit of the British Medical Association to Oxford, he received the degree of D.Sc., *honoris causa*, and was described by Professor Love as having been for many years a leading exponent of the principle that the art of medicine should be based upon the most exact scientific knowledge of the day. It would be out of place to dilate on Professor Osler's special fitness for the great position to which he has been appointed by the Sovereign. His title deeds are his works by which his name is honourably known to medical profession throughout the world. He does not come among us as a stranger. We may be allowed to quote what was written of him in the British Medical Journal in 1897: "A son of Canada, not only by birth, but by intellectual training, he has been so much among us at the annual meetings of the British Medical Association and at other times that he has come to be looked upon as one of ourselves. Though adopted in an academic sense, he has not ceased to be a Greater Briton." Professor Osler is therefore not adopted by this country, but claimed as one who belongs to her by natural right. At Oxford, Professor Osler, who unites in his own person the most advanced medical science with the broad general culture of the older physicians, will find a sphere of work most congenial to his intellectual temper. And in him Oxford will have a teacher who by his stimulating influence will add new lustre to her immemorial fame.

THE CHAIR OF PATHOLOGY IN THE UNIVERSITY OF MANCHESTER.

Dr. James Lorrain Smith, Professor of Pathology in Queen's College, Belfast, has been appointed to the Chair of Pathology and Pathological Anatomy in the University of Manchester. The subject of pathology has a double representation in the University of Manchester. Professor A. Sheridan Delépine is Professor of Comparative Pathology and Bacteriology, which is a new Chair founded by the Council of Owens College only a short time before the College was merged in the University. The Chair, to which Professor Lorrain Smith been has appointed, is practically the Chair originally held by Professor Delépine. The rapid growth of the department of bacteriology, and the fact that a large department of public health has grown up in connexion with the University, have made it imperative to increase the provision for instruction and research in pathology on the one hand, and in bacteriology and cognate subjects on the other. We believe the University of Manchester is the first University in the Kingdom to take so important a step.

VACATION SCHOOLS.

We were glad to notice among the recommendations of the London Educational Committee which were adopted at the last meeting of the London County Council before the recess one relating to the establishment of vacation schools. One of the earlier efforts made in this country to establish such "schools" during the holidays was that of Mrs. Humphry Ward in connexion with the Passmore Edwards Settlement. Another holiday school has been opened recently in connexion with the Browning Settlement in Walworth. Both institutions are being recognized and assisted by the London County Council. These vacation schools have been known for some time in American cities, and undoubtedly serve a useful purpose. It is not their object or intention to provide holiday tasks or to carry on the ordinary scholastic curriculum through the holidays. Far from it. To the average tripper, bent on pleasure-seeking and foreign travel, the meaning of the holidays to many of the 800,000 young Londoners in our public schools and to the parents of these youngsters is seldom the subject of even momentary thought. As to these fortunate ones who, by the agency of the Children's Country Holiday Fund and other Fresh Air Funds, a fortnight or three weeks in the country is available, well and good. But what of the unfortunate ones, by no means a few, for whom no such welcome change is at hand? Despite the increase in our public parks, the distribution of these lungs of London

is such that to many of the denizens of the slums it means an expedition to get the children to them. For such the playground is the crowded court or the public street. One recalls Tom Hood's pathetic story of the street arab whose only playthings were three bricks and a dead kitten, and the lot of some of our young barbarians in the mean streets of East and South London is much the same to-day. Deny these children the streets and the fetid tenements are deprived of their chance of aërial diffusion by day of the products of overcrowded humanity by night. Parents long for the reopening of the schools as for the day of release. Indeed we have been assured by teachers of experience in large towns that they have found the holiday times in many instances to have been periods of not only mental and moral but even of physical reaction and deterioration. The object of the vacation schools is to counteract these baneful influences—to supply for these not otherwise better provided for means of physical betterment, gymnastic drill, organized play, country excursions, and a little nature study. All this, in our opinion, is admirable, and well worthy of more general adoption, especially amongst our large urban populations.

THE MEMORIAL TO SIR THOMAS BROWNE.

A movement for the erection of a monument to Sir Thomas Browne at Norwich, the name of which he has made renowned in literature, was started some five years ago. Owing mainly to the financial depression caused by the South African war, the collection of funds for the purpose proved more difficult than was at first anticipated. A substantial sum has now, however, been raised, and the Executive Committee appointed to carry out the scheme has commissioned Mr. Henry Pegram, A.R.A., to make a statue of the famous writer and physician which is to be placed in the Haymarket at Norwich. Mr. Pegram is the sculptor of the fine piece of statuary, "Sibylla Fatidica," which has been bought by the trustees of the Chantrey Bequest for the Tate Gallery. He also executed busts of Sir Harry Johnstone and of Halley, the astronomer, and the bust of Cecil Rhodes which is in the Academy this year. The Executive Committee, which originally numbered sixteen persons, one of whom was the late Sir Frederic Bateman, has now been reduced to twelve. We understand that only a small sum is still needed to cover the expense of the memorial, which is likely to be not only a faithful likeness of Sir Thomas Browne, but also an ornament to the city of his birth. The admirers of the author of *Religio Medici* and *Urn Burial* are numerous, and a mere trifle from each one of them would make up the deficit. Contributions may be sent to the Honorary Secretary of the Committee, Mr. F. R. Eaton, King Street House, Norwich, or to Messrs. Barclay's Bank, Norwich.

CHOLERA IN PERSIA.

It was stated in the British Medical Journal of June 18th (p. 1451) that cholera was spreading to a serious extent in the province of Kermanshah in North-Western Persia. The sanitary and quarantine measures failed to stay the progress of the disease, which followed the pilgrim route; the towns of Hamadan, Sultanabad, Kum, Teheran, and Shiraz all suffered severely from the disease. In Teheran 5,000 deaths are said to have occurred: Ispahan, where the water supply is mostly from wells, practically escaped. Dr. Vaume, of the International Sanitary Board, who was in charge of the quarantine arrangements, succumbed to the disease, as also have several other Europeans. Teheran is now free from the disease with the exception of a few cases in the Jewish quarter. In Shiraz 2,000 deaths have taken place since the outbreak and about 60 deaths per day up to July 30th. Scores of villages have suffered terribly and a correct estimate is impossible. In Kermanshah 1,200 deaths up to the end of June were recorded. Quite 60 per cent. of the population have fled. The *Official Messenger* of St. Petersburg announces the closing of the land frontier of the Transcaspian territory owing to the prevalence of cholera in Persia and Afghanistan. Persons and goods coming from Persia and Afghanistan must be medically inspected at the newly-opened quarantine stations on the frontier.

INTERNATIONAL CONGRESS OF PHYSIOLOGY.

The International Congress of Physiology will, as already stated in the British Medical Journal, hold its sixth meeting in Brussels from August 30th to September 3rd, under the presidentship of Dr. Paul Heger, Professor of Physiology in the University of Brussels. The meetings will be held in the magnificent laboratories erected in the Parc Leopold by M. Solvay, a liberal, generous, and above all discriminative benefactor of science. Already over 150 members from all parts of the academic world have notified their intention to be present. The number of communications and demonstrations already set down is nearly one hundred.

MEDICAL WOMEN IN RUSSIA.

By an imperial ukase recently promulgated in St. Petersburg women who wish to practise medicine are placed on exactly the same footing as men. The way is freely opened to them to obtain not only a licence to practise but the degree of Doctor of Medicine. Women who have obtained the title of doctor at a foreign university are admissible at once to the Russian State Examination. For admission to the Institute for the Education of Medical Women, the possession of a leaving certificate of a recognized girls' school, and the passing of a "not too severe" entrance examination are required. The candidate must not, however, be a Jewess, and she must not be less than 19 nor more than 28 years of age. A Jewess can be admitted only if the number of co-religionists in the Institute does not exceed 3 per cent. of the whole number of students. Applicants for admission to the Institute who have neither home nor relations in St. Petersburg will be compelled to live in a hostel specially established for the purpose.

SANITARY REFORM IN WEST KENT.

If the whole country could be leavened with the spirit which seems to exist in a little corner of West Kent, the progress of sanitation would be as rapid as it is now slow, and the task of the active-minded medical officer of health, who at present has to fight his way step by step, would be no more difficult than that of the driver of a 30 horse power car on a Westrumite-laid track. In the locality in question certain inhabitants became impressed some eighteen months ago with the idea that there was much more typhoid fever than there need be, that the dairy farms in the neighbourhood were anything but "model," and that various streams and watercourses, though excellent imitations of old-fashioned drains, were not otherwise pleasant or pretty; consequently they set to work to try to get things altered. Sanitary reform, however, is never easy, and the task in this case was probably rendered no lighter by the fact that the locality in question, the district of Mottingham and part of Eltham, seems to be within the jurisdiction of several sanitary authorities, and to be reflexly affected by the activity or otherwise of places such as Bromley and Woolwich. The reformers, however, were not daunted by difficulty, and, appeals to the various Caesars proving vain, they formed a private guarantee fund, engaged the services of Professor Simpson, and asked him to inform them what the district must do to be sanitarily saved. He went very thoroughly into matters and in due course handed in an elaborate report, the more important recommendations of which were that certain dairy farms should be put into a sanitary condition, that needful arrangements made to ensure the cleanliness of the milk and of the milking of the cows thereat, and that watercourses should be freed from pollution and the waterlogging of certain parts of the locality prevented by the provision of efficient outlets for storm water and land drainage. Copies of the report having been handed to the various authorities the reformers rested on their oars and awaited results. As these did not seem to them striking, after five months they sent for Professor

Simpson again. He handed in a second report which justified the belief that, though something had been done, it did not amount to much and concluded with a statement that the dairy farms still remained a menace to public health and that other serious nuisances pointed out in the earlier report for the most part still remained. On receipt of this report the reformers decided to hold a meeting, and to invite thereto not only subscribers to the movement but also the general public, in order that the steps taken might become widely known and the whole subject be duly discussed. This meeting took place last month; so far as we are aware there has as yet been no very conclusive result from it; but such was hardly to be expected, and as the reforming movement is no half-hearted one we have no doubt whatever that those who initiated it will eventually effect all they desire in the locality. The matter, however, is of much more than merely local interest. Commonly a well-founded complaint in the profession is that it is almost impossible to get the public to take an intelligent interest in questions of sanitary reform. Here we have an example of the laymen of a community taking upon themselves the trouble and expense of investigating scientifically the sanitary conditions under which they live, and then pointing out to the authorities where they have been remiss in the discharge of their duties. This is very different from the usual attitude of apathy varied, upon the occurrence of an epidemic, by hysterical letters to the press. It is an instance which, when its occurrence becomes better known, may do something to convince communities elsewhere in the country that general sanitation, surface drainage, cleanly farms, and cleanly operations in milking are matters in which they have a direct and individual interest. In the meantime it is an encouragement to the medical profession to go on preaching, for there are obviously people who hear and hear intelligently.

AN EXPERIMENT IN PRISON REFORM.

In the August number of *Sunday at Home*, Miss Charlotte Smith-Rossie, Honorary Lecturer to the Hants County Council and Portsmouth Prison, gives an interesting account of a recent experiment in prison reform. In January of the present year the authorities of Portsmouth Prison allowed her to initiate a course of fortnightly lectures on sanitary subjects in the prison, the best-behaved among the women being selected as students. The initiative was not exactly original, as an attempt of a similar kind had been made at Wormwood Scrubbs. Miss Smith-Rossie points out, however, that there is a vast difference between the prisoners in a penal establishment and those in a short-sentence local prison, to which many women are sent for various petty crimes which in the richer classes would be expiated by a small fine. The former are too often so tainted by evil associations that it is hopeless to make any impression on them, whereas the latter are responsive to teaching as to the dignity of housekeeping and the efficient discharge of the duties of wife and mother. To women of the latter class Miss Charlotte Smith-Rossie gave lectures with practical demonstrations on nursing, the care of children, and domestic hygiene. Most of the women are grossly ignorant, but in a gaol such lectures are attractive as a relief from the monotony of ordinary life. They are also a safeguard against the outbursts of hysteria to which women in prison are peculiarly subject. Miss Smith Rossie's lectures were given gratuitously, and she thinks that the women may have liked the lectures all the more because she was not a regular official. The fact of her not receiving payment, however, was in one way a disadvantage, for she had no power to give marks for good work or to take away marks for trifling; in other words, she could make no attempt to ascertain how much her hearers understood of what they were told. Miss Smith-Rossie deserves the highest praise for having undertaken, from the mere wish to benefit her fellow-creatures, a task which cannot have been altogether a pleasant one. If her example were imitated by other ladies equally able and equally zealous there can be no doubt that a great deal of good could be done. We are strongly of opinion, however, that the work should not be left to private enterprise, and we hope that the Home Office may see its way to develop into a regular system the reforming agency which has been so well initiated by the private effort of Miss Smith-Rossie.

THE TREATMENT OF THE JAPANESE WOUNDED.

In an interesting letter published in the *Morning Post* of August 12th, Mr. J. Gordon Smith, our contemporary's war correspondent, gives an account of a visit which he paid to the military hospitals of Tokio. He says that in very few cases are operations performed on the field. In the main the wounds are dressed antiseptically by the surgeons at the front, and the dressings are not removed until the soldiers are brought to a hospital, where there are perfect arrangements for the treatment of the wounded. The Ei-ju Byoin, or military hospital, and the Sekijuji, or Red Cross hospital, are single-storied buildings with long narrow wards, windows, and rows of beds on either side; the ventilation is excellent, and everything is spotlessly clean. Up to the beginning of July over a thousand sick and wounded had been received at these two hospitals. Of the thousand or thereabouts who have been treated not a man has died at either hospital. Mr. Gordon Smith met Surgeon-Major L. L. Seaman, late Surgeon of the 1st United States Volunteer Engineers at the Sekijuji-sha Byoin. He was much impressed by the success of the Japanese treatment of the wounded. "After what I have seen," he is quoted as saying, "I should hesitate to operate in a single case at the front. The feature of the Japanese surgeon's work is that he leaves the wounds alone, and there are few operations—indeed, almost none at all. Of course, there are some few cases—aneurysms and such things—where the knife is used, but it is used no more than is absolutely necessary. The 'first aid' dressing of the Japanese is very simple. When it is placed on the wound by the surgeon at the front it is not touched again until a hospital is reached. The wounds are usually aseptic; in fact, from observations which I made in the Spanish-American war, the Boer outbreak, and the Boxer rising in China, small-calibre bullet wounds are usually aseptic and heal promptly. The wounds that are jagged and more extensive are caused mostly by the detachment of the jacket and the introduction into the bullet of foreign articles, such as cloth, button, etc., by the lateral impingement of the bullet, or ricochet. I have noticed that the wounds of the Japanese soldiers have very minute orifices, those of exit and entrance being hardly distinguishable from each other in appearance. From what I have seen so far, I most heartily endorse the Japanese system, and feel that the Japanese surgeons will again prove to the medical men of the world that manipulation and probing of such wounds in the field, except in the rarest instances, is surgical malpractice. The principle of leaving the wound alone is the best, and 'first-aid' dressing the best thing that can be used. It is far better to bandage the wound properly and avoid infection than to risk that danger by an operation under such conditions as prevail in the field. The Japanese are ever apt pupils, and they are following well the examples set by Lister and Pasteur, to whom military surgery owes its greatest debt. It was those famous doctors who simplified its labours and taught the great lesson of non-interference. The soldier who falls on the battlefield from the effects of a ball passing through any but a vital part of his anatomy and who has a 'first-aid' bandage promptly applied, and is then transferred to a general hospital where the Roentgen rays and the principles of asepsis and antisepsis can be utilized, has a far greater chance of recovery than when his wounds are treated on the field. In the war with Spain there were 95.1 per cent. of recoveries, while 4.9 per cent. died as a result of following these conservative methods. I believe the Japanese have even better results." "To my mind," Dr. Seaman added, "the ration issued to the Japanese soldier has much to do

with his immunity from suppurative conditions following serious injury. The freedom of the constitution of the Japanese soldier from inflammatory conditions or urea is largely the result of his diet—that of rice, fish, and a simple vegetable. The soldier's ration of rice, I am informed, is six 'go,' or about 36 oz. daily."

MEDICAL INSPECTION OF SHIPS.

AT a meeting of the Manchester Port Sanitary Authority on August 8th Dr. Pringle, medical officer, reported that during the month of July he inspected 298 vessels. Of this number 272 were British and 26 were foreign. In 143 cases defects or insanitary conditions were found. The nationality of these vessels was as follows: British, 130; Norwegian, 6; German, 3; Swedish, 1; Danish, 1; and French, 2. The defects in many cases were such as might easily be remedied. In 49 instances the ventilation was declared inefficient and the ventilators defective. In one case the forecastle was certified for four but was occupied by six persons. With regard to the nationalities of the crews affected by the insanitary conditions, Dr. Pringle stated that the full number was 3,833; of these, 3,356 were British, 214 were Norwegian, 92 were Lascars, 72 were Swedish, 63 were German, 23 were Danish, and 10 were French. Dr. Pringle added that at last it seemed as if some steps were to be taken for the proper supervision of the accommodation of the sailor. At the meeting of the Sanitary Institute in Manchester in 1902 he suggested that port sanitary authorities should have the same powers over ships, both during construction and afterwards, as urban authorities had over houses. A resolution adopted at the meeting of the Sanitary Institute at Glasgow this year showed that the official mind at least realized the justice and necessity for the reform indicated. The resolution which was adopted unanimously was to the following effect:—"In consideration of the insanitary condition of the mercantile marine, this Section of the Sanitary Congress is of opinion that the control of the sanitary arrangements on board ship, both during and after construction, should be vested in port sanitary authorities, and that medical inspectorships for shipping should be created on the staffs of the Local Government Boards of England, Scotland, and Ireland to supervise all suggestions from such port authorities for the consideration and approval of the Board, and the Section recommends the Council of the Institute to bring the proposition under the notice of the proper authorities." Mr. Hassall said he had had considerable experience of ships, and quite endorsed Dr. Pringle's view as to the necessity of improving the seamen's quarters. He had found that the dirtiest part of a ship was usually the forecastle, where the men had to sleep. Dr. Dearden said that Dr. Pringle was certainly entitled to the credit of being the first to take up this question in public.

THE WAR AGAINST DISEASE IN THE PHILIPPINES.

THE work of the United States Bureau of Government Laboratories of the Philippine Islands, as shown by reports received at the Bureau of Insular Affairs, War Department, covers a large amount of useful work. A new building, adapted to the needs of the Bureau, is now near completion. This will bring the scientific work of the insular government practically under one roof. Provision has been made for housing the branches of chemistry, bacteriology, pathology, botany and entomology and for preparing prophylactic and curative serums. An ingenious method has been employed for securing an adequate gas supply. Oriental coals are deficient in gas-producing qualities, and the importation of coal from Europe or America would be too expensive; even gasolene, which is sometimes used for the purpose, was found to be unsatisfactory. The plan of preparing gas from cocoanut oil, a native product, was therefore adopted. Strong cast iron retorts are brought to a red heat in furnaces and the cocoanut oil is then slowly fed into them, thus producing a very high quality of illuminating gas, free from smoke and tar. The struggle waged by the Bureau against rinderpest, which threatened to sweep the islands of draught animals, was eminently successful, and the veterinarians now have a herd of about seventy-five animals in the rinderpest serum herd which serve as a source of supply of serum for the innoculation of non-immune herds. The demand for vaccine virus has been very great, for until the advent of the Americans no systematic effort had ever been made to vaccinate the people of the islands, and small pox was an ever-present scourge. A large number of calves were purchased for the purpose of preparing the virus, and then sold to stock growers. The laboratory reports that a case of tuberculosis was never found in the course of examination of calves destined to be used for the cultivation of the vaccine virus. A plague prophylactic has also been furnished to the Board of Health in sufficient quantities, and its intelligent employment has practically freed the islands from this disease. The cholera epidemic, which began early in 1902, threw so large a burden of routine work on the laboratory that it interfered with much original investigation undertaken. The biological laboratory is investigating human diseases, and has in preparation a work on a method of protective inoculation against Asiatic cholera and on amoebic dysentery. The Philippine Commission, desiring that the laboratory be of the greatest possible economic benefit to the people of the islands, allows the general public, for reasonable fixed charges, to obtain analytical and diagnostic work from the Bureau. As a result, both the public and the other branches of the Government have obtained analytical results of all kinds and of the highest scientific accuracy. Fifteen bulletins have been published by the laboratory on medical, veterinary, and botanical subjects, some of which have excited wide attention. On the whole, the record of the first year's work of the laboratories is one that reflects credit on the Government of the islands, and the men who have devoted themselves to scientific research.

PAN-AMERICAN MEDICAL CONGRESS.

THE Pan-American Congress, which owes its inception to the late Dr. William Pepper, of Philadelphia, Dr. Charles A. L. Reed, of Cincinnati, and others, meets every three years. The first meeting was held at Washington, September, 1893, the second in Mexico in 1896. The third was to have been held in Venezuela in 1899, but had to be abandoned on account of the disturbed state of that country. The venue was changed to Cuba, but again had to be postponed until 1901 on account of the prevalence of fever on that island. Panama is not unlikely to be chosen as the place of meeting for the next congress.

THE MEDICAL PROFESSION AND LEGISLATION IN AMERICA.

THE medical and dental professions of Chicago have agreed that all questions of legislation and larger public policy relating to the affairs of the two professions shall be referred to a Committee which has been designated the Committee on Public Relations, and consists of ten members, five being from each profession. There will be an annual meeting of the Committee for the purpose of electing a chairman and a secretary, and thus preserving continuity in its organization. Special meetings may be called from time to time by the chairman or by any two members. Any question of public policy or public relation affecting either the medical or dental profession, or of legislation affecting either of them, directly or indirectly, may be referred to this Committee, and it will be the duty of the Committee to consider the matter carefully. The Committee will also have the power to recommend either specific action or general attitude to the societies from which the members come as delegates.

INTERNATIONAL CONGRESS OF HOME PROTECTION OF INFANTS.

THE first International Congress of Education and Home Protection of Infants will be held in connexion with the Universal Exposition at Liége in September, 1905. The work of the Congress is divided among four sections: 1. Study of Childhood. 2. Education of Children:

(*a*) General questions, (*b*) education by parents at home, (*c*) collaboration of the family with the school, (*d*) education in the family after the school period. 3. Abnormal Children. 4. Various lines of work relative to Childhood. The Presidents are M. Jules van der Heuvel, Minister of Justice; M. Henri Delvaux, Member of the Chamber of Representatives: M. Emile Dupont, Vice-President of the Senate. Communications should be addressed to the Corresponding Secretary, M. Pien, 44, rue Rubens, Brussels.

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.

This institute was founded in 1901 by Mr. John D. Rockefeller for the purpose of promoting original research into the causes and treatment of disease. Pending the completion of its organization and the erection of its buildings the directors of the institute have employed the funds at their disposal in making grants to scientists engaged on research in various laboratories throughout the country. The results of these researches have already been published in various medical periodicals, and have now been reprinted by the institute in volume form.[1] These reprints contain an interesting article by Professor Abbott and Dr. Gildersleeve on the etiological significance of the acid-resisting group of bacteria and the evidence in favour of their botanical relation to bacillus tuberculosis. The most important result at which these authors arrive is that, though other acid-fast bacilli may cause in rabbits and guinea-pigs nodular lesions suggestive of tubercles, none of these organisms are capable, when inoculated into hogs or calves, either by the subcutaneous, the intravenous, or the intrapulmonary method, of producing lesions in any way resembling those of true tuberculosis. There are two articles on agglutination phenomena by Professor Theobald Smith, and several interesting articles on dysentery by a variety of authors.

PROFESSIONAL SECRECY.

The question whether a medical practitioner incurs liability if he disclose his patient's confidences not long ago came up for consideration in a Scottish court. It is now a matter of common knowledge that a medical man is privileged when he makes disclosures of this kind in the witness-box: the case in question, however, would seem to supply authority for the proposition that the privilege does not extend to communications made to the party or his solicitor. It appears that the pursuer, an Edinburgh lady, consulted the defendant, a well-known medical man, in connexion with an action for judicial separation which she was about to bring against her husband. The defendant was not called as a witness by the pursuer in the separation action, but, on the contrary, was called and appeared as a witness on behalf of the husband, the defendant in the separation case. The pursuer then brought an action against the medical man, in which she averred that, in breach of the contract of confidential employment between them, he had communicated to the pursuer's husband and his agent and counsel the information obtained by him from his examination of her, and had made certain slanderous statements to them regarding her: further, that he had appeared at the trial of the separation case, and given evidence on the husband's behalf, using the information he had so acquired. Lord Kincairney refused the two issues relative to the evidence given in court, holding that a medical man enjoyed absolute privilege in the witness-box, but he allowed the two other issues. In allowing an issue for breach of confidentiality, Lord Kincairney followed the case of A. B. *v.* C. D. (1851), 14 D 177, where the court held that secrecy was an essential condition of the contract between a medical man and his employer, and that breach of this secrecy afforded a relevant ground for an action of damages. In allowing the issue of slander Lord Kincairney in effect held that the immunity enjoyed by witnesses in the box did not extend to statements made to a party's agent before the trial, and indicative of the evidence which the witness would give at the trial. While this is the state of the law it seems a little hard that if a medical practitioner acting in accordance with the dictates of etiquette, declines to give evidence which might in any way prejudice his patient he should himself be prejudiced in any way. Another Scottish case may be referred to in illustration of this. A medical man was insured against blood poisoning resulting from accident which was "capable of direct proof." On August 14th he cut his finger while operating on a patient; in four days his finger was inflamed; on August 26th the sore had assumed the characteristics of a primary syphilitic sore, and in September secondary symptoms were apparent. The place of inoculation was the wound. This much was proved. The medical man, sued on the policy, proved the facts above stated, and deposed that he was inoculated at the operation on the 14th, that he had no suspicion then that the patient had syphilis; but that since, from reasons apart from his own condition (he stated them) he was of opinion that she had syphilis on the 14th. He refused to disclose the patient's name, as a breach of etiquette, and did not examine another medical witness who, he said, had previously attended this patient, and knew that she had suffered from syphilis. It was decided that he had failed to prove that the patient was in a condition to inoculate him. (A. B. *v.* Northern Accident Assurance Company, 1896, 24 R., 25-8.)

[1] *Studies from the Rockefeller Institute for Medical Research.* Reprints, vol. I, 1904.

ANTIRABIC VACCINATION AT THE PASTEUR INSTITUTE.

A report by M. J. Viala, published in the *Annales de l'Institut Pasteur* of June 25th, shows that during the year 1903 the number of persons who underwent the antirabic treatment at the Institute was 630. Of these 4 died of hydrophobia, giving a total mortality-rate of 0.65 per cent. In two of these cases the disease manifested itself in less than fifteen days from the termination of the course of treatment, and on that ground should not be included in the statistics. The amended rate is therefore 0.32 per cent. It is pointed out that the number of patients treated in 1903 is smaller than in any previous year since the institute has been at work. This is attributable to two causes: first, the establishment of antirabic services at Lyons, Marseilles, Bordeaux, Lille, and Montpellier; and secondly, the measures taken by the prefecture of police for the protection of the public against stray dogs. These measures, although imperfect, produce an appreciable effect in diminishing the prevalence of rabies as long as they are strictly carried out. As soon as they are given up cases of the disease increase in the Seine Department. This has been observed in the present year.

A large hospital is to be erected in Philadelphia for the study of cancer and allied diseases.

The American Medical Association will hold its next annual meeting at Portland, Oregon, on July 11th to 14th, 1905.

The General Council of the Seine Department has under consideration a scheme for the establishment of epileptic "colonies."

The King of Greece has conferred the Gold Cross of the Royal Order of the Saviour upon Sir William Bennett, K.C.V.O., F.R.C.S., Senior Surgeon to St. George's Hospital.

The United States Secretary for War is said to be considering the advisability of appropriating a sum of £80,000 for the purchase of land in the District of Columbia on which to build a general army hospital.

The Italian Minister of the Interior has sent a circular to all prefects of the kingdom sanctioning the gratuitous supply of quinine by the communes to poor inhabitants of malarious districts. The drug is to be distributed for therapeutic as well as for prophylactic use.

The Paris Municipal Council has voted a grant of £120 to Professor Grancher in furtherance of his researches as to the means of preventing tuberculosis in schools.

The late Dr. Nathan S. Davis, the "true begetter" of the American Medical Association, has left estate valued at £7,800, of which £5,000 is real estate. The homestead is bequeathed to his widow, the library to his son, and a perpetual scholarship in North-Western University to his grandson, Frank H. Davis.

It is stated that Drs. Ott and Hirsch, the two physicians in attendance on the Czarina during her recent confinement, received a special fee of 100,000 roubles in honour of the birth of an heir to the Russian throne. The ordinary fee is 25,000 roubles.

Three Protestant missions, two of which are American and the remaining one English, have decided to establish a medical school at Peking. Students of all religions will be admitted. The cost is estimated at a quarter of a million of crowns; of this sum the Dowager Empress has promised to give 35,000 crowns.

The foundation stone of the large hospital of the English Blue Nuns on the Coelian Hill in Rome will be laid by Cardinal Respighi in October. The institution is under the patronage of the Duke and Duchess of Norfolk, the Duchess of Newcastle, Cardinal Merry del Val, and Archbishop Bourne. The hospital will be put under British protection.

A few weeks ago we called attention to a remarkable article in which Dr. Jacoby, Medical Superintendent of the Provincial Lunatic Asylum of Orel in Russia, urged the need of special provision for soldiers and sailors on active service suffering from mental derangement. His appeal has not been made in vain, for it is announced that, owing to the many cases of lunacy which have occurred at the front, the Russian military administration is about to organize three new hospitals at Chita, Irkutsk, and Kharbin, specially intended for soldiers who have become insane during the war.

The Commission for the Investigation of Pneumonia in New York, of which mention was made in the British Medical Journal of August 13th, will consist of the following well-known physicians: Dr. William Osler and Dr. William H. Welch, of Johns Hopkins University; Dr. Edward G. Janeway, of New York University; Dr. J. Mitchell Prudden and Dr. L. Emmett Holt, of the New York College of Physicians and Surgeons; Dr. Frank Billings, of the Rush Medical College of Chicago; Dr. John H. Musser, of the University of Pennsylvania; and Dr. Theobald Smith, of Harvard.

MEDICAL NOTES IN PARLIAMENT.

[From our Lobby Correspondent.]

Sanitary Reorganization for the Army.—Sir Gilbert Parker asked the Secretary of State for War whether a scheme of sanitary reorganization had yet been prepared for the army or proposed by the Medical Advisory Board; if so, whether there was included in it the sterilization of all fluids employed as drinks at manœuvres, on service abroad, and during active service, and by what means this sterilization was to be secured; whether steps had been taken to secure the instruction, practical training, and examination of non-medical officers of all ranks, in their respective units or commands, in methods of camp sanitation, especially with a view to the prevention of enteric fever, dysentery, and cholera; and whether, after such training and examination, the comparative responsibility of such non medical officers for the occurrence of these diseases in their respective commands or units was to be recognized. Mr. Bromley-Davenport, replying for the Secretary of State, said that the Board recommended the appointment of specialist sanitary officers to army corps and commands, and there were eleven of these appointments at home and eight in Egypt and Colonies, in addition to the five already existing in India. Instructions regarding the sterilization of all fluids employed as drinks which are applicable to manœuvres, service abroad, and active service had been included in the manual of combined training; heat, and in some instances filtration, were the means recommended. Lectures were regularly given to cadets at Sandhurst and Woolwich, and a more advanced course in military hygiene was provided for officers at the Staff College. Instructions in hygienic matters were also given by the specialist sanitary officers. The regulations were also being revised in the direction of devolving more responsibility upon non-medical officers in the supervision of sanitary services in barracks and camps.

Education and Physical Degeneracy.—When the report of the vote for over twelve millions for the Board of Education came on last week, Sir John Gorst called attention to the report of the Committee on the degeneracy of the race so far as it related to children in elementary schools. He regretted that the Committee was exclusively an official committee, and pointed out that it would have been well if some representative of the working classes and a woman had served on it. The fact that it was purely official, however, made the report the more astounding. The first recommendation was that teachers should be qualified to teach the children the fatal effect of alcohol on physical efficiency. The teachers were to become temperance missionaries. He thought the syllabus might be lightened of some subjects to admit this vital one with great advantage. He referred also to the proposals as regards teaching the opportunities and resources of rural life and instruction in cookery. He pressed for early attention to these recommendations. He regretted not to find in the report strong recommendations as to the provision of fresh air in schools, and said no school ought to have a public grant unless it were properly ventilated. As regards feeding the children, he quoted Dr. Eicholtz to the effect that in one school 90 per cent. of the children were physically unfit for their school work, and that 33 per cent. required feeding during six months in the year. Even the cautious official Committee went the length of suggesting that municipal aid might be invoked to feed the children. He pressed for the legislation necessary to do this. Sir William Anson in his reply dealt sympathetically with these several points, and said it might be necessary to have special schools for underfed children in certain poor districts, and he approved of the instruction of teachers in the laws of health so that the children might learn the subjects referred to. Mr. Crooks opposed the suggestion of special schools for underfed children. There must be no invidious distinction, and no attempt to place a badge of poverty on the children. Mr. Bryce, Sir William Hart Dyke, and others spoke, and the vote was agreed to without a division.

The Shop Hours Bill passed all its stages in the Commons in the early hours of Thursday in last week. There was a brisk discussion on the report stage, and amendments to exempt small shops and confectioners were rejected. The third reading was passed without debate. In the Lords the Bill met with opposition. The fact was the Lords were put out by the hard work thrown upon them during the last week and were determined to make a protest. Lord Wemyss moved an amendment to reject the Bill as it interfered with the working hours of full grown men. The Duke of Northumberland made a protest saying the Bill might have come before them months ago if proper arrangements had been made. Lord Balfour said there would be no improvement in the conduct of business till their Lordships went on strike. The Bill finally was read a second time by a majority of 19, and the remaining stages were not opposed.

Nuns as Nurses.—Mr. Sloan asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that at the meeting of the Newry Board of Guardians three nuns from the convent in Wexford were appointed as nurses to Newry Workhouse; if he could say where these nurses were trained and what was their qualification; and why these appointments were given to members of a religious order. Mr. Wyndham answered that three nuns, who were employed in the workhouse infirmary, had recently resigned, and the guardians had elected three other nuns in their places. The latter had had several years' experience as nurses in union infirmaries, including that at Wexford. Protestant patients at Newry were in charge of a Protestant nurse.

Small-pox in Armagh.—Mr. Lonsdale asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that there had been a sudden outbreak of small-pox in the city of Armagh, and that the efforts of the local authorities to check the spread of the disease were being hampered by the failure of the Local Government Board to furnish an adequate supply of vaccine lymph; and whether he would take immediate steps to remedy this deficiency. Mr. Wyndham replied that an outbreak of small-pox had occurred in Armagh. There had been no failure on the part of the Local Government Board to send an adequate supply of lymph. The Board forwarded 1,500 tubes between August 4th and 8th, and would continue to supply as much as might be required.

Excessive Hours of Labour.—Mr. Talbot asked the Secretary of State for the Home Department whether his attention had been called to a statement in the report of the principal lady inspector of factories (p. 237 of Annual Report for 1903) in which the magistrate was said to have described the case of a defendant charged with employing dressmakers for twenty-four consecutive hours, with under two hours' break for meals, as the very worst case he had ever had before him, and to have stated that he had never heard anything like it since the Factory Act had been in operation; and, if so, would he say what penalty was inflicted for this offence, and whether any security has been taken against the possibility of its recurrence. Mr. Secretary Akers Douglas answered that he was aware of the case referred to in the question. The penalties imposed by the magistrate amounted to £17 and the costs to £1 12s., eight informations being laid by the inspector. There was no power under the Act to take security from the occupier against a repetition of the offence, but the workshop would be kept under observation, and he hoped that the censure of the magistrate, together with the heavy penalty imposed, would act as a deterrent.

Sulphuric Acid, Arsenic and Glucose.—Mr. Kilbride asked the Chancellor of the Exchequer whether his attention had been called to the results to public health of the use of sulphuric acid in the manufacture of glucose, afterwards resulting in beer poisoning; and as sulphuric acid was used in the manufacture of patent spirit from molasses, would steps be taken by the excise authorities or the Local Government Board to prevent this product being sold to the public as genuine whisky. Mr. Austen Chamberlain said that his attention and that of his advisers had for a long time been directed to this matter. A Royal Commission was appointed in 1901 to inquire into arsenical poisoning from the consumption of beer and other articles of food and drink, and issued its final report last November. The President of the Local Government Board and himself were considering whether in the public interest any further legal powers should be given to the Departments concerned. The Board of Inland Revenue had not under the present law any control over the sale of patent spirits made from molasses, which had been inverted by the use of sulphuric acid; and he did not anticipate that it would be necessary to give it any such power. There was no evidence that arsenic or other similar poison had been found in patent spirit, and he was advised that even if such poison existed in any material such as molasses or malt before distillation, it would not be found in distilled spirit.

Pauperism and Death-Rates.—On Friday last Sir Walter Foster moved for and obtained a return showing for each Poor-law Union in London and the Poor-law Unions of Manchester, Liverpool, Birmingham, Leeds, Sheffield, and Bristol, respectively (1) the population according to the census of 1901; (2) the death-rate of persons at all ages per 1,000 of the estimated population for the ten years from 1891 to 1900; (3) the death-rate of infants under one year of age per 1,000 births for the ten years from 1891 to 1900; (4) the ratio of paupers relieved on January 1st, 1901, per 1,000 of population (Census 1901); and (5) the ratio of cost of relief for year ended Ladyday, 1901, per head of population (Census 1901). The return will give separately indoor paupers, including insane in workhouse, and vagrants, and the outdoor paupers, the cost of outdoor relief and the total expenditure on relief of the poor.

The Appropriation Bill, which marks the ending of the Session, and affords, as the final vote for money, the last opportunity for raising grievances, did not this year produce much discussion of special interest. Sir Charles Dilke once more referred to the conditions of labour in the Army Clothing Factory, and recalled the circumstances connected with the death of a worker named Alice Wright. The promises which were made to a deputation by the War Office, he complained, were not carried out. Mr. Bromley Davenport, replying later in the debate, objected to any outside authority, such as a trades union, being allowed to interfere by making representations on behalf of the workers, and said their representatives could always do so. The case of the worker mentioned, he argued, had been overstated. She was a person of delicate physique, and was constantly away through bad health, and was hardly fit for ordinary employment, much less for work in the Army Clothing Factory. He contended that the factory was not badly ventilated, and the inspection of the factory had been carried out by an official of the Home Office, and there was no ground for dissatisfaction with his report and investigation. Mr. Bell called attention to the fatal and non-fatal accidents on railways among railway men. He contended that there was not sufficient inspection on the part of the Government, as seven inspectors for all the railways of the United Kingdom was an evidently insufficient number compared with forty inspectors for the mines. Mr. Gerald Balfour said that one additional subinspector had been appointed and he should not hesitate to appoint another if he thought he could be usefully employed. He did not agree that such an appointment would largely lessen the accidents. A new system of recording and analysing accidents had been introduced and he believed the number of preventable accidents was much smaller than was supposed, and that most of the accidents could not be prevented by any law the House might pass. The second reading of the Bill was finally passed under closure at the end of the morning sitting of Thursday, and passed its remaining stages on Friday and Saturday.

Cruelty to Animals.—Mr. Akers-Douglas, in reply to Dr. Shipman, said that the number of visits paid by the inspectors under the Cruelty to Animals Act, 1876, to registered places in England and Scotland was 325, or an average of five visits to each place. Most of the places were visited thrice during the year. He had made inquiries as regards Ireland, and was informed that no record had been kept of the visits to registered places in Dublin, but that it was the rule that each registered place in Ireland should be visited at least twice a year.

The Pimlico Army Clothing Works.—Returning to this subject, Sir Charles Dilke last week asked the Financial Secretary to the War Office on what dates since the promise of improvement in ventilation the works had been inspected by any Home Office inspector, and what was the instrument used by the inspector who visited the works after the death of Alice Wright for ascertaining the proportion of carbonic dioxide in the air. Mr. Bromley Davenport replied that the dates of visits by a Home Office inspector since the date referred to were November 28, 1903; March 24th, June 23rd and June 24th, 1904. He had ascertained from the Home Office that the samples of air were taken by the inspector in bottles, six in number, on June 24th, and were sent to Mr. W. J. A. Butterfield, consulting chemist, for analysis, who probably tested them by the Pettenkoffer method.

Magistrates and Conscientious Objectors.—Last week, on the Expiring Laws Continuance Bill which re-enacts the last Vaccination Act, Mr. Broadhurst called attention to the insults to which poor people applying for certificates of exemption under the Act were subjected in the magistrates' courts. He asked the Home Secretary to issue a circular embodying the remarks made on this subject by the Lord Chief Justice at Birmingham. Mr. George White supported the request, and the Home Secretary said that he thought the Lord Chief Justice's remarks were well worth the careful study of the magistrates, and he had already given instructions that they should be circulated among magistrates clubs all over the country.

The Prorogation.—On Saturday last week and again on Monday, the Lords worked in earnest to close the session. Their protest having been made against being hustled, Bills were received, read a second time, the Committee stage dispensed with, and so passed rapidly. The result was that soon after 6 o'clock on Monday last Parliament was prorogued till Thursday, November 3rd. When the King's speech was read in the Commons there were only some twenty members present.

Ireland.

SMALL-POX IN IRELAND.

EIGHTEEN cases of small-pox are now being treated in Armagh. No new cases have occurred in Dublin or Drogheda. Orders have been issued to have all members of the Royal Irish Constabulary at the dépôt, Dublin, who have not been revaccinated during the past two years, so treated immediately.

Small-pox has appeared in the town of Monaghan: a girl was admitted to the Fever Hospital and has since died; and another girl has been admitted for observation. The Sanitary Committee of the Urban Council made a tour of inspection of certain districts of the town, and many of the dwellings were found nearly uninhabitable, with filthy yards. About fifteen cases are being treated in the Castleblayney Workhouse Fever Hospital, about fifteen miles from Monaghan. Energetic precautions are being taken to prevent the spread of the disease.

PROFESSOR LORRAIN SMITH.

It is with very mixed feelings, although with great interest, that the profession in the north of Ireland have just learned of the transference of Dr. Lorrain Smith to Manchester. Dr. Smith accepted the post of Lecturer on Pathology and Bacteriology at the Queen's College, Belfast, and Pathologist to the Royal Victoria Hospital about ten years ago. Since then, in addition to his ordinary duties, he has conducted post-graduate classes, has trained in his laboratory several men who have since done good work in original investigation, has carried out much work of his own on oxygen tension in arterial blood and kindred subjects, and has made for the public health authorities a series of bacteriologicalinvestigations on various problems in connexion with the occurrence of typhoid fever and the "septic tank" and "bacteria beds" treatment of sewage, the chemical side of which was undertaken by Dr. Letts, Professor of Chemistry. In 1901 the lectureship in the College was raised to a Professorship by the liberal endowment of the late Sir James Musgrave, D.L. Dr. Lorrain Smith served on the late Royal Commission of University Education in Ireland.

The profession in Ulster will regret Dr. Lorrain Smith's departure, but will all join in wishing him success, and in congratulating him on this recognition of his ability. His many personal friends will feel a loss not easily filled.

THE HEALTH OF LURGAN.

Dr. Agnew, Medical Superintendent Officer of Health, has lately issued his annual report on the health of Lurgan. The birth-rate was 31.7 and the death-rate 19 4; the zymotic death-rate was 2 9, but this figure is due to an epidemic of measles, which carried off 26 children. No deaths occurred from small-pox, typhus, typhoid fever, or whooping-cough. No deaths from typhoid have occurred since 1899. Special attention is drawn to the epidemic of measles, as it clearly shows the spread of the disease, and the probable efficacy of notification in stopping the epidemic in a small town. Two cases were introduced from Belfast; a number of cases then occurred in the neighbourhood for the next few months; cases had been prevalent in the country before, but whether from the Belfast introduced cases or from the country cases, there had been ample time to have tackled these isolated cases and stamped out the disease. In June it took severe hold on the younger children of two streets, and 12 deaths occurred in this month alone and 7 in July. The lesson impressed by this experience is that any sporadic case of measles should be at once isolated and treated as regards preventive measures with as much energy as a case of scarlatina, or even, perhaps, of small-pox or typhus.

Dr. Agnew again urges the necessity of providing sanatoriums for consumptives; 48 deaths out of 225 were due to some form of tuberculosis. Five times as many deaths arose from tuberculosis as from small-pox, typhus, typhoid, scarlatina, and diphtheria combined, and in the last ten years more victims were carried off by measles than by the same diseases, and yet neither tuberculosis nor measles are notifiable, nor is there any well-equipped or strenuous public effort to battle with either affection. It is satisfactory to learn that the deaths from diarrhœa numbered only 4, as the mortality from this affection is a valuable index of the general sanitary condition of house property and hygienic living.

ROYAL IRISH CONSTABULARY.

Dr. Alexander Montgomery, Belfast, has been appointed medical attendant to the Royal Irish Constabulary, Belfast, in room of Dr. William Marcus Killen, resigned.

TULLAMORE WORKHOUSE HOSPITAL.

In the *Dublin Poor Law and District Council Journal* of August 3rd, it is stated that the Master of Tullamore Workhouse reported that Mr. McArdle, of Dublin, who was on a visit to Dr. Moorhead J P., recently assisted that gentleman in a very critical surgical operation in the workhouse hospital. The operation was completely successful. Mr. Con Molloy proposed that the best thanks of the Tullamore Board of Guardians be tendered to Mr. McArdle for his kindness in assisting the workhouse medical officer in successfully carrying out the operation in question, and that the thanks of the Board be also tendered to Dr. Moorhead, J.P., for securing free of charge the valuable services of Mr. McArdle, and for successfully assisting that eminent practitioner in the operation in question. The motion was unanimously adopted.

NATIONAL VETERINARY ASSOCIATION.

The annual meetings of the National Veterinary Association of the United Kingdom were opened in Dublin on August 16th. Dr. Charles Allen, the President, in his address referred to the Commission which was appointed to investigate the whole question of the transmission of tuberculosis, and upon which their profession had been represented by an ex-President. The Commission, by the interim report which it had published, had failed to support Professor Koch's hypotheses, and had indeed demonstrated, what they had long held, that human tuberculosis was transmissible to cattle. This one conclusion invalidated the chief point in Koch's contention; and to his (the President's) mind the statement that it did not prove the transmission of the bovine tuberculosis to man begged the whole question. They, however, knew that they had lost valued colleagues from tuberculosis which they had accidentally inoculated into themselves when making *post-mortem* examinations. The whole question of the transmissibility of a disease from an animal of one species to an animal of another species was not only dependent upon the degree of virulence of the virus, but also upon the susceptibility of the other animal to the infection. It would, indeed, be remarkable if the tubercle bacillus found in the tissues and organs of bovines did not differ essentially from those found in man; but if the virus was removed from the ox and placed in other media and under other conditions, the organism might then come to resemble the germ taken from another species and treated in a precisely similar manner. The President next referred to the Commission on Cancer the work of which already was very valuable, and he was glad to say that many cancerous specimens had reached those who were doing the work of the Commission from members of the veterinary profession. Turning to the position of the Royal Veterinary College of Ireland, which four years ago existed only on paper, he said that the work which the governors had done was a credit to the profession. Captain Martin subsequently read a paper on Epizootic Lymphangitis, and an interesting discussion took place upon it, in which Professor Mettam, President of the Veterinary College of Ireland, Captain Pallen, and Colonel Blenkinsop took part, Professor Wooldridge's paper on Haemoglobinuria in Bovines was also discussed.

BRITISH ASSOCIATION.

PRESIDENT'S ADDRESS.

THE opening meeting of the British Association took place at Cambridge on August 16th, when the Right Hon. Arthur J. Balfour delivered his presidential address, which bore the title "Reflections Suggested by the New Theory of Matter." To what end, he asked, did these new conceptions lead? They were often described as the discovery of the laws connecting phenomena. But this was certainly a misleading, and, in his opinion, a very inadequate account of the subject. It was not only inconvenient but confusing to describe as "phenomena" things which did not appear, which never had appeared, and which never could appear to beings so poorly provided as ourselves with the apparatus of sense perception. But, apart from this, was it not most inaccurate in substance to say that a knowledge of Nature's laws was all we sought when investigating Nature? The physicist looked for something more than what, by any stretch of language, could be described as

"coexistences" and "sequences" between so-called "phenomena." He sought for something deeper than the laws connecting possible objects of experience. His object was physical reality; a reality which might or might not be capable of direct perception; a reality which was in any case independent of it; a reality which constituted the permanent mechanism of that physical universe with which our immediate empirical connexion was so slight and so deceptive. That such a reality existed, though philosophers had doubted, was the unalterable faith of science; and were that faith *per impossibile* to perish under the assaults of critical speculation, science, as men of science usually conceived it, would perish likewise. If this were so; if one of the tasks of science, and more particularly of physics, was to frame a conception of the physical universe in its inner reality, then any attempt to compare the different modes in which, at different epochs of scientific development, this intellectual picture had been drawn, could not fail to suggest questions of the deepest interest. If a little more than a century after the publication of Newton's *Principia* the average man of science had been asked to sketch his general conception of the physical universe, he would probably have said that it essentially consisted of various sorts of ponderable matter, scattered in different combinations through space, exhibiting most varied aspects under the influence of chemical affinity and temperature, but through every metamorphosis obedient to the laws of motion, always retaining its mass unchanged, and exercising at all distances a force of attraction on other material masses according to a simple law. To this ponderable matter he would, in spite of Rumford, have probably added the so-called "imponderable" heat, then often ranked among the elements, together with the two "electrical fluids," and the corpuscular emanations supposed to constitute light. In the universe as thus conceived the most important form of action between its constituents was action at a distance; the principle of the conservation of energy was, in any general form, undreamed of; electricity and magnetism, though already the subjects of important investigation, played no great part in the Whole of things; nor was a diffused ether required to complete the machinery of the universe. About a hundred years ago Young opened, or reopened, a great controversy which finally established the undulatory theory of light, and with it a belief in an interstellar medium by which undulations could be conveyed. But this discovery involved much more than the substitution of a theory of light which was consistent with the facts for one which was not; since here was the first authentic introduction into the scientific world-picture of a new and prodigious constituent—a constituent which had altered, and was still altering, the whole balance of the composition. Unending space, thinly strewn with suns and satellites, made or in the making, supplied sufficient material for the mechanism of the heavens as conceived by Laplace. Unending space filled with a continuous medium was a very different affair, and gave promise of strange developments. It could not be supposed that the ether, if its reality were once admitted, existed only to convey through interstellar regions the vibrations which happened to stimulate the optic nerve of man. Invented originally to fulfil this function, to this it could never be confined. If we jumped over the century which separated 1804 from 1904, and attempted to give in outline the world-picture as it now presented itself to some leaders of contemporary speculation, we should find that in the interval it had been modified, not merely by such far-reaching discoveries as the atomic and molecular composition of ordinary matter, the kinetic theory of gases, and the laws of the conservation and dissipation of energy, but by the more and more important part which electricity and the ether occupied in any representation of ultimate physical reality. Electricity was no more to the natural philosophers in 1700 than the hidden cause of an insignificant phenomenon. But to-day there were those who regarded gross matter, the matter of every-day experience, as the mere appearance of which electricity was the physical basis; who thought that the elementary atom of the chemist, itself far beyond the limits of direct perception was but a connected system of monads or subatoms which were not electrified matter, but electricity itself; that these systems differed in the number of monads which they contained, in their arrangement and in their motion relative to each other and to the ether; that on these differences, and on these differences alone, depended the various qualities of what had hitherto been regarded as indivisible and elementary atoms; and that while in most cases these atomic systems might maintain their equilibrium for periods which, compared with such astronomical processes as the cooling of a sun, might seem almost eternal, they were not less obedient to the law of change than the everlasting heavens themselves. But if gross matter were a grouping of atoms, and if atoms were systems of electrical monads, what were these electrical monads? It might be that, as Professor Larmor had suggested, they were but a modification of the universal ether, a modification roughly comparable to a knot in a medium which was inextensible, incompressible, and continuous. But whether this final unification were accepted or not, it was certain that these monads could not be considered apart from the ether. It was on their interaction with the ether that their qualities depended, and without the ether an electric theory of matter was impossible. It seemed possible now that ether might be the stuff out of which the universe was wholly built. Whether the main outlines of the world-picture which he had just imperfectly presented were destined to survive, or whether in their turn they were to be obliterated by some new drawing on the scientific palimpsest, all would, he thought, admit that so bold an attempt to unify physical nature excited feelings of the most acute, intellectual gratification. The satisfaction it gave was almost aesthetic in its intensity and quality. There was no *a priori* reason that he knew of for expecting that the material world would be a modification of a single medium, rather than a composite structure built out of 60 or 70 elementary substances, eternal and eternally different. Why, then, should we feel content with the first hypothesis and not with the second? Yet so it was. Men of science had always been restive under the multiplication of entities. They had eagerly noted any sign that the chemical atom was composite, and that the different chemical elements had a common origin. Nor did he think such instincts should be ignored. John Mill, if he rightly remembered, was contemptuous of those who saw any difficulty in accepting the doctrine of "action at a distance." So far as observation and experiment could tell us, bodies did actually influence each other at a distance. And why should they not? Why seek to go behind experience in obedience to some *a priori* sentiment for which no argument could be adduced? These obscure intimations about the nature of reality deserved more attention than had yet been given to them. That they existed was certain; that they modified the indifferent impartality of pure empiricism could hardly be denied. The common notion that he who would search out the secrets of Nature must humbly wait on experience, obedient to its slightest hint, was but partly true. This might be his ordinary attitude; but now and again it happened that observation and experiment were not treated as guides to be meekly followed, but as witnesses to be broken down in cross-examination. The difficulty really arose when experience apparently said one thing and scientific instinct persisted in saying another. The electric theory analysed matter, whether molar or molecular, into something which was not matter at all. The atom was now no more than the relatively vast theatre of operations in which minute monads performed their orderly evolutions; while the monads themselves were not regarded as units of matter, but as units of electricity; so that matter was not merely explained, but was explained away. The point to which he desired to call attention was not to be sought in the great divergence between matter as it was perceived and matter as it really was, but the fact that the first of these two quite inconsistent views was wholly based on the second. This was surely something of a paradox. We claimed to found all our scientific opinions on experience; and the experience on which we founded our theories of the physical universe was our sense-perception of that universe. That was experience; and in this region of belief there was no other. Yet the conclusions which thus professed to be entirely founded upon experience were to all appearance fundamentally opposed to it; our knowledge of reality was based upon illusion, and the very conceptions we used in describing it to others, or in thinking of it ourselves, were abstracted from anthropomorphic fancies, which science forbade us to believe and Nature compelled us to employ. In order of logic sense-perceptions supplied the premisses from which we drew all our knowledge of the physical world. It was they which told us there was a physical world; it was on their authority that we learned its character. But in order of causation they were effects due, in part, to the constitution of our organs of sense. What we saw depended not merely on what there was to be seen, but on our eyes. What we heard depended not merely on what there was to hear, but on our

ears. Now, eyes and ears, and all the mechanism of perception, had, as we knew, been evolved in us and our brute progenitors by the slow operation of natural selection. And what was true of sense perception was of course also true of the intellectual powers which enabled us to erect upon the frail and narrow platform which sense-perception provided the proud fabric of the sciences. Now natural selection only worked through utility. It encouraged aptitudes useful to their possessor or his species in the struggle for existence, and, for a similar reason, it was apt to discourage useless aptitudes, however interesting they might be from other points of view, because, being useless, they were probably burdensome. But it was certain that our powers of sense-perception and of calculation were fully developed ages before they were effectively employed in searching out the secrets of physical reality—for our discoveries in this field were the triumphs but of yesterday. The blind forces of natural selection, which so admirably simulated design when they were providing for a present need, possessed no power of prevision, and could never, except by accident, have endowed mankind, while in the making, with a physiological or mental outfit adapted to the higher physical investigations. So far as natural science could tell us, every quality of sense or intellect which did not help us to fight, to eat, and to bring up children was but a by-product of the qualities which did. Our organs of sense perception were not given us for purposes of research; nor was it to aid us in meting out the heavens or dividing the atom that our powers of calculation and analysis were evolved from the rudimentary instincts of the animal. It was presumably due to these circumstances that the beliefs of all mankind about the material surroundings in which it dwelt were not only imperfect but fundamentally wrong. It might seem singular that down to, say, five years ago our race had without exception lived and died in a world of illusions; and that its illusions, or those with which we were here alone concerned, had not been about things remote or abstract, things transcendental or divine, but about what men saw and handled, about those "plain matters of fact" among which common sense daily moved with its most confident step and most self-satisfied smile. Presumably, however, this was either because too direct a vision of physical reality was a hindrance, not a help, in the struggle for existence; because falsehood was more useful than truth, or else because with so imperfect a material as living tissue no better results could be attained. But if this conclusion were accepted, its consequences extended to other organs of knowledge besides those of perception. Not merely the senses but the intellect must be judged by it; and it was hard to see why evolution, which had so lamentably failed to produce trustworthy instruments for obtaining the raw material of experience, should be credited with a larger measure of success in its provision of the physiological arrangements which condition reason in its endeavours to turn experience to account. Considerations like these, unless he had compressed them beyond the limits of intelligibility, did undoubtedly suggest a certain inevitable incoherence in any general scheme of thought which was built out of materials provided by natural science alone. Mr. Balfour proceeded: Extend the boundaries of knowledge as you may; draw how you will the picture of the universe; reduce its infinite variety to the modes of a single space-filling ether; retrace its history to the birth of existing atoms; show how under the pressure of gravitation they became concentrated into nebulae, into suns, and all the host of heaven; how, at least in one small planet, they combined to form organic compounds; how organic compounds became living things; how living things, developing along many different lines, gave birth at last to one superior race; how from this race arose, after many ages, a learned handful, who looked round on the world which thus blindly brought them into being, and judged it, and knew it for what it was—perform, all this, and though you may indeed have attained to science, in nowise will you have attained to a self-sufficing system of beliefs. One thing at least will remain, of which this long-drawn sequence of causes and effects gives no satisfying explanation, and that is knowledge itself. Natural science must ever regard knowledge as the product of irrational conditions, for in the last resort it knows no others. It must always regard knowledge as rational, or else science itself disappears. In addition, therefore, to the difficulty of extracting from experience beliefs which experience contradicts, we are confronted with the difficulty of harmonizing the pedigree of our beliefs with their title to authority. The more successful we are in explaining their origin the more doubt we cast on their validity. The more imposing seems the scheme of what we know the more difficult it is to discover by what ultimate criteria we claim to know it. Here, however, we touch the frontier beyond which physical science possesses no jurisdiction. If the obscure and difficult region which lies beyond is to be surveyed and made accessible, philosophy, not science, must undertake the task. It is no business of this society. We meet here to promote the cause of knowledge in one of its great divisions; we shall not help it by confusing the limits which usefully separate one division from another. It may perhaps be thought that I have disregarded my own precept—that I have wilfully overstepped the ample bounds within which the searchers into Nature carry on their labours. If it be so, I can only beg your forgiveness. My first desire has been to rouse in those who, like myself, are no specialists in physics, the same absorbing interest which I feel in what is surely the most far-reaching speculation about the physical universe which has ever claimed experimental support; and if in so doing I have been tempted to hint my own personal opinion that as natural science grows it leans more, not less, upon an idealistic interpretation of the universe, even those who least agree may perhaps be prepared to pardon."

TREASURER'S ACCOUNT.

The general treasurer's account, presented by Professor Carey Foster, showed receipts to the amount of £3,351, and expenditure to the amount of £1,941; with a balance of £1,410. The expenditure includes grants made at the Southport meeting to the amount of £887.

ATTENDANCE.

It is officially stated that the number of tickets issued for the first evening's meeting numbered 2,600.

CONTRACT MEDICAL PRACTICE.

NOTICE AS TO DISTRICTS IN WHICH DISPUTES EXIST.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 79.

DR. EDWARD JEPSON (President, County of Durham Medical Union) writes: We have not yet arrived at a solution of the difficulty arising when a dispute occurs between doctors and their patients in contract practice; first, as to how we can keep away those who are ready to take advantage of any dispute; and next, when a doctor has come into a district to take up the practice at a lower rate, what shall be the proper way of dealing with such an individual. In short, we want some method of properly dealing with a man who takes up the position of a "blackleg."

The warning notices put in the BRITISH MEDICAL JOURNAL, and those put in the lay papers by our Medical Union have to a certain extent been useful, but they have not stopped all those who are indifferent to the stigma of "blackleg." And when the "blackleg" is duly installed in a district it is extremely difficult to get him out of that position. A few have been persuaded to relinquish the ill-gotten appointment: some have developed such weakness of character that their presence has shown up the righteous position of the old practitioner.

Boycotting is generally carried out, but it does not cause the offender to leave the district. In most cases the "blackleg" obtains his position through the canvassing of a committee of working men, who do this work freely and with energy.

The General Medical Council has passed a resolution condemning any medical man who shall take up such a position, and against whom the charge of canvassing can be satisfactorily proved. This is the point when we meet with our difficulty in such cases. Although we know that canvassing is done by agents on behalf of the intruder, yet it is extremely difficult to obtain the proof that is essential and to satisfy the General Medical Council.

The secretaries of the County of Durham Medical Union have been in correspondence with the General Medical Council with a view to get help from that quarter, and proposing the

attendance of a deputation from this Union to discuss this point, but we can make no progress towards accomplishing anything.

Now we turn to the profession as a whole, and ask as many practitioners as possible to put their names to a petition to the General Medical Council, urging *upon the Council the desirability of supporting medical men who struggle to maintain the honour and dignity of the profession especially when opposed by others who are ready to take advantage of any dispute in contract practice by canvassing or underselling, or in the obtaining of contract appointments by similar means.*

Copies of this petition may be obtained from Messrs. Graham and Shepherd, 32, John Street, Sunderland, secretaries to the County of Durham Medical Union.

AN APPEAL.

SIR,—May I enlist your kind help in bringing the appeal, herein enclosed, to the notice of the readers of the British Medical Journal? Contributions may be sent to Colonel Francis H. Welch, F.R.C.S., 8, Brandram Road, Lee, S.E.—I am, etc.,

14, Welbeck Street, W. E. F. Drake-Brockman.

We, the undersigned, desire to ask your generous consideration of this appeal on behalf of Miss E. B. Pellatt, of the London School of Medicine for Women and Licentiate of the Society of Apothecaries.

The facts of the case tersely put are as follows: After having become professionally qualified in 1893 she acted for a time as Curator at the London School of Medicine for Women and Clinical Assistant at the Royal Eye Hospital, Southwark. In 1895 she became a member of the Guild of St. Luke and decided to devote herself to medico-missionary work abroad, and to that end prepared herself for the Mohammedan sphere by learning Arabic at Zanzibar. In 1896 she joined the S. Philip's Mission at Cape Town, under the Society of St. John the Evangelist, her professional duty lying mainly among the Mohammedan Malays there located. She continued with this mission until February, 1903, when a severe chest affection necessitated her temporary transfer to England, and she was hoping to return to South Africa in December "quite fit for a great deal more work" when optic neuritis commenced in both eyes, and in February of this year it became evident that loss of sight would result, "no vision at all being left in the right eye and very little more than perception of light in the left." And this is the hopeless physical state in which she now is, while her general health is far from what is desirable.

Of the high estimation in which she was held, and of the valuable character of her work under the Cowley Fathers at Capetown, there is abundant evidence both in the annual reports of the S.P.C.K. (which, with the Guild of St. Luke, assisted in the maintenance of the dispensary) and in letters from the head of the Mission, while her own letters from time to time fully attest the marked zeal and interest with which she pursued her professional career and carried out her Christ-like work among the sick and suffering to whom St. Philip's Dispensary ministered. In a letter, during her illness, the Rev. H. P. Bull (the head of the Capetown Mission) writes: "It is a sore trial to many of our poor coloured folk that Dr. Pellatt has been so long ill; she is trusted and loved"; and in a later letter, after stating that she is permanently incapacitated from her medical work, he adds: "It is a sore trial to a most devoted doctor as well as missionary."

The Treasurer of the Fund is Surgeon-Colonel F. H. Welch, 8, Brandram Road, Lee, London, S.E., and he will gladly give any further information which may be asked for.—We are,

S. Russell Wells, Provost, St. Luke's Guild.
R. L. Page, S.S.J.E.
E. Symes Thompson, M.D., F.R.C.P.
George Cowell, F.R.C.S.
W. H. H. Jervoise, Warden, St. Luke's Guild.
Francis H. Welch, F.R.C.S., Vice-Provost.
E. F. Drake-Brockman, F.R.C.S.
J. Brindley James, L.R.C.P., M.R.C.S., Member of Council, St. Luke's Guild.
Mary Scharlieb, M.D., M.S.
J. M. Macdonald, M.D.
Elizabeth Courtland, L.S.A., M.S.Brux., Hon. Secretary, Women's Ward, St. Luke's Guild.

The following contributions have already been received:

	£	s.	d.		£	s.	d.
Dr. E. Symes-Thompson ...	1	1	0	Dr. R. Braithwaite	1	1	0
Mr. George Cowell	1	1	0	Rev. E. F. Russell	2	0	0
Surg.-Colonel F. H. Welch ...	2	2	0	Rev. Dr. and Mrs. F. W. Sutton	3	0	0
Lieut.-Colonel E. F. Drake-Brockman	1	1	0	Mrs. R. P. Wintle	2	2	0
Mrs. Wormald	3	0	0	Rev. H. Guy Latham ...	1	1	0
Dr. W. A. Satchell	1	1	0	Mrs. J. B. Butler	10	0	0
Dr. J. F. W. Tatham	1	1	0	Surgeon W. E. Marshall, R.N.	0	10	0
Mr. J. Wyatt Pratt	2	2	0	Lieutenant-General R. W. Lowry	1	1	0
Dr. J. Gurch	2	2	0	Rev. A. W. Tudball	1	10	0
Dr. T. Morton	5	0	0	Dr. J. A. Armitage	1	1	0
Mr. E. H. Addenbroke ...	3	3	0	Rev. C. H. Norton	1	1	0
Mr. George S. George ...	1	0	0	Dr. E. Symes-Thompson ...	1	1	0
Dr. Florence Armitage ...	0	10	6		61	9	6
Dr. Mary Cruikshank ...	0	10	6				
Mrs. Stanley Boyd, M.D. ...	10	0	0				
Dr. E. L. Fleury	1	1	0				
Miss M. Beatrice Counsell ...	0	5	0				

LITERARY NOTES.

The ninth volume of the second series of the Index Catalogue of the Library of the Surgeon-General's Office, United States Army, which has been lately issued, consists of 66 pages of preliminary matter, and 872 pages of text. It carries the vocabulary from L to Lyuri, including therefore all the entries under the letter L.

Dr. George F. Shrady has resigned the editorship of the New York *Medical Record*, which he has held since the foundation of the journal, a period of nearly forty years. In its issue of August 6th, in which Dr. Shrady's retirement is announced, our contemporary says:

The first line of type of the first number of this journal was set by Dr. Shrady, the first leader was penned by him, and from March 1st, 1866, to June 25th, 1904, it has been his policy that controlled the editorial pages. During that time the paper has grown from a semi-monthly of twenty-four pages in each issue to a weekly of over 2,000 pages a year.

Dr. Shrady is succeeded by Dr. Thomas L. Stedman, who has assisted him in the conduct of the journal for some twenty years past.

Some months ago it was mentioned in the British Medical Journal that Mr. Shattock had instituted a useful innovation in the *Transactions* of the Pathological Society by appending to certain papers summaries in Latin. The innovation has been received with so much favour that we believe it is to be continued in future volumes. Mr. Shattock has found an imitator on the other side of the Atlantic. In the *Studies from the Department of Neurology* of Cornell University, recently published under the direction of Dr. C. L. Dana, each article is preceded by an abstract in Latin. The following is an example:

Apoplexia Iuvenilis, cum Autopsia. Auctore J. R. Hunt. Descriptio casus gravis, fatalis haemorrhagiae cerebri viri iuvenis viginti et unius annorum. Impetus erat subitaneus, coma profundum, cum hemiplegia sinistra. Oculorum jugata ad dextrum deviatio. Mors intra sex dies. Autopsia exhibebat copiosam haemorrhagiam in recta hemisphaera cerebri in capsula interna et in ganglio basali. Arteriae erant incrassatae et atheromaticae velut senum. Aderat hypertrophe cordis, myocarditis, atque nephritis parenchymatosa. Quod in hoc casu plurimum interest, extraordinaria degeneratio vascularia est in viro tam iuveni.

Latinity of this fashion would doubtless have struck Cicero as *pingue quiddam sonans et peregrinum*, and might even have made "Quintilian stare and gasp"; but it is intelligible to educated pathologists of all nations, and that is the essential thing.

In M. Achille Luchaire's *Innocent III: Rome et l'Italie*, recently published, it is stated that that Pope was consulted on all kinds of matters by bishops and doctors of divinity in every part of Christendom. He was the *apostolicum oraculum*, and his solutions of the knotty problems submitted to his judgement show that he took a large view of practical questions. One of the cases on which he was asked to adjudicate was that of a monk of Geneva who relieved the monotony of his meditations on heavenly things by the practice of surgery. He operated on a peasant woman who had a tumour of the throat, and recommended her to remain quiet indoors for some time afterwards. It was harvest time, however, and the patient went to work in the fields and died. The bishop of the diocese, feeling anxious about the position of the operator who seemed to him to have incurred the ecclesiastical penalties attaching to "involuntary homicide," asked if he could still exercise his priestly functions. The Pope replied that the monk had undoubtedly done wrong in practising a profession which was not his. Inasmuch, however, as he acted from motives of humanity, not of greed, and had used all needful care in the performance of the operation, he was not to be held responsible for an accident caused by the disobedience of the patient. Therefore, after a suitable penance had been inflicted, the monk must be treated with mercy and allowed to say mass. Nothing, however, is said as to the propriety of his abandoning the practice of surgery, unless this is to be taken as implied in the *obiter dictum* that he had done wrong in exercising a profession which was not his.

In the current number of the *World's Work* there is an article entitled "Sea-bathing, as it should be," in which the writer comments on the increasing popularity of sea bathing and the greater facilities for that delightful exercise now being introduced at fashionable resorts. The days of strictly separate bathing, when ladies bobbed up and down in the water clad in the heaviest serge, very nearly killed swimming as a popular sport, but it was saved by the introduction of mixed bathing. The modern athletic woman wears a costume in which it is possible to swim, and at most places "holiday

makers are no longer hampered by out-of-date regulations and equipments." The swimming clubs and associations now so numerous throughout the country have done much to increase the popularity of bathing. There is still, however, considerable room for improvement in the accommodation provided for the purposes of undressing and dressing. The writer justly condemns the antiquated bathing machines as "uncomfortable devices and hideous disfigurements of the seaside." At many places, however, the local authorities and hotels are providing comfortable bath-houses for the convenience of visitors; and in others, in places where the tides are inconvenient, walls are being constructed to retain the sea, thus forming vast bathing pools where one can always enjoy a swim without traversing long stretches of shingle or mud. It is devoutly to be hoped that this latter arrangement may become the general rule.

ASSOCIATION NOTICES.

NOTICE OF QUARTERLY MEETING OF COUNCIL FOR 1904.

A MEETING of the Council will be held on Wednesday, October 19th, in the Council Room of the British Medical Association, 429, Strand, London, W.C.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

EAST ANGLIAN BRANCH.—The autumn meeting of the East Anglian Branch will be held at Kelling Open-air Sanatorium, near Holt, Norfolk, on Thursday, September 29th. Members wishing to read papers or show cases or specimens should communicate with Mr. H. A. BALLANCE, M.S., Norwich, Honorary Secretary.

NORTH WALES AND SHROPSHIRE BRANCH: SOUTH CARNARVON AND MERIONETH DIVISION.—The autumn meeting of this Division will be held at the White Lion Hotel, Bala, on Tuesday, August 23rd, at 2.30 p.m. Richard Jones, M.D., D.P.H., in the chair. Agenda: To read communication received from the Exeter Division. Dr. Elliott (Chester) will shew a Specimen of Ulcerating Endocarditis. The Chairman as representative of the Division on the Representative Meeting will give an account of the Oxford meeting, and draw attention to the questions submitted to the Divisions. The Honorary Secretary will read a paper (founded on the Medico-Political Committee's interim report) on Contract Practice: Its Aims and its Abuses.—W. JONES-MORRIS, Portmadoc, Honorary Secretary.

SOUTHERN BRANCH: SALISBURY DIVISION.—The next meeting of this Division will be held on September 7th next at the Infirmary, Salisbury, at 8.15 p.m.; the meeting to be preceded by dinner at the County Hotel at 7 o'clock. Members wishing to read papers or show cases at the meeting are requested to communicate as soon as possible with the Honorary Secretary, J. E. GORDON, 52, Endless Street, Salisbury.

SPECIAL CORRESPONDENCE.

CAPE TOWN.

Medical Ethics in South Africa.—Next Medical Congress.—The Prevention of Tuberculosis.—The British Medical Association and the Proposed Medical School in South Africa.

WHETHER *post hoc* or *propter hoc* one cannot say, but it is certain that the increase of competition in the South African medical field has been followed by a notable quickening in matters of organization and ethics. The medical associations are all devoting much more attention towards maintaining or raising the tone of the profession than has been the case before, and the Medical Councils of the older Colonies have been showing a commendable activity which formerly was certainly not in evidence. The Cape Colony Council has commenced a distinct crusade against advertising, and there is very little doubt about the fact of its being eventually able to suppress this practice. The Cape Council, although in some respects its powers are larger than those of the British body, can only recommend, but cannot decree removal. The giving effect to the recommendation lies with the Ministry. It is one of the misfortunes of this country that all things, even things medical, are argued out on political racial lines. When a vote for a hospital or an extra assistant in the Health Department comes on the estimates in the Assembly, one always knows that it will be discussed as a purely party matter. If English people try to imagine a condition of things under which every hygienic advance was fiercely opposed by the Conservatives and equally supported by the Liberals, or one under which the medical profession had to wait until a Liberal party came into office before mooting any legislation for its own regulation or protection, they may have some idea of our parlous state of things. It may be remarked that as far back as 1900, the Cape Medical Council notified to the profession a resolution declaring all advertising improper conduct, and this has been largely acted upon. Some men, however, profess to believe that they are still allowed to insert three simple notifications on commencing practice or changing address, but this limitation of the disciplinary rule is certainly not warranted by the terms of the resolution, which are absolute. Hitherto the Council has mostly contented itself with a simple letter warning the offender to desist advertising, and this has had no effect, as generally he has, in the small communities of this country received all the publicity he wishes by the time the Council hears of him. The Natal Council has disciplined, to the extent of censure, one or two dentists, but I have not heard of its having done this to any medical man. However, advertising is not nearly so rampant in the Garden Colony as in its big sister, owing perhaps to the fact of the medical *personnel* not being nearly so cosmopolitan there as here. The new Orange River Colony Council has just held its first meeting, and, when it gets into working order, will, no doubt, do much to put the profession on a proper footing in that colony. The Ordinance for the formation of a Medical Council and for medical practice regulation has just passed the Transvaal Legislative Council. It is a good law, although not quite so strong in some respects as that of the Orange River Colony. One commendable point is that it reduces the nominee element in the Council to very modest dimensions, six out of the eight medical members and one of the two dental members being elective.

The next Medical Congress is announced to be held at Pietermaritzburg in June, 1905, and preparations for it are very far advanced. It is certain to be a success.

An Association for the Prevention of Tuberculosis, which is to be affiliated with the home National Association, has been launched here under very influential auspices, the Governor having taken great interest in it. It is getting actively to work, and hopes to form branches all over the Colony.

The Capetown Branch of the British Medical Association has recently pronounced very strongly against the proposal of the South African College to found Chairs of Anatomy and Physiology, and has been backed up by the Medical Societies all over South Africa. Medical opinion almost unanimously concludes that the idea of a local medical school is altogether premature.

CORRESPONDENCE.

MEDICAL DEFENCE AND THE BRITISH MEDICAL ASSOCIATION.

SIR,—The history of the various attempts to get the British Medical Association to undertake medical defence shows how little progress has been made in all these years. The movement appears to have begun about 1886, for at the annual meeting at Brighton in that year a meeting of members was convened by the Secretary of the Lancashire and Cheshire Branch to consider the proposal. A circular had been sent to the Branches (see JOURNAL, 1886, vol. ii, pp. 344, 388), and replies showing 14 out of 25 in favour of the principle were laid before the meeting. The upshot was that a Provisional Committee was appointed, with Dr. Danford Thomas as Chairman, and Mr. William Armstrong as Secretary, which drew up a scheme and forwarded it to the Council. At the meeting of Council in October, 1886, a Committee was appointed to consider the whole question and the scheme of Dr. Danford Thomas's Committee; it presented a report which embodied various legal opinions, and ended by recommending the Council not to proceed further with the matter as being *ultra vires* under the existing Memorandum of Association (see JOURNAL, January 29th, 1887, p. 235).

After this the question slumbered until 1895, when an article urging it upon the attention of the Association

was published by Dr. Welsford in the *Medical Magazine* for July, 1895, and at the July meeting of Council in the same year a resolution was received from the South-Eastern Branch pointing out the desirability of the Council taking power to proceed against unqualified practitioners, and otherwise to protect the interests of the medical profession (JOURNAL, 1895, vol. ii, p. 222).

At the October meeting of Council (1895) a Committee was appointed to carry out these suggestions (ibid, p. 1079). It was soon discovered by the Committee that under the present Memorandum of Association the Association cannot take up the question of medical defence, either collective or individual, and counsel's opinion to this effect was printed in the JOURNAL (see 1895, vol. ii, p. 202).

The difficulty was put fairly, but not exaggerated, in the report made to the annual general meeting in London that year. I seconded the adoption of the report of the Committee, and said that while I saw the many advantages there were if the Association could take up medical defence, I was impressed by the difficulties in the way of obtaining a practicable scheme.

An amendment, moved by Dr. Welsford, asking the Council to reconsider the matter, was accepted by me in the name of the Council. At the July meeting of Council resolutions were received in favour of the prosecution of quacks by funds supplied by the Association from the South Wales, South Midland and Edinburgh Branches, and a resolution from the South Western Branch in favour of collective and individual medical defence.

At the Council meeting in October, 1895, (see JOURNAL, 1895, vol. ii, p. 1192) a special committee was appointed.

At the April meeting of Council (1896, p. 1117) a report of the Committee was received, and it was asked to prepare a scheme; this scheme was printed in the JOURNAL (p. 1575) and to it Mr. Butlin proposed an alternative scheme. The scheme of the Committee was accepted by the Council and in the hope that it would be accepted by the Association it was decided to hold an extraordinary general meeting in Birmingham to pass the necessary resolution for the amendment of the Memorandum of Association.

At the meeting held in Birmingham in July (see JOURNAL, 1896, vol. ii, p 159) Dr. Ward Cousins moved the necessary resolutions, which were seconded by Dr. Bridgwater. The following amendment was moved by Mr. Butlin:

> That no application for an alteration of the Memorandum of Association be made until a scheme or schemes for medical defence shall have been submitted to all Branches of the Association and sufficient time (six months) shall have been given for consideration and reply.

This was seconded by Mr. Victor Horsley, as he then was, who said nothing could be done to alter the memorandum until they knew precisely what they were going to alter it for. Sir Victor Horsley's memory must have been at fault if he told the Representative Meeting at Oxford, as he is reported, that the resolutions to alter the Memorandum "were passed ten years ago with great difficulty by the Reform Party in Birmingham"!! I supported the resolution, and the amendment was lost by five votes.

At the annual meeting at Carlisle in the same year (JOURNAL, 1896, vol. ii. p. 325) the question came up again. I was in the Chair as President of the Council, in the absence of the President. Mr. Victor Horsley moved that:

> No scheme would be adequate which did not provide that the claims and obligations of medical defence should be shared by all members of the British Medical Association.

This was carried by a large majority.

In 1897 the scheme which had been approved by the Council, modified by the adoption of suggestions made by Dr. Welsford, Mr. Victor Horsley, and Dr. Rentoul, was printed in the JOURNAL (see JOURNAL, 1897, vol. i, p. 277), and referred to the Branches in January. Its chief points were: (1) Membership obligatory upon all members of the Association resident in Great Britain and Ireland; (2) subscriptions not less than 5s. or more than 10s.; (3) foreign members not being liable to pay subscriptions, are not entitled to claim individual assistance from the fund; (4) appointment of a Standing Committee; (5) power and discretion of Committee; (6) limitation of expense to £200 in any particular case; (7) preliminary communication with Secretary of Branch before legal action within its area; (8) Members of Committee to receive travelling expenses; (9) appointment of a paid Organizing Secretary; (10) power to consult a solicitor; (11) Committee to report to Council. (12) Not to pay damages incurred by any party defended. (13) Accounts to be separate from the general accounts of the Association. (14) Duties of Committee defined: (*a*) Defence of members in respect of criminal and civil proceedings instituted against them; (*b*) institute proceedings for members libelled or scandalized; (*c*) settlement of disputes between members; (*d*) protection of the privileges and interests of the medical profession; (*e*) proceedings under Medical Act, 1858; (*f*) Apothecaries Act, 1815; (*g*) any other Act.

The questions submitted to the Branches were:
(1) Is your Branch in favour or not of your Association undertaking the duties of individual and collective medical defence? (2) Is your Branch in favour or not of the scheme as finally drafted by the Committee? (3) If not, what amendment does your Branch suggest?

The result of the reference was published in the JOURNAL (1897, vol. ii, p. 144)—in favour, 19; against, 20; neutral, 2; no reply, 26; of those Branches which did not reply 22 were Colonial. As these answers showed great difference of opinion the Council decided to take no further action. Soon afterwards a requisition for an extraordinary general meeting was sent to the Council signed by 100 members (see JOURNAL, p. 241). At the meeting (p. 302) Dr. Hugh Woods moved a resolution calling upon the Council to go on with medical defence, but it was withdrawn in favour of one by Dr. Welsford, which substituted for the words "medical defence" "maintainance of the honour and interests of the medical profession." This rather vague formula was carried by a majority of one, 89 voting for and 88 against. The Council then decided to take the opinion of the members of the Association by means of a postcard sent to each member. These were sent out in December, 1897, and the results were published in the JOURNAL (1898, vol. i, p. 1210). Total number sent out, 17,175; total replies, 8,693; 5,664 affirmative, 2,110 negative, and 919 various. As these figures showed only about 36 per cent. of members of the Association in favour of the proposal to take up medical defence, the Council decided to refer the matter to the next annual meeting to be held in Edinburgh.

At that meeting the Council report recommended that the matter should be put on one side until a stronger feeling in its favour was shown by members (see JOURNAL, 1898, vol. ii, p. 323). This was opposed by an amendment moved by Dr. James Myrtle, and supported by Mr. Victor Horsley, which called upon the Council "to bring this great question to a satisfactory issue." In speaking at that meeting I pointed out that the decision of the Council was not due to any want of sympathy with the principle of medical defence, but to the practical difficulties in giving effect to it, and the absence of agreement amongst members themselves as to what they wanted. The amendment was lost by 89 to 101, and the Council's report was adopted.

Medical defence dropped out of the index to the BRITISH MEDICAL JOURNAL until 1903, when it was revived by a letter (see vol. i, p. 1408), signed by Mr. Edmund Owen, urging the amalgamation of existing medical defence societies with the Association as "Trustee of the Reserve Funds." This proposal received some encouragement from Dr. G. A. Heron, Treasurer and Chairman of the Council of the London and Counties Medical Protection Society (p. 1464), but was opposed by Dr. A. G. Bateman, Secretary of the Medical Defence Union. A new Medical Defence Committee was appointed at the Council meeting held at Swansea on July 30th (see SUPPLEMENT, 1903 p. 188).

This Committee reported to the Council in April, 1904, and submitted its scheme (see SUPPLEMENT, March 19th, 1904, p. 31). Its chief features are as follow: (1) A Central Committee which will act for England and Wales, with dependant Scottish and Irish Committees. (2) The Central Committee to be partly elected by the Council; the others by the representatives. (3) Each Committee to have a Secretary. (4) Central Committees to have absolute control of funds. (5) The dependant Committees to have a capitation grant. (6) The Treasurer to advance money on security of guarantee fund. (7) The income to be expended solely for individual defence. (8) The scheme to be voluntary. (9) Subscription 10s. in addition to a guarantee of £1.

Unfortunately the hope of amalgamating existing societies was not fulfilled, while the Committee was so far from being unanimous that a minority report was presented, recommending the Association not to adopt the proposed scheme, mainly on the ground that the amalgamation of existing societies, to attempt which the Committee had been appointed, had proved to be impossible under existing conditions.

The Council therefore remitted the reports to the Divisions in order to ascertain their views and to gain some notion of the amount of support such a voluntary scheme would receive if launched. The results (see SUPPLEMENT, July 16th, 1904, p. 43) were: Number of Divisions polled, 189; number of replies received, 145. Approved, 46; total members, 3,473. Disapproved, 39; total members, 3,586. Willing to join Medical Defence Department, total number, 1,460.

Has any real progress been made since 1896? Is the scheme now before the Council fuller or better than that put forward by the Council in 1896, which was opposed by Sir Victor Horsley on the ground that it did not include all members of the Association? Does the present plan?

The resolution to take this step was passed by the Representative Meeting (see SUPPLEMENT, August 6th, p. 123) at Oxford, and pressed upon the Council at its meeting on the Friday morning. The Council had not proper time for consideration, and did not adopt my suggestion to refer the matter to the Divisions. Now we are committed to make the application, without being apparently any nearer than we were in 1896 to a working scheme that members will accept. Is this a better time to go to the High Court to alter the Memorandum than 1896 when Sir Victor Horsley argued that "nothing could be done to alter the Memorandum until we knew precisely what we were going to alter it for"? The Council is bound to proceed, but the application may not be granted unless it is understood to be the wish of a large majority of members, and judging from the returns above quoted can this be alleged?

It is further doubtful whether the Court will consider the resolutions passed so long ago as 1896 as sufficient basis for the application.—I am, etc.,

Birmingham, Aug. 11th. ROBERT SAUNDBY.

THE REGISTRATION OF MEDICAL AND DENTAL STUDENTS.

SIR,—Adverting to your SUPPLEMENT of August 6th, p. 120, allow me to place on record what I conceive to be a tactical error on the part of the Association, namely, the giving by the members their approbation to the compulsory registration of medical and dental students without the qualifying amendment of either no fee being charged the student, or, if such be permitted, the profession to receive further direct representation. At its last session the General Medical Council resolved:

> That the Lord President of the Privy Council be requested to introduce into Parliament a Bill to confer upon the General Medical Council statutory powers to establish and maintain registers of medical and dental students, and to impose a fee not exceeding £1 for registration therein.

The Council will now be considerably strengthened in its claims by being in a position to state that its request has the support of the British Medical Association. Let us by all means have the compulsory legal registration of students, but why place an approximate £1,700 a year at the disposal of a corporate body that has done so little for the general practitioner, and whose average expenditure over income from 1896 to 1902 was £1,433 5s. 11d. Have we got a single guarantee that the General Medical Council will in any way assist to remove our more personal grievances—the grievances resulting from professional economics, or that with the same recklessness as heretofore it will not eat up the additional income in purposeless loquacity?

It may be said the Council has no legal powers to ameliorate our condition. Let me ask, Has it ever tried to obtain them? Certainly not in my experience. But in my experience it has left no stone unturned to obtain finances, while its members personally consume fees to the amount of over £3,000 a year. From the cryptic references of its President to *in camerâ* reports, it would appear as if it contemplated even selling its Oxford Street premises!

The taxation of the student will now rehabilitate the Council, and free it from pecuniary anxiety for many years to come.

Our lot—the lot of the general practitioners—continues as before. I may frankly state it was my hope that the Council, having through its own lack of administrative power and foresight landed itself in hopeless insolvency, would have been coerced into accepting the suggestion of increased direct representation as the price of restored life. I understood that other members of the Association held similar views. Be that as it may, I am of opinion that a vigorous yet legitimate hostility to the General Medical Council towards that end is the only course open to us. Courteous passivity has hitherto been flouted by it.

I cannot do better than here to give excerpts from a striking article which appeared from the pen of Dr. W. Gordon, of Exeter (see BRITISH MEDICAL JOURNAL of January 16th, 1904), a writer of keen insight into the workings of the General Medical Council. Amongst other things he says:

> I suppose that in a "free country" there is no more surprising institution than the General Medical Council. *It is the government imposed on the profession for the advantage of the public, supported by a tax levied on the profession which has practically no voice in the government for which it pays!* How is that for a Constitutional Government?
>
> . . . . . Imagine there is no community beside the medical profession so supine and so senseless as to have borne with such a government so long, or indeed to have ever permitted it to come into existence.
>
> When the proposals come to be considered for the reform of this extraordinary Council, I trust that consideration for the interests of the country, if not common self-respect, will move the profession to insist on a government at once equitable and rational.

Your readers may say: "Is this not all dealt with in the proposed 'Medical Acts Amendment Bill?'" True; but to the thoughtful medical politician that proposed Bill is so overladen with contentious matter and the consequent opposition so powerful that the probability of its measures becoming law in immediate years appears remote indeed.

If the members of the profession in the present interval of parliamentary sessions should see their way to insist upon increased direct representation in connexion with the Bill for the Registration of Medical and Dental Students this letter may not have been written in vain.—I am, etc.,

Waddesdon, August 11th. S. WESLEY WILSON.

THE NEW SYDENHAM SOCIETY'S CLINICAL ATLAS.

SIR,—If any of your readers posssess drawings or photographs in illustration of varicella, more especially any which have reference to its diagnosis from variola, I shall be greatly obliged if they will allow me to see them. The Committee in charge of our *Clinical Atlas* is at present engaged in preparing a fasciculus dealing with these exanthems.—I am, etc.,

London, W., August 10th. JONATHAN HUTCHINSON,
Honorary Secretary, New Sydenham Society.

DISPENSING BY MEDICAL PRACTITIONERS.

SIR,—I have before me the abridged report of the Pharmaceutical Conference. Passing over the first six clauses, with which my present letter has nothing to do, I come to the seventh—the dispensing by medical practitioners. The President took exception to medical men dispensing because of:

1. The absence of any check on the accuracy of the dispensing doctor.

2. Mistakes which occurred in connexion with doctors dispensing: (*a*) The effect of inadequate training, or a confusion of mental processes consequent on the exacting nature of the medical man's duties in diagnosing the disease and determining the remedy; or (*b*) the outcome of employing unqualified dispensers; (*c*) the result of the regulations as to keeping dispensing and selling poisons, which are binding on chemists, not being compulsory in regard to doctor's surgeries.

With regard to 1: When a medical man sees a patient, he writes his notes and prescription at the time. When he gets home he enters the prescription at once in the day book, and then copies the prescription into the dispensing book, making the medicine up at once. These three checks are surely enough to ensure the doctor's intentions being properly carried out, and nobody can do this so well as himself.

2. Mistakes: (*a*) The effect of inadequate training. This remark is the result of the abolition of the apprenticeship, and the profession deserves the rebuke. That which was learnt during the early training was good practical work to be remembered all one's life. A confusion of mental processes, etc. This is a question of strength—the medical man and chemist alike are human. (*b*) The outcome of employing unqualified dispensers. Surely medical assistants are qualified. (*c*) explains itself. Medical men do not sell medicine.

With regard to non-dispensing. What might happen in towns I shall not speak of. What would happen in the country would be the rapid destruction of the chemist as such, or the total annihilation of the doctor.

Few country practitioners could afford to pay a chemist to make up club medicine, and those who did would lose half their practice, for the country folk think more of the bottle of medicine than all the doctor's advice.—I am, etc.,

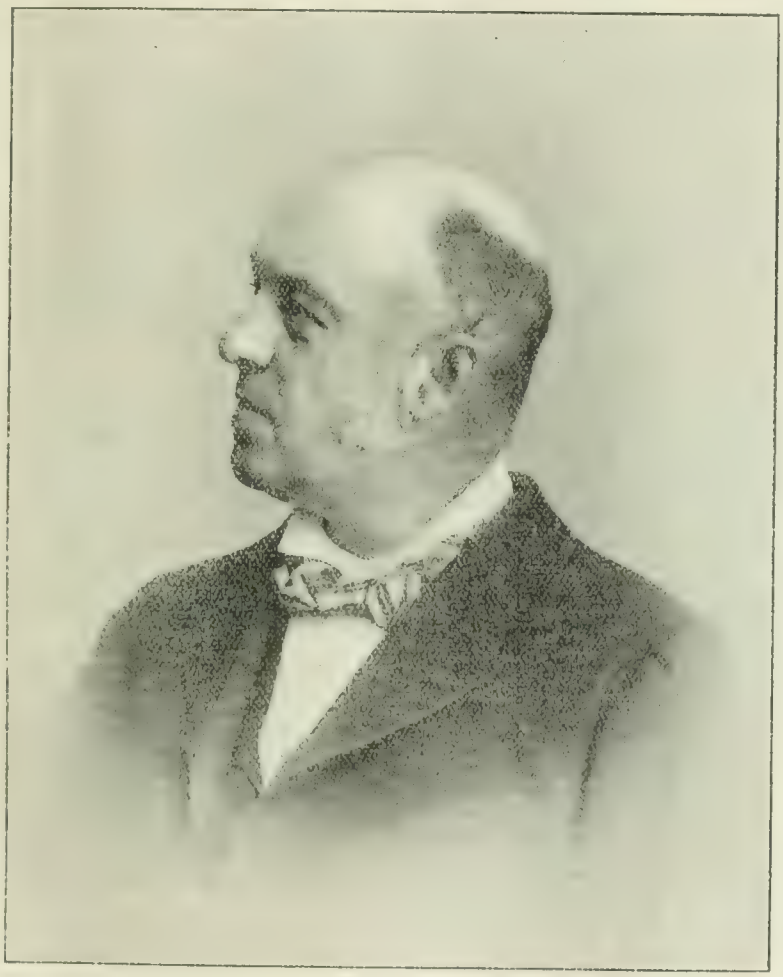
Conway House, Paignton, August 15th. GRIFFITH C. WILKIN.

OBITUARY.

Sir WILLIAM MITCHELL BANKS, M.D., LL.D., F.R.C.S.Eng., J P.

Emeritus Professor of Anatomy, Liverpool University, etc.

William Mitchell Banks, whose unexpected death while on a Continental holiday has come as a painful shock to his colleagues and many friends, was born in Edinburgh in 1842, his father being Mr. Peter S. Banks, Writer to the Signet, of that city. He received his early education at the Edinburgh Academy, whence he passed to the University, entering upon a brilliant career as a student of medicine, which ended by his taking the degree of M.D., with honours, in 1864. His thesis on the Wolffian Bodies, which remained for many years the accepted authority on the subject to which it refers, was awarded a gold medal.



Sir William Banks had the good fortune to pass through the Edinburgh School at a time when it was at the height of its fame, and he numbered among his teachers Syme, Goodsir, Simpson, Hughes Bennett, Turner, and others who have made it celebrated.

After graduating he was Demonstrator of Anatomy in the University of Glasgow under Professor Allen Thomson. He spent some time in Paraguay, where he saw something of the war, and he finally went to Liverpool about the year 1869 as Assistant to Mr. E. R. Bickersteth, who was then, and for many years afterwards, at the height of his fame as a surgeon. He put up his plate in Maryland Street, and joined the staff of the Infirmary School of Medicine, which was then in an almost moribund condition, and he became one of an energetic band of workers who laboured hard and successfully to place the school on a footing to compete with the other schools throughout the country and to secure its recognition by the universities and other licensing bodies. Most of his fellow-workers are still living; among them are Dr. A. T. H. Waters, Mr. Reginald Harrison, Dr. Caton, Dr. Glynn, and Mr. Edgar Browne. Dr. Alexander Davidson, with whom he was closely united in work and friendship, predeceased him by only a few months. Banks's special department in the school was Anatomy, in which he was first Demonstrator and then Lecturer. When the school was merged in University College he remained for some years Professor of Anatomy, but resigned when an endowed Chair was created, and was elected to the honorary position of Emeritus Professor of Anatomy. During his early days at the school he devoted himself with characteristic energy to the improvement of the dissecting room and the means of teaching anatomy, and many of his bold drawings and diagrams are still in constant use. But apart from the strictly technical work of his own department he deserves to be long remembered for the services he rendered the school in his capacity of Dean, and for his success in urging on the public its claims for pecuniary assistance in order that its equipment should be adequate for the teaching of medicine and surgery as they had then come to be understood. His knowledge of the world, and his power of clear and lucid expression were doubtless of great service at this time, and they were again called into requisition when, together with Dr. Waters and others, he took a leading part in the movement in favour of higher education in Liverpool, a movement which led to the formation of University College in 1882, and which culminated in the establishment of the University of Liverpool last year.

For some years Banks represented Victoria University on the General Medical Council, on which he strenuously advocated the raising of the standard of general and professional education, and strongly supported the addition of the fifth year to the curriculum. He was also at one time on the Council of the Royal College of Surgeons of England. Sir William Banks's scholastic and public occupations might indeed have been enough to employ the energies of most ordinary men, but his practical and humanitarian instincts were such as would not allow him to be content with the career of a scientific teacher or of a public man, and it was as an operating surgeon that his greatest triumphs were won. In 1875 he succeeded Mr. Reginald Harrison as Assistant Surgeon to the Royal Infirmary, and two years later, on the retirement of the late Mr. James Hakes, he was appointed full Surgeon. His term of office as Surgeon to the Infirmary reached a quarter of a century, ending in November, 1902, when he retired, in accordance with the law of the Institution, on attaining the age of 60 years. He was appointed Consulting Surgeon in the usual way, but the Committee in order to mark its appreciation of the very special services rendered by Sir William Banks, chiefly during the building of the new Infirmary, paid him the unique compliment of assigning him ten beds in his former wards.

In all matters affecting the Infirmary he always took the deepest interest, and he was one of the two representatives of the Medical Board upon the Building Committee. To him and his colleague, Dr. Davidson, were largely due the designing and perfecting of the new Infirmary which, after 14 years, still remains, in most respects, a model of what a hospital should be. As a surgeon his characteristics were judgement and decision, and he was a leader in certain departments. He will probably be longest remembered as a pioneer in the radical cure of hernia, and as an advocate of the extirpation of the axillary glands in the removal of the breast for cancer.

Sir William Banks was a frequent contributor to the medical journals, and occasionally, as in *The Gentle Doctor*, did not confine himself to the technicalities of his profession. He was a fluent and accomplished speaker, and was equally

at his ease at a strictly professional debate, at a public meeting, or when indulging in the pleasantries of an after-dinner speech. He was always delightful company, and was a charming *raconteur*. As a lecturer he was a great favourite with his students. He always interested them, and he never left them in doubt as to his meaning. Hard as he worked he found time to cultivate the amenities of life, and his recreations were as varied as was his work. He was a climber, a golfer, an angler, and a cyclist; he was a musician and a collector, and was lavish in his hospitality.

Great as were his industry and his attainments it cannot be said that the public and the profession were slow to recognize them. He enjoyed a large and lucrative practice, and he was the recipient of almost every honour and distinction that it was possible for him to receive. He received the honour of knighthood in 1899, this being the only time it has been conferred on a medical practitioner in Liverpool. He was President of the Lancashire and Cheshire Branch of the British Medical Association, President of the Medical Institution, a Member of the General Medical Council, a Member of the Council of the Royal College of Surgeons, and Lettsomian Lecturer in the College for 1900; he gave the annual oration before the Medical Society of London in 1893, and in 1897 delivered the address in Surgery at the Montreal Meeting of the British Medical Association. He was presented with his portrait, painted by the Hon. John Collier, on his resigning the Chair of Anatomy, and he received the honorary degree of Doctor of Laws of the University of Edinburgh. In 1892 he was appointed a Justice of the Peace for the City.

Some thirty years ago he married Elizabeth Rathbone, daughter of the late Mr. John Elliott merchant, of Liverpool, by whom he had two sons. One of his sons died some years ago, to the great grief of his parents; the other, Mr. Reginald Banks, is a student at Lincoln's Inn. Lady Banks also survives him. Sir William Banks was seldom laid aside by illness, and his cheery aspect suggested robust health, so that to most of those who saw him he looked as though he might have many years of life and work before him. To a few of his intimate friends it was, however, known that about two years ago he began to suffer from slight indications of angina pectoris, a disease to which his father had succumbed, and to those who knew his death was hardly a surprise. The end was, however, very sudden. He was, with his son, on his way to Homburg, where he had been recommended by his friend, Sir Dyce Duckworth, to go for treatment. During the night he was seized with symptoms of cardiac failure, and twenty minutes later passed away painlessly.

The remains were brought to Liverpool for interment, and were laid to rest in Smithdown Road Cemetery on Friday, August 12th, in the presence of a large gathering of colleagues, friends, and patients.

A memorial service was held in the Rodney Street Scotch Presbyterian Church, which Sir William Banks used to attend, the officiating minister being the Rev Dr. Watson ("Ian Maclaren") who delivered an eloquent panegyric on the deceased. He said:

It is with a deep sense of responsibility and a sad heart that I endeavour to express the regret of this city for the loss of a great surgeon, and the grief of his friends for the death of one of the kindest of men. We realize acutely the irony of life and the futility of things, when one who has fought disease for many a year and has beaten the enemy back from many a door himself is vanquished, and having saved others cannot save himself. And we expected that he would have been one of the last of us to fall—for he was so charged with life, so buoyant, so brave, so strong. There are men who, through age, have lost their hold on life, and like the withered leaves are ready to fall: there are others who, through the feebleness and narrowness of their natures, have never had much hold on life, but who move amongst us as ghosts; but our friend was alive in every nerve of his body and every faculty of his mind, with his roots struck in many provinces of activity and thought. Nothing human was alien to him; he rejoiced in the beauty of the world, in the feats of sport, in the gaiety of youth, in the fellowship of his friends, in art and letters. He had tasted the joy of living, and it came as a shock and surprise to his friends that this most vital of men had been, as it seemed to us, who did not know, struck down in the midst of his strength. The news has darkened many a holiday, and left some of us poorer for long days to come. And yet he met the summons bravely and calmly, as became one who had done his part in life faithfully and well, and I have no doubt that he would have preferred to leave in the fullness of his life rather than to see his right hand lose his cunning, and to be no longer fit for the work he loved and did so well. As he had loved to deliver his fellow-men from cruel pain, so the love of God received this faithful servant quietly and gently into the eternal rest. He had been honoured, as was most fit, before he died, by his Sovereign, by his University, by learned societies, by his profession, by his colleagues, by the Infirmary, and by his fellow-citizens. Our friend had been knighted. He was a magistrate. He had received the degree of Doctor of Laws from his mother University, he was a Fellow of the Royal College of Surgeons, he had been a professor in the Medical School of Liverpool, he was Consulting Surgeon to the Royal Infirmary, and he had been president of various scientific bodies. There was none of his honours, I dare to say, he had not deserved. There was, I fancy, no honour he really desired which he did not obtain. His was not the cynicism which effects to despise the approbation of his fellows, nor the unreality which affects to deprecate it. He was pleased when society recognized the work he had done, and his friends were proud when he was honoured. By virtue of his own generosity he reaped the harvest of general goodwill. It would not be seemly that a layman should estimate the work of Sir William Banks—and this has been done with knowledge and admirable taste by the press—but, as a member of the profession which works in another sphere and with different means, one envies the visibility and the practical utility of this distinguished man's work in perhaps the most brilliant department of medical science. With an inspiration of knowledge and with a magic of hand he accomplished those critical operations which restored sufferers to the ranks of fighting men and lifted the shadow from anxious homes. There are many in this city and district who are

living evidence of his insight and his skill. I envy him because he saw the fruit of his labours. His name is associated with the study and treatment of the most mysterious and cruel of all diseases, and will be preserved as one of the founders of the University of Liverpool, and one of the chief builders of the Royal Infirmary. Mitchell Banks, as we loved to call him, had those fine qualities which he shared with the chiefs of his illustrious profession. The first was sound judgement, a quality which I may be allowed in passing to say also belonged in conspicuous degree to his friend the late Dr. Alexander Davidson. He was open to light from every quarter, but he was dazzled by no speculations, and he tried no wild experiments with the living. Dealing with the issues often of life and death as he did, he depended upon knowledge as his best ally. He was a safe and sound man, who created and who merited confidence. Like Sir Thomas Browne, whom he delighted to read, and the *Autocrat of the Breakfast Table*, and the author of *Rab and His Friends* and the late Sir Grainger Stewart, and many living physicians and surgeons, he added culture to science, and thereby enriched his character, and gained, I submit, a deeper insight into life. None wrote with nicer touch, none had a better taste in books, none could make a more graceful or a more witty speech, none had a keener appreciation of the drama. To know him was indeed a liberal education. Above all, there dwelt in him that soul of kindness without which no man can reach the height of his calling, in medicine or any other profession. Science without sense fills one with absolute dismay, for there is no disastrous trick it may not play; science without culture repels one, for it is apt to be only a learned form of Philistinism; science without humanity is simply hateful, and is never to be trusted. True science honours life in every form, but chiefly in its highest, in man: it exists to study, to deliver, to reinforce, to glorify it; it is the eager, patient, tender, pitiful servant of every human being. Unto this divine service Mitchell Banks gave himself, and we may say now he has gone that he fulfilled his high commission. His was a shrewd insight and a clever hand, but his was also a big heart. He taught his students, I am sure, to treat the poorest patients as they would treat the greatest, and when the King was here a man in the street, recognizing our friend, cried out from the crowd, "God bless you, Dr. Banks, you saved my life." Our friend declared that in this he had received the best reward of his profession. Because he was so brotherly to every fellow creature and so true to his friends we loved him living, and now when he is gone we shall keep his memory green.

One of Sir William Mitchell Banks's oldest friends writes:

Somewhat more than forty years ago William Mitchell Banks matriculated in the University of Edinburgh as a student of medicine. A bright-eyed, vivacious youth, he soon attracted the attention of his teachers. He was zealous in his anatomical work, and an accomplished dissector, and great was his satisfaction when John Goodsir (then the Professor of Anatomy) selected him to act as Prosector to the class—a duty which he discharged with much ability, for he grudged no labour in the preparation day by day of a beautiful series of dissections to illustrate Goodsir's systematic lectures.

He attached himself also to Professor Syme, in whose clinical wards he acted as dresser, and subsequently he became his House-Surgeon. When it became necessary for Banks to select a subject for his thesis, preparatory to taking the degree of Doctor of Medicine, he investigated the development of the Wolffian bodies and the structures associated with them, and his research, which he published in a small volume, was regarded as of so much value that he was awarded a gold medal by the Faculty of Medicine. He showed that he possessed a sound perception of morphological principles, and there can be little doubt that if he had pursued anatomical science he would have attained distinction in it.

Soon after graduation, he accepted an appointment as surgeon to the Government of the Republic of Paraguay, but after a brief experience in that turbulent state, he wisely returned to his own country. He then, for a short time, resumed anatomical work, and acted as Demonstrator of Anatomy in the University of Glasgow, under the late Professor Allen Thomson. Actuated, however, by a strong love of surgery, he resigned that appointment, and on the recommendation of Professor Syme, he went to Liverpool as assistant to Mr. Bickersteth.

In the course of time he was appointed Lecturer on Anatomy in the Medical School in that city, and subsequently he became Surgeon to the Royal Infirmary. In conjunction with Dr. Alexander Davidson and Dr. Richard Caton, also graduates of the University of Edinburgh, who had about the same time settled in Liverpool, he took an active part in the development of the School of Medicine and of the University College. The progress which they have made and the educational position which they have taken, were regarded by His Majesty the King as of so much importance, that, a year ago, a Royal Charter was granted, which conferred on these Institutions the rights, privileges, and duties of a University.

Those who have been associated with Sir William Banks in his public and professional work in Liverpool will doubtless dwell on the important part which he took in the reconstruction of the Royal Infirmary and the development of the Medical School, but it may be stated here that, in recognition of his services in the promotion of medical education, his Alma Mater conferred on him, a few years ago, the honorary degree of LL D., a distinction which he greatly appreciated.

The writer, who has known Banks from his student days and has watched his career with much interest, may be permitted to refer to those qualities of mind and heart which, in conjunction with his professional attainments, contributed so materially to his success. He was a man of clear perception, who, when he decided on a course to be taken, resolutely followed it. He was no mere popularity hunter, but had the courage of his opinions and did not fear to express them. Such, however, was the geniality of his nature and the confidence which he inspired in his honesty of purpose that, even when his views did not at all times accord with those with whom he was associated, he retained their esteem and affection, and there were few of his colleagues who had so wide a circle of friends, both lay and professional.

Lady Banks and he exercised a gracious hospitality, and when a medical or scientific congress met in Liverpool, his house was filled with guests, and many will hold in agreeable recollection the merry evenings spent under his roof. His conversation bubbled with humorous expressions and his fund of story and anecdote was inexhaustible. When presiding over a smoking concert in Liverpool, or at the annual dinner of the former house surgeons and physicians of the Royal Infirmary in Edinburgh, he kept the ball rolling, and his presence in the chair at such gatherings ensured their success. The memory of his warm heart and kindly nature will long remain a source of pleasure to his friends.

Dr. Caton writes: In attempting to review or summarise in few words the character and the life of the beloved friend and colleague who has passed away from us within the past few days, the first feeling is that he possessed certain special and salient characteristics which somewhat distinguish him from others. Few men of the writer's acquaintance have been endowed with greater strength of will, with more force of character, few could think with so much clearness, and still fewer carried thought and resolve into action more resolutely. Banks was one of those fortunate men who are little troubled by doubts, who always see clearly the course to be taken. If two opposing views presented he quickly struck the balance. Possessing this singular decision of character combined with sagacity, acute observation, a retentive memory, and certain graces of manner and sympathy, it was natural that he should rise to distinction as a surgeon, and to the high position which he occupied in the profession at large.

He was very far from being purely and solely an operating surgeon. That vocation is a sufficiently large and important one for any man to fill worthily, but he lived in a still larger world; he was intensely human, as much interested in the many sides and concerns of human life as a man could be.

The breadth of his sympathies with others was remarkable. In a strong nature like his there was of necessity scope for both likings and antipathies. Banks had known bereavement in his own otherwise happy family circle. The memory of that great trouble had been transformed into sympathy, which was always alive in him when ministering to others. Whether the patient were poor or rich, the ailment was to him not merely an example of surgical disease, but was viewed as through the eyes of the patient himself, and thus his sympathy went out in the fullest measure to the sufferer. The surgeon or physician who thus actually puts himself in thought and feeling in the place of his patient does so at the cost of considerable personal strain. When travelling abroad with Banks, he and I have occasionally been invited to visit a hospital. "No," he would say, "it is my duty in my own wards to see these sad sights, because there I can do some good; here I can do nothing to help, and the sight saddens me too profoundly."

This real, unaffected sympathy with his patients and the friendly kindness accompanying it were not the least of the lessons which the student learnt from Banks in the Royal Infirmary.

While thus alive to sympathy and pity he had also a large share in the happier emotions; few men could be so light-hearted, so full of fun; few possessed such true humour, or could tell a Scotch story so inimitably. No wonder that with these and other gifts, and the hospitality for which his

household was famous, he and his whole family were such great and general favourites.

While profoundly interested in his profession and in some departments of the history of medicine, his intellect also found its food in many other fields. No form of good literature was unwelcome to him; in modern history his acquirements were considerable, while in the history of Napoleon's campaigns he was unusually well-informed. Repeatedly during pleasant holiday rambles abroad, when he and I have visited the scenes of that struggle in Italy, Austria, or France, his remarkable powers of memory and narration have made the event live before us.

It would be difficult to imagine a more attractive travelling companion, always enthusiastic when among the beauties of natural scenery, delighting in mountain climbing, full of interest in art, architecture, archaeology, and history. He was never bored, never dull, never out of temper; he brightened every day of the journey with that merry humour, which, alas! we shall hear no more from his lips.

He has accomplished a large amount of useful work. When extremely busy in practice he laboured to keep alight the little spark of higher education at the Medical School, in the hope, which he and others cherished, that it would grow, as in his lifetime it has grown, into an important college and University. He and another lost and lamented colleague, Dr. Alexander Davidson, had a large share in founding and in successfully planning the Royal Infirmary. Time would fail to tell of the excellence of our friend as a teacher, of his services to medical education, of his striking and powerful diction as a speaker and writer, of his public spirit, of the many efforts he has made to leave things better than he found them. He was a true man who did with all his might whatsoever his hands found to do. His place will not be easily filled.

Professor Rushton Parker writes: The writer is glad to comply with the Editor's request to place on record his knowledge of the life and work of our much-lamented friend, whose acquaintance he made on returning to practise in his native town after studying in London and abroad.

The time was the autumn of 1871, when Banks was secretary to the Liverpool Medical Institution and Lecturer on Anatomy in the then Royal Infirmary School of Medicine. There can be no doubt that Banks's agreeable manner, cogent speech, energy, and tact were of the greatest service to both establishments, as well as to his own progress. Reginald Harrison was Registrar of the School of Medicine—an office which he held many years before and after, and in which he displayed a genius for management, vigilance, and foresight.

The retirement of Mr. E. R. Bickersteth from the Lectureship on Surgery had been followed by the appointment as his successor of Mr. Harrison, who then withdrew from the Lectureship on Anatomy in favour of Banks, in whom he recognized the promise of high teaching capability, amply realized during a long tenure of office. The period named was that marked by the resuscitation of the Liverpool Medical School, and Harrison, as Secretary Manager, set himself to effect to each vacated lectureship in turn the appointment of some young energetic man prepared, like himself, to lead an academic life, and devote much time to demonstrative teaching, unimpeded by the demands of general or family practice.

The Lectureship on Medicine had till recently been held by Dr. John Cameron, who at the present moment, though retired, is the Nestor of Liverpool medicine, and one whose admirable life, nobility of character, and unimpeachable example have always been conspicuous. His successor was Dr. A. T. H. Waters, already a veteran teacher of the school in the departments of anatomy and physiology, and a distinguished mainstay even before the renaissance. The Lectureship on Physiology was a little later, 1872, bestowed upon Dr. Richard Caton, previously demonstrator while Dr. Waters was lecturer, and held by Dr. Caton with much distinction and to the greatest advantage of the school, until an endowment much later enabled the new college to elect its first pure physiologist in the person of Professor Gotch. On Dr. Caton's entry into the Lectureship on Physiology, the writer was appointed his demonstrator, and held the post five years, that is, until Mr. Harrison's resignation of the Lectureship on Surgery, to which the writer succeeded.

Side by side with these systematic arrangements for teaching in the medical school proper was a new era of clinical demonstrations in the Royal Infirmary—in surgery by Mr. E. R. Bickersteth, and in medicine by Dr. T. R. Glynn, then freshly appointed from the Northern Hospital, and for thirty subsequent years one of the most brilliant and appreciated clinical teachers in the whole country. When University College was founded and the new medical faculty organized, the four fundamental lectureships were those first converted into Professorships: Anatomy (Banks), Physiology (Caton), Medicine (Waters), and Surgery (the writer).

The mention of these numerous details is essential to a comprehension of the position developed by Mitchell Banks in a long course of years. The equipment of each department being thus renewed, Banks's work in his own, in which the first foundations of the students' technical training must be laid, was strenuous and ever-advancing. Previously the anatomical demonstrations had been conducted by T. R. Glynn and Edgar A. Browne, with praiseworthy regularity and diligence, in the midst of their other work. Now Banks secured the services of an all-day demonstrator to superintend the practical studies of anatomy. A long list of capable men have filled this office and started their professional life with it. Among them may be named E. Hyla Greves, Henry Briggs, and Henry Ashby as some of the earliest. By their aid, and by much close work of his own, Banks gradually collected an immense number of diagrams to illustrate his lectures, and in every way rendered the department of anatomy superlative in its practical efficiency.

There has been no lack of eminent anatomists at various times in these islands, with excellent original work and good teaching done by them; but in all probabilty none of them taught anatomy better than, and few as well as, the subject of these remarks. He had an easy command of simple, accurate, and euphonious language, and had the faculty of putting things in a clear and attractive light, with abundance of ready wit and convincing humour. His lectures on anatomy were most highly valued by generations of pupils, and it has long been understood that his aptitude for teaching the subject so as to make it acceptable and useful to medical students was exceptionally good. His clinical experiences in surgery were similarly well described whether in writing or in impromptu speech, and he had a happy faculty of securing the attention of his audience. His introductory address at the opening of the winter session in 1872, his numerous speeches in advocacy of university teaching in Liverpool, whether at public meetings, or at Town Hall and other banquets, all possessed the highest qualities of clearness, cogency, and elegance of expression.

It will thus be seen that out of a life of almost 62 years nearly 36 were coincident with the gradual reorganization of the Liverpool Medical School, the origin and development of a new University College, with the adoption of the School of Medicine as its working Medical Faculty, and the rebuilding of the Royal Infirmary. In each of these three schemes Banks played a conspicuous and practical part, devoting much time and energy to their successful accomplishment. His work was not all done in the higher spheres with which his name is connected, either as lecturer and professor of anatomy or as hospital surgeon and clinical teacher. He began as Curator of the Pathological Museum in the school and as Pathological Demonstrator in the hospital, in which two capacities his influence and capabilities first showed themselves. He did not shrink from personal labour, and often said that if a man pretends to do his duty he must be ready to do his share of "bottle washing."

When the late Queen conferred upon him the honour of knighthood, it was regarded as a distinction well deserved and well bestowed, as far as he was concerned, and was further felt to be a decided compliment to the medical profession of Liverpool.

"S. J. R.," an old house-surgeon of the deceased surgeon, writes: Truly a great man has been taken from our midst in Sir William Mitchell Banks. The profession has lost one of its ablest surgical exponents: Liverpool one of her most distinguished citizens; and Liverpool University one of its most sound advisers. That his surgical skill, sound common sense, and remarkable power of diagnosis, were fully appreciated by students was proved by the numbers who attended his clinical teaching in the wards. That this admiration was genuine was proved by the number of men who were anxious to become his house-surgeon, and thus become more intimately associated with him. To his house-surgeons he was always helpful and genuinely kind, a true friend. If in after-life you sought his advice upon any subject—as I have frequently—it was always cheerfully given, and always turned out for the best. In a word, he was a cultured gentleman, a great surgeon, and a true friend.

Sir FREDERIC BATEMAN, M.D., F.R.C.P., LL D., J.P.,

Consulting Physician, Norfolk and Norwich Hospital.

Sir Frederic Bateman, the distinguished physician of Norwich, whose death was announced in the British Medical Journal of August 13th, was born at Norwich on July 8th, 1824, and had therefore at the time of his decease not long completed his 80th year. Till within a few hours of his death he appeared to be in his usual health. Two days before the end he was present at a meeting of the executive body of the Bethel Hospital for Lunatics, an institution with which he had been closely associated for many years. At that meeting he resigned his office of Consulting Physician, and votes of thanks were passed to him for his long and valuable services; the patients presented him with an address in which they said that they "spontaneously desired to put on record our appreciation of the assiduous attention, unvarying patience, and kindly sympathy you have ever displayed towards us." The occasion was looked upon by Sir Frederic Bateman as his *nunc dimittis*, and the feeling proved to be prophetic. On the following day (August 9th) he went out for a walk, but complained of the heat, and later in the day was taken ill. When his medical advisers, Dr. Barton and Dr. Fielding, were summoned, he was beyond human aid. He suffered no pain and retained his consciousness till within a few minutes of the end, which came in the early hours of the morning of August 10th.



Sir Frederic Bateman came of an old Norwich family. His father, John Bateman, was Sheriff of Norwich in 1837. Young Bateman began the study of medicine at the Norfolk and Norwich Hospital, and afterwards studied at University College, London, and in Paris, where he took the diploma of *Officier de Santé* in 1846. In 1849 he was admitted a member of the Royal College of Surgeons of England, and in the following year he obtained the Licence of the Apothecaries' Society. In 1850 he took the degree of M.D. at Aberdeen. In 1851 he was appointed House-Surgeon to the Norfolk and Norwich Hospital. When he retired from that post he went into general practice in partnership with the late Mr. Gibson. In 1864, on the resignation of Dr. Ranking, Sir Frederic was appointed Physician to the Norfolk and Norwich Hospital. In 1866 he became a member of the Royal College of Physicians of London, and he was elected a Fellow in 1876. He continued to hold the office of Physician to the Norfolk and Norwich Hospital until 1895. On his resignation the Governors passed a vote of thanks to the following effect:

Sir Frederic Bateman, M.D., LL.D., F.R.C.P., Associé Etranger de l'Académie de Médecine de France, etc., late Senior Physician, having resigned office after thirty years' service on the honorary medical staff of the Norfolk and Norwich Hospital, the governors desire to express the feeling of sincere regret with which his withdrawal from active duty in the hospital is viewed by them.

The governors cannot speak too highly of the benefits conferred by Sir Frederic's attention to the duties of his office, his devotion to the interests of the charity, and the welfare of the afflicted poor under his charge, and the distinguished literary and scientific ability which has gained him a well-deserved recognition in this country and on the Continent, and has reflected credit on the hospital with which he has been so long and honourably connected.

Sir Frederick Bateman was also Consulting Physician to the Bethel Hospital, Physician to the Eastern Counties Asylum at Colchester, Honorary Physician to the Norwich City Asylum, and Consulting Physician to the Jenny Lind Infirmary and the Norfolk and Norwich Eye Infirmary.

Sir Frederic Bateman devoted special attention to diseases of the brain. He was the author of a well-known work entitled *Aphasia or Loss of Speech, and the Localization of the Faculty of Articulate Language*, originally an essay for which he was awarded a prize by the Paris Academy of Medicine. In the preface to the second edition, which appeared in 1890 in a greatly expanded form, the author states that the first edition, which was published just twenty years before, was one of the earliest, if not the very first, treatise on aphasia published in this country. Among his other works may be mentioned *The Idiot: His Place in Creation*, which also went into a second edition. Sir Frederic Bateman was also the author of papers on hystero-epilepsy, hypnotism, criminal anthropology and other subjects. Two valuable memoirs by him were published in French—one, "Logonévrose Epileptique," in *L'Encéphale* (1887); the other "La Surdité et la Cecité Verbale," in the *Archives de Névrologie* (1889).

Sir Frederic Bateman's scientific researches and professional engagements did not prevent his taking his full share of work as a citizen of no mean city. He was for many years a member of the town council and in 1872 filled the position of Sheriff as his father had done before him. During his year of office the Social Science Congress was held in Norwich, and Sir Frederic Bateman took an active part in its meetings. He read a paper to the members of the Churchman's Club on Darwinism Tested by Scientific Researches in Language, in which he combated the theory of evolution, and declared that he pinned his faith "to the story of the Grand Old Book, which tells us that man was created in the Divine image," and he added, "I accept the tradition that man sprang as man from the hands of his God." The lecture was afterwards published with a preface by Dean Goulburn.

Sir Frederic Bateman received the honour of knighthood in 1892 in recognition of his contributions to science, especially his researches on the subject of aphasia, and his eminence as a physician. He was also a Corresponding Member of the Psychiatric Society of St. Petersburg, an Honorary Member of the New York Neurological Society, a Foreign Associate of the Medico-Psychological Society of Paris, and a Corresponding Member of the Medico-Legal

Society of New York. In 1893 the University of Aberdeen conferred on him the honorary degree of LL.D.

He had been a member of the Norwich bench of magistrates since 1870. He was also a J.P. for the county of Norfolk. In referring to his death his brother magistrates testified to the fairness and impartiality with which he had administered justice on the bench and to his great usefulness as a citizen.

In 1855 he married Miss Emma Brownfield, only daughter of and heiress of Mr. John Gooderson of Heigham Fields-house. Of the marriage there were three sons, all members of the medical profession, and three daughters, one of whom died some years ago.

The funeral took place on August 13th in Norwich Cemetery, the coffin being placed in the family grave beside the body of his wife, who died in 1897. The chief mourners were Miss Bateman (daughter), Dr. C. Gooderson Bateman (son), Dr. and Mrs. McArthur (son-in-law and daughter), Dr. and Mrs. Harvey Bateman (son and daughter-in-law), and other members of the family. Among those present at St. Giles's Church, where the first part of the burial service was read, were the Mayor of Norwich (Mr. G. F. Buxton), the Sheriff of Norwich (Mr. Leathes Prior), Sir Peter and Lady Eade, Sir Charles Gilman, Dr. Beverley (representing the Norfolk and Norwich Hospital), Mr. J. J. C. Turner, and Mr. Sayer (representing the Eastern Counties Asylum).

Dr. Michael Beverley, of Norwich, who was for many years a hospital colleague of Sir Frederic Bateman, writes: When serving my apprenticeship to Bransby Francis in Norwich I occasionally saw Dr. Bateman, who was then practising in the old city with Charles Mends Gibson, a surgeon of considerable repute and an excellent lithotomist. Dr. Bateman subsequently gave up general practice, in order to qualify himself for the position of Physician to the Norfolk and Norwich Hospital, at which in former days he had been a pupil, and to which he was appointed Resident Apothecary (as the house-surgeon was then called). It was not, however, until some years afterwards, when I was a student in Paris, that I became personally acquainted with Dr. Bateman—this was in the early Sixties, in the palmy days of the Second Empire—the doctor, who did not know me, accosted me in French one morning at the Hôtel-Dieu, asking some questions about Professor Trousseau's clinic; his astonishment was great when I replied in our mother tongue, and still more so when he found I was a fellow-citizen. Dr. Bateman was then renewing his acquaintance with the Parisian schools and hospitals at which he had studied many years previously, and obtained the *diplôme* of "Officier de Santé." I frequently saw him in the wards of the Hôtel-Dieu, La Charité, and other hospitals, and noted at the time the zeal and energy with which he followed the practice and teachings of the men who had contributed to raise the Parisian school to the then zenith of its fame.

On my appointment as house-surgeon to the Norfolk and Norwich Hospital, I once more came in contact with Dr. Bateman, and as I had charge of his patients (for there were no house-physicians in provincial hospitals in those days) I soon recognized the untiring zeal and enthusiasm with which he performed his duties in the wards and out-patient department. His bedside notes were precise, his prescriptions simple, and I am indebted to him for much practical and useful knowledge. On one admission day a patient applied who could only answer the word "Yes" to every question Dr. Bateman put to him. This was the first case of aphasia he had seen and it is recorded in his work on the subject (Santy). Trousseau's lectures had not then been published, and as I had attended them I was able to give him my MS. notes. This was the starting point of Bateman's scientific investigation of aphasia, which in no small degree led up to his subsequent distinctions and honours.

Being an accomplished French scholar Dr. Bateman read up with great patience and labour all that Trousseau and his contemporary French clinicians had written on the subject, and as other cases followed in his hospital practice and private *clientèle* he was able to produce an excellent work on aphasia, which obtained for him not only the Alvarenga prize but secured his election to the Paris Academy of Medicine, and unquestionably was the direct cause of his being knighted on the recommendation of Lord Salisbury, endorsed by Sir Andrew Clark, the then President of the College of Physicians.

Sir Frederic during his long life occupied the position of a prominent citizen, and in various ways served well the city of his birth. As Sheriff of Norwich he carried out the duties of that high office with admirable good taste and generous hospitality; as a county and city magistrate he was invariably just and impartial. He was a fluent and incisive speaker—apt quotations were distinctive features in his speeches. At hospital Boards, at the annual meetings of the Colchester Asylum, at Medico-Chirurgical and British Medical gatherings, he was always well to the front whenever any special resolutions had to be moved or seconded. Within a fortnight of his death he had occasion to speak once in response to a congratulation by the Hospital Board on the attainment of his eightieth birthday, and then again a week later, in moving a vote of thanks to Dr. Robert Barnes for his munificent gift to the hospital—and all this was subsequent to an attack of hemiplegia, with slight aphasia, which occurred two or three years ago. At last the end came, as all who knew him expected it would—quite suddenly—and happily for him and his family within the confines of his own home. Thus has passed away another East Anglian physician whose name may be fairly

added to the long roll of Norwich medical worthies—which, beginning with John Caius—four hundred years ago, has continued, almost without a break, to the days of Frederic Bateman.

Dr. William Macdonald, of Blueclidde, Cape Colony, who died recently, was a native of Strathspey, and took the degrees of M.B., C.M. at Aberdeen in 1866, and that of M.D. in 1882. After serving a term as House-Surgeon in the Northern Infirmary he practised for many years in Inverness, where he earned a high reputation for skill and kindness. Acting on medical advice he removed to Cape Colony, where he soon built up a large professional connexion in Port Elizabeth. This he relinquished some years ago to settle down at Armadale, where he had purchased a fruit farm. There also his medical skill and sound judgement proved of much value to friends and neighbours. He was married to a niece of the late Mr. Caldwell, shipowner, Inverness, who survives him with a family of two sons and two daughters.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

Philip Walker Studentship in Pathology.

The Managers have elected Mr. J. Henderson Smith, B.A.Oxon., M.B.Edin., to this studentship for three years.

UNIVERSITY OF CAMBRIDGE.

Tropical Medicine and Hygiene.

The following candidates have satisfied the Examiners (Sir Patrick Manson, Major Ross, and Dr. Nuttall), and are entitled to receive the University Diploma in Tropical Medicine and Hygiene:

A. R. Cleveland, A. R. J. Douglas, G. Elliott, P. N. Gerrard, C. M. Heanley. J. C. B. Statham, C. A. Suvoong, J. C. Thompson.

UNIVERSITY OF LIVERPOOL.

Pass Lists—Faculty of Medicine.

The following candidates have satisfied the examiners:

Final M.B. and Ch.B. Examination—Part I.—J. F. Edmiston, B. T. J. Glover, T. E. Jones, J. F. McCann, J. McClellan, S. W. McLellan, R. H. Mole, L. D. Napier, T. W. Parry, C. H. Smith, F. H. Storey, C. Yorke, W. Yorke.

Part II.—With Second Class Honours: P. Hick, T. E. Walker. Pass: A. E. Grisewood, W. L. Hawksley, G. J. Keane, W. A. Kidd, G. C. Scott.

Second M.B. and Ch.B. Examination—Anatomy and Physiology.—J. W. Cropper, W. G. Williams.

Materia Medica and Pharmacy.—T. T. Apsimon, E. R. Armstrong, A. C. Edwards, S. J. C. Holden, A. Jones, T. Martlew, W. R. Pierce, J. H. Rawlinson, A. M. M. Roberts, R. S. Taylor, S. V. Tinsley.

Diploma in Public Health.—D. T. Barry, M.D.

Diploma in Tropical Medicine—T. M. Clayton, M.B., B.S.: Saiduzzafor Khan, M.B.; P. Hehir, Major I.M.S., M.D., F.R.C.S.; A. R. Maclurkin, M.B., Ch.B.; J. E. Nicholson, Lieut.-Colonel R.A.M.C., M.R.C.S., L.R.C.P.; N. Phillipson, L.R.C.P.&S. Edin.

THE ROYAL UNIVERSITY OF IRELAND.

Meeting of the Senate.

The Senate met on Thursday, July 28th, 1904.

Deaths of Members of Senate.

The Secretaries reported the deaths, since last meeting, of the following members of the Senate: William A. McKeown, M.D., on July 9th, and Edmund Dease, M.A., on July 17th. The following resolution was proposed by Sir Christopher Nixon, seconded by Rev. Dr. N. McA. Brown, and passed unanimously:

The Senate desires to record its deep regret at the death of William Alexander McKeown, M.D., and to express its high appreciation of the zeal and energy with which he devoted himself to the interests of the University, especially to those of the medical faculty, from the time of his appointment as Senator at the foundation of the University.

The following resolution was proposed by his Honour Judge Shaw, seconded by his Grace the Most Rev. Dr. Healy, Archbishop of Tuam, and passed unanimously;

The Senate desires to record its deep regret at the death of Edmund Dease, M.A., who has been a member of Senate since the foundation of the University, and to express its sense of the benefits which the University derived from the wide experience of public affairs, the high sense of duty, the unswerving integrity, and the unfailing courtesy which Mr Dease brought to deliberations of the Senate.

Mr. Dease was a scion of a well known Irish medical family.

Examination Results.

The report of the standing Committee in reference to the recent Summer Examinations was adopted and Passes, Honours and Exhibitions were awarded as follows:

The First Examination in Medicine.

Summer, 1904.

At the further examination for Honours, the following distinctions have been awarded:

Honours in Botany.—First class: W. D. O'Kelly, University College, Dublin; J. A. Sinton, Queen's College, Belfast. Second class: A. Kidd, Queen's College, Belfast.

Honours in Zoology.—First class: None. Second class: W. D. O'Kelly, University College, Dublin; H. H. MacWilliam, Queen's College, Belfast; W. P. Dunne, B.A., University College, Dublin.

Honours in Experimental Physics.—First class: W. D. O'Kelly, University College, Dublin; J. A. Sinton, Queen's College, Belfast. Second class: H. H. MacWilliam, Queen's College, Belfast; W. C. M. Lewis, Queen's College, Belfast; W. B. Dunne, B.A., University College, Dublin.

Exhibitions.—First class, £20: W. D. O'Kelly, University College, Dublin. Second class, £10: J. A. Sinton, Queen's College, Belfast.

Diploma in Sanitary Science.

D. J. Collins, M.B., B.Ch., B.A.O., Royal Army Medical College, London.

Deputation to the Prime Minister.

The Vice-Chancellor stated that, as authorized by the Senate, he had attended as representing the University on the deputation consisting of representatives of the universities of the United Kingdom and various learned bodies, organized by the British Association for the Advancement of Science, which had waited on the Prime Minister to ask for increased help from Government funds for universities and university colleges. The Vice-Chancellor gave an account of the reception of the deputation by the Prime Minister and the Chancellor of the Exchequer, and of the subsequent proceedings.

MEDICO-LEGAL AND MEDICO-ETHICAL.

IMPULSIVE INSANITY.

At the Leeds Assizes on July 29th, Mr. Justice Channell heard the case of Rex *v.* Kay, in which the defence of insanity was raised to a charge of murder, in somewhat peculiar circumstances.

Mr. Harold Thomas and Mr. W. V. Ball appeared to prosecute on behalf of the Treasury; Mr. Mitchell-Innes (at the request of the learned judge) defended the prisoner.

It appeared that the prisoner was a labourer, aged 52, who for some time past had lived with the deceased, a married woman living apart from her husband. Her husband had left her some eight months ago, owing to her intemperate habits. There had been frequent quarrels between the prisoner and the deceased. On the night of May 9th the prisoner woke up, crept downstairs, and took a hatchet, with which he dealt the deceased several blows on the head, causing fracture of the skull. He then went out and gave himself up to the police, stating that he was guilty of murder.

Dr. Clark, Medical Officer at the Wakefield Gaol, stated that he had had the prisoner under observation since the arrest. He had seen nothing in the prisoner's demeanour which showed any sign of insanity, but the prisoner had given the following account of how he came to commit the crime. He said: "Three days prior to May 19th I tried to commit suicide three times. On the night of May 9th I got out of bed as if I was in my sleep, and I seemed to hear a voice saying 'Get up and kill her.' I crept downstairs, got a hatchet, and struck her three or four blows. When I had done that it seemed as if some scales fell from my eyes, and I flew out of the house to give myself up. I was fond of the woman and never intended to kill her." Witness said that if these facts were true, it was his opinion that the prisoner was insane at the time of the act. The prisoner, who gave evidence on his own behalf, substantially repeated the above statement.

In summing up his Lordship said that he had never before heard of a case in which the only evidence of insanity was that of the prisoner himself. If an accused person were to be held irresponsible merely because he heard a voice calling upon him to commit a serious crime, any murderer might escape. The true test of insanity had been thus defined by Mr. Justice Stephen in *R. v. Davis* (14 Cox c.c. 563): "A person may be both insane and responsible for his actions, and the great test laid down in McNaughton's case was whether he did or did not know at the time that the act he was committing was wrong. If he did, even though he were mad, he must be responsible; but if his madness prevented that, then he was to be excused. As I understand the law, any disease which so distorts the mind that you cannot think calmly and rationally of all the different reasons to which we refer in considering the rightness or wrongness of an action, any disease which so distorts the mind that you cannot perform that duty with some moderate degree of calmness and reason, may be fairly said to prevent a man from knowing that what he did was wrong."

After an absence from court of half an hour the jury found the prisoner guilty, and he was sentenced to death.

EMPLOYER'S LIABILITY.

L. E. P.—A farm labourer contracts a poisoned hand whilst at work. The employer asks the medical attendant to fill up an insurance certificate to get compensation, but afterwards refuses to pay the fee demanded for the certificate on the ground that the patient ought to pay for it. Who is liable for the fee?

*** If the certificate was given at the request of the employer the latter would be liable for the fee. On the other hand, if, as is often done, the employer tells the patient that he must get such a certificate from his medical attendant, then the latter can only look to his patient for payment.

FEES DUE FROM DECEASED PATIENT'S ESTATE.

A Correspondent who has practised in Cape Colony for some years writes in reference to this subject that there the law is the same as in Scotland. The fees due to a medical man at a death-bed illness are preferent. For illnesses attended prior to his death-bed sickness the medical man has, however, to come in concurrently with other creditors.

MEDICAL WITNESSES' FEES AT CORONERS' INQUESTS.

Dr. Wright (Aldershot) states that he was summoned by the deputy coroner of his district to attend an inquest and ordered to make a *post-mortem* examination and to give evidence on the body of a child which died from congestion of the lungs caused by exposure to smoke and cold two days after an outbreak of fire in the house where the child lived. Dr Wright attended the child up to the time of its death, and at the inquest he was cross-examined upon its condition and surroundings as found previous to its death as well as the *post-mortem* condition of the body. On the first day of the inquest he was sworn and gave evidence. The inquest was adjourned for a week, when Dr. Wright was again called and gave evidence, being detained three hours.

The coroner paid Dr. Wright two guineas, stating that that was all he was entitled to. Our correspondent accepted this sum protesting that he was entitled to three guineas, namely two guineas for evidence and necropsy on first day of inquest and one guinea for evidence at the adjournment. Dr. Wright wishes to have our opinion as to the law on the question, and, if he is entitled to additional payment, how he is to proceed to recover the other guinea.

*** The fee for giving evidence at an inquest without a *post-mortem* examination is one guinea. If a *post-mortem* examination is ordered an extra guinea is payable. No extra fee is payable for adjournments as these are considered part and parcel of the one inquest. This is as the law now stands, but a Bill has been prepared by the Association which, if passed by Parliament, will permit the payment of an extra guinea for each adjourment.

MEDICAL ADVERTISING.

J. J. C. writes that he is recovering from a severe illness, during which many inquiries were made, and in many instances callers did not leave their names. He asks whether it would be possible to publish his thanks in the local newspaper in such a way as would not be considered advertising.

*** We would suggest that the editor of the local newspaper should be asked to insert a notice of the following kind in the correspondence column:

"Dr. —— desires to return thanks to many friends for their kind inquiries during his recent illness."

NEWSPAPER NOTICES OF MEDICAL PRACTITIONERS.

A CORRESPONDENT sends us a cutting from a newspaper which announces that the local medical officer of health is about to take a fortnight's holiday, and that his duties will be undertaken by another practitioner.

*** We think there is some justification for the announcement of the absence from home of a medical practitioner occupying an official position, and that it is better to confine our remonstrances with editors to cases for which there is no excuse.

THE RELATIONS OF PARTNERS.

A. writes that he is senior partner in his practice, and that his junior partner, whose experience as a partner and of practice is one of months only, has called in a specialist to consult with him on a case under his care without talking the matter over with A., as A. contends he should have done.

*** The relations between partners should no doubt be as frank and friendly as possible, but we do not think A. has any reason to feel seriously aggrieved with his junior colleague. A certain amount of freedom of action on both sides must be allowed if the partnership relation is to be tolerable.

MEDICAL ETHICS IN ITALY.

AT a meeting of the Council of the Ordine dei Medici of the Province of Rome held on July 20th it was resolved that a code of professional ethics be submitted for amendment and approval to all the medical associations of Italy. It is intended that this code shall be accepted by the whole profession in Italy and recognized by authorities and by the public.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: PIERCE L. CROSBIE, Surgeon, to the *Formidable*, August 11th; MURRAY P. JONES, Surgeon, to the *Proserpine*, August 24th.

ROYAL ARMY MEDICAL CORPS.

EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A MAJOR R.A.M.C., under orders for Bombay, sailing early in December, would exchange dates of sailing with an officer leaving in February or later. Reply to "Budli," c.o. Holt and Co.

COLONEL R. BLOOD, M.D., retires on retired pay, August 13th. He was appointed Assistant Surgeon, September 30th, 1871; Surgeon, March 1st, 1873; Surgeon Major, September 30th, 1883; Brigade Surgeon, April 9th, 1896; and Surgeon-Colonel, August 1st, 1901. He has no war record in the Army Lists.

Lieutenant S. C. BOWLE, from the seconded list, to be Lieutenant, August 1st.

ARMY MEDICAL SERVICE.

SURGEON DUDLEY HANLEY, retired list, died on April 3rd last. He was appointed Assistant Surgeon, July 20th, 1847; and Surgeon, February 19th, 1855. He retired from the service, July 10th, 1866.

ARMY MEDICAL RESERVE.

SURGEON-MAJOR A. D. FRASER, M.D., to be Surgeon-Lieutenant-Colonel, August 2nd.

INDIAN MEDICAL RESERVE.

LIEUTENANT-COLONEL W. G. HENDERSON, Bombay Establishment, is directed to officiate as Principal Medical Officer Aden District, during the absence of Colonel J. S. Wilkins on furlough.

ROYAL NAVAL VOLUNTEER RESERVE.

ROBERT ROXBURGH, M.B., F.R.C.S.E., has been appointed a Lieutenant, August 11th.

VOLUNTEER RIFLES.

MR. ARTHUR PRICE, late Surgeon, Royal Naval Artillery Volunteers, to be Surgeon Captain in the 4th Volunteer Battalion the King's (Liverpool Regiment), August 13th.

Surgeon-Lieutenant W. J. STEPHENS, 5th (the Hay Tor) Volunteer Battalion the Devonshire Regiment, resigns his commission, August 13th.

Surgeon-Lieutenant J. R. WILLIAMS, M.B., 3rd Volunteer Battalion the Royal Welsh Fusiliers, to be Surgeon-Captain, August 13th.

Surgeon-Major J. R. ESSEX, 3rd Volunteer Battalion the South Wales Borderers, to be Surgeon-Lieutenant, August 13th.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From.	To.
Lt.-Col. F. B. Maclean	Canterbury	Woolwich.
,, G. F. A. Smythe	Dublin	Mullingar.
,, H. J. R. Moberly	Transvaal	Or. Riv. Col.
Major R. Crofts, D.S.O.	—	Cork.
,, H. St. G. S. Hore	Dublin	Ballykinter Cp
,, W. W. O. Beveridge, M.B., D.S.O.	Transvaal	Cape Colony.
,, G. A. T. Bray	Crownhill	Devonport.
Captain S. W. Sweetnam	R.A.M. Coll.	Colchester.
,, W. S. Harrison, M.B.	,,	Chester.
,, R. J. Blackham	Newry	R.A.M. Coll.
,, S. H. Fairrie, M.B.	R.A.M. Coll.	Dover.
,, G. T. K. Maurice	,,	Portsmouth.
,, H. W. Grattan	,,	Chester.
,, J. H. Campbell, D.S.O.	,,	Dover.
,, J. C. B. Statham	,,	Netley.
,, E. C. Hayes	,,	Home District.
,, A. H. Waring	,,	Portsmouth.
,, E. W. W. Cochrane, M.B.	,,	Dublin.
,, A. H. Morris	,,	Chatham.
,, G. B. Riddick	,,	Aldershot.
,, A. J. MacDougall, M.B.	,,	Edinburgh.
,, R. W. Clements, M.B.	,,	Chester.
,, M. Swabey	,,	York
,, H. Hewetson	Aldershot	R.A.M. Coll.
,, W. E. Hudleston	R.A.M. Coll.	Bulford.
,, T. H. M. Clarke, M.B., C.M.G., D.S.O.	,,	Home District.
,, E. W. P. V. Marriott	,,	Devonport.
,, C. H. Hopkins	,,	York.
,, J. M'D. M'Carthy, M.B.	Chester	R.A.M. Coll.
,, A. W. N. Bowen	,,	,,
,, H. G. Martin	Dublin	,,
,, F. F. Carroll, M.B.	—	,,
,, S. de C. O'Grady, M.B.	—	,,
,, A. H. O. Young	Chester	,,
,, E. A. Bourke	R.A.M. Coll.	Dublin.
,, G. B. Carter, M.B.	Aldershot	R.A.M. Coll.
,, P. H. Collingwood	Cork	,,
,, S. O. Hall	—	,,
,, A. E. Weld	—	,,
,, R. H. Lloyd	Transvaal	Cape Colony.
,, H. M. Nicholls, M.B.	Cork	R.A.M. Coll.
,, L. N. Lloyd, D.S.O.	Home Dist.	,,
,, C. S. Smith, M.B.	Aldershot	,,
,, A. J. M. Cuddon-Fletcher	Home Dist.	,,
,, J. H. Brunskill, M.B.	—	Dublin.
Lieutenant W. F. Ellis	Woolwich	Chatham.
,, J. E. H. Gatt, M.D.	S. Africa	Transvaal.
,, R. M. Ranking	—	Aldershot.
,, F. C. Lambert	Woolwich	Colchester.
,, D. P. Watson, M.B.	Netley	Devonport.
,, P. J. Hanafin	Curragh	Belfast.

The undermentioned Lieutenants, who were appointed on probation on January 30th last, are stationed as follows: F. J. Turner, Netley; G. F. Rugg, Woolwich; D. S. B. Thomson, M.B., Curragh; J. Fairbairn, M.B., Woolwich; L. Bousfield, M.B., Aldershot; J. H. Douglass, M.D., Curragh; A. S. Arthur, M.B., Netley; R. R. Lewis, Netley; A. L. Otway, M.B., Curragh; C. H. Turner, Aldershot; D. Le Bas, Netley; E. C. Whitehead, M.B., Aldershot; W. F. H. Vaughan, Aldershot; R. B. Hole, M.B., Woolwich; T. C. Lucas, Aldershot; G. E. Cathcart, Aldershot; W. Wiley, M.B., Netley; H. Harding, M.B., Woolwich; J. A. Turnbull, Woolwich; M. F. Grant, Woolwich; D. P. Johnstone, Curragh; E. H. M. Moore, Aldershot; M. D. Ahern, Curragh; F. J. Garland, M.B., Netley; A. A. Meaden, Woolwich; R. J. Cahill, M.B., Netley; H. B. Connell, Woolwich.

BROTHERS AND BROTHER OFFICERS.

MAJOR N. FAICHNIE, R.A.M.C., writes: I am writing to point out a mistake that occurred in the BRITISH MEDICAL JOURNAL of August 13th. It is only a trivial matter and I dare say not worth correcting. On p. 857 the war services of several officers recently promoted are given. Of these the war services of my brother, Major F. G. Faichnie, are really those of another brother, Captain D. C. Faichnie, of the Leicester Regiment, whose regiment was in South Africa before the war and got shut up in Ladysmith after the battle of Lombard's Kop. As a matter of fact my brother (Major F. G. Faichnie) and I were in separate field hospitals and went up to the relief of Ladysmith, and the three of us met in Ladysmith for a time, though we had not seen each other for years.

EXAMINATION FOR LIEUTENANTS INDIAN MEDICAL SERVICE.

WITH reference to the extract from the *Gazette of India*, Medical Department, No. 1047, dated October 24th, 1903, paragraph 4, it is notified that the Government of India has decided that the scope of the examination which lieutenants of the Indian Medical Service will be required to pass after completion of eighteen months' service will be as follows:—Subject (*h*) Textbooks, the relevant portions of the *Army Regulations of India*, vols. ii and vi, and the *Field Service Departmental Code (Medical)*. Sub-

head (*a*) (2) the duties of the subordinate *personnel* of native military hospitals, and the preparation of returns and requisitions connected therewith. Subhead (3): The duties of executive medical officers of the Indian Medical Service. Subject (*d*), subhead (2): Indian military law and Indian articles of war as laid down for officers of the Supply and Transport Corps in G.O.C.C. 897 of 1902. One paper will be set in each of subheads (2) and (3) of subject (*h*). The time allowed for each paper will be three hours. The examinations will take place at district head quarters twice annually, on March 1st and October 1st, simultaneously with those for other officers commencing on October 1st, 1904. The standard required will be for a pass 5 in (*h*) and 5 in law; for special certificate 0.8 in (*h*) and 0.8 in law. An officer may present himself for examination in the above subjects either separately or conjointly. The above rules apply only to officers appointed to the Indian Medical Service on or after January 31st, 1900. The names of candidates for examination will be submitted by general officers commanding districts to the Director of Military Education in India, so as to reach that officer by September 1st and February 1st annually.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

THE ANNUAL REPORT OF THE REGISTRAR-GENERAL FOR ENGLAND AND WALES.

The sixty-fifth annual report of the Registrar-General relating to the vital statistics of England and Wales for the year 1902 has just been issued. The main statistical facts have already been dealt with, to some extent, in the quarterly returns relating to that year; but, besides much other additional information, the report now published contains a detailed analysis of the causes of death, which enables the masses of statistics presented in the tabular portions of the report to be more readily understood. An exceptional feature of the present report is an appendix containing an "abstract of arrangements respecting registration of births, deaths, and marriages in the British Dominions beyond the Seas."

Marriage-Rate.

The number of persons married during 1902 was 523,500, being equal to 15.9 per 1,000 of the estimated population, against 16.5, 16.0, and 15.9 per 1,000 in the three preceding years.

Birth-rate.

The births registered in England and Wales during the year under notice numbered 940,509, and were equal to an annual rate of 28.5 per 1,000 of the population. The birth-rate in 1902 was identical with that in the year immediately preceding, but was 1.1 per 1,000 less than the average in the ten years, 1892-1901. Since 1895 there has been a continuous decline, the rate in the last two years being the lowest on record. Among the various counties the lowest birth-rates were recorded in Rutlandshire, Westmorland, Sussex, Dorsetshire, and Somersetshire; and the highest rates in Northumberland, South Wales, Staffordshire, Monmouthshire, and Durham. There were on an average 1,039 male births to 1,000 female births, the proportion in the ten preceding years averaging 1,036 to 1,000.

Death-Rate.

The deaths registered in England and Wales during 1902 numbered 535,538, being equal to 16.2 deaths per 1,000 of the population at all ages. This is the lowest rate yet recorded since the establishment of civil registration in the year 1837. In comparing the death-rates of different localities it must be borne in mind that the ratio of deaths to persons living is largely modified by the proportions of persons of various ages in the several populations. Adopting as a standard the sex and age proportions of the whole country, the counties with the lowest corrected rates of mortality were Rutlandshire, Westmorland, Bedfordshire, Huntingdonshire, Dorsetshire, and Cambridgeshire, while the highest corrected rates of mortality were recorded in the West Riding of Yorkshire, South Wales, London, Durham, Northumberland, and Lancashire.

With regard to the mortality at different age-periods, it appears that the death-rates for 1902 were lower at all age-groups in both sexes than the corresponding rates for the decennium 1891-1900. The rates among children of each sex under 5 years of age were the lowest on record, as were also the rates among males aged 15-25 and 35-45, and among females aged 15-20 and 35-45. The proportion of deaths among children under 1 year of age to registered births was equal to 133 per 1,000, the average proportion in the decennial period 1892-1901 being 154 per 1,000.

The rate of mortality in the group of districts taken to represent the urban population was equal to 17.8 per 1,000, while in the remaining and chiefly rural districts the rate was 13.7 per 1,000; both the urban and rural rates were below the average, the decline being greater among the urban districts.

Causes of Death.

The various causes of death specified in the present report are grouped under two principal headings, namely, "General Diseases" and "Diseases of Special Organs." It is, however, distinctly pointed out that the present list of General Diseases is only provisional, some conditions which were formerly considered to be merely local having now been added, and further additions to the list being expected to be made in future reports. The aggregate mortality from the seven principal epidemic diseases was considerably below the average; the mortality from small-pox was in excess, but that from measles, scarlet fever, diphtheria, whooping-cough, "fever," and diarrhoea showed a decline. Influenza was slightly more fatal than it had been in the preceding year, but, compared with the average mortality in the decennium 1892-1901, the proportion of deaths per million persons living was only 223 in 1902, against a mean rate of 322. The mortality from phthisis among males was equal to a rate of 1,456 per million, and among females to 1,024 per million; the mortality among males exceeded that among females by 42.2 per cent., but among both sexes the rates were lower than the average for the preceding five years. The deaths attributed to cancer, or malignant disease, numbered 27,872, and exceeded the corrected average number in the five preceding years by 2,384; among males, the death-rate from this cause was equal to 696 per million living, and among females to 985 per million, no higher rate for either sex having yet been recorded. The number of deaths specifically ascribed to alcoholism during 1902 was 2,784, giving a rate of mortality equal to 105 per million among males and 65 per million among females, both these rates being in excess of the decennial average.

Inadequate Certification.

The deaths of 50,170 persons during 1902 were attributed to causes that are practically useless for purposes of classification. A much larger number of deaths from indefinite causes would have appeared in the report but for the systematic inquiries addressed to medical practitioners respecting deaths certified as due to dropsy, tumour, haemorrhage, and certain other indefinite conditions. In the course of the year, 4,706 replies to these inquiries were received, resulting in most cases in a more precise classification of the causes of death. For example, 448 deaths from malignant disease, 367 from tuberculous diseases, 165 from appendicitis, 153 from puerperal septic diseases, and 111 from gastric ulcer were transferred to their proper headings, as a result of the additional information so obtained.

ADULTERATION OF PEAS WITH COPPER SULPHATE.

At Bow Street Police Court, before Mr. Marsham, Louis Bottell, of 61, Theobald's Road, was summoned for selling certain articles of food containing an ingredient rendering them injurious to health. Mr. Walford prosecuted on behalf of the Holborn Council, and Mr. Ricketts appeared for the defence. According to a report in the *Standard*, Mr. Walford said the proceedings were taken under Section 111 of the Sale of Foods and Drugs Act, it being alleged that the defendant sold preserved peas and beans which contained an ingredient, namely, sulphate of copper, which was liable to be injurious to health. The Departmental Committee appointed to deal with the question of preservatives and colouring matters in 1899 recommended that the use of copper salts should be prohibited; one member, who signed a minority report, to a certain extent disagreed, but even he recommended that in no case should more than ½ gr. of metallic copper per pound be allowed. In the present case the analyst's certificate showed that the peas contained 3.402 gr. of sulphur of copper per pound, and the beans 4.067.

Mr. George Frederick Clark, an inspector under the Act, gave evidence as to purchasing a tin of French beans, and a bottle of preserved peas at the defendant's shop.

In cross-examination, he said there was a label on the beans intimating that they were preserved with sulphate of copper, as had been done for many years past. He did not know that there was a similar label on the bottles of peas in question, but that it had fallen off.

Mr. Arthur Douglas Cowburn, Acting Medical Officer for the Borough of Holborn, and Medical officer of Health for the Inner and Middle Temples, said copper sulphate was undoubtedly a poison when administered in a certain way. The amounts in these particular cases were much larger than would be administered by a medical man. The ordinary dose as an astringent was from ½ to 2 gr. Therefore, if a person ate a pound of these peas he would be taking nearly twice the maximum dose. Doses constantly given did not pass out of the body, but remained and produced a cumulative action, which might become injurious or dangerous to health, causing bronchial catarrh, colic, jaundice, etc. Experiments carried out recently showed that copper, in combination with peas, when given to animals, caused paralysis of certain portions of the spinal cord, and ultimately death. It was also found that where copper sulphate was present in such large quantities as in this case it entered into combination with the pith of the pea, and a highly dangerous sub-

stance was formed when it was taken in conjunction with fats, such as butter. Some persons were more liable to be affected than others.

In reply to Mr. Ricketts, witness said he knew that peas had been preserved with copper for many years. It was a great industry in France, and legislative interference with it had been abolished. Sulphate of copper was administered as an astringent. He had never known a case of ill-effects arising after eating preserved peas and beans.

Mr. Ricketts: And Dr. Tunnicliffe recommends the use of sulphate of copper in the preservation of peas?—He recommends that the quantity should not exceed half a grain per pound. I should not appear to support a prosecution if the amount was only half a grain.

Assuming that a quarter of a pound of these peas were consumed, they would contain less than a grain of sulphate of copper. Would that be harmful?—It is not the amount consumed at one time; it is the effect of constant doses.

Re-examined.—Witness said he knew that a well-known firm had given up the use of copper entirely, on account of the opinion expressed by the Departmental Committee. The effect of a grain taken daily by a person susceptible to the drug would very likely be serious

Witness explained, in answer to the magistrate, that when only a small amount of copper was used, it entered into combination with the chlorophyll, forming phyllocyanate of copper. There was no direct evidence that phyllocyanate of copper in minute quantities was injurious to health, although dogs fed on this substance became paralysed, which paralysis ultimately caused death. But when copper was used in such large quantities as those stated in the analyst's report, the copper entered into combination with the pith or substance of the pea or bean forming leguminate of copper. He had ascertained from the analyst that leguminate of copper was present in both the articles in respect of which proceedings had been taken.

Cross-examined: There was a difference of opinion as to whether leguminate of copper was or was not insoluble (in the intestine) when acted upon by gastric and pancreatic juices. When people, as they frequently did, used butter in cooking peas preserved with Cu, complex organic compounds, one of which was oleate of copper, were formed, in which case a much larger quantity of copper was absorbed into the body. That had been proved by experiments carried out for the purposes of the Departmental Committee on Food Preservatives.

Mr Ricketts said the doctor had admitted that he had never known an instance of any ill effects after eating preserved peas, and he thought that was the experience of everybody else. It certainly must be the view of the Legislature, because they had not taken any steps in the direction proposed by the Committee. The defendant had sold these things for thirty years past without any idea that he was either poisoning his customers or committing an offence. He suggested that the quantity of copper used in this case had not been shown to be injurious to health, because it could not be supposed that anybody ate preserved peas and beans every day. He also submitted that the summonses failed because the analyst's certificates did not disclose any offence; the analyst did not say that the analysis showed that the article was injurious to health.

Mr. Walford contended that the certificate was given in the form required by the Act, and the magistrate agreed.

Mr. Ricketts: Will you not accept the defendant's oath that he did not know it was injurious to health?

Mr. Walford: That is no defence.

Mr. Marsham fined the defendant 40s., with 2 guineas costs, on the summons respecting the beans, and 20s. and 2s. costs on the other summons.

At the request of Mr. Ricketts the magistrate agreed to state a case on the point raised as to the certificate.

VACCINATION REGISTERS.

REGISTER writes: I should feel obliged by your informing me as to the ownership of the vaccination register. When the Local Government Board asked for a return *re* vaccination some months ago, the clerk to the guardians wrote me for my old register, which I sent him. Although I have written for it several times it has not been returned to me, and in a letter he says: "I regret I cannot send you the old register, as a short time since I had to prepare an important return to the Local Board and several were missing, causing great inconvenience." Is the register my property, and, if so, what course ought I to pursue to obtain it?

*** There does not appear to be anything in the Vaccination Acts or Order to justify the action of the clerk to the guardians. The contract says of the public vaccinator: "He will keep a book, to be termed the Vaccinator's Register, according to the form prescribed by the Local Government Board, to be provided for him by the said guardians, etc." This register is to be delivered to the clerk each quarter, "and at such other times as may be required by the guardians or for the purposes of audit," but the clerk has no power to detain the book, and it is quite evident that the universal practice, which makes the public vaccinator responsible for the safe custody of his registers so long as he holds his position, is the correct and only convenient one. The public vaccinator is constantly being called upon to make returns, some official as to the Local Government Board, and some unofficial as to the medical officer of health, and may at any time be asked for duplicate certificates of primary or revaccinations performed months before, and it is intolerable as well as, in our opinion, entirely untenable that it should be necessary to do all these things through the clerk. The register is therefore the property of the guardians as long as they supply it to the vaccinator, but the clerk has no right to its custody except for scientific purposes clearly defined by the Order, and a representation to this effect should be made to the guardians, and, if necessary, to the Local Government Board, if a further appeal to the clerk should prove abortive.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

FROM the columns of the *Mercury* (a Stafford newspaper) of June 11th we gather that there has been some local difficulty owing to the fact that the medical officer of health of Tamworth sent a copy of his annual report to the Staffordshire County Council and the Local Government Board before it had been submitted to the Sanitary Committee of the borough. The following resolutions were passed: (1) "That the report of the medical officer of health be not printed, as in the opinion of this Council several paragraphs in the report in its present form are open to serious misinterpretation"; and (2) "That the action of the medical officer of health in sending his annual report to the Local Government Board and the County Council without first intimating his intention to do so is discourteous to the Committee."

Without having all the facts of the case before us it is difficult to form a satisfactory opinion upon this case. The official memorandum of the Local Government Board issued in 1903 in respect to annual reports of medical officers of health states, however, that "the report is to be made to the council by whom he (the medical officer of health) is appointed and he himself should send a copy of it to the Local Government Board and to the county council"; and further, "the Board's copy of the report should be forwarded to them when the original is sent to the Council, except where the report is likely to be printed by order of the Council. In such cases the Board need only be supplied with a printed copy." From this it may be inferred, and it is distinctly understood throughout the country, that a medical officer of health should send a copy of his own annual report, which is of the nature of a privileged document, direct to the Local Government Board without previously submitting it, except formally, to the council of which he is medical officer. The Board desire to learn the views of the medical officer responsible to them and not his views as abridged or modified by his council. That is perfectly clear and reasonable, otherwise medical officers' reports would speedily become reports of a council and not of an officer. Further, we think that a medical officer is acting within his rights when he refuses to amend or alter his report according to suggestions from his council, which has abundant powers of control of its medical officer, if anything too much control; his absolute liberty of report to the Board should be strictly protected. On the other hand, medical officers cannot be too judicious in the statements they make in their annual reports, or too tactful in the manner in which they treat their councils, however unreasonable these bodies may be from time to time.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 9,277 births and 6,482 deaths were registered during the week ending Saturday last, August 13th. The annual rate of mortality in these towns, which had been 14.1, 16.4, and 19.8 per 1,000 in the three preceding weeks, further rose last week to 22.1 per 1,000. The rates in the several towns ranged from 6.8 in South Shields, 9.0 in Hornsey, 10.2 in Hastings and in King's Norton, 10.4 in Devonport, 10.5 in West Hartlepool, 10.7 in Blackburn and in Halifax, and 11.3 in Coventry, to 31.2 in Birmingham, 32.4 in Aston Manor, 33.0 in East Ham, 34.6 in York, 35.5 in Bootle, 35.7 in Wigan 36.7 in Leyton, and 37.7 in Liverpool. In London the rate of mortality was 21.4 per 1,000, while it averaged 22.4 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 9.3 per 1,000 in the seventy-six large towns; in London the rate was 8.6 per 1,000, while among the seventy-five other large towns the rates ranged upwards to 17.3 in Walthamstow, 17.4 in West Ham, 17.9 in Hull, 18.0 in York, 19.6 in East Ham, 20.5 in Liverpool, 22.1 in Aston Manor, 23.5 in Leyton, and 24.5 in Bootle. Measles caused a death-rate of 1.2 in Brighton and in Hull, 1.6 in Salford and in Stockport, and 4.2 in Bootle; scarlet fever of 1.1 in Northampton; whooping-cough of 1.7 in Bootle and in Rhondda, 2.7 in Huddersfield, and 4.0 in Burton-on-Trent; and diarrhoea of 14.0 in Burnley, 15.1 in Birmingham, 16.2 in Hull, 16.4 in Walthamstow, 16.6 in West Ham, 17.8 in East Ham, 18.0 in York, 18.5 in Liverpool 18.6 in Bootle, 21.4 in Aston Manor, and 21.6 in Leyton. The mortality from diphtheria and from enteric fever showed no marked excess in any of the large towns. One fatal case of small-pox was registered in London, one in Coventry, and 1 in Stockport, but none in any other of the seventy-six towns. The Metropolitan Asylums Hospitals contained 21 small-pox patients at the end of last week, against 51, 46 and 32 at the end of the three preceding weeks; no new case was admitted during the week. The number of scarlet fever cases under treatment in these hospitals and in the London Fever Hospital, which had been 1,754, 1,784 and 1,758 at the end of the three preceding weeks, had risen again to 1,763 at the end of last week; 189 new cases were admitted during the week, against 234, 243, and 166 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, August 13th, 615 births and 379 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 14.1, 14.1, and 14.6 per 1,000 in the three preceding weeks, further rose last week to 15.7 per 1,000, but was 6.4 per 1,000 below the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 8.1 in Paisley and 12.3 in Perth to 15.6 in Aberdeen and 17.4 in Glasgow. The death-rate from the principal infectious diseases averaged 3.3 per 1,000, the highest rates being recorded in Glasgow and Greenock. The 266 deaths registered in Glasgow included 2 from measles, 3 from diphtheria, 17 from whooping-cough, and 50 from diarrhoea. Two deaths from measles, 5 from whooping-cough, and 2 from diarrhoea were recorded in Edinburgh; 8 deaths from diarrhoea occurred in Dundee; 4 in Aberdeen, and 2 in Greenock. Two fatal cases of whooping-cough were recorded in Paisley, and 2 in Leith.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, August 13th, 591 births and 370 deaths were registered in six of the principal Irish towns, against 495 births and 335 deaths in the preceding period. The mean annual death-rate in these same towns, which had been 13.7, 15.0, and 17.8 per 1,000 in the three preceding weeks, rose slightly to 17.5 per 1,000 in the week under notice, this figure being 4.6 per 1,000 below the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 9.7 in Waterford to 27.4 in Dublin. The death-rate from the principal zymotic diseases during the same period and in the same six Irish towns averaged 2.4 per 1,000, or 0.1 per 1,000 higher than during the preceding week, the high figure of 6.2 being recorded in Dublin, while Cork registered no deaths under this heading at all. In Dublin the high rate was chiefly due to diarrhoeal diseases, to which 32 deaths were ascribed.

From whooping-cough, 5 deaths occurred in Belfast and 4 in Dublin: from measles, 5 in Dublin, and 1 in an outlying town. In Belfast, 1 death from diphtheria occurred, and 2 in Dublin. The deaths from diarrhoeal diseases in Belfast were 17, but, except in Dublin, the deaths from this cause were elsewhere very few.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BATH: OPEN-AIR SANATORIUM FOR CONSUMPTIVES, Limpley Stoke.—Resident Medical Officer. Salary, £250 per annum.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Third House-Surgeon, resident. Salary, £50 per annum.

BRIGHTON THROAT AND EAR HOSPITAL, Church Street. Non-resident House-Surgeon. Salary at the rate of £75 per annum.

CAR ISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £150 per annum without board.

CHELTENHAM GENERAL HOSPITAL.—Assistant House-Surgeon, resident. Salary, £92 per annum.

DOUGLAS: NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £82 per annum.

LANARK: BELLEFIELD SANATORIUM.—Resident Physician. Salary, £100 per annum.

LANCASTER: ROYAL LANCASTER INFIRMARY.—House-Surgeon, resident. Salary, £100 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House-Surgeon, resident. Appointment for six months. Salary at the rate of £60 per annum.

LONDON UNIVERSITY.—Scientific Assistant in Pathology. Salary, £50 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon, resident. Salary, £50 per annum.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer. Appointment for six months. Salary at the rate of £80 per annum.

NEWCASTLE-ON-TYNE: HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer, male. Salary, £100 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—Assistant House-Surgeon, resident. Appointment for six months. Salary, at the rate of £60 per annum.

ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House-Surgeon, resident. Salary, £110 per annum.

ST. PETER'S HOSPITAL FOR STONE, Henrietta Street, Covent Garden, London.—Junior House-Surgeon, resident. Appointment for six months. Salary at the rate £51 per annum.

PLYMOUTH PUBLIC DISPENSARY.—(1) Honorary Physician. (2) Second Medical Officer, moiety of net receipts. (3) Physician's Assistant. Salary, £70 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House-Surgeon. Salary, £50 per annum.

WINCHESTER: ROYAL HANTS COUNTY HOSPITAL.—House-Surgeon, resident. Salary, £65 per annum.

APPOINTMENTS.

BELL, Thomas, M.D., Medical Officer of Health to the Shepstead Urban District Council.

COURTENAY, K. J., L.R.C.P.&S.Edin., L.F.P.S.Glasg., Medical Officer of Health for Wallingham.

FREER, J. H., M.R.C.S., L.R.C.P., Medical Officer of Health to the Rugeley Urban District Council.

HARLING, Thomas, L.R.C.P.& S.Edin., L.F.P.S.Glasg., Medical Officer to the Reeth Rural District Council.

LYON, R. M., M.B., C.M., Medical Officer and Vaccinator for the Parish of Cathcart.

PERRY, S. Herbert, M.D.Lond., M.B., Ch.B.Birm., M.R.C.P., Assistant Physician to the General Hospital, Birmingham.

PRINGLE, A. Douglas, M.B., Ch.B.Aberd., Senior Assistant Physician to the Government Asylum, Pietermaritzburg, Natal.

STANTON, T. W., M.R.C.S., L.R.C.P., Medical Officer for the Osbournby District of the Sleaford Union.

WALES, E. G., M.B., M.R.C.S., L.R.C.P., Medical Officer to the Downham Urban District Council.

DIARY FOR NEXT WEEK.

POST-GRADUATE COURSES AND LECTURES.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered as follows: Monday, at 5 p.m., Treatment of Nephritis; Tuesday, at 3.30 p.m., Demonstration in Medical Wards; Wednesday, at 5 p.m., Tobacco Amblyopia; Thursday, at 4 p.m., Demonstration in Surgical Wards; Friday, at 5 p.m., Surgical Cases.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 2s 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

GITTINS.—On the 10th inst., at 21, Eardley Crescent, Earl's Court, the wife of Surgeon O. B. Gittins, M.B.Lond., R.N., of a son.

DEACON.—At Tor View, Yelverton, Devon, on 4th August, to Thomas Deacon, Gold Coast Colonial Service, and Mary Ariel Stewart Deacon, M.B., B.S., Gold Coast Colonial Service, a daughter.

MARRIAGES.

GILL—JAMIESON.—On the 9th inst., at St. Mary's Church, Welford, Northamptonshire, Ella Ursula Jamieson, daughter of Mr. and Mrs. J. Storey Jamieson, of Sydney, N.S.W., and George Britton Gill, M.B., B.S., M.R.C.S., L.R.C.P., of The Gables, Bosper, son of the late Henry Clifford Gill, M.R.C.S., of Bootham, York, and Mrs. Macaldoe of High Bank, Sidmouth, Devon.

LINDSAY—SWINNERTON.—On August 10th at the Parish Church, Templecorran, by the Rev. T. Parr, M.A., Creighton H. Lindsay, M.B., Springfield, Widnes, to Margaret Helena Swinnerton, Wagneford, co. Derry, Ireland.

MURRAY-KERR—MILLIGAN.—On August 9th, at East United Free Church, Dunscore, by the Rev. W. J. Stirrett, M.A., United Free Church, Maxwelltown, assisted by the Rev. James Stewart, B.D., Cupar-Angus, brother-in-law of the bridegroom, and the Rev. Jas. Pollock, Dunscore, P. Murray Kerr, M.B., to Elizabeth H. S. J. Milligan, daughter of John Milligan, of Merkland, Lumfries.

DEATHS.

JOHNSTON.—On the 17th inst., at the residence of his son-in-law, Joseph Bostock, The Grove, Spondon, Thomas Johnston, M.R.C.S.Eng., of Belper. No flowers by request.

STEWART.—On the 16th August, 1904, at "Dunmurry," Sneyd Park, near Clifton, Glos., Hamilton Stewart, Assistant Paymaster (retired), younger son of James Stewart, B.A., F.R.C.P.Ed.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

CAUTION asks for a recipe for soap and ether solution for cleansing the skin before operations.

DR. ETHEL M. N. WILLIAMS (Newcastle-on-Tyne) writes: I should be glad if any reader of the BRITISH MEDICAL JOURNAL could give me any particulars of Guimar in Teneriffe. Is the accommodation good? Are there shady gardens for sitting or lying in? Are the milk and water supplies good? Is it possible to get a villa, or is there a small quiet hotel? Is there an English doctor within reach?

INTRACTABLE PSORIASIS.

A CORRESPONDENT writes: Can any members suggest a line of treatment for an intractable case of chronic psoriasis extending over the entire body with the exception of the face? The patient, a young lady, has been treated with arsenic, sulphur bath, ichthyol, chrysarobin, and many external applications over a period of two years, without effect. Are there any cases on record of cure by thyroid?

REQUIRED A DIAGNOSIS.

SIGMA writes: A strong, and up to the time of his attack, a presumably healthy workman, aged 28, was seized suddenly while at work with cramp of legs, arms, and body. He continued on duty, took part of his dinner, had no nausea or vomiting, and indeed beyond the cramp made no special complaint, except that he said he felt rather drowsy. This feeling increased; he was taken into a cabin close at hand, when he became more or less unconscious, and he was then removed home in a cab. When I saw him about two hours later he was suffering from intense collapse, his face and body drenched with perspiration, and he was evidently dying. He did not live much longer than one hour after his return home. But just before the close he developed a general convulsive condition of the body, which lasted till death. There was no paralysis, and no history of any injury. A necropsy could not be obtained, and an attempt to obtain a specimen of urine was unsuccessful, as the bladder was quite empty.

THE MEANS OF MAKING HOSPITAL WALLS IMPERMEABLE.

I.M.S. asks what is the best means of making hospital walls (operation room and wards) impermeable. Burdett recommends paper varnished, but our correspondent does not think this would be suitable for India.

*** We are advised that the best way to make hospital walls impermeable is a perpendicular damp-proof course up the whole height of the wall, from damp course to roof. If the walls are constructed in brick a 11 in. cavity, left 4½ in. or 9 in. from inside face of wall, should be filled with asphalte every four courses, or every foot, commencing from the damp-proof course, and pouring the asphalte in a boiling state into the cavity, which must be kept clear of mortar and dirt. The cavity may for practical purposes for different materials be kept 4½ in., 9 in., or in the middle of the wall, whichever is most easily worked. This will render the interior face of the wall absolutely impermeable even to violent gales or storms. An expert informs us that he has used it for 25 years with constant success.

ANSWERS.

EXCELSIOR has omitted to enclose his card.

NOM DE PLUME.—One of the following French medical journals might meet our correspondent's requirements: Weekly, *La Semaine Médicale*, 18, Rue de l'Abbe de l'Epée, 10 francs a year to foreign subscribers; *Le Progrès Médical*, 14, Rue des Carmes, Paris, 12 francs a year to foreign subscribers. Monthly, *Archives Générales de Médecine*, 28, Rue Serpente Paris, 15 francs a year to foreign subscribers.

SUPERFLUOUS HAIRS.

DR. W. PITT PALMER (Torquay) writes: In answer to "Electrolysis" in the BRITISH MEDICAL JOURNAL of August 13th, fifty to seventy hairs are sufficient to remove at one sitting, of which five to ten may return. In most cases a sitting could be endured every other day. Hair on the chin and upper lip would probably take three months for complete removal. Pain is such a variable quality in different individuals that it is difficult to estimate. Given an expert operator, with a small needle which will practically of its own weight fall into the hair follicle, with the correct amount of current, no pain is felt, and in a short time the patient does not notice any discomfort. The upper lip, especially near

the nostril, is often acutely sensitive in a highly-nervous patient: in this case the local application of ice is all that is necessary, or a little cocaine or eucaine may be mixed with lanoline, and the needle lubricated with it on each insertion. Ninety per cent. of all patients endure the slight pain without any complaint.

FRENCH MEDICAL DEGREES.

CALOR.—The degree of M.D. may be obtained by examination before a French faculty (Paris, Montpellier, Nancy, Bordeaux, Lyons, Lille, or Toulouse). The degree, however, confers the right to practise only if it has been obtained on precisely the same conditions as those to which French students are subject—that is to say, before registration as medical students they must produce evidence of having passed the examination for the French diploma of Bachelor in Classical Education (Arts and Philosophy), and the certificate in Physical, Chemical, and Natural Science, and they must go through the regular curriculum of professional study, and must pass all the five professional examinations required of French students. The degree of M.D. is still obtainable by holders of British diplomas under the old conditions of exemption at the discretion of the Minister of Public Instruction, from any preliminary examination in arts or sciences and from portions of the professional curriculum and examinations. The degree obtained in this way will not, however, confer the right to practise in France. The wards of hospitals and laboratories are still freely open to foreigners: and for those who may wish to obtain the purely honorary M.D. degree, the facilities offered in the way of dispensation from preliminary examinations are even greater than heretofore. Application for such exemption must be addressed to the Minister of Public Instruction, to whom the documents showing the examinations passed by the candidate in his own country and the degrees of qualifications possessed by him must be submitted. Fees to the amount of £60 must be paid. The *Progrès Médical* (14, Rue des Carmes, Paris) publishes a "Student's Number" every year about November, in which full information is given as to teaching and examinations in every medical school in France.

LETTERS, NOTES, Etc.

ANNUAL MUSEUM.

MESSRS. CUXSON, GERRARD AND CO., Limited, manufacturers of surgical dressings and appliances, Crown Buildings, Corporation Street, Birmingham, ask us to state that their daily journal containing a number of business entries was missed from their stand in the Annual Museum of Oxford. They will be greatly obliged by its return.

THE DISINFECTION OF B. TYPHOSUS WITH SANITAS.

DR. DAVID SOMMERVILLE (King's College) writes: Mr. Kingzett's criticism of my paper which appeared in the BRITISH MEDICAL JOURNAL of July 2nd is wholly wide of the mark. When other observers, working by the method I used and adhering strictly to all the details, find results divergent from mine, I shall be pleased to accept such results as worthy of criticism. But, since the findings of both the gentlemen quoted by the Chairman of Sanitas have no relation to the method used by me nothing has been raised as yet calling for reply. If Mr. Kingzett will get Mr. C. G. Moor and Dr. Grimes to perform my experiments, using the same organism, as nearly as possible in the same biological condition—possessing the same vigour, pathogenicity, etc.—and carefully observing uniformity in all the conditions mentioned, we shall then have a semblance at least of common ground on which notes may be fairly compared.

A PROFESSIONAL DRESS FOR MEDICAL MEN.

DR. W. T. FERNIE (Richmond) writes: Your little article in the present number of the BRITISH MEDICAL JOURNAL concerning a Professional Dress for Medical Men is, to my thinking, most opportune. For years past many of us have, I feel sure, good-naturedly grudged the general respect and prompt attention which our clerical brethren always command. Only let a spotless white cravat, an M.B. vest, and a sensible modern lounge coat of pepper and salt, or Oxford grey, appear in public—when willing deference and honour are straightway rendered. Surely our claims as a highly useful and devoted body of professional servants to the community are equal, if not, indeed, higher. Far be it from us to make Malvolios of ourselves, but an inch of red ribbon in the front buttonhole of the surtout's lappet would be a sufficiently conspicuous designation, I need not dwell on the striking advantage which this would confer of assured reliable help at hand in cases of accident or other physical emergency. For myself, I am too old to incur the suspicion of wishing to spread my feathers; but, like Susan Nipper, "though I may not be a peacock yet I have my eyes."

TUBERCULOUS PATIENTS SENT TO AUSTRALIA.

DR. DUNCAN TURNER (Melbourne) writes: As there are still a few cases with tuberculous lungs sent to Australia, kindly allow me a small space to point out to your readers the dangers of sending them by the Suez Canal. By this route the patient is continually coming in contact with the land every few days. To those accustomed to the ways of consumptives, I need hardly mention the perils connected with these trips ashore; moreover, from the time they enter the Canal till they pass Cape Lewin—a period of three weeks or a month—they are in a steamy atmosphere, which, as is well known, is most deleterious to chest patients. By the Cape route these dangers are to a great extent avoided, the patient going through the tropics in a direct line, which gives him a minimum of hot weather. All the rest of the voyage is comparatively cool, especially that part of it from the Cape to Australia. It is also a longer trip, generally occupying from six to seven weeks, which is all in favour of the consumptive; lastly, it is cheaper—a consideration of no small importance to the majority of patients.

During an experience of over a quarter of a century in Melbourne, I have seen phthisical subjects every month arriving from the old country via the Suez Canal. In almost every case there was little benefit from the voyage, either in weight or strength, and in many there is a falling away. On the other hand, those who came by the Cape route usually reached their journey's end in an improved condition of health. In the old days of the sailing ships it was not uncommon for a patient to put on from one to two stones in weight as a result of the sea trip; but in these modern days of rapid transit one rarely sees such improvement.

DIET IN SURGERY.

JOSIAH OLDFIELD, D.C.L., M.R.C.S. (Harley Street, W.) writes: Few experiments have been more striking in their suggestiveness than those classic experiments in which it was found that dogs fed on septic offal suffered from autosepsis when their bones and periostea were injured, while those fed on healthy food escaped sepsis, when in both cases similar precautions had been taken to prevent sepsis *ab extero*. This was pregnant with warning as to the risks of surgery upon a patient whose alimentary canal was in a septic condition. An important series of comparative experiments have now been carried out in the Hispano-American and in the Russo-Japanese campaigns which take us a step further. Surgeon-Major Seaman's observations show that when meat is practically excluded from the dietary and when cereals form the staple food, with some vegetables, dried fruits, and eggs, the effects of "shock" after injury are much less and the danger of inflammatory sequelae is minimized. The Japanese, fed on a practically fruitarian dietary, are found by Dr. Seaman to be "in superb physical condition" when brought back to the base hospital after severe wounds, while as to the American army, he described it as "in a state bordering on collapse at the end of the war," and his observations led him to determine that the great difference was due to the diet. My own observations have extended over about 2,000 cases where the patients have been fed upon exclusively fruitarian dietary, and I have quite come to the conclusion that for rapid recovery after operation, for the securing of a non-inflammatory diathesis, and for the development of a constitutional tolerance to grave surgical interference, it is wise to prepare the patient by replacing the ordinary mixed meats and beery dietary by one composed almost exclusively of milk, eggs, butter, cereals, farinacea, and dried fruits. This is a subject of such supreme importance that I hope further observations will be carefully noted.

THE MIDWIVES BOARD.

DR. LAFFAN (Cashel) writes: I am curious to know if any one of the large number of union hospital men read Dr. Sinclair's remarks at the above Board. They were much toned down in the BRITISH MEDICAL JOURNAL, offensive as they were there—but in the *Nursing Journal* they certainly surpassed the most extreme utterances I have ever heard or read of. I propose bringing them before my Branch of the Irish Medical Association.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Dr. B. Anningson, Cambridge; Sir R. Anderson, K.C.B., London; Messrs. Arnold and Sons, London; Dr. R. H. Ashwin, Market Weighton. **B** Mr. H. Balme, London; Mr. E. Brooke, Margate; Dr. F. G. Bushnell, Brighton; Dr. H. Barnes, Carlisle; Dr. T. E. B. Brown, C.I.E., London; Mr. J. Beard, Edinburgh; Mr. L. A. Bidwell, London; Dr. D. W. Buxton, London; Dr. M. Beverley, Norwich. **C** Dr. F. G. Crookshank, London; W. Catto, M.B., London; W. W. Cheyne, C.B., M.B., London; C. Christy, M.B., London; Dr. W. Cotton, Bristol; A. Court, M.B., Staveley; J. J. Coleman, M.B., North Burton; Dr. E. M. Callender, London; Mr. W. G. Caint, Derby; Mr. E. O. Cox, Cleobury Mortimer; Caution. **D** Mr. Q. B. De Freitas, Georgetown; Duryea Co., Manager of Coventry; Messrs. Down Brothers, London; Mr. W. H. Date, Culmstock. **E** Mr. H. R. Emms, Birmingham; Enquirer; Mr. F. R. Eaton, Norwich; Enquirer; Mr. T. H. Edwards, Huddersfield; Excelsior. **F** Fairplay; Major G. H. Fink, I.M.S., London; Dr. W. T. Fernie, Richmond; J. S. Fairbairn, M.B., London. **G** Dr. J. H. Galton, London. **H** Dr. G. A. Heron, London; Mr. J. Hutchinson, London; Mr. F. Haydon, London; Mr. J. Hughes, London; F. R. Hill, M.B., Carlisle; J. W. Hyslop, M.B., Leeds; Mr. D. Hunter, Edinburgh. **J** Mr. F. W. Jones, Enfield; Mr. B. H. Joy, London; Miss M. F. Johnson, Manaton; Dr. E. Jepson, Durham; Mr. W. Jones-Morris, Portmadoc. **K** Messrs. F. Krasa and Co., London; Mr. E. Keays, London. **L** Dr. A. Lawson, London; Mr. W. C. Lodwidge, Walton-on-Thames; Mr. T. Laffan, Cashel; Lieutenant-Colonel. **M** Dr. P. W. Macdonald, Dorchester; Dr. J. Meyer, Brooklyn; J. P. L. Mummery, M.B., London; Sir J. W. Moore, Dublin; Dr. E. J. Moorhouse, Stirling; Mr. V. Mortimer, London; J. Murray, M.B., London. **N** Dr. W. G. Niall, Guildford; B. H. Nicholson, M.B., Colchester; Mr. H. Nestle, London. **O** Mr. J. Oldfield, London; Ozone. **P** Mr. W. P. Pepperman, Washington; Dr. T. H. S. Pullin, Sidmouth; R. Parker, M.B., Liverpool; Mr. J. Patchett, Great Harwood; Dr. M. S. Pembrey, London. **R** Dr. J. M. Rhodes, Didsbury; Mr. H. M. Roberts, Stevenston; Mr. F. H. Richards, London; Register. **S** Dr. G. A. Stephens, Swansea; Sigma; S. J. R.; Dr. D. Sommerville, Long Eaton; Miss C. Smith-Rossie, Southsea; J. Scott, M.B., Teheran. **T** J. C. Taylor, M.B., Stewarton; Sir W. Turner, K.C.B., Falmouth. **V** Varsitas. **W** T. Wright, M.B., Aldershot; Mr. S. W. Wilson, Aylesbury; Mr. C. H. Whiteford, Plymouth; J. S. F. Weir, M.B., London; Mr. G. C. Wilkin, Paignton; Mr. T. M. Watt, Goxhill.

BOOKS, ETC., RECEIVED.

Our Baby: For Mothers and Nurses. By Mrs. J. L. Hewer. Ninth edition. Bristol: John Wright and Co. 1904. 1s. 6d.

The Purification of Sewage. By S. Barwise, M.O., B.Sc., M.R.C.S., D.P.H. Second edition. London: C. Lockwood and Son. 1904. 10s 6d.

Therapeutical Society Transactions, 1904. Second Session. London: Published by the Society.

Railway and Other Accidents with Relation to Injury and Disease of the Nervous System. By A. McL. Hamilton, M.D., F.R.S.E. London: Bailliere, Tindall and Cox. 1904. 15s.

A Manual of the Practice of Medicine. By F. Taylor, M.D., F.R.C.P. Seventh edition. London: J. and A. Churchill. 1904. 15s.

*** In forwarding books the publishers are requested to state the selling price.

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SEVENTY-SECOND ANNUAL MEETING
OF THE
British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF STATE MEDICINE.

J. S. Haldane, M.D., F.R.S., President.

DISCUSSION ON THE CONTROL OF THE MILK SUPPLY.

I.—George Newman, M.D., F.R.S.E. D.P.H.,
Medical Officer of Health, Metropolitan Borough of Finsbury.

Dr. Newman said: A right understanding of the best methods of how most effectually to control and protect the milk supply depends upon a clear appreciation of the exact reasons and conditions which make control necessary. It is because the public, and perhaps even the profession, do not understand the latter as fully as they might that they do not appreciate the importance of the former or perceive the lines on which it should proceed. I need therefore offer no apology for making reference to these reasons and conditions upon which depends the issue before us. For convenience, the reasons necessitating control of milk may be broadly divided into two: First, there is the prevention of milkborne disease; and secondly, there is the improvement and increase of the milk supply.

1.—The Prevention of Milkborne Disease.

It was Dr. Michael Taylor of Penrith, who in this country first demonstrated the conveyance of typhoid fever by means of milk. This was in 1857.[1] Since that date more than 160 epidemics of this disease have been traced to a polluted milk supply. Schuder states that 17 per cent. of all typhoid epidemics are due to the consumption of infected milk. The steps in the process of infection are briefly as follow. Enteric fever affects the intestine, and hence the excreta, especially in the early stages of the disease, are charged with large numbers of the causal bacilli. It is now known that the sweat, expectoration from the lungs, and the urine of a typhoid patient may also contain the typhoid bacillus. Indeed, the urine in 25 per cent. of the cases generally contains large numbers of the bacillus (Horton Smith).[2] There is also evidence to show that the bacilli may remain in the urine for long periods after convalescence, even for months and possibly for years. The bowel discharges and the urine are, therefore, the two chief channels by which the typhoid bacillus is excreted. It, therefore, readily gains access to the soil, to drains, and eventually on occasion to the water supply, and thus into milk and back again to man. The virus does not always pass in the discharges to water and milk, but may reach them by becoming dried dust. A small pollution may in this way set up widespread disease. The most common way for milk to become infected by the typhoid bacillus is through infected water (in 29 per cent. of milkborne outbreaks according to Schuder). Another source of infection of the milk is when persons suffering from a mild attack of typhoid fever continue to work a dairy or otherwise deal with milk, and this has proved a frequent means of infection. Flies doubtless convey the germ of the disease not infrequently, as was shown in the Spanish-American war of 1898 and the Boer war of 1900-1. Though the typhoid bacillus appears not to have the power of rapid multiplication in milk it has the faculty of existing in milk for a considerable time (twenty days or longer) even when milk has curdled or soured, and may thus infect milk products, such as butter and cheese. But infection by milk products may be eliminated as of too rare occurrence to deserve attention. The bacillus does not coagulate milk like its ally the B. coli communis (which is a frequent inhabitant of milk). It flourishes in milk at room temperature and blood-heat, and does not produce acid or alter the appearance of the milk.

The common channels of typhoid infection of milk, as illustrated in epidemics are as follow: (*a*) Personal contact with typhoid patients (Penrith, 1857); (*b*) infection from washing milk vessels with infected water (Clifton, 1897); (*c*) infection by the addition of infected water directly to milk (Moseley, 1873); (*d*) infection from the air by dried typhoid excreta (Millbrook, 1880); (*e*) infection from contaminated cloths or clothes (Barrowford, 1876); (*f*) infection derived from water in which milk in vessels was being cooled (Springfield, Mass., 1892).

Scarlet Fever and Diphtheria.

The second infectious disease shown in this country to be transmissible by milk is scarlet fever. In 1867 Dr. Michael Taylor investigated such a scarlet fever outbreak at Penrith. Since that date some seventy milkborne epidemics of scarlet fever have been put on record. It is unnecessary here to do more than mention two broad series of facts which should not be forgotten in investigating milkborne scarlet fever outbreaks, or in endeavouring to prevent them. First, whilst in similarly-conveyed outbreaks of typhoid fever it is necessary to consider the various ways in which human infection has been conveyed to milk, in scarlet fever it is necessary to consider in addition the possibility of cow infection. Human infection in scarlet-fever outbreaks is almost always conveyed by direct contact, and not, as in typhoid, through the medium of water or materials. Since 1881 (the Hendon outbreak) there has been necessary the added inquiry as to the communicability of zymotic disease from the cow. The case of cow infection of scarlet fever is not, in my opinion, yet proved or established. But there is certainly not a little evidence to show that previously to some scarlet-fever outbreaks, and outbreaks of aberrant forms of disease to be mentioned immediately, certain pathological conditions of the cow's udder have been found to be present; and it may be that further research will prove that there is causal relation between such conditions of the cow and disease in persons consuming the milk derived from such cows. Certainly there is sufficient evidence to make necessary careful examination of the cow in all milkborne outbreaks of disease. The second point to which attention must be called is the clinical modification of scarlet fever which has been milkborne. Such disease is generally mild, and accompanied by a large number of ordinary sore throats. Even in the scarlatinal cases the disease has a tendency to remain localized to the throat. The rash is evanescent, and the desquamation scanty. There is commonly a marked absence of post-scarlatinal nephritis, and a marked presence of alimentary disturbance, sometimes amounting to intoxication.

In 1878 evidence was first forthcoming in support of the view that diphtheria might on occasion be spread by milk. In that year Mr. W. H. Power made an inquiry into the outbreak of diphtheria in North London, and although it was clearly shown that milk was the channel of infection it was not discovered how the milk became infected. By a process of exclusion Mr. Power suggested that there may have been risk of specific fouling of milk by particular cows suffering, whether recognized or not, from specific disease. Subsequently to the discovery of the Klebs-Loeffler bacillus, Klein investigated the question of cow diphtheria, and Dean and Todd have recently thrown further light on the subject.[3] There can be little doubt that milk is a favourable medium for the B. diphtheriae. The organism both lives and multiplies in ordinary sterilized milk, but it thrives better in milk at comparatively low temperatures than 37° C. In ordinary milk, unsterilized and unprepared, the commoner organisms multiply much more rapidly, and so the diphtheria bacillus is in all probability soon crowded out. The cases, however, in which the B. diphtheriae has been actually isolated from milk are extremely few. In the outbreak of diphtheria at Senghenydd, in South Wales, in 1899 Bowhill[4] isolated a diphtheria bacillus from the suspected milk. The culture of the bacillus in broth proved fatal to a guinea-pig in two days. In the same year, Eyre[5] isolated a virulent diphtheria bacillus from some milk implicated in an outbreak of diphtheria in a school. In 1900, Klein[6] also reported the isolation of a genuine diphtheria bacillus in an examination of 100 samples of milk in London. Lastly, Dean and Todd isolated the B. diphtheriae from cow's milk in 1901.[7] These are the only four authentic cases of actual detection of

[1] *Edin. Med. Jour.*, 1858, pp. 993-1004.
[2] *Lectures on Typhoid Fever*, 1900.
[3] *Jour. of Hygiene*, 1902, vol. ii., pp. 194-205.
[4] *Veterinary Record*, April 8th, 1899, No. 561. *Journ. of State Medicine*, 1899, pp. 705-710.
[5] British Medical Journal, 1899, vol. ii., p. 586.
[6] *Jour. of Hygiene*, 1901, vol. i., p. 85.
[7] Ibid., 1902, vol. ii., pp. 194-205.

the B. diphtheriae in ordinary milk with which we have met. There is a question which must now be mentioned—namely, the relationship existing between diphtheria in man and animals and the milk supply. How does the milk become infected? (1) In the first place, it is now generally held that B. diphtheriae has a comparatively wide distribution in nature; whilst it appears not to be conveyed by water, it is is believed that certain conditions of soil favour its growth as a saprophyte. But this is not proved. (2) In the second place, it has been proved that persons suffering from diphtheria are foci of infection. The exact channels of infection differ under varying circumstances; but, in general, the source of infection is the throat and mouth of the patient. Anything which comes into contact with the mucous membrane becomes infected. Thus handkerchiefs, sweets, children's toys, etc., may act as the vehicles of contagion. The mucus and saliva may also be infective, and in speaking, kissing, coughing, or expectorating, such mucus (probably rich in bacilli) may be disseminated in very fine particles, and so carry the disease. It is by such means that the disease is spread. Moreover, there is the fact of the long period during which the human throat may remain infective. Woodhead, Cobbett, Graham Smith, and others have shown that the persistence of the diphtheria bacillus for periods up to eight or more weeks is of very common occurrence, and the same applies to contact persons not themselves suffering from the disease. (3) Richardière and Tollerman and others have shown that dust floating in the air of infected rooms may contain the diphtheria bacillus, and in this way milk and other foods may become contaminated. Since 1878 there have been traced more than 30 milkborne epidemics of diphtheria.

Sore Throat Illnesses and Epidemic Diarrhoea.

In addition to these three fairly well-defined types of infective disease, there have been other forms, some possibly aberrant forms, of disease conveyed by milk, of which sore throat has been a marked symptom. These obscure milkborne epidemics are among the most interesting of all the diseases conveyed by milk. The usual symptoms are congestion of the tonsils and mucous membrane of the throat, with sometimes ulceration, enlargement of the cervical glands, and some pyrexia, and general *malaise*. In not a few instances there has been observed various kinds of rash which have generally been of an evanescent character. Where the throat illnesses have occurred contemporaneously with outbreaks of scarlet fever or diphtheria, it is not unlikely that the condition was in reality scarlet fever or diphtheria. In South Kensington, in 1875, there was an outbreak of disease which attracted much attention at the time, and was officially investigated.[8] The illness was traced to some cream consumed at a dinner party, and in all twenty persons suffered, some of whom had scarlet fever, and others only sore throat. But the investigation showed that in the district from which the cream was obtained 119 cases of sore throat had occurred. Dr. Darbishire described an outbreak of 18 cases of sore throat at Oxford in 1882, the condition being characterized by marked severity of throat symptoms and a disproportionate amount of constitutional symptoms.[9] Similar outbreaks occurred in 1881 at Aberdeen (300 persons affected), and at Rugby school (90 boys) in three school-houses supplied by one milkman, who did not supply any other houses in the school. But he supplied houses in the town, of which nearly 50 per cent. were attacked with sore throat. Inquiry showed that some of the milk used had been obtained from a cow suffering from mastitis.[10] A similar outbreak took place in Edinburgh in 1888, and was investigated by Cotterill and Woodhead: and another at Dover in 1884, where there was a sudden and severe outbreak of sore throat in a localized area of good-class houses, affecting 205 persons, who all obtained milk from one particular farm. The chief symptoms were local inflammation of the throat, enlargement of lymphatic glands in neck, and vesicular eruptions preceding and accompanying the inflammation.[11] There were somewhat similar outbreaks at Craigmore (1890), Clapton (1892), Finchley (1894), Anglesey (1897), and at Surbiton in the same year, North Hackney (1900), Brighton (1901), Bedford (1902), Lincoln (1902 and 1903) Woking (1903), and Finchley (1904). In 1902 an outbreak of milkborne sore throat occurred at Lincoln (199 cases). Of the total 168, or 85 per cent., had consumed the suspected milk. The outbreak commenced suddenly, lasted a few days, and then suddenly terminated. The majority of the victims were adults or persons over 12 years of age. Females were much more affected than males. The symptoms of the disease simulated scarlet fever. The poison in the milk seems to have existed in the highest degree in the cream, and Klein isolated a yeast which he considers related to a yeast known heretofore to have been associated with throat illness and thrush. It has been suggested that some relationship may exist between this yeast and the spores of rusts, smuts, and mushroom fungi consumed by the cows. The whole circumstances of the case of this outbreak furnish one of the most interesting modern chapters in milk epidemiology.[12] In 1903 another outbreak occurred (56 cases) at Lincoln of a somewhat similar kind. In 1902 an outbreak occurred at Bedford (42 cases) consisting of sore throat, *malaise*, headache, giddiness, etc. Here, also, the cream seemed more infective than the milk. Indeed, in several families only those who had taken the cream suffered. The incidence was chiefly among young adults.[13] A somewhat similar outbreak occurred in October and November, 1903, at Woking, in which persons were infected in ninety-eight different houses. The illness was sore throat, with glandular enlargement and general symptoms. Dr. Pierce, the medical officer of health, examined four cows yielding the milk, and a bacteriological examination was made of the milk. In the result it was found that two of the cows suffered from suppurative mammitis, and the liquid yielded by these two cows "consisted of the most part of pus such as would be contained in an abscess." This was the character of the milk which had been consumed by the persons suffering from the illness.[14] These outbreaks illustrate many of the same points as the scarlet fever epidemics. But two additional points to which reference may be made here are (*a*) the demonstrable unclean condition of the milk in several instances, and (*b*) the infectivity of the cream.

The fifth class of disease conveyed by milk is epidemic diarrhoea, of which milkborne outbreaks have occurred at Giessen (1892), Manchester (1894), at St. Bartholomew's Hospital in London (1895 and 1898), and in other places. Nor is the evidence on this subject derived only from epidemics. A number of medical officers of health have shown that a large percentage of the fatal cases of epidemic diarrhoea in children have been due, as far as can be determined, to the use of unclean milk, which has gained its pollution or infectivity from unclean bottles, or unclean management in the home or at the farm (Delépine). Without quoting such reports at length one illustration may be taken. Dr. Newsholme has most recently stated his views on this topic in his annual report for Brighton (1903), where he sets out the following figures which bear out his views previously expressed in his reports or elsewhere:

Percentage of Infants under 1 Year of Age Fed in different Ways.

	A. In 2,671 Houses Visited House to House	B. Among Infants Dying of Epidemic Diarrhoea in 1903.
I. Suckled alone	61.7	6.8
Ditto and farinaceous food	12.2	4.6
Ditto and cow's milk	2.1	2.2
Ditto and condensed milk	0.9	
II. Cow's milk alone	8.3	27.1
Ditto and farinaceous food	9.5	11.5
III. Condensed milk alone	2.7	43.2
Ditto and farinaceous food	1.8	
IV. Patent foods only mentioned	0.8	
V. Unknown	—	4.6
	100.0	100.0

Dr. Newsholme states his conclusions thus: "The deaths of suckled children were about one-ninth of what ought to have occurred on the supposition of average distribution of diarrhoea; the deaths of those suckled and having also farinaceous food were about one-third; the deaths of those having only cow's milk were about three times, and the deaths of those having condensed milk were about seventeen times the number that ought to have occurred on the sup-

[8] Report of Medical Officer of Local Government Board, 1875, vol. vii, p. 80.
[9] *St. Bartholomew's Hospital Reports*, vol. xx.
[10] BRITISH MEDICAL JOURNAL, 1881, vol. i, p. 657; vol. ii,
[11] *Practitioner*, 1884, vol. i, p. 467 (Dr. M. K. Robertson).
[12] Report of the Local Government Board, No. 190, October, 1903 (Dr. L. W. Darra Mair)
[13] Report of the Medical Officer of Bedfordshire County Council, 1902, pp. 60-62.
[14] BRITISH MEDICAL JOURNAL, 1903, ii, p. 1492.

position of average distribution of diarrhoea among infants fed in different ways. If we assume that feeding plays no part in the causation of diarrhoea, these differences are difficult to explain; if, as is practically certain, it plays an important part, then suckling is a very potent means of minimising its incidence, the use of cow's milk, under present conditions greatly increases its incidence and the use of condensed milk still further increases its incidence."

I have made inquiry into the feeding of 190 cases of fatal diarrhoea in infants in Finsbury, and find that 20.5 per cent. were breast-fed, 34.7 per cent. were fed wholly or partly on condensed or other artificial milks, and 44.7 per cent. were fed wholly or partly on cow's milk. That is to say, that 79.4 per cent. of the children under 1 year dying of epidemic diarrhoea in Finsbury were fed on artificial or cow's milk, or in other words, upon milk which is liable to great contamination. Dr. Hope, of Liverpool, Dr. Richards, of Croydon, and other medical officers have made similar inquiries with similar results.

It is, therefore, important to remember that there is evidence to show that milk may (*a*) contain specific bacteria capable of setting up diarrhoeal intoxication, as in meat poisoning, and (*b*) by contained bacteria, or more probably by toxins, can also cause, or contribute to, diarrhoea of a more sporadic kind. It should not be forgotten that large numbers of deaths from epidemic diarrhoea do but indicate widespread outbreaks, which, though not recorded as milkborne epidemics, may in truth be such.

Tuberculosis.

Last of the chief diseases conveyable by milk is tuberculosis. In respect of this disease there are only two points which it is necessary to consider in a practical survey of the question from the point of view of control. The first has relation to the communicability of the disease from the cow to man; the second concerns the degree of disease in the cow which can affect the milk. It is impossible here to discuss the general question of the communicability of bovine tuberculosis. It may, however, be said that since Koch's announcement in 1901 a considerable quantity of evidence has been obtained in support of the intercommunicable theory, culminating in the two reports recently issued by the Commissioners appointed in Great Britain and Germany.[15]

These two preliminary official reports do not agree upon all points at issue, but they do agree that bovine and human tuberculosis are intercommunicable, and we may perhaps safely take that as established, although as to the degree of intercommunicability there would be some divergence of opinion. The second matter for consideration has reference to the fact that milk from tuberculous cows is only certainly or greatly infective when the tuberculous disease affects the udder.[16] This is not necessarily a condition of advanced tuberculosis. The udder may become infected at a comparatively early stage.

The presence or absence of tubercle bacilli in the milk of cows with udder tuberculosis is greatly dependent on the extent of the disease in the udder. But to make the milk infective the udder must be affected, and milk from such an udder possesses a considerable degree of virulence. Furthermore, tuberculous disease of the udder spreads in extent and degree with extreme rapidity. From these facts it will be obvious that it is of first-rate importance to be able to diagnose udder disease. This is not always possible in the early stage. The signs upon which most reliance may be placed are the enlargement of the lymph glands lying above the posterior region of the udder; the serous, yellowish milk which later on discharges small coagula; the partial or total lack of milk from one quarter of the udder (following upon excessive secretion); the hard, diffuse, nodular swelling and induration of a part or the whole of the wall of the udder; and the detection in the milk of tubercle bacilli. The whole organ may increase in weight as well as size, and on *post-mortem* examination show an increase of connective tissue, a number of large nodules of tubercle, and a scattering of small miliary tubercles.

Respecting the lesions of bovine tuberculosis, it will be sufficient to say that nothing is more variable than the localization or form of its attacks. The lungs and lymphatic glands come first in order of frequency, next the serous membranes, then the liver and intestine, and lastly the spleen, joints, and udder (Nocard).

The following table records the findings of Geddes, who in 1901-2 was sent by the Government of the United States to examine by means of tuberculin some of the chief breeds of dairy cattle.[17]

Breed.	Number Tested.	Number Rejected as being Tuberculous.	Percentage of Rejections.
Jersey (in Great Britain) ...	42	23	54.76
Aberdeen—Angus	258	104	28.73
Ayrshire	33	8	24.24
Shorthorn	228	53	23.25
Guernsey (in Great Britain)...	57	11	19.30
Galloway	36	6	16.67
Highland	19	3	15.79
Red Polled	57	4	7.02
Hereford	428	17	3.97
Jersey (an island)...	324	1	0.31
Dexter Kerry	15	0	0.00
Guernsey (an island)	53	0	0.00
Sussex	1	0	0.30
Total	1351	230	14.77

Eliminating the tests on Guernsey and Jersey, the percentages of reactions among the tests made in Great Britain and Ireland were as follow: In 1901, 13.67 per cent.; in 1902, 22.97, and for both years, 17.92. Hopkins examined 571 shorthorns, and found the percentage of positive reaction was 23.0, as compared with Geddes's result (for shorthorns) 23.25.[18] Probably it will be within the mark to say that upwards of 20 per cent. of all the milch cows in the United Kingdom suffer from tuberculosis. In London and a few of the largest towns the percentage is probably about 10.15. The higher standard is due (*a*) to better class animals being stalled in the large cities; (*b*) to more thorough inspection; and (*c*) to the fact that there is no inbreeding. When we turn to udder disease we find, on the authority of MacFadyean, that about 2 per cent. of the cows in the milking herds of this country are affected with tuberculous disease of the udder.[19] In London about 0.2 per cent of the cows are so affected, as judged by clinical observation. Bang has given 3-4 per cent. of milking herds as suffering from tuberculous disease of the udder. But we may take the generally accepted figure of 2 per cent. In the United Kingdom, in 1901, there were 4,102,000 milch cows (in the United States of America in 1901 there were 18,112,000 milch cows); 2 per cent. of this figure gives us 80,000 tuberculous udders. The average annual yield of milk per cow has been found to vary somewhat widely in this country and America. The latest return from America places the average at 418 gallons, and the most reliable average return for Great Britain which takes into account variations and different circumstances is 420 gallons. Accepting 400 as the lowest figure it would appear that from these 80,000 tuberculous udders 32 million gallons of milk are obtained. Now, whilst it is not asserted that this large volume of milk is actually virulent it will be admitted that the entire amount of it is open to grave suspicion if not absolute condemnation.

Such, then, broadly, are the outstanding facts in relation to the production of disease by the consumption of infected milk.

[15] Interim Report of Royal Commission on Tuberculosis, 1904; Tuberkulose Arbeiten aus dem Kaiserlichen Gesundheitsamte, 1904, i Heft.

[16] This is the generally accepted view, but it should be added that various workers have shown that cows having generalized tuberculosis, but apparently unaffected udders, may yield tuberculous milk. Quite recently—1903—Mohler, as the result of a long series of experiments, arrives at the following important conclusions: (1) That the tubercle bacillus may be demonstrated in milk from tuberculous cows when the udders show no perceptible evidence of disease either macroscopically or microscopically; (2) that the bacillus of tuberculosis may be excreted from such an udder in sufficient numbers to produce infection in experimental animals, both by ingestion and inoculation; (3) that in cows suffering from tuberculosis the udder may, therefore, become affected at any moment; (4) that the presence of the tubercle bacillus in the milk of tuberculous cows is not constant, but varies from day to day; (5) that cows secreting virulent milk may be affected with tuberculosis to a degree that can be detected only by the tuberculin test; (6) that the physical examination or general appearance of the animal cannot foretell the infectiveness of the milk; (7) that the milk of all cows which have reacted to the tuberculin test should be considered as suspicious, and should be subjected to sterilization before using; and (8) that it would be better still that tuberculous cows should not be used for general dairy purposes (Bureau of Animal Industry, Washington, U.S.A., Bulletin 44, 1903, p. 93). Experiments by Lydia Rabinowitsch have given somewhat similar results. She relies on tuberculin as a test of infectivity, and the animal experiment as proof of tuberculosis in milk. Ravenel also maintains that cows which show no evidence of tuberculous udders, but which react to tuberculin, may yield tubercle bacilli in their milk. J. H. Young, of Aberdeen, maintains, on the other hand, that cows free from udder disease though reacting to tuberculin yielded milk free from tuberculosis (BRITISH MEDICAL JOURNAL, 1903, vol. i, page 816)

[17] Nineteenth Annual Report of the Bureau of Animal Industry, 1902, p. 551.

[18] Report of Minister of Agriculture, Dominion of Canada, 1902, p. 134.

[19] *Trans. Brit. Cong. of Tuberculosis*, 1902, vol. i, p. 84.

These conditions must be kept in view in any consideration of means of control.

2. Improvement of the Milk Supply.

There is, however, a second reason why the milk supply should be controlled more than it has been in the past. The last century witnessed a change in the distribution of the population which we know of as the growth of the towns. A century ago the total population of England and Wales was 8,892,536, of whom 1,486 017, or 16.7 per cent., lived in towns of over 20,000 persons. In 1904 the population of England and Wales is 33,763 434 of whom 19,665,055 live in towns of over 20,000 persons. This gives 59.1 per cent. of the population living in the towns now, as against 16 7 in 1801, or a rise of 42.4 per cent. In 1801 there were five "great towns" having a population of more than 50,000, and eight "smaller towns" with a population of between 20,000 and 50,000, making thirteen towns in all. In 1904 there are seventy-six great towns and one hundred and forty-two smaller towns, or two hundred and eighteen in all. This change in the life of the people lies at the root of many social questions now pressing for solution. It concerns the housing question, overcrowding, means of transit, local government, and poverty. We have, for instance, been made aware by the inquiries of Booth, Rowntree, and others, of the fact that 20 to 30 per cent. of urban populations are so poor as to live below the level of efficient physical nourishment. It is certain that a large proportion of these urban communities do not obtain as much milk as they require, just as it is certain that, owing to country milk being sent to London or the great towns, a large proportion of the labouring classes in the country also go short of milk. The growth of the towns has created new markets for milk far removed from the gathering ground, which has been thus denuded of milk to the injury of consumers in country districts and the modern milk supply of the great markets has, on account of the remoteness of the gathering ground, raised new problems of protection and control. What sufficed for our forefathers will not now suffice for us, not because our physiological requirements have changed but because the conditions of life have changed. In the past consumers lived in the vicinity of the farm on which the milk they used was produced. They exercised in many instances a personal control. Now they do not. In the past they received their milk within an hour of milking. Now they rarely receive it less than twelve hours after milking. It has been shown by bacteriology, and by actual practice, that it is this intervening period—"the influence of time and temperature," so clearly demonstrated by Delépine and other workers—plus that lack of control, which constitutes the milk problem.

Conditions of Milk Trade.

We must now briefly consider three facts bearing on the problem, created by the growth of the towns:—First, there are the conditions under which the milk trade is carried on, secondly, there is the condition of the milk as placed on the market, and thirdly, there is the question of milk consumption. It is unnecessary to describe in any detail the conditions under which the milk supply of the towns is provided for. It is a matter of common knowledge that milk herds are not, with few exceptions, what they should be; in the majority of small dairy farms the question of breed and really careful management of the herd do not receive attention. If milk is yielded and can be sold, that is deemed sufficient. The cowsheds, too, are badly kept, most are ill-lit, overcrowded, badly ventilated, and badly drained. The milking process, also is, as a rule, carried out in a dirty and thoughtless manner, both cows and milkers being unclean. There are, of course, bright exceptions to these conditions. But these conditions prevail, as a rule, throughout the country. It is true, as alleged so frequently, that "these things have always been so," and therefore, it is assumed, may remain. But—and here comes in the crucial point—however suitable milk produced under these conditions may have been for our forefathers living on the land, it is not milk which can stand a long journey by rail to the towns. It may suffice for farm consumption, it does not suffice for the milk contractors' trade. But if we take an average of 100 to 150 miles for milk to travel to town, it means that milk is on the rail four or five hours. It generally reaches the consumer at earliest twelve to fourteen hours after leaving the udder. Some of it reaches the consumer twenty hours after milking. It has been (*a*) exposed, especially if it be delivered by the day service, to varying degrees of temperature, (*b*) it has been standing for twelve to twenty hours, and (*c*) it has been polluted on the farm, sometimes in transit, and always at the milkshop. Each of these three conditions very greatly reduces the quality of the milk as shown by Delépine and others, and surely it must be admitted that the conditions arise in the main as a town problem. There is the further pollution from domestic sources which does not concern us at this juncture.

Quality of Milk.

From a consideration of these facts it will be evident that much of the milk sold is not what it should be. It contains large numbers of bacteria, not by any means always injurious, not always of much importance perhaps, but absolutely certain indications of pollution. I have found 4 800 000 bacteria per cubic centimetre in fresh milk in a first-rate London milkshop. The popular mind fastens on the high figure, but the figure is of little interest or importance *per se*. It is of value only as indication of contamination and of bad management, and the toxin production in such milk must be not inconsiderable. A still more obvious indication of uncleanliness is rapid and early souring, which every practical milk purveyor dreads in long-travelled milk. It is to delay or postpone these inimical changes that preservative is added. Suspecting a certain milk seller of this practice I recently had twelve samples taken in twelve days for analysis, and preservatives were found in considerable quantities in eight out of the twelve samples. At least 30 per cent. of the milk sold in Finsbury contains preservative, which is more commonly practised on Sundays than weekdays. The Departmental Committee on Food Preservatives reported that 50 per cent. of London dairymen are said to use preservatives. Pus cells are often present. Stokes and Wegefarth found 25 per cent. of the milks of country cows, kept under good conditions, and 88 per cent. of town cows, kept under bad conditions, contained pus cells. Eastes, who made an examination of 186 London milks, found pus cells present in 30 per cent., muco-pus in 48 7 per cent., and streptococci in 75.2 per cent.[20] An investigation of milk in St. Pancras in 1899 yielded 24 per cent. of samples containing pus cells.[21] Foulerton, examining a series of milks from Finsbury in 1903, found pus or similar cells in 32 per cent. of them, staphylococci in 28 per cent. and streptococci in 32 per cent. Forty per cent. of the samples examined contained "foreign dirt."[22] Pierce found in the Woking outbreak in 1903 that the milk contained large quantities of pus.

Mucous threads are commonly found in milk containing pus. Such threads probably consist of nucleo-albumen, and when occurring with pus cells, the condition of "muco-pus" is present. This is held to indicate inflammatory lesion of the ducts of the udder, and not abscess formation in the substance of the gland. Blood corpuscles are not rare in milk, particularly soon after lactation. The last and least important kind of cell is that of the epithelium. Such scales may be derived either from the hand of the milker or from the teats of the udder. Milk containing many blood cells, mucous threads, or pus cells should surely be looked upon as wholly unfit for human consumption. Pathogenic or allied bacteria are not infrequently found in market milk. In Liverpool from 1900 2 788 "country" milks were examined, and 55 per cent. contained B. coli and 9 per cent. contained B. enteritidis sporogenes; of 722 "town" milks 23 per cent. contained the former bacillus and 4 per cent. the latter. If the presence of B. coli in water be accepted, as it is, as indication of excretal pollution, should it not also be similarly accepted in milk? As regards the tubercle bacillus a large number of investigations have been made in different cities. In 1898 14 per cent. of the milks examined in Berlin by Petri contained the tubercle bacillus. In 1899 in Islington the percentage was 14.4; in 1893 in St. Petersburg 5 per cent.; in 1901 in London 7 per cent.; in 1901 at Croydon 6.7 per cent. and Manchester 9.5 per cent.; in 1902 at Woolwich 10 per cent. and in Camberwell 11 per cent.; in the City of London and in Finsbury *nil*; in 1903 in Liverpool 5 8 per cent. These results must be taken for what they are worth, and not pressed too far. The conditions of experiment were not in all cases the same. An illustration may be given of a series of such investigations as carried out under similar conditions at Liverpool:

[20] BRITISH MEDICAL JOURNAL, 1899, vol. ii, p. 1342
[21] Report on Health of St. Pancras, 1899, pp. 61-66
[22] Report on Milk Supply of Finsbury, 1903, p. 44.

Table showing the Total Number of Milks Examined Bacteriologically for Tubercle Bacilli from August, 1896, to December 31st, 1903.

Year.	Total Number of Samples taken.	Town Samples. Number taken.	Town Samples. Tuberculous.	Town Samples. Percentage Tuberculous.	Country Samples. Number taken.	Country Samples. Tuberculous.	Country Samples. Percentage Tuberculous.
1896	119	83	4	4.8	36	5	14.0
1897	150	93	4	6.3	87	5	5.7
1898	112	84	7	8.3	28	5	17.9
1899	352	167	1	0.6	185	15	8.1
1900	560	255	4	1 5	305	5	1.6
1901	500	254	2	0 7	246	20	8.1
1902	510	212	1	0 4	297	29	9.7
1903	582	231	2	0.8	351	19	5.8

This table illustrates the double point of milk infection with tubercle bacillus and the comparative degree of infection between town and country milk (Hope). Broadly, there can be little doubt that these figures fairly represent the condition of things in English cities.

It is not, however, the occurrence of pathogenic organisms in milk that creates the milk problem, or is, indeed, the chief item in it. Taken at its worst, the spread of specific disease by milk is relatively slight. The vital characteristic which emerges from a study of the quality of milk as sold is its uncleanliness and its toxicity. Those are the dominating features, and those are the features which reduce the quality of market milk in this country, and it is against those conditions—which are chiefly affected by pollution and by time and temperature—that we should address our methods of control.

The Consumption of Milk.

Thirdly, as part of the town problem of the milk supply we must briefly consider the present degree of milk consumption. We have already seen that there are 4 102,000 milch cows in the United Kingdom, yielding 400 gallons of milk each, which amounts to some 1,600 million gallons of milk per annum. In a population of 41,609,091 this works out an average of 39.6 gallons per capita per annum, or 0.86 pint per diem, if all the milk were consumed as such, which it is not. [Since the above was written the Royal Statistical Society has reported 42 gallons as the average consumption per capita in one form or another.] In 1892 Mr. R. H. Rew stated that the annual consumption per capita in London was 11.5 gallons (0.25 pint per day), and in the country generally 19.7 gallons (0 43 pint per day).[23] In a careful estimate made in Finsbury in 1903 I calculated that the annual consumption per head was about 10 gallons (0.21 pint per day), and this estimate of ⅜ pint to ½ pint per day has been accepted in various places in the United Kingdom as the approximate amount of milk consumed as such per head of the population. The average quantity of course varies widely owing to social conditions—poverty, etc. In the United States of America it has been found that the average amount of milk consumed daily per capita is 0.61 pint in cities of over 100,000 population, 0.63 pint in cities of between 50,000 and 100,000, 0 58 in cities of 25 000 and 50 000, and 0.57 in towns of less than 25,000 persons. The smallest average consumption of milk in the large cities was found to be 0.27 pint per head in New Orleans and the highest (1.1) in such cities as Boston and Worcester in Massachusetts.

Returns of this nature vary not only in accordance with social position but also in relation to the consumption of condensed milk, which in some places has shown a very marked increase. Probably it would be safe to assume that the average amount of milk consumed per capita per diem varies from one-fifth to one-half a pint. But amongst the very poor it is considerably less, as the following inquiry into 287 families of the very poor in Finsbury in 1904 will show: In these 287 families there were 856 adults (over 10 years) and 546 children (under 10), or a total of 1,402; 38 families use condensed milk and fresh milk, and 137 families used condensed milk only. The average consumption of fresh milk per capita per diem was 1.7 oz. This does not allow for the provision of breast milk to infants which, however, is not on the whole, a serious item in this class of the community. It will be seen that 137 or 47 7 of the total families use condensed milk only, drinking no fresh milk at all. It comes, therefore, to this, that the average amount of fresh milk consumed per head daily is 1.7 oz., or, allowing for breast cases, 2 oz. per day. That is to say, that whilst the average consumption among all classes may be taken at one-fifth to one-half a pint per capita per diem, amongst the very poor the average is not more than one-tenth of a pint per capita per diem.

This is not sufficient. Milk is the ideal food for children, and there can be no doubt at all that an enormous increase of its consumption by children would directly tend to improve the physique of the rising generation. Not a little of such physical deterioration as exists among working-class children and young adults is due to living in urban communities, with all that it entails, and not receiving sufficient milk nourishment. Though milk is not an ideal food for adults, it is admirably adapted to be a means of supplementing the deficiencies of other articles of diet. Hutchison states that for the complete nutrition of a healthy man doing a moderate amount of muscular work, about eight pints of milk would be required daily, which is, of course, impracticable. Nevertheless, milk is the cheapest source of animal proteid, the ingredient most commonly deficient in mixed diets. "Skim milk," says Hutchison, "is an even cheaper source from which to supplement any lack of proteid in diet. Its great value in the dietary of persons to whom economical considerations are of importance cannot be over-estimated."[24]

To improve and increase the milk trade is, then, a requirement of national importance, and is the second reason why great efforts should be made to control the supply. It is a significant fact that the total dairy produce imported annually into Great Britain is valued at upwards of £30,000,000. The importation of condensed milk has exactly doubled during the last ten years 1894-1903 (from four million to eight million imperial gallons), and during the same period an import trade in fresh milk has arisen amounting now to 150,000 gallons a year. This may be but a cloud the size of a man's hand, but, unless the British dairy trade wakes up, the cloud may cover the sky. The control of the milk supply is therefore not only a concern of preventive medicine, but one of national importance.

Methods of Control.

It is not difficult to make suggestions as to what should be done towards the control and protection of milk, if one may judge by the abundance of advice which flows in increasing volume from all quarters. The law should do this, the dairy trade that, and the railway companies a third thing. Alarmist views and alarming measures receive ready support. But the problem in truth must be solved, as all great and complex problems, on broad lines and by slow progress. There are three broad principles then which I venture to submit as governing the question. First, in a general way some reform should come from the consumer. What the public demand the trade will supply. If the public insists on a pure whole milk obtained by cleanly methods from healthy clean cows, there is no doubt the thing can be done. Then, in the second place, some reform should come from the trade. This should be from inside rather than outside, from the dairyman rather than from the Act of Parliament. The milk trade should learn the vast importance of co-operation in the development of what should be a great national industry. It is to their own interest to put it at a low motive, and it is to the national interest to put it at a higher. A perusal of the conditions and regulations of the great dairy companies in Denmark, America, and Great Britain serves to illustrate what can be done in this respect, and their splendid enterprise has largely led the way in milk reform. It is of national concern that the best should be made of the milk supply for the sake of the development of a great agricultural industry, as well as that the community, especially the child community, should drink more milk and better milk. Then thirdly, there is the sphere of legislators and administrators, who should take, I contend, a large view of the question, making the aim to control by development rather than by restraint, by encouraging rather than hindering the trade, whilst at the same time insisting upon a pure milk, rather than adopting counsels of perfection in respect of cowsheds. What is needed in this country is, I submit, not so much more legislation in respect of milk as a direct and uniform application and enforcement of the legislation which now exists.

Now, whilst these general principles seem to indicate the path of advance, here are a number of details of importance upon which a few words must be said. The requirement is a pure milk supply, that is, a clean whole milk, unadulterated and unsophisticated and without preservation, derived from

[23] *Journ. of Roy. Statistical Soc.*, 1892, pp. 265-7.

[24] *Food and Dietetics*, R. Hutchison, 1902, p. 121.

healthy cows living under clean and sanitary conditions, and protected from contamination (dust and dirt) and infection (agents and products of disease). The consideration of the details of control may be most conveniently considered under four headings, (*a*) Milk production; (*b*) milk conveyance; (*c*) milk sale and distribution; and (*d*) specialized milk.

(*a*) *Milk Production.*

The importance of commencing the control of milk at the beginning can scarcely be over-estimated. If the cow be diseased or unclean, nothing can correct the unsatisfactory character of the milk. Milking herds, their breeding and management, call for more attention than they have yet received in this country.

It is evident that the present paper is not the place to discuss the question of breed, nor am I the person. But it may be urged that to improve milking stock should be one of the objects of the dairy farmer, and he should make it his business to study the question in practical fashion. In his excellent title book, *Economies in Dairy Farming*, Ernest Mathews has laid down five simple rules by which such improvement can be brought about, namely—(1) only keep the best cows and use bulls descended from the best milking dams; (2) select the calves with the best escutcheons and do not over-feed them; (3) weigh all the milk and record the same against each cow, and where the butter is made, test the value of each cow for butter-making by the churn; (4) do not discard heifers with their first calf, because they do not milk as well as some of the cows, as frequently those heifers that yield too well with their first calves turn out weak in constitution; (5) never exhibit any heifer intended to be kept for the dairy in the inspection classes at any agricultural show, as she will be over-fed and spoilt. Whatever means and methods are adopted, in breeding or in purchase, it is important to remember that some breeds are physiologically incapable of producing as good a quality and quantity of milk as certain other breeds. Hence the dairyman must first obtain a suitable breed if he desires to obtain compensatory results. He cannot nowadays plead ignorance as to what steps he should take, as the Board of Agriculture in this country and the Bureau of Animal Industry in America, not to speak of scores of agricultural and dairy societies, have issued simple instructions on all these points.

From an administrative point of view it is important to emphasize the need for regular, frequent, and systematic veterinary inspection of all cows used for dairy purposes (for the detection of vesicular eruptions of the udder and teats, the elimination of diseased cows, tuberculin test, etc.). It is noteworthy to witness the improvement in dairy cattle (as, for instance, in the London cowsheds) where inspection is properly carried out. There are two further points that I would also place in the first rank of importance. The first has relation to general sanitation of cowsheds and the water supply, the second refers to milking and the after-treatment of milk. It is evident what the intention of the Legislature was in introducing that admirable enactment, the Dairies, Cowsheds, and Milkshops Orders, and in inserting various regulations as to cubic space, etc., though it is not clear why the regulations are made permissive or the Order allowed to remain so much a dead letter as it is.

The really essential matters are not exact limits of cubic capacity, but thorough cleanliness and sanitation, coupled with a decent water supply, conditions which do not as a rule obtain. A model dairy does not require a large outlay of capital, but it requires a keen intelligence and unremitting care in its management. It is not expensive structural alterations which are needed, nor elaborate cowsheds, nor special water supplies laid on at great expense; but it is thorough cleanliness. A polluted water readily leads to a polluted milk, and is frequently at the bottom of unclean dairying, even as insufficient light in the byre leads to uncleanliness. One of the first steps in my opinion towards reform of milk production is reform of rural water supplies, and the direction in which such reform is required is not so much in the provision of new supplies as in the protection from surface contamination of the supplies which exist. These are two points frequently neglected, but of real importance. In the second place, there is the method of milking.

The greatest possible care and cleanliness should be observed in every detail connected with the work of milking. The hind-quarters and udders of the cow should be cleaned before milking takes place. Soap, water, and towel should be provided for the milkers to wash and dry their hands with before beginning to milk, and as often as necessary during milking. The practice of milking in the field during summer is strongly recommended. In autumn, before the cows are housed at night, the long hair on the tail, udder, and hind-quarters of the cows should be clipped.

The passing of the female milker is to be regretted, for now it happens that frequently odd men about the farm are employed as milkers amongst their other functions. They are often ill-trained, and unclean in person and manipulation. Yet the milker should be clean in all respects. He should, of course, be free from infectious disease of any kind, including tuberculosis. He should thoroughly cleanse his hands just before milking, and should, if possible wear a clean smock, used only when milking, and kept in a clean place at other times. Milkers would also do well to rinse their hands in clean water between the milking of each cow. Milking should be done quietly and thoroughly, and the first few streams from each teat thrown away, for such milk is often somewhat watery, and always contains the air bacteria which have gained access to the teat during the interval since the last milking. Milking should be done with dry hands, which should not come in contact with the milk.

In respect to treatment of milk after milking, the Danes recognize in a manner and to an extent at present unknown generally in Great Britain that the destruction, inhibition, and control of bacterial activity in milk is the basis of all successful dairying. They recognize the multitudinous opportunities which milk has of becoming polluted from the time it leaves the udder of the cow to the time it reaches the consumer's mouth, and they further recognize that milk is a highly favourable medium, and that, therefore, the bacteria which gain access multiply at an enormous rate. In consequence of this knowledge, the Danes adopt three simple rules. First, prevent organisms gaining access by cleanly methods of dairying; secondly, strain thoroughly; thirdly, inhibit by refrigeration the growth of such organisms as may have by accident gained access to the milk. Clean milking, careful straining, immediate cooling, are the cardinal principles of the dairy creed. Whatever treatment milk is to receive it should receive at once. One of the greatest mistakes is to suppose that milk may be treated after it has stood or travelled for ten or twelve hours. Refrigeration or sterilization is, then, too late to gain the highest advantage. A pure milk from the outset is vastly better than a milk subsequently sterilized. Many of the so-called "sterilized" milks now on the market are open to grave criticism, partly because they are frequently not sterile, and partly because they are dirty milks. Sterilization does not purify a dirty milk. It cannot be too clearly understood by the trade that what is required is a pure milk from the beginning, and all through the dairying process. I may suitably conclude this section by describing shortly the best working dairy farm—what may be rightly considered "a model dairy farm"—I know of in this country: (1) The cows used are carefully selected for milking purposes (a Jersey herd), are regularly inspected, and have all been tested with tuberculin. Their feeding is also kept under strict control, no brewers' grains being used. In summer the cows feed on grass, linseed-oil cake, and a small quantity of cotton cake and bran; in winter they have hay, mangols, maize, germ meal, and linseed and cotton cake. The farm is well kept and maintained under strict sanitary control, the health and cleanliness of the cows being the one thing aimed at. There are no elaborate cowsheds or expensive premises. (2) The cows are milked in the byre adjoining the sterilizing plant. Both cows and cowsheds are continually maintained in cleanliness. The udders are cleansed before milking, and it is required that milkers also should be clean in person and management of milking. (3) Immediately after milking the milk is removed into an adjoining room, strained through a metal screen, and at once separated by an ordinary Laval separator. This separation is adopted for purposes of purification only. The milk and cream are again mixed, and poured by means of a mechanical automatic bottle-filler into bottles. (4) The milk in bottles is then, within a few minutes of leaving the udder, placed in the sterilizer and maintained at 212° F. for twenty minutes as a protective measure. The bottles have been previously sterilized at 220° F. for sixty minutes. (5) After sterilization the bottles are sealed and the milk is cooled to 53° F., and kept at that temperature till required for delivery.

There is one further subject to which reference may most appropriately be made here, and that is dairy training. We are at last beginning to wake up in England in respect to the

importance of proper training and education in this industry, and the dairy schools at Chelmsford, Kingston-on-Soar, Reading, and those under the Bath and West of England Society are concrete illustrations of what can be done in this direction. I regret that space does not allow of detail reference to this excellent work.

(b) Milk Conveyance.

For town supplies the question of railway transit is of first importance. It may best be considered as it affects the metropolis. The following are the most recent returns available for the railway companies transmitting milk to London:

Railway.	Maximum Distance in miles from which Milk is Carried	Time occupied by the Railway Journey in Hours.	Whether Special Vans and Carriages are used for Conveyance of Milk.	Whether Refrigerator Vans are Used for the Milk.	Special Trains or Goods Traffic (except small quantities).
Great Eastern Railway ...	130	4	Yes	No	Special.
Great Northern Railway ...	150	5½	Yes	No	Special.
Great Western Railway ...	300	11	Yes	No	Special or Passenger.
London, Brighton, and S.C...	86	3¼	No	No	Passenger.
London and N.W. Railway ...	359	8½	Yes	No	Special.
London and S.W. Railway ...	150	5	Yes	No	Special or Passenger.
Midland Railway	423	12	Yes	No	Passenger.

It appears that the Great Western Railway Company are the largest carriers of milk in the United Kingdom, the quantity conveyed by them during 1899 being 23,495,925 gallons in 1,642,380 cans. Ninety-nine per cent. of the milk traffic received in London by this company is from stations within 150 miles, and the average distance is probably about 60 miles. The chief centre is the Wiltshire Dairy District. The London and North-Western Railway brings large quantities of milk from the Midlands and Staffordshire district. Its most distant supply comes from Tarff in Kircudbright (359 miles). The Midland Company conveys milk from Glasgow (max. distance). As a rule, most of the milk (80 to 90 per cent.) conveyed on the English railways is carried in special milk-trains. Some of it, in small quantities, is conveyed in vans attached to passenger trains, and a small amount by the ordinary goods trains. No special precautions are taken to keep milk churns or railway trucks carrying churns in the shade in summer time. Special sheds are exceptional. Generally speaking, the heavy milk traffic passes at night time.

Rates are low; the Great Western Railway, for instance, carry a churn of milk (8 barn gallons) 100 miles for 1s. 4d., or at the rate of 1d. per imperial gallon, the carriage of the returned empty being included. Probably the gross revenue of all the railway companies for carrying milk to London is under half a million. Viewed from the railway standpoint, therefore, the traffic is not worth exceptional consideration. There is lack of co-operation and organization in the trade, which is necessary to make the trade a good customer to the railways. Viewed from the dairyman's standpoint, there are grievances against the railway companies, which may be summarized by saying that the trade requires (though frequently it is ignorant of the requirement): (*a*) Special vans, if possible, refrigerators; (*b*) quick transit; (*c*) sealed churns; (*d*) milksheds at loading stations. These conditions are provided in other countries, and they ought to be provided in England. Railway transit in Great Britain is alleged to be bad rather than slow, porterage is frequently left to the trade, milk is sometimes packed with other articles such as fish, watercress, and general goods; and frequently is kept at such a temperature throughout the journey that it arrives sour or readily sours. The existence of these conditions has led to all sorts of suggestions as to enforcing railway companies by law to do this, that, and the other, which is, I submit, unreasonable. The railway companies in America and in Denmark have had to meet a demand from the trade, not an Act from the Legislature; and they have met it. Reform of railway transit of milk must surely spring from an organized trade able to be a good customer. Then the companies will become their servants. They cannot give an efficient and express service for a few churns or an odd wagon here and there, which would necessarily be costly, whilst at the same time the milk rates are low. What is required is co-operation on the part of farmers and milk-producers of a district for the carrying on not of a casual business from many centres, but a well-organized trade from a few centres, and by efficient dairying to raise the quantity and quality of milk per district. Railway companies will respond directly there is business, and when they respond may they remember the three cardinal principles of efficient transit of milk: (1) Cleanliness and absence of dust contamination of the milk; (2) shortness of time of transit, every hour lost makes the milk worse; and (3) lowness of temperature.

(c) Milk Sale and Distribution.

In New York milk is sold from 12 000 stores, or an average of one store to every 285 persons. In London the average works out at about one milkshop to every 500 persons. In Stepney the average is one to every 205 persons, in Holborn one to 373, in Finsbury 1 to 450, in Islington one to 510, in Fulham one to 518, in Kensington one to 627, in Paddington one to 839. These milkshops are of two kinds: (*a*) Dairies or shops selling dairy produce only, and (*b*) general shops selling milk in addition to a variety of articles often including spices, herrings, soap, firewood, paraffin oil, blacking, and many articles creating a dusty atmosphere. It is probably correct to say that the former, the dairies, constitute only 20 per cent. of all the milk-selling premises, taking London as a whole. This state of affairs gravely complicates the effort to obtain a pure milk supply. But unfortunately there is no direct power conferred on the local authorities, who are responsible for registration of milkshops, of refusing to grant registration to unsuitable shops. Clause 6 of the Dairy Order of 1885 enacts that every local authority shall keep a correct register of all milk sellers and purveyors (not premises) in their district, and they shall register every such person who applies. It would be desirable, surely, that the local authority should have direct power of refusing registration to unsuitable persons or premises. In the meantime it is important that local authorities should raise the standard of sanitation and cleanliness required in milkshops under Clauses 8 to 13 (including Regulations) and the Public Health (London) Act 1891, Section XXVIII, and thus compel the general salesman, who only sells insignificant quantities of milk to discard the sale of milk or bring his shop into line with the dairies in standard of sanitation and cleanliness. Such a process must inflict hardship upon many small dealers, but it is impossible under the Order as worded at present to obtain a high standard in any other way. In relation to this matter of sanitation in milkshops, it should also be understood that milk becomes contaminated in milkshops because it is not sufficiently protected. It is placed in a counterpan so constructed as to expose a large surface of milk to dust contamination. Constant dipping flies, dust from the shop and street serve in quite a remarkable degree to contaminate the milk. In Finsbury I found that 73 per cent. of milk sellers took absolutely no precaution to protect their milk. Under the Dairy Order (model regulation 17) it would seem necessary to insist that all such milk vessels be covered, say, with a light muslin or similar cover. As to sanitary defects it would appear that about 40 to 50 per cent. of all milkshops, particularly general shops, have one or more sanitary defects.

There is one other way out of this serious difficulty of pollution of milk at milkshops, which, were there opportunity, it would be easy to demonstrate actually occurs, and that is by the use of bottled milk. In America (and also on the Continent of Europe) this method of delivery is increasing in favour, and in many cities most of the fresh milk is thus delivered. It appears from the reports that the average retail price is no higher, and the system has many advantages. Each bottle is a sufficiently exact measure, holding a quart, pint, or half-pint, and unless it has been very carelessly filled, contains its right proportion of cream. Bottles are closed packages and thoroughly protect their contents from dust and foul air. They may be easily sealed, and their contents guaranteed. The bottles are heavy and fragile and expensive, but the greatest objection to their use is on account of their abuse. They are sometimes refilled without having been properly cleansed. This is a dangerous practice, as milk might be put into jars that had been in some way infected with the germs of a contagious disease, and thus carry the disease to other houses and families. Milk jars are easily sterilized, and, whenever this is done there seems to be no serious objection to counterbalance the many advantages of their use.

In a brief survey of the question it is not possible to do more than touch upon the chief out of many points. It is necessary, however, to mention under this section the urgent

importance of enforcing the Dairy Order in respect of cleanliness in cowsheds and milkshops. In reference to this and to regular inspection of milkshops and bacteriological examination of milk much remains to be done by local authorities. The immense improvement in London cowsheds as a direct result of inspection and of milkshops in various districts of London, Liverpool, Manchester, and other cities as a result of inspection affords absolute proof of the great value of this measure. The periodical visit of the sanitary inspector, and the occasional visit of the medical officer of health to every milkshop in his district, exerts a beneficial influence on the milk trade. But the process must not stop there. Occasional bacteriological examinations of the milk are also required, and are quite as necessary as examinations for abstracted fat or added water. Such gross pollution with filth and sometimes disease germs is at least as serious an offence as adulteration; and whilst I do not think that the time has come to legislate in regard to the degree of bacterial pollution, there can be no question as to the value of bacterial examination as indicative of sanitary dairying. In Liverpool 600 bacterial examinations are made every year.

Very instructive are the experiments recently carried out at Montclair in New Jersey, U.S.A., by Mr Leighton.[25] This inspector carried out investigations extending over a period of two or three years, and proved that the sanitary conditions of dairies may be judged by the number of bacteria in the product. He was able in a long series of periodic examinations to investigate the causes of a high rise or a marked fall in the number of bacteria present and he found that this proved to be "an absolute indicator" by which the care and cleanliness to which the milk has been subjected from the time it is drawn to its delivery may be determined. Mr. Leighton's report is certainly a very instructive one, and may prove to be a piece of pioneer work of value. The results of his examinations were published in the annual reports of the Montclair Board of Health, and led to a marked improvement in milk manipulation in the district.

A perusal of Bulletin 46 already quoted shows how far America is in advance of Great Britain in respect of the control of the milk supply, particularly in the following respects: (*a*) The increasing use of bottled fresh milk; (*b*) the diminution in the practice of pasteurization, the Americans having learnt that pure milk is preferable to pasteurized milk; (*c*) the enforcement of the dairy laws; (*d*) the beneficial results of thorough inspection; and (*e*) the value of the careful collection of facts respecting milk. It is not too much to say that America has gained a march upon us even in the matter of reports. Such a record as the American report on 200 cities if made in this country would lead to such an inquiry into the methods of the milk trade as would of itself exert a most beneficial effect throughout the country. The public needs more information, more knowledge of the exact condition of things, and it would very speedily demand reform.

It must further be mentioned in connexion with milk distribution that home contamination requires attention The poor have no pantries, and the milk is stored in dirty vessels exposed to dust and other uncleanness. Education on domestic hygiene in elementary schools is presumably one method of counteracting this, and of teaching the importance of the use of milk. Lady inspectors and health visitors are also able to assist in this education of the poor, and there is the method of using bottled milk.

At the same time as instituting new measures of examination and inspection, the Sale of Food and Drugs Act should continue to be pressed into the work of protecting milk. Irregular sampling, Sunday sampling, and more frequent sampling are required. Adulteration of milk is not getting less, though it may be changing in process. Mixing of separated and whole milk, and of condensed and cow's milk, is now probably more common than the grosser method of simply adding water to increase volume. Pressure should be brought to bear to obtain some legislation on the lines of the Departmental Committee's Report on Preservatives. In the work of dealing with milk sale and distribution there is an immense field for legislation, local authorities and medical officers of health.

(*d*) *Special Milk.*

The provision of modified milk for infants is perhaps a somewhat different question to that of the control of the ordinary milk supply. It is one of supplying a modified milk as a substitute food for infants containing the essential constituents of breast milk, namely, fat, albuminoids, and milk sugar, combined in such proportions as will suit the requirements of each individual infant, and free from injurious and other bacteria and their toxins. In short, it must be made as much like human milk as possible. Such milk is never exposed to the air, passes to the infant at the moment of manufacture, is germ-free, and at body temperature. Infantile mortality has a definite relationship to (*a*) the feeding of infants; (*b*) personal care of infants by parents; (*c*) housing accommodation; and (*d*) certain meteorological conditions affecting temperature and the dissemination of dust. Other elements enter into the problem, but, so far as municipal action is concerned, those are the four main elements. If we can succeed in raising the quality, as regards purity, of the milk on which infants are fed, we shall at the same time educate the sense of duty towards their infants on the part of parents. The mischief lies in polluted milk. The sources of the pollution are not only in unsatisfactory methods of milking, and in storing and conveying the milk supplied, but also in dirty domestic conditions, and particularly in carelessness in the use of feeding bottles. Successfully to attack, by municipal administration, all the sources of pollution, is at present impossible, but the ideal of public health administration in respect of infant feeding is a pure milk supply which needs no sterilization; and towards that end all our efforts should be directed. Modification of such cow's milk for infant use will still be necessary. Meanwhile we must do the best possible under existing conditions, and that involves sterilization, modification, and protection from home contamination. It is also essential that such a milk supply for infants who cannot be breast-fed, should be under medical supervision and adopted only in suitable cases.

Without entering into unnecessary details it would appear that there are five possible means of supplying a suitable and pure milk for infants: (1) By means of municipal milk dépôts as in France, and at Liverpool, Battersea, and other places; (2) by one or more dairymen undertaking, by private enterprise, to furnish such modified milk (certified) under medical supervision; (3) by obtaining such a supply from some central institution, company, or society, such, for example, as the Walker-Gordon Laboratory; (4) by means of medical milk commissions, as is done, in part, by the milk commissions established in the United States of America; and (5) by means of a voluntary health society supplying such milk under necessary supervision and control of sources and usage, as is done, in part, by the York Health and Housing Association.

The essential points requiring attention are such modification of the cow's milk as will make it, like human milk, suitable for infant consumpton, absolute control of its source and handling prior to its modification, and prevention of home contamination by delivery in sealed bottles. At present it would also be necessary to pasteurize or steri ize such milk.

It may be convenient briefly to summarise the chief advantages and disadvantages of this system:—Advantages: (1) Infants fed on dépôt milk receive a modified milk suited to their digestive capacities; (2) the milk is free from injurious and other bacteria; (3) the mother is saved labour and mistakes are prevented, as the home preparation of food for infants, etc., is not necessary if modified and sterilized milk is obtained ready prepared; (4) domestic contamination of milk is avoided. These four advantages are, in my judgement, of great value. Disadvantages: (1) The object being the saving of life and the prevention of infant disease, it is necessary that such a system should be individualized and placed under direct medical supervision. Indiscriminate use of such milk is undesirable, and the hand feeding of infants requires so much intelligent care that it should not be generally recommended. (2) There must inevitably result from any success of this system a tendency or risk for mothers to feed their infants on such milk instead of nursing them in the natural way. Such milk should only be provided for those infants which for some adequate reason cannot be nurtured on human milk. Such infants are the exception and not the rule, and it is undesirable to adopt any method which tends to lessen maternal feeding or maternal responsibility. Anything which tends in the direction of placing the responsibility of rearing infants on the municipality or any person other than the mother is to be deprecated. It is not a question of sentiment, but of fact, to say that the great need of the present time, in respect of this infant problem, is a better home life, more maternal care and feeding rather than less, and a more intelligent, cleanly and simple mode of rearing infants. Infants should be breast-fed, and anything which relieves the

[25] Milk Supply of Two Hundred Cities and Towns, U. S. Dep. of Agriculture, 1903, Bull. 46, p. 118-123.

healthy mother from this duty should be carefully watched. (3) The cost is at present prohibitive (1s. 6d. to 2s. per week) for the very class of the population it is necessary to assist in this way. (4) The evidence of benefit is not yet of a conclusive nature to form an opinion as to how far the use of dépôt milk reduces the infant death-rate. But there can be no doubt that, indirectly, immense benefit is derived.

Admirable accounts of the working of dépôts and milk dispensaries (*gouttes de lait* and *consultations de nourrissons*) have been written by Rotch, Rothschild, Budin, Variot, Hope, McCleary,[26] and others, to which reference may be made by those desiring particulars. The movement is certainly one of great value, and should be looked upon as part of the larger question of the control of the milk supply. At the same time as providing a modified milk, some effort should be made to check the increased use of condensed milk, which is generally a diluted, sweetened, skimmed milk, little more than a solution of sugar. Dr. Hope has drawn attention to the inferiority of most brands of condensed milk, and Hutchison has shown the harm done to infants by the indiscriminate use of such milks.[27]

In conclusion, it will be observed that I think the control of the milk supply should arise naturally and in part from the demand of the consumer, and that this should be met by the enterprise of the trade and by legislation. The milk problem requires united effort and co-operation between milk producers and dealers, guided by a higher standard of demand from the customer, and controlled by an equitable, uniform, and vigorous administration of the law by local authorities. The subject of milk legislation would need a paper to itself, and elsewhere a recent review of the matter will be found.[28] Here I must content myself by saying that what is required is, first, simplification and codification of our milk laws; and, secondly, uniform enforcement of them. At present they are more or less complex and chaotic and in the hands most frequently of interested persons, and therefore largely a dead letter.

II.—Henri de Rothschild, M.D.,
Paris.

Dr. Rothschild urged the importance of milk control originating with the consumer and the trade, and the milk being sold at a price which the poor could afford. Improvement of the milk supply of Paris, he stated, was taking place every year owing to a more educated public demand.

III.—C. R. Drysdale, M.D.,
London.

Dr. Drysdale said that in England and Wales 77 per cent. of the population lived in towns. In London people (if well-to-do) got good milk from such companies as Welford's, Express, Alliance, and Gloucester. The Americans and French were far before us in this all-important question. A good Republic was the best kind of tyranny in this matter, and the New York plan of inspecting milk was quite admirable. In Paris, too, they were far before us in their care for the milk supply, and we ought as soon as possible to imitate them. Meanwhile, he would advise Londoners to do as he had done—that is, to take a few shares in the milk companies. This would give them the power to lecture the directors and managers as to their duties towards the public in offering a genuine article fit for human food. Lord Salisbury once said, "We are the least governed people in world," and it was difficult to get such reforms carried.

IV.—S. Hallows, M.B.,
London.

Dr. Hallows said: During the past eight months he had examined between sixty and seventy farms other than those of the large dairy companies. Out of these sixty or seventy farms he had been unable to pass one. Why? Because of the spider-web-covered roofs, the filthy condition of the yards outside the byres, the grossly dirty condition of the cows. The transit of milk spoken about by Dr. Newman showed a peculiar state of things; here we had the railway servants helping themselves from the unsealed cans. There ought to be proper inspectors appointed well acquainted with milk and all the tricks of the trade. All the milkers and workers amongst milk should be taught the necessity of absolute cleanliness. The bottles must be sterilized. The great thing was that the people must be taught what pure milk was, and what the dangers were arising from impure milk. With regard to condensed milks, after a series of experiments he had found them absolutely useless as food.

V.—T. Laffan, M.R.C.P.I.,
Cashel.

Dr. Laffan dwelt on the necessity for the compulsory provision of milk for the working classes, the great necessity for fixing a standard of purity and for the inspection of dairies, and the tracing of milk from the producer to the consumer.

VI.—G. F. McCleary, M.D.,
M.O.H., Metropolitan Borough of Battersea.

Dr. McCleary wished to point out the disproportion between the evils shown to exist and the remedies proposed. Dr. Newman suggested that the solution of the problem must come from the consumer—that the consumer must be sufficiently educated and intelligent to appreciate the importance of clean milk and to demand it from the milk trade. He wished strongly to dissent from that view. He did not think that those who are engaged in the work of preventive medicine had done their duty when they told the consumer that if he wanted pure milk he must get it for himself. The reform must come from administration, and, if necessary, from fresh legislation. He agreed with Dr. Newman that the desideratum is cleanliness in milking rather than model cowsheds. Clean milking, however, seemed to imply one of two alternatives—(1) a revolution in the personal habits of the milkers, or (2) to replace them by persons of a higher social standing, who may be trusted to refrain from beginning milking by expectorating upon the hands in the absence of external compulsion. Each alternative implied great difficulties. Again, it was most important that clean milk production should not raise the price of milk, for milk was already so expensive as to be practically prohibitive for the poor, who are often obliged to have recourse to cheap condensed milks and proprietary foods. If the movement for clean milk resulted in raising the price of milk more harm than good would be done. In seeking a solution of the problem it should be remembered what had been done in the past to safeguard water supplies and meat supplies. The supply of water in all our large towns was now, from the gathering ground to the supply tap, under the supervision and control of the responsible officers of the sanitary authority. It was now generally held that the inspection of private slaughterhouses was unsatisfactory, and that the municipal abattoir was an essential feature in our system of practical preventive medicine. The milk supply was as important as the water supply, and the milk problem could not be solved until the milk supply became a function of the community in its collective capacity.

VII.—W. N. Barlow, M.R.C.S., D.P.H.,
M.O.H. Bootle.

Mr. Barlow said that reform in milk supply certainly depended in part on consumers, especially as regards cleanliness. He suggested certificates from the sanitary authorities as to cleanliness of shippons and milkshops, and that the public should buy only from shops and dairies having such certificates. Contamination of milk often took place from the cow's tail at the time of milking; that could be prevented by using an improved covered milking can instead of an ordinary bucket as commonly used.

THE TEACHING OF HYGIENE IN PUBLIC ELEMENTARY SCHOOLS,

AND THE INFLUENCE ON THE PUBLIC HEALTH OF THE INFANTS' DEPARTMENTS OF SUCH SCHOOLS.

By W. Naylor Barlow, M.R.C.S., D.P.H.,
M.O.H., Bootle.

Nearly every medical officer of health in his annual report deplores year by year the immense wastage of infant life, and comments upon the causes contributing thereto. It has been pointed out that, while some of this is due to neglect and indifference, very much more is due to ignorance. Hundreds of lives are lost yearly through ignorance of how to feed children. Hundreds of lives are lost yearly through ignorance of the simple laws of health.

[26] *Journ. of Hygiene*, July, 1904, p. 329.
[27] *Food and Dietetics* 1902, pp. 442-445; Reports on Health of Liverpool, 1898-1903; Report on Milk Supply of Finsbury, 1903, pp. 36-38.
[28] *Bacteriology of Milk*. Swithinbank and Newman, 1903; and Report on Milk Supply of Finsbury, 1903, pp. 53-65.

A man with a prize dog will take immense pains to learn how to feed the animal and keep it in health, but will take no pains to see that his baby is properly fed and clothed, or how to keep himself healthy.

Many hundreds of infants' lives are lost by reason of clinging to old superstitions regarding measles and whooping-cough. They are still considered mild diseases and of no account, in spite of oft-repeated warning that they kill more than all the other what are called "dangerous infective diseases" put together. It is a common superstition in Liverpool, that if a child with whooping-cough be taken across the river when the tide is on the ebb, that the disease will ebb with it, the result often being that an attack of bronchitis follows and the child's life ebbs altogether.

Efforts have been made to lift this pall of ignorance by scattering broadcast leaflets dealing with infant feeding, etc., and by popular lectures; but the fact remains that, among the poorer classes, most mothers cannot be taught; some will not be taught; and it has now come to be accepted that the best way to fight the battle is to do what is possible by means of leaflets and lectures with the present generation, and to improve the next generation by teaching a few of the elementary facts regarding personal hygiene, domestic hygiene, and the feeding of infants to the children (especially the girl children) now at school.

Now many education authorities, while looking more or less favourably upon the suggestion that hygiene should be taught in public elementary schools, say, "But how can we include this subject? our curriculum is already full to overflowing, and there are already many subjects much more valuable which ought to be taught and for which there is no room." Others say, "We already teach it in the subject called domestic economy." With regard to objection No. 1, I cannot do better than take a few extracts from Herbert Spencer's *Essay on Education*, a most valuable book, which I would recommend to all who have not yet read it.

Spencer deplores that the useful in education is sacrificed to the ornate, especially with respect to women. He says: "In the treatment of both mind and body, the decorative element has continued to predominate in a greater degree among women than men. In their education the immense preponderance of 'Accomplishments' proves how use is subordinated to display. When we have named reading; writing; spelling; grammar; arithmetic; and sewing, we have named all the things a girl is taught with a view to their actual uses in life."

Again he says: "If there requires further evidence of the rude, undeveloped character of our education, we have it in the fact that the comparative worths of different kinds of knowledge have been as yet scarcely even discussed—much less discussed in a methodic way with definite results. Not only is it that no standard of relative values has yet been agreed upon, but the existence of any such standard has not been conceived in a clear manner." Again, "For complete living it is necessary not only that sudden annihilation of life shall be warded off, but also that there shall be escaped the incapacities and the slow annihilations which unwise habits entail. As without health and energy the parental, the social, and all activities become more or less impossible, it is clear that this secondary kind of direct self preservation is only less important than the primary kind: and that the knowledge tending to secure it should rank very high. Consider how ill-health hinders the discharge of all duties, makes business often impossible and always more difficult, and produces an irritability fatal to the right management of children."

"Vigorous health and its accompanying high spirits are larger elements of happiness than any other things whatever, *the teaching how to maintain them is a teaching that yields in moment to no other whatever!*"

One last quotation: "Is it not an astounding fact, that though on the treatment of offspring depends their lives or deaths, and their moral welfare or ruin, yet not one word of instruction on the treatment of offspring is ever given to those who will by and by be parents. Is it not monstrous that the fate of a new generation should be left to the unreasoning custom, impulse, fancy, joined with the suggestions of ignorant nurses, and the prejudiced counsel of grandmothers? To tens of thousands who are killed, add hundreds of thousands who survive with feeble constitutions, and millions who grow up not so strong as they should be, and you will have some idea of the curse inflicted on the offspring by parents ignorant of the laws of life."

In the face of words like these from such a man as Herbert Spencer, can it now be advanced that there is no room in the school curriculum for the teaching of hygiene and laws of health, or that the subject is not of sufficient importance?

With regard to objection No. 2, I have looked through many of the books used in the teaching of Domestic Economy and, while it is true that in these are included a great many useful facts, still the useful facts, and what are to my mind the useless facts, are all mixed up together, and in 99 cases out of 100 the teacher himself or herself has not had the experience which will enable him or her to pick out the information which is important—for instance, in the books which came under my notice I found many pages devoted to the question, "How to choose a water supply for a town"; many others describing gully traps and the system of house drainage; many others on "How to choose the site for a house." Now these things are very interesting, particularly so for the teacher, but everybody does not want to be a sanitary inspector, and while coming under the heading of hygiene, it is not the kind of hygiene which is important from the point of view of teaching those things which will afterwards be of use to the children.

A short time ago I recommended that the elements of hygiene should be one of the subjects taught in the Public Elementary Schools, Bootle. My suggestion was approved of by the Education Committee, and as a commencement I gave two lectures to the teachers of the senior girls' classes, and presented to each a typewritten copy of the lectures, so that they might impart the information contained therein to the girls whom they teach. The subject matter of the lectures was most elementary, but contained what appeared to me to be the most essential facts under the following heads: (1) Cleanliness of house and person; (2) ventilation; (3) the feeding of infants; (4) general remarks on health.

If only a few of the facts taught are remembered much benefit to the public health will undoubtedly follow. At a time when the necessity of teaching health matters in schools is being pressed it seems to me that the time is opportune for putting an end to what is undoubtedly a prominent factor in the propagation of infectious diseases. I refer to the prevailing practice of encouraging children under the age of 5 years to attend the infants' departments of the public elementary schools.

I have made careful inquiries as what are the advantages from an educational point of view resulting from the attendance at schools of children of such tender years as from 3 to 5. There appear to be none. I am informed by teachers that children commencing school after the age of 5 years invariably overtake those commencing earlier, and, from a perusal of a syllabus of work done in the infants' departments of the public elementary schools of Bootle, I confess there is no subject in it of such pressing importance as would require that children of 2, 3, and 4 years should commence the study thereof so early. One alleged advantage of the practice is that the mothers are relieved of their children for about five hours per day, but I submit that this ought not to receive one moment's consideration when the disadvantages are so great and the results so disastrous.

Measles and whooping-cough kill every year more than all the other infectious diseases taken together, as I have before mentioned. These deaths practically occur all under the age of 5. For the past three years in my own town I find that 75 per cent. of all cases of scarlet fever notified were between the ages of 3 and 5, and that 25 per cent. of all cases of diphtheria notified were between the same ages, that is, the ages of the children who attend the infants' departments of schools. The percentage of deaths from these diseases between the ages of 3 and 5 to the total deaths was as follows:

Scarlet...	... 69 per cent.	Whooping-cough	... 40 per cent.
Measles	... 73 ,,	Diphtheria	... ... 70 ,,

It is a fact that the longer children are protected from the infectious fevers the less likely they are to contract them, and not only so, but the older a child is when attacked the less likelihood there is of a fatal termination to the attack.

It is, therefore, most essential that children should be kept as far as possible from danger in their earliest years, and the aggregation of all sorts and conditions of children from all sorts and conditions of houses at ages the most susceptible for becoming infected with such diseases, to say nothing of the slow undermining of the health of such children by being confined for five hours per day in rooms often ill-lighted and only indifferently ventilated, and this at ages when they most of all require fresh air and plenty of it, is fraught with evil results. I, therefore, respectfully ask the meeting to resolve:

That the teaching of the elements of personal and domestic hygiene in public elementary schools is desirable, and at the same time the practice of encouraging the attendance in such schools of children under the age of 5 years should be discontinued.

SCHOOL DIPHTHERIA IN THE METROPOLIS.

By C. J. Thomas, B.Sc., D.P.H.,
Assistant Medical Officer (Education) to the London County Council.

During the last two years of its existence the late School Board for London gave increased facilities for the study of diphtheria and the prevention of its spread in their schools. The following remarks form a review of the experience thus gained, and may contain some points of interest at this time when the control of elementary schools in this country is coming into closer relation with bodies having local sanitary powers.

The proportion of the total amount of diphtheria which can be ascribed to school influence has been greatly debated. Of the cases in London during this period of inquiry notified from homes from which children attended Board schools, I found that 16 per cent. could be definitely traced to school influence. This was at a time when every endeavour was being made to arrest the spread of diphtheria in these schools: as, moreover, voluntary schools did not come within the scope of this inquiry, it is clear that school influence ordinarily must account for much more than 16 per cent. of the whole. It should be mentioned that during the period under consideration 48 per cent. of total notifications of diphtheria came from homes from which children were attending Board schools.

Although the proportion of diphtheria due to school attendance is considerable, it is the factor which is the most amenable of all to control, as I will endeavour to show. The improvements likely to accrue from the whole of the elementary schools in a district being brought under one hygienic authority need no pointing out. The methods of investigation pursued are the following: The head teachers report upon a special form each case of exclusion for diphtheria, whether actually in a suffering scholar or on account of diphtheria in the home; they are required to state upon the form the classroom which the child attended and the date of last attendance. These returns are kept under continuous observation, and as soon as any suspicion of school influence shows itself a visit is made to the school. The attendance registers are first closely scrutinized, and an explanation is required of all absences, especially of such children who have been away and returned after a few days. In any case of the slightest doubt the child is called out for special examination. The importance of thus carefully examining the registers cannot be too strongly insisted upon; frequently the origin and course of the outbreak stand plainly marked in the book. Next, each child in the affected class or classes is separately examined, and every case presenting clinical symptoms is set aside for bacteriological testing; to these are added all children coming from recently-infected homes and children who have been noticed recently ailing by the teacher. By swabbing selected children in this way the carriers are usually discovered and excluded, and very rarely does it happen that the disease still spreads; if this occurs, a second visit must be made, and each member of the class swabbed.

From September, 1903, to May, 1904, twenty-nine school outbreaks were investigated, and the following classes of children were found by bacteriological proof to be spreading the complaint:

	Per cent.
1. Actual mild cases in attendance	80
2. Cases coming from infected homes, but presenting no symptoms	12
3. Cases of recrudescence after absence for notified diphtheria (return cases)	6
4. Carriers without symptoms or demonstrable contact... ...	2

Thus it appears that mild cases in actual attendance are by far the most serious cause of school spread, amounting to 80 per cent. of the total. This is fortunate, for their detection is easy.

At Chisenhale Road Infants' School in June, 1904, 4 cases of diphtheria had occurred, and 6 cases of exclusion on account of infection at home. Fifteen children were selected for swabbing on account of clinical symptoms and 34 for other reasons; 5 children amongst these 49 showed diphtheria bacilli on culture: but all 5 were amongst those presenting clinical symptoms, such as rhinorrhœa, cervical adenitis, and anæmia.

At Atley Road Girls' School in April and May, 1904, there had been 20 cases of actual diphtheria or exclusions. Amongst 44 children swabbed 4 were found to have diphtheria, one had a sore throat at the time of examination, the other 3 were sisters who had been away from school as shown by the class registers; the reason given by the mistress was that they had no boots: on examination they betrayed clear signs of recent illness, and all 3 gave diphtheria bacilli on culture.

During September, 1903 two children and the teacher of a class at Creek Road Infants School contracted diphtheria. The class was examined, and amongst the children a girl, R. G., was found to have a sore throat with a small patch of exudate on one tonsil: a pure culture of diphtheria bacilli was obtained. This case presented features of great interest. She was the next door neighbour and playmate of a boy who had recently returned from a fever hospital for diphtheria: on obtaining a culture, this boy also had diphtheria bacilli in his throat. R. G., with a sister, D. G., were both excluded from school. In a few days an indignant letter was received from their father, stating that he had taken R. G. to three medical men who all scouted the idea that she had anything the matter with her. One medical man actually sent a certificate stating that R. G. was absolutely free from infection—doing this without bacteriological examination—and the father demanded explanation and compensation; two days after the receipt of this letter and certificate the sister, D. G., contracted a serious attack of diphtheria from R. G., and was taken to a fever hospital. R. G. was examined in another three weeks, and it was found that the throat was clear, but a copious discharge was present in the nose, with much rawness. On testing, diphtheria bacilli were still present in the nasal discharge.

As an example of Class II, Wilton Road Infants' Department may be taken, when in March, 1904, a serious outbreak took place. On investigation, on March 11th, it was found that the greater number of cases had occurred in Class A, and amongst the girls only; all the girls were swabbed, therefore, and amongst them H O. was found to be carrying Klebs-Loeffler bacilli. She was the sister of a baby who had died of diphtheria a short while previously. After her exclusion a number of notifications came to light of cases which had occurred in Class G.; the incidence on this class also ceased with the exclusion of H.O., but it was elicited upon the next visit that R.O., the brother of H.O., had been a scholar in Class G, and had automatically shared her exclusion. The outbreak at this school, therefore, was originated by a brother and sister who acted as "carriers," and whose baby brother had recently died of diphtheria. Had they been bacteriologically examined as contacts the fact of their being hosts of the Klebs-Loeffler bacilli would have been ascertained and the outbreak averted.

An example of Class III is seen in an outbreak at St. Clement's Road Infants' School during October, 1903. Four cases of diphtheria were notified in quick succession from one class. They were all amongst the boys of the class, and none among the girls. The whole of the boys, numbering 24, were therefore examined bacteriologically, and in one alone diphtheria bacilli were found in the nasal secretion, although the throat was clear. This boy had just returned from a fever hospital for diphtheria.

Children presenting slight clinical symptoms are overwhelmingly preponderant amongst those spreading disease in school. Of almost equal importance from the point of view of obtaining control over school outbreaks is the fact that the vast majority of carriers are found at a definite age-period. Over 85 per cent of the cases discovered have been between the 5th and 8th birthdays, and of these more than 60 per cent. have been amongst 6-year-olds. This remarkable fact requires explanation. I think it may be found in the following considerations.

The diphtheria notifications at various age-periods in London average per 1,000 living at each age are as follows:

Age-Periods.	Per 1,000.	Age-Periods.	Per 1,000.
Under 1 year	1.96	6— 7	7.85
1—2	6.07	7— 8	6.00
2—3	7.39	8— 9	4.66
3—4	9.61	9—10	3.93
4—5	9.67	10—15	2.92
5—6	9.18		

It thus appears that the years of heaviest incidence are 3 to 4 and 4 to 5; there is a slight drop from 5 to 6, from 6 to 7 there is a considerable drop, and from 7 to 8 a further considerable drop, afterwards the incidence becomes relatively level. Thus, between the ages of 5 and 8 children are passing from a condition of high susceptibility to one of relative immunity. It is reasonable, therefore, to suppose that numbers of children during this age period are in a condition in which they may be liable to slight unrecognized attacks of diphtheria. If diphtheria attacks a child in a class under the age of 5 the probability is that the child will go down with a severe attack, and will not remain in school to spread the disease; indeed, in no single instance amongst the outbreaks investigated has a babies' room been found to be the source of spread of diphtheria in a school. If diphtheria attacks a scholar in a class over the age of 8 and he continues to attend, it is to be supposed that the children in his class have a relatively high immunity, and so many of them, at any rate, do not suffer from slight attacks. Between the ages of 5 and 8,

however, if a child attends with diphtheria, a large proportion of the children are liable to attack in a slight form, and the class becomes a source of danger, a few of the children being ill enough to get the disease recognized as diphtheria some carrying it home, and being excluded on account of diphtheria in the house, and more continuing to attend with slight clinical symptoms.

Thus, at Single Street School, in December, 1903, it was found that a mild epidemic of sore throat had been slowly working its way through St. I (aged 7) for six weeks, although there had been only three cases of notified diphtheria. It was found that 29 out of 54 children had suffered from the illness of which the characteristic symptoms were vomiting and sore throat, but in no case except those notified had the complaint been severe enough to keep the child from school more than one day. It was very easy to tell on inspection of the class which children had suffered, their pallor and listlessness contrasting with the ruddiness and liveliness of those who were well. On bacteriological examination two children showed diphtheria bacilli still, and on their exclusion the outbreak ceased.

At Eleanor Road School in May, 1904, 20 cases of diphtheria or exclusions occurred; they had been connected with the class aged 6-7 and the baby room; these two classes were swabbed; 3 cases of diphtheria were discovered amongst the former, and none amongst the babies. On exclusion of these three children the outbreak ceased.

The prevalence of diphtheria organisms in the general population is a question of great importance. Out of 1,027 swabs taken from September, 1903, to June, 1904, diphtheria organisms were found 77 times. The true diphtheria organism has, therefore, been found in 7.5 per cent. of cases examined. This is amongst children in infected classes; the percentage of true diphtheria bacilli in the general population in London at present must be very small indeed—much less than has been sometimes suggested. The pseudo-diphtheria organism, however, was found in 27 per cent. of cases. At first, owing to the incertitude that existed as to the significance of this organism, children giving it were excluded on suspicion; this led to so much dislocation of school attendance that later this procedure was discarded, and it has been found to be quite sufficient to exclude cases of true diphtheria bacilli; the outbreaks ceasing when all children harbouring the latter are discovered and excluded.

School closure has only once been resorted to in the last twenty-nine outbreaks, and on this one occasion it was done at the urgent request of the local medical officer of health; the same steps, however, with regard to swabbing and detection of carriers were undertaken before closure, and there is no reason to suppose that these measures would have been less efficacious in this instance than in all the other cases.

The objections to school closure are:

1. It is unnecessary where proper facilities for bacteriological diagnosis exist.
2. It may be harmful in that carriers are undetected, and may go on spreading the disease amongst playmates.
3. There is no guarantee that at the end of the closure period all the scholars will return free from infection.

In this last connexion the question of protracted infection is of importance, and is well illustrated by the following case:

At Lewisham Bridge School, in September, 1903, a few cases of diphtheria occurred in a class room of seventy children. The medical officer of health was anxious to close and exclude all the children, but it was felt that the more scientific procedure would be to discover the carrier cases, and exclude them only. Accordingly the children were all examined, and two were found harbouring diphtheria bacilli. On the exclusion of these two cases the outbreak subsided entirely. One case, R. C., aged 6, had a profuse nasal discharge; he was kept under observation for some time; his exclusion took place on September 29th; on November 11th he was re-examined, and diphtheria bacilli were still present; on December 8th he was again examined, and, although the nose now was free from diphtheria, a culture from the apparently healthy throat still gave Klebs-Loeffler bacilli, although this time they grew in bizarre and degenerate forms, showing that their vitality was on the point of exhaustion. In this case, therefore, the diphtheria bacilli persisted in a throat over seventy days. Had the children been excluded—say for twenty-one days—this boy would have returned with the others in a still infectious condition, and closure would have been a failure.

To recapitulate the main facts dealt with in this paper:

1. Diphtheria is spread by schools to a certain and considerable degree.
2. It is spread by direct personal transmission.
3. It can be checked by swabbing and excluding children carrying diphtheria organisms.
4. These children are chiefly mild, actually suffering cases.
5. Their age is usually between 5 and 8.
6. Pseudo-diphtheria organisms may safely be ignored.
7. School closure for diphtheria should be looked upon as a confession of impotence and defeat.
8. There is urgent need of greater recognition even on the part of medical practitioners of the rôle of slight cases and carriers. In many instances children sent home by the teachers have returned after seeing a doctor who has said they were not suffering from diphtheria, although their throats swarmed with diphtheria organisms.
9. All contacts with diphtheria cases should be rigorously swabbed before being allowed to mix with the general population. Disinfection of homes without this precaution is futile.
10. Much greater facilities for bacteriological examination need to be provided.
11. Could not the annual report of medical officers of health dealing with such facts as these become a means of education on these points? At least could they not be distributed to each member of the profession in the sanitary district?—a practice I believe not usually carried out.

Dr. DAVIES thought diphtheria prevalence could be effectively dealt with on the lines indicated by Dr. Thomas. In Woolwich the cases of diphtheria had been fewer during the last eighteen months than for thirteen years previously. This was attributed to (1) the local medical practitioners having had their attention called to the prevalence of mild (especially naval) cases of diphtheria going about and acting as sources of infection, were on the look out for such cases and made frequent use of the bacteriological diagnosis provided by the Borough Council; (2) the active measures taken by the London School Board—chiefly in the person of Dr. Thomas—in dealing with school outbreaks of diphtheria; (3) the practice in the local hospital of the Asylums Board of not sending out cases until they were culture free.

Dr. RICHARD JONES thought the spread of diphtheria in infants' schools was undoubtedly due to the wooden pencil holders supplied to the children. The teaching of hygiene should be made compulsory. The Merioneth County Council have resolved from the recommendation of the Education Committee to make the teaching of hygiene and the principles of temperance in all their schools compulsory.

Dr. HERBERT JONES (Hereford) pointed out that now that Article 101 had been eliminated from the Code of the Board of Education, single children could not be excluded from attendance at school.

Dr. MEREDITH RICHARDS (M.O.H. Croydon) agreed as to the futility of school closure in dealing with diphtheria. He had only once found it necessary in the last five years, and then only because school managers would not co-operate. He thought pseudo-diphtheria could be neglected unless occurring in known contacts, and pointed out the necessity of co-operation between medical officers of health and medical officers to schools, and for legal power to examine children in school. Ringworm cases should be excluded until all suspicious hairs were found free of spores at the municipal laboratories.

Miss THEODORA JOHNSON (Principal of the Swedish Institute for Physical Education) drew attention to the movement in favour of the teaching of hygiene and to the memorial presented to the President of the Board of Education. Miss Johnson had been a lecturer on this subject with seventeen years' experience in Bristol and Clifton, but in no instance had she been able to get the most important subjects of physiology and hygiene taught in schools; the curriculum was overcrowded, and there was still the old-fashioned and most incorrect idea that the subject was "improper." She would most strongly urge all members of the medical profession to do their utmost to forward this question, as there was no other of so much importance alike to the individual and to the nation.

Dr. LUTOSLAWSKI (Poland) said that the teaching of hygiene in schools tended to improve the habits of the people as far as health was concerned, and the medical profession could do very much in this direction. But there was a difficulty, in that medical men themselves knew too little about the matter of private hygiene. Every ordinary curriculum of a medical school ought to contain a course on personal and domestic hygiene.

Dr. J. MCGREGOR ROBERTSON took occasion to question the value of the teaching of hygiene in elementary schools, not from the point of view of the desirability of the teaching but from the point of view of its practicability. In his experience it was impossible to give the time necessary to teach successfully even the elementary physiological facts on which hygiene was based. A second difficulty was that at present there was no elementary textbook suitable for such teaching,

most of the books being designed to meeting the requirements of the Education Department, so that they were mere compilations of physiological facts rather than simple expositions of elementary physiological ideas. He thought, therefore, it was a waste of time to attempt at present to teach physiology and hygiene in elementary schools, and an injury to the scholar, and would continue to be so until a radical change were made in the character of the curriculum. A previous lady speaker had referred to the interest exhibited by working women and girls in a course of lectures given by herself, and to the usefulness which she had reason to believe had followed; he admitted the value of such lectures, but it was no argument for attempting to force physiology or hygiene into an already overloaded curriculum.

DISCUSSION ON POVERTY AND PUBLIC HEALTH.

I.—T. P. Whittaker, M.P.

ALCOHOLIC BEVERAGES.

The bearing of the use of alcoholic beverages upon poverty and public health is very close. The annual outlay on them is a heavy burden on the nation. For the great mass of the people it is an expenditure incurred at the cost of inability to provide much that is essential to health, efficiency, and well-being.

The expenditure on drink in the United Kingdom is about £180,000 000 a year. In England and Wales it is about £150,000 000, which represents an annual average outlay of about £18 per family for the non-abstaining working classes and those who have working-class incomes, and about £46 per family for the other non abstaining classes.

People with working-class incomes cannot afford such expenditure as £18 a year on drink. It represents about one-seventh of their income. A prudent expenditure in other directions of that one-seventh would make an enormous difference.

Many of the problems of public health, especially amongst the working and well-to do classes, resolve themselves into questions of cash. People are usually badly housed, overcrowded, and insufficiently and unhealthily fed, and children and delicate adults are not satisfactorily cared for because the money required to enable them to provide what is necessary is not available. The main reason why so little money is available for the essentials of decent and healthy existence is that so much is wasted in other directions.

We talk about the housing problem. As a nation we spend more on drink than on house rent.

We talk about the underfed. We spend more on drink than on butcher's meat, bacon, ham, poultry, and game put together. We spend more on drink than on bread, flour, milk, butter, cheese, and eggs.

We talk about facilities of communication to enable the people to get out where the air would be purer and the dwellings more spacious. We spend enormously more on drink than we do on railway, tram, and omnibus fares, or than would provide free communication to enable every one to live in the country.

We complain about rates and taxes rendering it impossible for us to provide funds for much that would promote the physical, mental, and moral well-being of the people. We spend as much on drink as all our rates and taxes amount to.

We talk of old-age pensions. The working-class families who are non-abstainers spend as much per head as if put aside from aged 20 would provide a pension of £2 a week for life for every one of them that reaches 65 years of age.

It is not, for the most part, that people have not got the money. It is that they have not the common sense and the self-respect to use what they have properly, and to live decently and cultivate their faculties and powers; and the community devotes far too little of its time and attention to encouraging and developing these qualities, and to suppressing temptations and facilities which militate against them.

We think too much of the easy philanthropy which alleviates results and too little of the genuine reforms which would remove causes. It is useless to tell us that the people have not got the money to live under far better conditions than they do. There are, of course, cases of genuine and unavoidable poverty in which that is true. But in the main it is not true. The great majority of them either have or might have the money. The fact that such an enormous sum is spent by them on drink proves beyond question and dispute that they have it. It is not available for the necessaries of decent existence because it is squandered on drink and folly which drinking encourages and begets. The result is misery, weakness, incapacity, disease, and innumerable social difficulties culminating in a terribly high death-rate especially amongst children.

Great masses of the people are brought up and live under conditions which render health, strength, efficiency, and self-respect impossible. They do not get food enough to adequately support life. Their clothing is defective and deficient. They are never properly protected against cold and wet. To a large extent they live in overcrowded, dismal, and unwholesome houses, and amid surroundings which render good health, cleanliness, sweetness, and comfort impossible. They live like animals. They marry early and have large families. The birth-rate amongst these people is higher than amongst tradespeople and the middle classes. In London the birth-rate per 100 women between 15 and 45 years of age is three times as high in Bethnal Green, Whitechapel, Southwark, and St. George's in the East as it is in the best districts in Westminster, Hampstead, and Kensington. The inexorable laws of nature step in, and these poor little waifs die off like flies.

In London in 1901 there were 727,389 persons living more than two in a room in tenements of four rooms and under. More than two in a room means counting kitchens, sitting-rooms and bedrooms; 120,372 were four or more in a room; 11,922 were six or more in a room. In the Boundary Street area in London, which was cleared for a housing scheme, the death-rate was 40 per 1,000; in the Clare Market area it ranged from 40 to 50 per 1,000; in the Cable Street area it was 44 per 1,000. In the Norfolk Street area it was 50 per 1 000 as compared with 18 per 1 000 for the whole parish of Islington. The death-rate for London as a whole is about 20 per 1 000, but it ranges from 14 to 16 per 1,000 in Hampstead, Lewisham, Plumstead, Wandsworth, etc., to 28 to 30 per 1 000 in Holborn, Southwark, Limehouse, St. Luke's, and the Strand districts.

In Central Manchester the death-rate is two and a-half times as high as in some of the suburbs,

In London the death-rate from consumption, pneumonia, and other respiratory diseases is three to four times as high in some districts as in others.

In England and Wales, as a whole, the expectation of life at birth is 43⅔ years. In Manchester it is 28¾ years. In London two out of every seven persons die in a workhouse, a hospital, or an asylum. Of the males one in three so dies. If we eliminate the middle and well-to-do classes, this means that of the working and poorer classes, every other boy or man dies in a public institution. It means that of the very poor very few die in the homes in which they live.

The death-rate amongst children is terrible. It is from four to five times as high in some districts in London as it is in others. In York, during the first year of life in the poorest districts, it is 247 per 1,000, in the best working-class districts it is 173 per 1,000, and amongst the servant-keeping class it is 94 per 1 000.

Those who struggle through the pitiless hail of want, neglect, disease and death, do not escape unscathed. They grow up feeble and stunted, mentally and physically. From the outset they are badly equipped for the struggle that is before them.

Social problems are complex, and causes and results act and react. Poverty, weakness, and degradation tend to create and perpetuate the conditions which cause them. No doubt poverty, overcrowding and insanitary conditions tend to promote drinking, but it is also true that a very large proportion of the poverty, overcrowding, and residence amongt those insanitary conditions is due to drinking. Drinking is far more the cause of poverty than poverty is the cause of drinking. The largest consumption of drink is not amongst the very poorest. Many of the poor are where they are because of the drinking of themselves and others; but when they have sunk into the direst poverty they are not the heaviest drinkers. They have not got the money.

There is the most drinking and drunkenness when trade is good and the country is prosperous. It is far more prevalent in wealthy manufacturing and mining districts than in poor agricultural ones. When trade is bad the drink bill falls rapidly and the arrests for drunkenness diminish greatly. Speaking broadly, people do not drink because they are poor. They are poor because they drink, or because those with whom they are connected have drunk and do drink.

It is not only those who actually drink themselves who

suffer. Children, who because their parents drank, are insufficiently fed, badly housed, never properly taught and brought up to no regular trade, are condemned, almost inevitably, to a life of poverty and misery. They may, when they grow up, in spite of these difficulties, tendencies and surroundings, be sober and steady, but with their diminished vitality, low nervous tone, and weakened vital organs, they are almost certain to be more or less feeble and incompetent. They have little capacity to endure fatigue or resist disease. Their recuperative power is small, and they readily fall victims to strain, temptation, and insanitary surroundings. Consequently, though they may themselves be sober, the poverty into which many of them drift is the result of drink, because it was owing to the drinking habits of their parents that they are what they are.

"Lack or irregularity of employment" is a common explanation of poverty, but closer inquiry frequently discloses the fact that employment has been lost because of irregularity, unreliability, or incompetence, resulting directly or indirectly from the drinking of themselves or others. Sickness and physical inability to work are often also similarly accounted for. Charles Booth says that drink must be accounted the most prolific of all the causes of pauperism. There can be no doubt that if the poverty which is so caused were prevented, the problem of dealing with that which is the result of genuine misfortune would be enormously simplified.

Overcrowding and the slums are not nearly so much the cause of drinking as drinking of overcrowding and the slums. By far the greater part of the drinking of this country is done by those who are or might be well and comparatively well housed and circumstanced. The dwellers in the slums are not there because they cannot find house accommodation elsewhere; for the most part they will not go elsewhere. When the London County Council built its first block of new dwellings in Bethnal Green and gave the opportunity of taking them to the tenants of the first batch of houses which were to be demolished, only 11 out of 900 went into the new buildings, and they did not remain. They prefer the slum and its freedom from restraint, order, and cleanliness, and also because they are allowed to overcrowd. Tenements which are let at a high rent per room become comparatively cheap per person if the tenants are allowed to crowd into them twice or three times as many per room as are permitted in well-managed dwellings. Those who live in well-managed blocks of industrial buildings must be sober and respectable, and overcrowding is not allowed.

The experience of those who work in the slums is that as soon as they make any of the people there abstainers they move away. The difference which the saving of money previously spent on drink makes to those who have become accustomed to live on marvellously little is enormous, and is only equalled by the change which takes place in their self-respect, their cleanliness and appearance, their health, and their family relations.

In the coal and iron districts of this country there are places where all the cottages have been erected by the owners of the works. They are all alike. The men who live in them work at the same employment and earn the same rate of wages. Go through one of these industrial villages. Many of the houses are bright and clean, and the women and children are happy and well-cared for. Others are dirty, miserable, and neglected. The cause of the difference is almost invariably drink. Exchange of homes would not change the character of the occupants. The occupants would speedily transform the homes. The people are not what their houses make them. The houses are what the people make them.

Not only does the expenditure of money on drink and the waste of time which it involves, and the loss of earnings which results, lead to families being badly housed and insufficiently clothed and fed, but the drink itself is injurious and tends to weaken physical vigour and shorten life even when taken in quantities which are usually considered moderate. Carefully-recorded insurance statistics demonstrate that as compared with carefully-selected moderate users of alcoholic liquors, total abstainers from them have during the strenuous working period of life—from 25 to 65 years of age—an annual mortality-rate 40 per cent. lower. No questions of poverty and slum dwellings and surroundings come in there. The injurious effects of alcohol, when the surroundings and conditions are entirely unfavourable, are much more marked and disastrous.

Consequently, on the one hand, inability to secure satisfactory housing, food, and clothing, because the money that would provide them is spent on drink, results in conditions which beget disease, and on the other hand, the consumption of the drink thus improvidently bought also deteriorates physical vigour, predisposes persons to disease, and renders them less able to resist and overcome its attacks.

Again, both drinking and physicial deterioration render people less able to do their work and discharge their duties, with the result that they lose their employment or earn less than they should. The temptation to drink increases as the difficulties of their position accumulate and the moral power to resist the temptation weakens; and, as though it were the object of legislation to make it easy to do wrong and difficult to do right, our licensing system has resulted in placing facilities for drinking in the greatest number precisely in those most crowded and poorest parts of our towns where the very condition and character of the people render it most necessary that they should be helped and protected against the greatest enemy to their health and well-being.

II.—Mrs. B. Bosanquet.

PAUPERIZATION AND INTERESTS.

Many causes have combined within the last quarter of century to emphasize the fact that large numbers of ou fellow-citizens are leading very unsatisfactory lives. That is perhaps describing the position too mildly. It seems probable that in the light of the more complete knowledge of the future, all we of the twentieth century shall appear to have led unsatisfactory lives; and a better statement would be that at the present moment one section of the community falls far below the standard of health and general well being which seems imperative to the knowledge and conscience of another section. It is this divergence between the standard of the better informed and the attainment of the backward, the clash between what we desire and what they practise, which is mainly responsible for the growing importance which the problem assumes; and it is in itself an omen of the happiest significance, as indicating an increasing sympathy and unity of interest between different classes in the community. The one danger is that this sympathetic interest, unless properly guided, may lead to injudicious action. It is natural that we should all be eagerly seeking for the best, that is, the surest and quickest methods of removing the evil from amongst us; and it will not be unnatural if our sympathy tends to outrun our wisdom and unwittingly to aggravate the problem. Against this danger meetings such as this of experienced men and women taking counsel together should be one great safeguard. I need not occupy your time in demonstrating that the evil exists—we are all of us only too familiar with it—so I will try to indicate as concisely as I can the main outline of its causes and remedies as they appear to me.

I have said that the discord which is troubling us in heart and conscience is a discord between the knowledge and ideals of one set of people and the actual conditions of life of another, and I wish to emphasize this point of view; for if the discrepancy were between the knowledge and ideals of a class and its own attainment, then the problem would be infinitely smaller and the solution close at hand. I mean that if the backward people cared and knew only half as much about their own health and comfort and progress as we do for them there would be comparatively little difficulty in its attainment. I do not think I am unjust in saying that the great mass of these backwards are indifferent to dirt and meanness, and have no keen or definite desire for any other way of life: the greater ease of an indolent squalor blinds them to its repulsiveness; and their ignorance both of the blessings and of the laws of health makes many things acceptable to them which we should repudiate. We all know, of course, that there are victims of misfortune who are forced into surroundings which are thoroughly uncongenial, but these are comparatively few and easy to rescue, and I should like once more to bear witness against the ardent conviction of the inexperienced almsgiver that a dirty home is the necessary sign of deserving poverty. When the love of cleanliness exists it never fails to show itself to the experienced eye even in the most adverse circumstances.

If I am right, then, an essential step towards progress is to make people care for the right things. I think we should not be in too great a hurry to assume that our standard is the only right one, and that every one should care for the things we care for. I am not even sure that the methods of sanitation now held up for our acceptance are always on the right

lines. But we cannot be far wrong in desiring that every one should conform more or less closely to a type of healthy, capable, and cleanly life, below which they are a source of danger both to themselves and to the community at large.

Let me enumerate briefly the physical conditions which characterize the kind of life we deplore. They are, generally speaking, dirt, overcrowding, insanitary houses, foul air, and insufficient or inappropriate food and clothing; to these we must add the presence or results of disease in the physical organism itself.

You will all agree with me that there is no single remedy for these very various evils: each calls for its particular remedy, in devising which the whole skill of the expert is required. But it is not these particular remedies which I am asking you to consider here; it is the general method of their application. The medical and sanitary experts will tell us the particular remedies for drink, disease, and physical backwardness; the point I want you to consider is how these remedies may be most effectually and universally applied. In short, I want to urge the importance of a definite policy of reform.

For in opening up our attack upon these evils there are two quite distinct policies between which we have to choose: our choice being largely determined, as I think, by the amount of care which we have given to analysing their causes.

There is first the policy which assumes that one and all of these very dissimilar results are due to the same cause—namely, poverty; and which, therefore, aims at merely supplying from outside what is more obviously lacking. It assumes that the recipients are desirous and capable of living the healthier life, and are debarred from doing so by their poverty alone. This is the policy which thinks the way to reform lies through free meals and clothing, municipal housing, and other subsidies from charity or Poor-law institutions.

The other policy is adopted by those who have found that these evils frequently exist where there is no poverty to account for them, and are driven, therefore, to probe more deeply for the real causes. These they find in the absence of those dispositions, faculties, and interests, which we are apt to sum up in the word "character"; and they find, moreover, that poverty itself is frequently but one amongst many outcomes of this lack of character. Hence they maintain that the true method of attack is to strike straight at the root of the evil, and by education and the healthy stimulation of interests, to arouse the energies and knowledge which will lead the backward into the ranks of the forward.

Let me illustrate by a few typical cases, how important this question is of choosing a right away of applying our remedies. Sanitary experts tell us that one great cause of ill-health and vice, is overcrowding and insanitation. Desiring to apply this knowledge rapidly and effectively, some authority clears an insanitary area and puts up dwellings of the most approved type. One of two things happens: either they permit the old inhabitants to take possession of the new dwellings, in which case they are soon reduced to dirt and squalor; or—and this is what generally happens in London—the authority declines any but respectable tenants, and the old inhabitants go off to make a new slum elsewhere.

Or take an instance quoted by the chairman of the Birmingham Housing Committee in last week's *Spectator*: "An owner was called upon by the Housing Committee to spend a large sum of money on two courts. He did everything that was required, yet now, six or twelve months afterwards, the tenants have made the houses almost as dirty as ever, and this is in no way due to the way in which the repairs were done." Now I do not say that the reformers were wrong to build new houses, or to insist on the repairs of the old, but I do say that they failed entirely to make the people in question lead more healthy lives.

Take another instance. The children in an elementary school being badly nourished, the remedy naturally suggested is good food, and the reformer institutes meals at school. The inevitable result is that many mothers, relying upon those meals at school, reduce the number of meals at home, and the evil, instead of being reduced, is spread over an increasingly wider area.

Or another: the doctors tell us that the great cause of infant mortality is insufficient or impure milk. We proceed, therefore, to supply sterilized milk in bottles, until we find ourselves confronted with two difficulties—on the one hand that mothers may be tempted by it to cease to nurse their own children: on the other hand that, owing to the inevitable association between bottles and medicine, they are beginning to regard milk as a medicine, and will only give it to their children so long as they are definitely ill.

It really seems sometimes as if all our efforts were useless. And yet the fault lies in no sense in the remedies themselves; it is our application of them which is wrong.

It is absolutely necessary that before we can make any progress at all we should enlist the people themselves on our side, and to do this we must influence their minds, must get them to take an active intelligent interest. It is a far more difficult task than one of handling bricks and mortar, and food and clothing; but it is essential. If we can make them care for clean houses we can give them clean houses to live in; if we can make them take an intelligent interest in their children they will not fail to feed them: and if we can teach them something of the relation of food to the needs of growing children they will feed them properly.

It may be asked what proof I can offer that it is mainly ignorance and lack of interest which are at fault, and not poverty alone. I appeal for support mainly to the experience of intelligent workers amongst the poor, who have learned slowly but surely how uncertion the connection is between good earnings and a good home. For those who find a greater security in figures I may refer to the rough test afforded by Mr. Rowntree's investigations in York. You will remember that of his 27 per cent. living in conditions of apparent poverty over 17 per cent. were in receipt of incomes which should have raised them out of it, while less than 10 per cent. had incomes insufficient for a healthy life. Even on this rough test, therefore, the great majority might have led healthy lives if they had known how and cared to. But more than this, we who have seen much of the lives of the poor know how often in cases of exceedingly small income, of real poverty, the worst forms of evil are absent. That is, the homes are clean, the children are healthy and well cared for, and the family life sober and industrious.

Now, you will grant me that in those numerous cases where people live unhealthy lives through sheer ignorance or self-indulgence the only remedy is education and stimulus. To give money in such cases is simply to subsidise the public-house and gambling; to give food is to set free more money for the same purpose; to feed the children at school is to check the supply of meals at home; while no one has been ingenious enough to even suggest a gift which will make lazy people clean.

It is not so immediately obvious that this policy of subsidizing is useless in cases of real poverty, but it is just as certain, except under very definite conditions and in very definite cases of misfortune.

Consider with me for a moment what are the conditions which make men efficient workers, capable and strenuous. Some of us, no doubt, work from ambition and the desire to rise to the head of our profession; others from sheer love of our work. But for the vast majority of men the chief motive is the sense of responsibility for their own lives and those of their family. To all of us in some degree, to most of us in a very great degree, work is repugnant, and strenuousness is difficult; it is much easier to let ourselves go, to work little rather than much, to be slack rather than efficient. Against this natural indolence there is no spur so effective as a man's interest in the home and wife and children for whom he has made himself responsible. Here and there are men with wider interests, who do not need this spur; but this is, or may be the common birthright of all mankind, and deprived of it the majority lack either courage or strength to live strenuously. To realize what a man becomes who has cut himself adrift from these natural interests without substituting others as potent, we need only turn to the forlorn tramps and vagrants who drag out their listless and useless lives in wandering between casual ward and common lodging-house.

It is for this reason that any movement which tends to lessen a man's responsibility for his own family life does far more to increase than to lessen poverty. You may urge that you are only helping a man to fulfil his responsibilities, that you have no intention of undertaking them altogether; and between individuals, between friends and neighbours, this is a possible though difficult position. It is next to impossible when the movement becomes a general one, and some charitable or State institution intervenes to share the work of providing for the daily needs of the family. The people who are ready to impose upon the benevolence of a neighbour are comparatively few, but still fewer are the people who are at all reluctant to get all they possibly can from an impersonal source of charity or relief; and so the

springs of independence are relaxed, and consciously or unconsciously men become less strenuous, less efficient, and worst of all less interested in their families. It is an old saying that everybody's business is nobody's business, and it is impossible for me to take the same interest in discharging a difficult duty when I know that just in proportion as I neglect it some outside agency will step in to undertake it.

I am not suggesting that we should do nothing, though nothing would be better than much which is being done at present. But I urge that we should work with a very definite policy; that we should resolutely set ourselves to increase, and not to diminish the interest taken by men and women in their own and their children's lives.

Now, one great factor in sustained interest is knowledge. Natural affection counts for much, is indeed the very root of all. But natural affection, unless it becomes intelligent, may not only be injurious to its objects—I have known a child whose father was affectionate enough to buy her a pair of boots, but so brutally ignorant as to break her foot in trying to force them on—it is also very liable to die out altogether. It is one of the commonplaces of life that our interest in any object or pursuit increases proportionately to our knowledge of it. There is nothing so unattractive or even repulsive that it may not become of absorbing interest if made the subject of intelligent study; and there is nothing, however attractive at first, which may not become indifferent if treated merely as a source of unintelligent pleasure. The vast majority of neglected children are neglected because their parents, understanding so little of their needs and constitution, have ceased to find them interesting; and when a child ceases to be interesting it rapidly becomes a nuisance. For this reason the great remedy, I believe the only fundamental remedy, for the shortcomings of the rising generation is to rouse parents to an intelligent interest in the bringing up of children, to instruct them in the arts of feeding and clothing, and to awaken where it is dormant the same sort of pride in their well-being as the gardener feels in his fruit and flowers. And in the same way, any radical reform in the sanitary conditions of their life must be accompanied by intelligence and understanding on their part.

I will illustrate what I mean with reference to one special branch of reform, in which we are all interested just now—the feeding of children. There is no doubt that many children who attend the elementary schools are badly fed; some get too little food, still more get the wrong sort of food. The main causes for this are neglect and ignorance on the part of the parents. The policy of feeding the children at school does absolutely nothing to remove this neglect and ignorance, and by diminishing the parents' interest in their children may do much to increase them. Moreover, it does not touch the needs of children under school age, though it is these who suffer most severely from the effects of wrong food. And yet again, it tends to diminish the number of homes in which the girls can get the most practical of all domestic training—that of watching and helping the mother to prepare the household meals.

The true policy lies in the better training of women and girls in the arts of housekeeping and child-rearing; and more especially in some knowledge of proper feeding. Most of us who know how to feed a family know it by a good tradition, handed down in practice from generation to generation; but many families, especially in our towns, have lost that tradition, and definite teaching is called for in order to its re-establishment. The difficulty is largely due, I think, to the immensely greater variety of food now placed within the reach of the working class household; a variety necessarily bewildering to the woman who has no other principle of selection beyond that of buying what needs least preparation or is most extravagant advertised. The doctors might help us greatly here if without going into the niceties of calories and albumenoids they would prepare some simple papers of instruction on the relative values of foods, which could be supplemented in the schools by practical lessons in the preparation of food.

I know that progress is being made towards providing instruction in the schools in various branches of domestic economy. I am nearly sure that we ought to go further and make such teaching not only permissive but compulsory so far as the girls are concerned. Under the new code the only compulsory domestic art is needlework; and, important as needlework is, it is less essential in these days of ready-made clothing than other branches of domestic knowledge. No one could be more reluctant than myself to confine a girl's education to domestic matters; but for the majority of women the care of children will be their most important function, and it is ridiculous that they should be allowed to enter upon it in a state of complete ignorance.

In the schools we might work for the homes that are to be. For the homes already existing we need another method of attack. Somehow or other we must manage to get hold of the mothers who have already begun their work, and help them to do it rightly. Many experiments are being made, and the movement only needs to be known in order to spread rapidly. There are health societies working by visitors to the homes in Manchester, Birmingham, York, Liverpool, Hampstead, and Westminster. The difficulty is, of course, to find a sufficient number of qualified visitors for work in the large towns. It is impossible to increase the official staff sufficiently to cope with it; and we must look mainly to interesting and educating the numerous district visitors and other philanthropic workers already existing. It will perhaps be useful if I describe very briefly how the most recent of these societies, that in Westminster, has set about organizing the work. The society is representative of practically all the philanthropic agencies in the district, and is also warmly supported by the local authorities, more especially by the medical officer of health. It began its work by instituting a course of lectures on hygiene and sanitation, which included such practical matters as infant management and children's ailments. They proved very successful, the audiences ranging from 50 to 100, and at the end of the course an examination was held. More popular lectures have also been given at mother's meetings with much success, and it is proposed to arrange them for girls' clubs and evening continuation schools. From the audience at the central course of lectures a staff of qualified visitors is being drawn, to work as volunteers in educating the people to ways of health in their own homes. These visitors are attached to special districts, preferably districts in which they already work, and where they are therefore known, and they work in connexion with a local committee to which they report in cases where it is necessary to take action with respect to insanitary conditions. They are already doing good work, and the medical officer of health is utilizing their services, more especially in visiting the homes of consumptives and endeavouring to improve the conditions under which they live. The Society has adopted the very necessary rule of abstaining from relief work; cases needing relief being referred to agencies already existing for the purpose.

The Society has also issued a list of books and pamphlets likely to be useful to the visitors in their work, including one on the Management of Infants and Children, written for the purpose by Dr. Edmund Cautley. So far, the expenses have been small, and defrayed by the Committee of the Society.

Work in the homes of this kind may be made to touch every branch of reform in which we are interested, and must, I am convinced, precede any true progress. It must, of course, be supplemented by the action of local sanitary authorities, with whom it rests to make a healthy life possible for those who desire it; and in special cases it must be supplemented by methods of more drastic interference, though these should always be the exception. For example, some cases will be found, though far fewer than is thought by the ordinary observer, in which the parents are so degraded that it is hopeless to secure through them a proper life for their children. For these children special provision must be made, and I believe that the best solution of the problem yet found, is to withdraw them into Day Industrial Schools, where they will be properly fed and cleansed, while at the same time official visitors bring constant pressure to bear upon the parents to contribute towards the expense, and to raise the standard of home life. In this way, we avoid the bad effects of wholesale feeding at a school where the children come from homes of every type.

Finally, I wish to repeat that if I seem to have spoken mainly of one branch of reform, it has only been by way of illustration; the principle I have advocated applies in every department of social work, namely, that the only way to fight the evils before us is to come to close quarters with them in the homes and hearts of the people, to make them understand and care for the benefits in which we wish them to partake.

III.—Hugh Hall, M.A., B.C.L.,
Alderman of the Oxford City Council.

THE HOUSING QUESTION.

If I had to illustrate the impotence of good intentions and the futility of misdirected effort, I could take no more striking

illustration than that which is known as the "Housing Problem." Royal Commissions have sat, Select Committees have reported, Parliament has passed Public Health Acts and Housing Acts by the dozen. Two great Departments, the Home Office and the Local Government Board, have been vigorously attacked for doing nothing, and vigorously defended for doing all that is possible to promote housing. A National Congress has sat on the subject, the Independent Labour Party has passed resolutions. Philanthropists have devoted millions and some of the great municipalities tens of millions to housing schemes, but he would be a bold and a very sanguine man who would say that the nation was well on the way to solve the Housing Problem.

What are the facts? I will not burden you with a mass of detail; the governing principle is this—that not in Great Britain only, but all over the civilized world, life in big cities has to be accepted as a permanent fact for the great majority. In England all the big towns are essentially modern, two-thirds of our population live in towns of over 10,000 population, and town life will soon prevail for three fourths of our people. In Scotland in the year 1801 there were only a million inhabitants, mainly rural; in 1901 there were four millions, mainly urban. Even in France, where the population is almost stationary, Paris has multiplied five fold since the Revolution, and Marseilles more than four-fold. In Germany the town population increases 20 per cent. every ten years since the Franco-Prussian war, while the rural population remains stationary. The same tendency is seen in Holland and Belgium, and even in agricultural Italy. In America the older farming districts are declining, and the big towns growing bigger. The rush to the towns with us has never been overtaken by an adequate provision of house accommodation. The census of 1891 showed three-and-a quarter million of people in overcrowded dwellings; one-fifth of the population of Glasgow live in one-roomed dwellings; one-third of the total population of Northumberland and Durham are overcrowded. London in 27 years—to 1903—cleared out 34 slum areas at a dead loss to the ratepayers of £2,200 000; the last year from April, 1903, to April, 1904, shows a quarter of a million spent on housing, and works are sanctioned to cost £2,315,000 but no one pretends that the problem is being solved, the Boundary Street scheme, for instance, actually displaced more people than it rehoused; it is now the rule with the London County Council to do the clearance and the building at the same time, but the old tenants at the slum rents are not provided for. About 900 000 people are living in overcrowded rooms, and 386,000 in the one room dwelling. It would be monotonous, and answer no purpose, to show what Glasgow, Liverpool, Manchester, Birmingham, and other big towns have done. It is impossible to deny either that they have recognized and manfully grappled with the problem, or that practically they have failed to make much impression on the gigantic evil. Within the last ten years Birmingham has lost no fewer than 3 000 dwellings rented at 5s. a week and under, and so well within the paying powers of the poor. Leaving the great cities, where the mischief is acute, and most injurious to the moral, mental and physical health of the people, if we turn to the smaller towns and to the country we find the same congestion, the same want of houses suited to the needs and the means of the working classes. This is made evident by the fact that, according to the latest Government return up to March 31st, 1900, 46 town councils, 41 urban district councils, and 6 rural district councils have adopted Part 39 of the Act of 1890, which will enable them to build; and, judging from my own personal experience of a city council, the need must have been extremely urgent to induce so many local authorities to go even so far as this, but only 30 were then carrying out schemes, most of them of a comparatively trifling character. For instance, Brighton, with a population of more than 120,000 had put up 28 cottages; Birkenhead, with a population of 110 000, had closed 76 houses and built 18; Leeds, with a population of nearly half a million, had built 80 houses; Newcastle received a report that 10 000 people needed housing, and has made a beginning. These are samples, proofs that the urgent need is recognized, but that at present municipalities can only feel their way in a very tentative fashion. If we turn to the country, the walk becomes a crawl. Only two rural district councils have built cottages, and Penshurst parish, with the joint assistance or hindrance of the district and county council, and the Local Government Board, took five years to build 20 cottages. If I chose to waste your time, I could occupy my twenty minutes in enlarging on the evils that overcrowding and defective house accommodation bring in their train. I prefer to leave these evils to your observation, your practical experience, and your imagination. I do not forget that I am addressing the very men who know most about the results of such evils, who could tell me the effect upon the death-rate, and who could best corroborate the findings of the Royal Commission of 1885—that loss of working power and lowering of vitality were among the worst features of overcrowding. At the last Housing Debate in the House of Commons in April, 1903, it was well said by the member for Shoreditch that the character of the new century will be determined by the kind of houses out of which the children come. And here I wish to emphasize a point that my own experience of Oxford housing has brought home to me. I emphasize it because I feel sure there are scores of towns in the same condition, and that is this: No serious overcrowding, but many very unhealthy slums with dilapidated houses let at low rents: and outside the slum area a great and increasing scarcity of houses let at 5s. a week and under. With us the slums are a decaying and crumbling carcass. I read the other day of a tramp who had no place of abode that could be traced by the police, who was tracked to a hollow tomb where he had taken up his home. I could take you to some of our slums in this city of towers and spires that are almost as dark and noisome as the tramp's tomb; and, candidly, I would prefer to inhabit a hollow tomb in a country churchyard than live in Godfrey's Yard, St. Ebbes, or Holyfield's Yard, or Peacock's Yard, St. Thomas's. But these wretched abodes answer a purpose, and some of them house some most respectable and clean people: women who make the best of their surroundings, and make them as bright as they can, while their neighbours have evidently sunk to the level of their dwellings.

A view of the Christ Church model dwellings close by, let at from 3s. to 4s. per week, and the clean comfort pervading them, makes one bitterly regret that the Oxford Corporation will not do even as much as a private landowner has done—give these poor people a chance in life in the better surroundings in which they deserve to live. Has a Corporation no responsibilities in the matter? Apart from being charged with the health of the town, the Corporation is responsible as a landlord that has pulled down scores of old houses, as a sanitary authority that has condemned others, and as the authority for public improvements that has swept away courts and yards. Are we always to figure as the destroyer of houses and never as the rebuilder?

My point so far as Oxford is concerned—and this applies to many other places—is in brief this, that it is increasingly difficult for workers with their hands not at the top of the tree to find houses in which they can afford to live, the house let at 5s., 4s., and 3s. a week is disappearing, rotting above ground and swept away by the besom of reform and none arising to take their place.

The newer type of house is a 7s. a week house, and many a working man is paying two days' wages out of his week to live in them, while others come from outlying villages to work in Oxford. The bicycle is a better friend to the working man than the municipality. But the old men and the old women cannot ride bicycles, and there are scores of people too old or too broken down to get regular work; they must live in the city to get work at all. For them there is no picking and choosing, and so the worst houses in the slums find tenants, and young children grow up in places where you would think twice before risking the health of a pig.

Yes, but, you will say, so far you have only shown the existence of a great evil; you have not shown that there is any remedy—and the comparative failures of big towns and the timid inaction of small towns and villages seem to point to the fact that there is no remedy. I accept the challenge. It would be an evil day indeed for this country if it were not to work its way out of such a mood of despair. All honour to the great municipalities which have tried to show the way; all honour to the ratepayers who have not grudged the cost. The good seed sown is already bearing fruit. The housing question is recognized by the King, by great statesmen, by the labouring masses to be the first of all reforms to be seriously tackled. In spite of all the Housing Acts on the Statute Book, it is quite certain that in a new Parliament there will be another and a bolder attempt to purify the slums and provide homes for the poor, and if that fails there will be another and still another. Let me indicate here the path I think reform ought to take.

In the first place, the recommendation as to rating vacant sites made by the Royal Commission on Housing of 1885, should be adopted: the general expenditure of towns on

improvements is enormously increasing the value of this property; it should be rated at 4 per cent. on its selling value. This would both bring building land into the market and diminish the burden of the rates on occupiers. In the second place, we want not only cheaper land but cheaper building. Cast-iron model by-laws fitted without distinction to all places need relaxing. Experiments should be carried out by a central authority with a view to the use of cheap and durable building material. Thirdly, we want cheap money. The Act of 1903 was a step in the right direction, in that it allowed 80 years instead of 60 as the maximum period of repayment, but all depends on the regulations of the Local Government Board. Hitherto its practice has been to allow only 50 or 60 years to repay money raised to buy land, and 40 or even 30 years to repay money raised to build workmen's houses. The land, at any rate, remains as a substantial asset, and one hardly sees why it needs a sinking fund at all—the buildings might have a loan for 80 years, and the gradual and low repayments would make all the difference to the rents. But not only a long term is wanted but a low rate of interest, and if the nation is in earnest we shall have cheap Government loans for rehousing at 2¾ per cent.

Now, if these suggestions were carried out, the State would have armed the local authorities with real powers to grapple with the evil. A wider rating basis, easier building by-laws, more land in the market, cheap money, and longer terms of repayment. Under these conditions the great municipalities might be trusted to do their duty. But do not let us make a mistake. On most local authorities there is a dead weight of *vis inertiae* to be overcome. To read the latest debate in the House of Commons on the wicked enterprise of municipalities, and the attack made by the *Times* upon their tendency to invade the field of the private trader, one would think they were boiling over with socialistic or collectivist energy: that is very far from my experience. I find a body of men who take their time over the most pressing grievances, whose maxim is, "Can't you leave it alone," who have a wholesome distrust of men of science, who consider that our fathers and grandfathers got on very well without any talk about cubic air space for each inmate of a bedroom, and that we can do the same. I find a very punctual and diligent set of administrators, a proportion of whom are personally interested in small house property. Now I take it we are in much the same position with regard to housing reform as we were with regard to public-health reform some fifty years ago. Sanitary law took its beginning by being optional and adoptive in the towns, and not applicable at all to the country. The Public Health Act of 1848 did not take effect unless petitioned for and adopted by the towns. The scourge of cholera, again and again renewed, showed us that street cleansing and drainage were not matters to be left alone or taken up just as localities chose, and now we have the great Public Health Act of 1875, with subsequent additions under which the central authority is armed with powers to compel local authorities to carry out their provisions, failing which the central authority can enter and do the work, and impose penalties out of the rates. It is a power in reserve not necessarily to be used, but note this, the central authority has its eyes and ears in every locality in the medical officers, whose duty it is to make full reports as to changes in the health of their districts. You will see at once my point. It is that the central authority must not wash its hands of responsibility for decent houses, must not shut its eyes to the existence of foul slums, but that, as it has powers over local authorities and uses those powers in the matter of public health, so it must do the same thing in the case of housing. It is not enough to say that four ratepayers may complain of this and a dozen ratepayers may demand that. These people never turn up when wanted. The utmost they ever do is to write to the local paper. If a dog keeps him awake all night, or a barrel organ prevents him from enjoying his morning paper, the ratepayer never makes a formal official complaint, still less will he avail himself of his powers under the Housing Acts. No; the true remedy is to be found in financial assistance from the central authority, coupled with real powers of initiative if necessary exercised by the central authority through their local officers. Thus the Local Government Board should be no longer able to shield itself by saying, "We have given all the powers that can be given to the local authorities and we can really do no more; you must blame them; we wash our hands of the business." If that were the attitude taken up in the inspection of factories, in public health observance, or in education, we should find our protection for factory workers a farce, our education a mockery, and our mortality returns creating widespread alarm. We must bring housing into line with these, create a separate department relieving the Local Government Board of this part of its work, and make this central housing department exercise a real supervision over all urban and rural sanitary district authorities. When they have the powers I have sketched out conferred upon them, the best of them will gladly do their duty, and the rest with a little judicious pressure will soon fall into line.

I began by saying that the housing problem illustrated the impotence of good intentions and misdirected effort. I believe the country is now nearly ripe to tackle the problem in good earnest. Some idea was given at the big conference just held at Bourneville, near Birmingham, of what our Continental neighbours are doing to provide decent homes at possible rents for the working classes. Berlin has mapped out for future development, land twenty miles from the centre of the city. The time has come when our big municipalities must regulate the growth of their suburbs in an orderly way, corner the land cornerers, and draw the population from the crowded centre to the healthier outskirts.

In spite of those who hate and fear municipal enterprise, the tendency of the day is to put more and more power into the hands of the municipalities. It may be said with truth that they are on the whole absolutely pure from any taint of corruption. It may be said with truth that, following the guidance of the medical profession, they have fought a winning fight against a high death rate. The mean death-rate last week in London and 75 other towns was 14.1 per 1,000, the mean annual death-rate from 1876 to 1885 was more than 20 per 1,000 for the whole of England and Wales. In London, under the Stuarts, the ordinary death-rate in healthy years was 40 per 1,000. The war against premature death and disease is being carried on with unabated vigour. Read the proceedings of the Sanitary Institute now sitting at Glasgow, and study the demands made upon the local authorities to fight disease germs by insisting on notification and isolation, to give us roads without dust, and chimneys without smoke; study what is demanded of municipalities in the field of education, primary and secondary: note the claims that they should have a voice in the control of the drink traffic, and, above all, hear the cry that is continually rising from the overcrowded and unhealthy slums. The citizens of the new century are not to be reared in such foul abodes with public-houses and gin palaces on every hand.

To obtain real reform the heart and conscience of the nation must be profoundly stirred. We need vigorous men in our town councils, backed up by a sound public spirit willing to make sacrifices for the common good; we need a strong Central Government department that will not shirk its work of bringing pressure to bear on timid, slothful, ignorant local bodies; we need zealous medical officers not afraid to lead, not slaves to routine. We can all do our part in creating and keeping alive the public spirit fitted to cope with the gigantic task of housing decently the industrious poor.

IV.—G. A. HERON, M.D., F.R.C.P., London.

DR. HERON said: With what has been said by the readers of these three papers we must in the main agree, but of course without pledging ourselves to details or to the support of extreme views. The ends in question will be best furthered by being supported by public opinion, and public opinion worth having must rest on a foundation laid in sound education. It seems incredible that education in the elementary rules of hygiene is still practically excluded from education in our schools and from our universities—excepting for those who propose to enter the medical profession. Lord Londonderry told a deputation in which our Association was represented that the reason why elementary hygiene is not taught in our schools is that we have few teachers ready to undertake the work, and he held out the hope that in 1906 we might hope to have some practically useful teaching in hygiene given in schools! There is, however, I consider, a large staff of admirably-equipped teachers able now to do this work, for there are numbers of doctors who are well able to begin this work at once. Medical men are not all too busy, and I am sure that many of those doctors with more or less of leisure would gladly undertake the work. The International Antituberculosis Association was unanimously of opinion, and expressed that

opinion strongly at their meeting in Copenhagen last May, that by means of using medical men as teachers much could be done at once to put into working shape education in hygiene. There is, then, no need to wait until 1906 before efficient teaching in elementary hygiene may begin in our schools and in our universities.

V.—Jas. Stewart, F.R.C.P.Edin.,
Clifton.

Dr. Stewart said one of the greatest triumphs of the medical profession of late years had been the success with which they had educated the public up to a proper appreciation of preventive measures against the propagation of disease. Encouragement was afforded as to the effects of education by what he had seen accomplished during his own time in reference to (1) the value of alcohol as a food as distinguished from its usefulness as a medicine, and (2) the recognition of inebriety as a physical disease. The recognition of this latter point had led to the systematic treatment of the disease, and thus a reduction of the risk of transmission of a deteriorating neurosis.

VI.—Miss Theodora Johnson,
Clifton.

Miss Johnson said: It is delightful to hear a scientific meeting characterized by what has been designated as the most uncommon of the senses—common sense—as have been the deliberations of this morning. In addition to the numbers of medical men who are already prepared and could teach hygiene once without waiting for Lord Londonderry's suggested 1906, there exists a large number of women already trained and prepared for this work. Eighteen years ago Madame Bergmann-Sherberg started her physical training college, out of which about 30 students have been issuing each year. All these competent and trained women are about our own country, our Colonies, and other countries; they are teaching Ling's educational exercises, and giving massage and medical movements under medical men. All these women are qualified to teach hygiene to-morrow if necessary. They have gone through a two years' course of anatomy, physiology, hygiene, chemistry, and physics, the theory and practice of Ling's system of physical education. I should like to add a word or two to what has been said so ably by Mrs. Bosanquet. Bristol is a city full of the difficulties of pauperism bred by its numerous ancient charities. Another grave difficulty is the increase of intemperance among women, and the establishment of drinking clubs among the inferior class of factory girls. Deplorable as this is in itself, it is far worse when you regard these girls as the mothers of the future, steeped in alcoholism in their teens. What will be the neuropathic condition of their children? From the most earnest point of view this is no less than a national calamity. Sir William Church, in his Address on Medicine, spoke strongly on State medicine, preventive measures being the most important branch of medical work, and I would venture to urge that the more widespread knowledge of this branch should come through the energy of the medical profession, and should lead public opinion in this direction at the earliest possible time by teaching the importance of the general knowledge of these subjects.

VII.—J. C. Wilson, M.B., C.M., D.P.H.,
Lanark.

Dr. Wilson said: The papers read illustrate how complicated the present position of sanitary reform or public health advancement has become. In the days when dangerous infectious diseases ravaged the land, there was so much to do when nothing was being done in the way of preventive measures that there was no need to delay and discuss measures. But now, even in dealing with the more common infectious diseases, there is difficulty in making progress along ordinarily-recognized preventive measures. Thus notification and isolation were thought at one time to be capable of stamping out diseases; proper water supplies and efficient drainage were thought to be capable of abolishing typhoid fever. Still with all these preventive measures in operation such diseases occur and even prevail. The giving of popular lectures by health officers and the appointment of female sanitary inspectors or lady health visitors have been tried as educational measures. In connexion with the prevention of pulmonary consumption we come into close touch with poverty, an important factor in the causation of the disease; indeed this disease seems to have as great an interest for those administering the Poor Law as those administering public health laws. With regard to intemperance, it is not likely that statutory measures such as inebriate reformation will be able to do much in preventing intemperance. These institutions can isolate for a time dissolute alcoholics, but there is not much prospect of permanent reformation.

VIII.—G. F. McCleary, M.D., D.P.H.,
Medical Officer of Health, Battersea.

Dr. McCleary said he wished to reply to two points raised by Mrs. Bosanquet against the system of supplying bottled milk from municipal dépôts. She stated that the dépôts discouraged breast-feeding, and that the bottled milk led the mothers to think of milk as a medicine only to be used for special reasons. The charge of discouraging breast-feeding had been brought by French writers against the *goutte de lait*. He had taken the trouble to consult a large number of documents published in France and other countries, and he had found no evidence whatever to support this charge. The other charge has some basis of fact. The milk is sometimes discontinued when the child recovers, but the usual reason is that the mother cannot afford the price which we are compelled to charge. Mrs. Bosanquet had pointed out the importance of the work to health visitors. He agreed that the educational work so carried out is of very great value, and in Battersea they had a health visitor who was doing excellent work. But there was a tendency to neglect other factors. So much stress had been laid on education this morning, to the exclusion of other important matters, that Dr. McCleary was somewhat surprised that no one had said that compulsory vaccination should be abandoned in favour of education, in the advantages of vaccination, or that we should repeal our sanitary code and trust to education to produce a sweet reasonableness in the jerry builder and slum property holder, so that they would of their own accord remedy sanitary defects and pull down their slums. Education is important, but it must supplement and replace efficient and strong administration. It is possible, however, to be adequately informed on preventive measures and to be unable to apply them. Take the case of infant feeding. To feed a baby of, say, 8 months old, who was no longer suckled, required at least seven or eight quarts of milk a week. With milk at 4d. a quart, that would cost from 2s. 4d. to 2s. 8d. per week. A workman earning, say, 25s. per week, paying about 6s. or 7s. a week rent, could not afford that sum, and the result was they used cheap condensed milk. He strongly disagreed with the main conclusion of Mr. Whittaker's paper that drink was more a cause of poverty than poverty was a cause of drink. He held with Professor Marshall that the destruction of the poor is their poverty. It had been said that men drank in Manchester because drink was the shortest way out of Manchester. If we herd the population in huge, hideous, overcrowded towns, we must expect drunkenness to continue to disgrace our civilization.

IX.—W. McAdam Eccles, M.S., F.R.C.S.,
London.

Mr. McAdam Eccles said: We must congratulate ourselves on the wisdom of introducing words from those who are experts in this matter of public health, although they are not of the medical profession, and our thanks are particularly due to Mrs. Bosanquet for her excellent, carefully and moderately worded paper. Her remark on the question of indifference of the people must be emphasized, but more so that of the need for education, and still more that it is useless to merely educate. There must, as she says, be a stimulus to carry out the knowledge acquired. I believe an excellent stimulus may be obtained by an installation of honest pride and healthy ambition. Mrs. Bosanquet stated there is no gift for cleanliness. But there is something which could be provided in certain districts. This gift is a pure water supply. Might I suggest a theme for interesting lectures for girls leaving school, who might be accompanied by their mothers? The ideal home: what it should be, how it may be built up, and how it may be maintained. Dr. Heron's suggestion should be carried out, but it must be upon all lines, and, as has been noticed, we must have good educators of those who are to teach. This Association and this Section can and must, I believe, take the matter up, and that at once. Could not a special Committee be appointed by recommendation from this Section, in order to formulate at once a scheme for the more thorough tuition of the teachers? Personally, I believe that this education must be given by carefully selected medical men and medical women.

X.—ALICE DRYSDALE, M.D.,
London.

DR. ALICE DRYSDALE said: It is satisfactory that the Section of State Medicine has commenced to study the relation between poverty and the public health. It has been shown that by far the greater part of the consumption as well as of infectious diseases come from the poorer section of the population. That is naturally so, as the very limited means of the poor do not enable them to choose their surroundings under desirable conditions of light and air, and to provide the necessaries of life in due proportion. Therefore, if we wish to improve the public health, it becomes an important question to determine the causes of poverty and how we can best remove them. One cause has been frequently alluded to, namely, that of alcoholism, which undoubtedly plays a very large part in the causation of poverty; but there is also another very important cause to which sufficient attention is very seldom given—the rate of increase of numbers. It has been shown by Mr. Whittaker that in the poorer districts of London the birth-rates are very much higher than in the wealthier districts.

REPLY.

MRS. BOSANQUET said that even against drink, which was largely an acquired taste, the substitution of real interests would be the best remedy; there was danger in popularizing a notion of "drink craze"; people must realize their responsibility. With reference to housing, it seemed a mistake to try to lower rents in overcrowded districts; they should try to get people into less crowded districts. There was great need of better housing in the country; its provision would lessen the drift to towns. Finally, she emphasized the need of education as really at the root of everything.

A PLEA FOR ORAL HYGIENE.

By KENNETH W. GOADBY, D.P.H., L.D.S.,
Lecturer on Bacteriology, National Dental Hospital, and Hygiene of the Mouth, London School of Tropical Medicine.

ORAL sepsis as a factor in disease has of late attracted some attention, but so far, owing perhaps to its very prevalence, the far-reaching and widespread effects of its ravages are by no means always attributed to their proper cause. The fact that as a rule the affection is a chronic one, that the symptoms of oral sepsis may simulate acute diseases of all kinds, that the frequently associated gastro-intestinal symptoms are chronic and persistent with only occasional acute stages which are easily attributable to other secondary causes, that the secondary anaemias associated with septic oral disease may be frequently masked by other probable causes and from the fact that the very manifestations of the disease in the mouth may often exist with teeth entirely free from dental caries, it is small wonder that the main question becomes somewhat obscured.

Dental caries is only important in that decayed teeth are often the determining factor in the production of inflammation of the mucous membrane of the mouth. Such an inflammatory process, either originating from dental caries or following on some general affection facilitates the symbiotic growth of pathogenic bacteria which may later gain access to the circulatory or other system, and in some cases actually produce death. Or the individual through the constant ingestion of pus from the alveolar margins as well as the living organisms and toxic bodies, slowly develops the signs of secondary anaemia, or of gastro-intestinal infection, or exhibits the symptoms of carcinoma of the stomach, or gradually drifts into a condition of neurasthenia, impaired nutrition, and falls an easy victim to some intercurrent disease. Such is no imaginary picture, as scores of such cases in various stages are to be seen at any dispensary or hospital out-patient department.

Among children we find impaired nutrition, and with it impaired growth; with this, again, badly-developed maxillae, and thus the vicious circle is complete. Among children chronic inflammation of the mouth should be regarded with the utmost suspicion as a mode of hibernation of infectious disease.

It is unnecessary for the present purpose to enter into a lengthy discussion of the minute pathology and bacteriology of mouth affections. It is, however, essential to briefly review the more important outline of some mouth pathology, as it is in the etiology of, and the prophylaxis of, certain of these conditions that I hope to stimulate your interest.

We may roughly divide the question for our present purpose into:

I. Affections of the teeth themselves—dental caries.

II. Affections of the soft tissues of the mouth—gingivitis, stomatitis, etc.

I. Dental caries is that destruction of the teeth which is brought about by the solution of their lime salts through the action of acids produced from carbohydrates by the activity of bacteria, and followed by liquefaction of the exposed and softened matrix by the proteolytic enzymes of other bacteria. The first point of attack is invariably some part sheltered from the mechanical cleansing, either of the act of mastication or the rubbing effect of the tongue. The point of attack is usually a small, mucilaginous patch of adhering bacteria, under which solution of the lime salts progresses, and the surface of the tooth is gradually eroded. In neither enamel or dentine does any physiological or inflammatory reaction appear to take place, the whole process of dental caries being comparable to the ordinary destruction of wood by rotting.

In its ultimate pathology dental caries is therefore so simple a process that many of the etiological factors more closely associated as determining causes may be easily observed. It is apparent that they will include any cause or series of causes which allow or facilitate the retention of food-stuffs of a carbohydrate nature in or about the teeth; the attachment of bacterial plaques to the surfaces of the teeth, irregularities of surface, softened and smooth food-stuffs without an accompanying proportion of hard and fibrous material. It follows, moreover, as a corollary, that these various causes commence to operate as soon as a child cuts its first milk teeth.

Tomes and Black have made a number of observations on the chemical constitution of different teeth, and they are both of opinion that there is little or no evidence that the incidence of dental caries is in any way related to the proportions or amount of the lime salts present in such teeth.

We may, therefore, schedule the various etiological factors as follows:

I.

1. Crowding of the teeth from whatever cause.
2. Rachitic conditions, associated with nasal obstruction, imperfect development of the maxillary bones, and other developmental conditions.
3. Abnormalities of the size of the tongue.
4. Deformities and irregularities of surface of the teeth themselves.

II.

1. Soft food stuffs, mainly of carbohydrate nature.
2. Absence of hard and fibrous material, and therefore loss of mechanical effect.

III.

1. Physiological alterations in the oral secretions, composition of saliva, etc.

II. Affections of the soft tissues of the mouth, such as gingivitis, stomatitis, and other similar affections, may or may not be associated with carious teeth and dento-alveolar abscesses. Quite commonly inflammatory sequelae may be found in the mouth after the acute fevers, measles, diphtheria, influenza, and many other affections which are associated with inflammatory conditions of the pharynx. It is quite common to find a chronic suppuration persisting along the margins of the gums after one or other of the above-cited diseases; and such a chronic condition induces a similar chronic inflammation of the various cavities related to the mouth, over and beyond gastro-intestinal and other affections which are commonly associated with oral sepsis.

Thus in 586 children examined during an outbreak of diphtheria, 458 of the total number showed some signs of mouth disease, ranging from simple hyperaemia of the mucous membrane of the mouth and throat to hypertrophy of the tonsils, with adenoids, post-nasal growth, and in the majority of cases with carious teeth. The number of children with carious teeth at this time was no less than 88 per cent. of the total number in the school.

I have not as yet had an opportunity of following up the question of the relation of the association of septic oral conditions with susceptibility to infectious disease, but in the few observations that I have made I have found the majority of the children suffering from diphtheria to show some sign of inflammation of their gum margins, and in four instances I have found the diphtheria bacillus present in the small ulcerated patches situated upon the tongue and the oral mucous membrane, although the cases themselves were of quite a mild type, and the throat symptoms had disappeared.

Without entering further into the more serious types of

disease associated with oral sepsis, the following are worth a passing thought:

1. Chronic infection of the lymphatic glands of the neck by septic mouth lesions.

2. Anaemia and lowering of the resistance of the gastric mucous membrane by the swallowing of staphylococci which are constantly present in suppurating gums.

3. Impaired nutrition due to inefficient mastication owing to carious teeth.

It is by no means uncommon to see at a gathering of children, such as a school treat, two or three children whose gums are in such a condition that when they make a large bite into a piece of bread and butter, a smear of blood is left around the marks of the teeth. The incidence of dental caries among children at the present time is exceedingly large, most observers put the average at 85 to 90 per cent., while in one Poor Law School I examined 230 out of 250 children had more than two carious teeth.

The statistics of Rosé for German children are almost identical. As to the incidence of oral disease in the general mass of the population, little need be said, as all who are familiar with out-patient practice, either at a general or a dental hospital, are only too well aware. The question of the proper treatment of such a widespread and insidious evil appears to me to be one of national import, and one that for its organization comes most emphatically in the province of Public Health or State Medicine.

We have seen from a rapid survey of the pathology of the mouth, that the foodstuff question is an all-important one; it is, moreover, well-known that our methods of food preparation have undergone very considerable changes during the last half century, and a very large number of fine carbohydrate preparations are on the market, and have a wide sale, while the preparations are of such a nature the mechanical effects of mastication in cleaning the teeth and gums is *nil*, the carbohydrate itself is not bad, but the fact that it remains around the teeth is the evil. It has been suggested, and I think with not a little truth, that could we return to a diet containing a larger quantity of fibrous matter, we should largely reduce the incidence of dental disease; it is, however, an impossible task to change the food of a nation, while even by so doing we should not treat the widespread present oral disease, and therefore we must rather aim to supplement by art what we cannot do by nature.

In endeavouring to formulate some sort of scheme for the general prophylaxis of oral disease at large, I do not wish it thought for a moment that I in any way belittle or disparage the work that has already been done in this country to combat the ravages caused by dental disease, more especially the work carried on by the dental hospitals and by the various dental officers attached to schools, which work is all in the right direction. But it is essential to point out the difficulties with which we are at present hampered, and if possible to discover a solution.

We are met with two difficulties. In the first place, the amount of attention that is given to the elements or oral hygiene in the schools is principally marked by its absence; no attempt is made to educate the child in the very rudiments of this most important question. In the second place, all dental operations take a very considerable amount of time to perform, so that the dental surgeon attached to any given school is much more seriously handicapped than his medical *confrère* in the amount of attention that he can devote to each individual case. He moreover finds it very difficult to inculcate principles of hygiene from the lack of attention given to that subject in the ordinary routine of teaching.

The question of time is one that is still more important in the treatment of adults, for in the ordinary routine of practice it is impossible for a dental surgeon to treat anything like the same number of patients in a given time that a medical man is able to in, say, a large working class practice, the ultimate result being that a large proportion of the population to whom the treatment by a qualified man is of real importance is impossible.

The same time-question appears again in the working of dental hospitals. It is quite impossible for the staff and students at any one dental hospital to cope with more than a small proportion of the dental disease presenting itself for treatment. It will be thus seen that the practical side is of prime importance, and must be considered when discussing any methods or suggestions regarding the prevention and treatment of very widespread oral disease.

On glancing back, we find that those persons who require treatment fall into three classes:

1. Children in schools, and the children before they reach the school age, which may be taken in two groups, 1 to 5, and 5 to 15.

2. Young adults, such as the domestic servant, shop assistants, apprentices, etc., who are generally unable to afford a payment.

3. The general mass of the working-class population, many of whom can afford small payments.

We will discuss the various groups *seriatim*.

Group 1 (1 to 5 Years).—In a very large proportion of cases these children have no treatment whatsoever. The mothers themselves suffer very largely from oral disease, and somewhat humorously regard the early destruction of the temporary teeth as a normal and proper process, with the result that the first permanent teeth irrupt into a mouth teeming with the bacteria of dental caries, whilst the preliminary stages of oral inflammation have resulted in the almost invariable presence of chronic hyperaemia of the mouth and throat.

It is a curious and instructive fact that the Zulu mothers, as soon as a child has obtained its first teeth, carefully cleanse such teeth after each meal with some wood ashes applied with the finger, and as the children become older they are taught the uses of the tooth stick. Still more curious is the well-known fact that many of the Hindus suffer from dental caries after becoming converts to Christianity, having given up their early training in oral hygiene with their ancient religion.

It is very largely in this age group, 1 to 5, that the ultimate fate of the teeth is decided, and it is therefore in this age group that oral hygiene is of such supreme importance. Efficient cleansing is what is required, with an intelligent understanding on the part of the parents of the broad facts of pathology noted above.

Group 1 (5 to 15).—This group is the main school age, and it is during this time that the permanent teeth require close attention. Disease in after-life is in the majority of cases preventable by attention during this time. We may consider the scheme dealing with these two groups together.

The Poor-law schools need not detain us, as many of them have appointed dental surgeons, but the main bulk of the children attending the preliminary education schools have little or no opportunities of treatment. It appears to me that a feasible plan would be for two or more schools, together with the local sanitary authority, to appoint a dental surgeon, to whom the children should be sent, and that his work should consist of:

1. Periodical inspection of the whole of the children, once in three months or oftener, at the schools.

2. The treatment of dental caries and conditions of oral disease at some central place to which the children could be sent.

3. The superintendence of the periodical cleansing of the mouths of all the younger children, which might be done by an intelligent assistant under the supervision of the dental surgeon. I attach much importance to this.

I should also suggest that the medical officer of health of the district be empowered to send any cases of chronic stomatitis or other mouth disease to the appointed dental surgeon for treatment, particularly young children and those liable to infection during outbreaks of diphtheria. The local sanitary authority should provide the room and material necessary.

Groups 2 and 3.—These two groups are the most difficult to formulate a scheme for. There is, however, existing machinery which might be enlarged to deal with a considerable amount of the work necessary. The various dental hospitals in London, at any rate, and perhaps the provincial hospitals and dispensaries, might be brought into the same category. Some such scheme as the following would, I think, work:

1. The appointment of dental clinical assistants (qualified men) at a salary similar to that paid to the house-physicians and house-surgeons at the various hospitals.

2. That a payment be made from the patients treated, such payment to be nominal, but to cover the working expenses.

3. The work to be undertaken should be the treatment of dental caries and the treatment of oral sepsis. No artificial or mechanical work to be undertaken.

4. The clinical assistants to be under the jurisdiction of the hospital staff.

5. The existing arrangements at the various hospitals (charity officer) to be made use of if necessary in determining

the propriety of treating any given patient, the present factors of computing a patient's suitability being appropriately extended.

I am quite aware that a scheme such as I have suggested will be met with considerable opposition, as forming a direct menace to the practice of the qualified man; but I contend that such will not be the case, and that any competition resulting would be much more directed against unqualified practice, both personal and by companies. The payments made would be unremunerative ones to the general practitioner, and the existent machinery would, I think, prevent advantage being taken by improper people. Again, a very large number of people who are able to make a small payment do not seek treatment at a charity from motives of pride. Moreover, adequate supervision as to the work undertaken would be provided for by the ordinary officers and staff of the hospital.

I advance these suggestions with a considerable degree of diffidence, as they are a departure from our recognized methods of dealing with general medical work. But they are not so much foreign to those general principles which underlie the working of the prevention of infectious disease, and as the matter is of extreme importance, and oral disease so widely spread, some drastic measures are indicated. I can only say in conclusion, in the words of the old Jesuit, "Give me the children and I will give you the world."

THE SEGREGATION OF TUBERCULOUS PATIENTS AMONG FACTORY WORKERS.

By C. W. J. BRASHER, L.R.C.P., M.R.C.S.,
Bristol.

THE treatment of tuberculosis in England is entirely inadequate, and as we descend in the social scale we find the chances of proper treatment and prevention of tuberculosis diminishing rapidly. It has been said that only one out of several thousand working-class patients has any chance of efficient treatment in the present day. There can be no prospect of improvement when nearly all governing bodies are so apathetic.

Dr. Weatherly states that "in England and Wales the percentage of Boards—that is, of guardians—doing anything is under 18 per cent."[1] Every year witnesses an increase of town dwellers and of factory workers recruited largely from country districts, who swell the great army of sufferers from overcrowding, and we know how quickly tuberculosis spreads among these unfortunate people.

The question is, What is to be done? All authorities in England agree that compulsory notification under the Infectious Diseases (Notification) Act of 1889 is at present impossible, and there is no probability of its adoption in the future. Voluntary notification may effect some improvement among the upper and middle classes, but it is unlikely to commend itself to the lower classes, who need it most. They dislike compulsory notification, and in many cases are only deterred from breaking the law by fear of the penalties involved; it is therefore obvious that they will not agree to voluntary notification of tuberculosis.

Hitherto in England all efforts have been directed to the treatment of individual tuberculous patients; little has been done to prevent the infection of others. In Germany every factory worker found to be suffering from consumption is sent immediately to his district sanatorium. Unfortunately, in England the Government and employés of labour have not awakened to the need or possibility of prevention. Hundreds of phthisical patients apply for work every year in English factories, and very many of these are engaged, for, with few exceptions, no attempt is made to eliminate the physically unfit. These unfortunate patients do incalculable harm, as they are usually allowed to work till they can work no longer; meanwhile, they are spreading the infection among those around them. They often break down for a time, are "patched up" and return to work, and, when the final collapse occurs, they drag out the last few weeks or months of life in crowded, ill-ventilated, insanitary homes, becoming day by day sources of greater danger to those around them. The great majority of English employers appear to regard this sacrifice of life as inevitable, and take no steps to prevent it, although if they will, they can profit by Germany's example. That they are quite indifferent in this matter was proved a few months ago in Bristol, when an appeal was made to employers for the endowment of beds in the Winsley Sanatorium, and only one firm responded to that appeal! How is this apathy to be overcome and any attempt at prevention to be made?

By regular examination of all candidates for employment in factories and by segregation of all cases of tuberculosis as soon as discovered, employers will soon realize that tuberculosis can be almost eliminated from some factories, and in all, its spread may be greatly retarded. The experience of four years' working of this system in Messrs. J. S. Fry and Sons' factories in Bristol proves that these statements are not exaggerated.

Messrs. Fry and Sons employ more than 2,000 women and girls, under 28 forewomen or "superintendents." When a woman or girl applies for employment she is examined as for life assurance, except that the urine is only tested in doubtful cases. Particular attention is paid to the condition of the lungs and heart, and, during 1903, twelve girls (out of a total of 376 applicants) were rejected as showing symptoms of phthisis. Persisent "mouth breathers," those having very unhealthy tonsils, or suffering from adenoids are required to submit to operation before being admitted to the factories. The superintendents are instructed to keep all new girls under observation, and to report any evidence of ill-health in any employé.

To enable them to do this more efficiently, some short lectures have been given from time to time to the superintendents, on tuberculosis and other infectious diseases, ventilation, diet, etc., the necessity for such lectures was shown by the astonishment expressed by the majority of superintendents on learning that "consumption" is an infectious disease.

All girls suffering from phthisis are suspended from work and put on the "sick fund." Until they can be sent to a sanatorium they are treated at home or at the factories, and are instructed as to proper diet, ventilation, rest, and other details of the "open-air treatment."

Hitherto there has been considerable delay in sending patients to sanatoriums owing to the entirely inadequate provision of such institutions for the working classes, but after November next the two beds endowed by Messrs. Fry at Winsley will be available, and this delay will be obviated. Patients who have suffered from phthisis are not encouraged to return to the factories after apparent cure, but rather to seek some outdoor or less sedentary employment, and are assisted as far as possible to obtain such.

Cases of tuberculous lymphadenitis or tuberculous peritonitis are allowed to resume work if cured, but no phthisical patient would be allowed to return to work until repeated examinations of the sputum had given uniformly negative results.

Doubtless cases of tuberculosis will occur from time to time, but the results attained since this system was introduced encourage the belief that we shall be able to detect cases in the earliest stage, and so prevent them infecting others, and at the same time give them the best chance of recovery.

During the last four years 14 cases of phthisis have occurred in Messrs. Fry's factories. Of these 3 died and 9 have left the employ, while of the remaining 2 one very chronic case has been pensioned and is attended in her home, and one is at present under treatment in a sanatorium. Of the 9 cases who left the employ, 1 was cured, 4 have died, and 4 have been lost sight of. Only one girl died last year from phthisis.

There has not been a single fresh case of phthisis since last November, and there has been no death from any cause during the seven months of this year among 2,064 women and girls.

It may be thought that friction would occur in carrying out this system. There was a little at first, but now the employés seem anxious to come up whenever there is any suspicion of tuberculosis, such is their dread of consumption.

I trust therefore, gentlemen, that you will consider I have made out a case for the systematic segregation of tuberculous patients, and that you all will do your utmost to bring home to all governing bodies and to all employers the possibility and the paramount importance of the prevention of tuberculosis.

REFERENCE.
1 *Tuberculosis*, April, 1904.

NORTH-WEST LONDON HOSPITAL.—Mr. George Herring has sent a donation of £509 to the North-West London Hospital, Kentish Town Road, being the promised one-third of the total amount (£1,527) subscribed in response to Lord Rathmore's appeal.

BRITISH ASSOCIATION.

(Continued from page 404.)

In preparing the following summary of communications made in the various sections which are in one way or another interesting to medical readers we have been largely indebted to the full reports of the proceedings of the British Association which have been published in the *Times*.

Section of Physiology.

President's Address.

Professor C. S. Sherrington delivered an address entitled, "The Correlation of Reflexes and the Principle of the Common Path." In it he considered a new view of the physiology of the nervous system, and, departing from present views on the action of nervous centres, treated in outline a theory of the mutual interaction of nervous arcs. He concluded with a brief summary of his position in the following words: The principle I have tried to outline to you has many and wide applications; it seems fruitful for problems of pathology and psychology, as well as for those of physiology. The reflex arcs (of the synaptic system) converge in their course so as to impinge upon links possessed by whole varied groups in common—common paths. This arrangement culminates in the convergence of many separately-arising arcs upon the efferent-root neuron. This neuron thus forms a final common path for many different reflex arcs and acts. It is responsive in various rhythm and intensity, and is relatively unfatigable. Of the different arcs which use it in common, each can do so exclusively in due succession, but different arcs cannot use it simultaneously. There is, therefore, interference between the actions of the arcs possessing the common path, some reflexes excluding others and producing inhibitory phenomena, some reflexes reinforcing others and producing phenomena of "*bahnung*." Intensity of simulation, species of reflex, fatigue, and freshness—all these are physiological factors influencing this interaction of the arcs; and under pathological conditions there are many others—for example, "shock," toxins, etc. Hence follows successive interchange of the arcs that dominate one and the same final common path. We commonly hear a muscle—or other effector organ—spoken of as innervated by a certain nerve; it would be more correct, as well as more luminous, to speak of it as innervated by certain receptors; thus, the hip flexor, now by this piece of skin, now by that, by its own foot, by the opposite fore-foot, by the labyrinth, by its own muscle-spindles, by the eye, by the "motor" cortex, etc. This temporal variability, wanting to the nerve net system of medusoid and lower visceral life, in the synaptic system provides the organism with a mechanism for higher integration. It fits that system to synthesize from a mere collection of tissues and organs an individual animal. The animal mechanism is thus given solidarity by this principle, which for each effector organ allows and regulates interchange of the arcs playing upon it, a principle which I would briefly term that of "the interaction of reflexes about their common path."

Sir John Burdon Sanderson, in proposing a vote of thanks to the President, referred in warm terms of praise to the highly important work which had been produced by Professor Sherrington during the past twenty years, culminating in the brilliant results the exposition of which the Section had just heard.

The motion was seconded by Professor J. N. Langley, and carried with acclamation.

Muscular Response to Electric Currents in Fishes.

Professor MacWilliam read a paper on Reflex and Direct Muscular Response to Galvanic and Faradic Currents in Fishes. He said that eels were remarkably sensitive to electric currents, a responsive fin-movement of a reflex nature being readily elicited. The negative pole was usually the stimulating one, but sometimes the positive. The different effect of the two poles were very distinct. Frogs, newts, carp, and other fish did not show similar results. After death of the spinal cord much stronger currents were necessary to cause any movement, and the movement was different in character, the positive pole (direct stimulation) always stimulating at "make" and the negative at "break," which recalled the so-named "reactions of degeneration" in man.

Metabolism of Arginin.

Professor Thompson read a paper on Metabolism of Arginin, in which he described his administration of the hexone base arginin to animals both in food and by intravenous injection with the purpose of studying its fate and utilization within the body. In animals in a state of nitrogenous equilibrium the nitrogen contained within the arginin reappeared almost quantitatively in the urine as urea. If the base were injected subcutaneously the amount of urea excreted was to a slight extent in excess of that to be expected from the amount given. Hence the base administered under such conditions tended to excite the breakdown of nitrogenous substances in the body.

Professor A. Kossel (Heidelberg), referring to the structural formula of arginin, pointed out how half of its nitrogen could be immediately split off by simple hydrolysis as urea, but that the remaining moiety required oxidation to yield its nitrogen as urea. He had shown recently that the liver produced a ferment capable of effecting this by dialysis. The significance of these facts in respect of the general formation of the important excretory product urea was of far-reaching consequence.

Dr. F. G. Hopkins stated that he had some time previously taken a mixture of the hexone bases by the mouth and had then watched the rate of excretion. He obtained evidence that the nitrogen excretion after such administration distinctly indicated two maximal periods, one soon after the dose was taken and the other at a later period. Hence probably the first maximum represented the excretion of that part of the nitrogen easily split off from arginin as urea, the second maximum representing the second moiety.

Trypsinogen and Trypsin.

Professor Starling read a paper on the relation of trypsinogen to trypsin, in which he observed that against Pawlow's conclusions, that intestinal juice contained a ferment which acted upon the trypsinogen of the pancreatic juice, converting it into the active ferment trypsin, French observers had raised the suggestion that the interaction of the two juices was analogous to the action of the cytases. The most recent evidence was in favour of Pawlow's view that enterokinase was a ferment of ferments.

Effect of Alcohol on the Heart.

Dr. W. E. Dixon, discussing the action and effect of alcohol on the heart, observed that he had found the pulse to be slightly accelerated, and suggested that the acceleration was due to peripheral irritation. The effect on the vessels consisted of dilatation of the peripheral or skin vessels and constriction of the splanchnics which constituted the majority. Lastly, the blood-press was invariably increased, whether the administration of the alcohol was by the stomach or by subcutaneous or intravenous injection. He concluded from his experiments that the first action of alcohol on the heart was a directly stimulant one.

Professor Schäfer said that some experiments of his proved that in a chloroformed animal the admixture of alcohol with the chloroform led to an acceleration of the heart-beat and an increase in its force; this was not due merely to the diminution in the amount of chloroform being administered.

Oxidation and Functional Activity.

Sir John Burdon Sanderson opened a discussion on oxidation and functional activity, or the relation between oxygen and the chemical processes of animal and plant life. The old notion had been that oxygen was a destroyer only, but now a double function—that of a constituent of the animal body and an oxidizer—was assigned to it. The process of metabolism was studied in muscle, in nerve centres, and in various organs. Muscle was best understood; there were cyclical metabolic processes, a building up, and then a discharge resulting in mechanical work. The spinal cord could be studied by replacing the blood by salt solution in which the amount of oxygen in solution could be varied. Strychnine was used to increase excitability, and the action of the cord was judged by the muscular response, which, when the salt solution contained oxygen, was a short tetanus. When salt solution without oxygen was used there was no tetanus, but only one or two twitches. Thus there was a direct relation between oxygen and the response to stimulus. Oxygen did not act as a stimulus, but it predisposed to contraction. The cycle was much slower in nerve than in muscle. The relation of oxygen to glands had been studied by Barcroft and Brodie, and it was found that the intake of oxygen was very great during activity, but there was no indication that the carbonic acid that got into the blood was proportional to it. In glands the catabolic side of the process did not preponderate as it did in muscle.

Dr. W. M. Fletcher thought that in the case of muscle the metabolism was masked by the material stored up in it ready

to break down. The catabolic side of the process was the one which was accentuated; in fact, it might be assumed that anabolism was veiled or absent. Muscle contained highly organized products, and continually emitted carbonic acid gas, the output of which was enormously increased if the muscle were placed in oxygen. To Hermann this suggested that the action of oxygen was destructive. Verworn, however, considered that oxygen conditioned the instability of the biogen molecule, that the process was not destructive only. Dr. Fletcher gave other reasons for thinking oxygen to be not entirely destructive; and observed further that in experiments on muscle metabolism performed by making an animal work and measuring the carbonic acid gas given out by the lungs it was found that much was so given out, but that after interference with oxidation by poisoning, for example, with phosphorus, less was given out. It was clear that in the absence of oxygen the disintegrative processes could not be complete. It was possible that some oxygen acted at a comparatively late period and was not intramolecular.

Professor T. G. BRODIE described the results obtained in experiments conducted by him in conjunction with Dr. J. Barcroft on the gaseous exchanges in the kidneys under the different conditions of rest and of activity. The total amounts of oxygen absorbed and carbonic acid eliminated were estimated at a time when the kidney was at rest, and then during the active secretion of urine excited by the injection of urea. The results obtained showed in all cases a great increase in the amount of oxygen absorbed, but only a very small increase in the amount of carbonic acid eliminated. The fact that they had found in most of their experiments the carbonic acid elimination during rest in excess of the oxygen absorption led them to the conclusion that secretory activity of the kidney was accompanied by marked absorption of oxygen practically in proportion to the work done. The experiments were not contradictory to the view that the kidney cells were capable of laying in a store of oxygen during a resting period, but further experiments were necessary before that view could be established for this organ.

Professor HALLIBURTON gave some account of the history of the ideas respecting the use of oxygen to the organism, and said that the idea that oxidation might be caused by a ferment was a recent one, for most of the ferments they were acquainted with were hydrolytic. Respiratory pigments, such as haemoglobin, partook of the nature of ferments, for they had a catalytic action. The oxidases or oxidizing ferments added on oxygen to the proteid molecule, but, unlike the hydrolytic ferments, they did not necessarily cause any breaking down. It had been suggested that the oxidases were nucleo-proteids, but the evidence was not conclusive.

Professor T. CLIFFORD ALLBUTT suggested that the theories advanced about the part played by oxygen offered some explanation of the clinical fact that the administration of oxygen gave relief to patients in "agony," not only in cases where the heart and lungs were affected, but in others also.

Dr. F. J. ALLAN stated that vital activity was connected with a certain class of nitrogen compounds, and formulated as a law the statement that every vital act involved the passage of oxygen to or from nitrogen; in anabolic changes oxygen united with nitrogen, in catabolic changes it passed from nitrogen to carbon. This he had stated so long ago as 1896.

The Spread of the Plague.

Mr. E. H. HANKIN, Government Pathologist at Agra, gave an address on the spread of the plague. He said that the generally-accepted view about the origin of the plague in India in 1896 was that it came from Hong Kong, but the following consideration suggested an alternative source. About the beginning of the plague in Bombay strangers were seen in very scant attire. These were fakirs from Garhwal, who were passing through Bombay on their way to attend a religious festival at Nassik. Garhwal was a region where plague was endemic, so that it was not improbable that the fakirs had disseminated it. Further evidence for this view was supplied by the fact that the festival at Nassik took place every twelve years, and that the two other outbreaks of plague which ravaged India occurred also at the time of a festival there. The plagues of 1812 and 1836 presented other characters in common with that of 1896. As to how the infection was spread, the fakirs did not object to sleep on burying places, and as the dead were not buried deep there was every chance of infection being conveyed from the corpses. There was considerable evidence to show that the plague which devastated Europe in the Middle Ages originated in India and was conveyed by trade routes and armies.

Professor WOODHEAD asked whether the pneumonic form of the plague was due to climatic conditions.

Sir RICHARD TEMPLE said it was noticeable that the plague of 1896 took hold of the country up to the Punjab and down south, but missed out Calcutta and Madras.

Dr. S. M. COPEMAN said that medical inspection had been substituted for quarantine in this country as a precaution against plague, and this had proved so effectual that no case of plague had occurred in recent years except in the seaports. As to how the plague spread, it could be caught by monkeys and rats, and possibly the fleas on rats assisted in disseminating the infection. Fleas deserted a dead organism, and one of the fleas peculiar to the rat could also exist on man. The reason that the natives were so much more liable to infection than whites might be that so much more of their bodies was exposed.

Professor J. MACKENZIE said that in Canada no plague cases had occurred, although plague was endemic in the Chinese quarter of San Francisco, between which and Vancouver there was much communication.

Professor GRÜNBAUM asked whether at Garhwal the plague was endemic in an attenuated form.

Sir WILLIAM RAMSAY asked how it was that the fakirs were able to carry the infection while they themselves were immune, and in view of the fact that they had so little clothing.

Mr. HANKIN, in reply, said that the pneumonic form of plague did no spread far. It was extremely easy to catch, but after passing through a very few individuals it lost its virulence, just as it did after passing directly from one rat to another. Except in cases of pneumonic plague isolation of the patient was useless. The thing to be done was to isolate the source of infection, namely, the rats and fleas. The incidence of the plague was often peculiar. Thus, in Bombay, the sweepers, who did all the filthy work of street cleaning, escaped entirely, and, according to an old writer, the scavengers enjoyed a similar immunity during the black death in Europe. The plague in Garhwal was extremely virulent, but it did not spread, because at the first appearance of infection—say, the finding of a dead rat—the villagers all fled from their homes. If the fakirs had little clothing, they had very long hair and dirty bodies, which were quite capable of harbouring infection. The plague in its virulent Indian form had not been experienced in Europe, probably because it had not come direct, but from some place where the disease was endemic. Those ports which boasted of the efficacy of the sanitary precautions had probably to thank that circumstance for their immunity rather than their own efforts.

The Physiology of Hearing.

Dr. C. S. MYERS read a paper describing the recent developments of Helmholtz's theory of hearing. He pointed out how well, by the employment of recently-discovered facts, that theory explained many points in the physiology of hearing. Thus, a pure tone, sounding in the presence of a complete series of wires attuned to different notes—that is, as in the basilar membrane—on the Helmholz theory, not only set in agitation the particular wire attuned to that rate of vibration, but also those other wires whose rate of vibration was a simple multiple of the first. This led to a simple explanation of the great physiological resemblance of a note to its octave, and also explained why, after the octave, the next note in point of resemblance was the fifth, and after that the fourth. Assuming it as probable that the vibration of one fibre resulted in the disturbance of the neighbouring fibres of the membrane, Dr. Myers pointed out how well this explained the fact that two notes of very nearly the same rate of vibration should reinforce one another in producing a fused sensation of a tone lying between the two notes sounded: while, if the periods of the two notes were a little further apart, the resulting fused sensation became discordant and even painful.

SECTION OF ANTHROPOLOGY.

Anthropometric Investigation and the Physical Condition of the People.

Mr. J. GRAY read the report of the Committee for Anthropometric Investigation in Great Britain and Ireland. He pointed out that the recommendation in last year's report of the committee—that steps should be taken to establish an anthropometric bureau, with the view of organizing continuous anthropometric work throughout the British Isles—

had recently acquired a new interest from the appointment during the past year of a Privy Council Committee to inquire into the question of alleged physical deterioration of the people. That Committee shortly after its appointment had put itself in communication with the Anthropometric Committee of this Section, and the Chairman (Professor D. J. Cunningham) and the Secretary (Mr. J. Gray) were asked to give evidence before the Privy Council Committee. It was only by such a measure that statistics could be accumulated that would enable the upward or downward tendency of the national physique to be detected. Valuable as were the results of the British Association Committee of 1878-83, it was no disparagement of its work to say that they were admittedly incomplete, and, indeed, the committee only claimed to have therein laid a substantial foundation for a further and more exhaustive study of the physical condition of the people. As part of the evidence given before the Privy Council Committee, the chairman and secretary had submitted a scheme of which the framework was that there should be an honorary consultative committee, a bureau, and a body of surveyors or measurers. The committee should consist of three members (one from each of the three divisions of the United Kingdom), who should be anthropologists of acknowledged reputation and well acquainted with the structure of the human body and the laws which regulated its development and growth; and they should likewise be men of weight and influence. The central bureau should be established in London and should be organized as a committee of the Privy Council. It would probably be necessary to appoint a director and deputy-director, one being an anthropologist and anatomist, and the other a statistician trained in the methods of Professor Karl Pearson. There would be a statistical department in the bureau; and there would be a body of male and female surveyors or measurers.

Professor D. J. Cunningham spoke on the alleged physical deterioration of the people, and said that the description of the Government report as epoch-making was fully justified. He had never read a document of such real value to the British race, and of such vast importance in respect of the solution of many of the social problems of our time. He accepted the general finding of the committee that there was no evidence of any general physical deterioration in the nation at large. But recent great disturbances of the conditions of life in this kingdom—such as agricultural depression, the great movement from the country to overcrowded towns and cities, and consequent depletion of rural districts, employment of female labour in factories, and compulsory education, which often kept hungry children in ill-ventilated rooms—must have had a great effect, though counteracted to some extent by the efforts of philanthropy and legislative measures. At present there were only two sources of evidence, namely, the statistical records of recruits to the army and data obtained by anthropologists, educationists, and some public bodies. Neither of these was sufficient for an accurate conclusion as to the upward or downward tendency of the race. The first could not be regarded as at all conclusive, since the physical condition of recruits varied with the state of the labour market, for when trade was good they were only drawn from the very lowest class of the people. Indeed, the committee had found that one might as well draw conclusions in respect of the moral characteristics of the people from examination of criminals as of the physical condition of the English people from the feeble specimens that came under special notice as recruits. The most important factors for physical well-being were environment and nurture, and proper atmosphere and proper food were the chief essentials for keeping up the standard of physique. It did not follow that there was now any permanent degeneracy of physique. For no matter how far certain sections might deviate from the standard, anthropologists believed that there was a mean physical standard of the race, and that the tendency of the race as a whole was to retain their inherited mean. All that was required was to improve the conditions of living, and it would be found that what was temporarily lost would be recovered. There seemed, however, to be a general and marked deterioration affecting the whole people in one respect, namely, the teeth; and he condemned the fashion that by its decree concerning tight lacing (though neither had recently greatly improved in this respect) had accused nature of committing a blunder and had interfered with the mechanism of the whole body by boots so shaped as to throw the weight of the body, not on the big toe, but on the middle of the foot. There seemed to be, also, structural changes being very slowly evolved in an increase of the volume of the brain and a consequent slow process of shortening of the jaws that prevented the growth and development of the wisdom teeth. The higher educational training of women was still in its experimental stage, and its results on physical condition could not yet be ascertained. But it seemed clear that there was a very marked improvement of physique amongst women of the upper and middle classes, for in the middle and latter half of the eighteenth century the women of those classes were certainly vastly inferior in physical condition to those of the present day.

Dr. F. C. Shrubsall delivered an address, aided by lantern slides, on a comparison of the physical characters of hospital patients with those of healthy individuals from the same areas, with suggestions as to the influence of selection by disease on the constitution of city populations. From a very large number of tabulated observations his conclusions were that blonde type persons suffered more than those of brunette type from disorders of a rheumatic nature, such as tonsillitis, acute rheumatism, and heart disease, while the reverse was the case with pulmonary tuberculosis, nervous disorders, particularly epilepsy, and cancer. Moreover, disease during childhood fell more heavily on the fair element. This element was at its maximum during the earliest period of life, but diseases and city life lessened both its numbers and proportion until the age of 20 to 25, when, owing to sudden rise of mortality from pulmonary tuberculosis, the chief cause of death at this period of life, the darker element began to suffer severely. Thus the relative frequency of darker individuals was then diminished. The most overcrowded areas were the most brunette areas, and also those in which the infant mortality—that is, of blonde children—was the greatest. That these areas did not become still more brunette was perhaps to be explained by the earlier rise in overcrowded areas of mortality from pulmonary tuberculosis, the greatest scourge during the child-bearing periods of life.

Mr. J. Gray then read the last paper before the general discussion, on an Anthropometric Survey, its Utility to Science and to the State. He outlined the scheme that had been presented to the Privy Council Committee, according to which the United Kingdom would be divided into 400 districts, in each of which a representative sample of about 1,000 adults of each sex would be subjected to a large number of measurements and observations. The whole of the school children would be measured, because a thousand of each sex for each age interval of one year would be required, which would amount to about the whole of the school population. The survey would be completed once every ten years, and the total number measured in that time would be about 800,000 adults and 8,000,000 children. The work, it has been estimated, could be carried out by a staff of twenty to thirty surveyors constantly employed, that is, whole-time surveyors. The material thus collected and classified would add immensely to our knowledge of the distribution and origin of the races of our own country. The correlations that would be discovered between the different physical characters and between physical and mental characters would be new and valuable scientific discoveries. The correlations discovered between the physique of man and his environment would throw much light on the nature of evolution. It was impossible to anticipate all the developments that would result from so great an accession to our exact knowledge of man. Whether any physical deterioration as had been alleged was really taking place or not could not be settled by any anthropometric statistics at present in existence. But if so, by calculating correlations between physique and all probable influences the causes of the deterioration would be indicated. The importance of such information to the statesman, to the sociologist, and to the public themselves, hardly needed to be pointed out. Civilization had brought so many new influences to bear upon the more advanced races of mankind that we were quite in the dark as to their ultimate effects. Influences might be at work which were steadily driving us by invisible steps on the road to national ruin. The anthropometric instrument would detect these insidious changes before they were visible to the naked eye; statesmen and the public would be warned in time, and the degeneration might be arrested before it was too late.

The President of the Association (Right Hon. Arthur J. Balfour) in opening the discussion, observed that in considering this all-important question of the physical condition of the people it was necessary always to bear in mind that one must divide the causes that produced temporary effects and those more insidious and more serious causes if there were any such that tended to produce permanent effects. As to the first set of causes, in the front rank was that rather

vague collection of causes comprised in the phrase "town life." The food and the education of the people were better than formerly, and therefore, except for the counteracting effects of this "town life," the race ought to be improving. What, then, Mr. Balfour asked, was the difference between the effect of town life on a factory hand and country life on a factory hand working equally long and then going home to lodgings and living practically in the same way as the town factory hand? Was there any difference? He himself had been brought up in the country, a small corner of the Lowlands south of the Firth of Forth, where the largest specimens of the human race were or had been produced, and he remembered in those days that the agricultural labourer and his family—a big family very often—lived in one small cottage or even in one room. Yet there was no deterioration. Was it the fresh air surrounding them that counteracted the natural tendency to deteriorate? The question he desired to put was, Was it wholly a question of ventilation, or was it the freshness of air and its beneficial effects? He presumed it was this effect of fresh air, for ventilation could be had in the towns, and the food of an ordinary urban population was better than that of a rural population. Next, as to the causes that seemed to, or might, produce permanent effects. If some of the modern theories of heredity—Weismann's theory, for example—were true, then it was only by some complete elimination of a permanent characteristic that the race could be affected. Three points of interest occurred to him in this connexion. First, the progeny of every man who won his way from the lowest ranks into the middle class was likely to diminish because of later marriages in that class. Hence it seemed that, as the State so contrived education as to allow this "rising" from a lower to upper class, by so much did it do something to diminish the actual quality of the breed. It was, of course, not an argument against the State's attitude towards education in this respect; but there was, or seemed to be, no escape from the rather melancholy conclusion that everything done towards opening up careers to those of the lower classes did something towards the deterioration of that race. Secondly, town life, as Dr. Shrubsall had apparently proved, seemed to encourage a dark-haired population and to discourage a light-haired population, or, in other words, the gradual increase of dark-haired people in towns; and this must have its effect in altering the qualities of the people in that it tended to accentuate those characteristics that we derived from the dark-haired progenitors of our composite race at the expense of those derived from our fair-haired and fair-eyed ancestors. That the change would be of great importance could not be denied. Thirdly, it was no doubt the most energetic part of our rural population that drifted into the towns and cities and constituted the great drain of population city wards; and if this continued, thus throwing upon the less energetic part left in the rural districts the greater part of the burden of continuing the race, the consequent deterioration of the race could not but be a permanent effect. This reasoning certainly was not reassuring. Mr. Balfour concluded by saying that after the Legislature had done what it could in respect of improving drainage systems, ventilating schools, and diminishing overcrowding, he feared that the larger questions would not have been touched, for the essential difference between town and country life would still be left. He feared that no legislation was likely to modify the permanent causes by which not merely the well-being of this or the next generation was affected, but which concerned the actual quality of the race.

Sir JOHN GORST said that it was proved beyond doubt that in this country a large proportion of the population lived in a condition not favouring their development, and it was the duty of every reformer and patriotic Englishman to do his best to remove those causes so deleterious to the generation now growing up. It was a very grave question whether the race was not now being propagated in undue proportion by the lowest portion of the race. The general death-rate was decreasing, but the death-rate of infants was not decreasing. Hence there was some cause counteracting all improvements. Restraints on marriage were less in the lower classes, and he thought that steps might be taken by the Legislature to prevent marriage before an age to be fixed by law; for juvenile marriages, though decreasing, were still far too numerous. The State might also do something to prevent the marriage of the mentally and physically unfit. The recent report of the Royal Commission in New South Wales had investigated the causes of the alarming decrease in the birth-rate in Australia, and had attributed it largely to the refusal by the middle classes on account of growing luxury and selfishness to perform their duty and bear the burden of bearing and bringing up children for the State. Further, the causes that actively injured child life from birth to manhood in this country operated not only in their homes, but in the schools for which society and the Government were directly responsible. The two essentials of physical life were fresh air and food; and he lamented the deprivation of large classes of growing boys and girls of these two necessaries. Neither was given as it ought to be. The slum classes lived in an atmosphere unfit for development of the body, and children in country schools suffered from being cooped up in schools where ventilation was not understood or never practised. As to the question of food, a child ought not to be taught if it was hungry. No doubt it was a question of opinion as to whether a child was underfed, but there had been medical evidence that in the Johanna Street Board School, Lambeth, 90 per cent. of the children were in a condition physically unfit to go through the school curriculum. He wished to urge the absolute necessity of feeding before teaching, and that there should be means of enforcing upon parents the necessity of feeding their children properly. Neither was provided by the State. Charity might mitigate the evils of insufficient feeding by parents, but in so doing it produced that very neglect by parents which it was its object to prevent. To force a hungry or continually-underfed child to any exertion of mind or body was absolute cruelty. If any one so treated a horse he would be prosecuted for cruelty. There was no alternative but to send the child away untaught or to feed it. There were plenty of methods for feeding children and for coercing parents into doing their parental duty; some were adopted on the Continent. It was, in his opinion, a question expressly for local authorities. Why not give them power to make experiments? At present no local authority had any power whatever in this respect. The whole medical faculty of Scotland had urged that something be done on these lines, and he hoped that in the Scotch Education Bill of next year regard would be had to the strong expressions of the medical faculty in Scotland in this matter.

Professor RUDOLFO LIVI, of Rome, Director of the Italian Military Survey, described the Italian anthropological survey of 300 000 recruits. He pointed out that statistics of a conscript army were free from the disadvantages that attended those of a voluntary army, but admitted the great value of the British army statistics in certain special directions. He discussed the limits of a survey of the population and the problems which it might hope to solve: and also on the question of physical deterioration thought that on the whole the liability to disease decreased as prosperity and knowledge increased, giving instances as to stature and weight and health of large numbers from the Italian military survey. England, he concluded, was favoured in respect of physique, because there the extremes of social conditions were much less than elsewhere.

Mr. E. W. BRABROOK expressed the view that all experience showed that it would be necessary for the survey to be made uniformly and by legislation.

Major MCCULLOCH, referring to the proposed measurement of children in army schools, thought that all anthropological measurements made therein and elsewhere should be uniformly made by the same methods and under the same conditions—for example, in respect of what garments should be worn while taking weight, so as to secure as far as possible uniformity and accuracy of results.

Professor A. MACALISTER urged that all measurements and statistics must be upon a large and complete scale, for from his experience statistics, unless based upon a large area and a wide scale of data, were extremely fallacious and misleading.

Mrs. WATT-SMYTH urged that part of the routine work of every primary school teacher should be simple measurements of weight and height, and observations of pigmentation of the scholars. The system would enable teachers to follow the development of the children, and valuable results could soon be obtained. This would pave the way for a national survey. Medical officers should be in attendance each morning at the opening of school to examine any child that looked unfit to work. This would result in early detection of infectious diseases.

The Intellectual Power of the Two Sexes.

A paper on this subject was read by Dr. J. de KÖRÖSY, Director of Municipal Statistics at Buda Pesth. The material of the author's statistics was drawn from observations made

during the last twenty-seven years in the schools of Buda-Pesth, where, since 1873, a special report on the progress of each pupil had to be sent to the author's office. These individual reports (amounting latterly to 60,000 per annum) represented together 808,350 cases; they related at first to the elementary schools (ages 6 to 12 years) only; later they included the higher elementary schools ("citizen schools," 10 to 16 years), and in the last years the grammar schools also. As to the general progress in the elementary schools, the test applied was the number of children who had to repeat their year's work instead of passing on to the next standard. Of 412,758 boys and 350,382 girls, 69,422 boys (16.8 per cent.) and 54,391 girls (15.8 per cent) repeated their work. These figures showed a slight superiority on the part of the girls. If the divergence standard by standard were observed, the boys and girls were seen to be nearly level at first, but the advantage of the latter increased with age. Thus, in the first standard the percentage repeating the year's work was—boys, 22.5; girls, 22.2; in the second standard the percentages were 16.6 and 15.4; in the third standard, 16.3 and 13 8; in the fourth standard, 12.2 and 9.2; in the fifth standard, 9 8 and 5.6; and in the sixth standard, 4.7 and 2 7. As to special progress in the fourth standard of the elementary schools, in a total of 172 477 cases the frequency of the best marks for boys and girls respectively was: In mother tongue, 23.6 per cent. and 32.3 per cent.; in arithmetic, 28.0 per cent. and 37.3 per cent.; and in geography, 29.2 per cent. and 36.9 per cent. With regard to the progress observed in the higher elementary schools, of 14,201 boys and 20,588 girls, 840 boys (6.2 per cent.) and 450 girls (2.2 per cent.) had to repeat their work. The frequency of the best marks in the fourth standard for boys and girls respectively was, in mother-tongue, 16.7 per cent. and 44 6 per cent.; in German, 12.2 per cent. and 39.2 per cent.; in history, 20 9 per cent. and 47 3 per cent.; and in arithmetic, 10 8 per cent. and 35.3 per cent. The superiority of girls was, said Dr. Körösy, really puzzling here, especially in arithmetic. In this division, however, there were difficulties, for the female group was more selected than the male; the boys who followed the higher elementary classes, instead of entering secondary schools, were from a class less gifted than the ordinary, while the contrary was the case with the girls. This disturbing cause exercised greater influence in the grammar school, as only the most talented and most ambitious girls entered the Latin schools. Besides this, the system of teaching and examination was more favourable to the girls. Thus the elementary schools furnished the most trustworthy measure, especially where their attendance was, as in Hungary, compulsory. The results were all in favour of the feminine sex, but related only to children. Since not only in sciences, but also in poetry and (with exception of the stage) in arts, the great work of human progress had been accomplished by the masculine sex, one was obliged to suppose that with the age of ripening the feminine intellect developed itself into more slowly than the masculine, and that there was a turning point at which the intellectual activity of women seemed to be arrested.

School-Leaving Certificates.

To introduce a discussion on the subject of The School-Leaving Certificate Schemes of the Board of Education, the University of London, and other Bodies, Professor Armstrong presented the report of the Committee on the Influence of Examinations. This stated that, although there was a strong consensus of opinion as to the evil effects produced by the existing system of examinations, very diverse views were held as to the remedies which should be introduced. The question had entered upon a new phase, and a more hopeful situation had been created since on July 12th last the Board of Education, Whitehall, issued suggestions for a system of school certificates which had been submitted to the Board by the Consultative Committee. It was to be noted that the Board refrained, in offering the scheme for public criticism, from the expression of any view as to the desirability or feasibility of the proposals, and were not at present committed to any action in the matter. The Scotch Education Department had long granted leaving certificates in single subjects; since 1902 it had given certificates for success in groups of subjects. There was a tendency more and more to correlate examination with inspection, and to call in the services of the teachers as well as to take into account the work done by scholars during their school career. Examinations were held under the Central Welsh Board of Intermediate Education, and upon them certificates were granted which met with a limited amount of recognition in lieu of other examinations. The majority of the members of the Board were actively engaged in the management of the schools under the jurisdiction of the Board, the headmasters and headmistresses having special representation. It was said to be the aim of the Board that every school should, as far as possible, be examined on a curriculum of its own choice; schools might accordingly in each year submit alternatives to the syllabuses of the Board in all or any of the subjects. Some of the examinations held by the Oxford Delegacy of Local Examinations, the Cambridge Syndicate of Local Examinations, and the Oxford and Cambridge Schools Examination Board served the purpose of leaving certificates in a measure, inasmuch as they carried exemption from certain qualifying examinations; but these examinations were conducted by Boards unconnected with the schools and did not take into cognizance the work of the scholars. The University of London had recently put in operation a scheme for the award of leaving certificates to scholars in schools under inspection approved by the University. In none of the English examinations was the opinion of the teacher of the pupil's abilities taken into account in the manner customary in the German Abiturienten-Examen. In the United States certain of the Universities had taken a step far in advance of European practice by admitting (without examination) pupils from recognized high schools.

Sir A. Rücker said that the subject was rather inconvenient for discussion, because the Board of Education had only just submitted the proposals of the Consultative Committee to the authorities concerned, and their views had not yet been pronounced. He must speak for himself and not for the University of London, which for two years had been carrying out a scheme similar to that now propounded by the Consultative Committee. There could be no doubt as to the immense importance of the reform proposed in its general character. The multiplication of examinations of the same standard was indefensible. The University had abandoned the name of school-leaving examinations because it made the parent suppose that the examination implied the desirability of the child leaving school at once. There was every desire to keep in close working contact with the schools, and, though in the ordinary matriculation examination it was impossible to carry out a practical examination, such a feature was now introduced into school examinations for matriculation. His main feeling in regard to the scheme of the Board of Education was one of great disappointment, because the Consultative Committee had not really faced the difficulties of the situation. It was easy to draw up a scheme which would work well if we were starting *ab initio*. But the situation was complicated by the fact that the Universities of Oxford, Cambridge, and London stood on a separate footing, in that for many years they had held what were at least the nearest possible approach to school-leaving examinations. Frankly, it was necessary to consider the finances of the whole position, and this point the Consultative Committee had put completely on one side. The University of London, for instance, had been started on its new career with the magnificent endowment of £8,000 a year, and it could not be forgotten that, even when only a reasonable fee was charged, examination carried out on a large scale was a profitable thing for the examining body. But it must not be supposed that he was not absolutely in favour of some such scheme as that propounded by the Consultative Committee.

Dr. Mangold, of Berlin, said that in Germany the leaving examinations took into account the school record and the character of the candidates, and this feature of the examination had given great satisfaction.

Principal Griffiths, of the University College, Cardiff, said that at present the new education authorities regarded the teachers with some distrust. They would not readily allow the teachers to take their proper place in the conduct of examinations, but gave a heart-breaking attention to the exact number of marks earned by candidates. Any new scheme should be directed to subordinating the effect of direct examination marks and increasing the importance of the teachers' reports.

Sir Oliver Lodge said that the departure heralded in the report of the Consultative Committee was allied to one which the Birmingham University intended to put in practice. They proposed there to hold school examinations in which the teachers should be asked to co-operate, and in which the certificates should be awarded in consultation with the teachers. In time, all the universities would no doubt

recognize each other's results, for at present the multiplicity of examinations was intolerable, and the preparation for purely external examination was not good for methods of teaching. The business of the university or educational centre of the district was simply to unify the standard of examination as much as possible. The school teacher might be left to determine the relative value of his pupils, and then the absolute value could be determined by the outside authority. He was sure that the country was ready for some such experiment as that proposed, and no mere vested interests of any university ought to be allowed to stand in the way.

Section of Zoology.

Heredity and Variation.

Mr. William Bateson, the President, chose as the subject of his address Heredity and Variation, as exemplified in the facts of breeding, with special reference to the generalization of Mendel on segregation, resolution, and disintegration. In some essential respects the spirit of the naturalists of fifty years ago was truer in aim and their methods of inquiry more direct and more fertile—as far as the problem of evolution was concerned—than those which have replaced them. The appearance of the work of Darwin, which crowned the great period in the study of the phenomena of species, was the signal for a general halt. The *Origin of Species*, the treatise which for the first time brought the problem of species fairly within the range of human intelligence, so influenced the course of scientific thought that the study of the phenomenon of specific difference almost entirely ceased. That this was largely due to the simultaneous opening up of lines of research in many other directions might be granted; but in greater measure it was to be ascribed to the substitution of a conception of species which, with all the elements of truth it contained, was yet barren and unnatural. It was not wonderful that those who held that specific difference must be a phenomenon of slowest accumulation, proceeding by steps needing generations for their perception, should turn their attention to subjects deemed more amenable to human enterprise. The indiscriminate confounding of all divergences from type into one heterogeneous heap under the name "Variation" effectually concealed those features of order which the phenomena severally presented, creating an enduring obstacle to the progress of evolutionary science. Specific normality and distinctness being regarded as an accidental product of exigency, it was thought safe to treat departures from such normality as comparable differences; all were "variations" alike. This prodigious confusion, which spread obscurity over every part of these inquiries, was traceable to the original misconception of the nature of specific difference, as a thing imposed and not inherent. From this, at least, the earlier experimenters were free; and the undertakings of Gärtner and his contemporaries were informed by the true conception that the property and behaviour of species were themselves specific. Free from the later fancy that but for selection the forms of animals and plants would be continuous and indeterminate, they recognized the definiteness of species and variety, and boldly set themselves to work out case by case the manifestations and consequences of that definiteness. Over this work of minute and largely experimental analyses, rapidly growing, the new doctrine that organisms were mere conglomerates of adaptative devices descended like a numbing spell. By an easy confusion of thought, faith in the physiological definiteness of species and variety passed under the common ban which had at last exorcised the demon Immutability. Henceforth no naturalist must hold communion with either on pain of condemnation as an apostate—a danger to the dynasty of Selection. From this oppression we in England, at least, were scarcely beginning to emerge. After dwelling on the limits of selection in relation to variation and fixation of type, Mr. Bateson said he was convinced that the investigation of heredity by experimental methods offered the sole chance of progress with the fundamental problems of evolution. The breeding-pen was to the biologist what the test-tube was to the chemist—an instrument whereby to examine the nature of organisms and determine empirically their genetic properties. As unorganized substances had their definite properties, so had the several species and varieties which formed the materials of the experiments. Every attempt to determine these definite properties contributed immediately to the solution of that problem of problems, the physical constitution of a living organism. We still spoke sometimes of Mendel's hypothesis or theory, but in truth the terms had no strict application. It was no theory that water was made up of hydrogen and oxygen, though we could not watch the atoms unite, and it was no theory that the blue Andalusian fowl was made by the meeting of germ-cells bearing respectively black and a peculiar white. Both were incontrovertible facts deduced from observation. The two facts had this in common also, that their perception gave a glimpse into that hidden order out of which the seeming disorder of our world was built. In the Mendelian method of experiment the one essential was that the posterity of each individual should be traced separately. If individuals from necessity were treated collectively, it must be proved that their composition was identical. In direct contradiction to the methods of current statistics, Mendel saw by sure penetration that masses must be avoided. Finally Mr. Bateson said that even our present knowlege of heredity, limited as it was, would be found of extraordinary use. Though only a beginning had been made, the powers of the breeders of plants and animals were vastly increased. Breeding was the greatest industry to which science had never yet been applied. This strange anomaly was over; and, so far at least as fixation or purification of types was concerned, the breeder of plants and animals might henceforth guide his operations with a great measure of certainty. There were others who looked to the science of heredity with a loftier aspiration; who asked, Could any of this be used to help those who came after to be better than we were—healthier, wiser, or more worthy? The answer depended on the meaning of the question. On the one hand, it was certain that a competent breeder, endowed with full powers, by the aid even of our present knowledge, could in a few generations breed out several of the morbid diatheses. And we had got rid of rabies and pleuro-pneumonia, so we could exterminate the simpler vices. Voltaire's cry *Ecrasez l'infame* might well replace Archbishop Parker's Table of Forbidden Degrees, which was all the instruction Parliament had so far provided. Similarly, a race might conceivably be bred true to some physical and intellectual characters considered good. The positive side of the problem was less hopeful, but the various species of mankind offered ample material. In this sense science already suggested the way. No one, however, proposed to take it; and so long as, in our actual laws of breeding, superstition remained the guide of nations, rising ever fresh and unhurt from the assaults of knowledge, there was nothing to hope or to fear from these sciences. But if, as was usual, the philanthropist was seeking for some external application by which to ameliorate the course of descent, knowledge or heredity could not help him. The answer to his question was No, almost without qualification. We had no experience of any means by which transmission might be made to deviate from its course; nor from the moment of fertilization could teaching, or hygiene, or exhortation pick out the particles of evil in that zygote, or put in one particle of good. From seeds in the same pod might come sweet peas, climbing 5 ft. high, while their own brothers lay prone upon the ground. The stick would not make the dwarf peas climb, though without it the tall could never rise. Education, sanitation, and the rest were but the giving or withholding of opportunity. Though in the matter of heredity every other conclusion had been questioned, he rejoiced that in this all were agreed.

Professor Weldon said that the points at issue between the conception of alternative inheritance attributed to Mendel and that formed by Galton, Pearson, and others, might best be illustrated by one of Mendel's experiments. Mendel took a pea of a race producing only seeds with green cotyledons, and crossed an individual of this race with an individual of another race, producing only seeds with yellow cotyledons. The seeds resulting from this crop produced plants of three kinds—a quarter of them produced green seeds only, a quarter produced yellow seeds only, and each of these sets of individuals was said to breed true. The remaining half of the plants of this generation produced seeds with the hybrid properties of their immediate cross-bred parents. Now, considering the way in which Mr. Galton had found that reversion occurred in other cases, we might regard the hybrids which made up half the segregation generation as reverting directly to their parents; of the remaining half, we might regard one series as reverting to the characters of the various green-seeded ancestors in various proportions, the other as reverting in a similar way to the various yellow-seeded ancestors, so that every generation of ancestry was represented, to a greater or less extent, the nearer ancestors more frequently, the remoter more rarely. Mendel's own view was a little obscure. He

was translated by Mr. Bateson as saying that the yellow-seeded individuals reproduced the character of the yellow-seeded "parent form," and neither from these words nor from the German text could it be certain whether Mendel understood by "parent form" the typical condition of cotyledon colour in the yellow-seeded race, or the seed colour of one individual of that race. Most modern followers of Mendel adopted the view which Mr. Bateson expressed two years ago in a report to the Evolution Committee of the Royal Society, that so far as colour character was concerned the green-seeded descendants of the hybrid, and the apparently true-breeding yellow-seeded forms were not merely like, but identical with the pure individual of green-seeded or yellow-seeded race used in making the original crop. The view attributed to Mendel paid attention to the last two only of the series of pure-bred ancestors. That of Galton and others considered that all the ancestors contributed, in various proportions, to the characters of the subsequent generations. If the description of the seed colours observed were made with sufficient accuracy we might easily decide between these two hypotheses; but since the description "yellow" was purposely made so vague that it included all the yellow-seeded ancestors and all their yellow-seeded descendants, we could say, from the data given, that the descendants were like one ancestor only, to the exclusion of others. Each human being had almost certainly seven cervical vertebrae, so had each of his parents, and each of his grandparents. Surely he had no right for this reason to say that they were exactly like their fathers, and that their grandfathers had no share in determining their characters. In a case described by Mr. Bateson the looseness of the Mendelian descriptions was still more obvious. Each of the species included as *Lychnis dioica* had a hairy and a glabrous form. If these were crossed, the resulting plants were hairy; and the offspring of such hybrids were hairy or glabrous in Mendelian proportions. Now those hairy plants which were apparently "pure" bred were said to be like the hairy plant used in making the original cross; but we were not told how hairy either plant was. He had himself counted the hairs on the leaves of pure-bred hairy plants, and found that the number per square centimetre of leaf surface might vary from about a dozen to 1,300. Now, if a pure-bred plant with 1,300 hairs per square centimetre were crossed with a glabrous plant, and if the offspring had on an average 500 hairs per square centimetre, were they "hairy" like their hairy parent, or were they completely intermediate between the hairy and the smooth parents used? Questions of this kind, which were vital to the Mendelian hypothesis, could not be answered without the adoption of finer methods of description and observation than any to which Mendelians at present condescended. The only kind of Mendelian statement which did directly answer some of the questions raised was the statement that some, at least, of the characters of hybrids must be regarded as reversions to the characters of fairly remote ancestors. The frequent existence of such reversion was, of course, prima facie completely inconsistent with the idea that the characters of such hybrids might be regarded as due to the combination of "pure" determinants derived from their immediate parents. But it had been said that the numerical conclusions drawn from the Mendelian hypothesis agreed so closely with the observed distribution of the descendants of hybrid individuals that these alone justified the conception of gametic purity. It was very easy with a small series of results to devise a dozen hypotheses with fitted the observations sensibly as well one as another. He would give the expression which Professor Pearson had supplied for a particular case of colour inheritance in mice, studied by Professor Cuénot. Crossing albino and yellow mice, each of known ancestry, Cuénot obtained 81 albino mice, 34 yellow mice, 20 black mice, and 16 grey mice. The remarkable modification of Mendel's hypothesis, which he had put forward to describe this result, led him to predict 76 white, 38 yellow, 19 black, 19 grey mice. This was in excellent accord with observation; but Professor Pearson's prediction—82.5 albinos, 31 yellow, 20.5 blacks, 17 greys—was still closer. In the great majority of cases the Mendelian expectation and that to which we were led by the work of Galton and Pearson were the same: and in those cases in which the expectation indicated by the two lines of thought was different, the evidence was not yet conclusive. What was wanted was more experiment, and, above all, a description of results so careful, that the questions raised by the Mendelian hypothesis could be answered, instead of being masked and evaded by the adoption of loose and vague descriptive categories. Till such work had been done it was, surely, better to use only the purely descriptive statements of Galton and Pearson, without invoking the cumbrous and undemonstrable gametic mechanism on which Mendel's hypothesis rested.

Mr. Bateson, in reply, maintained that by the Mendelian hypothesis alone was it possible to draw together the vast number of observed facts which had seemed utterly incoherent.

Miners' Worm.

A discussion, introduced by Mr. E. A. Shipley (on behalf of Mr. Elliott-Smith), followed on Professor Loos's Recent Researches on Ankylostoma (Miners' Worm). Mr. Shipley explained that in ankylostoma both male and female worms were found hanging in large numbers to the intestinal walls of the man affected, producing continuously enormous numbers of eggs, which were discharged from the body. Outside the body they hatched into small active worm-like larvae, which lived in the mud, from which they entered a fresh human being—through pollution of the food or water—and the cycle recommenced, the man affected suffering from severe anaemia, often ending in death. Loos on one occasion was observing a saucerful of water containing a number of the young larvae when some drops containing larvae splashed on the back of his hand. Next day he found considerable irritation and redness of the areas which had been touched, and eventually he came to the conclusion that the larvae had penetrated the skin and were setting up inflammation in the tissues below. This hypothesis was verified on a patient in the hospital whose leg was about to be amputated. A number of larvae were smeared on the skin of the leg. After the operation sections were taken of the part smeared, and the penetration of the larvae through the skin was proved. It had now been shown, Mr. Shipley said, that the larvae, after entering the skin, could make their way to the alimentary tract, and they had been traced through the blood into the vessels of the lungs, thence into the cavity of the lungs and the trachea, and so past the glottis into the oesophagus. All accounts showed that the barefooted races of the tropics and subtropics were very widely and generally infested with this worm, both in the Old World and in the Americas, and it appeared very probable that the lassitude and inactivity which Northern races attributed to so many natives of warm climates might be largely due to a more or less severe state of anaemia induced by the presence of the worm.

Mr. G. P. Bidder pointed out the extreme economical importance of the discoveries of Professor Loos. At the first alarm in this country last year we were told that the epidemic in Westphalia was caused by the custom prevalent among the miners of drinking pit water, and that cleanliness in eating and drinking might obviate all risk of infection. As a consequence of Loos's observations, it was now the view of the experts that the majority of cases in our Cornish tin mines were due to infection of the bare shoulders, arms, and hands by contact with polluted surfaces in the mines, and against such infection cleanliness in feeding was of no avail. The question was a very serious one, as the disease was grave, and we had half a million men working in our coal mines. In some of the mines on the Continent as many as 80 per cent. of the men working were infected, and though well-planned and expensive methods of disinfection and sanitary precautions had reduced this tremendous percentage to a small one, it had in no case completely eliminated the disease, and the evidence indicated that it never would. The disease, so far as was known, was not at present existent in British collieries, but there was a large proportion of mines in which conditions of temperature and humidity would allow it to take hold. The worm was a tropical animal, which could not exist under the surface conditions of Great Britain, but in the mines there was a suitable climate and a *terra nova*, sterile of the organisms which had been developed to prey on the parasite in its native climate, where the larvae (which had been proved to have six months' free existence) might hatch out in their full numbers and lead their full length of life secure of all enemies.

Dr. Simmers, Professor of Pathology at Cairo, commented on the paper from a long experience of thousands of cases. At Cairo they had never known anything resembling the "miners' bunches" which had been described as occurring in Cornwall. Loos's experiments on puppies pointed to a definite toxic effect on the tissues penetrated by the larvae. The most remarkable characteristic of the adult parasites was the absence of any wounds or bleeding in the intestinal wall to which they adhered. The muscular mouth of the worm appeared to draw up the tissues into a sort of bell, and at

the same time to secrete into the blood some substance which had the power of breaking up the constituents of the blood, so causing the peculiar anaemia described by the reader of the paper.

Cancer.

Dr. J. A. MURRAY, of the Imperial Cancer Research Fund, read a paper on the Biological Significance of Certain Aspects of the General Pathology of Cancer. He said that hitherto there had been a want of correlation between the different lines of work upon the problems which cancer presented. The limited scope of the individual investigations might well be the principal reason for this; but it was necessary, if progress were to be made, that the facts from widely distinct fields of inquiry should be focussed on the essentials of the problem; and that conclusions apparently warranted by one set of observations should be controlled by all the others. The following lines of inquiry seemed to be important at present: (1) Pathological anatomical, including gross anatomy as well as histology and cytological investigations. (2) Zoological distribution, including ethnological distribution. (3) Statistical investigations relating to age distribution in correlation with zoological distribution. (4) Experimental investigations as to transmissibility and the powers of growth of normal and malignant tissue. There were some facts which had been obtained by many observers which pointed to peculiarities of the living cell constituting the malignant growth that must be explained by any acceptable hypothesis. The old hypotheses went by the board with the collection of new facts—such hypotheses, for example, as that the disease was limited to men or even to mammals. Malignant new growths were associated with various kinds of structures; and they increased entirely from their own resources. While histologically they presented the same differentiation as the tissue from which they had arisen, they did not belong to that tissue. There was no evidence of the transformation of original tissue into malignant tissue. The cells of new malignant growths increased in number by division. Amitosis certainly occurred, but mitotic division was by far the commoner, especially in fully developed tumours. These tumours possessed enormous power of proliferation. By experiments in the transplantation of malignant embryonic and reproductive tissues, a mass of facts had now been accumulated, and was now reduced to a form which could be used to test the value of different hypotheses. After transplantation, certain nuclear changes had been observed which presented a close similarity to a conjugation process such as is met with in the lower forms of life; but until the complete cancer cycle had been elucidated this theory of conjugation must remain merely a working hypothesis. Such a process, if established, would give a very rational explanation of many of the phenomena observed after transplanting malignant new growth. The relation which the hypothesis bore to the question of the initiation of the cancer cycle was to be emphasized by reference to another line of inquiry, namely, the age-incidence of malignant new growths. The life-cycle of all the higher animals began by a fertilization process on which cell-division ensued, and the rate of this cell-division progressively diminished as life proceeded. Its gradual cessation manifested itself in the outset of old age, and along with this diminishing power of proliferation was an increasing liability to malignant new growths. The hypothesis of conjugation was an attempt to account for the entrance of a new growth-cycle without doing violence to what was known of the general course of cellular activity. It involved the assumption that the ordinary tissues of the body in the terminal phases of the growth might undergo changes by which a conjugation process was possible. Whether this process was effected or not would then determine whether a new cycle of growth were initiated and a malignant new growth resulted. An appeal might be made to working zoologists to be on the alert for malignant new growths and allied conditions in the lower animals. Every observation in this direction had a positive value. So far no case of cancer had been found in reptiles, although it was known to occur in all the other vertebrata, including fish, and none in the invertebrates. Considering how frequently cytological studies had been undertaken in the invertebrates, it was evident what importance would attach to the discovery of cancer in the lower forms of life.

SECTION OF ECONOMIC SCIENCE AND STATISTICS.

The Housing of the Poor.

Dr. WILLIAM SMART, Adam Smith Professor of Political Economy in the University of Glasgow, delivered an address on the housing of the poor and the methods of dealing with the problems adopted in Glasgow. He said that for the last two years he had been continuously engaged as a commissioner in studying the phenomena of the housing of the poor and the problems arising therefrom, as presented in the evidence laid before the Glasgow Municipal Commission. The problem of housing in Glasgow was, in broad outline, very much the problem of all large centres of population and industry. The city grew up, without a plan, in days when the laws of public health were little understood or cared for; when there was little municipal control and little thought for the municipal future. When it came to its senses about forty years ago, and realized what an Augean stable there was to clear out, it turned to the work with a will. Considering the still unformed state of public opinion, the City Improvement Act of 1866 was a very drastic one. It scheduled whole areas of slums and pulled them down, dishousing, within five years, some 19,000 persons; rating for the deficits to the amount of £600,000 altogether; and the burden was borne without much demur. By the time the Act had done its work, the public mind had become thoroughly awake to the danger of letting things alone. Further powers were asked and obtained for closing, demolition, and rebuilding. Four years ago was passed the Building Regulations Act, which, in addition to regulating the construction of new houses, made the provision of sufficient air and light space in front of bedroom windows compulsory, and this was so far retrospective that over 4,000 houses, conforming to sanitary requirements in other respects, became on a certain date "illegal houses" simply from the fact that they had not sufficient space outside. When, however, it was realized that dishousing on this large scale was accepted by a very large section of the municipality as logically calling for municipal housing on a similarly large scale, public attention was roused. The municipality appointed a mixed commission of nine councillors and six private citizens, with a remit to examine (*a*) the causes which led to congested and insanitary areas and overcrowding; (*b*) the remedies which could or should be adopted for the clearance of existing congested, insanitary, and overcrowded areas, and for the prevention of these evils in future; and (*c*) any other phases of or questions connected with the housing problem in Glasgow which the commission might deem it desirable, necessary, or expedient to consider and report upon. The evidence, report, and recommendations now before the public, generally speaking, bore out the conclusion that many things hitherto discussed as parts of the housing problem were not problems at all, but phenomena which merely needed to be known to secure that they were put an end to. Slums must be cleared away; streets must be widened; overcrowding must be prevented; the liberty of the landlord to sell and of the tenant to use insanitary houses must be interfered with; light and air space must be guarded as a right of the poor. So far as he was able to judge, the real housing problem of to-day narrowed itself down to this: how far did the experience gained point in the direction of the municipality itself building and owning houses for certain of the poorer classes? To this the Commission had contributed an answer in so far that, in the special circumstances of Glasgow, it recommended a limited scheme of municipal building and owning. But it added the words "without expressing any opinion upon the general policy of municipal housing." For a municipality deliberately to add a new competitive industry to its already manifold activities was a serious matter from three points of view: (1) House-owning was a business, neither a routine business nor one where success was certain. A tenement of houses, by change of circumstances, might lose its rent-producing capacity and call only for demolition long before it had suffered much deterioration as a building. In such circumstances the ideal kind of house would be one constructed to last say, 30 years at the outside. But this, of course, was the last thing that municipalities in their present mood would think of doing, and they generally made it impossible by their own building regulations. (2) The municipality entered into direct competition with many of its own ratepayers, competing not only with the comparatively small class of builders, but with the great class of owners of house property. (3) By pledging the public credit for a new debt, and adding a new activity and responsibility to already overworked members of the municipality, it *pro tanto* prevented the expansion of municipal activity in other directions. It was far too little realized that a sanitary

and comfortable house among quiet neighbours had a "productive value," and was, quite definitely, one of the factors of wage earning; in other words, a good house, as compared with a slum, brought with it the possibility of paying a higher rent for it. In view of the actual circumstances of slum life in every large city, and in view of the hopelessness of escape on the part of the low-paid wage-earner from contagious influences, there seemed prima facie a strong case for the provision of at least one-roomed and two-roomed houses by an agency which would aim primarily at affording to the tenants the conditions of health, morality, and efficiency, not only in the construction of the houses, but in their continued administration and control. The Glasgow Commission recommended the erection by the municipality, up to the extent of certain powers possessed by them under special Acts, of tenements of one and two apartment houses, to be reserved exclusively for respectable people of the poorest class, preference being given to those dispossessed; such houses to be situated, if possible, near to the area of dispossession, and to be under carefully selected caretakers. The Commission was confined by the limitations of its remit, to the consideration of housing within the city boundaries, and Greater Glasgow was growing more rapidly outside these boundaries. The problems of Glasgow grew up because the city refused to look forward and lay down the lines of its growth. Unhappily, that course was still forced upon it, in that it had no control over the operations of its suburbs. Every one knew that, in the near future, Glasgow must extend its jurisdiction and responsibilities. There was too much reason to fear that, when that time came, the city would fall heir to the same problem as it had now to face—insanitary property and ill-planned districts. This was a problem of all growing cities, and, in his opinion, a most urgent one. But this was not the whole of Glasgow's answer to its housing problem. The municipal houses were to be reserved for the respectable poor. What about the non-respectable—probably the majority of those who would be dispossessed? So far as he could see, the criminal and the dissolute had no claim on the community so far as regards housing. But there were many who were neither criminal nor hopelessly dissolute, and yet could not rise simply because they were down. They had lost their character; money could not buy them a decent house because they had no factor's line or other guarantee that they were fit for the possession of it. It was this class, perhaps, that would be most heavily hit by the dispossession, and for them also it seemed that some compensatory provision should be made by the municipality. And this seemed also in the interests of the community, for if these people were not lifted up they would be driven down. Hence the recommendation of the Commission that "an experiment should be made in the erection of a building or buildings for those who, while unable to show any factor's line or other certificate, are willing to submit to necessary regulations as to cleanliness, respectable living, order, and punctual payment of rent, with the view of rehabilitating their character and in time qualifying for a better house, such houses to be of the plainest construction, with indestructible fittings and capable of being quickly and efficiently cleansed." It was avowedly an experiment. The difficulty was not to provide such houses but to get the proper people to go into them. If any social obloquy was allowed to attach to these houses the proper people would not go into them. But it was an experiment to which he thought every one would wish God-speed. At any rate, it removed the last excuse for not going forward systematically, rigorously, and continuously with the renovation, closure, demolition, and prevention of overcrowding, which were the beginnings of any solution of the housing problem.

THE INTERNATIONAL CONGRESS OF OTOLOGY.

The seventh International Congress of Otology was held at Bordeaux, August 1st to 4th, under the presidency of Dr. E. J. Moure. At the opening meeting the President delivered an address upon the history of otology in France, commencing with the work of Duverney in the seventeenth century.

An Acoumetric Formula.

A joint report upon the choice of a simple and practical acoumetric formula was presented by MM. Politzer, Delsaux, and Gradenigo, who form a permanent committee, meeting once a year, to study the points still undecided. Quix (Utrecht), Panse (Dresden), Trétrop (Anvers), and Bonnier (Paris), read papers on the same subject.

Suppuration of the Labyrinth.

A discussion on the diagnosis and treatment of suppuration of the labyrinth was opened by Drs. Brieger (Breslau), von Stein (Moscow), and Dundas Grant (London). Dr. Brieger said that operation on the labyrinth was indicated in acute otitis media when with collapse or fever there was serious disturbance of equilibrium, nystagmus, and rapidly progressive deafness, or when with labyrinthine symptoms signs of meningitis appeared. Dr. von Stein distinguished paralabyrinthitis, perilabyrinthitis, endolabyrinthitis, and pantalabyrinthitis, according as the bony capsule, the perilymphatic space, the endolymphatic space, or the whole of these structures together were affected. Dr. Dundas Grant spoke of the relations of labyrinthitis to meningitis and to cerebellar abscess. He dealt with prophylaxis, the early detection of labyrinthine trouble, and the indications for operation. Dr. Politzer (Vienna) described the pathological changes in the labyrinth produced in serious suppurations of the middle ear, and showed preparations. Dr. Panse (Dresden) showed preparations and original drawings of ten cases of labyrinthine suppuration. Dr. Escat (Toulouse) reported three cases of necrosis of the cochlea with spontaneous elimination. Dr. Moure showed by means of the cinematograph the staggering gait of a number of patients with affections of the labyrinth.

The Treatment of Otogenous Cerebral Abscess.

In a discussion on the technique of the opening and after-treatment of otogenous cerebral abscess, Dr. Knapp (New York) showed the encephaloscope, recently devised by Whiting (New York), for examining the walls of the abscess cavity. Cautious irrigation was useful if the flow of pus was abundant. If the opening gaped there was no need of a drainage tube. Hernia cerebri was caused by a secondary abscess. Secondary abscesses inside the cranium were not rare; they caused aggravation of all the symptoms, and death by encephalitis or meningitis. Dr. Schmiegelow (Copenhagen) advised that the operation should be planned so as to make it possible to explore both cerebrum and cerebellum, and should commence by a free opening of the middle ear. The anaesthetic should be given with great caution, owing to the risk of failure of respiration. Dr. Botey (Barcelona) said the operation should always be commenced by an exploration of the mastoid and tympanum, passing thence to the intracranial cavity. He advised that, as a rule, the brain should be punctured through the intact dura before incising the latter, so as to make certain of the existence of an abscess; for when the dura had been incised with a knife the brain and meninges were much more exposed to infection. He condemned irrigation of the abscess cavity, and advised drainage by means of several small tubes. Professor Gradenigo (Turin) described a special form of intracranial complication with the following association of symptoms—acute otitis media, severe pain in the corresponding side of the head, especially in the temporo-parietal region, and paralysis or paresis of the external rectus on the same side. He had himself observed six cases. The symptoms were due to a circumscribed focus of leptomeningitis. Sir William Macewen (Glasgow) held that besides treating the aural and cerebral foci it was necessary to attend to the morbid tract leading from the one to the other; neglect of this precaution was a frequent cause of recurrences. For the anaesthetic, chloroform was preferable to ether, which was apt to cause oedema of the brain. If no adhesions were found in the subarachnoid space when the dura was incised, he waited twenty-four hours before exploring the brain. After an incision as free as possible he irrigated with the greatest gentleness. No drain was used, or at the most sometimes a strand of gauze.

Communications.

Amongst numerous other communications presented were the following:—Dr. Broeckaert (Ghent), a syringe for the injection of paraffin while cold; Dr. Dench (New York), the radical operation in chronic middle-ear suppuration; Dr. Delie (Ypres), auditory troubles and the abuse of tobacco; Dr. G. Laurens (Paris), surgery of the base of the skull and of the vertebral column in relation with suppurative otitis; Drs. Lermoyez and Bellin (Paris), two cases of recovery from acute general meningitis of otitic origin treated by mastoid operation and lumbar puncture.

Museum.

A museum of pathological specimens, models, and instruments was arranged in one of the rooms at the School of Medicine, where the Congress was held.

ENTERTAINMENTS.

During the Congress the President gave a delightful garden party and banquet to the members at his charming château at Carbon Blanc. They also received most hospitable entertainment from their French *confrères*, and, indeed, on all sides.

NEXT CONGRESS.

The next Otological Congress will be held at Buda-Pesth in 1908.

MEDICAL NEWS.

A LEAGUE against dust has been formed in Paris. Its object is to impress on the public mind the dangers caused by the diffusion of microbes in dust.

AN ALPINE RESEARCH STATION.—Professor Mosso, of Turin, and Signor Pagliani, the President of the Italian Alpine Club, have selected a site on Monte Rosa at a height of 3,000 metres for the erection of an Alpine research station. It is hoped that it will be in working order in 1906.

MEDICAL MAGISTRATE.—We learn from the *Cornish Times* that Dr. William Hammond, Honorary Associate Grand Priory of St. John of Jerusalem, has been placed on the Commission of the Peace for the Borough of Liskeard.

INTERNATIONAL TEMPERANCE CONGRESS.—The federation of the Catholic Temperance Societies of Belgium has decided to organize an international Congress on Alcoholism to be held in connexion with the University Exposition which is to take place at Liége next year.

MINERAL WELLS IN ITALY.—The Italian Minister of the Interior has sent out a circular inviting medical practitioners throughout the country to send detailed information as to the hygienic condition and therapeutic importance of mineral wells and bathing establishments in all parts of Italy.

THE SUPPRESSION OF QUACKERY.—A committee has been appointed by the Atlanta Society of Medicine for the purpose of collecting evidence against alleged illegal practitioners in Atlanta with the object of presenting their names to the grand jury.

THE TREATMENT OF HYDROPHOBIA IN ITALY.—The Italian General Board of Health has under consideration the question of the treatment of hydrophobia, with special reference to the disadvantages caused by the delay which often occurs in sending persons bitten by suspected animals to institutes where they can undergo antirabic inoculations. A circular is to be sent to all prefects, ordering them to urge upon local authorities the necessity of sending cases to the institutes as soon as possible.

THE ROCKEFELLER LABORATORY, NEW YORK.—The laboratory of the Rockefeller Institute of Medical Research, which is to be erected in New York, is to be a five-story building with a frontage of 136 feet and a pilastered façade of limestone and ornamental brick. The upper stories are to be furnished as general and special laboratories and research rooms, and the roof will have houses for the animals. The building will also have an auditorium hall and a library and study on the first floor. An annexe will contain a two-story building for the animals and a power-house.

ROYAL ORTHOPAEDIC HOSPITAL, BIRMINGHAM.—Mr. Augustus Clay has resigned the post of Honorary Surgeon to the Royal Orthopaedic and Spinal Hospital, Birmingham. The Committee passed the following resolution: "That the resignation of Mr. Clay be accepted with regret, and this Committee desire to place on record their appreciation of the great services rendered by Mr. Clay to the hospital during the many years he has been acting as Honorary Surgeon." At a subsequent meeting Mr. Clay was elected Honorary Consulting Surgeon to the hospital.

DENTISTRY FOR THE POOR.—A dental department, on an extensive scale, specially for the poor, is about to be opened at the new Leeds Dispensary. At the annual meeting of the institution the Chairman, Mr. John Ward, stated that communications with the North of England Dental Association on the subject had been held, and the Committee hoped shortly to announce the opening of the department. The idea is to provide the means not only of extracting teeth, but of executing other dental operations on the bare payment for the materials used.

DR. NORMAN MOORE has written a complete history of St. Bartholomew's Hospital, from its earliest foundation to the present day. The book will contain many illustrations, including pictures of the building and monuments, and reproduction of ancient documents. The sketches have been executed by Mr. Howard Penton. The whole of the proceeds of the sale of the book will be devoted to the Rebuilding Fund of the hospital. The work will be issued early in the autumn, in two styles of binding, one handsomely bound at £2 2s., the other bound in cloth at £1 1s. A list of subscribers to the first edition will be published with the work. Intending subscribers are requested to send their names to Mr. Ernest Flower, Hon. Secretary of the Appeal Committee, St. Bartholomew's Hospital, Smithfield, E.C.

DOCTORS AND INQUEST FEES.—At an inquest held at Wood Green on August 17th, Dr. Tomlin, one of the honorary members of the medical staff of the Wood Green Hospital, suggested that the jury should add a rider to their verdict to the following effect: "That the present system of not paying the usual fees in inquest cases of persons attended by members of the Hospital staff is unjust." Dr. Tomlin pointed out that medical men were debarred from receiving fees for patients who died suddenly at the hospital. He added that they were perfectly willing to give their services in the ordinary way for the sake of charity, but it was unfair that just because a patient died in the hospital the doctor should be deprived of the ordinary *post-mortem* fee and the professional fee for attending the inquest. The coroner (Mr. Forbes) remarked that he was in entire sympathy with the medical men, and if the rider was agreed on he should be pleased to send it to the County Council. The jury added the rider.

INCUBATED BABIES.—We learn from the *Boston Medical and Surgical Journal* that a remarkable reunion recently took place at Coney Island, where no fewer than forty healthy infants and young children who had been brought up in incubators were present. Notable among them were the Cohen triplets, who were born in a New York tenement house in July, 1901, weighing together at the time of birth only as much as one baby of ordinary size, and who, during the rest of the summer, attracted much attention at the Pan-American Exposition in Buffalo. Dr. Edmund Wallace Lee, of New York, who with Dr. M. A. Couney, of Berlin, the inventor of the incubators employed, installed the system first at the Omaha Exposition in 1897, stated that, whereas about 97 per cent. of the class of infants now reared in incubators formerly died, there had been lost only 6 out of 56 incubated babies at the Pan-American Exposition, 4 out of 32 at Coney Island in the summer of 1903, and 3 out of 38 during the present season. In this year's incubator colony at Coney Island there are three sets of twins and one of triplets.

TUBERCULOSIS AMONG POST OFFICE EMPLOYÉS.—A conference is to be held on Saturday, August 27th, at the General Post Office North, for the purpose of electing a provisional committee in connexion with a movement to establish sanatorium accommodation for Post Office employés. Mr. C. H. Garland, who is chairman of the National Committee for the Establishment of Sanatoriums for Workers Suffering from Tuberculosis, at the end of last year wrote to the Postmaster-General for the purpose of soliciting his aid in an endeavour to place at the disposal of postal employés sufficient sanatorium accommodation to provide for the treatment of all suitable cases of tuberculosis which arose among their ranks. The proposals set out were—(1) That the Postmaster-General would allow the Receiver and Accountant-General to make certain very small deductions from salaries for the purpose of providing the necessary funds; and (2) that he should facilitate leave of absence to those persons certified as requiring treatment and likely to benefit from residence in a sanatorium. Lord Stanley, in reply, said that, while he sympathized with the object in view, he foresaw that compliance with the first proposal might involve much expense and trouble to the department. As to the second proposal, he would be inclined to do what he could for such a laudable object. Further correspondence passed between the Postmaster-General and Mr. Garland, and in February last a deputation waited upon the Secretary to the Post Office for the purpose of discussing details. The reply received was to the effect that the Postmaster-General was prepared to agree to subscriptions for the sanatorium scheme being collected from salary, the deductions to be made in round sums, and not more than twice a year, provided it was made quite clear that the deduction was purely a voluntary one. As regards leave, the ordinary rules as to sick leave appeared to be sufficient for the purpose.

BRITISH MEDICAL ASSOCIATION.

Subscriptions to the British Medical Association for the year 1904 are now due and should be forwarded by postal order or cheque to the amount of 25s. to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, AUGUST 27TH, 1904.

THE MEDICAL ASPECTS OF THE PARLIAMENTARY SESSION.

ELSEWHERE we print (p. 461) an analysis of the work done and the questions of medical interest raised in Parliament during the past session. It will repay perusal by suggesting thoughts as to the difficulty of pressing forward legislation of a special character, and by indicating the methods by which such subjects can be kept alive for future consideration. The door of Parliament requires much knocking at before it opens, and the way to prepare for the entrance of any measure is repeatedly to call attention to a subject by questions, and by the other forms which the regulations of Parliament allow. It is in this way that the new method of printing answers to questions not requiring a verbal reply may be made increasingly useful by members of Parliament interested in questions affecting public health and other cognate subjects. We notice that the antivivisection party seem alive to this consideration, for they have largely used this mode of keeping their agitation alive in Parliament, though, we are glad to observe, without much success.

The results of the Session, as regards Legislation, must be admitted to be very disappointing. It has, indeed, been the most barren Session of recent times. It began without large promise, and has ended with small results. It is humiliating to have to record, that of the twelve measures mentioned in the King's Speech at the opening of the Session, only two, the Licensing Bill and the Shop Hours Bill, have been passed at its close. This is more significant than it seems at first sight, for the Bills mentioned in the Speech from the Throne, are always proposals of importance which represent the deliberate choice of the Government. It is, indeed, almost a single Bill session, for the Licensing Bill is the only one of first-rate importance, which has been placed on the Statute book. What its value may be time will show, but we think we only express a general feeling when we say that we regret that so great an opportunity should have come and gone, and yet so little have been achieved in the direction of lessening the facilities for drinking. As social reformers we are forced by our medical experience to denounce the excessive use of alcohol as one of the most potent sources of disease and deterioration, moral and physical, and on this account we are sorry that a stronger measure in favour of temperance reform has not passed into law. We observe that in the discussions on this Bill, the medical aspects of the drink question were too much ignored. Dr. Hutchinson made a manly protest when the closure was moved, and pointed out that while other classes had had their say the doctors had not been heard.

The Shop Hours Act is a mild but useful enactment which may mitigate, in districts where the local authorities are energetic, hardships which have long been discreditable and demoralizing. We wish it all success and congratulate Lord Avebury (Sir John Lubbock) on the result of many years of self-denying work.

Vaccination, although the cause of three or four Bills, has not produced a fresh Act this session. The enactment of 1898 has again been renewed for one year in the Expiring Laws Continuance Act. The Government has shown little courage in this matter. It passed its Act in 1898 on the understanding that a bill for revaccination would be introduced, but it has lacked the courage to fulfil its pledge. Even when a bill is introduced and passed through the House of Lords, as was done this session, the leader in that House admits its desirability and its efficacy, but does nothing to advance legislation.

There is another matter for regret. The Bill promised in the King's Speech to amend the Public Health Acts was never even introduced. It was, we believe, prepared with the object of passing some amendmends required to bring the several Acts into harmony and up to date, with a view to the consolidation of the law. There could be no more laudable object, and the strange neglect of so useful a measure is all the more deplorable. Among the other bills passed by the Government and the dozen passed by private members there is nothing of much interest. It is the omissions of the session rather than its accomplished work that call for comment.

One of the most striking of these omissions is the fact that there has been no debate on the recent reforms in the Army Medical Department. It was hoped that some opportunity would have been taken in Committee of Supply to tell the House and the country how far the lessons of the late war have been profitably studied. The session has passed and we know little as to the future form of the army as a whole, and we are left anxiously wondering how far the changes made by Mr. Brodrick in the Medical Service will survive the critical eye of Mr. Arnold-Forster. Uncertainty in matters of reform is one of the worst faults, for it damps ardour and destroys efficiency. We cannot afford to lose these qualities in the army and least of all in the Medical Department. On the first day of army supply early in March Dr. Farquharson touched very properly on army medical reform, but the opportunity for full debate never came, and it is only by many useful questions that any information has been elicited. The answers have been fully given in our Parliamentary Notes.

The attempts to amend the Medical Acts have been left to General Laurie, who has again failed to pass his Bill to secure reciprocity of practice between Great Britain and Canada. Last year the General Medical Council found the opposition of the Friendly Societies too strong for its Bill. Parliament this year has given a remarkable proof of the political strength of these societies by passing the Outdoor Relief Friendly Societies Act which gives special privileges to members of Friendly Societies in the distribution of outdoor relief. The Bill was for years opposed by high authorities on Poor-law questions, but the Government has this year thrown over the authorities, and surrendered to the Friendly Societies.

It is by a study of the matters raised by questions as reported in our Parliamentary Notes that a clear idea of the activities of the session can be gained. Irish and Scotch members have used questions with great industry and much judgment to keep the attention of the Government

in each country fixed on such questions as the position of parochial and dispensary medical officers, and the importance of local sanitation. English members are not so pertinacious in this kind of skirmishing, but many questions of much value have been asked. Sir Walter Foster, for example, addressed a series of questions to the Local Government Board on medical out-relief and its relation to infant mortality. The tendency of these questions has been to direct attention to the importance of making it easy for poor people to get suitable food, such as milk, for their infants, and also of making medical relief more accessible. These inquiries have resulted in the grant of a return which will show the infantile mortality in the London unions and the principal large towns as compared with the general death-rate and the expenditure on Poor-law relief. It may be hoped that the return will bring about salutary reforms to check the excessive infantile mortality which now exists.

At the beginning of the session there was much talk over two Bills for the Registration of Nurses. The Bills were, at the request of their promoters, referred to a Select Committee in order that a thorough inquiry might be made as to the feasibility and advantage of registration. The inquiry is not concluded, but so far as it has gone the general impression is unfavourable to registration. Evidence to be submitted next session before the final report is made may, however, alter the position. In the interest of the public and of the nurses themselves it is to be hoped the labours of the Select Committee will end in the production of a workable scheme.

The scandals connected with the present imperfect system of death certification have on two or three occasions this year come before the House of Commons, but no opportunity has occurred of raising the whole question. This is to be regretted, for there is an urgent need for some amendment of the law. For ten years the late Sir Henry Thompson and others have urged the Government to attend to the report of the Select Committee on Death Certification and by carrying out its recommendations to remove the defects in the law which facilitate crime, impair the value of vital statistics, and imperil the perfect administration of the laws for the protection of public health. We have made this protest before, and once again we plead for early consideration of a reform in the law which has been scandalously neglected.

"DE-GERMANIZING" AND DEGENERATION.

THE question of the degeneration of the national physique and its causes came under discussion alike in the State Medicine Section of the British Medical Association at Oxford and at the annual meeting of the British Association at Cambridge, but the treatmen accorded to it on these two occasions differed very materially.

At Oxford, while the question whether degeneration does or does not actually exist was not directly discussed, it was shown that conditions prevailed which, if allowed to persist, would inevitably lead thereto, and certain measures by which the general standard of health might be raised among all, and especially the poorer, classes received practical and skilled consideration. At Cambridge the question was dealt with in the Anthropological Section; two or three papers were read in which more or less extensive degeneration was admitted and its causes defined, but the principal feature was a speech in which the Prime Minister summed up the situation as it appeared to him. In the rôle of philosopher Mr. Balfour is perhaps at his best; always lucid in phraseology, he is often illuminating in his collation and illustration of facts, while his deductions are not seldom at once unanswerable and convincing. It is fortunate, however, that on this occasion only the former epithet can be truthfully applied to what he had to say, for on the subject of degeneration he proved himself a pessimist of the most depressing type. This at any rate was the impression produced on many of those who heard him, and a perusal of the numerous verbatim reports of his speech which have been published serves to confirm it.

Summed up briefly, his views appear to be as follows: The causes of degeneration are of two kinds, the temporary and obvious, and the permanent and insidious. The former are removable, but what is the use of removing them? For the latter are not less progressive than they are inevitable: so why struggle? In short, when, from a sanitary point of view, we have done all those things which we ought to do and have left undone those things which we ought not to do, the truth will still not be in us, for, to use Mr. Balfour's own words, "we shall not have altered the permanent causes upon which depend, not merely the well-being of this or the next generation, but the actual quality of the race looked at from a natural history point of view. I fear that no legislative machinery which we can command is likely permanently to modify these causes."

Mr. Balfour, however, did not content himself with this confession of faith, but stated the foundations of his belief, and fortunately the latter appear the more delusive the more closely they are examined. They are as follows: The effect of the constant increase in the proportion of the urban to the rural population must be "that of de-Germanizing the people, or of altering the balance of our population against the tall light-haired element descended from northern emigrations"; secondly, the greater the facilities offered to the working classes to rise in life, the worse for the prospective general intelligence of the country, because the middle and upper classes marry later and, therefore propagate less abundantly; thirdly, there is progressive deterioration because the more intelligent and enterprising members of the rural population either move to the towns where they are gradually killed off or emigrate, and are thus lost to the country immediately.

Mr. Balfour's idea of "de-Germanization" was based upon a paper by a medical man which formed part of the earlier proceedings. In this an attempt was made to show the specific morbid tendencies of different colour types, and to demonstrate from hospital statistics that fair adults form an undue proportion of hospital patients, and that fair children die more readily than dark ones. We are not prepared to consider these views in detail, but the thought at once suggests itself that, so far as we know, no such colour census exists as would make a statistical estimate of proportional mortality-rates reasonably sound. Mr. Balfour, however, accepted the conclusions in a whole-hearted fashion, and further deduced the corollary that urban life must be killing out the fair, tall, primitive northern element in the nation. The conclusion seems overstrained. It may be accepted as a fact that the colour type of the townsman is, and has long been, brown and that of the countryman fair; but change of colour does not necessarily mean change of ethnological constitution. In any large family there will be found fair and dark children begotten by the same parents. Are the fair Germans and

the dark the offspring of Southern Europe? Thousands of children, whether born in town or country, are fair throughout their teens and become darker with the onset of adult life, but it can scarcely be argued that they are ethnologically Germans when young and something less desirable when older. Even, however, if the nation really is becoming "de-Germanized," what of that? There is little reason to suppose that the primitive Northern type of mankind represents either in physical or mental constitution the true salt of the earth. We are a very mixed race, and it would be difficult to prove that the Celtic, Early British, and imported Southern elements have failed to contribute their share to the success of the nation, while as regards the Anglo-Saxon race in general, though it is now in the ascendant, it will have to remain there for a great many years to come before it has added as much to the general glory of mankind as the races which it has for the time being displaced.

We therefore regard the first of Mr. Balfour's causes of progressive deterioration with a more tranquil mind than he does, nor are we seriously alarmed by the next of his causes of national deterioration, the comparitive infecundity of the middle and upper classes. Mr. Balfour takes it for granted that the offspring of these classes necessarily make the most useful citizens and contribute most largely to the physical and mental wellbeing of the nation. Neither of these propositions is unassailable. The educated classes have always been relatively infecund. In past times the monasteries and convents were full of their celibate offspring; nevertheless the nation prospered. Nor is it certain that the contribution of these classes to-day to the adult population is really smaller than it used to be, for though they doubtless marry later than the masses do, the mortality among their children is less, while the total birth-rate among all classes has fallen.

As regards the relative utility of the offspring of the classes and of the masses it is to be remembered that if the masses have their dregs, represented by the criminal population and low class aliens, the classes have their scum, freely represented in England among the prison population and abroad by remittance men and Kipling's "lost legion." Moreover, clever parents do not necessarily—or, indeed, usually—have clever children, and even amongst admittedly hereditary "clever families" the tendency, mental and physical, is downwards, and not upwards. It is from the masses that the classes have always risen, and it is upon the condition of the former that the physical, mental, and commercial well-being of the nation depends, and always has depended. Certain causes have of late years militated against the physical well-being of this class, but these causes are removable, and if they are removed, conditions affecting the classes above it may be safely disregarded. The evil effect of emigration is perhaps less open to dispute, but this again depends to a considerable extent upon preventable causes.

Finally it is to be remembered that the physical constitution of a nation and its power to become and to remain great depend not upon its ethnological origin but upon the physical and climatic conditions under which its individuals live and the moral and mental aspirations by which they are led. If, therefore, Mr. Balfour will help us to obtain all those sanitary reforms towards which medical men and others are so earnestly striving, and will also aid them to teach the people to understand and practise the rules of healthy life, we shall be quite content to leave out of consideration all those other causes of national deterioration upon which he dilated, and which he considers to be of much greater moment. In short, since these causes, if they exist at all, are, according to Mr. Balfour, irremediable, why worry about them? Let us deal instead with those which he admits can be removed—drink, overcrowding, the ignorance of mothers, the educational hustling of the young and defects in the milk and other food supplies, the subjects, in short, which are dealt with in these columns year in and year out, and which were discussed in detail at Oxford.

SWIMMING.

If swimming ever becomes as popular an amusement and universal an accomplishment as the Life-Saving Society would desire it to be, that result will probably be in no small degree due to the introduction of mixed bathing, which is now established in favour at so many places, that its existence in any causes neither comment nor surprise. If the custom spreads, as it well may to inland towns, the progress of swimming will be still more rapid; many more fathers will teach many more daughters, and the accomplishments of daughters will lead to the rivalry of sons, for in spite of "de-Germanization," the boys are not yet content to sit quiet and see themselves beaten by the girls at any amusement demanding muscle. Before this comes about, however, a demand for better baths and more baths will have to be created and met—baths of a reasonable temperature and of a character to attract those who in no way require ablution, but merely a perfectly pure medium in which they can disport themselves. We should like, however, to see the use of ear plugs spread, for many cases of ear trouble are brought into activity by the inrush of water during diving or swimming. Nor do we favour the teaching of swimming to very young children. They are easily frightened and quickly exhausted, and just as swimming is easier for a stout, bulky man than for one of spare frame, so is the art of supporting themselves in the water more difficult for the thin lithe children who form the bulk of the child population and who from their activity and courage in ordinary games are most likely to be selected for tuition. Children should be taught the motions of swimming upon dry land, and not be put into the water until those motions are automatic and instinctive. It is not, however, the mere popularity of swimming that will lessen the death-rate from drowning. Hundreds of people who can swim reasonably well in bathing costume have never tried to swim fully clothed. When forced to do so unexpectedly their sense of impotence is so great that many lose their heads and drown almost as quickly as those who have never swum a stroke. It should also never be forgotten that swimming, though a healthy and desirable amusement, is to be classed as a violent exercise, and one in which, apart from any question of drowning, no one out of conditions can indulge with impunity for any length of time. A bathe of a very few minutes is quite sufficient for most people for the first few days, and those who possess what is commonly known as "a bad circulation" probably receive from bathing no material benefit whatever. There remains, too, that mysterious condition, "cramp," to the onset of which the sudden and seemingly inexplicable drowning of strong swimmers is commonly ascribed. Prolonged use of muscles often sets up cramp in one or other of the extremities; but the accustomed swimmer is usually able to get along fairly well with one limb useless, and when such a one suddenly drowns the cause is probably complex. In some the pain of a cramp acting reflexly on a somewhat fatigued heart may bring about sudden syncope; in others the "cramp" may be a spasm of the respiratory muscles, or a glottic spasm caused by an unexpected dash of water into the throat. In the long-distance swimming now in fashion we take little interest. It is comprehensible, and in some degree admirable, that men should be found to dare and do what few men have done, but the conditions

under which the swims take place are highly artificial, and at the best they are simply tests of the endurance of certain individuals. The object and surroundings lend them a certain interest, but they differ from similar tests on land only in that the individual is subjected throughout to the exhausting influence of cold. Of this he may be unconscious: nevertheless the difference between the temperature of the human body and that of the water is a constant drain upon physical energy, and leads to exhaustion setting in much more quickly than would be the case with corresponding exertion on land. Moreover, most sea swimmers swallow more or less water: this is a danger in itself, for it frequently causes sickness, and this in its turn may bring on faintness. The irritation in the eyes and face set up by salt water causes a further loss of strength. Most long distance swimmers who do their work under conditions which permit of their taking nourishment may be presumed to have learnt for themselves what suits them best, but *prima facie* we should have doubted whether the meat extracts which seem popular are really the most suitable form of nourishment. In some people, when drunk in any quantity or strength, they set up intestinal irritation and diarrhoea, and to this cause it appears possible that the colic may have been due which is credited with having contributed to the failure of one of the swimmers who have lately tried to cross the Channel.

THE FOOD AND NUTRITION OF MAN.

A very interesting paper on this subject was read at the British Association to a joint meeting of the Sections of Physiology and Economics, by Professor Atwater, of Middletown, Connecticut, Chief of Nutrition Investigators of the United States Department of Agriculture, who gave a summary of Investigations of the Nutrition of Man in the United States. He said the inquiry had three aspects—one very practical, another more purely scientific, and a third educational. On the practical side studies were made of the composition, the digestibility, and the nutritive values of food materials commonly used in the United States. This was done by chemical analyses and by actual experiments on men. Investigations were also made of the kinds, amounts, and costs of the food consumed by people of different classes and occupations in different parts of the country. The results threw valuable light upon the physiological, hygienic, and economic phases of the subject. At the same time experiments were made on various collateral topics, and thus information of the greatest usefulness was being acquired. The more abstract scientific researches had to do with the transformations of matter and energy in the body, and consequently with the fundamental laws of nutrition. The experiments were made with men, by use of the respiration calorimeter, an apparatus which served to measure the changes that took place in the body with different diets and under different conditions, as for instance, with physical or mental work or with rest. One very interesting result was the demonstration that the law of the conservation of energy, obtained in the living body. These experiments showed very clearly how the demands of the body for energy, for warmth and work decided the need for food. Taken in connexion with the practical inquiries, they revealed much that was previously unknown regarding the uses of food and the adaptation of diet to health, purse, and welfare. After some illustrations of the results of those inquiries and their practical application, Professor Atwater said that the Federal and State Governments which supported the inquiries and the institutions and individuals who carried them on laid great stress upon the distribution of the results among the people at large. Not only were the details printed in scientific memoirs, but the practical outcome was condensed in pamphlets and leaflets which the Government printed literally by the million and distributed gratuitously. Schools, from the lower grades to the Universities, were introducing the subject into their curriculums, and leading educators were coming to recognize that when such themes were treated in the true scientific spirit, as revelations of natural law, and their significance and their connexion with life and thought explained, they were valuable both for mental discipline and for daily use. It was not a lowering, but a broadening of the ideal of education which thus made these subjects in the best sense humanistic. Professor Atwater showed that such inquiries were already being actively pursued in the different countries of the world, in Europe, in Japan, and in the United States, and he suggested that the time had come for the development of the science of the comparative nutrition of mankind.

PHYSICAL EXERCISES IN PUBLIC ELEMENTARY SCHOOLS.

The Board of Education has issued a circular calling the attention of local educational authorities and managers of public elementary schools to the Report of the Inter-Departmental Committee on the Model Course of Physical Exercises lately issued, and also to the Syllabus of Physical Exercises for use in Public Elementary Schools, which has been prepared in accordance with the recommendations of the committee. The circular states that the Board of Education is in communication with various training college authorities with the view of securing that all students who pass out of the colleges shall in future, as far as possible, be qualified to give instruction in the course recommended by the committee. It is pointed out that in the meantime it is extremely important that the education authorities should take steps to place at the disposal of those teachers now teaching in the elementary schools who are prepared to take advantage of them some opportunities for training in the principles and methods of the new course. For this purpose it is suggested that the authorities may conveniently arrange for the provision of evening classes and Saturday morning or afternoon classes for teachers on the staff of the public elementary schools in their respective areas. The Board of Education consider that the syllabus should be adopted in all public elementary schools as soon as is reasonably possible. It is recommended that where possible a system of taking physical measurements of the children at regular intervals should be adopted.

SCHOOL FURNITURE.

Among the many important points dealt with by Dr. Kerr in his annual report for the year ending March, 1904, not the least interesting is that of school furniture. Desks play a most prominent part in the school life of every child: the proper angle of a desk influences the sight of the scholar; his position affects his spine, his lungs, and indirectly his heart and digestion. Healthy children without number are injured by sitting in a bad position day after day, while it is even more injurious to the delicate. Dual desks must be strongly condemned. Dr. Kerr mentions the following as serious objections to them: (1) It necessitates pairs of children sitting together, frequently in contact; (2) teachers train them to special contorted attitudes to prevent copying: (3) for many lessons teachers in the older wide class rooms bring the children together three in a desk. Dr. Kerr, taking into consideration that single desks take up so much room that the code does not allow them for elementary schools, considers that the "Sheffield system" is least objectionable. He says:

> The simplest arrangement, combining all the advantages of the dual desks, except the reading slope, and free from the objections urged above, is to have a continuous desk of half a dozen places, with single pedestal chairs. This is known as the "Sheffield system." Many schools in the North of England have been fitted on this system during the past ten years.
>
> The desk is supported on two plain pedestals screwed to the floor.
>
> Each seat has a back and stands on a pedestal also screwed to the floor.
>
> The advantages of this system are:—
>
> (*a*) That the seats are isolated.
>
> (*b*) Each child is accessible.
>
> (*c*) Each child can stand by its seat in its place, drill can be taken for a minute or two with the children in their places.
>
> (*d*) Rooms cannot be overcrowded.
>
> (*e*) The tilting of each desk on end for cleaning of the floor is not required.
>
> The space taken up by the desks and gangways in a class-room is the same as in the case of dual desks, about 1,000 square inches per seat. Cleaning is very much simplified with these seats and desks.

Footboards should be avoided, as inclining children whose desks are not the exact size for them, to sit obliquely. The stepping of rooms is well worth the extra expense, as it is injurious for children to have to strain the levator muscle looking up at the teacher, who, when the desks are on the flat, has to sit on a raised platform in order to overlook the class. In the infant classes, however, Dr. Kerr thinks a level classroom is best, and that owing to the nature of the children's employment there should be no necessity for a raised platform; they might be employed in occupations on flat-topped desks or tables. He also advises a composition wall board round the room, so that by using it for part of the class the continuity of the lesson may be broken and the strain upon the children diminished, while encouraging spontaneity. All these points, seemingly trifling, show a deep and intelligent study of the question by Dr. Kerr, and it is to be hoped that the new education authorities may mark, learn, and inwardly digest his most interesting report.

HOSPITAL SHIPS AND TRAINS.

From an interesting account lately published in the *Globe* on the Japanese Naval Medical Service we learn that our friends and allies are in this, as in other branches of their services, thoroughly up-to-date in organization and appliances. Their naval surgeons, although otherwise qualified, have to undergo, before admission as officers, a year's training in all the practical branches of military and naval medicine and surgery in a Naval Medical Academy at Tokio. The Japanese have four hospital steamships of about 2,300 tons, fitted in the minutest detail with all structural and other appliances for the treatment and comfort of sick and wounded officers and men; helpless patients are lifted on board or disembarked by a steam crane; everywhere steam and electricity are called into use for heating and lighting and generating power. The sick rooms are painted with white washable paint; the Roentgen-ray room painted black, and made light-proof; provision is even made for the dead, and the air-tight mortuary can be refrigerated by the ice-making machine. The wonderful completeness of the ships is largely due to the untiring efforts of the Medical Director-General, Baron Saneyoshi. The Russian medical preparations are naturally made chiefly on land, and we learn from a correspondent of the *Times* that the 26th military hospital train, fitted out by the Russian Ministry of War, was lately dispatched from Kieff for Irkutsk. These hospital trains are most elaborately fitted with the best and most recent medical and surgical appliances and contrivances, each affording accommodation for between 200 and 300 sick and wounded, and having a staff of three or more duly qualified doctors, six to ten nursing sisters of the Red Cross Society, and from thirty to forty hospital assistants. The whole of the vast line of the Manchurian and Siberian Railway has been systematically split up into sections with numbered hospital trains, and by such means the great number of sick and wounded anticipated are conveyed to Kazan, and from thence dispersed over Russia by rail and water carriage. It is to be hoped, for the sake of the sufferers who are conveyed over such enormous distances, that these hospital trains are proving in practice as perfect as they appear to be on paper, notwithstanding the cruel and scandalous misappropriation of Red Cross funds, in Russia itself, of which we have lately heard.

MEDICAL LEGISLATION IN HOLLAND.

The Netherlands Government has presented a bill to the Second Chamber of the States-General, amending the Medical Act of June 1st, 1865, by allowing medical men to state the cause of death to managers of insurance companies who issued a life policy on behalf of the deceased persons. The Government state that in three cases payment of the insured amount was refused, and the refusal was upheld by arbitrators on the ground that medical practitioners in accordance with their professional duty declined to state the cause of death on their oath. The Bill is intended to protect insurance companies against fraud. Nobody will know beforehand what practitioner will be asked to state the cause of his death. Another Government Bill is intended to amend the Qualifications Act for doctors, dentists, chemists and chemists' assistants, and midwives. The Bill obliges future chemists before they can pass their final examination to show that they have really done practical work as assistants to a dispensing chemist. It also alters the obligation of medical men in connexion with the Bill above referred to and obliges them to state the cause of death, not only where it is legally compulsory, but also in cases where the law merely authorizes medical men to do so. Dr. P. Muntendam complains that these Bills were presented without first consulting the medical authorities. He points out that the Government mixes up the principle of the oath of office and professional secrecy, and suggests that the Council of the Netherlands Medical Society should oppose the passage of the Bills. In a recent number of the *Weekblad van het Nederlandschtydschrift voor Geneeskunde* there appears a report of a general meeting of the Netherlands Society for Promoting Medical Science held on July 4th and 5th. A Committee to inquire into the desirability of an Act making it lawful to place inebriates in asylums against their will is likely to be dissolved, as a Royal Commission was appointed by the Government for the same purpose. A report was presented by a Committee appointed to inquire into the conditions of the life of sailors on board ship. The Dutch law is rather incomplete in this matter, Clause 20 of the Act of May 7th, 1858, merely stating that one-third of the sailors on board a ship are entitled to lodge a complaint about accommodation, food, etc. The report gives a mass of details showing that the hygienic conditions for sailors are deplorable, and ends with a suggestion that the law should be amended. The meeting adopted the report but cancelled the conclusion, leaving it to the Government how to amend the state of things—by Act of Parliament, by Order in Council, or in any other way it may consider practicable and efficient. Another report dealt with a scheme for mutual insurance with compulsory participation of the 2,000 members of the Society. Only half the members replied to the invitation of the Committee to give their opinion; of these 450 were in favour of the proposal and some 650 against it. After a long discussion on the question whether the principle of compulsion should first be adopted, or only after the obligations should have been stated and found satisfactory, the Society decided to discharge the present Committee and to appoint a new one, to inquire into the solvency of an already existing mutual insurance company for doctors, and into the possibility of reconstructing that company to such an extent as to make it possible for the Society to take it over.

THE MEDICAL PROFESSION IN RUSSIA.

According to statistics published in a recent issue of the *St. Petersburger medizinische Wochenschrift* the total number of medical practitioners in Russia is 21,827, of whom 21,090 are men and 738 women. Of the total number, 19,168 practise their profession in European Russia. In St. Petersburg there are 2,272; in Moscow, 1,528; in Warsaw, 1,034; in Kieff, 689; in Odessa, 615. In 1903 the number of members of the medical profession holding public appointments were as follows: Professors, *privatdocenten* and assistants, 731; medical officers in the army and navy, 3,683; district medical officers, 2,790; hospital physicians, surgeons, and residents, 1,495; municipal medical officers, 565; medical officers to factories, etc., 577; and to railways, 541.

MALARIA IN FORMOSA.

N. Mine[1] describes the efforts made by the Japanese to free their army in Formosa from malaria. The conditions in Formosa are favourable to the spread of the disease. The temperature varies between 55° F. and 82° F. The island is well wooded: the great rivers often overflow their banks; swamps, ponds, and ditches abound, and the rice fields are constantly covered with water. Malaria is

[1] *Archiv fur Schiffs-und Tropen-Hygiene*, Bd. viii, Heft 1.

endemic in the island, and the natives contract it almost without exception. Three varieties of mosquitos are found in the island to carry the parasite, the *Anopheles aconitus Donitz*, the *Anopheles vagus Donitz*, and the *Anopheles plumiger Donitz*. There are other varieties also which have not been classified. The plan adopted for the protection of the Japanese soldiers was that of Dr. M. Koike. Gauze nets were fastened over all the windows of their living places, and the bedrooms were fumigated. No one was allowed to be out between sunset and sunrise unless he wore a gauze veil and gloves. During the daytime no protection was attempted. The results of these measures proved most striking. Before they were introduced during the years 1897-1900, the death-rate from malaria varied between 17 per cent. and 20 per cent. When, in 1901, the plan was adopted for part only of the garrison, the death-rate fell to 11.19 per cent. and in 1902 to 7.32 per cent., while in the first half of 1903 it was 0.7 per cent. only.

THE UNIVERSITY OF WASHINGTON.

The original charter of the Washington University was drawn on February 22nd, 1898, the anniversary of the birthday of George Washington, and the University has since been incorporated under Act of Congess for the District of Columbia, and granted a charter as an educational institution to be situated in the City of Washington, and dedicated to the memory of George Washington, the first President of the United States. The first Board of Trustees was composed of fifty-two members, one from each State and territory. Plans are now being matured to erect a new university building with every modern convenience, an adequate material equipment, and to maintain its offices, lecture halls, library and recitation rooms, for the accommodation of its student body, alumni, and friends. The project of a national university was a favourite one with Washington during all his later years. Broached in his early communications to Congress, it soon found important and frequent place in his letters and addresses. The authorities of the Washington University of Washington, D.C., have recently taken another step to carry out and perpetuate George Washington's idea of a great university in the capital of the United States. In order to further facilitate these plans and aid in the further development of General Washington's ideas, the two organizations known as the George Washington University and the Washington University have been affiliated.

THE TOXIC PROPERTIES OF SNAKE VENOMS.

Captain George Lamb, M.D., I.M.S., has recently published[1] the details of his investigations into the specific properties of the venom obtained from the snake known as the bandee krait or *Bungarus Fasciatus*. He finds that cases of intoxication with this venom may be divided into three classes: (1) cases in which rapid death due to intravascular thrombosis follows the intravenous injection of large quantities of venom; (2) cases, resembling cobra venom intoxication, which present acute nervous symptoms, and which terminate fatally in two or three days; (3) cases running a more chronic course, terminating fatally between the sixth and the twelfth day, and showing on histological examination a well-marked primary degeneration of the cells of the central nervous system. The blood coagulability is increased when large doses are administered intravenously, but is diminished in the more chronic cases. The action on the red-blood corpuscles is only slightly destructive, and this action appears to be of little or no account so far as the production of symptoms is concerned. In toxicity the venom is much feebler than either cobra or daboia poison. The venom of *Bungarus Fasciatus* is not neutralized either by Calmette's serum or by a serum prepared by Dr. Tidswell, of Sydney, with the poison of another colubrine snake namely, *Hoplocephalus Curtus*.

[1] *Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India.* New Series. No. 7. Calcutta: Office of Superintendent of Government Printing. 1904. 9d.

CHOLERA EPIDEMIC IN CHINA.

Dr. J. Tsuzuki[1] has recently described the cholera epidemic which occurred in North China between May and September, 1902. The severity of the epidemic may be estimated from the fact that 1,223 Japanese and at least 1,183 Chinese were attacked by the disease in Tientsin alone; of these, 801 Japanese and 733 Chinese died. The river Peiho forms the main source of water for the inhabitants of North China, and it was therefore a matter of much interest when, after several attempts, Tsuzuki succeeded in demonstrating the presence of cholera vibrios in the river water. He next investigated the possibility of the spread of infection by means of flies. Sterilized Petri's dishes were placed in a house in which a death from cholera had recently occurred, a sticky substance being put at the bottom of each dish. The dishes were examined after several flies had stuck to them, and were found to be now infected with cholera bacilli. A second experiment consisted in placing inside a gauze cage two sterilized dishes, one sterilized and the other containing an agar plate infected with cholera spirilla. Flies were allowed to enter the cage, and after twenty-four hours the previously sterile dish was examined and had become infected. There could therefore be no doubt as to the power of flies to carry the infection. It seems clear that the disease was brought to the country by ships. The first case reported was in the harbour of Taku at the beginning of June. In the previous autumn there had been an epidemic in Shanghai, between which place and Taku a brisk traffic takes place. The disease spread steadily from place to place, always from the coast inland. These facts contraindicated an endemic origin of the disease. Causes which favoured the spread of the epidemic were the climate, the saprophytic life of the spirilla, and especially the absolute lack of any hygienic precautions among the Chinese. Prophylactic measures could not be effectively carried out by colonists as long as the Chinese formed a constant source of infection. Thus the Japanese were obliged to get water from the Peiho river and to get some forms of food from the Chinese, and they could not avoid the plague of flies. Under such circumstances the question of protection by inoculation was of the utmost importance. Tsuzuki first inoculated himself, and apart from local pain the reaction which followed was so slight as not to interfere with his work. He afterwards inoculated 1,247 Japanese and 231 Chinese, and in no case were there serious reaction symptoms. Unfortunately, inoculation was not begun until the later stages of the epidemic, when it was impossible to obtain conclusive results. Of 621 Japanese colonists who were inoculated and 912 not inoculated, 0.32 per cent. of the former and 0.54 per cent. of the latter contracted the disease; 0.16 per cent. of the inoculated and 0.22 of the uninoculated died. No cases of sickness occurred among 485 Japanese soldiers who were inoculated, but only one case occurred over the same period among 1,153 who were not inoculated. Tsuzuki concludes that inoculation against cholera is a method of protection which should not be disregarded, that it is of special importance during an epidemic in an uncivilized country, and that it can be carried out without any risk.

THE TRANSMISSION OF HEREDITARY SYPHILIS.

The maternal transmission of syphilis and its fatal effects on the offspring are well recognized, but the occurrence of paternal transmission has been contested by certain authorities. By paternal transmission is understood direct infection of the fetus through the sperm of the father without indirect infection from the mother. This difficult subject is well discussed by Professor Neumann in the *Wiener klinischer Wochenschrift*, May 19th, 1904. From his investigations it appears that three-quarters of the fathers of hereditary syphilitic children could not be examined and were useless in determining the factor of paternal transmission. Neumann points out that the question can only be solved by continued observa-

[1] *Archiv für Schiffs- und Tropen-Hygiene*, Bd. viii, Heft. 2.

tion of both parents and their progeny. From a series of observations in private practice, extending over many years, he concludes that in many marriages resulting in children with hereditary syphilis the mothers remain free from syphilis, while the fathers show symptoms of recent or old syphilis. As proof of the existence of paternal transmission must be adduced those cases in which a woman, having given birth to syphilitic children, later on, after connexion with a healthy man, gives birth to healthy children. Such observations have been recorded by Kassowitz and others. If between the birth of the last syphilitic child begotten of the syphilitic father and that of the healthy child begotten of the healthy father there is a relatively short interval, we can hardly explain such cases as arising from sudden extinction of a latent maternal syphilis; the production of healthy children must be attributed to the health of the father. Concerning the question of spermatic infection, Neumann remarks that although the existence of paternal transmission is proved by experience, the theoretical explanation thereof is not well established. The advocates of exclusive maternal transmission state that the virus is never mixed with the semen, and therefore cannot reach the ovum. To this Neumann replies that considering our ignorance of the nature of the syphilitic virus and of its mode of transmission, the exact conditions resulting in spermatic or ovular infection cannot be determined. But, considering the frequent and early infection of the testicles, an occasional admixture of syphilitic virus in the spermatic fluid may occur. As in tubercle and leprosy, germs are occasionally found in the semen, this may also occur in syphilis, either in cases of syphilitic orchitis, or even in general syphilis. Again, since the presence of pathogenic microbes has been shown in physiological secretions, especially the semen, in different infectious diseases, the possibility of virulent matter being transferred from these secretions to the fetus or the ovum must be admitted. Neumann also points out that transmission of syphilis through the ovum is possible, for in syphilis of the mother the ovum may become infected in the ovary, the tubes, or the uterus. Syphilitic affection of the ovary may cause auto-infection of the ovum. The theory which assumes no other than placental infection presupposes the circulation of considerable quantities of syphilitic virus in the blood. This can be assumed only for the active phases of syphilis, not for the latent. In early syphilis of the mother, the invasion of syphilitic virus into the ovum will take place more easily than when the placenta is fully developed, and acts as a barrier to infection. Hence intra-uterine ovular transmission, when the mother is affected with syphilis at the time of conception, is more likely than transmission to the fetus when protected by the placenta. The supporters of placental transmission point to the damage to the separating wall between the mother and fetus, caused by the frequency of placental disease. With regard to this, Neumann states that in both the maternal and fetal placenta pathological products of syphilis are found, but these products are not characteristic, and do not furnish evidence of the primary source of syphilitic infection. He concludes that, as regards practice, the theory of exclusive maternal transmission would imply treatment of the supposed latent syphilis of the mother, and disregard of treating the paternal syphilis. According to this theory, any syphilitic man, who was not at the time suffering from infective lesions, might be allowed to marry; whereas experience shows that it is by thorough treatment of the father that, in most cases, a healthy progeny can be raised. Fournier considers the denial of spermatic infection a dangerous view, opening the door of marriage to many syphilitic men hitherto deterred by the fear of injuring posterity. Neumann sums up that the assumption of a spermatic and of an ovular infection is supported by clinical, bacteriological, and physiological facts, and that the theory of exclusive placental transmission will not hold. Ovular infection would appear to be the easier and more probable means of infection of the two.

UTERUS DIDELPHYS COMPATIBLE WITH PREGNANCY.

Until quite recently it was taught that uterus didelphys is a condition absolutely precluding pregnancy, and usually associated with other malformations which do not allow the subject to survive its birth for more than a few days. Picot was of that opinion, and Herman relying on Kussmaul, who was one of the first to investigate the subject, considers that uterus didelphys is, therefore, of little practical importance. In this condition the uterine cornua are entirely separate, each opening, through a cervix of its own, into a separate vagina. Several authorities have already insisted that authentic cases of pregnancy in uterus didelphys have occurred. Dr. Arthur Giles was the first English writer to turn attention to this fact. In 1895 he read a communication on this subject before the Obstetrical Society of London. He defined the condition by examination under ether of a woman aged 31, who had twice been pregnant; on the second occasion the child was born at term and was reared. M. Guérin-Valmale[1] adds much matter to Dr. Giles's records in an important monograph which appeared recently. He has collected reports of 108 pregnancies in patients with uterus didelphys, and believes that even more such cases have been observed. In certain instances the patient has been fertile above the average, the abnormal uterus, that is to say, one or other half of it, bearing six, seven, eight, nine, or even (Hertzch) ten children. Often, indeed, as other cases show, sterility is associated with uterus didelphys owing to atresia with its necessary accompaniments, or to obstruction to coitus caused by the stout septum between the vaginae. Operations for the removal of the septum have frequently been performed. Twin pregnancy is relatively frequent, 4 being noted in the total of 108, being 1 in 27, whilst the proportion of twin gestations where the uterus is normal is 1 in 90. In all instances each twin had one cornu to itself; twins in one cornu, its fellow remaining empty, have never been observed. Breech presentation seems frequent, delivery of the fetus and placenta is usually normal. The empty cornu discharges a decidua. Puerperal infection is rare. The malformation in question, however, is far more prejudicial to the child than to the mother. Out of eight fetuses developed in a cornu of a uterus didelphys only one is born at term and but two are viable. We find that in the 46 relatively new observations, of which M. Guérin-Valmale gives a series of short notes, the vagina is reported as single in several instances. The authenticity of such cases will, we feel sure, be doubted by authorities. More than one case of uterus bicornis duplex may well have been included in this series of examples of a malformation known to be rare in the adult.

Dr. Darlington, Chief Commissioner of the Health Department of New York, estimates the annual loss caused to that city by tuberculosis at £4,600,000.

Professor George Darwin, of Cambridge, has been elected President of the British Association for the meeting in 1905, which is to be held at Capetown.

It is stated that the Government of the Mikado intends to introduce on a large scale into Japan the system of protection against malaria which has been so successful in Italy and elsewhere.

The President of the French Republic has conferred the grade of *Grand Officier* in the Legion of Honour on Professor Tillaux, President of the Paris Academy of Medicine.

Major Ronald Ross, C.B., F.R.S., of Liverpool, and Dr. Weir Mitchell, of Philadelphia, have been elected Foreign Corresponding Members of the Paris Academy of Medicine.

[1] De l'evolution de la puerpéralité dans l'uterus didelphe. *L'Obstétrique*, May, 1904.

The St. Petersburg Institute of Experimental Medicine has sent an expedition to the shores of the Black Sea to inquire into the prevalence of malaria, especially in the neighbourhood of Gagry, which is a climatic health resort.

The province of Munster has the "bad eminence" of heading the table of comparative death-rates from tuberculosis throughout the German Empire. This fact has led to the foundation of a local Society for the Cure of Consumptives.

The late Sir John Simon's estate was valued at £26,635 8s. 8d. gross, with net personalty £26,545 15s. 4d. Subject to numerous annuities and the life interest in the special trust fund of his adopted daughter, the testator left the ultimate residue of his estate to St. Thomas's Hospital. Should the income of the said special trust fund exceed £300, then the surplus is also to be paid to St. Thomas's Hospital.

A meeting was recently held at Frankfort-on-the-Main Professor Max Schmidt in the chair, at which delegates from the laryngological societies of Munich, Cologne, and Berlin, and of the Association of South German Laryngologists were present; it was decided that a laryngological society representing the whole of Germany and the German-speaking parts of Austria and Switzerland, should be established. The first meeting of the new society will be held at Heidelberg.

The report of the University of Berlin for 1903-4 shows that in certain auxiliary departments of medicine in which manual dexterity is especially required, women are in increasing numbers finding a field for the exercise of their abilities. In the Massage Institute, under the direction of Professor Zabludowski, there were 31 female and only 8 male pupils. In the Neurobiological Laboratory there is a female assistant, and in the Zoological Laboratory a woman is charged with the preparation of arthropoda.

Among the distinguished members of the British Association on whom honorary degrees were conferred on the occasion of the recent meeting at Cambridge were Professor Albrecht Kossel, of Heidelberg, and Professor Kavvadias, Ephor-General of Antiquities in the Kingdom of Greece. The former has won world-wide fame by his researches in the domain of chemical physiology, while the latter is best known to archaeologists by his excavations of the site of the Asklepeion at Epidaurus, the most celebrated healing shrine of antiquity.

Professor Oscar Hertwig, Director of Medicine and of Philosophy, Director of the Anatonio-Biological Institute and Member of the Academy of Sciences, has been elected Rector of the University of Berlin for the coming year. Of the ninety-five rectors of that seat of learning, he is the sixteenth who has been chosen from the Faculty of Medicine. Professor Hertwig was Dean of that Faculty in 1894-5. The Dean of the Medical Faculty for 1904-5 is Professor Johannes Orth, the successor of Rudolf Virchow in the Chair of Pathology.

In Germany the campaign against tuberculosis has hitherto consisted chiefly in the establishment of sanatoriums. A Committee has recently been formed at Berlin for the purpose of devising measures for fighting consumption in towns and dwellings. It is proposed to enlist the active support of all medical practitioners in Berlin and its suburbs with a view to the formation of an organization for the notification of the disease and the care of patients suffering from it. The Chairman of the Committee is Privy Councillor Putter, the General Secretary, Dr. Kayser.

Dr. Myer Coplans of Stroud has been appointed Medical Inspector of Schools and School Children for the Education Committee of the Gloucestershire County Council. Dr. Coplans is a Doctor of Medicine (State Medicine) of the University of London, and holds the Diploma in Public Health of the University of Cambridge. The scheme is, we believe, an experimental one, and is being introduced at first into the Stroud district of the county. We congratulate the Gloucestershire County Council on the enlightened step which it has taken, and we hope its example will soon be followed by authorities all over the kingdom.

Ireland.

Queen's College, Belfast.

The annual report of the Rev. Dr. Hamilton, President of the Queen's College, Belfast, has lately been issued. It is addressed to His Majesty, and has been laid before both Houses of Parliament. The references to the Medical School are of interest, and in many ways very satisfactory. There is a gratifying increase in the entrances in the Faculty of Medicine. The numbers were higher than those in any other medical school in Ireland, with the exception of the "Catholic University School of Medicine, Dublin," which shows three students more, and also than in any medical school in England, except the University of Cambridge and Guy's Hospital, London. This increase is assigned in part to the opening of the New Royal Victoria Hospital.

Reference is made to the death of Sir James Musgrave, Bart., D.L., Founder of the Musgrave Chair of Pathology, and to the donation of £5,000 from the Misses Riddel for the foundation of a Riddel Demonstratorship in Pathology and Bacteriology, in connexion with the Musgrave Chair of Pathology. Mr. William Mair, M.A., M.B.Edin., D.P.H.Cantab. has since been appointed to this post. Fifty-nine ladies were enrolled in the various faculties, and several gained prizes and scholarships. Scholarships, studentships, exhibitions, and prizes to the value of £2,400 per annum are offered. During the vacation an inventory was made of all books and periodicals in the library, and the total number was 51,299. The Medical Studentship in the Royal University of Ireland was gained by Mr. W. A. Osborne, M.B., and Mr. John C. Rankin, M.B.Belfast, was awarded a special prize, both former students of the College.

Queen's College, Cork.

The report of Sir Rowland Blennerhassett, Bart., President of Queen's College, Cork, for session 1903-4 was issued last week. It states that the number of students attending the College during this session was 225, as against 190 during session 1902-3. Of the 225 students, 212 were matriculated and 13 non-matriculated. The number of new students was 68; of these, 52 came from other colleges and universities, and 7 were non-matriculated. During the session the work done by the College has been thorough, and this remark applies in special degree to the Pathological Department. Dr. Moore, the Lecturer in Pathology, has since his appointment altered the methods of teaching this subject, and the post-graduate classes which he directs have added largely to the usefulness and distinction of the College. The claims of Cork to obtain an Examinership in Chemistry in Royal University have not, Sir Rowland points out, yet been satisfied, notwithstanding the unquestioned distinction of Dr. Dixon, the Professor of Chemistry in Cork, and although these claims are evident and great.

Poyntzpass Sewerage.

A public meeting was held in the courthouse, Poyntzpass, co. Down, to consider the question of providing a sewerage scheme for the village. For many years past constant complaints had been received from Dr. MacDermott, medical officer for the district, and from Dr. Clibborn, of the Local Government Board; and before the meeting Dr. MacDermott and others made a minute inspection of various premises. The investigation showed that the public health was in grave danger, and that there were no regular sewerage facilities for the district. It was finally determined to adjourn for a fortnight to enable the cost of a proposed scheme to become generally known.

THE PARLIAMENTARY SESSION.

The session of 1904 has been comparatively barren as regards general legislation, and especially as regards enactments affecting the medical profession. On the other hand, the proceedings of Parliament have from time to time been made interesting by the introduction of subjects connected with public health, and questions answered in the House or answered in print according to the new method have afforded much matter of medical interest. This year there were 225 public Bills introduced, as compared with 234 last year. The Government introduced 66 of these, or 6 more than last year, and succeeded in passing 27, or 12 less than last year. The 27 Acts which represent the Government's results for the session include only one Act of first-class importance—namely, the Licensing Act, which, with the Shop Hours Act, are the only 2 measures passed out of the 12 chief measures mentioned in the King's Speech on the opening of Parliament.

The Shop Hours Act did not occupy much time in the Commons, as the Committee stage was taken in the Standing Committee on Trade. It reached the House of Lords very late, but, in spite of opposition, passed quickly. Lord Avebury is to be congratulated on at last seeing a measure, for which he has worked so long, on the Statute Book, although the Act is somewhat weak in its provisions.

The Public Health Act passed is only a small measure dealing with sanitary regulations as to vessels arriving from infected ports, and was passed to give the necessary power to the Local Government Board to issue the regulations agreed to at the International Sanitary Conventions of Venice and Paris. The Public Health Bill referred to in the King's Speech on opening the session was a much more important measure to amend the laws of health. It has never even been introduced! Of the other twenty-four Bills passed most were money or departmental Bills, and none had any special medical interest. The expiring Laws Continuance Act, as last year, re-enacted the Vaccination Act of 1898, and so the conscientious objector was again established, and the Home Secretary made promises to try to protect him from unnecessary vexation on the part of the magistrates. When we turn to the 159 Bills introduced by private members, the poor result of twelve passed shows how greatly the chances of ordinary members have been lessened by the modifications in procedure made during the last ten years. Of these twelve new Acts of Parliament, two related to giving privileges to the new Universities of Leeds and Liverpool; one made a new departure, the Outdoor Relief Friendly Societies Act, by giving special rights as regards relief to members of Friendly Societies; while two others dealt respectively with the prevention of cruelty to children, and weights and measures without introducing the metric system. Last year 183 Bills were dropped, withdrawn, or rejected; this year the number was 186. Of these, 37 were Government Bills, and among those withdrawn or dropped were the Aliens, the Valuation, the Scotch Education, the Irish Labourers, the Lunacy, the Sale of Butter, and the Port of London Bills, all proposals of much interest. The remaining 30 were many of them departmental Bills, but some were measures of importance, such as the Penal Servitude and the Alkali Bills. The 147 Bills introduced without success by private members dealt with a great variety of subjects. General Laurie introduced his Bill to amend the Medical Acts so as to bring about reciprocity of practice in England and Canada; but although he persevered with it to the last days of the session he could not get even a second reading. The General Medical Council did not promote any Bill this year. There were two Bills dealing with vaccination, one to require the consent of guardians to all prosecutions for non-vaccination, introduced by Mr. Channing, and one to abolish compulsory vaccination promoted by Mr. Broadhurst. Neither had a chance of discussion. The Revaccination Bill introduced in the Commons was withdrawn early, but in the Lords it had more success. It was introduced by the Duke of Northumberland in June, passed its second reading without a division, and after a useful discussion, it got through its remaining stages in the Upper House, but as was expected was lost on its way to the Commons. The Bill, it was admitted on the second reading, could not be passed through the Commons this year. The usual Bills about Superannuation of Poor-Law and Municipal Officers were introduced, namely, Mr. Jessel's Local Authorities Officers' Superannuation, the Poor-Law Officers' Superannuation, Scotland, of Mr. Maxwell, the Poor-Law Superannuation, Ireland, of Mr. O'Malley, and Mr. Russell's Poor-Law Medical Officers, Ireland, Superannuation Bills. The one relating to Ireland was kept on the paper till late in the session. But without avail. Mr. Cathcart Wason also introduced a Bill to amend the Local Government (Scotland) Act of 1894, by giving out-door medical officers the protection of the Local Government Board, as regards emoluments and dismissal, but it never reached a second reading. Two old friends, the Public Health Bill of Sir Francis Powell and the Plumbers' Registration Bill, were not introduced this year. In spite of the passage of the Government Act on Housing last year, two Bills were introduced this year by Sir Walter Foster and Mr. Nannetti, to make better provisions for housing. Other Bills to be noticed are the Cottage Homes (Mr. Hutton), the Factory Acts Amendment (Mr. Tennant), and the Pharmacy Bill (Mr. Lough). The Tuberculosis Animals Bill, which aimed at giving compensation to butchers and others for condemned carcasses, was sent to a Select Committee, but made no further progress. The Prevention of Corruption Bill came down from the Lords in May but was not considered, and the two Bills for registering nurses introduced by Dr. Farquharson and Mr. Claude Hay were sent to a Select Committee, which took evidence but did not complete the inquiry. In the last days of the session a Bill to prevent juvenile smoking was appropriately introduced by the youngest member elected in 1900, Mr. Rigg, and will probably be heard of again next Session. In addition to public Bills, some 50 provisional order Bills became law for England and Wales, and nearly 30 for Scotland. In these Acts many important sanitary powers are included for the localities affected, and the Police and Sanitary Committee have dealt carefully with all local Acts so as to make the sanitary provisions as uniform as possible. In addition, Bills dealing with Bartholomew's and King's College Hospitals as regards sites have been passed during the session. The feature of the year has undoubtedly been the use made of questions, especially those not requiring an oral answer. In this way many medical subjects have been kept alive. Vivisection, for instance, which did not come up in the form of a Bill, was the subject of many questions. Vaccination and the supply of calf lymph also was the subject of much interrogation. The constitution of the Local Government Board, the sanitary condition of the House of Commons, factory inspection, grievances in many forms, pure beer and arsenic, the increase of cancer, Irish lunatic asylums, the sanitary condition of post-office buildings, the medical lessons of the war, plague, beri-beri, milk supply for pauper children and infant mortality, fees for vaccination and medical witnesses, death certification, physical degeneration, rabies, flogging, Irish dispensary officers, miners' phthisis, antitoxin, antityphoid inoculation, Poor-law children, cholera, and sanitary reorganization of the army are a few of the many subjects raised by industrious and inquiring members during the session.

Finally, in Committee of Supply some opportunities have occurred of raising questions of medical interest. On the Home Office vote a useful discussion was raised on factory inspection and on lead poisoning. The Local Government Board vote was this year productive of less debate of interest than usual, while the Army estimates, although they came on five times, never gave a fair chance for discussing the reorganization of the Army Medical Department. On the vote for the Houses of Parliament there was an amusing discussion on the ventilation and general sanitary arrangements of the Palace of Westminster. The Irish and Scotch Local Government votes also led to debate on some medical questions which had been previously raised in the form of questions. On the whole, the supply of discussions reflected the general character of the session in an absence of medical matter of any great importance.

THE MIDWIVES ACT, 1902.

Surrey.

At the last meeting of the Surrey County Council the General Purposes Committee presented the following report of a Subcommittee appointed to consider the provisions of the Midwives Act, 1902:

The Subcommittee suggest that the Act should be administered by the General Purposes Committee, as the "local supervizing authority," from the County Hall, under the supervision of the clerk of the Council and the County Medical Officer of Health, with the district medical officers of health acting as local agents and inspectors.

The machinery would be very similar to the administration of Diseases of Animals Acts by the Executive Committee, where the clerk of the

Council and the chief veterinary inspector supervise the machinery for the execution of the Acts, with eight district veterinary inspectors as local inspectors.

If this principle is accepted the following notes may prove useful:

That the duties of the "local supervising authority" be delegated, under Section VIII of the Act, by the County Council to the General Purposes Committee.

That the Committee themselves, by the clerk of the Council and the medical officer of health, exercise the duties imposed on the local supervising authority under Section VIII of the Act, other than Subsections II and III;

(2) Is to investigate charges of malpractice;

(3) Is to suspend any midwife from practice;

which duties it would be well to retain for the personal judgment of the Committee themselves.

That the municipal, urban, and rural district councils in the county be requested to permit their respective medical officers of health to perform the following duties in connexion with the Act:

E. 18 (1). To receive from midwife notice of death of mother or child.

E. 18 (2). To receive from a midwife notice of a still-birth.

E. 19 (*b*). To receive from midwife notice of sending for medical help.

E. 20. To inspect midwife's case-book, her bag of appliances, her place of residence, and her mode of practice, and such other analogous duties as the Committee may hereafter prescribe,

on such terms as may be agreed between the county council and each district medical officer of health.

The Subcommittee consider the proper amount of annual remuneration to be paid to each medical officer of health may be, till otherwise determined, fixed at the annual sum of a guinea for each midwife residing in the borough or district to which the district medical officer of health is attached.

That each borough or district medical officer of health shall be instructed to send to the county medical officer of health his claim for fees for the preceding year during January in each year, together with a report relating to the provisions of the Act, and the action he may have taken thereunder.

That the county medical officer of health exercise a general supervision over the borough and district medical officers, and will receive from them the reports lastly mentioned, will tabulate them, and submit them to the Committee with a general report, and it will be his duty to report at once to the Central Midwives Board the name of any midwife residing or practising in the county who, to his knowledge, has been convicted of an offence.

That the county medical officer will undertake during January in each year to supply the Secretary of the Midwives Board with the names and addresses of all midwives who, during the preceding year, have notified their intention to practise within any borough or district in the county, and to keep a current copy of the roll of midwives accessible at all reasonable times for public inspection, and he will also report to the Central Midwives Board the death of any midwife, or any change in the name or address of any midwife within the county, so that the necessary alterations may be made in the roll of midwives.

That the County Council be recommended themselves through a member or members of this Committee, appointed by the Committee for the purpose, to investigate any charges of malpractice, negligence, or misconduct on the part of any midwife in the country, and should a prima-facie case be established, to report the same to the Central Midwives Board: and also to direct that the power of suspending, under Rule F, a midwife who contravenes the rules of the Board, will also be undertaken by the Committee themselves.

The General Purposes Committee, we learn from the *County Council Times* of August 17th, after mentioning that it had approved the scheme contained in the above report, stated that it had carefully considered the point whether it or the Sanitary Committee should be the authority to which the powers and duties conferred or imposed by the Act should be delegated, and it had come to the conclusion that, for the time being at least, the delegation should be made to itself, the powers and duties devolving upon county councils being mainly of a police character. It therefore recommended "that the powers and duties conferred or imposed upon the County Council by or in pursuance of the above Act be delegated to the Committee pursuant to Section VIII of the Act." The report was adopted.

LANCASHIRE.

At the request of the Public Health and Midwives Act Committees of the Lancashire County Council, the Committee recommended that the salary of the county medical officer of health should be increased from £800 to £900 per annum, that the salary of the chief clerk in the office of the medical officer should be increased from £130 to £160 per annum, and that a trained obstetric nurse should be appointed as female inspector of midwives, at a salary of £104 per annum, with second-class railway fares and other necessary travelling expenses.

GLAMORGAN.

The Glamorgan Education Committee recently considered a communication from the Cardiff University College relative to the training of midwives. This stated that, provided the Council made an annual grant of £100 towards the expenses incurred by the College in arranging a course for the training of midwives the College was prepared to place at the disposal of the Council 21 free studentships, admitting persons to the course without payment of fees. The Committee recommended the Council to accept the offer.

INTERNATIONAL MEDICAL CONGRESS.

THE following is the programme of discussions, as far as at present arranged, which will take place at the Fifteenth International Medical Congress to be held in Lisbon in 1906.

I.—SECTION OF ANATOMY, ANTHROPOLOGY, EMBRYOLOGY AND HISTOLOGY.

1. Histological, cytological and embryological nomenclature (extending to all the animal series). Bases of classification. Reports by Professors Nathan Löwenthal (Lausanne) and Karl Benda (Berlin).

2. Definition, structure and composition of protoplasm. Report by Dr. Gustav Mann (Oxford).

3. Origin, nature and classification of pigments. Report by Dr. Marck Athias (Lisbon).

4. Histological phenomena of secretion, particularly in internally secreting glands. Reports by Professor Henneguy (Paris) and Dr. Swale Vincent (London)

5. Structure of muscular elements in general and the cardiac elements in particular.

6. Classification, origin and probable *rôle* of leucocytes. *Mastzellen* and *plasmazellen*. Reports by Professor Guglielmo Romiti and Dr. F. Pardi (Pisa).

7. Embryonic melamerisation: its importance from the standpoint of comparative anatomy. Report by Professor Roule (Toulouse).

Other subjects suggested for communications to this Section are:—

1. Internal metamorphoses.
2. Cellular changes in normal tissues.
3. Modifications produced in tissues by luminous radiations.
4. Connexions of the nerve cell.
5. The present state of the question of spermatogenesis.
6. Evolution and involution of the thymus.

II.—PHYSIOLOGY.

1. The part played by leucocytes in nutrition. Report by Professor L. Asher (Berne).

2. Thyroid secretion. Reports by Professor Bello de Moraes and Oliveira Soares (Lisbon).

3. Anatomical and physiological facts forming the basis of the present theories of thought.

4. The present theories as to processes in the nervous system. Report by Professor Max Verworn (Göttingen).

5. Renal permeability.

6. Constitution of the albuminoids and in particular of nucleins. Report by Dr. Charles Lepierre (Coimbra).

7. Action of the Becquerel and other similar rays on physiological processes.

8. Coagulation of the blood.

The following subjects are recommended for communications to this Section:

1. Enzymes and vital phenomena.
2. Physiological value of cytotoxins.
3. Mechanism of catalytic actions.
4. Isotonia and molecular concentration from the physiological point of view.
5. The red corpuscles of the blood from the standpoint of general biology.
6. Bacteria and nutrition.
7. The present state of knowledge as to antiferments.
8. The dietetic value of alcohol.
9. The ferments of the blood.
10. Critical study of Pawlow's theory of digestion.

III.—GENERAL PATHOLOGY, BACTERIOLOGY, AND MORBID ANATOMY.

1. What scientific proofs have we to-day of the parasitic nature of neoplasms, particularly cancer? Report by Professor Oscar Israel (Berlin).

2. What progress has been achieved in regard to the knowledge of the colloid substances of humours by the study of ultra-microscopic matter?

3. The practical value of monovalent and polyvalent bactericidal serums. Reports by Dr. A. P. Wassermann (Berlin) and Professor Tavel (Berne).

4. Preventive inoculations against bacterial diseases. Reports by Professor Wolf Dieudonné (Würzburg) and Professor W. Kolle (Berlin).

5. Preventive inoculations against diseases caused by protozoa. Report by Dr. Laveran (Paris).

6. Preventive inoculations against diseases caused by unknown specific agents.

7. Pyroplasmoses. Report by Dr. Annibal Bettencourt (Lisbon).

8. Trypanoses.

9. Serumtherapy of plague. Report by Dr. Dujardin-Beaumetz (Paris).

10. Function of cancerous cells. Reports by Professor Paul David von Hansemann (Grünwald), and Dr. Azevedo Neves (Lisbon).

11. Glands with internal secretion and infections.
12. Classification of sarcomas. Report by Dr. E. F. Bashford (London).
13. The pancreas and fat necroses. Report by Professor Hans Chiari (Prague).

IV.—Therapeutics and Pharmacology.

1. Local treatment in infectious diseases. Report by Professor A. Charrin (Paris).
2. Differentiation, from the physiological and therapeutic points of view, of the different radiations produced in Crookes's tubes from those emitted by radio-active bodies.
3. The therapeutic value of bactericidal serums. Report by Professor W. Kolle (Berlin).
4. Internal secretions in therapeutics.
5. Relations between the molecular constitution of organic bodies and their physiological and therapeutic action. Report by Professor Eduard Motta (Lisbon).
6. Treatment of cancer.

V.—Medicine.

1. Diabetes mellitus: its pathogenesis. Reports by Dr. Lima Faleiro (Beja) and Dr. F. W. Pavy (London).
2. Pathogeny of arterial hypertension. Report by Dr. Carl Trunecek (Prague).
3. Haemoglobinurias. Reports by Professor A. Murri and Dr. L. Silvagni (Bologna).
4. Treatment of hepatic cirrhoses. Reports by Professor Saundby (Birmingham) and Dr. A. Chauffard (Paris).
5. Cerebro spinal meningitis. Reports by Dr. Judice Cabral (Lagos) and Professor Anton Weichselbaum (Vienna).
6. International defence against tuberculosis. Report by Dr. Samuel Bernheim (Paris).

The following are recommended as subjects for communications to this Section:

1. Clinical study of colibacilloses.
2. Dyspnoea in acute febrile diseases.
3. Meningeal haemorrhages.
4. Paralyses in general: Etiology and treatment.
5. Headaches: Etiology and prophylaxis.

VI.—Paediatrics:

(*a*) Subsection of Medicine.

1. Spastic affections of infancy: Classification and pathogeny. Reports by Dr. Haushalter (Nancy) and Professor George Marinesco (Bucharest).
2. Cerebro-spinal meningitis: Etiology, treatment, etc. Reports by Drs. Jules Comby (Paris) and Carlos França (Lisbon).
3. Social campaign against rickets: milk supply, etc. Reports by Dr. J. E. Moraes Sarmento (Lisbon).

(*b*) Subsection of Surgery.

4. Orthopaedic surgery in nervous, spastic, and paralytic affections. Reports by Dr. Redard (Paris) and Dr. Salazar de Sousa (Lisbon).
5. Congenital luxation of the hip. Reports by Professor Kirmisson (Paris), Professor Adolf Lorenz (Vienna), and Professor Carlos Lima (Oporto).
6. Treatment of abdominal tuberculosis. Report by Dr. Auguste Broca (Paris).

VII.—Neurology, Psychiatry, and Criminal Anthropology.

1. Nature and pathological physiology of tabes. Report by Professor A. Eulenburg (Berlin).
2. Physiopathology of the medullary sensory apparatus. Reports by Professor Grasset (Montpellier) and Professor Ernesto Lugaro (Florence).
3. Exophthalmic goitre considered as a disease and as a syndrome. Report by Professor Virgilio Machado (Lisbon).
4. Nature and evolution of catatonia. Report by Professor T. Ziehen (Berlin).
5. Legitimate paranoia: its origin and nature. Report by Professor Enrico Morselli (Genoa).
6. Cerebral lesions in psychoses of toxic origin. Report by Professor G. Ballet and Dr. Laiguel Levastine (Paris).
7. Forms and pathogeny of dementia praecox. Reports by Dr. W. Weygandt (Würzburg) and Professor Vladimir Tschisch (Dorpat).
8. Pellagra in Portugal. Report by Professor Alfredo Magalhaes (Oporto).
9. Penal reform from the anthropological and psychiatric standpoints. Report by Professor G. A. van Hamel (Amsterdam).
10. Prophylaxis and treatment of relapsing criminals. Report by Dr. J. Morel (Mons).

The following are recommended as subjects for communications to this Section:

1. Medullar localizations.
2. Trophoneuroses of cerebral origin.
3. Muscular dystrophies of cerebral origin.
4. Etiology of systematized affections of the medulla.
5. Nosology of progressive muscular atrophy.
6. Relations between poliomyelitis and polyneuritis.
7. Relations of progressive muscular atrophy to Charcot's disease.
8. Little's disease.
9. Semeiological value of the examen of tendinous reflexes in lesions of the pyramidal bundle.
10. Are there primary systemic forms of myelitis?
11. Infectious encephalitis.
12. Etiology of sclerosis *en plaques*.
13. Operations on tumours of the medulla.
14. Indications for surgical operations on the spinal cord.
15. Diagnosis of epilepsy apart from the fit.
16. Pellagrous insanity; its clinical forms.
17. Cerebral localization in mental diseases.
18. Factors of degeneration and their relation to clinical forms.
19. Home treatment of the insane.
20. Tertiary syphilis *d'emblée* of nerve centres.
21. Cerebral lesions in psychoses of toxic origin.
22. Education and crime.
23. Examination of children in the anthropological sense.
24. Degenerative stigmatization in crime.
25. Value of reformatories for children.
26. Psycho-physical education of vicious and degenerate children.
27. Actual value and delimitation of the idea of degeneracy in criminal anthropology.
28. Legislation against the marriage of degenerates (alcoholics, epileptics, etc.) and the subjects of hereditary chronic diseases.

VIII.—Dermatology and Syphilis.

The programme of this Section will not be settled until after the meeting of the International Dermatological Congress to be held in Berlin in September.

IX.—Surgery.

1. Peritoneal septic infections: classification: treatment. Report by Professor D Giordano (Venice).
2. Gastro-intestinal and intestino-intestinal anastomoses. Reports by Professor Hartmann (Paris) and Professor A. de Vasconcellos (Lisbon).
3. Surgery of the arteries and veins: modern advances. Report by Professor Sousa, jun. (Oporto).

X.—Medicine and Surgery of the Urinary Passages.

1. Chronic urethritis and its treatment.
2. Surgical treatment of prostatic hypertrophy. Reports by Dr. Albert Freudenberg (Berlin), Dr. F. Legueu (Paris), and Dr. H. Bastos (Lisbon).
3. Surgical interference in medical nephritis. Reports by Dr. D. Giordano (Venice), Dr. A. Pousson (Bordeaux), and Mr. Reginald Harrison (London).

The following are recommended as subjects for communication to this Section:

1. Prostato-vesical tuberculosis (surgical treatment).
2. Vesical calculi.
3. Progress of urology in the diagnosis of renal diseases.
4. Tuberculosis of the testis and epididymis: treatment.
5. Chronic prostatitis: diagnosis and treatment.
6. Painful forms of cystitis.

XI.—Ophthalmology.

1. Myopia and the methods of treating it. Reports by Dr. C. Hess (Würzburg) and Professor W. G. H. Uhthoff (Breslau).
2. Ocular tuberculosis.
3. Blepharoplasty.
4. Serumtherapy in ophthalmology. Report by Professor T. Axenfeld (Freiburg).

XII.—Laryngology, Rhinology, Otology, and Stomatology.

1. Study of the epileptogenic action of foreign bodies in the ear, and of vegetations in the nasopharynx.
2. The manner in which diseases of the resonating cavities affect singers, and their treatment.
3. The different forms of suppuration of the maxillary sinus. Report by Dr. Lermoyez (Paris).
4. Intracranial complications of sinusitis of the face. Reports by Dr. Georges Laurens (Paris) and Professor V. Cozzolino (Naples).
5. Prosthetic injections of paraffin in rhinology. Report by Dr. G. Mahu (Paris).
6. Differential diagnosis of tuberculous, syphilitic and cancerous lesions of the larynx. Reports by Dr. E. J. Moure (Bordeaux), Dr. Suarez de Mendoza (Paris) and Dr. Ramon de la Sota y Lastra (Seville).
7. Choice of anaesthetics in tooth extraction. Report by Dr. Ludger Cruet (Paris).
8. Treatment of pyorrhoea alveolaris. Report by Dr. Jaime D. Losada (Madrid).
9. Determination of the pathogenic agent of dental caries. Report by Professor W. D. Miller (Berlin).

XIII.—Obstetrics and Gynaecology.

1. Obstetrical nomenclature.
2. Autointoxications in pregnancy. Report by Professor Pinard (Paris).
3. Indications and technique of the Caesarean operation. Report by Professor Alfredo da Costa (Lisbon).
4. Treatment of uterine retrodeviations. Reports by Dr. Richelot (Paris) and Professor Sousa Refoios (Coimbra).
5. Treatment of uterine myomata. Report by Professor A. E. Martin (Greifswald).
6. Diagnosis and treatment of ovaritis.

The following are suggested as subjects for communications to this Section:

1. Conservative surgery of the ovaries.
2. Tuberculosis of the adnexa.

3. Forms of metritis.
4. Utero-vaginal prolapse.
5. Early diagnosis of pregnancy.
6. Insertion of the placenta in the inferior segment of the uterus.
7. Symphysiotomy.
8. Relations between appendicitis and pregnancy.
9. Treatment of lacerated perineum.
10. Pyelonephritis and pregnancy,
11. Treatment of uterine cancer.
12. Pregnancy and cancer of the uterus.
13. Treatment of puerperal infections.

XIV.—HYGIENE AND EPIDEMIOLOGY.

1. Recent advances in our knowledge of plague. Reports by Professor Sousa, jun. (Oporto), Dr. Angelo da Fonseca (Coimbra), and Professor Ricardo Jorge (Lisbon).
2. Etiology and prophylaxis of sleeping sickness. Report by Dr. Annibal Bettencourt (Lisbon).
3. Contribution to the study of the etiology, endemiology, and prophylaxis of malaria. Reports by Professor Ricardo Jorge (Lisbon) and Professor Antonio de Padua (Coimbra).
4. The intermediary of yellow fever. Report by Professor Giuseppe Semarelli (Bologna).
5. Prevention of pretuberculosis.
6. Administrative and expert control of the work of public disinfection. Report by Dr. G. Ennes (Lisbon).

The following are suggested as subjects for communicating to this Section:

1. Co-operation of nations to prevent the importation of yellow fever and plague.
2. Measures to be taken to prevent the spread of plague from one country to another or within the same country.
3. Means of preventing influenza.
4. Preventable diseases and the means of preventing them.
5. Prevention of syphilis.
6. Adulteration of alimentary substances: international measures of prevention.
7. Watering of streets as a means of getting rid of dust.
8. Provision and regulation of small cheap tenements.
9. Country sanatoriums.
10. Does the Clayton oven efficiently disinfect merchandise on board ship? The present state of the disinfection of ships.
11. Lighting of schools and myopia.
12. School programmes.
13. Contagious persons in railway trains.
14. Industry at home: hygiene.
15. Public thoroughfares: sanitation and final treatment of material removed.
16. Recent advances in knowledge regarding the etiology and epidemiology of epidemic cerebro-spinal meningitis.

XV.—MILITARY MEDICINE.

1. Organization of the medical services in the future. Reports by Drs. Pedro Gomez Gonzalez (Barcelona) and Manoel Giao (Lisbon).
2. War surgery at dressing stations. Report by Dr. J. Barbosa Leao (Lisbon).
3. Military education of the medical officer of the future. Report by Dr. Lacio Nunes (Lisbon).
4. Portable ration of the soldier on campaign.

The following are suggested as subjects for communication to this Section:

1. Medico-chirurgical arsenal for field hospitals.
2. Purification of water on campaign.
3. Sterilization of surgical instruments and dressings in field hospitals.
4. Dressing stations on the battlefield.
5. Sanitation of battlefields.
6. Radiography and bacteriology on campaign.

XVI.—MEDICAL JURISPRUDENCE.

1. Signs of virginity and defloration in medico-legal reports. Report by Professor Adriano X. Lopes Vieira (Coimbra).
2. Cadaveric fauna: its medico-legal importance. Report by Professor J. J. da Silva Amado (Lisbon).
3. Impressions of hands: their medico-legal importance. Report by Professor J. J. da Silva Amado (Lisbon), and Dr. Lima Duque (Lisbon).
4. Medico-legal importance of the *caruncutae myrtiformes*. Report by Dr. J. L. de Freitas Costa (Lisbon).
5. Mechanism of death by hanging.
6. Value of the examination of vulvo-vaginal discharges in the determination of venereal contagion.
7. Signs of death by drowning.
8. Ecchymoses in their medico-legal aspects.
9. Abortions—spontaneous and criminal—from a medico-legal point of view.
10. Medico-legal researches on blood stains. Reports by Professors Ferreira da Silva and Alberto d'Aguiar (Oporto).
11. Relations between the seat of cerebral contusions and the point of application of the agent which has produced them.

The following are suggested as subjects for communications to the Section:

1. Epilepsy in medical jurisprudence.
2. When is it permissible to induce abortion?
3. The value of medical jurisprudence in the study of criminal law.
4. The best legislation as to professional secrecy.
5. Effects of the civil and penal law in regard to children born alive.
6. Distinction between natural notching of the hymen and tearing of that membrane.
7. Criminal vulvar copulation.
8. Organization of medico-legal services.
9. The *corpus delicti* supplying an adequate ground for criminal prosecution.
10. *Post-mortem* examination and chemical testing of the liver.

XVII.—COLONIAL AND NAVAL MEDICINE.

1. Etiology, prophylaxis, and treatment of the haemoglobinuric fever of hot countries. Report by Dr. A. Plehn (Berlin).
2. Etiology and prophylaxis of yellow fever. Report by Dr. Antonio de Lencastre (Lisbon).
3. Etiology and prophylaxis of beri-beri.
4. Human trypanosomiasis. Report by Professor R. Blanchard (Paris).
5. Treatment of bilharziosis: cycle of evolution of the *Distoma haematobium*.
6. Etiology and prophylaxis of the dysentery of hot countries. Report by Dr. J. M. da Costa Alvares (Lisbon).
7. Mental diseases in tropical countries.
8. The means of international protection against leprosy.
9. Hospital ships and the working of them in time of war.
10. Working of the medical service in naval battles.—Should the wounded be tended during the action, or only after it?—Means of transport of wounded.—Necessity of *personnel* specially trained for this service.—Sick bays in action: should they be above or below the armour belt?
11. Advantages of the adoption of complete sterilized dressings: individual dressings and complete sterilized dressings for large wounds.
12. Tuberculosis in navies: its prophylaxis. Reports by Drs. Angel Fernandez-Caro (Madrid) and Antonio Alves d' Oliveira (Lisbon).
13. Value of anthropometric data in estimating the physical fitness of the *personnel* of candidates for the naval service. Report by Dr. Silva Telles (Lisbon).
14. Prophylaxis of malaria and yellow fever on board ships stationed or which put into port in the colonies. Report by Dr. A. Mocaes Sarmento (Lisbon).

THE NEW SYDENHAM SOCIETY.

Annual Meeting.

THE forty-sixth annual meeting of this Society was held in Oxford on Friday, July 29th. The President, Dr. OSLER, presided, and amongst those present were the Treasurer, Mr. Henry Power, Dr. Coombs, Mr. Pye-Smith, Dr. Maurice Evans, Dr. Walters, Dr. Acland, Professor Gilchrist, Dr. Baildon, and many others.

After some preliminary business the HONORARY SECRETARY read the Council's report and submitted the balance-sheet and proposed list of officers for the ensuing year.

Dr. BAILDON asked some questions as to the salary of the Society's agent, to which the Treasurer, Mr. POWER, replied. The adoption of the report and balance-sheet was moved and seconded and carried unanimously. The ballot was taken for the list of officers as proposed by the Council, and the following were declared duly elected:—*President:* William Osler, M.D., F.R.S., LL.D. *Vice-Presidents:* Theodore D. Acland, M.D., *T. Clifford Allbutt, M.D., *Tempest Anderson, M.D. (York), Sir Thomas Barlow, Bart., M.D., R. L. Bowles, M.D., Byrom Bramwell, M.D. (Edinburgh), Sir. T. Lauder Brunton, F.R.S., A. H. Carter, M.D. (Birmingham), Sir W. S. Church, M.D., Pres. R.C.P., *William Collier, M.D. (Oxford), H. Radcliffe Crocker, M.D., Sir Dyce Duckworth, M.D., P. W. Latham, M.D. (Cambridge), Lord Lister, Sir Richard Douglas Powell, Bart., M.D., Philip H. Pye-Smith, M.D., F.R.S., *John Tweedy, F.R.C.S., Pres. R.C.S. *Council:* James Barr, M.D. (Liverpool), *J. W. Byers, M.D. (Belfast), W. Clement Daniel, M.D. (Epsom) William Ewart, M.D., *F. Colcott Fox, M.B., J. F. Goodhart, M.D., G. E. Herman, M.D., Jamieson B. Hurry, M.D. (Reading), *W. Hamerton Jalland, F.R.C.S. (York), *C. R. B. Keetley, F.R.C.S., Percy Kidd, M.D., *H. Ambrose Lediard, M.D. (Carlisle), Mr. Jordan Lloyd (Birmingham), Mr. R. H. Lucy (Plymouth), Johnstone Macfie, M.D. (Glasgow), E. Hooper May, M.D. (Tottenham), William Newman, M.D. (Stamford), George Oliver, M.D., *Sir Isambard Owen, *D'Arcy Power, M.B., Mr. R. J. Pye-Smith, (Sheffield), Guthrie Rankin, M.D., *Ernest S. Reynolds, M.D. (Manchester), *— Rockwell, M.D. (Colombo), *Humphrey D. Rolleston, M.D., G. H. Savage, M.D., R. Shingleton Smith, M.D. (Clifton), Seymour Taylor, M.D., Mr. Jabez Thomas (Swansea), Mr. T. W. Thursfield (Leamington) *Edward Ward, M.B. (Leeds). *Treasurer:* Henry Power, M.B. *Auditors:* A. E. Sansom, M.D., Mr. Waren Tay. *Honorary Secretary:* Mr. Jonathan Hutchinson, F.R.S., LL.D., 15, Cavendish

Square, W. (Those marked with an asterisk were not in in office last year.

Report of Council.

The report, after recording the fact that the Society's financial position was satisfactory, went on to state that the Council, encouraged by the reception given to the *Clinical Atlas*, had decided that it would be well to look forward to its indefinite continuance. A large and representative committee was in course of formation, which would assume its management. The plan of publication would be much that which had been adopted in the twelve fasciculi already issued, and at least four fasciculi would be published each year. On this topic the report went on to state:

"It will be the endeavour of the Editors to make each Fasciculus, and, as far as possible each Plate, complete in itself. At the same time, it will not be considered that any of the subjects illustrated are finally dismissed or considered complete. In the present advanced state of clinical knowledge, very numerous and important modifications of morbid processes are well recognized, which yet rank under the same names; and it is no longer possible adequately to represent the phenomena of any given malady by a single Plate. A Clinical Atlas cannot be made up after the manner of a collection of geographical maps, each one completing the subject dealt with. Every subject needs a number of illustrations, or it will fail to serve the needs of the clinical observer. The Council regards its *Atlas* as by no means restricted in its object to the pictorial instruction of the inexperienced, but is ambitious that by its fullness of detail it shall serve as a platform from which further advances in clinical observation may be made. It is hoped that it will serve as a repertory of well-illustrated cases, facts, and opinions which will be of lasting and world-wide value and importance."

As regards the publication of printed volumes, the report proceeded:

"Under the modifications of plan now proposed, it is hoped that in addition to the four fasciculi a year, to which the Society is pledged, the funds may soon afford the publication of a printed volume yearly. These volumes will be devoted to collections of the most important monographs recently published, especially selecting such as deal with topics which have been illustrated in the *Atlas*. Although, however, the Council does not see its way to make any promise of a larger issue of the *Atlas* than four fasciculi a year, it cannot be too strongly impressed that any considerable increase in the members' list would at once enable it to proceed much more rapidly. It would cost very little more to double the edition which is now printed, and if this were justified by the number of members, almost double the number of fasciculi might be afforded. The Society's members may, under these circumstances, rest assured that any exertions which they may make to increase our subscribers' roll will conduce, not alone to the gain of clinical medicine, but will advance the interests of all concerned."

After votes of appreciative thanks to the retiring Council and to the Society's Honorary Secretaries and to the British Medical Association for its courtesy in supplying a room, the proceedings were concluded by some brief remarks from the president.

Remarks by President.

Dr. Osler said that in his opinion some of the works published by the Old and the New Sydenham Societies were amongst the most valuable in the whole range of medical literature. He regarded with great satisfaction the proposal which the meeting, at the suggestion of the Council, had just adopted to prolong indefinitely the issue of the *Clinical Atlas*, feeling more that this work would prove of the utmost value to all engaged in the practice of our profession both at home and abroad.

TUBERCULOSIS (ANIMALS) COMPENSATION BILL.

The report and special report from the Select Committee on the Tuberculosis (Animals) Compensation Bill, together with the proceedings of the Committee, minutes of evidence, and appendix, have been issued as a Blue Book.

Apart from any question of the indirect effect upon the trade in meat of the present law and practice with regard to the seizure and condemnation of carcasses of animals on account of tuberculosis, the Committee does not think that serious pecuniary loss is inflicted at present by such seizure and condemnation upon butchers who deal in high-class meat, the vast majority of carcasses seized being those of old dairy cows. The loss in respect of such cows is considerable, but the butcher who deals in them takes the probability of that loss into consideration in fixing the price he gives for them. With regard to pigs, the Committee received evidence that serious loss from seizures falls upon butchers slaughtering home-bred animals. Several witnesses complained that the recommendation of the Royal Commission on Tuberculosis that "the presence of tuberculous deposit in any degree should involve seizure of the whole carcass of a pig is too stringent, especially in view of the fact that the detection of tuberculosis in imported pigs is rendered exceedingly difficult by their importation without their heads and neck glands."

The Committee considered the question whether butchers can meet the risk of seizure by insurance at reasonable rates, and had their attention drawn, both by witnesses called before them and by reference to the evidence given before the Royal Commission, to systems of mutual insurance against this risk existing in various towns and in certain auction marts. It appears to the Committee that the difficulty which stands in the way of the general adoption of a system of mutual insurance is the variety of practice which at present exists with regard to the amount of tuberculous deposit, the existence of which in a carcass is held to justify its total condemnation.

The Committee recommends that power be given to the appropriate central authority in England, Scotland and Ireland, respectively, to enforce uniformity in this matter upon all local authorities. If such uniformity were enforced butchers would be able to insure themselves from loss by seizure on account of tuberculosis at reasonable rates, in the case of animals presenting a healthy appearance before slaughter, and for which a fair price for the purpose of human food had been given. The Committee, however, does not think that the case of the butchers would be entirely met by provisions facilitating mutual, or other, insurance.

In the present condition of scientific knowledge upon the subject, it is impossible, the Committee states, to lay down any regulations for the partial or total condemnation of carcasses on account of tuberculosis which may not involve the destruction of some meat which might have been used with impunity for human food. In such cases the caution which may be rightly used in the interests of the community inflicts on the butcher unnecessary loss.

It was also urged upon the Committee that the fact that the butcher at present bears the whole of the risk of seizure is a strong inducement to meat traders to deal in foreign meat, which was stated by several witnesses to be less liable to condemnation than the meat of home-bred animals. There appears to the Committee to be considerable force in the argument used by the witnesses called on behalf of the Butchers' Federation that the prospect of heavy loss falling entirely upon himself is a strong temptation to a butcher to attempt to conceal the fact that he has upon his premises meat of the complete freedom of which from tuberculosis he may himself be doubtful. The Committee fears that if the butchers were relieved from the whole of the loss arising from seizures, the caution exercised by them in purchasing animals for slaughter might be relaxed, but it does not think that it would be unreasonable to provide that, subject to certain conditions, a proportion of the loss should fall upon the public, and it recommends that that proportion should be fixed at one-half. The conditions upon which such assistance from public funds should be granted appear to the Committee to be:

That the butcher claiming assistance should prove to the satisfaction of a court of summary jurisdiction (1) that he bought the animal for slaughter in good faith, as a sound animal fit for human food; (2) that at the time of purchase it exhibited no visible signs of tuberculosis; (3) that the price he paid for it was a fair market price for an animal of its class and weight free from tuberculosis; and (4) that he gave notice to the local authority at the earliest time reasonably possible after he became aware of the fact that he had upon his premises a carcass affected with tuberculosis.

The Committee does not recommend that this assistance should be given in the case of animals or meat imported into the United Kingdom.

The butchers who gave evidence complained more of the injury to members of their trade caused by prosecution in open court for having tuberculous meat upon their premises than of the direct pecuniary loss caused by seizures of such meat. It appears to the Committee that, if a butcher being in possession of such meat has notified the fact to the proper authority as soon as he could be reasonably expected to be aware of it, the case should not be taken into court. This appears to be the rule in many places, but not universally

throughout the United Kingdom. If aid from public funds is given upon the suggested conditions, the butcher upon whose premises tuberculous meat has been seized should have in all cases the opportunity of proving in open court, in substantiating his claim for assistance, that he acted throughout in good faith, had no reason to suspect that he was bringing a tuberculous animal into his premises, and made no attempt to conceal the fact of its presence there as soon as it came to his knowledge.

The Committee also considered the question of the fund from which the limited assistance suggested should be drawn. It is thought to be manifestly unfair to the ratepayers of the great collecting and distributing centres that they should bear this burden. If the charge is to be made upon local funds, it would appear to be more just that it should be imposed upon the locality in which the animal contracted or developed tuberculosis. The Committee think that the difficulty of tracing each animal in respect to which a claim is made to such locality makes the adoption of this method of distribution of the charge practically impossible. For these reasons the Committee recommend that such assistance to butchers as they suggest should be provided by the Imperial Exchequer.

LITERARY NOTES.

Reports, according to *Science* of August 5th, have been received from Dr. Max Uhle, who since the beginning of the year has renewed his archaeological explorations on the coast of Peru, carried on by him through the liberality of Mrs. Phoebe A. Hearst for the Department of Anthropology of the University of California. Dr. Uhle made new excavations at Ancon in several parts of the so-called Necropolis, with a view to determining the relative ages of the cultures represented by the different kinds of mummies and objects. After abundant material for this purpose had been obtained, excavations were made a short distance south of Ancon. Here, in a hitherto unsuspected deposit free from mummies, remains of an early culture distinct in character from any other in Peru were found. After completing his investigations at this spot, Dr. Uhle proceeded northward along the coast toward Supe or beyond.

In the June number of the *Bulletin of the Johns Hopkins Hospital*, Dr. Percy M. Dawson, Associate Professor of Physiology, contributes a biography of an investigator of whom he says that "just as the name of William Harvey stands foremost in that chapter of physiology which deals with the circulation, so does the name of Stephen Hales begin the sub-chapter on haemodynamics." Hales was born in 1677; he was the grandson of Robert Hales of Beckesbourn in Kent, who was made a baronet by Charles II. In his 19th year he entered Corpus Christi College, Cambridge, proceeding Master of Arts in 1703. He afterwards took orders, and became a Bachelor of Divinity in 1711. During the twelve years he was in residence at the University, Hales studied natural and experimental philosophy with great diligence. In company with William Stukeley, afterwards M.D. and F.R.S., he went botanizing about the country, and collected fossils from the gravel and chalk pits. The two friends studied anatomy together, dissecting frogs, dogs, and other animals; they also worked at chemistry. They witnessed the experiments of Vigani of Verona, the first professor of chemistry at Cambridge. About 1710 Hales was appointed perpetual curate of Teddington, where the celebrated Peg Woffington was one of his parishioners. In 1718 he became a Fellow of the Royal Society. In 1750, on the death of Frederick, Prince of Wales, he was appointed clerk of the closet and almoner of Her Royal Highness the Princess Dowager. In 1753 he became one of the eight foreign members of the French Academy in succession to Sir Hans Sloane, President of the Royal Society. The work and writings of Hales embrace a very broad field, which includes chemistry, botany, physiology, medicine, and public hygiene, not to mention sermons and temperance tracts. In 1719 he reported to the Royal Society some experiments which he had made on the effect of the sun's warmth in raising the sap in trees. This procured him the thanks of the Society, which also requested him to continue his research. "With this request," writes the biographer, "which was like the charge given by Pharaoh's daughter to the mother of Moses, to take care of her son, Hales complied with great pleasure, and on June 17th, 1725, he exhibited a treatise in which he gave an account of his progress." At the request of the Society this treatise was published and appeared in 1727 under the title *Vegetable Staticks*. A second edition was published in 1731. In the preface to that edition the author promised to add a second volume, and in 1733 he published his second famous work, entitled *Statical Essays: containing Haemostaticks, or an Account of some Hydraulick and Hydrostatical Experiments made on the Blood and Blood Vessels of Animals: also an Account of some Experiments on Stones in the Kidney and Bladder: with an Enquiry into the Nature of these anomalous concretions. To which is added an Appendix containing Observations and Experiments relating to several Subjects in the first Volume.* These two books were again edited under the title, *Statical Essays, Vols. I and II.* The *Statical Essays* gained for Hales an international reputation. The first volume was translated into French by Buffon, and the second into the same language by Boissier de Sauvages (1744), and before long there appeared German and Italian translations. In 1739 Hales published a volume entitled, *Philosophical experiments: containing useful and necessary instructions for such as undertake long Voyages at Sea; shewing how Salt-water may be made fresh, wholesome, and how Fresh Water may be preserved sweet; how Biscuits, corn, etc. may be secured from the Weavel, Maggots, and other Insects: and Flesh preserved in Hot Climates by salting Animals whole: to which is added an account of Experiments and Observations on Chalybeate or Steel-waters, with some Attempts to convey them to distant places, preserving their virtues in a greater degree than has hitherto been done; likewise a proposal for cleansing away Mud, etc., out of Rivers, Harbours, and Reservoirs.* This work was dedicated to the Lords of the Admiralty. In the same year he reported to the Royal Society an account of some "further experiments towards the discovery of a medicine for dissolving the stone in the kidneys and bladder, and preserving meat in long voyages," and it was for this that he received the gold medal of "Sir Godfrey Copley's donation." In the following year he published an account of some experiments and observations on Miss Stephens's medicines for dissolving vesical calculi, in which their dissolving power was inquired into and demonstrated. This work was subsequently translated into French. In 1743 he published a work on ventilators. From the introduction of this work, it appears that in the beginning of September, 1740, Hales wrote to Dr. Martin, the physician to Lord Cathcart, the general of the forces which lay embarked at Spithead, for an expedition to America, to propose (besides the usual sprinkling between decks with vinegar) the hanging up very many cloths dipped in vinegar in the proper places between decks, in order to make the air more wholesome; and in case an infectious distemper should be in any ship, to cure the infection with fumes of burning brimstone. The Hales's ventilators were ingeniously contrived bellows which sucked the foul air from the rooms or spaces to be ventilated and blew it out of doors. When large, these bellows were worked by means of a windmill; when small, by hand. In a few years Hales's ventilators had been put not only into Newgate and the Savoy Prison, but also into the Winchester Gaol, the Durham County Gaol, and afterwards into the gaols of Shrewsbury, Northampton, and Maidstone. The results were remarkable. During the first four months after their introduction into Newgate, the death-rate was reduced by more than 50 per cent., while in the Savoy prison the rate fell from 50 or a 100 per annum to 1 or 2 per annum. Equally gratifying were the results at the small-pox hospital. This institution contained 32 rooms, each accommodating two patients, and here the mortality was soon reduced to two-thirds of what it had formerly been. Meanwhile at the recommendation of the French Academy the whole French fleet had been equipped with ventilators, and many English vessels had adopted them. Hales's contemporaries admitted his "social virtue and sweetness of temper" and the "constant serenity and cheerfulness of his mind." He died in 1761.

The American Medical Editors' Association held its thirty-fifth annual meeting in Atlantic City in June. Among the papers read were the following: Dr. Harold N. Moyer (Chicago), Proprietary and Patent Medicines; Major J. Evelyn Pilcher (United States Army Medical Service), Military Medical Journalism; Dr. H. V. Wurdemann (Milwaukee), Medical Illustrations; Dr. William Porter (St. Louis), The Medical Press *versus* the Modern Plague. Dr. Porter's paper, which dealt with the use of patent nostrums, was followed by a discussion which ended with the passage of a resolution condemning the action of journalists who "either do not understand the true situation, or find it to their pecu-

niary gain to favour the use of nostrums and pander to the greed of their manufacturers at the expense of the health or even the lives of their dupes among the people."

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 72.

Proposed Petition to General Medical Council.

Dr. A. D. Williams (Devonport) writes: In the British Medical Journal of August 20th Dr Jepson asks as many practitioners as possible to join in petitioning the General Medical Council to crush the "blackleg."

Now, I am no advocate for individual disregard of the general welfare—quite the reverse. Nor do I defend selfish or sordid wrong-doing of any sort. But amid all the confusion existing (or seeming to exist) between public and professional interests, and the ways out of it, I submit that this way is neither right nor expedient. It is not right to squeeze one man out of existence for the benefit of others without giving him an alternative; and it is not expedient to attempt it, because it is certain that the public will not let us do it; at all events, until we show a much more solid front in defence of professional honour and interest than we have yet done.

There is little doubt that the best solution of this and other present-day problems will be reached when the public realizes that the disease, disablement, and death of its members are national concerns, both in prevention and treatment: and realizes also that it has no more claim to expect its work to be done by the medical citizen without proper remuneration than by the school teacher or the baker.

In the meantime, if we could attain amongst us so much consideration for the general good as to abandon all round the undignified and mischievious competition for unpaid and underpaid work, and demand proper payment for all proper and useful professional service to the State and its members, much would be gained.

In particular, in regard to sick assurance, we ought either to abandon it altogether to friendly and other societies, charging them adequately for our services, irrespective of their other objects, or we ought to organize it ourselves as a professional institution for the collective benefit of so many of the profession as choose to join the organization, and so many of the public as we choose to admit. On such a basis the all-round evils both of contract practice, and of the abuse of charity hospitals, might be largely remedied. For the present this branch of medical defence is as urgent as any, and one that is being advanced for us in the Medico-Political Committee of our Association. But it cannot be carried far enough unless we are willing to put our hands in our pockets. If the profession is to "go on strike" like other exploited working men, it will have to provide against the "blackleg" by helping those members who can show that they are unable to refuse the half loaf, which is better than no bread, to demand better terms, or to obtain better employment elsewhere for the benefit of all; in other words, to provide a strike fund.

The General Medical Council, if it were properly composed of representatives of the profession, and not of the teaching institutions, might help by limiting and discouraging its undue increase. As it is not likely to do this we should work to improve its constitution, or, better still, to put our own democratic Association into its place.

A correspondent writes: The following perfectly authentic fragment of a conversation between a mistress and her servant seems to illustrate the attitude of the female club member, and to explain, in some measure, the dislike which some medical practitioners have for female clubs.

Servant: "Yus, ma'am, I belong to a club; sixpence a month I pay, and I get all the medicine and visits I want."

Mistress: "But you are very seldom ill."

Servant: "Oh, never fear; I get my 'whacks' out of them, whether I am ill or not."

THE PLAGUE.

Prevalence of the Disease.

India.

The deaths from plague in India during the weeks ending July 23rd and 30th numbered 2,608 and 3,258 respectively. During the two weeks in question the principal figures were as follows: Bombay City, 59 and 58; Bombay Districts, 1,412 and 1,648; Calcutta, 6 and 6; Bengal Districts, 108 and 129; North West Provinces and Oudh, 58 and 101; Punjab, 48 and 58; Rajputana, 77 and 67; Central Provinces and Berar, 5 and 28; Central India, 6 and 7; Hyderabad State, 157 and 203; Mysore State, 519 and 620. The plague mortality throughout India continues slowly to increase owing to the growing mortality in Western India.

South Africa.

Port Elizabeth.—During the week ending July 23rd and July 30th the fresh cases of plague numbered 3 and 2, and the deaths from the disease 2 and 0 respectively. On July 30th 6 cases remained under treatment. At no other town in Cape Colony were cases of plague recorded. Rats and mice were found infected at Port Elizabeth and East London during the week in question.

Transvaal.—The Government of the Transvaal has announced that owing to the disappearance of plague in the colony, no further notifications will be issued. The latest cases were notified during the week ending July 9th.

Hong Kong.

During the weeks ending August 6th and August 13th the fresh cases of plague numbered 13 and 5, and the deaths from the disease 12 and 5 respectively.

Mauritius.

During the weeks ending August 11th and August 18th the fresh cases of plague numbered 3 and 5, and the deaths from the disease 1 and 3 respectively.

THE PELLATT FUND.

The Treasurer, Surgeon-Colonel F. H. Welch, 8, Brandram Road, Lee, Blackheath, S.E., begs to acknowledge the receipt of the following sums on behalf of Miss E. B. Pellatt, L.S.A., additional to those already reported:

	£	s.	d.		£	s.	d.
Miss M. E. Ekin	0	5	0	Miss F. F. Kelaart	0	10	0
Mrs. R. Wilmot	0	10	0	Miss W. M. Dod ...	1	1	0
E. A. A.	1	1	0	Misses Slee ...	0	15	0
M. A.	1	1	0	"A Thank Offering ...	1	0	0
Miss M. E. Lake	1	0	0	Rose E. Hope	2	2	0
Miss F. E. Cassan ...	5	0	0	"A Well-wisher"	0	10	0
"Methodist Doctor" ...	2	2	0	Miss Martin	2	2	0
C. E. Phipps, Esq.	1	1	0	Dr. J. J. Nason	1	1	0
Miss Jacomb	0	10	0	E. M. J.	0	6	0
Miss G. Beattie	0	10	0	R. Braithwaite, Esq. ...	1	1	0
Miss E. Garland	0	10	0	Miss M. Godsal	1	1	0
Provost Ball	1	1	0	F. Wood	0	2	0
Miss H. Iremonger	2	2	0	G. L.	0	10	0
Miss A. C. Jervoise	3	3	0	Miss L. Newton ...	1	0	0
Miss Cope	0	5	0	Rev. H. R. Manders	1	0	0
Miss M. Moriarty	1	0	0	Miss M. Gill	1	0	0
Miss J. M. Macdonald, M.B.	10	0	0	Dr. P. Jakins	1	1	0
"M.S."	0	10	0	Dr. C. R. Fleury	1	1	0
Mrs. Creaghe-Hayward ...	1	0	0	Dr. and Mrs. Colman ...	1	1	0
Mrs. H. L. Lancaster ...	2	0	0	F. B. Palmer, Esq.	5	5	0
Dr. O. Codrington	5	5	0	Mrs. E. S. Frost	0	10	0
"Sideman," St. Barnabas ...	0	5	0	Rev. G. Greenwood	5	0	0
L. T. T.	0	3	6	"The Blind Child of a Country Parson"	0	5	0
M. E. D.	5	0	0				
Miss Lillington	1	0	0				

SOUTH AFRICAN MEDICAL CONGRESS, 1905.

The next meeting of the South Africa Medical Congress will be held at Pietermaritzburg, Natal, in June, 1905, under the auspices of the Natal Branch of the British Medical Association, and will extend from Monday to Saturday.

The preliminary arrangements are well in hand. A large General Committee has been formed, and two Subcommittees (*a*) Financial and Social and (*b*) Sectional.

The work of the Congress will be split up into the following Sections:

1. Subject of general interest.
2. Medicine.
3. Surgery.
4. Gynaecololoy and Obstetrics.
5. Public Health.
6. Special.

The list of office-bearers is not complete, but the following offices have been filled:—*President of Congress:* James Hyslop, M.B., C.M.Edin., D.S.O., Lieutenant-Colonel Natal Medical Corps, Superintendent Natal Government Asylum, Pietermaritzburg. *Vice-President of Congress:* Samuel G. Campbell, M.D., F.R.G.S.Edin., D.P.H. (Durban). *Joint General Secretaries:*—D. Campbell Watt, M.D., C.M.Glas., Pietermaritzburg. W. Watkins-Pitchford, M.D.Lond., F.R.C.S.Eng., D.P.H., Government Laboratory, Pietermaritzburg. *Treasurer:* W. Russell Strapp, M.D., C.M.Edin., Pietermaritzburg. *Secretaries of Sections:*—General Subjects: A. T. Fraser, M.B., B.S.Cantab.; Medicine: H. N. R. Child, M.R.C.S.Eng., M.R.C.P.Lond.; Surgery: W. J. Woods, M.B., B.S.Ire., F.R.C.S.Eng.; Gynaecology and Obstetrics: H. S. Flook, M.R.C.S.Eng., L.R.C.P.Lond.; Public Health: O. J. Currie, M.B., C.M.Lond., M.R.C.S.Eng.; Special: R. A. Buntine, M.B., C.M.Melb.; all of whom reside in Pietermaritzburg.

As regards the Presidents and Vice-Presidents of Sections, the Secretaries are in communication with prominent practitioners in South Africa with a view to securing their acceptance of office.

A number of social functions and excursions will be arranged so as to form pleasing interludes to the professional work of the Congress.

Personal invitations will be issued to all medical men in British South Africa, and those who desire to read papers are asked to communicate with the Sectional Secretaries.

The presence at the Congress of medical visitors to South Africa will be highly esteemed.

Registration of Nurses in America. A Bill providing that nurses must be registered after passing a State examination has been introduced in the Legislature of the State of Louisiana. It is believed that the Bill will become law.

ASSOCIATION NOTICES.

NOTICE OF QUARTERLY MEETING OF COUNCIL FOR 1904.

A MEETING of the Council will be held on Wednesday, October 19th, in the Council Room of the British Medical Association, 429, Strand, London, W.C.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

EAST ANGLIAN BRANCH.—The autumn meeting of the East Anglian Branch will be held at Kelling Open-air Sanatorium, near Holt, Norfolk, on Thursday, September 29th. Members wishing to read papers or show cases or specimens should communicate with Mr. H. A. BALLANCE, M.S., Norwich, Honorary Secretary.

SOUTHERN BRANCH: SALISBURY DIVISION.—The next meeting of this Division will be held on September 7th next at the Infirmary, Salisbury, at 3.15 p.m.; the meeting to be preceded by dinner at the County Hotel at 7 o'clock. Members wishing to read papers or show cases at the meeting are requested to communicate as soon as possible with the Honorary Secretary, J. E. GORDON, 52, Endless Street, Salisbury.

SPECIAL CORRESPONDENCE.

LIVERPOOL.

The Mortality from Infant Diarrhoea.—Noble's Isle of Man Hospital.

THE unusual heat of the last few weeks has produced a death-rate higher than any that had been met with in recent years, the excessive mortality being due almost entirely to deaths from infantile diarrhoea. The great prevalence of this disease has come as a painful surprise to the inhabitants of Liverpool because the health authorities have been making special efforts to prevent it, and the mortality from it has been remarkably low during the last two years. It was also hoped that the careful supervision which is exercised over the food supply, especially the milk supply of the city, would have a beneficial effect in this direction, and the admirable arrangements made by the Corporation to supply sterilized milk at less than cost price seemed to promise a better state of things as regards young children than has existed in the past. The great prevalence of diarrhoea is generally admitted to be due to the consumption of food in the early stage of putrefaction, and indeed considering the intensity of the heat, the swarms of flies, and the rapidity with which all kinds of food has decomposed, it is not surprising that a vast amount of gastro-intestinal trouble has occurred. The fact appears to be that when a wave of unusually dry, hot weather occurs the arrangements for ensuring a supply of wholesome fresh food for the population break down, and that decomposition takes place, if not before the food reaches the consumer, at least before it is consumed. It is obvious that the conditions under which the poor live are such as to make it impossible for them to keep milk, fresh butter, or fresh meat in a state fit for consumption in hot weather for more than an hour or two, and the most that the inspectors can do is to condemn decomposing food before it is sold. Under the special climatic conditions of the past few weeks it is likely that food just on the point of decomposing, if not worse, has sometimes escaped the vigilance of the inspectors, and then of course by the time it was consumed putrefaction would have been considerably advanced. Considerations such as these raise doubts in the minds of many who have practical knowledge of the conditions of life in the poorer neighbourhoods as to the advisability of absolutely prohibiting the use of preservatives in milk and butter and other articles of common consumption.

The annual meeting of Noble's Hospital was held recently in Douglas. The Bishop presided, and Sir William L. Drinkwater, Chairman of the Committee, presented the report, which stated that the late Mr. Noble, the founder, had left funds for enlarging the hospital, and particularly for providing a nurses' home. A house adjoining the hospital was bought for £800. The report stated that owing to the increase of patients there were not enough beds, but it was hoped that Mr. Noble's bequest would end the difficulty. There was an excess of expenditure over income amounting to £400, but if the work was to be carried on according to modern requirements the expenses would be still higher than they had been. The in-patients amounted to 416 against 387 in the preceding year; the out-patients were 3,098. The average number of beds occupied was 29.

MANCHESTER.

The Water Supply.—The Sanitation of Sea-going Ships.—Amalgamation of St. Mary's Hospital and the Southern Hospital.—Jewish Hospital.—Free Bathing for School Children.—Hospital Sunday and Saturday Fund.

THIS month, it is anticipated, will see the completion of the second line of pipes from Thirlmere Lake to Manchester, a distance of 96 miles. Through this long aqueduct 24,000,000 additional gallons of water will be brought to the city. The work of supplying the city was begun in 1885, and up to 1894 the amount expended was £2,500,000, including the cost of the lake watershed and the wayleaves. The second part, about to be completed, has cost £600,000, and has taken two and a-half years for its construction. It is intended to lay three more lines of pipes, so that Manchester will have a supply of 60,000,000 gallons per day—the total aggregate cost approaching £5,000,000. To obtain the necessary amount at the watershed, it is proposed to raise the massive embankment at the outlet, whereby the level of Thirlmere will be raised 50 feet, and the lake will be increased in length from $2\frac{3}{4}$ miles to over $3\frac{1}{2}$ miles, with a capacity of 8,135,000,000 gallons, equal to 150 days supply, if no rain was to fall during this time. It is further proposed to construct a reservoir near the city which shall contain a three weeks' supply.

The Merchant Service Guild has communicated with the Board of Trade expressing its appreciation of the Board's action in preventing, so far as possible, any chance of reduction in crew's spaces on merchant vessels. The Guild states that in most merchant ships the accommodation for ships' crews is utterly inadequate, and that grave insanitary conditions very frequently exist. The latter may be almost wholly attributed to the restricted spaces which are provided. Where sickness or disease arises on board ship it is usually the case that the patient remains lodged amongst other members of the crew owing to there being no provision made for a ship's hospital. These remarks should be applied both to the seaman and to the ship's certificated officers on merchant ships. The Guild considers that the physical disabilities imposed upon ships' officers in regard to the limited provisions as regards space should be subject to the official interference of the Board of Trade. The President of the Board of Trade has notified that a representative of the mariners will be appointed on the departmental Committee which Mr. Bonar Law promised would be appointed to consider this matter.

At last a working arrangement has been come to between St. Mary's Hospital and the Southern and Maternity Hospital. St. Mary's is situated in Gloucester Street, with a small frontage towards Oxford Road, while the Southern Hospital will be erected near the new Royal Infirmary on a splendid site facing Whitworth Park. The two hospitals are to be amalgamated, and be called the St. Mary's Hospitals. The St. Mary's in Gloucester Street will be set apart for midwifery and a Maternity Hospital, and the other for diseases of women and children. The University will be afforded every facility in both institutions for the clinical instruction of its students in these departments of medicine.

The great and continual influx of poorer Jews from Russia and Roumania who have been accustomed to "kosher" food all their life, and by whom the scrupulous observance of Jewish law in the cooking of food is held as a binding obliga-

tion makes it necessary in any hospital in which Jewish patients are to be treated that a special kitchen for the preparation of Jewish food should be provided. Last year, in the Royal Infirmary 168 Jewish patients were supplied with "kosher" food from the Jewish kitchen provided in the Infirmary. This, however, only partially meets the case of these poorer Jews, many of whom only imperfectly understand English, and so are unable to explain fully their ailments to the medical and nursing staffs. There is, moreover, the fear of being away from their kith and kin, without hearing the last sacred prayers on their death-bed.

One can understand the desire of the sick Jew to be surrounded with nurses and doctors of his own faith. There are about 5,000 Jewish householders in Manchester, and of these 2,000 Jewish working men have bound themselves to give a weekly contribution towards the provision of a new hospital and its maintenance in the future. There is every prospect that the rich will help the poorer Jews. The first stone of the new Jewish hospital, called the Victoria Memorial Hospital, situated in Cheetham district, was laid last year, and it is hoped that the institution will be opened early this autumn. It contains four large wards. There will be a resident Jewish surgeon at the hospital, and there are to be six honorary surgeons and physicians not necessarily all Jews. The nurses also will be Jewish ladies. The benefits of the hospital will not necessarily be restricted to Jewish patients.

The Baths Committee of the City Corporation decided to suspend the rule that school children should be allowed the free use of the baths only when accompanied by their teachers. The restriction was suspended from July 15th to August 15th—the school holidays. The success has been complete, for during one month the "free bathers" reached the large total of 135,706—95 993 boys and 39,713 girls. Adding those school children who paid for admission, 40,092, and those accompanied by their teachers, 2 239, we had a grand total of 178 037 boys and girls who made use of the baths during the holiday month. Last year, in the same time, the restriction compelling the attendance of a teacher being in force only 11,429 enjoyed the free use of the baths, and no fewer than 60 868 paid for admission—a total of 72,327. Thus by the removal of the restriction, though only for a month, 105,710 more children have been enabled to bathe and wash than was the case last year. The extra cost involved was £20.

The Hospital Sunday and Saturday Fund Committee for Manchester and Salford has this year been able to distribute among the local charities a sum of £7,500. The following in round numbers represents part of the fund distributed: Royal Infirmary, £1,203; Children's Hospital, £1,174; Hospital for Incurables, £737; Sick Poor and Private Nursing Institution, £731; Salford Royal Hospital, £658; Ancoats Hospital, £560; Southern and Maternity Hospital, £477; Royal Eye Hospital, £446; Northern (late Clinical) Hospital, £401; Hospital for Consumption, £310; St. Mary's Hospital, £297; Hospital for Skin Diseases, £116. Smaller sums were sent to the other hospitals and dispensaries.

CORRESPONDENCE.

THE ASSOCIATION AND MEDICAL DEFENCE.

Sir,—The reasons for the slow progress, which as Professor Saundby points out, the medical defence movement has made during the past few years, are as follows:

(1) The attitude of the Council of the Association.

(2) The utter apathy and indifference of the medical profession as a whole, towards everything which affects their welfare.

(3) The selfish refusal of the Medical Defence Union to co operate in any scheme of amalgamation with other societies.

The reform agitation of 1895 and 1896 was, however, by no means fruitless. One of its objects was to rouse the members to realise the fact that, while the Memorandum laid down as one of the duties of the Association the maintenance of the honour and interests of the medical profession no machinery was provided for its fulfilment in a practical manner. Ten years ago the Association did little more than publish a journal, and organize an annual meeting, and the Council as a whole were strongly opposed to any movement, which, as was said at the time, tended to convert the Association into a trades-union. All that the reform party asked was that the Association should do for the medical profession what the General Council of the Bar and the Incorporated Law Society had done for the two branches of the legal profession, and that we should no longer be without an organization capable of actively and effectively protecting our interests. Since that time the constitution of the Association has been so changed that this duty can be undertaken practically. It is too soon to judge the work done by the Association in this respect, but the outlook is promising, and there is little doubt but that in time the Association will become the long-desired agency which will organize and unite our profession.

The second aim of the reformers of those days was the amalgamation of the existing defence societies, and the formation of one strong society under the aegis of the Association. It seems so self-evident that the medical profession would gain enormously by such an amalgamation that it is scarcely necessary to say more than a few words on this point. If we consider only the two principal societies we see a great waste of money in maintaining two offices, with separate staffs of paid officials, when the work could be done by one. The result is that each society spends nearly the whole of its income, and very little margin is left for the accumulation of a reserve fund. The protection of members from personal attacks, and the prosecution of a few struggling quacks are all that the societies can undertake, and in their present weak financial position neither society is in a position to undertake any case in which the issue is doubtful, and in which there is a danger of heavy costs being incurred.

In 1895 some members of the Association formed themselves into a committee, and solicited the opinions of the Branches on the question "whether it would be to the advantage both of the medical profession and the public, if the Council of the British Medical Association were to take power and authority to proceed against unqualified practice and quackery, and in other ways to protect the interests of the medical profession." Some thirty resolutions were received in reply, and of these 28 were favourable, 1 was unfavourable, and 1 was doubtful. This seemed an overwhelming expression of opinion in favour of the Association undertaking the duty of medical defence.

After the meeting at Carlisle the question was again referred to the Branches by the Council, and three distinct schemes of medical defence were submitted to them. The result was utter confusion, and when the replies came in a great difference of opinion was shown to exist, which would not have occurred had only one scheme been submitted for consideration.

When, later, the question was referred to the members, 5,664 voted in favour of medical defence being undertaken by the Association, and 2,110 against. This was a substantial majority, and in the face of the mandate given to the Council at the previous meetings, they had no legal right to shelve the question. No one who knows anything of the medical profession, how apathetic and indifferent the majority of medical practitioners are to all that concerns their profession as a whole, could be surprised at the fact that only about 50 per cent of the postcards were returned. This was only to be expected, and those who did not return their postcards should have been considered as not having voted one way or the other, and the suggestion that those who abstained from voting should be reckoned as not in favour of the proposal was not justifiable. Never will unanimity be obtained on this or any other question affecting the interests of many, and the vote of the majority should have been accepted, according to the practice which obtains universally. The Council had no right to refuse to go to the High Court to alter the Memorandum in 1897. No action was taken by the members, and the question was shelved.

Professor Saundby says that there is an absence of agreement amongst members themselves as to what they want. There was, however, no difference of opinion among the reformers of 1896. We desired that the claims and obligations of medical defence should be shared by all members of the Association, and we still think so. But in face of the opposition which has been artificially excited, mainly by the officials of the Medical Defence Union, a compromise is necessary, and this properly takes the form of a voluntary medical defence department of the Association. This scheme has recently been submitted to the Divisions, and 46 have voted in favour, while 1,460 members have expressed in writing their willingness to join such a department. This number is sufficient to warrant a start being made, without any risk being incurred by the Association. It cannot be gainsaid that a large number of members desire to have this department established,

and are willing to support it, and there is no valid reason for ignoring them. Those who do not approve of the scheme are under no compulsion to join, and there is no liability upon the general funds of the Association.

The minority report against the scheme which was presented when the Medical Defence Committee reported to the Council in April, 1904, was signed by Dr. Messiter, President of the Medical Defence Union, and by Dr. Beverley, and may be considered the protest of that body.

Dr. Messiter has publicly protested against the proposal as an attempt to establish a monopoly, by which he means, I suppose, that he is opposed to amalgamation, and he has also stated that he considers competition between defence societies desirable, and his words have been echoed by the Secretary, who spoke in the name of the Union. The circular sent out by the Council of the Medical Defence Union completely removes any hope that might exist that a more reasonable and unselfish attitude would be adopted, and that in the interests of the medical profession they would come forward and be willing to favourably consider any practical scheme of union and amalgamation with other societies, which is the attitude adopted by the London and Counties Medical Protection Society.

The open hostility of the Medical Defence Union to the medical defence scheme is a thing to be reckoned with, and as there is no likelihood of a more reasonable attitude being adopted, it is useless to consider that society any further. Let the Medical Defence Union go its own way. Certainly an end should be made to the practice of having our policy dictated to us by the officials of a small and independent society, which has in the interests of its corporate existence sought to maintain disunion among us.

The demand for this medical defence department having been made by a large number of members, it is unjust to them that any further delay should occur before power to establish this department is asked for. When the department is opened, I venture to hope that room will be found for members of the medical profession who not belong to the Association, and that every endeavour will be made to include the London and Counties Medical Protection Society in the union, and to meet their wishes in the matter. The attitude of this Society towards this question has been without reproach.—I am, etc.,

Hemel Hempstead, August 22nd. A. G. WELSFORD.

INFANTILE MORTALITY IN LIVERPOOL.

SIR,—The wave of exceptionally high temperature that has lately visited this country has been followed by the usual epidemic of infantile diarrhoea. The mortality in the great centres of population has risen in consequence to a height that has not been reached for some years, and Liverpool heads the list with a death-rate of 39 6 per 1,000. In the conditions under which the poor live it is not a matter for surprise that diarrhoea, due to the consumption of decomposing food, should be extremely prevalent at such a time as this. Even in the houses of the well-to-do it has been difficult to keep milk, fresh butter, and fresh meat, in a state fit for consumption for more than a few hours, and some of it has often to be thrown away as not above suspicion. In the slum dwellings in our great cities the difficulties of keeping fresh food in a state fit for consumption must be well nigh insuperable. The air of the overcrowded rooms is fouled with organic emanations from the bodies and clothes of the inhabitants; water has to be fetched from a standpipe outside; there are no relays of dishes or other receptacles for the food; such receptacles as there are are dirty; there is little or no protection from flies, and if the day's food goes bad the family must either eat it or go without any. These conditions are not peculiar to Liverpool, but there is one circumstance connected with Liverpool which I think explains, in part at least, their especially disastrous influence on the children in that city during the recent hot weather. For some years past the authorities in Liverpool have been actively engaged in suppressing the use of preservatives, especially boracic acid and salicylic acid, in foods, and I believe that the success of this crusade has laid the public open to the serious risk of poisoning by decomposing food.

Some time ago, in conversation with an official who opposed the use of preservatives on the ground that by sterilization decomposable food could always be prepared so as to be delivered in good condition to the consumer, I asked him how it was to be kept from going bad directly it was opened. His reply was that the officials had nothing to do with the food after it had reached the consumer, their only business being to see that it reached the hands of the consumer pure, which meant, in this case, free from preservatives. This may satisfy the official mind, but it is not common sense.

I have on more than one occasion invited the opponents of the use of preservatives in food to show that the reasonable use of boracic acid or salicylic acid as preservatives in food has ever injured the health of a single human being, and I have not heard of any such case that would bear investigation. On the other hand, every one admits that the consumption of decomposing food is attended with serious risk to health, and I maintain that in the conditions under which the poor live in our large cities their food is certain to undergo decomposition in hot weather unless preservatives are employed.—I am, etc.,

THOS. R. BRADSHAW, M.D., F.R.C.P.,
Liverpool, Aug. 21st. Physician to the Liverpool Royal Infirmary.

THE SCOTTISH POOR-LAW MEDICAL SERVICE.

SIR,—Your correspondent "Fair Play" is, I imagine, a Lowland medical officer. I venture to suggest that he is slightly mistaken in saying "that the grievances as depicted in the Highlands and Islands of Scotland are not in the slightest degree different from the grievances of any other part of Scotland."

Undoubtedly the grievances he mentions are general all over Scotland, but our Lowland brethren are much better off than we are in many respects; yet I shall not quarrel with him on that point.

I entirely agree with him that the Association ought to take action, and I am somewhat surprised that the same practical assistance has not been given to us as has been accorded to our Irish brethren, who, at least, have fixity of tenure, which we have not; so, in reality, we are in a much worse plight than they are.

The Scotch Local Government Board have lately had a Departmental Committee inquiring into Poor-law medical relief, but, the grievances of the medical officers being only "incidental," their claims to justice were omitted from the scope of inquiry, and any evidence bearing thereon was of the scantiest description.

A report by a Special Commissioner who would collect facts and evidence from the medical officers and remain uninfluenced by the "views and opinions" of parish council officials is urgently needed at the present juncture. The irregularities which go on in this service have been brought to the notice of the Local Government Board over and over again by individual medical officers, but little heed has been paid to them, parish council explanations being more readily accepted than the statements of the medical officer.

Perhaps "Fair Play" will permit me to correct his views with regard to the powers of the Local Government Board. So far as the medical officer is concerned, they are practically *nil*, and seem to be limited to taking care that he does not get too large a salary (adequacy is not taken into consideration), and dismissing him if need be. Beyond these eminently necessary and desirable powers exercised by the Board the medical officer is the "servant of the parish council" absolutely, and as completely as if he were only engaged to black the councillors' boots.

The Board cannot enforce the payment of lunacy fees, nor yet payments for visiting pauper lunatics; all they do is to see that these payments are not included under medical relief.

Neither is it illegal for any parish to refuse to pay the above fees. It is only dishonest. Medical officers are themselves to blame, because they are simple enough to agree to do such work without receiving the usual fees. If they refused they would be promptly kicked out of office, and other men would step in who would oblige "the Council" with their services gratuitously. Parish Councils know this, and act accordingly.

The usual way of playing the game is as follows, varied according to the idiocyncrasies of individual Councils:

An advertisement appears for a medical officer and public vaccinator at a fixed salary, with certain other allurements thrown in to improve the attractiveness of the bait.

The doctor arrives in the parish, makes his obeisance to "the Council," signs a cleverly drawn-up agreement, and Bumbledom has won the game.

He slowly wakes up to find that not only has he agreed to attend the paupers medically, and supply them with medicine for no extra charge, but he has to act as public vaccinator, sign lunacy certificates, visit pauper lunatics, and in some cases put in a monthly appearance at the different districts

for the benefit of the ratepayers at large, and all these important duties in respect of his salary as medical officer under the Poor-law.

I say the medical officers have no one to blame but themselves, and it is idle to expect the Local Government Board to help them.

The Board cannot legally enforce their "recommendations" if parish councils do not choose to adopt them, and in not a few instances they do not enforce their "rules." A great deal depends upon the 'cuteness of parish council officials and individual members as to whether "recommendations" are adopted or not. The "rules" they know they must obey or risk losing the grant, unless they are fortunate enough to trick the Local Government Board, or their officials, into believing that the "rules" are not applicable to their particular parish, or a hardship to the paupers, or some other equally plausible story.—I am, etc.,

August 19th. ANTI-BUMBLEDOM.

THE NOMENCLATURE OF MALARIA.

SIR,—The connexion between the prevalence of mosquitos and the occurrence of malarial fevers has, in the light of research during recent years, assumed such importance, that the systematic study of the various forms of these fevers, as well as the life-history, habitat, and geographical distribution of *Anopheles* mosquitos is at present engaging the closest possible attention of the medical profession generally in all parts of the world where mosquitos exist.

To aid and facilitate these researches, and in the interests of statistical accuracy, I wish to bring to notice the existing official forms of nomenclature as laid down by the Committee appointed by the Royal Colleges of Physicians of London referring to the varieties of malarial fevers, namely: 24 (*a*) Intermittent (Synonym Ague), and 24 (*b*) Remittent.

I would suggest that the present *Nomenclature of Diseases*, which is believed to be under revision, should be so altered as to embrace the various species or varieties of malarial fevers met with, all of which will, I think, fall generally under one of the following headings:

1. Benign tertian.
2. Quartan.
3. Cachectic or chronic.
4. Malignant tertian.

We would thus avoid such general terms of no scientific or statistical use as "intermittent" and "remittent fevers," as laid down in the last edition of the *Nomenclature of Diseases*. —I am, etc.,

E. BLAKE KNOX, M.D.,
Simla, Aug. 4th. Captain, Royal Army Medical Corps.

MALTA FEVER.

SIR,—Fresh from the perusal of the report of the interesting discussion on Malta fever which took place in the Army, Navy, and Ambulance Section at the recent meeting of our Association in Oxford, I am struck with the statements of Colonel D. Bruce, R.A.M.C., and Fleet Surgeon P. W. Bassett-Smith, R.N., that "in ordinary sea-water" the micrococcus melitensis "appears to die off almost immediately," and that "the organism can retain its vitality for a considerable period when desiccated, but that it dies in about five days in sterile fresh and sea water and urine, but remains active long in sterile milk."

The speakers do not appear to have touched upon the question of treatment of the disease, and it occurs to me to ask if it has ever been dealt with by the rectal or intravenous injection of normal saline solutions. The action of these solutions in inhibiting the activity of, or in destroying the power of, toxins in the blood, is so signal that, taken in conjunction with these facts observed by them, it would appear to be a treatment worthy of trial.

I can quite enter into the feelings of Professor S. Grech, who protested "against the nomenclature of the disease—Malta fever," stating that it "might give to Malta a bad name which might keep away from their shores winter visitors"; adding that "that same fever had been observed in Sicily, in Naples, in the other towns along the Mediterranean."

Malta is a charming place to stay in during the winter and early spring months if you have proper introductions, as I can testify from a visit I paid there of eight days' duration in April of last year. But the disease in question works sad havoc in the warmer months, and does so much mischief that one hails with delight the statement that the various Government authorities concerned are now engaged, under the direction of the Royal Society, in a research into its nature. I wonder whether an outcome of this inquiry will be that invalids will be sent to the higher ground in the interior of the island—say at Citta Vecchia, the old capital—instead of being kept in hospital in the vicinity of the Grand Harbour. There is probably much truth in the surmises of Professor Grech, who, after stating that formerly "the sea was a stagnant cesspool, the harbour and its surroundings the centre of infection to the men in the army and navy," goes on to say, "What he wished to impress upon them was the importance of the analysis of the air in the towns, in the harbour, through which he was afraid the poison of the fever was conveyed to the lungs."—I am, etc.,

Swansea, Aug. 15th. H. A. LATIMER, M.D.

DISPENSING BY MEDICAL MEN.

SIR,—I quite agree with a writer in the BRITISH MEDICAL JOURNAL that the abolition of apprenticeship has had a deleterious effect on dispensing by medical men.

There is one aspect of the subject that has not been mentioned. I think in almost every practice there are heaps of patients who cannot afford to pay more than 2s. 6d. for advice and medicine. If the medical man makes up his own prescriptions, when the medicine is finished the patient naturally returns to the surgery for more of the same; or, if necessary, an alteration is made and the doctor receives the same fee.

If the patient has to get the medicine made up by a chemist the chances are that he will not go to the doctor when he requires more, but will go direct to the chemist. The doctor will be a distinct loser, and, if this is often repeated, a serious effect on the medical man's income must be the result.

Patients too frequently give prescriptions to their friends who get the medicines made up whether they are suitable to their case or not. Whereas under other circumstances if, as a result of benefit, a patient recommends another sufferer to the medical man the latter is able to decide whether the remedies are suitable in the particular case, and the doctor's income is greatly benefited thereby.—I am, etc.,

Llanfairfechan, Aug. 21st. FREDERICK T. FAGGE.

STATIONARY HOSPITALS.

SIR,—In his very interesting paper on The General Hospital: Its Working and Staff, which appeared in the BRITISH MEDICAL JOURNAL of August 13th, Surgeon-Major C. R. Kilkelly, C.M.G., says:

> Stationary hospitals are improvised constructions scarcely deserving the name of hospitals. They are, although immovable, not properly staffed or equipped. . . . .

From this it is evident that Surgeon-Major Kilkelly cannot have seen the numerous stationary hospitals which were opened in many of the towns throughout the Orange River Colony and Transvaal during the latter half of the late war.

As a rule, they contained 100 to 150 beds, and were fully equipped in every respect. Up to the limits of their equipment, they were as capable of dealing with severe cases of gunshot wound or disease as any general hospital could be.—I am, etc.,

August 15th. LIEUTENANT-COLONEL.

THE CITY ORTHOPAEDIC HOSPITAL.

SIR,—As one of the governors of the City Orthopaedic Hospital, by whose vote it was decided to refuse to incorporate with the two other Orthopaedic Hospitals I think it only right to let the public know our reasons for this refusal, and I think that when they have considered them they will agree with me that the action of the Hospital Sunday Fund Committee, in refusing the usual grant to this most deserving institution for the purpose of coercing them, is most unjustifiable. The City Orthopaedic Hospital is worked at very small cost for administration and nearly the whole of the money subscribed goes to the patients.

It is on a freehold site in one of the most accessible spots for the poorer inhabitants of London, it can be reached by a penny omnibus fare or penny railway fare from all the poorer districts of London. It treats a class of disease to which the poor are particularly subject.

It was proposed to amalgamate the three Orthopaedic Hospitals and erect a large building at immense cost on a leasehold site at the West End of London, thus taking it too far away from the poor districts and spending a very large sum on bricks and mortar which is at present available for relieving the very great sufferings of the people.

It would also increase the administrative expenses much

out of proportion to the good to be derived from the amalgamation.

I think that pressure must have been brought to bear in some way to prevent the usual grant, as I cannot understand any one who has gone into the matter fairly refusing such funds to so deserving a charity.

I feel sure that it is only necessary for any one to visit this institution, which is situated in Hatton Garden, to see how carefully the Committee have husbanded their resources and the very kind way in which the poor little sufferers are treated to ensure plenty of donations and subscriptions to carry on this most humane work without the aid of the Hospital Sunday Fund Committee, which has refused to assist.—I am, etc.,

Sydenham, Aug. 18th. JAMES A. PHILLIPS.

THE METRIC SYSTEM.

SIR,—As the mover of the resolution in favour of the metrical system being adopted as soon as possible by the General Medical Council for the preparation and dispensing of medicines, I would like to ask Dr. C. Dukes if he wishes to emulate the celebrated Mrs. Partington in trying to keep back the tide with a sweeping-brush?

It is true there may be theoretically some advantages in the duodecimal system; but as the decimal system has been adopted almost universally by the civilized world, would it not be better if we fell into line, and adopted it also? Always remembering, as a salve to our insular pride, that although the French nation was the first to adopt it, yet it was proposed by the celebrated English engineer, James Watt, in a letter dated November 14th, 1783.—I am, etc.,

Plymouth, Aug. 22nd. GEO. JACKSON.

MEDICAL PRACTICE IN BUSSORAH.

SIR,—As an ex-holder of this appointment may I be allowed to say a few words? While agreeing with most points raised in the letter published in the BRITISH MEDICAL JOURNAL of June 25th, p. 1517, I think the income estimated a little too liberal. Ships visiting the port are not compelled to engage the doctor, and many do not; also the fee of £2 2s. may mean attendance on the ship for one month if she fail to sail by first tide. Apart from these points, a good opening certainly exists for a young surgeon. Stone and cataract are very common. A knowledge of French would be of the greatest use. Excellent snipe shooting is to be had during the winter months. Living is not expensive.—I am, etc.,

JOS. SCOTT, M.B.,
Medical Superintendent, Government Indo-European
Teheran, Persia, July 30th. Telegraph Department.

IRRIGATION OF OPERATION WOUNDS WITH SOLUTIONS OF CHEMICAL IRRITANTS.

SIR,—A whole copy of the BRITISH MEDICAL JOURNAL would not afford sufficient space for the discussion of all the points, relevant and irrelevant, raised by Dr. J. T. Fox in his letter of June 27th.

I therefore still limit the application of my remarks to "incisions through healthy skin into tissues prior to operation free from bacteria." Dr. Fox doubts the fact that "bacteria, in spite of all precautions do usually gain access to such wounds." In other words, he considers that the surgeon who at the end of an operation irrigates the wound with a solution of a chemical irritant, in order to kill the bacteria *in situ*, and the surgeon who irrigates with saline solution in order to wash away the bacteria are both on a fool's errand, because each is attempting to treat a condition which does not exist. In contrast with this opinion are the statements of Barling[1] that "no wound was absolutely aseptic, for if the surface of a wound was tested by cultures, immediately before it was closed, infection would always be found to be present; of Thelwall Thomas[2] that "the deeper parts of the skin were never rendered sterile"; and of Lockwood[3]: "It is impossible for me to conceive that an open wound is germless."

The statement that a chemical solution attacks impartially the tissues and the bacteria in reality understates the case, since pyogenic bacteria, such as those found in a wound (not the effete specimens growth in a laboratory), are far more able to resist the action of a chemical than are the tissues of the patient.

No discussion on wound treatment would be complete without bringing in the name of Lister, which to some people appears to to be as comforting as the blessed word Mesopotamia was to the old lady of historic fame.

It is being only gradually recognized that Lister's triumphs were due not to the few minutes' irrigation with a chemical irritant of divided living tissues, but to the prolonged action of the chemical on the inanimate bodies which were used during the operation. In other words, Lister reduced to a minimum the number of bacteria gaining access to the wound by sterilizing not the wound, but the objects with which the wound was made and treated, a result which to-day is obtained just as efficaciously and with far greater rapidity by means of heat.

Up to the present time, no one has devised a means of destroying bacteria in a wound without, at the same time, destroying the tissues of that wound. It is quite within the range of possibility that some day the surgeon may obtain from the bacteriologist and other workers on the subject of immunity a solution of antibodies, which, when applied to a wound, will destroy or neutralize bacteria and their toxins, without devitalizing the tissues of the patient. But this time alone will decide.

The theory, that the application for a few minutes of a solution of an alleged germicide is able to render capable of primary union a wound which has become infected during an operation, is responsible for much of the slipshod work in present-day operating. So long as men are imbued with the idea that the splashing into a wound of a solution of one in something, prior to closing the skin, is capable of neutralizing all sins of omission or commission, so long will suppuration be of common occurrence. Indeed, it is difficult to understand why men, who have such faith in the disinfecting power of chemical irritants, ever boil their instruments, or even wash their hands.

With such men as Ballantyne, Barling, Jessop, Stiles, and Thorburn (to mention only those names which occur on the spur of the moment), in the rapidly expanding ranks of those who recognize the inadvisability of applying solutions of irritants to operation wounds, irrigation with chemicals of wounds considered capable of union by first intention will, slowly, but surely, become a practice of the past.—I am, etc.,

Plymouth, August 11th. C HAMILTON WHITEFORD.

IS EXERCISE ESSENTIAL TO HEALTH?

SIR,—The above question is raised by the writer of the article on Skipping as an Exercise for Adults in the BRITISH MEDICAL JOURNAL for August 13th. He says he is not convinced that the axiom that exercise is essential to health is really a positive truth and of universal application, and, in support of the no-exercise theory, singles out Mr. Chamberlain and Mr. Labouchere as splendid examples of it.

Personally, I have never met a healthy person belonging to the "sedentary brigade," and it is certain that the public men mentioned above are far from perfect human machines. The ex-Colonial Secretary's enjoyment of life is often spoiled by an attack of gout, and the editor of *Truth* suffers from chronic dyspepsia. Now, as a firm believer in the value of exercise for the maintenance of physical and mental health, and as a means for its restoration in certain cases, I cannot but think that the profession will be making a grave error in lending any support to the no-exercise theory.

As with food so it is with exercise; the requirements of different men and women vary both as to kind and amount. A judicious amount of exercise combined with the other simple laws of hygiene is a far better safeguard of health—and in many instances a better remedy too—than all the drugs known to mankind, and, although one cannot guarantee complete immunity from the many ills that flesh is heir to, still there is no doubt that with the increased physical well-being to be obtained from suitable exercise and healthy living we stand a much better chance of resisting disease than the no-exercise man.—I am, etc.,

R. F. E. AUSTIN, Major R.A.M.C.
Station Hospital, Portland, Aug. 15th.

THE EFFECT OF HIGH ALTITUDES.

SIR,—I am afraid some additional evidence is necessary before Mr. Ryan's experience can be accepted as a permanent record of the effect of high altitudes pure and simple.

He says nothing about his own previous training in anticipation of the prolonged muscular effort experienced in mountaineering, nor does he mention the character of the food taken on the day preceding the climb, the amount of sleep obtained, or the rate of ascent, any or all of which

[1] *Lancet*, July 30th, 1904, p. 339.
[2] Ibid., April 23rd, 1904, p. 1124.
[3] BRITISH MEDICAL JOURNAL, February 6th, 1904, p. 295.

would have much to do with the appearance of headache, nausea, and vomiting.

The Matterhorn hut is about 10,000 ft. high, so that he would probably have been climbing at 12,500 ft. and 13 500 ft. between 2 a.m. and 5 a.m., which is a notoriously "delicate" time even for a stomach thoroughly experienced in early starts. Injudicious feeding or a bad night are often just enough to create a predisposing cause, and would easily account for his symptoms at such a time. The voiding of highly-coloured urine is not uncommon on the mountains at any time, and especially after "perspiring freely."

The temperature, unless taken in the rectum, is of no value; and Mr. Ryan does not state in which position his was recorded.

The frequent halts above 14,000 ft. may be accounted for by the nature of the mountain at this height, being at times sufficiently difficult to necessitate one climber only moving at a time; and a pulse of 200 with respiration of 56 would not be excessive in some persons under the existing conditions. I presume he has excluded any possibility of any organic disease in his own case which might render him unfit for excessive muscular effort.

Mr. Ryan says that he "did not experience any sense of muscular fatigue." Does he, in this statement, refer to aching of the limbs? Otherwise, with this exception, his symptoms chiefly resemble those of an individual untrained for or unequal to the prolonged muscular exertion of ordinary climbing.—I am, etc.,

Malcolm L. Hepburn, M.D., F.R.C.S.

Tunbridge Wells, Aug. 16th.

A NEW LIGATURE.

Sir,—In the many communications that have recently appeared in the British Medical Journal on the subject of ligatures and sutures I have not noticed any reference to iodized catgut. This, I believe, was first suggested by Claudius, and on account of its ease in preparation and general efficiency seems to be worthy of trial. It is prepared by simply soaking the dry catgut, as it comes from the makers, in water containing in solution 1 per cent. of iodine and 1 per cent. of potassium iodide. As I have been using it almost exclusively for the last two months, a few remarks may be the means of drawing attention to it and also eliciting the opinions of others.

After soaking in the solution for eight days the ligature is of a black colour and very tough, almost as strong as silk, and is quite sterile. Before use it must be rinsed in boiled water. It knots firmly; it is more slowly absorbed than similar material sterilized by heat; No. 2 thickness, when used to suture skin, holds for about ten days. I have used it for all ordinary purposes, and also for ligature of the femoral artery, for the pedicles of three ovarian cystomata, and the deep stitches in abdominal sections and herniotomies. I have not seen any suppuration or irritation about the stitches. It appears to contain sufficient antiseptic to inhibit the growth of pus cocci. I am not quite sure that the catgut does not tend to deteriorate by keeping, some specimens rot, and so am now storing it in alcohol after it has been eight days in the iodine water.—I am, etc.,

Lancaster, July 12th. A. S. Barling.

IS HYSTERECTOMY GENERAL SURGERY?

Sir,—It is difficult to understand exactly what your correspondent in the British Medical Journal of July 25th, under the title "Is Hysterectomy General Surgery?" means.

If he considers the pelvis ought to be a special preserve for obstetric physicians practising so important a department of surgery as gynaecology is at the present day, then his ideas are already much behind the time. It is simply because gynaecology is surgery that surgeons such as Mayo Robson, Bland-Sutton, and many others in Great Britain, America, and on the Continent practise it.

It is fruitless to try to stem the flowing tide, and the rank-and-file of the profession and the public will not consider the question or supposed rights of a narrow specialism but select the best trained and most expert operator, whoever he may be, to do the work.

To try to draw a line in practice between the pelvis and abdomen is unscientific. The abdominal cavity includes the pelvis. The operator who opens the abdomen must be prepared, in the interest of his patient, to do what is necessary anywhere within the cavity. To prove the absurdity of attempting to separate the pelvis from the rest of the abdominal cavity is simple and easy, and I crave your indulgence to cite two cases from actual practice. An obstetric physician proceeds to remove a very large abdominal tumour occupying the whole cavity, pelvis included, and believed to be ovarian in origin. He finds it to be a huge cystic kidney. Is it not his duty to remove it? Yet another case. What your correspondent would call, I suppose, a general surgeon is called upon to operate for appendicitis. He finds a large appendix hanging over the pelvic brim closely adherent to a cystic ovary about the size of a fetal head. Is he to be content with the removal of the appendix and leave the unfortunate woman to be operated upon by an obstetric physician some years after?

The moral of these two cases is obvious. Surgery advances with rapid strides, and will continue to advance, in spite of all efforts to maintain a narrow specialism.—I am, etc.

July 26th. Obstetricus.

THE RECOGNITION OF A RESPIRATORY AND CARDIAC REFLEX INDUCED BY PERIPHERAL IMPRESSIONS ON THE PUDIC NERVE.

Sir,—On reading the above section of Sir Wm Macewen's Address on Surgery, published in the British Medical Journal for July 30th, it recalled to my mind an incident which showed that it had been recognized at Guy's Hospital that certain peripheral impressions on the pudic nerve had its uses in practice. The late Mr. Arthur Durham, for whom I acted as one of his surgical ward clerks was going to remove a man's tongue for carcinoma. During the administration of $CHCl_3$ the patient's condition became alarming. One of the means adopted to restore respiratory and cardiac actions was to apply sponges wrung out of boiling water to the anus and perineum.

The patient recovered: a preliminary tracheotomy was performed, and the rest of the operation postponed.

If I remember rightly Mr. Tom Bird mentions, in his lectures on anaesthetics, the application of hot sponges in such cases. In my midwifery practice where forceps under $CHCl_3$ have to be resorted to frequently, I have found it difficult in a fair proportion of these cases to expedite delivery; because, when the patient seemed to be deeply under the anaesthetic, the mere stretching of the labia and vagina in order to introduce the blade of the forceps, was sufficient to cause a return to consciousness. Where I find one to drachms enough, these cases require an ounce or more. I have had a similar experience in gynaecological work, mostly in rectifying retroflexion of the uterus.—I am, etc.,

Preston, August 15th. J. Duncan Howe.

THE PREVENTION OF HERNIA AS A SEQUEL TO ABDOMINAL SECTION.

Sir,—I sincerely welcome Dr. Hastings Tweedy's letter in the British Medical Journal for August 13th as a very important addition to the question I have ventured to raise, and I need scarcely say that my remarks on the futility of a flap composed only of skin and subcutaneous fat were not meant to apply to the method he advocates. I must confess that I had not previously read his valuable article in the *Empire Journal*, but was referring to another by an American surgeon. The idea of raising the abdominal aponeurosis as a whole is essentially in accord with the views I have attempted to defend in my address, and at first sight appear to go far towards solving the problem with which we are all confronted. But perhaps Dr. Hastings Tweedy will add to the obligation he has already conferred by drawing my attention to his method, by explaining a difficulty which seems to me to stand in the way of our complete acceptance of this plan.

The difficulty is this. Below the fold of Douglas, as we all know, the aponeurosis passes completely above the recti muscles, and can be lifted from them; above this point it splits to encase them. The level of this fold is just above the mid-line between the pubes and the umbilicus. This line, then, would represent the limit above which the aponeurosis could not be raised, whilst the opening produced by the separated recti muscles beneath could only extend from this point to the pubes. Now it often occurs that in opening the abdomen for the removal or some solid mass—as, for example, a large fibroid uterus—the original incision is found to be too short and enlargement upwards becomes imperative. We have all, I take it, had at times to go above the umbilicus for this purpose. For the safe enucleation of a double pyosalpinx more room for manipulation is often required that at first appeared necessary, or adhesions high up in the abdominal cavity may need to be loosened as a preliminary

to extraction of a new growth. In all such cases the limitation of the opening would be a great inconvenience, to put it in the mildest form. Dr. Hastings Tweedy would therefore greatly add to the usefulness of his suggestion if he would explain in what manner he would act under such circumstances, and it will be noted that the last two are often impossible to predict. Would he divide the recti in a line with his first incision? If so, I can see that perfect access for manipulation might be obtained, but such section, in consequence of the tension on the fibres of the recti, would probably only produce a horizontal hernia in place of a vertical one. If, on the other hand, he would then split the aponeurosis. Where would be the gain? The method would appear to be extremely useful for work which can be done through a comparatively small opening, for such work, however, as requires a large exposure I fear that we shall always have to fall back on the vertical incision with all the possible sequelae I have emphasized.—I am, etc.,

Manchester, Aug. 17th. EDWARD STANMORE BISHOP.

SIR THOMAS BROWNE: *AUDI ALTERAM PARTEM.*

SIR,—Though Sir Thomas Browne is a favourite author of mine, I deprecate the notion of erecting a memorial to him. To such a memorial medical men should be the last to subscribe. Browne was great merely as a writer of stately prose. His *Religio Medici*, *Vulgar Errors*, etc., are a sufficient monument to his literary fame. Science and humanity are the watchwords of our profession. The author of *Religio Medici* was neither scientific nor humane. His record is stained with innocent blood, the blood of poor and defenceless people shed with his connivance, almost, one might say, at his instigation. Two wretched country women were tried at the Bury Assizes in 1664 for witchcraft. The judge (Hale) who tried the case seems to have had some natural qualms of conscience, for we are told that he would not so much as sum up the evidence, but left it to the jury with his prayers. Whatever we may think of the cowardice and muddle headedness of the lawyer, what can we say in defence of the expert physician whom he called in to help him? The case was garnished with the usual frenzied nonsense that characterized such proceedings, but, robbed of legal diction and vain repetition, the gravamen of the thirteen counts against the prisoners lay in the charge that certain children were afflicted with "fits" owing to the diabolic machinations of the accused.

Sir Thomas Browne, of Norwich, the famous physician of his time, was in court and was desired by my Lord the Chief Baron [Hale] to give his judgement in the case, and he declared that he was clearly of opinion that the fits were natural, but heightened by the devil, co-operating with the malice of the witches, at whose instance he did the villainies. And he added that in Denmark there had been lately a great discovery of witches, who used the very same way of afflicting persons by conveying pins into them. This declaration of Thomas Browne's could not but much influence the jury: and I count it turned back the scale that was otherwise inclining to the favour of the accused persons. . . . Country people are wonderfully bent to make the most of all stories of witchcraft; and having Sir Thomas Browne's declaration about Denmark for their encouragement, in half an hour they brought [the prisoners] in guilty upon all the thirteen several indictments.

The above is taken from the *Essay on Witchcraft*, by the Rev. Dr. Hutchinson, but the story so well-known and a sophistical defence of the conduct of the judge (afterwards Sir Matthew Hale and Lord Chief Justice of England) will be found in Matthew Arnold. The bench had its scruples, but no scruples appeared to have troubled the doctor, who was ready to sacrifice two helpless victims of popular prejudice, two women whom he should have looked upon as his patients, for the sake of quoting Olaus Magnus, and showing his familiarity with the goings-on of Danish witches. The blots upon Browne's literary style are perversity, pendantry, and a certain priggishness.

The further we go from him the less offensive these seem; they serve to give a pleasing smack of antiquity to the manner of an author who, after all, outlived Butler and Hobbes (both nobly distinguished from him by liberality and humanity in this matter of witchcraft), and whom Locke only survived twenty-two years. His evidence that he "believed the fits were natural but heightened by the devil" requires to be read charitably if we are not to add perjury to his other faults. No admirer of his literary power can defend his callous inhumanity in this case. It resembles nothing so much as the attitude of the imaginary "vivisector" whom the victims of the obsession of zoophilia are so fond of holding up to popular hatred. But the same defence cannot be entered for the Norwich physician as can be made for the supposed vivisector, or for the calumniators who have invented him, for Browne prided himself on being no fanatic nor enthusiast. If there was a fence to be had in the parish he sat upon it. Pity he could not come down on the humane side! He tells us that he ever endeavoured to nourish the merciful disposition and humane inclination he borrowed from his parents, and that he felt not in him what he charitably discourses of as the sordid and un-Christian desires of his profession.

I do not secretly implore and wish for plagues, rejoice at famines, revolve ephemerides and almanacks in expectation of malignant aspects, fatal conjunctions and eclipses. I rejoice not at unwholesome springs nor unseasonable winters;

and so forth.

Just as, in spite of his declarations of charity, he was no kindly man, so, notwithstanding his learned refutation of vulgar errors, notwithstanding protests of the supremacy of reason and truth, he was no scientific thinker, even as science was understood in his day. His phrase, "the fits were natural but heightened by the devil," is a fit reflection of his mind, in which sense and nonsense were so equally balanced that one never outweighed the other. In the seventh chapter of his *Pseudodoxia Epidemica* he discourses of the errors that have come in through authority:

Unto reasonable perpensions it hath no place in some sciences, small in others, and suffereth many restrictions, even where it is most admitted.

Nevertheless, in this, as in all his books, he seems to have deemed that he has proved any fancy he had a mind to when he has quoted some author or other in its favour. It is to be noted that he confounds testimony and authority in this chapter, and that he speaks only indirectly of medicine, presumably because he had not made up his mind whether authority weighs therein or not. It appears probable that Browne's unprincipled evidence in the Bury case may have had considerable force in upholding the arguments of the Mathers and the other authors of the fiendish proceedings in Salem some thirty years later, while the decline in witchcraft in England was due in part to the intelligence of Hale's successor, Holt, in part to the good nature of Charles II, who was not a malignant person when his own interests or pleasures were not interfered with, and so respited at least one wretched woman condemned to be hanged as a witch.

If we erect a memorial to Sir Thomas Browne, we ought certainly to erect another to the innocent poor women, Amy Demy and Rose Cullender, who owed their deaths to the credit given to his evidence, that is, to his reputation; or, if the money will not run as far as a separate memorial, perhaps the artist could introduce these interesting evidences of Sir Thomas's repute as supporters to the main figure in his monument.—I am, etc.,

Dublin, Aug. 21st. CONOLLY NORMAN.

TRAUMATISM AND HERNIA.

SIR,—The following case, which came under my notice a few weeks ago, illustrates the point that double rupture may be caused by a single strain, as pointed out by Dr. Asherton in reference to Mr. Sheen's communication:

The patient, a collier, was attempting to lift an empty coal tub which had got wedged fast with rock. He was in a half-sitting position, with the feet apart, and both hands under the corner of the tub lifting. Acute symptoms came on immediately, and the man had to cease work.

On examination the patient was found to have a small inguinal hernia on each side, the right being the larger. The man, who had been a collier many years, states he never had a rupture previous to the accident.—I am, etc.,

Leigh, Lancs, Aug. 16th. G. H. SHAW, M.B.

BARBERS' SHOPS.

SIR,—Would it not be well if there was a regular system of inspecting barbers' shops? My experience would be amusing if it were not that I am the victim. For ten years I have scarcely entered a hairdresser's shop, preferring to shave myself and submit my hair to the amateur ministrations of my wife. But on the 4th of this month I was dining out in the evening—was pressed for time—went to a barber's and was shaved. It was one of the leading shops in the suburb. On the 9th a pimple developed, and since then I have been at home with impetigo—had a *locum*—nearly poisoned myself with drastic mercury ointments—and generally feel a wreck.

Compulsory antiseptic precautions ought to be enforced in barbers' as well as in dairies.

That shave will cost me £50.—I am, etc.,

Balham, July 22nd. FRANK COLLIE.

OBITUARY.

KARL WEIGERT, M.D.,

Director of the Senkenberg Institute, Frankfort.

We regret to announce the death of the famous German pathologist, Professor Karl Weigert, which occurred suddenly on August 8th, in the 60th year of his age. Born at Munsterberg, in Silesia, he studied medicine at Breslau, Berlin, and Vienna. After taking his degree he became assistant to Professor Waldeyer, then head of the Institute of Pathology at Breslau. He afterwards worked with Cohnheim at Leipzig. In 1879 he was appointed Extraordinary Professor of Pathology in the University of Breslau. For reasons connected, it is said, with his religious belief, he was not elected to succeed Cohnheim when that great master of pathology died in 1884. He accepted an invitation to a chair in the Senkenberg Institute, Frankfort-on-the-Maine, where he remained till his death. He was a pioneer in the staining method of bacteriological research, and he enlarged the boundaries of knowledge in many directions, notably in regard to the life, diseases, and death of cells, the pathology of the blood and lymph vessels, neuroglia, and tuberculosis. He was the author of *First Staining of Bacteria* (1871), *Staining of Bacteria with Aniline Dyes* (1875), and of a monograph on *Coagulation Necrosis* (1880).

By the decease of Dr. John Ruxton, of Blackpool, who died on August 12th, at the comparatively early age of 56, the medical profession has lost a highly respected and popular practitioner, and many of those who knew him a kind and valued friend. He was a son of a well-known Scotch practitioner of the old school, who practised in the heart of a rural district, at Foveran in the north of Aberdeenshire, and who for nearly fifty years was looked up to by rich and poor alike as a general benefactor. Dr. John Ruxton, after holding the appointment of house-surgeon at the Preston Infirmary, entered the army and was appointed surgeon to the Seventeenth Regiment, with which he served in India. In 1873 he was promoted to the rank of surgeon-major, and served in the Jowaki campaign against the Afridees in 1877, receiving the Indian Frontier medal with the Jowaki clasp. Returning to England, he was appointed to military duties at Preston barracks and elsewhere, serving at Blackburn during the Jacksonian riots. He might be quoted as an excellent example of the type of man who made the old army system endeared to those who served under it. He was probably the first military surgeon who suggested and carried out a method of treating abscess of the liver on antiseptic lines, as also certain forms of Indian fevers. On retiring from the service, he practised for twenty-one years at Blackpool, where he was universally respected by his colleagues and the public. He was consulting surgeon to the Blackpool Infirmary, and an honorary medical officer of the Manchester Children's Convalescent Home at St. Anne's-on-the-Sea. Residence in the tropics and hard work at home combined to undermine his health some four years ago, and at short notice he was hurriedly "called away." The writer, whose privilege it was to be his intimate friend from his early college days up to the date of his lamented decease, sends this testimony to the genial and kindly disposition and the superior professional skill of a man whose loss will be mourned by a large circle of relatives and friends.

Dr. Erich Bennecke, Extraordinary Professor of Surgery in the University of Berlin, died recently in the 40th year of his age of septicaemia contracted in the course of an operation. He was born at Karlsberg in 1864. He studied medicine at Halle, Marburg, and Berlin. After graduation he became Assistant to Professor Marchand in the Department of Pathological Anatomy at Marburg. He was then Assistant to Professor Franz Koenig in the Surgical Clinic of Gottingen, from which he migrated to Berlin with his chief in 1895. In 1902 he was appointed Extraordinary Professor. He was the author of a monograph on gonorrhoeal inflammations of joints and of a manual of surgical operations.

Dr. J. C. McConnell, of the United States Army Museum, who died recently, was distinguished as an anatomist, and also as a delineator of objects of natural history, especially shells and fossils, skulls, and other bones. He had carried on this work for nearly thirty-five years, and according to *Science*, as a draughtsman in black and white line for scientific purposes, he had no equal in America if in the world. Many thousand exquisite drawings were prepared by him for the National Museum, and various surveys as well as for the Army Medical Museum. One of his last important works was the completion of the drawings for the illustration of the still unpublished Miocene volume of the Maryland Geological Survey. Dr. McConnell was a man of attractive personality, and greatly beloved by his official colleagues and all who came in contact with him.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Hygino de Sousa, Professor of Ophthalmology in the Medical School of Lisbon, and author of numerous contributions to the literature of that department of medicine; Dr. von Holst, formerly a well-known expert in mental diseases at Riga, and author of numerous writings; Dr. Rafael Coen, of Vienna, a specialist in disorders of speech, aged 64; Dr. Edward Singer, of Buda-pesth, who was in attendance on the ill-fated Emperor Maximillian in Mexico in 1866, aged 70; Dr. Dupuy, Professor in the Medical School of Toulouse; Dr. Bax, Professor of Clinical Medicine in the Medical School of Amiens; Dr. Rudolph Amandus Philippi, for many years Director of the Natural History Museum of Santiago, Chile, and author of numerous contributions to zoology and botany, aged 96; Dr. V. K. Bogosslowski, Emeritus Professor of Pharmacology in the University of Moscow, who took a prominent part in the development of balneology in Russia, aged 61; Dr. Kooyker, Emeritus Professor of Internal Medicine in the University of Groningen, aged 72; and Dr. A. Dureau, Librarian of the Paris Academy of Medicine, and the Nestor of French medical journalists.

MEDICO-LEGAL AND MEDICO-ETHICAL.

NIALL *v.* TREDGOLD.

According to a report which appeared in the *Surrey Times* (Guildford) of August 13th, judgement was entered in the case of Niall *v.* Tredgold, which was heard in Chambers by consent of both parties by Mr. Justice Joyce. Both the plaintiff and defendant are medical men, practising in Guildford, who were formerly in partnership. The case formed the sequel to one which was heard by the General Medical Council in November, 1903, at the conclusion of which the President said: "Dr. Niall, the Council, after deliberation, has resolved that the facts alleged against you in the notice of inquiry have not been proved to its satisfaction," (see Supplement to the British Medical Journal of December 5th, 1903, p. cxviii). The present case arose out of a partnership difference between Drs. Niall and Tredgold. The London and Counties Medical Protection Society on behalf of Dr. Niall served Dr. Tredgold with a writ on June 7th, 1904. Dr. Niall's claim was for: (*a*) a declaration that the notice of February 9th, 1903, purporting to terminate the partnership then existing between plaintiff and defendant by virtue of articles of partnership dated September 26th, 1901, is not effective and binding upon the plaintiff, and that the said partnership now exists. (*b*) Dissolution of the said partnership. (*c*) All necessary and proper accounts. (*d*) Costs.

Judgement was entered in the following terms: Upon the application of the plaintiff by summons for directions dated June 17th, 1904, and upon hearing the solicitors for the plaintiff and defendant, and upon reading the writ of summons issued in this action on June 7th, 1904, and the plaintiff and defendant by their solicitors consenting to this order, the Judge doth declare that the partnership in the writ mentioned between the plaintiff and defendant ought to be dissolved as from the date of this judgement, and doth order and adjudge the same accordingly, and the Judge not requiring further hearing of this action other than the hearing of this application. It is ordered that the following account and inquiry be taken and made: (1) An account of all dealings and transaction between the plaintiff, William George Niall, and the defendant, Alfred Frank Tredgold as co-partners from September 25th, 1901, the date of the articles of partnership, any settled account not to be disturbed. (2) An account of what the credits, property and effects now belonging to the said partnership consists, and any of the parties are to be at liberty to apply as there may be occasion, and the further consideration of this action is adjourned.

AMERICAN NOSTRUM VENDORS.

A correspondent has sent us a communication which he has received from the M. A. Winter Co. of Washington, D.C., asking him to become an agent for a nostrum called "Nature's Health Restorer." The circular commences: "Dear Friend—Your name has been handed to us by a business concern with whom (*sic*) you have been corresponding as a good party to take up our work in your section," and it goes on to express assurance of our correspondent's ability, conscientiousness, and other good qualities. He is offered a supply of the wonderful remedy on credit on condition of his undertaking to pay for it within sixty days. The boxes are sold to the agent at 2s. 3d. cash, or 2s. 6d. credit, and to the public at 4s. 2d., so that the profit is large. We can hardly believe that even an American nostrum vendor expects to find agents for his wares amongst English medical practitioners, and from the absence of anything in the address on the envelope to indicate that it is directed to a Doctor of Medicine, we suspect that it was really intended for some one else of the same name in the town—possibly a chemist. We hope it was

so, as we share our correspondent's indignation at the invitation to earn money by accepting a position which no medical man could hold without infamy.

THE CONSCIENTIOUS OBJECTOR.

The Lord Chief Justice made an important pronouncement on July 28th, at the Warwickshire Assizes held at Birmingham, upon the application of the Vaccination Act. He said that it was not sufficient for a man to believe generally that vaccination was an improper thing or that he had been led to form that belief without considering the particular case of the child in question. The applicant for exemption must believe honestly that vaccination would be injurious to the health of the child for whom he is responsible. No general objection to vaccination should come into consideration, either on the ground of interference with the liberty of the subject or the question of parental control. The only question which the magistrates have to decide is: Does the applicant conscientiously believe that vaccination will be prejudicial to the health of the child in question?

MEDICAL LAW IN AMERICA.

Cases in the English courts affecting medical men are so few and far between that it is sometimes difficult for the lawyer to find a suitable precedent when he wishes to ascertain the rights and liabilities of the practitioner. In these circumstances he will do well to consult the reports of cases which have been heard in America. In the *Universal Digest* for the latter half of 1903, which has recently been published, there are notes of one or two decisions which it may be well to place on record. The law as to malpraxis in America appears to be the same as that which applies in England. Thus in one American case it was declared that "in an action for malpractice in the treatment of a compound fracture it is proper to show the condition of the plaintiff's health at the time the treatment began, and the length of time he was treated by others after the defendant ceased to attend him; the jury being cautioned to compensate plaintiff only for such injury as may have been caused by the negligence of the defendant." It would appear from the report that the fact of there having been negligence was not in dispute; the only question for the jury was the assessment of damages. Arrangements appear to be common in America under which medical assistance is provided for workmen by their employers. Agreements of this nature appear to have been considered in several cases. Thus a practitioner, employed by the relief and hospital department of a railroad company to treat an injured employe in an emergency for no definite period, cannot recover from the employers for services rendered after notice that they were no longer needed, as the hospital surgeons were ready to take care of the case. The same case is quoted as authority for the proposition that where railroad companies enter into a voluntary association, and form a hospital department operated in connexion with each company, employés of each company being required to contribute regularly to such department, one of such companies is responsible for the compensation of a practitioner employed in accordance with the regulations of the department to treat the employé of another company who has been injured by an explosion in the shops of the first company. In America, however, as in this country, an employer can be held liable to pay for medical attendance upon his men only if there is an agreement to that effect. In a case in which the plaintiff had declined to render medical attention to the employés of the defendant firm until defendant's vice-president and general manager had directed him to do so and agreed to pay therefor, and it appeared that plaintiff had received 40 dols. from defendant's funds, which he claimed was in part payment for his services, but which defendant claimed was a personal loan, defendant was not entitled to have a verdict directed, on the ground that the defendant was under no legal obligation to call a physician to render service for such employés. A company which provides medical assistance is not bound to furnish the best that money can buy. So where a railroad retains a certain sum monthly from the wages of its employés for the purpose of furnishing medical attention when necessary, but derives no profit from such fund, it is only required to use ordinary care in the selection of a competent physician, and if it does use that due care, it is not liable for injuries to an employé caused by such physician's improper treatment.

Another case shows what is involved when a patient is admitted to a hospital. It appeared that, the defendant being ill, his doctor telephoned to a hospital, and was told that it would cost 15 dols. a week for a private ward, including room and medical attendance. On cross-examination the doctor stated he was told the price included the attendance of a house-physician and nurse, and that nothing was said about an operation. There was no evidence that the nature of defendant's illness was mentioned in the conversation. The defendant remained in the hospital for several weeks. He was operated on by the plaintiff, who was called in by the house-physician, and who rendered him daily service in dressing his wound for a time. When the house-physician did so on one occasion he objected, and said that he wished plaintiff to continue to dress his wound, and expressed a willingness to pay extra if he would do so. It was decided that the defendant, in the absence of any such agreement, would be liable for the reasonable value of the plaintiff's services.

MEDICAL CERTIFICATES OF THE CAUSE OF DEATH.

Hospital Secretary writes: I venture to ask if you can give a definite statement of the law governing communications to coroners in case of death by accident or when the cause of death is doubtful. I enclose an extract from a paper giving an account of an inquest in which a coroner severely censured a medical man for giving a certificate (copy enclosed) in a case where a trivial accident had occurred many weeks before death, on the ground that it was a serious offence against the law. The coroner also ruled that it was the duty of a medical man to communicate with him in such cases. I also enclose a summary of medico-legal matter extracted from a diary published for the information of medical men by a well known London firm, in which it is clearly laid down that the correct method of procedure (excepting in case of death in a prison, asylum, or in a registered nursing home for children) is for the medical practitioner to give a certificate in all cases, irrespective of the cause of death. In case of death through violence or accident, or, when in doubt, he is to give all the particulars in his power in the certificate, which he is to hand to the relatives or friends to take to the registrar, whose duty it appears to be to communicate with the coroner where necessary. If this is correct, it would appear that the usual practice of informing the coroner in the cases referred to is an act of courtesy on the part of the medical profession and not a duty imposed by law. And this is not the only occasion on which the coroner mentioned in the report has publicly censured medical men for giving certificates in cases in which he has subsequently decided to hold inquests, a definite statement of the law supported by a judicial decision or counsel's opinion, if possible, would I feel sure be of great assistance to the medical profession and to voluntary hospital authorities.

*** It is laid down in the Registration of Births and Deaths Act, 37 and 38 Vict., section 20, sub-section 2, as follows:—"In case of the death of any person who has been attended during his last illness by a registered medical practitioner, that practitioner shall sign and give to some person required by this Act to give information concerning the death a certificate stating to the best of his knowledge and belief the cause of death." This is the general law on the subject, but it has been the custom and practice for the medical attendant to withhold such certificate if he has reasonable grounds for believing that an inquest is likely to be held, and further he frequently communicates with the coroner, or directs the friends to do so. In the case of death following an injury it is the duty of the coroner to hold an inquest, to inquire into all the facts connected with the case, and the medical attendant is usually one of the witnesses. If the practitioner gives a certificate he cannot of his own personal knowledge certify how the said injury arose, and must rely on the statement of others, or of the patient himself, which may not always be reliable, and he is not called upon to do so by law. Besides this, the friends having the certificate may neglect to attend before the registrar for some days, and thus the inquest may be delayed, and by decomposition of the body the value of a *post-mortem* examination may be lessened. It is, however, no part of the duty of a coroner or jury to censure publicly a medical practitioner for giving a certificate of the cause of death in any case on which he has been in attendance. We would refer our correspondent to a small pamphlet written by the late Mr. A. Braxton Hicks, Coroner for London and Surrey, entitled *Hints to Medical Practitioners Concerning the Granting of Certificates of Death*, in which this matter is fully treated.

AGREEMENT NOT TO PRACTISE WITHIN A CERTAIN AREA.

Quercus writes that eighteen years ago he signed a bond, as assistant not to practise at any time within a certain area without the consent of his principal. Now, wishing to do ophthalmic work in that town, he has applied to the principal for permission, but has been refused. He wishes to know whether he can be thus barred from practice in this area.

*** If our correspondent signed such an agreement it must be presumed that he intended to be bound by it. Whether a court of law would enforce it under the circumstances, if he chose to disregard it, is another question. It is quite possible the law might consider the limitation as to practice unreasonable, as it would appear to be under the circumstances; but as such a dispute might involve expensive litigation, we cannot advise our correspondent to act in defiance of his agreement.

A QUESTION OF COMPENSATION.

Fairplay writes that while acting as an assistant to a practitioner, his principal, to get at his own bicycle, moved that of his assistant and left it near the waiting room door, which was kept open, and where it was visible from the street. During the day the bicycle was stolen, and our correspondent wishes to know whether he has any claim on the principal to make good his loss.

*** The principal is not legally liable for the loss, but if he considers himself in any way responsible personally, that is, that the moving the bicycle in question led to the theft, then he is morally bound to compensate the assistant.

PRACTITIONER AND *LOCUM TENENS*.

E. H. W. writes that he engaged a *locum tenens* to take charge of his practice during his absence. He states that on one day the *locum tenens* absented himself on his own private business from 5 to 10 p.m., and that as a consequence one of his midwifery cases was compelled to seek the services of another practitioner. He wishes to know whether he can claim from the *locum tenens* the half fee that will have to be paid to the practitioner called in.

*** Our correspondent has a legal claim on the *locum tenens* for this half fee. Strictly speaking he ought to sue him for this, as damage resulting from his neglect of duty. But practically his best remedy is to deduct this amount from the money he has agreed to pay the *locum tenens*, and leave it to the latter to take action against him if he thinks fit, when he can counterclaim.

ADVERTISING BY COTTAGE HOSPITALS.

General Practitioner draws our attention to an advertisement of a local cottage hospital which appears in a local newspaper.

*** As is well known, most country cottage hospitals are supported by the local provident medical clubs, and in this case the advertisement states that any one over the age of 14 years, by paying 1d. per week, can have free admission, nursing and maintenance; those wishing to join should apply to the honorary secretary, whose name and address are given. This does not seem contrary to the interests of the medical profession so long as the inmates of the hospital are allowed to choose their own medical attendants. The main objection to advertising and canvassing by clubs for members is that such clubs compel their mem-

bers to accept the services of their medical officers, so that the advertising and canvassing by the club is really for the exclusive benefit of the club. If all provident sick societies allowed their members to choose their own doctors, one of the chief causes of dispute in contract practice would disappear.

ADVERTISING BY MIDWIVES.

General Practitioner sends us a cutting from a local newspaper giving the advertisement of a midwife who announces that she is entitled to practise as a midwife in accordance with the provisions of the Midwives Act, 1902.

*** The regulation of midwives is a matter for the Central Midwives Board Advertising is not prohibited by the Midwives Act, and no pronouncement upon this subject has so far appeared in the rules published by the Board.

DISTRIBUTION OF TESTIMONIALS.

Enquirer has bought a death vacancy for which the only introduction he can receive is a printed circular letter from the widow, and he asks whether it would be proper to accompany that letter by copies of his testimonials to be distributed only to patients whose names are on the books of the practice?

*** We should think it sufficient if our correspondent accompanied the letter of introduction by one testimonial letter written by a well-known member of the medical profession who knows him personally, and can testify to his character and professional attainments.

PROFESSIONAL ETIQUETTE.

X. Y. Z. complains that a neighbouring practitioner called at a house where he is in regular attendance in order to vaccinate the baby, and while there was asked by the mother to look at a child under our correspondent's care. This he did, and through a relative, also a medical practitioner in the neighbourhood, suggested a consultation with our correspondent, who says he "resented this, as he knows that the parents are perfectly satisfied with him." He asks "Did Dr. —— and Dr. —— act professionally? What is the punishment?" He adds that he does not know whether the practitioner who visited his patient is a public vaccinator or not.

*** We think a practitioner who calls to vaccinate a baby should not examine another child under the care of another practitioner or express any opinion about the case or its treatment. If asked by the mother to examine the patient he should decline to do so, but might suggest a consultation, although he should leave the arrangements for the consultation to the mother, and should not propose it to the practitioner already in attendance, who would be likely to resent such interference. There can be no doubt that public vaccinators and other official members of the medical profession should act with great circumspection when in the course of their official duties they visit families under the care of other practitioners. But such actions as those of which our correspondent complains, although irritating, do not constitute offences which could be considered by a professional tribunal or for which any penalty has been affixed.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Charles C. Macmillan, M.B., D.S.O., Surgeon, to the *Phœbe*, undated: Charles S. Facey, Staff Surgeon, to the *President*, additional, for three months' hospital study, August 29th.

ROYAL ARMY MEDICAL CORPS.

Major John Henry Greenway died at Wynberg Camp, Cape Town, on August 8th, aged 46. He was appointed Surgeon, May 30th, 1885, and Surgeon-Major twelve years thereafter. He served during the South African war in 1899-1901 in the Orange River Colony.

EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

Major R A M C ordered to Malta in October wants an exchange to remain at home another year.—Address, "Tally-Ho," care of Messrs. Holt and Co., 3, Whitehall Place, London.

ARMY MEDICAL DEPARTMENT.

Surgeon Major-General Alfred Malpas Tipretts died at Southsea on August 16th. He was appointed Assistant Surgeon, April 7th, 1854; Surgeon, October 18th, 1864; Surgeon-Major, March 1st, 1879; Deputy Surgeon-General, August 25th, 1880; Surgeon-Colonel, November 24th, 1884; and Surgeon-Major-General, December 27th, 1891. He retired from the service, April 5th, 1892. He served in the Eastern campaign of 1854-5 with the 7th Fusiliers, and was present at the affair of Bulganac, the battles of Alma and Inkerman, and the siege of Sebastopol (medal with three clasps and Turkish medal). He was also in the Afghan war of 1878-80, including the expeditions into the Bazar and Hissarik Valleys (mentioned in dispatches, medal).

INDIAN MEDICAL SERVICE.

The undermentioned Lieutenants, who joined the department June 27th, 1901, were promoted to be Captains, dated June 27th, 1904: G. E. Charles, M.B., A. G. McKendrick, M.B., O. St. J. Moses, M.D., J. W. Little, M.B., F. W. Sumner, M.B., H. R. Nutt, M.B., J. A. Barnes, W. D. Ritchie, M.B., N. E. H. Scott, M.B., J. K. S. Fleming, E. C. Hepper, C. E. Southron, M.B., G. Fowler, J. Husband, M.B., H. B Foster, G. C. L. Kerans, C. B. McConaghy, M.B., H. W. Iblius, E. W. Browne, J. B. Christian, A. Murphy, M.B., F. T. Thompson, M.B., L. P. Brassey, M.B., C. F. Marr, M.B., P. L. O'Neill.

INDIAN PAY OF THE R.A.M.C AND PASSAGES ABROAD FOR FAMILIES.

Vanitas, in a long communication, contrasts the Indian pay of the R.A.M.C., and the calls upon it, with the home pay, and with that of other branches of the service. This he says has often been done before, but it is well that the matter should be reviewed from time to time. There can be no doubt that, taking the value of the rupee at 1s. 4d., the home pay is superior to that of India, even with the late additions to the pay of captains and lieutenants, and the charge pay to seniors.

*** Our correspondent shows that tentage and horse allowance, included in Indian pay, is merely a *quid pro quo*, whereby the Government ensures the efficiency of the officers drawing these rates. But the captain and subaltern who do not draw horse allowance have, nevertheless, to keep a horse or they could not discharge their duties, or maintain themselves in health. The recent addition to the pay of captains and subalterns was arrived at by turning the home pay into rupees at 1s. 4d., and permitting certain "exchange compensation." But when so calculated the apparent gain in India to a captain of seven years' service is only £51 per annum, which is more than swallowed up by keeping up tents, etc. In contrasting the pay of the R.A.M.C. with other branches the former are almost invariably the losers. He maintains that almost every officer of the Indian Medical Service draws extra pay in some shape or other, but with the exception of a few seniors drawing charge pay, the rest of the R.A.M.C. seldom draw an extra rupee, and even the best paid executive medical officers never draw pay equal to those of the military branches. The frequent moves and passage money are ruinous to married medical officers: their home tours being only about two years, compared with five and ten in other branches, they have to spend at least £100, say every three years in passages. Altogether it is very clear that the average R.A.M.C. officer gains nothing but risks much in his tours of Indian service.

MEDICAL OFFICERS AND THE INDIAN GAOL DEPARTMENT.

Convict a 59 writes: It is now a year since medical officers of the I.M.S. military branch have had their pay increased, and men in civil employ are beginning to wonder when the same concession is likely to be extended to them. Medical officers in the Gaol Department have a special grievance. Those over fifteen years' service find themselves drawing Rs. 50 per mensem more than those in military employ and 55Rs. less than an officer of the R.A.M.C. of the same service. The responsibilities of a medical superintendent of a large prison are far greater than those of a regimental medical officer. In one Province half the gaol appointments are held by ex-gaolers who commenced their career as European warders on Rs. 30 per mensem. The difference in the pay of a medical superintendent and that of his old gaoler who is now a superintendent is Rs. 100 per mensem, about £80 per annum. A prison doctor in England draws from £250 to £450 per annum for medical attendance on the prisoners, and he never has to combat such epidemics as cholera, plague, malaria. A prison doctor in India gets £80 per annum for his labours, certainly a beggarly pittance considering the worry, the climate, and the depreciated rupee. Another grievance is the non-reservation of the Inspector-Generalship for those officers who have elected for continuous service in the Gaol Department. Any medical officer in civil employ (not in the Gaol Department) as the rules now stand is eligible for this appointment, provided he has been at some time or other in charge of a prison, however small the gaol, or for however short a period. This of course is unfair, since civil medical officers (not in the Gaol Department) are better paid (three men immediately above the writer on the civil list and three men immediately below draw much higher salaries) and have in addition private practice. It is observed that in one Province the election of a medical officer outside the Gaol Department to the Inspector-Generalship has caused a block in promotion of about nine years, a condition which the Secretary of State wished to be specially guarded against. The Gaol Department, under the new system of medical superintendentships, is now about ten years old, and being in its infancy has so far been popular because in some provinces comparatively junior men have been appointed to the highest appointment. Those coming after will have longer to wait, and junior men will probably consider this fact before electing for gaol employ. In the new warrant it is to be hoped these grievances will be removed.

ARMY MEDICAL RESERVE.

Surgeon-Major W. M. Roockoft to be Surgeon-Lieutenant-Colonel August 2nd.

VOLUNTEER RIFLES.

Surgeon-Captain G. Hollies, M.D., 2nd Volunteer Battalion the King's (Shropshire Light Infantry), to be Surgeon-Major, August 20th.

Surgeon-Major W. M. Roockoft, 1st Volunteer Battalion the Manchester Regiment, to be Surgeon-Lieutenant-Colonel, August 20th.

UNITED STATES ARMY MEDICAL CORPS.

The standard of professional qualification to the Medical Corps of the United States Army has recently been raised. The new regulations came into effect on July 1st, 1904. Henceforward all candidates will have to pass a preliminary examination; if successful they will undergo a course of instruction at the Army Medical School Washington, and afterwards they will have to pass a final examination. Before a candidate is allowed to present himself for the preliminary examination he is subjected to a strict medical inspection. Then comes a written examination in the following subjects: Mathematics (arithmetic, algebra, plain geometry), geography, history (especially of the United States); Latin grammar and

the reading of easy Latin prose; English grammar, orthography, and composition; anatomy, physiology, normal histology, and therapeutics. The subjects in general education, it is stated in the official circular, are "an essential part of the examination, and cannot under any circumstances be waived." These preliminary examinations are conducted concurrently at convenient spots throughout the United States by medical officers. The questions will be the same everywhere, and the papers will be examined at the War Department in Washington. Candidates who gain a general average of 80 per cent. of marks will be employed as contract surgeons and sent to the Army Medical School for instruction as candidates for the Medical Corps. The course of instruction at the Army Medical School will consist of lectures and practical work in subjects directly connected with the duties of a medical officer. Students at the school will be under military discipline.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

Regius Professor of Medicine.

HIS MAJESTY THE KING has been pleased to approve the appointment of William Osler, M.D., F.R.C.P., D.Sc., F.R.S., Professor of Medicine at Johns Hopkins University, to be Regius Professor of Medicine.

Degrees.

The following Degrees of Medicine were conferred during the Summer Term:

Doctors of Medicine.—T. E. C. Cole, Christ Church; E. W. Willett, New College; W. A. P. Waters, Brasenose College; G. T. Schornstein, Christ Church; A. E. Boycott, Brasenose College, J. D. Rollestone, Brasenose College.

Bachelors of Medicine and Surgery.—W. B. Billinghurst, St. John's College; A. C. Inman, Wadham College; A. F. Hertz, Magdalen College; A. E. A. Loosely, Pembroke College; J. H. Thomas, Trinity College; R. D. MacGregor, Exeter College; P. A. Mansfield, Keble College.

The Doctorate in Science *honoris causâ*, has been conferred upon the following distinguished members of the medical profession: Sir William Selby Church, Bart., President of the Royal College of Physicians; Dr. T. Clifford Allbutt, Regius Professor of Physic in the University of Cambridge; Mr. Andrew Clark, Chairman of Council, British Medical Association; Dr. T. D. Griffiths, late President of the British Medical Association; Mr. Jonathan Hutchinson, late President of the Royal College of Surgeons of England; Sir William Macewen, Regius Professor of Surgery in the University of Glasgow; Sir Patrick Manson, of the London School of Tropical Medicine; Sir John W. Moore, formerly President of the Royal College of Physicians of Ireland; Dr. William Osler, Professor of Medicine in John Hopkins University.

Philip Walker Studentship in Pathology.

J. Henderson Smith, B.A.Oxon., M.B.Edin., has been elected to the Philip Walker Studentship for a period of three years.

Degree days are announced as follows; Thursday, October 20th; Thursday, November 10th; Saturday, December 17th.

Calendar of scholarships offered in Natural Science: December 6th, Balliol College, Christ Church, and Trinity College; December 13th, Lincoln and Magdalen Colleges; January 17th, 1905, Jesus College; March 4th, 1905, Keble College.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE following gentlemen, having passed the necessary examinations, and having conformed to the by-laws and regulations, have been admitted members of the College:

F. Alcock, Owens College and Royal Infirmary, Manchester, and Guy's Hospital; E. F. R. Alford, University College Hospital; H. R. Allingham, King's College Hospital; J. Ayleu, St. George's Hospital; F. Barnes, C. E. Bartlett, and J. E. L. Bates, Guy's Hospital; L. Bathurst and J. H. Bletsoe, St. Thomas's Hospital; H. G. W. Beckett and H. J. Brewer, St. Mary's Hospital; F. M. Boclet, Charing Cross Hospital; J. Bowen-Jones, Owens College and Royal Infirmary, Manchester; F. A. Brodribb, St. Thomas's Hospital; E. M. Brown, B.A., B.C.Camb., and F. M. Bulley, M.A.Camb., Cambridge University and St. Thomas's Hospital; W. Byam, St. George's Hospital; P. D. MacI. Campbell, St. Mary's Hospital; T. W. Chaff, St. Bartholomew's Hospital; J. R. A. Clark-Hall, St. George's Hospital; C. Colmer, London Hospital; G. H. Colt, B.A., M.B., B.C.Camb., Cambridge University and St. Bartholomew's Hospital; P. C. Coombes, Madras University and University College Hospital; H. Cooper, B.A.Camb., Cambridge University and London Hospital; W. F. Corfield, University College Hospital; W. I. Cumberlidge, B.A.Camb., Cambridge University and St. Bartholomew's Hospital; F. W. Daniels, London Hospital; W. B. Davy, Middlesex Hospital; R. J. Douglas, St. Bartholomew's Hospital; W. R. Leycester-Drawbridge, Durham University and St. Bartholomew's Hospital; E. P. H. Dudley, University College, Sheffield, and St. Bartholomew's Hospital; H. D. Duke, London Hospital; H. E. Dyson, University College Hospital; W. S. Edmond, St. Bartholomew's Hospital; N. C. Fletcher, B.A.Camb., Cambridge University and University College Hospital; G. H. Fowler, St. Bartholomew's Hospital; H. Frankish, B.A.Oxon., Oxford University and Middlesex Hospital; J. D. Galloway, L.S.A.Lond., London Hospital; H. T. George, B.A.Camb., and S. H. Gibson, B.A.Camb., Cambridge University and St. Batholomew's Hospital; H. J. Gibbs, Madras Medical College and St. Mary's Hospital; Dhanjibhai Ratanjee Gilder, Bombay and Edinburgh Universities, and University College Hospital; J. L. Gilkes and J. W. F. Gillies, St. Thomas's Hospital; F. G. Goble, Guy's Hospital; R. E. G. Gray, M.A.Camb., Cambridge University and St. Thomas's Hospital; M. Greenwood, London Hospital; P. Gully, Charing Cross Hospital; C. M. Halsall, University College and Royal Infirmary, Liverpool; J. M. Hamill, M.A.Camb., B.Sc.Lond., Cambridge University and St. Bartholomew's Hospital; R. O. Handcock, Yorkshire College and General Infirmary, Leeds; A. E. Hay, King's College Hospital; A. L. Heiser and J. W. Hele, L.D.S.Lond., Middlesex Hospital; F. C. Hepburn, Cambridge University and London Hospital; G. W. Heron, Westminster Hospital; E. C. Hughes, B.A.Camb., Cambridge University, and Guy's Hospital; H. Irving, Owens College and Royal Infirmary, Manchester; S. D. Jacobson, M.D., New York, New York University and Guy's Hospital; T. Jays and H. A. Kisch, St. Thomas's Hospital; H. H. Jenkins, Guy's Hospital; O. S. Kellett, Cambridge University and London Hospital; W. R. Kirkness, King's College Hospital; J. L. Lawry, London Hospital; H. Leach, Yorkshire College and General Infirmary, Leeds; H. C. Lees, St. Mary's Hospital; G. M. L. Lester, M.A.Oxon., Oxford University and St. Thomas's Hospital; T. Lewis, B.Sc.Lond., University College, Cardiff, and University College Hospital; E. G. R. Lithgow, St. Mary's Hospital; J. H. McAllum, Cambridge University and London Hospital; E. J. C. McDonald, L.M.S.Bombay, Bombay University, St. Thomas's and King's College Hospital; G. H. McLaren, M.D. Toronto, Toronto University and University College Hospital; J. B. McVail, London Hospital; M. Maher, Cairo and Guy's Hospital; H. T. Mant, University College Hospital; P. J. Marett, Westminster Hospital; W. N. May, Guy's Hospital; W. O. Meek, Owens College and Royal Infirmary Manchester, and St. Thomas's Hospital; R. Milne, London Hospital; E. L. Moss, St. Thomas's Hospital; R. C. Mott, Cambridge University and London Hospital; M. J. Mottram, Guy's Mospital; B. N. Murphy, L.D.S.Lond., University College and Royal Infirmary, Liverpool; F. Neale, Toronto University; H. Nicol, Westminster Hospital; S. A. Owen, B.A.Camb., Cambridge University and University College Hospital; G. R. Painton, London Hospital; W. F. Peach, L.D.S.Lond., St. Mary's Hospital; E. G. Perodeau, University College Hospital; E. E. M. Price, Birmingham University; T. P. Puddicombe, St. Thomas's Hospital; C. E. Reynolds, University College Hospital; R. I. Ritchie, M.B., Ch.B.New Zealand, New Zealand University and University College Hospital; T. H. F. Roberts and G. C. F. Robinson, Guy's Hospital; W. E. Robertson, M.B.Toronto, Toronto University and University College Hospital; E. J. H. Rudge, London Hospital; A. P. Salt and H. B. Scott, St. Bartholomew's Hospital; T. Sanders, Cambridge University and King's College Hospital; S. G. Scott, King's College Hospital; P. H. Seal, University College Hospital; A. W. K. Straton, St. Mary's Hospital; K. Takaki and A. Whitehead-Smith, St. Thomas's Hospital; H. M. Thomas, University College, Bristol, and St. Thomas's Hospital; H. S. Turner, King's College Hospital; M. K. Varughese, M.B., C.M. Madras, Madras Medical College, University College, and Middlesex Hospital; W. T. Wallace, M.B., Toronto, Toronto University and Middlesex Hospital; H. B. Walters, London Hospital; C. S. White, University College Hospital; H. T. M. Wilson and K. S. Wise, St. Bartholomew's Hospital; S. C. Yin, M.B. Toronto, Toronto University and University College Hospital.

CONJOINT BOARD IN IRELAND.

The following candidates have passed the examinations undernoted.

Third Professional Examination

Passed in all subjects.—T. A. Burke, M. Cohen, E. G. Condon, P. F. Foran, W. Glennon, C. W. Greene, W. P. Kelly, T. H. Massey, M. O'Connor, J. R. Tobin, C. H. Wilson.

Completed Examination.—R. Calnan, C. J. R. Clarke, S. C. Clarke, T. W. Conway, J. Corboy, J. B. Dwyer, T. J. Golding, P. E. Hayden, R. F. Hayes, H. Hosty, A. E. S. Irvine, L. F. Kelly, M. J. C. Kennedy, F. G. McCaughey, T. J. Madden, R. V. Murphy, J. O'Donnell, W. D. Sammon, P. D. Sullivan, W. G. Wright.

First Professional Examination in all subjects.—P. J. Timoney.

Final Professional Examination.

With Honours.—J. S. Sheill.

Passed in all Subjects.—Alice M. Barry, M. Campbell, W. I. Cowell, M. Keane, W. F. B. Loughnan, W. L. Murphy, A. L. O'Keaffe.

Completed the Examination.—A. J. Bracken, G. P. A. Bracken, A. N. Crawford, C. A. Cusack, B. D. Gibson, G. A. D. Harvey, P. Kinsella, F. J. Lennan, W. J. O'Sullivan, J. Parker, T. J. Ryan.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed examinations in the subjects indicated:

Surgery.—R. H. Cooper (Section II), A. W. S. De Vine (Sections I and II), E. F. W. Hoare (Sections I and II), A. C. Story (Sections I and II), R. H. Terry (Section I).

Medicine.—G. B. Messenger (Section I), C. S. Scott (Section II), I. C. Thorburn (Sections I and II), A. B. S. Todd (Section II), S. H. R. Welch (Sections I and II).

Forensic Medicine.—C. W. S. Boggs, E. F. W. Hoare, J. E. Jones, I. C. Thorburn, H. M. Waller.

Midwifery.—W. G. H. Cable, W. R. Elliott.

The diploma of the Society was granted to the following candidates:—R. H. Cooper, A. C. Story, A. B. S. Todd, and S. H. R. Welch.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

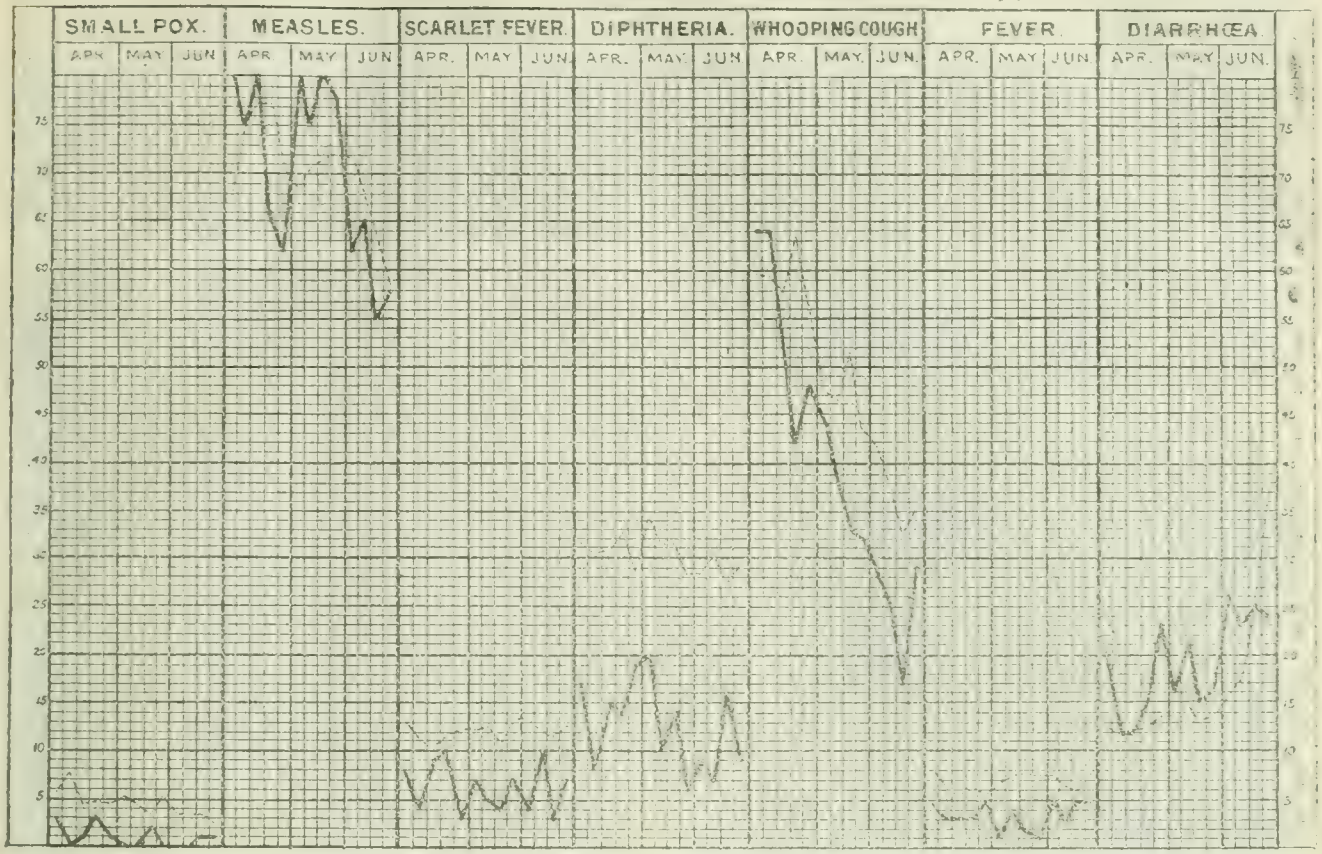
EPIDEMIC MORTALITY IN LONDON.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE accompanying diagram shows the prevalence of the principal epidemic diseases during the second, or spring, quarter of the year. The fluctuations of each disease, and its relative fatality as compared with that in the corresponding periods of recent years, can thus be readily seen.

Small-pox.—Twelve fatal cases of small-pox were registered last quarter, against 3, 3, and 8 in the three preceding quarters. Among the various metropolitan boroughs the greatest proportional mortality from this disease was recorded in Paddington, Kensington, Holborn, Fulham, Bethnal Green, Stepney, and Poplar. The number of small-pox patients admitted into the Metropolitan Asylums Hospitals during the quarter was 252, against 120, 94, and 198 in the three preceding quarters; 74

Deaths from Epidemic Diseases in London during the Second Quarter of 1904.



Note.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted lines show the *average* number of deaths in the corresponding weeks of the ten preceding years 1894-1903.

cases remained under treatment at the end of last quarter, against 21, 26, and 126 at the end of the three preceding quarters.

Measles.—The deaths from measles, which had been 247, 671, and 670 in the three preceding quarters, rose again last quarter to 932, and were 20 in excess of the average number in the corresponding periods of the ten preceding years. This disease was proportionately most fatal in Holborn, Bethnal Green, Stepney, Southwark, Bermondsey, and Deptford.

Scarlet Fever.—The fatal cases of this disease, which had been 91, 90, and 81 in the three preceding quarters, were again 81 last quarter, and were 76 fewer than the corrected average number. The highest death-rates from scarlet fever last quarter were recorded in Islington, Finsbury, Bethnal Green Poplar, and Woolwich The number of scarlet fever cases in the Metropolitan Asylums Hospitals, which had been 1,849, 1,606, and 1,546 at the end of the three preceding quarters, had risen again to 1,599 at the end of last quarter; 2,598 new cases were admitted during the quarter, against 3,006, 2,416, and 2,142 in the three preceding quarters.

Diphtheria.—The deaths referred to diphtheria in London, which had been 147, 189, and 207 in the three preceding quarters, declined again last quarter to 164, and showed a decline of 230 from the average number in the corresponding periods of the ten preceding years. Among the various metropolitan boroughs the greatest proportional mortality from this disease was recorded in Hammersmith, Hackney, Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of the quarter was 681, against 671, 734, and 786 at the end of the three preceding quarters; 1,316 new cases were admitted during the quarter, against 1,464, 1,438, and 1,287 in the three preceding quarters.

Whooping-cough.—The fatal cases of this disease, which had been 217, 209, and 603 in the three preceding quarters, declined again last quarter to 508, and were 125 below the corrected average number. Among the various metropolitan boroughs whooping-cough was proportionally most fatal in Shoreditch, Stepney, Southwark, Bermondsey, Deptford, and Woolwich.

"*Fever.*"—Under this heading are included deaths from typhus, from enteric fever, and from ill-defined pyrexia. The deaths referred to these different forms of "fever," which had been 87, 169, and 56 in the three preceding quarters, further declined last quarter to 47, and were 42 below the average number in the corresponding periods of the ten preceding years. One death from ill-defined pyrexia was recorded during the quarter under notice, but not any from typhus. Enteric fever mortality was highest in Paddington, St. Pancras, Islington, Holborn, and Bermondsey. The Metropolitan Asylums Hospitals contained 62 enteric fever patients at the end of last quarter, against 247, 246, and 86 at the end of the three preceding quarters; 137 new cases were admitted during the quarter, against 379, 506, and 173 in the three preceding quarters.

Diarrhœa.—The 249 deaths from diarrhœa in London last quarter were 34 in excess of the average number in the second quarters of the ten preceding years. Among the various metropolitan boroughs this disease was proportionally most fatal in Fulham, Finsbury, the City of London, Shoreditch, Stepney, and Battersea.

In conclusion, it may be stated that the 1,993 deaths in London attributed to these principal epidemic diseases during the quarter ending June last were nearly 19 per cent. below the corrected average number in the corresponding quarters of the ten preceding years. The lowest death-rates from these diseases last quarter were recorded in Paddington, the City of Westminster, Hampstead, Stoke Newington, the City of London, and Lewisham; and the highest rates in Stepney, Poplar, Bethnal Green, Shoreditch, Southwark, Bermondsey, and Deptford.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

[Specially Reported for the British Medical Journal.]

The Registrar-General has just issued his return relating to the births and deaths in the second quarter of this year, and to the marriages during the three months ending March last. The marriage-rate during that period was equal to 10.7 per 1,000 of the population, and was 0.9 per 1,000 below the average rate in the corresponding quarters of the ten preceding years.

The births registered in England and Wales during the quarter ending June last numbered 238,891 and were equal to an annual rate of 28.2 per 1,000 of the population, estimated by the Registrar-General to be 33,763,434 persons in the middle of the year. In the second quarters of the ten preceding years the birth-rate had averaged 29.5 per 1,000. The birth-rates last quarter ranged, in the several counties, from 21.9 in Somersetshire, 22.0 in Sussex, 22.8 in Dorsetshire, 22.9 in Bedfordshire, 23.1 in Oxfordshire, and 23.2 in Devonshire, to 32.2 in Northumberland, 32.7 in Nottinghamshire, 33.4 in Staffordshire, 35.5 in Glamorganshire, 35.7 in Monmouthshire, and 35.9 in Durham. In seventy-six of the largest English towns, including London, the birth-rate last quarter averaged 29.5 per 1,000, being 1.1 per 1,000 in excess of the general English birth-rate. In London the rate was 28.1, while it averaged 30.1 per 1,000 in the seventy-five other large towns, and ranged from 16.8 in Bournemouth, 18.1 in Hastings, 20.0 in Hornsey, and 20.2 in Halifax, to 36.6 in Middlesbrough, 36.7 in Gateshead, 38.3 in Rhondda, 38.4 in St. Helens, and 38.9 in Merthyr Tydfil.

The births registered in England and Wales during the quarter under notice exceeded the deaths by 114,669; this represents the natural increase of the population during that period. From returns issued by the Board of Trade it appears that 118,830 emigrants embarked during the three months for places outside Europe, from the various ports of the United Kingdom at which emigration officers are stationed. Of these 118,830 emigrants, 47,004 were English, 11,048 were Scottish, and 17,592 Irish, while 42,536 others were of foreign nationality. Compared with the averages in the corresponding quarters of the three preceding years the proportion of emigrants in the population of the several parts of the United Kingdom showed an increase of 27.2 per cent. English, and 40.3 per cent. Scottish, while the Irish emigrants declined by 1.4 per cent.

During the second quarter of the year the deaths of 124,222 persons were registered, equal to an annual rate of 14.8 per 1,000 persons living; this rate was 1.5 per 1,000 below the mean rate in the corresponding

periods of the ten preceding years. The lowest county death-rates last quarter were 11.2 in Middlesex, 11.4 in Berkshire, 11.7 in Essex, 11.8 in Surrey, 12 2 in Hertfordshire, and 12 3 in Kent; while the highest rates were 16.9 in Durham, 17.0 in Lancashire, 17 3 in Carmarthenshire, 17 4 in Carnarvonshire, 17 5 in Northumberland, and 19 3 in Denbighshire. In seventy-six of the largest English towns, with an aggregate population of more than fifteen millions, the mean rate of mortality was 15.3 per 1,000; in 142 smaller towns, containing in the aggregate upwards of four and a-half millions of persons, the death-rate was 13.8 per 1,000; while in the remaining, and chiefly rural, parts of England and Wales, the rate was 14 5 per 1,000. In London the death-rate was 14.8 per 1,000, while among the seventy-five large provincial towns the death-rate averaged 15 6 per 1,000, and ranged from 8.6 in Willesden, 8.8 in Hornsey, 9 1 in King's Norton, 10.6 in Leyton, and 9.8 in Handsworth (Staffs), to 18.8 in Burmingham, 18 9 in Liverpool 19 0 in Wigan and in Newcastle-on-Tyne, 19.2 in Warrington, and 20 0 in Manchester.

The 124,222 deaths from all causes in England and Wales last quarter included 11,235 which were referred to the principal infectious diseases; of these 3,716 were attributed to whooping-cough, 3 584 to measles, 1,337 to diarrhoea, 1,122 to diphtheria, 806 to scarlet fever, 550 to "fever" (principally enteric), and 120 to small-pox. The mortality from whooping-cough last quarter was in excess of the average for the corresponding quarters of the ten preceding years, while that from each of the other principal infectious diseases showed a decline. Of the 120 deaths from small-pox last quarter, 84 belonged to one or other of the 218 towns, including 12 belonging to London, 9 to Gateshead, 7 to Newcastle-on-Tyne, 5 each to Stockport, Manchester, Felling, and Tynemouth, and 4 to Leicester.

The rate of infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 113 per 1,000, against an average rate of 122 in the corresponding quarters of the ten preceding years. In the several counties the rates of infant mortality ranged from 70 in Hertfordshire, 72 in Berkshire, 74 in Buckinghamshire, 76 in Dorsetshire, 80 in Oxfordshire, and 81 in Bedfordshire, to 127 in Carmarthenshire, 129 in Cumberland, 131 in Northumberland, 134 in Warwickshire, 139 in Lancashire, and 146 in Denbighshire In the seventy-six large towns the mean rate was 120 per 1,000; in London the proportion was equal to 109 per 1,000, while it averaged 124 in the seventy-five other large towns, among which the rates ranged from 73 in Hastings, 74 in Reading, 76 in Willesden, 79 in Hornsey, and 82 in Leyton, to 154 in Hanley and in Birmingham, 165 in Manchester, 169 in Norwich, 171 in Burnley, and 182 in Blackburn.

The mortality in England and Wales during the three months under notice among persons aged between 1 and 60 years was equal to an annual rate of 7 6 per 1.000 of the population estimated to be living at this group of ages, and was 1.1 per 1.000 below the mean rate in the ten preceding second quarters. In the seventy-six large towns the death-rate at this group of ages averaged 8.6 per 1,000; in London this death-rate was 8 5 per 1,000, while among the seventy-five other large towns the rates ranged from 3.8 in Willesden, 4.2 in Hornsey and in King's Norton, 4 6 in Handsworth (Staffs), and 5 1 in Leyton to 10.9 in Liverpool, 11.0 in Newcastle-on-Tyne, 11 3 in Wigan, 11.6 in Manchester, 11.7 in St. Helens, and 11 8 in Warrington.

Among persons aged 60 years and upwards the death-rate last quarter was equal to 63.6 per 1.000 of the estimated population at this age-period. In the seventy-six towns the death-rate at this age-group averaged 64 5 per 1,000; in London the rate was 60.7, while among the seventy-five large provincial towns the rates ranged from 39 3 in Leyton, 41 2 in Devonport, 44.9 in King's Norton, 46 5 in Hastings, 47.1 in Walthamstow, and 47 2 in Stockport to 79.1 in Sunderland, 79.2 in Bradford, 80 7 in Rhondda, 80.8 in Rochdale, 81.0 in Newcastle-on Tyne and 86.3 in West Hartlepool.

The mean temperature of the air during last quarter was slightly above the average, the highest shade readings of the thermometer ranging at the various stations from 75° to 80°; the absence during the second quarter of the year of any temperature higher than 80° was a very unusual feature of the weather. The amount of rainfall measured in London amounted to 3.9 in., or less than three quarters of the average. The duration of bright sunshine in London during the quarter was 478 hours, being 35 per cent. of the possible amount, and 10 hours less than the average.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,896 births and 6,630 deaths were registered during the week ending Saturday last, August 20th. The annual rate of mortality in these towns, which had been 16 4, 19.8, and 22.1 per 1,000 in the three preceding weeks, further rose last week to 22.7 per 1,000. The rates in the several towns ranged from 7 8 in King's Norton, 9 6 in Handsworth (Staffs.), 10.5 in West Hartlepool, 10.7 in Blackburn, 11.8 in Hastings and in Devonport, 12 0 in Burton-on-Trent, and 12.1 in Bournemouth, to 31 0 in Hanley, 31.4 in Tynemouth, 31.8 in St. Helens, 32.1 in Salford, 32 3 in Tottenham, 33.4 in York, 34.0 in Wigan, 34 6 in Bootle, and 39.1 in Liverpool. In London the death-rate was 21.6 per 1,000, while it averaged 23 2 per 1.000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 9 7 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 8.8 per 1,000, while among the seventy-five other large towns the death-rates from these diseases ranged upwards to 15 8 in Rhondda, 15.9 in Birkenhead, 16 4 in Grimsby, 17 7 in Bootle and in Hull, 18 0 in Tottenham, 19.2 in York, 19 6 in East Ham, and 20 9 in Liverpool. Measles caused a death-rate of 1.2 in St. Helens, 1.3 in Rhondda, 1.5 in Bradford, 2.0 in Blackburn, 2.7 in Huddersfield, and 3.9 in Halifax; and diarrhoea of 14.0 in Grimsby, 14.1 in Leyton and in Wigan, 14 3 in Reading 14 6 in West Ham, 16 6 in Tottenham and in Hull, 17.4 in East Ham, 17.7 in Bootle, 18 0 in York, and 18 5 in Liverpool. The mortality from scarlet fever, from diphtheria, from whooping-cough, and from "fever" showed no marked excess in any of the large towns. No death from small-pox was registered last week either in London or in any of the seventy-five other large towns. The Metropolitan Asylums Hospitals contained 18 small-pox patients at the end of last week, against 46, 32, and 21 at the end of the three preceding weeks; 2 new cases were admitted during the week, against 7, 2, and 0 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1,784, 1,758, and 1,763 at the end of the three preceding weeks, had declined again to 1,745 at the end of last week; 198 new cases were admitted during the week, against 243, 166, and 189 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, August 20th, 928 births and 567 deaths were registered in eight of the principal Scotch towns The annual rate of mortality in these towns, which had been 14.1, 14 6, and 15.7 per 1,000 in the three preceding weeks, further rose last week to 17.1 per 1,000, but was 5.6 per 1,000 below the mean rate during the same period in the seventy-six large English towns Among these Scotch towns the death-rates ranged from 7.8 in Leith and 12.3 in Perth to 20.2 in Greenock and 21.1 in Paisley. The death-rate from the principal infectious diseases averaged 2 8 per 1,000, the highest rates being recorded in Glasgow and Leith. The 294 deaths registered in Glasgow included 3, which were referred to measles, 11 to whooping-cough, and 44 to diarrhoea. Two fatal cases of scarlet fever and 4 of diarrhoea were recorded in Edinburgh. Two deaths from whooping-cough and 4 from diarrhoea were recorded in Dundee; and 5 from diarrhoea in Aberdeen, 5 in Leith, and 3 in Paisley.

SANITARY INSPECTORS.

READERS of the BRITISH MEDICAL JOURNAL do not need to be told that local sanitary authorities are occasionally eccentric, but perhaps the most eccentric proposal with which we have yet met is one that seems to have found favour with the authorities of the Borough of Bexhill in Sussex. From the *Bexhill-on-Sea Observer* we gather that on economic grounds it has been decided to abolish the post of sanitary inspector, and to turn over the duties of that office to the borough surveyor. Fortunately this decision has not yet been put into actual practice, and organized opposition to it would appear to be on foot. This counter movement started within the Borough Council itself but it has since received the support of the local medical profession, the members of which, it is stated, have all signed a petition on the subject to the Local Government Board. It seems, therefore, so inevitable that the original decision will be upset, or that it will be voluntarily rescinded, that the matter would not seem to demand comment but for the curious attitude towards sanitary matters which the proposal and its acceptance in the first place seem to betoken. The work of a sanitary inspector is far too important to be sandwiched between the duties of any other office and any town of some 12,000 inhabitants, and especially one which, like Bexhill, has health-resort ambitions and fashionable possibilities, must certainly require the whole-time employment of at least one trained and experieuced inspector. His assistance is essential to the medical officer of health, who, however active and energetic himself, would be most seriously handicapped in the performance of his duties if deprived of the extra pair of hands and eyes with which it is the work of the inspector to supply him. It surely needs but a very brief study of the work of an inspector as defined by the Local Government Board to convince any one that the duties assigned to him are not such as can be performed by any but a man in a position to devote his whole time to them. Bexhill has of late years enjoyed the reputation of being a progressive town capably administered, and we have every reason to believe that at present its sanitary condition is all that it should be. It is, however, not likely to remain so should this retrograde decision be upheld, and it is not to be forgotten that the reputation of a health resort is much more easily marred than made, and that in such towns, more if possible than in any other, a cheese-paring policy in matters of public health is the most fatal form of municipal economy.

SCOTCH EDUCATION DEPARTMENT.

CLOSING OF SCHOOLS ON ACCOUNT OF EPIDEMIC DISEASE.

THE relationship of medical officers of health to the Educational Department with reference to the closure of schools apparently has not been understood by some School Boards, and in a few instances general practitioners have been specially appointed by Boards to grant certificates in connexion with this matter. The Scotch Educational Department recently issued a circular to the managers of rural schools calling attention to Section LVII of the Public Health (Scotland) Act, 1897 and pointing out the duties both of parents and of teachers under this Section and their liability to penalties, and also stating that strict observance of this Section will tend to obviate the necessity for closing schools or divisions thereof. The circular goes on to state that: (2) It is of great importance that the earliest possible intimation of sickness, ascertained or suspected to be infectious, in the persons of scholars, or of the family to which they belong, should be given by schoolmasters to the medical officer of health. This will tend to obviate the necessity for closing schools or divisions thereof by enabling the medical officer of health to adopt measures which will prevent the spread of the disease. (3) It is also of great importance for the same end that schoolmasters should take prompt action in accordance with the above section of the Public Health (Scotland) Act, 1897 on receipt of any intimation from the medical officer of health that infectious disease exists in any house in which children of school age reside. (4) It is to be kept in view that the closing of a school or a division thereof is not justified by the fact that the fall in the attendance threatens to affect the grant to a serious extent. This step is only to be taken either on the express authority of a duly qualified medical officer or on a requisition in terms of Article 30 of the Code. If only one division is required to be closed, only that division ought to be closed. (5) If the requisition is based upon such an incident as the appearance of infectious disease in a teacher's house adjoining the school, or in a janitor's lodge, every effort should be made, as by the removal of the patient, the procuring of lodgings, or the hiring of premises in which the school could be carried on, or otherwise, to obviate the interruption of education in the school. (6) When a school has been closed on account of epidemic sickness, the managers are recommended to take this into account in fixing the duration of holidays which fall due in the remainder of the year

The Local Government Board of Scotland has also moved in this matter and has issued circular letters headed "Closure of Schools" to clerks to the local authorities and also to the medical officers of health on the same subject. In the former it is stated that "it will be observed that therein the Board deprecate the closing of schools as a matter of routine, or for any but substantial reasons. They have observed that this procedure has been resorted to by certain local authorities in default of isolation in hospital; the use of houses of reception for contacts; disinfection; co-operation between the local authority and School Boards in promoting and procuring the observance of Section LVII of Public Health Act and other procedures which the local authority have the power and duty to adopt and which are calculated to secure public safety with the least possible interference with public intercourse in school, trade business, or otherwise. On receiving a report from the medical officer of

health recommending the closing of a school or part thereof in the district, or the exclusion of any scholars therefrom, it will be your duty to call an immediate meeting of the local authority or the appropriate Committee to consider the report. If a meeting cannot immediately be held your proper course will be to submit the report at once to two members of the local authority, whose sanction will be sufficient to enable you to address a notice to the managers of the school. The notice should in every case be accompanied by a copy of the report of the medical officer of health on which the local authority or its members base their action."

In the latter they make the following suggestions for the guidance of the Medical Officer of Health. They state that Article 30 of the Scotch Education Department provides that "where the managers have complied with any notice of the sanitary authority of the district in which the school is situated or any two members thereof, acting on the advice of the medical officer of health, requiring them for a specified time with a view to preventing the spread of disease, or any danger to health likely to arise from the condition of the school, either to close the school or to exclude any scholars from attendance, they may appeal to the Department if they consider the notice to be unreasonable."

It will be seen that while the powers of issuing notices to the managers of schools lies with the local authority, or two of its members, the duty of advising the local authority lies with the medical officer of health. The article recognizes alternative procedures: (1) The closing of the school; (2) the exclusion of individual scholars. With reference to the latter the Board remind the medical officers of health of the provisions of Section LVII of the Public Health Act, 1897, which prohibit the attendance at school of children who are suffering from infectious disease, or who reside in houses where such disease exists, and of their duty under the regulations passed by the local authority to cause intimation to be made to School Boards and headmasters of the existence of infectious disease in any house where children of school age reside. Their duty is reciprocal to that inculcated on school managers by the Scotch Education Department in their circular on closing of schools on account of epidemic sickness, a copy of which is appended for information. There may be causes beyond the scope of this section in which the medical officer of health may think it necessary to advise the exclusion of individual children—for example, a child who has been exposed to infection but does not reside in an infected house—until the lapse of the incubation period of the disease to which it has been exposed. Otherwise Section LVII ought automatically to exclude individual scholars whose attendance might spread infection. The closing of a school is a serious interference with the educational work of a district, and it is not to be recommended or required as a matter of routine or for any but substantial reasons. The fact that many of the school children are suffering from an infectious disease, and that the attendance is thereby greatly reduced, is not of itself sufficient ground for advising the closing of a school. The medical officer of health must be satisfied that the disease is being spread, or is likely to be spread, by the continued attendance of the children at school, and that the closing of the school offers a clear prospect of preventing or checking the spread. Even when satisfied that disease is being so spread, it will further be the duty of the medical officer of health to consider whether the closing of one or more classes or of one particular department may not be sufficient. Such considerations as the nature of the disease in question, its period of incubation, its age incidence, the mode of its infectivity, etc., as well as local matters, such as the character of the district, house accommodation, etc., etc., will throughout be duly weighed in arriving at a decision.

When a medical officer of health has satisfied himself that it is his duty to advise the local authority to issue a notice in terms of Article 30 of the Code, he shall embody his recommendations in a report which shall be forwarded without delay to the clerk to the local authority. The report should contain information on the following points:

1. Whether he recommends that the whole school, or one or more departments or classes, should be closed, or that certain specified scholars should be excluded.
2. The period during which the closure or exclusion should continue. This should be the shortest possible for securing the object aimed at. If the time suggested should prove to be insufficient, a further report advising an extension of the period may be made.
3. The disease on account of which the recommendation is made, with some statistics showing the extent and fatality.
4. The measures already adopted to prevent its spread.
5. His grounds for believing that the disease is being propagated by school attendance.
6. His reasons for anticipating that the course proposed will have the effect of preventing or checking the spread of the disease, and that other or less stringent measures would not suffice.

It is to be hoped that these instructions to educational and public health authorities may be the means of preventing any further difficulties in connexion with this important question.

MILK REFORM IN BERLIN.

The milk supply of Berlin is derived from many sources, which may be classed as: (1) Country milk supplied direct from the farms; (2) dealers' milk, which is country milk purified in the large dairies by centrifuging and pasteurizing; (3) dairy milk from cowsheds within the metropolitan area, of which there are 800 with about 10,000 cows. This town milk is the freshest, but the cowsheds are, in many respects, defective and insanitary. In view of the high infant mortality, and the prevalence of disorders of the digestive organs, especially among the children of the poorer classes, the desirability of obtaining the milk in as cleanly a state as possible, and of keeping it as cold as is practicable up to the time of its consumption, becomes a matter of the utmost importance, not so much for the destruction of the tubercle bacilli, as for inhibiting the development of those milk bacilli the poisonous products of which have been shown by Flügge to be the cause of so much intestinal and gastric disease among infants. In the summer of 1903 a considerable number of the urban cowkeepers were induced voluntarily to submit their sheds and cattle to inspection by medical men, and a system of veterinary control is already being organized. A Committee has been formed under the presidency of Councillor Kirchner for the supply of pure milk at a price suited to the means of the working and labouring classes. Dr. C. S. Engel, in the *Berliner Aerzte Korrespondenz*, 1904, No 7, further proposes to supply to all medical men, midwives, associations concerned with the care of young children, foundlings, etc., and so far as possible the parents of infants with information as to the inspected dairies, and to collect funds for supplying good milk at the lowest practicable price, or, in case of necessity, free.

Dr. Engel considers v. Behring's suggestion for the breeding of herds guaranteed free from tuberculosis as of the highest importance, but the preservation of the raw milk by the addition of formalin as of very doubtful expediency in view of the very unsatisfactory results hitherto obtained, and regrets that von Behring did not put the action of this addition to the test of practical experience before recommending it to the general public; he alludes also to the shaking of the confidence of medical men of late in the indications of tuberculin, and regrets that to the complications attaching to dairy hygiene, questions of feeding, pasteurizing, etc., should be added that of the use of formalin as a preservative.

BOER PRISONERS AND THE HEALTH OF ST. HELENA.

In his annual Colonial report on St. Helena, the Governor in commenting on the public health, says there is no doubt that it suffered very considerably from the presence of the Boer prisoners. In 1899, the year before the arrival of the Boers, the death rate was 17.3 per thousand. During the three years the Boer prisoners were interned in the island the death-rate among the inhabitants proper averaged 28.4 per thousand. Epidemics of enteric fever and a severe form of influenza, both introduced by the prisoners of war, would, it is observed, partly account for this; but there is no doubt that other diseases increased. The people lived at unaccustomed pressure, and their habits as to eating and drinking were considerably disturbed by the altered conditions. A few cases of beri-beri have been observed amongst the civil population, and these cases, the Colonial Surgeon states, must be regarded as a legacy left by the prisoners. An epidemic of this disease prevailed for many months in the Boer camps.

PUBLIC HEALTH IN MADAGASCAR.

At a recent meeting of the Paris Academy of Medicine, M. Kermorgant presented a report on the working of the departments of medical assistance and public health in Madagascar. During the year 1903 the medical establishments comprised a School of Medicine with a hospital attached; a Pasteur Institute at Antananarivo; a vaccine-producing station at Diego-Suarez; a central pharmacy; 29 hospitals, with 1,867 beds; 10 dispensaries, 17 maternities, 7 leper asylums. Further aid was rendered by the hospital establishments of the Colonial service and certain private institutions. In 1903 the hospitals admitted 16,788 persons as in-patients, while the out-patient attendances were 1,023,425. The number of lepers treated was 3,079. The number of vaccinations performed was 170,991. Small-pox almost disappeared during the year; a slight outbreak at Tenerivo was speedily checked by means of vaccination and revaccination. Small epidemics of diphtheria at Antananarivo and Fianarantsoa were easily subdued by means of serum injections. The disease which causes the greatest amount of sickness and death is still malaria. Quinine is gratuitously distributed among the natives, and measures for the sanitation of ricefields are under consideration.

THE HEALTH OF GIBRALTAR.

A report on the Gibraltar Blue Book for 1903 by Mr. F. Evans, C.M.G., Colonial Secretary, has been issued as a Parliamentary paper. The estimated population in the city and garrison and in the harbour, on December 31st, 1903, was 25,693, of whom 6,660 formed the military population, and 2,666 were aliens on permit. There were 92 deaths among children under one year of age, equivalent to 179.6 per 1,000 births. The average of the last ten years was 156 per 1,000 births. Considerable progress was made during the year with the works undertaken by the Sanitary Commissioners for improving the water supply, and a welcome addition to the reserve of water for dietetic purposes was secured when the winter rains fell. The scheme, which is estimated to cost about £29,000, consists in the formation of a catchment area, ten acres in extent, on a sand slope above Catalan Bay Village on the east side of the Rock, by covering the sand with corrugated iron sheets laid on creosoted timber framing, and the construction of a tunnel through the Rock for conveying the water from the catchment to the existing reservoirs on the west side. The area is capable of yielding 240,000 gallons per inch of rainfall, or an increased yield during an average year of 8,000,000 gallons. The scheme is capable of expansion.

HOSPITAL AND DISPENSARY MANAGEMENT.

HERTFORDSHIRE COUNTY ASYLUM.

This asylum, of which we have the fifth annual report, contains beds for 576 patients, but its administrative buildings are sufficiently large to serve 800 beds. That an extension is probable in the not distant future appears from the report of the Medical Superintendent, Dr. A. Norman Boycott. During the last four years there has been a steady increase in asylum patients in Hertfordshire, totalling 97, or an average yearly increase of 24·25. Even at the present rate of increase the beds belonging to Hertfordshire will be exhausted in nine years, but, as Dr. Boycott points out, owing to the increase of the population in the larger towns, the actual increase is likely to be at a greater rate in the future; and, further, nineteen-twentieths of the original number of 514 Hertfordshire beds at the Three Counties Asylum at Arlesley, where on December 31st, 1903, there were 332 Hertfordshire patients, may be bought by the Bedfordshire and Huntingdonshire Committees on giving six months' notice. The asylum at Hill End contained on January 1st, 1903, 608, and on December 31st, 1903, 591 patients. The daily average number resident was 587, and of these about two-thirds belonged to Hertfordshire, the other third being out-county and other patients, the majority being chargeable to Middlesex; 132 were admitted during the year, of whom 128 were first admissions. Eighteen of these were transfers from other asylums and in 61 the duration of insanity on admission was over twelve months. There were 48 cases of mania, 51 of melancholia, 7 dements, 4 cases of general paralysis, 8 of epilepsy, and 13 cases of congenital or infantile mental deficiency. One was not insane. In only 11 could alcohol be assigned as a cause. Hereditary influences were ascertained in 28, congenital defect in 13, epilepsy in 12, previous attacks in 20, and bodily diseases in 20. Moral causes were assigned in 16. There were 48 discharged during the year as recovered, a high recovery rate on admissions of 42·10; 6 as relieved and 23 not improved. There were 41 deaths in the year, a low death-rate on average residents of 6.98. The most noticeable causes of death were 5 from general paralysis, 5 from heart disease and 6 from senile decay. There

were only 3 from phthisis, and the average age at death was 57.63. The Commissioners comment favourably on the general management of this asylum.

JOINT COUNTIES ASYLUM, CARMARTHEN.

ON January 1st, 1903, there were resident at this asylum, which draws its patients from the counties of Carmarthen, Cardigan and Pembroke, 650 patients; and on December 31st, 1903, the numbers were 673. This is the largest number of residents in the history of this asylum, and the admissions for the year (177) were greater than any heretofore, being 55 more than last year. This might at first sight appear to indicate a great increase in insanity in this district, but a glance at the table, based on the census returns, contained in the report of the Medical Superintendent, Dr. Edwin Goodall, shows that whilst the ratio of certified insane paupers through England and Wales per 10,000 of the population has gone up between the years 1891 and 1901 from 26 75 to 30.11, in the joint counties the ratio has remained practically stationary, being 33.80 in 1891 and 33.34 in 1901. In consequence of this increase in admissions, there was some overcrowding during part of the year, particularly on the female side, so much so that it was necessary to make up beds on the floor. In connexion with this overcrowding it is noteworthy that the deaths from tuberculous disease were in the high proportion of 23 per cent. of the total deaths, and though we would not maintain this to be, in this case, a necessary connexion, it is a significant fact that in the reports of asylums lately reviewed, wherever overcrowding has been present, a high tuberculous death-rate has been a regular concomitant.

The Medical Superintendent's report contains some interesting notes. Dr. Goodall comments on the reception of a patient from gaol whom he found by anthropometrical examination to be "defective," and maintains that he should have been examined from this point of view before trial, and found unfit for trial or punishment, and have been transferred to an asylum or educational reformatory. Whilst agreeing with Dr Goodall that delinquents are from time to time sent to prison who cannot ethically be held responsible, the proof of their irresponsibility must at present rest on psychological and not anthropometrical or cephalometrical grounds, the latter being a matter still *sub judice*, and any argument from it of the nature of a *petitio principii*. The report contains further interesting matter on the possible autotoxic causation of acute insanities and the eradication of degeneration.

Of the causation of insanity in the admissions, a heredity of insanity or allied disorders was ascertained in 65 (43.6 per cent.), alcohol in 20 cases (13 4 per cent.), and shock, trouble, worry, etc., in 31. Previous attacks had occurred in 21. In 28 the cause was doubtful, and the remainder were distributed over the usually assigned etiological factors: 33 were suicidal and 22 dangerous; 34 were cases of mania, 29 of melancholia, 32 of dementia, 24 of delusional insanity, 8 of general paralysis, 15 of imbecility, and 5 of stupor; 44 were discharged as recovered during the year (a recovery-rate on admissions of 31.2), 6 as relieved, 37 as not improved, and 65 died (a percentage death-rate on average number present of 10 04). Of the deaths the only outstanding feature was the tuberculous death-rate already commented upon. All deaths were from natural causes. The general health of this asylum was good until the last quarter of the year, when 4 cases of typhoid fever appeared, of whom 1 died. There were also 2 cases of diphtheria, separated by an interval of six months.

COUNTY AND CITY OF WORCESTER ASYLUM.

ALTHOUGH neither in the average numbers resident in the asylum, nor in the admissions, was 1903 a record year, the statistical tables show a steady and fairly rapid increase of patients. Thus the average numbers resident in 1894 were 955, and in 1903 1,163. Further, of the 955, 60 patients belonged to Stafford, whereas in 1903 there were, in addition to the 1,163 resident patients, 45 female patients belonging to Worcester Asylum boarded out in other asylums. This has resulted in a condition of overcrowding on both male and female sides, adverted to in the report of the Commissioners in Lunacy, but which will be relieved when the new County Asylum at Barnsley has been completed. In the meantime the overcrowding of day rooms and dormitories cannot but have a bad effect, and here, again, the statistical tables show, accompanying this, a high death-rate from phthisis, being 22.3 per cent. of the deaths. On January 1st, 1903, there were resident 1,158, excluding the 45 boarded out, and on December 31st, 1903, 1,163 patients. There were during the year 221 admissions, 182 for the first time; of these 221, only 20 were in good bodily health and condition, 156 being in indifferent, and 45 in bad, health; in only 24, however, was the attack of more than twelve months' duration on admission; 110 were cases of mania, 57 melancholia, and 30 dementia. There were 5 cases of congenital or infantile deficiency, 13 of epilepsy, and 5 general paralytic; 1 was considered not insane; hereditary influence as a cause was ascertained in only 23—that is, in 10.4 per cent. of the admissions; family predisposition, however, was assigned in 36 cases; intemperance in drink is given in 35 cases (15.3 per cent.), previous attacks in 60, and unknown in 51; moral causes were assigned in 29; venereal disease is not given as a cause in any; 104 were discharged as recovered during the year, giving the high recovery-rate on admissions of 50.4 per cent.; 9 were discharged as relieved, 9 as not improved, and there were 94 deaths. Of the causes of death, the only outstanding features were the high death-rate from phthisis already alluded to and 11 deaths from dysentery. Concerning this latter disease, the Commissioners report on their visit on July 20th, 1903, that there had been no fewer than 109 cases of dysentery. This they attributed to the insanitary condition of the asylum, to which opinion, however, the Committee and the Medical Superintendent, Dr Braine-Hartnell, dissent, and it seems possible that the overcrowding is a factor which should not be overlooked. There were no serious accidents during the year, with the exception of a death from haemorrhage of the gullet due to a patient trying to swallow a large fragment of bone.

NOTTINGHAM CITY ASYLUM, MAPPERLEY HILL.

THE Medical Superintendent of this asylum, Dr. Evan Powell, like many other alienists throughout this country, has been struck by the increasing proportion of incurable cases, such as congenital imbeciles, epileptics, general paralytics, organic dements, and senile cases, and in consequence of this a diminishing recovery-rate. Dr Mills, speaking at the meeting of the Irish Division of the Medico-Psychological Association, attributed this to the increasing intolerance of the same population towards such persons in their midst; and similarly Dr. Powell thinks that "the chief cause is the gradual removal from the public mind of the prejudice against asylums, so that the senile, paralysed, and epileptic, as soon as they become troublesome, are promptly removed to the asylum, whereas before this was not done except in the very worst cases, and when every means of looking after them at home had failed." Doubtless, there is much truth in this, though, apart from the question of an actual increase in such cases, it is possible that greater care in the selection of cases for discharge as recovered and the improvement in medical and sanitary conditions aid in the accumulation of these incurables in asylums. Dr. Powell considers that the presence of such cases in the wards exerts an unfavourable influence on curable cases, and trusts that "the time is not far distant when every asylum will possess ample provision for the complete separation of the curable from the incurable." In so saying Dr. Powell is undoubtedly voicing the wish of many other medical superintendents for a much-needed reform, which has indeed already been put into effect in many asylums. There were resident in the Asylum on January 1st, 1903, 770, and on December 31st, 1903, 750 patients. There were admitted during the year 160, of whom 140 were first admissions, and in only 25 was the attack of more than twelve months' duration on admission. Of the total admissions there were 30 cases of mania, 42 of melancholia, and 41 of dementia, of whom 11 were stated to be cases of primary dementia. There were 21 cases of delusional insanity, 13 of general paralysis, 6 of epilepsy, and 6 of congenital mental deficiency. Of the "probable causes" in the admissions moral causes are given in 30, intemperance in drink in 11, previous attacks in 33, bodily diseases and disorders in 10, and "unknown" 13. Hereditary influences were only ascertained in 9, and notwithstanding the admission of 13 general paralytics, venereal disease is given as a cause in only 1. Concerning these last two factors, hereditary influence and venereal disease, the extreme difficulty of eliciting accurate information from patients or relatives should not be forgotten. The number of patients discharged as recovered during the year was 47, a recovery rate of 30.92, 5 as relieved, 51 as not improved, 1 as not insane, and 76 died, being a death-rate on the average number resident of 10 03. The chief causes of death were general paralysis 10, heart disease 9, epilepsy 5, phthisis 5, Bright's disease 5, and brain softening 4. The general health has been good and there has been an entire freedom from zymotic disease, though there were a few cases of dysentery.

A NEW ASYLUM.

AN important addition to the accommodation of an official character for well-to-do persons suffering from mental disease was made last month by the opening of Herrison House, Dorchester. It has been erected by the County Authority of Dorsetshire upon a private estate of some 400 acres, and the Commissioners in Lunacy, in their report dated July 13th upon Dorset County Asylum, speak of the new undertaking in terms of high commendation. The internal arrangements of the house appear to offer every facility for the application of modern methods of treatment, while in the grounds there are tennis and croquet lawns, cricket grounds, and a golf course. Though there will be a special resident medical officer, the general supervision and direction of affairs will be in the charge of the Medical Superintendent of the Public Asylum, Dr P. W. Macdonald, who planned the new building, and to whom the Commissioners assign great credit. The fees charged will range between one and two guineas a week.

MONMOUTHSHIRE ASYLUM, ABERGAVENNY.

THE report of the Medical Superintendent, Dr. J. Glendinning, of this asylum for the year 1903 shows that on January 1st, 1903, there were resident 1,111 patients, of whom 544 were males and 567 females. During the year 220 patients were admitted, of whom 53 were not first admissions. The total number under treatment during the year was 1,331 and the average number resident 950. There were 336 patients discharged during the year, and of these 86 were recovered, 15 relieved, 7 were not improved, and 228 chargeable to the counties of Brecon and Radnor were removed to the new asylum at Talgarth. The recovery-rate on admissions for the year was 42.5 per cent. Of the 220 admissions there were 62 cases of acute, 53 of chronic and recurrent, 10 of puerperal, and 3 of senile mania; 18 cases of acute, 24 of chronic and recurrent, and 2 of senile melancholia, and 15 cases of dementia. There were no cases of primary dementia. There were 9 cases of general paralysis, 10 of epilepsy, and 14 of congenital or infantile mental deficiency. Of the probable causes hereditary influences were ascertained in 43, previous attacks in 35, bodily diseases in 74, congenital causes in 12, and alcohol in 13, either as predisposing or exciting causes. Domestic trouble, adverse circumstances, or shock account for 9. Venereal disease appears in only 1 case as exciting cause. The deaths during the year numbered 95, a proportion on the average number resident of 9.9 per cent.; 24 died of heart disease, 10 of phthisis, and 13 of cerebral softening. There were 7 deaths from general paralysis, 1 case of suicide by strangulation, and 1 of accidental death on a level crossing on the Great Western Railway. The remainder are fairly equally distributed over the usual causes of death. Bed sores were present in only 3.6 of the deaths.

KESTEVEN COUNTY ASYLUM.

IN Kesteven the number of those requiring asylum treatment continues to increase. With a practically stationary population there has been an increase of 54 during the last six years, bringing the ratio of certified insane to the population up to 23 50 per 10,000. From the report of the medical superintendent, Dr. J. A. Ewan, we have extracted the following facts:

On January 1st, 1903, 198 were resident in the asylum, 158 were admitted during the year, 32 were discharged and there were 15 deaths, leaving 310 patients in the asylum on December 31st. Of the 158 admissions 100 were received from the London Asylum, and of the total only 38 per cent. were deemed curable, and in 108 the disorder had existed more than twelve months on admission. There were 11 cases of congenital or infantile mental deficiency, 78 cases of mania, 16 cases of melancholia, 43 cases of secondary and senile dementia, and 6 cases of primary dementia; there were also 4 cases of general paralysis. Hereditary influences were ascertained in 22, previous attack had existed in 15, old age and bodily disease accounted for 12, and moral causes for 12; intemperance in drink was assigned as a cause in only 2; 16 were discharged as recovered, a recovery-rate on admission of 20.69, and 16 unimproved. There were 15 deaths during the year, a low percentage on the average number resident (265) of 5.66. None of these deaths was attributable to tuberculous disease, only 2 being pulmonary in nature. The list of causes of death points no other unusual feature, all deaths being due to natural causes. The Commissioners speak well of the general condition of the asylum.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BATH: OPEN-AIR SANATORIUM FOR CONSUMPTIVES, Limpley Stoke.—Resident Medical Officer. Salary, £210 per annum.

BEDFORD COUNTY HOSPITAL.—House Physician, resident. Salary, £60 per annum.

BERKSHIRE COUNTY COUNCIL.—County Medical Officer of Health. Retaining fee of £52 10s. per annum with fee of £3 3s. per day for special services.

BIRMINGHAM GENERAL HOSPITAL.—House-Physician, resident. Salary, £50 per annum.

BRADFORD POOR-LAW UNION SANATORIUM.—Resident Medical Officer. Salary, £100 per annum.

CARDIFF INFIRMARY.—Assistant House-Physician, resident. Salary, £75 per annum. Appointment for six months.

CARLISLE: CUMBERLAND INFIRMARY.—Resident Medical Officer. Salary at the rate of £80 per annum for first six months, and £100 per annum for ensuing six months.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £150 per annum, without board.

CHELTENHAM GENERAL HOSPITAL.—Assistant House-Surgeon, resident. Salary, £92 per annum.

CLIFDEN UNION, No. 2 Dispensary District.—Medical Officer. Salary, £190 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL AND EYE INFIRMARY.—Assistant House-Surgeon. Salary, £50 per annum. Appointment for six months.

DOWNPATRICK: DOWN DISTRICT LUNATIC ASYLUM.—Junior Assistant Medical Officer, resident. Salary, £100 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—House-Surgeon, resident. Honorarium of £25 at completion of six months' service.

GLASGOW EYE INFIRMARY.—Resident Assistant House-Surgeon. Salary, £75 per annum.

GREAT YARMOUTH HOSPITAL.—House-Surgeon, resident. Salary, £90 per annum.

HAMPSTEAD GENERAL HOSPITAL.—Resident Medical Officer. Salary, £120 per annum.

LANARK: BELLEFIELD SANATORIUM.—Resident Physician. Salary, £100 per annum.

LIVERPOOL: ROOTLE GENERAL HOSPITAL.—Junior House-Surgeon, resident Salary, £80 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House-Surgeon, resident. Appointment for six months. Salary at the rate of £60 per annum.

LIVERPOOL STANLEY HOSPITAL.—Third House-Surgeon, resident. Salary, £70 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant Resident Medical Officer. Appointment for six months. Honorarium at the rate 50 guineas per annum.

LONDON UNIVERSITY.—Scientific Assistant in Pathology. Salary, £50 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon, resident. Salary, £50 per annum.

NEWCASTLE-ON-TYNE: HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer, male. Salary, £100 per annum.

ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House-Surgeon, resident. Salary, £110 per annum.

ROYAL EAR HOSPITAL, Dean Street, Soho, W.—Two Assistant Surgeons.

ST. PETER'S HOSPITAL FOR STONE, Henrietta Street, Covent Garden, London.—Junior House-Surgeon, resident. Appointment for six months. Salary at the rate £50 per annum.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon, resident. Appointment for six months. Salary at the rate of £70 per annum.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon, resident. Salary, £40 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House-Surgeon. Salary, £50 per annum.

WEST LONDON HOSPITAL, Hammersmith, W.—(1) House-Physician resident. (2) Three House-Surgeons, resident. Appointments for six months.

APPOINTMENTS.

HANNA, Henry, M.A., B.Sc., M.B., B.U.I., Demonstrator in Anatomy, Queen's College, Belfast.

HASWELL, N. R., M.R.C.S.Eng., Medical Officer to the Helston Rural District Council.

KERR, W. S., M.B., C.M.Edin., F.R.C.S.Edin., Honorary Surgeon to Ear and Throat Department, Sheffield Royal Infirmary.

LEIGH, W. W., M.R.C.S.Eng., L.R.C.P.Edin., Medical Officer of Llanfabon.

PARK, D. S., F.R.C.S.E., Medical Officer to the Boughton-le-Spring Union.

SPANTON, A. T., M.A.Camb., L.S.A., House-Surgeon to the Hulme Dispensary, Manchester.

DIARY FOR NEXT WEEK.

POST-GRADUATE COURSES AND LECTURES.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Lectures will be delivered as follows: Monday, at 3 p.m., Demonstration in Surgical Wards; Tuesday, at 5 p.m., X-ray Treatment and Diagnosis, with Lantern Slides; Wednesday, at 4.15 p.m., Demonstration in Medical Wards; Thursday, at 5 p.m., Middle-ear Suppuration, with Lantern Slides; Friday, at 5 p.m., Skin Cases.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

CRONAN.—At "Haut Mont," Jersey, on 21st inst., the wife of S. Cronan, Surgeon R.N., of a son.

MARRIAGES.

FISHER—WATERS.—On August 23rd, at the Parish Church, Nuneaton, by the Rev. W. J. Batcheler, M.A., Vicar of Brampton Regis, Rural Dean of Wirhamcombe, uncle of the bride assisted by the Rev. J. G. Ford, D.D., Vicar of Nuneaton, and by the Rev. H. Fisher, M.A., Rector of Hinksmon-the-Hill, father of the bridegroom, Henry Richmond Fisher, M.B., (Captain), to Evelyn Laura, eldest daughter of the Rev. S. G. Waters, M.A., Head Master of King Edward VII Grammar School, Nuneaton.

WHITE-MOUNSDON.—At St. Mary's Church, Lichfield (by the Rev. Dumeresq Cobu), James Atkin Swinton White, M.D., F.R.C.S.E., son of the late James Atkin White, M.R.C.S., of Manchester, to Laura Emily, second daughter of H. D. Mounsdon, Esq., of Lichfield. At home September 28th and 29th.

DEATHS.

ARCHER.—On August 20th, at Wells Road, Knowle, Bristol, Robert Kendray Archer, M.R.C.S.E., aged 56.

MOORE.—On August 18th at Cromaboo, Heavitree, Exeter, Daniel Moore M.D. (late of Cheriton, Ockington, Torquay), in his 65th year, formerly of Hastings, Upper Norwood and Sydenham. Cremation at Woking at 1.15 p.m., August 22nd; burial at Camberwell Borough Cemetery, Honor Oak, on Tuesday morning, August 23rd.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
EDITOR, 2631, Gerrard.
GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

THROUGH writes: Could any reader recommend a harmless stain for black hair prematurely turned grey? Solutions of silver nitrate and of hyposulphite of soda have proved ineffectual.

X. Y. Z. asks for any suggestions for a case of chronic sciatica. The patient is a man, aged 40; duration, three years. The right side is affected. The pain extends down the whole course of the nerve and branches, and is severe in the foot. The pain is never quite absent but there are times when it is very slight; fatigue aggravates. The man's habits are good except that he smokes a good deal; he very rarely drinks wine or beer, occasionally a very little whisky; urine normal; he is always constipated: he is rheumatic; he is rather thin, and generally a small eater, especially of meat. Of drugs salicylates are useless, but quinine and potassium iodide does a certain amount of good for a time. Treatment at Buxton was practically without effect.

DR. A. ALEXANDER, (Highgate Road, N.), would be glad to receive suggestions as to diagnosis and treatment of the following case: A lady of stout habit, 57 years of age, developed some three months ago a number of disseminated subcutaneous swellings, varying in size from that of a walnut to a large saucer on trunk, chin and lower jaw, arms, and hands. Occasionally one appears livid or red, but no pigmentation, pitting, or lobulation; one between neck and shoulders very painful, especially to touch; do not itch or migrate, but are more pronounced and firmer at times, especially in the morning. The patient has suffered from "irregular gout" for some years, which may account for the pathogenesis of the affection. Urine normal; digestion good (on gout dietary); massage cannot be tolerated.

ANSWERS.

PALMAM QUI MERUIT FERAT has omitted to enclose his card.

M. R. T.—We are not aware that there are any special institutions for the Weir-Mitchell treatment in England or Scotland. It could, however, be carried out in any nursing home.

COTTAGE HOSPITALS.

MONA HOUSE.—Our correspondent should refer to Sir Henry Burdett's book, *Cottage Hospitals*, which is published by the Scientific Press, 28, Southampton Street, London, W.C.

ETHEREAL SOAP SOLUTION.

L. F. H. writes in reply to "Caution," who asks for a recipe for an ethereal soap solution: I have found the following useful—R Soft soap, 10 oz.; meth. ether, 30 oz.; lysol, 3 drachms. An equally efficient and much cheaper solution with—Soft soap, 10 parts; lysol, 2 parts; and water, to 100.

INTRACTABLE PSORIASIS.

NEMO writes that many cases of intractable psoriasis have been cured by the administration of high-frequency electricity.

DR. W. T. PARKER DOUGLAS (Newbury) writes: In answer to "A Correspondent" in the BRITISH MEDICAL JOURNAL of August 20th on the subject of intractable psoriasis, an account of the thyroid treatment will be found in Byrom Bramwell's *Clinical Studies*, vol. ii, part 3, p. 211.

PRACTICE IN THE CANARY ISLANDS.

PULEX.—Practice in the Canary Islands is subject to the law governing medical practice in Spain. A royal decree dated November 7th, 1902, revived the law of 1857, which gave the Government power, acting on the advice of the Council of Public Instruction, to grant to persons holding a regular diploma obtained in another country the temporary right of practising medicine in Spain and the Spanish colonies. Our correspondent should apply, through the British Ambassador at Madrid, to the Spanish Minister of Public Instruction, giving full information as to his curriculum of study and the qualifications which he holds.

THE WALLS OF OPERATING THEATRE.

DR. LAFFAN (Cashel.)—We have referred our correspondent's question to an expert who writes: The great thing to avoid in the walls of an operating theatre are joints, and I have come to the conclusion after long experience that the best method of treating the walls, also the ceiling which is equally important in an operating theatre, is to paint with four coats of good oil colour (this is presuming the walls are plastered) and two coats of the best white enamel. This makes an impervious wall surface without a joint which can be wiped with a damp cloth or sponged with water if necessary.

MEDICAL PRACTICE IN MONACO.

MONACO.—The following British qualifications are, for the purposes of medical practice in the Principality of Monaco, considered equivalent to the French diploma of Doctor of Medicine: the degree of Doctor of Medicine of the University of "the United Kingdom of Great Britain," and the diplomas of Fellows of the Royal Colleges of Surgeons and Physicians of London, Edinburgh, Dublin, and of the Faculty of Physicians and Surgeons of Glasgow. Every application for leave to practise must be accompanied by the diplomas of the applicant or by copies of those documents certified as correct either by a Consul of the Principality or by the Mayor of Monaco. The applicants must enter into an undertaking to live in the Principality, and to practise their profession during the whole or part of the months of May, June, July, August, September, and October, agreeably to Article 1 of the Ordinance of May 29th, 1894.

LADY DISPENSER.

H. V.—In order to qualify as dispenser to a medical practitioner the young lady should pass the assistant's examination of the Society of Apothecaries of London. regulations respecting which will be supplied on application at the Hall The examination is divided into two parts, one of which is a practical examination in the compounding and dispensing of medicines, and the other an oral examination in materia medica, chemistry, pharmacy, and the translation of prescriptions. Examinations are held four times a year, commencing on the fourth Wednesdays of the months of January, April, July, and October. The fee is five guineas, and notice of candidature must be lodged fourteen days in advance, together with the fee, a certificate stating the age of the candidate (which must not be less than 18) and a certificate that the candidate has received instruction from the signer in practical pharmacy for six months. The latter may be signed by a registered medical practitioner, a fully qualified chemist, or an assistant of the Society who is holding a public appointment.

MIDWIVES' CERTIFICATES.

W. H., PULEX, and W. W.—By Section 11 of the Midwives Act of 1902, any woman, within two years of the passing of this Act, can claim to be certified under the Act, and to have her name entered in the roll of midwives provided she holds a certificate of midwifery approved by the Central Midwives Board, or produces evidence satisfactory to the Board that at the passing of the Act she had been, for at least one year in bonâ fide practice as a midwife, and that she bears a good character. Forms of applications and certificates can be obtained from the Secretary of the Central Midwives Board, 6, Suffolk Street, London, S.W. After receiving a certificate from the Central Midwives Board every woman is bound before commencing practice as a midwife in any area to give notice of her intention in writing to the local supervising authority of the district, or to the body to whom, for the time being, the duties of the local supervising authority shall have been delegated by the County Council. See Section x of the Midwives Act of 1902.

TREATMENT OF STAMMERING.

T. B.—In the opening chapter on stammering and the study of the alphabet in Professor John Wyllie's *Disorders of Speech* will be found valuable hints on this defect. The alphabet is there discussed on a physiological basis, and many useful sentences for the use of stammerers are set forth. Our correspondent may also refer to a paper on the treatment of stammering published in the BRITISH MEDICAL JOURNAL of July 20th, 1901, p. 130, in which Dr. H. G. Langwill gives an account of Professor Wyllie's methods. In the JOURNAL of September 6th 1902, p. 740, Mr. Philip Miall (Bradford) wrote in reply to a similar query: The patient should first be taught to expand the chest thoroughly in breathing, and afterwards to speak slowly at the beginning of expiration when the chest is full of air. At the end of respiration there is not force enough to speak with ease, and hesitation is the result. A daily drill in breathing and speaking is necessary, and the exercises should include all articulate sounds in turn, and all possible combinations of them. This requires some study, but any intelligent person can carry out the method if once put in the way. For a child at so early an age as 5 years a quarter of an hour's drill a day would probably be enough.

LETTERS, NOTES, Etc.

OXYGEN IN THE REDUCTION OF TEMPERATURE.

DR. GEORGE STOKER (Hertford Street, Mayfair, W.) writes: For some considerable time I have been interested in the use of oxygen gas for various surgical and medical purposes. I have used it, by continuous inhalation, in a large number of cases of ozaena and other diseases of the nose. I have observed that its use, in this way, is followed by a distinct fall of the patient's temperature. I have also seen many cases of pneumonia, in which the continuous use of oxygen as above indicated was followed by a remarkable reduction of temperature. In continued fevers, and under other conditions, in which it is reasonable to believe that oxidizing processes in the body are diminished or arrested, the temperature rises; and conversely as above stated, where these oxidizing processes are increased the temperature falls. I therefore venture to advocate this use of oxygen by continuous inhalation in all cases of fever.

SECTION OF NAVY, ARMY, AND AMBULANCE.

FLEET SURGEON P. W. BASSETT-SMITH, R.N., writes: In the report of my paper, published in the BRITISH MEDICAL JOURNAL of August 13th, on the "Etiology of Mediterranean Fever," read at the Navy and Army Section of the British Medical Association's meeting, the micrococcus melitensis is said to be always killed by dry heat at a temperature of 45° C. This is a clerical error, and should have been read as 65° C.

LANGENSCHWALBACH.

DR. R. J. MILLS (Norwich) writes: I am sure there are many men, who, like myself, after a year's hard work have become tired and snappy with patients, in short, need a holiday. I have come to the conclusion that a complete change of surroundings is essential, and for those living as I do at a low altitude like Norwich I believe I pull round quicker at a slight elevation. Langenschwalbach is 1,000 ft. above the sea, just high enough to be much cooler at night. On July 23rd, at noon, it was 18° C. in the shade, while Wiesbaden and Frankfort were 24 and 25° C. at the same time. Everything is quiet and restful, valleys with green grass and rippling trout streams, hills covered with forests of beech, fir or oak, where one can wander at will, for they are all the property of the Government, and one only disturbs the roebuck foxes and wild pig, the fritilleries and Camberwell beauties, to say nothing of the gorgeous dragon flies, delight the eye everywhere; on the sides of the hills are strawberries and raspberries everywhere, and hunting in the streams are kingfishers and water basel, while, perhaps, soaring over the mountain tops one sees a solitary eagle or bustard. The trout fishing is fair. I seldom take less than ten brace in an evening on warm days with dry flies running up to 2 lb. in weight. I have taken one of 3 lbs., and as many as 1,500 in July and August There are no other amusements, except tennis, and a very excellent band But, the "Metropole" is a remarkably good hotel, cheap, and with a most genial sportsman for host; his wife and daughters aid to make one comfortable. I have taken holidays at most places between Yalta and the Adirondacks, and I think a good home at reasonable cost is an important item in a holiday. If any one desires further information I will answer any question, and I can promise fishing on my own private water, which I rent from the Government, in addition. I may add that after six consecutive holidays spent at Langenschwalbach that the iron water baths highly charged with CO_2 are most invigorating, and free to medical men. I know the general impression is that this place is good for women and girls with anaemia, but I can assure them that men who are tired and neurasthenic will benefit still more if they will give the place a trial.

TREATMENT OF SNAKE BITES.

ENQUIRER writes: A Colonist from South Africa stated that the natives where he was dried the heads of snakes and powdered them. When a person was bitten some of this powder was given in water to the patient at intervals, and, the natives declared, with beneficial effects Swallowing snake venom is stated to be of value in cases of snake bites, and it can be preserved by the above simple method, we may have in this a remedy of some value for such cases.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Mr. E. E. Austen, London; Anti-Bumbledom; Mr. F. C. Allen; Dr. F. P. Atkinson, Bexhill-on-Sea; Albert B Sir W. H. Bennett, K.C.V.O., London; Mr. E. L. Bishop, Manchester; E. G. Bull, M.B., Birmingham; Messrs. Baillière, Tindall, and Cox, London; Messrs. Burgoyne, Burbridges, and Co., London; W. Badger, M.B., Penicuik; Miss F. Butcher, M.D., Falwall; Mr. J. Bradley, Coventry; Mr. L. A. Bidwell, London; Bro. Practitioner. C Mr. A. D. Cowburn, London; Cakr; County M.O.H.; Mr. E. Carnall, Conway; Mr. F. E. Coe, London; C. P. F.; C N. D S. Delépine, M.B., Manchester; W. T. P. Douglas, M.B., Newbury. E Dr A. Elliot, London. F Major G. H. Fink, I.M.S., London. Mr. F. T. Fagge, Llanfairfech Mr. H. W. Gadd, Exeter; Dr. A. Greenwood, Blackburn; Mr. H. Gilford Reading; Mr. E. E. Greville, Edinburgh; Glasgow. H Dr M. L. Hepburn, Tunbridge Well Mr J. D. Howe, Preston; H. R.; Mr. J. Hutchinson, London; L. F. Hemmans .B, Hull; Mr. J. Hughes, Harrogate; Dr. T. W. Hime, Bradford I Messrs. Ingram and Royle, London. J Miss T. Johnson, Bolton. K Mr. G. T. Kever Rowhedge. L Dr. H. A. Latimer, Swansea; Mr. T. Laffan, Cashel. M Motto; Mr. J. M. MacLullish, London; Mr. J. F. D. Mello, Rangoon; Mr. G. H. Mapleton, Goudhurst; Dr. P. W. Macdonald, Dorchester. N Mr. C. Nourse, London; Dr. W. G. Niall, Guildford; Nemo. P Dr. W. P. Palmer, Torquay; Pulex; Mr. E. M. Pears Bristol; Mr. J. A. Phillips, London; Per Aspera; Dr. E. P. Philpots, Bournemouth Patchett, Great Harwood; Mr. T. Percival, Knottingley. R A. W. Renney, M.B., Southampton. S G. H. Shaw, M.B., Leigh; Scalpel; Mr. J. H. Stormont, Tamworth-in-Arden; S. J. R.; Mr. G. Stoker, C.M.G., London. T E. Tonge, M.B., Beer; T. M. A.; Mr. M. R. Taylor, Helston. W Dr. A. G. Welsford, Hemel Hempstead; A. D. Williams, M.B., Devonport; Wellington; Dr. E. H. Warner, Bristol; Dr. A. M. Watts, Minster; Mr. C. M. Williams, Newcastle-on-Tyne; Sir W. Wade, Florence; Mr. C. H. Whiteford, Plymouth; Dr. C. J. Whitby, Bath; Dr. D. C. Watt, Pietermaritzburg. Y L. Youatt, M.B., Prescot.

BOOKS, ETC., RECEIVED.

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EDUCATIONAL NUMBER.

SESSIONS 1904-1905.

THE PROFESSION OF MEDICINE.

The profession of medicine, like every other, has its advantages and disadvantages, and those who think of entering it should carefully weigh the one against the other so that they may see clearly what they have to expect. For the more definite their idea of the life they will have to lead the more accurately will they, their parents and guardians, be able to judge of their fitness for it, and the more surely will they be able to avoid the stones of stumbling that will bestrew their path. With the object of helping young people who have come to the parting of the ways between youth and manhood to avoid making a mistake in a matter of such vital importance as the choice of a profession, we here place before them a dispassionate statement of what lies before one who adopts medicine as a career—the work he will be called upon to do, the rewards he may fairly look for, the sacrifices he may have to make, and the disappointments that may fall to his lot. It must be understood that we speak here of the man of average abilities, with no particular advantages in the way of money or influence, who takes up medicine for a livelihood, and expects a fair return for the time and money spent on his education.

Physical Fitness.

In considering the fitness of any individual for a particular profession, the question of bodily fitness meets one at the outset. The life of a student and that of a practitioner involves a considerable strain on physical stamina. The more keen a student is in his work the more his health is likely to suffer from the want of adequate exercise, from the close application which the present curriculum imposes as a necessity even on the least ambitious, and from the work and worry entailed by the number and severity of the examinations that must be passed. The risks to the health of the practitioner arise mainly from the unremitting labour which the conditions of professional life involve; except for two or three weeks' holiday in the year he is actually never off duty, day or night, weekdays or Sundays. He must have what Napoleon called the "two o'clock in the morning courage"—that is to say, he must be in possession of all his faculties, and ready to cope with any difficulty, even when called up in the middle of the night. And he may have unpleasantly frequent opportunities of displaying this readiness. The life of a general practitioner is indeed one of the constant meeting of emergencies in which, although a kind of tolerance is developed, the continuous strain gradually wears out the strongest. He is much more exposed to infection than most people, and his bodily resistance is often at a low ebb owing to irregularity in meals, exposure to inclement weather, and fatigue. On the other hand, a practitioner who loves his work finds abundant compensation in its efficient performance; the open-air life of a country doctor is almost as healthy as that of an agricultural labourer, and the medical man knows how to preserve his own health by taking precautions against infection or by the treatment of various ailments.

The Financial Outlook.

The profession of medicine is a path to fortune only for the few. This fact should be clearly recognized by all who think of adopting it as a career. It has the great advantage, however, that no practitioner who is willing and able to work need starve. Such tragedies as are from time to time revealed when an inquest raises the curtain that shrouds the life of a briefless barrister are practically unknown among members of the medical profession. The generations of men follow each other like the leaves. The eternal sea of birth and death ebbs and flows unceasingly, and wherever birth or death is taking place there is a sphere for the exercise of the knowledge and skill which are the means of livelihood of the medical practitioner. There are but few who become what a business man would consider even moderately rich by the exercise of their profession, but all should be able to earn, say, from £400 to £500 a year. The pecuniary disadvantages of medicine as a profession are the prolongation and costliness of the period of training, and the more or less lengthy time of waiting after qualification before anything like an average income is received. Then the working expenses, including house, carriage, and what may be called professional equipment, are so heavy in proportion to the gross income of a man in active practice, that the chances of being able to save, even to the extent of the return of the original capital, are in perhaps the majority of cases slight; while reasonable provision for old age, after family expenses are met, is too often impossible. What, however, is at once the glory of the profession and one of its most serious drawbacks from the financial point of view is that the true doctor is working, year in year out, to reduce the incidence of disease in general, and so is directly helping to destroy the sources of his income. On the one hand the medical man, unlike the manufacturer, who employs it may be thousands of helpers each of whom adds to his profits, must as a rule earn every penny himself. It is the chief glory of the medical profession, however, that its standard of success is not the amount of money earned, but the amount of good done to our fellow-

men, and the quantity of new truths added to the sum of knowledge.

THE PROFESSION FROM THE INTELLECTUAL STANDPOINT.

That which distinguishes a liberal profession from a trade is that in the former there is scope for the exercise of the highest intellectual powers. The practice of a profession is in fact not merely a means of livelihood, but in itself constitutes a worthy object in life. From the intellectual side there is no career which affords larger opportunities of intellectual achievement or more pleasure in work for its own sake than the profession of medicine. The training that must now be gone through is in itself one of the best means of cultivating not only the powers of observation, but the highest faculties of the mind. Of all men doctors should be the farthest removed from superstition and bigotry. The grim realities of life with which they are constantly brought into close contact tends to make them indifferent to the futilities and ineptitudes which occupy so large a space in minds of no scientific culture. They are concerned with things, not words; and they are in the happy position that their profession makes it necessary that they should aim at absolute truths undisturbed by prejudice or false sentiment. All through the active life of practice the mind is kept healthy and vigorous by the exercise of the powers of observation, analysis, and judgement.

THE PROFESSION FROM THE ETHICAL STANDPOINT.

It is probably a result of the individualistic nature of medical practice that doctors are proverbially sensitive and jealous in their professional relations with each other. This is merely to say that medical practitioners are made of the same clay as other men. Apart from this relish of humanity it may truly be said that no walk of life offers greater scope for the highest development of moral character. The readiness to render assistance, irrespectively of any other consideration but the need of him who asks for it; the alleviation of human sorrow as well as the relief of physical suffering; the courage which never shrinks from meeting infection or from incurring necessary responsibility in the endeavour to ward off death or ease pain; the perseverance which refuses to yield to the enemy until the end is obviously nigh; the generosity, discretion, cheerfulness, patience, and sympathy which characterize professors of the healing art worthy of the name, are beautiful in themselves and in their effects. The sympathy of medical practitioners is not so much an emotion as a motive; it is not indeed a sentiment expressing itself in sighs and tears, but a sympathy manifesting itself in active effort for the relief of the sufferer who is in need of help. The doctor, in the words of Matthew Arnold, "sees life steadily and sees it whole." He occupies a position of the most delicate trust, the duties of which it will need all his strength of mind and will, all his tact, and all his sense of honour to sustain worthily. Habits of reticence, of self-control, of disinterestedness, are of slow growth, but the seed of them should be sown in the virgin soil of the student's soul, if they are to fructify later in the professional life of the practitioner.

THE PROFESSION FROM THE SOCIAL STANDPOINT.

The medical man has little time for the cultivation of social amenities, and much of his work is of so intimate a nature that the cultivation of extra-professional relations with his patients is apt to be embarrassing to both sides. This to a certain extent tends to deprive him of the social status which is his due. On the other hand, his general influence is of the widest character, probably wider than that of any other professson, and although he has not yet gained any marked political influence, his special knowledge and trained faculty of dealing with facts have already given him a certain indirect power in the State, and must give him increasing importance as civilization advances. A proof of the special value of a medical training, and of the way in which it fits men for leadership among their fellows, may be found in the number of medical practitioners who have done good service to the country and achieved fame for themselves in the work of practical administration in new territories added to the Empire. Sir William MacGregor, Sir George Robertson, Sir John Kirk, General Leonard Wood, and many others could scarcely have done the work for which they will always be held in honour unless they had been doctors before they became empire builders. The foundation of our Indian Empire was to some extent laid by surgeons, and it has since been extended almost as largely by the lancet of the medical officer as by the sword of the soldier.

CONCLUSION.

To sum up the whole matter: the medical profession affords a fairly certain means of livelihood with unrivalled opportunities for that all-round development of the faculties which, as Goethe said, is a duty of the highest importance for every man; moreover, it opens a field for the exercise of his faculties in which he will have the sense of doing good with more certainty, perhaps, than in any other. As Carlyle said, whoever is in the wrong, he is in the right. Medicine, if practised in the spirit of John Arbuthnot, who "knew his art but not his trade," whether or not it brings wealth or dignity, cannot fail to give that highest earthly good, the sense of a life spent in the service of one's fellow-men. As an encouragement to those about to enter a profession which, honourable and satisfying as it is in many ways, has its full share of difficulties and trials, we may be allowed to quote the noble tribute paid to it by one who had more opportunities than fall to the lot of most men of knowing what medical practitioners are. In the dedication to *Underwoods* Robert Louis Stevenson writes: "There are men and classes of men that stand above the common herd: the soldier, the sailor, and the shepherd not infrequently: the artist rarely; rarelier still, the clergyman the physician almost as a rule. He is the flower—such as it is—of our civilization: and when that stage of man is done with, and only remembered to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practise an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and, what are more important, Heraclean cheerfulness and courage. So it is that he brings air and cheer into the sick room, and often enough, though not so often as he wishes, brings healing."

THE PORTALS AND PROSPECTS OF THE PROFESSION.

HAVING made up his mind to enter the medical profession the intending student must consider which avenue is the best for him. A candidate may, through ignorance, either choose a portal beset with so many difficulties that time and energy which might more profitably be expended in

some other direction are wasted in efforts foredoomed to failure, or, on the other hand, he may select one which too late he finds does not open the way to the goal of his aspirations. If such mistakes are to be avoided, the advice of some one who knows the ground thoroughly is almost indispensable. Nothing can take the place of counsel of this kind, but to those who have no such adviser the following remarks may be useful.

The Question of a Degree.

Whether the candidate is to aim at a university degree or to rest content with a qualifying diploma is perhaps the first question to be answered. Formerly, the problem was one in which the *res angusta domi* formed a large factor, but now that so many local universities lie everywhere close at hand, a degree is within the reach of all. If a candidate is ambitious to become a consulting physician, he must besides obtaining a degree in medicine from a recognized university, become a Member of one of the Royal Colleges of Physicians of London, Edinburgh, or Dublin, according to the part of the United Kingdom in which he proposes to practise. If he intends to devote himself to surgery, he must obtain the Fellowship of one of the Royal Colleges of Surgeons. In other spheres of practice a diploma in medicine, surgery, and obstetrics is sufficient. There can be no doubt, however, that the possession of an M.D. degree gives a practitioner a distinct advantage in the eyes of the public.

Requirements of General Education.

The next step is to pass a preliminary examination in Arts recognized by the General Medical Council, if a certificate of having passed such an examination either before leaving school or subsequently has not already been obtained. A list of the examinations recognized for this purpose will be found at p. 490. Whatever preliminary examination is selected it is important that the precise requirements demanded of candidates should first of all be ascertained, for valuable time may be lost if these are not exactly complied with.

The Choice of a Medical School.

Apart from considerations of locality and expense, the question of what school should be chosen is probably decided with regard to the eminence of the staff and the size of the hospital. In regard to the former, it is right to point out that the reputation—which may be world-wide—of the consulting staff should have no influence on the decision, as they, with few exceptions, take no part in the work of teaching in the school. The same remark applies in less degree to the senior members of the acting staff, as they are for the most part compelled by their professional engagements to leave the teaching largely in the hands of their younger colleagues. In regard to the size of the hospital, it must be pointed out that a large number of beds is not always an unmixed advantage; where the number of patients is not excessive, individual cases can often be studied more attentively. The chief consideration, however, is that the teaching and opportunities for training in medicine, surgery, obstetrics, and gynaecology, should be good and abundant. The choice of a school may in some instances be determined by the chance of securing an entrance scholarship. In the event of a student wishing, owing to unforeseen circumstances, to migrate to another school in the middle of his curriculum, the only difficulty likely to arise is that he has probably paid a "composition fee" to a particular hospital.

The Cost of Medical Education.

In counting the cost of the educational period of the medical life the manifold helps which are available in regard to expense should not be ignored. There are entrance scholarships at nearly all the schools, and there are besides other pecuniary aids peculiar to individual schools, having perhaps their highest development at the present day in the Scottish Universities; in addition to these there is a goodly number of open scholarships and prizes. For the ordinary student, the cost of medical education resolves itself into the cost of the hospital training and the cost of living during the five years of the curriculum. The composition fee for all the necessary classes at most schools, including hospital practice, may be taken as something between £125 and £150; the exact figures for the different schools may be found elsewhere in this number of the British Medical Journal. The cost of living is greater in London and in the older universities of England than at the newer provincial universities, or at those of Scotland and Ireland. Speaking generally the cost for the whole curriculum may be taken as something between £600 and £1,000, the precise amount varying both with the particular place of study and with the individual student's habits, mode of life, and success in passing examinations.

Professional Education.

Having passed the Preliminary Examination, and having actually commenced medical study at one of the recognized schools, no time should be lost in obtaining registration as a medical student by the General Medical Council, as the regulation five years' curriculum is usually held to date from the day of registration, and delay may thus mean compulsory lengthening of the already long probationary period. Such registration is not required by the Royal Colleges of Physicians and Surgeons of England and some other qualifying bodies, but it is required by most, and the student would be well advised not to omit this step, whatever his objective may be. Valuable advice in regard to the curriculum may be obtained by all new students at the schools from their respective Deans; further on will be found some observations in regard to the course of professional training which have a general application.

After Qualification.

After a qualification to practise has been obtained there is usually a more or less prolonged transitional stage between the medical student and the established medical practitioner. This period may most advantageously be used in gaining experience by serving as house-physician, house-surgeon, or casualty medical officer in a hospital, working as assistant to a busy practitioner, or, like Ulysses, seeing the manners and customs of many men by travel as a ship's surgeon or by serving four years in the Royal Navy.

The Prospects of the Profession.

The particular line a man will follow in his life-work to a large extent depends on his opportunities and aptitudes. If he can afford to wait and has the necessary equipment, then he will probably develop into a physician or surgeon, or a specialist in a more limited sense. If his tastes lie in the direction of general practice he will be wise to distribute his interests and energies over the whole field of medicine. Operative surgery, which in a town may usually be delegated to others, is, to a considerable extent

a necessity for every one engaged in country practice; and the country doctor, placed far away from professional assistance, is, without doubt, the general practitioner in his highest development.

Besides general and consulting practice other opportunities for good work and a fair income are offered by the Public Health Service, in which medical men have to deal with that increasingly important subject, preventive medicine, which has a most intimate relation with the social well-being, prosperity, and future development of the nation and empire. The navy, the army, and the Indian Medical Service all offer certain attractions, not the least of which is the certainty of a fair pension at the end of a relatively short term of service. The Colonial Service, the Prison Service, lunacy appointments, and resident Poor-law appointments also offer advantages which are not to be obtained by the general practitioner; they have mostly, however, some compensating limitations. Particulars of all these spheres of practice will be found in the following pages. For the few, teaching appointments in the medical schools may be obtained which often carry with them opportunities for original research.

THE WAITING TIME AND SOME OF ITS DANGERS.

The most trying time of the medical man's life, from the beginning of professional study onward, is probably while he is waiting for practice. It is then that he may be tempted to allow himself to be farmed by the commercial combinations known as co-operative friendly societies; at this period, therefore, it behoves him to be most vigilant and strenuous in detecting and avoiding that which is evil or even doubtful. For the young consultant waiting for practice teaching posts, private tuition, and various kinds of literary work, may help to provide a sufficient income. For the man who starts as a general practitioner without buying a practice or a partnership, or who has no private income, there are Public Health appointments, Poor-law appointments, including that of public vaccinator, certain workmen's clubs, and other similar means of obtaining an introduction to practice. A public appointment, indeed, is often of very great value even though it bring in no immediate pecuniary advantage.

CONCLUSIONS.

It is a sound principle on which to act that the newly qualified man should associate himself in as cordial a manner as possible with the practitioners already established in the district by attending the meetings of the local Divisions of the British Medical Association, joining the local medical society, and in other ways showing a disposition to cultivate friendly relations with his brother practitioners and combine with them in their efforts for the common good. Every one of us owes a duty to his profession as well as to the public; and a man who stands aloof in selfish isolation from the struggles of his brethren fails in that duty, and within the measure of his personal influence, whatever it may be, weakens the power and lessens the dignity of his profession.

A practitioner of medicine should, to the best of his knowledge and ability, strictly follow the code of etiquette accepted by the profession, for he may be assured that it has its root in a principle which works for the general good, while for his real success nothing in the end will prove more helpful than a faithful adherence to the spirit of the rule, "Do as you would be done by."

THE MEDICAL CURRICULUM.

THE course of professional training through which a student who desires to enter the medical profession must pass is, under existing regulations, essentially the same in all cases. The universities and medical corporations differ from each other rather in the severity of the various examinational tests which they impose than in the subjects of study, which are laid down by the General Medical Council, and are broadly the same for all. The minimum period of study after registration as a medical student is five years, whether the curriculum be passed in England, Scotland, or Ireland, and whether the student is seeking a university degree or a college diploma. Although in the case of the universities the minimum period of study is the same as that for a diploma, some students find, as a matter of fact, that it is necessary to spread their work over a longer period. Before, therefore, deciding upon a university course the intending student should carefully consider the regulations and requirements, and for his guidance in this respect we give in the following pages particulars of the regulations of the various Examining Boards. When the student has decided upon the degrees or diplomas to which he aspires, and has selected the medical school which he desires to attend, he should communicate with the Warden or Dean, who will give him all necessary advice in regard to the mode of entrance, registration, and the details of the best way to prepare for his several professional examinations.

Before he can profitably begin his course of medical study the student must have passed one of the recognized Preliminary Examinations in Arts, a complete list of which can be obtained from the Registrar of the General Medical Council (299, Oxford Street, W.) or from the Registrar of the Branch Council in Scotland or Ireland (48, George Square, Edinburgh, or 35, Dawson Street, Dublin). Care should be taken in the selection of the Preliminary Examination, for in the case of the student seeking a university degree the particular Preliminary Examination laid down by that university must be passed. Thus, for example, the student who has passed the first-class College of Preceptors or the Junior Oxford or Cambridge Local Examination in the required subjects can register as a medical student, and having completed his curriculum obtain the diplomas of L.R.C.P.Lond. and M.R.C.S.Eng., but he will not be admissible to the examinations for the degrees of the University of London. A list of recognized preliminary examinations will be found at p. 490, but the student intending to study in London will find it advantageous to pass the University of London Matriculation Examination, the regulations for which have been recently much modified so as to give a wide choice of subjects, thus adapting the examination to all reasonable requirements. Immediately after passing the required Preliminary Examination the student should enter at the medical school he has selected, and register his name at the office of the General Medical Council, after which he begins to count the compulsory five years of study.

By a recent regulation the Royal Colleges of Physicians and Surgeons do not now require that a student shall have been registered by the General Medical Council before admitting him to their examinations, but he must have passed a Preliminary Examination recognized by the Examining Board in England, and go through a five years' course of medical study. Notwithstanding this new regulation, we advise the student not to neglect registration

with the General Medical Council, since he may later seek other diplomas, under the regulations of which registration is necessary.

Under former regulations it was the almost universal custom for students to begin their professional studies in October; but owing to the alterations recently made in the curriculum there is now no special advantage in beginning at that time. At some of the medical schools, indeed, arrangements have been made whereby the student may with advantage enter upon his medical course in the summer session and commence the study of chemistry, physics, and pharmacy, if he has passed a Preliminary Examination early in the year.

It is not necessary or desirable that we should enter into a comparison of the details of the adaptation of the curriculum to the requirements of the various Examining Boards. The following account of the curriculum suitable for the examinations for the diplomas of L.R.C.P.Lond. and M.R.C.S.Eng., given by the Conjoint Examining Board of the Royal Colleges of Physicians and Surgeons will, we hope, prove useful to the student as an example of the general course required for entrance into the profession. With slight modifications in detail the course of study will be found suitable for the degrees of the University of London, since the curriculum and examinations of the Conjoint Board have now been brought much more into line with those of the universities than was formerly the case. Broadly speaking there are three stages with three examinations in the student's career: the first is devoted to elementary science, the second to anatomy and physiology, and the third to the purely professional subjects of medicine, surgery, and midwifery, and their special branches.

The First Examination includes: Part I—Chemistry, Part II—Physics, Part III—Elementary Biology, and Part IV—Practical Pharmacy. Pharmacy, however, may be passed separately and, indeed, may be taken at any stage of the curriculum. Generally speaking, the whole of the student's first year is devoted to the study of the subjects of the First Examination, which is usually passed in three parts: (1) Biology, at the end of the winter session in March; (2) Chemistry and Physics, at the end of the summer session in July: (3) Pharmacy, which may be passed during the first year or be postponed. By recent regulations the courses of instruction for the First Examination must include 180 hours' teaching and laboratory work in Chemistry, 120 hours in Physics and 120 hours in Biology, but the courses need not be completed within one year nor need they run concurrently. The First Examination of the Conjoint Board may be passed before entry at a medical school, but only if the student has taken courses of instruction in biology, chemistry, and physics at a science school specially recognized for the purpose. Instruction in science at an Institution other than a Medical School will only be counted as a part of the curriculum for a period of six months, and then only if the preliminary examination has been previously passed. Except under very special circumstances, therefore, the student should pass a preliminary Examination in Arts before he begins his science work, and should take care to attend lectures and laboratory instruction in Biology, Chemistry, and Physics at a properly-equipped and recognized institution, such as a medical school. In the metropolitan medical schools the students of the first year, except those proceeding to the University of London degrees, generally attend lectures on anatomy and dissect whilst engaged in their science study, a plan which has the advantage of permitting them to see the applications of biology, chemistry, and physics to the study of more professional subjects, although it does not now enable them to enter for the Second Examination earlier than they can if they devote their first year solely to science at a purely science school. The student should always endeavour to complete the First Examination within his first year of study, since delay in passing it either prolongs the course of study or curtails time which ought more properly to be given to purely professional subjects. Before admission to any part of the First Examination a certificate of attendance at a recognized institution on a course of instruction in the subject or subjects for which the student desires to present himself must be produced.

After passing the First Examination the student proceeds to the study of the intermediate medical subjects—anatomy and physiology. The regulations require him to attend, at a recognized medical school, a course of lectures in anatomy (six months), a course of lectures in physiology (six months), a course of practical physiology (six months), and to have dissected for not less than twelve months during regular sessions. The study of anatomy and physiology previous to the date of passing Parts I, II, and III of the First Examination is not now recognized. The earliest time at which he can be admitted to the Second Examination is twelve months after completing the First Examination—that is, twelve months of attendance at a recognized medical school during regular sessions. The student who has followed the usual course and has entered at a medical school in October and completed the First Examination at the end of his first year will therefore devote the whole of his second year to anatomy and physiology, and pass the Second Examination at the end of his second complete year of attendance at a medical school. He will find it greatly to his advantage to have begun anatomy and dissecting during his first year, as is the practice in the metropolitan medical schools, for one year is a short time to devote to the study of two such important subjects as anatomy and physiology. Many students, indeed, require six months longer, and additional time taken at this stage either prolongs the course or curtails the time which should be devoted to purely professional studies. In the case of those seeking the University of London degrees, two years of attendance at a recognized medical school are required after passing the Preliminary Scientific Examination instead of one year.

Having passed the Second Examination, the student begins the systematic practical study of disease by attending the out-patient rooms, at the bedside, in the operating theatre, and in the *post-mortem* room of the hospital, although if he be wise he will have taken the opportunity from time to time during the earlier part of his course of paying occasional visits to the wards and out-patient and *post-mortem* rooms. If he has been industrious and has passed all examinations without mishap, he now has two and a-half or three years to devote to the uninterrupted study of the more purely medical subjects. The Third or Final Examination cannot be passed before the end of five years from the date of registration, nor till after the expiration of two years, that is two winter and two summer sessions from the date of passing the Second Examination. The subjects of this examination may be taken at once, or it may be passed in three parts. One subject of the Final Examination, however—namely, midwifery—may be taken before the rest of the examination

at the end of four years of study at a medical school, and not earlier than one year after the date of passing the Second Examination. It is important that the student should pass each examination at the prescribed time, otherwise he will be delayed in obtaining his diploma until the lapse of the required time from the date of passing his earlier examinations, or will find it necessary to encroach upon the time which should be devoted to the more important practical subjects of his profession.

Space will not permit us to enter here into full particulars of the lectures and other work which the student must attend during the last two or three years: for this information we must refer him to the official regulations, outlines of which are given below. Speaking generally, however, he must attend lectures in medicine (six months), surgery (six months), midwifery (three months), pathology, including pathological histology and bacteriology (three months), pharmacology and therapeutics (three months), forensic medicine (three months), public health (three months) together with systematic practical instruction in medicine, midwifery, and surgery, operations on the dead body, attendance on the practice of a recognized hospital (two winter and two summer sessions), *post-mortem* demonstrations (twelve months), and clinical lectures on medicine and surgery (nine months). The student is also required to attend clinical instruction in ophthalmic surgery, insanity, and diseases of women, and to act as clinical clerk and surgical dresser for not less than six months each, and to attend twenty labours. Instruction in vaccination and the administration of anaesthetics and attendance at a fever hospital are also necessary.

REGULATIONS OF THE GENERAL MEDICAL COUNCIL

IN REGARD TO THE REGISTRATION AND EDUCATION OF MEDICAL STUDENTS.

The regulations of the General Medical Council as to registration, preliminary examination, and professional education must be followed by all medical students seeking to obtain degrees or licences to practise from the universities or medical corporations of the United Kingdom.

PRELIMINARY EXAMINATION.

1. Subject to such exceptions as the Council may from time to time allow, every medical student shall, at the commencement of his studentship, be registered in the manner and under the conditions prescribed by the Standing Resolutions of the Council.

2. No person shall be registered as a medical or dental student who has not attained the age of 16 years: and for the purpose of ensuring the observance of this regulation, every applicant for registration in the *Students' Register* shall be required to produce satisfactory evidence that this age has been attained.

3. No person shall be allowed to be registered as a medical student unless he shall have previously passed a recognized Preliminary Examination in the subjects of general education.

4. It shall be delegated to the Education Committee to prepare and issue from time to time a list of Examining Bodies whose examinations fulfil the conditions of the Medical Council as regards general education.

5. Testimonials of Proficiency granted by Educational Bodies, according to the subjoined List, in Clause 7, shall be accepted, the Council reserving the right to add to or take from the list.

6. A Degree in Arts of any University of the United Kingdom, or of the Colonies, or of such other Universities as may be specially recognized from time to time by the General Medical Council, shall be considered a sufficient testimonial of proficiency.

The student must make application for registration on a special form, to be had on application to the several qualifying bodies and medical schools.

The *Students' Register* is kept by the Branch Registrars, namely, in England, Mr. H. E. Allen, B.A., LL.B., 299, Oxford Street, London, W.; in Scotland, Mr. James Robertson, 54, George Square, Edinburgh; in Dublin, Mr. Richard J. E. Roe, 35, Dawson Street, Dublin.

7. The following is a list of examining bodies whose examinations in general education are recognized by the General Medical Council for 1904 as qualifying for registration as medical or dental student:

I.—University Examinations held in the United Kingdom.

A.

Final Examination for a Degree in Arts or Science of any University in the United Kingdom.

University of Oxford:
- Junior Local Examinations. Certificate to be endorsed as fulfilling the Council's requirement.
- Senior Local Examinations. Certificates to be endorsed as fulfilling the Council's requirements.
- Responsions. Certificate to be supplemented by others showing that the required mathematical subjects have been passed.
- Moderations. Certificates to include the required subjects.

University of Cambridge:
- Junior Local Examinations. Certificate to be endorsed as fulfilling the Council's requirements.
- Senior Local Examinations. Certificates to be endorsed as fulfilling the Council's requirements.
- Higher Local Examinations. Certificates to include the required subjects.
- Previous Examination. Certificates to include the required subjects.
- General Examination. Certificates to include the required subjects.

Oxford and Cambridge Schools' Examination Board:
- Lower Certificate Examinations. The required subjects to be passed at one time.
- Higher Certificate Examinations. Certificates to include the required subjects.

University of Durham:
- Examination for Certificate of Proficiency. The required subjects to be passed at one time.
- Senior Local Examinations. Certificate to include the required subjects.

University of London:
- Matriculation Examination. Certificate to include the required subjects.

Victoria University of Manchester:
- Matriculation Examination. Certificate to include the required subjects.

University of Liverpool:
- Matriculation Examination; Certificate to include the required subjects.

University of Leeds:
- Matriculation Examination; Certificate to include the required subjects.

University of Birmingham:
- Matriculation Examination; Certificate to include the required subjects

University of Wales:
- Matriculation Examination; the required subjects to be passed at one time.

Universities of Scotland:
- Preliminary Examination of the Joint Board of Examiners of the Scottish Universities for Graduation in Medicine and Surgery; the required subjects to be passed at one, or not more than two, examinations.
- Preliminary Examination of the Joint Board of Examiners of the Scottish Universities for Graduation in Arts or Science; Certificates to include the required subjects.

University of St. Andrews:
- Final Examination for the Diploma of LL.A.

University of Dublin:
- Principal Public Entrance Examinations: the required subjects to be passed at one time.
- Examinations for the First, Second, Third, or Fourth Year in Arts: Certificate to be signed in the approved form by the Medical Registrar of the University.

Royal University of Ireland:
- Matriculation Examination; Certificate to include the required subjects.

II.—Government Examinations held in the United Kingdom.

Scottish Education Department:
- Leaving Certificate Examinations, passes in Lower Grade: the required subjects to be passed at one, or not more than two, examinations.
- Leaving Certificate Examinations, passes in Higher Grade or Honours; to include the required subjects.

Intermediate Education Board of Ireland:
- Middle Grade Examination; the required subjects to be passed at one time.
- Senior Grade Examination: Certificates to include the required subjects.

Central Welsh Board:
- Senior Certificate Examinations; Certificates to include the required subjects.

III.—Examinations by Chartered Bodies held in the United Kingdom.

College of Preceptors:
- Examinations for First-class Certificate: the required subjects to be passed at one, or not more than two, examinations.
- Preliminary Examination for Medical Students; the required subjects to be passed at one time.

Educational Institute of Scotland:
Preliminary Medical Examination; the required subjects to be passed at one time.
Royal Colleges of Physicians and Surgeons in Ireland:
Preliminary Examination; the required subjects to be passed at one time.

IV.—EXAMINATIONS HELD OUT OF THE UNITED KINGDOM.

University of Malta:
Matriculation Examination.
University of Calcutta:
First Examination in Arts.
University of Madras:
First Examination in Arts.
University of Bombay:
Matriculation Examinations.
Punjab University:
Intermediate Examination in Arts.
University of Allahabad:
Intermediate Examination in Arts.
Ceylon Medical College:
Preliminary Examination.
University of McGill College, Montreal:
Matriculation Examination.
University of Bishop's College, Montreal:
Matriculation Examination.
College of Physicians and Surgeons of the Province of Quebec:
Matriculation Examination.
Universities and Colleges of the Province of Ontario:
Departmental Arts Matriculation Examination (conducted under the direction of the Provincial Education Department).
University of Manitoba:
Preliminary and Previous Examinations.
University of New Brunswick, Fredericton:
Matriculation Examination.
University of Mount Allison College, New Brunswick:
Matriculation Examination.
College of Physicians and Surgeons of New Brunswick:
Matriculation Examination.
Dalhousie College and University, Halifax, Nova Scotia:
Matriculation Examination.
Provincial Medical Board of Nova Scotia:
Preliminary Examination.
Newfoundland Medical Board:
Preliminary or Matriculation Examination.
University of Melbourne:
Matriculation Examination.
University of Sydney:
Matriculation Examination.
First Year Examination in Arts.
Senior Public Examination.
Entrance Examination for Medicine and Science.
University of Adelaide:
Senior Public Examination.
First Year Examination in Arts.
University of Tasmania:
Senior Public Examination.
University of the Cape of Good Hope:
Matriculation Examination.
University of Otago:
Preliminary Medical Examination.
University of New Zealand:
Preliminary Examination for Medical Students.
Codrington College, Barbadoes:
Examinations qualifying for a Degree in Arts at the University of Durham.
Foreign Universities in Europe:
The German Abiturienten-Examen of the Gymnasia and Realgymnasia: examinations entitling to the French Diplomas of Bachelier ès Lettres and Bachelier ès Sciences, and other corresponding Entrance Examinations to the Universities in Europe.
Egyptian Government:
Examination for the Secondary Education Certificate.

*** (*a*) No Certificate from the Indian and Colonial bodies in the foregoing Section (iv) is accepted unless it shows that the examination has been conducted by or under the authority of the body granting it, includes all the subjects required by the General Medical Council, and states that all the subjects of examination have been passed at one time, and copies of the form of the required certificate are supplied by the Registrar of the Council for the purpose.

(*b*) In the case of natives of India or other Oriental countries, whose vernacular is other than English, an examination in a classical Oriental language may be accepted instead of an examination in Latin.

PROFESSIONAL EDUCATION.

The period of professional study between the date of registration as a medical student and the date of the Final Examination for any diploma which entitles its holder to be registered under the Medical Acts must be a period of bonâ fide study during not less than five years.[1] The course of professional study and examinations must include the following subjects:

(i) Physics, including the Elementary Mechanics of Solids and Fluids, and the Rudiments of Heat, Light, and Electricity. (ii) Chemistry, including the principles of the science, and the details which bear on the Study of Medicine. (iii) Elementary Biology. (iv) Anatomy. (v) Physiology. (vi) Materia Medica and Pharmacy. (vii) Pathology. (viii) Therapeutics. (ix) Medicine, including Medical Anatomy and Clinical Medicine. (x) Surgery, including Surgical Anatomy and Clinical Surgery. (xi) Midwifery, including Diseases peculiar to Women and to Newborn Children. (xii) Theory and Practice of Vaccination. (xiii) Forensic Medicine. (xiv) Hygiene. (xv) Mental Disease.

[1] For the purpose of this requirement the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the date of registration.

The first four of the five years must be passed at a School or Schools of Medicine recognized by any of the Licensing Bodies; but (*a*) the first year may be passed at a University or Teaching Institution recognized by a Licensing Body and approved by the Council where the subjects of Physics, Chemistry, and Biology are taught; and (*b*) a graduate in arts or science of any university recognized by the General Medical Council, who has spent a year in the study of Physics, Chemistry, and Biology, and has passed an examination in these subjects for the degrees in question, is held to have completed the first of the five years of medical study provided that he has registered as a medical student with the General Medical Council. It is also to be noted that a student who has previous to registration attended a course or courses of study in one or all of the subjects, Physics, Chemistry, or Biology, in any university, school of medicine, or teaching institution recognized by any of the licensing bodies, may without further attendance be admitted to examination in these subjects, provided always that such course or courses shall not be held to constitute any part of the five years' course of professional study.

The General Medical Council recommends the Licensing Bodies to require that the fifth year should be devoted to clinical work at one or more public hospitals or dispensaries, British or foreign, recognized by any of the medical authorities mentioned in Schedule (A) of the Medical Act (1858), provided that of this year six months may be passed as a pupil to a registered practitioner possessing such opportunities of imparting medical knowledge as shall be satisfactory to the medical authorities, and that no qualification in Medicine ought to be granted without evidence of clinical instruction in infectious diseases.

REQUIREMENTS AS TO THE SUBJECTS OF GENERAL EDUCATION TO BE INCLUDED IN THE RECOGNIZED PRELIMINARY EXAMINATIONS IN ARTS.

Subject to the conditions indicated in the foregoing list, Clause 7, the Preliminary Examinations recognized by the General Medical Council are required to include the following: (*a*) English (Grammar, Paraphrasing, Composition, questions on English History and Geography), (*b*) Latin (Grammar, Translation into English from unprescribed Latin books, Translation into Latin of a continuous English passage, and of short idiomatic English sentences),[2] (*c*) Mathematics (Arithmetic, Algebra, including easy quadratic equations; Geometry, including the subject-matter of Euclid, Books i, ii, iii, and simple deductions). (*d*) One of the following subjects: (α) Greek (Grammar; Translation into English from unprescribed Greek books; Translation into Greek of short idiomatic English sentences); or (β) a Modern Language (Grammar; Translation into English from unprescribed books; Translation of a continuous English passage, and of short idiomatic English sentences).

UNIVERSITIES (INCLUDING THEIR COLLEGES AND MEDICAL SCHOOLS), SCHOOLS OF MEDICINE, AND RECOGNIZED SCIENTIFIC INSTITUTIONS AT WHICH MEDICAL STUDY MAY BE COMMENCED IN THE UNITED KINGDOM.

I.

University of Oxford.
University of Cambridge.
University of Durham (including the Durham College of Medicine and the Durham College of Science, Newcastle-on-Tyne).
University of London (including the following Medical Schools and Colleges: St. Bartholomew's Hospital, Charing Cross Hospital, St. George's Hospital, Guy's Hospital, King's College, London Hospital, St. Mary's Hospital, Middlesex Hospital, St. Thomas's Hospital, University College, Westminster Hospital, London (Royal Free Hospital) School of Medicine for Women, Bedford College, Royal Holloway College (Royal College of Science).
Victoria University (including Yorkshire College, Leeds; University College, Liverpool; the Owens College, Manchester).
University of Wales (including University College of Wales, Aberystwyth; University College of North Wales, Bangor; University College of South Wales and Monmouthshire, Cardiff).
University of Birmingham.
University of Aberdeen.
University of St. Andrews (including University College, Dundee).
University of Edinburgh.
University of Glasgow (including Queen Margaret College).
University of Dublin (including Trinity College).
Royal University of Ireland (including Queen's College, Belfast; Queen's College, Cork; University College, Dublin; Queen's College, Galway).

II.

Bristol: University College.
Sheffield: University College.
Edinburgh: School of Medicine of the Royal Colleges, Surgeons' Hall School, Medical College for Women.
Glasgow: Anderson's College, St. Mungo's College, Western Medical School.
Dublin: Catholic University Medical School, Royal College of Surgeons' Schools of Surgery.

III.

Bradford: Technical College
Brighton: Technical Day College.

[2] In the case of natives of India or other Oriental countries, whose vernacular is other than English, an examination in a Classical Oriental Language may be accepted as equivalent to an examination in Latin.

Bristol: Merchant Venturers' Technical College.
Cambridge: Girton College, Newnham College.
Cheltenham: Ladies' University College.
Derby: Technical College.
Dublin: Royal College of Science for Ireland.
Exeter: Royal Albert Memorial College.
Huddersfield: Technical College (day classes).
London: Birkbeck Institute, East London Technical College, Central Technical College, Westfield College, Battersea Polytechnic Institute (day classes).
Nottingham: University College.
Plymouth: Municipal School of Science (advanced day classes).
Preston: Harris Institute.
Reading: Reading Institute.
Southampton: Hartley College.
Swansea: Technical College (day classes).

THE ENGLISH UNIVERSITIES.

UNIVERSITY OF OXFORD.

THERE are two degrees in Medicine (B.M. and D.M.) and two degrees in Surgery (B.Ch. and M.Ch.), which under favourable circumstances may be obtained in six or seven years from Matriculation.

B.A. DEGREE.

The degrees of B.M. and B.Ch. are conferred only on candidates who have taken the B.A. degree, for which residence for three years within the University is necessary; the examinations, however, for the degrees in Arts and Medicine may be passed in any order, provided the subjoined regulations are complied with.

The degree of B.A. may be obtained in either of the following ways:

(*a*) By passing Responsions (or one of the Examinations which are accepted as equivalent), Moderations, a Scripture Examination, or, in the event of a candidate objecting, an examination in some substituted book: and the Final Pass School in three subjects, two of which may be the same as two in the Preliminary Examination in Natural Science.[1]

(*b*) By passing Responsions; an additional subject in Responsions,, the Scripture Examination; some of the Preliminary Examinations in the Natural Science School,[1] or the Preliminary Examination and the School of Jurisprudence, or the Honour School of Mathematics in the First Public Examination; and one of the Final Honour Examinations.

Responsions and the additional subject may be passed before a candidate is a member of the University;[2] Moderations and Scripture can be passed in or after the second term; the Final Pass School may be taken any time after Moderations; a Final Honour School may be taken at the end of the third or within the fourth Academical year—that is, twelve or sixteen terms respectively; the Preliminary Examinations of the Natural Science School may be taken as soon as Responsions have been passed.

DEGREES IN MEDICINE AND SURGERY.

To obtain the degrees of B.M., B.Ch., the following examinations must be passed:

Preliminary.—The preliminary examination in (1) Mechanics and Physics, (2) Chemistry, (3) Zoology, (4) Botany, of the Natural Science School.[1]

Professional.—There are two professional examinations held twice a year, at the end of Michaelmas and Trinity terms. The subjects of the first B.M. examination are Organic Chemistry, Human Anatomy, Physiology, Materia Medica, and Pharmacy. Candidates who have previously obtained a First or Second Class in the Final Examination in Physiology or Chemistry are exempt from further examination in those subjects. Candidates who have passed the First Examination are admitted at any time to examination in Pathology or in Forensic Medicine and Hygiene. But no candidate is admitted to examination in Medicine, Surgery, and Midwifery until he has attained the twenty-fourth term from the date of his matriculation (six years), and these subjects must be passed in at one and the same examination.

D.M. Degree.—A B.M. who has entered his thirty-ninth term is admitted D.M. on presentation of a dissertation approved by the appointed professors and examiners.

M.Ch. Degree.—An examination for this degree is held in June. The candidate must have entered his twenty-seventh term.

Fees.—University: B.A., £7 10s. B.M. and B.Ch., £14. D.M., £25. M.Ch., £12. Every Master of Surgery, being otherwise duly qualified, is entitled without further payment of fees, to supplicate for the Degree of Master of Arts, and every Master of Arts, being otherwise duly qualified, is entitled without further payment of fees to supplicate for the Degree of Master of Surgery. Also an annual fee to the University of £2 for the first four years, reduced to £1 when the B.A. is taken. College fees (varying in amount) on taking degrees and for the first four years of membership. Tuition fees, £21 to 30. The cost of living for the four University terms cannot be stated at less than £120.

Scholarships, etc.—The several Colleges grant scholarships of £80 a year tenable for four years in Natural Science, Chemistry, Physics, and Biology, and also exhibitions. Particulars can be obtained on application to the College tutors. A Radcliffe Travelling Fellowship of £200 a year, tenable for three years, is conferred annually. Candidates who have been placed in the First Class in any Final Examination in the Natural Science School, whether they have taken the degree of B.M. or not, are eligible.

TEACHING.

Preliminary Examination.—Courses of lectures and demonstrations on elementary Mechanics and Physics, on Inorganic Chemistry, on Animal Morphology, and on Botany are given at convenient periods, and are open to members of the University intending to proceed to a medical degree.

Degree of B.A.—The Course of Instruction for the Final Honour Examination in Physiology consists of lectures and practical work, and extends over two years. It is intended for students who have passed the Preliminary Examination in other subjects.

First B.M.—The instruction in Human Anatomy is by lectures and demonstrations; the dissecting room is open daily, and dissection may be continued during the vacation. The course of instruction in Physiology consists of a course of lectures extending over three full terms, a course of practical instruction in Histology during three terms, and a course of Elementary Physiological Chemistry, with practical laboratory work during two terms. Instruction in Organic Chemistry is given in the Chemistry Department.

Second B.M.—Lectures on Materia Medica and practical instruction in Pharmacology are given during the summer term, and clinical lectures and tutorial instruction and demonstrations in Physical Diagnosis in Regional Anatomy are given in each term at the Radcliffe Infirmary. Lectures on Pathology and practical instruction in Bacteriology and Pathological Histology are given in Michaelmas and Hilary Terms in the new Pathological Laboratory.

Elementary instruction in Medicine and Surgery is given by the Lichfield Clinical Lecturers at the Radcliffe Infirmary.

UNIVERSITY OF CAMBRIDGE.

BACHELOR OF MEDICINE (M.B.) AND BACHELOR OF SURGERY (B.C.).

A student proceeding to this degree must (1) reside in the University during the required portion of each of nine terms, (2) pass (or obtain exemption from) the Previous Examination (3) pursue medical study for five years.

There are three examinations for the degree of Bachelor of Medicine. They are partly in writing, partly oral, and partly practical. The examinations take place twice in the year, in the Michaelmas and Easter terms.

The First Examination is divided into two parts: 1. Chemistry and other branches of Physics. 2. Elementary Biology. These two parts may be taken together or separately. Before admission to this examination the candidate must have passed (or obtained exemption from) the Previous Examination. He must also produce certificates of diligent attendance on a course of lectures in Chemistry, and of practical instruction in Chemical Manipulations.

The Second Examination includes Human Anatomy and Physiology. Before admission to this examination the student must have passed both parts of the First Examination, must have practised dissection during six months, and must produce certificates of diligent attendance on a course of lectures on each of the following subjects: 1. Human Anatomy. 2. Physiology.

The Third Examination is divided into two parts, called the First part and the Second part respectively. Before presenting himself for either part, the student must have passed the

[1] The four subjects of the Medical Preliminary Examination are four of the subjects in the Natural Science Preliminary, and can be commenced directly after passing Responsions.
[2] Membership is constituted by Matriculation, and by becoming a member of a College or Hall, or a non-collegiate student.

Second Examination. The First part includes: (1) Pharmacology, (2) General Pathology. The Second part includes: (1) Principles and Practice of Surgery, (2) Midwifery and Diseases Peculiar to Women, (3) Principles and Practice of Physic. The student, before admission to the First part, must produce certificates of attendance on one course of lectures in each of the following subjects: (1) Pharmacology, and (2) General Pathology; he must have attended the practice of a recognized hospital for six months. In the Second part the student may present himself for examination in any two or in all of the Sections 1, 2, and 3. A student who satisfies the examiners in two of the sections may be exempted from further examination therein; but his name shall not be included in the list of successful candidates until he has satisfied the examiners in the remaining section. The candidates are informed of the result, but their names are not published. Before admission to the Second part a candidate must produce evidence that he has completed the five years' course of medical study and obtained certificates of diligent attendance on one course of lectures in each of the following subjects: (1) Principles and Practice of Surgery, (2) Midwifery, (3) Principles and Practice of Physic, (4) Medical Jurisprudence; he must also have attended the Medical and Surgical Practice of a recognized hospital (with clinical lectures), including certain special hospitals and asylums, during three years at least. All candidates must also produce certificates of attendance during three months on (1) practical instruction in Pharmacy and Dispensing, (2) clinical instruction in Fevers at a general or special hospital, (3) proficiency in Vaccination from an authorized vaccinator appointed by the Local Government Board, (4) of having attended twenty cases of Midwifery, (5) of having at a recognized hospital acted as Dresser or House-Surgeon for six months, as Clinical Clerk or House-Physician for six months, and as *Post-mortem* Room Clerk.

Act for M.B.—After these examinations have been passed, an Act must be kept in the schools in the following manner: The Regius Professor of Physic assigns a day and hour for keeping the Act, of which public notice has to be given eight days before. The candidate reads a thesis, composed by himself, on some subject approved by the Professor; the Professor brings forward arguments or objections for the candidate to answer, and examines him orally on questions connected with his thesis, as well as on other subjects connected with medicine of a more general nature.

B.C.—As the Third Examination includes operative and clinical surgery, the degree of Bachelor of Surgery is conferred upon candidates who pass it without further examination and without the Act. The degree of B.C. is thus a registrable qualification in Medicine, Surgery, and Midwifery.

Doctor of Medicine (M.D.).

This degree may be taken by an M.B. of three years' standing, or by an M.A. of four years' standing, who has been engaged in medical study for five years at least. In the latter case certificates of attendance on lectures and hospital practice for the M.B. must be produced, and the examinations for the M.B. must be passed. In either case the candidate keeps an Act by reading an original thesis upon which he is examined, and writes a short extempore essay upon one of four topics (at his choice), relating severally to Physiology, Pathology, Medicine, or State Medicine.

Master in Surgery (M.C.).

This degree is granted to a candidate who has completed all that is required for the degree of B.C. at least three years previously; the candidate is either (1) examined in Pathology, Surgery, Surgical Anatomy, and Surgery Operations, the examinations being both written and practical; or (2) submits books or writings constituting original contributions of merit to the science or art of surgery.

Dates, Fees, etc.

The dates of examinations are announced early in the Michaelmas and Lent terms. Each candidate pays £2 2s. to the Registrary of the University on giving notice of his intention to offer himself for either part of the First or Second, and £3 3s. for either part of the Third Examination for M.B., but any student who has been exempted from further examination in two of the sections in the Second part shall be required to pay a fee of £2 2s. on admission or readmission to examination in the remaining section. He pays £3 3s. examination fee for M.C. Schedules defining the range of subjects in the First M.B. Examination, and of the Pharmacology and General Pathology in the Third Examination; also schedules for the necessary certificates, and a list of the schools of medicine and hospitals recognized by the University, may be obtained on application to the Registrary of the University, the Registry, Cambridge.

UNIVERSITY OF LONDON.

Under the regulations of the University of London, as reconstituted, the degrees obtainable in the Faculty of Medicine are those of Bachelor of Medicine and Surgery, Master of Surgery, and Doctor of Medicine in five different branches.

All students of the University, it is to be remembered, are divided into two classes, Internal Students and External Students. An Internal student is one who, having matriculated at the University, or otherwise obtained registration as undergraduate, is pursuing a course of study approved by the University in a School or Schools, or under one or more of the Teachers, of the University. An External student is an undergraduate who is pursuing his education in some other way.

The standard of education required from those who present themselves for degrees, whether as internal or external students, is, as far as possible, the same; but the regulations which affect them differ to some extent. The information which hereinafter follows applies to those who propose to proceed to medical degrees as internal students, and who have not yet commenced their work. Those who propose to study elsewhere than at one of the constituent schools of the Faculty of Medicine of the University, should obtain the regulations which apply to them from the External Registrar. There are a few conditions under which exemption may be obtained from examination in certain subjects, or the intervals between examination abbreviated, but to the vast majority of students they have no application.

It may be stated here, that under no circumstances whatever can a degree after examination be granted to any one in less than three years after the date at which he passed the matriculation examination or obtained registration in some other way, and that External students of the Faculty of Medicine must pass not less than five years in professional study subsequent to matriculation. Four of those years must be passed after the Preliminary Scientific Examination, Part I. at one or more of the medical institutions or schools at home and abroad, recognized by the University for the purpose; and one year at least of those years must be passed at one of the schools situated within the United Kingdom.

The normal course of an Internal student of medicine is as follows: After matriculation he pursues approved courses of instruction in Chemistry, Physics, and Biology, and then at the end of his first year goes up for the Preliminary Scientific Examination (Part I). This passed, he goes up at the end of six months for the Examination in Organic Chemistry, known as the Preliminary Scientific Examination (Part II). The rest of the second and third years he spends on approved courses of Anatomy, Physiology, and Pharmacology, and then, at the end of his third year as a medical student, presents himself for the Intermediate Examination. The next two years he devotes to approved courses of instruction in Medicine, Surgery, Midwifery, and Diseases of Women, Pathology, Forensic Medicine and Hygiene, and at the end of his fifth year he is entitled to present himself for the final examination for the M.B., B.S. degree, success in which will entitle him to registration as a qualified practitioner. This five years' course, however, is liable to be prolonged by failure at any stage, as there is a minimum space of time fixed between passing one examination and attempting the next.

The Matriculation Examination (see Note p. 495) takes place three times in each year—namely, in the months of January, June (or July), and September. Application for admission to it must be made on a special form about six weeks beforehand, and must be accompanied by a certificate showing that the candidate will have completed his 16th year at the date on which the examination commences. It is a written examination, but the examiners are not precluded from putting viva voce questions to candidates if they should think fit. To pass the examination candidates must show a competent knowledge of five subjects, of which one must be English (one paper of three hours), another Elementary Mathematics (two papers of three hours each), and a third either Latin or Elementary Mechanics or Elementary Physics (Heat, Light, and Sound), or Elementary Chemistry or Elementary Botany. The other two may be selected from any of those in the following list, except, of course, those in which the candidate may have already been examined. Unless Latin has already been taken, one of them must be a language—Latin, Greek, French, German,

Arabic,* Sanscrit,* Spanish,* Portuguese,* Italian,* Hebrew,* Ancient History, Modern History, Logic, Physical and General Geography, Geometrical and Mechanical Drawing, Mathematics (more advanced than in the compulsory examination), Elementary Mechanics, Elementary Chemistry, Elementary Biology (Botany), Elementary Biology (Zoology),* Elementary Physics (Heat, Light, and Sound, or Electricity and Magnetism). Candidates who desire to be examined in the subject against which an asterisk is affixed must give at least two months' notice. The names of the successful candidates will be published in two lists, a first division and a second division. Communication concerning this examination must be addressed to the Principal of the University.

The Preliminary Scientific Examinations, Part I, takes place twice in each year, commencing on the third Monday in January and on the second Monday in July. It consists of two papers in Inorganic Chemistry, two in Biology, and two in Physics, and there is a practical examination in each subject not exceeding three hours in any one subject; examiners are also at liberty to test candidates viva voce. A student must present himself for examination, either in all of the three subjects together, or in Physics and Chemistry together, or in Biology alone. It is a pass examination only, and the list of successful candidates is published in the alphabetical order of their names.

The Preliminary Scientific Examination, Part II, takes place twice a year, namely, in January and July. It is a pass examination and consists of a three hours' paper in Organic Chemistry, and three hours' practical work, the examiners being at liberty also to test any candidate by viva voce questions.

The Intermediate Examination in Medicine takes place twice a year, commencing on the third Monday in January and the first Monday in July. Candidates must have passed Part I of the Preliminary Scientific Examination at least two years, and Part II at least one year previously. The subjects of examination are Anatomy, Physiology, and Pharmacology. In Anatomy there will be two papers, dissection, and an oral examination. In Physiology, two papers and a practical examination not exceeding six hours in length, which will include the preparation and identification of histological specimens, and the performance of simple experiments illustrating points in physiology and elementary physiological chemistry. In Pharmacology there will be one paper and an oral examination, which may include recognition of Materia Medica specimens. It is a pass examination, and the names of the successful candidates will be published in alphabetical order, but any subjects in which a candidate may have distinguished himself will be appended to his name if he has passed in all the subjects at one time. Candidates who have failed in one subject only at this examination may offer themselves for re-examination in that subject, if permitted to do so by the examiners. Three scholarships, one of the value of £40 in Anatomy, another of the same amount in Physiology, and one of £30 in Pharmacology may be awarded by the examiners to any candidate who, having passed the whole of the examination at one time, has been awarded marks of distinction in one or more subjects; as a rule, no candidate will be allowed to receive the income of more than one scholarship at the same time.

The Final M.B., B.S. Examination takes place twice a year, commencing on the last Monday in October and on the first Monday in May. No candidate will be admitted to this examination unless he has completed the course of study prescribed in the schedule or within two academic years from the date of passing the Intermediate Examination in anatomy and physiology.

The subjects of the examination are Medicine (including Therapeutics and Mental Diseases), Pathology, Forensic Medicine and Hygiene, Surgery, and Midwifery and Diseases of Women. The subjects may be divided into two groups, one of which shall comprise Medicine, Pathology, Forensic Medicine and Hygiene; and the other Surgery and Midwifery and Diseases of Women. Either group may be taken first at the option of the candidate, or the groups may be taken together. The examination in Medicine will consist of (*a*) two papers, each of three hours' duration, (*b*) a viva voce examination on cases, (*c*) an examination of a patient with a written report thereon, and (*d*) an oral examination on the whole subject. In Pathology there will be a paper, a viva voce, and a practical examination in clinical laboratory work, while in Forensic Medicine and Hygiene there will be a paper and an oral examination.

In Surgery there are (*a*) two papers each of three hours duration, one on Surgery and the other on Surgical Anatomy and Pathology, (*b*) a clinical examination on cases, and (*c*) an oral examination on Surgical Pathology, (*d*) another on Surgical Appliances and Surface Marking. In Midwifery and Diseases of Women there will be one paper and a viva voce. Only candidates who show a competent knowledge of all the subjects comprising a group will be passed. There will be no separate examination held for honours, but in the list of successful candidates the names will be divided into an honours list and a pass list, in each of which the names will be placed in alphabetical order. Only those, however, who have passed the whole examination at one time will be entitled to a place in the honours list. In this list the subjects in which they have distinguished themselves will be appended to the names of the successful candidates. The examiners will be empowered to recommend the award of a University Medal to the candidate who has most distinguished himself in the whole examination.

A diploma under the seal of the University, constituting a licence to practise, will be delivered to each candidate when he has passed in both groups of the examination.

DOCTOR OF MEDICINE.

The examination for the degree of Doctor of Medicine is held twice in each year, commencing on the first Mondays in December and July. Every candidate must have passed the examination for the M.B., B.S. of this University unless he became M.B. before May, 1904. Candidates may present themselves for examination in any one of the following branches: (1) Medicine, (2) Pathology, (3) Mental Diseases, (4) Midwifery and Diseases of Women, (5) State Medicine; and, if they wish, may pass also in another branch at a subsequent examination. Candidates for Branches 1 to 4 who have taken honours at the M.B., B.S. examination in the subject in which they present themselves for the M.D. degree, or who, subsequently to taking the M.B., B.S., have conducted a piece of original work approved for the purpose by the University, or have had such exceptional experience in the Branch in which they present themselves as may be approved by the University, may present themselves for the M.D. examination one year after taking their Bachelor's degree. Other candidates must show that they have taken the degree of M.B., B.S. not less than two years previously; and as regards candidates in Branches 1 to 4, either that subsequently to taking that degree they have held for at least six months a resident or non-resident medical appointment at a hospital approved for this purpose, or that they have been in qualified practice for not less than five years, or that as regards Branches 2 and 3 they have held in the one case a pathological and in the other an asylum appointment in an institution approved by the University. In each examination for the M.D. in Branches 1 to 4 there will be (1) two papers on the special subject of the branch; (2) a Clinical Examination; (3) an essay to be written on one of two given subjects connected with the branch. In Branch 1 there will also be a paper on Pathology, and in Branches 2, 3, and 4 a paper in Medicine, while in Branch 2 a Laboratory Examination will be substituted for the Clinical Examination held in the other branches.

Candidates in Branch 5 (State Medicine) must show that they have taken the degrees M.B., B.S. not less than two years previously, and that subsequently to taking those degrees they have had (1) six months' practical instruction in an approved laboratory; (2) six months' practical instruction from a medical officer of health, of which three must not coincide with the laboratory work, and three months' practice at a hospital for infectious diseases. The interval between passing the M.B., B.S. and proceeding to the M.D. State Medicine may be reduced to one year, subject to conditions corresponding to those affecting Branches 1, 2, 3, and 4. The examination will consist of two papers in State Medicine (including Hygiene and Forensic Medicine), one paper in Medicine, an essay to be written on one of two subjects of State Medicine, and a practical examination extending over two days, one of which will be devoted to laboratory work, and the other to practical examination in, and reporting on, subjects which fall within the outdoor duties of a medical officer of health a viva voce is also possible.

MASTER OF SURGERY.

The examination for the degree of Master in Surgery will take place twice in each year, commencing on the same dates as the foregoing, and the general regulations already quoted with regard to the M.D. will practically apply to it, surgery

being substituted for medicine. The examination will consist of (1) two papers on Surgery (one of which may be a case for commentary; (2) an essay to be written on one of two subjects which may be selected from any branch of surgery; (3) two papers on Surgical Pathology and Surgical Anatomy; (4) a Clinical Examination; (5) operations on the dead body; (6) an oral examination at the discretion of the examiners. Competent knowledge in every subject of the examination must be shown in order to pass.

For the M.S. Degree and all branches of the M.D. a candidate is at liberty to forward a thesis or copies of published works embodying the result of independent research in the subject in which he presents himself for a degree and also any printed contributions to the advancement of professional knowledge published either separate or conjointly. If the examiners consider such thesis or works of sufficient merit they are empowered to exempt a candidate partly or entirely from examination in the subject to which such work refers. They also have power to award a University medal to the candidate who at the examination in any branch passes with most distinction.

Fees.

For Matriculation.—£2 for each entry.

Preliminary Scientific Examination.—Part I: £5 for each entry to the whole examination, and £2 for each subject when less than the whole examination is taken at one time. Part II: No fee for first entry, £2 for each subsequent one.

Intermediate Examination.—£10 for each entry to the whole examination, and £5 for re-examination in one subject.

M.B., B.S. Examination.—£10 for each entry to the whole examination, and £5 for examination or re-examination in either group.

M.D. and M.S. Examinations.—£20 for each entry.

Note.—The following persons may obtain registration as Internal or External students on presentation of documentary evidence as to their condition and a payment of £2: Graduates of such British, Colonial, and foreign universities as are approved by the Senate for that purpose, and those who have passed all the examinations required for a degree in those universities, also women who have obtained Tripos certificates granted by the University of Cambridge, and women who have obtained certificates showing that, under the conditions prescribed by the Delegacy for Local Examinations at Oxford, they have passed the Second Public Examination of that University or have obtained honours in the Oxford University Examination for Women in Modern Languages, and students who hold the Scotch School Leaving Certificate, having passed on one and the same occasion, in the Higher or Honours Grade in all the subjects required by the regulations for the Matriculation Examination, and those who have obtained at an *Abiturien-Examen* the *Zeugniss der Reife* from a Gymnasium or Real-gymnasium within the German or Austrian Empire, or the *Maturitäts-Zeugniss* of a Swiss Gymnasium or *Oberrealschule*, or the *Eidgenossische Maturitäts-Zeugniss* of Switzerland, or the Leaving Certificate of a Gymnasium of the Russian Empire. Their standing as students will date from the Matriculation Examination immediately preceding the date on which their registration was complete.

UNIVERSITY OF DURHAM.

The University of Durham grants six degrees in the Medical Faculty—M.B., M.D., B.S., M.S., B.Hy., D.Hy. The degrees of M.D., B.S., and M.S. are granted only to M.B. graduates of the University. The degrees B.Hy. and D.Hy. are granted under certain conditions to graduates in medicine of recognized Universities (see pp. 537-8). The University also grants a diploma in Public Health. These degrees are open both to men and women. It is hardly necessary to say that every student intending to attend the University of Durham College of Medicine, Newcastle-on-Tyne, would do well to pass the necessary examination in general knowledge, and qualify himself to obtain the degrees of the University.

Degree of Bachelor of Medicine (M.B.)

Preliminary Examination in Arts.—In addition to the Certificate of Registration, a candidate must pass the Preliminary Examination in Arts for the degree in Medicine of the University of Durham, or show either (1) a certificate of graduation in Arts in any university in the British Empire; or (2) a certificate of having passed the First Public Examination for the Degree of B.Litt. of the University of Durham; or (3) (*a*) The First Public Examination in Arts of the University of Durham; (*b*) the University of Oxford Moderations; (*c*) the University of Cambridge Previous Examination; (*d*) the University of Cambridge General Examination; (*e*) the Matriculation Examination of the University of London; (*f*) Durham Senior Local Examination: (*g*) the Oxford or Cambridge Senior Local Examination; (*h*) Oxford and Cambridge Joint Board Examination (Higher Certificate). Particulars as to the Preliminary Examination of the University of Durham can be obtained from the Rev. Henry Ellershaw, M.A., Secretary of the Examinations, the University, Durham, to whom the fee (£1 10s.) is payable.[1]

The Preliminary Examination in Arts is held thrice yearly, in January, March, and September. The next examination will be commenced on September 20th, 1904.

Curriculum.—The curriculum extends over five years, of which at least one must be spent in attendance at the University of Durham College of Medicine, Newcastle-on-Tyne, and in the clinical practice of the Royal Infirmary there. First and second year students (dating from registration) are not required to comply with the regulation regarding attendance on hospital practice. Students are recommended to carry out the curriculum on some such plan as the following:

First Winter: Anatomy, Dissections, Chemistry, Physics, Elementary Biology. First Summer: Practical Chemistry, Practical Physics, Elementary Biology (if not attended during the Winter).

Second Winter: Anatomy, Physiology, Practical Physiology, Dissections. Second Summer: Practical Histology, Practical Pharmacy, Materia Medica, Therapeutics, and Pharmacology.

Third Winter: Medicine, Surgery, Hospital Practice, with Clinical Lectures, Public Health Third Summer: Pathology, Practical Pathology, Medical Jurisprudence, Hospital Practice, with Clinical Lectures.

Fourth Winter: Medicine, Surgery, Midwifery and Diseases of Women and Children, Practical Midwifery, Regional Anatomy, Hospital Practice, with Clinical Lectures. Fourth Summer: Operative Surgery, Ophthalmic Surgery, Practical Midwifery (if not previously attended), Hospital Practice, with Clinical Lectures.

Fifth Winter: Regional Anatomy (if not previously attended), Infectious Diseases, Hospital Practice, and Clinical Lectures, Practical Midwifery (if not previously attended). Fifth Summer: Clinical Lectures, Mental Diseases, Operative Surgery (if not previously attended).

Professional Examinations.—There are four professional examinations conducted in writing, practically, and viva voce, each held twice a year (April and September). *First Examination:* Elementary Anatomy and Biology, Chemistry, Physics. *Second Examination:* Anatomy, Physiology, Materia Medica, Therapeutics, and Pharmacology. *Third Examination:* Pathology, Medical Jurisprudence, Public Health, and Elementary Bacteriology. *Final Examination:* Medicine, Clinical Medicine and Psychological Medicine, Surgery and Clinical Surgery, Midwifery, and Diseases of Women and Children. The *Calendar* of the University of Durham College of Medicine, Newcastle-on-Tyne, contains synopses of the subjects of the examinations and examination papers. Applications for further information should be addressed to Professor Howden at the College. A candidate who has passed the First and Second Examinations of the University will be exempt from the First and Second Examinations of the Conjoint Board in England. Candidates who have completed part of their curriculum elsewhere may pass their First, Second, and Third Examinations *previously* to entering at the College of Medicine, Newcastle-upon-Tyne.

Degree of Doctor of Medicine (M.D.).

A candidate for this degree must have been engaged in practice for at least two years subsequent to obtaining the degree of M.B. in the University of Durham, and must satisfy the University as to his knowledge of Greek. The candidate is required to prepare an essay, which must be type-written, based on original research or observation, and is subject to examination on the topic of his essay. For particulars as to the degree of M.D. for medical practitioners of fifteen years' standing, without curriculum, see p. 533.

Degrees in Surgery.

Bachelor of Surgery.—A candidate must have passed the examination for the Degree of M.B.(Dunelm), and have attended courses of lectures on Operative Surgery and on Regional Anatomy. He is required to perform operations on the dead body, and to show practical acquaintance with the use of surgical instruments and appliances.

Master of Surgery.—A candidate must have obtained the degree of B.S (Dunelm) at least two years previously, and have been engaged in practice for that period. The subjects for the examinations are Principles and Practice of Surgery, Surgical Pathology, Surgical Anatomy, Surgical Operations, Clinical Surgery.

Degrees in Hygiene (B.Hy., D.Hy.).

For the regulations as to the Degrees, see pp. 537-8.

[1] Candidates from Indian Universities must have passed a Matriculation Examination at one of the Indian Universities, and will have to reside for one academic year at the University of Durham College of Medicine at Newcastle-on-Tyne before presenting themselves for the M.B. Degree Examination, in accordance with the regulations on pp. 68 to 71 of the *Calendar*. If the Matriculation Examination at the Indian University did not embrace Latin and either Persian or Sanskrit, then it will be necessary for the candidate to produce evidence that he has passed in Latin and one of those subjects, or in Greek, within twelve months of his presenting himself for the examination for the Degree in Medicine.

FEES.

Preliminary Arts Examination for Degrees, £1 10s. First, Second, and Third Professional Examinations (M.B.), each £5. Final (M.B.), £10. Examination for the degrees of M.D., B.S., and M.S., each £5, in addition to a payment to the University of Durham for each degree of £6 6s.

THE VICTORIA UNIVERSITY OF MANCHESTER.

Matriculation.—A candidate for the Matriculation Examination[1] is examined in: (1) Latin; (2) Mathematics; (3) Elementary Mechanics; (4) English Language, Literature, and English History; (5) *One* of the following: i, Greek; ii, French; iii, German; iv, some other modern language approved by the Board of Studies. Candidates who propose to present themselves in Italian or Spanish, or in a modern language not included in the list, must give notice to the Registrar on or before March 1st in the year in question. Candidates who fail in Mechanics only may pass in it separately afterwards.

Matriculation.—Before matriculating, which consists in signing the University Register, candidates must produce proof that they are registered students of the University, or of a medical school recognized by it.

DEGREES OF BACHELOR OF MEDICINE AND OF SURGERY (M.B., CH.B.).

Curriculum and Residence.—Five years must be spent in study at a recognized medical school subject to registration as a medical student; of these five years, two at least must be passed in the University, and one of these two years must be subsequent to passing the First M.B. Examination.

First M.B. Examination.—Candidates must have attended during at least one year courses of lectures and laboratory work in each of the subjects of the examination—namely: Part I. (*a*) Physics; (*b*) Chemistry. Part II. Biology (Animal and Vegetable Morphology, Physiology, and Laboratory work). The two parts may be taken together or separately.

Second M.B. Examination.—Candidates must have attended winter courses in Anatomy and Physiology, and a summer course in Materia Medica and Pharmacy, must have dissected for two winter sessions and one summer, and must have had practical instruction in Physiology and in Materia Medica and Pharmacy. The subjects of the examination are: (1) Anatomy; (2) Physiology; (3) Materia Medica and Pharmacy; (3) may be passed separately.

Final M.B. Examination.—Candidates must produce certificates of having attended, in a recognized medical school, courses of instruction in all the subjects of the examination, which are: Part I. (*a*) Pharmacology and Therapeutics, (*b*) General Pathology and Morbid Anatomy, (*c*) Forensic Medicine and Toxicology and Public Health. Part II. (*d*) Obstetrics and Diseases of Women, (*e*) Surgery, (*f*) Medicine (including Mental Diseases and Diseases of Children). The two parts may be taken separately, and any one of the subjects of Part I. may be deferred and taken with Part II.

DEGREE OF DOCTOR OF MEDICINE (M.D.)

A candidate must have obtained the degree of M.B. at least one year previously. He must present a printed dissertation, and may be examined on any subject connected therewith.

DEGREE OF MASTER OF SURGERY (CH.M.)

A candidate must have obtained the degree of M.B. at least one year previously, must have been engaged in the study of Practical Surgery in the interval, and have held a surgical appointment for not less than six months in a hospital or other public institution. He must also produce certificates of having attended special courses in Operative Surgery, Bacteriology, and Ophthalmology.

FEES AND DATES OF EXAMINATION.

Matriculation examination, £2; re-examination after failure, £1. First, Second, and Third M.B. Examinations, each £5: re-examination after rejection, £2. M.D., £10; Ch.M., £5 on examination, and £5 on the conferring of the degree.

The Matriculation Examination is held in June, July (for schools), and September. The First M.B. Examination is held in June, also in September. The Second and Final M.B. Examinations are held in March and July, and that for the Ch.M. in July.

[1] It has been arranged that the Matriculation Examination shall be held as heretofore in June, July (for schools), and September and shall be conducted as a joint Examination by the Victoria University of Manchester, the University of Liverpool, and the University of Leeds.

UNIVERSITY OF BIRMINGHAM.

THE University of Birmingham confers the degrees of M.B., Ch.B., M.D., Ch.M., and also a B.Sc. in the subject of Public Health. The course for the Bachelor's degrees extends over five years from the date of registration with the General Medical Council. As a rule, the first four of these years must be spent in the University, but the Senate has power of recognizing attendance at another University as part of the attendance qualifying for these degrees, and of recognizing examinations passed at such other Universities as exempting from the examinations in Chemistry, Physics, and Comparative Anatomy. In the case of such students at least three years must be spent in attendance upon classes at the University. The fifth year may be spent at any other school or schools of medicine recognized by the University.

DEGREES OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY.

The student must have passed either the Matriculation Examination of the University or one of the following examinations, which will be accepted in lieu thereof, *for the present*. (*a*) The Previous Examination of the University of Cambridge., (*b*) Responsions of the University of Oxford. (*c*) The Matriculation Examination of any other University in the United Kingdom. (*d*) The leaving Certificate (Higher) of the Oxford and Cambridge Boards. (*e*) The Oxford or Cambridge Junior Local Examinations (First or Second Class Honours). (*f*) The Oxford or Cambridge Senior Local Examination (Honours). (*g*) The College of Preceptors Examination for First class Certificate. Matriculation Examinations are held in June and September in each year, the Regulations for which may be obtained from the Registrar

First Examination.—Chemistry and Physics. One year's lectures with practical work.

Second Examination.—Anatomy, Comparative Anatomy, and Physiology. Two winters' and one summer's dissections with lectures in Anatomy; one winter course of lectures and practical Comparative Anatomy; one winter course and two summer courses of lectures and practical work in Phsiology.

Third Examination.—Pathology and Bacteriology. One course of lectures and practical work during the winter session, with a practical course during the summer session.

Fourth Examination (at the end of the fourth year).—Forensic Medicine, Toxicology, and Public Health.

Final Examination.—Medicine, Surgery, Midwifery, Gynaecology, Therapeutics, Mental Diseases, and Ophthalmology. Attendance on General Hospital for a year after the passing of the Fourth Examination, also attendances at Fever Hospital, Lunatic Asylum, Vaccination, courses of Ophthalmology, Medical and Surgical Anatomy, and Operative Surgery.

DEGREES OF DOCTOR OF MEDICINE AND MASTER OF SURGERY.

Candidates for either of these Degrees will be required to comply with the following regulations:

For the Degree of M.D.—Every candidate for this degree shall present a Thesis embodying observations in some subject embraced in one of the departments of the medical curriculum enumerated below, and in addition he will be required to pass a general examination in Principles and Practice of Medicine. It will be in the power of the Board of Examiners to exempt a candidate whose Thesis is of exceptional merit from any part of these examinations. A Thesis may be presented in any of the following departments of study: (*a*) Anatomy, including Comparative Anatomy, (*b*) Physiology, (*c*) Human or Comparative Pathology, (*d*) Bacteriology, (*e*) Pharmacology, (*f*) Therapeutics, (*g*) Medicine, (*h*) Mental Diseases, (*i*) Preventive Medicine or Public Health, (*j*) Toxicology, (*k*) Legal Medicine, (*l*) Midwifery.

For the Degree of Ch.M.—Candidates are required to comply with one or other of the following regulations: (1) A candidate may present a Thesis, embodying original observations in some subject embraced in the medical curriculum and approved by a Board of medical examiners to whom the Thesis will subsequently be submitted—on the report of which Board the degree will be awarded or withheld. The candidate may be examined on the subject which he has chosen for his Thesis, and the examiners may require to see the notes of original observations on which the Thesis is based. (2) A candidate may pass a general examination (written and practical) in Surgery, and in addition show special proficiency in any one of the following subjects to be chosen by the candi-

date: (*a*) Regional Surgery, (*b*) Gynaecology, (*c*) Ophthalmology, (*d*) Diseases of the Ear, Nose and Throat.

Degree in Public Health.

For the Regulations for Degree and for the Diploma in the same subject, see p. 537.

Fees.

Matriculation, £2; First Examination, £4; Second, £4; Third, £2; Fourth, £2; Final, £4. The composition fee, £85, is inclusive and payable in four annual instalments—namely, £25, £25, £15, and £20 at the commencement of each year. This fee covers all the courses necessary for the degrees of this and other Universities and the ordinary qualifications of the Licensing Boards. It does not include, however, courses for Public Health Diplomas, nor those for the Preliminary Scientific Examination of the University of London, nor the additional courses required for the Fellowship of the Royal College of Surgeons, and other such higher diplomas and degrees.

Entrance Scholarships.—Sands Cox, 40 guineas awarded to the candidate who obtains the highest marks at the June Matriculation Examination. Sydenham Scholarships, one or more annually, restricted to orphan sons of medical men, elected by the Council, on the recommendation of the Medical Faculty, 40 guineas.

The Winter Session begins on October 3rd, 1904, and terminates on April 1st, 1905.

The Summer Session commences on April 26th, 1905, and terminates on July 8th, 1905.

Further particulars may be obtained by application to Professor Windle, Dean of the Medical Faculty, at the University.

UNIVERSITY OF LIVERPOOL.

Medical Faculty.

Students may enter for the degrees of the University of Liverpool, or may study for the degrees and qualifications of the other licensing bodies. The conditions as to the degrees of the University of Liverpool are for the present the same as those of the Victoria University (see p. 496).

Medical School Buildings.—The older buildings have during the past seven years been almost entirely replaced by spacious and well-equipped class rooms and laboratories for the practical study of all the important scientific subjects which form the basis of medicine.

Medical Research has also been endowed with several new laboratories in which students can pursue research work after graduation.

All the laboratories and class rooms are situated close together, communicating with one another, and are made up of four large blocks of buildings which form one side of the College quadrangle.

The most recent additions are the Johnston Laboratories for Experimental Medicine, Bio-Chemistry, and Comparative Pathology, and the new building recently completed for Anatomy, Surgery, Toxicology, and the Dental subject.

The departments of Physiology and Pathology are accommodated in the large block provided by the generosity of the Rev. S. A. Thomson-Yates in 1898.

The Anatomical Department is situated in a separate block and has a complete suite of rooms, including a large and well-stocked museum, and a well-lighted dissecting room on the upper floor, measuring 70 ft. by 40 ft.

Hospitals.—Students may take out their clinical work at the Liverpool Royal Infirmary, or at the United Hospitals Clinical School formed by the David Lewis Northern Hospital, the Royal Southern Hospital, or the Stanley Hospital. Particulars as to fees, appointments, etc., may be obtained from the Secretaries of these schools.

The practice of the Lying-in, Eye and Ear, Women's, Children's, Dental, and Skin Hospitals is also open to students of the Faculty of Medicine.

Fellowships and Scholarships.—Fellowships, Scholarships, and Prizes of over £700 are awarded annually. A Holt Fellowship in Pathology and Surgery, of the value of £100 for one year, is awarded annually by the Medical Faculty to a senior student possessing a medical qualification. The successful candidate is required to devote a year to tutorial work and investigation in the Pathological department. A Holt Fellowship in Physiology, awarded under similar conditions, of the value of £100 for one year. A Robert Gee Fellowship in Anatomy, awarded under similar conditions, also of the value of £100 for one year. An Alexander Fellowship for Research in Pathology of the annual value of £100, renewable. A Johnston Colonial Fellowship in Pathology and Bacteriology (£100 a year, renewable). A John W. Garrett International Fellowship in Physiology and Pathology (£100 a year, renewable). An Ethel Boyce Fellowship in Gynaecological Pathology (£100 a year, renewable). A Stopford Taylor Fellowship (£100 a year, renewable) in Dermatological Pathology. A Thelwall Thomas Fellowship (£100 a year, renewable) in Surgical Pathology. Two Lyon Jones Scholarships, of the value of £21 each for two years, are awarded annually—a Junior Scholarship, open at the end of the first year of study to Liverpool University students in the subjects of the first M.B. Examinations, and a Senior Scholarship, open to all students in the school at the end of the second or third year of study, in the subjects of Anatomy, Physiology, and Therapeutics. The Derby Exhibition of £15 for one year is awarded in Clinical Medicine and Surgery in alternate years. Students may compete in their fourth and fifth years. In 1904 the subject will be Clinical Surgery. The Torr Gold Medal in Anatomy, the George Holt Medal in Physiology, the Kanthack Medal in Pathology, the Robert Gee Book Prize, of the value of £5, for Children's Diseases, and numerous class prizes are awarded annually.

Entrance Scholarship.—Four Robert Gee Entrance Scholarships, of the value each of £25 for one year, are offered annually for competition. The holder is required to take out the Science Course for the University Degree in Medicine.

Communications should be addressed to the Dean, Professor Benjamin Moore, M.A., D.Sc., the University, Liverpool.

Liverpool Dental Hospital and School of Dental Surgery.—The courses of systematic instruction are given in the University buildings, five minutes' walk from the Dental Hospital. The two institutions are now closely associated, and the management of the curriculum is in the hands of a Joint Committee. At the Dental Hospital recent alterations have been made, and, as it now stands, this school offers advantages to students which are not excelled anywhere. The ground floor of the building contains the following: Extraction room with all needful appliances; anaesthetic room specially reserved with every convenience; and large waiting room for patients. The first floor has a large Board room and a very comfortable students' room set apart exclusively for the use of students. The whole top floor of the building has been thrown into one fine, airy, and well-ventilated operating room. This room will accommodate upwards of thirty operating chairs, which are of the "Morrison pattern," and each of which has a special electric light (canting pendant) suspended before it. In the basement a very convenient work room has been fitted up, containing the necessary requirements, and there are commodious lavatories for students. A new Laboratory for practical mechanical work has also been constructed so as to meet the requirements of the curriculum. It is adequately furnished with all the modern appliances of a dental workshop. A skilled dental mechanic has been engaged, and students are able to undertake at the hospital the whole of their training in Mechanical Dentistry. The times of the lectures at the University are arranged to meet the convenience of students, thus allowing the maximum time for attendance upon Dental Hospital practice. The staff of the hospital includes seven honorary Dental Surgeons, a Demonstrator, two House-Surgeons, and a Curator. Fees for two years' hospital practice, £21. Apprenticeship: A limited number of apprentices are admitted annually, fees for three years, £105. Further information may be had from the Warden, Mr. W. H. Gilmour. The various Medical and Dental lectures are given at the University of Liverpool. The anatomical department has been removed to a new building, comprising a spacious Dissecting Room and a Museum which contains an excellent collection of skulls illustrative of human and comparative dental anatomy. Fees: The composition fee for lectures is at present under revision and will amount to *about* £60 under new regulations. The fee for general hospital practice is £10s. 10s.

School of Tropical Medicine.—Courses of instruction are given in Tropical Diseases, particulars regarding which may be obtained from Mr. A. H. Milne, B 10, Exchange Buildings, Liverpool. A diploma in Tropical Medicine is now granted by the University.

Public Health Department.—This is located in a separate building known as Ashton Hall, in which full courses of instruction are given to D.P.H. students.

School of Veterinary Medicine.—A school of Veterinary Medicine will be opened in October, 1904. Courses will be provided for the entire veterinary curriculum and students prepared for the M.R.C.V.S.

School of Pharmacy.—Complete courses of instruction are provided, adapted to the requirements of candidates preparing for either the Minor or Major examinations of the Pharmaceutical Society of Great Britain.

Prospectuses and further information may be had on application to the Dean of the Medical Faculty, University of Liverpool.

UNIVERSITY OF LEEDS.

Medical Faculty.

The medical degrees granted by the University of Leeds are:

Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.).

Doctor of Medicine (M.D.).

Master of Surgery (Ch.M.).

Degrees of Bachelor of Medicine and Bachelor of Surgery.[1]

All candidates for the degrees of Bachelor of Medicine and of Surgery are required to pass the Matriculation Examination in the following subjects:

(1). English Language or Literature and English History: (2) Mathematics; (3) Latin; (4) Elementary Mechanics: (5) one of the following:—(i) Greek; (ii) French; (iii) German; (iv) some other modern language approved by the Senate, or to have passed such other examination as may from time to time be recognized for this purpose by the University.

Candidates who have passed the Matriculation Examination but have not included Latin, Mechanics, and either Greek or a Modern Language, will be considered to have passed the Matriculation Examination (Faculty of Medicine), provided, before passing the First M.B. Examination, they satisfy the Examiners in the subject or subjects omitted.

Candidates who have taken Mechanics as one of their subjects but have failed in that subject shall be allowed to complete their examination by passing in Mechanics at a subsequent examination, but such candidates shall not be admitted to graduate in the Faculties of Arts, Science, and Law.

Before admission to the degrees of Bachelor of Medicine and of Surgery a candidate is required to present certificates that he will have attained the age of 21 years on the day of graduation, and that he has pursued the courses of study required by the University Regulations during a period of not less than five years subsequently to the date of his registration as a medical student by the General Council of Medical Education, two of such years at least having been passed in the University and one year at least having been passed in the University subsequently to the date of passing the First Examination.

All candidates for the degrees of Bachelor of Medicine and of Surgery are required to satisfy the Examiners in the several subjects of three examinations, entitled respectively: the First Examination, the Second Examination, the Final Examination.

Before admission to any examination, the candidate must pay the examination fee, and must deposit with the Registrar satisfactory certificates of attendance upon the courses prescribed for that examination. A year of medical study is understood to mean a winter session of six months and a summer session of three months. Attendance during a year must, normally, include attendance upon at least two of the prescribed courses of lectures or laboratory work, or one such course and hospital practice, in each session, if that year is to count as part of the degree course. Such attendance must be given at the University or at a college or medical school recognized by the University.

First Examination.

The First Examination consists of two parts: I, *Physics and Chemistry*, and II, *Biology*, and candidates will be allowed to pass the two parts separately.

Candidates for the First Examination must have attended during at least one year courses both of lectures and of laboratory work, in each of the three above-named subjects.

Candidates who have passed the Intermediate Examination in the Faculty of Science, in Chemistry, Physics, and Biology, will, on payment of the required additional fee, be regarded as having passed the First Examination for the degrees of M.B. and Ch.B.

Subjects of Examination.

I. *Physics.*—The properties of matter, the chief phenomena of sound, heat, light, electricity, and magnetism, treated in an elementary manner. Practical physics.

Chemistry.—Inorganic Chemistry, with special reference to the non-metals. Introduction to Organic Chemistry. Practical Chemistry, including the qualitative analysis of mixtures of not more than two simple mineral salts; the detection of the more common organic compounds, and exercises in simple preparations.

II. *Biology.*—Animal morphology. Vegetable morphology and physiology. Laboratory work.

Second Examination.

Candidates for the Second Examination are required to have passed the First Examination, and to have attended courses of instruction in Anatomy for one winter session; in Physiology for two winter sessions (one session will, however, suffice, provided a full course, approved by the University, has been duly attended); in Materia Medica and Pharmacy for one summer session. The certificates must show (1) that dissection had been practised during two winter sessions and one summer session at least; (2) that laboratory instruction, approved by the University, has been received in Physiology; (3) that practical instruction, approved by the University, has been received in Materia Medica and Pharmacy.

Subjects of Examination.

Part I.—Anatomy; Physiology, including Physiological Chemistry and Histology, with experimental work.

Part II.—Materia Medica and Pharmacy. Candidates may pass in each part separately.

Final Examination.

Candidates, before presenting themselves for the First part or the Second part of the Final Examination, are required to have passed the Second Examination, to have completed the fourth winter or the fifth year, as the case may be, of medical study, and to furnish certificates of having attended courses of instruction, approved by the University, in the University, or in a Medical School recognized for this purpose by Statute of the University, in the subjects in which they offer themselves for examination.

Candidates are required to furnish certificates as follows:

1. In Medicine and Surgery, of having attended the medical and surgical practice of a hospital or hospitals, approved by the University, during at least three years, of which years two at least must be subsequent to the date of passing the Second Examination, except when exemption has been granted by the Senate, after report from the Board of the Faculty of Medicine.

2. In Pathology and Morbid Anatomy, of having attended during at least twelve months' demonstrations in the *post-mortem* theatre of a hospital.

3. In Obstetrics, of having attended during three months the indoor practice of a Lying-in Hospital approved by the University; or of having attended not less than twenty cases of labour, at least five of which shall have been conducted under the direct supervision of a registered practitioner, and of having continued such attendance throughout the puerperal period.

4. In Diseases of Women, of having during at least three months received in either a general or a special hospital approved by the University, such clinical instruction in the diseases peculiar to women as shall be approved by the University.

5. Of having acquired proficiency in vaccination.

6. Of having acted as a Dresser for six months in the surgical wards, and as a Clinical Clerk for six months in the medical wards of a hospital recognized by the University.

7. Of having attended courses of instruction, approved by the University, in the University or in a Medical School or Hospital recognized for this purpose by Statute of the University, in the following subjects:

(i) Pharmacology and Therapeutics, one winter or one summer session.

(ii) General Pathology and Morbid Anatomy, one winter and one summer session.

(iii) Forensic Medicine, one summer session. Public Health, one summer session.

(iv) Obstetrics and Diseases of Women, two summer sessions or one winter session.

(v) Systematic Surgery, one winter session: Practical Surgery, one winter session; Clinical Surgery, two years of clinical lectures.

[1] These regulations are in force for the session 1904-5. Changes may be introduced in the following year.

(vi) Systematic Medicine, two winter sessions; Clinical Medicine, two years of clinical lectures.

The Certificate in Medicine must in all cases testify that the candidate has attended during a summer session, or its equivalent, courses of instruction approved by the University in (*a*) Mental Diseases, (*b*) Infectious Diseases.

The certificate in Obstetrics and Diseases of Women and Children must in all cases testify that the candidate has attended courses of practical instruction approved by the University in the use of obstetrical and gynaecological instruments.

The certificate in General Pathology and Morbid Anatomy must in all cases testify that the candidate has attended a course of laboratory instruction in these subjects approved by the University.

Subjects of Examination.

The subjects of examination are: Pharmacology and Therapeutics, General Pathology and Morbid Anatomy, Forensic Medicine and Toxicology, and Public Health; Obstetrics and Diseases of Women; Surgery, Systematic, Clinical, and Practical; Medicine, Systematic and Clinical, including Mental Diseases and Diseases of Children.

Candidates may either present themselves in all the six subjects of examination on the same occasion or may pass the examination in two parts, the first part consisting of two or three of Subjects 1, 2, and 3, the second part of the remaining subjects.

Candidates who fail to satisfy the Examiners in the First part must either present themselves again in the subjects as selected, or in all the three subjects of the first part, or in all the six subjects of examination.

Candidates for the first part of the examination must have completed the fourth winter of medical study in accordance with the Regulations of the University.

Candidates for the second part of the examination, or for the whole Examination, must have completed the fifth year of medical study in accordance with the Regulations of the University.

Degree of Doctor of Medicine.

No candidate will be admitted to the degree of Doctor of Medicine unless he has previously received the degrees of Bachelor of Medicine and Bachelor of Surgery, and at least one year has elapsed since he passed the examination for those degrees.

Candidates for the degree of Doctor of Medicine are required to present a printed dissertation embodying the results of personal observations or original research, either in some department of medicine or of some science directly relative to medicine, provided always that original work, published in scientific journals or in the *Proceedings* of learned societies, or separately, shall be admissible in lieu of or in addition to a dissertation specially written for the degree. No candidate will be admitted to the degree unless his application, after report from the Board of the Faculty of Medicine, shall have been recommended by the Senate to the Council for acceptance. Candidates may be examined on any subject connected with the work submitted.

The names of candidates who have been approved for the degree of Doctor of Medicine are published in alphabetical order.

Degree of Master of Surgery.

No candidate will be admitted to the degree of Master of Surgery unless he has previously received the degrees of Bachelor of Medicine and Bachelor of Surgery, and at least one year has elapsed since he passed the examination for those degrees.

Candidates, on presenting themselves for the examination for the degree of Master of Surgery, are required to have graduated as Bachelors of Medicine and of Surgery in the University, and to furnish certificates of having, during the intervening period, satisfied the University requirements for attendance and study. (See *Calendar*.)

Subjects of Examination.

Surgical Anatomy, Surgery, Operative Surgery, Clinical Surgery, Ophthalmology, Pathology and Bacteriology.

The names of candidates who have satisfied the examiners are published in alphabetical order.

Times of Examination.

1. The Matriculation Examination is held twice in each calendar year, in June or July, and in September.

The dates for the subsequent examinations have not yet been fixed, but will probably be as follows:

2. The First Examination in June and in September.
3. The Second Examination in March and in July.
4. The Final Examination in March and in July.

Fees.

1. The fee for the Matriculation Examination is £2; for each subsequent examination, £1.

The fees for the subsequent examinations have not yet been fixed, but will probably be as follows:

2. The First Examination, £5; for each subsequent examination, £2.
3. For the Second Examination, £5; for each subsequent Examination, £2.
4. For the Final Examination, £5; for each subsequent Examination, £2.
5. For the Examination for the Degree of Ch.M., £5; for any subsequent Examination, £2.
6. A fee of £10 on the conferring of the Degree of M.D.
7. A fee of £5 on the conferring of the Degree of Ch.M.

The dates for payment of the fees will probably be as follows:

Note:—For Examinations held in March, or July, the First of the month in question; for those in June, May 14th: and for those held in September, the Seventh of that Month.

Cheques and orders should be made payable to the University of Leeds.

THE ENGLISH COLLEGES.

The Medical Corporations in England are the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London. The two Royal Colleges now co-operate to hold a series of examinations, on passing which the candidate receives the diplomas of Licentiate of the Royal College of Physicians (L.R.C.P.), and Member of the Royal College of Surgeons (M.R.C.S.). The Society of Apothecaries grants its diploma separately.

CONJOINT EXAMINING BOARD IN ENGLAND.

A candidate who desires to obtain the Licence of the Royal College of Physicians of London and the diploma of Member of the Royal College of Surgeons of England is required to pass three professional examinations, and to produce evidence of having passed through a stated course of instruction at a recognized medical school. The full period of five years must be spent in professional study after passing the required Preliminary Examination, of which six months may be spent at an institution recognized by the Board for instruction in Chemistry and Physics. The candidate must pass an examination in subjects of Preliminary Education before entering the medical school (see page 490). For institutions from which certificates are accepted by the Conjoint Board see p. 527.

First Professional Examination.

The examination consists of four parts: (1) Chemistry, (2) Physics, (3) Elementary Biology, (4) Practical Pharmacy.

A candidate must pass in Parts I and II together, but he may take the remaining parts at different times, or he may present himself for the whole at one time, *or he may take Practical Pharmacy at any time during the curriculum.*

A candidate is required to produce evidence of having received instruction in each of the above-mentioned subjects. (Note.—In the case of students who commence their professional studies after June 1st, 1904, certificates must be produced of 180 hours' instruction and laboratory work in Chemistry, 120 hours' instruction and laboratory work in Physics, and 120 hours' instruction and laboratory work in Biology. These courses need not be completed within one year, nor need they run concurrently, and they may be commenced or attended before the candidate passes the required preliminary examination in general education.) A candidate referred in any part or parts will not be admitted to re-examination for three months. If referred in Chemistry and Physics or Biology he must produce evidence of further instruction. A candidate who produces evidence of having passed an examination for a degree in Medicine or any of the subjects in this examination at a university in the United

Kingdom, India, or a British colony will be exempt from examination on the subjects in which he has passed. (Note.—A new synopsis of Chemistry and Physics will come into force at the examination in March, 1905.)

Second Professional Examination.

The subjects of this examination are Anatomy and Physiology, and both must be passed at the same time. A candidate must have attended during two winter sessions and one summer session (or fifteen months during the ordinary sessions) at a recognized medical school lectures on Anatomy, Physiology, and a course of Practical Physiology and Histology, and have dissected for twelve months during the ordinary sessions. The study of Anatomy and Physiology before the date of passing Parts I, II, and III of the First Examination is not recognized. If rejected, a candidate, before being admitted to re-examination, must continue his studies for not less than three months.

Third or Final Professional Examination.

This examination consists of three parts: Part I, Medicine, including Medical Anatomy, Pathology, Practical Pharmacy,[1] Therapeutics, Forensic Medicine, and Public Health; Part II, Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances: Part III, Midwifery and Gynaecology.[2] The examination may be passed at one time or in each part separately. Evidence of attendance at courses of instruction in the subjects of the three parts must be produced, and also of attendance on twenty labours. The candidate must have passed the Second Examination two years previously, and have spent five years in professional study subsequent to passing the required Preliminary Examination. A rejected candidate must produce evidence of further instruction during three months.

All applications with reference to the examinations for the Licence of the Royal College of Physicians of London and for the diploma of Member of the Royal College of Surgeons of England should be addressed to the Secretary, Examination Hall, Victoria Embankment, London, W.C. (telegraphic address, "Conjoint," London), from whom also synopses of some of the subjects can be obtained.

Regulations for Colonial, Indian, or Foreign Candidates and University Candidates.

A person holding a Colonial, Indian, or foreign qualification which entitles him to practise in the country where such qualification has been obtained, is after a course of study and examination equivalent to those required by the Regulations of the two Royal Colleges, admissible to the Second and Third or Final Examinations, without any interval. Members of an English, Scotch, or Irish University are under certain conditions eligible for admission to the Third or Final Examination two years after passing at their University the subjects included in the First and Second Examinations of the Board.

A Doctor or Bachelor of Medicine or Surgery of an Indian, Colonial, or foreign University recognized for the purpose, who shall have passed at his University in the subjects of the First and Second Examinations, will be eligible for admission to the Third or Final Examination two years after passing in the said subjects.

Fees, Dates, etc.

First Examination. £10 10s. Re-examination, Parts I and II, £3 3s.; Parts III and IV, each £2 2s. *Second Examination,* £10 10s. Re-examination, £6 6s. *Third Examination,* £21. Re-examination, Part I, Medicine, £5 5s. Practical Pharmacy, £2 2s. Part II, Surgery, £5 5s. Part III. Midwifery and Diseases of Women, £3 3s. Members of an English, Scottish, or Irish University, £5 5s.; for the diplomas, £36 15s.

The examinations are held in January, April, July, and October. A book of questions set at the several examinations is published annually, and can be obtained from Messrs. Taylor and Francis, Red Lion Court, Fleet Street, London, E.C.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

Licentiates.—Candidates for the Licence are now subject to the regulations of the Conjoint Examining Board in England.

Members.—The Membership of the College is granted after examination to graduates in Medicine of recognized Universities, or to Licentiates of the College, being above the age of 25 years, who do not engage in trade, do not dispense medicine, and who do not practise in partnership. Under the provisions of the Medical Act of 1886 the diploma of Membership is not registrable at the present time as a primary qualification, and is therefore granted only to persons already registered, or who have passed the Final Examination for the Licence.

The examination, which is held in January, April, July, and October, is partly written and partly oral. It is directed to Pathology and the Practice of Physics, and is conducted by the President and Censors. Candidates under 40 are examined in Latin, and either Greek, French, or German. Candidates over 40 are not so examined, and the examination in Medicine may in their case be modified under conditions to be ascertained by application to the Registrar. The fee for the Membership is £42, but if the candidate is a Licentiate the fee is the difference between what he has already paid and £42. In either case £6 6s. is paid before examination.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Membership.—Candidates who registered on or after October 1st, 1884, are now subject to the regulations of the Conjoint Board.

Fellowship.—The Fellowship of the College of Surgeons is granted after examination to persons at least 25 years of age who have been engaged in professional studies for six years. There are two examinations—the first in Anatomy and Physiology, which may be passed after the third winter session; the second, chiefly directed to Surgery, which may be passed after six years of professional study. Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship, except in the case of Graduates in Medicine and Surgery of not less than four years' standing, of universities recognized by the College for the purpose.

Fees.—At First Examination: £5 5s. At Second Examination: £12 12s. Diploma fee: Members, £3 3s.: non-Members, £13 13s. Further information can be obtained on application to the Secretary, Examination Hall, Victoria Embankment, London, W.C.

SOCIETY OF APOTHECARIES OF LONDON.

The examinations are Primary and Final. The Primary Examination is held quarterly, on the first Wednesday, and on the Monday and Thursday in the same week, in the months of January, April, July, and October. The Final Examination is held monthly.

Primary Examination.—This examination consists of two parts: Part I includes (*a*) Elementary Biology; (*b*) Chemistry, Chemical Physics, Practical Chemistry; (*c*) Pharmacy. A synopsis indicating the range of the subjects in the examination will be sent with the regulations on application. This examination may be passed after registration as a medical student. No professional studies commenced before registration will be recognized as part of the medical course. Should the candidate not succeed in passing in all the subjects of the examination, he will be referred only in the subject or subjects in which he fails. Part II includes Anatomy, Physiology, and Histology. This examination cannot be passed before the completion of twelve months' Practical Anatomy, with demonstrations. These subjects cannot be taken separately except in the event of the candidate having previously passed in one. A schedule of the Primary Examination, to be obtained of the Secretary, must be signed by the Dean of the Medical School or other authority. Candidates will be excused any or all the subjects of the Primary Examination on producing evidence that they have passed equivalent examinations before an examining body recognized by the Society. Candidates referred in Anatomy will be required to produce evidence of further work in the dissecting room before being admitted to re-examination.

Final Examination (Sec. I).—This examination consists of three parts. Part I includes: The Principles and Practice of Surgery, Surgical Pathology, Operative Manipulation. Surgical Anatomy, Instruments and Appliances. Part II includes: (*a*) The Principles and Practice of Medicine (including Therapeutics, Pharmacology, and Prescriptions), Pathology,

[1] Candidates who have previously passed in Practical Pharmacy will not be re-examined in that subject at the Third Examination.

[2] Candidates may present themselves for examination in Midwifery and Diseases of Women at any time after the completion of the fourth year of professional study at a medical school, and not less than one year after the passing of the Second Examination, on production of the required certificates.

and Morbid Histology; (*b*) Forensic Medicine, Hygiene, Theory and Practice of Vaccination, and Mental Diseases. Part III: Midwifery, Gynaecology, and Diseases of Newborn Children, Obstetric Instruments and Appliances. Sec. I of the Final Examination cannot be passed before the expiration of 45 months after registration as a medical student, during which time not less than three winter sessions and two summer sessions must have been passed at one or more of the medical schools connected with a general hospital recognized by the Society.

Final Examination (Sec. II).—This examination consists of two parts: Part I, Clinical Surgery: Part II, Clinical Medicine and Medical Anatomy. This examination cannot be passed before the end of the fifth year.

Information as to the details of the course of study required may be obtained on application to the Secretary, Court of Examiners, Apothecaries' Hall, Blackfriars, E.C. The examination offices are open from 10 to 4, Saturdays 10 to 1.

Fee, £21.—Primary Examination, £5 5s.; Final Examination, £15 15s.

THE SCOTTISH UNIVERSITIES.

It will be convenient to give the regulations for Edinburgh in detail, and then briefly to indicate points of difference as regards the other three Universities.

UNIVERSITY OF EDINBURGH.

The following regulations apply to all who began their studies after October 1st, 1892.

Four degrees in Medicine and Surgery are conferred—namely, Bachelor of Medicine, Bachelor of Surgery, Doctor of Medicine, and Master of Surgery. The degree of M.B. is not conferred separately from Ch.B., and vice versa, but M.D. and Ch.M. are separable.

Preliminary Examination.

This must be passed before beginning medical study; the subjects are: (1) English;[1] (2) Latin, Translation and Parsing, Prose Composition Grammar, and Sentences; (3) Elementary Mathematics, Arithmetic,[2] Algebra, and Geometry, Euclid, Books i, ii, and iii (or their equivalents with easy deductions); (4) Greek (Translation, Sentences, and Grammar), or French, or German. [One paper will be set in French and one in German. The papers will be of a lower standard than those set in these subjects in the Arts and Science Preliminaries. The time allowed for such paper will be three hours. The papers will comprise questions in grammar, translations, a piece of English for translation, and some short sentences.]

Excellence in one or more subjects will in some measure compensate for deficiency in others. The examination is conducted by a joint Board of the four Universities, and will be held from September 23rd to September 28th, 1904, and from March 24th to March 29th, 1905, and these dates apply to all the Scottish Universities. The standard of examination corresponds pretty nearly to the certificate of the Scotch Education Department, or the Lower Certificate of the Oxford and Cambridge Schools. Candidates are required to pass in all the necessary subjects at one or not more than two examinations. The examinations of a large number of bodies are taken as equivalents of the Preliminary; these will be found on pages 484 486 of the *University Calendar* (Regulations of the Joint Board of Examiners). The fee is 10s. 6d. each time, and is to be sent with the schedule to Mr. T. Gilbert, the University Clerk, not later than September 16th, 1904,[3] and March 1st, 1905. The schedules can be had on and after September 8th, 1904, and February 15th, 1905.

Registration.

The student must register within fifteen days after the commencement of medical study. There is no fee. Forms and information may be had from Mr. James Robertson, 54' George Square, Edinburgh, or at the office of the Faculty of Medicine. Candidates for registration must produce evidence that they have attained 16 years of age.

Professional Education.

The course extends over five years. During the first four the student must attend Elementary Botany, Elementary Zoology, Physics, Practical Chemistry, Practical Physiology, Practical Pathology, and Medical Jurisprudence, during courses of not less than 2½ months each; a course of Public Health of 30 lectures; Practical Anatomy during two courses of not less than 5 months each; Chemistry, Anatomy, Physiology, Pathology, Surgery, Materia Medica and Therapeutics, Medicine and Midwifery, and the Diseases of Women and Infants, during courses of not less than 5 months each. During the fifth, or final year he must be engaged in clinical study for at least 9 months, and must attend a 9 months' course in Clinical Medicine and Clinical Surgery. In all, before graduation he must have attended, for at least three years, a hospital which accommodates not fewer than 80 patients, and possesses a distinct staff of physicians and surgeons, and he must have acted as clerk in the medical and dresser in the surgical wards of such a hospital. He must have had approved opportunities of studying at a hospital *Post-mortem* Examinations, Fevers, and Ophthalmology. He must have had a course of Operative Surgery. Every candidate must attend one of the three following courses: (1) A six weeks' course of clinical instruction in the Diseases of Children; (2) a course of instruction, of at least 18 meetings, in diseases of the Larynx, Ear, and Nose; (3) a course of clinical instruction in diseases of the skin, of not less than 20 meetings. He must have attended a course of 25 meetings on Practical Pharmacy, a course on Mental Diseases, been properly instructed in Vaccination by a certificated public vaccinator, have attended 12 cases of labour, or had 3 months' attendance at a lying-in hospital, and have personally conducted 6 cases. Certificates for these various courses must attest regular attendance and due performance of the work of the class. The fees vary from 1 to 4 guineas for each class, and the total minimum cost in class, examination, and other fees for the M.B. and Ch.B. may be set down as £150. Two of the five years' course must be taken in the University of Edinburgh. For students beginning their course in winter there may be given the following minimum curriculum for the degrees of M.B. and Ch.B., with suggested order of study and examination:

First Winter Session: Chemistry, Practical Chemistry, Physics,[4] and Anatomy (Lectures), Examination in Chemistry, Practical Chemistry, and Physics. First Summer Session: Elementary Zoology and Elementary Botany, Examination in Elementary Botany and Elementary Zoology.

Second Winter Session: Practical Anatomy, Physiology, Practical Physiology, Surgery,[5] Hospital and Clinical Surgery after Christmas.[5] Second Summer Session: Practical Physiology, Practical Materia Medica, Practical Anatomy, Hospital and Clinical Surgery.

Third Winter Session: Materia Medica, Practical Anatomy, Anatomical Demonstrations, Clinical Surgery (with Dressership), Hospital, Examination in Anatomy, Physiology, and Materia Medica and Therapeutics (the last may be postponed to the end of the following summer). Third Summer Session: Practical Pathology, Clinical Medicine, Hospital, Examination in Materia Medica and Therapeutics (if not previously taken).

Fourth Winter Session: Pathology, Medicine, Midwifery, and Diseases of Women and Children, Clinical Medicine (with Clerkships), Hospital, *Post Mortems*, and Dispensary, Examination in Pathology, and Forensic Medicine and Public Health, which may be postponed till the end of the Summer Session. After July, 1905, Forensic Medicine and Public Health can only be taken in the Final Examination. Fourth Summer Session: Forensic Medicine, Public Health, Ophthalmology, Diseases of Children, or Larynx, Ear, and Nose, or Skin, Hospital and Clinical Medicine, Dispensary, Mental Diseases.

Fifth Winter Session: Clinical Medicine, Hospital, Fevers, Vaccination, Practical Midwifery.

Spring Vacation and Fifth Summer Session: Operative Surgery, Examination in Surgery and Clinical Surgery, Medicine and Clinical Medicine, and Midwifery, Forensic Medicine and Public Health (if not taken in the Third Professional Examination).

Professional Examinations.

These are four in number, and the first three may be taken in sections as indicated above.

First.—Botany, Zoology, Physics, Chemistry, taken any time after the full specified course in these subjects.

[1] In English no set books are prescribed, nor is a general knowledge of the life and works of the greater authors expected of candidates, but one or two questions may be set, giving an opportunity to candidates to show a knowledge of famous literary works. The historical questions will not be confined to any period, but will cover the whole of British History, and will be set in such a way as to give an opportunity to candidates who have confined their studies to a single period to show their knowledge. A single three hours' paper will be set, containing an Essay, a Paraphrase, two questions on History, two on Geography, four on Grammar (including correction of sentences, parsing, analysis of sentences, and derivations), two of a literary and general kind. Eight answers will be required. The Essay, the Paraphrase, one answer on History, and one on Geography, will be compulsory.

[2] *Arithmetic* (including Vulgar and Decimal Fractions, Proportion, Percentage, Square Root, Simple Interest); *Algebra* (including Fractions, Factors, Square Root, Equations of the First Degree, Simultaneous Equations of the First Degree, Easy Quadratics, and problems leading to the above Equations).

[3] A student whose native language is not English may substitute his own language for either French or German, and may substitute any other classical language for Latin or Greek.

[4] Three months' course.

[5] Or in Third Winter Session.

Second.—Anatomy, Physiology, Materia Medica, and Therapeutics, at the end of the third Winter.

Third.—Pathology.

Final.—Surgery, Clinical Surgery, Medicine, Clinical Medicine, and Midwifery, Forensic Medicine, and Public Health at the end of the fifth year.

Failure in one subject does not involve failure in the other subjects of that division. Candidates must be 21 years of age before admission to the degrees of M.B. and Ch.B.

Examination Fees for M.B. and Ch.B.

	First Time.	Re-entry.
	£ s. d.	£ s. d.
Preliminary	0 10 0	0 10 0
First Professional	6 6 0	
Any two Subjects of Ditto ...	3 3 0	
Second Professional	6 6 0	£1 1s. each time for each subject.
Anatomy and Physiology ...	4 4 0	
Materia Medica, etc.	2 2 0	
Third Professional	4 4 0	
Final	6 6 0	

DEGREE OF M.D.

The candidate must be M.B. and Ch.B. of Edinburgh, must have been engaged for one year in the medical wards of a hospital, or at scientific work at a recognized research laboratory, or in the military or naval medical services, or for at least two years in general practice, and must be 24 years of age. He must write a thesis on a subject not exclusively surgical, and he will be examined in Medicine, and in some of its special departments. The fee is £10 10s., and the re-entry fee £5 5s.

DEGREE OF CH M

The candidate must be M.B. and Ch.B. of Edinburgh, have worked one year in the surgical wards of a hospital, or been engaged in scientific work, or in the military and naval medical services, or for at least two years in practice not confined to medicine. He must be 24, must submit a thesis on a subject not exclusively medical, will be examined on Surgical Anatomy, Operations on the Dead Body, Clinical Surgery, and some of its special departments. The fee is £10 10s.

For further details the student is referred to the *University Calendar* (published by Mr. Thin, South Bridge, Edinburgh, price 3s., post free 3s. 6d.), or the *Medical Programme*, price 2d., also published by Mr. Thin, or to the Dean of the Faculty of Medicine, University of Edinburgh.

REGULATIONS FOR GRADUATION OF WOMEN.

When granting recognition to medical schools or teachers for the medical instruction of women, the University Court *requires that the classes shall not be mixed classes, except on special cause shown.*

The University Court has recognized the Medical College for Women, 20, Chambers Street, Edinburgh, as a medical school whose course of instruction qualifies for graduation in Medicine (but see p. 518). Every candidate must produce evidence of having satisfied the conditions with respect to the preliminary examination and registration as medical students, and will be examined in all the subjects necessary for graduation by the Examiners of the University in which she takes her degree. All students not matriculated students of the University attending this school for purposes of graduation must, at the commencement of each year of such attendance, enter their names in a book to be kept in the University for that purpose, paying a fee of the same amount as the matriculation fee paid by students of the University, and having, in respect of such payment, a right to the use of the library of the University.

UNIVERSITY OF GLASGOW.

The regulations are essentially the same as those given above for Edinburgh.

PRELIMINARY EXAMINATION.

The dates of the next two Examinations are the same as those given under Edinburgh. Fees, 10s. 6d. each time. Names to be given in and fee paid by September 5th, 1904, and March 3rd, 1905, to the Assistant Clerk, Matriculation Office. The extent of the Examination will be found under Edinburgh.

REGISTRATION.

Printed form of application may be had from the Assistant Clerk at the Matriculation Office, and this must be transmitted to Mr. James Robertson, Scottish Branch Registrar, 54, George Square, Edinburgh.

PROFESSIONAL EDUCATION.

The minimum cost is about £148, and the course is the same as at Edinburgh.

FEES, ETC.

The total examination fees for M.B., Ch.B., are the same as for Edinburgh, but are differently distributed. The fee for the First and Second is £6 6s., and for the Third and Fourth £5 5s. each. In the event of a candidate being rejected in any of these he may be admitted once to re-examination without payment of further fee, but for a second and for each subsequent re-examination a fee of £2 2s. is charged.

The regulations at length may be had post free on application to the Assistant Clerk, Matriculation Office, or will be found in the *Glasgow University Calendar* for 1904-5, published by James Maclehose and Sons, 61, St. Vincent Street, Glasgow, price 3s., post free 3s. 6d. (see also p. 518).

Queen Margaret College, which provides a course of instruction for women, is now an integral part of the University. (For course of study, etc., see p. 518.)

UNIVERSITY OF ABERDEEN.

The regulations are essentially the same as for Edinburgh.

PRELIMINARY EXAMINATION.

The next Preliminary Examination will be held on precisely the same dates as are given under Edinburgh, and the subjects are the same. Names must be intimated, and the fee (10s. 6d.) paid ten days previously, to the Secretary of the Medical Faculty, Marischal College.

PROFESSIONAL EDUCATION.

The candidate before admission to his Final Examination must produce certificates to the effect that he has attended for at least three years the medical and surgical practice of a general hospital; attended courses in clinical medicine and clinical surgery of not less than nine months each; attended courses in mental diseases and in practical pharmacy; and the out-practice of a hospital, or the practice of a dispensary: that he has acted for a period equal to a winter session both as a Clinical Clerk and Surgical Dresser, that he has attended no fewer than twenty-five necropsies, and taken part in some: that he has attended for not less than three months a fever hospital of at least forty patients, and has had a three months' course on Disease in Children, and the same in Ophthalmology. The total minimum cost for M.B. and Ch.B. is about £125.

The fees for Professional Examinations are: First, Second, and Third, each £5 5s.: Final, £7 7s.

Further information will be given by the Secretary of the Medical Faculty, or will be got in the *University Calendar* for 1904-5, published by the University Press, Limited, Aberdeen: price 3s. 6d., or post free 3s. 10d.

UNIVERSITY OF ST. ANDREWS.

United College, St. Andrews: University College, Dundee.

PRELIMINARY EXAMINATION.

The dates of the next two examinations are September 23rd to 29th, 1904, and March 24th to 30th, 1905. Fees, 10s. 6d. each time. Examination schedules to be returned, filled up, and fees paid by September 10th, 1904, and March 8th, 1905, to the Secretary of the University.

REGISTRATION.

Printed forms may be obtained from the Secretary, and must be sent to the Scottish Branch Registrar.

PROFESSIONAL EDUCATION.

The United College, St. Andrews, offers classes in the subjects of the first two years of the medical curriculum; University College, Dundee, for the full period of five years.

BURSARIES AND SCHOLARSHIPS.

United College, St. Andrews.

A list of Bursaries and Scholarships open to competition during session 1904-5 may be obtained on application to the Secretary of the University.

The Bursaries are allocated in the order of merit, the most valuable ones being given to those students who obtain the highest marks in the Preliminary Medical Examination, and who are prepared to take two *anni medici* at the United College, St. Andrews.

University College, Dundee.

A list of Bursaries and Scholarships open to competition at this College during Session 1903-4 may be had by applying to the Secretary of the College.

Fees, etc.

The total fees for M.B. and Ch.B. are the same as for Edinburgh (22 guineas). The fee for the First Division is £6 6s., and is payable in two instalments of £3 3s. The fee for the Second, Third, and Fourth Divisions of the Professional Examinations are respectively £6 6s., £4 4s., and £6 6s., and are payable in instalments at the rate of £2 2s. for each subject. A fee of 10s. 6d. is charged to all candidates who, having been previously registered, present themselves for re-examination in any one subject.

Degrees of M.D. and Ch.M.

The regulations and fees for these will be found under Edinburgh.

THE SCOTTISH COLLEGES.

The three medical corporate Colleges in Scotland the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons in Glasgow—now co-operate to hold a series of examinations, after passing which the student is presented with the diplomas of all three Colleges. Each College grants its single qualification only to persons who already possess another and opposite qualification (see below).

CONJOINT EXAMINING BOARD IN SCOTLAND.

A candidate who passes this series of examinations is granted the diploma of each of the co-operating bodies, and is entitled to register the three diplomas under the Medical Acts, and to write after his name—L.R.C.P.Edin., L.R.C.S.Edin., and L.F.P.S.Glasg.—qualifications which are recognized by the army, navy, and other public services.

Preliminary Examination.

The Educational Institute of Scotland conducts special preliminary examinations in Edinburgh and Glasgow for the Colleges. The next examination will be held on September 8th, 9th, and 10th, 1904, and names must be in, and fees paid by September 3rd. Full particulars may be obtained from S. M. Murray, Esq., LL.D., 40, Princes Street, Edinburgh, Treasurer of the Institute. The entire examination must be passed at one period. A cheque on a private account will not be received in payment of fees. The Preliminary Examination may be passed before any of the Boards recognized by the General Medical Council. A list is given on pp. 118 and 121 of the *Edinburgh Medical School Calendar* for 1903-4 (E. and S. Livingstone, Edinburgh. Price 2s.; post free, 2s. 3d.).

Professional Curriculum.

The course of study after registration as a medical student must occupy not less than five years, and comprise five winter and five summer sessions; but graduates in Arts or Science of any recognized University, who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an examination in these subjects for the degrees in question, shall be held to have completed the first of the five years of medical study. Professional studies commenced before registration will not be recognized, except in the case of Physics, Elementary Biology, Chemistry, Practical Chemistry, and Practical Pharmacy. The fifth year must be devoted to practical clinical work, and six months of this year may be spent as a pupil of a registered practitioner.

The following order of study is recommended as conforming generally to the sequence of examinations, but is not imperative:

First Summer: Physics, Elementary Biology. First Winter: Chemistry, Practical Chemistry, Junior Anatomy, Dissections. Second Summer: Histology, Dissections. Second Winter: Anatomy, Dissections, Physiology. Third Summer: Pathology, Materia Medica, and Hospital Practice. Third Winter: Surgery, Hospital Practice, with Clinical Surgery. Fourth Summer: Midwifery and Gynaecology, Medical Jurisprudence and Public Health, Hospital Practice, with Clinical Surgery. Fourth Winter: Medicine, Hospital Practice, with Clinical Medicine. Fifth Summer: Hospital Practice, with Clinical Medicine, Insanity, Practical Midwifery. Eye Diseases. Fifth Winter: Hospital Practice, Dispensary, Fevers, Vaccination.

Students are also recommended to study in the fifth year the following subjects: Operative Surgery, Diseases of Children, Ear and Throat, Skin.

Professional Examination.

During the five years of the professional curriculum the student has to pass four examinations. Each examination is held six times in each year, four times in Edinburgh and twice at Glasgow, and a candidate may present himself at either place. An interval of not less than three months must elapse between the passing of any two successive examinations, and an interval of two academic years must intervene between the passing of the Second and of the Final Examination. Candidates may enter for all the subjects of an examination at one period, or may enter for any division of subjects. If the latter a higher percentage is exacted. Schedules showing the course of study followed must be submitted before the examinations to one or other of the Inspectors of Certificates: In Edinburgh, Mr. James Robertson, solicitor, 54, George Square; in Glasgow, Mr. Alexander Duncan, B.A., L.L.D., Faculty Hall, 242, St. Vincent Street, to whom all inquiries as to professional examinations should be addressed.

First Examination.—This examination may be passed at any time after registration as a medical student by any candidate who has attended the obligatory courses. The examination consists of three parts: (1) Physics, (2) Chemistry, (3) Elementary Biology, and each division may be taken separately.

Second Examination.—This examination may be passed at any time after the end of the second year by a student who has attended courses of Anatomy, Physiology, and Dissection for six months each. The subjects of the examination are: (1) Anatomy and (2) Physiology, including Histology. A candidate may pass in one subject while failing in the other.

Third Examination.—The student must have attended a course of Pathology and of Materia Medica before presenting himself for this examination, the subjects of which are (1) Pathology, (2) Materia Medica and Pharmacy, which must be entered for together.

Final Examination.—The student must be 21, and may not pass this examination till the end of the fifth year. The subjects are: (1) Medicine, including Therapeutics, Medical Anatomy, and Clinical Medicine; (2) Surgery, including Surgical Anatomy, Clinical Surgery, and Diseases and Injuries of the Eye; (3) Midwifery and Diseases of Women and of Newborn Children; (4) Medical Jurisprudence and Hygiene. Candidates may also be examined on Diseases of Children, Diseases of the Ear and Throat, Insanity, Vaccination, etc. The examination may be taken in divisions at different times or all at once.

Table Showing the Fees for the Conjoint Examinations in Scotland.

The Figures signify Pounds Sterling.

	Whole Examination.	Re-entry for all Divisions.	Re-entry in one or two Divisions.	Entry for one Division.	Re-entry for one Division.
Preliminary	1	½	—	—	—
Professional First	5	3	2½	2½	2
,, Second ...	5	3	2	—	—
,, Third ...	5	3	2	—	—
,, Final... ...	15	5	—	6	2

The total minimum cost for Lectures and Examination Fees for the Conjoint Examinations is about £152.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

Licence.—The Licence is only granted as a separate qualification (in Medicine) to persons (of either sex) who already possess a recognized British, Irish, Colonial, or Indian qualification in Surgery. A candidate, who must not have been rejected within three months by any Licensing Board, is subjected to written and oral examination in Medicine, Clinical Medicine, Materia Medica, Midwifery, and Medical Jurisprudence. The fee for the examination is £15 15s.; it is held on the first Wednesday and succeeding days of each month except September and October. A special examination can be obtained on showing cause and paying £5 5s. extra. Eight days' notice must be given by all candidates to the Secretary of the College, from whom further particulars can be obtained.

Membership.—The candidate, who must be a Licentiate of a College of Physicians, or graduate of a British or Irish University, and 24 years of age, is examined in (1) Medicine and Therapeutics, and in (2) one of the following subjects chosen by him: (*a*) One or more departments of Medicine specially professed; (*b*) Psychological Medicine; (*c*) General Pathology and Morbid Anatomy; (*d*) Medical Jurisprudence;

(*e*) Public Health: (*f*) Midwifery: (*g*) Diseases of Women. Further particulars as to other formalities can be obtained from the Secretary. A candidate 40 years of age and ten years in practice *may be excused* any part of or all the examination by the Council. The fee paid by a Licentiate of the College is £21 if licensed prior to August 1st, 1876: if subsequently, £15 15s. Fee for others, £36 15s. The examination is held quarterly (October, January, April, and July), and application must be made a month previous to the date of examination.

Fellow.—A Member, aged 25, and of at least three years' standing, may be elected a Fellow; he pays £64 18s. (including stamp duty). Women are not yet admitted to the Membership or Fellowship. Under certain exceptional circumstances a practitioner of standing has been and may be elected to the Fellowship of the College without examination.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

Licence.—The Licence is only granted as a separate qualification (in Surgery) to persons (of either sex) who already possess a recognized British, Irish, Colonial, or Indian qualification in Medicine. A candidate, who must not have been rejected by any other Licensing Board in Surgery within three months, is examined on one day by written papers, and on a subsequent day orally, on specimens in the wards of a surgical hospital, and may be required to operate on the dead body. The fee is £15 15s., of which £10 10s. will be returned to unsuccessful candidates, and is payable to Mr. James Robertson, Clerk to the College, 54, George Square, Edinburgh, from whom further particulars may be obtained, and to whom eight days' notice must be given. A special examination can be obtained on showing cause. The fee is £20, of which £10 will be returned to candidates remitted on examination.

Fellowship.—A candidate must have the diploma of the Royal College of Surgeons of Edinburgh, England, or Ireland, or of the Faculty of Physicians and Surgeons in Glasgow, or the surgical degree of one of the universities of Great Britain and Ireland, must be 25 years of age, and must have been engaged in practice for two subsequent years at least. Candidates who are Licentiates of the Edinburgh Colleges are examined in Surgery, Surgical Anatomy, including Clinical and Operative Surgery, and one optional subject, and in other subjects not adequately included in the examination passed elsewhere. The optional subjects recognized by the College are (1) Ophthalmic Surgery, (2) Aural, Nasal, and Laryngeal Surgery, (3) Dental Surgery, (4) Midwifery, (5) Gynaecology, (6) Surgical Pathology and Operative Surgery, (7) Advanced Anatomy, (8) Advanced Physiology, (9) Pathology and Bacteriology, (10) Medical Jurisprudence, (11) Public Health. The examinations are written, oral, and practical. Three weeks' notice must be given to Mr. James Robertson as above, from whom full particulars as to certificates required (among others two from Fellows of the Colleges, of whom one must reside in Edinburgh) may be obtained. The fee is £30 to those who hold the diploma of Licentiate of the College, and £45 to others (no stamp duty is payable on the diploma). Registered practitioners, aged not less than 40, and who have been in practice for not less than twenty years, and who have distinguished themselves in their profession, may under special circumstances be elected without examination. Women are not admitted to the Fellowship.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

Licence.—The Licence is only granted as a separate qualification to candidates who already possess a recognized British, Irish, Colonial, or Indian qualification in Medicine. Candidates are examined in Surgery (including Clinical Surgery) and Surgical Anatomy. The fee is £15 15s. The examination is held quarterly. Further particulars can be obtained on application to Alexander Duncan, B.A., LL.D., Faculty Hall, St. Vincent Street, Glasgow.

Fellowship.—Every candidate must be qualified for two years, and aged 24. The ordinary mode of admission to the Fellowship is by examination and subsequent election. The subjects of examination are either (*a*) Medicine (including Clinical Medicine, Medical Pathology, and Therapeutics); or (*b*) Surgery (including Clinical Surgery, Operative Surgery, Surgical Anatomy, and Surgical Pathology); and one of the following at the option of the candidate: (1) Anatomy, (2) Physiology, (3) Pathology, (4) Midwifery, (5) Diseases of Women, (6) Medical Jurisprudence, Surgery, in one of its following branches, (7) Ophthalmic Surgery, (8) Aural, Laryngeal, and Nasal Surgery, (9) Dental Surgery; Medicine in one of its following branches, (10) State Medicine, (11) Psychological Medicine, (12) Dermatology. Four examinations are held annually (January, April, July, October): Fourteen days' notice must be given. The fee is £30 unless the candidate desires to qualify to hold office, when it is £50. In the case of a Licentiate of the Faculty, £25 and £15 respectively.

Four Fellows may be elected in each year "in virtue of distinction," and without examination. They must not be less than 50 years of age, and ten years qualified.

THE IRISH UNIVERSITIES.

UNIVERSITY OF DUBLIN.

THE University of Dublin grants two degrees in Medicine (M.B. and M.D.), two in Surgery (B.Ch. and M.Ch.), two in Midwifery (B.A.O. and M.A.O.). A candidate for any one of these degrees must be a graduate in Arts and have passed the Previous Medical Examination.

The following schools in addition to the School of Physic, are recognized by the Board of Trinity College—the Schools of the Royal College of Surgeons in Ireland, the Schools of the Catholic University.

PREVIOUS MEDICAL EXAMINATION.

This examination is divided into three parts: (1) Physics and Chemistry, (2) Botany and Zoology, (3) Anatomy, Practical Histology, and Physiology. The three parts may be taken together or passed at separate examinations. The examinations are held in November, January, May, and June.

DEGREES IN MEDICINE.

The following conditions must be fulfilled in order to qualify for the degrees in Midwifery (B.A.O.), Surgery (B.Ch.), and Medicine (M.B.): The student must be of B.A. standing, and his name must be for at least five (academic) years on the books of the Medical School, reckoned from the date of his matriculation. He may carry on his Arts course concurrently with his Medical course, and he need not have taken his B.A. before presenting himself for his Final Medical Examinations, but he cannot have the Medical degrees conferred without the Arts degree. The following courses must be attended:—Lectures: Winter Courses: Systematic Anatomy, Descriptive Anatomy, first year; Descriptive Anatomy (with Dissections), second year; Applied Anatomy (with Dissections), Chemistry, Surgery, Physiology (two courses), Practical Physiology, Practice of Medicine, Midwifery, Pathology. Summer Courses: Practical Chemistry, Practical Histology, Botany, Zoology, Materia Medica and Therapeutics, Medical Jurisprudence, and Hygiene, Operative Surgery, Practical Pathology. Term Courses: Physics (Michaelmas, Hilary, and Trinity Terms). The student must attend three courses of nine months' attendance each on the Clinical Lectures of Sir Patrick Dun's or other metropolitan hospital recognized by the Board of Trinity College. One year at a recognized London or Edinburgh hospital or two years at a recognized county infirmary or recognized Colonial hospital previous to the commencement of their metropolitan medical studies may be allowed, on special application to the Board of Trinity College, to count as equivalent to one year spent in a recognized metropolitan hospital. The following examinations must be passed: The Previous Medical or Half M.B. Examination and the Final Examination. The Final Examination is arranged as follows:—First Part:—Section A.: Applied Anatomy (Medical and Surgical), paper and viva voce; Applied Physiology and Physiology of the Nervous System, paper and viva voce; Materia Medica and Therapeutics, paper and viva voce. Section B.: Medical Jurisprudence and Hygiene, paper and viva voce; Medicine, paper and viva voce; Surgery, paper and viva voce; Pathology, paper, oral and practical. Section A. may be passed in any part of the fourth year, provided the corresponding curriculum shall have been completed, and must be passed before B. can be entered for: Section B. not before Trinity Term of the fourth year. Examination for both Sections are held in November, January, or February, and May or June. Liceat fee £5, to be paid on entering for A. Second Part:—Midwifery, paper and viva voce; Gynaecology, paper and viva voce; Obstetrical Anatomy, paper.

Medicine—Clinical Medicine; Mental Disease, paper. Surgery—Clinical Surgery, Operations, Clinical Ophthalmology. Both Sections of the First Part must be passed at least one term before any section of the Second Part can be entered for. One Section of the Second Part must be passed in Trinity Term of the fifth year or subsequently; the other two in any part of the fifth year if the corresponding curriculum be completed. Subject to this provision the Sections of the Second Part may be taken in any order. Liceat fee £5, to be paid when entering for whichever Section the candidate takes first.

Degree of M.D.—The candidate must have passed all the qualifying Examinations in Medicine, Surgery, and Midwifery, and have taken, or have been qualified to take, the degree of B.A. three years previously. He must read a thesis before the Regius Professor of Physic.

Degree of M.Ch.—The candidate must be a B.Ch. of not less than three years' standing, and have been engaged in practice for two years. Graduates of ten years' standing may be given a special examination.

Degree of M.A.O.—The candidate must have passed the qualifying examination in Medicine, Surgery, and Midwifery. The examination is specially directed to Obstetrics and Practical Gynaecology.

University Diplomas.

The University grants diplomas in Medicine, in Surgery, and in Obstetric Medicine. A candidate must have completed two years in Arts and five years in medical studies.

Diploma in Medicine.—The medical course and examination are the same as for the degree of M.B., excepting that attendance is not required on lectures on Botany and Zoology, and that the candidate is not examined in those subjects.[1]

Diplomas in Surgery and in Obstetric Science.—The examination and courses necessary for these diplomas are the same as for the degrees of B.Ch. and B.A.O. respectively.

Fees.

Matriculation, 5s.; M.B., B.Ch., B.A.O., £17; M.D., £13; M.Ch., £11; M.A.O., £5; L.M., L.Ch., L.A.O., £11.

A schedule containing recommendations respecting the five years' medical curriculum can be obtained on application to the Registrar of the School of Physic in the University of Dublin.

ROYAL UNIVERSITY OF IRELAND.

The University confers the following: Medicine—Bachelor of Medicine, M.B.; Doctor of Medicine, M.D. Surgery—Bachelor of Surgery, B.Ch.; Master of Surgery, M.Ch. Obstetrics—Bachelor of Obstetrics, B.A.O.; Master of Obstetrics, M.A.O. Sanitary Science—A Special Diploma. Mental Diseases—A Special Diploma.

The course for these degrees must be of at least five medical years' duration; but graduates in Arts or Science who have spent a year in the study of Physics, Chemistry, and Biology, and have passed an examination in these subjects for the degrees in question, will be held to have completed the first of the five years of medical study.

Students who commenced their medical studies after January 1st, 1892, must furnish evidence of having been registered by the General Medical Council, as Students in Medicine, for at least 57 months, before being admitted to the M.B., B.Ch., B.A.O. Degrees Examination. No one can be admitted to a degree in Medicine who is not 21 years of age. All candidates for these degrees, in addition to attending the lectures and complying with the other conditions to be from time to time prescribed, must pass the following examinations: The Matriculation Examination (information as to which may be obtained from the *University Calendar*. (Dublin: Alex. Thom and Co. London: Longmans, Green, and Co. Price 2s. 6d.; by post, 3s. Extracts can be obtained: Arts, etc., 4d.; Medicine, 2d.), the First University Examination, the First Examination in Medicine, the Second Examination in Medicine, the Third Examination in Medicine, the M.B., B.Ch., B.A.O. Degrees Examination.

The course of medical studies is divided into five periods of one medical year each, during which periods the students must attend such courses of lectures and hospital instruction respectively, and comply with such other conditions as the Senate shall from time to time order.

When a student has fully completed the course of medical studies prescribed for any year, he may proceed with the studies assigned to the year next following without passing the corresponding examination.

There must be an interval of at least one medical year between the passing of one examination and the being admitted to the examination next subsequent. But the Senate may, under special circumstances, allow a candidate to present himself for his following examination within a less interval.

The Senate may allow any candidate who so desires to present himself for the Third Examination in Medicine, and for the M.B., B.Ch., B.A.O. Degrees Examination at the same examination period, provided that an interval of three medical years shall have elapsed from the time of passing the Second Examination in Medicine, and provided that such candidate shall have completed the entire course of studies, etc., prescribed for the five years of the medical curriculum.

First Examination in Medicine.—Candidates may present themselves for this examination after an interval of one academical year from the time of passing the Matriculation Examination, provided they have already passed the First University Examination and completed the First Year of the Medical Curriculum. Candidates at this Examination must answer in the following subjects: Natural Philosophy; Systematic Chemistry; Botany; Zoology. The Examination in each subject consists of three parts: (*a*) A Written Examination; (*b*) an Oral Examination; (*c*) a Practical Examination, except in Chemistry, in which the Practical Examination forms part of the Second Examination in Medicine. Special importance is attached to the practical part of the Examination. The subjects are: Natural Philosophy; Chemistry; Organic Chemistry; and Botany and Zoology. Schedules are given in the *Calendar*.

Second Examination in Medicine.—Candidates may present themselves for this examination after an interval of one academical year from the time of passing the First Examination in Medicine, provided they have completed the Second Year of the medical curriculum. The subjects are: Anatomy, Physiology, Practical Chemistry. Schedules may be found in the *Calendar*.

Third Examination in Medicine.—Candidates may present themselves for this examination after an interval of one academical year from the time of passing the Second Examination in Medicine, provided they have completed the third year of the medical curriculum. The subjects are: Anatomy, Physiology, Materia Medica, Pharmacology, and Therapeutics.

M.B., B.Ch., B.A.O. Degrees Examination.—Candidates may present themselves for this Examination after an interval of such period, not being less than one academical year from the time of passing the Third Examination in Medicine, as the Senate may from time to time prescribe, provided they have completed the entire medical curriculum. This Examination consists of three parts: (*a*) Medicine, Theoretical and Clinical, including Therapeutics, Mental Diseases, Medical Jurisprudence, Sanitary Science, and Medical Pathology; (*b*) Surgery, Theoretical, Clinical, and Operative, including the use of instruments and appliances; Surgical Anatomy, Ophthalmology and Otology (candidates at this examination must exhibit reasonable proficiency in the use of the Ophthalmoscope and Laryngoscope), Surgical Pathology; (*c*) Midwifery and Diseases of Women and Children. All candidates must enter for and go through the entire examination, but a candidate may be adjudged to have passed in any of the foregoing parts in which he satisfies the examiners. Upon completing satisfactorily his examination in all three divisions, the candidate, in addition to the parchment diploma recording his admission to the M.B., B.Ch., B.A.O. Degrees, will receive a certificate of having passed a qualifying examination in the subjects of Medicine, Surgery, and Midwifery.

Honours.—Special examinations for honours are held in connexion with these examinations.

M.D. Degree.—Candidates may present themselves for the examination for this degree after an interval of three academical years from the time of obtaining the M.B., B.Ch., B.A.O. Degrees; but in the case of candidates who have obtained a degree of the University in the Faculty of Arts an interval of two academical years shall be sufficient. Candidates at this Examination must answer in the following subjects: (1) Medicine; (2) Pathology. The Examination in each subject consists of: (*a*) A Written Examination; (*b*) an Oral Examination. In addition every candidate must diagnose

[1] A diplomate in Medicine, on completing his course in Arts, and proceeding to the degree of B.A., may become a Bachelor of Medicine by attending the lectures on Botany and Zoology, passing the Previous Medical Examination in those subjects, and paying the degree fees.

at the bedside at least three medical cases and prescribe treatment. He must also write detailed reports on at least two cases to be selected by the examiners, and discuss the questions arising thereon.

M.Ch. Degree.—Candidates may present themselves for the examination for this degree after an interval of three academical years from the time of obtaining the M.B., B.Ch., B.A.O. Degrees; but in the case of candidates who shall have obtained a degree of the University in the Faculty of Arts an interval of two academic years shall be sufficient. Candidates at this Examination must answer in the following subjects: (1) Surgery, Theoretical and Practical, including Ophthalmology and Otology; (2) Surgical Pathology; (3) Surgical Anatomy and Operative Surgery, with the use of surgical instruments and appliances. As far as practicable there will be a Written and Oral Examination in these branches, and in addition every candidate will be required to diagnose at the bedside at least three surgical cases, and prescribe treatment. He must also write detailed reports on at least two cases, to be selected by the examiners, and discuss the questions arising thereon.

M.A.O. Degree.—Candidates may present themselves for the examination for this degree after an interval of three academical years from the time of obtaining the M.B., B.Ch., B.A.O. Degrees; but in the case of candidates who shall have obtained a degree of the University in the Faculty of Arts, an interval of two academic years shall be sufficient. Each candidate must furnish satisfactory evidence that since graduating in Medicine he has (1) had personal charge of at least twenty cases of labour, and (2) attended during a period of three months the practice of a Clinical Hospital for Diseases of Women, where at least six beds are in constant occupation, or in a special ward of a General Hospital where such cases only are treated, and containing at least six beds in constant occupation. Candidates at the examination must answer in the following subjects: (1) Midwifery; (2) Diseases of Women and Children; (3) Pathology; (4) the Use of Instruments and Appliances. The examination in each subject consists of (*a*) an Oral Examination, with practical illustrations, including use of instruments and appliances; (*b*) a Written Examination; (*c*) a Clinical Examination, as far as practicable.

Exhibitions and Scholarships.—The following Exhibitions may be awarded annually by the Senate: At the First Examination in Medicine, two First-class of £20 each and two Second-class of £10 each. At the Second Examination in Medicine, two First-class of £25 each and two Second-class of £15 each. At the Third Examination in Medicine, two First-class of £30 each and two Second-class of £25 each. An Examination for a Travelling Scholarship in the Faculty of Medicine, value £100, is held in October. The subjects are, in rotation, (1) Anatomy and Histology, and (2) Physiology and Pathology. Candidates who have obtained the M.B., B.Ch., B.A.O. Degrees, either in the year of the Scholarship Examination or in the year immediately preceding, are alone eligible. Dr. Henry Hutchinson Stewart Medical Scholarships are awarded as follows: (1) One Scholarship of the annual value of £10, tenable for three years, for competition in the subjects of the Second Examination in Medicine. (2) One Scholarship is of the annual value of £50, tenable for three years, for competition among medical students of not more than two years' standing, for proficiency in the knowledge of Mental Diseases. In October, 1904, there will be offered for competition among the graduates in Medicine of the University one Medical Studentship, tenable for two consecutive years, of the annual value of £200.

Fees.—The fees for the various examinations are as follows: Matriculation, £1; First Examination in Medicine, £1; Second Examination, £1; Third Examination, £1; M.B., B.Ch., and B.A.O. degrees, £10; M.D. degree, £5; M.Ch. degree, £5; and M.A.O. degree, £5.

THE IRISH COLLEGES.

CONJOINT EXAMINING BOARD IN IRELAND.

THE diplomas of these two bodies are now granted upon terms and after examinations settled between the Colleges.

Preliminary Examination.—Examinations in general education, which fulfil the requirements of the General Medical Council, are accepted by the Colleges (see pages 490-1). The Preliminary Examination of the Colleges is held in spring and autumn, and seven clear days' notice must be given to Dr. Trevor N. Smith, Secretary of the Committee of Management, Royal College of Physicians, 6, Kildare Street, Dublin. Preliminary Examinations for the commencement of medical study of the Royal Colleges of Physicians and Surgeons for Sessions 1904-1905, will be held on Monday, September 26th, and following days, and Monday, October 31st, and following days, 1904. Prospectus can be had on application.

PROFESSIONAL EXAMINATIONS.

There are four Professional Examinations:

The *First Professional Examination* may be passed not earlier than the end of the first winter session. It consists of two Parts: I, Chemistry and Physics; II, Biology.

The *Second Professional Examination* consists of two Parts: I, Anatomy; II, Physiology and Histology.

The *Third Professional Examination* may be passed not sooner than the end of the third year of medical study. It consists of three Parts: I, Pathology; II, Materia Medica, Pharmacy, and Therapeutics; III, Public Health and Forensic Medicine.

Candidates are recommended to present themselves at the same time in all the subjects of each of the above examinations, but may present themselves in one or more of the specified divisions separately, provided they have completed the curriculum as far as concerns the subject or subjects in which they present themselves.

The *Final Professional Examination* may be passed not sooner than the end of the fifth year of medical study. A candidate may present himself in all the subjects at one time, or in one or more in the following groups: (*a*) Medicine, including Fevers, Mental Diseases, and Diseases of Children; (*b*) Surgery, including Ophthalmic and Operative Surgery; (*c*) Midwifery, including Diseases of Women and Newborn Children, and the Theory and Practice of Vaccination. A student at or after the end of his fourth year may present himself in any one of the Groups I, II, or III, provided he has completed his curriculum as far as concerns the group in which he presents himself. But one of these groups must be deferred till the end of his fifth year.

Four complete years of Medical Study must be attended as a recognized Medical School after passing the First Professional Examination and before completing the Final Examination.

CURRICULUM.

The curriculum, as above stated, extends over five years, and its general arrangement can be gathered from the subjects of the examination which are arranged to test the student's progress. Full details may be obtained on application to the Secretary as above.

FEES.

Preliminary Examination, £2 2s., except in the case of matriculated pupils of the Royal College of Surgeons, who pay £1 1s.; re-examination, £1 1s. First Professional Examination, £15 15s.; Second, £10 10s.; Third, £9 9s.; Final, £6 6s.; Re-examination fee, £1 1s. for each subject, with a maximum fee of £3 3s., except in Medicine and Surgery at the Final Examination, for each of which the re-examination fee is £2 2s.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

This College continues to issue its Licence in Medicine and the Licence in Midwifery to registered medical practitioners whose names appear on the *Medical Register* of the United Kingdom.

Licence in Medicine.—The subjects of examination are: Practice of Medicine, Clinical Medicine, Pathology, Medical Jurisprudence, Midwifery, Hygiene, and Therapeutics.

Licence in Midwifery.—The candidate must produce certificates of having attended a course of lectures on Midwifery, and of having attended Practical Midwifery and Diseases of Women, for six months, at a lying-in hospital or maternity recognized by the College; or, where such hospital attendance cannot have been obtained during any period of the candidate's course of study, of having been engaged in Practical Midwifery under the supervision of a registered practitioner holding a public medical appointment, the certificate in either case to state that no fewer than twenty labour cases have been actually attended. A registered medical practitioner of five years' standing is exempted from the examination by printed questions.

Fees.—Fee for the Licence to practise Medicine, £15 15s. Fee for examination for the Licences in Medicine and Midwifery, if obtained within the interval of a month,

£16 16s.—to be lodged in one sum.[1] Fee for special examination for the Licence to practise Medicine, £21. Fee for examination for the Licence to practise Midwifery, £3 3s. Fee for special examination for the Licence to practise Midwifery, £5 5s. The admission fee, less the sum paid to the examiners, will be returned to rejected candidates. The examinations for these licences are held in the week following the first Friday in February, May, and November. Notice must be given, and the schedule transmitted at least four days before the first Friday in each of the above months to the Registrar of the Royal College of Physicians of Ireland, Kildare Street, Dublin, from whom further information can be obtained. A special examination can be obtained under conditions which can be ascertained from the Registrar.

Membership.—The examinations for the Membership are held in January, April, July, and October.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The Licence.—Candidates who hold registrable surgical diplomas including the licence of the Apothecaries' Society of London, granted since October, 1886, are admitted to examination without further evidence of study, but candidates who hold medical qualifications only, including the L.S.A. granted before October, 1886, will be required to produce certificates of two courses of lectures in Anatomy and Dissections, one course of Practical Physiology, one course of lectures in Surgery, and one course of Operative Surgery.

Subjects.—Candidates are examined in Surgery, Clinical Surgery, Operative Surgery, Surgical Appliances, and Ophthalmic Surgery. The examination is partly written, partly viva voce, and partly practical. The fee is £26 5s., of which £5 5s. is retained by the College if the candidate be unsuccessful. The fee for a special examination is £31 10s.

Diploma in Midwifery.—A diploma in midwifery is granted after examination in persons possessing a registrable qualification. Candidates must produce evidence of (*a*) attendance on a course of lectures on Midwifery and Diseases of Women and Children in a recognized school; (*b*) attendance on six months' practice of a recognized lying-in hospital or recognized dispensary for lying-in women and children, and (*c*) of having conducted at least thirty labour cases. The fee for the examination is £15 15s., of which £5 5s. is retained by the College if the candidate is unsuccessful.

Fellowship.

A candidate for the Fellowship must make application to the President and Council to be admitted to examination, and, if the Council decide to entertain the application, it must lie on the table for at least a fortnight for consideration before it is put to the Council for approval. All the required evidences of study or qualification, fees, and testimonials as to character must be submitted previously to its being so considered, and the candidate will then, if approved by the Council, be admitted to the next Sessional Examination or to a Special Examination if granted by Council, at such date as the President may fix. In order that these regulations may be carried out, candidates are required to enter their names with the Registrar at least one month before the date of examination.

Periods of Examination.—Sessional Fellowship Examinations commence, as far as arrangements permit, on the third Monday in February, May, and November. Special Examinations may be granted at other times except during the months of August and September, when the College is closed for the Summer Recess, by the Council if it sees fit, on sufficient cause being shown.

Grades of Examination.—Candidates for the Final Fellowship Examination are divided into two grades: (1) Licentiates or graduates in Surgery of less than ten years' standing, (2) Licentiates or graduates in Surgery of more than ten years' standing. Students not either Licentiates or graduates in Surgery are permitted to present themselves for the Primary Examination under Grade 1 at the end of their third winter conrse of dissections.

Grade 1.—Candidates are required to pass two Examinations—Primary and Final. But candidates may present themselves for the Final Examination immediately after passing the Primary part, provided they have complied with the necessary regulations. The subjects for the Private Examination are: (*a*) Anatomy, including Dissections; (*b*) Physiology and Histology; those for the final are: (*a*) Surgery, including Clinical and Operative Surgery; (*b*) Surgical Pathology.

Grade 2.—The subjects of examination are: (*a*) Surgical Anatomy, (*b*) Surgery, including Clinical and Operative Surgery, (*c*) Surgical Pathology.

Fees.—Grade 1: For Licentiates of the College—for Primary Examination, 15 guineas; for Final Examination, 10 guineas. For Licentiates in Surgery of other licensing bodies—for Primary Examination, 25 guineas; for Final Examination, 15 guineas; for Students of the College, Primary Examination, 5 guineas; Final Examination, 20 guineas; for Students of other licensing bodies, Primary Examination, 10 guineas; Final Examination, 30 guineas. *Grade 2:* Licentiates of the College, 25 guineas; Licentiates in Surgery of other licensing bodies, 40 guineas. Extra fee for Special Examination, 10 guineas. In case of rejection, 10 guineas in addition to the special fee, if such has been paid, is retained by the College, and is not allowed in the fees for re-examination. In the case of Fellowship candidates who fail to present themselves for the examination at the time fixed, without having previously given at least a week's notice of their withdrawal, five guineas of the fee is retained by the College.

Regulations and entrance forms can be obtained from the Registrar at the College, Stephen's Green West, Dublin.

APOTHECARIES' HALL OF IRELAND.

The Licence of this Hall is granted to students who can present certificates of having fully completed the course of study as laid down in the curriculum. The diploma of the Apothecaries' Hall of Ireland entitles the holder to be registered as a practitioner in Medicine, Surgery, and Midwifery; also with the privileges of the Apothecaries' Licence.

There are four professional examinations, the total fees in connexion with which amount to 21 guineas. Ladies are eligible for the diploma.

Candidates already on the *Register* will receive the diploma of the Hall upon passing an examination in the subjects which are not covered by their previous qualification and on paying a fee of 10 guineas; if Medicine or Surgery be required 2 guineas extra will be charged.

The fees payable for each examination are as follows: First Professional, £5 5s.; Second, £5 5s.; Third, £5 5s.; Final Examination, £6 6s.

If a candidate gives three clear days' notice of inability to attend, he may present himself at the ensuing examination without any further fee.

A candidate is allowed for each professional examination which he has completed at any other Licensing Body, except the Final. If he has passed only in some of the subjects in a given examination, he has to pay the whole of the fee for that examination.

The fees for re-examination are: For each subject, £1 1s., excepting in the subjects of Chemistry, Pharmacy, Surgery, Medicine, Second Anatomy, and Ophthalmology, the fees for which are £2 2s. each.

The fee for Final alone is £15 15s. when the other examinations have been taken elsewhere.

All examination fees are to be lodged in the Sackville Street Branch of the Royal Bank of Ireland to the credit of the Examination Committee.

Applications and schedules, together with bank receipt for the fee, must be lodged with the Registrar, Apothecaries' Hall, 40, Mary Street, Dublin, fourteen clear days before the day of examination.

There are four Examinations, First, Second, Third, and Final. The first three are held quarterly on the Third Monday in January, April, July, and October; there are only two finals in January and July. The First Examination includes Biology, Physics, theoretical and practical Chemistry, with an examination at the bench. Pharmacy is put down in this examination, but it may be taken at any of the first three examinations. Candidates holding a pharmaceutical licence are exempt from this subject. Osteology (First Anatomy) is also a subject of the First Professional Examination.

The subjects for the Second Professional are: Anatomy of the whole body (the examination in the subject is practical). Material Medica, and Therapeutics, Physiology, and Practical Histology.

The Third Examination consists of Pathology, Materia Medica if not taken at Second Examination, Medical Jurisprudence, Hygiene.

The Final Examination includes Medicine, oral and clinical; Surgery, including operations clinical and oral; Clinical

[1] Any candidate who has been rejected at the examination for the Licence in Medicine forfeits this privilege, and will be required to pay the full fee of £3 3s. for the Licence in Midwifery.

Ophthalmic Surgery, Midwifery, and Gynaecology. Written papers are required on all these subjects.

Candidates who desire to obtain the Letters Testimonial of the Apothecaries' Hall of Ireland, must, before proceeding to the Final Examination, produce evidence of having been registered as medical students for fifty-seven months; also of having attended courses of instruction as follows:

One course each (winter course of six months) of the following: Anatomy (Lecture), Chemistry (theoretical), Midwifery, Practice of Medicine, Physiology or Institutes of Medicine, Surgery Dissections, two courses of six months each.

Courses of three months.—Materia Medica, Medical Jurisprudence, Chemistry (practical), Practical Physiology and Histology, Operative Surgery, Physics, Clinical Ophthalmology, Biology, Clinical Instruction in Mental Disease, Pathology, Vaccination.

Medico-Chirurgical Hospital, twenty-seven months to be distributed, at the student's own discretion, over the last four years of his study. The candidate may substitute for nine months in this hospital attendance for six months as a resident pupil. He will be required to present a certificate of having taken notes of at least six medical and surgical cases recorded under the supervision respectively of a physician and surgeon of his hospital.

Three months' study of Fever—which may be included in his twenty-seven months' Hospital Attendance—in a Hospital containing Fever Wards, and having taken notes of five cases of Fever—namely, either Typhus, Typhoid, Scarlet Fever, Small-pox, or Measles.

Six months' practical Midwifery and Diseases of Women during the winter or summer of the third or fourth year at a recognized lying-in hospital or maternity.

Three months' practical Pharmacy, in a recognized Clinical Hospital or a recognized School of Pharmacy, or a year in the Compounding Department of a Licentiate Apothecary or a Pharmaceutical Chemist.

Each candidate before receiving his diploma must produce evidence that he has attained the age of 21 years.

Each candidate must produce evidence of having before entering on Medical Studies passed a Preliminary Examination in General Education recognized by the General Medical Council, and of having been registered by that Council as a Student in Medicine. Certificates of Medical Study will not be recognized if the commencement of the course to which the certificate refers dates more than fifteen days prior to such registration, except in the subjects of Physics and Biology. This registration is not undertaken by the Hall, but the student must apply to the Registrar of the General Medical Council that he may be so entered.

The details of the course of education required and syllabus of the Examinations will be supplied on application to the Registrar, at 40, Mary Street, Dublin.

NOTES ON MEDICAL SCHOOLS AND COLLEGES.

LONDON.

THE conditions and possibilities of medical education in London have been materially altered by the reconstitution of the University of London. Its Medical Faculty is now constituted by the twelve general hospitals of London to which medical schools are attached, and the staffs of these hospitals and schools, together with representatives of some of the special hospitals, constitute the teachers and members of the Faculty. There is now, therefore, a direct and organic relation between the leading hospitals of London and the University such as has never existed before, and the effect of this reconstitution or reconstruction cannot fail to be far-reaching in a great number of ways.

One early result, which seems as inevitable as it is desirable, is that there will be co-ordination of effort, among several at any rate of the smaller schools, for instruction in some of the studies comprised in the earlier part of the medical curriculum; and, further, that machinery will come into being by which the incomparable clinical material to be found in London will be more thoroughly utilized than has ever hitherto been the case. What effect the relation now established will have upon the comparative popularity in the schools of the degrees of the University and of the diplomas of the Colleges, as qualifications for admission to the *Register*, remains to be seen. It appears probable, however, that the University road will be more constantly pressed upon the student's notice as the right one for him to follow if he wishes to do the best that he can for himself. In whatever estimation the non-medical degrees of the University may have been held, it is indisputable that, as far as qualifying degrees are concerned, the Bachelorship of Medicine of the University of London has long been recognized as the best evidence of mental ability and solid work with which a young medical man can arm himself. But the paths towards it were in some respects so beset with traps that many men, to whom the examinations themselves would have presented no insuperable difficulty, were led to seek plainer routes to the goal of a diploma entitling them to admission to the *Register* of qualified medical practitioners. Under the new regulations things are improved, and though the standards are in no respect lowered, a candidate is less hampered in his progress by red tape. This improvement, plus the great advantage of the new machinery for education which it is believed will be called into existence, is likely to restore to London that popularity as a place of early not less than of advanced medical study, of which various circumstances have to some extent deprived it during the past few years. It may thus be anticipated that before long London, in spite of the springing up of local universities, will at last be in the position to which its greatness entitles it of being the Mecca of all those who wish to learn the best in the best possible way. The advantages of pursuing a medical education in London are indeed already so great that they may properly be pressed upon the notice of any student of fair ability who has no special reason for electing to study at one of the provincial centres.

CHOICE OF A SCHOOL.

The following notes as to the various London schools will, it is hoped, be found useful. Some of them, perhaps, have rather better accommodation for teaching than others, but the courses which they provide are all fundamentally the same, and in all of them the arrangements made are such as to meet the requirements of students of every class—of those who are aiming at the diplomas of the Conjoint Board and Apothecaries' Hall, not less than of those who have the degrees of the London University in view. Special facilities are given to men who have commenced their professional education at the older Universities. Little guide can be given in these columns as to the choice of one school rather than another, since such choice must depend largely on personal factors. In a general way, however, it may be said that while to the student of the day it may be, perhaps, almost a matter of indifference to what school he belongs, there is often a certain advantage in after-life in having been an alumnus of one of the more celebrated schools.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL SCHOOL.

The Hospital contains 744 beds.

Appointments.—Clinical Clerks to the Physicians and to the Physician-Accoucheur, and Dressers to the Surgeons and in the Casualty Department are chosen from the students. Clerks and Dressers are also selected from the students to attend in the out-patient rooms, in the special departments (Ophthalmic, Orthopaedic, Gynaecological, Laryngological, Aural, Dermatological, Electrical, and Dental), and in the *post-mortem* room. Chief Assistants and Clinical Assistants are selected from qualified men and appointed yearly, to help in the special departments just named. Ten House-Physicians and ten House-Surgeons are appointed annually. During their first six months of office they act as "Junior" House-Physicians and House-Surgeons, and receive a salary of £25 a year. During their second six months they become "Senior" House-Physicians and House-Surgeons, and are provided with rooms by the hospital authorities, and receive a salary of

£80 a year. A resident Midwifery Assistant and an Ophthalmic House-Surgeon are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Two Assistant Anaesthetists are appointed annually, and receive salaries of £120 and £100 a year respectively. An Extern Midwifery Assistant is appointed every three months, and receives a salary of £80 a year.

There is a residential college within the precincts of the Hospital.

The ground—10 acres in area—provided for the use of the members of the Students' Amalgamated Clubs, is at Winchmore Hill, within easy reach of the Hospital.

Special classes for students preparing for the Preliminary Scientific and other Examinations for the M.B., M.D. of the Universities of London, Oxford and Cambridge, and for the higher surgical degrees at the same Universities, including the M.S.Lond., First and Second F.R.C.S., M.Ch.Oxon., and M.C.Cantab. Special laboratory instruction for the D.P.H. of Cambridge, Oxford, Durham, and London is also given.

Entrance Scholarships.—Five Entrance Scholarships will be awarded after an Examination to be held on September 19th, 1904, and following days. The subjects of examination and conditions of eligibility for these Scholarships are: (1) Two Scholarships, value £75 each, in no fewer than two nor more than three of the subjects—Chemistry, Physics, Botany, Zoology, Physiology, and Anatomy, limited to students under 25 years of age who have not entered to the medical or surgical practice of any London medical school. (2) One Scholarship, value £150, in not fewer than three of the following subjects—Chemistry, Physics, Botany, Zoology, and Physiology, limited to students under 21 years of age who have not entered to the medical or surgical practice of any London medical school. (3) The Preliminary Scientific Exhibition of £50 will be given for the second best examination in the same subjects and under the same conditions as (2). (4) The Jeaffreson Exhibition in Mathematics, Latin, and one other language—Greek, French, or German—and of the value of £20. The value of the Scholarships and Prizes is nearly £800 annually.

Communications must be addressed to W. D. Harmer, Esq., M.C.Cantab., Warden of the College, St. Bartholomew's Hospital.

Charing Cross Hospital Medical School.

The Charing Cross Hospital Medical School is one of the Schools of Medicine of the University of London, it is situated in the very centre of London, and easily accessible from all parts. It is within three minutes' walk of the Royal Dental Hospital of London. The Lectures are at hours to suit both General and Dental Students. The Hospital and Convalescent Home at Limpsfield contain 300 beds recently built. Over 2,000 cases pass through its wards each year, and some 22,000 out-patients and casualties are treated. There are Special Departments for Midwifery, Diseases of Women, of Children, of the Skin, Eye, Ear, Throat, Nose, and Teeth, for Orthopaedic cases, X Ray, and for Electrical Examination and Treatment. New Biological and Physics Laboratories have recently been established in the school and the Pathological Laboratory has been considerably enlarged.

Appointments.—In the Medical School Demonstratorships and Assistant Demonstratorships, when they fall vacant, are open to students of the school and carry honoraria. The Curator and Pathologist is appointed annually, and receives £100 a year. Medical, Surgical, and Obstetric Registrars to the Hospital are appointed annually, the two former of whom receive £40 a year each, with luncheon in the Hospital. Six House-Physicians, six House-Surgeons, and two Resident Obstetrical Officers are appointed each year on the recommendation of the Medical Committee, after competitive examination. They are provided with board and residence in the Hospital. Assistants to the Roentgen-ray and to the Electrical Departments are appointed every six months. They receive an honorarium of 12 guineas, with luncheon at the Hospital. Clinical Clerks and Dressers are appointed in all the general and special departments of the Hospital. Arrangements can be made for students who have not entered for the entire medical curriculum to hold the posts of Clerk and Dresser. Every student holds in turn the appointment of Pathological Assistant, and assists at the Necropsies. The above appointments are open without any additional fee.

Entrance Scholarships.—Five Entrance Scholarships, of the respective value of 100 guineas (Livingstone Scholarship, founded in memory of the late Dr. Livingstone, a former student of this school), 60 guineas, 55 guineas (Huxley Scholarship, founded in memory of the late Professor Huxley, a former student of this school), 40 guineas, and 30 guineas, are open to students commencing their medical curriculum. Three of these (100 guineas, 60 guineas, and 40 guineas) are open to all general students,[1] one (55 guineas) is reserved for the sons of medical men, and one (30 guineas) is open to Dental Students only. All these Scholarships are awarded annually at the commencement of each winter session, after a competitive examination in the following groups of subjects: (1) English, including Language, History, and Geography; (2) Latin and any one of the following three languages—Greek, French, and German; (3) Mathematics, including Arithmetic, Algebra, and Geometry; and Mechanics, including Statics and Dynamics; (4) Inorganic Chemistry and Experimental Physics, including Acoustics, Heat, Magnetism, Electricity, and Optics; and (5) Animal and Vegetable Biology. No candidate may offer himself for examination in more than three of the above groups of subjects, the selection of the groups being left to the candidate. Students who join in the summer session have the same privileges as regards scholarships, medals, and prizes as those who join in October of the same year. The value attached to each group of subjects is 1,000 marks. No credit will be given for any paper in which the candidate obtains less than one-fifth of the total marks. Candidates must be under 25 years of age on the first day of the examination. Candidates must give notice to the Librarian of their intention to compete, and of the groups in which they offer themselves for examination, on or before Saturday (10 a.m.), September 24th, 1904. The examination will commence at the School on Monday, September 26th, at 9 a.m., and will continue during the two following days. The successful candidates will be required to enter forthwith for their complete medical education at the Charing Cross Hospital.

One Epsom Scholarship, giving a free education, is, each winter session, placed at the disposal of the Royal Medical Benevolent College at Epsom, to be competed for by foundation scholars who have passed the Preliminary Scientific M.B. Examination of the University of London.

Two University Scholarships, of the value of 72 guineas each, are open to students from the University of Oxford who have passed the first M.B. Examination, to students of the University of Cambridge who have passed the second M.B. Examination, and to students of the University of London who have passed the Intermediate Examination in Medicine, and who have not entered at any London Medical School. Subjects: Anatomy and Physiology, including Histology. The examination for these Scholarships, which will be partly practical, will be held at the school on September 26th and 27th. Candidates must give notice to the Librarian of their intention to compete on or before Saturday, at 10 a.m., September 24th, 1904. The successful candidates will be required to enter forthwith at the Hospital for the completion of their curriculum.

Fees.—The composition fee for general students is 115 guineas; for dental students, 61 guineas; and for University students 74 guineas.

Further information may be had of the Dean, Mr. Herbert F. Waterhouse, Charing Cross Hospital Medical School, Chandos Street, Strand, London, W.C.

St. George's Hospital Medical School.

The Hospital contains 351 beds, of which 205 are devoted to Surgical and 146 to Medical cases.

Appointments.—The following paid appointments, amongst others, are open to students after they have held house office: Two Medical Registrarships, each at £200 per annum; Surgical Registrarship at £200 per annum; Curatorship of the Museum at £200 per annum; Assistant Curatorship at £100 per annum; Obstetric Assistantship, Resident, at £50 per annum; two Demonstratorships of Anatomy, each at £50 per annum; the post of Senior Anaesthetist at £50 per aanum; the posts (2) of Junior Anaesthetists, each at £30 per annum. Dresserships to the Surgeons and Clinical Clerkships to the Physicians are open without fee to all students of the Hospital. A large number of House Office Appointments, which may be held for six, twelve, or eighteen months, are open without fee to every perpetual student of the Hospital, and are made strictly in accordance with the merits of the candidates.

Instruction.—Great attention is made by members of the staff to individual teaching. A number of Special Courses

[1] Those who enter for their entire medical education.

are given in which the requirements of University and other Examinations receive careful attention. The following may be cited as examples: (1) Elementary Bacteriology, (2) Advanced Bacteriology, (3) Clinical Pathology, (4) Systematic Pathology, (5) Histological Pathology and Morbid Anatomy, (6) Operative Surgery, (7) Public Health, (8) Tropical Diseases. Special Test Examinations and Classes are held by members of the staff for all examinations.

Entrance Scholarships—in Arts £100, in Science £100, in Anatomy and Physiology £50—are awarded at the commencement of each winter session. The William Brown Exhibition of the value of £100 per annum (tenable for two years), is awarded by examination to a perpetual pupil of the hospital every second year. The William Brown Exhibition of £40 (tenable for three years) is awarded by examination to a perpetual pupil of the Hospital every third year. Other prizes to the value of £200 are awarded annually to the students of the Hospital.

The School possesses an Amalgamation Club, with well-fitted Reading, Smoking, and Luncheon Room, on the Hospital premises. Students have the advantage of a well-filled Library of Medical and Scientific Books, which is kept thoroughly up to date. A Register of Accredited Apartments, and a List of Medical Men and others willing to receive St. George's men as boarders, may be seen on application to the Secretary.

Fees—The composition fee is £150.

Further information may be obtained from the Secretary of the Medical School.

GUY'S HOSPITAL MEDICAL SCHOOL.

The Hospital contains 602 beds in constant occupation; an additional 50 beds have been recently opened on the medical side of the Hospital. Thirty-one beds are set apart for diseases of the eye, and 40 for the most urgent and interesting medical cases, which form the subjects of the weekly clinical lectures. There is a special ward of 32 beds for the reception of cases of diseases of women and for cases of difficult labour. Beds are also allotted to the Throat and Ear Departments, and a small additional ward for children will shortly be opened.

Appointments.—All appointments are given without extra payment, and according to the merits of the candidates, as determined by a committee of the medical staff. Eight Assistant House-Physicians, 8 House-Physicians, 24 Assistant House-Surgeons, 8 House-Surgeons, and 2 Ophthalmic House-Surgeons are appointed annually. The House-Physicians and House-Surgeons hold office for six months each, and receive free board and lodging in the college, as also do the Resident Obstetric Assistants, of whom 3 are appointed annually, each holding office for six months. Every student is provided with rooms and commons in the hospital during the period of his "take" as Dresser. In addition to the Clerkships and Dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant, dresser, or clerk in the special departments of ophthalmology, laryngology, gynaecology, dermatology, otology, electricity, anaesthetics, and dentistry. More than 150 additional appointments have been added to the list of those annually open to students of the Hospital, the majority of them being in the special departments.

The College, fronting the east gate of the Hospital, provides accommodation for 60 resident students. It contains a dining hall, reading rooms, library of general literature, and gymnasium for the use of the residents and of the members of the Clubs' Union. The athletic ground at Honor Oak Park is reached from the Hospital in 20 minutes.

Scholarships, Prizes, etc.—Two Entrance Scholarships in Arts. One of the value of £100 open to candidates under 20 years of age, and one of £50 open to candidates under 25. Subjects: English, Latin, Arithmetic, Algebra, Euclid, and either Greek, French, or German. Three Entrance Sholarships in Science: One of £150 and one of £60, open to candidates under 25, and one of £50 to University students who have completed their study of Anatomy and Physiology. Subjects: Anatomy, Physiology, Chemistry, Practical Chemistry, Biology, and Physics. These examinations begin on September 22nd: names must be sent in on or before September 14th. Junior prizes for general proficiency, £20, £15, £10; Arthur Durham prizes for dissection, £15, £5; Hilton prize for dissection, £5; Michael Harris prize for Anatomy, £10; Sands Cox Scholarship for Physiology, £15 for three years; Wooldridge Memorial prize for Physiology, £10; Beaney prize for Pathology, £34: Treasurer's gold medal in medicine, Treasurer's gold medal in surgery, and the Golding-Bird gold medal and scholarship for Bacteriology (£20) are awarded annually after competitive examination. The Gull Studentship in Pathology and the Beaney Scholarship in Materia Medica, of the annual value of £150 and £31 10s. respectively, are awarded without examination to enable research to be carried on in these subjects.

Special classes are held for the Preliminary Scientific and Intermediate M.B. Examinations of the University of London and for the First and Final F.R.C.S.Eng.

Special teaching is also provided to meet the requirements of the Universities of London, Oxford, and Cambridge in General Pathology and Pharmacology.

Fees.—For particulars of new scheme for payment of composition fees apply to the Dean.

KING'S COLLEGE MEDICAL FACULTY.

The Hospital contains 220 beds in daily use.

Appointments.—Resident Medical Officers, Clerks, and Dressers are chosen from the students, and the former have rooms and commons free. Two Sambrooke Registrarships, Medicine and Surgery, of the annual value of £50 each, are open to students in higher appointments of the Hospital. Clinical assistants are appointed in the Ophthalmic, Ear, and Throat Departments.

Entrance Scholarships.—1. Two Warneford Scholarships, for the encouragement of previous education, each £100 value; subjects of examination—Mathematics, Classics, Divinity. 2. One Sambrooke Exhibition, of £100, open; subjects of examination, Mathematics, Elementary Physics, Inorganic Chemistry, Botany, and Biology. 3. Rabbeth Scholarship, value £20, in July, for best evidence of early scientific training. 4. Two Scientific Exhibitions, open, given annually, in October, by the Clothworkers' Company, value £60 and £40, for proficiency in any four of the following subjects: Mathematics, Mechanics, Physics, Chemistry, Botany, Geology, Mineralogy, and Zoology will be open to all candidates who are under the age of 19. 5. Medical Entrance Scholarship, of £50, instituted for students who propose to take their degree at Oxford, Cambridge, or other British University, having already passed the examination of that University in Biology, Chemistry, and Physics.

During the curriculum Scholarships and Prizes of the value of £300 are open to matriculated students.

For conditions of scholarships and subjects of examinations apply to the Dean, Medical Faculty. Examinations commence September 20th.

The Dean of the Medical Department, Professor W. D. Halliburton, attends daily (Saturdays excepted) at King's College for the purpose of seeing students and their friends. Any letters addressed to the Dean during the vacation will receive early attention.

Fellowship Examinations of the Royal College of Surgeons.—Special classes for the Final Examinations are held, and a special prospectus regarding these classes will be forwarded on application to the Dean.

University of London.—A special class for the Matriculation Examination will commence on September 27th. Classes for the science subjects are held by the Professors of the Science Faculty of King's College, and students avail themselves of their laboratories.

Fees.—The composition fee is £135.

Athletic Club.—All students are entitled to the privileges of the Athletic Club, which manages a large recreation ground of the College at Wormwood Scrubbs.

LONDON HOSPITAL MEDICAL COLLEGE.

The Hospital contains 820 beds.

Appointments.—The salaried appointments open to students are those of Medical Registrar, Surgical Registrar; Medical, Surgical, and Obstetric Tutors; Medical, Surgical, and Ophthalmic Clinical Assistants; Senior Dressers to Out-patients; and Clinical Assistant in the Light Department. There are also 5 Resident House-Physicians and 6 Resident House-Surgeons, 2 Accoucheurs, 6 Receiving Room Officers, and 2 Emergency Officers. In addition there are numerous Assistantships and Clerkships, and Dresserships in the various departments.

Scholarships and Prizes.—The following is a list of scholarships and Prizes: *At Entrance:* Price Scholarships in Science, £120; in Anatomy and Physiology, £60: Entrance Scholarships in Science, £60 and £35; Epsom Scholarship, £126;

Buxton Scholarships in Arts, £30 and £20. *After Entrance:* Anatomy and Biology Scholarships, £20; Anatomy and Physiology Scholarship, £25; Letheby Prizes, £30; Scholarships in Clinical Medicine, Surgery, and Obstetrics, £20 each; Duckworth Nelson Prize, £10; Hutchinson Prize, £40; Sutton Prize, £20; Sir Andrew Clark Prize, £26; Anderson Prizes, £9; Out-patient Dressers' Prizes, £60; Practical Anatomy Prizes, £10.

A special course for the D.P.H. will commence at the beginning of the winter session.

Special classes for the Preliminary Scientific and Intermediate M.B.Lond., the Primary and Final Fellowship, and other examinations are held. Those for the Final F.R.C.S. commenced on September 2nd.

Fees.—The composition is 120 guineas. A reduction of 15 guineas is made to sons of medical men.

New Buildings.—The new departments of Bacteriology, Public Health, Chemistry, and Biology, the new Pathological Institute at the Hospital, and the new Out-patients and special Departments are now completed and in full use. New Students' Rooms have been added, and a Garden and Fives Court opened for the use of the members of the London Hospital Clubs Union.

Information may be obtained from the Warden, Mr. Munro Scott, at the London Hospital Medical College, Mile End, E.

St. Mary's Hospital Medical School.

The Hospital at present contains 281 beds. The new wing, the ground floor of which, comprising the new out-patient department, was opened in 1898, will be completed within the next few months. This will raise the total number of beds to 350, and will include additional Operating Theatres, a new Clinical Laboratory, Clinical Theatre, and an *x*-ray Department. The situation of the hospital in the centre of the residential districts of Paddington, Bayswater, and North Kensington renders it especially convenient to students who wish to reside in the immediate vicinity, and a register of approved lodgings is kept in the office of the Medical School.

All clinical appointments in the Hospital are free to students of the Medical School, the term of office in each case being of four months' duration, and the Resident Medical Officers are chosen by competitive examination. Six House-Physicians, six House-Surgeons, four Obstetric Officers, and two Resident Anaesthetists are appointed each year, and receive board and residence in the hospital.

Entrance Scholarships in Natural Science.—One of £145, one of £78 15s., two of £52 10s., and two of £63 (open to students of any British University), are awarded annually by competitive examination in September.

The Laboratories.—The Physiological Department comprises a Lecture Room specially constructed for practical demonstrations, separate laboratories for Physical Physiology, Chemical Physiology, and Histology respectively, and smaller rooms for research work. Demonstrations on Chemistry are given in the Chemical Lecture Theatre in conjunction with the systematic lectures, and a laboratory is provided for the study of Practical Chemistry, Inorganic and Organic. During the present year a special laboratory has been provided for the classes in Physics. The classes in Bacteriology and Pathological Histology are held in the Laboratory Class Room, which accommodates 56 students.

The Bacteriological Laboratory has recently been enlarged and entirely refitted. Provision is made for instruction and research in Chemical Pathology, for which a special laboratory is available under the direction of the Lecturer on Pathological Chemistry.

Special Tuition.—In addition to systematic courses of Lectures and Demonstrations, special tuition is provided for the Intermediate and Final Examinations of the Universities of Oxford, Cambridge, and London.

Preliminary Scientific Course. Special classes, including Lectures and Laboratory Work, are held throughout the year under recognized teachers of the University of London.

The composition fee for students is £140 if paid in one sum, or £145 if paid in four instalments. University students who have completed their examinations in Anatomy and Physiology are admitted on payment of a composition fee of 60 guineas (£63) paid in one sum, or 65 guineas (£68 5s.) if paid in two annual instalments. University students, prior to completing their examination in Anatomy and Physiology, pay an annual fee of 25 guineas (£26 5s.). Separate courses of Lectures, Laboratory Work, or Hospital Practice may be taken.

The School Calendar and full information can be obtained from the Secretary, St. Mary's Hospital Medical School, Paddington, W.

Middlesex Hospital Medical School.

The Hospital contains 340 beds. A new wing containing 40 beds and special research laboratories is entirely devoted to patients suffering from cancer. It offers unrivalled opportunities for the study of this disease, both in its clinical and pathological aspects.

Appointments, etc.—Eighteen Resident appointments are open annually to competition among pupils of the Hospital. The officers reside and board in the Residential College free of expense. There are two Casualty Medical and two Casualty Surgical Officers appointed annually. Six House-Surgeons are appointed every year at intervals of two months, after examination: the six House-Physicians are also appointed annually at similar intervals; they must have a legal qualification, or hold a Broderip Scholarship. An Obstetric House-Physician (qualified to practise) is appointed every six months. Non-resident Physicians' Assistants are appointed in the various out-patient departments. In the out-patient department the appointments are: Dresser to the Assistant Surgeon and to the Dental Surgeon, Clerk to the Assistant Physician, Dresser to the Ophthalmic Surgeon, Clerk in the Department for Diseases of the Skin, Clerk in the Department for Diseases of Women, and Dresser to the Throat and Ear Department. There are also Extern Midwifery Clerks and *Post-mortem* Clerks. The appointments are so arranged that every student may during his course hold all the Out-patient and In-patient Clerkships and Dresserships. Each student must have held an out-patient clerkship and dresserships before being eligible to hold in-patient clerkships or dresserships. No student can be appointed to any office until he has passed the Second Examination of the Examining Board in England or its equivalent. Clinical Assistants are appointed in the Children's, Ophthalmic, Skin, and Throat and Ear Departments.

Entrance Scholarships.—Two Entrance Scholarships, value £100 and £60, are open to all gentlemen commencing their medical studies in May or October, 1904. The successful candidates must become general students of the school. Examination on September 20th, 21st, and 23rd. Candidates must send in their names to the Dean, stating the three subjects they select, on or before September 12th.

University Scholarship.—An annual Entrance Scholarship, of the value of £60, is open to students of the Universities of Oxford and Cambridge who have completed the curriculum for or passed the examinations in Anatomy and Physiology. Subjects: Anatomy and Physiology, including Histology. The examination takes place on September 20th and 21st. Application to be made on or before September 12th. Students joining the school in the previous May are eligible to compete for the Entrance and University Scholarships in that year.

The Freer Lucas Scholarship is annually awarded on the nomination of the head master to a pupil of the Epsom College, who has passed the Preliminary Scientific M.B. Examination.

Fees.—The composition fees is 135 guineas.

Further information may be obtained from Mr. J. Murray, the Dean.

The Residential College is situated in Cleveland Street, W., and has its frontage in the Hospital Garden; it accommodates about 30 students. Warden, Dr. R. A. Young, B.Sc.

St. Thomas's Hospital Medical School.

The Hospital contains 602 beds. It is built on the system of separate pavilions, which are connected by a covered and an open-air corridor. There are separate wards for the treatment of diseases peculiar to women, of diseases of the eye, and of children under 6 years of age. The Hospital and School are situated along the banks of the Thames between Westminster and Lambeth Bridges, an open-air terrace running the whole length of the buildings facing the Houses of Parliament. There are now four chief Operation Theatres for the Surgical Wards. Besides these there are five other fully-equipped theatres for operations in the various departments of the Hospital. A Clinical Laboratory is provided, in which all the more difficult methods of diagnosis, bacterio-

logical, chemical, and microscopical, are carried on under the direction of a Superintendent.

The Clinical Lecture Theatre is reserved entirely for the delivery of Clinical Lectures and Demonstrations. Its central position in the Hospital makes it possible to illustrate the lectures by patients from the wards and out-patient rooms. Provision is made also for the exhibition of lantern slides, where patients may not be available. The Theatre has also been specially adapted for ophthalmological, laryngological, or microscopical demonstrations. Throughout the academical year Clinical Lectures are delivered here on Medicine, Surgery, and the various special branches of study. The Department for Out-patients has been rearranged, and now consists of a series of rooms, among which are two large, well-ventilated Clinical Theatres provided with ample sitting accommodation, so that large numbers of students are enabled to follow closely the practice and teaching of the out-patient staff.

The new Casualty Department comprises a spacious receiving hall which runs the whole length of the department, and from which on the one side open out the male and female sorting and waiting rooms, whilst, on the other, are a number of smaller rooms for the examination and treatment of patients. Isolation rooms for infectious cases are placed outside the lodge door. The whole department is tiled, efficiently lighted and fitted throughout on the most modern lines. The ventilation is on the Plenum system. In connexion with it there are an Accident Ward of 20 beds for the reception of urgent male cases, a small but complete operation theatre, and two isolation wards. During the twelve months ending December 31st, 1903, the number of patients admitted into the hospital amounted to 6,299. In the same period 21,372 out-patients have been treated, and in the maternity department 1,959 women have been attended at their own homes. Casualties to the number of 99,265 attendances were treated during the same period.

The *School Buildings*, which are separated from the Hospital by a quadrangle containing a lawn tennis court for the use of the residents, comprise numerous theatres, laboratories, and class rooms, and are well adapted for the modern teaching of large bodies of students in the subjects of the medical curriculum. A large library and reading room and a very complete museum are open to all students from 9 a.m. to 5 p.m. The new club premises, opened in 1894, contain a dining room and smoking and reading room supplied with daily and illustrated weekly papers, and a gymnasium. A cloakroom with lockers, and a lavatory with bath rooms are in the main school building. Students are thus able to spend the whole day at the school, all meals being obtainable at a moderate tariff, and they are further provided with facilities for exercise and recreation. A ground of more than nine acres in extent is provided at Chiswick. It can be reached in forty minutes from the hospital; it is admirably adapted for football, cricket, lawn tennis, and athletic sports. It is provided with a pavilion where refreshments can be obtained.

Scholarships.—Three entrance Scholarships will be offered for competition in September, namely: One of £150 and one of £60, in Chemistry, Physics, and Biology, for students who have not received instruction in Anatomy or Physiology: one of £50 in any two of the following subjects: Anatomy, Physiology, Chemistry, for students who have completed their examinations in Anatomy and Physiology, for a medical degree in any of the Universities of the United Kingdom, and have not entered as students in any London medical school. Copies of the examination papers of last year may be obtained on application to the Medical Secretary. Applications must be sent in not later than September 13th, with a certificate of birth and of Preliminary Examination, and with a notification of the choice of optional subject. Numerous scholarships, prizes, and medals are open for competition throughout the whole career of a student, including a Fellowship of £100 given by the Salters' Company for research in Pharmacology.

Appointments.—All Hospital appointments are open to students without charge. A Resident Assistant Physician and a Resident Assistant Surgeon are appointed annually at a salary of £100 each with board and lodging. Two Hospital Registrars, at an annual salary of £100 each, are appointed yearly. The tenure of these offices may be renewed for a term not exceeding two years. Two Resident Casualty Officers are appointed half-yearly at a salary of £100 per annum. An Obstetric Tutor and Registrar is appointed each year at an annual salary of £50. Four House Physicians, two House-Physicians to Out-patients, four House-Surgeons, four House-Surgeons to Out-patients, two Obstetric House-Physicians, two Ophthalmic House-Surgeons, and eight Clinical Assistants in the special departments are appointed every three months and hold office for six months if recommended for re-election. Clinical Clerkships and Dresserships to the in-patient and out-patient departments are available to the number of 400 each year.

Fees.—The Entrance Fee for First or Second Year's Students is 20 guineas; for third year's students 10 guineas. The Annual Composition Fee is 30 guineas. For Preliminary Scientific Students the fee is 16 guineas. Extra charges are made for materials required in practical courses.

University Examinations.—Special Courses of Instruction for the Preliminary Scientific and Intermed. M.B.Lond., for the Oxford and Cambridge Examinations, and for the Primary and Final F.R.C.S. are held throughout the year. St. Thomas's Hospital is one of the Medical Schools of the University of London.

Lodgings.—A register of approved lodgings is kept by the Medical Secretary, who has a list of local medical practitioners, clergymen, and others who receive students into their houses.

Further information may be obtained on application to Mr. Rendle, the Medical Secretary, St. Thomas's Hospital, Albert Embankment, S.E.

UNIVERSITY COLLEGE, LONDON: MEDICAL FACULTY.

The Hospital now contains 191 beds, all available for clinical study. At the end of the year at least 277 beds will be available for clinical study on the opening of the north-east wing of the new Hospital.

Appointments.—Eight House-Physicians, six House-Surgeons, twelve Obstetric Assistants, Out-Patients Physicians' and Surgeons' Assistants, Clinical Clerks, Surgeons' Dressers, and Ophthalmic Surgeons' Assistants are selected annually from among the students without extra fee. The House-Physicians, the House-Surgeons, and four Obstetric Assistants reside in the Hospital, receiving free board and lodging.

Entrance Scholarships.—The Bucknill Scholarship of £30 a year for four years, and two Exhibitions of the value of 60 guineas each, are offered for competition in September to gentlemen who are about to commence their first winter's attendance. The subjects are Chemistry, Physics, Botany, and Zoology. Two Exhibitions of the value of 80 guineas each are offered for competition in September, the subjects of the examination being Anatomy and Physiology. Only one of these Exhibitions will be awarded to a student who has received his Anatomical and Physiological instruction in University College. The Bucknill Scholar is not eligible for these Exhibitions. The examinations for the Scholarship and Exhibitions will take place at the College on September 20th and 21st, 1904. Notice of intention to compete must be given to the Secretary, on or before September 17th, at the office of the College.

Other exhibitions and prizes of the annual value of about £500 are given in the Faculty of Medicine.

Fees.—University Courses: Preliminary Science, 25 guineas; Intermediate, 60 guineas (two instalments 62 guineas); Final, 80 guineas (two instalments 82 guineas). Conjoint Board Courses: First payment, 30 guineas; second payment, 50 guineas (two instalments 51 guineas); third payment 80 guineas (two instalments 82 guineas).

Information respecting the Medical Faculty may be obtained from the Dean, Professor Sidney Martin, M.D., F.R.S.; the Sub-Dean, Dr. Poynton; or the Principal, T. Gregory Foster, Ph.D.

WESTMINSTER HOSPITAL MEDICAL SCHOOL.

The Hospital contains upwards of 200 beds.

Appointments.—A Medical and a Surgical Registrar are appointed annually, each with a salary of £40. Two House-Physicians, two House-Surgeons, two Assistant House-Surgeons, and a Resident Obstetric Assistant are appointed for six months, after examination, and are provided with rooms and commons. An Assistant House-Surgeon, after six months' service, becomes House-Surgeon for a further period of six months. Clinical Assistants to the Assistant Physicians and Assistant Surgeons, and to the officers in charge of special departments, are appointed from among qualified students. Every student must perform the duties of Out-patient Dresser for four months, and afterwards hold the

office of In-patient Dresser for four months. He is also required to serve two terms of four months each as Clinical Clerk to In-patient Physician. Two Pathological Clerks are appointed every four months to assist in the *Post-mortem* Room. No student is eligible as an In-Patient Dresser or Clinical Clerk until he has passed the Second Examination of the Conjoint Board, or an equivalent examination. Clerks and Dressers in the Special Departments of Hospital Practice are periodically appointed. So far as vacancies permit students of other hospitals are admitted to In-patients' Dresserships or Clerkships.

Scholarships.—The following Scholarships are offered for competition during the year 1904-5: *In September, 1904:* Three Scholarships in Arts, £60, £40, and £30; Scholarship in Arts for Dental Students, £20; two University Scholarships in Anatomy and Physiology, £40 and £30: Two Natural Science Scholarships, £60 and £40; Free Presentation, open to pupils of Epsom Medical College. *In April, 1904:* Two Scholarships in Arts, £60 and £40; two University Scholarships in Anatomy and Physiology, £40 and £30; Two Natural Science Scholarships, £60 and £40.

Fees.—The composition fee is 110 guineas.

Further information can be obtained on application to the Dean at the Westminster Hospital Medical School, Caxton Street, Westminster, S.W.

London (Royal Free Hospital) School of Medicine for Women.

The Hospital contains 170 beds, all of which are available for clinical instruction. There are separate departments for Obstetrics, Diseases of Women, Diseases of the Eye, Throat, and Ear, Skin, and classes for instruction in Anaesthetics, Bacteriology, etc., in addition to the ordinary Clinical Lectures and Demonstrations and Tutorial Classes. Students also attend the practice of one of the Fever Hospitals of the Metropolitan Asylums Board, and receive special instruction in Lunacy at one of the hospitals under the Asylums Board of the London County Council; they are also admitted to the practice of a number of special hospitals.

Appointments as House-Physician and Surgeon, Surgical and Medical Registrars, Anaesthetists, Medical Electrician, Curators of the School and Hospital Museums, and Clinical Assistants and Demonstrators in various subjects are open to students after qualification.

Scholarships.—An Entrance Scholarship value £30, and the St. Dunstan's Medical Exhibition value £60 a year for three years, extendible to five years, are offered for competition at the end of September in each year. The Bostock Scholarship, value £60 a year for two or four years, is awarded by the Reid Trustees on the result of an examination held in September by the University of London. The holder of the Scholarship must enter the London School of Medicine for Women. The Stuart Mill Scholarship, value £30 a year for four years, the John Byron Bursary of £20 a year for two years, and two Mackay Prizes, value £20 each, the Helen Prideaux Prize of £50, the Mabel Webb Research Scholarship of £30 for two years, together with many other scholarships and prizes, are offered on sundry conditions. Various Missionary Societies also offer scholarships on certain conditions, and assist ladies who wish to go to India as medical missionaries.

The Course of Study includes preparation for the whole course required by the University of London, the Royal University of Ireland, the Conjoint Boards of Scotland and Ireland, and the Society of Apothecaries, London; also for the greater part of the course required by the University of Durham and the other Universities of England which admit women to their degrees, and the University of Glasgow. Special classes are held in preparation for the Preliminary Scientific Examinations of the Universities of London and Durham.

School Buildings.—The entire School has been rebuilt and greatly enlarged. The Laboratories are large and well-lighted, and are fully equipped for the Preliminary Scientific and Intermediate M.B. work required by the University of London. There are also a large Library and a Common Room for the use of the students, and sets of chambers to accommodate seventeen students.

Fees.—University of London, Preliminary Science Course, £25; course for Intermediate and Final M.B., £135; course after Intermediate M.B., £86. Composition Fee for course of study for other qualifications, £140.

Cooke's Medical School, London.

The School is prepared to admit to its supplementary work all who may wish to join the same, but in regard to its curriculum work it does not receive more than half a dozen students in the course of the year; these have special advantages both as regards anatomy and physiology. The fees, we are informed, are but slightly in excess of current charges.

The operations of Surgery are performed on the dead body. Such courses are recognized for army promotion, for the Indian Medical Service, etc.

The School possesses a good collection of anatomical models, physiological and chemical apparatus, and gentlemen preparing for the higher examinations (F.R.C.S.Eng., M.B.Cambridge, Oxford, London, etc.) receive special instruction in the more difficult subjects.

PROVINCES.

The medical schools in England, outside London, which give instruction in the full medical curriculum, are those of the Universities of Oxford, Cambridge, and Durham (University of Durham College of Medicine, Newcastle-on-Tyne); the Victoria University of Manchester; the University of Liverpool; the University of Birmingham; the University of Leeds; University College, Bristol; and University College, Sheffield.

The opportunities for obtaining a good knowledge of the Preliminary Sciences, and of Anatomy and Physiology at the Universities of Cambridge and Oxford are unsurpassed; the teaching staffs are distinguished, and the laboratories are most completely equipped. After three years have been passed at this work and the examinations therein completed it is the rule for Oxford and Cambridge men to proceed for the remaining two years to London or some other large town, where the opportunities of gaining clinical experience are greater. At many of the London schools special arrangements—as to which full particulars can be obtained on application to the respective Deans—are in existence to meet the case of students from the Universities who join after their preliminary studies are complete.

The arrangements and appliances for laboratory and other practical instruction at the Victoria University, Manchester; at the University of Birmingham; at the University of Liverpool: at the University of Leeds; at University College, Sheffield; and at University College, Bristol, are complete, and it is becoming more common than was formerly the case for students to go through their whole curriculum at these centres.

The Medical School of the University College of South Wales and Monmouthshire at Cardiff gives instruction in all the subjects of the medical curriculum belonging to the first three years.

General and Queen's Hospitals, Birmingham.

The practices of the two hospitals are amalgamated for the purpose of clinical instruction. The hospitals have a total of upwards of 450 beds for the treatment of medical, surgical, and special cases. There are special departments for gynaecological cases, and for the treatment of diseases of the eye, throat, and ear, each department having beds assigned to it. Besides these special in-patient departments, there are at the General Hospital special out-patient departments for the treatment of dental and skin cases, while attached to the Queen's Hospital is a large maternity department. During the last year more than 7,500 patients passed through the in-patient wards of the two hospitals, while the out-patients numbered more than 90,000. The medical and surgical staff of the hospitals attend daily, and give clinical instruction in the wards between the hours of 10 a.m. and 1 p.m. Clinical lectures in medicine, surgery, and gynaecology are delivered every week during the winter and summer sessions. Special ward classes are also held by the physicians and surgeons for the instruction of senior students, the times being announced in the hospital time table of clinical instruction. Senior and junior tutorial classes in medicine and surgery are also held weekly for the instruction of the junior students. Surgical operations are performed by the various surgeons and special

officers daily in the operating theatres attached to each hospital. *Post-mortem* examinations are made daily by the Pathologist, and demonstrations on recent morbid anatomy specimens are held at regular intervals. A complete radiographic department exists at the General Hospital, fully equipped with all necessary apparatus, and the treatment of patients by means of the Roentgen rays and the Finsen light is carried on daily.

Appointments open to Past Students.—At the General Hospital: One Resident Medical Officer, salary £70 a year; a degree in Medicine is necessary. One Resident Surgical Officer, salary £100 a year; must be F.R.C.S. One Resident Pathologist, salary £100 a year. Two non-resident Casualty Assistant Physicians, salary £50 a year. Two non-resident Surgical Casualty Officers, salary £50 a year. Two non-resident Anaesthetists, salary £50 a year. Five House-Surgeons, office tenable for six months, £50 a year. Three House-Physicians, tenable for six months, £50 a year. One Resident Medical Officer at the Jaffray Branch Hospital, salary £150 a year. One Resident Assistant at the Jaffray Branch Hospital (post vacant early in April, July, October, and January), tenable for three months. At the Queen's Hospital: Three House-Physicians (posts vacant in February, May, and November, tenable for twelve months, at a salary of £50). Three House-Surgeons (post vacant in February, May and November, tenable for twelve months, at a salary of £50). One Obstetric and Ophthalmic House-Surgeon (post vacant in May and November, tenable for six months, salary £20, with board and lodgings, etc.). One Resident Dresser (post vacant on the first day of January, April, July, and October, tenable for three months); candidates must previously have attended all their lectures, etc., and need not be qualified. At the City Workhouse and Workhouse Infirmary: Five Resident Medical Officers. At the Birmingham General and Branch Dispensaries: Eight Resident Surgeons. At the Birmingham Lunatic Asylums: Five Assistant Medical Officers. At the City Fever Hospitals: Three Assistant Medical Officers. At the Children's Hospital: One Resident Surgical Officer, one Resident Medical Officer. At the Birmingham and Midland Eye Hospital: Three Resident Surgeons. At the Orthopaedic and Spinal Hospital: Four Clinical Assistants (non-resident). At the Ear and Throat Hospital: One House-Surgeon, four Clinical Assistants (non-resident). There are also four non-resident Poor-law appointments in the gift of the Board of Guardians.

Besides the above-mentioned positions in institutions in the city of Birmingham, there are numerous resident appointments in the Hospitals in the immediate vicinity which are open to the students of the Birmingham Medical School, such as the West Bromwich Hospital; the Guest Hospital, Dudley; the Warneford Hospital, Leamington; the Kidderminster Infirmary; the Worcester General Infirmary; and the Walsall and District Hospital. Most of the above positions are at the present time occupied by past students of the School.

Clinical Prizes.—The following prizes will be given annually: Senior Medical Prize, for students during their "final" year, to the value of £5 5s.; Senior Surgical Prize, ditto, £5 5s.; Junior Medical Prizes, for students before the commencement of the "final" year, to the value of £3 3s.; Junior Surgical Prize, ditto, £3 3s.; Midwifery Prize, for students during their "final" year, to the value of £4 4s.

UNIVERSITY COLLEGE, BRISTOL: FACULTY OF MEDICINE.

The lectures and instruction given in the Faculty of Arts and Science of University College, Bristol, are adapted to the various Preliminary Examinations, including the Preliminary Scientific Examination of the University of London; and students can complete in Bristol the entire course of study required for the medical and surgical degrees of the University of London, the diplomas of the Royal College of Physicians of London and the Royal College of Surgeons of England, and of the Apothecaries' Society of London, and for the Examinations for admission to the Royal Navy and the Indian Medical Services, and the Royal Army Medical Corps.

Students of the College are admitted to the Clinical Practice of the Bristol Royal Infirmary and the Bristol General Hospital conjointly, and consequently both these institutions are open to all students.

The Infirmary and the Hospital comprise between them a total of 470 beds, and both have very extensive Out-patient Departments, Special Departments for the Diseases of Women and Children, and of the Eye, Ear, and Throat, besides large Outdoor Maternity Departments and Dental Departments. Students may also attend the practice of the Bristol Royal Hospital for Sick Children and Women, containing 104 beds, and that of the Bristol Eye Hospital, with 40 beds. The total number of beds available for clinical instruction is therefore 614. Very exceptional facilities are thus afforded to students for obtaining a wide and thorough acquaintance with all branches of Medical and Surgical work. Each student has the opportunity of personally studying a large number of cases and of acquiring practical skill in diagnosis and treatment.

Appointments—Royal Infirmary: House-Physician, House-Surgeon, Junior House-Physician, and Junior House-Surgeon; Clinical Clerks and Dressers, also Ophthalmic, Obstetric, and Pathological Clerks are appointed. The Dressers reside in the Infirmary in weekly rotation. *General Hospital:* House-Surgeon, Assistant House-Surgeon; Assistant House-Physician, and Casualty House-Surgeon; Clinical Clerks, Dressers, and Obstetric, Ophthalmic, and Pathological Clerks are appointed. The Dressers reside in the Hospital in rotation free of expense.

Scholarships and Prizes.—(1) University Entrance Scholarships, £50. (2) Lady Haberfield Entrance Scholarships, £30 (about), after examination in subjects of general education. (3) Martin Memorial Pathological Scholarships, two of £10 each. (4) Tibbits Memorial Prize, value 9 guineas, for proficiency in Practical Surgery. (5) Committee Gold Medal for fifth-year Students for general proficiency. (6) Committee Silver Medal for the same. (7) Augustin Prichard Prize, value about 7 guineas, for proficiency in Anatomy. (8) Henry Clark Prize, value about 11 guineas, for general proficiency. (9) Crosby Leonard Prize, value 7 guineas, for proficiency in Surgery. (10) Suple Surgical Prize, a Gold Medal and 7 guineas in money. (11) Suple Medical Prize, a Gold Medal and 7 guineas in money. (12) Henry Marshall Prize, value about £12, Dresser's Prize. (13) H. M. Clarke Scholarship, value £15, for proficiency in Surgery. (14) Sanders Scholarship, value £22 10s., for general proficiency. Prizes and certificates are also awarded in the various classes of the College.

Fees.—The composition fee for the College courses is 70 guineas (or 75 guineas in two instalments). Dental Composition Fee, 60 guineas.

Clinical and Bacteriological Research Laboratory.—This Laboratory has been established with the view of enabling medical men in the West of England to obtain reliable information and reports upon pathological material, to assist them in the clinical investigation of cases presenting obscure symptoms, and to afford them the opportunity of personally carrying out investigations.

Full information can be obtained on application to the Dean of the Medical Faculty, Professor E. Markham Skerritt, University College, Bristol.

THE UNIVERSITY OF LEEDS SCHOOL OF MEDICINE.

Clinical instruction is given at the Leeds General Infirmary, which has over 440 beds in constant use, and includes gynaecological and ophthalmic wards and a large new out-patient department. The Ida Semi-convalescent Hospital attached to the Infirmary has over 40 beds. The West Riding Lunatic Asylum at Wakefield is also open for the study of Mental Diseases. Students can, in addition, attend the practice of the Leeds Public Dispensary, the City Fever Hospitals (100 beds), and the Hospital for Women and Children.

Appointments.—Senior Anaesthetist, £50. Five Anaesthetists, £25 each. The Resident Medical, Surgical, and Casualty Officers, each at £100 per annum. The Resident Ophthalmic Officer at £50 per annum. A Resident Obstetric Officer at £50 is attached to the Gynaecological ward and an extensive external maternity department. A Resident Medical Officer is appointed every six months for the Ida Hospital (honorarium £25). Six House-Physicians, each holding office for six months, and four House-Surgeons holding office for twelve months. Physicians' Clerks and Surgeons' Dressers are appointed for six months; Ophthalmic and Aural Dressers, Gynaecological Ward Clerks, Gynaecological Out-patient Clerks, Maternity Clerks, Assistant Physicians' Clerks, Laryngological Clerks, and Assistant Surgeons' Dressers, Assistant Ophthalmic Surgeons' Dressers, Dressers in the Casualty Room, *Post-mortem* Clerks, and Laboratory Assistants for three months. A Pathological Curator (£120 per annum) has charge of the new pathological laboratory. Appointments are also open to students at the Leeds Public Dispensary (three Resident Medical Officers, with salaries commencing at £80), at the Hospital for Women (House-Surgeon, honorarium £120, and Anaesthetist £25), and at the West Riding Asylums.

Entrance Scholarships.—The University awards annually a Scholarship in the form of a free admission to the lectures and classes covered by the composition fee. Candidates must have passed the First (Scientific) Examination of the University, or the Preliminary Scientific (M.B.) Examination

of the London University. The subjects of the examination are those included in the above examination. The Infirmary also awards a scholarship of the value of 40 guineas in the form of a free admission to the clinical teaching of the Infirmary. The subjects of the examination are: (*a*) Latin, (*b*) Elementary Mathematics, (*c*) English Language (including an essay), (*d*) English History, and (*e*) one of the following languages: French, German, or Greek.

Fees.—The composition fee for the University courses is £67 4s. For those who have passed a Second Professional Examination, 41 and 37 guineas respectively for University or non-University courses.

Further information can be obtained from the Dean, School of Medicine, Leeds, or from the Secretary of the Faculty, General Infirmary, Leeds.

The Victoria University of Manchester: Medical Department.

The Royal Infirmary contains 290 beds; associated with it are the Convalescent Hospital (136 beds) and the Royal Lunatic Asylum at Cheadle, accommodating, with its branches, 350 patients.

Appointments.—The following appointments are made: A Surgical Registrar, at £80 per annum, and an additional £30 is paid to that officer when acting as Surgical Tutor; a Pathological Registrar, at £100 per annum; a Medical Registrar, at £70 per annum; a Director of the Clinical Laboratory at £70 per annum; an Assistant Director of the Clinical Laboratory at £50 per annum; Assistant Medical Officer and an Assistant Surgical Officer, each at £50 per annum; an Anaesthetist, at £50 per annum: an Assistant Anaesthetist, at £50 per annum; a Third Anaesthetist is appointed for six months, 30 guineas; an Accident House-Surgeon is appointed for three months, 20 guineas; Resident Officer, one year, £150 per annum; ditto, at Cheadle, one year, £150 per annum; Resident Surgical Officer, one year, £150 per annum; an Assistant Medical Officer at the Convalescent Hospital at Cheadle is appointed every six months, at a salary of £80 per annum; two House-Surgeons and two House-Physicians are appointed every three months for a term of six months. The House-Physicians and House-Surgeons and Resident Assistant at Cheadle must possess a qualification which can be registered. Four or more Clinical Clerks are attached to each Physician and Assistant-Physician, and to the Obstetric Physician, and four or more Dressers to each Surgeon and Assistant-Surgeon, and to the Ophthalmic Surgeon, and four or more Clerks to the Pathological Registrar, two Clerks to the Director of the Clinical Laboratory, and a number of Clerks, not exceeding 6, are appointed to assist the Medical Officer for Home Patients. Accident Room Dressers will be appointed every three months, and will hold their appointments for three months; there will be three Senior Dressers and twelve or more Junior Dressers, the former selected from students who have acted as Dressers in the ward for a full period of six months. Additional Clinical Clerks are appointed to assist in the departments for the Diseases of the Eye, Ear, and Throat.

Entrance Scholarships.—For more detailed particulars as to Fellowships, Scholarships, Exhibitions, and Prizes, and dates of examinations, see the *Calendar* (Manchester: At the University Press, Sherratt and Hughes). Rogers and Seaton Scholarships (in alternate years), £40 per annum, tenable for two years. Subjects: Greek and Latin. Credit given for knowledge of Geometry, Algebra, French, German, and English. Examination, May, 1905. Dalton (entrance), two of £40, one of which will be awarded annually, except in such years as a Cartwright Scholarship is awarded; tenable for two years. Subjects: Geometry (Euclid I to IV and VI, or the subjects thereof); Algebra (as far as the Binomial Theorem, inclusive); Plane Trigonometry (to Solution of Triangles); Elementary Analytical Geometry, the Conic Sections. Credit given for knowledge of Classics and Modern Languages (including English); Examination in May, 1905. Cartwright Scholarship, £35 per annum, tenable for three years; subjects as in Dalton. Examination in 1905. Hulme, three of £35, one of which will be awarded annually, tenable for three years. Examination in May, 1905. Subjects: English Language (Grammatical Structure and Outlines of Its History); English Literature (an Essay on some subject of English Literature), and Modern History (Outlines of English History and Geography); with at least two of the following: Latin (Translation at sight; Grammar and Easy Composition); Greek (ditto); French (ditto); German (ditto). Credit given for knowledge of Mathematics (Geometry and Algebra). James Gaskill, two of £35, one of which will be awarded annually, and tenable for two years. Examination in May, 1905. Subjects: Mathematics—Geometry, the subjects of Euclid, I to IV and VI; Algebra, as far as the Binomial Theorem inclusive; Plane Trigonometry (to Solution of Triangles); Elementary Mechanics, including composition and resolution of forces in a plane, centre of gravity of simple bodies, uniform acceleration, direct impact, the elements of Hydrostatics, Boyle's Law. Chemistry: Inorganic Chemistry; Practical work, including preparations, analysis of mixtures of inorganic salts, easy quantitative analysis. Credit given for knowledge of Classics, elements of English Language, Literature, and History; French, German. Dora Muir Scholarship, £25 per annum, tenable for three years, and open to the competition of women students only. The Scholarship will be awarded on the results of the Examination for the Entrance Scholarship, and candidates may elect to take such papers as they desire from amongst those set for other Entrance Scholarship Examinations, with the sanction of the Senate. Next competition in May, 1905. Sir J. P. Kay-Shuttleworth Scholarship, £30 per annum, tenable for three years, open to the competition of scholars from Sedbergh School, Giggleswick School, and Burnley Grammar School. Next competition in May, 1906. Subjects: Geometry, Algebra, Trigonometry, Chemistry, Practical Chemistry, and Mechanics, as in the James Gaskill. Theodores Modern Languages Exhibition, £15, awarded annually. Examination in May, 1905. Subjects, French and German. Two Dauntesey Medical Scholarships, value £35, tenable for one year. Candidates must not have attended lectures in a medical school. Subjects of examination: Zoology, Botany, and Chemistry. The successful candidates must enter for the full course of medical studies at the University. A Gilchrist Scholarship of £50 per annum, tenable for three years at the University; awarded annually upon the results of the June Matriculation Examination of the University. A Matriculation Entrance Scholarship of the value of £30 per annum, and tenable for three years, is awarded to the duly qualified competitor who stands highest at the July Matriculation Examination. Grammar School Scholarships, 3 of £25 per annum, tenable for three years, open to scholars of the Manchester Grammar School between the ages of 16 and 21. Subjects: Mathematics with Classics and Physical Science in alternate years. A subject for an English Essay will be set each year. Examination on May 15th, 17th, and 18th, 1905. Subjects: Mathematics and Physical Science. Entrance Scholarships in Medicine.—Two each of the value of £100, will be awarded annually for proficiency in Arts and Science respectively. The award will be made on the proofs of proficiency shown. Robert Platt Zoological and Botanical Scholarship—£50 for one year, but renewable for a second year—awarded to the candidate who shows most promise for prosecuting original research in Zoology or Botany. (Next award, 1905.) Other Fellowship Scholarships and Exhibitions varying in value from £15 to £100 are also offered for award.

Fees.—The composition fee for the University courses is £70, payable in two instalments of £35 each.

Prospectuses may be obtained from the Registrar, Mr. E. Fiddes, M.A.

University College, Sheffield: Department of Medicine.

The Favell Laboratory of Physiology has been equipped to fulfil the most modern requirements. The department consists of a lecture theatre (with lantern for demonstration purposes), students' laboratory, preparing room, and galvanometer room. Each student has his own bench, with gas, water, electric light, and the requisite apparatus.

The Pathology Department is at present situated in premises adjacent to the College. It contains a large museum, students' laboratory and lecture room, and also a bacteriological laboratory, which has been completely equipped by a "Sheffield Citizen." The Laboratory is recognized by the Royal Colleges of Physicians and Surgeons, and by Cambridge University and by the University of London, and full courses of laboratory instruction are given for the D.P.H.

The Arthur Jackson Chair of Anatomy has been founded by Mrs. Arthur Jackson in memory of her late husband. The Anatomical Department has been improved by the addition of a new theatre and museum.

Clinical instruction in Medicine and Surgery is given at Sheffield Royal Infirmary and the Royal Hospital, and in

Midwifery and Gynaecology at the Jessop Hospital for Diseases of Women (80 beds). Students are also admitted to the practice of the Borough Fever Hospitals and the South Yorkshire Asylum. The Royal Infirmary contains 247 beds, including Ophthalmic Wards (30 beds) and departments for Diseases of the Skin and of the Ear, Nose, and Throat. The Royal Hospital contains 160 beds, and Dental and Ophthalmic departments, and special out-patient departments for Diseases of the Skin, Nose and Ear, Eye, Throat, and Mental Diseases.

Dental Department.—A complete course of instruction in the subjects required for the L.D.S. has been inaugurated at the College. Dental Hospital practice being taken out at the Royal Hospital. The three years' course of Mechanical Dentistry may be taken out in the Dental Laboratory of the same institution.

Scholarships, etc.—An Entrance Scholarship of the value of £110 is awarded annually to the best candidate, if of sufficient merit, in Latin, Mathematics, Elementary Physics, Inorganic Chemistry, and English. The "Kaye Scholarship" (being the interest on £900) for second-year students is awarded annually under certain regulations. Prizes in Clinical Medicine and Surgery are awarded by the Clinical Committee. Certificates and Book Prizes are awarded annually.

The building of the new College is in active progress, and will be completed in October, 1905. The new building, which will contain the departments of Arts, Science, and Medicine, is on a site adjoining Weston Park, and is within easy distance of the hospitals. The foundation-stone was laid on June 30th, 1903, by the Lord Mayor of London.

Fees.—The composition fee, if paid at the commencement of medical study, is 60 guineas, or the fees may be paid 35 guineas at the commencement of the first and 30 guineas at the commencement of the second year. These fees do not include hospital practice or instruction. The composition fee for this is £45.

University of Durham College of Medicine, Newcastle-on-Tyne.

The Royal Infirmary contains 280 beds.

Appointments.—Assistant Demonstrators of Anatomy and Prosectors for the Professor of Anatomy, Assistant Physiologists, Pathological Assistants, Assistants to the Dental Surgeon, and Assistants in the Eye Department, Throat and Ear Department, and Department for Skin Diseases are elected annually. The Assistant Demonstrators of Anatomy receive £5 each; the others are unpaid. Four times in the year Clinical Clerks and Dressers are appointed for three months.

Scholarships.—A University of Durham Scholarship, value £100, for proficiency in Arts, open annually at the beginning of the winter session to intending students. The Dickinson Memorial Scholarship, interest of £400, with a gold medal, for Medicine, Surgery, Midwifery, and Pathology, open to perpetual students in their fifth year. The Tulloch Scholarship, interest of £400 annually, for Anatomy, Physiology, and Chemistry for students at the end of their second year. The Charlton Memorial Scholarship, interest of £700 annually, open to full students entered for the class of Medicine, at the end of their fourth or fifth winter. The Gibb Scholarship, interest of £500 annually, for Pathology, at end of summer session. The Goyder Memorial Scholarship, proceeds of £325; subjects: Clinical Medicine and Clinical Surgery. Luke Armstrong Memorial Scholarship, proceeds of £680, for best essay on some subject in Comparative Pathology. The Scholarship is open to all graduates in Medicine or Hygiene, and candidates for these degrees who have spent at least six months at the University of Durham, and whose age does not exceed 30 years. The Stephen Scott Scholarship in Surgery, interest on £1,000 annually. The Heath Scholarship. The late George Y. Heath, M.D., M.B., D.C.L., F.R.C.S., President of the University of Durham College of Medicine, bequeathed the sum of £4,000 to found a scholarship in surgery, the interest to be awarded every second year. First award in 1896. The Gibson Prize in Midwifery and Diseases of Women and Children, interest on £225.

Fees.—The composition fee for the College course is 72 guineas.

University College of South Wales and Monmouthshire: School of Medicine, Cardiff.

This College, which is one of the Colleges of the University of Wales, has, since its foundation in 1883, prepared students for the Preliminary Scientific Examination of the University of London, and for the corresponding examinations of other licensing bodies. In 1893, Chairs of Anatomy and Physiology and a Lectureship in Materia Medica and Pharmacy were established, making it possible for students of medicine to spend three out of the five years of prescribed study at Cardiff. Arrangements with the Managing Committee of the Cardiff Infirmary give students of the College the privilege of attending this large and well-ordered Hospital, which is situated within five minutes' walk of University College. Many students, especially from Wales and Monmouthshire, avail themselves of the opportunity thus afforded to pursue the earlier part of the medical curriculum near home.

All classes, at the College and at the Infirmary, are open alike to both men and women students over 16 years of age.

The courses of instruction given at Cardiff are recognized as qualifying for the examinations of the Universities, Royal Colleges, and other licensing bodies of Great Britain and Ireland.

Having spent two or three years in study at Cardiff, and having passed the examinations corresponding to these years, a student may proceed to London or elsewhere and complete his qualifying course for a University Degree or for a College Diploma.

Students preparing for the Preliminary Scientific and Intermediate Examination in Medicine of the University of London may compound for their three years' instruction at Cardiff by paying a single composition fee of £57 10s., or by paying £13 13s., £28, and £2, at the beginning of their first, second, and third years respectively.

Students preparing for the First and Second Examinations of the Conjoint Board for England, or for the corresponding examinations of the Conjoint Board for Scotland, or for those of the Society of Apothecaries, may compound for their classes by paying a single composition fee of £41 10s., or by paying £20 and £24 10s. at the beginning of their first and second year respectively.

In 1899 a department of Public Health was established, and Lecturers in Bacteriology and in Public Health and Hygiene were appointed. Medical men preparing for a Diploma in Public Health and Hygiene can attend complete courses of Lectures and Laboratory instruction in this department. These courses are recognized by the Universities of Cambridge and London, by the Royal Colleges of Physicians and Surgeons, and by Victoria University.

Students preparing for a University Degree in Medicine can, with some additional work in the first three years of their study, take courses qualifying for the B.Sc. degree in the University of Wales.

A course of Lectures to Midwives, adapted to the requirements of the Central Midwives Board, under the Midwives Act, will be commenced early in October, 1904. The Lectures will be suitable both for pupil midwives and practising midwives, as well as for nurses who desire to enter for the examination for certification under the Act.

Scholarships and Exhibitions.—A considerable number of scholarships and exhibitions are open to students of Medicine. The examinations for these take place in September (see Syllabus of Examination, which may be obtained on application to the College Registrar).

Further information may be obtained by application to the Dean of the Faculty of Medicine.

SCOTLAND.

University of Aberdeen.

The Faculty of Medicine comprises twelve chairs, from which instruction is given in all the main branches of medical science, namely, Botany, Zoology, Physics, Chemistry, Anatomy, Physiology, Materia Medica, Pathology, Forensic Medicine, Surgery, Medicine, and Midwifery. Special opportunities for practical instruction are afforded in the laboratories and museums attached to these departments. Clinical instruction is obtained in the Royal Infirmary (accommodating 200 patients), the Royal Lunatic Asylum (700 patients), the Sick Children's Hospital (75 patients), the City Fever Hospital (100 patients), the General Dispensary, etc. (10,000 out-patients annually), and the Ophthalmic Institution (1,600 patients annually). Courses of practical instruction are given in Diseases of Children at the Sick Children's Hospital; in Fevers at the City Fever Hospital; in Insanity at the Royal Asylum; in Diseases of the Ear and Larynx at the Dispensary; in Diseases of the Eye at the Infirmary and Eye

Institution; in Diseases of the Skin at the Royal Infirmary. The fee for each University course is, as a general rule, £4 4s.; and for a second attendance, £3 3s. Matriculation Fee, both sessions, £1 1s.; summer session alone, 10s. 6d.; Royal Infirmary, Perpetual Fee, £6; or, first year, £3 10s.; second year, £3. The winter session begins on October 11th, 1904. Bursaries, Scholarships, and Fellowships, to the number of fifty, and of the annual value of £1,180, may be held by students of medicine in this University. They range from £8 to £100 per annum, and are tenable in most cases for two or three years.

EDINBURGH UNIVERSITY.

Practical Instruction.—The following means are afforded for practical instruction: Royal Botanic Garden, Herbarium, and Museum; Zoological Laboratory and Museum of Science and Art; Physical Laboratory; Chemical Laboratories; Dissecting Room, Bone Room, and Anatomical Museum, Physiological Laboratory, Medical Jurisprudence Laboratories; John Usher Institute of Public Health; Materia Medica Museum and Laboratory: *Post-mortem* Department of the Royal Infirmary; and University Pathological and Bacteriological Laboratory; Royal Infirmary of fully 800 beds; Royal Hospital for Sick Children, with nearly 100 beds; Maternity Hospital; City Fever Hospital with nearly 400 beds; Mental Diseases at Royal Morningside Asylum; Tutorial Classes of Practice of Physic, of Clinical Medicine, and Clinical Surgery, Surgery, and Midwifery.

Fees.—The Sessional Fee for Zoology, Botany (Garden Fee, 5s.), Chemistry, Anatomy Lectures, Physiology, Pathology, Materia Medica, Medical Jurisprudence, Surgery, Medicine, Midwifery and Gynaecology, Clinical Surgery (Winter), Clinical Medicine (Winter), is £4 4s. each. Second Course, £3 3s. Third Free. A perpetual ticket taken at the beginning of the first year is £6 6s. Physics, Practical Chemistry, Advanced Practical Physiology, Practical Pathology, Clinical Surgery (Summer), Clinical Medicine (Summer), Practical Anatomy (Winter), Operative Surgery, Obstetric Operations, Practical Materia Medica, including Pharmacy, Pathological Bacteriology, Experimental Pharmacology, Vertebrate Morphology and Comparative Embryology are £3 3s. Practical Botany (besides Garden Fee of 5s.), Elementary Practical Zoology (besides charge of 10s. for Laboratory expenses), Practical Physiology (Experimental), Practical Physiology (Histological), Practical Botany (Advanced), Practical Zoology (Advanced), Practical Anatomy (Summer), Anthropology, Anatomy Demonstrations, Diseases of Children, Diseases of the Eye, Diseases of the Larynx, Ear, and Nose, Diseases of Tropical Climates, Clinical Instruction on Diseases of the Skin, Regional Anatomy, Physiological Chemistry, Invertebrate Zoology, Organic Chemistry, Mental Diseases, £2 2s. Applied Anatomy (medical and surgical), £1 1s. Vaccination, £1 1s. Matriculation Fee £1 for each year, or 10s. for a Summer Session. Library open from 10 to 4; Saturdays, 10 to 1.

Fellowships, Scholarships, Bursaries, and Prizes open for competition in 1904-5:

FELLOWSHIPS.

1. *The Syme Surgical Fellowship* of the annual value of £100, tenable for two years, open to M.B.'s of not more than three years' standing who present the best thesis on a surgical subject.
2. *The Goodsir Memorial Fellowship*, £100 yearly for two years, open to all graduates of Edinburgh and Licentiates of the Colleges, for the best essay on original work in anatomy.
3. *The Leckie-Mactier Fellowship* of about £70 per annum, tenable for three years, open to M.B.'s of not more than three years' standing, after written reports and commentaries on cases.
4. *The Allan Fellowship in Clinical Medicine and Clinical Surgery* of about £45, awarded annually, after competitive examination of the six candidates who obtain the highest marks in the subjects named in the Final Examination.

FUNDS FOR RESEARCH.

1. *The William Dickson Travelling Fund* of the annual value of £85, usually divided into grants of varying amounts.
2. *The Earl of Moray Fund* for the promotion of original research. The annual income is £600, available for payment of the actual expenses of original research.
3. *Carnegie Post-graduate Scholarships* (£100), *Fellowships* (£150), and grants in aid for research in medicine. Application forms from the Secretary to the Trust, 14, Hanover Street, Edinburgh. These to be returned by May 1st.

SCHOLARSHIPS.

1. *Six Vans Dunlop Scholarships* of £100 each, tenable for three years after competitive examination in various subjects of the University medical curriculum.
2. *Two Crichton Scholarships for Research*, each of the value of £100, tenable for one year, with power of reappointment, for knowledge of (1) materia medica and (2) pathology.
3. *The Mouat Scholarship in Practice of Physic* of about £57 (partly in money and partly in the form of a bronze medallion) for the highest place in the class of medicine, and the highest marks in medicine in the Final.
4. *The Murchison Memorial Scholarship*, annually. Proceeds of £1,000 for proficiency in clinical medicine. Examination in Edinburgh in 1905.
5. *The Buchanan Scholarship*, £40 annually, for proficiency in midwifery and gynaecology.
6. *The James Scott Scholarship*, of the value of about £34 annually, for proficiency in midwifery.
7. *The Elles Scholarship in Medicine*, £30 annually, to the most distinguished graduate.
8. *Two Hope Prize Scholarships*, each £30 for one year for excellence in chemistry.
9. *The Houldsworth Scholarship*, £46 annually, tenable for one year, with power of re-election, for promotion of research in pharmacology in the department of materia medica in the University.
10. *The Coldstream Memorial Medical Missionary Scholarship*. Proceeds of £400, tenable for five years, to first-year medical student who wishes to be a medical missionary.

BURSARIES.

1. *Town Council Bursaries.* A number are vacant. Apply "City Clerk, County Chambers, Edinburgh."
2. *The McCosh Graduates' Bursary* of about £168, and the *McCosh Medical Bursary* of about £12. Tenable for one year. Both for research.
3. *Sibbald Bursary* of £30 a year, tenable for three years.
4. *Two Thomson Bursaries*, £25 each, tenable for four years.
5. *Two Mackie Bursaries*, each of about £29, tenable for one year.
6. *Five Grierson Bursaries.* Three of £20 and two of £10. Preferential Bursaries in the first place.
7. *Two John Aitken Carlyle Bursaries*, each £29, tenable for one year.
8. *Four Mackenzie Bursaries*, each of £8, awarded annually in practical anatomy.
9. *Reston Bursary*, £20, tenable for one year, with restrictions.
10. *Two Crichton Bursaries*, £50 each, tenable for four years, for Scottish students.

PRIZES.

1. *The Medical Faculty Gold Medals*, given to M.D.'s whose theses are deemed worthy.
2. *The Neill Arnot Prize in Physics*, £39 annually.
3. *The Beaney Prize* for highest marks in Anatomy, Surgery, and Clinical Surgery in the Professionals, £32 annually.
4. *The Cameron Prize*, £80 annually, for "any highly important and valuable addition to practical therapeutics" in the course of the five years preceding the award.
5. *Two Gunning Victoria Jubilee Prizes*, one in Zoology, and one in Materia Medica, each of the value of £50, awarded at graduation in July, 1905.
6. *The Conan Doyle Prize*, of about £32, awarded annually to the most distinguished graduate of the year from South Africa.
7. *The Wightman Prize* in Clinical Medicine, £15 annually.
8. *The Pattison Prize* in Clinical Surgery, £11 annually.
9. *The Robert Wilson Memorial Prize* in Chemistry. Silver Medal and £8 annually.
10. *The Dorothy Gilfillan Memorial Prize* of £11 annually to the most distinguished woman student in the Final M.B., Ch.B.
11. *The Dobbie-Smith Gold Medal in Botany.* Open to all matriculated students of the year of award for an essay on a botanical subject.
12. *The Trustees of Gray's Prize Essay Fund* offer three prizes of £15, £10, and £5, for the first, second, and third best essays on "The Philosophy of History."

LECTURESHIP.

The Swiney Lectureship in Geology, value £144 per annum, tenable for five years, is open to graduates, and is in the patronage of the Trustees of the British Museum.

Full particulars of all these will be found in the University *Calendar* for 1904-5, price 3s., or in the Medical Programme, price 2d., to be had from Mr. Thin, 55, South Bridge, Edinburgh.

EDINBURGH ROYAL INFIRMARY.

Fees.—Six months, £4 4s.; one year, £6 6s.; perpetual, £12 in one sum, or separate payments, £12 12s.

Eight resident physicians and six surgeons are appointed every six months; they live in the house free of charge, save for laundry. They must be registered. Many non-resident clinical clerks are also appointed for six months. The physicians and surgeons appoint their own clerks and dressers, and assistants in the Pathological Department are appointed by the pathologists. Instruction is given in all the special departments.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, EDINBURGH.

The teaching is similar to that of the Scottish Universities, and the students receive similar certificates at the close of each session. The courses on the special subjects not included in the curriculum of the Examining Boards are also conducted by teachers specially qualified in each branch, and have for the last quarter of a century formed a special feature of the School.

This School of Medicine is composed of Lecturers licensed by the Royal Colleges of Physicians and Surgeons, and also recognized by the University through their *licentia docendi*, who, for the sake of convenience, lecture in separate buildings near at hand to the Royal Infirmary. The Lecturers form one body, are all subject to the same rules and regulations, and enjoy the same privileges. A new constitution and set of regulations have recently been drawn up, in virtue of which a medical corporation has been formed, recognized by both Royal Colleges, the government of the School is placed in the hands of a Governing Board consisting of five members elected by the Royal College of Physicians, of five members elected by the Royal College of Surgeons, and of five members elected by the Lecturers in the School. This Board, with the assistance of the Standing Committees of the School, supervises the whole management, and specially the maintenance of the efficiency and discipline of the School. The different buildings at present utilized for the purposes of lecturing are the following: 1. Surgeons' Hall, Nicolson Street; 2. Minto House, Chambers Street; 3. Nicholson Square; 4. Marshall Street; 5. the New School, Bristo Street; and other places.

Medical College for Women, Edinburgh.

Clinical instruction in the Royal Infirmary qualifies for graduation in the Universities. Precisely the same facilities for medical study are given as to male students in the School of Medicine, Edinburgh. Arrangements, fees, and regulations are similar. All the teachers are qualified lecturers of the School, and their courses admit to the various qualifying bodies for women. The lecturers are also recognized by the University of Edinburgh as giving courses admitting to the degrees of M.B., Ch.B. In the case of those proceeding to such degrees, the same fees as those in the University must be paid. The classes, with the exception of those in the Royal Infirmary, are open to all ladies, whether taking a full medical curriculum or not. Prospectus and all information from Miss H. F. Mackay, 20, Chambers Street (Minto House).

University of Glasgow.

The whole course of study required for graduation at the University of Glasgow can be passed in the Medical School of that University. Besides work of a practical and clinical kind in the hospitals, practical courses are conducted in the laboratories of the following departments: Surgery, Pathology, Public Health, Pharmacy, Physiology, Anatomy, Chemistry, Zoology, Physics, and Botany, the Botanic Garden and the Hunterian Museum being also open to students. New buildings and equipment have recently been provided for Botany at a cost of £19,000, for Practical Anatomy at £13,000, for Operative Surgery at £9,900, as well as for Pathology, while very large additions have been made to the Chemistry Laboratory, rendering it probably the most extensive in Scotland. New class-rooms and laboratories are now in course of erection for the departments of Physiology, Materia Medica, and Medical Jurisprudence and Public Health, to cost with equipment upwards of £60,000. The University has of late been making efforts to extend and improve the accommodation, especially the laboratories, of the medical departments, to strengthen the teaching staff, and to encourage post-graduate and research work.

Partial Study elsewhere.—Only two of the five years need be spent at the University; the remaining three may be spent in such university or schools, or under such teachers, as are recognized by the University Court.

Bursaries.—Bursaries confined to the Medical Faculty amount in annual value to about £950, while bursaries in any Faculty, amounting to about the same annual sum, may be held by students of medicine, a number of both sets being open to women. Some are definitely restricted to women. Several valuable scholarships may be held by medical students who have graduated in Arts.

Hospitals.—Three very extensive General Hospitals in the City afford exceptional opportunities for clinical instruction, namely, the Western Infirmary (416 beds), near to the University and attended by the bulk of the men students, the Royal Infirmary (587 beds), and the Victoria Infirmary (180 beds); while the Royal Asylum (460 beds), the Royal Hospital for Sick Children (74 beds), the Maternity Hospital (34 beds), the Glasgow Eye Infirmary (100 beds), the Fever Hospitals at Belvidere (680 beds) and Ruchill (528 beds), and other institutions, afford facilities for the practical study of special branches.

Fees.—The matriculation fee for each year is £1 1s., in most cases the fee for each University Class is £4 4s., but in some cases it is £3 3s. For hospital attendance students pay an entrance fee of £10 10s. at the Western Infirmary, with an additional fee of £3 3s. for each winter and £2 2s. for each summer clinical course; while at the Royal Infirmary the fees for the first year are £10 10s. and the total fees £21. The University fee for the four professional examinations is £23 2s. (£6 6s. for each of the first and second examinations, and £5 5s. for each of the third and fourth). For the whole curriculum, the fees for matriculation, class attendance, Hospital attendance and professional examinations, amount to about £150.

Public Health.—A new ordinance empowering the University to confer the degrees of B.Sc. and D.Sc. in Public Health received the sanction of the King in Council on May 20th, 1903. To be eligible for these degrees, candidates must be graduates of a University of the United Kingdom or of some other recognized University.

The Women's Department of the University (Queen Margaret College).—The course of study, degrees, regulations, fees, etc., are the same as for men. Women students have their own buildings, with class rooms, reading room, library, etc., and are mainly taught in classes apart from male students, but have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, where wards are reserved for their exclusive use, and in its dispensaries; also in the Royal Hospital for Sick Children; the Royal Asylum, Gartnavel; the City of Glasgow Fever Hospitals, Belvidere, and Ruchill; and the Glasgow Maternity Hospital.

Scholarships and Bursaries at Queen Margaret College.—The Arthur Scholarship, annual value £20, tenable for three years. Open to competition by medical students of first year at the First Professional Examination in October, 1904. This Scholarship is the gift of Mrs. Arthur, of Barshaw, and is restricted to women medical students. The following Bursaries are open to students of both sexes: The Dr. Thomas Gibson Bursary, annual value £36, tenable for four years. Open to medical students who are preparing for service as medical missionaries in connexion with the Church of Scotland. Next vacancy in 1904. It will be awarded to the eligible candidate who has gained the highest number of marks in the First Professional Examination. One Logan Bursary, annual value £17, tenable for four years; appointment by the Senate. Next vacancy, 1905. The Mackintosh Mental Science Bursary in Medicine, of the value of £31, is awarded annually to the student (of either sex) attending the class of Insanity, who stands first in an examination in that subject, to be held in June—the Bursar to continue the practical study of the subject to the satisfaction of the Faculty of Medicine. The William Gardiner Bursary, annual value about £14, tenable for two years, will be awarded after the autumn professional examination to the candidate who has passed in Physiology of the Second Professional Examination, and whose aggregate of marks in that subject and in Chemistry and Physics of the First Professional Examination is the highest. It is open in 1905. The following are tenable in any Faculty: two Pratt Bursaries (each £20 and tenable for four years) open in 1904, and two Taylor Bursaries (each £7, tenable for four years) are both open in 1905. Three Armagh Bursaries (£48 each, tenable for four years) one open in 1904 to students taking honours in Mathematics and Natural Philosopy in the Final Examination for the degree of M.A.; and one, tenable for two years, open in 1904 for the Honours Examination in Mental Philosophy. Two Andrew and Bethia Stewart Bursaries (£50 each, tenable for three years in Medicine or Law); candidates must have taken the M.A. degree of Glasgow. There is a special Examination. The Buchanan Society Bursaries have, in the meantime, been suspended. The directors have reserved power to award to Arts, Science, and Medical Students, Bursaries tenable at Scottish Universities, the amounts, conditions, and periods of tenure being in their discretion. The Carnegie Trust for the Universities of Scotland is empowered to pay the whole or part of the University ordinary class fees of students of Scottish birth or extraction, under conditions given in the College prospectus. The Dobbie Smith Gold Medal is awarded annually for the best essay on any subject within the Science of Botany. The Brunton Memorial Prize of £10 is awarded annually to the most distinguished graduate in Medicine of the year. The University Commissioners have issued an Ordinance to make regulations for the admission of women to certain other Bursaries, Scholarships, and Fellowships. Miss Galloway will supply details. See Prospectus for 1904-5.

Class and Examination Fees.—The class and hospital fees for the subjects enjoined by Ordinance as constituting a five years' course of study and clinical work amount to about £110 5s. To this must be added £5 5s. for matriculation fees (£1 1s. for each of five years), £23 2s. for examination fees, and £5 1s. for registration as a medical practitioner.

Board for Students.—A House of Residence for women students, Queen Margaret Hall, is situated near the College. The cost of board and residence is from 17s. to 25s. per week, according to accommodation. Full information can be obtained from Miss Galloway, Queen Margaret College; or from the Lady Superintendent, Queen Margaret Hall, Bute Gardens, Glasgow.

For further information male students may apply to Mr. W. Innes Addison, Matriculation Office, Glasgow University; women students to Miss Galloway, Queen Margaret College, Glasgow, W., from whom copies of the prospectus may be had.

St. Mungo's College, Glasgow.

The College buildings are situated within the grounds of the Royal Infirmary, the wards and clinical imstruction therein being available for students. Qualifying classes are held

during the winter in Physics, Zoology, Chemistry, Anatomy, Materia Medica, Physiology, Pathology, Medicine, Surgery, Ophthalmology, Gynaecology, Diseases of Throat and Nose, and in Public Health Laboratory Work. Instruction is also given daily in the Dispensary by the Assistant Physicians and Surgeons of the Royal Infirmary. During the summer the classes include Botany, Medical Chemistry, Practical Pathology, Practical Physiology, Anatomy, Operative Surgery, Diseases of Children, Clinical Medicine, Clinical Surgery, Medical Jurisprudence, Dermatology, Otology, Bacteriology, and Psychological Medicine. All classes in this College qualify for the diplomas of the English, Scotch, and Irish Conjoint Boards.

Class Fees.—£2 2s. for each class, except Anatomy, £4 4s.; Pathology, £4 4s.; Zoology and Botany, joint fee, £3 3s.; Otology, Throat and Nose, and Dermatology, £1 1s.

Hospital Fees.—First year, £10 10s.; second year (and perpetual), £10 10s.

Total cost of a qualifying course, including Corporation Licence, about £70.

A *Calendar* giving full particulars of the School may be obtained on application from the Dean, Professor Alex. MacPhail.

Glasgow: Anderson's College Medical School.

Classes are conducted in all the subjects of the five years' curriculum. Hospital Practice and Clinical Lectures in Western or Royal Infirmary; Pathology in Western or Royal Infirmary; Vaccination and Dispensary Practice in Western or Royal Infirmary Dispensary. These classes qualify for all the Licensing Boards in the United Kingdom. They are also recognized by the Universities of London, Durham, Ireland, Glasgow, and Edinburgh (the latter two under certain conditions which are stated in the School *Calendar*).

The new buildings are situated in Dumbarton Road, immediately to the west of the entrance to the Western Infirmary, within two minutes' walk of that institution, and four minutes' walk of the University.

The Carnegie Trust pay the fees of students at Anderson's College on conditions regarding which particulars may be obtained from the Secretary, Carnegie Trust Offices, Edinburgh.

A *Calendar* containing full particulars of the School may be obtained from the Secretary to the Medical Faculty, Anderson's College, Dumbarton Road, Partick, Glasgow.

Class Fees.—For each Course of Lectures (Anatomy, Ophthalmic Medicine, and Surgery, Aural Surgery, Diseases of Throat and Nose, and Mental Diseases excepted) first session, £2 2s.; second session (in Anderson's College), £1 1s.; afterwards free. For Practical Classes, in Chemistry, Botany, Zoology, Physiology, Pharmacy, first session, £2 2s.; second session, £2 2s. Reduced joint fees in Zoology and in Botany, for Lectures and Practical Class when taken in same summer session, £3 3s.; for either course separately, £2 2s. Anatomy Class Fees.—Winter: First session (including Practical Anatomy), £4 4s.; second session (including Practical Anatomy), £4 4s.; third session, £2 2s. Summer: Lectures and Practical Anatomy, £2 12s. 6d.; Lectures alone £1 11s. 6d.; Practical Anatomy alone, £1 11s. 6d.; Osteology and Practical Anatomy, £2 12s. 6d.; Osteology alone, £1 11s. 6d.; Operative Surgery, £2 2s. (laboratory fee, 10s. 6d.); Public Health Laboratory, £11 11s., or with Lectures, £12 12s. Ophthalmic Medicine and Surgery (including Hospital Practice).—Aural Surgery, Diseases of Throat and Nose, and Mental Diseases, £1 1s. Matriculation Fee.—Winter: 10s. to those taking two or more classes, which represents a combined fee for the winter and summer session: 5s. to those taking only one class. Summer: 5s., except to those who have paid a fee of 10s. for the winter session. Western Infirmary.—Fees: For Hospital Attendance, £10 10s.; for Clinical Instruction, winter session, £3 3s.; summer session, £2 2s. Students who have completed their Clinical course elsewhere shall be permitted to enter for a six months' course of the Hospital only on payment of a fee of £2 2s. Pathology.—First session, £3 3s.; second session, £2 2s. Practical Pathology.—First session, £4 4s.; second session, £3 3s. Vaccination fee, £1 1s. Royal Infirmary.—Fees: Hospital Practice and Clinical Instruction, first year, £10 10s.; second year, £10 10s.; afterwards free. Six months, £6 6s.; three months, £4 4s. Pathology, both courses, £4 4s. Vaccination fee, £1 1s. Attendance at the dispensaries of the Western and Royal Infirmaries is included in the hospital fee. Eye Infirmary. Fee: Hospital Practice and Clinical Instruction, including Lectures at the College, six months, £1 1s. The session opens on Thursday, October 13th, 1904.

University College, Dundee.

Some information as to this College will be found under the head of University of St. Andrews.

The new medical buildings containing laboratories and work room, for Anatomy, Physiology, Materia Medica, Pathology, Ophthalmology, Public Health, Medicine, Surgery, and Gynaecology will be opened in October.

Dundee Royal Infirmary.—The Infirmary contains 300 beds, with a special ward for the treatment of diseases of children. Four Resident Qualified Assistants are appointed annually. Clinical Clerks and Dressers are attached to the physicians and surgeons, and students are appointed to assist in the *post-mortem* room. Out-patients are seen daily at 9 a.m. There is an Intern and Extern Maternity Department connected with the Infirmary. The instruction given at the Infirmary is recognized for purposes of graduation by all the Scotch Universities, the University of London, the University of Cambridge, the Royal University of Ireland, and by the Royal Colleges of England and Scotland. Further information on application to the Medical Superintendent.

Dundee District Asylum.—The appointments include two qualified Resident Assistants and two Resident Clinical Clerks. Clinical instruction is given.

Fees.—The fee in the case of most of the classes is 4 guineas for systematic and 3 guineas for practical classes. The hospital ticket is 3 guineas a year or 2 guineas a session. The total fees for the five years' curriculum amount to about 100 guineas.

IRELAND.

Students desirous of prosecuting their medical studies in Ireland may attend the School of Physic in the University of Dublin; the Schools of Surgery of the Royal College of Surgeons of Ireland; the Catholic University School of Medicine, Dublin; or the Schools of Medicine of the Queen's Colleges in Belfast, Cork, or Galway. The student will be guided in making his arrangements for clinical instruction by the advice of the teachers of the School which he may select to attend.

School of Physic in Ireland, Dublin.

This school is formed by an amalgamation of the medical school of Trinity College and of the Royal College of Physicians; the King's Professors of Institutes of Medicine, Practice of Medicine, Materia Medica, and Midwifery being appointed by the latter.

Clinical instruction is given by the staff of Sir Patrick Dun's Hospital. The following Hospitals are also recognized by the Board of Trinity College: Adelaide Hospital, Royal City of Dublin Hospital, Dr. Steevens's Hospital; House of Industry Hospitals: Jervis Street Infirmary, Mater Misericordiae Hospital, Mercer's Hospital, Meath Hospital, the National Eye and Ear Infirmary, St. Mark's Ophthalmic Hospital, St. Vincent's Hospital, Richmond Asylum, St. Patrick's Hospital.

Catholic University Medical School.

Prospectuses and further information about this school, which provides complete courses of lectures as required by the examining bodies, may be obtained from the Registrar of the School, Cecilia Street, Dublin, who has written a very useful *Guide for Medical Students*. The total fees for school and hospital courses is £160, payable as the courses are taken out.

The Schools of Surgery of the Royal College of Surgeons in Ireland.

The Schools of Surgery are attached by Charter to the Royal College of Surgeons, Dublin, and have existed as a department of the College for over a century. They are carried on within the College buildings, and are specially subject to the supervision and control of the Council. The buildings have been reconstructed, the capacity of the dissecting room nearly trebled, and special Chemical, Pathological, Bacteriological, Public Health, and Pharmaceutical Laboratories fitted with the most approved appliances, in order that students may have the advantage of the most modern method of instruction. There are special rooms set apart for lady students. The entire building is now heated by hot-water pipes, and lighted throughout by the electric light. A refreshment room is also open, where students can have luncheon. The winter session commences October 1st, and the summer session April 1st. All the lectures and courses of practical instruction may be

attended by medical students who are otherwise unconnected with the College.

Prizes.—The Barker Anatomical Prize (£31); the Carmichael Scholarship (£15); the Mayne Scholarship (£15); the Gold Medal in Surgery, and the Stoney Gold Memorial Medal in Anatomy; Class Prizes of £2 and £1, accompanied by silver medals, will also be given in each subject.

Prospectus and *Students' Guide* will be forwarded post free on written application to the Registrar, Royal College of Surgeons, Dublin.

QUEEN'S COLLEGE, BELFAST.

The courses of study meet the requirements of the Royal University of Ireland and other examining bodies. The class fee is £2, except in a few cases. The total cost of the medical curriculum of the Royal University of Ireland, including examination fees and perpetual fee for the Royal Hospital, but not including fees for the special hospitals, is about £95. It amounts to about the same for the course of the Conjoint Board in Ireland.

Clinical instruction is given at the Royal Victoria Hospital. An entirely new hospital containing 300 beds was opened in July, 1903. *Fees*, six months, £7 7s.; nine months, £9 9s.; Perpetual, £21 in two instalments. The Maternity Hospital, the Ulster Hospital for Women and Children, the Hospital for Sick Children, the Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Poorhouse Infirmary, and the District Lunatic Asylum are open to students.

Prizes.—(1) Ten medical scholarships each year, value £20 each; (2) two Dunville studentships (one each alternate year), value £145 each; (3) one Andrews studentship each alternate year, value £145; (4) numerous sessional prizes.

The College contains laboratories in connexion with the departments of Chemistry, Physiology, Pathology, Anatomy, and Physics and Materia Medica.

All the medical classes are open to women students.

A Students' Union provides dining room, reading room, library, and various recreation rooms.

A pamphlet containing full information can be had free on application to the Registrar, Queen's College, Belfast.

QUEEN'S COLLEGE, CORK.

The arrangements in the Faculty of Medicine are made chiefly with reference to the requirements of the Royal University of Ireland, but students proceeding for the examinations of the Conjoint Boards of England, Scotland, or Ireland, the Society of Apothecaries of London or the Apothecaries Hall of Ireland can arrange the courses of Lectures which they attend, and the order in which they attend them, to meet the requirements of those bodies. Certificates of attendance in the College are also accepted by the University of Cambridge. The total fees for the College Lectures and Hospital attendances required by the Royal University of Ireland is about £85.

Clinical instruction is given at the North and South Infirmaries (each 100 beds). Students can also attend the Mercy Hospital (60 beds), the Cork Union Hospital, the County and City of Cork Lying-in Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session at Queen's College extends from October to April inclusive (twenty-seven weeks), but arrangements have been made for the delivery of some of the three months' courses of lectures during the months of April, May, and June. The Hospitals are open to students in May, June, and July also.

The College contains Laboratories in the Departments of Biology, Chemistry, Physiology, Pathology, and Materia Medica and Pharmacy, and there are a Botanic Garden and Plant Houses in the grounds.

Scholarships and Prizes.—Eight Medical Scholarships, two in each of the first four years, of the value of £25 each, and in the fifth year the Blaney Scholarship of the value of £32, and a Senior Exhibition, value £30. Three Exhibitions, one in Practical Medicine, one in Practical Surgery, and one in Practical Midwifery, each of the value of £15. Book prizes at the sessional examinations.

Further information (free) can be obtained in the College Regulations, or on application to the Registrar, Queen's College, Cork.

QUEEN'S COLLEGE, GALWAY.

The Lectures of the Professors in the Medical School of Queen's College, Galway, and the Clinical Instruction in the Galway Hospitals, are recognized as qualifying for the Diplomas of the Royal Colleges of Physicians and Surgeons of Ireland, England, and Scotland, and for the Medical Degrees of the University of London and the Royal University of Ireland.

Clinical teaching is carried on in the Galway Hospital, established as a Public General Hospital (in the place of the County Galway Infirmary) by Act of Parliament (1892).

In addition to this, the Galway Fever Hospital[1] is open to Students of the Clinical Class. Here opportunities are afforded for studying the various forms of Fever and Zymotic Disease admitted during the College Session. The Medical Faculty has also made arrangements with the medical officers for the admission of students to the Galway Union Hospital. This Hospital affords an extensive field for the study of all classes of disease, acute and chronic. A special ward is set apart for the diseases of children, in which students will have an opportunity of studying this important class of cases. Opportunities for extra practice and vaccination are afforded at Galway Dispensary, No. 1. Students whose names are on the Clinical Roll of the Galway Hospital may attend any of the above-named institutions without further charge.

For further information as to the arrangements for clinical teaching (which are liable to alteration) application should be made to Professor Pye, Honorary Secretary of the Medical Staff of Galway Hospital.

CLINICAL HOSPITALS OF DUBLIN.

SIR PATRICK DUN'S HOSPITAL.

Clinical instruction is given in this hospital every morning of the week, including Medicine, Surgery, Diseases of Women, Fevers, Diseases of the Skin, and Pathology. A new Out-patient Department and Operating Theatre have recently been erected.

Special classes for students commencing their hospital studies are held during the months of October, November, and December.

The X-ray Department has recently been remodelled, and possesses the latest and most convenient arrangements for the study and treatment of injury and disease.

Clinical Medals and Prizes are awarded annually in Medicine and in Surgery. Full particulars can be had on application to the Secretary.

Appointments.—A House-Surgeon is elected each December, and four Resident Pupils are appointed each half-year.

Fees.—The payment of £12 12s. entitles a student to the benefits of Hospital Attendance and Clinical Teaching for the Winter and Summer Sessions. Fee for Winter Session only £8 8s., and for Summer Session only £5 5s. The fees will be received by Dr. E. H. Taylor, Honorary Secretary, or by any other member of the Hospital staff.

RICHMOND, WHITWORTH, AND HARDWICKE HOSPITALS.

These hospitals contain 312 beds: 110 for surgical cases, 82 for medical cases, 120 for fevers and epidemic diseases.

There are special clinics for diseases of the eye, throat, and nose, and diseases of women.

Appointments.—A Resident Surgeon and a Resident Physician are appointed every year, receive a salary, and hold office for one year. Eight Residential Clinical Clerks are appointed four times a year, and provided with furnished apartments, fuel, etc. These appointments are open not only to students of the hospitals, but also to qualified and unqualified students of other hospitals.

The Richmond Lunatic Asylum, containing over 1,200 patients, adjoins these hospitals, affording facility for the study of mental diseases.

Further information can be obtained from the Honorary Secretary, Dr. J. O'Carroll, 43, Merrion Square East, or the Honorary Treasurer, Sir William Thomson, C.B., 54, St. Stephen's Green East.

ADELAIDE MEDICAL AND SURGICAL HOSPITALS.

The hospitals contain 140 beds. Two House Surgeons and Physicians, resident and salaried, are appointed yearly, and three resident pupils are selected half-yearly.

Further particulars may be obtained from Mr. F. T. Heuston, 15, St. Stephen's Green North, Dublin, or any of the members of the medical staff.

ROYAL CITY OF DUBLIN HOSPITAL.

This hospital, in addition to the general Medical and

[1] The Royal University and other Licensing Bodies require a certificate of attendance for three months at a hospital devoted to the treatment of fever.

Surgical Wards, contains special wards for Ophthalmic and Aural cases, Diseases of Women, and Diseases of Children. There is also an isolated building for the reception of infectious cases. An entirely new operation theatre has been constructed in accordance with the most modern surgical requirements. Roentgen-ray and Lupus Lamp Departments have been installed.

Appointments.—Clinical Clerks to the Physicians and Dressers to the Surgeons are appointed from the most deserving of the class, and certificates awarded for the faithful performance of their duties. Medical and Surgical Resident-Pupils are appointed, and special certificates awarded if merited. A Resident Medical Officer is appointed annually.

For detailed prospectus or further particulars apply to Mr. G. Jameson Johnston, F.R.C.S.I., Honorary Secretary, Medical Board, 13, Lower Fitzwilliam Street, or at the Hospital.

Jervis Street Hospital, Dublin.

Jervis Street Hospital is the oldest established in Dublin. The new hospital has been only completed since 1896 and is consequently up to date in every respect. There is a largely attended Dispensary, which includes special Departments for Eye, Ear and Throat, Skin, and for the Diseases peculiar to Women. Clinical Instruction is given daily in the Wards and Dispensaries. Systematic Courses of Lectures are given and illustrated by cases, in every branch of Surgery and Medicine. Arrangements have been made by which the Students of this Hospital can attend lectures on the Diseases of Infancy and Childhood, and on Orthopaedic Surgery and Appliances, at the Children's Hospital, Temple Street, without any extra charge whatever. Two Resident Surgeons and twelve Resident Pupils are appointed annually. Clinical Clerks and Dressers are also appointed periodically. Gold and silver medals are awarded annually by examination, besides other prizes and special certificates to deserving students.

Mater Misericordiae Hospital.

This hospital contains 338 beds. Fifty beds are reserved for the reception of patients suffering from fevers and other contagious diseases. There is a convalescent home containing 50 beds.

Appointments.—Two House-Physicians, six House-Surgeons, and twelve Resident Pupils are elected from the most attentive of the class each year.

Entries are to be made with and fees paid to the Registrar, Dr. Martin Dempsey, 35, Merion Square.

A prospectus containing in detail the arrangements for clinical instruction, prizes, etc., may be obtained from the Secretary of the Medical Board.

Mercer's Hospital.

This hospital, founded in 1707, is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery of the Royal College of Surgeons, the Catholic University School of Medicine, and within five minutes' walk of Trinity College. It contains 120 beds for medical and surgical cases, and arrangements have been made with the medical officers of Cork Street Fever Hospital whereby all students of this hospital are entitled to attend the clinical instruction of that institution, and become eligible for the posts of Resident Pupils, etc. There is a large Out-Patient Department, and a special department for Diseases Peculiar to Women. There are also special wards for the treatment and study of children's diseases. During the past few years the hospital has undergone extensive alterations in order to bring it up to modern requirements.

Appointments.—A House-Surgeon is appointed annually. Five Resident Pupils, each for six months, and Clinical Clerks and Dressers are appointed monthly from amongst the most deserving members of the class.

Fees.—Winter, six months, £8 8s.; summer, three months, £5 5s.; nine months, £12 12s.

For further particulars apply to R. Charles B. Maunsell, M.B., F.R.C.S., 32, Lower Baggot Street, Dublin.

Dr. Steevens's Hospital.

This hospital, situated at Kingsbridge, contains over 200 beds. Three new wards have recently been opened. It affords exceptional advantages for clinical instruction; owing to its position amongst manufactories and railway works a large number of casualties are always under treatment in the institution, while there are to be found occupying its beds at all times numerous cases of acute and chronic medical and surgical disease. There is a ward entirely devoted to venereal diseases, and a detached building for fever cases; in connexion with the hospital is a newly-built extensive out-patient department, with separate clinics for diseases of the eye and ear, skin, throat, teeth, and diseases of women. In addition to these special dispensaries, a general dispensary is held daily. Every opportunity is afforded to the students to become thoroughly familiar with the modern appliances used in diagnosis and treatment of disease. Operations are performed on Tuesday, Thursday, and Saturday. Gynaecological operations on Wednesday. There is accommodation in the hospital for four medical, six surgical, and two specialist (Gynaecology and Ophthalmology) resident pupils, who are provided with separate furnished rooms, with coal and gas, and also a comfortable common sitting room for meals, which can be obtained at a reasonable rate.

Fees.—Hospital practice, Nine months, 12 guineas; six months, 8 guineas: three months, 5 guineas; Residence: Each three months, 10 guineas, which includes fee for hospital practice and certificate.

A prospectus and particulars may be obtained from the Resident Surgeon at the hospital, or from William S. Haughton, M.D., Honorary Secretary, 30, Lower Fitzwilliam Street.

St. Vincent Hospital.

The hospital contains 165 beds, and has attached to it a crowded dispensary and three special dispensaries. The whole practice of the hospital is available for clinical instruction, which is carried on during the session in the most systematic manner, from 9 to 12 o'clock in the forenoon. Two successive classes, and a special class for junior students, visit the wards each morning under the guidance of the physician and surgeon on duty, by whom instruction at the bedside is given in various details of diagnosis and treatment, and every facility is thus given to students for learning the practical part of their profession. Lectures are delivered on special subjects, and operations are performed in the theatre. The number of major operations performed during the nine months ending June 30th has been upwards of 700. *Post-mortem* examinations are made in the pathological theatre, and frequent opportunities are given for the examination of morbid specimens. There is a museum in connexion with this department. Instruction is also given daily in the dispensaries, from 10 to 12 o'clock on a great variety of cases, the treatment of such diseases as are there met with forming a most important part of every practising physician's daily work. Two resident medical officers and sixteen resident pupils are appointed annually from amongst the most deserving members of the class. The fees for clinical attendance are the same as at the other Dublin hospitals. Special arrangements have been made with the Fever Hospital, Cork Street, and with other hospitals for providing senior students with clinical instruction in infective fevers, as required by the Licensing Bodies, without extra charge. Further particulars can be obtained on application to the Honorary Secretary of the Medical Board, R. F. Tobin, F.R.C.S.I., 60, Stephen's Green, Dublin.

Meath Hospital and Co. Dublin Infirmary.

This hospital contains 150 beds available for clinical teaching. There is a separate building for the isolated treatment of Fevers. There are Accident Wards and an Operating Theatre, in connexion with which all the modern requirements of surgical teaching have been provided. The certificates of this hospital are recognized by all the universities and licensing bodies of the United Kingdom. Special classes are arranged for Junior Students at the commencement of the session.

Twenty Medical and Surgical Resident Pupils and Clinical Clerks and Dressers are appointed every session, and a House-Surgeon is elected annually.

A prospectus giving the complete arrangements for the Medical and Surgical Classes for the coming session may be obtained from the Honorary Secretary of the Medical Board, Dr. F. Conway Dwyer, F.R.C.S.I., 9, Rutland Square, Dublin.

Rotunda Hospital.

Master—Dr. E. Hastings Tweedy.

This institution consists of two distinct hospitals, and is the largest Maternity as well as Gynaecological Hospital in the British Empire.

A recently constructed annex contains 40 beds for the treatment of diseases of women.

Over 2,000 patients are admitted annually to the maternity wards, a similar number are attended at their own homes,

whilst over 12,000 patients are attended in the out-patient department.

A new Pathological Laboratory has become an important feature of the hospital.

Clinical instruction includes daily lectures and practical demonstrations in Midwifery, Gynaecology and Cystoscopy.

The diploma from this hospital is granted to pupils on their passing an examination, after a period of six months' attendance on the practice of the hospital.

Paid clinical clerks are appointed (by examination) from amongst qualified men who have obtained the hospital diploma.

The new residential quarters have recently undergone complete renovation and now afford comfortable accommodation. The grounds of the hospital contain asphalt and grass courts for lawn tennis and croquet.

Pupils can enter at any time for a period of one month or longer. The hospital offers exceptional opportunities for qualified practitioners of any nationality who desire to take out a course of post-graduate instruction.

Fees.—Intern pupils: Six months, £21; three months, £12 12s.; two months, £9 9s.; one month, £6 6s. Extern pupils: Six months, £10 10s.

ROYAL VICTORIA EYE AND EAR HOSPITAL, ADELAIDE ROAD, DUBLIN.

This hospital is an amalgamation of the two institutions which have heretofore given special instruction in ophthalmology separately—namely, St. Mark's Ophthalmic Hospital and the National Eye and Ear Infirmary. This hospital, which was opened in February last, contains 80 beds. Clinical instruction in diseases of the eye, including the use of the ophthalmoscope, is given daily. Operations are performed daily as occasion requires. Instruction in aural surgery is also given. Special classes for practical instruction in the use of the ophthalmoscope, etc., and for the demonstration of cases, are formed from time to time.

CLINICAL HOSPITALS.

OPPORTUNITIES for clinical instruction and study are afforded by many hospitals which are not directly connected with any medical school, to which the post-graduate student, and in many cases the student in the fifth year of the curriculum, will find it to his advantage to resort, since they offer great facilities for gaining practical clinical experience. The following pages contain brief particulars as to the more important of them.[1]

LONDON.

Clinical instruction and appointments as Clinical Assistants can be obtained at most of the Special Hospitals in London, as well as at the General Hospitals to which medical schools are not attached. Resident appointments (Resident Medical Officer, House-Physician, House-Surgeon, etc.) are made from time to time, and vacancies are announced in our columns. The appointments are usually for stated periods of six or twelve months.

GENERAL HOSPITALS.

Great Northern Central Hospital, Holloway Road, N.—This hospital is recognized by the Examining Board in England of the Royal Colleges of Physicians and Surgeons as a place of study during the fifth year of the medical curriculum. The hospital contains 158 beds, all of which are at present occupied. The large rectangular and circular wards, each of which contains 20 beds and 4 cots, the operation theatre, an additional theatre, and a new surgery block containing 2 observation wards, patients' waiting hall, examining rooms and surgery proper now in course of erection, out-patient department general and special, and the pathological departments, have all been erected since 1887. Medical practitioners are invited to attend the general and special practice of the hospital. Clinical Assistants (qualified), Clinical Clerks, and Pathological Clerks are appointed in the general and special departments, and may receive certificates at the end of their terms of office. There are five Resident Medical Officers, one Senior and two Junior House-Surgeons, Senior and Junior House-Physicians, also Pathologist, Registrar, Casualty Officer, and four Anaesthetists. Full particulars of and rules for these appointments can be obtained from Mr. C. F. Peyton Baly, L.D.S., M.R.C.S., Honorary Secretary of the Medical Committee.

London Temperance Hospital.—The hospital contains 100 beds. The medical and surgical practice is open to students and practitioners. Appointments (vacancies for which are advertised in the medical journals): Surgical and Medical Registrars, Resident Medical Officer, one Assistant Resident Medical Officer, and Assistant House-Surgeon. For particulars as to hospital practice and classes apply at the hospital.

Seamen's Hospital Society.—Dreadnought Hospital, Greenwich, 225 beds. Branch Hospital, Royal Victoria and Albert Docks; 50 beds. Dispensary in the East India Dock Road, and at Gravesend. The London School of Tropical Medicine is attached to the Seamen's Hospital Society, and is situated within the grounds of their branch hospital in the Royal Victoria and Albert Docks. In this hospital are constantly to be found many cases of tropical disease, and opportunities are afforded to students and others to study Practical Surgery and Diseases Incidental to Tropical Climates. Four hundred and thirty students have joined the school since October, 1899, of which number 26 were women graduates. See also p. 532.

West London Hospital, Hammersmith Road, W. (West London Post-graduate College).—The hospital contains 159 beds, all of which are now in occupation. Some 2,500 in-patients are treated in the hospital during the year. The teaching in the hospital is especially devoted to the requirements of post-graduates. The Physicians and Surgeons attend on Mondays, Tuesdays, Wednesdays, Thursdays, and Fridays at 2 30 p.m. and instruction is given by the Assistant Physicians and Surgeons in the out-patient department daily at 2.15 p.m. A course of twenty-seven special demonstrations is given in the wards by the Physicians and Surgeons each session. Operations are performed daily at 2.30 p.m. There are special departments for Diseases of the Eye, Skin, Ear, Throat and Nose, Women, X Rays, Medical Electricity. Post-graduate lectures are delivered daily, except Saturdays, at 5 o'clock. The date of the commencement of each course is advertised in the medical journals. No junior students are admitted to the practice of the hospital. The study certificate of the College is recognized by the Army Medical and Naval Medical Departments for "study leave." There is a pathological investigation laboratory attached to the hospital in charge of a Pathologist, at which instruction is given in practical pathology and elementary bacteriology and microscopy. A special class in Bacteriology commences the beginning of each month. A large lecture room, together with reading and writing rooms, lavatories, etc., are provided for the use of post-graduates. The fee for the hospital practice, including Post-graduate Lectures, is £2 2s. for one month, £4 4s. for three months, and £9 9s. for one year. For Post-graduate Lectures alone, £1 1s. for a course of 10 lectures. Full particulars of the next Post-graduate Course, and any other information about Post-graduate teaching can be obtained on application to the Dean, Mr. L. A. Bidwell, at the hospital.

North-West London Hospital, Kentish Town Road.—The hospital, which was established in 1878, provides 53 beds. It is a general hospital. There are two spacious wards for men and women respectively. The children's wards contain 18 cots. The special departments include: (1) Diseases of women; (2) diseases of the eye; (3) diseases of the skin; (4) dental. There are two resident officers; an honorarium at the rate of £50 per annum attaches to each post. Operation day, Thursday at 2.30 o'clock. Further particulars from the Secretary at the hospital.

Tottenham Hospital, N.—This general hospital, which is in the midst of a densely-populated neighbourhood, is authorized by the University of London to give certificates of Post-graduate study for the M.D. and M.S. degrees (see p. 493). It is on the high road, South Tottenham, N., within a few minutes' walk of the stations of South Tottenham (Midland Railway), Seven Sisters (Great Eastern Railway), and Tottenham Hale (Great Eastern Railway Main Line), and can also be easily reached by tramcar from Clapton, Dalston, Edmonton, Finsbury Park, Hackney, Holloway, and other parts of North London. It contains medical and surgical wards and a ward for children, having in all 73 beds, which, it is intended, will shortly be increased to 120. There are special departments for gynaecological cases, diseases of the eye, ear, throat and nose, and skin diseases. Operations are performed every afternoon of the week (except Saturday) at 2.30 p.m. There are three resident appointments—House-Physician, House-Surgeon, and Casualty Medical Officer, and Clinical Assistants are appointed under certain conditions.

[1] For Clinical Hospitals in Dublin see p. 520.

Over 18,800 new out-patients were treated during the last year, and 953 patients were treated in the wards. Further particulars in regard to the hospital may be obtained from Mr. H. W. Carson, F.R.C.S., Secretary to the Medical Committee, 26, Welbeck Street, W.; or from Dr. A. J. Whiting, Dean of the North-East London Post-graduate College, 142, Harley Street, W.

Children's Hospitals.

The Hospital for Sick Children, Great Ormond Street, W.C., contains 200 beds, divided into 102 medical, 73 surgical, and 25 for special and infectious cases. A new surgical ward will be opened shortly containing 21 beds, besides 52 beds at the Convalescent Branch, Highgate. The hospital having been recognized by the Conjoint Board for England as a place where, under the new curriculum, six months of the fifth year may be spent in clinical work, the practice is arranged to meet this need, and is open to students who have completed four years of medical study, and also to qualified medical men. Appointments are made every three months to six Medical Clerkships and six Surgical Clerkships, which are open to students at the hospital. Lectures or Demonstrations, given once or twice every week during both winter and summer sessions, are open, free of charge, to medical practitioners. The sessions are of ten weeks' duration, and begin in October, January, and March. Fees for hospital practice, three months, 2 guineas; perpetual ticket, 3 guineas. Prospectuses and further information will be forwarded on application to the Dean, Dr. Voelcker, or to the Secretary, at the hospital.

East London Hospital for Children, Shadwell.—The hospital contains 107 cots, one-third being devoted to infants. Two House-Surgeons and two House-Physicians (holding office for six months) are appointed annually. This hospital is recognized by the Conjoint Board for England as a place of instruction for students, at which six months of their fifth year under the new regulations may be spent in clinical work. The following opportunities for the study of the diseases of childhood are offered to gentlemen who have completed four years of medical study, and to those who are already qualified: The practice of the hospital (in the out-patients' department) is open to students every day (except Saturdays), at such hours as the physicians or surgeons for the day are attending. The in-patient practice is open to students holding clerkships or dresserships in the hospital, and to students not holding appointments, during the attendance of the physicians and surgeons. A certain number of Clinical Clerks and Dressers are appointed every three months to each physician and surgeon. Gentlemen who wish to hold these appointments must have completed their fourth year of medical study. They are eligible for reappointment at the end of three months. Practitioners and students are admitted to the practice of the hospital in both the wards and out-patient department, and clerkships and dresserships can be obtained. Any additional information may be obtained on applying to Mr. H. Betham Robinson, M.S., F.R.C.S., 1, Upper Wimpole Street, or to Mr. Thomas Hayes, the Secretary, at the hospital.

North-Eastern Hospital for Children, Hackney Road, Bethnal Green.—The hospital now contains 114 beds. Patients in 1903 (only 57 beds were available for first nine months): In-patients, 952 (270 under 2 years of age); out-patients, 19,267; new cases, 61,826 attendances. There are special Dental, Eye, and Roentgen-Ray Departments. Particulars of facilities for attending Medical and Surgical practice can be obtained on application to Mr. T. Glenton-Kerr, Secretary.

Lying-in Hospitals and Hospitals for Women.

Queen Charlotte's Lying-in Hospital and Midwifery Training School.—This hospital receives over 1,400 patients annually, besides having a large out-patient department. Medical pupils are received at all times of the year. Pupils have unusual opportunities of seeing Obstetric complications and Operative Midwifery, on account of the very large number of primiparous cases—upwards of three-fourths of the total admissions. Clinical instruction is given. Certificates of attendance at this hospital are recognized by all Universities, Colleges, and Licensing Bodies. Pupil Midwives and Monthly Nurses are received and specially trained. *Fees.*—Medical Pupils, £8 8s. for four weeks, exclusive of board and lodging; Pupil Midwives, £35 for five months. Pupil Nurses, £24 for sixteen weeks, inclusive of board and lodging. The new residence for Medical Pupils opposite, and in telephonic communication with, the hospital is now open. *Terms.*—Full board and residence, £1 15s. per week.

Hospital for Women, Soho Square.—There is an organized School for Gynaecology open to qualified medical men and students after their fourth year. A limited number of Clinical Assistants to the Physicians in the Out patient Department are appointed for periods of one or more months. Clinical instruction is given also in the theatre and in the wards. *Fee* for the three months' course, £8 8s., or for one month, £3 3s. Further information can be obtained by letter, addressed to the Dean at the hospital.

Ophthalmic Hospitals.

Royal London Ophthalmic Hospital (Moorfields Eye Hospital), City Road, E.C.—The hospital was founded in 1804 in Charterhouse Square; in 1821 it was moved to a larger building in Blomfield Street, where the work was carried on until 1899; in 1899 the present building in City Road was opened. It contains 138 beds for in-patients, which were occupied during last year by 2,122 persons; twenty beds were closed for want of funds; in the same year the out-patients were 39,752, and the attendances 121,638. Operations are performed daily from 10 a.m. until 1 p.m., and four surgeons attend on each day. Students are admitted to the practice of the hospital. *Fees*, for six months, £3 3s.; perpetual, £5 5s. Courses of instruction in the following subjects are given at the hospital periodically: (1) The Use of the Ophthalmoscope; (2) Errors of Refraction; (3) External Diseases of the Eye; (4) Surgical Anatomy of the Eye; (5) Operative Surgery. Systematic instruction is also given in the Laboratory of the hospital on the Pathology of the Eye. Perpetual students are admitted to the lectures free, with the exception of the course on Operative Surgery. Students of the hospital are eligible for the offices of House-Surgeon, Out-patient Surgical Officer, or Clinical and Junior Assistants. Junior Assistants are appointed every three months. Any further information will be furnished by Mr. Robert J. Bland, Secretary.

Royal Westminster Ophthalmic Hospital, King William Street, West Strand.—The hospital has been recently modernized throughout; it contains 40 beds and an out-patient department. The practice is open to practitioners and students from 1 to 4 p.m. daily. Special instruction is given in the Diagnosis, Pathology, and Treatment of Eye Affections, including the Operations on the Eye, the Treatment of Errors of Refraction, and the Use of the Opthalmoscope. *Fee:* Six months, £3 3s.; perpetual, £5 5s. For particulars apply to Mr. Adams Frost, F.R.C.S., at the hospital.

Royal Eye Hospital, Southwark.—This hospital contains 40 beds and 2 cots. The new patients in the out-patient department number over 25,000 yearly. Operations are performed and patients seen daily at 9 a.m. and 2 p.m. Qualified practitioners and students are admitted to the practice of the hospital. *Fees*: For three months, £2 2s.; for six months, £3 3s.; perpetual, £5 5s. Courses on Ophthalmoscopy, Refraction, and Diseases of the Eye, each £1 1s. (perpetual students one course free); Pathology, £1 1s., to cover cost of materials. Tutorial classes arranged to suit candidates for the various examinations. Qualified students of the hospital are eligible for the offices of Registrar and House-Surgeon, may also be appointed Clinical Assistants for six months, and are eligible for re-election. Further particulars may be obtained from Mr. Edwin Easton, Acting Secretary, at the hospital, Southwark, S.E.

Central London Ophthalmic Hospital, Gray's Inn Road, W.C.—This hospital has 26 beds, and possesses facilities for clinical teaching daily. Last year there were 13,329 new cases. Classes of instruction in the use of the Ophthalmoscope, with demonstrations on cases, and also Classes on Refraction, are given during the winter months, commencing in October. The out-patient work begins at 1 o'clock, and operations are performed daily between 1 and 4 o'clock. For full particulars apply to the Secretary, Mr. Harry R. S. Druce.

Fever and Small-pox Hospitals of the Metropolitan Asylums Board.

Students are admitted to study at the Fever and Small-pox Hospitals of the Metropolitan Asylums Board after they have completed the third year of medical education, provided they have held the offices of clinical clerk and dresser, and have obtained the sanction of the authorities of the medical school to which they belong. The minimum duration of the course of study at the fever hospitals is two months, and the ordinary

course of study at the small-pox hospitals consists of twelve demonstrations. At the fever hospitals the student may attend three days, and must attend two days a week: at the small-pox hospitals the dates and times of demonstrations are notified to students who have entered for a course. They must abide by the rules laid down as to disinfection and other matters, and must satisfy the Board of Management that they are sufficiently protected against small-pox by vaccination or otherwise. A certificate signed by the medical superintendent of the hospital at which attendance is made, and countersigned by the Clerk to the Board, is granted to a student when he has satisfactorily completed the course of study. Qualified medical men are admitted under similar terms and conditions, except that the sanction of the authorities of the medical school is not required in their case.

Fees.—Fever hospitals, two months, £3 3s., and £1 1s. for every additional month; small-pox hospitals, £4 4s. for the course of 12 demonstrations, or (for qualified medical men only) £1 1s. per demonstration, or £2 2s. per course of three demonstrations.

Courses of instruction in the treatment of fevers are usually held three times a year, beginning in January, May, and October respectively; and information as to the classes is furnished to each of the recognized medical schools in the metropolis.

Courses in connexion with small-pox are held from time to time as circumstances permit.

OTHER SPECIAL HOSPITALS: LONDON.

Bethlem Royal Hospital.—Two Resident House-Physicians are appointed twice a year for six months from recently qualified medical students. Students of certain hospitals are allowed to attend for clinical instruction. Qualified medical men are allowed to attend for three months on payment of a fee. Post-graduate courses are given from time to time.

Hospital for Consumption and Diseases of the Chest, Brompton.—The hospital has been recognized by the Conjoint Board for England as a place where, under the present curriculum, six months of the fifth year may be spent in clinical work. There are 318 beds in the two buildings constituting the hospital, and a special throat department. Pupils are admitted to the in-patient and out-patient practice of the hospital. Three courses of lectures and demonstrations will be given during the year. Clinical Assistants are appointed to the Assistant Physicians in the out-patient department, and Clinical Clerks are appointed to the Physicians in the wards. These appointments are tenable from three to six months. The fee for the practice of the hospital is £1 1s. for each month, or £2 2s. for each period of three months, or a perpetual fee of £5 5s.

City of London Hospital for Diseases of the Chest, Victoria Park.—There are 164 beds. The practice of the hospital, both as regards in-patients and out-patients, is open to students and medical practitioners. Certificates of attendance in the medical practice of this hospital are recognized by the London University and London medical examining Boards. Information as to medical instruction can be obtained on application to Dr. O. K. Williamson, Secretary to the Medical Committee at the Hospital.

National Hospital for the Paralysed and Epileptic, Incorporated by Royal Charter, Queen Square, Bloomsbury (University of London).—This hospital, with the Finchley branch, contains 200 beds and cots. The out-patient practice and lectures are free to students and practitioners. Ladies who are post-graduates are invited to the lectures. Lectures and demonstrations are given on Tuesdays at 3.30 in three courses—spring, summer, and winter—and the physicians attend every Monday, Tuesday, Wednesday, and Friday for out-patients at 2. Surgical operations are performed on days and at hours of which notice is posted at the hospital. The hospital is a school of the University of London, and has been recognized by the Conjoint Board for England as one of the places where part of the fifth year of study may be spent. Clinical Clerks are appointed to the Physicians for in-patients and out-patients. All communications regarding clinical clerkships, lectures, and hospital practice should be addressed to the Secretary at the hospital.

Central London Throat and Ear Hospital, Gray's Inn Road.—The hospital contains accommodation for 17 in-patients, and has a very extensive out-patient department (over 50,000 attendances yearly), which is open daily to all medical practitioners and students for the purpose of Clinical Demonstration and instruction. Fee, for three months' attendance, 3 guineas; for six months, 5 guineas. Courses of practical demonstrations on the special diseases treated at this hospital are held during both the winter and summer months by members of the staff. The dates of these demonstrations are announced in the medical journals prior to their commencement. They are open to qualified practitioners and advanced students of medicine on payment of 1 guinea for each course of twelve classes, with an additional guinea for attendance upon the out-patient hospital practice if desired. Operations on in-patients and on out-patients are performed on Tuesdays and Fridays at 2 p.m. Considerable attention is given to scientific work, particularly with regard to the pathology and bacteriology of the diseases of the ear and upper respiratory passages. Full particulars will be supplied on application to the Dean at the hospital.

Metropolitan Ear, Nose, and Throat Hospital.—The hospital was founded in 1838, and is situated in Grafton Street, Tottenham Court Road. The out-patient department is open daily at 2.30 p.m. to practitioners and students for acquiring clinical instruction and technical knowledge. Operations are performed on in-patients on Tuesdays, Wednesdays, and Thursdays at 9 a.m. Fee for one month's attendance at the hospital one guinea, and for three months two guineas. During the forthcoming session demonstrations will be given by members of the staff on the pathology and treatment of diseases of the ear and respiratory passages. Short practical classes will also be held in clinical pathology and surgical anatomy. Weekly clinical lectures are given by the staff on the special disease treated at the hospital, the date, time, and subject of these lectures are previously announced in the medical journals. The lectures are free to all medical practitioners and students.

Royal Ear Hospital, Dean Street, Soho, W.—Courses in Diseases of the Ear and Nose are given by the members of the staff throughout the teaching year. The teaching is of a practical character, and the number of students is limited. Clinical Assistants are also appointed. The new building will be opened on or about September 29th, 1904. For full particulars address the Honorary Secretary of the Medical Board, Mr. Macleod Yearsley, F.R.C.S., at 10, Upper Wimpole Street, W.

St. Peter's Hospital for Stone and Urinary Diseases (Henrietta Street, Covent Garden).—Qualified medical men and students are admitted free to the practice of this hospital, which contains 26 beds and has a large out-patient attendance (46,061 for 1903). New cases 4 302. Operations are performed and consultations held on Wednesdays and Fridays at 2. Clinical instruction is given regularly by members of the staff. In-patients admitted in 1903, 556.

St. Mark's Hospital, City Road, E.C.—A course of Lecture-Demonstrations upon Diseases of the Rectum will be held at the Hospital during the Winter Session commencing upon October 6th. The fee for the course is 1 guinea. The time table and further particulars can be obtained by application to the Secretary of the Medical Committee at the Hospital.

St. John's Hospital for Diseases of the Skin (Incorporated).—The Out-patient Practice (at 49, Leicester Square, W.C.) is open free to the medical profession every week-day from 2 to 4 p.m., on presentation of their cards to the Medical Officer in attendance. Chesterfield Lectures are given free. The In-patient Department, with 45 beds, is at 238, Uxbridge Road, W. Further particulars may be obtained from Mr. George A. Arnaudin, Secretary-Superintendent of the Hospital, 49, Leicester Square, W.C.

LIVERPOOL.

The following hospitals have made arrangements for clinical instruction:

Royal Infirmary.—The Royal Infirmary is directly adjacent to the University and the Medical School, and contains 300 beds. The present building, completed in 1890, has been brought thoroughly up to date, and is one of the best appointed hospitals in the kingdom. *Fees:* The fee for a perpetual ticket is 40 guineas, payable in two instalments. There is no extra fee for clerks and dressers. *Appointments:* A Medical and a Surgical Registrar are appointed annually, with a salary of £100 each. Ten Resident Medical Officers are appointed every six months. They receive board and lodging, with private sitting room, in return for their services. Full particulars may be obtained from the Secretary of the Medical Board, T. R. Bradshaw, M.D., F.R.C.P., 51, Rodney Street, Liverpool.

Royal Southern Hospital: Clinical School.—The hospital

contains 200 beds; there is a children's ward, and beds are appropriated to the diseases of women, and also for cases of tropical disease in connexion with the Liverpool Tropical School. Clinical teaching is given in the hospital, and arrangements have been made to render it both thorough and systematic. The members of the staff visit the wards daily, and clinical lectures are given each week. Tutorial classes are also held each day, at which the junior students are instructed in the methods of diagnosis, and the seniors are prepared for their final examinations. The Pathological Department has a good laboratory attached, in which the students receive practical instruction. *Appointments:* In addition to the usual clinical and *post-mortem* clerkships, two resident posts of Ambulance Officer are awarded every three months to the students whom the Board may consider most suited to hold them. *Fees:* Perpetual, £26 5s.; one year, £10 10s.; six months, £7 7s.; three months, £4 4s. *Board* (exclusive of fees for Hospital Practice), £15 15s. per quarter. The practice of the hospital is recognized by all examining bodies. Further particulars may be obtained from the Dean, Mr. Newbolt, 42, Catherine Street, Liverpool.

David Lewis Northern Hospital, Liverpool.—An associated Clinical School of the Liverpool University (see United Hospitals Clinical School, Liverpool), recognized by all Examining Boards and Universities; 246 beds. Winter Session and Clinical Lectures commence on October 1st. Students of the School are appointed to clinical clerkships and dresserships at the commencement of each session. Arrangements for board and lodging in the hospital buildings can be made for a limited number of students. Special arrangements are made for graduates who desire to undertake clinical research as clinical assistants. A fully-equipped laboratory is attached to the hospital. Two senior students are appointed Assistant House-Surgeons at the beginning of each half year, board and lodging provided. House-Surgeons and Physicians (salaried) are appointed from time to time. For all information as to time table, curriculum, fees, etc., application should be addressed to the Secretary to the Medical Board at the Hospital.

United Hospitals Clinical School, Liverpool.—This Clinical School has been formed by the association of the following hospitals for purposes of clinical instruction: The Royal Southern Hospital, the David Lewis Northern Hospital, the Stanley Hospital, the Eye and Ear Infirmary, the Hospital for Women, the Infirmary for Children. These hospitals contain in all 790 beds. During the twelve months ended December 31st, 1903, the number of patients admitted to the hospitals was 8,487; the out-patients who attended during the year numbered 67,782, and the attendances 244,062. The object of the scheme of co-operation which these hospitals have adopted is that of utilizing to the greatest advantage the large amount of valuable material which they contain. The regulations which govern this co-operation have received the approval of the University. The full prospectus may be obtained on application to the Honorary Medical Secretary, Mr. Keith Monsarrat, 11, Rodney Street, Liverpool. The hospitals are so situated as to be easy of access from the University and from one another. While holding the appointments of Medical Clerk and Surgical Dresser students are not permitted to transfer their attendance from one hospital to another during term, but during the fifth year the courses of instruction at all the hospitals are open to them. Clinical Clerks and Dressers to in-patients and to out-patients are appointed at the beginning of each session. In each of the three general hospitals senior students are appointed to accident duty, and while holding this appintment they are provided with board and lodging in the hospital. Students are appointed assistants in the clinical laboratories and to the pathologists at the different hospitals, and during the fifth year act as clinical clerks in the special hospitals or in the special departments of the general hospitals. Medical and surgical tutors are appointed annually by the Executive Committee of the school at a salary of £100 per annum. There are nine House-Physicians and Surgeons in the general hospitals, three at £100 per annum, three at £80, three at £70. Resident Medical Officers are also appointed from time to time in the special hospitals. *Fees.*—Perpetual ticket for hospital practice, including clinical lectures, £26 5s.; three months' hospital practice, £4 4s.; six months, £6 6s.; twelve months, £10 10s.

Eye and Ear Infirmary, Myrtle Street.—The infirmary contains 65 beds. Evening courses of Lectures on Refraction and Medical Ophthalmoscopy and Diseases of the Ear are delivered at this infirmary during the winter months by the honorary medical staff. Students of medicine of Liverpool University have free access to the practice of the infirmary. Out-patient dresserships may be obtained on application to the Secretary of the Medical Board. The infirmary is recognized by the Conjoint Board as a teaching institution.

Liverpool Infirmary for Children.—During the building of a new hospital of 100 beds, the work of the infirmary is being carried on in temporary quarters with 18 beds. In-patients (1902), 602; new out-patients, 14 030; out-patient attendances, 50,611; the new out-patient department was opened in January, 1903. The practice of the hospital is free to students, and clinical instruction is given by the medical and surgical staff. For further particulars apply to the Secretary of the Medical Board.

Manchester.

In addition to the Royal Infirmary (see page 515) facilities for clinical instruction are afforded at the following hospitals:

Manchester Children's Hospital, Pendlebury.—The hospital at Pendlebury contains 168 beds, and 24 beds at the Convalescent Home, St. Anne's-on-the-Sea. The medical staff see out-patients daily at the Dispensary, Gartside Street, at 9.30 a.m., and visit the hospital at 10 a.m. and 5 p.m. The practice of the hospital and dispensary is free to students accompanying the medical staff.

Royal Eye Hospital.—The hospital contains 110 beds. The medical staff attend daily from 9.30 to 11. Clinical instruction is given to students. Further particulars can be obtained from the Secretary, Mr. W. S. Prophet.

St. Mary's Hospital for Diseases of Women and Children.—One hundred beds, including 40 for the reception of lying-in cases, especially those attended with difficulty or danger. In the out-patient departments students are taught the various methods of examination and diagnosis, and the use of gynaecological apparatus, while in the wards they have an opportunity of becoming familiar with the diagnosis and treatment of graver cases, and of witnessing more important gynaecological operations. The number of maternity cases attended annually is over 3,000. A student attends his first five cases under the immediate supervision of the House-Surgeon and Resident Obstetric Assistant Surgeon. The hospital possesses a library, presented by the late Dr. Radford, consisting of nearly 5,000 volumes, chiefly on subjects connected with obstetrics and gynaecology. There is also a museum, containing a large number of pathological specimens, and a valuable collection of deformed pelves, casts, obstetric instruments, and anatomical models. The gynaecological practice of the hospital is free to fourth and fifth years' students. The fee for the midwifery practice, which includes attendance upon 20 cases of labour, as required by the examining bodies, is £2 2s. Application must be made to the Secretary at the hospital. In the New Hospital recently opened accommodation has been provided for resident students at a cost of £1 11s. 6d. per week for board and residence for the term of three weeks.

Manchester Northern Hospital for Women and Children.—The hospital is situated in Cheetham Hill Road, near the centre of the town, and contains 70 beds. Out-patients are seen daily at 8.30, and the wards are visited at 9 a.m. Secretary, Mr. Hubert Teague, Barton Arcade, Manchester.

Newcastle-on-Tyne.

Hospital for Sick Children.—There are 70 beds in the hospital, besides an isolated block for infectious and doubtful cases. There is a large out-patient department. The practice of the hospital is open free to all students or qualified practitioners. The number of in-patients in 1903 was 807. The out-patient department is carried on in buildings recently erected in the central part of the city which are being at present extended at an outlay of £10,000, and the number of out-patients in 1903 was 12,743, with 20,797 attendances.

Infirmary for Diseases of the Eye. This hospital contains 20 beds. Its out-patients number 5,000 annually. Clinical instruction is given daily from 11 a.m. to 1 p.m.

Sheffield.

Jessop Hospital for Diseases of Women.—The number of beds is 72; in the Diseases of Women Department 54, and in the Maternity Department 18. Students can attend the practice of the hospital, and be supplied with cases of midwifery. (See also p. 515.)

Bath.

Royal United Hospital.—The hospital contains 130 beds, and

is recognized by the Royal Colleges of Physicians, Surgeons, etc., and licensed for dissections. It contains a library and an excellent museum, in which are a large number of interesting specimens, both in Pathology and Comparative Anatomy. Fees for attendance: Twelve months, £10 10s.; six months, £5 5s. (Temporary pupils can also, by permission of the honorary staff, attend the practice of the hospital by the payment of £1 1s. for each month.) Instruction in Practical Pharmacy for three months, £3 3s. For further particulars apply to the Secretary, Mr. J. M. Sheppard.

BIRMINGHAM.

Birmingham and Midland Hospital for Skin and Urinary Diseases.—The practice of the hospital is open to medical students who have passed their anatomical and physiological examinations, and to registered medical practitioners. The fee for a course of three months is 5 guineas. Further particulars may be obtained from the Secretary at the hospital.

BRADFORD.

Bradford Royal Infirmary.—The hospital contains 220 beds. Non-resident pupils are received, and have every opportunity of acquiring a practical knowledge of their profession under the superintendence of a House-Surgeon and House-Physician. One year's attendance is recognized by the Examining Boards. *Fee*: Perpetual, £10 10s.

BRIGHTON.

Sussex County Hospital.—The hospital contains 190 beds (130 surgical, 60 medical), with separate wards for children and separate blocks for diseases of women and for cases requiring isolation; and the Out-patient Department is attended by 1,100 to 1,300 patients weekly. It is recognized by the College of Surgeons and by the Conjoint Board as a hospital where part of a course of Dispensing may be taken. Pupils are admitted to the clinical teaching at a fee to be agreed upon. Further information may be obtained from the House-Surgeon.

CANTERBURY.

Kent and Canterbury Hospital.—The hospital contains 104 beds. Over 700 in-patients and 1,200 out-patients attend every year. Lectures are delivered weekly during term time to the students of St. Augustine's Missionary College on Practical Medicine by Dr. Gogarty, and on Surgery by Mr. T. W. Reid.

DERBY.

Derbyshire Royal Infirmary.—The infirmary will accommodate 195 patients. Pupils are admitted to the practice of the infirmary at £10 10s. a year.

DEVONPORT.

Royal Albert Hospital.—The hospital contains 52 beds, and 6 additional for emergency cases only. A course of Practical Pharmacy is given by the Dispenser on payment of a fee of £5 5s.; pupils of the medical staff can attend this course on payment of £2 2s.

EDINBURGH.

Victoria Hospital for Consumption and Diseases of the Chest.—Excellent opportunity is afforded for the clinical study of Diseases of the Chest. Special clinics by the staff are arranged from time to time, both in the hospital itself, which contains 50 beds, and in the extensive outdoor department, which has its head quarters in Lauriston Place, close to the University. The number in attendance at these clinics is limited. The fee is £2 2s. for a few weeks' course. Application for places has to be made some time in advance. Two medical appointments in connexion with the hospital are vacant every six months: (1) Resident Physicianship; (2) Non-resident Physicianship for the outdoor department. The vacancies occur usually in April and October.

Royal Edinburgh Hospital for Sick Children.—The hospital stands in Sciennes Road, about seven minutes' walk from the Medical School and Royal Infirmary, contains over 110 available beds, and is fitted with modern improvements. There are some 1,600 in-patients and 25,000 out-patients yearly. No cases of infectious disease are admitted. The out patient department (medical and surgical) is conducted in a building adjoining the hospital, and is well equipped. Systematic clinical courses of instruction, at a fee of £2 2s., which qualify for the University and other examinations, are given at various times throughout the year by the ordinary physicians and surgeons. Students may enter at any time. A limited number of clinical clerkships are available, and six resident appointments are made yearly. The Registrar of the hospital, Dr. James Burnet, will supply particulars.

Edinburgh Eye, Ear, and Throat Infirmary.—Open daily at 6, Cambridge Street, at 1 p.m., for Eye Diseases; on Monday, Thursday, and Saturday at 12 for Ear Diseases: on Tuesday and Friday at 4 for Throat Diseases. There is a small infirmary of six beds in male and female wards. In-patients, 190; out-patients, 2,800. Fee for three months, £2 2s.

Edinburgh Royal Maternity and Simpson Memorial Hospital has 40 beds, about 360 in-patients and 600 out-patients yearly. Daily clinics are given by the physicians and assistant physicians. Two House-Surgeons are appointed for each quarter. The Milne Murray Home in connexion with the hospital is a residence for students taking their midwifery practice. *Fees:* The hospital fee is £4 4s. per month, and the residency fee 25s. per week. There is meanwhile accommodation for twelve students. The intern and extern practice of the hospital is reserved for the students in residence.

Edinburgh City Hospital for Infectious Diseases at Colinton Mains contains 600 beds, a large number of which are available for teaching purposes. Qualifying courses of instruction are given by the Consulting Physician, Dr. J. O. Affleck, and the Medical Superintendent, Dr. Claude B. Ker, during the winter and summer sessions. The fee is £1 1s.

Royal Asylum, Morningside, Edinburgh.—There is a clinical field of 500 beds, comprising all the wards except those for private patients. Students have the opportunity of personally coming in contact with and examining the cases, so as to learn the modes of dealing with patients suffering from mental disease; they are exercised in diagnosis and the drawing up of certificates, the aim being to enable them to recognize its early stages, to distinguish its varieties, to adopt suitable treatment, and to advise the relatives as to sending the patient to an asylum. The course extends through the last month of the winter session and the most of the following summer session, and the fee is £2 2s. Dr. Clouston is the Lecturer on Insanity for the University of Edinburgh.

EXETER.

Royal Devon and Exeter Hospital.—The hospital contains 214 beds, including a Special Children's Ward. There are a Library, Museum, and *Post-mortem* Rooms. Attendance on the Practice at this hospital qualifies for all the Examining Boards. Arrangements may be made by which students can attend Midwifery. For further particulars apply to the House-Surgeon.

West of England Eye Infirmary.—This infirmary contains 64 beds. Arrangements can be made for students of the Exeter Hospital to attend the practice of the Eye Infirmary.

GLASGOW.

Royal Hospital for Sick Children.—This hospital, containing 100 beds (26 of which are at the country branch at Drumchapel) for the non-infectious diseases of children, is open for clinical instruction, as is the dispensary or out-patient department. Students, by paying the fee of £1 1s., are entitled to the practice of the hospital and dispensary for twelve months from the term of entry. In-patients, 1,000; out-patients, 9,866. Further particulars may be had by applying to the Resident Medical Officer, 45, Scott Street, Garnethill. The Dispensary is at 11, West Graham Street (within 3 minutes' walk of the hospital).

Glasgow Western Infirmary.—This hospital adjoins the University of Glasgow. Number of beds, 416. The Clinical Courses are given by the Physicians and Surgeons, each of whom conducts a separate class, and students may attend whichever they select at the beginning of the session. Special instruction is given to junior students by tutors or assistants, and Clinical Clerks and Dressers are selected from the members of the class. Special wards are set apart for Diseases of Women and for Diseases of the Skin. In the Out-Patient Departments there are special clinics for Diseases of Women and for Diseases of the Throat, Ear, and Teeth. All the courses of clinical instruction are recognized at the University of Glasgow and other Boards in the kingdom. Nine Resident Assistants are appointed annually without fee from those who have completed their course. *Fees.*—(1) Every Student shall pay a fee of £10 10s. for hospital attendance, and this shall be kept quite apart from the fees for clinical instruction. (2) Every Student shall pay £2 2s. for each summer, and £3 3s. for each winter session of clinical instruction, or such other fees as may be fixed from time to time by the managers in conjunction with the University Court. (3) Students who have completed their clinical course elsewhere shall be permitted to enter for a six months' course of the hospital only, on payment of a fee of £2 2s. In-patients, 5,339; out-patients, 18,252.

Glasgow Eye Infirmary.—This infirmary is situated at 174, Berkeley Street, and 80, Charlotte Street. Dispensaries open daily at 1 p.m. Operations performed on Monday, Wednesday, and Friday at 2 p.m. Fees for six months, 1 guinea. In-patients, 1,824; out-patients, 22,207.

GLOUCESTER.

General Infirmary and Gloucestershire Eye Institution.—The hospital contains 156 beds. Resident and non-resident pupils are admitted by the General Committee on the recommendation of a member of the Medical Board. Each pupil pays in advance £10 for the first half year, and £5 for every subsequent quarter, or portion of a quarter, of a year. Each resident pupil has board and lodging in the house, for which he pays in advance 26 guineas for the first half year, and 13 guineas for every subsequent quarter, or portion of a quarter, of a year. Each pupil pays in advance to the House-Surgeon a fee of £5 5s. for instruction, and a further fee of £3 3s. for every subsequent year or portion of a year. One year spent at this hospital, after passing a preliminary examination, is recognized by the Royal College of Surgeons.

LINCOLN.

County Hospital.—The hospital contains 125 beds and 5 isolation beds. The House-Surgeon is allowed to take two pupils, on terms arranged by the Weekly Board, himself, and the pupils. A fee of not less than £10 10s. is paid by every pupil to the hospital. The House-Surgeon is responsible for the conduct of his pupils. The pupils remain in the hospital only when occupied in performing or observing the actual work of the hospital.

NORWICH.

Norfolk and Norwich Hospital.—The hospital contains 220 beds. Students (non-resident) are admitted according to the following scale: For three months, £3 3s.; for six months, £5 5s.; as permanent students, £8 8s. The resident officers are a House-Physician, House-Surgeon, Assistant House-Surgeon, and Second Assistant House-Surgeon.

NORTHAMPTON.

General Hospital.—There are 174 beds and a large out-patient department. Out-pupils are received, and have every opportunity of acquiring a practical knowledge of their profession. Instruction is also given in Anatomy, Materia Medica, and Pharmacy. Non-resident pupils are taken at a fee of £10 10s. annually. Resident pupils will be taken when the new hospital is opened.

NOTTINGHAM.

General Hospital.—The hospital contains 241 beds. The Honorary Staff introduce pupils to witness the practice of the hospital on payment of £10 10s. annually in advance. The pupils receive instruction from the Resident Medical Officers.

PORTSMOUTH.

Royal Portsmouth Hospital.—120 beds. One year's attendance is recognized by the Examining Boards. For particulars as to fees apply to the Secretary of the Committee of Management.

SOUTHAMPTON.

Royal South Hants and Southampton Hospital.—This institution was established in 1838. The out-patients' building was erected in 1887. The number of beds is 130. The in-patients number about 1,500 a year, the out-patients about 5,000. Large additions to buildings, including new isolation wards, new operating room, a new ward block, and a steam laundry, and new night casualty receiving room and nurses' home for 44 nurses have just been completed. The hospital has been registered by the Royal Colleges of Physicians and Surgeons as a "Medical School."

STAFFORDSHIRE.

Staffordshire General Infirmary. There are 75 beds. The pupils of medical practitioners resident in the county of Stafford are allowed to witness the medical and surgical practice of the infirmary, and to be present at operations. The pupils of the officers of the institution are admitted to these privileges gratuitously, those of other practitioners on the payment of £10 10s. with each pupil.

North Staffordshire Infirmary and Eye Hospital.—The Infirmary has accommodation for 216 patients, including children's wards, eye department, and special ovarian wards, electrical and *x*-ray departments. The attendance of pupils at this infirmary is recognized by all the Examining Boards. Particulars as to fees, etc., may be obtained from the Secretary and House-Governor, Mr. Albert E. Boyce, Hartshill, Stoke-on-Trent.

WINCHESTER.

Royal Hants County Hospital.—The hospital contains 108 beds. The Physicians and Surgeons are allowed to introduce a certain number of pupils; the Resident Medical Officers may also receive a pupil, for whose maintenance a certain sum, to be fixed by the Committee, is payable annually in advance. Pupils of medical men not on the staff of the hospital may, with the consent of the Committee, become out-pupils, and see the practice of the hospital, under the direction of the Resident Medical Officer, on the payment of £10 10s. for one year, or £21 for unlimited attendance.

WOLVERHAMPTON.

Wolverhampton and Staffordshire General Hospital.—The hospital contains 230 beds, and is a Preparatory School of Medicine and Surgery. The pupils see the whole of the practice of the Physicians and Surgeons, and are trained in clinical work by the medical and surgical staff. Attendance at this hospital is recognized by the Examining Boards. *Fees:* First year, £10 10s.; subsequent years, £5 5s.

INSTRUCTION IN PRELIMINARY SCIENCES.

THE following institutions are recognized by the Conjoint Board in England for instruction in chemistry, including chemical physics, practical chemistry, and elementary biology. Certificates for Biology will only be accepted from those institutions marked with an asterisk.

Aberystwith.—*University College of Wales.
Banbury.—Municipal Technical Schools.
Bangor.—*University College of North Wales.
Bath.—*Kingswood School.
Bedford.—Grammar School; Modern School.
Berkhamsted.—Berkhamsted School.
Birkenhead.—Holt Schools of Science and Art.
Blackburn.—*Stonyhurst College; Municipal Technical School.
Blaenau Festiniog.—County School.
Bolton.—Central Higher Grade Board School.
Bradford.—*Grammar School; *Bradford Technical College.
Brighton.—*Municipal School of Science and Technology.
Bristol.—*University College; *Merchant Venturers' Technical College; Bristol Grammar School.
Burslem.—Wedgewood Institute.
Bury.—Bury Grammar School.
Canterbury.—Simon Langton's Schools.
Cardiff.—*University College of South Wales.
Cheltenham.—Cheltenham College.
Clifton, Bristol.—Clifton College.
Derby.—*Municipal Technical College.
Devonport.—Municipal Science, Art, and Technical Schools.
Dulwich.—*Dulwich College.
Epsom.—*Epsom College.
Eton.—*Eton College.
Exeter.—*Royal Albert Memorial College.
Felsted.—*Felsted School.
Godalming.—*Charterhouse School.
Halifax.—Municipal Technical School.
Hanley.—Higher Grade Board School.
Harrow.—*Harrow School.
Huddersfield.—*Technical School.
Hull.—Municipal Technical School; *Hymer's College.
Leeds.—Institute of Science and Art.
Leicester. Wyggeston School: Municipal Technical and Art School.
Liverpool.—*School of Science, Technology, and Art.
London.—*The Department of Science and Art, South Kensington.
" City of London School.
" *St. Paul's School, West Kensington.
" Pharmaceutical Society.
" *Pharmaceutical Society.
" *Birkbeck Literary and Scientific Institute.
" *South-West Polytechnic Institute, Chelsea.
" *City of London College.
" Polytechnic Institute, Regent Street.
" *Polytechnic Institute, Battersea.
" *Northern Polytechnic Institute, Holloway.
" East London Technical College, People's Palace.
" Mercer's School, Holborn.
" St. Olave's Grammar School, Tooley Street, S.E.
" Merchant Taylors' School
" Technical Institute, Wandsworth.
" Highgate School
" Central Foundation Boys' School, Cowper Street, E.C.
" Municipal Technical Institute, West Ham.
Manchester.—Municipal Technical School.
Marlborough.—Marlborough College.
Middlesbrough.—Middlesbrough High School.
Newcastle-upon-Tyne.—*Durham College of Science; *Rutherford College.
Norwich.—Higher Grade Board School; Technical College.
Nottingham.—*University College.
Oldham.—Municipal Technical School.
Oundle.—Oundle School.
Plymouth.—*Science, Art, and Technical School.
Portsmouth.—Grammar School.
Preston.—Harris Institute.
Reading.—*Reading College; Reading School.
Rochdale.—Municipal Technical School.
Rochester.—Mathematical School.

Rossall, near Fleetwood.—Rossall School.
Salford.—Royal Technical School.
Sherborne (Dorset).—Sherborne School.
Southampton.—*Hartley College.
Southend.—Technical School.
Stoke-upon-Trent.—School of Science and Art.
Stourbridge.—King Edward's School.
Swansea.—Municipal Technical School.
Swindon.—Swindon and North Wilts Technical School.
Tonbridge.—*Tonbridge School.
Towyn (Merionethshire).—Intermediate County School.
Walsall.—Municipal Science, Art, and Technical School.
Winchester.—Winchester College.

MEDICAL EDUCATION OF WOMEN.

QUALIFICATIONS FOR FEMALE PRACTITIONERS.

DEGREES, DIPLOMAS, AND SCHOOLS.

THE qualifying bodies in the United Kingdom which admit women as candidates for their degrees or diplomas are as follows: The Universities of England, with the exception of the Universities of Oxford and Cambridge, the Universities of Scotland, the Royal University of Ireland, and Trinity College, Dublin; the Society of Apothecaries, London, and the Conjoint Boards of the Royal Colleges of Physicians and Surgeons of Scotland and Ireland. Women candidates for qualification are subject to the regulations of the General Medical Council as to education and examinations in precisely the same manner as men.

The Schools of Medicine which provide a medical education for women only are the London (Royal Free Hospital) School of Medicine for Women (University of London), the Edinburgh Medical College for Women, and Queen Margaret College, Glasgow. Women are also admitted to the Schools of Medicine conducted in connexion with the Universities of Durham, Liverpool, Manchester, Birmingham, and Aberdeen, and also special classes at the School of Medicine of the Royal Colleges, Edinburgh; the Schools of Surgery of the Royal College of Surgeons in Ireland, and of the Queen's Colleges of Belfast, Cork, and Galway. Students of the University of Glasgow receive their education at Queen Margaret College, which is an integral part of the University. Two years only of the medical curriculum can be taken at the United College, St. Andrews; the remaining three years are taken at University College, Dundee, where the whole five years can be passed if desired. Women can also attend classes for the first three years of the medical curriculum at University College, Cardiff.

Some further particulars as to the London (Royal Free Hospital) School of Medicine for Women will be found on page 513, but intending students should write to the Secretary of the School, 8, Hunter Street, Brunswick Square, London, W.C. The prospectus of this School contains an article of advice to students which will be found very useful.

POST-GRADUATION STUDY.

A RESULT of the enormous growth of medical and surgical science and art in recent years is that a practitioner who is unable to keep himself practically acquainted with the details of that growth finds himself after a while at a decided disadvantage. The facility with which he gets through his ordinary every-day work may deceive a man for a time into thinking that he knows all he need, but, sooner or later, if his mind is at all awake, he must become conscious that he is behind the times. He finds that other men around him carrying on the same line of practice are employing methods of treatment of which he knows nothing, and instruments of which he barely knows the names; and, moreover, that when he meets them in consultation or elsewhere they regard diagnosis and prognosis in the light of knowledge which is not shared by himself. Apart from this, it is of importance to remember that it is chiefly by keeping the mind in a receptive condition that it is best able to utilize knowledge already acquired, since the reception of even one new idea often causes links of association to form with many others, and so increases the professional power of the practitioner. Moreover, there are many special departments of medicine and surgery, of which medical students are not required to make any very profound study; in after-life, however, they often find themselves so placed that more knowledge of some one or other speciality would be of the greatest advantage to them. Dexterity, for instance, in the use of the ophthalmoscope, the laryngological mirror, the oral speculum or in the performance of minor operations may not only lead to a man's assistance being sought by other practitioners, but enable him in his own practice and with entire justice to the interests of his patients, to dispense in a great many cases with the services of a consultant. Such extra knowledge may often be acquired at a very small expenditure of time and pains, and yet bring in a hundredfold return. Besides this there are certain new branches of study, of which the medical practitioner who desires to do justice alike to himself and to his patients should at least know something, for instance, *x*-ray and other forms of electro-therapeutic work, in order that he may be able to answer questions and advise his patients in respect of them.

Finally, there is in post-graduate study the very important advantage that, by having his mind brought into contact with those of other progressive students of medical science, the inevitable tendency of the isolated worker to fall into mental ruts and to come under the dominion of fixed ideas is counteracted.

Not altogether unsuccessful efforts have been made of late years to obtain practical recognition of the force of these considerations in the case of officers of the army and navy, and it rests with other classes of medical practitioners to apply them to themselves. They have done so of late years with increasing frequency, with the result that the demand for facilities for post-graduate study has been met in the ways of which details are given below. By those medical men who are unable to keep in touch with medical schools or get into touch with post-graduate courses, a persevering effort may be made to keep their medical capital in a steadily-growing state by means of recent book and magazine literature alone. In this connexion, in particular, reference may here be made to the many valuable libraries open to medical men. In London the library of the British Medical Association is conveniently situated, and is especially rich in recent works; the superb library of the Royal College of Surgeons in Lincoln's Inn Fields is courteously opened to all practitioners who go through the formality of obtaining a card of introduction from a Fellow or Member; the library of the British Museum is also available on easy conditions; the library of the Royal Medical and Chirurgical Society may be consulted after obtaining an introduction from a Fellow, and the library of the Royal College of Physicians may be utilized after complying with certain easy conditions. Outside London there are valuable libraries in connexion with the universities, and others of great value, such as that of the Royal College of Physicians of Edinburgh, to which recourse may be had by suitable persons.

LONDON.

In London there are four main types of organized instruction available for qualified men. (1) The London Post-Graduate Association has established a system by which cards of admission are issued giving the right to the bearer to avail himself of the clinical instruction of all the teaching and many special hospitals. At the former the post-graduate is present at the demonstrations given to ordinary students, but at the latter those who attend are principally qualified men. (2) There is the excellent arrangement made by the London Polyclinic by which cases of interest and rarity are examined and demonstrated in consultation with some of the leaders in the profession, and in connexion with which a large number of practical classes are conducted. (3) Certain general hospitals throw open and limit their practice to qualified men, and at some of them post-graduate medical schools have been organized to meet the requirements of their members. Among the latter may be mentioned the West London Post-Graduate College, associated with the West London Hospital in Hammersmith Road, W.; and the North-East London Post-Graduate College, associated with the Tottenham Hospital, at South Tottenham, N. (4) Clinical assistants are appointed in many of the special hospitals of the metropolis, such as the Brompton Hospital for Consumption and Diseases of the Chest, the Great Ormond Street Hospital for Sick Children, the National Hospital for the Paralysed and Epileptic, the Royal London Ophthalmic Hospital, the Golden Square Hospital for Diseases of the Throat, the Bethlem Royal Hospital, the Blackfriars Hospital for Skin Diseases, the Chelsea Hospital for Diseases of Women, and several others.

London Post-graduate Association.

That most excellent combination of London Hospitals, "the London Post-graduate Association," continues to fill a long-felt want to qualified medical men, and for those who desire to keep up to date in their clinical work it offers the best of opportunities. The scheme is now so well known that it is scarcely necessary to state that one ticket admits the holder to the Clinical Instruction in the wards and out-patients' departments, the Operations, the Necropsies, etc., of the following hospitals (General and Special):—*General:* Charing Cross, Guy's, King's College, the London, Middlesex, St. Bartholomew's, St. George's, St. Mary's, St. Thomas's, University College, Westminster. *Special:* The Brompton Hospital for Diseases of the Chest, the Hospital for Sick Children, Great Ormond Street, the London School of Tropical Medicine, the National Hospital for the Paralysed and Epileptic, the Royal London Ophthalmic Hospital. The wealth of clinical material here in London is enormous, and in this way it is thrown open for the almost nominal fee of 7 guineas for a three months' course, or 10 guineas for six months. Medical men from all parts of the world take out tickets, and a great number who join the Association for three months, at the end of that period renew their tickets for another three months or more—a sure sign that they are satisfied with their course. Particulars may be obtained from the Secretary, the London Post-graduate Association, Examination Hall, Victoria Embankment, London, W.C., by writing, or personally between the hours of 11.30 and 1, and 2 and 3, except on Saturdays.

London Medical Graduates' College and Polyclinic.

The London Medical Graduates' College and Polyclinic, which was opened in May, 1899, has already attracted to itself large classes of practitioners, and its success fully justifies its foundation.

The College, which occupies premises formerly used as a High School, is situated in central London, being at the corner of Chenies and Ridgmount Streets, about 50 yards to the west of Gower Street. The building, with the additions now completed, is sufficiently commodious for all present purposes.

In the basement is a dark room, against the walls of which are placed 12 seats, each separated from the adjoining one by a partition, and each having its own electric light that can be used in varying strength, naked or shaded. In this room twelve patients can be examined simultaneously, but separately from each other, with the ophthalmoscope, laryngoscope, or other instrument of precision, and their indications demonstrated. An adjoining room is fitted with appliances for instruction in ophthalmic cases, such as type tests, working models of eyes, stereoscopes, lenses, etc.

The ground floor contains class-rooms, which are furnished with black boards and various other appliances for clinical instruction. In one of them is a large and powerful Roentgen-ray apparatus, which is frequently requisitioned in the diagnosis of fractures and deformities. For special occasions the partition dividing one room from the other can be removed, and the two rooms thus united form a class-room of fine proportions.

The first floor is occupied by the library, reading room, and consultation theatre.

The third floor contains an excellent laboratory for bacteriology and chemical pathology, each table having its Bunsen burner, set of reagents, test tubes, etc.

There is a lift to all the floors, and the whole College is fitted with electric light everywhere. At the side of the building is a museum, which is devoted to clinical illustrations; portraits and models of diseased conditions find their place there, and the newest medical and surgical instruments and appliances of all kinds, which can be examined at any time, form a marked feature of this department of the College. The museum has been enriched by a unique collection of valuable pictures of disease, especially skin disease, most of which are painted from life, together with many other specimens of rare clinical value, which have been placed at the service of the Polyclinic by Mr. Jonathan Hutchinson, F.R.S., and the museum has been appropriately named after him—the Hutchinson Museum.

One chief method of instruction provided for the medical men attending the classes is the system of consultations taking place every afternoon. These afford opportunities of studying exceptional forms of disease by the most recent methods of diagnosis. Notes are taken of the cases, and are supplemented on occasions by photographs or other portraits of the rarer morbid conditions.

West-London Post-Graduate College: West London Hospital.

The West London Hospital was the first general hospital in London to organize a systematic scheme for post-graduate teaching, and to devote the clinical material in its wards and out-patient department solely to the instruction of qualified men. The College was started in 1895, and three years later its basis was enlarged by the provision of accommodation for the post-graduates in the shape of lecture, reading, and writing rooms, etc., while, owing to the continued growth of the College, these were transferred in 1901 to a building especially constructed for the purpose.

Upwards of 900 post-graduates have been enrolled since its establishment, the yearly entry being now about 180.

The Hospital, which contains 159 beds, is in the main road, about three miles from Hyde Park Corner: it is within two minutes' walk of the Hammersmith stations of the Metropolitan, the District, and the South-Western railways; it is within ten minutes' walk of Kensington (Addison Road) Station, and twelve minutes' walk of the Shepherd's Bush Station of the Central London Railway: and omnibuses pass the door from Liverpool Street, King's Cross, Charing Cross, Piccadilly, Barnes, and Chiswick. Electric cars from Hampton Court, Twickenham, Hounslow, Uxbridge, Ealing come close to the hospital.

The Physicians and Surgeons attend daily at 2.30 p.m. Post-graduates accompany the staff on their visits to the Wards.

Instruction is given in the Out-Patient Department daily at 2.15 p.m. by the Assistant Physicians and Assistant Surgeons. The Out-Patient Department has recently been enlarged, and there is now ample accommodation for post-graduates to see and examine the patients.

There are Special Departments for the Diseases of the Eye, the Ear, Throat and Nose, the Skin, for Diseases of Women, Medical Diseases of Children, and for Orthopaedic Surgery, Medical Electricity and for *x*-ray work. Clinical Assistants are appointed from among the post-graduates. Practical Classes for instruction in these subjects are held as required. They are limited in number, and each member has opportunities of gaining experience in the methods of examination and treatment. Classes are also held in Tutorial Medicine, Intestinal Surgery, Surface Anatomy, Clinical Examination of Blood and Urine, and Urinary Surgery.

Operations are performed daily at 2.30 p.m. Post-graduates are allowed to stand close to the table, and can see the operations perfectly. The surgeons often avail themselves of the assistance of post-graduates at operations.

Instruction is given in the administration of anaesthetics by the Anaesthetists on the operating days, and post-graduates will be allowed to administer anaesthetics under their superintendence. Special Classes are also held each session; each member will have opportunities of administering several different anaesthetics.

Post-mortem examinations are performed at 12 noon or 1.30 p.m., and Demonstrations on recent Pathological Specimens are given on Mondays and Fridays at 12 noon during each session, in the Pathological Laboratory.

Post-graduates also visit the wards in the morning with the House-Surgeons and House-Physicians; they also often render assistance to these officers in the Casualty Department.

Practical lectures and demonstrations are given each afternoon (except Saturdays) at 5 p.m. during the session. Included in this course are lectures by outside specialists on Mental Diseases and on Public Health, and in connexion with the former instruction is also given in certain asylums.

The practice of the Hospital is well adapted to the needs of medical officers of the Royal Navy and officers of the Royal Army Medical Corps who have obtained leave for further professional study, and the certificate of attendance at the College during such leave is recognized by the Admiralty.

The Pathological Laboratory has just recently been completely reorganized and placed in the hands of the Pathologist, Dr. Candler, who attends there during the whole day. Post-graduates are given instruction in Bacteriology and Microscopy. A Special Class meets on three mornings a week from 10.30 to 12, and post graduates joining the class can work in the laboratory at other times under the guidance of the pathologist. A class will consist of twelve meetings, and will commence at the beginning of each month. The fee for this class in Bacteriology and Microscopy, including the use of a

microscope, will be £3 3s. for one month, or £5 5s. for two months.

A considerable number of gentlemen have studied at the College previous to presenting themselves for the degrees in Medicine of the Universities of Oxford, Cambridge, London, and Durham, also for the Fellowship of the Royal Colleges of Surgeons of England, Edinburgh, and Ireland.

Arrangements can be made for gentlemen working for these higher examinations to be coached in Medicine, Surgery, etc. Full information will be supplied by the Dean. Arrangements have also been made with Mr. Johnson Smith for classes in Operative Surgery at Greenwich. Special facilities are offered to those attending the College.

The hospital is situated in a pleasant residential neighbourhood, within easy access of the park, the river, etc., and there is no difficulty in getting good lodgings.

A certificate signed by the staff will be given at the end of three months' hospital attendance.

The hospital is connected with the National Telephone Company's Exchange, so that post-graduates can receive messages by telephone when at the hospital. (Telephone, Hammersmith 82.)

Arrangements have been made for providing tea for the post-graduates each afternoon. Tea, bread and butter, and biscuits can be obtained between the hours of 4 and 6 p.m. at a charge of 4d. Smoking is permitted in the reading and writing room.

The fee for the hospital practice, including all ordinary demonstrations and lectures, is £1 1s. for one week, £2 2s. for one month, £4 4s. for three months, £6 6s. for six months, £9 9s. for one year, and £21 for a life ticket; all fees to be paid in advance.

A practitioner who cannot attend the whole course may attend any ten lectures or demonstrations during the session for a fee of £1 1s.

A Vacation Class is held each year in August, the fee being £2 2s. for the course of two weeks, including hospital practice, or a ticket for a fortnight's hospital practice, including the lectures, can be obtained for £1 1s.

The fee for a three months' course of instruction in the administration of anaesthetics, including a course of lectures, is £2 2s.

A ticket for any of the above courses will be issued at any date.

On application to the Dean of the College a full prospectus will be forwarded to any gentleman who holds a medical qualification. All communications to be addressed to the Dean, Mr. L. A. Bidwell, Post graduate College, West London Hospital, Hammersmith, W.

North-East London Post-Graduate College.

In connexion with the Tottenham Hospital, N. (see p. 522), which is recognized by the University of London as a place of post-graduate study for the M.D. and M.S. degrees, facilities are afforded to qualified medical practitioners for taking part in the work of an active general hospital, and for attending demonstrations of various branches of Medicine, Surgery, and Gynaecology, with opportunities for clinical instruction in Diseases of the Eye, Ear, Throat, Nose, Skin, and Fevers, Tropical Diseases, Psychological Medicine, State Medicine, the Administration of Anaesthetics, and Dentistry. Cliniques, Lectures and Demonstrations are given by members of the staff, in the lecture room, in the wards and in the various out-patient departments; operations are performed every afternoon of the week, except Saturday. The fee for a three months' course of study, which may be begun at any time, in any single department, is one guinea. A fee of three guineas admits to the whole practice of the hospital for a similar term (one month, 2 guineas), and a perpetual ticket for the practice of the hospital may, for the present, be obtained on payment of a fee of five guineas. Medical practitioners who have attended a three months' course in any departments are eligible for appointment as Clinical Assistants in those departments. A certificate signed by the staff may be obtained at the end of three months' hospital attendance. A reading and writing room, containing a reference library is provided, and tea may be obtained. The hospital is connected with the Telephone Exchange (No. 23, Tottenham). Additional information can be obtained from the Dean of the Post-Graduate College, Dr. A. J. Whiting, 142, Harley Street, W.

University College.

Pathological Chemistry.—At University College, London, Dr. Vaughan Harley, Professor of Pathological Chemistry, holds classes in Pathological Chemistry intended for the advantage of qualified practitioners and advanced students. Each course is practical, and includes demonstrations and lectures on the principal points brought out by analysis in the diagnosis and prognosis of disease. Each member of the class is given the actual material to analyse, and from results obtained is required to make the diagnosis, which is corrected if necessary. Thus each man not only does the ordinary class analysis, but he learns to apply his results to practice. Each course includes the analysis of the saliva, stomach contents, faeces, urine, calculi, and pathological fluids, and in the lectures the chemical changes which occur in disease are fully discussed, and as far as possible explained. The laboratory is open from 9 a.m. to 5 p.m., so that the practical work can be done at the hours most convenient to those attending the class. The next class will commence in October. The fee for the class, including apparatus and material, is £5 5s. A department is also fitted up for research work, and is open to all researchers at the fee of £1 1s. a month. A record of the research work is kept. Several workers have received grants from the Scientific Grants Committee of the British Medical Association.

Department of Clinical Pathology.—The top floor of the west wing of the new hospital is equipped for histological, chemical, and bacteriological investigation of the cases in the hospital.

Charing Cross Hospital.

Post-Graduate Class and Lectures.—Special series of clinical lectures and practical demonstrations, exclusively arranged for the convenience of practitioners and post-graduate students, are given at the hospital throughout the year. The lectures for the year are arranged in three courses, each course consisting of ten meetings, and lasting ten weeks. Two of these courses are held during the winter and one during the summer. The class meets on each Thursday in the board room of the hospital, and proceeds thence to the wards or to the department in which the demonstration may be held. The fee at present charged for each course of ten lectures is one guinea. The first of the two winter courses of the ensuing academical year will commence on October 6th next, and will be conducted by the members of the medical and surgical staff. Practitioners wishing to join the class can receive any further information as to the dates and subjects by communicating with the Honorary Secretary (Dr. Willcocks) at the hospital.

Cambridge.

Special arrangements for advanced study and research were made in 1896 in the University of Cambridge. Graduates of other Universities may be admitted to the University of Cambridge as advanced students. They may pursue courses of advanced study or research, literary or scientific, under the direction of the University teachers, and may become members of colleges without fulfilling the same conditions as are imposed on junior students. Advanced students may, if they wish, obtain a certificate of proficiency in research, or may proceed to the degree of B.A. or LL.B. under certain conditions. In their third or some subsequent term of residence up to the tenth they may become candidates for certain parts of the Tripos (Honour) Examinations, among others the Natural Science Tripos, Part II. Having satisfied the examiners, and after residence of six terms in all, they are admissible to the degree of B.A. or LL.B. The Certificate of Research may be obtained after residing for three terms (one academical year), and when the student has completed six terms' residence he is admissible to the degree of B.A. The facilities for advanced study and research offered by the University include the University Library and the Philosophical Library, while each of the seventeen Colleges possesses its own Library, as do also the respective Natural Science Departments. The department of Zoology and Comparative Anatomy includes a museum of zoology and a laboratory for animal morphology and elementary biology. The new department of botany contains a comprehensive herbarium and a museum of specimens illustrating the morphology and life-history of plants. There are also laboratories and class-rooms fitted for experimental work, while the Botanic Garden contains a large and varied collection, with numerous plant houses and a botanical laboratory. The department of Human Anatomy contains a spacious dissecting room, a museum, osteological room, and a number of rooms for special study and research in anatomy, histology, and physical anthropology; upon the last-named subject special courses of lectures are given. The department of

Physiology contains a number of rooms provided with electric light and motive power, and with abundant and complete appliances for all kinds of practical work. Special rooms are set apart for histology, chemical physiology, and experimental inquiries, including psycho-physical researches. The new department of Pathology and Hygiene is well equipped for the study of the processes and results of disease and for bacteriological teaching and investigation. The Humphry Museum contains a fine collection of specimens illustrative of morbid anatomy. The surgical portion is of special importance, and includes a large number of interesting specimens presented by the late Sir George Humphry. The Pharmacological Museum and Laboratory possesses a complete collection of the official materia medica and ample appliances for experimental and chemical research on the nature and uses of medicinal substances. Lectures on clinical medicine and surgery are given at Addenbrooke's Hospital by the staff. The departments of Chemistry and Physics are very completely furnished, and several of the colleges also possess chemical laboratories. Certain scholarships are open, including the John Lucas Walker Studentship for Pathology, the Balfour Studentship for Animal Morphology, and the Coutts Trotter Studentship (at Trinity College) for Physiology and Experimental Physics. Special arrangements for Advanced Students have been made by most of the Colleges. Further particulars may be obtained from the Registrary of the University, the Registry, Cambridge.[1]

Edinburgh.

At various periods of the year graduates may avail themselves of short courses in Diseases of the Chest at the Victoria Hospital for Consumption, and at the out-department of that hospital at 26, Lauriston Place, by Drs. R. W. Philip and G. Lovell Gulland; Diseases of Children by the staff of the Royal Hospital for Sick Children; Surgery in Children by Mr. Stiles at the same hospital; Diseases of Ear, Throat, and Nose, at the Royal Infirmary, by Dr. Mackenzie Johnston; on the same group of subjects by Dr. Logan Turner at the Cambridge Street Infirmary; Ophthalmoscopy by Dr. George Mackay, at the Royal Infirmary, and by Dr. W. G. Sym at 6, Cambridge Street; on Infectious Diseases, by Dr. Claude B. Ker, at the City Hospital; Practical Bacteriology, by Dr. Shennan, at Surgeons' Hall; Electricity in Medicine and Surgery (with Roentgen rays), by Dr. Dawson Turner, at the Royal Infirmary and Surgeons' Hall; and in Diseases of the Skin, by Drs. W. Allan Jamieson and Norman Walker, at the Royal Infirmary.

Various other courses are from time to time available, and are advertised at the beginning of the winter and summer sessions.

Belfast.

During the summer session special classes are formed in bacteriology, clinical pathology, pathological neurology, and chemical physiology, and during the winter facilities are afforded to medical men to work at these subjects in the pathological and physiological laboratories. Lectures and demonstrations are given from time to time in the Anatomical Department on the Advanced Anatomy of the Nervous System or some department of applied anatomy.

Miscellaneous Special Departments.

It is not difficult to obtain opportunities for the study of any of the branches of surgery and medicine, either in small hospitals specially devoted to them or in the general hospitals which have special departments for light treatment, laryngology, otology, orthopaedics, etc.

Special arrangements for the study of Laryngology exist in London at St. Thomas's, Guy's, St. Mary's, Charing Cross and the West London Hospital; for Otology at the London Hospital and the Royal Ear Hospital; and for both subjects at the Golden Square Hospital, the London Throat Hospital, and the Central London Throat Hospital.

At several of these special hospitals, also, a certain number of appointments as clinical clerks or clinical assistants are available. These posts are mostly filled by senior students or newly-qualified men. The field is very large, and the opportunity for gaining technical knowledge is great, as the work is done in connexion with, and under the eye of, a member of the staff. At the children's hospitals, both at Great Ormond Street and at Shadwell, and also at the Evelina Hospital, appointments of this kind can be obtained.

At many other special hospitals clinical practice can be attended, and full particulars will be furnished by the Secretaries.

[1] *Guide for Advanced Students*, compiled by Dr. Donald MacAlister, tutor of St. John's College, and Linacre Lecturer in Medicine, has been printed by the Cambridge University Press, and can be obtained (price 6d.) from any bookseller.

TROPICAL MEDICINE.

It has, of course, always been recognized that there are many diseases and conditions either peculiar to warm climates or at least so prevalent therein as to supply the greater part of the work of a medical practitioner in tropical and subtropical regions. No recognized scientific methods, however, were employed in their investigation, and it was only by actual clinical experience that any real knowledge of them could be gained.

During the past ten years or more, however, the problems of tropical medicine have occupied some of the brightest minds and most highly-trained laboratory investigators, with the result that progress has been immense and knowledge acquired of a sort which can be handed on to others. In addition to this, the importance of the subject has been grasped alike by the medical profession, by commercial firms engaged in tropical enterprise, and by local and home Governments. Consequently a demand for opportunities of obtaining instruction in tropical medicine arose, and was met by the institution of two schools of tropical medicine, the one at Liverpool and the other in London. Particulars of these schools will be found below, and it is to be noted that they have not only met a demand for instruction from medical men with no knowledge of tropical disease at all, but have created one amongst those whose practical experience of medical work in the hot countries is great, but who desire to be in a position to investigate the conditions with which they have to deal, upon strictly scientific lines. The movement received great encouragement from Mr. Chamberlain when Colonial Secretary, and it is now the rule for all candidates for the Colonial Medical Service to pass through one or the other school before his appointment is finally approved. A further and more recent development has been the institution by some of the examining bodies of a diploma in tropical medicine. The nature of the work required will be gathered from the particulars here given with regard to the diploma granted by Cambridge University, and it seems not improbable that the possession of some such diploma may be demanded by all employers who have medical appointments in the tropics in their gift.

University of Cambridge.

The Cambridge Examination takes place once a year, in August; further information respecting it can be obtained from Mr. G. H. F. Nuttall, Pathological Laboratory, Cambridge. The following are the requirements:

Any person whose name is on the *Medical Register* is admissible as a candidate to this examination, provided

(I) That a period of not less than twelve months have elapsed between his attainment of a registrable qualification and his admission to the examination;

(II) That he produce evidence, satisfactory to the Syndicate, that he has diligently studied pathology (including parasitology and bacteriology) in relation to tropical diseases, clinical medicine and surgery at a hospital for tropical diseases, and hygiene and methods of sanitation applicable to tropical climates.

As evidence of study and attainments a candidate may present to the Syndicate (1) any dissertation, memoir, or other record of work carried out by himself on a subject connected with tropical medicine or hygiene, (2) any certificate or diploma in public health or sanitary science he may have obtained from a recognized Examining Body. Such evidence will be considered by the Syndicate in determining whether he is qualified for admission to the examination, and by the Examiners in determining whether, if admitted, he shall be included in the list of successful candidates.

The examination will have reference to the nature, incidence, prevention, and treatment of the epidemic and other diseases prevalent in tropical countries. It will comprise the following subjects:

1. The methods of pathological and bacteriological investigation. The examination of the blood. The characters, diagnosis, and life-history of animal and vegetable parasites. The examination, chemical and microscopic, of poisonous or contaminated foods and waters.

2. The origin, pathology, propagation, distribution, prevention, symptoms, diagnosis, and treatment of the epidemic, endemic, and other diseases of tropical climates, including—Malaria; blackwater fever; trypanosomiasis; relapsing fever; dengue; yellow fever; plague; tetanus; beri-beri; dysentery and hepatic abscess, cholera, enteric fever, Malta fever, and specific diarrhoeal affections of the tropics; diseases due to cestode and other worms; filariasis; bilharzial disease; specific boils, sores, and other cutaneous affections; mycetoma; ophthalmic affections of the tropics; affections caused by poisonous plants and animals, and by poisoned weapons; sunstroke.

3. The general effects on health in the tropics of seasons and climate, soil, water, and food; personal hygiene, acclimatization; principles of general hygiene, with special reference to food supplies and water supplies, sites, dwellings, drainage, and the disposal of refuse; the sanita-

tion of native quarters, camps, plantations, factories, hospitals, asylums, gaols, pilgrim and coolie ships; principles and methods of disinfection.

The Examination is partly in writing, partly oral, and partly practical and clinical. The clinical part will be conducted at a hospital for Tropical Diseases, at which cases will be submitted for diagnosis and comment.

Every candidate is required to pay a fee of 6 guineas before admission or readmission to the examination. A candidate who, after being approved for admission, fails to present himself at the examination, will not have the fee returned, but will be entitled to present himself without further fee on one subsequent occasion.

Every candidate who passes the examination to the satisfaction of the examiners will receive from the University a Diploma testifying to his knowledge and skill in Tropical Medicine and Hygiene.

LONDON SCHOOL OF TROPICAL MEDICINE.

The Seamen's Hospital Society possesses two hospitals—the Dreadnought Hospital at Greenwich, 225 beds, and the Branch Hospital in the Royal Victoria and Albert Docks, E., 50 beds. It has also two Dispensaries—one in the East India Dock Road and the other at Gravesend, from which the patients are transferred to the hospitals.

The School Buildings, Laboratories, Museum, Library, etc., are within the grounds of the Branch Hospital, Royal Victoria and Albert Dock, Station, Connaught Road, Great Eastern Railway.

Opportunities are afforded to students and others who may be desirous of studying diseases incidental to Tropical Climates and also Practical Surgery before entering the services or going abroad. In the hospitals of the Society are to be found cases of Tropical Disease such as may be met with in actual practice in the tropics. There are three courses in the year, each lasting three months, beginning October 1st, January 15th, and May 1st respectively.

The Laboratory, Museum, Library, etc., are open daily, and clinical instruction is given daily in the wards of the hospitals.

The Lecturers in the School are: Sir P. Manson, F.R.S., Dr. Andrew Duncan, Dr. L. Westenra Sambon, Dr. Macleod, Professor R. Tanner Hewlett, Mr. James Cantlie, Mr. E. Treacher Collins, Dr. Crombie, Dr. F. M. Sandwith, Mr. Goadby, and Professor W. J. Simpson. The Medical Tutor is Dr. G. C. Low.

Certificates are granted after examination to those who complete a full course.

Resident chambers are available for students, who must be qualified or in the fifth year of their medical studies.

Appointments.—There is a House-Physician, a House-Surgeon, and a Junior Resident Medical Officer, at the Dreadnought Hospital, Greenwich, and a Senior House-Surgeon and House-Surgeon at the Branch Hospital. The pay of these offices varies from £40 to £100.

Prize.—The Craggs Prize of £50 is awarded yearly.

The Prospectus, Syllabus, and other particulars can be obtained on application to the Secretary, Mr. P. Michelli, Seamen's Hospital, Greenwich, S.E., or from the Medical Tutor at the School.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

This school was established in Liverpool in 1899. Sir Alfred Jones, K.C.M.G., is Chairman. The Duke of Northumberland is one of the Vice Chairmen. It is carried on in conjunction with the Liverpool University, and the Royal Southern Hospital, for the purposes of research and clinical teaching respectively. A special ward at the hospital has been set apart for the reception and treatment of Tropical Diseases, and all facilities for investigation and study are given in the Tropical Diseases Laboratories of the University.

Major Ronald Ross, C.B., F.R.S., F.R.C.S., is the Sir Alfred Jones Professor of Tropical Medicine and Consulting Physician in Tropical Diseases at the hospital, and Dr. J. W. W. Stephens holds the post of Walter Myers Lecturer in Tropical Medicine to the school. Dr. R. Fielding-Ould, Dr. A. S. Grünbaum, Dr. Balfour Stewart, and Dr. C. Christy have been appointed Assistant Lecturers, and Dr. J. E. Dutton holds the Walter Myers Fellowship of Tropical Medicine. Dr. Wolferstan Thomas and Dr. Stanley Linton are working on special research in connexion with trypanosomiasis in Liverpool, and Dr. Dutton and Dr. J. L. Todd in the Congo. The movement is entirely supported by the voluntary subscriptions of Liverpool merchants and others. The school has organized many important medical research expeditions to West Africa, the Brazils, Egypt, and the tropics. Mr. A. H. Milne, B.A., is the Honorary Secretary.

PSYCHOLOGICAL MEDICINE.

THE study of mental diseases is nowadays carried on in a fashion very different from that which at one time prevailed, and the facilities which exist for its pursuit, even by medical men not exclusively devoted to the treatment of alienism, are now very considerable. In addition to the regular lectures given in the different medical schools, post-graduate lectures are given in the Bethlem Royal Hospital, and the London County Council has thrown open its large asylums, these, as also the City of London Asylum, being recognized by the Conjoint Board and other examining bodies as teaching hospitals. Dr. Maurice Craig at Guy's, and Dr. Rayner at St. Thomas's, have special classes, with clinical instruction at Bethlem Royal Hospital; Professor E. W. White lectures at King's College, and gives clinical instruction at the City of London Asylum, near Dartford, and the Metropolitan Asylums for Idiots and Imbeciles, Darenth; Dr. Percy Smith is the Lecturer at Charing Cross, and gives clinical instruction at Bethlem; Dr. Claye Shaw at St. Bartholomew's, with clinical instruction at Banstead Asylum; Dr. Mickle at Middlesex and University College; Dr. Hyslop at St. Mary's; Dr. C. Mercier at Westminster; Dr. J. K. Will at the London Hospital, and Dr. T. Seymour Tuke at St. George's.

In the Provinces, also, each medical school has a Lecturer on Psychological Medicine, who gives clinical instruction in a neighbouring asylum; and in Scotland and Ireland similar arrangements exist.

The Royal University of Ireland grants a diploma for proficiency in the treatment of mental diseases under the following conditions:

The diploma is conferred only on graduates in medicine of the University.

Candidates must give notice, in writing, to the Secretaries of their intention to present themselves, and must pay the prescribed fee of £2 at least one month previous to the examination.

Candidates who satisfy the examiners will be required to pay a further fee of £3 before the diploma is conferred.

The subjects for this examination are those required by the Hutchinson Stewart Scholarship for proficiency in the treatment of Mental Diseases.

The Medico-Psychological Association of Great Britain and Ireland also grants a Certificate in Psychological Medicine after a course of training, according to the rules of the Association, to candidates registered under the Medical Act. The examinations are held in London, Scotland, and Ireland twice a year. The fee for the examination is £3 3s. Full particulars may be obtained from the General Secretary, Dr. R. Jones, Claybury Asylum, Woodford Bridge, Essex. The Medico-Psychological Association further gives a Bronze Medal and £10 10s. to Asylum Assistant Medical Officers for the best dissertation on any clinical or pathological subject relating to insanity; also the Gaskell Prize, value £30, and the Hack Tuke Memorial Prize awarded for an essay on some subject connected with insanity.

DEGREES FOR PRACTITIONERS.

SINCE it was formerly the almost universal custom for medical students educated in London not to seek a university degree, and as that custom still prevails to a considerable extent, a very large proportion of medical men in actual practice in England possess diplomas to practise but not degrees in Medicine. The want of a degree and of the title of "Doctor" is often a subject of regret in after-life, and certain universities have issued special regulations under which the degree of M.D. is granted to practitioners of a certain standing under special conditions. The regulations of these universities are stated briefly in the following paragraphs. The University of Brussels also grants the degree of M.D. to practitioners after examination, without restriction as to residence or curriculum; but this degree is not registrable on the *Medical Register* if obtained subsequently to June, 1886.

UNIVERSITY OF LONDON.

Registered medical practitioners of not less than three years' standing, and not less than 25 years of age, who pass, or have already passed, the Matriculation Examination, or who are entitled to claim registration as students of the Univer-

sity without examination in virtue of any of the conditions described in the foot-note on page 495, and who pass, or who have already passed, the Preliminary Scientific Examination, Parts I and II, may proceed to the Intermediate and M.B., B.S. Examinations without the intervals prescribed by the regulations on producing certificates that they have gone through the course of prescribed study at any time previously: subject to the proviso that no degree of the University can under any circumstances be granted by examination to any one in less than three years after passing the Matriculation Examination or admission by the University of the candidate's right to exemption therefrom.

University of Durham.

The degree of M.D. is granted by the University of Durham to registered practitioners of not less than fifteen years' standing, who have been qualified and in practice for that period, upon the following conditions without residence: The candidate must be 40 years of age, and must produce a certificate of moral character from three registered medical practitioners. If he have not passed previously to the professional examination in virtue of which his name was placed on the *Register* an examination in Arts, he is examined in Classics and Mathematics; if otherwise, he is required to translate into English passages from any one of the following Latin authors: Caesar, *De Bello Gallico* (first three books), Virgil, *Æneid* (first three books), or Celsus (first three books).

Professional Examination.—The candidate must pass an examination in the following subjects: i. Principles and Practice of Medicine, including Psychological Medicine, Hygiene and Therapeutics; ii. Principles and Practice of Surgery; iii. Midwifery and Diseases Peculiar to Women and Children; iv. Pathology, Medical and Surgical; v. Anatomy, Medical and Surgical; vi. Medical Jurisprudence and Toxicology. The examination is conducted by means of printed papers, clinically, in the Royal Infirmary, Newcastle, and viva voce. The classical portion of the examination may be taken separately from the professional on payment of a portion (£10 10s.) of the full fee.

Foreign and Colonial Practitioners.—Natives of India or the British Colonies are placed on the same footing as natives of Great Britain. Natives of India must produce evidence from an Indian university that they have passed within one year an examination in Latin.

Fees.—The inclusive fee is fifty guineas; if a candidate fail to pass twenty guineas are retained, but if he present himself again forty guineas only are required.

Dates, etc.—The examinations are held twice a year, towards the end of April and of September. Notice, accompanied by the fee and certificates, must be sent to Professor Howden, Secretary of the University of Durham College of Medicine, Newcastle-on-Tyne, at least twenty-eight days before the commencement of the examination.

University of Brussels.

British practitioners of medicine holding medical and surgical qualifications are, in common with legally-qualified practitioners in other countries, admissible without further curriculum to the examination for the degree of M.D. of the University of Brussels.

Examination.—The examination is divided into three parts. The "First Doctorate" includes Medicine, Pathology (with microscopical examination[1]), Therapeutics, Mental Diseases, and Diseases of Women and Children. The "Second Doctorate" comprises Surgery, Midwifery, Hygiene, and Medical Jurisprudence. The "Third Doctorate" consists of clinical examination in Medicine and Surgery, examination in Midwifery with the *mannequin*, Ophthalmology, Operative Surgery (amputation, ligature of arteries in the dead subject), and Regional Anatomy with Dissections. Special importance is attached to practical knowledge. The examination is conducted in French through an official interpreter, but most of the examiners, it is stated, speak English fluently. The examination is viva voce, but a written examination may be obtained on paying a special fee of £1 for each part.

Dates.—The examinations take place on the first Tuesday in November, December, February, May, and June. It is desirable that the candidate should arrive in Brussels on the previous Saturday before 2 p.m. at latest. The whole examination (First, Second and Third Doctorate) may be got through in about a week, and seldom exceeds eight to ten days.

[1] More microscope work is now required than formerly.

Fees.—Candidates are required to leave their diplomas with the Registrar of the University prior to the examination. The fees are: For inscription of name, £8 12s.; for examination, £13; for legalization of diploma, 8s.: total, £22. If a candidate fail in the first part of the examination the fees for the second and third are returned to him; if in the second, the fees for the third. A rejected candidate may present himself again in three months on paying the examination fees, provided his second appearance be in the same academic year (October 1st to June 30th); otherwise the matriculation fee must be renewed—that is, the fee for inscription of name.

Further particulars may be obtained from Dr. F. H. Edwards (Camberwell House, Camberwell, S.E.), Hon. Sec. Brussels Medical Graduates' Association. An article containing a full description of everything concerning the degree was published in the British Medical Journal on September 15th, 1888.

PUBLIC HEALTH OR STATE MEDICINE.

A medical officer of health of any county, or of any single or combined district with a population at the last census of 50,000 or more, or of any metropolitan district, or the deputy of any such officer, must be legally qualified for the practice of Medicine, Surgery, and Midwifery, and also either be registered in the *Medical Register* as the holder of a diploma in Sanitary Science, Public Health, or State Medicine, under Section xxi of the Medical Act, 1886, or have been, during three consecutive years preceding the year 1892 a medical officer of a district or combination of districts in London or elsewhere with a population, according to the last published census, of no fewer than 20,000, or have, before the passing of the Local Government Act, 1888, been for not less than three years a medical officer or inspector of the Local Government Board.

The following regulations for candidates for diplomas in Public Health have been laid down by the Royal College of Physicians of London and the Royal College of Surgeons of England, and conform to the requirements of the General Medical Council. These regulations are designed to ensure "the possession of a distinctly high proficiency, scientific and practical, in all the branches of study which concern the Public Health."

Section I.
Examination.

(1) Candidates must have obtained a registrable qualification in Medicine, Surgery, and Midwifery.

(2) The examination, consisting of two parts, will be held in the months of January and July in each year.

(3) Candidates must pass Part I before being admitted to Part II.

(4) Candidates may enter for Parts I and II separately, or at the same time, but no candidate's name will be published until he has passed in both parts of the examination.

(5) The examination in each part will be written, oral, and practical.[1]

(6) The fee for each part is £6 6s., and must be paid three days prior to the day on which the examination commences.

(7) A candidate who fails to satisfy the examiners in either part may present himself again at the next examination on payment of a fee of £6 6s.

(8) The diploma awarded is entitled "Diploma in Public Health of the Royal College of Physicians of London and the Royal College of Surgeons of England."

(9) A candidate intending to present himself for either part of the examination must give 14 days' notice in writing to the Secretary, at the Examination Hall, Victoria Embankment, W.C.

Section II.
Conditions of Admission to Examination.

I. *For candidates who obtained a registrable qualification on or before January 1st, 1890.*

A candidate entitled to be registered under the Medical Act on or before January 1st, 1890, will be admissible to Part I of the examination on producing evidence of being at least 23 years of age, and to Part II on producing evidence of being at least 24 years of age.

II. *For candidates who obtained a registrable qualification after January 1st, 1890.*

A candidate will be admissible to examination in Part I on producing evidence:—

(1) Of having been in possession of a registrable qualification in Medicine, Surgery, and Midwifery for at least twelve months.

(2) Of having attended, after obtaining such registrable qualification, practical instruction in a laboratory, recognized by the Examining Board in England, during a period of six months.

(3) Of being at least 23 years of age.

A candidate will be admitted to Part II of the examination on producing evidence:—

(4) Of having, after obtaining a registrable qualification, been associated day by day in the duty, routine and special, of Public Health Administration during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under Paragraph 2, Clause 2) under the supervision of—

[1] The practical examination in Part II may include a visit to, and report on, some selected premises.

(*a*) In England and Wales, the medical officer of health of a county or of a single sanitary district having a population of no fewer than 50,000, or a medical officer of health devoting his whole time to public health work; or

(*b*) In Scotland, a medical officer of health of a county or counties, or of one or more sanitary districts having a population of no fewer than 30,000; or

(*c*) In Ireland, a medical superintendent officer of health of a district or districts having a population of no fewer than 30,000; or

(*d*) A medical officer of health who is also a teacher in the department of public health of a recognized medical school.

(*e*) A sanitary staff officer of the Royal Army Medical Corps having charge of an army corps, district or command, recognized for the purpose by the General Medical Council.

*** Provided that the period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of laboratory instruction required under Regulation 2), in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary law, sanitary engineering, vital statistics, and other subjects bearing on Public Health administration, given by a teacher or teachers in the Department of Public Health of a recognized Medical School.

Note—The certificate of an assistant medical officer of health of a county or of a single sanitary district having a population of no fewer than 50,000 may be accepted as evidence under Clause 4, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and to issue certificates.

5. Of having attended, during three months, after obtaining a registrable qualification, the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration. In the case of a medical officer of the Royal Army Medical Corps a certificate from a Principal Medical Officer under whom he has served, stating that he has during a period of at least three months been diligently engaged in acquiring a practical knowledge of Hospital Administration in relation to Infectious Diseases, may be accepted as evidence under this regulation.

6. Of being at least 24 years of age.

SYLLABUS FOR THE EXAMINATION.

PART I.

The first part of the examination will have reference to the general principles of sanitary science, and will comprise the following subjects:

The elements of chemistry, physics, and geology. Methods of examination of water and air for hygienic purposes, including a knowledge of analytical methods and the interpretation of results. The chemical composition of foods, and the usual forms of adulteration. The laws of heat and the elements of pneumatics, hydrostatics, and hydraulics, in their relation to warming, ventilation, water supply, and drainage. Principles of building construction in their application to dwellings, hospitals, schools, etc. Meteorology in relation to health; meteorological instruments, their construction and use. The general principles of sanitary engineering, including the disposal of sewage and refuse. The reading and interpretation of geological and ordnance survey maps. The microscopical examination of foods and the detection thereby of the common forms of adulteration. The methods of bacteriological analysis, and the bacteriology of water, air, food, and soil. Disinfectants, their chemical and bacteriological efficacy and use. The general pathology of infection and the diseases of animals that are transmissible to man. Nature of immunity and protection from infectious disease.

PART II.

The second part of the examination will have reference to the application of the Principles of Sanitary Science, and will comprise the following subjects:

Laws and statutes relating to Public Health, including the model Bylaws of the Local Government Board. General Epidemiology with reference to the origin, pathology, symptoms, propagation, geographical distribution, and prevention of epidemic, endemic, and other diseases at home and abroad. Unwholesome trades and the diseases to which they give rise, and the prevention of nuisances arising therefrom. Nature and origin of parasitic diseases. Nuisances injurious or dangerous to health. Causes and conditions which produce climate, general effects of climate, acclimatization. Effects on health of overcrowding, vitiated air, impure water, polluted soil, and bad or insufficient food. Duties of sanitary authorities and their officers.

Vital statistics:—Calculation of population, birth-rate, marriage-rate, and death-rate; mortality from zymotic diseases; sickness-rate; relation between occupation and mortality; life tables, their construction and interpretation of the value of statistical facts, averages and methods.

Laboratories recognized for the above course of Laboratory Instruction:

London.—St. Bartholomew's,* Guy's, London, University College, King's College, Charing Cross, St. George's, St. Mary's, St. Thomas's, Westminster, Middlesex.
Birmingham.—The University.
Brighton.—Technical School.
Bristol.—Medical School.
Cardiff.—University College.
Leeds.—Yorkshire College.
Liverpool.—The University; School of Science and Technicology.
Manchester.—Owens College.
Newcastle-on-Tyne.—University of Durham College of Medicine.
Sheffield.—University College.

Books of questions set at the examinations for the diploma in Public Health during the years from 1887 to 1903 may be obtained on application to Messrs. Taylor and Francis, Red Lion Court, Fleet Street, London, E.C. Price 6d., post free, 6½d. each.

The examination for diplomas in Public Health, granted by the various Universities and Medical Corporations, and the courses of study required, are adapted to meet the regulations of the General Medical Council, and, as a rule, to fulfil the recommendations issued by that body from time to time.

* Bacteriology only.

BOOKS.

It is impossible to indicate all the books which may be consulted with advantage by candidates for the various examinations, but the following list of books includes those which are most generally read:

Whitelegge's *Hygiene and Public Health* (London: Cassell and Co., 1899, 7s. 6d.); Parkes and Kenwood's *Hygiene and Public Health*, second edition (London: H. K. Lewis, 1902, 12s.); Wilson's *Handbook of Hygiene*, eighth edition (London: J. and A. Churchill, 1898, 12s. 6d.); *The Theory and Practice of Hygiene*, by Notter and Horrocks and Firth, second edition (London: J. and A. Churchill, 1900, 25s.); Hamer's *Manual of Hygiene* (London: J. and A. Churchill, 1902. 12s 6d.; Stevenson and Murphy's *Treatise on Hygiene and Public Health*, 3 vols., for reference on special subjects (London: J. and A. Churchill, 1892-4, 80s.); Wynter Blyth's *Manual of Public Health* (London: Henry Renshaw, 1896, 21s.); Kenwood's *Public Health Laboratory Work*, third edition (London: H. K. Lewis, 1903, 10s. 6d.); Wanklyn's *Water, Air, Milk, and Bread Analysis*, four separate manuals (London: Kegan Paul, Trench, Trübner and Co., 5s. each); Thresh's *Examination of Waters and Water Supplies* (London: J. and A. Churchill, 1904, 14s.); Horrocks, *Bacteriological Examination of Water* (London: J. and A. Churchill, 1901, 10s. 6d.); Woodhead's *Bacteria and their Products* (London: W. Scott, 1892, 3s. 6d.); Kanthack and Drysdale's *Practical Bacteriology* (London: Macmillan and Co., 1895, 4s. 6d.); Muir and Ritchie's *Manual of Bacteriology*, third edition (London: Young J. Pentland, 1902, 12s. 6d.); Klein's *Micro-organisms and Disease* (London: Macmillan and Co., 1896, 10s. 6d.); Crookshank's *Textbook of Bacteriology* (London: H. K. Lewis, 1896, 21s.); Hewlett's *Manual of Bacteriology*, second edition (London: J. and A. Churchill, 1902, 12s. 6d.); Daniell's *Textbook of the Principles of Physics* (London: Macmillan and Co., 1896. 4s. 6d.); Balfour Stewart's *Elementary Physics* (Oxford: Clarendon Press, 7s. 6d.); Newsholme's *Vital Statistics*, third edition (London: Swan Sonnenschein and Co., 1899, 7s. 6d.); McVail's *Vaccination Vindicated* (London: Cassell and Co., 1887, 5s.); J. W. Moore's *Meteorology: Practical and Applied* (London: Rebman and Co., 8s.); Scott's *Meteorology*, sixth edition (London: Kegan Paul, Trench, Trübner and Co., 1893, 5s.); Stanton's *Public Health Acts* (London: Knight and Co., 7s. 6d.); Knight's *Annotated Model By-laws*, sixth edition (London: Knight and Co., 1899, 12s.); Corfield's *Dwelling Houses: Their Sanitary Construction and Arrangements*, fourth edition (London: H. K. Lewis, 1898, 3s. 6d.).

It is also desirable to consult several Special Reports of the Local Government Board, etc. (London: Eyre and Spottiswoode).

UNIVERSITY OF OXFORD.

The examination is in two parts, conducted partly in writing, partly viva voce, and in each subject partly practical. The first part comprises the application of Chemistry and Physics to General Hygiene. The second part comprises the following subjects: General Pathology, with special relation to Infectious Diseases; the Laws Relating to Public Health; Sanitary Engineering; Vital Statistics. Both parts may be taken together at the same examination, or they may be taken at separate examinations; but no one is deemed to have satisfied the Examiners in Part II unless he has satisfied the Examiners in the subjects of Part I. The fee for admission to each part is £5. A diploma is issued to every candidate who has passed in both parts of the examination, but no diploma or certificate is given under any other circumstances. Candidates must have satisfied all the rules of the General Medical Council of the United Kingdom relating to the admission of candidates for diplomas in Public Health which are in force at the time of the examination.

UNIVERSITY OF CAMBRIDGE.

A diploma in Public Health is granted by the University, and any person whose name is on the *Medical Register* may apply to be examined, provided he can show that he has complied with the regulations laid down by the General Medical Council (see p. 490).

Two Examinations in so much of State Medicine as is comprised in the functions of Medical Officers of Health will be held during the year 1904-5 in Cambridge. Each examination will consist of two parts. Part I will begin on the first Tuesday in April and on the first Tuesday in October respectively; Part II will begin on the second Tuesday in April and on the second Tuesday in October respectively; and each part will end on the following Thursday.

Any person whose name is on the *Medical Register* is admissible as a candidate to this examination provided that

(I) A period of not less than twelve months has elapsed between the attainment of a registrable qualification in Medicine, Surgery, and Midwifery, and the admission of the candidate to either part of the examination;

(II) He produce evidence that, after obtaining a registrable qualifications, he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration, including therein the methods of dealing with patients at their admission and discharge as well as in the wards, and the medical superintendence of the hospital generally;

(III) He produce evidence that, after obtaining a registrable qualification, he has attended during a period of six months one or more courses,[1] approved by the Syndicate, of Practical Laboratory Instruction in Chem-

[1] A list of Colleges and Schools of Medicine at which the courses of Laboratory Instruction have, for the purposes of this Examination, been already approved by the Syndicate, will be found printed on p. 535.

istry, Bacteriology, and the Pathology of those Diseases of Animals that are transmissible to Man:

(IV) He produce evidence that, after obtaining a registrable qualification, he has during six months [1] (of which at least three months shall be distinct and separate from the period of laboratory instruction required under Paragraph III) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of—

(*a*) In England and Wales, either the Medical Officer of Health of a county or of a single sanitary district having a population of not less than 50,000, or a Medical Officer of Health devoting his whole time to Public Health work.

(*b*) In Scotland, the Medical Officer of Health of a county or counties, or of one or more sanitary districts having a population of not less than 30,000; or

(*c*) In Ireland, the Medical Superintendent Officer of Health of a district or districts having a population of not less than 30,000; or

(*d*) A Medical Officer of Health who is also a teacher in the Department of Public Health of a recognized medical school; or

(*e*) A Sanitary Staff Officer of the Royal Army Medical Corps having charge of an army corps, district, or command, recognized for this purpose by the General Medical Council.[2]

The Certificate of an Assistant Officer of Health of a county or of a single sanitary district having a population of not less than 50,000 may be accepted as evidence under Paragraph IV, provided the Medical Officer of Health of the county or district in question permits the Assistant Officer to give the necessary instruction and to issue certificates.

*** A candidate who produces evidence that he has himself held an appointment as Medical Officer of Health under conditions not requiring the possession of a Special Sanitary Diploma shall be exempt from the provisions of Paragraph IV. The provisions as to previous study, Paragraphs II, III, IV, shall not apply to medical practitioners registered, or entitled to be registered, on or before January 1st, 1900. A candidate who previous to January, 1902, was admitted or was qualified for admission to the examination, or who had already entered on the course of study prescribed by the Regulations in force before that date, will continue to be admissible on presenting the certificates required under the old Regulations.

The First Part of the Examination will have reference to the General Principles of Sanitary Science, and will comprise the following subjects:

The elements of chemistry and physics: methods of chemical analysis, and in particular the analysis of air and water. The laws of heat and the elements of pneumatics, hydrostatics, and hydraulics, in their application to warming, ventilation, water supply, and drainage. The geological and other conditions determining the healthiness of sites for dwellings. Sources, storage, and purification of water supply. The elements of meteorology in relation to health. Principles of building construction in their application to dwellings, hospitals, and schools. The disposal of sewage and refuse, and the general principles of sanitary engineering. Disinfectants, their chemistry and use. The chemical and microscopical examination of foods, and the detection of the commoner forms of contamination. The methods of bacteriological investigation and analysis. The bacteriology of air, water, food, and soil. The general pathology of infection, and of the diseases of animals that are transmissible to man.

The Second Part of the Examination will have reference to State Medicine and to the applications of Pathology and Sanitary Science, and will comprise the following subjects:

Laws and Statutes relating to Public Health.[3] The model By-laws of the Local Government Board. Sanitation of dwellings, schools, factories, and workshops, and of villages and towns. Inspection of slaughter-houses, cowsheds, etc. Inspection of meat and other articles of food. General Epidemiology, with special reference to the origin, pathology, symptoms, propagation, geographical distribution, and prevention of the epidemic, endemic, and other infective diseases both of temperate and of tropical climates. The methods applicable to the medical investigation of epidemics. Effects on health of overcrowding, vitiated air, impure water, polluted soils, and bad or insufficient food. Unwholesome trades and occupations, and the diseases to which they give rise. Nuisances injurious or dangerous to health. The effects on health of season and climate. The principles and methods of Vital Statistics in relation to Public Health.

N.B.—The foregoing schedule is not to be understood as limiting the scope of the examination, which will include every branch of Sanitary Science. No candidate will be approved by the Examiners who does not show a high proficiency in all the branches of study, scientific and practical, which bear upon the duties of Medical Officers of Health.

The examination in both parts will be oral and practical as well as in writing. One day at least will be devoted to practical laboratory work, and one day to oral and practical examination in, and reporting on, subjects connected with outdoor sanitary work.

[1] This period of six months may be reduced to a period of three months (which must be distinct and separate from the period of laboratory instruction required under Paragraph III) in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary law, sanitary engineering, vital statistics, and other subjects bearing on Public Health Administration given by a teacher or teachers in the Department of Public Health of a recognized medical school.

[2] Districts recognized by the General Medical Council: Aldershot, Salisbury Plain, Southern and South-Eastern, Western, Dublin and Belfast, Cork, Chatham and Woolwich, Home, Eastern, North-Eastern and North-Western, Scottish, Gibraltar Command, Bombay Command, Punjab Command, Bengal Command, Madras Command.

[3] All candidates will be examined in the provisions of the English Statutes relating to Public Health, but any candidate will be given an opportunity of showing a special knowledge of other Sanitary Laws in operation within the British Empire, provided that, *when applying for admission to the Examination*, he *give notice* of his desire and indicate the special law he proposes to offer.

[4] The Examination Papers set at former Examinations can be obtained at the Cambridge University Press Warehouse, Ave Maria Lane, London. Price 1s. each set, or by post 1s. 1d.

Candidates may present themselves for either part separately or for both together at their option: but the result of the examination in the case of any candidate will not be published until he has passed to the satisfaction of the examiners in both parts.

Every candidate will be required to pay a fee of six guineas before admission or readmission to either part of the examination, but candidates who have presented themselves before the year 1896 will be readmitted to either part on payment of a fee of five guineas.

Every candidate who has passed both parts of the examination to the satisfaction of the examiners will receive a diploma testifying to his competent knowledge of what is required for the duties of a medical officer of health.

All applications for information respecting this examination should be addressed to Dr. Anningson, Walt-ham-sal, Cambridge, Secretary to the State Medicine Syndicate.

Candidates who desire to present themselves for the examination and the courses of study in the University must send in their applications on forms supplied for the purpose, and transmit them with the fees to J. W. Clark, M.A., Registrary, University of Cambridge, for the April examination on or before March 17th, and for the October examination on or before September 15th. The prescribed certificates must be sent to the Registrary so as to reach him not later than 10 a.m. on March 30th and September 28th respectively. Cheques should be crossed "Barclay and Co., Ltd." The fee for either part of the examination cannot be returned to any candidate who fails to present himself, but he will be entitled without an additional fee to be a candidate on one subsequent occasion.

Candidates must before admission to either part of the examination produce evidence of having satisfied Provisions I, II, and III, and before admission to Part II evidence of having satisfied Provision IV above mentioned.

Courses of Practical Laboratory Instruction approved by the Syndicate with reference to Provision (III) are given at

The University Laboratories, Cambridge.
London Hospital Medical College.
St. Bartholomew's Hospital Medical College.
King's College, London.
University College, London.
The Royal Army Medical College, London.
Victoria University of Manchester.
Durham College of Medicine, Newcastle-on-Tyne.
The University of Birmingham.
University College, Liverpool.
St. Mary's Hospital Medical College.
Charing Cross Hospital College.
University College, Bristol.
Yorkshire College, Leeds.
Guy's Hospital Medical School.
St. Mungo's College, Glasgow.
The University of Edinburgh.
The University of Glasgow.
The University of Aberdeen.
Middlesex Hospital Medical School.
The Royal Southern Hospital, Liverpool.
The Royal Colleges, Edinburgh.
Surgeons' Hall, Edinburgh.
Lister Institute of Preventive Medicine.
Trinity College, Dublin.
Queen's College, Belfast.
St. Thomas's Hospital Medical School.
Westminster Hospital Medical School.
University College, Cardiff.
University College, Sheffield.
Catholic University Medical School, Dublin.
St. George's Hospital Medical School.

Courses of lectures (and time table), laboratory instruction, and practical sanitary administration are arranged in order to fulfil the requirements of the regulations for the examinations in Sanitary Science held in April and October, and include:

1. Dr. Anningson: (*a*) General course of lectures on the principles of Hygiene, (*b*) practical sanitary (urban and rural) administration, (*c*) administrative work of the Cambridge Borough Infectious Diseases Hospital.

2. Mr. G. H. F. Nuttall, M.A.: Lectures and practical laboratory instruction in Bacteriology and Preventive Medicine at the Pathological Laboratory, Downing Street, Cambridge.

3. Mr. A. E. Shipley, M.A.: Lectures and practical demonstrations in animal parasites at the Pathological Laboratory.

4. Mr. J. E. Purvis, M.A.: Lectures and practical laboratory instruction in Chemistry and Physics as applied to Hygiene, and including the chemical and physical examination of gases, water, sewage, foods and their adulterations, etc., at the Chemical Laboratory, Pembroke Street.

Further particulars may be obtained from Dr. Anningson, Walt-ham-sal, Barton Road, Cambridge, or at the University Laboratories above mentioned.

University of London.

The University does not grant a diploma in Public Health, but has established a degree of M.D. in State Medicine, which is open to persons holding the degrees of M.B., B.S. of the University.

VICTORIA UNIVERSITY OF MANCHESTER.

The University grants a diploma and a degree (B.Sc.) in Public Health. In the Public Health Laboratories (York Place) instruction is given adapted to the requirements of (1) candidates preparing for the examinations of the various universities and examining bodies for the diploma of Public Health; (2) candidates preparing for the degree of B.Sc. in Public Health of the University of Manchester; and (3) medical men or students wishing to undertake research in Pathology, Bacteriology, Sanitary Chemistry, etc., or to take post-graduate courses of Clinical Pathology and Bacteriology.

Communications regarding classes should be addressed to the Director of the Public Health Laboratories (York Place), Victoria University of Manchester. Entries for classes should be made with the Registrar, and fees paid to the Bursar.

Diploma in Public Health.

The examination is held twice yearly, beginning about the middle of January and the middle of July, under the following regulations:

1. The examination is in two parts, and is written, oral, and practical.

2. Candidates before entering for the first part of the examination must have held for not less than twelve months a registrable qualification in Medicine, Surgery, and Midwifery, and must present satisfactory certificates.

(i)[1] Of having attended an approved course of instruction in Public Health in the University, or in a college or medical school recognized for this purpose by the University.

(ii)[1] Of having attended, after obtaining a registrable qualification, during at least six months' practical instruction in laboratories approved by the University, the courses including Chemistry as applied to Public Health, Bacteriology, and the Pathology of those diseases of animals which are communicable from animals to man.

3. Candidates before entering the second part of the examination must present certificates—

(1) Of having, after obtaining a registrable qualification, attended during not less than three months the Clinical Practice of a Hospital for Infectious Diseases approved by the several licensing bodies recognized under the Medical Act;

(2) Of having, after obtaining a registrable qualification, during six months (of which at least three months shall be be distinct and separate from the period of laboratory instruction required under (ii) been diligently engaged in acquiring a knowledge of the duties, routine and special, of Public Health Administration, under the supervision of the medical officer of health of a county, or of a single sanitary district having a population not less than 50,000, or a medical officer of health devoting his whole time to public health work, or a medical officer of health who is also a teacher in the department of public health of a recognized medical school.

4. Candidates may present themselves for Parts I and II separately or at the same time, provided that no candidate be admitted to Part II unless he has already passed in Part I. No candidate's name will be published until he has satisfied the examiners in both parts of the examination.

5. The fee for each part is £5 5s., and must be paid on or before December 15th or July 1st in each year. For any subsequent examination in the same part the fee will be £3 3s.

Every candidate who has passed both parts of the Examination, and who is legally registered, will receive a Diploma in Public Health.

Subjects of Examination.

Part I.

The subjects of examination are as follows:

1. *Chemistry as applied to Public Health.*—(*a*) Chemistry, with special reference to the examination of air and water; (*b*) methods of qualitative and quantitative analysis.

2. *Physics as applied to Public Health.*—(*a*) Elements of Heat, with special reference to warming, ventilation, and meteorology; (*b*) meteorological instruments and their use.

3. *Etiology of Disease.*—(*a*) Pathology of Epidemic and Endemic Diseases, including diseases of animals communicable to man; (*b*) influence of unwholesome food, air, water, occupation, dwelling, climate, season, soil.

4. *Practical Pathology and Bacteriology.*—(*a*) Practical Bacteriology, detection and cultivation of vegetable parasites, bacteriological analysis of air and water; (*b*) recognition of parasites and of the lesions which they produce in man; (*c*) recognition of diseased meat.

5. *Microscopy as applied to Public Health.*—(*a*) Foods, their adulterations, contaminations, and parasites; (*b*) air and water, their microscopical impurities.

Part II.

The Subjects of Examination are as follows:

1. *Engineering as applied to Public Health.*—(*a*) Water Supply; (*b*) Drainage, Sewerage, and Disposal of Refuse; (*c*) Construction of Dwellings, Schools, Hospitals, including their warming and ventilation; (*d*) Geological data referring to the above; (*e*) Interpretation of plans.

2. *Sanitary Law and Administration.*—(*a*) Domestic and General Sanitation of houses, villages, and towns; (*b*) Regulation of offensive, dangerous, or unhealthy trades and occupations; (*c*) The prevention and control of epidemic disease by isolation, disinfection, vaccination, and other methods; (*d*) Statutes and By-laws relating to Public Health.

3. *Vital Statistics.*

4. *Sanitary Reporting.*—The candidate will be required to visit and report upon the sanitary condition of some locality assigned to him by the Examiners.

Order of Examination.

Part I.

The Examination will include:

1. A three hours' written examination on Chemistry and Physics as applied to Public Health.
2. A four hours' practical and oral examination on Chemistry as applied to Public Health.
3. A three hours' written examination on the Etiology of Disease.
4. A four hours' practical and oral examination on Bacteriology, the Pathology of infectious diseases, diseased meat, and the use of the microscope as applied to the examination of food, air, and water.

Part II.

The Examination will include:

1. A three hours' written and oral examination on Engineering as applied to Public Health.
2. A three hours' written examination on Sanitary Law and Administration, and on Vital Statistics.
3. Sanitary reporting.
4. Oral examination on the above subjects.

Candidates preparing for the D.P.H. Examination of the University will find it convenient to arrange their attendances in one of the following ways:—

1. Beginning in October: Laboratory work from October to March; Outdoor Sanitary work from January to July; Hospital for Infectious Diseases, three months before, during, or after the period of study in the Laboratory.

2. Beginning in January: Laboratory work from January to July; Out-door Sanitary work from March to October; Hospital for Infectious Diseases, three months before, during, or after the period of study in the Laboratory.

3. Beginning in April: Laboratory work from October to March; Outdoor Sanitary work from April to October; Hospital for Infectious Diseases, three months before, during, or after the period of study in the Laboratory.

4. Beginning in July: Outdoor Sanitary work from July to January; Laboratory work from October to March; Hospital for Infectious Diseases, three months before, during, or after the period of study in the Laboratory.

Candidates are recommended to begin either in October or July, rather than in January or April.

Candidates who have not attended a course of lectures on Public Health as part of the medical curriculum should attend either the general course given during the summer session or the advanced course of lectures on Public Health.

Candidates beginning in July or October may present themselves for examination the following July.

Candidates beginning in January may present themselves for examination the following January.

DEGREE OF B.SC. IN PUBLIC HEALTH.

1. Candidates must be graduates in Medicine of this University or of some other University recognized for the purpose.

2. Candidates must produce certificates of attendance at courses of study in the University extending over not less than two years subsequent to their graduation in Medicine,

[1] May be modified in the case of practitioners qualified before 1890.

and must have passed an examination in the subjects prescribed by the regulations.

Regulations.

1. The courses of study shall include: (1) The subjects of the diploma in Public Health. (2) An approved advanced course in two of the following subjects: (*a*) Comparative Pathology, (*b*) Physics and Meteorology, including Climatology, (*c*) Chemistry, (*d*) Biology, (*e*) some other Science.

2. Candidates must produce certificates of having attended six months, day by day, with a medical officer of health recognized for this purpose by the University; such period may include the attendance at a Fever Hospital.

3. The candidates must have passed the examination for the diploma in Public Health, either at the end of the first year or second year of study, and must have attained in that examination a standard approved by the Faculty of Science.

4. Candidates must present themselves for examination in the two subjects under (2) at the end of their course of study.

Candidates preparing for the B.Sc. degree must, after attending the D.P.H. courses, apply for admission to two of the following departments: Comparative Pathology, Chemistry, Physics, Biology (Botany and Zoology), where they must devote one year to the study of the subjects indicated to them by the professor in charge of the department.

University of Birmingham.

The University grants the degree of B.Sc. in Public Health, and also a diploma in the same subject on the following conditions: Graduates in Medicine of this University may become candidates for the degree of Bachelor of Science in Public Health by conforming to all the requirements laid down for candidates for the Diploma in Public Health, except that after graduating in Medicine all courses of study must be taken out in the University, and they must, in addition, have attended a three months' course of Geology in the University.

The following are the regulations for the Diploma in Public Health:

General Conditions.—(1) All candidates must be registered under the Medical Act. (2) The examinations will be held in the months of January and June, and will consist of two parts. No candidate will be allowed to pass Part II until he has passed Part I. (3) Candidates may enter for Parts I and II separately or at the same time. (4) The examination in each part will be written, oral, and practical. (5) Candidates intending to present themselves for either part of the examination must give notice in writing to the Registrar of the University on the date prescribed in the Calendar. (6) The fee for each part of the examination is £5.

Conditions of Admission to the Examinations.—(1) For candidates registered under the Medical Act on or before January 1st, 1890. Candidates so registered will be allowed to sit for examination on producing certificate of registration. (2) For candidates registered under the Medical Act after January 1st, 1890. Candidates will be admitted to examination in Part I on producing evidence: (1) Of being at least 23 years of age, and of having been possessed of a registrable qualification in Medicine, Surgery, and Midwifery for a period of twelve months. (2) Of having received, after obtaining a registrable qualification, during six months, practical instruction in a laboratory or laboratories, British or foreign, approved by the University, in which Chemistry, Bacteriology, and the Pathology of the Diseases of Animals transmissible to man are taught. (Note.—Graduates in Medicine of the University of Birmingham, or past students who have taken out the whole of their curriculum in the Birmingham Medical School, may attend the required instruction in Chemistry and Bacteriology either in this or in some other University, University College, or Medical School in Great Britain or Ireland. Others must attend the special courses of instruction in Chemistry and Bacteriology required for the diploma, in the University of Birmingham.) (3) That after obtaining a registrable qualification, he has, during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under Rule 2) been associated day by day in the duty, routine and special, of Public Health administration under the supervision of: (*a*) In England and Wales, the medical officer of health of a county or a single sanitary district having a population of no fewer than 50,000, or a medical officer of health devoting his whole time to Public Health work; or (*b*) in Scotland, a medical officer of health of a county or counties, or of one or more sanitary districts having a population of no fewer than 30,000; or (*c*) in Ireland, a medical superintendent of health of a district or districts having a population of no fewer than 30,000; or (*d*) a medical officer of health who is also a teacher in the department of Public Health of a recognized medical school. Provided that the period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of Laboratory instruction required under Rule 2) in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has, during three months, attended a course or courses of instruction in Sanitary Law, Sanitary Engineering, Vital Statistics, and other subjects bearing on Public Health administration, given by a teacher in the department of Public Health in the University, or (as in Note to Rule 2) in any medical school in the kingdom. The certificate of an assistant medical officer of health of a county or of a single sanitary district having a population of no fewer than 50,000, may be accepted as evidence under Rule 3, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and to issue certificates. (4) That, after obtaining a registrable qualification, he has attended during three months the practice of a hospital for infectious diseases recognized by the University, at which opportunities are afforded for the study of methods of administration. Officers of the Royal Army Medical Corps who have studied Chemistry and Bacteriology at the Staff College, and pursued the further course of study approved by the General Medical Council in December, 1902, will be admitted to the examination for the Diploma in Public Health, whether they have previously been students of the Birmingham School or not.

The examination for the degree is not the same as that for the diploma, and a considerably higher standard of knowledge will be exacted at the former.

The whole of the instruction, with the exception of outdoor sanitary work, required for the degree and diploma in Public Health can be taken out in the University. Fees: Sanitary chemistry, £8 8s.; caution money deposit, £1; bacteriology, £4 4s.; incidental fee, £1 1s.; geology, £2 2s.; public health lectures, £2 2s.

Conjoint Board in England.

The diploma in Public Health of the Royal College of Physicians of London and the Royal College of Surgeons of England is granted to persons whose names are on the *Medical Register*, or who are entitled to register. The examination is held in two parts, and Part I may be passed before fulfilling Clauses 4 and 5 under Part II. The subjects of the two parts and other particulars of the examination are to be found on p. 533.

University of Durham.

The University grants a Diploma in Public Health (D.P.H.) and the degree of Bachelor in Hygiene (B.Hy.) and Doctor in Hygiene (D.Hy.)

Degree of Bachelor in Hygiene (*B.Hy*).—The candidate must be a registered medical practitioner, a graduate in medicine of a recognized University, and not less than 22 years of age. He is not admissible until after the lapse of at least twelve months from his obtaining his first registrable qualification. He must have spent six months of professional study subsequent to the attainment of a registrable qualification in attendance at the University of Durham Colleges in Newcastle-upon-Tyne, in the following manner: (*a*) Three months' course of lectures on Comparative Pathology, with practical work in the Bacteriological Laboratory. (*b*) Three months' practical instruction in the Chemical and Physical Laboratories. This course must not be concurrent with the three months' course of lectures on Comparative Pathology, with practical work in the Bacteriological Laboratory. Outdoor Sanitary Work: (*c*) Six months' practical study of outdoor sanitary work under a medical officer of health, as required by the rules of the General Medical Council. Regulation (*c*) to be omitted in the case of a Practitioner who has himself held appointment as a Medical Officer of Health under conditions not requiring the possession of a Sanitary Diploma under the Local Government (England and Wales) Act, 1888.

The rules of the General Medical Council as to outdoor sanitary work are as follows: Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of (*a*) in England and Wales, the medical officer of health of a county, or a single sanitary district having a

population of no fewer than 50,000, or a medical officer of health devoting his whole time to Public Health Work;[1] or (*b*) in Scotland, a medical officer of health of a county or counties, or of one or more sanitary districts having a population of not less than 30,000: or (*c*) in Ireland, a medical superintendent officer of health of a district, or districts, having a population of not less than 30,000: or (*d*) a medical officer of health who is also a teacher in the department of public health of a recognized medical school; or (*e*) a sanitary staff officer of the Royal Army Medical Corps, having charge of an army corps, district, or command recognized for this purpose by the General Medical Council. The following districts have been recognized by the Council, namely, Aldershot, Salisbury Plain, Southern, South-Eastern, and Western districts, Dublin, Belfast, and Cork districts, Chatham, Woolwich, Home and Eastern districts, North-Eastern and North-Western districts, Scottish district, Gibraltar, Bombay, Punjab, Bengal, and Madras commands.[2]

(*d*) The period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of laboratory instruction required under Rule 2), in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in Sanitary Law, Sanitary Engineering, Vital Statistics, and other subjects bearing on Public Health Administration, given by a teacher or teachers in a department of Public Health of a recognized medical school.

Every candidate must produce evidence that, after obtaining a registrable qualification, he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration.[3]

(*e*) Course of lectures on Public Health.

Regulation (*e*) to be omitted in the case of a candidate who has already attended the course before obtaining a registrable qualification.

Books recommended.—*Manual of Public Health*, by Professor A. Wynter Blyth. *Hygiene and Public Health*, by Parkes and Kenwood. *Handbook of Hygiene*, by Dr. Geo. Wilson. Notter's *Theory and Practice of Hygiene. Comparative Pathology: Manual of Bacteriology*, by Professor Crookshank; or *Manual of Bacteriology*, by Muir and Ritchie; *Essentials of Practical Bacteriology*, by Curtis. *Parasites of Man*, by Leuckart. *Sanitary Chemistry and Physics; Sanitary Examination of Water, Air, and Food*, by Dr. C. B. Fox. *Analysis of Water, Air, and Food*, by Professor Wanklyn. *Air, Water, and Disinfectants*, by Mr. Noel Hartley. *Dwelling Houses*, by Professor Corfield. *Meat Inspection*, by Professor Walley. Aitken's *Practice of Physic*: *Medical Geography*. Law: The Statutes and By-laws named under the heading "Sanitary Legislation."

The Examination is divided into two parts as follows: Part I: Sanitary Chemistry.—The examination of Air for Sanitary purposes. Water for Sanitary purposes. Milk and Food. Practical Examination in Chemistry as applied to Public Health. Physics.—The Principles of Physics in their application to warming, ventilation, water supply, and drainage. The Elements of Meteorology. Viva voce examination in Chemistry and Physics, Comparative Pathology, etc.—Knowledge of Comparative Pathology, Methods of Propagation, and Prevention of Microbic and Parasitic Diseases intertransmissible between Man and the Lower Animals; Morphology of Microbes and Animal Parasites. Methods of Microscopical Examination and Artificial Cultivation of Micro-organisms. The Bacteriological Examination of Water, Air, and Earth. Practical Examination.—The candidate will be expected to show a practical acquaintance with the usual methods of Bacteriological examination, and to be able to recognize specimens of Animal Parasites and Pathogenic Bacteria. There will also be a viva voce Examination in the above subjects. Part II: Sanitary Legislation.—Most of the Statutes relating to Public Health will be found in Knight and Co.'s *Public Health Acts* (latest edition), and the By-laws in the work under that title, by the same publishers. Vital Statistics.—Nosology.—Definition, Nomenclature, and Classification of Diseases. Climatology, Meteorology, Geographical Distribution of Health and Disease over the Globe, and in different Urban and Rural Districts of the United Kingdom. Sanitary Medicine. Practical Hygiene.—The Preparation of Sanitary Reports, and other Duties of a Medical Officer of Health. The candidate will also be required: (*a*) To pass an examination on medical clinical cases at the City Hospital for Infectious Diseases or elsewhere; (*b*) to draw up outlines for Annual or other Reports of a Medical Officer of Health: (*c*) to report upon the condition of some actual locality: (*d*) to describe the construction and use of Hygienic Apparatus and Sanitary Appliances: (*e*) to examine submitted specimens with the microscope; (*f*) to describe submitted specimens of Diseased Organs and Tissues (Human and other): (*g*) to inspect and describe specimens of Meat or other articles of food. The candidate will also be examined viva voce.—N.B.—Candidates may present themselves for either part of the examination separately or both together, at their option. Every candidate wishing to present himself for examination for the degree of Bachelor in Hygiene must give at least twenty-eight days' notice to Professor Howden, Secretary of the University of Durham College of Medicine, Newcastle-upon-Tyne, and must, at the same time, send the examination fee and the necessary certificates. The fee for the examination for the degree of B.Hy. is £10 10s., and for the degree, £6 6s.

Degree of Doctor in Hygiene (*D.Hy*).—The candidate must be a Bachelor in Hygiene, and must have been engaged for two years subsequent to the date of his acquirement of that degree, in practice, as a medical officer of health. He must write an essay on some practical hygienic subject, selected by himself and approved by the Lecturer on Public Health, and he will be examined thereon. The essays must be forwarded to the Lecturer on Public Health one month before the date of the examination. The fee for the examination for the degree of D.Hy. is £5, and for the degree £6 6s.

Diploma in Public Health (*D.P.H.*).—The candidate must be a registered medical practitioner not less than 22 years of age. He must have spent six months of professional study subsequent to the attainment of a first registrable qualification, in attendance at a recognized medical school, in the following manner:

(*a*) Three months' course of lectures on Comparative Pathology, with practical work in the bacteriological laboratory. (*b*) Three months' practical instruction in a chemical laboratory. This course must not be concurrent with the three months' course of lectures on Comparative Pathology, with practical work in the bacteriological laboratory. (*c*) Six months' practical study of outdoor sanitary work, under a medical officer of health, as required by the rules of the General Medical Council. Regulation (*c*) to be omitted in the case of a practitioner who has himself held appointment as a medical officer of health under conditions not requiring the possession of a Sanitary diploma under the Local Government (England and Wales) Act, 1888. (*d*) Three months' attendance—after obtaining a registrable qualification—on the clinical practice and instruction of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration. (*e*) Course of lectures on Public Health. Regulation (*e*) to be omitted in the case of a candidate who has already attended the courses before obtaining a registrable qualification.

The regulations for examination are the same as those for the Degree of Bachelor in Hygiene (see p. 537). The fee for the examination and diploma is £10 10s.

Diploma in Public Health for Medical Practitioners.—The candidate must have been registered, or entitled to be registered, on or before January 1st, 1890. The examination is the same as that for the ordinary Diploma in Public Health. Candidates must give at least twenty-eight days' notice to Professor Howden, Secretary of the University of Durham College of Medicine, Newcastle-upon-Tyne, and must at the same time send the examination fee and the necessary certificates. The fee for the examination and diploma is £10 10s.

UNIVERSITY OF ABERDEEN.

The University grants a diploma in Public Health. Candidates for the diploma must have graduated in Medicine in the University, or in a University in the United Kingdom, one year before they receive the diploma; and they must produce evidence of (1) having complied with the regulations of the General Medical Council (see p. 533): (2) of having attended a female hospital, containing no fewer than 50 beds, for six months: (3) if not a graduate in Medicine of Aberdeen University, of having attended a course in the University in one or more of the subjects embraced in the examination for the diploma. The examination consists of two parts: Part I (*a*) Physics, Engineering, and Meteorology; (*b*) Chemistry, Microscopy, and Bacteriology. Part II (*a*) General Hygiene; (*b*) Sanitary Law and Vital Statistics. The examination (which is written and oral) is held in March and July, and notice must be given to the Secretary of the Medical Faculty two weeks before. A detailed synopsis can be obtained from the Dean of the Medical Faculty, or will be found in the *University Calendar* for 1904-5. The fee, which must be paid at the time of giving notice, is £5 5s. The fee for re-examination, £1 1s.

UNIVERSITY OF EDINBURGH.

This University confers two degrees in science in the

[1] The certificate of an assistant medical officer of health of a county, or of a single sanitary district having a population of not less than 50,000, may be accepted as evidence provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instructions and to issue certificates.

[2] In the case of a medical officer of the Royal Army Medical Corps a certificate from a principal medical officer under whom he has served, stating that he has during a period of at least three months been diligently engaged in acquiring a practical knowledge of hospital administration in relation to infectious diseases.

[3] Methods of administration shall include the methods of dealing with patients, at their admission and discharge, as well as in the wards: and the medical superintendence of the hospital generally.

Department of Public Health, namely, Bachelor of Science (B.Sc.) and Doctor of Science (D.Sc.).

Bachelor of Science.—Two examinations must be passed, and the candidate must produce evidence of having complied with the regulations of the General Medical Council (see p. 533), and have taken a degree in Medicine in the University of Edinburgh or in a University recognized by it. The subjects of the First Examination are: (1) Laboratory work, practical, written, and oral; (2) Elements of Experimental Physics; (3) Geology, written and oral. The Second Examination cannot be taken sooner than six months after the first. The candidate must have attended a course of lectures (50 at least) in the University of Edinburgh, or in a university recognized by the Court. The subjects of the Second Examination are: (1) Sanitation: (2) Sanitary Law; (3) Vital Statistics; (4) Medicine in its bearings on Public Health; and the examinations in these subjects are taken at one time. (A detailed syllabus is given in the *Calendar*, pp. 288-290. The time table will be found at pp. 299-302 of the *Calendar*). The examinations are held in March and July. The fee for each examination is £3 3s. Further particulars may be obtained on application to the Dean of the Faculty of Science at the University Matriculation Office, where the schedules for examination are issued and the certificates of candidates examined.

Doctor of Science.—Bachelors of Science in the Department of Public Health may, after the lapse of five years, proceed to the degree of Doctor in the same Department on presenting a Thesis on some subject in the Department of Public Health, or a published memoir of works, and are required to pass an examination in Public Health, and in such of its special departments as may from time to time be determined. (Candidates for D.Sc. in Public Health may appear for examination in any one of the departments of knowledge required for the degree of B.Sc. in Public Health. They are required to submit the subject in which they propose to be examined for approval at least two months before the date of the examination.) Every such Thesis must be certified by the candidate to have been composed by himself, and must be approved by the examiners. The Thesis must be lodged with the Dean of the Faculty of Science on or before December 1st, and the subject of examination must be submitted before January 20th. The examination will take place about the end of March. The fee is £10 10s.

University of St. Andrews.

This University grants a diploma in Public Health. Candidates must have been in possession of a medical degree of this University or of a University of the United Kingdom for at least twelve months previous to admittance to examination. There are two examinations: First, in Chemistry, Physics, Bacteriology, and Meteorology; secondly, in Sanitation, Sanitary Laws, Vital Statistics, Epidemiology and Endemiology and Pathology of Infectious Disease. Fee for each examination, £5 5s. For re-examination, £1 1s. A synopsis of the subjects of examination and books recommended will be found in the *University Calendar*.

Further information will be given by the Secretary of the University, or will be found in the *University Calendar* for 1904-5, published by William Blackwood and Sons, 45, George Street, Edinburgh, price 2s. 6d., or post free, 2s. 10d.

Conjoint Board in Scotland.

The Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow will grant a conjoint diploma in Public Health, after examination by a Board on which these bodies are represented. Candidates qualified before 1890 will be admitted without evidence of special instruction (though even in their case such instruction is strongly recommended). Candidates must produce evidence of attendance (subsequent to obtaining a registrable qualification) for six months at a Public Health Laboratory, and for six months under a Medical Officer of Health of a county or of a large urban district. There are two examinations, and candidates may present themselves for both of them at one period or for either examination separately. The First Examination embraces the following subjects in their relation to Public Health: Chemistry, Laboratory Work and Bacteriology, Physics, and Meteorology. The Second Examination includes: (*a*) Report on premises visited; (*b*) examination at fever hospital; (*c*) examination at public abattoir; (*d*) epidemiology and endemiology; (*e*) vital statistics and sanitary law; (*f*) practical sanitation. The various subjects of both examinations are detached and limited by synopses given. The laboratory work embraces not only Chemical Analyses, but also Microscopical Examination, Bacteriology, Parasites, etc. At the Second Examination each candidate is required to submit a report on the sanitary condition of premises to which he may be sent for the purpose, and is examined on the Acts of Parliament included under "Sanitary Law." The fee is £12 12s., or £6 6s. in respect of each examination; and candidates referred are readmitted on a fee of £3 3s. in respect of each examination. The examination is held in Edinburgh or in Glasgow, there being two periods of examinations yearly—October and May. The examination in October, 1904, will be held in Edinburgh. Applications for examination in Edinburgh to be sent to Mr. James Robertson, 54, George Square, Edinburgh; and in Glasgow to Mr. Alexander Duncan, B.A., LL.D., 242, St. Vincent Street, Glasgow, not later than fourteen days before the examination day. The regulations and synopses of subjects will be found at p. 137 of the 1903-4 edition of the *Medical School Calendar for Scotland*, published by E. and S. Livingstone, 15, Teviot Place, Edinburgh, price 2s., post free 2s. 3d.; or at page 58 of the 1903-4 edition of the *Calendar of the School of Medicine of the Royal Colleges, Edinburgh.*

University of Dublin.

The diploma in Public Health is conferred after examination upon M.D.'s or graduates in Medicine and Surgery of Dublin, Oxford, or Cambridge. The name of the candidate must have been on the *Medical Register* at least twelve months before the examination, and, subsequently to registration, the candidate must have completed six months' practical instruction in a laboratory approved by the University; must have studied practical outdoor sanitary work for six months under an approved officer of health, three of which must be distinct from the time spent in laboratory work, and must have studied for three months in a fever hospital, in which opportunities are afforded for becoming acquainted with methods of administration. [This condition does not apply to candidates registered or entitled to be registered on or before January 1st 1890.] Examinations are held in December, March, and June, and candidates are required to send in their names at least a week before the first day of the examination to the Registrar of the School of Physic, from whom a full syllabus of the examination can be obtained. Candidates who have registered since January 1st, 1890, are required to make application for permission to present themselves for examination to the Board of Trinity College, submitting at the same time certificates of the required courses of study. The subjects of examination are: Hygiene and Epidemiology (paper); Chemistry (paper and laboratory); Physics and Meteorology (oral); Sanitary Engineering (paper and practical); Vital Statistics and Public Health Act (paper); Bacteriology and Pathology (paper and practical).

Further particulars can be obtained on application to the Registrar of the School of Physic, Dublin.

Royal University of Ireland.

The diploma in Sanitary Science is conferred only on graduates in medicine of the University. Candidates may present themselves after an interval of twelve months from the time of obtaining the M.B., B.Ch., B.A.O. degrees. Each candidate who satisfies the examiners must pay a further fee of £3 before the diploma can be granted to him. Every candidate when entering for the Examination must produce:

(*a*) A certificate of having, after obtaining the M.B., B.Ch., B.A.O. degrees, attended, during a period of six months, practical instruction in a laboratory approved by the University. The nature of this course is fully indicated by the detailed syllabus of the examinations in Physics, Climatology, Chemistry, Microscopy, Bacteriology, etc. An institution applying to be recognized as fulfilling the conditions of the regulations in regard to the course of practical instruction in a laboratory will be required to include in the instruction given in such institution the various subjects set forth in this syllabus, and special application for recognition must be made.

(*b*) A certificate of having, after obtaining the M.B., B.Ch., and B.A.O. degrees, during six months—of which at least three months must be distinct and separate from the period of laboratory instruction required under (*a*)—been associated day by day in the duty, routine and special, of public health administration, under the supervision of

1. In England and Wales, the medical officer of health of a county, or of a single sanitary district having a population of not less than 50,000, or a medical officer of health devoting his whole time to public health work; or
2. In Scotland, a medical officer of health of a county or counties, or of one or more sanitary districts having a population of not less than 50,000; or
3. In Ireland, a medical superintendent officer of health of a district or districts having a population of not less than 30,000; or
4. A medical officer of health who is also a teacher in the department of public health of a recognized medical school.

5. A sanitary staff officer of the Royal Army Medical Corps having charge of an army corps, district, or command recognized for this purpose by the General Medical Council.

The certificate of an assistant medical officer of health of a county or of a single sanitary district having a population of not less than 50,000 may be accepted as evidence under Rule (*b*), provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and to issue certificates. Every candidate must produce evidence that, after obtaining a registrable qualification, he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration. The Rules as to study do not apply to medical practitioners registered, or entitled to be registered, on or before January 1st, 1890. Candidates at this examination must answer in the following subjects: (1) Physics, (2) Climatology, (3) Chemistry, (4) Microscopy, (5) Bacteriology, (6) Geology, (7) Sanitary Engineering, (8) Hygiene, Sanitary Law, and Vital Statistics. The following are the particulars of the foregoing subjects of examination:

I. PHYSICS.—General Laws of Heat: Mechanics, Pneumatics, Hydrostatics, and Hydraulics. (*Everett's Elementary Textbook of Physics.*)

II. CLIMATOLOGY.—A general knowledge of meteorological conditions; the reading and correction of instruments, and tabulating the results of meteorological observations. (*Buchan's Handybook of Meteorology: Moore's (J. W.), Meteorology.*)

III. CHEMISTRY.—Constitution of the atmosphere. Pure and impure waters. Food and its adulteration. Poisonous substances used in manufactures, etc.

There will be a practical Examination, both chemical and microscopical, at which the candidate must make at least qualitative analyses. (*Hassall on Adulteration.*)

IV. MICROSCOPY.—The recognition of the constituents of food, such as starches and muscular fibre. The recognition of the chief fibres of clothing, such as wool, cotton, and silk. The recognition of constituents of ordinary dust, and deposits from water.

V. BACTERIOLOGY.—The Morphology of Microbes, Artificial Cultivation of Microbes, Staining of Microbes in fluids and in tissues. Modes of inoculation and special characters of Pathogenic Microbes: special characteristics with practical work on Pathogenic Micro-organisms, Aërobic and Anaërobic Bacteria. Nature of immunity from infective disease and modes of producing it, with evidence of having received practical instruction in those diseases of animals that are transmissible to man. Antiseptics and disinfectants. Parasites and other Organisms infecting Foodstuffs or the Human Body.

VI. GEOLOGY.—Soils; Clays; Rocks; Sedimentary Rocks; Springs; Natural Gases; Brackish Waters, and influence of contact of sea water with ordinary fresh waters: Ordinary constituents of fresh water and sea water; solid matter, and soluble constituents not separable by filtrations.

VII. SANITARY ENGINEERING.—The construction of dwellings, barracks, hospitals, schools, factories, etc., in accordance with the principles of warming, ventilation, drainage, water supply, etc. The examination will also include the reading of plans, sections, scales, etc., in connexion with buildings, sanitary construction, etc.

These subjects will be distributed as follows:

(*a*) Drainage and Sewerage of Houses and Towns [*Latham's Sanitary Engineering*]

(*b*) Supply of Towns with Water. [*Rankine's Manual of Civil Engineering; Hughes on Supply of Towns with Water* (Weale's Series). Much Useful information will also be obtained in *Humber's Treatise on Supply of Towns with Water.*]

(*c*) Warming and Ventilation of Dwellings, etc. [*Parkes's Practical Hygiene; Hood on Warming and Ventilation* (latest edition); *Article on Ventilation in Spon's Dictionary of Engineering.*]

(*d*) Reading of Plans, Scales of Drawing, etc. In this portion of the examination the candidate must be able to explain the meaning of the different parts of the drawing of a dwelling-house, etc., the plans of the different floors, the sections, and how they show the relations between different parts of the building; and must also be able to take off dimensions by means of the scale of the drawing. [*Winter's Geometrical Drawing, Part I.*]

VIII. HYGIENE, SANITARY LAW, AND VITAL STATISTICS.—*Parkes's Practical Hygiene; Cameron's Manual of Hygiene; The Manual of Public Health for Ireland; Public Health (Ireland) Act, 1878.*

The candidate must draw up reports on the Sanitary Condition of Dwelling-houses, or other building selected for the purpose.

Fees.—The fee for the examination is £2; and for the diploma, £3.

CONJOINT EXAMINING BOARD IN IRELAND.

A diploma in State Medicine is granted by these two Colleges after an examination conducted by them jointly. Candidates are required to comply with the requirements of the General Medical Council (see p. 533). The regulations as to study do not apply to practitioners registered or entitled to be registered on or before January 1st, 1890. The examination comprises the following subjects: State Medicine and Hygiene, Chemistry (including Chemical Physics), Meteorology and Climatology, Engineering, Vital Statistics, Law, and Bacteriology. In addition to written papers, the candidates will be examined orally in Hygiene, and practically in the reading of plans, sections, and scales, as well as in Analytical Chemistry, with special reference to air, water, and food, including the use of the Microscope, and in Bacteriology. They will also be required to read meteorological instruments, and to explain their construction; and will be called upon to make a practical Sanitary report.

The candidate must return his name to the Secretary of the Committee of Management under the Conjoint Scheme, Royal College of Physicians, 6, Kildare Street, Dublin, two weeks before the examination, and lodge with him a testimonial of character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh. If he has been registered subsequent to January 1st, 1890, he must lodge, in addition, a schedule, setting forth that he has attended the necessary courses of instruction as laid down in the Regulations.

The examination is divided into two parts, which may be passed either together or separately. The examination occupies six days.

The fee for examination is £10 10s., for re-examination £5 5s.; the examinations begin on the first Tuesday of the months of February, May, and November.

A special examination for the diploma may, at the discretion of the Committee of Management, be granted on payment of £10 10s. in addition to the ordinary fees mentioned above—except during the months of August and September—and on giving a notice at least one fortnight before the date of the proposed examination.

Detailed Regulations and Schedules can be obtained from the Secretary.

INSTRUCTION AND LABORATORY CLASSES.

Courses of lectures and laboratory instruction to suit the requirements of candidates for diplomas in Public Health have been organized at the following schools and could probably be arranged for at most of the other schools and colleges (see also p. 533). The chemical and bacteriological examinations for many of the health diplomas are now so practical and the time allowed so short, that unless a candidate—even though familiar with the duties of a M.O.H.—has a considerable amount of the manipulative dexterity only to be acquired by work in a laboratory, he would not be likely to satisfy the examiners.

LONDON.	
St. Bartholomew's Hospital.	London Hospital.
Charing Cross Hospital.	Middlesex Hospital.
St. George's Hospital.	St. Mary's Hospital.
Guy's Hospital.	St. Thomas's Hospital.
King's College.	University College.
PROVINCIAL.	
Cambridge University.	University of Durham College of Medicine, Newcastle-on-Tyne.
University of Birmingham.	University College, Bristol.
University of Liverpool.	Victoria University, Manchester.
University of Leeds.	
IRELAND.	
School of Physic, Dublin.	Royal College of Surgeons, Schools of Surgery, Dublin.
Catholic University School of Medicine.	
SCOTLAND.	
University of Edinburgh.	University of Aberdeen.
University of Glasgow.	St. Mungo's College, Glasgow.

THE PUBLIC SERVICES.

THE ROYAL NAVY AND ARMY AND THE INDIAN MEDICAL SERVICES.

GENERAL REGULATIONS.

THE following are the general rules governing admission to these services:

All candidates must be between the ages of 21 and 28 years, must possess registrable qualifications to practise medicine and surgery in Great Britain and Ireland, and must be adjudged by the Medical Board appointed for the purpose to be physically fit for service, must submit to an examination by a Medical Board into their physical fitness before being admitted to the entrance examination. This examination takes place before permission is accorded to competitors at the entrance examinations. Special attention is given to the candidate's power of vision. A moderate degree of myopia is not considered a disqualification, provided that it can be corrected by glasses during operations, and that no organic disease of the eye exists.

Testimony has also to be furnished, or is sought, with regard to the candidate's moral and general character, and the Secretaries of State concerned reserve the right to refuse permission to compete to any candidate.

As the prospect of a medical officer in one of these services attaining to the highest administrative grades depends to a large extent upon the regulations with regard to compulsory retirement at the age of 55, if below a certain grade at that age, there is a distinct advantage in entering the service at as early an age as possible.

THE ROYAL NAVY MEDICAL SERVICE.

A candidate for admission to the Royal Navy Medical Service must be between 21 and 28 years of age, age to be verified by a copy of birth registration, or by a declaration before a magistrate by parent or near relative. He must also produce a certificate of moral character, up to date, and a recommendation signed by a clergyman or magistrate to whom he has been for some years personally known, or by the President or senior Professor of the College at which he was educated. He must be registered under the Medical Act in force as qualified to practise medicine and surgery in Great Britain and Ireland. He must declare—(1) His age and date and place of birth; (2) that he is of pure European descent, the son either of natural-born British subjects or of parents naturalized in the United Kingdom[1]; (3) that he labours under no mental or constitutional disease or weakness nor any other imperfection or disability which may interfere with the most efficient discharge of the duties of a medical officer in any climate; (4) that he is ready to engage for general service at home or abroad; (5) whether he holds or has held any commission or appointment in the public service; (6) that he is registered under the Medical Act in force as duly qualified professionally, and what diplomas, etc., he holds. He must be free from organic or other disease, and his physical fitness for sea service will be determined by a Board of medical officers, who are to certify that his vision comes up to the required standard, which will be ascertained by the use of Snellen's test types.

The certificates of registration, character, and birth must accompany the declaration, which is to be filled up and returned as soon as possible, addressed, "O.H.M.S.," Director-General Medical Department, Admiralty, 18, Victoria Street, London, S.W.

The entrance examination consists of two parts: in Part I, *Compulsory* (*a*) Medicine, including materia medica, therapeutics, and general hygiene (marks 1,200); (*b*) Surgery and surgical anatomy (1,200). The examination in Medicine and Surgery will be in part practical, and will include, beyond papers, the examination of patients and pathological specimens, a knowledge of bacteriology, the performance of operations on the dead body, and the application of surgical apparatus. The attention of candidates is especially drawn to the importance of the section of Operative Surgery, as a competent knowledge in this subject is essential in order to qualify for a commission.

No candidate will be considered eligible who has not obtained at least *one-third* of the maximum marks in each of the above *compulsory subjects.*

Part II, *Voluntary*, consists of two divisions: (*a*) French and German (300 marks each); a knowledge of modern languages being considered of great importance, all candidates are urged to qualify in them; (*b*) Natural Sciences (Zoology, Botany, Chemistry, Physiology, Geology, and Physical Geography) (300 marks each); the two latter subjects are combined for the 300 marks. No candidate will be allowed to present himself for examination in more than two of the (*b*) subjects. Total attainable marks 600 in each division. A number less than one third of the marks obtainable in each of these *voluntary subjects* will not be allowed to count in favour of the candidate who has qualified in the *compulsory subjects.*

The examination in Chemistry will include the general principles of inorganic and organic chemistry; the preparation and properties of the chief non-metallic and metallic elements and their compounds; the preparation, properties, and classification of the more important compounds, such as marsh gas, ethylene, acetylene, methyl and ethyl alcohols, glycerine, ether, formic, acetic, lactic and oxalic acids; cyanogen and cyanides; carbohydrates; fats; proteids.

The examination in Physiology will comprise the minute structure and functions of the various tissues and organs of the body; the physiology of the blood; the nature of food and the processes of its digestion, the mechanics of the circulation and respiration; the physiology of nutrition, secretion, and excretion; animal heat, the nature of sensation, volition, reflex action, inhibition and influence of the nervous system on other organs and their functions.

Zoology.—The examination in Zoology will include the general principles of biology and a comparison of animals with plants; the distinctive character of the larger groups of animals—the protozoa, coelenterata, vermes, anthropoda, mollusca, echinodermata, and vertebrata—as illustrated by common types; the elements of embryology; animal parasites.

Botany.—The examination in Botany will comprise the general principles of the morphology and physiology of low forms of life—for example, torula, bacteria, spirogyra, moss, fern; the general morphology of flowering plants; diagnosis of the important British natural orders; medicinal plants.

Geology and Physical Geography.—The examination in Geology and Physical Geography will be limited to general principles, such as: The relations of the earth to the rest of the solar system, nature of the earth's crust, and the chief kinds of rocks, general configuration of land and water, mountains, plains, lakes, rivers, islands, glaciers and icebergs, the ocean currents, tides, winds and storms, dew, rain, climate, volcanoes, earthquakes, distribution of animal and vegetable life.

The appointments announced for competition will be filled from the list of qualified candidates arranged in order of merit; but should it at any time be considered expedient to grant commissions beyond those periodically competed for, the Admiralty has power to admit annually:

(*a*) Two candidates, proposed by the governing bodies of Schools of Medicine in the United Kingdom, who have satisfactorily filled the office of house-surgeon in a large civil hospital for at least six months.

(*b*) Not more than six candidates, according to requirements, specially recommended by the governing bodies of such Colonial universities as may be selected, and whose qualifications are recognized by the General Medical Council.

Candidates so proposed are to be approved by the Director-General of the Medical Department, and are to be certified by the governing body proposing them as duly qualified according to the regulations in force for the entry of candidates.

In cases of Colonial nominations, registration of professional qualifications as required by first paragraph above, may be deferred until after the arrival in England of a candidate who has been passed on the station, but a commission as Surgeon will not be granted until the certificate of the Registrar of the General Medical Council has been produced at the Medical Department of the Navy.

Candidates from schools at home will be required to pass a physical examination in London, which will be arranged by the Medical Director-General. Colonial candidates will have to pass a physical and test examination before a Board of Naval Medical Officers on the station.

Copies of the Regulations for entry of candidates for commissions in the Medical Department of the Royal Navy will be furnished on application to the Medical Director-General, Admiralty, 18, Victoria Street, London, S.W.

Successful candidates immediately after passing the examination will receive commissions as Surgeons in the Royal Navy, and will undergo a course of practical instruction in Naval Hygiene, the diseases of warm climates, bacteriology, surgery of gunshot wounds, etc., radiography and the photography in connexion with it at Haslar Hospital. Three prizes of the approximate value of £10 each will be awarded at the close of each session at Haslar to the students who have shown the greatest proficiency, and their seniority in the service will depend on the marks obtained at the examination in London, and at the termination of their studies at Haslar. Surgeons entered without competition will take seniority next after the last surgeon entered by competition. A fee of £1 will have to be paid by each candidate to entitle him to take part in the competition.

Surgeons are only required to provide themselves with a regulation case of pocket instruments, a stethoscope, and three clinical thermometers. All other instruments are provided at the public expense.

Promotion.—(1) An inspector-general of hospitals and fleets will be selected from among deputy-inspectors-general who have in that rank three years' full-pay service, and have not declined foreign service unless with the sanction of the Lords Commissioners of the Admiralty. (2) A deputy-inspector-general of hospitals and fleets will be selected for ability and merit from among the fleet surgeons. (3) (*a*) Subject to the approval of the Lords Commissioners of the Admiralty, the rank of fleet surgeon will be granted to staff surgeons at the expiration of eight years from the date of promotion to staff surgeon if recommended by the Medical Director-General and if they have not declined service except for reasons which in the opinion of the Lords Commissioners of the Admiralty are satisfactory. (*b*) Special promotions to this rank will be made at the discretion of the Admiralty

[1] If any doubt should arise as to this question the burden of clear proof that he is qualified will rest upon the candidate himself.

in cases of distinguished service or conspicuous professional merit. Such promotions will be exceptional and not exceed the rate of one in two years, or a total number of six at any one time of fleet surgeons so promoted. (4) (*a*) The rank of staff surgeon will be granted to surgeons at the expiration of eight years from the date of entry, subject to the recommendation of the Medical Director-General and the passing of a qualifying examination after the completion of five years from date of entry. (*b*) Special promotions will be made at the discretion of the Admiralty to the rank of staff surgeon in cases of distinguished service or conspicuous professional merit, such promotions not to exceed one a year, or a total of eight at one time on the staff surgeons' list. No officer will be so promoted unless he passes the examination prescribed for the other surgeons, but in such a case five years in rank will not be required for so doing. These officers will attain the rank of fleet surgeon after eight years. (*c*) When a surgeon's promotion to the rank of staff surgeon has been retarded by failure to pass the qualifying examination, he will, should he pass and be promoted, be dealt with as follows: He will be granted the seniority of staff surgeon he would have received had he passed in ordinary course. He will reckon service for increase of full and half pay only from the date of appointment to full pay as staff surgeon. If on half pay, or placed on half pay when promoted, he will receive the lowest rate of half pay of the new rank from the date of passing the qualifying examination. Where delay in passing the qualifying examination is due to unavoidable circumstances, special consideration will be given. (*d*) The examination for promotion to the rank of staff surgeon will be held by the Examining Board, to which a naval medical officer will be attached to conduct the examination in naval hygiene. The subjects of examination will be in writing, and will include Medicine, Surgery, Pathology, General Hygiene, Naval Hygiene. Earlier promotion to the rank of staff surgeon may be granted to those surgeons who before entry have held the post of resident medical or surgical officer to a civil hospital of not less than 100 beds for a period of not less than six months, provided their conduct and professional abilities have been favourably reported on during the time they have served in the navy. They may be granted from six months to one year's seniority, according to the time they have held their civil appointments as house-surgeons, but in no case will more than one year's seniority be granted. This only applies to officers who enter by competition. Candidates who at the time of entry into the navy hold or are about to hold posts as resident medical or surgical officer in a recognized civil hospital will be allowed to complete their time in these appointments, provided it does not exceed twelve months.

Relative rank is accorded as laid down in the *King's Regulations* and *Admiralty Instructions*, and also in the official *Quarterly Navy List*.

Full Pay and Allowances.—The rate of pay of surgeons is on entry £255 10s. a year; after four years' full-pay service, £310 5s. a year; after eight years' full-pay service, or on promotion to staff surgeon, £365; after twelve years' service, £438. Fleet surgeons on promotions, special, or after 20 years in the service, £492 15s. a year; after 4 years' full-pay service in that rank, £547 10s.; after 8 years' full-pay service, £602 5s.: and after 12 years' service, £657; Deputy Inspector-General, £766 10s. a year; Inspector-General, £1,300, consolidated. The Inspectors-General at Haslar and Plymouth Hospitals, and the corresponding officer at Chatham Hospital when the new hospital is completed, will be granted an allowance of 10s. a day as charge pay. Deputy inspector-generals, fleet surgeons, and staff surgeons in charge of certain hospitals receive charge pay of 7s. 6d., 5s., and 2s. 6d. a day respectively. The senior medical officer—fleet or staff surgeon—of ships bearing the flags of flag officers commanding foreign stations and the Channel and home fleets receive an allowance of 5s. a day. An allowance of 2s. 6d. a day may be granted to the senior medical officer of ships bearing the flag of flag officers not commanding stations or fleets and to ships flying the broad pennant of commodores. Medical officers conducting the course of instruction at Haslar Hospital will receive the following allowances:—The two senior officers employed upon this duty, £150 a year each; the junior officer assisting, £50 a year; the junior officer instructing the sick berth staff, £50 a year. The following charge allowances may be granted to medical officers in charge of hospital ships, if above the rank of fleet surgeons, 5s. a day; if of the rank of fleet surgeon or junior, 3s. 6d. a day. The fleet and staff surgeons serving at the Admiralty and the Marine Rendezvous will be granted hospital allowance of £53 a year in addition to the usual lodging money. Hospital allowances for naval medical officers at home and abroad, in lieu of provisions for themselves and servants, and for fuel and lights, are as follows: Deputy inspector-generals, at home, £67; abroad, £112; fleet or staff surgeons, at home, £53; abroad, £112: surgeons, at home, £39; abroad, £108. Medical officers employed elsewhere than at a hospital, and not victualled in kind, receive an allowance of 1s. 6d. a day in lieu of above.

Half Pay.—Surgeons under 2 years' full-pay service, 6s. per diem; after 2 years' full-pay service, 7s. per diem; after 4 years, 8s.; after 6 years, 9s.; after 8 years, or on promotion to staff surgeons, after 12 years, 12s.; after 14 years, 13s.; after 16 years, and on promotion to fleet surgeon, 14s.; after 18 years, 15s.; after 20 years, 17s.; after 22 years, 18s.; and after 24 years, 20s. Deputy-inspector-general on promotion, 25s.; after 2 years' full-pay service in rank, 27s.; after 4 years, 29s. Inspector-general, 38s.

Retirement.—Compulsory retirement will be as follows:

Inspector and deputy-inspector-general of hospitals and fleets.	At the age of 60, or if unemployed for three years. The Admiralty reserves the right to extend the age of retirement of an inspector-general of hospitals and fleets in the interests of the public service, to 62 years.	To be retired at any age if physically unfit for service.
Fleet surgeon, staff surgeon, and surgeon.	At the age of 55, or at any age, if he has not served for three years.	

Gratuities and retired pay will be awarded on retirement and withdrawal on the undermentioned scale:

Rank.	Gratuities.	Daily.	Yearly.
	£ s. d.	£ s. d.	£ s. d.
Surgeon, Staff Surgeon, and Fleet Surgeon:			
After 4 years' full-pay service	500 0 0	—	—
,, 8 ,, ,,	1,000 0 0	—	—
,, 12 ,, ,,	1,500 0 0	—	—
,, 16 ,, ,,	2,250 0 0	—	—
Fleet Surgeon:			
After 20 years' service	—	*1 0 0	365 0 0
After 24 ,, ,, ...	—	*1 2 6	410 12 6
After 27 ,, ,, ...	—	*1 5 0	456 5 0
After 30 ,, ,, ...	—	*†1 10 0	547 10 0
Deputy-Inspector-General ...	—	1 15 0	638 15 0
Inspector-General	—	2 0 0	730 0 0

* To obtain this rate an officer must hold the Commission of Fleet Surgeon.

† Or on compulsory retirement at the age of 55.

Voluntary retirement and withdrawal will be allowed as follows:

(*a*) Every officer will have the option, subject to their Lordships' approval, of retiring after twenty years' full-pay service on the scale of retired pay, or with a gratuity, as laid down above.

(*b*) At the expiration of 4, 8, 12, or 16 years' full-pay service, every officer will be permitted, subject to their Lordships' approval, to withdraw from the Naval Service, receiving a gratuity on the scale laid down above. The name of an officer so withdrawing will be removed from the lists of the Navy, with which all connexion will then be severed.

(*c*) Voluntary retirement and withdrawal at the discretion of their Lordships will be allowed, as a rule, only when an officer is unemployed or serving at home. Under very special circumstances, however, it may be permitted in the case of an officer serving abroad, provided he pays the passage of his successor to relieve him.

(*d*) Applications from officers, not entitled to retire or withdraw, to resign their commissions, will receive every consideration, but no officer will, as rule, be permitted to resign under three years from the date of entry.

NOTE.—This necessary "subject to their Lordships' approval" for those voluntary or optional retirements, withdrawals and resignations has of late very greatly qualified them. Loss of full-pay service from sickness or inability to obtain service from no default of the officer, peculiar to the navy as compared with the army, delays these so-called voluntary retirements and withdrawals. An officer retired with less than 20 years' service on account of disability contracted in and attributable to the service, will receive half-pay of his rank or with the consent of their Lordships a gratuity on the scales previously given, but such an officer will not be entitled to receive any special compensation for the disability in addition to the gratuity as above.

An officer retired with less than twenty years' service on account of disability, contracted in but not attributable to the service, will receive:

(*a*) If he has over eight years' full-pay service, either a gratuity on the scale given in paragraph above, or half-pay, according as their Lordships think fit.

(*b*) If he has less than eight years' full-pay service, such gratuity as their Lordships think fit, not exceeding the rate of £125 for each year of full-pay service.

Under circumstances other than those specified, and other

than misconduct, neglect of duty, etc., an officer retired with less than twenty years' service will not be allowed half-pay or retired pay, but will receive a gratuity on the scale laid down above, if he has eight years' full-pay service, should his full-pay service not amount to eight years, a gratuity at the discretion of the Admiralty.

The power vested in their Lordships of granting reduced rates of half-pay and retired pay in cases of misconduct is extended to the award of gratuities on retirement, and the gratuity awarded will be reduced to such an amount as is thought fit.

An officer retiring after twenty years' full-pay service will be eligible, if recommended by the Medical Director-General for distinguished or meritorious service, to receive a step of honorary rank, such step to be awarded at their Lordships' discretion, and not to confer any claim to increase of retired pay or of widow's pension.

All retired officers will be liable, till the age of 55, to serve in time of declared national emergency, in a rank not lower than that held on retirement, even if only honorary rank.

This liability will not exist in cases of withdrawal on the conditions specified under voluntary retirement previously.

Retired officers will receive special consideration as regards appointments on shore connected with the Admiralty, now filled by civilians.[1]

Widow's Pension.—When an officer retires, or withdraws, on a gratuity, his widow and children will have no claim to pension or compassionate allowance.

Miscellaneous.—A special cabin will be appropriated to the fleet or staff surgeon or the surgeon in charge of the medical duties in each ship.

Special regulations have been made as regards the mess expenses of medical officers appointed to the several divisions of Royal Marines for limited periods.

Every medical officer will be required to undergo a post-graduate course of three months' duration at a metropolitan hospital once in every eight years (should the exigencies of the service permit), and this as far as possible during his surgeon's, staff surgeon's, and fleet surgeon's period of service. While carrying out this course the medical officer will be borne on a ship's books for full pay, and will be granted lodging and provision allowances, and travelling expenses as for service under the Regulations to and from his home or port; the fees for each course (not exceeding £25) will be paid by the Admiralty on the production of vouchers at the end of the course. The medical officer will be required to produce separate certificates of efficient attendance in the following:

I. The Medical and Surgical Practice of the Hospital.
II. A course of Operative Surgery on the Dead Body.
III. A course of Bacteriology.
IV. A course of Ophthalmic Surgery, particular attention being paid to the Diagnosis of Errors of Refraction.
V. A practical course of Skiagraphy.

ENTRIES FOR TEMPORARY SERVICE.

The following are the regulations for the entry of Surgeons for Temporary Service in the Medical Department of the Royal Navy during war or emergency: They must be registered under the Medical Act as qualified to practise Medicine and Surgery in Great Britain and Ireland; they must produce certificates of good character; they must be reported physically fit after medical examination; and their age must not exceed 40 years.

Pay and Allowances.

Full Pay.	Half Pay.
22s. 0d. a day. £401 10s. 0d. a year.	10s. a day £182 10s. 0d. a year.

Note.—Half-pay is for sickness and extra leave only.

To be granted 30 days' advance of pay on joining a ship after appointment.

To receive the same allowances as are payable to permanent officers of their rank.

Lodging money at the rate of £50 a year is usually allowed when employed on shore without quarters in the United Kingdom, and £24 a year in lieu of rations. In cases however of temporary employment on shore, the lodging and provision allowances will be at the rate of 3s. 6d. and 1s. 6d. per day respectively.

If quarters are provided in a medical establishment, an allowance is granted in lieu of provisions, for self and servant, and for fuel and lights at the rate of £39 a year in the United Kingdom, and £108 a year abroad.

Uniform.

Each surgeon to provide himself as follows:

1. Frock coat, waistcoat, and trousers.
2. Undress coat.
3. Uniform cap.
4. Mess jacket and waistcoat.
5. Sword and undress belt.

[1] Recently this has been the case more than formerly.

All as specified in the Uniform Regulations.

To cover the above each officer accepted for service will receive an equipment allowance of £20 (payable on the officer's being called up for active service).

The following instruments must be provided by the surgeon:

A pocket case of instruments.
A stethoscope.
Three clinical thermometers.

Messing.

Surgeons will be allowed, when attached to ships in commission, the ordinary ship's rations: but will have to pay about 2s. a day towards the maintenance of their mess as wardroom officers.

Pensions for Wounds and to Widows, etc.[1]

In the event of surgeons engaged for temporary service being wounded in His Majesty's Service, gratuities or pensions, varying in amount according to the injuries sustained, will be granted, on the basis of the awards in similar cases of naval officers.

Should temporary-service surgeons be killed in action, die within six months of wounds received in action, or meet their death by acts of the enemy, the following pensions and allowances will be granted to their widows, children, etc.:

	Widows.		Children up to the Age of 18 for Boys and 21 for Girls.		Widowed Mothers Dependent on their Sons, if the Latter left no Widows or Children.	Orphan Sisters Dependent on their Brothers, if the Latter left no Mothers, Widows, or Children.
	Killed in Action.	Drowned, etc., by Acts of the Enemy.	Killed in Action.	Drowned, etc., by Acts of the Enemy.	Killed or Drowned, or Suffered Violent Death by Acts of the Enemy.	Killed or Drowned, or Suffered Violent Death by Acts of the Enemy.
	£	£	£	£	£	£
Surgeon ...	80	65	12 to 16	10 to 14	50	50

In addition to the foregoing pensions the widows and children of officers killed in action will be granted the following gratuities:

Widows.—One year's pay of their husband's corresponding rank in the Royal Navy.

Each unmarried child, under the age of 21, one-third of the gratuity paid to the widow.

These pensions and gratuities can be given only in cases of injury or death caused by acts of the enemy, and not on account of injury, disability, or death, which may result from carrying on the ordinary duties of the service.

Conditions of Service.

To engage for six months certain, but the liability to serve will be limited to five years.

To serve when and where required from the date of signing the declaration.

To be liable to immediate discharge for misconduct or incompetency.

To rank with, but after, surgeons in the permanent service.

To be under the general rules of the service as regards discipline, etc.

To receive two calendar months' notice of services being no longer required.

To be granted a gratuity of two calendar months' pay on discharge, if not discharged for misconduct or incompetency.

Voluntary resignation of appointment will be allowed subject to the convenience of the service, but the gratuity of two calendar months' pay on discharge will be thereby forfeited.

ROYAL ARMY MEDICAL CORPS.

A candidate for a commission in the Royal Army Medical Corps must be 21 years and not over 28 years of age at the date of the commencement of the entrance examination. He must possess, under the Medical Acts in force in the United Kingdom at the time of his appointment, a registrable qualification to practise. He must fill up a form of application

[1] Unmarried candidates will be preferred.

and declaration, which can be obtained on application to the Director-General, Army Medical Service, 68, Victoria Street, London, S.W., and submit it to the Director-General in sufficient time to permit of reference to the medical school in which the candidate completed his course as a medical student.

The Dean, or other responsible authority, of such school will be requested by the Director-General to render a confidential report as to his character, conduct, professional ability, and fitness to hold a commission in the Corps, and to this report special importance will be attached. After the form of application and the confidential report above alluded to have been received, the Director-General will decide if the candidate may be allowed to compete for a commission in the Royal Army Medical Corps. If approved, he will then be examined as to his physical fitness by a Board of Medical Officers, in accordance with regulations which can also be obtained from the Director-General. The entrance examinations are held twice in the year, usually in January and July. The Secretary of State reserves the right of rejecting any candidate who may show a deficiency in his general education.

An entrance fee of £1 is required from each candidate admitted to the examination, and is payable at the conclusion of his physical examination, if pronounced fit.

A candidate successful at the entrance examination will be appointed a lieutenant on probation, and will be required to pass through such courses of instruction as the Secretary of State shall decide, and, after passing the examinations in the subjects taught, and satisfying the Director-General that he possesses the necessary skill, knowledge, and character for permanent appointment to the Royal Army Medical Corps, his commission as lieutenant will be confirmed. The commission will bear the date of the officer's appointment as lieutenant on probation.

ENTRANCE EXAMINATIONS.

Candidates will be examined by the Examining Board in medicine and surgery. The examination will be of a clinical and practical character, partly written and partly oral, marks being allotted under the following scheme:

	Maximum Marks.
Medicine (written).	
A. Examination and report upon a medical case in the wards of a hospital	125
B. Commentary upon a case in medicine	125
(Three hours allowed for A and B together.)	
Medicine (oral).	
A. Clinical cases; clinical pathology	75
B. Morbid anatomy and morbid histology	75
(One-quarter of an hour allowed for each table.)	
Surgery (written).	
A. Examination and report upon a surgical case in the wards of a hospital	125
B. Commentary upon a case in surgery	125
(Three hours allowed for A and B together.)	
Surgery (oral).	
A. Clinical cases, including diseases of the eye; surgical instruments and appliances...	75
(One-quarter of an hour allowed for this table.)	
B. Operative surgery and surgical anatomy	75
Total marks	800

The following headings are published as a guide to candidates in drawing up their reports on cases:

(a) A brief history of the case as given by the patient, including such points only (if any) in the family or personal history as have a distinct bearing upon the present illness or incapacity.
(b) A detailed account of the subjective symptoms and physical signs elicited by the candidate's personal examination of the patient, noting the absence of any which might be expected to be present in a similar case.
(c) Where there is any reasonable doubt in the mind of the candidate as to an exact diagnosis, he is to give the alternatives, with his reasons for making the selection.
(d) A commentary upon the case as a whole, pointing out the symptoms which may be considered typical, and those which appear to be unusual or only accidental complications.
(e) Suggestions as to treatment, both immediate and possibly necessary at a later date.
(f) A forecast of the progress and probable termination of the case.

Similarly the commentary on the report of a case submitted to the candidate should discuss:

(a) The family and personal history and other conditions preceding the development of the condition described.
(b) The relative significance of the physical signs, symptoms, other indications of disease noted, and the general clinical aspects of the case.
(c) The diagnosis, with reasons for selection of the most probable, when a positive diagnosis cannot be attained.
(d) The treatment—dietetic, medicinal, operative, etc., including a criticism of the plan adopted, and alternative schemes of treatment in cases of disagreement.
(e) The morbid appearances, and an account of the *post-mortem* examination (if any).

The examination will be held in London and will occupy about four days.

Having gained a place in this entrance examination, the successful candidates will undergo two months' instruction in hygiene and bacteriology, after which they will be examined in these subjects. The maximum number of marks obtainable at this examination will be 100.

On completion of the above course lieutenants on probation will be ordered to proceed to the Dépôt of the Royal Army Medical Corps at Aldershot for a three months' course of instruction in the technical duties of the Corps, and at the end of the course will be examined in the subjects taught. The maximum number of marks obtainable at this examination will be 100.

EXAMINATIONS FOR PROMOTION.

Lieutenant before Promotion to Captain.

(For Lieutenants appointed after March 31st, 1901.)

This examination may be taken at any time after completing 18 months' service, and will be held in the military district in which the officer is serving.

The subjects of this examination, which are detailed in the *King's Regulations*, are as follows:

1. Regimental duties.
2. Drill.
3. Military law.
4. Duties and accounts connected with military hospitals and their supplies.
5. Other duties of executive medical officers.

Captains before Promotion to Major.

(For Captains promoted to that rank after July 27th, 1895.)

Captains will be examined under the rules laid down in the next paragraph, and will be eligible for acceleration in their promotion to the rank of major under Article 352 of the Royal Warrant, subject to the following restrictions:

(a) The acceleration which can be gained by a captain promoted to that rank in January, 1896, will be limited to 6 months, and an officer gaining this acceleration will take precedence after the last captain promoted major on completion of 12 years' service.
(b) The acceleration which can be gained by a captain promoted to that rank in July, 1896, will similarly be limited to 12 months, and an officer gaining this acceleration will take precedence next after the last captain promoted to that rank in January, 1896, who may have gained 6 months' service.
(c) A captain promoted to that rank in January, 1897, can gain the full acceleration, but will take precedence after any captain promoted to that rank in July, 1896, who may have gained 12 months' acceleration.
(d) Officers gaining acceleration under (a) will take precedence *inter se* in order as they have obtained a special certificate or passed in the 1st, 2nd, or 3rd class, and a similar course will be followed under (b) and (c).
(e) In all other cases an officer who gains accelerated promotion will be placed for precedence after the last officer (whether subject to acceleration or not) promoted approximately 3, 6, 12, or 18 months before him.

This examination, which may be taken at any time after completing five years' service, will be held in London on the termination of a period of special study. The examination will consist of written papers, essays, oral and practical examinations in the following subjects, which are detailed in the *King's Regulations*:

1. Medicine, including specific fevers.
2. Surgery, including skiagraphy.
3. Hygiene.
4. Bacteriology and tropical diseases.
5. One special subject from the subjoined list, to which additions may from time to time be made:
   (a) Bacteriology, including the preparation of antitoxins.
   (b) Dental surgery.
   (c) Dermatology, including venereal diseases.
   (d) Otology, including laryngology and rhinology.
   (e) Midwifery and gynaecology.
   (f) Operative surgery, advanced.
   (g) Ophthalmology.
   (h) Psychological medicine.
   (i) State Medicine.

Captains serving in that rank before July 27th, 1895, will be promoted under the old regulations contained in Appendix I, Regulations for Army Medical Services, and will not be eligible for acceleration.

Majors before Promotion to Lieutenant-Colonel.

(For Majors promoted to the rank after March 31st, 1895.)

This examination, which may be taken at any time after three years in the rank of major, will be held in the military district in which the officer is serving at times which will be duly notified.

The subjects of this examination, which are detailed in the *King's Regulations*, are as follows:

1. Military law.
2. Army medical organization.
3. Sanitation of towns, camps, transports, etc.
4. Epidemiology and the management of epidemics.
5. One special subject from the subjoined list to which additions may from time to time be made:
   (*a*) Medical history of important campaigns.
   (*b*) A general knowledge of the Army Medical Services of other powers.
   (*c*) The laws and customs of war in relation to the sick wounded.

Pay, Additional Pay, and Charge Pay.

The following are the rates of pay, additional pay, and charge pay of the officers of the Army Medical Staff and Royal Army Medical Corps, etc., as laid down in the new Royal Warrant.

Pay.

—	Inclusive of all Allowances except Field and Travelling Alowances.
Army Medical Service. *At Head Quarters.*	Yearly. £
Director-General	2,000
Deputy Director-General	1,500
Assistant Director-General	850
Deputy Assistant Director-General	750
—	Exclusive of Allowances.
At Other Stations.	Daily. £ s. d.
Surgeon-General	3 0 0
Colonel	2 0 0
Lieutenant-Colonel	1 10 0
Lieutenant-Colonel specially selected for increased pay after at least 8 years' service abroad	1 15 0
Major	1 3 6
After 3 years' service as such	1 6 0
Captain	0 15 6
After 7 years' total full-pay service	0 17 0
After 10 years' total full-pay service	1 1 0
Lieutenant on probation and lieutenant	0 14 0
Adjutant of the Royal Army Medical Corps (Volunteer)	The pay of his rank.
Quartermaster	As a quartermaster of infantry.

A lieutenant-colonel appointed one of the Honorary Physicians or Honorary Surgeons shall receive pay at the rate laid down for a colonel of the Royal Army Medical Corps when qualified for promotion to that rank.

A captain of the Royal Army Medical Corps holding the brevet rank of major shall receive pay at 28. a day in addition to the rates laid down for a captain.

Additional Pay.

Officer not serving on the head quarters staff appointed a member of the Advisory Board... £150 a-year.
Officer serving as Secretary of the Advisory Board and Nursing Board... ... ... £100 a-year.

	Daily. s. d.
Officer under the rank of lieutenant-colonel holding an appointment as specialist	2 6
Quartermaster in charge of the medical stores at Woolwich	2 6

Charge Pay.

(*a*) Officer in charge of a general or other hospital; or of a division of a general hospital—

	Daily. s. d.
If in charge of at least 50 beds	2 6
,, ,, 100 ,,	5 0
,, ,, 200 ,,	7 6
,, ,, 300 ,,	10 0
(*b*) Officer in command of the depôt, Royal Army Medical Corps	5 0
The senior officer of the Army Medical Service with an army in the field—	
A rate to be fixed by the Secretary of State according to the magnitude of the charge	
In a command abroad—	
The senior medical officer, if the number of soldiers is 1,500 or upwards	s. d. 5 0

Extra-Duty Pay.

An officer of the Royal Army Medical Corps, appointed to act as adjutant or quartermaster of the Royal Army Medical Corps (Militia) during preliminary drill or training, shall receive extra-duty pay at the following daily rates:

	s. d.
Acting Adjutant	2 6
Acting Quartermaster	2 0

Reserve of Officers.

On the completion of three years' service, an officer of the Royal Army Medical Corps may be permitted by the Secretary of State to become an Army Reserve officer for a period of seven years, and while so serving he shall receive pay at the rate of £25 a year.

With the sanction of the Secretary of State such officer may be allowed to return to the active list, and if the period he has been in the Reserve of Officers amounts to at least one year, and not more than three years, he shall be allowed to reckon one-third of such period towards promotion, gratuity, and pension.

Pay during Sick Leave.

An officer of the Army Medical Staff or Royal Army Medical Corps may be allowed full pay during sick leave of absence under certain conditions.

Household Troops.

The rates of pay of medical officers of the Household Troops are as follows:

	£ s. d.
Brigade-surgeon-lieutenant-colonel	1 15 0
Surgeon lieutenant-colonel	1 10 0
Surgeon-major	1 3 6
After 3 years' service as such	1 6 0

Retired Pay.

An officer of the Army Medical Service may be permitted to retire, in cases in which such retirement may be deemed expedient by the Secretary of State.

Army Medical Staff.	Daily. £ s. d.
Surgeon-General	2 0 0
Royal Army Medical Corps and Medical Officers of Household Troops.	
Colonel	1 15 0
Lieutenant-colonel, or surgeon-lieutenant-colonel of the Household Troops—	
After 20 years' service	1 0 0
,, 25 ,,	1 2 6
,, 30 ,,	1 5 0
Lieutenant-colonel, after having been in receipt of the increased pay allowed under the terms of the new Warrant, for 3 years, or brigade surgeon-lieutenant-colonel of the Household Troops—	
Under 30 years' service	1 7 6
After 30 ,,	1 10 0
Major, or surgeon-major of the Household Troops—	
After 20 years' service	1 0 0
After 25 years' service, if his service reckoning for promotion is insufficient to qualify him for promotion to the rank of lieutenant-colonel under Article 354	1 2 6
Major or captain—	Gratuity.
After 5 years' service in the rank of captain	£1,000
After 10 years' service if the officer was commissioned before the date of the Warrant	1,250
After 3 years' service in the rank of major, *or, if the officer was commissioned before the date of the Warrant, after 15 years' service*	1,800
After 6 years' service in the rank of major, *or, if the officer was commissioned before the date of the Warrant, after 18 years' service*	2,500
Surgeon-lieutenant-colonel or surgeon-major of the Household Troops—	
After 15 years' service	1,800
,, 18 ,,	2,500

Retirement on Account of Age, or Limitation of Period of Service.

Conditions of Retirement.

The Director-General of the Army Medical Service shall retire on completion of the term of his appointment; and the retirement of other officers of the Army Medical Service (except quartermasters) shall be compulsory at the following ages:

Surgeon-General	60
Colonel, *promoted to the rank on or after the date of the Warrant*	57
Colonel, *promoted to the rank before the date of the Warrant (subject to Article 558)*	60
Other officers	55

A major shall retire on completion of 25 years' service; or, if he fails to qualify for promotion, on the completion of 20 years' service.

A captain or lieutenant shall retire on completing 6 months' service on the supernumerary list.

It shall be competent to the Secretary of State to place a medical officer on the retired list after 30 years' service.

Scale of Retired Pay.

Director-General Army Medical Service.

After 3 years' service as Director-General—	Yearly.
With 30 years' service—	[illegible]

RETIREMENT ON ACCOUNT OF MEDICAL UNFITNESS.

Conditions of Retirement.

An officer of the Army Medical Service placed on the half-pay list on account of medical unfitness shall, if not previously retired, be retired from the Army at the expiration of 5 years from the date on which he was placed on the half-pay list, or if reported by the regulated medical authority to be permanently unfit for duty, on the officer's application, at such earlier date as may be decided by the Secretary of State.

An officer, whether on full or half pay, placed in detention as a person of unsound mind, shall be retired from the army, with the retired pay to which he would be entitled if reported by the regulated medical authority to be permanently unfit for duty. If his disability was not caused by military service, and he is not entitled to permanent retired pay by length of service, he shall receive temporary retired pay equivalent to the half-pay, and temporary retired pay, if any, which he would have received if his disability had been other than insanity.

SCALE OF RETIRED PAY.

Director-General Army Medical Service.

	Yearly.
Under 3 years' service as Director-General, and after not less than 30 years' service	£875

The full text of the new regulations, with appended matter, may be obtained on application to the Director-General, 68, Victoria Street, London, S.W.

INDIAN MEDICAL SERVICE.

Candidates must be natural-born subjects of His Majesty, between 21 and 28 years of age, at the date of the examination, of sound bodily health, and in the opinion of the Secretary of State for India in Council in all respects suitable to hold commissions in the Indian Medical Service. They may be married or unmarried. They must possess a registrable qualification entitling them under the Medical Acts to practise both medicine and surgery in Great Britain and Ireland.

They must subscribe and send in to the Military Secretary, India Office, Westminster, so as to reach that address by the date fixed in the advertisement of the examination, a declaration according to a prescribed form setting forth that they do not labour under any mental or constitutional disease, or any imperfection or disability that can interfere with the discharge of the duties of a medical officer.

This declaration must be accompanied by (*a*) a documentary proof of age.

(*b*) A recommendation from some person of standing in society—not a member of the candidate own's family—to the effect that he is of regular and steady habits; and a certificate of moral character from a magistrate or a minister of the religious denomination to which he belongs.

(*c*) A certificate of having attended a course of instruction for not less than three months at an ophthalmic hospital, or the ophthalmic department of a general hospital, which course shall include instruction in the errors of refraction.

The Dean or other responsible authority of the medical school in which the candidate completed his course as a medical student will be asked by the Secretary of State for India to furnish a confidential report as to his character, conduct, professional ability, and fitness to hold a commission in the service. To this report special importance will be attached.

The physical fitness of each candidate will be determined by a Board of Medical Officers, who are required to certify that his vision is sufficiently good to enable him to pass the tests[1] laid down by the regulations. Candidates who pass the physical examination will be required to pay a fee of £1 before being permitted to compete.

The candidate's personal and professional qualifications having been found satisfactory, he will be examined by the Examining Board in the following subjects, and the highest number of marks attainable will be distributed as follows:

	Marks.
1. Medicine, including Therapeutics	1,200
2. Surgery, including Diseases of the Eye	1,200
3. Surgical Anatomy and Physiology	600
4. Pathology and Bacteriology	900
5. Midwifery and Diseases of Women and Children...	600
6. Chemistry and Pharmacy, with either Botany or Zoology at option	600

The examination in medicine and surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside. The examination in chemistry will be limited to the elements of the science, and to its application to medicine, pharmacy, and practical hygiene. No candidate will be considered eligible who has not obtained at least one-third of the marks obtainable in each of the above subjects and one-half of the aggregate marks for all the subjects.

After passing this examination the successful candidates will be required to attend one entire course of practical instruction at the Army Medical School and elsewhere, as may be decided in—

1. Hygiene.
2. Clinical and Military Medicine.
3. Clinical and Military Surgery.
4. Pathology of Diseases and Injuries incidental to Military Service.

This course will be of not less than four months' duration.

—During this period of instruction each candidate will receive an allowance of 14s. per diem, with quarters, or, when quarters are not provided, with the usual fuel and light allowances of a subaltern, to cover all costs of maintainence; and he will be required to provide himself with a uniform (namely, the regulation undress uniform and mess dress of a lieutenant of the Indian Medical Service, as described in *Indian Medical Regulations*, vol. vii).

At the conclusion of the course candidates will be required to pass an examination on the subjects taught during the course of instruction.

13. A lieutenant who, before the expiry of one month from the date of passing his final examination, furnishes proof of his election to a resident appointment at a recognized civil hospital, may be seconded for a period not exceeding one year from the date on which he takes up such appointment, provided that he joins it within three months of passing his final examination, and that he holds himself in readiness to sail for India within fourteen days of the termination of the appointment. While seconded he will receive no pay from Indian funds, but his service towards promotion, increase of pay, and pension will reckon from the date on which the course of instruction for lieutenants on probation commences.

14. Before the commission of a lieutenant on probation is confirmed he must be registered under the Medical Acts in force at the time of his appointment.

Officers appointed to the Indian Medical Service will be placed on one list, their position on it being determined by the combined results of the preliminary and final examinations, and, so far as the requirements of the service will permit, they will have the choice of commands in India (that is, Bengal, Punjab, Madras, or Bombay), according to their position on that list. Though ordinarily employed within the limits of the command to which they have been posted, they will be liable to employment in any part of India according to the exigencies of the service.

Examinations for admission to the service usually take place twice in the year—that is, about January and August.

No candidate will be permitted to compete more than three times.

PRISON MEDICAL SERVICE.

THE prison department consists of two branches—the convict service and the local prison service. These are now practically amalgamated, and the officers of each branch are freely interchangeable. In the case of the smaller prisons the medical officer is usually a local practitioner, but in the case of the larger prisons the medical officers are appointed by the Convict Prison Board or the Prison Commission, and form practically a special service. The Chairman of the Board is Sir Evelyn Ruggles-Brise, K.C.B. Application for employment may be made to the Board on a special form, which, we understand, can be obtained from the Secretary, Major E. G. Clayton, Prison Commission, Home Office, London, S.W.

The number of vacancies is not large and the prospects of promotion are bad. This is due in part to the fact that the

[1] These are as follows: (1) If a candidate can read D = 6 at a distance of 20 ft., and D = 0.6 at any distance selected by himself, with each eye without glasses, he will be considered fit. (2) If a candidate can only read D = 24 at 20 ft. with each eye without glasses, his visual deficiency being due to faulty refraction which can be corrected by glasses which enable him to read D = 6 at 20 ft. with one eye, and D = 12 at the same distance with the other eye, and can also read D = 0.8 with each eye without glasses at any distance selected by himself, he will be considered fit. (3) If a candidate cannot read D = 24 at 20 ft. with each eye without glasses, notwithstanding he can read D = 0.6, he will be considered unfit. N.B.—Snellen's test types will be used for determining the acuteness of vision. Squint, inability to distinguish the principal colours, or any morbid condition subject to the risk of aggravation or recurrence in either eye, will cause the rejection of a candidate.

rate of pay of the higher appointments depends upon the number of prisoners in the particular prison, and that the total number of prisoners in the country is not increasing in proportion to population.

Convict Service.—Five deputy medical officers at £250, rising to £300; four medical officers at incomes ranging from £300 to £550.

Local Prison Service.—Ten deputy medical officers at £250, rising to £300; nine medical officers at £200; three medical officers at £250; three medical officers at £300, rising to £390; six medical officers at £400, rising to £500. Quarters, or an allowance in lieu, are granted to those who give their whole time to the service.

MEDICAL APPOINTMENTS IN THE COLONIES.

1. Medical appointments are from time to time filled up by the Colonial Office in the following Colonies and Protectorates: British Guiana, Jamaica, Trinidad, Windward Islands, Leeward Islands, British Honduras, Fiji, Sierra Leone, Gambia, Gold Coast, Lagos, Northern and Southern Nigeria, Ceylon, Straits Settlements, the Federated Malay States, Hong Kong, Mauritius, Seychelles, Cyprus, Gibraltar, St. Helena, and the Falkland Islands. In Ceylon, Jamaica, and Mauritius vacancies are almost always filled locally by the appointment of qualified native candidates.

It is for the West Indies and the West African Colonies that medical officers are chiefly required.

2. The majority of the West Indian appointments involve medical charge of a district, including, as a rule, the care of a hospital, poor-house, asylum, or other institution, and free attendance on the aged and children.

N.B.—Passage money on first appointment, and leave of absence on half-pay (in addition to the ordinary annual vacation on full-pay, not exceeding three months in two years), are granted only in the cases specified in the Colonial Regulations. Leave on half-pay is not granted before the completion of six years' service, except on the ground of illness or urgent private affairs. With regard to pension, medical officers are usually on the same footing as other Government servants; but in cases where private practice is allowed the rule is that they are not usually entitled to pension.

3. The following is a short account of the appointments in the separate Colonies:

British Guiana.—Forty-two appointments. Candidates must have held for at least six months a resident medical appointment in some public institution. Officers are appointed on two years' probation as supernumeraries, and are paid a salary at the rate of £300 per annum, with quarters, without the right to private practice. Supernumerary officers, married or single, who obtain leave to reside out of the quarters provided for them will not be entitled to lodging allowance. After serving for two years, if appointed to the permanent staff, the officer will receive £400 per annum, rising by increments of £25 annually up to £700 per annum. A Government medical officer on being appointed to a district, and a supernumerary on being appointed to act in charge of a district, will receive a salary of £500 per annum, but will not receive any increments thereto until entitled to such increments by length of actual service. Every medical officer appointed to a district or to act in charge of a district will receive a travelling allowance at a rate varying from £100 to £150 per annum as the extent of the district may require. He is allowed private practice. No more than £30 is allowed for passage money on first appointment. There is a Widows' and Orphans' Fund in the colony to which all Government servants are compelled to subscribe at the rate of 4 per cent. on their salaries. The Governor now has the power to appoint private practitioners to perform the duties of medical districts on temporary agreements.

Jamaica.—The appointments, 54 in number, are mainly district appointments with private practice allowed; the salary paid by Government varies from £100 to £250 per annum, and in most cases is £200. Newcomers are, in some cases, attached for a while to the public hospital in Kingston, and given an allowance at the rate of £200 per annum, but not permitted to undertake private practice. Some medical officers receive a varying capitation allowance for attendance on immigrants. There is a Civil Service Widows' and Orphans' Fund established by law, to which all medical officers are obliged to subscribe at the rate of 4 per cent. on their salaries.

Trinidad and Tobago.—In Trinidad there are 32 appointments. Under the terms of the Ordinance regulating the medical service, officers are appointed in the first instance on two years' probation as supernumeraries. They receive a salary of £250 per annum with furnished quarters, and are usually attached to the Government hospital: the salary assigned to the district appointments, to which they are promoted as vacancies occur, is £300, which is increased to £400 and upwards by various allowances for horse, house, or otherwise. These posts carry the right to private practice. After every five years' service an officer is given an additional personal allowance at the rate of £50 per annum. All officers hereafter appointed are required to contribute 4 per cent. of their salaries to the Widows and Orphans' Fund. But for the past few years no appointments have been made under the Ordinance, and officers appointed have received a fixed salary of £250 per annum without any subsequent increment, and in a few districts a system has been introduced by which the work is performed by private practitioners under temporary contracts. The question of revising the terms of appointment is under consideration.

In the island of Tobago there are three district appointments with salaries of £250 per annum with quarters.

Windward Islands (Grenada, St. Lucia, St. Vincent).—The 22 appointments are, with few exceptions, district appointments with the right to private practice attached; the salaries paid by Government vary from £250 to £400, with allowances in certain cases. The Secretary of State reserves the power to transfer a medical officer from one island to another.

Leeward Islands (Antigua, St. Christopher and Nevis, Dominica, Montserrat, Virgin Islands).—The 25 appointments are of the same nature as in the Windward Islands. An officer when first sent out is not appointed to a particular island, but to the service of the Leeward Islands, with a salary of £200 or £250, and the Governor decides as to the district which is to be allotted to him. The medical officers receive fees for successful vaccinations, *post-mortem* examinations, attendance and giving evidence at courts of justice, certificates of lunacy, and, in the larger islands, for burial certificates. They are also allowed private practice.

British Honduras.—There are three medical appointments (besides the principal post of Colonial Surgeon) in all of which private practice is allowed, if it does not interfere with the public duties of the officer; the pay varies from $750 to $1,080. One of the medical officers is also district commissioner, and receives $1,500 for the combined posts of medical officer and district commissioner. Unless they already possess a diploma of public health, medical officers are liable to be required before they join the colony to undergo a course of instruction at a laboratory of public health or analogous institution. The dollar = about 4s. 2d.

Fiji.—The medical service has recently been reorganized, and officers appointed in future will be styled Government Medical Officers, and receive a salary of £300, rising by annual increments of £10 to £400. They will be allowed private practice, so far as is consistent with the proper discharge of their duty to the Government. They will be required either to take charge of hospitals or of districts, at the discretion of the authorities. The posts will be pensionable. As at present arranged, there will be ultimately 15 of them in addition to a senior medical officer (who at present receives £450 and £50 allowance for house rent), and a chief medical officer (£600 a year). Government Medical Officers will be given free quarters or an allowance in lieu thereof.

Ceylon.—The pay of the (36) Sub-Assistant Colonial Surgeons and (8) other subordinate medical officers is at the rate of from Rs. 900 to Rs. 1,600 per annum. There are nine Deputy Assistant Colonial Surgeons, with salaries at the rate of Rs. 1,500 to Rs. 2,500. The (23) Assistant Colonial Surgeons are paid at a rate of from Rs. 3,000 to Rs. 5,000 per annum, and the (6) Colonial Surgeons and (3) other superior medical officers at a rate of from Rs. 5,500 to Rs. 8,000 per annum. The Principal Civil Medical Officer receives Rs. 15,000, rising by annual increments of Rs. 500 to Rs. 18,000 per annum. Private practice is allowed to the subordinate officers, but the Colonial Surgeons may take only consultation practice. The Medical Service of Ceylon is mainly recruited from among gentlemen born in the island, but possessing British diplomas. Exchange Compensation, that is, an allowance in respect of one-half of an officer's salary, sufficient to make up the difference between the market value of a rupee and a rupee worth 1s. 6d. is at

[1] Intending applicants would do well to consult a memorandum prepared for the use of the Parliamentary Bills Committee of the British Medical Association, and published in the British Medical Journal on April 23rd, 1892.

present granted to officers appointed from this country to medical posts in Ceylon.

This privilege is subject to an annual vote of the Legislative Council, and its permanence cannot therefore be guaranteed.

Straits Settlements.—Two house-surgeons in the General Hospital, Singapore, and one in the General Hospital, Penang, on £300 rising to £360, with free quarters. There are ten other subordinate posts in the Medical Department, with salaries varying from £300 (rising to £360) to £780 (rising to £900). Some of these posts have free quarters attached, and the holders of some are allowed private practice within limits. The salary of the Principal Civil Medical Officer is £1,000.

Federated Malay States.—There are 18 District Surgeons on salaries of £360 rising to £480. There are also four State surgeons on salaries varying from £480 (rising to £540) to £720 (rising to £840).

Medical officers have no claim to private practice, and the enjoyment of it will be strictly subject to the permission of Government. The private practice to be obtained is limited, Government officers, the wives and families of certain classes of officer, and in some States the employés of neighbouring mines, being attended free. There are two assistants in the Institute for Medical Research on salaries of £360 to £420. These are non-pensionable, and the holders are eligible for appointment as District Surgeons.

Hong Kong.—Principal Civil Medical Officer, £800 rising to £1,000. There are two Health Officers of the Port, four Medical Officers of Health, and four Assistant Surgeons, with salaries of £480 rising to £720. Most of these appointments are pensionable. Private practice is not allowed, and free quarters are only given in a few cases.

In Hong Kong, the Straits Settlements, and the Federated Malay States officers whose salaries are fixed in sterling are paid locally in dollars at a rate of exchange fixed monthly by the Government, and based on the average exchange value of the dollar during the preceding month.

Mauritius.—There are 24 medical appointments in all; of these 14 are minor appointments, with salaries varying from Rs. 500 to Rs. 1,500 per annum. The other 10 appointments have salaries varying from Rs. 2,000 to Rs. 9,000. Free quarters are not given in most cases, and private practice is not allowed. The service is mainly recruited from among gentlemen born in the island.

N.B.—There are Widows' and Orphans' Pension Funds in Ceylon, Straits Settlements, the Federated Malay States, Hong Kong, and Mauritius, to which all permanent Government servants are called upon to subscribe at the rate of 4 per cent. on their salaries.

Officers in the service of Mauritius are required annually to contribute 2 per cent. of their salaries towards their pensions.

Seychelles.—There are four medical appointments. The Government Medical Officer receives Rs. 4,000. The Assistant Government Medical Officers receive Rs. 3,000. The holders of these latter appointments have free quarters. Private practice is allowed.

Gibraltar.—There is a surgeon of the Colonial Hospital receiving £275, and an assistant surgeon receiving £96, in each case with quarters and private practice, and allowance of £20 12s. for fuel and light. The surgeon of the hospital, as medical officer of the civil prison and lunatic asylum, receives £55. The assistant surgeon is also police surgeon, £45, port surgeon, £109 and a public vaccinator.

Cyprus.—There is a Chief Medical Officer paid at the rate of £500 per annum, two District Medical Officers paid at the rate of £250 per annum, and one paid at the rate of £200, rising by £10 a year to £250, all enjoying private practice and receiving 2s. per diem forage allowance; these are the only medical appointments in the island which are open to English candidates.

St. Helena.—The Colonial Surgeon receives £300 per annum, and £30 horse allowance. Private practice is allowed.

Falkland Islands.—There are two appointments, one of which is paid at the rate of £300 per annum, with £25 as Health Officer, and the other at the rate of £200 per annum, with £36 as Deputy Postmaster. Private practice is allowed in both cases.

4. All applicants for medical employment in these Colonies must be between the ages of 23 and 30, and must be doubly qualified; preference will be given to those who have held hospital appointments as house-physicians and house-surgeons; certificates of moral character and of sobriety will be required, and every officer before being appointed will be medically examined by one of the consulting physicians of the Colonial Office, Sir Patrick Manson, 21, Queen Anne Street, Cavendish Square, London W.; Dr. Andrew Davidson, 11, Morningside Place, Edinburgh, and Dr. Hawtrey Benson, 57, Fitzwilliam Square, Dublin.

5. In addition to the ordinary medical appointments in these Colonies vacancies also occasionally, though very rarely, occur for which specialists are required—for example, to take charge of a lunatic asylum—and the particulars of chief medical officer in some of the larger Colonies have not been given, as the headship of the Medical Department in such Colonies, requiring administrative as well as professional qualifications, is not reserved to the ordinary medical staff of the same Colony, but is often filled up directly by transfer, and sometimes from outside the service.

6. Applications for medical employment in these Colonies from persons in the United Kingdom must be addressed to the Assistant Private Secretary, Colonial Office, Downing Street, S.W. Out of the total number so applying a list of candidates will be made, who will be considered as vacancies occur, but no promise whatever can be held out that candidates, even if they are placed on the list, will eventually receive an appointment. It is not possible to forecast either the number or the nature of the vacancies which will arise in the course of any given year, and it is not expected that candidates should hold themselves in readiness by refraining from other employment, as usually, when selected for an appointment, they can be allowed sufficient time to make their preparations and to terminate their existing employment.

7. Information as to the West African Medical Staff is given in a separate memorandum, printed below.

8. *South Africa.*—Medical appointments in the Bechuanaland Protectorate and Basutoland are made only on the recommendation of the High Commissioner for South Africa, who usually appoints local candidates. Appointments of medical officers to the South African Constabulary are made by the High Commissioner on the recommendation of the Inspector-General. The Secretary of State does not select candidates for these appointments, and no register of candidates is kept at the Colonial Office.

Medical appointments in the Transvaal and Orange River Colony are only made on the recommendation of the Governors of those Colonies. The supply of candidates in the Colonies is understood to be sufficient, and it is not anticipated that there will be any demand for the services of medical men from this country for ordinary appointments. Information as to the conditions of practice in these Colonies can be obtained from the Emigrants' Information Office, 31, Broadway, Westminster, S.W.

Medical appointments in the Cape and Natal are made only by the Colonial Governments. Information with regard to appointments in these Colonies can be obtained from the Agent-General for the Cape, 100, Victoria Street, S.W., and the Agent-General for Natal, 26, Victoria Street, S.W.

Appointments in Rhodesia are made by the British South Africa Company, 2, London Wall Buildings, E.C.

INFORMATION FOR THE USE OF CANDIDATES FOR APPOINTMENTS IN THE WEST AFRICAN MEDICAL STAFF.

1. The medical services of the West African Colonies and Protectorates (namely, the Gambia, Sierra Leone, the Gold Coast, Lagos, Southern Nigeria, and Northern Nigeria) form one service under the above name. All the medical officers for the service are selected by the Secretary of State for the Colonies, and are on one list for employment and promotion.

SALARY AND ALLOWANCES.

2. The grades and salaries of medical officers are shown in the following table:

Grades.	Gold Coast, Southern Nigeria, Northern Nigeria.			Sierra Leone, Lagos.			Gambia.		
	Minimum Salary.	Annual Increment.	Maximum Salary.	Minimum Salary.	Annual Increment.	Maximum Salary.	Minimum Salary.	Annual Increment.	Maximum Salary.
	£	£	£	£	£	£	£	£	£
Principal Medical Officer	1,000	50	1,200	800	50	1,000	—	—	—
Deputy Principal Medical Officer	700	25	800	—	—	—	—	—	—
Senior Medical Officers	600	20	700	600	20	700	500	20	600
Medical Officers ...	400	20	500	400	20	500	400	20	500

3. The allowances are as follows:

(*a*) *Duty Pay.*—A Deputy Principal Medical Officer or Senior Medical Officer receives duty pay at the rate of £100 a year while acting for the Principal Medical Officer.

In the Gambia a Medical Officer while acting for the Senior Medical Officer in charge of the Medical Department receives duty pay at the rate of £50 a year.

Duty pay at the rate of £60 a year is also paid (1) to each Deputy Principal Medical Officer or Senior Medical Officer while employed in Ashanti or the Northern Territories of the Gold Coast, and (2) to not more than two officers of either of those ranks in Northern Nigeria, when similarly employed in outlying districts, at the discretion of the High Commissioner.

(*b*) *Horse or Hammock Allowance.*—An allowance of 2s. 6d. a day is paid to every medical officer for personal conveyance while on duty at his station, for any periods during which he was required by Government to keep, and has actually kept, a horse, carriers, etc., for the purpose.

(*c*) *Transport of Stores.*—The Government carries free of cost a reasonable amount of stores for every medical officer, the amount in each case being fixed by the local Government.

(*d*) *Travelling.*—Medical and other officers travelling on duty in a colony or protectorate are entitled to repayment of any actual out-of-pocket expenses which they may necessarily have incurred. In some cases, in lieu of the repayment of expenses, a travelling allowance is given, which is estimated to cover the average cost of travelling.

(*e*) *Field or Bush Allowance.*—An allowance of 5s. a day is paid to all medical officers, whatever their rank, while employed in the field or bush, away from recognized stations. Officers, while in receipt of this allowance, are not entitled to any repayment or allowance under (*d*) above.

(*f*) *Allowances on a Military Expedition.*—All medical officers, whatever their rank, while employed with a military expedition, will be paid an allowance of 10s. a day; and they will also be given free rations, or an allowance of 3s. a day in lieu of rations, whenever other officers employed with the expedition are given free rations or an allowance in lieu of rations. While in receipt of these allowances, medical officers will not be entitled to any repayment or allowance under (*d*) and (*e*) above.

(*g*) *Outfit Allowance.*—An allowance of £12 is paid to every medical officer before his departure on first appointment for the purchase of camp outfit (see under "Outfit").

(*h*) *Special Allowances.*—Allowances varying in amount up to 10s. a day are paid to medical officers detailed for certain special duties—for example, sanitary duties in large towns, the charge of laboratories for research, etc.

Medical officers, when acting as Assistant District Commissioners on the Gold Coast, in addition to performing their medical duties, receive duty pay at the rate of £80 a year, and when acting as District Commissioners in Ashanti at the rate of £140 a year.

LEAVE OF ABSENCE, PASSAGES, ETC.

4. Medical officers are in general subject to the Colonial Regulations in force for the time being, Chapter XVIII of which contains the rules specially applicable to West Africa. A brief summary of these rules is given here for convenience.

5. The ordinary tour of residential service is one year, followed by leave with full pay during the voyages to and from England, and for four or two months clear in England, according as the officer is returning for further service in West Africa or not. If an officer is detained beyond the year, additional leave is given with full pay for ten days in respect of each completed month beyond twelve, whether he is returning or not. If he is invalided before the end of the year, the leave with full pay is for the voyages, and for ten or five days in respect of each completed month, according as he is returning or not. Leave granted on the understanding that an officer will return is known as "return leave," and any pay drawn in respect of such leave is liable to be refunded if he does not return.

6. Leave may be extended for a limited period with half or no pay on the ground of ill health, or without pay on other grounds.

7. Free passages are given to all officers who are granted leave as above. A free passage is also given on first appointment, subject to the officer signing an agreement under which he is liable to refund its cost if he relinquishes his appointment for any other reason than physical or mental infirmity, or is removed for misconduct, within three years from the date of his arrival in West Africa.

8. Half-pay is given during the voyage out on first appointment.

9. Fuller information on these points will be found in the Colonial Regulations, which are published in the annual Colonial Office List (Messrs. Waterlow and Sons, Great Winchester Street, E.C., price 10s. 6d.), or may be consulted on application at the Colonial Office; and a copy of Chapter XVIII may also be obtained free on application to the Colonial Office.

GENERAL CONDITIONS OF ENGAGEMENT.

10. Every medical officer, unless exempted from this condition on account of previous Colonial service or for any other reason, is engaged in the first instance on probation for one year from the date of his arrival in West Africa. If it is established to the satisfaction of the Governor or High Commissioner that an officer is not qualified for efficient service in West Africa, the Governor or High Commissioner, subject to the confirmation of the Secretary of State, will have full power to cancel his appointment at any time within the year without giving him any further compensation than a passage back to England, which will be granted only at the discretion of the Governor or High Commissioner.

11. At the end of the year of probation the officer may, on the recommendation of the Governor or High Commissioner, subject to the approval of the Secretary of State, be confirmed in his appointment with effect from the date of his first embarkation from England for West Africa; and unless it is expressly continued in this manner, the appointment will cease at the end of the year.

PRIVATE PRACTICE.

12. All medical officers, except the Principal Medical Officer, in each Colony or Protectorate, are allowed to take private practice, provided that it does not interfere with the faithful and efficient performance of their official duties, but it is within the power of the Governor or High Commissioner to withdraw or suspend the privilege in such places and for such periods as he may consider desirable.

OUTFIT.

13. *Instruments and Drugs* and all medical appliances are supplied by the Government. Medical officers are not required to provide themselves with microscopes, which are supplied, when necessary, by the Government.

14. *Camp Outfit* on the following scale must be taken out by every medical officer, and an allowance of £12 is given for its purchase: Camp table, 2½ ft. by 2 ft., camp bed (straps, etc.), hurricane lamp (with spare chimneys and wicks), enamelled basin, camp chair, portable bath, Berkefeld filter, stable bucket, mosquito curtains; tents are supplied by the Government if required.

15. *Clothing, etc.*—The following are recommended: Thin gauze vests and drawers, one or two pair of thick Jaeger drawers, thin flannel shirts, white shirts, turned-down collars for wear at head quarters (not required in Northern and Southern Nigeria), merino socks, one or two pairs of woollen socks, thick woollen cholera belts, thin flannel pyjamas (and two thick), flannel dressing gown, medium greatcoat, light tropical mackintosh (the seams should be sewn throughout, as those fastened only with composition fail to pieces after a few weeks), umbrella (either white linen with green lining, or ordinary black with white cover), shooting boots; a pair of high indiarubber rain boots for crossing swamps, etc., is useful; brush, comb, shaving brush, razor, glass, tooth brushes, powder, sponge, soap, candles, needles, and thread, etc.

16. *Miscellaneous Outfit.*—Tableware (not required in Southern Nigeria)—plates, dishes, glass, knives, forks and spoons, cruet and coffee-pot, cups and saucers, jugs, etc.; table cloths, napkins, dusters, glass cloths, corkscrew, turnscrew, tin-opener, kitchen ware (not required in Southern Nigeria)—kettles, cooking utensils, towelling; camp canteen, water-bottle, waterproof sheet, thick blankets, towels, sheets (if desired), pillow cases. Good watches or jewellery should not be taken out. A small clock is useful. Lounge chair (for voyage). Shot gun, ammunition, hunting knife and belt, etc., if desired. Tin boxes, to hold 65 lbs. or less, are better than wooden boxes or portmanteaux. Transport is effected by means of native carriers, whose average load is 50 lbs. each.

N.B.—A complete set of winter clothes and winter underclothing may be required on board ship if an officer's leave of absence takes him to England in the cold weather. Arrangements might preferably be made for these to meet the officer during the voyage, as they are apt to get destroyed if kept unused in West Africa.

17. The above lists are only intended as a guide to requirements. Many articles can be obtained in West Africa, though at a rather higher price than in England. As a general rule it is desirable for officers to take out as little as possible with them, but circumstances vary, and a newly appointed officer should always, if possible, consult someone who has recently been on the Coast. If he applies to the Colonial Office he will be placed in communication with some officer at home on leave of absence, who will be able to advise him what to do.

UNIFORM.

18. In Northern and Southern Nigeria there is a uniform prescribed for medical officers in common with other civil officers, particulars of which can be obtained from the Colonial Office. In the other Colonies medical officers at present wear no special uniform.

QUARTERS.

19. At all the recognized stations free single quarters, furnished in most cases, are provided for medical officers, or an allowance is paid in lieu of quarters. Information as to the nature of the quarters, the amount of furniture supplied, etc., may be obtained on application at the Colonial Office.

PENSIONS AND GRATUITIES.

20. The ordinary regulations relating to pensions and gratuities for West African service can be consulted at the Colonial Office, but for convenience a brief though necessarily incomplete account of them is given here.

21. On attaining the age of 50 years, or after eighteen years' service (of which at least twelve must have been residential), an officer is qualified for a pension calculated at $\frac{1}{60}$ of the last annual salary for each year of service.

22. If invalided after a minimum of seven years' service, he is qualified for a pension calculated at the same rate.

23. If invalided before completing seven years' service, he is qualified for a gratuity not exceeding three-quarters of a month's salary for each six months of service; provided that he has been confirmed in his appointment, and that he has been specially recommended by the Governor or High Commissioner for such gratuity.

24. For the purpose calculating the amount of these pensions and gratuities, leave of absence without salary is not counted, while leave with half salary is counted half.

25. In addition to the ordinary regulations, an officer of the West African Medical Staff enjoys the following special privilege: At the end of nine years (of which not less than six must have been residential) he will be permitted to retire with a gratuity of £1,000, or at the end of twelve years (of which not less than eight must have been residential) with a gratuity of £1,250. All claims to pension are, however, forfeited on the receipt of such a gratuity.

APPLICATIONS FOR APPOINTMENTS

26. Applicants for appointment as medical officers in the West African Medical Staff (the higher grades will usually be filled by promotion from the lower) must be British subjects of European parentage, and between 25 and 35 years of age; they must possess a complete double qualification, and must be on the *Medical Register*.

27. Preference will be given to unmarried candidates. Married ones are not excluded; but it should be remembered that passages for wives and children are not provided by the Government, that houses for them are rarely available, and that, except in the case of an officer dying on active service, no provision is made by the Government for a widow or orphans.

28. Candidates should, in the first instance, apply in writing to the Assistant Private Secretary to the Secretary of State, Colonial Office, Downing Street, London, S.W., stating generally their qualifications and enclosing a certificate of birth. A form of application will then be forwarded to them to fill up and return together with testimonials.

29. Candidates whom it is proposed to select for appointment will have to be medically examined by one of the medical advisers of the Colonial Office (or, in the case of those residing in a colony, by a medical officer appointed by the Colonial Government), and no appointment will be made unless the candidate is declared to be physically fit for service in West Africa.

30. Candidates for medical appointments in West Africa are allowed to express a preference for any particular Colony or Protectorate, and their

wishes in this respect will be borne in mind and met as far as possible, but they are liable to be posted in the first instance, or transferred afterwards if necessary to any other West African Colony or Protectorate at the discretion of the Secretary of State.

31. Transfers from one Colony or Protectorate to another will, however, be made as seldom as possible, and will usually be restricted to the following cases:

(i) If an officer is appointed in the first instance as supernumerary to the establishment in one Colony or Protectorate pending the occurrence of a vacancy in another Colony or Protectorate.

(ii) If an officer applies himself for transfer in the same grade.

(iii) On promotion.

(iv) Temporary transfers in cases of emergency.

INSTRUCTION IN TROPICAL MEDICINE.

32. Every candidate selected for appointment will, unless the Secretary of State decides otherwise, be required to undergo a course of instruction for two or three months either at the London School of Tropical Medicine, Royal Victoria and Albert Docks, E. (near Connaught Road Station), or at the Liverpool School of Tropical Medicine at University College, Liverpool. The cost of the tuition, fees, board, and residence during such instruction, amounting to a maximum of £48 8s. 10d. for three months, will be borne by the Government, and a daily allowance of 5s. (but no pay) will be paid to each candidate during the course, and may be continued subsequently up to the date of embarkation. These payments will be made subject to the candidate's signing an agreement by which he will be bound to refund them (1) if he declines to accept an appointment in any of the Colonies or Protectorates for which he may be selected by the Secretary of State; (2) if he fails to obtain the certificate referred to in the next paragraph; or (3) if he relinquishes the West African service for any other reason than mental or physical infirmity, or is removed for misconduct within three years of the date of his arrival in West Africa.

33. Every candidate sent to either of the schools is required to obtain a certificate showing that he has satisfied the school authorities with regard to his regularity of attendance, progress, and proficiency, and for this purpose to undergo any examinations which they may consider necessary; and if he fails to obtain such a certificate, he may not only be called upon to refund the payments made to him or on his behalf (as provided in the previous paragraph), but his selection for the West African Medical Staff may also be cancelled.

34. Half pay begins from the date of embarkation.

35. If a medical officer has for any reason not taken a course of instruction prior to appointment, he is required to take it during his first leave of absence, and to obtain the certificate before he can be confirmed in his appointment. In this case the tuition fees, but not the fees for board and residence, will be paid by the Government, and no daily allowance will be given in addition to pay.

36. The seniority of Medical Officers is reckoned generally from the date of their embarkation in this country, but in the case of those who have taken a course of instruction before proceeding to West Africa, a period is added equal to the period during which they have actually been under instruction. This addition, however, is only made for purposes of promotion, and does not affect pensions, gratuities, or increments of salary. Seniority alone does not, moreover, give any claim to promotion.

DENTAL SURGERY.

REGULATIONS OF THE GENERAL MEDICAL COUNCIL.

CANDIDATES for a diploma in Dental Surgery are required to produce certificates of having been engaged during four years in professional studies, and of having received three years' instruction in Mechanical Dentistry from a registered practitioner, or at some dental hospital where instruction is given in this subject. One year's bona-fide apprenticeship with a registered dental practitioner, or one year's instruction at a dental hospital, after being registered as a dental student, may be counted one of the four years of professional study. The three years of instruction in Mechanical Dentistry, or any part of them, may be taken by the medical student, either before or after his registration as a student; but no year of such mechanical instruction will be counted as one of the four years of professional study unless taken after registration.

A Register of Dental Students is kept by the Registrar of the General Medical Council, 299, Oxford Street, London.

Preliminary Education.—Dental students are subject to the same regulations as regards preliminary examination as medical students, but professional study may commence by pupilage with a registered dental practitioner.

DIPLOMAS.

The Royal College of Surgeons of England, the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow, each grant a licence in Dental Surgery, and the Royal College of Surgeons in Ireland grants a licence in Dentistry, in all cases after the student has produced evidence of passing through the stated curriculum and prescribed examinations. Particulars can be obtained upon application to the Secretary of the Conjoint Board in England, Examination Hall, Victoria Embankment, London, W.C.; to Mr. James Robertson, Clerk to the Royal College of Surgeons, Edinburgh, 48, George Square, Edinburgh: to the Secretary of the Royal College of Surgeons in Ireland, Dublin; and as to the Faculty of Physicians and Surgeons, to Mr. Alexander Duncan, B.A., 242, St. Vincent Street, Glasgow.

The University of Birmingham grants the degree of Bachelor of Dental Surgery to students of its own school who have obtained a licence in Dental Surgery elsewhere at least one year previously, have produced evidence of certain additional study, and have passed the prescribed examination.

EDUCATION.

A candidate for the Diploma in Dentistry can obtain the necessary instruction in special dental subjects (the general subjects being attended at some general hospital), at the Dental Hospital of London (apply to the Dean at the Hospital, Leicester Square, W.C.); or at the National Dental Hospital and College, London (apply to the Dean, the National Dental Hospital, Great Portland Street, London, W.); at the Dental School of Guy's Hospital (apply to the Dean at the Medical School, Guy's Hospital, S.E.); at the University of Birmingham (apply to the Dean of the Medical Faculty, University of Birmingham); at Owens College, Manchester (apply to the Registrar, Owens College, Manchester); at the Liverpool Dental Hospital and School of Dental Surgery (apply to the Dean of the Medical Faculty, University of Liverpool); and at the Devon and Exeter Dental Hospital (apply to the Honorary Secretary of the Hospital). The Scottish Schools of Dentistry are the Incorporated Edinburgh Dental Hospital and School (apply to the Dean, 31, Chambers Street, Edinburgh); the Glasgow Royal Infirmary, Dental Department (apply to the Dean of the Faculty of Medicine, Mr. R. T. Kent, St. Mungo's College, Glasgow); and Anderson's College Medical School, Glasgow (apply to the Secretary, Mr. D. M. Alexander, 97, West Regent Street, Glasgow).

UNIVERSITY OF BIRMINGHAM.

Degrees in Dentistry—namely, Bachelor and Master of Dental Surgery (B.D.S) and M.D.S.)—are granted by the University of Birmingham. All candidates for these degrees must pass the same Matriculation Examination as that required from candidates for medical degrees. The Degree of Bachelor of Dental Surgery is not conferred upon any candidate who has not obtained a Licence in Dental Surgery from some body legally entitled to confer such qualification. The candidate is not eligible for the degree until a period of twelve months has elapsed from the passing of his examination for the Licence in Dental Surgery. Of this period at least six months must be spent in the dental department of a general hospital approved by the University. *A.* In addition to the Licence in Dental Surgery the candidate must produce evidence that he has attended the courses required by medical students of the University in the following subjects, and passed the examinations held in the same for medical and surgical degrees: (*a*) Chemistry and Practical Chemistry, (*b*) Physics and Practical Physics, (*c*) Comparative Anatomy, (*d*) Anatomy and Practical Anatomy, (*e*) Physiology and Practical Physiology. *B.* That he has attended the following courses: (*f*) One Course of Lectures on Medicine, (*g*) One Course of Lectures on Surgery, (*h*) Special Courses of Lectures on the Surgery and Medicine of the Mouth, (*i*) Pathology and Bacteriology; and has passed the examinations for candidates for Dental degrees held in each of these subjects. *C.* That he has attended courses in: (*k*) Dental Histology and Patho-Histology; (*l*) Comparative Dental Anatomy; (*m*) Dental Surgery and Prosthetic Dentistry. *D.* That he has received instruction in the Clinical Examination of living cases at the dental department of a general hospital for a period of not less than six months. The final examination will deal with the subjects in Classes *C* and *D*. On the expiration of twelve months from the date of passing the examination for the Degree of Bachelor of Dental Surgery, the candidate will be eligible for that of Master of Dental Surgery. For this degree candidates will be required to submit a thesis containing original work and investigations in some subject connected with Dentistry, which thesis shall be submitted to examiners to be nominated by the Advisory Board. The degree will be awarded or withheld according to the report of these examiners.

The teaching of Dentistry is undertaken by the University acting in association with the Birmingham Dental Hospital and the Birmingham Clinical Board.

An Entrance Scholarship, value £37 10s., is awarded annually at the commencement of the Winter Session.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Candidates who register as Dental Students after Jan. 1st,

1897, are required to pass three examinations — the Preliminary Science Examination, the First Professional Examination, and the Second Professional Examination—and to produce the following certificates before admission to the several examinations:

PRELIMINARY SCIENCE EXAMINATION.

1. Of having received instruction as an institution recognized for the purpose in Chemistry, Physics, and Practical Chemistry.

This instruction may be taken prior to the date of registration as a dental student.

2. Of having been engaged during a period of not less than three years in acquiring a practical familiarity with the details of Mechanical Dentistry, under the instruction of a competent practitioner, or under the direction of the superintendent of the mechanical department of a recognized dental hospital, where the arrangements for teaching Mechanical Dentistry are satisfactory to the Board of Examiners in Dental Surgery. In the case of qualified surgeons evidence of a period of not less than two instead of three years of such instruction will be sufficient

This instruction may be taken prior to the date of registration as a dental student.

3. Of registration as a dental student by the General Medical Council, 299, Oxford Street, London, W.

4. Of having attended at a recognized dental hospital and school—
   (*a*) A course of lectures on Dental Metallurgy.
   (*b*) A course of Practical Dental Metallurgy.
   (*c*) A course of lectures on Dental Mechanics.
   (*d*) A course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns.

SECOND PROFESSIONAL EXAMINATION.

5. Of having been engaged during four years in the acquirement of professional knowledge subsequently to the date of registration as a dental student.

6. Of having attended at a recognized dental hospital and school—
   (*a*) A course of Dental Anatomy and Physiology.
   (*b*) A separate course of Dental Histology, including the preparation of Microscopical Sections.
   (*c*) A course of Dental Surgery.
   (*d*) A separate course of Practical Dental Surgery.
   (*e*) A course of not less than 5 lectures on the Surgery of the Mouth.*
   (*f*) A course of Dental Bacteriology.†
   (*g*) A course of Dental Materia Medica.†

7. Of having attended at a recognized dental hospital, or in the dental department of a recognized general hospital, the practice of Dental Surgery during two years.

8. Of having attended at a recognized medical school—
   (*a*) A course of lectures on Anatomy.
   (*b*) A course of lectures on Physiology.
   (*c*) A separate Practical Course of Physiology.
   (*d*) A course of Lectures on Surgery.
   (*e*) A course of Lectures on Medicine.

9. Of having performed dissections at a recognized medical school during not less than twelve months.

10. Of having attended, at a recognized hospital or hospitals, the Practice of Surgery and Clinical Lectures on Surgery during two winter sessions.

11. Of being 21 years of age.

Note.—Professional study prior to the date of registration as a dental student is not recognized except in the case of Chemistry, Physics, and Practical Chemistry, and of instruction in the details of Mechanical Dentistry (see Clauses 1 and 2), and will not be counted under any circumstances in lieu of part of the four years' study subsequent to the date of registration as a dental student, required by Clause 5.

EXAMINATIONS.

The Preliminary Science Examination consists of Chemistry, Physics, and Practical Chemistry, and will be identical with Part I of the First Examination of the Examining Board in England. Candidates may present themselves for this examination before entering at a dental school on production of certificates of having received instruction in chemistry, physics, and practical chemistry. A candidate who produces satisfactory evidence of having passed an examination for a degree in Medicine, conducted at a university in the United Kingdom, in India, or in a British Colony, on the subjects of the Preliminary Science Examination, will be exempt from that examination.

The First Professional Examination consists of Mechanical Dentistry and Dental Metallurgy. Candidates who have passed the Preliminary Science Examination may present themselves for the First Professional Examination for the Licence after the completion of six months' attendance at a recognized dental hospital and school, on production of the certificates already specified.

At the Examination in Mechanical Dentistry candidates will be required to provide themselves with the following instruments, namely, wax spatula, double-ended sculptors, gouge and handle, vulcanite files, gold files, pliers, pin roughing and bending and snipe-nose cutting nippers, braces and handles, fret saw, one Melotte's moulding outfit, one Bunsen burner (laboratory), fine saws, chasers' special blowpipe for mouth 12 in., solder tweezers, crown holder, shears curved, collar pliers, N.P. pin nippers plain, rivetting hammer, dividers $4\frac{1}{2}$ in.

The following instruments will be supplied by the hospital at which the candidates are to be examined—namely, hammers for striking up plates, horn mallets, ordinary casting materials and apparatus.

A Synopsis of the Examination in Dental Metallurgy, which will be conducted by written paper, will be found on page 5 of the Regulations.

The *Second Professional Examination* consists of:

Part I.—General Anatomy and Physiology, General Pathology and Surgery.

Part II.—Dental Anatomy and Physiology. Dental Pathology and Surgery, and Practical Dental Surgery.

The Examination is partly written, partly practical, and partly oral.

The Written Examination in Part I comprises General Anatomy and Physiology, General Pathology and Surgery; and in Part II Dental Anatomy, Physiology, Dental Pathology and Surgery.

The Oral Examination in each Part comprises the several subjects above mentioned, and is conducted by the use of preparations, casts, drawings, etc.

At the Practical Examination in Part II candidates may be examined:

(*a*) On the treatment of Dental Caries, and may be required to prepare and fill cavities with Gold or Plastic filling or material, or to do any other operation in Dental Surgery.

(*b*) On the Mechanical and Surgical Treatment of the various irregularities of Children's Teeth.

Candidates who have past the First Professional Examination at least six months previously may present themselves for the two parts separately, or they may take the whole examination at one time. Before presenting themselves for Part I they must produce the certificates required under Section I, Clauses 5, 8, 9, 10, and 11, and before taking Part II the certificates required under Section 1, Clauses 5, 6, 7, and 11.

Candidates who have passed the Second Examination of the Examining Board in England, or who shall produce evidence of having passed the Examination in Anatomy and Physiology required for the Licence in Surgery of the Royal College of Surgeons of Edinburgh, the Royal College of Surgeons in Ireland, or the Faculty of Physicians and Surgeons of Glasgow, or an Examination in Anatomy and Physiology required for a Degree in Medicine or Surgery at a University in the United Kingdom, will be exempt from re-examination in those subjects in Part I.

Candidates who are members of the College, or who have passed the Examination in Surgery of the Examining Board in England, or who produce evidence of having passed the Examination in Surgery for the Licence in Surgery of the Royal College of Surgeons of Edinburgh, the Royal College of Surgeons in Ireland, or the Faculty of Physicians and Surgeons of Glasgow, or an Examination in Surgery for a Degree in Medicine or Surgery at a University in the United Kingdom, will be exempt from examination in Surgery and Pathology in Part I.

Fees.—The fee for the Diploma of the Licence in Dental Surgery is 20 guineas, and is payable in the following manner—namely:

		£	s.	d.
Preliminary Science Examination.	Each admission ...	3	3	0
First Professional	" ...	2	2	0
Second "	" Part I ...	2	2	0
	" Part II ...	3	3	0
Amount payable before grant of diploma		10	10	0
		£21	0	0

Fees for re-examination will not be allowed to count as part of the fee of 20 guineas payable for the diploma, except in the case of any candidate being on June 1st, 1900, registered by the General Medical Council as a Dental Student, and becoming within six years from the date of his registration entitled to receive the Diploma.

The Preliminary Science Examination will be held in January, March or April, July, and October in each year.

The First and Second Professional Examinations will be held in May and November in each year.

N.B.—All applications with reference to the Examination for the Diploma in Dental Surgery should be addressed to Mr. F. G. Hallett, Secretary of the Examining Board in

* These lectures may be given either at a recognized dental hospital and school, in which case the lecturer must be a qualified surgeon practising surgery; or they may be given at a recognized medical school, and may form part of the course required by Clause 8 (*d*).

† These certificates will only be required of students who enter at a recognized dental hospital and school on or after May 1st, 1902.

England, Examination Hall, Victoria Embankment, London, W.C.

University of Dublin.

The University of Dublin grants both a Degree and a Licence in Dental Surgery. To obtain the former, candidates must have taken a Degree in Arts; the Licence is awarded to duly qualified persons who have passed the Public Entrance Examination of Trinity College, Dublin.

The Licence.—Before passing the Entrance Examination in Trinity College or immediately after doing so students are advised to begin their three years' course of instruction in Dental Mechanics, and to devote all their time during one year to this subject. Dental Mechanics may be learnt in the Mechanical Department of the Dental Hospital, where a fee of £100 is charged, or from a registered dentist, in which case the fee charged is a matter of arrangement.

Having passed the Public Entrance Examination in Trinity College, students should register themselves as Dental Students at the Registrar's Office in the Medical School, and commence the following course of study, in addition to continuing their work in Dental Mechanics.

First Year.—

Winter Session—	
Anatomy Lectures	£3 3 0
Chemistry Lectures	2 2 0
Physics Lectures	—
Dissections	5 5 0
Summer Session—	
Materia Medica	3 3 0
Practical Chemistry and Metallurgy	3 3 0
	£16 16 0

Second Year.—During this year students should attend Clinical instruction at a recognized general hospital, and continue their attendances at the classes in the Medical School as follows:

Winter Session—	
General Hospital	£12 12 0
Physiology Lectures	3 3 0
Surgery Lectures	2 2 0
Dissections	5 5 0
Summer Session—	
Histology and Dental Microscopy	5 5 0
General Hospital	—
	£28 7 0

Students should pass the Previous Dental Examination as soon as possible after the completion of the above courses.

The subjects of the Previous Dental Examination are: (1) Anatomy, Physiology, and Histology; (2) Physics, Chemistry, and Metallurgy; and (3) Materia Medica. All these subjects may be passed at one and the same time, or each group may be passed separately.

Third Year.—Having passed the Previous Dental Examination, Students should join the Dental Hospital, and attend the Classes and Lectures given there. In this year they should also attend the Course of Lectures in Medicine at the School of Physic.

Dental Hospital	£15 15 0 + *x*
Medicine Lectures	3 3 0
	£18 11 0 + *x*

Fourth Year.—Students should continue their attendance at the Dental Hospital, and prepare for the Final Dental Examination at the end of this year:

Dental Hospital	£12 12 0 + *x*

N.B.—The probable value of (*x*) will be £2 2s. in each year.

Before being admitted to the Final Examination, Students are required to produce certificates of having received three years' instruction in Dental Mechanics, and of satisfactory attendance on the Lectures in the following subjects: (1) Dental Surgery and Pathology (two courses); (2) Dental Mechanics (two courses); (3) Orthodontia; and (4) Dental Anatomy. Certificates of regular attendance (12 months) at a hospital recognized for Clinical Instruction, and of satisfactory attendance during two years at the Dental Hospital, are also required. Students must have passed the Previous Dental Examination in all its parts, and have attained the age of twenty-one years.

The subjects of the Final Examination are:

Medicine.	Dental Surgery and Pathology.
Surgery.	Dental Mechanics.
Dental Anatomy.	Orthodontia.

The fee for the Final Dental Examination is £5.

The total fees in order to obtain the Licence are—

Dental Mechanics	£100 0 0
Entrance Fee—	
Trinity College	15 0 0
Lecture and Laboratory Courses, Trinity College	35 14 0
General Hospital (one year)	12 12 0
Dental Hospital (two years)	32 11 0
	£195 17 0
Examination fee	5 0 0
	£200 17 0

The Degree.—The course of study recommended in the case of candidates for the Degree in Dental Surgery is the same as that stated above for the Licence, with the addition of—

Pathology Lectures	£2 2 0
Pathology, Practical	2 2 0
Bacteriology	3 3 0
	£7 7 0

which should be taken out in the fourth or fifth year.

Before presenting themselves for the Final Examination for the Degree candidates must—(1) have passed the examination for the B.A. degree; (2) have attended satisfactorily the courses indicated above; and (3) must have had their names on the books either of the Medical School or of the Dental School for a period of not less than five years. They must also have passed the previous Dental Examination in all its parts, and have attained the age of 21 years.

The subjects for the Degree Examination are—Medicine, Surgery, Pathology, Bacteriology; Dental Anatomy, Human and Comparative; Dental Microscopy, Dental Surgery and Pathology, Dental Mechanics, and Orthodontia.

The fee for the examination is £5.

The Board of Trinity College is willing to consider applications, on the part of qualified practitioners and others, for recognition of courses taken previous to the establishment of the Degree and Licence, in case they proceed to complete the course.

Royal College of Surgeons in Ireland.

Candidates for the Licence in Dental Surgery are required to pass three examinations—namely, *Preliminary* (in General Education), *Primary Dental* and *Final Dental*.

Primary Dental Examination.—Every candidate is required, before admission to the Primary Dental Examination, to produce evidence (1) of having passed a recognized Preliminary Examination, and of having been registered as a medical or dental student by the General Medical Council; (2) of having, subsequently to registration as a dental or medical student, attended at a recognized medical school (*a*) one course (six months) lectures on Practical Anatomy, including Dental Anatomy; (*b*) two courses (six months each) Demonstrations and Dissections; the certificate must include a statement that the candidate has dissected the head and neck at least three times; (*c*) one course (six months) lectures on Chemistry; (*d*) one course (six months) lectures on Physiology, including Dental Physiology; (*e*) one course (three months) lectures on Materia Medica; (*f*) one course (six months) lectures on Surgery; (*g*) one course (six months) lectures on Medicine; (*h*) one course (three months) Practical Chemistry, including Metallurgy; (*i*) one course (three months) Practical Physiology and Histology, including Dental Physiology and Histology, human and comparative; (3) of having attended Clinical Instruction at a recognized general hospital for one year. Primary Dental Examination, £10 10s.; Re-examination, if rejected, £5 5s. Fees are not returned to candidates who may fail to present themselves without having given two days' previous notice to the Registrar, or who may have been rejected. All fees are to be lodged to the credit of the Royal College of Surgeons at the Bank of Ireland. A rejected candidate will not be again admitted to examination until after a period of three months.

Exemptions.—Candidates who produce evidence of having passed the Second Professional Examination of the Conjoint Scheme, Royal Colleges of Physicians and Surgeons in Ireland, shall be permitted to present themselves for the Primary Dental Examination on the production of Certificates of having attended Clinical Instruction at a recognized general hospital for one year. One course (six months) of Lectures on Surgery, One Course (six months) of Lectures on Medicine, and One Course (three months) of Lectures on Materia Medica, and shall be exempt from all the subjects of the Primary Dental Examination, except Surgery. The fee for these candidates is two guineas.

Subjects of Examination.—Candidates who have passed in Chemistry and Physics at a First Professional Examination under the Conjoint Board with the Royal College of Physicians in Ireland, or an equivalent Examination,

A Book of Questions set at the Examination for the Licence in Dental Surgery for the years from 1892 to 1900 may be obtained on application to Messrs. Taylor and Francis, Publishers, Red Lion Court, Fleet Street, London, E.C. Price 6d. each, post free 6½d.

recognized by the College, are exempted from examination in these subjects, at the Primary Dental Examination. Candidates will not obtain credit for passing any part of the examination unless they pass at the same time in at least two of the following subjects, save in case they need a lesser number to complete their examination. 1. Physics: Heat, Electricity, and Light (as in Ganot's *Natural Philosophy*). 2. Chemistry, including Metallurgy; Elementary Chemistry (inorganic), including Metallurgy, as found in Roscoe's *Lessons in Elementary Chemistry*, with a practical Examination in the Laboratory. 3. Anatomy: The Bones, the names and positions of the principal Muscles, Blood Vessels, and Nerves; the elementary anatomy of the Viscera, of the Thorax and Abdomen, and of the Brain and Cranial Nerves; the anatomy of the Mouth and Jaws, and parts in relation thereto. 4. Physiology and Histology: An elementary knowledge of the functions of Digestion, Circulation, Respiration, and the Nervous System; and an elementary knowledge of Histological Structures, the Physiology and Histology of the Mouth and the organs related thereto. 5 Surgery: Inflammation, its varieties and consequences; Fracture, Dislocations, and Injuries of the Mouth, Face, Jaw, and Parts in relation thereto, their immediate and remote effects; Surgical Diseases of Blood Vessels, Diseases of the Mouth, Bones, and Joints thereof, Wound Infection, Pyaemia, Septicaemia, Use of Anaesthetics, Accidents therefrom, and their treatment.

Final Dental Examination.—Candidates must produce evidence of having passed the Primary Dental Examination of this College, or the Third Professional Examination under the Conjoint Board with the Royal College of Physicians in Ireland, or with the Apothecaries' Hall, or an equivalent examination recognized by the College. Candidates are required to produce certificates of having attended subsequent to registration as a dental or medical student: 1. The following courses of lectures recognized by the College: Dental Surgery and Pathology (two courses), Dental Mechanics (two courses). 2. For two years the practice of a dental hospital recognized by the College, or of the dental department of a general hospital so recognized. 3. Of having been engaged during four years in Professional Studies. 4. Of having received three years' instruction in Mechanical Dentistry from a registered dentist.[1] Candidates holding a diploma in Surgery will be admissible to the Final Dental Examination on producing certificates of having attended: 1. One course of lectures on Dental Surgery and Pathology. 2. One course of lectures on Dental Mechanics. 3. For one year the practice of a dental hospital recognized by the College, or the dental department of a general hospital so recognized, where such attendance has been subsequent to the date of diploma. This remission (3) has been made on the understanding that the surgeon devotes his whole time to dental work. 4. Of having been engaged during a period of not less than two years in acquiring a practical familiarity with the details of Mechanical Dentistry, under the instruction of a registered dentist. Candidates are examined in: Dental Surgery—Theoretical (including Dental Pathology), Clinical, and Operative. Dental Mechanics—Theoretical, Clinical, and Practical (including the Metallurgy of the workshop). Candidates must pass in all the subjects at the same time. Final Dental Examination.—Candidates holding L.R.C.S.I, or students who have passed Primary Dental or Third Professional Examination of the College, £10 10s.; re-examination, £5 5s. Fees for Final Examination of all other candidates, £26 5s. Re-examination, £10 10s. Extra fee for Special Examination, £5 5s. Fees are not returned to candidates who may fail to present themselves without having given two days' previous notice to the Registrar or who may have been rejected. All fees are to be lodged to the credit of the Royal College of Surgeons at the Bank of Ireland. A rejected candidate will not be again admitted to examination until after a period of three months. The Council has power to admit to examination, *sine curriculo*, candidates whose names are on the *Dentists Register*, published under the direction of the General Medical Council, and who are unable to furnish the certificates required by the foregoing regulations, on presentation of the schedule of application as hereinafter set forth, accompanied by any certificate they may have of general or professional education, and by the required fee. The application of the candidate for examination shall be made on a form, obtainable at the College, setting forth a certificate, signed by two Fellows, Members, or Licentiates of a College of Surgeons, and by two Licentiates in Dental Surgery in the Royal College of Surgeons in Ireland [or two members of the British Dental Association, or of the Odontological Society], to the effect that applicant is of good moral character, has been for five years engaged in the practice of Dentistry, is a registered dentist, and has not, during the past two years, attracted business as a dentist by advertising or other unbecoming practices. The examination and fees are the same as for the Final Dental Examination of other candidates.

[1] The three years' instruction in Mechanical Dentistry, or any part of them, may be taken by the dental student, either before or after his registration as a student; but no year of such instruction in Mechanical Dentistry shall be counted as one of the four years of professional study unless taken after registration. One year's bona-fide instruction from a registered dentist after being registered as a dental student may be counted as one of the four years of professional study.

BRITISH PRACTITIONERS ABROAD.

THE following notes give some indication of the conditions under which medical men possessing British degrees or diplomas are at liberty to carry on regular practice outside Great Britain and Ireland.

EUROPE.

Austria.—It is necessary to pass the State examination, or to obtain a University Degree in Medicine, a necessary preliminary to which is naturalization as an Austrian subject. Recognition of foreign diplomas may be obtained on passing certain examinations.

Belgium.—Permission to practise must be obtained by foreign practitioners through a duly appointed Medical Board. So stringent are the formalities that it is held by His Majesty's Minister at Brussels that the difficulties are prohibitive. No foreigner has, as a matter of fact, received permission to practise since 1893.

Denmark.—Foreigners are allowed no privilege in respect of exemption from examination.

France.—The degree of M.D. obtained by examination before a French faculty (Paris, Montpelier, Nancy, Bordeaux, Lyons, Lille, or Toulouse) is required. This regulation applies to Algiers. The degree, however, confers the right to practise only if it has been obtained on precisely the same conditions as those to which French students are subject—that is to say, before registration as medical students they must produce evidence of having passed the examination for the French diploma of Bachelor in Classical Education (Arts and Philosophy) and the Certificate in Physical, Chemical, and Natural Science, and they must go through the regular curriculum of professional study, and must pass all the five professional examinations required of French students. The degree of M.D. is still obtainable by holders of British diplomas under the old conditions of exemption, at the discretion of the Minister of Public Instruction, from any preliminary examination in Arts or Sciences, and from portions of the professional curriculum or examinations. The degree obtained in this way will not, however, confer the right to practise in France. The wards of hospitals and laboratories are still freely open to foreigners; and for those who may wish to obtain the purely honorary M.D. degree the facilities offered in the way of dispensation from preliminary examinations are even greater than heretofore. Application for such exemption must be addressed to the Minister of Public Instruction, to whom the documents showing the examination passed by the candidate in his own country, and the degrees or qualifications possessed by him must be submitted. Fees to the amount of £69 must be paid. The *Progrès Médical* (14, Rue des Carmes, Paris) publishes a "Student's Number" every year about November, in which full information is given as to teaching and examinations in every medical school in France.

Germany.—Any person may practise medicine, but if he has not passed the State examination he does so at his own peril, and is liable to fine and imprisonment if convicted of a mistake. The right to practise is obtained only by passing the German *Staats-Examen*. A lad who intends to enter the profession of medicine must attend a gymnasium (upper school), and pass an examination in general knowledge—Latin, Greek, German, French, divinity, mathematics, physics, history, and geography. After passing this examination he may be accepted as an ordinary full student of the university. At the end of the fourth semester (second year) he can pass the first State Examination (*Tentamen Physicum*), which embraces anatomy, physiology and physics, chemistry, botany and zoology. In the tenth semester he may pass the Final State Examination. In some universities the degree of M.D. can be obtained at the end of the eighth semester (fourth year)—that is, before the *Staats-Examen*, can be passed. The degree of M.D. does not in itself confer a licence to practise in the German Empire. By a recent ordinance the Universities of Prussia will not in future grant the degree of M.D. except to persons who have passed the State examination. The fee for the *Tentamen Physicum* is £1 16s.; for the Final State examination, £10 6s. The fee to the University for the M.D. degree varies between £15 and £25.

Greece.—A State examination must be passed, but graduates of foreign schools may take their examination in French or German.

Holland.—Foreigners are required to pass the State examination.

Hungary.—An English diploma does not entitle one to practise in Hungary without certain formalities of confirmation, owing to the fact that there is no International Convention between England and that country.

Italy.—A foreigner must (*a*) obtain an authorization (*abilitazione*) from one of the Royal Universities of Italy; or (*b*) if he desires to practise only among foreigners, he is at liberty to do so. In Italy medical studies are conducted in Government Universities under the immediate supervision of the Ministry of Public Instruction in Rome. There are several universities, one in each of the most important centres of the kingdom, such as Rome, Turin, Naples, Genoa, Palermo, Pavia, Pisa. There is only one medical degree in Italy, and it is that of Doctor in Medicine and Surgery. The title is conferred by the Rector of each University in the name of the King. The examination can be passed at any of the universities, and the students can transfer themselves from one to the other. An original thesis must be presented.

Monaco.—The following British qualifications are, for the purposes of medical practice in the Principality of Monaco, considered equivalent to the French Diploma of Doctor of Medicine: the degree of Doctor of

Medicine of the university of "the United Kingdom of Great Britain," and the diplomas of Fellows of the Royal Colleges of Surgeons and Physicians of London, Edinburgh, Dublin, and of the Faculty of Physicians and Surgeons of Glasgow. Every application for leave to practise must be accompanied by the diplomas of the applicant or by copies of those documents certified as correct either by a Consul of the Principality or by the Mayor of Monaco. The applicants must enter into an undertaking to live in the Principality and to practise their profession during the whole or part of the months of May, June, July, August, September, and October, agreeably to Article 1 of the Ordinance of May 29th, 1894.

Portugal.—The State examination must be passed.

Rumania.—The State examination must be passed (viva voce).

Russia.—Foreign medical men must pass a comprehensive examination at the Medical Academy of St. Petersburg or one of the universities of Russia, and must know Russia. Those who have not a B A degree must pass an examination in general education, and in Greek and Latin.

Norway.—The State examination must be passed. The Government may, however, grant permission in individual cases to persons who produce satisfactory evidence that they possess the requisite knowledge.

Spain.—The Spanish law of September 9th, 1857, gave to the Government, acting on the advice of the Council of Public Instruction, power to recognize medical studies pursued abroad, and to grant to persons holding a regular diploma obtained in another country the temporary right of practising medicine in Spain. On the downfall of Queen Isabella a more liberal spirit prevailed, and on February 6th, 1869, Señor Zorilla issued a decree declaring that foreign degrees should be held as equivalent to Spanish, and granting foreign doctors the right to practise in Spain on production of their diplomas and payment of 500 pesetas (£20). This ministerial order has recently been rescinded. A Royal decree, dated November 7th, 1902, revives the law of 1857, but suspends its application till a new ordinance has been promulgated. Foreign doctors now practising are to be compelled to comply with the new enactment within six years.

Sweden.—The State examination must be passed. Some reduction in curriculum may be granted.

Switzerland.—A qualified English practitioner desiring to practise in Switzerland, even if he practise only among his own countrymen, is required to pass the Federal examination in that country. The degree of Doctor of Medicine does not give the right to practise. The Federal examination may be passed at Basle, Zürich, or Berlin in German, and at Geneva or Lausanne in French. The applicant is advised to obtain from one of his teachers in this country an introduction to a professor at the university at which he proposes to pass the examination. His proper course would be to call upon the Rector of the University. We are informed that every information would be afforded, and that no difficulties are placed in the way of candidates. At the University of Zürich, the three examinations which it is necessary to pass are held as a rule at the following periods of the year: *First Examination:* End of January and mid-September. *Second Examination:* End of January and mid-September. *Third Examination:* Beginning of January, end of May, and beginning of October. At Basle the next examinations are in October. At Geneva the examinations are held in the third week of October, and in the second week of July, at the opening and conclusion respectively of the winter and summer session. At Lausanne the examinations takes place as follows: *First and Second Examinations:* April and October. *Final Examinations:* February and March, and June and July.

Turkey.—An examination in the chief branches of medicine and surgery must be passed at Constantinople (fee, £4 10s.). Before being admitted to the examination the candidate must present a diploma from a medical school recognized by the Government of the country in which it is situated.

AUSTRALASIA.

South Australia, New South Wales, Queensland, Western Australia.—Medical men holding British medical degrees or diplomas entitling them to registration in the United Kingdom under the Medical Act of 1858 can obtain admission to the Register in these Colonies upon furnishing proof of identity with the right holders of the qualifications produced, and upon payment of any fees that may be for the time being in force.

New Zealand, Tasmania.—A register is maintained by the Colonial Medical Council, and admission thereto can be obtained upon equivalent terms to those indicated in the foregoing paragraph.

AFRICA.

Cape Colony, Natal.—Application for permission to practise must be addressed to the Colonial Secretary of either Colony who will grant it upon the recommendation of the Colonial Medical Council concerned. The recommendation is always made in the case of medical men who produce proof that they are the rightful owners of degrees or diplomas entitling them to registration in Great Britain and Ireland under the Medical Act of 1858. The fee for registration in Cape Colony is £5 and in Natal £1.

Transvaal, Orange River Colony.—The regulations are of a corresponding character to those indicated above.

Rhodesia.—A licence to practice costs £5, and is accorded to the legal holders of degrees and diplomas entitling them to admission to the *Register* in Great Britain or Ireland upon application to the Administrator of Rhodesia.

Egypt.—Permission to practise is accorded by the Director-General of the Sanitary Department to registered British practitioners upon proof of identity and a certificate of good character from the British Consul-General.

NORTH AMERICA.

Quebec, Ontario, Nova Scotia, North-Western Territories, Prince Edward's Island.—The laws of these States permit of permission to practise being accorded by the Medical Council in each case concerned to medical men who are in possession of degrees or diplomas issued by examining bodies in Great Britain or Ireland, provided that such degrees or diplomas constitute a title to the registration under the Medical Act of 1858, and that the legality of their possession by the holders is duly authenticated.

British Columbia.—The Medical Council of this province requires from those who desire to practise that they shall show that they have been accorded a qualification to practise medicine and surgery by a school or college of medicine which exacts four years' study; they must also pass before the Council an examination touching their fitness to practise.

Manitoba.—Permission to practise in this province is usually accorded by the Council of the College of Physicians and Surgeons of Manitoba to medical men who have received diplomas or degrees entitling them to registration in Great Britain and Ireland.

New Brunswick.—In addition to proof of possession of a medical degree or diploma accorded after a curriculum of not less than four years in a recognized school of medicine, the Medical Council of this province requires candidates for registration to pass an examination in the subjects of general education unless he has matriculated at a University.

The United States.—Each of the States has its own laws and regulations: some of them will admit any man to the *Register* who holds a diploma or degree wherever obtained; the majority require the candidate for registration to submit to an examination. An attempt to bring about reciprocity between the States is now proceeding. Changes are frequent and any one proposing to practise in America should address special inquiries to the Medical Board of the State in which he desires to settle for information as to the regulations in force.

SOUTH AMERICA.

South American Republics require any one who seeks permission to practise to pass an examination irrespective of any degrees which he may hold, and the examinations are conducted as a rule in Spanish.

BRITISH COLONIES.

West Indies.—In British Guiana and throughout the West Indian Islands registration can be obtained by any medical man who is qualified for admission to the *Register* in Great Britain and Ireland, proof thereof being demanded.

In the small British Colonies scattered throughout the world no difficulty is raised to the practise of medicine and admission to the *Register*, if one is kept, in the case of any medical man who is in a position to prove his qualification to registration under the Medical Act of 1858.

OPENING OF THE MEDICAL SCHOOLS.

THE arrangements for the opening of the Winter Session in the Medical Schools and Colleges in the United Kingdom, as far as they are at present complete, are as follows:

LONDON.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.

The Winter Session will begin on Monday, October 3rd. The Old Students' Dinner will be held on the same evening in the Great Hall of the Hospital at 6.30 for 7 o'clock.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.

The Winter Session will commence on Monday, October 3rd, by the delivery of the fifth Biennial Huxley Lecture by Sir William Macewen, F.R.S. The Old Students' Dinner will be held on the same evening at the Hôtel Métropole.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.

The Winter Session will begin on Saturday, October 1st. The Annual Dinner will be held the same evening at the Whitehall Rooms, Hôtel Métropole.

GUY'S HOSPITAL MEDICAL SCHOOL.

The Winter Session will begin on Monday, October 3rd. A House Dinner will be held the same evening in the College Dining Hall at 7 30 p.m., Sir Thomas Stevenson in the chair.

KING'S COLLEGE, LONDON.

The Winter Session will begin on Tuesday, October 4th, with an Introductory Address at 3.30 p.m. by Dr. Thomas Buzzard. The Old Students' Dinner will be held in the evening at the Hôtel Cecil at 7 p.m., Dr. Urban Pritchard in the chair.

LONDON HOSPITAL MEDICAL SCHOOL.

The Winter Session will commence on Saturday, October 1st. The Annual Dinner will be held in the College Library on October 3rd, at 6.30 for 7 p.m., Dr. Percy Kidd in the chair.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.

The Winter Session will begin on Monday, October 3rd, with an Introductory Address by Dr. A. E. Wright. The Annual Dinner will be held on the same evening at the Whitehall Rooms, Hôtel Métropole, Mr. A. Q. Silcock in the chair.

MIDDLESEX HOSPITAL.

The Winter Session will commence on Monday, October 3rd. The Annual Dinner of past and present students will take place the same evening at 7 o'clock at the Trocadero Restaurant, Dr. Sidney Coupland in the chair.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.

The Winter Session will open on Monday, October 3rd. The Annual Dinner, which all former and present students are invited to join, will take place the same evening in the Hôtel Cecil at 6.30 for 7 o'clock.

UNIVERSITY COLLEGE, LONDON.

The Winter Session of the Medical Faculty will commence on Monday, October 3rd, when an Introductory Lecture will be given at 4 p.m. by Professor J. Norman Collie, Ph.D., F.R.S. The Old Students' Dinner will be held the same evening, at the Hôtel Cecil, when the chair will be taken

by Mr. John Tweedy, President of the Royal College of Surgeons.

Westminster Hospital Medical School.
The Winter Session will begin on Monday, October 3rd. The Annual Dinner will take place on the same evening, at the Trocadero Restaurant, when the chair will be taken by Dr. W. Rivers Pollock.

London School of Medicine for Women.
The Winter Session will open on Monday, October 3rd.

London School of Tropical Medicine.
The Winter Session will commence on Saturday, October 1st.

PROVINCES.

University of Birmingham.—The Winter Session will commence on Monday, October 3rd.

University College, Bristol.—The Winter Session will commence on Monday, October 3rd.

University College of South Wales and Monmouthshire, Cardiff.—The Winter Session will begin on Tuesday, October 4th.

Yorkshire College, Leeds.—The Winter Session will open on Monday, October 3rd.

University of Liverpool.—The Winter Session will begin on Monday, October 3rd.

Victoria University, Manchester.—The Winter Session will begin on Monday, October 3rd.

University of Durham College of Medicine, Newcastle-on-Tyne.—The Winter Session will commence on Monday, October 3rd.

University College, Sheffield.—The Winter Session will commence on Monday, October 3rd.

SCOTLAND.

University of Edinburgh.—The Winter Session will commence on Tuesday, October 18th.

Medical College for Women, Edinburgh.—The Winter Session will commence on Tuesday, October 18th.

Edinburgh Extra-Academical School.—The School will open on Tuesday, October 18th.

University of Aberdeen.—The Winter Session will commence on Tuesday, October 11th.

University of St. Andrews.—The Winter Session will commence on Monday, October 10th.

University of Glasgow.—The Winter Session will be opened on Thursday, October 13th. The Winter Session of Queen Margaret College Medical School for Women will begin on Thursday, October 13th.

Anderson's College Medical School.—The Winter Session will open on Thursday, October 13th.

St. Mungo's College, Glasgow.—The Winter Session will open on Thursday, October 13th.

University College, Dundee.—The Winter Session will open on Monday, October 10th.

IRELAND.

University of Dublin: School of Physics.—The Winter Session will commence on Saturday, October 1st.

Royal College of Surgeons in Ireland: Schools of Surgery.—The Winter Session will commence on Saturday, October 1st.

Queen's College, Belfast.—The Winter Session will begin on Tuesday, October 18th.

Queen's College, Cork.—The Winter Session will begin on Tuesday, October 18th.

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 132.

ASSOCIATION NOTICES.

NOTICE OF QUARTERLY MEETING OF COUNCIL FOR 1904.

A meeting of the Council will be held on Wednesday, October 19th, in the Council Room of the British Medical Association, 429, Strand, London, W.C.

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

Guy Elliston, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

Border Counties Branch: West Cumberland Division.—The next meeting of this Division will be held on September 9th next, at the Cottage Hospital, Keswick, at 4.15 p.m. Members wishing to read papers or show cases at the meeting are requested to communicate as soon as possible with the Honorary Secretary, G. Bertram Muriel, 109, Scotch Street, Whitehaven.

East Anglian Branch.—The autumn meeting of the East Anglian Branch will be held at Kelling Open-air Sanatorium, near Holt, Norfolk, on Thursday, September 29th. Members wishing to read papers or show cases or specimens should communicate with Mr. H. A. Ballance, M.S., Norwich, Honorary Secretary.

Southern Branch: Salisbury Division.—The next meeting of this Division will be held on September 7th next at the Infirmary, Salisbury, at 8.15 p.m.; the meeting to be preceded by dinner at the County Hotel at 7 o'clock. Members wishing to read papers or show cases at the meeting are requested to communicate as soon as possible with the Honorary Secretary, J. E. Gordon, 52, Endless Street, Salisbury.

Metropolitan Counties Branch: Wandsworth Division.—A meeting will be held at the Town Hall, Wandsworth, on Thursday, September 29th, at 9 p.m. Business: To receive the Representative's report of his attendance at Oxford, where several resolutions based thereon will be submitted. An address, illustrated by the optical lantern, will be given by W. D. Turner, M.D., on Tuberculosis, its Origin and Extinction. It is hoped the members will attend in large numbers, and so begin the winter session well.—E. Rowland Fothergill, M.B., Torquay House, Southfields, S.W., Honorary Secretary.

ROYAL NAVY AND ARMY MEDICAL SERVICES

ROYAL ARMY MEDICAL CORPS.

Exchange.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A Field Officer (Lieutenant Colonel) R.A.M.C., who has completed one year and eleven months at Gibraltar, will exchange with one of similar rank in Egypt, Ceylon, Hong Kong, South Africa, or Bermuda.—Apply, stating terms offered dates, etc., to X. Y. Z., c.o. Messrs. Holt and Co., 3, Whitehall Place, S.W.

Field Officer, under orders for Madras in January next, is desirous of exchanging to South Africa.—Address, C. W. D., c.o. Messrs. Holt and Co., 3, Whitehall Place, S.W.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,650 births and 5,999 deaths were registered during the week ending Saturday last, August 27th. The annual rate of mortality in these towns, which had been 19.8, 22.1, and 22.7 per 1,000 in the three preceding weeks, declined again last week to 20.5 per 1,000. Among these large towns the death-rates ranged from 7.7 in Hornsey, 10.2 in South Shields, 11.0 in Blackburn, 11.1 in Halifax, 11.3 in Bournemouth, 12.0 in West Hartlepool, 12.5 in Southampton and in King's Norton, and 12.7 in Coventry, to 27.2 in East Ham, 27.3 in Rhondda, 29.3 in Plymouth, 29.4 in Liverpool, 29.5 in Birkenhead, 30.4 in Bootle, 31.6 in Wigan, 31.8 in Hanley, and 33.5 in Salford. In London the rate of mortality was 18.9 per 1,000, while it averaged 21.2 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 7.8 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 6.3 per 1,000,

while among the seventy-five large provincial towns the death-rates from these infectious diseases ranged upwards to 14.3 in Walsall, 14.8 in York, 15.0 in Birkenhead, 15.3 in Liverpool, 15.5 in Salford, 16.4 in Walthamstow, 16.6 in Hull, 16.9 in Bootle, and 17.4 in East Ham. Measles caused a death-rate of 1.1 in Walsall, 1.2 in Liverpool, 1.4 in Salford, 1.6 in Hanley, West Bromwich, and Grimsby, 1.7 in Rhondda, 2.7 in Huddersfield, 3.2 in Plymouth, 3.4 in Bootle, and 3.6 in Birkenhead; scarlet fever of 1.7 in Northampton and in Barrow-in-Furness, and 2.4 in Hanley; whooping-cough of 1.2 in St. Helens, and 2.0 in Great Yarmouth; and diarrhoea of 12.3 in Salford, 12.7 in Bootle, 13.1 in Walsall, 13.4 in Liverpool, 14.1 in York, 14.8 in Hull, 15.5 in Walthamstow, and 16.5 in East Ham. The mortality from diphtheria and from enteric fever showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Bury and one in Salford, but not one in any other of the seventy-six large towns. The Metropolitan Asylums Hospitals contained 13 small-pox patients on Saturday last, August 27th, against 32, 21, and 18 on the three preceding Saturdays: no new case was admitted during the week, the numbers being 2, 0, and 2 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1,758, 1,763, and 1,745 at the end of the three preceding weeks, had risen again to 1,781 at the end of last week; 263 new cases were admitted during the week, against 243, 166, and 189 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, August 27th, 949 births and 537 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 14.6, 15.7, and 17.1 per 1,000 in the three preceding weeks, declined again last week to 16.2 per 1,000, and was 4.3 per 1,000 below the mean rate during the same period in the seventy-six large English towns. The lowest death-rates in these towns were 11.0 in Leith and 11.4 in Aberdeen; and the highest rates 17.2 in Dundee and 17.5 in Glasgow. The death-rate from the principal infectious diseases averaged 2.9 per 1,000, the highest rates being recorded in Glasgow and Paisley. The 267 deaths registered in Glasgow included 1 which were referred to measles, 3 to scarlet fever, 17 to whooping-cough, and 37 to diarrhoea. Four fatal cases of measles, 4 of whooping-cough, and 8 of diarrhoea were recorded in Edinburgh. Three deaths from diarrhoea were recorded in Dundee; 2 from whooping-cough and 2 from diarrhoea in Paisley; 2 from diarrhoea in Leith; and 2 from measles and 2 from diarrhoea in Greenock.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BATH: ROYAL UNITED HOSPITAL.—House-Surgeon, resident. Salary, £80 per annum.

BEDFORD COUNTY HOSPITAL.—House-Physician, resident. Salary, £60 per annum.

BERKSHIRE COUNTY COUNCIL.—County Medical Officer of Health. Retaining fee of £52 10s. per annum with fee of £3 3s. per day for special services.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon. Salary, £170 per annum, and £30 for cab hire.

BIRMINGHAM: ROYAL ORTHOPAEDIC AND SPINAL HOSPITAL.—Honorary Surgeon.

BRADFORD POOR-LAW UNION SANATORIUM.—Resident Medical Officer. Salary, £100 per annum.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—House-Surgeon. Salary, £100 per annum.

CARDIFF UNION.—Assistant Medical Officer for the Workhouse, resident. Salary, £130 per annum.

CARLISLE: CUMBERLAND INFIRMARY.—Resident Medical Officer. Salary at the rate of £80 per annum for first six months, and £100 per annum for ensuing six months.

CHELTENHAM GENERAL HOSPITAL.—Assistant House-Surgeon, resident. Salary, £92 per annum.

CITY ORTHOPAEDIC HOSPITAL, Hatton Garden.—Honorary Dental Surgeon.

DEVONPORT: ROYAL ALBERT HOSPITAL AND EYE INFIRMARY.—Assistant House-Surgeon. Salary, £50 per annum. Appointment for six months.

DOUGLAS: NOBLE'S ISLE OF MAN GENERAL HOSPITAL.—Resident House-Surgeon. Salary, £90 per annum.

DOWNPATRICK: DOWN DISTRICT LUNATIC ASYLUM.—Junior Assistant Medical Officer, resident. Salary, £100 per annum.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £4 per annum.

GLASGOW EYE INFIRMARY.—Resident Assistant House-Surgeon. Salary, £75 per annum.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—Pathologist. Salary, 50 guineas per annum.

LEICESTER INFIRMARY.—Clinical Clerk, resident. Honorarium, £10 10s. for six months.

LIVERPOOL STANLEY HOSPITAL.—Third House-Surgeon, resident. Salary, £70 per annum.

LONDON HOSPITAL, Whitechapel, E.—Physician.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant Resident Medical Officer. Appointment for six months. Honorarium at the rate 50 guineas per annum.

METROPOLITAN HOSPITAL.—(1) Casualty Officer. (2) House Physician. (3) House-Surgeon. (4) Assistant House-Physician. (5) Assistant House-Surgeon. Salary for (1) at the rate of £150 per annum, for (2) and (3) £40 per annum, and (4) and (5) £20 per annum.

MONTROSE ROYAL ASYLUM.—Junior Assistant Medical Officer. Salary, £125 per annum.

NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—Assistant House-Surgeon, resident. Honorarium, £25 for six months.

ROTHERHAM HOSPITAL AND DISPENSARY. Senior House Surgeon. Salary, £110 per annum.

ROYAL EAR HOSPITAL, Dean Street, Soho, W.—Two Assistant Surgeons.

ST. PETER'S HOSPITAL FOR STONE, Henrietta Street, Covent Garden, London.—Junior House-Surgeon, resident. Appointment for six months. Salary at the rate £50 per annum.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—Lecturer on Physics.

SALFORD UNION.—Male Assistant Resident Medical Officer at the Infirmary. Salary, £130 per annum.

SALISBURY INFIRMARY.—Assistant House-Surgeon, resident. Salary, £60 per annum.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon, resident. Salary, £40 per annum.

TOTTENHAM HOSPITAL.—House-Physician, resident. Salary, £60 per annum.

TOXTETH PARK TOWNSHIP.—Assistant Medical Officer of the Workhouse and Infirmary, resident. Salary, £100 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House-Surgeon. Salary, £50 per annum.

APPOINTMENTS.

ALLEN, Sydney H., F.R.C.S.E., Medical Superintendent of the Queen Victoria Memorial Infectious Diseases Hospital Melbourne.

ATTWOOD, Richard D., M.R.C.S., L.R.C.P.Lond., Second Assistant Medical Officer at the Southwark Infirmary.

BOURNE, Eleanor E., M.B., Ch.M.Syd., Resident Surgeon at the Hospital for Sick Children, Brisbane.

BROSTER, W. B., M.B., C.M.Edin., Medical Officer to the White Lead Works, Burry Port.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BISSHOPP.—On August 26th, at Parham House, Tunbridge Wells, the wife of Francis R. B. Bisshopp, M.A., M.D.Cantab., M.R.C.P.Lond., of a daughter.

BODGER.—On August 24th, at Studley, Warwickshire, the wife of S. Bodger, M.D., of a daughter.

COOKE.—August 16th, at 36 Gay Street, Bath, the wife of W. H. Cooke, M.D.Brux., F.R.C.S.E., etc., of a son.

EWART.—On Tuesday, August 23rd, at Chichester, the wife of David Ewart, M.B., Ch.B., F.R.C.S., of a daughter.

FELCE.—On August 27th, at Cricklewood Villas, N.W., the wife of Stamford G. Felce, M.A., M.D., B.C.Cantab., of a son.

HUNTER.—At Duncairn, Helensburgh, on the 28th August, the wife of J. Ewing Hunter, M.B. & C.M., of a daughter.

LOCKHART-MURE.—On August 25th, at 10, Craig-y-don Parade, Llandudno, the wife of T. V. Lockhart-Mure, M.B., C.M., of a son.

PEARSON.—On 26th August, at 17, Alva Street, Edinburgh, the wife of C. Mowbray Pearson, M.B., M.R.C.P.E., of a daughter.

MARRIAGE.

BROMHALL—DRAKE.—August 24th, at St. Peter's Church, Mount Sorrel, Loughborough, by the Rev. H. Drake, of Verwood, brother of the bride, and the Rev. W. J. Lewis, Vicar, Ernest Bromhall, M.R.C.S.Eng., L.R.C.P.Lond., Rawtenstall, to Beatrice, only daughter of the late Rev. Thomas Drake, M.A., Vicar of St. Peter's, Mount Sorrel.

DEATH.

COLLIE.—On August 26th, at 14, Balham Park Road, Katie Margery, aged 25 years, wife of Frank L. Collie, M.D.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Dr. T. M. Allison, Newcastle-on-Tyne; A. Alexander, M.B., London: B Dr. F. T. Bond, Gloucester; A. H. Benson, M.B., Dublin; Dr. H. E. J. Biss, Eastbourne: A. Binning, M.B., Hatfield; Dr. W. B. Bell, Liverpool; Mr. J. Bland-Sutton, London. C Mr. G. D. Clunies-Ross, London; Chevy: Dr. T. Churton, Leeds. C. J. W. D Dr. Frustra. Messrs. Duncan, Flockhart, and Co., London; Professor S. Delépine, Paris; Professor A. F. Dixon, Dublin: Dr. A. D. Didama, Syracuse, N.Z. F E. R. Fothergill, M.R., London; Dr. E. L. Fox, Plymouth; Mr. M. Farrant, Exeter: F. G. G. R. S.; G. I.; G. P.; Dr. A. S. Grünbaum, Liverpool; G. F. H Mr. F. Hull, London; Mr. T. F. Hopgood, Sunderland: Mr. A. Hudson, London; Dr. T. Hayes, Rathkeale; Mr. J. Hutchinson, London; Mr. H. Hall, Tunbridge Wells; Humanitarian League, London; Mr. W. H. Horrocks, Bradford. I F. W. Inman, M.B., Seacombe. J Mr. G. Jackson, Plymouth; Mr. B. H. Joy, London; Dr. J. Johnson, Bolton. K Dr. H. W. King, Chester. L Dr. R. R. Law, Sidcup. M Mona House: O. J. Martin, M.B., London; M.D; Dr. P. W. Macdonald, Dorchester; Dr. J. F. MacGregor, Morvern; Mr. W. J. Middleton, Bournemouth; Mr. T. I. Mills, Easingwold; Dr. J. C. Molson, Brighton; Mr. B. G. Monson, London. N Mr. C. Norman, Dublin; National Canine Defence League, Nutfield: Nemo. O Messrs. Oldfield, Pattinson, and Co., Manchester; One who Knows. P Mr. C. P. Pasley, Dublin; Palmam qui meruit ferat; Perplexed; M. S. Pembrey, M.B., London; P. S. W. Q Q. R Dr. J. Robinson, Kidderminster; Mr. R. Roberts, Blaenau Festiniog; Dr. W. L. Rodman, Philadelphia; Dr. W. B. Rowe, Bristol. S Dr. J. Scott, Teheran; Dr. W. Sykes, Paignton; Mr. D. Lloyd-Smith, Rowdon; Sanitary Institute, London; Dr. A. Sellers, Manchester. T Through. V G. H. Vos, London. W Dr. A. D. Waller, London; Sir W. F. Wade, Florence; Dr. J. M. Wilson, Beverley; Worn out at Forty; Wratsch; West Surrey Central Dairy Co. X X.; X.Y.Z.

BOOKS, ETC., RECEIVED.

Notes on Radio-activity. By W. Harrison Martindale. London: Office of "Pharmaceutical Journal." 1s.

Great Britain's Colonial and Indian Possessions. London: John Walker and Co., Ltd. 1s.

The Surgery of Ritual Circumcision. By Jacob Snowman, M.D., M.R.C.S., M.R.C.P.Lond. London: Medical Board of the Initiation Society. 1904. 2s. 6d.

Diet and Food: Considered in Relation to Strength and Power of Endurance, Training, and Athletics. By Alexander Haig, M.A., M.D.Oxon., F.R.C.P. Fifth Edition. London: J. and A. Churchill. 1904. 2s.

Laws of Health. London and Edinburgh: McDougall's Educational Co., Ltd. 6d.

Gynäkologie für Ärzte und studierende. Von Dr. med. Wilhelm Nagel. Zweite verbesserte und vermehrte Auflage. Berlin: Fischer's Medicin. Buchhandlung H. Kornfeld. 1904. M 10.

Tables for Qualitative Chemical Analysis. By A. Livers dge. Second Edition. London: Macmillan and Co., Ltd. 1904. 4s. 6d.

A Guide to Medical Officers on Field Service. By Major J. S. Edye, R.A.M.C. London: Gale and Polden, Ltd. 1s.

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SEVENTY-SECOND ANNUAL MEETING

OF THE

British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF PATHOLOGY.

JAMES RITCHIE, M.A., M.D., B.Sc., President.

DISCUSSION ON IMMUNITY.

I.—JAMES RITCHIE, M.A., M.D., B.Sc.,
Reader in Pathology, University of Oxford: Physician, Radcliffe Infirmary, Oxford.

IN acceding to the request of the other officials of the Section that I should open the discussion on immunity which is to take place to-day, I could have wished that the task might have been assigned to one better fitted to illuminate the subject, and I must crave indulgence for the shortcomings which I know will be apparent in the remarks which I have to make.

Both my own inability to contribute any new facts, and the suitability of having at the opening of our proceedings a somewhat general consideration of the subject, make it desirable that I should try and give a review of the present state of our knowledge concerning the matters before us. It is natural when pathologists meet in a representative gathering like the present that they should attempt to arrive at a general idea of the combined results that the researches of many different individuals are leading to. In the case of the subject of immunity such correlation is becoming more and more necessary when we consider that fields so apparently far apart as those of physical chemistry on the one hand, and haematology on the other, are being searched for facts which may throw light on the problems involved.

We must at the outset once more recognize that the whole situation is still dominated by the theories promulgated by Ehrlich six years ago, and I think it is now recognized by all that, whatever modifications these theories may undergo in the future, and even if they were, by the advance in knowledge, swept out of existence, the great worker whose genius gave them birth will always be looked to as the person who, more than any other, stimulated the pathological research which must ultimately succeed in the solution of the questions at issue. These questions now cover a very much wider field of inquiry than was the case when the inquiry began. Then it might be said that the three main points to be cleared up were: (1) The natural immunity observed under certain circumstances to exist towards disease; (2) the artificially acquired immunity which came about in disease contracted under what may be called natural conditions of infection; and (3) the relation of these conditions to recovery in any case of infectious disease. It may be said that at present the direct attack on these problems has been largely overshadowed by the investigation of points which indirectly bear upon them, and especially by the urgent practical necessities which have arisen in consequence of demands made from the therapeutic side of medicine. It thus comes about that our reasonings chiefly are concerned with high degrees of immunity such as do not occur in nature and with artificial diseases whose phenomena elucidate matters under discussion. But how far, for instance, the knowledge accumulated regarding the mode of action of diphtheria antitoxin throws light on the recovery from an untreated attack of the disease, which may of course take place, is still an open question.

Let us first of all inquire what solid basis of fact we have arrived at regarding the process of immunization. We find the results can be very briefly stated. We know that certain of the effects of some bacteria and most of the effects of other bacteria can be traced to poisons extremely soluble in simple saline solutions; that these poisons are of unknown composition; that they frequently have a selective action on special tissues; that when injected into the body of a susceptible animal they rapidly disappear from the circulating fluids of the body, probably in consequence of being fixed in susceptible cells; that they sometimes, as in the case of tetanus toxin, travel to the sensitive cells by special paths; that by immunization procedures an almost limitless degree of immunity can be developed in a sensitive animal; that such high degrees of immunity are associated with the appearance in the serum of an immune animal of substances capable of neutralizing these toxins; that the action of an antitoxin is specific—that is, it only neutralizes the toxin which stimulated its genesis; that the neutralization of toxin by antitoxin is of the nature of a chemical union; that in its union with antitoxin and also in its union with a susceptible cell, affinities in the toxin cell are saturated which differ from the affinities to which the essentially toxic action is due. This last deduction is, however, only made from the fact that immunity can be produced by toxins so altered as to have partially or entirely lost their toxic action. We may add as an almost certain fact that the union of toxin and antitoxin is dissociable, and that the therapeutic effects of antitoxin, when acting in such a way as to detach toxin from cells to which it is fixed, is dependent on dissociation phenomena. Finally, here we may, I think, say, especially from what is known regarding tetanus toxin, that probably the elaboration of toxins may in some way favour the growth of the bacteria producing them, and this may explain why the neutralization of these toxins apparently converts a dangerous organism like the diphtheria bacillus into a relatively harmless saprophyte.

But we have further to recognize that the elaboration of soluble toxins is a quality of only certain bacteria, and that in the case of most bacteria, to put the fact in its most intelligible form, not merely the neutralization of poisons produced is necessary if the animal body is to escape destruction, but the bacteria themselves must be actually killed. When we are dealing with a highly immunized animal—and in the present state of our knowledge this limitation is very important—we may again here ask what our certain knowledge is. We must recognize that it is limited to the statement that the killing of the bacteria is associated with the presence in the serum of an immune animal of two substances, one thermolabile (complement) which naturally occurs in the serum of the animal species involved, and the other, thermostable (immune body), which either is present in normal serum in very small amount, or is altogether absent; that the degree of immunization which can be produced is much smaller than is the case with immunization against toxins; and that this is due to the fact that while immune body can be formed in large quantity the act of immunization has much less effect on the production of complement. There is the further fact that we are only certain of the specificity of the immune body—that is, we know that immune body will only act deleteriously on the protoplasm which stimulated its genesis. We cannot make a similar statement regarding complement. We may further say that it is practically certain that the reactions of these two substances on one another, and on the bacteria to be destroyed, are of a chemical nature analogous to the action of toxin on antitoxin, and also that the thermolabile substance has a chemical constitution closely allied to the constitution of toxin. I am aware that in making the statement regarding the presence of these bodies in the blood serum I would not carry with me those who consider that the bodies do not, *in vivo*, exist apart from cells, and that their presence in the serum is due to the dissolution of cells. While I think that such results as those of Walker point strongly to the leucocytes being the source of complement, I must say that a review of the evidence adduced in favour of a coincident and correlated cytolysis occurring in every case where extracellular destruction of bacteria takes place during life is extremely unsatisfactory. To take the case of the cytolysis said to occur in the intraperitoneal cells when cholera vibrios are introduced in an immune animal, we may ask by what method it is possible to estimate whether the total number of cells in the whole peritoneal cavity is or is not decreased. It appears to me that to attempt to do so by the examination of small amounts of fluid withdrawn by capillary pipettes is absolutely fallacious.

Our knowledge with regard to the bacteria which by their presence give rise to infections differs in a very important detail from our knowledge of the bacteria acting by means of soluble toxins. In the case of the latter we are practically certain that it is the presence of the toxin in an animal's body which stimulates the production of antitoxin. In the case of the infective bacteria, on the other hand, we do not know what it is in the bacterial protoplasm which stimulates the production of substances—that is, immune body and complement—capable of killing that protoplasm. This is a point which merits attention here.

The infective bacteria manifest their actions in the body by

the production of inflammation and of fever. For the concept of fever I think it would be well if pathologists substituted the idea of a disturbance of metabolism of which fever may be one of the leading features. Though in the more recent treatments of the subject such as those of Lazarus-Barlow and Ainley Walker the metabolic aspects of fever are kept well in view, still in the minds of many the aspect of fever which leads to the explanation of the disturbances of heat regulation has rather a preponderant place attached to it. There is a tendency to look on fever too much in relation to normal heat regulation in the body, and here, as in other similar pathological processes, to leave out of account possible pathological changes in function. If we consider the temperature curve in many cases of pneumonia where there may be for days a comparatively even temperature at, it is true, a high level, and think of this in relation to the specific heat of the body, we must recognize that extremely minute disturbances hour by hour of the balance between heat production and heat output must take place. Even in other types of fever this must also be largely true. It is practically recognized by all that an increased burning up of the bodily tissues takes place, and it is this increased metabolism with its causes that from the pathological standpoint is really the important question, and it is probably from the consideration of this question in relation to infection that light may come on the true significance of fever as a whole. In fact it may safely be said that in the future, on the one hand, it will be well to consider both fever and inflammation in connexion with the infective causes with which in man they are far more often associated than with any other, and, on the other hand, no consideration of infection as a whole will be complete without taking into account the relationship of the local inflammatory effects of bacteria to the general metabolic disturbances produced. What the factors in the altered metabolism in fever are we cannot say, but just as in the group of effects which we usually call inflammation there are those which are the expression of injury done to tissues and those in which we have to recognize the activity of probably unaltered cells, so in fever I think it will be well for us to keep a mind open for the possibility that part of the increased metabolism may be the expression of work done by cells actively engaged in operating on the invading bacteria. That this is all the more likely is indicated if we correlate the known facts regarding the increased excretion of potassium and phosphorus during fever with the increased activity which can be microscopically observed in the colourless cells of the blood, which contain these elements in considerable abundance.

The fact that in broad outline the general effects produced in the body by different bacterial infections are similar might be explained in a variety of ways. Into these I cannot go, but will content myself with looking at the part which poisons may play in the process. First, here, is the important fact that the poisonous substances present in infective bacteria do not diffuse out into an ordinary watery medium in which the bacteria may be present. Among the infective bacteria it is generally true that only from old cultures or from younger cultures which have been salted with ammonium sulphate can any poisons be obtained by filtration through porcelain. The most probable source of the poisons is the breaking up of the bacterial protoplasm which apparently frequently, both in cultures and in the living animal, follows on death. This is indicated by the observation of Pfeiffer, which perhaps has recently not been sufficiently borne in mind, that when, through special circumstances, the solution of bacteria in the tissues is increased there is evidence of a corresponding increase of poisonous effects. The poisons concerned are the so called intracellular toxins, and, if we may judge from animal experiment, it is by means of them that the non-specific effects of the infective bacteria are due. When we come to ask what is the relation of these toxins to the rise of immunity against infection we are in considerable difficulty. And here again the early observations of Pfeiffer working with the cholera vibrio are of great importance, for this observer found that by appropriate dosage an immune animal might exhibit the capacity of killing all the bacteria injected into it and yet succumb to the effects of the toxins which the death of the bacteria liberated from the bacterial protoplasm; in fact, might show earlier and greater symptoms of poisoning than the control unimmunized animal. Similar results have been more recently obtained by Kolle working with the plague bacillus, which probably has a somewhat different mode of pathogenic action. This observer has found what apparently is also true for the cholera vibrio and the typhoid bacillus, that a serum which has the effect of aiding an animal to kill the invading bacteria has no effect in neutralizing these poisons liberated by the solution of these bacteria. Both Pfeiffer and Kolle are apparently quite prepared to uphold the thesis that in the case of the infective bacteria the intracellular toxins which produce the pathogenic effects are not concerned in the production of the immunity which can be developed against these bacteria. There is little doubt that such a view is quite intelligible on Ehrlich's theory of the rise of immunity. The essence of the process by which as a consequence of immunization the bacteria are destroyed is the solution of the continuity of their protoplasm, which we usually call lysis. There is no reason why some part of the bacterial protoplasm which is quite non-toxic, but which is necessary to the maintenance of the protoplasmic continuity, should not be the means, when it gains entrance to the animal body, of causing to arise substances which are capable of causing protoplasmic solution. Differences in the substances in different bacteria stimulating the production of lysins might account for the specific differences noted in the serums which develop in immunization against different bacteria. This would leave open the question of whether the similarity in the toxic effects of different bacteria is or is not due to the death and solution of the different bacteria releasing chemical bodies which in all bacteria have similar or identical composition. Such an occurrence would account for the similarity in the type which is observable in the disturbances of metabolism accompanying the action of the infective bacteria. If it is permissible thus to neglect the toxic element in immunization against bacterial action and to look on the lysis of the bacterial cell as the important factor, we at once can recognize the importance of investigations regarding haemolytic action in relation to immunity.

If we turn to look at the prominent problems of the present, we find that while a great amount of good work is being done in investigating the details of lytic action, the most important of the questions which stand forward is the nature of the chemical reactions of toxin and antitoxin. A brief reference may be made to the discussions on this point. To put it in its simplest form, we may say that controversy at present turns on the interpretation of the well-known Ehrlich phenomenon, which, briefly put, consists in this, that the amount of a crude toxin (such as diphtheria toxin) which one immunity unit of antitoxin will just neutralize being determined, such a neutral mixture with one minimal lethal dose of the crude toxin added will not cause death. According to Ehrlich's original view this was due to the fact that the crude toxin contained, besides true toxin, degenerated products named toxoids whose toxic and combining properties were impaired. The strongly toxic, strongly combining part of the crude toxin added turned out some of the weakly toxic, weakly combining poison of the crude toxin originally used, and thus the poison actually free was insufficient to kill. Two years ago Madsen and Arrhenius, interpreting experiments with tetanolysin in the light of physical chemistry, of which Arrhenius is such a leading exponent, advanced the opinion that the Ehrlich phenomenon was really due to the true toxin present in the crude product. The underlying fact, they consider, is that the avidity of antitoxin for toxin is relatively weak, and that therefore before complete neutralization takes place, there are very complicated reactions between the combined toxin-antitoxin and the toxin and antitoxin which are still uncombined—in other words, the reaction is reversible. To support this view advantage has been taken of the fact that ammonia has a haemolytic action on blood corpuscles of a kind similar to that displayed by tetanolysin, and it has been possible to compare the action of this agent as a haemolytic, when that action is neutralized by such a weak acid as boric acid, with the action of the tetanolysin when it is neutralized by the supposed weakly acting antitoxin. The views of Madsen and Arrhenius have been combated by Ehrlich, who maintains his original position, and in this he has the support of Sachs, Morgenroth, and von Dungern. Whatever the issue may be it cannot affect the elemental facts regarding the nature of the relations of toxin and antitoxin. The controversy illustrates, on the one hand, the complexity of the principles which underlie the development in the animal economy of even the more simple variety of immunity, and, on the other hand, the discussion brings out the fact that in the future it is probably by the applications of the methods of physical chemistry that many immunity problems are to be attacked, so far as such an attack is possible from the chemical side. As an illustration of the way in which these methods are coming to the front, reference

may be made to the work of Römer in Behring's laboratory to the effect that when an electric current is passed through tetanus toxin in a U-tube and the moieties of toxin pipetted off from the kathode and anode poles the examination of the moiety from the former shows that a rise in virulence has taken place. This is a very remarkable result, and if confirmed opens up a most important series of questions.

If we turn to the actual present I think we may say that during the last fifteen months at least three pieces of work have been published which form the points of departure for altogether new lines of inquiry.

The first of these is the work of Meyer and Ransome. In this research these observers, extending the observations of others, have established the fact that tetanus toxin reaches the nerve cells by means of the motor axones only. They have also brought out certain very striking facts regarding the action of antitoxin. It has been usual to suppose that if a sufficient amount of antitoxin were injected, toxin might subsequently be injected freely without any disease resulting. But the observers referred to have shown that even the injection of a very large excess of antitoxin is insufficient to entirely protect an animal if the subsequent injection even of a small amount of toxin be practised in a motor nerve. From this they argue that while the toxin reaches the nerve cells by the protoplasm of the axones, antitoxin only reaches them by the very much more round-about route of the lymphatics. But much more important is their observation that even in an animal actively immunized against tetanus, and possessing a fairly potent antitoxic serum, this fact will not prevent the development of tetanus if the toxin be injected into a motor nerve. If this observation is confirmed, then it appears unlikely that, as Ehrlich has held, antitoxin is formed in the nerve cells. In this respect Ehrlich's theory was largely founded on the observations of Wassermann and Takaki on the fixation of tetanus toxin in the brain of susceptible animals. Though the validity of this observation has not been denied, yet the interpretation has given rise to much dispute, and we must admit that at present we know of no definite facts which point to the place of origin of antitoxin. We must, therefore, keep an open mind for admitting that the cells pathogenically affected by a toxin may not be the cells of origin of antitoxin. Ehrlich's own views have paved the way for this possibility, but the question has not yet been very vigorously attacked. For instance, we know little of the part played by the wandering cells of the body in bacterial intoxications. Very little attention appears to have been paid even to the state of the blood in either natural or artificial bacterial intoxications. In this connexion it may be remarked that, for the study of any possible reaction of these cells, tetanus presents a more likely field of observation than diphtheria, where is usually present the local inflammatory reaction, which in itself may be due to the activity of more than the diphtheria bacillus. In view of Meyer and Ransome's results such an inquiry might bear important fruit. If antitoxin be not formed in the susceptible cells, one difficulty which I have always felt existed in accepting Ehrlich's original view is removed—namely, what becomes of the toxophorous affinities during the process of immunization when the cell is being bombarded with fresh amounts of toxin. The view that the saturation of the side chains of the cell with toxin made them drop off with their burden of toxin always appeared to me to be hardly tenable, in view of the fact originally put forward by Ehrlich that the reason for the affinity of toxin for the cell was probably to be found in the fact that the toxin closely resembled the normal food of the cell. It would be of little use to the cell if a side chain should straightway drop off into the serum whenever a food particle became attached to it. The whole view was too theoretical.

The second piece of modern work calling for attention as a new departure is that of Muir, which appears to me to be the most important of all the recent contributions to the interactions of the constituents of haemolytic serums. Muir has investigated further the observations of Ehrlich that in blood corpuscles probably there exist more affinities capable of being saturated by immune body than those which are actually concerned in haemolysis when complement is supplied. He has shown that when corpuscles are thoroughly saturated with immune body it is possible to dissociate a certain amount of the immune body and to cause it to become attached to fresh corpuscles. A not unimportant aspect of this observation is the deduction following from it that an exchange of molecules can take place between cells when these cells are merely in contact with each other. Further, Muir shows that for each moiety of immune body taken up by corpuscles a corresponding amount of complement can be taken up. This establishment of a definite quantitative relationship in the reaction suggests a definite chemical reaction between immune body, complement, and red blood corpuscles, and is opposed to the view of Bordet and the French school generally that the action of immune body is what they describe as a sensitization. But Muir's most important observation here is that after red blood corpuscles have taken up as much immune body as they are capable of, and when to the combination as much complement has been added as again can be taken up, still some of the immune body but none of the complement can be dissociated from the combination, and this immune body is dissociated in the original form in which it became attached—that is, it does not bring off any complement in combination with it. As Muir points out—and the observation is of very great weight—such an experiment seems incompatible with Ehrlich's view that immune body forms a link between the red blood cells and complement. In his latest work (with Browning) Muir brings forward evidence that the lysis by complement of red blood corpuscles saturated with immune body alters the affinity of these corpuscles for the weakened complementary bodies or complementoids which can be produced from complements by heat. This observation, taken along with the earlier results, opens up entirely new questions regarding the relationship of immune body which in the near future will demand an answer.

The third work to which I would refer is that of Wright and Douglas. As is well known, the question of the exact part played by the act of the ingestion of bacteria by cells in the killing of these bacteria has for long been in a most unsatisfactory position. Phagocytosis is an indisputable fact which every bacteriologist has constantly before him under the microscope, but under what circumstances it occurs, and by what laws it is governed, constitute questions to which no answer could be given. But one cannot help feeling that the investigators named have by their work given ground for the hope that before long some of the much-needed light will be forthcoming. For one thing, Wright, by the elaboration of methods of the highest precision, had previously laid the foundation for the attack on the problems on which he is now engaged. And further, thanks to the beautiful method of Leishman, we have now a means of measuring exactly the phagocytic power of a cell by counting how many bacteria it can ingest in a given time. How exact this method is one has only to read the papers of Wright and Douglas to appreciate. These observers have made a weighty contribution to our knowledge of the relative parts played by the bactericidal power of the serum, and by the intracellular destruction of bacteria. They have shown that in the case of the normal man some bacteria are killed extracellularly, whilst with others the serum has no bactericidal effect, but phagocytosis is the prominent feature when these bacteria are introduced into the blood. Wright and Douglas have further shown that, when bacteria are ingested, in the cases examined these bacteria are previously sensitized by union with a substance existing in the plasma, and which Wright and Douglas call an opsonine. What these opsonines are, and whence they come, is a matter for the future, but any one who has had to plod wearily across the acres of barren papers which have hitherto formed the literature of phagocytosis will feel that the edge of the desert has been at length reached.

These three researches are, I think, the most important contributions recently made to immunity questions.

While the precise inter-relations of the substances concerned in the actual killing of bacteria, and, it may be, the possible variations in the processes at work in individual cases must occupy much attention in the near future, the work of Wright and Douglas raises another question, namely, of how far the struggle between bacteria on the one hand and the bodily cells on the other does not involve in the case of the latter a symbiosis between different types of cells or between different activities of the same cells. The attempt to answer this question, taken along with all the existing evidence for the idea that cells work through the agency of chemical substances, will inevitably lead to a closer inquiry than has hitherto taken place into the sources of the, it may be, varied substances which require to come into activity in any one case. And it is here that our discussion to-day touches very closely that of to-morrow on the rôle of the lymphocyte. The outstanding feature in an infection is the state of embryonic activity into which the wandering cells and endothelia of the body are thrown. Part of this activity may be toxic in origin, and may be looked on as the result of an injury to cells;

part may be of the nature of a response to what may be called physiological injury—that is, an injury which results in more work being done. We are ignorant of the true nature of the principles underlying this process connected, as it must be, with hypertrophy as a whole. At present we can only admit as a fact that when a tissue requires to do more work more work is done. In the present case the greater work done by the increased number of cells may be partly of a mere scavenging character. The result may only be that the toxic remains of bacteria may be swept out of existence. But part of the work may be the elaboration of the chemical substances required for the active killing of bacteria or for the building up of antitoxic material. Prima facie there is a case for the wandering cells of the body, and especially the leucocytes playing a part in these processes. What exactly that part may be and whether other cells in the bodily organs also take part are questions for the future. But what is most striking at present is that with all the work which is being done in haematology, we still require more light on the nature and functions of such cells and, especially in relation to immunity, we need parallel observations in which the chemical properties of the blood are correlated with its microscopic characters. Much help might also come from further study of the comparative morphology of the leucocytes, and here the work of Gulland, and lately of such workers as Hirschfeld and Meinertz, has opened up the way for further advance. In this connexion the most striking feature seems to be the fact that in nearly all mammalia, and even in many fishes and birds, the cells most uniformly found are of the type of which the large hyaline cell and the small cell with basophilic granules in its protoplasm, occurring in man, are the most familiar examples. But the most interesting fact that comes out from this study is the extraordinary diversity which occurs in the animal series in the cells of which the polymorpho-nucleate cell is the type. With regard to them, we are still far from appreciating what the significance of minute differences in form and granulation signify. Some light might come on this problem by the comparative inquiry involved in the study of the same infection in animals with corpuscles of different forms.

Whatever line of research here is fruitful, it is certain that the study of immunity will not be complete till we know not only the substances concerned in the processes of high immunization and of ordinary resistance to a first attack of disease and the inter-relation of these substances, but also the sources from which these substances are derived and the laws which govern their formation. From our present standpoint, no knowledge would be in this connexion more interesting or important than the knowledge of the precise part played by wandering cells in the nutrition of the lower forms of life. As Ehrlich pointed out, both toxins and the constituents of the bacterial protoplasm must in chemical composition closely resemble the ordinary food material of animal cells. The further fact of the existence in the blood serum of substances closely allied to immune bodies points to a close relationship between the principles underlying immunity and some process of ordinary metabolism. The only other view which might be put forward is that the qualities to which immunity is due have come from the survival of the most immune. Such a hypothesis is difficult to maintain in view of the ease with which new and artificial disease conditions can be brought into existence at the will of the pathologist and of the conditions of natural immunity which are found to obtain against these artificial diseases. All the facts indicate that when the subject of immunity begins to be more clearly opened out it may be found that the methods by which the effects of an invading bacterium are met are merely special manifestations of the normal interdependence of groups of the bodily cells one on another.

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The advent of the bacteriological era in medicine twenty-five years ago revived the old question whether resistance to the invasion of infectious virus is brought about by the body humours or the body cells, and just as the old humoral doctrines preceded Virchow and his cellular pathology, so here the humoral doctrines are chronologically the first. In dealing with the question of the relation of the cells and fluids to the immunity problem—a problem which for interest to the medical scientist is without its rival at the present time—it seems to me necessary to pause and consider the foundations of our beliefs as progress towards the final goal—the construction of a rational system of therapy based on the etiological curative principle—can only be obtained by following the great currents and by avoiding the eddies and backwaters which lead nowhere. In the present instance I have attempted by a study of the extensive literature and by independent observation to determine what is fact and what is fiction in regard to the question of the cellular pathology and immunity. Too often even the youngest of us have seen beliefs taught to us as facts swept away because their foundations were insecure, and isolated experiments on animals of lowly organization have been utilized without further criticism for the construction of hypotheses applicable to problems of vast complexity in the higher mammalia. The Pathological Committee of this Association has, I think, done wisely to discuss at the present time the doctrine of immunity in its various aspects, so that by observation, criticism, and study we may direct our course into paths likely to be heuristic, and that we may distinguish incontrovertible facts from what is doubtful, and from what perhaps may better be referred to the domain of myths.

That there is a condition of immunity which can be artificially produced is certain, and we owe the basis of this knowledge to the classical work of Pasteur[1] on *Cholera des Poules*, Pasteur and Thuillier[2] on *Rouget*, and Pasteur, Roux, and Chamberland[3] on *Anthrax*. Not satisfied with the mere existence of immunity, attempts were then made to solve the nature of the immunity and its mode of action. Certain facts were observed, and then speculations arose as to how these facts are to be interpreted, and from this time dates the difficulties which have arisen in the immunity question. From actual observations in flasks of broth with cultivations of the chicken cholera bacillus, Pasteur formulated his *theorie d'épuissement*, or exhaustion theory, to explain what takes place in the body of the fowl immunized by the hand of man. Now, it often happens that a theory, although it contain a great element of truth, may be subverted, because it cannot at the time satisfactorily explain particular observations. Such has been the fate of Pasteur's theory because it could not explain the fact that immunity can be produced by the soluble products of microbes, and because the tissues of animals, immune or otherwise, suffice perfectly as a medium for the growth of microbes. (Bitter[4], Griffin,[5] Metchnikoff.) Although, therefore, Pasteur's theory cannot be held to explain the whole question of immunity, it is still a question whether certain forms of natural immunity may not owe their existence to an absence of suitable nutritive pabulum—a view revived in recent years by Ehrlich in the conception of the absence of suitable receptors.

Chauveau ([6] to [9]), on the analogy of the noxious substances produced by microbes in artificial media, thought that in the living body substances might be retained, these acting detrimentally on the microbe, and this was the foundation of his doctrine or *theorie de la substance ajoutée*. In his belief he was supported by the fact that the lambs of sheep vaccinated against anthrax may be born immune; and, secondly, that it is possible to immunize by means of soluble products of bacteria.

Both these old theories neglect what is now known to be a fundamental factor, namely, the host infected and the means employed by that host to resist microbic infection. This was first clearly set forth by Metchnikoff, whose writings have played an immense rôle in the elucidation of this whole problem. As is well known, Metchnikoff's theory of immunity is that the cells bring about the resistance to infection, and this is based upon a number of observations, notably the discovery by Haeckel (1862) that amoebae englobe foreign bodies, the discovery of Langhans[10] (1870) that emigrated leucocytes in haemorrhagic foci became charged with red blood corpuscles. Birch-Hirschfeld[11] (1872) had found that micrococci injected into the blood are taken up by leucocytes, and Panum[12] had suggested that possibly this was a method by which microbes might be destroyed.

Röser[13] expressed himself much more definitely that the immunity is due to the ability of contractile cells to seize the infectious virus.

Long before this Metchnikoff[14] (1865) had himself shown that the intestinal protoplasm of Geodesmus, a land planarian, is capable of englobing foreign bodies, and from about 1878 onwards he has in a long series of researches laid the foundations of his so-called phagocytic theory. These foundations cover a wide zoological field, ranging from the lowly rhizopoda to the highest mammals (Metchnikoff[15] to [27]). Briefly, the theory held by Metchnikoff was that the virus was destroyed in the interior of certain mesodermic cells by a pro-

cess of digestion. In recent years Metchnikoff has had to shift his standpoint to a certain extent, although in the main the cardinal doctrine is the intracellular digestion in leucocytes and other cells of mesodermic or even epiblastic origin.

While Metchnikoff was collecting his data and building up his hypothesis another theory was gradually being evolved—the humoral theory defended chiefly by Buchner, and at first this was directly antagonistic to the views promulgated by Metchnikoff.

The humoral theory was based on certain experiments by Traube and Geschleiden,[28] Wyssokowitch,[29] and Fodor,[30] who observed that bacteria injected into animals cannot be recovered again although these same bacteria did not appear to have made their exit from the body.

From 1888 dates a long series of researches inaugurated by the important memoir of Nuttall,[31] showing that destruction of bacteria takes place in cell-free serum outside the living body altogether, and that the bacterium-destroying property in the serum can be inhibited if the serum be heated to 56° C. This fundamental experiment has been confirmed by numerous workers, among whom one may mention Behring,[32] Nissen (33 to 34), Lubarsch,[35] Stern,[36] Denys and Kaisin,[37] de Giaxa and Guarnieri,[38] Leclef (38 to 39), Denys,[40] Buchner.[41] In particular Buchner has elaborated this branch of work in a long series of elaborate memoirs (42 to 47) culminating ultimately in his alexic theory of immunity. In spite of various objections raised by Christmas,[48] Székely and Szana,[49] Baumgarten and his pupils,[50] it is now accepted as proved that in the serum there are substances—alexins—which destroy certain bacteria *in vitro*. Buchner[46] has drawn special attention to the characters of the alexins—their thermolability, their absorption by bacteria and their behaviour on dialysis.

Leaving the question of the existence of alexins we find ourselves on very uncertain ground when we come to the problem of the site and the mode in which Buchner's alexin is manufactured in the body.

Hankin (51 to 53) was the first to refer the alexins to a leucocytic source, but erred in regarding the eosinophilic cells as the alexocytes (Mesnil[54]). There is no doubt, however, that his work led to other researches which culminated in a partial fusion of the rival humoral and cellular theories. These researches are closely connected with the names of Denys and his collaborators in the Louvain School, and were accepted by Buchner[55] in his address at the Congress for Hygiene and Demography in Buda-Pesth in 1894. The opinions of Denys were further strengthened by the observed correlation between hyperleucocytosis and alexic action (Sanarelli,[56] Everard, Massart and Demoor,[57] and Bordet[58]).

Before dealing with this important question of the connexion of the leucocytes to the amount of alexin it will be remembered that in point of time the discovery of antitoxin had insinuated itself into the immunity problem, and the same humoral and cellular difficulties again arose. Is this remarkable substance antitoxin merely in the humours or is it a vital cell product? That the latter view is correct is apparent from the researches of Roux and Vaillard,[59] Salamonsen and and Madsen (60 to 62), Knorr,[63] and constitute a support for Metchnikoff's views of the cellular origin of antibodies, the whole question being, Are we, or are we not, in a position to locate this cell factory? Is it limited to one type of tissue as affirmed by Metchnikoff or not? In all his publications Metchnikoff has definitely committed himself and has asserted the pre-eminent rôle of the leucocyte, and most of the researches emanating from the Pasteur Institute have been dominated by Metchnikoff's ideas.

We have already referred to the possible origin of alexins from leucocytes, and we must now consider carefully the grounds on which Buchner accepted this new view as expressed by him at Buda-Pesth in 1894, and why he departed from the purely humoral conception, for he definitely stated that the leucocytes possess important functions as defensive organs, and especially from their ability to secrete alexins. Phagocytosis he regarded as a secondary phenomenon.

Denys and Havet[64] found that dog's serum is less bactericidal than dog's blood, and special attention was directed to the factors to which this could be due. They tried blood which had been filtered through paper, and serum with and without the addition of leucocytes, and using as test objects bacterium coli, bacillus subtilis, and staphylococcus, they came to the conclusion that by filtration dog's blood loses practically all its bactericidal properties, and as the leucocytes were kept back by the act of filtration they assumed that they must in some way be connected with the formation of alexin. The blood of man, pigeon, or fowl did not, however, yield similar results. The microscopic examination permitted the observation of all stages of phagocytosis, and although they thought that the serum itself plays a very small part in bactericidal action, they stated in their conclusions that neither the phagocytic nor the humoral theories taken separately are sufficient to explain immunity, but the cells and fluids act together in a manner varying with the species of animal, and probably also with the nature of the virus.

Havet[65] observed an increase of bactericidal power following a leucocytosis produced by injections of staphylococcus cultures.

By means of exudates artificially produced by aleuron emulsions, Buchner[66] found that the leucocytic fluids were more bactericidal on B. coli than serum or blood. The question of phagocytosis was put out of court by killing the leucocytes by freezing and thawing. Denys[67] also believed that the alexins were secretory products of the leucocytes. The experiments of Buchner were repeated with variations by Hahn (68 to 69), who came to similar conclusions. In order to obtain leucocytes as isolated as possible, he introduced into the peritoneal cavity small pledgets of sterile cotton wool, and after a number of hours these were removed and squeezed, and the fluid frozen and thawed, and then tested. The results were not quite harmonious, for although the bactericidal action of the leucocytic fluid for bacillus typhi and staphylococcus was greater than that of the serum, the contrary was found to be the case for vibrio cholerae. From Hahn's calculations it is not apparent that the bactericidal action on staphylococcus was very pronounced, or even beyond the limits of experimental error. Schattenfroh (70 to 75) made an extensive series of observations with leucocytes more isolated than had been the case in the experiments of Denys, Buchner, Hahn. The leucocytes were thoroughly washed in saline solution, and then centrifugalized. They were then added to the inactivated serum, and bactericidal action was observed.

Schattenfroh also found that if isolated leucocytes were frozen and then mixed with inactive exudate and macerated for one to two days in the cold they acted bactericidally on certain bacteria.

From this period onwards a very large number of researches have been published to determine the question of the exact relationship of the leucocytes to the alexins, and as time has gone on it has become apparent that the question is a complicated one. This is the outcome of investigations by Bordet, Ehrlich and Morgenroth on haemolytic serums and from the fact that Buchner's alexin is a complex of two distinct substances, namely, a complement (alexin proper) and an immune body (amboceptor. Ehrlich).

As is now well known, the injection of alien erythrocytes leads to the development of a haemolytic serum, the haemolysis being due to the co-operation of a thermolabile complement—also called alexin and thermostable immune body, otherwise amboceptor.

Clinging fast to his cellular theories, Metchnikoff believes that both these bodies are contained in certain cells or at any rate are produced by them, and that in the main cells like erythrocytes are destroyed by certain ferments—cytases—present in the macrophages. The existence of these cytases is based on experiments with protozoa and actinia. Experiments with neutral red, led Mouton to the belief that amoebae possess a ferment—amibodiastase. Similar ferment, actinodiastase, was extracted from actinia by Mesnil. Arguing from this Metchnikoff supposes that the leucocytes are similar and that they also possess endocellular cytases.

For a number of years Metchnikoff has distinguished two great types of phagocytes, namely, macrophages and microphages, the former possessing no granulations, the latter including the neutrophile and eosinophile leucocytes. The exact histological characters of the macrophage are to my mind not apparent from Metchnikoff's writings. He sometimes describes them as large lymphocytes and speaks of their chief site as being the lymph glands, epiploon, and spleen. At other times[26] (p. 84) he says that the mesoblastic phagocytes are divisible into fixed phagocytes or macrophages of the spleen, endothelium, connective tissue, neuroglia, muscular fibres, and into free phagocytes. He also tries to show that the macrophages and microphages act differently, in so far that the macrocytase destroys red corpuscles and cells, the microcytase being chiefly concerned with microbicidal action, and he parallels this conception with the existence of other

leucocytic ferments, such as fibrin ferment, amylase, lipase, and oxidase.

Proceeding still further, Metchnikoff regards the identity of the cytases with Buchner's alexin as demonstrated, and that the alexic action is of the nature of a digestive process, although this is entirely negatived by the experiments of Nolf, Gruber, and others. He also assumes that any macrocytase which is present in the serum has come there by the phagolysis of the macrophages. The discovery of the complex character of cytolytic serums no doubt was a puzzle to Metchnikoff at first, but he rose once more to the occasion by affirming that the amboceptor, or, as he prefers to call it, the fixator, is also phagocytic in origin, and is produced in abundance during intracellular digestion. When it is produced in excess it escapes from the macrophages, and makes its way into the serum, in which it can be demonstrated in large quantity.

We have in these statements the most concrete and most extreme views yet published on the relation of cells to immunity, and it now behoves us to consider whether these views have met with the support of other investigators.

I have already dealt with the views of Denys, Havet, Hahn, and Schattenfroh on the alexic secretory action of leucocytes, and we have to discuss whether there are real grounds for this belief.

In the first place, it may appear strange that the simple question whether the alexin is free in the plasma or not has been the subject of numerous researches of contradictory character.

Metchnikoff, basing his conclusions on the work of Gengou,[76] affirms that the plasma is alexin-free. Gengou examined the blood of rabbits, dogs, and rats in paraffined vessels to prevent coagulation and failed to demonstrate bactericidal action in the plasma for B. typhi, B. anthracis, B. coli, and V. Metchnikovi, a result confirmed by Levaditi;[77] Pettersson,[78] on the other hand, using oxalate and citrate plasma, got entirely different results in the case of B. typhi and B. coli. Von Dungern[79] found that the plasma of scyllium canicula was quite as haemolytic for rabbit's corpuscles as the serum. Hahn could find no difference between the serum and histon blood. Similar results led Simnitzky[80] and Lambotte,[81] to the belief that alexin or complement circulates free in the plasma.

The Munich school, influenced by the work of Buchner, Hahn, and Schattenfroh, and regarding the alexin as a secretory product of the leucocytes, have attempted by a variety of methods to extract alexin from these cells. Van de Velde[82] used distilled water as an extractive. Bail[83] used leucocidin, Löwit[84] ground up the leucocytes with glass powder. As a result of numerous experiments Schattenfroh came to the conclusion that the substances which can be extracted from the leucocytes are not identical with the serum alexins. Shibayama[85] examined the effects of extracts of guinea-pig's organs on dog's blood and found that haemolysis was produced by splenic and lymphatic gland extracts, but not by bone marrow or other organs. Tarassewitch[86] examined the haemolytic action of extracts of organs of guinea-pigs, rabbits, and dogs, and found the so-called macrocytase in the lymph glands and other macrophagic organs, a conclusion also supported by the experiments of Levaditi.[87] Korschun and Morgenroth[88] found that certain organ extracts were haemolytic, but that the haemolytic substances present were quite different from alexins, as they were very heat-resistant, soluble in alcohol, and incapable of forming antihaemolysins. Similar results were obtained by Donath and Landsteiner[89] and Doemeny.[90]

Petrie[91] was unable to find any bactericidal substance for B. typhi in any of the leucocytes either of the normal or the immune rabbit. Nor was he able to reactivate an inactivated serum by the addition of leucocytes or leucocytic extracts. Similar negative results were obtained by Ascher[92] in the case of vibrio cholerae. In a study of the source of haemolytic complement and amboceptor, Bulloch,[93] by simultaneously measuring the amount of the haemolytic constituents on the one hand and the mononuclear and polynuclear leucocytes on the other, found that the appearance of the amboceptor in the serum is coincident with a rise in the number of mononuclear leucocytes, and the latter follow the fluctuations of the former with regularity.

By producing an artificial polynuclear pseudo-eosinophilia there is a coincident rise in the amount of the complement, but no rise in the quantity of immune body. Ainley Walker[94] also believes that complement is a leucocytic product appearing in the blood plasma mainly as a result of disintegration of the leucocytes. Studying the serum complement in disease, Longcope[95] observed a rise in the quantity of complement associated with hyperleucocytosis.

In the case of immune serums, Pfeiffer and Marx,[95] Wassermann,[96] and Deutsch[97] found the main site of formation of antibodies to be the spleen, bone marrow, and lymph glands.

Taking advantage of the fact that a certain time—usually four or five days—elapses between the injection of ox blood and the development of the specific haemolysis in the blood of rabbits, I attempted by making extracts from the different organs to determine where the haemolysins were formed; but the technique was so difficult and the results so uncertain that the research was not continued, but so far as it went there was no evidence that more haemolysin was formed in the spleen and bone marrow than in other organs.

On the other hand, Wauters,[98] experimenting with staphylococcus and hay bacillus in the case of pigeons and rabbits and making extractions of the organs with inactivated serum, found the most marked bactericidal properties in bone-marrow extracts. Briscoe[99] and Moxter[100] could find no immediate relation between the microphages and the presence of bactericidal complement.

Other researchers are not only satisfied that this relationship exists, but they have sought to demonstrate the manner in which the leucocytes part with their alexin. Laschtschenko[101] used as a leucocytic extractive, a serum heated to 55° C., and not in itself bactericidal, and he assumed that in such a serum the leucocytes were living, and that the increased amount of alexin must necessarily be due to a secretory activity on the part of the leucocytes. Trommsdorf ([102] to [103]), repeating this work, estimated the vitality of the leucocytes by their amoeboid movement and by their staining reactions with Nakanishi's method, and he found that the majority of the leucocytes were living. Most recently Lazar,[104] doubtful as to whether these estimates of vitality were sufficient, took as his test the ability of the leucocytes to exert a phagocytic action, and he ultimately came to the conclusion that bactericidal substances get into the serum only when a certain number of the leucocytes are destroyed.

From this mass of conflicting details, it would appear difficult to draw accurate conclusions in regard to the origin of protective substances. In the first place, the existence of alexins is undoubted, but nothing certain is known of their origin. Even the question of their existence in the plasma is not definitely settled, although the balance of opinion is in favour of their occurrence outside the blood cells. It is not certain that cytases exist in Metchnikoff's sense. It is very improbable that alexin acts like a digestive ferment. It is not proved that leucocytes secrete alexin, although it is probable that they do.

It may be asked why there is this extraordinary diversity of opinion, and the answer must be sought in the complexity of the subject and the defects in the technique employed, for there is no doubt that the experimental error in determining the number of bacteria destroyed, especially when this estimation is carried out by the older plate method, is a very great one. This is clearly seen when one comes to an organism like staphylococcus—an organism much in favour in this class of work. According to the best bactericidal methods of Wright, it is impossible by the aid of a serum normal or immune to kill a staphylococcus by bacteriolysis, using the term in its technical sense.

The result of all this investigation has been the development of a great harmony between the views of the rival schools of Buchner, Ehrlich, and Metchnikoff, and it would seem at the present time that the differences are more those of words than of actualities. Perhaps the main point still is that the French school attribute to the leucocytes a more important rôle than that admitted by the Germans, and there is a great amount of evidence that the leucocytes are of importance, although the exact manner of their action is still unsolved. We have spoken of antitoxic immunity and bactericidal immunity, and we may ask ourselves whether the host has exhausted its resources against the virus or the poison by these two methods. In other words, Is immunity always antitoxic or bactericidal? and I use the word "bactericidal" in a specific sense and not in its etymological sense. According to Nuttal, Stern, Neisser, and Wright, the serum of an animal is not bactericidal towards staphylococcus. I have found the same in the case of B. pyocyaneus. No doubt staphylococcus and B. pyocyaneus are destroyed in the living body, but not by the specific method we know as bacteriolysis. Now it is a remark-

able thing that for the majority of infective diseases the immunity is neither an antitoxic nor a bactericidal, and it is chiefly in the case of these diseases that Metchnikoff's phagocytic theory was established, and he has always clung to the belief that the serum plays a subordinate rôle compared with that of the cells. By a study of the serum and the phagocytes separately Wright and Douglas ([105] [106]), in two epoch-making papers, have shown that in so-called phagocytosis a most important, if not a cardinal, rôle is played by substances in the serum, which substances have nothing to do with Buchner's alexins. Their method has been to mix serum or plasma with bacterial emulsions and washed leucocytes, and after contact of these for fifteen minutes films are prepared and stained by Leishman's dye, and the number of bacteria ingested by the leucocytes is taken as the index of the phagocytosis. This method is a modification of that originally brought forward by Major Leishman in his studies on phagocytosis.

Wright and Douglas found that the phagocytic property is arrested by heating the serum to 60-65° C. for ten minutes, although the leucocytes are, of course, normal, that is to say, the leucocytes are practically unable to pick up microbes by themselves. If the unheated serum is mixed with bacteria at 37° C. for fifteen minutes and the mixture is then heated to 60° C. for fifteen minutes, phagocytosis can still take place, thus demonstrating that the serum acts in some way on the bacteria, rendering them suitable prey for the phagocytes. This thermolabile serum feast preparer is called by Wright and Douglas opsonine (ὀψωνιάζω, to furnish with provisions).

They have also shown that during the process of active immunization the opsonic value of the serum is increased, and they have succeeded in demonstrating this opsonic immunity for a number of infections, such as staphylococcus, Malta fever, pneumococcus, tubercle. In conjunction with E. E. Atkin I have devoted considerable time during the last six months to the question of opsonic immunity, and we have been able to confirm the work of Wright and Douglas, and have studied in other directions the mode of formation and action of opsonic serum. We have found it impossible to increase indefinitely the amount of opsonine in the serum as a result of inoculation. A limit is apparently reached very soon, so that if the serum is diluted the opsonic effect is not manifest. The effect of injections of microbes on the opsonic content of the serum is similar to the effect on the antitoxic or bactericidal content. There is, as is well known, a negative phase, a positive phase, and a higher base level. The reason why the opsonic value cannot be indefinitely increased by inoculation is difficult to understand, especially as we have found that the opsonine is a body built on the type of agglutinin, and analogous to Ehrlich's receptor of the second class. Opsonic serum which has been heated cannot be activated again, although this inactive opsonin is seized by bacteria and fixed to them, so that when mixed with fresh active opsonin no opsonic effect is apparent. We must admit, therefore, the existence of an opsonophoric and a haptophoric group. Further, we have demonstrated that the serum contains a number of opsonines, each of which is specific for given bacteria. By saturation experiments we can remove the one opsonine after the other, our results being in harmony with the pleurimistic doctrines of Ehrlich. From the researches of Wright and Douglas, Bulloch and Atkin, it would appear that in addition to antitoxic and bactericidal immunity there is a third type, namely, opsonic immunity, which is a common phenomenon, and is brought about by the coalition both of humours and cells, and it corresponds largely to what Metchnikoff has preached for years as phagocytosis. The actual part played by the leucocyte in the drama seems less clear than ever, as evidently the bacteria are altered in some way before being ingested. This alteration is not, however, a fatal one to the microbe, and no doubt plenty has to be done by the leucocyte before the microbes are disintegrated.

Thousands of facts point to the conclusion that our leucocytic-forming tissues are our great defensive organs against parasitic invasions. The mystery is how the microbes are destroyed, and I in this connexion we seem pretty much in the same state as John Hunter over a century ago, when he wrote of pus: "The final intention of this secretion of matter is, I believe, not yet understood, although almost every one thinks himself able to assign one, and various are the uses attributed to it." [107]

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THE investigations here briefly described have been made by me in the course of the last two years, partly in association with Mr. Jex-Blake of Oxford University, and partly alone. We hope shortly to publish a complete account of the work, with tables and minutiae; accordingly I shall now confine myself to a summary of its results, giving only such details as are necessary for its comprehension.

Nicolle was the first to argue that the agglutination of bacteria depended upon the union of an agglutinable substance within them to the agglutinin of the specific immune serum. Joos proved, further, that the presence of a salt was necessary for the occurrence of such agglutination, and it is now generally believed that the process is due either directly or indirectly to the combination of these three bodies—agglutinable substance, agglutinin, and salt—with one another. The application of Ehrlich's side-chain theory to the phenomena of agglutination has led to speculation as to the nature and mode of action of the specific agglutinins; Bail regards them as receptors of the third order, while Eisenberg and Volk are uncertain whether they are receptors of the second order or of the third, and describe them as containing a specific precipitating group that is labile, and a more stable group that serves to unite them with the bacteria they can agglutinate. In the same way Eisenberg and Volk describe the existence of two combining groups in the bacteria themselves, one the labile agglutinophore group, the other a more stable group—Ehrlich's haptophore—that combines with the agglutinins; and they explain the formation of agglutinoids, comparable to Ehrlich's toxoids, by the action of heat, acids, and other influences upon the agglutinins. To these agglutinoids they attribute the remarkable property of having a greater affinity for the bacterial agglutinable substance than is possessed by the agglutinins; while they are unable to produce agglutination themselves, they can still prevent its occurrence in the presence of unchanged agglutinin by entering into union with all the combining groups (haptophores) of the bacteria.

Our own researches have been made with the bacillus coli communis, and the agglutinating immune serum of coli-immunized rabbits and goats. The cultures used were always twenty-two to twenty-four hours old, where no special mention is made of their age; either bouillon cultures or emulsions in 0.85 per cent. salt solution of the bacteria grown upon agar in Roux's bottles being employed. The emulsion was always made up to a uniform strength (½ normal) or opalescence by standardizing it against an arbitrarily-chosen standard bacterial suspension in a test tube. Some such standardization of the emulsion is absolutely necessary for exact work. It has been shown by Sacquépée that the apparent agglutinating power of an immune serum may vary more than 100 per cent., according as it is tested upon a strong or a weak bacterial emulsion.

Eisenberg and Volk have endeavoured to avoid this source of error by emulsionizing the bacteria grown upon a constant area of agar in a constant volume of saline solution; but in our hands this method has proved inadequate, giving emulsions varying over 100 per cent. in opalescence. The fresh bacillus coli emulsion, made as we have described, is always acid to phenolphthalein, its acidity being equal to that of an equal volume of $\frac{1}{1000}$ to $\frac{2}{1000}$ normal HCl.

Our experiments were arranged in the following way: Into each tube of a series of 24 small test tubes were measured one and a half c.cm. of the bacterial emulsion or bouillon culture, and then such a quantity of normal saline as to make the total volume of liquid in each tube up to $2\frac{1}{2}$ c.cm. after the proper amount of agglutinating fluid had been added. The amount of agglutinant added diminished regularly in passing down each separate series of tubes, being a hundred times as great in tube No. 1 as in tube No. 23. Tube 24 contained only emulsion and normal saline, and served as a control in each series. Each tube was then well shaken up, and all were placed in an Ostwald's water bath at 37° for one and a half to two hours, after which the measurements of the degree of agglutination were made. These measurements were repeated after the tubes had stood at room temperature for a further eighteen hours in cases where diminution of the agglutinin's reaction-velocity seemed to demand it. The measurements were made partly by Madsen's method—that is to say, by selecting as a standard a moderately agglutinated tube out of one of the series, and by noting which tubes in the other series were equally agglutinated—and partly by determining in which tube of each of the series the minimum agglutination visible to the naked eye was present. The latter mode of measurement was inevitable in cases where the size or the consistency of the flocculi of agglutinated bacilli in the different series was too variable or irregular for the application of Madsen's method of measurement.

We may here emphasize the fact that the results given by these two methods by no means agree with one another in many cases. Where the agglutinating power of an acid or of a simple immune serum are being determined, measurements made by these two methods either after the tubes have stood for two hours at 37°, or eighteen hours later, give much the same relative values. But if the serum has first been treated by heat or by various chemical reagents, the case is wholly different, and it may be that, while the measurements made after the tubes have stood for two hours at 37° indicate that most of the agglutinin has been destroyed, those taken after they have stood for a further eighteen hours at the room temperature prove that practically no destruction of the agglutinin has actually taken place. In other words, the reaction velocity of the chemical or physical processes that result in the agglutination of bacteria is a very variable factor, and one of the greatest importance in the results obtained.

The age of the culture, that is to say the time during which it has been standing in the incubator at 37°, has little influence upon the agglutinability of the emulsion in normal saline of the bacteria grown upon agar. But bouillon

cultures of bacillus coli of one, three, five, and twelve days' growth respectively may require quantities of coli agglutinin represented by the figures 1, 4, 6, and 20, to produce identical degrees of agglutination in them. This diminished agglutinability of the older bouillon cultures seems to be mainly if not wholly due to the increasing production of certain substances (toxins) during the growth of the bacteria in the fluid, substances which are able to combine with the agglutinine, and are precipitated by excess of it. The formation of such toxins by the continued growth of bacillus typhosus and bacillus coli communis in bouillon has been described by several writers (Kraus, Wassermann, etc.), although their compounds have not been closely examined.

The compounds formed between bacteria and agglutinin have been investigated by Eisenberg and Volk, who found that with increasing quantities of agglutinin its absolute absorption by a constant quantity of bacteria increased, while the coefficient of absorption, that is to say, the ratio of the amount of the agglutinin absorbed by the bacteria to that of the agglutinin originally present, fell. Arrhenius has made use of the figures given by these investigators in calculating a formula for the compound formed by agglutinin and agglutinable substance.

We, on the other hand, have found that the relation between coli agglutinin and coli toxin is totally different. Using the filtrate of a nineteen-day bouillon culture of bacillus coli, we found that with increasing amounts of agglutinin its absolute absorption by the bacterial products also increased, but that the absorption coefficient remained much the same, whether great or small amounts of agglutinin were present. This is quite different to what Eisenberg and Volk found to be the case with the bacteria. How far it may modify the present views of the laws regulating the combination of agglutinin with agglutinable substance will have to be shown by further researches.

Diminution of the agglutinability of bacteria by the action of heat has been remarked by a number of observers. The temperature at which this change becomes marked and the degree to which it attains have been very variously recorded and the facts have received very various explanations. It is, perhaps, only natural that different stocks of the same bacterial species should react in various ways to heat; our own investigations have shown that subcultures of the same stock may vary widely in their behaviour to heat even from one day to another. A water bath was used for heating the emulsion. We found that the different sets of tubes containing the heated emulsion frequently showed the so-called "inhibition zone" or "zone of inhibited agglutination" when exposed to the action of agglutinin. That is to say, it appeared that a small amount of agglutinin would often produce a greater degree of agglutination than a larger one, and that no visible agglutination at all might be present in a tube containing ten or twenty times as much agglutinin as there was in another tube of the same series showing nearly total agglutination.

As previous observers have done, we found that heating to below or up to 60° scarcely alters the agglutinability of coli emulsion, but that heating to temperatures of 70° or more much diminishes it. We are unable to offer any explanation of the wide variation in the results here yielded by successive twenty-four-hour subcultures of our bacillus coli stock from day to day, but found that the older the culture was the less it lost in agglutinability on heating. Reckoning the amount of agglutinin required to produce a given degree of agglutination in the unheated twenty-four-hour emulsion as 1, then the amount needed to agglutinate emulsions of various ages and heated to different degrees is given in the following table:

Culture.	24-hour Bouillon.	24-hour Agar-emulsion.	4-day Agar-emulsion.	50-day Agar-emulsion.
Unheated ...	1.0	1.0	1.0	1.0
Heated to 40°	1.0	1.1	1.0	1.0
,, 50°	1.3	1.5	1.0	1.0
,, 60°	2.3	2.1	1.4	1.1
,, 70°	2.5	2.8	1.8	1.3
,, 80°	18.0	10.0	8.9	3.1
,, 90°	21.5	12.0	8.9	3.6
,, 100°	24.6	14.0	9.3	3.6

Thus, for example, from fourteen to thirty-five times as much agglutinin was required to produce a given degree of agglutination in a twenty-four-hour emulsion just heated to 100° as is needed to agglutinate to the same degree the same culture when unheated; but only nine and four times as much agglutinin was required to produce the same agglutination in a four days and a fifty days' culture just heated to 100°. Levin has explained this loss of agglutinability by supposing "that by the heating a great deal of the agglutinable matter in the bacteria is destroyed." Eisenberg and Volk found that bacillus typhosus loses practically all its agglutinability when heated to 100°, while it still preserves its faculty of combining with agglutinin, and they explain the phenomenon by assuming that the labile agglutinophore group of the bacteria is destroyed by such heating, while the more stable combining group survives it. Thus they draw a parallel between this process and Ehrlich's view of the changes that may be undergone by diphtheria toxin.

But our own researches with B. coli communis argue wholly against this view that the diminution in agglutinability is due to the destruction of the agglutinable substance by heat. Were it so, then continued heating of the emulsion for several hours would still further reduce the agglutinability, or at least would leave it permanently lowered. Yet we have found that the prolonged (two to thirteen hours) heating of the emulsion to 100° brings back the agglutinability partially or even entirely, as the accompanying table proves, the amount of agglutinin required to produce a certain degree of agglutination in a twenty-hour unheated emulsion being taken as 1.

24-hour B. coli Emulsion.	A.	B.	C.
Unheated	1	1	1.0
Heated to 100°	14	—	12.0
,, ,, ,, 1 hour	21	22	—
,, ,, ,, 2 hours	7	15	1[illegible]
,, ,, ,, 3 ,, ...	4	12	—
,, ,, ,, 5 ,, ...	—	9	—
,, ,, ,, 7 ,, ...	—	9	—
,, ,, ,, 13 ,, ...	—	4	—

This phenomena can be partially explained by supposing that some of the agglutinin-fixing substance in the bacteria is dissolved out into the fluid during the heating. That such a dissolution is taking place we have proved by filtration. The slowly increasing agglutinability on prolonged heating to 100° F. might well correspond to a slow destruction of the dissolved agglutinin-fixing substance, whatever its chemical nature may be, and as a matter of fact the filtrate on prolonged heating to 100° loses its power of fixing agglutinin. In addition, it is possible that some obscure factor, such as a change in the bacterial surface tension, is involved. On the other hand, it might be objected that the agglutination of long-heated bacteria is wholly different in nature from that of the unheated, and that it is not a specific phenomenon.

One of us (Dreyer) made further inquiry into the matter in the autumn of 1902. A series of orientating experiments was made to find out if other substances showed similar behaviour on heating. Amongst other bodies, megatheriolysin was employed. Denoting as 1 the amount of unheated lysin needed to haemolyze a given volume of goat's blood to a given degree, the following figures show the quantities required to effect the same degree of haemolysis when the lysin has been heated before use:

Unheated megatheriolysin	1
Lysin heated to 60° C., half an hour	60
,, ,, ,, ,, then to 100° 10 mins.	4
,, ,, 100°	10
,, ,, 100° for 10 mins.	2.5

Thus, heating the megatheriolysin to 60° for half an hour makes it completely inactive, as already stated by Todd; but if it is then heated to 100° for ten minutes it is restored to one-quarter of its original strength. If heated in the first place just to 100° it is weakened to one-sixth, but if the heating is continued at 100° for ten minutes it will again become more active as it is now only weakened to two-fifths of its original strength. It might be argued that this restored haemolytic power differs in kind from that of the unheated lysin; but this is disproved by the fact that in each of the cases the haemolysis is prevented by the addition of antimegatheriolysin. It is impossible to give any further explanation of this remarkable and hitherto unknown phenomenon at the present moment.

Turning now to the influence of heat upon the agglutinin itself, various investigators (Bail, Eisenberg, Volk, etc.) have

found that when a coli or typhosus agglutinating immune serum is heated to 65° for half an hour, it loses but little of its specific power, but most of it at 70° and all at 75°. Serums so heated often exhibit the "zone of inhibition" in agglutinating; in other words, they cause agglutination when present in relatively small amount, but do not do so when present in quantity. Eisenberg and Volk note the phenomenon, explaining it by the assumption that part of the agglutinin is converted by heat into agglutinoid, the latter having a greater affinity for the bacterial agglutinable substance than the former, and drawing confirmation for this view from their observation that the more agglutinin has been destroyed the greater is the inhibition zone. But our own experiments go to prove that there is no direct connexion between the extent of the zone of inhibition and the actual destruction of agglutinin. Thus we found that a heated serum either could be much weakened by heat and yet have a small zone of inhibition, or that it could have a large zone of inhibited agglutination although it was not recognizably injured by the heating. Therefore we think that the phenomenon is not to be interpreted in this elaborate way, which is closely allied to Ehrlich's view on toxins as very complex bodies.

Here, again, it must be emphasized that the results obtained are very different according as one uses for experiment a bouillon culture of the bacteria or an emulsion in physiological salt solution of the bacteria grown upon agar, and also according to the time at which the observations are made. For example, when estimating the agglutinating power of an immune serum heated to 65° for half an hour, measurements taken after the test tubes have stood for two hours at 37° showed that half the agglutinin had been destroyed, while measurements made after they had remained at the room temperature for a further eighteen hours proved that the destruction of agglutinin was actually *nil*. Again, the greater the dilution at which the serum is heated the greater is the destruction of its agglutinin and the smaller is its zone of inhibition. Thus we have been led to conclude that the inhibition zone is not a consequence of the conversion of agglutinin into agglutinoid, and more particularly so because it may also appear as a consequence of heating the bacterial emulsion. Again, a heated serum may show an inhibition zone with a saline bacterial emulsion, but not when a bouillon culture is used for agglutination. A partial explanation at least of the whole phenomenon may lie in the slowing of the velocity of the agglutination reaction.

In the next place, we must describe briefly the agglutination of bacillus coli and bacillus typhosus by acids. Malvoz was the first to remark that acids and various other chemical reagents could agglutinate bacteria, but neither he nor later observers appear to have noted or described the peculiar features of this agglutination, which is indistinguishable both to the naked eye and microscopically from the agglutination produced by a specific immune-serum. Here, again, there is much difference between the behaviour of a bacterial emulsion of B. coli in normal saline and that of a bouillon culture. The former is readily agglutinated by hydrochloric acid, the latter only with difficulty, although it must be noted that an emulsion in sterile bouillon of the bacteria grown on agar is easily agglutinated by the acid.

The most characteristic thing about agglutination by acids is the irregularity with which it occurs. It is produced either by relatively large or by relatively small quantities of acid, but not by the intermediate amounts. Thus, in a series of test-tubes, each containing 1.5 c.cm. of saline emulsion of bacillus coli communis, after the addition of amounts of orthophosphoric acid, diminishing as the series was descended, agglutination occurred in the tubes containing from 11S cg. down to 4 cg. of the acid, and again in those containing from 1.1 mg. to 0.01 mg.: but there was no agglutination produced in the intermediate tubes that contained from 3 cg. to 1.3 mg. of the acid. Also the strength or degree of opalescence of the emulsion is an important factor in agglutination by acids, the intermediate zone of inhibition diminishing much or almost vanishing as the density of the emulsion increases. The extent of the inhibition zone varies greatly with different acids and cultures of B. coli.

There is a strong resemblance between this acid agglutination of bacteria and the flocular precipitation of gum mastic from water by normal ferric chloride (Fe_2Cl_6) solution studied by Neisser and Friedmann. These authors recorded the occurrence of an intermediate inhibition zone in this precipitation; the extent of the zone diminishes as stronger and stronger emulsions of the gum are employed. Hence the phenomenon is not a specific one, nor is it peculiar to micro-organisms.

The acid agglutinability of bacillus coli is much diminished by previous heating of the emulsion to temperatures from 50° to 100°. An emulsion of the dialyzed bacteria made with distilled water is still agglutinable by acids, although it is not so by immune serum, being freed from salts. We have examined and compared the relative agglutinating power of a large number of organic and inorganic acids, but have failed to find any relation between it and their relative "strengths" (that is, their capacity for inverting sugar).

Passing now to the serum agglutination of bacterial emulsions to which varying quantities of free acid have been added we have found that extremely minute quantities of free acid exercise a profound influence upon their agglutinability. The presence of 0.03 mg. of hydrochloric acid in 1.5 c.cm. of the bacterial emulsion, a quantity of acid that produces slight agglutination when acting alone, does not influence the agglutination produced by serum; 0.06 mg. reduces the serum agglutinability by one-half, 0.12 mg. by no less than fourteen-fifteenths, although each of these quantities acting alone would produce a marked agglutination; 0.24 and 0.48 mg. of acid reduce the serum agglutinability to one thirty-third of its normal value when normal emulsion is employed. At the same time irregularities and zones of inhibition may appear in the agglutination of the acidified emulsion. Since neutralization of the acidified emulsion will render it once more normal to serum agglutinin, the phenomenon cannot be explained by a destruction of the agglutinophore group as suggested by Eisenberg and Volk. It is seen that the presence of small amounts of HCl (0.03 to 0.48 mg.) sufficient to agglutinate 1.5 B. coli emulsion will prevent the effect of two to thirty-three times the amount of agglutinin necessary to produce agglutination, and vice versa. Thus the acid and the immune serum, both being agglutinants, appear mutually to obstruct each other's agglutinative working.

Various writers—Pick, Eisenberg and Volk, and others—have studied the action of acids upon the immune serum agglutinins, and find that they prevent these serums from producing agglutination when present in large quantities, but not when present in small. The facts are undoubted; the change closely resembles that which follows heating the serum. It is explained by Eisenberg and Volk as being due to a partial transformation of the agglutinin into agglutinoid, but their own experiments are here open to the objection that no attention is paid to the presence of the free HCl added, with the serum, to the bacterial emulsion: it is at least possible that much of the agglutination observed here was due to the combined effect of the agglutinin and acid, or to the agglutinating action of the acid alone.

In our own experiments with acidified serum the serum and acid were allowed to act upon one another for two hours at 37° before use, the mixture being employed either directly or after neutralization with caustic soda, phenolphthalein being used as indicator. Very different results were obtained according as a saline emulsion or a bouillon culture of the bacteria was employed. To give a single example: Coli-agglutinating serum, diluted and acidified with hydrochloric acid to $\frac{1}{250}$ of the normal, in quantities of from 1.0 to 0.2 c.cm., produced no agglutination in 1.5 c.cm. of B. coli emulsion, although these quantities contained from twenty to three times the amount of agglutinin normally required to produce agglutination. Yet 0.02 c.cm. of the same acidified serum produced total agglutination, which subsequent examination proved to be due to the small amount of acid—0.03 mg.—it contained, and not to the agglutinin, which was but one-third of that needed to produce total agglutination. The occurrence of the zone of inhibition when acidified serum is examined, and the apparent diminution in the agglutinative power of such serum are not readily explained; but they are due, at any rate partly and perhaps wholly, to a reduction of the reaction-velocity of the interacting bodies; because an inhibition zone that is well marked after the tubes have stood for 2 hours at 37° may have moved far up the series, or even have disappeared altogether, after a further eighteen hours at the temperature of the room.

That there is no question here of Eisenberg and Volk's transformation of agglutinin into agglutinoid is further shown by the result of neutralizing one half of the acidified serum and setting up two parallel sets of test-tubes with emulsion, the one for the neutralized and the other for the unneutralized half of the serum. The former may then show that the acidification has had no permanent influence upon the agglutinin, while the latter exhibits a marked zone of in-

hibition and considerable apparent destruction of the agglutinating power. Very similar results are obtained when bouillon cultures are used, and here acidification of the serum to $\frac{1}{800}$th of the normal may cause an apparent loss of $\frac{9}{10}$ths of its agglutinating power, though no inhibition zone appears; but eighteen hours later the tubes show that the agglutinin has not been destroyed, but that its action has been retarded only. This result is the more important as the small amount of acid added with the serum is unable to agglutinate the bouillon culture alone. Here, also, we have not succeeded in tracing any relation between the destruction of the agglutinin and the appearance or extent of the zone of impeded agglutination.

In conclusion, I must touch upon the influence of the caustic alkalies upon agglutination. Acting upon the saline bacterial emulsion, they make it more translucent and less agglutinable. So far as we have seen they do not agglutinate it or lead to the production of zones of inhibited agglutination. Acting upon an immune serum, an alkali is far more destructive, *caeteris paribus*, than an acid. For example, the presence of $\frac{1}{800}$th HCl produces only a slight destruction, but if $\frac{1}{800}$th NaOH is present the agglutinating power is reduced to $\frac{1}{10}$th of its original strength. Here, also, the actual destruction of agglutinin is less than the apparent, as neutralization with an acid can be made to show. Zones of inhibited agglutination are observed with alkalized serum, and we believe that they are due to a diminution in the reaction velocity of the agglutinin, as we have already explained, rather than to any agglutinoid formation.

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TOXINS AND ANTITOXINS.

I FEEL highly honoured by the request addressed to me by the President of this Section to give an exposition of the question of the interaction between toxins and antitoxins in the light of physical chemistry, and owing to the limit of time shall confine myself to making reference to the researches carried out in the State Serum Institute in Copenhagen mainly by Arrhenius and myself.

To begin with, it might perhaps be the best to briefly review some of Ehrlich's older work. It is quite natural that we begin by mentioning the man to whom the whole theory of toxins and antitoxins is most indebted, he being foremost among the pioneers who advanced the idea of chemical combination to its ultimate victory, and who through his methods of exact standardization of the toxins and antitoxins first gave us the assurance that it was possible to get exact measurement of these two bodies. To him will for ever belong the credit for having broken the path in the difficult field of the investigation of the constitution of the toxins. As is well known, it was his work on the standardizing of the diphtheria antitoxin which afforded the basis for his ideas concerning the constitution of the diphtheria poison, and further for his whole theory of immunity.

In order to make the essential points clear it might be preferable to enter into the details of the neutralization of a special diphtheria poison with antitoxin. We take 100 toxic units (the amount which kills a 250 gr. guinea-pig in three to four days) and find the amount of antitoxin, which added to it *in vitro* will produce a mixture without any toxic action, when introduced in the subcutaneous tissue of a guinea-pig. To this amount of antitoxin we assign a numerical value, say, 100. If the neutralizing action of the antitoxin had been of the same kind as the neutralization of a strong base (NaOH) with a strong acid (HCl), we should expect that the antitoxin would neutralize proportionate amounts of toxin; that, for example, $\frac{1}{100}$ of antitoxin added to the 100 units of toxin would allow 1 toxic unit to be free; $\frac{2}{100}$ antitoxin, 2 toxic units; $\frac{50}{100}$ antitoxin, 50 toxic units, etc. This proved not to be the case. If to the 100 toxic units were added $\frac{9}{10}$ of antitoxin, a mixture resulted which produced in guinea-pigs a slight oedema, disappearing in a few days without necrosis. After a small loss of weight the animal apparently recovered, but after two to three weeks showed a typical post-diphtherial paralysis. Not until the amount of antitoxin was decreased to $\frac{1}{10}$ was a mixture obtained which caused death in a few days. These phenomena, in Ehrlich's opinion, are to be explained by presuming that the diphtheria poison is not a single substance but consists of two chief components, toxin and toxon. Both have the property of combining with the antitoxin but have different avidities, the toxin being stronger and being therefore neutralized before the toxon, which possesses a weaker affinity. The toxon has weak toxic properties of the above-mentioned nature. Death never occurs after a few days' illness as is the case with toxin. The toxon produces only a soft oedema, which quickly disappears without causing necrosis and alopecia, as is the case with the toxin. Then, as pointed out by Woodhead and also by myself, the toxons often produce typical paralyses, which are very seldom observed after injections of toxin. But the toxin itself seemed to Ehrlich to be a complicated body. To show this we examine the toxin by the partial saturation method as used by Ehrlich. That is: To the constant amount of toxin we add decreasing amounts of antitoxin and observe how many toxic units are liberated. When the antitoxin is diminished from $\frac{75}{100}$ to $\frac{45}{100}$, that is, by $\frac{30}{100}$, only 5 toxic units are set free On the contrary, the next $\frac{30}{100}$ ant., from $\frac{45}{100}$ to $\frac{15}{100}$, leave much more free, namely, 50 toxic units, and the last small decrease, from $\frac{15}{100}$ to 0, leaves not less than 45 toxin units free.

TABLE I.

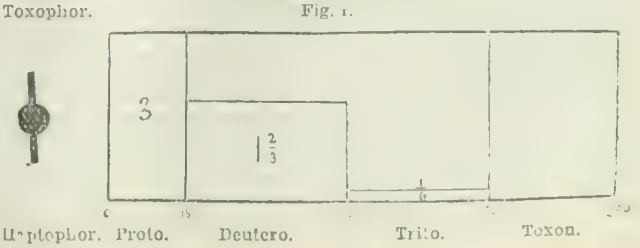
100 Toxin Units + x Anti-toxin.	Free Toxin Units.	Combining Units.	Toxic Units.	Proportion of Toxic to Combining Units.	
$x=$ 100	0	25	0	0	toxon
75	1	30	5	$\frac{1}{6}$	trito
45	5	30	50	$1\frac{2}{3}$	deutero
15	55	15	45	3	proto
0	100				

When we now compare the relation between the capacity possessed by the crude toxin of fixing antitoxin and its toxic power, we find that the first $\frac{25}{100}$ antitoxin leaves unsaturated 0 toxic units, the next 30 leaves 5, that is, each combining unit is equivalent to $\frac{1}{6}$ toxic unit, the next $\frac{30}{100}$ leaves 50 toxic units, that is equivalent to $1\frac{2}{3}$, and the last $\frac{15}{100}$ leaves 45 units, that is each equivalent to 3.

Ehrlich's explanation is that we have three different toxins with different toxicity and different avidities to the antitoxin, namely, the prototoxin, the deuterotoxin and the tritotoxin. Experimentation shows that when toxins are kept for some time their toxicity decreases, often considerably. However, within considerable limits, the antitoxin-fixing power remains unchanged. From this fact Ehrlich assumes that the fixing and toxic properties of the toxin belongs to two different groups in the molecule, the haptophorous, which possesses the property to combine with the antitoxin, and the toxophorous, which contains the toxic properties. We must imagine the diphtheria toxin as composed of a series of bodies: proto-, deutero-, trito-toxin and the toxon, each having haptophorous groups, which are very stable. Further, each division of toxins possesses toxophorous groups which are strongest in the prototoxin, of medium force in the deuterotoxin, and very weak in the tritotoxin. These toxophorous groups are rather unstable and liable to deteriorate, especially that of the prototoxin, but also that of the deuterotoxin. In this way we get modifications of the toxins (the toxoids) with the same antitoxin-fixing power (unchanged haptophorous group), but with decreased or no toxicity—that is, with weakened or destroyed toxophorous groups. Ehrlich usually represents the diphtheria toxin by means of a "spectrum," where he plots along the axis of the abscissa, the added amount of antitoxin expressed in combining units—in this case called 100—with sinking avidity from the left to the right side. The above-mentioned example in Ehrlich's terminology would be represented in the following way (Fig. 1): To the extreme left a

DIPHTHERIA TOXIN.

Fig. 1.



zone of prototoxin with 15 combining units. As this zone contains 45 toxin units, each combining unit is equal to 3 toxic units. Then follows a deuterotoxin zone, from 15 to 45, where the 30 combining units contain 50 toxic units, or each $1\frac{2}{3}$ toxic unit. After this a tritotoxin zone from 45 to 75; as these 30 combining units only contain 5 toxic units, the toxicity per combining unit is only $\frac{1}{6}$. From 75 to 100 the toxon zone: this containing no acute toxic properties.

In general, Ehrlich assumes the constitution of the diphtheria poison as being made up accordingly (Fig. 2). First,

Fig. 2.



Proto. Deutero. Trito. Toxon. Epitoxonoid.

the prototoxin with the greatest avidity for the antitoxin and with the greatest toxicity—that is, in the fresh poison; but, it being comparatively labile, it changes after some time into prototoxoid. Here at this point we find the phenomenon that small amounts of antitoxin added to the poison do not produce any decrease in its toxicity. Next follows the deuterotoxin, composed of two modifications, the β (the one half-part), which is rather stable, while the other half-part, the α modification, is more labile and changes into toxoid. In this case equal parts of toxin (hemitoxin) and toxoid are observed. The tritotoxin-zone stands next, with 1 to 3 toxin units to 9 to 7 toxoids. After the toxin we find the toxon, which Ehrlich is wont to consider as being also a complicated body, and finally the recent investigations of v. Dungern add one body more, the epitoxonoid, with still smaller avidity—the "ultra" of Ehrlich.

Most of the facts concerning the diphtheria toxin which form the basis of Ehrlich's theory, were confirmed in a paper of mine. Working in Ehrlich's laboratory, I found that tetanolysin, the haemolytic substance of tetanus poison, in its relations to its antihaemolysin, showed phenomena which very much recalled the diphtheria toxin. Starting from similar points of view we could also here distinguish a proto-, deutero-, and trito-toxin zone as well as a long toxon zone. When we add only $\frac{1}{75}$ of the total neutralizing amount of antilysin we take away $\frac{1}{3}$ of the total haemolytic power, the next $\frac{1}{3}$ removes $\frac{2}{3}$, and the following $\frac{1}{3}$ antitoxin only $\frac{1}{75}$ of the total toxicity. But I found that when the portions of antilysin were added with very small increments, the neutralization, instead of the stair-step curve, as used by Ehrlich in his spectrum, could be represented by a very regular curve without any indications of the supposed differences between the different subdivisions of toxin. This suggested the idea that we here had a means which could be used to bring the study of toxins and antitoxins in conformity with the laws of modern chemistry. The tetanolysin was much more fitted than the diphtheria poison for this kind of study, as we were able to carry out experiments on an unlimited scale. Further, the method of test tube experimentation allowed us to vary the external conditions—temperature, dilution, medium, etc.—to very great extent. As Professor Arrhenius found the material suitable for theoretical investigation, he kindly joined in the work, and after two years' experimentation we obtained our present conception of the neutralization phenomena.

In taking up this discussion, let us first consider how a so-called strong acid combines with a strong base. Let the base be NaOH, which like the tetanolysin is haemolytic; a definite amount, for example, 1 c.cm. normal NaOH, is able to dissolve a certain amount of red blood corpuscles; this can be measured through simple calorimetric methods. Since 1 c.cm. normal HCl produces a complete neutralization of the base by the formation of NaCl, no free H or OH ions remain. Likewise 0.25 c.cm. n/1 HCl removes one-quarter, 0.5 c.cm. one-half, and 0.75 c.cm. three-quarters, of the action of the base. Thus the antihaemolytic action of the acid solution is directly proportionate to its amount; the neutralization-curve is almost a straight line, because the two bodies, NaOH and HCl are strongly dissociated, have great avidity, and therefore combine almost completely. On the other hand, when we take a weak base and a weak acid, such as ammonia and boric acid, we will find that their combining relations can be expressed by a hyperbolic curve. At the beginning the curve (that is, when small amounts of acid are present) is almost a straight line, but when we add more and more acid the curve becomes more and more deflected. This comes from the fact that the combination of ammonia and boric acid is incomplete, owing to the weak dissociation of these two bodies; further, the formed ammonium borate is to a certain extent dissociated into its components. As we add more and more acid, the amount of free ammonia is decreased, but more and more slowly in correspondence with a hyperbolic curve nearing the asymptote, but never reaching it. These phenomena can be calculated according to the law of Guldberg-Waage—the law of the mass action—there being an equilibrium between

$$\frac{\text{Free } NH_3}{\text{vol.}} \cdot \frac{\text{Free } H_3O_3B}{\text{vol.}} = K \frac{(NH_4H_2O_3B)^2}{\text{vol.}}$$

Now, when we examined the neutralization of tetanolysin by antitetanolysin, we found that the curve was very similar to the ammonia-boric-acid curve, and that the data could be calculated in a quite corresponding manner after this formula:

$$\frac{\text{Free toxin}}{\text{vol.}} \cdot \frac{\text{Free antitoxin}}{\text{vol.}} = K. \frac{(\text{Toxin-antitoxin})^2}{\text{vol.}}$$

where K is the constant of dissociation.

This formula indicates that 1 molecule of antitoxin combines with a constant amount of toxin (perhaps 1 molecule) to form two molecules of one or more combinations of toxin-antitoxin. Without entering into the details of the calculation, I only refer to the Table II, where in the first column is found the amounts of antitoxin, in the next column under "T. (Toxicity) obs." the corresponding amounts of free toxin expressed in arbitrary units, and in the last column the corresponding T. calculated after the above formula. It is easily seen that the correspondence is excellent. This is graphically expressed in a curve, where the doses of antitoxin are indicated along the axis of abscissa, whilst the toxicity is indicated as ordinates. The curve represents the theoretical (calculated) values, the marks the observations. On the same chart there

TABLE 2.

TETANOLYSIN.

$$\frac{\text{Free Toxin}}{\text{vol}} \cdot \frac{\text{Free Antitoxin}}{\text{vol.}} = K \frac{(\text{Toxin-Antitoxin})^2}{\text{vol.}}$$

Antitox.	T. (obs.)	T. (calc.)
0	4·45	(4·45)
0·05	3·67	3·67
0·1	3·13	2·95
0·15	2·32	2·29
0·2	1·82	1·72
0·3	0·97	1·03
0·4	0·63	0·62
0·5	0·45	0·46
0·7	0·27	0·28
1·0	0·18	0·18
1·3	0·12	0·13
1·6	0·09	0·11
2·0	0·08	0·09

is a representation of the same phenomenon, expressed by Ehrlich's spectrum method, which would indicate this particular crude toxin to be composed of a whole series of

different toxins, the number depending upon how small we make the fractions of antitoxin. It seems clear that the continuous curve is the proper means of expressing the phenomenon.

Let us consider our present knowledge of facts in the light of this theory, that the combination of tetanolysin with antitetanolysin is partly dissociated into its components. It is in concordance with experience that the two bodies have a weak avidity and under ordinary conditions combine slowly, the combination being very much influenced by concentration and temperature. This theory would afford an explanation for the long zone of neutralization. It is the case with tetanolysin and many other toxins that after taking away the greater part of the toxicity we can continue adding antitoxin in large amounts before we obtain the final disappearance of the toxic action.

By our explanation we offer a natural solution deciding the old fight concerning the final point of neutralization. Such a point does not exist. If we continue the addition of antitoxin, the amount of free toxin will constantly diminish, but it will never disappear. There will be, of course, a point where the small amount of free toxin cannot be demonstrated by our usual indicators (erythrocytes, animal experimentation), but if we use more susceptible indicators, or if we increase the amount of the mixture, then we will be able to demonstrate the toxic action. This explains why the law of multiple proportions seems sometimes not to be applicable. A certain amount of a mixture of toxin and antitoxin may be without action, while a multiple is toxic. This was difficult to undertand when we assumed a complete neutralization. This also explains the experiments of Buchner, that mixtures of tetanus poison and antitoxin which did not act upon mice produced well-marked tetanus in guinea-pigs, and the experiments of Roux that mixtures of toxin and antitoxin, which were without action upon normal guinea-pigs, killed animals which had recovered from injections of vibrio Massouah and other microbes.

Our view also explains the paradoxical fact of former days that mixtures of toxin and antitoxin proved to contain both free toxin and free antitoxin. It is easy to understand that such mixtures have immunizing properties.

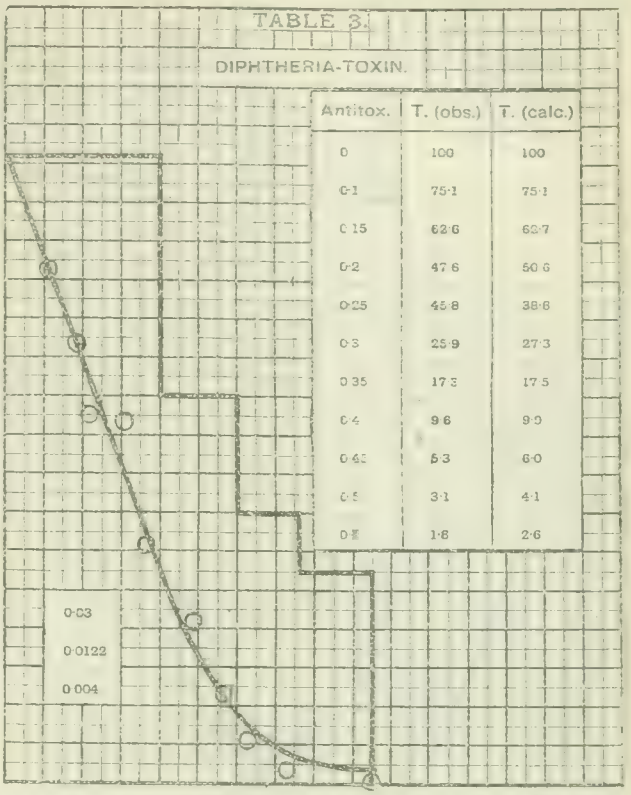
The corresponding examination of the diphtheria poison was much more difficult, as it required animal experimentation, but became easier after Dreyer and myself had succeeded in finding a poison, of which the toxin alone (without addition of antitoxin) regularly produced paralyses in guinea-pigs. Hereby one of the chief reasons to assume a difference between toxon and toxin disappeared. In examining the combination of this diphtheria toxin with antitoxin it was found that it could be expressed by a curve quite like the tetanolysin curve, and that it could be calculated after the same formula. This applied to the fresh poison. When it was examined again after some time it had become weaker, and certain irregularities in the beginning of the curve were found, which I interpreted as due to a formation of prototoxoid. If such had been the case this phenomenon ought to have been much more pronounced when the toxin was examined in a later stage of deterioration. But when the toxin was again examined, after a period of one year, there was found quite a regular curve without the slightest trace of prototoxoid. At the same time Arrhenius proposed a better method for the calculation of the toxicity, and by means of this we have examined three different diphtheria toxins, one of these in different stages of deterioration. They all showed that by means of the improved manner of calculation the irregularities mentioned disappeared, and the data showed throughout correspondence with the above-mentioned formula, and afforded regular curves without indication of the presence of a prototoxoid. As example, I quote the data for the last-mentioned poison after it had lost over one-half of the toxicity. The correspondence between the calculated and the observed values is quite satisfactory. As usual the curve represents the calculated, the circles the observed values.

In this conception you see that there is no reason to consider the diphtheria poison as a highly complicated body; the difference between Ehrlich's conception and ours will be easily recognized by observing the figure, where Ehrlich has given his spectral representation of one of our neutralization curves. (Table III.) We find here the same thing as in the tetanolysin curve: that the more data are obtained the more we get the impression of a regular curve instead of the "stair step" curve of Ehrlich. The examination of these three diphtheria poisons showed that their constants of dissociation were rather different: 0.03, 0.0122, and 0.004; because of this different degree of dissociation the neutralization curve of the first toxin was rather deflected, while the last (that figured) is very nearly a straight line. Our investiga-

TABLE 3.

DIPHTHERIA-TOXIN.

Antitox.	T. (obs.)	T. (calc.)
0	100	100
0·1	75·1	75·1
0·15	62·6	62·7
0·2	47·6	50·6
0·25	45·8	38·6
0·3	25·9	27·3
0·35	17·3	17·5
0·4	9·6	9·9
0·45	5·3	6·0
0·5	3·1	4·1
0·6	1·6	2·6

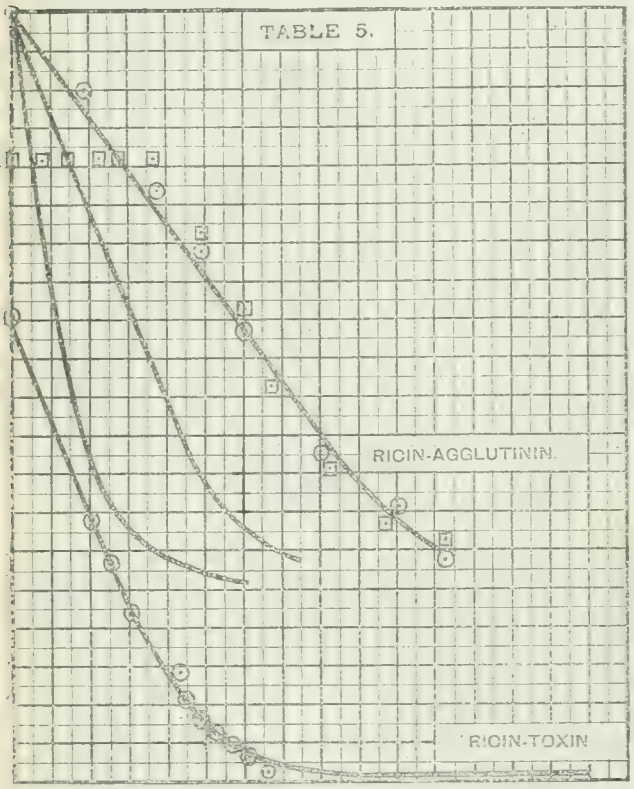


tion explains a point of certain interest, that is concerning the influence of the formation of toxoid upon the neutralization curve. Ehrlich maintains that the avidity between diphtheria toxin and antitoxin is strong, and that the combination is parallel to that of a strong base and a strong acid, that is, is a straight line, and that, if deviations occur, they are due to the influence of toxoid. We have examined the neutralization curve of a particular toxin at three different periods; the last time the toxicity was about one-half of its first value. We found that the antitoxin-fixing power of the poison was the same, in spite of the weakening of the toxicity, and that the curves in each of the three cases could be calculated by the same formula and by the same constant of dissociation. This seems to indicate a formation of toxoids (syntoxoids, in the terminology of Ehrlich) with reduced toxicity but unchanged power to combine with antitoxin. But the formation of toxoids proved—in this case—to have no influence upon the form of the neutralization curve. This was in all cases exactly the same. In our paper concerning this subject we will enter more into the theoretical explanation of this phenomenon.

The neutralizing curve of a third body—ricin—has been examined by Walbum and myself, both its agglutinating property upon erythrocytes and its toxicity upon guinea-pigs. The neutralization curve of the ricin agglutinin was examined three times with the same antitoxin in different stages of deterioration; it could be calculated after a formula similar to those of the tetanolysin and the diphtheria toxin. Table IV shows the correspondence between the calculated and the observed values; the curves give the graphical representation. Approximately the same applies to the ricin-toxin as indicated by the table (IV) and the curve (Table V). The correspondence between the observed and calculated values is exceedingly close, when it is taken in consideration that they are obtained from animal experimentation. Of interest is the fact that we also found with ricin certain phenomena which, in Ehrlich's sense, would be interpreted as indicating the presence of toxons. When the antiricin is added

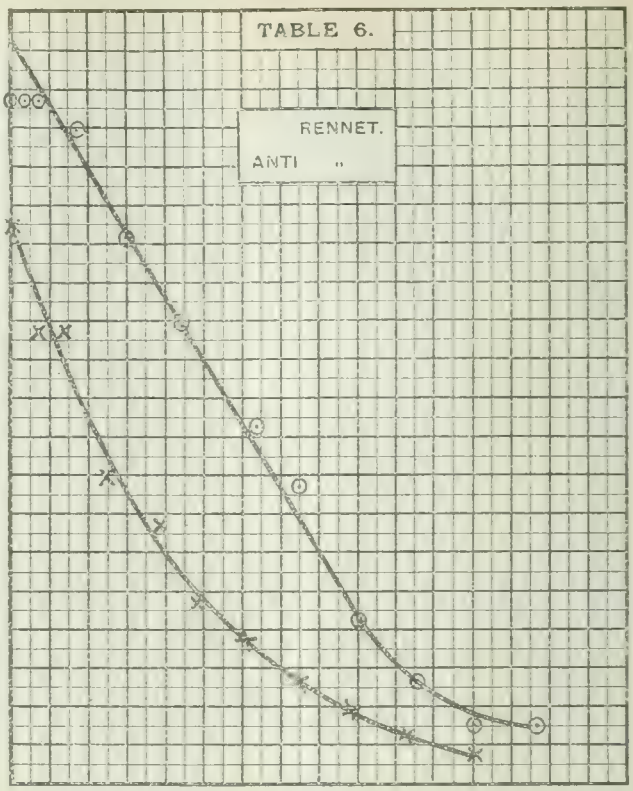
TABLE IV.—*Ricin.*

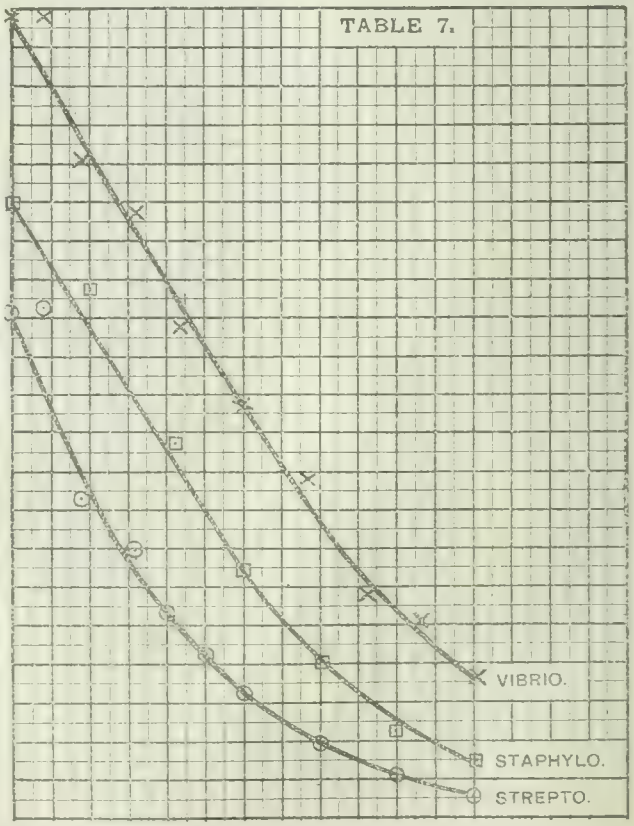
Agglutinin.			Toxin.		
Antitoxin.	5 (obs.).	5 (calc.).	M. Antitoxin.	M. Calc.	5 (obs.)
0.0	4.54	4.54	0.0000	0.00000	40.65
0.1	4.00	3.90	0.0100	0.00991	25.00
0.2	3.33	3.26	0.0125	0.01170	21.00
0.3	2.86	2.64	0.0150	0.01570	17.00
0.4	2.00	2.02	0.0200	0.01980	12.00
0.5	1.25	1.42	0.0225	0.02260	9.00
0.6	0.72	0.88	0.0250	0.02490	7.00
0.7	0.54	0.50	0.0275	0.02770	5.00
0.8	0.32	0.29	0.0300	0.01950	4.00
			0.0325	0.03180	3.00
			0.0350	0.04190	1.00



The plain agglutinin curves refer to the degenerated toxin.

there is a long zone between the amount, which leaves one fatal dose unsaturated, and that which prevents the last traces of toxic action. And such a mixture has in common with diphtheria "toxons" the property that they produce an œdema which disappears without necrosis, whilst necrosis is always observed after the injection of small amounts of ricin alone. But that these mixtures really contain free ricin can be demonstrated by the injection of a very large amount (ten times) of the mixture. Then the animals will die with symptoms of a typical ricin-intoxication—although these occur more slowly than usual. In this case it is much more evident than in the case of diphtheria "toxons," that the difference between toxin and toxon is only of a quantitative and not of a qualitative nature. As a matter of convenience we shall use this term "toxons" to shortly designate such mixtures with "toxon" action. Both in the ricin and diphtheria curve we find that in the last part the observed values lie under those calculated. We do not have a perfectly satisfactory explanation of this phenomenon. It is probably closely related to the difference between the action of toxin and toxon. Possibly the explanation might be ascribed to a decrease in the rate of reaction of the toxin, due to the presence of antitoxin or the toxin-antitoxin combination, so that the absorption in some way is retarded. That the rate of reaction between toxon and antitoxin is really much retarded in the presence of antitoxin I have directly shown



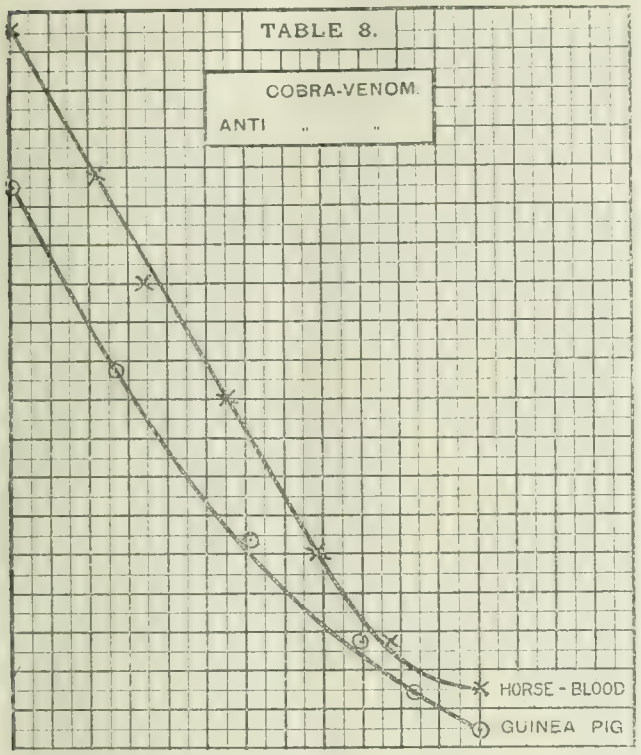


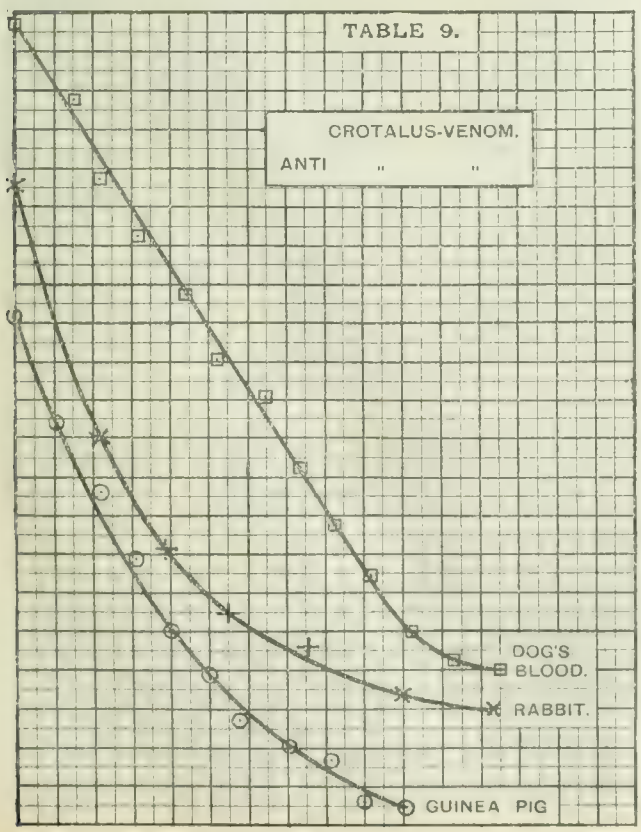
for tetanolysin. I was also able to show that the rate of reaction between "toxons" of the tetanolysin and the erythrocytes was much slower than in the case of the toxin,

and Dreyer demonstrated that the "toxons" of the diphtheria poison were fixed much more slowly in the organism than the toxin.

Furthermore, Walbum and I have examined the neutralization curves of several other bodies and their antibodies: the rennet (Table VI), the vibriolysin, the staphylolysin, and the streptolysin (Table VII).

In each case these show that the combination with the corresponding antitoxin follows the previously mentioned rule, and to avoid tiresome repetition I shall only refer to the curves. The same applies to a series of investigations of Dr. Noguchi and myself, concerning the anti-effect of different specific antivenoms upon their venoms. The research included both the toxic and the haemolytic substances. The chart represents a few of the curves.





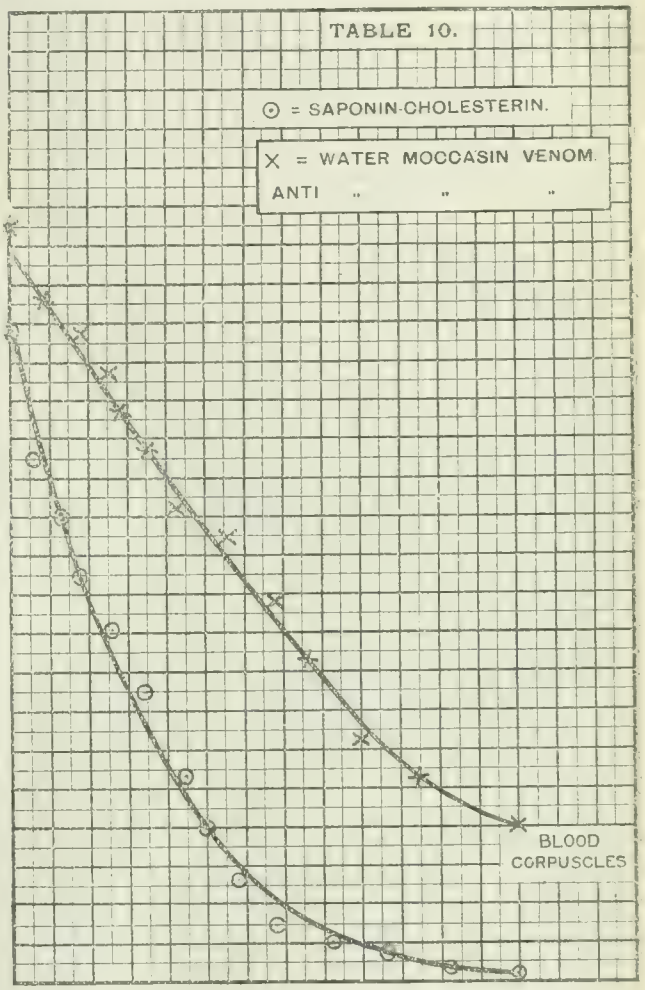


Table VIII. The neutralization curve of Calmette's antivenom upon cobra venom, measured upon guinea-pigs and also on horse erythrocytes.

Table IX. The neutralization curve of anticrotalus venom upon crotalus venom; determined by dog's erythrocytes, rabbits, and guinea-pigs.

Table X. Antimoccasin venom tested upon dog's erythrocytes.

Furthermore, Dr. Noguchi and I have tested the antihaemolytic action of cholesterin upon saponin. (Table X.)

When we look through these curves we get the general impression that we have to deal with the same phenomenon throughout, and certainly in all cases the correspondence between the calculated and the observed values has been quite satisfactory. But within this general scheme many variations in the details are found, into which it is not possible to enter at the present time. For example, the constants of dissociation show a great difference, so that the curves present varying degrees from an almost straight line (very small constant of dissociation)—cobra venom and certain diphtheria poisons—to the highly dissociated curve of the tetanolysin (with a great size of the constant) A comparison of the neutralizing phenomena of this whole series of different toxins throws light upon many obscure points, which we were unable to explain when only one single toxin was

taken into consideration. For example, the apparently great difference between the toxon and toxin in the case of diphtheria poison became much smaller for the ricin, and almost disappeared in the case of tetanolysin and other lysins.

In opposition to our views there have been raised objections from Ehrlich's school and from Ehrlich himself, who still maintains his theory as being correct in all of its details. For want of sufficient time I shall not enter fully into the details of this polemic, but shall confine myself to touching only on a few points. Ehrlich maintains that in founding our theory we have selected from numerous curves only a few as suitable for our calculations, and that the others might possibly show considerable deviations. With regard to this, I should like to emphasize that for each of the rather numerous poisons which we have examined up to the present time, we have very many curves all corresponding, and that the cyphers are becoming more and more regular as our technique improves. And, indeed, of all the poisons examined, only one, the botulismus toxin, shows different phenomena.

One of the chief objections is the following: If we are right in applying the mass-action law to the toxin-antitoxin combination, then this action ought to be reversible, that is, it might be again split up into its components.

Now v. Dungern and Sachs, in continuation of similar experiments of Bordet and Danysz, have shown that the neutralizing action of a certain amount of antitoxin upon a certain amount of toxin is smaller when the toxin is added in small fractions than when added at once; this fact is interpreted by these authors as follows:—The toxins contain bodies with weak avidity—the epitoxonoids—which combine with the antitoxin. When a small amount of toxin is added to the antitoxin then its epitoxonoids form a combination with the antitoxin: after a short time this combination is so stable that it cannot be split by the addition of more toxin. In the opinion of v. Dungern and Sachs this proves that the toxin-antitoxin combination is not a reversible process, and that we therefore have not the right to apply the mass-action law to it. The experimental facts stated and all the problems connected with them are at the present time being examined at our Institute, and before our investigations are finished and we have the whole data, including especially the rate of reaction, quantitatively determined, I shall not put forward the explanation which seems to us to be the most probable. I shall confine myself to the remark that even if it should be found that the toxin-antitoxin combination in some cases through some secondary process should become fixed, still, notwithstanding this, the process at the moment of primary combination does follow the mass-action law. We can illustrate by several examples that it is really possible to split the combination toxin-antitoxin into its components. We must imagine that in a given mixture of toxin and antitoxin there exists an equilibrium between the free toxin, the free antitoxin, and the combination toxin-antitoxin. If by the elimination of the free toxin or the free antitoxin this equilibrium is destroyed, it must be re-established by the dissociation of the combination until a new equilibrium is obtained. Walbum and I have proved this to be the case for the ricin-antitoxin combination. If such a combination which contains only a minimal amount of free ricin and antiricin is shaken with red blood corpuscles—these absorbing the free ricin—it is possible to remove several minimal lethal doses, and at the same time the rest of the fluid distinctly shows antitoxic properties. In this case the combination was dissociated by the elimination of the free toxin. Danysz showed that similar results were obtained when the antitoxin was destroyed by some proteolytic ferment; by this proceeding he could render a non-toxic mixture of ricin and antiricin toxic. In the same connexion the experiments of Wassermann and Bruck might be mentioned. These workers showed that a mixture of tetanus toxin and antitoxin which did not produce tetanus when injected in the hind limb of a control guinea-pig, did produce tetanus when the animal had previously received a local injection of adrenalin. Hans Meyer and Ransom have demonstrated that the antitoxin is chiefly absorbed through the vascular system; in the above case the vessels are constricted by the adrenalin, while the toxin is being absorbed through the nerves, which are not influenced by this body. The value of this experiment is, however, somewhat reduced, as we lack sufficient data concerning the rate of reaction between tetanus spasmin and its antibody.

I shall briefly mention some experiments I have made, together with Famulener and Walbum, concerning the staphylolysin. When this is heated to 70° C. it loses a great deal of its toxicity, but when heated five minutes at 100° the toxicity almost completely returns. The heated toxin combines with the antitoxin as well as the unheated, and when by the boiling of a neutral mixture of toxin and antitoxin the antitoxin is destroyed, the toxicity returns.

Having quoted these examples to show that it is really possible to split the toxin-antitoxin combination and that this is dissociable, I shall touch upon the last publication from Ehrlich's school, namely, that of Morgenroth. As Morgenroth has not yet published the details of his experiments, I shall offer no criticism, but simply mention some interesting facts which he brought out. Dreyer and I had shown that certain mixtures of diphtheria toxin and antitoxin had different actions upon rabbits and guinea-pigs. A mixture which acted upon rabbits (that is, killed in a few days), acted only as toxon in guinea-pigs (that is, produced only paralysis), and a mixture with a little more antitoxin acted as toxin upon rabbits but was quite without action upon guinea-pigs. Now Morgenroth states that this difference is only present when the fluids are injected a short time after the mixture, but that it disappears when they are allowed to stay for a long time, such mixtures having then quite the same effect upon both kinds of animals. These results are in full harmony with the conception of Arrhenius and myself, and the difficulties presented by the supposed difference really have a simple explanation. The fact is that Morgenroth's highly important and very interesting experiments show that the avidity of the diphtheria toxin to the anxtitoxin is small, and that the reaction takes a long time to be completed. This forms the strongest contrast to what Ehrlich hitherto maintained. He has always with great force insisted as a fundamental fact that the combination between the two bodies showed a great avidity and was complete in only a few minutes; further, that it was like the combination between a strong base and a strong alkali, straight-lined (vide supra). Therefore, he held, we could not be right when we conceived the combination between the two bodies to show a comparatively small avidity and to be expressed by a hyperbolic curve. Now Morgenroth's experiments have proved that the rate of reaction between the diphtheria toxin and the antitoxin is very slow. He even seems to find it necessary to keep the fluid first a day at room temperature and then an hour at 37° before he considers the reaction to be finished. Thus he has really put forward a splendid proof for the validity of our theory.

In this toxin-antitoxin discussion there has been a tendency to assign to us the position of "unitarians" in contradistinction to the "pluralist." I should like to emphasize that this is not the case. Like every one who has entered into the extended field of the immunity investigation, we have recognized how complicated matters are, and how many different bodies we have to deal with. The greater our experience becomes the more we realize that manifold forces are present, decreasing or increasing the reactions, or influencing them in otherwise. But in the midst of all these complicated processes it is extremely important to select such phenomena, whose laws appear to be within our grasp, to study their possible exceptions as a basis for new lines of investigation concerning secondary or intermediary processes. It must be our purpose so far as possible to bring our results in conformity with known natural laws, but it seems to be a rather dangerous principle to explain every new phenomenon we meet by the assumption of the existence of a new body.

Certain examples show this. It was above mentioned how the interpretation that some irregularities in the diphtheria curve indicated the existence of prototoxoids was proved to be erroneous by further experimentation. Walbum and I very often observed similar irregularities in the ricin-agglutinin curves. Table V shows two neutralizing curves, made within an interval of few hours, with the same ricin, antiricin, and blood; the one presents a typical prototoxoid phenomenon, while the other curve is completely regular. Irregularities of quite the same kind were observed in the rennet-antirennet curve. This seems to indicate that the prototoxoid phenomenon does not depend upon a special constitution of the toxin, but perhaps on certain conditions in the medium. Again, in the first tetanalysin experiments the following remarkable difference between the toxon and the toxin was found. Whilst the toxin was able to dissolve the erythrocytes at all temperatures between 0° and 37°, this was not the case with the "toxons"; even the largest amounts of such a toxin-antitoxin mixture were quite unable to produce haemolysis at low temperatures. Thus here was a strong

argument for the differentiation between the toxin which was able to dissolve at a low as well as at a high temperature and the toxon which required elevated temperatures—that is, above 10°. This difference thus appeared to be a qualitative and not only a quantitative one. However, our theory affords a very simple explanation. As the toxin-antitoxin combination is partly dissociated, and as the degree of dissociation increases very much with rise of temperature, it is easy to understand that in a mixture which at a low temperature contains no free lysin, at a higher temperature there is liberated through increased dissociation a certain amount of lysin.

As previously mentioned, Dreyer and I have shown the different action of certain diphtheria toxin-antitoxin mixtures—"toxons"—upon rabbits and guinea-pigs. In accordance with his whole view Ehrlich explained the peculiarity that the "toxon" has acute killing properties by the assumption of two different kinds of toxon, thus introducing the conception of a new body—the toxonoid. According to his view at that time, the crude diphtheria poison consisted of proto-deutero-trito-toxin, the toxon (which produces acute death in rabbits but only paralysis in guinea-pigs), the toxonoid (non-toxic for guinea-pigs, producing paralysis in rabbits), and (the quite non-toxic) epitoxonoid. A short time afterwards his own collaborator, Morgenroth, as mentioned, showed that the difference between toxon and toxonoid disappeared when the rate of reaction was taken into consideration, and thus offered a very simple explanation of the phenomenon. This example shows how easily Ehrlich's conception might lead us into error. When carried out in all its consequences we ought to suppose an unlimited series of toxins with different toxicities and different avidities to the antitoxin. Our statement that the rate of reaction—avidity—of the toxin decreases as antitoxin is added furnishes an explanation, founded upon the much simpler supposition of the existence of only one toxin. But of course we do not in the slightest way object to the idea of more kinds of toxins, if such should really afford the simplest solution of the problems. At the present time the main question seems not to be if toxons exist or not, but if we are right in our general view of the process of toxin-antitoxin combination.

In the foregoing I have almost exclusively dealt with the toxin-antitoxin question; but before finishing I shall give a few examples to illustrate the applicability of physical chemistry to the whole theory of immunity. Thus Arrhenius has employed the laws of this science to the study of the absorption of agglutinins by bacteria, and the absorption of the haemolysins can doubtless be studied after similar principles. In a former paper I have shown that the disappearance of different antibodies from the actively and passively immunized organism can be expressed by a simple formula, which includes the usual formula of the rate of reaction.

TABLE XI.—*Decrease of Antibodies in the Organism.*

$$\frac{dx}{dt} \cdot \frac{1}{x^{M+1}} = K$$

Goat, Pass. Immun.			Man. Typh. Fever.		
t	$\frac{1}{x}$ obs.	$\frac{1}{x}$ calc.	t	$\frac{1}{x}$ obs.	$\frac{1}{x}$ calc.
0	0.0011	0.0011	0	0.017	0.017
0.3	0.0018	0.0019	2	0.020	0.020
1	0.0030	0.0030	6	0.028	0.028
3	0.0048	0.0050	10	0.040	0.037
5	0.0060	0.0064	15	0.060	0.053
8	0.0080	0.0080	20	0.085	0.074
11	0.0100	0.0093	27	0.100	0.110
15	0.0110	0.0110	35	0.150	0.170
			42	0.250	0.250

The concordance between the observed and calculated values is obvious from Table XI. The first series shows the values derived from a goat, passively immunized by Jörgensen and myself. The second is from a more extended research by Jörgensen, and demonstrates how closely the disappearance of the typhoid agglutinin during an attack of typhoid fever in man follows the said formula.

A problem, which now requires a thorough investigation is the study of the rates of reaction. The importance of this is now becoming more and more obvious. Together with Noguchi and Walbum I have taken the first steps toward the study of its relations to the temperature for a series of toxins and related bodies. We found that the rate of reaction as a rule increased with increasing temperature after quite the same formula, which applies to the known chemical phenomenon—

$$\frac{C_1}{C_2} = e^{\frac{\mu}{R}\frac{(T_1 - T_2)}{(T_1 T_2)}}$$

where C_1 and C_2 are the concentrations at the temperatures T_1 and T_2, e the base for the natural logarithms, $\frac{\mu}{R}$ a constant and T_1 and T_2 the absolute temperatures.

TABLE XII.—*Temperature and Rate of Reaction.*

$$\frac{C_1}{C_2} = e^{\frac{\mu}{R}\frac{(T_1 - T_2)}{(T_1 T_2)}}$$

Coli Agglutinin.			Vibriolysin.		
Tp.	$\frac{1}{c}$ obs.	$\frac{1}{c}$ calc.	Tp.	$\frac{1}{c}$ obs.	$\frac{1}{c}$ calc.
41.9°	0.000085	0.000084	39.8°	0.03	0.03
36.7°	0.0001	0.0001	35.4°	0.042	0.043
30.7°	0.00018	0.00014	29.5°	0.07	0.073
25.9°	0.0002	0.00017	25.3°	0.1	0.104
19.4°	0.00023	0.00023	20.1°	0.17	0.17
15.9°	0.000275	0.00027	15.6°	0.03	0.25
12.0°	0.00033	0.00033			

Our investigations include the haemolytic action of the acids and alkalies, vibriolysin, streptolysin, ox-blood haemolysin, the agglutinating power of ricin and $HgCl_2$ upon erythrocytes, the precipitating action of egg albumen precipitin, the agglutinating action of coli and typhoid agglutinins. It was found that in general these quite different processes follow the mentioned formula. Table XII shows an example of the correspondence between observed and calculated values.

Finally, I shall give a proof how the methods of physical chemistry can be used upon a quite different subject, the weakening of the poisons. Famulener and I found that the weakening of the vibriolysin by heat follows the laws of the monomolecular reactions (the same as applies to the sugar-inversion)

$$\frac{dx}{dt} = K(A - x)$$

where A — x is the concentration of the toxin at the time t, K is a constant and A the concentration at the beginning of the experiment. Table XII shows how close the concordance is between observed and calculated values. Recent investigations of Arrhenius and myself seem to indicate that the deterioration of the diphtheria toxin by standing is also a continuous process and follows this rule. Thus it is not a weakening following simple proportions (to $\frac{1}{2}$ or $\frac{1}{4}$ of the original toxicity) as supposed by Ehrlich.

TABLE XIII.—*Vibriolysin. Weakening at 48° C.*

$$\frac{dx}{dt} = K(A - x).$$

Time.	T. (obs.)	T. (calc.)
M.		
[illegible]	100	104
5	67.8	67.9
10	47.0	44.4
15	[illegible]	29.0
20	[illegible]	18.9
25	[illegible]	12.4
30	[illegible]	8.1
35	[illegible]	5.3
40	[illegible]	3.4
45	[illegible]	2.3

These few examples will, I hope, give the impression that many problems will prove to be much simpler and clearer when treated in the light of physical chemistry. And certainly this science, which allows us to work with relative values, will be one of the means to aid us when analytical

chemistry fails. No doubt many of our present ideas will undergo changes and may have their places taken by more complete conceptions as knowledge progresses, but I feel sure that we have made some advance towards that end which will place the investigation of the problems presented by the facts relating to immunity in the roll of exact sciences.

V.—C. J. MARTIN, D.Sc., M.B., F.R.S.,
Director, Lister Institute of Preventive Medicine.

No apology is, I think, necessary on behalf of those of us who have worked at the subject of snake venoms on account of its intrinsic interest. The fact that these reptiles are endowed with a poison of such potency that in some cases 0.000025 g., or even one-tenth of this quantity, if introduced intravenously, will speedily destroy a rabbit of 1 000 grams weight, is in itself worthy of attention, both from a general biological and a pharmacological point of view. The toxicity of the most powerful venoms thus far exceeds that of the most potent alkaloidal poisons known.

I will not enter into the consideration of the chemical composition of venoms further than to point out that they consist for the most part of solutions of modified proteids, varying between 20 to 35 per cent. in strength, and that so far the attempts which have been made to separate the toxic principle from such proteids, as, for instance, has been accomplished by Jacoby[1] and Hausmann[2] for ricin abrin, have hitherto been unsuccessful.

Accordingly, at the present time, one must regard such toxic principle as residing in some special grouping of a portion of the atoms in the complex venom proteid molecule, although it is possible that this is a side chain, and may be ultimately capable of differentiation as a separate entity. Venoms are by no means simple solutions of one poisonous substance, but the more they have been studied the more complex have they been shown to be. The analysis of their physiological actions has proved them to be made up of a great many more constituents than would be imagined from their chemical examination.

Different venoms have been found to contain one or more of the following:

1. A powerful fibrin ferment. (Lamb, Martin.)
2. A neurotoxin with in many cases a special affinity for the cells of the respiratory centre.
3. A neurotoxin with an affinity for nerve endings in muscle and those in the diaphragm in particular.
4. Various cytolysins, for example, for red blood cells, endothelium of vessels, leucocytes, nerve cells, and the cells of many other tissues. (These cytolysins are distinct for each cell, and are of the nature of amboceptors.—Flexner and Noguchi.)
5. An antibactericidal body. (Welch and Ewing.) (These are of the nature of anticomplements.—Flexner and Noguchi.)
6. An antifibrin ferment. (Cunningham. Lamb.)
7. Agglutinin for red blood cells, etc. (Weir Mitchell and Reichert, Flexner and Noguchi.)
8. A proteolytic ferment. (Weir Mitchell, Flexner and Noguchi.)
9. A substance which causes systolic standstill of the isolated heart. (Elliot.)

Nearly all venoms contain a neurotoxin, and the rapidly fatal action of some venoms is due either to this constituent causing respiratory paralysis, or to the action of the fibrin ferment producing intravascular clotting.

No venom yet studied is possessed of all the above actions, and the dissimilarity in the effects produced upon man and animals after poisoning with the venoms of different snakes is due to the proportions in which the different groups of toxic substances occur in the particular venom.

Some years ago, in a not unnatural striving after unity, I expressed the opinion that all these constituents with the same physiological action, which may be found in different venoms, might indeed be identical.

My reasons for this view were: (1) The similarity of the action of the neurotoxin, say, of cobra and *Hoplocephalus curtus* (an Australian snake), or of the fibrin ferment in the poison of *Hoplocephalus pseudechis* or *crotalus*. (2) The repeated assertion of Calmette that the antiserum against one species of venom was equally powerful against others. Recent experiments by Cunningham, Lamb, Tidswell, Flexner and Noguchi, Kyes, Rogers, and myself have, however, led me to the conclusion that many of these constituents from different venoms, even when incapable of being differentiated by their physiological action, can be so differentiated by the inability of antiserum prepared by one venom to combine with the toxin in another venom; or, expressed in terms of Ehrlich's interpretation, that, although the toxophoric group may be similar, the haptophor is dissimilar.

It is not, however, on account of its intrinsic interest that I wish to draw your attention to the subject of snake venoms to-day, but because, owing to the analogy which has been found to exist between venoms and the toxins elaborated by some organisms, the results of experiments with snake poison have taken a not unimportant part in the development of our knowledge of immunity.

The full strength of the analogy was demonstrated in 1894, when almost simultaneously Calmette and Phisalix and Bertrand published the fact that by continued treatment of an animal with injections of venom they had been able to produce an antitoxic serum. This observation was confirmed by Fraser in 1896. Since then, principally owing to the energy of Calmette, antivenene has taken its place as one of the most satisfactory of antitoxic serums for the treatment of poisoning by quite a number of snakes. There is, however, an important point in connexion with the therapeutic value of antivenenes which is in a very unsatisfactory condition—namely, how far are they specific?

Calmette has frequently emphatically stated that they are not specific, but this has not been found to be the case by Cunningham, Kanthack, Lamb, Tidswell, Rogers, Flexner and Noguchi, and myself, working with a variety of venoms and antivenenes prepared from a single kind of venom.

In a recent paper Calmette[3] goes so far as to admit that there are two poisonous constituents in some venoms, namely, a neurotoxin and a haemorrhagin (Flexner), and that the antitoxic serum prepared by injecting cobra venom is, as shown by Flexner, without action upon this haemorrhagin. He states further that one can easily obtain polyvalent antivenenes by vaccinating animals simultaneously with a strongly neurotoxic poison, such as cobra venom, and with a venom rich in haemorrhagin, such as that of the vipers *Daboya Russellii* or *lachesis*.

In support of this conclusion he says that "the serums obtained by vaccinating horses exclusively with the venom of the cobra is distinctly (*nettement*) antitoxic with regard to all the neurotoxins of other venoms." He gives no safer data, and I feel in some doubt as to the precise meaning of this statement. In the same communication he makes the further statement that the serum prepared in Sydney by Tidswell "destroys very well *in vitro* the venoms of the two Australian snakes *Hoplocephalus* and *Pseudechis*."

Now, this is the very opposite of the facts described by Tidswell, and which I have been able to confirm. It was with the object of determining this question of specificity that Tidswell immunized a horse with the poison of *Hoplocephalus curtus*. He ultimately procured a serum 0.4 c.cm. of which neutralized 10 M.L.D. for 1,000 g. rabbit of the same poison, but 4 c.cm. (10 times the quantity) produced no appreciable effect upon 10 M.L.D. of the venoms of three other Australian snakes, which were all colubrines, and two of them belonging to closely-allied genera to *Hoplocephalus*. The physiological action of the poisons of these two—*Pseudechis* and *Dimenia*—is absolutely similar to that of *Hoplocephalus*.

Lamb[4] has also made a long series of careful experiments bearing upon the question of specificity. He used a serum which he procured by immunizing horses with pure cobra venom and Tidswell's serum against *Hoplocephalus* poison, and tested these against 10 M.L.D. of the following venoms: *Naja tripudians*, *Naja bungarus* (king cobra), *Bungarus coeruleus*, *Bungarus fasciatus*, *Enhydrina valakadieri*, *Daboya Russellii*, *Hoplocephalus curtus*, *Echis Carinata*, *Trimeresurus gramineus*, *Crotalus adamantus*.

Using quantities of these serums from 4 to 10 times those necessary to neutralize 10 M.L.D. of the particular poison by injections of which the serum had been produced he obtained no delay in time of death; 15 times this quantity of anti-cobra serum caused delay in time of death when mixed with the venom of king cobra, and was sufficient to prevent the death of the animal when mixed with the venom of *Enhydrina Valakadieri*.

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[1] Weber die Chem. Natur des Ricins, *Arch. exp. Path.*, 1901, 46, 28.
[2] Für Kenntniss des Abrins, *Hofmeister's Beiträge*.

[3] *Comptes Rendus de l'Acad. des Sciences*, 1904.
[4] *Scientific Memoirs of Officers of Medical Departments, Government of India*, 1903, No. 3, p. 33, the Poison of Russell's Viper; 1903, No. 5, Specificity of Antivenomous Sera; 1904, No. 7, p. 20, the Poison of the Banded Krait, *Bungarus Fasciatus*; 1904, No. 10, Specificity of Antivenomous Sera (second communication).

Rogers's[5] results with Calmette's antivenene indicate a less rigid specificity for serums, but it must be remembered that this antivenene is made by vaccinating with a mixture of venoms. It appears that in all cases the serums are not absolutely specific, but neutralization may sometimes be accomplished by greatly increased quantities of a heterogeneous serum.

The question of specificity can very well and conveniently be studied in regard to haemolysin, which is present in almost all venoms; and this has been done by Stephens, and quite recently in a very careful manner by Lamb.

Stephens,[6] using an antivenene of Calmette's prepared by injecting horses with the venoms of *Naja haje* 80 per cent., *Bothrops lanceolatus* 10 per cent., *Crotalus* 10 per cent., concludes that the haemolysin of a variety of venoms can be neutralized by an antivenene made by vaccinating horses with snake poisons other than those used in the experiments, but that its antihaemolytic power is by no means equal against the different venoms.

Lamb[7] has tested the antihaemolytic power of the serum of a horse immunized with pure cobra poison against ten different venoms, and finds that whereas with a M.H.D. of cobra venom haemolysis is prevented by 0.03 c.cm. of serum, thirty times the quantity of serum had *no* effect on the M.H.D. of *Bungarus fasciatus*, *Hoplocephalus curtus*, *Vipera Russelii*, *Echis carinata*, *Trimeresurus gramineus* or *Crotalus adamantus*, and that the M.H.D. of *Bungarus coeruleus* required twenty times this quantity of serum. With *Naja bungarus* and *Enhydrina Valakadieri* nearly complete haemolysis took place with 1 c.cm. of serum, that is, 30 times the quantity adequate to prevent solution of the corpuscles by a M.H.D. of cobra venom.

Larger antimultiples were not tried. These experiments are in some details in apparent contradiction to those of Stephens, but it must be remembered that Lamb refers to an antivenene produced by the injection of a single venom and Stephens by a mixture.

These experiments show that the haemolysins are largely specific, and that for the purpose of serum therapeutics one must not assume identity from similarity of physiological action.

Megatheriolysin and tetanolysin both dissolve corpuscles. This subject of specificity is too large a one to enter into more fully at the present time. The differences are as to fact, and can only be determined by evidence adduced. In fairness to the other observers quoted I must say, however, that I have never been able to discover in the publications of Calmette the account of any experiment giving quantitative data which has convinced me of the accuracy of his contentions.

From the evidence available I am of opinion that, notwithstanding identity in physiological action in the constituents of different venoms, the antibodies produced by their injection into animals are to a high degree specific.[8] Exceptions for the individual constituents do undoubtedly occur, as shown for haemolysins by Stephens and Flexner and Noguchi who found that the antibody produced by the injection of *Crotalus* serum was effective against the haemolysins of all venoms they experimented with.

For researches of theoretical importance in connexion with the relationship of toxins and antitoxins venoms possess an advantage over bacterial toxins owing to the fact that in a chemically dry condition they are perfectly stable. They are, moreover, fairly stable in watery solution if kept cold, and in most cases can be heated to 70° C. or even boiled without being destroyed. Further, most venoms contain a haemolysin which permits of experiments being conducted in test tubes instead of with animals, thereby greatly increasing the accuracy in all quantitative determinations, both by doing away with an insensitive end point (namely, the death of a guinea-pig) and permitting of a much larger number of determinations being made than would be practicable in animal experiments.

The nature of the antagonism between toxins and antitoxins was the subject of controversy during the first few years subsequent to the discovery by Behring of the principle of serum therapeutics.

Behring Kitasato and Ehrlich were of opinion that the antagonism was of chemical nature and that the antitoxin neutralized the toxin much as an acid is neutralized by an alkali. In 1894 Ehrlich, Kossel, and Wassermann[9] made the important observation that the neutralization occurred according to the simple law of proportion (law of multiples) which indicated a simple chemical relationship between the two. Buchner[10] found this unconvincing and took the contrary view that the toxin was not directly destroyed by the antitoxin, but that the latter operated in some way upon the cells of the animal so as to render them insusceptible to the poison—strongly supported by Roux.

In support of his view he stated that a mixture which failed to kill mice was fatal to guinea-pigs, and quoted a statement of Behring's that an animal which in process of immunization against tetanus had become hypersensitive to the poison, nevertheless afforded an immune serum of high degree.

At the Eighth International Congress of Hygiene and Demography, 1894, as the strongest evidence in support of his view, etc., Roux[11] communicated some results of Calmette's with snake venom and antivenom. Calmette used cobra poison and his newly-discovered antivenene. The former is unaltered by heating to 68° C. for ten minutes, but the antivenene is destroyed by this treatment. Mixtures of cobra poison and antivenene were allowed to remain together ten minutes and injected into rabbits. The rabbits showed no symptoms. Similar mixtures but heated to 68° for ten minutes prior to injection killed rabbits of the same weight in a few hours. From his experiments Calmette concluded that the toxin of snake venom does not interact with its antitoxin *in vitro* but only *in corpore*, and that the neutralization of toxin by antitoxin is not to be accounted for by a chemical operation between the two. Subsequently somewhat analogous experiments were made by Wassermann[12] with pyocyaneus, and by Marenghi[13] with diphtheria, which yielded similar results to those of Calmette.

In 1896 a highly important contribution to the immunity question was made by Fraser.[14] This observer used cobra venom and an antivenene which he obtained by immunizing rabbits against this poison. Having confirmed the fundamental results of Calmette, and having shown that after the first M.L.D. the law of multiples discovered by Ehrlich, Kossel, and Wassermann was valid for venom and antivenene, he proceeded to investigate the influence upon the result of varying the conditions under which both the venom and antivenene were administered. He made four series of experiments.

1. The venom and serum were mixed together prior to injection.
2. The venom and serum were simultaneously injected under the skin of opposite sides of the body.
3 The serum was injected some time previously to the venom.
4. The venom was injected previously to the serum.

In the first series 0.25 c.cm. protected a rabbit against 1½ lethal doses. In the second series it required 3 5 c.cm. (eight times as much) to protect against 1½ lethal doses. In the third series 2.7 c.cm. were required, and in the fourth series 3 2 c.cm. were required.

Fraser pointed out that the great difference between the dose of serum required when the two substances, although simultaneously administered, are in the one case mixed together before injection and in the other not so mixed, suggests most forcibly that the antidotism is chemical and not physiological.

Another very important fact observed by Fraser was that 1 3 c.cm. of antivenene neutralized 5 M.L.D. if allowed to remain in contact twenty minutes, but failed to do so when intervals of five or ten minutes only elapsed between mixing and injecting.

As pointed out by this observer, the "resistance of tissues" theory of Buchner, Roux, and Calmette is quite incapable of explaining these results; whereas they are entirely compatible with a chemical interpretation of the reaction between toxins and antitoxins.

Notwithstanding the work of Fraser, the experimental evidence against the simple chemical interpretation advanced by Behring and Ehrlich must have seemed so convincing that

[5] *Phil. Trans.*, 1904, p. 123.
[6] *Journ. Path.*, 1900, p. 293.
[7] *Sci. Mem.*, 1904, No. 10.
[8] A want of specificity which is of scientific interest must be carefully differentiated from one of therapeutic value.

[9] *Deut. med. Woch.*, 1894.
[10] *Berl. Klin. Woch.*, 1894, p. 73, Eighth International Congress of Hygiene and Demography.
[11] *Annales de l'Institut Pasteur*, 1895, p. 250.
[12] *Zeit. f. Hyg.*, 1896, Bd. 22, p. 263.
[13] *Centralbl. f. Bakt.*, 1897, vol. xxii, p. 521.
[14] *Nature*, April, 1896, p. 569.

Proportion of Toxin to Antitoxin.		Control Venom Only.	Time Allowed for Interaction of Toxin and Antitoxin, Temp. 20° to 21° C.					
Antitoxin.	Toxin.		2 mins.	5 mins.	10 mins.	15 mins.	30 mins.	Injected unheated 8 mins.
1 c.cm.	2 fatal doses	Died 15 hours	Lived (very ill for 2 days)	Lived (ill 1 day)	Lived (no symptoms)	Lived (no symptoms)	Lived (no symptoms)	Lived (no symptoms)
1 c.cm.	3 fatal doses	Died 12 hours	Died 20 hours	Died 28 hours	Lived (ill 2 days)	Lived (ill 1 day)	Lived (no symptoms)	Lived (no symptoms)
1 c.cm.	4 fatal doses	Died 9 hours	Died 13 hours	Died 5 hours	Died 23 hours	Lived (very ill for 2 days)	Lived (no symptoms)	Lived (no symptoms)

in the opening paragraph of the latter's classical paper on ricin toxin and antitoxin[15] the following sentence is to be found: "As the original interpretation of a destruction of the poison by the antibody has been proved untenable, since it is admitted that in a physiologically neutral mixture both components are present as such, two opposing views present themselves."

1. That in the tissue fluids toxin and antitoxin do combine to form a harmless mixture.

2. Antitoxin has no action upon toxin, but operates in some way upon the cells so as to immunize them. (Roux and Buchner.)

In this paper Ehrlich showed that the agglutination *in vitro* of corpuscles by ricin could be prevented by antiricin just as the poisoning of an animal could be prevented by the injection of serum. A similar fact regarding an action *in vitro* of cobra venom had, however, been discovered a little earlier by Kanthack. Cobra venom when added to recently-shed blood inhibits coagulation (Cunningham). Kanthack demonstrated to the Physiological Society in October, 1896, that this action of cobra poison was destroyed by antivenene, but not by any other serum. This observation of Kanthack's was unpublished.[16]

A further important contribution to the subject of antitoxin immunity, in which the evidence was derived from experiments with snake poison, was made in 1898 by Stevens and Meyers.[17] This research consisted of experiments with the haemolysin of cobra poison and its neutralization by antivenene. The experiments were similar to those of Ehrlich with ricin, and the authors succeeded in proving that the antivenene neutralizes the haemolysin of cobra poison *in vitro* and that the law of multiples applied in this case also.

Simultaneously with the above researches (1897-8) the problem was attacked by Cherry and myself.[18] We used both diphtheria toxin and the neurotoxin of a snake venom in our experiments. It was conceivable that, even if toxin and antitoxin did chemically combine, as seemed a necessary interpretation of many of the facts recorded above, such combination might possibly be dissociated by a temperature of 68° C., and so explain the results of Calmette, Wassermann, and Marenghi.

To decide this point some method of separating toxin and antitoxin, when existing side by side, which could not possibly cause a loose chemical compound to dissociate, was wanted.

A few years previously[19] one of us had described a method of separating colloids from substances of smaller molecular size by filtering, under pressure, through a porcelain filter, the pores of which were plugged with gelatine.

We knew that both diphtheria toxin and the neurotoxin of the venom we were using traversed such a filter but that the antitoxin as shown by Brodie did not.[20]

Here, then, was a tool which was capable by simple physical means of effecting a separation of the two constituents if existing side by side in solution.

We mixed solutions of diphtheria toxin and snake venom with slight excess of their respective antitoxins, allowed them to stand half an hour, and then filtered through gelatine. Quantities of the filtrate corresponding to 30 to 50 lethal doses of the original solution were injected into guinea-pigs without the slightest effect.

If the toxins had remained unaffected beside their respective antitoxins, there was nothing to prevent them passing through the filter in virtue of their smaller molecular size, for when mixed with normal serum the filtrate was about three-quarters as toxic as the orginal solution. As, however, they did not pass the gelatine, we concluded that they had entered into some sort of chemical relationship with the relatively large molecules of the antitoxins during their sojourn together prior to the filtration. We then repeated the experiment of Calmette. We took mixtures containing several lethal doses of venom and sufficient antivenene, so that after standing together for thirty minutes prior to injection into a rabbit, no symptoms were produced.

Some of these mixtures we heated to 68°C. for ten minutes before injecting. This made no difference in the effect.

These results, while they were in entire agreement with the filtration experiments, seemed diametrically opposed to those of Calmette. As the experiments were so simple as hardly to leave any possibility of experimental error, we turned our attention to any differences in the conditions which obtained in the experiments of Calmette and our own. The only obvious difference was in the time the venom and antivenene had been in contact before the heating. By this time we had become impressed with the necessity of a chemical interpretation of the phenomena, in which case time, temperature, and proportion of active masses would probably exert an important influence upon the transaction.

The toxin and antitoxin of this venom are both of great molecular size and complexity. *A priori* one would expect the velocity coefficient of any reaction between such complex molecules to be a high one, and, in addition, from their great molecular weight, the solution will in proportion to the mass dissolved contain relatively few molecules; so that it is not surprising that any chemical operation in which they are concerned should, as first pointed out by Fraser, occupy a very appreciable time. The experiments, indeed, showed this very clearly.

The value of the factors time and influence of proportion of active masses, will be seen on reference to the table above, which represents the results of twenty-one experiments. On reading along any horizontal line, will be seen the influence upon the result of the time during which the toxin and antitoxin were allowed to operate upon each other, with proportion of active masses constant. On reading any vertical line the influence of varying proportions of active masses with time of operation constant is indicated. The thick line separates off the fatal results from those in which the rabbits lived. All other factors were kept constant. That is, we obtained the same results as Calmette, whenever we heated the mixture whilst it contained still one fatal dose of venom unacted upon.

Our experiments, then, not only afforded further support to the chemical interpretation of toxin-antitoxin antagonism, but we also were fortunate enough to be able to show the invalidity of the most important evidence upon which the opposite contention was based.

An observation made by Fraser (1896), and mentioned above, seems to me to have an important practical bearing upon the question of toxin-antitoxin relationship—namely, the great difference in the quantity of antitoxin required to preserve the life of an animal from the same dose of venom according to whether the two were mixed together previously

[15] *Fortschritte der Med.*, 1897, p. 41.
[16] Stevens and Meyers, BRITISH MEDICAL JOURNAL, March, 1898.
[17] *Path. Soc. Trans.*, xlix. p. 352.
[18] *Proceedings of the Royal Society*, vol. lxiii, p. 420, May. 1898.
[19] *Journ. of Physiol.*, 1896, vol. xx.
[20] *Journ. Path.*, 1897, p. 460.

to injection or injected simultaneously, but in different situations.

In 1898[21] I repeated these experiments, and extended them by making comparative observations on the efficacy of the serum:

1. Mixed together for fifteen minutes, and subsequently injected under the skin.

2. Injected simultaneously, but the antitoxin into a vein and the toxin subcutaneously.

3. Injected simultaneously but separately under the skin.

The results of these experiments led to the conclusion that about the same quantity of antitoxin which will counteract the action of the toxin if previously mixed *in vitro*, will do so when it is injected into the bloodstream and the toxin subcutaneously, whereas ten to twenty times this quantity is required when they are both placed simultaneously under the skin but in different parts of the body.

The explanation of these results is not, I think, difficult. In the case where the antitoxin is introduced directly into the circulation it is there ready to combine with the toxin as this is absorbed, so that the conditions are nearly as favourable, provided absorption is not too rapid, as when mixed together in a glass.

The great excess required when the one is injected in the right flank and the other in the left, in the light of the previous experiment, can only be explained on the supposition that the venom is much more quickly absorbed than the antivenene, so that the latter gets into the circulation in advance of the antitoxin and is fixed by the cells.

That venom is fairly quickly absorbed by the capillaries might be expected as it dialyzes. This has also been proved to be the case.[22] On the other hand, antitoxic virtue is associated with the globular traction of serum proteids,[23] and, as shown by Starling,[24] most of the capillaries are not very permeable to proteids.

These results possess a certain practical significance, namely, that if one is in a hurry to get antitoxin into the system, it should be injected into a vein. This is especially indicated with the weaker serums, but in view of the above-mentioned facts has been employed for the last six years as a routine practice with all bad cases of diphtheria in the general and children's at Melbourne, and with very encouraging results.

The neutralization of venom by antitoxin was shown by Meyers[25] to take place in a similar manner to that described by Ehrlich in his classical researches on the constitution of diphtheria poison. Meyers also found that, as is the case with diphtheria, solutions of venom diminish in strength but still require the same quantity of antivenene for their complete neutralization. It is worthy of mention at the present time that in this paper Meyers discusses the possibility of the toxin-antitoxin reaction being reversible, and points out that if such were the case it would be capable of explaining his partial neutralization results without the assumption of the multiple composition of the venom toxin he was dealing with (haemolysin), a view which has recently been strongly urged by Arrhenius and Madsen.

This assumption in itself is not, however, adequate to explain the diminution in toxicity with maintenance of antitoxin combining power which was found to gradually take place in solutions of venom.

Flexner and Noguchi[26] have made a number of very interesting experiments bearing upon toxin-antitoxin relationship by working with the venoms of American snakes (crotalus, copperhead, moccasin), and also with the blood serum of these reptiles which is itself poisonous. Some of their results I have already referred to. They succeeded[27] by means of experiments analogous to those of Wassermann and Takaki[28] in neutralizing the neurotoxin of copperhead venom by means of emulsion of brain without appreciably diminishing the haemolysin in this venom. Emulsions of other organs did not possess this effect. They found that the haemolysin and neurotoxin of their venoms in solution readily formed toxoids, but that haemorrhagin did not; they were, however, able to produce toxoid formation in this constituent by treatment with weak HCl, and subsequently[29] succeeded in immunizing animals against this haemorrhagin by means of toxoid injections. This is not only of theoretical interest but of practical importance, for up to this time no one had succeeded in producing a serum of any value against rattlesnake, owing to the impracticability of immunizing an animal by repeated injections of the unaltered venom on account of the terrible sloughs occasioned by each inoculation.

I feel that an account of the part played by snake-poison researches in the building-up of the doctrine of immunity would be incomplete without the mention of the valuable contributions which have been made by Preston Kyes to the knowledge of those less simple phenomena where the reaction is complicated by the necessity for the interaction of a third body, as is the case in haemolysis and bacteriolysis by foreign serums.

Flexner and Noguchi[30] showed that haemolysis by venom was accomplished only with the co-operation of a third body, which is present in normal serum. Venom haemolysis, therefore, became an exceedingly convenient field to study such phenomena.

Kyes[31] has taken advantage of this opportunity, and has obtained results of the greatest interest and importance, but the discussion of which would lead me into another chapter of the immunity question, which I must reserve for another occasion. I think, however, that I have shown that the results of researches with snake poisons have taken no mean part in contributing the materials out of which the fertile imagination of Ehrlich has produced the doctrine of immunity.

VI.—Robert Muir, M.D., F.R.C.P.E.,

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So much research has been devoted to the subject of haemolytic serums within recent years, and so great a mass of facts has been accumulated, that it seems to me the time at my disposal will be most profitably used if I endeavour to bring out the chief facts which have been established, and critically examine the theories which have been offered in explanation. It is unnecessary to say that in this department the chief place is occupied by the work of Ehrlich—a work which in its breadth of conception, in the possibilities of its applications, and in the detailed analyses in which it abounds, is probably unsurpassed in medical science. In discussing the subject I shall confine myself as far as possible to matters which have come under my own observation.

Haemolytic serums give us a means of studying the action of immune body and serum complement with a precision which is equalled in no other case. By the study of their properties information is supplied on the three following questions, which will form the subject of my remarks: (1) The nature of the combination of antisubstances; (2) the constitution and mode of action of complements; and (3) the combining relationships of receptor, immune body, and complement.

1. *The Nature of the Combination of Antisubstances.*

This can be investigated either in the case of the red corpuscle and its corresponding immune body (receptor of red corpuscle + antireceptor) or in the case of complement and anticomplement. As Ehrlich and Morgenroth showed in their first research that the immune body combines with the red corpuscles at 0°C.; the relative amount taken up, however, varies much in the case of different serums. When we take the case of natural lysins we find striking examples of such variations in the combining affinities. For example, in the guinea-pig's serum there is a natural immune body which has a great affinity for ox's corpuscles, so that it can be readily removed from the serum by contact with the ox's corpuscles. In the case of the natural immune body of the guinea-pig's serum for rabbit's corpuscles and of that of the rabbit's serum for guinea-pig's corpuscles, the combining affinity is much less, and when the serum is left in contact with even great excess of corpuscles a considerable amount of the immune body still remains free. This is still more strikingly the case with the

[21] *Proceedings Royal Society.*

[22] Fayrer, Martin.

[23] Brodie, *loc. cit.* Pick, Zur Kentniss der Immunkörper. *Hoffmeister's Beiträge*, 1901, vol. i, p. 351.

[24] *Jour. Physiol.*, 1895-6, vol xix, p. 311.

[25] *Journ. Path.*, 1900, p. 416.

[26] Constitution of Snake Venom and Snake Serums. University of Pennsylvania, *Med. Bull*, November, 1902, xv, p. 345.

[27] *Journ. Exper. Med.*, 1902, p. 202.

[28] *Berl. klin. Woch.*, 1898, xxv, p. 5.

[29] Production and Properties of Anticrotalus Venin. *Journ. of Med. Research*, 1904, vol. xi, p. 363.

[30] Snake Venom in Relation to Haemolysis, Bacteriolysis and Toxicity. *Journ. Exper. Med.*, 1902, vol. vi, p. 277.

[31] Ueber die Wirkungsweise des Cobragiftes, *Berl. klin. Woch.*, 1902; Zür Kentniss der Cobragift activirenden Substanzen, *Berl. klin. Woch.*, 1903; Ueber Isolirüng von Schlangengift Lecithiden, *Berl. klin. Woch.*, 1903; Cobragift u. Antitoxin, *Berl. klin. Woch.*, 1904; Lecithin u. schlangengifte, *Zeitsch. f. Physiol. Chem.*, 1904, Bd. xli, p. 273.

ox's serum and guinea pig's corpuscles, where, as Ehrlich showed, the corpuscles do not take up even a full haemolytic dose of the immune body until complement is added. It is a point of some importance to note that the combining affinities of the natural homologues of immune body vary so much and that they are on the whole weaker than is the case with an artificially-produced immune serum.

We may now consider the saturation phenomena when immune body is added to red corpuscles. Does what Ehrlich observed in the case of neutralization of toxin with antitoxin obtain here? It is easy to show that this is the case. If three haemolytic doses of immune body (rabbit *v.* ox) be added to the standard amount of red corpuscles an amount sufficient to be detected remains free, but five additional doses must be added before one dose remains free. In other words, the amount which enters into combination is not a fixed quantity, but varies according to the amount of immune body present; we have, in fact, an example of mass action. One cannot make a neutral mixture of red corpuscles and immune body; there is no point of neutralization. The phenomena are specially well seen when a complement is used with which the dose of immune body is high—for example, guinea-pigs corpuscles, immune body from the rabbit, and guinea-pig's complement. In this case, even when a third of a dose of immune body is added, a small portion can be shown to remain uncombined. The combination of the receptors with immune body is moreover a reversible action. As Morgenroth first showed and as I also discovered independently, if red corpuscles combined with multiple doses of immune body be mixed with untreated corpuscles, part of the immune body passes to the latter, so that lysis of them occurs when complement is added. I have not made sufficient observations to enable me to say whether the combination of immune body with receptors of the red corpuscles follows Guldberg and Waage's law, but undoubtedly the two essential factors—namely, mass action in combination and reversibility—are present. The question, however, appears to me to be capable of more accurate investigation in the case of red corpuscles + I B than in any other case, as the combined immune body can be readily removed by centrifugalization and its amount estimated, whereas, in the case of toxin and antitoxin, or complement and anticomplement, the "free toxin" or "free complement" can only be demonstrated by its combination with other substances, tissue cells, etc., and thus the balance of the "free" and "combined" must become disturbed. It appears to me that it would be well in discussions on this subject to keep two questions distinct—namely: (1) How do a substance and its antisubstance behave as regards combination when the amount of each is varied—do they follow the laws of physical chemistry? (2) Do "toxins" or "complements," etc., contain one combining substance, or do they contain modifications—toxoids, complementoids, etc.? The combination of a pure toxin and its antitoxin may correspond to that of two bodies like ammonia and boracic acid—this would give rise to the phenomenon described by Ehrlich—and yet toxoids may also be present. And, as I shall explain below, the existence of complementoids can be readily demonstrated.

I need not discuss fully the combination of complement with anticomplement; it is sufficient to say that here also the amount free bears a relation to the amount combined and that the combination is a reversible process. With regard to the former fact Bordet says that if a condition of equilibrium of a mixture of complement and anticomplement is obtained and then more complement be added, the latter does not remain free but distributes itself over the whole of the anticomplement, and he concludes that one molecule of anticomplement may combine with more than one molecule of complement, so that we have AC^1, AC^2, and C combinations. I think, however, that the phenomenon may be possibly explained according to the laws of physical chemistry, and that this possibility should be excluded before any theory such as he proposes is adopted.

2. *The Constitution and Modes of Action of Complements.*

At a comparatively early period in his researches Ehrlich recognized the analogy between complements and toxins, and came to the conclusion that a complement possesses two chief atom groups: a combining or haptophore group and a toxic or zymotoxic group. In short, in relation to red corpuscles treated with the appropriate immune body the complement acts as a toxin. Our own observations completely confirm Ehrlich's views on this subject. We may accordingly without further remark consider some of the properties of these two groups.

1. *The Haptophore Group.*—I shall first speak of the nature of the combination of complement with red corpuscles treated with immune body, that is, with R + I B molecules. In a former paper I showed that red corpuscles combined with multiple doses of immune body took up multiple doses of complement—a clear indication of the chemical nature of the reaction. In the particular case studied (immune body for ox's corpuscles obtained from the rabbit, along with guinea-pigs complement) I found when a few doses were used that, on the saturation point being reached, another dose of complement added usually remained free, the combination of complement with R + I B resembling that of a strong acid with a base. When higher multiples were used, however, a difference was brought out, more than one dose of complement having to be added in order to give one dose free. Further observations show that the latter result may be taken as the general rule, though considerable variations in degree are noted—variations even with the same R + I B molecules towards different specimens of the same kind of complement.

I have gradually been led to the conclusion that the same phenomena noted in the combination of toxin and antitoxin also obtains in the case of the union of C with R + I B, though in some cases, when free complement first appears, the discrepancy between the amount of complement then added and that which remains free may be so small as to escape notice. Manifestly the phenomenon in question may be due to the presence of complementoids with weaker combining affinity, or may be due to the nature of the combination as has been explained above. Is the union a reversible action, or, in other words, can C be dissociated after combination? There is no doubt that in most cases the union of complement with R + I B is a very firm one, much firmer than the union of R with I B or of complement with anticomplement; indeed, it is this fact which enables us to estimate the amount of complement which is taken up. And in one case Dr. Browning and I found that no dissociation could be determined, though the conditions of experiment would have revealed the separation of 1 per cent of the complement combined, had this occurred. In such experiments, however, one cannot deduce a general law from one case, and, as a matter of fact, we have recently met with an example where there is distinct evidence of the dissociation of complement, the combination in question being guinea-pig's corpuscles, immune body from the rabbit, and rabbit's complement, and the test for the separation of complement being guinea-pig's corpuscles + I B. This question will require further investigation before it is fully understood, but I may express my opinion by stating that the combination of complement with R + I B is usually a very firm one, and that there is good ground for believing that in many cases the saturation phenomena observed may be in part due to the presence of complementoid; in certain others complement may be dissociable—that is, the combination may be a reversible action

Another question of high importance in relation to the combining affinities is that as to the multiplicity of complements. Evidence for the existence of more than one complement in a serum is to be sought for in differences in the haptophore groups. Now it should be clearly kept in mind that these differences may be of a quantitative or a qualitative kind. I may give two examples in illustration of this. The anticomplement to guinea-pig's complement has only a very slight effect on rabbit's complement. It might therefore be assumed that most of the molecules of rabbit's complement have a quite different haptophore group from those of the guinea-pig's complement, while some of them have the same haptophore group. The explanation might, however, be (I am only discussing the matter theoretically) that the rabbit's complement had merely a much weaker affinity for guinea-pig's anticomplement than guinea-pig's complement had. (As a matter of fact in the combination of guinea-pig's complement with its anticomplement some of the complement molecules remain free—these are not necessarily different molecules). This example is, therefore, one of quantitative difference which may or may not be due to real differences in the haptophore group. As a matter of fact, when we come to the firmer combination of complement with R + I B, the two complements referred to combine with the same molecules, the guinea-pig's complement keeping out the rabbit's complement and vice versa. Accordingly complements which appear to be different when tested with an anticomplement may act equally well with the same immune body.

As an example of a qualitative difference, I may mention a case recently investigated. By a certain method, to be after-

wards published, it can be shown that in the rabbit's serum there is a complement in certain amount which can produce lysis of guinea-pig's corpuscles treated with immune body, but fails to do so in the case of ox's corpuscles treated with immune body, though the complement present in largest amount acts on both kinds of corpuscles. This complement can be left in the serum after the complement which has a common action on the two kinds of corpuscles has been removed. It must therefore be accepted, as Ehrlich has shown, that more than one complement may be present in a given serum. On the other hand, the very important fact must be kept in view that in very many cases, by means of one immune body combined with its corresponding receptor, all the complement for another immune body may be removed from a serum, even though this immune body may be obtained from an animal of different species. And we have also the results of Bordet, which I can confirm, that all the haemolytic complement may be removed from a serum by means of bacteria treated with their immune body. And a similar statement applies to the direct combination of complement with bacteria, tissue cells, etc. There can, so far as my observations go, be no doubt that the wide combining affinities of a given complement have been overlooked to a great extent, and the importance of multiple complements has been exaggerated. In the combination of complements we find nothing comparable with the specific affinities of immune bodies for their corresponding receptors. Ehrlich considers that an immune body may have several complementophile groups, and thus may take up several different complements. But our observations, so far as they go, do not support this view. If this were explanation in the case in question, and a given immune body had combining groups for both guinea pig's and rabbit's complement, then on saturation with guinea-pig's complement a certain amount of rabbit's complement would still be taken up. And a similar result would be obtained if there were two immune bodies, one of which took up guinea pig's complement and one which took up rabbit's complement. As has been already stated, we have not found evidence of this.

2. *The Zymotoxic Group.*—Ehrlich has come to the conclusion that the zymotoxic group is much more labile than the haptophore group, and may be destroyed by heat while the latter persists, the resulting body being a complementoid. The chief evidence for the existence of complementoids is supplied by the fact that when serum heated at 55° C., and thus deprived of the active properties of complement, is injected into an animal of different species from that supplying the serum, anticomplement is developed in the blood of the treated animal. The only explanation of this, so far as one can see, is that it is due to the presence of complementoid, or at least of some body having the same haptophore group as the complement in question. Further, although heated serum or complementoid does not usually prevent the combination of active complement and the resulting lysis, Ehrlich and Sachs found in one case that this actually occurred—the complementoid of dog's serum prevents lysis by guinea-pig's complement, of guinea-pig's corpuscles treated with the natural immune body of dog's serum. Dr. Browning and I in a recent paper have shown how complementoids can be demonstrated by ordinary test tube experiments. I need merely mention the chief results obtained in this research. If anticomplement is treated with the corresponding serum heated at 55°, its power of taking up complement is diminished or it may be removed; in other words, the combining groups of the anticomplement have their affinities filled up by the complementoid molecules. Again, while heated serum (complementoid) does not prevent lysis by complement, it combines with the R + I B molecules after lysis and diminishes proportionately the amount of complement which can then be taken up by these molecules. We have also shown that very little complementoid enters into combination with red corpuscles treated with immune body until lysis occurs; thereafter complementoid combines readily with R + I B molecules. In other words, the intact corpuscles, even when treated with immune body, are almost impervious to complementoid, whereas after the toxic action of complement has occurred complementoid readily enters into combination. This is a new fact, one may say a new principle, with regard to the combination of such substances. By these observations the existence of complementoid, that is, complement modified by heat, has been completely proved—a fact of considerable importance in view of the circumstance that the existence of toxoids has lately been called in question by certain observers.

Another subject which we have recently studied is that of variations in the toxic activity as contrasted with the combining affinities of complements, when tested with different corpuscles. This is manifestly a matter of great importance, yet it is one which hitherto has received little or no attention. Our results have not yet been published, but I may mention one or two of the chief facts. In connexion with the "complementing" of an immune serum (deprived of its complement by heating) it is usual to consider that that complement acts best where haemolysis occurs with the smallest dose of immune body and complement, the readiness with which haemolytic or bactericidal action takes place being taken as evidence of the special affinity of the haptophore group of complement for immune body. And Ehrlich has made the general statement that an immune serum is complemented best by the complement of the species of animal from which the immune serum has been derived. To take an example—the immune body for guinea-pig's corpuscles, obtained from the rabbit (immune body, rabbit *v.* guinea-pig) has a minimum haemolytic dose about ten times greater when guinea-pig's complement is used than when rabbit's complement is used. Here it might be supposed that rabbit's complement suited the combining affinities of R + I B molecules much better than guinea pig's complement did. (It may be noted that Ehrlich and Morgenroth in the quite analogous case of the immune body of guinea pig *v.* rabbit, considered the explanation to be that there were two immune bodies, one of which combined with the rabbit's complement and one with the guinea-pig's.) On testing the combining affinities it is found that this supposition is not correct. We have determined that the guinea-pig's complement combines perfectly with the R + I B molecules, but a large amount requires to be taken up before lysis occurs. The apparently "deficient complementing" therefore does not depend in this case on want of combining affinity, but on weakness of the toxic action of the zymotoxic group on the corpuscles. When haemolysis or bacteriolysis takes place with small doses of immune body and complement, manifestly the chemical affinities must be suitable, but when the converse is the case this may be due either to the nature of the zymotoxic group or to the affinities being unsuitable. Accordingly, in order that a bactericidal serum be efficient therapeutically, not only must the complement concerned combine readily through the medium of the immune body, but the bacterium must be sensitive to the action of the zymotoxic group of the complement. The importance of this subject is manifest.

3. *The Combining Affinities of Receptor, Immune Body, and Complement.*

As is well known, there are two chief theories regarding the action of these substances—namely, that of Ehrlich and that of Bordet. In Bordet's theory of a sensitizing action, there are really two chief points, one being that the immune body (*substance sensibilisatrice*) makes the living cell (corpuscle, bacterium, etc.) sensitive to the action of complement, and the second being that the complement combines directly with the molecule of the cell. I need not refer to this idea of a sensitizing action, as there seems enough to disprove it; the mere fact that after dissolution of the cell has occurred the addition of more immune body leads to the taking up of more complement is sufficient to show that we have to do with a chemical combination of the three different molecules. But it does not follow that the immune body is an amboceptor. The fact is that two molecules, receptor and immune body, are each incapable of taking up complement when separate, but do so when combined; in a certain sense one of these two molecules sensitizes the other to the combining affinity of complement. Theoretically, the affinity of receptor for complement might be increased by the former combining with immune body, just as well as the affinity of immune body for complement might be increased by its combining with receptor. The question then comes to be, Is the arrangement R-I B — C or I B-R — C?

Facts to show that there is a chemical combination of the three molecules are sufficiently numerous, but the direct evidence that immune body is an amboceptor cannot yet be accepted as convincing. I had hoped to be able to state a definite opinion on the subject, but further observations still require to be made. I may refer to one or two points. In the first place there is the so-called *Ablenkung* of complement described by Neisser and Wechsberg in the case of bactericidal serums, and by Flexner and Noguchi and by Kyes in the case of snake venom. In these cases excess of immune body may interfere with the bactericidal or other actions, and the explanation given is that the molecules of immune body are more

numerous than the complement molecules, and thus some of the receptors obtain only an immune-body molecule, whereas if the immune-body molecules were fewer in number—say fewer than the complement molecules—all the receptors would get I B + C molecules and thus bactericidal action would be complete. It is further assumed in this explanation that a free molecule of immune body has as great an affinity for complement as a molecule of immune body combined with the bacterium has. This is a subject on which further impartial investigation is necessary before all other possible explanations can be said to be excluded.

One fact should be borne in mind, namely, that even if the immune body be proved to unite with complement, there is no doubt that complement molecules unite directly with the bacteria; we have an example of what I referred to above as the wide combining affinity of the haptophore group of complement. And even if it be established that immune body unites with complement it would still remain to be proved that the I B + C combination has still a free combining group by which it unites to the bacterium and produces bactericidal effects. Another difficulty may be mentioned. If we use an emulsion of Metchnikoff's spirillum and the correspond ng immune body and test their behaviour with haemolytic complement we get the following result. The immune body alone takes up no appreciable amount of haemolytic complement, the emulsion of the spirilla takes up a considerable amount, the spirilla + immune body a large amount. To bring such a result into harmony with the *Ablenkung* theory we would require to suppose that there were at least two immune bodies (both be it noted developed by the injection of the spirilla) one of which when free had as much avidity for bactericidal complement as it had when combined with the bacteria, and another which had when free no affinity for haemolytic complement but when combined with the bacteria took it up firmly. I mention this as an example of the difficulty of accepting the *Ablenkung* explanation *simpliciter*.

In the case of haemolytic serums I have found no evidence that immune body combines directly with complement. Morgenroth has recently found that "amboceptor" combined with antiamboceptor takes up complement, and considers that this is due to the antiamboceptor increasing the affinity of amboceptor for complement. But manifestly the antiamboceptor is the homologue of a receptor (R), and hence the fact which he has brought forward simply corresponds to what is already known, namely, that immune body does not take up complement alone, but that R + I B takes up complement.

Ehrlich says that an immune body is always complemented best by the complement of the animal from which the immune body was obtained. This is a subject, however, on which more extended observations are required. I may mention, however, that in the case of three serums which we have examined, using three complements, we have found that the serum is complemented worst by the complement of the animal whose corpuscles are being tested. I may also in this connexion refer to the result which I have already published, namely, that from a combination of R + I B fully saturated with complement (the excess being afterwards removed), immune body can still be dissociated, and that it comes off as immune body alone. I can see no explanation of this on the supposition that immune body is a link between the receptor and complement molecules.

In discussing this subject I have avoided making any dogmatic assertions, as I consider that at present no conclusion can be considered as yet completely proved. I have contented myself with simply stating some of the considerations arising in the course of my work which have prevented my accepting the view that the immune body is an amboceptor.

VII.—HIDEYO NOGUCHI, M.D. *

(From the State Serum Institute, Copenhagen).

BEFORE presenting my therapeutic experiments I shall first deal with some facts concerning the specificity of snake venoms and antivenenes. There has elapsed nearly a decade since Calmette and Fraser discovered the antivenene, and much has been worked out regarding the properties of the antivenene, in particular with the anticobra serum. Upon reviewing the work, however, of different investigators of this subject, one is struck by finding that there is a controversy as to the most important point, namely, the specificity of venoms. According to one view, which was once held by Calmette, the chief toxic principle of all venoms is identical, and it can be counteracted by the antivenene which is produced by cobra venom. Thus Calmette recommended the employment of his antivenene in the treatment of all cases of snake poisoning. On the other hand, Kanthack, C. J. Martin, and Flexner and Noguchi failed to find any protective action in Calmette's antivenene against the venoms of the *Daboya*, the Australian snakes, and of the rattlesnake (*Crotalus adamanteus*), and they are agreed in the view that the chief toxic principles of different venoms are characteristic to each species. The importance of the question of the specificity of venoms cannot be overestimated, when we remember that the success or failure of treatment depends entirely upon proper application of an antivenene.

For the purpose of deciding this point I have employed three different antivenenes, namely, the anticrotalus, antimoccasin, and anticobra serums. The first named two antivenenes were prepared by myself at the Statens Serum Institut, while the anticobra serum was obtained through the kindness of Professor Calmette, whom I wish to thank most cordially. The cross actions of these antivenenes were examined both in the animal body (general toxicity) and *in vitro* (haemolysis). The mixtures of the venom and antivenene were kept for two hours at 37° C. before the injection into the animal, or before the haemolytic tests were made. Guinea-pigs were used in the animal experimentation, while dog's blood was used for the haemolytic experiments.

The following table shows the results:

TABLE I.—*Cross Action of Antivenenes in Vivo (Toxicity).*

	Neutralized.		
	Crotalus Venom.	Water Moccasin Venom.	Cobra Venom.
Anticrotalus 2.5 c.cm. ..	12 m.l.d.*	1 m.l.d.	0
Antimoccasin 2.5 c.cm. ..	3 m.l.d.	5 m.l.d.	0
Anticobra 2 c.cm.	0	1 m.l.d.	5 m.l.d.

* Minimal lethal dose.

Cross Action of Antivenenes in Vitro (Haemolysis).

	Neutralized.				
	Crotalus Venom	Moccasin Venom.	Cobra Venom.	Daboya Venom.	Trimeresurus Venom.
Anticrotalus 1 c.cm. ...	10 d m.h.	1.33 (d m.h.)	0.75 (d.m.h.)	1.2 d.m h	2 25 (d.m.h.)
Antimoccasin 1 c cm. ...	4.125 ,,	40 d.m.h.	4 d m.h.	4 d.m.h.	5 d.m.h.
Anticobra 1 c.cm. ...	0	0	2 d.m.h.	0	0.3 d.m.h.

The action of different antivenenes is highly, if not strictly, specific to the venoms from which they are derived. It is also of special interest that the haemolysins of different venoms are highly specific.

In this connexion I may mention here another important fact as to the relation between the antitoxic and the antihaemolytic power of an antivenene. I have examined three different samples of Calmette's antivenene, and found that two of them had about, if not exactly, the same antitoxic power as well as the same antihaemolytic power. These showed the ratio that 10 c.cm. of the serum neutralized 9 M.L.D. and 0.7 c cm. 50 D.M.H. On the other hand, the third sample showed quite reverse relation, or 4 c.cm. neutralized 10 M L.D. and 1 c.cm. only 2 D.M.H. There is no constant relation between the antitoxic and the antihaemolytic strengths of an antivenene, hence the standardization of the antitoxic power of an antivenene cannot be made by the simple haemolytic tests *in vitro*.

I will now proceed to present some experiments on the therapeutic value of anticrotalus and antimoccasin serums.

If 2 M.L D. of crotalus venom are given to a guinea-pig intraperitoneally, it will die between four to five hours after the injection of the venom. In the case with moccasin venom the death ensues between three and a half to five hours after

* This study was conducted under a grant from the Carnegie Institution, Washington, D.C., U.S.A.

the injection. The symptoms are similar in both cases, except that in case of the moccasin poisoning, where there are more paralytic symptoms, especially dyspnoea and paresis resembling the cobra poisoning. The first symptom is the irritation, followed gradually by the steady increase of the abdominal tension, which is due to severe haemorrhage taking place in the abdominal cavity. The bloody fluid generally escapes from the needle puncture. The animal becomes gradually inactive, and avoids moving. After two and a half to three hours it becomes so weakened that it is unable to change its position, at the same time the temperature becomes lower, and dyspnoea sets in. Finally, the temperature is much lowered in the animal, it becomes unable to stand upon its legs, and, falling to the floor, death ensues within fifteen to twenty minutes from this moment.

In the therapeutic experiments I have taken a series of guinea-pigs, and to each animal given 2 M.L.D. of the venoms intraperitoneally; then after one hour the specific antivenenes were administered intraperitoneally to the first group, after two hours to the second, etc., hourly up to and including the fourth hour after time of injection of the venoms. The following table shows the result:

TABLE II.—*Therapeutic Experiments with Anticrotalus and Antimoccasin Serums.*

Anticrotalus Serum.		Crotalus Venom (2 M.L.D.).	Antimoccasin Serum.		Water Moccasin Venom.
Time.	Dose.	Result.	Time.	Dose.	Result.
Control.	0	Death, 3hr. 48m.	Control.	0	Death, 4hr. 4om.
	0	Death, 4hr. 34m.		0	Death, 4hr. 35m.
	0	Death, 4hr. 20m.		0	Death, 4hr. 20m.
	0	Death, 4hr. 50m.		0	Death, 3hr. 50m.
1 hour	1 c.cm.	Recovery	1 hour	1 c.cm.	Death, 10 hours
				2 c.cm.	Recovery
2 hours	1 c.cm.	Death, 6 hours			
	2 c.cm.	Recovery	2 hours	2 c.cm.	Death, 3hr. 35m.
				3 c.cm.	Death. 6hr. 20m.
3 hours	1 c.cm.	Death, 5 hours		4 c.cm.	Recovery
	4 c.cm.	Recovery		6 c.cm.	Recovery
4 hours	4 c.cm.	Death, 9 hours	3 hours	4 c.cm.	Death, 4hr. 10m.
	8 c.cm.	Recovery		8 c.cm.	Recovery
			4 hours	10 c.cm.	Recovery

It can readily be seen that with these rather weak serums as compared to the diphtheria antitoxin, if used in sufficient doses, it is possible to save the life of experimental animals even at the most critical stages of intoxication, that is, so long as the animal is still able to stand. In those cases where the amounts of the antivenenes were insufficient to cure the animal, there was still a considerable delay in the time of death. In this research, owing to the limited amount of the venoms at my disposal, I was not able to raise the antitoxic strength of the serums, but I hope in the future to be able to produce antivenenes of much higher antitoxic units, which can be used in human therapeutics.

In conclusion, I wish to draw your attention to the following points:

1. The action of antivenenes is highly, if not strictly, specific both *in vitro* and *in vivo*, therefore only the specific antivenene must be used in the treatment of venom poisoning.

2. The relation between the antitoxic and the antihaemolytic powers of an antivenene is quite variable. The strength of the one cannot be determined by estimating separately the other constituent of the antivenene.

3. The anticrotalus and the antimoccasin serums possess a very great therapeutic value. They can cure the animals from their critical stages of poisoning.

VIII.—MARC ARMAND RUFFER, M.A., M.D.

(From the Port Vieux Laboratory, Alexandria.)

ON HAEMOLYTIC AND HAEMOSOZIC SERUMS.

THE object of this paper is to give a short account of researches concerning some of the effects produced on the blood by the injection of urine and bile, two of the most important secretions of the animal body. The experiments on which this paper is based were performed by Drs. Crendiropoulo and Caloscoreni and myself.

The word "haemosozin," frequently used in this paper, was coined in order to avoid the confusing word "antihaemolysin," and denotes any substance which prevents the haemolysis produced by serums or other organic liquids. For the same reason the word "lysogen" will be used here for any substance which, when injected into the animal body, produces a haemolytic serum; and the word "sozogen" for any substance which, similarly injected, produces a "haemosozic" serum. The words "lysogenetic" and "sozogenetic" hardly require an explanation.

Fresh urine of man and animals contains lysogen. The haemolytic power in the serum of a rabbit injected with urine can be demonstrated after one week, or even after a shorter period. It is not known how long the serum retains its haemolytic property. The serum dissolves quickly the red corpuscles of that species of animals whose urine has been injected, but very slightly, or even not at all, the red corpuscles of other species of animals.[1]

The serum of rabbits injected with the urine of man, for instance, dissolves human red blood corpuscles with astonishing rapidity; that of rabbits injected with the urine of sheep the red corpuscles of sheep; that of the same animals injected with the urine of the ox the red corpuscles of the ox. As the serum of rabbits always dissolves to some extent the red corpuscles of sheep, and occasionally those of man also, comparative control experiments are indispensable.

The lysogen of urine is not appreciably altered by a temperature of 96° C. (thirty minutes), but becomes less active when heated to 100° C. for some time, and is completely destroyed, or, at any rate, rendered inactive by a temperature of 120° C. prolonged for half an hour. Lysogen does not dialyze readily, and it is completely destroyed by digestion with mineral acids (5 per cent. HCl). Moreover, it is contained in some, though probably not in all, pathological albuminous urines.

The filtrate of urine precipitated with ten times its volume of absolute alcohol contains some lysogen, but the larger part is precipitated by the alcohol. Long contact with alcohol (twenty-four to thirty days) completely destroys lysogen.

Lysogen is precipitated by ammonium sulphate, but whether the whole can be thus removed is uncertain. If the saturated liquid be shaken up with alcohol, a certain amount of lysogen passes into the alcohol. Animal charcoal does not remove it entirely.

A process of exclusion shows that this substance is not likely to be one of the substances hitherto isolated by chemists from urine; and, probably, not one but several lysogens are present.

Miss Sheldon Amos has shown by experiment that neither kreatin nor kreatinin, urea, uric acid, colouring matters, xanthin, or hypoxanthin are lysogenetic.

Normal urine contains a substance (haemosozin) antagonistic to the haemolysin or haemolysins produced by the injection of urine. No haemolysis takes place in a mixture of haemolytic serum and urine, even if the latter is in small quantities only.

Urine freed from salts by dialysis is haemosozic still, and so is the precipitate thrown down by ammonium sulphate, when dialyzed until free from salts. A temperature of 100° C. diminishes the quantity of haemosozin in the urine, and exposure to 120° C. for half an hour renders the urine inactive. Animal charcoal also removes nearly the whole of this substance.

As, clearly, the reactions of the haemosozin and lysogen of urine resemble one another, it is conceivable that both are the same substance. An important fact to be taken into consideration against this theory, however, is that whereas lysogen is specific—that is, produces when injected a serum haemolytic for one species of animals only—the haemosozin of urine is not. Human urine, for instance, is haemosozic not only against the serum of animals injected with human urine, but also against the haemolytic action of animals injected with ox's or sheep's urine acting on the red corpuscles of the ox and sheep respectively. Some animals' urine is haemosozic against the haemolytic action of normal serum.

Similar experiments have been carried out with bile, and have been published already, but some additions are made here.

The haemolysis produced by bile *in vitro* cannot be attributed to bile salts only, for when freed from salts by dialysis, bile is haemolytic still. The filtrate of bile treated with ten times its volume of absolute alchol is not haemolytic, but repeated extractions of dried bile with absolute alcohol do not remove the whole of the haemolytic substances.

On the other hand, the ethereal extract of bile is haemosozic.

[1] In our first paper we did not sufficiently appreciate the fact that normal guinea-pig's serum dissolves the red corpuscles of rabbits.

and so is normal serum when tested against the bile of an animal of the same species. The amount of haemosozin present in the serum of various animals differs greatly. It is not destroyed by a temperature of 100° C. acting for thirty minutes.

When injected subcutaneously, bile produces inflammation followed by necrosis at the point of inoculation. When injected intravenously, phlebitis of the wounded vein is the rule. Bile salts have a share in producing some but not all these symptoms, for bile freed from salts by dialysis produces like results.

The residue of dried bile after repeated extraction with alcohol and ether has phlogistic effects. Heat and animal charcoal diminish but do not abolish entirely the phlogistic properties of bile.

Repeated injections of small quantities are followed by great emaciation, cachexia and death, but give rise to no real local or general immunity against this fluid.

The changes in the blood of animals so injected have been fully described in a former paper and need not be detailed here.

Repeated subcutaneous or intravenous injections of ox bile into rabbits produce a serum which prevents to some extent the haemolytic action of ox bile (haemosozic serum). Occasionally the serum of such animals is not haemosozic, but haemolytic; but a mixture of haemolytic serum so produced and haemolytic bile is less haemolytic than either serum or bile taken alone.

For any given mixture of bile and red corpuscles there is a quantity of serum giving the maximum haemosozic effect. Further addition of serum does not increase this action. Haemolysis is greatly delayed and diminished by haemosozic serum, but only exceptionally is it prevented completely. The serum is more active on bile which has been heated to 100° C. than on normal bile. The sozogen of bile is not destroyed by heating to 100° C.

The red corpuscles of an animal repeatedly injected with bile do not resist the haemolytic action of bile more than those of a normal animal.

The filtrate of bile treated with ten times its volume of absolute alcohol contains sozogen, but the precipitate and ethereal extract do not. Alcohol acting for several days destroys the sozogen, which, however, does not pass through the dialyzer.

The haemosozic serums produced by the injection of bile often neutralize completely the haemolysins present in the serum of animals injected with urine. This action on such haemolytic serums is far more apparent than on bile; for whereas a given quantity of serum may only neutralize an equal quantity of bile, and not completely even then, it does prevent the haemolysis due to several times its volume of haemolytic serum.

IX.—A. E. Wright, B.A., M.D.,

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[Abstract.]

Dr. Wright said: Much harm has been done by endeavours to form and record accurate mental pictures of abstruse theories regarding extremely complex phenomena; further, much confusion and error have crept in through the use of faulty methods. For example, it has been pointed out by Dr. Bulloch that deductions as to bactericidal power have been published based upon experiments with bacteria, which it is now known are not killed by the serums employed. In my work upon typhoid vaccination, a diminution of protective substances in the blood shortly after inoculation—in other words, a "negative phase"—was shown to occur, and the same phenomenon is to be observed in regard to the formation of antitoxins. In connexion with inoculations which I undertook for the cure of a case of staphylococcus infection, it was demonstrated that the serum of the immunized patient could not kill one staphylococcus; similar experiments proved that the same holds true for the micrococcus melitensis and the plague bacillus. It was then that Leishman hit upon the method of testing the patient's phagocytic power, and it became apparent that great increase follows successful inoculation; moreover, the condition exhibits a marked negative phase, during which the phagocytic power is much diminished. This appeared to foreshadow a return to the ideas of Metchnikoff, but when attention was turned to the share of each factor in the reaction it was found that, if a mixture were made of the patient's serum, his washed white blood corpuscles and a culture of staphylococcus, active increase of phagocytic power was manifested; if, however, the serum were heated to 55° C. before admixture, no increased phagocytosis occurred.

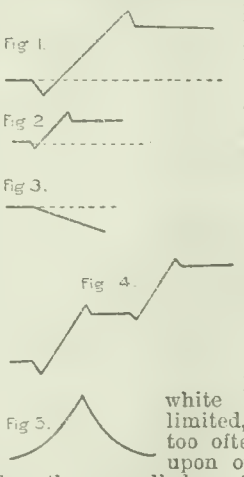
By making admixtures (see tables) with control corpuscles

1. Patient's W.B.C., 3 parts Patient's serum, 3 parts Staphylococcus culture, 1 part	Incubated ½ hr. cocci.	In each corpuscle, 25.7
2. Control W.B.C., 3 parts Control serum, 3 parts Staphylococcus culture, 1 part	Incubated ½ hr. cocci.	In each corpuscle, 13.0
3. Patient's W.B.C., 3 parts Control serum, 3 parts Staphylococcus culture, 1 part	Incubated ½ hr. cocci.	In each corpuscle, 13.0
4. Control W.B.C., 3 parts Patient's serum, 3 parts Staphylococcus culture, 1 part	Incubated ½ hr. cocci.	In each corpuscle, 28.2

and control serum under similar conditions, it was easily demonstrated that the active agent was resident in the serum and not in the corpuscles. To indicate its action in preparing the bacteria for consumption by the phagocytes, the name "opsonine" was coined.

I have found these observations to hold true also for the tubercle bacillus; at the present time I have cases of otherwise hopeless tuberculosis whose blood exhibits increased power and corresponding improvement in their clinical condition as the result of inoculations on these lines.

I must make some mention of the superposition of doses. After one inoculation the curve of opsonic power shows first a dip, the negative phase; then a marked rise, again a slight fall, and a continuance upon a higher level, thus (Fig. 1). If the dose employed be very small, the curve has still the same character (Fig. 2); but in the case of a very large dose the negative phase is very prolonged, and a patient may exhibit an exacerbation of symptoms (Fig. 3). When a second dose is given after the second fall (Fig. 4), a similar curve represents the effect on the opsonic power, leading to a still higher permanent level. It is most important that a second dose should not be given during the negative phase of the first inoculation; and to ascertain clinically the suitable moment, observations must be made of the phagocytic power of the patient's white corpuscles. Response is not unlimited, and if inoculations be repeated too often or at unsuitable times the effect upon opsonic power would be represented by the so-called roof-tree curve (Fig. 5). It may be asked, Why do bacteria flourish in an organism already containing inimical serums? The reply to that is, How does one know that the tested blood is truly representative of the whole blood mass of the body? The "bacteriotropic pressure," that is, the disruptive power of the antisubstance upon bacteria, varies in different parts of the body. Thus the typhoid bacillus which grows in the spleen does not grow in the heart blood. It has been shown also in Malta fever and spirillum fever that, whilst the circulating blood is powerfully bacteriolytic, that of the spleen is not so. Much the same holds good for the tubercle bacillus and the staphylococcus. The treatment of an ordinary septic wound of the finger, for example—namely, hanging down the arm in a hot bath—practically resolves itself into a "douching" of the wound by protective material brought thither by determination of blood to the part.



It is found that in the fluids of the pus from staphylococcic or tuberculous abscesses no opsonic power resides, although the blood of the patients exhibits it in considerable measure; there is not, that is to say, an effectual circulation of blood to the disease focus. However, if a staphylococcic abscess be opened and fomented, the lymph afterwards flowing from the wound has high opsonic power, and it is possible the explanation of the curative influence of laparotomy upon cases of tuberculous peritonitis is to be found here.

DISCUSSION ON
THE RÔLE OF THE LYMPHOCYTE.

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The Nature, Relations, Origin, and Function of Lymphocytes.

The first question which it is desirable that we should answer with some approach to unanimity is, What is a lymphocyte? Of the so-called non-granular cells of the blood most authors, following Ehrlich, distinguish four varieties: Small lymphocytes, large lymphocytes, large mononuclears, and transitional cells. There is a general agreement that the small and large lymphocytes are identical, the small being the younger form. They are so well known to you that I need not describe them, but there is no such agreement with regard to the two other forms. Ehrlich[1] says that the mononuclears are to be strictly separated from the lymphocytes, and that this separation is "founded on the fact that they differ entirely in their whole appearance from the other type, and that transitional forms between them are not to be observed." He defines them as cells two or three times the size of a red corpuscle, with a large, oval, and generally excentric nucleus, staining rather feebly, and with a relatively large amount of protoplasm free from granules, weakly basophile, and, in contradistinction to the lymphocytes, less basophile than the nucleus. They become transformed in the blood (according to Ehrlich) into the transitionals, which are to be distinguished from them by the possession of a more or less horseshoe-shaped nucleus, which has a rather greater affinity for stains, and by the appearance of a few neutrophile granules in the cytoplasm. These cells are supposed to be transitional between the large mononuclears and the polymorphonuclear neutrophiles, or, as I shall call them for the sake of brevity, polymorphs.

My own view is that the lymphocytes, mononuclears, and transitionals are merely stages in the development of one type, and that there is no relation between the transitionals and the polymorphs. I shall take up these two propositions separately.

There are four assigned reasons for the distinction between lymphocytes and mononuclears and transitionals:

1. The cytoplasm of the latter is not so basophile.
2. The nucleus is relatively smaller in the case of the mononuclears, and differently shaped in the case of the transitionals.
3. The presence of granules in the transitionals.
4. The larger size of both sets of cells.

Even if these were correct as facts they would not convince me, and I hope to show that each one of them is either incorrect or explainable on other grounds.

1. The cytoplasm of the larger cells is not so basophile, simply because there is more of it and the basophile parts of it are less crowded together. I do not propose to enter into the controversy as to the structure of protoplasm, but shall content myself with describing what one sees in fixed cells. All the members of the group have a cytoplasm of which the ground is very faintly basophile, and in all four members the depth of tint which this assumes is much the same. The strands and nodes of the cytoplasmic reticulum which traverse this ground substance vary a great deal in thickness and in closeness of apposition, not only in different cells but in different parts of the same cell. The thicker the strands and the more closely they are apposed the more basophile do the cells appear to be. Thus, in small lymphocytes in which the strands are short and densely crowded together, the cytoplasm looks almost homogeneously basophile to superficial observation. In larger cells the astrosphere is always left free, and as the amount of cytoplasm increases the strands are more separated, become thinner, and are not so basophile. But until the cytoplasm attains a very large size in the large mononuclears there is always some part or parts of it which show the original structure and deeper basophile staining. Ehrlich has himself noted that in the neutrophile series the younger cells are more basophile than the older, and I think any one who is in the habit of examining developing tissues stained with a differential stain will have noted that almost all young cells tend to be basophile in their cytoplasm. The drawings which illustrate this were made from the same film in order to prevent any fallacy.

2. The shape and staining of the nucleus. This, in leucocytes, is a matter of no importance. We are all nowadays agreed that the neutrophile myelocytes and polymorphs belong to the same series, but what nuclei could be less alike than the pale oval one of the myelocyte and the dark twisted one of the polymorph? But not only is the polymorph derived from the myelocyte, but, as Ehrlich says, one has only to examine any film of pus to find that the polymorphous nucleus can and does become oval again, and, further, the eosinophile sputum of certain asthmas contains countless cells which, if they were in the blood or marrow, one would unhesitatingly call eosinophile myelocytes, though the eosinophiles in the blood of the same case all have polymorphous nuclei. M. Heidenhain's researches,[2] which explain satisfactorily all the changes undergone by leucocyte nuclei, have met with far too little attention from both pathologists and haematologists. I have confirmed and amplified them elsewhere,[3] and need not here enter fully into the question, but may briefly state the main laws as they apply to mobile cells such as leucocytes. The cytoplasm consists of a ground substance in which are imbedded radii which have their centre in the centrosomes, astrosphere, or attraction sphere. When the cell is in a state of rest the pull of these radii tends to bring the astrosphere to the centre of the cell. The usual obstacle is the nucleus, and in cells with a small amount of cytoplasm, for example, lymphocytes, the pull is not strong enough to bring this about. As the cytoplasm increases in amount the pull becomes stronger, and the nucleus is pushed to one side and ultimately deformed, becoming first kidney shaped and finally horseshoe shaped, at which stage the astrosphere comes to rest in the centre of the cell, for example, transitionals. But in some cases the cytoplasm is relatively very large in amount, and here the astrosphere can reach the centre of the cell without causing any deformation of the nucleus, for example, large mononuclears. If a nucleus is about to divide, it probably usually swells up and reassumes the circular form first. If a cell begins to move, the nucleus moves with it, and may be secondarily deformed by movement—for example, polymorphs, eosinophiles, and some transitionals—and, of course, the more amoeboid the cell the greater the deformation is likely to be. It will be obvious how this rule explains the shape of the nuclei of leucocytes, and why the nuclei of the more amoeboid series (neutrophile, eosinophile, basophile) are so frequently polymorphous, while those of the lymphocyte, or less amoeboid series, are only occasionally polymorphous, though transitionals have a polymorphous nucleus much more often than is supposed. The depth of staining of the nucleus in different cells depends on the spacing of its chromatin, in the same way as in the cytoplasm.

3. The presence of granules. I pointed out some time ago[4] that the granules of the other series are really the nodal points of the reticulum of the cytoplasm, and my observations have since been confirmed by Arnold and others. In this sense all lymphocytes are granular, for there are nodal points in their cyto reticulum as in the others; but they are generally much less conspicuous, and in the smaller lymphocytes are often concealed by the thick strands. In the large lymphocytes, mononuclears, and transitionals they often attain a considerable size, and it has been shown by studies with the Romanowsky stain and its modifications that they are not neutrophile, but take up the methylene-azure of that stain. Wolff,[5] indeed, regards them as specific for the lymphocyte series, and their presence in all the above cells furnishes another proof of the identity of the different forms. That the granules cannot be demonstrated in all lymphocytes seems to depend on conditions of solubility not unlike those of the mast-cells, and one often finds negative pictures of them.

4. Size of the cells. The mononuclears are always large cells—their large amount of cytoplasm necessitates this—but some transitionals are no larger than a medium-sized lymphocyte. The size of the mononuclears and transitionals seems largely to depend on the taking up of fluid—in the blood at least—as the strands of the reticulum are often widely separated, and these cells are obviously soft, as may be seen from the way in which they are indented in films by the red corpuscles, which does not happen to the smaller members of the series. Many of the degenerated lymphocytes in blood films have the

[1] Ehrlich and Lazarus, *Die Anaemie*, Nothnagel's series, vol. viii.

[2] M. Heidenhain. *Festschrift für Kölliker.* Leipzig, 1892, and *Arch. f. mikr. Anat.*, vol. xliii, 1894.

[3] Gulland, *Journ. of Physiol.*, 1896.

[4] Ibid.

[5] *Zeits. f. klin. Med.*, vol. lii

appearance of mononuclears, but of course with their structure effaced.

A further proof of identity is the fact that both mononuclears and transitionals are found in lymph glands—the macrophages of the lymph-sinuses are simply bloated mononuclears—and also in lymph from the thoracic duct and large lymph-vessels, as I have often seen. The attempt to distinguish them by their powers of movement must also be given up, as it has been shown that even the small lymphocytes show amoeboid phenomena, though, of course, their range of movement is restricted because of the small amount of their cytoplasm (Hirschfeld,[6] Wlassow and Sepp,[7] Ewing[8]).

On all these grounds I consider that the small and large lymphocytes, mononuclears, and transitionals should all be regarded as belonging to one series, and the two last names should be allowed to drop out of use, except with the understanding that they are used as applied to lymphocytes.

Relations of Lymphocytes to Other Forms.

It will be seen from what I have said that I regard leucocytes as classifiable in four series—lymphocyte, neutrophile, eosinophile, and basophile or mast cells. In the other series the cells pass through the same cycle of changes as in the lymphocyte series, but with this difference, that in them only the terminal or polymorphonuclear stage is found in the blood under normal conditions, while all the members of the lymphocyte series are found normally in the blood. The other stages of the three granular series are found normally only in the marrow, with such slight exceptions as the finding of basophile or mast-cell myelocytes in lymph-glands and elsewhere. It is curious that the terminal form (transitionals) of the lymphocyte series is so rare, either in blood, glands or marrow. It suggests either that the normal reproductive rate of lymphocytes is so great that few cells get that length without dividing, or else a rapid mortality, or else that lymphocytes are most easily transported and most available in their earlier stages. The large mononuclears are certainly best formed in presence of assimilable material as in lymph-sinuses and bone-marrow.

As regards the developmental relation of the series to one another, I am not now so convinced as I once was that there is any interchange between the series after they have once become differentiated. Our knowledge of the functions of the marrow has been so greatly increased during the last few years by the labours of Muir and others, that there is now no reason to doubt that the demand for any one set of cells in the blood or tissues is responded to immediately by the myelocyte forms of that cell in the marrow, and it does not seem necessary to assume the assistance of the other forms of leucocytes. On the other hand, one cannot deny that cells are sometimes found in the marrow which seem to be intermediate between lymphocytes and neutrophile myelocytes, and again between neutrophile and eosinophile myelocytes. These are, however, few in number, and, looking at the question from the broadest point of view, I do not think that they are of importance in solving the problem. Clinically and experimentally, in adult life the various series are different, and react differently to stimuli.

I certainly do not think that the transitionals ever justify their name by becoming polymorphs. They are far too few in number to be of much use in this way; Ehrlich himself admits that they are not increased in number in the blood in a polymorph leucocytosis, and they are certainly not increased in the marrow in that condition; their granules are not neutrophile, and their cytoplasm stains quite differently from that of the polymorphs.

It is not so easy to decide what is the original source of the different forms in the embryo. I have lately reinvestigated this point with the aid of a large collection of embryonic material, and find that the primary leucocytes, or wandering mesenchyme cells, are certainly non-granular, and would be recognized as lymphocytes; but, on the other hand, the other series are differentiated very early indeed. For example, in a rabbit embryo $\frac{1}{4}$ in. long, at a stage when almost all the red cells are nucleated, and most of them megaloblastic, I could make out both lymphocytes and eosinophiles in the blood of the liver, though the total number of leucocytes in the embryo was so small that only one or two could be found in each section. One must, I think, conclude that these are differentiated from a lymphocyte-like cell; but though in later life there may be a reversion to this method of formation, there is very little evidence of it. Such preparations as the above mentioned are the best answer to those who consider that erythroblasts are derived from lymphocytes. There must in that embryo have been some thousands of erythroblasts to one lymphocyte, and in later life there is, to my mind, just as little question of a transition.

Place of Origin of Lymphocytes.

No one, of course, doubts their formation in lymph-glands, and in the lymphatic tissue of the tonsils, intestines, spleen, etc. The work of Flemming[9] and his pupils in 1884 placed beyond doubt the mitotic reproduction of lymphocytes in these situations, especially in the germ centres. Ehrlich asserted that lymphocytes were not to be found in the marrow, apparently only because their presence interfered with his ideas on leucocytosis. The basis of these is that the marrow only furnishes granular cells and provides the materials for an active (polymorph) leucocytosis, while lymphocytes are supposed to be formed only in lymphatic tissue, and swept out thence passively into the circulation. The whole of his elaborate argument is destroyed by the undoubted fact that there are enormous numbers of lymphocytes of all kinds in the marrow. They are not so well seen in the human marrow as in that of animals, as most cases die either of some terminal infection which greatly increases the proportion of neutrophile myelocytes, or of some disease which exhausts or alters the marrow in some way, while resected ribs are usually removed for suppurative conditions. Even in such cases numerous lymphocytes can be found, whilst in the marrows of animals, especially young animals, there are often more lymphocytes than all other cells put together. Several cases of acute lymphatic leukaemia have now been published, and I have seen others which I have not yet published, in which there was either little or in some cases no enlargement of glands, and in which the marrow was full of lymphocytes, and the original source of the condition was evidently the marrow-lymphocytes, while even in myelaemias of the chronic form, where most of the lymphatic tissue in the body has undergone the myeloid transformation, one often finds the lymphocytes largely in excess of the normal number per c.mm. (I do not speak of percentages, but total number). In a recent case, which was undoubtedly a myelaemia, I found on one occasion 39 per cent. of large lymphocytes and 3 of small, with a total count of 300 000.

Further, in our recent experiments on digestion leucocytosis[10] we found that the total number of lymphocytes per c.mm. was increased often by from 3,000 to 11 000 in an hour, while at the same time there was no increase in their number in the mesenteric veins, and the adenoid tissue in the intestinal wall showed no evidence of special activity.

It seems impossible that they could come from the thoracic duct in such numbers, as one usually finds relatively few leucocytes there, and the lymph is well filtered before it reaches the duct through glands which could not allow so many leucocytes to pass through them. Moreover, the fall in the number of lymphocytes was almost as rapid, and unless one believes that they are broken down in the blood or tissues for nutritive purposes, one is almost driven to the conclusion that they come from and probably return to the marrow. Other experiments[11] have shown that the spleen is not an important source of them, and still other experiments, as yet unpublished, have confirmed the view that they are mainly derived from the marrow.

The lymphocytes are in reality the leucocytes most widely distributed in the body, and it is of little consequence practically whether their appearance in the blood is due to their own amoeboid movement or to other forces.

Some pathologists still believe that they can be derived from endothelial cells. No doubt they often lie against endothelium or pass through it in certain stages of inflammation, but I have never seen anything that suggested a transformation. I have made a considerable study of the cells of pleural exudations in particular, and I have never been at a loss to distinguish between shed endothelial cells and lymphocytes. But it is outside my province here to discuss this point.

The Function of Lymphocytes.

There is, of course, no doubt that they are largely protective, especially when present in lymph-glands, etc. It is not yet settled whether those of the blood are directly protective, whether they are present there in process of being

[6] *Berl. klin. Woch.*, 1901.
[7] *Virch. Arch.*, vol. clxxvi.
[8] *Clinical Pathology of the Blood.* 2nd edit. London, 1904.
[9] *Arch. f. mikr. Anat.*, vol. xxiv.
[10] Goodall, Gulland and Paton, *Journ. of Physiol.*, vol. xxx, 1903.
[11] Paton, Gulland and Fowler, *Journ. of Physiol.*, vol. xxviii, 1902.

carried to reinforce lymphatic tissue, or whether they are nutritive, or have some other function. On the one hand, it is difficult to imagine that the millions present in the blood are concerned only with defence; on the other, the facts of leucocytosis show how rapidly the polymorphs have to be increased on occasion, and how great this increase may have to be. We are apt to forget that our bodies are constantly being attacked by organisms, and that illnesses represent only the more vigorous attacks attended with some measure of success.

It is interesting to note that the main dépôts of lymphocytes, apart from lymph-glands and marrow, are round the hollow tubes of the body, the alimentary and respiratory tracts, and that these are the places which are occupied by saprophytic, non-virulent, or attenuated organisms. It seems possible that lymphocytes are adapted and sufficient to keep these in check. They are certainly not sufficient to resist virulent infections, which have to be met by polymorphs. Lymphocytes multiply so easily in connective tissue that the small percentage in the blood is enough for reinforcement and for direct protection there; polymorphs do not multiply well in connective tissue, hence their percentage in the blood must be higher.

II.—Robert Muir, M.D., F.R.C.P.E.,
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In considering the genetic relationships of the lymphocyte, as indeed of any class of cell, certain general principles should be kept in view. At the outset one may remark that mere histological details will not carry us very far in our attempts to arrive at conclusions—in fact, if relied on alone they will carry us in wrong directions. It is easy, for example, to make, and make quite faithfully, a series of transition forms from the small lymphocyte to all the members of the leucocyte class, but we would make a great error if we were to conclude that any one variety might be changed into another according to circumstances. It appears to me that three considerations are of prime importance in connexion with the subject, namely: (*a*) the philogenetic and ontogenetic development of the different classes of leucocytes; (*b*) the character of the cells undergoing active division and the sites of their multiplication; and (*c*) the general behaviour of the different classes of cells in pathological conditions.

On the two first heads I shall only speak so far as is necessary to make clear the general trend of my remarks. A hyaline wandering cell with rounded or oval nucleus, though it may become lobulated, may be taken, as Dr. Gulland has stated, as the primitive type, the form first to appear both in philogenetic and ontogenetic development. I think that next to this may be placed the coarsely granular eosinophile cell, which is a well-developed and common class of cell even amongst the lower animal forms, and in the mammalian embryo it appears at an earlier date than the finely granular cell. In the case of the human fetus the observations of Dr. Browning, made in my laboratory, show that it is not till the fifth month that cells with well-marked neutrophile granules are present in any number, whereas the eosinophiles are developed at a considerably earlier date. Further, in the bone marrow the leucocyte cells which accumulate first are non-granular, with distinctly basophile protoplasm, and afterwards acquire neutrophile granules—a point which will be referred to later in connexion with the subject of leucocythaemia. When we examine the sites of division of leucocytes in the adult, we find that the non-granular cells multiply in the germ centres of lymphoid tissues generally, and that the finely-granular and coarsely-granular cells multiply in the marrow, though there is a possibility that the eosinophiles may multiply in other positions. And here I may remark that although, especially in rodents, apparent transition forms may be found between the finely granular and the coarsely granular cells, yet, so far as my observations go, this is not the case with cells undergoing mitosis, these belonging distinctly to one or other of the two classes. The behaviour of the cells in pathological conditions also supports the view that the two classes are distinct.

Another point may be noted, namely, the relation of the distribution of the different classes of cells to the time of their development. The oldest cells in development, the lymphocytes and hyaline cells, have the widest distribution, being found in the blood and all the tissues of the body; the distribution of the eosinophiles is more restricted, but still they occur in considerable numbers in the tissues, especially in the lower mammals; whereas the finely granular cells are practically restricted in the normal state to the blood and marrow (I except, of course, mucous surfaces where they may be seen in process of emigration in presence of bacteria). Is it possible to correlate those considerations with the facts supplied by pathology? I think this can be done, at least to a certain extent. The non-granular cells have a very wide range of activity, but it is chiefly in subacute and chronic conditions that they are the preponderating variety of cell—examples of acute conditions in which the finely granular cells are not attracted or attracted very feebly, whereas the non-granular cells are specially involved, are supplied by typhoid fever, anthrax in the human subject, and small-pox. The eosinophiles are attracted by special chemiotactic substances in relatively non-acute conditions, and I have been frequently struck by their association with lymphocytes in subacute inflammatory conditions in rodents. The finely granular cells are *par excellence* those which react in acute bacterial infections, and I think one is justified in relating their numbers and activities to the conditions obtaining in warm-blooded animals. The defence offered by the hyaline cells, especially in the case of the ordinary connective tissues, is brought into operation with relative slowness on the whole. It might conceivably be sufficient for the defence of cold-blooded animals against protozoa and bacteria in these conditions, but when the temperature of warm-blooded animals is reached, the rate of multiplication of bacteria, when once they have gained a foothold in the tissues, is greatly increased, and some other arrangement would be necessary. The most efficient defence would be supplied by cells brought by the blood and possessed of the power of rapid emigration, and by a mechanism by which the supply of these cells might be kept up or increased. This last point is of special importance. Such, I believe, is the rationale of the enormous supply of the finely granular cells, of the blood leucocytosis, and of the increased proliferation of the mother cells in the marrow, which are found in various acute infections. I stated my conclusions on this subject six years ago at a similar discussion to the present, and subsequent investigations which I have made have only confirmed and elaborated what I then said. Since that time corresponding results have been ascertained with regard to the changes in the marrow in eosinophilia. It is well to bear in mind these facts in considering the non-granular cells, and to inquire whether an analogous condition exists with regard to them, so far as increased production in the germ centres and subsequent conveyance to various parts of the body by the blood stream are concerned. In the case of lymphoid tissue in general, it must be admitted that there is no mechanism for a rapid passage of newly-formed cells into the blood stream under chemiotactic influences, such as obtains in the bone marrow.* In fact it is doubtful if the cells leave the tissue by any other channels than the lymph paths. A blood lymphocytosis may conceivably be brought about either by substances which induce increased multiplication in the centres, the cells produced in excess being carried away by the lymph, and thus reaching the blood, or it may be, as Ehrlich supposes, by an increased flow of lymph through the lymphoid tissue. In connexion with this question, the condition of the blood in variola, and the mechanism by which it is brought about, are points of special importance, and will be discussed by Dr. Ferguson. It must be borne in mind, however, that in this disease we have reactions in the lymphatic glands secondary to the skin lesions and others the result of irritation, and hence the condition is not strictly analogous to what obtains in an ordinary leucocytosis.

We may now consider briefly the source of the non-granular cells found in the tissues in pathological conditions, and in doing this it is well to have before us the fact that it is the larger hyaline cells which are the most active, and occur specially in acute and subacute conditions: whereas the smallest lymphocyte forms are most abundant in the specially chronic processes—in fibrotic changes, as seen, for example, in the liver, kidneys, thyroid, etc. Now, so far as the normal state is concerned, we have no distinct evidence that spherical cells of the hyaline class are formed elsewhere than in lymphoid tissues—no evidence, for example, that any of the cells found in the lymph paths are derived from fixed or clasping cells in connective-tissue spaces. But when we come to inflammatory conditions, there is no doubt that non-granular cells acting as phagocytes have, at least, two sources, namely: (*a*) the hyaline cells or larger

* I have discussed this subject in a former paper, On the Reactions of the Bone Marrow and other Leucocyte-forming Tissues in Infections. *Trans. Path. Soc.*, London, vol. liii, 1902.

lymphocytes of the blood, which undoubtedly emigrate into the tissues in large numbers; and (*b*) certain cells which are normally fixed or sessile cells. In the peritoneum, say, of the guinea-pig, a considerable number of hyaline leucocytes (small and large lymphocytes) are normally present, and there is no difficulty in distinguishing them from the endothelial elements. But in infections, or after injections of various chemical substances, we find, following upon the emigration of the neutrophile leucocytes, a great activity on the part of the non-granular cells, and these are undoubtedly derived from two sources: (*a*) many of the hyaline leucocytes undergo enlargement, and (*b*) the endothelial cells become detached and spherical in form, and show striking phagocytic functions. The two classes of cells possess similar activities as regards phagocytosis, ingesting broken-down leucocytes and corpuscles, bacteria, etc.; and although, as I have stated, the two classes of cells originally differ in appearance, yet, as the process goes on, it is often impossible to say whether a given example is derived from a hyaline leucocyte or an endothelial cell. In the stages of the return to normal after a favourable issue we see a reversal of the process, the two classes become again easily distinguishable, and the smaller hyaline cells or lymphocytes become more and more numerous, a diminution in the size of these cells certainly taking place, according to my observations. In a study of inflammatory changes in lymphatic glands, I have been able to trace quite an analogous series of changes, including the separation of the fixed endothelial cells and the assumption by them of phagocytic properties; there is no doubt, also, that these cells multiply by mitosis in the presence of irritants. Such changes are seen especially along the lymph paths and sinuses, and appear to me to be of special interest, as we are here dealing with what are merely modified connective-tissue spaces. It seems that the cells referred to are specialized from the ordinary connective-tissue cells, and that fibrotic changes, adhesions, etc., do not follow unless the latter become implicated in the reactive process. Does a similar condition hold with regard to the ordinary connective tissues? Or, to put the question in another form, are there homologous fixed or clasping cells distinct from the ordinary connective-tissue corpuscles or fibroblasts, which in inflammatory conditions become spherical in form and act as phagocytes? In my opinion this is the case, and it need hardly be mentioned that many of the most recent researches are in favour of such a view, the clasmatocytes of Ranvier and Marchand, some of the polyblasts of Maximow, the histogenic leucocytes of Pappenheim, etc., belonging to this category of cells. I may also mention here that, according to the observations of certain workers, some of the fibroblasts themselves may assume the spherical form and phagocytic function, presenting the same appearance as the cells to which I have referred, but on this point I have no definite opinion to offer. While I have stated that cells of different origin may come to resemble each other and show similar activities, it does not follow that a converse process may take place—for example, that large lymphocytes may emigrate from the blood and settle in the tissues as clasping cells. The spherical form and phagocytic function represent very primitive properties in the process of evolution, and hence it is not surprising that cells of different classes should revert to a former state existing before differentiation and specialization occurred.

I may therefore briefly summarize my views with regard to the non-granular cells by saying that, on the one hand, we have the class of lymphocytes, the "hyaline leucocytes" being the larger forms of these, whose site of production is lymphoid tissue. The larger forms, at least, emigrate from the blood vessels, and may in pathological conditions undergo considerable enlargement; later they may become smaller again, and may assume the appearance of small lymphocytes. On the other hand, non-granular cells, with great phagocytic activity, may under pathological conditions be derived from fixed cells, especially from endothelial cells and their homologues; these are influenced largely by the same chemiotactic agencies as the hyaline cells, and some of the cells of the two classes of cells may come to present similar appearances.

It is generally assumed that the smallest lymphocytes are the youngest cells of the series, and afterwards undergo enlargement. I do not think that such a view represents the whole truth. I find, on the other hand, considerable evidence that hyaline cells after inflammatory conditions dwindle in size, the protoplasm becoming scantier, and the nuclear chromatin more condensed and resembling rather the chromatin of old cells. The collections of lymphocytes seen in chronic conditions may be partly explained in this way. It is pretty certain that they may persist for a long time in the tissues in an inactive state and without alteration in appearance; in general, the small lymphocyte may be regarded as a comparatively inactive cell. In this connexion I may also refer to the fact that in the chronic lymphatic leukaemias the small lymphocyte is the preponderating cell—a circumstance which would be difficult to reconcile with the view that this cell always represents the youngest form.

Time does not allow me to discuss the subject of lymphatic leukaemia, but I may refer to one or two points of general significance. I have recently observed a case of myelogenic leukaemia in which many of the cells resembled myelocytes in size and appearance, but differed from them in having no neutrophile granules but having a protoplasm with marked basophile reaction. This might, so far as the appearance of the cells was concerned, be regarded as a case of mixed myelogenic and large-celled lymphatic leukaemia. But I think there is little doubt that in such cases we have before us cells which represent the non-granular precursors of the myelocytes seen in embryonic life, although why these should be especially numerous in certain cases I am unable to say. A few cases of apparently unequivocal mixed leukaemia have, however, been recorded, and Hirschfeld, in a recent paper, considers that these are originally cases of lymphatic leukaemia in which the marrow tissue has been affected secondarily by the lymphocytic infiltration, with the appearance of the marrow cells in the blood as a result—the phenomenon being analogous to what is sometimes observed in invasion of the marrow by tumour growth. In any case, no facts have as yet emerged which are opposed to the view regarding the independence of the granular and non-granular leucocytes, as explained above. In conclusion, it seems to me, in view of what has been stated above, to be a question well worth consideration whether in some cases of acute lymphatic leukaemia where the cells are practically all of the large variety, the cells may not take origin from clasping cells of the connective tissues.

III.—James M. Beattie, M.A., M.D.,
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In studying the mononucleated cells of inflammatory exudations, we are met at the outset by two great difficulties. The first is one of our own creation. A great deal of published cytological work is based merely on stained preparations of the cells. The variations in staining reaction are taken as essential differences between cells, and hence part of the confusion which exists as to cell nomenclature. When we come to combine the staining properties with the reaction of the cell in its living condition on the warm stage, and with its developmental history as studied experimentally, we are forced to the conclusion that many of the cells which are described as essentially different are one and the same cell in a different stage of activity, or at a different period of its life-history. The second difficulty is a more serious one. In the early stages of an inflammatory process various kinds of cells accumulate at the site of irritation. Many of these migrate from distant parts; others, however, are produced locally by proliferation of endothelial cells and fixed connective-tissue cells. The latter are in their early stage small round cells with a darkly-stained nucleus, very rich in chromatin, and with a very scanty cytoplasm. They have a striking resemblance to the ordinary cells of lymphoid tissue, and to the small lymphocyte of the blood. In addition to these, we have the so-called plasma cells. These are derived by v. Marschalko, Councilman, and others from the lymphoid cells. At first they are small, with a nucleus often slightly indented and very rich in chromatin, and with cytoplasm which is scanty, but which stains more darkly than the nucleus, if stained with Unna's alkaline methylene blue.

And, again, we have the lymphoid tissue which one sees along the lines of the vessels, often very small in quantity, at other times more abundant, and collected into nodes. It is agreed by writers on the subject that most of these cells gradually increase in size by an increase of their cytoplasm. As they increase in size the nucleus becomes more vesicular and stains less intensely, the chromatin network becoming more evident. The granularity and staining reaction of the cytoplasm also varies. The more active the cell becomes the less intensely does its cytoplasm stain.

Experimentally it is easy to produce these various kinds of cells, and to show the transition forms. My work has been largely confined to a study of the peritoneal fluid, and the omentum in cases of acute peritonitis produced by injections

of the B. coli communis, and more chronic conditions produced by injections of the B. tuberculosis.

I do not propose dealing with these various kinds of cells, but will confine my remarks as far as possible to the lymphoid cells.

Surrounding the vessels, especially those of larger size, in the omentum of the guinea-pig and of the rabbit, there is a sheath of lymphoid tissue. At parts this tissue is accumulated into masses, sometimes comparatively large. Round the smaller vessels this lymphoid sheath may be represented by merely a few lymphoid cells. The same condition is seen in the human omentum, but here the condensation into masses is more marked.

The cells of this lymphoid tissue are like the cells of lymphatic glands. They are small; the nucleus is rich in chromatin; usually, it is round and central. The staining is so dark that very little structure can be made out in the nucleus. The protoplasm is generally very scanty, and takes on a reddish stain with eosin. Usually at the periphery of these sheaths or masses, some of the cells may be seen quite separated from the rest. Some of these may even be seen at some distance from the vessels in the normal omentum. The separated cells usually have a much more definite rim of protoplasm. The nucleus, in most cases, remains very dark, though it generally appears somewhat lighter as the cell enlarges.

In the early condition, however, the difference between these cells and the endothelial cells is extremely well marked. The nucleus is much darker, and the protoplasm takes on a deeper stain with the eosin. This lymphoid tissue undergoes marked changes during inflammation. A proliferation takes place. The increase is not very marked in the early stages, but a number of the cells are found at some distance from the vessels, and these cells are, as has been already noted, larger than those near the vessels. The increase, however, is much better seen where the irritant has been acting for a longer time. Some days after an intraperitoneal injection of tubercle bacilli, the increase of this lymphoid sheath is a striking characteristic of the omentum. It is especially well seen from twelve to fifteen days after the injection. After injections of foreign particles (for example, vermilion) these masses of lymphoid tissue become very dense and become crowded with the vermilion particles. Thus they appear to act like lymphatic glands. That proliferation of this tissue takes place, and that cells similar in every way, but usually somewhat larger, may be found at some distance is undoubted. A study of the omentum from my preparations leaves me in no doubt on these points.

These collections of small round cells have always been a source of trouble. The generally-accepted view is that they are derived from the blood vessels. This was strongly opposed by Ehrlich, because he maintained that the lymphocytes were non-amoeboid; though later on after Hirschfeld demonstrated that these cells were motile, he somewhat modified his views. Maximow, in his recent very exhaustive paper, maintains that they must come from the blood vessels. He holds that they are produced so rapidly and in such enormous numbers that local proliferation is out of the question. Ribbert argues for their local production from pre-existing lymphatic tissue which is normally present, though in a condition but little developed.

My observations in the main support the view of Ribbert. In the omentum of guinea-pigs from eight to fifteen days after intraperitoneal injection of B. tuberculosis one finds, as I have already noted, a considerable increase in the normal lymphoid tissue round the vessels and in the pre-existing lymphoid nodes.

If this increase were the result of migration from the vessels, one would expect to find a very considerale increase of lymphocytes in the blood vessels. This increase is sometimes seen, but I have never seen it at all in proportion to the collections outside the vessels, and in most cases it is entirely absent. My preparations seem to show that in the early period (four to six days) there is an increase in the pre-existing lymphoid tissue, especially of the lymph nodes—the cells get into the lymph stream, and can be traced by the efferent lymphatics into the larger lymphatic vessels, and by way of these pass along the periphery of the blood vessels. Sometimes these lymphatic channels contain but a few cells, at other times from eleven to fifteen days after injection they are crowded with them. Sections show the lymphatic channels full, while the blood capillaries lying alongside show no mononucleated cells. From these lymphatic channels they undoubtedly migrate and pass to the foci where the tubercle bacilli are lodged. On this view we have an explanation of why in certain cases of tuberculosis, as pointed out by Swan and also by Bunting, the blood examination does not show an increase of lymphocytes. The increase may be purely local—certain lymphatic nodes and channels being unaffected. On the other hand, the infection may be more general or the parts affected may be channels which are very directly connected with blood vessels, and in these cases a lymphocytosis would be found. The cytology of serous effusions becomes of ever-increasing importance to the clinician. It is very generally held that a pleural fluid or a cerebro-spinal fluid which is very rich in lymphoid cells indicates tuberculosis. Though I do not agree with those who hold that it is a proof of tuberculosis, but with Ribbert that it is merely evidence of chronicity, yet with lymphatic channels in the pleura or in the spinal membranes crammed with lymphoid cells, it is a natural result that the fluid would show a rich lymphocytosis.

Do these Lymphoid Cells Increase in Size?

Ehrlich has pointed out that there are no transitions between the lymphocytes and the larger mononucleated cells in the blood. In inflammatory exudations from twelve hours onwards, transition stages can be seen between lymphocyte like cells and the large mononucleated leucocytes. From sixty-eight to ninety hours in non-fatal cases the small cells and the transition forms are very numerous. In the omentum from cases of tuberculosis the increase of cytoplasm in the lymphoid cells which are migrating from the lymph nodes to the tubercle follicles is quite distinct, though it is not so marked as in the more acute processes. Most observers derive the so-called plasma cells from the lymphocytes, and Councilman describes the transitions between the two cells. We must therefore, I think, conclude that the lymphoid cells do increase in size, and yet one cannot ignore the opinion of Ehrlich. These seemingly different statements are explained on the view that the lymphoid cells are produced by proliferation of the pre-existing lymphatic tissue outside the vessel. Those present in the blood are, we might say, accidental and without function there. They have been simply washed in by the overflow from the lymphatic channels, or they may possibly have migrated in. Herbert, in 1900, working with cases of trachoma, referred to the hypertrophy of pre-existing lymph follicles, to a new formation of these, and to the passage of the lymphocytes directly into the small vessels. Though I have not been able to definitely confirm this view, I think it highly probable that such a migration takes place.

In dealing with the function and destiny of these lymphoid cells, one must consider not only the small forms but the larger ones which are derived from them—the cells called polyblasts by Maximow. These are, he says, the uninucleated round cells, which by writers are called sometimes the uninucleated leucocytes of the blood because they are small, and sometimes, because they are larger, plasma cells. The smallest, he says, corresponds morphologically with the lymphocyte. Though I have never seen phagocytosis by the smaller forms, the larger forms and the plasma cells are undoubtedly phagocytic, not only to foreign particles, but also to other cells and to bacteria. The larger forms show a very distinct vacuolation of the protoplasm, and the staining of the cytoplasm and of the nucleus in these larger forms is less intense than in intermediate and smaller forms.

This, I believe, is simply due to the fact that the smaller cells are less active and are not yet properly performing their function. Adami has pointed out that the nucleus plays an important part not only in the process of cell division but in the function of the cell. With activity the chromatin of the nucleus becomes used up and discharged into the body of the cell, to combine with certain bodies and thus form the specific secretion of the cell.

Metchnikoff, referring to the vacuolation of these cells, regarded it not as a degeneration—a view taken by Councilman, Krompecher, and others but rather as an abundant secretion of digestive fluid analogous to that observed in the protozoa whilst intracellular digestion is going on.

Justi thinks that the cells may be special carriers of some substance, either for nutrition of other cells or some noxious substance which they are carrying away or destroying.

Ranvier, in a paper, "The Clasmatocytes," in the *Triton*, says: "These are like ordinary leucocytes, but much larger." The enlargement, he says, is specially by the addition to the protoplasm of a particular substance the chemical nature of which is unknown. This substance is a secretion of the cells which may play a part in the nutrition of the tissues. The

processes of these cells can be enlarged to store up the secreted material or retracted to very delicate protoplasmic processes. This is in accord with a former view of Ranvier that the leucocytes are unicellular glands.

The cells with branching processes which have been referred to are, I am convinced, either endothelial cells or cells derived from the large mononucleated leucocytes in a condition of active amœboid movement, and possibly also special functioning activity.

The multiple vacuolation of these phagocytic cells, whether derived from the endothelium or from the mononucleated leucocytes, is quite apparent. It is present in the cells in the peritoneal fluid taken from healthy animals. It becomes much more marked at the period when the activity of the cells is most pronounced—for example, about thirty-six to forty-eight hours after an injection into the peritoneal cavity. It is seen also in the cells in the sinuses of the spleen in typhoid fever, and in the lepra cells in the splenic sinuses.

At the later periods, when the animal has practically recovered—at the period when active phagocytosis has ceased—the vacuolation becomes less pronounced in the cells. It is not uncommon to find some of these mononucleated cells in which the protoplasm stains very darkly—even more darkly than the nucleus—and in which the vacuolation is not seen. This suggests the accumulation of some substance in the protoplasm of the cell, and probably a secretion of the cell. When the cell commences to function actively this secretion is discharged, either as a nutritive agent or as some special ferment or possibly antitoxic body. The cells now become clearer and their vacuolation more marked. The fact that very often this vacuolation of the protoplasm precedes degenerative changes in the cell is not evidence against the view that the vacuolation may be the result of a secreting function of the cell.

We know that the cells have only a short life. Charged with their secretion, they migrate from their original position, carry out their work, and now, cut off, as it were, from their supplies, they probably die. Further evidence of the production of some ferment or other body by the cell is given by the method of gradual digestion of the ingested cells. The gradual dissolving away of the chromatin of the nucleus, followed by the gradual disappearance of the protoplasm in a clear space in the cell, suggests very strongly the pouring out of some digestive ferment round the ingested cell. If we are to accept this view of Metchnikoff's—and it seems to me everything points in that direction—we must regard these mononucleated phagocytes as the most important of the cells of inflammatory exudations. They may play an important part in the early stage of infection by the production of a substance which injuriously affects the bacteria. In the healthy peritoneal fluid, and in the later stages of infection, where recovery is taking place, they are almost the only cells present.

In all my experiments, where the animal recovered from the infection, these mononucleated cells became greatly increased, as compared with the polymorphonuclear leucocytes, from about thirty hours onwards. In fatal cases the polymorphonuclear leucocytes were always in excess. This agrees with Pratt's observations in cases of pneumonia. In a case of acute pleurisy which I examined, and in a case of pneumonia with some effusion into the pleural cavity, the cells in the fluid were mostly of the mononucleated type. They were well stained, and showed an active phagocytosis. Vacuolation was well-marked in the cells found in the fluid during the early periods of pleural accumulation, and less marked at a later stage. Both patients recovered. The presence, therefore, of an excess of these mononucleated cells in an inflammatory effusion at an early period, especially if actively functioning as shown by the vacuolation and phagocytosis, may be regarded as a favourable sign.

My observations have led me to agree with the view taken by Metchnikoff, that the cells of the body are the principal agents in antagonizing injurious substances. The fixed cells—for example, the endothelial cells of serous membranes, blood vessels, etc., probably play an equally important part. The cells act as phagocytes. They englobe, and, by a special secretion or ferment, digest other cells and bacteria. Further acted on by the bacteria or by their products they become specially active, and secrete a substance which acts not only by digesting included bacilli and cells, but by producing changes in the blood serum which renders it inimical to the life of bacteria, and possibly also rendering inert, by chemical combination or other means, toxic bodies already circulating in the blood or lymph.

Do the Lymphoid Cells form Fibrous Tissue?

The chief function of the polyblasts, according to Maximow, is the clearing away of waste products and the preparation of the region for fibroblasts. They divide in the tissues formed from the fibroblasts, gradually lose their amœboid movement, become sessile and accommodate themselves to the new tissue, as true constituents. In the later stages, the lymphocytes develop into plasma cells, and these plasma cells are transformed into fixed connective-tissue elements.

My own observations in the transformation of lymphocytes into fixed connective-tissue elements are not sufficiently advanced to speak with any degree of certainty on the subject. One sees undoubtedly small lymphoid cells in granulation tissue. These elongate, become spindle-shaped, and certainly my observations lead me to the view that these cells in repair and in tubercle granulations are capable of producing fibroblasts and fibrous tissue. At the same time, I am convinced that their rôle here is a very secondary one. The fibroblasts are formed, at any rate, principally from the fixed cells of the part. Most of the lymphoid cells apparently are destroyed in the newly-formed tissue.

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When some time ago I consented to take part in this discussion I thought it would not be a matter of any great difficulty, after examining the available facts, to come to a just opinion as to the clinical significance to be attached to the presence of a lymphocytosis. I speedily found, however, that though the presence or absence of lymphocytosis may in certain instances have been of material assistance in forming a correct conclusion, yet in practically every case the facts had been used in a purely empirical manner, and that it was not possible to draw any conclusion as to the significance of lymphocytosis in general.

In the first place, while anxious to avoid the thorny subject of the origin of the lymphocyte, I may say that till we are on firmer ground in this respect, till we understand more clearly the various factors which under physiological circumstances furnish a more or less constant number of these cells to the circulating blood, and the other factors which lead to the wide variation in numbers in disease, we are not in a position to do more, clinically, than accept such facts as we possess and use them, as we use many other symptoms, without being able adequately to explain them.

There is no doubt, I think, at present too great a tendency to forget that the enormous majority of the blood changes found in disease are symptomatic merely and not the whole disease, the clinical symptoms and course being in great measure neglected. So far has this tendency carried some workers that Hodgkin's disease, lymphosarcoma and lymphatic leukaemia are for them indistinguishable merely because, as it seems to me, the two former conditions are in some cases accompanied by an increased number of lymphocytes in the blood. Nothing could be better calculated to throw discredit on the value of blood examinations than this attitude.

It is only by thoroughly appreciating our limitations in weighing the value of blood counts that we can hope to profit by the increase in knowledge on the anatomical and physiological side when it comes.

The number of observations dealing with a diminution in the number of lymphocytes is so exceedingly small that it were waste of time to consider their significance, and I propose to confine myself to conditions in which their number is increased, that is, to conditions in which there is a so-called lymphocytosis. If I venture to give a definition of lymphocytosis it is only that there may be no doubt as to the meaning in which I propose to use the term.

Lymphocytosis is, then, an increase beyond the limits observed in health of the absolute number of lymphocytes in the circulating blood. For clinical purposes we may further restrict this to the peripheral blood which always furnishes the material for examination.

If we hold strictly to this definition, we exclude at once many conditions in which the lymphocytosis is relative only, and this, so far from being a disadvantage, is to my mind an advantage, for it manifestly should be our aim to eliminate error; and surely it is an error to label a condition lymphocytosis, even if we prefix relative to it, when the essential change we are dealing with is a decrease in the number of polynuclears, the lymphocytes remaining constant. If we

could trace any connexion between the variations in number of the two forms there might be some excuse, but it is sufficient to show that either form may remain at the normal level during the time that the other is fluctuating widely to demonstrate their mutual independence, and at the same time the folly of calling a polynuclear leukopaenia by the term "relative lymphocytosis." The term, though it most commonly conceals a diminution in the number of polymorphonuclear cells, will equally obscure the fact of true increase in the number of lymphocytes in cases where all the varieties are increased, though possibly not in the same proportion. The simplest, and at the same time the best, way of avoiding misunderstanding is in making any statement to give always the actual numbers, per c.mm. of each variety, or at least to furnish data as may enable others to obtain such figures for themselves.

It is not too much to say that a very large proportion of all the literature is inadequate for this purpose. It is as easy to remember absolute numbers as it is percentage, and for myself, taking as a rough standard 7,500 leucocytes per c.mm. of blood, I count 5 000 polymorphonuclears, 2 000 lymphocytes, 350 large mononuclears, and 150 eosinophiles as the number of the different varieties. These numbers are readily remembered, and any deviations from the normal are noticed at once even in cases of myelogenic leukaemia, where the presence of many abnormal cells so greatly obscures these facts when percentages are given.

In seeking to discover the forces which lie at the root of the variation in the number of lymphocytes, we turn naturally in the first place to a consideration of those conditions in which the variations may be termed physiological. Of these in the adult the one least open to objection is the leucocytosis of digestion.

The results obtained appear somewhat contradictory mainly, I believe, because in the earlier observations it was not sufficiently well recognized what small deviations from health, for example, slight constipation or trifling accidental causes, might cause the phenomenon to remain in abeyance or import disturbing influences. Excluding such influences, we find that a meal rich in animal proteid will cause an increase in health of about 30 per cent. in the number of leucocytes per c.mm. This in actual numbers is so small an amount that the number present before the meal must be ascertained for each individual. Of this number an undue proportion, according to most recent observers, are lymphocytes.

The most obvious source of the increase in the number of lymphocytes would lie in an increased activity of the lymphatic tissue during digestion. Whether such increased activity occurs is doubtful, the observations of Hoffmeister being in direct conflict with the later ones of Goodall, Gulland, and Paton. These latter authors are in agreement with Rieder that the blood of the mesenteric veins during digestion is no richer in leucocytes than that in the arteries, and conclude that the increase of lymphocytes cannot, therefore, have its origin in the intestinal lymphadenoid tissue. Without going further into this subject there is enough evidence to show that even in physiological processes the question is still too unsettled to be of use for clinical argument.

In the child for the first few years of life the number of lymphocytes is as a rule high. Immediately after birth the total leucocyte count is about 18 000 to 20 000, and of these as many as 15,000 may be polymorphonuclears, leaving a diminished proportion but still absolutely higher number of lymphocytes than in the adult. In the first week this polymorphonuclear excess has disappeared; the absolute numbers for this cell having reached the figure at which it remains during life. At the same time a further increase in the number of lymphocytes takes place and reaches its maximum, according to Hutchison, about the age of 6 months. The number gradually falls, is still well marked at the end of the second and disappears usually about the seventh year. The number at the end of the sixth month may be as high as 8 000 or 9,000 per c.mm.—that is to say, four times the number present in adult life. This lymphocytosis, which is a true lymphocytosis, and is everywhere recognized as the normal condition which obtains during infancy and early childhood, is often increased in disease at that age. This fact is often seized upon and made use of to support the theory of a reversion to the fetal type of all severe anaemias in early life. If we compare the condition of the blood in health and disease it will be seen, I think, that this is by no means certainly the true or only explanation. The fact that those conditions which in the adult are accompanied by an increase of the polymorphonuclear cells are in the infant, of whatever age, similarly accompanied, and secondly, that after the first week the polymorphonuclear cells are already fixed, as it were, at the adult number, are good reasons for believing the two types are quite constant. This invariable presence in large numbers in health of the lymphocytes corresponds with that age period when the lymphatic tissues throughout the body are most active, and, at the same time, most subject to disease. Whatever the cause of this activity, or whatever useful purpose it subserve, there can be no doubt that the lymphocytosis at this age is an expression of its existence. So must the increase in disease surely be an expression of an increased stimulus to or call upon the already active tissue, and not in any way a reversion.

In discussing pathological lymphocytosis I will confine myself to considering shortly certain conditions in which the lymphadenoid tissue is obviously affected, and in which the number of lymphocytes in the circulating blood may be at times increased.

Hodgkin's Disease.—Round this disease much controversy has raged. How much of this is due to the multitude of its names, each more misleading than the others, how much to undue weight being allowed to the blood changes or not sufficient to the anatomical, it is difficult to say. The fact remains that it is regarded by some as an aleukaemic stage of lymphatic leukaemia, by others as a form of lymphosarcoma, and by others, again, as a form of tuberculosis. I have a table here of cases from St. Bartholomew's, in all of which there was an opportunity of making a *post-mortem* examination or an examination of a gland removed during life. They are 14 in number, and illustrate fairly what I believe is the true picture of the very moderate degree of the blood changes. Of the 14 cases, 6 had total counts of 6.000 leucocytes per c.mm. or under, and 6 of 10 000 or over, the highest count being 19 800 and the lowest 2.330, this latter from a patient in moribund condition. The average count was 10,340. Of the polymorphonuclear cells, in 7 cases the number were above 5,000, the highest being 14,000, and of the 7 cases below the lowest count was 1,700. Similarly, the lymphocytes were equally divided into 7 cases above and 7 below 2 000 per c.mm., the highest count being 4,500 and the lowest 530. It is possible to say that the changes are never excessive, and when the number rises above the average total the number of both the polymorphonuclear cells and of the lymphocytes is absolutely increased, most often without any great alteration in their relative proportion. When the number falls below the average the total number of each variety falls in a similar way. The number of cases is small, of course, but they show conclusively that Hodgkin's disease may run its course to a fatal issue without presenting any permanent blood changes which are characteristic, or what might be called excessive. In half the cases the numbers were increased, in the other half decreased; and in either case the change affected both the varieties under discussion. I think this can only mean that where large alterations are found, such as are on record, affecting most often the polynuclears, but sometimes the lymphocytes chiefly, these changes cannot be regarded as symptomatic of the essential cause of Hodgkin's disease, but rather of some secondary infection or other accidental cause.

Of tuberculous adenitis very much the same may be said. In uncomplicated cases the changes are, as a rule, absent. In syphilis, on the other hand, a fairly-marked leucocytosis is the rule during the secondary stage, and the increase of the lymphocytes is greater than that of the polymorphonuclear cells.

In lymphosarcoma the lymphocytes may be greatly increased in numbers—as, indeed, they may be in other forms of sarcoma. I have seen an absolute count of over 20 000 lymphocytes in a case of sarcoma of the kidney, but here again the changes are usually trifling. In this group examination of the results from the clinical point of view is very disappointing in that they are chiefly negative, and that when a lymphocytosis does occur it affords us no information beyond the bare fact. We are left with the other clinical symptoms, the course of the malady and a histological examination, if that be available, to help us to a conclusion. The blood examination serves us only to exclude lymphatic leukaemia, and even in this condition we may be deceived if we happen on an aleukaemic interval.

We know that during digestion and in infancy there is an increase in the number of lymphocytes, and here we may trace it probably to a physiological greater activity of the lymphocytic tissue. We know that in lymphatic leukaemia we have a pathological change in the same direction. It is possible—as for example in the lymphocytosis following the administration of pilocarpin—that the increase may be traced

to a mechanical washing away of the cells by an increased lymph flow. We may, as in local chronic inflammations and exudations, hint at chemiotaxis. But in the majority of cases we are at present unable even tentatively to explain the appearance of an increased number of lymphocytes in the circulation.

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For the theme of the present discussion, variola, considered from the point of view of the leucocytic changes which occur in the blood, and which are therefore reflected in varying degree by the different tissues of the body, constitutes the most perfect example amongst the acute infectious diseases of a specific condition affecting the lymphocyte most profoundly.

In the time at my disposal I propose to pass in review the changes to be found first of all in the blood, and afterwards to deal with those met with in such situations as the bone marrow, lymph glands, skin, and certain of the organs.

This field of observation practically coincides with that of my own work on the subject, which forms the basis of the present paper.

With regard to the condition of the blood, the distinctive feature consists in a progressive increase of the smaller hyaline cells or lymphocytes—a condition which, commencing at a comparatively early stage of the disease, rapidly reaches a climax, and, after oscillating between narrow limits for some days, slowly declines till the normal proportion of this type of cell is reached, the patient being, by this time, quite convalescent.

Accompanying the establishment of this condition, there is an almost exact inversion of the process as regards the polymorphonuclear leucocyte which, diminishing in numbers, reaches its lowest register at a period coinciding with that of the lymphocyte maximum, after which it steadily climbs to its normal position in the leucocytic ratio. The condition of the blood thus briefly outlined is most typically illustrated in mild and moderately severe types of the disease. The characteristic condition of the blood in such a case at the ninth day of the disease is illustrated by the following differential count:—Polymorphonuclear leucocytes, 45.0 per cent.; lymphocytes, 51.0 per cent.; large hyaline cells, 1.5 per cent.; eosinophiles, 2.5 per cent: total, 100.0. The number of leucocytes per cubic millimetre at this date was 20,200.

In confluent or haemorrhagic cases, on the contrary, the leucocytosis, although it generally presents the leading features just described, is moderate in degree and transient in character. Indeed, the systematic examination of the blood in such cases suggests that an attempt is made to realize the curve of leucocytic change characteristic of more favourable cases of variola, but that the reaction of the haematopoietic tissues and organs suddenly fails, with a correspondingly abrupt fall in the number of all the varieties of leucocytes before death.

The leucocytic changes which are thus found to characterize variola occupy the period, generally speaking, between the third and thirtieth days of the disease, the maximum proportion of lymphocytes being found between the eighth and tenth days of the disease. Their average proportion at this date amounts to nearly 50 per cent. of all white cells in the blood, while in exceptional instances they constitute no less than 60 per cent. of all leucocytes present.

It is therefore apparent that in small-pox the lymphocytes are regularly increased—very often notably so—both in a relative and absolute sense, while the polymorphonuclear leucocytes are diminished, always relatively and sometimes even absolutely. It must be added that degenerated forms are much more common amongst the latter than the former class of cell.

The appearance in the blood of cells which are normally only found in the bone marrow occurs regularly in the more severe class of cases. Thus mononuclear neutrophile cells (myelocytes) form 6.5 per cent. of all white cells in the more severe cases, and frequently proportions of 10 per cent. to 12 per cent. are found in the worst confluent and haemorrhagic cases. Along with these, nucleated red corpuscles and mononuclear eosinophile cells find their way into the blood, the latter, however, in very small numbers. As these further changes do not come within the scope of the present discussion, they will not be further alluded to.

The lymphocytes which present themselves in the blood of the variolous subject vary considerably in size as well as in staining affinities. The type commonly met with under normal conditions is present in the blood of small-pox in increased numbers, namely, a small cell with a relatively large spherical or slightly notched nucleus staining very deeply with basic dyes, and surrounded by a scanty protoplasm of marked basophilic character. Besides these, however, and in greater numbers than the preceding type, are cells of somewhat larger size, whose general features conform pretty closely to the preceding description, but whose nucleus and protoplasm, while still basophilic, are only feebly so; the protoplasm with Ehrlich's triacid stain, however, is more deeply stained than the nucleus.

The protoplasm of such cells is completely non-granular, though the occasional occurrence of a portion of a degenerated polymorphonuclear leucocyte having perhaps a spherical fragment of the original nucleus and half-a-dozen granules still retaining their neutrophile tint presents a degree of likeness to the type of cell we are considering, sufficient to cause slight hesitation in assigning to it its proper place. It is to such a product that the term "pseudo-lymphocyte neutrophile" has been applied by Weil and others, but as its occurrence, especially in the blood of severe cases of small-pox, is fairly common, and its nature is, as a rule, not difficult to determine, the use of such a term appears to me unnecessary and likely to lead to confusion.

With regard to the condition of the bone marrow in small-pox, it must be borne in mind that this tissue only reveals the last effects of the acute morbid process in which it has shared, opportunities of examining it apart from quite exceptional instances occurring only after the termination of very severe cases. As viewed under these conditions, the tissue often appears almost entirely depleted so far as its neutrophilous elements are concerned. In the majority of instances it contains a considerable quantity of blood, with comparatively few mononuclear neutrophile elements and a large quantity of free neutrophile granules. Occasionally clumps of lymphocytes, frequently visible as small white grains in the midst of the strawberry-coloured diffluent juice of the marrow, occur in sections and film preparations.

The practically constant presence of granular clumps of this kind in the marrow led Chiari to regard the affection as peculiar to small-pox, and the term "osteomyelitis variolosa" was applied by him to the condition. Having regard, however, to the fact that there is regularly an absolute increase in the polymorphonuclear cells, although these are relatively diminished, and also to the fact that these cells are undergoing rapid destruction in the blood itself (as well as in the skin), we are almost compelled to infer the existence of a proliferative or leucoblastic activity of the marrow in cases proceeding to a favourable termination.

The Lymphatic Glands in Variola.

One is naturally led to anticipate, from the rapidity with which a marked lymphocythaemia is established in the disease, that a proportionate degree of cellular activity might easily be demonstrable in the lymphatic glands, and more particularly in their germ follicles.

These indeed do show marked enlargement due to a great increase in the numbers of lymphoid cells, the degree of enlargement being such as to cause coalescence of the germ follicles at their margins. The central sinuses, and also those which converge towards the efferent sinus at the hilum of the glands, are usually crowded with lymphoid and hyaline cells.

The cortical lymph sinuses, as well as the cavernous sinuses of the medullary portion, are distended with cells of various types. Most frequently lymphocytes and large mononuclears with clear nucleus abound. The periglandular connective tissue, moreover, is crowded with cells of the same kind. Cells possessing granules of either the neutrophilous or eosinophilous variety, on the contrary, are only met with in comparatively small numbers in the sinuses of the gland, and even these exhibit very general signs of degeneration. In many instances they are to be observed in the interior of mononuclear phagocytes.

Nucleated red corpuscles, or cells proper to the bone marrow, are not frequently seen in the sinuses of the lymphatic glands, and I have not found any evidence, apart from the proliferation of mononuclear cells of endothelial origin, favouring the view of certain observers that the glands in variola assume a function like that of the bone marrow, a so-called "myelogenic transformation."

In view of the fact that the presence of the virus of small-

pox in the skin excites there an exudation composed largely of mononuclear cells of the lymphocyte class, and that the virus is conveyed from the skin to the superficial lymphatic glands, it may justly be inferred that the proliferative activity of the lymphoid cells in the glands is the direct result of its presence there. In this connexion it is interesting to note that the greatest degree of lymphocythaemia coincides in point of time with the period at which the eruption has attained its fullest development.

The spleen in variola appears to play a more or less passive rôle; it is mainly concerned with the digestion and destruction of leucocytes which have suffered degenerative changes in the blood stream. There is, however, to be noted, on the other hand, a certain degree of hypertrophy of the Malpighian bodies. This is due not only to an increased number of lymphoid cells, but also to a proliferation of cells of endothelial form and origin at the margins of these bodies. It is possible that cells of both kinds may enter the blood from this situation, and so contribute to the leucocytic formula previously described as characteristic of small-pox.

With regard to the condition of lymphoid tissue elsewhere in the body in small-pox I cannot speak with certainty, but it is worthy of note that I have found the submucous areas of lymphoid tissue in the gastro-intestinal tract, showing distinct evidences of proliferative activity.

In conclusion: (1) There is in small-pox an excessive production of cells of the lymphocyte and smaller hyaline class. These are found in very high proportions in the blood and in the skin. In the latter situation they form a notable constituent of the exudation in the earlier stages of the eruption. In the blood, however, they reach their highest proportions after the virus has presumably left the blood to enter the skin.

(2) These changes are accompanied by considerable activity of the lymphocyte-producing tissues throughout the body. The subcortical lymphoid follicles of the lymphatic glands appear to me to be chiefly concerned in this process, although the Malpighian bodies of the spleen also play a contributory rôle in producing the lymphocythaemia. Cells of the neutrophile class, on the contrary, undergo a progressive diminution relatively, any initial activity on the part of the bone-marrow being soon replaced by a passive condition, or even in severe cases by one in which all the leucoblastic elements are destroyed.

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IN the study of cases of leukaemia an unnecessary difficulty, I believe, has arisen from the hard-and-fast distinction which Ehrlich has drawn between the physiology of the lymphocytes and that of the granular cells of the blood. In the following contribution it is our intention to discuss from various standpoints the validity of this distinction. In other words, the question at issue is: How far is lymphocytosis to be regarded as a purely passive phenomenon, and is there any necessity to consider that lymphatic leukaemia is a totally different pathological process from the spheno-medullary variety?

The constituents of the lymphocyte group of cells found in the blood are (1) the lymphocytes proper, including both small and large varieties, and (2) the large mononuclear and transitional leucocytes—adopting Ehrlich's classification. In normal blood these two groups of cells can without much difficulty be separated. The size and shape of the nucleus surrounded by a concentric border of deeply basophile protoplasm serve to differentiate the typical lymphocytes; on the other hand, the large mononuclear cells are distinguished by their large size, their oval nucleus often situated excentrically, and staining faintly, and their relatively abundant but faintly basophile protoplasm. In pathological blood conditions I have often experienced great difficulty in accurately placing individual cells in one or other of these two groups. In some blood conditions every grade of transition between the lymphocytes proper and the large mononuclear cells are found, no matter in what way the preparations are stained. I have, however, always endeavoured, in making differential counts, to classify the cells of the lymphocyte group in these two divisions. My method has been as follows: All cells, irrespective of their size, which conform in appearance and staining to the typical lymphocytes are classed in one group; while cells which from the character of their nucleus and protoplasm and their reaction to staining reagents conform to the type of the mononuclear leucocytes in the second group. Doubtful cells I have assigned to the first or second group, according to their size. This method, though open to objection, seems the best possible under the circumstances.

It is universally granted that the lymphocytes proper have their origin in the lymphatic tissues and glands. Various theories exist with regard to the origin of the large mono

TABLE I.—*Cases in which the Percentage of Large Mononuclears was 10 per cent. or above.*

Date.	Red Cells.	White Cells.	Pmn.	Lymph.	M.	E.	Hb.	Diagnosis.
			Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	
Jan. 11, 1902	4,430,000	9,000	54.8	16.0	27.6	1.6	86.4	General enlargement of glands; no splenic enlargement; lymphoma maligna.
Mar. 20, 1902.	3,500,000	10,000	80.0	8.4	11.6	—	69.0	Same case: one gland which was incised had become septic.
Jan. 31, 1902 ..	—	—	68.0	18.0	14.0	—	—	General enlargement of glands; spleen not felt; tubercle (?)
Feb. 9, 1903 ..	4,500,000	8,000	57.8	24.6	17.7	—	90.0	General enlargement of glands; no spleen felt; Hodgkin's.
April 26, 1903..	4,200,000	14,200	44.0	39.2	16.4	0.4	79.0	Lymphosarcoma of neck.
June 29, 1903 ..	4,330,000	7,400	67.0	15.6	16.8	—	80.0	Numerous enlarged glands: probably lymphosarcoma.
Nov. 20, 1903 ..	3,070,000	12,500	44.4	38.0	17.2	0.4	36.8	Glands enlarged in neck, axilla, and groin; severe anaemia.
Jan. 16, 1904 ..	—	—	25.0	63.4	11.6	—	—	Lymphosarcoma of neck (baby).
March 17, 1904.	4,560,000	8,000	52.5	26.5	19.5	1.5	88.0	Hodgkin's disease; no splenic enlargement.
April 5, 1904 ..	3,550,000	9,500	53.5	33.5	11.0	2.0	67.9	Adenoids and tonsils, gastro-intestinal trouble; no splenic enlargement.
Oct. 29, 1901 ..	5,140,000	5,500	50.8	26.8	18.2	4.2	98.0	Spleen enlarged; general lymphatic enlargement; Hodgkin's or tubercle.
March 3, 1902..	2,305,000	6,560	51.6	39.0	18.0	0.5	49.3	Spleen enlarged; enlarged glands.
Oct. 6, 1901 ..	1,800,000	19,600	28.6	58.6	11.6	1.2	30.0	Von Jaksch's anaemia.
April 11, 1904 ..	1,700,000	13,300	46.0	38.0	16.0	—	27.6	Von Jaksch's anaemia.
Aug. 10, 1903 ..	3,000,000	4,000	69.0	18.4	20.8	2.0	—	Malaria.
Feb. 4, 1902 ..	5,030,000	4,000	62.4	24.4	11.2	2.0	98.0	Enlarged spleen.
June 4, 1903 ..	4,340,000	9,350	27.5	36.0	35.5	1.0	57.6	Enormous spleen.
Aug. 12, 1903 ..	1,610,000	4,200	47.8	42.4	9.0	0.4	28.0	Splenic anaemia.
Oct. 30, 1903 ..	2,400,000	2,580	51.0	19.0	29.0	1.0	48.5	Enlarged spleen.
Feb. 2, 1904 ..	4,120,000	10,000	69.0	23.5	14.0	—	80.0	Enlarged spleen.
	2,540,000	7,500	46.0	40.0	12.8	1.2	—	Enlarged spleen.
Sept. 24, 1900	4,025,000	6,500	47.0	41.0	10.0	2.0	45.0	Splenectomy.
March 4, 1901..	5,450,000	8,450	46.6	41.2	3.0	9.2	85.0	Splenectomy.
Nov. 23, 1900 ..	4,060,000	4,500	48.8	40.2	10.7	0.3	78.0	Typhoid.
March 8, 1901..	5,300,000	6,900	54.4	33.0	10.2	2.4	1[illegible]	Typhoid.
July 3, 1902 ..	3,175,000	9,000	57.2	32.0	10.8	—	49.3	Tubercle.
Sept. 29, 1903..	3,750,000	10,600	77.5	14.0	18.0	0.5	72.0	Tubercle (mediastinal glands)
Oct. 19, 1903 ..	3,740,000	29,000	70.2	19.8	11.2	0.8	52.3	Sarcoma.
Nov. 2, 1900 ..	3,640,000	4,600	63.0	26.0	10.5	0.5	41.0	Prolonged diarrhoea.
Sept. 25, 1900..	3,990,000	4,000	54.2	31.8	10.8	3.2	64.0	Chlorosis.
Nov. 2, 1900 ..	4,200,000	6,400	50.0	33.8	10.8	4.4	59.0	Chlorosis.
Aug. 24, 1901 ..	4,[illegible]00,000	7,400	45.6	41.2	11.2	—	53.0	Chlorosis.
Jan. 29, 1902 ..	2,[illegible]00,000	4,400	47.2	39.4	10.8	2.6	43.4	Chlorosis.
Mar. 22, 1902 ..	980,000	4,500	67.2	22.0	10.0	0.8	37.5	Pernicious anaemia.
April 19, 1902..	1,500,000	5,000	30.8	49.6	13.6	—	35.7	Pernicious anaemia.
	5,[illegible]00,000	5,500	70.0	25.0	4.0	1.0	1[illegible]	Normal blood.

nuclear leucocytes. They have been supposed to come from the spleen (splenocytes), from the bone marrow (Erhlich), and from the lymphatic tissues by different haematologists. With the view of throwing some light on their origin, I have carefully gone over my findings in some 500 differential counts of various pathological conditions, and from these I have compiled the table given on p. 591, selecting only those cases which show a very considerable increase of the large mononuclear elements. I have tabulated the cases which show 10 per cent. or over of large mononuclears. This percentage is three or four times that usually found in blood conditions.

The pathological conditions determined by this method of selection are:

Ten cases in which the lymphatic glands and lymphatic tissues were markedly affected.

Two cases of tubercle in which we may presume the lymphatic tissues were involved.

Eight cases in which an enlarged spleen was the most notable clinical feature of the cases.

One case of malaria.

One case of splenectomy.

Two cases in which both lymphatic glands and spleen were involved.

Two cases of typhoid in which disease both the lymphatic tissues of the intestine and the spleen were involved.

One case of prolonged diarrhoea in which the intestinal lymphatic tissue was almost certainly involved.

Two cases of pernicious anaemia.

Four cases of chlorosis.

I have purposely omitted from this list all my cases of leukaemia, which will be considered later.

Considering that 10 per cent. of the leucocytes is a very high percentage of large mononuclears, I think we are justified in assuming a connexion between the pathological condition present and the great increase in these cells in the cases tabulated on p. 591. These cells may, therefore, be greatly increased in general lymphatic enlargement and in enlargements of the spleen. The only cases in this table in which either the spleen or lymphatic tissues were probably not much involved are 4 cases of chlorosis and 2 of pernicious anaemia. As far as the argument goes, it points to the origin of these cells from either the spleen or the lymphatic tissues. The fact that the one case of splenectomy which I had an opportunity of accurately observing showed a decided increase of these cells proves that the spleen cannot be their only origin. The two cases of pernicious anaemia might possibly point to their origin from the bone marrow, because we know that the bone marrow is notably involved in this disease. The cases of typhoid fever and chlorosis will now be dealt with in more detail.

In anaemic conditions, such as the anaemia of typhoid fever, chlorosis, and pernicious anaemia, we generally find that an increase of the large mononuclears roughly corresponds with an increase in the lymphocytes proper. For instance, here are the figures from a series of differential counts in typhoid fever from the same case at different stages:

	Hb.	Lymph.	Mononuclears.
	Per cent.	Per cent.	Per cent.
1. Early stage	88 0	20.0	7.6
2. Anaemia beginning...	67.0	37.6	11.2
3. Anaemia and phlebitis	65.0	30.0	2.6
4. Anaemia more advanced	60 0	40.0	9.0
5. Anaemia and abscess	54.0	25 0	5.8
6. Convalescence	66.0	37.0	12.2

We here notice that the percentage of the large mononuclears roughly increases and decreases with the percentage of the lymphocytes proper.

The following cases show the same relation in cases of chlorosis:

	Hb.	Lymph.	Mononuclears.
	Per cent.	Per cent.	Per cent.
M. R., Sept. 10, 1900 (1st examination)..	56.00	33.15	6.25
Sept. 29, 1900 (2nd examination)	52.00	24.40	6 00
R. C., Aug. 24, 1001 (1st examination)...	53.00	45.20	11.20
Sept. 6, 1901 (2nd examination)...	70.00	25.60	6.00
A. M., Oct. 13, 1901 (1st examination) ...	33 70	42.80	8.00
Oct. 27, 1901 (2nd examination)...	40.00	38 40	5.20
M. K., Oct. 1, 1001 (1st examination) ..	29 96	26 40	3.60
Oct. 17, 1901 (2nd examination)...	40.40	26.80	3.60
B. K., Nov. 30, 1901 (1st examination)...	24 60	28.40	4.00
Dec. 14, 1901 (2nd examination)...	29 00	10.00	1.60

I do not wish to lay any great stress on such figures, as for reasons already stated we can only expect an approximation in such differential counts. Yet I think that in such conditions as the anaemia of typhoid and chlorosis the large mononuclears seem at least roughly to vary, as the lymphocytes do, and as lymphocytosis is almost certainly a passive phenomenen in such conditions we can only infer that both lymphocytes and large mononuclears have the same origin in the lymphatic structures.

If it is the case that the large mononuclears and the lymphocytes proper have the same origin in the lymphatic glands and tissues throughout the body, and if there is to be found in pathological blood conditions every grade of transition between these two classes of cells, it may naturally be asked why is there any necessity for classifying them differently. In answer to this question it may be noted that in normal blood conditions the large mononuclears only reach the general circulation in very small numbers, and that a large increase of these cells denotes an abnormal irritation or stimulus of the lymphatic tissues, which is not always or necessarily participated in by the typical lymphocytes; in fact, there are many indications that these cells behave in a somewhat different manner from the typical lymphocytes.

(1) These cells seem to be more amoeboid and phagocytic than the lymphocytes proper. The fact that their nucleus is often kidney-shaped or notched, and that all grades of transition are found between them and the polymorphonuclear cells, points to a higher grade of development and motility in these cells than in the ordinary lymphocytes.

If fresh blood be mixed with a bacterial culture, and kept in the incubator for a short time, it will be found that the micro organisms are ingested principally by the polymorphonuclear cells, but also in small numbers by the large mononuclears, while they are not usually ingested at all by the typical lymphocytes.

(2) In staining with granular stains, especially by the Romanowsky method, we often find a few granules in the large mononuclear and transitional cells pointing to an affinity in differentiation with the polymorphonuclear cells.

(3) I have noted in a number of acute septic conditions that the large mononuclears are considerably increased in numbers, while the typical lymphocytes do not apparently vary.

The cases given in Table II (see below) will explain my meaning.

These were all cases of very acute sepsis in adults (several of them terminated fatally). The varieties of leucocytes have been calculated in absolute numbers per cubic millimetre. It will be seen from the table that the lymphocytes proper remain about their normal numbers while the large mononuclears are greatly increased, varying from three to twenty times their normal numbers. This would seem to indicate that they are more liable to what has been styled chemiotaxis than the ordinary lymphocytes, and in this respect they

TABLE II.—*Cases to Show that in Acute Septic Conditions the Large Mononuclears may be Increased.*

Date.	Red Cells.	White Cells.	Pmn.*	Lymph.*	Mono.*	Eosins.*	Hb.	Diagnosis.
							Per cent.	
Oct. 17, 1900 ..	2,060,000	40,000	36,000	1,680	1,280	160	37 0	Purulent infiltration of lung.
Feb. 4, 1901 ..	4 300,000	15 000	11,460	2,460	960	120	67.0	Sepsis.
April 22, 1902...	3.500,000	25,000	22,000	2,000	1,000	—	—	Puerperal pyaemia.
Mar. 22, 1902 ..	1,600,000	16,000	11,200	3,520	1,280	—	19 7	Uterine sepsis.
Jan. 24, 1902 ...	3,800 000	20,000	16,320	1,720	1,960	40	41.4	Pyaemia (recovery).
Jan. 27, 1902 ...	3.840,000	42,000	34,784	3,360	2,806	—	—	Peritonitis (death).
April 24, 1902...	3,500,000	25,000	22,000	2,000	1,000	—	—	Empyema (sepsis).
{ Jan. 26, 1901	3,200,000	190,000	153,000	4,560	6,840	1,140	20.0	Acute sepsis (recovery).
{ Feb. 5, 1901	3,200 000	10,000	7,200	2,040	280	80	30.0	Second examination.
Normal... ...	5,000,000	10,000	7,000	2,500	400	100	100 0	Normal for comparison.

* Numbers per cubic millimetre.

physiologically approach the polymorphonuclear leucocytes. The last case tabulated deserves special notice on account of the extraordinary leucocytosis. The numbers of leucocytes were very carefully determined, several samples of blood being taken; the enumeration showed almost 200,000 leucocytes per cubic millimetre, and the films presented an appearance only comparable with splenomedullary leukaemia. The films showed 12.2 per cent. of neutrophile myelocytes and 0·6 per cent. of basophile leucocytes. The condition was only temporary, as the second count will show, and the patient is living and well at the present day. The blood condition was the result of acute cellulitis of the arm, for which amputation was performed at the shoulder-joint. This case illustrates in a unique manner that an acute sepsis may produce a blood picture which closely simulates spleno-medullary leukaemia.

Ehrlich has brought forward many arguments to prove that lymphocytosis is always a purely passive phenomenon, and that the lymphocytes behave in an entirely different manner from the polymorphonuclear cells. In papers published in the BRITISH MEDICAL JOURNAL I have endeavoured to show that this is the best explanation of their behaviour in such conditions as the anaemia of typhoid fever, chlorosis, and possibly also in pernicious anaemia. In such anaemic conditions there is no absolute leucocytosis and the absolute numbers of lymphocytes vary but little. The proportional increase of the lymphocytes is therefore due to the gradual "apparent" decrease of the polymorphonuclear elements. If we suppose the blood in such conditions diluted according to the percentage of haemoglobin, the numbers of lymphocytes must have increased almost identically in proportion to the dilution. The lymphocytes, therefore, in such conditions are washed mechanically into the blood stream by an increased flow of lymph. We would, therefore, infer that as the lymph flows through the lymphatic apparatus it washes, so to speak, some two or three thousand lymphocytes per cubic millimetre into the blood, so that in the diluted blood the number of lymphocytes per cubic millimetre remains constant, while their proportion to the polymorphonuclears rise. We have often determined this percentage increase of lymphocytes and found that it corresponds roughly to the amount of anaemia present or to the increase of volume as determined by the CO-method. It may here be pointed out that in studying the behaviour of the lymphocytes in such passive conditions we must always consider the question of the amount of dilution of the blood.

Another condition in which there is a marked increase in the percentage of lymphocytes is the blood in Bright's disease. The following cases may here be enumerated as examples:

Date.	Red Cells.	White Cells.	Per Cent. Hb.	Per cent. Lymph.	Per cent. Poly.	Weight.	Diagnosis.
						st, lb.	
27-11-01	4,440,000	8,200	80·0	44.8	52.4	12 11	T.R. Acute Bright's disease—anasarca.
4-12-01	4,100,000	9,200	79·0	46.4	46.4	12 8	
20-12-01	4,660,000	12,000	82.0	54.4	54.4	9 5	
8-11-01	3,900,000	13,000	74·0	45.3	53 3	10 10½	T.M. Kidney disease with dropsy.
14-11-01	3,820,000	8,500	74·0	25.6	70.8	10 5	
22-11-01	3,400,000	8,500	69·0	41.6	56 8	10 5	
29-11-01	3,850,000	8,100	67.0	38 6	60 4	10 6½	
15-3-02	4,310,000	7,300	87.2	39.6	60 0	10 2	G.L. Second attack of chronic Bright's disease.
20-3-02	4,200,000	10,100	86 9	47.6	46 4	10 10	
26-3-02	4,500,000	12,150	87.2	43.4	51.6	10 9½	
6-4-02	4,540,000	9,100	87.2	36.8	56 8	10 10	
22-4-02	4,790,000	9,500	98.75	35.2	64 8	10 12	Bright's disease, Mitral murmur and oedema.
27-2-02	4,910,000	8,500	98.75	53.6	46.4	10 2½	

In such cases the increased proportion of lymphocytes bears no relation to the amount of anaemia present. In Bright's disease, however, there must be abnormal lymph relations. In several of these cases a rise in the percentage of lymphocytes is noted as the oedema is passing off as determined by the loss of body weight, and probably this rise is accounted for by an increased lymph flow which may be expected to take place when the oedema is disappearing. We are therefore inclined to think that the lymphocytosis of Bright's disease is also to be explained mechanically, but that it differs from the conditions previously mentioned in bearing no relation to the anaemia present. The explanation of this difference must be found in the fact that in true anaemic conditions the blood itself is at fault, and is liable to suffer more or less permanent dilution, while in Bright's disease the blood is not, at least primarily, at fault, and constantly tends to regain its normal volume, quickly correcting any temporary dilution.

In the histology of tuberculous and syphilitic lesions we have evidence that the specific toxins of these diseases have the power of gathering large numbers of lymphocytes to the pathological focus, and possibly, as a result of this process, we often find a relative increase of lymphocytes in the blood. This increase is generally relative, as in these conditions there is seldom any leucocytosis. The blood condition is, therefore, best explained as an index of what is taking place in the morbid focus, and may be the result of purely mechanical processes.

The lymphocytosis, which so constantly occurs in malaria has, indeed, been referred by Marchiafava and Bignami to a specific chemiotactic action, but most writers seem to regard it as the result of mechanical processes.

We thus see that Ehrlich's mechanical explanation of lymphocytosis seems to apply to such conditions as chlorosis, typhoid fever, Bright's disease, syphilis, tubercle, malaria, and probably to all conditions which show merely a relative lymphocytosis.

The lymphocytosis which has so often been noted in the diseases of children differs from the lymphocytoses which occur in the above conditions, in the fact that the lymphocytes in morbid conditions in children are often very considerably increased, not only in proportion to the polymorphonuclear cells but also in absolute numbers. In other words, a decided leucocytosis often occurs in children which is mainly due to an absolute increase in the numbers of the lymphocytes in the blood. Such conditions have usually been explained on the mechanical theory as the result of the extensive hyperplasia of lymphatic structures which is so common in early life. These two conditions are no doubt intimately related, although the purely mechanical explanation is open to the objection that in similar cases in adults, where there may be very marked glandular hyperplasia, there is seldom or never a sufficient number of lymphocytes given off from the glandular focus to increase their absolute number in the blood to any extent. It seems, therefore, evident that in the child there is a greater tendency for the lymphocytes to find their way into the blood than in the adult.

The following cases are examples of acute sepsis in young children:

Date.	Red Cells.	White Cells.*	Pmn.*	Lymph.*	Eosins.*	Per cent. Hb.	Diagnosis.
19-1-04	3,600,000	17,000	6,664	10,268	68	70	Pneumonia (age 5).
30-1-04	3,840,000	16,000	11,200	4,640	160	—	Acute adenitis (age 6).
29-2-04	—	30,000	20,600	11,000	100	—	Appendicitis (age 9).
4-2-01	4,000,000	16,000	7,744	7,008	448	71	Perinephritic abscess (age 3).
21-12-00	4,200,000	25,000	16,800	8,200	—	67	Abscess (age 10).
2-1-01	4,400,000	33,000	17,820	15,540	—	76	Abscess (age 9).
2-1-00	3,400,000	17,000	10,370	6,520	—	60	Psoas abscess (discharging) (age 5).
Normal	5,000,000	10,000	7,000	2,800	200	80	Normal child (age 6).

* Numbers per cubic millimetre.

Cabot reports a case of pneumonia in a child of 6 years of age in which there were 66 per cent. of lymphocytes among 94,600 white cells, and several similar cases by other writers have been noted in children.

It seems hardly logical to ascribe the very marked lymphocytosis, which may occur in children in such acute septic conditions as those mentioned merely to mechanical causes the result of excessive granular proliferation. In acute septic conditions in adults we have already pointed out that the lymphocytes proper are not at all increased in numbers, although in all such cases the lymphatic apparatus is abnormally stimulated, and such cases, which in children may produce this leucocytosis largely consisting of a lymphocytosis, are exactly similar to the conditions which in the adult produce a pure polymorphonuclear leucocytosis. It seems necessary, therefore, to admit that the lymphocytes in young children may be increased in conditions which in the adult usually produce a pure polymorphonuclear increase. This argument is not complete and requires further proof. There are, however, many observations to show that even the lymphocytes proper have a certain amount of amoeboid power, and it is my intention to test the phagocytic power of the lympho-

cytes in young children and in lymphatic leukaemia as soon as an opportunity offers.

Apart from leukaemic conditions an active lymphocytosis in the adult is a rare phenomenon. The following cases, however, show that such a condition may occur.

Date.	Red Cells.	White Cells. *	Pmn. *	Lymph. *	Eosins. *	Diagnosis.
25-1-03	5,360,000	24,000	12,480	9,930	1,590	Phosphorus poisoning (adult).
8-7-03	2,590,000	96,000	13,440	82,560	—	Acute pneumonia (age 54).
7-8-03	3,620,000	15,100	10,000	450	160	Convalescence.

* Numbers per cubic millimetre.

The first case is one of chronic phosphorus poisoning, with necrosis of the jaw, in which there was a very considerable increase of the lymphocytes as well as of the polymorphonuclear elements. We can here see no adequate reason why the increase in the polymorphonuclear cells should be regarded as an active process (chemiotactic) and the increase of the lymphocytes as a purely passive phenomenon, since the mixed leucocytosis was the result of a definite poison. The evidence of an active process is much more apparent in the second case, which was one of acute croupous pneumonia in a man aged 54. The clinical signs of pneumonia were unmistakable, while the sputum was full of pneumococci. The blood, instead of showing a polymorphonuclear increase as usually occurs in pneumonia, presented a picture closely resembling lymphatic leukaemia. There was a total leucocytosis of 96,000 cells per cubic millimetre, of which 36 per cent. were lymphocytes. These blood changes were, however, temporary, and gradually disappeared as the patient became convalescent. Here we have an enormous increase of lymphocytes in the blood as the result of the toxin of the pneumococcus, which under ordinary circumstances produces an almost pure polymorphonuclear leucocytosis. It seems difficult to explain such a case except on the assumption that the lymphocytes were influenced in this case by the toxin instead of the granular cells, as usually happens in pneumonia. This case seems to show that the infantile type of blood may in rare cases persist in the adult, and that an active lymphocytosis does occasionally occur in the adult.

The acme of lymphocytosis occurs in cases of lymphatic leukaemia, and it seems from the arguments already brought forward quite unnecessary to regard the enormous increase of lymphocytes which occurs in the blood of such cases as a purely passive phenomenon. We know of many conditions in which there are active glandular changes such as tubercle, syphilis, lymphosarcoma, and Hodgkin's disease; and although in these conditions there may be a proportional increase of lymphocytes, the number of these elements hardly ever reaches a high figure. We have, therefore, if we adhere to the rigid mechanical theory of lymphocytosis, to explain on mechanical grounds alone why the blood picture does not in these conditions simulate that of lymphatic leukaemia. The view that polymorphonuclear leucocytosis is an active chemiotactic phenomenon finds, of course, its best support in the fact that these cells are actively amoeboid. Evidence has recently been brought forward by Wolff and others to show that amoeboid movements are also found, to a certain extent, in the lymphocytes. In film preparations I have observed lymphocytes with elongated processes, which are difficult to explain, unless the cell is in some degree amoeboid.

The following cases of lymphatic leukaemia, which I have had an opportunity of examining, will now be discussed:

CASE I.

A boy, aged 17, was admitted to the Royal Victoria Hospital suffering from severe anaemia and profuse epistaxis. He developed purpuric spots over his chest and abdomen. He had irregular pyrexia. No glandular enlargement could be detected. The disease ran a rapidly fatal course, and he died within two months from the beginning of his illness.

Blood Examination.—Red cells, 2,500,000 per c.mm.; white cells, 30,000 per c.mm.; haemoglobin, 30 per cent. The differential count showed that 99 per cent. of the leucocytes were lymphocytes. A few of these were typical small lymphocytes and stained well. The lymphocytes varied greatly in size, from cells the size of a red blood corpuscle to cells twice or three times the diameter of the red cells. The staining seemed to grow fainter the larger the lymphocytes. Many of the larger lymphocytes contained two nuclei (as if dividing) and had hyaline protoplasm.

The points of interest in this case were:

1. The fact that clinically no enlarged glands could be detected.
2. The rapidly fatal course of the disease.
3. The age of the patient (17).
4. The comparatively small number of leucocytes present in the blood.
5. The peculiar type of lymphocytes found.

CASE II.

This patient was a child 1 year and 8 months old. The spleen and liver were both greatly enlarged. There was also general enlargement of the lymphatic glands. Some petechial haemorrhages occurred during the course of the disease. The case ran its course to a fatal issue in six weeks.

Blood Examination.—Red cells, 2,200,000 per c.mm.; white cells, 810,000 per c.mm.; haemoglobin, 38.8 per cent. The differential count showed that 99.2 per cent. of the white cells were lymphocytes. The great majority of the cells in this case were true lymphocytes containing a nucleus which stained deeply and the surrounding rim of protoplasm was also deeply basophile. Many of the nuclei of the lymphocytes showed signs of breaking up and degeneration, the nuclei becoming reticulated and broken into an irregular network. A few of the lymphocytes were large hyaline cells.

The points of interest are:

1. The fact that although the glands were greatly enlarged at the time the case first came under observation, before death both the spleen and lymphatic glands rapidly diminished in size.
2. The rapidly fatal course of the disease.
3. The age of the child (1 year 8 months).
4. The very large number of lymphocytes present in the blood.
5. The great majority of the white cells were typical lymphocytes of all sizes.

CASE III.

This patient was a young farmer, aged 24. He suffered from profound anaemia and severe epistaxis. There were petechial haemorrhages on his chest. The glands in his neck, axilla, and groin were considerably enlarged. The spleen could be felt. The disease ran a very rapid course, and he died in about two months from the first symptom of his illness.

Blood Examination.—Red cells, 1,230,000 per c.mm.; white cells, 14,400 per c.mm.; haemoglobin, 16 per cent.

Differential Count.—Small lymphocytes, 78 per cent.: large hyaline cells, 17 per cent.; transitional cells, 2 per cent. (=97 per cent. of lymphocytes); polymorphonuclear leucocytes, 3 per cent. The lymphocytes were of all sizes and varied considerably in their staining reactions. Some were typical lymphocytes, while many were very large hyaline cells; all grades of transition were found between the two varieties, so that classification into the two groups of lymphocytes was quite impossible.

The points of interest were:

1. The general lymphatic enlargement.
2. The rapidly fatal course of the disease.
3. The patient was a very young adult (age 24).
4. The very small number of leucocytes present in the blood. Some doubt might be felt in classifying such a case as one of lymphatic leukaemia on account of the small number of leucocytes in the blood, although they were nearly all lymphocytes (97 per cent.). However, the *post mortem* on this case confirmed this diagnosis, as the bone marrow was found almost entirely replaced by lymphocytes, and the liver, spleen, heart, and kidneys showed typical leukaemic thrombi.
5. All the varieties of the lymphocyte group of cells were represented in the blood of this case.

CASE IV.

This patient was a boy, aged 12 years. He suffered from profound anaemia, irregular temperature, and he had some purpuric spots. He had also severe epistaxis, and complained of some pain and swelling in one knee. The disease ran a very rapid course, and he died in six weeks from his first symptom of illness. There was practically no enlargement of the lymphatic glands, though the spleen could be felt.

Blood Examination.—Red cells, 1,600,000 per c.mm.; white cells, 40,600 per c.mm.; haemoglobin, 31.6 per cent.

Differential Count.—Polymorphonuclear cells, 0.8 per cent.; lymphocytes, 99.2 per cent. The lymphocytes in this case showed great variations in size; the great majority were much larger than typical lymphocytes and contained more protoplasm. The protoplasm, however, took the basic stain more deeply than the nucleus.

The points of interest were:

1. The absence of glandular enlargement.
2. The rapidly fatal course of the disease.
3. The early age of the patient (12).
4. The comparatively small number of leucocytes present in the blood.
5. The variations in the size of the lymphocytes.

CASE V.

This patient was a gentleman, 60 years of age. His illness lasted about three years; he was of a sallow yellow colour, the glands in the axilla, neck, and groin were enlarged, and he suffered from a peculiar spasmodic cough, probably also the result of glandular pressure. He was greatly troubled for some time during his illness with swollen and inflamed gums.

Blood Examination.—Red cells, 2,760,000 per c.mm.; white cells, 213,000 per c.mm.; haemoglobin, 45 per cent.

Differential Count.—Polymorphonuclear cells, 1.6 per cent.; lymphocytes, 97.6 per cent.; eosinophiles, 0.8 per cent. The cells were for the most part typical lymphocytes, although they varied

much in size. A good many of the lymphocytes showed signs of degeneration.

The interesting points about this case were:

1. The lymphatic glands showed a remarkable diminution in size shortly before death.

2. The chronic course of the disease (three years). Chronic lymphatic leukaemia is a much rarer condition than the acute variety.

3. The advanced age of the patient (60 years). Chronic lymphatic leukaemia usually occurs in adults, while the acute variety usually occurs in early life.

4. The leucocytes reached the figure usually described as occurring in this disease.

5. The lymphocytes were for the most part typical lymphocytes, though they varied much in size.

6. The patient died of an acute inflammatory lung condition, and films were taken during this attack, but there was no change in the differential count, pointing, probably, to a complete destruction of the bone marrow—at least, as far as the production of polymorphonuclear cells was concerned.

I have introduced these cases because they emphasize the following points:

1. The essential pathological feature of lymphatic leukaemia is lymphatic hyperplasia. This hyperplasia may involve the lymphatic glands, spleen, and bone marrow, but the enlargement of the spleen or glands does not seem necessary to give rise to the typical blood picture.

2. All degrees of leucocytosis may occur in this disease, but in every case there is a high percentage of lymphocytes present in the blood (in all these cases over 97 per cent.).

3. All varieties of cells belonging to the lymphocyte group are found in different cases of lymphatic leukaemia. In some cases the cells are nearly all typical lymphocytes, though they vary greatly in size, while in others cells are found which are quite indistinguishable from large mononuclear leucocytes. The acute forms seem often to have a large number of hyaline cells, but this rule does not seem to be invariable.

4. Acute lymphatic leukaemia is a much commoner disease than the chronic variety. The former is a disease of early life, while the latter only occurs in adults.

5. Lymphatic leukaemia from a clinical point of view closely resembles an acute septic process.

The argument of this contribution may be summed up as follows:

1. All the cells of the lymphocyte group, both typical lymphocytes and large mononuclear cells, have their origin in the lymphatic tissues generally. The fact that all different types of lymphocytes are represented in some cases of lymphatic leukaemia supports this view, as the essential morbid change in this disease is excessive lymphatic proliferation.

2. The large mononuclear cells, which are often represented in large numbers in cases of lymphatic leukaemia, are undoubtedly amoeboid and phagocytic.

3. There is evidence to show that even the lymphocytes proper possess some degree of motility.

4. That the clinical resemblance of both spleno-medullary leukaemia and lymphatic leukaemia to septic processes has often been noted. A case of acute sepsis has been described in which the blood picture closely simulated spleno-medullary leukaemia. A case of acute pneumonia was also described which closely simulated lymphatic leukaemia.

5. That as sepsis in the child may produce a leucocytosis which is mainly a lymphocytosis, and in the adult a leucocytosis mainly of the polymorphonuclear cells, so the leukaemias of early life are chiefly of the lymphatic type, while those of the adult are characterized as a rule by an increase of the granular cells (myelocytes and polymorphonuclears).

6. Recently cases of "mixed-celled" leukaemia have been described by Wolff and others, and since a mixed-celled leucocytosis is comparatively common in children, the fact that such cases do occur is in conformity with the argument of this contribution.

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In the histological study of the lesions in typhoid fever there have always existed, and still exist, certain obscurities as to the origin of the cells concerned. Only the chief points in this discussion need be referred to, but from those it will be seen that the nature of the cells is of great importance in determining the nature of the process itself. Virchow at first regarded the lesions as inflammatory in nature, but later altered his view, and laid his chief stress on the hyperplasia of the cells. All the workers on the subject observed the presence of very large cells in the lymphoid structures of the intestine and mesentery, which Rindfleisch named "*Typhuszellen*," and it is chiefly as to the nature of these that discussion has arisen. Billroth, Grohé, C. E. E. Hoffman, and Klein unhesitatingly interpreted them as swollen lymphoid cells which had become motile and phagocytic, and recognized their inclusions of injured lymphoid cells. Others, however, such as Hoffman, a student of Marchand; Weber, a student of Ribbert; Saltykow, working with Chiari; Cornil and Ranvier, and other French writers; and, lastly, Mallory, have explained them as derived from the fixed cells which line the reticulum of the lymph glands and lymphoid structures of the intestine or from the endothelium of the lymphatic canals, or even of the venous channels, and regard them therefore as proliferated and desquamated endothelial cells.

Accordingly, the first-named group of authors find in typhoid fever an affection chiefly of the lymphoid cells, while the others ascribe to them a very passive rôle. Mallory, in his admirable paper upon the histology of the typhoid lesions, describes in detail the early stages of the change, and traces the large cells to the cells which lie flat upon the reticulum, and which he calls endothelial cells without any discussion of the limitations of that term. The enlargement of the lymphoid structures he ascribes largely to the abundant production of these cells, whose activity in devouring the lymphocytes is remarkable; and this proliferation, he thinks, is due to the action of a diffusible toxin. This toxin, which, according to him, is chiefly responsible for the production of the typhoid lesions acts indifferently upon many varieties of endothelial cells of the lymphatics and blood vessels, and particularly the endothelial cells of the sinuses of the spleen are similarly affected.

Some mention is made of the alterations in the lymphocytes; many of them are said to become modified into plasma cells, some are caught wandering from the blood vessels, and myriads of them undergo destruction by the larger phagocytic cells. As far as his statement goes, however, they seem to play a passive part, being finally most extensively destroyed, and in the stress of the process the active rôle is put upon the endothelial cells. The secondary lesions which Mallory describes are of less interest here to us.

Turning for a moment to the literature upon the condition of the blood in typhoid fever we find a considerable unanimity of opinion. Naegele, Köllner, Thayer, Kast, and Gütig have all determined the fact that, at any rate after the first week of the disease, there is such a disappearance of leucocytes that one may well speak of a definite leukopenia or hypoleucocytosis. This is most marked at the height of the disease, there being later a return of the white cells to their normal numbers. Not only is this true, but there is a fairly constant alteration of the numerical relations of the various leucocytes to one another, a change which has been graphically shown by Naegele and Kast and Gütig by the aid of charts. The decrease is in the polymorphonuclear leucocytes, while after an initial fall the relative and apparently also the absolute numbers of the lymphocytes are greatly increased. Dr. Thayer pointed out that it was chiefly in the larger mononuclear elements that this increase could be observed, and at the Johns Hopkins Hospital we are usually able to confirm this observation. Others, however, have found the smaller cells most increased in number. Every one, nevertheless, agrees in finding that the mononuclear elements of the blood are increased, and after all the distinctions made among these are rather difficult to carry out and somewhat arbitrary. It will interest us, therefore, to observe whether there is anything in the condition of the blood-forming organs in typhoid fever which will explain this alteration in the blood.

My attention was first called to the relation of the lymphoid cells to the lesions of typhoid fever by a case of acute meningitis occurring in a young man in the course of a typical attack of typhoid fever in which we determined that the typhoid bacillus was the sole cause of the inflammation of the meninges. I have the clinical notes from Dr. Cole, who will later publish an account of the case with me. Briefly, there were the usual signs of meningitis, and on making a lumbar puncture Dr. Cole withdrew a slightly turbid fluid containing numerous leucocytes and mononuclear cells of various sizes from which he obtained a typical typhoid bacillus in pure culture. At the autopsy the brain and cord were found to be covered with a yellowish exudate from which again the typhoid bacillus was recovered in pure culture, and seen alone on the smears.

Sections of the meninges in this case showed an interesting

histological picture. There were very abundant polymorphonuclear neutrophile leucocytes in certain areas entangled in a network of fibrin. Quantities of coagulated fluid distended the meninges, and the blood vessels were all widely dilated with blood. Most striking, however, was the presence of great numbers of lymphocytes and the related cells, chiefly about the veins, but also scattered throughout the meninges, and in some places so numerous as to mask the polymorphonuclear leucocytes. Some of these cells were small with relatively large deeply-staining nucleus—others maintaining the same type of vesicular nucleus with coarse chromatin clumps about its membrane had acquired a great deal more protoplasm; many of these had the form and general characteristics of plasma cells, while others were still larger with abundant pink staining protoplasm. Perhaps most abundant of all were very large cells, evidently actively amoeboid with convex outlines, but frequently prolonged into fantastic shapes. These had rather pale vesicular nuclei which were sometimes seen in mitosis and were very actively phagocytic. They were to be found about the vessels, in the substance of their walls, in the loose exudate, indeed everywhere in the meninges.

The interpretation of these various cells is in many ways difficult. It is interesting to observe that the presence of the typhoid bacillus alone can give rise to the emigration of quantities of polymorphonuclear leucocytes, a process which is at least unusual in this disease. The lymphoid cells, however, are of especial importance in this connexion, because since they are found in a tissue ordinarily devoid of any quantity of lymphoid tissue, and scattered through the tissue, the view seems inevitable that they have emigrated from the blood vessels in response to a chemiotactic influence.

I may be allowed to turn aside for a moment to consider the power of the lymphoid cells of the blood in this regard. Wolff, Hirschfeld, Jolly, and others have shown clearly that under certain circumstances the lymphocyte of the blood is capable not only of slight alteration of form but even of active movements. These views have recently been attacked by Wlassow and Sepp on the ground that the conditions to which the cells were subjected were of such abnormal character—high temperature, 40° or more, and the effect of chemical agents, such as are present in Deetjen's medium—but it seems plain that practically these are the conditions which are found in such a disease as typhoid fever. Proof of the matter seems to be brought by such specimens as I have placed under the microscope, in which undoubted mononuclear or lymphoid cells may be seen half way through the endothelial walls of the small veins, the nucleus being constricted to a narrow thread or isthmus, which lies in the similar narrow neck of protoplasm, one portion of the cells being within and the other without the vessel. Some of these are in the spleen, others in the omentum or intestinal wall. It is true that one usually regards the splenic sinuses as having very porous walls, but the emigration of the lymphocyte through these pores, which are small enough to constrict it tightly, is none the less an active process. I have no hesitation, therefore, in regarding the lymphoid cells in the meninges as emigrated cells.

With regard to the remaining cells found there, I shall again digress to refer to the interesting work of Maximow, who has followed the cellular changes which result from the introduction of a foreign body into the tissue. So arranged that the invading cells are isolated from contact with the surrounding tissues by the foreign body itself, Maximow has determined that not only is there active emigration of lymphocytes, but these cells develop after leaving the blood vessels with the production of cells of larger size—sometimes very much larger—which become actively motile and phagocytic. Some of these large cells are the plasma cells about which there has been so much dispute—the others he speaks of polyblasts. They become the wandering cells of the tissues, and either disappear finally or are incarcerated in the crevices of the tissue. They are very similar to Marchand's adventitial cells which have similar function, and in his more recent papers Maximow tends more and more to identify some at least of his polyblasts with Marchand's leucocytoid adventitial cells. I have repeated Maximow's experiments, using sometimes cello din chambers as devised by him, sometimes the porous boiled froth of beaten-up white of egg, a substance which is admirable for this purpose, and I may briefly state that from these experiments his conclusions seem justified, although I was not able to produce such abundant large phagocytic cells as he pictures. That lymphocytes appear in the cavities of the foreign body within a few hours is, however, easily shown.

With lymphoid cells and their various modifications scattered about in the meninges, evidently as a result of emigration from the blood vessels, it is tempting to apply Maximow's findings to all of the cells found there, and to regard the very large phagocytic cells as the ultimate product of the enlargement and modification of these wandering cells; and, indeed, there is much in favour of this view. They are extremely abundant, and are scattered everywhere in the tissue, particularly about the vessels, but sometimes in the substance of their walls, or even within the veins; they may be seen pushing out long pseudopods, or in other places contracted into a spherical form. They resemble closely certain cells with elongated, blunt pseudopods, vesicular nucleus, and granular protoplasm, which may sometimes be seen in the vein walls in the normal meninges, and which may probably correspond with Marchand's adventitial cells; but they do not at all resemble the fibroblasts or fibrous tissue cells, nor the normal endothelial cells.

Their nuclei are paler than those of the lymphocytes, however, and contain less chromatin, and that in finer granules; so that, while I incline to the idea that they may represent this last stage of the development of the polyblastic cell, it cannot be denied that they might be swollen and altered proliferated endothelial cells from the arachnoid, although direct evidence of such an origin is lacking. From this case, then, we have at least evidence that in a simple tissue such as the pia, in which no abundant lymphoid tissue is to be found, infection with the typhoid bacillus will produce an abundant appearance of lymphoid and allied cells, in addition to other changes.*

It is of interest, therefore, to compare the lesions in other tissues, and particularly in the intestine, with this, in order to see whether in that complicated collection of cells any such active participation may be made out. It has already been mentioned that Hoffman and Klein hold as important this rôle of the lymphocytes, while later writers have tended to deprive those cells of any such distinction, although Mallory does mention their emigration, and the appearance of plasma and cell forms.

It is quite unnecessary for me to describe the well-known histological changes in the intestine. In our cases I have found precisely the changes described by Mallory and others, but I wish to discuss briefly the changes in appearance of the lymphoid cells in the Peyer's patches and solitary nodules of the cells of the stroma of the mucosa, the nature of the large cells so frequently mentioned, the wandering of the cells into the other tissues of the intestinal wall, and the relation of all those changes to those of the mesenteric glands.

While the lymphoid cells in the normal Peyer's patches are very uniform in appearance, being almost all small cells with scanty protoplasm, there is in the lymphoid tissue of the typhoid intestine a remarkable abundance of rather large cells, with nuclei still of identical character, but with more abundant protoplasm. Some of these reach a considerable size, and I cannot but regard them as representing a change in the lymphoid cells such as is described by Maximow. Such cells may be found throughout the Peyer's patch, and are abundant in the sinuses and in the lymph channels wherever these can still be seen. Normally the cells of the mucosa differ in this very respect from those of the lymphoid nodules, and have rather the appearance of plasma cells and other polyblastic elements, but in typhoid fever this increase in size is even more striking, and I have sometimes been able to trace the alteration of these cells into very large cells indeed. Here, again, it is extremely difficult to decide whether it is probable that in their development these cells actually produce the very large so-called typhoid cells which have attracted so much attention.

I cannot prove to my own satisfaction that those large cells which are found throughout the nodule, and particularly in the sinuses and lymph channels, are derived from fixed cells, nor can I disprove it. They have, it is true, paler vesicular nuclei than the lymphoid and surely polyblastic cells, but they are practically always free and rounded and actively phagocytic. Endothelial cells, of course, are phagocytic, and there is no reason why they should not proliferate, but on *a priori* grounds one would hardly expect them to undertake active migration. Still, whatever be the nature of those cells

* It is interesting in this connexion that Achard and Passeau have recently published the case of a boy with typhoid fever and meningitis, from the lumbar puncture in which they obtained a fluid which contained only lymphocytes. (*Bull. et Mém. de la Soc. Méd. des Hôpitaux de Paris*, 3 S., xxi. No. 13, 1904.)

which lie in the meshes of the lymphoid tissue and in the lymph tissue and in the lymph sinuses, it seems certain that the great numbers of cells which are found wandering far and wide in the submucosa, the musculature, and the subserous tissue are not proliferated endothelial cells. They are largely lymphocytes which must have wandered a considerable distance and the rest are plasma cells and large wandering cells of a distinctly polyblastic type with deeply-stained nuclei and heavy chromatin granules. These in advanced cases are sometimes extremely numerous; indeed, they may, especially in the colon, constitute a dense infiltration of all the tissues of the intestinal wall. Confident as we may be of their wandering nature, we cannot be so sure as to what proportion have actually emigrated from the vessel, and how many are produced in the old lymphoid tissues of the intestine itself; but other data as to the condition of the bone marrow which I shall bring forward indicate that a great number are derived from the circulating blood. Many of all the varieties of cells get into the efferent lymph channels and are poured into the sinuses of the mesenteric lymph glands; indeed, the extent of the filling up of these sinuses is largely dependent upon the bulk of material brought from the intestine, although the changes in these structures themselves are entirely analogous to those in the Peyer's patches. Here, too, it is of special interest to us to observe the abundance of polyblastic cells, and to note that they may appear in the capsule of the gland and in the tissues round about it. This outwandering of cells may perhaps be compared with their migration into the muscle and elsewhere in the intestine.

The passive transport of the lymphoid and large endothelioid cells is of considerable importance in the further course of the disease. Mallory, indeed, thinks that many of the secondary lesions, such as the necroses in the liver, may be explained as due to embolism of the vessels by masses of cells which are carried through the portal veins. The opinions as to the mechanism of the production of the necroses are, however, far from agreement. From the mesenteric lymph glands the cells are further transported into the thoracic duct, and in one case which I presented before the German Pathological Society in 1903 it was possible to show that quantities of lymphoid and other cells had passed by this route into the vessels of the lung, packing them to such an extent as to produce here and there extensive haemorrhagic infarctions.

In the spleen the actual emigration of the mononuclear cells can readily be observed. They can be seen passing through the walls of the venules into the splenic pulp, where they form one of the most conspicuous constituents. Hoffman and Klein regarded the large cells which, loaded with red blood corpuscles, are seen both within and without the blood vessels as the derivatives of these lymphoid cells, but although there are great numbers of polyblastic cells to be found scattered throughout the splenic pulp, it is quite true that the endothelial cells of the blood sinuses become swollen and loaded with red corpuscles, and may become free in the sinuses.

In the liver the minute greyish nodules so frequently seen were spoken of by Wagner, Hoffman, and others as lymphoid nodules or lymphomata on account of their contents of lymphoid cells. Reed has shown that, on the contrary, these are areas of necrosis of the liver cells into which other cells have wandered and become more or less disintegrated; but while this is true, the older view of Wagner is more or less justified by the fact that while the nuclei of the invading cells are usually much fragmented, it is often possible to make out that they are really mononuclear cells of the lymphoid type together with many larger cells, almost all with a single round nucleus. Study of the capillaries throughout the liver shows that they contain lymphocytes, and it is these cells which have been attracted into the necrotic areas.

Finally, Dr. W. T. Longcope has recently made a study of the bone marrow in typhoid fever, comparing its condition with that in other infectious diseases and with the blood counts in the various cases, and has reached results which seem to me important, and which will be published soon in the *Centralblatt für Bakteriologie u. Parasitenkunde* as well as in the *Bulletin* of the Ayer Laboratory of Philadelphia. Briefly, I may sum up his results which he has kindly given me by saying that in cases of uncomplicated typhoid fever the differential count of the cells in the bone marrow of the femur shows a percentage of myelocytes sometimes as low as 35 and seldom above 50, while the percentage of lymphoid cells found there reaches 40 to 50. This relation is but slightly affected by even quite serious complications such as perforative peritonitis. On the other hand, in cases of such inflammatory diseases as lobar pneumonia the percentage of myelocytes is high, being always over 65 and reaching 75 or more, while the lymphoid cells are present in a percentage of only 13 to 20. In cases in which there is no disease to affect the bone marrow in its blood-forming capacity a middle position is held by these elements, the myelocytes showing a percentage of 55 to 60, the lymphoid cells 22 to 32.

We may interpret these results as follows: In the pneumonia or other suppurative disease in which there is a great demand for polymorphonuclear leucocytes the response on the part of the bone marrow is seen in the great increase in the myelocytes, the forerunners of the neutrophile leucocytes. In typhoid fever, on the contrary, no chemiotactic influence is exerted upon the neutrophile leucocytes in uncomplicated cases, and no effort is made for their production in the bone marrow—indeed, even when in the course of typhoid fever perforation of the intestine occurs, and a purulent peritonitis, the bone marrow seems so paralysed, as far as this particular function of the new formation of polynuclear leucocytes is concerned, that one frequently finds no excess of them in the blood and the proportion of myelocytes in the bone marrow is not increased. There is, however, in this disease a distinct chemiotactic influence over the lymphocytes, which respond by wandering out of the vessels and into the tissues which are exposed to the toxin, and this increased demand is met, in part at least, by the noticeable increase and new formation of lymphoid cells in the bone marrow.

On the whole, then, while we cannot absolutely determine the origin of the large endothelioid cells which play so important a part in the lesions of typhoid fever, we can say that we believe that the substances produced by the typhoid bacillus exert a positive chemiotactic influence upon the lymphoid cells which wander out of the blood vessels, and from the lymphoid tissues, far and wide, into the adjacent tissues.

They are, in part, derived from the lymphoid cells in the bone marrow, which furnish their quota to the blood, in part from the lymphoid tissues elsewhere. They undergo an alteration and growth in the manner described by Maximow by reaching the tissues, and act as phagocytes. Coming, then, in response to the presence of a noxious material, many of them are injured, and are then taken up by other larger phagocytic cells. In all the lesions which we have been able to study in the course of typhoid fever, whatever the other changes which take place, we have found the lymphocyte playing an active rather than a passive rôle.

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In the various forms of leucocythaemia white corpuscles are met with in the blood and in the different organs affected which are classed as lymphocytes, but which are not all by any means identical with the normal lymphocytes met with in the blood of a healthy person.

In the *chronic lymphatic* form of *leucocythaemia* the vast majority of the lymphocytes in the blood has very much the same characters as the normal small lymphocytes, and these originate, doubtless, in the lymphatic glands, in which there is evidence of an increased proliferative activity.

Banti, in his recent article on leucocythaemia, has suggested that this increased activity of the glands is of the nature of a sarcomatous growth, and that the lymphocytes, as a consequence of this mode of increase, invade and enter the blood vessels, and so both produce the metastatic lymphoid deposits met with in the various organs and lead to the

appearance of such numbers of the lymphocytes in the blood. Like many other beautiful theories this breaks down on examination, since in Hodgkin's disease there are exactly analogous lymphoid deposits in the organs with, however, an absence of increased lymphocytes in the blood. Hodgkin's disease would therefore appear according to one criterion (the presence of metastatic deposits) to be of the nature of a lymphatic sarcoma, whilst according to the other (the absence

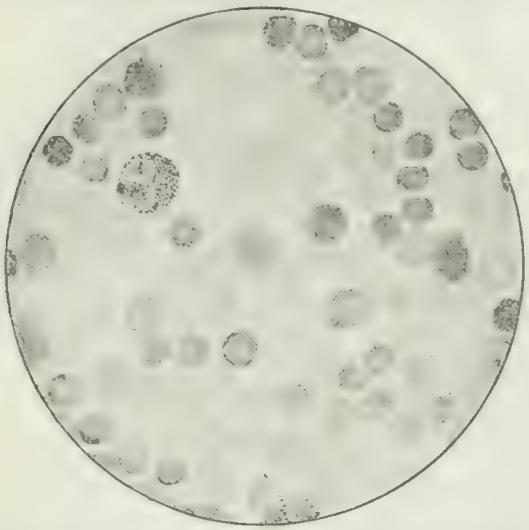


Fig. 1.—Slide B 1. This slide represents a typical field of a blood film from a case of lymphatic leucocytnaemia, and the majority of cases have cells of this character. A very constant feature is the extreme fragility of the lymphocytes; in this field there are five which have been crushed in the process of preparing the film, and in some of the thinner parts of the film a still higher proportion of the cells will be found destroyed in this way. In this case the leucocytes were 600,000 in the cubic millimetre, and the vast proportion, over 99 per cent., were lymphocytes, only occasional neutrophiles or eosinophiles being met with.

of excess of lymphocytes in the blood) it would appear not to be, thus showing the valuelessness of the two criteria in proving the sarcomatous character of the process going on in the lymphatic glands in the form of leucocythaemia in question. Banti further states that he has found that in lymphatic leucocythaemia the endothelial lining of the capillaries

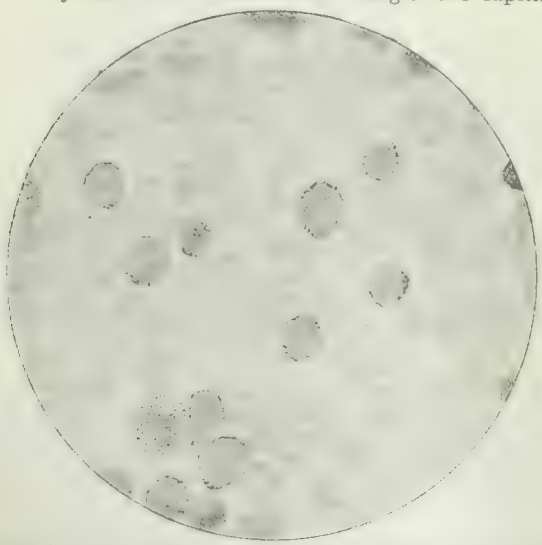


Fig. 2.—Slide B 2. Here the average size is somewhat larger, many of the lymphocytes being considerably larger than a red corpuscle, resembling the large lymphocytes of normal blood.

in the glands is invaded by the growing lymphocytes, the vessel wall thus coming to be formed of lymphoid tissue only, from which an escape of the lymphocytes into the blood stream takes place freely. Since, however, in health a certain number of the lymphocytes escape from the adenoid reticulum into the blood vessels a similar condition must hold normally, and the change in the relationship of capillary and adenoid tissue in lymphatic leucocythaemia may be simply one of degree, and not necessarily of kind, such as the sarcoma theory supposes. The bone marrow, as well as the glands, shows signs of greatly increased activity in the lymphoid elements which enter into its structure. The normal granule-containing marrow cells appear to be largely replaced by a great increase in the lymphocytes, which are normally present in small numbers in the marrow.

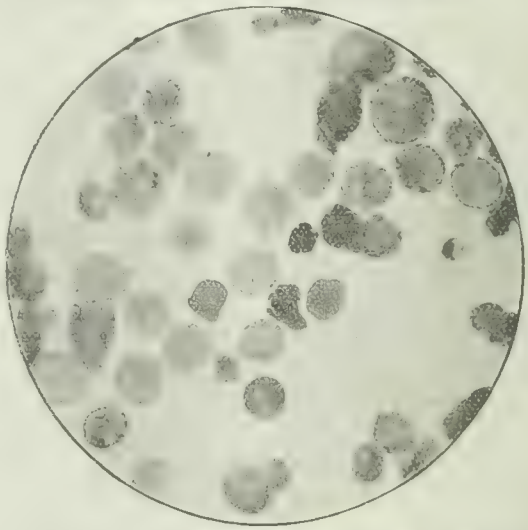


Fig. 3.—Slide B 3. The majority of these are large, much larger, as this and the next two slides will show, than the normal lymphocytes. Their nuclei are round or oval (rarely indented), and they have a narrow zone of protoplasm which stains more or less deeply basophile, with in some a deeper-staining peripheral rim. It is not uncommonly noted that the protoplasm is not purely basophile, but, as in this case, tends to take up a certain amount of the acid stain, appearing pink or purplish.

Functionally there would seem to be some support for the suggestion that the cells which are so largely increased have some of the characters of those of a malignant neoplasm. Whatever be the function of the normal lymphocytes it is plain that the lymphocytes in lymphatic leucocythaemia are so structurally imperfect, as shown by their extreme fragility, as to be incapable of carrying on normal functions, and we may conclude that their presence in such numbers in the

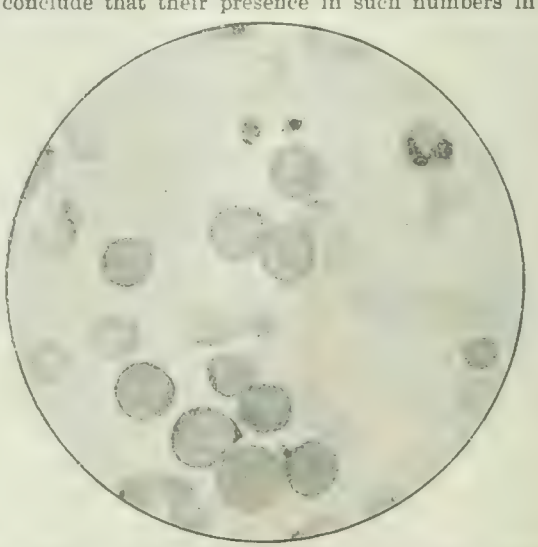


Fig. 4.—Slide B 4. This is again shown in this case, which is another field from the same case of acute leucocythaemia, but at a more thinly-spread portion of the film. A careful examination will reveal in some cases that a certain number of the cells which otherwise have the lymphocyte characters may, in addition to this diffuse acid staining, show the presence of a few neutrophile granules.

blood has no useful purpose, but is simply the expression of an abnormality of proliferative activity.

In acute leucocythaemia, which is practically always described as being of the lymphatic variety, the cells met with

in the blood have very different characters. The character, therefore, of these cells, though classed as lymphocytes, is very different from that of normal cells passing under that name.

In many cases of acute leucocythaemia the lymphatic glands are plainly involved in an active proliferation, and doubtless some of the smaller cells in the blood with the more typical characters come from the lymphatic glands. But in a considerable number of cases now the glands have

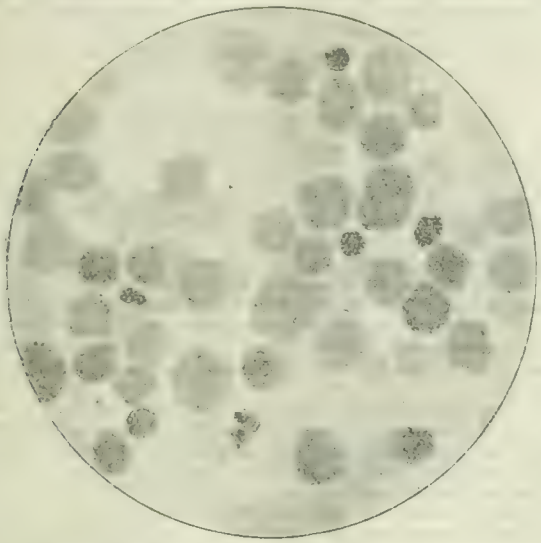


Fig. 5.—Slide B 5. In this case two of the cells show a portion of their protoplasm bearing neutrophile granules.

been found normal, and the sole changes have been in the bone marrow. In such cases the neutrophile and eosinophile cells of the marrow are almost completely replaced by cells similar to those in the blood, which there can be but little doubt originate in the red marrow. These cells exhibit in the marrow, as in the blood, a tendency in their protoplasm to stain with acid dyes, or exhibit on careful examination the remains of a few neutrophile granules; indeed, a smear from the red marrow in this case appeared identical in characters with the picture of the blood film thrown on the screen.

The conclusion has been forced upon me that these so-

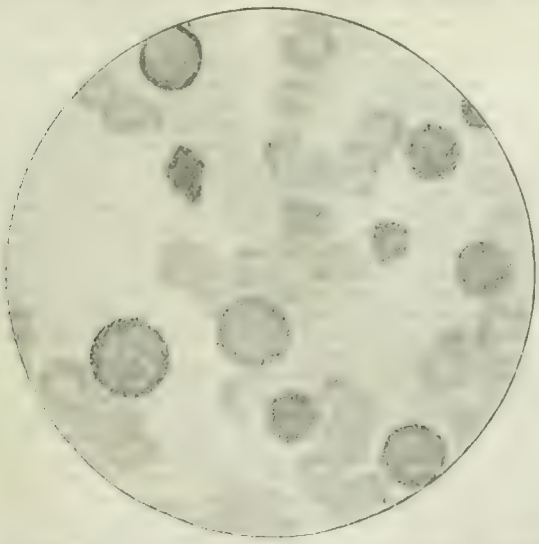


Fig. 6.—Slide B 6. Here is a slide from a case of spleno-medullary leucocythaemia in which there was a great increase in the large lymphocytes, one of the cases, indeed, which have been supposed to be mixed forms of leucocythaemia. Two of the cells in this field have the typical characters as described. In some of the larger ones this deeply-staining periphery is less marked, as is this cell with the larger amount of protoplasm surrounding its nucleus, and a complete series of transitions can be met with to this type of cell—a large cell with a considerable amount of protoplasm surrounding the nucleus, staining less deeply basophile, and showing a uniform basophile stippling or granulation, though there is some doubt whether the stained points are true granules in the sense that the neutrophile granules are.

called large lymphocytes bear no real relationship to the lymphocytes of normal blood, but are in reality retrograde forms of the neutrophilic myelocytes of the marrow, which have almost wholly lost their power of showing that higher differentiation of protoplasm which is involved in the presence of neutrophile granules.

In Spleno-medullary Leucocythaemia, in addition to the myelocytes with neutrophile granules which are typically pre-

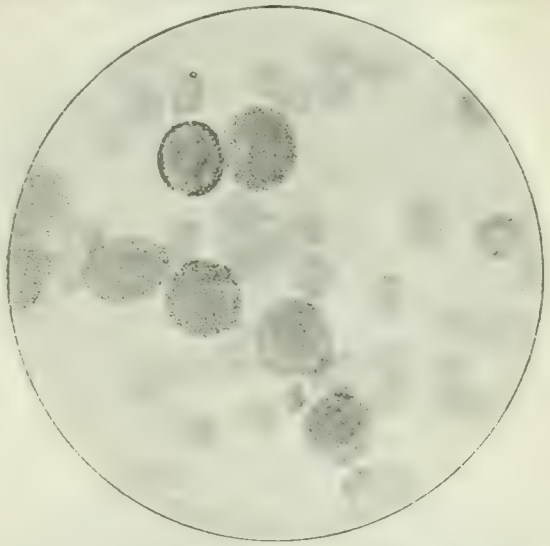


Fig. 7.—Slide B 7. Here are further examples of these large lymphocytes, for all these varieties of cells are usually classed among the large lymphocytes, there being no strict line of demarcation to be drawn anywhere. One of these is a large lymphocyte with the deeply-basophile peripheral zone of protoplasm, the other two are cells with a large amount of protoplasm with basophile stippling surrounding the nucleus. The other cells are neutrophile myelocytes, one being in transition to a polynuclear neutrophile. One of the myelocytes is of interest as showing a remnant of basophile stippling among the neutrophile granules in its protoplasm.

sent in such large numbers, there is a constant increase in the cells which are classed as large lymphocytes. These are large cells, distinctly larger than the lymphocytes of normal blood, with very definite characters. The round or oval

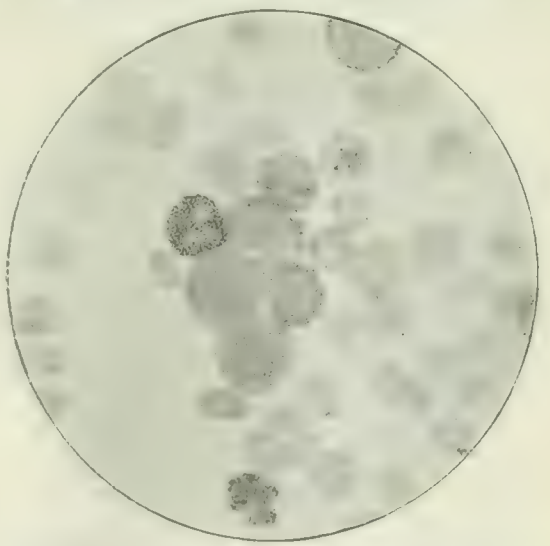


Fig. 8.—Slide B 8. Here we get three large cells, which are commonly classed as large lymphocytes, though exhibiting very different characters. One is the large cell with the small amount of deeply-staining protoplasm; this next has a larger amount of still somewhat deeply-staining protoplasm, which presents large vacuoles, and these vacuolated lymphocytes, both large and small, were somewhat numerous in this specimen. The third is another characteristic specimen of the large cell with basophile stippling.

nucleus has a sharp, well-defined margin, and the surrounding narrow zone of protoplasm stains with basic dyes, taking up the stain especially deeply at its periphery.

Here, therefore, as in acute leucocythaemia, the presence of these lymphocyte-like cells is to be looked upon as a return on the part of the bone marrow to a more primitive, less differentiated type of cell. In early embryonic life the cells of the bone marrow have an indifferent lymphoid character.

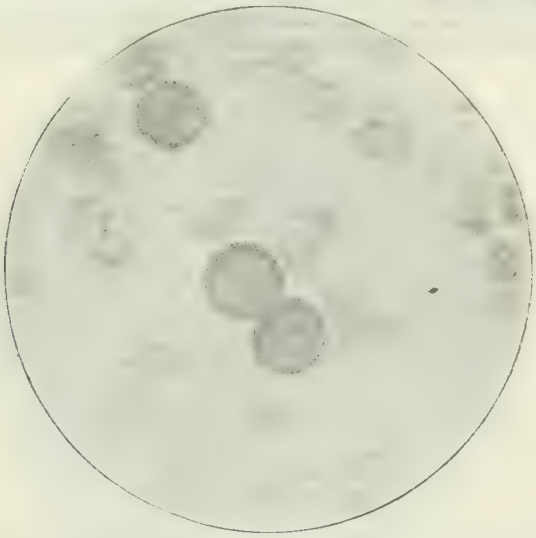


Fig. 9.—Slide B 9. It is, however, on seeing such a field as this that the true position of these so-called large lymphocytes becomes evident. Here we have a typical large lymphocyte, with its narrow zone of deeply-staining protoplasm; here one of the cells with the larger amount of protoplasm, with basophile stippling; and here another large cell with distinct basophile stippling, but with undoubted neutrophile granules in addition, that is, a myelocyte. We have already seen other specimens of neutrophile myelocytes which showed very distinct signs of this basophile stippling as these two on Fig. 6, and a careful study of such a slide as the one from which these fields have been selected is enough to convince one that these so-called large lymphocytes, however variable among themselves in appearance, are all to be regarded as imperfectly developed forms of myelocyte.

In the course of development differentiation occurs, the protoplasm of the more highly-differentiated leucocytes acquiring neutrophile or eosinophile granules, whilst that of the red corpuscles becomes so differentiated as to form haemoglobin with its marked affinity for acid stains. In spleno-medullary

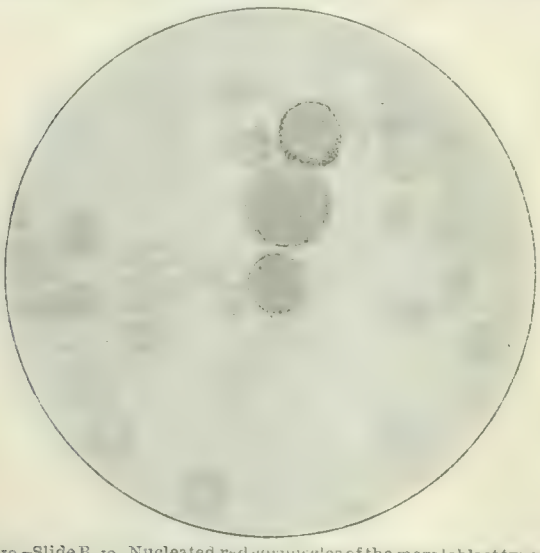


Fig. 10.—Slide B. 10. Nucleated red corpuscles of the megaloblast type such as this are still further degraded. This slide serves to show how the leucocyte and the red corpuscle by this reversal in the process of developmental differentiation come to closely resemble each other as they approach the character of the indifferent lymphoid cell from which they are both developed in the embryo.

leucocythaemia there is a degradation in the character of the cells in the blood. The myelocyte is a less highly differentiated cell than the polynuclear neutrophile, and these large lymphocytes are a further retrograde step. Not only in the leucocytes, but also in the red corpuscles, is there evidence of the process going on. The nucleated red corpuscles are less highly differentiated than normal red corpuscles. That this retrogression, this loss of differential characters, may be progressive is shown by the cases recorded, in which the blood picture of spleno-medullary leucocythaemia has been replaced by that of lymphatic leucocythaemia in the course of the disease, though the reverse condition has never been recorded; that is to say, that the cells with neutrophile granules have, as the disease progressed, been replaced by less highly-differentiated lymphocyte-like cells, as the functions of the bone-marrow cells become more and more degraded.

IX.—T. GILLMAN MOORHEAD, M.D., D.P.H.,

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A PRELIMINARY REPORT OF SOME INVESTIGATIONS INTO THE ETIOLOGY OF LEUKAEMIA.

SINCE the first recognition of leukaemia as a distinct clinical and pathological entity some sixty years ago, this disease, along with most others that principally affect the blood-forming tissues, has remained an etiological puzzle, and, although many have investigated the subject and some few have attempted to produce the disease experimentally in the lower animals, no definite and confirmed result has as yet been reached.

Of late, discussion and investigation has principally centred around the inter-relationships of the different diseases to which the generic term leukaemia is applied, and attempts have been made to prove that they are all primarily diseases of the bone marrow. It is not my intention, however, to enter into this discussion, or to consider the supposed different functions and properties of the various forms of white blood corpuscles. It is sufficient to state that both the lymphatic and spleno-medullary type of disease appear to be essentially the result of morbid changes in the haemopoietic tissues, and that in both diseases changes in all parts of these tissues may be expected to occur. The close physiological connexion of the spleen, bone marrow, and lymphatic glands, has indeed been shown by their universal reaction to lymphotoxic and myelotoxic serums as proved by Flexner.[1] Moreover, the occurrence of cases in which, as far as the blood itself is concerned, the type of disease changes, by a myelocythaemia becoming converted into lymphocythaemia,[2] supports Flexner's results, and is referred to, in order to point out that in experiments attempting to produce either form of leukaemia, the actual production of any changes in the haemopoietic tissues will have a positive value.

The various theories that have been propounded concerning the etiology of the disease may be reduced to two, namely (1) the parasitic theory, and (2) the toxic theory.

Writing in 1898, Robert Muir[3] states that no parasite of the nature of the malarial organism has been observed in leukaemia, and that there is no adequate evidence that any bacterium is concerned in the disease. Since that date, however, Löwit[4] has described an amoeboid organism, which he calls the haemamoeba leucaemiae magna, and which he states can be demonstrated by special staining methods in the blood and tissues of patients suffering from spleno-medullary leukaemia. A similar but smaller organism, which he terms the haemamoeba leucaemiae parva, is to be found, according to the same observer, in the blood of lymphatic leukaemia patients.

These organisms are stated to form spores and to pass through stages very similar to those of the malarial parasite. They have not as yet been artificially cultivated. By injections of fresh tissues obtained from leukaemic patients immediately *post mortem* Löwit claims to have produced in rabbits pathological changes which closely resemble those found in myelogenic leukaemia, and to have found the haemamoeba in the diseased parts. Similar injections into dogs, cats, and guinea-pigs did not produce any changes. These results, as far as I am aware, have not as yet been confirmed, although it is now more than three years since the date of their publication, and until they are fully confirmed

[1] The Pathology of Lymphotoxic and Myelotoxic Intoxications, Univ. of Pen. *Med. Bulletin*, 1902, xv, p. 287.

[2] (1) A Case of Leukaemia with Change of Type in the Appearances of the Blood—R. Wilkinson, M.D. *Lancet*, June 20th, 1903. (2) Seelig—*Deutsch. Archiv. fur klin. Med.*, 1895. (3) *Archiv. fur klin. Med.*, Bd. lvii.

[3] Clifford Allbutt's *System of Medicine*, vol v, p. 652.

[4] Die Parasitäre, Natür der Leukämie, *Centralbl. für Allgemein, Path. u. Path. Anat.*, 1901, p. 913 et seq.

they can hardly be accepted, at any rate in their entirety. Somewhat similar attempts to produce the disease in animals, carried out by Bollinger and Mosler[5] before the parasitic theory was mooted, gave negative results. Among the other organisms which have been found in the blood in leukaemia streptococci are the most numerous, but none have been found with sufficient frequency to justify any conclusions concerning their relation to the disease.

Turning now to the toxic theory, it is necessary at once to state that this theory is in no way necessarily antagonistic to the parasitic theory, inasmuch as any toxin present may have been produced by micro-organisms equally well as by a disordered metabolism. The facts which favour the view that a toxin is present are numerous, and a few of them may be briefly summarized: (1) In many cases the onset has been preceded by some other disease—for example, malaria[6]—which has lowered the general resisting power of the organism, and has disturbed the normal course of metabolism. (2) Inflammatory affections of the mouth, stomach, and intestines frequently precede or accompany the disease. This fact, combined with others, which will be immediately stated, led Köttniz to hazard the suggestion that the disease was a toxaemia produced by the absorption of peptones from the alimentary canal, the mucous membrane of which had lost its power of converting peptones into albumen. (3) Peptones and uric acid can usually be found in the blood of leukaemic patients, and there is said to be an excess of peptones in the spleen. (4) Repeated injections of peptones cause continued leucocytosis in animals, though without production of organic changes.[7] (5) The blood of leukaemia patients is less coagulable than normal, a fact which is attributable to the presence of histones, peptones, and albumoses. (6) In the urine there is evidence of increased breaking-down of tissue, together with deficiency of metabolism, inasmuch as the ammonia salts and purin derivatives are increased in amount, and a form of nucleo-histon has been found. The increase of ammonia salts may of course be regarded as evidence of an increased formation of acids in the body. (7) The occurrence of capillary haemorrhages suggests the presence of haemolytic or similar toxins. (8) The areas of necrosis found in various tissues also suggest the action of a toxin.

If the hypothesis of the existence of a toxin in the body be admitted, the exact relation of the lymphatic and other tissue changes to the toxin must be considered. To consider the lymph glands alone, their hypertrophy may be either a compensatory overgrowth designed to make up for an excessive leucocytial destruction, or else a direct reaction to the presence of a toxin within them. In the last case we might suppose that they had acted as filters, and were suffering themselves in their endeavour to protect the organism. Of the two possibilities the latter seems more in accordance with the facts, because there is more evidence of increased formation than of excessive destruction of the white blood cells. If indeed there is a toxin present in the glands, it can hardly be possessed of very acute poisonous properties in the majority of cases, owing to the chronic nature of the disease, which appears to be more the result of a mildly stimulating poison than of an actively destructive one.

Following the above briefly indicated line of reasoning, I have carried out some experiments with a supply of glands obtained fresh *post mortem*, from a patient who had suffered from the lymphatic form of the disease. The material at my disposal consisted of 135 grams weight of glands. This was divided into two equal parts, and the following extracts were made.

1. An alcoholic extract. The alcohol was filtered off and evaporated. The residue, which weighed about 1 gram, was then dissolved in saline solution, which was kept sterile by the addition of a small amount of thymol.

2. A glycerine extract of the second portion of glands. This was filtered off, and also sterilized by thymol.

3. A saline solution extract of the residue left after filtering the alcohol off the first portion of glands.

Similar extracts, of as nearly as possible the same strength, were made from normal human glands, obtained from accident cases, so that in all six extracts were prepared. A partial analysis of these extracts gave the following results:

1. Both alcoholic extracts reacted negatively with the usual proteid tests, with the exception of the fact that the normal gland extract gave a positive result with the xanthoproteic test.

2. Both glycerine extracts reacted positively with the proteid tests. The extract from leukaemic glands contained a trace of albumose.

3. Both saline solution extracts contained a considerable quantity of phosphorus.

Blood Pressure Experiments.

These were made upon full-grown rabbits; the pressure in the carotid artery was recorded, while the solutions were injected into the jugular vein. The rabbits were anaesthetized with urethane and chloroform.

1. Alcoholic extract of leukaemic glands. This causes a slight increase in force of the individual heart beats, and a slight rise in blood pressure, which is followed after a few seconds by a fall to and below the normal. This fall is again succeeded, after a variable time, by a rise above normal. Respiration, usually unaffected, may become jerky, irregular and quick.

2. The similar extract prepared from normal glands produced no change in heart beat or blood pressure.

3. Saline solution of alcoholic residue of leukaemic glands. This produces a primary very slight rise, followed quickly by a very pronounced fall. The fall is again succeeded by a very gradual rise up to about two-thirds normal. During the fall of blood pressure the heart beats are feeble, as is also respiration. This reaction was much more pronounced than any obtained from the other extracts. The similar extract from normal glands caused respiration to become temporarily quick and shallow but had no effect on blood pressure or heart action.

4. Glycerine extract of leukaemic glands. The injection of this extract causes an immediate slight rise in blood pressure followed by a gradual fall. After a considerable time the pressure again rises up to and much beyond the normal. The individual heart beats are at first increased in force, and respiration is shallow and quick. The similar extract from normal glands produced almost the same result, but it is probable that the effect of both extracts is largely due to the glycerine, as it was found that pure glycerine gives a tracing which closely resembles that above described.

My further experiments—which consisted in the hypodermic injection of extracts over a period of several days—were carried out on young rabbits. It was necessary, however, in the first place to obtain a thorough knowledge of the cells of their body fluids, lymph glands, spleen, bone marrow, and thymus gland. For this purpose I repeated in the first place, as far as necessary, the work of Kanthack and Hardie,[8] and, with the exception of a few minor points, am able to confirm their results in every particular.[9] To their work I would add the following facts:

1. In the rabbit a horseshoe-shaped nucleus is not entirely confined to the coarsely-granular oxyphile cells, but both in the blood and in the bone marrow can be found in the finely-granular oxyphiles.

2. I cannot agree with Kanthack and Hardie in regarding the granules of the finely-granular oxyphiles as purely oxyphile in character, for in several preparations I found that they assumed a violet colour when stained with eosin and methylene blue. This occurred not only when those stains were used successively, but also when used according to Leishman's formula. Occasionally even I have found some granules to take a pure blue colour. With a laboratory preparation of Ehrlich's triacid mixture the granules in these cells were always violet, while, on the other hand, the same stain as prepared from Grübler invariably imparted to them a deep red tint. As, however, I cannot go as far as Noel Paton, who applies the name "amphophiles" to these cells, I have retained Kanthack and Hardie's name.

3. I am able to confirm the observation of Max Schultze and others that intermediate forms between lymphocytes and hyaline cells can be found in the peritoneal fluid, and I have noticed similar intermediate forms in the bone marrow.

A differential count of the white cells in the blood gave the following results:

	Per cent.
Coarsely-granular oxyphiles	2.1
Finely-granular oxyphiles	24.6
Hyaline cells	0.0
Lymphocytes	(
Basophiles	

[5] *Virchow's Archiv*, Bd lix, p. 341.
W. R. Gowers, Leucocythæmia, Reynolds's *System of Medicine*.
[7] Vehsemeyer, *Münch. med. Woch.*, 1893.

[8] Wandering Cells of Mammalia, *Journal of Physiology*, vol. xvii.
[9] Since writing the above I find that Noel Paton and others, writing on the Relationship of the Spleen to the Formation of Red Blood Corpuscles (ibid., vol. xxviii), state that they have repeated and confirmed Kanthack and Hardie's work.

This may be summarized by stating that the oxyphiles form about 26 per cent., and the mononuclear leucocytes about 72 per cent. of the white cells of the blood. According to Kanthack and Hardie, the number of lymphocytes present varies much, being most abundant after a meal, and it is most important, of course, that this liability to variation should be kept in mind. The absolute number of white cells also varies much (from 6,000 to over 12,000 per c.cm.), and consequently the production of blood changes experimentally is hard to detect.

In studying the peritoneal fluid, I followed the methods of the two authors already mentioned, and can fully confirm their results. The small type of coarsely-granular oxyphiles, which they describe as being present in this fluid, is also occasionally met with in the blood. The bone marrow of the femur was studied; and as it soon became apparent that the relative number of the different cells varies a good deal in different parts, it was necessary to make a series of sections throughout the whole length of the column of red marrow which exists in young rabbits. Smear preparations were also made, in order that the form of the individual cells might be more closely studied. Following Dominici,[10] I recognized the following main types of cells, though variations from these types are extremely numerous.

1. Megacarocytes—large giant cells, composed of structureless protoplasm, and containing a lobed and usually ring-shaped nucleus.

2. Hyaline cells. These are fairly abundant, and constitute about 20 per cent. of the white cells present. They are very variable in size and usually possess an oval nucleus, though variations in the shape of the latter are not uncommon. In some of them, a few granules staining violet with the triacid stain are to be seen clustered at one end of the cell. In consequence of this these cells are regarded as the precursors of the amphophile myelocytes, and therefore of the small granular oxyphiles of the blood. A few lymphocytes can be seen in the marrow, principally towards the centre of the shaft of the bone, and also intermediate forms between them and the hyaline cells.

3. Myelocytes with small granules. These are the so-called amphophile myelocytes. They form about 60 per cent. of the white cells of the marrow. Their nucleus varies much in shape, but is most frequently spherical or bilobed.

4. Myelocytes with large granules. Here, the eosinophile myelocytes constitute about 10 per cent. of the white cells. They vary much in size. Their granules are somewhat larger than any met with in the normal blood, but the size of the granules is by no means constant. An oval nucleus is most common, but a horseshoe-shaped nucleus is also found.

5. Myelocytes with basophile granules. These are comparatively few in number and are best seen in smear preparations.

6. Nucleated red blood corpuscles. Normoblasts are most common, but occasionally megaloblasts and microblasts are met with. These cells usually appear in the form of little clusters scattered throughout the substance of the marrow.

The lymph glands and thymus of the rabbit do not require any special description. In the spleen pulp large numbers of white cells, both lymphoid and granular, are found, and a small amount of broken-down haemoglobin appears to be normally present.

Experiments.

1. Two rabbits were inoculated with the glycerine extract of leukaemic glands, 1 c.cm. being injected daily beneath the loose skin of the back. The first rabbit died after the eighth injection, and the second after the twenty-eighth. During life no blood changes, other than slight anaemia, were noted. Both animals suffered from diarrhoea and lost weight. *Post mortem:* The lymph glands near the site of injection were enlarged in both animals, but no other changes in the haemopoietic tissues were found. In both animals there was severe parenchymatous nephritis. Cultures from blood and spleen were negative. Owing to this negative result, no injections of the similar extract from normal glands were made.

2. Three rabbits were injected with the alcoholic extract of leukaemic glands, and the following results were obtained:

Rabbit 1 received five injections in ten days, and was then chloroformed. *Post mortem:* In the blood there was a marked relative increase in the number of the coarsely-granular oxyphiles. A differential count gave the following results:

	Per cent.
Lymphocytes...	33·5
Hyaline cells...	10.8
Coarsely-granular oxyphiles	13·5
Finely-granular oxyphiles	40.2
Basophiles	2.0

This increase in eosinophiles gradually developed during the course of injections. The granules in the finely-granular oxyphiles showed degenerative changes. There was no absolute increase in number of white cells. In the marrow the eosinophile myelocytes were greatly increased, and appeared to equal or even to exceed in number the amphophile cells. The lymph glands, both axillary and inguinal, were enlarged, and their substance infiltrated with oxyphile cells. These were principally collected under the capsule and around the larger arteries. The spleen was normal in size and contained much broken-down haemoglobin; kidneys healthy; cultures from blood negative.

Rabbit 2. Chloroformed after tenth injection. The blood during life presented no changes. *Post mortem:* The lymph glands generally were enlarged, and presented slight infiltration of their substance with oxyphile cells; the spleen was normal in size and contained much broken-down haemoglobin. In the marrow slight general cellular hyperplasia was noticed, which especially involved those hyaline cells, which contained a few violet-staining granules. The nuclei of the megacarocytes were somewhat broken. Kidneys and liver normal; cultures negative.

Rabbit 3. Chloroformed after twenty-first injection owing to supply of material having run out. The blood during life did not present any changes. *Post mortem:* Axillary lymph glands enlarged; slight cellular hyperplasia, involving the hyaline cells, present in the red marrow. The other lymph glands, the liver, spleen, and kidneys were normal. Cultures negative.

Two control experiments were performed with the similar extract from normal glands. Both animals were killed after the twentieth injection. One of them was the subject of fairly well-marked coccidial disease of the liver, but showed no other pathological change. In the other no morbid change was detected. In neither of them were even the axillary lymph glands enlarged.

From the above series of experiments no conclusion, except perhaps a negative one, can be drawn. The marked eosinophilia in the first rabbit must, I think, have been due to some adventitious cause. It is possible that with a further supply of material more definite information might be obtained.

3. Three rabbits were treated with the saline solution of leukaemic glands with the following results:

Rabbit *a*. Received eight injections during sixteen days. During this period there was a progressive fall in the number of red cells present, from 5,200,000 to 3,000,000 per cm. On one occasion a few nucleated red cells were found. There was no marked change in relative or absolute numbers of the white cells. *Post mortem:* The marrow was pink and softer than normal. An increase in the nucleated red cells was at once apparent. The little groups in which they lie were greatly increased in size and megaloblasts were especially abundant. Large irregular and bilobed nuclei were frequently seen. The megacarocytes were increased and there was an enormous general cellular hyperplasia, principally involving the amphophile myelocytes. The axillary, inguinal, and some of the mesenteric lymph glands were enlarged and showed general hyperplasia. The cells, which possess a considerable amount of perinuclear protoplasm, and which are normally found in the centre of the glands, constituted almost the entire substance of the glands which were sectioned. In most sections a few large cells containing fragments of haemoglobin, and, occasionally, entire red cells were present. The spleen was much enlarged. Its Malpighian corpuscles were unusually conspicuous and had a very anaemic appearance. The kidneys and liver were normal. The thymus was not examined. Cultures from blood and spleen negative.

Rabbit *b*. It is unnecessary to detail the changes found in this rabbit, as they were practically the same as in the first. The blood showed a slight leucocytosis, the oxyphiles predominating, but no nucleated red cells were seen. The marrow, lymph gland, and splenic changes were well marked; thymus normal; cultures negative.

Rabbit *c*. Received fourteen injections during twenty-eight days. During this period the animal rapidly emaciated. There was slight leucocytosis, the oxyphiles largely predominating. The hyaline cells of the blood were very large, and many of them contained two nuclei. The nuclei in the small granular oxyphiles were much broken up. Many uni-

[10] Ranvier, *Manuel d'Histologie Pathologique* Art. Sang et Moelle Osseuse

nuclear granular cells were also found. No count of the blood platelets was made, but in all preparations they were very numerous, apparently being five or six times as numerous as in normal blood. This increase of platelets, though not so well marked, was also noticeable in the blood of the other two rabbits. During the course of injections the red cells fell from 5,600,000 to 3,100,000. *Post mortem:* The marrow and lymph glands showed the same changes as in the other rabbits. The spleen was somewhat enlarged, and the Malpighian corpuscles conspicuous and anaemic. The liver was somewhat congested; kidneys and thymus normal.

Three control rabbits were treated with the saline solution of normal glands, receiving respectively ten, twelve, and seven injections. All three emaciated somewhat. No blood changes were detected. In only one was the marrow changed, the alteration consisting in a great increase of the megacarocytes. The axillary glands, near the site of injection, were enlarged in all three and were extremely congested, but no other glands were altered. In all three the spleen was unusually small, and of a pinkish anaemic colour, but showed no structural alteration. Other organs normal; cultures negative.

As a further control upon the above results a series of similar experiments have been carried out with extracts of thymus glands. The glands of lambs were selected, owing to the difficulty of obtaining an adequate supply of normal glands from human fetuses. Two extracts were prepared similar to those made from the lymph glands, namely, (1) a saline solution of the substances extracted by alcohol; (2) a saline solution extract of the alcoholic residue. Only the latter of these two was used for injections.

Blood Pressure Experiments.

1. Saline solution extract. This solution did not produce any effect upon blood pressure, and in this negative result the thymic extract thus corresponds with the similar extract from normal lymph glands, and contrasts with that prepared from leukaemic glands. The fact that this thymus extract has no effect upon blood pressure is surprising, as it is well known that depressor substances can be readily obtained from the thymus gland. It is possible, of course, that a similar extract prepared from human thymi would have a depressor action, and till such an extract can be investigated too much stress must not be laid upon the above results. The result as it stands is, however, striking, and is decidedly in favour of the conclusion that leukaemic glands contain some specific substance.

2. Alcoholic extract of thymus gland. This produces a primary rise of blood pressure, followed by a pronounced fall. The extract, therefore, seems to contain both a pressor and a depressor substance.[11]

Hypodermic Injections.

Three young rabbits were subjected to a series of hypodermic injections of the saline extract. The notes on these are as follows:

Rabbit 1 *t.* Received thirty-two injections. No blood changes of any kind detected. *Post mortem:* Lymph glands normal in size, but contain a considerable number of oxyphile cells; spleen somewhat congested; contains much broken-down haemoglobin and a fair number of oxyphile cells; other organs and tissues normal; cultures negative.

Rabbit 2 *t.* Received eighteen injections. No blood changes. *Post mortem:* Lymph glands somewhat enlarged but microscopically normal; kidneys show slight nephritis; other organs and tissues normal.

Rabbit 3 *t.* Received twenty-six injections. No blood changes. *Post mortem:* Spleen slightly congested. Other organs and tissues normal.

When the results of the experiments of the saline extract of the (1) leukaemic glands, (2) normal glands, and (3) thymus glands are compared, it will at once be seen that with one only of these, namely, the leukaemic glands, was any constant result obtained. Unfortunately only a few experiments could be carried out with that extract, owing to want of material, and in consequence no definite conclusions can at present be drawn. For the present I must content myself, therefore, with drawing the following tentative conclusions, which future investigation may either establish or overthrow. One reason indeed for the publication of these results in their present state is the hope that doing so may be the means of my obtaining a fresh supply of material.

[11] Cf. *Journal of Physiology*, vol. xxix, p. 242 et. seq.

Conclusions.

1. After precipitation with alcohol, a substance can be extracted from leukaemia lymph glands by saline solution, which produces a marked fall of blood pressure in rabbits. This depressor substance is not a constituent of ordinary lymphoid tissue, inasmuch as similar extracts of normal lymph glands and of thymus glands do not contain it.

2. The above-mentioned depressor substance is possibly a specific toxin, because continuous injection of the extract containing it produced marked changes in the haemopoietic tissues in rabbits. It is to be noted that these changes were not confined to any one of these tissues, but involved them all. The rapid development of changes may be supposed to be due to the large quantities of toxin which were injected on each occasion.

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Origin and Development of the Lymphocyte.

THE large and small lymphocyte, in common with the granular cell, are derived from the "lymphoid cell" (Wolff). The large lymphocyte is younger than the small. This relationship is so, I believe, because I have found that no sharp distinction can be drawn between the types of non granular cells by routine methods of staining of blood films in health and disease. It is true that such differences are merely due to tinctorial affinities in nucleoplasm and cytoplasm (and contained albuminous granules in some cells), and to the contour and volume of the nucleus and cell.

In the child and adult the granular myelocyte or marrow cell forms granular cells mainly, the lymphoid cell of adenoid tissue (lymphatic gland, thymus, spleen, tonsils, marrow of bones, etc.) produces non-granular cells.

According to Hammar, about the fourth month of intra-uterine life mononuclear leucocytes appear in the marrow, and myelocytes in the fifth month. The "lymphoid cells" of Wolff, however, do not appear to be more numerous in infancy than in adult marrow.

Lymphocytosis and its Clinical Significance.

Lymphocytosis is physiological in infants and young children (5,000 lymphocytes per cm. in newly-born, 9,000 per cm. at sixth month, 8,000 per cm. at first year, 4,500 per cm. at third year, and 2,000 at sixth year.—R. Hutchison). The thymus and lymphoid tissues are active in proportion to numbers in blood. There may be lymphocytosis accompanying digestion, in pregnancy, and in lactation. It occurs in anaemias, leukaemias, and sarcomatous growths; thus it is seen in primary and secondary anaemias (pernicious, splenic anaemia, rickets with enlarged spleen, chronic gastro-intestinal irritation), in lymphatic leukaemia, in lymphosarcoma, chloroma and sarcoma (? in mycosis fungoides). In lymphadenoma, in protozoal malaria, trypanosomiasis, and bacillary diseases (for example, tuberculous adenitis), in syphilis, and in Graves's disease it is frequently met with, and after the administration of thyroid extract and tuberculin.

Lymphocytosis is thus seen to occur in conditions in which the nutrition and metabolism are at an unusual balance. The adenoid and lymphocytic tissues are clearly concerned with the process of absorption of nutritive material (Schäfer), and equally so with the destruction of bacterial organisms. It is in affections of these tissues that lymphocytosis may occur, and it appears in response to the invasion of animal cells (blood cell, malarial parasite, trypanosome (Metchnikoff), while the transference of the fat of chyme to the lacteals is physiological; in the anaemias, especially those associated with the gastro-intestinal diseases of infancy, due to ill-feeding, the lymphocytosis is pathological.

Lymphocytosis and its Interpretation.

In general terms lymphocytosis may be interpreted as indicating a response to disturbances of lymphoid tissues by physiological or by toxic agencies. It is noteworthy that animal cells in the main evoke lymphocytosis (rather than leucocytosis). Gengou indeed states that exudates of "macrophages" have haemolytic properties, erythrocytes being digested.

If it is granted that polynuclear cells (phagocytic) are related in origin and morphology to lymphoid cells, lymphocytosis can be understood as occurring in infection, animal or vegetable, in response to positive chemiotaxis (Metchnikoff), to which, however, Ehrlich considers the lymphocytes are insensible.

No.	Name, Age, and Sex.	Disease, etc.	Red Cells per c.mm.	Haemoglobin per cent.	Colour Index.	Total Leucocytes per c.mm.	Large Mononuclear Cells. Large Lymphocytes.	Lymphocytes.	Transitional.	Polymorphonuclear Neutrophile.	Eosinophile.	Mast Cells.	White to Red.	Total of Large Mononuclears per c.mm.	Date.
1	S. T., 28, male	Malaria (aestivo-autumnal): examination made at end of paroxysm, temperature being 99·2°; no quinine given; "crescentic bodies" and "rings" abundant	2,480,000	50 Haldane's modified Gowers	1.0	10,284	32.5, 12.0 = 44.5	15.2	0.9	35.6	3.5	0	1 to 240	3,342	Feb. 2, 1903.
		Second examination	2,560,000	50	1.0	12,891	30.7, 14.2 = 44.9	17 7	0.9	27.9	8.2	0	—	—	Feb. 9, 1903.
		Third examination (bubo and jigger in foot)	2,800,000	75	1.2	14,673	12 7, 4 4 = 17.1	15.6	1.2	46.6	19.3	0	—	—	Feb. 21, 1903; bubo.
		Fourth examination, apyrexia	—	—	—	—	32.9, 15 6 = 48 5	17.5	1.8	27.9	13.5	0.005	—	—	Mar. 3, 1903.
2	A. B., 35, male	Blackwater fever and cachexia; a few malarial crescents in blood: blood examination made at end of the haemoglobinuria	2,420,000	30	0 6	25,591	9 9, 11 7 = 21.6	9.9	1 0	64.6	2.7	0	1 to 94	2,533	Mar. 4, 1903.
			—	—	—	—	11.1, 15.4 = 26 5	20.8	0.5	49.5	2.4	■			
3	E. K., 18, female	Lymphadenoma (no signs of secondary infection)	6,000,000	75	0.7	34,781	17.3, 8.0 = 25 3	8.5	2 0	62.2	1.5	0	1 to 170		
4	W. N., 17 male	Sarcoma of scapula	—	—	—	—	12 5, 8.2 = 20.7	8.8	—	66.8	1.7	■			
5	P., 11, male	Lymphadenoma (cervical glands on right side much enlarged)	5,100,000	76	0.75	12,000	16.8	35.4	1.1	38 5	8	1	1 to 425	—	350 cells counted Sept. 16, 1903.
1a	E. M., 26, male	Malaria crescents in blood	3,240,000	—	—	4,600	17	28	—	53.0	2.0	0	1 to 704		
2a	T. R., 25, male	Blackwater fever; temperature 99.6°	3,425,000	65 Von Fleischl	—	10,000	18	21	—	59	1	1	1 to 342	—	Mar. 9, 1903.
			3,635,000	65	—	7,000	—	—	—	—	—	—	—	—	Mar. 23, 1903.
			3,000,000	59	—	10,000	8	13	—	77	—	1	—	—	Mar. 24, 1903.
			3,000,000	56	—	11,800	21	20	1	56	2	—	—	—	Mar. 25, 1903.
3a	S., 40, female	Trypanosomiasis	3,880,000	—	—	8,600	29.7	16.0	—	51.5	1.0	0 25	1 to 451	—	Nov. to Dec., 1902.
			2,825,000	36	—	4,200	22 7	18 4	—	55.2	1.8	0.48	—	—	" "
			—	—	—	—	19.6	24.0	—	53.7	2.5	0.15	—	—	Feb. to Mar., 1903.
4a	—	Lymphadenoma	3,853,700	58.5	0.78	10,480	13 3	15 1	—	69.3	1.8				
5a	—	Osteosarcoma of thigh	—	—	—	Great increase	6	19	—	74	0.1				
6a	male	Normal average of cells per c.mm.	5,000,000	100	1.0	7,500	4 to 8	20 to 30	—	60 to 75	0.5 to 5	0.5			
	female		4,500,000	80 90 Von Fleischl											
7a	—	—	—	—	—	5,000 to 10,000	200 to 800	1,000 to 3,000	—	3,000 to 7,500	25 to 500	25			
	7 years	Lymphatic leukaemia	—	—	—	21,178	—	—	—	—	—	—	—	—	April 9th 1903.
						159,649 *	—	—	—	—	—	—	—	—	May 1st, 1903.

* Large relative and absolute lymphocytosis.

1, 2, 3, 4, and 5, Reports Clinical Laboratory, South Devon and East Cornwall Hospital, Plymouth. 1a, Captain T. H. Delany, M.B., I.M.S., BRITISH MEDICAL JOURNAL, March 28th, 1903. 2a, Drs. W. G. Ross and G. C. Low, BRITISH MEDICAL JOURNAL. 3a, Drs. Duncan, Whyte, Daniels, and Lowe, BRITISH MEDICAL JOURNAL, May 30th, 1903. 4a, Dr. J. C. Da Costa (average of ten cases). 5a, Dr. R. C. Cabot (Clinical examination of the blood). 7a, Dr. J. C. Da Costa, total number of leucocytes normally found per c.mm. ("Clinical Haematology").

Examples of Lymphocytosis.

Name, Age, and Sex.	Disease.	Red Cells per c.mm.	Haemoglobin per cent.	Colour Index.	Total Leucocytes per c.mm.	Large Lymphocytes.	Lymphocytes.	Transitional.	Polymorphonuclear Neutrophile.	Eosinophile.	Remarks, Date.
F. R., 30, female...	Cervical lymphadenoma	—	—	—	3,200	5.7	35.6	—	58.60		
G. F., 8, male ..	Lymphadenoma	5,344,000	70	—	15.844	—	—	—	—	—	Microscopical examination showed typical structure of lymphadenoma.
R. P., 11, male ...	Lymphadenoma	5,616,000	76	—	11,428	16.8	35.4	1.10	38.50	8.0	
						5.4	30 3	—	—	15.3	
F. P., 15, male ...	Lymphadenoma (?)	—	—	—	16,000	15.0	8.0	1.00	74.00	—	May 31st.
					14,000	8.6	14.6	—	76.30	—	June 3rd.
W. H., 38, male ...	Pernicious anaemia	1,592,000	35	1.12	10,612	59 34		0.32	38.37	1.6	Basophile, 0.32.
——, 24, male ..	Beri-beri	—	—	—	34,285	42.20		—	53.80	3.8	
——, 24, male ...	Beri-beri	—	—	—	31,020	37.70		—	60.30	1.9	
M. O'B., 11, female	Splenic anaemia	5,696,000	56	0.40	8,000	8.8	38.0	—	45 50	7 5	December 31st, 1903.
		3,000,000	40	—	17,308	5.9	49.5	0.60	43 20	0.6	January 19th, 1904.
		3,680,000	50	—	10,589	1.0	35.0	1.50	67.50	1.0	May 7th, 1904.
		3,024,000	44	—	3,500						

Lymphocytosis and its Immediate Cause.

In addition to positive chemiotaxis (as, for example, the perivascular mononuclear cell collections seen in trypanosomiasis—Low and Mott—in tubercles, in leprosy, etc., and the lymphocytosis of malaria, etc.) there are other mechanisms by which lymphocytes are swept into the blood stream—for example, increased circulatory activity in the lymphatic tissues, which washes them from the lymphatics

into the general circulation (Ehrlich). It appears, also, that the muscle fibres of lymphatic glands could originate local alterations in lymph pressure and flow by contraction, and thus tend to an increased flushing of the lymph sinuses. Finally, lymphocytes are produced in abnormal numbers, as evidenced by mitoses, etc., in lymph glands, spleen (as in leukaemia), and are passed on into the lymph stream.

Why a discrimination in the numbers of lymphocytes in the circulation results in lymphadenoma, lymphosarcoma, lymphatic leukaemia, and chloroma, is not at present understood, despite the differences of their structure that exist under the microscope in these diseases.

The Lymphocyte in Relation to Pathological Conditions.

(1) To granulation tissue. Although fibrous tissue is formed from the leucocytes of the tadpole, and though there is a possibility that the large uninucleated hyaline leucocytes can become fibroblasts (Metchnikoff), it is improbable that the lymphocyte (or amoeboid leucocyte) forms granulation tissue. The plasma, fixed connective tissue, and endothelial cells probably take the chief share in the process. Its relationship to the small round-celled sarcoma, to glioma, to myxoma, etc., is uncertain, but transition would occur by the natural and mysterious phenomenon, named heterology. (2) To the anaemias, leukaemias (and sarcomatous processes?) it is probable that the lymphocyte is correlated in three ways, (*a*) in the action and reaction of the highly active blood tissues, (*b*) alterations in the nutrition and metabolism of the body, (*c*) in most cases due to injurious influences, as defective diet, infection, etc.

In passing it may be said that the absence of definition between the blood diseases, which thus shade off one into another, is partly explicable if the source of the blood cells is agreed to be capable of variation.

The relation of lymphocytosis to splenic anaemia is of much interest. The spleen acts as a large lymphatic gland in filtering from the blood stream foreign particles (experimental, red and white cell remains, infective matter, etc.). In microscopic preparations of a marked case of splenic, hepatic, and pancreatic fibrosis associated with cholelithiasis and cholangitis (infective) the resemblance of the fibrous hyperplasia of the spleen to that seen in splenic anaemia was clear. It suggests a bacterial origin to both diseases, presuming, as is most possible, that the splenic fibrosis in cholangitis is due to toxins as is the hepatic fibrosis. According to Ehrlich an increase of lymphocytes, as long as disease of the lymphatic glands can be excluded, should be considered due to functional exclusion of the spleen, by a kind of over-compensation on the part of the glands. This would explain the lymphocytosis which is present in the splenic anaemia of children and often of adults, and might be expected similarly in other diseases in which splenic fibrosis occurs.

Lymphocytosis in relation to lymphadenoma and tuberculous adenitis is concerned with the response of the lymphoid cells to infection in all probability.

Lymphatic leukaemia undoubtedly does occur without any total increase of lymphocytes, but always with an absolute increase of lymphocytes. It is common in children, whereas myelogenous leukaemia is rare. Whether it is infective, or a neoplasm (sarcoma) of the blood tissues or a less differentiated form of leukaemic process is unknown. The large lymphocyte usually accompanies acute leukaemia.

The estimation of the urinary purin bases in blood diseases and neoplasms in which metabolism is suspected to be altered would be of value, but few reliable figures are available. Purins are present in all cells, so that they may be excreted normally, and indeed are; purin substances are passed from the general tissues into gut, and also appear in excretions from defective absorption of purin bodies introduced with the food (feeding with adenin of thymus gland gives 25 per cent. total purin N as urinary purins). In the faeces the nucleoproteids of leucocytes help to form the purins contained (Walker Hall).

A practical point in the enumeration of white blood cells is perhaps worthy of note in conclusion.

V. Limbeck believed that errors therein are due (*a*) to inaccuracy in collecting the blood, (*b*) in measuring and diluting, (*c*) in dropping the right amount of fluid on the slide, (*d*) in counting, (*e*) in the apparatus, (*f*) in unequal mixture of the blood and fluid.

Reinert has shown that pressure on the tissues may make a difference between 4,582,000 red cells and 3,860,000 in the same case. He found a difference of 25 per cent. between a Thoma-Zeiss and Malyassey instrument. Lyon and Thoma counted an average of 1,141 cells in 24 preparations of a specimen of blood and found a variation of 1.82 per cent. Again, with an average of 934 cells there was a variation of 2.71 per cent. Reinert obtained similar results.

With the Thoma-Zeiss apparatus I have obtained considerable variation in successive white cell counts (and even red cell) of the *same sample* of blood, obviously due to unequal mixture at different periods, despite agitation of the bulb for four minutes. To minimize, if possible, this error, I have suggested, and hope to show you, two mechanical "commixers," one for the apparatus of Thoma-Zeiss and one for Gowers.

REVIEWS.

LARYNGOLOGY, RHINOLOGY, AND OTOLOGY.

Professor Gradenigo's[1] many original monographs have made him known throughout the medical world, and the general textbook of diseases of the ear and upper air passages which he has now published ought to command the attention of a large circle of readers. It combines many of the excellences both of the German and of the French schools, and it will be found clear and thorough without being laboured. The work commences with twelve lectures on the general pathology, symptomatology, and therapeutics. These are followed by twenty others on their application to the special diseases according to which the sections are classified. Thus we find ourselves carried to and fro between nose, ear, pharynx and larynx. This method prevents a good deal of repetition, but it seems rather strained to those who are accustomed to an anatomical rather than a pathological classification. Lecture XXII, on diseases of the peripheral apparatus for special sense, is most interesting, but it embraces together with such subjects as hysteria, and disturbances of smell and taste, the diseases of the labyrinth, all, it need hardly be said to those who have followed the author's work, treated with considerable originality and with sufficient thoroughness. Professor Gradenigo advances strong pleas for grouping together otology, rhinology, and laryngology, the nose being a ground common to both the first and the last of these. Points in regard to treatment are discussed in the practical way we so highly appreciate. As an instance (p. 303), while advocating warm applications in cases of peritonsillar abscess, he advises their suspension and the substitution of cold if the inflammation extends to the aditus laryngis. Among other forms of disease to which he draws attention more pointedly than is usually done, we may note (p. 324) non-perforative acute purulent median otitis, with its attendant dangers, parasyphilitic (p. 662) and "paratuberculous" (p. 697) sclerosis of the middle ear, as also a dry form of median otitis occurring in tuberculous subjects. The book is rendered all the more valuable as a work of reference, inasmuch as it possesses an excellent index and an extremely detailed table of contents. While recognizing the work of investigators in all countries, the author prides himself on showing what has been done by his keen and brilliant Italian *confrères*.

The second edition of the work on the *Diseases of the Larynx and Trachea*,[2] by Professor Philipp Schech of Munich, amply maintains the credit of its author. It is compact and practical, and omits little or nothing which the practitioner may wish to know on the subjects dealt with. In his preface to the first edition the author apologizes for the meagreness of the sections on diseases of the trachea, but he has now amply made up for any shortcomings in this respect. The instructions for the practice of laryngoscopy and tracheoscopy are most ample, and a good description is given of the various forms of "phantom," on which the tiro may exercise his 'prentice hand. The most commonly observed diseases are treated with sufficient fullness, and the occasional acute exudative forms of laryngitis, which are often very puzzling, are dealt with in a valuable chapter. The section on mal-

[1] *Patologia e Terapia Dell' Orecchio e Delle Prime Vie Aeree* [Pathology and Therapeutics of the Ear and Upper Respiratory Passages (Otology, Rhinology, and Laryngology)]. Por Professor Giuseppe Gradenigo. Turin: S. Lattes and Co. 1903. (Demy 8vo, pp. 668; 278 illustrations. L. 20.

[2] *Die Krankheiten des Kehlkopfes und der Luftröhre* (mit Einschluss der Laryngoskopie und Lokal Therapeutischen Technic) [Diseases of the Larynx and Trachea (including Laryngoscopy and the Local Therapeutic Technique)]. Von Dr. Philipp Schech, Professor of the University of Munich. Second edition, with 89 illustrations. Leipzig and Vienna: Franz Deuticke. 1903. (Royal 8vo, pp. 331, 89 illustrations. M. 7.)

formations, congenital and acquired, is sure to be found helpful, as also that on anomalies of the circulation, including, among other points, cyanosis, icterus, haemorrhage, and non-inflammatory oedema. Inflammatory oedema is brought under the heading of phlegmonous laryngitis, primary and sequential (p. 117). An interesting reference is made to a form of phlegmonous laryngitis occurring in diabetics as furunculosis laryngis diabetica (p. 119). The book is rich in instances of affections of the larynx depending on various constitutional disturbances. Tuberculosis is discussed from the general and special points of view. The author places the local above the general treatment in laryngeal tuberculosis, describing the various methods with wise insistence on the contraindications. He thinks that lactic acid is contraindicated when there are extensive ulcers occupying the whole of the entrance of the larynx, or in debilitated patients with advanced disease of the lungs. Some recommend the application of lactic acid in tuberculous infiltration; Schech, in common with Hajek, protests against the possibility of bringing about a disappearance of such infiltrations, but on the other hand sees the probability of converting the infiltration into an ulcer, a proceeding which must not be lightly considered. As contraindications against sending a patient to a climatic health resort or watering-place in addition to loss of strength and diarrhoea, are severe dysphagia, laryngeal dyspnoea, and haemoptysis. He speaks well of the galvano-caustic method. In his admirable chapter on carcinoma he might have made the distinction between the intrinsic and extrinsic forms somewhat more marked. The translation of his work on the diseases of the mouth, nose, and pharynx, by Dr. Blaikie (Young J. Pentland), was much in demand when it first appeared, and the present book would, we are sure, meet with a most favourable reception in English guise. We recommend it most cordially to our readers.

Dr. GRAYSON'S work on *Diseases of the Throat, Nose, and Ear*[3] gives a good general account of them in an unusually attractive manner. In some matters the reader will wish to amplify his knowledge by referring to more detailed though perhaps "drier" textbooks and monographs. It affords, however, a most excellent introduction to otology and laryngology, and will, we are sure, lead many to take up the subjects. The author's attention to the constitutional side of treatment must appeal to those who are general in their practice, and many of his hints may be taken to heart with advantage. Many of the chapters, though short, contain most of what is practically required, as for instance in regard to hay fever, epistaxis, and nasal reflexes. The diseases of the nasal sinuses might have received more detailed description in view of their complexity and seriousness. Again, the reference to intrinsic carcinoma of the larynx might well have been more explicit, and the description of cholesteatoma of the middle ear more definite. Among points to which the author has given the importance they deserve we may note the complete rest of the voice he insists on in laryngeal tuberculosis and the cleansing of the nasal passages in acute and chronic suppurative inflammations of the middle ear. He cuts down the sections on deflections of the nasal septum to very reasonable limits, recommending strongly Douglas's septum perforator and curved septum knife. A curious disproportion exists between the space devoted to the operation of removal of the stapes and that given to the radical mastoid operation, the latter having immensely greater importance than the former. We are sure this book will be found valuable and at the same time most readable, two qualities which are not universally coexistent.

The growing attention to the distressing results of ear disease if neglected or improperly treated has led to a rapid increase in knowledge of their clinical and pathological history. The operative treatment is therefore coming more and more to the front, and at a time when an excess of zeal is evinced in some quarters a discreet enthusiasm is to be highly encouraged. *Operations on the Ear*,[4] by Dr. HEINE, is from this aspect especially deserving of a welcome from aural and general surgeons alike. His descriptions of the indications for the various operations are characterized by well-balanced discussion of their advantages and drawbacks. The scope of the work extends from paracentesis of the membrane to puncture of the lateral ventricles of the brain. The information conveyed is well up to date, and perhaps one of the most valuable of the novelties contained in the book is the chapter dealing with the evacuation of the labyrinth in cases of purulent inflammation of that structure. He points out very succinctly the difficulties in the way of its diagnosis, while clearing them away as far as possible. He starts with the broad dictum that the one condition necessary is the certainty that pus is present in the labyrinth. This has to be made out by means of symptoms on the one hand, and signs found during the operation on the other; neither alone seems to be quite definitive. Although, in the long run, many will be saved from death from meningitis or cerebellar abscess by the timely adoption of operative procedures on the labyrinth, he is disposed to think that many labyrinths will be opened without necessity and with undesirable results before the indications for the operation are definitively settled (p. 110). The removal of the ossicle for chronic suppuration of the middle ear is kept within very judicious limitations. He considers it only advisable when the hearing is much diminished, when there is caries confined to the ossicles, and expectant treatment had proved unavailing (p. 26). The "radical" mastoid operation necessarily occupies a considerable amount of space, and no important points in connexion with the after-treatment is omitted. The book is full of practical hints founded on experience; and, as far as any one man's experience can help another, this work may be consulted with every confidence.

[3] *Diseases of the Nose, Throat, and Ear.* By Charles Prevost Grayson, A.M., M.D. London: Henry Kimpton. 1903. (Demy 8vo, pp. 540; 137 illustrations. 18s.)

[4] *Operationen am Ohr. Die Operationen bei Mittelohreiterungen und ihren intrakraniellen Complicationen.* [Operations on the Ear. Operations for Middle ear Suppurations and their Intracranial Complications.] By Dr. B. Heine, Senior Assistant in the Aural Clinic of the Royal University of Berlin. Berlin: S. Karger; and London: Williams and Norgate. 1904. (Demy 8vo, pp. 178, 36 illustrations. 6s.)

MEDICAL NEWS.

DR. MAZERON, of Auzances, died a few days ago at an electoral meeting as he was beginning a speech.

A SOCIETY for the suppression of dust on streets has been founded in Munich.

THE SPITTING NUISANCE.—The New Jersey State Board of Health has begun a crusade against the spitting nuisance on all the railroads of the States.

THE inaugural sessional address before the Pharmaceutical Society of Great Britain will be delivered on October 3rd by Professor Arthur William Crossley, D.Sc., Ph.D., F.I.C. The presentation of the Pereira medal by the President will take place on the same occasion.

THE Duchess of Albany has consented to open the new Operating Theatre at the National Hospital for the Paralyzed and Epileptic, Queen Square, Bloomsbury, at 3.30 p.m. on Saturday, October 8th, and to attend a harvest festival service in the Chapel, at which Bishop Welldon will preach.

AN examination by Professor Dunstan at the Imperial Institute of certain minerals discovered during a recent mineralogical survey of Ceylon has shown that the principal constituents of one found in refuse from gem washings near Balangoda is radio-active; it contains 75 per cent. of thorium oxide, and it is thought probable that radium is present.

MRS. S. A. BARNETT, Honorary Secretary of the Hampstead Heath Extension Council, is enabled to state that an undertaking has been given to purchase from the Eton College Trustees the eighty acres of Wyldes Farm, to be finally transferred to the London County Council and held as an open space. Of the total sum of £40,000 required, £4,000 remains to be collected, and subscriptions will be received by Mrs. Barnett, Warden's Lodge, Toynbee Hall, Whitechapel, E.

NURSING IN JAPANESE MILITARY HOSPITALS.—Miss McCaul and Miss Elaine St. Aubyn, with the sanction of the Queen, went out in March to Japan to inspect and report upon the Japanese military nursing both in the field and at the base hospitals. During the two months which they spent in Japan they were allowed by special permission of the Japanese Government to go up in a hospital ship to Feng-kwan-chenn, where under Japanese escort they saw the work of the Red Cross Society in the field. They also visited Matsyuama, where the Russian prisoners where being detained. Every facility for seeing everything appertaining to their commission was granted to them by the Japanese authorities; and it is understood that their experiences will be embodied in a special report to be made to the Queen and the military authorities in London.

BRITISH MEDICAL ASSOCIATION.

Subscriptions to the British Medical Association for the year 1904 are now due and should be forwarded by postal order or cheque to the amount of 25s. to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, SEPTEMBER 10TH, 1904.

THEORIES OF IMMUNITY.

THE papers contributed to the discussion on immunity in the Section of Pathology at the Oxford meeting of the Association, which we publish to-day, are well worthy of careful perusal. The authors are all men who are actively engaged in research on the subject, and are thus in a position to put forward the latest views on the very varied questions involved. These questions are at present concerned largely with the phenomena of artificial immunization, which have been brought to the front by the search for substances which might be utilized in the therapeutics of infectious disease. The problems which have to be faced in order that the known facts and the new facts which are constantly emerging may be explained are very complex, and it must be confessed that there is as yet apparently no possibility of this complexity being in any way diminished. The time has long passed when, even in dealing with those diseases which are associated with the presence of bacteria in the tissues, the pathologist could explain recovery and immunity by reference to the phagocytic capacities of cells. Even if the narrow view held by some be true, that, in every case, for the death of bacteria, a previous taking of them up by cells is necessary, it is admitted on all hands that such englobing cells act through the elaboration of definite chemical substances. The investigation of these substances and of the similar bodies concerned in immunization against bacterial intoxication forms the great contribution which has been made to the whole subject by the work centring round the theories of Ehrlich. The main results which have up till now been definitely ascertained in this connexion were summarized by the President of the Section in the commencement of his opening address.

Of the facts on which was first based the deduction that the antagonism of such substances as toxin and antitoxin is of a chemical nature none were more important than those derived from the observations of Professor C. J. Martin on snake poisons and their antivenenes, and his restatement of his views in the light of subsequent work is of the highest interest. The chemical nature of the antagonism is now practically accepted on all hands, though the definiteness of the reactions occurring is to some extent impugned by Bordet, who apparently looks on the union of immune body with bacterial cells as sensitizing these, so that an indefinite amount of complementary substance can act towards their solution. Such a view does not fall in with the observations made by Professor Muir, and mentioned in his paper, to the effect that, for each amount of immune body fixed by blood cells, only a definite amount of complement can be subsequently taken up, and further, that, after haemolysis is complete, the disintegrated molecules of the blood cells can still take up both immune body and complement.

But, putting this aside, controversy at present mostly turns on the nature of the chemical reactions which occur between the bodies developing in the attacked animal on the one hand, and the bacteria or bacterial products on the other. As is well known, Ehrlich holds that the peculiar properties of such a substance as the toxic filtrate from a bouillon culture of the diphtheria bacillus are due to the occurrence of toxic bodies closely allied in composition to one another, but having different affinities for antitoxin and different toxic powers. Dr. Madsen, on the other hand, relying on data obtained by the use of the methods of physical chemistry, while not denying the existence of modified toxins, holds that the characteristic effects, especially that known as the "Ehrlich phenomenon," are due to the most powerful of the toxins having a comparatively low affinity for antitoxin, and also to the reaction between it and the latter being reversible. In his paper at Oxford he has adduced in support of his views fresh facts derived from investigations of diphtheria toxin, ricin agglutinin and toxin, rennet, vibriolysin, and cobra venom, and his results, showing as they do a very close correspondence between the observed facts and the results derived from mathematical calculation, must have great influence on future discussions of this problem. They may be said completely to confirm their author's earlier comparisons between the tetanolysin-antitetanolysin reaction, and that of ammonia with the weakly acting boric acid. With regard to them it will be interesting, on the one hand, to hear the answer of the Ehrlich school to the statement that, in examining the results of neutralizing in successive experiments a definite quantity of toxin with progressively decreasing fractions of the neutralizing dose of antitoxin, the smaller these fractions are made the greater is the evidence (if Madsen is wrong) of the existence of greater and greater numbers of degenerated toxins. On the other hand, we wait with interest Madsen's detailed reply to the facts brought forward by Sachs and v. Dungern to show that the toxin-antitoxin reaction is not reversible.

It may be found that great differences exist in the combining affinities of bodies belonging to the same class. Professor Muir, for instance, in his Oxford paper, gives the opinion, based on his own work, that what Madsen holds to be true of the toxin-antitoxin combination is also true of the combination of red blood corpuscles with an immune body—to the extent, at least, that both mass action and reversibility are present. His observations, however, on the absence of any evidence of reversibility of the union of complement with the combination of red blood corpuscles and immune body, accentuates the possibility of the existence of variability in combining power, especially when he states that he and Dr. Browning have succeeded in one case in dissociating complement from such a union.

The researches of Dr. Madsen and Professor Muir do not, however, furnish the only examples in this discussion of the way in which physical chemistry is forcing its way to the front in the attack on immunity problems, for Dr. Dreyer, dealing with agglutinins, brought forward evidence that phenomena which had been interpreted as showing the existence of agglutinoids really indicated that in this particular instance the importance of a time reaction had been overlooked. This constant resort to considerations derived

from physical chemistry is one of the most striking features, not only of the papers we are here concerned with, but of many others dealing with the problems of immunity. The fact is very significant, for confessedly the present methods of analytical chemistry are impotent to aid in the solution of the problems which those who are engaged in this field of research have to face, and it is thus hopeful for future progress in knowledge that the methods—more difficult, it is true, both in application and in interpretation—of the more advanced physical side of the science are being found to be of service.

While investigations along chemical lines may be said to be the basis of a great part of the work at present being done, pathologists cannot shut their eyes to the fact that, according to our present ideas, the only sources of chemical activity we know of in the body are to be found in cells, and therefore it is most opportune that we should have before us the paper in which Dr. Bulloch, with great ability and critical acumen, has reviewed the existing state of knowledge regarding the part played by cells in manufacturing the chemical products, otherwise so thoroughly investigated. It must be confessed that much still remains to be done before we are in possession of even an outline of this aspect of bodily function. But enough is known, both from direct and indirect evidence, to show that cells which hitherto have been looked on as playing very subordinate parts in the animal economy may be possessed of most active and important functions. In this connexion is to be taken Dr. Wright's contribution to the discussion. His recent differentiation of the parts which may be played by the body fluids on the one hand and the body cells on the other in different infections, and his proof that when phagocytosis occurs a previous action of the blood fluids on the bacteria to be ingested is necessary, are of the highest importance, especially as he now announces that he has extended this generalization so as to include infection by the tubercle bacillus. The demonstration of the fact that such an apparently simple occurrence as the taking up of a bacterium by a cell is really made up of different stages, involving, it may be, the co-operation of one cell with another, opens up quite a new field of inquiry, especially when taken along with Dr. Wright's new observation of the existence of differences in the composition of the same fluid in different parts of the body.

Of quite new ideas in relation to immunity, the Oxford discussion, as will have been gathered, furnishes many examples. To two of these special reference may here be made. Among the many suggestive points in Dr. Dreyer's paper, none is more outstanding or remarkable than his statement with regard to the effects of heat on megatherio-lysin. It is a familiar fact that substances of the toxin class are, as is usually said, "destroyed" by heat. In relation to this phenomenon Dreyer has found that if the lysin named be heated to 100° C. for a short time it loses its lysogenic action, but if the heating be continued this power is restored. It is evident that this remarkable fact will require the most serious attention. The other point is contained in Professor Muir's paper. As is well known, Ehrlich has conceived that in the solution of bacteria and other cells by immune serums the immune body acts as a link between the cell and the complementary substance—it is what he calls an amboceptor. Muir has been led by his results to question this view, and to ask whether the facts might not be explained by merely supposing that by the entry of immune body into a cell the affinity of the latter for complement is increased. The evidence for such a supposition is apparently not yet complete; but it is needless to say that, if it be substantiated, the results would be of a far-reaching character, and would go far to modify existing views of the chemical relationships of the substances concerned in immunization against bacterial invasion.

We have only been able in what has been said to deal with a very few of the main features of the most important series of papers read at Oxford. There are many other points to which we should have wished to make reference, but sufficient has been said to indicate the great value which the discussion has in placing before pathologists the latest scientific results in the important field of inquiry with which it deals.

NATURE STUDY.

Those who watch the signs of the times in matters educational cannot have failed to notice the attention which is increasingly directed towards what has been rather loosely termed Nature study. In a reply recently addressed by the London County Council to a question propounded by the Board of Education as to how far the provision of laboratories and accommodation for drawing classes was in future to be considered an essential part of the equipment of a public elementary school, it was maintained that, in view of the stress now laid upon the early training of the hand and eye, and thus paving the way for all true research, such provision was to be regarded as eminently desirable, if not absolutely essential. An interesting debate arose in the Council on this question, and the Chairman of the Education Committee stated that he regarded the movements in favour of manual training and Nature study as welcome indications of a revolt against the conventional tyranny of the three R's. The Council concurred in the view that laboratories and class rooms for the purposes of carrying the methods of the kindergarten into the higher standards of the primary school, and thus developing the child's powers of observation and experiment, were to be regarded as suitable equipment for any new school which the Council might design.

It may be well to inquire what is really the meaning and drift of this Nature study question of which we read so much. Gilbert White of Selborne knew what Nature study was when he faithfully observed and recorded the habits of animals and plants in and around his own picturesque home. Hugh Miller was a Nature student when he learnt and told the story of the rocks. Constable was Nature studying when, one of the first among artists, he made the fields and lanes his studio and recorded on canvas the poetry of English landscape with loving and faithful care. G. H. Lewes, instinct with more positive methods, showed how Nature could be induced during holiday times to yield up her secrets to those who had eyes to see in his most interesting *Seaside Studies*. In more strictly pedagogic works, such as those of Pestalozzi and Froebel, the object has been to teach things at first hand, to know things themselves, and not the names of things, and the kindergarten system has in the case of younger children fully justified the methods of these reformers. It was Emerson who said the best part of a boy's education was the knowledge he gained during his walks to and from school; this

over-statement of the case may seem to neutralize the views of those who distrust all knowledge except such as is directly derived from books. We may well believe, with the poets Tennyson and Wordsworth, that "poring over miserable books," has cramped in innumerable instances the expanding mind of childhood, and we are apt to forget how "sweet is the lore that Nature brings." No one, moreover, who has ever accompanied a class on a field-day excursion or taken charge of a boys' camp on the shore or in the country can have failed to recognize the pre-established harmony that seems to exist between the budding aptitudes of a healthy child and the world of Nature to which he is introduced. Thus early to enable the young student to enjoy the delights of discovery and share the joys of intellectual victory is, as we have said, the sure and certain means of paving the way for all true original research. The old pump and bucket theory of education is discarded in schools that have any claim to be modern, and the co-partnership of the child and his teacher in bringing out the special aptitudes of the former is being advantageously recognized and utilized by the really thoughtful teachers.

To those students who may eventually enter a profession such as that of medicine, with its close association and relation to the natural sciences and its field for varied research, we can conceive no better training in earlier years than that which makes Nature study and manual training essential and integral parts of the curriculum. We are glad that public education authorities are thus exhibiting an earnest desire for the adoption of the best educational methods, and we are not quite sure that some of the older and more famous public schools might not advantageously follow their example.

THE AMBULANCE IN CIVIL LIFE.

Mr. Reginald Harrison has very opportunely issued a sixth edition of his pamphlet on *The Ambulance in Civil Life*.[1] It contains an account of the introduction of the horse ambulance into Liverpool, and of the work of the Metropolitan Street Ambulance Association, formed at the instance of Dr. Arthur James in January last. Mr. Harrison points out that neither in the lay or medical press has a hostile or antagonistic criticism been provoked, but that, on the contrary, the views and actions of the Metropolitan Street Ambulance Association have been throughout received with a unanimity of approval rarely found in connexion with public questions. The *Westminster Gazette* of Monday last, for instance, drew attention to the backwardness of London in this respect, and contrasted it with the admirable ambulance arrangements in most cities of the United States. Mr. Harrison adds to his pamphlet an illustrated description of the motor ambulance employed in New York, but Mr. Ludlam, the Superintendent, states that it has not been found altogether satisfactory, and that the Roosevelt Hospital has returned to the horse vehicle. From another communication from Mr. Ludlam it appears that during 1899 the number of calls received by the New York Hospital and its emergency branch was 5,538.

INDIAN MEDICAL SERVICE DINNER TO SURGEON-GENERAL SIR BENJAMIN FRANKLIN.

It has been the custom for several years to hold an Indian Medical Service dinner in Simla annually, and on the last two occasions it has been given by Sir Benjamin Franklin, the popular Director-General of the service. As this will be the last year that Sir Benjamin will be in Simla in this capacity a strong committee of service men arranged to entertain the Director-General at the annual dinner this year. It took place on August 12th, and proved most successful, over forty medical officers from all parts of India taking part in it, probably the largest number of members ever brought together, with the exception of the first—and last—Indian Medical Congress, at Christmas, 1894. The toast of the guest of the evening was proposed by Surgeon-General Scott Reid, who referred to the enthusiasm with which the proposal to entertain the Director-General had been received and the expansion of the local into a general service dinner. He reviewed Sir Benjamin Franklin's career in India, and dwelt on the great services he had rendered to Simla, India, and his Department, and concluded by expressing the wish of the whole service that he might long live to enjoy his approaching retirement. The toast was received with enthusiasm and drunk with musical honours. Sir Benjamin Franklin, in replying, said he was much gratified at seeing such a large assemblage of officers present. The last two years had been years of change, and he was sorry to say that many measures were still in the stage known as "under consideration." The delay, however, was in itself evidence that they were measures of improvement, for what was worth having was never very easily obtained. The Indian Medical Service was under lucky stars, for no men could be more kindly disposed towards it than the present members of Council. The vast improvement in the position of the medical profession generally, and in that of the sister service in particular, made the demands for improvements in the position and pay of the Indian Medical Service irresistible. In a service with such varied activities it was not considered advisable to dispense with a severe examination for entrance, but its retention rendered it possible to do without examinations for promotion. Facilities for study were necessary, but it was difficult to arrange for suitable rules for this object. A liberal scheme was, however, in preparation. An auxiliary measure was one for accelerating promotion. Retiring allowances had also been improved—as, for example, those after seventeen and twenty years' service—and a colonel had no longer to serve his full five years before getting some additional pension. This removed an old hardship and would hasten promotion. Moreover, an officer was no longer liable to be deprived by age of the full pension, as he could extend his service to complete his thirty years. Lastly, there was the question of civil pay. He had hoped to be able to give full information on this point, but he could only say that he thought all was going well. He concluded by proposing "The Service," which was responded to by Colonel Bomford. Telegrams of congratulation were received from officers of the Indian Medical Service in Calcutta, Bombay, Rangoon, Quetta, and other stations.

SCHEMES FOR NEW COLONIAL UNIVERSITIES.

We learn from *Nature* that Mr. Walter James, the Premier of Western Australia, in a speech delivered at the conclusion of the last of a series of extension lectures by Mr. Frederick Soddy in the colony, stated that during the course of the last twelve months a distinct step had been taken towards the establishment of a university of Western Australia; the University Endowment Act had been passed, trustees had been appointed, and some seven or eight hundred acres of land had been vested in their hands. This promised for the future university the richest endowment enjoyed by any university in Australia. Mr. James contended that it was a mistake to suppose that no university could be established unless a large sum of money were first expended in an elaborate building; so long as efficient workshops were provided for the professors, the sooner the colony commenced to get the professors the sooner could it begin the work of the university. A scheme which has already been set on foot in the Transvaal promises to develop a university in that colony; also a technical institute, at present devoted entirely to engineering and mining, opened recently at Johannesburg, has taken over the classes in mining engineering which have been held for the last eight years at Kimberley, with the financial support of the De Beers Company and the Cape Government. These classes form

[1] London: John Bale, Sons and Danielsson, Limited, 1904, 1s. 1 ett.

the third and fourth year prescribed by the Cape University for its diploma and degree in mining engineering. The correspondent of the *Times* in Johannesburg now announces that it is hoped that in the near future there will be further development of the work in two directions. In the first place, arrangements have been made to enable students from the Royal College of Science and other institutions in Great Britain to proceed to the Transvaal for a year of post-graduate study. In the second place, it is hoped that the establishment of the Transvaal Technical Institute is only the first step towards the foundation of a large and fully-equipped university. The Cape University is an examining body only, and the ambition of the Transvaal Commission, which recently reported, was clearly to establish a teaching university. Opinion in favour of this move is said to be growing, and it is thought probable that an offer of the Government to grant a site large enough for a technical institute, but not for a university, will be declined, and that an effort will be made to obtain a much larger area upon which the buildings of a fully-equipped university might eventually be erected.

AUTOMOBILES FOR MEDICAL MEN.

THE Automobile Club of Great Britain and Ireland carried out last week one of those prolonged trials of automobiles to which this club has devoted so much time, energy, and money during the past few years. One of the principal objects of the club is to popularize the use of automobile transport, and one of the means by which it endeavours to do so is to make extensive trials of the productions of any manufacturer who is not afraid to submit to the test. Trials of certain minor points are made at comparatively short intervals, but the great event of the year is the reliability trial. At this the conditions are extremely stringent, and it must require some pluck and a good deal of confidence in the merits of his machine for any manufacturer to enter it. The public, however, has no cause to complain, because the tests to which the cars are submitted are a good deal more exacting in many ways than those which any given machine would undergo in the course of an average day's private use, while manufacturers have the advantage of the glory which accrues to them if their machines really prove to be all they believe them to be, and in any case that of finding out what they can do as compared with those of others, and in what particular points there is room for improvement. It is, however, the man who is hesitating what machine to buy who benefits most, for an intelligent reading of the judges' report should enable him to turn a deaf ear to the suasions of would-be sellers and to select for himself the machine best suited to his needs, with just as much knowledge of its good and weak points as its own builder. Last year the club tried cars of all classes together, or in all some 104 different makes, their prices ranging from £160 to £1,000. These limits were too wide, and necessitated the introduction of a complicated system of result-marking which made the final report of the judges not so easy of comprehension by the uninitiated as was desirable. This year things have been managed differently. The club has regarded the respective virtues of the more expensive types of automobile as for the time being settled, and has devoted its energies to examining the claims made on behalf of cars of low price. This fact makes the trials this year of peculiar interest to such medical men as desire to purchase an automobile for business objects alone and who at the same time wish to avoid any greater initial expense than is essential to ensure efficiency and economy. The limit this year was fixed at £200 and the trials lasted six days. In spite of the narrow limit a large number of different makes of automobile were entered. Only a preliminary report has so far been issued by the judges, but as soon as possible after the issue of the final report a full account of matters will be published in these columns. Meanwhile it is sufficient to say that a considerable number of cars performed well, and that the assurance with which a purchaser may limit himself to an expenditure of £200 seems to be agreeably strengthened.

IMMUNIZATION AGAINST ANTHRAX.

MR. J. A. GILRUTH, M.R.C.V.S., veterinary surgeon and bacteriologist to the New Zealand Department of Agriculture, has met with some success in immunizing animals against anthrax by adopting the method of mixed infection. He finds that guinea-pigs, rabbits, and sheep can completely resist the inoculation of large doses of virulent anthrax bacilli, provided that these organisms are mixed with a larger dose of certain other organisms which are non-pathogenic to the animals in question. In order to secure this result it is necessary that the anthrax bacilli should be actually mixed with the other organism used; for if the dose of each organism be injected separately, under different parts of the skin, no resistance is obtained. It is not claimed that a single inoculation establishes immunity, and it is conceded that an animal which has suffered with impunity the injection of a large dose of anthrax bacilli, when mixed with a foreign organism, may succumb later to a much smaller dose of pure anthrax culture. If, however, the doses of mixed cultures be repeated in increasing quantities, Mr. Gilruth finds that, in the case of rabbits and sheep, immunity to large doses of pure anthrax bacilli can be conferred. For the purpose of admixture with his anthrax cultures, he has found the bacillus of Gaertner a convenient organism to use. The following results of Mr. Gilruth's investigations are worth quoting: He has succeeded in producing in a rabbit an immunity to 4 c.cm. of pure virulent anthrax culture, and in another rabbit an immunity to 3 c.cm.; moreover, two sheep and a pig have each offered a successful resistance to 5 c.cm. of a similar culture. The antagonism of other organisms to anthrax has long been known, but the value of mixed inoculation as a practical preventive measure is not yet clear.

VISCERAL DISEASE AND MENTAL PHENOMENA.

A CASE of suicide which occurred in Devonshire recently possesses some points of unusual interest, and appears, perhaps, to have some bearing upon the question of the connexion between mental disorder and visceral disease to which Dr. H. Head drew attention some few years ago. In this case the subject of a determined suicide by throat-cutting was, as reported in the *Devon and Exeter Gazette*, a naval pensioner, some 67 years of age. He appears to have led a happy, useful, and contented life, and to have been of such an habitually cheerful disposition that all the witnesses alike expressed an unusual degree of surprise at the fashion in which his life came to an end. Evidence was also given by Dr. T. H. S. Pullin, of Sidmouth, a medical man who had passed the deceased into the navy as a lad some fifty years before, and who had constantly had occasion to see him during the thirty years that he had been in the receipt of a pension. To him, too, the suicide was a great surprise. He appears to have been in constant touch with the deceased, and had attended him occasionally when out of health, and in June had visited him during an illness resulting from a poisoned finger. From this illness, however, the deceased made a perfect recovery, and he had no occasion to prescribe for him again until some thirty hours before the suicide occurred. Upon that occasion he had advised the deceased to remain in bed for a day or two, since he was suffering from haemorrhage from the bowel, due, it would appear from the report, to some innocent cause. In response to a request from the Coroner that he would attempt to throw some medical light upon the possible causes of the action of the deceased, Dr. Pullin made a statement to the effect that, in the course of his fifty-four years' experience, he had seen several cases in which the higher and lower nerve centres had been suddenly affected in somewhat mysterious fashion. In two instances he had known haemorrhage similar to that from which the deceased had suffered to be followed by the sudden development of insanity, and consequently in the present case he was inclined to ascribe the suicide to the indirect effect upon the brain of the loss from the bowel of a considerable quantity of blood. The subject of the true connexion between the functional

phenomena of the higher nervous centres and bodily disorders and conditions is one of the profoundest interest, and in many of its relations can only be studied with advantage by the trained asylum pathologist. It is open, however, to every practitioner to study the subject at times in its clinical aspects, and to contribute, perhaps, thereby something to the general knowledge upon which an elucidation of the matter will eventually be founded. An example of the sort of work which may be done in this latter direction will be found in the *Bulletin of the Johns Hopkins Hospital* for July-August, in a paper by Dr. C. J. Gamble.

POST-MORTEM EXAMINATIONS.

The legal responsibilities of medical men with regard to *post-mortem* examinations are not often brought into question, but recently have been touched upon in two cases. In one of these a medical man was rebuked by a coroner for performing an admittedly necessary necropsy without obtaining either the expressed and definite consent of the nearest known relative or an order from the coroner; in the other—an account of which will be found at page 624 of the British Medical Journal—an attempt was made to bring the penal clauses of the Anatomy Act, 1832, to bear upon a medical man who examined a body in accordance with the implied directions of a deputy coroner but apparently against the wishes of a relative of the deceased person. The law with respect to the body of a deceased human being is a little curious; it is quite clearly the law of this country that a human corpse is a thing which does not and cannot belong to any one; this being the case, it follows that a man cannot, by will or otherwise, dispose of his dead body; and even though, by will or otherwise, he is at liberty to direct that his body after death be treated in a certain fashion, yet the fulfilment of those directions cannot be enforced upon the executors of the deceased's estate nor upon his nearest known relatives. At the same time, the legal personal representatives of a dead person have a right to the possession of that person's body and to its custody until it is buried or disposed of in some other lawful manner, such as burning, and in two well-known cases the dead person's representatives recovered possession of his body from creditors who attempted to detain it as security for the settlement of certain claims against the estate of the deceased. There have been not a few curious actions at law with regard to human corpses, and the fact that there could be no property in a corpse made it exceedingly difficult to put a stop to the practice of body snatching. Since there was no property in a corpse it could not be stolen, and, provided that sacrilege was avoided, and the corpse alone removed, the act of removal was merely a misdemeanour. Prior to the Anatomy Act of 1832 the Colleges of Surgeons and Physicians in England were entitled to receive annually for the purposes of dissection a certain number of the bodies of executed felons, and the bodies of all murderers executed in London and Middlesex. These privileges, however, were abrogated by the Anatomy Act, which is authoritative with respect to all medical aspects of the law relating to dead bodies. A human corpse cannot now be examined for any purpose, or even removed for such a purpose, except upon certain stringent conditions; while, once buried, it cannot be touched at all except upon the order of the Secretary of State for the Home Department, and under a faculty granted by the Ordinary for that purpose. The conditions affecting medical practitioners are as follows: A body may be examined upon a coroner's order made in the exercise of his discretion, or upon an order issued during the course of an inquest by a majority of the jurors present. So, too, any medical man is legally entitled to examine a body provided he obtain the permission of the legal personal representative of the deceased or other person having lawful possession of the body, unless the deceased shall have expressed a desire during his life that the body should not undergo examination, or unless the surviving husband or wife, or any known relative, require the body to be interred without such examination, and such relatives should be apprised of the intended examination, and have a reasonable time for objecting thereto. The relatives, moreover, have a right to object even if the deceased during his life directed that his body should be examined after death. Due observance of the Act is secured by penal clauses, which make any failure to observe its provisions a misdemeanour, punishable by fine or imprisonment. No difference is established between the position in the matter of a private practitioner and that of a medical officer of a hospital or other like institution.

WOUNDS PRODUCED BY THE JAPANESE RIFLE.

Some years ago when the proposal to adopt the Meiji rifle for the Japanese army was under consideration, Dr. Kikuchi reported strongly in favour of it on the ground that its bullet would have greater stopping power, though the wounds it would make would heal quickly. The rifle has the smallest calibre of all existing military rifles, and its trajectory is very flat. Dr. Kikuchi, who is a staff surgeon in the medical department of the Japanese army, has now written a report claiming that the experience gained during the earlier stages of the present war has fully confirmed his conclusion. The stopping power of the bullet he attributes to its cutting clean through arteries and veins, causing a large loss of blood and consequent weakness and faintness, so that the man is unable to proceed. In the wounded Russians who fell into the hands of the Japanese after the battle of Yalu, healing occurred with great rapidity, and at the date of Dr. Kikuchi's report, forty days after the battle, even the most severely wounded were convalescent. One of these patients had been shot through the lungs, and must have lost a large quantity of blood, estimated at as much as a pint and a half or a quart. Another case which recovered was shot in the stomach. These statements are confirmed by a Central News telegram from Vladivostok, which states that in the cases of about 100 officers and 6,000 men treated in the Russian Military and Red Cross Hospitals for bullet wounds healing took place rapidly. Even in cases in which the chest or liver were penetrated recovery took place, as also in one instance of a bullet-wound traversing the head. Cases of this kind were, we believe, not infrequent during the Boer war, in the case of wounds produced both by the Mauser and the Lee-Metford rifles.

A HOSPITAL FUND.

A new scheme for tapping the public purse for the benefit of the hospitals was roughly outlined in *Public Opinion* last week. The needs of the hospitals were described, and it was estimated that under present circumstances there are out of the whole population of greater London some four million who never contribute a penny towards the upkeep of medical charities; similarly, it was concluded that, taking the country as a whole, the number of persons who ever give anything is less than the total number of possible contributors by 30,000,000. Taking these figures as a basis, the calculation was made that if each of these non-contributors could be induced to pay a penny a year a sum of £130,000 would be realized. The idea, therefore, is to bring out some scheme which shall extract at least a penny a head from these people, and which further shall give effect to the view that "Everybody's pennies count more than the rich man's pounds." No details of the plan by which it is proposed to attempt to accomplish this end are furnished. It is merely indicated that an attempt will be made to establish a successful Hospital Penny Fund by an appeal to three phases of human nature: first, the propensity for collecting, especially in the matter of stamps; secondly, man's readiness to add to his income, particularly if by so doing he can help others; and, thirdly, the love of art. There may be something in the plan, but until the details, promised for an early date, have been supplied, no idea can be formed as to whether the scheme is either a desirable one in itself or likely to prove even moderately successful.

CONFERENCE OF LONDON SANITARY AUTHORITIES.

We have now received the official report of the Sanitary Conference which took place in July last between some of the metropolitan boroughs. It will be remembered that it was called by the London County Council, and met at Spring Gardens. The Chairman of the Public Health Committee of the County Council (Mr. Henry Jephson) presided, and the Medical Officer of the County Council (Mr. Shirley F. Murphy) and twenty-two of the twenty-eight borough medical officers attended. There also came from the various boroughs some forty or fifty laymen, and this was at once perhaps the strength and weakness of the Conference—its strength because one of the very objects of the meeting was to impart information and bring the members of different authorities into personal touch with each other, its weakness because much of the subject matter of the Conference, as indeed was inevitable, was of a discursive and untrained nature. Mr. Jephson pointed out that this Conference was the first gathering of the sanitary authorities of London to consider as a whole the administration of the laws relating to the public health of the metropolis, and he thought that, large though the subject was, it could be conveniently classified into subdivisions concerning housing, food supply, and the prevention of disease. He rightly insisted on the importance of uniformity in administration in the different districts of the metropolis, and that to this end co-operation between districts and between boroughs and the County Council was very desirable. The Conference at its first day's sitting discussed a number of resolutions concerning the housing question, and agreed that the increased registration of houses let in lodgings was desirable; that more frequent inspection of these tenement houses was necessary: and that there should be no rental limit of exemption. Underground rooms, draw-off water taps, sanitary conveniences in factories and workshops, inspection of sleeping accommodation in business premises, premature occupation of newly-built houses, the sanitary condition of premises where food is prepared, the abolition of private slaughterhouses, inspection of meat and milk shops, the power of refusal of registration of unsuitable milkshops, the need of municipal milk dépôts, and the Sale of Food and Drugs Acts were all discussed. At the adjourned meeting of the Conference on July 18th the chief subject was the prevention of disease, and the matters upon which resolutions were carried dealt with disinfection, the provision of permanent shelter accommodation for persons displaced during disinfection, the inutility of notification of measles, the desirability of adopting voluntary notification of phthisis, and of providing sanatorium treatment under the Metropolitan Asylums Board; resolutions were also passed in favour of improved carts for dust collecting in the streets, and of a street ambulance service for London. In all forty-nine resolutions were passed, and from this and the category of subjects named above it will be seen that the Conference deliberated on a wide extent of subjects—perhaps too wide to be of much service. Such conferences, however, have their value, and we trust that increased co-operation between the metropolitan sanitary authorities may be a result of this Conference.

WORKMEN'S COMPENSATION AND EMPLOYERS' LIABILITY.

The Home Office has issued a return showing the operation of the Workmen's Compensation Acts and the Employers' Liability Act, as far as it appeared in the cases submitted to the Courts of Law, the Medical Referees, and Chief Registrar of Friendly Societies. The number of cases dealt with under the Compensation Acts by County Court judges and arbitrators in England and Wales was 1,437, as compared with an average for the five years 1899 to 1903 of 1,244. In 324 cases the compensation was awarded on account of death, and averaged £180 13s.; in 122 cases compensation for injury was paid in a lump sum; in 512 cases a weekly sum was assigned. The average rate of weekly allowance for the last five years has been in case of total incapacity, 10s. 11d., 11s. 6d., 11s. 10d., 12s. 2d., and 12s. 1d.; in the case of partial incapacity 9s. 2d., 10s. 9d., 9s. 8d., 9s. 11d., and 10s. 6d. The total number of cases taken into court in 1903 was 2,033 as compared with 1,807 in 1902. In 2,971 cases the compensation was settled by agreement, and in cases of this kind the average awards to dependents of dead workmen was in the five years £173 14s. 5d., £171 14s. 2d., £167 5s., £157 12s. 9d., and £155 6s. 2d.; and the average weekly payment in cases of incapacity 12s. 1d., 13s. 9d., 13s. 5d., 13s. 1d., and 13s. The number of cases dealt with under the Employers' Liability Act was 513, and the average amount of damages for death was £246 5s. 3d. The average in 1903 was greatly affected by the award of £2,025 in three cases; in 1902 the average awarded under the Liability Act was £115 7s. 10d., and under the Compensation Act £168 0s. 1d. The number of medical referees appointed was on December 31st, 1903, in England 199, in Scotland 75, in Ireland 38. The number of cases in which a reference was made to the referees by judges, committees, and arbitrators was somewhat greater than in the previous year, but still very small. In England there were 105 such references, as compared with 94 in the previous year, and 83 in 1901: 53 by County Court judges, 6 by agreed arbitrators, and 46 by committees. The statistics furnished by the Registrar of Friendly Societies show that on June 30th, 1903, 52 certified schemes of compensation, affecting 122,441 workpeople, were in operation. Last year the railway companies of the United Kingdom paid £155,495 as compensation, including premiums to insurance companies and to funds under schemes certified by the Registrar of Friendly Societies. This works out at about half a guinea compensation to every hundred pounds of wages.

NEW ZEALAND'S ATTITUDE TOWARDS CONSUMPTION.

Sir Joseph G. Ward, K.C.M.G., Postmaster-General and Minister of Public Health for New Zealand, delivered an address[1] to the sanitary science section of the Australasian Association for the Advancement of Science, which met in Dunedin last spring, on the Attitude of New Zealand towards Consumption. He justly claimed credit for the energetic attitude of the Legislature in the crusade against this disease. New Zealand possesses a system of meat and butter inspection equal at least to that of any other country, which in itself is a safeguard against the communication of tuberculesis by meat and milk. But in attempting to control the spread of tuberculosis the first important step is, Sir J. Ward insists, to place consumption in its proper position amongst infectious diseases. This infers notification, by means of which the exact number of sufferers is ascertained, and the New Zealand Legislature has not shrunk from taking this step. Some hardship, he allows, undoubtedly at first existed; but this has been diminished by tactful administration. The next step was the erection of sanatoriums for the treatment, and incidentally for the isolation also, of those afflicted. One such institution Sir J. Ward himself opened at Te Waikato, close to Cambridge, and the scheme which the Government proposes to carry out includes the establishment of similar institutions at Auckland, Hamilton, New Plymouth, Masterton, Otaki, Nelson, Christchurch, Naseby, Lawrence, Queenstown, and in the neighbourhood of Dunedin. It is proposed to add to the various county hospitals a few shelters capable of holding some thirty patients each, and thus at comparatively small cost to provide for all the consumptives of the colony. As there were 802 deaths from consumption in New Zealand last year, there are probably between 2,000 and 2,500 cases of consumption in the colony. That the scheme is to be actively carried out is shown by the meetings in different parts of the colony to discuss the question of establishing the proposed annexes for consumptives; for example, the New Plymouth *Budget* of April 30th reports a public meeting for this purpose, at which the matter was very fully discussed, and a Committee nominated to obtain information. A fortnight later, on the report of this

[1] Reported in the *New Zealand Medical Journal*, April 30th, 1904.

Committee, it was decided to raise funds for the annexe by public subscription. Sanatoriums appear to be already in working order at Dunedin and Otaki. All this shows that the campaign against consumption in New Zealand is being prosecuted with vigour. Sir Joseph Ward maintains that no great or permanent reform can take place without the aid of the law, which is "public opinion crystallized." Many of the difficulties in the way of obtaining necessary sanitary legislation disappear when there is a member of the Legislature specially concerned in promoting and safeguarding the health of the community.

THE DIPLOMA IN TROPICAL MEDICINE.

The first examination for the diploma in tropical medicine and hygiene by the University of Cambridge was held last August, and the papers, with a list of those who passed, have now been published by the University Press. The examination consisted of three written papers: one in pathology, including bacteriology and parasitology; one in medicine and surgery; and the third in hygiene and sanitation. Practical and oral examinations were also held on the same subjects, the laboratory parts at Cambridge, the clinical at the Seamen's Hospital, Albert Docks, London. A study of the different papers contained in the pamphlet shows that the examination has been searching and thorough, and that a candidate, in order to be successful, must, in addition to theoretical knowledge, have also possessed practical skill in the methods of laboratory research now specially taught in the Schools of Tropical Medicine. This is as it should be, and the diploma, with its high standard, should be eagerly sought after by those practising in tropical colonies.

IDIOTS AND IMBECILES.

The King, on the recommendation of the Home Secretary, has appointed a Royal Commission to consider the existing methods of dealing with idiots and epileptics, and with imbecile, feeble-minded or defective persons not certified under the Lunacy Laws; and, in view of the hardship or danger resulting to such persons and the community from insufficient provision for their care, training, and control, to report as to the amendments in the law or other measures which should be adopted in the matter, due regard being had to the expense involved in any such proposals, and to the best means of securing economy therein. The Commission is constituted as follows: The Marquis of Bath (Chairman), Mr. William Patrick Byrne, C.B., Mr. Charles Hobhouse, M.P., Mr. Frederick Needham, M.D., Mr. Henry David Greene, K.C., M.P., Mr. Charles E. H. Chadwyck-Healey, K.C., Rev. Harold Nelson Burden, Mr. Willoughby H. Dickinson, Mr. Charles Stewart Loch, and Mrs. Pinsent.

THE PROSECUTION OF UNQUALIFIED PRACTITIONERS IN NEW YORK.

At a recent meeting of the New York County Medical Association, the legal adviser of the association presented a report of the work done during the past three years in investigating and prosecuting illegal practitioners of medicine. Close upon 700 complaints had been investigated, where charges had been made that persons were practising medicine illegally, and 129 (51 women and 78 men) had been prosecuted. In 123 cases the evidence had been obtained through agents of the association, and in 6 from outside sources. In the 129 cases a conviction had been secured in 123, while in 3 the charge had been dismissed. During the first year the average fine had been 45 dollars, during the second year 67 dollars, and during the past year 85 dollars. In eleven instances sentence had been suspended. Referring to midwives, the lawyer said that they really had a "Midwife Protective Association," and that a person occuping a prominent position in that body had privately informed him that the "County Association" had "scared" them "to death." The defence of suits of alleged malpractice brought against members of the association had been very successful. The lawyer said this branch of their work would go on until November, 1904; because of the amalgamation of the two county societies, it would be discontinued, unless arranged for at that time. He thought a continuance of this work by the legal department would in the near future result in a discontinuance of such efforts on the part of the laity.

A CONGRESS ON MILK SUPPLY.

The second International Congress on Milk Supply will be held in Paris in connexion with the International Milk Exposition in the third week of October, 1905. The following is the programme:—(1) Production of milk: (*a*) breeds of cows, feeding, milking, etc.; (*b*) hygiene of the cow-house. (2) Technology of milk supply: (*a*) Milk in its natural state, its preservation, transport, sale, etc.; (*b*) butter; (*c*) cheese; (*d*) derivatives and by-products. (3) Hygiene: (*a*) General hygiene of the milk supply; (*b*) public assistance and maternity. (4) Chemistry of milk: (*a*) Scientific researches, analytical methods; (*b*) adulterations (milk, butter, etc.). (5) Legislation, etc.: (*a*) Insurance; (*b*) education of the public, communications to the press, pamphlets, etc.

The next session of the Royal Medical and Chirurgical Society of London will commence on October 25th. A special Committee is engaged in arranging for the celebration of the centenary of the Society on May 22nd, 1905.

The *Medical Directory of the City of New York*, in the edition for 1904, just issued, contains the names of 5,909 practitioners in Greater New York. These are distributed as follows: Manhattan and The Bronx, 4,211; Brooklyn, 1,519; Queens, 121; Richmond, 58.

The King has appointed Dr. Joseph Kerzl, Physician-in-Ordinary to His Imperial Majesty the Emperor of Austria, to be an Honorary Commander of the Royal Victorian Order, and Dr. Gustav Henry Anton Bezold, Director of the Falkenstein Sanatorium, to be an Honorary Member of the Fourth Class of the same Order.

It is stated that Professor Osler will not sever his connexion with the Johns Hopkins University, Baltimore, until after the end of the approaching session, and that he will, therefore, not go into residence at Oxford until June next; meanwhile the duties of the office are being discharged by the deputy Regius Professor, Dr. Thomson.

The next Lees-Raper lecture will be delivered by Mr. John Burns, M.P., in the Free Trade Hall, Manchester, on Monday, October 31st. The subject will be Labour and Drink. Previous lectures on this foundation have been delivered by Sir Victor Horsley, Professor Sims Woodhead, and Mr. Whitaker, M.P.

The Select Committee of the House of Commons appointed to consider the expediency of providing for the registration of nurses has reported the minutes of evidence taken at its seven sittings to the House, and has asked to be reappointed next session. The minutes have now been published in a Blue Book of a little over one hundred pages, which can be obtained through any bookseller for 1s. The general character of the evidence given has already been indicated in the British Medical Journal.

The Colonial Office has issued a Blue Book of nearly 500 pages (price 2s. 6d.) containing a selection from Colonial medical reports for 1901 and 1902. The Colonies dealt with include the Bahamas, British Guiana, British Honduras, Cyprus, Fiji, Gambia, Hong Kong, West Indian Islands, the Seychelles, Sierra Leone, the Straits Settlements, and Weihaiwei. The report on the place last named consists solely of a return of diseases treated at the civil hospital, from which not much information can be extracted beyond the fact that taenia solium appears to occur rather frequently.

Scotland.

ROYAL EDINBURGH ASYLUM.

THE statistical tables of the annual report for the Royal Edinburgh Asylum for 1903, compiled under the supervision of the Medical Superintendent, Dr. Clouston, show that there were in the asylum on January 1st, 1903, 940 patients, whilst 10 more were absent on probation; and that on December 31st, 1903, there remained 924, with 5 more absent on probation. The average numbers resident were 917.2, which is a considerable decrease on any one of the three previous years, though an increase of 110 6 on the average of the numbers resident since 1864.

Four hundred and eleven cases in all were admitted during the year, of whom 334 were first admissions. Of the total admissions, in 296 the attack was within twelve months of admission, and in 164 of these the attack was the first attack and within three months of admission; in 102 the attack was of more than twelve months' duration, and in 13 the condition was congenital; 317 were in indifferent health and reduced condition, 61 in bad health and very exhausted condition, and only 33 in average health and good condition. Of the admissions, there were 170 cases of mania (simple 82, acute 48, delusional 38, chronic 2, 147 cases of melancholia (simple 49, hypochondriacal 2, delusional 33, suicidal 31, resistive 2, excited 12, stuporose 18), 18 cases of dementia, 53 cases of general paralysis, 7 of acquired epilepsy, and 21 cases of congenital or infantile mental deficiency. There was also 1 case of traumatic coma and 1 was not insane.

On another table (Table XIII) the cases are arranged according to Skae's classification, in which the mental symptomatology is not of first importance, but the attention is directed to the presumed relation existing between some physical deviation from health, or a periodic alteration, and the insanity. The categories of this method of classification —cardiac insanity, uterine insanity, phthisical insanity, etc.— are too numerous to give in detail here, but the outstanding features are—general paralysis 53 (as above), and alcoholic insanity 94.

On turning to the probable causes of insanity in the admissions, again the most striking feature is that in 118 cases alcoholic intemperance was assigned as exciting cause and in 4 more as predisposing cause, making a total of 122. Hereditary influences, direct and collateral, were ascertained in 85, and syphilis in 11. Mental and moral causes appear in only 11. Periodic alterations, puberty and adolescence, change of life and old age appear in 91, previous attacks in 90, and in 229 the cause was unknown.

During the year 147 were discharged as recovered—a recovery-rate of 35.8 per cent. on admissions, 140 as relieved, 26 as not improved, and there were 119 deaths, being a death-rate on the average numbers resident of 13 per cent. Of these, 35 died from general paralysis and 3 more of general paralysis combined with phthisis, and 20 from other cerebro-spinal diseases. There were 14 deaths from phthisis, 8 from pneumonia, 1 from pleurisy, and 4 from heart disease; 23 died of senile decay with brain disease, 2 from general tuberculosis, and the remainder from other general diseases; there was only 1 death from dysentery. Dr. Clouston's remarks on their tuberculous death-rate are of much interest. He says:

> Taking the whole of the institution, 16 per cent. of our deaths were either solely due to tuberculosis or it was found *post mortem*. In 13 5 per cent. it was the sole cause. Our tuberculosis rate per 1,000 inmates was 17.5 per cent., as against 18.2 in England.

The patients, however, are distributed in various separate establishments, rate-paid patients in the West House and paying patients in one of the other houses, of which Craig House is the most important. Now for nine years there has been no death from tuberculous disease in Craig House. Commenting on this fact Dr. Clouston continues:

> But if Craig House had no tuberculosis then it follows that the share of the West House is more than would appear from the statistics of the whole institution. Its proportion was 22.5 per 1,000 inmates and 14.5 per cent. of the total deaths, against the English numbers of 18.2 and 16.9. . . . . Looking at our thirty years' tables of the causes of deaths, I find, as might have been expected, that during the last nine years—1894 to 1903—since we became distinctly overcrowded, tuberculosis has distinctly increased.

The Medical Superintendent's report contains further deeply interesting matter in a summary of the work of this institution since 1873 in three decades, in which Dr. Clouston analyses the facts at his disposal, considers them in relation to the last report of the Scottish General Board of Lunacy (Scottish Blue Book for 1902), and gives deductions from his inquiry which, coming from so distinguished an authority, command the consideration of all interested in the grave question of the increase of insanity and the possibility of its prevention or decrease. The Commissioners in the course of their reports, which are throughout highly commendatory, refer to the discharges of patients to the care of outside guardians.

> The percentage of admissions to those resident is 83.7, a proportion which does not obtain in any other asylum in Scotland. This means that the resident number is composed of patients who require great care in their treatment, or who are specially difficult to manage. Harmless and incurable patients have been freely discharged, and either sent to the care of relatives or provided for by the parish authorities in suitable homes in rural districts. This feature in the management is most creditable, and is one which should be fully recognized, as it has enabled the asylum to be of greater service to the acutely insane, and those requiring skill, care, and treatment.

The advantages of this system are too obvious to require further remark.

STATE REGISTRATION OF NURSES.

The matron of St. Bartholomew's Hospital, Miss Isla Stewart, gave an address on the registration question to a meeting of nurses in St. Cuthbert's Hall, Edinburgh, on August 30th. About a hundred were present, and Miss Louisa Stevenson presided. Miss Stewart spoke of the existing want of organization, and said that the prevailing state of affairs was unfair to the public and to the trained nurses who had to compete with half-trained nurses. She referred to the two Bills introduced into Parliament last session, and said that registration had been tried in several other countries and its success assured. Miss Haldane, Cloan Den, Perthshire, having spoken, Miss K. Burleigh moved:

> That in order to secure for sick nurses a minimum basis of training it is necessary for the nurses throughout the United Kingdom to be registered by the State, and that a certificate of registration should be awarded only after an examination set by the State through the Central Council.

Miss Sandford, Edinburgh, seconded, and on the resolution being put to the meeting Miss Stevenson declared it carried unanimously. Miss L. Dock, from America, and Miss Stevenson also addressed the meeting.

QUARRIER'S SANATORIUMS FOR CONSUMPTION.

The Glasgow Corporation have recognized the work being done at the Bridge of Weir Sanatorium by voting the handsome sum of £5,000 to that institution. Mr. Quarrier was the first to take up this work for the consumptive poor in Scotland, and he established a home with 80 beds, where excellent work has been done. The trustees now propose to erect another block to supply 48 additional beds, and the Corporation's subscription will aid that object. A similar sum was voted some time ago to the Bellefield Sanatorium, which was recently opened by the Glasgow and District Branch of the Association for the Prevention of Consumption.

DEATH OF PROFESSOR PIRIE.

Many medical graduates of the University of Aberdeen will have heard with great regret of the death of Professor Pirie, of the Mathematical Chair, King's College, which took place so suddenly at Braemar. The professor had been spending his summer holiday at Braemar, and had been doing a considerable amount of mountain climbing. Heart failure was the cause of death. For twenty-six years he had been Professor of Mathematics and took a great interest besides in every department of university life, his interest in the student being by no means confined to those in his own class, but followed them in their after careers. He was a frequent attendant at the social gatherings of the Aberdeen University Club in London, and at these meetings his genial presence will be much missed.

THE HEALTH OF ABERDEEN.

Dr. Matthew Hay's annual report on the health of Aberdeen during 1903 has just been issued in printed form and as usual is full and elaborate, containing many carefully prepared tables of much interest and value. Writing in connexion with the death-rate of the city Dr. Hay reports that if regard be had to the size and the industrial character of Aberdeen, it may at present claim to be one of the healthiest of the large towns in Britain, taking the death-rate as the index; and it has by no means yet exhausted all the means of improving its sanitation. There are still some houses, though not many, which are scarcely fit for habitation; there is one small area at Footdee—the fishing part of the community—where the sanitary arrangements are far from satisfactory;

there is a decided lack of small open spaces for the recreation of children; there are no public baths for the working classes at convenient centres; there is as yet no public slaughter-house and no refuse destructor; the air is still laden with smoke which the furnaces ought to consume; the water supply is not taken from an unimpeachable source, and the problem of the reduction of the high infant mortality is not by any means entirely solved. The city may not be suffering much from some of these defects, but it can scarcely be disputed that it is desirable that they were all remedied as soon as may be practicable. The death-rate from diseases of the circulatory system—chiefly heart diseases—has, like the death-rate from pneumonia, grown considerably within the last quarter of a century, but, also like that rate, it suffered some decline last year, the rate being 213 per 100,000 of population as compared with 225 per 100 000 in 1902. The greater part of the rise in this rate has taken place within the last eight or ten years. Increasing accuracy in diagnosis can only account for a small part of the rise, especially within so short a period. It is possible that the increased prevalence of influenza in recent years may have favoured the occurrence of heart disease or hastened its fatal termination. This, however, can scarcely be true of pneumonia and influenza, for the growth of the death-rate from pneumonia was more rapid before the invasion of influenza than subsequently. No doubt subtle conditions such as have determined the unusual prevalence of influenza in recent times may materially affect the prevalence of pneumonia, which, in certain of its forms, is of a zymotic character. It is gratifying to observe that the death-rate from cancer and other similarly malignant diseases—which had, like the pneumonia death-rate, almost doubled in thirty years—has been receding during the past two years, the rates for 1902 and 1903 being 88 and 81 respectively, as compared with 95 in 1901. The rate for the past year is the lowest within the decade. It is too soon to say that the recession indicates a definite staying of the hitherto continuous growth of the cancer mortality, but, such as it is, it is undoubtedly welcome.

Dr. Hay refers at length to the cause of infant mortality, and discusses the value of the experiments being made at St. Helens, Liverpool, Glasgow, Leith, and Dundee in establishing municipal milk dépôts. He points out the fact that it is a punishable offence for a dairyman to neglect the proper cleaning of any of his milk utensils, and thinks there is no reason why it should not also be a punishable offence for a mother or nurse, after due warning, to persist in feeding an infant from an insufficiently cleaned bottle, if only in this way a proper conscience in this important matter can be created.

There were no cases of small-pox in the city during 1903, and typhoid fever has undergone a remarkable decline during the past two years and especially last year. It is very difficult to account satisfactorily for this great decline. It is possible that the city is beginning to reap the advantages of the increasing attention which has been paid in recent years to the water supply and general sanitation of dairy farms by the public health officers of the districts in which the farms are situated. Reference is made at some length to the treatment of consumption, and the investigation of Professor Hamilton and Mr. Young, of Aberdeen University; Dr. Nathan Raw, of Liverpool; and the Royal Commission on Tuberculosis, are referred to in some detail.

Last year, in his annual report, Dr. Hay directed attention to the practice of drinking methylated spirits. Now he believes that this practice is greatly circumscribed, if not altogether extinguished. Both the police and Inland Revenue authorities had been very active in dealing with the matter. It was felt that the practice could probably be best checked by prosecuting one of the chief vendors of methylated spirits for drinking purposes, but difficulty was experienced for a time in getting the requisite evidence that the vendor was aware that the spirits sold were to be so used. At length, such evidence was available, a prosecution was instituted, and a conviction obtained with severe penalty; since this conviction Dr. Hay is informed by the police that the practice of drinking methylated spirits has almost completely ceased in the city.

Small-pox in Scotland.

During the month of August, 1904, 62 cases of small-pox were intimated to the Local Government Board. These were distributed over the eight counties of Ayr, Edinburgh, Forfar, Inverness, Lanark, Linlithgow, Renfrew, and Stirling. The largest number of cases in any one town was in Glasgow, with 19; while Holytown had 7, and Coatbridge Burgh 6. None occurred in the city of Edinburgh. During the month the disease appeared in five new districts of Scotland where no cases had been previously reported during the present year.

Ireland.

Trinity College, Dublin.

As female students will this year be admitted to all classes within the University for the first time, the Board of Trinity College has made special arrangements for their instruction. The building, which will include a large well-lighted dissecting room, retiring rooms, etc., is fast approaching completion. This year also the new scheme for the licence and degree in dental science (L.Dent.Sc. and M.Dent.Sc.Univ.Dub.) comes into operation, and the School of Physic, Trinity College, in conjunction with the Dental Hospital, Lincoln Place, undertakes the complete course of instruction, including all subjects except general hospital practice. The first degree in dental science was conferred *honoris causâ* upon Mr. A. W. W. Baker, the Dean of the Dental Hospital, at the summer commencements. The natural science moderatorship course (one of the honours science courses of the University) will in future include anatomy, physiology, and pathology. Until this year physiology alone of these subjects, and that only to a very limited extent, was included. The vacation post-graduate class, which proved such a success, and the special classes in preparation for the Royal Army Medical Corps, the Indian Medical Service, and the Royal Navy Medical Service, organized towards the end of last session, will be continued.

Dr. Woods of Birr.

The Birr Board of Guardians, having accepted the resignation of Dr. Woods, of Birr, have, in consideration of his long and faithful services, awarded him a pension of £200 a year. He held the offices of dispensary medical officer, and physician to the workhouse hospitals. He was educated at the Richmond Hospital School and was for a time resident pupil. He obtained the M.R.C.S.Eng. in 1838, M.D.Glasg. in 1839, and L.R.C.S.I. in 1840. Besides many papers on medical subjects, he has written on The Existence of the Deity, Heat of Chemical Combination, Photography, and Lord Ross's Telescopes. He continues to practise his profession.

Armagh District Asylum.

The Medical Superintendent of this asylum (Dr. George R. Lawless) is to be congratulated on the results of last year's work, for in spite of considerable overcrowding of an asylum, part of which was built seventy-five years ago and has never been remodelled or brought into harmony with modern requirements, and an entire absence of any special provision for epileptic and suicidal cases, the annual report for 1903 shows a low death-rate, a high recovery-rate, and no accident of a serious nature no death by violence or suicide, and no epidemic of serious disease. Notwithstanding this, it is to be hoped that the Committee will not delay in carrying out the improvements recommended by the Inspector of Lunatics (Sir George Plunkett O'Farrel). The estimated accommodation is for 434 patients, and the numbers resident on January 1st, 1903, were 509, and on December 31st, 1903, were 517. One hundred were admitted during the year, but, as is pointed out by Sir George O'Farrel, admission had to be refused to all but the most urgent cases owing to the crowded state of the asylum. Of the 100, there were 52 of the first class—that is, first attack, and within three months of admission—and only 14 of more than twelve months on admission. The average age on admission was 39. Forty-seven were cases of mania 46 of melancholia, 2 of dementia, 4 of congenital or infantile mental deficiency, and 1 was not insane. Of the causes, hereditary influences were ascertained in 18, previous attacks in 9, intemperance in drink was assigned in 9, moral causes in 10, and the remainder are distributed over the usually cited etiological factors. Forty-five were discharged as recovered, 9 as relieved, and 1 as not insane on admission, making a percentage of recoveries of 45 per cent. There were 37 deaths—that is, a percentage on the daily average numbers resident of 7.4. Fifteen deaths were attributed to cerebro-spinal diseases; 10 to diseases of the chest; diarrhœa and enteritis, 3; disease of liver, 1; erysipelas, 1; and senile decay, 7. *Post-mortem* examinations were made in the regrettably small number of 3 cases.

Queen's College, Cork.

Sir Rowland Blennerhassett, LL.D., Bart., has resigned the Presidency of Queen's College, Cork, which office he has filled with dignity for the past seven years or so. Sir Rowland has not enjoyed robust health for some time past, and it is to that cause his resignation has been attributed. Sir Rowland is a familiar figure at the Athenaeum Club, and was once a prominent Irish member of the House of Commons. He sat in Parliament for Galway from 1865 to 1874, and for his native county of Kerry from 1880 to 1885. He succeeded his father in 1849 as fourth baronet. In 1870 he married Countess Charlotte de Leyden, one of the most learned women of her time. She is a Doctor of Philosophy, *honoris causâ*, of the University of Munich, and the French Minister of Education conferred upon her the "Golden Palm" as a recognition of the great value of her researches in French history. Sir Rowland is known to be an excellent authority on the politics of the Continent. He will be a loss to the Queen's College, Cork, whose interests he carefully guarded during his term of Presidency.

The Musgrave Professorship of Pathology in Queen's College, Belfast.

The appointment of Dr. Lorrain Smith to Manchester University renders vacant the Musgrave Professorship of Pathology in the Queen's College, Belfast, and considerable interest has been aroused in local medical circles as to the probable candidates. The holder of this post comes into frequent relationship with the profession, and his opinion as an expert is being constantly called for. Dr. Thomas Houston, who has assisted Dr. Lorrain Smith for nearly seven years in the pathological laboratory, will, it is said, be a candidate. He held the Exhibition in Pathology in the Royal University of Ireland, and was Research Scholar of the British Medical Association, and his teaching, both private and tutorial, has always been much appreciated by students.

Small-pox in Ireland.

There were twenty-nine cases of small-pox in Armagh hospital last week, showing an increase of ten as compared with the previous week. There has been one additional case in Clones, and there are two in Castleblaney workhouse. In Dublin one new case has been admitted to the isolation hospital. It came from Belfast. Isolated cases have occurred over a large area, but the outbreak is being dealt with energetically, and it is unlikely that it will assume serious proportions.

VACCINATION CERTIFICATES IN SCOTLAND.

The Local Government Board for Scotland has issued a Memorandum, dated August 24th, as to the granting of certificates of successful vaccination. In considering the reports made to them by medical officers of health regarding cases of small-pox, the Board has had its attention drawn to cases of children (the majority of whom were under 5 years of age) who presented no evidence whatever of successful vaccination either in the presence of local scars or in modification of the disease, although said by the parents to have been vaccinated. Similar cases were observed in the course of the inspection of "contacts." Further inquiry led to the discovery that in many cases a certificate of successful vaccination had been lodged with the Registrar. After investigation of the circumstances under which this occurred, the Board is satisfied that considerable laxity exists in the granting by medical practitioners of such certificates, in respect that they are not always founded on personal inspection of the child after a sufficient interval, and occasionally have even been signed at the time of the operation, when its result was unknown and when subsequent inspection would have disclosed failure. It is pointed out that a practitioner who grants a certificate of successful vaccination in such circumstances places himself in a very serious position. The certificate states that the operation was performed by the person who signs it and that it has succeeded. If in either respect the certificate is false the signatory is liable to a criminal prosecution. The Court regards a certificate of vaccination by a medical practitioner as a matter of public importance. In the case of the Lord Advocate *v.* Webster, September 27th, 1872, 45 Jur. 3, the judge pointed out that a medical practitioner acting under the Vaccination Act is a public officer with a public duty to perform. The medical practitioner is, by that Act, erected into an officer who is to serve the public, and give a certificate of successful vaccination, and that certificate is a permanent document entered on a public register, and is equivalent to a clean bill of health as regards the child. The charge here is that the doctor granted certificates of successful vaccination when he had not successfully vaccinated the children and knew that he had not. . . . This must be regarded as a serious violation of public duty, involving punishment.

The result of the prosecution in that case was that the practitioner, who had granted certificates of successful vaccination, though the vaccination had not taken effect, was convicted and sentenced to four months' imprisonment. The Board desired to make it publicly known that if in future any case of this nature comes to its knowledge it will be its duty to report it to the Crown with a view to proceedings being taken.

THE PELLATT FUND.

The Treasurer, Surgeon-Colonel F. H. Welch, 8, Brandram Road, Lee, Blackheath, S.E., begs to acknowledge the receipt of the following sums on behalf of Miss E. B. Pellatt, L.S.A., additional to those already reported:

	£	s.	d.		£	s.	d.
E. M. G.	0	5	0	C. T. Standring, Esq. ...	0	10	0
"Anon"	0	3	0	E. Chapman, Esq., M.P., ...	1	0	0
Miss M. Thorne, F.R.C.S.I.	5	0	0	Rev. C. E. McCreery... ...	0	2	6
Dr. Helen Gordon	0	10	6	J. Brindley James, Esq. ...	1	1	0
Dr. Lilian Blake	0	10	6	Mrs. Bull	5	0	0
Dr. J. H. Galton	1	1	0	Miss E. N. Dalton	0	5	0
Dr. E. Malins	2	2	0	Mrs. J. M. Turner	2	2	0
Dr. E. Clapton	1	1	0	Dr. Elizabeth Wilks	5	0	0
Dr. P. Fraser	0	10	6	Mrs. C. A. Willans	5	0	0
"Anon"	1	6	0	"Anon"	0	5	0
C. E. C.	1	1	0	"Anon"	1	1	0
J. Taylor, Esq....	0	10	6	"Anon"	0	10	6
G. Pernet, Esq.	0	10	6	Dr. P. Ashworth	0	10	6
Miss Vaughan	5	0	0	Miss Mackinlay	1	1	0
Miss L. Leslie	1	1	0	Dr. F. S. McDade	0	15	0
St. Matthew's Club, Liverpool	0	3	0	Mrs. E. J. Wigan	5	0	0
				Mrs. Raven Hollings ...	20	0	0
Rev. J. A. Thomas	2	2	0	Dr. Flora Murray	1	1	0
Dr. J. Browne	0	10	6	Mrs. Lowe, M.B.	5	0	0
Dr A. Turnbull, R.N. ...	0	12	7	"A Poor Man's Meeting," Seaton	2	0	0
"Ajax"	1	1	0				
Dr. E. Grace Adams	0	10	0	Dr. Turle Evans	1	1	0
Mrs. M. Gordon	1	1	0	Dr. Jesse G. Evans	1	1	0
F. A. Humphrey, Esq. ...	1	1	0	Rev. W. Francis	10	0	0
Dr. Charles Steele	2	2	0	Miss C. Francis	1	0	0
Mr. C. North	0	10	6	Dr. W. Domett Stone... ...	1	1	0

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 79.

Post Office Medical Appointments in the Highlands and Islands of Scotland.

As we learn that the Post Office is still endeavouring to induce medical men to enter into contracts to act as medical officers of post offices, to include attendance on rural postmen, at the rate of 8s. 6d. per annum for each person on the list, we would again call the attention of readers to whom application may be made to the fact that the annual payment of the sum mentioned is intended to cover locomotion expenses, as well as the supply of medicines. Considering the distances which may have to be traversed, it is obvious that such a rate of remuneration is absurdly inadequate.

An Advertisement.

A correspondent sends us the following advertisement from the *Yorkshire Post*: "Wanted—Doctor for the Knottingley Medical Aid Association, now being formed," and says it looks like trying to get a number of medical men to bid for "a pig in a poke." Such an advertisement may be well regarded with suspicion. Medical practitioners should never think of competing for such posts without first making inquiries of the Honorary Secretary of the local Division of the Association. As the formation of such associations is more often than not the result of an attempt on the part of the local profession to obtain fair treatment from the Friendly Societies of the district, it would be most unwise for a young practitioner to commence his career by putting himself in antagonism to his professional brethren in the place where he presumably proposes to settle. The remuneration he is likely to receive would hardly justify so doubtful a step, apart from any question of professional ethics.

LITERARY NOTES.

We have received the prospectus of the *Internationales Archiv für Schulhygiene*, which is to make its appearance shortly under the editorship of Professor H. Griesbach, M.D., Ph.D., of Mülhausen, Alsace, with whom Sir Lauder Brunton, Professor A. Johannessen (Christiania) and Dr. A. Mathieu (Paris) will co-operate. The idea of founding such a magazine originated at the first International Congress on School Hygiene held at Nuremberg last April. That Congress, the prospectus asserts, proved not only that amongst all civilized nations school hygiene is an independent science standing in the forefront of the people's welfare, but also that "the most sacred duty of a people is to regard the health of its youth as its greatest good, and to give the greatest possible care to the health of the children, especially during school life." Original articles—that is to say, papers based on original researches, observations, and experiences, or scientific lectures and reports—only will be accepted. They may be written in German, English, French, or Italian. The *Archiv* will be published by the firm of William Engelmann, Mittelstrasse 2, Leipzig, and the annual subscription will be 30 marks. Members of the German Society for School Hygiene and of other societies associated with it will receive the periodical at a reduced rate (25 marks).

In the Cymmrodorion Section of the Royal National Eisteddfod of Wales held at Rhyl this week, Sir John Williams introduced a discussion on the subject of a national library for Wales. He said that the foundation upon which the whole superstructure must be erected was a collection of books and manuscripts in the Welsh language, and this, as our readers will remember, he has himself to a large extent provided by purchasing the Hengwrt library, said to be both in extent and in quality the finest collection of Welsh manuscripts in existence. The library, he said, should also contain books written by Welshmen upon any subject, and in any language, books in allied languages, Irish, Gaelic, Manx, Cornish and Breton, and books on the allied races and the several branches of the Celtic race. Sir Isambard Owen also contributed a paper on the subject, in the course of which he appeared to consider it probable that a grant would be made from the Treasury for the establishment of a national library for Wales. Great approbation was expressed by other speakers as to Sir John Williams's suggestion that the library should be established in some quiet place where students might work without interruption or distraction.

ASSOCIATION NOTICES.

NOTICE OF QUARTERLY MEETING OF COUNCIL FOR 1904.

A meeting of the Council will be held on Wednesday, October 19th, in the Council Room of the British Medical Association, 429, Strand, London, W.C.

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

Guy Elliston, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

East Anglian Branch.—The autumn meeting of the East Anglian Branch will be held at Kelling Open-air Sanatorium, near Holt, Norfolk, on Thursday, September 29th. Members wishing to read papers or show cases or specimens should communicate with Mr. H. A. Ballance, M.S., Norwich, Honorary Secretary

Metropolitan Counties Branch: Wandsworth Division.—A meeting will be held at the Town Hall, Wandsworth, on Thursday, September 29th, at 9 p.m. Business: To receive the Representative's report of his attendance at Oxford, when several resolutions based thereon will be submitted. An address, illustrated by the optical lantern, will be given by W. D. Turner, M.D., on Tuberculosis, its Origin and Extinction. It is hoped the members will attend in large numbers, and so begin the winter session well.—E. Rowland Fothergill, M.B., Torquay House, Southfields, S.W., Honorary Secretary.

South-Eastern Branch: Croydon Division.—The next meeting will be held at the Cock Hotel, Sutton, on Thursday, October 20th, at 4 p.m., Mr. G. Bower (Sutton) in the chair. Members desirous of exhibiting specimens or reading notes of cases are requested to communicate with the Honorary Secretary, E. H. Willock, 113, London Road, Croydon.

SPECIAL CORRESPONDENCE.

BERLIN.

A New State Institute of Hygienic Education.—Medical First Aid.

In Charlottenburg, a suburb of Berlin, there is a new State institute which, although its objects are not exactly medical, deserves the attention of all interested in improving the physical well-being of the working classes. The institute calls itself "Permanent Exhibition for the Welfare of the Working Classes (Ständige Austellung für Arbeiter-wohlfahrt), and is a sort of museum—constantly replenished and kept up to date—of appliances for the protection and well-being of those employed in factories, mines, agricultural undertakings, etc. An important point is that the machines are not merely models, but specimens of those in actual use, and that they are shown at work, with the protective appliances attached. The latter are all painted red so as to be easily distinguishable. Besides these protective appliances—and their number is legion—there are respirators for the protection of the lungs and throat from poisonous gases and dust, safety vessels for the storage of petroleum and other inflammable liquids, suction apparatus for use in workshops where there is much dust, etc. A special department is the tuberculosis museum which contains models, microscopes, diagrams, tables—everything calculated to arouse the interest of the general public in the tuberculosis question, and to afford trustworthy information as to the best means of combating the disease. Free popular lectures are given here, not exactly addressed to the "man in the street" but to persons selected from among policemen, foremen in factories, railway officials, etc. Special courses for mothers will begin shortly, and are to be continued on stated days. All these lectures are illustrated by photographs thrown on the screen, the subjects being taken from the daily life of the poor. The connexion between dirt and disease is demonstrated by pictures of slum rooms, and statistics of the development of tuberculosis in such surroundings, while pictures of sanatoriums, cottage homes, etc., show the good influence of cleanliness and ventilation. The organizers hope that these "object lessons" will do much to destroy the prejudice against hospitals and similar institutions which is still deep-rooted among the people. To show the practical value of scientific work, tables published by the Prussian Statistical Department are demonstrated, and the marked decrease in tuberculosis since 1886, which these tables show to have taken place, is brought into connexion with Koch's discovery of the tubercle bacillus in 1882, this discovery having led to entirely new methods of prophylaxis. Further, to stimulate the hearers' interest, there is a box in which written questions may be placed; these together with any that may be asked verbally at the end of the lectures the lecturer answers in turn. An anti-alcohol museum is another feature of the institution. It contains an admirable collection of telling printed matter on alcoholism and degeneration. One of the tables shows the frequency of weak brain power, and even idiocy among children begotten at periods of general drunkenness, such as carnival time and grape harvest time. Such children are known popularly in Germany as "*Rauschkinder*," drink children, and among them the percentage of mentally-defective individuals is very high. The large figures of another table show that Germany spends annually on education—schools, churches, etc., 330 million marks (£16,500,000), on the army and navy 871 million marks (£43,550 000), and on alcohol 3,000 million marks (£150,000,000)! These figures seem appalling, but probably they represent a past high-water mark of alcoholic consumption, from which Germany is gradually descending; for there can be no doubt that in all classes enlightenment as to the dangers of chronic alcoholism

has spread. Labourers drinking tea or coffee instead of beer or "schnaps" are no uncommon sight at present, and among the upper classes it is fast growing into a dietetic principle to take no alcoholic drink whatever until evening. Most remarkable and hopeful sign! One hears of antialcoholic societies among German students. In Munich, Germany's beer metropolis, a first-class non-alcoholic restaurant lately opened has proved so brilliantly successful that a second one is to be erected; and in Berlin an influential Committee is collecting capital for a similar undertaking, which is recognized to be almost a necessity.

The Central Committee for post-graduate medical instruction ("*Aerztliches Fortbildungswesen*") is arranging courses on medical first aid, which are to be held from the middle of October in the lecture hall of the Pathological Museum. The courses, which are gratuitous, are open to doctors of medicine only. The subjects are as follows: (1) Weakness of the Heart and Disturbance of Consciousness (Professor Kraus); (2) Conditions of Excitation in the Insane and Delirious (Professor Ziehen); (3) Fractures and Luxations (Professor Hoffa); (4) Injuries to the Head (Professor v. Bergmann); (5) Injuries to the Trunk (Dr. Borchardt); (6) Haemorrhage from the Large Vessels (Professor Rotter); (7) Haemorrhage from the Respiratory and Digestive Tracts (Professor Senator); (8) Suffocation and Drowning (Professor George Meyer); (9) Burns (including Lightning-stroke) and Injuries from Cold (Professor Sonnenburg); (10) Poisons (Professor Robert Rostock); (11) Haemorrhage from the Female Genital Tract (Professor Landau); (12) Haemorrhage from the Urinary Apparatus and Sudden Retention of Urine (Professor Kutner); (13) Transport of the Sick, especially in Infections and in Mental Cases (Professor George Meyer); (14) Public Help in First Aid (Dr. S. Alexander).

VIENNA.

Cretinism in Austria.—Small pox in Vienna.—The Heat and Health Statistics.

Professor Wagner, Director of the University Clinic of Mental Diseases, has for some time past devoted special attention to the treatment of idiocy and cretinism. The latter occurs in certain regions of the Alps, especially in Styria and the Tyrol, and also on the shores of the Adriatic. Professor Wagner has tried the effects of extract of the thyroid glands of calf and cow in cases of cretinism. The results of the treatment of selected individuals for periods varying from three months to a year have been remarkable. Cretins of full age, who were known not to have grown for years, gained from $\frac{3}{4}$ in. to $1\frac{3}{4}$ in. in height, the skin became normal, the circumference of the neck was diminished by 2 to 4 cm., while the mental faculties approached or even reached the normal standard. Professor Wagner has laid before the Government a scheme for the treatment of all cretins in the empire by the method referred to. If this suggestion is adopted, he believes that the propagation of the disease may be checked; the offspring of cretins naturally tend to repeat the conditions of physical malformation. Teachers in elementary schools are to be provided with the necessary data for the diagnosis of cretinism, and power is to be given to authorities, both local and general, to enforce the application of appropriate treatment. Special commissions are to visit the afflicted districts several times a year in order to control the results, and the remedy, which is rather expensive, will be supplied at a nominal charge to the public on the production of a prescription. The scheme is now being considered by the Public Health Board, which will, there is little doubt, approve of it. This experiment on a large scale may be compared with the fight against small-pox which was waged for some years in Bosnia, where compulsory vaccination was introduced and proved extraordinarily beneficial.

An outbreak of small-pox occurred a few days ago in the centre of Vienna, but was soon localized and checked. Among the labourers engaged in the building of the new General Hospital, a considerable number come from Italy, and are therefore not vaccinated. It was proved that one of these had come to Austria whilst actually suffering from the disease, and had transmitted small-pox to some five or six of his fellow-workers. Stringent measures were immediately adopted, with the result that not a single further case has been observed for the last twelve days.

The prolonged drought, with its unprecedentedly low rainfall and very moderate moisture of the air—hygrometric observations showed as little as 25 per cent.—has had a marked effect on the health statistics. Whilst the number of catarrhal affections of the respiratory organs is decidedly low, there are numerous cases of acute inflammation of the nerves, besides sunstroke. Gastro-intestinal troubles have nearly doubled when compared with the corresponding period of the last five years. The mortality from diarrhoea amongst infants is higher by 48 per cent. Milk is said to be deficient in quality on account of the lack of green food. Haemorrhage in the brain is more frequent, especially in the capital, and suicides have reached the highest number noted since observations were introduced in Vienna. Generally the month of May heads the list, but this time July is responsible for an increase of 22 per cent. The astonishingly low number of cases of influenza is supposed to be due to the amount of sunshine, which exceeded the usual or average number of hours by 112 during July alone.

MANCHESTER.

Cost of Aliens in Lunatic Asylums.—Extension of Northwich Infirmary.

The cost of maintenance of lunatics for the ratepayers of Lancashire will reach the sum of £131,626 for the year expiring March, 1905. One hundred and thirty-four alien lunatics are maintained in the several asylums of the county. Germans lead the way with 28, and, in addition, there are 11 German Jews and 1 German Pole; Swedes, 13; Italians, 12; Americans, 6; Frenchmen and Norwegians, 5 each. Practically, in fact, every country or nation or religion is represented. The cost of the alien lunatics was estimated at £6,500 per annum, and it was urged that these undesirable aliens should be shipped back to their native countries. It was pointed out, however, that a great many alien lunatics have homes and families in England, and that a great many Englishmen, also, were being maintained in foreign asylums, especially in America.

The Victoria Infirmary of Northwich is to be extended at a cost of £5,000, this extension being the form which the Mid-Cheshire Memorial to Queen Victoria is to take. About twelve additional beds with the necessary accessories will thus be provided.

BRISTOL.

Report of M.O.H.: Increase of Area and Population: Statistics.—Small-pox; Other Infectious Diseases.—Medical Inspection of Elementary Schools.—Phthisis. Fever Hospitals.

The report of the Medical Officer of Health on the health of the city during the past year is, as usual, full of interest. Owing to the recent extension of the city's boundaries the population and the acreage have increased very largely during the past ten years, the former being 338,895 and the latter 11,942, of which 678 consist of parks and open spaces. A considerable amount of sewerage work was carried out during 1903, and more is contemplated in the immediate future. The vaccination returns are, as usual, for a previous year, namely, 1902, and show a percentage of successful vaccinations to births of 65.82. Pauperism shows a slight increase, with a natural slight increased cost. During 1903 there were 9,239 births (249 illegitimate), which shows a slight decrease on the previous year. This decrease began in 1880 when the rate was as high as 35.1, whereas it has now fallen to 27.2, the lowest it has been except in 1901, when it was 27.0. In the 52 weeks of 1903 there were 4,822 deaths, a rate of 14.22, comparing favourably with that of the seventy-six large towns of 16.3. The infant mortality rate was 116, the lowest for the past twenty-five years.

Small-pox was notified 46 times, and of these cases 3 terminated fatally. These cases represent 15 separate introductions, most of which occurred in the first half of the year. Unlike the cases in 1902, which were all introduced in the Port, the disease came from all points of the compass. Details of these introductions are given, and one outbreak is of particular interest. It was found from the cases that between February 26th and March 24th that a fresh introduction had been missed. On inquiry the fact was elicited that a barber, whose child had developed small-pox, had had a rash with an attack of "influenza." Further inquiries showed that a recognized case had, in the early stages of the disease, been a customer at the shop, and had so infected the barber. As it was, two of the fatal cases contracted the disease from this source, one being the barber's own unvaccinated child. Several of the other outbreaks are of great interest, especially one dealing

with school absentees for chicken-pox. At the request of a member of the Health Committee the town clerk wrote to Leicester to inquire into their "method." No answer was received, but Dr. Davies, in commenting on the incident, says the method appears from statistics to be to run a considerable risk by vaccinating at the wrong time, when there is every chance of being too late to obtain protection.

Of scarlet fever there were 2,168 cases, with a case mortality of 2.2 per cent.; on the whole, the disease was of a mild character. Unfortunately, deficient hospital accommodation has prevented any real attempt being made to control the disease by isolation. The number of cases of enteric fever was low, 134, with 21 deaths. Under diphtheria and membranous croup, 1,134 cases were notified, the largest number on record; but the case mortality was low, 10.4 per cent. It is impossible to summarize the lengthy report of this disease, but Dr. Davies's remarks and account of the methods employed to check the epidemic are worthy of careful perusal.

A brief notice must be made on his reference to medical inspection of public elementary schools. It appears that in Bristol no provision is made to supervise the general health of the children, and Dr. Davies argues that such work can best be done by the officers of the Health Committee, which would, of course, entail the appointment of special medical officers for the work. As an instance of how necessary some supervision is, he quotes the report of the Medical Officer of the Fever Hospital, who states that 40 per cent. of the children admitted have verminous heads. The city appears to have been free from measles, as only 11 children died of it in the year.

The number of deaths from phthisis again shows a considerable reduction, 366 having died as compared with 415 in 1902. During the year 74 samples of milk were examined for tubercle and only 4 showed its presence.

The report contains the usual sub-reports of the Ham Green and other fever hospitals, of the inspector of nuisances, of the baths, and a meteorological report from which we gather that the rainfall for the remarkably wet year, 1903, was 42 821 in., being 9.7 in. above the average of the last 22 years.

CORRESPONDENCE.

THE CO-ORDINATION OF THE WORK OF DIVISIONS.

Sir,—Lately one has heard suggestions that something might now be done to bring the various Divisions into closer touch with one another, as also to increase the membership of the Association. This latter object would seem to depend a good deal on the first, as also on the local organizations and the amount of vitality they severally display.

But often, however desirous local committees may be to act for the benefit of their members, all is not done that is possible owing to want of ideas or a timidity as to the probable result.

I would like, therefore, at the beginning of another session, to make one or two suggestions. The first is that those secretaries who are keen on the success of the Divisions or Branches under their control should exchange all sessional cards, agendas, circulars, reports, etc., that they may from time to time issue. These often contain good ideas that are worthy of being copied, and although not practicable in all districts, could be carried out in those similarly situated. This would seem, at all events at present, a far better and more permanent way of putting Secretaries in touch with one another than any central meetings that at the best can only last a few hours, and at which the amount of talk would drown all action.

I would say at once that I should be glad to have copies of all such documents issued by other Divisions and would reciprocate this attention if desired. I am at the present moment clearing out the surplus copies of numerous circulars, etc., for last session, and if any Divisional Secretary cares to have a set in case they contain ideas he would wish to avail himself of, I shall be pleased to forward same on receipt of a postcard, and also to enter his name on a list for periodic supplies of all matters we shall be dealing with during the winter.

Branch Councils could also now take into their consideration the advisability of arranging for the periodic meeting of their Branch and Divisional Secretaries. The railway and other expenses are a legitimate charge on the funds. These meetings, appointing their own chairman and secretary, and being informal and not bound down by red tape, could start impromptu discussions on any point, and having come to decisions could then approach their Councils with the view to carrying them into effect. It would be found to be a very useful Standing Committee to refer matters to, as the wishes of the members could be quickly obtained, the Secretaries through their local Committees being in close touch with the whole of the area. Successful organization depends on taking pains with the trivial details, and it would be found that by means of these Committees matters not sufficiently important to be placed on a Branch Council agenda could be well talked over and threshed out.

Another point Branch Councils might take into their consideration, after the meetings of the Divisional Secretaries have proved their value, would be to arrange for the periodic meeting in a central town of the Secretaries of the neighbouring Branches. Here again the expenses would fall on the funds, and the resulting benefit in ultimate cohesion of the Association would be immense.

Many I feel sure would be glad to hear that letters have been received by the Central Council from Branch Secretaries asking for accommodation to be provided for them, as a Committee, at our Annual Meetings. Which Branches will take up this idea?

If you, Sir, could give space in the Supplement from time to time (with a heading "Hints to Branch and Divisional Secretaries," or some such title), in it might appear very concisely information on any subject that has been considered in a Branch or Division, together with the result; and if any one desired further particulars he could communicate with the Secretary and obtain it.

I would suggest the value of the organization of the Association will be found to lie along these lines; and meetings of the larger Branches, except for *soirées* and such-like, will become unnecessary, as they are at present practically valueless and very expensive.

In these several ways we should get into touch with one another better, and when we meet at Annual Meetings we should do so prepared for a friendly chat based on our previous knowledge of each other's work; and not as at present find the time, all too short as it is, taken up in introductions alone.

But after all we must not lose sight of what our object is in endeavouring to organize our profession and rid it of its many shackles rusty with age, unless we wish to cause reactionaries to revile, and call us *trade* unionists.

It is not that we as individuals should find as a consequence that we can put a few more guineas in our pockets; but rather that, having done so through organization and regaining for ourselves due recognition of our status as an honourable profession, we should have more leisure to keep ourselves abreast with the discoveries of the times, so that those that come under our care may receive the best that can be obtained, and we in ourselves may have the keen delight that results to all lovers of their profession from watching the success following on a truly scientific diagnosis and treatment of disease in all its forms.—I am, etc.,

E. Rowland Fothergill,
Honorary Secretary, Wandsworth Division.

Southfields, S.W., Aug. 30th.

THE ASSOCIATION AND MEDICAL DEFENCE.

Sir,—In reference to the letter published in the British Medical Journal of August 27th, I must ask you to permit me to reply to Dr. Welsford in respect of certain points.

The action of the Council of the Medical Defence Union was confirmed by the members in general meeting assembled, and, curiously enough, received practical endorsement at the meeting of Representatives of the British Medical Association at Oxford, inasmuch as the "scheme" was referred back to the Committee and not accepted. These facts make it clear that what Dr. Welsford describes as the "artificial opposition" of the Medical Defence Union to the scheme was fully justified, and proves that the criticism of the Union was healthy and reasonable.

Dr. Welsford states that "in their present weak financial condition neither society, that is, the Medical Defence Union and the London and Counties Medical Protection Society, is in a position to undertake any case in which the issue is doubtful and in which there is a danger of heavy costs being incurred."

Speaking for the Medical Defence Union, I can only say that such a statement is absolutely without foundation. I am surprised that one who must have read our annual reports

should have so failed to understand them. The facts therein disclosed year by year in Mr. Hempson's legal statement show that the question of costs in a case never influences the action of the Council, and that "a less liberal policy in medico-legal work in this respect would have proved a false economy from every point of view, and would have detracted from the prestige which the Union has earned as a result of the work which it has done and is doing both on behalf of its members and the profession at large."

The suggestion that the Union only takes up cases where the issue is undoubted is disproved by every line of Mr. Hempson's reports. The fact that more than three-quarters of our court cases are those in which we appear as representing the defendant also proves the absurdity of this contention. As a matter of fact the only cases which we refuse are those in which no professional principle is involved, and those, except under exceptional circumstances, in which one medical practitioner brings an action against another. Had our Union been conducted on the lines imagined by Dr. Welsford its success would have been imperilled, if not lost entirely, and the membership would not have increased as it has.

I was under the impression that the one great advantage claimed by the promoters of the scheme of medical defence being taken up by the British Medical Association was that the department would have behind it the financial resources of the Association. According to Dr. Welsford, however, this is not the case. He states in his letter, "those who do not approve of the scheme are under no compulsion to join, and there is no liability upon the general funds of the Association."

If this be correct, I fail to see in what way this new department will be more advantageous to members than the existing societies. It will be dependent upon the annual subscriptions, and will have to start without the reserve funds which the present societies have, through good management, gradually accumulated. With a small membership to start with—there does not appear to be a rapid rush to join it—it will probably have to do the very thing which Dr. Welsford inaccurately accuses the Union of doing—namely, only undertake cases where the issue is not doubtful. In fact, it will have to start *de novo*, and compete against other societies which have proved their competency to do the work well and ably.

Dr. Welsford seems annoyed at the Medical Defence Union for criticizing the scheme proposed by the Committee of the British Medical Association: he appears to forget that the Representative Meeting at Oxford and the Divisions previously to that meeting equally criticized it, and, finding it wanting, referred it back to the original Committee.

Dr. Welsford says in his letter: "Let the Medical Defence Union go its own way." I, as a member of the Medical Defence Union and of the British Medical Association, am grateful to him for this concession; its "own way" has proved to be most successful in the past, is so in the present, and I venture to affirm will be so in the future. It may interest Dr. Welsford to know that the membership has increased this year to date 647, the largest increase in its history, and in spite—perhaps in consequence—of the threatened competition of a third—or is it a fourth?—association for medical defence.

From my long experience in matters of medical politics I am of opinion that a settled conviction based upon firm and consistent policy always pays best and appeals better to the instincts of educated men rather than a policy which is made up of differences of opinion, and in which every leader appears to advocate something which differs from his colleagues' desires.—I am, etc.,

London, W., Aug. 30th. A. G. BATEMAN.

INFANTILE MORTALITY IN LIVERPOOL.

SIR,—The main point of Dr. Bradshaw's letter to you last week on this subject, namely, that the present high death-rate in Liverpool is a result of the successful campaign against food preservatives, is easily disproved. The increase in mortality is nearly entirely among infants, whose main food is milk. Now milk has never been much preservatized in Liverpool, and the campaign has been directed chiefly against the use of preservatives in other food-stuffs. Consequently, their diminished use can have very little, if anything, to do in influencing the present epidemic of diarrhoea in comparison with former years. As regards the general question of their use in milk, it would seem that Dr. Bradshaw thinks his own wisdom and common sense superior to that of the Departmental Committee, which recommended:

> That the use of any preservative or colouring matter whatever in milk offered for sale be constituted an offence under the Sale of Food and Drugs Act.

Although nobody may have thought it worth while to respond to a special invitation from Dr. Bradshaw, and he has not seen or heard of a case of injury from the use of food preservatives which satisfies him, yet there are on record several cases which seem sufficient to the unprejudiced observer. One of these was quoted by Dr. Hope in his evidence before the Food Preservatives Committee. It is, of course, a difficult matter to prove that any particular illness or symptom is due to preservatives, and the diagnosis probably requires more than average clinical acumen. For this reason more satisfactory evidence is obtained from observations on healthy individuals, and the researches of the Reichs-Gesundheitsamt in Berlin have clearly shown (in spite of Liebreich's contradictions) that boric acid in small quantities is by no means an indifferent substance.

It is not at all certain that preservatives in small quantities can prevent decomposition. They do stop putrefaction, and thus destroy the signs by which decomposition is made evident to the senses. To use them is equivalent to tying down the safety valve of a steam engine.

The advocates of food preservatives seem always to ignore or to be ignorant of the opportunity afforded and advantage taken of their use for dirty and fraudulent practices. Their use also renders vain all attempts to teach the hygienic value of care and cleanliness to the poorer classes when they find these virtues apparently superfluous.—I am, etc.,

Liverpool, Aug. 27th. ALBERT S. GRÜNBAUM.

SIR THOMAS BROWNE: *AUDI ALTERAM PARTEM.*

SIR,—Does not Dr. Conolly Norman do Sir Thomas Browne an injustice when he suggests that the Norwich physician acted disingenuously in giving evidence against the unfortunate women accused of witchcraft? Surely perjury is the last suspicion that would cross one's mind in connexion with the incident. If Sir Thomas Browne is a favourite author with him Dr. Conolly Norman will remember the following passage from the *Religio Medici*, vol. i:

> It is a riddle to me how this story of oracles hath not wormed out of the world that doubtful conceit of spirits and witches; how so many learned heads should so far forget their metaphysics, and destroy the ladder and scale of creations, as to question the existence of spirits. For my part, I have ever believed, and do now know that there are witches.

These words were published some twenty years before the trial, and whatever we may think of Sir Thomas Browne's part in the latter, we cannot accuse him of inconsistency in testifying to his belief irrespective of the lamentable consequences entailed. I quite agree with Dr. Conolly Norman that as medical men we have little cause for pride in the career and character of Sir Thomas Browne, though we cannot but admire his industry and painstakingness. Browne's cast of mind was essentially non-scientific; in himself he was the product of a period characterized by admiration paid to a somewhat meretricious and ostentatious display of curious learning. The adulation generally showered on the *Religio Medici* is somewhat difficult to understand. The book is intensely egotistic and shallow, faults covered up for us moderns (as Dr. Conolly Norman points out) by the pedantry of the style in which it is written. There is no genuine attempt made to reconcile dogma and science—the real basic problem of the religion of every medical man—but a constant asseveration of the author's own faith and humility. The devotional sentiments of great minds are the only ones that can be of general service; those of mediocrities, especially bigoted mediocrities, are private matters that concern only the individual. Sir Thomas Browne was a diligent antiquarian, collector, and collator, but there is no evidence that he was a great, or even a good, physician. Indeed, it is difficult to conceive of a man of his day who persistently ridiculed the idea of the earth's motion being possessed of scientific qualities, in spite of the success he attained in the practice of his profession. The manner of his acceptance of a knighthood, too, does not inspire respect for that sense of personal unworthiness that he dwells on so much in his *magnum opus*. To compare Browne with his contemporary Sydenham from the point of view of professional merit, is to compare Hyde Parker with Nelson; yet I believe we have no memorial to Sydenham beyond the statue over the door of the College of Physicians. As to personal characteristics I fancy we most of us prefer the breezy *insouciance* of Radcliffe, the pompous irascibility of

Dover, and even the dour genius of John Hunter to the smug self-complacence of Sir Thomas Browne.—I am, etc.,

Eastbourne, Aug. 27th. HUBERT E. J. BISS.

SIR,—Dr. Conolly Norman would confer a favour on your readers if he would give the reference to the report of the trial of Cullender and Demy at the Bury St. Edmunds Assizes, March 16th, 1665, before Chief Baron Hale. I have only the *Encyclopaedia Britannica* before me, but the account there does not quite agree with the report in Dr. Hutchinson's *Essay on Witchcraft*, which was not written till 1718.

Witchcraft was in the seventeenth century a statutory felony. The facts were for the jury, the law for the judge. Hale would have gone beyond his powers had he withdrawn the case from the jury. According to the report before me, the Chief Baron did sum up. Hale was regarded by Lord Campbell in his *Lives of the Chief Justices* as the most eminent man who ever filled the office of Chief Baron. He was neither cowardly nor muddleheaded.

That Sir Thomas Browne was not wiser than his generation, that he was not a century ahead of his time is no doubt matter for regret, but is scarcely ground for the serious charges brought against him by your correspondent.—I am, etc.,

August 27th. G. I.

SIR,—Your correspondent Dr. Conolly Norman makes the common historical mistake of judging Sir Thomas Browne by the ethics and beliefs of the twentieth, not of the seventeenth century.

Sir Thomas Browne believed in the reality of witches and of witchcraft. He says:[1]

> For my part, I have ever believed and do now know that there are witches; they that doubt of these do not only deny them, but spirits, and are obliquely and upon consequence a sort not of infidels, but atheists.

He was therefore quite honest in his evidence and in his belief in the reality of the Suffolk witches and their doings. Therefore to talk of Sir Thomas Browne being neither "scientific or humane" is most misleading, and to say that "he was ready to sacrifice (*sic*) two helpless victims of popular prejudice.....for the sake of quoting Olaus Magnus, and showing his familiarity with the goings on of Danish witches," is absolutely unjust and unfair. Sir Thomas Browne did not believe in the non-existence of witches; neither did he believe in the antiseptic treatment of wounds nor in the bacterial origin of fevers. In fact he lived in the seventeenth, not the twentieth century.

The Norwich Committee are raising a memorial to Sir Thomas Browne, not for the things in which he believed with his contemporaries, and acted honestly in consonance with those beliefs, but in honour of the things wherein he was in advance of his times.

If Dr. Conolly Norman can show that Sir Thomas Browne fell behind the average of his contemporary medical brethren in either humanity or scientific insight, his protest may be justified; but he cannot.

If we are any of us to be judged as to our scientific acquirements by the knowledge of 250 years hence, and as to our humanity by the altruistic dicta of our great-great-grandchildren, which of us shall 'scape whipping?

Sir Thomas Browne gave his skilled evidence "to the best of his knowledge and belief." Can any present-day witness do more?—I am, etc.,

Paignton, S. Devon, Aug. 27th. W. SYKES, M.D., F.S.A.

SKIPPING AS AN EXERCISE FOR ADULTS.

SIR,—I have no intention of demurring to the appreciative article under the above heading in the BRITISH MEDICAL JOURNAL of August 13th, though I may perhaps be allowed, parenthetically, to observe that the writer's contention that exercise is not essential to health does not affect my plea for skipping, on the ground that, if you do want exercise, skipping is the best way in which you can take it as a home gymnastic. What I shall be glad, if you will allow me to do, is to clear up a misconception on a matter of fact into which the writer of the article has fallen. He winds up his rather questionable citation of Messrs. Chamberlain and Labouchere as models of health by asking why, if everything that has been said in favour of skipping were well founded, it does not "catch on" more than he seems to think it has done. The answer is simple. It is true that skipping has been generally practised by athletes; but no one knew that it was except the athletes themselves. It may also have been idealized as a graceful movement on the stage now and again, but that would scarcely be likely to popularize it much as a health exercise. So far as my own advocacy of it is concerned, it is true that I recommended it nearly forty years ago in an article in the *British and Foreign Medico-Chirurgical Review* as useful in the treatment of chorea, but I have never published anything further on the subject until five months ago, when I was led to issue a pamphlet on Skipping as a Form of Home Gymnastics, a copy of which I have the pleasure to enclose with this. It could hardly be expected that skipping would have made much progress in the way of "catching on" in so short a time as this. But what are the facts?

At the time my pamphlet was issued there was absolutely no literature of any kind on the subject of skipping as an exercise for adults, and next to none on it even as a "girl's game." Apart from an almost entire lack of information as to its antiquarian aspects, beyond the brief statement in Strutt's *Sports and Pastimes* that "this amusement is probably very ancient," even the comprehensive treatise on *Physical Culture*, issued by Messrs. Cassell and Co., under the competent editorship of Mr. Eustace Miles, contains no reference to it, nor does that monumental epitome of information *de omnibus rebus et quibusdam aliis*—the *Encyclopaedia Britannica*. An inquiry at the libraries of the British Medical Association and of the Colleges of Physicians and Surgeons succeeded in eliciting no reference to skipping from a therapeutic point of view, beyond that by myself noted above. The whole subject was evidently a *terra incognita*, which no one had thought it worth while to cultivate.

And yet, curiously enough, no sooner was my pamphlet issued and noticed, as it was most sympathetically by the press, than it appeared, mainly from editorial comments on it, that skipping had been practised, in an unrecognized sort of way, as an admirable means of training, by athletes of all kinds, but, apparently, to the complete unacquaintance with the fact of everybody except the athletes themselves. So far as children are concerned, it is noteworthy that in the report of the Interdepartmental Committee on the Model Course of Physical Exercises, which appeared coincidently with my pamphlet, it is advised that "for girls the exercise of skipping particularly should be encouraged."

Such being the state of knowledge—or, rather, of ignorance—of the "man in the street" as to the merits of skipping as a health exercise five months ago, it may be interesting to ask what evidence there is as to whether it has "caught on," as you say, during the short period that has since intervened—a period, by the way, which has not been altogether favourable to interest in an active exercise like skipping. I will not rely, for the purpose of this inquiry, on the statements which have repeatedly appeared in society and other papers—of which I enclose evidence with this—such as that "skipping, which was once the sport of the humble, is now favoured by the feet of fashion"; that skipping is to be "the fashionable cure"; that it is the "latest society craze"; that a "fashionable club in Piccadilly has made it a leading feature of its attractions," and so on. Such evidence as this may be taken for what it is worth. What is more to the point is that between 500 and 600 applications have been received for the pamphlet, not only from all parts of the British Isles and the Continent of Europe, but from such unlikely places as Burmah, Bombay, Bulawayo, Brisbane, Hong Kong, Jamaica, Swaziland, and numerous others with which I need not burden your columns, in which one would have scarcely expected to find much interest in such an active exercise as skipping. And these applications still continue to be received.

I do not know whether these facts may or may not lead the writer of your article to admit that he has at least been somewhat premature in assuming that skipping, as an exercise for adults, has not "caught on," but, for my own part, I can say that I am satisfied with the progress already made in this direction; that I feel that the publication of my little contribution to the subject has been fully justified; and that my only anxiety is that the real merits of skipping as a health exercise shall not be dissipated in a cloud of exaggerated eulogy as they have been hitherto concealed in unintelligible neglect.—I am, etc.,

Gloucester, Aug. 25th. FRANCIS T. BOND, M.D.

IS HYSTERECTOMY GENERAL SURGERY?

SIR,—As your correspondent "Obstetricus" does not think the subject worthy of his true name, I do not feel justified in

[1] *Religio Medici*, Part I, p. 50, Golden Treasury edition.

continuing the discussion. From his unselfishness and self-obliteration I cannot but suspect that he is a surgeon in sheep's clothing.—I am, etc.,

Edinburgh, Aug. 27th. F. W. N. Haultain.

DISPENSING BY MEDICAL MEN.

Sir,—The question of dispensing by medical men having again come to the front, I trust you will allow me to say a few words on the subject. The statements of Mr. Idris have been somewhat severely commented on, but I think due note has not been taken of the fact that his views, if expressed with too great emphasis, are still those which are generally held by no inconsiderable body of pharmacists. There is probably no druggist who would care to assert that a medical man is incapable of dispensing successfully any prescription he may choose to write. Nevertheless chemists as a class feel that having been qualified in expectation of receiving such work, having it alone to do, and time enough to do it, they are in a position to carry it through not necessarily with greater absolute safety, but as a rule more easily, exactly, and regularly, in short, in a more business-like manner. From conversations with some of them in this neighbourhood, I should judge that as a body they are not indisposed to meet medical practitioners in a reasonable arrangement which would not only deal effectively with counter-prescribing, but would also limit, if desired, the repetition of medicines prescribed, and the transfer of prescriptions. I regard this attitude as of hopeful import, since the discontinuance of dispensing by medical men—an object much to be desired for several reasons—can be best attained on the basis of some such mutual understanding. Mr. Idris's argument is not without some cogency. It is fortunately true that serious mistakes in dispensing by medical men are rare, and with sobriety they should be practically impossible. Still the check by another mind equally responsible is better than any system of booking, especially in view of the fatigues and emergencies of medical practice. Besides, the system of repeated entry mentioned by one of your correspondents is by no means universal. The contention that unless dispensing is adhered to either practitioner or chemist must go to the wall is surely a baseless one. There should be work for both even in a country district. A medical man must always depend mainly on his success in treatment, and a pharmacist is not likely to remain idle if he is allowed a free hand in his proper sphere. We are constantly told what would happen if the prescribing system were adopted. May I suggest to those gentlemen who believe so strongly in the conditional future that they attempt the experiment, be it ever so cautiously, and so enable themselves to judge of its actual effect?—I am, etc.,

London, N., Aug. 29th. B. G. Morison.

OBITUARY.

PROFESSOR ANTON DRASCHE, M.D.,
Vienna.

Professor Drasche, for a long time physician to the General Hospital of Vienna, died at Voslau on August 23rd, at the age of 78. He was born on July 1st, 1826, at Leobendau in Bohemia, and, after studying medicine in the Universities of Prague, Leipzig, and Vienna, took his doctor's degree in the last-named seat of learning in 1853. During the cholera epidemic of 1855 he was in charge of the cholera department in the General Hospital, and by his services in that capacity won great distinction. In 1866 he was entrusted with the charge of the Municipal Cholera Hospital. In 1858 he qualified as a lecturer on medicine, and in 1874 he was appointed extraordinary professor of epidemiology and physician to the *Allgemeine Krankenhaus*. He was physician in chief of that great institution till 1897. In 1891 the Emperor of Austria conferred upon him the title of Aulic Councillor.

Professor Drasche devoted himself mainly to epidemiology, but he was also the author of numerous writings on subjects of general medicine. For many years he took a prominent part in the work of the Superior Sanitary Council of Austria. Owing to ill-health he retired from active professional life many years before his death. He was held in high respect for his scientific knowledge and beloved by those who had the privilege of intimacy with him for his amiability and kindness of heart.

WILLIAM BLASSON, M.R.C.S.Eng., L.S.A.

We regret to record the death, on September 2nd, of Mr. William Blasson, in his 69th year, whilst on a visit with his wife to Harrogate. He was the eldest son of Mr. Thomas Blasson, F.R.C.S.Eng., a much-respected medical practitioner of Billingborough, Lincolnshire. William Blasson was educated by a private tutor, and, like his father and his two brothers, received his professional training at Guy's Hospital. He "passed the Hall" in 1856, and "the College" in 1857, and shortly afterwards became Resident House-Surgeon to the Kent and Canterbury Hospital, Canterbury. After four years' service in that institution he joined Dr. Shaw in partnership, at Edgeware, Middlesex, and, after that gentleman's retirement, was constantly engaged in the busy life of a country practitioner, for which he proved to be typically fitted. Of robust build, self-reliant, courteous in manner, cheery in conversation, of tact and sympathy compact, he soon came to be trusted by all, the friend of high and low, rich and poor, and was appealed to for counsel in emergencies of all kinds. When he left, after twenty-eight years' residence in Edgeware, his friends and patients presented him with a handsome and substantial testimonial of their regard and esteem.

For the last twelve years he led a quieter life in Seymour Street, Portman Square, where many of his old patients, some of them occupying high positions in the State, were delighted to consult him. His health failed during the last year; and he suffered from gout and diabetes. He married, in 1865, Miss F. Mair; and they had two sons, who are both in South America. The funeral took place on Wednesday at Highgate Cemetery.

On Sunday, August 28th, Mr. George Marshall Phillips, M.R.C.S., L.S.A., entered into rest at the ripe age of 85 years. Educated at St. Bartholomew's Hospital and in Paris, he qualified in 1842, and after practising at Hertford for a short time he settled at Whitwell, in Hertfordshire, where he remained in practice for nearly fifty years. He was gifted with unusual ability, which, together with constant reading and most painstaking investigation of all cases, made him a most successful practitioner, and his opinion, formed from his ripe experience, was much valued by his medical *confrères* in the neighbourhood. A man of singularly retiring disposition, but blessed with a great fund of quiet humour, of refined artistic tastes, an enthusiastic gardener, and a sincere friend of the poor, he was universally beloved by all who knew him.

We have also to record the decease, upon September 5th, of Dr. Joseph Wood, formerly a Fleet Surgeon in H.M. Navy. Dr. Wood received his medical education at the University of Edinburgh, where, in 1866, he received the degree of M.D., and, two years later, the diplomas of the Royal Colleges of the same city. Three years after completing his student career Dr. Wood entered the Royal Navy, and became Staff Surgeon in 1880. His promotion to the rank of Fleet Surgeon followed in ten years, and in 1893 he retired upon pension, having then reached the age of 51. During the early part of his service he was engaged, as Surgeon of the *Himalaya*, in the Zulu war, and received the medal for that campaign. His death took place at "Glengall," Hurstpierpoint.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Joseph Wiener, of New York, who was for a considerable time associated with the late William Detwold in the Chair of Military Surgery in the College of Physicians and Surgeons, since affiliated with Columbia University, and one of the founders of the department of pathology in that school, aged 76; Professor Albert Landerer, of Berlin, whose name is associated with the introduction of cinnamic acid for the treatment of consumption, aged 50; Dr. Friedrich Zahn, Professor of Pathological Anatomy in the University of Geneva; and Dr. Bax, Professor of Clinical Medicine at Amiens.

The Local Government Board has issued a circular recommending urban and rural authorities to instruct their meat inspectors to act in strict accord with the principles laid down by the Royal Commission in their report of 1898 with respect to the degree of tuberculous disease which should cause the carcass of an animal to be seized.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON H. A. W. RICHARDSON has been placed on the retired list, at his own request, with the rank of Deputy Inspector-General, September 1st. He joined the Royal Navy as Surgeon, March 31st, 1874, becoming Staff Surgeon, March 31st, 1886, and Fleet Surgeon, September 21st, 1890. During the Egyptian war in 1882 he was Surgeon of the *Tamar*, and had received the medal and Egyptian bronze star granted for that campaign.

Fleet Surgeon J. H. THOMAS has been placed on the retired list, September 4th. He entered as Surgeon, February 11th, 1884, and became Fleet Surgeon, February 11th, 1900. He was Surgeon of the *Humber* during the Soudan campaign in 1884-5, and has a medal with clasp and the Khedive's bronze star.

The following appointments have been made at the Admiralty: ANTHONY KIDD, Fleet Surgeon, to the *Vivid*, additional, for Pembroke Dockyard, September 28th; JAMES C. WOOD, Staff Surgeon, and CECIL H. ROCK, Surgeon, to the *Diana*, or commissioning; HAROLD CHATER, Surgeon, to the Royal Marine Division at Forton, September 9th; DOUGLAS V. LOWNDES, Surgeon, to the *Terror*, additional, to assist the Fleet Surgeon of Bermuda Dockyard, August 31st; FREDERICK G. B. GITTINGS, M.B., Surgeon, to the *Hannibal*, August 31st; HERBERT R. H. DENNY, Surgeon, to the *Thames*, additional, for the *Forth*, September 9th; CHARLES J. E. COCK, Surgeon, to the *Pembroke*, additional, lent to Chatham Dockyard for forty-two days, September 1st; JOHN MENARY, M.D., Fleet Surgeon, to the *Good Hope*, September 2nd; ROBERT F. BOWIE, Fleet Surgeon, to the *President*, additional, for three months' hospital course, undated; JOHN MUIR, M.B., Surgeon, to the *Implacable*, on re-commissioning, September 9th; ARTHUR H. PRICHARD, Surgeon, to the *Sealark*, September 8th; EDWARD O. B. CARBERY, Surgeon, to the *Vernon*, undated; ROBERT BENTHAM, Deputy-Inspector-General, to Malta Hospital, September 15th; CHARLES JAMES, Deputy Inspector-General, to Plymouth Hospital, September 15th.

Inspector-General DUGALD MCEWAN, M.D., died on August 21st, at Bedford. He was appointed Surgeon in 1847; Staff Surgeon, April 9th, 1856; Fleet Surgeon, October 18th, 1875; Deputy Inspector-General, January 20th, 1882; and Inspector-General, January 25th, 1887. He retired from the service, April 1st, 1887. He served in the Baltic during the Crimean war in 1854-5, receiving a medal. He was made an Honorary Physician to Queen Victoria in 1887, and had been awarded Sir Gilbert Blane's gold medal.

ARMY MEDICAL SERVICE.

MAJOR H. C. THURSTON, C.M.G., Royal Army Medical Corps, to be Deputy Assistant Director-General, vice Lieutenant-Colonel E. M. Wilson, C.B., C.M.G., D.S.O., Royal Army Medical Corps, who has resigned that appointment, August 18th. Major Thurston was appointed Surgeon-Captain, February 5th, 1887, and Major twelve years thereafter. He was in the Burmese campaign in 1891, with the Wuntho Field Force, receiving a medal with clasp; he was also in the South African war in 1899-1900, being mentioned in dispatches, and made a Companion of the Order of St. Michael and St. George.

Lieutenant-Colonel JOHN HENRY BEATH, M.D., C.B., died at Stirling, aged 69. He entered the service as Assistant Surgeon, September 15th, 1857; became Surgeon, February 24th, 1872; Surgeon-Major, March 1st, 1873; and Brigade Surgeon, September 27th, 1882; retiring with the honorary rank of Deputy Surgeon-General, December 9th, 1882. He served in the Indian Mutiny campaign in 1857-9, and was at the siege and capture of Lucknow (medal with clasp); in the campaign in China in 1860 with the 3rd Foot (the Buffs), being present at the action of Sinho and the taking of Tangku and the Taku Forts (medal with clasp); and in the Egyptian war in 1882, when he was mentioned in dispatches, received a medal and Khedive's bronze star, awarded the third class of the Order of the Medjidie, and made a Companion of the Order of the Bath.

ROYAL ARMY MEDICAL CORPS.

EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

FIELD OFFICER, under orders for Madras in January next, is desirous of exchanging to South Africa.—Address, C. W. D., c.o. Messrs. Holt and Co., 3, Whitehall Place, S.W.

THE undermentioned gentlemen are appointed Lieutenants on probation, dated July 30th: WILLIAM BYAM, CHARLES RYLEY, HARRY T. WILSON, LIONEL V. THURSTON, WALTER H. HILLS, M.B.; PATRICK DWYER, M.B.; PHILLIP C. T. DAVY, M.B.; JOHN F. C. MACKENZIE, M.B.; ARTHUR W. GATER, GEORGE A. D. HARVEY, HAROLD C. WINCKWORTH, JAMES CAMPBELL, M.B.; RICHARD C. HALLOWES, M.B.; HARRY W. RUSSELL, M.B.; GEORGE R. PAINTON, MEURICE SINCLAIR, M.B.; EVELYN J. H. LUXMOORE, KENNETH A. C. DOIG, HERBERT O. M. BEADNELL, HERBERT ST. M. CARTER, M.D.; ROBERT H. L. CORDER, JOHN P. LYNCH, ALASTAIR N. FRASER, M.B.; NELSON LOW, PERCY A. JONES, CECIL R. MILLAR, AUGUSTINE T. FROST, M.B.; GEORGE H. RICHARD, HARRY C. SIDGWICK, M.B.; JOHN ST. A. MAUGHAN.

Lieutenants W. BYAM and H. ST. M. CARTER, M.D., are seconded under the provisions of Article 349 of the Pay Warrant, dated July 30th.

Lieutenant F. M. M. OMMANNEY is seconded for service under the Foreign Office, August 12th.

Lieutenant J. A. LONGLEY, M.B., from the Seconded List, to be Lieutenant, August 21st.

Major M. L. HEARN, R.A.M.C., 9th Division, 3rd Army Corps, has been selected for an appointment in North China. He proceeds to Tientsin via New York and Vancouver at an early date.

ARMY MEDICAL RESERVE.

SURGEON-MAJOR J. P. ATKINSON, M.D., having attained the prescribed limit of age, is removed from the Army Medical Reserve, July 31st.

The notification regarding the promotion of Surgeon-Captain C. E. L. B. HUDSON, F.R.C.S.Eng., contained in the *Gazette* of July 26th, is cancelled.

Surgeon-Lieutenant A. H. L. STEWART, 2nd County of London Imperial Yeomanry, to be Surgeon-Lieutenant, September 7th.

INDIAN MEDICAL SERVICE.

THE undermentioned Lieutenants, posted to the commands noted, reported their arrival at Bombay on the dates specified: F. P. CONNOR, Bengal, March 5th; W. W. JEUDWINE, Punjab, May 9th; G. H. L. WHALE, Punjab, March 21st; W. J. COLLINSON, Punjab, March 28th.

Surgeon-Major JOHN CAMPBELL, M.D., C.B., late of the Indian Army, died at Looe, Cornwall, on August 26th. He served in the Afghan war in 1841, in Sind in 1843, and in the Indian Mutiny in 1857. For his services during the siege of Lucknow he was made a Companion of the Bath.

Sir BENJAMIN FRANKLIN, K.C.I.E., Director-General Indian Medical Service, is granted three months' leave. Colonel G. BOMFORD, C.I.E., M.D., acts as Director-General during the absence of Sir B. Franklin, Lieutenant-Colonel T. E. L. Bate, C.I.E., officiating as Inspector-General of Hospitals, Punjab.

Lieutenant-Colonel J. LANCASTER, M.B., Madras Establishment, has been permitted to retire from the service, from April 1st. He was appointed Assistant Surgeon, March 31st, 1874, and became Surgeon Lieutenant-Colonel, March 31st, 1894.

The undermentioned Captains are promoted to be Majors, from July 27th: *Bengal* Establishment—P. B. HAIG, M.B., T. W. A. FULLERTON, M.B., R. H. MADDOX, M.B., E. V. HUGO, M.D., H. G. MELVILLE, M.B., H. A. SMITH, M.B., D. R. GREEN, M.D., G. MCI. C SMITH, M.B., H. M. EARLE, J. G. HULBERT, M.B. *Madras*—P. C. GABBETT, J. L. MACRAE, M.B. *Bombay*—F. E. SWINTON, S. H. BURNETT, M.B., T. JACKSON, M.B. Of these Captains Haig, Fullerton, Maddox and Hugo entered the department as Surgeon-Captains, July 27th, 1895; all the others cited entered as Surgeon-Lieutenants, July 27th, 1892, being made Surgeon-Captains, July 27th, 1895.

IMPERIAL YEOMANRY.

THE appointment of Surgeon-Lieutenant G. S. WARD to the Herts Regiment, which was announced in the *Gazette* dated March 18th, 1904, bears date May 5th, 1903, and not as therein stated.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

MAJOR T. H. OPENSHAW, M.B., F.R.C.S., C.M.G., the London Companies, resigns his commission, retaining his rank and uniform, August 27th.

Lieutenant W. H. PAYNE, the Woolwich Companies, to be Captain, August 27th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

MR. SANDERSON MELLER, late Lieutenant, 6th West Riding of Yorkshire Rifle Volunteer Corps, to be Surgeon-Lieutenant in the 1st Kent Regiment, July 16th.

VOLUNTEER RIFLES.

SUPERNUMERARY SURGEON-LIEUTENANT G. R. LIVINGSTON, M.B., 3rd (Dumfries) Volunteer Battalion the King's Own Scottish Borderers, to be Surgeon-Captain, and to remain supernumerary, September 3rd.

MR. SAMUEL G. DAVIDSON, late Surgeon-Lieutenant, to be Lieutenant in the 4th (Donside Highland) Volunteer Battalion the Gordon Highlanders, July 16th.

BRIGADE BEARER COMPANY.

THE King has been pleased to approve of the Bearer Company of the Lancaster and Border Volunteer Infantry Brigade being formed into an independent unit, to be designated the "Lancaster and Border Bearer Company, Royal Army Medical Corps (Volunteers)."

THE SOMALILAND CAMPAIGN.

THE *London Gazette* of September 2nd contains numerous and somewhat lengthy accounts of the military operations in Somaliland from January 18th, 1902, to May 31st, 1904. The dispatches are from the several officers in command of the troops engaged, and give great praise to the forces under them and to the officers directing them. Brigadier-General Manning, commanding the 1st Brigade, under date August 17th, 1903, mentions among others the services of Lieutenant-Colonel J. F. Williamson, C.M.G., R.A.M.C., who, he says, "as Principal Medical Officer has efficiently organized the medical arrangements of the Somaliland Field Force under conditions of peculiar difficulty."

General Egerton, the chief officer in command, in a dispatch dated May 30th, 1904, also says:

"Colonel J. F. Williamson, C.M.G., R.A.M.C., Principal Medical Officer. His great and valued war experience has made him a most valuable administrative medical officer. The arrangements for the care of sick and wounded, and their transport over some 350 miles of desert on occasions have been admirable. . . . The following are brought to special notice by the Principal Medical Officer, as having done particularly valuable work: Captain A. E. Hamerton, R.A.M.C.; Captain C. Hudson, I.M.S."

Captain S. de C. O'Grady, R.A.M.C.; Captain F. L. Blenkinsop, I.M.S.; and Major F. W. Gee, I.M.S., are also specially brought to notice, in the order named, by the Principal Medical Officer.

"I would also (the General writes) bring to notice the services of the R.I.M.S. *Hardinge*, which has been employed as a hospital ship throughout the operations (except for a short period), and to ask that the services may be brought to the notice of the Government of India for suitable recognition, together with the names of the officers who have commanded her: Commander A. J. G. Piffard, R.I.M.; Commander T. A. L. de Berry, R.I.M."

Colonel A. N. Rochfort, C.B., R.A., late attached to the Abyssinian Army, writing to the War Office on June 2nd last, also reports that Major J. W. Jennings, D.S.O., R.A.M.C.; Major H. N. Dunn, R.A.M.C.; and Dr. A. B. Wakeman, I.M.S., joined at Harrar, and he adds, "Major Jennings, by his sympathy and unremitting attention to the sick, won the esteem of all those with whom he came in contact."

The *London Gazette* of September 6th announces that the King has been graciously pleased to give orders for the following appointments in recognition of services during the operations in Somaliland: To be an Ordinary Member of the Military Division of the Third Class or Companion of the most Honourable Order of the Bath, Colonel John Francis Williamson, C.M.G., R.A.M.C. To be Companions of the Distinguished Service Order: Captain Corrie Hudson, I.M.S., Captain Albert Ernest Homerton, R.A.M.C., Lieutenant James Henry Horton, I.M.S.

A NAVAL TUBERCULOSIS CAMP IN AMERICA.

THE Surgeon-General of the United States Navy has completed plans for an outdoor hospital for men suffering from tuberculosis. He proposes that such men shall not be discharged or become pensioners, but shall be subject to treatment under conditions that promise a restoration to health and a preservation of useful men to the service. The Surgeon-General proposes that a farm should be purchased somewhere near the coast, at an elevation of about 2,000 ft., to which naval tuberculous patients may be sent. He believes that the camp should not be too far from the coast, or at an altitude which will make it impossible for patients to return to sea duty. He also suggests that the camp shall be open to army patients, in return for the courtesy shown the navy at the army sanatorium at Fort Bayard, New Mexico.

MEDICO-LEGAL AND MEDICO-ETHICAL.

AN ALLEGED ILLEGAL *POST-MORTEM* EXAMINATION.

ON August 5th, Mr. John Shaw Carleton, a surgeon practising at Newnham, was summoned at the Littledean Petty Sessions, to answer certain charges under the Anatomy Acts of 1832. According to a report published in the *Gloucester Journal* it was alleged (1) that he, upon July 25th, 1904, being a person lawfully qualified to practice medicine, unlawfully did practise anatomy without having obtained a license in pursuance of 2 and 3 William 4, c. 75, empowering him to do so. (2) That on the same date, being qualified to practice medicine, he unlawfully did examine anatomically the body of John Price, without the permission or direction of the surviving wife. (3) That he did unlawfully carry on anatomy at a place, to wit, the house of Emily Price, there situate, without having given at least one week's notice thereof before the first receipt or possession of the body for such purpose to His Majesty's Secretary of State for the Home Department.

Mr. W. Langley Smith prosecuted, and Mr. H. Williams defended.

The facts of the case appear to be shortly these. John Price died of heart disease on July 23rd. Prior to his death he was being attended by a Dr. Harris or his assistant, but some years ago he had been attended by Dr. Carleton. On July 23rd, Mr. M. F. Carter, Coroner for the Forest Division of Gloucester, received a police report concerning the death of John Price. On July 24th Mr. J. W. Guise, who was acting as the Coroner's deputy, received a communication from Dr. Carleton, in reply to which he sent the following letter: "Dear Carleton, I did not know I was to hold an inquest to-morrow on poor Price. I have had no instruction myself from Mr. Carter to this effect. If, however, he tells you I am to, there is no doubt I shall do so. As to the necropsy, if you cannot arrive at the cause of death without one please make it. It is my practice to leave these matters to the discretion of the doctor. If I am to hold an inquest I shall probably do so between 5 and 6 o'clock to-morrow." On July 25th Dr. Carleton called at the house of the deceased, saw the body, and made a necropsy. There was a dispute as to whether upon this occasion Walter Price, a son of the deceased, did not ask Dr. Carleton whether he had any authority to make the necropsy. Dr. Carleton, in the course of his evidence, said that he acted upon the written authority given by Mr. Guise, and that in his practice, which extended over 26 years, he had never held a necropsy without an order. He had not told the relations of his intention for fear it would distress them. He had merely wished to clear up a mystery which existed in connexion with the death. Dr. Harris made out a certificate of death from heart disease at 11.30 a.m. on Monday, July 25th.

At the conclusion of the evidence the magistrates retired, and upon returning said they considered that the summons must be dismissed. They did not think upon the evidence that a jury would convict. Dr. Carleton acted upon the best authority he could get, and the authority was the letter written by Mr. Guise.

QUESTIONS OF ETIQUETTE.

WELLINGTON writes: (1) A patient employing Dr. X. leaves him and comes to me. One night patient's child is injured, and in the absence of its mother is taken by a neighbour to Dr. X., who dresses it. Next morning the mother brings the child to me. How ought I to act towards Dr. X? (2) Dr. X. being on a holiday, a patient of his finds fault with the treatment of his *locum tenens* and desires my attendance. What should be my action?

*** (1) Our correspondent is quite justified in attending, but it would be an act of courtesy on his part to acquaint Dr. X. with the circumstances of the case. (2) An effort should be made to see the patient in consultation with Dr. X.'s *locum tenens*. If the patient refuses, our correspondent should offer to attend for Dr. X., and resign the case to the latter on his return.

RECOVERY OF FEES.

GLASGOW asks whether a L.F.P.&S.Glas. can sue for medical and surgical fees in a court of law, and whether he can keep an open shop for the sale of drugs, etc., over the counter.

*** (1) Certainly he can. (2) The keeping an open shop, though very derogatory from a professional point of view, is not illegal.

FEE OF MONTHLY NURSE UNABLE TO ATTEND.

PATER asks whether a monthly nurse can legally demand a fee, where she has been engaged for a particular time, and where, owing to the labour coming on earlier, and she not being able to attend, another nurse has had to be engaged.

*** She is entitled to her fee if she was unable to obtain other employment during the time for which she had been engaged. A common practice is to pay the nurse half the fee. A medical man is similarly entitled to recover under the same conditions, but it is seldom wise on his part to enforce his rights. Nurses, too, will often show discretion in not pressing unduly their claims in such cases.

FEE FOR ATTENDANCE ON SICK PASSENGER.

S. I. O. writes that he was recently asked by a guard of a railway company to attend to a passenger in an epileptic fit; he did so, and took charge of the patient up to the London terminus. He has since applied to the company for remuneration, but his claim has been repudiated. He wishes to know if the company is legally responsible.

*** Unfortunately, our correspondent can only claim payment from the patient for services rendered. The officials of a railway company have no authority to pledge the credit of the company for medical or surgical aid. This was decided in Cox *v.* Midland Railway Company (18 L. J. Ex. 65). In a later case, however (Walker *v.* Great Western Railway Company), it was laid down that the general manager of a railway company may pledge the company's credit for medical expenses.

SPECIAL HOSPITALS OR SPECIAL DEPARTMENTS.

E. L.—Where a general hospital is willing to provide an efficient special department it seems to us bad economy to start a special hospital. Unquestionably the foundation of special hospitals was due to the refusal of the general hospitals a generation or two ago to make adequate provision for these special departments, and to the opposition to specialism which was at that time manifested by many leading members of the medical profession; but this has all passed away. The need for specialists is generally recognized, and there can be no reason why a special department in connexion with a general hospital should not be as efficient as a special hospital.

OPTICIANS AS OCULISTS.

"G. P." and "Nemo" write to complain of the claims put forward by opticians to act as eyesight specialists. This matter has been repeatedly referred to in the BRITISH MEDICAL JOURNAL, and is being dealt with by the Medico-Political Committee. As these opticians are not members of the medical profession no question of medical ethics arises except where medical practitioners are asked to countenance these persons in any way either by acting as examiners to the bodies which grant them diplomas, or by assisting them in their work.

E. G. G.—We may refer our correspondent to the report of the Medico-Political Committee (see SUPPLEMENT, July 16th, p. 36) and to the discussion at the Representative Meeting (See SUPPLEMENT, August 6th, p. 120), both of the present year. The matter has also been repeatedly referred to in this column. It would be unfair to condemn all opticians, but medical men should be cautious how they afford any assistance to those who are making claims to a knowledge and skill which unquestionably they do not possess.

SHOULD INSTRUMENTS AND APPLIANCES BE CALLED AFTER THE NAMES OF THEIR INVENTORS?

D. L. S.—This practice is unquestionably open to abuse, but, as our correspondent says, precedents can be quoted in its favour. It must therefore be regarded as a matter of taste; each case must be considered on its merits, and, as the Ethical Committee has pointed out, much must depend upon the real utility of the invention or improvement to which the name is to be attached.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

MR. ARTHUR THOMSON, M.A.Oxon., M.B.Edin., Professor of Human Anatomy and Deputy Regius Professor of Medicine, has been elected a member of the General Medical Council for a period of five years.

UNIVERSITY OF CAMBRIDGE.

SIR ISAMBARD OWEN, M.A., M.D., of Downing College, has been appointed a Governor of the University College of Wales, Aberystwyth.

Mr. H. E. Durham, M.A., M.B., King's, and Mr. G. S. Graham-Smith, M.A., M.B., Pembroke, have been elected John Lucas Walker Students in Pathology.

The degree of Doctor of Science, *honoris causâ*, was, on August 17th, conferred on Professor A. Kossel, of Heidelberg, Professor A. Engler, of Berlin, Professor H. F. Osborn, of New York, and Sir W. T. Thiselton-Dyer, of Kew.

CONJOINT BOARD IN ENGLAND.

THE following gentlemen passed the First Examination of the Board in the subjects indicated at the quarterly meeting of the Examiners:

Chemistry—H. R. L. Allott, R. W. Annison, J. J. H. Beckton, V. H. Bowen, N. B. Benjafield, V. D. B. Bransbury, J. Brierley, B.A.Oxon.; C. J. Butler, E. J. Chambers, B. Dale, D. Davies, G. A. Dempster, F. N. Doubleday, F. Dumphy, W. J. I. Dwyer, E. C. East, B. C. Eskell, E. R. Evans, A. K. Glen, B. G. Goodwin, P. T. Harper, F. M. Harvey, L. A. Harwood, MacW. Henry, G. Holman, V. P. Hutchinson, G. James, B. A. Keats, C. F. V. Kebbell, S. H. Kingston, F. M. Lipscomb, R. A. Morrell, S. P. Mart, S. Mozumder, J. J. O'Mullane, A. B. Pettigrew, C. C. Pickles, A. L. Saul, A. B. Scott, H. Spitz, Shepheard, E. R. Sircom, K. Wolferstan, R. S. S. Statham, S. S. M. Wood, H. H. S. Templeton, H. E. Wall, J. L. Waller, S. Williams, C. R. Woodruff.

Practical Pharmacy—C. E. H. Adam, C. H. F. Atkinson, J. H. Bankes, E. C. Banks, E. C. P. Barnes, A. Baxendale, A. M. Benett, W. P. Bonner, F. Brache, A. J. Brown, J. Browne, R. G. Buckby, J. A. Bryne, R. S. Capon, J. P. Clarke, A. H. Clough, R. Cock, P. S. Connellan, H. Cooper, B.A.Camb.; S. Coram, A. Cordon, H. P. Costobadie, H. R. Cotton, R. M. Dennys, W. J. I. Dwyer, J. G. Edwards, H. B. Farrant, R. Farrant, A. E. Foerster, E. H. Good, R.S. Graham, G. C. Gray, J. H. Gurley, C. P. R. Harvey, D. Havard, G. A. Hayman, P. K. Hill, G. M. Huggins, F. W. Hobbs, E. C. Holtom, S. F. Huth, H. M. Inman, B.A.Oxon.; H. G. Janion, W. G. Jones, E. McIntyre, P. W. Matthew, T. M. Miller, F. C. Morgan, J. F. H. Morgan, B. N. Murphy, F. W. Murray, A. E. Nicholls, F. F. O'Mahony, T. G. Percival, E. Prall, F. C. Pridham, R. B. N. Reade, R. A. Robinson, L. P. Sanders, J. E. Scales, W. S. Simpson, T. W. R. Strode, F. L. Smith, W. R. Taylor, H. E. Wall, F. Thompson, E. R. B. Von Braun,

L. F. K. Way, C. H. Welch, P. C. West, H. B. Wickham, W. E. Wilks, H. G. Williams, W. H. Williams, W. T. Williamson.

Elementary Biology.—R. B. Abraham, T. C. R. Archer, H. W. L. Allott, C. W. T. Baldwin, F. Balkwill, W. E. P. Briggs, A. C. B. Biggs, C. C. C. Brace, W. V. Corbett, E. E. Davies, R. P. Davies, G. A. Dempster, D. C. Druitt, E. C. East, G. Holman, F. H. Fawkes, C. W. Gee, F. J. Gordon, B. A. Keats, C. F. V. Kebbell, S. C. Langford, K. G. Haigh, A. W. Havard, R. A. Hosegood, S. P. Mort, G. L. Lawlar, W. S. Luly, G. K. MacLean, P. E. H. Patey, A. T. Pitts, J. St. A. Titmas, A. R. Wise, E. A. Pywell, I. Ridge-Jones, G. G. Rigby, A. L. Robinson, N. F. Sinclair, J. G. Watson, G. F. Turner, D. Wainwright, and P. A. With.

PUBLIC HEALTH

AND

POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

ON seventy-six of the largest English towns, including London, 8,109 births and 5,335 deaths were registered during the week ending Saturday last, September 3rd. The annual rate of mortality, which had been 22.1, 22.7 and 20 5 per 1,000 in the three preceding weeks, further declined last week to 18 2 per 1,000. Among these large towns the death-rates ranged from 6 4 in Hornsey, 7 8 in Kings Norton, 8.2 in Derby, 11.0 in Blackburn, 11 1 in Southampton, 11 6 in Halifax, 12.0 in Smethwick, and 12.3 in Croydon, to 26 3 in Stockport and in Hull, 26.6 in Salford, 27 8 in Liverpool, 27 4 in Plymouth, 27 5 in Middlesbrough, 28 5 in Hanley, and 28.7 in Bootle. In London the rate of mortality was 16.4 per 1,000, while it averaged 19 0 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 5 6 per 1,000 in the seventy-six large towns; in London the rate was 4 5 per 1,000, while among the seventy-five other large towns the death-rates from these diseases ranged upwards to 9 2 in Middlesbrough, 9.3 in Grimsby, 9 6 in York, 10.4 in Burnley, 10.9 in Liverpool, 11 3 in Hull, 12 4 in Warrington, 13.0 in Hanley, 14 1 in Wigan, and 14.4 in Bootle. Measles caused a death rate of 1.1 in Salford, 1.2 in Manchester, 1.8 in Plymouth, and 2.5 in Bootle: diphtheria of 1.8 in Rochdale: whooping-cough of 1.4 in Merthyr Tydfil, 2.7 in Norwich, 3.0 in Burton-on-Trent, and 3 9 in Grimsby; "fever" of 1.5 in Ipswich; and diarrhoea of 8.0 in Newport (Mon.), 8 1 in Stockport, 8 3 in York, 8.6 in Middlesbrough, 9.3 in Liverpool, 10 3 in Hull, 10 6 in Hanley, 11.6 in Warrington, 11.8 in Bootle, and 12 5 in Wigan. The mortality from scarlet fever showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Warrington, 1 in Preston, and 1 in Gateshead, but none in any other of the seventy-six large towns. The number of small-pox patients in the Metropolitan Asylums Hospitals, which had been 21, 18, and 13 at the end of the three preceding weeks, had further declined to 9 at the end of last week; 2 new cases were admitted during the week, against 2 and 0 in the two preceding weeks. The number of scarlet fever cases remaining under treatment in these hospitals and in the London Fever Hospital on Saturday last, September 3rd, was 1,819, against 1,763, 1,745, and 1,781 on the three preceding Saturdays; 266 new cases were admitted during the week, against 189, 198, and 263 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, September 3rd, 927 births and 530 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 15 7, 17.1, and 16.2 per 1,000 in the three preceding weeks, further fell last week to 16.0 per 1,000, and was 2 2 per 1,000 below the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 9.2 in Perth and 11.7 in Leith, to 18.0 in Greenock, and 18.6 in Glasgow. The death-rate from the principal infectious diseases in these towns averaged 3.0 per 1,000, the highest rates being recorded in Glasgow and Greenock. The 284 deaths registered in Glasgow included 34 which were referred to diarrhoea, 16 to whooping-cough, 3 to measles, 2 to diphtheria, 2 to "fever," 1 to small-pox, and 1 to scarlet fever. Three fatal cases of whooping-cough, and 3 of "fever" were recorded in Edinburgh; 7 of diarrhoea and 3 of whooping-cough in Dundee; and 9 of diarrhoea in Aberdeen, 4 in Paisley, and 2 in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, August 20th, 568 births and 355 deaths were registered in six of the principal Irish towns, against 591 births and 379 deaths in the preceding period. The mean annual death-rate in these towns, which had been 15.0, 17 8, and 17.5 per 1,000 in the three preceding weeks, fell to 16.0 per 1,000 during the week under notice, this figure being 6.7 per 1,000 below the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 7.8 in Waterford and 10.9 in Limerick to 18 6 in Belfast, and 25.2 in Dublin. The death-rate from the principal zymotic diseases during the same period and in the same six Irish towns averaged 2.3 per 1,000, or 0.1 per 1,000 less than during the preceding week, the highest figure, 5.9, being recorded in Dublin, while Cork and Limerick recorded no deaths under this heading at all. The high rate in Dublin was due to diarrhoeal diseases, to which cause 33 cases were there ascribed, and 16 in Belfast.

During the following week, ending August 27th, the births in the same six Irish towns numbered 520, and the deaths 341, while the mean annual death-rate rose to 3 0 per 1,000, this figure being 2.0 lower than the corresponding rate in the seventy-six English towns. The figures ranged from 10.9 in Limerick and 11 7 in Waterford to 18.6 in Belfast and 24.5 in Dublin. The death-rate from the principal zymotic diseases during the same period and in the same six towns averaged 3.0 per 1,000, or 0 7 higher than during the preceding week, the highest figure, 6.7, being recorded in Dublin, while Limerick still recorded no deaths under this heading at all. In Dublin 35 deaths were ascribed to diarrhoeal diseases, and in Belfast, 17 from the same disorder. Measles also accounted for 7 of the Dublin deaths from zymotic disease.

PLUMBERS' WORK.

THE Worshipful Company of Plumbers has issued a second portfolio of diagrams illustrating on a reduced scale the work of the plumber and some of the scientific principles underlying it. The diagrams are accompanied by descriptive and explanatory notes. The new set of diagrams are of a more advanced character than those comprising the first series, and are designed for the use of those following the intermediate and final courses of the Company's graded syllabus of instruction for plumbers. The two sets are intended to secure greater uniformity in the instruction of apprentices and others engaged in the plumbing trade, and have been prepared by a committee of experienced plumbers. It is believed that the general adoption of these diagrams in technical classes would tend to set up a higher standard of plumbing practice throughout the country, affording a still further guarantee against the admission of sewer gas into dwellings and the pollution of water.

TREATMENT OF SEWAGE AT MANCHESTER.

THE Rivers Department of the City of Manchester has just issued its annual report for the year ending March 30th, 1904. For several years past the department has furnished students and workers at sewage problems with the instructive particulars of the great experiments at Davyholme, and the present volume is no exception to that rule. The original works first came into operation in the spring of 1894, and were designed for chemical treatment. During the past few years the new works for bacterial treatment of the sewage have been in process of construction and are now nearly completed; consequently the greater proportion of the flow is dealt with by bacterial methods and chemical treatment will shortly be abandoned. The sewage is screened and then passed either through open septic tanks on to the half-acre contact beds or after simple sedimentation on to the storm beds. A certain proportion is chemically treated with lime and copperas, and after settlement in tanks is further purified on the storm beds or passes direct into the Ship Canal. The sludge which settles in the sedimentation tanks or septic tanks flows by gravity or is pushed by manual labour into channels leading to two ejectors, from which it is forced under air pressure into two storage tanks near the banks of the Ship Canal. From these tanks it flows by gravity into the sludge steamers and thus to the open sea.

The total area of land comprising the Davyholme Works is now 187 acres, of which 10 are occupied by precipitation and open septic tanks; 15 by buildings, sludge tanks, etc; 46 by bacteria beds, complete or being constructed, and 26 by storm water filters. The volume of sewage delivered at the works from March to March was 13,154,6-0,000 gallons, or 35 million gallons per diem. From this flow some 4,000 tons of detritus has been removed by the screening process, and 3,527,217,000 gallons of sewage has been passed into the open septic tanks, or an average of 9½ million gallons per day. About 6 tons per million gallons of this sewage becomes sludge as compared with 14 tons, which was the average amount of sludge per million gallons obtained by chemical treatment during the previous four years. The report, which is signed by the Chairman, Sir Bosdin Leech, gives a number of particulars as to the actual workings of the department, and the scientific data furnished by the Superintendent, Dr. J. G. Fowler, are placed in an appendix. This latter includes many tables and charts, and deals in the main with experiments on gauging sewage flow, with experimental filtration of effluent from chemical treatment, with the chemical characteristics of the filtrate from the half-acre bacteria beds, and with various miscellaneous work, all of which will prove of value to workers in sewage treatment.

DIPHTHERIA IN BRISTOL.

ONE of the most interesting portions of Dr. Davies's annual report on the health of Bristol for 1903 deals with the recent history of diphtheria in the city. The comparative returns from the Registrar-General's annual summary show that the diphtheria mortality in Bristol during the decade 1890-9 yielded the low average rate of 14 per 100,000 living, and in 1899 the even lower rate of 10. These figures of course compared very favourably with other great towns. But in 1900 the figure rose to 31, in 1901 to 37, and in the following year to 54. In 1903 there is the decline of the wave, and the figure is 35. The return of 54 for 1902 was the highest of all the great towns, and was 26 per 100,000 above the average. Moreover, from 1900 to 1902 the fatality of diphtheria steadily increased in Bristol, just as it has in other towns similarly invaded by a virulent type of bacillus. Dr. Davies points out that the recrudescence of the disease in 1900-3 has generally avoided the congested slum districts of the older parts of the city and has fallen heavily upon the more recently-built districts on the fringe. A large proportion of these new districts consists of a working-class population, especially susceptible, not because they are insanitary but because there is "a preponderance of young and susceptible children of school ages amongst such a population." Taking a broad view of the facts both of increased fatality and of distribution, Dr. Davies summarizes his view in the following words: "The outstanding features of the 1900-1 outbreak in Bristol were (*a*) the introduction into the city of a new and virulent variety of the bacillus, and (*b*) personal spread by unrecognized cases presenting few or no characteristics, but containing diphtheria bacilli in nose or throat." Acting on this belief of personal transmission of the disease and in its unsuspected persistence in nose and throat the authorities at Bristol have made systematic search for the bacillus in contacts, and isolation and treatment of such cases without resort to school closure, "which seems a quite inadequate measure and sometimes actually harmful in the case of diphtheria."

Dr. Davies's conclusions as to the part played by the pseudo-diphtheria bacillus of Hofmann are not in entire accord with the recently-expressed view of Dr. Thomas and others as a result of experience in the metropolis. The Bristol experience points to the view that the presence of the Hofmann bacillus amongst children who have been in direct association with cases of clinical diphtheria is a sign of danger, as "their frequent appearance in both stages of throat diphtheria, and their constant occurrence amongst contacts with clinical diphtheria (especially in schools) lead us to attach serious importance to them when found in intimate association with an outbreak of recognized diphtheria, and to ascribe to them in such association the rôle common to the mildest forms of scarlet fever or of small pox, that is, of keeping alive an infection which, if marked clinical cases alone occurred, might readily be blotted out." This is a clearly defined position, and on the whole we are of opinion that the occurrence of the Hofmann bacillus must, for the present, be viewed with suspicion.

Professor Stanley Kent, who had undertaken the bacteriological examinations at Bristol in 1902, reports that of 5,545 examinations made for the Klebs-Loeffler bacillus 768 cases showed the specific organism to be present

in free growth, 465 in scanty growth, and 1,404 revealed the pseudo-forms, including Hofmann. Streptococci were abundant. Professor Kent concludes that evidence is accumulating to prove "that the Hofmann bacillus may, under certain conditions, produce a disease undistinguishable from ordinary diphtheria produced by the Klebs-Loeffler organism."

THE HEALTH OF ESSEX.

In his Annual Report to the Essex County Council Dr. Thresh summarizes the annual reports of the local Medical Officers of Health, while also dealing with the statistics of the county as a whole. The population for the middle of 1903 is estimated at 881,831. During the year 19,158 births were registered in the urban districts, and 6,125 in the rural districts. The birth-rate for the county in 1903—28.6—is 0.2 greater than that for England and Wales. The relative birth-rate position for Essex has therefore improved, since it has generally been below that of the rest of the country.

The total deaths in the county numbered 10,504, of which 7,343 occurred in the urban, and 3,161 in the rural, districts. The excess of births over deaths is 14,779. The natural increase for the year reaches, therefore, the remarkably high figure of 16.7, exceeding that for England and Wales by 3.7, the difference being almost entirely due to the low death-rate for the county. The death-rate for 1903 was 11.9, the lowest on record—12.6 being the second lowest.

A valuable feature of this year's report is that the corrected death-rates are given for a number of the districts, which in this way can be compared with one another. Except for Ilford, the rural districts have a lower corrected death-rate than the urban, while of the urban districts Ilford, Chelmsford, Leyton, Walthamstow, occupy in the order mentioned a relatively better position than East Ham, Southend, Colchester, and Barking. The former are above the average for urban districts, the latter below. The infantile mortality-rate for the county was 101. For urban districts it was 106, for rural 87. For England and Wales it was 132. The low infantile mortality-rate is, of course, largely due to the low diarrhoea mortality, which for Essex was less than half the average.

The number of deaths from the chief zymotic diseases was practically the same as for 1902, and far below the average, especially for scarlet fever, typhoid fever, and epidemic diarrhoea.

The death-rates per 1,000 for the administrative county were: Small-pox 0.014, measles 0.229, scarlet fever 0.062, whooping-cough 0.302, diphtheria 0.168, fevers 0.116, diarrhoea 0.33. Total zymotic death-rate 1.22, the lowest on record.

In regard to cancer, Dr. Thresh points out that the county death-rate is considerably below that of England and Wales, although the physical conditions which have been supposed to lead to a high cancer mortality are markedly present in Essex (a retentive clay soil, in many parts marshy and liable to flooding).

The phthisis death-rate was 0.881, and for other tuberculous diseases 0.371.

Small-pox cases for 1903 were 96 with 8 deaths, compared with 1,334 cases with 181 deaths for 1902. The two chief outbreaks were at Barking (27 cases) and Colchester (24 cases). In each instance the disease was imported by a member of the "tramp" class. Out of the 96 cases 5.4 were definitely traced to tramps.

Scarlet fever has been less prevalent in proportion to population, but the case mortality has risen from 1.4 for 1901, 1.5 for 1902, to 2.2 for 1903. Diphtheria has also diminished. Case-rate, 1.88 per 1,000; case mortality, 8.9 per cent. for the administrative county. For typhoid fever the case-rate was 0.67 per 1,000 and the case mortality 17.3 per cent. Dr. Thresh again draws attention to the different figures for the Thames Valley districts (case-rate, 1.17; death-rate, 0.20), and for the other parts of the county (case-rate, 0.47; death-rate, 0.08). Of the 589 cases, about 110 are definitely referred to the consumption of contaminated shellfish.

A very valuable part of the report, and one which occupies no less than 48 pages, is a discussion and description of the systems of sewage disposal in use in the county. At least five different methods of sewage disposal are in use in Essex—that is, (1) simply discharged in crude state into the sea or tidal river; (2) similar, but after passage through a septic tank; (3) chemical precipitation; (4) bacterial treatment; (5) purified by irrigation on land.

The work done in the County Public Health Laboratory at Chelmsford shows 1,288 bacteriological examinations, of which 1,144 were swabs for diphtheria bacilli and 345 chemical examinations. These figures do not show a great or sufficient appreciation of the benefits of bacteriological and chemical examinations, although it must be remembered a few of the districts have their own laboratories.

The report concludes with a summary of each annual report received from the different urban and rural sanitary districts.

THE PAYMENT OF NOTIFICATION FEES.

A MEDICAL practitioner forwards us a letter which he has sent to a local newspaper in a rural district anent the non-payment by a rural district council of four notification fees. The facts as related by him are as follows: In three months this practitioner notified seven cases, and in due course received payment for three of these. In answer to repeated inquiries he was informed that the council refused to pay him for the remaining four cases, and had instructed the Medical Officer of Health not to answer any questions on the subject. They added that the matter had been laid before the Local Government Board. At the end of a year, no answer having been received to repeated inquiries, the practitioner then threatened legal proceedings; but before taking these, wrote to the Local Government Board. He was informed by an official of this Board that the Board had no power to intervene where an authority decided to withhold notification fees, and that his only remedy was in a court of law. On now initiating proceedings in the County Court he was informed that the defence would be that all accounts against public authorities were invalidated after six months from their accruing, and he had therefore to withdraw his action without having secured a remedy.

*** On the facts as before us, the practitioner appears to have been clearly entitled to his fees in the first instance. There may be another side to the question which has not been revealed to us. The practitioner is entitled to his fee if the certificates were given in good faith, and if he was in attendance on the patients. Even when a mistake in diagnosis has been made the fee should be paid, unless the practitioner has withdrawn the certificate. This is clear from the following extract from a letter of the Local Government Board: In cases of differing diagnoses, "unless . . . the sanitary authority satisfy themselves that they have sufficient grounds for doubting the good faith of the certifying practitioner, the authority should, in the Board's opinion, pay the fees for the certificates."

THE NOTIFICATION OF INFECTIOUS DISEASES BY MEDICAL MEN.

DR. H. C. MARTIN (Wroughton, Wilts) writes: Is it necessary for every medical man who makes an official report of a case of infectious disease to the local authorities (and for which he receives 2s. 6d.) to personally visit the patient and assure himself from what disease the patient is suffering? or is it enough for the medical man to be told by, say, the mother of the patient that one of her children is ill from such-and-such disease, but not ill enough to require medical attendance, and on this evidence alone to report the case to the local authorities?

*** Legally the medical practitioner must be in attendance or "called in," from which it may be inferred that previous to notification he must personally examine the patient. Certainly such a course should be the rule in order to avoid accidents and mis-notifications.

ATTENDANCE ON SMALL-POX PATIENTS.

VARIOLA does not appear to have any claim against the Local Sanitary Authority as they did not engage him. The Sanitary Authority ought to pay, even though not legally liable.

TUBERCULOSIS AMONG POSTAL WORKERS.—A conference of Post Office employés was held on August 27th. Mr. C. H. Garland said it was proposed to elect a Provisional Committee to carry out the necessary preliminary arrangements in connexion with the movement for securing a sufficient amount of accommodation in sanatoriums for all the cases of consumption which were likely to occur among postal servants. The original idea was to establish a sanatorium for themselves exclusively. When, however, the project was launched for providing sanatorium accommodation for the whole of the workers of this country, it was thought desirable to associate themselves with it. The National Committee was formed under the auspices of the Hospital Saturday Fund, and its scheme would have the support of the working classes generally. By allying themselves with those identified with the wider movement they would have placed at their disposal a large amount of expert opinion and advice. The proposal of the National Committee was to erect a sanatorium by public subscriptions, and the beds were to be endowed by friendly societies, trade unions, and other organizations. The object of the postal movement was to create a fund in order to reserve for the use of postal employés in that sanatorium a certain number of beds. The Postmaster-General had practically given his consent to their scheme, which included a voluntary payment by members of the postal staffs of 2s. per annum. He was told by the chief medical officer of the Post Office that a subscription of 2s. a year would produce a sufficient sum to provide all the accommodation required for Post Office cases, and would probably leave a surplus to pay the travelling expenses of those coming from a distance. In reply to questions Mr. Garland said there was no intention on their part to appeal for subscriptions outside the postal staffs. There would be a public appeal made by the National Committee for funds with which to build the sanatorium. The beds would be under the control of the organizations which endowed them. He could not say definitely where the sanatorium would be erected, but negotiations were going on for the acquisition of a site about seventeen miles from Hastings. The more hopeful members of the National Committee considered that building operations would be started early next year, while others thought that they would not be started till the middle of the year. The subscription of 2s. a year by postal workers would entitle them to accommodation at the sanatorium free of all charge, and in addition their sick pay would be continued for six months. After further discussion, a provisional committee was elected to carry out the necessary preliminary arrangements.

MEDICAL MAGISTRATE.—The Lord Chancellor has added the name of Charles Gibson, M.D., Harrogate, to the Commission of the Peace for that town.

BEQUESTS TO MEDICAL CHARITIES.—Miss Rebecca Mary Tothill, late of Stoke Bishop, Gloucester, has bequeathed £50 each to the Mary Carpenter Home for Feeble-Minded Girls at Bristol; the Home for Children, Bristol (formerly known as the Canadian Home for Little Girls); the Bristol District Nurses Society; and the Preventive Home, Royal Fort, Bristol. Miss Julia Moore, of 23, Bolton Street, Piccadilly, who died on July 12th, in her 101st year, bequeathed £100 each to St. George's Hospital and the Middlesex Hospital.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BANBURY: HORTON INFIRMARY.—House-Surgeon, resident. Salary, £80 per annum.

BATH ROYAL UNITED HOSPITAL.—House-Surgeon, resident. Salary, £80 per annum.

BERKSHIRE COUNTY COUNCIL.—County Medical Officer of Health. Retaining fee of £52 10s. per annum with fee of £3 3s. per day for special services.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House-Surgeon. Salary, £80 per annum and notification fees.

BIRMINGHAM: GENERAL HOSPITAL.—(1) House-Surgeon. Salary at the rate of £50 per annum. (2) Resident Pathologist. Salary, £100 per annum.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon. Salary, £170 per annum, and £30 for cab hire.

BOURNEMOUTH: NATIONAL SANATORIUM FOR CONSUMPTION AND DISEASES OF THE CHEST.—Resident Medical Officer. Salary, £10 per month.

DEVONPORT: ROYAL ALBERT HOSPITAL AND EYE INFIRMARY.—Assistant House-Surgeon. Salary, £50 per annum. Appointment for six months.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £40 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Eight Clinical Assistants in Out-patient Department.

GORDON HOSPITAL FOR FISTULA, Vauxhall Bridge Road.—House-Surgeon. Honorarium, £15 15s. for six months or £30 for twelve months.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—Pathologist. Salary, 50 guineas per annum.

HALIFAX UNION POOR-LAW HOSPITAL.—Resident Medical Officer. Salary, £120 per annum and £20 for dispensing medicines.

HEREFORD COUNTY AND CITY ASYLUM.—Assistant Medical Officer, resident. Salary, £150 per annum.

INVERNESS DISTRICT ASYLUM.—Assistant Medical Officer, resident. Salary, £100 per annum.

LEICESTER INFIRMARY.—Clinical Clerk, resident. Honorarium, £10 10s. for six months.

LIVERPOOL INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer. Salary, £120 per annum.

LONDON HOSPITAL, Whitechapel, E.—Physician.

LONDON OPEN AIR SANATORIUM, Pinewood, near Wokingham.—Resident Assistant Medical Officer. Salary, £100 per annum.

MANCHESTER TOWNSHIP.—Junior Resident Assistant Medical Officer at the Workhouse. Salary, £110 per annum.

METROPOLITAN HOSPITAL.—(1) Casualty Officer. (2) House-Physician. (3) House-Surgeon. (4) Assistant House-Physician. (5) Assistant House-Surgeon. Salary for (1) at the rate of £150 per annum, for (2) and (3) £40 per annum, and (4) and (5) £30 per annum.

MONTROSE ROYAL ASYLUM.—Junior Assistant Medical Officer. Salary, £125 per annum.

QUEEN'S JUBILEE HOSPITAL, Earl's Court, S.W.—House-Surgeon, resident. Salary at the rate of £52 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—House-Physician, resident. Salary at the rate of £80 per annum.

ROTHERHAM HOSPITAL AND DISPENSARY. Senior House-Surgeon. Salary, £110 per annum.

ST. MARY'S HOSPITAL, Paddington.—Medical Officer in charge of X ray Department. Salary, £150 per annum.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—Lecturer on Physics.

SALISBURY INFIRMARY.—Assistant House-Surgeon, resident. Salary, £50 per annum.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon, resident. Salary, £40 per annum.

TOTTENHAM HOSPITAL.—House-Physician, resident. Salary, £60 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House-Surgeon. Salary, £50 per annum.

WINCHESTER: ROYAL HANTS COUNTY HOSPITAL.—House-Surgeon, resident. Salary, £65 per annum, increasing to £75.

WISBECH: NORTH CAMBRIDGESHIRE HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-Surgeon, resident. Honorarium at the rate of £75 per annum.

APPOINTMENTS.

BURNET, E., M.B., Ch.B.Vict., District Medical Officer of the Parish of Birmingham.

CARSE, W. H., M.B., C.M.Edin., District Medical Officer of the Rochdale Union.

CODD, J. A., M.D.Lond., B.Sc., Medical Officer of Health, Heath Town Urban District.

CRUTTWELL, H. A., L.R.C.P. & S.Edin., L.F.P.S.Glasg., District Medical Officer of the Chertsey Union.

CUDMORE, Arthur M., M.B., F.R.C.S., Surgeon to the Adelaide Hospital, South Australia.

CUMPSTON, T. H. L., M.B., B.S., Resident Medical Officer, Parkside Lunatic Asylum, South Australia.

EDLESTON, R. S. C., M.R.C.S., L.R.C.P. Lond., District Medical Officer of the Bakewell Union.

EDMONSTON, W. C., M.B., C.M.Aberd., District Medical Officer of the Pembroke Union.

FLANNERY, J. G., L.R.C.P. & S.I., Certifying Factory Surgeon for the Tubercurry District, County Sligo.

GRAHAM, S. G., M.R.C.S., L.R.C.P. Lond., Medical Officer of Health for the Watchet Urban District.

GRIFFITH, O. W., L.R.C.P. & S.Edin., District Medical Officer of the Pwllheli Union.

HAWKESWORTH, T. A., M.D.Lond., M.R.C.S.Eng., District Medical Officer of the Henley Union.

ST. THOMAS'S HOSPITAL.—The following gentlemen have been selected as House-Officers from Tuesday, September 6th, 1904:

Resident House-Physicians.—B. Higham, M.R.C.S., L.R.C.P.; W. Haward, M.B., B.S.Durh., M.R.C.S., L.R.C.P.

House-Physicians to Out-patients.—A. G. Gibson, B.A., M.B., B.Ch.Oxon., B.Sc. Lond.; K. Takaki, M.R.C.S., L.R.C.P.

Resident House Surgeons.—H. S. Bennett, M.R.C.S., L.R.C.P.; N. C. Carver, B.A., B.C.Cantab., M.R.C.S., L.R.C.P.; A. C. Birt, M.R.C.S., L.R.C.P.; G. T. Birks, M.A., M.B., B.C.Cantab.

House-Surgeons to Out-Patients.—H. A. Kisch, M.R.C.S., L.R.C.P.; G. R. Footner, B.A.Cantab., M.R.C.S., L.R.C.P.; R. E. G. Gray, M.A.Cantab., M.R.C.S., L.R.C.P.; J. C. F. D. Vaughan, M.R.C.S., L.R.C.P.

Obstetric House-Physicians.—(Senior) J. P. Hedley, M.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.; (Junior) H. I. Pinches, M.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.

Ophthalmic House-Surgeons.—(Senior) H. S. Staunus, M.B.Lond., M.R.C.S., L.R.C.P.

Special Departments.—Throat.—T. B. Henderson, M.A., M.B., B.Ch.Oxon.; R. E. Whitting, B.A., B.C.Cantab. Skin.—W. L. Harnett, M.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.; F. M. Gulley, B.A.Cantab., M.R.C.S., L.R.C.P. Ear.—T. Guthrie, M.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.

Some other gentlemen received an extension of their appointments.

SHAW, William, M.D., Honorary Physician to the West Kent General Hospital, Maidstone, *vice* C. E. Hear, M.D., resigned.

WYNN, William H., M.D., B.Sc.Lond., M.Sc., M.B., B.Ch.Birm., Casualty Assistant Physician to the General Hospital, Birmingham.

DIARY FOR NEXT WEEK.

POST-GRADUATE COURSES AND LECTURES.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m.: Monday, Skin Diseases; Tuesday, Medical Cases; Wednesday, Surgical Cases; Thursday, Surgical Cases; Friday, Eye Cases.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BLANDFORD.—On August 27th, at Harland House, Norton-on-Tees, to Dr. and Mrs. Laurence J. Blandford, a son.

KIRKBY.—On September 5th, at 87, Earlsfield Road, Wandsworth Common, the wife of R. C. Kirkby, M.R.C.S., L.R.C.P., of a son.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Arundel Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

PLUMBAGO asks suggestions for treatment of the following case: A child fell and struck its nose against a tin of blacklead. There is now a purple-blue line beneath the epidermis, extending horizontally across the nose.

DUBIOUS will be grateful for any hints as to the treatment of a patch of ringworm on the scalp of a boy aged 10 years. The disease has existed for twelve months and has resisted treatment by the application of iodine, oleate of mercury 10 per cent., sulphur ointment, Coster's paste, chrysarobin ointment, etc. On more than one occasion, after the disease has apparently been cured, it has developed afresh.

NEMO writes: I should be glad to know from you or any of your readers whether there is any literature dealing with the therapeutic value of rum, or whether any of your readers are in the habit of prescribing rum in preference to any other alcoholic beverage in certain cases; if so, in what particular cases they find it to be of special value.

TREATMENT OF TUBERCULOUS BONE DISEASE.

G. V. writes: I have a case, a young lady, who has suffered from tuberculous inflammation and necrosis of many of the bones (but with good health and spirits all the time) for now fifteen years. I would like to know if any serum treatment would do her good, or perhaps cure her. All remedies, change of air, etc., are useless.

ANSWERS.

H. R.—If the appliance in question leaves "an unsatisfied feeling," its use is injurious, and tends to produce neurasthenia.

ALBERT.—Chavasse's *Advice to a Wife* (London: J. and A. Churchill. 2s. 6d.) and *Advice to a Mother* (London: J. and A. Churchill. 2s. 6d.) will probably meet our correspondent's views.

THE correspondent who has forwarded to the Medical Secretary a marked copy of a pamphlet on Catarrhal Deafness is requested to communicate his name.

INTRACTABLE PSORIASIS.

DR. J. F. MACGREGOR (Morvern, Argyllshire) writes: If your correspondent would consult Dr. Byrom Bramwell's *Clinical Studies* (R. and R. Clark, Limited, Edinburgh), vol. ii, Part III, which is published quarterly, he will there find a very full account of cases, with illustrations, of the successful treatment of psoriasis by thyroid.

DR. THOMAS HAYES (Rathkeall, Ireland) writes: I have had a case of intractable psoriasis which was treated in hospital and at Harrogate without result. A gentleman, aged 75, was covered from head to foot with psoriasis, and after protracted treatment extending over a year was perfectly cured by the following treatment: Bran or linseed meal baths at temperature 100° daily; applications daily of a solution of liq. carb. detergens; application of creosote ointment occasionally to relieve the itching, and the administration internally of iodide of potassium in infusion of cinchona.

G. R. S. writes: Three years ago during a small-pox scare I vaccinated two middle-aged women. These had been under my care for two years or more, suffering from psoriasis, and had benefited but little from the usual treatment. They both suffered very badly from the vaccination, but both lost all trace of psoriasis in two to three weeks' time. And

there has been no return of the rash in one at any rate, for I saw her only a week or two ago. The second woman I lost sight of about twelve months ago.

G. F.—Luff and Page's *Manual of Chemistry* and Mitchell Bruce's *Materia Medica*, both published by Cassell and Co., would probably meet the requirements of a candidate for the Assistant's Examination of the Society of Apothecaries. Mr. Thomson's *Apothecaries' Hall Manual* (Whitaker and Co.) would also be useful for the purpose of crystallizing the knowledge gained from the books that have been named.

ETHEREAL SOAP.

MESSRS. DUNCAN, FLOCKHART AND CO. (London) write: We noticed in the BRITISH MEDICAL JOURNAL of August 20th, an inquiry from "Caution" re an ethereal soap for cleansing the skin preparatory to operation. Will you permit us to inform him that we make such a soap to which we have given the name "Sapo Antisepticus Aetherius." This soap has received the approval of a number of medical men and is used fairly largely. It has been described as a valuable antiseptic wash, containing, in addition to its pure soap basis, red iodide of mercury (1 in 1,000). The soap is dissolved in an aetheric-alcoholic menstruum and has in consequence great penetrative powers, and thus more thoroughly cleanses the skin than ordinary aqueous solutions of soap.

MESSRS. OLDFIELD, PATTINSON AND CO. (Manchester) submit the following formula: ℞ Acid. oleic, 3½ fl. oz.; alcohol. 90 per cent., 1½ fl. oz.; potass. hydrat. q.s.; ol. gaultheria, m. 10; aether meth. 0.720, ad Oss. Mix the oleic acid with the alcohol, and exactly neutralize with a 1 in 1 solution of potassium hydrate, of which nearly 6 drachms will be necessary, using phenolphtnalein as indicator. When cold add the oil and ether. A slight excess of the alkali will increase its detergent action.

DYSENTERY AND TROPICAL ABSCESS.

PER ASPERA.—Pathologically, dysentery is now usually divided into bacillary and amoeboid. The first is said to be caused by a bacillus of the coli group, described by Shiga, Flexner, and others, the second by the amoeba coli. In single tropical abscesses the amoeba coli can generally be detected, and probably it is the etiological factor. A good description of the whole subject is to be found in Manson's *Tropical Diseases*.

CHRONIC SCIATICA.

DR. T. CHURTON (Leeds) writes: Most of us can sympathize with "X.Y.Z." in the BRITISH MEDICAL JOURNAL of August 27th, p. 483, in his trouble with a case of this kind. No doubt he has already tried the continuous current. If he has not tried acupuncture let him thoroughly sterilize the skin of the buttock, and two long acupuncture needles, and pass one needle down to the bone in the position of the nerve, an inch or less above the level of the trochanter, the other two or three inches lower down, and leave them in for twenty minutes.

DR. BARRETT ROUE (Clifton) writes: I should strongly advise "X.Y.Z." to try the "high frequency" current. If he cares to put himself in communication with me I think I can give him some information that may prove of value to him.

DR. HAMILTON HALL (Tunbridge Wells) writes: The case of troublesome sciatica reminds me greatly of a similar case where I was morally satisfied that the pain was "neuralgic," whatever that means. At that time Dr. Ewart had recently made some remarks on the association of a good—namely, somewhat too good—pulse with gout. This pulse point I had myself noticed several times in my own patient, and, being rather desperate, I diagnosed "gout" on the "strength" of the pulse only, and gave him colchicum freely, with results no less gratifying to him than surprising to myself. This particular case went far to convince me of the truth of the teaching that gout is a neurosis; and, curiously enough, during the last eight years, while my practice has been entirely among neurotics I find "gouty" histories at every turn. Of course, every neurotic is a liar; but this is what they say. I should, therefore, venture to suggest that your correspondent might try the effect of keeping his patient's bowels really free, and giving him as much colchicum as he thinks he can stand, and if he finds that he has observed him to have a hard pulse either at times or habitually, I should further venture to say he might expect a good deal of benefit.

DOMESTIC FILTERS.

P. J. W.—It is generally held that the Pasteur-Chamberland filter and the Berkefeld are the best domestic filters. The former is supplied by Messrs. Deiries, 145-147, Houndsditch, E.C., and the latter by the Berkefeld Filter Company, 121, Oxford Street, W. Both filters are readily sterilized by steaming or boiling.

STATIC ELECTRICITY IN PHTHISIS.

C. J. W.—There is a paper on the treatment of malignant disease by electric osmose (high frequency) in the *Lancet* of September 12th, 1903, by Dr. Clarence Wright, which bears on some of the points our correspondent is interested in. A figure is given, and the treatment of phthisis is referred to.

GÜIMAR, TENERIFFE.

C. J. W. writes: My attention has been called to Dr. Ethel M. N. Williams's query as to Güimar on p. 419. Having wintered there for three years, and found the climate and scenery delightful, I can, perhaps, give some of the information required. There do not seem to be any villa residences to let, except one rather large unfurnished house. There is one English hotel, El Buen Retiro, which is quiet, comfortable, and reasonable in its charges, with a pretty and shady garden. Milk and water supplies are good. There was a resident doctor in the hotel last winter, and I am informed that similar arrangements will be made for the coming season.

PERPLEXED.—1. Should do nothing at present. 2. Later on, if he is applied to as the medical attendant of the assured in his last illness, he should give the bare facts of the case, without any comment. Unless he is applied to directly by the company he should remain passive.

FLOORS OF OPERATING THEATRES.

L. S. L.—The best floor for an operating theatre or infectious ward is that formed of terrazzo, a marble mosaic, which, when properly laid *in situ*, is jointless, impervious, and semi-polished. Further particulars will be found in the reply to a correspondent published in the BRITISH MEDICAL JOURNAL of July 2nd, 1904, p. 51.

LETTERS, NOTES, Etc.

A MISPRINT AND ITS CONSEQUENCE.

IN Section I (Physiology) of the British Association a paper by Dr. Adamkiewicz with the title "Ist der Krebs erblich?" that is, "Is cancer hereditary?" was on the programme. "Erblich" was misprinted "Erdlich" = earthy. The paper was not read, but the *Times* announced that a paper had been read by Dr. Adam Kiewicz on "Is the crab a sea or land animal?"!

CERTIFICATES OF UNFITNESS TO ATTEND SCHOOL.

DR. DONALD C. MARTIN (Stourport) sends us the following circular letter:

Union Offices, Droitwich,
August 24th, 1904.

Education.

Dear Sir,—I am directed by the Droitwich District Education Committee to inquire whether in the event of a book of forms being provided you for the purpose you would be prepared to give certificates to parents of children (free of charge) where their children are not able to attend school in consequence of sickness.

I enclose a stamped directed envelope, and shall be glad to receive your reply on or before Tuesday, the 30th inst.

Thanking you in anticipation,
Yours faithfully,
ARTHUR J. BEATCROFT.

Donald C. Martin, Esq., M.D., Surgeon, Stourport.

He has replied to the effect that writing certificates affords part of his income, and that, unless for a charitable object, he will not grant them for nothing.

In this connexion we may recall the reference to the subject contained in the report of the Annual Representative Meeting (SUPPLEMENT to BRITISH MEDICAL JOURNAL, August 6th, p. 120). The Chairman then asked that information on the subject should be transmitted to the Secretary of the Medico-Political Committee.

A CORRECTION.

THE Old Students' dinner of St. Thomas's Hospital will take place on October 1st, and not on October 3rd, as stated last week.

LETTERS, COMMUNICATIONS, ETC., have been received from

A Dr. T. G. Atkins, Cork; Professor A. J. Anderson, Rostrevor: A Thirty Years' Member; Allen and Hanburys, London; Ankylostomiasis. B Mr. E. G. D. Benson, Stanley; Dr. W. Bligh, Dalestead: E. A. Brown, M.B., Johannesburg. C Captain; Cosenza and Co., London. D Dubious; Dr. Didama, Syracuse, N.Y.: J. G. Duncanson, M.B., Shooters Hill; J. H. Dauber, M.B., London; T. A. Dukes, M.B. Croydon. E Dr. A. Eddowes, London; H. M. Evans, M.B., Richmond. F Factory Girls' Country Holiday Fund, London: Mr. J. Fenwick, Accrington; Fair Play. G "Gentleman's Journal," London; W. Gripper, M.B., Wallington; Dr. K. A. Grossman, Liverpool. H Dr. F. W. N. Haultain, Edinburgh; Dr. W. Hunter, London; Mr. W. G. Hazard, London. I Inter; Income Tax Adjustment Agency, London. J J. A.; Miss C. L. Jenkins, Bradford. L Mr. L. S. Luckham, Salisbury; Luscinia; Dr. C. A. Leedham-Green, Birmingham. M Dr. D. C. Martin, Stourport; G. B. Muriel, M.B., Whitehaven; Mutton Chop; Mr. E. D. Marriott, Nottingham; J. MacPherson, M.B., Young, N.S.W. N Dr. J. C. Nichol, Manchester; Nemo. O S. I. Oddie, M.B., Crosley Green. P Mr. G. A. Phillips, Walsall; Mr. H. E. Powell, London; Dr. L. H. Pegler, London; Paper. R R. R.: Dr. C. H. G. Ramshottom, Burgay; Dr. W. B. Roue, Bristol; Dr. J. O. Renton, Glasgow; Mr. H. M. Roberts, Stevenston; Dr. R. R. Rentoul, Liverpool. S Senex; Messrs. G. Street and Co., London. T Mr. E. H. Tweedy, Dublin; Mr. G. L. Thornton, Exmouth; Dr. W. J. Tyson, Folkestone; H. P. Taylor, M.B., Mid Yell; Dr. R. T. Turner, Nantwich. V Variola; Dr. G. H. Vos, Tottenham. W Mr. F. H. Wilcock, Croydon; Dr. A. M. Watts, Minster; Mr. G. O. Wilkin, Peignton; Dr. C. Watson, Edinburgh, Dr. A. A. Warden, Paris; Worshipful Company of Plumbers, London. Y Mr. P. M. Yearsley, London.

BOOKS, ETC., RECEIVED.

Hossfeld's Japanese Grammar. By H. J. Weintz. London: Hirschfeld Brothers, Limited. 1904. 10s. 6d.

Clinical Diagnostic Bacteriology, including Serum Diagnosis and Cytodiagnosis. By Alfred C. Coles, M.D., D.Sc., F.R.S.Edin. London: J. and A. Churchill. 1904. 8s.

Health and Disease in Relation to Marriage and the Married State. Edited by Geh. Medizinalrath Professor Dr. H. Senator, and Dr. Med. S. Kaminer. Translated from the German by J. Dalberg, M.D. Vol. I. New York: Rebman Co.; and London: Rebman Limited. 2 vols. 80s.

The Sayings of Lao-tzu. Translated from the Chinese by Lionel Giles, M.A. Oxon. London: The Orient Press. 1904.

Nature Teaching, based upon the General Principles of Agriculture for the Use of Schools. By Francis Watts, B.Sc., F.I.C., F.C.S., and William G. Freeman, B.Sc., A.R.C.S., F.L.S. London: J. Murray. 1904. 3s. 6d.

University College, Bristol, Calender, 1904-5. Bristol: J. W. Arrowsmith; and London: Whittaker and Co. 1904. 1s.

Handbuch der Krankenpflege. Bearbeitet von Dr. Salzwedel. Achte Auflage. Berlin: August Hirschwald. 1904. M. 6.

*** In forwarding books the publishers are requested to state the selling price.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

Eight lines and under	£0	4	0
Each additional line	0	0	6
A whole column	2	0	0
A page	5	5	0

An average line contains six words.

Advertisements should be delivered, addressed to the Manager, at the Office, not later than first post on Wednesday morning preceding publication; and if not paid for at the time, should be accompanied by a reference.

Post-Office Orders should be made payable to the British Medical Association at the General Post-Office, London. Small amounts may be paid in postage-stamps.

N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

SEVENTY-SECOND ANNUAL MEETING
OF THE
British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF TROPICAL DISEASES.

Brig.-Surg.-Lieut.-Col. Alexander Crombie, I.M.S. (Ret.), C.B., M.D., President.

DISCUSSION ON THE PROPHYLAXIS OF MALARIA.

I.—J. W. W. Stephens, B.A., M.D.Camb.,
Walter Myers Lecturer in Tropical Medicine, Liverpool University.

I think it may help to make our views more precise if, instead of recounting the methods of prophylaxis used and the results achieved in Italy, in British, French, and German tropical possessions, in Japan, I bring before you some scientific aspects of the problem which in many of the publications I have read on this subject seem to me to be overlooked. I will assume in this paper that I am dealing with the occurrence of malaria in our tropical possessions. It is, I believe, not unnecessary even now to point out how malaria is contracted. It has been for centuries believed that malaria is contracted from the vapour of marshes; and now that certain mosquitos are proved to be the cause, it is not uncommon to overlook the means whereby the mosquito produces malaria, and still to attribute malaria to the presence of the water in which the mosquito breeds, the "shallow pools," etc. What seems to me to be necessary is that the public should be educated to regard not the pool, not the mosquito, not even the Anopheline, as the source of danger, but the *infected* Anopheline; and I would go further: I would have everybody clearly understand how it is that the Anopheline becomes infected—that is, can convey malaria. It results from the fact—which, I believe, not 1 in 100 laymen in the tropics knows—that malaria is a contagious disease. The source of contagion, unsuspected by the layman, lies in the fact that in the tropics the native population, especially the child population, carries malarial parasites in its blood; that it does so often while presenting not the least outward sign of sickness. It is this apparently healthy but actually highly infected population which is the great source of malaria parasites, and hence of danger, to the European. It is from the native that the malaria-bearing mosquito gets its parasites, and these it transmits again after the lapse of a certain time to the European. I have said that the native population may show no outward sign of sickness. I do not forget, however, that the native also dies from malaria, but if we wish to see malaria in its severest forms, let us visit some up-country miner's camp or European settlement in the bush. There we shall find those "malarial wrecks," the fever-stricken pioneers, "down with fever," as it is called, vomiting incessantly, with a temperature of 105°, in constant dread of blackwater fever, which not uncommonly supervenes. Those who live in the towns not uncommonly forget that it is in these out-stations that malaria exists in its most virulent form. I have dwelt on this condition because it is the lot of these unfortunate Europeans to fill the "white man's grave," because I think that in schemes for eradicating malaria they are forgotten, because I think that many of these lives can be saved by means which I will specify later, and that we can legitimately do so even at the expense of delaying that general eradication of malaria from the native which will be the work of years, and which will not be achieved in our time.

Malaria is indeed a contagious disease. It has been the great discovery of Ross that it is a certain mosquito that conveys the contagion. Let me review briefly the state of our knowledge on this point. We know now that certain mosquitos of the sub-family *Anophelina*, alone can convey the contagion. Now of Anophelines there exist about a hundred species. Which of these, or do all of them in different parts of the world convey malaria? It is surprising that on this point we have but scanty information.

The number of species that we know can convey malaria we may almost count on our ten fingers. They are in Europe —*A. maculipennis* (mainly); *A. bifurcatus* (less concerned); *P. superpictus*; *M. pseudopictus* (especially in some parts). In Africa *A. maculipennis* (in Algeria); *P. costalis* and *M. funesta* (especially in tropical Africa), and *P. Chaudoyei*. In India *M. listoni*, *M. culicifacies*, *N. maculipalpis* (?). In North America *A. maculipennis*. In West Indies *Ce. albipes*. That is, a dozen species only of which we can say with any certainty they convey malaria out of nearly a hundred existing species. But it may be urged, if one species conveys malaria another will; that is not a scientific argument, and nothing short of actual proof should be allowed to satisfy us. We can go further, and say that we have a certain amount of evidence, gradually increasing, to show that all species do not convey malaria.

Let me recall to your mind the results obtained by Christophers and myself in India. We had formed the hypothesis, based upon general observations, that all species of Anophelines were not concerned in the transmission of malaria. We put this hypothesis to the test in two very malarial places in India—Mian Mir (Punjab) and Ennur (Madras). We caught in the same huts, at the same time, in these two far distant places two species of Anophelines—*M. rossii* and *M. culicifacies*. We determined by actual dissection which of these species contained parasites (sporozoits) and found as follows:

—	Number Dissected.	Number Infected.	Percentage.
In Mian Mir:			
M. culicifacies ..	259	12	4.6
M. rossii	496	0	0
In Ennur:			
M. culicifacies	69	6	8.6
M. rossii	364	0	0

So that *M. rossii* was not carrying malaria under conditions where *M. culicifacies* was. These observations have been repeated by others and the result is always the same. *M. rossii* does not in nature convey malaria. This, while scientifically of great interest, is also of practical value. Shall we spend money and occupy our time in eradicating *M. rossii* when as far as we know it is not concerned in the transmission of malaria? These mosquitos exist in myriads in Calcutta, Madras, Bombay, and in all large towns. We believe them to be harmless.

But this is not an isolated instance. Recently Hirshberg in the United States has got similar results, though in this case by feeding experiments. Two species—*A. maculipennis* and *A. punctipennis*—were fed on the same case of malignant tertian malaria under the same conditions, with the following result:

	No. Fed.	No. Infected.
A. maculipennis	48 ...	... 8
A. punctipennis	58 ...	... 0

Whether *A. punctipennis* conveys malaria in nature remains to be seen. Similar results (unpublished) have been obtained in Japan. These results, then, show that certain species of Anophelines do not convey malaria, and on general grounds there is little evidence to connect those species which we know as "wild" mosquitos with the transmission of malaria. Anyhow, it should not suffice to state simply "the *Anopheles* was found" without stating what species of Anopheline; but, most important of all, it should be determined by actual dissection whether or no that species does transmit malaria.

The practical bearing of these facts is obvious. If we can positively state that a certain species of Anopheline does not transmit malaria, it will obviously simplify operations directed against mosquitos. Another point of great interest in connexion with Anophelines is their breeding grounds. Take again the two Indian species mentioned above, *M. rossii* and *M. culicifacies*. Christophers and myself showed in India that, broadly speaking, each Anopheline has a breeding ground of its own. At any rate, in the case of the above two species they are totally distinct and different in nature, and whereas *M. rossii* breeds in the shallow pool or puddle some inches deep only, *M. culicifacies* does nothing of the kind. It is never found breeding in these dirty puddles; it loves clear, fresh water, of streams, rivers, canals, and other moving water, where it occurs in myriads. Now if our results are true, that *M. rossii* does not carry malaria, and no doubt has yet been thrown on them, it means that it is unnecessary to

attack the breeding grounds of *M. rossii*. This means an immense saving in labour and expense, for even during the dry season the pools in which *M. rossii* breeds are very numerous, and during the rains they are legion. Minute work, then, is still required on breeding grounds, on the habits of larvae, their enemies—fish, beetle, beetle larvae, and the like, natural larvicides so to speak—all these points may be of great practical import.

Then, again, there is the question of the flight of mosquitos, a very important problem. Christophers and myself were constantly engaged in trying to make observations on this point, because we used to read alarming statements published by hasty writers that mosquitos (genus and species it is needless to say not mentioned) flew fifteen miles, so that it seemed to us, if this were so, whatever might be done to free a place from Anophelines, there was nothing to prevent some of these long fliers coming, with parasites in them, into a district just made free and undoing all one's labours. But close observations convinced us that nothing of the kind happened, or perhaps, to be strictly accurate, did not happen under the conditions we knew of, and all our observations, repeatedly made and checked, tended to show that the normal flight of Anophelines was a matter of some hundred yards and not miles. Thus we observed that the centre of Freetown, the capital of Sierra Leone, was completely free from Anophelines. We slept during many months there at all seasons of the year in four different houses and never did we see Anophelines in our rooms—*Stegomyia*, of course, in hordes. But a quarter to half-a-mile away it was very different; there Anophelines were as thick as bees. What was the difference? The centre of Freetown was in fact a town with large stone houses, open streets, and moderately well arranged surface drains. But in the outskirts we come to the streams, with their countless larvae, in the back-waters and pools, and to the native huts, infested with Anophelines, having therein a plentiful supply of blood. Why, then, should they fly abroad and visit the centre of the town? In fact they did not, and the result is this important condition, that in the centre of Freetown, a quarter to half a mile from deadly centres of infection, you have a segregated protected area, where the danger of contracting malaria is extremely remote.

Again, by a series of observations we made in India we were able indirectly to come to somewhat similar conclusions. We sought to determine why, of a series of villages in the same district, one was highly malarious, another only slightly so, and we found that this was almost entirely dependent on the number of Anophelines there present, and that the number of Anophelines was dependent on another factor—the presence or absence of breeding grounds past or present; so that when a village was distant three-quarters of a mile from breeding grounds the amount of malaria—the endemic index as we termed it—was reduced to very low dimensions—5 per cent. or 0 per cent., instead of 50 to 70 per cent. where breeding grounds surrounded the native huts. We concluded from these observations that a distance of about a mile from breeding grounds was sufficient to protect that village from malaria, consequently that here at all events this distance was beyond the normal flight of Anophelines. The distance in Freetown was decidedly less than this, a quarter to half a mile. These observations seemed to us of some importance as indicating the distance that sufficed to give protection from mosquitos, or at least a considerable if not an absolute degree of protection. This question of flight of course requires still further study, since, as we shall see later, under certain conditions it may be a complicated one, resulting in distances as great as one to two miles being traversed. We see, then, that various problems still exist for a more complete solution than we were able to give in the time at our disposal, and that these problems have considerable bearing on the question of prophylaxis, and that the prophylaxis of malaria will not be best achieved by blindly proceeding to act against mosquitos as a whole, but by careful action based upon accurate study of all the habits of mosquitos. I have unduly prolonged these preliminary considerations, but their importance is in my opinion immense, and they are at present practically completely neglected.

In the remaining portion of my paper I will consider very briefly modes of prophylaxis, pointing out what in my opinion are the merits or demerits of each system. For in fact it would appear from the advocates of these systems that one and only one method exists—that is, the one advocated by the particular person. Thus it seems to be the aim of the advocates of each system to decry that of others. This does not appear to me to be the best solution of the problem, for the method that may succeed in one place may quite conceivably fail in another where the conditions are entirely different.

Now the measures usually adopted are:

1. *Antilarval.*—Of this method I would say that it appears to me to be fundamental and thorough, provided it takes the form of systematic drainage, and that it is the method which should as a sanitary reform be followed as a steady continuous policy.

Its merits consist in the obvious fact that as the mosquito breeds in water, if this water can be drained away, the number of larvae in that area must diminish, and probably, if there is no influx from without, the number of mosquitos, and also of malaria. It seems to me that this method should take from the first this form—namely, drainage—and that it is not wise to substitute for it petrolage, except as a temporary makeshift, without any attempt to diminish the real source of the mosquitos—namely, the water.

Let us now consider by what means it is possible to estimate the success or want of success of antilarval measures. In other words, the diminution of malaria.

I will not consider the means of estimating the number of larvae or the number of Anophelines, suffice it to say that it is quite easy for anyone who has made systematic observations on larvae and mosquitos throughout one year easily to appreciate whether there is a diminution in succeeding years, but that is not the practical question, which is, Is the malaria diminished? How can we estimate this? Now I believe we have found a test more accurate and sensitive than any of those on which we had previously relied. It lies in the variation in the "endemic index" of the native population. Christophers and myself found in West Africa at the same time as Koch in the East Indies that the child population contained numerous parasites in their blood, although apparently healthy (a condition I venture to state quite unsuspected by those who were aware that the mortality of children was partly due to malaria). We found, then, that by estimating the percentage number of children at any particular age, say under 10 years, which contained parasites in their blood, it was possible to get a very accurate idea of the variations of endemic malaria. By this simple means we were able to show, for instance, that in spite of public opinion on the prevalence of malaria in the suburbs of Calcutta, malaria was not endemic in the population there, but, on the other hand, when we reached the ill-famed Terai, at the foot of the Himalayas, there indeed malaria was intense, reaching the figure of 72 per cent. in the particular district examined by us. I cannot conceive by what other means such a remarkable difference could have been shown. Anophelines existed in myriads in the suburbs of Calcutta; that was no test. (We were asked by the doubting editor of the *Indian Medical Gazette:* If not with malaria, with what, then, are our hospitals filled? The answer is now being given: With "cachexial" fever.) That was the test of hospital admissions. Hospital statistics, I need hardly point out to you, require the most careful scrutiny. To take one source of error only: Imagine the effect on statistics where a new medical officer enters nothing as malaria except those cases he microscopically diagnoses as containing parasites, where the old medical officer entered practically everything as malaria that had a temperature. Such instances have occurred. In the endemic index we have the best and surest test at our disposal. What other test so accurately and sensitively shows, for instance, the variation in endemic malaria from month to month?

Finally, I would point out the absolute necessity for control observations and the neglect of these in so many published results. I would say on this question of estimating the success of operations that two conditions are necessary to be fulfilled:

a. That the endemic index of the populations must show a decrease.

b. That the control areas must remain unchanged.

If these are fulfilled, to me the success of any operations will be convincing, even if hospital statistics showed the reverse, which I should not expect.

2. *Mechanical Prophylaxis by Wire Netting, etc.*—That by this means excellent results can be got has been shown by the Italians. The Japanese have likewise applied it to their troops, with the remarkable result that in a particular regiment the entries diminished from 2,000 odd in 1900 to 256 in the first six months of 1903. We are told that the sentries wore veils and gloves at night!

3 *Quinine Prophylaxis.*—I believe this method, too, excellent, and the success attending it remarkable. How far it is applicable in every locality local conditions must decide. I believe its applicability is somewhat limited, but this should not hinder its adoption in suitable circumstances. In many isolated villages I believe malaria could readily be stamped out in this way, where antilarval measures would be impossible owing to the fact that the larvae breed in the rice swamps surrounding the villages. A quinine prophylaxis among Europeans in small settlements has given in the hands of the Germans excellent results. The so-called gram prophylaxis, repeated on two consecutive days, has in certain instances been thoroughly effective, and it should be noted that there is no danger of the quinine producing blackwater fever, for, on the contrary, it is among those insufficiently protected with small doses—that is, among those suffering from malaria—that quinine induces blackwater fever.

4. *Segregation.*—Next, I would call your attention to a mode of prophylaxis which you may not even have heard of—namely, "segregation of Europeans." It was, however, recommended by Ross as "one of the fundamental principles which the State must adopt in order to extirpate malaria in tropical cities." Major Ross has informed me personally, however, that this was done on general sanitary grounds only, and not on the special grounds resulting from the demonstration by Christophers and myself that the natives were the source of European infection in the tropics. I think, then, that we may claim in our report to the Royal Society of May, 1900, to have first put forward this as a definite prophylactic measure based upon our knowledge of how Europeans are infected. Manson has also declared segregation to be the first law of hygiene for the Europeans in the tropics. We were led to advocate this measure with all the seriousness and urgency we could, because we had seen for ourselves during two years' travelling in British possessions in Africa the terrible effects resulting from its neglect. That it was a practical policy we had no doubt. We had, in fact, seen it carried out—on general grounds—in Accra, where most of the officials enjoy the protection of well isolated bungalows well separated from the insanitary native huts; insanitary in a very special sense, for it is here that Anophelines are infected. We had seen that the segregation of Government House, Freetown, a quarter of a mile from native huts, afforded complete protection. It is a policy that can be carried out in the case of single bungalows, situated in the bush, in larger settlements, and even eventually in towns. And yet an African Governor has denounced it as academical (although actually in existence in Accra), impolitic, and so forth. That it is not so is shown by the fact that another African and unprejudiced Governor, who had no system of his own, has actually carried out this prophylactic method, and, personally, I rejoice to learn that in several Gold Coast stations the Europeans now enjoy segregated cantonments. The principle, in fact, in its widest application is that which we see over the whole of India, namely, European cantonment and native bazaar. In its more limited and still easier application it means that the European bungalows should not be built as now, in the midst of a native village, surrounded by huts, swarming with infected Anophelines, but that an isolated site some half-mile away should be chosen. I believe the immunity then given to Europeans living hitherto in the midst of infected Anophelines will be very great. It was, we felt very strongly, an urgent matter, one easily carried out, and one that would at once save many lives, while measures for draining large towns would be a matter of many years. But it is also said that it is not a just method, for the native is neglected, and the native should be treated as the white man. Within limits this is true but it is the limits that alter the nature of the case. When the sanitary and general education of the native population has made any progress whatever, it will then, perhaps, be possible to begin to treat natives and Europeans alike; but until that happy day arrives it is, I maintain, not right to sacrifice the European lives that are daily sacrificed to such false sentimental ideas.

I have said little of actual operations and actual results in this paper, because you will have papers on this subject later. I have urged the necessity for critical inspection of these results. I will not here contrast, for instance, the success of antimalarial operations at Ismailia with the failure at Mian Mir; I will only say a word on each. At Ismailia the campaign was against mosquitos as a whole. It is difficult to know what the effect on the Anophelines has been; no data are yet forthcoming. The operations of the mosquito brigade were very largely devoted to treating cesspits which were the breeding grounds of *Stegomyia*, a process which, of course, could not affect malaria one way or another, and so far as it is not clear what has been done to the Anophelines. We do not even know what Anopheline is carrying malaria at Ismailia, yet we have the brilliant result of the diminution of the fever entries from an average of 2,000 to 200 roughly. Of Mian Mir I may say a word of explanation, as I myself took part in the preliminary survey of the place. Some misconception has arisen as to why Mian Mir was selected, a place now proved to be very difficult to deal with. We selected it because (1) it was highly malarious, and (2) because it had an extremely small rainfall, and we thought that antilarval measures would consequently be easy. It was only on arriving at Mian Mir that we found the whole place to be a network of irrigation canals, and even had we known this we might not at first have seen its importance for at that time it was the prevalent opinion that Anophelines "bred in shallow puddles." Anyhow, we could find no other place where it seemed at all likely that success would attend our efforts in the time at our disposal, since we did not know when we might have to return home.

I will say, however, of the Mian Mir experiment that I believe it stands alone in many respects. In no place that I know of has the preliminary survey of a place been carried out with the thoroughness with which it was done there. All the species of Anophelines were collected. It was determined which were carrying malaria. The breeding places of each species were carefully mapped out. The endemic index of the various native bazaars was determined every month. Adequate care was taken to have control areas, the necessity of which was clearly shown during the operations; for example, the endemic index in the area of operations at one time fell rapidly, and it might have been concluded that it was the result of the antilarval measures, and, indeed, one could not have said it was not, had it not been for the control. But in the control bazaar, where no measures were being taken, a parallel fall in the endemic index took place. That certainly shows the necessity for control observations, which have been very rarely given in results hitherto published. You will have, I believe, two papers on Mian Mir, so that I need hardly discuss the matter. I must say, however, that I believe that Captain James and Lieutenant Christophers did everything possible to secure success, and that no expense was spared. The unfortunate factor that was not anticipated, namely, the flight of mosquitos into the area from as far as two miles away, has been discussed by Captain James and Lieutenant Christophers in their report on Mian Mir. It was not that the antilarval measures were a complete failure, but that the conditions of the place made it impossible to prevent this influx. I am sure that nobody regrets the unfortunate result of this experiment more than Captain James and Lieutenant Christophers. There are many lessons to be learned from this experiment, hardly realized before, I think. I will mention two only (1) the seriousness and magnitude of the work, for the operations were conducted with the greatest perseverance for two years; (2) the fact that general amelioration of the sanitary conditions of the cantonments must play an important part in malaria prophylaxis, and that the removal of native bazaars with their infected population from the vicinity of European barracks is the main one to keep in view. How far antilarval measures are practicable where a network of irrigating channels exist remains to be seen, for apparently it was not this that was the cause of the Mian Mir failure, but an immigration from without that could not have been then predicted. It seems to me, then, very necessary that in the carrying out of measures of this kind the most careful consideration will have to be given to all existing conditions. That the great cause to which we all desire success has really suffered from the Mian Mir experiment, I do not believe. It has taught us useful lessons. The difficulties are greater than we at first perhaps suspected; that they will be overcome I have no doubt, but prophylaxis, be it of enteric, tuberculosis, or malaria, is necessarily slow in its progress. We should endeavour, however, to do our utmost to hasten it.

II.—Captain S. P. James, I.M.S.; and Lieutenant S. R. Christophers, I.M.S.

THE SUCCESS OF MOSQUITO DESTRUCTION OPERATIONS.

So many operations where mosquito destruction has been successfully carried out are reported that it appears almost unnecessary to ask how far such measures may be considered

of practical utility in diminishing the incidence of malaria. It is, indeed, only when we make a closer study of the reports of operations that we realize in how many cases little or no proof of success is given, and in how many the conclusion of success is based on such inconclusive evidence as the number of admissions to hospital and popular report. As regards the number of breeding places it is necessary to destroy in order to bring about a successful result, we find curiously optimistic ideas very prevalent, and it is far from unusual to see a reduction in admission rates put down to the most trivial and inadequate operations. In perusing such accounts we find it very difficult to reconcile these easy and triumphant successes with the extreme difficulty encountered in our own efforts. The operations undertaken by the Government of India at Mian Mir[1] were throughout very thorough. Every effort was made to make the destruction of breeding places complete, and the experiments were continued for over two years. Many hundreds of pools were drained or filled, and throughout the whole area systematic search for and destruction of breeding places was consistently carried out. Here, then, if mosquito destruction is so readily brought about as would seem from so many accounts, we should have been able to show a very marked and decided reduction in the number of adult *Anopheles* and malaria. As a matter of fact the result in both cases was poor and totally out of proportion to the means employed. If adults were reduced in number it was demonstrable only in the first four or five weeks of the rains with the onset of which the fever season begins. Later on in the season it only required the care always necessary for the detection of *Anopheles* to make it very obvious that marvellously little reduction in their numbers had taken place. The effect upon malaria consisted in the delay of the onset of the fever season from the end of August to the end of September. In October the most strenuous and apparently complete measures against breeding places seemed not to influence malaria either in the bazaars or among the troops

To what are we to ascribe the absence of the usual successful issue? We do not feel justified in considering it due to want of thoroughness in the conduct of the operations nor to peculiar conditions in Mian Mir. There is, indeed, in our minds little doubt that the difference is entirely due to the great disparity in the value of the tests used in estimating the reality of results achieved.

In very few instances that we know of has an attempt been made to verify a reduction in the number of adult *Anopheles:* nor has a reduction in endemic malaria, as shown by the number of infected natives, ever been demonstrated. The endemic index of Freetown approaches 100 per cent. If measures really possess the success claimed for them it should not be difficult to reduce this to 50 per cent. or less. Short of a reduction in this percentage infection we cannot claim a success in the reduction of malaria.

In our reports on the experiment at Mian Mir we have attempted to give some idea of the determinable effect of the operations, and we succeeded in actually demonstrating such effect, though it was but partial.

Our attempts to really show what has been the effect of operations have a distinct value. They show that destruction of *Anopheles* sufficiently complete to be of practical importance as a prophylactic measure is an undertaking much in excess of the usual estimate of the character of operations necessary.

Perhaps the most valuable result of the Mian Mir operations was that they gave an insight into the difficulties which are almost certainly to be encountered in most really malarious places. We found *Anopheles* breeding places much more numerous than would be gathered from most accounts of operations, and the difficulty of keeping up with the ever-changing situation of breeding places under different degrees of rainfall was very great. We found that we had to deal with breeding places at considerable distances, and that quite local destruction was utterly futile. We encountered enormous changes in the facilities for breeding places in the rains, and had to count upon, what appears to have been the main factor causing our want of success, an infiltration of adults from outside the area which could not be prevented by any means in our power.

In chronicling our want of ready success we fully realize the inadvisability of damping enterprise by the suggestion of possible failure. But if in the near future we are really to reduce malaria in our tropical possessions, it seems to us that something more must be done than merely to popularize the idea of anti-malarial measures. We see no reason to doubt that malaria will be reduced and in a manner much more direct than by blind schemes of drainage. Little good, however, seems likely to result from proclaiming a successful issue, on evidence which will not bear criticism.

Before concluding this brief note we may call attention to certain points which seem to us of importance.

1. It is easy enough to destroy larvae in millions and to do away with hundreds of breeding places. It by no means follows that malaria is diminished or adult *Anopheles* banished, and the success of operations on a large scale is still very doubtful.

2. The idea that by destroying breeding places around a barracks, prison, or other building, a reduction in malaria is likely to result requires more critical study before it can be accepted.

3. The occasionally-reported cases where a brigade has rid a town of malaria we have no hesitation in challenging as absurd. We are by no means so certain that the number of *Culex* and *Stegomyia* may not be very considerably affected by such means.

4. The use of "admission returns" of all kinds as evidence is a miserable method of proof, and the insignificant factors which greatly influence all such figures make them quite valueless for the purpose of estimating the effect of operations. The only really satisfactory test of success is a reduction of the endemic percentage of infection. In this connexion we recommend isolated bazaars and villages as more suitable in the present state of our knowledge for trial experiments than large tropical towns.

5. In any attempt to show a reduction in the number of *Anopheles* it is necessary to recognize that it is easy to delude oneself as to their absence, since they are always difficult of detection, and, except in certain places and in certain times of the year, would, as a rule, be considered absent by an observer imperfectly acquainted with their habits.

6. Mosquito operations reports are very often extremely uncritical and often ridiculous, since they claim an amount of success for which they have no evidence.

In conclusion, we hope that our remarks may not be without some result in directing attention to the need of more rigid experiments and the desirability of further knowledge being amassed regarding details, which should enable us eventually to form a special branch of sanitary science dealing with this important subject.

[1] *Scientific Memoirs of the Officers of the Army of India.* New series, Nos. vi and ix.

III.—Ronald Ross, F.R.S., F.R.C.S., C.B.,
Professor of Tropical Medicine, University of Liverpool.

THE ANTI-MALARIA EXPERIMENT AT MIAN MIR.

The President of the Section has asked me for some remarks on this subject: I must apologize for not presenting them in person.

The anti-malaria experiment at Mian Mir has been described in three reports, namely, one by Stephens and Christophers,[1] one by James,[2] and one by Christophers[3] alone. The first, apparently written early in 1902, deals merely with some preliminary thoughts and observations, and I therefore do not propose to examine it here, beyond remarking that it clearly defines the object of the experiment which was then about to commence. That object was "to demonstrate by test operations" the "utility of all anti-malarial measures," particularly the destruction of *Anopheles* larvae (pp. 13 and 14). The actual operations and their results are detailed in the subsequent reports of James and Christophers; and with regard to these, I have the following remarks to make:

1. *Omissions.*—I can find no information in either report regarding several points of importance. Neither report is dated, nor contains a table of contents nor an index, nor gives a map of the country surrounding the small area of operations, a necessity for the reader. I can find no mention of the total population of Mian Mir, apart from the garrison—not even of that of the area of operations. Christophers gives the whole area of Mian Mir as being 12 square miles, and that of the selected area of operations as 4 square miles (pp. 2 and 8); but though the latter area is said to be "isolated," no indication is given of the degree of

[1] Reports to the Malaria Committee of the Royal Society, eighth series 1903.
[2] Ibid., and also Scientific Memoirs by Officers of the Government of India, 1903.
[3] Scientific Memoirs of Officers of Government of India, 1904.

isolation—that is, of the distance of the nearest villages or barracks.

2. *Organization.*—The organization of the work is not specifically described.

Was it directed by the Royal Society or by the Government of India, or was it only a private enterprise of the writers of the reports?

I gather that Captain James was in charge of the operations during 1902, and Lieutenant Christophers during 1903; but I can find only incidental remarks regarding the working staff at their disposal. James appears to have had the aid of a single hospital assistant (p. 34), and to have employed "between forty and fifty coolies" at one time (p. 24); but Christophers is quite indefinite on the subject. It is not stated whether the medical staff of the station assisted in examining blood films, checking admissions for malaria, searching for breeding places of *Anopheles* or superintending the operations. Yet such details are necessary to enable the reader to judge regarding the thoroughness of the work, because it may be questioned whether a single medical officer helped by a single hospital assistant (a native, I presume) could effectively attend to so many duties at once.

According to James (p. 34), "the greater part of the work of filling in pools and emptying out water from surface drains was done by contract labour, so as to avoid the necessity of constantly watching the coolies to see that they were working properly."

3. *Cost.*—In the matter of cost, I can find no statements as to who provided the funds, and as to whether any limit was put upon them or upon the duration of the experiment. The work was commenced on April 2nd, 1902, and James gives a "rough statement of expenses" up to the end of October (the seven months including the rainy season). The total cost was 7,217 rupees (about £521), of which 5,365 rupees (£397) were spent upon bricking and plastering a single watercourse, leaving only 1,852 rupees (about £124) for the remaining expenditure during seven months—an average of only about £18 a month. This included contract work, about £53 altogether; the wages of coolies, about £48, and contingent expenses for oil, material, etc., about £23. These sums, though exclusive of the salaries of the medical officer and his hospital assistant, were certainly not too large for dealing with a difficult irrigated piece of country during the rainy season. Logan Taylor[4] spent over £1,000 for a preliminary draining of the waste puddles of Freetown. Ismailia, though it was I think both a smaller and an easier area to deal with than that at Mian Mir, cost £5 000 for the first year.[5] According to Watson,[6] Klang and Port Swettenham cost about £3,225 and £8 600 respectively for the first year's work. Sir William MacGregor tells me that Lagos has been costing about £10,000 per annum for anti-malaria work, including reclamation of swamps, tanks, building sea-wall, and mosquito-proofing rooms in Government houses. For Havana I have not been able to obtain the figures, but they were certainly considerable.

In Christophers' report of the work at Mian Mir during 1903 I can find no financial statement at all—a most unaccountable omission; but he is evidently sparing of oil for petrolage, because he says (p. 14): "Had all the pools in the area been oiled weekly, about 200 gallons, costing 50 rupees, would be required per month"—a little over £3. On the whole I incline to the view that he could have spent little more than £100 during 1903. At all events the expenditure at Mian Mir seems to have been extremely modest for so important an experiment, and one which was being conducted by the combined forces of such a wealthy body as the Government of India and such a learned body as the Royal Society, especially when we remember that it was an experiment the failure of which would tend to bring universal discredit upon a means of saving human life on the large scale.

4. *The Operations.*—The antimosquito operations are not easy to follow from the description. Commenced before the rainy season of 1902, they appear not to have been carried beyond a half-mile radius by the end of August, 1903. Thus Christophers says (p. 14): "Unfortunately, the great importance of some of these outlying pits, most of them at a distance of half a mile, was not at first recognized, so that it was only from the end of August, when larvae were found swarming in them, that actual measures were adopted." It is, therefore, scarcely surprising that mosquitos still occurred in the area of operations up to and after that date. James (p. 3) mentions the existence of numerous wells, but we cannot ascertain how these were dealt with. I see also that instead of using oil freely (as has been done everywhere for years) he adopted baling as an alternative, because it might be said that oil damaged the crops (p. 21). Such caution was unnecessary, oil being used for spraying plants in green-houses; and baling would probably be an ineffective and costly substitute. During 1903, general oiling seems not to have been commenced until the end of August (Christophers, pp. 9 and 16), and then not beyond a half-mile radius. Moreover, it was repeated only every twelve days (p. 9), the reason for this being that Christophers thought that the aquatic stage of *M. rossii* lasted fourteen days. He says (p. 29): "Fourteen days appeared, therefore, to be the minimal time in which adult *M. rossii* hatched in September. As this month appeared especially favourable for the development of this species, it is probable that the above represents the shortest time in which *M. rossii* can develop."

On the other hand, James says (p. 30): "In this month (August) it was found necessary to repeat the oiling of pools at least every three days, as the larvae developed so rapidly and under the great heat the oil quickly evaporated."

Both cannot be right—if three-days intervals were required in August, 1902, twelve-days intervals would probably be insufficient in September, 1903. At all events, one may doubt the wisdom of risking in this manner the success of the whole undertaking merely in order to save a few pounds' worth of oil. Another question which arises is whether large numbers of larvae were not swept into the area by the influx of the irrigation waters, and the experiment of the closed *cul de sac* cited by Christophers (bottom of p. 16) obviously does not negative this supposition (see also James, p. 37). Judging from such details and from the small cost of the operations, I should say that the latter were not nearly so complete as the authors maintain.

5. *The Test for Mosquito Reduction.*—In an important formal experiment of this nature it was absolutely necessary to employ accurate and sensitive tests for gauging the number of mosquitos or the amount of malaria present. Without such tests small variations due to the operations would not be appreciable, and, indeed, the whole results might be called in question. Moreover, it was incumbent on the directors of the experiment not merely to state their personal impressions regarding the issue of the tests, but to give the actual figures arrived at—one of the first principles of reliable scientific work.

Now what was the test employed at Mian Mir for gauging the number of mosquitos? According to James (p. 18) it consisted merely in the formation of personal opinion by himself. He says: "It is impossible for an observer who has regularly collected *Anopheles* mosquitos in any given bazaar or barrack to ascertain with certainty whether they are more or less abundant in the year of operations than in previous years."

Christophers evidently relies upon the same test. But it is obviously open to the following objections: (*a*) the observer may be unconsciously biassed; (*b*) only large variations in the number of mosquitos will be appreciable by this means; and (*c*) the actual ratio of reduction cannot be stated in figures. Moreover, even for the purposes of the roughest valuation, it would be necessary to state the number of times the test was applied; to give the number of houses searched, the number of control houses examined, and the number of occasions on which this was done. But neither James nor Christophers indulges us with this necessary information.

I see that this test is being hailed everywhere as being much more reliable than the one used by me at Sierra Leone, namely, "the general consensus of opinion." But, as will be seen by my report,[4] I added to this consensus the special opinions of three competent observers, Drs. Daniels, Logan Taylor, and McKendrick. I was quite aware that, even with their support, our conclusions regarding the reduction of mosquitos at Freetown could not be considered definitely convincing; but then in my hurried visits to Africa I had no time to apply more stringent tests. On the other hand, Captain James and Lieutenant Christophers have been able to give years of study to the subject; and it is astonishing that they did not succeed in devising something better before undertaking so important an inquiry. As a matter of fact their test is exactly the same as mine except that being based upon the opinion of fewer observers it is, if anything, less exact.

6. *The Test for Malaria Reduction.*—Their principal test for

[4] *Memoirs of the Liverpool School of Tropical Medicine*, No. 5, Parts I and II, 1901 and 1902.
[5] Ibid., No. 12, 1904.
[6] *Journal of Tropical Medicine*, November and December, 1903.

determining the amount of malaria depended upon the microscopic examination of the blood of native children for the parasites. Theoretically it is a good test; but its practical application must present many difficulties. First, it is a general law that the percentage of infected children varies largely according to their age. This implies a careful classification of the children by age before the test is applied. Secondly, long search for the parasites is required in many of the cases; and this implies for accurate work a preliminary standardization regarding the amount of blood to be examined—obviously the percentage of children found to be infected will increase with the thoroughness of the examination. Moreover, the personal qualities or condition of the observer will come into play; he may detect the parasite less often if he is careless, unskilled, fatigued, unwell or biassed. Thirdly, the well-known statistical errors have to be guarded against. If we examine 100 children under exactly the same conditions on three consecutive days we should almost certainly find a different percentage of infection on each day, and the difference might be large. Moreover, as in differential counts of leucocytes, a very large number of observations must be made before reliable percentages can be obtained. Fourthly, the apparent percentage of infection probably varies largely from season to season, apart from the influence of mosquitos. Thus I see from James's table (p. 6) that the admission-rate for malaria at Mian Mir begins to rise in April (especially among the native troops), and is already high in May; but according to him (p. 9): "It was not until the middle of May that adult mosquitos of this genus (*Anopheles*) became sufficiently numerous in the houses to be detected by searching." I have always inclined to the view that the parasites, both of man and birds, tend to be influenced by the external temperature. Lastly, even supposing that a locality were entirely freed from mosquitos, it is doubtful whether a marked reduction in the percentage of infection would occur for months, or perhaps years, at least without quinine medication; so that any expectation of finding an immediate marked reduction after a few months' partial clearance of mosquitos appears to me, as I have often stated, quite unjustifiable.

This test must therefore be a most difficult and laborious one, at least for the detection of small variations in the malarial endemicity. Unfortunately neither of our authors seem to be even conscious of the difficulties just enumerated. They seemed to expect a marked reduction *pari passu* with the operations; they give no adequate details of the examinations, and worst of all often content themselves with publishing mere ratios (James, pp. 7, 43, 44). Christophers (pp. 20 and 21) scarcely gives any figures at all regarding the endemic index, and merely states that it was not diminished. The military statistics which he quotes are almost worthless, because no effort is made to distinguish new infections, and because the previous health of the troops is not exactly discussed.

7. *Some Startling Results.*—Let us now examine our authors' statements regarding the effect of the operations on the number of mosquitos within the area. Christophers states (pp. 5, 17, 36) that "in spite of most energetic measures," the destruction of "millions of larvae," and "the almost complete absence of breeding," the "reduction in adult *Anopheles* was at the most very slight." He described this as a "somewhat startling fact." Indeed, the insects seemed if anything to have increased; for he says (p. 36) that in spite of the operations "the adults still appeared in large and in increasing numbers in the area"; and James says (p. 42) that "the number of adult insects present in the houses increased considerably instead of diminishing." Yet Christophers says (p. 16): "In the operations the destruction of larvae was enormous. A single oiling of a canal in the later months must have destroyed millions, since it was not unusual to remove fifty or more specimens in a single dip of the dipping can."

Let us picture to ourselves the real meaning of these statements. Here was an area of four square miles over which propagation was almost completely arrested for a year and a half. The destruction of larvae was so immense that millions were killed in a single oiling of a single canal, and we are assured that all the waters were oiled at least once in twelve days. How many insects must therefore have been destroyed during the whole period! Yet the effect of this colossal slaughter was inappreciable—was, if anything negative. In other words, if all these millions had been allowed to come to maturity it would have made no practical difference. How immense, then, must be the total number of *Anopheles* in unfortunate Mian Mir!—there must be many millions of them to every man in the place. I confess that I have never seen or heard of such a thing before. One sometimes finds a few score mosquitos in a house; but at Mian Mir each house must contain myriads.

But there is one—and only one—other possible explanation of these statements, namely, that as soon as the slaughter commenced an enormous compensating influx of *Anopheles* must have set in from without. And this influx must have begun with the operations in order to maintain the balance of *Anopheles* within the area.

What caused such a curious phenomenon? Were the insects attracted by the smell of oil, or perhaps by the perspiring coolies baling out the puddles? Perhaps they flocked in to watch the operations. Indeed James (p. 38) describes them riding in "in carriages, carts and other vehicles from neighbouring towns and villages."

Seriously, Drs. Christophers and James must face these alternatives, both unlikely if not impossible—either there are such enormous numbers of *Anopheles* at Mian Mir that the destruction of many millions of them makes no difference, or else a great compensatory immigration must have commenced when the operations commenced.

But many others of their statements may be criticized. For example, Stephens and Christophers say (p. 17): "The results of the examination of the children of different bazaars show a correspondence between the proximity of ditches and the malarial index." James (p. 12) confirms this, and adds that the number of adult *Anopheles* "that can be caught in the different bazaars and lines varies with the distance from a breeding place"—he means "varies inversely as the distance." On p. 38 he records an interesting experiment. "As we had already shown," he says, "that the further a group of houses is removed from a breeding place the fewer are the adult insects present, my plan was to remove all the inhabitants of one series of syce lines to such a distance from all breeding places that no *Anopheles* mosquitos at all should be present in the houses on the new site." Accordingly a site was chosen "over 600 yards from the nearest pool," and the inhabitants of the syce lines were moved into it in August, 1902. "As a result of this no adult *Anopheles* mosquitos were found in any of the tents during September and October:" and (p. 45) the endemic index fell from 56 in the October of the previous year to 1 child out of 25 in the October after the removal (a somewhat sudden fall). Of course this accords perfectly with the experience of everyone; and indeed it would be mathematically impossible for mosquitos to be as numerous far from their breeding place as they are near to it: the mosquito-density must diminish with distance as radiated light and heat diminish. Hence the nearest breeding places must, *ceteris paribus*, be the most dangerous. The fact that local malaria is connected with local marshes and may be removed by local drainage has been known for ages—evidently owing to popular observations of instances similar to those recorded by James. Now, however, we find Christophers remarking (p. 11): "Our experience in Mian Mir has led us to look upon measures confined to the pits and puddles in the immediate neighbourhood of buildings as quite futile;" while on p. 36 he makes the sweeping and astonishing declaration that "the mere obliteration of local breeding places is useless." Surely there must be something wrong here. If the obliteration of proximate pools is quite futile, as he says, that of distant pools must be less than quite futile, so that the drainage of all the pools in the world would have no effect. As a corollary, these wonderful mosquitos must either breed without breeding places or be immortal.

I am sorry to see that Dr. Christophers disposes of another prophylactic measure against malaria, and one which he has already advocated hitherto, namely, segregation. Referring to the sporozoite rate in *M. culicifacies*, the principal malaria-bearing mosquito of Mian Mir, he remarks (p. 28): "It matters little in this respect from which house, shed, or stables this species is taken, since the percentage of infected individuals is much the same in all places." Segregation would therefore be obviously useless, at least against *M. culicifacies*.

Christophers concludes by remarking that "the destruction of *Anopheles* within an area by attacking their breeding places is extremely difficult." One asks at once, what does he really mean? He apparently expected to banish all the mosquitos within his area of operations for a few hundred pounds. But what may be difficult to effect for so small a sum may not be difficult to effect by means of a proper expenditure. Malaria at Mian Mir must cost the Govern-

ment alone some thousands of pounds annually, representing the interest on perhaps fifty to a hundred thousand pounds capital; and it is therefore a sum of this magnitude, and not a poor hundred or two, which for economical reasons alone may be spent on banishing the disease there. A task is easy or difficult according to the power available for performing it. Again, what does he mean by the "destruction" of *Anopheles*? Does he mean complete extinction or partial reduction? The former must of course always be more difficult and costly than the latter. It is a question of degree. To state that the task of destroying mosquitos is extremely difficult, without specifying either the degree of destruction or the means available for effecting it, tends merely to discourage future work, without really conveying any exact meaning whatever.

After discrediting most of the antimalaria measures suggested by others, Dr. Christophers hints that we may yet find salvation in some "gradually carried out sanitary reforms," but with commendable caution he fails to satisfy our curiosity by explaining what these reforms are. We can imagine the delight with which this judgement will be hailed by all local authorities. "No more trouble, no more expense," they will cry; "we know quite well what the words sanitary reforms mean, even without looking in the dictionary—they mean night-soil buckets—let us buy some more at once, they are quite cheap."

On p. 17, Christophers says: "The outcome of our experiment with regard to the effect of anticulicidal measures against *Anopheles* is therefore at direct variance with the results of such operations as have hitherto been recorded. It is but fair, however, to add that in many of such recorded operations no attempt whatever was made to show by search in the houses that the number of *Anopheles* was really diminished."

It would have been still more fair if he had shown justification for this statement. Such search was of course made at Sierra Leone, and, I suppose, everywhere else. The "direct variance" is more probably due to a much more evident cause.

8. *Summary.*—My remarks may therefore be summed up as follows: (1) We are not convinced that mosquito propagation at Mian Mir was really suppressed to the extent claimed, even over the small radius of half a mile; (2) the test employed for detecting reduction in the number of mosquitos consisted of nothing but the formation of a personal impression unsupported by definite figures, and was therefore neither delicate enough nor convincing enough for the purposes of a formal and important experiment like this one; (3) the figures given regarding variations in the amount of malaria are not sufficient to enable us to form any opinion one way or another; (4) several of the statements contained in the reports appear either to be contradictory or unintelligible, or to involve mathematical impossibilities; (5) even if we admit the thoroughness of the work done and the validity of the tests used, the whole experiment is still open to the final criticism (*a*) that it might not have been continued long enough, and (*b*) that the radius of operations might not have been large enough.

I therefore think that the sweeping conclusions placed at the end of Lieutenant Christophers' report are not supported by the evidence which he and Captain James have published. They are not entitled to claim any more than is contained in the following sentence: That after operations extending to a half-mile radius, lasting a year and a half, and (apparently) costing between two and three hundred pounds, no very large reduction in the number of mosquitos or in the amount of malaria was, judging wholly by their own personal impressions, effected. I can quite believe it.

Owing to the omission of a financial statement for 1903, we can only estimate the cost given above. The considerable sum spent on bricking the watercourse is not included, as it seems to have been more or less useless (Christophers, p. 4, line 28); probably a few pounds' worth of oil would have done as well.

In these remarks I have confined myself to a textual commentary and have not dealt with the broad principles which govern the prophylaxis of malaria, and which, though self-evident enough, require a more or less mathematical treatment for their formal demonstration. The logical basis of the great measure of mosquito reduction is absolute. There is no doubt whatever that in any locality we can reduce mosquitos to any percentage we please, provided that we arrest their propagation to a sufficient degree and within a sufficient radius. This proposition, like the multiplication table, does not require experimental proof, and is incapable of disproof. If experiments would appear to disprove it, the experiments and not the proposition must be wrong.

Experiment is required, not in support of the general principle, but only in order to obtain certain unknown constants. We have still to determine (*a*) the radius of operations required to reduce the density of a given species of mosquito to a given percentage: and (*b*) the percentage of mosquito reduction required in order to obtain ultimately a given percentage of malaria reduction. But experiments directed to this end must be of a true scientific quality; they must be prefaced by a mathematical inquiry and be executed by means of rigid tests applied by the brain as well as by the hand. In the meantime, we may rest assured that the smallest work against malaria will not be without its reward. The oiling or draining of a single pool, the cinchonization of a single person, and the "proofing" of a single room must and will perform their small quota of good. If we can do more than this, let us do it; we shall undoubtedly get better results. But if local authorities wish to clear the malaria in a large town or cantonment they must be prepared to spend money on the work, just as they would for a new water supply or sewerage system. The example of Ismailia is always before them. The road leads straight forward. Work like this at Mian Mir only tends to arrest enthusiasm in the cause without really adding anything definite to our knowledge.

IV.—Captain E. P. Sewell, B.A., M.B., B.C.Cantab., R.A.M.C.

THE RESULTS OF THE CAMPAIGN AGAINST MALARIA IN MIAN MIR.

Topography.

The cantonment of Mian Mir is a little over four miles from Lahore, the capital of the Punjab. It is built in the midst of an arid, almost treeless plain. The soil is alluvial sand, with an admixture of clay. At a depth of about 6 ft. is a layer of "kunkur," a hard, stony material which is used for road-making, and is almost impervious to water. The fall of the ground is very slight, and the kunkur layer hinders the percolation of water through the soil, so that, after a heavy shower of rain, a large part of the station lies under water. The resulting pools often take several days to dry up, and during the monsoon, when they become replenished by frequent showers, the larger pools remain for months at a time, and afford suitable breeding places for the *Anopheles*.

The nearest river is the Ravi, distant about seven miles to the north. From the head waters of this river water is brought by the Bari Doab Canal for irrigation purposes. This canal passes within a mile of the cantonment, and from it several smaller irrigation channels take their origin and pass through the station, supplying each compound with water by means of lateral branches. These latter are mere ditches, in many cases overgrown with weeds and grasses, and in them the larvae of *Anopheles culicifacies* can be found in plenty throughout the summer and autumn months.

Irrigated crops—cereals and cotton—are grown not only in close proximity to the cantonment, but around and between the individual bungalows. Even rice crops are grown within a mile of the barracks.

Climate.

The climate is for the greater part of the year very dry. Nearly the whole of the annual rainfall occurs in July, August, and September, the monsoon usually breaking in the middle of July, and continuing with longer or shorter "breaks" until the middle of September. The average annual rainfall of the last fourteen years has been 18.2 in. The temperature varies considerably; while in the summer a maximum shade temperature of 120° F., is often registered, it is not uncommon to get a minimum of 25° F., or even less, in the winter.

Mosquitos.

Throughout the warmer months mosquitos, chiefly *Culices*, are very numerous. They begin to appear at the beginning of April, and their numbers rapidly increase until the weather gets hot, when they fall off a little, only to become more numerous than ever during the rains. Very few are seen after the beginning of November.

Anopheles are not found in any numbers in the bungalows until the rains, although they can be found in small numbers in the bazaars. But during the rains they are present in large numbers in most of the bungalows, barracks and hospitals. The commonest forms are the *A. rossii* and the *A. culicifacies*. The larvae of the latter are found from April to October in running water along the weedy margins of the

smaller irrigation channels, those of *A. rossii*, on the other hand, in pools of water formed by the rains, and so are not present in any number until the monsoon bursts in July.

The Carrier of Malaria.

Of these two species, the *Anopheles culicifacies* has been found by Captain James, I.M.S., to be the carrier of the malarial parasite. The habitat of this mosquito being the irrigation canals, it is natural to ascribe to the irrigation system the malarial unhealthiness of the station.

Malaria in Mian Mir.

The following facts strongly support this inference. The Bari Doab Canal was excavated and the irrigation system introduced into the cantonment in 1867, in which year the fever rate jumped to 1288.3 per 1,000 from 654.3—the average of the preceding seven years. In the thirty-five succeeding years the high rate of 1386 per 1,000 was maintained.

These figures represent the number of admissions to hospital per 1,000 of British troops for malarial fevers. They by no means accurately represent the actual amount of malaria, since on the one hand numbers of mild cases are only detained and not admitted to hospital, and are therefore not shown in the returns, while, on the other hand, they include many cases of readmissions for recurrences. However, they serve for the purpose of comparing one year with another.

It is clear, then, that the incidence of malaria among British troops has more than doubled since the introduction of irrigation, and there can be no doubt that irrigation is the chief cause of the unhealthiness of Mian Mir.

Effect of Rainfall.

There is another factor, however, which largely influences the amount of malaria in any particular year, namely, the amount of rainfall. For instance, in 1899 there were only 6.21 in. of rain, and a malarial rate of 46.9 per cent., while in 1900 22.07 in. of rain were registered and a malarial rate of 107.9 per cent.

Antimalarial Measures.

Any measures, then, which have for their object the improvement of Mian Mir, should be directed mainly against the irrigation systems, and should also provide for the proper draining of the cantonment, and the filling up of all holes, pits, and low-lying ground upon which water remains after a shower of rain. It was on these lines that Captain James, I.M.S., in 1902, and Lieutenant Christophers, I.M.S., in 1903, prosecuted a campaign against malaria in Mian Mir. The whole station, however, offering too wide a field for their experiments, the south end, which includes the R.A. lines and the Military Prison, was chosen, as being of a suitable area and somewhat isolated. Their efforts consisted mainly in having the irrigation canals systematically cleaned, the banks made even, vegetation completely removed, and the sides plastered with mud, so as to present a smooth, unbroken surface to the water. Pools left when the water was shut off were baled out and allowed to dry. Oiling was practised whenever larvae were found to be present in any number. During the rains large numbers of shallow, rain-formed pools, which were found to contain larvae of *A. rossii*, were drained, oiled, or in many cases filled up. Bungalow compounds were kept under supervision, holes filled up, and empty tins removed.

Results of the Operations.

The way is now clear to examine the results of the operations, as shown by the malarial rate among British troops in the station.

The following table gives the malarial rate per 1,000 for the years 1902 and 1903 and compares them with the average of the preceding ten years:

1892-1901 Average.	1902.	1903.
982.1	269.4	1031.7

1902.

It will be seen at once that there was a large decrease of malaria in 1902, and the credit of this was somewhat prematurely ascribed to the antimalarial operations, but it must be borne in mind that the year was one of light rainfall, well distributed throughout the year, and that other stations in the Punjab were in the same healthy condition. Moreover, the reduction was just as well marked at the north end of the station, where no extraordinary efforts were made to fight the disease, as at the south end. The most that can be said is that in 1902 the efficacy of the operations was not proved.

1903.

The year 1903, on the other hand, was a malarious one throughout the Punjab. The rate at Mian Mir rose to 1031.7, a figure which is in excess of the average for the ten years preceding the experiment. Not only were the number of admissions high, but the type of fever was very severe. Haemorrhagic cases were very common, and several cases of the comatose cerebral form occurred. Several cases of the algide type might almost have been mistaken for cholera. All these malignant types are fortunately uncommon in Mian Mir.

It is difficult to estimate if any benefit to the station as a whole was afforded by the operations, as it would be fair to argue that the state of affairs might have been still worse were it not for these operations. But if the operations were a success it should at least be incontestable that the health of the area included within the scope of the operations was better than that of the area outside. The opposite, however, was the case. The malarial rate among the troops occupying the south end was more than double that of those living at the north end.

The following table shows that the south end is not usually to any extent more unhealthy than the north end:

Malarial Rate per 1,000.

Year.	South End R.A. Lines and Military Prison.	North End. British Infantry.
1900	148	529
1901	906	702
1902	73	54
1903	169	74

The facts of the case, then, are, that in 1903, the second year of the antimalarial campaign, malarial fevers were in excess of the average both in the number of cases and the severity of the type, and that this excess was more pronounced within the area of the operations than in the remainder of the cantonment.

Causes of Failure.

With these facts in view we can only conclude that the campaign has up to the present proved a failure, and the cause of this failure is not far to seek. The operations were doubtless efforts in the right direction, but were conducted on a scale utterly inadequate to make any impression on an evil of such a magnitude as that against which they were directed.

At the outset, it was a mistake to attempt to treat the R.A. lines as an isolated area. They cannot be treated as such, and any factor which affects the rest of the station is bound to affect a part of it, which is not separated by any physical division but is in direct continuity and subject to the same influences.

Secondly, any plan which aims at the reduction of malaria in Mian Mir must have as its basis the entire abolition of the irrigation systems, and the clearing off of all watered crops in the cantonment, and around it for the distance of at least one mile.

Thirdly, although the operations included the filling up of certain pits and holes and the draining off of water from low-lying patches of ground, a few minutes' acquaintance with Mian Mir after a heavy shower of rain would convince any one of the utter inadequacy of such local measures in one corner of the cantonment. There was nothing to prevent the *Anopheles* breeding in any of the numerous pits and ditches outside the area, and flying a few hundred yards to the buildings within the area.

To meet with any success a campaign against malaria must be on a very much larger scale. Nothing short of the complete levelling and draining of the whole cantonment and its environments, and the total abolition of irrigation and irrigation channels in and around the station is at all likely to cause any appreciable difference in the amount of malaria in Mian Mir.

Unfortunately these drastic measures involve considerable expense. The stoppage of irrigation would entail great loss to the zemindars, and the compensation paid to them for the deterioration of their land and loss of crops would amount to a large sum of money, which local funds are quite unable to meet, and which the Government of India has hitherto shown no disposition to grant.

Appendix.

Year.	Rainfall. Monsoon.	Total Annual.	Percentage of Malaria.
1892	20.32	23 51	107.1
1893	14.71	26 00	94.9
1894	9.24	23.19	136.5
1895	5.80	12 16	148 3
1896	6.53	9.91	30 8
1897	13.45	20.25	73 8
1898	11.42	18 44	80.8
1899	3.88	6.21	46 9
1900	18.94	22.07	107.9
1901	12.78	17.96	135 4
1902	8.90	11.83	26 9
1903	11.92	14.71	103.2

V.—HENRY STRACHAN, C.M.G.,

Principal Medical Officer of Lagos, West Africa.

I FEAR I can say nothing that will not be said, and said better, by others on this important subject. But I cannot refuse to give my views, such as they are, when requested to do so. Our present knowledge, founded partly on the soundest scientific investigation, and partly on the results of actual practice—which is based on the former—during the past few years, enables us to declare, and with emphasis, that the prophylaxis of malaria resolves itself ultimately, so far as the individual is concerned, into obedience to the rule, "Do not permit yourself to be bitten by mosquitos," simple to enunciate, but very difficult to obey in such places as the West African Colonies.

The measures necessary to carry this rule out thoroughly, and in the fullest sense, obviously include such as have for their object the destruction of existing adult mosquitos, and the prevention of their presence in a given locality by rendering the breeding of them there impossible, and by destruction of larvae.

Measures taken for the destruction of existing mosquitos involve an expenditure of money and time that place them almost entirely out of the range of practical work. In Lagos we have tried the experiment of employing a "mosquito catcher" in certain large institutions, but I am not able to say conscientiously that the results have been very valuable. The reduction of the number of mosquitos of various kinds cannot have been greatly aided by this means, as a constant influx of new individuals replaces the few destroyed daily, though possibly in a few places the comfort of residents may have been a trifle increased.

A. But the prevention of the presence of mosquitos by destruction of all possible breeding places and of the larvae, is a matter of vital importance, and on it our hopes of ultimately abolishing malaria in West Africa mainly depend. It includes:

(*a*) Filling up thoroughly of all areas of depression in the surface of the land that cannot be adequately drained, with the planting of water-absorbing trees.

(*b*) Filling up of swamp areas.

(*c*) Drainage of all areas where filling up is impracticable, but drainage is possible.

(*d*) Elimination of all the smaller breeding grounds (preferred by *Anopheles*), such as:

1. Domestic water receptacles, jars, calabashes, etc. (whose contents are left long enough to allow the short time necessary for breeding of the insects) water-butts and tanks having orifices open to admit the ovipositing mosquito. The former should be emptied daily, the latter two carefully closed at all joints, and the necessary orifices guarded with fine wire gauze.

2. Puddles in compounds and streets should be filled up, or if that be not possible during the rainy season, swept out daily, or treated with paraffin oil.

3. During the rains all plants whose leaves are so constructed as to collect and retain water where mosquitos breed (such as bananas, bromeliads, pineapple plants, yuccas, and the like), and hollows in tree trunks, or where branches have decayed away, should be carefully inspected, and, if necessary, removed when close to human habitations.

4. Empty tins, jars, broken bottles, potsherds, even pots in which plants are growing, and where heavy rain allows water to remain for some days above the surface of the contained earth in them, must be removed.

5. Flower vases must be daily emptied to prevent *Anopheles* from breeding in them in the house. (I have seen more than one instance in which no breeding ground for *Anopheles* could be found after weeks of search in the immediate neighbourhood, where the source of supply of the insect was eventually traced to the flower vases decorating the dining table!)

(*e*) Attention to wells. These need:

1. Careful closing, with employment of a pump outside of an enclosing railing. (This also aids in preventing pollution of the well water.)

2. When the latter is impossible, covering with a well-fitting lid, and frequent inspection to ascertain presence of mosquito breeding.

3. When larvae are found. Use of "larvicide" (which though somewhat disagreeable, is not poisonous to human beings), or of kerosene oil, with subsequent cleaning out of the well.

(*f*) Attention to ornamental fountains and tanks. These can be emptied, or treated with kerosene oil, when larvae are found in them. Fish will sometimes prevent breeding of mosquitos in such places.

(*g*) Attention to gutters under the eaves of houses. This, too, is of importance, and is sometimes overlooked. Gutters, when at all irregular, contain small collections of water which last long enough to enable mosquitos to breed in them. They should be regularly inspected and swept out, and defects of structure and level corrected. (Iron in the water is not inimical to *Anopheles* larvae. I have seen small collections of water in iron vessels which were almost solid with iron rust and larvae!)

(*h*) Attention to cesspits. They must be treated with kerosene oil when larvae are found breeding in them.

B. Equal in importance to the prevention of mosquito breeding is the employment of means to prevent the adult insect from attacking persons. They are:

1. The careful use of the mosquito net.

2. Use of mosquito-proof rooms.

3. Use of punkahs (or electric fans), fly-whisks, and other mechanical devices for warding off the attacks of the insects.

4. Burning, and other use, of certain materials (chiefly containing pyrethrum, or essential oils) in rooms, on the person, etc.

The use of the first is most important, since it is simple, within the power of all, and very effectual during the night hours.

The use of the second (mosquito-proof rooms) is really of the greatest importance, since it is in the evening hours, before going to bed under the protecting net, that the risk of infection from mosquitos is, perhaps, at its height, but in practice is most difficult to carry out—in Lagos, at least. The greater degree of heat felt in a mosquito-proof room is apparently considered by many to be worse than an attack of malaria, and the use of the mosquito-proof room is evaded.

This leads to consideration of the use of punkahs and fans. They are not available to the mass of persons in such a place as Lagos. Only a few Europeans can afford to employ the former, as there is no class of native here to accept punkah-pulling as an occupation, as in Eastern countries, and the natives will not use such means themselves. Electric power is not supplied by Government to all officers' quarters, and, of course, by the vast mass of the population it is impossible of employment. The fans, too, are somewhat costly articles. So that the heat in a mosquito-proof room is not to be mitigated, except in a few rare cases by those mechanical aids.

In consequence of this, as I am informed, many persons will not use those mosquito-proof rooms which have in some cases been supplied; so that a most important means of prophylaxis does not at present promise to be of much avail in Lagos, except to the very few who now make use of it.

I have suggested that malaria should be treated legally, as other infectious diseases are, so that the person who does not care enough for his own health to avoid risk of infection shall, when suffering from malarial fever, be deemed to be a source of danger to others, and therefore be isolated until recovery. This practice would in time lead such persons to take extra precautions against being infected. And costly mosquito-proof rooms would not be left to decay, unused by

those to whom they may be supplied, as would seem to be their fate now.

At the same time I feel bound to say that such rooms should be constructed on a better plan than they seem to have been, taking them generally. Some allow for easy ventilation during the hours of the day; others are practically permanently sealed, and when not exposed to a very strong breeze the heat is really unendurable, and one cannot be surprised that men refuse to live in them. Others are so situated as to be flooded during the rainy season.

Also one does not forget that even those persons who are scrupulously careful in observing all the means of prophylaxis are at times exposed to infection from no fault or carelessness of their own.

The use of burning pyrethrum, of essential oils, and so forth, must be considered among the minor accessory means of preventing attacks. My experiments a year or so ago with ocimum viride, a plant which was said to be so greatly disliked by mosquitos that its presence rendered theirs impossible, proved to me that it was quite useless. I did not publish the observation, as Dr. Prout, of Sierra Leone, coming to the same conclusion, pointed out the fact in the press.

Among accessory measures must be considered:

(*a*) Avoiding the heat of the sun during the hours when its power is greatest (say from 10 a.m. to 4 p.m.). One cannot but regret that young officers—military—are exposed during these hours on the very hot rifle range or at parade. The result is frequent "slight touches of fever," as they term it—and an undermining of strength that lessens resisting power. These "touches of fever" being either sun-fever or malaria, which is not a fresh infection.

(*b*) Avoiding of chill, from cold or wind or wetting by rain. Many cases of fever (not re-infection) are brought about by these agencies. The refreshing temporary effect of a cool breeze causes the individual to "enjoy" it until he is chilled. This is very noticeable on ships returning to Europe.

(*c*) A mode of life in which "temperance in all things" is the guiding principle.

C. Lastly, there is to be considered prophylaxis from employment of drugs. The action of quinine is too well-known to need discussion. But some twenty-two years of observation of the use of this drug leads me to entertain the following opinions as to its value and limitations.

It is useful—in daily small dose (5 or 6 grains), or in a larger dose (6 to 10 grains), on one or two days in a week—in preserving some persons from malarial attacks, under conditions where such attacks might be expected, or if they are attacked, in causing the disease to run a brief and mild course, generally speaking.

Others, however, are attacked in spite of such regular taking of quinine.

There is a notable percentage of persons, who cannot take quinine without marked suffering in various ways, especially disturbances of digestion and of the nervous system, and perhaps, after prolonged use, changes in the blood and the nerves, such as those of sight and hearing.

The usual preparations of quinine are therefore useless to such persons as a prophylactic. Other preparations (as enquinine) and other drugs (as methylene blue and arsenic) have been from time to time suggested for employment in such cases, but so far have proved of far less value than quinine.

Recently thiocol has been advocated, and I am inclined to think with some reason, but the number of cases in which I have used it, apparently with good effect, is at present too small for me to base on it any useful opinion; I, however, think it would be well if the drug were widely tested with the view of settling the question. It has the advantage of being easily taken, and of not disturbing the well-being of the taker.

In view of the cost of quinine (a minor disadvantage in one sense, but one to be considered where thousands of natives are concerned), and of the drawbacks mentioned above to the use of the drug, I am compelled to regard its use as a prophylactic, though so very valuable, as being secondary to its value as a means of destroying the malaria parasite. For it is in antimalaria work on a large scale that this, its greatest value, is evident, it being the one reliable agent known for destruction of the parasite in infected persons, and so, ultimately, for reducing the amount of the malaria poison which is in existence in any given region; and for this reason its use is to be urged.

While, therefore, I advocate its employment among the known means of prophylaxis, I feel that those which relate to protection from mosquito-bites are the ones from which we may expect the most marked and widespread results in Lagos in the immediate present, since reduction of the amount of infecting material (the parasite) must be a matter of years, considering the vast numbers of infected natives in the large areas inhabited by them.

It is necessary to consider the prophylactic measures that should be taken by persons travelling in the Bush, away from their residences.

I have found the little apparatus described below, made for me by Messrs. Benjamin Edgington, most useful in warding off mosquito attacks in the evening hours and at dawn—the periods of the day when one is most exposed to such attacks.

A large umbrella, of waterproof canvas, with cane ribs and a bamboo support. (This opens widely enough to allow room for small table and chair and one can take meals, and sit and read or write in comfort, protected from mosquitos and the other myriad insects which, attracted by light, make the taking of meals a very uncomfortable proceeding at certain times of the year.) Over the top of this umbrella fits a circular piece of calico, from the edge of which to the ground hangs a weighted and ample mosquito-net. The entrance is made by wide overlapping folds of the netting. This apparatus is light, easily carried about, and is useful in many ways. From this umbrella-net, one proceeds to bed, where the usual mosquito-net at once affords protection during the night.

In the camp-beds in vogue the rods to support the mosquito net give, after very short use, and allow the net to come in contact with the sleeper's body. I have obviated this difficulty by having the brass rods pass right through the edge of the cot into holes in the four corner legs, so that they are tilted outwards and so keep the net away from the sleeper. Both these little improvements have been made by Messrs. Edgington at very moderate cost, and will be found, I am sure from my experience, to be boons to the traveller. Quinine—3 gr. of hydrochlorate—should be taken daily when on the march. I need not dwell on the necessity for choosing, when possible, suitable sites for camping, nor on precautions to be taken as to water-supply.

From the foregoing it will be seen that in most places the antimosquito war (and in consequence the antimalaria war) becomes a mere question of money expenditure—money expended in preventing mosquito breeding. Given the necessary funds we may expect excellent, not to say marvellous, results—as in the case of Havana, to quote one striking instance.

In West Africa there are places where great improvement may be expected—Lagos Island is such a place, but where complete success cannot be hoped for, owing to physical conditions. Such places are better abandoned, in my opinion, and a new town built in a suitable site.

This is not the time or place for me to discuss the enormous advantages that would follow such a move in the case of Lagos Town. Apart from the malaria question, the obtaining of a fair water supply, of soil where vegetables and fruit could be grown and good cattle and sheep reared for food, and of a locality where new and good sanitary arrangements could be at once established—all so sorely needed in the present town—would revolutionize life for Europeans. But the all-powerful god, Mammon, places his veto on such a life-saving migration, and all that is actually in our power is to do the best possible to improve existing conditions in the existing town.

It will, perhaps, be noticed that I have not considered the question of prophylaxis as affecting Europeans apart from natives.

Apart from the humanitarian and political reasons, and apart from that duty towards the native which is very properly a portion of the "white man's burden," all of which are opposed to segregation, I consider that even from a lower and a selfish point of view, segregation is to be avoided. The amount of existing malaria poison must be reduced, and that could not be, if only segregation were practised, without constant efforts to improve the condition of the native in regard to this great cause of suffering and death among them.

There is, to some extent, a natural segregation—"like will to like"—and so the European quarter is in most places somewhat separated from the native, to the satisfaction of some of both sections of the inhabitants no doubt; but even so intermingling must occur, and I feel it is as impossible as it is inexpedient for high or low motives, to endeavour to create a wider breach between native and European.

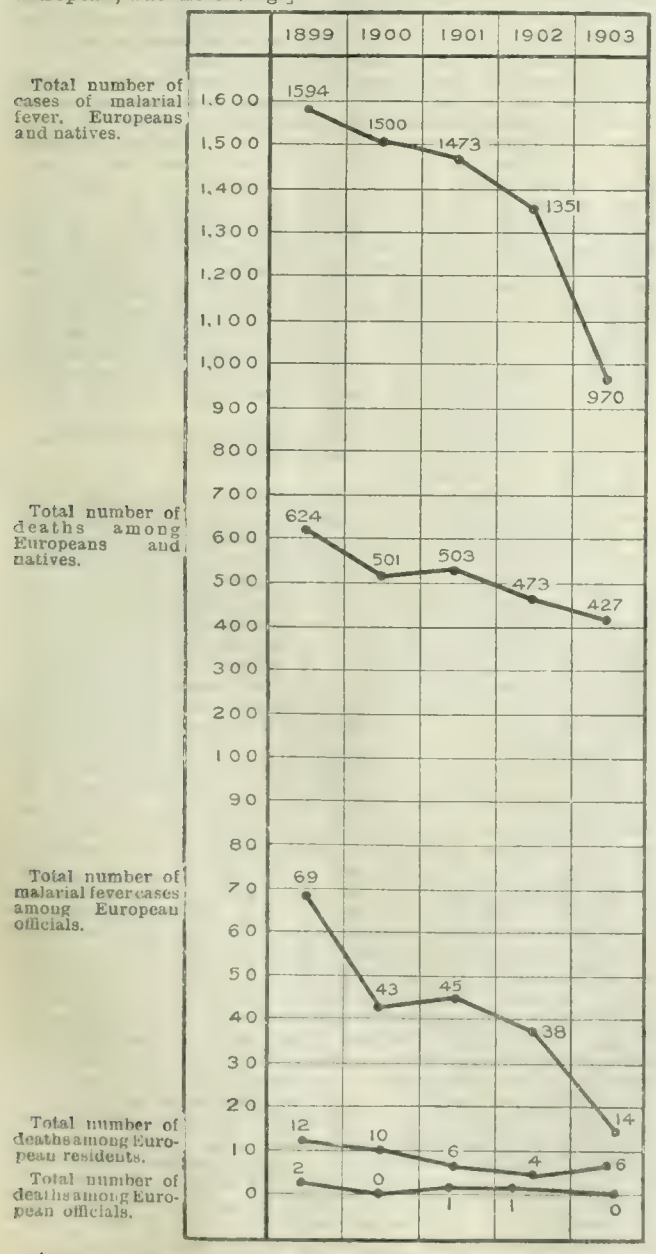
In Lagos during the past few years we have endeavoured by illustrated lectures and pamphlets, by the teaching of elementary sanitation in schools, and by the constant intervention of trained sanitary inspectors, to educate the natives in regard to malaria, its cause and prevention, and I venture to think the records of the past six years show that such education is having the desired effect, though it must be many a year before very marked beneficial result will be clearly in evidence so far as the native is concerned. Quinine has been issued regularly to all officials, European and native, and to such other natives as would take it, for the past three years.

The attached chart gives the number, so far as reliable records show them, of cases of malaria among Europeans, European and native officials, and the death-rate among natives, during the past five years in Lagos.

LAGOS. WEST AFRICA.

Total Number of Malarial Fever Cases, including Deaths, recorded among the Europeans and Natives (Officials and Non-officials) from 1899-1903 inclusive.

[During these years the population, both native and European, was increasing.]



Among officials it was possible to secure a greater amount of obedience to advice and greater precaution against infection than is the case with other European residents, who were more prone to follow their own ideas as to prophylaxis and treatment. I trust that in the future we shall see as great a degree of improvement among them as among officials.

Blackwater Fever (Europeans).

	1899.	1900.	1001.	1902.	1903.
Total cases	5	2	9	11	4
Total deaths	3	6	4	5	2
Of these cases there were among officials...	1	1	4	1	3
Deaths	0	0	0	1	1

This chart is, I think, of great value, as indicating the changed condition as regards number of cases and deaths (malaria) in Lagos town since the end of the year 1898, when I arrived in the colony.

The number of cases, European and native, has fallen steadily each year, from 1,894 (in 1899) to 970 (in 1903), while the number of deaths has fallen from 624 to 427 in the same time. Of these deaths, the majority, of course, are among natives, for the deaths among all European residents have fallen from 12 to 6, and among European officials from 2 to 0.

These cases are taken from the following records: The Register of Births and Deaths, that of the Lagos Hospital, of the Ereko Dispensary, of the Government Prison, and from the Government daily sick list. To these is added for the past two years the record of the Massey Street Dispensary, which, being additional to the former, might have been expected to show a marked increase in the number of recorded cases, and I think we may say would certainly have done so instead of indicating a farther and continuous decrease, had there not been a strong counteracting agency at work (for it must also be remembered that the population of Lagos Town has been increasing during these years—the census of 1901 gave a population of 39,387, as compared with 32,508 in 1891 for natives, and 233 as against 143 for Europeans).

This counteracting agency, I venture to think, may be justly considered to be the prophylactic measures adopted by us during the time under review, namely, anti-mosquito measures and the administration of quinine, for I imagine the actual treatment of attacked persons was much the same in bygone times as it is nowadays in West Africa, so far as Europeans are concerned.

VI.—ANDREW DUNCAN, M.D., B.S.Lond., F.R.C.S., M.R.C.P.,
Physician, Seamen's Hospital Society; Lecturer on Tropical Medicine, the London School of Tropical Medicine.

I PROPOSE to limit my remarks to the prevention of malaria amongst the troops in military expeditions, and more particularly to the mobile columns of the same. The preponderating effect in disablement that malaria causes in campaigns has ever been manifest. It will suffice to mention as examples the Ashanti expedition of 1896, in which one half of the troops employed were placed *hors de combat* by African remittent fever; the Spanish-American war, in which out of 13,657 men in hospital at Cuba 2,014 were cases of malaria; whilst in our Burmese, China, Abyssinian, Looshai, Duffla, Malay, and Afghan wars, amongst others, malarial fevers either headed the list of admissions or took the second place. What, then, are the means whereby we may prevent this large disabling influence?

Before proceeding to the more especial means of prevention in accordance with the true etiology of malaria, I would first draw attention to the avoidance of the predisposing elements in matters connected with:

1. The selection of the men.
2. The age of the men.
3. Race.
4. The season for operations.
5. The clothing.
6. The period of marching.
7. The camping grounds.
8. The food.
9. The precautions at night.

First in the selection of the men. Here it must be borne in mind that previous attacks of malaria render the subjects of them more prone to future attacks. Hence the medical histories of a regiment must be closely scrutinized. For example, in the Duffla expedition of 1874, the 16th M.I. had for the eleven months previous to the outbreak of hostilities suffered greatly from "fever" in Assam; the 44th L.I. had for seven months before the expedition been stationed in the malarious plains

also of Assam; in the campaign the 16th M.I. had 29 06 per cent. admissions for malarial fevers, the 44th Assam L.I. 18 40 per cent. for the same cause, rates far above those of the other regiments not presenting the malarious history which had admissions ranging from 3.60 per cent. to 7 35 per cent. only. Again, in the Afghan war my old regiment, the 14th Sikhs, one of the finest regiments in the Bengal Army, suffered greatly from malaria; previous to the campaign they had been for three years stationed in the malaria-stricken Peshawur Valley.

But not only does a malarious history predispose to malarial disease, but it also powerfully influences the onset of other diseases, especially amongst native soldiers—for example, pneumonia—it is also one of the common causes of cardiac dilatation. A regiment with a clean malarial history presents a great contrast to those cited above. I was some time in charge of the 23rd Pioneers in the Afghan campaign. They had come down from the hills of Simla in rude health, and no regiment during the war gave a better medical history. Hence we learn that regiments that have suffered markedly from malaria previously should not be chosen. The severer and more fatal forms of malaria never, as a rule, attack those previously immune from it.

Regarding age, it has been found that young soldiers and recent recruits suffer more than their older comrades. This was well shown in the Ashanti expedition of 1895-6.

Respecting race, it has been found that the negro race possesses the greatest immunity; in the War of the Secession in America, negro troops suffered the least from malaria, whilst a like experience was obtained in the Mexican war.

As regards season, meteorological influences speak with no uncertain voice. The end of the hot season in the tropics, when great alternations between the morning and evening temperatures occur, is very predisposing to malaria; again, the most dangerous time in the United Provinces in India is at the drying up of the rains. Hence this period of the year should be avoided if possible for military expeditions. A striking example of the above facts was shown in Ashanti in 1873. Here previous to the arrival of Sir Garnet Wolseley certain military operations had been carried on in the unhealthy season of the year. The Marines became so stricken with malaria that they had to be sent home, the mortality of the strength disembarked being 17.30 per cent. Sir Garnet operated in the succeeding healthy season, and the mortality for the strength was only 3 14 per cent.

Respecting clothing, flannel should be worn. Khaki cotton drill is not a good material to wear. At my recommendation in Afghanistan the men of the regiment were given a woollen jersey each, and the admission for malaria at once decreased. Cotton drills become damp and clammy in a humid climate. In the Perak expedition, for instance, it was a great source of fever. Flannel protects against the great alternations of heat and cold, of the day and night temperatures, inasmuch as by it a more equable temperature is insured.

As regards the period of the day for marching some authorities, such as Morache and Sanderson, advise not to march in the early morning. The late Professor Parker recommended doing so in the afternoon in hot malarious climates. I would, however, differ from this teaching on account of the danger of sunstroke. I never observed any ill effects from marching in the early hours in Afghanistan, whilst the men were far more knocked up whenever we did march in the afternoon. In Ashanti also it was found that although malaria was most powerful in the early morning, yet less harm occurred when marching in these hours than when proceeding for a length of time in the sun. The men should always have a meal of coffee and bread previous to setting out, and should also smoke in moderation, as Sanderson found by experience the good effect of tobacco in warding off attacks of malaria when marching in the early morning. At the end of the march, sitting down in wet clothes should not be permitted, and arrangements should be made whereby the men always have their great-coats handy. In the Afghan war the 14th Sikhs were without their great-coats, and for nearly three weeks slept on the ground with only their ordinary uniform. Malarial fever was exceedingly prevalent amongst them. The cholera belt should always be worn.

As regards the camping grounds, the exigencies of the military operations must of course always be of chief weight. But as showing the influence of healthy camps over the reverse, it may be mentioned that during the Zulu war the second division enjoyed a high state of health, being encamped and operating on high bracing uplands. The first division, on the contrary, was on the hot swampy coast-line, and suffered much from fever. The American War of the Secession gave us a striking example of this in the force occupying the Atlantic coast: where there were huge alluvial tracts the intermittent fever-rate was 194.03 per 1,000, as against 121.77 for the Pacific region, where only a narrow strip of land intervened between the sea and the mountains. Again, especial precautions should be undertaken where the necessities of warfare entail much disturbance of the soil, as in making fortified places. This was shown in the large amount of malarial fever that attacked our men in the Zulu war during the erection of Fort Chelmsford. In the French army, again, at Madagascar, the men employed in road-making died like flies.

Turning now to the food of the men, the ration must be sufficient, and it should not be a monotonous one. Livingstone in Africa found plenty of wholesome food protected his men more than quinine. Tea and coffee should be as far as possible habitually drunk, both on the march and in camp. Koch recommends that all water be boiled in the prevention of malaria. In the Niger campaign the only white officer who remained free from the disease boiled his water. The late Sir Henry Stanley used to emphasize the importance of sterilizing water in combating malaria. In the Terai the Forest Department, by constructing deep masonry wells, have enabled their employés to remain permanently at work at the station at which they had formerly to be relieved periodically every fortnight on account of the deadly malaria.

With regard to the precautions to be taken at night: where arrangements can be made, the men should not sleep on the ground. In the Spanish-American war it was reported in the *New York Medical Journal* that "nearly all those who slept on the ground after the battle of July 1st to 3rd contracted some form of malarial fever, the worst cases being in those who had to sleep on wet ground with only their army blankets for bedding. Every one of a number of men who slept on wet ground at a certain spot near 'Bloody Bend' died later of pernicious malaria." Mr. Sanderson, whose life was spent in the jungles of Chittagong after elephants, attributes the fact that he was remarkably free from malaria to two facts: (1) that he always slept off the ground on a bedstead, and (2) that he always slept within mosquito nets. This last fact brings us to the methods by which we may attack the *fons et origo mali*. Malarial fever may be prevented in three ways:

1. By malarial protection against the infected mosquitos.
2. By destruction of the infected mosquitos.
3. By prophylactic drugs.

With regard first to mechanical protection: any one who has been on a campaign must recognize the fact that for an army on the march protection by mosquito nets is out of the question. What chance would there be for the net remaining intact during the daily packing and unpacking of the impedimenta. Again, in these days, when one's luggage is cut down to a minimum, so that a tent and portable bedstead are even out of the question, how could a mosquito net be fixed up? The officers of the force might, perhaps, arrange for such, but does any one imagine that Tommy Atkins would take care of his net? The destruction of infected mosquitos is also out of the question on the line of march. There remains, therefore, the protection to be obtained by the administration of prophylactic drugs. There is a vast amount of evidence from all parts of the world in favour of this method. There is also a certain amount of evidence showing this method to have failed. Thus it is curious that both in the Ashanti war of 1873 and in the last one, the principal medical officers did not find the practice of any value. The same occurred in the Malay war of 1875-6. In the Gambia expedition the men taking quinine had as much fever as those not taking it. But, on the other hand, there is overwhelming testimony in its favour. Time will not permit me to give all the instances in which it has been found to be beneficial to give prophylactics. What prophylactic should be used? During the latter period of my service in India I made comparative trials of fifteen different antimalarial drugs. The experiments were comparable, as they were all made on one race of men, namely, Goorkhas, and the men were all in the same station. The result showed that quinine was *the* drug *par excellence*. Next to quinine, powdered pine bark was most successful. Narcotine, recommended by the late Sir William Roberts, was disappointing. Arsenic I found to have no antimalarial action. It has, however, been found effectual by other observers such as Crudeli and Ricchi in Italy, Downie in India, and Leslie in Africa. Sulphur and hyposulphite of soda, recommended by Dr. Schmidt, were tried in the Mauritius epidemic of 1866-7, but found to be of no use.

With respect to the dose of quinine, this was given by me in three grains every morning.

VII.—Kenneth McLeod, M.D.Edin. : Colonel I.M.S. (Retired),
Professor of Clinical and Military Medicine, Army Medical Staff College.

Colonel McLeod remarked that there were several points in the papers just read which deserved comment. The conditions affecting the life of the mosquito were very properly mentioned as having an important bearing on prophylaxis. The food of larvae was not referred to, but this seemed a very essential condition. The conveyance of adult mosquitos by railways and other carriages, ships, etc., was not alluded to, although that was no doubt a possible means of dissemination. The relations of mosquitos to trees and plants was not dealt with by Dr. Stephens, but this point seemed also of some consequence. The use of the broom in sweeping away insects was referred to in one of the papers read. There could be no doubt that the clearing away of dust in dark corners where mosquitos lodged during the day in huts and houses ought to be scrupulously practised. In regard to the Mian Mir experiment a doubt arose as to the propriety of the selection. The conditions were evidently most complex and difficult. The influence of irrigation in the prevalence of malaria had long been known. The abolition of irrigation as a means of preventing malaria seemed hardly feasible or commendable. The alternative was between fever and famine but perhaps, by good drainage and other measures, this alternative need not necessarily arise.

VIII.—Major G. H. Fink, I.M.S. (Retired).

Major Fink said: There are many points in Dr. Stephens's paper which place us in a very difficult position as to the prime origin of malaria while considering Ross's investigations with regard to the particular species of *Anopheles* in which he (Ross) had found the malarial parasite. The speaker previous had referred to the food of mosquitos, and I feel that the difference in the opinion as to the particular *Anopheles* in which the parasite of malaria is to be seen may possibly be due to the food, as well as the soil, as conditions favouring the life of the parasite or otherwise. An *Anopheles* mosquito which is harmful as regards malarial transmission in a clayey, moist soil and atmosphere, might be harmless in a sandy, dry soil and atmosphere. With regard to this particular point of finding certain conditions in cells, I would like to state that Professor Heitzman of Vienna had in his investigations found a nucleus always present in "unicellular organisms" which he had cultivated in Vienna, but the same organism presented no nucleus in New York. This would, perhaps, throw some light upon the subject. Plehn's "primitive bodies," or karyochromatophile granules, mentioned in Manson's book, have yet to be thoroughly investigated, since it is acknowledged that very little was known about them, except that they are to be seen in the blood of Europeans on the West Coast of Africa soon after their arrival there, but attended with anaemia, and this before malaria has pronounced itself in the individual. It might be considered as a "latent phase" of malarial fever parasites, but an organism on the borderland between the vegetable and the animal, which presented both the male and the female element, which had to pass through the usual cycle before its exact position could be recognized in the body of the mosquito, and before malarial fever was transmitted through the bite of that insect to man. With regard to prophylaxis of malaria many substances are mentioned in books; but peppermint oil is not given as a culicide or culicifuge. I tried it in Sibsagur district, Assam, in my own house with good effect, and found it superior to petroleum. I also tried it as an emulsion with castor oil and liquor potassae, which I sprinkled over the stagnant water of a quadrangular moat around the station; the mosquitos on the side of the moat where it had been tried were lessened in numbers, and the fever cases on that side diminished greatly. I felt that such an experience was worth recording, and have only come forward with my remarks since I believed that we can not learn too much about malaria and its prevention in every country from the lips of all interested in the subject.

IX.—P. O. Malabre, M.D.

Dr. Malabre inquired as to the reputed destructive power of dragon flies on mosquitos. It had been said that the dragon fly preyed upon mosquitos, and it would seem a possible method of destroying mosquitos and lessening malaria to introduce the natural enemies of the mosquito into regions where they prevailed and where malaria was rife. In Jamaica smoke from various substances was also an efficient means of keeping down the number of mosquitos.

X.—Captain C. E. Williams, I.M.S.

Captain Williams said: Dragon flies in all parts of the world prey on mosquitos, which they usually seize when on the wing. I have seen it reported that in some parts of the tropics residents keep dragon flies in their rooms with a view to reducing the number of mosquitos, but I cannot remember the reference just now. In Hudson's *Naturalist in La Plata* it is related that whenever dragon flies were present the mosquitos, which had previously been a pest to residents, at once disappeared, and only reappeared when the dragon flies left the vicinity. The mosquitos appeared to realize the danger from the dragon flies, and to hide themselves until it had passed. I have lately raised dragon flies from the larvae, in captivity, and fed them on living mosquitos, which they seized when on the wing and fed upon. So far as I know, the dragon fly does not feed after dusk in the tropics; my personal observations relate to India and Burmah. The minute nymphs of various species of mantis feed readily on mosquitos, and possibly other insects of the same size. I have raised many hundreds from the egg, and fed them for the first six weeks entirely on mosquitos, upon which they thrived most satisfactorily.

XI.—Fritz I. A. Beringer, M.R.C.S., L.R.C.P.,
Colonial Service, Gold Coast.

Dr. Beringer said that in regard to the use of quinine as a prophylactic he was in Hong Kong doing duty with troops from 1900 to 1902. Quinine sulphate, 5 gr. in solution, was given to European troops every morning at quinine parades, beginning in 1900, at the time when the malarial season usually commenced; later 10 gr. per day on three consecutive days per week were administered. During this year a greater percentage of cases than during the previous five years was noted. In one month 14 per cent. of all European troops were in hospital for malarial fever. At the same time it must be stated that this was a bad malaria year amongst the civil population. The general opinion was that the cases of fever were perhaps a little less severe. The result undoubtedly showed that quinine in this instance had no effect on the number of cases of malaria. In West Africa also he had seen several cases of malaria in those who had taken quinine regularly. The diagnosis rested on clinical evidence in the great majority of Hong Kong cases, but many were examined microscopically and the malarial parasites found.

XII.—Sir Patrick Manson, K.C.M.G., F.R.S.,
Medical Adviser, Colonial Office.

Sir Patrick Manson asked if the diagnosis of malaria in the case of the Hong Kong garrison in whom quinine failed to exercise its usual prophylactic influence was correct, how was it arrived at? Possibly the fever from which the garrison suffered was not malarial. Hitherto many places in the tropical world in which the physical conditions seemed to be suitable for malaria had remained immune. That such places might become infected subsequently was evidenced by the recent history of Mauritius. Might not many of the islands of the Pacific—Fiji, Tahiti, Samoa—become similarly infected? Would it not be advisable to be prepared beforehand against such a contingency?

XIII.—Daniel Elie Anderson, M.D.Paris, M.B.Lond.

Dr. Anderson said: Whilst on a visit at Tamatave, Diégo-Suarez, and Nossi Bé, in Madagascar, in 1889, I noticed and was told that the natives cooked their food in the one-roomed hut, and the only outlet for the smoke was a hole in the apex of the cone-like roof; thus the room was constantly filled with smoke and became free from mosquitos. It is a known fact that in Mauritius and elsewhere in the tropics, and also along the Riviera, substances producing a large quantity of smoke are burned in the bedrooms to drive away the mosquitos. The smoke does not kill the mosquitos, but numbs them; for hours they remain quiet and will not fly about. I have over and over again tried this method in Paris in summer to obtain a few hours' sleep. Everybody living in the Riviera (in Mentone, Nice, etc.) will corroborate what I state. I beg to

corroborate Sir Patrick Manson's statement that the malarial *Anopheles* can be introduced into places where it never existed before, as in Mauritius, for instance, where in 1867 it was brought over probably from India or Madagascar. Malarial fever now is endemic in that island. Why the malarial *Anopheles* had not made its introduction before, seeing that immigration of coolies from India had existed for a score of years anteriorly, and there had been constant communication with Madagascar, whence bullocks for the market are brought —why, I say, the malarial *Anopheles* had not propagated itself in larger numbers before 1867 in Mauritius is until to-day a subject of discussion (*vide* my Notes on Malarial Fever in Mauritius, August, 1890). There is no doubt that before 1867 sporadic cases of malarial fever were known in Mauritius. During my visit to the island of Mauritius in 1899 I came across several Indians suffering from filariasis, and in most of them I traced the cause to eating the watercress growing in ponds of stagnant water. Evidently the eggs of the filaria had been deposited on the under surface of the leaves of the watercress. In Madagascar (Nossi Bé), which I also visited, where filariasis is common, the remedy is aq. chloroformi (*B.P.*), ℥j, two or three times in the two hours, until patients fall asleep: then the symptoms begin to disappear.

XIV.—W. J. Simpson, M.D.Aberd., F.R.C.P.,

Professor of Hygiene, King's College, London; Lecturer in Tropical Hygiene, London School of Tropical Medicine.

Professor Simpson remarked that the only observation he had to make was that he regretted that the experiment against malaria had been made at Mian Mir. It was not under conditions that were likely to be successful. Only a small portion of the cantonment was dealt with instead of the whole, which after all only covered an area of four miles. If a proper and efficient organization had been used over the whole cantonment probably the results would have been very different. The Government of India were well known to expect their medical officers to make bricks without straw. Other experiments were proposed to be made in the central provinces. The Sanitary Commissioner proposed that the civil surgeons of five municipalities should carry out a campaign against the mosquitos. The civil surgeons were to search out for the localities in which the *Anopheles* reproduced themselves, to take measures for the destruction of the mosquitos, and to note the results in their annual reports. Now, at the Indian Medical Congress held in Calcutta in 1894 he (Dr. Simpson) had shown that it was perfectly impossible for a civil surgeon to carry out any sanitary duties, his work in other directions being so overwhelmingly great. He had to visit the gaol and attend to the prisoners, also the lunatic asylum and the hospital, to superintend vaccination, besides performing many other governmental duties, as well as those of medical attendant to the civil servants and others of his district. No civil surgeon had any time to carry out any malarial campaign, and it was hoped that no such experiment would be attempted, for it would only lead to confusion and to failure. Nothing of this kind could be effected without a proper sanitary organization, which India was without at the present moment, but which he hoped, for the sake of the welfare of the Indian population, would be soon created.

XV.—Alexander Crombie, M.D.,

President of the Section.

The President said: We have now before us two great object lessons. Not to speak of the brilliant results which are reported from Havana, we have the success which followed the measures taken at Ismailia, which have made it a mosquito free and malaria-free sanatorium, and we have the equally signal failure of those carried out at Mian Mir, and which have failed to mitigate in the smallest degree the incidence of malaria in that cantonment, and it behoves us to ask ourselves why the same or similar measures for the destruction of mosquitos were successful at one place and failed at the other. The answer is not difficult to find. At Ismailia the means adopted were adequate, were carried out in a whole-hearted way, were applied to the whole and every part of the town, and included the adjoining marshes. Not only was the usual anti-mosquito campaign carried out in the town, but the neighbouring marshes were drained, and their stagnant water converted into running streams. The whole area was rendered unfavourable for the propagation of mosquitos. At Mian Mir, on the other hand, only a small fraction of the area was brought into the field of operations; only one corner of the cantonment was treated, and the remaining three-fourths of the area was left untouched, with its network of irrigation canals, its irrigated crops up to the very doors of the bungalows, a very paradise for the breeding of mosquitos, its pools of standing water after each shower, and no adequate provision was made to prevent the influx of *Anopheles* from outside, of larvae in the water of the canals, and of adults from the irrigated fields outside and inside the limits of the cantonment. An experiment conducted on that scale was doomed to failure. Would it have succeeded at Ismailia if the measures had been restricted to one quarter of the town, and nothing been done to prevent the immigration of *Anopheles* from the adjoining marshes? I think we may say that if the measures advocated by Ross at Ismailia had been carried out in the same partial and half-hearted way the failure there would have been just as complete as it has been at Mian Mir. Another thing has come out of the discussion, and that is the astounding fact that in the year of grace 1904 the cultivation of crops for which irrigation is essential is permitted within the limits of a cantonment for British troops. The danger to health of the cultivation of rice and other crops requiring irrigation and standing water has been recognized from all time. I was lately reading a book (*Epidemiologia Española*), published at Madrid in 1802, in which the following passage occurs: "The cultivation of this plant (rice) has often been considered contrary to public heath. From the year 1324, little more than a century after the conquest of the Kingdom of Valencia, we meet with the prohibition of the growth of rice in the neighbourhood of the capital, and in that of some of the surrounding towns. This prohibition was repeated by the same sovereign, Don Pedro the Second, in 1386, by King Don Martin in 1403, and by Don Alonso in 1483." In the memoirs of the Royal Academy of Medicine of Madrid, printed in 1797, are some excellent observations "on the cultivation of rice in the Kingdom of Valencia, and its influence on public health," by Don Antonio Josef Cabanilles. He attributes the unhealthiness of regions where rice is grown to the multitudes of insects which are produced in these marshy situations, leaving there their excrement and dead bodies, and points out that the colour of men dwelling in these regions is changed, and tertians manifest themselves, which with time augment in strength and malignancy. He insists on the prohibition of the cultivation of rice and the drainage of the fields where it is grown as the remedial measures indicated. And yet we have, six hundred years after the royal edicts I have alluded to, the all but incredible fact that the cultivation of rice and other irrigated crops is permitted inside a British cantonment. I do not think that Colonel McLeod was quite fair to Captain Sewell in this respect. That officer does not demand the abolition of irrigation throughout the length and breadth of India, but he advocates its abolition only within the limits of Mian Mir, and I think we must all agree with him that there can be no diminution of the prevalence of malaria, or of the inefficiency which it causes among the troops stationed there till it is abolished. One of two things must be done; either the irrigation system which now exists must be swept away, or the cantonment of Mian Mir must be removed to a more healthy situation. The result of the anti-malarial experiment carried out in that cantonment shows conclusively that half measures are futile.

DISCUSSION ON THE LEISHMAN-DONOVAN BODY.

I.—W. B. Leishman, Major, Royal Army Medical Corps,

Professor of Pathology, Royal Army Medical College, London.

In opening this discussion on the nature and significance of the new parasitic bodies, I would wish, in the first place, to express my sense of the honour which I feel has been done me in my having been asked to undertake it.

As this is the first meeting of the Association at which these bodies have formed a subject of discussion, it may, I think, be of most service to the members if I describe, as briefly as possible, the main facts which have been brought to light in connexion with these parasites before entering, at somewhat greater length, upon the more debateable points in connexion with their nature and significance. The blanks in our knowledge are many, but good progress has of late been made in filling in some of these, and I trust that still further additions may be the fruit of this discussion.

Since the bodies were first brought to notice quite a large

number of cases have been put on record by Donovan, Marchand and Ledingham, Manson and Low, Bentley, Rogers, and others, and it is becoming more and more evident that the disease associated with their presence is by no means uncommon in tropical countries, and there can be little doubt that, as the parasites themselves and the methods necessary for their demonstration become better known, we shall hear of many more cases.

Detailed descriptions and figures of the bodies have been published in connexion with so many of these cases that I do not propose to occupy your time upon this point, more especially as there is a general uniformity in these descriptions which leaves little doubt that the appearance of the parasites met with in the different cases is constant and regular.

Geographical Distribution.

On this point we have a certain amount of information, but cases have been reported from countries so widely apart that it would be rash at this stage to attempt to assign geographical limits to the disease. The first case in which the parasites were found was that of a soldier, invalided from Dum-Dum in 1900 with tropical cachexia and splenomegaly, and soldiers at Netley presenting a similar clinical picture were so frequently found to have served in or near this station that I termed the condition "Dum-Dum fever." Such a name was, however, only intended as a temporary expedient for the avoidance of a periphrasis in speaking of the condition with which the bodies were associated, and, as it appears likely that the disease may prove to be identical with kala-azar, this well-known name will probably be adopted.

Up to the present moment cases have been reported from three or four widely separated districts of India, from China, Tunis, Algiers, Arabia and Egypt. As our knowledge of these endemic areas is added to, it would be of great interest to endeavour to find out any physical peculiarities they may possess in common, as this may help us in the search for the alternative host which the analogy of malaria and other protozoal diseases would suggest to be necessary.

Distribution of the Parasites in the Body.

Originally found in the spleen, the parasites have since been met with in the liver, the mesenteric glands, the bone marrow, the kidney, and in ulcers involving the intestinal mucosa. The great majority of those who have searched for them in the peripheral blood have failed to detect them, but M. Laveran is of the opinion that certain small bodies occurring in the red corpuscles in some of his specimens are young forms of the parasite.

The most exhaustive accounts of the distribution of the parasites are those of Marchand and Ledingham and of Christophers, and their results are in many respects in marked agreement. According to these and other observers the parasites appear to be chiefly, if not solely, intracellular, and are met with in the protoplasm of large mononuclear cells, which are probably, as Christophers suggests, "macrophages," and of the same nature as those large phagocytes which, in malarial cases, are filled with ingested melanin granules. A fact which has been noted, and which appears to me significant, is that neither the parasites nor the cells which harbour them appear to suffer from their mutual association.

In specimens obtained by splenic or hepatic puncture during life the parasites are, however, usually found free or in groups of several members, and such free or agglomerated parasites are frequently seen to be embedded in a structureless matrix or stroma, staining grey or pale blue with Romanowsky's method. This stroma or matrix is of importance, as it is largely owing to the different conceptions as to its origin that different views have been taken as to the nature of the parasite. That the true origin of this stroma lies in the disintegration of those large mononuclear cells through mechanical violence, and that the stroma represents a fragment of the protoplasm of one of those host cells, appears probable from the work of Christophers and of Marchand, which I have been able to confirm to a large extent by the chromatin staining of sections from one of my own cases.

Symptomatology.

As I trust we shall receive fresh information on this point from some of those who are to follow me, I shall only enumerate the chief points which appear to be presented in common by the cases I have myself observed and those which have been recorded by others.

1. Splenic and hepatic enlargement—the former being apparently constant, while the latter is common but not invariable.

2. A peculiar earthy pallor of the skin, and, in the advanced stages, an intense degree of emaciation and muscular atrophy.

3. A long-continued, irregularly remittent fever, of no definite type, lasting frequently for many months, with or without remissions.

4. Haemorrhages, such as epistaxis, bleeding from the gums, subcutaneous haemorrhages or purpuric eruptions.

5. Transitory oedemas of various regions or of the limbs.

6. Complications, such as congestion of the lungs, diarrhoea and dysentery, have been frequently reported, and are occasionally the immediate cause of death.

7. Blood count. The cases coming under my own notice have shown a marked mononuclear increase, an interesting point, if confirmed by further experience, in view of the proved absence of malaria.

To these positive signs may be added certain negative ones of hardly less importance: First, the absence of malaria, except as a concurrent affection, which yields to appropriate treatment; secondly, the negative result of the agglutination test to typhoid and Malta fever; and, thirdly, the resistance to medication, and especially to quinine—at all events, in the later stages of the disease.

Relation to Kala-azar.

It will be noticed that the symptoms detailed above are very similar to those of kala-azar, a disease which has furnished matter for discussion at previous meetings of this Section, and concerning whose causation great differences of opinion have existed. I suggested in my original communication that search should be made for these bodies in kala-azar, and Bentley has since reported finding them in the spleen in cases of this disease, while his results have been confirmed more recently by Rogers. It is, perhaps, too early to say definitely that they are the cause of kala-azar, but it certainly looks as though this were the case, as they seem to occur constantly in this disease. If it should be so, the question arises whether the other cases in which the parasites have been found are identical with kala-azar, and, if this identity is proved, we must then admit that the geographical distribution of kala-azar is much wider than has been supposed, and, further, that it is not uncommon amongst Europeans.

The Nature of the Parasite.

On this point, so important for the solution of many of the unsolved problems in connexion with the disease, there has been a divergence of opinion, and it is much to be hoped that the question will soon be definitely settled. When it is, analogy should help us in clearing up the rest of the life history of the parasite, and put us on the track to what should be our ultimate goal—the prevention and, if possible, the stamping out of the disease. Stated briefly, the views that have been enunciated are the following:

1. Major Ross, working with films sent to him by Donovan, came to the conclusion that the bodies represented a new genus, belonging to the sporozoa, which he did me the honour to name Leishmania.

2. M. Laveran, also working with films from Donovan's cases, pronounced the bodies to belong to the piroplasmata, and gave them the name P. Donovani.

3. In my own opinion they appeared to represent a stage in the life-history of a flagellate organism, closely resembling a trypanosoma, if not actually belonging to that genus.

Few of those who have recorded cases of the disease have expressed their views upon this question of their nature, but Marchand and Ledingham, as a result of the study of their case, have come to the same conclusion as myself.

To examine these views more in detail: first, M. Laveran's view, that they are a species of piroplasma—a parasite of the red blood corpuscles—has met with little support from other observers, whose most careful search has failed to demonstrate their presence in the red cells of the peripheral circulation, while, further, it has been pointed out that the arrangement of the chromatin, the method of apparent multiplication, and the tendency to occur in the protoplasm of the large mononuclear cells of the spleen and liver further militate against this theory.

Such high authorities as Manson, Ross, and Marchand have also pronounced against this view. When the parasites are very numerous in a film it must happen at times that

some are superimposed on the red cells, and when this occurs it is no easy matter to say whether it is a case of a true inclusion or not. But, in addition, Laveran has found pyriform bodies recalling the shape of piroplasma bigeminum, and he further regards the pale, grey-staining stroma, frequently seen surrounding the bodies, as representing the degenerated remains of the red corpuscle which harboured the parasite. A more probable explanation of this stroma appears to be that of Christophers, to which I have already alluded.

In a later publication Laveran reports that he has met with small intracorpuscular bodies in some of Donovan's films, taken from the peripheral blood of patients in whose spleens the parasites had been detected by spleno-puncture. These bodies Laveran considers as young forms of the piroplasma, and he mentions a series of points in which they appeared to him to differ from young malarial parasites. So far as I am aware, this observation has not yet been confirmed.

Secondly, in Major Ross's view we have to deal with a representative of a new genus of the sporozoa, and he regarded "the individual bodies as spores produced in the matrices, which would appear to be relics of the parent organism." In this connexion it may be noted that the parasites found by Wright in a Delhi boil, which appear to be either identical or very closely related to the spleen bodies, are also regarded by him as belonging to a new genus, to which he has given the name "helcosoma."

Thirdly, with regard to the flagellate theory, I will not occupy your time by recapitulating the arguments which I put forward in its support. Briefly, in my first communication I suggested that the bodies were possibly degenerated trypanosomata; but this opinion I subsequently qualified in my communications of November 21st, 1903, and February 6th, 1904, to the BRITISH MEDICAL JOURNAL, in which I spoke of them as possible involution forms of trypanosomata, or encysted trypanosomata, and as representing a stage in the life-history of these organisms. My further prolonged study of the atypical forms assumed by trypanosomata has only strengthened my impression that the new bodies represent a stage in the development either of a trypanosoma or of some closely-allied member of the flagellata. I may add that the investigations of Marchand and Ledingham led them to endorse this close resemblance, and also to support the deduction I ventured to base upon it. Some of the forms resulting from the involution of the trypanosomata, as illustrated in the accompanying sketches of actual specimens, are at times

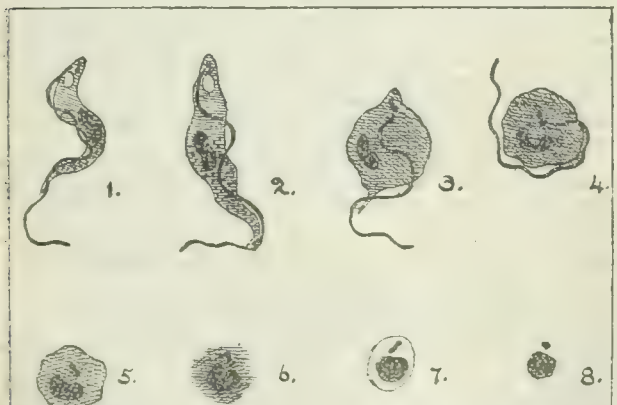


Fig. 1.—Involution forms of trypanosoma brucei. 1, 2, 3, 4, 5, Successive stages in the involution of a trypanosoma; 6, 7, 8, different forms of completely involuted trypanosomata. (Drawn from specimens stained by Romanowsky's method.)

almost indistinguishable from the new bodies, and the resemblance is even more striking in sections of organs stained to display the chromatin of the parasites. The sections, etc., of organs of animals infected with trypanosoma brucei displayed under the microscopes will sufficiently illustrate this resemblance, and I shall pass to the consideration of some recently published work which seems to me to lend further support to the theory of a flagellate origin of the bodies, and at the same time to furnish a possible explanation of their true nature.

In the first place, Schaudinn, in following the various transformations undergone by a blood parasite of the stone owl when taken into the stomach of a mosquito (*Culex pipiens*), comes to the conclusion that this halteridium is in reality a sexual form of a true trypanosome, to which he gives the name trypanosoma noctuae. To give even an outline of this very striking and convincing work of Schaudinn's is impossible in the time at my disposal, so I must limit myself to a few brief references to the points which seem to me to bear upon the present subject. For instance, he describes how at one stage the trypanosomata, free in the mid-gut of the mosquito, lose their typical shape and enter the epithelial cells of the intestine, in and among which they assume a resting form, the body becoming contracted and the flagellum shrinking up into a short rod-shaped structure. In this resting stage division by simple fission may occur, so that frequently large aggregations of these non-flagellated parasites are found in the intestinal epithelium. Further, after describing the mode in which these trypanosomata may push their way between the cells of the muscular coat of the stomach, he says: "When they come to rest here they become almost spherical and the flagellar apparatus reverts to its primitive form," that is, to the blepharoplast or micronucleus from which it was derived. From this resting form a freely mobile trypanosoma is again developed, the flagellar apparatus arising from the blepharoplast by the elaborate mitotic process whose details have been so minutely studied and described by this author.

Again, Prowazek, working on similar lines to those of Schaudinn with a parasite of the house fly—*Herpetomonas muscae domesticae*—finds similar trypanosomal forms which also assume resting forms in much the same manner as trypanosoma noctuae.

From the descriptions and figures given by Schaudinn and Prowazek of these resting forms of trypanosomata, a very close resemblance may, I think, be traced between them and the new bodies, as we meet with the latter in the mononuclear cells of the liver and spleen, and in this resemblance lies the possible explanation of the flagellate origin of the bodies, of which I spoke just now.

A point in Mr. Christophers' report also strikes me in this connexion as suggestive, and that is the occurrence, in every case that he examined, in the ulcerated intestinal mucosa of what he describes as very large curved micro-organisms, with a single large chromatin mass near the centre, having one end more pointed than the other and somewhat resembling sporozoits. These he regarded as bacteria, but he does not mention whether any attempts were made to cultivate and isolate them, and it appears to me as at least possible from his description that they may represent an intermediate stage between the theoretical intracellular resting form and the free-swimming flagellate.

A fact of great importance in connexion with the possible means by which the parasites are eliminated from the system is the presence of the bodies in the ulcers of the intestinal mucosa. This fact was brought out by Christophers and also by Manson and Low, and, from the frequency with which dysenteric complications have been reported in the course of the disease, it seems probable that this ulceration is a fairly constant feature. The parasites have not yet been found in the urine, but, as their presence in small numbers in the kidney has been noted, this is a possibility not to be overlooked.

With regard to the discovery of Wright, already alluded to, that very similar parasitic bodies are met with in the well-known Delhi boil, it is obviously of the first importance that the identity or non-identity of those parasitic bodies with the splenic bodies should be established, and it is possible that the cercomonads which Ross found in these boils may be developed from, or may develop into, these bodies. Should Wright's parasites prove to be identical with those under discussion, I see no great difficulty in reconciling the marked differences of symptomatology, as bacteriology shows us so many examples of a given germ producing at one time only a local inflammatory process, at another a possibly fatal septicaemia or other grave general affection, the type of disease being determined by such factors as the channel of infection, the virulence of the germ, and the resistance of the host.

Since preparing the above remarks an announcement has been made by Captain Rogers that trypanosomata have developed in cultures of the spleen parasites, and from the details

published by him in the last number of the *Lancet* there would appear to be little doubt that this is actually the case, and that we may soon be justified in taking the connexion between the bodies and trypanosomata as an established fact. If so, it is difficult to overestimate the great importance of this observation of Captain Rogers, which should greatly facilitate the investigation of the many problems which still await solution in connexion with the parasite and the morbid conditions to which it gives rise. Captain Rogers has been good enough to send me a note confirming the announcement made in his telegram, and I am glad to hear that he is making a communication on the subject to this meeting.

II.—Leonard Rogers, M.D., M.R.C.P., I.M.S.,
Acting Professor of Pathology, Medical College, Calcutta.

CACHEXIAL FEVER IN INDIA ASSOCIATED WITH CUNNINGHAM-LEISHMAN-DONOVAN BODIES.

In a recent note[1] I described briefly the parasites found in the spleen in cases of chronic fevers with great enlargement of the spleen in Bengal, and suggested the term "cachexial fever" for the disease as describing its most prominent features, and at the same time retaining the association with the name by which these cases have always hitherto been known, namely, "malarial cachexia." In the present communication, I propose to briefly set forth the results of a study of a number of further cases in the large hospitals of Calcutta. The name of Cunningham is associated with the parasite, in addition to those of the recent discoverers of the organism in the spleens of chronic fevers, for it has been shown by Captain S. P. James, I.M.S., that the bodies described by D. D. Cunningham many years ago in Delhi boil are indistinguishable from those in the splenic cases, an observation which I am able to vouch for, as Captain James kindly showed me his slides from Delhi boil cases, and we were unable to find any differences between them and those in my spleen-puncture slides. Including thirty cases in Dinajpur, I have now performed spleen puncture over sixty times, and that of the liver once, in a case where that organ was much more enlarged than the spleen (Case 6 of the table). Immediately the needle is withdrawn pressure is kept up with a finger over the place for a few minutes, and in no case has even slight perisplenitis occurred, although the coagulability of the blood in many of the cases was reduced.

Frequency of the Disease in Calcutta.

In my previous series of cases in the very malarious district of Dinajpur, I found the new parasites by spleen puncture in only one-third of the cases presenting chronic fever and marked splenic enlargement, malarial parasites being found in some of the others, and no distinguishing features could be found between the chronic malarial and the cachexial fever cases. In Calcutta the proportion of cases in which the new parasites were found was much greater, positive results having been obtained by spleen puncture in over five-sixths of this class of case, while in one of the negative cases a pure culture of plague bacilli was obtained, the patient dying of the septicaemic form of the disease, and another proved to be typhoid fever. Further, as mentioned in my former note, the parasites may be found at a second examination when absent at the first, especially in the low fever of the chronic cases. Again, I find that if two or more slides are made from the same blood, one of them may show no parasites and the other fair numbers of them. Failures to find the parasite by spleen puncture in true cases of cachexial fever must, then, occur sometimes, and possibly two of the negative results were of this nature, as the cases showed the typical blood changes to be described presently. The other two cases did not show these features of the disease, but they may possibly have been recovering ones, as they showed very little fever, and their general condition was improving. We may conclude, then, that the great majority of the cases known hitherto as "malarial cachexia" occurring in Calcutta, at any rate, during the hot-weather months, when true malarial cases are at their minimum, are really cachexial fever due to the new parasites.

The Intensity of the Infection.

Although a single film may be misleading as regards the number of parasites present, still the examination of a series of cases such as that tabulated on p. 647 (Table I)—at least two slides having been made from each case—allows a fairly definite opinion to be formed as to the intensity of the infection in the group as a whole. The number found in each case is indicated in Table I, an examination of which shows that in about half the cases only "a few" were found, which means that they were found only after some minutes' search. In another fourth they were found easily, but not in very large numbers, this degree being indicated by the term "many." In the remaining quarter they were classed as "numerous," meaning that they were very easily found, being occasionally present in nearly every field of the microscope. In many of the cases in which but few were found the patients showed only a low intermittent fever, or none at all, for days together, and were improving and likely to recover. "Many" parasites were, however, found in some such cases, and in one instance this was the case after the temperature had been normal for several days; while in other cases "a few" were found as long as twelve days after the cessation of fever. On the other hand, the parasites were most numerous during marked fever, especially of the double remittent type to be described presently, and in progressive cases in children. When only very scanty in a blood film they could be found in much larger numbers in centrifuged citrated blood, by which means it is possible to find them in such cases much more easily than in smears of spleen blood. In some cases where they were very numerous in the spleen blood several c.cm. of blood was taken from a vein in the arm and centrifuged, but no parasites of any kind were detected in the peripheral blood by this means, so they are probably absent from it. The appearances mentioned in my last note as possibly parasitic in the peripheral blood have not been seen again. Possibly in the rainy season "numerous" parasites may be found in a larger proportion of cases, as I showed some years ago that in the epidemic form of the disease the majority of the cases arose in the rainy season. Still, it will be shown presently that "numerous" parasites were found in a much larger proportion of spleen bloods from kala-azar cases than in those of the endemic disease in Calcutta and Dinajpur, thus confirming my view expressed in 1897 that kala-azar is but an intensified form of what was then known as "malarial cachexia."

Races Attacked.

The great majority of the patients at the Medical College are natives, and my cases include Hindus, Mohammedans, Chinamen, and Burmese women, and also two Europeans. Several of them had first been attacked with the fever while living in Calcutta. In addition to these I have found the parasite in the spleens of four cases in the European General Hospital, two being adults and two children, while several other similar cases clinically are under observation there, so that Europeans not infrequently suffer from the disease. Further, the disease frequently attacks more than one member of a family even among Europeans, a father and child having died of the disease, both with cancrum oris, in the European Hospital recently, while at the present time a mother and son are suffering from the disease there, in both of whom I found the parasite by spleen puncture. This, I pointed out in my original report, was the most characteristic feature of the distribution of kala-azar cases, in which it was the rule rather than the exception in hospital cases for at least half the household to have died of the disease. A similar, although much less marked, tendency is also present in the endemic form.

Clinical Characters.

General.—Time will not permit of detail as to the clinical characters of the disease, nor is it necessary, as "malarial cachexia" is only too well known, while this part of the subject was very fully treated in my book on kala-azar, individual cases of which very closely resemble "malarial cachexia," except in their greater severity and the more rapid course of the epidemic form. When the disease is fully established it is easily recognized by the wasted condition of the patient, contrasting with the tumid belly, due to great enlargement of the spleen, and, to a less degree, of the liver, accompanied by anaemia of variable but usually moderate degree, and, in the later stages, swelling of the feet. Such a case presents no difficulty in diagnosis, except, perhaps, from true chronic malaria, if it really produces such a condition. In this stage, however, but little can be done by treatment, so it is of the utmost importance to try and find means of differentiating the fever in its earlier and more amenable stages. For this purpose I have made a careful study of the temperature curves and of the blood changes in the present series of cases, together with those of former cases of "malarial

[1] British Medical Journal, May 28th, 1904. (This paper contains references to other recent work.)

cachexia," which I now recognize to have been cachexial fever. The temperature was taken every four hours, a lesser frequency affording little help.

Temperature Curve.—1. *Chronic Cases.*—In the typical advanced endemic form the temperature curve is extremely irregular, but usually intermittent, running up from 100° to 102° F., and not infrequently remaining normal for days together. Sooner or later, in progressive cases, the temperature rises to a higher level, and a very irregular remittent type appears, the most marked feature of which is a tendency for a double or even a treble rise to take place within twenty-four hours, one rise occurring in the early morning and a second in the afternoon or evening. In this late stage of the disease the hours of the rises are seldom exactly the same on two successive days, while frequently only one rise occurs, especially if the temperature ranges lower than before. As the exacerbation passes away, the intermittent fever with a single daily rise recurs. Chart 1 illustrates such an exacerba-

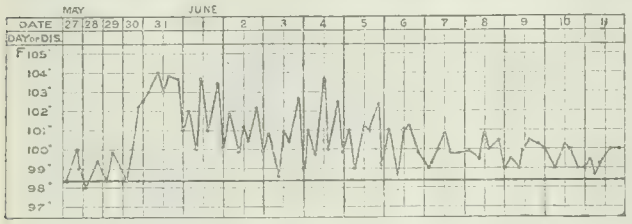


Chart 1.

tion of the fever in a man who had suffered from intermittent fever in hospital for seven months, which became reduced to a stage in which the temperature only rose to 100° occasionally for weeks together by the use of large doses of quinine combined with the hypodermic use of the drug. As long as he took a dose of 10 gr. to 20 gr. by the mouth every morning, he remained practically free from fever, and improved greatly in health; but very soon after the daily dose was reduced to 5 gr. the relapse illustrated in the chart occurred, and the irregular double remittent type of fever appeared.

2. *In Early and Actively Progressive Cases.*—The earliest stages of this fever are still unknown, and it is not until considerable enlargement of the spleen has occurred as a result of long-continued fever that they are recognizable. In Assam I studied cases of fever in infected households, which subsequently went on to become typical kala-azar, but I failed to find any way of differentiating them in the earliest stages from ordinary malarial fever, possibly owing to so many of them being complicated by malaria, as shown by the nearly invariable presence of melanotic pigment in the organs of kala-azar cases after death. Recently I have been able to examine a few comparatively early cases with marked remittent type of fever and progressive wasting, anaemia, and moderate enlargement of the spleen, and in such cases the irregular double remittent type of fever, just described as occurring occasionally in more chronic cases, is much more marked a feature, especially when the temperature runs up to 103° or 104° F. Chart 2 illustrates such a case, two,

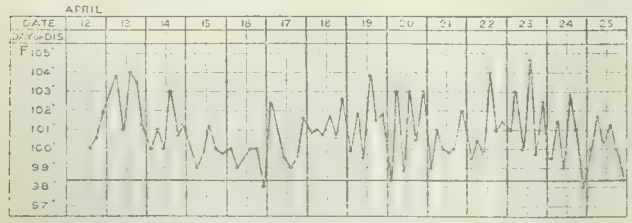


Chart 2.

and even three, rises occurring within twenty-four hours on several days, the new parasites having been found in the spleen blood in considerable numbers. After going on for a month in hospital the temperature became lower and less frequently showed the double rise, thus resembling the chronic forms. Another case which occurred before the new parasites were known showed a regular double rise, at 2 a.m. and 2 p.m., for two weeks, but subsequently became irregular. Further, in a previous paper[2] on tropical fevers I gave a chart with "double daily remissions and highly resistant to quinine," which I diagnosed as malarial remittent on account of a marked increase of the large mononuclear white corpuscles, a change which I shall show presently also occurs in cachexial fever, and this case was probably the early stage of cachexial fever, and it showed the characteristic double and treble remittent curve just described. In the early stages rigors not infrequently occur, and a history of a double daily rise may sometimes be obtained. This characteristic cause, then, appears to be more marked the earlier the case is seen, and if further experience confirms this, it will be an important point in the early diagnosis of the fever—a matter of the greatest practical importance, as it is only in the earlier stages that much good is likely to result from treatment.

The Blood Changes.

In a previous paper[3] on "malarial cachexia" I pointed out that both in the cases hitherto known by that name and in kala-azar there is commonly a marked increase of the proportion of the large mononuclear white corpuscles, and I regarded this as evidence that both forms of the disease were malarial. In my previous note on cachexial fever I recorded the fact that in cases accompanied by the new parasite a similar change was found. In the first-mentioned paper I also pointed out that in "malarial cachexia" the total number of white corpuscles is very greatly reduced, the polynuclears especially suffering, so that there may be less than one-twentieth of the normal number in the blood, and that such cases were very resistant to treatment with quinine, while those cases in which this feature was less marked usually did well under treatment. On going over my old notes and from four temperature charts I find that these cases agree exactly with those in which I have recently found the new parasites, and, as will be seen from a glance at Table I (p. 647), in which are recorded the data of all the cases up to date of tabulation in which blood counts have been made and the parasites also found by spleen puncture.

The Degree of Anaemia.—Bearing in mind that the percentage of haemoglobin in natives of India, and also in most Europeans after some residence, is only from 70 to 80 per cent. of Gowers's standard, it will be observed that the degree of anaemia is usually only a moderate one, while it may be very slight in spite of a marked white corpuscular decrease, as in Cases 15 and 16. The number of red corpuscles also not infrequently reaches over 4,000,000, and is as a rule over 2,500,000, even in advanced cases, while in only a very small number is there a very marked degree of diminution of them.

The Leucocyte Changes.—The number of white corpuscles, on the other hand, shows a most remarkable and constant reduction, the number per c.mm. being less than 2,000 in the great majority of the cases, while it is quite common for them to fall to 1,000 or less. That the white corpuscles are reduced in much greater degree than are the red is evident from the column showing the ratio of the white to the red corpuscles, from which it will be seen that instead of there being 1 white to about 625 red as in a normal subject, the proportion is commonly from 1 to 2,000 to 1 to 4,000, and may be even lower still. Further, on referring to the last column, in which it is noted whether the disease was progressive or the patient was improving and likely to recover, it will be found that all the cases in which the total number of leucocytes was over 2,000 were improving or stationary, with the exception of Case 19, in which a secondary staphylococcus infection and cancrum oris was present, and probably produced a feeble attempt at leucocytosis, resulting in a temporary slight increase above the usual low level of such cases.

When we come to examine the proportion of the different kinds of leucocytes we find that it is the polynuclears which are especially reduced in numbers, while the percentage of the lymphocytes and large mononuclears are relatively increased, although their total numbers per c.mm. are much below the normal. In order to bring out the great reduction in the total number of the polynuclears per c.mm. the numbers have been calculated and are shown in the table. It will be seen that the only cases which showed over 1,000 polynuclears per c.mm. were those which were improving or stationary, having only occasional low fever or none at all. Of the progressive cases, most showed less than 500, or under one-tenth of the normal numbers, while in No. 9 less than one-fiftieth were present, the patient dying the next day of

[2] *Med. Chir. Trans.*, 1903, and *Lancet*, vol. i, 1903.
[3] *Indian Medical Gazette*, November, 1902.

TABLE I.—*Cachexial Fever Cases.*

No.	Sex.	Age.	Haemoglobin.	Haemoglobin Value.	Red Corpuscles.	White Corpuscles.	Ratio of White to Red.	Total Polynuclears.	Polynuclears.	Lymphocytes.	Large Mononuclears.	Parasites.	Remarks.
			Per cent.						Per cent.	Per cent.			
			80	0.80	5,000,000	8,000	1–625	5,600	70	25	5	—	Normal blood of native.
1	M.	30	40	0.65	3,065,000	750	1–4,087	532	71	24	5	A few	Low fever and dysentery.
2	M.	35	—	—	5,050,000	1,375	1–3,673	316	23	58	19	A few	Double remittent fever.
3	M.	46	44	0.54	4,080,000	625	1–6,528	312	51	38	11	A few	Low fever, improving.
4	M.	—	—	—	4,110,000	1,000	1–4.110	360	36	42	22	Many	Double remittent fever.
5	M.	30	—	—	4,290,000	625	1–6,864	231	37	46	17	Scanty	Ditto.
6	F.	56	42	0.70	2,960,000	1,125	1–2,653	798	71	22	7	A few	Died of melaena.
7	M.	30	45	0.65	3,415,000	1,000	1–3,415	352	35	56	9	A few	Double intermittent fever.
8	M.	19	46	0 67	3,420,000	2,875	1–1,190	1,811	63	24	12	A few	Low fever, improving.
9	M.	17	49	0.84	2,920,000	625	1–4,672	103	17	72	11	Numerous	Died of cancrum oris.
10	F.	40	29	1.23	1,175,000	1,250	1–940	725	58	30	12	A few	Fever and dysentery.
11	M.	22	44	0.70	3,110,000	2,250	1–1,382	1,386	62	24	14	A few	Improved.
12	M.	35	54	0.74	3,620,000	2,875	1–1.434	862	30	45	23	Many	Fever stopped, improved.
13	M.	24	40	0.86	2,330,000	2,500	1–932	1,300	52	32	8	Very few	Ditto.
14	F.	10	—	—	2,790,000	875	1–3,188	374	43	45	12	Numerous	Fever continued.
15	M.	37	63	0.69	4,540,000	1,000	1–4 454	456	46	43	11	Many	Cancrum oris, very bad.
16	M.	21	72	0.69	5,210,000	2,250	1–2,315	1,134	50	38	11	Many	Improving.
17	M.	12	—	—	1,835,000	1,625	1–1,129	666	41	42	17	Numerous	No change.
18	M.	10	52	0.77	3,380,000	1,025	1–2,080	341	21	60	18	Numerous	Improved slightly.
19	M.	16	18	0.77	1,155,000	2,250	1–513	832	37	52	11	Many	Cancrum oris.
20	F.	21	57	0 87	3,485,000	875	1–3,970	481	55	36	9	Many	Low fever persistent.
21	M.	20	55	0.67	4,100,000	875	1–4,686	516	59	29	12	A few	Died of pneumonia.
22	M.	8	45	0.55	4,100,000	750	1–5,466	150	20	59	21	A few	High fever, double remittent.
			56	0.72	3,870,000	1,250	1–3,096	60	5	80	15	—	Five weeks later cancrum oris.

TABLE II.—*Blood Changes in Kala-azar.*

No.	Sex.	Age.	Date Examined.	Haemoglobin.	Haemoglobin Value.	Red Corpuscles.	White Corpuscles.	Ratio of Red to White.	Result.
				Per cent.					
1	M.	25	8-6-96	30	0.96	1,590,000	750	1–2,210	Died.
2	M.	18	7-5-96	12	0.50	1,220,000	1,250	1–976	Died.
3	M.	8	8-5-96	12	0.40	1,500,000	1,500	1–1,000	Died. So ankylostoma.
4	F.	8	15-5-96	45	0.55	4,100,000	7,250	1–781	Early stage.
			9-6-96	—	—	3,130,000	2,500	1–1,212	Died 1-8-96.
5	M.	30	15-5-96	25	0.61	2,030,000	1,000	1–2,030	Died.
6	F.	7	23-5-96	16	0.50	1,500,000	750	1–2,920	Died.
7	M.	22	25-5-96	43	0.79	2,700,000	1,750	1–1,743	Died.
8	F.	17	16-5-96	28	0.64	2,180,000	2,330	1–948	Very cachectic.
			9-6-96	33	0.69	2,380,000	1,500	1–1,500	Ditto.
			1-7 96	36	0.80	2,250,000	6,500	1–423	Much improved. Eventually recovered completely.
9	F.	10	17-5-96	72	0.59	6,100,000	6,000	1–1,016	Completely recovered.
10	M.	36	19-5-96	48	0.65	3,670,000	3,500	1–1,050	Cachectic, but recovered.
11	F.	40	20-5-96	38	0.51	3,730,000	7,750	1–517	Ditto.
12	M.	35	22-5-96	31	0.52	3,000,000	2,500	1–1,200	Cachectic.
			2-7-96	43	0.57	3,790,000	9,500	1–389	Improving. Recovered.

cancrum oris. In another case in the General Hospital, shortly before cancrum oris ended the scene, the numbers were reduced to 62, or about one-hundredth of the normal number; and No. 22 shows a similar extreme reduction. This extraordinary reduction of the polynuclear leucocytes is the most remarkable feature of the disease, and of the greatest prognostic importance; while it also affords a ready explanation of the frequency with which these cases end, by a secondary infection such as cancrum oris, pneumonia, dysentery, and phthisis, the patients having so few phagocytes that their tissues are unable to resist the invasion of the organisms of these diseases, the frequency of which will be demonstrated presently.

The Large Mononuclears.—As already pointed out, the percentage of large mononuclear white corpuscles are considerably increased in both cachexial fever and kala-azar, so that this change is not diagnostic of malarial fevers from those due to the new parasite, but must be regarded rather as a sign of a protozoal as opposed to a bacterial infection, being also present in trypanosomiasis, for I have shown elsewhere[4] that they are not increased in the first three weeks of typhoid fever, unless it is complicated by malaria. It is, however, possible that this change may be of some diagnostic value, if the total number of leucocytes is also taken into account, for a study of Table I shows that the increase of the large mononuclears in advanced cases of cachexial fever is only a relative one, the total numbers per c.cm. being greatly reduced, as are also the lymphocytes. In malaria the leucocytes, as a whole, are also reduced, except in some pernicious cases, but whether uncomplicated malaria produces the extreme degrees of leucopenia, which I have found so frequently in typical cachexial fever cases, is worthy of close investigation, for should it not do so then we shall have in the changes described above a method of differentiating the disease from malaria without resort to spleen puncture. In the early stages, however, no help can be expected from this method, so that the demonstration of a marked large mononuclear increase in cachexial fever necessitates a revision of the opinion I expressed last year[5] that the remittent fevers other than typhoid met with in Calcutta were probably all malarial because they constantly showed the large mononuclear increase, for some may have been early stages of cachexial fever, a point which I am reinvestigating. The fact that nearly all, except a very few showing the double remittent type of fever, readily yielded to treatment by quinine either by the mouth or hypodermically, however, is in favour of the view that they were chiefly malarial. On the other hand, this does not affect my conclusion that all cases of long continued fever, as opposed to remittents, were typhoid, which it was the main object of the paper to demonstrate.

Secondary Infections as the Usual Cause of Death.

I have already referred to the frequency with which secondary diseases bring about the fatal termination of cachexial fever cases, and indicated the extreme reduction in the numbers of the polynuclear white corpuscles as the explanation of this fact. In the cases in Table I some of these complications are illustrated, but for the purposes of obtaining further data I have analysed the *post-mortem* records of all the cases of "malarial cachexia" which I have performed at the Medical College, as the great majority of these cases were certainly really cachexial fever, although mostly also complicated by malaria, as shown by the melanotic pigmentation found in those whose organs were examined microscopically, in 20 of the cases.

[4] *Med. Chir. Trans.*, 1903, and *Lancet*, vol. i, 1903.

[5] *Med. Chir. Trans.*, 1903, and *Lancet*, vol. i, 1903.

Uncomplicated		-
Complicated—		
Cancrum oris and meningitis	1	
Cancrum oris and dysentery	2	
Phthisis	2	
Phthisis and dysentery	1	
Pneumonia	4	
Dysentery	3	
Cirrhosis of the liver	1	
Haematemesis	1	
Cerebral haemorrhage	1	
Total complicated cases		16
Total cases		23

In kala-azar precisely similar complications are met with, only that in more intense forms of the disease deaths from uncomplicated fever are considerably more frequently met with. The cases of death from haemorrhages of various kinds are of interest in connexion with the reduced coagulability of the blood in the advanced stage of the disease, which is easily observed when obtaining blood from a prick of the finger, while, in addition, purpuric haemorrhages in the skin, etc., occur in such cases.

In view of Lieutenant Christophers[6] having found the new parasites in ulcers in the large intestine, the lesions of the bowels are of great importance. In 2 out of his 3 *post-mortem* examinations perforations of ulcers in the large intestine had taken place; but this is a complication I have never met with either in Calcutta or in Assam, so his experience must have been exceptional. On the other hand, dysenteric ulcers in the large intestine were met with in 6 of the 23 cases tabulated above, and scars in 4 more. In 1 case Shiga's bacillus was isolated. In 24 *post-mortem* examinations on kala-azar cases of which I have notes, mostly done by myself, ulceration of the large intestine was only noted in 3, so that it is quite exceptional in that disease. I have elsewhere described a form of pigmented atrophy of the mucous membrane of the small intestine occurring in both the Lower Bengal and the Assam form of the disease, and sections showed much melanotic pigmentation, apparently of malarial origin. These lesions are worthy of examination for the new parasite, material for which, unfortunately, I have not yet obtained, except one case with but few parasites in the spleen, and here I failed to find them in the small or large intestinal walls, although dysenteric ulcers were present in the latter. This case died of gangrene of the lung following pneumonia.

In connexion with the possibility of the infection taking place through the bowel, it is interesting to recall that I showed[7] several years ago that there is a close relationship between a good water supply and a low spleen-rate around Calcutta, and that filtered water supplies had reduced the fever death-rate in the towns of the North-West Provinces, as compared with those without such a supply.[8]

Bacteriological Examinations.

Advantage has been taken of the spleen punctures carried out in the Calcutta hospitals to make cultures from the blood of the spleen in over 30 cases. In a few of the earlier ones contamination with non-pathogenic bacteria occurred, but with improved technique, a long series of purely negative results have been obtained (using both a considerable quantity of broth, to dilute the blood enough to do away with any bactericidal action, agar, and in some of them also coagulated human blood serum), with the exception that in 2 cases of severe cancrum oris pure cultures of staphylococcus pyogenes were obtained, thus proving the secondary invasion of the system by these organisms. In one case a peculiar bacillus grew on a special serum medium only, but it proved non-pathogenic to rabbits and guinea-pigs.

These results confirm my former negative bacteriological results in the case of kala-azar, and finally dispose of Dr. Bentley's Malta-fever theory of the disease.

Further, the absence of the Malta fever coccus in a considerable series of prolonged fevers (one at least of which was contracted in the Punjab, where many cases of Malta fever have been diagnosed on the strength of serum reactions in low dilutions only, including Dr. Bentley's kala-azar cases), raises the question whether most of the so-called Malta fever cases in India may not be cachexial fever, for it is a significant fact that no one has been able to cultivate the micrococcus melitensis from Indian cases. Further, I have been informed by some of those who have obtained serum reactions that they are very rarely, if ever, obtained in high dilutions such as 1 in 80, while Captain Cornwall, working in Madras, has recently[9] shown that reactions with low dilutions can be obtained in healthy persons, and also fairly high ones in cases with no symptoms of Malta fever.

Cultivation of the Protozoal Parasite of Cachexial Fever, and the Development of Trypanosoma from Cunningham-Leishman-Donovan Bodies.

The recent cultivation of trypanosoma has led me to try to obtain similar results with the parasites of cachexial fever by means of adding the blood obtained by spleen puncture to a small quantity of sterile citrate of soda solution, to prevent the blood clotting, and then keeping it under different conditions. Time will not permit me to go into detail with regard to the results so far obtained—which I hope will be published elsewhere very shortly—but I may say that although when the solutions were kept at blood heat the parasites very rapidly degenerated and disappeared, yet when placed in a cold incubator at 27° C. and films made daily, they retained their natural conditions for several days and stained perfectly. Moreover, they increased markedly in numbers, so that in some instances, instead of two or three in a field of an oil immersion lens, as in the freshly-taken blood, after a day or two scores, and even a hundred, very young forms could be found in the same area. Further, very numerous dividing forms were found, even in a single field, although in the original specimens these were very few and far between, and required much searching in specially good specimens to enable even a few to be found, while in my experience the very young forms, which were so numerous in the cultures, are very rarely met with in fresh spleen-puncture blood, and then only within large cells, and not free in a gelatinous zooglea mass as in the cultures. These multiple forms result from the repeated subdivision of the nuclei of the ordinary oval form, as described in my former paper. In addition to this method of division, another frequent manner is a single division of both nuclei, followed by the splitting up of the parasite into two, the separation usually beginning from one end. We have, then, clear evidence of the survival and multiplication of the organism outside the body.

As at a temperature of 27° C. the parasites only lived for three or four days, I next reduced the temperature of the cold incubator to 22° C. This temperature I found to be more suitable to the parasites, as they multiplied more readily, and when very few at first several could easily be found in a field after a day or two. Further, I noticed that many forms of a considerably larger size than I had seen in fresh blood films appeared in a single day. This caused me to look out for flagellated bodies, for on first finding the spleen parasites in Dinajpur I was struck by the resemblance of the double nuclei, one larger than the other, with those of trypanosoma, as Major Leishman had been before. Within the last few days in two of my cultures unmistakable trypanosoma have appeared, together with smaller pear-shaped flagellated bodies like those described by Plimmer in tsetse-fly disease and other intermediate forms. The most marked of these cases (from which the illustrations have been taken) showed completely developed trypanosoma with thick flaggella, macro-nucleus and micro-nucleus after incubation for one day, while the living forms were also seen in the blood culture moving rapidly among the corpuscles. They were quite numerous, and could readily be found after only a short search in a stained film, as will be seen from the specimen sent. This case was a typical one of cachexial fever in a Chinaman, whose spleen blood before incubation showed only fairly numerous oval forms described by Leishman. This case (No. 2 in the table) had also been in hospital for fever two and a half months before, at which time I also found a few typical oval parasites by spleen puncture. The other case in which the trypanosoma have developed was by good fortune a case of kala-azar from Assam, from whom my assistant, Assistant-Surgeon G. C. Chatterjee, kindly got some blood by spleen puncture, and after incubating for five days at 22° C. we found in the citrated blood a number of intermediate forms and a few fully-developed trypanosoma. The fully-formed trypanosoma has, therefore, been already found in my cultures in both the endemic cachexial fever of Lower Bengal and also in the epidemic form of Assam, known as kala-azar, and the true nature of the organism is at least clear, Major Leishman's original hypothesis that the bodies he found were degenerate trypanosoma not being very far from the truth, as they must now be looked on as one stage of the life-history of the new human trypanosoma found by me. In this connexion it is worth recalling that Assistant-Surgeon Chatterjee found a

[6] *Scientific Memoirs Med. Service*, No. 8.
[7] *Journal of the Asiatic Society of Bengal*, vol. lxix, Part II, No. IV, 1900.
[8] *Ind. Med. Gaz.*, October, 1901.
[9] *Ind. Med. Gaz.*, June, 1904.

trypanosome in the proboscis of a mosquito caught near Calcutta as long ago as October, 1901 (*Indian Medical Gazette*), while I also desire to acknowledge his help in making microscopical examinations of my cultures.

Prophylaxis and Treatment.

It is usually stated that quinine is quite useless in this form of fever, and this is certainly frequently so in advanced cases with but a very small number of polynuclear white corpuscles remaining. I am, however, unable to agree with the opinion that the drug is always useless in this fever. In the first place[10] Dr. Dodds Price has absolutely proved that the drug is a reliable prophylactic against the most virulent form of the disease, namely, kala-azar. I have also frequently seen the fever stopped or greatly decreased by quinine in cases in which over 2,000 leucocytes were still present in the blood, while in chronic cases on leaving off the drug the fever often rises to a considerably greater height than while it was being taken regularly. Further, once the fever has been reduced a single large dose daily will often prevent a relapse. Dr. Dodds Price, as a result of his unrivalled experience of the epidemic form of the disease in Assam, recently wrote to me on this point as follows: "Nothing will induce me at present to admit that quinine is useless. I know, and so do you, that it often fails, but the same can be said of any drug, including mercury in syphilis, while as a prophylactic no sane person can deny its utility." I feel convinced that when we can diagnose cachexial fever in a comparatively early stage—that is, before nine-tenths or more of the polynuclear corpuscles have been destroyed—then we shall get better results by the use of quinine, although it may have to be given hypodermically, or, perhaps, even intravenously.

The only other method of treatment I have time to refer to is one which I recommended in kala-azar seven years ago, namely, the use of red medulla tabloids, or fresh uncooked bone marrow. I was led to try this by finding the yellow marrow in the shafts of the long bones invariably converted into red marrow in fatal cases of the disease, and I looked on this as an effort on the part of the system to repair the damage to the blood caused by the prolonged fever. As, according to Ehrlich, the polynuclear white corpuscles are mainly formed in the red marrow, they, as well as the red corpuscles, may be expected to be increased by this treatment. I have recently been watching the effect of this method on the blood in several cases in which the new parasites were found in the spleen, and in two cases in which only the intermittent type of fever was present the leucocytes were nearly doubled in a few weeks and the general condition improved, although the degree of fever remained unchanged. In another case in which the remittent type of fever continued there was some increase in the total leucocytes, but the differential count showed a continued decline in the polynuclears, cancrum oris set in, and the case terminated fatally (No. 22). It is not to be expected that this treatment will have a direct effect on the fever, but if this can be controlled or is mild or absent for a time, then a more rapid renewal of the leucocytes may be brought about, and the resisting power of the patient against the fatal secondary infections already mentioned may be increased, and recovery eventually occur.

Epidemic Cachexial Fever or Kala-azar.

In my report on kala-azar I laid great stress on the fact that, individually considered, cases of this disease were quite indistinguishable from "malarial cachexia," although when groups of cases were noted it was found to be more virulent and to spread through households, villages, and districts in an epidemic manner. It was this very close resemblance to malarial cachexia, and the frequent presence of malarial parasites at times in all stages of different cases, although they were often absent for long periods in individual cases, that led me to think that the disease was entirely malarial in its origin. The recent discoveries of the new parasites in "malarial cachexia" cases naturally lead to the possibility of their presence in kala-azar being raised, and on my return to India, as soon as I had confirmed the presence of the new parasites in "malarial cachexia" cases in Lower Bengal, I obtained some slides of spleen blood from kala-azar cases, thanks to the very great kindness of my old friend, Dr. Dodds Price, and, as already reported, I found the parasites in five out of six cases, the remaining negative case being one which was reported to be improving and likely to recover. These observations were made before the recent announcement by Dr. Bentley[11] that he has abandoned his Malta-fever theory of the disease in favour of the new parasites. Since my last note was written, Dr. Price has very kindly sent me three further series of spleen bloods taken by puncture during life in typical kala-azar cases, together with notes and charts of the cases, so that I have now been able to examine 17 more cases, making 23 in all. They included cases of from three months to three years' duration, half of them being from five to eight months, and nearly all presented persistent fever. Of the 17 new cases, the new parasites were found in 16, although in 2 of them were only found in the second slide examined. Not only were the parasites nearly constantly found, but in a considerable majority of the cases they were present in extremely large numbers, being present in nearly every field of the microscope, and often several in a field. Such numbers were only found in quite a small proportion of the endemic cases examined in the Calcutta hospitals and in the Dinajpur district, so that I am convinced that the parasites are present in larger numbers on the average in the epidemic form of the disease in Assam than they are in the endemic form in Lower Bengal, this being in accordance with the suggestion of Major Ross that the epidemic nature of the former was due to "numerosity" of the parasites, although he was writing of the malarial parasites, having agreed with my opinion, after a short investigation of the disease in Assam, that kala-azar was malarial in nature. It is further worthy of note that most of the cases in which I found comparatively few parasites were noted by Dr. Price to be favourable cases in which he considered the prognosis to be fair or even good, while the cases in which he gave a bad prognosis nearly all showed very numerous parasites. As he has had over ten years' daily experience of large numbers of cases, his prognoses may be accepted as reliable, several of them having been already confirmed, and we may conclude that there is a relationship between the number of parasites and the severity of the disease, as is also the case with the endemic form in Bengal. It appears, then, to be highly probable that kala-azar owes its peculiar features of persistent fever and rapid cachexia to the new parasite, although its very frequent complication with malaria is evidenced by both the common presence of the malarial parasites, especially in the malarial rainy fever season when most of my examinations were made, and by the constant or nearly constant presence of fine melanotic pigment throughout the spleen and liver, etc., after death.

The Blood Changes in Kala-azar.—In my original report I dealt very fully, in a special section, with the blood changes in kala azar; but as my notes were fortunately saved from a fire in which all my microscopical slides were destroyed, it will be worth while to compare the results then obtained with those of endemic cachexial fever with the new parasites given in an earlier section of this paper. The differential leucocyte count was not done, but the total red and white corpuscles were counted in upwards of 50 cases, and repeatedly in many of them, including a few very early cases, and also cases whose recovery from an advanced condition was watched. The tabulation of a few cases will illustrate the changes best. The first seven shown in Table II (p. 647) are a consecutive series of progressive ones, while the last five are consecutive cases, which, although showing a markedly cachexial condition, were improving, and eventually recovered. No. 4 shows a loss of nearly two-thirds of the white corpuscles within less than a month, while the rest of the seven progressive and fatal cases show less than 2,000 leucocytes. Of the cases which recovered, No. 8 was the most remarkable, for the girl was extremely wasted, while her spleen reached nearly to the level of the anterior superior spine, and diarrhoea had set in. After the failure of iron and arsenic and other treatment to effect any improvement, I put her on red medulla tabloids, and in less than a month the leucocytes had increased from 1,500 to 6,500, while her general condition had improved to a most remarkable extent, and she eventually completely recovered, became quite plump, left the hospital, and was married shortly afterwards. The other cases all had over 2,000 leucocytes when examined, and all made good recoveries, Case 12 showing a very marked increase of the leucocytes to nearly four times their former number within six weeks, accompanied by an equally marked improvement in his general condition.

It is clear, then, that the blood changes in the two forms of the disease are identical; for I showed in my paper on "malarial cachexia" that the differential leucocyte count in kala-azar is just the same as in the endemic cases, and have

[10] *Indian Medical Gazette*, October, 1902.

[11] *Journal of Pathology and Bacteriology*, 1903.

recently confirmed this observation in slides sent by Dr. Dodds Price from cases showing the new parasites, and thus go far to support the conclusion derived from finding the parasites in every progressive case of both forms of the disease, that endemic cachexial fever of Lower Bengal is similar in its pathology to the epidemic form known as kala-azar, as I originally maintained in my report on the latter disease in 1897.

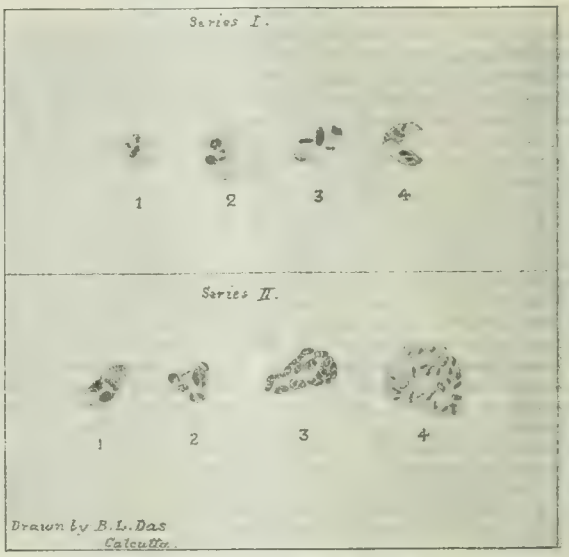
Segregation as a Means of Eradicating Kala-azar.

The remarks already made on the treatment of cachexial fever apply equally well to kala-azar, the greater intensity of the latter being borne in mind. It only remains to refer to the latest evidence concerning the value of the methods I advised in 1897 for the eradication of the disease from infected tea-garden coolie lines, the success of which I have already reported elsewhere.[12] Where a line was badly infected all the healthy coolies in whose households no cases of the disease had occurred were removed to a new site at a distance of half a mile or more from the old one, and all newly-imported coolies also put in the new lines. The following extract from a letter I recently received from Dr. Dodds Price on the subject gives an admirable account of the results of these measures. He writes: "I wonder if you are puzzled that I should always be able to get cases when I have so plainly stated that the disease can be stamped out of tea estates if proper precautions are taken. If you are, the answer goes still further to prove the correctness of my opinion. Kala-azar is only existent in gardens where in addition to building new lines the precaution of destroying the old houses and sites, and taking care to allow none but non-infected coolies into the new lines, has not been properly carried out. Here at Amluckie kala-azar got very bad; new lines were built and remain healthy, but the older time-expired coolies refused to turn out of the old lines, and over 60 per cent. of them are now dead of kala-azar! At Rangamati and Nonoi we still have cases for the same reason, but at Old Solonah, where the disease accounted for hundreds, we never see a case, and even remittent fever hardly ever occurs. Here the most stringent measures were taken, and after a death-rate of over 10 per cent. up to 20 per cent. for several years, we only lost 9 souls last year out of a population of 500, and this year to date (June 2nd, 1904) we have had only 2 deaths."

It is unnecessary to add anything to this plain statement of facts to prove the complete success of the segregation measures which I advised for eradicating kala-azar from infected coolie lines, for the Old Solonah lines were the ones where these measures were first undertaken, and the new lines still remain free after over seven years, although nearly 100 healthy people from the infected lines were moved into them. I should, however, state that Dr. Price had in one garden arranged for a large batch of new coolies to be put in separate new lines, instead of in old infected ones, at a still earlier date with marked success, and it was this example, as well as the action of some villagers in deserting their old houses, and the proof which I gave of the communicability of the disease, which led me to advise the bolder measure of moving out all the healthy coolies from the already badly-infected lines during the cold weather months, when I found infection to be at a minimum and fresh cases rarely occurred. The success of this measure, which Dr. Dodds Price deserves great credit for first carrying out so thoroughly, also demonstrates the local nature of the infection, and points to the soil or water as the habitat of the parasite outside the body, or some form of animal life with such a location.

In conclusion, I desire to acknowledge my great indebtedness to Dr. Dodds Price for sending me kala-azar spleen films, and to Lieutenant-Colonel G. A. F. Harris, I.M.S., and Major F. P. Drury, I.M.S., Physicians to the Medical College Hospital, for allowing me to make use of their cases. The first successful cultivation of the trypanosoma was from a patient of Lieutenant-Colonel Harris.

[12] BRITISH MEDICAL JOURNAL, September 24th, 1898.



Under 1/12 oil immersion lens and ocular 204.

Description of Figures.

Series I. Showing division of a Leishman body into two, as seen in freshly-drawn blood from the spleen of a kala-azar case.

Series II. Showing method of division, plasmodial stage, into a number of small ones in a culture in citrated blood. These forms also occur in the spleen during life, but appear in very large numbers in cultures.

Series III. Showing the development of trypanosoma from the plasmodial form (Cunningham-Leishman-Donovan bodies).

1. Oval body becoming pear-shaped, the micronucleus passing towards the thin end, from which a thin flagellum is seen arising.

2. Bodies elongated with separation of the micronucleus and macronucleus, but without definite flagella.

3. Body much enlarged with large macronuclei, which are assuming the appearance found in the amoeboid forms (No. 6), while on division it will resemble No. 4.

4. Form intermediate between Nos. 3 and 7.

5. Small flagellated form intermediate between the plasmodial form and the amoeboid form (No. 6).

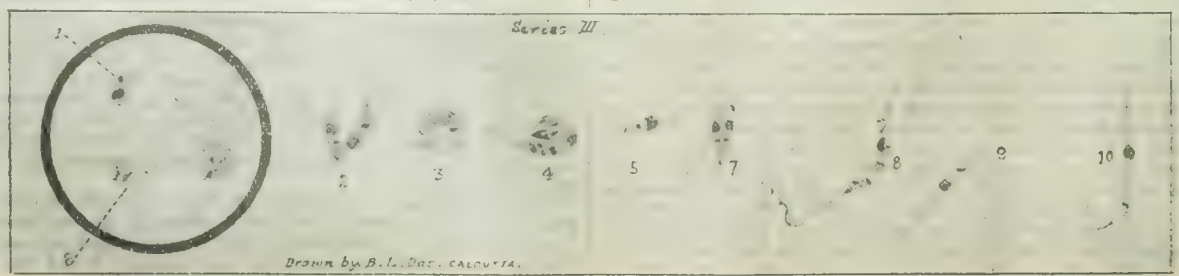
6. Large oval flagellated forms with large granular macronucleus and flagellum arising from the micronucleus, exactly similar to the amoeboid stage of T. brucei described by Rose Bradford and Plimmer. Nos. 1 and 6 were found in a single field.

7. Double elongated flagellated form beginning to resemble a trypanosoma.

8. More advanced double form.

9. Single form with shape of a trypanosoma and well-marked macronucleus and micronucleus and flagellum.

10. Similar but larger form like a full-grown trypanosoma, except that the undulating membrane has not yet developed and the micronucleus is still at the anterior end, as in the amoeboid stage of the organism. A complete membrane has not yet been seen, the organisms having died out after reaching this stage. The very close resemblance of the above forms to those described by Rose Bradford and Plimmer, after a prolonged study of the disease in many animals, can leave no doubt as to the present organism being a trypanosoma, especially when it is stated that all of this series except No. 3 were found in a single film from a one-day culture of the plasmodial form (Leishman bodies) found in the spleen in cases of cachexial fever.



Under 1/12 oil immersion lens and ocular 204

III.—Major C. Donovan, I.M.S.,
Second Physician, General Hospital, Madras.

HUMAN PIROPLASMOSIS.

Under the above heading I am contributing a short paper to the Association's meeting. I have limited myself to the clinical side of the question, as abler hands than mine will doubtless have more to say on the nature of the parasite itself. I have for the present accepted Laveran and Mesnil's determination of the organism in the genus Piroplasma. Leishman first found the parasite in November, 1900, in smears of spleen pulp taken *post mortem*: independently of him I met with the parasite in the same organ, also *post mortem*, on April 9th, 1903. On June 17th, 1903, I procured the parasites in blood taken by puncture from the spleen during life. Besides the spleen, the parasites are also found in the peripheral circulation when the temperature is above 103° F. (this find of mine has been confirmed by Laveran and Mesnil); in the liver, bone marrow, submucosa of the large intestines, ulcers of the skin, and ulcerations of the mouth; occasionally in the blood from the kidneys and suprarenals.

I have had up to the date of writing this paper, June 16th, 1904 (exactly a year since I first found the parasites in the spleen blood during life), 72 cases in my wards only. The total admission for the same period was 1,304, giving a percentage of 5.52 for natives and Eurasians collectively; to take them separately, the percentage amongst natives was 6.79, and Eurasians 2.38. In my wards no cases were found amongst Europeans, but a few were admitted in the wards of the other physicians, where the disease is of as common occurrence. The disease attacks the poorer class of natives of both sexes and all castes and creeds, Eurasians and Europeans less frequently. Age is no bar to infection. In Madras the disease is chiefly endemic in the insanitary native quarter of the city called Blacktown. A few have sought admission from a village twenty miles north of Madras, one from Rangoon (?), one from Hyderabad, and another from Bassein, Burmah.

The most characteristic feature of this disease is an enlarged spleen, irregular pyrexia unaffected by quinine, and the absence of the malarial haematozoa in the peripheral circulation.

To go more into details, I give the results obtained from observation of the 72 cases admitted into my wards during the last twelve months. The temperature is of an irregular type with occasional lapses of apyrexia. In the beginning it is of a marked intermittent type, varying from 97° to 103° or 104° F., of daily occurrence, coming on chiefly in the afternoon, associated with shivering; in the later stages it simulates hectic with profuse night sweats. In a few cases the intermittent temperature occurs twice daily; when any complication is present, as broncho-pneumonia or cancrum oris, the pyrexia is continuous or subcontinuous. The four temperature charts (attached) will show the various forms of the pyrexia. The spleen is enlarged in nearly all the cases; in five only was there no enlargement of this viscus. The increase is, as a rule, not great, the organ usually extending down to the level of the umbilicus; rarely, however, has the pelvis been reached. The size of the spleen varies according to the temperature; in some instances, the variation in size has been marvellous, with fever the spleen has been below the umbilicus, and in a week or ten days, on the onset of apyrexia, the organ has contracted and disappeared underneath the ribs, but for a time only; with the reappearance of pyrexia the spleen has as quickly increased in size, and within a few days attained its former enlarged proportions.

The liver is not so invariably affected in size, and it was only in 27 cases that an increase in bulk was noticed, usually to the extent of 1 in. to 2 in. below the costal arch.

Diarrhoea was present in more than half the cases (40 out of 70), the motions were of a dysenteric character, with slime and blood; this intestinal symptom was not always present, but recurred with the severity of the disease. Occasionally ankylostomata, rhabdonemata and balantidia were found in the stools, but their presence was by no means a constant feature of this ailment. Intestinal ulcerations were present, chiefly in the large intestines; their perforation gave rise to peritonitis and death in some cases.

In nearly all the cases there were skin eruptions. The skin was dry, furfuraceous, and irritable. Sometimes there were eruptions simulating those caused by the itch mite; by the scratching of these small ulcers were formed; in two cases such ulcers reached the size of a rupee, and had a great resemblance to Delhi boil.

Subcutaneous haemorrhages or petechiae were present in 12 cases, especially over the chest and ankles, outcrops of these appeared and disappeared, and were a prognosis of bad augury. Pigmentation of the skin was very prevalent noticeable usually on the palms of the hands and the soles of the feet; in a few cases in the buccal mucous membrane, tongue and bulbar conjunctivae. A general pigmentation of the whole body is better marked in light complexioned Eurasians. In native patients who are not carefully tended or washed the dry, furfuraceous skin remains on and becomes in time dirty and black-looking. This is most probably the darkening or blackness of the skin spoken of in connexion with kala-azar. In a few of my Eurasian cases the whole of the skin took on an icteric tinge a day or two previous to death.

Cancrum oris, inflammation and ulceration of the gums and hard palate, very occasionally suppurative tonsilitis, were present in 22 cases.

Associated with these affections of the mouth and pharynx were 4 cases of suppuration of the middle ear. Another constant feature is oedema of the feet, occurring in more than half the cases.

As to the lungs, bronchitis was very prevalent; half the number were thus affected. About six patients suffered from pleurisy with serous effusion, and one had haemothorax; broncho-pneumonia occurred in two. Rarely was ascites found to be present; in one patient there was a considerable amount of blood in the peritoneal cavity; this was detected before splenic puncture, and therefore was not due to that operation.

As to the mortality, 22 died, 7 were removed moribund, and with the exception of 3 still in hospital, the remainder were discharged at their own request, invariably in a much worse condition than on admission; indeed, few of these had any prospect of surviving more than a month or two. In only one case, that is No. 65, whose case and temperature chart is attached, was there any semblance to a cure.

The causes of death were—6 from general infection, 1 from cancrum oris, 1 from oedema of the glottis, 6 from diarrhoea, 5 from peritonitis, 1 from broncho-pneumonia, 1 from tubercle of the lungs, and 1 from haemorrhage after splenic puncture.

The blood examinations in cases of piroplasma infection always show a marked decrease of the red blood corpuscles; these vary from 2,000,000 to 3,000,000 to the cubic millimetre. There is no actual increase of the leucocytes, but a relative one of the mononuclears, as in malaria. The average differential leucocyte count in ten cases gave the following result: Polymorphonuclears, 62.56 per cent.; mononuclears, 21.58 per cent.; transition, 2.04 per cent.; lymphocytes, 9.22 per cent.; and eosinophiles, 4.60 per cent.; the number of mononuclears varying from 6 per cent. to 46 per cent.

The urine usually contains albumen and invariably pigment. The faeces, as mentioned before, contain in a few of the cases balantidia, ankylostomata, and rhabdonemata. Quinine has been given by mouth, hypodermically, and intramuscularly *ad nauseam*, with no appreciable result. The same may be said of other less suitable drugs—that is, arsenic, salicylate of sodium, carbolic acid, creosote, tincture of iodine, etc.

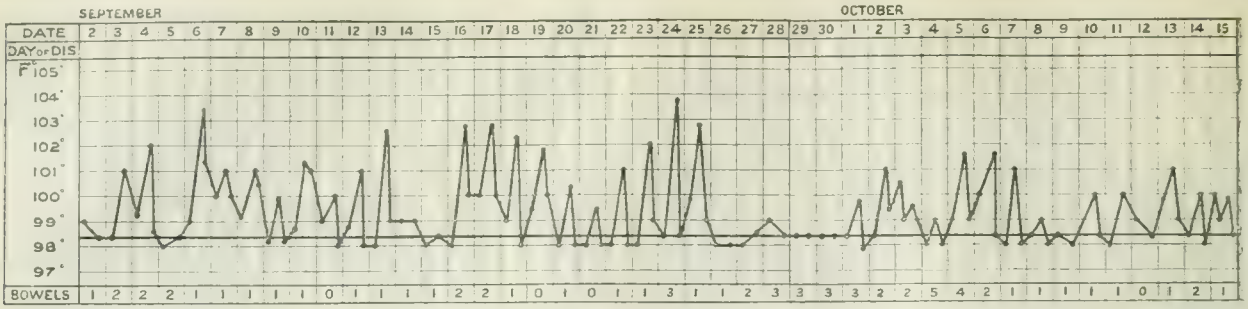
The *post-mortem* find is generally an enlarged, pigmented, or unpigmented spleen; liver enlarged, congested, or cirrhosed; at times there is pigmentation present; intestines, especially the large, deeply congested, inflamed, or ulcerated.

Owing to limit of time I can only give a short history of four cases with their temperature charts:

1. Case No. VIII.—Vedachellan, a healthy looking and well-built boy, aged 12 years, lives at Perambur: fever one and a half month's duration. Spleen enlarged to umbilicus, liver normal, no diarrhoea and no oedema of the feet. During his stay in hospital for over two months had irregular pyrexia and had become a little thinner when discharged.

2. Case No. XXIV.—Narainsami, an emaciated, very dark complexioned man, aged 35 years, lived at Blacktown; history of fever of two months' duration with dysenteric motions. Was three months in hospital suffering from typical pyrexia, dysenteric motions, cough, oedema of feet and soreness of mouth. The strange feature about this case was that the spleen and liver were not enlarged, and it was with some difficulty that the spleen could be punctured. He died, and a necropsy was held by me. The following especial features were noted: Fourteen ounces of blood-stained fluid in the abdominal cavity; parietal peritoneum, especially in the pelvis and sides, mesentery and omentum, covered with numerous petechial spots of recent origin, some, however, appear old, like miliary tubercles. Intestines—lower part of the large—inflamed and ulcerated. Spleen normal, of a brownish-pink colour, non-pigmented. Liver very slightly enlarged, congested, non-pigmented. Suprarenals enlarged. The other viscera call for no mention.

3. Case No. XLVI.—Sivaraman, a delicate native boy, aged 13, lives in



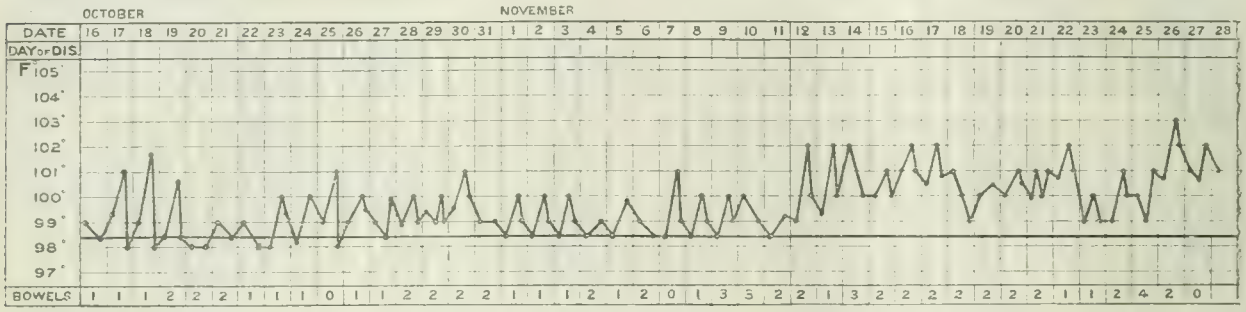
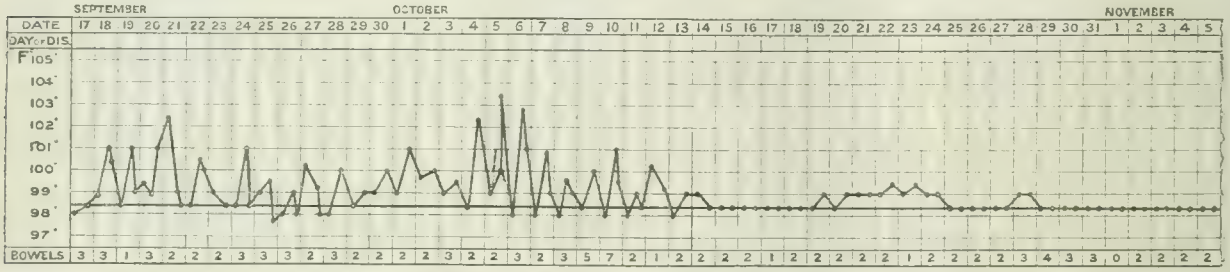


Chart 1.—Case VIII.



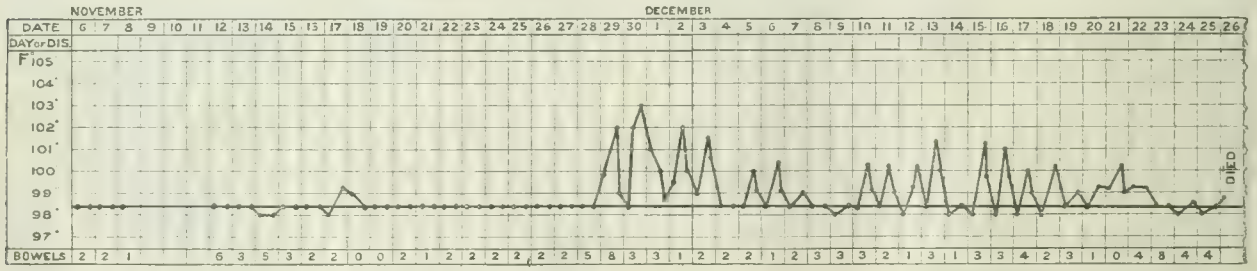


Chart 2.—Case XXIV.

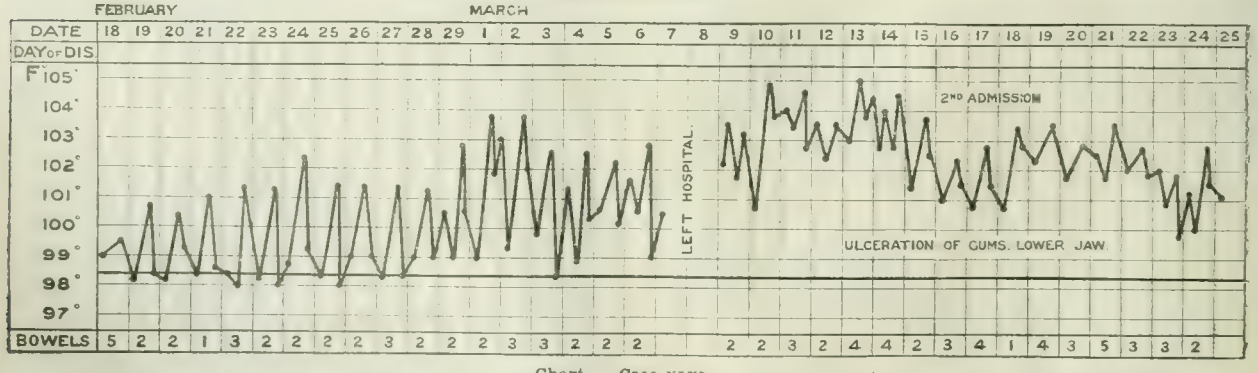


Chart 3.—Case XLVI.

Blacktown; spleen enlarged to umbilicus, liver normal. Has had fever for 8 months, the splenic enlargement noticed two months ago, occasional oedema of feet, with diarrhoea and cough. Was a little over a month in hospital. During the latter part of his stay he suffered from ulceration of the gums over the left incisors. He left at his own request much weaker than on admission.

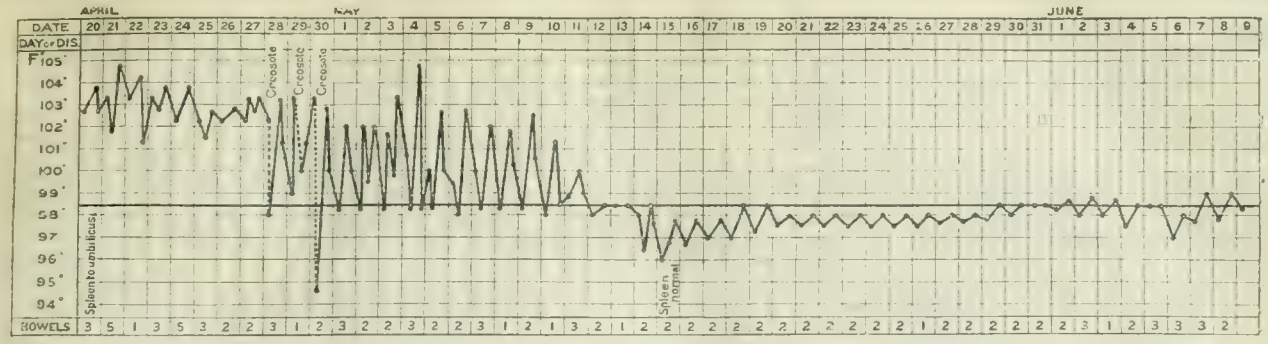


Chart 4.—Case LXV.

4. CASE NO. LXV.—Mahadevan Nair, aged 21 years, a hospital assistant from Bassein, Burmah; was admitted very ill on April 20th, 1904, suffering from continuous fever, between 103° F. and 104° F., with enlarged spleen and oedema of the feet and a purulent discharge from both ears. The fever kept more or less continuous till June 27th. On the morning of next day creosote was applied to the axilla, when the temperature dropped in an hour to normal, but rose again in the afternoon. Similar applications of creosote were made on the two following days, with the same effect of reducing the pyrexia for a short time. After this the fever became of a marked intermittent type, and reached normal on May 12th. During the last week of the pyrexia the spleen became gradually smaller and smaller, and on May 15th had regained its normal size. From May 12th to the date of his discharge (June 9th) the temperature kept more or less normal. The patient left hospital apparently cured; he had picked up weight, was able to walk about and eat heartily, and the only sign of disease was a slight oedema of his feet coming on in the evenings. This is the only case in which I have noticed such marked improvement. I am afraid it is only illusory, and expect him back again in a fortnight with fever. This hospital assistant is a native of Tellicherry, on the Malabar coast, and had never any fever till he went to Bassein in Burmah.

IV.—CHAS. A. BENTLEY, M.B.Edin.,

Tezpur, Assam.

NOTES UPON KALA-AZAR AND THE NEW PARASITE.

THE discoveries of the past twelve months have now shown the connexion between kala-azar, the epidemic fever of Assam, and the so-called malarial cachexias of Bengal, Madras, and other parts of India. They have also indicated the widespread incidence of this disease in many other parts of the tropics.

Probably all medical men who take an interest in tropical medicine are sufficiently familiar with the clinical symptoms and general history of kala-azar, so that it is only necessary to point out here that the accounts of the disease that have been published up to the present deal only with the epidemic form, and require, therefore, to be slightly modified now that the widespread distribution of the condition has been recognized.

To summarize briefly, kala-azar is an endemic disease occurring over wide tracts in many parts of India and probably in many other parts of the world. Occasionally it may appear in epidemic form. It is characterized by gradual enlargement of the spleen and sometimes of the liver, together with more or less emaciation and frequently with bursts of irregular fever, generally of a continued or a quotidian intermittent character. Pain in the ends of the long bones is a frequent symptom. Attacks of the disease appear to commence in various ways. Some are ushered in with fever, others begin with acute gastro-intestinal or dysenteric symptoms. In other patients, again, a more or less typical pneumonia prefaces the attack, while not a few patients merely complain of an increasing general debility coupled with pain in the limbs and an accompanying enlargement of the spleen.

Among the minor symptoms may be mentioned haemorrhages from the stomach, the gums, or the nose; gradual darkening of the skin (not true pigmentation); occasional oedema of the face and ankles, or, in cases with marked hepatic enlargement, ascites. A certain amount of secondary anaemia is also generally present and may exist in marked degree.

The disease attacks people of every age and both sexes. Attacks may last for several years or run through a rapid course of a few months. The dysenteric form is usually rapidly fatal.

The disease occurs sporadically over the whole of Assam, and it has spread as an epidemic through the more southerly districts of that province, as a wave of increased fever mortality, gradually decreasing after a few years, but leaving behind it the endemic form of the disease. Apparently it began thus in Bengal many years ago, sweeping over that province in a north-easterly direction, and leaving behind it an endemic affection which to this day causes many of the districts therein to return an annual fever mortality of from 20 per cent. to 75 per cent. per mille of the population. The disease as it is met with at the present time is most resistant to treatment. Quinine is absolutely useless either as a prophylactic or specific. Change of climate or removal to an absolutely fresh and uninfected site, together with careful dieting, is far more useful than treatment by drugs. Often a comparative immunity appears to be gradually acquired by those who have been long exposed to infection, and, although during an epidemic few only may escape and the case mortality may reach 90 per cent., yet two or three years will show an abatement in the number and virulence of the attacks, until at last the disease is hardly recognizable by medical men of the pre-Laveran school as anything different to what they call "ordinary malaria." The differential diagnosis from malaria is, as a matter of fact, easy to those who have studied the latter disease and who are accustomed to make a microscopical examination of the blood. Difficulties chiefly arise in diagnosing between kala-azar and cachectic conditions such as general tuberculosis, endocarditis, etc.

The only accurate method of diagnosis in these cases is the examination of blood drawn from the spleen during life. In cases of kala-azar which are recovering parasites may be almost entirely absent even from the spleen.

The Parasite.

The parasite of kala-azar has now been described by so many observers that it is difficult to add anything new regarding its morphology. As generally seen, it is of an elliptical shape, varying in size from 1½ to nearly 4 microns in length by from 1 to 2½ microns in breadth. It varies somewhat in shape, the smaller bodies being more fusiform and the larger ones possessing a more circular outline.

Seen from the side it is distinctly fusiform in section; Christophers has compared it to a closed cockle-shell in general shape. The most striking feature of the parasite is its double nucleus. Nearly all except the smallest bodies show a large oval nucleus at one periphery and a smaller rod-shaped centrosome, placed somewhat at a tangent, on the opposite side of the parasite.

As originally pointed out by Leishman, the arrangement of these two nuclear masses is extremely like that shown in degenerated trypanosomes. (A plate in the *Annales de l'Institut Pasteur* for September, 1901, illustrating an article by Laveran and Mesnil on the trypanosome of the rat, gives an excellent idea of this resemblance.) Stained by Romanowski's method, the parasites appeared to possess a well-marked body wall or capsule. The larger parasites often exhibit vacuoles in the bluish-pink stained body substance.

Christophers has pointed out the fairly frequent occurrence of various developmental forms of the parasite, in which the larger nucleus is seen divided or dividing, and the smaller rod remains undivided.

I have observed these forms and others also in which conjugation appears to be taking place, with a fusion of the larger chromatin masses, while the smaller rods remain separate at opposite sides of the twin parasite.

Large circular cells, with a distinct wall or outline, are

frequently to be seen containing what appear to be dividing parasites. These cells vary in size, and contain different numbers of bodies. Some appear to hold only two or three, while others are crowded with twelve or eighteen small-sized parasites. These circular cells or cysts are often to be seen in the protoplasm of large macrophages, in addition to numbers of single parasites.

Situation of the Parasites.

So far I have only found these parasites in the tissues of the spleen, liver, and bone marrow. Manson has, however, detected them in the mesenteric glands, and Christophers has found them in the tissues surrounding ulcers of the colon, and in petechiae in the arachnoid. I have also heard of their being met with within leucocytes in the peripheral circulation, but their occurrence there would appear to be exceedingly rare. A parasite of similar appearance has been shown recently to occur in the tissues of Delhi boil. In an examination of over 60 sores and ulcers in natives of this part of Assam I have not met with this parasite once. An examination of blood drawn from the spleen during life, or of tissue smears obtained *post mortem* from a case of kala-azar, generally shows the parasite to be present in large numbers in large cells, apparently endothelial in character. These cells, however, are evidently phagocytic, and appear to be markedly amoeboid. They are often seen to contain many red blood cells and large numbers of parasites.

I think that Christophers's contention is correct—namely, that the mauve or blue staining stroma or "zooglea mass" which is frequently to be seen enveloping masses of parasites is in all probability derived from these large macrophages, fractured in making the preparation. These so-called zooglea masses are less frequently to be seen in films that have been carefully spread by means of cigarette-paper.

Probable Nature of the Parasite.

At the present time there are, I believe, three suggestions regarding the probable nature of this new parasite.

A. Leishman first suggested that the body was a degenerated trypanosome. I do not think that this idea can be now entertained, as, were it such, we should expect to find recognizable trypanosomes in some part of the human body in cases of kala-azar. Up to the present no observer has reported the discovery of human trypanosomiasis in any part of India. The strong evidence, too, regarding the presence of developmental forms among the new parasites appears to me to entirely negative Leishman's original view.

In connexion with this I should like to suggest that these bodies may be one phase in the life-history of some flagellate. The possibility has struck me in view of certain facts which I have been able to elicitate while investigating the occurrence of kala-azar. It appears that certain species of mud-fish, taken from marshes or bheels adjacent to kala-azar infected lines, in nearly every instance showed marked trypanosomiasis. This has held good in the case of a number of different coolie lines and a kala-azar infected village. Fish obtained from bheels at a distance from any source of faecal contamination, on the other hand, appeared to be entirely free from trypanosome infection. I am now pursuing my investigations on these lines, but up to the present moment have been able to arrive at no definite conclusion.

B. The second theory is that put forward by Professor Laveran, who, shortly after the discovery of the new parasite in cases of fever in Madras by Donovan, pronounced the body to be a species of piroplasma.

I do not think that there are strong grounds for entertaining Professor Laveran's suggestion. The occasional occurrence of a kala-azar parasite superimposed upon a red blood cell does not appear to me to be strong evidence for classing the new parasite among the haemocytozoa. Careful examination of a large number of spleen slides from cases of kala-azar have convinced me that the bluish staining stroma enveloping some of the parasites is not of the nature of degenerated red blood cells. Moreover, I have compared the new parasite with two species of piroplasma canis, to neither of which did it bear the slightest resemblance.

C. The suggestion of Professor R. Ross that the parasite is a tissue parasite of an entirely new genus appears to me to be the most reasonable.

Before admitting this suggestion I think that there are several points to be cleared up. It is true that Manson and Low's idea that the parasite was an example of a class of organism having an exceedingly simple life-cycle has much to recommend it: but I do not think that it has yet been definitely shown that the so-called Leishman-Donovan body is more than the spore of some micro- or myxo-sporidian. I think, also, that the non-parasitic nature of the large macrophages, which so frequently contain the kala-azar body in large numbers, requires to be demonstrated before we can assume that the question is one to be easily settled.

The signs of division and development to be seen in many of the kala-azar bodies is, no doubt, a fact which supports Manson and Low's contention; on the other hand, the enormous number which show no sign of fission or conjugation, and their possession of what appears to be a resistant capsule, are points in favour of their being the spore or endospore of some parasite of a totally different nature.

No doubt the fact that up to the present no "stinging thread" has been demonstrated in the case of any of these bodies is a strong argument against their being the spores of a micro- or myxo-sporidian, but it may yet prove that they are a phase in the life-history of some flagellate or other organism.

The recorded fact of the occurrence of large numbers of endothelial microphages in the capillaries of the spleen and liver in cases of splenic anaemia and Banti's disease seems to negative the idea that these large amoeboid cells are of a parasitic nature, unless the Leishman-Donovan body is subsequently demonstrated in those conditions. The occurrence of similar large cells in the tissues in cases of malaria and trypanosomiasis are also points against the theory, but the finding of malarial pigment in one of them, as recorded by Christophers, does not appear to have any bearing on the point at issue, for it is a well-known fact that foreign bodies of all sorts may be recognized in the body substance of several varieties of amoeba coli, and there is no reason, imagining for the sake of argument that the macrophages are themselves parasites, that they should not as readily engulf red blood cells containing malarial parasites as well as any other.

Although the staining reaction of these large cells is in nowise characteristic, resembling that of the large lymphoid elements, this is hardly a strong point against the suggestion of their parasitic nature, as it may be well to remember that one at least of the several species of amoeba to be found in the intestines of man in this part of India has a staining reaction very similar to that of these cells. It is also known that the pseudo-leucocytes that are present in the blood in trypanosomiasis and spirillar fever have a similar staining reaction to elements of normal blood.

Mode of Entrance and Exit of the Parasite.

As Manson has already pointed out, it is of importance that we should endeavour to learn the mode of entrance and exit of the parasite to and from the human body. So far, I believe, all attempts at finding the parasite outside the human body have proved useless.

In the course of a long series of investigations, suggested to me privately by Sir Patrick Manson, I have carefully examined the blood and tissues of a large number of animals of various kinds, in the hope of finding some clue. I have been unsuccessful in finding the parasite in dogs, cats, goats, cattle, rats, deer, bats, fish, frogs, and snakes. The examination of the stomach and salivary glands of mosquitos has likewise been fruitless, and the dissection of several species of blood-sucking flies has not shown any result.

This latter operation is exceedingly difficult, and it is possible that greater experience may show other results. Tabanidae and stomoxys are exceedingly common in this part of Assam, and give great annoyance to the natives during the rainy season. As part of a routine examination I have not neglected to search well and hoolah (marsh) water for the parasite.

Samples of surface and bottom water have been centrifugalized, and the resulting deposit carefully stained and examined under the microscope, but so far without result. The search for the mode of exit has likewise up to the present been no more successful. The search through stained slides prepared from the faeces of kala-azar patients has only brought to light the fact that this class as a whole exhibit an extraordinary number of protozoal organisms of different kinds among the miscellaneous fauna of their intestines. Four different varieties of amoeba have been recognized, besides cercomonas and a peculiar organism provided with a ciliated membrane, apparently distinct from paramaeceum coli.

One or more cases of kala-azar exhibited a body which appeared to be a coccidium, very different from those described by Giles. This body resembles in general shape a closed mussel shell: in size it is about 12 to 15 microns long, by about 7 or 8 broad. It appeared to be enclosed in a

tough refractile capsule. The stools from healthy people in this district, while showing the presence of two species of amoeba in small numbers, together with the usual number of ova of various worms common to all natives of this part, were otherwise fairly free from protozoal organisms. I may mention here that I have also examined a certain number of ankylostomata expelled by vermicides from the intestines of cases of kala-azar. In one instance, among the blood cells contained in the alimentary tract of one of the worms, a binucleated body resembling the parasite of kala-azar was found. In two instances also, while examining slides from a case of kala-azar exhibiting dysenteric symptoms, bodies of this description were also seen.

Urine from cases of kala-azar, centrifugalized and the deposit examined, showed nothing of interest. Sputum from cases of the disease likewise failed to show more than the usual collection of bacteria common to cases of bronchial catarrh, etc. Slides prepared from several cases of kala-azar who had developed cancrum oris petechial eruptions have shown nothing beyond bacteria.

As I have previously mentioned, I have so far failed to find the parasite in any skin lesion among the natives here. Although some of the less cleanly natives suffer much from skin affections superficially resembling Delhi boil, I have up to the present failed to meet with this disease in Assam.

Major Donovan has announced the finding of the kala-azar parasite in the lesions of scabies upon individuals suffering from infection with the parasite of kala-azar. Up to the present I am unable to confirm this occurrence in cases in this district.

Further investigation may show some connexion between the local skin lesion and the general infection; but, so far, known facts appear to indicate the existence of two different species of parasite of the same genus. Were skin lesions to be the initial mode of infection, one would expect to find a frequent implication of the superficial lymphatic glands—a symptom which up to the present remains unrecorded in cases of kala-azar.

Conclusion.

It appears to me that the clinical history and the epidemiology of kala-azar give certain indications as to necessary lines of research.

It has been my experience during the four years in which I have been familiar with the disease that cases suffering from severe fever appeared to be more dangerous, as far as the spread of the epidemic went, than those whose temperature was more frequently near the normal.

It is these cases with high and continued fever who show on splenic puncture a larger proportion of fission and conjugation forms than the milder type of case.

Again, I have frequently noticed when the epidemic was at its height that cases which showed dysenteric symptoms, and especially those who became bedridden while suffering from dysentery, were sure to be followed by fresh cases in the same household or among the attendants.

When the intestinal form of the disease is in abeyance, the epidemic gradually assumes a milder type, with a corresponding decrease in the case mortality.

Another fact which appears to me to be of importance in regard to any investigation of the disease is the comparative immunity of Europeans. Although isolated cases are met with in Europeans, they are uncommon. This fact appears to indicate that certain conditions are necessary for the spread of the disease to which Europeans as a class are rarely exposed: and therefore the careful study of the case history of such patients when they are met with may be expected to give a valuable indication regarding the source of infection.

V.—Lieutenant S. R. Christophers, I.M.S. (on Special Duty).

TROPICAL SPLENOMEGALY AND ORIENTAL SORE.

Whoever may have first seen the parasitic bodies variously known as the Leishman-Donovan bodies—piroplasma donovani, leishmania, or helcosoma—it is undoubtedly chiefly owing to the researches of Donovan that the occurrence of an entirely new parasitic disease of man was first brought to the attention of parasitologists and students of tropical medicine generally. With Donovan's discovery of the disease in Madras and Laveran's definite announcement of the parasitic nature of the bodies, speculation at once became rife regarding their zoological position, life-history, and method of transmission.

The earliest researches centred chiefly around the morphology and the zoological affinities of the bodies. They were thought by Leishman to be flagellates, on account of the conspicuous chromatin masses, which certainly appear to represent a karyosome and centrosome very like those of the trypanosomata. But that they are any form of degenerated trypanosome is exceedingly unlikely in the face of the large number of recorded cases in which no trypanosomes have been present. The same unlikelihood pertains to their supposed affinities with the genus piroplasma, and the discovery by Wright of the bodies crowded in the cells of granulation tissue in tropical ulcer would appear to be the death-blow to this view. It has been suggested that the bodies are of the nature of microsporidia, but the proof for this rests on no further evidence than their remarkable uniformity in size and appearance. On the data we have at our disposal, it is indeed impossible to place these bodies in any of the genera or better known divisions of the sporozoa. A good deal of speculation has raged around the nature of the so-called "matrix" of Ross, "zooglea mass" of Manson, and "red corpuscle" of Laveran. In my first report I gave reasons for considering this nothing more or less than the cytoplasm of endothelial cells of the spleen, more especially that derived from the large macrophages which bud and vacuolate so as to give rise to the curiously definite masses in question. The process is much increased by the fluid usually present in the barrel or needle of the syringe used for puncture. A study of sections shows very clearly the real condition, which is one of endothelial cells gorged with the parasites.

In regard to the nature of the infective process, it has very generally been taken for granted that the recently discovered parasite is a blood parasite, much in the sense that the malarial parasite is. If Laveran should be right in his surmise that the parasite is a species of piroplasma, this will of course be true. As matters stand at present, the parasite does not appear to be related to this genus or to be a parasite at any time of the red cell.

Are they to be considered as parasites of the plasma? On this point I have no hesitation in saying, from the result of my recent researches, that they are probably a blood parasite in no other sense than are the organisms of septicaemic infection or the tubercle bacillus.

While the attention of many observers was still directed to the novelty of the presence of the bodies in the spleen and liver of cases of tropical splenomegaly, Wright, in America, had, apparently independently, discovered the same bodies in large numbers in the granulation tissue of tropical ulcer, a lesion which had long been recognized as probably a specific local granuloma. That the bodies described by Wright are identical with those found in cases of enlarged spleen in Madras cannot be doubted after a study of the excellent photographs which accompany his paper. We also have the important communication from Captain James, I.M.S., that abundant forms indistinguishable from those in the Madras cases and in kala-azar from Assam were found by him in cases of Oriental sore from North India. The general pathology of the lesion and the relation of the bodies to the tissues as described by Wright make it seem certain that in this case the newly discovered parasite is acting as the causal agent in a focal granuloma of the skin.

Shortly after Wright's paper reached India, Donovan found the characteristic bodies in small numbers in ulcers in an advanced case of the Madras disease with enlarged spleen and cachexia. Stimulated by the discoveries of Wright and Donovan, I examined very thoroughly the tissues of fatal cases of the disease, especially with reference to the skin and intestinal lesions found in such cases. The result has been to throw a considerable amount of light on the nature of the infective process.

Bodies were found in the spleen, liver, and bone marrow, intestine, lungs, testis, and kidneys. I have in the first report already shown that the apparently free forms seen in specimens of splenic blood cannot be considered as other than forms artificially liberated by rupture of cells, more especially the large macrophages. The same relation holds good in the case of the liver and bone marrow, and in all the organs the condition may be described as an engorgement of the endothelial cells with the parasite. In the lung, testis, and kidney, bodies were much less numerous, but were in places readily seen lying in cells of endothelial nature. Free forms were never seen in sections.

In unulcerated papules of the skin, in small and large ulcers of the skin and of the intestine, the bodies were consistently present. They were as a rule scattered singly through the

tissue, and appeared to be lying embedded in the cytoplasm of tissue cells. Closer investigation showed that they lay in the endothelial cells of the finest capillaries. No bodies were ever detected lying free in the lumen of vessels. In larger vessels, in the immediate neighbourhood of granulation tissue, endothelial cells were seen containing from two to six bodies, and in many of the still larger ones cells crowded with bodies almost blocked the lumen.

Briefly stated, we have in infection by the Leishman-Donovan bodies a type of infection in which the vascular endothelium is mainly implicated. The importance of such a fact is manifest. In the first place, it suggests the comparison of the Madras disease (chronic malarial cachexia) with the usual type of septicaemia. In this, from the researches of Werigo[1] and Kuhnau[2], it is evident that infection of the blood stream with the septic organism is chiefly shown by the deposit of forms in the endothelium and leucocytes of the viscera. If, indeed, we say that the disease seen in Madras is a systemic infection of septicaemic type, we shall most nearly express what is known as to the nature of this new protozoan disease. This view will also allow us to see in Oriental sore a local infection by the same organism.

As regards the cycle of development of the parasite, we believe that multiplication of forms is mainly by binary fission, the larger fission forms being of secondary importance. The parasites having entered or been taken in by an endothelium cell, would appear to proliferate, causing eventually the disruption of the cell and the temporary setting free into the blood stream of the crowd of contained bodies. There does not appear to be any intracellular digestion of forms included in the endothelium cell, and this latter very probably constitutes a suitable host for the parasites, in spite of the fact that it may originally take them in by reason of its phagocytic properties.

VI.—Aldo Castellani, M.D.Florence,
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"LEISHMANIA DONOVANI" IN CEYLON.

To my knowledge Leishman-Donovan bodies have been found so far only in cases with well-marked features of tropical splenomegaly. It may be of some interest, therefore, to record a case in which these bodies were present, but in which symptoms were practically absent, the case being probably at the very beginning of the disease.

D. S., Cinghalese, aged 20, was for a few days in the General Hospital of Colombo under care of Dr. Sinnatamby. The patient was affected with lobar pneumonia, and showed all the usual symptoms of that disease. He died on May 4th, 1904, at 6 a.m. I held the *post-mortem* examination at 11.45 a.m. of the same day. The body was in a fairly good state of nutrition. No cutaneous eruptions, no bedsores. Rigor mortis present.

Thoracic Viscera.—Parietal pericardium had a normal appearance. Pericardial fluid not increased. The heart slightly enlarged, valves normal. Right lung healthy. The whole lower lobe of left lung consolidated, airless; the pleural surface showed a fibrinous exudate; cut surface dark red, with a granular appearance.

Abdominal Viscera.—No effusion in the peritoneal cavity. Liver enlarged, signs of fatty degeneration. Spleen somewhat enlarged, but not hard; no signs of perisplenitis; cut surface of a vivid red; pulp soft. Kidneys both slightly enlarged and congested. Pancreas healthy. Intestine normal; no entozoa.

From the spleen as a matter of routine I made two smears. The films were stained some hours later in the Bacteriological Institute according to Ziemann's modification of Romanowsky's method. Both films presented a very large number of Leishman-Donovan bodies. I was surprised, as the *post-mortem* examination of the body had not shown the features of a splenomegaly. The bodies were well stained and identical with those I have seen in the preparations of Donovan, Manson, and Low. In my films the free forms were most abundant; some embedded forms were also present, though as a rule, according to some authors, the embedded varieties are found generally in preparations made *intra vitam*. I could not see any intracorpuscular forms, as described by Laveran and Mesnil; a few parasites could be seen superposed or underlying a red blood corpuscle. I was especially struck with the large number of leucocytes, the nuclei of which contained deeply-stained masses resembling closely Leishman-Donovan bodies. In fact, 15 per cent. to 25 per cent. of the mononuclear as well as of the polymorphonuclear leucocytes presented such masses stained a deep red-purple in their nuclei.

Ross has already called attention in one of his papers to the presence of some curious massive nodular deeply-staining granules arranged principally round the periphery of the nucleus of leucocytes. Ross states that he is not familiar with such granules, and cannot definitely connect them with the Leishman-Donovan body.

Ross observed such a peculiar appearance of the leucocyte nuclei in preparations made during life; my preparations were made after death, but it is to be noted that the *post-mortem* examination was held less than six hours after death. Laveran and Mesnil also state that in some cases they have had the impression of seeing the Leishman-Donovan bodies included in the nuclei of the leucocytes, and that in such cases the nuclei always presented some changes.

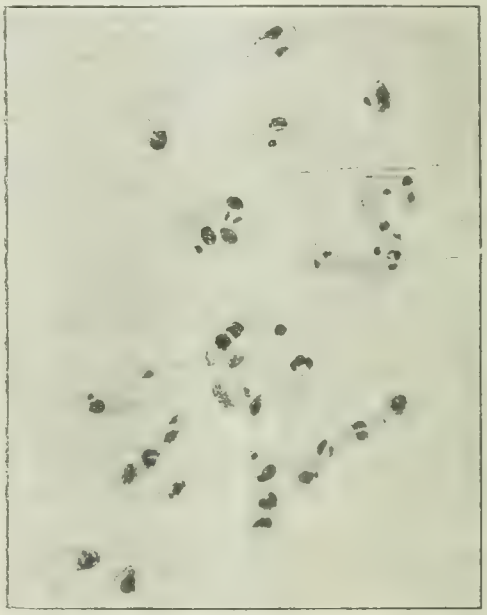


Fig. 1.

It seems to me that, as already practically proved by Manson, Ross, and Low, the Leishman-Donovan bodies are not piroplasmata. They are not likely to be degenerated trypanosomata, seeing that no observer has found stained flagella, though smears from the spleen of rats infected with

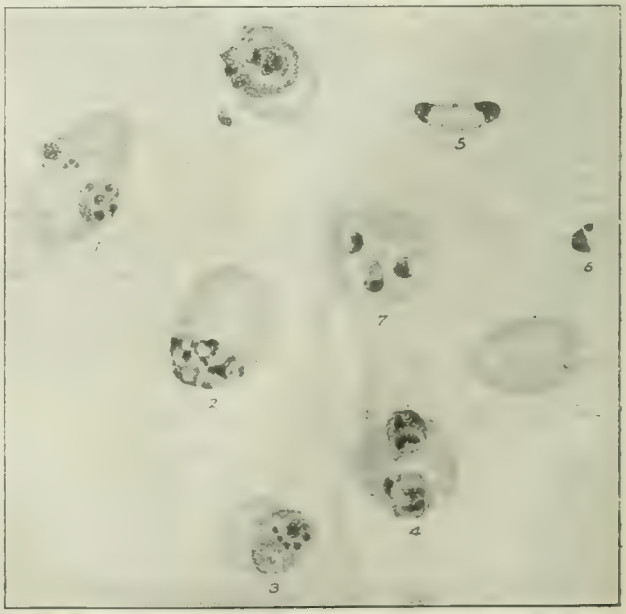


Fig. 2.—1, 2, 3, 4, leucocytes showing in the nucleus formations resembling the Leishman-Donovan bodies; 5, 6, free forms; 7, embedded forms.

T. lewisi, as pointed out by Leishman, present peculiar formations very much like the Leishman-Donovan bodies. In

[1] *Annal. Institut Pasteur*, 1892.
[2] *Zeit f. Hygiene*. Bd. 25. p 492.

Ceylon, as observed by Dr. Willey and myself, 20 per cent. to 30 per cent. of rats are infected with T. lewisi. Smears from the spleen of such rats show structures very much like the Leishman-Donovan body. It is much more probable that the Leishman-Donovan body represents a new genus (Leishmania). As the nuclei of the leucocytes, at least in the preparations examined by me, show so often masses resembling the Leishman-Donovan body, could it not be that the parasite in one of its stages of development is a parasite of the nucleus of the leucocytes—a leucocytozoon?

It is remarkable that leucocytes presenting in their nucleus Leishman-Donovan bodies, or formations resembling these, are far more numerous than are the leucocytes with similar structures lying in their protoplasma. It is remarkable also that some nuclei appear as if they had been damaged and sometimes almost destroyed by those bodies. All this cannot be explained in my opinion by phagocytosis.

In the lower animals some parasites of the nuclei of the leucocytes have been described already by Danilewsky, Ziemann, Berestneff, etc. It must be stated, however, that these parasites (leucocytozoon, Danilewsky, etc.) morphologically have no resemblance to Leishmania-Donovani. The view I give I bring forward merely as a suggestion.

In conclusion my case may perhaps be of some value:

1. In connexion with the geographical distribution of the parasite, the Leishman-Donovan body had not hitherto been observed in Ceylon.

2. The case was not a typical case of tropical splenomegaly; probably it was a case at the very beginning of the disease; the intercurrent disease (lobar pneumonia) killed the patient.

3. The examination of my preparations confirms the opinion of Manson, Ross, Low, etc., that the bodies are not intracorpuscular parasites of the red blood corpuscles.

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NOTE ON THE OCCURRENCE OF THE LEISHMAN-DONOVAN PARASITE IN ARABIA AND EGYPT.

Enlargement of the spleen, with or without ascites, is a very common disease in Egypt, and for some time I have been studying the cases of ascites that occurred in Kasr el Ainy Hospital, the results of which will appear in the forthcoming volume of the records of the Egyptian Government School of Medicine. The main facts that I elicited were that in 100 consecutive cases of ascites, diseases of the heart accounted for 4 (possibly 7) per cent., of the lungs 3 per cent., of the kidneys 8 (possibly 9) per cent., of the peritoneum 3 per cent., of the liver and spleen 7 or 8 per cent., of which malignant diseases formed 5 per cent. of the whole, syphilis 1 per cent., alcohol 8 per cent., bilharzial cirrhosis 1 or 2 per cent., malaria 30 per cent., leaving 32 per cent. of doubtful etiology. I had, however, hesitated to puncture enlarged spleens in these cases in order to search for malarial parasites. But in April of this year Dr. Balfour of Khartoum told me that in a case at Khartoum, on splenic puncture Leishman's parasite had been discovered. On being assured that no ill effects usually followed puncture of the spleen, I decided to search for the parasite in cases under my care at Kasr el Ain Hospital, feeling fairly certain that some of these cases of enlargement of the spleen without any apparent cause would turn out to be associated with the parasite in question. This I accordingly did, staining the films so obtained by Leishman's stain, or by Romanowsky's stain, prepared as recommended in the report of the Trypanosomiasis Commission.

After some failures, I found the parasite in large quantities in the splenic pulp of a Turk who had lived for a long time in Yemen, in Arabia. Three days later I admitted another patient who had also lived for a long time at Mecca, in Arabia, and whose splenic tissue also yielded the body in question in very large numbers. These bodies, in one of the two cases, were perfectly typical, occurring often in masses of 200 to 300, and staining with the Romanowsky red, and with the red of Leishman's stain. In the isolated parasites the two chromatin bodies could be made out. I showed the films to Dr. Bitter, of the Sanitary Department, Cairo, and he recognized in them the same bodies that he had been shown by Dr. Sheffield Neave in the case from Khartoum. A few days later I took in an Indian from Delhi, with an enlarged spleen, and in him I also found bodies identical with the other two cases. (Details of these cases follow.)

We must therefore add Arabia to the countries in which this parasite occurs, and since the Hedjaz is the place of pilgrimage of the whole Mohammedan world, we may have to reckon with a parasite of great import. Further, it has been found in Delhi boil; it may also be found in the Aleppo boil of Arabia.

Taking into consideration its occurrence in Arabia and the great prevalence of chronic enlargement of the spleen in Egypt one would not be surprised at finding it also in the dwellers of this country. This surmise has proved correct; I have since found it in a native of the Menufieh province of Egypt, the body occurring in fair numbers. I have also found it in another case of a native Egyptian, in small numbers.

My house physician, Dr. Iscandar, who has helped me in the preparation of the films, has pointed out to me that in the cases in which the parasite has occurred, splenic puncture has been followed by a rise of temperature, but in cases in which it has not been found, no such rise has taken place.

As the following short notes show, the clinical aspects of the cases closely agree with the clinical aspects of the cases described in India.

1. Abdu Rashid, a Turk, aged 30, was admitted into Kasr el Ain Hospital on June 16th, 1904, complaining of pain after food and giddiness on slight exertion, constipation, and the occasional passage of a few drops of blood after defaecation. He had lived for the last two years in Yemen, in Arabia. He states that a month and a half ago he had an attack of diarrhoea with tenesmus and blood in the stools; this stopped under treatment. About the same time he had an attack of fever which began with rigors and which lasted during the period of the diarrhoea. The physical examination revealed that he was anaemic. His spleen was enlarged, reaching nearly to the umbilicus, the extent of the enlargement below the ribs being 7 cm. No malarial parasites were found in the blood. The blood count showed anaemia. There was nothing else worthy of note in his physical examination. During his stay in hospital his temperature ranged from 36° to 37° C., and rose after splenic puncture to 38.5° C. The parasites occurred in large numbers in his splenic pulp.

2. Hassan Mohammed el Naggar, an Egyptian, aged 35, was admitted into Kasr el Ain Hospital on June 19th, 1904, with oedema of the legs. The patient had lived for the last fifteen years in the Hedjaz, in Arabia. For the last two years he had suffered from attacks of fever characterized by rigors and ending with sweating. During this same period he had also had irregularity of the bowels with occasional tenesmus and passage of blood. He was emaciated, anaemic, and had oedema of the lower extremities. This latter had been present for three months. His spleen was found to reach 6 cm. below the ribs in the nipple line. The liver could also be felt enlarged. There was a systolic murmur to be heard over the cardiac area, and he passed daily 3,000 to 5,000 c.cm. of urine of low specific gravity. His temperature was irregular, ranging from 36° to 38° C., and during the first twelve days of his stay in hospital he had diarrhoea. The parasites were abundant in his splenic pulp.

3. Ahmed el Zanati, aged 30, an Egyptian from the province of Menufieh, in Lower Egypt; occupation, fellah. He was admitted to Kasr el Ain Hospital on June 30th, 1904. For the last six months he has had attacks of fever, the fever coming on every evening and lasting four days, and then subsiding without treatment. During the attacks he used to feel pain in the left side and in the lower part of the abdomen. Three months ago he noticed distension of the abdomen coming on, and he became unable to do any manual work. At the beginning of the illness there was looseness of the bowels, blood also was passed in the motions, and defaecation was accompanied by tenesmus. The physical examination revealed anaemia; this was accompanied by a soft systolic murmur over the mitral and pulmonary areas. There was slight oedema of the feet. The spleen was enlarged, and extended 6 cm. below the ribs. There were no signs of free fluid in the abdominal cavity. Splenic puncture, as already stated, revealed the organism in fair quantities. His temperature during his stay in hospital ranged from 36° to 38° C., rising to 38° C. and to 37.5° C. after splenic punctures. There was slight looseness of the bowels during his first few days' stay in hospital.

4. Ibrahim Rakah, aged 14, an Egyptian from the Gharbieh province of Lower Egypt, a fellah, was admitted to Kasr el Ain Hospital on July 4th, 1904. Two years ago he was attacked by fever; there were three separate attacks, each lasting about a week, and characterized by a rise of temperature in the afternoon, preceded by shivering and followed by sweating. He was anaemic (3,000,000 red blood corpuscles being present), and examination revealed a systolic murmur over the mitral area. The spleen was enlarged, reaching 10 cm. below the ribs, and the liver was also enlarged, reaching 6 cm. below the costal margin. Splenic puncture yielded blood containing but few organisms, but these were present in sufficient number to be sure of their presence. In him also the temperature rose after splenic puncture, reaching 37.8° C. There was some looseness of the bowels during his first few days' stay in hospital.

VIII.—Sir Patrick Manson, K.C.M.G., F.R.S., D.Sc.

Sir Patrick Manson said: It is certain that many medical men will be exploring spleens for Leishman-Donovan bodies. It is not an operation free from danger. One danger specially likely to be encountered, on account of a leading symptom, is the possibility that the splenomegaly and febrile attacks of leucocythaemia may be regarded as kala-azar, and the

spleen punctured with disastrous haemorrhage. Therefore I would urge blood examination before splenic puncture. A matter of great practical importance is the settlement of the way of exit and the way of entrance of the parasite. Its association with ulcerations, dysentery, and oriental sore, suggest that it emerges through ulcerations and enters by insect bites. Oriental sore must now be regarded as a serious disease, as sometimes leading to a general infection. Thus, I have seen a patient who suffered from oriental sore, and subsequently became the subject of disease of the testes, supposed to be tuberculous, for which he was castrated.

IX.—DAVID BRUCE, C.B.,

Colonel, Royal Army Medical Corps.

COLONEL BRUCE said: I have listened with the greatest interest to Major Leishman's and the other papers on this newest and apparently most important of diseases—kala-azar—and I think this Section may congratulate itself upon the important work which has been brought before it this morning. To me, one of the most interesting of the experiments brought forward is that by Captain Rogers on the development of Leishman's bodies into trypanosoma—*in vitro*. The experiment was on the simplest lines. I understand he simply placed a few drops of citrated splenic blood in a test tube and kept it at 22° C. In a short time beautiful fully developed trypanosomata were found to be present. It sounds like a fairy tale, and yet it is difficult to see where a fallacy could have crept in. He states he was working with sterilized solutions. We know flagellate organisms will sometimes develop from tap water. I heartily congratulate Captain Rogers on this startling observation, and await eagerly its confirmation. In the second place, I would like to call attention to the nomenclature of these bodies. Lately I find them called the Cunningham-Leishman-Donovan bodies, and usually they are called the Leishman-Donovan. Now, as I understand this subject, this brilliant observation of the presence of these bodies in the spleen of cases of this disease was made by Leishman, and by Leishman alone. Donovan only confirmed the observation as many others have done. It would be just as logical to call these bodies the Leishman-Donovan-Ross-Bentley-Manson-Low, etc., bodies, as Leishman-Donovan. I do not suppose it is Donovan's fault that this honour has been thrust upon him, it is rather a case of being saved from one's friends.

X.—G. C. LOW, M.B.Edin.,

Superintendent, London School of Tropical Medicine.

DR. LOW said: In reply to Colonel Bruce's remarks on Captain Rogers's experiments on the production of trypanosomes from cultures of Leishman-Donovan bodies, I may state that, in the case Sir Patrick Manson and I described from the London School of Tropical Medicine, cultures were attempted. Tubes of haemoglobin agar and haemoglobin broth were inoculated with splenic blood and incubated, some at 37° C., others at room temperature. In neither of those did the parasites multiply, and on the second day had entirely disappeared. Similarly, fresh specimens, ringed with vaseline and watched under the microscope for four days, showed no movements in the parasite and no sign of development. Our experiments, however, were, perhaps, too few to be considered in any way conclusive. In regard to the pathology of this disease, many of the previous speakers have used different terms as regards the cells of the body in which the parasites are found. I think it is important that the exact site should be thoroughly determined. They are found in the macrophages, or splenic cells of the spleen, in the secreting cells of the liver, in the marrow cells, and also apparently in some situations in the endothelial cells. Experiments on monkeys might help in the elucidation of the disease, or subcutaneous ones, or inoculations into the spleen. I think it also rather important that splenic anaemia (Bruhl's disease) should be closely investigated to see if it is due to the same parasite. Clinically, the diseases are identical, but I cannot find the original reference to see if those cases of Bruhl's had ever been abroad. In view of the recent remarkable observations by Schaudinn of the change of an intracorpuscular pigmented parasite into a trypanosome, we should, I think, consider the possibility of the Leishman-Donovan bodies having something to do with the resting stage of malaria. I do not say there is any evidence of this, but the gradual widening geographical distribution of this new disease shows that it is not limited to Assam, the home of kala-azar, but is common throughout other areas, many of which are intensely malarious.

XI.—JONATHAN HUTCHINSON, F.R.S.,

Consulting Surgeon, London Hospital.

MR. HUTCHINSON considered the fact that the Leishman-Donovan parasite had been found in Delhi sore was a discovery of considerable pathological value. He had always looked upon Delhi sore as being allied to lupus, and therefore possessing a tuberculous affinity. It, however, seemed possible that a true explanation of the disease had been found.

XII.—KENNETH MCLEOD, M.D.Edin., Colonel, I.M.S. (Retired).

Professor of Clinical and Military Medicine, Army Medical Staff College.

COLONEL MCLEOD observed that in the splenomegaly connected with the Leishman-Donovan body the haemorrhages seemed to be more severe and constant than in the cases of kala-azar in Assam.

XIII.—ALEXANDER CROMBIE, C.B., M.D.,

President of the Section.

THE PRESIDENT thought that the pigmentation so prevalent in cachexial fever might be due to the action of the Leishman-Donovan body and not to malaria. An observation that had come to his knowledge in this connexion might be of service in explaining the etiology of Oriental or Scinde sores and their connexion with trypanosomes or Leishman-Donovan bodies. It was well known that persons who attended upon or who drove camels were especially liable to a form of Oriental sore. The camel was the subject of trypanosomes, and an insect, the "camel fly," might prove to be the medium whereby man became infected from the camel and the production of the sores accounted for. There was a very close parallelism between the geographical distribution of camels and Oriental sore.

SUPPLEMENTARY NOTES ON THE TSETSE-FLIES

(GENUS GLOSSINA, WIEDEMANN).

By ERNEST E. AUSTEN,

Zoological Department, British Museum; Author of "A Monograph of the Tsetse-Flies," etc.

SINCE the publication of *A Monograph of the Tsetse-Flies* a little more than a year ago, our knowledge of these interesting insects, so important to the student of African trypanosomiasis, has been extended in various directions. It has therefore seemed advisable to embody these additions in a short paper, which it is hoped may not prove altogether unworthy of the attention of the members of this Section, and may serve to bring the author's monograph so far as possible up to date.

In the work in question seven species of Tsetse-flies were recognized and described. But within the last few months an eighth species has been described under the name *Glossina decorsei*, by Dr. Emile Brumpt, from specimens recently obtained by Dr. Decorse on the River Shari and the shores of Lake Chad.[1] An examination of some of Dr. Decorse's specimens, however, kindly submitted by Dr. Brumpt, shows that the supposed new species is in reality none other than *Glossina tachinoides* (Westwood), which was described as long ago as the year 1850. In his Monograph, *Glossina tachinoides* was regarded by the present author as a variety of *Glossina palpalis* (Robineau-Desvoidy), the species that, since Colonel David Bruce's investigations in Uganda last year, has become widely known as the disseminator of *Trypanosoma gambiense*, now recognized as the cause of sleeping sickness. The study of further material, however, and especially of a long series of specimens obtained two months ago on the Benue River, Northern Nigeria, by Mr. W. F. Gowers, and kindly presented by him to the British Museum, shows that *Glossina tachinoides* (Westwood) is in reality a perfectly distinct species, nearly related to *Glossina pallidipes* (Austen) but distinguishable at once, apart from its much smaller size, by the fact that the hind tarsi are either entirely dark, or, as in the female, are dark with the bases of the first three joints usually pale. The total number of species of Tsetse-flies now known, therefore, amounts to eight. In the paper already referred to Dr. Brumpt considers that *Trypanosoma brucei*, the parasite of nagana or Tsetse-fly disease in domestic animals, is carried by at least

five of these species,[2] and he further states that the investigations that he is making upon sleeping sickness lead him to suppose that this malady may also be transmitted by several species of Tsetse-flies. The mere possibility that this supposition may ultimately prove to be true is perhaps sufficient warrant for thinking that no detail concerning the morphological characters, distribution, or bionomics of any of the species of *Glossina* is without importance for those interested in the sanitation of tropical Africa. In the present paper, therefore, the eight species will be considered in order, and any new facts regarded as worthy of notice recorded under each, the arrangement adopted in the Monograph being adhered to, and *Glossina tachinoides* inserted in its proper place. At the end of the paper a revised "Synopsis of species" will be given, which it is hoped may prove useful for the determination of specimens.

Glossina palpalis (Rob.-Desv.).

The form of this species designated in the Monograph as "Var. *tachinoides* (Westw.)" must now be regarded as a variety which for the present may remain unnamed. It is characterized by the possession of pale femora, buff-yellow median stripe on the abdomen, and narrow pale hind margins to the abdominal segments. Specimens obtained by Drs. Todd and Dutton on the Gambia during the Gambia expedition of the Liverpool School of Tropical Medicine belong to this form, which may eventually have to be raised to specific rank. A second variety also has the femora paler than usual; the palpi, except the tips, pale; and the abdomen somewhat reddish-brown, with the pale area on the second segment oblong instead of triangular. Owing to the colour of the abdomen this form presents a certain resemblance to *Glossina pallicera* (Bigot). A specimen of variety No. 2 was obtained at Old Calabar on May 14th, 1900, by Dr. Annett, of the Liverpool School of Tropical Medicine.



Glossina palpalis, male (× 6). Reproduced from a coloured drawing by Mr. Terzi, in Mr. Austen's *Monograph*

As many of the members of this Section are doubtless aware, our knowledge of the life-history of Tsetse-flies was originally due to Colonel Bruce, who, during his investigations upon Tsetse-fly disease, or nagana, among domestic animals in Zululand in 1895, discovered that the species studied by him—either *Glossina morsitans* (Westw.) or *Glossina pallidipes* (Austen)—"does not lay eggs as do the majority of Diptera, but extrudes a yellow-coloured larva nearly as large as the abdomen of the mother."[3] Specimens of the pupa of this species, kindly supplied by Colonel Bruce, were described and figured on pp. 26-28 of the author's Monograph. Owing to the kindness of Colonel Bruce, Captain E. D. W. Greig, I.M.S., and Dr. Nabarro, all of the Sleeping Sickness Commission, who forwarded specimens from Entebbe, Uganda, it is now possible to describe the larva and pupa of *Glossina palpalis*.

Larva of Glossina palpalis.

I have been enabled to examine a series of sixty-two larvae of this species, ranging in length from 2 mm. to 7 mm., but only one of these (the largest) can be regarded as adult. The colour of these specimens, which have been preserved in 5 per cent. formalin, varies from cream to buff-yellow. In all the larvae the tumid lips on the last segment, as seen in the pupa, are plainly visible, and in a larva of 2½ mm., which may perhaps be considered to be in the first stage (*i.e.*, before the first moult), the size of the lips is relatively, if not even actually, considerably greater than in a larva measuring 3½ mm., which is perhaps in the second stage (*i.e.*, between the first and second moults). In the former stage, too, the lips are much wider apart than in the second, and the very young larva viewed from above may be said to be conical in shape, with a protuberance on each side of the truncate posterior extremity. In the second stage (larvae from 3 mm. to 3½ mm. in length) the lips are nearer together, and separated by a much narrower interval than in larvae in the third stage (about 3½ mm. in length and upwards), in which they have their final position, as seen in the pupa. In the first stage the lips, or anal protuberances, appear slightly brownish all over; in the second stage they are blackish at their extremity and at the margin of the intervening notch; in the third stage they are uniformly deep black, and the granules with which they are covered can now be easily discerned under an ordinary platyscopic lens. In the second and third stages the body of the larva in front of the bifid anal extremity (twelfth segment) is seen to be composed of eleven clearly marked segments. In the larger larvae the tips of the mouth hooks can be seen slightly protruding from the cephalic end. The larva already referred to as being the only one that can be regarded as adult, measures 7 mm. in length, by 3 mm. in greatest width, and was obtained by Captain Greig, at Entebbe, Uganda, in April of the present year. In this larva, in the median ventral line, each of the segments from the fourth to the tenth shows on its anterior margin a narrow ridge, measuring about ⅓ mm. in transverse width. The object of these ridges may be to assist the adult larva on extrusion to crawl away to some hiding-place in which the pupal stage may be assumed.

All of the larvae here referred to were deposited by the

parent flies in boxes, and, since all, with a single exception, are immature, it follows either that *Glossina palpalis* differs from the species described by Colonel Bruce, in that the larva feeds and grows outside the body of the mother after extrusion, or else that the parents of these larvae, probably owing to their being in captivity, gave birth to their offspring prematurely. The latter supposition would appear to be the more reasonable.

Pupa of Glossina palpalis.

The pupae examined were all obtained at Entebbe, Uganda—those forwarded by Dr. Nabarro in September, 1903, while others were collected in April, 1904, by Captain Greig. Additional specimens were sent home last year by Colonel Bruce.

The pupa varies in length from 5¼ mm. to 6½ mm. and in greatest width from 3 mm. to 3⅓ mm. In general appearance it is precisely similar to that of the Zululand species, figured on page 27 of the author's Monograph. The tumid lips on the last segment, however, are much closer together, the space between them being reduced by quite one-half, while the lips themselves are somewhat larger, and covered with sparser and therefore more conspicuous granules. The notch between the lips is somewhat deeper, and consequently approaches slightly closer to the preceding segment than in the species figured in the Monograph. Other points of difference are that the edge of each lip bears only two grooves or furrows instead of four, while the ridges connecting the lips at the base on the dorsal and ventral side, besides being lower owing to the greater depth of the notch, have a broad, shining black margin, instead of being almost dull.

Whatever be the case with regard to the larvae, it would seem probable that, did be but know them, all the species of Tsetse-flies might be distinguished in the pupal stage by the characters afforded by the last segment. At any rate, in a pupa forwarded from Entebbe by Captain Greig with those already referred to, the lips are extremely low, much wider apart than in either of the forms previously mentioned, and separated by a wide and shallow notch instead of a deep and narrow one. The longitudinal grooves with which the connecting ridges are deeply scored at the base are very conspicuous, and the connecting ridges themselves are without a broad and shining black margin. This pupa, of which the dimensions are—length 7½ mm., greatest width 4 mm., should perhaps be assigned to *Glossina pallidipes* (Austen), in which case the specimen figured in the Monograph would belong to *Glossina morsitans* (Westw.).

Distribution of Glossina palpalis.

Since the publication of the author's Monograph, our knowledge of the distribution of this species has been considerably extended. As regards Uganda, Bruce, Nabarro and Greig have published[4] a map showing the localities in which the species was obtained in the Uganda Province and Usoga. Here the fly is found on the forest-lined shore of Lake Victoria and the adjacent islands, passing down the Nile until Lake Albert is reached, all round which the species was met with last year by Mr. W. Y. Wyndham. In a letter to Dr. Nabarro, dated "Wadelai, November 2nd, 1903," Mr. Wyndham states that he has found the fly on all the shores of the Albert Nyanza, and also on the Congo side of the Nile, about eight miles to the south of Wadelai. He adds that from the results of his investigations "there is little doubt that the fly is prevalent in this part of Africa, wherever the local conditions are favourable." North of Lake Albert *Glossina palpalis* was encountered at Nimule, in the Nile Province of Uganda, by Dr. Brumpt, who also found it to the west of the Nile in the Belgian enclave of Lado, and all down the Congo system, from the source of the Welle to the mouth of the Congo. Eastwards Dr. Brumpt had previously met with the species on the river Omo, which falls into the north of Lake Rudolf. In West Africa (Sierra Leone) Major Fred. Smith, D.S.O., R.A.M.C., writing to the author from Freetown on May 16th last, stated that in April of the present year he had found *Glossina palpalis* all the way from Freetown to Kakena in the north of the Sierra Leone Protectorate. It was the only species met with, though Major Smith's native boys talked of a larger one (probably *Glossina fusca*) which, however, he did not encounter. In Northern Nigeria *Glossina palpalis* was found in March of the present year in the Kadima River Valley, thirteen miles south of Wushishi, by Dr. S. H. Jones, who kindly presented the three specimens collected by him to the British Museum. The National Collection has also received four specimens from Mr. W. F. Gowers, collected by himself on the Forcados River, Southern Nigeria, on June 18th, 1904. Lastly, it may be noted that a large series of specimens of this species were obtained by Drs. Dutton, Todd, and Christy near Leopoldville, on the islands in Stanley Pool, and at other localities on the Lower Congo from November, 1903, to May, 1904, during the expedition for the study of trypanosomiasis, recently dispatched to the Congo by the Liverpool School of Tropical Medicine.

Habits of Glossina palpalis.

Contrary to what has been found to be the case with regard to *Glossina morsitans* in South Africa, *Glossina palpalis* does not appear to be dependent for its existence upon big game, and in Uganda, at any rate, the members of the Sleeping Sickness Commission seem to have come to the conclusion that this species of Tsetse-fly subsists largely upon human blood. This is supported by the experience of Mr. W. Y. Wyndham on the Albert Nyanza. Writing to Dr. Nabarro from Wadelai on November 2nd, 1903, Mr. Wyndham says:

The fly cannot depend for its existence upon game, as in most of the places in which I found it there was none, or next to none.

On the subject of habits, Mr. Wyndham writes:

The fly seems a rapid feeder, to judge from some caught on the men. They do not appear early in the morning, but continue until evening has well set in, and I caught one which was decidedly lively after dark by candle-light.

The following field notes concerning *Glossina palpalis* on the Congo have been kindly furnished by Dr. Cuthbert Christy:

We found *Glossina palpalis* to be extremely common on the banks of the Congo and its tributaries, even on the smallest streams, as far up as the mouth of the Kasai River. As to its presence beyond that I cannot as yet give you any information. We frequently observed that it was commoner and more bloodthirsty at bridges and fords, or in places where ferry canoes were kept, or where the women go down to draw water or wash, than on either side further up or down the stream. On the approach of either animal or man at a river crossing or in the densest forest, the victim is soon scented out by the Tsetse if there be one in the vicinity, and then either silently or with a peevish buzz the fly makes straight for the most accessible spot, by preference the leg or foot in man, or in the ear in the pig, to which animal it seems especially partial.

At Leopoldville we employed a brigade of boys, to whom we supplied nets and bottles. On wet or dull days their total catch was often not more than a dozen or so between them; but on other days from December to May they brought in regularly twenty or thirty each, the boys being paid according to the number each caught. The low-lying forest and scrub by the banks of the river was the best hunting ground. During the last week in January, by the kindness of the State authorities, who placed a steamer at our disposal, Dr. Dutton and myself were enabled to make an exploratory tour of the islands in Stanley Pool. On the large forest-covered island of Bamou, where I spent two consecutive days hunting, *Glossina palpalis* were literally in myriads, and for the whole two days my hands, face, and neck were bitten unmercifully—seldom less than ten or a dozen flies attacking at the same time whenever I remained within one hundred yards of the abrupt edge of the forest. Surrounding this forest are areas of marsh many miles in extent, where patches of solid ground are few, and where not a Tsetse is to be found. In the dark, cool interior of the forest the Tsetse, although not nearly so numerous or so bloodthirsty as at the margin, were still a pest. On one occasion I counted thirty-eight probing the body of a large monitor (*Varanus niloticus*) that I had shot only a few minutes before. In the blood of this animal were numbers of *Drepanidia sp.* (? *nov.*), but no trypanosomes.

On this island the question again arose,—"Has the buffalo any connection with the Tsetse?" There were many small herds which passed backwards and forwards between the forest and the marsh, spending, however, most of their time in the marsh. One occurrence, namely, the fact that I came upon a herd of buffalo resting during the hottest part of the day, actually at the extreme edge of the forest where, as I have said, the flies were, and always are in my experience the most numerous and tormenting, tends to show that the skin of the buffalo, which is enormously thick, is too much for the Tsetse.

Speaking from personal experience alone, the initial stab of *Glossina palpalis* is very painful, but no subsequent irritation follows. At the seat of the bite there soon appears a hard nodule, which may remain for many days, but is unaccompanied by any marked swelling or discoloration.

I may add that at the end of April, I again visited Bamou Island, and was surprised on that occasion to find that *Glossina palpalis* was conspicuous by its almost total absence, hardly a fly being encountered, while the few that were seen appeared to have little inclination to bite. I have long suspected that this fly only sucks blood during certain months in the year.

Glossina pallicera (*Bigot*).

There is nothing to add to the account of this species given in the Monograph, and no further specimens have been received. The typical specimen, and a second one referred to on p. 80 of the Monograph, have been kindly presented to the British Museum by Mr. G. H. Verrall.

Glossina morsitans (*Westw.*).

From a gravid female of this species taken near Yola,

Northern Nigeria, on October 10th, 1903, by Mr. W. F. Gowers, I have extracted an immature larva measuring 4 mm. in length by 2⅔ mm. in greatest width. It is of the normal type, and the tumid lips on the last segment, which in this specimen are only slightly brownish in colour, are separated by a narrow notch but almost meet together at their margins, which appear to be marked by only two grooves.

Specimens of *Glossina morsitans* from one or two new localities have been received at the British Museum since the publication of the author's Monograph. These include seven males and five females from the Mwangazi River, on the borders of North-Eastern Rhodesia and Portuguese East Africa (latitude 14° 10′ S., longitude 32° 30′ E.); presented by Mr. Robert Codrington, Administrator of North-Eastern Rhodesia. Besides these, Mr. W. F. Gowers has forwarded a series of individuals of both sexes, taken by himself near Yola, Northern Nigeria, on October 10th, 1903, and March 12th, 1904. In a letter to Professor Ray Lankester dated "Yola, October 21st, 1903," Mr. Gowers writes as follows:

"These specimens were caught about twenty-five miles north of Yola (the exact locality being 9° 36′ 40″ N. latitude, and 12° 41′ 20″ E. longitude), on the bank of the River Loko, a small tributary of the Benue, at the place where it is crossed by a well-used native path. There is here a belt of large trees with thick undergrowth, and, so far as the road is concerned, the fly appears to be confined to this belt, which is not more than one hundred yards across. I cannot yet say how far it extends into the bush to the east and west (the road runs nearly north and south). To the north, east, and south of this spot are many farms and villages. There are cornfields within two or three hundred yards, and a village not more than half a mile away. To the west is a stretch of uninhabited bush where game, including buffalo, is said to be plentiful, but there is no indication of game in the immediate vicinity, and it is not likely that it exists, at any rate in any quantity, in the neighbourhood of the road and cultivated land.

"The fly is found here in considerable numbers; altogether about 100 were secured in two hours by tying up a horse there as 'bait.'[5]. . . I have no absolute proof at present that the bite is fatal, but the local natives all agree that cattle, horses, and donkeys are killed by it, while it is harmless to sheep and dogs;[6] the reason, however, given for the immunity of the sheep is that it is protected by its wool. I am going to test its effect on the two latter animals. Within a radius of three or four miles from the spot where the flies were caught no cattle are kept, the alleged reason being that the fly prevents it. Natives travelling with horses or cattle avoid this part of the road by making a detour to the east. Death is said to ensue from the bite in from one to three months, and from descriptions I gather that the symptoms are very much the same as in the case of fly-disease in South Africa. I fancy that Tsetse-fly will be found to be pretty well distributed throughout the southern portion of Northern Nigeria."

In addition to the foregoing, a single female, presented by Colonel Griffiths, Chief Veterinary Officer, Egyptian army, has been received from the Pongo River, between Wau and Dem Zibehr, in the Bahr-el-Gazal Province, Egyptian Soudan, where it was taken in 1903. Since this is another new locality for the species, it may be worth while to add that the place of origin is in Goro, west of the Rol country, near the intersection of the 27th parallel E. long. and 8th parallel N. lat., and that the fly is said to be very abundant there. Other specimens of *Glossina morsitans*, collected by the donor in North-Western Rhodesia in 1899 and 1902, have been presented by Mr. Val Gielgud.

As regards the connexion between Tsetse-flies and big game in South Africa, it may be noted that Mr. Robert Codrington, Administrator of North-Eastern Rhodesia, in his Report on the Administration of North-Eastern Rhodesia for the year ending March 31st, 1903 (Fort Jameson: Printed at the "Administration Press," North-Eastern Rhodesia), pp. 15-16, writes as follows:

> The general increase of game of late years has been remarkable. . . . . The Tsetse-fly is now, for presumably the same reason, found in districts where it was before unknown.

Similarly, on p. 23 of the same pamphlet, in a Report by the Civil Commissioner (Charles McKinnon, Esq.) for the year ending March 31st, 1903, on North Luangwa and Awemba Districts, it is stated that

> The Tsetse-fly is increasing to an alarming extent to the south of Mirongo, which I take to be due to the increase of game.

These observations support the statements on this subject in the writer's Monograph, pp. 14-15.

Glossina tachinoides (*Westw.*).

As has already been stated, this species is nearly related to *Glossina pallidipes* (Austen), which, except in size, it closely resembles, but is readily distinguishable by the colour of the hind tarsi. These are either entirely dark, as in the male, or have the first three joints somewhat lighter at the base. The front and middle tarsi are pale, with the exception of the last two joints, the tips of which are usually faintly brownish. The abdomen is marked with deep interrupted bands of dark brown, leaving the hind margins of the segments only narrowly pale. In the present paper there is no necessity to enter into a detailed description of this species, more especially since its diagnostic characters will be found in the appended "Synopsis." It may, however, be stated that it is the smallest of all the Tsetse-flies, the males not exceeding 6 to 6½ mm. in length, while the females measure 7⅓ to 8 mm., exclusive of the proboscis in each case.

In addition to the extensive series of specimens of this species, taken, as already stated, on the Benue River, Northern Nigeria, in the latter half of May and beginning of June of the present year by Mr. W. F. Gowers, the British Museum has received, through the kindness of Professor Mesnil, of the Institut Pasteur, and Dr. Brumpt, of the Laboratoire de Parasitologie, Paris, seven other individuals from the series collected on the river Shari, French Soudan, by Dr. Decorse. Lastly, a single female obtained by himself thirteen miles south of Wushishi, in the Kadima River Valley, Northern Nigeria, at the beginning of last March (with three specimens of *Glossina palpalis*), has been presented by Dr. S. H. Jones.

As regards the occurrence of *Glossina tachinoides* on the Benue River, Mr. Gowers has kindly contributed the following note:

> This species of Tsetse-fly is found along the Benue River between Lau and Lokoja. With the exception of one or two small spots, no horses or cattle can be kept in this area. Above Lau, however, the river banks are swarming with cattle, and there are large encampments of herdsmen in the dry season. After the rains have commenced the fly is present on the river in sufficient numbers to be an annoyance to travellers, and continually bites the canoe-men. In the dry season, however, which lasts from October to April, it is much less numerous.
>
> On the banks of the Benue River within the area in question almost the only species of game to be found is *Kobus kob*, which is very numerous indeed. West African buffalo, waterbuck, and reedbuck are met with in the swamps near the river; but in the Benue Valley there are, in the immediate vicinity of the river, more kob than specimens of all the other species of game put together.

According to Dr. Brumpt[7], on the Shari River and on the shores of Lake Chad *Glossina decorsei* (that is *Glossina tachinoides*) seems to be exclusively confined to the water's edge. The author in question further writes as follows:

> The stab of *Glossina decorsei* is disagreeable, as is that of all the species of *Glossina*, but not very painful; it causes some time after the bite a rather acute itching. Both sexes feed on blood. . . . . The natives of the Shari dread the effects of the bite of the *Glossina* on their herds; like the inhabitants of many other countries, they have recognized the existence of a close connexion between the presence of nagana and the bite of this fly. Nagana is very widely spread on the Shari, where it was stated to occur by Morel and met with again by the Chevalier Expedition.

Glossina pallidipes (*Austen*) *and Glossina longipalpis* (*Wied.*).

There is nothing to add to the account of these species given in the Monograph. Additional specimens of the former, however, have been received from Colonel Bruce, including six individuals collected by Dr. Moffat at Simba, East Africa Protectorate, in a carriage on the Uganda Railway, and six examples from Busoga, Uganda. The latter is a new locality for *Glossina pallidipes*. In addition to the foregoing, a long series of *Glossina pallidipes* from Kibwezi, East Africa Protectorate, has been presented by Dr. Nabarro.

Glossina fusca (*Walk.*).

Since the publication of the Monograph the specimens of this species in the National Collection have been augmented by a large number of examples from Kibwezi, East Africa Protectorate, received from Dr. Nabarro. Besides these, five specimens also from Kibwezi, collected in a railway carriage by Dr. Moffat, have been presented by Colonel Bruce; while three specimens, obtained on the Congo by the Trypanosomiasis Expedition of the Liverpool School of Tropical Medicine, have been received from Dr. Christy. Of the specimens last mentioned, which are all females, two were captured near Leopoldville, on December 26th, 1903, and February 6th, 1904, respectively, while the third was taken at Leisha on April 14th last. With reference to these flies Dr.

Christy has been good enough to furnish me with the following notes:

During our stay at Leopoldville three specimens of *Glossina fusca* were collected. One was brought in by a native alive, folded up in a leaf: another was captured among *Glossina palpalis* by our juvenile fly brigade, and the third was caught under the following circumstances: On April 14th, while sitting after dinner with two State officials, as late in the evening as 10 p.m. under the verandah of the Chef de Poste of Leisha, a wood post some four days' steaming above Stanley Pool, I noticed one of the men, who as usual in addition to shoes and socks wore nothing on his legs more protective than a thin pair of trousers, holding between his finger and thumb a fly which I recognized as a Tsetse and immediately secured. It had been biting the man's ankle, and its abdomen was half-full of blood. The man assured me that there was very little pain or irritation, but within ten minutes a large swelling arose obliterating the malleolus. In the morning this had somewhat subsided, but in its centre was a very distinct purple mark, as of a bruise, surrounded by a greenish-yellow area. During the next five days two more specimens of *Glossina fusca* were caught, I believe by the same individual, at the same place and under precisely similar circumstances, but these I am sorry to say never reached me. Leisha wood post is on the bank of the river, surrounded by forest, and when I camped there for two days in April in the rainy season. *Glossina palpalis* and a large *Simulium* bit unmercifully from morning till night. At this post there were two advanced cases of sleeping sickness.

A few days before the above occurrence, on my way up river on one of the small stern-wheelers, we found ourselves one afternoon tied up to the bank, while all the available hands on board were set to work to cut wood for our next day's steaming. At dinner that evening I wore, as a protection against mosquitos, a pair of thin putties beneath my flannel trousers, and afterwards sat talking in the dark on deck. Towards 11 p.m. I felt a severe bite through the puttee, and, putting my hand to the spot, caught a tsetse full of blood. By the light of the lamp in the saloon I recognized the fly as *Glossina fusca*, but unfortunately allowed the insect to escape while trying to put it into a tube. A quarter of an hour afterwards the swelling from this bite had extended nearly round my ankle. I experienced scarcely any pain or irritation, and in the morning the swelling had almost subsided, though the purple and yellow stain described above remained for days.

On my return to Leopoldville Dr. Dutton, before I had said anything about *Glossina fusca*, told me that while I had been away a certain official from higher up the Congo, who had taken some interest in biting flies, had, while visiting the laboratory, volunteered the information that the larger of the two species of "mvakwa"—the native name for the Tsetse—bit at night, an assertion of the greatest interest in the light of my experiences up-river.

It may, perhaps, be remembered that specimens of *Glossina fusca* found by Captain Crawshay sitting on a path at Kaporo, at the north end of Lake Nyassa, at sunset in February, 1895, did not bite (Monograph, p. 289). In view of Dr. Christy's observations, their failure to do so cannot have been due to the fact that they were not met with in the heat of the day, as previously suggested by the writer (Monograph, p. 99).

Glossina longipennis (*Corti*).

Of this species the only specimens received since the publication of the Monograph are a male and female collected in the East Africa Protectorate on the Uganda Railway in 1903, by Captain E. D. W. Greig, I.M.S., and presented by Colonel Bruce; of these, the male was obtained at Kibwezi station in thorny bush.

It was pointed out in the Monograph (p. 103) that *Glossina longipennis* "is the Tsetse-fly of Somaliland and the adjacent regions, but that its range overlaps that of *Glossina fusca* (Walk.), somewhere in the vicinity of the Sabaki river." Dr. Brumpt states[8] that *Glossina longipennis* was the only species of Tsetse met with by him in Somaliland between July and October, 1901. According to the same author[9] this species is responsible for the dissemination of a form of trypanosomiasis among camels and mules, which is probably identical with nagana, and, like the fly itself, is known to the Ogaden Somalis by the name "aïno."

The other species of *Glossina* considered by Brumpt to be carriers of *Trypanosoma brucei* in the case of domestic animals were referred to at the commencement of this paper, and it may be pointed out in conclusion that this author believes[10] that, in addition to trypanosomiasis in its various forms, Tsetse-flies must play an important part in the dissemination of other diseases due to haematozoa. Brumpt states that in certain districts on the Upper Congo a filariasis due to *Filaria volvulus* is very widely spread; the disease occurs only among the canoe paddlers—that is, among those who are most exposed to the bites of Tsetse-flies. "The only cases hitherto known," writes Brumpt, "have been observed in the regions (such as Nigeria and Dahomey) in which Tsetse-flies abound. The lymphatic tumours caused by *Filaria volvulus* are met with especially in the places towards which the lymphatics of the exposed regions converge."

REVISED SYNOPSIS OF THE SPECIES OF GLOSSINA.

1. Hind tarsi entirely dark, or at least all the joints more or less dark (in the ♀ of *Glossina tachinoides* the basal half of the first joint and the extreme bases of the following joints are usually pale) 2
   Hind tarsi not entirely dark; last two joints alone dark, remainder pale 4
2. Ground colour of abdomen ochraceous-buff, with interrupted dark-brown deep transverse bands, and sharply-defined pale hind borders to the segments; a very conspicuous square or oblong pale area in the centre of the second segment; small species, not exceeding 8 mm. in length (exclusive of proboscis), the males considerably smaller *tachinoides*, Westw.
   Abdomen not so marked, very dark or for the most part uniformly brown, hind borders of segments if lighter extremely narrow and cinereous; pale area in centre of second segment usually triangular, with the apex directed backwards and continued into a cinereous median stripe; larger species ... 3
3. Third joint of antennae dusky brown to cinereous black ... ... *palpalis*, Rob.-Desv.
   Third joint of antennae pale (orange-buff) ... ... *pallicera*, Bigot.
4. Large species: length at least 11 mm. ($5\frac{1}{4}$ lin.), wing expanse (measured from tip to tip, when wings are set at right angles to body) at least 25 mm. ($11\frac{3}{4}$ lin.) 7
   Smaller species: Length rarely reaching 11 mm. ($5\frac{1}{4}$ lin.), often considerably less; wing expanse not exceeding 25 mm. ($11\frac{3}{4}$ lin.). 5
5. Last two joints of front and middle tarsi with sharply defined dark-brown or black tips 6
   Last two joints of front and middle tarsi without sharply defined dark-brown or black tips—front and middle tarsi entirely yellow, or last two joints of former faintly tipped with pale brown ... ... *pallidipes*, Austen.
6. Generally distinctly larger; head wider; front darker and narrower in both sexes, sides parallel in ♂; abdominal bands deeper, leaving hind margins of segments only narrowly pale: hypopygium in ♂ smaller, darker, and more hairy; tip of ♂ abdomen more thickly clothed laterally with short black hair, bristles on sixth segment finer and less prominent... ... ... *longipalpis*, Wied.
   Usually smaller; head narrower; front paler and wider; eyes in ♂ as well as in ♀ distinctly converging towards vertex; abdominal bands less deep, pale hind margins of segments therefore deeper; hypopygium in ♂ larger, paler, somewhat more oval in outline, and clothed with fewer fine hairs: tip of ♂ abdomen less hairy laterally: bristles on sixth segment in ♂ stouter and more conspicuous ... ... *morsitans*, Westw.
7. Dorsum of thorax with four sharply defined small dark-brown oval spots, arranged in a parallelogram, two in front of and two behind transverse suture; bulb at base of proboscis brown at the tip ... ... *longipennis*, Corti.
   Dorsum of thorax without such spots, though with more or less distinct longitudinal stripes; bulb at base of proboscis not brown at the tip* ... ... *fusca*, Walk.

NOTES AND REFERENCES.

[1] Sur une Nouvelle Espèce de Mouche Tsé-Tsé, la *Glossina Decorsei*. n. sp., provenant de l'Afrique Centrale. Par M. E. Brumpt (*Comptes Rendus des Séances de la Société de Biologie* (Séance du 16 Avril, 1904), T. lvi. pp. 628-630. [2] *Glossina longipennis* in Somaliland: *Glossina morsitans* and *Glossina pallidipes* in Zululand and elsewhere: *Glossina palpalis* in the basin of the Congo: and *Glossina tachinoides*. Westw. (*Glossina decorsei*. Brumpt) on Lake Chad and the Shari. Mr Gowers also found that the latter species carries the disease on the Benue River. [3] Preliminary Report on the Tsetse-fly Disease or Nagana in Zululand. By Surgeon-Major David Bruce, A.M.S. Ubombo, Zululand, December, 1895 (Bennett and Davis, Printers, Field Street, Durban), p. 2. [4] Reports of the Sleeping Sickness Commission, No. iv, November, 1903. [5] Mr. Gowers has recently informed me that this horse died in three weeks, undoubtedly from Tsetse-fly disease.—E. E. A. [6] In South Africa dogs at any rate succumb to Tsetse-fly disease.—E. E. A. [7] Loc. cit., p. 620. [8] *Comptes Rendus des Séances de la Société de Biologie* (Séance du 23 Avril, 1904) T. lvi, p. 673. [9] Ibid.; see also op. cit., T. lv, p. 1497. [10] Op. cit., T. lv, p. 1497.

*N.B.—The ordinary dark brown patch on each side of the bulb on its upper margin, which is often especially well marked in West African specimens, must not be mistaken for a brown tip.

A NEW TREMATODE OF MAN
(AMPHISTOMA WATSONI).

By H. F. CONYNGHAM, L.R.C.P.I..
Demonstrator, London School of Tropical Medicine.

LAST February Dr. Watson, of Northern Nigeria, sent six curious trematodes from the small intestine of a negro who had died of starvation and diarrhoea to the London School of Tropical Medicine. These proved to be a species of *amphistome*, totally unlike the *Gastrodiscus hominis* of Lewis—so far the only one of that genus found in man—and also unlike any hitherto described as occurring in animals. A specimen was sent to Professor Blanchard, of Paris, who very kindly examined it and reported that he considered it a new species. Dr. Watson sent some clinical notes of the case; they are as follows:

The patient—one of a gang of freed slaves, all of whom were in a pitiable condition due to starvation—was brought from Adamawa, German West Africa, to Zola, Northern Nigeria. He was found to be suffering from diarrhoea, and was admitted to hospital, where he died the same night. His stools were numerous, watery, and of a bilious colour, but containing no blood or mucus. In the stools were found many reddish-yellow, translucent, gelatinous, oval bodies (the trematodes). Necropsy revealed the spleen small, hard, and black. In the stomach some undigested milk was found. The duodenum and upper part of the jejunum were found full of these oval bodies, some of which were alive and adherent. The mucous membrane showed no haemorrhages but appeared to be slightly red. The other parts of the bowel, as also the other organs, were normal. A few of the bodies were seen lying in the large intestine. The patient was extremely fond of eating raw meat.

The animals are pear-shaped, flattened ventrally and slightly indented posteriorly at the margin of the posterior sucker, but owing to the preservative used they have shrunk considerably and are now of a dark slate colour. The anterior sucker in most of the specimens is retracted and lies at the bottom of a sulcus which is terminal and ventral, the posterior sucker is very large, its cavity measuring over 1 mm. across; it is subterminal and ventral. The genital pore lies about a quarter of the length of the parasite from the anterior end and is rather prominent. The cuticle of the body is marked with transverse ridges, these being coarser and better defined on the ventral surface; the latter is flattened, surrounded by an elevated ridge and bulges posteriorly.

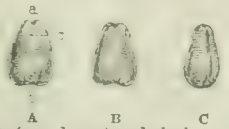


Fig. 1.—Amphistomum (nearly natural size). A, ventral view: *a*, anterior sucker retracted; *b*, posterior sucker; *c*, genital pore. B, posteriorly. C, laterally.

The worms measure 8 mm. long, 5 mm. at point of greatest breadth, this tapering gently anteriorly to 2.5 mm.; their greatest thickness is about 4 mm.

The genital pore lies 2 mm. from the anterior sucker. The ova as seen in the uterus are oval and measure 130 μ by 75 μ. It was found impossible to clear the specimens sufficiently to make out definitely their internal anatomy, but the general arrangement seems to be like that of the *Amphistoma conicum* (Zeder).



Fig. 2.—The appearance of internal structures from ventral aspect. Anterior sucker protruded. (Semidiagrammatically.)

That these parasites may have been the cause of death is not at all unlikely, when it is considered that the larger part of the small intestine contained a great number of them, and that at least one other species of the same genus causes serious sickness in the higher animals, namely, the *amphistome*[1] of Collins in India, causing "*masuri*," a condition of severe intestinal irritation in horses; and another, the *gastrodiscus*[2] of Sonsino, is supposed to cause death in horses and mules in Egypt, Senegal, and Guadeloupe. Another trematode of a different genus, the *Fasciolopsis buski*,[3] inhabiting the small intestine of man, has been credited with causing intestinal irritation and typhoid-like symptoms, and this is occasionally followed by death.

These worms are, therefore, a new parasite of man, probably causing serious intestinal disturbance, diarrhoea, marasmus, and death. Whether their distribution is limited, which is likely, remains to be seen; but by a careful examination of faeces for ova, or adults in cases of diarrhoea, it may be found again in at least that part of Africa in which the patient resided.

It is not at all probable that the eating of raw meat, which Dr. Watson notes, had anything to do with their introduction into the body, as parasites of that genus are, as a rule, ingested in the larval or cercarial form, encysted on some vegetable substance.

I would suggest that the name *Amphistoma watsoni* be given to the interesting parasite.

REFERENCES.
[1] Neumann, *Parasites and Parasitic Diseases of Domesticated Animals*. [2] Ibid. [3] Theodor Odhner, Fasciolopsis buski (Lank.) ein bisher wenig bekannter Parasit des Menschen in Ostasien, *Centralblatt*, May 14th, 1902.

A NEW TREMATODE.

By JOHN CATTO, M.B., D.P.H.,
Singapore.

AT the *post-mortem* examination of a Chinaman, dead from cholera, attention was drawn to the uniform enlargement and tough nodular condition of the liver. The spleen reached to within an inch of the iliac crest and showed malarial pigmentation. The mesentery was thickened and its glands varied in size from a bean to a golf ball. The large intestine had all its coats hypertrophied. The thickening was $\frac{3}{4}$ in. at the rectum. The coats got thinner and less uniformly affected as the caecum was approached. The posterior wall of the bladder was thickened and adhered to the rectum. Numerous small glands were found lying on the large intestine and between the bladder and rectum. There was an increase of the fatty tissue all over the body. Wet specimens were shown and labelled as follows:

1. Liver showing nodular cirrhosis of whole organ.
2. Slice of liver and gall bladder showing thickening of the coats and addition of fat to the latter.
3. Piece of mesentery showing enlarged glands, vessels and general thickening.
4. Duodenum with enlarged glands attached. At one end was a pouch containing ascarides.
5. Caecum, part of ileum, with stump of appendix, showing its mesentery and a dilated lymphatic vessel on its free surface.
6. Rectum and part of bladder showing thickening of the adherent walls.

Microscopic slides of these tissues were exhibited to show minute oval double-walled bodies, whose size varied about 68 μ to 70 μ long by 34 μ to 40 μ broad. These were found from the appendix to the rectum, and were distributed roughly as two concentric rings—the one in the submucosa showed ova in enormous numbers, the other, under the peritoneum, had the ova sparsely distributed. In one slide free nematode embryos were shown in great profusion, aggregated in groups and bundles in the mucosa of large intestine.

Some slides showed sections of a minute adult trematode in a vessel of the mesorectum; inside the uterine tube of this ova were distinctly seen. A free nematode embryo was seen in a blood vessel of a mesenteric gland. This corresponds in lateral measurements to those seen in the mucosa of the large intestine, and also to *Filaria nocturna* in the lung from another case.

Briefly the relationship of these forms seems to be (1) a parental oviparous trematode of minute dimensions, and of unknown species; (2) ova of the trematode in the wall of the bowel; (3) nematode embryo in vessels of bowel and general circulation.

THE FUNGUS OF TINEA IMBRICATA.

By Fleet Surgeon P. W. BASSETT-SMITH, R.N.,
Lecturer on Tropical Medicine, Haslar.

THIS disease, which is mostly found among the natives o the East, particularly in those of the Malay peninsula, East Indian, and South Sea Islands, has lately been observed in the natives of Brazil,[1] having thus a wide geographical distribution. In some islands, as in Borneo, amongst the up-country "Meruts," I have seen it to be almost universal where the natives crowded together under the most insanitary conditions.

There is no doubt of its direct contagiousness, like other forms of ringworm being conveyed from man to man, which

was demonstrated experimentally by Manson and others; it is a disease also at times affecting Europeans. Clinically, the condition in its early stage may resemble tinea circinata, but later the peculiar concentric wavy outlines of the affected epidermis and the separation of the scales from one border, giving an imbricated character, are quite diagnostic, the scales coming off in large flakes, being easily collected for examination.

The Parasitology.

Manson describes the causative agent as a trichophyton-like fungus, seen in enormous profusion. Nieuwenhuis succeeded in cultivating the fungus artificially, and describes it as "much-bent mycelial threads, which divide dichotomously and develop light refracting cells or spores, sometimes two or three in a row." McAnderson describes "chains of spores more numerous than the mycelial threads: the spores, instead of being round, are oval, rectangular, or irregular, while the mycelial threads are long, straight, or gently curved." Sigfried says that "the mycelial threads are large in size and predominate over the spores, which are few." Triboneau found once club-shaped sporulating germinal hyphae, and described the fungus as a lepidophyton, allied to aspergillus.



Fig. 1.—Fungus of tinea imbricata (Lepidophyton), showing spore formation by gonidiophores.



Fig. 2.—Fungus of tinea imbricata (Lepidophyton), showing spore formation direct from mycelium.

For the last four years I have mounted and examined great numbers of specimens of scales showing the fungus. In all, the mycelium consists of short oblong joints, branching dichotomously, and very abundant, staining well with eosin. A short time ago I was fortunate in mounting specimens containing spores in numbers; these were round or oval in shape, generally loosely scattered, but also seen in rows of two or three, as if taking the place of the short rectangular joints, and presenting the appearance of "oidia"; but there was also present in one specimen (vide micro-photograph, etc.) a long unjointed hypha springing from the mycelial network, club-shaped at its extremity, and bearing a number of rather long sterigmata, each carrying a single round gonidium, or spore. I made many attempts to cultivate from these scales (which were received from Selangore) on various media, but without success.

The possibility of the growth of a secondary fungus on the scales after removal from the body must be considered, but I do not think that the present specimen is an introduced contaminating aspergillus, because if that mould infects specimens it generally is abundantly present, and would be probably found in most of the scales of the series contained in the tube, which was not the case; also the germinal hypha appears to rise from the mycelium threads, which are like those of the ordinary type as seen in other batches of scales that have been examined.

It would seem, therefore, that this fungus should no longer be considered as one of the trichophytons, but as belonging to the aspergillus group of the perisporiaceæ differing from the aspergilli in having two forms of reproduction: (1) By gonidia, from the gonidiophores; (2) by the development of oval spores direct from the mycelium cells. I would suggest that the name "lepidophyton," given to the organism by Tribondeau, be retained for the fungus.

REFERENCE.
1 Dr. U. Paranhos, *Journ. Trop. Med.*, May 25th, 1904.

Sir PATRICK MANSON remarked that in attempts at culture of the fungus of tinea imbricata the difficulty of obtaining scales free from fungus forms other than that in question must be borne in mind. Fleet Surgeon Bassett-Smith's results, as similar attempts by other authors, must be read in this light.

THE CONGO FLOOR MAGGOT.

A BLOOD-SUCKING DIPTEROUS LARVA FOUND IN THE CONGO FREE STATE.

The First Interim Report of the Expedition from the Liverpool School of Tropical Medicine to the Congo, 1903.*

BY

J. EVERETT DUTTON, M.B.Vict., Walter Myers Fellow, University of Liverpool.

J. L. TODD, B.A., M.D., C.M.McGill,

AND

CUTHBERT CHRISTY, M.B.Edin.

IN correspondence, during our stay at Boma, with the Rev. Holman Bentley and Mr. Sutton Smith, both of the Baptist Missionary Society Corporation, we learned of the existence in the Lower Congo of what were called "floor maggots," which they described as "keen blood-suckers." It was not, however, until camped at a place called Nkanga, on our way from Tumba to Lutete, in the cataract region of the Congo, that we had an opportunity of seeing specimens of these maggots. Here the head man of a neighbouring village, after being questioned on the subject of native pests, collected for us during the night a number of what appeared to us, at first sight, to be ordinary blow-fly maggots. On a closer inspection many of them were seen to contain bright red blood.

A day or two afterwards, when visiting a native village, we had the opportunity of seeing the natives collect these blood-suckers by digging with the point of a knife or scraping with a sharpened stick in the dust-filled cracks and crevices of the mud floors of their huts. We were soon able to find them ourselves as easily as the natives, and unearthed many larvae which contained bright red blood. In collecting them the natives selected those huts in which the occupants slept on floor mats, saying that where people slept on beds or raised platforms the maggots were not so numerous. They informed us, however, that those who slept in beds which were not raised more than eighteen inches from the ground were also bitten, and credited the maggot with the power of jumping to that height. In some of the huts we collected, in a short space of time, as many as twenty from only a small proportion of the floor crevices. Many were turned up from a depth of three inches. In some of the cracks, and in moist, soft earth, they were found at greater depths. There is no doubt that these maggots feed only at night. Mr. Bentley told us that as many as fifty could sometimes be found beneath a single mattress, and that he had known boys to be so pestered by them that they had preferred to sit all night outside a house to sleeping within it.

In one village, Nzungu, we visited a hut, measuring 8 feet by 10 feet, in which seven boys were sleeping on a mat, and in the dust beneath a bed-platform on which slept a man and

* Written December, 1903.

a woman. In the corner of the hut was the usual small fire and a sleeping pye dog. Although we did not see the maggots actually feeding, we collected from beneath the mats and from amongst the boys' legs some half-dozen which were filled with recently sucked blood. The natives said that the maggots dropped off at once if the limb on which they were feeding were moved. There were specimens of all sizes, ranging in length from 2 to 15 mm., amongst those brought to us, and so far we have obtained them in every village we have visited. When ready to pupate, the larva lies dormant upon the surface, changes in colour to a pinky-brown, and later becomes a dark reddish or brownish-black, chitinous, segmented, with oblong puparium.

We have never been able to substantiate the assertion, made to us on several occasions, that the maggot is able to jump to a height of 18 inches. We think it more probable that they reach the raised beds by crawling up either the supports or the grass wall against which the bed is usually placed. We have, however, satisfied ourselves that it feeds mainly or entirely at night, and that it probably feeds nightly, since blood in varying stages of digestion, and ranging in colour from bright red to black, can often be seen in its alimentary canal.

The distribution of this larva seems to be very extensive. We have collected it all over the Lutete and surrounding districts, and at Leopoldville. We have heard of it as being common at San Salvador, in Portuguese territory, and on the Congo at Matadi, in the cataract region, and at Tchumbiri 150 miles above Stanley Pool.

Some of the native names for the maggot are as follows: At Tchumbiri, north of Leopoldville, the Beteke call it "mabinzu." At Leopoldville the Bateke call it "nchichi." At Wathen (Lutete), in the cataract region, Mr. Bentley states that all maggots are called "ntunga," and that there was no other special name for this one. At Matadi the native name is probably "mvidi." In the Bangala district it is called "kiso."

This larva maggot (Fig. 2, c) is semitranslucent, of a dirty white colour, acephalous, and amphipneustic. It resembles, when adult, the larvae of the bot-flies, and consists of eleven very distinct segments. The first or anterior one is divisible, owing to a slight constriction, into two portions, the foremost of which is small, bears the mouth parts, and is capable of protrusion and retraction to a considerable extent.

The larva is broadest at the ninth and tenth segments, is roughly ovoid in transverse section, and is distinctly divided into dorsal and ventral surfaces. At the junction of the two surfaces is a row of irregular protuberances, two or more being placed on each segment. On each protuberance is a small posteriorly directed spine and a small pit. The central part of the ventral surface is flattened, and at the posterior margin of each segment is a set of three foot-pads, transversely arranged, each covered with small spines directed backwards. These aid the larva in its movements, which are fairly rapid and peculiar, in that the mouth parts are protruded to the utmost and the tentacula fixed, as a purchase, first on one side then on the other, while a wave of contraction runs along the body as each segment is contracted and brought forward.

The last segment is larger than any of the others. Its upper surface is flattened and looks backwards and upwards at an angle of about 45 degrees with the longitudinal axis of the larva. This surface is roughly hexagonal and bears anteriorly, one on either side, the posterior spiracles which are seen with a pocket magnifying glass as three transverse, parallel, brown lines. Around this flattened surface, towards its border, are placed groups of rather prominent spines. The ventral surface of this segment is also flattened, and is thrown into folds by muscular contractions. The anus is situated in the anterior portion of this segment in the middle line, and is seen as a longitudinal slit surrounded by a low ridge. Posterior to it, and on either side, is a large conspicuous spine. The anterior segment is roughly conical and bears the mouth parts in front. Posteriorly, on the dorsal surface, almost covered by the second segment, two spiracles, one on either side, are seen with a low power as small brown spots. Two black hooks or tentacula protrude from the apex of this segment. They are curved towards the ventral surface of the maggot. The apex of each hook is blunt, and its base surrounded by a fleshy ring. Between them is the oral orifice. The tentacular processes are continued for some distance into the body of the maggot as black chitinous structures with expanded bases. There is probably, as in *Oestrus ovis* (Linn.), an articulation between the external and internal chitinous structures, since the arrangement of the mouth parts seems to be the same as in the maggot of that fly. Paired groups of minute spicular teeth are placed around the two tentacula so as to form a sort of cupping instrument. The arrangement of these teeth is as follows: A rather large tubercle is situated on either side of and above the tentacula; each is mounted by two or more groups of very small chitinous teeth. Just above each tentaculum is another small group of teeth. On either side of these black tentacula two irregular rows of small teeth are placed one above the other. The two latter groups are not placed upon tubercles. The integument of the larva is thick and difficult to tear. The larva is able to withstand a good deal of pressure without injury.

The following gross internal anatomical structures have been made out—intestinal canal, salivary gland, nervous system, and fat body. The intestinal canal commences as a short oesophagus, which ends in a proventriculus. A remarkable dorsal diverticulum, corresponding to the food reservoir of the muscid larvae, opens into the oesophagus near its anterior end. After the maggot has fed, the diverticulum is a very conspicuous object (Fig. 1), since it is seen through the semi-transparent

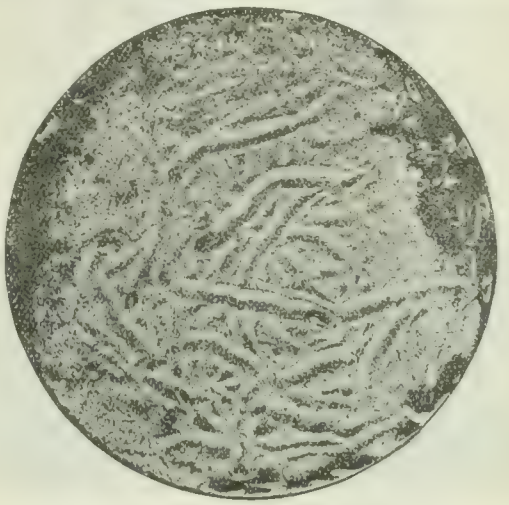


Fig. 1.—Showing the ingested blood in the bodies of the larvae, and the tracks left by them on dry sand.

body wall as a bright red area, when full of blood extending from the head to about the fifth segment. The caeca behind the proventriculus have not as yet been well made out. The mid-intestine or chyle stomach is short, when compared with the hind intestine, and extends from the proventriculus to the junction of the urinary tubules with the gut. It lies in one or two coils. The hind intestine is very much coiled, and occupies the greatest part of the body cavity.

The urinary tubules are four in number, two on either side of the intestine. Each lateral pair combines to form a broad plate, from which is given off a single process for attachment to the gut.

Each salivary gland of the larva consists of one very long acinus made up of large granular cells. The gland ends in a chitinous ringed duct, which joins its fellow of the opposite side to form a common duct, opening near the base of the free portion of the tentacula. The body of the maggot is lined by a white, loosely reticulated fat body. The minute anatomy of the mouth parts and sucking apparatus has not been studied.

The time required for the maturation of the larva is not yet known. The puparium (Fig. 2, b) is a dark-brown or black, cylindrical, segmented body measuring 9 to 10.5 mm. in length and 4 to 5 mm. in width. The anterior end is roughly conical, the posterior is rounded. All the external structures seen in the larva can be made out on the external surface of the puparium. The cuticle shows annular ridges. The duration of the puparial stage is from a fortnight to three weeks.

During our stay at Wathen, Mr. Bentley showed us, among his collection of insects, a large light-brown fly which he believed to be developed from the floor maggots. Specimens caught in the boys' dormitory at Wathen Mission were soon after brought in by one of our collectors, and later, while searching a native hut infested with "floor maggots" we saw one of these flies resting on the grass wall. Many others were subsequently found in the same building, sitting motion-

less amongst the beams and cobwebs of walls and roof. Because of their colour, which corresponded exactly with the smoke-stained straw and rafters of the huts, they were difficult to see, and in the dark interiors more difficult to catch.

This fly, seldom one of any other species, has since been found in many huts infested with maggots. We were told that the fly deposited its eggs on the ground of a hut, particularly in spots where urine had been voided. As a rule the fly is silent, but on one occasion we observed it buzzing loudly, fly in at the door and go directly beneath some bed mats which were raised by a low platform some eight centimetres from the floor.



Fig. 2.—*Auchmeromyia luteola*. Fabr. A, imago; B, pupa; C, larva (the Congo floor maggot).

Both Mr. Bentley and the natives state that this fly never bites men. The native name for the fly which we describe is "Nkulu Mwanzi." The fly (Fig. 2, A) is thick set, and is of about the size and build of a blue-bottle. It is about 10 to 12 mm. in length, and once seen can be easily recognized. Its general colouring is tawny, but the small black hairs covering its body give it a smoky appearance. The head is large, as broad as the thorax, and protrudes in front of the eyes, which are when fresh a reddish-brown in colour. The eyes are separated from each other below by a considerable interval and appear small in comparison with the size of the head. The proboscis is folded beneath the head in a deep groove, and is inconspicuous while in this position.

The palpi are club-shaped and covered, more particularly at their apices, with conspicuous black bristles. The third joint of the antenna is long, yellow, flattened from side to side, and rounded at its apex. It bears an arista which, thickened at its base (probably jointed), tapers to a fine point. The arista bears fine black hairs along its upper and lower borders; long at its base, the hairs become short and scanty at its apex. The dorsum of the thorax is flattened, and marked by longitudinal black and brown stripes, the transverse suture is well marked. The thorax is covered with fine black hairs and studded with rows of black bristles, which are particularly long on the sides. The squamae are very large, yellow in colour, and completely cover the yellowish-white halteres. The abdomen apparently consists of five segments. It is covered with long black hairs, and bears a few long bristles on the last two segments. The second segment is the longest, and here the width of the abdomen is greatest; the upper surface of this segment is characteristically marked. A dark brown or black line runs down the centre of the segment to meet at right angles a similar line which borders its posterior edge. There are no other marks on this segment; it is transparent and its general colour is that of the rest of the body. The third segment is, except for a narrow yellow streak along its anterior border, very dark brown in colour, more marked laterally. The fourth segment is of the same dark colour, and is bordered posteriorly by a narrow lighter brown band. The fifth segment is small and contains the genital apparatus. The wings are of a smoky brown colour and show a well-marked venation. The legs are of the same buff as the rest of the body, and are covered with black hair and bristles. A noticeable feature of the legs is the jet-black fifth tarsal joint, which stands out prominently against the large cream-white pulvilus.

We have been able to allow a number of these maggots to feed on rats and guinea-pigs. We purpose carrying out a series of experiments with the object of determining whether they are able to play a part in the transmission of the human trypanosome. In none of the entomological works which we can at present command are we able to find any reference to habits or morphology by which we can identify this fly.

Specimens of the flies and larvae were submitted for identification to Mr. E. E. Austen, the well-known dipterologist to the British Museum, together with a copy of the above report, and he has been kind enough to write as follows: "I have read the report on the 'blood-sucking floor maggot' with the greatest possible interest. Whether this maggot prove to be in any way concerned in the dissemination of trypanosomiasis or no, Messrs. Dutton, Todd, and Christy have come across an entirely novel and most interesting fact in the biology of diptera, and they are heartily to be congratulated on being the first to bring it to notice. The flies are specimens of *Auchmeromyia luteola*, Fabr. (a species of the family *Muscidae*), which is widely distributed in tropical and subtropical Africa. Before reading the report, I was under the impression that the larvae of this fly were well-known subcutaneous parasites of human beings and dogs, but I have now no doubt that *A. luteola* has been confused with another fly, very similar to it in appearance, but belonging to a different genus, the larvae of which are unquestionably subcutaneous parasites in man, dogs, and monkeys. Nevertheless," says Mr. Austen, "I have evidence, apparently reliable, which seems to show that the larvae of *A. luteola* may, perhaps, under exceptional circumstances, live subcutaneously in man. The fly itself, so far as I am aware, is otherwise harmless, and is incapable of sucking blood. Specimens in our collection show that it ranges from Northern Nigeria to Natal; it is therefore somewhat surprising that the habits of the larva have not been reported before."

After the above was written a very intelligent native from Lake Tchad, acting as interpreter to M. Chevalier, leader of the Paris Geographical Society's Expedition, when shown specimens of the fly and maggot in Leopoldville, at once recognized them, and volunteered the statement that the maggots were common in Western Tchad regions. The full report of our feeding and other experiments with these maggots is not yet completed.

Mr. T. J. TONKIN said that in the Congo floor maggot he recognized an old acquaintance. Some ten years ago he visited the town of Kano in Northern Nigeria. Certain huts were put at the disposal of himself and his companions. On taking possession he noticed that one of his servants took a bit of cane and cleaned out the cracks on the part of the floor where he proposed to put his sleeping mat. On inquiring the reason he was told that a biting insect lived in the cracks, and a specimen was shown him. Mr. Tonkin had little doubt that the maggot shown him on that occasion was identical with the one exhibited this morning.

LEPROSY A CURABLE DISEASE.

By T. J. TONKIN, L.R.C.P. and S.E.,
Late Medical Officer, Hausa Association's Central Soudan Expedition, 1893-4-5.

IN calling attention to the curability of leprosy I do not suppose I am bringing anything new to the notice of those who are, or have been, intimately associated with the disease. I am bringing the subject forward because I believe it to be important that the facts with regard to the prospects of cases of leprosy generally should be correctly appreciated, not only among those who make up the extremely small circles that come in close touch with the disorder, but in that larger world of interested opinion, both professional and lay, which lies outside. In dealing with the matter I propose—

1. To state and support the proposition that leprosy is a disease, not only markedly amenable in many of its grades to

intelligent direction, but one from which, both with and without treatment, recovery may take place.

2. I shall endeavour to show why, if leprosy be curable, it is important that the fact should be made widely known; and

3. I shall touch on the responsibility of our own profession in the matter.

The Argument in Favour of Curability.

For myself I have no hesitation in saying that I believe leprosy to be a disease that often yields to the influence of improved circumstances, whether that improvement be the result of wise supervision in an institution or a fortunate course of events outside.

In this respect leprosy closely resembles tuberculosis. There are few who would care to dispute the fact that many recover from the latter disease. One has only to have the opportunity of following a series of autopsies to know that the lungs of a considerable proportion of persons who die at advanced years, and of ailments in no way connected with tuberculosis, present, on examination, evidence of pre-existent tuberculous disease. The slowly calcifying caseous focus, or the fibroid patch, show that they have been so affected; but the condition of these things—the caseous focus rigidly cut off from the surrounding healthy tissue, and the fibroid patch pale and hard, when taken with the age, appearance, and history of the person in question—leave no doubt that they are but the ashes of a long-dead fire.

What are the circumstances which, in any given instance, have determined this course of events we can, as a rule, only speculate. This much, however, we can usually be sure of, that at some time or other, when the person was in a lowered condition from poverty, business worry, previous illness, vicious courses, or any other of the hundred-and-one everyday things that depress our vitality, he was exposed to the infection of tuberculosis. The man's extremity was the bacillus's opportunity. As a result he became the subject of definite tuberculous disease. Then, after a period of dejection of mental and physical powers—a period during which the disease made headway—something happened, and the tide turned. Perhaps it was a rise in wages that determined it, or the removal of some source of trouble; but, whatever may have been its particular nature, it was something that lifted the man up again—allowed his vital forces to rally, and helped them to face and defeat the invading influence. Unfortunately, these vital forces, however thoroughly they may be reawakened, are often unequal to the task of repairing the actual damage done by the operations of the invader; but they can, and do, bottle it up and strangle and starve it, so that in time, from being a centre of action hostile to the system, it becomes a mere passive encumbrance—in the way, perhaps, but more or less powerless for evil. You may call such a man phthisical if you like, and if you happen to have known the nature of his previous malady; but if febrile reaction, emaciation, night-sweating, cough, and bacillus-laden expectoration have left him, and his capacity for work and pleasure has returned, you may call him what you like; you will not make him a sick man or a danger to the community.

It is much the same with leprosy. Since the days of Moses leprosy has been regarded as incurable, and the word "incurable" has in this instance acquired the force of a formula conveying the idea of a thing incapable of betterment—past help, hopeless. But there are other ways of reading the word. Incurable leprosy certainly is in the sense that we do not at present possess—and possibly never may possess—a remedy that affects its course as dramatically as mercury and the iodide of potassium affect that of syphilis, or as antitoxin affects that of diphtheria. But it is difficult to regard it as incurable in any other sense. The course of events I have just sketched in connexion with tuberculosis is often followed by leprosy. The disease, contracted as the result of an exposure to contagion rendered effective by the depressing influence of adverse circumstances, is often recovered from when those circumstances are removed. The application of a knowledge of this eminently natural course of events is what I call intelligent treatment of leprosy, and its successful issue I call cure. Leprosy is a disorder of which every grade exists. In any endemic area where one person suffers severely, many are subject to slighter degrees, from which they may recover without doing more than, or in some cases even so much as, suspect the nature of their malady. And among those who take the disease more severely the supervention of some improvement in their circumstances almost always betters the condition of the individual, and in appreciable proportion of the cases abolishes the disorder.

One of the greatest obstacles to the recognition of the true state of affairs with regard to this matter has undoubtedly been an imperfect understanding of the actual condition of many persons supposed to be lepers. To the average individual, whether medical or lay, a person with no fingers or toes and an abbreviated nose is a leper, no matter what his condition of health may be otherwise. But a man is not necessarily still a leper because he happens to be mutilated.

The figures of any table arranged to illustrate the duration of the disease will help to make this clearer. I quote one of my own[1] because I am best acquainted with it. The table I allude to gives in periods of five years the time that in each of 220 cases had elapsed since the onset of the disease. The average period over which fatal leprous disease extends does not usually exceed a dozen years. The last figures[2] I had to do with in connexion with this matter gave ten as an outside limit. To give the thing fullest play, let us make it fifteen. If a person have survived the invasion fifteen years, it is highly probable that his disease will be in an exceedingly quiescent condition, while if twenty have elapsed the signs will often be of so indefinite a nature as to defy recognition. Of the 220 cases I have just quoted, 24 per cent. had survived the fifteen years' limit, while 8 per cent. had left the date of invasion periods, varying from twenty to fifty-five years, behind them. There are exceptions, of course; but in a large number of these cases it will be found that all specific leprous manifestations have been left behind also. Their effects may remain; naturally the fingers and toes that have been lost will not grow again; but you can no more reasonably, on that account, look on a man as suffering from leprosy when he may have enjoyed previous to the date of his examination anything from five to fifty years of unbroken health, and when his capacity for labour is only limited by the destruction of tissue resulting from the pre-existent disease, than you could reasonably regard the man with the calcifying focus or fibroid patch as necessarily suffering from tuberculosis.

At this point in the discussion of the subject, the objection is often made that it is impossible to be sure that any given individual is really cured. It is suggested that, although he may seem to be cured, it cannot be regarded as certain that he has no lepra bacilli inside him. I readily concede this. But I do not see any pressing necessity for knowing whether he has lepra bacilli inside him or not. He may have them in him—indeed, I should say there is little doubt he very often has—and yet he may not be suffering from leprosy. The presence of lepra bacilli in a man's tissues does not necessarily make that man a leper. The term "leprosy" is only properly applied when it is used in connexion with the reaction that takes place between the constituents of the bacilli and those of the tissues they invade. While that reaction is in being the individual affected is suffering from leprosy; as long as it is in abeyance, or after it has died down, it cannot be considered that he is. If some bacilli are there—and in a recent letter I am informed by Dr. Hansen that Lie has found them in the spinal cord fifty years after invasion—they are there on much the same terms as such tubercle bacilli as may remain in a caseous focus of long-standing. In appearance and reaction to the various stains they may be indistinguishable from the organism in an active state, but their vitality is nevertheless open to doubt, and their influence under the circumstances in question is almost certainly *nil*. It is probable that, for the time at least, they are negligible quantities. It cannot matter much whether they are there or not. If the man be devoid of the signs and symptoms of the active disease, if his organs are performing their functions in an ordinary fashion, if he enjoy life and can work, I hold it is rational to look on that man as hale, and if the accessible fluids of his body are free from bacillary pollution he can hardly be regarded as a danger to the community.

That in this sense leprosy is curable there can be little doubt. In every endemic area many individuals will be found whose appearance makes it clear that they have been leprous. They have lost fingers and toes, some of their nerve trunks may have suffered irreparable damage, certain of their muscles may have ceased to exist save as attenuated fibrous cords, integumentary areas may be found devoid of sensation, and yet in some of these very cases the soundly healed stumps of the mutilated members, the absence of pain or progressive paralysis, the bright eye, keen appetite, able digestion, capacity for enduring fatigue, and full enjoyment of the pleasures of life, make it equally evident that they have

left the active disease of former years behind them. You may describe the condition as quiescence: you may call it latency if you like—it is only a question of terms. The condition, whatever it may be styled, is post-leprous, and it is as satisfactory to those who have entered into it and as worthy of the title "cure" as any that supervenes on previously active tuberculous disease. If this may occur, and it does, as the result of the mere undirected accidents of life, it may most certainly be expected to accrue with more frequency from the skilful handling of affected individuals either in sanatoriums or otherwise. As a matter of fact, the books of almost any leper asylum will bear out this statement, but if I had no other evidence than that afforded by the streets of any great town in any endemic area that I have visited, I should still feel myself justified to the uttermost in saying that I consider incurable an adjective that may not with propriety be applied to leprosy.

The Importance of Recognizing the Curability of the Disease.

The second thing I wish to do is to show why, if leprosy be a curable condition, it is important that the fact should be widely recognized not only by those who have to do with the disease directly, but by all who are interested, no matter how indirect that interest may be.

It is not enough that those who have to supervise or treat lepers medically should be well informed—they indeed usually are—it is equally important that lepers themselves, the communities from which they are taken, the men who by means of the press or otherwise move or represent the public opinion of such communities, and that those who govern them should have before their several minds clear and true conceptions of the case.

If, in the first place, a community be under the impression that leprosy is in all cases hopelessly incurable, that a man once a leper retains his leprosy for life, and with it the power of communicating the disease to others, it is not likely to look with favour upon any asylum administration that discharges its patients, however enlightened that administration might be, or however well-grounded its reasons for doing so.

In the second place, if the government of such a community regards leprosy as incurable, it is not likely to institute any educational movement to correct the prejudices of the people, nor will it sanction a general application of any more appropriate views that may be held by the medical officers of its leper asylums.

And, in the third place, if the leper himself feels that once within the walls of a leper hospital he is there for ever, once in the clutches of the disease there is no escape but the grave, he is not only unlikely to seek help in those early stages of the disease which afford such golden opportunities for treatment, but hope is extinguished in his breast; and though hope cannot be weighed in any balances, or viewed through any microscope, it is still a potent opponent in the advances of such a disease as leprosy, and the man from whom it is taken is robbed of a buckler of the trustiest description.

With regard to the first two of the considerations mentioned, I am provided with an illustration almost damp from the press. In the issues of the *Cape Times* (weekly edition) from March 30th onward all the world may read a series of articles criticizing the dealings of the Cape Legislature with leprosy. The articles in question are the work of a man whose knowledge of the subject is incomplete, but that does not affect the situation. Even in that respect he is representative of the general public. One of the complaints he makes is that persons have been taken to Robben Island and kept there periods of time varying from three to ten years, after which they have been discharged as not suffering from the disease at all. The writer quotes cases and gives such minute detail that the editor of the journal, in a column of comment, certain scraps of which I am appending to this paper,* says: "There must be something radically wrong in a system which compels the detention of a man or woman for years before medical authorities are able to decide as to the nature of his complaint," and suggests that the legality of such a thing is a menace to the community at large. I am not finding any fault with the attitude of the journal; it is difficult to imagine an editor commenting otherwise; it is public opinion that is at fault. Personally, I think I see my way through the situation. It is unbelievable that the medical officers of Robben Island should remain in doubt as to the nature of a case for such periods as those stated. It would be a gross outrage to suggest that the detention of the cases was due to neglect. Fortunately, neither hypothesis is needed. There is little doubt that the cases in question were cases of cure. Judicious treatment resulted in recovery, and in due course the individuals were sent back to their homes free from leprosy. Their return excited comment, and public opinion measured what had happened by its faulty standards. Leprosy is incurable, it said; therefore, if these men ever had leprosy, they have it now. But the medical officers of Robben Island say they are free from leprosy, and if they are free now they have always been free, and their detention at the asylum has been an injustice to them and an outrage on the community. That is the vicious train of reasoning applied to such cases as I have mentioned, and when in such a place as the British South Africa of to-day it is able to produce such results as six columns of critical article and the editorial sympathy of a journal of world-wide repute, it may well be considered time the public were supplied with information that will enable them to reason in a sounder and less troublesome fashion.

This phase of the situation is important; but there is yet another and perhaps more serious side, certainly a side the gravity of which it would be difficult to overstate. The belief that leprosy is incurable, and the attitude of the public mind induced by that belief, is the cause of large numbers of leprous persons being rendered ineffective as wage-earners, when, under other circumstances, they might have retained their usefulness. Looking upon the disease as incurable, the man who is affected does not, as in the case of other disorders, properly appreciate the value of early attention, and, haunted by the fear of the asylum, which will take him from his work and home, and, as he thinks, give him nothing in return but a prison wall and a graveyard plot, it is not surprising that he evades for as long a time as possible the notice that will bring recognition of his condition. And while, under a false impression, he is avoiding that recognition, the precious moments during which influences of a favourable nature may be brought to bear upon his condition with the greatest effect are passing from him. During those moments, which he is squandering, appropriate treatment may stand between him and the disabling mutilations that so often mark the later stages of the disorder. Taken early, it is at least possible that the man may be sent back to the world, not only cured of his disease, but able to take his old place and do the work to which he has been trained. This is an advantage to the community as well as to himself, and it is in this stage alone that cure is economical, or perhaps even really desirable. In the later stages, when mutilation has already occurred, the man may still recover, but recovery is then a doubtful advantage. It may relieve him of discomfort, but his disease has deprived him of usefulness, and it leaves him maimed and helpless, a mere human fraction, a burden to himself and a charge upon the community.

The Responsibility of our Profession in the Matter.

It is hardly necessary to say that it is most desirable, when possible, to have at least the opportunity of trying to forestall these later developments, and that is where our own responsibility as a profession comes in. In a large number of cases ultimate disablement may be prevented by early attention. But affected persons will not present themselves for early treatment till it is widely understood that something can be done for the disorder. That this is not the case at present is, in some degree at least, due to our backwardness as a profession in recognizing the idea. If the amenability of leprosy to suitable direction were freely recognized by the medical profession its acceptance in general scientific and official circles would speedily follow, and the application of it by the masses of interested communities would come as a matter of course. I am told we are waiting for proof. If we wait for more proof than is at present available—I mean for more of that particular kind of proof which alone seems able to satisfy the cravings of a certain type of scientific mind—we shall wait for long, and while we are waiting, a certain section of our fellow-creatures are passing from those stages of leprosy when cure means renewed usefulness to that further one in which recovery is less desirable than

* . . . . Any Field Cornet may drag a person away on suspicion of being a leper, and if the district surgeon is unable to decide the case the unfortunate man is taken to Robben Island. Our correspondent states that three such cases were recently released after periods of imprisonment . . . ranging from three to eight years, at the end of which time it is found they are not suffering from the disease at all. There must be something radically wrong in a system which compels the detention of a man or woman for eight years before the medical authorities are able to decide the nature of his complaint . . . . . We trust the facts as revealed by our correspondent will be made the subject of prompt inquiry, for if such things can occur legally under the present system every member of the community is potentially affected.—*Cape Times* (weekly edition), April 6th, 1904.

death. This is no small responsibility. It is well the broad shoulders of a corporation are beneath it; it is nothing less than not encouraging the leper to come for early treatment when the means of giving him that encouragement lie ready for use in our hands. Sooner or later the thing will be acknowledged. Whether it comes to-day or to-morrow may be little to us, but to leperdom and to contaminated communities it is much, and it is most earnestly to be desired that those who have influence will early see their way to consider and endorse the idea.

With details of treatment this paper has, of course, nothing to do. The policy of institutions is equally outside its scope, but there is one more remark I should like to make to anticipate a question that must inevitably suggest itself to the uninitiated. Men in charge of leper asylums, whatever their private opinions may be, do not, as yet, except in very marked cases, make a practice of discharging their patients. Public opinion is not ripe for it. It is not the business of an official, however strongly he may be convinced of the rectitude of his opinions, to assert them in a way that would give rise to friction. Nor would the authorities employing him allow him to do so even if he were unwise enough to wish it. In dealing with these matters we are reduced to proceeding on a gauge the narrowness of which is a thing, not of choice, but of necessity. The duty of the leprologist is not to attempt to force his opinions on the world by indiscreet action, but to try and influence, through the proper channels, the authorities that employ him and the profession of which he is a member, and leave to these greater powers such application of his ideas to the community as may seem practicable to them.

References.
[1] Analysis of 220 Cases of Soudanese Leprosy, *Lancet*, April, 1903. [2] Leprosy in Jamaica, *Trans. Bristol Med.-Chir. Soc.*, 1904.

Mr. Hutchinson said that although there was nothing new in the idea that leprosy was a disease from which recovery was possible, he welcomed Mr. Tonkin's advocacy of it. He had himself long ago taught that there was a natural tendency to cessation of all active processes if the patient lived long enough, and that in this respect leprosy resembled tuberculosis. That its active stages were self-terminable was part of the definition of leprosy which he had recently given in the *Clinical Atlas* of the New Sydenham Society. Its closest analogy was, he believed, with lupus erythematosus, a malady which after a few years' activity always tended to spontaneous cessation. He was now in a position to assert as to leprosy that in the cases in which recovery had taken place there was usually no tendency to relapse. The bacillus appeared to exhaust its soil and to be incapable of indefinite prolongation of its life. He had seen cases in which a period of fifteen or even five-and-twenty years had passed since the disease was apparently cured and in which there had not been the slightest return. Such patients usually regained good health. Nor was it only in slight forms or in the maculo-anaesthetic type that recovery ensued. A case which he had brought before the Medico-Chirurgical Society in 1878 was an example of recovery from a severe tubercular form, and he might now add respecting that case that the patient remained in good health many years after the date of publication of her case. Mr. Hutchinson here produced some photographs of a well-marked tuberous case in which recovery was in progress. In connexion with it he took occasion to remark that the influence of chaulmoogra oil in expediting the recovery appeared to have been very definite. The result of his inquiries in India had been to greatly increase his estimate of the value of this oil, and he was inclined to rank it as far superior to all others. It appeared to possess real power in arresting the vitality of the bacillus, and he would strongly urge its more extended trial, not only against leprosy, but against its close congener, tuberculosis. It was a remarkable fact, if the proposition were accepted that leprosy was a spontaneously curable disease, that the opposite opinion should have been so generally prevalent. There was, however, he believed, a very simple clue to the apparent discrepancy. Leprosy was incurable and for the most part fatal if the patient remained in the country in which it had originated; it was curable if he left it. It was from Norway that we got the strongest expressions as to uselessness of all drugs and the incurability of the disease. There it was said that cases of apparent recovery in hospital relapsed when sent home. The explanation was simply that, in returning home, the patients returned to the dietary which originally caused the disease. They resumed a dietary which consisted largely of fish, and it could not be wondered at that they relapsed. Although probably it was only fish in certain peculiar conditions which could originate leprosy, yet when once the disease was established, almost all forms of fish might tend to feed it. Many observers had noted that fish food made leprosy worse. All observations as to the curability of leprosy and as to the influence of drugs upon its course were, he believed, quite valueless unless abstinence from fish were enforced. In Norway, where the peasants live on fish, and fish was supplied in the asylums, the disease was severe, and was held to be incurable; in India and Ceylon, where fish was not abundant, it was mild and often curable; in Natal, where no fish was to be had, it did not spread, and was for the most part mild, and followed by recovery.

CLIMATIC BUBO FROM WHICH AN ORGANISM WAS CULTIVATED.

THE RELATION OF CLIMATIC BUBO TO PESTIS MINOR.

By James Cantlie, M.B., F.R.C.S.,
Surgeon, Seamen's Hospital Society, London; Lecturer on Surgery, London School of Tropical Medicine.

The specimens beneath the microscope were prepared from cultures made by Dr. R. T. Hewlett, Professor of General Pathology and Bacteriology, King's College, London, and Lecturer in Bacteriology, London School of Tropical Medicine. The material was obtained from an undoubted case of so-called climatic bubo. The patient, a man aged 33, had lived in a part of the Mysore State, Southern India, where plague had prevailed for some years. He reached London on February 24th, 1904, having travelled by way of Madras and Colombo. The day before reaching London he observed a swelling in the left groin. There was no venereal taint of any kind. His condition soon got worse, the gland increased in size, and a rise in temperature was noted towards evening. The patient was seen by Professor W. J. Simpson and by Dr. G. C. Low, and they each agreed with my diagnosis of climatic bubo. On March 7th a needle was inserted into the seat of the swelling and pus found. An incision down to the gland was made, and on March 9th the whole gland was removed and the material given to Professor Hewlett for examination. The patient made a good recovery, although convalescence was delayed owing to a channel of pus having found its way upwards along the abdominal wall beneath Scarpa's fascia. The cultures made by Professor Hewlett show an organism which stains like a diplococcus. Experimental inoculation of animals, however, proved negative.

Remarks.

The association of climatic buboes with outbreaks of plague have been frequently reported. On the Volga, in 1877-8, in one town true plague prevailed, with a high mortality; in another town some 100 miles higher up the river an epidemic of buboes (climatic?) prevailed, from which no deaths occurred. In China, before and during the appearance of plague in 1894, I reported many cases of climatic bubo, and subsequently several observers notified the same. In 1893-4, before plague appeared in Hong Kong, climatic buboes were met with plentifully by medical men in the Straits Settlements and in the French possessions in Indo-China. Professor Simpson also reported cases of the kind in the soldiers of the Shropshire Regiment when they came from Hong Kong to Calcutta.

In 1894 I termed the disease "pestis minor," not by that term signifying a mild form of plague, or pestis ambulans, but a specific modification of plague in which an "involuted" form of the plague bacillus was found. Hitherto no bacillus has been described as occurring in this complaint, except by Professor Simpson and Dr. Cobb in Calcutta in 1896, and now by Professor Hewlett. The specimen before us certainly reminds one of the plague bacillus.

A further point is the presence of climatic buboes, and the cases of plague reported by Koch in Central Africa. It will be remembered that Koch in 1896, from specimens he received from German East Africa, in a district to the south of the Victoria Nyanza, came to the conclusion that plague prevailed there. Now, although many men have traversed the regions adjacent to the districts whence Koch obtained his specimens, no cases of true plague have ever been seen. If plague exists there it is in a form different to that met with in any other part of the world, and I have no hesitation in saying that the cases from which Koch obtained his specimens were really cases of pestis minor.

Further, climatic buboes have been reported as of frequent occurrence along the eastern shores of Africa from Zanzibar northwards, and it is only reasonable to assume that similar

cases occur in the Hinterland. Climatic buboes were seen frequently by Dr. G. C. Low in the Uganda district in 1902, and quite recently (1904) I have seen a man from Northern Nigeria suffering from climatic buboes. He declares that the disease was considered a new disease to Northern Nigeria. It would seem, therefore, that the infection has travelled from the eastern littoral of Africa, across Uganda and neighbouring countries, and has crossed the watershed to Nigeria. I am more than ever convinced that the disease "climatic bubo" is a specific infection, that it is allied to plague, and that it is the true pestis minor of our textbooks.

Dr. M. Cameron Blair (Medical Staff, Northern Nigeria) said that quite 25 per cent. of native soldiers in Northern Nigeria suffered during the course of the year from indolent inguinal buboes, which did not generally suppurate. He had always regarded them as venereal.

THE TREATMENT OF SNAKE-BITES.

By Leonard Rogers, M.D., M.R.C.P., I.M.S.,
Acting Professor of Pathology, Medical College, Calcutta.

The large amount of research work which has been done recently on the physiological action of snake poisons by different observers in India and elsewhere has yielded a fairly definite knowledge of the manner in which death is brought about by the different classes of venomous snakes. The limitations of the action of antivenenes have also been tested, while quite recently the value of local use of permanganate of potash has been experimentally investigated by me at the suggestion of Sir Lauder Brunton and Sir Joseph Fayrer, and in conjunction with them a simple and practical method of using it has been formulated.[1] A brief summary of the practical application of these different researches may, therefore, not be without some value at the present time.

The Physiological Action of the Different Classes of Snake Venoms.

The poisonous snakes may be divided into two main subdivisions according to their physiological actions. First, we have the colubrine class, which also includes the very numerous *Hydrophidae* or sea snakes, the venoms of which I have recently found[2] to have essentially the same physiological action as the colubrines. These kill by paralysing the respiratory centre, and, to a less extent, the motor end plates of especially the phrenic nerves. In addition, they have a slight haemolytic action, which is most marked in the case of the cobra, although of no real lethal power even in it, while in the case of the sea snakes and the other Indian colubrine snakes I have found this action to be very feeble and of no practical importance.[3] Cobra venom I also found to have some action in contracting the peripheral vessels, a point which has been confirmed by Elliot, who also finds it to have a slight action on the heart. Death, however, is always produced by respiratory paralysis in this class, although C. J. Martin showed that one of the Australian colubrine snakes also had to a less extent an action similar to that of the viperine class; and I have found the same in the case of the Indian coluber, the *Bungarus fasciatus*, or banded krait,[4] these two being examples of mixed colubrine and viperine poisons. Secondly, we have the viperine class, including the true vipers, of which the Indian *daboya* and the African puff-adder are the best known varieties; and the pit vipers, which include the rattlesnakes of America and the *trimensurus* of India, all of which I was fortunate enough to be able to investigate in the physiological laboratories of the London University last year, in addition to the different Indian poisonous colubrine snakes. The action of these venoms is more complicated than in the case of the first class, while our knowledge of them is of more recent date, so that it will be necessary to go a little more fully into them, as one line of treatment I have to recommend is based on the results of my recent experiments. Our first accurate knowledge of the action of the pit vipers dates from the classical work of Weir Mitchell and Reichart on the rattlesnakes, which they found had a marked action on the blood, rendering it incoagulable, haemorrhages from the bowel and into the tissues resulting. They also considered it had some action in paralysing the respiratory system, and noted some effect on the heart and in paralysing the vasomotor system. No intravascular clotting was produced by these venoms. It was not until a much later date that further light was thrown on the action of the true vipers by C. J. Martin finding that the mixed Australian colubrine snakes, in addition to causing respiratory paralysis, also, if injected directly into a vein, caused rapidly fatal intravascular clotting, and he suggested that the rapid death with violent convulsions produced by a single lethal dose of the Indian *daboya* venom probably acted in the same manner—a supposition which was subsequently confirmed by Lamb working in Bombay. D. D. Cunningham had previously shown that repeated subminimal lethal doses of *daboya* venom produced loss of coagulability and death from haemorrhages like rattlesnake venom—a very important point, practically, as this is the mode of death produced by *daboya* venom in the case of the relatively large animal, man. Further, a study of Lamb's experiments showed the amount of intravascular clotting might be very small indeed even in fairly rapid poisoning, and quite insufficient to account for death, and haemorrhages might also be absent. On taking respiratory and circulatory tracings illustrating the action of *daboya* venom, I found that rapid death through circulatory failure might be readily induced without it being possible to find the smallest trace of intravascular clotting immediately after death or any capillary obstruction, clearly showing that there was an important factor to be considered besides the action of the venom on the blood. I therefore carried out a long series of experiments with the four viperine poisons already mentioned, the results of which have been published elsewhere,[4] so that only the conclusions arrived at need be mentioned here. Briefly, it may be said that the one action common to all these venoms was a rapid failure of the circulation, due not to any direct effect on the heart, but to paralysis of the central vasomotor centre in the medulla, as shown by a marked dilatation of the portal vessels simultaneously with the fall in the general blood pressure, which was both watched under the microscope in the mesentery and also recorded graphically by placing a large loop of the intestines in an oncometer, etc. Further, the general blood pressure could be markedly raised again by such drugs as powerfully contract the arteries, of which adrenal extract and nicotine were the most active, and as long as the vasomotor centre was not absolutely paralysed the good effect produced by the former might last for a considerable period of time, such as half an hour or more.

The Potency and Best Mode of using Antivenene.

The paralysis of the respiratory centre by colubrine venoms and of the vasomotor centre by viperine ones is a remarkable instance of the selective action of closely-allied poisons, while it fully accounts for the now generally admitted fact that Calmette's serum (which is made mainly from cobra venom, the small proportion of viperine poison used being largely or entirely destroyed by the mixture being heated before injection) is only active against colubrine venoms and not at all against the viperine ones. Further, C. J. Martin showed that it has but a very slight, and practically unimportant, action against even the colubrine element of the Australian snake venoms. Last year I was able to test its efficiency against all the Indian colubrine snakes and one of the sea snakes,[4] and found that it did neutralize all of them except that of the banded krait, in which case the colubrine element only was destroyed, the remaining viperine one ultimately proving fatal. Its action, however, was most marked against the closely-allied king cobra or hamadriad, less against the sea snake (*Enhydrina*), and feebler still against that of the common krait (*Bungarus coeruleus*). Recently I have repeated some of these experiments with an antivenene made purely with cobra venom with similar results in the case of the hamadriad and *Enhydrina*, so that there can be no doubt about the facts mentioned.

In the first experiments the antivenene was mixed with the venoms for half an hour before injection, ten lethal doses usually being employed, so that the recoveries obtained could only have been due to neutralization of the venoms. From the data thus obtained it was possible to work out the quantity of serum required to neutralize *in vitro* the average quantity of cobra venom ejected at a single bite, which, according to the observations of D. D. Cunningham in Calcutta, amounts to 0.254 gram, and the amount of serum thus obtained came to over 400 c.cm. (a practically prohibitive dose), while for the other colubrine snakes probably still larger amounts would be required.

How much more antivenene would be required when injected after and separately from the poison I was not then able to ascertain, but as Burroughs Wellcome and Co. very kindly recently sent me some of their antivenene made purely from cobra venom I have been able to take up this question again with the following important results, the details of which will

be published elsewhere. Having elsewhere suggested that on account of the weakness of these antivenenes they should always be injected intravenously instead of subcutaneously, as is usually done, I determined to test their relative efficiency when administered in three different ways. First, by mixing the venom and antivenene for half an hour before injection as before, the mixtures being kept at blood-heat for this period of time; secondly, by giving them both subcutaneously in different parts of the body at the same time; and, thirdly, by giving the venom subcutaneously, as in nature, and the serum intravenously, at as nearly as possibly the same time. The results were remarkable, for whereas the antivenene given subcutaneously in such doses as I could use had little or no effect, yet when given intravenously it acted just as well as when mixed with the venom for half an hour before injection. Further, this was true also of hamadriad venom, thus proving absolutely that the antivenene made purely from cobra venom did neutralize a different colubrine venom within the body of a susceptible animal. For example, while a dose of 6 c.cm. of the antivenene injected failed even to prolong the life of a pigeon into which two lethal doses of cobra venom had been injected subcutaneously, yet only 2 c.cm. of the serum injected intravenously saved the life of a pigeon which received four lethal doses of the same venom subcutaneously. Further, the same dose injected intravenously into a pigeon one hour after two lethal doses of venom, when very marked symptoms had ensued, also brought about a complete recovery, although it failed under similar circumstances against three lethal doses.

Even allowing for a probably more rapid absorption of a subcutaneous dose of antivenene in larger animals than in pigeons it is clear from these experiments that the serum should always be given intravenously so as to get the maximum effects from its use, but that even then antivenenes will have to be made very much stronger than at present if they are to be relied on to save patients who have received full quantities of colubrine poisons, while those as yet prepared and on the market are quite useless against viperine poisons. Nevertheless, as it can never be known what dose of venom has actually been received into the system, antivenene should always be used unless it is quite certain that the snake was a viperine one, but it is clear that it will have much more chance of being useful if most of the venom received can first be destroyed by any method of local treatment, such as that about to be described, leaving only the small amount already absorbed before the local treatment is carried out to be neutralized by the antivenene.

Local Treatment with Permanganate of Potash.

At the suggestion of Sir Joseph Fayrer and Sir Lauder Brunton I have recently reinvestigated the possibility of using permanganate of potassium to destroy some at least of the venom at the seat of its injection, with results which have been already published in conjunction with them by the Royal Society. The power of the drug to destroy different kinds of venoms when mixed with them in solution was first tested, and it was found to be very effective against both colubrine and viperine poisons, including the sea snakes among the former and both the true and the pit vipers among the latter. Next several lethal doses of cobra venom, as a typical colubrine poison, and that of the *Daboya Russellii* as a typical viper, were tested in the following manner: Several lethal doses were injected into the animals subcutaneously, and after a given time, varying from half a minute to ten minutes, a ligature was placed round the limb above the seat of injection of the venom, and an incision was made into the seat of injection, and solid crystals of permanganate of potassium were rubbed into the spot with sterile salt solution. To facilitate this small operation in actual practice, the little instrument shown was devised by Sir Lauder Brunton, and was used in all my experiments. It consists of a lancet-shaped blade half an inch long set in a handle, the other end of which is hollowed out to form a receptacle for the salt, both ends being protected by wooden caps. This instrument is being made in large numbers by Messrs. Arnold and Sons, and will be sold at the lowest price possible so as to bring it within reach of even the poorest natives. In my first series of experiments, I was only successful in prolonging the lives of rabbits by this method, on account of too large doses of the venoms having been given. With cats, however, out of six experiments with cobra venom, and another six with *Daboya* poison, I only lost one in each series, while recoveries were obtained up to ten lethal doses of cobra venom—about the average ejected by them in the case of a man, according to D. D. Cunningham's observations in Calcutta—and up to five lethal doses in the case of the *Daboya* venom, the ligature being tied half a minute after the bite was inflicted, the shortest time in which a handkerchief, or in the case of a native part of their cotton clothing, could be utilized for this purpose. In the case of cobra venom recoveries were also obtained from five and three lethal doses when the ligature was not applied until five and ten minutes respectively after the poison was injected, and similar results were obtained with *Daboya* venom.

On my return to India I hoped to have been able to carry out a more extensive series of experiments at the Calcutta Zoological Gardens, but a transfer prevented my doing more than a few experiments with cobra venom. Recoveries were obtained from three and a half lethal doses when ligature and treatment were deferred for fifteen minutes, and from two lethal doses after waiting half an hour, but after ten lethal doses a delay of five minutes proved fatal. In the case of such small animals as cats symptoms ensue very rapidly when several lethal doses are injected, but in the case of man the treatment may be reasonably expected to prove efficacious when carried out after longer periods than the above. Nevertheless, it is clear that the local application of permanganate must be undertaken without much delay, at any rate in the case of cobra bites; and the wide distribution of Sir Lauder Brunton's little instrument would allow of this being done, for it would always be ready at a moment's notice if any of the bystanders had one with him. In the case of the viperine poisons it is likely to be still more efficacious, for the venoms of these snakes are, weight for weight, much less toxic than those of the colubrine class, so that in their case a smaller number of lethal doses is likely to be received by a man. Thus, in the case of the most deadly of the Indian vipers, the *Daboya*, I estimate from recent measurements that the amount of venom obtained by making full-sized specimens bite through a plantain leaf was not more than one or two lethal doses for a man of 50 kilos, which is a good weight for a native of Bengal. The great advantage of this method of treatment is that it acts equally well in the case of all classes of snake bites, while our present serums are useless against the vipers, and are too weak to be trusted to alone in practicable doses for a full quantity of cobra venom. If, however, much of the venom can be destroyed locally, then a comparatively small dose of antivenene may be sufficient to reduce the amount of cobra venom, already absorbed before the local treatment may have been carried out, to below a lethal dose, and so life may be saved. I have also recently carried out some experiments to ascertain if permanganate of sodium or potassium could be used as antidotes to venoms already in the circulation by being administered intravenously. I found that, when they were injected intravenously with small doses of venom they did retard the fatal result, but when the venom was injected subcutaneously and the solution of the antidote intravenously, no advantage appeared to be gained, doubtless because oxidation occurred so rapidly in the blood that the salt was rendered inert before the poison was absorbed into the circulation.

The permanganate can, therefore, only be used with advantage locally, being supplemented in the case of colubrine poisoning by antivenene used intravenously, when it is available: in the case of viperine poisons by adrenal extract repeatedly injected subcutaneously. In the case of bites by the European adders the same local treatment should be used, and supplemented if symptoms of failing circulation ensued by adrenal extract.

References.

[1] *Proceedings of the Royal Society*, 1904. [2] Ibid., 1903. [3] *Lancet*, February 6th, 1904. [4] *Philosophical Transactions of the Royal Society*, 1904.

RECOVERY FROM LIVER ABSCESS, FOLLOWED BY ABSCESS OF THE UPPER LOBE OF THE RIGHT LUNG AND EMPYEMA.

By James Cantlie, M.B., F.R.C.S.,

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The specimen I show you is a vertical section through the right lung, diaphragm, and liver of a patient who was admitted to the Seamen's Hospital, Albert Docks, under Sir Patrick Manson.

The man, aged 26, had been in India seven years. He had lived in Cawnpore chiefly, where he had several attacks of malarial fever, and when in Assam, in 1899, had dysentery. In October, 1903, he developed signs and symptoms of liver abscess. The abscess was incised and

drained, and he did well until on the way home, in April, 1904, when the "liver" symptoms seemed to recur.

On admission to the Seamen's Hospital on May 20th, 1904, he was suffering from fever, cough with expectoration of pus, night sweating, and leucocytosis. The liver was not tender, there was no enlargement downwards, but the upper limit of liver dullness was merged with an impaired area of dullness over a region of the chest corresponding exactly with the lower lobe of the right lung—a frequent occurrence in liver abscess.

On May 25th the liver was thoroughly explored for pus, but no pus was found. Dr. Alexander Crombie, who was acting for Sir Patrick Manson, found pus on the following day in the pleural cavity. On May 27th the pus was reached by a trocar and cannula, and drained by siphon drainage. The pus that escaped looked and smelled like liver pus, and there were no organisms found present in the pus. The drainage served well, but the patient did not do well. On May 30th, and again on June 9th, pieces of rib were removed so that the hand could be easily introduced, and the parts thoroughly examined by the electric lamp. The pus could be seen coming from the upper part of the cavity; the lower lobe of the right lung and the liver were again explored for pus, but none was found. The lower lobe of the right lung expanded well during inspiration. The man gradually sank and died on July 11th.

The *post-mortem* examination showed the healed scar of a liver abscess on the upper surface of the liver, 2 in. in front of the coronary ligament of the liver, proving that this was not a suprahepatic abscess (in suprahepatic abscess the pus occurs between the layers of the coronary ligament), but merely an intrahepatic abscess that had found its way upwards. The scar was adherent to the diaphragm below, and the base of the right lung was adherent to the diaphragm, but there was no pus in this region. The seat of the trouble was found to be in the upper lobe of the right lung, where an abscess had penetrated into a bronchus and ruptured also into the pleural cavity, causing empyema.

Remarks.

1. Abscess in the lower lobe of the right lung is a very common concomitant of, or sequence to, liver abscess. In the present case the abscess was in the upper right lobe, between which and the old liver abscess there was no continuity of tissue.

2. The abscess in the lung was evidently embolic in origin, the embolus travelling by way of the hepatic vein, heart, and pulmonary artery to the upper lobe of the right lung.

3. In the British Medical Journal I reported a case of liver abscess, followed three weeks after operation by an embolism in the ophthalmic vein of the right eye, which led to loss of vision and necessitated removal of the eyeball.

4. Had the seat of mischief been accurately ascertainable in the present case to have been in the upper lobe, and seeing that the lower lobe of the right lung was also collapsed, the proper surgical procedure would have been ligature of the root of the lung and removal of the whole organ.

INFECTIOUS JAUNDICE.

By F. M. Sandwith, M.D., F.R.C.P.,

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I think the chief reason why the compliment was paid of inviting me to read a paper on this subject, is that I published in January last a description of it in the *Journal of Tropical Medicine*. As there may be some members present who have not had to pay especial attention to this disease, it will perhaps be convenient if I give a very brief account of it.

Definition.—An acute infectious disease, sometimes becoming epidemic during the summer months, characterized by fever, jaundice, enlarged liver and spleen, nephritis, and some nervous symptoms. The disease is not contagious, but one attack seems to confer immunity.

Distribution.—In Smyrna it has apparently been endemic since 1837, and in Alexandria certainly since 1870 and perhaps longer. In 1886, during four months, 185 cases were reported from Nauplia in Greece in the same year. Professor Weil, of Heidelberg, published four cases of acute infectious jaundice with swelling of spleen and nephritis, and since then several similar cases have been recorded from Germany. There have been small epidemics in England, the United States, and China, and doubtful cases in several towns in Egypt, Greece, Turkey, Syria, Dalmatia, Malta, and the Ionian Islands. The malady probably exists in India and other tropical countries, though masked under other headings.

Causes.—Men chiefly between the ages of 20 and 30 are most affected, during the months between April and October. In addition to the natives of a region, the Greeks seem to be more predisposed to this disease than other Europeans. It is not entirely confined to the poorest classes, for many cases during epidemics have been seen among bankers, lawyers, merchants, and doctors, in addition to tradesmen. But there can be no doubt that it is a filth disease, engendered by contamination with sewage and putrid meat.

In Alexandria it has become more common since the introduction of a bad system of imperfect drainage, and the bulk of the patients come from the lowest parts of the town, where the drainage is worst, and where the sewers empty into the sea; yet the suburbs of the town, which are not drained at all, are apparently unaffected. Again, at Smyrna, the disease only prevails in the most dependent parts of the town, where the sewers join the sea, and at Nauplia it has disappeared since iron drain pipes have superseded badly jointed stone conduits. In Germany men have caught it after bathing in a river contaminated by sewage, or after eating tainted meat.

No microbe has as yet been discovered, and there is as yet no evidence that the disease is insect borne, though analogy points very strongly towards this. The *Stegomyia fasciata* (the transmitter of yellow fever) and the *Culex fatigans* are both common house mosquitos in the towns affected; but whereas the *Stegomyia* breeds in casual water in or near house, such as that in tins, washtubs, etc., and is not found in cesspools, the *Culex* seems to prefer foul water like the contents of cesspools, and cannot be bred in clean water in a laboratory. If, therefore, one of these two mosquitos is to be suspected, the *Culex fatigans* is the more likely to be the transmitter. I should very much like to see the experiment tried in an infected port of killing off all the mosquitos, and seeing whether the disease would then not cease to be endemic, but it must always be remembered that there are other insects besides mosquitos which are capable of transmitting disease, such as flies, by means of food, to the alimentary canal.

The *Symptoms* may be divided into three stages: (1) primary fever, lasting from three to five days; (2) jaundice, about seven to nine days; (3) secondary fever, also lasting from seven to nine days, making a total duration of about three weeks. After incubation of only one or two days there is usually a sudden onset with a distinct rigor, the temperature rising to anything between 102° and 104°, together with general pains and vomiting. About the third or fourth day the jaundice begins with marked enlargement and tenderness of the liver, enlargement of the spleen, and albuminuria, after which the fever usually subsides. The jaundice and other symptoms then gradually disappear, but in about three-fourths of the cases there is a secondary attack of fever, and convalescence is in all cases very slow. The accompanying temperature chart from one of Dr. Valassopoulo's cases in the Greek Hospital of Alexandria shows the course of the disease.

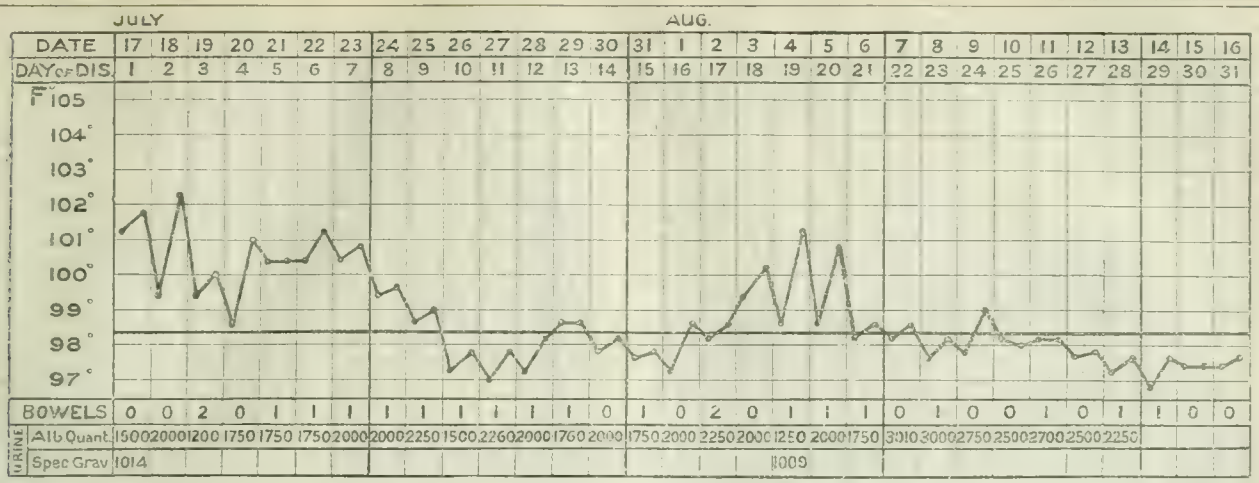
At the beginning of the fever the pulse may be 100 to 120, but, as in other cases of jaundice, the rate may fall to 60, until the third week, when it rises again to 100.

The nervous symptoms are chiefly headache, giddiness, and sleeplessness, which usher in the fever and disappear with it. Delirium at night is not uncommon at the beginning, while bad cases develop somnolence, prostration, hiccough, weakness of sphincters, lividity of face, dry brown tongue, and muscular twitchings—in fact, the "typhoid state." Muscular pains, especially at the nape of the neck and in the calves of the legs, are intense during the first stage of the disease, and are greatly increased by pressure, forming a useful diagnostic sign.

Patients usually complain of epigastric pain, which can be traced to the liver; nausea and bilious vomiting occur in the first stage, and constipation as a rule, but in some very severe cases there is diarrhoea. The stools are of normal colour, until they become clay-coloured or white during the jaundice stage. Jaundice usually begins on the fourth or fifth day, but in rare cases it may be seen on the third day, or may be delayed until the sixth or seventh day of the disease. Some very slight cases, however, show little or no jaundice, and bile pigment cannot be found in the urine. In most mild cases jaundice disappears at the beginning of convalescence, but in those who have been very deeply jaundiced the skin does not regain its normal tint for a month.

Epistaxis is the earliest and most frequent form of haemorrhage; it occurs at the end of the first stage, and may be seriously profuse. After epistaxis, intestinal haemorrhage during the second stage is the most likely to occur; haematemesis is only seen in 2 per cent. of the Alexandria cases, and haematuria is quite rare, but bloody sputa, haemorrhage from the gums, and petechiae on the skin are often seen.

The changes in the urine in this disease are so remarkable that one sometimes wonders if the kidneys do not contain the solution of the problem. During the first stage, the urine, which is acid throughout, becomes scanty and of high colour,



with diminished urea, and a trace of albumen is nearly always present. During the second stage and more markedly in the severe cases, all these changes are exaggerated. The urine diminishes in quantity, until only 2 oz. or 3 oz. are passed in the twenty-four hours, the colour becomes gradually greenish, bile pigment is seen, more albumen is present, and blood casts may be revealed by the microscope. In some of the fatal cases no urine at all is passed for a couple of days, and the patient dies of uraemia. But in favourable circumstances a urinary crisis takes place between the seventh and ninth days, polyuria takes the place of almost complete suppression, so that patients have been known on the second day of this crisis to pass urine varying in quantity from 3 to 12 pints in the twenty-four hours, while the specific gravity falls from 1,022 to 1,005. The albumen is lessened, and the quantity of urea increased from perhaps ½ oz. to 2 oz. during the day. This polyuria is sometimes continued during the third stage of secondary fever. Leucin and tyrosin are usually absent.

The liver and spleen are swollen and tender from the beginning, and can generally be felt below the ribs, but during convalescence they gradually regain their normal state.

Mortality.—An analysis of 300 cases admitted into the Greek Hospital in Alexandria gives an average death-rate of 32 per cent., though the mortality of any one year may vary from 10 per cent. to 60 per cent. The epidemic at Nauplia gave a mortality of 25 per cent. All the deaths occur above the age of 20, and are most common in those above 40 years of age.

Morbid Anatomy.—Corpses usually show well-marked rigor mortis; the skin and mucous membranes are jaundiced, and there are often petechiae on the skin of the trunk and the limbs; while petechial haemorrhages, not unlike those of typhus, are variously distributed on the pericardium, endocardium, pleurae, and peritoneum. The liver is enlarged, and shows signs of fatty degeneration, the lobules are indistinct, the liver cells show cloudy swelling, and the portal canals are enlarged and infiltrated with lymphocytes. The gall-bladder is sometimes empty, sometimes full; but, when full, pressure cannot squeeze out the thick bile, though there is no visible obstruction. The spleen, in cases uncomplicated by malaria, is only slightly enlarged. The stomach shows capillary haemorrhages in the mucous membrane, and there are sometimes ecchymoses in the ileum and colon. The kidneys are the seat of similar haemorrhages, and are always enlarged, but the only microscopical change so far seen is a slight infiltration of lymphocytes round the glomeruli.

Diagnosis.—The disease has no connexion with either typhus or typhoid fever, though terms like "Typhus bilieux" are still employed by most foreign writers. They date back to half a century ago, when many fevers were classed together in a typhus group.

For many years infectious jaundice was confused with relapsing fever, but since the discovery (1872) of the *Spirochoete Obermeieri* the diagnosis is not difficult, for this organism is never present in infectious jaundice, though, if looked for at the proper time, it can invariably be found in the blood of relapsing fever patients. Both diseases are acute infections with jaundice, and both have recently occurred as epidemics in Alexandria; but it must be remembered that in relapsing fever the spleen is chiefly affected, while in infectious jaundice it is the liver which is enlarged, and suppression of urine and nephritis are also present.

The bilious remittent fevers of malarial countries must be differentiated by the presence of haematozoa in the blood. Acute yellow atrophy is sometimes difficult to exclude in sporadic cases, though in that disease careful clinical examination can generally find that the liver is gradually diminishing in size, and leucin and tyrosin should be present in the urine.

Yellow fever has never been found in Egypt, but it has been suggested that the infectious jaundice of Alexandria is a modified form of this scourge. Some of the reasons for not accepting this view are that in yellow fever there is distinct albuminuria in severe cases on the first day of the disease, and in all cases, except the slightest, there is albumen on the second or third day, whereas in infectious jaundice the kidney symptoms are secondary and the albumen is never excessive. The temperature charts do not betray any resemblance, and at *post-mortem* examinations the liver of infectious jaundice is not invariably yellow, as it is in yellow fever.

Are we justified in embracing under one heading the infectious jaundice which I have described from various parts of the Mediterranean, and the cases called "Weil's disease" reported from Germany and other parts of Northern Europe? I think everyone allows that all the symptoms are very similar, and in many cases of "Weil's disease" there is a secondary fever, but some critics object quite reasonably that "Weil's disease" represents a milder illness with less mortality, and although sometimes of local epidemicity, it never becomes endemic; also, that the spleen is more enlarged, and there is less fever than in infectious jaundice. Can these differences not be accounted for by variations in the climate, temperature, race and sanitary surroundings? If the two diseases are the same, the sooner we abolish the unsatisfactory title of "Weil's disease" the better for our nomenclature.

EPIDEMIC CATARRHAL JAUNDICE.

By S. Anderson, M.B., B.Sc.Glasg., Captain I.M.S.,
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In response to the request of the President of the Tropical Section, I wish to make a few remarks on that comparatively rare but interesting complaint known as "Weil's disease."

In a paper in the British Medical Journal for September, 1898, Colonel Crombie noted amongst the unclassed fevers of hot climates an outbreak occurring in the Central Provinces, reported by a native doctor as "yellow fever." Again, in the *Indian Medical Gazette* for November, 1903, I wrote an account of a similar epidemic in the Buxar Central Gaol; these two occasions are as far as is known the only ones on which this disease has been noticed in India.

From a perusal of the statement of cases given it will be noted that most of the prisoners attacked had suffered more or less from malarial fever at a period varying from one to two months previous to the attack of jaundice.

During the period from May 12th to June 1st there were in all some 16 cases, only 1 of which was fatal; at this time in Buxar the mean daily temperature was 92.3° F., the mean daily range of temperature was 25.2°; and on May 8th, 23rd,

and 24th the highest temperature—namely, 110.0° F.—observed during the month was recorded.

At first I regarded the cases as being of the simple catarrhal variety, which is common in Indian gaols, but these gradually increased in number, and the seemingly infectious nature of the complaint gradually impressed upon me the idea that it was epidemic in type and that I had to deal with a specific and separate disease.

On first detection those affected were not incapacitated from work, and the man who died continued to work as a barber up till two days before his death; some of the patients were seriously ill, but the majority were admitted to hospital after the weekly inspection parade, and it was thus ascertained that the period of incubation was six to seven days.

Most of the prisoners attacked were between the ages of 20 and 35; in almost all the onset was gradual, and in the more severe cases symptoms calling for treatment were only evident to the patient in from three to seven days after the commencement of the attack.

Most of the patients complained of weakness, loss of appetite, and general malaise: almost three-fourths of the cases suffered from fever, often ushered in with chilliness, giddiness, drowsiness, and headache, and followed by the usual concomitants of fever, such as quick pulse, furred tongue, thirst, and scanty, high-coloured urine. In some a feeling of abdominal distension almost amounting to pain was present, whilst others had attacks of vomiting; constipation was the rule, the motions at first being hard and clayey, but under treatment quickly became of a yellow colour. The fever persists from the beginning, the temperature rising to 100° or 101° F., and, as a rule, the icteric tint of the conjunctivae, which in the majority was a pale yellow or lemon colour, increases in depth immediately after the fever, a period varying from one to ten days after the commencement of the disease. The liver was tender but not enlarged, the spleen was not enlarged except in cases previously caused by malarial fever. The urine was usually scanty, high-coloured, contained no albumen, and by Gmelin's test gave the characteristic reaction of bile in each case. The pulse, at first quick, becomes slow, the deep yellow staining of the conjunctivae gradually fades, the urine increases, the stools become bile-coloured, and convalescence is soon established.

A microscopical examination of the blood of patients taken during the height of the attack did not show any leucocytosis nor malarial parasites; it may thus be inferred, that apart from malarial fever causing greater susceptibility to the disease, it had no direct causative relation to the jaundice.

There was one fatal case:

Bhabatosh Pramanik, who was admitted to hospital on May 23rd with the usual symptoms become unconscious at 2 p.m. on the 24th, and died the same evening. The *post-mortem* examination was performed by me the following morning, and revealed on section that all the organs, excepting the liver and duodenum, apart from being bile-stained, were healthy. The liver appeared to have lost its lobular arrangement, due to the amount of fatty degeneration which had taken place, and was only indicated here and there by the presence of inter-lobular vessels and ducts. The duodenum revealed two irregular inflammatory patches, measuring 3 in. by 2 in., situated in the long axis of the bowel above and below the entrance to the bile duct; these changes were probably secondary to the catarrhal condition of the liver. On section through the membranes of the brain an increase in the amount of cerebro-spinal fluid was noted, and the markedly congested state of the brain and its membranes indicated that meningitis had supervened and caused a fatal termination.

The occurrence of such an outbreak is interesting, in that the possibly infectious nature of the disease is in part demonstrated, since of the 16 cases 6 were admitted from ward No. 12, 4 from ward No. 4, and 4 from ward No. 3; this, however, appears to be doubtful, as the actual mode of propagation of the disease was not definitely ascertained.

Cases of Catarrhal Jaundice at Buxar Central Gaol in May, 1903.

Serial No.	Prisoner's No.	Name.	Age.	Date of Admission to Hospital.	Ward No.	Occupation.	Previous History.	Remarks
1	7657 A.	Ram Chariter Panday	20	May 12, 1903	12 (10)	Wall guard	Received from Buxar Sub-gaol in good health on October 2, 1902 Admitted for malarial fever on March 28, 1903, and again on April 11, 1903	Recovered.
2	7560 B.	Keolewar Gop	25	May 15, ,,	4 (19)	Water-carrier	Received from Bhagalpur in good health on August 29, 1902 Admitted April 7, 1903, for malarial fever	Recovered.
3	7037 B.	Balgobind Rai	25	May 15, ,,	12 (12)	Cook	Received from Chupra Gaol on April 21, 1903, in good health Admitted for malarial fever on March 18, 1903	Recovered.
4	7725 A.	Chotto Miah	38	May 16, ,,	3 (16)	Lamp-lighter	Received from Chupra Gaol on October 23, 1902, in good health Admitted for malarial fever on April 12, 1903	Recovered.
5	7446 B.	Khair Bux	40	June 17, ,,	3 (15)	Newar-making	Received from Bhagalpur on August 17, 1902, in good health Admitted for malarial fever on March 25, 1903, and on April 8, 1903	Recovered.
6	8222 A.	Bhabotosh Pramanik	24	May 23, ,,	12 (12)	Barber	Received from Bankura on April 7, 1903, in good health No previous admission	Died from meningitis.
7	7634 A.	Matabar Hazari	34	May 23, ,,	4 (18)	Wheat grinding	Received from Durbhunga in good health on September 24, 1902 Admitted for diarrhoea October 6, 1902 Admitted for malarial fever on April 28, 1903	Recovered.
8	8130 B.	Bhulatan Teli	24	May 24, ,,	40 (cells)	Dye-shop	Received from Daltonganj in bad health, due to enlargement of spleen. Diarrhoea, March 31, 1903	Recovered.
9	8131 B.	Sukhari Gariri	45	May 25, ,,	24	Lifting water	Received from Daltonganj in bad health with enlarged spleen	Was several times in hospital, and has been almost always in the convalescent gang.
10	6669 B.	Budhan Ahir	30	May 26, ,,	12 (4)	Tent-shop	Received in good health	Recovered.
11	6984 A.	Sukhi Barhi	20	May 31, ,,	4 (22)	Carpenter	Received from Arrah Gaol in good health on March 30, 1902	Recovered.
12	7452 B.	Gopal Kalwar	28	May 31, ,,	12 (8)	Convalescent gang	Received from Bhagalpur in good health on August 17, 1902	Four previous admissions for malarial fever. Recovered.
13	8185 B.	Mahomed Ali	30	May 31, ,,	12 (12)	Lifting water	Received from Bhagalpur in good health	Two previous admissions for malarial fever. Recovered.
14	8121 B.	Lakhan Bind	25	May 31, ,,	4 (22)	Mason	Received from Arrah Gaol in good health	Recovered.
15	7162 B.	Khoda Bux	40	May 31, ,,	3 (15)	Newar-making	Received in good health; under observation since May 24, 1903	Recovered.
16	7469 B.	Jherie Jurgha	30	June 1, ,,	3 (14)	Dye-shop	Received from Bhagalpur in good health on August 24, 1902 Admitted for malarial fever on September 14, 1902, and March 9, 1903.	Recovered.

In attempting to determine the etiological factors in this outbreak, the conditions of life under which the prisoners exist must be understood; these depend upon two factors—first, the labour on which the prisoners are employed, and, secondly, the barracks in which they sleep. Apart from these, there is a general similarity of vital conditions. The hours of work and rest are the same. The water supply for all is the same. The diet of all the prisoners is practically the same, and as the monotony of the food had perhaps a causative relation to the disease, I altered the scale on May 25th by substituting two chittacks of meat for one chittack of dal twice a week; this seems to have had a beneficial effect, as no more cases occurred after June 1st.

This type of jaundice does not appear to have any causative relation with employment, since the occupation of the affected prisoners was very various, and there is no reason to think that the habits of the affected people had any share in the causation.

Amongst the more recent contributions on the subject of the contagiosity of icterus, S. Costa, in the *Rev. de Méd.* of February 10th, 1904, relates the history of an epidemic of icterus, in which he is convinced that the disease spread by contact. The epidemic occurred in a battalion of infantry, consisting of six companies. In all, from July 7th to January 24th, 77 cases of jaundice of a type similar in all respects to that which occurred at Buxar, were treated. The troops were operating in a hilly country where malaria was unknown, and none of the civilian population were known to have suffered from jaundice. Cases occurred in all the companies, but the first was found in a company which did not traverse the scene of the manœuvres till a week after the man attacked had been sent to hospital. The two last patients were young soldiers who did not join the battalion till November after the manœuvres were over. They were not affected until twenty-four days after the case immediately preceding. At first the water supply of the main camp was suspected, and the men were provided with tea at meal times; this, however, did not check the epidemic. The six companies being engaged in manœuvres, were constantly being moved, and as each was moved near to a company already infected, the jaundice spread to it. Costa believes that this epidemic proves the contagiosity of jaundice.

In the Buxar outbreak, however, a close examination of all the associations and surroundings of the cases as they were admitted failed to discover anything pointing to direct contagion, and in no case were those in attendance on the sick attacked.

The type of the disease varies in different individuals, and is one of degree of severity rather than of kind. There is the case which cannot be distinguished from the type of jaundice of simple digestive origin, and the other a "fulminant" variety, where the virulence of the disease is such that complications supervene and death quickly ensues.

According to most writers the degree of the jaundice is determined by the differences in character of the poisons responsible for the production of the jaundice, and is proportioned to the degree of irritation and catarrh they set up in the smaller bile ducts in the course of their elimination by the bile.

Bile in itself is wonderfully innocuous. You must all be familiar with the case of chronic jaundice seen in the wards of a general hospital, where the bile in gradually-increasing quantity is distributed throughout the system, and when it is introduced in this manner the body becomes "tolerant"; but where, owing to the presence of the poison or toxin in the blood and the consequent catarrh in the bile ducts, there is a sudden outflow of bile into the system, "toleration" cannot be established, and death quickly results.

The actual nature of the jaundice in the outbreak was probably an "infective" one; the jaundice is catarrhal obstructive, but the obstruction is intrabiliary and not of duodenal origin. In all, whether mild or severe, the predominant feature is that of an infection, the disease always setting in with fever and its concomitants, marked constitutional disturbance, and running a more or less definite course.

JAUNDICE IN SOUTH AFRICA.

By H. B. Mathias, D.S.O.,
Major, Royal Army Medical Corps.

This disease, which was prevalent among the troops during the late war in South Africa, is a most interesting one, and, like enteric fever, appears to have been fairly general all over the country. The period of greatest incidence was during the autumn and winter months, from February to June. Some idea of its frequency is given by the following figures:

No. 19 General Hospital, Pretoria, Transvaal.—455 admissions, or 7.6 per cent. of all cases.

No. 17 General Hospital, Standerton, Natal.—571 cases, or 2.7 per cent. of all cases.

No. 19 Stationary Hospital, Harrismith, Orange River Colony.—495 cases, or 6 per cent. of all cases.

The total number of all cases during the campaign was 5,648; deaths not known.

Symptoms and Course.

The clinical picture varies according to the severity of the attack, some of the milder cases appearing to be merely the usual catarrhal jaundice, with little, if any, pyrexia or constitutional disturbance; whilst others of a more pronounced febrile type resemble on the one hand a severe case of catarrhal jaundice, and on the other a febrile form of gastro-intestinal disease that runs a course like an abortive attack of enteric fever. The symptoms in this latter class of cases occur as follows: The patient comes complaining of loss of appetite, nausea, vomiting, and general feeling of malaise, with severe pains in the back and legs, a history of either diarrhoea or constipation, and a coated tongue. The disease is ushered in by a distinct rigor, the temperature rising from 100° F. to 103° F. Great pain will then be complained of in the epigastrium and right hypochondrium, and on examination both liver and spleen will be found to be enlarged, the former markedly so; occasionally a pear-shaped tumour can be percussed out over the region of the gall bladder.

Jaundice usually makes its appearance between the third and sixth day of the disease: beginning in the conjunctivae (especially that part covered by the lower eyelid), it gradually spreads over the whole body. In some cases the jaundice is intense, the patient becoming a deep bronze colour, and this may persist for a month or even longer.

Temperature.—As stated above, the temperature at the onset is markedly raised to 103° F., or even higher, gradually coming down to normal in from eight to twelve days—sometimes the fall is more sudden—and a further rise of temperature a few days later may be noticed; whilst in other cases there is an irregular temperature for three weeks or more. During the jaundice stage the temperature frequently falls below normal, and remains so for several days, the thermometer registering from 96° F. to 97° F. I have the charts of about 30 cases, of which specimens are here given (page 676.)

Pulse.—The pulse rate is increased during the febrile stage, but during the jaundice stage it may fall to sixty or lower.

Stools.—The stools at first contain bile, and diarrhoea may be complained of; later constipation is the rule, and the motions are clay coloured or white.

Urine.—In mild cases the first thing that may attract the patient's notice is the high colour of his urine, later it becomes the colour of porter, thick and scanty, bile pigment is present. I was unable to find albumen in the urine in these cases, except in a few instances, and then only a small amount.

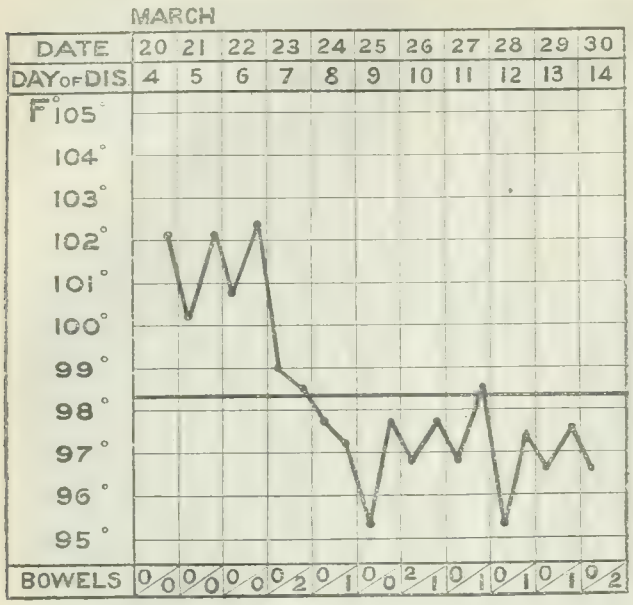
In no case that came under my notice was there suppression of urine.

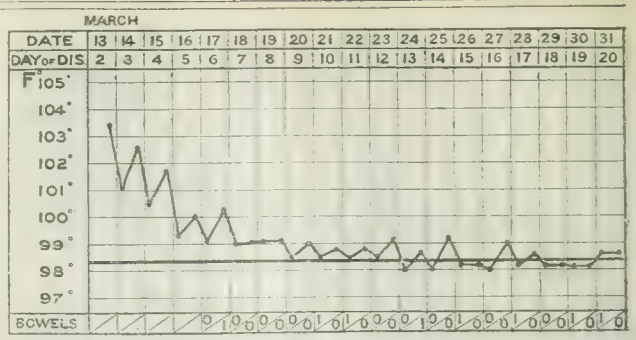
Skin.—Erythema and urticarial eruptions are fairly common phenomena.

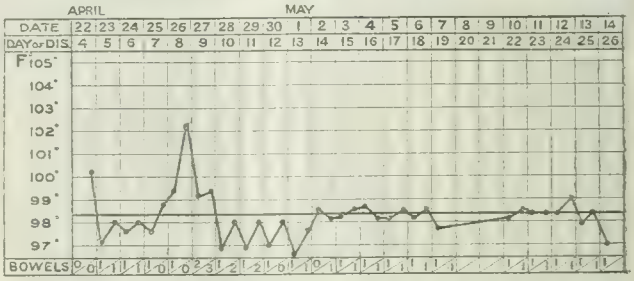
Sequelae.—Great debility and mental depression are well marked sequelae of this disease, and it was found necessary to send many of these cases to convalescent camps, or to the seaside for change of air, before they recovered sufficiently to return to duty.

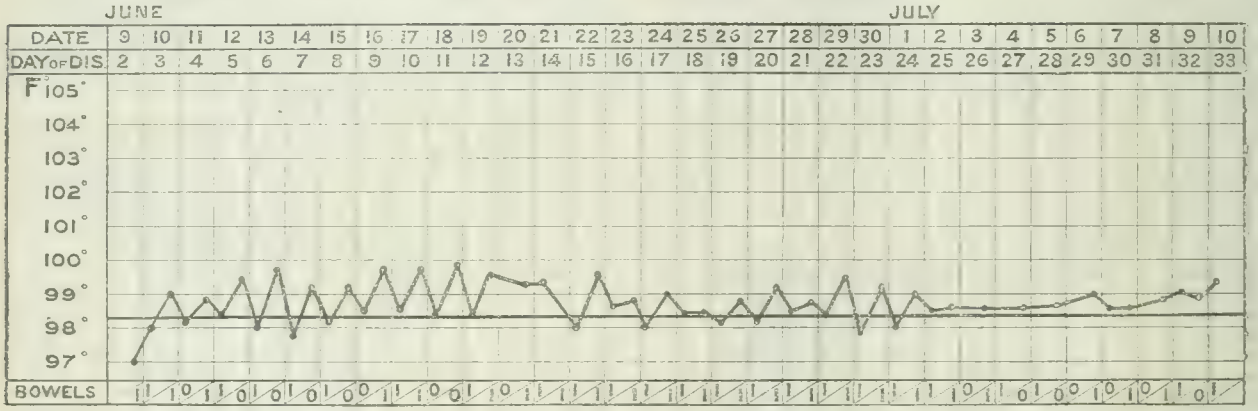
Deaths.—This was not a fatal disease. No deaths came under my notice (with one doubtful exception); I am therefore unable to give the results of *post-mortem* examinations. The exception was the case of a Kafir, admitted with jaundice, and who died the following day.

At the *post-mortem* examination, made a few hours after death, all the tissues and fluids of the body were bile stained, except the faeces, which were fetid and frothing. The gall bladder was distended to the size of a large pear, with clear, honey-like fluid. Mucous membrane normal; no gall stones; liver and spleen enlarged: the cellular tissue surrounding the hepatic ducts in the transverse fissure of the liver was oedematous and much swollen: there was no obvious inflammation of the ducts themselves. He had many healed and healing typhoid ulcers in his ileum, caecum, and ascending colon. Brain and all other organs healthy.









Nature of Disease.

The question naturally arises, What was the nature of this disease, and to what was its prevalence due? Was it merely the obstructive form of catarrhal jaundice due to chill, or irregularities of diet, the result of active service conditions? or was it a toxic form, of an infectious nature, due to the circulation of some poison in the portal system, and known under various names, such as "Weil's disease," "febrile jaundice," "infectious jaundice," etc.?

Whilst admitting that many of them appeared to be merely the ordinary cases of catarrhal icterus due to chill, or possibly to catarrh, extending from the stomach and duodenum, from dyspepsia, etc., and which readily yielded to treatment, there were others of a pronounced febrile type, with greater severity of symptoms, which could not be classed under this category, and which, in my opinion, were certainly a toxic form, due to a definite infection.

As to the exact causation of the disease, we are still more or less in the dark; it has been attributed by Jaegar and Banti in Germany to a "bacillus," "the bacillus proteus fluorescens," but this does not appear to have been confirmed by other observers. Weil himself seems to have been disposed to look on these cases as a modified enteric fever, whilst Chantemesse and other French physicians go still further and attribute all cases of febrile jaundice, from the mildest to the most acute yellow atrophy of the liver, to the presence of the typhoid bacillus in the portal system, and have named this disease "fièvre typhoide bilieuse."

All observers, however, are agreed that it is a filth disease, and exists only where insanitary conditions prevail, that it is especially prevalent in armies in the field and in standing camps, and my experience in South Africa certainly bears this out, a large proportion of the cases admitted to No. 19 Stationary Hospital, Harrismith, coming from a standing camp which was notoriously unhealthy, and where some of the worst cases of enteric fever I saw during the campaign were contracted.

Dr. F. M. Sandwith, of Cairo, in a valuable paper on Weil's Disease, instances an outbreak which came under his notice during the Russo-Turkish war in a camp with insanitary surroundings.

A medical man who had been in practice in Harrismith for ten years before the war assured me that jaundice was by no means a common complaint there in ordinary times, and that he only remembered seeing a few mild cases. And in a letter just received from the medical officer at Harrismith I am informed that jaundice has quite died out in epidemic form there, and that there have been less than half a dozen cases in the past eighteen months.

We know that jaundice is a rare complication of enteric fever. From a large number of statistics on the subject collected by various observers in different countries, it seems to vary between 5 per cent. and 7 per cent., a wide range; but Dr. Ogilvie, in a paper in the British Medical Journal, has pointed out that probably the true percentage in temperate climates is a little more than 1 per cent. and less than 1½ per cent.

At Mooi River Hospital, with 1,337 admissions for enteric fever, there were 13 cases complicated by jaundice, or about 1 per cent., and our returns at Harrismith gave about the same percentage. The blood in these cases of febrile jaundice was frequently examined during the course of the disease, but at no time could anything abnormal be discovered, and "Widal" gave a negative result, although a positive one was obtained in typical cases of enteric with jaundice as a complication. Colonel Birt, R.A.M.C., now at Pretoria, informs me that they do not react to B. coli or paracoli.

In South Africa it was remarkable how these cases of febrile jaundice made their appearance each year, at the commencement of the autumn, when enteric fever had reached its maximum, and was on the decline; and, reading the history of past epidemics, one cannot help being struck by the frequency with which these cases of febrile jaundice have followed outbreaks of enteric fever. I conclude by here quoting two or three instances:

1. A most interesting report by Dr. Ord on an outbreak that occurred at Rotherham, Yorkshire, in the autumn and winter of 1862, appears to be very much to the point. Part of it runs as follows:

Scarcely had the late fatal epidemic (enteric fever) subsided ere another less fatal, but as widely spread, has taken its place. In November, 1862, several persons were attacked with jaundice: 150 persons are now suffering from it. None of those attacked by the last fever are suffering from the present epidemic.

A further reference to the same outbreak is to be found in the sixth report by medical officer to Privy Council, from which the following passage is a quotation:

Fever and Jaundice at Rotherham, by Dr. Ord.

February 26th, 1863.—It appears that about 200 cases of jaundice in all have come under treatment, but there are at least 100 more for which medical help was not sought.

Symptoms.—The attack usually commences with disordered digestion, flatulence, loss of appetite, nausea, or vomiting. These symptoms are often introduced by shiverings, and are always accompanied by languor and depression; at the same time pain is felt in the epigastrium, together with the feeling of fullness and distension, and with distinct tenderness. Jaundice appears in from two days to a fortnight. In mild cases the first thing noticed is the colour of the urine. There were 8 cases of abortion in pregnant women. Its occurrence shortly after an outbreak of enteric fever is a fact of great interest, though there is no evidence to connect the two epidemics. The defective sanitary state of the town, defective water supply, foul state of privies, and neglect of scavenging are conditions which at all times impair the health of the population and foster epidemic diseases.

May 1st, 1863.—No change in the nature of the symptoms is reported, but I have to add to the enumeration of my former report the fact that in most cases a certain amount of febrility is noticed during the first few days of the attack.

2. M. Martin, a French army surgeon, gives an account of epidemic jaundice among artillery and volunteers of the French army stationed at Pavia during the Italian war, commenced in the autumn after an outbreak of fever, presumably enteric; 71 cases out of 1,022 men. *Symptoms.*—Increase in size of liver and spleen, great pain in epigastrium. No fatal cases.

3. Surgeon-Major Giraud, in his report on the diseases of the Zulu war, at Port Chelmsford, after describing the fevers that were prevalent there, which from his description, and also from a report by Surgeon-Major Hodgson, were evidently enteric fever, says:

"About the middle of May, a change in the type of fever began to be observed, and, at the same time, cases of jaundice became numerous. The disease with which we now had to deal was undoubtedly remittent fever, or, as it has been called, 'typhoid malarial,' of all degrees of severity; some very slight, passing off in a few days, others were of extreme severity, with high fever and delirium, which left the patient extremely prostrate. In the very great majority of these cases the patient was more or less jaundiced, in the early stages of all there was hepatic congestion and gastric irritability. In some cases there was diarrhœa, in others constipation, and this seemed to depend on the amount of jaundice. In those cases where diarrhœa was a symptom the stools were not those of enteric fever. The urine in most of the cases was very high coloured, sometimes as dark as strong tea or coffee. The fever ranged high, 103°, but did not follow the course of enteric fever, and in all except the most severe cases there were distinct remissions."

I think it is extremely probable from this description that many of them were cases of "febrile jaundice" and similar to those so common during the late war. "It seems to me, therefore, that there is a distinct form of epidemic jaundice with symptoms as above noted, that at times follows outbreaks of enteric fever, and that it is to this form rather than to true 'Weil's disease' as described in textbooks that the cases in South Africa belonged."

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Lieutenant-Colonel Kenneth McLeod, M.D., remarked that enteric fever was a rare disease in India, and the connexion between epidemic jaundice and enteric would seem to be negatived by the fact, inasmuch as epidemic jaundice occurred in India not infrequently. In the Island of Lewis, on the West Coast of Scotland, he remembered when a lad, seeing an epidemic of jaundice which attacked young and old. It was evident, therefore, that epidemic jaundice was in no sense a tropical ailment.

Dr. M. A. Ruffer (Ramleh, Egypt) remarked that the bilious typhoid met with in Alexandria seemed more nearly allied to yellow fever than to Weil's disease. Weil's disease developed slowly, bilious typhoid quite suddenly in a few minutes, the patient becoming seriously ill. In Weil's disease also the mortality was persistently low, some 2 per cent. only, whereas in bilious typhoid 20 or 30 per cent. was the rule, but a death-rate of even 82 per cent. had been recorded. In their morbid anatomy also there were marked differences, the kidney lesions in bilious typhoid being much more pronounced than usually stated to be. Fatty degeneration of the kidney being especially obvious, resembling the condition met with in yellow fever. Effusion around the hepatic veins was also a characteristic lesion, and emboli of hepatic cells apparently found their way into the hepatic vessels and so got disseminated. No bacterium had been found in bilious typhoid, and inoculation of animals with the blood from these cases had produced any nocuous effect upon animals.

Major Andrew Buchanan, I.M.S., said that about five years ago there was an epidemic of jaundice in the Nagpur Central Gaol; and at one time there were 150 cases in hospital. He had written a report on the epidemic at the time. All the cases, except one that died, were mild—the temperature was raised a degree or two for only one day. The symptoms were those of ordinary jaundice; the average loss in weight of those who were attacked was 5 lbs. He thought the disease was produced by some microbe, but it was not possible to exclude food as a cause. With regard to the question of a possible connexion between this disease and enteric fever, there had been a number of cases of enteric fever in native prisoners in the same gaol, and he had frequently reported and shown *post-mortem* specimens which placed it beyond doubt that natives did suffer from enteric, though it must be admitted that they were comparatively immune. He had heard of a similar outbreak that had occurred about twenty years before in another gaol, and he had noticed that several small epidemics had been reported in the British Medical Journal. One of his cases had died, but at the necropsy nothing of a characteristic nature was discovered except the intense yellow colour in all organs.

EVANESCENT SUBCUTANEOUS NODULES ACCOMPANIED BY ERUPTIVE FEVER IN A PATIENT FROM SOUTHERN INDIA.

By James Cantlie, M.B., F.R.C.S.

Surgeon, Seamen's Hospital Society, London; Lecturer on Surgery, London School of Tropical Medicine.

During the month of June, 1904, R. H. Bremridge, M.D.Oxon., drew my attention to the case of a man with peculiar subcutaneous nodules, who had just returned from the Kolar Goldfields, Mysore State, Southern India. The patient stated that for many months he had found several nodules about the size of No. 6 shot beneath his skin. Each nodule as it appeared was accompanied by a slight increase in temperature, and caused some slight irritation and local redness. The nodule lasted some three weeks in all, at the end of which time all local traces disappeared. The patient stated he had found the nodules in the upper and lower limbs, but when I saw him there were but three, situated all on the left lower extremity. One was situated 4 in. below the left anterior inferior iliac spine; a second in the inner aspect of the leg, half-way down; a third 3 in. above the ankle on the outer side of the anterior aspect of the leg. There was some redness about two-thirds of an inch in diameter around two of the nodules. The skin was slightly adherent to the nodules, which, however, moved freely of the deeper tissues.

The possibility of the nodules being of filarial origin was disposed of by the absence of filarial embryos from the blood when examination was made late at night; and Dr. G. C. Low, who examined one of the nodules, said no worm was discoverable either the naked eye or microscopically.

The sections of the tumour shown under the microscope were made by Dr. Low. In one part of the field of each

section a newly-formed connective tissue, embryonic in nature, is to be seen, with a number of dilated lymphatics or lymphatic spaces in the centre.

I have never heard or read of an ailment of this description, except a series of 6 cases described by Surgeon A. J. Wildey, R.N., in the *Transactions of the Hong Kong Medical Society*, vol. i, 1889, published by Messrs. Kelly and Walsh, of Kong Kong. In this volume Surgeon Wildey, in a paper entitled "On Some Cases of Lymphatic Obstruction occurring among the Detachment of Royal Marines at Port Hamilton, Corea," described very similar conditions, but the nodules in his cases were, perhaps, larger, and the lymphatic streaks more pronounced. As in the cases referred to by Surgeon Wildey, so in my case I am convinced that the disease was an evanescent obstruction of the lymphatics in the limbs.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

AN UMBILICAL FISTULA.

THE following case of an umbilical faecal fistula, spontaneously cured, was observed in my hospital last year.

R. V. B., aged 45, a male Mohammedan, came with a fluctuating tumour at the umbilicus. The latter had bulged out to a distance of 1½ in. in front of the abdominal wall. It had a small opening surrounded by exuberant granulations. On gentle pressure a drop of purulent discharge escaped from the opening.

Since the umbilicus is not a common seat of an abscess I suspected something unusual in the case, and under chloroform cautiously opened the abscess on a director. A large quantity of pus was washed out, and three solid masses were found free on the floor of the cavity. These solid masses on examination under the microscope proved to be faecal matter, and it was evident that they had escaped from a faecal fistula which had subsequently closed.

On inquiry the patient told us that the abscess was of a month's duration, and that previous to its occurrence he experienced not the slightest trouble or inconvenience. The abscess cavity has now healed and the patient has completely recovered.

Considering the usual danger of perforation of the small intestine, the operation, and the amount of after-care it requires, one cannot help wondering at the quiet and effective cure Nature at times brings about.

G. R. TAMBE,
State Surgeon, Indore, Central India.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

ULSTER BRANCH.—At the last meeting of this Branch, Dr. THOMAS MCLAUGHLIN, President, in the chair, Professor BYERS gave an account of a large fibro-cystic tumour of the uterus which he had recently removed which exhibited areas of secondary degeneration (myxomatous, suppurative, and sarcomatous). Professor Byers also showed a solid tumour of the ovary (sarcoma) which was associated with ascites and pleural effusion, and mentioned that Mr. Lawson Tait's dictum was that in a case of pleuro-peritoneal effusion an exploratory abdominal section should be done, as cases clinically malignant sometimes were shown by direct examination of the parts after the peritoneum had been opened to be capable of removal. Professor Byers pointed out that a great deal needed to be done in reference to the pathology of so-called sarcomatous ovarian tumours, and said that this case afforded support to the views put forward by Dr. Cullingworth in the Ingleby Lectures for 1904 (A Plea for Exploration in Suspected Malignant Diseases of the Ovary, with Illustrative Cases). Professor Byers also showed a placenta from a case of a normal full-term child. Incorporated with the placenta was an arrested fetus whose cord was attached to an abnormal (necrotic) portion of the placenta. Photographs of the specimen were shown taken by a vertically-placed camera.—Professor LORRAIN SMITH gave a demonstration with explanations of the microscopic characters of all the specimens.—Dr. JOHN MCCAW (Belfast) gave a short account of a case of triplets he had attended and showed the placenta.—Mr. A. B. MITCHELL showed (1) a series of six prostates removed by Freyer's method; (2) a patient wearing a Symonds's tube for stricture of the oesophagus; and (3) a child operated on for hare lip and cleft palate.—Dr. HOWARD SINCLAIR (Rostrevor) read a paper on the consumptive poor.

REVIEWS.

OPHTHALMOLOGY.

IN his book on the examination of the functions of the eye,[1] Professor SCHWARZ has made a sound and very solid contribution to the literature of clinical diagnosis. Although the work has many neurological bearings, yet they are quite overshadowed by the ophthalmological interest. It may be said at once that it seems to be intended for specialists in ophthalmology, and for them nothing could be better adapted, but for the neurologist who wants as much help as he can get from ophthalmology it would probably prove not nearly so helpful as some others, for instance, that by Max Knies. Dr. Schwarz begins with seventy-four pages of pure physics which include more trigonometry and algebra as applied to optics than the average medical man, to say nothing of the average ophthalmologist, would be inclined to face by the time he needs suggestions on the methods of investigating the different functions of the living eye. Immediately following this is an elaborate disquisition on visual acuity and the methods of estimating it: then a dissertation on defects of accommodation, with more mathematics. The treatment of the subject of the light sense and colour vision will appeal to the physiologist, as well as to the ophthalmologist, and the sections on visual fields, mind blindness, pupil changes, binocular vision, and diplopia are exhaustive; but the section on the diagnostic significance of eye changes is scanty, almost bald in its statements, and withal rather too dogmatic. Methods are given for estimating the different ocular defects quantitatively as well as qualitatively. The style of the book for the English reader is good; the German is transparent, and the arrangement is methodical and rational, but the book is truly a portentous aggregation of facts which, while doubtless of importance to the specialist, is likely to overpower by its mass the ordinary man.

Dr. WEBSTER FOX (Philadelphia) has added to the long list of textbooks of ophthalmology by the production of an attractive-looking volume, *Diseases of the Eye*.[2] In arrangement it is, however, somewhat different from the usual books of this nature in that the different structures of the eye are discussed in order from without in, thus we get refraction quite at the end. The author is so well known as an advocate of the use of large probes in the treatment of obstruction of the nasal duct that we are not surprised to find them strongly recommended here: in fact, he prefers to dilate the duct to a sufficient degree to allow the patient to be able to force air through the slit canaliculus. He is also an advocate of the use of the keratome in making the incision in iridectomy for glaucoma. In discussing colour vision the theories of Helmholtz and of Herring are given, but we find no mention of the important work of Edridge Green on the subject. There is an appendix giving directions for the management of operations, together with numerous illustrations of instruments. At the end is a somewhat abridged pharmacopoeia and a list of terms used in ophthalmology with their meanings. The book is profusely illustrated.

The Refraction and Motility of the Eye,[3] by Dr. W. N. SUTER, of Washington, is divided into four parts. Part I describes the theory of refraction. Part II deals with the normal eye. Part III gives a detailed description of the errors of refrac-

[1] *Die Funktionsprüfung des Auges und ihre verwertung für die Allgemeine diagnostik.* Von Professor O Schwarz, of Leipzig. Berlin: S. Karger; and London: Williams and Norgate. 1904. (Demy 8vo, pp. 322. M. 7.)

[2] *Diseases of the Eye.* By L. Webster Fox, A.M., M.D., Philadelphia. London: Sidney Appleton. 1904 (Demy 8vo, pp. 624: 300 illustrations. 18s.)

[3] *The Refraction and Motility of the Eye.* For Students and Practitioners. By William Norwood Suter, M.D., Washington. London: Sidney Appleton. 1904. (Crown 8vo, pp. 390; 105 illustrations. 9s.)

tion, and Part IV with the disorders of mobility of the eye. Thus it is seen that the book is comprehensive and includes all that can be wanted in this subject in a general way by ophthalmic surgeons. It treats far more fully of the subject than the ordinary textbook, though it is by no means needlessly hampered with long mathematical formulae. There are 101 engravings and four plates in colours and monochrome, and these are excellent, and show very well the points they are intended to illustrate. The book may be strongly recommended, for, although it may contain little that cannot be found in the ordinary books, yet it is concise and well written, and will prove a useful work for students and practitioners.

The Eye, its Refraction and Diseases,[4] by EDWARD E. GIBBONS, of Baltimore, is a formidable-looking volume, consisting of over 460 pages, but with rather a misleading title, for in it the diseases of the eye are not described, but simply the errors of refraction and muscular anomalies. It is divided into twenty-eight chapters and contains all that would be required in order to teach any one the theory of refraction. "The author feels that the new material and diagrams the work contains justifies its publication, so offers no apology for adding one more to the numerous books upon the same subject." It is handsomely got up and goes into the subject very fully. It will doubtlessly prove popular, and should readily take its place with the numerous other first-class books of a similar nature that have preceded it.

Yet another addition to the formidable array of books on refraction is *Elementary Lectures on Errors of Refraction and their Correction*,[5] by Mr. HAROLD B. GRIMSDALE. It includes just what would be required by the student for examination purposes, and should form a good guide for him when in practice. There is, of course, nothing new in such a work as this, and it seems not a little astonishing that book after book should be written all covering the same ground; presumably, however, the demand equals the supply. The present work is reliable, and is well suited to the purpose for which it is intended.

NEUROLOGY.

DR. ALLEN STARR has laid the whole profession of medicine under obligation by the publication of his book entitled *Organic Nervous Diseases*[6]. It would be difficult to speak too highly of it from any point of view; its chief value, however, is that it is a reflex of his own neurological faith. As the preface states, "While the extensive literature of neurology has been carefully sifted, its facts collated, and its theories considered, the author has utilized personal observation and experience in the presentation of each subject." Taking this as a standard we have no hesitation it saying that the book is a success. It is impossible to do more in the compass of a short review than pick out one or two matters for special comment and to give the impression produced by a careful study of the work as a whole. In general, then, the matter is well balanced, clear, and interesting much beyond the ordinary. Its account of the normal function and structure of the nervous system is sound, short, and to the point; its pathology is illuminating; and its morbid anatomy, illustrated by well-reproduced photographs of macroscopical specimens and coloured drawings of microscopical preparations (for which all neurological literature is laid under levy), is wonderfully helpful in conjunction with the rest in helping one to visualize a subtle morbid process; its symptomatology is illustrated by well-chosen clinical cases on which wise comments are made, point by point; its diagnosis is good, although perhaps a little discursive; and its treatment is, for a neurological work, quite unusually fresh and detailed in its instructions. While speaking in these terms of praise of the book generally, one or two adverse criticisms may be permitted. Figure 20 of the hand and forearm, showing dropped wrist, is in an impossible position, inasmuch as the palm of the hand is facing directly upwards; this, we are sure, is due to a printer's error, and the picture merely needs rotating 90°.

Dr. Starr says that multiple sclerosis is a very rare affection, and he bases this statement on the fact that he has recognized it only twenty-seven times in over 10,000 cases. The statement as a dogma British experience alone would probably suffice to refute. The section dealing with syphilis of the nervous system is meagre. The especially excellent parts, on the other hand, are the sections dealing with vascular lesions of the brain and cord, both acute and chronic, and those discussing in a masterly way tumours of the same.

In *Die Progressive Myoklonus-Epilepsie*[7] Dr. HERMAN LUNDBORG, of Upsala, has published a monograph on a nervous disease of some rarity, 51 cases alone having previously been recorded, and, curiously enough, not one of these from a British source, although instances of the disease have been met with in this country and have indeed been brought before the Neurological Society. The irregular clonic muscular contractions of the disease were first described by Friedreich in 1881 under the name of "paramyoclonus multiplex," but it was not until 1891 that Unverricht first pointed out the occurrence of a similar myoclonus in combination with epilepsy as a familial disease. Dr. Lundborg has met with some 17 cases of the symptom-complex in 9 branches of one Swedish family, and in making an exhaustive record of these he has taken the opportunity of collecting and making comments on all the cases previously published. If he has not advanced our knowledge of the condition he has at least systematized it in a useful manner. Not the least interesting parts of his monograph are the genealogical trees of his own cases which show, among other things, that in one branch of the main family, one which exhibited 5 cases of myoclonus, there were no less than 5 cases of paralysis agitans, and in several of the branches there were cases of pure epilepsy. In regard to pathology and treatment, Wagner described similar clonic spasms in animals after thyroidectomy. Dana recorded a case of myoclonus that began after an operation on the thyroid gland for abscess, and one case of the disease is said to have been cured by thyroidin. Although the author leans to a possible pathology of parathyroid insufficiency, he yet failed to get any appreciable improvement by thyroid medication, as had been the experience of Oppenheim before him. The monograph is a careful piece of work, and, apart from the record of the new cases, for which alone it would be welcome, it is of value in formulating the present position of neurology in respect of a mysterious disease having wide and intricate connexions with other forms of so-called functional nervous disorders.

From the last volume of Dr. BOURNEVILLE'S *Recherches Cliniques*[8] we learn that on January 1st, 1902, there were in the Bicêtre 438 children; during the year 90 were admitted, 21 died, and 69 were discharged, so that the number under treatment on December 31st remained the same. Many of the children had much improved under the medico-pedagogic treatment to which they had been subjected, and illustrative cases are related. In order to ameliorate the pronunciation of the children and to develop their speech, twenty of the instructors had been sent to the National Institution for Deaf-Mutes, and the result has proved most successful. Instruction is given in brushmaking, basketmaking, tailoring, carpentering, blacksmith work, shoemaking, and printing, and the total amount of work produced in the workshops is reported. At the Fondation Vallée, where there is the same system of instruction as at the Bicêtre, there were 216 inmates on January 1st, 1902. During the year 47 were admitted, 12 died, 9 were discharged, and 19 were transferred to Villejuif and the Salpêtrière, leaving on December 31st 222 in residence. Dr. Bourneville's attempt for the last ten years to obtain special classes for weak-minded children, such as we have in England, has not proved successful, but it is to be hoped that he will be more fortunate at no distant date. Of the twenty-four articles on the clinical history, therapeutics, and pathological anatomy of idiocy, only the most important can be noticed. In two of these the Mongolian type of idiocy is described, and in one details of the histological examination of two brains of Mongolian idiots are given. In these the tangential fibres were inferior in number, and so were the radial fibres.

[4] *The Eye, its Refraction and Diseases.* The Refraction and Functional Testing of the Eye, complete in itself. By Edward E. Gibbons, M.D. London: Macmillan and Co. 1904. (Demy 8vo, pp. 482. 21s.)

[5] *Elementary Lectures on Errors of Refraction and their Correction.* By Harold B. Grimsdale, M.B., B.C.Cantab., F.R.C.S., Assistant Ophthalmic Surgeon to St. George's Hospital, etc. London: *The Medical Times*, Limited. 1904. (Crown 8vo, pp. 92. 2s. 6d.)

[6] *Organic Nervous Diseases.* By M. Allen Starr, M.D., Ph.D., LL.D. London: Baillière, Tindall, and Co. 1904. (Royal 8vo, pp. 751, 26 plates, 275 illustrations. 25s.)

[7] *Die Progressive Myoklonus-Epilepsie.* [Progressive Myoclonus Epilepsy]. Von Dr. Herman Lundborg. Upsala: Almqvist and Wiksell. 1903. (Demy 8vo, pp. 212.)

[8] *Recherches Cliniques et Therapeutiques sur l'Epilepsie, l'Hystérie, et l'Idiotie* [Clinical and Therapeutical Researches on Epilepsy, Hysteria, Idiocy]. By Dr. Bourneville, with the assistance of Messieurs Ambard, Bert-houd, Blumenfeld, Boyer, Crouzon, Lemoine, Morel, Offenbach, Paul-Boncour, Philippe, and Toulard interne in the service. Vol. XXIII. Paris: Felix Alcan. 1903. (Demy 8vo, pp. 424; 42 illustrations. Frs. 5.)

The cells, on the contrary, were less affected. In both cases there was a cortical meningo-encephalitis especially marked in the most superficial regions of the cerebral cortex. This process had invaded all the convolutions in both lobes of the brain with equal intensity. It had caused considerable diminution of the tangential and radial fibres, but the cells, apart from a certain degree of atrophy, were sufficiently numerous in all the layers of the cerebral cortex. Dr. Bourneville continues his researches into the action of alcohol on the production of idiocy and epilepsy. He has now examined the histories of 2,846 cases, and he finds that in 35.5 per cent. of the fathers, 2.9 per cent. of the mothers, and 1.5 per cent. of both fathers and mothers there had been excessive drinking. He advises all mothers to avoid sexual connexion when their husbands are drunk. In an article on the examination of the reflexes, the tendinous, cutaneous, and pupillary reflexes are fully considered. The case of a girl affected with tic is related, because the affection is generally deemed to be incurable, but by treatment with syrup of the iodide of iron, cod liver oil, bromide of camphor, hydrotherapeutics, gymnastics, attendance at school, and working in the institution, she was completely cured. With reference to the part which consanguinity plays in the production of epilepsy, hysteria, idiocy, and imbecility, Bourneville finds that in 3,076 cases which had been under his care, consanguinity was only present 106 times, or in 3.4 per cent. In these cases there was also a history of either heredity or alcoholism, or heredity and alcoholism combined. At the end of the book there are several plates showing the condition of the brain in patients in whom a necropsy had been made. Evidently much good work is being done at the Bicêtre.

NOTES ON BOOKS.

THE first volume of the new issue of the *Journal of the Malaya Branch of the British Medical Association*[1] consists partly of an account of the proceedings of the Branch during the session 1903-4, and partly of original papers and case records. It is a volume of much interest and promise, and should appeal particularly to students of tropical medicine, since they will find therein many notes and practical papers on tropical diseases written by men in daily contact with the diseases and conditions of which they treat, and addressed to others similarly circumstanced. One paper of rather uncommon type is an attempt by Dr. W. R. C. Middleton to estimate the amount of alcohol consumed by the active members of certain golf, cricket, and other European clubs in Singapore. He concludes that the amount is very moderate, and expresses the opinion that the ill-effects of alcohol in the tropics on the European constitution have been overestimated, and that at least as much indisposition is brought about by over-eating as by alcohol in moderate quantity. This local journal cannot but increase the interest of the scattered members of the Branch in their daily work, and tend to promote precise observation, and its revival after a lapse of seven years is a further proof of the activity in this Branch, upon which comment was made in these columns some three or four months ago.

Professor LASSAR-COHN thinks that the reference books dealing with the analysis of urine and stomach contents are overburdened, from the point of view of the ordinary chemist, with descriptions of too many confirmatory tests and of rare bodies occurring in the urine; he wishes that the ordinary analytical chemist should perform analysis of urine and stomach contents, and has written the German work now translated under the title, *The Praxis of Urinary Analysis*,[2] with the idea of providing a guide which may be understood by the pure chemist. Within a very short time, in Germany, a second edition has been called for, so that Dr. Lassar-Cohn has supplied a need. The methods recommended are well known to English readers, but some surprise will be felt, and considerable doubt thrown upon observations carried out with the book as a guide, when it is observed that the application of heat followed by the use of acetic acid is the only test recommended for the detection of albumen, and that Trommer's test is preferred for the qualitative estimation of sugar. The translator, Dr. Lorenz, of New York, points out that a feature of the booklet is the description of processes by means of which artificial pathological urines may be produced; presumably, this is for the benefit of such analytical chemists as are not enabled to secure pathological material from hospitals. So far as we know, analysis of such fluids is, in England, carried out by medical men, and we fail to see that results would be rendered any more reliable if they were obtained from analytical chemists who had made analyses according to the plans set out in this meagre guide.

The *Report on the Work of the Pathological Department of the Brompton Hospital*[3] for the three years April, 1900, to April, 1903, shows that during that period 379 *post-mortem* examinations have been made. Of this number, 284 were cases of pulmonary tuberculosis, and in 14 other cases evidence was found of tuberculosis, active or arrested. In 115 cases of pulmonary tuberculosis the point of origin of the disease in the lungs was determined, and of these 65 per cent. commenced in the left lung as against 35 per cent. in the right. Dr. Horton Smith has arranged his material well for reference purposes, and the remarks on the various cases give clearly and concisely the points of special interest. There were 10 cases of acute caseous tuberculosis of the lungs, and in comparison with the cases of chronic phthisis it is noted that tuberculous ulceration of the intestine and of the larynx and pneumothorax occurred relatively more frequently in the acute cases. The preponderance of the female sex in these acute cases and the comparatively early age at which they occur are strikingly evidenced. Nineteen cases of tuberculous pneumothorax are tabulated, of which 12 were on the left side and 7 on the right. Two cases of lymphosarcoma were complicated by pulmonary tuberculosis affecting the lung also attacked by the new growth. The report contains much that is interesting and instructive.

Horse or Motor for Medical Practice?[4] a small pamphlet by an anonymous M.D., contains a certain amount of vague advice, but we do not think that any one will gain much by reading it, except, perhaps, some amusement from a passage intended to refute the idea that motoring is colder work than carriage driving. The suggestion is made that the friction of the air at the higher speed of a motor increases the warmth of the body. By the same reasoning sitting on a house-top in the teeth of an easterly gale should be more comfortable in winter than sitting with one's feet on a fender.

A third edition has recently appeared of *Motors and Motor Driving*,[5] a book which, for the present, forms the final volume of the *Badminton Library*. It is divided into twenty-three articles or chapters, each of which is by a different author, and deals with a different aspect of the general question; an appendix is added, which contains, among other things, the text of motor laws as they at present exist, and a glossary of motor terms in English, French, and German. Among the subjects which receive special notice are: The Choice of a Motor (by Mr. Alfred C. Harmsworth, who is also the general editor), Motor Cars and Health (by the late Sir Henry Thompson), Motor Driving (by Messrs. S. F. Edge and C. Jarrott), Motor Cycles (by the Editor of the *Motor Car Journal* and F. Straight), and Dress for Motoring (by Lady Jeune and Baron de Zuylen de Nyevelt). Mr. Harmsworth favours the use of mixed tires—that is, solid drivers and pneumatic leaders—for anything but racing. Lady Jeune regretfully concludes that serious lady automobilists must abandon the idea of preserving a peach-bloom complexion. It is a book full of interest and of information, given in a readable fashion, of great value alike to actual and prospective car-owners.

Professor PATTISON MUIR has provided a scholarly treatise in his *Elements of Chemistry*.[6] He treats of the fundamental facts and theories of the science so lucidly that any student of average intelligence will grasp them at once. More than this, he will be led to adopt orderly methods of thought in following up such new ideas as are certain to be suggested by a perusal of the book. To make a student think and reason for himself should be the end of all textbooks, though we fear that mental nausea is a

[1] Singapore: Kelly and Walsh. 1904. (Demy 8vo, pp. 95. 1 dol.)

[2] *The Praxis of Urinary Analysis: A Guide to the Chemical Analysis of Urine.* By Professor Lassar-Cohn. Translated from the Second German Edition by Dr. H. W. F. Lorenz. New York: John Wiley and Sons: and London: Chapman and Hall. 1903. (Crown 8vo, pp. 58. 1 dol.)

[3] London: McCorquodale and Co. 1904. (Demy 8vo, pp. 36. 1s.)

[4] Coventry: British American Co. (32mo, pp. 23. 6d.)

[5] *Motors and Motor Driving.* By A. C. Harmsworth. Third edition. London: Longmans, Green and Co. 1904. (Demy 8vo, pp. 540. 9s.)

[6] *The Elements of Chemistry.* By M. M. Pattison Muir, M.A., Fellow and Praelector in Chemistry of Gonville and Caius College, Cambridge. London: J. and A. Churchill. 1904. (Demy 8vo, pp. 554. 10s. 6d.)

result more frequently obtained. The author concludes the preface as follows: "I hope I have not merely added one more illustrated catalogue of chemical odds-and-ends to the many which have already appeared under the title of a 'Text-Book of Chemistry.'" He has certainly not done this, but has produced a work which will be of great service to all students of chemistry.

THE SIXTH INTERNATIONAL CONGRESS OF PHYSIOLOGY.

The large number of physiologists from all parts of the world who met in Brussels at the Sixth International Physiological Congress from August 30th to September 3rd received a warm welcome from the President, Professor Paul Heger. They were received in one of the three gorgeous crystal palaces which owe their erection to the munificence of M. E. Solvay, whose love of science on the one hand and whose endeavours to promote the well-being of his countrymen on the other are so well known. M. Solvay is a scientist who has known how to apply scientific principles to a great practical art, who has reaped the fruits of his labours, and who shares these fruits liberally for the benefit of mankind, and he proved himself a Maecenas.

The Parc Leopold is a veritable park of scientific palaces, constructed largely of iron and glass, ornate without, brilliantly lighted, and admirably equipped. Nowhere are such characteristic palaces of sciences to be seen, and all of them founded and maintained chiefly by private liberality. When Professor Heger became Professor of Physiology and laboured in the old University in the Rue du Sol, not one of these laboratory palaces was in existence. M. E. Solvay founded the Institute of Physiology and the Institute Solvay, and persuaded Professor Heger to relinquish practice and devote himself entirely to the prosecution of physiology.

Inaugural Meeting.

The first formal meeting preparatory to the meeting of the sections was held in the beautiful Institut de Sociologie erected by M. Solvay. Universal regret was felt at the absence through illness of the Honorary Perpetual President, Sir Michael Foster, who wired "Vobiscum Adsum." The King of the Belgians sent a telegram of welcome, the Municipality sent representatives, and the Minister of Fine Arts had prepared a medal commemorating Vesalius, a copy of which was given as a souvenir to every member of the Congress.

Graceful tributes were paid to the memory of some of the members who since the last meeting at Turin had joined the majority. Professor Kronecker paid a warm tribute to the memory of Professor Marey, while the name and work of Magnus Blix and Professor Vitzow were not forgotten.

The Sections.

The number of contributions and demonstrations—about two hundred—was so large that the work was divided into three sections, which met at the same hours in the forenoon and also in the afternoon.

The papers were so numerous and varied that we can notice a few only. Passing over a number of botanical subjects of great interest and other papers in general physiology, there were several in physiological chemistry of interest to medical men.

Synthesis of Adrenalin-like Body.

Amongst these we may mention the communication by Professor Hans Meyer of Marburg, who has been able synthetically to prepare substances which possess the properties of adrenalin. Proceeding from the constitution of suprarenin, a body—methylaminoorthodioxyacetophenon—was prepared which, when injected into the vascular system, causes constriction of the blood vessels and acts on the iris, causing constriction, and also produces glycosuria. It appears that a series of homologous compounds, aminoketones, athylaminoketones, can be prepared which have similar actions on the vascular and other systems.

Autoregenration of Nerves.

A very lively discussion took place on the subject of autoregeneration of peripheral nerves, arising out of papers on this and kindred subjects by A. Bethe, of Strasburg, Professor Langley and Dr. Anderson, of Cambridge, and H. Braus, of Heidelberg (Regeneration of nerves in transplanted limbs.)

According to Bethe, peripheral nerves in young mammals, when permanently cut off from their trophic centre, do not remain permanently degenerated. On the contrary, they are regenerated and become functional. This so-called permanent separation it is attempted to obtain by cutting out a long piece of the nerve, or cutting the nerve and tearing out its roots, and the results of full degeneration are subsequently completely investigated. Bethe found after weeks or months in the peripheral part of the nerve plenty of medullated and functional nerve fibres. Of course, to prove Bethe's contention, it must be shown that these regenerated fibres are not connected with the central nervous system, either by physiological or anatomical evidence or both. The central end of the peripheral stump was described as ending in a bulb, from which no nerve fibres proceeded into the adjoining tissues.

Langley, however, put a different complexion on the matter, for his experiments with Anderson showed that in nearly all cases after excision of a long piece of the sciatic or crural nerve, or after sewing the peripheral end into the skin, some connexion was established between the peripheral end and the central nervous system, and the connexion was made usually not with the nerve which had been cut, but with the central end of nerve fibres running to the tissues in the neighbourhood of the peripheral neurone, and the degree of connexion varied in different instances. In later experiments, the sciatic or crural nerve was cut a second time nearer the spinal cord than in the first operation, and other nerves which might have established a connexion with the peripheral end of the nerve were also cut. Time was allowed for degeneration, and then the nerve was examined, and its physiological actions—if any—tested. The peripheral nerves caused no contraction when stimulated, and not a single normal medullated fibre was present in them, but they contained a variable number of recently degenerated fibres. Langley remarked that it is conceivable that some nerve fibres may have regenerated autogenetically, and then have become connected with the central nervous system, but concluded from his experiments that no autogenetic regeneration took place; that is to say, the nerve fibres found in the peripheral stump of a divided and regenerated nerve grow out from the central nervous system—a doctrine long ago laid down by Ranvier and others.

The autoregeneration theory was attempted to be supported by experiments on the transplantion of the first outgrowths of limbs in amphibian larvae. At their earliest appearance these budding limbs were transplanted to another part of the animal's body, where they took root and developed much as an ordinary limb: thus, a tadpole might have a hind leg growing near its eye, and a fore limb between the two hind limbs. It was assumed that the young cells in the transplanted limb were not all alike, and developed accordingly. It appears that the nerves in the transplanted limb develop quite naturally, while at the point of junction of limb with trunk only quite thin nervous connections with the central nervous system exists, and as there are far more nerves in the transplanted limb than at the junction Braus concluded that the nerves here regenerated in the limb and were not pushed out from the central nervous system. This paper also was submitted to a sharp criticism. The outward appearance of these tadpoles with their Isle-of-Man-looking limbs was "komisch," as some of our German *confrères* expressed themselves. It is doubtful if these beautiful and difficult experiments convinced the audience of the reliability of the autogenetic theory.

Coronary Arteries have no Vasomotor Nerves.

Professor Schäfer, by perfusing Locke's fluid through the coronary system of the heart of cat or rabbit and automatically registering the outflow while leaving the vagi and accelerantes nerves in connexion with the heart—and simultaneously recording the fluctuations of intraventricular pressure, finds that the result of excitation of either the vagus or accelerans was entirely negative, and no evidence was obtained that these nerves contain either vaso-constrictor or vaso-dilator fibres. Even the injection of suprarenal extract produces no effect whatever upon the rate of flow through the coronary vessels. It would appear that the coronary vessels do not receive vaso-constrictor fibres and that they are independent of the vasomotor nervous system.

Locomotor Co-ordination in Lumbar Cord.

Maurice Philippson, of Brussels, has repeated Goltz's experiments on complete transverse section of the spinal cord in the lower dorsal region in dogs and monkeys. In the dog, when the animal is held horizontally and the tail slightly extended, the hind limbs make a series of rapid, extensive and

rhythmical movements, and these movements, when studied by chrono-photography, in certain cases present all the characters of the movements of the hind limbs in walking or running. Both dogs and monkeys can walk. As soon as, by movements of the trunk, they get their body in equilibrium on the four limbs, the hind limbs flex and extend themselves in a co ordinated manner. The dogs often lose their static equilibrium, and the hind quarters fall on the ground. It would thus appear that the mechanism of bilateral co-ordination of locomotive movements exists in the lumbar region of the spinal cord.

Cerebellar Localization.

Hitherto the cortex of the cerebellum has been regarded generally as of more or less equal value; at any rate so far no localization such as marks the cortex cerebri has been satisfactorily established. Giuseppe Pegano, of Palermo, by systematic excitation and destruction of different parts of the cerebellum, believes he has established a functional localization in this organ. The method adopted was deep parenchymatous injection of a one per cent. solution of curare into the organ. The cerebellum is not an organ acting homogeneously and as a whole, rather are its different modes of activity related to definite parts of the organ. There is a certain motor localization, that is, certain parts are definitely related to definite groups of muscles. The cerebellar motor elements are not in the cortex, but are situated deeply in the organ itself. Indeed, there are points where stimulation produces constantly a psychical excitation. The results of partial destruction, combined with those obtained by excitation, lead Pagano to the conclusion that there is a functional localization in the cerebellum. There is a centre for the fore limbs, and if the centre be excised there is a characteristic "dissymmetry" of these limbs which passes off. In this case excision of the cerebral arm centre of the opposite side causes the dissymmetry to reappear. The centres for muscles of the neck, and near it those for the eyes, lie deep in the vermis. After the excision of the most posterior part of the vermis fatigue occurs very rapidly, even after a very short period of muscular exercise.

Effects of Excision of one Cerebral Hemisphere in Fowls.

D. Axenfeld, of Perugia, finds that after excision of one cerebral hemisphere in young fowls, there is an arrest in the development of secondary sexual psychical characteristics. In the male there is a want of courage, of jealousy, of generosity towards the female. The female is a "bad sitter." In the male the testes are greatly reduced in volume.

Does Vaso-dilation necessarily increase the Bulk of an Organ?

It is generally assumed that vaso-dilation of an organ is accompanied by an increase in the volume of that organ. Loewi, of Marburg, and Henderson, of Toronto, find that the increased outflow of blood following stimulation of the vaso-dilators is nearly as great when the organ is embedded in plaster of Paris. This applies to the submaxillary gland (stimulation of the chorda tympani) and the kidney (injection of caffein).

Heat Contraction in Nerves.

Brodie and Halliburton communicated a paper on "Heat Contraction in Nerve." By special arrangements it can be shown that in nerve as in muscle there is a certain range of temperature at which the first proteid coagulates. In the frog this is 35° to 40°, mammal 45° to 47°, bird 50° to 53°, temperatures which coincide with those at which electrical response to excitation is abolished. These results show adaptation of these different classes of animals to their environment and normal body temperature.

Is Conduction in Heart Myogenic or Neurogenic?

There were several papers and demonstrations on the heart. Amongst the former was one by Professor Kronecker and F. Spallitta, of Bern, on the "Conduction of Vagus Inhibition through the 'Flimmernden' Auricle of the Dog." This communication raised the old question, Is conduction in the heart due to muscle or nerve—is it myogenic or neurogenic? Professor Kronecker is an ardent supporter of the latter theory, and Professor Engelmann, of Berlin, of the myogenic theory. In support of his contention Kronecker brought forward the following evidence from experiments on dogs: When the frequency of beat in auricles and ventricles is the same, the tetanized auricles exhibit fibrillar contractions, whilst the ventricles still continue to pulsate. The tetanized vagi are unable to influence the "fibrillary" auricles, but arrest the beat of the ventricles. When the ventricles are ligatured off from the auricles they continue to beat, usually with a slower rhythm and independent of the auricles.

In this connexion, Professor Spalteholtz, of Leipzig, showed that a very well defined bundle of muscular fibres, several millimetres in diameter, connects the human auricle with the ventricle. A complete account of this auriculo-ventricular bundle will be found by one of Professor Spalteholtz's pupils, Robert Retzer, in *Archiv für Anatomie und Physiologie*, Heft i, Anat. Abth., 1904.

Ligature of the Pancreatic Ducts in Dogs.

Zunz and L. Mayer, of Brussels, studied the effects of ligature of the pancreatic ducts in the dog. The dogs were killed at periods of six to thirty-two days after the operation, and four to ten hours after the ingestion of a meal. It was found that, in the absence of the pancreatic juice, digestion took place, compensation occurring by the action of the gastric juice and the erepsin and other proteolytic ferments of the small intestine. Ligature of the pancreatic ducts never caused glycosuria, in spite of rapid atrophy of the gland. Extirpation of the gland a month after ligature and cutting of the ducts caused glycosuria and death. Ligature of the ducts causes at first a notable loss in body weight, but the body weight gradually increases to normal. It is significant that though sclerosis of the gland occurs, the glandular acini disappearing progressively, the islands of Langerhans persist—at least to the end of a month, and are then very numerous. No regeneration of new ducts or acini was observed.

Lipase in Intestinal Juice.

In dogs with a Thiry-Vella fistula W. Boldireff, of St. Petersburg, finds the juice secreted from such a fistula of the duodenum contains a lypolytic ferment—a lapase, or fat-splitting ferment. In this way Boldireff explains the fact that dogs digest 50 per cent. of milk fats after ligature of the pancreatic ducts. Several other papers relative to digestive activity were communicated by the same observer.

Besides the foregoing, there were, amongst others, papers by Dr. Sherrington on "scratch reflex," temperature range in birds and mammals; by Atwater on respiration, presence of nucleones in various tissues and plants; several dealt with ferments and fermentation, ergographs and fatigue, the action of the vagus on liver, respiratory and other processes, resuscitation of the dead heart (Kuliabko): relatively little nerve-muscle physiology; a few papers on vision, and one or two on hearing; leucocytes and their culture in bags of collodion; an admirable demonstration of models was given by Professor W. P. Lombard on muscles that act on two joints; and on osmotic pressure of hepatic cells, by Dr. Demoor.

Demonstrations and Exhibits.

There were numerous "demonstrations," some of them cinematographic, like those of François-Franck on the beating heart; those of Professor Errera on the projection of phenomena connected with the presence of various chemical substances and processes in plants. Some experiments were made on living anaesthetized animals. Indeed, the President at the concluding meeting expressed himself in these words: "Nous savons le prix de la vie et le prix de la souffrance, et nous nous reprocherions d'infliger au derniers des animaux une souffrance inutile."

Amongst more notable demonstrations were those of Barcroft, of Cambridge, and Brodie, of London, on "The Gaseous Metabolism of the Kidney." It was shown that during diuresis, excited by urea or a saline diuretic, there is an increased consumption of oxygen, and only in a few instances an increased excretion of carbon dioxide was observed.

Heymans and Kochmann, of Gand, showed a simple but striking experiment for the artificial circulation of blood through a heart or other organ. The blood of a dog is rendered incoagulable by the injection of commercial peptones. The heart or other organ of another dog is excised and its aorta is connected with the carotid of the blood-yielding or second dog, so that the blood passes into the coronary arteries. The heart immediately commences to beat; the blood which flows out is collected in a funnel which is in connexion with the jugular vein of the second dog. Such a heart kept under proper conditions beats for many hours.

Dr. Waller gave a demonstration on an animal during the second half-hour after death, of the electrical reaction of the skin excited by electrical stimulation.

W. B. Cannon, of Boston, showed the movements of the intestine by his well-known method of feeding a cat on

food mixed with subnitrate of bismuth, and then exposing in a dark room the body to the Roentgen rays, and allowing the shadows of the food to fall on a phosphorescent screen.

R. Magnus, of Heidelberg, dealt with the survival of excised small intestine when placed in Ringer's fluid freely supplied with oxygen; the movements can be observed and recorded for hours together. The intestinal wall may be separated into its constituent muscular layers and their movements studied. Automaticity, rhythmical contractions and refractory period of the intestinal muscle are dependent on the presence of Auerbach's plexus, but not conduction of the excitatory process.

Professor Grützner fed a starving rat on bread coloured with alkaline litmus and a few minutes afterwards with white bread. On the animal being killed and its stomach laid open longitudinally the blue mass was seen in fundus and along the greater curvature with the white bread lying in the centre of the blue pulpy bread.

Amongst the exhibits were the preparations by F. Heger, of Brussels, of the omentum. An aseptic emulsion of cinnabar, or soot, injected into the peritoneal cavity is soon absorbed, and the coloured particles are largely found in the gastro-hepatic omentum.

Hospitality and Eloquence.

We have mentioned only a few of the communications and exhibits, but the hospitality of the city must not be forgotten, nor the unbounded hospitality of M. Solvay, his splendid reception of the members of the Congress, at which Professor Mosso gave by admirable lantern slides pictures of Alpine scenery, and narrated the work carried on in the Physiological Laboratory on Monte Rosa. Indeed, so graphic were the Professor's word pictures that it was difficult to decide whether the photographic pictures on the screen or the choice, picturesque language gave the greater pleasure. Both together produced an agreeable impression, and when the learned Professor of Turin concluded by naming a lake after Bowditch, of Boston, and called for "Hip, hip, hoorah" in true English style, the hearty response showed how Mosso had kept his audience spellbound by the charm of art and the influence of his magic eloquence.

It would be difficult to describe the beauty, practical adaptation, and equipment of the three magnificent buildings erected by M. Solvay—the Physiological Institute, the Institute of Commerce, and the Institute of Sociology. Probably few physiological institutes or even infirmaries for the sick poor are provided with operating rooms and their annexes such as are fitted up near the Physiological Institute. Probably they are surpassed only by those of Pawlow of St. Petersburg.

At the final meeting, a letter from the Perpetual Honorary President, Sir Michael Foster, was read stating that the telegram of the Congressists had acted on him as the best of tonics.

Various reports were presented and other business transacted.

Meeting of 1907.

The next meeting will be held three years hence in Heidelberg, when Professor Kossel will preside on the first occasion on which the Society meets on German soil.

THE FIFTY-EIGHTH REPORT OF THE COMMISSIONERS IN LUNACY.*

The Increase of Insanity.

The statutory returns made to the office of the Commissioners in Lunacy show that on January 1st, 1903, there were in England and Wales 113,964 persons certified as insane, and on January 1st, 1904, there were 117,199, of whom 9,551 were private patients, 106,771 were pauper patients, and 877 criminal lunatics. This gives a total increase on the previous year of 3,235. This increase is less than that of the previous year, which was 3,251, but it is in excess of the annual average increase in the preceding ten years by 821, and of that in the preceding five years by 837. A comparison of the figures shows that the main increase has been amongst those detained in county and borough asylums, amounting to 2,540, or 78.5 per cent. of the total increase. There has also been a comparatively large increase in the Metropolitan District Asylums, amounting to 688. As a result of this general increase the ratio of the insane to the estimated population of England and Wales stood at the beginning of this year at 34.71 per 10,000, or, stated in other terms, there was 1 lunatic for every 288 of the population. The magnitude of these figures is apparent when they are contrasted with those of former years. In 1859 the proportion of certified insane to population was only 18.67 per 10,000, and since then there has been a steady rise to the present figure. This increase—so much greater than the growth of the population—is practically confined to the "pauper" class, for, going back to 1859, it is found that whilst the ratio of private patients has only risen from 2.38 to 2.83 per 10,000, and that of criminal lunatics has fallen from 0.34 to 0.26 per 10,000, the ratio of pauper lunatics has risen from 15.95 to 31.62 per 10,000.

In relation to this increase the Commissioners have drawn up two interesting tables. One shows the proportion between "first" and "not-first" attacks and sex incidence relatively to the whole population; the other is an attempt to determine whether this growth of insanity is to be met with more amongst those who are of an age when the mental faculties are presumably most active, or amongst those who are at a time of life when the mental and bodily powers are declining. For this purpose they have divided the cases into two groups—those of between 20 and 54 years of age, and those of 55 and upwards. The statistics are drawn from county and borough asylums, hospitals, and licensed houses—that is, from nearly four-fifths of the whole certified insane, detailed information of the others not being available. The first table shows that, excluding cases of congenital insanity, the actual growth of insanity is 1.5 per cent. in excess of the growth of the population for the decade 1891-1901. The growth is more marked amongst males (2.1 per cent.) than amongst females (0.8 per cent.), and is to be found wholly amongst those attacked for the first time. With regard to the age-period, the Commissioners' results indicate that the rate of increase in the numbers has been much smaller amongst those of ages 20 to 54 than those above the latter age.

"Indeed, if comparison with the actual rate of increase of the population in the ten years be permissible, the rate of increase of the ratio of the insane to population is seen to be below the foregoing rate in the younger group, but above it in the older."

Admissions.

The number of patients admitted during the year 1903 was 22,217, being a decrease of 634 on the year 1902. The county and borough asylums received 89.1 per cent., and of the whole number 18,363, or 82.6 per cent., were first admissions. Of the whole number, also, 1,124 were private patients, 19,543 were pauper patients, and there were 232 criminal lunatics. The sexes were fairly evenly divided, there being 11,015 males and 11,202 females: this close approximation between the sexes is observed at each age-period, the annual average returns for 1898-1902 giving: Below 35 years of age, males 37.8, females 37.01; from 35 to 64, males 52.2, females 52.2; and 65 years and upwards, males 10.0, and females 10.7.

Causes of Insanity.

The figures showing the yearly average of assigned causes during the five years 1898-1902 do not differ materially from those in the last report for the years 1897-1901. The Commissioners point out that the return is only approximately true, owing to a possible plurality of causes in any case. Hereditary influence was ascertained in 18.6 per cent. of the males, and in 24.4 per cent. of the females. Alcoholic intemperance takes a chief place amongst physical causes, being noted in 22.8 per cent. of the males and 9.5 per cent. of the females, and existing in considerably higher proportion amongst the pauper than amongst the private patients. Venereal disease is assigned as a cause in 3.6 per cent. of the males and in 0.8 per cent. of the women, but here the relation between pauper and private patients is reversed, this cause being almost twice as frequent in the private as in the pauper class. Previous attacks were recorded in 16.1 per cent. of the males, and in 22.6 of the females. Comparison is also made with regard to the distribution of the so-called "moral" causes, in all of which, especially for those involving anxiety and worry, the rates are higher for the private than the pauper patients.

Forms of Insanity.

The statistics of institutions, other than idiot institutions, show that for 1899-1902, of the total admissions, 5.5 per cent. were cases of congenital insanity, 41.7 per cent. of mania, 29.5 per cent. of melancholia, 4.1 per cent. of delusional insanity, 6.4 per cent. of general paralysis, and 12.8 per cent. of

* Fifty-eighth Report of the Commissioners in Lunacy to the Lord Chancellor. London: Eyre and Spottiswoode. 1904. 3s. 2d.

dementia. The Commissioners say that, speaking broadly, there has been since 1899 a decrease in mania and an increase in melancholic types. General paralysis and dementia are higher amongst males, whilst mania and melancholia are higher amongst females. General paralysis was present in 10.8 per cent. of the males, but in only 2.2 per cent. of the females. Without attempting an analysis of the tables, it is noted by the Commissioners that in almost all forms of insanity the age-incidence is higher in the pauper class than amongst the private patients.

DISCHARGES.

The total number discharged as recovered in 1903 was 8,299. The percentage recovery-rate on admissions, exclusive of transfers and readmissions, was 37.35, which is slightly below the average of the ten years 1894-1903, which was 38.08. The recovery-rate amongst females was 41.12, and amongst males 33.53. The total number discharged as "not recovered" was 7,704, but of these 5,465 were discharged to other institutions, and 97 were only technically discharged owing to lapse of reception order, making the absolute discharges 2,142.

CAUSES OF DEATH.

During 1903 there were 9,287 deaths, giving a death-rate on average daily residents of 10.20 per cent. Of this the only outstanding features are general paralysis of the insane 1,458, and phthisis 1,394. The tuberculous death-rate is notoriously high in asylums, and to the above number of deaths from phthisis must be added those from tuberculosis (192), and doubtless many other cases collected under general categories, such as meningitis, diseases of bones and joints, etc. There were also 28 deaths by suicide and 96 other deaths due to accident or violence.

THE INCREASING SIZE OF COUNTY ASYLUMS.

In this report the Commissioners protest in forcible and emphatic terms against the tendency to undue increase in the size of asylums. The moment that an asylum increases beyond a reasonable size, they say, it ceases to be possible for the medical superintendent to be in close relationship with his patients, and he must perforce delegate his medical functions to others who are, if not less able, usually less experienced than himself. Not only that, but the aggregation of large numbers of persons within a limited area gives rise to the origination or development of diseases of a serious and fatal type, such as asylum dysentery and consumption. In the year 1902 cases of this kind (asylum dysentery) occurred in 57 asylums. Whilst in asylums of less than 500 patients the cases were only 3.2 and the deaths 1.1 per 1,000, and in asylums with more than 500 and less than 1,000 inmates the cases were 9.8 and the deaths 3.3 per 1,000, in those asylums with an average number of over 1,000 inmates the cases were 14.5 and the deaths 4.3 per 1,000. These are indeed startling figures; and when to these are added the increased facilities for the spread of tuberculous diseases, the urgent necessity for some alteration of system which will prevent this enormous aggregation of the insane in limited areas becomes at once apparent.

LITERARY NOTES.

THE *Liverpool Post* of August 5th contains an interesting article on Some Famous Liverpool Doctors, to which the death of Sir William Mitchell Banks gives unexpected opportuneness. The first medical man of whom any detailed account is forthcoming is said to be Silvester Richmond, who was Mayor in 1672. He practised as a physician for upwards of thirty years in Liverpool. He lived at Thornton Hall, in the immediate neighbourhood of Crosby, and seems to have found time to engage in mercantile pursuits. He died in April, 1692, and was buried in St. Nicholas's. A brass plate screwed to a seat in the chancel of the church bears the following inscription:

Here lieth the body of Silvester Richmond, Professor of Physick and Chirurgery, who after nearly thirty years indefatigable care and successful practice in this town and country, at last exhausted that life which had been so carefully employed in the preservation of many others. He died the 16th and was interred the 19th April, 1692.

Walter Green, M.D., who died in 1788, was a physician to the Infirmary, and practised with great success. The newspaper of the day, in noticing his death, says:

His memory is rendered of some repute by his translations of Virgil and Horace, with some fugitive pieces of Pindar and Anacreon. About three years ago he lost his sight, which was, happily, restored to one eye about a year later by a gentleman of the faculty in the town. His death was so momentary that two minutes before the event he was speaking to a person who was shaving his head, seemingly as well as at any other period of his life.

Dr. Green was succeeded at the Infirmary by Thomas Houlston, apothecary and bookseller in High Street. In 1755 was established, at the instance of Houlston, the Humane Society for the recovery of persons apparently drowned, while a house of reception was opened on the north side of the Old Dock. He discovered or brought into notice in 1773 the mineral spring in the quarry. Among his many works are *Observations on Poisons and the Use of Mercury* (1748), and *Remarks on the Hydrophobia and the Ormskirk Medicine* (1786). He died in February, 1787, in the 41st year of his age. The most famous of Liverpool doctors was James Currie, who in 1780 established himself as a physician in Basnett Street. To show the state of society in the town at that time, we read that he found it necessary to become a member of two card clubs, a bowling club, and of a weekly literary society. The literary tastes and critical powers of Dr. Currie were highly valued by Roscoe, who submitted to his judgement the manuscript of a great part of his historical works. In 1786 Currie was appointed physician to the Infirmary. He was a pioneer in the treatment of fevers, in which he used cold effusions. He was also one of the first physicians who employed the thermometer in clinical observation. In 1793 he published the celebrated letter from Jasper Wilson to Mr. Pitt, and in 1800 his world-famous *Life of Burns*. He died in 1805 at Sidmouth. Dr. Matthew Dobson, F.R.S., wrote in Enfield's *History of Liverpool*, two chapters, "On the temperature of the air" and "On the variations of the temperature of the sea." Through ill-health he was compelled to resign his post of physician to the Infirmary, and retired to Bath, where he died in 1784. He was a Fellow of the Royal Society, and enriched divers volumes of its *Transactions* with some ingenious papers. John Rutter, M.D.Edin., was a native of Liverpool, where he was born in 1762. To him principally the profession is indebted for the establishment of the Medical Institution, which he enriched by the gift of his very valuable medical library. He died in 1838. Dr. Thomas Stewart Traill lived at Liverpool from 1803 to 1832, when he was appointed to the Chair of Medical Jurisprudence in Edinburgh University. He was the prime mover in founding the Literary and Philosophical Society, of which he was the first secretary. He was the Professor of Chemistry in the Royal Institution, and lecturer in different branches of natural philosophy.

In an address published in a recent issue of the *Canada Lancet*, Dr. F. R. Eccles, Professor of Gynaecology in the Western University, London, takes occasion to recall the fact that before Oliver Wendell Holmes gained a name in literature, he was a practitioner and teacher of medicine, supplementing his income by frequent lectures at night, often travelling many miles into the country and returning in the small hours of the morning. At Harvard, besides anatomy, he lectured on physiology, microscopy, and histology, a plurality of function which made him say in reply to a question as to what chair he filled, that he occupied a settee. His famous paper on the contagiousness of puerperal fever, which appeared in 1834, had its origin in a discussion at a medical association concerning the death of a medical practitioner who made a necropsy on the body of a woman who died of puerperal fever, and who himself died of septicaemia within a week, having in the meantime attended several women in their confinement, all of whom died of puerperal fever. As showing the opinion that prevailed in high professional places in America many years later, Dr. Eccles quotes the following passage from an introductory lecture delivered by Dr. Hodge (whose name now lives only through a pessary) in October, 1852:

The result of the whole discussion will, I trust, serve not only to exalt your views of the value and dignity of our profession, but to divest your minds of the overpowering dread that you can ever become, especially to women, under the extremely interesting circumstances of gestation and parturition, the minister of evil, that you can ever convey in any possible manner a horrible virus so destructive in its effects and so mysterious in its operations as that attributed to puerperal fever.

In the same year another obstetric luminary—Professor Meigs—speaking of the ravages of puerperal fever, said:

I prefer to attribute them to accident or Providence, of which I can form a conception rather than a contagion, of which I cannot form any clear idea—at least as to this particular malady.

Meigs spoke of Holmes as a "very young gentleman," and of his contention as "the jejune and fizenless dreaming of sophomore writers." One hears the sniff of the superior person who here—as always—was blinded by conceit, contemptuous of everything that ran counter to his prejudices, and stupidly obstructive.

THE DAVID LEWIS EPILEPTIC COLONY AT SANDLEBRIDGE, CHESHIRE.

The title deeds of the Sandlebridge Colony for Epileptics, near Alderley Edge, were formally handed over to the Lord Mayor of Manchester and other representative trustees on September 8th. The circumstances under which the colony has been established, and its objects and character are thus related for us by Dr. J. Milson Rhodes:

When the late Mr. David Lewis died it was found that his money was left to his two nephews, Mr. Benjamin Levy and Mr. Elliot Levy, to do as they liked with To their great honour, instead of using it for their own profit, they expended it in various ways for the benefit of the public. Not the least of these is the new Epileptic Colony situated at Sandlebridge, near Alderley Edge, about twelve miles south of Manchester.

The question of proper provision for epileptics has been a prominent one in Lancashire for the last twelve years, and it is good to know that adequate provision is being made for those unfortunates in the County of the Red Rose not only by the Lewis Trustees, but also for the pauper class, by the Chorlton and Manchester Guardians, acting in combination; and we are informed that most of the other Boards of Guardians in Lancashire are making arrangements with them to take their cases in also. Thus we may hope that before long England will cease to occupy the unsatisfactory position it does at the present time. It may be well to point out that the blame for the present deplorable state of affairs does not so much rest with the county councils or Boards of Guardians as with Parliament. As the law at present stands the county councils can provide for persons suffering from "mental disease," but the highest legal authorities have held that epilepsy is not a mental disease, though the cause of much mental disease! The number of cases of epilepsy in the country unions is so small that very few Boards would be justified in making proper provision, and the only way out of the difficulty at the present time is for other large Boards to follow the example of the Chorlton and Manchester and combine and take in the cases from the smaller unions as boarders.

It is not, however, with the general question of epilepsy, but with the Lewis Colony we have to deal at present. The colony is situated about two miles from Alderley Edge, in Cheshire, and occupies part of the estate formerly owned by Lord Knutsford. The distance from the station is, in the opinion of those best qualified to judge, by no means an objection, as epileptics are too often irritable and capricious, and apt to rush off on the occurrence of anything that causes their anger.

An undulating country, a light soil, and good drainage make the site a beau-ideal one. Most of the buildings are constructed in the old black and white Cheshire style of architecture, a style that does much to diminish the institutional character of the buildings. After passing the lodge gates we come to the administrative block, where accommodation is provided for Dr. A. McDougall, the medical superintendent, the matron, nursing staff, Board room and offices; directly in rear of this block is the recreation hall, which will also serve the purposes of a church, being provided with a stage and dressing rooms at one end and a chancel at the other end. Behind the hall are the reception and observation wards, and connected to them by a short corridor is the hospital, which has been made as perfect as possible. The next building is the block containing the kitchen, from which all the food will be supplied to the homes by tricycles, such as used by the Distributive Kitchens Co. Separated from this building by a range of greenhouses is the school for children. The Trustees and Committee were unanimous when the plans were prepared in ignoring the absurd recommendation of the Committee on Defective Children, and had them drawn on common-sense lines.



Dining, day, and school rooms are provided, and the rooms are furnished with the best appliances for teaching. Surrounding the outer side of the oval are the villas to accommodate the first, second, and third-class cases. The villas for such cases, in addition to the usual furniture, are provided with billiard tables, a provision which is balanced on the female side by pianos in all the villas. An electric installation has been provided and is powerful enough to light the colony and work all the machinery which finds place in it.

To philanthropists and public bodies wishing to make suitable provision for this unfortunate class the generous gift of the Lewis Trustees furnishes the most perfect example of an epileptic colony at present existing, and it is to be hoped that careful observation of the cases will help us to solve some of the difficult problems connected with epilepsy that still await solution. Mr. Graham, of Regent Street, is the architect, and Mr. Marshall, of the Barton Arcade, Manchester, the Secretary of the Institution.

Lord Egerton of Tatton has consented to be President, and the colony will be opened for the reception of patients at an early date, but the official opening will probably be postponed until next year.

THE PLAGUE.

Prevalence of the Disease.

India.

During the three weeks ending August 6th, 13th, and 20th, the deaths from plague in India numbered 4,794, 5,849, and 6,198 respectively. The distribution of fatal cases was as follows: Bombay City, 44, 57, and 42; Bombay Districts, 2,927, 3,308, and 3,566; Calcutta, 8, 3, and 3; Bengal, 191, 366, and 335; North-West Provinces and Oudh, 240, 368, and 361; Punjab, 24, 31, and 33; Rajputana, 46, 65, and 134; Karachi, 2, 2, and 2; Central Provinces and Berar, 39, 58, and 93; Coorg, 1, 3, and 7; Central India, 90, 95, and 230; Madras Districts, 390, 413, and 475; Hyderabad State, 187, 266, and 201; Mysore State, 390, 814, and 716. The chief increase in plague recently has occurred in the Bombay Districts.

South Africa.

Port Elizabeth.—With the exception of 1 case of plague and 1 death from the disease during the week ending August 20th, no fresh cases of the disease have been met with in any town in Cape Colony. Three cases of plague remained under treatment on August 20th. Plague-infected rats were found in Port Elizabeth and East London.

Hong Kong.

During the weeks ending August 20th and 27th and September 3rd the fresh cases of plague numbered 1, 1, and 3, and the deaths from the disease, 1, 1, and 3 respectively.

Mauritius.

During the weeks ending August 25th, September 1st and 8th, the fresh cases of plague numbered 10, 7, and 4, and the deaths from the disease 5, 6, and 2 respectively.

Hamburg.

On the British steamer *Bishopsgate* arriving in Hamburg during the first week of September some plague rats were found. No member of the crew has shown signs of illness.

THE MIDWIVES ACT, 1902.

Northamptonshire.

The annual report to the Northamptonshire County Council by Dr. Charles E. Paget, County Medical Officer of Health, contains the following statement of the action taken with regard to the administration of the Midwives Act:

The work of bringing the Midwives Act, 1902, into operation in this county has entailed a very heavy official correspondence and much pains to make the provisions of the Act quite clear to those interested in them. A preliminary notice, dated April 6th, 1903, was posted up in every parish of the administrative county, calling the attention of every woman using the title of "midwife," or who habitually and for gain attended women in childbirth, that the Act came into operation on April 1st, 1903, that the local supervising authority was the County Council, and that further information would be given to any woman affected by the provisions of the Act on her making application to me. In the meantime, I put myself into communication with every medical practitioner in the county, and asked him to be good enough to assist me by sending me, as far as he was able from the area within which he practised, (1) a list of women who habitually and for gain attended women in childbirth without a medical practitioner, and (2) a list of women who occasionally attended confinements, not necessarily for gain. The information thus obtained was supplemented by lists furnished me by the Superintendents of the County Police through the kindness of the Chief Constable. I then put myself into communication with each of the women of whose existence I thus become aware and sent her an explanatory letter, setting forth the provisions of the Act and inviting her to communicate with me on any point that might be difficult for her to understand. The number of women thus written to was 378. A second explanatory letter had to be sent to 224 of these women, and interviews were accorded to sixteen others. The rules of the Central Midwives Board were not published until towards the end of September, 1903, their approval for a period of three years by the Privy Council not having been granted until the 12th of August preceding. On the publication of the Rules I wrote to inform all the women practising midwifery in the county—the total number having been increased in the meantime by additional information to 384—of the fact, explained to them the necessary procedure in each class of case if they desired to be certified as midwives under the Act, and sent them at the same time an abstract of the rules relating to the practice of midwives. By the middle of February, 1904, 46 applications had been made by women for enrolment as midwives on the ground either (*a*) of having been in bona fide practice for one year previous to July 31st, 1902, or (*b*) of possessing certificates in midwifery satisfactory to the Central Midwives Board; at the same time, 36 other women had decided to give up practice as midwives on account of increasing years, ill-health, or inability to write and so fill up necessary forms, or because they did not care to go to the expense of qualifying for certificates. The right of any woman to take or use the name or title of midwife ceases from and after April 1st, 1905, unless she be duly certified under the Act. I intend, therefore, later on to send the remaining women who have not finally communicated with me a reminder of this provision. In December I reported to the Public Health Committee on the manner in which, in my opinion, the Act should be administered in this county. In regard to certain suggestions to county and county borough councils in reference to the duties assigned to them under the Midwives Act, 1902, issued by the Central Midwives Board, I pointed out that those relating to the retention of the duties under the Act by the County Council, and the appointment of the Public Health Committee as the local supervising authority, had already received the approval of the County Council. My own appointment as the executive officer of the committee was then recommended, and subsequently approved by the Council. In regard to the supervision of midwives, it was also decided to give me assistance by means of a fully trained nurse who should herself be qualified to be put on the roll of midwives, and I am of opinion that such a female inspector should succeed in making the supervision both practical and helpful to the midwives themselves. The important clause in the rules of the Central Midwives Board respecting the disinfection of the clothing of midwives by the local sanitary authority, has led to a recommendation being sent from the County Council to the District Councils to provide proper steam disinfectors where such are not in existence; and I am glad to say that this recommendation is meeting with some satisfactory response. A further step of importance in regard to administration has also been taken, namely, in regard to action which must follow the notification of a case of puerperal fever in the practice of a midwife. It was obvious that in almost every instance the notification of the case would reach the District Medical Officer of Health before it reached me, and that he would have opportunities of making earlier inquiry into it for the information of his District Council than I could for the local supervising authority. The local Medical Officer of Health is, however, under no obligation to report on such a case to the local supervising authority; but, inasmuch as there should be as little delay as possible in a report on the circumstances of a case of puerperal fever occurring in the practice of a midwife, the Council, following the example of the Derbyshire County Council, decided that a payment of half-a-guinea should be made to the Medical Officer of Health on his sending in a prompt report of the case upon an approved form. I am hopeful that the administration of the Act may now be carried out in this county without friction and in a satisfactory manner.

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 83.

MEDICAL NEWS.

The annual dinner of the Incorporated Society of Medical Officers of Health will take place on Friday, October 18th, under the chairmanship of Dr. John F. J. Sykes, President.

A Chair of Tropical Medicine has been created at the Naval Medical School, Washington, and Surgeon P. A. Lovering has been appointed to it.

An address introductory to the Medical Session of the University of Manchester will be delivered by Dr. Lorrain Smith, the newly-appointed Professor of Pathology, on Monday, October 3rd, at 4.30 p.m.

Dr. A. T. Brand, Public Vaccinator, Driffield District, Driffield Union, has been awarded the Government extra grant for efficient vaccination for the eighth consecutive time.

The Spitting Nuisance.—Spitting on pavements will in future be a costly luxury in Seneca, Illinois. An ordinance recently passed by the City Council makes the offence punishable by a fine of 3 to 25 dollars (15s. to £5).

The next Pan-American Medical Congress will be held at Panama in the first week in January, 1905. Dr. Julio Ycaza has been appointed President, and there will be four Sections—surgery, medicine, hygiene, and the specialities.

Dr. Norman Moore has written a history of St Bartholomew's Hospital from its foundation to the present day. The whole of the proceeds of the sale of the book, which will be published by Messrs. C. A. Pearson, Limited, will be given to the Fund for the rebuilding of the Hospital. It will be illustrated by original sketches by Mr. Howard Penton, and will contain interesting reproductions of the ancient seals and muniments of the Hospital. The volume will be issued at two prices, two guineas and one guinea, and a list of the subscribers to the first edition, which will be limited to two thousand copies, will be printed as an appendix to the work. Intending subscribers are requested to send their names to the Honorary Secretary of the Rebuilding Fund, St. Bartholomew's Hospital, E.C.

BRITISH MEDICAL ASSOCIATION.

Subscriptions to the British Medical Association for the year 1904 are now due and should be forwarded by postal order or cheque to the amount of 25s. to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, SEPTEMBER 17TH, 1904.

THE PROPHYLAXIS OF MALARIA.

The discussion on the prophylaxis of malaria in the Section of Tropical Diseases at Oxford, published this week, is interesting from several points of view, but in none more so than in the apparent divergence of opinion as to the efficacy of mosquito brigades in reducing the number of mosquitos and thereby lessening the prevalence of malaria. Another prominent feature brought home by the discussion was the fact that many of the ailments we have hitherto considered to be manifestations of paludism are due to other parasites than the *Anopheles*. Even so-called "malarial cachexia" has been shown to be probably not due to malaria at all, but to the new parasite—the Leishman-Donovan body; and that anomalous ailment kala-azar has been attributed to the same "body." In addition to these, the commonest fever met with in the centre of large cities in the tropics, and termed "urban fever," is considered by some to be more of the nature of a typhoid than of a malarial poison. It would appear also, that the species of *Anopheles* which conveys the malaria parasite prefers fresh water and running streams wherein to deposit its ova, and that it is only the harmless mosquitos, as far as malaria is concerned, that breed in stagnant water and dirty puddles around dwellings. It is therefore argued that the mosquito brigades which have devoted much time and money to the clearing up of back yards, stagnant and foul water accumulations, etc., around houses, have not been doing true prophylactic work as regards malaria but merely reducing the number of mosquitos, harmless and otherwise—an entirely different thing. The experiment at Mian Mir, conducted by Captain James and Lieutenant Christophers, was sharply criticized by several speakers. These officers attempted antimosquito work in a section of the large cantonment of Mian Mir. Their efforts were not, however, crowned with success, for mosquitos continued to abound in spite of the destruction of millions of mosquito larvae. The causes assigned for the failure are that they worked with an insufficient staff, that their operations were performed over too circumscribed an area, that irrigation was being applied to rice fields within the cantonment, and that the mosquitos came in numbers from outside the area of their operations. Several of those who took part in the discussion expressed regret that the experiment had been made, and hoped that limited attempts of the kind would not be repeated, as they tended to cause the public to look askance at any future attempts of the kind, and to hesitate to vote money for the work.

We confess we share this regret, but, at the same time, we cannot deny the fact that much of the work hitherto attempted by mosquito brigades is being looked at with critical eyes; and there may be some justification for this attitude. The expenditure involved is large. Some thousands of pounds annually would seem necessary to keep down mosquitos even in limited areas and in towns of no great size. In colonies in which the financial struggle is keen a few additional thousands form an important item in their exchequer; and if any doubt is cast upon the efficacy of the work on which the money is spent, there is a great temptation to withdraw the grant altogether. We should be sorry to see this happen, for with the example of Ismailia before our eyes, expensive though it has proved to be, the money has been and will continue to be well spent if malaria can be eradicated or even materially diminished. But few places are so favourably situated as Ismailia for the purpose of mosquito destruction. The area is limited, and once dealt with there is but slight chance of infection from without. In a town in the heart of a malaria-mosquito country, however, infection from without must always be dreaded. Irrigation is the great stumbling-block to mosquito destruction. If irrigation is done away with in India or China famine will result; if it be allowed to continue malaria prevails. Administrators and sanitarians are on the horns of a painful dilemma, and escape may have to be sought for in other prophylatic measures. That there are others we know. Quinine, mosquito-netting of windows and doors, and the separation of European from native dwellings—each of these prophylactic measures has its advocates and its detractors, some on practical, others on theoretical, grounds, so that at present we have no universally applicable means of dealing with *Anopheles* mosquitos and malaria with any certainty of complete success. Perhaps a combination of two or more of the methods in vogue will best serve the object in view. Whilst regretting the publicity that has been given to what appears to have been at Mian Mir an experiment bound to fail, we believe that in the public interest good will arise from the discussion the Mian Mir incident has occasioned.

In regard to malaria prophylaxis, it is evident, however, the end is not yet, and before launching into any large expense it would be wise for municipal authorities to ascertain first if it really is malaria that is occasioning the large spleens and the malarial cachexia—once considered unmistakable signs of malaria—and in the next place to ascertain what prospect there is of destroying the particular species of *Anopheles* that transmits malaria in the locality in question, taking into consideration the possibility of infection from without the area dealt with, and the proximity of irrigation methods of cultivation of the land.

THE LEISHMAN-DONOVAN BODY.

For many years previous to Leishman's discovery, Crombie and others in India had been well acquainted clinically with a tropical cachexia resistant to quinine, a disease known by some as Dum-Dum fever, and by Crombie as non-malarial remittent fever. Though Rogers, basing his deductions on the relative increase of the large mononuclear leucocytes in those cases, attempted to prove the disease was really malarial, Crombie and many Indian physicians were equally positive in asserting that it was not so, and their views, backed up by Leishman's recent work, are now known to be correct. It was, in fact, in a soldier invalided home from Dum-Dum for tropical cachexia and enlarged spleen that

Leishman first found a new parasite, and since that date it has been recorded from widely-separated geographical areas—namely, many parts of India, Assam, Ceylon, China, Tunis, Algiers, Arabia, and Egypt. As more careful observations are made in different parts of the world, it is in the highest degree probable that the area will still further be widened; and the mapping out of its distribution is not the least important part of the work that still requires to be accomplished. The most important of the recent advances in our knowledge of this interesting subject is the discovery by Bentley of similar parasites in kala-azar: and there is little doubt that the solution of this mysterious and much-discussed disease is now before us, the difference between it and tropical cachexia with splenomegaly being one only of name.

Many of the papers read at the recent discussion in the Section of Tropical Medicine at the Annual Meeting of the British Medical Association at Oxford, and published in full in this issue, have entered into the clinical symptoms in detail; and it may not be out of place, for the benefit of those who have been unable to follow the recent researches, to mention some of those here. Cachexia with splenomegaly is the keynote of the disease. The earthy pallor and pigmented skin at once strikes the observer very forcibly in a case which is at all advanced, and emaciation and wasting will also be prominent. The fullness of the abdomen on examination will be seen to be due to the splenic enlargement, which is often excessive; the liver will in all probability be similarly atrophied, and oedema of the legs may give an appearance of fullness to those parts. Along with these well marked and easily determined features are associated a remitting irregular temperature, anaemia, with a blood count on the average of 2,500,000 per c.mm., a diminution of the total leucocytes, with a relative increase of the large mononuclear elements, a tendency to haemorrhages from the nose and other parts, and chronic diarrhoea of a dysenteric type. The tendency of the disease is to progress, slowly, it is true, in many instances, but nevertheless constantly until the fatal termination—often hastened by complications—is reached.

Granting that the parasite discovered by Leishman is the cause of this train of symptoms, it remains for us to determine what the organism is, and here at once we are face to face with a difficulty well worth the expenditure of much time to overcome, when it is remembered that at the present time three different views are held by the highest authorities as to the nature and classification of this most recent arrival in tropical pathology. Leishman originally came to the conclusion that his parasite had some connexion with the trypanosomata, that it might be a degenerated form, or, more recently, that it might represent a phase in the development of this flagellate. This view has received strong encouragement quite recently from Rogers, who states that he has developed undoubted trypanosomes from cultures of the Leishman bodies taken from the spleen.

The work of Rogers, a short account of which also appears in the proceedings of the Section, is admirable, but more careful study and experiments are required, and especially confirmation from some independent source, before his conclusions can meet with unanimous assent.

The second view—that of Laveran and Donovan—that the parasite belongs to the genus Piroplasma, is not accepted by most of the authorities on the subject. The recent work by Christophers in India, and Manson and Low in London, on the distribution of the parasites in cells of the different organs of the body, and their constant absence in the red blood corpuscles, would seem to negative Professor Laveran's views completely.

The third view—that of Professor Ross—that the parasite belongs to a new genus of sporozoa, cannot be lightly passed over, especially if we grant that the bodies found by Wright in a Delhi boil are identical with those associated with the name of Leishman. As far as our present knowledge goes, it is difficult to understand how trypanosomes, blood parasites, should subsist, even in a stage or phase of development, in the granulation cells round an ulcer. Wright, so impressed with the resemblance of his bodies to sporozoa, has given them a new generic term, namely, "Helcosoma."

Should his views turn out to be correct, it may eventually be found that tropical cachexia with splenomegaly is a sporidial disease of man akin to the microsporidial disease of the silkworm or the microsporidial disease of fish, the primary point of inoculation being local, and then, as Christophers puts it, a systemic infection of a septicaemic type taking place.

Until we can determine what the parasite is, its life-history outside the body, and how it enters the body, little can be done in the way of preventing the disease. More work, it will be evident, is required, then, to solve these problems, and, until their solution is forthcoming—when, it is to be hoped, the parasite will receive its proper scientific name—Colonel Bruce's suggestion that the bodies should be known as Leishman's bodies has much to recommend it, as the useless multiplication of names only adds to the confusion which, sooner or later, will have to be cleared away.

THE UNIFICATION OF MEDICAL PRACTICE IN CANADA.

AT the present time a medical man who obtains a licence to practise in one of the provinces of the Dominion of Canada is not entitled to practise his profession in another province without obtaining a fresh licence from the Medical Council of the province. This has given rise to much inconvenience in Canada, and has also stood in the way of the recognition of Canadian degrees by the home authorities. As our readers are aware, a Bill to create a Medical Council for Canada to examine and grant licences to practise throughout the Dominion and to keep a register of medical men so qualified was passed through the Dominion Parliament by Dr. Roddick in 1902. The Bill provided that before the provisions could come into force the provincial Legislatures should pass adoptive measures; such measures have now been passed by Nova Scotia, New Brunswick, Prince Edward Island, Manitoba, and the North-West territories, and it is understood that during the next session of the Ontario Provincial Legislature a similar Bill will be introduced with every prospect of passing into law, the Premier (Mr. Ross) having stated at the last meeting of the Ontario Medical Association that he was strongly in favour of the Roddick Bill, and would use every effort to have it concurred in during the next session. British Columbia, it is generally understood, will follow the example of Ontario. The feeling among the profession in the province of Quebec is not unfavourable, but the authorities of Laval University, which has its head-quarters in Quebec, object to federal interference with education. Owing to the pressure brought to bear by the Laval University the provincial Legislature of Quebec has rejected a Bill authorizing the provincial Medical Board to accept the Dominion qualification. The French-Canadian profession in the district of Montreal is favourably disposed to the measure, and it is believed that the influence of the profession with the University will eventually lead to the withdrawal of its opposition. Meanwhile Dr.

Roddick intends to introduce in the next session of the Dominion Parliament a Bill authorizing the formation of the Dominion Medical Council and the institution of Dominion registration so soon as five provinces have passed Bills authorizing the provincial Boards to accept the Dominion qualification. The Bill, it is believed, will be passed by the Dominion Parliament, and as five provinces have already given in their adhesion its provisions will at once come into force.

OPTICIANS AS OCULISTS.

The August number of the *British Optical Journal* is mainly devoted to a defence of the action of the Spectacle Makers' Company in its policy of instituting examinations in eyesight testing for its diplomates. This defence consists of an attack upon the medical profession or upon those representative bodies which, having been applied to by the Company for their advice or an expression of opinion, are criticized for having pointed out the objections to the course proposed and since followed by it. The line of argument taken is not marked by any great strength. It is suggested that the opinions in question are only those of small and prejudiced sections who represent the extreme views of those anxious to grasp everything for the advantage of the medical profession without consideration for the interests of the public; but there is no attempt to show that this is true, and to all who know the composition of the bodies concerned this accusation must appear absurd. The report of the Medico Political Committee of this Association comes in especially for adverse criticism, but the basis of that report was the unjustifiable advertisements of Fellows of the Spectacle Makers' Company, and the claims therein put forward. It is not to the point to say that the majority of errors of refraction may be corrected without recourse to drugs when Fellows of the Spectacle Makers' Company claim to possess the proper means for correcting all forms of such defective eyesight; and the last part of the article in the *British Optical Journal* deserves to be quoted as justifying every line of the report and all that has appeared in the British Medical Journal That article speaks of the "unfortunate, unjustifiable advertising methods used by some diploma holders. To those opticians who have been offenders in this way belongs much of the responsibility for that friction and opposition which the Court of the Spectacle Makers' Company is now called on to meet; and, apart from this inconvenience, it is unquestionable that the good repute of the trade as a whole must and does suffer through these errors of judgement and taste on the part of a few. In the past we regretfully admit there has been a good deal of the wanton exaggeration so much complained of; and the language of hyperbole which has been used has given occasion to our medical critics to hold the optical advertisers in something like contempt. So the reform now urged is one really dictated to every refractionist by consideration of self-respect; and its adoption will be found to establish one of the most far-reaching claims to the respect of others." Yet we complain that these advertisements not only have been frequent in the past, but are still continued (see Journal, September 10th, p. 624), while the Spectacle Makers' Company has so far taken no effectual means to put a stop to them. So long as this is the case we must decline to accept the professions of those interested that the establishment of the diploma is only intended to improve the technical knowledge of opticians, nor can we consider that medical men would be justified in taking any part in these examinations or in co-operating in any way with opticians who make these unwarranted claims.

BORATED FOOD AS A CAUSE OF LESIONS OF THE KIDNEYS.

Borax and boric acid are at the present time extensively used as food preservatives, and the quantities present in certain articles have been proved to be by no means small. For example, milk may contain 2 grams per quart; butter, 2.5 grams per lb.; cream, 1 gram per pint; oysters, 4.5 grams per pint; corned beef and ham each 18 grams per lb.; sausages, 4 grams per lb. These preparations are preferred not only on account of their preservative influence, but because they do not withdraw water as salt does, while they preserve the natural colour. It has also been contended that they do not penetrate the tissues and may easily be washed away by soaking. This, however, appears not to be true. Nethertheless, many advocates of their use, among whom is Professor Liebreich, contend that they are absolutely harmless. In a recent article published in the *American Journal of the Medical Sciences*, Dr. Charles Harrington, Assistant Professor of Hygiene in the Harvard Medical School, contends that the harmlessness of substances which obviously do not produce immediate evil effects can only be demonstrated by much more prolonged experiments than those which have been undertaken. Where the results do not follow immediately it is practically impossible to connect the diseases which might arise with articles of food, especially as the use of these preservatives is so widespread that all of us swallow them without knowing anything about it. It has been repeatedly shown, notably by Dr. Féré, that the medicinal use of borax may produce or aggravate lesions of the kidneys. This has been disputed by Liebreich, who gave boric acid to seven patients in varying amounts and for different periods without producing albuminuria. Two received 28 grams in 7 days; three received 33 grams in 11 days; another 37.5 grams in 22 days; another 39.9 grams in 24 days. In none of these cases did albuminuria follow. Dr. Harrington has endeavoured to clear up this point by experimenting on cats. Twelve cats were selected, and kept under precisely the same conditions. One received no preservatives, six received borax in varying amount, and five received another preservative, which he does not mention. Of the six cats fed on borax, one died at the end of six weeks. The duration of the experiment in four cats was 133 days, and the dose was about 0.8 gram. Of those six cats five showed marked kidney lesions, described by Professor William T. Councilman as analogous to those found in subacute and chronic nephritis in man. Dr. Harrington says that it might be objected that the daily doses of borax were in proportion to weight much greater than a person could possibly receive in food in a day, but he denies this, as he claims that with the amounts given above a man might easily take 7 grams of borax and boric acid at a meal, and this might be doubled in the course of the day. We certainly think there is more in this objection than Dr. Harrington allows. If an average cat weighing 5 lbs. takes 0.8 gram of borax, a man weighing 140 lbs. would have to take 22.5 grams in order to get an equivalent dose. Nevertheless, the evidence tends to show that boron compounds are capable of causing nephritis, and this undoubtedly constitutes a grave objection to the use of these preservatives in such large quantities as 18 grams to the pound of corned beef or ham, and suggests the desirability of the Governments concerned revising their regulations on this subject.

THE CONSCIENTIOUS OBJECTOR.

The Home Office has now issued to the clerks to borough justices throughout the country a copy of the observations which the Lord Chief Justice recently made at the Birmingham Assizes on the duty of magistrates in administering Section 2 (the Exemption Section) of the Vaccination Act of 1898. In the British Medical Journal it has been repeatedly urged that some magistrates err on the side of stringency, and others on the side of laxity. The remarks of the Lord Chief Justice are on the same lines. As regards undue stringency, he states that some magistrates appear to think "that they ought to be satisfied that vaccination would be harmful to the child," and that some even "seemed to think that they were entitled to have medical evidence before them that such vaccination would be prejudicial." But what the Act says is that the magistrate has to be satisfied merely that the applicant conscientiously believes "that vaccination would be prejudicial to the health of the child." It is the applicant's belief, not the magistrate's, that is to be the determining factor

in the case. On the other hand, as a check to undue leniency, the Lord Chief Justice points out that an objection to vaccination, "either on the ground of interference with the rights of the subject or the question of parental control," is not valid under the Act; the belief that vaccination would be prejudicial must not be merely general, but must have reference to the particular child regarding whom the application is made. It may be a little difficult to give effect to this last point in practice, as an anti-vaccinating parent may declare that he conscientiously regards the operation as bad for every child on whom it is performed, and, therefore, for his child. However that may be, there is no doubt of the importance of the Exemption Clause being reasonably administered. True, it is difficult to avoid sympathizing with magistrates who have no patience with faddists, whose folly has its effects, not on themselves, but on their helpless offspring. But it is a simple matter of fact that over-severity in carrying out the law is apt to foster rather than to discourage anti-vaccination fanaticism. The purpose of the Exemption Clause is to prevent sham martyrdoms, and since the Act was passed it has occasionally been found possible by experienced agitators to get up an indignation meeting over the case of a parent who has been refused an exemption certificate, and has subsequently been penalized for the non-vaccination of his child. We have often urged that the Vaccination Acts should be obeyed. That applies as well to Section 2 of the Act of 1898 as to the other Sections and Acts, and it applies as well to the magistrate as to the public generally. It is to be hoped, therefore, that in future justices who in the past have gone too far in the direction either of leniency or severity will take heed to the Lord Chief Justice's timely advice.

THE SURGERY OF HEPATIC CIRRHOSIS.

THE surgical treatment of hepatic cirrhosis is closely associated with the name of Talma. An instructive monograph on the subject, prepared by M Gaston Alexandre, and reviewed in the July number of M. Pozzi's *Revue de Gynécologie*,[1] deserves the consideration of every surgeon who may be consulted by a physician about a case of cirrhosis. Talma advocated suture of the omentum to the parietes in order to ensure adhesions, which became vascular, and thus relieved the portal system. The turning of some of the portal blood into the systemic current has been shown by experience to entail no bad effects. Enough portal blood can pass through the normal channels in the liver, relieved of over-pressure, to afford to the patients the benefits of the natural functions of that organ. In short, the danger of poisoning by portal blood is imaginary. Alexandre enters into clinical considerations about cirrhosis itself. Ascites is the prominent complication, but there are others to be taken into account. Hypertrophic cirrhosis in alcoholic subjects is favourably influenced by Talma's "omentopexy." With atrophic cirrhosis it is otherwise, but the latter is also the least favourable type for medical treatment. Jaundice of a malignant character and chronic vomiting render the patient unfit for abdominal incisions. The alterations in blood pressure entail several unfavourable complications—enlarged spleen, epistaxis, melaena, and haemorrhoids, also "opsiuria," a condition described by MM. Gilbert and Lereboullet, in which the excretion of urine is relatively greater during fasting than within a few hours after full meals. Definite cardiac and renal lesions are, of course, of grave import; nevertheless, no case of cirrhosis is free from some of these complications. Statistics show that omentopexy is a serious operation. Alexandre has collected 107 reported cases, and hints that many fatal results must remain unrecorded; 58 ended favourably, 20 being registered as ameliorated, and 38 as "cured"; 14 were followed by "recurrence," and no less than 35 died. In 51 cases the bulk of the liver was noted in the reports, 31 being atrophic and 20 hypertrophic cirrhoses. The mortality was 41 per cent. in atrophic cirrhosis, and 15 per cent. in the hypertrophic type. Thus the operation is dangerous, but Alexandre dwells on the fact that most physicians follow Weir's teaching, that the surgeon should not be called in until there is no chance of cure by medical treatment. It would be better if omentopexy were practised earlier in the course of cirrhosis. Alexandre deprecates operation in advanced cases, especially where there is marked icterus, acholia and albuminuria or pleural effusion. Haemorrhages in themselves imply that operation is urgently called for, and the presence of sugar in the urine is not in itself a contraindication. Alexandre advocates a fairly free abdominal incision, from 2 in. above to 2 in. or 3 in. below the umbilicus, which is avoided by passing the knife nearly an inch to its left. The ascitic fluid must be emptied slowly, and the peritoneum dried by compresses. The viscera should then be very carefully inspected in order to make sure of the diagnosis. The omentum is then drawn down and spread out laterally, but it is important not to drag down or kink the transverse colon. The edge of the omentum is sutured to the parietal peritoneum on the right, the left and the lower angle to the wound. Alexandre deprecates scratching the peritoneum, fixation of the edge of the omentum between the liver and diaphragm, and suture of omentum to the subcutaneous or sub-muscular tissue of the abdominal incision anterior to the parietal peritoneum. Occasionally haematemesis, and, in one case, haemorrhage from the bowel, have followed omentopexy.

[1] L'Omentopexie dans les Cirrhoses Hépatiques. *Thèse de Paris*, 1903.

ALCOHOL AND INSANITY.

THE question of a causal relationship between alcoholic excess and insanity has for long been the subject of controversy. That a comparatively high percentage of persons addicted to excessive drinking should be found in our asylum population, just as it is—though to a less extent—in our prison population, is on *a priori* grounds to be expected: but the question as to whether in the majority of these cases the alcoholism causes the insanity, or that the alcoholism is only one expression of a pre-existing and inherent mental weakness or instability, is still left open. A reference to the annual reports of lunatic asylums, reviewed from time to time in the BRITISH MEDICAL JOURNAL, will show that the proportion of cases in which intemperance is assigned as a predisposing or an exciting cause of insanity is extremely variable in the different asylums. The average, however, for all asylums returned in the English Lunacy Blue Book for 1902 was 16 per cent. It is therefore with considerable surprise that we read in Dr. Clouston's interesting annual report on the Royal Edinburgh Asylum for 1903 that in 42.3 per cent. of the men and in 18 per cent. of the women excess in alcohol was assigned as the cause of their mental disorder. Not only that, but we notice that the proportion of alcoholics amongst the paying patients of Craig House—who number, roughly, a quarter of the whole—was only 9 per cent., thus making the percentage amongst the rate-paid patients higher still. This proportion is a very rapid increase on former years, as for the five years 1873 to 1877 the percentage of alcoholic cases was only 18.5 among the male and 10.4 among the female admissions. "No explanation," says Dr. Clouston, "will account for this, but the one that certain classes of the population are drinking to greater excess than they did, and in doing so are, many of them, destroying their sanity. Several facts seem to confirm this conclusion, for example, the increase in general paralysis" (previously referred to in his report), "which is now generally admitted to be caused by evil living, the increased drink bill of the Empire, and the increasing arrests for the smaller offences connected with drunkenness." Whatever may be the explanation, he continues: "It is a social scandal of a very alarming kind that nearly one-half of the insanity in men of any district or class should be more or less due to drink even for one year." These statements, coming from so eminent an authority as Dr. Clouston, naturally created some stir in Scotland, and evoked a leading article in the *Scotsman*, which traversed his conclusions and compared his figures with those of the Montrose Asylum, whose Medical Superintendent, Dr. G. J. Havelock,

in giving the proportion of cases in which the insanity could be stated as due to alcohol as 8 per cent. of the admissions to his asylum, took occasion to remark that "the insane have had enough unmerited opprobrium to endure in the past without being stigmatized to-day as if they were in the main drunkards and steeped in all manner of vice," and quoted from Sir James Paget's *Clinical Lectures and Essays* the following pregnant words: "To determine the influence of excesses in producing insanity, you must count, not only the insane, but the sane who have committed excesses and retained their mental power." Now it must be admitted that it is almost impossible to get even a fairly accurate and complete account from a patient or his relatives of his family history, partly from ignorance of his forbears, and partly from reluctance to admit what is felt by many to be a blot upon the family escutcheon. In consequence of this, various so-called "moral" causes, worry, domestic trouble, etc., and toxic and autotoxic agencies, may rise into prominence at the expense of the potent influence of heredity, and confound statistical tables, which become thus a stumbling-block to the investigator. In an able and courteous reply to the *Scotsman*, which with characteristic acerbity had contended that the increase in alcoholic insanity was "due to the doctors rather than the patients," Dr. Clouston lays stress upon the fact that the decided increase in the special form of insanity known as "alcoholic insanity," which is by its characteristic features clearly distinguishable from any other form, shows that it is "the facts, and not the doctors, who have to be reckoned with." It is, of course, possible that a mental instability is the fundamental factor, and that the alcohol merely decides the mode or venue of the disorder; this explanation is to some extent supported by the statistics of the Psychiatric Hospital of Moscow, which are to the effect that in continuous alcoholic delirium, hereditary predisposition was present in 99.5 per cent. of the cases, a higher percentage than obtains in any other form of mental disorder; whilst Kraepelin, who states that alcohol and syphilis cause a quarter to a third of his asylum admissions, considers, with considerable show of reason, dipsomania to be one of the manifold varieties of epilepsy.

THE NATURE AND CAUSE OF ARTERIO SCLEROSIS.

The problem of the cause of arterio sclerosis has long interested investigators. The results of the pathological and experimental observations made may be conveniently summarized by recalling the effects discovered by different observers on the elements of the arterial wall. The nutrition of these structures is maintained in one of the following ways: either all three coats are nourished by blood derived from the vasa vasorum or the supply of nutrition is twofold, the intima being nourished by the blood within the vessel, and the remaining coats by the vasa vasorum. The latter view is held by those observers who have failed to find branches of the vasa vasorum penetrating the elastic lamina, and so reaching the intima; it does not, however, follow that because the existence of such vessels cannot be proved, no nutrition reaches the intima from the vasa vasorum; indeed, Koester, who established the existence of a rich arterial supply to the muscular coat of the larger arteries, also found minute lymphatics in the same layer, and his pupil, Trompetter, showed the existence of lymphatics in the hypertrophied thickened intima of diseased vessels. In pathological conditions changes may be met with in one or all of the arterial coats. Virchow considered the changes met with in the intima to be due to chronic inflammatory hyperplasia. Cohnheim was of the same opinion, but considered that such changes were restricted to vessels supplied with vasa vasorum. V. Engelhardt supported the view of the inflammatory nature of the changes. Lobstein admitted that the changes were due to a nutritional disturbance, but gave no explanation for them. Marchand, too, was unable to offer any explanation for these changes, which were not inflammatory in the ordinary sense of the term. Rokitansky considered that the thickenings found in the surface of the intima were due to deposits from the blood circulating in the lumen of the vessel; and Traube, following out the same idea, contended that the white corpuscles were responsible for the formation of the deposits. Thoma, on the other hand, advanced views entirely different from those currently held. He contended that deposits in the intima were nothing more than efforts on the part of this coat to fill up the slight aneurysmal hollows resulting from weakness in the external coats of the blood vessel. Amongst French writers Huchard is strongly inclined to the view that all changes of a chronic character met with in the vessel walls are attributable to disturbances of the blood supply through occlusion of the vaso vasorum (Martin). Professor Jores, of Bonn, has recently published[1] the results of a careful histological inquiry into the changes of the inner coat of arteries. They may, he states, take the form of mere hyperplastic thickenings—that is to say, there may be an increase of the individual cellular elements of the internal coat and multiplication of the lamellae of the elastic layer, while even the longitudinal muscle fibres lying in close relation to the elastic layer may be hypertrophied. In other cases the changes found are described as "regenerative connective-tissue growth," implying that it is the subendothelial tissue which shows a more luxuriant hyperplasia than any other element. Still another group is described in which the characters of the above types of change are combined, but we have the impression that other observers would have considerable difficulty in recognizing all the characters sufficiently distinctly to lead to the clear separation of the primary types, let alone this third one. Turning to the question of the causation of these changes, Professor Jores advances the opinion that they are due merely to exaggeration of a reaction which is demonstrable in quite early life—on the part of the intima and other arterial coats in response to a call for increased power of resistance against enhanced blood pressure. Should such demands be excessive then arteriosclerosis results, and if still further developed, fatty degeneration takes place in the tissue that has been thrown up as a defence. Professor Jores has added considerably to our knowledge of the minuter characteristics of the changes known as arteriosclerosis, which, though at first reparative, ultimately assume degenerative characters. We can accept the former part of his results, but we fear he will not find many supporters of his etiological theory, more especially because his explanations refer almost entirely to the changes which begin in the intima. Most observers are aware of Martin's views of the importance of adequate nutritional supply by means of the vasa vasorum, and no explanation of the cause of arteriosclerosis will be considered adequate which neglects to consider the influence of occlusive changes taking place within these small vessels upon the vessel walls to which they are distributed.

THE PSYCHOPATHOLOGY OF EVERYDAY LIFE.

The severance of normal from morbid psychology has for long been maintained by the psychologists of the schools, who, for reasons into which it is unnecessary to enter here, have for the most part—and in no question more than in the great free-will controversy—tacitly ignored the bearing upon normal psychology of the phenomena of morbid mentality. That this separation, however, though of practical use, is arbitrary and essentially factitious, and that there is an unbroken continuity of phenomena and a fundamental conformity of law between these two apparently dissimilar bodies of knowledge, has been successfully urged by modern psychopathologists. The gap is being daily filled up by studies in degeneracy, criminal psychology, and kindred subjects; and Professor Freud's interesting book on the *Psychopathology of Everyday Life*[1] is a small

[1] *Weiteres und Entscheidendes über Arteriosklerose auf Grund neuer experimenteller Untersuchungen.* [An Anatomical and Experimental Inquiry into the Nature and Causation of Arteriosclerosis.] Von Prof. L. Jores. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. (Demy 8vo., pp. 172, 4 plates. 5s.)

[1] *Zur Psychopathologie des Alltagslebens.* [The Psychology of Everyday Life.] Von Professor Dr. Sigm. Freud. Berlin: S. Karger; and London: Williams and Norgate. 1904. (Demy 8vo, pp. 92. 3s.)

contribution to the evidence for the fundamental solidarity of normal and morbid mental states. The subjects under investigation are occurrences apparently trivial, but, inasmuch as they throw light on obscure mental processes, of importance; occurrences which every one must have encountered, such as slips of pen and tongue, solecisms, and mistaken and apparently accidental actions. These incidents, in the main personal experiences of the author, are subjected to searching examination, and their mechanism explained. Throughout all these apparently accidental happenings, whether the forgetting of a proper name—the subject first discussed—the insertion of a wrong word in speaking or writing, or a mistake in conduct, any one of which may or may not be instantly recognized as faulty by the subject, accident or chance, the author maintains, has no place. "I believe, indeed," he says, "in external (real) accident but not in internal (psychic) chance." He relates in detail numerous instances in illustration of his contention that all such mistakes are "motived" subconsciously, and are generally related to a definite disturbing influence outside the intended action and connected thereto by some process of association. These views are ingeniously worked out at a length which here precludes a more detailed account. One of the most interesting chapters—the keystone, indeed, of the whole work—is that on determinism and superstition, in which the results of the preceding chapters are summed up, and it is shown that the common characteristic of all these phenomena is that they can be referred to incompletely suppressed psychical material which has become detached from consciousness without, however, being deprived of every possibility of expressing itself. Even the apparently random choice of a name or number is thus, he contends, subconsciously determined. He makes a suggestive comparison between this subconscious determination in the normal and the characteristic attribution by paranoiacs of extraordinary significance to unimportant details in the conduct of others. The category of the fortuitous, of unnecessitated motives, which the normal man predicates of part of his mental processes, is rejected by the paranoiac in the psychical processes of others; that is, Professor Freud says, he probably projects into the mental life of others what is present in his own subconsciousness; or, to put it otherwise, the nexus of determined action and thought, which in normal states remains unconscious or subconscious, rises in the paranoiac into the conscious field. This outwardly projected psychology is also for Professor Freud the cause of a large part of the mythological conceptions of the universe which, he affirms, still persist in the most modern forms of religion. This book deals with a fascinating subject, but it is rather the sidelight thrown on graver issues than the ingenuity displayed in elucidating everyday occurrences which make it noteworthy.

THE SENSE OF ATTITUDES.

M. PIERRE BONNIER[1] has written a most readable and, in many places, amusing pamphlet, largely dialectic, on self-orientation. By the term "sense of attitudes" he does not intend to define any newly-discovered sense, but wishes merely to replace by it certain terms which are in circulation in the scientific world, such as muscular sense, sense of space (CYON), kinaesthetic sense, and stereognostic sense. M. Bonnier, who is clearly an out-and-out adherent of the school of metaphysical materialism, tilts against dualistic forms of philosophy which, he affirms, are perpetuated in the expressions of modern psychology, and prevent any rational psychological explanation of time and space cognitions. The book is thus essentially a philippic directed against the generally accepted view of psycho-physical parallelism, and in particular against his dualistic disputant, M. Claparède of Geneva, who conceives the soul to be a thinking and unextended entity, and matter to be an extended and non-thinking reality entirely heterogeneous and disparate. M. Claparède laid himself open to an obvious rejoinder when he affirmed that the principle of parallelism was at once "a fact of observation and an artifice of method." M. Bonnier stigmatizes this as an intrusion into geometry, only it is a geometry without space. "In what part of scientific psychology," he asks, "can one class as a fact of observation a parallelism between a thing which is somewhere and another which is nowhere?" He readily admits, also, that there is here an artifice of method, just as there is in seeing double by means of squinting, but he cannot see what purpose is served by this experimental diplopia, save an illusory superposition of the abstract on the concrete, of the supernatural on the natural, of the virtual or factitious on the real. In short, things must be somewhere or otherwise are non-existent. This is in effect the fundamental article of M. Bonnier's psychological creed. For M. Bonnier, then, ideas and sensations exist extended in space and have necessarily a form determined by the anatomical and physiological distribution of the neural elements engaged at the time. The notion of space plays the chief part in the mechanism of psychic phenomena because the neural morphology intervenes in thought just as the morphology of the limbs does in gesture, and it is by an immediate recognition of a thing as existing at some point or place that it is recognised as some thing. In every peripheral perception there are two distinct operations, a sensorial perception and a definition of the points thus perceived, both functions residing co-extensively in the same structure. Owing to sensory differentiation and specialization, sensorial modalities have ceased to be reducible amongst each other; for example, a notion of temperature cannot be expressed in terms of colour, but these may be perfectly superposable on the same point in space. Thus the identity of localization under diverse sensorial aspects engenders the substantive notion and gives to it its concrete existence. But if localization is the test of concrete reality, there is nothing better localized than our ego, which is above all a point in space. We should not thus for one instant speak of intelligence as an immaterial thing enclosing other immaterial things, the ideas. "Intelligence, ideas, and sensations are things of gravity, temperature, and defined form, which in man can exist only at a temperature in the neighbourhood of 38° C." We have not space to follow M. Bonnier in his exposition of this difficult and interesting subject, which has for beginning and middle and end "*pour exister, quelque chose doit être quelque part.*" An eminent psychologist once said that it is impossible for any man to transcend the limitations of his own constitution, and M. Bonnier, himself a master of invective, will forgive us if we say that though this dictum appears at first sight to support his thesis, it may, on deeper reflection, be found to carry a particular application.

[1] *Le Sens des Attitudes*, by M. Pierre Bonnier. Paris: C. Naud. 1904. Pp. 114.

PROPOSED INTERNATIONAL OPHTHALMOLOGICAL SOCIETY.

MR. W. M. BEAUMONT, Bath, has issued to the tenth International Ophthalmological Congress, which is being held at Lucerne this week, a fly-leaf suggesting the formation of an International Society of Ophthalmologists. He states that the nine International Congresses of Ophthalmology are monuments which record the steps the science has made, and that a comparison of their *Transactions* from the first volume in 1857 to the ninth in 1899 shows how rapid the march of knowledge has been. He thinks that the Congresses would be bound together in unbroken continuity if the intervals were bridged by such an international society as he proposes. There need, he thinks, be no change in the routine of the meetings of the Congress, but believes that "every nationality with its own executive, always in touch one with the other, and always working in unison, would be ready, when its turn came, to prepare for a congress. For a small annual subscription this world's society would issue to every member annually a report, printed in his own language, on the progress of ophthalmology in all parts of the world, with monographs on special subjects by leading authorities. Members of such a society, travelling in foreign countries, would have a bond of union which would give them facilities for

seeing the work of their *confrères* with but slight formalities, and an 'Entente Cordiale' would be established, which perhaps could be formed in no better way." Such a scheme must have the sympathy of those who recognize how much the progress of knowledge and the application of new discoveries to practice is hindered or delayed in all departments of medicine by differences of language, by national prejudices, and by the multiplicity of transactions and special journals. We should have thought that ophthalmology suffered less than almost any other speciality from these difficulties, but if the ophthalmologists can produce a good working scheme, there can be little doubt that their example will be followed. The risk is that the proposal may result merely in the establishment of one more special periodical.

THE SANITARY INSPECTORS' ASSOCIATION.

The autumnal meeting of the Sanitary Inspectors' Association was held last week at Bournemouth, where the members were the guests of the Mayor and Corporation and the Bournemouth Medical Society on several occasions. On the first day the Chairman gave an address on the inception, progress, and aspirations of the Sanitary Inspectors' Association, and said that its main object was to help sanitary inspectors to carry out their duties honestly and fearlessly; they wished to improve their position and obtain the recognition to which their arduous and responsible duties entitled them. On the second day Sir J. Crichton-Browne, President of the Association, gave an address, in which he contrasted the health conditions of Bournemouth and Middlesbrough. He pointed out that in Bournemouth the mortality of children under 1 year of age was only 81 per 1,000, the lowest of all the seventy-six great towns of England and Wales, whereas Middlesbrough had an infantile mortality of 186; in Middlesbrough that mortality was increasing, while in Bournemouth it was decreasing. He cited other facts which supported his contention that Bournemouth held a sanitary primacy among the large towns; its cause was to be found partly in the natural advantages of situation and partly in the absence of artificially-introduced conditions, such as smoke and overcrowding, by which health was impaired; but the most important cause was the systematic recognition by the inhabitants and the local authorities of the fact that the prosperity of the town depended upon its salubrity. He quoted the testimony of Mr. Cooper, the Chief Sanitary Inspector, to the effect that the bakers had met the requirements of the new Act affecting bakehouses in a public spirited way; of Dr. Nunn, M.O.H., who had reported that the local Dairymen's Association had not only approved of the regulations drafted during the year, but had suggested that local authorities outside the borough should be communicated with, in order to induce them to accept similar regulations and periodical inspections of dairy farms; of Mr. Tanner, Borough Bacteriologist, who had described the success of the admirable system of throat swab examination in cases of diphtheria and throat diseases of a doubtful nature; of Mr. Cripps, the Public Analyst, who had drawn attention to the improvements which had taken place during the last three years in the quality of foods and medicines; and of Mr. Christie, the Inspector under the Foods and Drugs Act, who had noted a steady decrease in the percentage of adulterated samples submitted to analysis. In conclusion he said that the housing problem was not yet solved, overcrowding in great cities was as embarrassing as in the walled cities of the past; there was need of redoubled sanitary energy, and therefore of improved education for the sanitary inspector, who would be supported, as he had never been before, by science and the good will of the public. Dr. Snow, in proposing a vote of thanks to Sir J. Crichton-Browne for his address, said that the high infantile mortality of the country was a reproach. He attributed it mainly to three causes, first, that many mothers did not care to fulfil their maternal duties; secondly, that there was great ignorance, especially among the poorer classes as to the proper feeding of infants; and, thirdly, a difficulty, especially in some large cities, of procuring a pure milk supply; he also condemned the use of preservatives in food. Dr. E. P. Philpots, who seconded, advocated the appointment of special women-inspectors to look after the welfare of children, and the establishment of crèches and dépôts where humanized and sterilized milk could be obtained. Sir James Crichton-Browne, in reply, referred to the recent experiments in America, showing that the prolonged use of preservatives, such as boracic acid, in milk was injurious. The poor, however, had often no proper place in which to keep milk, and the whole matter was one which required most careful consideration.

HOSPITAL SHIPS IN NAVAL WARFARE.

On the initiative, as would appear, of the French Government, an international conference is to be held at the Hague, probably in December, to draw up regulations with regard to hospital ships in naval warfare. The chief object will be to revise existing international rules so as to leave no doubt with regard to the neutrality of hospital ships. The need of such ships in actual warfare is, of course, now everywhere recognized; Japan has two hospital ships, and Russia has recently commissioned the *Orel*. Hospital ships have been commissioned on several occasions in the British Navy for the transport of sick and wounded of the army. At the present time the Royal Navy possesses only one hospital ship, the *Maine*, which, since its employment during the South African war, has been reconstructed, and is now attached to the Mediterranean Squadron. It is, we believe, found extremely useful and convenient, especially in the case of the smaller ships, such as torpedo-boats and destroyers, which have no sick-bay; patients are received on the *Maine*, and treated there, and the ship makes occasional trips to this country when a considerable number of invalids need to be brought home.

PROTECTION OF CHILDREN IN SPAIN.

A new law for the protection of children under the age of 10 years has been passed by the Spanish Cortes. The administration of the law is entrusted to provincial and local *juntas* or committees, under the control of a Central Superior Council. The committees are to include elected representatives of scientific societies, charitable associations, and working-class organizations. The need of such a law is shown by the fact that, according to the most recent official statistics available, the number of children under 5 years of age who died in the forty-nine provinces of Spain in 1900 was 229,348, being 42.72 per cent. of the total mortality. Among older children the death-rate was also high.

INTERNATIONAL CONGRESS ON ACCIDENTS AMONG WORKMEN.

An International Congress on accidents among working men is to be held next year in Belgium. The questions proposed for discussion are: Traumatic lesions and post-traumatic affections; the organization of first aid for the injured in large towns and industrial centres; the uniformity and centralization of medical statistics. The General Secretary of the Congress is Dr. Poels, 2, Rue Marie-Therese, Brussels, to whom all communications relative to the Congress should be addressed.

Inspector-General of Hospitals and Fleets Herbert MacKay Ellis, R.N., took over the duties of the Director-General of the Medical Department of the Royal Navy in succession to Sir Henry F. Norbury, K.C.B., on September 12th. He received his medical education at St. George's Hospital, and entered the service in September, 1875; he served with the Royal Marine Artillery throughout the campaign in Egypt in 1882, being present at the two engagements at Kassassin and at the battle of Tel-el-Kebir: for his services in Egypt he was promoted to Staff Surgeon. He was Fleet Surgeon in H.M.S. *Victoria* when she was sunk off Tripoli in collision with the *Camperdown* in 1893.

Canada.

The Ontario Medical Association.

At the recent meeting of the Ontario Medical Association a number of matters of interest to the profession throughout the Province were discussed in addition to the many papers read.

Proposed Amalgamation with British Medical Association.

A motion by Drs. Cameron and Thistle, that the Ontario Medical Association be changed to constitute a Branch of the British Medical Association, was, on the motion of Drs. Powell and McPhedran, referred to a committee to be named by the incoming President and Mr. Cameron to report to the Association.

Incipient Insanity.

It was moved by Dr. McPhedran and seconded by Dr. Beemer:

> That, in the opinion of the Association, there exists an urgent need for the establishment of hospital accommodation for the temporary reception and treatment of suspected cases of mental alienation. The establishment of such institutions offers the only efficient means for the cure of such cases, and would save many of them from the stigma of having been incarcerated in an asylum for the insane.

Mild Small-pox.

Dr. Hodgetts, Secretary, Ontario Board of Health, read a valuable paper on The Diagnosis of Modified Small-pox, a subject on which his large experience as Provincial Inspector entitles him to speak with authority. The word "modified" was used to mean cases in which the course was in any way atypical, not those of varioloid. About five years ago this form spread over the western and northern parts of the Province and was variously diagnosed as syphilis, chicken-pox, and impetigo. The symptoms and differential diagnosis were given very fully and illustrated by cases.

Life Insurance.

A symposium on life insurance examination was held in which a number of examiners and medical referees took part, and to which Mr. Papps, the actuary of a well-known company, contributed a paper. With regard to tuberculosis it was agreed that heredity was of minor importance in comparison with other factors, such as personal condition, history and habits. As to syphilis, treatment should be continued for at least three years, and the patient should be free from symptoms for ten years before he could be held to be free from danger of recurrence. Not much weight is now laid on the heredity of cancer, the German committee of investigation having held that it is not hereditary. Complaint was made of the smallness of the remuneration allowed the examiners, but Mr. Papps pointed out that they had only themselves to blame for this, as the companies would pay only what they had to pay, and there was no difficulty in getting examiners.

Diphtheria.

Dr. Sheard, City Health Officer, Toronto, read a paper on Diphtheria, in which he emphasized the importance of the clinical manifestations in making a diagnosis of this disease, and stated that he was convinced that we cannot depend exclusively on the results of the bacteriological examination. He evidenced a series of 7 cases diagnosed as posterior fibrinous rhinitis, in which repeated examinations failed to reveal the presence of the Klebs-Loeffler bacillus, but each case was followed by paralysis. Attention was called to a form of diphtheria, the post-scarlatinal type, characterized by the presence of the Klebs-Loeffler bacillus during the second week of scarlet fever; no special symptoms are seen, the patients invariably get well, and they are not infective. Owing to this, the association of the two forms of infection was simultaneous in the same patient as the result of two separate exposures. A separate ward is kept for these cases at the Isolation Hospital. Cases of post-diphtherial scarlet fever, the latter disease following closely on the former, and exhibiting a mortality of 80 per cent., were met with. As these cases occur as frequently in private houses as in the hospital, they cannot be accounted for by exposure there. A frequent experience at the hospital is to have whole families sent in, half of them suffering from one disease and the rest from the other, showing the correctness of Sydenham's contention that there exists a far greater intimacy between these two diseases than is generally admitted. In conclusion, Dr. Sheard said scarlet fever seems to be antidotal to diphtheria, while diphtheria aggravates scarlet fever.

Functional Heart Murmurs.

Dr. Rudolf read a paper on Functional Heart Murmurs, in which he gave the analysis of the examination of a number of wards in the city hospitals, showing that in 60 per cent. of the patients these murmurs were present. Fever gives rise to these signs, 66 per cent. of scarlet fever cases showed them, and they are likely to recur in rheumatic fever. A useful rule is that functional murmurs tend to occur late in fever, while endocardial murmurs appear within the first ten days.

Standard for Matriculation.

At a recent annual meeting of the Ontario Medical Association it was decided to raise the standard of matriculation, which has been in the past the pass matriculation of the province, by requiring a minimum of 40 per cent. in each subject, and an aggregate of 50 per cent. on the total.

Other Business.

The annual luncheon was most successful, speeches being made by Premier Ross, the Hon. Mr. Harcourt, and others. Following this, the members were taken on an automobile trip around the city by the members of the Automobile Club.

Dr. J. W. F. Ross retired from the Presidency, and Dr. W. A. Burt was elected to succeed him, and Dr. C. P. Lusk was made Secretary.

Ontario College of Physicians and Surgeons.

At the annual meeting of the Ontario College of Physicians and Surgeons, the official governing body of the profession in the Province, a certain number of changes in the *personnel* were made. This body consists of members elected by the different electoral districts into which the province is divided by the Medical Act, and of *ex officio* members representing the different educational bodies.

Dr. W. H. Moore retired from the presidency and was succeeded by the Hon. Dr. Sullivan, Dominion Senator, of Kingston; other officers elected were: Vice-President, Dr. A. A. Macdonald, Toronto; Registrar, Dr. R. A. Pyne, Toronto; Treasurer, Dr. H. W. Aikins; Solicitor, Christopher Robinson, K.C.

A communication was received which had been forwarded to Lord Minto by the Hon. Alfred Lyttelton, Colonial Secretary, stating that a private members Bill had been introduced in the British House of Commons providing that when any part of a British possession was under both a central and a local Legislature, the King might by Order in Council declare any such part under a local Legislature to be a separate British possession. The object of this measure was to enable reciprocal arrangements to be entered into under the Medical Act of 1866, with such Provinces of Canada as desired to do so. The Colonial Secretary desired to have the views of Canadian Ministers on the measure. The Government had in turn forwarded it to the Provincial Secretary, who had transmitted it to the Council. The communication was referred to a special committee.

The case was reported of Dr. Epp, a qualified practitioner of Ohio, U.S.A., who resides on Pelee Island in Lake Erie, and who had a Bill passed by the Legislature permitting him to practise there only, on petition of the inhabitants. He is the only practitioner on the island. The cases were reported of a large number of faith-healers, osteopaths, magnetic healers, etc., but as they prescribe no medicines no action can be taken against them as the law now stands.

It was reported that in the final examination this year 142 candidates had presented themselves and 93 had passed. This is an unusually large percentage of failures, and there were 24 appeals against the finding of the examiners, but the Council determined not to interfere.

The Special Committee appointed to consider the question of fixing a scale of fees brought in a report setting forth maximum and minimum fees, but as the Council has no legal right to fix a tariff, it simply approved of the report, which contained also a recommendation that the practitioners of each division form separate associations and adopt a general tariff.

The members were entertained at luncheon by the Dean and Faculty of the University Medical Department.

The Toronto Municipality and Tuberculosis.

A pronounced difference of opinion exists in Toronto as to the best method of applying the 50,000 dols. which the city has voted for the relief of the consumptive poor; Dr. Sheard, the City Health Officer, is opposed to the construction of a municipal sanatorium on the ground that it would inevitably

become a burden upon the city, which had hoped to have solved its problem by the vote mentioned. He favours the turning over of the work to an independent body, retaining control only to the extent of the city's contribution. The Toronto Anticonsumption League, which has been active in the municipal campaign, has issued a statement in opposition to this view, taking the ground that the city should not let the control pass out of its hands into those of a private institution. There is already a private sanatorium in the vicinity of the city, private in the sense that it owes its inception to private beneficence, but intended for public patients, and the management of this institution hope to have the money voted by the city turned over to them. Some of the difference of opinion is doubtless due to local jealousy.

Profits on Patent Medicines.

The Wholesale Druggists' Association, which includes all the wholesale druggists in Montreal, Toronto, and other cities, has formed a strong combination, the purpose of which is to put a stop to the cutting of prices on all patent medicines sold throughout Canada. It is at present trying to get control of all patents by means of an agreement between retailers: manufacturers who refuse to fall into line will be blacklisted. No premiums, tickets or bonuses are to be given by the druggists, and a 50 per cent. profit is guaranteed on all patent medicines to the retailers, while the wholesalers are bound not to sell to retailers who cut prices. Six months, it is expected, will be required to complete the scheme, and it does not become operative until a majority of the patent medicine manufacturers have agreed to the terms. The departmental stores inaugurated the practice of cutting rates in these medicines.

Deportation of Trachoma.

Thirty-two Syrians affected with trachoma have been arrested at the instance of the Government Immigration Inspector and their deportation ordered. *Habeas corpus* proceedings were taken on their behalf for their release, but Mr. Justice Archibald in the Practice Court upheld the action of the inspector on the ground that trachoma was an infectious and loathsome disease within the meaning of the Statute.

Public Health.

The Secretary of the Provincial Board of Health has received a report that there have been over 100 cases of small-pox in the district about New Liskeard, and that 25 are now in quarantine. These are distributed throughout seven townships.

The presence of typhoid bacilli in the Toronto City water has been detected, and citizens have been advised to boil water before drinking; the cause is believed to be the high level of the water about the settling basin at the island.

Recent meetings of the Ontario Board of Health have been held in Sarnia and Collingwood, for the discussion of the best form of sewage disposal for these towns, which are situated on the shores of the great lakes, and where relation to water supply makes the position of the outlet for sewers of vital importance. The Board is opposed to any form of disposal which is associated with any possibility of contamination, and insists on the treatment of sewage in such cases.

The statistics published for July in Toronto show a heavy mortality among infants. There were in all 270 deaths recorded, and 116 of them were of infants less than a year old. The figures were as follows:

Births	420
Marriages	295
Deaths	270

In London, Ontario, the numbers for the same month were as follows:

Births	96
Marriages	44
Deaths	43

Scotland.

Scottish Sanitary Congress.

The thirtieth annual congress of the Incorporated Sanitary Association of Scotland, held in Perth, was attended by 400 members, and no fewer than 97 town and county councils were represented. The business meetings were held on September 8th and 9th, but on the evening of September 7th a popular lecture was delivered in the City Hall, by Professor Glaister, of Glasgow, on "Municipal Obligations and Undertakings."

On September 8th, Mr. Cameron, the Chief Sanitary Inspector of Aberdeen, the President of the Association, delivered his inaugural address on the "Mission of Sanitation." He indicated the difficulties and prejudices with which sanitation had to contend, and pointed out some of the directions—social and industrial—in which progress had still to be made. Despite the larger powers which the legislature had conferred upon the sanitary authorities there was still much that was a hindrance to sanitation and which rendered it difficult to effect improvement.

An important discussion took place on the supervision of small-pox contacts, introduced by Dr. C. Parker Stewart (Medical Officer of Health, Perth). The advantages of the reception house were pointed out, but a doubt was expressed whether, in the case of residents in the town, this was not a very expensive method. The majority of outbreaks of small-pox were caused by tramps and vagrants, and this class of person ought to be registered, and on the outbreak of small-pox ought to be vaccinated or revaccinated. He ought to be treated much as a ticket-of-leave man.

Mr. Hendrick (Aberdeen) read a paper on the use of preservatives in food, and the Congress passed a resolution calling for legislation in this matter. Other papers read dealt with the disposal of town refuse and the construction of sewers.

On September 9th the principal subjects before the Congress dealt with sanitation in relation to the very poor and depraved, and several of the Glasgow Corporation officials took a prominent part in the discussions. Dr. A. K. Chalmers (Medical Officer of Health, Glasgow) spoke of the relation of health to poverty, as evidenced, for example, by the size and character of the house. The children of one-apartment families were shorter and lighter in weight than those occupying two rooms, and those from two-apartment families shorter and lighter than those from larger houses. There was a housing problem, a food problem, and a clothing problem as well as a labour problem. The right to prevent the production of conditions which produced disease and insanitary conditions should be claimed. Deterioration in the housing and deterioration in the character of the inhabitants were apt to go together, and there ought to be greater power to deal with both. Mr. Fyfe (Chief Sanitary Inspector, Glasgow) discussed the "ticketing of small houses," and suggested the compulsory employment of caretakers by owners of low-class property, with powers of eviction for persistent overcrowding. Miss Armour (Sanitary Inspector, Leith) spoke of the general conditions of the homes of the poor, and the value of women as sanitary workers.

The annual dinner of the Association was held on the evening of September 8th, and in the afternoons pleasant excursions were arranged for members to places of interest in the neighbourhood of Perth. Fortunately the weather conditions were excellent.

Royal Edinburgh Maternity and Simpson Memorial Hospital: The Milne Murray Lodge.

Already the Milne Murray Lodge, although only in the second month of its existence, promises to take its place as an important and valuable addition to the equipment of the Edinburgh Medical School. It has too long been a reproach to this school that the facilities for training students in the practical work of midwifery have been scant, unorganized, and unsatisfactory. In consequence students went elsewhere to find what was denied them in Edinburgh. Now as a memorial to the late Dr. Milne Murray we have this Home established as an adjunct to the Maternity Hospital. There is accommodation for twelve students, who for a month have the interne and externe practice of the hospital. The hospital fee for the month is £4 4s., and the cost of board and residence in the lodge is about £6 for the same period.

The Lodge is very prettily fitted up, the food is ample and excellent, and those students who have already been in residence speak very highly of the pre-eminent fitness of Mrs. Milne Murray to preside over it. She is thoroughly in sympathy with the students.

The Lodge was established by the Town and Gown Association working in conjunction with the Board of Management of the Maternity Hospital. With the latter it is connected by a covered passage, and instead of students having to be summoned from the four quarters of the town, as under the old régime, they are close at hand, and in a few minutes can be in the wards of the hospital when there is occasion for their attendance.

Ireland.

The Professorship of Pathology in Queen's College, Belfast.

We understand that two memorials are to be presented to the authorities of Queen's College, Belfast, strongly urging the appointment of Dr. Thomas Houston to the vacant Chair of Pathology in that institution. The first is signed by the Professors of Medicine, Surgery, Midwifery, and Materia Medica (that is, by all the present practising professors of Queen's College who hold hospital appointments), by all the members of the staff of the Royal Victoria Hospital, by those of the Mater Infirmorum Hospital, the Sanatorium Hospital, the Belfast Maternity Hospital, the Ulster Hospital for Children and Women, the Belfast Hospital for Sick Children, the Belfast Ophthalmic Hospital and Eye and Ear Dispensary, the Ulster Eye, Ear, and Throat Hospital, and the Belfast Asylum. The second memorial has attached to it the names of Dr. Houston's old pupils now in practice in various parts of the empire. Such remarkable testimonials from former professors, teachers, colleagues, professional friends, and pupils have rarely been presented in favour of any candidate, and indicate clearly the feeling of the medical profession in Belfast and Ulster. Those who recommend Dr. Houston for the Chair do so on the grounds of (*a*) his personal qualities and his scientific attainments, (*b*) his high academic standing, (*c*) his special devotion to and work in pathology, (*d*) his acknowledged success as a teacher, (*e*) the confidence reposed in him by the medical profession in the North of Ireland, and (*f*) because his appointment would at the present juncture be in the interest of the medical school in Belfast, of which he was a former most distinguished student, and in which he is now a most capable and popular lecturer.

Public Health of Belfast.

Small-pox.

At the last meeting of the City Council of Belfast the Medical Superintendent Officer of Health reported that 202 cases of zymotic diseases had been notified during the past month, including 60 cases of simple continued fever and 51 of typhoid fever and 2 of small-pox; the births registered numbered 1,096, and the deaths 592, with an annual death-rate from all causes of 17.2. Only 4 cases of small-pox remained in hospital; the total number admitted since the commencement of the outbreak was 105, of whom only 3 died.

Building By-laws.

The minutes of the Public Health Committee referred to prosecutions for adulteration of milk, and also recommended that in case of building sites a bacteriological examination of the soil should be made in every case of filled-in ground, the approval of the building plan to be conditional on the soil being found suitable. An amendment to delete this clause was carried by 10 votes to 6.

Consumption Sanatorium.

A subcommittee of the Public Health Committee was appointed to confer with the authorities of the Forster Green Consumptive Hospital as to the proposal that the City Council should take over the whole of the latter institution and establish it as the proposed municipal sanatorium; the place allows of development and is a good site, and the plan would be economical. The establishment of a new institution would be very expensive, and the two would overlap. This suggestion of the Lord Mayor's (Sir Otto Jaffé) is highly to be commended, and it is sincerely to be hoped that the trustees of the Forster Green Hospital will not offer opposition to what is so palpably for the benefit of the community. The medical staff, who have worked so hard, in conjunction with the Board, to bring the hospital into line with modern sanatoriums would be in a position to advance still further.

Proposed Poor-law Sanatorium at Whiteabbey.

The Local Government Board have written to the Belfast Board of Guardians that "they approve of the guardians' proposal to acquire the premises known as the 'Abbey,' Whiteabbey, with a view to convert them into an additional workhouse." Considerable opposition to this project exists among the guardians themselves, both on account of the large number of objections that have been raised against the site, and also because a municipal and a Poor-law sanatorium is deemed a useless expenditure and tax on the ratepayer. It was finally decided, however, to ask for a form of consent, to be signed by the majority of the guardians.

Small-Pox in Ireland.

There has been no serious increase in the number of cases of small-pox in the North of Ireland. Nine cases are reported in Cavan. In Armagh the disease is quite under control. Dublin shows no fresh attack since the case reported a fortnight ago.

THE ANNUAL REPORT OF THE METROPOLITAN ASYLUMS BOARD FOR 1903.

The magnitude of the operations of this Board may be judged by the fact that it now possesses no fewer than 51 establishments, 17 of which are hospitals for infectious cases, 5 asylums for imbeciles, a training ship and 13 homes or schools for certain classes of children, and 8 ambulance stations; and that during 1903 as many as 21,925 patients have passed through the Board's fever hospitals, and 359 patients through the small-pox hospitals.

The report is a volume of over 300 pages, and contains numerous charts showing the fluctuations of infectious disease in London. The work of the several departments is summarized in the reports of the Committees of Management, and the report of the Board, signed by the Chairman (Mr. A. C. Scovell) and the Clerk (Mr. T. Duncombe Mann) forms an introduction to these. A map showing the situation of the various hospitals, asylums, and other institutions controlled by the Board, and containing statistical items extracted from the various reports, is a useful addition to the volume.

Administrative Details.

Medical administrators would do well to consult the portions of the report dealing with buildings and contracts. The publication of the experience of the Board on administrative details is a new departure which will be heartily welcomed. The deficiencies of the "contract" system of supply are illustrated, one way of escape from these being to extend the number of contracts. Thus, firewood when included in the general schedule for oilman's goods cost 45s. per 1,000 bundles, and only about 30s. when separately contracted for. Portland cement was similarly lowered from 52s. 9d. to 30s. per ton. By obtaining port wine direct from shippers a reduction in price of 14 per cent. was secured. Potatoes were more advantageously bought in the open market than under contract, and a great saving has been secured in obtaining coal direct from the collieries.

The continued popularity of the Board's hospitals is shown by the fact that 83.8 per cent. of the cases of scarlet fever and 80.3 per cent. of the cases of diphtheria—a higher percentage than in any previous year—were removed during 1903. Of enteric fever 51.8 per cent. of the cases, as compared with 53.2 per cent. in 1902, and of small-pox 97.8 of the cases were removed.

Fatality of the Different Infectious Diseases.

The statistics of fatality of each infectious disease, classified according to age and sex, which are given in this report, increase in value year by year. The fatality among scarlet fever cases was 3.10 per cent., which is higher than in 1899, when it was 2.65, and in 1900, when it was 2.97. Have we reached beyond the period of lowest fatality of this disease, and will scarlet fever now tend to assume its former high fatality? The highest fatality in the experience of the Board was 15.27 per cent., in 1879. These differences are subject to the necessity for certain corrections for age and sex distribution of the cases of scarlet fever, the fatality of scarlet fever notoriously varying with age and sex. Thus last year the fatality of cases of scarlet fever among patients aged 1 to 2 was 13.2 for male and 7.5 per cent. for female children. It would be a great boon if the Statistical Committee of the Board would consider the practicability of publishing fatality and incidence rates corrected for age and sex, similar to those of death-rates from certain infectious diseases now given in the Registrar-General's annual reports.

Of the cases of diphtheria 9.7 per cent. were fatal, which is the lowest fatality on record; and 15.4 per cent. of the cases of enteric fever, which is not far from the average.

Length of Residence of Patients in Hospital.

The average duration of residence of scarlet fever patients was 59.4 days, as compared with 61 in the preceding year for town patients, and 76.92, as compared with 67.75 in 1902 in the

convalescent hospitals (including previous residence in the town hospitals). At the Park Hospital the average residence was 41.8 days, at the Western Hospital 42.4 days, at the Brook Hospital 50 96 days, apparently indicating differences of administration.

The average length of residence of diphtheria patients in town hospitals was 47.6, as compared with 51.4 days in the previous year. The length of average residence varied from 45.8 days at the Western Hospital (117 patients), to 59.6 days at the Park Hospital (31 total patients).

Enteric fever patients were on an average 50.7 days in hospital.

From an administrative point of view this question is of the utmost importance, as it largely determines the amount of hospital accommodation required. Thus, dealing only with scarlet fever, there was in the Board's town hospitals a saving in the number of days' maintenance in 1903, as compared with 1899, of 112,706 days, which at 8¾d. per caput per diem represents a monetary saving of £4,109. This saving, furthermore, is equivalent to the use of another hospital of at least 600 beds.

Dr. Goodall has, during and since 1901, discharged a considerable number of scarlet fever patients at the end of four weeks' stay in hospital while they were still desquamating. During last year no diphtheria patient has been discharged until two consecutive bacteriological examinations of the fauces have proved negative; and he does not find that as the result of this practice the average stay in hospital has become prolonged.

Dr. Caiger makes a remark which should be brought home in every possible way to parents as well as to others: "Until the day arrives when it is possible to conclusively demonstrate the absence of the specific infective agent from the human mucous membranes, the impossibility of a person either recently convalescent from, or who has just come from living in close association with those infected with, the disease being capable of transmitting either scarlet fever or diphtheria to others with whom he may come in contact can never be guaranteed."

Diphtheria and Antitoxin.

The fatality last year was only 9 6 per cent., the lowest on record. At one of the hospitals a record was kept of the fatality rates according to the day of disease on which the antitoxin serum treatment commenced. Of 187 cases treated during the years 1897 to 1903, on the first day of the disease not a single case died, and amongst 1,186 treated on the second day of the disease the fatality rate did not rise above 5.4 per cent.; whereas amongst cases not coming under treatment until the fifth day and after the rate was upwards of 22 per cent.

The reduction in the fatality of laryngeal cases of diphtheria from 42.2 per cent. in 1895 to 18.0 per cent. in 1903 points in the same direction as does also the fatality of tracheotomy cases, which has declined from 1 in 2 cases to 1 in 3 cases.

Small-pox.

During 1903, 358 patients were admitted to the small-pox hospitals, including 8 from outside London. The gross fatality among these was 3.4 per cent., excluding 2 cases which were found not to be small-pox. Altogether 423 cases were notified as small-pox in London, but 77 were found not to be small-pox and were sent away from the wharves; of these, 37 were chicken-pox, 6 measles, 5 erythema, 8 syphilis, 3 urticaria, 5 dermatitis, and single cases were other conditions than the above.

Red-light treatment was given a trial during the year on Dr. Finsen's recommendation, he having claimed that by the exclusion of all but red light from the wards suppuration and pitting could be prevented. Among the patients thus treated by Dr. Ricketts, "in no instance did the development of the eruption and the progress of the case differ from what would have been expected had the patients been treated in an ordinary ward."

Medical Supplement.

A medical supplement is given, edited by Drs. F. M. Turner and J. E. Biggs, two of the Board's medical superintendents. This gives tables showing the incidence of various complications on cases of scarlet fever, diphtheria, and enteric fever, and the cases in which more than one infectious disease co-existed.

Post-scarlatina diphtheria is then dealt with, also the antitoxin treatment of diphtheria, tracheotomy and intubation statistics, laparotomies in enteric fever, etc. The statistics relating to scarlet fever and diphtheria should be arranged so as not to overlap with those given earlier in the report.

Dr. W. H. L. Barlow, Assistant Medical Officer at Park Hospital, contributes a valuable article on Purin Compounds in Nephritis, and a second article on Vincent's Tonsillitis.

ROYAL VICTORIA HOSPITAL, BELFAST:

THE PRACTICAL WORKING OF THE "PLENUM" SYSTEM OF HEATING AND VENTILATION.

By Professor Byers, M.A., M.D.

So much attention is at present being directed to the question of the heating and ventilation of hospitals, churches, and other large buildings, that it may interest your readers to have some details as to the practical working of the Plenum system adopted in the new Royal Victoria Hospital, Belfast, which was opened by His Majesty the King on July 27th of last year.

In Belfast, during last winter, the lowest temperature taken in the neighbourhood of the hospital in the open air was 22° F., while inside that institution the temperature was maintained at 59° F. to 62° F. The average weekly consumption of coal during the winter months was 45 tons. During the present summer the highest temperature reached so far has been 125° F. in the sun or 80° F., in the shade, while in the wards the temperature the same day was 65° F., and the average temperature of the wards has varied between 63° to 65° F., with an outside shade temperature of about 72° F. In the summer the average consumption of coal has been 18 to 20 tons per week. The coal is used to generate the steam for driving the engines which work the fans of the Plenum system, but this steam heats the pipes which warm the air; it is also employed for cooking and laundry purposes, and for heating those parts of the administrative buildings which are not connected with the Plenum system of heating and ventilating, and it is also utilized for sterilizing the dressings and instruments in five operating theatres, the four surgical and the gynaecological.

The greater consumption of coal in winter is owing to the greater heating required at that season. In summer the coolness of the wards is maintained by two fans being kept going instead of one as in winter, and, as a result, the air is changed in the wards ten to twelve times in an hour, while in winter it is changed seven to eight times. Since June 1st two fans have been kept going, and will probably be continued until the end of September. From tanks situated in lofts above the engine-house, with automatically-regulated discharges, fifteen gallons of water flow over three screens of coir matting in winter every ten minutes, while in summer, every five minutes, thirty gallons flow over six screens. Further, these screens are "hosed" every second day, and the large main air-duct is washed out once a week, so that, as a result, the air, as it enters the wards, is deprived of those impurities so often seen in hospitals in crowded cities (ventilated by windows), and leaves no trace of discoloration. Observations taken by the wet and dry bulb thermometer in the recent hot weather showed there was rather more moisture in the wards than in the air outside the hospital.

From the point of view of patients, nothing could be more perfect than the Plenum system of heating and ventilation as seen in the Royal Victoria Hospital, Belfast. Patients do better in both the surgical and medical wards than in the old Royal Hospital, and the nurses, it is reported, are more healthy; while from the medical and surgical side of the question the comfort of working in wards and operating theatres which are uniformly and perfectly heated and ventilated is remarkable. There is neither undue heat nor cold in the wards and no feeling of stuffiness nor of oppression, while any one who visits a ward immediately after a member of the visiting staff has gone round with a class of students will find it quite pure and as if no other occupants than the patients and nursing attendants had been present, a state of affairs very different from what is observed under similar conditions in hospital wards not ventilated and heated on the Plenum system. With reference to the expenditure of the hospital, the following statistics presented to a recent meeting of the Finance Committee are interesting:

The expenditure in the old Royal Hospital, Belfast, for the six months ending June 30th, 1903, was £5 595 7s. 5d., while in the new Royal Victoria Hospital for the six months ending

June 30th, 1904, the expenditure was £7,073 10s. 3d., which shows an increase of £1,478 2s. 10d. The daily average number of patients in hospital for the six months ending June 30th, 1903, was 156, while for the six months ending June 30th, 1904, the daily average number of patients in hospital was 187; in other words, there is one-fifth more patients in the new hospital than in the old, and by adding one-fifth (£1,119 1s. 5d.) to 1903 expenditure (£5,595 7s. 5d.), we find the cost of patients in 1903 would be £6 714 8s. 11d., while the cost of patients in 1904 was £7,073 10s. 3d., the difference between these figures—£359 1s. 4d.—representing the increase (mainly in keeping up the Plenum system) in the new hospital as compared with the old one. At present all the beds in use in the new Royal Victoria Hospital are 204, but, when all the wards are occupied, there will be 300 beds available, and there will be no additional cost for heating and ventilating these wards, which simply for financial reasons of up-keep the Board of Management have wisely decided not to open until they have a guaranteed additional annual income of £3,000 to maintain the 96 additional beds. The reason why, with the additional wards opened, there will be no more expense is due to the type of Plenum system employed, which is adapted to the architectural features of the building.

Two arguments were used against the employment of the Plenum system of heating and ventilating in the Royal Victoria Hospital, Belfast. It was said (1) it would be a failure, or unpleasant, or uncomfortable; and (2) enormously expensive. The experience in the Belfast Hospital falsifies the first, and shows that—from the statistics given—it will not be at all so costly as anticipated by some, and the cost will become no more but relatively less when all the wards are open; while in addition, as the result of the adoption of the Plenum system, and the uniqueness of the construction of the institution, the facility of administration, and the ease and comfort of patients, as well as of the medical staff, are immensely increased. People who have come from all parts to visit the new Royal Victoria Hospital, Belfast, have been much struck with many of its features which are in advance of any existing institution of the kind, and with none have they expressed themselves as more pleased than with the successful way in which the confessedly difficult problem of heating and ventilating has been managed. The patients are provided with an equable temperature in summer and winter, and are protected from those sudden and protean changes so common in a variable climate like the North of Ireland, while, at the same time, by the constant circulation and change of pure air, cold in summer and heated in winter, they live in a comparatively aseptic atmosphere. So far as it can be judged by its practical working in the Royal Victoria Hospital, Belfast, the Plenum system of heating and ventilating employed is an unqualified success, and in the carrying out of the details of the method Mr. H. S. Innes (the engineer in charge) deserves the greatest credit.

PREVENTION OF CONSUMPTION.

England.

Birmingham.—At a meeting of the Birmingham City Council on July 26th, Alderman Cook brought forward the report of the Health Committee, and moved that the proposal of the Committee for the adoption of a system of voluntary notification of tuberculosis of the lung be approved, and that the Committee be authorized to take the necessary steps to put the same into effect. By means of improved sanitation, better housing, better food, and better general regulations respecting health, the ravages of consumption had been reduced by 50 per cent. But a great deal remained to be done. What the Committee desired was to know where the cases were, in order that means might be taken, where necessary, to secure the isolation of the sufferers, and also to assist in preventing, as far as possible, the spreading of the disease. In Birmingham there was an average annual death-rate from tuberculosis of nearly 1,100, and that showed the importance of the subject, because after all, small-pox, scarlet fever, and the other infectious diseases did not cause anything like the number of deaths that consumption did. Last quarter, of all the deaths in Birmingham, one in every twelve was due to phthisis. Therefore, if the Committee could only do something to reduce the mortality they would accomplish a great work. The notification would be regarded as absolutely confidential, and would not be allowed in any way to prejudice the patient. The Committee would prefer compulsory notification, but they thought the time had hardly arrived for that. The experience of other towns was that by voluntary notification about 50 per cent. of the whole of the cases were notified. The cost of voluntary notification would be about £300 per annum, and he thought the money would be well spent. Mr. Sayer seconded the resolution, which was supported by Mr. Myers, who expressed the hope that the Committee would be able to assist the Boards of Guardians in doing something for the bad cases which constantly came before them. Mr. Walthall was in favour of compulsory notification. Mr. Middleton, as a Friendly Society official, expressed the opinion that voluntary notification would do much to help the Committee in their efforts to put down the disease. In his opinion there was no reason why the Committee should not endeavour to stamp out the disease by the provision of sanatoriums without pauperizing the patients, as might be the case if the work were undertaken by the Board of Guardians. Mr. Godlee said the Committee were proceeding by steps, and in that way were anxious to try voluntarily notification. Alderman Cook, in reply to questions, stated that the first step would be to see how far they could induce people to isolate the patients. Although there was often a great deal of overcrowding in bedrooms it was a singular fact that the attic was very often not used at all. The Committee hoped to get people to carry out suggestions which, in the ordinary way, would not occur to them. They were proposing to circularize every medical man in the city, and they would be paid for notification the same rate as for other diseases—2s. 6d. per case. The Committee expected to receive, through medical men, information of about 50 per cent. of the cases. He added that he thought the voluntary notification would, in a reasonable time, lead to compulsory notification. He was doubtful whether the climate of Birmingham was suitable for a sanatorium, but something might be done in the way of making some provision for the very poor. He thought they could accomplish more by preventing contact than by climatic improvement. They were completing the hospital in Yardley Road, and he was hopeful that in due course the Health Committee would have some recommendation to make which would meet with the approval of the Council. The resolution was carried.

Derby.—A conference of representatives of the Derbyshire County Council, the Derby Town Council, and other public bodies, as well as responsible members of the leading Friendly Societies, was held at Derby on July 23rd to consider the desirability of establishing a sanatorium for the benefit of persons in Derby and Derbyshire suffering from consumption. The meeting, which was promoted by the Derby Medical Society, was presided over by Dr. Edward Vaudrey, who alluded to the advantages of sanatoriums, and pointed out the difficulty of maintaining them properly if they depended entirely on private philanthropy. Addresses were delivered by Dr. Nathan Raw, of Liverpool, and Mr. F. Litchfield, of London, one of the deputation sent by the Friendly Societies of this country to inquire into the methods of treating consumption in Germany. A resolution was passed in which those present promised to recommend the various authorities to move in the direction of providing a public sanatorium for Derby and Derbyshire.

Durham.—A report recently issued by the Society for the Prevention and Cure of Consumption in the County of Durham gives evidence that their work is making substantial progress. The following are amongst the special measures which are adopted throughout the county: (1) In every district, except the borough of South Shields, suspected sputum is examined free of charge for tubercle bacilli on application to the health authorities; (2) voluntary notification of cases of consumption is in force in the boroughs of Sunderland, Gateshead, and Jarrow; (3) many authorities offer free disinfection of rooms vacated by consumptives: (4) in Weardale special efforts have been made to improve insanitary cow-byres; (5) in Sunderland certificates are granted to farmers who keep sanitary byres and sell milk from cows declared to be free from tuberculosis by the tuberculin test. During the last year the Society's sanatorium, which was opened in May, 1900, received 210 applications for admission, but owing to the insufficient number of beds was only able to receive 108 of these cases. The report, however, showed that some 14 additional beds were being provided, bringing the total to 44.

Bequests.—Under the will of Mr. David Kendall of Malvern Link, who died on July 12th, the Malvern Rural Hospital, the Malvern Dispensary, and Worcester Infirmary each receive £100.

THE PELLATT FUND.

THE Treasurer, Surgeon-Colonel F. H. Welch, 8, Brandram Road, Lee, S.E., begs to acknowledge the receipt of the following sums on behalf of Miss E. B. Pellatt, L.S.A., additional to those already reported:

	£	s.	d.		£	s.	d.
The Society of St. John the Evangelist	25	0	0	A Nursing Home, Blackling-ton	0	10	0
Mrs. Webb	10	0	0	"A Blind Lady"	0	3	0
Mrs. Benyon	5	0	0	Mr. and Mrs. J. E. Ransome	2	0	0
Miss Harris	0	10	0	Dr. P. Frank	5	0	0
Miss T. N. C. Gray	1	1	0	Dr. Minnie E. Bowlby ...	1	1	6
Miss C. A. Nevill	1	1	0	Miss A. Pellatt...	1	0	0
Dr. W. Travers...	1	1	0	Miss Marie Corelli	5	0	0
Dr. Elizabeth Courtaud ...	5	0	0	Mrs. Mann Taylor	3	3	0
Mr. F. D. Welch	1	1	0	Mrs. Nicholson	2	2	0
Miss R. E. Crosse	2	0	0	Dr. Florence A. Stoney ...	1	1	0
Miss F. Garington	1	0	0	Dr. F. de Haviland Hall ...	2	2	0
Dr. Mina L. Dobbie	2	0	0	The Misses Henderson ...	2	0	0
"Tyneside"	1	1	0	Mr. Leonard A. Bidwell ...	1	1	0
Dr. Edith Shove	5	5	0	Dr. Gabrielle Breeze... ...	1	1	0
The Misses Fergusson ...	3	0	0	Mrs. C. Jones	10	0	0
Mr. G. Jones	0	3	0	Mrs. Beaumont	5	0	0
Dr. Maria Sharp	1	1	0	"A Nurse"	0	10	0

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 19th of October, at **2 o'clock** in the afternoon.

September, 1904. GUY ELLISTON, *General Secretary.*

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: COVENTRY DIVISION.—The annual dinner of this Division will be held at the Drill Hall, Queen Victoria Road, Coventry, on Thursday, October 6th, at 7.15 p.m. After the dinner the Chairman (Dr. Webb Fowler) will give his address as chairman for the year. Mr. J. Smith Whitaker, the Medical Secretary of the Association, has accepted an invitation to be present. Dinner tickets, including wine, will be 15s. each. It will be open to members to introduce guests, who must be either medical men or registered dentists. The Secretary will be obliged if members will let him know at an early date, not later than September 30th, whether they will be present, and whether they will be introducing guests. Members wishing to read papers or to show specimens or cases during the current session are requested to communicate their wishes to the Honorary Secretary, E. H. SNELL, Knighton House, Coventry.

EAST ANGLIAN BRANCH.—The autumn meeting of the East Anglian Branch will be held at Kelling Open-air Sanatorium, near Holt, Norfolk, on Thursday, September 29th. Members wishing to read papers or show cases or specimens should communicate with Mr. H. A. BALLANCE, M.S., Norwich, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH: ALTRINCHAM DIVISION.—The members of this Division will meet at the Brooklands Hotel, Brooklands, at 5 p.m. on Thursday, September 29th. (The 4.5 p.m. train from Northwich will be stopped at Brooklands.) The meeting will be a Special Meeting (under Rule 12) for the purpose of passing (under Rule 13) a new rule to provide for the filling of casual vacancies among the officers. It will also be the ordinary quarterly meeting. The Association and Medical Defence: The Committee calls attention to the history of this subject as given in Dr. Welsford's letter on p. 469 of the BRITISH MEDICAL JOURNAL of August 27th, 1904, and reminds the members that the Special Meeting of March 30th, 1904, passed a resolution, *nem. con.*, in favour of the proposal that the Association should undertake medical defence. The Committee considers that the importance of the subject demands further action, and requests each member to be good enough to fill up and return the post-card to the Honorary Secretary before September 29th, to facilitate the discussion on a resolution to be proposed. The Committee further request members to read the reports of the Annual Representative Meeting as contained in the JOURNAL and SUPPLEMENT of July 30th and August 6th, with a view to making an official communication to the Central Council. Agenda: 1. Minutes of last meeting (May 18th). 2. Report of Committee (Minutes of Meeting of August 31st). 3. Dr. C. J. Renshaw will open a discussion on the advisability of the State registration of nurses; and will move a resolution. 4. The Association and Medical Defence. 5. New rule as to filling casual vacancies among the officers. 6. Report of Representative on Annual Meeting at Oxford; authorize official communication to Central Council. 7. To transact any business that may be transacted at an ordinary meeting. 8. Communication from Exeter Division.—T. W. H. GARSTANG, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WANDSWORTH DIVISION.—A meeting will be held at the Town Hall, Wandsworth, on Thursday, September 29th, at 9 p.m. Business: To receive the Representative's report of his attendance at Oxford, when several resolutions based thereon will be submitted. An address, illustrated by the optical lantern, will be given by W. D. Turner, M.D., on Tuberculosis, its Origin and Extinction. It is hoped the members will attend in large numbers, and so begin the winter session well.—E. ROWLAND FOTHERGILL, M.B., Torquay House, Southfields, S.W., Honorary Secretary.

NORTH WALES AND SHROPSHIRE BRANCH: FLINT AND DENBIGH DIVISION.—The annual meeting will be held at the Westminster Hotel, Rhyl, on Friday, September 30th, at 3 p.m. Members wishing to read papers, or show cases or specimens, are requested to communicate with the Honorary Secretary. E. D. EVANS, Wrexham.

SOUTH-EASTERN BRANCH: CROYDON DIVISION.—The next meeting will be held at the Cock Hotel, Sutton, on Thursday, October 20th, at 4 p.m., Mr. G. Bower (Sutton) in the chair. The dinner will take place at 6 p.m., charge 7s., exclusive of wine. All members of the South-Eastern Branch are entitled to attend, and to introduce professional friends. Papers have been promised by Mr. Dundas Grant, Dr. W. H. Tunnicliffe, Dr. A. E. Giles. The subjects of these papers will be announced at a later date. N.B.—The Honorary Secretary would be much obliged if members would kindly inform him by postcard whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner. By doing so they will materially facilitate arrangements, and promote the success of the meeting.—E. H. WILLOCK, Honorary Secretary, 113, London Road Croydon.

SPECIAL CORRESPONDENCE.

PARIS.

Professor Lucas-Championnière on the Treatment of Varicose Veins and Phlebitis by Movement.—Nomination of a Commission to Control Vaccine Establishments.—The International Congress of Tuberculosis in 1905.

PROFESSOR LUCAS-CHAMPIONNIÈRE, reporting on a paper by Dr. Marchais on the treatment of varicose veins by walking, already mentioned in the BRITISH MEDICAL JOURNAL, draws attention to the freedom from bad results when cases of phlebitis are not immobilized after operation, the complications in wounds of veins being entirely due to infection. After operation, the limb is left free in the bed, the patient only requiring the rest which is necessary after any operation on the lower limb, movement being favourable to healing in cases of phlebitis. Immobility causes continuation of pain due to oedema, and also muscular atrophy, which changes these patients into chronic feeble subjects. Professor Lucas-Championnière has remarked that movement had nothing to do with the fatal termination in cases of embolus occurring in the course of treatment of fractures of the lower limb. These cases, which are so difficult to explain, and in which pulmonary embolus is so rapidly fatal, occur, he has observed, in patients who had been kept carefully immobilized. He cites cases in proof of the statement, and quotes a paper by Dr. Dagron advocating the treatment of cases of phlebitis by massage. The limb should not be touched while the temperature is above normal, as then the infection is active and the clot soft; this period, as a rule, does not exceed fifteen days. Movements causing contraction first of the muscles of the calf, then those of the thigh, are then begun. After one week of these he adds movements of rotation and abduction of the limb, without flexion on the pelvis, the patient not yet being allowed to sit up. At this period massage may be given, avoiding the region of the external saphenous, the popliteal space, Hunter's canal, and Scarpa's triangle. During a third period, if oedema has gone, mobilization will be increased; the patient is allowed to sit, the legs being allowed to hang for a few minutes, and then he is allowed

to stand up. At the end of another week movements of flexion and extension of the thigh on the pelvis are allowed. Massage is carried out very prudently at the same time that walking is commenced very methodically with only short steps at a time. Instead of long months of immobility, the patient usually begins to walk regularly at the end of four weeks. If such results have been obtained in cases of phlebitis, why should not movement and massage be employed to help the circulation in limbs which are only affected with uninflamed varicose veins? Dr. Marchais's method consists especially in massaging a little and then making his patients walk. It rests on the old observation that walking rather favours circulation in healthy or altered veins, while standing slows, or in some way prevents, venous circulation; omnibus conductors, for instance, suffer tortures from varicose veins, while country postmen with varicose veins usually support their infirmity very well and cover long distances without complaining. As a preliminary to his treatment, Dr. Marchais forbids his patients to stand motionless, to wear elastic stockings, which favour the faulty resistance in the vascular wall, or to use hot baths, which cause congestion of the lower limbs. The following are the elements of his treatment: A preliminary massage, which will be the preparation for the treatment and must be continued for fifteen days to a month; this causes the oedema to disappear and gives a little tone to the vessels and muscles. This preliminary treatment diminishes the sensibility of the limb. When there is no infiltration there is freedom from pain in walking. As to the exercise, which properly speaking is the therapeutic measure, rapid walking is advised. The repose advised in these cases is only good if taken in the horizontal position; rest taken while standing or walking slowly is always harmful. In rapid walking the sharp contractions of the muscles favour the venous circulation. All the physician's art must consist in measuring and favouring this rapid walking, which is always somewhat difficult to begin with. To be efficient the patient should walk at the rate of 100 steps to the minute, stopping as soon as symptoms of fatigue begin. To avoid being overcome by fatigue, he will split up his exercise into as many periods as he likes; he should begin with one hour, then an hour and a half, then two hours, and then he can go further still. If during the treatment there are pains, extreme fatigue, or a too great tendency to oedema, massage must be employed, and then return to rapid walking. Dr. Marchais advises cold baths and douches, which tone up patients who can support them. Professor Lucas-Championnière is convinced of the importance of the results, and is of opinion that more can be done in this line. He has himself advised two forms of exercise which are especially useful when rapid walking would be difficult or painful. He advises exercises in the horizontal position, as in some Swedish exercises, or with entension apparatus and exercisers. He also makes some patients ride the bicycle or tricycle, when, with a low gear, there are moderate contractions of the muscles with the limbs not quite in a vertical position.

The Prefect of the Seine has recently appointed a Commission to look after and control establishments destined to prepare and distribute vaccine in Paris and the Department of the Seine. This Commission is composed of the General Secretary of the Prefecture of the Seine as President, and as members: Professor Chantemesse, Professor of Hygiene in the Faculty of Medicine; Dr. Roux, Director of the Pasteur Institute; and M. Martel, head of the Sanitary Veterinary Department of the Seine.

The International Congress on Tuberculosis, which will meet in Paris from October 2nd to 7th, 1905, has drawn up the preliminary plan of its work. Three questions will be discussed in each of the two Sections of the Congress, there being three reporters on each subject, one of whom will be French. The work to be done is as follows:

PATHOLOGICAL SECTION.—*President*, Professor Lannelongue.

1. Treatment of lupus by new methods. Reporters, Dr. Jeanselme and Dr. Chatin.
2. The early diagnosis of tuberculosis by new methods. Reporter, Dr. Achard.
3. The comparative study of the different tuberculoses. Reporter, Professor Arloing.

SOCIAL SECTION.—*President*, Professor Landowzy.

1. The etiological factors of tuberculosis. Reporter, Dr. Romme.
2. The rôle of dispensaries and sanatoriums in the campaign against tuberculosis. Reporter, Dr. Curtois-Suffit.
3. Assurance and mutuality in the fight against tuberculosis. Reporter, Dr. Edouard Fuster.

MANCHESTER.

Health Conditions on Ships.—Small-pox Hospital for Bury and District.—Isolation Hospital for Colne Valley.—The Annual Report of the Sanitary Committee of the City.—Salford: Improved Sanitary Conditions; High Infantile Mortality.—Home Secretary and Exemption from Vaccination Certificates.

THE report of the Medical Officer of the Port of Manchester, which deals with the period from August 1st to 27th, states that 140 vessels which entered the Ship Canal were inspected. Sixty-five were British steamships and 58 sailing ships under the British flag. Of the remaining 17, 15 were steam and 2 sailing ships. Defects or insanitary conditions existed on 70 British and 2 Norwegian vessels, 1 German, and 1 Spanish vessel. In 35 cases there was inefficient ventilation and defective ventilators. In other cases the defects related to the conditions of the crews' quarters and the decks, the storage of food and water, and sanitation generally. Twelve canal boats were inspected during the month of August, and in 5 of these contraventions of the Acts which govern canal boats were found to exist.

The Bury and District Joint Hospital Board, whose area includes not only Bury but also Radcliffe, Ramsbottom and adjoining areas, and which has made arrangements to take small-pox patients from Bolton, has approved of plans for a new small-pox hospital to be erected in its district for the accommodation of 32 patients. The hospital will cost about £8,000.

An isolation hospital for the 13 townships of the Colne and Holme Valley has been opened at Meltham, subserving a population of 56,000. It contains 50 beds—6 in the isolation pavilion, 30 in the scarlet fever pavilion, and 14 in the typhoid pavilion. The cost was about £24,000.

The Manchester Sanitary Committee has issued its annual report of work done up to April 30th last. The number of complaints dealt with was 47,200; of these, 27,104 were made through the Medical Officer of Health's Department, 17,876 by his staff, 2,125 by the public, and 95 by the police. Inspections of various kinds were made to the number of 93,196, while inspectors applied tests to the drainage of 4 034 houses, warehouses, and other buildings. For the abatement of nuisances 11,726 notices were served. The number of dairies and milkshops on the register is 2,712, and of cowkeepers 77, and the number of cows kept 1,035. It is gratifying to note that it was necessary to take magisterial proceedings against only three milksellers for storing milk in places where it would be liable to contamination. The percentage of adulteration in the samples of food taken was 2.47, as against 3.54 last year. The number of insanitary dwellings certified to the Committee was 666, or 95 more than last year. Of these, 596 were ordered to be closed: 77 cases were adjourned. Of the orders to close, 219 only were actually issued, the owners having agreed to make the necessary alterations.

From the annual report of the Medical Officer of Health for the borough of Salford we learn that the birth-rate was 32.2 per 1,000, being 1.8 less than last year. The death-rate was 19.1 per 1,000. This is the third successive year in which the death-rate has been lower than at any earlier date, and the records go back to 1844, when the population was only 75,414: now it is estimated at 226 480. The death-rate has been steadily declining since 1871, when it was 30 3, with a population of 125,890. As to causes, probably a large factor is the succession of three cool summers, though there is every reason to believe that the action of the corporation in clearing the slums and providing better sanitary arrangements is having a beneficial effect on the health of the town. In one district—Regent Road—the death-rate remained at a standstill. This is the only district in which the work of transformation of dwellings from back-to-back to through houses has had to be postponed, as also the provision of new sanitary arrangements, owing to the deficiency of water supply. Greengate, which has received most attention in these matters, shows the greatest improvement. There is still, however, a dark aspect of the question There were 1,226 deaths of infants under 1 year of age registered during the year, giving a death-rate of 168 per 1 000. This is an increase on the previous year. Still, the infantile mortality has wonderfully improved since 1895, when it was 229 per 1,000. The improvement in the past two years is mainly to be attributed to the cool summers we have had; these have prevented the epidemics of summer diarrhoea which are so fatal to infant life. There

are other factors not to be omitted. When one knows that an infant which is fed by its mother in the natural way has a chance of life three or four times greater than that of the child brought up on cow's milk or other food, one cannot be too thankful that the lady health visitors have been so assiduous in their duties, both in the way of instructing mothers in this regard and in keeping hundreds of infants under close observation. It is believed that, as a direct result, the proportion of children fed from the breast has gone up to the remarkably high percentage of 82. The health visitors also report that they find mothers more willing to accept advice as to feeding of their infants than they were when the movement was first started. Even with all this, Salford's position among the thirty-three great towns of England in regard to infant mortality is still bad—nearly at the bottom of the list, in fact.

The Heywood magistrates have granted upwards of 500 vaccination exemption certificates to applicants from all parts of the country this year, and the validity of the certificates is now being called in question. The matter has been brought before the Home Secretary. It appears that a non-resident in a petty sessional division applied in June last for the grant of a certificate of exemption under the Vaccination Act, 1898, and having been refused a certificate by the justices of that division shortly afterwards was successful in obtaining such a certificate from a neighbouring Bench. The Home Secretary has replied that he "considers the proper course for the justices is to refuse to deal with applications for certificates of exemption when the parent and child are resident outside their jurisdiction."

INDIA.

Further Progress of the Antimalaria Campaign at Mian Mir.—A Cure for Leprosy.—Piroplasma in the Human Subject and in Animals.—Plague in the Punjab.

IN a recent letter were described the results of the first year's work at mosquito destruction in the very malarious cantonment of Mian Mir. Some further information has since been published in the report of the Sanitary Commissioner with the Government of India for 1902, bringing the information up to the end of the second year's experiments. It will be remembered that during the first year only a slight reduction in the number of *Anopheles* was obtained, and that although all larvae were destroyed during the next cold weather for two miles around the area, yet in the next hot weather both varieties of *Anopheles* reappeared; at first they were in smaller numbers than in the untreated area, but by the end of May they were almost as numerous as ever. During the second hot weather and rainy seasons the destruction of all larvae was continued under more favourable circumstances than in the previous year, with the result that although the operations were apparently very satisfactory as regards the destruction of larvae, they failed to show any demonstrable reduction of the adult insects. This failure appeared to be due to their passage from beyond the area of operations, and in two instances the undoubted flight of *A. rossii* from 900 yards and three-quarters of a mile respectively was established. "The effect of the operations on malaria was at first distinctly noticeable. As the fever season advanced, however, the operations appeared quite futile, and both among the troops and in the bazaar malaria became rife." The result of the whole season's work was that malaria was considerably more prevalent among the troops within the area treated than among those outside, the lower rate among the latter having been partly due to prophylactic administration of quinine. Among the natives in the area there was a similar reduction of malaria in the early part of the season, but in the latter part no good effect was found, malaria being as prevalent as before the operations were commenced. As to the value of the prophylactic use of quinine, it was found that among 100 men, to whom 15 grains of quinine were administered on two consecutive days of the week under medical supervision, a striking reduction of malarial fever was obtained. In a larger series under as strict supervision as is practical when dealing with large bodies of men, but not so scientifically exact as in the first small series, a considerable but less marked reduction was obtained, while in a third series with supervision as ordinarily practised no effect whatever was observed. Among natives, quinine distribution to children produced a marked reduction in both fever and the spleen rate, as in the previous year. The results of the operations, which covered one quarter of the Mian Mir cantonment and were controlled during both years by medical officers possessing special expert knowledge, are summarized as follows:

The success obtained scarcely warrants the conclusion that antimosquito operations would be an efficient practicable measure in every cantonment. On the whole, therefore, it would appear that the results of the present experiment were distinctly against the employment of antimosquito measures as a practical means of combating malaria in such a cantonment as Mian Mir.

As regards the prophylactic use of quinine among British troops the conclusion is arrived at that

it appears doubtful whether, with the means of supervision at present available, this measure could be applied with much benefit as a routine one to troops.

In the May number of the *Indian Medical Gazette* a paper by Captain Rost, Indian Medical Service, appears, in which he claims to have grown the leprosy bacillus and to have successfully treated the disease by inoculation with "leprosin," made on the same lines as tuberculin; and more recently telegrams have appeared in the Indian papers from Rangoon announcing that 29 cases of leprosy have been cured by this method. As the material is being sent out for trial further reports may be expected shortly, and, if confirmed, the discovery will be a very important one.

The same medical journal contains a paper by Dr. Lingard and Major Jennings, I.M.S., with a coloured plate, in which a piroplasma is described which is said to be found in the blood of all kinds of animals, including lizards, and also in the human subject; both in cases of fever other than malaria and typhoid, and even when no fever is present. The full life cycle is described, and the parasite is also said to have been found in pools of muddy water. If these observations are correct, the new organism must be different from those of cattle malaria, and of piroplasma canis, which have no such universal distribution, being limited to a very few animals.

Reference was lately made to the very severe nature of plague in the Punjab this year. Unfortunately the outbreak is not subsiding as rapidly as in other parts of India, 17,000 deaths a week still taking place, or about twice as many as in the same week last year. Cashmir and the Afghan border do not yet appear to be infected, but it is difficult to see how they can escape in the next year or two, while so many deaths have taken place in some Punjab districts that the survivors could not get in their crops. The success of the inspection at the ports of India has relieved Europe of much fear of the importation of the disease by sea, but the danger of the slow but sure spread of the disease by land to Russia is a very real one, and much more difficult to deal with.

SYDNEY.

Federal Quarantine.—The Bubonic Plague.—Lodge Practitioners' Defence Fund.—The Exclusion of Consumptives from the Commonwealth.—Medical Men and Pharmacists.

AT the instance of the Commonwealth Government a conference of the officers of the Boards of Health of the various States, was held at the offices of the Minister for Customs, to consider a number of questions connected with the institution of a system of quarantine by the Commonwealth. The following composed the conference: Dr. Ashburton Thompson, President of the Board of Health, New South Wales; Dr. Gresswell, Chairman of the Board of Health, Victoria; Dr. B. B. Ham, Commissioner of Public Health, Queensland; Dr. W. Ramsay Smith, Chairman of the Central Board of Health, South Australia; Dr. T. H. Lovegrove, Principal Medical Officer, Western Australia; and Dr. Elkington, of the Health Department, Tasmania. Mr. J. F. M Guinness, of the Customs Department, was appointed secretary. The following subjects were submitted to the conference for its consideration. (1) The advisability of taking over the administration of the quarantine laws of several States; (2) provisions necessary or desirable to introduce in the Federal Quarantine Bill in regard to (*a*) the prevention of the introduction of diseases from abroad; (*b*) prevention of dissemination of disease; (*c*) quarantine of animals and plants; (3) generally in regard to (*a*) method of the administration of the central staff, etc.; (*b*) any matter in connexion with which it may deem that the Commonwealth legislation should deal. The conference, which lasted several days, has presented the draft of a Bill for the initiation of a system of Federal quarantine. It suggests the establishment of a Central Quarantine Department, under the control of a Director-General, who should be a man possessing both scientific and administrative attainments, and should be paid at a salary of at least £1,800 per annum. It suggests that the Director-General should also have a well-

paid assistant and a sufficient staff to enable him to carry out his various and onerous duties. Among the diseases which should be dealt with under a uniform system of Federal quarantine are bubonic plague, typhus, small-pox, cholera, leprosy, and any other disease which might be proclaimed under this Act, if necessity arises, by the Governor-General in Council. It is suggested that the expense attached to quarantine should be borne by the levy of a special rate upon shipping, as most of the serious diseases are brought into the country from oversea. This conference was also asked by the Minister for Customs for some general suggestions on other matters. The conference suggests that the States should be approached with a view to all matters relating to adulteration of foods, also to vital statistics, being incorporated; and that a central office should have attached to it a complete laboratory. On the subject of complusory vaccination, the conference considered that it should be made to apply throughout the Commonwealth, and that the control authority should obtain from the States the right to central this matter. It is understood that this draft report has been submitted to the Commonwealth Government by the Minister for Customs, and it seems probable that some legislation bearing on the subject will be introduced into Parliament at a later stage of the present session.

Only one further case of bubonic plague has been reported within the past week or two, but quite recently there has been an alarming increase in the number of plague-infected rats discovered in Sydney. On some business premises in Wharf Street, in the Darling Harbour area, 55 infected rats were caught within a few days, and since March 1st 171 plague-infected rats and mice have been caught in the city. Dr. W. G. Armstrong, the City Health Officer, in presenting a report to the Health Committee of the City Council, stated that the discovery that rats were dying on these premises was made most opportunely, as, unless prompt action had been taken, it seemed hardly likely that an outbreak of plague among the employés at the stores could have been avoided. The buildings were comparatively new and in good condition, but the basement of the floor of one had not yet been concreted. Dr. Armstrong pointed out that the City Council was doing all that could be expected in maintaining a rat-catching and special plague-cleansing staff; that the payment by the Government of a capitation fee for dead rats and mice, and the structural improvements being carried out by the Harbour Trust as ground landlords in the direction of rendering buildings impervious to rats, represented the work which these bodies should perform. The destruction of rats in premises was the duty of the occupants, and if they failed in that duty their rat-infested premises became a danger to the whole community. Dr. Armstrong suggested that the Council should hold responsible any occupant of premises which were found rat-infested if ordinary measures of repression appeared to have been neglected. He further recommended that the Harbour Trust should be urged to press forward the concreting of the floors of the two or three buildings in their area specially liable to harbour rats, and that they should also consider the urgency of the need of constructing a rat-impervious sea wall along the whole foreshore of Darling Harbour.

Last year, on the suggestion of Dr. Furnival, of Auburn, a fund was started called the Lodge Practitioners' Defence Fund, the object being to endeavour to some extent to compensate medical men who, at the request of the Council of the New South Wales Branch of the British Medical Association, should resign their positions as medical officers to Medical Aid Societies and such corresponding associations as might be considered inimical to the best interests of the profession. At the last meeting of the Council of the New South Wales Branch of the British Medical Association the first grants from this fund were made to two medical officers who had resigned their connexion with the Balmain United Friendly Society's Dispensary.

The exclusion of consumptives from the Commonwealth is engaging the attention of the Minister for External Affairs, and he has published a minute on the subject. The question of applying the provisions of the Immigrant Restriction Act so as to prohibit the admission of consumptives to the Commonwealth was brought under his attention by the medical superintendent of the Queen Victoria Sanatorium, Wentworth Falls, New South Wales. Personally the Minister is of opinion that consumptives should be excluded from the Commonwealth, if it is possible to do so without inflicting too great a hardship or injustice upon individuals. He recognizes the serious practical difficulties in the way of carrying out this policy to be, first, the question of examination and detection of the disease by medical experts; and, secondly, the division of persons so found into two classes—those in whom the disease has reached such stages as to practically render recovery improbable, and the other those in whom, under favourable conditions, such recovery may be reasonably hoped for. This matter was under the consideration of the recent conference of health experts at Melbourne, but the members were not disposed to make any recommendation on the subject.

A circular has recently been sent by the pharmacists of Sydney and suburbs to the profession, drawing attention to the growing tendency among medical men to prescribe patent and proprietary medicines, and especially medicines packed in tablet form. They state that it is now an every-day experience for them to be called upon by the public not only for simple drugs such as bicarbonate of soda and cascara, but for more dangerous drugs such as sulphonal, chloralamide, Easton's syrup, in tabloid form. There is no doubt, as the pharmacists assert, that the prescribing of remedies in tablet form in such a way that the patients themselves can read the prescription, and then, not only go to a chemist's shop and buy these tablets themselves, but prescribe them for their friends also, is a source of danger to the public at large.

CORRESPONDENCE.

THE ASSOCIATION AND MEDICAL DEFENCE.

Sir,—May I be permitted to reply to Dr. Bateman's comments on my letter on medical defence, especially as, no doubt inadvertently, he has attributed to me a suggestion which I never made? I did not say that the Medical Defence Union never undertakes cases in which the issue is doubtful. My actual words were that "in their present weak financial position neither society is in a position to undertake any case in which the issue is doubtful *and* in which there is a danger of heavy costs being incurred." Prolonged litigation is extremely expensive, and costs soon run into four figures. Considering that apart from the guarantee fund the reserve fund of the Medical Defence Union amounts to only £1,095, my statement seems a self-evident truth.

In making this statement I have no desire to attack the management of the Medical Defence Union—of which I have been a member for many years—but to draw attention to another self-evident truth, that it is impossible for defence societies to accumulate large and effective reserve funds while they are separate and competing and burdened with unnecessary working expenses, and that the reserve fund of an amalgamation of these societies would soon grow by reason of the economies thereby effected. The amalgamated society would before long be in a position not only to undertake the defence of individual members but to combat actively the evils which oppress our profession, and with which we are powerless to deal in the absence of any effective combination on our side. We require more than the societies can give at the present time, and when, ten years ago, I proposed that they should amalgamate under the aegis of the Association, it was with the expectation that in time every member of the Association would contribute towards medical defence, and that these contributions would be ear marked for that purpose, so that the general funds of the Association would not be endangered. The most urgent need of the medical profession is an organization, somewhat analogous to a trades union, modified according to our special requirements. No one need start at the term "trades union." The term is applied to an organized body of workmen in any trade, manufacture, or industrial occupation associated together for the promotion of their common interests, and I know of no other term to describe a similar organization among professional men. As a matter of fact, the Medical Defence Union is a trades union, although its work is limited. We have good examples of larger and more effective trades unions in the legal profession in the cases of the Incorporated Law Society and the General Council of the Bar. These unions are so effective that there is no tolerance of quackery in law, or of sweating of legal practitioners by lay bodies. How long are we to wait before we defend ourselves as effectively?

If general practitioners would but interest themselves in the question of medical defence, instead of folding their hands and doing nothing but complain, and would insist upon the existing societies uniting to form an active organization, and would afterwards support their amalgamated society by becoming members, we should quickly have at our backs a

rich and powerful union, and it would not be long before half our troubles would be of the past. As it is, we fritter our energies away by supporting a number of petty societies which seem to be always bickering, and which maintain disunion through their competition, and are the real stumbling-blocks to the union we desire.

I believe that the amalgamation of these societies can be best effected through the Association, and that when the Medical Defence Department is once started the majority of the members of the Association will join it. Certainly, if we are not prepared to pay a small contribution per head, say an annual subscription of 10s., for medical defence we do not deserve to emerge from the mire in which the medical profession is plunged. Artisans pay far more in proportion to their means to their unions, and their condition and prospects are immensely improved by them. Of course, some will say that it is derogatory to the medical profession to form any kind of union for defensive purposes. Those who hold these views are not, as a rule, general practitioners, who feel the shoe pinching, but we who know how much the medical profession is exploited will remember the ancient saw that "great men are not always wise," and will rely upon our own judgement. The degradation of the profession which follows unfair exploitation is infinitely more derogatory than a proper and manly defence of our common interests.

Union is essential before amalgamation of the societies can be effected, and we must regard with suspicion those who advocate the continuance of the present competition and disunion between the societies. This appears to be the present attitude of the Medical Defence Union, and it is essentially reactionary. Perhaps Dr. Bateman will explain why the officials of the Medical Defence Union should publicly state that the Union welcomes competition.

Dr. Bateman must agree with me that it would be to the advantage of the medical profession to have a large influential union, embracing the majority of general practitioners, and rich enough to attack quackery on a large scale, and to oppose the illegitimate practice of medicine practically, as well as to support medical practitioners individually and collectively against the encroachments of the Friendly Societies, and in other ways to defend our interests. These are some of the aims of the Medical Defence Union, but that body is not strong enough to properly fulfil them.

Will Dr. Bateman kindly explain how the realization of such a strong union can be obtained by maintaining a number of small societies and by welcoming competition between them? It may be a matter of opinion whether the amalgamation of existing societies can be best effected through the Association, and if the officials of the Medical Defence Union, whose opposition has done so much to retard the union of the societies under the Association, succeed in wrecking the scheme, are they prepared to bring forward a scheme of their own, and to form an amalgamated society, which is the most urgent requirement of the medical profession? At present their policy is reactionary, and although I dissent from Dr. Bateman's statement that I am annoyed at the criticisms of the Union on the scheme proposed by the Committee of the Association, I certainly regret the attitude of the Union towards the whole question, which has disappointed many of its supporters.

I do not think I quite understand the concluding paragraph of Dr. Bateman's letter, nor do I know whether it is meant to reflect upon me. However, speaking for myself, I have consistently advocated the amalgamation of existing societies and the formation of a big union which should protect us as the Incorporated Law Society protects solicitors, since I first brought the question forward in 1894.

Much will be gained if the Medical Defence Union will withdraw its present opposition to amalgamation, and will endeavour to form an amalgamated society, which would work with the Association as one of its departments or even independently. This policy is in the best interests of our profession. If it refuses to do so, sooner or later it will meet with the reward which falls upon all who in the business of life "make the great refusal."—I am, etc.,

Hemel Hempstead, Sept. 11th. A. G. WELSFORD.

THE CO-ORDINATION OF THE WORK OF THE DIVISIONS.

SIR,—I think some of Dr. Rowland Fothergill's suggestions are very valuable. The work of the Divisional Secretaries is of the utmost importance. To them we must really look for any increase in the number of members. We ought not to rest satisfied until we have succeeded in getting into the fold every registered practitioner who is ready and willing to abide by the rules and regulations of the Association. How to accomplish this desirable object is not quite clear, but as in the multitude of counsellors there is supposed to be some wisdom, it is evident that suggestions from the various secretaries sent to the JOURNAL would, at all events, prove interesting reading. It appears to me very essential to get hold of the young men when they have just qualified and have started in practice.

Much might be done to improve the scale of professional fees in our large towns, and in this case the Divisional Secretaries would be in a position to give us valuable information. It may be said that the work of the secretaries has already become too burdensome. Well, Sir, is there any good reason why the Association should not remunerate these officers? As a member of the Medico-Political Committee I know that last year a conscientious secretary must have spent a very considerable portion of his time in studying the many elaborate papers sent in by that Committee.—I am, etc.,

Cardiff, Sept. 12th. T. GARRETT HORDER.

SIR,—Allow me to support Dr. Fothergill in his attempt to bring about better co ordination in the work of the Divisions, and to emphasize the importance of the suggestions which he makes. The impotence of the last Representative Meeting, whose highest ideal of constructive legislation was to refer "it back again," was largely due to this want of co-ordination. Unless this weakness is overcome, the Association is not likely to be of much practical use to the profession.—I am, etc.,

Salford, Sept. 10th. R. H. WOLSTENHOLME.

SIR,—Dr. Fothergill's letter with the above heading raises the whole question of the results of the reorganization of the British Medical Association, with which I must confess I am not quite satisfied.

Last year I looked in vain for some correspondence on the Representative Meeting, and this year it is the same. Some may say that every one has been satisfied and has nothing more to say, but I do not consider this the true reason, and more especially with regard to the one held this year. What impressed one the most was that the hours fixed and utilized, if not wasted, as many think, were most inconvenient, and the majority of those present were anxious to get away from the room as soon as possible. Some may contend that there was quite talk enough, but my opinion is that many were kept back from discussing some questions owing to the great amount of business which had to be got through, in some way or other, in order to get disbanded. There is not one representative who will ever forget the giant book of the agenda which he received about one week before the meeting, instead of at least two or three for careful perusal, except in those cases where they have absolute leisure and inclination to do so in a few days. Next year there is reason to hope that better arrangements will be made, but I should much like to know what steps have been taken in this direction as a result of the deputation to the chairman.

I am not only in favour of what Dr. Fothergill suggests, but I also very much desire that the representatives in each Branch should be brought together several times during the year, and that representatives throughout the Association should occasionally communicate with each other, and meet at least once in the interim. But how are we to do this if we have not a list of them published in the BRITISH MEDICAL JOURNAL or *Year Book* earlier?

I pointed out at the meeting at Oxford the anomaly of publishing the list of last year's representatives and other officers of Branches and Divisions so late as May 14th last, and now we may have to wait until next May for the list for this year. Thus valuable time is being wasted, and the opportunities for the various officers intercommunicating are lost. I consider that if our new organization were energetically worked out, if the means which we are entitled to were placed earlier in our hands, things would be on a good sound basis before the next annual meeting, and the representatives especially would go to their work more interested in it, and more disposed to discuss all the agenda paper in the deliberate manner it fully deserves.

If we are to wait for the list appearing in the *Year Book* we shall not see it until some time in 1905. What I would suggest is that the book should cover, not the year from January to December, but the Association year, and should be published as soon after the annual meeting as possible,

containing the names of the new Council of the Association and all the officers of Branches and Divisions, as well as the various Standing Committees of the Association. Why should it not be published either on September 1st or in October, so that no time will be lost waiting until January?—I am, etc.,

Manchester, Sept. 12th. G. H. BROADBENT.

*** We may, perhaps, be permitted to point out that many reports and documents relating to a good deal of the business which came before the Annual Representative Meeting were published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL at various dates; thus, for example, the report of Council appeared on May 7th, the report of the Medical Defence Committee and the minority report on March 19th, and the result of the polling on July 16th; the Medical Acts Amendment Bill and the explanatory memorandum were published on May 28th, the Bill for the Reorganization of the Local Government Board on January 30th, and a memorandum on the same on March 19th, the scheme for the election of Direct Representatives on the General Medical Council on January 30th, and the Nurses' Registration Bills on March 19th. We may further point out that by by-law 27 representatives of a constituency in the United Kingdom must be elected not more than three months nor less than three weeks before the Annual Representative Meeting; if, therefore, the *Year Book* were published in the autumn the list of representatives which it could contain would be those elected for the term expiring prior to the next annual meeting. Under the present constitution the authentic list of Representatives appointed to attend at the Annual Representative Meeting cannot be completed until immediately before the annual meeting.

THE SCOTTISH POOR-LAW MEDICAL SERVICE.

SIR,—I appreciate the remarks anent the above made by "Anti-Bumbledom" in the BRITISH MEDICAL JOURNAL of August 27th, and I am glad that he has pointed out to your correspondent "Fair Play" his mistake in stating that the grievances of the Highland and Island medical officers do not differ from those of other medical officers in Scotland.

The essential differences are as follows:

First, that most medical officers in the Highlands and Islands depend almost entirely upon their parochial salaries for a living, the private practice obtainable in these wide and poor parishes being of little or no value, the majority of the people being on the borderland of pauperdom. Consequently, should the medical officer be dismissed from his official appointment by a majority of his parish council, he is in reality dismissed from the parish and from his living, and in many cases ruined. It is different with medical officers in the South, who have good general practices, and are in a sense independent of their official parochial appointments.

Secondly, parish councils in the crofting counties of the Highlands and Islands frequently contain a majority of illiterate men who are easily led, it may be by a clergyman, a factor, or a storekeeper, who is usually "chairman," he being often the only member of the council who can read or write.

Hence, should there happen to be any differences between the chairman and council and the medical officer these men become mere tools in the hands of, perhaps, a clergyman, a factor, or a local grocer, and the medical officer is liable to be dismissed from his living as well as from his official appointment by a mere majority of such people.

Moreover, clergymen in the Highlands and Islands—especially Dissenting Church clergymen—are usually sprung from the lowest order of the people, and frequently carry with them all the prejudices of their origin. This, too, in spite of the often superficial "education" which they mostly receive through charity, and the grotesque veneer which they generally adopt. Such men, when pitchforked into a parish council through pandering to ignorant prejudices of the common people, do not fail to show their little authority, on trifling excuse, over the unfortunate, but generally much more gentlemanly and well educated, medical officer.

It is different in the South, where the parish councils consist, for the most part, of fairly well educated and business-like men, who are independent, and will not stoop to be dictated to by an ignorant clergyman or an interfering factor.

As for the Local Government Board, perhaps the less said about it the better. The Board is badly in need of a thorough reformation. Should a medical officer have occasion to consult the Local Government Board on any difference with his parish council, the reply he generally receives is to this effect: "We have no power to interfere; you must go to the Law Courts."

The immediate granting to the Local Government Board of full powers as to the appointment, duties of, and dismissal of medical officers is urgently required.

Better still, however, would be the constituting of the parochial medical service of the Highlands and Islands into a purely Government service entirely independent of parish councils. The medical officers could then perform their arduous duties without fear of molestation on the part of the ignorant and unprincipled, and such necessaries as a free official residence, a fair salary, and a proper pension according to length of service would also be ensured.—I am, etc.,

August 29th. PRACTICAL.

SIR,—I am thankful to "Anti Bumbledom" for his letter in the BRITISH MEDICAL JOURNAL of August 27th, p. 470, and am pleased to have his explanation of where the grievances of the Lowlands differ from those of the Highlands. The grievances fully detailed will assist in enlightening the general profession and hasten the needed reforms. I fail to see any difference; therefore I ask for more light.

Where can this report of the Scottish Local Government Board inquiry be got? Perhaps it will give me the information I want, but I am afraid not; for their ways are not the ways of sense, and past finding out. My interest is in Poor-law administration as a whole, and I am confident that if the medical officers are to get full justice it can only be properly brought home to Parliament by a full and searching inquiry by a Parliamentary Commission. The value of the doctor in the administration of the Poor Law, and the comfort and humane treatment of the pauper would be brought clearly out, and the need for protection of the doctor in the interest of humanity would be clearly proved to be essential.

I do not agree with "Anti-Bumbledom" in thinking that the powers of the Local Government Board are practically *nil*, but the very reverse. I hold that they have the powers to enforce full justice being done to the doctor, and what I would like done is that the Local Government Board be made to understand that they have to do their duty. Will "Anti-Bumbledom" oblige by giving the information which proves the Local Government Board have not the power?

The Board can and are bound to enforce the payment of lunacy fees if they are not to be guilty of assisting parish councils in claiming money from Parliament they are not entitled to by statutory conditions of the Medical Relief grant.

It is surely illegal for a parish to compel a doctor to do lunacy work for his Poor-law salary. "Anti-Bumbledom" is the first I have ever known who holds that opinion. I can find nothing to support him in that opinion, but the very opposite. Could your correspondent give us some of the advertisements or agreements that the Local Government Board sanctions, that allow of lunacy, vaccination, etc., being included in Poor-law appointments? Such information will be of enormous value for the Association and profession to have. I hold the medical officers have the Local Government Board to blame more than themselves, as they are entitled to expect that all their conditions of Poor-law administration shall be carried out by the parish councils through their responsible heads, the chairman and the inspector of poor who are under their control. How many parish councils in Scotland obey the statutory rules which give them all the power of an Act of Parliament? If these statutory rules are not enforced, who is responsible, and who is guilty of a breach of trust in not seeing to it that they are enforced? If the Local Government Board do their duty (for which the members are highly paid), the parish doctors would not have to complain of being cheated out of their fees.

I would humbly crave that "Anti-Bumbledom" would give your readers the exact information that will guide myself and others to a right understanding of Poor-law service. I would like to see fixity of tenure, as without such medical officers will never have peace, and I suppose "Anti-Bumbledom" will agree with me in saying that if fixity of tenure was got the doctors could compel payment of their fees. Is that not so?

September 6th. FAIR PLAY.

SIR THOMAS BROWNE: *AUDI ALTERAM PARTEM.*

SIR,—Dr. Conolly Norman writes deprecating the proposal to erect a monument to the author of *Religio Medici*, on the ground that he made a mistake whilst giving evidence, which resulted in the execution of two old women for witch-

craft. Dr. Conolly Norman must admit that Sir Thomas Browne gave that evidence, believing it to be true; and that in those days he probably failed also to save the lives of many of his patients whom he could have saved if he had had Dr. Norman's present-day knowledge. Also Dr. Norman, in common with all of us no doubt, loses the lives of many old women; which lives, no doubt, he could prolong if he had the knowledge of a physician of several centuries hence. Therefore, supposing Dr. Norman accomplished anything worthy, the people of several centuries hence would not be justified in holding his memory in respect. The belief in witchcraft is not yet quite dead, and believing as Sir Thomas Browne did, he was quite justified in securing the death of people whom he honestly believed to be witches. We have really no time to weep over the mistakes of our predecessors: our own are sufficient.—I am, etc.,

Seacombe, Cheshire, Aug. 30th. F. William Inman.

INFANTILE MORTALITY IN LIVERPOOL.

Sir,—The question raised in my letter of August 21st cannot be dismissed so lightly as Dr. Grünbaum seems to think. Those who, like myself, have had a considerable experience of out-patient practice in large cities know well that the children of the very poor are largely fed on other things than milk, that milk is often beyond their parents' means, and that, as the mothers say, "they get a bit of anything that's going." Whether milk was ever much preservatized in Liverpool or not does not affect my argument, for the mortality from infantile diarrhoea in Liverpool has always been high, though it has seldom approached the figure recorded this year. But we do know that there have been prosecutions in Liverpool for boric acid in margarine and in cream, and my contention is that if the dealers had not had the fear of the inspector before their eyes, they would have used some preservatives in milk and other articles during the period of excessive heat, and that had they done so the rapid putrefaction of the food and the consequent high mortality from infantile diarrhoea might have been, to some extent at least, prevented.

Dr. Grünbaum seems to be rather shocked at my presuming to hold an opinion at variance with the recommendations of the Departmental Committee on Preservatives in Foods, but I plead in extenuation of my offence that most of those medical witnesses who were actually concerned with practice among the poor in large cities were by no means inclined to go the lengths advocated by the Committee, that opinions expressed by a committee three years ago are not necessarily binding in the light of subsequent experience, and that the Government which appointed the Committee attaches so little importance to its recommendations that although they were made three years ago no attempt has been made to enforce them by legislation.

In response to my invitation to produce a single instance of injury from the reasonable use of boric or salicylic acid as a preservative in food, Dr. Grünbaum refers me to a case quoted by Dr. E. W. Hope in his evidence before the Food Preservatives Committee. If Dr. Grünbaum considers this case convincing, I can only explain it by the readiness with which the scientific mind can be deceived in the face of matters outside the laboratory. At the risk of being tedious I will briefly relate it. Dr. E. W. Hope told the Committee (Answers 6841, 6910-12) that a lady complained to him that she had made arrangements with her milk-dealer to give him twice the amount he asked upon the condition that he should send her nothing but pure milk. One day her infant was taken violently ill. Nothing had been given it but under her own supervision. She at once went to the milkman and asked him what he had been sending, and he admitted that he had put some boracic acid in the milk on that one day, but on no other.

Now, it is apparent that the case is only "quoted," as Dr. Grünbaum happily expresses it; that it is only evidence on hearsay, and that the statement of the milkman, whose honesty was not above suspicion, was twice hearsay. But taking the story as it stands, we are not told what were the symptoms in the child, what other food it may have had, nor whether it got well when other milk was supplied. Further, if the boracic acid had caused violent illness in the child, one would expect to hear of similar cases in other children receiving milk from the same source, and one would expect to hear of more or less continuous ill-health in children whose parents had made no special arrangements with regard to the quality of the milk supplied. This case will certainly not carry conviction to the unprejudiced observer, and Dr. Grünbaum has certainly not strengthened his case by referring to it.

The researches of the Reichs-Gesundheitsamt by no means settled the question, and, *pace* Dr. Grünbaum, the conclusions drawn from them have been conclusively disproved by Liebreich. The experiments of Tunnicliffe and Rosenheim are as strong in favour of the innocuousness of boric acid to children as any evidence alleged on the other side.

The distinction Dr. Grünbaum draws between decomposition and putrefaction in food, is a purely artificial one. There is no reason to suppose that odourless bodies such as boric acid can allow decomposition and at the same destroy the signs by which it is made evident to the senses. But it is hardly necessary for me to insist on this point, for the M.O.H. for Liverpool has stated (see *Lancet*, page 642) that diarrhoea occurs at a time when food becomes rapidly *putrescent*.

The alleged drawback of preservatives, that they open the way for dirty and fraudulent practices, and make it difficult to teach care and cleanliness to the poor, can have no weight if it be true, as I maintain, that they keep food in a condition fit for consumption, which would otherwise have to be thrown away. Even if we grant all that has been alleged against the use of preservatives their strongest opponents have never attempted to show that they have raised the death-rate to 39 per 1,000.

I do not hold up the use of preservatives in food as a counsel of perfection. If our slums were abolished and our people were all wise and prosperous, there would be less need for them, though I believe that in the case of temperance beverages they will always be needed to supply the place of the alcohol which keeps intoxicating drinks from going bad. What I do maintain is what I stated in my letter of August 21st, a statement which Dr. Grünbaum has not attempted to controvert, namely, that in the conditions under which the poor live in our large cities their food is certain to undergo rapid decomposition in hot weather unless preservatives are employed.—I am, etc.,

Thos. R. Bradshaw, B.A., M.D., F.R.C.P.,
Physician, Liverpool Royal Infirmary; Lecturer on Clinical Medicine, University of Liverpool.
Sept. 10th.

Sir,—The evidence of a general practitioner is sometimes as valuable as that of the pathologist. Let this be my excuse for entering into the discussion. The insanitary condition of the older parts of Liverpool is an abomination and a disgrace to a so-called civilized corporation. I am speaking particularly of the open brick middens, which still persist throughout the city. These disgusting and antiquated institutions are situated in the back yards at the rear of the houses. These yards are often so small that the open brick midden is frequently within a few feet of the back door or windows of the dwelling. Food and milk, usually stored in the kitchen at the back of the house, is of necessity freely exposed to the poisonous emanations of these open middens.

The resulting evil is accentuated during the hot summer months, and particularly when there is much wind, which may frequently blow a stream of dust particles from the refuse heap into the houses. Swarms of flies breeding in these middens invade the houses, and contaminate the milk and food therein. The system of emptying these middens is fraught with danger to the neighbourhood, as the alleys at the back of the houses are too small to admit a cart, and the refuse is removed in baskets to a neighbouring street. If the cart is not available the refuse is allowed to accumulate in the street. Many cases of sore-throat and scarlet fever have, from my own observation, followed this lax system of removal.

While this primitive and antiquated system is allowed to persist Liverpool can scarcely expect to reduce the infantile death-rate. The rigid enforcement of a small sanitary dust-bin and daily removal of the refuse is the first step to adopt. Not until this has failed should we pin our faith on nostrums and food preservatives, which Dr. Grünbaum rightly deprecates.

It is beyond the scope of this letter to enumerate all the contributing factors of a high infantile death-rate; but I think most Liverpool practitioners will admit that drink in either parent plays a most important part. If miscarriage does not occur, the infant is a puny weakling, incapable of resisting disease, and a ready victim of epidemic diarrhoea.—I am etc.,

Liverpool, Sept. 10th. A. C. Rendle, M.D., D.P.H.

INFANTILE DIARRHOEA, OR EPIDEMIC ENTERITIS.

SIR,—The present hot weather brings in its train so much suffering and danger to the youngest and poorest of the community that I venture to remind your readers of its virulent microbic etiology. Its treatment differs essentially from that of other diarrhoeas, for, after the initial sufficient dose of castor-oil or other aperient to remove peccant matter, sedatives are never permissible in the early stages, at least of epidemic enteritis. One endeavours to partially sterilize the intestinal tract. This is best accomplished by giving frequent minute doses of calomel with half a grain of salol, and perhaps a little soda or bismuth. Milk must be altogether withheld for from one to three or four days, and instead of it either cold boiled water, with or without a few drops of brandy, or liquid peptones, or white of egg, both freely diluted given instead. Recovery in nearly all cases is rapid and satisfactory.—I am, etc.,

Chester, Aug. 29th. HENRY W. KING.

PHTHISIS AMONG SCHOOL TEACHERS.

SIR,—On reading Dr. Haldane's address on Standards of Ventilation I was especially interested in the references made to mortality figures for schoolmasters, quoted from Dr. Tatham's tables in the Supplement to the Fifty-fifth Annual Report of the Registrar-General.

At page 145 is given the comparative mortality of males between the ages 25 to 65, in different occupations, from all causes and from several causes. The following figures are extracted:

Causes of Deaths.

Occupation.	All Causes.	Phthisis.	Bronchitis.	Pneumonia.
All Males	1,000	192	88	107
Physician ... ... }				
Surgeon ... ... }	966	105	12	93
General Practitioner }				
Schoolmaster ... }				
Teacher ... ... }	604	111	22	43

When we compare these two groups and note the fact that in spite of the schoolmaster having such a much more favourable standard death-rate from all causes, there is a higher percentage of death from phthisis and from bronchitis than among the medical profession, the question naturally arises to what special conditions are these differences due.

It has been pointed out that the profession of the teacher is very "jealously protected against the intrusion into it of maimed or infirm persons or those who have in them the seeds of constitutional diseases."

The conditions under which their work is carried on protects them against the dangers attending exposure to rough weather, and they are comparatively free from much of the worry and anxiety of other professional classes. The medical profession has no restrictions or means of selection of those who join its ranks; its members must be prepared to do their work irrespective of atmospheric conditions, however disagreeable, hence their comparatively high death-rate from pneumonia; and to accept a fair share, or it may be a large share, of the usual worries and anxieties of life, hence their comparative high mortality from all causes. But they as a profession die in smaller numbers from phthisis and from bronchitis than do the schoolmasters. What other difference in their lives can explain this fact? Is it not chiefly because the doctor spends much of his time in the open air, while the schoolmaster works in an atmosphere which may contain 17.5 volumes of carbonic acid per 10,000 as compared with three or four parts in outside air?

Whether the cause of the greater proportion of deaths among school teachers from phthisis is due to want of a higher standard of ventilation in the schools and the associated presence in the air of the products of respiration may not be easy of direct proof, but the comparison with the returns of the medical profession shows that there is a strong probability that breathing foul air is the chief factor. Dr. Haldane's remarks, probably unintentionally, rather leave on one's mind the impression that the effect of the air in the school must be very trifling, for the teachers are chosen as a class who by their very favourable death-rate from all causes seem to give a negative answer to the query. "Does habitual exposure to these volatile substances predispose towards phthisis and the other diseases associated with indoor occupations?"—I am, etc.,

Beverley. MITCHELL WILSON.

THE UTILITY OR OTHERWISE OF FEVER HOSPITALS: THE NEED FOR AN INQUIRY.

SIR,—It is now becoming generally recognized that the results which are being achieved by fever hospitals—erected and maintained entirely out of public funds—are not nearly so great as we were wont to believe. It is not surprising, therefore, that a strong feeling is growing up that the subject calls for full investigation by some specially-appointed tribunal.

In an able editorial on the subject in your issue of February 27th, you, Sir, wrote as follows:

> The facts and arguments advanced . . . are sufficiently cogent to afford justification for the suggestion that the advantages and disadvantages of hospitals in which cases of infectious disease are aggregated would be a suitable subject for investigation for a Select Committee, if not by a Royal Commission.

More recently the *Lancet* (August 27th, page 624) also devoted an editorial to the subject, which concluded as follows:

> The issues raised are complex, but we think that a case is made out for inquiry, and hope that that inquiry, if instituted, will be conducted without any introduction of personalities.

Another weekly medical journal, the *Medical Press*, December, 30th, 1903, wrote:

> Three questions suggest themselves: Are isolation hospitals effecting the purpose for which they were introduced? Are the drawbacks to the system inherent or capable of being removed? Are the enormous sums which these hospitals cost justified, or could the money be better applied? These are grave matters, and fully warrant the demand for combined inquiry by some representaaive body in the profession.

The *Medical Magazine*, March, 1904, wrote in reference to fever hospitals:

> It is a question of national gravity as to their continuance on the present system, and in any case an official inquiry seems to be demanded. . . . In view of the enormous cost of these hospitals to the country, we can only repeat our conviction that a searching inquiry appears to be necessary.

A resolution calling for an inquiry was passed in October, 1903, by the Southern Branch of the Society of Medical Officers of Health, and more recently by the Congress of the Royal Institute of Public Health held at Folkestone last July.

The demand for an inquiry being, therefore, clearly established, it remains to be considered what form the inquiry should take. The subject is admittedly a highly complex one, and it is one of national importance, for it concerns almost every sanitary district throughout the country. Moreover, the annual charge on the rates entailed by fever hospitals is, when compared with other items of preventive medicine expenditure, very heavy indeed. The plea which is now being put forward that these institutions are a great convenience to the public is not alone sufficient to justify this expenditure.

It is not unreasonable to claim that the subject is of sufficient importance to justify the appointment of a really authoritative tribunal, preferably a Royal Commission, as suggested by you.

The second point on which I wish strongly to insist is that the tribunal, whatever else its qualifications, must be an impartial one. This is all-important. This question of the utility of fever hospitals has, as is well known, become a keenly controversial one. It is unfortunate that it should be so, but the fact remains. Those who have taken an active part in this controversy, on either side, are disqualified to sit in judgement, however well qualified they may otherwise be. So, also, those sanitarians who have been actively instrumental in securing the provision of fever hospitals in the past cannot be regarded as impartial or unprejudiced observers, though I am well aware that this will exclude many of our older and most able officers of health. There are, however, plenty of men available well qualified, both as regards training and experience, to investigate such a subject as this, and without being handicapped by long-standing convictions or preconceptions. There is no necessity that the Commission should be composed entirely of medical men; indeed, it would be better that it should contain some laymen.

It should be the duty of this Commission to receive witnesses and to collect evidence from every source, and I venture to predict that when all available evidence has been obtained it will not be impossible for impartial judges to arrive at some definite conclusion.—I am, etc.,

Leicester, Sept. 7th. C. KILLICK MILLARD.

CHANGES IN THE BONES IN GOUT.

SIR,—In the BRITISH MEDICAL JOURNAL of August 6th, Dr. Berkart, under the heading of "Changes in the Bones in Gout" draws attention to the fact that in 1893 and 1895 he contributed articles to the literature of that subject in which he expressed views similar to those contained in my paper of

July 16th. As he remarks, those contributions had escaped my notice, and I am much indebted to him for drawing my attention to his valuable work on the histology of gout.

I am interested to note that his results were "sympathetically analysed" by Von Noorden, for it shows, in view of the latter's recent writings, how difficult it is for the rigid adherents of a theory to apprehend the true significance of freshly ascertained facts. There is a natural but mistaken tendency to try to relate the new facts to the old theory without first inquiring whether a different theory of causation may not supply a more adequate explanation of the whole series of phenomena.

My article on July 16th was entitled, "Further Facts in Favour of an Infective Element in Gout," and was in substance a plea for deliverance from the incubus of a tradition, which appears, first, to have narrowed the field of observation relative to that disease, and, secondly, to have obscured the significance of the phenomena actually observed. At the present time the questions cannot be too often reiterated, whether the histological researches of writers like Dr. Berkart, the recent acquisitions from the study of comparative pathology, and the latest results of clinical experience do not entail the reduction of "uric acid" from the rank of cause to the rank of effect, and compel us to regard it as a result, though an important one, of an infective process which operates through the alimentary tract.—I am, etc.,

Edinburgh, Sept. 3rd. CHALMERS WATSON.

THE BURIED UNABSORBABLE SUTURE.

SIR,—Sir William Macewen's Address in Surgery at the annual meeting of the British Medical Association, in which he points out how irrational and useless it is to bury unabsorbable sutures in the human body, is worthy of being epitomized and painted on the wall of every operating theatre. Students are still taught to expect a sterile unabsorbable suture, placed among sterile tissues, to remain permanently buried and to hold the parts together for all time. It is only after some years of experience that the disillusion is complete, and the ex-student wonders why he was ever taught a practice based on false premisses and imaginary results.

I have on two occasions, in your columns, inveighed against the attempt to convert the tissues of the patient into a cemetery for pieces of knotted silk and twisted metal. Five years ago, in a paper published in the JOURNAL of July 29th, 1899, p. 272, I wrote:

> The permanent buried suture after a short time fails to act as a suture, and not infrequently declines to remain permanently buried. The moral is obvious—dispense with buried sutures as far as possible, and, where they are a *sine qua non*, employ material capable of being absorbed.

Last year, in a paper on "The Buried Unabsorbable Suture and its Sequelae," published in the BRITISH MEDICAL JOURNAL of July 25th, 1903, p. 191, I traced the burial and resurrection of the unabsorbable suture on lines very similar to those of Sir William Macewen's address. Scarcely a month passes without my meeting some victim of the silk-burying craze. One of the most recent cases was that of a lady on whom ovariotomy had been performed. She told me that the operation had been a complete success, but she had been obliged to remain under treatment a month longer than usual because a silk ligature had taken that time to come to the surface!

If Sir William Macewen is successful in altering the practice and teaching of surgeons in regard to the burial of unabsorbable sutures he will confer, on that large portion of suffering humanity which comes under the care of the operating surgeon, a boon which can only be appreciated by those who have experienced the pain and annoyance caused by the extrusion of such foreign bodies as silk and metal.—I am, etc.,

Plymouth, Aug. 17th. C. HAMILTON WHITEFORD.

THE METRIC OR THE DUODECIMAL SYSTEM.

SIR,—We all admire Dr. George Jackson's energy and accomplishments, but when he makes a mistake leading to public disaster may I not expose the error? Dr. Jackson admits[1] that the duodecimal system may have advantages over the metric system, but he calls them "theoretical"! I think he must admit the advantages are practical. We must, in practice, see our patients at intervals of days or fractions of days; and we are obliged practically to order medicines at intervals of hours, or else two, three, or four times a day (intervals of two hours and twenty-four minutes are impracticable). If we prescribe five or ten doses to be divided among the twenty-four hours the second bottle is just started when we come to prescribe again. If we write the prescription decimally for one dose, and order the chemist to send six or a dozen doses, we throw the difficulty on to the chemist, and admit the awkwardness of the decimal system by still using duodecimal bottles. This is a practical difficulty which affects all of us, except those who, after each occasional consultation, give the patient a prescription which he can take till he is tired of it, or dead of it—yes, and his friends also.

It is not only for medical purposes that the metric system is so clumsy, but for all the practical concerns of life. The main uses for weights and measures are to divide up and distribute all sorts of things. But tens have many fewer factors than dozens, and of these thirds and quarters are much more useful than fifths; moreover, dozens pack much easier than tens—advantages which are all practical.

From a controversial point of view it may be amusing to compare my advocacy of the duodecimal system to the efforts of Mrs. Partington—could the same be said of the late Herbert Spencer?—but to compare the follies and fashions of legislators to the resistless order of the ocean tides is to invite sarcasm, especially in the case of a member of the General Medical Council! The implied argument also is quite false. Foreign countries are not eager to adopt the metric system. It has always been forced upon the peoples by rulers who knew nothing practically about weights and measures. It has always been variously modified into a centesimal system; and although enforced by law and taught in the schools, yet after three generations the old weights and measures are still used. S. Laing tells us why:

> In many of the most necessary and perpetually-recurring applications of weight, measure, time, labour, and money value to natural objects duodecimally divided by nature the decimal division is inconvenient, and, therefore, never will come into general use in France or anywhere else.[2]

The metric system is only a human invention; its utility is questionable, and its imperfections are undeniable. Now, when foreign countries adopt any useful invention, which should we do—slavishly copy that invention, or, profiting by their experience, adopt a modification of that invention which avoids its inconveniences and has other advantages? If the latter course is the wiser, I invite Dr. George Jackson to advocate the duodecimal system instead of the metric failure.—I am, etc.,

Croydon, Sept. 6th. T. ARCHIBALD DUKES.

THE PHYSICAL CONDITION OF THE PEOPLE.

SIR,—I am glad to say that I differ *in toto* both with the conclusions of the Anthropological Section of the British Association and with the opinion of the Prime Minister as regards the degeneration of the English people.

Having held three country practices in different and widely-separated parts of England may, I hope, give me some right to speak on this subject. If the people of England are degenerating, should not some facts be given to substantiate the grave statement? Some theories certainly appear; facts are conspicuous by their absence.

As a general practitioner in the counties of Sussex, Somerset, and Northampton, I have seen no sign of this alarming complaint. In my opinion, while England has such splendid women as she has at present, good daughters, good wives, and good mothers, she need not fear to hold up her head proudly with the proudest.

That there is much to be deplored in the number of the vast cities that are arising in the State, and in the consequent absorption of the rural populace, is true, and I think it would have been better had our Prime Minister devoted his speech to showing how the country people could be made more comfortable—more contented with their lot.

The first improvement that should be made is as regards the cottages in which the people are often made to live. No cottages should be allowed to be built except under Government supervision, and by and with its full permission. The second improvement should be with regard to the amusement of the people. Few individuals have the power to amuse themselves, especially after the fatigue of the working day; therefore, when he returns home, too often finding the children crying about the cottage, the workman seeks his fellows, and rarely is there any assembly room but the inn.

[1] BRITISH MEDICAL JOURNAL, August 27th, 1904, p. 472.

[2] *Notes of a Traveller*, S. Laing, p. 59.

Give these men honest employment for their leisure time, without undue restraint.

The Legislature has done much to prevent overcrowding, but not all it can. There are places where land is cheap, and yet where you will find cottages crowded one on the other without sufficient open space back and front, either from the lack of common sense, or more often, I fear, from parsimony.

All this the State should see to, and there is much that the medical profession can do to enable the people the better to meet their daily work.

In a paper I hope yet to read at one of the Branches of the Association I have pointed out the importance of the thorough and systematic removal of adenoids in childhood. That this will be done some day, I know—when, I cannot tell.—I am, etc.,

Paignton, Sept. 5th. GRIFFITH C. WILKIN.

THE REGISTRATION OF NURSES.

SIR,—In the discussion on the registration of trained nurses there is a point which has escaped notice. I shall be glad to have the opinions of your readers as to the best means of overcoming the difficulty. When the wife of a mechanic or working man is ill the service of a "help" is usually called in, who nurses the patient to the best of her ability and carries on the work of the house. The hospital-trained nurse would not undertake these duties, nor could the working man pay for her services. The district nurse could not give sufficient time to such cases. I shall be glad to learn in what way this want is to be supplied.—I am, etc.,

Bradford, Aug. 29th. WILLIAM HORROCKS.

THE PREVENTION OF HERNIA AS A SEQUEL TO ABDOMINAL SECTIONS.

SIR,—In answer to Dr. Stanmore Bishop's query as to the space available for operation when the abdomen is opened by transverse section, I can assure him that it is quite sufficient for all ordinary operations.

I have now employed this method in about thirty cases, and so far have had to adopt no special device in order to obtain more room. There is nothing, however, to prevent an operator (in the event of difficulties arising as a consequence of insufficient space) enlarging his wound in the vertical direction. For my part I prefer to select my cases, and still employ the vertical incision in the majority of extensive and difficult operations.—I am, etc.,

E. HASTINGS TWEEDY,
August 30th. Master, Rotunda Hospital, Dublin.

PHYSICAL DETERIORATION AND ITS CONNEXION WITH DENTAL DEGENERATION.

SIR,—With reference to the above important subject, I would suggest a simple remedy widely used by the natives of Oriental, and indeed most warm, countries.

It is a matter of common observation that the denture of negroes, Malays, Chinese, and Japanese is vastly superior to that of the average European or American. The latter are, of course, handicapped by the obsession of civilization; but, in spite of this, I believe the masses are less careful to cleanse their mouths after eating than are the Orientals and negroes. In addition to careful cleansing of the mouth, these uncultured people are almost continually chewing sugar cane, betel nut, or other detergent; and it is the former of these—namely, sugar cane—that I consider the remedy by means of which dental caries might be very much diminished. Sugar cane could be easily imported into this country, and in ample quantity, from Jamaica, whence there is a regular and rapid service of steamers. It is required only to originate a taste for sugar cane, and perhaps a knowledge of the benefits to be derived from it. The chewing of sugar cane, besides being of benefit to the teeth and musculature of the jaws, might obviate the occasional bad results of eating the many-coloured atrocities sold as sweets. Sir Alfred Jones might increase the indebtedness of Jamaica and the United Kingdom to his enterprise by making the experiment of importing sugar cane.—I am, etc.,

August 31st. SURGEON, R.N.

FOREIGN STUDENTS AT GERMAN UNIVERSITIES.—Of the 37,692 students enrolled in the German Universities for the summer semester of the present year, 3 093 were foreigners. Of these 986 were Russians, 322 Swiss, and 324 American. Of the total number of students 1 314 were women.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON SAMUEL W. VASEY has been appointed to the *Defiance*, September 9th.

ARMY MEDICAL DEPARTMENT.

INSPECTOR-GENERAL EDWARD MENZIES died at Napier, New Zealand, on May 25th last. He entered the service as Assistant-Surgeon, October 29th, 1841; became Surgeon, July 26th, 1853; Surgeon-Major, October 29th, 1861; Deputy Inspector-General, March 4th, 1868; and retired with the honorary rank of Inspector-General, August 17th, 1870. He served with the 94th Regiment during the operations at Aden in August, 1846, against the Arab tribes; in the Crimea from May, 1855, including the taking of Kerich and Yenikale, and the attacks of the Redan on June 18th and September 8th (medal with clasp, and Turkish medal); and with the 59th Regiment at the storming of Namtow, China, on August 11th, 1858.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL P. M. ELLIS is promoted to be Colonel, *vice* R. Blood, M.D., retired, August 13th. He was appointed Surgeon, August 5th, 1877; Surgeon-Major, August 5th, 1889; granted the rank of Lieutenant-Colonel, August 5th, 1897; and made Brigade-Surgeon-Lieutenant-Colonel, November 6th, 1900. He was in the Burmese campaign in 1886-7, receiving the Frontier medal with clasp.

Colonel G. D. N. LEAKE, who is serving in the Bombay Command as Principal Medical Officer, Bombay and Nagpore Districts, is transferred in the same capacity to the Oudh and Rohilkhund Districts.

Colonel F. W. TREVOR, also serving in the Bombay Command, is transferred from the Poona District to be Principal Medical Officer, Bombay and Nagpore Districts.

Lieutenant-Colonel A. W. P. INMAN, M.B., who is serving in the Bengal Command, is appointed to officiate as Principal Medical Officer, Allahabad and Narbudda Districts.

Major JOHN HENRY GREENWAY died at Capetown on August 8th, aged 47. He was appointed Surgeon, May 30th, 1883, and Surgeon-Major, May 30th 1897. He served in the Orange River Colony during the war in South Africa in 1899-1901.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL R. D. MURRAY, M.B., Bengal Establishment, Professor of Surgery at Calcutta Medical College, is appointed to officiate as Principal Medical Officer, Lahore District, from July 25th; he is granted the temporary rank of Colonel while so officiating.

Colonel J. T. B. BOURKE, C.B., Bengal Establishment, has returned from leave and resumed charge of the duties of Principal Medical Officer, Kohat District.

Lieutenant-Colonel G. J. KELLIE, Bengal Establishment, is appointed Principal Medical Officer, Derajat District, *pro tem.*

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

SURGEON-LIEUTENANT W. A. TAYLOR, M.B., 1st Forfarshire, to be Surgeon-Captain, September 10th.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE KEIGHLEY CORONER AND HOSPITAL NURSES.

A CORRESPONDENT has favoured us with a recent issue of the *Yorkshire Post*, in which, under the above heading, the following report appears:

"During an inquest at Keighley yesterday, the District Coroner (Mr. T. P. Brown) made some strong comments as to the attendance of hospital nurses at inquests. He alleged that the head nurse had defied him previously, but if he could get up a strong enough case he would send up three policemen to bring her down; and where it was necessary to have the evidence of a nurse he would go the length of issuing a warrant for her attendance. A juryman suggested that there had been a mistake and that the wrong nurse had been called in the case referred to by the Coroner. He felt sure the hospital authorities would always be willing to supply whatever evidence they could. A policeman said the Matron had stated that if nurses were to be regularly called to give evidence she would appeal to the Management."

*** It must not be forgotten that coroners possess very large powers as regards summoning witnesses and enforcing their attendance, and if those summoned to give evidence at a Coroner's Court do not appear, they absent themselves at their peril. Matrons and nurses of hospitals, as well as the medical officers, sometimes find that the time fixed for their attendance at an inquest does not fit in with their other engagements, and that substitutes have to be employed during their temporary absence. With the hint given by the Coroner, let us hope that in the future there will be no necessity to send three policemen to fetch the reluctant matron to the inquest. She must obey the mandate, and no appeal to the hospital authorities will exempt her from that duty. On the other hand, we have noticed that some coroners (on the score of economy, so we are told) have failed to summon the medical attendant to give evidence, receiving instead the opinions of nurses and policemen as to the cause of death, and that on such irresponsible statements verdicts have been returned. These deaths might, indeed, be not inappropriately registered as "uncertified" in the same way that deaths are when no certificate of the cause signed by a registered medical man has been received. We are further of opinion that at every inquest the last medical man in attendance on the deceased, or the one called in after death, should be summoned to give evidence, and then the jury would have before them a skilled expert medical witness, enabling them to return a correct verdict as to the cause of death. If this practice were pursued by all coroners, we do not think they would so frequently require to call matrons and nurses away from their hospital duties.

MEDICAL ETHICS.

H. L. H.—If in the course of the partnership negotiations which were broken off B. had access to sources of information respecting the neighbourhood which would otherwise have been closed to him, and which might influence his opinion of its desirability as a place in which to settle, he can scarcely take advantage of this knowledge. If there was no such disclosure of material facts, and the negotiations in question did not go beyond, and were broken off upon, broad questions of income and price, there might be no impropriety in the proposed course, but although his conscience may be clear if he settles in the place, he can hardly hope to escape being accused of acting unfairly.

MEDICAL ETIQUETTE.

ANXIOUS writes: A. and B. are attending patients in the same village. B. has been attending a patient every day for a week, and on going one morning is informed by the mother of the patient that A. has been there and is going to attend her. B. saw the patient on the previous day and nothing was said to him about calling in another doctor. Was this not a gross breach of professional etiquette on the part of A.? When B. spoke to A. about what he had done, he said that the patient's mother told him that she had informed B. that she was going to have another doctor, so he went. In that case was A. justified in going without first of all consulting B.? When he did go, was he acting according to professional etiquette when he informed the mother that the patient was not suffering from the disease which B. said she was and that she was being treated wrongly?

*** It was A.'s duty to see that B. had been informed that his services were no longer required: on this point he seems to have been misled by the mother. While one practitioner who succeeds another should treat his predecessor's opinions and statements with respect, it would not be possible to lay down a rule that he must never express his dissent from them. It should be remembered that the friends of patients often exaggerate and put into a highly offensive form statements which have been made with all due reserve.

MEDICAL CHARGES.

VIATOR.—A correspondent writes that he recently sent in a bill to a patient, who pleaded poverty, charging at the rate of 3s. a visit. The latter died shortly after, and was then found to have left a considerable sum of money. Another bill was then sent to the executors, charging at the rate of 5s. a visit, but they refused to allow any change in the original account. He wishes to know if he has any legal remedy.

*** The executors could do no less than refuse our correspondent's claim. Had they paid him at the higher rate, they would have been liable to make good the difference between the first and second accounts. When a practitioner has once sent in an account he cannot alter his charges, and it is always injudicious to endeavour to do so.

SHOULD A REGISTERED MEDICAL PRACTITIONER UNDERTAKE TO GIVE ADVICE ON THE HEALTH OF INDIVIDUALS IN THE CORRESPONDENCE COLUMN OF A NEWSPAPER?

PAPER.—It is contrary to medical ethics to contribute signed articles upon the treatment of disease to the lay press, or to give individual medical or surgical advice in the columns of a newspaper to unseen correspondents. Moreover, such a correspondence column might be abused in many ways—for example, to puff particular trade articles, or to attract patients to the writer.

OPTICIANS AS EYESIGHT SPECIALISTS.

DR. E. ARCHER BROWN sends us from Johannesburg, South Africa, two other specimens of the advertisements of persons who put the letters "F.S.M.C." (Fellow Spectacle Makers' Company) after their names. As already pointed out, the subject is receiving the attention of the Medico-Political Committee.

MEDICAL ADVERTISING.

FAIR PLAY.—The writing of a description of a health resort by one of the resident medical practitioners does not lay him open to the charge of medical advertising, and nothing can be more natural than the appearance of a tolerably lengthy review of the work in the local press. The right of Doctors of Medicine of the University of Brussels who are also registered medical practitioners to append the letters "M.D." after their names cannot, we think, be questioned, though it would be franker to indicate the source of the degree.

MASSAGE SHOPS.

A CORRESPONDENT draws our attention to a long list of advertisements in the *Sunday Times* of manicures, masseuses, and places for the treatment of rheumatism, in almost all instances kept by women, which he suggests points to a revival of the massage shops which had to be put down by the police a few years ago.

*** Such a surmise is possibly true, but at present we have no evidence to support it.

FEES PAID TO *LOCUM TENENS*.

A. G. J. inquires whether a *locum tenens* is entitled to fees for giving anaesthetics for his principal's professional neighbours, or to fees for notifying infectious diseases, and for inquests, etc.

*** A *locum tenens* is entitled to nothing beyond the remuneration the principal has agreed to pay him. All professional fees he receives while he is in the principal's service belong to the latter.

A DISCLAIMER.

MRS. ELLA SCARLETT-SYNGE, M.D. Brux., L.S.A. (London, S.W.), writes: I beg to state that the paragraphs which have appeared in a weekly journal and subsequently in the daily papers were inserted absolutely without my knowledge.

AMERICAN NOSTRUM VENDORS.

WITH reference to our annotation under this heading on p. 475, a correspondent sends a copy of a similar circular which reached him addressed to Mrs. ——, the only person answering to this description being his mother, who, he says, has certainly not been "corresponding" with any "business concern." He also points out that in one of the papers "doctors" are stated to be working for the company; but we hope and believe that this is not true of medical practitioners in the British Islands.

HOSPITAL AND DISPENSARY MANAGEMENT.

CUMBERLAND AND WESTMORLAND ASYLUM, GARLANDS, CARLISLE.

ON January 1st, 1903, there were in this asylum 694 patients and on December 31st, 724. As the main asylum was not intended for more than 660 patients, the accommodation has, the Superintendent, Dr. W. J. Farquharson, says, been taxed to its utmost, and temporary expedients have been resorted to to relieve the overcrowding of the dormitories. The congestion appears to be due not so much to increased admissions as to the unfavourable nature of the cases brought to the asylum in the last two years, resulting in a lowered recovery-rate and an accumulation of chronic and hopeless cases. A glance at the statistical tables affords ample evidence of the unsatisfactory nature of the 186 admissions. Fifty of these had previously been under treatment at the asylum, hereditary predisposition was ascertained in 63 cases, 44 had suicidal tendencies, and "fully one-half were in a feeble state of health, 5 were in a weak and exhausted condition, and several died very shortly after admission. Further, the admissions included 15 cases of congenital imbecility, 6 cases of epilepsy, 1 case of general paralysis, 14 over 70 years of age, and 6 cases transferred from other asylums. With such a class of admissions little was to be expected, and the discharge of 40 of these as recovered and 7 as relieved cannot be regarded as unsatisfactory. The total discharges during the year were 92, 65 of these as recovered, 21 as relieved, and 6 as not improved. The recovery-rate was thus, after deducting transfers from other asylums and readmissions owing to expiry of reception order, 36.3 per cent. on admissions. This, though very much below the average recovery-rate of the asylum for the last 42 years (42.4 per cent.), is slightly above the average recovery-rate of the asylum for 1902 (36.1 per cent.). Of the probable causes of insanity in the admissions, in addition to the hereditary influences and congenital defects noted above, intemperance in drink is given as an exciting cause in 23, and domestic trouble in 15; venereal disease, 6. There were 64 deaths during the year, a death-rate on the average daily number of patients of 9 per cent.; 19 deaths were due to cerebral and spinal diseases, 33 to diseases of the chest, 4 to abdominal diseases, and 8 to general diseases: 11 of the chest diseases were cases of phthisis pulmonalis, and 3 other deaths due to tuberculous disease, giving a percentage of 21.8 of the deaths due to tubercle. All deaths were from natural causes. The segregation of phthisical patients in asylums is so important that we are glad to note that proposed additions include small wards for the isolation of such cases.

SALOP AND MONTGOMERY COUNTIES AND BOROUGH OF WENLOCK ASYLUM.

THERE is accommodation in this asylum for 750 patients, but the average number resident in the year 1903 is shown in the 59th annual report to have been 790. On January 1st, 1903, the asylum contained 782 patients, and on December 31st 808—that is, 75 above its provided accommodation. To meet this overcrowding the Committee of Visitors has decided to board out 20 female patients at Abergavenny Asylum, and has further directed inquiries to be made as to the possibility of boarding-out in workhouses. During 1903 there were 199 admissions (a decrease of 26 compared with the previous year), 34 of whom were readmissions. Of these 199, 61 were classed as acute mania, 3 as chronic mania, 54 as acute melancholia, 2 as chronic melancholia, 20 as chronic dementia, and no less than 10 as acute or primary dementia. There were 15 cases of idiocy, 15 of delusional insanity, 5 of epileptic insanity, and 14 cases of general paresis.

Of the probable causes of insanity in these, previous attack accounts for 25, moral causes for 20, alcohol as predisposing or exciting cause in 8, and in 104 the cause is unknown. Congenital defect is assigned in 5 only, and no note of hereditary influence is made, though possibly subsumed under the category "unknown." Notwithstanding the 14 cases of general paresis the presence or absence of venereal disease finds no mention. There were 62 discharges during the year, 55 as recovered (a percentage recovery-rate on admissions of 29.59), 4 as relieved, and 3 not improved.

There were 111 deaths, a percentage on the average number resident of 12.61. Of the causes of death the salient features are phthisis 25, influenza and its complications 18, and heart disease 17. One case is noted of bronchitis from a broken rib. Three inquests were held during the year, and the verdicts were (1) death from natural causes, (2) suicide by strangulation, and (3) death from accidental scalds. Three nurses were prosecuted and fined for striking patients.

The Commissioners in Lunacy visited the asylum, but their report is not included in the report we have before us.

The above facts are extracted from the report of the Medical Superintendent, Dr. D. F. Rambaut, and from the statistical tables compiled by his assistant, Dr. Rigden.

WEST SUSSEX COUNTY ASYLUM, CHICHESTER.

JANUARY 1st, 1904, completed the period of ten years from the date when the agreement to dissolve union with East Sussex was carried into effect—January 1st, 1894. From that time to the present there has been a steady increase of the inmates of this asylum, though last year's increment (12) was the lowest in this period. By the erection of additional blocks in 1901 and 1902, however, the accommodation was so much increased that this asylum will supply, the Medical Superintendent, Dr H. A. Kidd says, the needs of West Sussex far into the future. The surplus beds are at present occupied by 21 private and contract patients, 60 of whom have been admitted since the close of the year from Cardiff Borough and Essex County. There is, however, Dr. Kidd points out, need for separate accommodation for private patients, as at present such cases

are only received under special circumstances and not treated separately from other patients; and he further comments on the fact that the "stigma of pauperism" is felt acutely by many who, although their friends are unable to afford even the ordinary maintenance rate, have always, prior to their illness, been able to earn their own living, and who upon recovery will do so again, and thus cannot justly be styled "paupers." This evil, Dr. Kidd maintains, cannot be remedied, but might be mitigated by providing accommodation for those whose relatives are able to make moderate payments for treatment but who are unable to afford the sums required by most private asylums, and recommends the subject to the West Sussex Committee. On January 1st, 1903, there were resident 723 patients, and on December 31st, 1903, 659. This considerable drop in the numbers is accounted for by the termination of contracts and the re-transfer of 98 chronic patients to their respective county asylums. One hundred and fifty-one were admitted during the year, and include 55 out-county and private cases. Of these 151 admissions, 123 were first admissions, but the Medical Superintendent says that only one-fifth of the whole number can be regarded as probably recoverable. Seventy-one were cases of mania, 44 melancholia, 7 dementia, and in 12 there was congenital defect. There were 8 cases of epilepsy (acquired) and 9 general paralytics. Hereditary influences were ascertained in 63 (42 per cent. of the whole), but the actual percentage in those furnishing family histories amounted to 50 per cent. Intemperance in drink was assigned as a cause in 24, privation and starvation in 15, previous attacks in 38, and moral causes in 19. Venereal disease appears as a cause in 6, and the remainder are distributed over the other usually cited causes. There were 47 discharged as recovered during the year (a recovery-rate of 32.19), 37 as relieved, 77 as not improved, and there were 59 deaths, being a death-rate to average daily numbers resident of 8.9 per cent. Half the deaths were due to organic brain disease, including 5 cases of general paralysis. Ten deaths were due to tuberculous disease, 5 to cancer, and 6 to heart disease. The general health has been good; with the exception of influenza there has been no illness of an epidemic nature, and, as we have had occasion to notice elsewhere, with ample accommodation for patients, the death-rate from tuberculous disease has been low.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,544 births and 5,188 deaths were registered during the week ending Saturday last, September 10th. The annual rate of mortality in these towns, which had been 22.7, 20.5, and 18.2 per 1,000 in the three preceding weeks, further declined last week to 17.5 per 1,000. The rates in the several towns ranged from 5.1 in Hornsey, 8.3 in Willesden, 8.6 in Smethwick, 9.4 in Kings Norton, 9.6 in Handsworth (Staffs.), 11.7 in Walthamstow, and 12.8 in West Hartlepool, to 24.7 in Liverpool, 25.0 in Rotherham, 25.3 in St. Helens, 26.5 in Tynemouth, 28.4 in Plymouth, 29.9 in Wigan, 31.8 in Hanley, and 33.0 in Great Yarmouth. In London the rate of mortality was 15.2 per 1,000, while it averaged 18.5 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 5.2 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 3.5 per 1,000, while among the seventy-five large provincial towns the death-rates from these diseases ranged upwards to 9.0 in Portsmouth, 9.1 in Stockport and in Wigan, 10.7 in Liverpool, 10.9 in Burnley, 11.9 in Plymouth, 12.0 in Great Yarmouth, 12.7 in Bootle, and 14.7 in Hanley. Measles caused a death-rate or 1.1 in Walsall and in Stockport, and 1.4 in Plymouth; diphtheria of 1.5 in Bradford and in West Hartlepool, 1.6 in Hanley, and 1.7 in Bootle; whooping-cough of 1.1 in Stockport, 1.6 in West Bromwich, and 3.0 in Great Yarmouth; "fever" of 1.3 in Aston Manor; and diarrhoea of 3.2 in Preston and in Hull, 8.3 in Wigan, 8.6 in Grimsby and in Liverpool, 9.0 in Great Yarmouth, 9.3 in Burnley, 10.1 in Bootle, 10.5 in Plymouth, and 12.2 in Hanley. The mortality from scarlet fever showed no marked excess in any of the large towns. Two fatal cases of small-pox were registered in Salford, and one each in Manchester and in Newcastle-on-Tyne, but none in any other of the seventy-six towns. The Metropolitan Asylums Hospitals contained 8 small-pox patients at the end of last week, against 18, 13, and 9 at the end of the three preceding weeks; 2 new cases were admitted during the week, against 2, 0, and 2 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital which had been 1,745, 1,781, and 1,819 on the three preceding Saturdays, had declined again to 1,816 on Saturday, the 10th inst.; 234 new cases were admitted during the week, against 198, 263, and 266 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, September 10th, 850 births and 519 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 15.7, 16.2, and 16.0 per 1,000 in the three preceding weeks, further declined last week to 15.7 per 1,000, and was 1.8 per 1,000 below the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 9.7 in Leith and 14.0 in Edinburgh, to 18.7 in Greenock, and 20.0 in Perth. The death-rate from the principal infectious diseases in these towns averaged 2.6 per 1,000, the highest rates being recorded in Paisley and Greenock. The 231 deaths registered in Glasgow included 4 which were referred to measles, 2 to diphtheria, 0 to whooping-cough, 2 to "fever," and 22 to diarrhoea. Two fatal cases of diphtheria, 2 of whooping-cough, and 7 of diarrhoea were recorded in Edinburgh; 2 of whooping-cough and 9 of diarrhoea in Dundee; 3 of diarrhoea in Aberdeen; 7 of diarrhoea in Paisley; and 2 of whooping-cough and 4 of diarrhoea in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, September 3rd, 551 births and 327 deaths were registered in six of the principal Irish towns, against 520 births and 341 deaths in the preceding period. The mean annual death-rate of these towns, which had been 17.5, 16.0, and 15.8 in the three preceding weeks, rose to 17.2 per 1,000 in the week under notice, this figure being 1.0 per 1,000 lower than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 3.8 in Waterford to 23.9 in Londonderry. The zymotic death-rate during the same period and in the same six Irish towns averaged 1.8 per 1,000, or 1.2 less than during the preceding period, the highest figure, 4.0, being recorded in Dublin, while Limerick and Waterford registered no deaths under this heading at all. Diarrhoea caused 26 deaths in Dublin and 18 in Belfast; no deaths from diphtheria, scarlet fever, small-pox, or simple continued fever were recorded anywhere in Ireland. In Belfast 1 death was ascribed to typhus.

THE HEALTH OF NATAL.

THE annual report on the health of the Colony of Natal, furnished by the Health Officer, Dr. Ernest Hill, affords evidence of progress. There has been a decline in the death-rate, which stands at 12.9 per 1,000 for 1903 as against 14.4 for 1902, and the infant mortality rate is not, under all the circumstances, excessive. Much of Dr. Hill's report is concerned with what may be described as pioneer work and the inculcation of the elements of hygiene. The sanitary legislation now in force in the Colony needs amendment in respect to vaccination, registration of deaths, and adulteration of food, and the Public Health Act of 1901 needs some modification. In many ways there appears to be in public opinion in the Colony lack of appreciation of the value of sanitary measures, and the Health Officer points out how this affects many common and everyday requirements of a healthy life, such as pure water, clean milk, drainage, refuse disposal, and so forth, and thus it comes about that filth diseases such as typhoid, diarrhoea, dysentery, etc., are the chief contributors to the death-rate. Dr. Hill considers that the two chief channels of infection in enteric fever, which causes more than 7 per cent. of the total deaths, are polluted water and insanitary privies and earth closets. The incidence of the disease in Maritzburg was more than three times as heavy in the portion of the town supplied with water from the Zwaartkop stream, which is not filtered, as in the portion supplied from the Chase Valley Works, where the water is passed through sand. The gathering grounds also seem open to criticism. Pollution of rivers with refuse from sugar mills has elicited increasing complaint, and much nuisance results from the deposit of refuse in proximity to dwellings and highways. The report dwells a good deal also upon the transference of infection by flies. Disease has still been too prevalent at Ladysmith, where the possibilities of pollution are great. An extensive water scheme is in hand. During the year a water-carriage system of sewerage and a closed septic tank and contact beds have been installed in connection with the Railway Barracks at Maritzburg, and a Bill is before Parliament for sanctioning a loan for the purpose of installing similar works for the town. Scurvy is very common among the natives, especially the latter half of the year. It seems to be due in large measure to the absence of vegetable diet, the insufficiency of nutriment in the native's ordinary food, and the unsatisfactory condition of house property. Plague caused 157 deaths out of 208 cases, of which 20 cases and 5 deaths were among Europeans. The medical officer rightly insists that in addition to keeping imported cases out and killing rats, immunity from plague depends largely upon general sanitation. Reports on the various towns and districts and on port sanitation are appended.

DISINFECTORS.

SUBSCRIBER.—There are a large number of efficient steam disinfectors now on the market. The cheapest form we know of is Thresh's disinfector (approximately £105), described in the BRITISH MEDICAL JOURNAL, June 28th, 1902, p. 1606; but many authorities prefer an Equifex (Defries and Son, Houndsditch, E.C.; £250 and upwards), or a Washing on Lyon (Manlove, Alliot, and Co., Nottingham), or one of the disinfecting machines of Goddard, Massey, and Warner, Nottingham.

WATER ANALYSIS.

M.O.H. writes: The Chairman of the Rural District Council to which I am medical officer of health directs the Sanitary Inspector to bring me samples of his domestic water supply for analysis; he has done so now upon three occasions, without taking the trouble to write to me or send a word in explanation. The Inspector tells me it is no use his remonstrating, as he, the Chairman, would simply say: "Take it to him: it his duty to analyse it." It is not a question of any illness in his family or employés likely to be caused by polluted water, but simply, I believe, to know that it is all right. May I ask if I am bound to comply with this somewhat arbitrary and very uncourteous proceeding? The Chairman is a well-to-do farmer.

*** While it is the duty of a medical officer of health to keep himself informed of all circumstances likely to affect the health of his area, and thus to acquaint himself with the nature of the water supply, it is not his duty to conduct analyses of water in the absence of a special arrangement on the point between himself and the local authority. The Local Government Board ruled to this effect many years ago.

MEDICAL VACANCIES AND APPOINTMENTS.
VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BANBURY: HORTON INFIRMARY.—House-Surgeon, resident. Salary, £80 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House-Surgeon. Salary, £80 per annum and notification fees.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £50 per annum.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Second Assistant Anaesthetist.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Second House-Physician, resident. Salary at the rate of £50 per annum.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £40 per annum.

EYE AND EAR HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Eight Clinical Assistants in Out-patient Department.

HALIFAX UNION POOR-LAW HOSPITAL.—Resident Medical Officer. Salary, £120 per annum and £20 for dispensing medicines.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Honorarium, £25 for six months.

HULL ROYAL INFIRMARY.—House-Surgeon, resident. Salary, 80 guineas per annum.

INVERNESS DISTRICT ASYLUM.—Assistant Medical Officer, resident. Salary, £160 per annum.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.—House-Surgeon. Salary, £120 per annum, increasing to £150.

KIRKBURTON: STORTHES HALL ASYLUM.—Assistant Medical Officer, resident. Salary, £140 per annum.

LEITH HOSPITAL.—(1) House-Physician; (2) Physician in the Outdoor Department; (3) Assistant House-Surgeon.

LINCOLN COUNTY HOSPITAL.—Junior Male House-Surgeon, resident. Honorarium, £25 for each six months.

LIVERPOOL INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer. Salary £120 per annum.

MANCHESTER: CHILDREN'S HOSPITAL.—(1) Junior Physician; (2) Junior Surgeon. Honorarium, £50 each. Junior Physician, to act also as Pathologist, with honorarium, £25.

MONSALL FEVER HOSPITAL.—Fourth Medical Assistant, resident. Salary, £100 per annum.

NEW HOSPITAL FOR WOMEN, Euston Road, N.W.—Clinical Assistant in the Out-patient Department.

PRESTON ROYAL INFIRMARY.—Assistant House-Surgeon, resident. Salary, £160 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—House-Physician, resident. Salary at the rate of £80 per annum.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Morning House-Anæsthetist. Honorarium, £50 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—House-Physician, resident. Salary at the rate of £60 per annum.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Clinical Assistants.

TOTTENHAM HOSPITAL.—House-Physician, resident. Salary, £60 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Surgeon, resident. Honorarium, £25 for six months.

WEST LONDON HOSPITAL, Hammersmith Road.—Additional Officer in charge of X-Ray Department.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House-surgeon, resident. Honorarium at the rate of £75 per annum.

APPOINTMENTS.

BELL, E. S., M.D.Brux., M.R.C.S., L.R.C.P., Medical Superintendent, Bermondsey Parish Infirmary.

DANIELL, G. W. Bampfylde, M.R.C.S., L.R.C.P.Lond., Anæsthetist to the Edinburgh Dental Hospital.

HAIG, Harold A., M.R.C.S., L.R.C.P.Lond., Junior Assistant Medical Officer to the Cumberland County Council.

HETHCOTE, D., M.B., B.S.Durh., District Medical Officer, Richmond (Yorks) Union.

HOLMES, A. H., M.D., District Medical Officer of the Bourne Union.

HOOLE, John, M.R.C.S., L.S.A., Medical Officer of Health to the Ashbourne Rural District.

HOWLETT, J. K., L.R.C.P. & S.Edin., L.F.P.S.Glasg., Medical Officer and Public Vaccinator for the Grassenhall District of the Mitford and Launditch Union, *vice* S. M. Hopson, M.R.C.S.Eng.

HUGHES, R. M., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Forehoe Incorporation.

JACKSON, F. W., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Market Rasen District, Lincolnshire.

KEMP, W., M.B., C.M.Edin., Certifying Factory Surgeon for the Castleford District, County York.

KILLEN, J. W., M.B., B.S., R.U.I., Assistant Medical Officer at the Hendon Asylum of the Central London Sick Asylum District.

LAWSON, W. W. J., M.B., Ch.B.Aberd., Second Assistant Medical Officer to the Berkshire County Asylum, Wallingford.

LEVICK, G. K., M.B., B.S.Lond., Medical Officer of Health to the Havant District Council, *vice* Wm. Bannister, M.R.C.S.Eng.

MCDONALD, James E. F., M.B., B.S.Melb., Acting Assistant Health Officer for the Port of Brisbane, *vice* R. A. O'Brien, M.B., B.S.Melb., resigned.

MACKLIN, T. T., M.D.Glasg., Certifying Factory Surgeon for the Whalley District, County Lancaster, and Medical Officer of Health, Clitheroe Rural District.

MACLENNAN, John N. E., M.B., M.S.Aberd., Government Medical Officer and Vaccinator at Young, N.S.W., *vice* Dr. Alfred Campbell, resigned.

MARKBY, H., M.R.C.S.Eng., L.R.C.P.Lond., Medical Officer to the Post Office, Morley District.

MILLS, R. J., M.B., C.M.Aberd., Medical Officer for the Thorpe District of the Blofield Union.

MOLESWORTH, T. H., M.B., B.C.Camb., District Medical Officer of the Dover Union.

MOODIE, D., L.R.C.P. & S.Edin., District Medical Officer of the Selby-field Union.

MOORE, E. J. E., M.R.C.S., L.R.C.P., Medical Officer, Well Street Temporary Workhouse of the West Ham Union.

MOSTYN, Sidney G., M.B., B.Ch.Oxon., D.P.H.Camb., Medical Officer of Health for the Borough of South Shields.

NICHOLSON, F. D., B.C.Camb., District Medical Officer of the Hoxne Union.

NORMAN, A. S., L.R.C.P., M.R.C.S.Eng., D.P.H.Camb., Certifying Factory Surgeon for the Havant District, Southampton.

PARKHURST, L. E., M.D., B.Ch.Oxon., Medical Officer of the Workhouse of the Brackley Union.

PERHAM, E. A., M.D.Lond., M.R.C.S., Certifying Factory Surgeon for the Whitchurch District, County Salop.

POTTS, L., M.R.C.S.Eng., Medical Officer for the Headley District of the Epsom Union.

RODWAY, F. A., M.B., B.S.Melb., Junior House-Surgeon to the Hobart Hospital, Tasmania.

ROSS, A. P., M.B., M.S.Edin., Government Medical Officer and Vaccinator at Condobolin, N.S.W., *vice* Dr. W. H. Bracewell.

ROSS, D. M., L.R.C.P.Lond., Assistant Medical Officer, St. Marylebone Infirmary.

ROSS, Gordon, M.B., B.S.Melb., Resident Medical Officer at the Brisbane Hospital, Queensland.

SAYER, Thomas, M.R.C.S.Eng., L.R.C.P.Lond., Medical Officer and Public Vaccinator for the Kirklington District of the Bedale Union and for the Pickhill District of the Thirsk Union; also Medical Officer of Health for Kirklington, Yorks.

SHANNON, David, M.B., Ch.B.Glasg., L.M.(Rot. Dub.), Indoor House-Surgeon to the Maternity Hospital, Glasgow.

SHARPE, Edward S., M.B., Ch.B.Edin., Junior Assistant House-Surgeon to the Stockport Infirmary.

SOPER, G. M., M.R.C.S., L.R.C.P., District Medical Officer of the Totnes Union.

STACY, J. H., L.R.C.P. & S.Edin., Medical Officer of the Receiving Home of the Norwich Union.

TARBET, P. R., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Hitchin Union.

WICKHAM, G. H., M.B., B.C.Camb., Certifying Factory Surgeon for the Fleet District, County Southampton.

WILLIAMS, J. O., M.R.C.S., L.R.C.P., Medical Officer of Health for Barmouth Urban District, *vice* Arthur Hughes, M.R.C.S.Eng.

DIARY FOR NEXT WEEK.

POST-GRADUATE COURSES AND LECTURES.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin Diseases; Tuesday, Medical Cases; Wednesday, Surgical Cases; Thursday, Surgical Cases; Friday, Ear Cases.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BRUCE PEARSON.—On September 8th, at The Cottage, Buckingham, the wife of Bruce Pearson, L.R.C.P., etc., of a son.

GODDARD.—On August 21st, at Naval Hill, Bloemfontein, O.R.C., the wife of Captain G. H. Goddard, R.A.M.C., of a son.

MARRIAGES.

BARNES—ORMSBY.—On September 13th, at North Street Church, Brighton, by the Rev. E. Dowsell, J. A. Percival Barnes, L.R.C.P., M.R.C.S., son of the Rev. John Barnes, of Sutton, Surrey, to Louisa Eileen, elder daughter of Thomas Ormsby, Esq., solicitor, of Beaumont, Blackrock, Co. Dublin.

BLACKBURN—SHOTTON.—On August 31st, at St. Woolos Church, Newport, Monmouth, by the Rev. B. Lloyd, Vicar, assisted by the Rev. T. E. Richardson, Curate, Vernon Kent Blackburn, M.R.C.S., L.R.C.P. Lond., of Barnsley, Yorkshire, elder son of John Blackburn, M.R.C.S., of Barnsley, to Katie, eldest daughter of John Webb Shotton, of Newport.

BUNTING—WALKER.—On September 8th, at Wesley Chapel, Bolton, by the Rev. Thomas Allen, D.D., and the Rev. George Oyston, B.A., William Hartley Bunting, M.D., F.R.C.S.Edin., to Edith Maude, younger daughter of Thomas Walker, J.P., of Southfield, Bolton.

WHITE—PULLIBLANK.—On September 7th, at St. Michael and All Angels, Rampisham, Dorsetshire, by the Rector, father of the bride, assisted by the Rev. W. Beale White, M.A., and Rev. Leonard H. White, M.A., brothers of the bridegroom, Clement White, M.D.Cantab., to Emily Jane Pulliblank.

DEATHS.

CARVER.—On Wednesday, September 7th, at Torquay, Edmund Carver, M.D., late of Cambridge, aged 80. Friends will please accept this intimation—no flowers, by request.

JAMESON.—On September 13th, at Newlands, Eltham, Surgeon-General J. Jameson, C.B., K.H.S., etc., late Director-General Army Medical Service aged 67.

RUSHTON.—On September 11th, at Jordangate, Macclesfield, John Latham Rushton, jun., M.R.C.S.Eng., L.R.C.P.Lond., aged 28 years, elder son of John Latham Rushton, M.D.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 3, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National).— EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

MEDICUS would feel obliged by being informed of a very dry place in England suitable for a young patient suffering from albuminuria to winter in.

R. wishes to know where he can obtain lantern slides of signs of early pregnancy, areola, diagrammatic of cervix, shape, etc., for clinical lecture purposes.

INSECT STINGS.

H. J. W. asks whether any reader has found anything of especial value as a local application in cases of stings by wasps, etc. A little while back a slice of onion applied was mentioned in one of the daily papers as a sure cure. Is this a useful remedy?

SNORING.

SOMNUS asks for a remedy for the unfortunate and most disagreeable nuisance of snoring. He has often been consulted about it, but all the remedies suggested seem to have failed.

THE ELECTION OF CORONERS.

SENEX writes to inquire as to the appointment of coroners, their remuneration, as to publications in which vacancies are advertised, and where a list of existing coroners can be obtained.

*** Coroners are now elected either as county coroners by members of the County Councils, or as borough coroners by members of the Corporations. A list of the present coroners and their respective districts is now published in Churchill's *Medical Directory*. The salary paid to coroners varies considerably, and is fixed by agreement between the coroner and the authority that appoints him, and is usually based upon a quinquennial estimate of the average yearly number of inquests held during that period. In case of non-agreement on this matter there is an appeal to the Home Secretary, whose decision is final. When a vacancy occurs, advertisements sometimes appear in the medical and legal journals, but more frequently in the daily or local newspapers.

ANSWERS.

WE would request correspondents who desire to ask questions in this column not to make use of such signatures as "A Member," "A Member B.M.A." "Enquirer," and so on. By attention to this request much confusion would be avoided. Correspondents are asked to write upon one side of the paper only.

GRINDELWALD.

J. W. G.—The skating and tobogganing season at Grindelwald begins early in December, and ends usually towards the close of February. At Davos the season is longer, beginning some weeks earlier, and ending considerably later. The hotel charges would probably be rather lower at Grindelwald for similar accommodation.

PRESERVATION OF CREAM.

STERILIZER.—(1) Cream may be pasteurized at or about 70° C. in any of the ordinary domestic pasteurizers, of which there are a number on the market. (2) Probably the vendors whose cream keeps better than that procured from the farm pasteurize it, but it is impossible to say without further information as to the company. (3) Cream in tins should keep good indefinitely, if sterilized and properly sealed.

CHRONIC SCIATICA.

A. B. C. writes: In reply to "X. Y. Z." I have seen two cases which were due to a tumour in the rectum. I have heard of other cases which were due to other tumours contained in the pelvis or abdomen.

ADMINISTRATION OF DRUGS BY MIDWIVES.

FORCEPS.—A midwife certified under the Midwives Act of 1902 is permitted, by the rules framed by the Central Midwives Board, to administer ergot, opium, or any other remedy commonly used in the management of normal labour. The midwife is, however, bound to enter in her casebook every dose of medicine she has given to her patients, and also the purpose for which it has been administered, and this book must be duly submitted to the local supervising authority of the County Council within whose area she has received permission to practise.

CHLORIDE OF ETHYL AS A GENERAL ANAESTHETIC.

E. M.—Chloride of ethyl can be administered for general anaesthesia. After narcosis is fully established air should be admitted, and 2 or 3 c.cm. sprayed into the bag every two or three minutes as occasion demands. As air is excluded during the actual inhalation, it is of course necessary to allow the patient to breathe air from time to time. As to the length of time during which the anaesthetic is given, that must depend upon the requirements of the operation and the state of the patient. The possible dangers arise from interference with respiration, and signs of respiratory difficulty must be watched for, and if present would indicate either that the dose of the anaesthetic given was too great, or that the patient is suffering from the effect of the repeated small doses. In this case ether can readily be given in place of the chloride of ethyl. Some authorities record failure of circulation under chloride of ethyl, and, remembering this, any tendency to pulse feebleness or syncope should place the anaesthetist upon his guard, and lead him to desist from the administration, or replace the anaesthetic by ether.

LETTERS, NOTES, Etc.

FORMOL IN CORYZA.

DR. ALFRED S. GUBB (Aix-les-Bains) writes: The other day, being afflicted with severe nasal catarrh *qua* cold in the head, I was tempted to employ a spray of menthol in liquid vaseline. I selected for the purpose a nasal spray apparatus which was at hand ready charged, but to my dismay I discovered when too late that it contained a 1 per cent. of formol. The smarting was severe, but when it had passed off I found that the coryza had subsided, much to my relief. The application of a solution of formol in the treatment of an unquestionably microbial inflammation of the nasal mucosa, if disagreeable, is distinctly reasonable, so I venture to call attention to my accidental experience.

A HALFPENNY IN OESOPHAGUS OF CHILD.

DR. W. I. WATSON (Wellingborough) writes: Three months ago a girl 2½ years old was brought to me who had swallowed a halfpenny, which was supposed to be in the gullet. I put my finger as far down the throat as possible, but could not feel it. The child retched, but the coin was not dislodged. I did not use a horsehair probang, fearing it might push the coin down, and recommended the child to be taken to Northampton Hospital, where the x rays might be used. This was not done. Everything solid has been returned directly, but fluids could be swallowed, and the mother got a baby's bottle for the child. The faeces have been of a very dark colour, and the mother thought the coin was dissolving away, consequently further medical treatment was not sought. When the child was not asleep she was generally crying, and would put her hand to the top of her chest. Yesterday a piece of bloater was given her: she retched twice, got black in the face, and brought up the halfpenny, covered with dark brown matter. It was stained nearly black.

THE PUBLIC ESTIMATE OF THE PARISH DOCTOR.

A CORRESPONDENT sends us a prospectus of Knight's Dictionary of the principal local government officials of England and Wales, and draws attention to the list of prizes offered to local government officials for their experiences in the form of contributions to the *Local Government Chronicle*. He points out that while officials of County, Borough and Town Councils, and even Clerks of Boards of Guardians and Urban and Rural District Councils, are offered prizes amounting to £20, and engineers, surveyors, and the officials in their offices are offered prizes of £15, prizes to the value of £10 are considered sufficient to elicit the experiences of medical officers, who in this respect are classed with the masters, matrons, and stewards of workhouses, relieving officers, inspectors of nuisances, sanitary inspectors, nurses, and probationers. We should certainly expect the experiences of medical officers to be at least as instructive and entertaining as those of the officials to whom higher prizes are offered, and it is pretty certain that medical men are less likely to be able to spare the time for literary work and therefore would require a greater inducement. We do not know the basis upon which the prizes are fixed but we hesitate to adopt our correspondent's conclusion, and think it probable that the lower sums may be due to the greater number of the medical officers.

LETTERS, COMMUNICATIONS, Etc., have been received from

A Dr. T. G. Atkins, Cork; Alpin; Anxious; Dr. T. M. Allison, Newcastle-on-Tyne; A. B. C. B Dr. W. B. Bell, Liverpool; Messrs. E. A. and C. Black, London; C. W. Branch, M.B., St. Vincent; British Balneological and Climatological Society, Secretary of, London; Dr. T. R. Bradshaw, Liverpool; Dr. A. T. Brand, Driffield; Dr. J. W. Byers, Belfast; Mr. W. L'E. Blenkarne, Worthing; Mr. G. H. Broadbent, Manchester. C Mr. J. J. Curran, Killeagh; C. B. D.; Central Public-House Trust Association, Secretary of, London; Mr. R. Clarke, Clitheroe; Messrs. Crossley and Co., London; Mr. J. Coventry, Birmingham; Commercial Intelligence Bureau, Manager of, London; Dr. H. Coates, Oldham; Dr. J. Charles, Stanley; Mr. J. S. Crabbe, Birmingham; Country Practitioner. D Dr. J. H. Dewhurst, Campden; Mr. G. W. B. Daniell, Edinburgh; Disgusted; Mr. H. V. McM. Dillon, London; Messrs. Down Bros., London. E Mr. W. H. Easy, Enfield; E. M.; H. M. Eyres, M.B., Richmond, Yorks. F Forceps; Sir Ernest Flower, London; Major G. H. Fink, I.M.S., London. G Dr. R. Gibson Portwine; Mr. V. P. Gonsalves, London; W. Gepper, M.B., Wallington; E. N. Goodman, M.B., Kingston-on-Thames. H H. L. H.; S. P. Hallows, M.B., London; H. J. W.; Mr. T. G. Horder, Cardiff; Mr. J. Hartley, Darlington. I "International Magazine of School Hygiene," Editor of, London; Inquirer. J J. W. G.; Dr. E. J. Jones, Aberdare; J. H. D. K Messrs. Kassler and Wolff, London. M Mr. G. H. Morley, Birmingham; Mr. W. H. Martindale, London; Mr. W. R. Meyer, Horstpierpoint; Dr. H. P. Mottersham, Smethwick; Dr. C. K. Millard, Leicester; Medicus; S. A. Milner, M.B., Lostwithiel; A. MacPhail, M.B., Glasgow; Mr. H. F. Mackay, Edinburgh; M O H; Dr. W. H. MacCarthy, Bristol; Dr. A. S. Morton, London. N National Hospital for the Paralysed and Epileptic, Secretary of, London; J. S. Norwell, M.B., Perth; Mr. C. Norman, Dublin. P Provincial; Perplexed; Plumbago; Mr. H. E. Powell, London; Dr. P. H. Pye-Smith, London; Dr. H. G. Pesel, Chadhill. R Dr. C. S. Redmond, Hulme; Royal Society, Secretary of, London; Dr. J. Ritchie, Oxford; T. Russell, M.B., Parkhead; Mr. W. F. R. Wilson, Bradford; Mr. A. C. Reindle, Liverpool, Reversant; Mr. H. E. Rae, London; Dr. J. C. Renton, Glasgow. S Subscriber; St. Helens; Dr. H. Snow, London; Messrs. W. B. Saunders and Co., London; Sanitas Company, London; Dr. W. F. Somerville, Hillhead; Dr. J. A. Shaw-Mackenzie, London; Mr. T. Sayer, Kirklington; J. M. Y. Stewart, M.B., Guildford; Somnus; Surgeon; Dr. H. B. Shaw, London. T Mr. C. L. Thaylen, London; Mr. D. R. Thom, Aberdeen; Mr. H. W. Thomas, Liverpool; T. M. U University of Durham College of Medicine, Secretary of, Durham. Unbiassed Reformer. V Viator. W Mr. F. H. Welch, Lee; Messrs. Woolard and Batten, London; Dr. A. E. Wright, London; Dr. A. A. Warden, Paris; Mr. J. C. Wilson, Haworth; Dr. J. Williams, Dowlais; Mr. G. W. Weethy, Liverpool; Dr. H. F. Waterhouse, London; Mr. R. H. Wolstenholme, Salford; Wigan Medical Society, Secretary of, Wigan; Mr. E. H. Willock, Croydon; Dr. A. G. Weisford, Hemel Hempstead; etc.

BOOKS, Etc., RECEIVED.

The Differential Diagnosis of Syphilitic and Non-syphilitic Affections of the Skin, including Tropical Diseases. By George Pernet. London: Adlard and Son. 1904. 6s. 6d.

Lehmann's Medizin Handatlanten. Band V. Atlas und Grundriss der Haut-krankheiten. Von Dr. Franz Mracek. Zweite Auflage. München: J. F. Lehmann. 1904. M.16

Preaching and Healing. The Report of the C.M.S. Medical Mission Auxiliary for 1903-4. London: Church Missionary House. 1904.

A Textbook of Pathology. By Joseph McFarland, M.D. Philadelphia, New York, and London: W. B. Saunders and Co. 1904. 21s.

A Practical Application of the Roentgen Rays in Therapeutics and Diagnosis. By William Allen Pusey, A.M., M.D., and Eugene Wilson Caldwell, B.S. Second edition. Philadelphia, New York, and London: W. B. Saunders and Co. 1904. 21s

Practical Materia Medica for Nurses, with an Appendix. By Emily A. M. Stoney. Second edition. Philadelphia, New York, and London: W. B. Saunders and Co. 1904. 8s.

The Student's Handbook of Surgical Operations. By Sir F. Treves, Bart., K.C.V.O., C.B., LL.D., F.R.C.S. New edition, revised by the Author and Jonathan Hutchinson, jun., F.R.C.S. London: Cassell and Co., Ltd. 1904. 7s. 6d.

Handbook of Physiology. By W. D. Halliburton, M.D., F.R.S. Sixth edition. London: John Murray. 1904. 16s.

Die Entwickelung der Dermatologie in Berlin. Eine historische Skizze. Von Dr. Paul Richter. Berlin: August Hirschwald. 1904. M.1.

V. Internationaler Dermatologen-Kongress abgehalten in Berlin vom 12-17 September, 1904. Verhandlungen und Berichte herausgegeben von Sanitatsrat Dr. O. Rosenthal. I. Band. Berlin: August Hirschwald. 1904. M.10

Geneva. By Charles Marriott. London: Methuen and Co. 6s.

Statistical Tables of the Patients under Treatment in the Wards of St. Bartholomew's Hospital during 1903. By the Medical Registrars, C. Morley Fletcher, M.D. Cantab., F.R.C.P., J. H. Drysdale, M.D. Cantab., F.R.C.P., and the Surgical Registrar, E. C. Bailey, M.S. Lond., F.R.C.S. London: Charles Skipper and East. 1904.

Health in Infancy. By T. M. Allison, M.D. Newcastle-on-Tyne: T. and G. Allan; and London: Simpkin, Marshall, Hamilton, Kent and Co., Ltd. 1904. 1s.

Transactions of the Southern Surgical and Gynecological Association. Vol. XVI. Sixteenth Session held at Atlanta, Georgia, December 15th 16th, and 17th, 1903. Edited by W. D. Haggard, M.D. Published by the Association. 1904.

*** In forwarding books the publishers are requested to state the selling price.

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Post-Office Orders should be made payable to the British Medical Association at the General Post-Office, London. Small amounts may be paid in postage-stamps.

N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

An Address

ON THE

RELATIONS OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY WITH OTHER ARTS AND SCIENCES.

Prepared for and Read at the International Congress of Arts and Sciences, St. Louis, on September 21st, 1904.

By Sir FELIX SEMON, C.V.O., M.D., F.R.C.P.,

Physician Extraordinary to His Majesty the King.

Mr. President, Ladies, and Gentlemen,

When Professor Newcomb's extremely flattering invitation reached me to deliver an address before the Section of Laryngology and Otology of the Congress of Sciences and Arts held in connexion with this wonderful Exhibition, my first feeling was naturally one of sincere gratitude for the great honour done to me. This feeling was enhanced by the information contained in Professor Newcomb's letter that the invitation was extended on the nomination of a number of American representatives of medicine, whose names are household words on the other side of the Atlantic. I am deeply sensible, believe me, of the exceptional distinction thus conferred upon me, and my pleasure in accepting it is only marred by the consideration that I cannot pretend to be an aurist, and that the otological part of my task would no doubt have been infinitely better fulfilled by many European representatives of that branch. I dutifully mentioned this fact to the organizers of the Congress, but it was not considered an insurmountable obstacle to my undertaking the pleasant duty conferred upon me. Needless to say, I will do my best to do justice to the otological part of my address as well, but it will be intelligible to my hearers, and will, I trust, be pardoned by them that the lion's share of my remarks will be devoted to subjects rather of which I can speak from personal experience, than to questions with which my work is less intimately connected.

If my first feeling on receiving your invitation was naturally and properly a sense of gratitude for the high distinction conferred upon me, this feeling was run very close by the sincere pleasure I experienced in thinking that I should have been selected to co-operate in a work so entirely sympathetic to me as is this great undertaking. It was stated in Professor Newcomb's invitation that the object of this Congress was "to discuss and set forth the uniformity and mutual relationship of the sciences, and to thereby overcome the lack of harmony and relation in the scattered special sciences of our day."

I do not know whether I was selected as having upheld throughout my scientific career this leading idea, but I can say without fear of contradiction—and in proof thereof I may point to my literary work—that I have consciously and intentionally striven, wherever opportunity offered itself to me, to maintain the principle which animates the organizers of this Congress.

I should not be a specialist if I did not firmly believe in the necessity of specialism in medicine. The immortal aphorism, "Life is short, art is long, technique is difficult," applies today with even greater force than when it was uttered two thousand years ago by the Father of Medicine. Whilst the span of life has since his time remained very much what it was then, his art has been, and is, making giant strides. Economical considerations stand in the way of indiscriminately prolonging the time of medical study, and more and more work has to be compressed within the span of the few years which serve to prepare the future medico for his professional life. No wonder, then, that it has become extremely difficult, nay, almost impossible, to equip our students so thoroughly that they can enter practical life with full knowledge of their craft in every branch of medical thought and work. Even the few who, endowed with good health and strength, with exceptional abilities, and with equally exceptional industry, succeed during their students' career in mastering all the details of current medicine will, with very rare exceptions, find it practically impossible, when once they have plunged into practice, to keep abreast of the rapid progress which is the signature of the times in which we live.

Under these circumstances division of labour has become a logical and unavoidable necessity. The old line of demarcation between internal medicine and surgery, to which, at a somewhat later period, gynaecology and midwifery were added as independent branches, no longer suffices to carry on investigation and practice within their formerly strictly defined limits. Gradually one recognized speciality has developed after another, partly owing to the necessities of special training in a certain technique, partly because only men trained in that technique could promote further investigations.

The International Medical Congresses bear testimony to this unavoidable development of contemporaneous medicine. Their organizers desire nothing more than to limit the number of the Sections of the Congress, yet time after time is it found indispensable to create new sections. Thus, whereas at the International Medical Congress of Brussels in 1875 eight Sections sufficed to carry on the work, which was truly representative of the state of scientific medicine at that time, that number had been more than doubled twenty-five years later, when no less than seventeen Sections had to be formed at the International Medical Congress of Paris of 1900. Seeing the unexpected rise of so many branches formerly undreamt of within the memory of our own generation, he would be a bold man indeed who would dare to assert that the limit had been reached of further specialization of our science.

This progressive division of labour—the outcome, not of individual caprice, but of stern necessity—has certainly resulted, within the last fifty years, in greater progress of medical knowledge and power than has taken place at probably any corresponding period in the history of medicine. If we middle-aged men remember what medicine was when we entered upon our studies and see what it is today, and if we further reflect how much of all the progress achieved meanwhile is due to the labours of specialists, we have every reason, I think, to be grateful to the division of labour which has brought forth such splendid fruit.

But while this must be readily and ungrudgingly acknowledged, it cannot be denied that, as in almost every movement of a similar character, thus in this development of modern medicine, there is one great and real danger, namely, the peril of over-specialization. Well do I remember, when I first selected a specialist's career, how incensed I was at the reproach then currently levelled at specialism, namely, that it engendered narrowmindedness, and how illfounded and unjust that reproach seemed to be to me. With longer experience and riper judgement I have learnt that the danger of narrowmindedness, accruing from too exclusive a devotion to specialism, is more than a mere phantom. Whether by natural turn of mind, or by want of steady connexion with broader aspects of pathology, there is no gainsaying that the enthusiastic specialist is apt to see a local trouble everywhere, and to overlook disturbances of general health and other organs which in reality require the chief attention. The tendency which has become particularly marked during the last decade, namely, to confine research and discussion in special subjects to special societies and special journals, has materially increased that danger, the reality of which was foreseen nearly twenty years ago by my great teacher Virchow when in the address he gave at the jubilee meeting of the Berlin Medical Society on October 28th, 1885, he spoke the memorable words, to which I have more than once referred, and which in verbatim translation are as follows:

> Amongst us has arisen the large army of specialists, and it would be useless, or at any rate fruitless, to oppose this development; but I think I ought to say here, and I hope to be sure of the consent of you all when I say it, that no speciality can flourish which separates itself completely from the general body of science; that no speciality can develop usefully and beneficially if it does not ever and ever again drink from the general fount, and if it does not remain in relationship with other specialities, so that we all help one another, and thereby preserve for science, at any rate, even if it should not be necessary for practice, that unity on which our position rests intrinsically, and, I may well say also, with regard to the outer world.

Under these circumstances it was certainly a happy thought to remind us again of the unity of Sciences and Arts, and to try thereby to overcome the lack of harmony and connexion between the scattered special sciences of our day.

And I look upon it as a particularly characteristic sign of the times, and as a hopeful augury for the future, that the reminder should have come from the scientists of a country so eminently progressive as the United States of North America. If they, who are untrammelled by many of the traditions, formalities, and prejudices which so severely handicap us on the other side of the Atlantic, have found that it is high time to raise a warning word against the ever-

increasing disruption of the unity of Science, surely this ought to make those pause who, with a light heart, consider every further step on the road to so-called "independence" as a practical gain to specialism. If to-day, by placing before you in rapid succession the intimate links which connect us with other arts and sciences, I should succeed in convincing some of the more ardent protagonists of such independence, that laryngology, rhinology, and otology can only flourish and healthily progress by never for a moment losing sight of their close relationship with other often enough apparently remote branches of human thought, I conceive that I shall have contributed my mite towards the excellent object of this great Congress.

It is not a mere figure of speech when I say that the more I advanced in the preparation of this address the more did I become impressed with the magnitude of my task, and with the intimacy of unexpected or hardly-thought-of connexions between laryngology, otology, and rhinology and other sciences and arts. These specialities have developed so much along characteristically independent lines that theoretically one might be inclined to think that they had comparatively little in common with other branches of medicine, let alone other sciences and arts.

Nothing could be better calculated to destroy such mischievous belief than the results of my inquiry. At every step during the preparation of this paper has it become clearer to me how much we owe to apparently remote lines of human thought, how much we have been and are benefited in our special work by progress made in other distant fields, and how much more good we may expect to accrue to us from the advances achieved in territories of human thought, which a few years ago even the most fantastic visionary could not have brought into useful combination with our own occupation.

It will be my endeavour in this address to justify the foregoing statements by rapidly surveying the intimate connexion of laryngology, rhinology, and otology—in addition to their relations with other branches of medicine—with physics, chemistry, mathematics, philosophy, history, biology, technology, and music, and I only regret that within the limit of time allotted to me it will be quite impossible to do full justice to my task.

I. PHYSICS.

(*a*) *Light.*—Let us first take physics. The connexions of that science with laryngology, rhinology, and otology are as manifold as they are interesting and important. The branches of medical science named have it in common that they deal with the investigation of the physiology and pathology of deep-seated cavities. Hence the question of their illumination for purposes of examination is of the greatest importance, and thus the chapter of physics dealing with the properties of light is a subject of immediate and pressing interest to us all. This applies with particular force to laryngology. Although of late, through the work of Kirstein, direct inspection of the larynx by means of depressing the tongue with suitable spatulas has been rendered feasible, this method of examination is only applicable in a certain fraction of cases, and examination of the larynx is still carried out universally by means of reflecting mirrors. The very foundation of laryngoscopy, as ordinarily practised, depends upon the principle of physiological optics: that when rays of light fall upon a reflecting surface placed in a certain inclination towards the source of light, the angle of reflection is equal to the angle of incidence. Thus, if a small mirror be held at an angle of 45 degrees to the horizon just below the uvula, whilst a powerful beam of light is thrown horizontally into the throat of the person examined, the part just underneath the mirror, that is, the larynx, becomes illuminated by reflected light, and its image is in turn thrown back upon the mirror, and hence reflected into the eye of the observer, which is parallel with the rays thrown upon the reflecting surfaces. Exactly the same principle applies if, instead of the larynx, the nasopharyngeal cavity has to be examined, and the law of physiological optics just described is as all-important for posterior rhinoscopy as it is for laryngoscopy. But in order to obtain a really good image of either the larynx or of the nasopharyngeal cavity it is necessary that the light, which is thrown upon the reflecting mirror, should be a powerful one. Hence every progress which is made in concentrating and intensifying the light used for illumination of these parts is of the greatest interest for my branch of science. It sounds nowadays almost like a myth, that the progress of laryngology in its infancy should have been retarded for almost half a year, and that Professor Türck, of Vienna, who first utilized Manuel Garcia's epoch-making discovery of the laryngoscope for the investigation of pathological processes in the larynx, should have given up his studies for the time, because the winter of 1857 in Vienna was a very dark one, and because sufficient light for illumination of the larynx could not be obtained from the direct rays of the sun. Yet such was actually the case, and it was only, as Morell Mackenzie has tersely stated, through Professor Czermak's substituting artificial light for the uncertain rays of the sun, and using the large ophthalmoscopic mirror of Reute for concentrating the luminous rays that the initial difficulties were overcome. Thus already at this early stage, lenses, another achievement of physiological optics, were employed to help our young science. Ever since, every improvement in the way of light has been a subject of the keenest interest for laryngology and rhinology. What progress we have made from the *Schusterkugel*,—a large glass globe filled with water, originally employed by Türck and Stoerk—until now when we are actually able to introduce a small electric lamp into the cavities of the body themselves to illuminate them properly for purposes of diagnosis and operation, or to throw light into the oesophagus or the bronchial tubes, or to transilluminate the face for diagnostic purposes, as, for instance, for the diagnosis of disease of the maxillary antra, or of the frontal sinuses!

The employment of gas, recently followed by its new incandescent modification; the introduction of hydro-oxygen light, and, above all, that wonderful source of light, now in general use, the electric, have formed so many steps in the way of improving our powers in laryngology and rhinology. Quite recently the invention of the Nernst lamp has proved a great boon to us, enabling those who had been accustomed to the, if excellent, rather cumbersome use of hydro-oxygen light, to get illumination almost equally good at infinitely less trouble.

As if this had not been progress enough within the comparatively short span of a quarter of a century, Professor Roentgen's great discovery of the penetrating power of the ultra-violet rays, which now go by his name, has, at its very inception, been most happily utilized for the purposes of laryngology. When the extraordinary properties of the *x* rays were made known I expressed a hope that by their help it might become possible to distinguish, owing to their different density, between benign and malignant growths. Although this hope has, unfortunately, not been realized so far, yet the medical uses of these rays are surely wonderful. They enable us to discover the presence of metallic foreign bodies in the larynx, the lower air passages, the nose and its accessory cavities. When it is doubtful whether paralysis of a vocal cord is due to the presence of an aneurysm, or of a solid new growth in the chest pressing upon the pneumogastric or recurrent laryngeal nerves, the *x* rays again come to our aid and help us to make a differential diagnosis. A further very ingenious application of the Roentgen rays has been made by Dr. Spiess, of Frankfort-am-Main, who has suggested that the delicate and by no means dangerless probing of the frontal sinus may be controlled and thereby rendered innocuous if during the act of introducing the probe the picture of the patient's head be thrown on the screen, the operator being thus enabled to see whether the instrument is really on the right way into the frontal sinus.

Who will be bold enough to say that with such discoveries the resources of physics have been exhausted, and that possibly at some near future some other even more powerful source of light may not be introduced? Those who are unwise enough to believe in the finality of scientific progress need simply be reminded of the possibilities quite recently introduced through the discovery of radium with its as yet imperfectly-known properties.

Before leaving the subject of light I must refer to some other methods in which that branch of physics has been rendered useful to our specialities.

The Microscope.—The first of these is the use of the microscope. On this point I need say but little. The enormous value of the microscope in medicine is so universally recognized that it would mean carrying coals to Newcastle if I were to enlarge upon it. Our specialities have been benefited as much in the understanding of the finer processes of normal and pathological anatomy of the throat, nose, and ear, as any other branch of our mother science. To show the truth of my statement it suffices to mention the help which the microscope gives us in the differential diagnosis between benign and malignant growths, in the recognition of tuberculous and diphtheritic affections, and in the differentiation of septic disease in general.

Stroboscopy.—Another, though much more restricted, application of light for the use of laryngology is stroboscopy. By an ingenious modification of the stroboscope, consisting of two rotatory discs, the one perforated, whilst on the other figures are drawn, which are inspected through the perforation of the first disc, the late Professor Oertel succeeded in constructing an apparatus by means of which the oscillation of the vocal cords can be accurately observed. Very interesting observations on the action of the vocal cords during singing have been made with the aid of this apparatus, as an example of which I need only mention that, according to Oertel, "the sounds of the chest register are produced by oscillation of the vocal cords in their entire length and breadth, whilst the sounds of the falsetto register are caused by the longitudinal division of the surfaces of the vocal cords into aliquot parts, nodules being at the same time formed on them."

Photography.—A further method to be mentioned in this connexion is photography. I need not say that photographic reproduction of preparations illustrating the normal and pathological anatomy of the ear, the nose, and the throat is no exclusive property of laryngology, rhinology, or otology, but a special interest connects the former of these sciences with photography, inasmuch as by the aid of this method a number of most interesting observations have been made on the physiology of the larynx during the act of singing. The method has proved particularly useful in showing the absurdity of the preconceived ideas of some teachers of singing as to the extent of the individual registers. It has fully corroborated the views held by those most competent to speak as to the enormous variety of modes of producing the singing voice, even in persons whose voices belong to one and the same category. The pioneer in this fascinating territory has been an American, my friend Dr. French, of Brooklyn, and to his enthusiasm and perseverance have been due the first reliable results of this most promising method of physiological investigation. Further studies in this direction have been made by Dr. Musehold and Professor E. Meyer, of Berlin. The last-named gentleman has just, in co-operation with the celebrated mechanician, Zeiss, of Jena, constructed a very ingenious apparatus for demonstrating and photographing the larynx; but having seen the photographs obtained by its use, I am bound to say that the work done by Dr. French has not been so far surpassed.

Stereoscopy.—Finally, in connexion with light, I must not omit to mention the ingenious application of stereoscopy for purposes of medical teaching made by my friend, Dr. Watson Williams, of Clifton, in the wonderful atlas which accompanies the second edition of his work on Diseases of the Upper Respiratory Tract. It being often extremely difficult to obtain, for teaching purposes, really illustrative preparations of the accessory cavities of the nose, the employment of the principle of stereoscopy in order to substitute photographs, the plasticity of which truly rivals life, may fairly be described as a triumph in utilizing for our special purposes the achievement of an apparently very remote science.

The mention of electricity, the *x* rays, and radium naturally brings to our minds the fact that the chapter on light is of interest to laryngologists and rhinologists, not from the point of view of the question of illumination alone. We are privileged to live in a time when the great healing powers of light have been discovered and are utilized in a class of cases in which there is much need for addition to our therapeutic armoury. The light of the sun, the electric light, the ultra-violet rays, and the emanations of radium are nowadays utilized with much success for the treatment of lupus, of rodent ulcer, and of some of the more superficial forms of malignant disease; and it may fairly be hoped that further progress may be made in the treatment of these cruel affections, even when they occur in parts not easily accessible to the effects of the various rays.

(*b*) *Sound.*—Whilst the chapter of physics dealing with light and its powers is, as I have just endeavoured to show, of the very highest importance for laryngology and rhinology, the chapter on sound holds an equally high position with regard to otology. I need not elaborate that a science which is prominently concerned in dealing with the troubles of hearing is inseparably connected with the physics of sound. Thus the tuning fork is one of the most indispensable weapons of the aurist, and the question whether the sounds caused by its vibrations are more easily perceived by aërial or by bone conduction is of the highest diagnostic importance in a large number of ear affections. In the same category may be mentioned Galton's whistle for the testing of the hearing of high notes. Again, the question of the capacity for the perception of tune; the difference in perception according to whether the mouth is closed or open; interference phenomena; the estimation of the hearing capacity for speech; the audibility of different sounds; the differential diagnosis between affections of the sound-conducting and sound-perceiving apparatus—are all questions intimately connected with the physics of sound, and it might be said without exaggeration that otology without constant close relationship with physics is an impossibility.

The Phonograph.—Speaking of sound, the phonograph, an invention due to American genius, must not be forgotten, although its possibilities in connexion with our triad are still in their infancy. I may remind my hearers that very shortly after its introduction Dr. Mount Bleyer, of New York; Dr. Lichtwitz, of Bordeaux, and I, independently of one another, conceived the idea of utilizing its recording powers for the purposes of instruction. One does not always have a case of whooping-cough at hand if one lectures on that disease, and although it be easy and true enough to say that the peculiar cough connected with that disease was so characteristic that any one who had ever heard it would never forget it, it is not so easy to practically demonstrate in what the characteristics of which one speaks consist. Here the phonograph comes to one's aid: let the child afflicted with that disagreeable affection cough a few times into the apparatus, and turn it on, when you have to lecture on whooping-cough, and have no illustrative case near. The whoop will come out true enough!

It need not be said that the investigation of different forms of cough and hoarseness is only one of the modes in which the discriminating powers of the recording mechanism of the phonograph could be utilized. Attempts have already been made by Dupont to investigate with its help modifications of speech in different forms of delirium, paralysis, multiple sclerosis, etc. More recently Flatau of Berlin has studied the various forms of vocal disturbances by means of Edison's phonograph, and has also utilized it for investigation of the finer mechanism of the singing voice. With further perfection of the apparatus it may justly be hoped that yet more valuable results may be obtained than those so far achieved, although even now they are anything but a negligible quantity.

The Sensitive Flame.—Finally, in this connexion, it should be mentioned that König's sensitive flame has been utilized for the registration of sound waves produced by the human voice. The apparatus consists of a rapidly rotating cube, the four lateral sides of which are formed by mirrors, and of a membrane in the side of a gas chamber, connected with which is a small sensitive gas flame. If a note be sung on to the membrane the flame bobs up and down, and the waves seen on the mirrors are not simply up-and-down ones, but the primary large waves are complicated by smaller ones on their surface. The richer the voice the more numerous are the overtones of the harmonics represented on the reflecting sides of the rotating cube. (Halliburton).

(*c*) *Electricity.*—The enormous progress of the science of electricity made within our generation has had the most useful effects upon the diagnostic and therapeutic powers of laryngology, rhinology, and otology. In fact, there are probably few collateral sciences in which our speciality is so keenly interested, and the progress of which so greatly benefits us, as electricity in all its different forms. It has already been stated that the illuminating power of the electric light is being utilized not only for ordinary, but also for trans-illumination of the cavities of the head and neck, and for the inspection of the lower air and food tubes. The constant and faradic currents are of the greatest help to us, both in diagnosis and in treatment. By means of the reaction of degeneration we are enabled to decide whether paralysis occurring in the mouth, the pharynx, or the larynx is of central or peripheral origin. By employing both forms of current we succeed in many cases in curing paralytic disorders, more particularly when they are of functional character.

Again, electricity in the form of the galvano-cautery is of practically daily use in the hands of the laryngologist and rhinologist. It has superseded the employment of most other forms of caustics, and few laryngologists nowadays would care to be without it.

Yet another form of employment of electric force, namely, electrolysis, is highly extolled by some devoted adherents, who utilize it for the treatment of such troublesome affections as ozaena, naso-pharyngeal fibromata, reduction of irregulari-

ties of the nasal septum, etc. It must, however, be confessed that this method has never met with general adoption by the bulk of laryngologists.

Finally, in recent times the motor power of electricity has been largely used, and I do not think anywhere more than in the United States, as the driving force of such instruments as trephines, saws, drills, particularly in nasal surgery and electro-motor masseurs in aural therapeutics. If the method has not yet met with general acceptance in Europe it is, I think, more from want of acquaintance with it than from any other cause, and I feel confident that the more general the domestic use of electricity becomes, the greater rôle will the electro-motor play in our instrumentarium.

Even as it is now, however, the rapid sketch I have just drawn will suffice, I trust, to show the enormous importance of this branch of physics for our special field of research.

II. Chemistry.

Whilst it cannot be said that chemistry, apart from its general relations with medicine, is so closely connected in its various branches with laryngology, rhinology, and otology as physics, yet there are points enough of very great and immediate importance which link these two sciences together.

In the first place, synthetic chemistry gains every day in importance for us by enriching us with new and important pharmaceutical preparations. Need I remind you of orthoform, anaesthesine, adrenalin, iodoform, sozoiodol, peroxide of hydrogen—to mention a few only of the large number of new remedies which form, so to say, our present stock-in-trade, and for the introduction of which we are indebted to synthetic chemistry? Every day increases our power of doing good, due to the progress made in this collateral science, and we are therefore accustomed to constantly watch nowadays for further help in our therapeutical powers from that source.

Sceptics, it is true, may say with some show of reason that we had lately had and were still having a little too much of a good thing in the shape of new remedies, but I the more gladly leave that undecided, as chemistry comes to our aid not only with regard to therapeutics but also to diagnosis. It is mostly by means of the different chemical reactions of cerebro-spinal fluid, and of the ordinary serous secretion met with in vasomotor affections of the nose that we can differentiate between these two affections.

Finally, although this may perhaps be called "music of the future," I myself look forward to the day when further progress in physiological chemistry will enable us to recognize subtle differences in the composition of nerves and muscles. Should that hope be realized, physiological chemistry will perhaps enable us to solve that great problem, which for the last twenty five years has occupied the minds of so many of us—namely, the cause of the greater proclivity of the abductor fibres of the recurrent laryngeal nerve, and the muscles which they supply, to succumb sooner than the adductors, or even exclusively in cases of organic disease of the roots and trunks of the motor laryngeal nerves.

III. Mathematics, including Statistics.

Occasionally the resources of mathematics have to be laid under contribution by our specialities. Thus, for instance, it was necessary when I studied some years ago the position of the vocal cords in quiet respiration in man, to correct, when using graduated laryngeal mirrors, the considerable difference between the actual and the apparent length of the distance measured. This difference could be accurately expressed by a mathematical formula.

Similarly, in a recent paper on the aërodynamics of the respiratory passages, Dr. Gevers, of Leuven, measures mathematically the permeability of the nasal chambers. On the whole, however, it must be confessed that the connexion between pure mathematics and laryngology, otology, and rhinology, is only a distant one.

But matters become very different if we look upon the science of statistics as a method of applied mathematics, and consider its employment in our literary work under the present heading.

More and more frequently of late years has the statistical method not merely been laid under contribution, but been allowed to have a decisive vote in questions of the greatest importance for laryngology, otology, and rhinology. It may, therefore, not be out of place to express on this occasion a devout hope that those who employ this method for the decision of controversial points in our own science, should make themselves first acquainted with the general principles of the method itself. The non-observance of this precaution has led in more than one instance, not only to fallacious scientific conclusions, but to deplorable practical results.

I will illustrate this by one example only.

In no chapter within the territory of our own specialities has the statistical method of late years been more frequently used than in that of cancer of the larynx. As a matter of fact, the usefulness or otherwise of the individual operations now practised for the cure of that terrible disease is judged by most surgeons exclusively on the basis of statistics recording the results of various forms of operation. Unfortunately, however, a good many of those who have compiled such statistics have done so in a most empirical manner. They have simply registered under one and the same heading all operations of one and the same type ever performed, without taking into consideration such indispensable distinctions as:

1. The period of our knowledge at which each of these operations was performed.
2. The individual and enormously different conditions present in each of the cases which were subjected to one and the same operation.
3. The progress of the technique of these operations as they gradually developed.

The outcome of this, as will be clear to everybody who has paid any attention to the principle of statistics, has naturally been lamentable. Most valuable forms of operation, such as thyrotomy, have been, and unfortunately still are, persistently discredited, because some compilers of these statistics will not or cannot see that a thyrotomy performed, say, in 1870, was a thing as different as heaven and earth from a thyrotomy performed in 1904 under altogether different conditions of diagnosis and technique. They accordingly put together all thyrotomies ever performed, without taking these all-important differences into consideration, and calmly proceed to register the net result. The natural outcome of such directly misleading statistics has been that the true value of thyrotomy in suitable cases has not nearly universally enough been recognized at the present moment, and those who have practised it with excellent results in really suitable cases during the last fifteen years have even at this hour of the day to carry on an uphill fight against those who put their faith blindly in the unsatisfactory sort of statistics just described. The hope may, therefore, be justly reiterated on this occasion that every medical man who wishes to approach a medical question from the statistical point of view should make himself thoroughly acquainted with the standards of his measurements before applying the latter to the question which he intends to study.

IV. Meteorology and Climatology.

A few words only are requisite at the present state of our knowledge with regard to the connexion between meteorology and laryngo otology. The more we learn of the influence which climatic and meteorological conditions exercise upon certain diseases, the more necessary does it become to study these conditions in order to benefit our patients, and to avoid serious mistakes in sending them to localities which, however suitable in other affections, are not adapted for their particular case. This general rule applied to our specialities comes particularly into force with regard to laryngeal tuberculosis and to middle-ear catarrh. With regard to the former, I need simply mention that at present the opinions as to the suitability or otherwise of high altitudes in cases of laryngeal complications of pulmonary tuberculosis are extremely divided; with regard to middle-ear catarrh, one sees it frequently stated that seaside places exercise a distinctly unfavourable influence upon them. But the relation of meteorology and climatology to our branches is certainly a wider one than indicated in the foregoing illustrations, and well deserves—and will, no doubt, receive—further attention.

V. Philosophy, Logic, History, and Literature.

Of the connexions of philosophy, logic, history, and literature with laryngology and otology I wish to say a few words jointly, because their relations to our specialities are similar in kind. They are not of that palpable and, if I may say so, tangential character, as are those of physics, chemistry, and mathematics, and of the other branches of human intellectual activity to be touched upon hereafter, in that it is impossible to name individual distinct points in which their achievements touch equally distinct and individual points of specific interest for us. But, although more subtle, their

relations with the higher aspects of our work are no less intimate, and additionally, if I may say so, are all-pervading. The specialist who is endowed with a philosophical turn of mind will look upon his own work and upon the interests of his speciality from a much broader point of view than the man whose horizon is obscured by the limited and more or less narrow-minded doctrines of one individual school of thought. He will not be swayed by the fashionable currents of the moment, and will be consoled when he sees that not only the public but many within the ranks of his own confraternity periodically lose their heads over the latest sensational development, destined in the opinion of its creator and its disciples to bring about in our own times the millennium, by the remembrance of Ben Akiba's immortal dictum:

Alles schon dagewesen (Nothing new under the sun),

and by the reflection that in all probability in a very few years the same faithful ones will bow down and worship another golden calf. The man who has learnt to think logically will not be caught, when he writes a paper, in glaring self-contradictions, and will carry, when following a chain of thoughts, that chain to its only possible conclusion. The author who does not confine his literary studies to the reading of exclusively medical productions, who has been brought up with a knowledge of all that is good in the literary productions of former as well as of our own times, and who has a warm heart for poetical and literary beauties in the literature of all nations, will make his own work attractive to readers, and will know how to give clear expression even to abstruse scientific questions. And, in conclusion, the laryngologist and otologist, who knows something of history in general and of the history of the development of his own speciality in particular, will have an infinitely higher standard of comparison of the achievements of the present day with those of our predecessors than the man for whom all that has been published ten years ago is merely "ancient history" not worth reading. Above all, he will have learnt from the lessons of the past the one great truth that, however important a discovery he may imagine he has made, it behoves him to be modest in the face of what has been done before him.

It is extremely tempting to illustrate what I have just said by reference to the writings of some of our *confrères*, whose scientific productions are distinguished by literary charm, by limpidness of expression, by inexorable logic of thought, and by profound knowledge of the history and literature of other subjects; but, apart from the question of the length of this address, which hangs over me like the sword of Damocles, the task, although enticing, would be somewhat invidious. Still, I hope that nobody will grudge it, if before leaving this part of my task, I refer with admiration to the work done by two American specialists, and illustrating the truth of what I have just said, namely, the excellent historical and literary researches of Dr. John Mackenzie, of Baltimore, which give quite a special *cachet* to several of his papers, and the recent magnificent medical history of laryngology and rhinology by Dr. Jonathan Wright, which, owing to a most unusual combination of all the philosophical, literary, and historical qualities of which I have spoken, will, I feel sure, ever remain a classic in the literature of our specialities.

VI. Technology.

A few words must suffice to remind you of the great importance of every technological progress for those whose special practice lies in the treatment of throat, nose, and ear diseases. From year to year these specialities tend more and more to become branches of surgery, and the question of their surgical equipment therefore is constantly with us. Most of our instruments are no doubt invented by specialists themselves, but in not a few cases we are only able to give a leading idea to the instrument maker, and the success or otherwise of our idea depends upon the constructive talent of the latter. Nor is it rare that patients themselves devise improvements of existing instruments and apparatus. Thus, for instance, the most ingenious, and at the same time simplest, speaking apparatus which I have ever seen, used by patients condemned to wear for a time or for ever a tracheal cannula, was constructed by a watchmaker who had the misfortune of himself belonging to the class of patients in question. A glance at the innumerable "modifications" of instruments now in general use recommended in the catalogues of various instrument makers shows the intimacy and importance of our relations with technology, and I desire in conclusion of this reference only to remind you of the quiet revolution that has been going on in our tools of late years in proportion to the greatly-increased importance of aseptic surgery, and in the course of which it has become the aim to have all our instruments fashioned out of metal, and to banish wood entirely.

VII. Music.

Next we come to a most fascinating subject—the relation of the noble art of music to laryngo-rhino-otology. Of the intimacy of this relation there can be no possible doubt; without what is called a "musical ear" music is an impossibility altogether; without the possession of a healthy larynx, singing cannot be thought of. When I speak of a "musical ear" I mean, of course, the control exercised by the ear over the technique of executants; that music in its highest forms is completely, or at any rate nearly, independent of the power of hearing has been shown by nothing more conclusively than by the case of deaf composers, whose "inner voice," to speak with Robert Schumann, elevated them beyond the apparently-indispensable faculty of hearing. Beethoven was deaf when he wrote the Ninth Symphony, and nothing more pathetic surely can be imagined than, when his audience after its first performance rose to an indescribable pitch of enthusiasm, one of the singers had to turn the deaf maestro round in his chair to see—what, alas, he could no longer hear—the applause with which the public of Vienna greeted this, probably the greatest musical composition of all times. But even in this exceptional case the close relationship of the art of music with the physical faculties of sound and hearing is characteristically illustrated. If the musical ear had come to the great composer's help in the final chorus, I cannot imagine that he would have written the soprani parts as he has done—too high to be reached without great effort by the voice, and not pleasing in its effect to the tympanum of the ordinary listener.

As to the connexion of laryngology with singing, no more significant testimony could surely be adduced than the fact that the laryngoscope, upon which modern laryngology is based, has been the invention, not of a medical man, but of a singer, the venerable Señor Manuel Garcia, who has been spared by a merciful Providence to live in undimmed possession of all his mental and physical powers to the patriarchal age of 100, and whose 100th birthday we hope (D.V.) to celebrate in March of next year. The auspicious event will coincide, I may remark, with the jubilee of laryngology, his epoch-making paper, entitled Physiological Observations on the Human Voice, which he submitted to the Royal Society of London in 1854, having been published in the *Proceedings* of that Society (vol. xii, No. 13) in 1855. Garcia was led to his discovery by the natural desire of an intelligent singer to study the physiological properties of that most wonderful of all instruments, the human voice, by direct inspection of its constituent parts during the act of singing. Ever since manifold endeavours have been made to let the art of singing profit by the revelations given by the laryngoscope. Candour, however, compels me to say that these efforts have hitherto been less successful than one might naturally have expected. Pretensions have been, and are being, made as to the claim of the laryngoscope to lay down the law concerning most intricate questions arising in the production of the singing voice; but, as I have stated on a previous occasion, there exists no "superior wisdom" based upon laryngoscopic observations with regard to the teaching of singing. Now, as in bygone days, the teacher who founds his instruction upon the classical traditions of the art of singing, and who individualizes in every case entrusted to his care, will certainly be more successful than the theorist who, starting from preconceived notions, the correctness of which is anything but proven, forces the natural mechanism of his pupils' voices into his unbending formula, and thereby, in not a few instances, ruins them.

This warning is of course not intended in any way to deter both laryngologists and singing masters from joining forces in determining questions regarding the physiology of the voice, and recent work, such as that of Holbrook Curtis, Flatau, Bukofzer, and Imhofer, shows how valuable the laryngologist's aid may be in assisting the task of the teacher of singing in such questions as, for example, the method of intonation—a point in which science and art very nearly touch one another. Future anatomical and physiological researches will have to solve the fascinating questions of the mutual interdependency of the centres and paths of audition and sound in the brain. The data at present at our disposal are not sufficient to fully understand through what kind of afferent and efferent fibres impressions are conveyed to and from these

centres; how they are changed into volitional impulses, and how they produce the desired note of the voice.

For the purposes of this address the foregoing short remarks will, I trust, suffice to show that no better illustration of the mutual relationship of most various arts and sciences could be imagined than in the territory of music, and more particularly of singing. That noble art is inseparably interwoven with laryngology, otology, rhinology—for the accessory cavities of the nose serve as resonators for the sounds produced in the larynx—anatomy, physiology, and physics.

VIII. Biology.

If we consider the relation of our branches to biology—excluding from the generic term thus used human anatomy and physiology—the same remark applies to their connexion which I just used when speaking of the relation of music to our specialities: more might be expected from the future than has been achieved in the past. No doubt the study of comparative anatomy and physiology, particularly the developmental part of these sciences, has been very useful in making us understand the origin, the gradual development, and final composition of the complicated organs with which we have to deal, and in not a few questions—more particularly in those relating to the nervous mechanism of the larynx—the lessons derived from experimental physiology have already been of the greatest importance in helping to solve the difficult problems with which we have to deal. Still, I am in no fear of contradiction when I say that a great deal more may be expected for the elucidation of many difficult questions with which we are confronted in laryngo-oto-rhinology from further biological studies.

IX. Medicine.

Finally—and, though last, not least—I have to discuss the relations of laryngo-oto-rhinology with other branches of our great mother science, Medicine. The subject is one so large that, to do it justice, not one but a course of lectures would be required. At every step the specialist whose mind is open is reminded of the close connexion of his limited field of achievement with other branches of medical art and science.

Anatomy, Physiology, Pathology.—He can do no good without an intimate knowledge of the anatomy of the organs entrusted to his care, and of their anatomical relations to adjoining and even more distant parts. In order to understand morbid conditions of the nose, throat, and ear, he must be thoroughly acquainted with the action of these organs in health, in other words, with their physiology. Wherever clinical observation is insufficient or at fault, he can appeal to no better helpmate than to the researches of pathological anatomy, and it may be truly stated that the conviction of this intimate association with the three sciences named is becoming more and more alive in our minds. We no longer leave the investigation of anatomical, physiological, and pathological problems pertaining to our specialities exclusively in the hands of professors of these branches; a large number of very valuable contributions towards the elucidation of such problems has been made of late years by members of our own specialities, and in not an inconsiderable number of instances the co-operation between laryngologists, rhinologists, and otologists with pure anatomists, physiologists, and pathologists has been productive of most valuable scientific results.

It suffices to mention the anatomical work of B. Fraenkel and his school, of Broeckaert, Onodi, Paul Heymann, Elsberg, Carl Seiler, Körner, Jelenffy, Killian, Politzer, Gruber, Urban Pritchard, Tilley, Logan Turner, Kanthack, Seifert, Siebenmann, Gouguenheim, and Lermoyez; the physiological researches of Schech, Grabower, H. Krause, Katzenstein, Klemperer, Fraenkel, Hooper, Bryson Delavan, Frank Donaldson, jun., Desvernine, Réthi, Hajek, Zwaardemaker, and Greville MacDonald; the pathological studies of Heinze, Grünwald, Kuttner, Seifert, Kahn, Heryng, and Butlin, and the joint work of B. Fraenkel and Gad, of Bowditch and Donaldson, of von Mering and Zuntz, of Mikulicz and Michelson, to which I hope I may add the researches undertaken by Victor Horsley and myself—to show that the above statements are not mere assertions, but based upon solid facts. On the other hand, we gratefully recognize the most important help that has come of late years to the aid of laryngological knowledge from such distinguished anatomists, physiologists, and pathologists as Luschka, Sappey, Zuckerkandl, Exner, Hermann Munk, Richard Ewald, Risien Russell, Bechterew, and others. And yet these are, I particularly wish to state, a few names only taken at random from one's recollection of those who have enormously improved our knowledge of the anatomy, physiology, and morbid histology of the throat, nose, and ear, within the last twenty years.

Bacteriology.—From pathological anatomy in general there is but one step to the latest development of that science, bacteriology. Here again the close relationship of our specialities to this new science is evident everywhere. We learn from the bacteriological examination of the sputum in cases in which the clinical examination of the nose, pharynx, larynx, or ear, leaves it doubtful whether we have to do with tuberculosis, the true nature of the process that engages our attention; we differentiate with the help of bacteriological examination between true diphtheria, Vincent's angina, and other forms of septic inflammations of the cavities of the mouth and throat; the employment of antitoxin enables us to deal infinitely more effectively than at any previous state of our knowledge with that scourge of humanity, diphtheria: we ascertain in those terrible, although fortunately rare cases, which I have grouped together under the name of "Acute Septic Inflammations of the Throat and Neck," the nature of the particular pathogenic micro organism that is causing the disease in a given case; and although as yet by no means masters of the situation, we succeed in a certain number of these cases—namely, in those in which the streptococcus is producing the septic inflammation—in warding off by the employment of antistreptococcus serum the otherwise unavoidable fatal issue. As a matter of fact, an almost unlimited vista of further progress has dawned for our specialities in a number of previously most intractable affections from the rise and progress of bacteriology.

Internal Medicine.—On the connexion of laryngology, rhinology, and otology with internal medicine, it is practically unnecessary to dwell. Whilst there is, needless to say, a number of local diseases of these organs strictly limited to them, in another large and important number the affection for which the aid of the specialist is sought is only part and parcel of a systemic disease, and, as I have endeavoured to show on another occasion, it would seem high time that not only the public—which has rushed to the conclusion that all affections of the throat, nose, and ear ought to be treated locally—but also some enthusiastic specialists should come to understand that in such cases not so much local as constitutional treatment is indicated. There are numbers of cases of general anaemia, of periodical disturbance of the circulation, of general plethora, of nervous irritability, of gout, in which, without any actual changes existing in the throat, nose, or ear, unpleasant sensations are experienced in these parts, which can only be effectually treated by attending to the systemic conditions which underlie these local sensations. On the other hand, actual organic lesions occurring in these parts often enough are of the greatest importance for the diagnosis and proper treatment of grave general diseases. To give but a few examples: paralysis of one vocal cord may for a long time be the only actual sign discoverable, with the means at present at our command, of aneurysm of the aorta, or of other mediastinal tumours, of affections in the posterior cavity of the skull, of pleuritic thickening of the apex of the right lung, of cancer of the gullet, and a host of other grave organic affections; certain laryngoscopic appearances may enable us to diagnose the existence of pulmonary tuberculosis at a time when all other signs fail; Killian's bronchoscopy, one of the most valuable modern additions to our diagnostic and therapeutic equipment, permits us to remove foreign bodies from the interior of even the smaller bronchial tubes; chronic obstruction of the nose undoubtedly exercises a very unfavourable influence upon the general health, a fact which is most clearly demonstrated by the surprising improvement of well-being which follows removal of adenoid vegetations in much-developed cases; a cerebral abscess is nowadays known to be much more frequently due than was suspected only a few years ago to diseases of the middle ear and mastoid process, and has become infinitely more accessible to treatment than one could venture to hope in previous times. I may further remind you of the frequency with which the throat, nose, and ear are affected in infectious diseases, such as measles, scarlet fever, small-pox, typhoid, and influenza; again, of the manifestations of gout, rheumatism, and syphilis in these parts, and this list could be easily extended. The above examples, however, will suffice, I hope, to show the intimacy of the relations between our specialities and internal medicine.

Surgery.—If, as I have just said, it is almost superfluous

to insist on the intimacy of our relations with internal medicine, this certainly applies in an even higher degree to their connexion with surgery, for indeed they are daily becoming more and more branches of surgery itself. I have on another occasion stated my own conviction, that it is in the nature of things that when a part of the human body has been made more accessible to eye and hand by the progress of science, the treatment of affections of that part should gradually change from the medical to the surgical side. So much has this been the case of late with regard to the development of laryngology, otology, and rhinology, that if there be any danger in its further progress it would certainly not be in the direction of underrating, but of over-emphasizing the idea that the existence of an affection of the ear, nose, and throat must be invariably associated with the idea of surgical interference. However, this is a subject on which I have no wish to dwell again on this occasion, and I much rather recognize the brilliant progress made of late years—and, I may proudly add, mostly by specialists—in the surgical treatment of the early stages of laryngeal cancer by thyrotomy, of affections of the accessory cavities, and of deviations of the septum of the nose, in the radical treatment of mastoid disease, and in the removal of foreign bodies from the bronchi and oesophagus. All these achievements belong to the veritable triumphs of contemporaneous surgery.

Children's Diseases.—The large proportion of children seen in the out-patients' room and at the private consultations of specialists for throat, nose, and ear affections bears eloquent testimony to the close association between diseases peculiar to childhood and affections of the auditory and upper respiratory tract. Here, of course, in the first place, adenoid vegetations and their far-reaching influence upon general development have to be mentioned, an influence of which it may only be devoutly hoped that it should not be overstated. But there are additionally the infectious diseases of childhood, in the course of which complications on the part of the ears, the throat, and the nose play a large rôle. It is pleasant to note how much more attention is paid to the condition of the upper respiratory tract and the ears of children by Government and public health officers than was the case only a few years ago, and to read of the increased frequency of the examination of school children with regard to their hearing and breathing powers in different countries of the world. That is certainly the proper way to promote the health of the community

Ophthalmology.—Whilst in this country for a number of years the specialistic treatment of affections of the throat, ear, and nose has frequently been combined in one hand, both in private practice and in hospitals, it is only comparatively recently that attention has been more prominently directed towards the close association of affections of the eyes and nose. The pioneer in this direction has undoubtedly been Dr. Ziem, of Danzig. But much has been learnt regarding the importance of this connexion since he published his first paper about twenty years ago. The reader who has not himself worked on the subject will be surprised to learn from the recent brilliant contribution to this question from the pen of Professor Schmiegelow, of Copenhagen, how much more has been done in this field since Ziem's first investigations were published and how much more remains to be done.

Dermatology and Syphilitic Diseases.—Here again the close connexion between manifestations on the external integument and similar ones on the mucous membranes is a well-established fact. The chapter on syphilis of the throat, nose, and ear is one of the most important in our field, and the possibility of syphilis must be always kept in view in the event of our meeting with any obscure affection. On the other hand, eruptions on the mucous membranes of the pharynx, nose, and larynx not only accompany in a number of cases analogous skin affections, but may precede such external manifestations, or even remain for a long time limited to the mucous coverings. Thus lupus, herpes, pemphigus, lichen, and a host of other eruptions sometimes occur first in the parts entrusted to our care, and may baffle the specialist whose knowledge of skin diseases is limited.

Neurology and Mental Diseases.—When discussing the relations of our specialities with internal medicine I have already incidentally mentioned the significance of laryngeal paralysis for the diagnosis of some of the gravest intrathoracic diseases. It is, however, not only in connexion with these, but with numerous affections of the central nervous system, that laryngology is of the greatest importance for neurology. The discovery of a laryngeal paralysis may be for a long time the first sign of the existence of organic central nervous disease, and in no affection is this more clearly shown than in tabes dorsalis. Again, neuroses of the olfactory nerve not rarely accompany important intracranial affections. Thus anosmia may occur in hysteria, basilar meningitis, and locomotor ataxy, and parosmia may be met with in hysteria, epilepsy, hypochondriasis, or may precede mental disturbances of an even graver character. Affections of the inner ear and of the auditory nerve occur in many diseases of the central nervous system. Auditory hallucinations, such as the hearing of voices, may accompany, or even usher in, different forms of insanity, and symptoms of Menière's disease probably come as often under the observation of the neurologist as of that of the aurist.

I forbear from entering upon a further enumeration of the branches of medicine with which our specialities have points of interest in common. My list is by no means exhausted, and I may, as a proof of this, remind you of the connexion between them and dentistry, the point of contact being the affections of the antrum of Highmore, but in truth it may be said that there is hardly one single branch of medicine which does not occasionally come into touch with laryngological, rhinological, or otological interests.

In conclusion, I should have liked to dwell upon the relations of the three specialities to one another, a question on which I hold views of my own. But, apart from the need of keeping my own observations within the limits of the time specified, it would be out of place to introduce controversial matters into an address of this kind; and, further, I have on more than one previous occasion stated my opinions on this most important topic as clearly as I could.

And now, gentlemen, that I am at the end of my task let me say that nobody could be more painfully conscious than I am how incompletely I have fulfilled it. I had intended to bring before you a picture full of life, and on looking back I have to confess to myself that I have offered you little more than a framework, the details of which must be filled by your own knowledge and imagination. I had hoped to give you chapter and verse for every statement I have made, and I see that my paper is little more than a sort of catalogue, under the headings of which only indications but no elaborations could be given.

But, whilst unreservedly recognizing these shortcomings, I trust I may justly plead that the subject confided to me is one of such magnitude that, within the limit of time necessarily imposed upon me, it was well-nigh impossible to do full justice to it. Yet, incomplete as my exposition has been, I venture to hope that it has illustrated, by the demonstration of the intimate connexion of laryngology, otology, and rhinology with human activity in so many other branches of Art and Science, the truth of Goethe's immortal dictum:

> Truly the fabric of mental fleece
> Resembles a weaver's masterpiece,
> Where a thousand threads one treadle throws,
> Where fly the shuttles hither and thither,
> Unseen the threads are knit together,
> And an infinite combination grows;

and that it has more than justified the warning words of my great teacher Virchow, which I have quoted at the beginning of this address:

That no speciality can flourish which separates itself completely from the general body of Science; that no speciality can develop usefully and beneficially if it does not ever and ever again drink from the general fount, and if it does not remain in relationship with other specialities, so that we all help one another, and thereby preserve for Science, at any rate, even if it should not be necessary for Practice, that unity on which our position rests intrinsically, and, I may well say also, with regard to the outer world.

A HEALTH EDUCATION LEAGUE.—An organization with this title has, we learn from the *Boston Medical and Surgical Journal*, been formed in that city with the object of preventing avoidable disease by the education of the people to higher standards of personal and public health. The League has the support of the medical and clerical professions, as well as of instructors in sanitary science and members of sanitary organizations. Its first publication, a tract entitled *Hints for Health in Hot Weather*, is pronounced to be a decided success.

SEVENTY-SECOND ANNUAL MEETING
OF THE
British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF PHYSIOLOGY.

Professor FRANCIS GOTCH, F.R.S., President.

DISCUSSION ON CHLOROFORM ANAESTHESIA.

I.—Sir VICTOR HORSLEY, B.S., F.R.C.S., F.R.S.,
Surgeon, University College Hospital and National Hospital for the Paralysed and Epileptic.

SIR VICTOR HORSLEY, in opening the discussion, said that on the initiative of Dr. Waller the Council of the Association appointed three years ago a Special Chloroform Committee. The Chairman of that Committee, Dr. Radcliffe Crocker, was unavoidably absent, and asked him to represent what the Committee had so far accomplished. The Committee, which from the first fortunately secured the services of Mr. Vernon Harcourt, had published each year its plan of operations and the results obtained. The expenses were borne by the general fund of the Association. The Committee had critically reviewed the methods of determining chloroform quantitatively in the atmosphere. Of the two classes of method, gravimetric or chemical, they concluded that the latter was preferable as, on the average, likely to give more accurate treatment. The determination in air was of prime importance, as the work of the Committee showed that the determination of chloroform in liquids was more quickly attained by getting the chloroform out into the air and then estimating it. The object of the Committee was to put the quantitative determination of chloroform on a sound basis, and so far this amounted to a purely academic inquiry. With this standard of knowledge in hand it was next their purpose to discover the two practical points: (1) The smallest possible dose by volume in the atmosphere breathed requisite to induce anaesthesia; (2) the smallest possible dose to maintain analgesia after initial loss of consciousness. He showed that, although it was common practice to begin with a considerable dose and then reduce it, it was not recognized—in fact, it could not be without some form of instrument like Mr. Harcourt's—to what a remarkable degree this reduction could and ought to be carried. It was possible to represent the dosage in a diagrammatic form, and he could at once apply results of the Committee's work by saying that to obtain the first effect of complete unconsciousness to the pain of an incision, etc., the dose found to be adequate was from 1 to 2 per cent. by volume in the atmosphere breathed. For the second part—that is, the maintenance of analgesia when the deeper and far less sensitive parts are being handled—the dose could be diminished even to 0·2 per cent. This second question, the long-continued maintenance of anaesthesia, involves the important question as to whether accumulation occurs in the body. The work of Professor Sherrington and Miss Sowton, published in the Committee's first report, showed in a striking way that as far as the entire heart was concerned such accumulation could not be said to exist, but the action of chloroform on the blood shows that this question must be regarded as still an open one.

He now desired to refer to the work done on the condition of chloroform when inhaled and absorbed into the blood. Chloroform in a liquid—for example, water, saline solutions, and blood—is said to be in solution. The Committee had first to determine whether this was really the case, and some preliminary observations were made two years ago. Since then three independent lines of research, beginning with that of Professor Moore and Dr. Roaf, have shown absolutely clearly that chloroform is in varying state of association with the substances which may happen to be in the fluid in which the chloroform is dissolved—that, in short, in a complex fluid like blood, a certain amount (20 per cent.) of the chloroform is definitely held. He thought the Association was to be congratulated on the fact that its efforts in arriving at the scientific truth of the chloroform problem were being extended and supported by this concurrence of independent research.

The Committee's report of its own work on the subject this year contained further striking investigations by Professor Sherrington and Miss Sowton on the difference in chloroform-holding power, and of ability to produce transitory or permanent damage respectively of the heart tissues by chloroform, according as to whether it is conveyed in saline solution or in whipped blood. Similarly, Mr. Byles, working with Mr. Vernon Harcourt and himself, had found that this holding power of the blood was in the main dependent upon the corpuscles, and that, in fact, as experiments on dilution showed, the morphological integrity of the corpuscles is an essential element in the case. The results were obtained by separating the plasma and corpuscles after peptonization.

The result of all these researches on "chloroform holding" showed that the degree of holding or retaining power rose as one passed up the scale from plain water at the lowest point and then reached blood corpuscles at the highest.

Concurrently with this academic work, the Committee had continued its investigations with the view of obtaining an instrument which would deliver a dose of chloroform at a known value and with sufficient accuracy. His experience was that Mr. Harcourt's apparatus furnished all these requirements, and a very large clinical experience of its use confirmed the fact.

The errors incidental to all apparatuses of the kind would be touched upon by other speakers, and he would leave the details to subsequent speakers.

II.—BENJAMIN MOORE, M.A., D.Sc.,
Professor of Bio-Chemistry, University of Liverpool.

PROFESSOR MOORE described experiments which he had conducted, in association with Dr. H. E. Roaf, upon the formation of easily dissociable compounds or aggregates between chloroform and the proteids of the blood and tissues. The results tended to show that the production of anaesthesia was due to such aggregations; the activities of the protoplasm were thereby limited. The combinations only existed so long as an adequate pressure or concentration of the anaesthetic in solution was maintained; as soon as the pressure fell the compound or aggregate dissociates and the cell became free to take up once more its normal activities. The existence of such compounds or aggregates was shown by (1) the greater solubility of chloroform in serum or solutions of haemoglobin than in saline, for while water or saline dissolved approximately 0·7 to 0·9 per cent., serum dissolved 4 per cent. to 5 per cent., and solutions of haemoglobin dissolved over 4 per cent., the upper limit being indeterminate on account of the precipitation of the haemoglobin; (2) the fact that with equal concentrations the pressure of the anaesthetic, as shown by the differential densimeter, an instrument specially designed for this purpose,[1] was much lower in the case of serum or blood than in the case of water or saline solution; (3) obvious changes which occurred in serum or blood and demonstrated an interaction between the proteid and the anaesthetic. The relationship between the pressure of chloroform—that is, the concentration of vapour in the inspired air—and the corresponding pressure or concentration of the anaesthetic in the blood had been determined throughout a wide range, from below the values necessary for anaesthesia up to concentrations far in excess of that value. The results showed that with increasing concentrations of chloroform in the inspired air a more than proportional amount was absorbed by the blood. Experiments were also described to show that the above observations also applied to the action of chloroform upon cardiac tissue and cerebral tissue; the chloroform produced its effect by acting upon protoplasm and not upon such substances as lecithin or the fatty substance in the cerebral tissue; the effect was also proportionate to the concentration or osmotic pressure of the anaesthetic at any given time.

III.—E. S. EDIE, B.Sc.Edin.,
Liverpool University.

MR. EDIE gave an account of experiments which he had carried out to investigate the precipitates produced by chloroform in solutions of haemoglobin and serum. In the case of haemoglobin 1·5 per cent. of chloroform caused a precipitate if the temperature were raised to that of the body; higher percentages produced this effect more rapidly. With high percentages the solution first becomes brick-red in colour and opaque. If this precipitate were washed and warmed with

[1] See *Proc. Roy. Soc.*, 1904, vol. lxxiii, p. 382.

water under reduced pressure, there was a considerable quantity of gas evolved. After pumping off this gas, which was probably chloroform, the precipitate was practically insoluble in water, but was readily soluble in sodium hydrate or sodium carbonate, the solution in the latter case yielding the spectrum of alkaline haematin. When the percentage of chloroform was insufficient to produce a precipitate, it was necessary to precipitate the proteid by saturation with ammonium sulphate. Formanek investigated the precipitate by drying it at 130° C., and then found no chlorine in it. In the present experiments the chlorine was estimated by warming the precipitate with alkaline potassium permanganate, and then precipitating with silver nitrate after the excess of alkali had been neutralized. In the case of serum it was necessary to precipitate with ammonium sulphate. The following table showed the relation between the percentage of chloroform and the proteid in the precipitate when varying percentages of chloroform were added to solutions of haemoglobin:

Percentage of Chloroform Added.	Percentage of Chloroform in Precipitate to Proteid in Solution.
0.5	1.55
0.1	1.60
0.2	1.30
0.3	1.70

These results seemed to show that this compound between chloroform and proteid had a constant proportion of chloroform, and the same was true in the case of serum, which, however, had not been studied in such detail. That this compound was more unstable than the compound between carbon monoxide and haemoglobin was shown by the fact that if the solution of haemoglobin were first saturated with carbon monoxide the precipitate did not form until much more chloroform was added than was necessary with solutions of ordinary haemoglobin.

IV.—C. S. SHERRINGTON, M.D., F.R.S.,
Professor of Physiology, University of Liverpool.

PROFESSOR SHERRINGTON referred to the experiments which he had performed in conjunction with Miss S. C. M. Sowton on the Dosage of the Isolated Mammalian Heart by Chloroform, and which were published as an appendix to the Report of the Special Chloroform Committee of the British Medical Association.[1] He said that in the case of perfusion of the isolated heart with solutions containing chloroform, the effect of the drug upon the heart was of two types. With heavier doses, a permanent damage was inflicted which no amount of perfusion with solutions free from chloroform could remove; with lighter doses, a temporary depression of the cardiac beat was obtained. The amount of this depression was graded by the tension of the chloroform in the perfusion fluid; the depression was immediately relieved by cessation of the perfusion with the fluid containing chloroform. Since the tension of chloroform was much less in blood than in saline solution, *ceteris paribus*, the effect on the heart was less in case of the former than in that of the latter. This difference was seen in the experiments on the isolated heart, and was found to be strikingly great—namely, a tenfold one.

V.—C. J. MARTIN, M.D., F.R.S.,
Director of the Lister Institute, London.

DR. MARTIN congratulated Professor Moore and Dr. Roaf upon their research upon the formation of easily dissociable compounds or aggregates between chloroform and the proteids of the blood and tissues. Referring to the published work of Dr. Embley, who had worked in his laboratory, he stated that he fully recognized the difficulties of the determination of the quantity of chloroform retained in the blood.

VI.—J. A. MACWILLIAM, M.D.,
Professor of Physiology, Aberdeen University.

PROFESSOR MACWILLIAM said that investigation had fully established the view that while the respiration as a rule stopped first in cases of death from chloroform, and while failure of arterial tone might be a factor of importance, the grave dangers most difficult to meet depended on the effects of the anaesthetic upon the heart. In cases of relatively slow poisoning by gradual overdosing with chloroform, the heart, arteries, and respiratory centre were all depressed or paralysed. In cases of sudden death at an early stage, when comparatively little chloroform had been given, one had to distinguish between fatal vagus inhibition or poisoning of the heart muscle or a combination of these. Vagus inhibition did not prove fatal, as a rule, by stopping the heart sufficiently long to kill—whether the inhibition were (1) a result of reflex excitation or (2) stimulation of the vagus centre by the drug. Still the occurrence of vagus inhibition, though not directly fatal by its effect on the heart, was fraught with danger in another way: by causing a fall of blood pressure and a slowing of the blood stream through the lungs, with the result that the blood in the lungs might become much too highly charged with chloroform, and then pass into the heart and coronary vessels when the phase of inhibition was over, and the heart again beat rapidly with raised blood pressure, etc. Thus a local overdosing of a portion of the blood (in the lungs) might occur, though there might not be a lethal dose in the circulation as a whole. Such dangers were especially apt to arise during imperfect anaesthesia, with vagus inhibition, changes of blood pressure, and disturbances of respiration (temporary stoppage, gasping, etc.). A steady intake and distribution of chloroform was what should be aimed at; this involved not only (1) the regular entrance of a certain amount of anaesthetic into the pulmonary air cells, but (2) the regular transmission in the blood stream from the lungs and throughout the circulation. Even with a fixed percentage in the air inhaled very different amounts of anaesthetic might enter the lungs per minute if the respiration changed (increased several times during quick, deep breathing as compared with ordinary breathing). Similarly, the amount carried from the lungs to the heart, etc., per minute might vary greatly from circulatory disturbances. It was very desirable to have a steady intake of chloroform into the lungs, apart from variations in the volume of air entering, and similarly to exclude circulatory disturbances. Hence the grave dangers of surgical interference during imperfect anaesthesia, giving too concentrated a mixture of chloroform and air, etc. Idiosyncrasy played an important part both in animals and in the human subject. The phenomena of chloroform anaesthesia in the cat most closely resembled those in man. *Post-mortem* examination could not be relied upon in many cases to show whether death from chloroform had been caused by asphyxia or by syncope. For a heart directly paralysed by chloroform might in some instances show, as a result of rigor mortis in the cardiac muscle, the characters usually associated with death from asphyxia.

[1] BRITISH MEDICAL JOURNAL, July 23rd, 1904.

VII.—A. G. VERNON HARCOURT, M.A., F.R.S.

MR. VERNON HARCOURT demonstrated his form of inhaler for the administration of known percentages of chloroform, and indicated the precautions which should be taken in the use of the apparatus. He also referred to the work done upon the estimation of chloroform in blood, and maintained that the blood should be exposed to chloroform in a state of vapour, and not in a liquid state, if results comparable to those in anaesthesia were to be obtained. Full details of the inhaler and of the experiments were, he pointed out, given in the report of the Special Chloroform Committee.[1]

VIII.—AUGUSTUS D. WALLER, F.R.S.,
Director of the Physiological Laboratory, London University.

DR. WALLER expressed himself as being in agreement up to a certain point with the position taken up by the Special Chloroform Committee. He concurred in the principle that ordinary anaesthesia of the human subject required the continuous exhibition of chloroform and air at 1 to 2 per cent. dilution; the upper limit might exceptionally be raised to 3 per cent. But as regards the apparatus by which this was to be effected, he did not consider that the Harcourt apparatus was the best possible, since it was based upon the principle that the supply of anaesthetic was dependent on the inspirations of the patient. The objections to this method were that with failing respiration there was rising percentage of chloroform, that continuity of anaesthesia required very perfect closure of the mask, and that shaking of the chloroform bottle raised the percentage to such an extent as to render the instrument maker's scale altogether illusory. The principle of quantitative administration should not be made to depend upon the fortunes of this faulty apparatus. The clinical report of its use had indeed been very favourable, it being stated by one authority that it had been used in several

[1] BRITISH MEDICAL JOURNAL, July 23rd, 1904.

hundred cases with success; but indefinite statements of this character, without reference to cases where the apparatus had to be set aside, or where fatal accidents had happened during its use, were misleading. Dr. Waller expressed his preference for the Dubois apparatus, in which an excess of chloroform and air mixture of known percentage was delivered to an open face-piece, from which the patient inspired continuously. With regard to the physical relations of chloroform and blood, he expressed his satisfaction with the agreement between the results published in the report of Byles, Harcourt, and Horsley, and those of the report of Waller and Wells presented to the Committee in the previous year. He thought it desirable that the Committee should correct or explain its statement that "during rapid breathing, although more air passes over the surface of the chloroform, less weight of that anaesthetic is actually delivered to the patient."

IX.—DUDLEY W. BUXTON, M.D., B.S., M.R.C.P.,
Anaesthetist and Lecturer on Anaesthetics, University College Hospital.

CLINICAL ASPECT OF THE SPECIAL CHLOROFORM COMMITTEE'S WORK.

THE ultimate value of the work which has occupied the time of the Committee for the past three years must be looked for in its clinical results.

The dangers of chloroform are commonly believed to arise from:

1. Insufficient dosage.
2. Reflex inhibition during narcosis.
3. Overdosage.

1. Insufficient dosage. It has been commonly held that the deaths which are frequently met with during the period of induction arise from the patient having been inadequately chloroformed. "A few whiffs of the anaesthetic are taken and the patient dies." These fatalities fall into two categories; the one consists of such cases as were not uncommon in the pre-anaesthetic days, when the patient struggled and fainted and never resumed consciousness. One recalls the historic case of such a death which Sir James Y. Simpson records when the patient to whom he was to have administered chloroform, but did not, died upon the table before the operation was begun. These deaths, occurring in an early stage of anaesthetization, might be regarded as quite parallel with the pre-anaesthesia deaths, except for the fact that they occur almost, if not exclusively, under chloroform. We know that even small amounts of chloroform lower blood pressure, and possibly in this lies the explanation of the greater liability to syncope in these cases when that anaesthetic is given. But it is the second category of such cases which is of greater importance. I refer to those in which the patient is not deeply under an anaesthetic—is in a degree of narcosis less than the third.

It will be convenient to consider these cases of danger with those which are grouped as being due to reflex inhibition during narcosis. It has been commonly taught that when death occurs as a result of reflex shock it does so because the depth of the narcosis is inadequate. Indeed, an explanation has been advanced, I think without sufficient experimental data, that during the earlier degrees of narcosis the usual control exercised by the nervous centres over reflexes is affected, and as a result the response to even a slight stimulus scatters, so to speak, and what should be a simple reflex may become an inhibition of the heart's action. A patient taking chloroform is adequately under its influence, judging, let us say, by the lid reflex. The operation is commenced. Let us suppose the anus is stretched, or some such operation performed which is associated with shock. At once respiration stops and the heart's action is inhibited. This result, we are told, is due to insufficient depth of narcosis. And in general it is held that "shock" is less profound if the patient is protected by depth of narcosis. As an effect of such teaching, patients, before being subjected to severe operative measures, are placed in a profound degree of narcosis; the lid reflex is not admitted to be an adequate test, and some often very marked depression of the respiratory rhythm is sought before the patient is deemed adequately anaesthetized for the operation. I venture to submit that this teaching and line of procedure are entirely wrong when examined by our present knowledge. They are, indeed, not only fallacious, but place the patient in grave peril. In the first place, we have learned from the work of Rudolph, and, more recently, of Embley, that vagal reflexes of the most dangerous character are not absent, and cannot be made so, in even profound narcosis. So that no "pushing" of the anaesthetic, when once true anaesthesia is attained, will prevent reflexes conveyed by the vagi, although, of course, narcotization of the medullary centres is gradually produced and respiration weakened. In the second place, Embley has shown that reflexes which produce dangerous symptoms in adequate, although not profound, narcosis do not necessarily destroy the animal, but such reflexes prove fatal when they arise during profound narcosis. The mechanism of these reflexes have been carefully worked out by Professor Brodie and Dr. A. E. Russell.[1]

The clinical evidence which supports these physiological investigations, my experience permits me to assert, is ample. Under certain circumstances the exigencies of surgery, especially in the case of severe operations upon the abdominal viscera, render it necessary to push the anaesthetic until the narcosis is very profound, and I have repeatedly seen reflex interference with respiration and circulation so serious as to call for prompt and energetic measures to resuscitate the patient. On the other hand, when the amount of chloroform given has been less, the interference with circulation and respiration has been transitory, hardly calling for any measures besides attention to posture and discontinuance of the chloroform for the moment. A group of cases one meets with which illustrates my meaning is that in which are included grave and prolonged operations demanding complete relaxation of the muscles. The patients, if they are given high percentages of chloroform, even without evincing dangers of a reflex origin, gradually pass into a state of collapse. They look pallid or cyanosed, the breathing is feeble, and the pulse hardly perceptible. They are in danger for hours. A certain number never rally; some vomit and die from syncope. Now, the practical bearing of the work of the Committee upon these points is this: it has shown or at least has confirmed the truth that in low-percentage vapours of chloroform lies safety. We have had the great advantage of testing the matter by means of Mr. Harcourt's inhaler, and have found that a chloroform vapour as low as 2 per cent. will produce anaesthesia. With such a percentage as a maximum, reflex dangers may, I believe, be faced without fear; and even the most prolonged operations can be safely negotiated without the post-anaesthesia collapse met with when larger amounts of the anaesthetic are employed.

I do not mean to say that 2 per cent. is sufficient in all cases. I have found it ample in most, and regard it as adequate in all. In the larger number of patients 2 per cent. suffices for the induction of anaesthesia, and 1 per cent., or even less, is enough to maintain an adequate degree of narcosis. It is often asserted that light narcosis involves insufficient relaxation and frequent alarming interference with respiration when viscera are handled. I suggest, as I have pointed out elsewhere,[1] that these phenomena are not necessary, nor are they the result of light narcosis. They really belong to the domain of incomplete anaesthesia. The patient under these circumstances has never been carried into the third degree of narcosis, anaesthesia proper, but is kept oscillating between overdosage and underdosage through irregularities in the supply of the anaesthetic or in the rhythm of respiration. Professor Sherrington's and Miss Sowton's most interesting research on the action of chloroform on the isolated mammalian heart bears upon this subject. They have shown that the most minute quantities of chloroform when they enter the cardiac tissues at once affect the beat. If the quantity is small the heart appears to be undamaged: this is the counterpart of what occurs when patients inhale low percentages of chloroform. If cyanosis or enfeeblement occurs the chloroform supply is discontinued, and the heart at once recovers itself. When, however, as these observers have pointed out, the amount of chloroform is increased a point is reached at which the cardiac musculature is damaged, and its resistance towards the anaesthetic disappears. This, then, is the counterpart, I take it, to the condition which I have called the post-anaesthetic collapse. The patient suffers from shock, the result in part of the operation and in part of the amount of chloroform inhaled, is unable to rally because the heart is exhausted and incapable of recovery, since it is poisoned by the amount of chloroform perfusing its tissues. Leonard Guthrie has, like some Continental observers, met with deaths following chloroform, due, he believes, to destruction of the tissues of the body by the action of the chloroform in the blood. Such deaths could not, I submit,

[1] *Journ. Phys.*, vol. xxvi, p. 97 *et seq.*
[2] *Proceedings of the British Gynaecological Society*, May, 1904.

occur when the chloroform is inhaled in a highly dilute state.

Let me turn to another aspect of the question. It has been repeatedly forced upon my attention that to patients who are suffering from some depreciated condition of their blood, such as the chlorotic, the anaemic, in leucocythaemia, in cyanosis, glycosuria, and septicaemia, anaesthetics, and especially chloroform, are peculiarly dangerous. Some years ago I made a number of observations upon the blood of patients before, during, and after chloroform narcosis, and although I do not propose to enter into the results of that research here, I wish to say that I found that anaesthesia was followed by destruction of red blood cells. The importance of this becomes emphasized by the observations of Professor Moore, Dr. Roaf, and of Mr. Byles, Mr. Harcourt, and Sir Victor Horsley. The damage to blood corpuscles will, I think, be found to be greater when high percentages of chloroform are inhaled, and especially is this so when the inhalation is prolonged for an hour or more.

If I may sum up the points of my experience, I would say clinically, I believe, we have no evidence that any individual possesses an idiosyncrasy towards chloroform. It is a question of dose. The resistance of an individual to chloroform is made up by the healthiness of his tissues, by the quality and quantity of his blood as compared with his body weight, and the freedom of his exchanges.

In low percentages 2 per cent. or less induction is safe and pleasant. Low percentages are adequate in most, if not in all cases; and even if, for the convenience or necessity of an operation, a profound degree of narcosis is aimed at, it is always advisable to commence the case with the use of a reliable regulating inhaler like Mr. Harcourt's, and return to its use as soon as the necessity for the deeper narcosis has disappeared.

The reflex dangers of anaesthesia are great when high percentages of chloroform vapour are in use, are slight when 2 per cent. or less is being inhaled. I do not deny that many most capable men use other methods than the one I advocate. A drop bottle and a Schimmelbusch's mask may give excellent results in careful hands, but they cannot give precision when the patient's respiration loses its regularity of rhythm. In the apparatus which Mr. Harcourt has now provided, and the accuracy of which is shown by one of the reports appended to the Committee's Report for this year, we possess a reliable means of giving chloroform in the desired percentage. That 2 per cent. as a maximum has been selected is due to the action of the Committee; the inhaler is capable, by altering the size of the bottle containing the chloroform, of supplying any given percentage which it is deemed requisite. That low percentages are adequate and safe I have attempted to show. My own experience tells absolutely in this direction, and I believe that when a careful consideration of the matter is made from a clinical as well as a physiological standpoint it will be generally recognized and accepted that in the past we have employed too high percentages of chloroform, and in the future we shall deem lower percentages not only adequate but essential. Deaths from overdosage are probably always due to the inhalation of high percentage vapours, and the use of an apparatus which enables the chloroformist to see the amount of the anaesthetic he is administering will go far to prevent such fatalities.

X.—W. J. McCardie, M.B.,

NOTES ON THE ADMINISTRATION OF CHLOROFORM BY MR. A. VERNON HARCOURT'S CHLOROFORM REGULATOR.

To test the length of time needed to induce anaesthesia with 1 per cent. I anaesthetized ten adult patients, afterwards continuing with ether, and found the average period till the lid reflex was much dulled or abolished to be 16½ minutes. With 1.5 per cent. in 10 cases the average was 12½ minutes. I have not yet tried induction with 2 per cent. During the last 4 to 5 minutes of induction the patient was sufficiently under for cleansing of the skin, etc. After the above experience I anaesthetized ten patients with ethyl chloride or "gas" followed by ether for 5 minutes, and found that I could then continue the anaesthesia with just about 1 per cent. of chloroform. This method, I think, is very advantageous. Judging from the above, and my personal experience when Dr. Dudley Buxton administered 1 per cent. of chloroform to me before the Committee and found that in about 16½ minutes my lid reflex was dulled, I should advise that induction of anaesthesia began with 1 per cent. or 1½ per cent. In my first twelve cases I had twice to change from chloroform to ether because of the length of the induction period. For certain very strong or alcoholic patients I think some means of increasing the percentage of vapour during induction would be useful. Mr. Harcourt has, however, I believe, recently provided for this. The main features of the anaesthesia obtained by means of the regulator are: (1) The very quiet and regular induction; mental and muscular excitement were practically absent in my cases. (2) The comparative and yet efficient lightness of the anaesthesia. (3) The perfect control over narcosis. (4) The comparatively quick recovery and small after-effect. The great principles of graduation of dosage during induction, fixation, and regulation of dosage during continuance of anaesthesia can be perfectly carried out with Mr. Harcourt's apparatus, and by it the dangers of overdosage can be largely done away with. I would suggest that an alternative form of the apparatus be made which could be slung by a band round the neck of the administrator—just as Junker's inhaler—so that it would be out of the way and one of his hands would be quite free. It would be of great advantage also could an unbreakable chloroform bottle be devised, for the glass one is liable to be broken and is not always easily replaced. The regulator will be a great help in teaching students to realize the power and dangers of chloroform and the minimum percentage in which it should be administered.

XI.—Paul M. Chapman, M.D.Lond., F.R.C.P., and Victor J. Duigan, L.R.C.P., M.R.C.S.Eng.

REPORT ON THE ADMINISTRATION OF CHLOROFORM BY DUBOIS'S APPARATUS AT THE HEREFORDSHIRE GENERAL HOSPITAL.

Dubois's apparatus was first used in England for ordinary surgical purposes at the Herefordshire General Hospital on November 7th, 1903, by Dr. Augustus Waller. There were 5 unselected cases, mentioned by him in the *Lancet*, November 28th, 1903, and reported by Dr. Chapman with his own notes and comments in the *Lancet*, January 16th, 1904. The apparatus has been subsequently used by us in 45 unselected cases.

The average time occupied in inducing complete surgical anaesthesia (excluding 5 cases of children and babies) was eight minutes. Where the induction was unduly prolonged for ten minutes and upwards, there were various causes to explain the delay. In the earlier cases the face-piece was now and again removed, quite unnecessarily. We found that better results were obtained by passing more rapidly from the initial 1.2 per cent. to 1.6 per cent. and to 2 per cent., about half a minute between each appears to give better results, 2 per cent. being reached in about two minutes. This is kept up until reflexes are abolished and the skin incisions are made. Reduction is then made to 1.6 or 1.2 per cent., and this is kept up without removal of the face-piece until some slight reappearance of reflex, or the insertion of sutures, appears to render a return to 2 per cent. advisable for a few minutes.

A long induction may be due to insufficient thoracic movements. But it may also be caused by the actual percentage of chloroform vapour supplied being lower than the nominal percentage.

Errors.

1. *Percentage Less than Nominal.*—(*a*) In Case No. 5 the spirit lamp which warms the phial into which the drops of liquid chloroform are instilled, went out unnoticed, and as it is necessary in cold weather to warm the phial in order to ensure complete vaporization of the chloroform, an unduly low percentage was supplied, enabling the patient to exhibit reflexes momentarily interfering with the operation.

(*b*) The handle of the wheel may be turned too slowly. That is to say, a certain velocity of inrush into the gasometer is necessary if one would be sure of vaporizing completely the few drops of chloroform instilled into the phial. There should be about six revolutions per minute to obtain a percentage according with the nominal. This was markedly seen in Cases 8 and 9, which were my own children. Owing to inexperience and to excessive care, these two little boys, one aged 10½ and the other 6 years, took ten minutes to anaesthetize. We should now anaesthetize them in about four minutes each.

(*c*) The drops of chloroform instilled into the phial through which the inrush passes will not be vaporized wholly unless the inner tube is well fixed down in the phial, so that its lower end is close to the surface of the thin layer of chloroform at the bottom of the phial.

(*d*) If the outrush from the gasometer is very slow indeed, so will be the outrush through the orifices in the applied face-

piece, and if the patient is taking vigorous inhalations air might be sucked back through these orifices. This should be rare, for any one may satisfy himself, by holding a few fibres of cottonwool before the orifices in the face-piece, that there is no retrosuction when the apparatus is properly managed.

2. *Percentage Greater than Nominal.*—If the handle of the wheel is violently turned, while the apparatus is standing on an insecure base, the jolting will upset additional runlets of chloroform into the phial. Without such jolting we believe it to be impossible, with the apparatus we have been using, to supply a higher percentage than 2.1 per cent.

Examples of Anaesthesia by this Method.

(*a*) *Operations of Short Duration.*—A gentleman, age 56, tall, very powerful and muscular.

Operation for phimosis caused by very thick and hard preputial bands. 9.30 a.m., 1.2 per cent.; 9.32 a.m., 1.6 per cent.; 9.34 a.m., 2 per cent.

During administration some vigorous resistance in arms, with endeavours to sit up. Corneal reflexes abolished in 10 minutes. Absolute quietude throughout operation. Percentage reduced from 2 per cent. to 1.6 per cent. a few minutes before the termination of the operation, which lasted about 12 minutes.

The patient spoke coherently 10 minutes after the operation, and then slept again as if in natural sleep. Half an hour afterwards was himself again, his mind quite interested and clear. No retching or any feeling of nausea at any time.

(*b*) *Operations of Longer Duration.*—A woman, aged 31, severe operation for gall stones. 3.16 p.m., 1.2 per cent.; 3.17 p.m., 1.6 per cent.; 3.18 p.m., 2 per cent.

Operation actually begun 3.30 p.m., percentage reduced after incisions to 1.2 per cent.

Operation ended 4 50 p.m.

Patient uniformly quiet throughout. No retching during operation. Patient showed signs of consciousness in about 40 minutes. No sickness that day. Some persistent vomiting the day following.

(*c*) *Chronic Alcoholism.*—L. T. A., a typical case, aged 54, operated on for ischio-rectal abscess in Guy's Hospital, May 16th.

Time of induction 9 minutes, after some resistance, noisiness, blueness, and stertor. Duration of operation 25 minutes. Uniformly quiet anaesthesia. Pulse and respiration unaffected by dilatation of sphincter. No sickness either during or after the operation.

At outset, during induction, the percentage was raised from 1.2 to 1.6 and to 2 per cent. at intervals of half a minute. During the operation the percentage was altered from time to time, but the face-piece was never removed until the conclusion of the operation.

(*d*) *Administration Discontinued owing to Dangerous Symptoms.*—A woman, aged 43, heart sounds feeble, first sound very like the second sound, no bruit. Operation for semi-solid ovarian cyst with adhesions.

Corneal reflex absent in 6 minutes. Pulse feeble. After about 20 minutes, and while the surgeons were dragging on the tumour and separating adhesions, the pulse became imperceptible at wrist, and the face became very pale. Respiration continued, though shallow and rapid. Anaesthetic stopped, 10 mm. ether injected subcutaneously, hot water bottle to precordium, patient's head lowered, and hot towels applied to it. Still no pulse at wrist. Repeated the ether injection. Also gave liq. strychninae m v. subcutaneously, and 1 oz. brandy per rectum. Saline fluid poured into peritoneal cavity. The pulse now became perceptible at wrist, but continued very feeble. Ether was given with Clover's inhaler for about 5 minutes. The rest of the operation was finished with no anaesthetic, the pulse being barely perceptible the whole time. At no time were the pupils dilated nor did the respirations cease.

We think that shock of operation was the main cause of the heart failure in this instance, the heart's action being initially very feeble and the shock great. The table on which the apparatus was placed was subsequently found to be shaky, but the patient did not seem to have had an overdose. Whether it were so, or whether the same trouble would have occurred under ether, we cannot say. It seemed to be safer to discontinue any anaesthetic towards the end of the operation. It was the only case in which we have had any anxiety.

The case shows that even when unfavourable symptoms may appear the administration is sufficiently uniform and gradual to afford a wide time-limit of warning, and that the use of a known percentage may diminish the great risk and danger of sudden accident such as might occur by sudden fluctuation of percentage from 1 per cent. or 2 per cent. to 5 per cent. or 10 per cent., which high values, though not necessarily fatal, are very dangerous.

Dental Cases.

Mr. Peyton Levason, Dental Surgeon, Herefordshire General Hospital, has furnished me with his own remarks. He was present when the apparatus was used at the hospital by Dr. Waller, and was struck by the absolutely perfect anaesthesia exhibited when the patient was well under, and the remarkable lack of any reflex muscular action. He says:

Since then I have operated in three cases, Dr. Chapman being the anaesthetist, removing in each case respectively 23, 18, and 36 stumps and teeth. I may say that I have never extracted teeth under such favourable conditions. There was absolute quietude on the part of each patient, and the fact that the anaesthetic could continue to be given through one or other nostril made the operation considerably more expeditious. There was no necessity at any time to stop even for a moment, the mouth being left to me, and never covered up, as frequently occurs in any other method of anaesthetizing. In no case was there any vomiting at the time, which is always a great nuisance in dental work. I must say that it struck me there was less haemorrhage, though whether this were due to the anaesthetic, or to the condition of the patient, I could not say. Certainly there was less than is usual in similar operations under ether, so much so that I am inclined to urge this as an argument in its favour in dental work.

In all three cases the patient made a rapid recovery, and owing to the complete and uniform anaesthesia, and consequent lessened hurry, there was considerably less wounding of the surrounding tissues than is usual after such wholesale extractions. Others are better qualified to speak as to the safety of the method, but I may say that one of the patients operated on was a person to whom I should have hesitated to administer nitrous oxide gas. While the anaesthetic is being administered through the nostril the operator is conscious of the presence of chloroform vapour, to which I am very sensitive: but this was much less noticeable in the last and most prolonged of the three cases, owing, I understand, to an endeavour being made to allow the supply of the anaesthetic to synchronize with the inhalations of the patient; when the supply is carefully regulated it is hardly fair to consider this as an obstacle to the operator, his convenience in every other respect being so very largely enhanced.

Sickness and Retching.

In a few cases slight retching has occurred during induction. In but 2 cases of the whole series has there been any retching during the operation, and then it was but slight. On the other hand, retching may occur not uncommonly some hours after, or even the day after, an operation.

Character of Anaesthesia.

As is usual when anaesthesia is successfully induced by any method, there was a steadying of the pulse and an improvement in its tone. The peculiar and most striking characteristic in all cases was the uniform depth of the anaesthesia, which in most cases appeared as if the patient might be sustained there indefinitely without further submergence.

Retained Chloroform.

In giving our fixed percentages we find that after prolonged administration, although the depth of the anaesthesia may have appeared to be uniform throughout, yet the patient is longer in coming round.

When an animal is anaesthetized with $CHCl_3$ in the laboratory, it has been found that the whole of the $CHCl_3$ inspired is not recoverable.

In one experiment by Dr. Waller on a cat, there was this result:

$CHCl_3$ inspired	...	243 c.cm.
,, rejected	...	189 c.cm.
,, retained	...	54 c.cm. (— 0.27 gram).

That our patients are longer in coming round after prolonged administration points, we think, to some accumulation. The subject is too difficult for clinical experiment, but we hope it will be further pursued in the physiological laboratory, as we think it would be to the great advantage of the administrator that he should know what becomes of this retained chloroform.

XII.—H. C. CROUCH, M.R.C.S., L.R.C.P.,

Anaesthetist, St. Thomas's Hospital.

MR. CROUCH said: When the Harcourt inhaler was first introduced I came to the conclusion, from what I saw of it in the hands of myself and others, that the amount of shaking that took place completely stultified the intentions of the inventor, and I accordingly gave up using it. When, however, I saw that a discussion was going to take place on the work of the Committee—a discussion that must include this inhaler—I determined to try it again. In order, however, to exclude the shaking, I had a stand constructed to hold the machine, and a length of flexible metal tubing, $\frac{5}{8}$ in. in diameter, to connect it with the face-piece. The shaking in the unclamped apparatus takes place in various ways. A certain amount of shaking goes on all the time merely from the effort to hold the apparatus closely applied to the patient's face; this, however, is slight, and may make but a small difference in the area of chloroform exposed; a more serious amount is when, owing to a feeling that the mouthpiece is not properly adapted, the inhaler, and with it the bottle, are moved from side to side to ensure the accurate fit

of the latter. Again, when the temperature of the chloroform is seen to be too low, the hand is applied to the bottle, and oscillation of the fluid takes place. This is especially noticeable when the grasp is relaxed, for the hot hand adheres to the bottle, and draws it on one side. Further, when the patient is moved from the anaesthetizing room into the theatre the shaking becomes violent. Lastly, it is obvious that a conscious, or partly conscious, patient is always liable to move, and I have seen such violent movements on the part of an excitable patient that the chloroform has been sucked into the glass valve box. I make no reference to the intentional movement that is at times imparted to the bottle by the anaesthetist to hasten events, as that is, of course, equally liable to occur with the inhaler clamped, and is a most unjustifiable action on the part of the anaesthetist.

In order to warm the bottle without shaking it, I have done so either by putting it into warm water contained in a porringer, by raising the latter, or I have applied a spirit flame momentarily. Further, I took off the face-piece while the patient was rushed into the theatre, and there reapplied it; the loss of time never exceeded 10 seconds.

I have taken all these precautions, because I felt sure that in a scientific audience such as this, any statement of mine that the shaking was negligible would be received with derision, and that you would demand proofs that the element of shaking was actually eliminated. I always had an anaesthetist by my side to check me, to see that I allowed no leakage round the face-piece, and to take notes, or he gave the chloroform and I took the notes, the terms of such notes being agreed on by both.

I regret that there are only 9 cases, but I found it impossible to use this method on more than the first case in the afternoon, as the most good-natured surgeon declined to wait the necessary time between the cases.

CASE I.—F., 22. Gall bladder: 2 per cent. in 5 minutes. Incision in 20 minutes. Pupil dilated, but no movement. Anaesthesia satisfactory.

CASE II.—M., 25. Radical cure of hernia: Incision in 29 minutes. Patient moved legs and head. Anaesthesia satisfactory.

CASE III.—M., 36. Parotid tumour: Incision in 21 minutes. Patient moved his feet. Anaesthesia satisfactory, but some pressure had to be kept on the man's head to prevent movement, and his adductors were acting so strongly the whole time that at no time could his legs be separated; he was, therefore, too lightly under for any abdominal or rectal operation.

CASE IV.—F., 40. Repair of perineum: 2 per cent. for 20 minutes, not unconscious for 15, then had 2.5 per cent. (with Harcourt tube in bottle) for 5 minutes, then 3 per cent. for 3 minutes. I then used a drop bottle and lint mask, as the surgeon would wait no longer. The patient 3 minutes later, or 31 minutes after starting the anaesthetic, was sufficiently relaxed to be got into the lithotomy position. All previous attempts had failed.

CASE V.—M., 18. Abdominal exploration: 2 per cent. was reached in 5 minutes. The patient's breathing was very shallow, the amount of movement of the valves being very small. The incision was made in 13 minutes, and evoked no reflexes. Half an hour afterwards the percentage was reduced to 1.5 per cent., as the man had all the signs of overdose, and later to 1 per cent. The surgeon said that the anaesthesia was very good.

CASE VI.—M., 17. Hernia: 2 per cent. in 3 minutes, incision in 14. The patient drew up his legs and had to be restrained by dressers. The instrument was then unclamped and used in the ordinary way, and 3 minutes later the dressers were no longer required, and the anaesthetic was satisfactory. N.B. The anaesthetist afterwards said that to keep the patient quiet he had been shaking the bottle, as otherwise the surgeon complained.

CASE VII.—F., 12. Appendix: 2 per cent. in 4 minutes, the patient breathing very shallowly. The incision in 10 minutes evoked no reflex; 23 minutes after the start of the anaesthetic I saw that the valves were moving less and less, and the anaesthetist was shifting the face-piece to see if there was a leakage round it to account for the small excursion. I then interfered, as I saw that the cause lay not in a misfit, but in the condition of the patient, and the chloroform was put down to 0.5 per cent. A minute later the chloroform was stopped, and the patient required no more before the operation was finished, 29 minutes from the start.

CASE VIII.—F., 23. Dilatation for dysmenorrhoea: 2 per cent. in 4 minutes; at the end of 15 minutes, as the patient could not be got into the lithotomy position, 2.5 per cent. was given for 3 minutes, and then 3 per cent. for 2 minutes more, when the patient was sufficiently relaxed. The patient crowed when the vagina was dilated; 15 minutes from the start of the operation the percentage was reduced to 2, which was maintained to the end.

CASE IX.—M., 31. Hernia: 2 per cent. in 4 minutes; incision in 21 minutes, when the legs were drawn up, and the dressers had to hold the man down. This went on for 3 minutes; 46 minutes from the commencement, when the skin was being sewn up, the surgeon hoped that his stitches would hold, as the "belly was like a board."

It will be seen from these 9 cases that there were 2 cases of threatened overdose, and in both these cases the breathing was extremely shallow, and it was probable that, as shown by Mr. Vernon Harcourt in the last report of the Committee, the patients were having a very much larger quantity than the 2 per cent., which they were supposed to be getting. One of these cases exhibited very well what is liable to occur where the inhaler is in the hands of an inexperienced anaesthetist, and that is that the attention is riveted on the apparatus instead of the patient. In two cases it was not possible to induce a satisfactory anaesthesia with the maximum percentage allowed by the apparatus, and recourse had to be had in one case to the drop bottle. Of the remaining 5 cases, in two the surgeon complained of the movements of the patient, movements which threatened to impair the success of the operation.

It seems obvious to me, therefore, that the success of the apparatus has in the past depended on the amount of shaking which is unconsciously given to the bottle. Such shaking cannot be measured, and it is possible that the extra percentage thus obtained may reach dangerous proportions, and the anaesthetist, while thinking that he is giving one amount may be giving double. At any moment the percentage may suddenly be thus increased, and a dangerous, perhaps fatal, cardiac inhibition induced.

Considering what precautions I have taken to see that the inhaler has been used without leakage round the face-piece, I do not imagine that anyone can object to the cases on that account. It can be alleged, however, that it was not in experienced hands; to that I reply that the *raison d'être* of the machine is the exhibition of the drug in such a manner that it may give a satisfactory and a safe anaesthesia in the hands of the inexperienced practitioner.

XIII.—A. G. LEVY, M.D.,

Anaesthetist, Guy's Hospital.

DR. LEVY said: The few remarks I have to make refer to certain failings of the Vernon Harcourt inhaler, which I have tested under various conditions. In carrying out these experiments, in order to maintain control over the volume and force of aspiration of the air through the inhaler, recourse was had to an adjustable suction bellows driven by a motor. In order to avoid all possible complications arising from shaking the chloroform bottle, I regulated the temperature of the chloroform by the momentary application of a flame, instead of by the usual method of warming it up by the heat of the hand. In all cases the estimation was made whilst the higher temperature bead was just afloat, the other bead being of course always sunk. The surface of the chloroform was always kept at a constant level, the volume of the chloroform being 45 c.cm. The determinations of the percentages were performed by the Harcourt combustion method of analysis.

The first series of experiments demonstrate the effect of varying the rate at which the air is made to flow over the chloroform. This was accomplished by keeping the rate of action of the pump constant, but altering the volume of air sucked through per stroke. The working capacity of the bellows was estimated in each instance by means of a gasometer.

The average rate of flow of the air current may be expressed in C.G.S. units by the ratio:

$$\frac{\text{volume of air per suck (in c.cm.)}}{\text{duration of suction (in seconds)}}$$

In the case of a mechanical pump, in which, of course, the suction phase occupies approximately half the time of a whole revolution of the crank, this ratio may be readily calculated.

TABLE I.—*Showing Variations in the Rate of Suction and the Corresponding Variations in the Percentage Yield of Vapour.*
Rate of action of the bellows, 20 sucks per minute. Each estimation of this series was performed in duplicate.

Average Rate of Flow per Second.	Volume of Suction.	Index at Nominal Percentages of		
		2 per cent.	1 per cent.	0.5 per cent.
386 c.cm.	580 c.cm.	1.38 1.37	0.96 0.95	0.70 0.67
320 c.cm.	480 c.cm.	1.57 1.54	1.07 1.06	0.68 0.68
190 c.cm.	280 c.cm.	2.03 2.02	1.25 1.24	0.86 0.85

The lowest of the rates of flow given corresponds, according to anaesthetic standards, to moderately weak breathing. This is demonstrated by the action of the inspiratory valve, which under its influence barely rises to a horizontal position. The highest rate corresponds to moderately strong breathing.

I regret I am unable to give figures representing the extremes of breathing, as my present object has been to keep my observations well within the range of the commonest clinical experiences.

When the index is adjusted to lower percentages, that is, 1 per cent. and 0.5 per cent., the variations due to alteration of the rates of flow are, of course, proportionately less great than when the index is turned to the full 2 per cent.

If, now, we compare the percentages when the index is set at different values under the same conditions of rate of flow, it is found that the actual values do not bear the same relation to one another as do the nominal ones—in other words the index is faultily graduated.

Thus, for instance, the value, 0.96, with the index at 1 per cent., should be raised to double, namely, 1.92 with the index at 2 per cent., whereas it actually only works out as 1.38.

This result is what might be expected, for when the index is set half-way at 1 per cent., only half the air passes over the chloroform and that at half the rate, and is so more heavily charged with the vapour.

I am glad to see that Mr. Vernon Harcourt, in his report to the Chloroform Committee published on Friday[1] last, is practically in agreement with me as regards the effect of the varied strength of the breathing. Unfortunately it is not easy to compare his table with mine, for he expresses the breathing in terms of the total air inspired per minute, and as being either deep, shallow or normal. These particulars give no information as to the rate of flow during the act of inspiration, which I have already pointed out is the determining factor as regards the percentage yielded. I would further insist that the mere depth of an inspiration is not an index of the percentage yield, for a deep breath may be either slowly or rapidly effected and will result in a correspondingly high or low percentage of vapour.

Without wishing to appear unduly critical, I must also grumble at the term "normal breathing," for there is no standard of normal breathing under the influence of an anaesthetic and operative procedure; the breathing is invariably disturbed.

A second series of experiments was performed in order to estimate the influence of a shake applied to the inhaler upon the percentage of chloroform. The shake was applied manually to the bottle suspended from the inhaler in the usual fashion by a short length of rubber tubing. The shake was maintained throughout the experiment and was regulated with an appreciable degree of accuracy by keeping the side of the bottle wetted only to a constant height above the normal level of the chloroform. This height was measured on a scale in millimetres.

Table II.

The rate and stroke of the bellows was constant throughout this series of estimations (stroke 20 per minute, volume 280 c.cm.).

Measurement of Shake.	Percentages Obtained.
None	2.02
Very gentle (5 mm.)	2.73
Gentle (10 mm.)	3.26
Moderate (20 mm.)...	4.49
Rather strong (25 mm.)	5.00

These figures require very little comment from me. It is sufficiently obvious how the mere application of the hand to the bottle in the process of the regulation of the temperature of the chloroform will induce sufficient shaking to raise the percentage to a very appreciable extent, and to all conversant with practical anaesthetics it will be apparent how more violent shakes may occur, which are unquestionably a serious source of danger.

To quote a passage in a leading article of the British Medical Journal of July 23rd, the requirements of a chloroform inhaler are that "it should tell us to a nicety what strength of vapour the patient is inhaling," and I think it can hardly be claimed that the Vernon Harcourt inhaler fulfils such a condition.

I would further insist most strongly that, in view of the possible presence of these errors at any moment, any scientific conclusions drawn from the experimental or clinical use of this instrument are valueless.

In conclusion, I have to state that it was Sir Victor Horsley who urged me to follow up these investigations, and that both he and Mr. Vernon Harcourt have kindly placed every facility at my disposal.

[1] British Medical Journal, July 23rd, 1904.

Reply by Sir Victor Horsley.

Sir Victor Horsley, as the time did not permit of an extended reply, said that he had asked Dr. Levy to measure as exactly as possible the error due to shaking of the Harcourt apparatus; but while, of course, endeavouring to obtain correction of the measurement, the continuous shaking of Dr. Levy's method was a very different thing to the occasional agitation during a clinical administration.

The difficulties Mr. Crouch had met with were exactly those of every one who tried for the first time to use an instrument he was unfamiliar with, and he would content himself by saying that Mr. Crouch's nine cases could not be accepted as equivalent to the 400 or 500 successful cases of Dr. Buxton.

Personally, his experience of the instrument was very favourable, and it required only full discussion like that of the present occasion to arrive at a thoroughly reliable means of anaesthetizing a patient without danger to life.

ADDENDA TO THE DISCUSSION ON CHLOROFORM ANAESTHESIA.

I.

Comments upon the Third Report (1904) of the Special Chloroform Committee of the British Medical Association.

By Augustus D. Waller, M.D., F.R.S.

The report for 1904 of the Special Chloroform Committee of the British Medical Association, published in the British Medical Journal of July 23rd, touches upon several points of physiological interest, and upon one chief point of clinical importance.

The point of clinical importance is the distinct admission with regard to a particular apparatus of what, in my opinion, is the principle of danger inherent in that apparatus—namely, the vicious circle in accordance with which rise of percentage occurs, with falling respiration, and vice versa.

The inventor of the apparatus now points out, correctly enough, that the total amount taken in is less when breathing is more shallow, greater when breathing is deeper,* and gives the following averages:

Vernon Harcourt, 1904 Report.

Breathing (in Litres per Min.).	Percentage of $CHCl_3$ Vapour.	Mass Inhaled (in Grams per Min.).
Shallow 3.1	3.26	0.35
Normal 4.9	2.01	0.40
Deep 7.3	1.54	0.56

These results are in agreement with those obtained by independent examination of the apparatus as reported to the British Medical Association in July, 1903, and published in the *Lancet* of July 9th, 1904.

Waller and Wells—1903 Report.

Ventilation in Litres per Minute.	Percentage.	Mass in Grams per Minute.
1.8	3.1	0.28
4.6	2.3	0.57
9.2	1.9	0.87

The two sets of figures, independently arrived at, are mutually confirmatory. As stated in the 1903 report, "the delivery under laboratory conditions is practically what it professes to be." The slight discrepancies between the two sets of

* Upon these results the official report is to the effect that "during rapid breathing, although more air passes over the surface of the chloroform, less weight of that anaesthetic is actually delivered to the patient. In slow and deep respirations the converse obtains. The practical importance of these determinations is obvious." It is obvious in this sentence that there has been some confusion of thought, or at least of language, on the part of the authors of the report.

figures are explicable as the result of various small improvements made by the inventor during the last year, more particularly as regards the exact shape and dimensions of the bottle holding the requisite quantity of chloroform.

The clinical value of the apparatus does not, however, in any degree depend upon details of this order, but upon far more obvious points which were indicated in the report by Waller and Wells presented to the Special Chloroform Committee of the British Medical Association in July, 1903,[1] namely, upon the necessity of an accurately fitted face-piece and of perfect tranquillity of the chloroform surface.

The clinical report of the use of the apparatus has been very favourable indeed, but it has not been either complete or impartial. The statement by Dr. Dudley Buxton that it has been used successfully in many hundreds of cases at University College is wanting in precision, more especially by omission of all reference to cases in which the apparatus has been unsuccessfully used, and to cases which have terminated fatally during its use.

The points of greatest physiological interest dealt with in the 1904 report of the Special Chloroform Committee concern the physical relation of chloroform to blood and the quantitative estimation of chloroform in blood. Both of these points were considered in the 1903 report to the Chloroform Committee, and it is satisfactory to find that the main conclusions of that report have been substantiated by the subsequent experiments of the Committee. The fact that blood possesses greater affinity for chloroform than does water, acting, therefore, as a temporary restraining medium rather than as a simple solvent in the transfer of blood from the pulmonary air to the nervous centres, as shown by the greater absorptive power of blood towards chloroform, and by the smaller delivery of chloroform from chloroformed blood than from chloroformed water, was stated in the 1903 report, and has since been published in the *Proceedings of the Royal Society* (vol. lxxiv, p. 55) in support of a similar conclusion arrived at by Moore and Roaf.[2]

As regards the estimation of chloroform in blood, the Chloroform Committee presents a report by Byles, Harcourt, and Horsley, containing a description of a method by which they appear to have obtained figures not very different from those given in the 1903 report of Waller and Wells. In the 1903 report it was stated that the average recovery of a known amount of chloroform from blood averaged 80 per 100, and that the percentage recoverable from chloroformed blood on the second, third, and fourth day of preservation remained invariable.

Byles, Harcourt, and Horsley, in their report of 1904, find that "of the chloroform left in contact with the blood for eighteen hours, not more than about 80 per 100 was recoverable, and that, if the period of contact was lengthened to three or four days, no material change occurred in the percentage recoverable."

The figures of the one experiment quoted by these authors as the first of a series undertaken to determine the amount of chloroform in the blood in various degrees of narcosis and at the instant of death, are of the same order as those given by Waller and Wells in similar experiments described in their report of 1903.

The figures of the 1904 report are: 0.03945 to 0.04179 per cent. of chloroform present in the blood of complete anaesthesia, 0.06555* per cent. in the blood at cessation of respiration. The corresponding figures of the 1903 report are 0.042† during anaesthesia, 0.054 just before sudden arrest of respiration. Considering the unavoidable imperfection of estimation, these estimates did not profess to give values beyond the third decimal (that is, milligrams), and the centimilligrams given in the experiment of the 1904 report are not to be regarded as the token of the precision and accuracy of method employed by the authors of that report.‡

It is not quite clear from the context of that report whether the figures given of chloroform recovered from the blood were obtained by means of the formula recommended by the authors for calculating the total amount of chloroform present in solution. The formula in question as given by its authors requires three separate (burette) readings§ taken at equal intervals of time, with rate of passage of air and temperature of blood maintained constant within narrow limits.

In the form given by the authors as most convenient for calculation it runs thus:

$$x = a - \frac{b'^2}{2b' - c'}$$

where a, b, c, are three successive readings, $b' = b - a$, $c' = c - a$, and x = the limiting value towards which diminishing alkali approaches.

This method, however ingenious, is evidently very laborious and necessarily inexact. Its promulgation proves, however, that the exact estimation of chloroform in blood is not so easy as it appears at first sight. I had, in fact, expressly excluded it from the scheme of work proposed to the Special Chloroform Committee at its inception in 1901.

It is doubtful, however, whether the method will be found practicable for any exact determination of the total amount of chloroform in blood, especially if the recommendation be followed of preserving the fluidity of the blood by means of urea previous to titration of hydrochloric acid by alkali, since the ammonia arising from urea will of necessity subtract from the hydrochloric acid which serves as the measure of chloroform.

References.
[1] *Lancet*, July 9th, 1904. [2] *Proc. Roy. Soc.*, lxiii, p. 382.

II.

Further Remarks by A. Vernon Harcourt, F.R.S.

Having had, owing to shortness of time, no opportunity of replying to the questions concerning my inhaler which were raised by Dr. Waller, Dr. Crouch, and Dr. Levy, I hope I may be allowed to append a short reply to the report of the discussion.

The point of most importance, on which all three speakers strongly insisted, is the increase in the proportion of chloroform which is likely to arise from the shaking of the bottle. The only absolute remedy for this is to have the inhaler, as I showed it, mounted on a firm stand, or attached to the back rails of a bed, and the face-piece connected with it by about 2 ft. of rubber tubing. If the inhaler is thus supported the bottle will not shake. But even when the inhaler is held in the hand little shaking occurs if abrupt movements are avoided, and if the bottle is suspended by a tube of suitable length and substance. The length should be 2½ in., and the rubber tube thin-walled and limp; the bottle thus attached will hang nearly vertical for small inclinations of the stem; a movement will cause it to swing a little but not to jerk, and it is a jerk of the bottle, not a swing, which agitates the liquid.

There will, however, always be some movement, and consequently some increase, more or less, in the proportion of chloroform, when the inhaler is held in the hand: and there may also be variations of temperature, above 15° C. in hot weather, and below 13° C. in cold weather, which will raise or lower the proportion. But I think the anaesthetist may be trusted to notice these variations, and to neutralize their effect by placing the pointer at a line different from that at which he would have placed it had the liquid been at rest and the temperature within the chosen limits.

The apparatus which I first proposed[1] was too heavy to be shaken; it was provided with a water-jacket for the maintenance of a constant temperature, and the proportion of chloroform to air which it delivered was independent of the rate of breathing. In the present apparatus, as I reported to the Committee, much has been sacrificed to convenience and portability. I have never claimed for it more than an approxi-

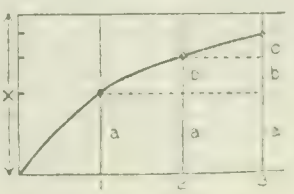
* This number should be 0.0623, unless 35 c.cm. is a misprint for 33 c.cm.

† Other values found in the blood during anaesthesia were 0.027, 0.016, 0.0185, 0.0265.

‡ The figures for chloroform recovery from water given in the 1904 report are 95 to 100 per cent. The analogous figures in a pair of experiments of the 1903 report are 95.4 and 99.2 per cent.

§ It is clear from the context that the three successive readings—a, b, and c—signify the three successive values of these three readings, namely, a, a + b, and a + b + c. But in any case a third reading c is unnecessary, since the value of x comes out from two readings a and b by the formula:

$$x = \frac{a^2}{a - b}$$



[1] *Proc. Roy. Soc.*, vol. lxx.

mate dosage, and to obtain this requires the exercise of care and common sense on the part of the anaesthetist.

Most of the speakers held that 2 per cent. of chloroform was in nearly all cases sufficient. Dr. Crouch's experience went to show that this dose, though largely augmented by shaking the bottle, was often insufficient. If a stronger mixture is desired it can readily be provided either by using a slightly larger bottle or by placing in the neck of the bottle a small tube which I have had made for the purpose.

With regard to the rate of inhalation of chloroform, I stated that it was greater when breathing was deep than when it was shallow: Dr. Waller stated that the reverse was the case. Taking moderate variations in the rate of breathing and rather more than the corresponding variations of percentage, the comparison stands thus:

Rate of Breathing (litres per minute).		Percentage of Chloroform in Mixture.		Relative Amounts Inhaled per minute.
7	×	1.5	=	10.5
3	×	2.5	=	7.5

Dr. Waller's paper entitled Examination of Apparatus Proposed for the Quantitative Administration of Chloroform was printed in the *Lancet* shortly before the discussion, and is thus the full text of his contribution. I propose to comment on a few points.

It appears from Table I,[2] which gives the result of a trial of Junker's apparatus, that when the temperature of the air around the bottle through which air is driven is 15° C., nearly twice as much chloroform evaporates as when the temperature is 17°, and from Table III that rather more evaporates when the depth of chloroform through which the air is driven is 3 in. than when it is 6 in., though the air is not saturated in either case. Such impossible results prove that some grave experimental error escaped notice.

Table IV gives the results of a number of analyses of mixtures of air and chloroform delivered by my inhaler with the tap in different positions. "Owing to narrow tubing used," air was drawn through at less than one-fourth the ordinary rate of breathing; also the temperature was in nearly every case two or three degrees above the limits which I have adopted. Under such conditions the percentages of chloroform are necessarily too high. In Table V the temperature of the chloroform, when the passage of air over it was begun and was ended, is only given in 6 cases out of 24: in these the average was 20.2°, that for which the inhaler is adjusted being 13° to 15°.

Early in this inquiry Dr. Waller and Dr. Geets presented results to the Chloroform Committee resting on the assumption that when chloroform evaporates in air the volume of the mixture of air and chloroform vapour is the same as that of the air alone. My assurances to the contrary were accepted at the time, but a column of figures in this table has been calculated on the same singular hypothesis. The gains in weight of the densimeter bulb are given in decimals of a gram, but the formulae at the foot of the table are designed for milligrams. In the same place is a much more curious error. The correction for temperature and pressure by the first formula given would alter the percentages by about 5 per cent. But Dr. Waller substitutes for this formula what he terms an "abbreviated formula," apparently thinking that it serves, like the longer formula, to "introduce corrections for temperature and pressure"; then, finding that the figures to which he applies it are changed by less than ½ per cent., he concludes that such corrections are "evidently unnecessary." The abbreviated formula corrects the figures for the temperature and pressure observed in each case by multiplying them all by the constant quantity 0.996.

Table VI relates to Dr. Brodie's tap, and gives the results of "trials with an air current, (1) driven, (2) drawn, through the chloroform vessel at the room temperature of 19° to 20° C." The results are that the evaporation of chloroform when the air current is produced by suction is between two and a half and three times as great as when it is produced by propulsion. Now, between suction and propulsion, as applied to such experiments, there is no difference at all. The air current passes through the tap because there is a slightly greater pressure at the inlet than at the outlet, and, other things being the same, it is quite immaterial whether the small difference of pressure is caused by increase at the inlet (propulsion) or by diminution at the outlet (suction); whether, for example, the barometer standing at 75 cm. the pressure at the inlet is increased to 76, or whether the barometer standing at 76 cm. the pressure at the outlet is reduced to 75. The minute difference in atmospheric pressure at inlet and outlet, which will supply the air current required for respiration through an adequate opening without any sensible increase of muscular effort, amounts to about 0.1 per cent., and causes a similarly minute increase in the rate of evaporation of chloroform. Further, this increase, such as it is, should be referred to the change of pressure which is dependent on atmospheric changes, and not to any distinction between suction and propulsion.

What can be thought of experimental work which is undertaken with the object of examining a non-existent cause, and which shows it to produce an immense effect?

[2] *Lancet*, July 9th, p. 77.

III.

Description of Dubois's Apparatus for the Administration of known Percentages of Chloroform at the Pathological Museum, British Medical Association Meeting, 1904.

By PAUL CHAPMAN, M.D., F.R.C.P.

THE "Dubois" apparatus is in use in many physiological laboratories, for keeping animals safely anaesthetized during prolonged observations. It was devised (in accordance with the knowledge that a mixture of $CHCl_3$ vapour with air in the proportion of 2 per cent. is (1) relatively free from danger, and is (2) just sufficient to produce complete surgical anaesthesia, without reflex movements) in such a manner that a constant stream of a mixture of $CHCl_3$ with air, not exceeding 2 per cent., can be supplied through a face-piece, independently of any suction efforts on the part of the patient. There is a constant outflow from the face-piece, and the patient's expiration is also quite without obstruction.

The air is expressed from a small cylindrical gasometer containing four litres, by means of a piston working inside the cylinder. As the piston rises four litres of air are expelled above the piston and pass through a tube into the face-piece; at the same time air rushes into the cylinder below the piston. As the piston descends the action is reversed. The air below the piston now out-rushes into the face-piece, and there is an inrush of air into the cylinder, above the piston.

When the apparatus is in use, the inrush of air always takes place closely over the surface of a few drops of liquid chloroform thinly spread out at the bottom of a vessel. By this means the few drops are completely vaporized (the vapour occupying some 300 times the bulk of the liquid $CHCl_3$), and the vapour is intimately and uniformly mixed with the air in the cylinder.

It is necessary that the few drops of chloroform should be supplied in constant quantity, and that they should be instilled into the vessel just before each upward and downward movement of the piston previous to the inrush of air. Therefore use is made of the momentary dead-points occurring at the reversal of the upward or downward movements of the piston. The piston is moved by a wheel moving always in one direction, the reversal of the movement of the piston being automatic.

Projecting laterally from the circumference of the wheel are two little nuts which alternately catch (at the moment of the reversal of the movement of the piston) on the arm of a crank which moves a horizontal lever. At each thrust of the lever in a horizontal direction movement is imparted to a vertical screw, which conveys a slight downward movement to a plunger attached to it. The plunger dips into a small cylindrical vessel (clamped beneath it, but easily detachable) containing when full some 4 oz. of liquid chloroform.

At each descent of the plunger a uniformly regulated number of drops of $CHCl_3$ run out of the vessel, through a lip projecting from the upper part of it, into the before mentioned small vessel, through which the inrush of air passes and where it is wholly vaporized.

By means of a "cam" the horizontal movements of the lever can be made more or less excursive, thereby taking up fewer or more cogs connected with the vertical screw carrying the plunger. By this means it is easy to obtain, within minute limits, a faithful percentage of 1.2 per cent., 1.6 per cent., or 2 per cent. of chloroform vapour.

It will be at once seen that no reasonable excess of zeal on the part of any one turning the handle can increase the chloroform percentage. Such a person may cause a needless waste of 2 per cent. chloroform vapour, embarrassing perhaps both to himself and to the operator, but he can do nothing worse.

As a detail, it is as well to warm the vessel containing the thin layer of liquid $CHCl_3$, so as to insure complete vapori-

zation, otherwise a lower percentage may be obtained. A spirit lamp is therefore supplied for this purpose, which warms the frame in which the vessel is held.

ON THE HISTOLOGICAL CHANGES OCCURRING IN UNUNITED DIVIDED NERVES.

By Robert Kennedy, M.A., M.D., D.Sc.,
Assistant Surgeon, Western Infirmary, Glasgow; Examiner in Surgery, University of St. Andrews.

The histological changes which ensue in nerve fibres on severance of the nerve trunk are in certain of their broad features well known. The immediate changes are of a degenerative type, consisting of the destruction and removal of the débris of the old nerve fibres. It is known that these changes affect the entire peripheral segment and a short length at the termination of the central segment. It is now almost universally admitted that the destruction extends to all the nerve fibres in those portions of the nerve trunk, so that after a short time there remains in the affected parts of the nerve trunk not one of the original nerve fibres. As regards the parts of the nerve fibres affected by the degeneration, there is no doubt that the medullary sheaths and axis cylinders are destroyed and removed, and this comprises the essential features of nerve degeneration. In the central segment of the divided nerve the same destruction affects the immediate termination, but with that exception the central segment appears to escape any profound immediate alteration of its essential characters.

In addition to the fragmentation and absorption of the medullary sheaths and axis cylinders which speedily ensue on severance of the nerve fibres from their connexions with the centres, other changes in the fibres occur. I refer to changes in the normal cellular elements of the nerve fibres, namely, the nuclei and protoplasm situated between the sheath of Schwann and the medullary sheath. It has been long known that almost simultaneously with the destructive changes in the nerve fibre these cellular elements rapidly proliferate. Many other cells—leucocytes and connective-tissue cells—invade the nerve, but these are clearly distinguishable from the cells with elongated nuclei derived from the cells lining the sheath of Schwann. The study of the later changes which ensue in the peripheral segment leaves no doubt that the chief function of this early proliferation of neurilemma cells is a regenerative one, the cells in question giving origin to new nerve fibres. Since proliferation of these cells begins at a very early date after the injury to the nerve, the changes grouped under the heading of regeneration must be regarded as running concomitantly with those regarded as degenerative changes.

These changes progress rapidly up to a certain point. Certain of the changes will proceed uninterruptedly to completion, others will be influenced in their course by the existing conditions. Thus the degeneration and absorption of the myelin and axis cylinder in the entire peripheral segment and ultimate portion of the central segment, once started by the injury, will progress until there is no trace left of the old structures affected. The degenerated remains will be carried off, and many months may be required before all the old myeline has disappeared from the nerve, but the process goes steadily on.

As regards the changes in the normal cellular elements of the nerve fibres, these will progress uninterruptedly only to a certain point so long as the nerve remains ununited. Even in these unfavourable conditions, with the peripheral segment quite unconnected with the centres, these cellular elements will produce spindle cells, which unite end to end and in this way constitute young nerve fibres. In an ununited peripheral segment after several weeks the formation of young nerve fibres reaches the highest point which can be attained under the circumstances—that is, an embryonic fibre is formed in which can be clearly demonstrated a fine axis cylinder surrounded by protoplasm in which is deposited fine drops of myelin, the entire fibre being surrounded by a delicate sheath of Schwann. At intervals along such young fibres can be seen spindle-shaped nuclei lying between the primitive medullary sheath and the young sheath of Schwann. Well-marked nodes of Ranvier can also be easily seen (Fig. 1).

In a peripheral segment which has not been reunited to the central segment, the series of changes only come to a stop when absorption has removed the old medullary sheaths and axis cylinders, and when the cellular elements have elaborated these young nerve fibres. The regeneration part is practically completed in a few weeks, but the final removal of débris may take many months. While the separation of the segment lasts the nerve fibres never develop further, and the characters which I have given for the young nerve fibres represent a resting stage, and in this condition they apparently remain for very long periods. I have examined ununited peripheral segments up to eighteen months from the date of division, and found the histological characters the same as regards young nerve fibres. The nerve fibres are therefore of small size and imperfect development, although all the parts are represented; but the small size and difficulty of staining, and the compact way in which they are packed together, make it very difficult to recognize them as nerve fibres. If, however, very fine sections are cut from nerves embedded properly in paraffin, and if these are successfully stained by Stroebe's

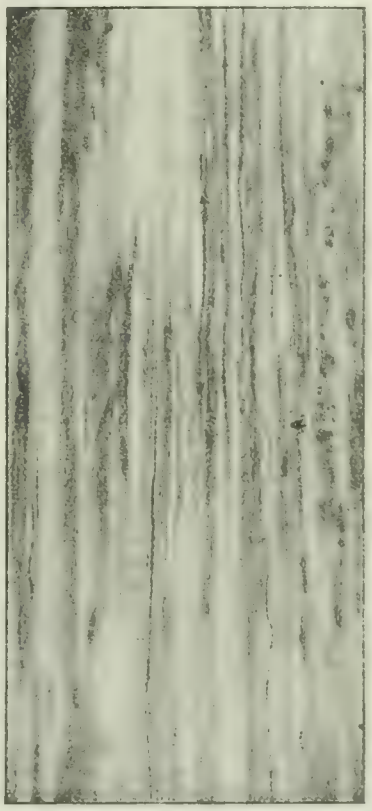


Fig. 1.—Longitudinal section of portion of dog's sciatic which was excised and implanted in a pocket made under the skin of the leg. The animal was killed in six months and the implanted portion of nerve recovered. Shows young newly-formed nerve fibres with axis cylinders, young medullary sheaths, nuclei, and sheaths of Schwann, and nodes of Ranvier. ×300.

method, no doubt can be entertained as to the structures in question being nerve fibres. Vanlair[1] divides degeneration into several stages, the final of which he calls atrophic degeneration. In this stage, the ultimate one to which, according to Vanlair, all degeneration processes lead, he describes the nerve as being composed of atrophied fibres, the remains of the old nerve fibres without axis cylinder or medullary sheath. This appearance is got in thicker sections in which it is impossible by any process of staining to obtain differentiation of the axis cylinders or other parts of the young nerve fibres; and I have no doubt that the stage described by Vanlair as atrophic degeneration really corresponds to the stage at which the nerve trunk is composed of a mass of newly-formed immature nerve fibres, in which, with sufficient thinness of section and with appropriate staining methods, the axis cylinder and other structures can be easily demonstrated.

When the peripheral segment is reunited at an early period to the central end, the only difference which is brought about in the changes which ensue is that the young nerve fibres do not stop in their development, but progress rapidly to the adult dimensions.

Recently, Mott, Halliburton, and Edmunds[2] have investigated the subject of regeneration of nerves, and as a result of

their observations adhere to the view that the regenerated fibres are derived entirely by growth from the central end. The portion of nerve from which Fig. 1 was taken was a portion which was excised from the sciatic of a dog and grafted in the subcutaneous tissue of its thigh, from which it was removed in six months. It was therefore impossible that the new axis cylinders shown there could have come from the sciatic central end.

These authors, however, with Langley and Anderson,[3] would explain such an appearance by supposing that a bed could not be prepared for a graft without dividing small nerve twigs, from the central segments of which twigs fibres would sprout forth and insinuate themselves into the graft. The explanation is, I think, far fetched, and assumes an extraordinary affinity between the supposed young nerve fibres and the old nerve trunks, an affinity which, if it existed, would, I am sure, secure almost certain spontaneous union of nerve trunks after accidental division, unless very extraordinary barriers were placed between the divided ends. The number of cases, however, in which secondary suture has to be performed shows that divided nerves cannot be confidently left to Nature to repair, which I am sure might almost uniformly be the case did such a strong affinity between young nerve fibres and the distal degenerated segment exist.

Mott, Halliburton, and Edmunds seem to lay great stress on the presence of excitability and conductivity as a proof that a given distal segment contains young nerve fibres. I do not think that these should necessarily be present at all,

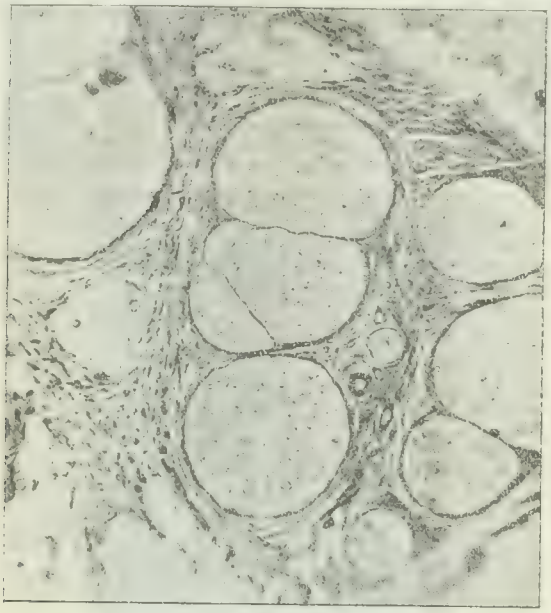


Fig. 2.—× 50.

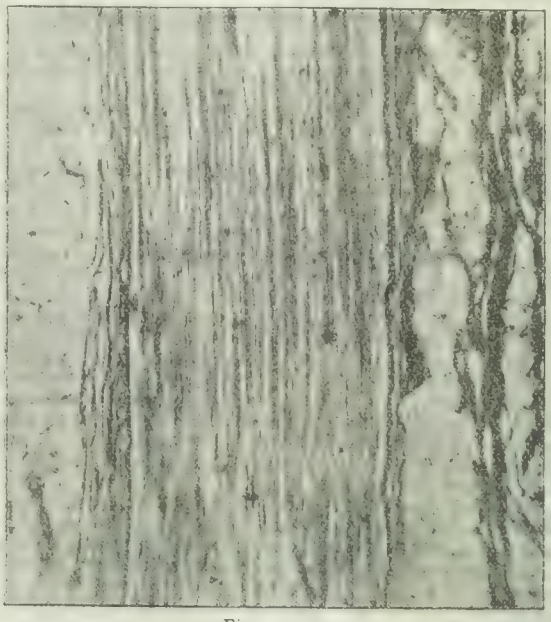


Fig. 3.—× 50.

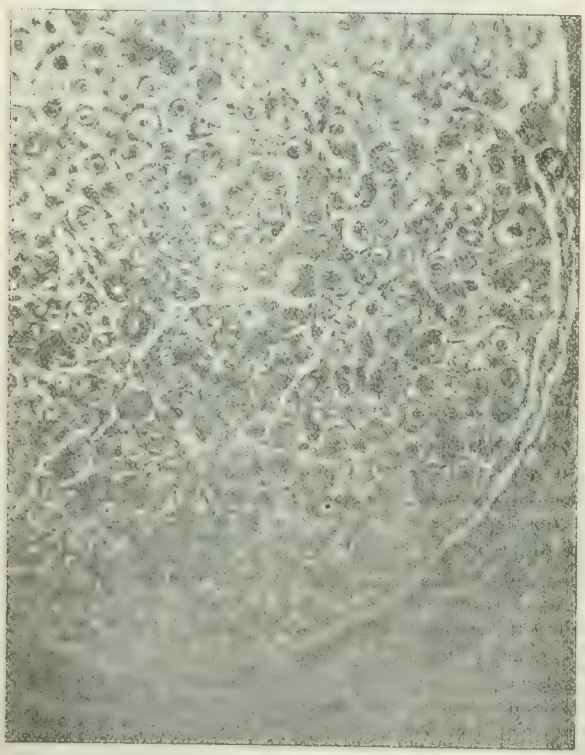


Fig. 4.—× 360.



Fig. 5.—× 360.

Transverse and longitudinal sections of internal popliteal nerve from a stump twenty-five years after amputation of the leg at the knee-joint.

although the distal segment is liberally supplied with young nerve fibres. Excitability and conductivity are properties of nerve fibres, but not necessarily of immature nerve fibres. There must be a stage in the development of a nerve fibre when it becomes fit for its function, and the exact stage at which this is attained remains to be investigated. It is now several years since I [1] showed that as long as a distal segment is still separated from its central segment the nerve fibres do not develop to the adult stage, but remain immature, and also that the appearance of these fibres is the same, no matter how long since the section of the nerve was performed. I have, therefore, suggested that they represent a resting stage in the life-history of the fibre, and that no further development would be attained until connexion was made with the centres. That they need little further development to be capable of conducting, if not already able to conduct, is shown by the early development of sensation after secondary suture. This early return of sensation—that is, a day or two after the operation—Mott, Halliburton, and Edmunds admit "would be very valuable evidence in favour of the 'peripheral theory' if it was entirely trustworthy." They then refer to a case in which, after union of a divided nerve by a secondary operation, the man stated that he was again able to feel, but that these sensations rapidly subsided, and real sensation did not return until months later. The preliminary sensation they explain as being due to irritation of the central end by the process of "freshening up," the sensation being referred to the distal terminations of the nerve. This is the same kind of sensation which leads a man whose leg has recently been amputated to feel pain in the toes of his amputated limb. One would have thought it hardly necessary to explain that this is not the kind of sensation which surgeons mean when they describe early return of sensation after the operation of secondary nerve suture, seeing that the facts have been so frequently and clearly described by many independent observers. Sensation due to irritation of the central end by the process of "freshening up" would clearly be independent of any stimuli applied to the skin in the area of the distribution of the nerve. Inserting a needle into the affected skin would not produce any sensation, unless the nerve from the skin up to the central end were capable of conducting the impulses.

The method by which return of sensation is tested is as follows: Previous to the operation of suture, the distribution of the divided nerve is carefully examined for sensation of touch, pain, and thermic difference. These observations are accurately marked on charts. After the operation the affected area is daily tested for sensation of pain as follows: The patient's head is covered so as to prevent him observing what is about to be done, and he is asked to say when he feels being touched. A needle is then inserted into the affected skin, and the rule is that a day or two after the operation the patient at once gives indication that he feels pain when this is done. As soon as the presence of sensation for pain is found, the localization of sensation and the thermic sensation are examined for and the results recorded on fresh charts. Also the tests are repeated daily and the results recorded until the sensation is perfectly developed.

As the result of examination by these methods of about 40 cases, I am able to state that sensation for pain does come back in a day or two after secondary suture undertaken at least a month or six weeks after division, and that the sensation very speedily becomes perfect, even in cases in which the nerves have been divided for long periods—for example, eighteen months. Return of sensation for touch is not taken as evidence of reunion of the nerve, seeing that although the skin is entirely devoid of sensation, an impact against it may be recognized by means of the neighbouring sound nerves (mediate sensation of Letiévant).

As regards the central segment, with the exception of the small ultimate portion in which immediate degeneration takes place as the result of trauma, there do not appear to be any very striking immediate changes as a result of section. At a later date, one striking change which does take place is the increase in thickness of the nerve trunk. I have found this to be due largely to an increase in the size of the lymphatic spaces of the endoneurium, without any appreciable increase in the volume of the nerve fibres or connective tissue. I have also found the same increase in thickness to take place in the peripheral segment.

Much has been published with regard to the ultimate changes in the central end of a nerve which is cut off permanently from its peripheral terminations; but whatever changes do occur there is no doubt that even at periods very remote from the date of severance, and where reunion has not or cannot occur, the changes do not at all compare with the changes which take place in the peripheral segment. Fleming [5] has published the results of his observations on this subject, and has described the changes which he found in the ulnar nerve from a stump ten years after amputation, and has concluded that the changes have reference principally to the finer nerve fibres. I have recently investigated a case in which the leg had been amputated at the knee-joint twenty-five years ago. It recently became necessary to amputate the thigh at the hip-joint, and I was, therefore, able to obtain a sciatic nerve, with its division into external and internal popliteal, which had for twenty-five years been cut off from its peripheral terminations. The most striking feature was the increase in thickness of the entire nerve and its two divisions. Transverse sections taken from the external and internal popliteal nerves shortly after their origin from the sciatic, and well above the terminal bulbs, showed the fasciculi arranged normally. (Figs. 2—5.) The sections were strained by Stroebe's and by Weigert's methods, and each fasciculus was found to contain adult medullated nerve fibres which presented all the characters of normal nerve fibres. Some of the fasciculi were almost exclusively composed of very large adult nerve fibres, but in the majority of the fasciculi there was present an abnormal number of small nerve fibres grouped in bundles of from two or three up to a dozen, and presenting the characters of the bundles of immature nerve fibres met with in a regenerating peripheral segment, only, perhaps, slightly more advanced than those usually found in a peripheral segment which has been long separated from its centres. These bundles of smaller nerve fibres were seen in longitudinal sections also, and there presented the characters of small nerve fibres with axis cylinder, medullary sheaths, nuclei, etc. Here and there a degenerated large fibre could be seen, but these were not of more frequent occurrence than in most normal nerves. The only evidence, therefore, of this nerve being abnormal was the appearance of a larger number of smaller nerve fibres arranged in bundles, and yet for twenty-five years this nerve had not fulfilled its normal function. It is possible that many of the afferent nerve fibres had formed a connexion with the scar, and were therefore conveying impulses to the centres, but the efferent fibres could not have subserved this function. The number of adult fibres in the section was so great that the view that new peripheral terminations had been found in the scar could not, I think, explain their occurrence. I therefore conclude that the changes which occur in a nerve cut off from its peripheral terminations, but still in connexion with the centres, do not involve the atrophy of the nerve. The changes which do occur simply cause the production of a larger number of smaller fibres than is usually found in a normal nerve. These changes would be quite explained on Mayer's [6] view that degeneration and regeneration are constantly taking place as a normal process in nerves. Thus the adult nerve fibres after a period of life degenerate and the neurilemma cells produce the young nerve fibres which are destined to take their place. Cut off from their peripheral terminations, but still retaining the connexion with the centres, the nerve fibres are still under the influence of the nerve impulses, although not in a position to conduct them to their terminations. The effect of the impulses on development of the fibres still remains, in part at least, and in consequence the nerve fibres may develop to the adult condition. On this view the adult nerve fibres visible in the section are not the original adult fibres, but newly-developed fibres which have attained the normal dimensions.

References.

[1] *Archives de Biol.*, Vol. vi, p. 127. [2] The *Journal of Physiology*, Vol. xxxi, May, 1904; *Proceedings of Physiological Society*. [3] The *Journal of Physiology*, Vol. xxix, 1903; *Proceedings of Physiological Society*. [4] *Phil. Trans., Roy. Soc. Lond.*, 1897, Series B, Vol. clxxxviii. [5] *Edin. Med. Journ.*, January, 1897. [6] *Zeitschrift für Heilkunde*, Bd. 2.

Professor Gotch said that Dr. Kennedy's observations as to the occurrence of short axon processes in a nerve graft so situated as to be independent of other nerve fibres were extremely interesting, and appeared to indicate that axon formation of the type shown to occur in the tail of the lizard, etc., could take place in mammals. Professor Gotch added that although this more primitive type of formation was thus shown to be capable of being induced in mammals, it still seemed extremely doubtful whether the formation by this primitive process of axons possessing the true nerve properties of excitability and conductivity occurred in higher animals.

He referred to the results of a second section as determined by Halliburton and Mott; this caused degeneration in all the fine nerve fibres found to be present in the peripheral part of the previously divided nerve, and as no such degeneration was found in the part above the second lesion, it was difficult to draw any other conclusion than that the fine fibres had somehow entered the peripheral fragment of the nerve by sprouts from the central end. He also doubted the validity of the so-called immediate recovery of sensation which appears to occur within a few days of secondary suture, and on which Dr. Kennedy had laid considerable stress. At Liverpool, Professor Gotch stated that he had the opportunity of examining several such cases, and was struck by the fact of the apparent hyperaesthesia to such tests as needle pricks, whilst a far more delicate test, that of stroking the hairs over the affected region, evoked no sensation at all. Since this latter method appeared to him far more satisfactory from the point of view of localization of the stimulus, the hyperaesthesia to skin pricks would have to be related to a spread of the stimulus to the zone outside the affected region. The remarkable investigations carried out by Dr. Head on himself showed plainly the difficulty of localizing the stimulus so that it should not affect this marginal hyperaesthetic zone of the anaesthetic region, and did not favour the opinion that the apparent immediate sensory recovery in secondary nerve suture could be taken to indicate the presence of a normal afferent path from the anaesthetic region up the peripheral part of the divided nerve. On the whole, therefore, while admitting that Dr. Kennedy's observations showed that in a nerve graft axons could, after a certain time, be detected, Professor Gotch could not at present accept the statement that axons having the full properties of conductivity and excitability were formed in the mammal except as sprouts from other axons which, lying in the central stump, were still in connexion with their nerve cells in the posterior root ganglia or in the central nervous system.

Professor WESLEY MILLS asked if Dr. Kennedy had used the method of Bielschowsky for demonstrating the presence of axons.

Dr. WARRINGTON also alluded to the value of this method, and asked for further information on the ultimate clinical results viewed from the standpoint of peripheral regeneration.

Professor W. H. THOMPSON said that, although he held the view that complete functional restoration could not occur in the absence of central connexion, he thought that Dr. Kennedy had conclusively shown that a formation of nerves almost perfect in structure had taken place in completely severed portions of nerve trunks. He also thought that the immediate return of sensation after suture might be explained by the fact that a very free overlapping occurs in the distribution of cutaneous nerves, so that no one portion of the skin is solely dependent for sensation on one nerve.

Dr. KENNEDY, in reply, thanked the Section for the reception given to his paper. Replying to the President's remarks, he said that the experiment of making a second section through a reunited nerve at a point below the seat of reunion would certainly be followed by degeneration of all the nerve fibres distal to the second point of section, while those in the segment between the two points of section would remain perfectly sound. This, however, in no sense could be taken as opposed to the peripheral theory of nerve degeneration as held by him, and described in the paper which he read before the Royal Society in 1897. The President evidently thought that he supposed the young nerve fibres to be outgrowths from cells situated peripherally, and that these outgrowths gradually grew upwards till they met the central end. In that case, then, the experiment described by the President would be of value, but that was not the mode of formation of young nerve fibres which he described. The nerve fibres are found in the peripheral segment from a chain of spindle cells, which are united end to end. The material for the formation of these fibres is already laid down along the whole length of the peripheral segment—that is, the neurilemma cells—and their proliferation and formation of spindle cells, and junction end to end, produces the new fibres, which are then joined to the central end by new fibres formed from spindle cells derived partly from the central end and partly from the peripheral end. On section a second time, as described by the President, degeneration in the distal section would, of course, be the result. Referring to the President's remarks as to the early return of sensation, Dr. Kennedy stated that the method of stroking the hairs produced sensation of touch only, but in order to obtain reliable proof of reunion of the nerve, sense of pain only should be taken, as conclusions based on sense of touch might be fallacious. Distinct return of sense of pain was absolute proof of restoration of the nerve. With reference to Professor Thompson's remarks on the overlapping of the nerve distribution leading to fallacious conclusions, Dr. Kennedy said that while it was well known that overlapping occurred, still that fact did not complicate the observations which were made. The data were obtained from cases of secondary suture, not from those of primary suture. When a nerve had been divided some time—for example, three months—the condition of sensation was certainly definite and not liable to change. The conclusions were drawn from the return of sensation in areas which previous to operation were ascertained to be absolutely devoid of sensation, in which condition, of course, they would not have been if supplied also by neighbouring nerves.

ON THE CELLS OF THE SPINAL GANGLIA,

AND ON THE RELATIONSHIP OF THEIR HISTOLOGICAL STRUCTURE TO THE AXONAL DISTRIBUTION.

BY

F. GRIFFITH, M.B., Alexander Fellow in Pathology, and W. B. WARRINGTON, M.D., M.R.C.P., Demonstrator in Pathology, University of Liverpool; Physician, David Lewis Northern Hospital.

(From the Thompson Yates Laboratories, School of Pathology.)

[ABSTRACT.]

SINCE Ranvier's discovery, the view has generally been accepted that the spinal ganglia contain cells each of which gives origin to an axis cylinder dividing into peripheral and distal branches. Additional knowledge has shown that the ganglion is a considerably more complex structure, and the new facts have come principally in three directions.

First, Ramon y Cajal, Lenhossek, and others have demonstrated besides the cell with the T-shaped axon, there are also present some few multipolar cells, and Dogiel has further described a cell whose axon is short and gives off numerous branches ending in a pericapsular and pericellular network around the ordinary type of cell. This cell therefore resembles the "relay" cell met with in other parts of the nervous system.

Secondly, the Nissl method has shown that the cells differ in a constant manner in the form and arrangement of the chromatic granular substance. In this connexion the work of Lugaro is particularly valuable. This observer has shown that in various kinds of animals five types of cells can be recognized, and that each of these differs physiologically in so far that there is a specific and constant kind of reaction to injury of the axon. Orr and Rows have demonstrated that Lugaro's types can be recognized in man.

Thirdly, a series of exact numerical observations have recently appeared from the Chicago Laboratory by Professor Donaldson, Hatai and Hardesty. Their researches show that the cells of the ganglion are much more numerous than the fibres in the dorsal roots, and that whilst the total number of cells is constant throughout life, the relative proportion of large and small cells varies greatly at different periods of age. They consider that some of the small cells are in a growing state, or in a more or less permanently immature condition, are not possessed of axons, but may later acquire them; hence a distinction may be made between cells in "commission" and cells in "reserve." It is thus seen that many questions await an answer, and new problems are introduced.

In our observations we have used the method of the axonal reaction, and inquire whether this is able to add to our knowledge regarding the meaning of the great difference in size and histological appearance of the cells of the spinal ganglia, and whether it can yield any further information on the problems suggested by Professor Donaldson and his colleagues.

We may indicate our results as follows:

1. *The Cells of the Spinal Ganglia which Give Origin to Afferent Fibres in the White Rami.*

It is known from physiological experiment that every white ramus contains afferent fibres which have their cells of origin in the spinal ganglia. The number of these afferent fibres is not large. Sherrington determined the number in the tenth thoracic white ramus of a small cat to be 150. Dr. Anderson tells us that in the twelfth thoracic ramus he has found 374.

Similarly, after division of the anterior and posterior roots of the first and second dorsal nerves, and allowing forty-eight days for the degeneration of any fibres having their cell bodies in the spinal cord, we found that the number of intact and therefore afferent fibres in the first white ramus was 136, in the second 192.

In size these fibres varied from 2 μ to 12 μ. Taking advantage of a dissection kindly explained to us by Dr. Anderson, we were able to expose the stellate ganglion of the thoracic sympathetic chain with its various connexions. In some instances we then cut the rami communicantes of the second dorsal nerve, in others removed the stellate ganglion. If any axonal reaction takes place we should be able to observe the type of cells affected.

Little is known of the distribution of the afferent fibres in the upper dorsal white rami; it is certain that none pass into the cervical sympathetic, and clinical evidence especially adduced by Head points to their distribution to the heart and lungs.

In both of these experiments we found undoubted evidence of change in the cells of the spinal ganglia. After division of the second dorsal ramus the alteration was, of course, limited to the corresponding ganglion, whereas after removal of the stellate ganglion some change was found as low as the fifth ganglion, indicating that afferent fibres arise from the first five spinal ganglia, run up the thoracic chain, and pass through the stellate ganglion and out by the annulus of Vieussens. Since the splanchnics receive afferent fibres from at least as high as the fourth dorsal, it would appear that the same spinal ganglion may supply both thoracic and abdominal viscera—a fact of interest in connexion with the overlapping of the sensory areas of referred pain in diseases of the stomach and lungs. In both experiments the affected cells chiefly belonged to the small, dark obscure type, having a diameter of 30 μ to 40 μ; some few attained a diameter of 50 μ to 55 μ, and were of the clear type.

2. *The Cells of Origin of Afferent Fibres to Muscle Structures.*

For this inquiry we divided the "hamstring" nerve, which is distributed purely to muscles, and is easy of access at its origin from the great sciatic. The sixth, seventh, and eighth post-thoracic ganglia were examined; obvious chromatolysis was found in some cells in each ganglion.

We found that the largest cells in the ganglion, namely, those over 80 μ, showed marked change, but also others of varying sizes down to 30 μ were unaltered. We know from Sherrington's observations that only fibres of 7 μ or more are distributed to the muscle spindles, and hence the cell of origin of these is the large clear cell; the remaining cells account for afferent fibres to muscle structures which have some other kind of end of organ.

3. *The Cells of Origin of Nerves of Common Sensation.*

We divided the internal saphenous nerve and examined the sixth lumbar ganglion. Many cells were found showing chromatolysis, varying in size from 28 μ to 71.5 μ; the majority belonging to the obscure type, but some representatives of the large clear cells were changed. We find the size of the fibres in this nerve to vary in diameter from 1 95 μ to 15 μ.

Conclusions from these Experiments.

Our observations are in agreement with Sherrington's suggestion that nerve fibres of large diameter arise from large cells, and indicate the variety of cell, according to Lugaro's classification, which gives origin to axons distributed to tissues of different function. The largest myelinated fibres of the sympathetic system and the fibres from muscle spindles arise from similar cells—the large clear type. Most of the fibres from the skin and the finer medullated sympathetic fibres arise also from similar cells—the dark, obscure type. In this connexion we recall the important observation of Anderson, who has shown that large myelinated splanchnic and large somatic fibres develop their myelin simultaneously, as also, but at a different time, do fine splanchnic and fine somatic fibres.

4. *On Cells which do not Undergo Alteration after the above Experiments.*

(*a*) The coarsely-granular cell appears to remain intact—at least, examples of it showing a perfectly normal structure can always be found. This confirms Lugaro's statement. Whatever its function, it appears to possess marked resistance to reaction after section of its axon. We find, however, that if the dorsal root is cut very close to the ganglion, as can be done in the region of the cauda equina, this cell can no longer be recognized. This, again, is in agreement with Lugaro.

(*b*) The smallest cells in the ganglia are of much interest.

In none of the above experiments have we found cells less than 30μ for showing chromatolysis. Some further observations are being made on this point. We suggest at present that this fact is in support of Donaldson's work on the numerical superiority of cells to fibres.

NOTE.—The paper was illustrated by drawings and microscopical preparations, and will, it is hoped, shortly be published in full elsewhere.

THE PROTECTIVE VALUE OF PROTEIDS AND THEIR DECOMPOSITION PRODUCTS IN TRYPSIN.

By H. M. VERNON, M.A., M.D.,
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[ABSTRACT.]

THE protective value of various substances upon trypsin was estimated by keeping pancreatic extract with 0.4 per cent. sodium carbonate and a known percentage of the substance for one hour at 38° C. and determining the amount of trypsin thereby destroyed. As a rule, the protective value depends almost entirely upon the power the substance possesses of neutralizing the alkali and so rendering it incapable of reacting upon the ferment.

Most proteids have practically the same protective value, about 45 per cent. of the trypsin of an extract being destroyed each hour in presence of 0.4 per cent. of proteid, 27 per cent. in presence of 1 per cent., 12 per cent. in presence of 2 per cent., and 7 per cent. in presence of 4 per cent. of proteid. When no proteid was present, 56 per cent. of the ferment was destroyed. Hydrated proteids have a slightly greater protective value than native proteids, and the decomposition products of proteid hydrolysis a slightly greater one still. The protective value of individual substances depends solely upon their power of neutralizing alkali—for example, aspartic acid and glycocol have a somewhat greater protective value than proteids; leucin and hippuric acid have about the same value; bile acids have considerably less; whilst urea, creatin, and the sugars have none at all. Also, if the acid radicles in the various substances be previously neutralized by the addition of alkali, they entirely lose their protective power over the ferment.

In certain cases there is a combination between ferment molecule and proteid. Thus, egg albumen possesses a most marked antitryptic action, the digestive power of the ferment being reduced to 29 per cent. and 2.9 per cent. of its normal value in the presence of 0 05 per cent. and 1 per cent. of the proteid respectively. Also a mixture of Witte's peptone with sodium carbonate sufficient for its complete neutralization can exert a considerable protective action upon the ferment.

SOME POINTS IN THE METABOLISM OF DIABETES:

WITH REFERENCE TO PRESENT-DAY TREATMENT.

BY

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and

E. I. SPRIGGS, M.D., Demonstrator of Physiology, Guy's Hospital.

[ABSTRACT.]

THIS paper dealt with some results obtained during the pro longed observation of a number of cases of severe diabetes upon various treatments. In these cases daily estimations of the nitrogen, ammonia, sugar, acidity, and sodium oxybutyrate were made for periods varying up to three months. The results show that the bad effects, such as nausea, vomiting, weakness, and loss of weight, with the odour of acetone in the breath, which follow a too rapid withdrawal of carbohydrate from the food of a severe diabetic, are associated with precisely the same metabolic changes and symptoms of acid poisoning as in coma itself, to which they are known to sometimes lead. The most prominent result in the urine is a rapid rise in the proportion of ammonia. The percentage of nitrogen excreted in this form rose in one case in ten days from 7 per cent. to 29 per cent. The alkalinity of the blood also falls, and the amount of carbon-dioxide in it is diminished.

The peccant material, therefore, does not seem to be derived from carbohydrate.

The spontaneous recovery which usually occurs is accompanied by a diuresis, but not by a fall in the proportion of ammonia. The administration of alkali produces the opposite effects to a diabetic diet as regards the ammonia, and causes a general improvement in the condition of the patient and a disappearance of the odour of acetone; although an increase in the quantity of urine follows, there is no marked rise in the excretion of sugar after the first day or two. The alkali was given in considerable doses, up to 75 grams of sodium bicarbonate per diem in milk in four equal portions. It would seem advisable to use this drug when a patient is being transferred from an ordinary diet to one which is poor in carbohydrate, and especially to a rigid diabetic diet if such should be desired. The administration of alkali must be watched, as disturbances of digestion, diarrhoea, and oedema may be produced; the object of the alkali is attained when the urine becomes neutral; this occurs in a few days in some cases, but in some not for weeks. Opium caused in the cases observed a general diminution in the amount of urine and of its constituents, but none in the proportion of ammonia. Codeine was not found to produce any effect upon the metabolism. The ferric chloride reaction was most marked on a diabetic diet, and on alkali it became less when coma was actually imminent. The odour of acetone is greatest on a diabetic diet, and is diminished by alkali. This sign and the weight of the patient were found better guides to the condition of severe cases than was the amount of sugar in the urine.

FURTHER INVESTIGATIONS ON ACCOMMODATION.

By KARL GROSSMANN, M.D., F.R.C.S.E.,
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SINCE I gave a report of my investigations on accommodation at the annual meeting of the British Medical Association in July, 1903, I have subjected the result to a careful re-examination, and can uphold my statements in every particular.

These investigations were at the time prompted by the examination of a case of total congenital aniridia duplex with good range of accommodation, and gave as their result the following changes during accommodation: (1) The diameter of the lens equator becomes smaller; (2) the antero-posterior (axial) diameter of the lens increases; (3) the anterior pole of the lens moves forward (towards the cornea), the posterior pole of the lens moves backwards; (4) by means of retinoscopy, a ring-shaped shadow zone becomes visible between the centre and the equator of the lens, as an expression of the occurring refractive changes—of the formation of a lenticonus accommodativus; (5) it was proved by means of the Sanson-Purkinje reflex images that the posterior surface of the lens also forms a lenticonus; (6) the lens *in toto* moves upwards and inwards.

Besides this was noticed, though only at the height of eserinization, the appearance of the ciliary processes, and their centripetal moving inwards (towards the axis of the eye); and the tremor of the lens, first observed by Hess, was also seen very distinctly.

The results of these different points, of which the first six have now for the first time been demonstrated as established facts and not as hypotheses, have not been refuted by any one, and have been universally accepted with the one exception of Dr. Tscherning. Now, after the traction theory has been deprived of one support after another, Dr. Tscherning tries to replace missing facts by a highly imaginative hypothesis. At the end of this paper I shall disprove also this latest hypothesis.

The observation No. 6, that the lens moved upwards and inwards during accommodation, seemed as unexpected as difficult to explain. The movement took place and could be observed during voluntary effort of accommodation, although not in such a high degree as after eserine. As I had already remarked at Swansea, this movement more than counterbalanced the slight sinking of the lens due to gravitation which took place at the height of eserinization. Although it is so much greater, it cannot be proved entoptically, because in a normal eye it is accompanied by a simultaneous and analogous movement of the contracting pupil, which is also dislocated upwards and inwards.

Meanwhile it has been observed again this year in another case of congenital absence of iris. Mr. Story, in Dublin, to whom the patient went, informed me by letter that for the present he had not been able to conduct a more minute examination, but could observe "an indefinite decrease of the equatorial diameter of the lens, with apparent dislocation upwards and inwards. The lenses stand normally in the young girl a little upwards and inwards, and this dislocation

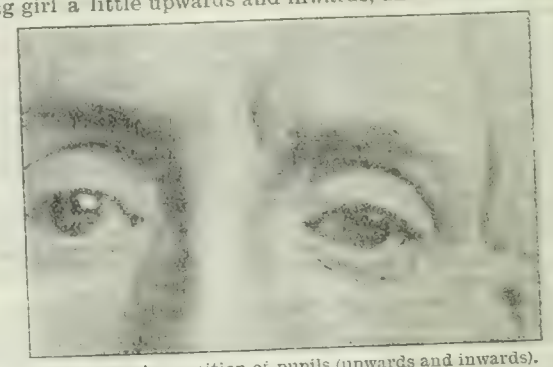


Fig. 1.—Showing position of pupils (upwards and inwards).

was more accentuated by eserine." We may without doubt look forward to a detailed account of the case from Mr. Story.

The observations made on my case of aniridia gave me an explanation for the following case, which is so interesting that I give it somewhat fully here:

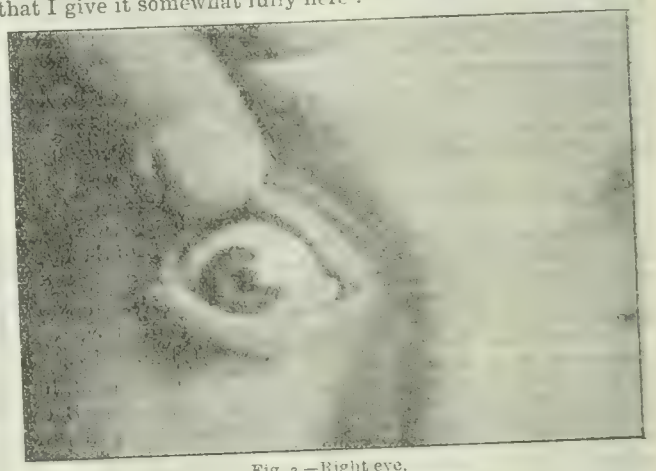


Fig. 2.—Right eye.

Mr. B., aged 37, came to me in October, 1903. Besides some other symptoms of a conjunctivitic nature, I noticed in both eyes a pronounced and symmetrical displacement of the pupils upwards and inwards. Their function was otherwise quite normal (Figs. 1, 2, and 3)

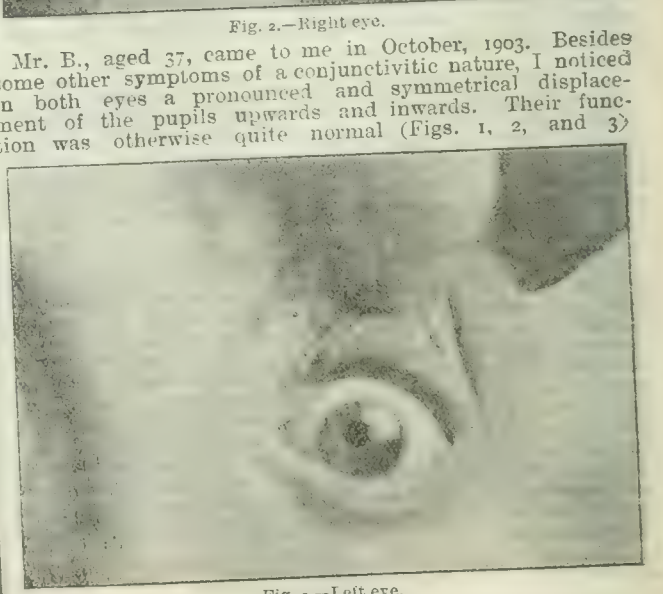


Fig. 3.—Left eye.

Both corneae are of normal size and shape, and are about 11 millimetres in diameter. In medium light the pupils have a diameter of 3 millimetres, and are situated as indicated by the accompanying diagrams (Figs. 4 and 5) where the sizes of both pupil and iris in the two principal directions are

given in millimetres. The centre of the pupil does not coincide with the centre of the iris, and the line passing both these centres I will call here the principal axis. In the right

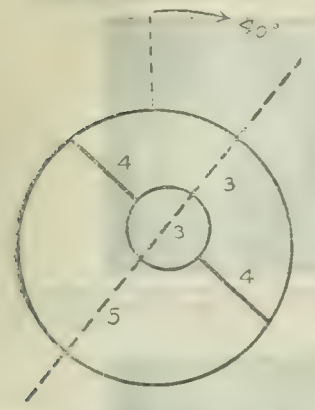


Fig. 4.—Diagram of iris and pupil of right eye.

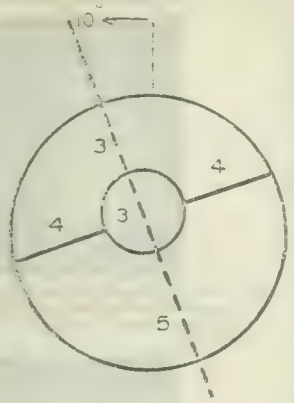


Fig. 5.—Diagram of iris and pupil of left eye.

eye the principal axis (marked ------- in Figs. 4 and 5) was inclined with its upper end 40 degrees towards the nose, in the left 10 degrees. In the direction of these axes both pupils show a slight tendency to be oval.

Vision for distance was: S R = $\frac{20}{20}$ with cyl. — 1.75, deviation from the vertical of the upper end of the cylinder axis 40 degrees (towards the nose); S L = $\frac{20}{20}$ with — 3.0 sph. ⊂ cyl. — 1.75, deviation from the vertical of the upper end of the cylinder axis 10 degrees (towards the nose).

When examined for short-range vision, it was found that very small print, lines, dots, etc., can be made out much better when the axis of the right glass is turned more horizontally by 17 degrees, and for the left eye by 10 degrees, as shown in Fig. 6



Fig. 6.
——— Axis of cylinder during rest (distance).
------- " " " accommodation (reading, etc.).

Glasses for near work were, therefore, prescribed in which the cylinder axes have the corresponding position differing from that in his distance glasses.

From the first there was hardly any chance of a mistake, the patient being very precise and clear in all his answers; and a series of re-examinations excluded the possibility of any error. The explanation for this unusual condition suggested itself to me from observation No. 6 on the irisless eye; it is due to a dislocation of the lens inwards and upwards during accommodation. I was in the fortunate position of being able to examine most carefully the corneae of the patient, with the help of the Oxford Helmholtz ophthalmometer, which Professor Gotch had kindly lent me for my investigations. No trace of corneal astigmatism was present; both corneae, however, had almost exactly in their respective centres an apex of a curvature a very little stronger than the rest. It followed that both lenses were suspended slightly excentrically, which accounted for the astigmatism. During any accommodative effort an additional movement of the lenses upwards and inwards took place. For the right eye the inward component of this movement was larger than for the left eye, quite in harmony with the excentricity of both pupils, as already existing for the state of rest; and thereby it was effected that, with the corneal apex remaining in its place, the axis of the astigmatism—namely, its upper end—moved towards the nose, and more so in the right than in the left eye.

This observation has since then been corroborated by two further cases of a similar nature, though not quite as pronounced as the one given here *in extenso*. In my opinion it furnishes the explanation of a somewhat rare and obscure condition, namely, a temporary alteration, improvement, or even disappearance, during accommodation of the astigmatism found to exist for distance, or vice versâ. Such an occurrence has hitherto often been explained by a thoroughly hypothetical partial contraction of the ciliary muscle; it now finds a simple explanation by a lateral displacement of the lens during accommodation. I have been fortunate in being able to observe this accommodative movement of the lens, and also to demonstrate it here in Oxford last year, but although I have no doubt that its existence is the rule, it will be possible only under exceptional conditions to prove its occurrence.

This change of axis of the astigmatism having once been ascertained, it was found much easier for the patient himself to recognize it whenever the pupils had been slightly dilated by a quantity of cocain small enough not to interfere with the accommodation. This suggested another question, namely, whether an improvement of vision was brought about by the narrowing of the pupil alone, or also by its concomitant dislocation upwards and inwards, assisted by its simultaneously increasing oval shape.

For the solution of this question, it appeared desirable to examine the mechanism of accommodation in an eye with a pupil of a pronounced oval shape. For various reasons, investigations on ruminants could not be undertaken, and I therefore decided to select an eye in which the oval type of pupil had developed to its extreme, namely, to a slit-shaped pupil, of which we have the most pronounced and familiar example in the eye of the cat.

I did not approach the subject with very sanguine hopes, remembering what an observer generally so reliable as Professor Hess, partly alone, partly in conjunction with Dr. Heine, had stated with regard to the range of accommodation in various animals, of which dog, cat, and rabbit are specially mentioned. In all of them, the range of accommodation was asserted to be extremely limited, so that only the eye of the monkey could be compared with the human eye in this respect. My investigations on the eye of the cat, however, have shown that Professor Hess's assertions are wrong.

It became necessary to examine the facts concerning the accommodation of the eye of the cat both anatomically and physiologically. The difficulty—hitherto unsurmountable—of determining anatomically the shape of the lens during accommodation, consists in the circumstance that up to now no unexceptionable method of fixing the shape of the lens was known. I tried osmic acid in different concentrations, pure and with chromic acid, Fleming's solutions, but found that in a series of experiments with the unopened eyeball action took place neither evenly nor deeply enough, while in the opened eyeball the additional grave objection existed of the disturbed intraocular pressure. Moreover, I have sometimes observed very marked distortions through swelling and other uneven action. In fact these methods proved quite unreliable.

Should it become possible to fix the lens in its shape and place, it would then be desirable to introduce some staining method in order to differentiate the lens clearly from its surroundings. An observation which I had made some time previously came to my help and led to a method of examination which combines both fixation and staining of the lens in a thoroughly satisfactory manner.

When examining bullocks' eyes for other purposes I had noticed that on freezing the eyes the lens had become chalky white, while the surrounding parts, aqueous and vitreous, were semi-transparent and of a dark colour. It was thus possible to fix the lens in its position without any disturbance and to make topographical transverse sections in which the lens stood out in a sharply-defined hard white outline from the dark grey of the surroundings. Different formulae were employed for freezing mixtures, but as it was advisable to freeze the eyes as rapidly as possible, I resorted, on the suggestion of Dr. Mann, of Oxford, to solidified CO_2. Liquid CO_2 is commercially obtainable; by vaporizing part of it a snow of solid CO_2 can be obtained which is used to cool alcohol.

Such low temperatures can thereby be produced that small objects, such as an eyeball, when dropped into the alcohol, freeze almost instantly.

The frozen eye is then taken out and sawed in the direction marked beforehand. The technique is not without trouble and requires some practice, but it yields exquisite pictures. On the other hand it is not easy, and requires a good deal of patience, to obtain good photographs of the frozen sections; the surfaces are rather apt to melt during the slow process of focussing such small objects with an ordinary camera. Nevertheless I have been able to take a series of photographs which, even in the less sharp specimens, give some idea of the surprising clearness of the originals.

For the purpose of examination the atropinized or eserinized eyes of freshly killed animals were frozen and opened with a fine saw through the vertical meridian, marked previously with a coloured thread. The following differences were found:

In the atropine lens the anterior surface is more strongly curved than the posterior surface, and is of a regular, spherical shape; the posterior surface, always curved in a smaller degree, showed in many cases a pronounced central flattening. (Figs. 7, 8, 9, 14.)

In the eserine lens the anterior surface is scarcely different from that of the atropine lens; the curvature appears the same in the centre and the surrounding zone, only towards the periphery there is often a stronger curvature present. (Figs. 11, 12, 13.) The posterior lens surface, however, showed a change in

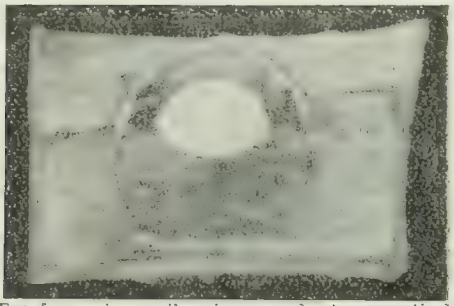


Fig. 7.—Eye frozen in mucilage in a wooden box; vertical section; cornea upwards; atropine lens; anterior (upper) surface much more strongly curved than posterior surface, the latter flattened in centre.

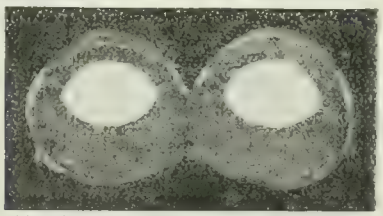


Fig. 8.—Atropine lens; cornea upwards; vertical section.

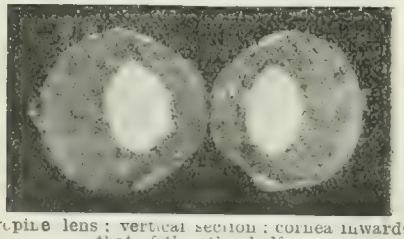


Fig. 9.—Atropine lens; vertical section; cornea inwards, touching that of the other half.

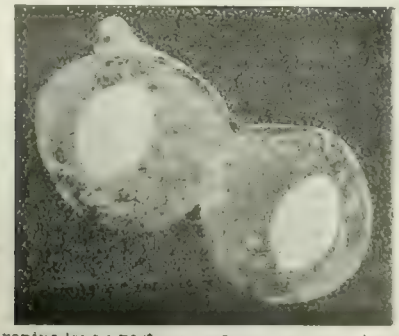


Fig. 10.—Atropine lens; vertical section; cornea outwards. The left (upper) half a little distorted in the photograph by being nearest and slanting towards the camera.

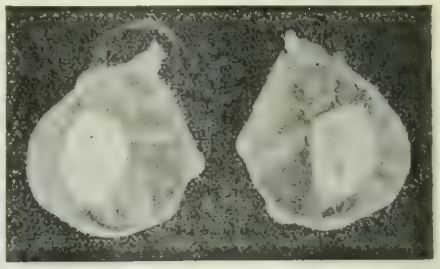


Fig. 11.—Eserine lens; vertical section; corneae outwards; anterior lens surface not noticeably different from atropine lens; posterior surface shows marked lenticonus with excentric apex turned upwards.

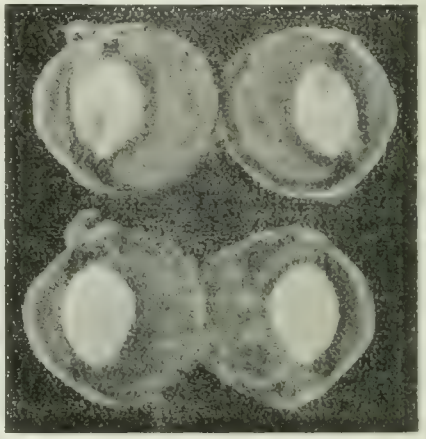


Fig. 12.—Above section through atropine lens and below section through eserine lens of same cat; corneae outwards; vertical sections; the left upper half damaged; right half clear; lenticonus and excentricity in lower lenses well marked.

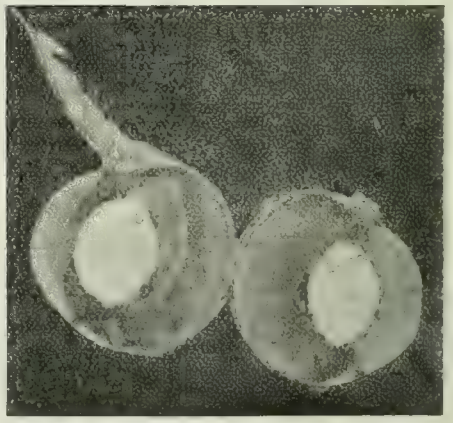


Fig. 13.—Eserine lens; horizontal section; corneae outwards; lenticonus in that particular meridian barely recognizable.

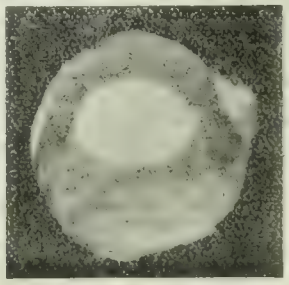


Fig. 14.—Atropine lens; vertical section; cornea upwards; not sharply focussed, but flattening of posterior lens surface well recognizable.

form as marked as it was unexpected; a pronounced lenticonus has appeared, the apex of which is situated above the axis of lens centre, at a height which corresponds approximately to half the distance between the centre of the lens and its upper margin (Figs. 11, 12). The equatorial diameter of the eserine lens is scarcely any smaller than that of the atropine lens.

The figures (Figs. 8, 9, 10, 11, 12, 14) represent the "vertical" meridians, in which we find the extremes of the differences between the eserine and atropine lens. The meridians are not absolutely vertical, but correspond to the direction of the slit of the contracted pupils; their upper ends are slightly divergent (inclined towards the temple). Intermediate figures are found in the intermediate meridians.

It is clear that we have here to deal with a phenomenon which, though new, is indisputable, and on it—as upon a solid foundation—we can build further conclusions. The principal one of these is that there must exist in the eye of the cat not only a very considerable amount of accommodation, but also that this accommodation must be accompanied by a high degree of astigmatism. In other words, the effect of the accommodation will consist in an increase of the refraction, principally in the direction of the vertical meridian.

And if we consider how such an astigmatism could be corrected we find that two ways would be open to us to effect this—namely, either by a concave cylinder lens placed with its axis in the vertical meridian, or else by stenopoeic slit put in the same direction. In the eye of the cat we find the second alternative employed: the pupil contracts to a slit, the direction of which corresponds with the principal axis of the astigmatism, and corrects it more or less completely. If this explanation of the above-stated anatomical differences between the atropine lens and the eserine lens is correct, it should be possible to demonstrate physiologically that during accommodation a fair amount of astigmatism occurs with its principal axis in the direction of the slit of the pupil. From the very beginning I had strong misgivings with regard to the already mentioned assertion of Hess—expressed as recently as February, 1904, in the *Clinica Oculistica*—that the amount of accommodation in the eye of the cat is very small. Apart from the seemingly excellent vision of the cat for near objects, the large extent of the field of binocular vision spoke in favour of a highly developed vision for near objects. In order to clear up this point, iridectomy was performed on the cat's eye, which is a more complicated operation than in man, as, in consequence of the larger size of the blood vessels of the iris, the anterior chamber at once fills with blood. It takes months and months before its absorption admits of a reliable examination of the refraction. This latter requires some practice before one becomes accustomed to determine the refraction for a definite part of the fundus. It will be found that the portion which approximates in position to our yellow spot has, in the atropinized eye, a fairly high degree of hypermetropia. After eserinization, however, I found in the iridectomized eye myopia, and for the vertical meridian a well-marked myopic astigmatism. The amount of accommodation measured was, on an average, equal to 9 dioptrics, with the addition of 5 dioptrics more for the vertical meridian. Allowing for the original hypermetropia, this would correspond to a near point of about 5 in., and would, with the help of the slit-shaped pupil, admit of a sharp focussing for the distance of the fore-paws—analogous to our short-range working distance—and would be called into use when a cat was playing with a mouse, etc.

After these results it appeared desirable to see whether the accommodative dislocation of the lens observed in the human eye was also accompanied by a noticeable, if small, excentricity of the posterior lenticonus. My patient with aniridia and the Helmholtz ophthalmometer were happily accessible. The reflex images were produced by a naked arc light doubled by prisms. The posterior lens pole, to all appearance situated exactly in the centre of the posterior lens surface, was unsuited for the measurement of the reflex images, owing to the small white opacity (polar cataract), but careful measurements carried out in the circumpolar zone showed that after eserine actually a slightly stronger curve existed upwards and inwards from the posterior pole than downwards and outwards. The difference in the size of the reflex images was, however, very small, and would probably not have been detected with a less accurate instrument.

The establishment of these facts is of great importance, as they indicate a decided analogy between the mechanism of accommodation in man and in certain other animals, not necessarily anthropoids. It will therefore be admissible, though of course with due reserve, to apply certain conclusions obtained from investigations on animals to the human eye.

The question then arose how to explain the excentricity of the lenticonus, and why when I observed the lenticonus first in the aniridic human eye I was wrong in assuming it to be correctly centred, and its apex coinciding with the posterior pole of the lens. I think the answer will be found most easily by studying the surrounding anatomical conditions prevailing in eyes with oval or slit-shaped pupils. We find that the ciliary body forms a ring which, in the eye of the cat, is narrower at the upper than at the lower end of the vertical meridian. Between the two extremes there are gradual transitions which are symmetrical in the nasal and temporal half. The size of the ciliary muscle, and therewith the possible amount of its contraction, is greater at the lower than at the upper end of the vertical meridian, while the temporal and nasal halves are symmetrically arranged, and hold each other in equilibrium. It results from this anatomical condition that by the contraction of the ciliary muscle during accommodation, a greater amount of relaxation of the zonula occurs in the lower than in the upper part, and therefore the conditions are given for an accommodative deformation of the lens with a pronounced asymmetry in the vertical meridian.

In animals with a more horizontal pupil we find an analogous asymmetry of the ciliary body in the direction of the horizontal diameter. In man the pupil and likewise the ciliary body is approximately circular, but still we find that the ciliary body is broader outwards and downwards than inwards and upwards, which equally holds good for the iris. The amount of asymmetry is here very small, and not generally noticed except in such extreme cases as described above.

Evidently a certain correlation exists between the size of the ciliary muscle and the sphincter of the iris. While the iris in the atropinized eye of the cat forms a narrow ring of equal width all round, the narrow slit of the eserinized pupil leaves the iris at its upper end much narrower than at its lower end. An analogous condition, though more horizontally situated, occurs in the eye of the ruminants.

These observations help to demonstrate the preponderating importance of the one function of the iris, namely, that of acting as a correcting diaphragm for the purpose of eliminating as much as possible the effects of aberration. We notice an inter-dependence between the muscular apparatus of accommodation and that of its diaphragm. The ciliary body not being equal all round, the lens moves in one direction during accommodation, while the diaphragm contracts in such a manner as not only to shift the position of the narrowed pupil with the optical axis, but also to adapt its very shape to the optical requirements.

That this function of correcting aberration is more important than that of regulating the amount of infalling light, is generally shown by physiological and pathological observations. Physiologically the pupil of youth is wide. The lens is bounded by approximately spherical surfaces. These surfaces become more parabolic or hyperbolic during accommodation, and the pupil narrows accordingly with it. In age the lens fibres become sclerosed, the cortical layers lose their jelly-like softness. The elasticity of the capsule gradually loses its power of altering the shape of the lens, and the latter becomes more permanently hyperboloid, with a marked anterior and posterior lenticonus, such as we find transitorily in the youthful lens during accommodation. Likewise, we find that the pupil of age contracts gradually more and more until we often see in old age the pinhole pupil, which is, however, easily dilatable with mydriatics.

With regard to the regulation of light, on the other hand, the amount of light that reaches the retina is, *ceteris paribus*, owing to the decreasing transparency of the optic media smaller in age than in youth. Nevertheless, in age the pupil is narrower, producing sharper images.

It will be interesting to see whether the eye of the cat shows an analogous slit-shaped contraction with advancing age. Observations in this direction do not exist to my knowledge, and it will, of course, take some years before I can report any observations on this point.

Pathologically, too, we see that the light-regulating function of the iris may long have been destroyed—for example, in locomotor ataxy—while the synergetic contraction of the pupil still accompanies accommodation.

In conclusion, I wish to touch on some points in the reply to my previous paper which Dr. Tscherning has just pub-

lished.[3] The publications of Dr. Besio,[4] made under the auspices of Dr. Tscherning, were, as he rightly assumes, unknown to me. I should otherwise have commented at the time on some of the conclusions set forth there, to which I can only refer very briefly here, namely:

The flattening of the periphery of the lens during accommodation is in itself of no importance, it is simply an accessory to the increased curvature of the centre, which is the essential point for the accommodation. The dead and excised lens does not admit of any unmodified conclusions as to the behaviour of the lens in the living eye. Both Crzellitzer's and Tscherning's experiments have been disproved since by other experiments of Hess.[5]

The quantities calculated (not measured) by Dr. Besio for the increase of the diameter of the lens are far too small (fractions of a millimetre) to admit of any conclusions as to the alteration of the equatorial diameter of the lens. My own direct measurements gave an apparent difference of 1½ mm., but I already mentioned at the time that this amount is too small, because it represents only the distance of the optical images of the anterior and posterior lens pole. After reduction the real distance is found to be nearer 3 mm. than 2 mm. The transverse section of the lens focussed for distance as represented by Tscherning is wrong, even if the curves of the anterior and posterior surfaces are sketched only diagrammatically. The lens is not rounded at the equator but sharp-edged. If Dr. Tscherning says: "It is asserted that the lens trembles owing to relaxation of the zonula as assumed by Helmholtz, but no one has, to my knowledge, seen that the reflex image of the anterior lens surface ever trembles." I here state again and distinctly that in my case of aniridia the lens moved *in toto:* the tremor was observed in the sharp equatorial margin, in the posterior and in the anterior polar cataract. In order to obviate the possible objection that after all the tremor may be confined to the intracapsular mass of the lens, I have to record an observation made since in a case of iridectomy performed some time ago for a corneal opacity. Within the area of the artificial iris coloboma a small deposit of uveal pigment was visible on the anterior surface of the anterior lens capsule. During eserinization this pigment mark trembled with the lens. Thereby proof is given that also Tscherning's latest hypothesis—according to which during accommodation the anterior lens capsule becomes taut and fixed through increased tension of the zonula, while simultaneously the posterior capsule becomes relaxed—is wrong and contradicts the actual facts.

With regard to the possibility of a greater amount of relaxation of the posterior as compared with the anterior lens capsule, time does not allow me to enter into particulars here; I am therefore glad to be able to refer in this respect to a paper just published in the *Journal of Physiology*, vol. xxxi, p. 1, by Professor J. P. Anderson Stuart, who comes to conclusions diametrically opposed to those of Tscherning.

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[1] BRITISH MEDICAL JOURNAL, September 26th, 1903; and *Ophthalmic Review*, January, 1904. [2] *V. Graefe's Arch.*, xxiii, 3, p. 127. [3] *La Clinica Oculistica*, November, 1903: and *Ophthalmic Review*, April, 1904. [4] *Journ. de Physiologie et de Pathologie Générale*, June and September, 1901. [5] *La Clinica Oculistica*, February, 1904.

THE SO-CALLED SANSON-PURKINJE REFLEX IMAGE OF THE ANTERIOR LENS SURFACE.

By KARL GROSSMANN, M.D., F.R.C.S.E.,
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IN my paper on the Mechanism of Accommodation[1] I mentioned that the reflexion from the anterior lens surface could not be used for the purpose of demonstrating any changes of curvature that might take place in the anterior lens surface during accommodation. I have been informed from various sides that this has been understood to mean that in my case of aniridia the anterior surface did not change its curvature at all, or not sufficiently to be observed, during accommodation. This is altogether a misunderstanding; no reflexion from the anterior capsule could be obtained at all in its centre, neither during rest nor during accommodation, while in the circumpolar and peripheral parts they could be easily produced. If we wish to observe the reflected image of an ordinary flame—for example, of an Argand gas-burner—on the anterior lens surface, we shall find that the angle of 30 degrees selected by Helmholtz for his ophthalmometric observations is much less suitable for easy recognition than an angle of double the size—namely, 60 degrees. The incident ray should thus form with the reflected ray (visual line of the observer) an angle of 120 degrees, in order to give the best conditions for observation. With this angle it is easy to let the reflex image of the flame travel over every part of the pupillary area. It very soon becomes clear that in the overwhelming majority of cases the anterior lens surface in the living human eye is not spherical, but more curved in the centre than towards the periphery. This also holds good not only for distant vision (for rest), but is even more easily observed after atropinization than with a normal, and therefore narrower, pupil. I have found this increased central curvature of the anterior lens surface at all ages, in children as well as in old people, though generally more marked in the latter.

As soon as one has gained some experience in the observation of these reflex images, and especially after having learnt to interpret correctly the shadows thrown by the lashes, particularly those of the upper lid, it is a surprise to find the reflex image of the flame interrupted in some parts by black lines which in the beginning, if observed at all, were also put down as the shadows of the lashes. Following them up more closely, one finds that they form the figure of a six or seven rayed star (Fig. 1), which corresponds to the architecture of



Fig. 1.

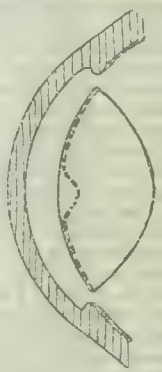


Fig. 2.—The dotted line indicates the reflex producing surface (very diagrammatic).

the lens. From this it follows at once that the image on the anterior lens surface cannot be produced by the anterior surface of the anterior lens capsule, but by a deeper lying surface.

The epithelium of the anterior lens capsule does not take part in the radiate arrangement of the mass of the lens fibres, but coats the inner surface of the anterior capsule in a continuous layer without any break; the visibility of the radiate figure suffices, therefore, to show that the reflecting surface is situated underneath the capsular epithelium. Sometimes it is possible to see that the reflex image is produced not by a mathematical surface (a boundary surface between two media of different refractive index) but by a layer of a certain thickness. This has become evident in a few cases where the reflex images of the flame showed a striking iridescence, which latter can be produced only by an actual layer of a certain depth, not by a mere mathematical surface. In examining this reflex image in lenses with commencing cataract, we often find interesting occurrences, which will be described elsewhere. Here I will recur only to the point mentioned at the beginning of this note. When I examined the anterior lens surface of the aniridia case with this reflex image, I found that no reflex image at all was visible at the anterior pole. With focal illumination it was possible to see that the anterior surface was of quite normal shape. When, however, the reflex image was brought from the periphery towards the anterior pole, it turned inwards at the margin of the small cataractous opacity towards the centre of the lens, bending off gently behind the opacity and soon vanishing there. (Fig. 2.)

We know that the anterior polar cataract belongs histogenetically to the capsular epithelium. The difference in the refractive index of aqueous, anterior capsule and epithelium is evidently very small compared with that of epithelium and lens fibres, or of the thin layer of substance sometimes observed between both. Thus it came that, notwithstanding the normal curvature and smoothness of the anterior capsule within the area of the polar cataract, no reflex was seen at all, and could therefore not be used for the purpose of measuring the curvature of that region.

The phenomena described here are visible to the naked eye and do not require the help of a corneal microscope. It must

however, be pointed out that their easy observability without the help of a magnifying glass varies very much within wide individual limits.

Reference.

1 British Medical Journal, September 26th, 1903.

SOME CHANGES OBSERVABLE IN LIVER CELLS DURING ACTIVITY.

By E. Wace Carlier, M.D.,
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The present research was undertaken in the hope that the microscope might be able to shed some further light on the production of ferments by the liver cells, which, as has been pointed out by Pawlow, play such an important rôle in digestion.

The animals—full-grown male white rats, some fifty in number—were placed in separate cages, and liberally fed for some time on a mixed diet, the quantity of which was accurately adjusted in each case. Subsequently the animals were divided into four batches. Batch A was fed on the same mixed diet as previously; Batch B received a purely proteid diet of lean beef; Batch C received only starch paste and sugar, which constituted a purely carbohydrate *régime*, and Batch D was fed exclusively on suet. In this way, after a few days, each batch had become accustomed to a special form of food. Each batch was now dealt with separately, food being withheld for twenty-four hours; one animal was killed as a control, and the others fed with a full meal, and killed off hour by hour till the series was complete. The tissues were prepared, and sections made and stained by well-known methods.

Appearances Presented by the Liver Cells of the Fasting Rats.

Owing to the small amount of Glisson's capsule present in this animal it is often very difficult to ascertain the exact dimensions of the liver lobule, especially in the fasting condition, and the cells themselves offer certain peculiarities. The cell envelope is distinct, and is completely filled by the protoplasm, there being practically no vacuolation, except in a few cases where a space was observed in the immediate neighbourhood of the nucleus. Situated in the protoplasm are clumps of an apparently structureless material, more abundant in some cells than in others, but present to some extent in all. This substance stains deeply with eosin and iron alum haematoxylin; it is not glycogen, because it fails to give any of the characteristic reactions of that substance, and because it is most abundant after a long fast, which would not be the case were it glycogen. So far I have been unable to ascertain the nature of this substance, which, I take it, is not due to the action of any reagent, as it is present in greater or less abundance in all cases and at all times.

Many cells also contain numerous fine, highly-refractile granules of a greenish-grey colour, mostly situated between the nucleus and the bile capillary, but in some cases scattered throughout the entire protoplasm. They vary considerably in size but are always minute.

The nucleus, of which there may be more than one, is rounded or somewhat oval in shape, plump, rather poor in chromatin, which lies partly under the capsule in irregular karyosomes and partly upon the nucleoli in the form of crescentic masses. The nucleoli, of which there may be several, are of moderate size, and occupy various positions in the nucleus. A few may be seen under the capsule and one here and there in process of migration through the nuclear wall.

Cells during Activity.

By the end of the first hour all the refractile granules have disappeared, and do not recur, even by the end of the twelfth hour. They would seem, therefore, to accumulate only after prolonged fasting.

The amount of structureless material varies somewhat, but very little was ascertainable concerning it. The most visible change in the cytoplasm is the rapid formation of vacuoles, which occurs in less than an hour after feeding, and is not recovered from for an hour or two subsequently. The cause of this vacuolation is not apparent, and seems never to occur in the small flat cells immediately bordering the portal spaces, the spongioplasm of these cells is always very dense, and exhibits deep staining under some conditions. About the sixth hour, or in some cases earlier (starch), the cells swell and exhibit vacuoles containing abundance of glycogen. The most marked changes, however, are present in the nuclei, which exhibit all the phenomena of chromatin loss and repair described by me in the oxyntic cells of the newt's stomach, showing that some ferment is being produced by them, though not in the form of granules, as in the stomach, but in a form which renders its detection exceedingly difficult. Practically, therefore, we have only the visible changes in the nuclei to go upon, yet I have no doubt at all as to the direction their activity is taking, and that they produce a ferment, probably of a digestive nature, that passes into the bile, to be stored in the gall-bladder until required. Between the third and fourth hours the nuclei are quite restored and resting, but this does not last long; they soon again enter into activity and pass through the ferment-production stages as before—that is, the liver cells show two marked periods of activity, one commencing directly after food is ingested and the other beginning some four or five hours later. This second activity is of longer duration than the first, and the ferment secreted therefore probably more abundant.

In all the four forms of diet tried the same phenomena present themselves; therefore the ferment so produced does not appear specially adapted to deal with one class of foods to the exclusion of all others. Yet it varies markedly in amount and in the time during which it is secreted, to judge by the nuclear changes observed. It is least abundant with a carbohydrate, and more so with a fat and flesh diet. Further, it seems admissible that the first secretion is psychic in character, and that the liver, like the salivary glands, stomach, and to some extent, no doubt, the pancreas also, is excited by the sight and smell of food. Experiments with the object of establishing this point are at present in progress.

SOME POINTS IN THE PHYSIOLOGY OF THE MAMMALIAN HEART.

By J. A. MacWilliam, M.D.,
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The spontaneous rhythmic contraction originates not only in the terminal portions of the vena cava and pulmonary veins but also in the coronary veins and in the coronary sinus. Pulsation has been seen in the anterior coronary vein in favourable circumstances as far down as the middle of the left ventricle. The close relation of the coronary sinus to the ventricles often makes it difficult to determine whether contraction in some special cases originates in the sinus or in the ventricle itself—a true ventricular automatism.

The vagus nerve can depress the force of the ventricular contraction, though this has been denied by some observers. Strong stimulation of the vagus is necessary for this purpose. The relation of the vagus to the ventricles is in some respects different from its relation to the auricles; in the ventricles direct excitability is not depressed. Weakening of the ventricular force is apparently not brought about in precisely the same way as in the auricles. Most methods of recording exact ventricular force are open to criticism.

When the heart (with circulation intact) is disconnected from the central nervous system by section of the vagi and augmentor nerves, the rate of beat shows a decided insensitiveness to changes in blood pressure within pretty wide limits—for example, 40 mm. to 160 mm. Hg aortic pressure. Marked changes in venous pressure are similarly ineffective within certain limits in changing the rate. An excessively low aortic pressure—for example, 30 mm., etc.—does lead to slowing, followed by acceleration when the pressure is raised. Changes in blood pressure are well known to affect the force of the heart-beat very readily. With intact cardiac nerves changes in blood pressure affect the heart very differently, a fall of blood pressure from the normal (as in haemorrhage) causing acceleration by diminishing vagus control; if the fall becomes very excessive slowing follows, as in some cases of collapse, etc. This is due to the influence of an excessively low pressure on the organ itself, as seen after section of the cardiac nerves.

Changes in the rate of the mammalian heart in ordinary life seem to be due mainly to variations in the activity of the cardio-inhibitory centre in the medulla, diminution of this normal control causing acceleration of the heart, and vice versa. There is no experimental evidence to show quickening of the heart by the cardiac augmentor nerves, apart from direct experimental stimulation of these nerves. Reflex excitation of augmentor nerves through afferent nerves has always failed, and the production of acute cerebral anaemia and of asphyxial conditions have only elicited very doubtful signs of the possibility of the activity of the cardiac augmentor nerves being called forth in such ways. In many such experiments, after the vagi had been cut the heart was kept beating

at a moderate rate by continued slight stimulation of the peripheral end of a cut vagus so as to give any possible accelerating influence of the augmentor nerves a better chance of showing. After section of the vagi, and while the heart is beating very rapidly—good blood pressure, normal temperature, etc.—even direct stimulation of the augmentor nerves has little or no effect. It is only when such a heart, after section of vagi, is depressed in rate by some cause that direct stimulation of the augmentors can cause marked acceleration. Acceleration of the heart in ordinary circumstances—intact nerves, etc.—is usually due to diminution of vagus control; in the augmentor nerves there is a reserve power of acceleration which is capable of acting on a heart which, though freed from vagus control, is not beating rapidly enough, in consequence of some depressing influence acting upon it—for example, excessively low blood pressure, etc. Under what conditions such supplementary accelerating action of the augmentor nerves may come into play in the intact state there is no adequate evidence at present available to show.

As regards the peripheral efficiency of the vagus nerve in the heart, very few agents have been found to affect this in an important degree—apart from well-known drugs (atropin, etc.). Changes in arterial and venous pressure and asphyxial conditions have comparatively little effect. But the readmission of air into the lungs at a certain stage of asphyxia has a very powerful effect in making the heart beat very rapidly (as high as 340 per minute in the cat) in spite of vagus influence tending to keep it at a moderate rate.

THE ACTION OF MUSCARIN AND PILOCARPIN ON THE HEART.

By H. MACLEAN, M.D.,
Aberdeen.

[ABSTRACT.]

SEASONAL changes in the hearts of the frog, newt, and eel were first investigated. The survival time of the excised heart was found to be curtailed and the power of the inhibitory mechanism greatly diminished. It was found that the effects of the drugs varied just as the efficiency of electrical stimulation of the inhibitory mechanism varied. There is an exact correspondence between the effects of electrical excitation of the inhibitory mechanism and the drugs as regards the changes in the different portions of the heart—in the frog depression of the sinus, auricles, and ventricles; in the newt differential effects on the ostial and interjugular parts of the sinus, profound depression in auricles and ventricle, which become quite inexcitable to direct stimulation and persistent excitability in the bulbus; in the eel differences in inhibitory effect in the two parts of the sinus, profound depression of the auricle, and complete absence of depression in the ventricle. The apical part of the newt's ventricle (which contains no ganglion cells) can be paralysed by local application of the drugs, the standstill being easily removed by atropin. These facts show that muscarin and pilocarpin in small doses act not on muscle directly but upon the inhibitory mechanism, and upon the terminal parts of that mechanism, not upon ganglion cells.

THE ELASTIC TISSUE OF THE EYE IN BIRDS.

BY E WACE CARLIER, M.D.,
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[ABSTRACT.]

BIRDS whose eyes are strongly accommodated to pick up small objects from the ground, or small insects in the bark of trees, are provided with much more elastic tissue in the eyeball than those whose eyes are used chiefly for vision of distant objects. Furthermore, all birds have more elastic tissue in their eyes than other vertebrates have; this is probably due to their powerful striped ciliary muscles, which would no doubt act more smoothly on elastic than on rigid white fibres. The muscle also, being of the quickly contractive variety, would tend to produce great shaking of the lens if its jerk were communicated to a non-yielding apparatus instead of to an elastic one. Contrary to expectation, the other members of the Sauropsida, namely, lizards, etc., do not, in the cases which have been examined, possess any elastic tissue.

With regard to the controversy concerning elastic fibres in the cornea, as described by Tartuferi and others, the writer is confident that neither Descemet's membrane nor any elastic fibres are stainable by Weigert's method in the body of the cornea, though such elements can be stained by other methods, and he inclines, therefore, to the views expressed by Sattler and Stützer that the tissues stained by Tartuferi are not elastic in the same sense as those stained by Weigert's method, but that being stainable when Weigert's stain is reinforced by orcein, they are of a nature chemically closely allied to, though not identical with, elastin. Indeed, in mammals the tissue stained by Weigert's stain starts from the junction immediately external to Descement's membrane and not from it, and the threads lie on the surface of the network of fibres round the spaces of Fontana and do not form their cores as in birds.

SECTION OF PATHOLOGY.

JAMES RITCHIE, M.A., M.D., B.Sc., President.

DISCUSSION ON THE CHEMICAL PATHOLOGY OF GOUT.

I.—Professor CARL VON NOORDEN,
Frankfort.

[ABSTRACT.]

IT is absolutely necessary to separate the well-ascertained facts and the hypothetical views; this is the only way to avoid errors such as have been committed in former times. It was an error that the general metabolism of the gouty is sluggish; the oxidizing power of the tissues does not differ from that in healthy people, but there are remarkable peculiarities in the metabolism of albumen. Sometimes in the course of gout the excretion of nitrogen rises, sometimes it sinks. The increase of nitrogen and phosphoric acid elimination is not confined to the attacks, but occurs also in the course of chronic atypical gout and between the attacks, and must be considered as a sign of toxogenous disintegration. The nature of the poisons, which are undoubtedly of endogenous origin, is unknown. Variations in nitrogenous elimination similar to those in the gouty are met with in other diseases—for example, diabetes and Graves's disease.

The influence of gout on the stomach is not a regular one; sometimes the hydrochloric acid is deficient, but this is only the case in severe attacks, and has the same significance as it has in other acute febrile conditions. Very striking are the observations on absorption of nitrogenous substances in the intestine. We find very often too much nitrogen in the faeces, probably the result of increased secretion of nitrogen into the intestinal canal; the nature of these nitrogenous substances demands study. Putrefaction in the intestinal canal is often increased during the attacks.

Uric acid originates from the nuclein of the body (endogenous) and from the nuclein of the food (exogenous). We may take it that only 50 per cent. of the uric acid produced in the body appears; the remainder is disintegrated. Other purin substances which accompany uric acid (xanthin bases) have no special significance. The amount of endogenous uric acid in gouty people does not differ from that in the healthy, but successful attempts have been made to discover some characteristics of the exogenous.

1. On a constant diet gouty people are liable to sudden and considerable fluctuations of uric acid excretion; this is the case both in chronic atypical, and in the intervals of typical gout, and is of importance as showing the line along which treatment is to proceed.

2. Similar increase of uric acid excretion is observed in acute attacks but much more pronounced.

3. The rise of uric acid after ingestion of purin substances appears in gouty patients to be much more delayed than in the healthy.

These observations indicate that there is sometimes a real retention of uric acid in the body which is followed by an increased excretion of uric acid in the urine.

Of the uric acid in the blood it is now established that in normal blood only traces are to be found; by overfeeding with nuclein bodies uric acid increases in the blood; the percentage is often higher than even that found in gout and yet there are no gouty deposits; in nephritis, likewise, uric acid is to be found, indicating decreased secretory power of the kidneys. In gout 50 to 70 milligrammes of uric acid were found in the blood, a concentration far from sufficient to explain its deposition. The uric acid contents of the blood do not vary in a typical manner with the phases of gout, and we do not know what are the compounds that circulate.

Of gouty deposits it is known that they consist of sodium biurate; that uric acid is a poison determining inflammation in the surrounding tissues, but only when the solution reaches a certain concentration; the solid needles do not irritate the tissues; alterations of the alkalinity of the blood and tissues cannot explain the deposition and the solution of the crystals; this solution of solid needles is a phagocytic process; it is highly probable that the crystals are deposited before the acute attack and that the acute gouty inflammation depends on sudden solution of the needles.

By means of the hitherto established facts alone we cannot explain entirely the clinical picture of gout: we want an hypothesis.

Some authors found recently that there are certain organic combinations of uric acid which are extremely soluble; the uric acid is so intimately bound up in them it cannot be estimated by ordinary methods of analysis. Minkowski puts forth the hypothesis that in gout substances of a kind which bind the uric acid firmly and make it easily soluble and easily excreted are formed in too small quantities both in the blood and in the gouty foci. The new hypothesis appears pregnant with results; if we amplify it we get the following view.

The normal organism has at its disposal a certain number of organic substances with haptophore side-chains for catching and solving uric acid. In this form the uric acid is removed from the place of its origin and passed through the blood; out of these combinations the kidneys eliminate the uric acid, whilst the uric acid salts as such are only eliminated with difficulty. Two deviations from the normal may arise. In the first place the sum of the uric acid binding substances is normal, but the influx of uric acid to the blood is too great; that is, we find loosely bound uric acid in the blood as in case of excessive disintegration or ingestion of nucleins or in nephritis. Secondly, the sum of the uric acid binding substances is too small; hence the characteristic anomaly of gout.

A certain part of the uric acid formed in the body does not meet with molecules bearing haptophore side-chains for uric acid and finds only with difficulty the way out; analysis of the blood indicates uric acid, and in certain tissues a deposition takes place.

The contents of the body in regard of uric acid binding molecules varies in gout, partly depending on the varying character of the disease, and partly on external influences. Increase of uric acid catching substances is indicated by increase of uric acid in the urine—as a sign that it is a toxin-producing process—and also by an increase of nitrogen and phosphoric acid. When the influx of uric acid binding substances increases suddenly, and largely, then acute local inflammation, due to dissolved uric acid, and a genuine febrile reaction accompany it: the typical gouty paroxysm arises.

With regard to treatment we are all agreed that food containing an excess of purin bodies should be avoided, and those words embody almost all there is to be said as to dietetics.

Alcohol is very injurious in gout; it decreases the excretion of uric acid, probably because it hinders the cells in the formation of substances with haptophoric chains for uric acid. Investigations should be made as to the uric acid in the blood after alcoholic excess.

We ought, as far as possible by therapeutic means, to promote elimination of uric acid, without producing injurious effects. I have tested various substances. Salicylic acid acts apparently most powerfully, but it is a dangerous remedy in gout.

Alkalies in every form are utterly useless. They act excellently in nephrolithiasis, but in true gout they cause a diminution, that is, an actual retention of uric acid: the pure alkalies, the waters of Neuenahr, Vichy, and Contrexéville were tested.

On the other hand, very striking and very remarkable is the increase of uric acid in the urine which follows the use of salt solutions, and much more the use of certain saline springs. The Homburg Elizabeth Spring seemed to be the most powerful. By the use of this spring the uric acid was increased 25 per cent. to 30 per cent., and remained at this height for a considerable time. While recording this remarkable result, one is reminded how once again an old empiric fact comes to honour, for the Homburg Elizabeth Spring has been for a long time a renowned and important medical resort for gout, in spite of the theories which pointed rather to the alkaline springs. Now we learn from new and most exact investigations that this saline spring has a considerable effect in flushing and cleansing the blood as regards uric acid.

II.—A. E. Garrod, M.A., M.D., F.R.C.P.,

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The amount of careful investigation devoted to the question of the pathology of gout during the past ten or fifteen years has been greater than at any former period, but whereas these more recent researches have shown that the problem is much more difficult of solution than was at one time supposed, and have demonstrated the inadequacy of the older and simpler theories, which were based to some extent upon incorrect data, they have failed hitherto to replace them by a fresh theory so firmly grounded as to command at all general acceptance. I take it that this discussion will not have failed in its object if it should succeed in clearing the ground to some extent, and above all if there should be indicated in its course any promising lines of research. More than this we cannot hope to attain to in the present state of our knowledge, and the day when the problem of gout shall be finally solved is not yet.

A very natural result of the disheartening failure to explain the phenomena of the disease by the study of uric acid and its excretion has been a swing of the pendulum in the direction of regarding uric acid as playing a far less important part in its pathology than it was formerly supposed to do, and of looking upon it as a mere secondary product, the excess of which in the blood and the deposition of which in the tissues are mere epiphenomena of the disease.

In striking contrast to such views, which are held by many who are entitled to speak with authority on the subject, is the alternative theory, which also has not a few adherents, that uric acid, even when held in solution in the body fluids, exerts toxic properties, and plays a conspicuous part in the causation not only of gout, but also of many other maladies which stand to it in no obvious clinical relationship.

The foundations of both these extreme views are largely theoretical, and the fact remains that the chief known data bearing upon the pathology of gout centre around uric acid and its compounds. Before uric acid can safely be relegated to a secondary place it is essential that the wide gaps in our knowledge of the part played by this substance in the phenomena of the disease under consideration should be filled up, at least to some extent. It is to this aspect of the question that I propose to confine my remarks, but I wish to disclaim at the outset any originality for the views expressed. My aim will simply be to emphasize and to underline certain points which, although attention has been called to them repeatedly, do not appear to have been sufficiently grasped by some of those who have written upon the subject.

The essential points which can be looked upon as definitely established are very few. It has long been known that the deposition of sodium biurate in the articular and other tissues of gouty subjects constitutes the most striking and characteristic feature of the lesions of the disease. It is also known that uric acid is present in excess in the blood of the gouty, whereas the excretion of uric acid in their urine does not, in the long run, transgress the somewhat wide normal limits, either in the direction of excess or of defect. Lastly, it is known that some diminution of uric acid excretion immediately precedes an acute attack, but that when the attack is once fairly established the output is temporarily increased.

It would take much longer to enumerate the important facts of which we are still in ignorance, and it appears to me that what is still required for the solution of the problem is further careful research in certain directions, and a restraint in theorizing, except in so far as the theories put forward serve a useful purpose as working hypotheses.

The presence of excess of uric acid in the blood of the gouty may be looked upon as a fact established beyond all reasonable doubt, and is accepted as such. It is equally well established that such excess in the blood is not confined to gout, but is met with in a number of other conditions; and moreover that the presence of uric acid in excess in the blood does not necessarily bring about the symptom-complex to which the name of gout is applied.

Obviously there are several different ways in which such an accumulation of uric acid in the blood might be brought about, and there is good reason for believing that in different circumstances different causes are actually at work to produce the result.

In the first place an excess of uric acid in the blood may be expected to result from over-production of that substance in the ordinary seat or seats of its formation. Such over-production might result from tissue metabolism on the one hand, or on the other hand from an excessive ingestion of nucleins or purin substances into the alimentary canal. The former is supposed to be the cause of the excess in leukaemia, the latter is the cause of the excess after thymus feeding.

Both in leukaemia and after thymus feeding there is a conspicuously-increased output of uric acid by the kidneys. In some cases of leukaemia this phenomenon is very conspicuous, whereas in others it is hardly observed. In some cases the uric acid of the urine has reached to such figures as 4 or 5 grams in the twenty-four hours, but such an amount as 2 grams is much more common.

Such excessive excretion is what is to be expected when an excess in the blood is due to over-production, and when at the same time the kidneys are performing their work in an efficient manner. Under such circumstances, it is difficult to conceive of over-production without increased excretion. The phenomena of leukaemia and of thymus feeding alike show that normal kidneys can excrete much more uric acid than they are usually called upon to dispose of, and, this being so, so long as these organs are acting normally, they will constantly be endeavouring to reduce the amount in the blood to its ordinary level, whilst the level will as continually be raised by the over-production which is going on.

Such considerations apply equally to a local formation of uric acid at the seats of, and as the result of, the gouty lesions. The excess entering the blood will, in this case also, be constantly drained off by the kidneys, and an excessive excretion in the urine will result. It is important that one should mention the possibility of a local formation of uric acid as the result of the gouty processes, because such an origin of the uratic deposits has been suggested by no less an authority than the distinguished opener of this discussion. However, the most careful and elaborate investigations carried out upon the excreta of patients upon constant diet, and by methods the adequacy and accuracy of which are beyond reproach, have failed to show that the excretion of uric acid by persons suffering from gouty troubles, and who have, or may be assumed to have, excess of uric acid in their blood, exceeds that of normal individuals, except during the later stages of an acute attack.

It is true that the normal limits, 0.2 to 1 gram in the twenty-four hours, are somewhat wide, and that individuality of metabolism is specially pronounced in connexion with uric acid, so that unless we could obtain a comparison of the habitual excretion of the patient before and after he became gouty a slight increase might escape observation; but judging from the analogy of leukaemia such an excess of uric acid as is present in the blood of the gouty, should, if simply due to over-production, be clearly manifested by an obvious increase in the amount excreted.

These considerations, especially when coupled with the absence of any direct evidence of over-production of uric acid in the gouty organism, seem to render impossible the acceptance of the view that the excess of uric acid in the blood in gout is due to any form of over-production.

Another possible cause of an excess in the blood is a diminished destruction of uric acid in the organism, comparable with the defective utilization and combustion of glucose, to which the hyperglycaemia of diabetes is at least mainly due. That some of the uric acid formed in the body undergoes further changes is a view which is generally held and which is supported by a large amount of experimental evidence. It is true that doubt has been thrown upon this view by the recent work of Soetbeer and Ibrahim, who believe that urate taken by the mouth largely escapes absorption, and who obtained no evidence of destruction when a solution of urate of piperazine was injected subcutem. However, these investigators were not able to demonstrate the presence of unabsorbed uric acid in the faeces, and their results are complicated by the fact that the excess of uric acid found in the urine during the days following the injection was actually greater than the amount injected.

This question does not seriously concern us here, for if the excess of uric acid in the blood of the gouty were due to deficient destruction, we should expect to find an excess in the urine comparable with the glycosuria which results from the hyperglycaemia of diabetes.

It has been maintained by some that uric acid is formed in the kidneys themselves by a process of synthesis, and by them excreted with the urine. In order to reconcile with such a view the excess in the blood, we must assume that in the gouty there is a backward secretion from the kidneys into the blood, without any corresponding increase of the onward secretion into the urine—a course of events which is so unlike anything with which we are familiar that very strong evidence would be required to enforce its acceptance. This is quite apart from the fact that there is much evidence that the bulk of the uric acid, at any rate, is formed elsewhere than in the kidneys.

There remains to be considered the view that the excess in the blood in gout is due to deficient excretion of uric acid by the kidneys.

At the first glance it would seem that such deficient excretion should be manifested by an unduly low output in the urine, but further reflection will show that it does not necessarily follow that an accumulation due to defective excretion involves an output below the normal limit. A very scanty daily deficit would in time lead to an obvious accumulation behind the kidneys, as when a low dam is built across a stream, and to pursue further the analogy of the dam we may readily suppose that when the accumulation behind it reaches a certain limit the efforts of the kidneys to equalize matters will result in a daily output equal in amount to the daily production. There will be no diminished flow of the stream, although the level of the water has risen behind the dam. This involves the assumption that the kidneys of the gouty, like those of the healthy, are capable of responding to an accumulation behind them by an increased excretion of uric acid, and that they are capable of doing so has been demonstrated, as we shall see presently.

Hence it would appear that whereas the observed phenomena cannot be reconciled with the views that the excess of uric acid in the blood in gout is due either to simple over-production, or to diminished destruction in the body, they are not incompatible with the view that the accumulation results from a defective excretion of uric acid by the kidneys. In a word there is a strong probability that retention is the actual cause of the excess.

There are two possible ways in which such retention might be brought about. It might be due to a defect of the kidneys, organic or functional, or to something amiss with the uric acid itself—to something unusual in the form or combination in which it is presented to the kidneys for excretion.

This brings us to a parting of the ways. If the fault is in the kidneys alone gout must be removed once and for all from the category of metabolic disorders, and relegated to a place among the sequelae of renal inadequacy, at least in so far as the uric acid phenomena of the disease are concerned.

It is hardly necessary to point out that the phenomena of gout are in many respects strongly suggestive of its being what is called a metabolic disorder, and it is tempting to suppose that just as certain individuals of the race exhibit abnormalities of metabolism which are clearly inborn and hereditary, and are sometimes, to all appearance, harmless, so in the case of such diseases as diabetes and gout there is an inborn instability of metabolism which lays the victims of it specially open to the development of harmful derangements. Just as it seems certain that not all or nearly all diabetes is a result of disease of the pancreas, so it is not easy to believe that all gout is a sequel of antecedent renal disease.

As with the inborn metabolic errors heredity plays a very important part in the etiology of gout, and in families in which the tendency to gout is strongly transmitted the disease is apt to develop in members who have conformed to the strictest rules of living, and to develop at earlier ages in succeeding generations. I cannot forbear to quote the following example, which is the most remarkable one that I have ever met with.

A man, aged 53, stated that his father and paternal grandfather had both "died of gout." His father's brothers mostly died young, but one who lived to 50 had articular gout. He has only two first cousins on his father's side, and they both have gout. The patient has two brothers and three sisters, all of whom have had articular gout, and he himself had his first attack at the age of 20. He has no children, but one of his sisters has sons, one of whom had an attack in his great toe when a schoolboy aged 16 years.

The argument from heredity is a two-edged one, it is true, and there are comparatively few diseases in which the hereditary tendency is altogether absent, so that it is even possible to classify families according as their members afford good or bad soil for the exanthemata. It is true, moreover, that the tendency to interstitial nephritis seems to be heredi-

tary to some extent, but, as we have seen, in strongly gouty families the disease is apt to develop at ages far below those at which chronic interstitial nephritis constitutes anything but a clinical curiosity. It must be conceded, too, that a patient may suffer from attacks of gout for many years before he exhibits any of the clinical signs of renal disease.

I may quote as an example of a case carefully watched, but by no means an extreme one, that of a man who had his first attack of articular gout at the age of 44, and who had had many subsequent attacks, but in whose urine albumen was first detected when he had reached the age of 55 years. Since then it has been present whenever the urine has been examined. Speaking generally, one would be disposed to come to the conclusion, on clinical grounds, that chronic interstitial nephritis, which undoubtedly stands in some close relationship to gout, is rather a secondary than a primary phenomenon of the disease, for not only may the signs of the renal trouble develop as late events in a gouty life, but there are many sufferers from chronic interstitial nephritis who never manifest any unequivocal gouty symptoms.

In the *post-mortem* room the association between interstitial nephritis and gout appears to be much closer, but it must be remembered that we are here dealing with cases which have proved fatal from one cause or another. During one year of those in which I was carrying out the medical *post-mortem* examinations at St. Bartholomew's Hospital, I got Dr. J. H. Churchill to make histological examinations of the kidneys in all cases in which there were uratic deposits in the toe joints. In no single instance were the kidneys entirely free from interstitial change, although in some instances such changes were not to be detected on macroscopic inspection of these organs. This is in accord with the observations of Levison, Luff, and others who have investigated this point. On the other hand many patients with chronic interstitial nephritis had no deposit in their toe joints.

Saturnine gout supplies a further argument in support of the renal theory, seeing that lead is well known to produce renal damage. There are, indeed, some grounds for thinking that the clue to the chemical pathology of gout is most likely to be obtained by the study of the saturnine variety of the disease.

The frequency with which clinical evidences of renal disease are absent in the earlier stages of gout, led to the suggestion that the kidneys of gouty individuals are the seats of a functional defect which diminishes their power of excreting uric acid, but here again we are confronted with a theoretical condition—a failure of the kidneys to excrete one particular metabolic product—for which it is difficult to find a parallel among the established data of pathology.

On the chemical side there is some evidence of the renal origin of the accumulation of uric acid in gouty blood, in the observations of Vogel and Schmoll, confirmed by Magnus Levy and Hans Vogt, of a retention of total nitrogen in gouty subjects who show no clinical signs of renal disease. If we attempt to explain this by supposing that in the subjects on which the observations were made the kidneys were actually the seats of disease, we concede once and for all that the lack of clinical signs of renal trouble in no way excludes its presence. Moreover, Schmoll, and more recently Hans Vogt, found that in gouty cases the retention of nitrogen was not associated with a retention of phosphorus such as Fleischer found to precede the retention of nitrogen in cases of renal disease.

The observations of Schmoll and others, which show that thymus feeding causes an increased output of uric acid in the gouty, as it does in the healthy, do not seem to me to afford any strong argument against the renal view. They show that the power of the kidneys of gouty subjects to excrete uric acid is not taxed to the utmost, but it is not difficult to suppose that the damaged kidneys may respond to an increased *vis a tergo*, and that with a further accumulation of uric acid behind the kidneys an increased excretion will result. Indeed, the argument from thymus feeding tells in favour of the renal view, in the light of the more recent observation, that although the kidneys of the gouty do respond to such feeding they do not respond to the same extent as those of normal individuals.

It will, I think, be conceded that the evidence in favour of the view that the error is in the kidneys is so weighty that it cannot be lightly dismissed, and can only be definitely set aside by the demonstration that a gouty individual may possess kidneys which are not only normal to macroscopic and microscopic examination, but are also normal in their excretory functions.

It is, of course, conceivable that the retention of uric acid by the kidneys is only capable of producing actual gout in certain members of the community, and that whilst defective excretory power of the kidneys is an essential factor, a second factor such as an error of metabolism is also concerned.

The view that the error lies in the uric acid is a very attractive one, which was originally suggested by Minkowski, in whose recent work on gout the subject will be found admirably discussed. Were it not for the evidence of a retention of total nitrogen by gouty subjects, a retention too great to be ascribed to uric acid alone or to the purin bodies as a whole, this view would seem to afford the most reasonable explanation of the failure of the kidneys to excrete one particular metabolite, namely, uric acid.

We do not know in what combination uric acid exists in the blood of the gouty, and I would venture to suggest that this question offers a promising line for investigation—an investigation which is by no means easy at the present day, when venesection is no longer in fashion.

The theory of the quadriurates propounded by Bence Jones, and warmly adopted by the late Sir William Roberts, is less in favour than it used to be, and the researches of Tunnicliffe and Rosenheim have thrown much doubt upon the occurrence of these theoretical salts, even in the urine. I fancy, indeed, that beyond the limits of our own land the theory of the quadriurates has never met with any widespread acceptance.

It has been suggested that it is quite possible that the uric acid in the blood may not be in combination at all, and if we could suppose that part of it exists in gouty blood in a particulate or crystalline form it would be easy to conceive that it might escape excretion by the kidneys.

It has been shown, moreover, that uric acid forms organic compounds, as, for example, with nucleic acid, as Minkowski has pointed out, and it is conceivable that as part of a large organic molecule it might escape excretion.

It is obviously unnecessary to suppose that all or nearly all the uric acid is in such an abnormal combination, a very small fraction so combined would suffice to account for the observed accumulation in the blood. Now there is reason to believe that uric acid has more than one origin in the organism, and that whereas in mammals the bulk is formed from nucleo-proteids, a certain portion has a synthetic origin. In man this latter portion is probably small in amount, but in birds and reptiles, on the other hand, in which animals the uric acid reaches amounts for which the nucleins are quite inadequate to supply a source, the synthetic process is probably the chief one. One is tempted to imagine that if the uric acid be at fault, the fault may lie only in the synthetic portion. However, we are here wandering away from the basis of solid fact. The assumption that this portion of the uric acid may be presented to the kidneys in a form difficult of excretion is quite compatible with a free excretion of uric acid formed as the result of thymus feeding, but it will not explain the fact that the response to thymus feeding is less in the gouty than in healthy subjects. On the other hand, the absence of gouty lesions in other conditions in which uric acid is present in excess in the blood, as in leukaemia, is perhaps best explained on the hypothesis that the uric acid is at fault, and that the fraction which cannot be excreted lingers in the blood and becomes deposited in the tissues, whereas even large quantities of uric acid which are merely in transit do not lead to the formation of deposits.

To summarize the above argument: It is in the highest degree probable that the excess of uric acid in the blood of gouty subjects is due to defective excretion, and not to overproduction or deficient destruction. Of the arguments which may be adduced in support of the alternative views that the retention is due to a defect in the kidneys, or to something abnormal in the form in which the uric acid is presented to the kidneys for excretion, those which favour the renal theory appear to be rather the more cogent.

Whatever be the form in which uric acid exists in the blood in gout, it is as crystalline sodium biurate that it is deposited in the tissues. That the excess in the blood and the deposits in the joint and elsewhere are intimately connected cannot be doubted, but of what nature the connexion is we do not know. The time allotted to me has nearly run out, and my remarks on this point must be very brief and fragmentary. The suggestion that the deposits are due to a local formation at the seats of the lesions, and that the uric acid thence makes its way into the blood, has been already referred to, and the objection to it has been stated. If, on the other hand, the

excess in the blood is the primary phenomenon, we might suppose that, owing to local conditions, deposition occurs in the joints, and is the actual exciting cause of the acute attack, or that the acute attack is due to some other unknown irritant, or even to uric acid in solution, as Ebstein believes, and that, owing to the excess in the blood, deposition of biurate occurs in the damaged structures.

Klemperer has shown that the blood of the gouty is not saturated with uric acid, but can take up more than it naturally contains. Magnus Levy has proved that the deposition is not due to diminished alkalinity of the blood, for its alkalinity is not diminished. The careful experiments of the late Sir William Roberts and of Luff do not seem to offer a final answer to the question of how the deposition of sodium biurate is brought about.

It is a noteworthy fact that, with the exception of plumbism, other conditions which are attended by an excess of uric acid in the blood do not give rise to such deposits, and, although cases of acute gout occurring in the course of leukaemia are quoted, they are so few that accidental association cannot be excluded.

From what I have seen of gouty joints I cannot accept Ebstein's view that the deposit is regularly preceded by erosion or ulceration of cartilage, but rather believe that when the cartilages show loss of substance this is usually due to the removal of deposits previously laid down in them.

The incidence of the articular lesions of gout suggests that their seats are largely determined by local conditions, such as previous injuries. I have seen an acute attack of gout in the pinna of an ear follow syringing for the removal of wax, and the best explanation that has been offered of the peculiar liability of the toe joint is that this joint is subject to special pressure in walking. Not the pressure of boots, for podagra was common enough when sandals were the only foot gear.

To the objection urged to the theory that deposition of urate is the primary event, namely, that the deposits are not attended by inflammatory lesions elsewhere than in the joints, it may be replied that in haemophilia the extravasation of blood, presumably sterile, produces acute troubles in joints, such as do not result from similar extravasations elsewhere. Haemorrhage into the lobe of the ear produces effects in no way comparable to those witnessed in the joints of bleeders. This suggests that it is not safe to argue that a process which gives rise to no acute lesions in other structures will not do so in the joints.

It must not be forgotten that although many of the symptoms which it is the fashion to ascribe to gout have only the most shadowy connexion with that disease, there are abarticular lesions, such as sciatica, myalgia, and a form of eczema, which are regarded, on good evidence, as having a gouty origin. No direct connexion between such lesions and uric acid has yet been established, nor, as far as I know, is any positive evidence yet forthcoming of their origin in the "uratosis" suggested by Sir William Roberts, that is to say, the separation of sodium biurate in crystalline form in the blood.

In conclusion, I feel that in the present state of opinion upon the subject some apology is needed for having inflicted upon you a further disquisition on the well-worn theme of the part which uric acid plays in the phenomena of gout. It may be objected that in so limiting my remarks, I have wilfully neglected more hopeful lines of research, such as the part played by other members of the purin group, the possible intervention of an infective element, and the like, and have wandered once again down a lane which is well-known to have a blind ending. The aspects of the subject to which I have just referred will doubtless be discussed by other speakers who are much more competent to deal with them, and my excuse must be that the problems which I have dealt with have to be faced, and will none the less call for investigation and solution, even if it should be shown at some future time, as it possibly may be, that uric acid plays only a subsidiary and secondary rôle in the pathology of gout.

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VARIATIONS IN THE EXCRETA OF GOUTY PATIENTS.

THE frequent changes in the general appearance of gouty patients form one of the striking features of the disease. These changes are, as a rule, directly associated with abnormal conditions of absorption, assimilation, and excretion, and it is possible that some definite explanation of these variations or a precise knowledge of their etiology might materially assist our treatment of gout and its allied disorders.

As it is now generally admitted that uric acid is a symptom rather than an exciting cause of gouty conditions, investigations may be profitably extended in other directions in our search for the ultimate causal factors of the disease. The experimental production of similar variations in healthy as well as in gouty individuals suggested itself as one of the means to this end, and the present paper consists of a preliminary report of such investigations. The results obtained so far indicate that variations in the excreta may occur independently of any increased cell destruction, and they suggest that substances absorbed from the alimentary canal may exert a considerable influence upon the metabolism of bodies commonly present in excess in the tissues of the sufferer from gout.

Variations in the Excretion of Nitrogen, Proteid, and Fat.

Under this heading it is only necessary to refer to the numerous careful investigations which have satisfactorily shown that variations in the output of nitrogen occur at irregular intervals in cases of chronic gout, and point to the presence of a low grade of toxaemia. That absorption is often deficient, and that the faeces contain abnormal quantities of fat and proteid material are also well known.

Variations in the Excretion of Uric Acid.

Although we may agree with those who consider the excess of uric acid in the tissues during gout as a symptom rather than a cause, it must be conceded that in its relationship to gouty conditions there still remain many points which require elucidation. We yet neither know the precise source of uric acid, nor understand its exact status in metabolism, while our views upon its mode of excretion are based upon very slender evidence. We do know, however, that uric acid contains a nucleus (C_4N_4) to which the name "purin" has been given by Emil Fischer, and that it belongs to that group of oxypurins in which are also found the monooxypurin and dioxypurin, hypoxanthin and xanthin. We are also aware that the administration of the latter substances to healthy or diseased individuals is followed by an increased output of uric acid, and that the ingestion of such nuclein derivatives does not directly interfere with the excretion of that moiety of uric acid which is derived solely from the autogenous nucleins of the body. We have fortunately of late accumulated a considerable number of new facts concerning these purin substances, and as their further investigation is important in connexion with problems of metabolism, we may perhaps consider their etiology in closer detail.

The purins which occur in human tissues when the diet consists of purin-free food are obviously endogenous in origin; in like manner the purins contained in food stuffs are chiefly autogenous, since the plants and animals taken for human consumption use practically purin-free nutrients. Thus, although the food purins are exogenous to the individual who ingests them they are endogenous to the organism that produces them. All purins are therefore ultimately of an endogenous origin. What, then, are the sources of the endogenous purin? At the moment the lack of definite evidence precludes a definite reply, but for purposes of discussion we may perhaps formulate their probable sources with some show of precision, and thus consider them as arising (1) by synthesis; (2) from the destruction of leucocytes; (3) from the breaking up of nucleo-proteids during cell processes.

There are certainly some facts which point to the synthetical formation of uric acid in the human body, but the amount must be very small, even if we fully accept the results of Wiener's experiments with malic and tartaric acids. Whether this synthesis is more pronounced in abnormal conditions of metabolism is not yet known, but in any case it is necessary to enter into a critical survey of the anabolic processes of cell life.

Now it has been shown by Burian and Schur[1] that the total nuclein and purin contents of the tissues of young animals increase with the age and the growth, although the food taken be entirely purin-free; when the adult stage is reached an average content is maintained, and thus there is every reason to believe that a similar constructive metabolism occurs in both stages. Again, in mammalian tissues, the nucleins are loosely combined with the typical cell-proteids, being linked together somewhat in the same way as albumin and fat.

[1] *Zeit. f. Physiol. Chemie*, 1897, s. 60.

TABLE I.—*H. W., Male, Meat-eater, aged 36. Weight, 11½ st. Chronic Rheumatism. Urine Free from Albumen and Sugar.*

Date.	Quantity.	Total Purin Nitrogen.	Uric Acid Nitrogen.	Xanthin Bases Nitrogen.	Diet.	
1902.	C.cm.					
November, average of ten days...	1,300	0.1240	0.1030	0.0203	Fixed purin free	
November 21st ...	1,275	0.1918	0.1762	0.0156	Ditto + 45 gr. sodium salicylate	60 per cent. increase of purin nitrogen output.
,, 22nd ...	1,050	0.1974	0.1606	0.0368	Ditto + 60 gr. sodium salicylate	

TABLE II.—*A. H., aged 28. Vegetarian for Six Years. Weight, 11 st. Urine Free from Albumen and Sugar.*

Date.	Quantity of Urine.	Total Nitrogen.	Total Purin Nitrogen.	Uric Acid Nitrogen.	Xanthin Bases Nitrogen.	Diet.
1904.	C.cm.					
April 27th	1,340	—	0.1680	0.1662	0.0018	Purin free: fixed.
,, 28th	825	—	0.1600	0.1590	0.0100	,,
,, 29th	855	—	0.1562	0.1369	0.0193	,,
,, 30th	930	—	0.2517	0.2079	0.0438	,, + 45 gr. sodium salicylate.
May 1st	885	—	0.1940	0.1721	0.0219	,, + 45 gr. sodium salicylate.
,, 2nd	1,220	—	0.1250	0.1123	0.0127	,, + 45 gr. sodium salicylate.
,, 3rd	1,370	—	0.1783	0.1523	0.0260	Purin free.
,, 4th	840	11.1333	0.1533	0.1464	0.0069	,,
,, 5th	880	10.7800	0.1709	0.1283	0.0426	,,
,, 6th	—	—	—	—	—	Portion lost.
,, 7th	920	10.4762	0.1680	0.1466	0.0214	Purin free: fixed.
,, 8th	1,450	12.4329	0.2120	0.1822	0.0298	,, + 45 gr. sodium salicylate.
,, 9th	900	11 5220	0.2272	0.2008	0.0164	,, + 45 gr. sodium salicylate.
,, 10th	1,380	11.6850	0.1450	0.1124	0.0326	Purin free: fixed.
,, 11th	720	10.7392	0.1600	0.1462	0.0138	,,

TABLE III.—*A. B., aged 33. Vegetarian for Fifteen Years. Weight, 10 st. Urine Free from Albumen and Sugar.*

Date.	Quantity of Urine.	Total Nitrogen.	Total Purin Nitrogen.	Uric Acid Nitrogen.	Xanthin Bases Nitrogen.	Diet.
1904.	C.cm.					
April 16th	1,040	—	0.1950	0.1774	0.0176	Purin free: fixed.
,, 17th	610	—	0.1189	0.1175	0.0014	,,
,, 18th	575	—	0.1491	0.1274	0.0217	,,
,, 19th	995	—	0.2227	0.1878	0.0349	,, + 45 gr. sodium salicylate.
,, 20th	940	—	0.2012	0.1781	0.0231	,, + 45 gr. sodium salicylate.
,, 21st	805	—	0.1544	0.1261	0.0283	,, + 45 gr. sodium salicylate.
,, 22nd	645	—	0.1202	0.0862	0.0340	Purin free: fixed.
,, 23rd	1,040	—	0.1092	0.0809	0.0283	,,
,, 24th	600	—	0.1575	0.1283	0.0292	,,
,, 25th	820	—	0.1470	0.1312	0.0164	,,
,, 26th	740	—	0.1369	0.1230	0.0139	,,
,, 27th	920	—	0.1570	0.1204	0.0366	,,
May 30th	850	8.7696	0.1390	0.1275	0.0115	,,
,, 31st	945	8.0444	0.1420	0.1360	0.0060	,,
June 1st	860	7.3203	0.1275	0.1060	0.0215	,, + 15 gr. guaiacum resin.
,, 2nd	950	7.9800	0.1450	0.1266	0.0184	,, + 15 gr. guaiacum resin.
,, 3rd	1,030	8.3636	0.1450	0.1287	0.0163	Purin free: fixed.
,, 4th	785	9.2316	0.2260	0.1950	0.0310	,, + 45 gr. sodium salicylate.
,, 5th	1,000	10.0200	0.2250	0.1966	0.0284	,, + 45 gr. sodium salicylate.

Some nucleins contain carbohydrates in addition to the purins and albumin; they require prolonged chemical action before they are broken up and their purin derivatives manifest a distinct affinity for phosphorus compounds. The formation of nuclein from simpler substances appears to be therefore necessary in daily life in order to replace the molecules broken down and excreted as urinary purins, so that it is more reasonable to suppose an increased or decreased formation of nucleins during altered metabolism than to assume the direct synthesis of an end-product such as uric acid. If the nucleins are increased, then their excretion necessitates the production of an excess of uric acid; further, we may remember that when substances are produced in excess by the tissues there is a general tendency towards looseness of construction—a looseness which, in this instance, might facilitate the cleavage of the nuclein molecule, hasten the liberation of the purin nucleus, and explain the subsequent increased formation of uric acid. This is a point which has not received the attention it deserves.

In regard to normal leucolysis as a probable source of endogenous purins, it is only possible for this condition to contribute a very small proportion of the total output. True it is that in leukaemia the enormous increase of leucocytes is accompanied by an increased output of uric acid; but it is known that in leucopenia, even when the leucocytes are lowered to 1,500 to 3,000 per cm., the uric acid or purin excretion is practically unaltered. To produce one gram of purin bodies large numbers of leucocytes are necessary—numbers out of all proportion to the leucocytosis of febrile and acute inflammatory conditions; so that, while we may include leucolysis in a list of the sources of endogenous purin and uric acid, it cannot be considered as an important factor.

Next, to consider the third point. It has been shown that the endogenous uric-acid output is constant in the same individual living under similar conditions; if the quantity of nitrogenous and carbohydrate food are reduced to a minimum, then the urinary uric acid falls; if the need for metabolic processes is diminished, then the uric acid is also decreased. For instance, in one of my experiments, a man, aged 19, had an average daily excretion of 0.1050 purin nitrogen when on a purin-free diet, and when he followed his usual vocation; but the same man, after lying in bed for several weeks, excreted only 0.0600 purin nitrogen per day. Other workers state like results. As to the place of production of the endogenous uric acid, the several organs of the body yield nearly equal amounts of free purin substances—at all events so far as may be ascertained from estimation of the tissues of freshly killed animals—and, although the liver more rapidly oxidizes hypoxanthin and xanthin to uric acid, the general tissues possess to some extent the same property. Our knowledge of the fate of the fully formed endogenous uric acid is based upon a few experiments, consisting of the removal of the liver or kidney, which have shown that the amount of excreted uric acid is about 50 per cent. less than the quantity formed. It is very evident that many new facts as to the origin and behaviour of endogenous purins are necessary before we are in a position to understand the causes which alter their quantity or quality.

Variations in Endogenous Uric Acid Produced Experimentally.

There are only a few ways by which the endogenous uric

TABLE IV.—*Male, aged 45. Chronic Gout: Confined to Bed. Urine: Trace of Albumen: No Sugar: Few Casts.*

Date.	Daily Amount.	Specific Gravity.	Reaction.	Total Purin Nitrogen.	Uric Acid Nitrogen.	Xanthin Bases Nitrogen.	Diet.
1903.	C.cm.						
January 17th	387	1010	Very acid.	0.0760	0.0607	0.0153	Purin free.
,, 18th	465	1015	,,	0.0626	0.0598	0.0028	,,
,, 19th	500	1012	,,	0.0625	0.0586	0.0039	,,
,, 20th	500	1015	,,	0.0585	0.0571	0.0014	,,
,, 21st	590	1014	,,	0.0618	0.0507	0.0111	,,
,, 22nd	810	1015	Acid	0.1495	0.0911	0.0584	Plus beef extract = 0.07 purin N.
,, 23rd	740	1015	,,	0.1050	0.0770	0.0280	Purin free.
,, 24th	500	1015	,,	0.0875	0.0850	0.0025	,,
,, 25th	750	1012	,,	0.0570	0.0375	0.0195	,,

acid may be altered. The administration of organic acids and the production of fever, as already mentioned, are not very effectual. In sodium salicylate, however, we possess a drug which markedly augments the general uric acid excretion. Its action has been tested upon healthy and diseased individuals, when taking a meat or a vegetable diet, and when in a condition of nitrogenous equilibrium. All the published results show an increase of 30 per cent. to 50 per cent. in the uric acid output, and of 7 per cent. to 10 per cent. increase of the total urinary nitrogen. From previous experiments, however, it is impossible to conclude whether the increase is due to the "washing out" of retained uric acid, to the more extensive excretion of the exogenous purins, or to an increased formation of uric acid following stimulation of the cells by the salicylate of soda.

These questions I have in great part avoided. The subjects of experiment had not eaten meat for six and sixteen years respectively, and their dietary consisted of fixed purin-free food; while, as a control, I included experiments upon a meat eater, who for a short time adopted a purin-free diet.

Tables I, II and III show that the administration of 45 grains of sodium salicylate to a person living on purin-free food is followed by an immediate rise of 30 to 60 per cent. in the uric acid output. When the sodium salicylate is stopped, the uric acid excretion falls slightly below the average, regaining the normal level during the next forty-eight hours. If the sodium salicylate is continued, the percentage increase gradually diminishes; in one other case, however, in which the salicylate was given continuously for several weeks, the purin excretion remained at the same level. These results, obtained from vegetarians in nitrogenous equilibrium, express the effect of sodium salicylate upon the excretion of endogenous uric acid, and are practically the same as those recorded by Schreiber,[2] Bohland,[3] Ulrici,[4] Magnus Levy[5] and others in experiments upon meat-eaters. Similarly, the excess excretion of nitrogen is almost the same as that yielded in experiments with a mixed dietary.

What are the causes of this increased endogenous uric acid excretion? Is it due to increased formation, to diminished destruction, or to the retention of uric acid in the tissues? Ulrici[4] and Magnus Levy[5] did not observe any distinct leucocytosis, such a condition was not present in the subjects of my experiments, and as I have previously pointed out, the leucocytosis must be very pronounced to seriously augment the uric acid output. The 6 to 7 per cent. increase in the total nitrogen consists in an excess of urea and ammonia, and may result from stimulation of the hepatic cells. We must remember that while the changes which the salicylate undergoes in the intestine and its action upon the intestinal contents are not yet accurately known, acidosis of the tissues has been described as one of its sequelae, and this or other pathological conditions may account for the breaking-up of the proteids and the loss of nitrogen. Now since we may, with some degree of certainty, exclude the probability of uric acid retention in my experiments, it only remains to consider the possibility of an increased formation or of a diminished destruction. The former condition does not seem probable, either from the amount of the increase or from the corresponding increase of nitrogen; while in regard to the latter process it is significant that, although the increase varies with the individual, it is invariably a large one (30 to 60 per cent.); an increase, in fact, so nearly approximate to the quantity which is normally oxidized in the body to urea that it is tempting to assume that salicylate of soda, in addition to its action upon proteids and upon the formation of urea, hinders the normal oxidation of uric acid to urea. Magnus Levy[5] advanced the same view in regard to the action of salicylate of soda upon gouty meat-eaters. At all events, the probability of such action is sufficient to suggest that other substances may act upon the excretion of uric acid in the same way, and it will be of interest, therefore, to further examine the question. Before doing so, we may with advantage pause for a moment to consider some points in connexion with the purin excretion in gout.

[2] *Arch. f. Exp. Path.* Bd. 42. S. 69.
[3] *Münch. med. Woch.* 1899. S. 505.
[4] *Arch. f. exp. Path.* 1901. S. 321.
[5] *Zeit. f. klin. Med.* Bd. 36. S. 412.

The Variations in the Purin Excretion in Gout.

From the few facts at our disposal upon this aspect of the subject, we may infer that the endogenous purin excretion in gouty individuals approaches the lowest average of the healthy person. Marked variations occur both at and before the acute attacks, although the cases recorded are by no means sufficiently numerous to provide a safe basis for deductions. Several patients, whose excreta I have had the opportunity to examine, show a distinct decrease in the endogenous uric acid output as the disease progresses. In the case of a man, aged 45, whose hands, feet, elbows, and knees were covered with tophi and who was subject to frequent attacks of metastatic gout, the following figures were obtained:

Table IV shows that by a gouty patient, upon the addition of 0.070 purin nitrogen to a purin-free diet, the greater portion of the added purin bases are rapidly excreted: in fact, in this instance the increased excretion was sufficient to suggest the elimination of retained uric acid. The exogenous purins are, as a rule, well metabolized by the gouty patient, even when the excretion of endogenous purins is at a very low level. Cases are, however, reported from time to time which show that the elimination of the exogenous uric acid may be delayed. The fact that the food purins are produced by healthy cells suggests that the tendency of the endogenous purins to be deposited in gouty tissues or retained in their fluids arises from abnormalities of construction which alter their affinities and permit irregular combinations.

The Endogenous Purin in Gouty Constipation.

The frequent occurrence of constipation in gouty patients led me next to determine whether the retention of intestinal contents produced any changes in the endogenous uric acid excretion. The headache and *malaise* associated with chronic constipation have often been ascribed to the absorption of toxic substances by the large intestine, and although I cannot at present discuss their bacterial or other origin, I may report, perhaps, a few preliminary experiments bearing upon these points.

TABLE V.—*T. W., Male, aged 40. Gout: Urine free from Albumen and Sugar.*

Date, 1904.	Quantity of Urine.	Total Purin Nitrogen.	Total Uric Acid Nitrogen.	Xanthin Bases Nitrogen.	Diet.
	C.cm.				
Average of six days' excretion	607	0.0627	0.0650	0.0062	Purin-free diet.
Jan. 25	740	0.1050	0.0770	0.0280	Purin: + constipation.
Jan. 26	500	0.0875	0.0850	0.0025	,, ,, ,,
Jan. 27	750	0.0500	0.0375	0.0125	,,

TABLE VI.—*A. R., Male, aged 21. Spinal Caries. Confined to Bed. Urine free from Albumen and Sugar.*

Date, 1904.	Quantity of Urine.	Total Nitrogen.	Total Uric Acid Nitrogen.	Diet.
	C.cm.			
June 1 ...	800	8.5621	0.0776	Purin free: fixed.
,, 2 ...	760	8.9054	0.0525	,,
,, 3 ...	710	6.0634	0.0584	,,
,, 4 ...	790	8.4214	0.0827	,, + constipation.
,, 5 ...	855	8.1234	0.0830	,, ,, ,,
,, 6 ...	800	7.9744	0.0545	Purin-free diet: fixed.
,, 7 ...	760	7.8532	0.0630	,, ,,
,, 26 ...	600	7.2000	0.0760	Purin free: fixed.
,, 27 ...	690	7.5974	0.0771	,, + constipation.
,, 28 ...	770	8.1016	0.0641	,, ,, ,,
,, 29 ...	665	8.8445	0.0780	,, ,, ,,
July 1 ...	785	7.9744	0.0897	,, ,, ,,
,, 2 ...	530	6.7876	0.0549	Purin-free diet: fixed.
,, 3 ...	830	7.8304	0.0624	,, ,, ,,

The figures in Table V show that constipation in the gouty patient may be accompanied by a slight rise in the endogenous uric acid excretion, which disappears immediately the faeces are passed. Similar results appear in the controls specified in Table VI. Of course the experiments are too few to allow any deductions, but Trautner,[8] working independently in Denmark, has reported a similar increase in the case of a gouty patient, the percentage excess being the same whether the patient was on milk, meat, or mixed diets. The increase in the uric acid excretion is certainly too great to be explained by absorption of nucleins from the retained faeces, so that the endogenous moiety is directly affected. The total nitrogen is practically unaltered, hence the toxins do not alter the usual proteid metabolism. It is therefore not impossible that constipation is associated with the delayed oxidation of uric acid, and acts like salicylic acid in this regard.

Variations of the Excreta in their Relation to the Acute Attacks, to the Fibrous Hyperplasia, and to the Circulation and Deposition of Urates.

The increase of uric acid which precedes the acute attacks rarely lasts more than forty-eight hours, and this rapid return to the normal suggests that the tissues are soon accustomed to the causal irritant. It may be noted that a similar excretion follows the ingestion of salicylates. We cannot yet say if the increase is due to increased formation or decreased destruction of uric acid, although the evidence available points more clearly to the latter than to the former condition.

The fibrous hyperplasia shows no definite relation to the variations of the excreta. In some cases it occurs early, in others at a late stage of the disease. It is perhaps best to regard it as a sequel to the degenerative changes of the parenchymatous cells.

The circulation and deposition of urates are perhaps the most difficult questions in the pathology of gout, and are accordingly the most fruitful in new hypotheses. The latest suggestion of Minkowski and von Noorden, that the purins normally circulate in conjunction with albuminous substances and abnormally as salts of sodium, only partially explains the conditions. There are other possibilities which may not be neglected. Burian and the writer,[9] when testing certain methods for the estimation of purin bodies, found that while it was comparatively easy to remove the bulk of the purins from a solution containing albuminous substances, there always remained a percentage which was difficult to extract, and which showed a rough relation to the concentration of the fluid, and to the quantity of albumoses present. Burian[10] has further shown that on the addition of diazo bodies to purin bodies, definite coloured compounds result, and that a molecule of phosphorus attached to the N 7 group of the purin nucleus most probably forms the connecting link. Now the purin bodies may be considered to consist of a combination of pyrimidin and imidazol, the latter group being concerned in the formation of both the silver purin reaction and the diazo-purin bodies.

Steudel[10] has already shown that the administration of pyrimidin does not alter the purin output. All this indicates that the excess of urates in the blood stream may be possibly due to the presence of substances which hinder the separation of uric acid by the kidney, although permitting its estimation by laboratory methods. Such substances may easily result from the abnormal metabolic processes which occur in gouty tissues, and which are formed continuously and quite apart from the incidental accession of toxins during the acute attacks. At all events, there exists no specific evidence of increased cell destruction and consequent formation of uric acid; the facts we know rather suggest that the cells are working at high pressure, forming products which, according to the recent admirable researches of Dr. Oliver, possess lymphogogic properties, and tend to alter the composition and rate of flow of the tissue fluids.

Variations of the Excreta in their Relation to Lymph Flow.

This aspect of the question has until now been almost entirely neglected. Dr. Geo. Oliver, in his recent Oliver-Sharpey lecture,[11] has shed very clear light upon some of the processes which take place in the lymphatic and tissue spaces. Amongst other results, he shows that the purin bodies increase the exudation of lymph, and consequently affect the lymph flow. Now it is beyond question that uric acid and the purin bases are present in excess in the blood and tissue spaces of the gouty individual, so that we may appreciate Dr. Oliver's contention that the hypertonic circulatory conditions in the patient affected with gout are associated with persistently increased lymph pressure, the consequent depression of metabolic processes, and the resultant increased arterial pressure, with its usual vascular changes. This portion of the subject offers a wide field for further investigation.

Although it may be conceded that our knowledge of the etiology of gout is very slight, yet it is impossible to accept entirely the conclusions of those who state that we are no nearer our goal than were the workers of fifty years ago. If we but glance at the mass of hypotheses that need confirmation or disproval we shall perceive how much routine work has been, and still must be performed before the direct causes of the disease may be even approached. During such re-examination of asserted facts many observations have been made which have in turn explained or negatived certain empirical statements, while many of the barriers of unreliable data have been completely removed. Of course, as these results are attained progress becomes more difficult and slower, and in this regard the laboratory worker, while appreciating the necessity for observations upon a large number of gouty cases and particularly upon those exhibiting the earlier manifestations of gout, still recognizes his inability to obtain a number of such cases for examination. It is within my own knowledge that, on the one hand, many patients in their desire for better treatment, will readily submit themselves to suitable and purposive experimentation, and that, on the other hand, numerous practitioners are willing to record the relations of clinical conditions, together with observations upon the blood and lymph pressure of gouty adults, as well as to report the manifestations of gouty children in their connexion with diet and alimentary changes, climate and temperature and puberty and marriage. Cannot these two sets of factors be brought together and utilized by a collective investigation committee appointed by the British Medical or some other Association? There is little doubt that such a committee would readily obtain the co-operation of practitioners, of members of hospital staffs, and of medical students. Incidentally, such a step would perhaps appeal to those whose generosity has stimulated and encouraged medical research, since a rich return of new facts might be expected within a reasonably short period.

SUMMARY.

1. The endogenous purins are increased by the administration of sodium salicylate, and this increase does not arise from excessive cell destruction, but probably from diminished destruction of already-formed uric acid.

2. The exogenous purins are metabolized by gouty patients almost as well as by normal individuals, any slight retention being due to increased capillary pressure and subsequent slowing of the lymph stream, and not to the formation of abnormal compounds.

3. The endogenous purin in gouty individuals may possess peculiar affinities and combine with abnormal products of proteid metabolism.

4. The presence of constipation in gouty patients is accompanied by an increased output of uric acid, this excess, however, apparently arising from diminished destruction of the formed uric acid.

[8] *Hospitalstidende*, Bd. 38.
[9] Walker Hall, *Journal of Pathology*, March, 1904, and *The Purin Bodies of Foodstuffs*.
[10] *Zeit. f. physiol. Chemie*, Bd. 38, S. 336.
[10] *Berichte der deutschen chemischen Gesellschaft*, 18. Heft 4, Nos. 105, 106.
[10] *Zeit. f. physiol. Chemie*, 1901, S. 255.
[11] *Lancet*, April 30th, May 7th, 1904.

The total nitrogen was estimated by Kjeldahl's process, the total purins by Arnstein-Camerer's method, and the uric acid by Gowland Hopkins' ammonium chloride method.

IV.—W. SMITH JEROME, M.A., M.B.,

Lecturer in Pharmacology and Materia Medica, University of Oxford.

THE following simple experiment was made in connexion with the subject of the spontaneous precipitation of uric acid in the urine: Two friends, both past middle life, one gouty and the other not, and each having a good appetite, while staying at a hotel with a good cuisine, behaved differently towards the menu, one, A., partaking of as many dishes as possible, and the other, B., limiting himself to a few. After three weeks the urine of both was examined; that of A. only gave a uric acid deposit.

In the second stage B. removed the restraint previously imposed as to the number of courses, and examination after a fortnight showed a uric acid sediment in both urines. In the third stage the menu was much curtailed for both A. and B., and the urine of each, examined after three weeks, was found to remain free from precipitate.

The points suggested for consideration are:

1. The nature of the process concerned in the precipitation.
2. The conditions which determine it.
3. The relation of such conditions to gout.

Nature of the process: In stage 1 of the above experiment the urine which did not deposit uric acid (B.) was much more concentrated than that of A., being considerably more acid, and containing a distinctly higher percentage of total nitrogen. The percentage of uric acid may have been greater in A.'s urine than in B.'s, but the precipitation must not be attributed to this alone, for some concentrated and highly acid urines, with a high percentage of uric acid, keep the uric acid in solution, while others less concentrated give a deposit. In the *Journal of Physiology* for 1898 I described a specimen, which, with a little less than 18 mgr. of uric acid per 100 c.cm., deposited nearly half of the acid within twenty-four hours.

The following are the principal explanations which have been given of the process in question:

1. An acid fermentation of the urine; but urine does not necessarily get more acid before the uric acid falls.

2. A high uric acid percentage combined with a high degree of acidity. The combination though favourable to, does not necessarily produce precipitation, as shown by the specimen referred to, in which the acidity as well as uric acid percentage was low.

3. The presence of the uric acid in a free condition, or at any rate in a state in which it is less firmly combined than it would be in a simple biurate. The evidence adduced in favour of this suggestion is the fact that some urines, in being filtered through a layer of pure uric acid, have some of their uric acid withdrawn more readily than others do.

4. The existence in the urine of a quadriurate which is decomposed into uric acid and biurate, the latter leading then, through the influence of the monobasic phosphate, to the reformation of the quadriurate, which in its turn is again decomposed, and so on till the whole of the uric acid is thrown down. Without discussing the evidence for and against the existence of quadriurates in general, it may be stated that all acid urines do not deposit uric acid however long they may be kept with the addition of an antiseptic, and that the precipitation, so far as my experience goes, is never complete.

5. The necessity for a certain ratio between the uric acid and the dibasic phosphate. It is possible, however, without altering this ratio, to throw down uric acid in certain urines by adding monobasic phosphate, when a precipitate would not otherwise have occurred.

6. A deficiency of certain urinary solvents of uric acid, for example, water, urea, salts, pigments, etc.

It is not necessary in order to account for the deposition of uric acid in urine to suppose the presence of an abnormal substance, as the normal ingredients suffice to explain the process, if certain of them are present in certain proportions.

The solvent, *par excellence*, of uric acid in the urine is dibasic phosphate. As long as any of this is present it will tend to keep some uric acid in solution. Its solvent powers, however, are lessened by the presence of monobasic phosphate, for a solution of dibasic of a given strength when digested with uric acid will dissolve less than a solution of the same strength to which some monobasic phosphate has been added.

An increase of acid in the urine converts some dibasic into monobasic phosphate, thereby lessening the amount of the principal solvent of uric acid, and at the same time reducing the solvent powers of that which remains.

Acidity as a means of precipitating uric acid must be considered in conjunction with the quantity of dibasic phosphate present, for it is possible to have two specimens of urine showing the same reaction with phenolphthalein, though the one contains very little dibasic phosphate and the other a considerable quantity.

The points principally concerned in the precipitation are therefore:

1. The proportion of acids to base.
2. The percentage of uric acid.
3. The ratio of uric acid to dibasic phosphate.
4. The ratio of monobasic to dibasic phosphate.

The influence of some other ingredients of the urine, such as the water, urea, pigments and salts, etc., which have more or less power of dissolving uric acid, must, of course, not be overlooked.*

Conditions determining the occurrence of the ingredients of the urine in the proportions necessary for the precipitation of uric acid: That the required state of urine can be induced by a certain kind of feeding is beyond doubt. The extent to which it can occur independently of this remains to be ascertained.

Relation to gout: Goutiness is not necessary for precipitation of uric acid in the urine. This may be induced in the healthy, given the required food, appetite, and power to digest. In the above experiment it was the perfectly healthy one whose urine showed the greatest tendency to throw down its uric acid.

There are no statistics showing distinctly that precipitation occurs more frequently in the gouty than in the healthy. In this connexion the infrequency with which the urine of the healthy is examined must be borne in mind. Even if statistics indicated a greater tendency in the gouty, this might mean only that their food was responsible for the precipitation.

The alternate occurrence of gout and of uric acid deposition in the same individual, or of one of these in one member of a family, and of the other in another member of the same family, admits of a similar explanation. It has not yet been shown that food which, in the healthy, does not cause the uric acid to be deposited, will do so in the gouty when taken in the same quantity.

V.—W. RINGROSE GORE, M.B., B.Ch.,

Llandrindod Wells.

THE position of uric acid in gout I have always considered a minor one as far as it is concerned in the production of any of the symptoms which make up the disease we call gout; there is no symptom in gout beyond the actual mechanical one of biurate of soda depositions that can in any way be ascribed to the presence of uric acid in the blood; there are several diseases in which uric acid is present in the blood to a much greater extent than in gout, and if the symptoms of gout were due to that body, then we would expect to find gouty symptoms in a disease like leukaemia, in which the excess of uric acid in the blood is greater than in most cases of gout; the excess in leukaemia and in some cases of malnutrition in children is sufficient to lead to the production of uric acid calculi, yet there is no symptom in common between these diseases and gout except the one symptom of the presence of uric acid in the blood.

It has been suggested that in gout the kidneys are at fault: that why uric acid will produce symptoms of gout in that disease is that there is deficient elimination owing to faulty kidney, while in leukaemia for instance there is free elimination; this argument fails unless it can be definitely shown that this defective elimination leads to a greater accumulation of uric acid in the blood in gout than exists in those diseases in which it occurs, and in which free elimination exists; this has never been done; the actual amount of uric acid in the blood in gout is in many cases small, said to be absent in some, and rarely if ever reaches the amount often present in leukaemia; uric acid can be no exception to the rule, the symptoms produced by a drug will vary with the amount present in the blood.

I consider the symptoms of gout are undoubtedly toxic in character and due to a toxin circulating in the blood. The principal symptoms of gout are similar to those produced by

* I have only just become aware, through Dr. Garrod, of Klemperer's contribution on the influence of colloidal urochrome, which shows that the solvent power of pigment is higher than had been previously supposed.

other toxins, especially the joint affections. We know that in many toxic diseases the joints, skin, and mucous membranes are very liable to be affected, probably owing to their taking on an accessory eliminatory action.

The actual sequence of changes taking place in a joint during an attack of acute gout I consider to be as follows: Quoting from a former paper of mine on the subject, it is much more probable that the deposition of sodium biurate which occurs is secondary to the attack: that inflammation precedes deposition of urates. The deposition of urates found in the synovial membranes and structures beneath it are shown to be deposited from the synovial fluid. Assuming for a moment that the inflammatory process is not due to the uric acid in the blood, we have a joint rapidly and acutely inflamed quickly distended with synovial fluid rich in quadriurate; as the disease progressed for some days the sodium quadriurate would become converted into sodium biurate, the synovial fluid would also decrease by absorption, the less soluble biurate would be deposited in the tissues surrounding the synovial membrane, especially the edges of cartilaginous structures in which the circulation is most sluggish. The conversion of sodium quadriurate, in which form uric acid exists in the blood, to sodium biurate, the salt of uric acid which forms the deposits in the joints, may take a long time—up to two or three days. The deposition first occurs in that part of cartilage or other structures of the joint immediately under the synovial membrane. At the commencement of an attack the synovial membrane is exuding a fluid rich in sodium quadriurate; after an attack has gone on for a few days it is absorbing a fluid in which the sodium quadriurate is being converted into sodium biurate; in which process is the deposition of sodium biurate most likely to occur? Obviously during the absorption.

If gout is caused by a toxin, that toxin must be one of those formed in the intestinal canal, as the symptoms of gout are more likely to be caused by the absorption of a toxin from without the body than from the growth, as has been suggested, of a bacillus in some of the tissues. The only place the toxin could be produced would be in the digestive canal, the contents of which are, physiologically speaking, outside the body. As gout can be induced in most people, it must be due to one of the bacilli normally found in the intestinal canal; as gout is a definite disease with definite symptoms, it must have a definite constant cause, and consequently must be due to a definite bacillus.

It is often admitted that gout is due to some product of digestion absorbed from the intestinal canal, which, acting on the liver, will derange its functions and so produce gout, while it is not admitted that gout is due to the actual body produced in the first instance. To this one can say, as I have said above, that gout is a definite disease, and consequently must have a definite cause; it cannot be due to any chance absorption of intestinal products: it must be due to the absorption of a definite body which will produce the symptoms of gout, and which will also in its action on the liver, by disturbing the metabolism of that organ, lead to the production of uric acid. The great rapidity with which symptoms of gout arise in some cases owing to some special article of diet also shows that whatever produces gout must be produced in the gastro-intestinal canal.

The toxin of a bacillus varies with its environment, we know. We know that in the intestine the most virulent toxins can be produced by the intestinal bacilli if the intestinal secretion is altered. I think that people who have what one might call an unstable intestinal secretion, either hereditary or acquired, are prone to have gout; that each attack leaves an increased tendency to intestinal change which may in aggravated cases become permanent.

VI.—JOHN HADDON, M.A., M.D.,
Hawick.

DR. HADDON said: It is admitted that uric acid has in some way to do with gout; the uric acid depends upon the nitrogenous food and tissue waste, and much nitrogenous food is acknowledged to be bad in gout. Is it possible that rich nitrogenous food such as flesh is the cause of that degeneration of the digestive tract which precedes the occurrence of gout? If so, surely it would be well if flesh foods were restricted or altogether avoided, and food from the vegetable kingdom alone used. Professor von Noorden has told us that there is an absence from the blood of some organic constituent with which the uric acid can combine and so become soluble. Is it not possible that an inorganic substance such as potash or soda, which exist so largely in vegetables, may be sufficient to render uric acid comparatively harmless by combining with it, rendering it easily soluble? If so, we can understand the reputation that certain vegetables have acquired in the treatment of gout.

VII.—ELIZA WALKER DUNBAR, M.D.,
Bristol.

DR. DUNBAR said: In the discussion no mention has been made of the remarkable effect of colchicum on the toxin of acute gout. The practitioner needs some substance which will dissolve the urate deposits as thyroid gland extract dissolves and eliminates the products of myxoedema. Experiments with ferments seem to promise a possible discovery of some substance which will effect this result.

THE RESERVOIR ACTION OF THE LIVER.

By R. N. SALAMAN, M.A., M.B.Camb.,
Assistant-Director, Pathological Institute, London Hospital.

DR. SALAMAN demonstrated various points of interest in the histology of the nutmeg liver, and called attention to the central deposition of fat in the lobule of the congested liver. In children it was shown that this deposition was secondary to an absorption of fat previously distributed throughout the entire lobule. Fat formation was shown to be induced by a low degree of back pressure, accompanied by a certain amount of stasis. Fibrosis in nutmeg liver was shown to be of three kinds, namely, fibrosis around the portal vessels, the hepatic veins, and the central vein and its capillaries. Portal fibrosis was never extensive, hepatic vein fibrosis was always present in cases of chronic back pressure, whilst central was only found in those cases where the back pressure had been extreme and had produced destruction of liver tissue. From an analysis of the morbid anatomy and histological structure it was shown that nutmeg liver could be divided into three types: The liver of acute congestion with no structural changes, the liver of chronic equable back pressure as seen in tricuspid stenosis, and the cirrhotic cardiac liver where central fibrosis was well developed. Dr. Salaman then showed diagrams pointing out the amount of expansion of which the normal as well as these three types of liver were capable under pressure of 1 ft. and 2 ft. 3 in. respectively. These diagrams demonstrated that whereas under 2 ft. 3 in. the normal liver doubled itself, the congested and chronic nutmeg liver only expanded to about one and a-half times their volume or less; whilst the cardiac cirrhotic liver, already small and hard, was capable of but very little expansion. These facts were then correlated with clinical observations on oedema and ascites in heart disease, and it was shown that the histological condition of the liver was directly responsible for the degree and manner in which these phenomena occurred. It was possible, therefore, to look on the liver as a safety-valve to the right heart, which by continued use lost its value and shortened very greatly the field of cardiac response. Dr. Salaman expressed his indebtedness to Dr. Bythell, of Manchester, for the four beautiful lantern slides made by the three-colour process.

SUBSECTION OF FORENSIC MEDICINE.

Sir THOMAS STEVENSON, M.D., F.R.C.P., President.

A SUGGESTION ON THE CRIMINAL RESPONSIBILITY OF HOMICIDAL AND DANGEROUS LUNATICS.

By FRED. J. SMITH, M.D., F.R.C.P.,
Physician, London Hospital; Joint Lecturer on Medicine, late Lecturer on Forensic Medicine, London Hospital Medical School

THE more one studies the responsibility of the insane the more one sees how involved the question is, and the more one appreciates how uncertain is the position of any criminal on whose behalf the plea is or may possibly be, raised. The subject, as a whole, has been more than once publicly discussed, and I do not wish here to raise the whole question again, but merely to take one small part of it—namely, that which concerns homicidal or dangerous lunatics, the latter adjective being intended to cover those in whom arson, for instance, is the prevailing impulse.

I must next briefly allude to the old differences between lawyers and medical men in order to make the particular point which I wish to discuss, which is the form and mode of

capital punishment which might be adopted with advantage to everybody.

Medical science, though its investigations are still, so to speak, in their infancy, has already proved conclusively and satisfactorily that all well marked insanity, no matter what may be its primary causative factor, essentially consists of disease of a part or of the whole brain; medical men, as a logical consequence of this statement, naturally then urge "surely you would not punish a man for disease; you would try to cure him."

The legal mind, on the other hand, or rather the law, for the legal point of view of any subject must be to a large extent limited by the law, only can consider "conduct," and takes but minimum notice of the original springs of that conduct. The lawyer says in effect, "this man's conduct is an infraction of the law of the land, the law can only notice infractions of its claims by imposing a penalty for them, and therefore this man must pay the penalty, in other words be punished."

Such, in a nutshell, is a statement of the two views. At first sight they seem to stand in direct antagonism to one another, and so even in practice is it at present found. But I venture to think that the views need not be so absolutely antagonistic; that by modification of the punishment inflicted a *via media* might be found, an intermediate course between punishment as known to the law—which involves a large element of revenge, disguised, it is true, but there, nevertheless—and cure as known to the alienist. For minor offences involving mere fine or imprisonment for a short term such a *via media* might easily be found; but it is not my purpose now to discuss this aspect of the question. I wish to deal only with those cases in which very serious crimes against the community have been committed. On the one hand, I do not wish to do a homicidal lunatic to death in a barbarous and cruel manner, nor, on the other, do I think it right that a man of unbridled passions and temper should be able to earn a comfortable home for life by killing or maiming a fellow creature, a position he can certainly attain to now—witness the man Prince, who in 1897 stabbed Terriss the actor, and now lives at Broadmoor in what for him is affluence and luxury.

Put in brief, my contention is: (1) That it is advisable to alter our mode of inflicting capital punishment; (2) that a more civilized and humane mode is easily within our reach; and (3) that homicidal and dangerous lunatics should be put to death in this humane method.

I have therefore considered shortly:

1. The objections to capital punishment.
2. Why do we hang a sane murderer?
3. Why should we not destroy an insane murderer?
   Their crimes.
   Their curability in general.
   Curability in (*a*) puerperal insanity.
   (*b*) In toxic insanities.
4. The lethal chamber.

Capital Punishment.

The objections to capital punishment may be divided into two groups:

1. To the fact itself.
2. To the attendant circumstances, cruelty, publicity, etc.

To the first class of these objections I have little to say; I can well understand the position and mental attitude of the man who says that society has no right to take the life of a human being. But I must state most emphatically that I do not share his views; mankind in general, and practically all communities of men—from the most savage to the most civilized—have decided that for certain acts under certain conditions a man shall forfeit his right to continue to live, and the higher in civilization we progress the more does it become evident that there are other possessions of man valued more highly than life itself.

Judged by every known true standard, the Japanese must be admitted to be the most highly civilized nation in the world, and yet amongst them even suicide is an honourable act.

The subject may, of course, be argued from many points of view—religious, social, and moral—but I do not wish to dilate upon it, for in this aspect of total abolition of capital punishment whatever argument applies to a sane person applies, whether *pro* or *con*, to an insane one.

The second class of objections seems to me to possess more weight; at any rate, its influence has been greater in practice. There are, no doubt, men still living who can recollect seeing a public execution and its attendant scenes of horror and disgusting licence. Such a spectacle is now, happily, a thing of the past, and I cannot help thinking that many of the objections to capital punishment in the abstract are based mainly on considerations of these same disgusting details that used to surround an execution, rather than on the fact itself. There can be no reasonable doubt that the influence on the population in general of such a form of public entertainment was bad in every way, for even the deterrent effect of hanging was prevented: a man who "died game" was rather an example to be followed by other criminals than an object-lesson of the fate that overtook a law-breaker.

On the score of cruelty it is probable that there is an exaggerated feeling in the minds of the public at large, for, so far as the evidence goes, hanging is not a painful death. Still this idea of cruelty does send a shudder through the mind, and to the more sentimental it seems especially an objection when they reflect that the victim was possibly mad. To myself personally there seems an infinitely greater degree of refined cruelty in telling a person that he is going to die at a certain fixed hour, and leaving him to ponder upon that fact for a couple of weeks or more, and then putting him through the mental, not bodily, torture of binding his arms, blindfolding him, placing the rope round his neck, and letting him await the signal for the bolt to be withdrawn. These details are certainly more worthy of the Chinese or Red Indian torturer than of a man appointed by our boasted civilization to carry into effect the demands of the law.

Why do we Execute a Sane Murderer?

The answers to this question would seem to be two:

1. To deter others from murder.
2. To rid the world of a person who is by his own actions proved to be not fit to live as a member of society.

The first of these replies is admitted by every one, for it is the universal consensus of opinion that punishment should be deterrent. I have read somewhere, but cannot recall the reference, that in all probability, to the criminal mind, the *certainty* of detection and punishment following on crime is a much more powerful deterrent than the nature of the possible punishment that may ensue upon arrest; and I am inclined to accept the statement as probably a fundamental factor in human nature, whether criminal or not, for every one is continually hoping to escape from the unpleasant consequences of misdeeds, however trivial those may be.

So far as an insane criminal is concerned, the argument is not worth very much, for though it is well known to all alienists that the insane can be kept in order by threats of punishment, it is equally well known that their minds are so unstable that the threat has, as a rule, very little lasting effect.

The second reply to the question is not, I imagine, quite so readily admitted, but there is very strong evidence that it exists. How often do we hear it said, when some particularly atrocious murder has been committed, "Serve him right to be hung; he is not fit to live," and, again, do we ever hear any outcry about the execution of a criminal, sane or insane, when, in addition to murder, he has raped his victim either before or after death, or, indeed, caused death by attempts at rape. No, we must not deceive ourselves and think we are always acting from high motives; we must admit that disgust at the crime frequently robs us of all sympathy with the criminal and we think the world well rid of him. Many people hold this view of the sane only, or, rather, give expression to it only when there is no question of the sanity of the criminal raised, but to me it seems irrational to apply it to one and not to the other. The difference I would make, if any, should be in the mode of execution. For the sane murderer I have no sympathy whatever, but I must admit that our present method of execution savours more of the savage barbarity and ideas of revenge than is altogether compatible with our extreme protestation in public and private that we have reached a state of civilization in which such considerations have lost all weight.

Why not Execute an Insane Criminal?

I will first glance at two general considerations in the matter.

What are the crimes committed? Nicolson, in Allbutt's *System of Medicine*, gives us a clue to this: he there states that there were 743 criminal lunatics in Broadmoor and elsewhere in 1895. Of these, 103 were undergoing sentences for minor offences in places other than Broadmoor. Of the Broadmoor 640 patients, 527 were in for crimes of personal violence—murder, manslaughter, or attempts at those acts. Of the 81 cases in Broadmoor for offences other than murder,

manslaughter, or attempts, there were arson 19, assault with intent to rape 10, burglary 9, unnatural offences 8. He gives a further table, which simplifies matters thus:

86 per cent. of lunatics act from malice (homicide),
5 " " " lust (rape),
9 " " " acquisitiveness (theft),

which makes 91 per cent. of crimes which it is difficult for society to forgive, or even to punish lightly.

Curability of Lunacy.

It is an established position in medical science that while peripheral nerves will practically always grow again if given proper care and treatment, there is no evidence to show that the neurones of the cord and brain are ever repaired. Modern researches into the morbid anatomy of lunacy are reported to be finding anatomical changes in these neurones; the changes are, I believe, not yet agreed upon, but most observers seem to agree that they exist, that the neurones do not behave to staining like normal neurones. Anatomical research and neurological inferences tend to show, therefore, that recovery from lunacy is not, and cannot be complete.

Does experience on the clinical side offer us any greater consolation? In my opinion, very little. I have talked frequently with alienists, and put the question to them: Do lunatics recover? They generally begin by saying: Of course, they do, many of them; but when pushed a little further, and asked, Would you trust a lunatic who has recovered, to go through the same circumstances (stress, misery, poverty, disappointment, etc.) that ostensibly produced the mental trouble? the answer begins at once to be more hesitating, and I think it must be admitted that a recurrence of the temptation is extremely likely to bring about a recurrence of the fall.

If then the fall be some act of violence the question at once becomes acute: What possible reason can there be for ever allowing a patient who has once fallen to be again exposed to the risk of temptation—in other words, released from an asylum?

The answer to—Why should we not execute an insane murderer? practically always amounts to this: "Well, he could not help himself: it was an accident arising out of disease of the brain," and it would be unjust to punish a man for disease which he could not help. It is in the word "punish" that I wish to join issue with the humanitarian. I would reply at once: No, I do not want to punish him for his disease, in the sense of inflicting upon him discomfort and pain out of a feeling of revenge, or out of a feeling that I must punish him to deter other lunatics, but I do want to place him in such a position that it will for ever be impossible for him to repeat his crime. To this the humanitarian at once replies: "Place him in Broadmoor: he cannot do any mischief there." To this I have the two replies ready:

1. That I think the fact that a man whom some consider quite sane—it is to such cases as Prince's I allude—has by a hideous crime earned for himself a comfortable home for life, is not only no deterrent to others of a like kidney to prevent them from committing murder with a similar object, but is even a distinct incentive to some poor wretch hovering on the brink of starvation to go and do likewise, so that he too may be taken care of for the rest of his life.

2. That even in an asylum there are large numbers of sane attendants and medical men, etc., to whom the homicidal lunatics constitute a standing danger; and, in my opinion, it is a risk which is very unnecessarily rendered lasting by the fact that, no matter how homicidal the man may be, he will be kept alive from motives of (false) humanity.

Another reply that is urged is this: The lunatic may recover and again become a useful member of society. I have already briefly glanced at the curability of lunacy, but here I must enter upon one or two points as regards the chances of recovery in different classes of lunatics—for instance, puerperal insanity. Dr. Nicolson says (Allbutt's *System of Medicine*): "Amongst the women there were only 14 cases out of a total of 130 where the person killed was other than their own child." He does not state in so many words that these were all cases of puerperal insanity, but it is fairly certain that the bulk of them were so.

Now, whether we allow or not that a woman who is attacked with puerperal mania is *ab initio* a woman with an unstable brain, it must be at any rate admitted that in general such mania is not brought into active manifestation by any other agency than that connected with child-bearing—pregnancy, puerperium, or lactation; hence it is easy by oöphorectomy to guard against any recurrence of the circumstances tending to upset mental balance, and I would suggest that the correction—I choose this term in preference to "punishment"—for child murder in puerperal mania should be (1) oöphorectomy performed as soon as practicable, (2) detention in Broadmoor until recovery was considered to be satisfactory by the tests at present in force there.

Again, take the bulk of the cases of insanity due to drink or other definite and removable cause in the shape of drugs. If a person in this condition has committed a murder, the ovaries or testicles should be removed to prevent multiplication of probable degenerates: and, again, the criminal might be released with the precautions that are at present adopted, but with this additional condition: that the very slightest breach of a pledge of teetotalism, quite irrespective of the effects that might accrue, should be treated as the most serious offence, carrying with it a return to the asylum, with the possibility of his being placed amongst the incurable classes.

Omitting these two great classes, there is, I think, very little doubt but that the rest of the criminal inmates of Broadmoor must be classed as unsafe, even after apparent recovery, and it is for such that I claim there is no possible chance of their being liberated from confinement, and as a logical deduction they must be classed as "incurable" in the ordinary sense of the term, that is, so far as security against another outbreak of homicidal violence is concerned.

It is here that my arguments receive their direct application. What good end can possibly be served by keeping these homicidal lunatics alive, provided we can rid the world of them by some absolutely painless and unobjectionable method? I confess I can see no reason.

The Lethal Chamber.

Modern science has placed within our power many other means for the execution of a criminal than the coarse one of hanging. In America electricity has been tried, but not apparently with the success that was anticipated; some failures and very shocking experiences have leaked out. The main object of my present address is to advocate the principle of the lethal chamber. Modern sentiment has insisted upon this painless method of extinction for our pet animals, and I cannot see why it should not be extended to human beings who have forfeited their lives for some hideous crime of brutal violence. The plan I would suggest is that there should be in every prison in which executions are now carried out, and also in Broadmoor criminal asylum, one or more (preferably several) bedrooms built in such a manner as to be capable of being made practically air-tight, with an opening through which artificially prepared CO and CO_2 could be driven from a generating station; that prisoners condemned to death by legal and proper decision should be made to sleep in these rooms, and that during the night the asphyxiating gases should be admitted.

I would further suggest that the condemned person should not, under any circumstances, be allowed to know upon which night the execution would be performed. I have already drawn attention to the hideous cruelty of the expectation of death.

As a conclusion, let me say definitely, so as not to be misunderstood, I am not advocating the present impracticable scheme of destroying a lunatic because he is a lunatic; I am only advocating a painless method of destroying those who, by their actions, have forfeited their lives to the State. Let it be still, as it is now, proved to the unanimous satisfaction of the jury that the prisoner was actually guilty of the alleged crime.

Dr. HARVEY LITTLEJOHN dissented as to many of the views expressed as to capital punishment, and thought that hanging was a humane and, under the circumstances, the best, method of carrying out capital punishment.

Dr. WALDO said that in the interesting paper just read many suggestions of a radical kind had been made with which he did not agree. At the same time, he did agree with Dr. Smith that the present method of ending the existence of criminals by hanging, although preferable to electrocution, was a barbarous one, and might usefully be substituted by some other mode of execution. It had often occurred to him that it would be perhaps more humane to end life by means of a hypodermic injection of morphine.

Dr. W. H. WILLCOX said public opinion would be very strongly against the removal of the reproductive organs in

insane criminals. On physiological grounds this operation was to be condemned, since the effect which the internal secretion of these organs had on the metabolism was a profound one, and their removal would be certain to aggravate the mental symptoms in the criminally insane.

Wounds of the Throat.

Dr. Harvey Littlejohn gave a lantern demonstration of suicidal and homicidal wounds of the throat, and discussed briefly some points in regard to the supposed characteristic differences between these two kinds of wound.

Mr. R. Henslowe Wellington (Honorary Secretary of the Medico-Legal Society) said cuts on the back of the wrist were rare in suicides, but common on the front of the wrist, though cuts in the hand indicated homicide. Such an excellent collection of cases proved the importance of special assessors (medical) to coroners' courts.

Dr. W. H. Willcox said it was very important that cases of "cut throat" should be examined with an open mind, as the wounds were by no means always typical. In cases where in addition to the cut in the throat many other cuts were present—for example, on the backs of the hands—probably the patient must be insane, since a multiplicity of wounds were constantly found in insane suicides.

SOME NOTES ON THE KLOSOWSKI (CHAPMAN) ANTIMONY POISONING CASE.

By F. J. Waldo, M D., Barrister-at-Law,
Coroner for the City of London and Southwark.

The subject of antimony poisoning has always attracted a considerable amount of interest. The first famous case on record of poisoning by tartar emetic was that of Dr. Pritchard, who was convicted of that crime and executed at Glasgow in 1865. In the notorious Palmer case the prisoner, a surgeon, at first administered antimony to his victim, Cook, but killed him, finally, with strychnine. In the Bravo Case investigation (1876) the murderer was not traced. It is worth noting that in most of the recorded cases antimony has been used homicidally by persons who have been either medical men or have had a partial medical education. The latter was the case with Severino Klosowski, *alias* George Chapman, convicted in 1903 of murdering his reputed wife by the administration of antimony. His case came under my personal notice and investigation as His Majesty's coroner for the ancient Metropolitan Borough of Southwark. The prisoner was a Pole, thirty-seven years of age, who in his youth had received some sort of medical training as dispenser and surgical dresser in a hospital at Prague, in Poland. He was charged with the wilful murder of Maud Marsh, who for rather more than twelve months had lived with him as his wife. It transpired in the course of the trial that two other women who had lived with him as his wives had previously died. His real wife, a Pole, appeared as a witness and identified Klosowski as her husband.

Maud Marsh, nineteen years of age, entered the service of the prisoner as barmaid in September, 1901, at the Monument public-house, Southwark. Shortly afterwards it was given out that they were married. Subsequently there was a suspicious fire at the Monument, and at the end of the year 1901 Chapman, as he was called, moved to the Crown public-house close by in the Borough.

The exact time when Maud Marsh became ill is uncertain; but by July 28th, 1902, she was suffering from sickness, diarrhoea, and abdominal pain, and her sister took her on that date to Guy's Hospital, where she remained as an in-patient until August 20th. A provisional diagnosis of peritonitis was formed by the attendant physician, but no cause was found for that particular condition. The important feature of her stay in the hospital is that she left the hospital considerably improved in health. On October 10th prisoner called on a local surgeon practising in the New Kent Road, and obtained a bottle of medicine for the woman who passed as his wife, "and who was suffering from sickness and diarrhoea." This practitioner called at the Crown, and saw deceased the same evening, and continued attendance until her death on Wednesday, October 22nd. On the 20th the mother of Maud Marsh came to stay at the house. On October 21st, a surgeon practising at Croydon, the medical attendant of the Marsh family, was called in by the father in consultation with the local practitioner. They then arrived at the conclusion that deceased was suffering from some form of irritant poison, probably ptomaine. As the second surgeon was returning to Croydon, he turned the matter over in his mind while in the railway train, and arrived at the conclusion that the irritant was more probably arsenic, given in minute repeated doses. Shortly after the death the local attendant suggested to Chapman that a *post-mortem* examination would be desirable, as the cause of death could not be accounted for. Chapman asked what was the use of a *post-mortem* examination. The doctor observed he did not know the cause of death, whereupon the prisoner said she had died from exhaustion, and when asked what caused the exhaustion he replied "diarrhoea and vomiting." Being further pressed as to what set up the diarrhoea and vomiting, he made no answer, whereupon the doctor said he could not grant a certificate of death, and there must be either a *post-mortem* examination or an inquest. Arrangements were ultimately made for a private *post-mortem* examination at the Southwark mortuary. On the morning of the day after the death, that is Thursday, October 23rd, a telegram was sent to the Croydon surgeon, who meanwhile had heard of the death of Maud Marsh from her parents, warning the local practitioner to look out for arsenic. This telegram was received by the latter before he made the *post-mortem* examination with a colleague. These two medical men found nothing to account for death, but submitted portions of the viscera to an analyst for chemical examination. Traces of arsenic were found in the contents of the stomach, together with antimony in far larger quantity. Subsequently Dr.—now Sir Thomas—Stevenson, at my request, made a second analysis, and found antimony in nearly all parts of the body, from which he recovered 7¼ gr. of metallic antimony, in equivalent bulk to 20⅝ gr. of tartar emetic. He concluded that death was due to antimony administered in a soluble form, either as tartar emetic or as metallic antimony. From the fact that some of the poison was found in the intestines, he arrived at the further important conclusion that a large dose must have been given shortly before death, as otherwise it would have been absorbed.

It was shown that Klosowski prepared food at times for deceased with his own hands, and also administered, as a rule, during her illness both food and medicine. Sickness often followed immediately after taking food, drink, or medicine. On the night before the death, the mother of the deceased, Mrs. Marsh, took a small quantity of the brandy and water that had been brought up by the prisoner for the use of deceased. Shortly after taking the brandy the mother was attacked by violent sickness and diarrhoea, which lasted several hours.

It was shown that, some years before, prisoner bought an ounce of tartar emetic from a chemist at Hastings. The sale was entered in the poison register as having taken place on April 3rd, 1897.

With regard to the two previous so-called wives of Chapman, the surgeon who attended Maud Marsh also previously attended Bessie Taylor in her fatal illness at the Monument public-house in February, 1901. He had attended the latter woman regularly from January 1st, and had given her physic some weeks before that time. Her symptoms were vomiting, diarrhoea, and pains in the stomach. She was seen by three other medical men besides himself, and at least four differing diagnoses were made—namely, uterine mischief, hysteria, cancer of the stomach or intestines, and obstruction of bowels. The local surgeon filled in the death certificate, "intestinal obstruction, vomiting, and diarrhoea" as the causes of death. The body of Bessie Taylor was exhumed. It was found in a remarkable state of preservation after an interment of twenty-one months, doubtless owing to the preservative qualities of the large quantity of antimony shown to be present in the tissues. Dr. Stevenson recovered no less than 29.12 grains of tartar emetic from the body, but there was no evidence either of uterine or of intestinal mischief.

The first woman, Isabella Spink, had been buried about five years, but the body, like that of Taylor, was not only not putrid, but had been preserved in a most remarkable manner. Dr. Stevenson stated that on opening the coffin the head and face were those of a woman who might have been coffined the day before, while the eyeballs were found intact. Antimony was found in the various organs and tissues in such quantity as to suggest she had taken more antimony than Maud Marsh. The cause given on the certificate of death in the case of Isabella Spink was consumption, but no signs of tuberculosis were found in the body.

It will be noted that the medical diagnoses in the cases of these three women were contradictory, vague, and contrary to facts. This circumstance emphasizes the difficulty of detect-

ing cases of poisoning, even by such skilled and experienced observers as medical men, when no direct suspicion has been aroused by concomitant circumstances.

Klosowski was found guilty of the murder of Maud Marsh by the administration of tartar emetic, and was shortly afterwards executed at Wandsworth Gaol.

A remarkable feature of the case is the inadequate motive for the commission of two, at any rate, of these crimes. Klosowski was not married to either of the three women. During the life of the first of his victims, Isabella Spink, he obtained from her a sum of £700, sufficient to start him in the public-house business. No such motive, however, existed in the case of Bessie Taylor and Maud Marsh, but it has been suggested that the latter knew too much of the prisoner's secrets.

Some of the chief points of interest raised by the foregoing short narrative of facts may be briefly noticed. In this relation it is interesting to note that two of the series of deaths by antimony poisoning were unsuspected. The cause of the third death appears to have been ultimately discovered as the result of vague suspicions aroused shortly before the death of Maud Marsh in the minds of her parents and of one, if not of both, of the medical men concerned. The symptoms of antimony poisoning simulate more or less closely various morbid conditions, such as cholera, enteric fever, ptomaine poisoning, and other acute gastro-intestinal affections. In this case the precise nature of the illness was detected neither in hospital nor in private practice.

Incidentally this case demonstrates the usefulness of the poison register kept by the chemist in accordance with the Pharmacy Act of 1868 for the registration of poisons. It is needless to dwell on the value of the corroborative testimony furnished by the proof of the purchase of a large quantity of tartar emetic by the prisoner before the death of the first of the three women.

In the Maud Marsh case the suspicions of the medical men concerned appear not to have been aroused until shortly before death. The local medical attendant very properly insisted upon the necessity of a *post-mortem* examination, the responsibility of which he took entirely upon himself. In so doing although he may have been strictly speaking within his statutory legal rights, yet I cannot help thinking that the interests of every one concerned—to say nothing of the ends of justice—would have been better safeguarded had he communicated at once with the coroner of his district.

The public, as in this case, are not generally acquainted with their obligations in cases of suspicious death. Their duty is clearly laid down in the following passage (p. 6 in the last edition of Jervis, the standard work on coroners): "In all cases of sudden death, or death under any circumstances of suspicion, where the duty of informing the coroner is not by statute imposed upon any particular person, it is the duty of those who are about the deceased to give immediate notice to the coroner or his officer, or to the nearest officer of police, who then communicates with the coroner. If possible notice should be given while the body is fresh, and while it remains in the same situation as when the death occurred."[1]

Speaking generally, in cases of suspected poisoning medical men would always secure sound advice from the coroner as to the best course to pursue. It is advisable that any such communication should always be made in writing and not by word of mouth. Incidentally, it may be remarked that the medical attendant has two means of control always at hand, first, the removal of the patient to other quarters, and, secondly, to analyse vomited matter, urine and so on.

[1] 1. Salk, 377; i, E.P.C., 378.

INFANTILE MORTALITY FROM "OVERLAYING."

By W. H. Willcox, M.D.Lond., D.P.H., F.I.C.,
Lecturer on Public Health, etc., St. Mary's Hospital Medical School.

The subject of the paper I have the honour of reading before you is that of Infantile Mortality from "Overlaying." The broader title, Deaths from "Suffocation in Bed," would, perhaps, be a more scientific one, since the great majority of these occur in infants, and it is under this heading that deaths from "overlaying" are given in the reports of the Registrar-General. The very high infantile mortality from all causes which obtains in this country demands the earnest attention of all students of preventive medicine. The method of combating with this is one of the great problems of the day.

While death-rates from other causes have, in a general way, considerably diminished during the past fifty years, the infantile mortality remains as high as ever, and during the decennial period 1891-1900 for England and Wales it is as high as in the corresponding period forty years ago. Deaths from suffocation in bed have an important share in the high infantile mortality, and it is on this account that I consider the subject of sufficient importance to bring before you.

I.—*Statistical Evidence.*

In the first place, the statistics on the subject must be carefully examined, and in this connexion one must bear in mind that they will certainly give a lower estimate than is actually the case, since undoubtedly many deaths from "overlaying" or "suffocation in bed" are registered under other names—for example, convulsions, etc.

The annual reports of the Registrar-General for England and Wales and for London have been studied, and some very remarkable information has been gained. I propose to place before you a brief account of the result of these investigations.

First of all, it should be stated that "deaths from suffocation in bed" in London are of a magnitude scarcely realized. During the last ten years they amount to a number equal to the deaths from scarlet fever or from typhoid fever.

In London the death-rates per million of population from "suffocation in bed" are more than four times as great as those for the rest of England and Wales, which the accompanying tables illustrate.

"Suffocation in Bed."
Decennial Period, 1891-1900.
I.—England and Wales.

Mean Annual Deaths.	Under 5 Years.	Death-rate per Million Population.
1,749·7	1,718·5	46.45

II.—England and Wales (London Excluded).

Mean Annual Deaths.	Death-rate per Million.
1,137	32.45

III.—London Only.

Mean Annual Deaths.	Death-rate per Million.
612	129.44

1st qr.	2nd qr.	3rd qr.	4th qr.
[illegible]	144.3	105.6	167.5

England and Wales.
Deaths from "Suffocation in Bed." -Annual Death-rate per Million Population.

Year.	Total Deaths.	Death-rate excluding London.	Death-rate including London.
1891	1,768	34.01	46.77
1892	1,677	31.18	43.97
1893	1,656	31.66	43.02
1894	1,650	32.80	42.46
1895	1,865	35.42	47.55
1896	1,809	[illegible].14	45.63
1897	1,736	32.10	43.41
1898	1,763	30.72	43.66
1899	1,793	31.75	43.97
1900	1,780	31.90	43.25
1901	1,620	29.07	[illegible]

ENGLAND AND WALES (Table by Dr. Danford Thomas).
"Children Suffocated in Bed" (under 1 year).

Year.	No. of Cases.	Year.	No. of Cases.
1889	1,331	1896	1,466
1890	1,389	1897	1,556
1891	1,472	1898	1,536
1892	1,390	1899	1,687
1893	1,296	1900	1,741
1894	1,320	1901	1,538
1895	1,511	1902	1,600

ENGLAND AND WALES.
"Murder and Manslaughter."—Total Deaths from "Suffocation."

Year.	Total Deaths.	Deaths under 1 Year.
1880	29	25
1890	33	26
1891	33	31
1892	35	33
1893	13	13
1894	16	15
1895	30	23
1896	34	32
1897	14	14
1898	12	9
1899	11	6
1900	14	12
1901	19	18
Mean Annual Deaths for Decennial Period 1891-1900	21.2	18.8

LONDON.
"Suffocation in Bed."—Mean Deaths and Death-rates per Million of Population for Decennial Periods.

	Mean Annual Deaths.	Mean Death-rates per Million.
1871-1880... ...	552.6	157.26
1881-1890... ...	644.1	161.01
1891-1900... ...	612.0	139.44

LONDON.
Deaths from "Suffocation in Bed" and Death-rates per Million of Population.

Year.	Total Deaths.	Under 1 Year.	Death-rate (per Million of Population).
1891	626	608	148.21
1892	621	605	145.45
1893	574	556	133.11
1894	518	508	119.04
1895	631	610	143.83
1896	643	626	145.50
1897	595	568	133.77
1898	660	644	147.56
1899	641	628	142.65
1900	611	602	135.45
1901	553	541	121.67
1902	600	588	131.03
1903	538	534	122.10

In 1858 deaths from "suffocation" in London were first recorded separately from those due to hanging.

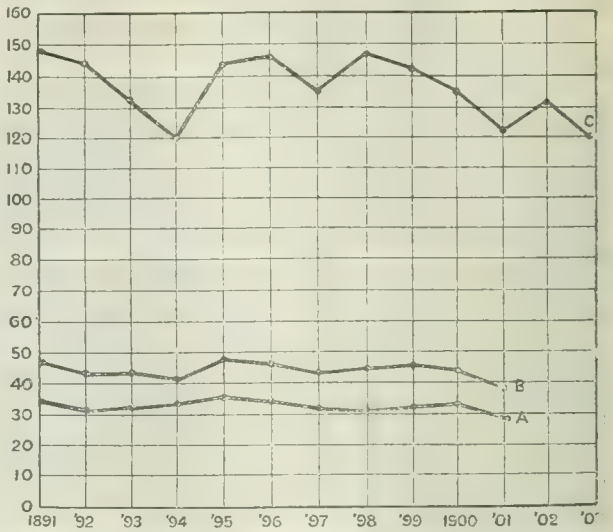
In 1876 the deaths from "suffocation" were first given in different age-periods, and since almost all of these occurred under the age of 1 year, it is obvious that they were almost solely due to "suffocation in bed" or "overlaying."

In 1891 the term "suffocation in bed" was first introduced in the London reports, and no doubt a more accurate record has resulted since a still greater proportion of deaths occur under 1 year.

The mean annual death-rate per million of population in London for the decennial period 1891-1900 from "suffocation in bed" was 139.44.

In England and Wales for the corresponding period the death-rate was 46.45.

But if England and Wales, exclusive of London, is considered, the mean annual death-rate from this cause is only 32.46, that is, less than one-quarter of the corresponding rate for "London only."



A. Annual death-rates per million population E. & W. (London excluded)
B. " " " " E. & W. (London included).
C. " " " " London only.

Statistics, therefore, show an alarmingly high death-rate from "overlaying" in London, and I venture to think that scarcely sufficient attention has been paid to this very important factor in our infantile mortality.

Dr. Danford Thomas has very kindly informed me that in his district (the Central District for London) there were no less than 102 deaths from "overlaying" during the last year (1903).

For England and Wales a few deaths from "suffocation" are included in the "murder and manslaughter" returns, instead of under "suffocation in bed from accident and negligence." For the decennial period 1891-1900 the total mean annual deaths so included are only 21, and of these 19 are under one year.

These would make only a very slight addition to the figures quoted for England and Wales, since they involve the addition of 19 to the large number 1,750, if they are included as being due to "suffocation in bed." A reference to the accompanying tables will perhaps make the above remarks clearer.

For assistance in obtaining the above statistics my sincere thanks are due to Dr. Newman, M.O.H. for Finsbury, who kindly placed his records of deaths in London at my disposal; and also I am indebted to Dr. Danford Thomas for very kindly furnishing me with a table of undoubted deaths from "overlaying" for England and Wales, which was obtained from the records of the Coroners' Society and the Home Office. These figures, it is seen, reduce the mortality for England and Wales still lower as compared with London.

II.—*Causes of "Suffocation in Bed."*

The chief way in which this is brought about is by "overlaying," usually on the part of the parents, but in rare instances other children, and even cats, have been responsible.

The contributing factors may perhaps be briefly summed up in the broad terms "Ignorance and Vice." Points worthy of consideration are the following:

(*a*) The provision of cradles or cots for infants. It seems certain that amongst the poorer classes of the crowded districts of London and many of our great towns the cradle or cot for the young infant is practically unknown.

In the country districts the use of cradles by the agricultural classes is, on the other hand, the rule rather than the exception; though in many country districts I understand that the labouring classes use a cradle by day, but at night the child is allowed to sleep with its parents.

A point in defence of those who object to cradles is that the exposure to cold in a deficiently-clad and ill-fed child is perhaps a worse evil than the risk of "overlaying." I do not think, however, that this contention can be seriously urged.

(*b*) "Drunkenness of the parents" is a very important factor. In some cases the child is no doubt partly intoxicated by the alcoholic milk it obtains from its mother, and so is rendered

unable to struggle sufficiently to arouse the drunken parent overlying it.

In this connexion should be mentioned the fact that in France and Germany it is not the custom for nursing mothers to take alcohol, and drunkenness in women is much less common than in England. Also the use of the cradle is customary, the result being that deaths from "suffocation in bed" or "overlaying" are quite a rarity abroad.

In London investigation has shown that the large majority of cases occur on the Saturday and Sunday nights, when, unfortunately, drunkenness is commoner. Dr. Newman informs me that 75 per cent. of the deaths from "overlaying" in the borough of Finsbury occur at this period of the week.

(*c*) *Criminal Intent.*—Undoubtedly, in some cases "overlaying" may be intentional, and the insurance of the infant's life has been a suspicious coincidence. However, I think it would be an unjust libel on our poorer classes to allow this factor to occupy a prominent position. Dr. Wynn Westcott, in an able paper published in the British Medical Journal last year, expresses the opinion that the great majority of cases of "overlaying" are accidental. Other important causes are:

(*d*) *The early age of the mothers*, when, owing to inexperience, the child is neglected.

(*e*) *Illegitimacy*, where deaths from this cause are commoner than amongst legitimate children.

(*f*) *Errors in feeding* no doubt contribute, since a weakly, puny child is much more likely to be overlaid. In this connexion the dangerous practice of leaving young infants asleep with the teat in the mouth should be alluded to.

III.—*Preventive Measures.*

So far no very serious steps have been taken in dealing with this problem, but there are signs that the time is at hand when the subject will be strenuously attacked. It has been suggested that legal measures would be useful. That a verdict of murder or manslaughter, accompanied by a severe punishment, would act as an effective deterrent. However, public opinion in this country is against such a procedure, and hence it is rare for such a verdict to be given by a jury. In Germany "overlaying" of an infant may be brought in as "death from carelessness," and is punishable by three years' imprisonment. It has been suggested that if magistrates could inflict two or three weeks' imprisonment in cases of this nature some good would accrue. I venture to think that if any punishment is inflicted, a severe one is necessary, in order that the offence may be regarded with becoming gravity.

There is no doubt that the only effectual way of coping with the great problem before us is by the education of the poorer classes. The gradual removal of ignorance and carelessness of parents, and the awakening to a sense of their responsibilities, are bound to be followed by the disappearance of deaths from this essentially preventable cause. The only certain remedy is to influence in every way possible the mothers in our overcrowded districts, so that they may do all in their power towards the careful bringing up of their offspring. This can be done—and is being done in many parts of the country—by properly trained lady sanitary inspectors and health visitors, who, by personal visits in the crowded districts, can, by tactful and kindly advice, influence the mothers in a way that is more effective than any amount of legislation. There are happy signs of an extension of work in this direction throughout the country.

Lastly, by the proper education of girls in our elementary schools in the important details of the care of infants, when the time arrives that they themselves become mothers it will be impossible for such accidents to happen to their own children. Being forewarned they will be forearmed.

It is a happy augury that the medical profession as a whole is alive to the importance of the proper teaching of hygiene in our elementary schools, as evidenced by the recent important petition presented to the "Central Educational Authorities of the United Kingdom." It is earnestly desired that this will result in effective action in the immediate future.

The high mortality from "overlaying" in London and our great towns is almost entirely due to ignorance. It is essentially preventable. The proper education of girls in our elementary schools would certainly be the means of causing in a few years the lamentable heading "Suffocation in Bed" to disappear entirely from our mortality statistics.

Dr. F. J. Waldo said the matter of committing parents for "overlaying" was not so easy, legally, as it appeared. Before the jury could legally return a verdict of manslaughter and the coroner commit for trial a parent or nurse, the jury must be satisfied that the case not only showed negligence—such as being the worse for liquor—but that it was of a guilty, criminal character. In many districts there were various reasons for an apparent increase (which was very small) of deaths from suffocation, but coroners had no proof in evidence that intemperance on Saturday nights was the cause. Instead of any criminality, in the majority of these cases, his opinion was that suffocation of children was more often due to the desire of the mother for the welfare of her child. His experience was that the main causes were: (1) The English habit among the poor of having the child to sleep on the arm; (2) mother suckling the child when in a recumbent position; (3) child lying between or at the side of the parents with its head below the pillow; (4) to the father or mother, in turning in sleep, throwing the clothes over the face of the child. If cots were used there would be few cases of suffocation. He believed that in nearly all suffocation cases the parents had the clearest character for sobriety and anxiety for the welfare of their children. Cases occurring on Saturday nights and Sunday mornings he thought were due to mothers having been over-tired from shopping, cleaning rooms, etc., rather than to intoxication or other causes.

Dr. Symons (M.O.H., Bath) thought that much good work might be done by systematic inquiry into the causes of deaths of children under 1 year of age. They would thus make parents ashamed of allowing infants to die, and help to prevent infantile mortality, which was a national question.

RIGOR MORTIS IN STILLBORN CHILDREN

AND ITS IMPORTANCE FROM A MEDICO-LEGAL POINT OF VIEW.

By C. H. W. Parkinson, M.R.C.S.,
Wimborne.

In cases of supposed infanticide, before inquiring how a child has come by its death, it is necessary to show that it was born alive, and the question is often difficult to answer, and I hope, therefore, that the following communication, as the result of 30 years' experience as Police Surgeon and observations of stillbirths occurring in an extensive midwifery practice, may not be unwelcome.

My attention was called to the question of rigor mortis in stillborn children by a case which occurred in 1873, and was subsequently reported in the *Medical Times*.

A young woman, of respectable antecedents—a National School mistress—was charged with child murder. The girl was confined in her house quite alone, and the infant was found in a drawer dead, and with marks of violence and wounds on the face and head.

The medical man called in stated that the gaping wounds and the fact that rigor mortis had set in clearly proved the infant was born alive, and the girl was committed for trial for murder. The doctor did not make a *post-mortem* examination, as in his opinion it was unnecessary.

The girl's relatives asked my assistance and advice, but I could not find in any textbook of Medical Jurisprudence any allusion to rigor mortis as a sign of live birth. The girl was acquitted at the assizes, as the injuries were, she stated, inflicted in the agony of childbirth; while the doctor was censured—and rightly—for neglecting to make a *post-mortem* examination.

Some time after I was attending a case of protracted labour, and found when the child was born it was not only dead, but that cadaveric rigidity had set in and had clearly obstructed labour, and moreover, I found the rigor mortis went on increasing, and the legs and arms became drawn up and flexed in the position they would have taken within the uterus. I have since then observed in the case of infants who died or were killed by craniotomy, etc., during birth, that although they might be limp when born and their limbs fall in various positions, when rigor mortis set in there was the same drawing up of the knees and flexing of the arms approaching to the ordinary position in the uterus.

Some time since I was called on to examine the body of a newly-born infant. The mother of the child lived at home with her parents, and the police received information that the girl had been confined, and found the body buried in the garden. When shown to me, the body was lying in the box in which it had been buried, the back rounded, the head doubled on the breast, the knees and thighs flexed and doubled up on the abdomen, and the arms flexed and doubled on the chest—in fact in the position it would take within the

uterus. On taking it from the box the limbs were found to be quite limp, and fell apart on placing the child on its back; there were marks of pressure at the flexures of the joints, and the limbs were readily replaced in the position in which they were found. From the appearance, I was convinced the child had died *in utero*, that cadaveric rigidity had followed and had passed off before the birth. This was fully borne out by the *post-mortem* examination. The child was between seven and eight months, and evidently had never breathed. The defence was that the mother did not feel the child for a day or two, and did not expect for some weeks, that the child was born unexpectedly, and as it was dead the parents thought it no harm to attempt to hide their daughter's shame by burying in the garden, and this view was adopted, and, I have no doubt correctly, by the Court.

Conclusions.

The conclusions I have arrived at are as follows:

1. That rigor mortis may occur *in utero* and (*a*) may pass off before labour terminates, or (*b*) may occur during and so hinder labour and continue after delivery.

2. That in deaths during the later stage of labour, where the child is expelled soon after death, rigor mortis may set in afterwards.

3. That in all cases of stillbirth the character of the rigidity is the same, and that whereas in children that have been born alive the rigidity is that of ordinary rigor mortis, and the limbs stiffen in the position in which they may be then lying, in children stillborn the rigidity always takes the same form, and the limbs, although lying loose and limp, are drawn up more or less into the position they took in the uterus, and even if the rigor mortis had passed off *in utero* before delivery, there would be evidence by pressure-marks, or the natural tendency of the body and limbs to adopt the intra-uterine position, that this has occurred.

4. Rigor mortis does not accompany stillbirth always, but where it is not present there is no difficulty in deciding the fact from the signs of decomposition present. The mode of death probably influences the rigidity in stillbirths as it does the rigor mortis of adults, and the only suggestion I can make is that possibly the rupture of membranes and discharge of liquor amnii may be a factor.

The point I wish to press is that in a case of suspected infanticide, or where the question of live birth comes in, any evidence that the limbs and body have been drawn up while in a state of cadaveric rigidity into the shape in which the body is moulded *in utero* is a strong evidence of stillbirth.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

ACUTE INTESTINAL OBSTRUCTION CAUSED BY AN IMPACTED GALLSTONE.

The remarkable point in Dr. Chittenden Bridges's interesting case (British Medical Journal, July 2nd, 1904, p. 19) is the fact that a gallstone measuring only seven-eighths of an inch in its longest diameter should have become impacted in the small intestine.

Some weeks ago I operated, in the British Hospital, Paris, with success, on a somewhat similar case (the details of which I hope to publish later)—a woman of about 50 suddenly showing signs of obstruction high up in the small bowel—namely, vomiting faecal in odour, little abdominal distension, pulse 130, temperature 96°, etc. The gallstone removed measured 2½ in. in length by 1⅛ in. in diameter, and, in spite of its size, had not caused obstruction until it reached intestinal adhesions to the abdominal cicatrix of a former operation. The stone was freely movable above that part of the intestine constricted and fixed by its adhesions, and, had it ulcerated into the bowel below them, might have travelled at least to the ileo-colic valve.

Sappey gave the diameter of the terminal portion of the small intestine as 20 mm. (rather over ¾ in.), but recent researches [1] have shown that both it and the ileo-colic valve admit olive-shaped *bougies à boule*, measuring about 30 mm. (about 1¼ in.) in diameter, the exact detail being an average of 31 mm. in men and 29·8 mm. in women. Naunyn states that a calculus of 3 cm. diameter is likely to cause obstruction. May I add that the interest of these cases is such that careful measurements of the dimensions of the calculi are worthy of record, the length as a rule being the least important dimension unless the calculus be impacted transversely?

Paris. A. A. Warden.

[1] Brochard. *Thèse de Paris*. 1899. De l'Obstruction Intestinale par les Calculs Biliaires.

EXPECTORATION OF CALCAREOUS BODIES.

The above phenomenon may be of sufficient rarity to warrant the recording of an instance of it.

Dr. Fowler in *Encyclopaedia Medica* mentions the expectoration of caseous material and calcareous granules, but the size of those recorded here marks them as more than "granules."

The patient S.C., a lad of 14, with phthisis, involving all the lobes of the right lung and the cardiac lapet of the left, generally has a normal temperature and pulse. On June 17th, however, he had a febrile attack with a rectal temperature of 103°, no pain, cough, or other symptom, besides headache. The physical signs in the chest showed greater moisture in quality of the crepitations. The temperature gradually came down on the subsequent days, but on the 23rd and two succeeding days he coughed up three calcareous bodies, one of which he preserved for my inspection. It was irregular in shape, and measured 7 mm. in length and 2 mm. in breadth, and was hard and brittle, and devoid of any organic material.

No more have been expectorated, and the pulse and temperature are now as usual. The source of these bodies was possibly a calcified gland, or more probably a fibrosed nodule in the lung, where some activity of the disease had occurred, with release of the calcareous material in its centre, the rise of temperature being the outward sign of this activity.

Eastby, Yorks. Howard G. Pesel, M.D.

CONGENITAL ELONGATION OF THE CERVIX.

Observations as to the influence of congenital elongation of the vaginal cervix on labour being at least somewhat rare I venture to pen the following remarks:

The patient, a young woman 25 years of age, unmarried, first consulted me six months ago on account of cessation of her periods for the previous three months. Symptoms strongly suggested pregnancy, and the patient confessed that for the past five years she had frequently allowed sexual connexion. I advised a vaginal examination and found close within the vaginal orifice the lower extremity of a congenital hypertrophic elongation of the vaginal portion of the cervix and that she was pregnant.

A few days ago I was called to the confinement, the prominent feature of which was the ease and rapidity with which everything passed off. Pains had first come on about 3 p.m., by 10 p.m. every obstacle had been successfully overcome, the only help given having been a little digital dilatation of the os.

W. Boxer Mayne, L.R.C.P.Lond., M.R.C.S.Eng.

Swindon, Wilts.

CARDIAC SOUNDS ENORMOUSLY INCREASED BY SURGICAL EMPHYSEMA.

I am not aware of a case similar to the following having been recorded.

The patient, a woman aged 38, after a quarrel with her husband jumped out of a window, and was brought to the infirmary on a police ambulance. She had some contusions about the face, and a small bruise, about the size of half-a-crown, at the junction of the third and fourth right ribs with the sternum. Nine hours afterwards examination of the chest revealed that the bruising in this situation had nearly gone. On listening to the cardiac sounds, they appeared to be normal at the apex, but upon going up towards the aortic area a very slight systolic murmur became apparent; when, however, the stethoscope was placed on the sternum and over an area about 3 in. by 3 in., situated over the third and fourth right ribs near the sternum, most alarming cardiac murmurs were heard. Neither in aneurysms nor with the phonendoscope have I heard sounds or murmurs so amplified. The skin over this area was raised about ¼ in. by surgical emphysema. At first one thought of an aneurysm near the bursting point, causing rupture of the pleura, for a thrill could be very distinctly made out. Gradually as the pressure of the stethoscope was increased it cut out the air, and one was enabled to listen through the ordinary chest wall, the result being that the alarming sounds immediately disappeared, and the sounds of the heart were heard quite distinctly. As the pressure of the stethoscope was diminished, the abnormal sounds

returned again to their full intensity. A more minute examination detected increased movement of the third and fourth ribs, due apparently to a fracture close to their junction with the sternum.

The following points of interest appear in this case: (1) The sounds and situation closely simulating a sudden bursting through the pleura of an aneurysm (although, of course, there were features against this). (2) The peculiar vibratory thrill in the emphysematous patch, set up by each beat of the heart. (3) The extraordinary amplification of the cardiac sounds, caused by the minute caverns of air in the tissues. (4) The way in which removal of the air, by increasing the pressure of the stethoscope, enabled a diagnosis to be made.

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REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

MANCHESTER UNION HOSPITAL.

A CASE OF PYLORECTOMY FOR MALIGNANT DISEASE.

(By Arthur H. Burgess, F.R.C.S.Eng., M.B., M.Sc. (Vict.), Visiting Surgeon to the Hospital.)

A man, aged 36, was admitted to the Manchester Union Hospital on December 16th, 1903, complaining of having had "indigestion" of two and a-half years' duration.

History.—At first he suffered only from pain after food, later he commenced to vomit with gradually-increasing frequency, until for the last two months he could scarcely ever retain even liquid food. At no time did the vomit contain blood.

State on Admission.—His former weight was 9 st. 4 lb.; on admission he weighed only 5 st. 7½ lb., and was in an extremely weak condition. The stomach was made out to be largely dilated, but no tumour could be felt through the abdominal wall, though the latter was thin and lax.

Operation.—On December 17th laparotomy was performed, and after separating some old adhesions about the pylorus, this was found to be constricted and of a very hard consistence, a condition which was strictly limited to the pylorus. No enlarged glands could be felt in the omenta. From its consistence I believed the pylorus to be the seat of carcinoma, but as the patient's condition was too serious to allow of any prolonged operation, posterior gastro-enterostomy by continuous suture was performed to relieve the dilated stomach. I intended to excise the pylorus at a later date, and with this in view made the anastomosis well towards the cardiac end of the stomach.

Progress.—During the next three weeks he improved so considerably that he declined further operation, and left the hospital at the end of five weeks, during which he gained 20 lb. in weight. He returned, however, on February 2nd, 1904, desiring the growth to be removed. The abdomen was reopened on February 10th, and the growth found to have increased to at least five times its former size, and to have extended for some distance along both curvatures of the stomach, enlarged glands being felt in both omenta. After clamping the stomach and duodenum, and ligaturing the omenta in sections, the growth and glands were excised. The divided end of the stomach was accurately closed by two layers of continuous suture, but, owing to the depth of the duodenum and the thinness of its walls, I could not feel satisfied that a similar attempt to close the duodenal end was sufficiently successful, and a large gauze drain was therefore inserted, leading down to the line of suture.

Result.—For four days some bile escaped from the wound, probably from the duodenal end, but afterwards ceased. The patient made an excellent recovery, and left the hospital on April 30th, having gained altogether 49 lb. since the first operation.

Remarks.—The case illustrates the difficulty of making a diagnosis between cicatricial thickening of the pylorus from old gastric ulcer and malignant disease, even when the parts are actually exposed by laparotomy. In spite of the long history of the symptoms, the presence of old pyloric adhesions, and the absence of glandular affection all pointing to a cicatricial condition, I considered at the first operation that the case was one of carcinoma, relying chiefly upon the extreme hardness of the pylorus to palpation. When, however, a gain of 20 lb. occurred in the five weeks following, I began to doubt my diagnosis, and was considerably astonished at the immense increase in size of the growth noted at the second operation, since the general condition had improved so remarkably during the intervening period, and the weight had increased by 28 lb.

REVIEWS.

CYTODIAGNOSIS.

It would appear that the bacteriological examination of effusions into the pleural, peritoneal, and pericardial sacs, into the tunica vaginalis, and into joints has limitations which justify the introduction of certain other methods of examination. For example, the inoculation of a quantity of pleural effusion may lead to negative results, despite the presence of tubercle bacilli, owing to the fact that the organisms present are dead; and further, the inoculation with suspected tuberculous material requires a delay of some weeks before any certainty of interpretation can be obtained; the toxins present in an effusion may of themselves lead to the death of the animal before development of organisms has taken place. It is not surprising, therefore, to find that investigators, amongst whom Widal, Ravaud, Dopter, Achard, Loeper, Dr. Marcel Labbé, the author of the volume now before us—*Le Cytodiagnostic*[1]—and many other French workers, have turned their attention to the careful examination of the leucocytes occurring in pathological fluids, not so much from the point of view of estimating the total number of cells present as to discover in the case of these cells the relative number present (cytodiagnosis). The cytological examination of effusions, provided that the results are reliable and easy of interpretation, is far less cumbersome than the more lengthy and technical bacteriological investigation. This applies not only to the examination of cases of suspected tuberculosis, but also, though to a less extent, to the examination for the diplococcus of Weichselbaum, for streptococci, staphylococci, and pneumococci, etc.

Much of the difficulty met with in the bacteriological as well as the cytological examination of various fluids which contain the factors necessary for the formation of fibrin, is the development of a clot which entangles the organisms or cells. It is therefore necessary to defibrinate such a fluid as soon as possible after removal from the body. The fluid is received into stout flasks containing large glass beads. By agitating the flask and its contents small detached clots of fibrin are formed. The fluid is then centrifugalized and these small clots fall to the bottom of the flask, carrying with them cells and bacteria. Films prepared from this material are fixed and stained by the ordinary methods, or even moist preparations may be employed, using a 1 per cent. solution of methylene blue for staining. Not only leucocytes but cancer and sarcoma cells, endothelial cells, etc., are thus rendered easy of study. When applied to the examination of pleural effusions, cytoscopy has given excellent diagnostic and prognostic results, without, it is true, the certainty of bacteriological examination in many cases, but readily obtained and easy of interpretation. The fluid from moderately-advanced cases of pleural tuberculous disease shows a great preponderance of lymphocytes (Widal, Litten, Wolff), and there may be a few red cells as well; during the first few days of the effusion, however, a number of large mononuclear cells occur which stain badly, as if undergoing degeneration. It is not quite certain whether they are endothelial cells or large mononuclear leucocytes. Widal and Ravaud, in addition, found in the early stages a number of polymorphonuclear leucocytes showing neutrophile and eosinophile granulation; in brief, the cells found in the early stages are of various characters, but, after a few days, when the second stage is developed, lymphocytosis occurs. In pleurisy due to the pneumococcus, streptococcus, etc., the fluid contains large numbers of polymorphonuclear cells, which increase in numbers as suppuration sets in. When effusions occur as the result of so-called mechanical causes, chronic emphysema, Bright's disease, and cardiac inefficiency, then a preponderance of endothelial cells exists, producing a picture which differs very considerably from that met with in inflammatory conditions. In cases of leucocythaemia or of involvement of the pleurae by neoplasms, the cells special to these conditions may be found in the fluid.

Next to the cytological examination of pleural effusions, that of the cerebro spinal fluid has yielded the most practical results. In health the cerebro-spinal fluid is free from cells; presence of cells is always an indication of an organic affection of the central nervous system

[1] *Le Cytodiagnostic: Les Méthodes d'Examen des Sérosités Pathologiques et du Liquide Céphalo-rachidien* [Cytodiagnosis and other Methods of Examination of Pathological Effusions and of the Cerebro-spinal Fluid]. Par Dr. Marcel Labbé. Paris: J. B. Baillière et Fils. 1903. (Cr. 8vo, pp. 95, 7 illustrations. Fr. 1 50.)

with participation of the meninges in an inflammatory reaction. Acute organic changes begin with a preponderance of exudation of polymorphonuclear cells, to which succeeds with an improvement of the patient's condition a mononuclear leucocytosis; this in time disappears with a return to health. Chronic organic changes cause a lymphocytosis, especially in syphilitic infection, also in chronic alcoholism. In zona it is found that lymphocytosis occurs. In various neuroses, in peripheral neuritis, and cases of tumour which do not involve the cortex cerebri or the surface of the cord, a meningeal reaction is not produced, and there is no lymphocytosis. Tuberculous meningitis, which as a rule shows a preponderance of the lymphocytes in the cerebro-spinal fluid, may be thus differentiated from cases of non-tuberculous meningitis, tetanus, and hysterical pseudomeningitis. In chronic affections of the nervous system, for example, tabes and general paralysis, lymphocytosis in the cerebro-spinal fluid allows of an early diagnosis, even when the signs are confined merely to the presence of the Argyll-Robertson pupil (Babinski and Nageotti, Widal and Lemière). We have shown how Dr. Labbé has given a summary of the application of this important means of diagnosis in cases which present the greatest difficulties; exceptions and difficulties are fully admitted, and the modesty of his statements indicate that he has carefully considered the disadvantages as well as the merits of this extremely interesting clinical aid.

WATER BACTERIOLOGY.

IN the preface to *Elements of Water Bacteriology*,[1] Messrs. PRESCOTT and WINSLOW declare their opinion with patriotic frankness, that "the best work on the bacteriology of water" has been done in America, and the entire volume may be said to consist of an elaboration of this statement, backed up as it is by the excellent bibliography appended to the text, which bears eloquent testimony to the industry of our American brethren. Much as we should like to controvert the main contention of Messrs. Prescott and Winslow, we are compelled to admit that, theoretically at least, the bacterioscopic examination of water, in America, has attained a standard of uniformity and thereby a public appreciation of its value, towards which English practice is still striving. This happy result is due to the action of the Laboratory Section of the American Public Health Association, which some time ago promulgated "standard" methods of analysis, thus rendering comparable the results and reports of individual workers.

Although we should heartily welcome a similar uniformity of practice in this country, it must not be inferred that we are in favour of the adoption, in their entirety, of the standard methods described—indeed, many we would unhesitatingly reject. As an instance, we would mention that simple yet universal process, the enumeration of the bacterial contents of water by methods of "plate" cultivation. The results so obtained, although often of little value in the case of isolated examinations of unknown waters, are of considerable importance when dealing with known waters frequently and regularly examined—any marked deviation from the normal average "count" at once putting the bacteriologist on the *qui vive*. In carrying out this investigation, Messrs. Prescott and Winslow (p. 28) advocate the delivery of 1 c.cm. of the water sample into a sterile Petri dish of 10 cm. diameter, adding 5 c.cm. standard liquefiable medium, for example, 10 per cent. gelatine, and securing the even admixture of water and medium on the bottom of the plate "by careful tipping and rotation," and the subsequent incubation at 30° C. (a misprint for 20° C.) for 48 hours; this method introduces so many obvious fallacies that comment is needless. Again, the process of enumerating the organisms in a water sample which will multiply at the temperature of the human body appears to be restricted by the authors to a count of only such bacteria as ferment lactose, to the neglect of the information afforded by the ratio existing between those developing in ordinary nutrient agar at 37° C. and those appearing in the gelatine plates incubated at 20° C.

These, however, are minor points; the general consensus of opinion, that for all practical purposes the presence of colon bacilli in small quantities of water serves as an index of noxious pollution, leads us to examine those sections of the book devoted to a consideration of the means adopted for the detection of this organism with critical interest. Here we are decidedly in accordance with the authors, who favour preliminary "enrichment" of the sample, by adding small quantities of the water under examination to a fluid nutrient medium, for example, dextrose broth, and incubating for from eight to twenty-four hours in the hot incubator, and subsequently plating the resulting growth upon suitable media. The test is made approximately quantitative by inoculating a series of tubes each with, say, 0.01 c.cm. of the water sample. The authors deprecate the use of larger volumes of water than about 1 c.cm., in this test, for they state that on the one hand a large proportion of colon bacilli, originally present, are lost during the preliminary incubation, being crowded out by the growth of other organisms (a result we would suggest, easily obviated by the use of selective media, and incubation at a temperature of 42° C., under anaërobic conditions), and on the other, they consider the significance of B. coli when present in numbers less than one per cubic centimetre, extremely doubtful. This brings us to the chapters dealing with the interpretation of results, and here we cannot but feel that the tentative standards put forward are distinctly lenient—water containing B. coli in every hundred cubic centimetres, but not in every ten, is regarded as safe; in every ten but not in every one, reasonably safe: in every centimetre but not in every tenth, questionable; in every tenth but not in every hundredth probably unsafe; and only when the colon bacillus is present in the water sample to the number of one hundred per cubic centimetre at least, do the authors consider that water as definitely unsafe. Needless to say, we unquestionably agree with this last dictum.

The authors evidently attach considerable importance to the presence of streptococci in drinking water, and further lay stress on the necessity of estimating the numerical strength of these organisms by methods similar to those employed in the case of the colon bacillus. B. enteritidis sporogenes, on the contrary, they do not consider as affording any indication of either recent or dangerous pollution.

We strongly recommend the perusal of this little book to every water bacteriologist, for not only does it afford a faithful index of American precept and American practice, it also provides food for reflection and suggestions for future work.

[1] *Elements of Water Bacteriology, with special reference to Sanitary Water Analysis.* By Samuel Cate Prescott, Assistant Professor of Industrial Biology, and Charles Edward Amory Winslow, Instructor in Sanitary Bacteriology, in the Massachusetts Institute of Technology. New York: John Wiley and Sons, and London: Chapman and Hall. 1904. (Crown 8vo, pp. 172. 5s. 6d.)

DISORDERS OF THE STOMACH AND INTESTINES.

DR. ROLLESTON has reprinted in *Clinical Lectures and Essays on Abdominal and other Subjects*[1] seventeen of his lectures and essays which have appeared during the past seven years. The practice of disinterring such articles is perhaps not one always and wholly to be commended, but we must admit that it is entirely justifiable in this instance. The various articles are not merely the statutory output of the ordinary hospital teacher, but are a record of truly scientific inquiry in the field of clinical medicine. Many of Dr. Rolleston's inferences are admittedly tentative, but no one can read the book without being stimulated by his intellectual activity. The first article is a good example of this. It is written round two cases of persistent vomiting after diphtheria, but the author takes occasion to go deeply into the general question of the causes of vomiting in this disease, and to add a suggestive discussion of the prognosis and treatment. He refers among other points to the experimental observation that tracheotomized dogs do not vomit. It has accordingly been suggested that this operation should be performed in cases of dangerously persistent vomiting in man; from inquiry, however, in the diphtheria wards at St. George's, Dr. Rolleston finds that tracheotomy in the human subject may be followed by dangerous vomiting, and hence concludes—quite rightly, as we think—that the introduction of so dangerous a surgical measure is not justifiable. The practical aspect of the book is throughout in evidence, no fewer than four of the lectures being explicitly devoted to the subject of treatment. Of these, perhaps, the most interesting and original is that on the treatment of gastric ulcer. Dr. Rolleston is a strong advocate of the principle of complete physiological rest to the alimentary canal in this affection. He deprecates the sucking of ice by the patient and doubts whether, provided plenty of water be given by the bowel, nutrient enemata are necessary during the week or two in which no food is given by the mouth. Of course, a great deal will depend upon the general condition of nutrition of

[1] *Clinical Lectures and Essays.* By H. D. Rolleston, M.D., F.R.C.P., Physician to St. George's Hospital, etc. London: S. Appleton. 1904. (Demy 8vo, pp. 184. 5s.)

the patient when admitted, but there can be little doubt that if this will allow it starvation affords the best prospect of rapid healing for the ulcer. For haematemesis Dr. Rolleston recommends rest and morphia; he deprecates the use of drugs by the mouth, and shows that to give ergot is unscientific. In a modified form he approves also of the starvation treatment of typhoid, particularly when diarrhoea or tympanites are present. He has much that is suggestive to say concerning the use of intestinal antiseptics in this disease; he himself adopts Sir W. Broadbent's plan of giving liquor hydrarg. perchlor. in half-drachm doses three or four times during the twenty-four hours. For cardiac failure in typhoid he prefers strychnine subcutaneously to either digitalis or alcohol; this is a matter of clinical experience, for we doubt whether he would be able to justify its superiority to the former at any rate upon physiological grounds. The remaining articles relate either to examples of rare and unusual diseases or to those clinical studies in perverted metabolism to which, as is well known, Dr. Rolleston has devoted so much attention. Among the former the accounts of cases of Recklinghausen's disease and of persistent hereditary oedema of the lower limbs are worthy of particular notice. Under the latter heading are several valuable contributions to our knowledge of diseases of the liver, intestines, and pancreas. A lucid discussion of the pathology of myositis ossificans forms the subject of another lecture, to which is appended a highly-stimulating note on developmental diseases of the mesoblast. As will be readily believed by any one familiar with Dr. Rolleston's work, the present volume is almost infallibly accurate and nearly entirely free from even minor slips, though in one place iodine is referred to as a metal, while the assumption that the palatal implication in post-diphtherial palsy is due to the direct action of the toxin upon the muscles is at least somewhat speculative. As a whole, however, we have no hesitation in saying that Dr. Rolleston's book, as an example of practical and useful deduction from sound pathological data, is a creditable and valuable addition to medical literature.

On principle we do not approve of publications which deal merely with the study of a symptom; such a study would far better form part of a textbook in medicine, since taken by itself it might tend to narrow the point of view of the reader. Dr. JANOWSKI, the author of a Study of Vomiting as a Symptom,[2] shows that he is well aware of this danger; he has been at pains to treat his subject broadly, and a perusal of the volume will be well repaid, for it contains, besides much information on the general plan of examination of the vomit, a very just, critical estimate of the value of various chemical and microscopical examinations. The author describes some thirteen groups of disorders in which vomiting is a characteristic. In cases of phthisis, morning vomiting occurs frequently, and the author thinks this is due to the drying of sputum during the night in the upper air passages, the accumulation being responsible for producing nausea. The subject of periodic or cyclical vomiting is briefly discussed, though no suggestions are given as to the cause of the malady. It is a comparatively rare disorder, and is frequently associated with symptoms suggestive of neurasthenia. The periods during which vomiting takes place are of varying duration, sometimes hours or days, and cases have been met with of several weeks' duration. In some cases, between the attacks, the individual is free from symptoms, whereas in others there is a constant feeling of nausea and gastric pain. Obstinate vomiting, as is well known, is a common symptom of gastric ulcer, and the observations of Korczynski and Jaworski would seem to point to the effect of the hyperchlorhydria in exciting bleeding and the escape of the blood as a cause of the vomiting; the human stomach apparently is intolerant of human blood, whether derived from the gastric walls or from the nose or lungs, whereas it is extremely tolerant of the blood of animals when taken in food. Obstinate vomiting occurs as a result of gastro-enterostomy in about 16 per cent. of the cases operated on; the explanations of this result are various, sometimes the stomach wall is too weak to urge on the contents; on the other hand, the contraction of the stomach wall may lead to a narrowing of the artificial opening, even a portion of the bowel may invaginate through the aperture and occlude it; in a large proportion of the cases the vomiting is due to weakness of the walls of the bowel leading to the seat of the gastro-enterostomy, to extreme dilatation producing obstruction in the bowel leading from the seat of operation, or allowing bile and pancreatic juice to be regurgitated through the pylorus into the stomach, there exciting irritation. Faecal vomiting is met with in a variety of cases other than actual obstruction; for example, vomiting of faecal matter will occur when there is a fistula between the stomach and the bowel, in cases of peritonitis and in the paralysis of the bowel following certain operations or in typhoid fever. The writer doubts the explanation which attributes faecal vomiting to an antiperistaltic action, nor is Brunton's theory of a reverse axial current discussed. We must admit that the explanation quoted by the author, though not entirely satisfactory, would appear to be the best; whether the obstruction is mechanical or paralytic, the contents of the bowel cause irritation of the intestinal nerves; and this in turn excites a reflex contraction of the abdominal muscles and diaphragm, and the force of this contraction leads to propulsion of the contents of the bowel, in certain cases, into the stomach. For proving the existence of blood colouring matter in the vomit, the writer prefers Weber's test to Teichmann's, because when bismuth has been administered, crystals similar to haemin crystals may appear as a result of the use of glacial acetic acid and sodium chloride. Weber mixes a portion of the vomit with acetic acid and ether, and shakes thoroughly; then a little turpentine and tincture of guaiacum are added, and a blue-violet colour is produced in the mixture, and this may be intensified by the addition of a little chloroform. The author passes in review all the characteristics of vomit, and the act of vomiting and the concluding section deals with a discussion of the value of the estimation for hydrochloric acid; he is careful to warn us that the absence of this acid from the stomach contents is of no more value than any other negative result, and we must not conclude that its absence means gastric carcinoma: examples are given of instances in which there was achlorhydria, and yet conditions widely different from gastric cancer were present.

Turning to *Constipation*,[3] which also appears to be a volume dealing with a particular symptom, we find, unfortunately, that Mr. SHERMAN BIGG's efforts have no redeeming feature. We are told that "the widespread and almost universal prevalence of the complaint lends a charm to the investigation of the subject," though the "disease lacks a glamour which so many ailments possess." The book consists mainly of platitudes interspersed with advice that may be found in any ordinary textbook; the book can hardly be intended for the medical reader, and we fancy that general readers even will turn away in distrust when they read that the appendix is a small round tube which secretes an oil for the lubrication of the bowel, or that horse exercise helps to shake up the liver. It is a pity that medical men, when writing for the laity, should stoop to the use of such terms as "vitiated bile," "thickened bile," "anaemia of the liver," and we regret that the writer should give prescriptions for the cure of these various conditions.

[2] *Allgemeine Semiotik des Erbrechens* [The Study of Vomiting as a Symptom]. Von Dr. med. W. Janowski. Jena: Gustav Fischer. 1903. (Demy 8vo, pp. 108. M. 2.40.)

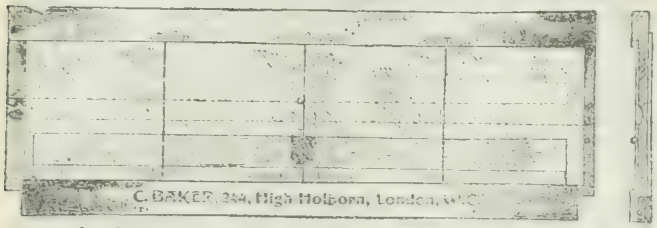
[3] *Constipation.* By G. Sherman Bigg, F.R.C.S.E. London: Baillière, Tindall, and Cox. (Cr. 8vo, pp. 67. 2s. 6d.)

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

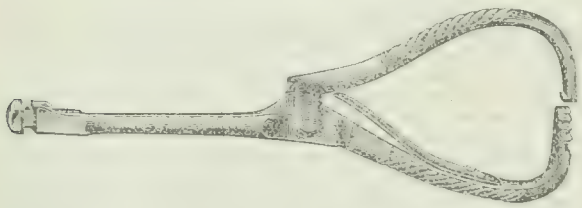
All-Metal Glass Cover Holder.—Mr. EDWARD HORDER, F.R.C.S.Edin. (Ramsgate), writes: Owing to the use of wood in their composition some holders offered for sale are liable to warp in the tropics; others are limited in their usefulness, being made to receive but one size cover-glass; while in another the worker is prevented placing his specimens in an oven, owing to the employment of india-rubber in its construction. In consequence of these drawbacks of other frames, I have designed an all-metal holder, capable of receiving any size cover-glasses between 15 and 26 mm., a sufficient range probably to meet the requirements of all workers. It has the following advantages: (1) It will receive glass covers of any size in general use: (2) being made entirely of metal, it can be easily washed or sterilized; (3) specimens requiring heat can be placed in an oven with the films in

position without fear of ruining the holder. Square or oblong cover-glasses are recommended. Having used a cover-glass holder for some years, I can endorse Major Marshall's



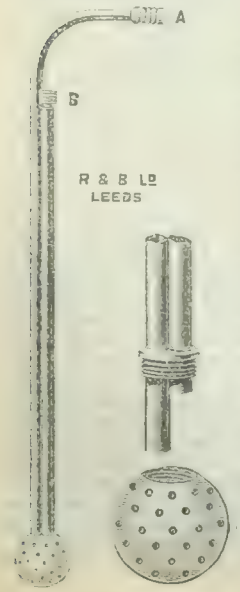
remarks in the *Lancet*, as to the general advantages of such an instrument when making blood films, namely: "Saving of time at the bedside. No time is wasted choosing and picking up cover-glasses. Cleanliness, the cover-glasses need never be fingered. When prepared, the instrument can be wrapped in paper or dropped into a small metal box, contamination of the films by dust, etc., being thus avoided." Directions for use: With the holder between finger and thumb of left hand, pull sliding bar with the right until the opening is a little wider than necessary. Place cover-glasses on base plate, bring sliding bar into apposition with covers, and the holder is prepared for taking a "spread." A small projecting pin at end of plate secures covers from sliding off. The groove along centre of base plate will enable the operator to remove cover-glasses easily by means of forceps. Messrs. C. Baker, of 244, High Holborn, London, W.C., supply the holder.

Improved Hagedorn's Needle Holder.—Mr. CECIL H. LEAF, Assistant Surgeon, Cancer Hospital, Brompton, writes: One drawback which may be urged against Hagedorn's needle holder is that a somewhat uncomfortable movement of the



little finger is necessary to unlock it. I have, therefore, requested Messrs. Arnold and Sons, of West Smithfield, to construct a Hagedorn with a Macphail's catch. This renders the unlocking a comfortable process. The holder as thus modified is shown in the above illustration.

An Evacuator for Removal of Fluids from Cavities.—Mr. C. HAMILTON WHITEFORD, M.R.C.S., L.R.C.P., has sent to us an instrument which he has devised for removing fluid from the abdominal and other cavities during operation. It consists of a Higginson's syringe attached to one of two parallel tubes, which terminate in a hollow collecting bulb. The second tube is provided for the purpose of preventing a negative pressure within the bulb. The bulb is thrust into the collection of fluid to be removed, and the syringe is worked by an assistant. By reversing the syringe the instrument may be used as an irrigator. For either one or the other use the instrument is convenient and handy, though not one of more than occasional usefulness. It permits, however, of rapid evacuation of fluid collections in the abdomen, so that in some abdominal operations its use will save time. The instrument has been made at Mr. Whiteford's request by Messrs. Reynolds and Branson, Leeds.



THE CORRECT METHOD OF STATEMENT OF BIRTH-RATES IN ITS BEARING ON THE DECLINING BIRTH-RATE IN AUSTRALIA.[1]

IN one of the most lucid statistical papers which we have had the pleasure of reading, Mr. W. McLean, the Government Statist of Victoria, arrives at the conclusions that in the Australian Commonwealth the decline in the birth-rate "is due mainly to natural causes," and not as stated by Mr. Coghlan, the Government Statist of New South Wales, to "the art of applying artificial checks to conception."[2] The difference of opinion is so striking that it is desirable to examine this particular instance of declining birth-rate in some detail. It does not follow, of course, that even if in the Australian Commonwealth the decline in the birth-rate is due to natural causes not involving either natural or artificial diminution of fecundity, this explanation will hold good to any considerable extent for other communities. That must be the subject of further investigation.

In 1860 the birth rate of Victoria stated per 1,000 of total population was 42.81; in 1902 it had fallen to 25.23. This method of statement, however, especially in young communities, is misleading. In the earlier years the population of Victoria consisted chiefly of men and women at the reproductive period of life, and the proportion of persons at these ages has since declined. The decline in the birth-rate may conceivably have been due to this change in the constitution of the population. How is this to be ascertained? Three methods are practicable. First, a more correct birth-rate is given by the ratio of the number of legitimate births to that of married women under 45. This method is still not strictly accurate, though much more so than the statement of the crude birth-rate, for among married women of child-bearing ages the birth-rate decreases with increasing age. The second plan is to state a separate birth-rate for each successive age-period. Thus among Swedish wives in 1891 the annual birth-rate per 100 wives was 51.8 at ages 15 to 20, 45.1 at ages 20 to 25, 37.5 at ages 25 to 30, 31.2 at ages 30 to 35, 25.0 at ages 35 to 40, and 14.2 at ages 40 to 45. The desirability when practicable of comparing the birth-rate in different communities among women at the same ages is shown by an instance quoted by Mr. McLean. In Buda Pesth the birth-rate is 38.0, and in New South Wales it is 27.0 per 1,000 of population. But when each age period, 15 to 20, 20 to 25, etc., is taken separately, and the legitimate birth-rate is stated in terms of the number of married women at these ages, the birth-rate of New South Wales is higher in every age-period than that of Buda Pesth. This pitfall is well-known in relation to death-rates, but it has not previously been so clearly stated for birth-rates. The third plan is to apply the birth-rate at each age-period of some standard population, for example, that of Sweden, to the married women at each age period, 15 to 20, 20 to 25, etc., and having thus obtained a standard birth-rate for all the married women at these ages to compare it with the birth-rate on the actual population. The results of such a comparison—which after all is merely an extension of the second method so as to have one numerical statement for all married women instead of a separate statement for each age period—are given in the following table:

Birth-rate in Victoria per 1,000 Married Women.

Census Year.	(a) By Applying Swedish Rates to Married Women of Victoria.	(b) Of Actual Victoria Population of Child-bearing Ages.
1871	304	303
1881	303	303
1891	320	297
1901	291	229

It will be seen from the above table that, assuming the true birth-rate at each age-period had remained stationary

[1] *The Declining Birth-rate in Australia.* By W. McLean, Government Statist of Victoria. (Reprinted from the *Intercolonial Medical Journal Australasia.*)

[2] *The Decline in the Birth-rate of New South Wales.* By T. A. Coghlan, Government Statist of New South Wales. Sydney: Gullick, Government Printer.

the apparent birth-rate would have declined from 304 to 291 per 1,000 married women. In actual fact, it declined from 303 to 229 per 1,000, or about 24 per cent. Similarly, in New South Wales, it declined 29 per cent. This, then, is the true decline in the two Australian States, the cause or causes of which need elucidation, as compared with a decline of 33 per cent. which the crude birth-rates would have indicated in Victoria.

Mr. McLean is of opinion that the women who emigrated to Victoria some thirty years ago were of a type likely to be specially prolific, and that its population is now assuming a more settled character, which would normally be less prolific. He is of opinion, also, that the hardships, financial depression, and drought of recent years have tended, as such conditions do elsewhere, to a diminished marriage-rate and birth-rate. He then lays stress on the low infantile mortality, which would tend to increase the average duration of suckling, and thus increase the natural intervals of child-bearing. This aspect of the question is dealt with elsewhere in this Journal. When Mr. McLean goes beyond this, and states that it is probable that "the solution of the problem of the general decline in the birth-rate throughout all civilized communities lies in the preservation of human life," he goes, we think, somewhat beyond his facts. True, he shows that both historically and at the present time a high birth-rate coexists with a high infantile mortality, and a low birth-rate with a low infantile mortality; it is a remarkable confirmation of his views as applied to Victoria that the infantile mortality has declined approximately 27 per cent. during the same period in which the birth-rate has declined 24 per cent.

It would be comforting were the above explanation applicable to England and Wales. What are the facts? Between 1876 and 1901 the crude birth-rate declined from 36.3 to 28.5 per 1,000 of population, or about 22 per cent.; while the infantile mortality was 146 per 1,000 births in 1876 and 151 per 1,000 births in 1901; and if average infantile mortalities for a number of years be taken, the same absence of decline in infantile mortality is shown. It would be interesting to have birth-rates for England and Wales per 1,000 of standard population in the four last census years. Such birth-rates would probably show a decreased proportion of married women at child-bearing ages, and a portion of the reduction of the birth-rate would be thus explained, almost certainly not as much as in the case of Australia. The remainder cannot be explained as in Australia by a declining infantile mortality increasing periods of suckling and intervals of child-bearing, for there has been no reduction in infantile mortality. We are therefore driven back, so far as England is concerned, on the explanation that the declining birth-rate is not due mainly to natural causes, but in a large measure to "the art of applying artificial checks to conception."

LITERARY NOTES.

Dr. Robert Fletcher, Editor-in-Chief of the *Index Medicus*, has issued the following official contradiction of a rumour to the effect that the new series of the *Index* had come to an untimely end at the beginning of the present year:

A circular letter has been extensively distributed, signed by the Directeur-Général de l'Institut de Bibliographie Médicale de Paris, 93, Boulevard Saint-Germain, in which it is stated that the *Index Medicus* ceased to appear after the issuance of the number for January, 1904, and that its publication would probably not be resumed this year. If the writer had inquired of the Secretary of the Carnegie Institution, or of the Editor of the *Index Medicus*, he would have been saved from making an unfounded and misleading assertion. Owing to "strikes" in the printing offices of Boston, in which city the journal is printed, the January number was delayed, and a card was sent to the subscribers explaining the cause of the temporary interruption. The numbers of the journal down to and including that for June have been duly issued, and the number for July is now being printed.

We take this opportunity of again calling the attention of all interested in the progress of medicine to the importance of supporting the *Index Medicus*, which is a master-key to current medical literature.

The mention of the *Index Medicus* reminds us that in 1892 the series of *Thèses de Paris* were first added to the library of the British Medical Association. Since that time a copy of each thesis presented to the University of Paris for the degree of Doctor of Medicine has been filed. The whole series forms a collection of 7,190 theses. The theses presented to the University of Lyons are also accessible to members who visit the library.

In the report of the Perpetual Secretary of the Paris Academy of Medicine it is stated that in the course of 1903, 3,600 works, making up 4,511 volumes, were added to the library. On December 31st of that year the total number of printed books in the library was 142,042, making up 202,376 volumes. During the present year important donations of books have been made by Mesdames Bergeron, Marjolin, and Dumontpallier, and by MM. Bucquoy (485 volumes), Vallin (308), Lereboullet (153), Le Camus (90), and others. Various manuscripts of great value have also been added to the library.

Many of our readers have doubtless read with much interest the letters on Sir Thomas Browne's attitude in regard to witchcraft which have lately appeared in the British Medical Journal. By a curious coincidence, the subject is dealt with by a writer in the *Cornhill Magazine* for September. He gives an account of the proceedings at the last trial of witches in England which took place in the year 1664. On the Bench was Sir Matthew Hale, Knight, Lord Chief Baron of His Majesty's Court of Exchequer, and among the evidence called was that of Dr. Browne, of Norwich. Two poor widows of Lowestoft, Rose Cullender and Amy Dury, were charged with bewitching two children, Elizabeth and Dorothy Pacey, so that they had terrible fits, and, moreover, vomited a vast number of pins and twopenny nails. The fits went on in Court, but without the production of nails or pins. One of the witnesses called was an aunt of the girls living at Yarmouth, to whom the children had been sent. This deponent said that she gave no credit to what was related to her, conceiving possibly the children might use some deceit in putting pins into their mouths themselves. Whereupon she had unpinned all their clothes and left not so much as one pin upon them, but sewed all the clothes they wore instead of pinning them. But notwithstanding all this care and circumspection of hers, the children afterwards raised at several times at least thirty pins in her presence, and had most fierce and violent fits upon them, in which they would cry out against Rose Cullender and Amy Dury, affirming that they saw them, and they threatened to torment them ten times more if they complained of them. Sometimes the children would see things run up and down the house in the appearance of mice, and one of them suddenly snapped one with the tongs and threw it into the fire, when it screeched out like a rat. At another time the younger child, being out of her fits, went out-of-doors to take a little fresh air, and presently a little thing like a bee flew upon her face and would have gone into her mouth, whereupon the child ran in all haste to the door to get into the house again, screeching out in a most terrible manner. Whereupon the deponent made all haste to come to her, but before she could get to her the child fell into her swooning fit; and at last, with much pain, straining herself, she vomited up a twopenny nail with a broad head, and after that the child had raised up the nail she came to her understanding; and, being demanded by this deponent how she came by this nail, she answered that the bee brought the nail and forced it into her mouth. This picture of a bee carrying a twopenny nail does not seem to have disturbed the gravity of the Court; for, of course, a bee might be bewitched as well as a human being, and so perform prodigies out of nature. The most interesting feature of the trial to us of to-day is the evidence of the famous author of the *Vulgar Errors*, which is worth transcribing:

There was also Dr. Browne, of Norwich, a person of great knowledge, who, after the evidence given, and upon view of the persons in court, was desired to give his opinion, what he did conceive of them. He was clearly of opinion that the persons were bewitched, and said that in Denmark there had been lately a great discovery of witches, who used the very same ways of afflicting persons, by conveying pins into them, and crooked as these pins were, with needles and nails. And his opinion was, that the devil in such cases did work upon the bodies of men and women upon a natural foundation, that is, to stir up and excite such humours superabounding in these bodies to a great excess, whereby he did in an extraordinary manner afflict them with such distemper as their bodies were most subject to, as particularly appeared in these children. For he conceived that these swounding fits were natural, and nothing else but that they call the mother, but only heightened to a great excess by the subtilty of the devil, co-operating with the malice of those which we term witches.

It must be admitted that Browne does not cut a very creditable figure here; but he was no worse than the others who took part in the proceedings, with the exception of Mr. Serjeant Keeling. That learned gentleman, who seems to have possessed a judicial mind, was "much unsatisfied" with the evidence, and thought it insufficient to warrant a conviction, saying that "no person was in safety if it be applied to the prisoners upon the imagination of the persons afflicted." Notwithstanding his protest, however, these poor widows, who had perhaps annoyed the Pacey children while

they were at Lowestoft and so got on their nerves, were hanged for having sent pins and twopenny nails by bee-post all the way to Yarmouth.

At the annual meeting of the American Medical Editors' Association, held in Atlantic City on June 6th, Major J. E. Pilcher, M.D., of the United States Army, read a paper on the Military Medical Journalism in the Present Day. There are, he stated, in existence to-day twenty-six military medical journals, which may be divided into three classes: (1) Official medico-military journals, published by the governments of the countries in which they are issued; (2) private military medical journals, published by individuals or private firms and supported by subscriptions and advertisements, as are other medical journals; (3) periodical publications of associations of military medical officers. The first class comprises nine publications, including those published by the governments of Belgium, France, Germany, Italy, Norway, and Spain. Of the second class—journals published by private enterprise—there are three in Austria-Hungary and one each in Argentina, Finland, France, Germany, Holland, Roumania, Russia, and Spain. In the third class are numbered the journals published by the Danish Military Medical Society, the Japanese Association of Military Surgeons, the Central Committee of the International Red Cross Society, and the Association of Military Surgeons of the United States. Of all these journals the *Archives de Médecine et de Pharmacie Militaires* of Paris is the oldest, having been in existence for ninety years and being itself the successor of a series of military medical periodicals dating back to the year 1767. The *Deutsche Militarärztliche Zeitschrift* has almost reached the age of 32 years. The Russian military medical journal, the *Boyenno Meditsinski Journal* of St. Petersburg, has been published continuously for eighty-one years. Up to 1903 Great Britain possessed no military medical journal, but in that year was begun the publication of the *Journal of the Royal Army Medical Corps*. Japan has an up-to-date medical military journal, while the Journal of the Association of Military Surgeons of the United States covers a broader field than that of any other country, as it combines in its *clientèle* the Medical Department of the Army, the Medical Corps of the Navy, the Public Health and Marine Hospital Service of the United States, and the Medical Departments of the National Guard, Militia, and State Forces of the several commonwealths comprising the Union.

The first number of the *Journal of the Roentgen Society*, bearing date July, 1904, is now before us. The journal will, it is stated, contain not only the reports of meetings and papers read before the society, but notes of interest, abstracts of papers read before other societies at home and abroad, reviews of books, etc. Short original papers by members and others will also be published. The journal will be issued bimonthly during the working session. It is edited by Mr. J. H. Gardiner, F.C.S., with the co-operation, among others, of Mr. Mackenzie Davidson, Mr. Harrison Low, Dr. John Macintyre, and Mr. C. W. Mansell Moullin. A complete set of photogravure portraits of past-presidents will be issued; if they are equal to that of Professor Silvanus P. Thompson, published in the first number, they will form a gallery of high artistic merit.

To the *Journal of Cutaneous Diseases* for August, Dr. James C. White, Emeritus Professor of Dermatology in Harvard University, contributes some notes concerning domestic remedies formerly used in skin diseases. Some of these, he says, were survivals of the surgery of past centuries, such as friar's balsam; others were of indefinite age. Many of the vegetable remedies seem to have acquired their therapeutic reputation from the intensity of their colour or that of their juices, as yellow dock (*Rumex*), poke weed (*Phytolacca*), saffron (*Crocus*), blood root (*Sanguinaria*), etc. Bruises, excoriations and slight cuts were treated with various lotions always kept at hand in the family medicine chest. Among these none was held in higher esteem in the country than the bottle of Balm-in-Gilead leaf buds preserved in rum or alcohol. This was a powerful irritant when used too freely, and on some skins a single application would produce very severe dermatitis. It has not yet entirely disappeared from the household materia medica of New England. Later, tincture of arnica came into use as an embrocation, and was supposed to possess magical powers. If, says Dr. White, its virtues approached in minutest degree its positively dangerous qualities when applied to the skin, its reputation was well founded. Its domestic employment has now been supplemented by extract of hamamelis, the leaves and bark of which are credited with a potency almost as marvellous as those of its twigs when used as "divining rods." Dr. White thinks its popular name of "witch hazel" may suggest supernatural properties. Few household remedies were in use for affections of the scalp and hair. Boys and men wore their hair longer. Facilities for washing the head were far less universal than now. Small-toothed combs are in general use for the removal of dandruff, and children's heads were generally combed with them once a week on general principles, whether or not there was any visible indication for their use. Hair oil and pomade, especially bear's grease, were in universal use. Dr. White thinks it possible that these measures were more conducive to the longevity of the hair than our frequent shampooing. Pediculosis capitis was frequent in children of all grades of society; the only treatment was the small-toothed comb, which was used on all the younger members of the family impartially on Sunday mornings. Itch was very prevalent in New England in early days; the patient was smeared with sulphur ointment and then laid before an open fire so that the agent might be thoroughly melted into the skin. For ringworm the household remedies most in use were a paste made by rubbing together gunpowder and vinegar; burning a cotton rag between two cold shovels and applying the thick, black, oily, empyreumatic product of smothered combustion containing creosote and pyroligneous compounds, and painting with ink. Dr. White contrasts the far simpler remedies of half a century ago with the thousand proprietary remedies for the skin now freely advertised in the newspapers. In the last report of the Massachusetts Board of Health there was published a list of twelve well-advertised hair restorers containing acetate of lead, also nine cosmetics for the face containing corrosive sublimate in the proportion of 1 to 15 gr. to the oz., and thirty-three "sarsaparilla remedies" and "blood purifiers" holding iodide of potassium in solution.

Representatives of the American State medical journals who were present at the annual meeting of the American Medical Association recently held in Atlantic City, decided that an Association of those journals would form a strong bond of union. The objects of the Association are set forth in the preliminary articles, which are as follows:

The name of this Association shall be "The American Association of State Medical Journals."

Its purpose shall be to federate, for mutual encouragement, support and business interests, the journals now published by State Medical Associations, or which may hereafter be so published: only journals published or controlled by State Medical Associations shall be eligible to membership.

Its meetings shall be held annually at such time and place as the American Medical Association may meet.

This Association makes the following declaration in regard to advertisements: No State Medical Journal shall accept an advertisement of a medicine which is not ethical. To be ethical in the meaning of this declaration the product advertised must have published with it the names of its constituent parts, but also the amount of such constituents, so that a definite dosage can be determined. Further, such product must not be advertised to the lay public through the secular press.

In case a product is advertised under a copyrighted name, the manufacturer shall furnish with it the proper chemical name, and if not patented then also the process of manufacture.

All advertisements not covered by above paragraphs, or which contain extravagant and improbable claims, shall be submitted to the Executive Committee for approval before they can be accepted.

Editors of State Medical Journals and members of Publication Committees of State Societies shall be included in the membership of this Association.

A new American quarterly journal, entitled *Ophthalmology*, will appear on October 1st. It will be a periodical of about 250 pages, devoted to original essays, abstracts of original articles appearing in domestic and foreign literature, and book reviews. Dr. H. V. Wurdemann, of Milwaukee, will be managing editor and publisher, and Dr. Nelson M. Black, of Milwaukee, assistant editor. Among those in charge of special departments we note the name of Mr. Claud Worth, F.R.C.S., of London.

Dr. Kenneth W. Millican has resigned his position as associate editor of the *New York Medical Journal*, which he has held since April, 1898, in order to assume the editorship and entire charge of the *St. Louis Medical Review*. Dr. Millican is a B.A. of Cambridge, and a Member of the Royal College of Surgeons of England (1879) and a Licentiate of the Royal College of Physicians of Edinburgh (1880).

To a thesis on dislocation of the humerus recently presented to the University of Zurich for the degree of Doctor of Medicine, the author—M. Lambert—has appended a summary, twenty pages in length, in Esperanto. A review entitled *La Lingvo Internacio*, entirely written in that *lingua franca*, and published in Hungary, has been in existence for a year: it has published a paper by Professor Brouardel on the cure of tuberculosis. During the last six months two French medical journals—the *Archives d'Hydrologie et de Climatologie* and the *Archives de Thérapeutique*, have regularly published articles in Esperanto. It must not be thought, however, that Esperanto has the field to itself. It has several rivals besides the defunct Volapuk. Spokil, for instance, should have a special interest for us, as it is the invention of a member of the medical profession. Dr. A. d. Nicolas, who practises at Bourboule, has just published a grammar and dictionary of his creation under the title *Spokil, La Langue Internationale, Grammaires, Exercises, Les Deux Dictionnaires*. (Paris: A. Maloine.) The author states that "Spokil" belongs to the category of so-called philosophical languages in which words are translated by their very definition, and expression defines the thought, differing in this from languages formed of words borrowed arbitrarily from other tongues. Spokil may, we think, be left to the philosophers: the average man will probably find it more difficult than the decipherment of cuneiform inscriptions: as far as we can make out it is purely arbitrary. For instance, we are told thirst is rendered *drava* in Spokil, the word being formed from the "symbol" *dr* which means water, and from the root *av* signifying need and *a* the characteristic of nouns substantive. But how are we to know these things? By the light of Nature apparently. We are also expected to know in the same way that *br* in Spokil "symbolizes" food and *S* knowledge: hence we understand at once, whatever our nationality, that *brava* means hunger, and *savo* (*o* being the characteristic of adjectives) means desirous of knowledge, like the persevering person who vexed the Circumlocution Office by "wanting to know, you know." The words "tall," "broad," "big," "long," thick," etc., are rendered in Spokil, *alpo*, *alko*, *alj*, *also*, *alto*: hence it is self-evident that *ulpo* means small, *ulko* narrow, *uljo* slender, *ulso* short, *ulto* thin, and so on, the vowel *u* being used as the opposite of *a*. The consonants *m* and *n* have also a "contrastic" character. For the formation of its words Spokil requires only 128 consonants, either simple or associated in euphonic combinations and 19 simple or double vowels, all borrowed from the French alphabet. Surely it were better to bear the yoke of the classic tongues than to waste time on such silly puzzles as this.

THE PREVENTION OF CONSUMPTION.

Great Britain.

Nottingham.—At a recent meeting of the Nottingham Trades Council, Dr. Ransom and Dr. Goodall attended as a deputation to urge the claims of the Notts Consumption Sanatorium for financial aid. Dr. Ransom, in introducing the matter, said that no hospital and no sanatorium would stamp consumption out. The great cure was better housing, better conditions of workshop life, and better food, but unfortunately everything desirable in that direction could not be carried out at once, and the urgent question, therefore, was what to do for the large number of consumptives constantly in our midst. Between 400 and 500 people died every year in Nottingham of consumption or consumptive disease, and nearly as many died in the county, so they were faced with the startling fact that nearly 1,000 people died from consumption in Nottinghamshire alone. Speaking solely of the city, if between 400 and 500 died every year, there must be at least 1,200 suffering from consumption, and it was doubtful if one-tenth part were in a position to pay for proper treatment. For the remainder what was done? There were a number of very good hospitals in the town, not one of which did he wish to deprive of a penny piece for the sake of the sanatorium, but the only one which undertook to treat consumption was the General Hospital. Hundreds applied there for admission, and if all were taken in there would be no room for any one else. About 200 were treated in the out-patient's room, but he doubted very much if they derived much good. They received a bottle or two of medicine, went on struggling with their work, and eventually drifted away and no more was heard of them. The great majority undeniably were treated in vain. Personally, he thought that might partially be altered, and that with health visitors and visiting nurses to improve things in the home something might be done. Then from 100 to 120 consumptive patients were taken inside the hospital during the year—or one-tenth part of the 1,200—and those certainly derived benefit. But the most hopeful treatment was unquestionably the open-air treatment, and just on the edge of Sherwood Forest, three miles out of Mansfield, there was a hospital which was erected specifically for that purpose. It had been opened two years and a half, and up to the end of last year some 110 patients had passed through it. The hospital was entirely for persons of limited means or for persons with no means at all, and if the trades council could help it in any way he was sure they would be doing a good work. Mr. Goodall mentioned that the Notts Sanatorium was built to accommodate fourteen persons. It had since been increased to accommodate twenty-six, but the income had not increased proportionately. It was then agreed to refer the matter to the executive, and the delegates undertook to lay it sympathetically before their various societies.

Middlesex.—It is proposed to establish a consumption sanatorium for the county of Middlesex. The Executive Committee which has the project in hand has issued a report, in which it is estimated that over 1,000 persons are attacked with tuberculous diseases each year in the county. In 1902 no fewer than 1,062 deaths from these diseases occurred. It is suggested that the sanatorium shall provide accommodation for 100 patients (50 men and 50 women). The cost, it is said, need not exceed £300 per bed, and, it is added, "the weekly cost of each patient will at all events not exceed 30s." The Borough and District Councils are to be asked to establish and maintain 50 of the beds, and it is suggested that the remainder of the beds should be established and, as far as necessary, maintained by public subscriptions and contributions from large firms and benefit societies.

Newcastle.—The Committee of the Newcastle and Northumberland Branch of the National Association for the Prevention of Consumption, in its annual report, which has been issued in pamphlet form, says that almost five years have elapsed since the formation of the Branch. The number of members up to the present date includes 8 life members and 96 ordinary members. The Committee has been endeavouring to obtain a suitable site for a sanatorium. This proved to be no easy matter. The President promised the handsome sum of £4,000 to the Sanatorium Fund. Eventually some land near Barrasford was offered to the Committee upon terms which were worth considering. This was visited by the Sites Committee, who selected a piece of land. The Committee adopted the recommendation subject to certain conditions being fulfilled with regard to the water supply and other details. The place is situated about three miles from Barrasford Railway Station, and stands about 650 ft. above the sea level, commanding a splendid view. As soon as the site was chosen a Committee was appointed to obtain plans for a sanatorium. It was decided to erect a building of wood and iron, consisting of an administrative block capable of serving 100 patients, and a two-storied building for the accommodation of 50 patients, each to be provided with a separate room—the males, 30 in number, to be in one wing, and the females, 20 in number, in another. This accommodation will be extended to the full complement of 100 patients at as early a date as funds will permit. The Committee states that in some instances, notably in the Newcastle Corporation tramcars, the prohibition of spitting has been enforced. There still remains much to be done in this direction, either by the more universal voluntary adoption of measures prohibiting spitting, or by the institution of local by-laws, or even more radical measures to be enforced by the State. The sum which the Committee aims at collecting to properly erect, equip, and endow the sanatorium is £50,000. Towards this they have obtained between £12,000 and £13,000.

Carmarthen.—A general committee meeting of the West Wales Branch of the National Association for the Prevention of Consumption was held at Carmarthen on August 16th, Sir James Williams-Drummond, Bart., presiding. The Hon. Secretary (Dr. Douglas A. Reid, Tenby) reported favourably on visits and lectures to various places, gave statistics to prove the power of the penny subscriber, particularly at the docks, but was unable to give satisfactory results from the county councils owing to adjournments of the question. The recent bazaar at Carmarthen had produced about £4 000. They should certainly raise a sufficient amount to complete the block for poor patients. The hon. secretary referred to a statement made by Mr. Parry at the meeting of the Cardiganshire County Council that this affair was a fad, and

that the medical profession were divided on it. If this movement was a fad, then His Majesty the King, all the Royal Family, and a host of the medical profession were faddists. He added that since the Building Committee met that morning a Carmarthenshire lady had contributed £100, bringing that county's quota, so far, up to £2 090. The Chairman said Princess Christian had suggested Easter for the stone-laying, at which date she could be present at the ceremony. The hon. secretary said Lady Drummond and her friends were endeavouring to get purses presented from all parts, and it was hoped that another £4,000 would be realized before Royalty visited the scene of operations.

UNITED STATES.

New York.—The National Association for the Study and Prevention of Tuberculosis has secured a central office in New York. According to the New York *Medical Record*, the work of the Association will be mainly one of education. There is no intention of founding any sanatorium or dispensary for the treatment of the disease. It is not likely that a laboratory even will be instituted at first, although that may be done later. The work planned for the present is the collection and dissemination of information of every sort touching the disease. Statistics will be collected and pressed on the attention of municipal bodies and institutions in order to get them to make scientific warfare against the spread of the infection. The formation of local associations and committees will also be urged and assisted in every possible way. One of the first definite enterprises will be the publication of a tuberculosis directory, containing, among other things, information regarding the 125 hospitals and sanatoriums in the United States and Canada, specially equipped for the treatment of tuberculosis.

ROUMANIA.

The Roumanian Government has allotted the sum of £16,000 for the erection of a hospital in which poor consumptives can be isolated. The Municipality of Bucharest has given a site covering an area of several hectares for the institution.

ITALY.

Rome.—On the occasion of the birth of the Princess Yolande of Savoy, a Committee was formed at Rome with the object of founding a sanatorium for young children with a predisposition to tuberculosis, and a hospital for adult consumptives in the province of Rome. A sum of 344,140 lire has been collected for the purpose. One-half of this sum has been assigned to the Seaside Hospital Association, which has a sanatorium at Anzio with accommodation for forty children. The other half has been handed over to the Hospitals Committee of Rome as a contribution to the expense of erecting a hospital on the Coelian Hill for adult consumptives.

THE BOMBAY PLAGUE RESEARCH LABORATORY.

[FROM A CORRESPONDENT.]

THIS laboratory was founded by Mr. Haffkine at the outbreak of plague in India at the end of 1896. Very soon it became clear that general measures of disinfection, isolation, segregation, etc., were not applicable to the circumstances of this epidemic. The activity of the laboratory was then concentrated on the manufacture and distribution of the prophylactic for preventive inoculation worked out and introduced by Haffkine. During the seven and a half years that the laboratory has been working under his direction, the number of doses of the material issued to applicants in India and other countries has amounted, up to the end of March last, to 5,757,225. Of these 504,966 were supplied to countries outside India, and 5,252,259 to districts in India.

It is claimed that the number of deaths from plague has been reduced by this inoculation to less than one-sixth of what it is among the non-inoculated. In the severe epidemic in the Punjab of 1902-3 half-a-million people were inoculated by medical men specially sent out from England. According to the latest information published by the Government of India, the proportion of deaths to attacks in the inoculated was under 25 per cent., or less than one-half of that observed in the non-inoculated. From numerous observations it results that the number of attacks is less than one-third of that in the non-inoculated population. These figures refer to the Indian natives, whose susceptibility to plague is, like that of the Chinese, much higher than the susceptibility of the white races. Among inoculated European residents no fatal cases of plague have so far come to notice.

The prophylactic material for inoculation according to Haffkine's method is now manufactured and obtainable not only from the Bombay Laboratory, but also from the Local Government Board, through Professor E. Klein, at St. Bartholomew's Hospital; from the Lister Institute for Experimental Medicine; from the Thompson-Yates Laboratories, Liverpool; from the Pasteur Institute in Paris; from the Institut für Infektionskrankheiten, in Berlin; from the Institut Impérial de Médecine Expérimentale, St. Petersburg; from the Swiss Bacterio-Therapeutic and Vaccinal Institute, Berne; from the Government Laboratory in Pianosa, Italy, and from the Laboratory of the Insular Board of Health, Manila, Philippine Islands.

Attempts at treating native patients in hospitals with antiplague curative serums have not been successful. The first experiment in this direction was made in 1897-8, soon after Dr. Yersin's original publication, with a serum prepared in Bombay by M. Haffkine. An inquiry which he instituted led him to the conclusion that the treatment had no effect on the mortality-rate. The preparation of that serum in Haffkine's Laboratory was then abandoned; but in 1898-9 an experiment on a large scale was carried out in one of the Bombay plague hospitals with a serum prepared by Professor Lustig, of Florence, the method of testing being the same as was applied by Haffkine to his serum. This method, in its main features, consisted in treating one out of every two patients admitted to hospital, and comparing the clinical features of the disease and the mortality-rate with those in the remainder of the patients. Of 900 cases thus admitted, the 450 so treated had 55 deaths less than the 450 not treated; but a careful analysis of the cases showed that, in this experiment, there was a marked preponderance of grave cases among those admitted into the non-treated group, compared to those in which the serum treatment was applied. Between November, 1902, and July, 1903, another experiment was made, under stricter conditions, and under the direct supervision of the laboratory, with a serum prepared by Professors Terni and Bondi, in Messina. In this instance, the cases for treatment were taken alternately, as they came in, no selection of any kind being permitted. Of 111 patients thus treated 90 died; of 112 admitted alternately with the above, and left without serum injections, 91 died. Subsequently, another batch of 16 patients were treated with the same serum in another Bombay Hospital, 16 alternate patients being left for comparison. Of the first category 12 died, and of the second, 11. In 1904, a serum prepared by Dr. Brazil in San Pavlo, which was reported to give good results in Brazil, was tried by the laboratory. In one hospital the proportion of deaths, among the injected, was 41 out of 50, and among the control cases, 45 out of 50; in another, the injected gave a proportion of 17 deaths out of 20, and the control cases, of 15 out of 20. The treatment in all cases consisted in hypodermic injections, the doses in the latter experiments amounting sometimes to several hundred cubic centimetres. Investigations have now been started with Yersin's serum manufactured in the Pasteur Institute in Paris, and intravenous injections are being tried. M. Haffkine is of opinion that his results, so different from those reported by other experimenters, may be due to the greater susceptibility to plague of the natives in India, as well as to the difficulty of getting them early for treatment in hospitals.

Investigations made in the laboratory into the transmissibility of plague by means of rat fleas have given so far negative results, though the hypothesis itself appears extremely plausible. A large amount of research has been done in the laboratory in various other directions in connexion with plague and other disease, such as different methods of disinfection, serum diagnosis of enteric fever, Malta fever, plague; distribution of plague bacilli in tissues and secretions of sick and convalescent; the presence or otherwise of plague microbes in dwellings, clothing, furniture, and soil, and in various species of animals, etc., as well as on cholera, relapsing fever, scurvy, epizootic lymphangitis, beri-beri, snake venom and antivenene, scorpion venom, diphtheria, leprosy, variola and vaccinia, surra, lathyriasis; on the morphology and classification of mosquitos, etc. Only a part of these investigations has been published, the majority being contained in laboratory records and reports to Government, which will never see the light of publicity. We understand that certain difficulties exist in the matter of publication, and this has had a deterring and paralysing effect on the laboratory's activity. M. Haffkine's work in India has a world-wide interest, and it is essential that any regulations which hinder the publication of his results should be removed as soon as possible.

CONTRACT MEDICAL PRACTICE.

NOTICE AS TO DISTRICTS IN WHICH DISPUTES EXIST.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 75.

JUVENILE LODGES.

MEDICUS asks if it is a common practice for the Oddfellows to pay only one halfpenny a month per member to the medical practitioner of the juvenile lodges.

*** It is to be feared that only a halfpenny a month per member is the usual payment in the case of juvenile lodges, whether Oddfellows or Foresters. Such payment is grossly inadequate, and it is to be regretted that medical practitioners can be found to accept such remuneration.

THE MIDWIVES ACT.

WE are requested to publish the following resolution adopted by the Council of the Incorporated Medical Practitioners' Association:

That we, the Council of the Incorporated Medical Practitioners' Association, at this our first meeting since the vacation, desire to place on record our protest against the action of the Central Midwives Board in deciding to appoint as examiners for the certificate of the Board non-medical women, thereby raising, to the level of the duly registered medical practitioner who has undergone an expensive course of study and a searching examination, women who are not required to show proof that they possess any knowledge of the different subjects which a medical practitioner has to study in order to obtain a diploma.

MEDICAL NEWS.

MEDICAL MAGISTRATE.—Dr. Graham Blick has been appointed acting Resident Magistrate in charge of the Broome District, West Australia, and Chairman of the Broome Quarter Sessions.

THE winter session of the West London Post-graduate College will commence on Thursday, October 13th, when an opening address will be delivered by the Bishop of Oxford at 5 p.m. Medical men wishing to attend can obtain a card of admission on application to the Dean, Mr. L. A. Bidwell, West London Hospital, Hammersmith Road.

THE STUDY OF ALCOHOL.—The American Medical Society for the Study of Alcohol and other Narcotics was formally constituted on June 8th, 1904, by the union of the American Association for the Study of Inebriety and the American Medical Temperance Association. The Secretary is Dr. T. D. Crothers, Hartford, Connecticut.

ANKYLOSTOMIASIS.—A Committee representing the South and West Yorkshire coalowners and the Yorkshire Miners' Association is engaged in devising measures to prevent the introduction of ankylostomiasis into the pits in Yorkshire. Among other steps it is intended to give lantern-illustrated lectures at the various mining centres, in order to secure the intelligent co-operation of the men. The two lecturers appointed are Dr. Porter of Sheffield and Dr. Vaughan Bateson of Bradford, the task of illustration being entrusted to Mr. Scott, the Secretary of the Committee.

A HOSPITAL TOWN.—According to an American Consular report, when the new hospital in Vienna, the foundation stone of which was recently laid by the Emperor of Austria, is completed, it will form quite a town in itself. The total area covered is 2,400,000 sq. ft., and there will be 40 separate buildings, of which 32 will be clinics or hospitals, and the remaining 8 will be devoted to offices and residences for the staff. All the clinics will have flat roofs with gardens, so that patients, particularly consumptives, can be in the open air as much as possible. Each patient will have 1,030 sq. ft. space, the largest proportion of space allotted to a patient in any hospital in the world. The hospital will be on the "pavilion" or "cottage" plan. Each pavilion, with its sick wards, operating and lecture rooms, will form a hospital by itself, and of these there will be 18. The hospital will have 2,300 beds. The magnificent operating rooms will be of a new type. In the clinics for infectious diseases the patient will be separated from the professor and the students by a glass partition.

CARBOLIC ACID POISONING.—Mr. Walter Schroeder, Deputy-Coroner for the Central District of London, stated, at an inquest at Hampstead recently, that since the Order in Council declaring that liquid preparations of carbolic acid and its homologues, containing more than 3 per cent. of those substances, are to be deemed poisons, the number of deaths, accidental or suicidal, from this cause has very greatly decreased. It will be remembered that it was largely owing to the exertions of the British Medical Association that the Order in Council was issued.

A DINNER was given on September 16th by Sir Alfred Jones, President of the Liverpool Chamber of Commerce, in honour of Sir William MacGregor, K.C.M.G., C.B., late Governor of Lagos, who has been appointed to the Governorship of Newfoundland. A sum of nearly £1,000 was subscribed by those present to be handed over to the Liverpool School of Medicine in the name of Sir William MacGregor in recognition of his services to sanitation in West Africa. Sir William MacGregor is a Doctor of Medicine of the University of Aberdeen.

A CHEMICAL AND PHARMACEUTICAL CONGRESS.—A Congress of Chemistry and Pharmacy organized under the auspices of the Pharmaceutical Association of Liége and the Chemical Society of Belgium will be held in connexion with the International Exposition to be held at Liége in July, 1905. In addition to technical matters, questions relating to legislation and professional ethics will be discussed. Communications should be addressed to one of the Secretaries, M. J. Raymond, 16, Place des Carmes, Liége, or M. J. Wauters, 83, Rue Souveraine, Brussels.

PRESENTATION.—Dr. James Nairn McDougall, of Coldingham, Berwickshire, was recently presented with a brougham by a number of his friends and patients. The presentation was made at a banquet which was largely attended. Lord Tweedmouth, in apologizing for his inability to be present, wrote: "There is no one whose services to Berwickshire are more deserving of ample recognition than Dr. Dougall. His life has been a record of good work done and sacrifices made for the sake of others." Dr. McDougall, in acknowledging the gift, said he had begun practice in lodgings at 7s. a week and made his rounds on a pony borrowed from a farmer. He continued to practise on horseback for thirty-four years. He claimed for himself that he was the sole representative in Berwickshire of the old practitioners of the type of Gideon Gray, depicted by Scott in the *Surgeon's Daughter*. A portrait of Dr. McDougall is to be painted by Mr. W. G. Burn-Murdoch.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The following are the officers and members of Council for 1904-5:—*President:* Mr. C. M. Tuke.* *Vice-Presidents:* Mr. C. B. Keetley, Mr. W. P. Barrett, Dr. G. H. D. Robinson, Mr. J. R. Lunn, Dr. E. Furniss Potter, Dr. E. Bromet,* Dr. G. P. Shuter,* Mr. H. Webb.* *Council:* Mr. R. Pollock, Dr. A. M. Ross Sinclair, Mr. G. A. Garry Simpson, Dr. Percy Dunn, Mr. McAdam Eccles, Mr. E. P. Paton, Dr. A. Saunders, Dr. A. J. Rice-Oxley, Dr. J. A. Mansell Moullin,* Dr. A. Morison,* Dr. A. E. Russell,* Dr. C. Buttar.* *Treasurer:* Mr. T. Gunton Alderton. *Secretaries:* Dr. Andrew Elliot, Dr. W. H. Walter.* *Librarian:* Mr. H. W. Chambers. *Editor of Journal:* Dr. Leonard Dobson. *Editorial Secretary:* Mr. J. G. Pardoe. (Those marked with an asterisk did not hold similar office last year.)

BEQUESTS TO MEDICAL CHARITIES.—By the will of Mr. Thomas Whiffin, of Putney, who died on March 27th, the following bequests are directed to be paid, free of legacy duty: £500 each to St. George's Hospital, St. Thomas's Hospital, Guy's Hospital, Charing Cross Hospital, the Metropolitan Free Hospital, Kingsland Road; King's College Hospital, the Middlesex Hospital, and the Victoria Hospital for Children, Queen's Road, Chelsea; £250 each to the Brompton Hospital for Consumption, the National Hospital for Paralysis and Epilepsy, Queen's Square, Bloomsbury; the Hospital for Women, Soho Square; the Samaritan Free Hospital, Marylebone Road; the City Orthopaedic Hospital, Hatton Garden; the Central London Ophthalmic Hospital; the Royal Hospital for Incurables, Putney; the Asylum for Idiots, Earlswood; the Royal Blind Pension Society, and the Royal Association in Aid of the Deaf and Dumb, Oxford Street.

BRITISH MEDICAL ASSOCIATION.

Subscriptions to the British Medical Association for the year 1904 are now due and should be forwarded by postal order or cheque to the amount of 25s. to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, SEPTEMBER 24TH, 1904.

THE RELATION OF SPECIALITIES TO GENERAL SCIENCE.

THE International Congress of Arts and Sciences, held this week at St. Louis, is the concrete embodiment of an idea that the subdivision and multiplication of specialities in science have reached a stage at which a survey of the various fields of knowledge, with the view of bringing into closer mutual relations the sciences which as they grow tend to separate by fission, is likely to be profitable. For this purpose, the organizers of the Congress mapped out the whole range of human knowledge into twenty-four departments. Leading representatives of theoretical and applied sciences were invited to set forth the general principles and fundamental conceptions connecting groups of sciences, show their mutual relations, and discuss the problems now calling most urgently for solution. Among the representatives of medical science chosen for this highly honourable but difficult duty are four representatives of British medicine. Professor Clifford Allbutt deals with internal medicine; Sir Lauder Brunton with therapeutics and pharmacology; Professor Ronald Ross with preventive medicine, and Sir Felix Semon with laryngology, rhinology, and otology in relation to all other branches of knowledge. Sir Felix Semon's address is published in full in this issue of the BRITISH MEDICAL JOURNAL.

No one could be better fitted than Sir Felix Semon to perform in an adequate manner the task which he was invited to undertake in regard to his own province of medical science—that is, in the words of Professor Newcomb, "to discuss and set forth the uniformity and relationship of the sciences and to thereby overcome the lack of harmony and relation in the scattered special sciences of our day." While recognizing the necessity of specialism in medicine, Sir Felix Semon has always been strenuous in urging the danger of a divorce between any particular department of practice and the healing art as a whole. Like Rudolf Virchow, he has always contended that "no speciality can develop usefully and beneficially if it does not ever and ever again drink from the general fount, if it does not remain in relationship with other specialities." The speciality of which he is a foremost representative in this country was, in the early stage of its evolution, viewed with pecular suspicion by the leaders of the profession. This feeling doubtless had its origin partly in personal considerations, but it can hardly be denied that it was also to some extent the result of ignorance, and, it may be, of jealousy. The laryngoscope was derided by one superior person as a "physiological toy"; another declared that adenoid growths in the naso-pharynx were fond things vainly invented for the benefit of those who treated them. Only those who know the attitude of the profession towards those who laboured in the Naboth's vineyard of the throat and nose twenty-five years ago have any conception of the prejudice and stupid conservatism which the speciality had to overcome before it succeeded in gaining for itself the freedom of the City of Medicine.

No one has done more than Sir Felix Semon to redeem laryngology from the somewhat Pharisaic reproach of not being "respectable," which used to be heard from the lips of *viri pietate graves*, and the reason is that he has, to parody a well-known phrase, been a specialist, if you will—but first of all a physician. In the address delivered at St. Louis, Sir Felix Semon brings out clearly how impossible it is for a speciality to exist independently, and how, at one point or another, it touches every department of knowledge, and borrows light from every source. From physics laryngology gets the means of illumination which has made the physiological toy a potent instrument in the relief of human suffering, and has extended the range of observation to cavities previously hidden in impenetrable night. From physics, too, it gets the rays which heal; but Sir Felix Semon would, doubtless, be the first to admit that the practical difficulties of applying either the Finsen light or the x rays to the mucous membrane of the throat and nose are such as seriously to limit their usefulness. The utility of the phonograph for clinical teaching is pointed out, but no reference is made to the application of the instrument which has been made by certain French observers to the study of peculiarities, national and provincial, of intonation and pronunciation which may possibly have a practical value in regard to the rectification of defects of speech.

Sir Felix Semon's remarks on the right and wrong use of statistics may be commended to the earnest attention of all compilers of series of surgical operations. The fallacy of figures is a familiar theme that need not be dwelt upon here. Even in the hands of expert mathematicians they sometimes yield results curiously at variance with obvious and unquestionable facts. But no skill in the higher mathematics is required to avoid the lumping together under one head of things as disparate as a pound of lead and a pound of feathers.

Sir Felix Semon, who is an accomplished musician, is especially interesting in his discussion of the relations of music to laryngology, rhinology, and otology. We note with particular satisfaction that he gives no support to the use of the laryngoscope as an instrument for the training of the voice. This erroneous method, which a few years ago was fashionable among singing masters of a certain school, was the means of wrecking many voices. It reminds one of the making of clothes in Laputa, where tailors measured their customers with the theodolite.

The connexion of laryngology with philosophy, logic, history, and literature is so remote that Sir Felix Semon's ingenuity seems to be somewhat taxed to find any points of relationship. We might perhaps suggest that the laryngologist may be called a natural philosopher, on Touchstone's principle that he knows that it is the property of light to illuminate and of the galvano-cautery to burn. The want of a proper training in logic makes the work of many industrious investigators a mere record of misdirected labour, while the absence of any feeling for the graces or even decencies of literary style is painfully conspicuous in many medical writers. Laryngology has also a relation to history other than that

of medicine, as it might conceivably be the means of preserving a life of supreme importance to the State. But this, perhaps, is to refine too much.

We have merely touched here and there on the fringe of a vast subject, of which Sir Felix Semon has given a comprehensive survey. His address, which is marked at once by philosophic breadth of thought and exact knowledge of detail, should be read by all interested in the relation of medicine to other arts and sciences.

THE ABUSE OF MEDICAL CHARITIES.

That "Abuse of Hospitals" should recently have become a prominent headline in the daily papers is probably in large measure due to the slackness of the season, but the occurrence is perhaps none the less to be welcomed on that account since the subject is one upon which public opinion needs to be informed.

The questions involved in the term "hospital abuse" have long occupied many thoughtful minds. They have called into existence a special committee—the Hospitals Committee—of the British Medical Association, formed to study the matter in all its bearings, and they are as far ripe for public discussion as any subject ever can be which is full of inviting but misleading side-issues, and which demands for its adequate comprehension a considerable amount of special knowledge.

To those who have been watching the trend of affairs, it will perhaps seem natural that the subject should have reached the surface in the form of a grievance and charge against the London Hospital, to the effect that it is carrying on its work in such fashion as to make private practice in its neighbourhood impossible. Nevertheless, the circumstance is to be regretted, since it militates against the detachment of mind with which the question should be considered, and may obscure the fact that when the evils in the East End of London have been planed down to the common level there will still remain for settlement difficult questions of principle and of practice involving all hospitals alike.

The points specially prominent in connexion with the London Hospital have been the subject of friendly negotiation between the authorities of that institution and the East London Medical Society for some months past, and though a certain tincture of acerbity has lately crept into the discussion, it may still be hoped that as satisfactory conclusions will be eventually reached between the parties as are possible so long as sundry points affecting all hospital localities alike still remain unsettled.

The area of London more particularly served by the London Hospital is by no means that congeries of slums which many persons suppose it to be. On the contrary, much of it compares favourably in appearance with a good many localities in the North-West and West of London, and at first sight there is no obvious reason why questions of hospital abuse should assume exceptional importance. In reality, however, there are two causes at work. On the one hand, while the proportion of persons of the true hospital class is probably no greater than it is elsewhere, the general standard of life is low, and the medical fees in vogue are in proportion. Consequently there is little or none of the well-paid work which in other quarters helps to make up for much badly-paid work; the net result being that anything in the nature of hospital abuse makes a more than ordinarily serious difference to the general practitioners in the locality, and one that is felt not by a few but by all. On the other hand, there are certain features in the administration of the London Hospital which tend to make hospital abuse in connexion with it more rampant than is the case with other great hospitals.

The observations on the subject which have been made by the general press have for the most part been perfectly sound, but there are one or two points which, perhaps, demand brief comment.

There has been talk of methods of the Inquisition being introduced at the London Hospital, and of the harrowing of sick patients by questions and inquiries; but such talk is mere foolishness, and any one acquainted either with Mr. Sydney Holland, the Chairman of the House Committee, or with his right-hand man, Mr. Norris, the Secretary, will not doubt for a moment that any system of inquiry which it may be thought right to institute by way of safeguard will be conducted in a considerate fashion Equally foolish are the cheap sneers which have been launched at medical practice as conducted in the East End. Those who know anything about it at all will admit that the average of it is intrinsically good, and astonishingly so in comparison with the sums for which it is performed.

For the rest, there is very little in the public treatment of the matter which requires notice beyond some remarks ascribed to Sir Edmund Currie by an interviewer from the *Daily News*. On this occasion Sir Edmund Currie spoke as a present governor and past chairman of the London Hospital, and we are glad to think that the attitude of fatuous superiority which he appears to have adopted is not that of those who have most to do with the hospital and who more commonly speak in its name.

On the contrary, we have good reason to believe that it is there frankly recognized that the East End medical men have cause to feel aggrieved upon certain points, and that there exists a real desire and intention to mend matters. Nevertheless, it is quite comprehensible that the East London Medical Society should at present feel some doubt upon the subject; but, since we hope that this will eventually be set at rest by the authorities of the hospital upon their own initiative, it does not seem necessary for the present to discuss the special characteristics in the administration of this hospital to which reference has already been made.

THE DIMINISHING BIRTH-RATE.

The Presidential Address delivered by Professor John W. Taylor before the British Gynaecological Society, an abstract of which, furnished by the author, was published in the British Medical Journal of February 20th, 1904, p. 427, has been republished in pamphlet form.[1] We welcome its appearance, as it is most important that this cogent statement of the evil which we have repeatedly discussed in these columns should receive wide publicity.

The statement quoted by Professor Taylor from Ruskin's *Unto This Last* appears to us to be sound social economy: "There is no wealth but life. That country is the richest which nourishes the greatest number of noble and happy human beings." In face of this statement, and of our knowledge of the artificial methods by which this declining birth-rate has been produced, and of the fact that the decline has been greatest in the classes from whom the

[1] *On the Diminishing Birth-Rate.* By John W. Taylor, M.Sc., etc. London: Baillière, Tindall, and Cox. 1904. (Demy 8vo. pp. 27. 1s.)

replenishment of the population is most desirable, the position is one which demands sound teaching not only by medical and clerical professions, but by all who have the continued welfare of the community at heart. We leave for separate consideration the question as to whether a portion—in some communities possibly nearly the whole—of the declining birth-rate may not be due to other causes than the production of artificial sterility. In the British Isles these other causes only account for a relatively small proportion of the total decline in the birth-rate.

Is it true, in the first instance, that even if it be accepted that the community loses, the parents gain by the reduction in the sizes of their families? We have, on the one hand, the avoidance of much pain, trouble, and expense in connexion with pregnancy, lying-in, lactation, and subsequently for each child. Professor Taylor points out that, on the other hand, there are the occasional dangers associated with the preventive measures, and that "neurotic" conditions in both men and women are frequently found among those practising these methods. "Widely as the practice of prevention has spread, you will still have to go to the mothers of large families if you want to point to the finest and healthiest examples of advanced British matronhood." It is also certain that the highest type of humanity cannot be built up on a selfish basis. There must be moral deterioration among those who determine to restrict their families in order that a higher standard of luxury may be enjoyed. The children of large families have in most instances undergone a more wholesome and salutary training and are better fitted for future life than the over-protected progeny of small families.

Professor Karl Pearson has touched on an important aspect of the same problem in a recent address on "the bearing of our present knowledge of heredity upon conduct."[2] In this address he points out that inheritance is the same in human as in other forms of life, and that it covers both physical and psychical characters. If the society of the future is to represent the best type of humanity, it must have health, sanity, and intellectual ability fully represented. We know also that these are inherited characters. The subsequent remarks may be best given in Professor Pearson's own words: "If you breed largely from the unhealthy, the mentally defective, the stupid and unconscientious members of a society, your society will degenerate, and that more rapidly than is generally known. Thus, 25 per cent. of married couples produce 50 per cent. of the next generation. In other words, owing to difference in the size of families, probably about one-sixth of the adult men and women in the community produce more than half the next generation." The bearings of this important statement of the case on the possibilities of the future are fairly obvious. The character of a nation may be totally changed in a few generations if that one-sixth happens to be less sane, less intelligent, less thrifty, or less conscientious than the remainder of the community.

The important point, therefore, is to ascertain whether the population is being chiefly recruited from the fit or from the unfit. We know that since 1877 the birth-rate in this country has been steadily declining, and it is probable that the greater part of this reduction is due to really decreased fertility and not to altered age-distribution of the population or postponement of marriage. Professor Pearson is of opinion that the fewer beings now born are born of the less healthy, less sane, and less thrifty classes. He states that "the birth-rate of the better type of working-man has been falling off more rapidly than the birth-rate of the nation as a whole," but in the report of his lecture the actual statistics on this point, which would be most interesting, are not given. The relative fertility of the fit and unfit in the community has, he states, changed widely since 1877. "A hundred years ago you hung a rogue if you caught him. Nowadays, you provide him with soup-kitchens, night shelters up and down the country, and leave him to propagate his kind at will." Without endorsing any views which would indicate the undesirability of protecting the lives of the poorest (Professor Pearson explicitly disowns any such advocacy), we can heartily endorse his view that "much of the current feeling with regard to early marriage and large families is demonstrably immoral and is opposed to social welfare in that it must lead to the degeneration of the society in which it is current; and that social pressure should be exercised to secure the celibacy of the unfit, and particularly to limit the procreation of the criminal, the tramp, and the chronic pauper."

[2] *University College Gazette*, May, 1904, p. 404.

GIFT BY LORD STRATHCONA TO McGILL UNIVERSITY.

We learn by telegraph from Montreal that Dr. Roddick, the Dean of the Medical Faculty of McGill University, Montreal, announced at a meeting on September 21st that Lord Strathcona and Mount Royal, the Chancellor of the University, had presented the sum of 50,000 dollars to the Medical Faculty. This is in addition to a gift of 100,000 dollars which Lord Strathcona made to the Medical Faculty about two and a-half years ago. The whole of that sum was expended in alterations and extensions of the buildings of the Faculty; these were so extensive that they practically amounted to rebuilding. Two new lecture rooms, and three laboratories for chemistry, physics, and hygiene respectively were erected, and other alterations and additions made which greatly increased the working power of the Faculty. These buildings, which were opened by the Prince of Wales about two years ago, cost some 30,000 dollars more than was expected. The further sum now given by Lord Strathcona is intended to cover the deficit and to assist the general work of the medical school. The additions thus made, and the increased funds at the disposal of the University, will enable it at once to introduce the five years' curriculum for medical students.

MUNICIPAL MILK SUPPLY FOR INFANTS.

The Bradford Corporation, upon the recommendation of its Health Committee, decided, in the early part of last year, to establish a dépôt for the supply of modified and sterilized milk. The necessary arrangements were at once made, and by July a dépôt was opened in one of the most crowded neighbourhoods in the city. At first the demand for the milk was not great, but it steadily increased, and by the end of the year milk was being supplied to forty-five infants whose mothers were unable to suckle them. The scale of charges was fixed as low as possible, 1s. 6d. being the price for a full week's supply for an infant of less than 6 months of age, 1s. 9d. for a child of between 6 and 8 months, and 2s. when the age exceeded 8 months. The milk is supplied in bottles, each containing a sufficient quantity for one meal, every new customer being also furnished with a teat to be used with the bottles. At the same time a sheet containing simple directions for the feeding of infants, for keeping the teats clean, and for warming the bottles, is given to the parent, who is further instructed to report at once if the milk seems not to be agreeing with the child, and to bring it up to the dépôt once a fortnight so that it may be weighed. The scheme has not so far been a financial

success, the loss being at first as much as 30s. a week, and though the deficiency has steadily grown less, the dépôt is still not self-supporting. In spite of this, however, the Health Committee has been sufficiently impressed with the partial success of the experiment to decide it to recommend to the Corporation that a central laboratory should be established with dépôts for distribution in various parts of the city. One reason, perhaps, for the fact that a larger use has not been made of this opportunity provided for obtaining a pure and suitable milk for infants has been that mothers, when they apply, are always urged to suckle their children themselves whenever it is possible, and to resort to artificial feeding only when absolutely necessary. This enlightened policy, though it has interfered with the financial success of the undertaking, will doubtless have been productive of much good indirectly.

UNDERFED SCHOOL CHILDREN.

At the present time, when an active discussion is proceeding in the columns of the *Times* as to the duty of the State to feed the children attending the public elementary schools, it may be convenient to some and news to others to know what is actually being done to meet the alleged distress in the absence of such legislative powers as are demanded by some and deprecated by others. The late School Board, and recently the London County Council, have, as was manifestly their duty, seriously considered the whole question, and in the minutes of the Council of June 14th last will be found an interesting account of what has been done during the last four or five years. The late Board, after long inquiry and debate, decided that there was no necessity to impose the burden of supplying meals for underfed children upon the rates, and that the organization of private charity was equal to coping with all cases of distress. A joint committee representative of the Board and the three voluntary funds dealing with the question was satisfied that "all real distress on any considerable scale had been effectively met." The Committee had never been restricted in its efforts for want of funds, and it was of opinion that "if the public purse were drawn upon, relief would be distributed more lavishly." The machinery for working this arrangement through committees of managers of schools, with the co-operation of the teachers and the necessary clerical work is, we gather, supplied by the local educational authority, and this will be continued by the London County Council. The charitable funds for providing the meals are derived from the London School Dinners Association, the Destitute Children's Dinner Society, and the *Referee* Fund. A provisional list of the underfed children is prepared in the month of October, and is verified by visitors and others who are in touch with the parents of the children. It may be that, as supposed, the approaching winter will be more than usually hard, and it may be that the arrangements that have sufficed in former years may prove inadequate, but we scarcely think that all those who criticize so vigorously have made themselves familiar with what has already been done to cope with this social problem.

THE CORONER FOR WESTMINSTER AND HOUSE-SURGEONS.

We have had more than one communication from members drawing our attention to recent paragraphs in the daily papers recording observations made by Mr. Troutbeck concerning the value of the medical evidence given at inquests by the resident house-surgeons of hospitals. It appears that on September 19th an inquest was held concerning the death of a man who was suddenly taken ill at his work, and was conveyed to St. Thomas's Hospital, where, after examination by the house-surgeon, he was pronounced dead. Dr. Freyberger was employed by the coroner to make a *post-mortem* examination, and he stated that death was due to syncope whilst suffering from chronic disease of the heart. Upon this the foreman of the jury inquired "why the hospital doctor who had examined the deceased immediately after death had not been called to give evidence at the inquest?" The coroner is reported to have replied that "Dr. Freyberger was a pathologist appointed by the London County Council to assist at inquests in special cases, and that he did not care to rely upon the evidence of a young house-surgeon, perhaps only just qualified." We may assure our correspondents that no such appointment as stated by the coroner was ever made by the County Council, which possesses no power to do so, and has publicly so stated. What the County Council really did was to send round to the coroners a list of the names of about a dozen young hospital pathologists, Dr. Freyberger amongst them, who were willing to make *post-mortem* examinations and give evidence at inquests for the usual fees payable under the statute law in cases in which a special pathological examination might be required. We do not consider that any special pathological examination was required in the inquest referred to, and that the slur cast by the coroner upon the reliability of house-surgeons is as unfair as it is incorrect. We know, as a rule, that the resident medical officers of hospitals do their work well, with credit to themselves and to the institutions they represent; and to ignore them simply because they are young or recently qualified is an injustice to them and a reflection on the profession of which they are duly qualified and legally registered members. The statute law which gives power to the coroner to call medical evidence at inquests plainly states whom he may summon—namely, the medical man who attended during the last illness, or who was called in at the time of the death. It is the persistent departure from this course which has caused so much friction in the districts presided over by the coroner in question.

EMPLOYERS' LIABILITY.

An Employers' Liability Act came into force in Belgium at the end of 1903, and the Government has now published a schedule which establishes the precise limits of the financial responsibility of the employer in respect of the expenses for medical attendance consequent upon an accident to one of his labourers. Under the law the employer is made responsible for all the medical expenses incurred by a workman during the first six months following an accident, but power was left to the executive to reduce this wide general responsibility to definite figures. In performing this task, it does not appear that the Government has left the employer much room to grumble or the employé and his medical man much cause for gratitude on account of the liberality of the arrangements made. The schedule consists of a list of all the lesions and surgical conditions likely to arise in the course of work, whether in a factory or elsewhere, and of the amounts payable for treatment in respect of each of them. The possible contingencies have been well thought out, and the occasional need for assistance and anaesthetics has not been overlooked, but the amounts allotted seem unduly low. As, however, quite small injuries are included, and the sums allowed for these are relatively high as compared with those named for injuries involving serious operations, the tariff may possibly work out more satisfactorily in a general way than might be expected; nevertheless, hardship must arise in individual cases. The sums, it is to be noted, are stated to be payable directly to the medical man whose services have been utilized, and not to the patient, for the law makes the employer directly responsible to the former and not to the latter. The tariff, however, does not affect in any way those employers who either have themselves established a medical department in connexion with their works for the use of those injured therein or have contracted with some society to do so; in such case, however, a notice must be posted up in each workshop or be included in the labour contract-note stating where and to whom the employé should apply for treatment in case of injury. A tariff is also given for dressings and other things supplied by the chemist as equivalent to the patient under treatment.

SMALL-POX AND FOOTBALL.

THE prevalence of small-pox in some parts of the North of England led last week to a curious controversy, which was at length happily settled in accordance with the dictates of common sense. One of the Association football matches in which the populace of the North takes such profound interest had been arranged to take place on September 17th at Dewsbury, between a team from that town and one from Bramley, a suburb of Leeds. Dewsbury, however, has been suffering from small-pox intermittently ever since the early spring, and at the present moment is the seat of a very extensive outbreak of the disease in a somewhat mild and common, not readily-recognized form. Dr. Cameron, the medical officer of health for Leeds, therefore suggested to the Bramley Football Committee that the match should be adjourned, pointing out the danger which would be created by a large number of Leeds people being induced to visit Dewsbury, there to mingle with a dense crowd of Dewsbury folk, many of whom would doubtless be inhabitants of infected houses. The Bramley Committee perceived the force of the reasoning, and was prepared to adjourn the match; but the Northern League Committee, the supreme football authority, ordered that it should be played upon the date originally fixed. In consequence of these orders, the Bramley Committee placed itself in the hands of the players themselves, or rather in the hands of all those who were eligible to represent Bramley in a first-class match, and from among whom the players would have to be selected. Very naturally the players were not inclined to hang back, more especially as a refusal to play in spite of the League's orders might risk the all-important position of Bramley in the football world; with one or two exceptions, therefore, all concerned expressed their readiness to play, so the Bramley Committee had perforce to complete the final arrangements for the match. The medical representations, however, were renewed, and received the support of the employers of the men engaged to play, and, wiser counsels prevailing, the Northern League Committee withdrew its orders, and thus enabled the Bramley Committee to declare the match abandoned for the time being. It is to those who are best acquainted with the solemn importance attached in the Northern counties to League matches that this result will seem most striking; but, in any case, Leeds is to be congratulated on the result, since the danger to which Dr. Cameron drew attention was undoubtedly very real.

PUBLIC ELEMENTARY SCHOOLS AND THE PREVENTION OF TUBERCULOSIS.

IT is generally agreed that in order to introduce hygienic habits of life amongst the poorer classes of the community it is advisable to teach hygiene to the children. The teaching of this subject in class ought, however, to be supplemented and illustrated by the practice of hygienic methods in school life, not only for instruction but for the good effects of the healthy life on the children themselves and the diminished risk of the spread of infectious ailments in schools. One aspect of this important question of practical hygiene in school life forms the subject of an address to the American Academy of Medicine by Dr. S. A. Knopf, published in the *New York Medical Journal* of September 3rd. He expresses the belief that the public school, or what in this country we have till recently known as the Board School, can be made one of the most important factors in the prevention of tuberculosis as a disease of the masses. This is not an entirely new proposition, nor is it the first time that Dr. Knopf has himself drawn attention to it: but it is a matter which deserves consideration, not only in America, but also in this country. Dr. Knopf divides his address into four parts—namely, the duties of the education authority, the duties of the superintendent, the duties of the school teacher, and those of the school physician, relating to the prevention of tuberculosis. The situation, construction, and surroundings of the school building are first considered, and the necessity for good ventilation and facilities for cleaning the school-room. Both these latter points are capable of improvement in many of our public elementary schools. In connexion with ventilation, the question of the air space allowed for each child is most important; and it would hardly be contended that the allowance in our public elementary schools, or in most public and private schools, is altogether satisfactory. Dr. Knopf lays stress on the advisability of out-door instruction, "not only botanizing tours and geological excursions, but also outdoor singing and outdoor recitation." When the weather permits, it would be of great advantage to the children to have some of the lessons out-of-doors in the playground, whilst the classroom is thoroughly aired. It is, however, unnecessary to detail the principles of school hygiene; the subject is well understood, though its practical application may leave much to be desired. With special reference to the prevention of tuberculosis, Dr. Knopf recommends that the children should be taught the simple rules which are given to consumptive patients, especially as regards spitting, and also why they should not put things, such as pencils, in their mouths. Whatever may be said about the necessity for instruction in the prevention of special diseases, there can be no doubt that the practical application of hygiene in school life does much towards preventing tuberculosis, as well as many other diseases amongst the children.

FARMFIELD INEBRIATE REFORMATORY.

IT is now some four years since the London County Council embarked upon the first experiment, by way of a certified inebriate reformatory under the Act of 1898, conducted under municipal control. It is perhaps even yet too early to begin to ask for anything like definite results or precisely formulated conclusions on the institutional treatment of habitual drunkards. From inquiries which we have recently made, we have, however, learnt that at Farmfield, where non-restraint and moral suasion are practised to the greatest practicable degree, there is ground for encouragement and satisfaction. It is true the class of case sent thither by the magistrates is of the lowest type, degenerate and degraded in many instances to an abysmal depth; yet under the growing practice of sending such cases for the maximum period of three years, more cases of cure and fewer of relapse are being experienced. The penal cells are rarely resorted to: a system of marks, with the power to earn mark-money, is a valuable incentive to good behaviour. The new buildings afford means for classification of cases according to the amenities and liberty permitted, and according to the preparedness of the patient for licence or discharge. Moreover, by the appointment of a travelling sister, whose sole duty is to keep an eye on the licensees and offer friendly aid and advice to the discharged, the Council has reduced the number of return cases. The farm and the estate of some 300 acres afford healthful occupation for the women, and are proving profitable, especially in regard to fruit culture and dairy work. The maintenance-rate per patient is now less than £1 a week, and this is further reduced by the Government grant. We understand that persistent efforts have been made to induce the Committee to submit its patients to the operations of the secret-cure vendors, but so far, we are glad to know, without success. We have yet to learn that anything out of a bottle can redeem the sot or rehabilitate the human will.

SURGERY ON OLD MEN.

DR. W. H. ARTHUR, who, as Surgeon to the Hospital of the United States Soldiers' Home, has had unusual opportunities of observing the effect of old age with its accompanying disabilities in reducing the chances of recovery from serious surgical operations, has recently published some interesting results,[1] which, though derived from a limited number of cases, certainly justify his conclusion that old men are much better subjects for operation, and also for prolonged general anaesthesia, than is generally

[1] *Boston Medical and Surgical Journal*, September 1st, 1904.

supposed. Special attention is directed to twenty-three instances of severe operation performed on patients whose average age was 70.4 years, the youngest being 62, the oldest 85. A major amputation was performed in three of these cases, laparotomy for intestinal obstruction in one case, nephrectomy in another, and operations for hernia which, we assume, were practised for strangulation in nine cases. In one case of senile gangrene in both feet of a subject aged 89, simultaneous amputation of both legs was followed by speedy healing and a good recovery. Of these twenty-three cases one only was fatal, this being an almost hopeless case of infra-trochanteric amputation for senile gangrene. These results are the more remarkable, as beyond the disadvantages of advanced age many of those coming under the care of Dr. Arthur are the subjects of chronic alcoholism and of some form of advanced arterial or visceral disease. Indeed, he states that it is the exception to find a man over 60 in his hospital who is entirely free from one or other of these diseases. Dr. Arthur attributes his success in these instances to modern methods of surgical treatment. In dealing with old subjects with limited resistance he believes that great care in securing asepsis is pre-eminently necessary, and attaches much importance to the practice observed by himself and his assistants of wearing rubber gloves during an operation. In connexion with this record it might be found interesting to take note of the surgical experience of preantiseptic times, which would seem to indicate that advanced age is not, even under unfavourable prophylactic conditions, a serious contraindication of operative treatment. Nearly twenty years ago it was pointed out by Sir James Paget that though in old subjects shock was a serious risk, haemorrhage was not especially dangerous; that repair, though generally less speedy and complete, was often very remarkable, and that there was less liability than in young and adult patients to septic poisoning and pyaemia.

REPORT OF THE MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD.

The annual report of the medical officer of the Local Government Board for England and Wales for 1902-3[1] was issued on September 20th; it forms a volume of some 750 pages. The principal medical officer, Mr. W. H. Power, F.R.S., in dealing with the auxiliary scientific investigations in his introductory letter, calls particular attention to the inquiry by Dr. Klein with regard to the occurrence of a disease in rats presenting superficial resemblance to plague, and caused by a bipolar bacillus which, however, on cultivation, was found not to be the plague bacillus. Dr. Klein has further found evidence that plague "proper" to the rat, at any rate in temperate zones, is of small virulence and feeble infectivity. He does not accept the theory that the disease is transmitted from rat to rat by the flea, and he finds that it is not easily conveyed by feeding; upon the whole, he considers the spread of plague among rats to be due in the main to inoculation, and lays stress on the fighting propensities of sick rats, and on the fact that rats in a state of nature are seldom free from wounds, abrasions, and ulcers. Another research of great interest which has been carried out for the Board is that by Dr. Mervyn Gordon as to the bacillary fouling of the air of dwelling rooms and public buildings directly referable to emanations from the bodies of persons collected in them. Previous researches have shown that in coughing and sneezing liquid matter from the air passages is sprayed into the atmosphere. Dr. Gordon finds, as a result of experiments with Petri dishes, that during speaking droplets of saliva are disseminated throughout the air of rooms, and even to a distance of 40 ft. from the speakers. Dr. Sidney Martin, in the course of his investigation into the chemical products of diarrhoea producing bacteria, has ascertained that proteus vulgaris elaborates a toxic substance closely connected with a proteid which is not albumose and is easily extracted from the bodies of the micro-organisms by distilled water: it is especially abundant, or at least most active, in broth cultures established less than fourteen days. The main outcome of Dr. Houston's investigation on the bacteria of healthy human faeces has been to show that 90 per cent. of the bacilli belonging to the coli group, were typical B. coli, and that atypical B. coli, which is so common a feature of sewage, sewage effluents, and of waters reputedly liable to objectionable contamination, is comparatively rare in the contents of the lower bowel of the healthy human subject. An investigation by Drs. Klein and Gordon of the method designed by Professor Koch for determining the presence of B. typhosus within twenty-four hours, and distinguishing it when sparsely present, has not shown that the method is likely to fulfil in an administrative sense the expectations entertained as to its utility. We shall hope to refer more at length to the report of the medical officer and the appendices in an early issue.

[1] London: Eyre and Spottiswoode: Edinburgh: Oliver and Boyd Dublin: E. Ponsonby. 8s. 3d.

THE REVACCINATION BILL.

The Council of the Association of Public Vaccinators at their meeting on September 16th passed the following resolution: "That the members of this Association be requested to do everything in their power to further the passage through the House of Commons of the Revaccination Bill which is to be reintroduced next Session." The County Council of Salop has forwarded to the Honorary Secretary of the Imperial Vaccination League a petition in support of the Bill. Members of the British Medical Association can give the Bill material assistance by urging their friends on the various county councils to point out the importance of every such council petitioning the House of Commons in favour of the Revaccination Bill. Much can also be done by requesting members of Parliament in every constituency to support the Bill.

CHOLERA IN PERSIA.

We learn that while cholera has practically ceased in Shiraz, Ispahan, Teheran, it has shown a tendency to increase in Kermanshah. On the main caravan routes sporadic cases still occur. Two cases of plague were recently reported which on inquiry turned out to be cases of malignant pustule.

VISIT OF FRENCH PHYSICIANS AND SURGEONS TO LONDON.

As has already been announced, a party of French physicians and surgeons will visit London from October 10th to the 12th for the purpose of seeing the work of the London hospitals and laboratories. The Paris Committee has already received the names of about 130 physicians and surgeons, chiefly resident in Paris, who propose to take part in the visit, and it seems probable that before the list is closed on September 30th the number may reach 150. Among those who have definitely arranged to join the party are the following professors of the Faculty of Medicine in Paris: MM. Berger, Blanchard, Chantemesse, Chauffard, Le Dentu, Huchard, Lucas-Championnière, Peyrot, Ricard, Lepage, Marie, Netter, Hallopeau, Porak, Reynier. It is possible that MM. Bouchard, Gariel, Gautier, and Gauchard may also be able to join the party. In addition, the names of some twenty-five other physicians and surgeons to the hospitals of Paris have been received, and some representatives of French provincial medical schools will also be among the visitors. As already announced, the London Committee has arranged to give a dinner to the French visitors at the Hotel Cecil on Wednesday, October 12th. Any medical man resident in London who may wish to attend this dinner is requested to communicate with one of the honorary secretaries of the Executive Committee, Dr. Dawson Williams, 2, Agar Street, Strand, W.C.: or Dr. W. Jobson Horne, 27, New Cavendish Street, Portland Place, W.

The session of the Clinical Society of London will commence on Friday, October 14th.

Scotland.

NEW PARISH COUNCIL HOSPITALS FOR GLASGOW.

THE new Parish Council Hospitals for Glasgow, which have been in course of erection during the last three years, were formally opened on September 15th. This marks a new departure in the administration of the poorhouses of Glasgow, and one that will greatly benefit the unfortunate patients and inmates. Hitherto, the poorhouse hospital has been part of the ordinary poorhouse; with the increase of the city the poorhouses have been becoming overcrowded, and the hospitals have been conducted under considerable disadvantages. The idea of the present extensions has been to dissociate the ordinary poorhouse cases from those requiring active hospital treatment. The extensive buildings at Barnhill will in future be retained for ordinary cases not requiring special care. The present Parliamentary Road buildings have recently been acquired by one of the railway companies for extension. The parish council, therefore, have had to face the building of new premises, and it is these that have now been completed.

A general hospital has been erected at Stabhill, on the north-eastern outskirts of the city, in which will be accommodated the infirm and aged poor, as well as children who require hospital care. In addition there are now two district hospitals in the city itself—one in Duke Street and the other near Earscube Toll: in these the acute surgical and medical cases will be treated. In the Duke Street district hospital a separate block has been arranged for mental cases, where, under the supervision of Dr. Carswell, acute and incipient cases of insanity may be treated, some of which may ultimately have to be sent to one of the asylums.

The general hospital at Stabhill is a large building, and provides for 1,650 patients, 100 nurses, and 70 servants, while there are also houses for 20 workmen. The whole of the buildings are of brick with stone lintels and window sills, and without any attempt at architectural extravagance. They are mainly two stories in height, and provided with all the most modern improvements and appliances for the benefit of the patients. There are 14 large medical and surgical wards, several special wards for aged and infirm persons, a large number of special wards for children, an isolation block, and the usual administrative departments. Special arrangements are being made also for the treatment of consumption—a large number of cases being always present in the poorhouses. The extent of this new hospital may be gathered from the fact that it has cost about £300,000, and that the site, which extends to 54 acres, itself cost £8,300.

The Eastern District Hospital, which is in Duke Street, provides accommodation for 244 patients; of these 44 may be mental cases. Owing to the restricted nature of the site, the architect has arranged the wards radiating from a common centre, and so economized the space required for corridors and staircases. The Western District Hospital at Earscube Toll provides for 207 patients. These buildings are also simply built of brick and plainly furnished, although provided with the latest improvements in hospital construction. They have each cost from £70 000 to £75 000.

On the forenoon of September 15th the members of the Glasgow Parish Council and some friends were conveyed in carriages to Stabhill, where on the lawn in front of the administrative block a short ceremony took place. Mr. Brand, the convener of the hospital committee, presided, and introduced Mr. Dott, the chairman of the parish council, who declared the Stabhill Hospital and the two district hospitals open after a few interesting remarks regarding the work of the council and the development of which these new buildings were some indication. The company spent a short time inspecting the various buildings, and were then driven to Woodilee Asylum, where Mr. Dott, as chairman of the Lunacy District Board, opened the new nurses' home at that institution, after which the company was entertained to luncheon.

THE ABERDEEN COMPANIES R.A.M.C. (VOLUNTEERS).

Major Scott Riddell has been appointed to command these companies in place of Major Mackenzie Booth, who was unfortunately compelled to resign on account of ill-health. The announcement of Major Riddell's appointment will be received with much favour, for no officer has worked harder in the interest of the corps, and under his command the prosperity and continued popularity of the corps among the medical students of Marischal College are assured. Recruiting in the future is likely, however, to be somewhat interfered with on account of the institution of the University Squadron of the Scottish Horse. In spite of the undoubted disadvantage of serving under the Militia Act, this squadron has already been very successful, some 70 or 80 students having joined, and from all accounts the camp at Dunkeld, held last month, was a great success.

Ireland.

INFANT MORTALITY IN DUBLIN.

SIR CHARLES CAMERON, in his report for the month, mentions that for some weeks past there has been a great mortality due to diarrhoea in many English and Irish towns, but in Dublin it did not exceed 5.5 per 1,000 living persons. In Salford it was 12.3, in Hull 14.8, in Walthamstow 15.15, and in East Ham 16.5. In the five weeks ended September 3rd, 1904, the deaths of 121 persons were registered as caused by diarrhoea and dysentery; 10 of the decedents were 30 years or more of age, 28 were children 1 year old and upwards, and 87 were infants under 1 year. Owing to the removal of families of the decedents and other causes it was found impossible to get information as to the diet of more than 99 out of 115 children; of these, 74 were under 1 year old. The following table shows the nature of the milk supplied to the children who were not nursed by their mothers or wet nurses, the way the milk was given to them, and the way it was kept until made use of:

Seventy-four Children Under 1 Year.

Fed by mother, 11; bottle fed, 38; partly by mother and partly bottle, 16: spoon fed, 3; spoon and bottle fed, 1: mother and spoon fed, 5: fresh new milk, 60; condensed milk, 3; fresh and condensed milk, 3; city milk, 40: country milk, 18; tubes in bottles, 34; no tubes in bottles, 20; milk kept overnight, 39; milk not kept overnight, 10; nurse children, 12; city and country milk, 0.

Twenty-five Children Over 1 Year.

Fresh new milk, 21; fresh and condensed milk, 4; city milk, 15; country milk, 0; milk kept overnight, 20; milk not kept overnight, 5; city and country milk, 1.

Only 11 infants out of the 74 were nursed by their mothers. As the great majority of the infants in Dublin are nursed by their mothers, it is evident that they suffered less from diarrhoea than the bottle-fed infants, who only form a minority; the proportion, 11 mother-fed infants to 63 bottle-fed infants, clearly shows the great superiority of the natural as compared with the artificial feeding. Dealing with the 25 children 1 year old and upwards, it is remarkable that 19 of them had been nursed by their mothers before their illness; they died after the mothers had ceased to nurse them. This is very significant. It is satisfactory to find that 85 of the infants and children had been supplied with fresh milk and only 3 with condensed milk, and 3 with fresh milk and condensed milk. The condensed milk was chiefly condensed separated milk, which is not the proper food for young children. As regards the infants, 20 of them were fed from bottles without tubes, and 34 from bottles with tubes. The rest were fed from spoons. In 8 instances, single bottles without tubes were used. In 6 cases 2 tubeless bottles were in use. The excellent "Rotunda" tubeless bottle was used in each of 13 cases, and Allen and Hanbury's in 4 cases.

In addition to the milk, the majority of the children got other food, some of which was most unsuitable to them. Amongst things commonly given to infants under 1 year of age were porter, sweets, cakes, cabbage, meat, fish, potatoes, various kinds of artificial foods, rusks, bread and butter, fruit. It is satisfactory to find that condensed separated milk, which is so generally used by the poorer classes, is but rarely given to infants. Much of the infantile mortality is due to the use of improper food, milk improperly kept, and often tainted from the improper atmosphere of the places it is kept in, and is often the cause of diarrhoea. In a very small number of English towns, notably Liverpool, the municipality supplies sterilized milk for the use of children. In Liverpool the system was started near the close of 1900, and up to December 31st, 1903, 6,295 infants of the average age of 3½ months were supplied with sterilized milk. It would seem that the supply of sterilized milk to from four to five thousand infants cost the city nearly £2,300, or about 10s. per infant. It is by the constant distribution of leaflets containing instructions for the feeding of children, the personal instructions given by the lady sanitary sub-officers, by improving the general hygienic condition of the dwellings of the poorer

classes, that we may hope to diminish the infantile mortality of Dublin. Although that mortality is not in excess of the average in the large English towns, yet it is far too large. It is amongst the children of the poorer class that the great mortality occurs. In 1903 the death-rate of infants under 1 year in the class of persons comprising hawkers, porters, labourers, etc., was at the annual rate of 142 per 1,000. On the other hand, the death-rate of infants belonging to the independent, professional, and middle classes was 25 per 1,000.

INDIA IN 1902.

THE REPORT OF THE IMPERIAL SANITARY COMMISSIONER.

SURGEON-GENERAL SIR BENJAMIN FRANKLIN'S report for the year 1902 is constructed on the same lines as its recent predecessors. No alteration has been made in the statistical tables, which cover 155 of a volume of 250 folio pages. The letterpress has been—in accordance with recent orders—considerably contracted; but, though concise, the summary presented of the sanitary condition of Indian population and communities is as full as the material on which it is founded justifies, and, in addition, well-condensed and up-to-date information is given regarding accretions to our knowledge of various subjects of special Indian interest, such as malaria, enteric fever, plague, beri-beri, dysentery, trypanosomiasis, kala-azar, etc. This feature of the report renders it of educative value to the medical and sanitary executive, and supplies, in brief, useful material, which most officers in India have not the time or opportunity to obtain. We hope, therefore, that in future reports this element will not be eliminated, although it may reasonably be regarded as outside the main purpose of the record. The events of 1902 will be concisely displayed in this article, in series with similar summaries relating to the preceding five years.*

GENERAL CHARACTER OF THE YEAR 1902.

Following a healthy year in which recovery from the disastrous influences of 1900 was in progress, the year 1902 was characterized by conditions conducive to physical well-being. The meteorology of the year was favourable, pressure, heat, and humidity being average, and rainfall only 0.37 in. in defect for the whole empire, its distribution in space and time being normal. No information is given regarding crops or the price of food. The absence of this is a serious defect in an Indian sanitary report, which ought to relate the conditions affecting the statistical data so elaborately set forth, whose significance and value depend on an explanation of the circumstances from which they arise. The year was one of political peace and social rest. Some remarks on these aspects are also desirable. We gather from the tables that only a limited number of native troops was employed on service—1,558 constituting the Mashud blockade, 1,121 the Malakand force, 1,165 the Kohat-Kurrum force, 3,905 the China garrison, and 132 employed with the Somali expedition, while 1,012 proceeded to England as a Coronation contingent. The Delhi Durbar and manœuvres were an important event of the year: 1,638 European and 2,060 native soldiers took part in these. Some references are made to the sickness and mortality arising from these employments; but it seems desirable that such incidents and their effect should be more specifically represented in the sections relating to the health of the army.

VITAL STATISTICS OF 1902.

The results of registration of births and deaths, though still very far from accurate, give for purposes of comparison with past years useful general indications. The birth-rate for the whole empire was 39.38 per 1,000, against 34.60 in 1901. The provincial extremes were 56.9 in Berar, and 23.91 in Coorg. The percentage of male to female births varied from 127 in Sind to 101 in Coorg. High birth-rates are said to depress this percentage. The death-rate for India was 31.49, against 29.46 in 1901. Both years compare favourably with 1900, which gave a rate of 38.6. The birth-rate exceeded the death-rate in every province except the Punjab, Bombay, and Coorg, where the death-rate exceeded the birth-rate by 0.3, 4.88, and 3.14 respectively. The great mortality caused by plague is held to account for the excess in the Punjab and Bombay, and a depressed birth-rate in the small province of Coorg. The highest rate (44.1) was returned by the Punjab, and the lowest (18.12) by Upper Burmah, where registration is still very defective. Urban death-rates were higher than rural in every province except Assam. The highest mortality was recorded in December, and the lowest in July. In the Punjab there was a decided excess of female mortality; in other provinces the rates were not far apart. The great infantile mortality in all provinces continues to attract attention, but, the census basis being fixed and the birth-rates fluctuating, rates calculated on the former are subject to qualification. On the whole, the figures for 1902 relative to the general population of India indicate sustained improvement in health and condition.

PREVALENT DISEASES.

Statistics relating to these are necessarily subject to grave doubt, on account of the absence of a skilled agency for their registration. It is pointed out for example that many deaths due to plague are probably returned as caused by respiratory disease, and deaths from measles and perhaps other eruptive fevers are entered under the head of small-pox. No doubt, also, deaths from acute inflammatory affections unduly swell the huge total of "fevers." This total amounted in 1902 to 4,279,551—19.17 per 1,000 of population. The rate in 1901 was 18.73. The increase was probably not due to malaria, for among troops and prisoners whose death statistics rest on scientific diagnosis, there was a decrease in deaths from malarial fever. Moreover, the greatest rise in fever mortality occurred in May—a non-malarious month. Plague, undoubtedly, contributed to this increase and in some parts of Madras and Burmah dengue prevailed, and deaths from this cause, though not numerous, were entered as fever deaths. It is curious to contrast with this formidable rate of 19.1 the fever mortality of European and native troops and of prisoners. The ratios are 4.29, 2.17 and 2.02, the figures for intermittent and remittent fevers combined being 0.70, 2.03 and 1.88. Reference is made to anti-mosquito campaigns in several provinces; but these efforts are evidently tentative and feeble. The distribution and sale of quinine appears to be on the increase in some provinces, in others a decrease took place, while in other provincial reports the subject is not mentioned. "Kala-azar" has decreased in some districts of Assam and increased in others—especially in the Sylhet district of the Surma Valley. Unusual fever mortality in the Hissar district of the Punjab "is ascribed by the Civil Surgeon to cerebro-spinal fever of a very severe and fatal type which prevailed in an epidemic form during the first quarter of 1902."

There was a decrease in the mortality caused by bowel complaints from 2.45 in 1900 and 1.11 in 1901, to 1.06 in the year under report. Unlike fevers the mortality is higher in urban than in rural areas. Tea-garden coolies in Assam die largely from bowel complaints, but it is thought that many deaths from beri-beri ankylostomiasis and chronic fever find a place in this category.

The mortality caused by cholera was 1.01 against 1.21 in 1901, and 3.70 in 1900. Assam again presents a maximum of 2.40, followed closely by Bengal with 2.02. There was no cholera in the North-West Frontier and Central Provinces and Upper Burmah, and the cholera rates of other provinces were inconsiderable. The rates in Assam tea gardens were higher than the provincial rate, except in Sylhet. The cholera mortality of coolie immigrants was only 0.9 per mille. The inoculations performed among this class amounted to 3,144. Arrangements have been made for having all coolies inoculated at Assansol. Of 106 inoculated coolies only one was attacked, and of 1,192 uninoculated eighteen were attacked and four died.

There was an increase in small-pox mortality, the ratio being 0.52 against 0.40 in 1901. Inoculation is blamed for severe outbreaks in the Surma Valley, and arrangements for vaccination are reported to be defective in several provinces.

There was an advance in the mortality caused by plague, the number of deaths being 583,937, against 283,788 in 1901. The Bombay Presidency again heads the list with a plague mortality of 10 per mille; the Punjab comes next, with 8.52; then follow on a lower level Berar (1.55), United Provinces of Agra and Oudh (0.84), and Bengal (0.44). The only provinces that were entirely exempt were Assam, Burmah, and Ajmere-Merwara. Deaths in the city of Bombay amounted to 13,786, and in Calcutta to 7,278. In some Punjab villages from 20 to 40 per cent. of the population perished from plague. Some interesting notes are given regarding recent researches concerning the identification and vitality of the plague bacillus, the agency of rats and fleas in its dissemination, and the

* BRITISH MEDICAL JOURNAL, January 13th and November 3rd, 1900, pp. 89 and 1326; June 1st, 1901, p. 1369; October 4th, 1902, p. 1074; and September 26th, p. 742.

value of some prophylactic measures. Simpson's conclusion, from study of the Hong Kong plague, is that "infection is carried from place to place by individuals and from house to house by rats." The question as regards the agency of fleas is still unsettled. The Sydney experience goes to favour their intermediacy, but additional observation and experiment are necessary. The failure of the Punjab inoculation campaign is chronicled, and the preventive efficiency of evacuation and disinfection finds fresh illustration. The outlook as concerns plague in India is not promising. The disease has now prevailed continuously for eight years, and shows signs of increase and spread rather than decline. There was a substantial rise in the Bombay Presidency, where it first appeared, and where indications of abatement might first be expected. There was a large increase of mortality in the Punjab, the United Provinces, Madras, Mysore, and a fresh invasion of Berar. The only province that shows a decrease is Bengal, but the death-roll still amounts to 32,967.

PRISONERS.

Statistics relating to the prison population ought to correspond more closely with those of the general population than those of troops, because these institutions are recruited from the general native public without regard to physique or health, and the inmates of gaols carry with them the effects of influences which they encountered outside and endure during their detention the influences prevailing in the country and locality. Troops, on the other hand, live under special conditions. Seeing that the extremes of life, which contribute so largely to the death-rate, are not represented in gaols, and that the circumstances of incarceration should act in preventing the entry and spread of infectious diseases, the mortality of prisons ought to be lower than that of the outside community. The death-rate of 24.85, though contrasting favourably with that of previous years, appears therefore to be in excess of the expectation which these considerations would justify, the decrease on the general rate being only 6.64 per mille. The sickness rates of the year were favourable. Ague, dysentery, abscess, and diarrhoea were as usual the chief causes of sickness; ague contributing 41, and bowel complaints 16 per cent. of the admissions. The principal causes of mortality were dysentery, tubercle of the lungs, and pneumonia, constituting respectively 26, 17, and 14 per cent. of total deaths.

There was a decrease of influenza, and only 36 cases, with 24 deaths, from cholera occurred. From small-pox there were 47 admissions and 4 deaths, the death-rate being 0.08 per mille, against 0.52 in the general population. Measures were adopted in some gaols to prevent malaria, and quinine was administered largely for prophylactic purposes, but the methods employed seem to have been ineffective and loose. Seventy cases of enteric fever were returned, with 15 deaths; eighteen gaols had 1 case each. *Post-mortem* examinations are said to have confirmed the positive results of Widal's test in most cases. There were 136 cases of cerebro-spinal fever, with 108 deaths, against 141 and 102 in 1901. The cases occurred in nineteen gaols. There were 42 cases in the Ahmedabad gaol, 35 in Mung Rasul, 14 in Delhi, and 11 in Bhagalpur; ten gaols had but 1 each, and four from 2 to 7. "Nothing new," it is stated, "was anywhere discovered as to the causation and spread of the disease," but evidence is increasing regarding the existence of this fever among the free population. There were 220 cases of relapsing fever, with 4 deaths; 180 cases of dengue, with no death; and 37 cases of plague, with 20 deaths. Most of these latter occurred in Bombay gaols; 145 admissions from scurvy were recorded. There was an increase of admissions and deaths from tubercle of the lungs, but less pneumonia. There was also a decrease in dysentery, but a slight increase of diarrhoea. Nine cases of beri-beri were reported from Burmah and Madras; epidemic dropsy occurred in the Burisal gaol, and an outbreak of catarrhal jaundice in the Buxar Central Prison. There was a decrease in the number of deaths returned under the head of "anaemia and debility," which is a satisfactory circumstance, but it is surmised that this is in part due to more exact diagnosis.

EUROPEAN TROOPS.

The death-rates rose from 12.38 to 14.68. The decennial rate—1891-1900—was 16.21. The sickness and invaliding rates were lower. Venereal diseases and ague constituted as usual the chief causes of admissions, and enteric fever and liver abscess of deaths. Bombay and Bengal were the most unhealthy commands. Barrackpore again heads the list of unhealthy stations. There was a decided decline in the prevalence of influenza. Only 3 cases of cholera occurred, and 23 cases of small-pox, with 4 deaths. There was a considerable fall in admissions from ague, but a slight rise in mortality. Decrease in some stations is attributed to measures taken to destroy mosquitos and their larvae, but the Sanitary Commissioner doubts whether these were carried out with sufficient thoroughness. The same remark applies to the prophylactic use of quinine. Eight admissions with 1 death were registered from Malta fever. Considerable doubts are entertained regarding the diagnostic value of the serum test, and indeed as to the existence of this form of fever in India. There was a rise in both the admission-rate and death-rate of enteric fever, which amounted to 16.7 and 4.29, against 12.8 and 3.32 in 1901; both years, however, presented considerably reduced rates as compared with the decennium 1891-1900 (24.2 and 6.46). The diagnosis and etiology of enteric fever are dealt with at considerable length, and much interesting material is presented in an orderly and concise way. The subject of "paratyphoid fever" is also discussed. Only 4 admissions and 1 death took place from plague at Umballa and Belgaum: a single case of cerebro-spinal fever occurred at Indore, and 1 of relapsing fever at Poona. There were 39 admissions from beri-beri, 35 of which happened in Burmah. The admission-rate from tubercle of the lungs was the same as in 1901 (3.4), but the death-rate (0.59) somewhat higher. Pneumonia gave higher rates (5.9 and 0.97); there was a satisfactory lowering in dysentery, but more admissions and deaths were due to abscess of the liver. The admission-rate for venereal diseases was 281.4, against 276.0 in 1901; the increase is attributed to the number of regiments and drafts returning from field service in South Africa, marches to Delhi and the hills, and the imperfect control of public women. There was an increase in the death-rate from sunstroke. The death-rates of officers was 16.05, of women 14.87, and of children 45.23. All these are considerably in excess of the preceding year.

(To be continued.)

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 19th of October, at **2 o'clock** in the afternoon.

September, 1904. GUY ELLISTON, *General Secretary.*

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: COVENTRY DIVISION.—The annual dinner of this Division will be held at the Drill Hall, Queen Victoria Road, Coventry, on Thursday, October 6th, at 7.15 p.m. After the dinner the Chairman (Dr. Webb Fowler) will give his address as chairman for the year. Mr. J. Smith Whitaker, the Medical Secretary of the Association, has accepted an invitation to be present. Dinner tickets, including wine, will be 15s. each. It will be open to members to introduce guests, who must be either medical men or registered dentists. The Secretary will be obliged if members will let him know at an early date, not later than September 30th, whether they will be present, and whether they will be introducing guests. Members wishing to read papers or to show specimens or cases during the current session are requested to communicate their wishes to the Honorary Secretary, E. H. SNELL, Knighton House, Coventry.

BORDER COUNTIES BRANCH.—The autumn meeting of this Branch will be held at Penrith at the end of October, and members who propose to make communications thereat are requested to write to the Honorary Secretary, Dr. FRANCIS R. HILL, Warwick Road, Carlisle.

EAST ANGLIAN BRANCH.—The autumn meeting of the East Anglian Branch will be held at Kelling Open-air Sanatorium, near Holt, Norfolk, on Thursday, September 29th. Members wishing to read papers or show cases or specimens should communicate with Mr. H. A. BALLANCE, M.S., Norwich, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH: ALTRINCHAM DIVISION.—The members of this Division will meet at the Brooklands Hotel, Brooklands, at 5 p.m. on Thursday, September 29th. (The 4.5 p.m. train from Northwich will be stopped at Brooklands.) The meeting will be a Special Meeting (under Rule 12) for the purpose of passing (under Rule 13) a new rule to provide for the filling of casual vacancies among the officers. It will also be the ordinary quarterly meeting. The Association and Medical Defence: The Committee calls attention to the history of this subject as given in Dr. Welsford's letter on p. 469 of the BRITISH MEDICAL JOURNAL of August 27th, 1904, and reminds the members that the Special Meeting of March 30th, 1904, passed a resolution, *nem. con.*, in favour of the proposal that the Association should undertake medical defence. The Committee considers that the importance of the subject demands further action, and requests each member to be good enough to fill up and return the post-card to the Honorary Secretary before September 29th, to facilitate the discussion on a resolution to be proposed. The Committee further request members to read the reports of the Annual Representative Meeting as contained in the JOURNAL and SUPPLEMENT of July 30th and August 6th, with a view to making an official communication to the Central Council. Agenda: 1. Minutes of last meeting (May 18th). 2. Report of Committee (Minutes of Meeting of August 31st). 3. Dr. C. J. Renshaw will open a discussion on the advisability of the State registration of nurses; and will move a resolution. 4. The Association and Medical Defence. 5. New rule as to filling casual vacancies among the officers. 6. Report of Representative on Annual Meeting at Oxford; authorize official communication to Central Council. 7. To transact any business that may be transacted at an ordinary meeting. 8. Communication from Exeter Division.—T. W. H. GARSTANG, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WANDSWORTH DIVISION.—A meeting will be held at the Town Hall, Wandsworth, on Thursday, September 29th, at 9 p.m. Business: To receive the Representative's report of his attendance at Oxford, when several resolutions based thereon will be submitted. An address, illustrated by the optical lantern, will be given by W. D. Turner, M.D., on Tuberculosis, its Origin and Extinction. It is hoped the members will attend in large numbers, and so begin the winter session well.—E. ROWLAND FOTHERGILL, M.B., Torquay House, Southfields, S.W., Honorary Secretary.

NORTH WALES AND SHROPSHIRE BRANCH: FLINT AND DENBIGH DIVISION.—The annual meeting will be held at the Westminster Hotel, Rhyl, on Friday, September 30th, at 3 p.m. Members wishing to read papers, or show cases or specimens, are requested to communicate with the Honorary Secretary. E. D. EVANS, Wrexham.

SOUTH-EASTERN BRANCH: CROYDON DIVISION.—The next meeting will be held at the Cock Hotel, Sutton, on Thursday, October 20th, at 4 p.m., Mr. G. Bower (Sutton) in the chair. The dinner will take place at 6 p.m., charge 7s., exclusive of wine. All members of the South-Eastern Branch are entitled to attend, and to introduce professional friends. Papers have been promised by Mr. Dundas Grant, Dr. W. H. Tunnicliffe, Dr. A. E. Giles. The subjects of these papers will be announced at a later date. N.B.—The Honorary Secretary would be much obliged if members would kindly inform him by post-card whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner. By doing so they will materially facilitate arrangements, and promote the success of the meeting.—E. H. WILLOCK, Honorary Secretary, 113, London Road, Croydon.

SOUTH-EASTERN BRANCH: ISLE OF THANET DIVISION.—The next meeting of this Division will be held at the Grand Hotel, Broadstairs, on Tuesday, September 27th, at 3.30 p.m., Mr. F. Brightman in the chair. Tea will be served after the meeting. It being found that at meetings clinical subjects have been much curtailed on account of the large amount of medico-political matter to be discussed, at the last meeting of the Division it was decided that two additional meetings should be held, for clinical purposes only. These meetings will be held during the winter months, and it is hoped that members will make good use of them in bringing forward papers and cases of interest. Agenda: Mr. W. Gosse (Representative of the Division) will give a report of the proceedings at the meeting of Representatives at Oxford. Mr. Biddle will read notes on a case of interest. Mr. Raven: Some cases of Pancreatic Disease. All members of the South-Eastern Branch are invited to attend these meetings and to introduce professional friends, but will not be entitled to vote on Divisional questions.—HUGH M. RAVEN, Honorary Divisional Secretary, Barfield House, Broadstairs.

SOUTHERN BRANCH.—This is to give notice that in the month of October next, the Branch will proceed to elect a representative on the Central Council of the Association. The names of candidates, nominated each by three electors in writing, should be sent to me not later than October 20th.—H. J. MANNING, Honorary Secretary, Laverstock, Salisbury.

ULSTER BRANCH.—The autumn meeting of this Branch will be held in the Medical Institute, Belfast, on Wednesday, October 5th, at 3 p.m., when Professor Lindsay will deliver his Presidential Address.—CECIL SHAW, Honorary Secretary.

SPECIAL CORRESPONDENCE.

MANCHESTER.

Refusal of the Board of Education to Sanction Lectures on Alcohol and Temperance in Schools.—Small-pox in Oldham and Ashton.—Testing the Eyesight of Children in Blackpool.

LECTURES on alcohol in elementary schools formed the subject of a very interesting discussion at the last meeting of the Cheshire County Education Committee. It appears that the Committee passed a resolution some time ago that such lectures, which had been given for years, should be continued. A vicar, who had been in communication with the Board of Education, stated that the Department had written that they could not at present sanction any addition to the curriculum of the public schools which was not included in the approved time table of the schools. Dr. Hodgson, who approves of the course being given, contended that the Education Committee were responsible for all secular education, and moved that the Director of Education inform any administrative subcommittee that may experience any difficulty with managers of schools in arranging for these lectures (which are intended to be given as object-lessons in elementary science, and are given by trained, certificated teachers) that such lectures are to be considered as secular instruction, for which the local education authority, and not the managers, are responsible. The motion was carried by a large majority, although the Government Inspector placed before the Committee the *non-possumus* attitude of the Board, which had for the last eight or nine years refused to recognize the subject of lectures on alcohol or temperance in the time table. It was also resolved that the Director of Education should write to the Secretary of the Band of Hope Union asking him to submit a syllabus of the lectures to H.M. Inspector of Elementary Education for the district for his approval.

Oldham, since August 20th, has experienced two outbreaks of small-pox. Of 43 cases discovered or reported in the town, 23 were directly or indirectly traceable to a house in which a young man from Yorkshire had stayed; probably 8 or 9 others were due to the same source. One case was discovered in a lodging-house, and a fortnight later 7 cases, all traceable to it, occurred. Another case was found in another district, with 4 cases next door, which were being treated as chicken-pox; and, in a street near by, 5 other cases, also being treated as chicken-pox. A medical man who attended some of the cases also caught the disease. Two deaths have also occurred. A serious outbreak has also occurred in Ashton Workhouse, 9 cases being reported during the week.

The sight of over 5,000 of the children attending the Blackpool County Schools has been tested within the last few months: 69 per cent. had normal vision, 22 per cent. were classed as having eyesight below normal, 6 per cent. were defective, and 2 per cent. very defective.

ADELAIDE.

Annual Meeting of the South Australian Branch.—Nemesis.

OUR Branch, the senior in age, I believe, of all those which have been established under the Southern Cross, celebrated its twenty-fifth birthday last month, when Dr. Jay delivered an excellent valedictory presidential address, surveying things medical from China to Peru in a pleasant and optimistic manner, and without any trace of the usual attitude of the *laudator temporis acti*. His successor is Dr. C. W. Hamilton, the third of three brothers who have attained to the chair of this Branch. At our next meeting we are to have a paper by Dr. Anstey Giles on a successful case of gastro-enterostomy for congenital pyloric stenosis.

Nemesis seems to steadily pursue the Hon. C. C. Kingston and all his merry men who aided in the *débâcle* at the Adelaide Hospital some six years ago. That turbulent politician, probably seeing that the star of the Labour party was in the ascendant, quarrelled with his colleagues in the first Commonwealth Ministry, and resigned; when, however, the present Watson Ministry did come into power, he was unable, on account of ill-health, to accept the proffered office. His unfortunate protégé, Dr. Leith Napier, formerly connected with the Chelsea Hospital for Women, had a fall from his horse whilst with one of the contingents about to be dispatched from here to South Africa, and sustained a fracture of the base of the skull. Though not at first expected to live he

made a marvellous recovery, but becoming incapacitated for serious work he was compelled to resign his position at the Adelaide Hospital. It was understood that he was very liberally treated, but a bombshell fell into the Government camp when Dr. Napier commenced an action for injuries sustained whilst on military service, and laid his damages at £6,500. At the usual rate of legal business in these States the action is not likely to be heard for a long time. Another supporter of Mr. Kingston—Dr. Bickle—who owed his appointment at the Adelaide Hospital to his siding with the Government, was left out in the cold the other day, and quite a junior, Dr. Cudmore, was appointed full surgeon in his stead.

CORRESPONDENCE.

THE CO-ORDINATION OF THE WORK OF THE DIVISIONS.

Sir,—The excellent letter of Dr. Fothergill will, I am sure, be welcomed by all keen secretaries, whether Branch or Division, for many of us have been a good deal bothered with this problem of co-ordination of Division work. Some of his ideas seem to me so good that I shall do my best to get them adopted by the Division and Branch of which I am Secretary.

I welcome the idea of an exchange of ideas and circulars amongst secretaries, and am ready to exchange with any secretary who cares to communicate with me. The meeting of all Division Secretaries in a Branch will be most useful to any Branch which adopts it. As a result of the talk I had with Dr. Fothergill and some of his metropolitan colleagues at Oxford. I have already put this matter on the agenda paper for our Branch Council meeting. I found the conversation just mentioned so useful to me that I hope Dr. Fothergill or some other member of the Council will see that at the next annual meeting a meeting of all Division and Branch secretaries shall be arranged. A great many will be there as representatives, members of Council, or otherwise, and a meeting of secretaries would be an excellent opportunity for an exchange of ideas between them and the General and Medical Secretaries. It is safe to say that the experience and ideas thus gained would soon be reflected in the work of the Association.

While writing mainly to express hearty sympathy with Dr. Fothergill's ideas, I would like to take the opportunity of throwing out a suggestion based on letters I had recently from Surgeon-General Evatt. He is very much concerned about the organization of the Poor-law, vaccination, and sanitary departments of the profession in the provinces, and he suggests that in every large Branch some man should be appointed public health secretary and specialize in the branches of work mentioned. He points out that the whole work of any important Branch is too much for any one man, a fact which I would be the last to deny. On careful consideration of Surgeon-General Evatt's plan, I would go a step further, and suggest that all Branches of any size should appoint secretaries, who should devote themselves to the various divisions of our work, and that these divisions would naturally fall under the heads of the important Committees of the Association. Thus the Branch would have a general secretary who would also be organizing secretary. He would be answerable for minutes, getting up of the Branch Council and Branch meetings, would, generally speaking, be the official means of communication with head quarters and would co-ordinate the work of the Divisions as far as possible. There would be a medico-political secretary, an ethical secretary, and a public health secretary, whose work would also include the vaccination and Poor-law services. I think that in any good-sized Branch properly worked, all these secretaries would find ample employment. The plan would also have the great advantage of directly interesting more men in the Association work, and there would always be three or four men in training for secretarial work, thus making the work less and less a one-man affair. I fancy this plan of specialization would be found more efficient than having two or three secretaries with no clear division of duty. At any rate, I shall try to persuade the North of England Branch to try the experiment. What do other secretaries of Branches think of this, and if they disapprove of it will some of them tell us how they propose to get all the rapidly increasing work of a Branch done while still continuing the minor but necessary duty of making their bread and butter?

In conclusion, Division secretaries who are new to the work should not get discouraged by small attendances at the meetings and smaller interest in the work done. Our profession is about half a century behind every other calling in organization. There are still a few in it who consider it derogatory to their dignity to do anything which savours of unionism, trade or professional. The necessity for organization is pretty evident to the younger men, and it behoves the few enthusiasts to work for it, helped as they will be by the force of circumstances. A good secretary goes a long way towards making a good Division.—I am, etc.,

Gateshead, Sept. 13th. Alfred Cox.

Sir,—I consider the letter of Dr. Fothergill expresses very clearly the feeling that exists in the minds of all those members of our Association who have tried and are still trying to make it of real use to the profession.

I confess I am disheartened at the progress we are making, and it was with a view of "co-ordinating the work of Divisions," as Dr. Fothergill puts it, that I proposed at the last meeting of the South-Eastern Branch the formation of two Branches out of the present huge and unworkable one. In my opinion a Branch secretary should aim at "co-ordinating the work of Divisions," but how can he do so when his Branch is so large that it takes a day's journey to get from one end of it to the other? The matter has been referred to each Division, and I trust that at the meetings at which the question is discussed the secretaries will endeavour to arrange that both sides of the question shall be fairly stated.

Until we have a Branch formed in which it is possible for the Division secretaries, the representatives, and other officials to meet together without leaving their practices too long it is useless to aim at co-ordination, and each Division must, as at present, go its own way.

I am sure that at present there is too great a tendency to magnify the importance of Division meetings and minimize that of Branch meetings. When a man has worked up his Division and secured local union, he begins to see that local efforts by themselves are futile. He desires a larger field of work and the creation of a larger constituency in which to advocate his views. There should be a continuity, so that a question that has been discussed in Division meetings should be taken to the Branch, and there be put before the whole members of the Branch. At present the meetings of the South-Eastern Branch are absolutely barren of results so far as the organization of the local profession is concerned. Routine business and social converse between men who have never met before, and who will not meet again for years, is the sole object in view.

But assuming there is easy and quick communication between the Divisions forming a Branch, there can be no better way of furthering the interests and increasing the membership of our Association than by frequent discussions between the officials. I have known instances in which a Division secretary has done absolutely nothing until he has been approached by a more enthusiastic colleague. I know of Divisions even now where nothing is being done. What would be the feeling of the secretary of such a Division if, at a meeting of all the Division secretaries in a certain Branch, when requested to state what was being done in his Division, he was obliged to say that he had no Chairman, no Representative, and had no meetings!

The present method of each Division being allowed to propose resolutions for the annual Representative Meeting is good so far as it goes, but it would be much more satisfactory if the questions had also been fully discussed by truly representative Branch meetings, and I hope Dr. Fothergill's letter will lead to a better appreciation of what is expected from some of our officials.

The new constitution has not yet had a fair chance. Medical men as a body are not yet at all clear that by joining the Association they get their money's worth. They want to see some of our schemes a little more "out of the air" and more applicable to our daily practice. They want to see real results, and not so much abortive effort. The real opinion of the profession on many subjects has not yet been ascertained; we are very far off from having such a thing as "the united voice of the medical profession." If the general body of practitioners could be got to attend our meetings, and could be persuaded that their interests needed safeguarding by such an association as the British Medical Association, then we could hope for better times within our own lifetime, but at the present rate of progress it is questionable if our grandchildren will be any better, or so well off, as we are. We must "wake up," and I am delighted to find that such

earnest workers as Drs. Garrett Horder, Wolstenholme, and G. H. Broadbent agree with Dr. Fothergill.—I am, etc.,

Folkestone, Sept. 19th. ARTHUR E. LARKING.

SIR,—Please allow me space to express my approval of the letters of Dr. Fothergill and others advocating the co-ordination of the work of the Divisions, by which, of course, I mean those Divisions which are actively alive and possess active officers.

Take, for instance, the arrangement of the Representatives' meeting. Only those who attended at Swansea and Oxford can have any idea of the physical discomfort which the Representatives had to endure, or of the hurried manner in which much of the work was dispatched, with very little consideration.

I have carried my Committee with me, and hope on the 29th inst. to carry my Division also, in resolving to send in a very strong protest against a repetition of the muddle.

But how can I approach other secretaries or Divisions, in order to invite assistance, encourage united action, and give strength to our representations? It is useless to try to take action at the next Representatives' meeting; it must be done before that; and I shall personally welcome any steps which the Council in its wisdom may devise, or which we Secretaries may initiate ourselves, to secure intercommunication of ideas, during the fifty-one weeks which each time elapse between two consecutive annual meetings.

As to the particular point I have taken above as an illustration—namely, the inconvenience of the arrangements for the Representatives' meeting, may I ask that any secretaries or Representatives who are in sympathy with me will kindly send me their names (with suggestions for amendment) before the 29th inst.?—I am, etc.,

Altrincham, Cheshire, Sept. 19th. T. W. H. GARSTANG.

THE ASSOCIATION AND MEDICAL DEFENCE.

SIR,—Dr. Welsford and those who think with him do not appear to have grasped the initial fact that the Medical Defence Union, existing, as it does, as a corporate body, has no legal power to amalgamate with any other Society or Association whatever. This has been stated by us time after time, in season and even out of season; and one would have imagined that all careful readers of the BRITISH MEDICAL JOURNAL would have known this fully. It will perhaps save further repetition if I once more call attention to this elementary principle.

All the criticism which has been levelled at us in this respect is therefore beside the mark, and is a mere beating of the air. To term us "reactionaries" for declining to waste time in attempting to do the impossible is to abuse the King's English.

It will be news to solicitors that the Incorporated Law Society has done such valuable service to the legal profession as Dr. Welsford states it has. I fear that, owing to the exigencies of a busy medical practice, Dr. Welsford has read neither the law journals nor the daily papers, which have commented repeatedly upon the inactivity of the Society.

The membership of the Incorporated Law Society is purely voluntary, and its members comprise but a small proportion of the solicitors practising in the United Kingdom. Its success in checking unqualified practitioners is due, not to its extraordinary efforts, but to the fact that the legal profession is properly protected against illegal practice by a statute law which is far reaching in its operations and easily workable. Our Medical Act is a cumbersome and almost useless machine, which by its faulty construction renders its starting a matter of great labour and difficulty, and when started its movement is erratic, even dangerous to those working it.

Let us hope that we may live long enough to see a new Medical Acts Amendment Bill drafted by the British Medical Association, passed by Divisions and by Representative Meeting, and carried through the Commons and Lords by the Council.

With reference to our reserve fund, we find it amply sufficient for our purposes, and our income has enabled us to carry cases to the Court of Appeal time after time, when such a course was necessary for our members' interests, and we should not hesitate if required to take a case to the House of Lords.

I regret having once again to enter the field of controversy, but I hope, having made our position clear, I may not have to do so again. If the British Medical Association can evolve and carry out a plan for medical defence which shall be superior to and more successful than that which the profession already enjoys in existing societies, no one can complain; but for men to "drop the substance" in order to "grasp a shadow" would appear to me to be a poor game, and one not in accord with the best protective interests of the profession.—I am, etc.,

London, W., Sept. 19th. A. GEORGE BATEMAN.

SIR,—The oft-repeated libel on our profession, once more reiterated by Dr. Welsford in his letter on medical defence, should not pass uncontradicted. "The utter apathy and indifference of the medical profession as a whole towards everything which affects their welfare"! What statement could be more inappropriate, for what body of men is more keenly alive to all the hardships they suffer? They suffer almost in silence, it is true, but not from apathy. The real reason is that, excepting those at the top of the tree, who have no grievance, we are all of us so occupied in working hard for little pay that we simply have not time or energy left to take part in crusades to ameliorate our lot. Dr. Welsford mentions the 50 per cent. return of post-cards as an instance of this apathy, but he should remember that probably more than 50 per cent. of us have had no time to go into the question asked, and so were unable to express an opinion. And we never shall have time to help ourselves until we no longer need help—that is, until we have reached one of the rare lucrative practices; but every man who sets himself to slowly but surely raise the value of his professional services is doing good work, not only for himself but for the whole profession. When we can make an income commensurate with the cost of our education and establishment—by an eight-hours' day instead of an eighty-four hours' week—then we can afford an hour or two to discuss medical politics; meanwhile we can only rely on our leaders to remember the small fry behind them and do what they can to help us.—I am, etc.,

August 28th. WORN OUT AT FORTY.

SIR THOMAS BROWNE: *AUDI ALTERAM PARTEM.*

SIR,—Of course Sir Thomas Browne believed in witches, as far as he can have been said to believe in anything, and in the passage which Dr. Sykes quotes Browne plainly gives his reasons. "They that doubt of witches," he says, "do not only deny them, but spirits, and are obliquely and upon consequence a sort, not of infidels, but of atheists." I commend this argument to your readers as a fine specimen of scientific reasoning. The times were troublesome, and it was wise for speculative writers to protest that they could "enjoy a singularity without a heresy."

It sounds well to contrast the enlightenment of the twentieth century with the darkness of the seventeenth, but (not to say that some of us who were born about the middle of the nineteenth century have no desire to hurry the pace so) let us consider what was going on at the time; for the days of Charles II were not absolutely days of mediaeval darkness. Harvey, the discoverer of the circulation of the blood, died in 1657. Isaac Newton graduated at Cambridge in 1665 (the year of these witchcraft trials). The Royal Society was incorporated in 1660. Sydenham was over forty years of age in 1665. It is true that Browne's *Religio Medici* was published some twenty years earlier, and written, he himself tells us, when he was thirty (1635). He should then have been in the full swim of the intellectual life of his time, neither should he have fallen far behind in the scientific ardour of the day at the age of sixty. Specimens of his reasoning in other matters allow of being briefly quoted from the *Religio Medici*, and are very conformable with his witchcraft views: "Conceive the distinct number of three, not divided or separated by the intellect, but actually comprehended in its unity, and that is a perfect trinity." "In brief, conceive light invisible, and that is a spirit"; "God, being all things, is contrary unto nothing; out of which were made all things, and so nothing became something, and omneity informed nullity into an essence." Stuff of this sort bears the same relation to the scientific output of the early and mid-seventeenth century workers that *Alice in Wonderland* does to the mathematical treatises of its distinguished author.

As, however, nobody seriously claims a scientific reputation for Sir Thomas Browne, it may be fairer to judge him by mere literary standards. No great eclipse of reason is known to have occurred between the middle of the sixteenth and the middle of the seventeenth centuries, yet Montaigne, who died ninety years before Browne, had the intelligence, the courage, and the humanity to write thus:

To kill men, a clear and shining light is required; and our life is too real and essential to warrant these supernatural and fantastic accidents. . . . I have my ears battered with a thousand such flim-flams as these: Three men saw him such a day in the East, three the next day in the West. . . . How much more natural and likely do I find it that two men should lie, than that one man in twelve hours' time should fly with the wind from East to West. . . . I am of St. Augustine's opinion, that it is better to lean towards doubt than assurance in things hard to prove and dangerous to believe. 'Tis now some years ago that I travelled through the territories of a Sovereign Prince, who, in my favour and to abate my incredulity, did me the honour to let me see in his own presence and in a particular place, ten or twelve prisoners of this kind, and, amongst others, an old hag, a real witch in foulness and deformity, who long had been famous in that profession. I saw both proofs and free confessions, and I know not what insensible mark upon the miserable creature. I examined and talked with her and the rest as much and as long as I would, and made the best and soundest observations I could, neither am I a man to suffer my judgement to be captivated by prepossession: and in the end should sooner have prescribed them hellebore than hemlock. *Captisque res magis mentibus, quam conscelcratis similis visa. The thing was rather to be attributed to madness than malice.* Justice hath correction proper for such maladies. . . . After all, 'tis setting a man's conjectures at a very high price upon them to cause a man to be roasted alive.

Now, lest it should be objected that I here transcribe Cotton's *Translation of Montaigne*, published in London in 1685, let me remind your readers that the first edition of Florio's version of the essays appeared in 1603. There is evidence that it was familiar to Shakespeare, Jonson and Bacon. A second edition, of which I have a copy, appeared in 1613. Besides, the original must have been well known to Browne who travelled in France and studied at Montpelier.

Hobbes in the *Leviathan*, published in 1651, refers only to witches in an occasional contemptuous aside. He thought that those who attempted to commune with the devil should be punished, not for any harm they could do, that being impossible, but for the wickedness of the design.

Samuel Butler (born seven years after Browne, died two years before him) deals with Matthew Hopkins, the witch-finder (who apparently brought about two hundred people to death and was himself eventually hanged as a sorcerer), in the following lines:

> And has he not within a year,
> Hanged three score of 'em in one shire?
> Some only for not being drown'd,
> And some for sitting above ground
> Whole days and nights upon their breeches,
> And feeling pain were hang'd for witches.
> And some for putting knavish tricks
> Upon green geese and turkey chicks,
> Or pigs that suddenly deceas'd
> Of griefs unnatural, as he guess'd;
> Who after prov'd himself a witch,
> And made a rod for his own breech.

I will at once admit that the third part of *Hudibras*, in which these lines appear, was not published till 1668, but Matthew procured the murder of sixty women in Essex in 1645, and met his reward in 1647. These things cannot have been hidden from Browne.

Readers will note the kindly tone of compassion for its victims that mingles with the contempt for the absurdity of witchcraft both in the minds of Montaigne and Butler. No such sentiment seems to have troubled the learned cogitations of Sir Thomas Browne, who "conceived that these swooning fits were natural, and nothing else but that they call the mother, but only heightened to a great excess by the subtlety of the devil, co-operating with the malice of these which we term witches, at whose instance he doth these villanies." I here quote the best first-hand authority, *Cobbett's Complete Collection of State Trials*, vol. vi, but "G. I." will find a very good account in H. L. Stephen's *State Trials*, vol. i. Hutchinson is very correct, on the whole, and Scott's *Demonology and Witchcraft* contains a good account of the trial. (Poor old widow Amy Duny's name was misprinted, by the way, in my first letter. The *State Trials* give the date of the Bury trial as March 10th, 1665.) It is true that Hale did charge the jury. He assured them that witches existed, he left them to God as to the present case, and he concluded with the usual platitude that to discharge the guilty or punish the innocent was equally undesirable. Reference to the *State Trials* will show that Sir Thomas Browne was so far behind some non-medical contemporaries in humanity and insight that I need not take up the challenge and prove a very large negative. Lord Cornwallis, Sir Edmund Bacon, and Mr. Serjeant Keeling were asked to examine one of the bewitched who said she had a fit whenever Amy Duny approached her. They blindfolded her, and made believe Amy Duny approached when somebody else did. She got the customary fit. They returned to court declaring that the whole transaction was mere imposture. "This put the court and all the persons into a stand" (the metaphor is apparently drawn from a fox hunt). Keeling, who seems to have been an *amicus curiae*, further declared himself much unsatisfied with the evidence, and thought it not sufficient to convict the prisoners, for, admitting that the children were in truth bewitched, yet, he said, "it can never be applied to the prisoners upon the imagination only of the parties afflicted." The antiseptic action of a little common sense was by no means unknown in the Bury Court House the day Sir Thomas Browne gave his evidence.

Neither can I apologize for my irreverent language with regard to Hale. Let me examine "G. I.'s" witness, Lord Campbell. Talking of this precious transaction, he says that on this occasion Hale "was not only under the influence of the most vulgar credulity, but that he violated the plainest rules of justice, and that he was really the murderer (*sic*) of two innocent women." According to Campbell, Hale was afraid of an acquittal or pardon in this case; for he thought, like Browne, that witchcraft and theism were inseparably bound together. In his life of Lord Justice Holt (1642-1710), having mentioned that that judge directed the acquittal of eleven cases of witchcraft which were tried before him, and directed that in future the bewitched should be indicted as impostors and cheats, Campbell quotes Roger North (1653-1734), who wrote:

> If a judge is so clear and open as to declare against that impious vulgar opinion that the devil himself has power to torment and kill innocent children, or that he is pleased to divert himself with the good people's cheese, butter, eggs, pigs, geese, and the like, errors of the ignorant and foolish rabble, the countrymen cry, "This judge hath no religion, for he doth not believe in witches;" and so, to show they have some, *they hang the poor wretches.*

Lord Campbell by no means claims infallibility for Hale, even though he was a Lord Chief Justice. On the contrary, he tells us Hale was "coxcombical in his own way," a very disastrous way for his family whom he ruined. Campbell also makes game of "his speculations on the manner in which the heavens and earth were created, and his geological explanation of the effect of Noah's flood," and quoting Roger North, says this work "is very remarkable for a childish ignorance of the subject, and that scarce any one ever read or will read it." Evidently Hale's speculation had not the literary power that distinguishes Browne's. Campbell ridicules the bad poetry, too, of "one who must listened to the versification of Dryden."

Were it not a well-recognized fact that witchcraft had a special attraction for the unsound of mind, and that witch hunters as well as their victims were often insane, it might seem unfair to speculate on the state of Hale's mental health in his latter years. The fatuous "meditation" which he wrote the Sunday following the Bury trial, in which he exulted over the results of the case which brought him so little credit suggests mental weakness. It may appear almost unkind to refer to the stark dementia which characterized the closing scene, when he believed the time of his death was miraculously revealed to him. The infirmities of age are to be pitied, even in men who have shown little pity. Let those of us who are growing old thank God that we do not live in the days of Sir Thomas Browne, and that, no matter how old, frail, and friendless we may become, we are not likely to be burned, hanged, drowned, or pressed to death as witches.—I am, etc.,

Dublin, Sept. 12th. CONOLLY NORMAN.

SIR,—I have followed with interest the discussion on this subject, for I chanced to read the original account of the trial of the witches (with an object having no reference to Browne) only a few days before the appearance of Dr. Conolly Norman's letter. It is contained in a pamphlet entitled, *A Tryal of Witches at the Assizes held at Bury St. Edmunds on the Tenth Day of March, 1664*, which may be found at the British Museum, where it is entered in the catalogue under "Bury St. Edmunds."

It is evident that your correspondents are not acquainted with the original account of this trial, or they would not in so many cases argue that Browne merely shared the general belief of his day. In Charles II's days it was by no means necessary to be a very advanced person in order to disbelieve in witchcraft; the opinions of educated people were about equally divided.

The "bewitched" in this case were mostly young girls between the ages of 9 and 18; it was an instance of what we should term epidemic hysteria, influenced by suggestion. The girls had fits, during which they did not lose conscious-

ness, and they shrieked when the witch touched them. It is noteworthy that Browne recognized the hysterical nature of the affection; "he conceived that these swounding fits were natural, and nothing else; but that they call the mother [that is, hysteria], but only heightened to a great excess by the subtilty of the Devil." Several lawyers in court were dissatisfied with the evidence, and suggested some sensible experiments; these were carried out with such results as we should nowadays expect, but they were ingeniously explained away. The witches were convicted, and within half an hour the girls were perfectly restored.

Browne was not in front of his age; he was a little behind it. His deeply-rooted belief in spiritual influences, benign and malign, may be connected with the fact that he came from Cheshire, where the "Celtic" element is still considerable. It is uncritical, to say the least, to claim for him any medical pre-eminence. He remains one of the glories of our literature.—I am, etc.,

Lelant, Cornwall, Sept. 21st. H. Havelock Ellis.

Sir,—The detailed account of the trial by Sir Matthew Hale of the two Suffolk "witches" in 1665 is to be found in a small volume with a quaint preface, published in 1682, the year of Sir Thomas Browne's death. He, "a person of great knowledge," was asked "what he did conceive of them?" The book is usually catalogued under Reports of Criminal Trials.

It has been suggested that the fear of summary lynch-law led to these repulsive sentences, for it was a time when a Sir Francis Bacon sat in his place in Parliament and helped to pass "an Act against conjuration, witchcraft, and dealing with evil and wicked spirits," and when King James, Defender of the Faith, ordered the common hangman to burn Reginald Scot's *Discovery of Witchcraft*, a second edition of which offence appeared in 1651. True it is that Thomas Willis then was striving to prove that many of those charged with "selling their souls to the devil" were the subjects of hysteria, or of what we should now diagnose as obsession, infatuation, imitative delusion, or malingering; it was, moreover, a healthy sign of the times for an expert medical witness to be called to express his personal knowledge and belief with regard to technical pathology. The shifting learning of the schools unfortunately overruled the solid grounds of Nature. Perhaps a little free thought by Thomas Browne, M.D., would have been as wise in this as in another sphere: "I borrow not the rules of my religion from Rome or Geneva, but the dictates of my own reason."—I am, etc.,

London, E.C., Sept. 14th. Stanley B. Atkinson.

ALL FOR THE WORST.

Sir,—A good deal of advice is at the present time being given to those about to enter the medical profession. To the general practitioner who has borne the burden and heat of the day it will occur that the best advice would be that offered by Mr. Punch to those about to marry, "Don't!" It is hardly necessary to point out that, in spite of the lengthened curriculum, the profession is overcrowded. Many medical men's incomes are returned at £180 a year—and less. It is safe to assert that the difficulties confronting the student of to-day are without parallel in the annals of our profession.

To those students who propose to swell the ranks of general practitioners it ought to be made clear that the general practitioner is passing away, just as did the family doctor before him. What is there left for him to do? The municipality takes away a large number of his patients and is laying claim to more, placing the practitioner in the enviable position of unsalaried certifying surgeon to the town or county council. Contract practice, hospitals—real and sham, general and special—meet him and defeat him at all points. Women, qualified and unqualified, but all registered, undersell him. And, worst of all, he has to encounter that spirit of commercialism which now troubles the once placid waters of professional life, and, if he be a clean living man, be worsted in the unequal fight, the end of which is bitterness and heart-break and failure.

Should the intending student, learning these things, still desire to cast in his lot with us, he ought to be asked to read the annual reports of the societies which have been organized for the defence of medical men and endeavour to reckon up his chances in the matter of those blackmailing charges which are certain to be brought against him at no distant date.

In the inaugural address he will hear of nothing but honour and glory and the nobleness of our calling, but we who have sailed in those treacherous seas owe it to him at least to chart the sunk rocks which may make shipwreck of his hopes and aspirations. Of the many sections into which the profession is now divided there is not one that has not its heel on the neck of the general practitioner. Amongst these the specialist ranks first. And I will tell the intending student his fortune: the time is at hand when he will himself be compelled to become specialist as an act of self-defence. And this will be the beginning of the end of that form of specialism which bases its claim to existence on the ground of a supposed necessity for the division of labour, as though the two things were coincident.

If, knowing all these things, the embryo practitioner is determined to face the music, I have nothing more to say to him than *bon voyage*.—I am, etc.,

Nottingham, Sept. 3rd. Edward Dean Marriott.

THE METRIC SYSTEM.

Sir,—When Mr. George Jackson says that he moved a resolution in favour of the metric system being adopted as soon as possible by the General Medical Council for the preparation and dispensing of medicines, I suppose he means that the present system of medical weights and measures is to be rendered illegal. I presume so, because the metric system has been legal for many years past, only no one, not even I suppose a single member of the Medical Council, has adopted it in prescribing.

May I ask what mandate from his medical brethren had Mr. George Jackson when he moved a resolution tending to the abolition of a system against which no valid complaints have been made, which the vast majority of the profession have found convenient, safe, and of sufficient practical accuracy for all prescribing purposes?

I gather from his letter, published in the British Medical Journal of August 27th, that his reasons were that "as the decimal system has been adopted almost universally by the civilized world, would it not be better if we fell into line and adopted it also?"

Here we have the usual stalking horse "decimal system" used to cover the invasion of the French metrical system. It is not merely a decimal system that is sought to be forced on us. It is free to any one to have 10, 20, 50, or 100 gr. weights instead of the usual 10, 20, 30, 60, or 120 gr. series,[1] if he prefer a decimal to the time-honoured sexagesimal system. But that would not do; the latter must be made illegal to please French vanity of metrical conquest. Thus shall we fall into line with "the civilized world." By this expression Mr. George Jackson appears to designate the Latin nations, with a few others whose Governments have successively been persuaded by France to force its system on their subjects. Thus, while by the authoritative list of the countries which are stated to have adopted the metric system the inhabitants of Java, Hayti, Venezuela, etc., are in the civilized world, those of Great Britain and its vast territories and of the United States are beyond its pale.

I will not be so cruel as to inquire how far the civilized inhabitants of the above countries—Java, etc.—have adopted the metric system; but it happens that, educated at French college and laboratory in that system, I have retained constant touch with France; and I may say that there, in the country of its origin, after a century of Government education and police pressure, it is adopted only to this extent: that while the commercial and shopkeeping classes are compelled to use it in their business, out of that limit every Frenchman and woman evades it if possible. For unfortunately a decimal system, however convenient for arithmetical calculation, is about the most inconvenient system possible for weights and measures. Can any person believe that it was reserved for the French revolutionary times to discover the magical number *ten* as a factor for the series of weights and measures? That none of the peoples of the world, ancient and modern, though all using decimal numeration, should not have discovered the alleged advantages of a decimal system of weights and measures? No; everywhere, always, up to the French Revolution, has *ten* been rejected as about the most inconvenient of factors in a series of weights and measures

[1] I am not strictly accurate in saying this, as the Board of Trade, while most thoughtful to allow French metrical weights, does not allow British decimal weights; but it is well known that it would scarcely venture to prosecute offenders. I have for years used a decimal series of pound weights up to 50 lb. without any fear of the prosecution to which I am strictly speaking liable.

intended for the general use of a nation. (As for the pretentious claim of the metre as the standard unit, that has been exposed over and over again, and even the French Government now describes it only as the length of a certain piece of metal.) It happens that our system was about the best in Europe, with a principle of unity binding its various sections, and of marvellous flexibility. For scientific calculations not only decimals can be used, but one series—that of land measures—has long had a duplicate set of decimal measures running parallel with those familiar to the people.

Our system can always be improved when necessary. Unfortunately our schoolmasters do not know it as they should, and few of them are capable of teaching it. However, the English-speaking races have long ago learnt to make up for the defects of their schooling, and when they come to learn their own system instead of believing the misrepresentations of it, there is little fear of the metric system prevailing. In the meantime it is desirable that the General Medical Council should do as little mischief as possible.—I am, etc.,

EDWARD NICHOLSON,
Liverpool, Aug. 29th. Brigade Surgeon-Lieutenant-Colonel.

MEDICAL EVIDENCE AT CORONERS' INQUESTS.

SIR,—As a contribution to the literature which appears in your correspondence columns, aiming at showing what medical men think should be the methods adopted by coroners, may I send a note of a recent inquest?

An otherwise healthy man had had a single very severe epileptic fit, for which I had treated him for twelve months. While at work in London he was seized with a convulsion. The practitioner who was called in, a man of very high standing, attended him during some hours until he died, after a succession of fits, believed by the doctor present to be epileptic.

The coroner was informed that I had previously attended the patient, and that on the assurance that the fits during which he died appeared to the doctor then in charge to be epileptic I would certify the cause of death. The Coroner, however, held an inquest. With this decision I find but little cause of complaint. The attack might have been the result of external violence or of poisoning, but I am informed that no *post-mortem* examination was made.

Hence we have the feelings of the friends and the pocket of the community disregarded by an inquiry, not necessary if the doctors were right, and so conducted that no proof could be adduced that the doctors were wrong.

As a supporter of coroners in general, I cannot but regret that the feeling among the public, widespread if mistaken, that payment by fees is a mistake in policy, should gain strength by cases like this.—I am, etc.,

Kingston-on-Thames, Sept. 11th. ROGER N. GOODMAN.

WAS IT APPENDICITIS?

SIR,—Some years ago I visited a patient with a respected colleague. We found tenderness and pain in the superointernal iliac region. The tenderness could be traced upwards and to the left. The temperature was 102°. There was furred tongue, sickness, and headache. The pain, tenderness, and fever came on several hours after eating unfermented "wholemeal" bread. The patient, fancying that an obstruction existed, had dosed himself with castor oil, etc., with this result: that the tenderness, which was at first limited to a small area, extended. The bowels being meanwhile opened by the purgative, my colleague suggested the administration of an opiate (pil. saponis co.), rest, and a milk farinaceous diet. The tenderness gradually decreased in area, the fever diminished, and after a few days the tenderness, which became limited to a small area near the caecum, disappeared. There was no return of the tenderness or pain for a very long time, the patient meanwhile abstaining from the use of wholemeal bread, and, indeed, wheaten meal in any form. Happening, however, to break through this rule by eating heartily of fermented wheaten bread, he was again invaded by the pain, tenderness, and fever. The pain and tenderness again showed themselves in the upper left iliac region in the early hours of the following morning. The temperature at 9 a.m. was 103°. The same medical practitioner who treated the patient previously again administered opium (liq. morph. acetatis), and enjoined rest and farinaceous food. Rapid recovery followed.

It seems obvious that the bran particles were responsible for the disorder which simulated "perityphlitis" very closely. Most people will admit that people use bran bread for the nitrogen it contains and the relaxing effect due to the contact of the bran particles with the intestinal wall, two apparently opposing qualities. But it is known that bran, although nitrogenous, has not nitrogen in an easily assimilable form, and the second property which bran has may lead the bran to operate injuriously, if the scales get caught between two folds or in chinks of the intestinal mucous coat. The almost general use of "wholemeal" bread must be attended with no injurious effect in the majority of cases, but in a small percentage the result may be as above, if not worse. It is, perhaps, a question whether a diminution in the consumption of wheat in this form would be attended with any disadvantage. Abstinence from it in some cases would probably save life.

I was on one occasion called to see a patient who suffered from great irritation of the mucous membrane just inside the anus. This was not relieved after defaecation. I found that a piece of apple-core had got lodged in a recess in the mucous membrane where it joins the skin. Relief followed its removal. Another patient, also addicted to the use of wheaten bread, some time afterwards was troubled with inflammatory tenderness over the seat of the appendix, which was relieved by opiates following small doses of calomel. On making inquiry with reference to an old attack of an apparently similar affection, the cause was attributed to the eating of cooked apples. Those who have taken the trouble to note how many apple-tarts are made with fruit imperfectly cored will not be surprised that accidents occasionally occur, and that the vermiform appendix may become a receptacle for bits of apple-cores as it does now and then for grape-seeds, cherry-stones, oat shellings, bran particles and other things.—I am, etc.,

August 28th. WRATSCH.

VISCERAL DISEASE AND MENTAL PHENOMENA.

SIR,—In a note unner this heading in the BRITISH MEDICAL JOURNAL of September 10th it is stated that a medical witness suggested that the cause of the suicide (therein mentioned) was due to "the indirect effect upon the brain of the loss from the bowel of a considerable quantity of blood."

But surely "temporary insanity" is very rarely caused by severe haemorrhage. On the other hand, it is more than probable that the "mental phenomena" were due to the disease in question having been below the diaphragm, which would bear out the truth of the statement (which I remember to have read in a scientific article recently) that "in diseases above the diaphragm patients are most hopeful, whereas in diseases below the diaphragm they are most hopeless;" in consequence, I suppose, of the great depression of the sympathetic nervous system. There would seem to be a scientific argument in this contention, which is well worth discussion.—I am, etc.,

Worthing, Sept. 10th. W. L'HEUREUX BLENKARNE, M.R.C.S.

MEDICAL MISSIONS IN INDIA.

SIR,—As, I believe, the formation of the Baptist Mission Medical Auxiliary was due in the first instance to my suggestion, may I be allowed a few words in answer to the query in the BRITISH MEDICAL JOURNAL of July 6th as to missionary polity? Are we medical missionaries properly distributed, or is an undue portion of us employed in centres which have hospitals, and which already contain lay practitioners of western medicine, and, if not, why not? The answer is "Yes" and "No." As far as my own society (the Baptist Zenana Mission) is concerned, we adhere strictly to the rule of working where there is no efficient medical work already in existence. I came to this district of 600,000 people, where the civil surgeon was an army apothecary, and his subordinates the only doctors with any pretence of a qualification. In a short time the Zenana government of the town work was made over to the mission, and the handsome (?) sum of Rs.20 per annum granted—barely enough to support one dai and one probationer, of which six are required for the work of the hospital.

About Rs.8,000 were spent in building a hospital to suit the requirements of modern surgery. We hoped for a building grant from the Government, but in spite of the fact that there was absolutely no other provision of the kind for women in the whole district we did not get it. The people are too poor to pay fees—a man is considered rich if he makes Rs.30 per mensem—consequently almost the whole assistance we get from local sources is a sum of R.50 per mensem, which does not cover the keep of native assistants. When the local section of the Agra Delhi Chord Railway was commenced overtures were made to me to overlook the medical work of

a 12-mile section, and I was offered Rs.10 per mensem for visiting at anything up to 18 miles distant!

I replied that the charity I represented was intended for indigent natives of this country and not for Government officials. Not knowing what to charge I offered to do the work for Rs.30, based on a rough calculation of the incomes of the probable patients. I afterwards found that Rs.50 was given to the civil-surgeon of a neighbouring district, but I am not aware that he ever came himself into the section and what European patients there were came to me and the Government had to pay the fees charged by the mission in addition to the civil-surgeon's allowance. At one time there were several thousands of coolies employed, and blasting operations carried on. Cholera and plague were epidemic in the neighbourhood and the neglect to employ the most efficient local medical aid might be considered open to criticism. As another instance of the business methods of this same State railway a contract for Rs. 15,000 was sold for Rs. 5,000, a transaction which throws those of the late Mr. Kruger's government quite into the shade.

Again, with regard to plague relief our mission introduced inoculation into the neighbourhood, did it all at first, ran a plague camp in the next district, and administered the only relief given in the town. We took over a women's camp at the request of the local authorities, but not a farthing of the expenses have they furnished. A request for drugs was refused by the Punjab authorities, and a small grant from a neighbouring municipality was only sufficient for the needs of in-patients, the requirements of hundreds of out-patients being furnished entirely by the mission and private charity. We had plenty of sympathy (combined of course with criticism) from Government officials in a private capacity with a little material help, for which we were duly grateful. My personal relations with individual Government officers have almost invariably been of the pleasantest description, but I think my experience will coincide with that of most missionaries in the Mofussil, namely, that the Government does not encourage private enterprise even when it would be most to their advantage to do so.

In addition to financial difficulties is that of finding suitable assistants in out-of-the-way parts. My present nurses are every one foreign to the race they have to tend. What wonder then, under these circumstances, if some missions consider a large centre as essential to forming the base of missionary operations. A neighbouring missionary friend, who has had experience as well of Government work, lately advocated the taking up of work by our mission in a neighbouring city, where a considerable amount of consulting gynaecological practice would materially aid the funds of the mission. Up country, at least, women's hospitals run by missions are better found and managed than Government ones, and also more popular; for the native, so far as I know him, is blest with a large toleration in religious matters, and rather prefers the religious element introduced into his treatment. Mission hospitals supply the needful element of competition which can only be a gain to the public, and why should a society any more than than a private individual be to blame for entering into fair competition with others of the same profession; and since a foreign mission is at best a necessary evil, surely it is a sound policy to render it, as far as possible, locally self-supporting?—I am, etc.,

Punjab, July 26th. F. BUTCHER, L.S.A., M.D.Brux.

DIPHTHERIA IN BRISTOL.

SIR,—In the BRITISH MEDICAL JOURNAL of September 10th you give an interesting summary of that part of Dr. Davies's annual report for 1903 which deals with the increase of diphtheria in Bristol during recent years. Though I have not yet had an opportunity of reading the report, I should like to be allowed to comment on two points which are referred to in your notice.

I read that

> Taking a broad view of the facts, both of increased fatality and distribution, Dr. Davies summarizes his view in the following words: "The outstanding features of the 1900-1 outbreak in Bristol were (*a*) the introduction into the city of a new and virulent variety of the bacillus, and (*b*) personal spread by unrecognized cases presenting no characteristics, but containing diphtheria bacilli in nose or throat."

The existence of the new and virulent bacillus I take, then, to be inferred from the increased severity and frequency of the cases. But perhaps I am wrong, and the virulence of the new bacillus was experimentally compared with that of the older one. In any case the two statements appear to me conflicting. For if the bacillus were unusually virulent, one would not expect an unusual number of unrecognized cases—for such are usually mild ones; and these cases must have been unusually numerous, or they would not have formed an outstanding feature of the outbreak.

Surely a simpler explanation of the severity of the epidemic is to be found in the long-continued comparative immunity to diphtheria which Bristol had previously enjoyed. For Wassermann and others have shown us that quite a large proportion of children are protected by possessing a natural antitoxin in the blood. This antitoxin is spoken of as a natural one because it occurs in those who have never been known to have had diphtheria; yet it is difficult to believe that it is really natural and not acquired by unrecognized affections produced by the diphtheria bacillus, unless, indeed, it is inherited from mothers who have themselves been so affected. In any case this antitoxin, occurring in probably, as a rule, about 50 per cent. of the children, is to be attributed to the direct or indirect action of the bacillus itself, and it is only reasonable to suppose that, after ten years of comparative immunity, the proportion of children thus protected in Bristol must have fallen very low, and thus prepared the community for an outbreak.

One more point I should like to allude to, and that is Dr. Davies's opinion of Hofmann's bacilli, which you quote as follows:

> Their frequent appearance in both stages of throat diphtheria, and their constant occurrence amongst contacts with clinical diphtheria (especially in schools), lead us to attach serious importance to them when found in intimate association with an outbreak of recognized diphtheria, and to ascribe to them in such association the rôle common to the mildest forms of scarlet fever or of small-pox—that is, of keeping alive an infection which, if marked clinical cases alone occurred, might readily be blotted out.

I am in entire agreement with Dr. Davies in thinking that diphtheria is kept alive by unrecognized cases, but I do not believe that such are caused by Hofmann's bacillus. I wish him every success in his efforts to stamp out the outbreak in Bristol—well planned as I believe them to be—by the use of methods which proved beneficial in Cambridge and Colchester. But I would point out that if Hofmann's bacillus plays the part ascribed to it by him, it is useless to examine contacts and to isolate and treat such as harbour the diphtheria bacillus, while those infected with Hofmann's bacillus are allowed to go free; and that the isolation and treatment of these latter is impossible, because they are not confined to contacts, and number considerably more than half the children of the elementary schools.

Dr. Davies is impressed with the frequency of Hofmann's bacillus in contacts, especially in school children, but I should like to ask him whether he has made any control examinations of the children of healthy schools. This was done in Cambridge, during the outbreak of 1900, in the case of a school situated in an outlying part of the town (Romsey Town), where there was no diphtheria at the time, nor had been for some years. The result was that Hofmann's bacillus was met with just as frequently among the children of this school as among those of other schools where cases of diphtheria had occurred, or even among the brothers and sisters of the patients themselves.

In conclusion, I should like to say that, for reasons which it is impossible to go into here, I believe Hofmann's bacillus to be entirely harmless, and that a thorough search among contacts for those who carry about the true diphtheria bacillus will succeed in the discovery of the great majority of those who spread infection, and that their isolation or effectual treatment is the best means we have of combating the spread of diphtheria.—I am, etc.,

Stansted, Sept. 15th. LOUIS COBBETT.

DISPENSING BY MEDICAL MEN.

SIR,—Some of those who write in your columns upon the above subject miss the main point at issue, and take very much for granted their power to dispose of the rights and liberties of others. A movement by the British Medical Association, directed towards preventing medical men from dispensing would be a demonstration of trades-unionism in one of its most objectionable forms, and an interference with the liberty of the law abiding subject to which the large majority of general practitioners would by no means submit.

Let those who wish give up dispensing by all means, and I for one would be no party to any scheme for coercing them into doing work to which they object; but, on the other hand, we must as firmly refuse to be coerced.

The majority of country general practitioners would elect, were such choice unfortunately thrust upon them, to sever their connexion with the British Medical Association and became "passive resisters" to the end rather than submit to dictation upon such a point.

Those who find that they lose dignity in the eyes of their patients by dispensing, will, if they search their hearts and answer truly, admit that they find great difficulty in maintaining it at other points.—I am, etc.,

September 11th. COUNTRY PRACTITIONER.

STATUE OF SYDENHAM.

SIR,—In the current issue of the BRITISH MEDICAL JOURNAL, your correspondent, Dr. Hubert E. J. Biss, writes, "I believe we have no memorial to Sydenham beyond the statue over the door of the College of Physicians." It may interest Dr. Biss and other of your readers to know that a fine, life-sized statue of Sydenham, the work of Mr. Hope Pinker, stands in the court of the University Museum at Oxford, between the statues of Hunter and of Harvey. It was unveiled by the late Marquis of Salisbury, Chancellor of the University, on August 9th, 1894, during his presence in Oxford as President of the British Association; and was the joint gift of the Chancellor himself, Sir William Anson, Sir Thomas and Sir Henry Acland—the Warden and three former Fellows of All Souls' College, which Society shares with Wadham and Magdalen Hall the honour of having numbered Sydenham among their members.—I am, etc.,

Oxford, Sept. 14th. F. A. DIXEY.

INFANT MORTALITY IN LIVERPOOL.

SIR,—It will hardly serve any useful purpose further to discuss Dr. Bradshaw's lengthy mere contradictions of my statements. It would be of more interest if he were to bring forward some proof that in the conditions under which the poor live in our large cities their food is certain not to undergo decomposition if preservatives are employed.—I am, etc.,

ALBERT S. GRÜNBAUM,
M.A., M.D.Cantab., F.R.C.P.Lond., D.P.H.Vict.

Leeds, Sept. 20th.

OBITUARY.

WILLIAM LEE DICKINSON, M.D., F.R.C.P.,

Assistant-Physician, St. George's Hospital, London.

THE Hospital and School of St. George's Hospital have sustained a severe loss, and a career of high promise has been unexpectedly brought to a close, by the untimely death of Dr. William Lee Dickinson, which took place at his father's house, Trebrea Lodge, Tintagel, Cornwall, on September 6th.

Dr. Lee Dickinson, as is well known, was the son of a distinguished father—Dr. Howship Dickinson—and bade fair to succeed to no small part of his reputation. Like his father, he was a member of Caius College, Cambridge, from which he came to study at St. George's Hospital in the year 1882. He qualified as a member of the College of Surgeons in 1885, and filled the office of House-Physician shortly after. He took his M.B. at Cambridge in 1890. In the same year he was elected Medical Registrar to St. George's Hospital, and filled this office till 1893, when he was appointed Curator of the Museum. The latter office he held until the following year, when the retirement of his father, in accordance with the laws of the hospital, created a vacancy upon the staff, and Dr. Lee Dickinson was elected Assistant-Physician. He proceeded to the degree of M.D. in 1893, and in 1894 was elected a Fellow of the Royal College of Physicians. In 1898 he succeeded Sir Isambard Owen as Lecturer in Toxicology and Forensic Medicine. In 1895 he was appointed Assistant-Physician to the Hospital for Sick Children, Great Ormond Street, again following in the steps of his distinguished father.

Dr. Lee Dickinson was an indefatigable worker, and during the early years of his connexion with St. George's Hospital contributed to medical literature a number of valuable papers, including one on the Local Paralysis of Peripheral Ganglia, and the Connexion of Different Classes of Nerve Fibres with them, which appeared in the *Proceedings of the Royal Society*, and one on Progressive Paralysis of the Nerve Cells of the Superior Cervical Ganglion, which appeared in its *Transactions*. He also wrote the articles on Subphrenic Abscess and Diaphragmatic Hernia in Allbutt's *System of Medicine*, and was a frequent contributor to the medical press, as well as the *Transactions* of the London Societies.

In October, 1898, however, Dr. Lee Dickinson exhibited symptoms of tuberculosis of the lung. Being granted a prolonged leave of absence by the hospital, he spent a winter in South Africa, and returned home free from pulmonary symptoms, though to the eyes of his friends and colleagues no longer quite the man he had been. He remained, however, free from active indications of danger, and continued to discharge his duties to the hospital and school and to carry on an increasing private practice until towards the close of the present summer, when he went to Cornwall for his vacation. While staying at his father's house, without any previous warning a sudden and severe attack of haemoptysis ended his life.

Dr. Lee Dickinson's abilities, his upright and honourable character, and his singleness of purpose won him the respect of all who knew him and the affection of those who knew him intimately. The number of his real intimates was perhaps fewer than it might have been owing to the reserve which habitually characterized his outward demeanour. His loss is deeply regretted at St. George's Hospital and amongst the many close friends whom he possessed in London.

EDMUND CARVER, M.A., M.D.CANTAB., F.R.C.S.,

Consulting Surgeon, Addenbrooke's Hospital, Cambridge.

DR. EDMUND CARVER, for many years Surgeon to Addenbrooke's Hospital, Cambridge, died at Torquay on September 7th, at the age of 80. He was born at Melbourne, near Royston. His father was a greatly respected schoolmaster, whose pupils lived to distinguish themselves in literature and politics, and honoured the memory of their teacher. It was in 1841 that Edmund Carver began medical work, and after serving a three years' apprenticeship to William Mann, of Royston, he became a student at University College Hospital, and held the office of House-Surgeon under Liston. He also worked for Erichsen and Quain, to the latter of whom he was greatly attached. He became a Member of the Royal College of Surgeons in 1848, and a Fellow in 1854. After holding office at the Brompton Hospital he took an assistantship at Nantyglo in Wales; he held it only for a year, but was accustomed to attribute much of his surgical success in after life to the experience he thus gained among the miners. From this post Dr. Carver proceeded to Cambridge, where he was House-Surgeon at Addenbrooke's Hospital in the days when only one officer resided in the building. With untiring industry he kept the records of the patients' cases, gave anaesthetics at operations, or otherwise assisted: was on duty night and day with medical and surgical patients; extracted teeth for any one of the town or county, and made all the *post-mortem* examinations.

Dr. Humphry, then Professor of Anatomy, availed himself of Dr. Carver's services as Demonstrator of Anatomy, thus bringing him in touch with University students. Moreover, he became a member of St. John's College and graduated in 1858, proceeding later to the degrees of Master of Arts and Doctor of Medicine. In 1866 he was induced to move to Huntingdon by the offer of a partnership, and there became Surgeon to the County Hospital. His health, however, broke down four years later, and, after a voyage round the world, he returned to Cambridge. A few years after his second start there he married Miss Emily Grace Day, who survives him, and was elected to a vacancy at Addenbrooke.

On the honorary staff of Addenbrooke's Hospital, with Humphry as his brilliant colleague, Dr. Carver held for many years a position requiring great industry, skill, and tact. He was a most cautious and painstaking operator, and was devoted heart and soul to his patients' welfare. Rich and poor alike had Dr. Carver's ungrudging care. His connexion with the hospital at Cambridge lasted during nearly half a century, and he became well known and trusted in the town, county, and University, where he had many friends and filled many offices. He was surgeon to the University Rifle Volunteer Corps, a Fellow of the Philosophical Society, and a member of the Antiquarian Society.

He was an original member of the Cambridge Medical Society at its foundation in 1880, and was President seven years later. It was not until 1898 that Dr. Carver finally gave up practice, and he then still felt sufficiently young, at the age of 76, to offer his services for home duty when the war broke out a year later. After his retirement he moved to Kent, but soon returned to Cambridgeshire, and made a home

at Chesterton. This summer, however, he determined to move to Torquay, where his son practises, and there his busy and useful life ended. For so successful a man he was of a singularly retiring disposition, and wrote but little. A few papers in the *Journal of Anatomy and Physiology* and in the medical journals are all that remain to represent the great amount of experience, which he so seldom expressed in literary work. Quietly and usefully he toiled, feeling that "to travel hopefully is better than to arrive, and the greatest success is to labour."

HENRY ARTHUR BENHAM, M.D.Aberd.,
Medical Superintendent, Fishponds Asylum, Bristol.

THOUGH the state of Dr. Benham's health had for some time given rise to anxiety, none of his friends was prepared for his painfully sudden death on September 14th.

Henry Arthur Benham was the second son of Mr. William Benham, a member of an old Oxford family, who had opened and conducted for many years a successful school in Bristol. For some time Dr. Benham was a clerk in a stockbroker's office, but, following the natural bent of his inclination, he entered as a medical student at Aberdeen in 1875, receiving, however, part of his education at the Bristol Medical School and the London Hospital. He took the L.S.A. in 1880, the M.B., C.M.Aberd. in the same year, and the M.D. of the same University in 1883. Adopting psychology as his special branch of medicine, he acted for some time as Assistant Medical Officer at the Royal Lunatic Asylum at Dundee. On the death of Dr. Thompson he was appointed Medical Superintendent at the Fishponds Asylum, Bristol, and this position he held with distinction to himself and to the complete satisfaction of the Bristol City Council to the day of his death.

A little over a year ago, on the advice of his friends, Dr. Benham took a thorough holiday for some months, and every one was glad to see him return much better in health. But on September 14th, having given the usual daily directions to the steward, he was a few minutes afterwards found dead in his chair.

In his own subject Dr. Benham was a recognized authority. He had contributed a few papers on psychological subjects to various journals, but the care of a large asylum, with many hundreds of patients under his charge, allowed him little time for work of this kind. He was a member of the Council of the Medico-Psychological Association, and was Lecturer on Insanity at the Bristol Medical School.

Dr. Benham was an extremely popular man, with a large circle of friends and acquaintances, and his sudden death will be acutely felt in and around Bristol. In the Masonic world he had held most of the offices that fall to provincial Masons. He was a P.M. of the Royal Sussex Lodge, and P.P.G.S.W. of the province of Bristol. In the higher degrees he was P.M. of the Baldwin Mark P.Z. of the Chapter of Charity, P.P.E P. of the Baldwin Preceptory K.T., and had held office in the Provincial Arch. He was a regular Mason in his attendances, and was always welcome as a visitor in the Lodges of the province. In addition, he was not only a Mason in spirit and act, but well read in its history and an authority on the various rituals.

The regard in which Dr. Benham was held was shown on September 17th, when a large number of the members of the City Council, Corporation officials, medical men, and friends attended the funeral at Arno's Vale. Dr. Benham was 49 years old.

MR. ISAAC HARTHAN, who was at one time a well-known medical practitioner in the Hulme district of Manchester, died at his residence, Blythewood, Didsbury, on September 5th. He was originally a student of the Liverpool School of Medicine and became M.R.C.S. in 1856. He was a member of the South Manchester Division of the Lancashire and Cheshire Branch of the British Medical Association, and kept up his interest in medical matters, although he retired from active practice a good many years ago.

WE regret to announce the death of Mr. JOHN LILLY LANE of Dublin, after a short illness while on holiday. Mr. Lane was educated at the Carmichael Medical School, and took the diploma of L.R.C.S.I. in 1880, and that of L.R.C.P.I. in 1881. He became an Assistant Physician in the Rotunda Hospital, and subsequently was appointed Gynaecologist to the City of Dublin Hospital, a position which he held up to his death. He had also been Maternity Physician to Steevens's Hospital, and Lecturer on Midwifery in the former Carmichael School. He has left many friends to regret his death.

PROFESSOR HEINRICH KÖBNER, one of the founders of German dermatology, died in Charlottenburg on September 3rd. He was born in Breslau in 1838, and, after graduating in Berlin, and studying for some time in Vienna and Paris, he settled in Breslau, where he established a polyclinic for diseases of the skin. His work in connexion with parasitic diseases of the skin, especially sycosis, earned for him the position of Professor, and a university clinic of skin disease and syphilis was established for him in Breslau in 1876; his career there, however, was cut short by illness, and he subsequently settled in Berlin, where he practised with success and established a polyclinic.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Otto Rembold, Professor of Medicine in the University of Innsbruck, and author of researches on calorimetry and many other subjects, mainly in the domain of chemistry and pharmacy, aged 71; Count John Magawly, M.D., formerly Director and Surgeon-in-Chief of the St. Petersburg Institute for Diseases of the Eyes, aged 73; Dr. V. S. Bogolowsky, Professor of Pharmacology in the University of Moscow; and Dr. Tito Carbone, Professor of Pathological Anatomy in the University of Pisa, well-known by his researches on Malta fever, haemolytic serums, the nature of antitoxins, and many other subjects, aged 41.

HOSPITAL AND DISPENSARY MANAGEMENT.

WARWICK COUNTY ASYLUM.

THE annual report of the Warwick County Asylum for the year 1903 shows that on January 1st, 1903, there were resident 972 patients, of whom 942 were chargeable to unions in the county of Warwick, and on the last day of 1903 there were 997 inmates, of whom 974 were chargeable to the county of Warwick. As there is only accommodation for 967 patients, some overcrowding was present throughout the year, and from the report of the Medical Superintendent, Dr. Alfred Miller, it appears that this was more keenly felt in the female division than in the male. Two hundred and thirty-nine cases were admitted during the year, a decrease of 20 on the previous year. Of these, 90 were cases of acute mania, 56 of acute melancholia, and 14 of primary dementia. There were also 20 cases of acquired epilepsy, 16 of general paralysis, and 11 of congenital or infantile mental deficiency. Of the total admissions, in only 18 was the attack of more than twelve months' duration on admission, and in 118 the attack was a first attack, and within three months of admission. The number of acute and curable cases is thus larger than usual and a good recovery rate to be expected. Of the probable causes of insanity in the admissions, hereditary influence was ascertained in 68 and congenital defect in 18; intemperance in drink was assigned as cause in 41, previous attacks in 64, and bodily diseases and disorders in 56. Eleven imbecile and idiot children were removed to the Knowle Asylum. Dr. Miller states his opinion that such cases are unsuitable for the wards of an asylum, both for the sake of the children and of the asylum patients, and hopes that the asylum authorities in the Midlands will combine for the purpose of providing accommodation for idiot and imbecile children at present in county asylums. "Personally," he says, "I am strongly opposed to housing all such cases under one roof, and would much prefer to see them classified and living in smaller numbers, somewhat on the lines of cottage homes. Under these circumstances classification would be an easy matter, and those capable of receiving instruction and deriving benefit from special treatment would thereby obtain the best opportunities for doing so." Seventy-three cases were discharged as recovered—a recovery-rate on admissions of 32.5 per cent.—10 as relieved, 26 as not improved, and 10 died, a death-rate on average daily residents of 10.7 per cent.; 50 died of cerebrospinal diseases, including 11 cases of general paralysis, 19 died of tuberculous disease (phthisis 17, general tuberculosis 2), 17 of other chest diseases, 11 of senile decay, and 2 of colitis. The general health on the male side was good, but on the female—we have already alluded to the overcrowding on this side—there was a great deal of illness, including an outbreak of epidemic diarrhoea. About 60 patients were attacked, and of these 2 died. It is to be noted also that of the 17 deaths from phthisis 13 were females and 4 males. This ratio of female to male deaths from phthisis is out of all proportion to the preponderance of female over male residents, or to the general slightly increased incidence of phthisis in the female sex.

MEDICAL STUDENTS IN GERMANY.—The number of students in the medical faculties of the Universities of the German Empire during the past summer semester are stated officially as follows: Berlin, 953; Munich, 903; Freiburg 469; Wurzburg, 422; Leipzig, 410; Heidelberg, 292; Kiel 253; Bonn, 210; Breslau and Königsburg, 205; Tubingen, 201; Strassburg, 197; Erlangen, 182; Halle, 175; Greifswald 174; Giessen, 172; Marburg, 169; Göttingen, 157; Jena, 157; and Rostock, 123.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE PREVENTION OF CRUELTY TO CHILDREN ACT, 1904.

THE Prevention of Cruelty to Children Act, which comes into force on October 1st, 1904, repeals, and re-enacts with certain important amendments a similar Act passed in 1894. As the services of medical men are frequently invoked in the administration of this branch of the criminal law, it may be convenient if we refer to some of the changes which are now introduced. Broadly speaking, the effect of the Act of 1894 was to provide that any person over the age of 16 years who has the custody, charge, or care of any child under the age of 16 years, wilfully assaults, ill-treats, neglects, abandons, or exposes such child, or causes or procures such child to be so treated in a manner likely to cause such child unnecessary suffering, or injury to its health, that person shall be guilty of a misdemeanour. The remainder of the Act was an expansion of the wholesome principle that children must be properly cared for by those who are responsible for their maintenance. The old Act placed restrictions upon the employment of children at places of amusement, subject, however, to a power vested in a petty sessional court to grant a licence permitting the employment of children exceeding 7 years of age. The new Act in substance re-enacts these provisions, but under it the age limit is raised to 10 years. The duty of seeing that the restrictions and conditions of any such licence are observed is placed upon inspectors and other officers who are charged with the execution of the Employment of Children Act, 1903. With a view to protecting children the Act of 1894 provided that a constable might take to a "place of safety" any child in respect of whom an offence was committed. The new Act provides that this duty may also be performed by "any person authorized by a justice of the peace." It would appear, therefore, that an officer of the National Society for the Prevention of Cruelty to Children may obtain the necessary powers by application to a court of petty session.

Another important amendment of the law has been made in connexion with the maintenance of children. By the Act of 1894 the court which has power to commit a child to the custody of any person has power to make a maintenance order upon the parent of the child. By the new Act it is provided that if any such parent is in receipt of any pension or income, such pension or income may be attached for the purpose of providing the maintenance. With a view to facilitating the proof of a parent's means when the question of the amount of maintenance comes up for discussion, it is also provided by the new Act that a written statement signed by an employer or by his foreman shall be prima facie evidence that the wages therein entered has been so paid

One other modification of the law calls for notice. It was provided by the Act of 1894 that "a Board of Guardians may out of the funds under their control pay the reasonable costs and expenses of any proceedings which they have directed to be taken under the Act in regard to the assault, ill-treatment, neglect, abandonment, or exposure of any child, and in the case of a union shall charge such costs and expenses to the common fund." These provisions are re-enacted in the Act of 1904, together with the important addition that a Board of Guardians may, with the consent of the Local Government Board, subscribe to any association or society for the prevention of cruelty to children.

PRESCRIPTIONS FOR POISONOUS DOSES OF MORPHINE.

AT an inquest held by Mr. Walter Schroeder with regard to the death of a young woman who died at the house of her mother at Hampstead the evidence of the sister was to the effect that the deceased had been upset by her mother's ill-health; she said she had taken morphine, and showed a bottle which had contained that drug. The chemist, who was also called as a witness, stated that the deceased called at his shop and asked for the usual quantity of morphine for her mother. In reply to the coroner he stated that she did not produce the prescription for the morphine; the original prescription was given by a doctor—now dead—ten or eleven years ago. The chemist did not consider that it was necessary to see the prescription every time. The medical evidence was to the effect that the deceased had taken 20 gr. of morphine. The Coroner observed that he considered the chemist had been lax in not insisting on seeing the prescription.

The jury returned a verdict of "Suicide whilst temporarily insane," and added a rider that there should be in future some restriction on the use of old prescriptions.

At another inquest, held by Mr. Schroeder at Holborn, with regard to the death of a French advocate, it was elicited that he obtained from a chemist in the neighbourhood of Russell Square, a mixture containing 4½ grains of morphine; this was dispensed on a prescription in the deceased's own handwriting. In reply to the coroner, the chemist said that morphine could be supplied without the production of a prescription, but admitted that it might be well if the production of a prescription signed with the full name and address of a duly qualified medical man were made a condition of dispensing morphine in quantities sufficient to cause death, as was the law on the Continent.

The jury, in returning a verdict of "Death by misadventure," added the following rider: "And the jurors having heard in evidence that the prescription presented to the chemist was written by the deceased himself, suggest that greater precautions should be taken by chemists to ascertain that prescriptions brought to them bear the full name and address of duly qualified medical practitioners."

CHARGE AGAINST A PUBLIC VACCINATOR.

ON September 14th, Hugh Stanley Revell, 35, surgeon, who had pleaded guilty at the June Sessions to having obtained, by false pretences, from the Guardians of the Poor of the Wandsworth and Clapham Union, several amounts of money by wilfully signing false certificates under the Vaccination Act, 1867, came up before the City Recorder, Sir Forrest Fulton, for sentence. Mr. Bodkin, for the prosecution, said that the Guardians, having been promised by the accused's friends that they should be reimbursed the costs they had incurred, were desirous of leaving the case to be dealt with entirely according to the discretion of the Court, without making any suggestion whatever. The amount allowed by the taxing officer had been duly paid. Mr. Charles Mathews, for the prisoner, remarked that the promise to pay costs having been fulfilled, and the accused having already been in custody for three months, he hoped that his lordship would see his way to adopting a merciful course. The Recorder inquired whether the accused's name had been removed from the *Medical Register*. Mr. Mathews stated that this had not been done, as the General Medical Council was not sitting, but there was unfortunately no doubt that his name would be removed. The Recorder observed that, having regard to the disgrace and suffering the accused had brought on himself, and to the facts that he had already been in custody for three months, and had, through his friends, reimbursed the guardians their expenses, it would not be necessary to punish him further. He therefore passed a nominal sentence, entitling him to immediate release.

AN UNREGISTERED DENTIST.

ON September 13th the local magistrates at Oldham heard two cases which were of considerable interest to dentists practising in that town. Charges were brought by Mr. W. H. Buckley, on behalf of the qualified dentists of Oldham, against William Henry Moseley for that he had falsely represented himself to be a duly qualified dentist, contrary to Section 11 of the Dentists' Act, 1878.

According to a report published in the *Manchester Evening Chronicle*, it appeared that about six years ago Mr Moseley went to Oldham, and took the house, No. 54, Lees Road, where he has since carried on business as a dentist. He placed a lamp outside the door bearing the sign, "Moseley, dentist," and subsequently a signboard bearing the name "Moseley and Son, dentists." He had also advertised freely. On March 7th, 1904, a police-constable attended at 54, Lees Road, to have a tooth extracted. As the defendant was unsuccessful, the constable went elsewhere. The defendant was also charged with having falsely described himself as a dentist on a motor-car certificate.

The defendant pleaded guilty. It was stated on his behalf that he would undertake not to practise as a dentist again.

The Bench imposed a fine of £5 and costs in each case.

REGISTERED PRACTITIONERS AND PATENT MEDICINES.

ERASMUS writes: May a registered medical practitioner be the principal proprietor of a patent medicine or a large shareholder in a company which advertises and sells such patent medicine?

*** We know of no pronouncement by the General Medical Council on the subject, but the Royal College of Physicians of London on February 2nd, 1888, passed the following resolution: "That it is undesirable that any Fellow or Member of the College should be officially connected with any company having for its object the treatment of disease for profit." The words "officially connected" probably mean acting as a director of such a company. Several of the medical corporations forbid their Fellows and Members to take any part in the sale of drugs, and the Faculty of Physicians and Surgeons of Glasgow expressly forbids Fellows of the Faculty being proprietors or having any proprietary interest in a secret remedy. This last sentence would, in our opinion, prohibit holding shares in such a company. The Ethical Committee of the Association has not yet had to deal with the point, but the recently-published draft code of medical ethics issued by the French Permanent Committee of Professional Medicine and Ethics, in Article 95, expressly forbids any medical practitioner from taking part in any way in such a business *so long as he is in practice*. If our correspondent is dealing with a concrete case and will furnish a statement of the facts, the matter is of sufficient importance to be referred to the Ethical Committee.

WHO SHOULD RETAIN THE PATIENT?

ALPIN writes that while he was on his holiday an old patient was taken suddenly ill and sent for him. Being from home his partner attended, but when he arrived found the *locum tenens* of a neighbouring practitioner just finishing his examination. The patient wished the *locum tenens* to attend, and he did so. On "Alpin's" return home he was asked to see the patient in consultation with the *locum tenens*. He did so, and while the *locum tenens* is in charge he will, of course, only attend in consultation. The illness is likely to be protracted, and "Alpin" wishes to know if he will be at liberty (ethically) to take entire charge of the case when the *locum tenens's* principal returns home?

*** As the patient was originally attended by "Alpin" he should resume charge as soon as the present attendance terminates.

CORONERS AND MEDICAL EVIDENCE.

S. J. R. writes to complain that, in a recent inquest, no medical evidence was called by the coroner, who held an inquest at Kendal concerning the death of a man unknown who was found dead in a canal. The deceased was well dressed, and about 45 years of age, but was not identified. The constable was called, and stated that, in his opinion, the death of the deceased was caused by drowning. Thereupon the jury returned a verdict of "Found drowned."

*** We agree with our correspondent that in such a case medical evidence should have been called, and a *post-mortem* examination made to ascertain whether the deceased did die from suffocation from drowning or from some other cause before the body was placed in the water. If coroners and juries neglect their duty by failing to avail themselves of expert medical evidence, and are satisfied with the opinion of a police-constable as to the cause of death, the safety of the public life is at stake, and the door is open to neglect and crime, and manslaughter or murder may pass undetected.

MEDICAL ADVICE IN NEWSPAPERS.

PAPER.—We think the proposal to give advice to correspondents in the columns of a lay newspaper, even although such advice stops short of drug treatment, is contrary to medical ethics. We are also of opinion that signed articles upon medical subjects in lay newspapers are frequently open to grave objection. Complaints respecting such articles are often received by the BRITISH MEDICAL JOURNAL, and we fear our correspondent, if he undertakes this work, will expose himself to similar complaints.

LIABILITY OF POLICE.

H. writes that he was called in by a police inspector to see a woman, believed to be of unsound mind, at her own residence. The inspector stated at the time that, if the patient did not pay the fee, the head constable would. The latter has since refused to pay, and alleges it was "H.'s" duty to attend as district medical officer, and that the inspector had no right to pledge his credit. "H." proposes to sue the head constable, and would like to know if the latter is liable, and, if not, who should he proceed against?

*** The head constable's statement that it was the duty of the district medical officer to attend under the circumstances is incorrect. No duty rested on that official, unless he received an order from a proper Poor-law authority to attend, and, had our correspondent been wise he would have insisted on a better guarantee for his fee before attending. The proper course for the police to have followed would have been to have drawn the attention of the relieving officer of the district to the case, when no doubt an order would have been issued for the district medical officer to attend. Where the police are responsible and refuse to pay a legitimate charge, action should be taken against the police authority, which is usually the county council, but it is to be feared our correspondent will not be able to recover a fee, and, if he goes to the county court, will probably fail in his action.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

INSPECTOR-GENERAL DUNCAN HILSTON, M.D., C.B., retired, has been appointed Honorary Physician to the King in place of Inspector-General D. McEwan, deceased. Dr. Hilston entered as Surgeon, May 19th, 1860, and became Inspector-General, May 7th, 1892, retiring from the service April 10th, 1897. He was present at the attack on the rebel redoubt at Rangiriri, New Zealand, in 1863, and was specially mentioned for his services to the wounded while under fire (medal). He was Inspector-General in charge of Haslar Hospital from January 2nd, 1894, to January 2nd, 1897; and was made a Companion of the Order of the Bath, June 26th, 1902.

The following appointments have been made at the Admiralty: FREDERICK A. BRICE, Fleet Surgeon, to the *Revenge*, September 21st; HORATIO S. R. SPARROW, Fleet Surgeon, to the *President*, for three months' course of hospital study, October 3rd; JAMES M. ROGERS, F.R.C.S., Fleet Surgeon, and HENRY W. FINLAYSON, Surgeon, to the *President*, additional, for victualling at Deptford, September 30th; JOHN C. FERGUSON, M.B., Fleet Surgeon, and PERCY L. CROSBIE, Surgeon, to the *Formidable*, for commissioning, October 1st; WALTER BOWDEN, D.S.O., Fleet Surgeon, to the *Boscawen III*, October 1st; PERCY H. BOYDEN, M.D., Staff Surgeon, to the *Prometheus*, on commissioning, September 20th; THOMAS W. PHILIP, M.B., B.A., Staff Surgeon, to the *Excellent*, September 30th; GEORGE A. S. BELL, Staff Surgeon, to the *Briton*, for the drill season, September 17th; RAMSEY M. RICHARDS, Surgeon, to the *Vulcan*, September 17th; JOHN C. ROWAN, M.B., Surgeon, to the *Fire Queen*, September 17th.

THE GRIEVANCES OF THE SERVICE.

CRO TANTO writes: For the excellent leading articles which have lately appeared in the BRITISH MEDICAL JOURNAL on the Naval Medical Service we of that department owe you a deep debt of gratitude. The critic whom you mention in the article of June 11th as claiming to speak from "first hand information," evidently obtained his information from one of those hide-bound executive officers who are the curse of the service, but who, fortunately for all concerned, are now few. The statements you make in reply to him are absolutely correct, and ninety-nine out of every hundred medical officers will bear you out.

There are, however, one or two points in your articles which I should like, with your permission, to enlarge upon.

1. In the article of April 23rd you say: "The majority of medical officers have no wish for executive titles." You might go much further. The majority of us would be disgusted to have to bear such titles; we are medical officers, and we have no desire to be taken for anything else. The engineer officers courted, and lately obtained, executive titles, and look what it has brought them: nothing but derision, more especially from their own class ashore. The only executive authority we desire is that the principal medical officer of a hospital should be able to award punishments to those serving under him; the present system, such as prevails at Haslar, of having to send all offenders to the dépôt, is grotesque.

2. Cabins.—In one point, re cabins, I do not agree with you. You say in the article of June 11th that a cabin should be allotted to the principal medical officer in every new ship, and remain so throughout the ship's existence. I think it would be better if no cabins were allotted to any officer—other than the admiral and captain, of course—and that on a ship commissioning the officers of whatever department, indiscriminately, should select their cabins by strict seniority; then there could be no heart burnings. What happens is this: when a ship is being prepared for commissioning she has a navigator and one or more engineers appointed to her. these officers have the opportunity, therefore, of selecting their cabins, so that on commissioning it is found that tallies, "Navigating Officer," "Fleet Engineer," "Senior Engineer," are over their respective doors, and these cabins are secured to them irrespective of the fact that the medical officer and the accountant officer may be years senior to them, and these officers have to put up with whatever indifferent cabins it has pleased some minor dockyard official to place their tallies over. When a ship recommissions there should be a reallotment of cabins again in strict seniority. If it can be shown that the cabin appropriated to the navigating officer affords special facilities for him getting to the bridge—it is so in some ships—or that those captured by the engineers are nearest to the engine room, well and good; but in most battleships this is not so, and it is no uncommon thing to find a comparatively junior naval lieutenant occupying a cabin twice the size of that of a fleet surgeon of several years' seniority, and one which at the same time affords less facility for getting on deck. There is an extraordinary fact I should also like to bring to your notice—namely, the medical officer is not allowed a knee-hole table in his cabin, and, coincidently, no electric fan.

ROYAL ARMY MEDICAL CORPS.

EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 8s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

MAJOR, R.A.M.C., is willing to exchange to South Africa. Can offer full home tour. Apply, stating terms, to "Africa," care of Holt and Co.

A LIEUTENANT-COLONEL, R.A.M.C., who will complete two years' service at Gibraltar on October 6th, will exchange with a field officer serving at home. Apply, stating terms, dates, etc., to "X. Y. Z.," care of Messrs. Holt and Co., 3, Whitehall Place, S.W.

Lieutenant D. D. PATON, M.B., from the Seconded List, to be Lieutenant, September 1st.

Lieutenant-Colonel A. W. P. INMAN, M.B., who is serving in the Bengal Command as Officiating Principal Medical Officer, Allahabad and Narbudda Districts, is granted the temporary rank of Colonel while so officiating, from August 6th.

Major J. FAYRER, M.D., now serving with the 18th Company in London, is to be appointed Medical Officer of the Duke of York's Military School at Chelsea.

ARMY MEDICAL SERVICE.

SURGEON-GENERAL JAMES JAMESON, M.D., C.B., Honorary Surgeon to the King, died at Eltham on September 13th, aged 67. He entered the service as Assistant Surgeon, November 9th, 1857; became Surgeon, March 1st, 1873; Surgeon-Major, April 1st, 1873; Brigade Surgeon, May 2nd, 1883; Surgeon-Colonel, September 14th, 1888; and Surgeon-Major-General, July 6th, 1893. He was appointed Director-General of the Army Medical Service, May 7th, 1896, and held that appointment till June, 1901, when he retired from the service. He was promoted to be Surgeon "in consideration of his highly meritorious services during an outbreak of yellow fever at Trinidad." During the Franco-German war in 1870-1 he was employed with the English ambulance, and was at the siege of Paris and in the campaign on the Loire, being awarded the Memorial Medal of the Emperor William I. He also held the Canadian war medal with clasp for his services during the Fenian Raid in 1866. Surgeon-General Jameson was made Honorary Surgeon to the late Queen Victoria in 1893, granted a Distinguished Service Reward in 1896, and made a Companion of the Bath in 1897. He was also a Knight of Grace of the Order of St. John of Jerusalem.

INDIAN MEDICAL SERVICE.

COLONEL J. P. GREANY, M.D., Bombay Establishment, Principal Medical Officer, Sind District, has been granted leave out of India for five months on private affairs.

Major GEORGE BROOKE FRENCH, M.B., Bengal Establishment, died at Tunbridge Wells on August 20th, aged 45. He was appointed Surgeon, September 30th, 1886, and Major, September 30th, 1898. He served with the Manipore expedition in 1891, receiving the medal with clasp.

THE STATION HOSPITAL SYSTEM.

THE correspondent whose letter on Military Employment in the Indian Medical Service was published in the BRITISH MEDICAL JOURNAL, April 16th, 1904, p. 930, sends us the following comments on the criticisms contained in the communication from "Captain I.M.S.," published in the JOURNAL, July 9th, p. 102:

Your correspondent says that my experience that the wish for the introduction of this system is prevalent except amongst the very junior officers is diametrically opposed to his. Well, I can only say that I, too, have been at some pains to ascertain the true sentiments of my brother officers regarding the introduction of this system, with the result previously stated. But even allowing that amongst medical officers in military employ under the rank of major, the general desire is, as he says, for the retention of the present regimental system, I still hold that it is a wrong system, and an anachronism.

The mere fact that so few men remain in military employment after they reach the rank of major—so much so, that "Captain I.M.S." estimates "that in most of the commands, the seniors actually serving with regiments might be counted on the fingers of one hand"—shows, I think, the absolute necessity for some radical change which will have the effect of rendering a permanent military career attractive to men entering the I.M.S.

The introduction of the Station Hospital system is the only alternative I know of which is likely to have this effect. For no service can go on with only juniors and next to no senior officers. As it is, the military authorities are at their wits' end to find medical officers of field rank for the command of field or general hospitals when mobilized.

A great deal has been written about the social side of the question. Undoubtedly, regimental life has many attractions, but it has its drawbacks as well. When a regimental medical officer finds himself senior to his own commanding officer, permanent or officiating, as is bound to happen in time if a man remains in military employment for any time in the I.M.S., it is only by the exercise of the greatest tact on both sides that everything goes on smoothly.

Also as regards professional work, the present regimental system in too many cases leads to absolute rustiness and lack of energy amongst the men of the I.M.S. Your readers would never believe, unless they saw it, how antiquated the equipment of a station regimental hospital is; and without tools you cannot expect a man to take much interest in his work. The clinical material at his disposal is very limited; he having, perhaps, to go round daily half-a-dozen or more fever cases, which, for want of any critical instruments for examining the blood, are all indiscriminately diagnosed "ague" and treated with quinine, a few ulcers and blistered feet, several old chronics complaining of rheumatism and lumbago who are putting in their time for pension—and, perhaps, one puzzling case.

Now, in a station hospital treating the sick of various units, where presumably the equipment would be on a more modern and liberal scale, the fever cases multiplied by three or four, might be scientifically investigated by keen juniors lately out from Netley, not to mention the despised seniors who are often as keen as possible in sporting malarial parasites and making blood counts, as a fairly long experience of India has shown me. For it is wonderful how a little emulation and talking

over cases stimulates one's interest in them. At a somewhat large station where it was lately my lot to serve, there were seven officers of the I.M.S. in military employment, as well as a fair number of R.A.M.C. men all present in the station. Under an energetic P.M.O. a room in the Station Hospital for British Troops was very soon converted into a laboratory, at which several of us used to meet daily. Before long these meetings evolved into a flourishing local medical society at which papers were read, and cases shown and discussed, and in which every doctor present in the station took a keen interest.

Again, "old chronics" admitted to a native station hospital would have more chance of being sent back to duty, the responsibility for classing them as malingerers, as they usually are in reality, falling on the shoulders of the older man in command of the hospital, instead of on a youngster in a regimental hospital. And the "puzzling cases" would become a source of great interest amongst the medical officers, the elucidation of which would improve their experience and professional knowledge.

Why "military discipline should run counter to professional feeling in a station hospital" (whatever that may mean), as "Doctor Sahib," in the JOURNAL of May 14th, 1904, suggests, I cannot understand. While expecting and maintaining the proper respect due to his rank, no senior officer who had any gentlemanly feeling would interfere professionally with a junior serving under him, unless to give his opinion and advice if asked for. As doctors, all men meet as equals and brothers, and every doctor knows this.

Lastly, as regards messes. It is stated that the present Commander-in-Chief in India hopes to carry out a scheme by which approximately two-thirds of the native army in India will be cantoned along the North-West Frontier, and in the Punjab one-regiment stations will probably in a very short time be a thing of the past. So that when this scheme is carried out the establishment of I.M.S., or of combined R.A.M.C and I.M.S messes, ought to present no difficulty. I, for one, hope that these will only be a corollary to the institution of station hospitals for native troops.

THE CIVIL SIDE OF THE INDIAN MEDICAL SERVICE.

SARDAM writes: I gather that the new warrant of pay, etc., for the civil side of the I M S. is still even yet "under consideration." I suppose it will be issued some day: in the meanwhile, it is of some interest to recall the dates on which the enhanced rates came into force for the R.A M C. For this service new rates were drawn from April 1st, 1902, as far as officers serving in England were concerned, and from November 24th, 1902, for those in India; whereas the I.M S. military service had to wait until August, 1903, and for the civil side these are, as I have said, even now "under consideration"; the result is that there is the greatest difficulty in filling up vacancies in civil employ.

There is another point which I should like to draw attention to, and that is the essential necessity of the Director-General being a member of the Viceroy's Council, and the surgeon-generals of the various presidencies of the Councils of their respective presidencies. Recent events in the Gaol Department of Madras Presidency confirm the necessity for a medical representative on the Council. Briefly put, these events are: In Madras Presidency there are two medical officers holding gaol appointments. Of these, one had sundry charges brought against him in the Council; they were all "found true" against him, and he was transferred to another and less desirable gaol, and the public were informed through the medium of the public papers that "Government deplored the irregularities." Now, please observe the officer concerned had not been given any opportunity to defend himself, nor was he aware of the charges until he saw them in the newspaper. The other officer in this extraordinary department has been found by the Local Government to be "unfitted for the Gaol Department"; no reason of any kind was given him. He appealed to the Government of India, and he has been reinstated "for the present." I think events such as these point to the absolute necessity of the appointments I have mentioned.

HONOURABLE ARTILLERY COMPANY OF LONDON.

SURGEON-MAJOR T. E. F. MCGEAGH, M.D., resigns his commission, September 10th; he retains his rank and uniform, and retires into the Veteran Company.

Mr. John F. Taylor is appointed Surgeon-Lieutenant, September 10th.

VOLUNTEER RIFLES.

SURGEON-LIEUTENANT B. W. HOGARTH, M.D., 2nd Volunteer Battalion the King's Own (Royal Lancaster Regiment), and Surgeon-Lieutenant T. A. ROTHWELL, M.D., 3rd Volunteer Battalion the Cheshire Regiment, are promoted to be Surgeon-Captains, September 10th.

WILLIAM B. MILBANKE, M.B., is appointed Surgeon-Lieutenant in the 3rd (Sunderland) Volunteer Battalion the Durham Light Infantry, September 10th.

Surgeon-Major J. P. ATKINSON, M.D., 3rd (Cambridgeshire) Volunteer Battalion the Suffolk Regiment, to be Surgeon-Lieutenant-Colonel, September 17th.

Mr CECIL F. WIGHTMAN to be Surgeon-Lieutenant in the 1st (Hertfordshire) Volunteer Battalion the Bedfordshire Regiment, September 17th.

Surgeon-Captains G. M. EDMOND, M.D., and G. WILLIAMSON, M.B., 1st Volunteer Battalion the Gordon Highlanders, to be Surgeon-Majors, September 17th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

MAJOR J. S. RIDDELL, M.B., the Aberdeen Company, is appointed to command under Paragraph 55A Volunteer Regulations, September 10th.

VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

CLASSES of instruction for the training of stretcher bearers will commence at the head quarters of the London Rifle Brigade, 130, Bunhill Row, E.C., on Monday, October 3rd, at 7.40 p.m. Further particulars can be obtained from Major R. R. Sleman, A.M.R., 23, Cambridge Street, Hyde Park, W.

PROMOTION TO SURGEON-MAJOR.

CAPTAIN.—Unless there are some special circumstances, it is not likely that our correspondent will be able to obtain the rank of surgeon-major until he has completed twelve years in his present rank. A recommendation from his colonel, even if unsuccessful, would, however, do no harm.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

		From.	To.
Colonel	W. W. Kenny, M.B.	—	Transvaal.
Lt.-Col.	F. B. Maclean	Woolwich	Canterbury.
,,	R. E. R. Morse	Leeds	York.
,,	J. C. Culling	Transvaal	Pembroke Dk.
,,	E. G. E. Risk	Belfast	Holywood.
,,	Sir A. A. Brooke-Pechell, Brt., M.B.	,,	,,
,,	F. S. Henston, C.M.G.	Dublin	Kilmainh'm H.
Major	J. Maher	Jersey	R.A.M. Coll.
,,	G. E. Moffet, M.B.	Hamilton	Perth.
,,	R. Crofts, D.S.O.	Cork	Buttevant.
,,	S. N. Cardozo	Portsmouth	Golden Hill.
,,	M. L. Hearn	Holywood	N. China.
,,	F. W. H. D. Harris	—	Devonport.
,,	J. J. O'Donnell, M.B.	Leeds	York.
,,	J. J. Gerrard, M.B.	South Africa	Transvaal.
,,	T. H. F. Clarkson	Malta	Jersey.
,,	E. Eckersley, M.B.	O. R. Colony	Transvaal.
,,	T. Browning	Mullingar	Kilworth.
,,	H. C. Thurston, C.M.G.	Home District	War Office.
,,	A. Y. Reily, M.B.	Belfast	Firmer Camp.
,,	S. F. Clark, M.B.	Devonport	Dartmoor.
,,	A. E. Smithson, M.B.	O. R. Colony	Cape Colony.
,,	J. D. Ferguson, D.S.O.	Somaliland	South Africa.
,,	D. D. Shanahan	Cape Colony	Tipperary.
,,	C. Dalton	Dublin	Curragh.
,,	J. T. Brogden	Gosport	Portsmouth.
,,	I. A. O. MacCarthy	Somaliland	Dublin.
,,	T. MacDermott, M.B.	Curragh	Dublin.
Captain	J. R. McMunn	Dublin	Curragh.
,,	W. S. Harrison, M.B.	Chester	Hulme.
,,	L. F. Smith, M.B.	R.A.M. Coll.	W. Africa.
,,	S. H. Fairrie, M.B.	Dover	Canterbury.
,,	J. V. Forrest, M.B.	R.A.M. Coll.	W. Africa.
,,	H. W. Grattan	Chester	Trawsfynydd.
,,	E. W. Bliss	R.A.M. Coll.	W. Africa.
,,	T. H. M. Clarke, M.B., C.M.G., D.S.O.	Home Dist.	Pirbright.
,,	J. G. Berne	Birr	Dublin.
,,	J. D. G. Macpherson, M.B.	Southern Dist.	R.A.M. Coll.
,,	A. C. Lupton, M.B.	R.A.M. Coll.	Hounslow.
,,	G. B. Crisp	Transvaal	Netley.
,,	J. S. Gallie	Aldershot	Bordon.
,,	H. Herrick	Bombay	Aldershot.
,,	E. J. Dobbin	,,	,,
,,	J. W. H. Houghton, M.B.	Transvaal	O. R. Col.
,,	J. H. Brunskill, M.B.	Dublin	Curragh.
,,	A. W. Sampey	—	Dublin.
Lieutenant	D. P. Watson, M.B.	Devonport	Dartmoor.
,,	T. S. Dudding	Netley	Portsmouth.
,,	O. Ievers, M.B.	Curragh	Belfast.
,,	S. L. Pallant	Netley	Gosport.
,,	J. T. M'Entire, M.B.	Curragh	Cork.
,,	E. M. Glanvill, M.B.	Woolwich	Dundalk.
,,	M. C. Wetherell, M.B.	Netley	Shorncliffe.
,,	R. T. Collins	,,	Dover.
,,	A. C. Osburn	,,	Portsmouth.
,,	D. P. Johnstone	Curragh	Glen Imaal.
,,	M. D. Ahern	,,	Clonaster.

Lieutenant-Colonel and Hon. Brigade-Surgeon A. F. S Clarke, M.D., retired pay, has relinquished his medical charge of Sandhurst Military College, and has been succeeded there by Major J. Maher, R.A.M.C.

Major S. Butterworth and Lieutenant-Colonel G. T. Trewman, retired pay, have assumed the medical charge of troops at Carlisle and Reading respectively.

THE COMMAND OF HOSPITALS IN THE UNITED STATES NAVY.

OWING to the efforts of Surgeon-General Rixey, Chief of the Medical Department of the United States Navy, and the Bureau of Medicine and Surgery, of which he is the head, an important reform has been made in the administration of naval hospitals. In future, medical officers of the United States Navy are to be in "command of" instead of "in charge of" hospitals. The following order has lately been issued by Acting Secretary Darling: "Medical officers in charge of naval hospitals, or other medical departments of a naval station under the command of the station, are hereby authorized to use the term 'in command,' instead of 'in charge of,' to designate their respective official positions."

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,464 births and 4,980 deaths were registered during the week ending Saturday last, September 17th. The annual rate of mortality in these towns, which had been 20.5, 18.2, and 17.5 per 1,000 in the three preceding weeks, further declined last week to 17.0 per 1,000. The rates in the several towns ranged from 6.1 in Handsworth (Staffs.), 6.7 in East Ham, 7.1 in Hastings, 8.9 in Walthamstow, 9.0 in Burton-on-Trent, 9.6 in Reading, 9.7 in Bournemouth, 10.3 in Smethwick, and 10.4 in Wallasey to 24.0 in Wallsall, 24.7 in Stockport, 24.8 in Warrington, 25.1 in Hull, 25.5 in Sunderland, 26.1 in Hanley, 27.8 in Salford, and 31.6 in Wigan. In London the rate of mortality was 15.3 per 1,000, while it averaged 17.8 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 4.1 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 2.7 per 1,000, while among the seventy-five other large towns the rates ranged upwards to 8.0 in Walsall, 8.2 in

Preston, 8.4 in Gateshead, 0.1 in Wigan, 9.3 in Warrington and in Burnley, 9.4 in Hull, 10.0 in Sunderland, and 13.9 in Hanley. Measles caused a death-rate of 1.1 in Walsall and in Salford, and 1.7 in Bootle: diphtheria of 1.6 in Hanley; whooping-cough of 1.2 in Bristol, 1.7 in Wigan, 2.0 in Great Yarmouth, and 2.6 in Barrow-in-Furness; "fever" of 1.0 in Hull; and diarrhoea of 7.1 in Gateshead, 7.5 in Ipswich and in Wigan, 7.8 in Hull, 8.5 in Warrington, 9.3 in Burnley and in Sunderland, and 12.2 in Hanley. The mortality from scarlet fever showed no marked excess in any of the large towns. Three fatal cases of small-pox were registered in Oldham, and one each in Preston and in Gateshead, but none in any other of the seventy-six towns. The Metropolitan Asylums Hospitals contained 5 small-pox patients at the end of last week, against 13, 9, and 8 at the end of the three preceding weeks; 1 new case was admitted during the week, against 2 in each of the two preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last, September 17th, was 1,929, against 1,781, 1,820, and 1,816 on the three preceding Saturdays; 340 new cases were admitted during the week, against 263, 266, and 234 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, September 17th, 945 births and 547 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.2, 16.0, and 15.7 per 1,000 in the three preceding weeks, rose again last week to 16.5 per 1,000, but was 0.5 per 1,000 below the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 13.0 in Paisley and 14.3 in Aberdeen, to 17.8 in Glasgow, and 21.5 in Perth. The death-rate from the principal infectious diseases in these towns averaged 3.1 per 1,000, the highest rates being recorded in Dundee and Greenock. The 272 deaths registered in Glasgow included 42 which were referred to diarrhoea, 6 to whooping-cough, 2 to measles, 2 to diphtheria, 2 to "fever," and 1 to small-pox. Four fatal cases of whooping-cough and 4 of diarrhoea were recorded in Edinburgh. Nine deaths from diarrhoea and 2 from "fever" occurred in Dundee; 4 from diarrhoea and 2 from scarlet fever in Aberdeen; 4 from diarrhoea in Paisley, and 3 in Leith; and 2 from diphtheria, 2 from "fever," and 2 from diarrhoea in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, September 10th, 649 births and 330 deaths were registered in six of the principal Irish towns, against 551 births and 327 deaths in the preceding period. The mean annual death-rate of these towns, which had been 16.0, 15.8, and 17.2 per 1,000 in the three preceding weeks, fell to 16.2 per 1,000 in the week under notice, this figure being 1.3 per 1,000 lower than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 6.8 in Limerick to 21.6 in Dublin. The zymotic death-rate during the same period and in the same six Irish towns averaged 3.5 per 1,000, or 1.7 per 1,000 higher than during the preceding period, the highest figure, 9.7, being recorded in Waterford, while Limerick registered no deaths under this heading at all. The high rate in Waterford was due to diarrhoeal diseases, to which cause 26 deaths in Dublin and 16 in Belfast were also ascribed.

THE RELATIONS OF MEDICAL OFFICERS OF HEALTH TO THEIR PROFESSIONAL COLLEAGUES.

COUNTRY TOWN writes: A., a private practitioner, notifies B., the M.O.H., of a case (a child) of scarlet fever. This was a private patient of A.'s living in a small detached cottage where there are other children. B. called personally and interviewed the parents of the child, and, unknown to A., tried to persuade them to move the child to the Isolation Hospital, pointing out as an argument that the child would in that case be allowed out-of-doors in the grounds of the institution earlier than could be the case at home, with other houses close at hand. He asks: Is not B. in taking this course exceeding his duty as M.O.H.? Has A. or has he not just grounds of complaint in this matter against B.?

*** The two questions are substantially one. We have repeatedly expressed our opinion that medical officers of health should communicate with private practitioners before visiting cases under their care, and should seek their co-operation and consent to such measures as removal of the patient if contemplated by them. Moreover, the view taken in the letter sent by the Local Government Board in answer to a complaint against an M.O.H., published in the BRITISH MEDICAL JOURNAL, July 16th, p. 134, emphasizes the necessity for this communication. We have been informed that the Society of Medical Officers of Health is willing to do its best to regulate the relations between its members and their colleagues. We should therefore advise our correspondent to send a statement of the facts to the Secretary of the Incorporated Society of Medical Officers of Health, 9, Adelphi Terrace, London, W.C.

LOCAL SANITARY ADMINISTRATION.

UNBIASSED REFORMER asks a series of questions, which raise the whole question of the defects of local sanitary administration, especially in small areas. We would advise him to read the Presidential Address given by Dr. Griffiths to the British Medical Association, at the annual meeting in Swansea last year (BRITISH MEDICAL JOURNAL, August 1st, 1903, p. 229), and the Address in Medicine given by Sir William Church at Oxford this year (ibid., July 30th, 1904, p. 226). A County Council has power to appoint a medical officer of health for the county, but not for certain areas. Several local authorities can combine and appoint a medical officer of health for the combined area; the salary thus provided may be sufficient to ensure that a competent officer shall give his whole time to the office. With regard to security of tenure, we would refer our correspondent to the Annual Report of the Medico-Political Committee (SUPPLEMENT, July 23rd, 1904, p. 68), and to the discussion on the matter at the Annual Representative Meeting (Ibid., August 6th, 1904, p. 115). The answer to the question whether it would be advisable to replace several small isolation hospitals by two or three, to meet the demands of all the areas of a county, must depend on local circumstances. In some counties, owing to distances to be traversed and other considerations, it would not be advisable.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Junior House-Surgeon, resident. Salary at the rate of £50 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Second House-Physician, resident. Salary at the rate of £50 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Eight Clinical Assistants in Out-patient Department.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Third House-Surgeon, resident. Salary, £80 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Honorarium, £25 for six months.

HULL ROYAL INFIRMARY.—House-Surgeon, resident. Salary, 80 guineas per annum.

KIRKBURTON: STORTHES HALL ASYLUM.—Assistant Medical Officer, resident. Salary, £140 per annum.

LINCOLN COUNTY HOSPITAL.—Junior Male House-Surgeon, resident. Honorarium, £25 for each six months.

LEICESTER INFIRMARY.—Assistant House-Surgeon, resident. Salary, £80 per annum.

MANCHESTER: CHILDREN'S HOSPITAL.—(1) Junior Physician; (2) Junior Surgeon. Honorarium, £50 each. Junior Physician, to act also as Pathologist, with honorarium, £25.

MANCHESTER: ANCOATS HOSPITAL.—Resident House-Physician. Salary, £80 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—(1) House-Surgeon, resident. Salary, £80 per annum. (2) Honorary House-Physician.

SEAMEN'S HOSPITAL SOCIETY.—(1) Junior Resident Medical Officer, Dreadnought Hospital, Greenwich. (2) House-Surgeon, Branch Hospital, Royal Victoria and Albert Docks. Salary, £40 and £50 per annum respectively.

NORFOLK AND NORWICH HOSPITAL.—(1) Surgeon. (2) Assistant Surgeon.

NORTHAMPTON GENERAL HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer, resident. Salary, £130 per annum, rising to £150.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—House-Physician, resident. Salary at the rate of £60 per annum.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Clinical Assistants.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Surgeon, resident. Honorarium, £25 for six months.

WEST LONDON HOSPITAL, Hammersmith Road.—Additional Officer in charge of X-Ray Department.

APPOINTMENTS.

BAILEY, T. H., L.S.A., District Medical Officer of the Nantwich Union.

CALDER, Edward Percy, M.B., Ch.B.Edin., Resident Medical Officer to the Royal Lancaster Infirmary.

CATTO, R., M.B., Ch.B.Aberd., House-Surgeon, Aberdeen Royal Infirmary.

DAVIDSON, A. Dyce, M.A., M.B., Ch.B.Aberd., House-Physician, Aberdeen Royal Infirmary.

KING, Patrick J., M.B., Ch.B.Glasg., Assistant Surgeon to the Dispensary of the Royal Hospital for Sick Children, Glasgow.

MACMULLAN, J. U., L.R.C.P. & S.Edin., L.F.P.S.Glasg., Surgeon and Agent to the Admiralty at Penarth.

TARBET, P. R., M.R.C.S., L.R.C.P., Medical Officer of Health, Stevenage Urban District.

THOMPSON, S. W., M.R.C.S., L.S.A., Medical Officer, Calvert Road Homes, Greenwich Union.

TIMMS, A. B., L.R.C.P. & S.Edin., Assistant Medical Officer of the Cardiff Workhouse.

WOOD, G. Bennington, M.B., C.M.Edin., Medical Officer to the Post Office and Medical Examiner to the Board of Education, Sandown, Isle of Wight.

EDINBURGH ROYAL INFIRMARY.—The following appointments were confirmed by the Board on September 12th:

Clinical Tutors for the ensuing winter and summer sessions, 1904-5—G. F. Barbour Simpson, M.B., F.R.C.S.Edin. (Gynæcological Department), Edwin Matthew, M.A., M.B., Ch.B.; George Lyon, M.B., Ch.B.; and Edward Bramwell, M.B., M.R.C.P. Edin. & Lond., University Medical Wards; M. Herbert Shepherd, M.B., F.R.C.S.Edin., University Surgical Wards. Medical Wards: Alexander Goodall, M.B., F.R.C.S. (Dr James S.); J. A. Conner, M.A., M.B., Ch.B. (Dr. Bramwell); J. Rankine, M.B., M.R.C.P.Edin. (Dr. Gibson); W. E. Drummond, M.B., C.M. (Dr Bruce). Surgical Wards: H. T. Thomson, M.D. (Mr. Cotterill); A. Campbell Geddes, M.B., Ch.B. (Mr. Cathcart).

Instructors in Anæsthesia.—T. T. Luke, F.R.C.S.Eng., to Professor Annandale's wards; G. W. P. Daniel, M.R.C.S., L.R.C.P., to Mr. Cathcart's wards.

Resident Physicians.—G. Stirling Landon, M.B., Ch.B., to Professor Greenfield; Hugh S. Davidson, M.B., Ch.B., to Dr. Bramwell; R. W. Johnstone, M.A., M.B., Ch.B., to Dr. Gibson; J. Allen Anderson, M.B., Ch.B., to Dr. Bruce.

Resident Surgeons.—T. P. Haverhill, M.B., Ch.B., to Professor Annandale; D. Brown, M.B., Ch.B., to Dr. Berry Hart; Henry Curwen, M.B., Ch.B., to Mr. Cotterill; A. G. Coullie, M.B., Ch.B., to Mr. Cathcart.

Clinical Assistants.—James M. Graham, M.B., Ch.B., to Dr. Bramwell; D. P. D. Wilkie, M.B., Ch.B., to Dr. Bruce; Thomas B. Coulson, M.B., Ch.B., to Dr. MacGillivray; W. A. Wilson Smith, M.B., Ch.B., to Mr. Cathcart; Arthur J. Brock, M.B., Ch.B., to Dr. Murdoch Brown in the medical waiting room.

DIARY FOR NEXT WEEK.

POST-GRADUATE COURSES AND LECTURES.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin Diseases; Tuesday, Medical Cases; Wednesday, Surgical Cases; Thursday, Surgical Cases; Friday, Ear Cases.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

ECCLES.—On Sunday, September 18th, at 124, Harley Street, W., the wife of W. McAdam Eccles, M.S., F.R.C.S., of a son.

MULCAHY.—On September 14th, at Copnor, Portsmouth, the wife of T. A. Mulcahy, L.R.C.S. & P.I., of a son.

MARRIAGES.

OSBORN—WHITEHOUSE.—On September 7th, at the Cathedral, Singapore, Straits Settlements, Major G. Osborn, Royal Artillery, eldest son of Ashby G. Osborn, Esq., M.R.C.S. & Eng., L.S.A., of Dover, to Alice May, third daughter of Benjamin Whitehouse, Esq., J.P., of Seagoles, Staffordshire.

PARKE—LONGDEN (Golden Wedding).—On September 21st, 1854, at St. Margaret's Church, Wormhill, Derbyshire, John Latimer Parke, M.R.C.S., L.S.A., of Tideswell, Derbyshire, to Jane, daughter of Thomas Longden, of Elm House, near Buxton, Derbyshire, to Jane, daughter of Thomas Longden, of Elm House, Wormhill.

TURNER—HAMILTON.—On September 14th, at the Parish Church, Tavistock, Devon, by the Rev. Alfred Woodin, Rector of Broughton, Hampshire, assisted by the Rev. G. C. Le Neven, Vicar of Tavistock, William Turner, M.S. Lond., F.R.C.S., of 87, Queen Anne Street, Cavendish Square, London, to Lily, only daughter of John Kerr Hamilton, of St. Rumon's, Tavistock.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National) :— GENERAL SECRETARY AND MANAGER, EDITOR, 2631, Gerrard. 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

SURGEON R.N. would be glad if any reader of the BRITISH MEDICAL JOURNAL would advise him as to a satisfactory treatment for a boy of 17 years suffering from incontinence of urine. He has suffered from childhood, and no cause can be found. All the usual treatments have been tried.

COMPOUNDERS AND DISPENSERS.

R.A.M.C. asks: (1) Whether a "compounder of medicines" of the R.A.M.C. is qualified to dispense in any capacity in civil life? (*a*) if not, to what extent can he dispense, and what extra qualification would be necessary to rank as an equal with a civilian dispenser? (2) Can a "compounder of medicines" of the R.A.M.C. on leaving the service become the proprietor of a chemist's shop without employing a qualified assistant as dispenser? (*a*) if not, what extra qualification is required to open a chemist's shop and do his own dispensing if desired?

*** (1) No qualification is required for dispensers in civil life: but if the medicines dispensed contain scheduled poisons they can only be sold by a medical man, a pharmaceutical chemist, or a chemist and druggist. There are a certain number of positions in which a legal qualification as a dispenser is not essential, and to Poor-law dispensing appointments ex-army compounders are believed to have a special claim; nearly everywhere, however, now candidates are expected to hold at least the "assistant's certificate" of the Apothecaries' Hall, if not the qualification of the Pharmaceutical Society. (2) No, not even with a qualified assistant. (*a*) The "minor" qualification of the Pharmaceutical Society is essential.

ANSWERS.

SNORING.

SCOTLAND writes: If "Somnus" would have a mould of india-rubber made for the chin, and fix it over the head with tapes during the night, he would, I think, find a cure. This keeps the mouth shut and forces the person during sleep to breathe only through the nose.

WASP STINGS.

DR. P. O'CONNELL (Stillorgan, co. Dublin) writes: In reply to the query of "H. J. W." in the BRITISH MEDICAL JOURNAL of September 17th, p. 711, I beg to inform him that I have found a strong solution—1 in 10 or 1 in 15—of carbolic acid most useful. Even this summer I was stung several times by wasps while destroying their nests. I soaked a tiny bit of absorbent cotton in the phenol solution and laid it over the spot, and kept it there for several hours, frequently adding a couple of drops of the solution to keep the cotton wet. This quickly relieved the smarting and the itching. I found this plan very efficacious in mosquito bites when living many years ago where these pests abound.

TREATMENT OF OBSTINATE RINGWORM.

DR. H. E. POWELL (London) writes: In reply to "Dubious," I would advise him to try a 40 per cent. solution of formalin. After first shaving the hair for 1 in. round the infected area, let him, with a mop of cotton-wool fastened to a penholder, well rub in the formalin solution, and do this three times on alternate days. At the end of a week or ten days any crusts which may have formed should be removed, and dead hairs epilated. The treatment may be repeated again after the lapse of a fortnight if it seems desirable. I may say that for many years now I have used formalin in the treatment of ringworm, and have never failed in effecting a cure in from three weeks to two months.

DR. E. A. MILNER (Lostwithiel) who also suggests formalin, writes: The strength I use is from 15 per cent. to 40 per cent. formaldehyde, according to circumstances—the stronger the better. It should be applied carefully to the patch, care being taken not to go further outside the affected area than necessary. An application twice daily for about five or six days will produce considerable pustular inflammation. When this occurs the formalin should be stopped and boric poultices applied. When the inflammation has subsided and the pustules healed, it can be seen whether the disease is cured or not; if not, the same process should be repeated. I have tried this method on some scores of cases without so far finding one that resisted it.

DR. J. SANDISON CRABBE (Gravelly Hill, Birmingham) writes: I had a case of ringworm similar to the one described; the child was a chemist's son, and almost every drug had been tried by the father and medical men with no result. About that time I had had several brilliant results in other diseases with the new silver salt "Argyrol," so I tried a 20 per cent. solution painted on the patches. The result was surprising. In fourteen days the head was all but well, and good strong hair growing. The boy is now perfectly well, after eighteen months of the disease.

F. P. B. says: "Dubious" might try this: Cut the hair short, rub in oil of turpentine with the finger liberally; allow to remain for five minutes, wash off with carbolic soap and hot water. Paint the patch with tr. iodi or a 2 per cent. solution of iodine in oil of turpentine. The application is to be made once or twice a day. Or a saturated solution of chrysophanic acid in chloroform may be tried.

DR. JOHN RIGG (Preston) writes to recommend the application of formalin.

LETTERS, NOTES, Etc.

A SLOGAN FOR NURSES.

ALL American colleges have a war cry or "yell" of their own with which they encourage their representatives in athletic contests, and give vent to their feelings on festive occasions. Even training schools for nurses have their "yells," of which the following may serve as a sample. It is taken (by the *Medical Record*) from the *Capitol*, a newspaper of Topeka, Kansas, which gives it as the "yell" of the class of 1904 at the Wichita Training School for Nurses:

Staphylococcus, streptococcus,
Microbes all!
Sterilize and fumigate,
Watch them crawl!
Big germs, little germs,
Short and tall;
Fat germs, lean germs,
We kill them all!
Antisepsis, that's our call,
We're the largest class of all!

It sounds more like a form of exorcism than a slogan for fighters against disease; but the spirit of the "yell" is excellent.

LETTERS, COMMUNICATIONS, ETC., have been received from A. A. V. S.; Dr. R. R. Allen, Dartford; S. B. Atkinson, M.B., London. B. Birmingham University, Dean of, Birmingham; B. A. H.; Dr. T. Buzzard, London; Dr. W. B. Bell, Liverpool; A. G. Bateman, M.B., London; Mr. W. H. Buckley, Oldham; Sir W. H. Bennett, K.C.V.O., London; Mr. L. T. Biggs, Belfast; Dr. T. F. Budden, London; Mr. E. F. Bindloss, Melbourne; Mr. G. T. B. Buck, Broome, W.A.; A. G. Bateman, M.B., London; B. W.; Mr. G. H. Broadbent, Manchester; Bothered; Mr. D. Binnie, Glasgow; Dr. T. E. B. Brown, C.I.E., London. C. Country Surgeon; Mr. W. S. Caw, Edinburgh; A. Cox, M.B., Gateshead; Mr. J. S. Colman, London; Dr. L. Cobbett, Stansted; W. M. Clendinnen, M.B., Coseley; W. J. Carr, M.B., Bury St. Edmunds; Mr. W. B. Cosens, Dorchester; Country Town; Mr. W. Clover, London; Dr. E. W. Carlier, Birmingham. D. Dr. F. A. Dibey, Oxford; Director General of the Medical Department of the Admiralty, London; Dr. W. S. Dalke, Sutton; Dr. W. G. Dickinson, London; G. H. G. Davie, M.B., Withington; J. G. Dunconson, M.B., London; W. J. Dixon, M.B., Temple Combe. E. Mr. G. D. Edwards, London; Erasmus; Ebor; Mr. H. Elliot-Blake, Bognor. F. Far East; Dr. W. T. Freeman, Reading; Mr. J. F. Farrar, London. G. General Practitioner; Mr. T. W. H. Garstang, Altrincham; Mr. E. E. Greville, Edinburgh; Miss M. J. Gilmore-Cox, Glasgow; Graduate. H. H. M.; Mr. J. J. Hemming, Margate. J. Mr. B. H. Joy, London. L. Mr. R. N. Lyon, Lucan; Messrs. S. Low, Marston, and Co., London; Dr. A. E. Larking, Folkestone; L. H. M. Modern; T. E. Mitchell, M.B., Old Hall; M.B.; Dr. S. Malauah, Hyderabad; Mr. H. J. Manning, Salisbury; M.D. N. Nemo; Newcastle. R. S. Ness, M.B., Glasgow; Nesciat. O. Dr. P. O'Connell, Stillorgan; One Who Has Seen It. P. Mr. H. E. Perrin, London; Messrs. Parke, Davis, and Co., London; Mr. R. D. Pedley, London; Mr. J. Phillips, Aberdare; Paper; J. Pollock, M.B., Stratford, Victoria; Captain A. E. H. Pinch, London. Q. Quarens. R. Mr. W. F. Rawson, Bradford; R.; Dr. A. J. Rodocanachi, West Didsbury; Mr. H. M. Raven, Broadstairs; Dr. J. W. Russell, Birmingham. Dr. W. Robinson, Sunderland. S. Dr. E. H. Spell, Coventry; Successful; Dr. J. Symington, Belfast; Dr. C. Shaw, Belfast; Sardam; Surgeon R.N.; Messrs. C. W. Simpson and Co., Liverpool; Scotland; Dr. E. W. Saby, Doncaster. T. Mr. R. F. Tomlin, London; Mr. W. Tylar, Birmingham; Tobacco; Dr. J. Thornley, Bolton; Mr. H. R. Tabboth, Walthamstow. V. Dr. N. Vaschide, Paris. W. Mr. H. A. Wanklyn, London; Messrs. J. Wright and Co., Bristol; Surgeon-Colonel F. H. Welch, London; Mr. C. Whittaker, St. Leonards-on-Sea; Dr. F. J. Wethered, London; Mr. G. Westby, Liverpool; Mr. T. M. Watt, Goxhill; Dr. B. Walker, Kirkby Stephen; W. G.; etc.

BOOKS, ETC., RECEIVED.

Modern Ophthalmology. By James Moores Ball, M.D. In 2 volumes. Philadelphia: F. A. Davis Company. 1904. 7dols.

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An Address
ON
THE HISTORICAL RELATIONS BETWEEN SURGERY AND MEDICINE.

Delivered at the Medical Congress, St. Louis, on September 27th, 1904.

By T. CLIFFORD ALLBUTT, M.D.Cantab., F.R.S., etc.,
Regius Professor of Medicine, University of Cambridge, and Representative of Great Britain at the Congress.

[Abstract.]

[After recalling the way in which about the year 1864 surgeons began to treat such cases as abdominal tumours, ileus, and other abdominal conditions and cerebral tumour which had previously been considered to belong to the province of physic, Professor Clifford Allbutt continued:]

It seems to me that the present is a critical moment in the relations of medicine and surgery, especially in England, where the two branches of the art have been separated so radically as to appear to be "two professions"—a moment when it is our duty to contemplate the unity of medicine, to forecast its developments as a connected whole, and to conceive a rational ideal of its means and ends. But this large and prophetic vision of medicine we cannot attain without a thoughtful study of its past. If, as from a height, we contemplate the story of the world, not its pageants, for in their splendour our eyes are dim, but the gathering, propagation, and ordination of its forces, whence they sprang and how they blend this way and that to build the ideas and institutions of men, we may wonder at their creative activity or weep over the errors and the failures, the spoliation and the decay, which have marred or thwarted them; and if we contemplate not the whole but some part of men's sowing and men's harvest, such a part as medicine, the keener is our sorrow and disappointment, or our joy and our hope, as we admire the great ends we have gained or dwell upon the loss and suffering which have darkened the way. In the development of medicine, said Helmholtz, "there lies a great lesson on the true principles of scientific progress."

Pray do not fear, however, that to fulfil the meaning of the title of this address I shall describe to you the history of medicine and the history of surgery, and on this double line compare and combine my researches; in the time allotted to me no such survey is possible. In the seventeenth century the handicrafts of anatomy, chemistry, and physiology so penetrated medicine that the separate influence of surgery is less easily discernible. My purpose, therefore, is to pass in review certain eminent features of the history of these departments of knowledge up to the end of the sixteenth century and to compare them with a view to edification; your fear will be rather that I may tell my story with the unrighteousness of a man with a moral. In his address on Morgagni at Rome in 1894 Virchow said that medicine is remarkable in its unbroken development for twenty-five centuries—as we may say without irreverence, from Hippocrates to Virchow himself. The great pathologist's opinion, however, seems to need severe qualification; if it be so, the stream has more than once flowed long underground. The discontinuity of medicine from Egypt to Crotona and Ionia is scarcely greater than from Galen to Avicenna, during which period, in spite of a few eminent teachers in the Byzantine Empire, it sank—in the West at any rate—into a sterile, foul, and superstitious routine.

[After referring to Hippocrates, who was "in genius perhaps the greatest physician of all past time," Professor Clifford Allbutt proceeded:]

The chief lesson of the Hippocratic period for us is that, in practice as in honour, medicine and surgery were then one; the Greek physician had no more scruple in using his hands in the service of his brains than had Pheidias or Archimedes; and it was by this co-operation in the fifth century that the advance was achieved which in our eyes is marvellous. As we pursue the history of medicine in later times we shall see the error, the blindness, and the vanity of physicians who neglected and despised a noble handicraft. The clear eyes of the ancient Greeks perceived that an art is not liberal or illiberal by its manipulations, but by its ends.

Between Hippocrates and Galen, an interval of some five centuries, flourished the great anatomical and medical schools of Alexandria. Our only important source, however, for the medicine of the Alexandrian period is Celsus, who lived in the reign of Augustus. In Celsus we find that the surgical and the obstetrical sides of it had made further substantial progress. Besides the Hippocratic surgery we recognize means of treatment in piles, fistula, rodent ulcer, eczema, fractures, and luxations; the nasal passages were cauterized for ozaena, dropsies were systematically tapped, hernias were submitted to radical cure, plastic operations were undertaken, and for the first time the larger limbs were deliberately amputated, though only in extreme need and often with fatal results by secondary haemorrhage and otherwise. How active surgery was from Celsus to Galen and how honourable and intimate a part of medicine we know from the scanty records of Archigenes of Apamea, who also practised in Rome in the reign of Trajan. Galen calls him an acute but too subtle a physician. Such of his subtleties, however, as are known to us—his distinction between primary and consequential symptoms, for instance—are to his credit. He applied the ligature in amputations and Antyllus applied the method to the cure of aneurysm, which, indeed, Rufus seems to have done before him. Galen tells us where he got his "Celtic linen thread" for the purpose—namely, "at a shop in the Via Sacra between the Temple of Rome and the Forum." We learn also from Oribasius that Antyllus practised extensive resections of bone in the limbs and even in the upper and lower jaw. Galen came to Rome under Marcus Aurelius. In the biological sciences this great physician stands to Harvey as in physics Archimedes stood to Galileo and to that other great physician, William Gilbert. Galen was the first, as for many centuries he was the last, to apply the experimental method to physiology. He embraced the ancillary sciences, he opened out new routes, and he improved the old. Unhappily, his soaring genius took delight also in speculation, and it was not the breadth of his science nor the depth of his methodical experiment but the height of his visionary conceits which imposed upon the Middle Ages. Galen did not himself forget the precept of Hippocrates—to look, to touch, to hear (*κάι ἰδεῖν, και θιγεῖν, και ἀκοῦσαι*); but he did not wholly subdue himself—the *πεῖρα τριβικὴ*—to this toilsome conversation with troublesome facts. Galen did not make any great mark on surgery; his tracts on the eye are lost, but, so far as we know, his surgery was adopted in the main from the Alexandrians and from Soranus. However, Galen successfully resected the sternum for caries, exposing the heart, and he excised a splintered shoulder-blade; moreover, with all his bent to speculative reason, we have no hint that he fell into the mediaeval abyss of regarding surgery as unfit for a scholar and gentleman.* After Galen and Soranus medicine came to the evening of its second day, to the long night before the rise of the Arabian, Italian, and French surgeons of the twelfth, thirteenth, and fourteenth centuries.

[After showing how by the twelfth century the wholesome discipline of practical surgery fell off and the tradition of Galen made for a plague of drugs, "which were least mischievous when merely superfluous," Professor Clifford Allbutt proceeded:]

Surgery saw its revenge, its bitter revenge, but in the ruin of its temple. In the thirteenth and fourteenth centuries surgery, hated and avoided by medical faculties, scorned in clerical and feudal circles, began in the hands of lowly and unlettered men to grow from a vigorous root, while inward medicine, withdrawing itself more and more from the laboratory of Nature, hardened into the shell, which till the seventeenth century was but a counterfeit. The surgeons of the thirteenth, fourteenth, and fifteenth centuries, reared in humble apprenticeships, not illiterate only but forbidden the very means of learning, lay under heavy disadvantages; yet such is the virtue of practical experience and technical resource, that by them the reform of medicine was made. Towards the end of the fifteenth century, indeed, even this progress had slackened, soon to be reinforced, however, by new and urgent problems, not of the schools, but of direct rough and tumble with Nature. Of these new problems, of which Paré became the chief interpreter, syphilis and the wounds of firearms were the chief.

[Professor Clifford Allbutt referred to Italy as leading the world in medicine from the twelfth to the eighteenth century.

* "Lords, indeed!" said Mr. Osbourne, "I saw one of 'em speaking to a dam fidler, a fellar I despise."

Roger, who wrote the *Practica Chirurgiae* in 1180, used styptics, the suture, and the ligature. In his treatment of wounds he encouraged suppuration, and dressed them with ointments on lint. Professor Allbutt continued:

Hugh of Lucca was born of honourable family about the middle of the twelfth century; he served as surgeon in campaigns, and was present at the siege of Damietta, but of writing he left not a line. Such vision as we have of him we owe to his loyal disciple, probably his son, the Dominican Theodoric, Bishop of Cervia, and master of Henry of Mondeville. He completed his *Surgery* in 1266, but his life was almost conterminous with the thirteenth century. What was Theodoric's message? He wrote thus:

For it is not necessary, as Roger and Roland have written, as many of their disciples teach, and as all modern surgeons profess, that pus should be generated in wounds. No error can be greater than this. Such a practice is, indeed, to hinder Nature, to prolong the disease, and to prevent the conglutination and consolidation of the wound.

In principle what more did Lister say than this? Henry of Mondeville made a hard fight for the new principle, but the champions of Galen and suppuration won all along the line, and for five following centuries to come poultices and grease were still to be applied to fresh wounds, and tents, plastered with irritants to promote suppuration, were still to be thrust into the recesses of them, even when there was no foreign body to be discharged. If after all this erysipelas set in—well, says Henry, lay it at the door of St. Eligius!

Hugh and Theodoric for the fresh wound rejected oil as too slippery for union and poultices as too moist; they washed the wound with wine, scrupulously removing every foreign particle; then they brought the edges together, forbidding wine or anything else to remain within. Dry and adhesive surfaces were their desire. Nature, they said, produces the means of union in a viscous exudation, or natural balm, as it was afterwards called by Paracelsus, Paré, and Würtz. In older wounds they did their best to obtain union by cleansing, desiccation, and refreshing of the edges. Upon the outer surface they laid only lint steeped in wine. Powders they regarded as too desiccating, for powder shuts in decomposing matters; wine, after washing, purifying, and drying the raw surfaces, evaporates. The quick, shrewd, and rational observation and the independent spirit of Theodoric I would gladly illustrate further did time permit. In passing, I may say that he was the first to notice salivation as the result of administration of mercury in "skin diseases."

Both for his own merits and as the master of Lanfranc, William Salicet was eminent among the great Italian physicians of the latter half of the thirteenth century. Distinguished in surgery, both as practitioner and author, he was also one of the protestants of the period against the division of the craft from inner medicine—a division which he justly regarded as a withdrawal of medicine from its intimacy with Nature. Like Lanfranc and all the great surgeons of the Italian tradition, and unlike Franco and Paré, he had the advantage of the liberal university education of Italy, but, like Paré and Würtz, he had large practical experience in camp, hospital, and prison. His surgery contains many case histories. He discovered that dropsy may be due to a "durities renum"; he substituted the knife for the abuse of the cautery by the followers of the Arabs; he pursued the investigation of the causes of the failure of healing by first intention; he described the danger of wounds of the neck; he forwarded the diagnosis of suppurative disease of the hip; and he referred chancre and gangrene to "coitus cum meretrice." The *Chirurgia Magna* of Lanfranc of Milan and Paris, published in 1295-6, was a great work written by a reverent but independent follower of Salicet. He distinguished between venous and arterial haemorrhage, and generally used styptics (rabbit's fur, aloes, and white of egg was a popular styptic in elder surgery), though in severe cases ligature. Learned man as he was, Lanfranc saw the more clearly the danger of separating surgery from medicine. "Good God!" he exclaims, "why this abandoning of operations by physicians to lay persons, disdaining surgery, as I perceive, because they do not know how to operate . . . an abuse which has reached such a point that the vulgar begin to think the same man cannot know medicine and surgery . . . say, however, that no man can be a good physician who has no knowledge of operative surgery; a knowledge of both branches is essential" (*Chir. Magna*).

Henry of Mondeville, of whom we hear first in 1301 as surgeon to Philip the Fair, was for the most part a loyal disciple of Lanfranc, and, aided as it would seem by Jean Pitard, also surgeon to the King, attempted for wounds to introduce the new methods of Hugh and Theodoric; for his pains he exposed himself to bad language, threats, and perils, and, "had it not been for truth and Charles of Valois," to far worse things. So he warns the young and poor surgeon not to plough the sand, but to prefer complaisance to truth and ease to new ideas. I may summarize briefly the teaching of Henry on the cardinal features of the new method: Wash the wound scrupulously from all foreign matter; use no probes, no tents—except in special circumstances; no oily or irritant applications; avoid the formation of pus, which is not a stage of healing, but a complication; do not, as Galen teaches, allow the wound to bleed with the notion of preventing inflammation, for you will only weaken the patient's vitality (virtus), give him two diseases instead of one, and foster secondary haemorrhage; distinguish between oozing haemorrhage, haemorrhage by jets, and that which pumps out of an inward wound, using for the first styptics and for the last two the cautery, or, where practicable, digital compression for not less than a full hour; when your dressings have been carefully made do not interfere with them for some days; keep the air out, for a wound left in contact with the air suppurates; however, should pain and heat arise, open and wash out again, or even a poultice may be necessary, but do not pull your dressings about. Nature works better alone; if first intention fail she may succeed in the second; as a jeweller, if he can solder gold to gold does so, if not, he has to take to borax; these resources, however, we learn well, not by arguing, but by operating. By the new method you will have no stinks, shorter convalescence, and clean, thin scars. When using the word "Nature" he freely admits that the word is an equivocal one, but he would speak of her allegorically as a lute player to whose melodies the physician has to dance.

Every simple wound will heal without any notable quantity of pus, if treated on Theodoric's and my instructions. Avoid every cause of formation of pus, such as irritating applications, exposure, high diet, oedema, local plethora. Many more surgeons know how to cause suppuration than how to heal a wound.

Now let me remind you that until Hugh of Lucca the universal doctrine was that suppuration or coction is necessary, and that if it does not set in it must be provoked.

The greatest of the French surgeons before Paré was Guy of Chauliac, who flourished in the second half of the fourteenth century. He studied in letters and medicine at Toulouse and Montpellier, in anatomy at Bologna. The surgeon ignorant of anatomy, he says, "carves the human body as a blind man carves wood." The Arabs and Paris said: Why dissect if you trust Galen? But the Italian physicians insisted on verification. Guy was called to Avignon by Clement VI. During the plague of 1348 he stayed to minister to the victims, and did not himself escape an attack, in which he was ill for six weeks. His description of this epidemic is terrible in its naked simplicity. He gave succour also in the visitation of 1360. His *Chirurgia Magna* I have studied carefully, and do not wonder that Fallopius compared the author to Hippocrates and that John Freind calls him the prince of surgeons. The work is rich, aphoristic, orderly, and precise. Guy was a more adventurous surgeon than Lanfranc, as was Franco, a later Provençal, than Paré. He did not cut for stone, but he operated for radical cure of hernia and for cataract—operations till his time left wholly to the wayfaring specialists. In Guy the critical spirit was awake. He scorns the physicians of his day, "who followed each other like cranes, whether for love or fear he would not say." In respect of principles, however, Guy was not infallible. Too sedulous a disciple of Galen, he was as a deaf adder to the new message of Hugh, Theodoric, and Henry, and not only was he deaf himself but, as the authoritative master of the early renascence, he closed the ears of his brethren even to the day of Lister.

In the midst of the mainly Arabist professors of medicine of the fifteenth century arose Benivieni, the forerunner of Morgagni and one of the greatest physicians of the late Middle Ages. This distinguished man, who was born in 1448 and died in 1502, was not a professor but a doctor of medicine, a man of culture and an eminent practitioner in Florence. Although born in the new platonism he was, like Mondeville, one of those fresh and independent observers who surrender to no authority, to Arab nor Greek. Yet for us Benivieni's fame is far more than all this, for he was the founder of the craft of pathological anatomy. So far as I know he was the first to make the custom and to declare the need of necropsy to reveal what he called not exactly "the secret causes" but the hidden causes of diseases. Before

Vesalius, Eustachius, or Fallopius were born, deliberately and clear-sightedly he opened the bodies of the dead as keenly as any pathologist in the spacious times of Morgagni, Haller, or Senac, or of Hunter, Baillie, and Bright. Among his pathological reports are morbus coxae (two cases), biliary calculus (two cases) abscess of the mesentery, thrombosis of the mesenteric vessels, stenosis of the intestine, "polypus" of the heart, scirrhus of the pylorus, and ruptured bowel (two cases). He gives a good description of senile gangrene.

It would be unjust to forget that in the latter half of the fifteenth century Paris admitted some reforms; celibacy for physicians was abolished and with it diminished the allurements of prebends and rectories and the pernicious practice of the "médecins reclus," who did not visit patients nor even see them, but received visits from ambassadors who brought gifts and vessels of urine and carried back answers far more presumptuous than that wise counsel of Falstaff's physician. Still, not only was reform in Paris very grudging but it was capriciously favoured and thwarted by the French Court. The Faculty denied to St. Côme "esoteric" teaching, diagnosis, and the use of medical therapeutics—a jealousy which ended in the physician being requested to do little more than write the prescription. Aristotle was quoted as unfavourable to the "vulgarizing of science." Joubert was attacked for editing Guy in the vernacular. Fortunately, the surgeons were carried into the field of battle—a far better school than the Paris Faculty. Thus it was that in the opening of that great century in the history of the human mind—the sixteenth century—we find Italian medicine still in the van until the birth of the great French surgeons, Franco and Paré, and of Gersdorff and Würtz of Germany.

Franco, like Paré, was no clerk; he came of a class lower even than that of Paré and the barbers—the wayfaring class of bonesetters, oculists, plastic operators, and cutters for stone and hernia. These dangerous ventral operations and those on the eye, which but too often were swiftly disastrous, fell into the hands of wandering craftsmen, men usually of low origin, ignorant, reckless, and rapacious. As the truss was a very clumsy instrument—at any rate, till the end of the seventeenth century—the radical cure of hernia was in great demand. It is not the least of the merits of Franco that he brought these operations within the lines of responsible surgery, and thrust them into the ken of Paré and Fabricius. This illustrious provincial surgeon—"*ce beau génie chirurgical*," as Malgaigne calls him, in declining the task of entering upon so full a life—was born about 1503. He began as an apprentice to an operating barber and to a hernia specialist. He had no more "education" than Paré or Würtz, and he was spared the misfortune of a speculative intellect. He picked up some anatomy, educated himself by observation, experience, and manipulation, and as a simple operator or "master" won considerable renown. As upright and modest as Paré, though he never attained Paré's high social position, he submitted to call in the physician, and took his quiet revenge in the remark that the physicians did not know enough to distinguish good surgery from bad. Nicaise says roundly: "No surgeon made such discoveries as Franco." For hernia, stone, and cataract he did much more than Paré. Whether from incapacity or the brutality of habit, it had been the custom during the Middle Ages and down even till the middle of the seventeenth century, in operating for hernia, to sacrifice one or even both testicles—an abuse against which Franco took successful precautions, for he proved that the canal could be closed and the ring sutured without castration. In irreducible inguinal hernia he distinguishes between opening and not opening the sac, and describes adhesions of sac and intestine. From him, indeed, dates the rational operation for strangulated hernia, and in strangulated scrotal hernia he founded the method. Paré and, after him, Petit condemned the ablation of the testicle, which procedure, however, many surgeons thought quite good enough for priests, and Paré gives credit to Franco for these advances, though Fabricius does not even mention them.

The very eminence of Ambroise Paré encourages, if it does not command, me to be content with a few words of commemoration. Himself of humble origin, he won for surgery in France a social place and respect it had never attained before. Born in 1517, he became a barber's apprentice in the Hôtel Dieu, whence he followed the campaign of Francis I. against Charles V. As he could not write a Latin treatise his admission to St. Côme was, of course, opposed by the Faculty, but Paré stoutly declared that the vernacular tongue was essential to the progress of medicine. Riolan the elder, who had taken part in the opposition, wrote a tract on the other side in 1577 with the following insolent title: "Ad impudentiam quorundam Chirurgorum qui medicis aequari et chirurgiam publicè profiteri volunt pro dignitate veteri medicinae apologia philosophica." Now, at this time Paré was 60 years of age and surgeon to the King. If, in comparison with Paré, Haeser treats Franco somewhat slightly, and if in some respects Paré may not be lifted far above his great Italian contemporaries, such as Maggi, Carpi, or Botallo, yet, taken all round, the founder of modern surgery surely surpasses all the physicians of his time as an independent, original, and inventive genius, and as a gentle, masterly, and true man.

Yet I am often surprised to see, even to-day, the invention of ligature of arteries attributed to Paré, whose surprise, if our journals have an astral shape, must be greater still, seeing that he himself refers the ligature to Galen. The attribution is, of course, a legend. Malgaigne discreetly claims no more for Paré than the application of the ligature from wound surgery to amputations, but, in my opinion, even this claim goes beyond the truth of history. Celsus speaks of the ligature as an ordinary method in wounds; from Oribasius we learn that Archigenes of Apamea even tied vessels in amputation after fixing a tight band at the root of the limb. It seems, probable, indeed, that unless the application of a ligature were performed with modern nicety secondary haemorrhage must have been frequent; indeed, in 1773 Petit deliberately discarded the ligature, as Franco and Fabricius had done before him. Military surgeons considered even Paré's "ligature en masse" as too delicate a method for the battlefield. It is a more intelligent service to a great man to point out that the ligature and other operative details were no mere incidents, but steps in a large reform of method in amputation—a reform made imperative by the ravages of firearms, which could not be covered up with galenisms.

To turn to Germany: Paracelsus (born 1491) was a surgeon and no inconsiderable one. Had this extraordinary man been endowed with a little patience he would have been a leader in wound surgery, though, like Würtz, he was not an operator. He pointed out not only the abuse of the suture by the surgeons of the day, but also that suppuration is bad healing, for, if left to herself, Nature heals wounds by a "natural balm"—a phrase which Paré adopted. In his *Grosse Wündarznei* he says he began at the surgical because it is the most certain part of medicine, and time after time he rebukes those who withdraw medicine from surgery. Brunschwig was the first surgeon to write upon the surgery of gunshot wounds with any fullness or precision. He held, as Vigo after him, that a gunshot wound was a poisoned wound, and, to eliminate the poison by free suppuration, used the medicated tents, or, in case of through penetration, the setons which were to arouse the angry antagonism of Würtz. Felix Würtz, like Franco and Paré, had the good fortune to escape a scholastic education; he was lucky enough, however, to enjoy the liberal education of Gesner's friendship and to listen to the fiery disputes of Paracelsus. Gifted with an independent and penetrating mind, he is as fresh and racy as Henry of Mondeville had genius enough to be in spite of the schools. Like all his compatriots, he wrote in the vernacular, and for its originality and conciseness Würtz's *Practica*, published in 1563, stands in a very small company. Had he known as much anatomy as Paré—his defect in which he bewails—he might have been as great a man, for his clinical advances were both new and important. He protests against the kind of examinations for practice held in some cities where candidates patter off cut-and-dried phrases like parrots, while apprentices "play upon the old fiddle the old tune continually." By setting his face against cataplasms and grease he made for progress, though neither he nor Paré attacked suppuration in principle as Theodoric and Henry had done. His chief title to fame—a fame far less ripe, of course, than that of Sydenham, but, as it seems to me, not unworthy to be remembered beside it—lies in his clinical acumen, and especially in his conception of wound infections and their results. His description of diphtheria is especially remarkable.

England—if by England we mean no more than the Isles of Britain—makes no great show in medi æval or renascence surgery. Arderne was probably a far better surgeon than Gilbert, or John of Gaddesden, but he is little more than a name. Nor does it do to peruse Thomas Gale (1507-1586?) after Mondeville, Guy, Paré, Würtz, or Maggi. Gale's merit lies mainly in the chapter on the Wounds made by Gonneshot in the third part of his *Surgery*, as he also withstood

"the gross error of Jerome Brunswicke and John of Vigo, that they make the wound venomous."

With the sixteenth century my survey must end. From this time medicine entered upon a new life, upon a new surgery founded on a new anatomy and on a new physiology of the circulation of the blood and lymph. These sciences, thus renewed, not only served surgery directly, but by the pervading influence of the new accuracy of observation also indirectly modified the traditional doctrines of physicians unversed in methods of research, as we observe in the objective clinical medicine of Sydenham. Our physiologists tell us that destruction is easy, construction difficult; but in the history of medical dogma this truth finds little illustration. So impatient is the speculative intellect of the yoke of inductive research, so tenacious is it of its castles in the air, that no sooner did Harvey, by revealing the mechanics of the circulation, sap the doctrines of the schools, than some physicians instantly set to work to run up the scheme of iatro-physics, others to build a system of iatro-chemics, but upon Von Helmont rather than on Willis and Mayow, while Hoffmann and his school resuscitated the *strictum* and *laxum* syllogisms of the Greek methodists.

In this sketch of the past—a sketch necessarily indiscriminate but not, I trust, indiscreet—we have seen that up to the time of Avicenna medicine was one and undivided; that surgery was regarded truly not as a department of disease but as an alternative treatment of any disease which the physician could reach with his hands; that the cleavage of medicine, not by some natural and essential division but by paltering to false pride and conceit, let the blood run out of both its moieties; that certain diseases thus cut adrift, being nourished only on the wind, dried into mummy or wasted in an atrophy, and that such was medicine; while the diseases which were on the side of the roots, if they lost something of their upper sap, were fed from below, and that such was surgery. Thus the physicians who were cut off from the life-giving earth, being filled with husks and dust, became themselves stark and fantastic. Broadly speaking, until the seventeenth century pathology was a factitious schedule and medicine a farrago of receipts, most of them nauseous, many of them filthy, most of them directly mischievous, all of them indirectly mischievous as tokens of a false notion of therapy. This is the truth I have tried to get home to you: that in the truncation of medicine the physician lost not only nor chiefly a potent means of treatment; he lost thereby a method; he lost touch with things, he deprived his brains of the co-operation of the subtlest machine in the world—the human hand—a machine which does far more than manufacture, which returns its benefits on the maker with usury, blessing both him that takes and him that gives. Pure thought, for its own sake, especially in early life, when the temptation to it is strong and experience small, seems so disinterested, so aloof from temptation of gain, that in the history of ideas speculation and the construction of speculative systems have played but too great a part and have occupied but too many minds of eminent capacity.

In the minds of academical teachers the notion still survives that the theoretical or university form and the practical or technical form of a profession or trade may not only be regarded separately and taught in some distinction—which may be true—but in independence of each other; nay, that the intrusion of the technical quality by materializing degrades the purity or liberality of the theoretical—that, indeed, if he had not to get his daily bread the high-minded student may do well to let the shop severely alone. Thus the university is prone to make of education thought without hands; the technical school hands without thought; each fighting shy of the other. But if in a liberal training the sciences must be taught whereby the crafts are interpreted, economised, and developed, no less do the crafts, by finding ever-new problems and tests for the sciences, inseminate and inform the sciences, as in our day physics are fertilized by the fine craft of such men as Helmholtz, Stokes, Rayleigh, and Kelvin, and biology by Virchow, Pasteur, and Lister.

If it be true, as I have been told, that the University of Birmingham has a coal mine upon the premises, I am ready to believe that the craft of coal-getting by carrying practice into thought will fortify the web of theory. There exists no doubt the contrary danger of reducing education to the narrow ideas and stationary habits of the mere artisan. By stereotyped methods the shop master who does not see beyond his nose may cramp the 'prentice and the 'prentice becomes shopmaster in his turn. We need the elevation, the breadth, the imagination which universities create and foster; but in universities we need also bridges in every parish between the provinces of craft and thought. Our purpose must be to obtain the blend of craft and thought which, on the one hand, delivers us from a creeping empiricism, and, on the other, from exorbitant ratiocinations. That for the progress and advantage of knowledge the polar activities of sense and thought should find a fair balance is eminent in great examples of mankind. Moreover, it is apprehended in the reciprocal tensions of faith and works, of hypothesis and experience, of science and craft. In our controversies on theory and practice, on universities and technical schools, on grammar and apprenticeship, we see their opposite stresses. The unison is far from being, as too often we suppose, one merely of wind and helm; it is one rather of wind and wing; it consists not in a mere obedience of hand to mind, but in some mutual implication or generative conjugation of them. How these two forms of impulse should live in each other we see in the fine arts—in the swift confederacy of hand and mind in Dürer and Michael Angelo, Rembrandt, Velasquez, Watteau, and Reynolds. The infinite delicacy of educated touch is almost more incredible than the compass of imagination. When they unite in mutual creation no shadow is too fleeting, no line too exquisite for their common engagement and mutual reinforcement. Michael Angelo and Leonardo da Vinci, the greatest craftsmen, perhaps, the world has seen, were as skilful to invent a water engine, to anatomize a plant, or to make a stone-cutter's saw, as to build the dome of St. Peter above the clouds of Christendom.

Solve the problem as hereafter we may, now we can take heed at least that energy shall not accumulate about one pole or the other. Our little children have a message to us if we would but hearken to them. Every moment they are translating action into thought and thought into action. Eye, ear, and hand are incessantly on the watch and in pursuit, gathering incessantly for the mind the forms of thought which as rapidly issue again in new activities. If, as we mature, we gain the power of restraint, it is not that we shall cease to act, that the mind shall depose the hand, but that these variables shall issue in a richer and richer function. If we forget the hand, that cunning loom which wove our minds; if we thrust our hands into our pockets, and turn our eyes inwards, will our minds still truly grow? That by virtue of the opposable thumb monkey became man is no metaphor; in its measure it is sober truth. For the last millennium too much thinking has been the bane of our profession; we have made it a point of honour to ignore the hands out of which we were fashioned, and in this false honour to forget that the end of life is action, and that only by action is action bred. While we are professing to admire Bernard Palissy or Jean Groujon, the mediaeval mason or the mediaeval goldsmith, we are still acting as if fine arts only are fine, and the mechanical arts base, whereby we blind ourselves to the common laws of growth which know not these distinctions, and bring barrenness on those who make them. We wean our children from the life of imaginative eyes and of thoughtful fingers; instead of teaching them to rise from simple crafts to practical crafts, to scientific crafts or to lovely crafts, and thus to pursue the mean of Nature herself, we teach them the insolence that, except in sport, the mind should drop the acquaintance of the fingers. Shall we wonder, then, that in this generation bold men call English people stupid, all stupid save those few men of genius or rich talent who, like Gilbert, Harvey, or Darwin, were great enough to be true to eye and to hand and to breed great conceptions by their intimate coition with the mind? Shall we wonder that medicine fell into sterility when by most unnatural bonds surgery, her scientific arm, was tied behind her and her sight was turned inwards from processes to formulas? Shall we wonder that even in the eighteenth century, when medicine had begun to occupy itself in the crafts of pathology and chemistry, one visionary after another, striding in long procession athwart the barren wilderness of physic, wasted his generation in squeamish evasion of the things that happen and in vain pursuit of vacuous unities? Yet if to the high stomachs of our forefathers surgical dabblings were common and unclean, there remained still some eyes curious enough and some fingers dexterous enough to carry the art back to the skill of Hippocrates, and forward to the skill of Lister, and by the mouths of barbers and cutters rather than of the pharisees of the colleges Medicine breathed her lowly message to her children.

SEVENTY-SECOND ANNUAL MEETING
OF THE
British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF SURGERY.

H. P. Symonds, F.R.C.S.Edin., President of the Section.

THE PRESIDENT'S ADDRESS.

THE PRINCIPLES OF MODERN SURGERY.

In welcoming the members of the Association who are to take part in the proceedings of this Section, there is very little need for me to detain you from the important work which falls to be done during the next few days. In looking over the long list of papers to which we are to listen, we are again struck with the enormous importance of the modern principles of aseptic and antiseptic surgery enunciated by Lord Lister, and I think that the officials of the Section have only recognized the paramount importance of these principles in arranging that our work shall commence with a general discussion of them. For it will be seen that scarcely any of the work which the papers which are subsequently to be read in this Section deal with could have been done without the practice of Listerian surgery. We must, therefore, again do honour to this great worker, who has not only been the means of enormous saving of life, but who has shown an example to all in the gracious dignity with which he has borne the honours which have crowned his work.

Those who have only within recent years joined the ranks of surgeons have very little idea of the enormous advances which have been made during the last thirty years. When I commenced the study of surgery in 1869, only operations for the immediate saving of life were undertaken. This was due to the great mortality which followed operations from pyaemia, septicaemia, and erysipelas. However, just at that time in the Radcliffe Infirmary here, a beginning was being made with the more modern methods. How different these were from what is now practised may be judged of by the fact that cases of psoas abscess, interference with which was then beginning to be considered justifiable, were opened under a veil of strong carbolic oil. This was with the idea of preventing air coming in contact with the wound. Then carbolic oil was also used for other wounds. The treatment gave great pain, but certainly the results were better than under the former treatment, which consisted in the application of linseed poultices until the abscess burst, and the subsequent dressing of the wound with simple water dressing. In ordinary operations of that period I do not remember primary union taking place at all. Nor was our experience here exceptional.

It was shortly after this that the Franco-Prussian war broke out, and there I had opportunities of seeing a large number of the wounded in the German hospitals. There there was practically no form of antiseptic used, charpie being simply sprinkled over the wound. The mortality was very great indeed, in fact, no case of secondary amputation was at that time reported to have recovered. And the only cases of severe blood poisoning where recovery occurred were those that were treated entirely in the open air, the patients being put under shelters in parks and gardens. Shortly after this period, somewhat better results were obtained by treating cases with a continuous irrigation with water. When the more strictly Listerian precautions began to be adopted, a marked change occurred. The technique was, as you know, at first somewhat cumbersome, and only those who have gone through the experience are able to realize the difficulties which those who first carried out the principles in hospital had to face. But one great advantage of those days was that the surgeon had to look after all his preparations himself, down to the most minute details. This, probably, had much to do with the great success which attended the antiseptic practice in those early days. And this success applied not only to cases which were isolated from one another but even to cases in hospital wards where every description of case was admitted.

The great triumph of modern surgery lies in this, that whatever operation has to be undertaken, we may say with almost absolute certainty that if the modern precautions are properly carried out there is a moral certainty that the patient shall not be exposed to any risk from micro-organisms coming from the outside. The result is not only that operations which formerly were quite unjustifiable can be undertaken with certainty, but that operations of an exploratory nature can be performed to aid both the surgeon and physician in diagnosis.

The aspect of surgery in which improvement is still to be made is in dealing with cases which are already septic before they come under the notice of the surgeon. With regard to some of these, I think it is a question whether an improvement in results might not be obtained by treating them as nearly as this climate will allow in the open air. The climate of the Alps is already utilized for this purpose in treatment of tuberculous affections. At mid-day invalids remain out of doors in the sun, although the shade temperature may be below freezing. The possibility of the extension of such treatment to surgical affections is suggested by an experience of Ambroise Paré in an Alpine campaign, now many hundred years ago. At that time blood poisoning was prevented by pouring into the wound boiling oil. On one occasion the supply of oil became exhausted, and with great anxiety Paré arose early in the morning to see the condition of the patients who had not had the benefit of this approved treatment. To his relief, he found that those patients who had not been treated with boiling oil, but whose wounds had been exposed to the fresh air of the mountains, were really in a better condition than those who had been treated.

Whether in the treatment of septic cases an improvement in the results can be obtained by the use of antistreptococcic serum has yet to be proved. Much experimental work has been done along such lines, and it is to be hoped it will be attended by satisfactory results. Many of you will have been interested in noticing its recent development in the establishment of the preventive methods which Mikulicz has lately described. This surgeon has suggested that by the injection of nucleic acid, or even of normal saline solution, an artificial hyperleucocytosis may be produced which may combat a bacterial invasion, even when this has already made itself manifest, such as is the case in many conditions connected with the stomach and intestines which demand surgical interference.

From the work that has lately been done, we observe that outside the surgical clinic itself the physiological and bacteriological laboratories form the best training ground for the modern surgeon, keeping in mind and following as nearly as possible the Pasteur dictum that "Scientific experiment permits of nothing but absolute proof."

A DISCUSSION
ON THE PRESENT POSITION OF THE ASEPTIC TREATMENT OF WOUNDS.

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I am deeply conscious of the honour that has been paid me in asking me to open this discussion before so distinguished an audience, but I feel that I owe an apology to this meeting for the imperfect manner in which that important duty will be performed. I may urge in extenuation, however, that the invitation was only received a fortnight ago, and that the calls upon my time have prevented me from devoting as much time to the preparation of my contribution as the nature of the subject deserves. However, I have the satisfaction of knowing that there are so many distinguished surgeons desirous of taking part in the discussion, that my deficiencies will be more than made good, and that the only real cause for regret will be the absence of my friend and colleague, Professor Watson Cheyne, who should have opened the debate.

The object of this discussion is to review the present position of the aseptic treatment of wounds, using the phrase in the true sense of the term, which I may perhaps be allowed to define, as there is still some confusion upon the point. By the term "aseptic treatment of wounds," we mean all those precautions that the surgeon takes to prevent the access of pathogenic bacteria to wounds that he has made through unbroken skin. Another very important object is to neutralize or diminish as far as possible the ill-effects pro-

duced by any organisms that may have gained access to the wound during the course of the operation in spite of these precautions. In other words, the term embraces all the measures adopted to keep the wound aseptic or free from the ill-effects of septic organisms throughout its entire course. The term "antiseptic," on the other hand, when applied to the treatment of wounds, should be reserved for those measures designed to combat sepsis already present in a wound; this latter part of the subject does not come within the scope of this discussion, and will not therefore be touched upon. I venture to call attention to these definitions because those who, like myself, employ antiseptic lotions during the course of an operation, and dressings impregnated with antiseptics subsequently, are often said to belong to the "antiseptic" school as opposed to the so-called "aseptic" school, the members of which do not use antiseptics either during the operation or in their dressings. It is needless to say that we all claim to be looked upon as "aseptic"; our end is the same, though our means of attaining that end differ in certain important particulars.

Since Lister introduced aseptic surgery, steadily improving results have been obtained by all who have followed him. At first the chief object was to reduce the previously great mortality from septic poisoning, until, as the principles underlying his teaching became better understood, death from sepsis after operations through unbroken skin has become increasingly rare. Although it would be obviously an exaggeration to say that at the present time such cases have quite disappeared from surgical practice, yet it is recognized that they are preventable, and their occurrence is due to mistakes upon the part of the operator or his assistants. Moreover, it is recognized that immunity from serious septic disease may be obtained with various methods of wound treatment.

Nowadays, however, surgeons judge their results by a higher standard than mere recovery. The modern surgeon is not satisfied with knowing that, even should suppuration occur in his wounds, it will be subacute and local, and at the most will lead to the extrusion of buried sutures or to the healing of the superficial parts by a process of granulation. The wound must not only heal by first intention throughout, but there must be no redness or swelling about its margins, nor must there be any signs of irritation along the stitch-tracks; pus in this situation at once reduces the case to the rank of a septic wound.

Still more exacting are those who, in spite of the absence of all signs of suppuration, or even inflammation, will not class a wound as aseptic unless it and its immediate surroundings are bacteriologically sterile. This high standard, although worthy of all praise as a means of education, goes somewhat beyond the requirements of the ordinary operating surgeon. All that the latter asks for is a method of treatment which, while simple and readily adaptable to the varying circumstances of everyday practice, will allow him to feel reasonably certain that, with due care, any wound that he makes through unbroken skin will run a clinically aseptic course and heal by first intention, however extensive the operation may have been. It is about the best method of meeting these stringent demands that there is a difference of opinion among the schools of surgical technique. There is no real question of principle involved; the difference is in the detail, and it is as well to remember that, other things being equal, preference should be given to the method that is simplest and most readily adaptable to the exigencies of everyday practice. It is an old saying that he is the best surgeon who obtains his results by the simplest means. What surgeons want is not necessarily what is theoretically the best, but what is likely to give the best results to the greatest numbers. Since there is no real difference in the principles underlying the various methods in vogue at the present day, it is to details that I shall direct your attention.

Paths of Infection.—Before planning a method of aseptic treatment the surgeon has to consider what are the paths by which pathogenic bacteria may gain access to a wound. Wounds may become infected in three principal ways. The first in importance is infection from the skin, either of the surgeon or his assistants, or perhaps, even more important still, from that of the patient himself. The skin collects and retains not only organisms that are usually found in connexion with it, but dirt and dust, which is so intimately ground into the comparatively rough epidermis that its complete removal is a matter of difficulty. Some surgeons even say that it is impossible, since the organisms are not confined to the surface of the skin, but penetrate deeply into its substance along the follicles and the ducts of the sweat glands from which it is impossible to extract them. This may be true of the cocci peculiar to the skin, which, however, are non-pathogenic, but I cannot find any convincing evidence that pathogenic bacteria are usually found in these situations. Organisms doubtless often lie at some distance from the surface, but this is specially the case where the skin is rough, thick, and thrown into folds and cracks, as, for example, in the case of the nails, the scalp, the front of the knee, etc.

The next path of infection is by way of objects that come into contact with the wound at some time during the operation, such as the instruments, the sponges, the sutures and ligatures, and the towels surrounding the field of operation.

Lastly, infection may reach a wound from the air. The air of operating theatres has been tested many times by exposing culture media to it, and has been found, like the air elsewhere, to be rich in organisms, some of which must therefore find their way into the wound during the course of an operation. It is true that the great majority of these organisms are non-pathogenic, but there is no certainty that they always are, and it is only reasonable to suppose that the air of a crowded hospital must contain a relatively high proportion of pathogenic bacteria. With new operating theatres with glazed walls and floors that can be flushed with a hose this danger will no doubt be lessened, but it nevertheless exists.

Disinfection.—There are two means by which these organisms can be destroyed, namely, heat and chemicals, and a few words may be devoted to the relative advantages of the two. Sterilization by means of heat is the most certain of all methods, and it may be carried out in one of three ways; it may be by moist heat (or boiling); it may be by dry superheated steam, or it may be by dry hot air. The last method is not likely to come largely into use owing to the high temperature required and the complexity and expense of the apparatus necessary. The two other methods are both satisfactory, provided that certain points are observed.

Sterilization by boiling is the simplest plan of all, and is quite reliable, provided that the articles are boiled for a sufficient time. All instruments, towels, cloths, silk or silkworm gut boiled for twenty minutes to half an hour in water containing a teaspoonful to the pint of common washing soda may be regarded as absolutely sterile, however virulently they may have been infected previously. A shorter period than this would suffice in many cases, but spore-bearing organisms require prolonged boiling for their complete destruction, and half an hour should be allowed so as to make sure. The length of time required for the complete sterilization of an instrument by heat constitutes the weak point in this method. Inconvenience is not very likely to arise before an operation: the difficulty arises when the surgeon during the course of an operation wants an instrument that has not been previously boiled. Usually the attendant at once takes it from its cupboard, plunges it into the sterilizer, and leaves it there until the surgeon calls for it to be handed to him. It may have lain in the sterilizer for two or three minutes; it may have been there for only a few seconds; there is no guarantee that it is aseptic. Concerning boiling we may say that it is easy to effect and perfectly reliable. Its drawback is that it is only applicable to certain things. A minor disadvantage of it is that sharp instruments, such as knives, needles, scissors, are often ruined by the process.

Sterilization by dry superheated steam, if properly carried out, is as efficient as sterilization by boiling, but it is likely to fail unless care be taken to see that the superheated steam circulates freely to all parts of the structures to be sterilized. In some hospitals all the towels, abdominal cloths and swabs, etc., are sterilized by this method, and are usually put into the sterilizer packed tight in metal boxes, through which the superheated steam must find difficulty in circulating freely. It is well known that many errors have occurred in connexion with this process. I myself have seen a portion of a candle exposed unaltered in the middle of a packet of so-called sterilized dressings after they had been submitted to superheated steam in a large sterilizer in one of the London hospitals; and if this can happen with the expensive apparatus to be found there, it is still more likely to occur when the sterilizing is done in the top of one of the small low-pressure sterilizers that are to be found in cottage hospitals, nursing homes, and private practice. I therefore reject the use of superheated steam for the disinfection of anything but utensils, chiefly because, however efficacious the method is theoretically, it is impossible to rely upon its being always

efficiently carried out, whereas one can be perfectly certain in the case of boiling. Of superheated steam we may say that it ranks with boiling in certainty, and the disinfected articles come out of the sterilizer dry—a manifest advantage in the case of bowls and trays; but the process is liable to error, and requires more careful supervision than does sterilization by boiling; indeed, an expert person is required for the work.

This brings us to the question of chemical antiseptics, which are so much used for disinfection of the skin, where, of course, heat is inapplicable. It is about the merits of these that much of the dispute arises at the present time; some surgeons, like myself, use them fairly largely in an operation, others very little, while a few go to the opposite extreme and deny them any virtue at all. Of course antiseptics in the strength in which they would be almost immediately deadly to all organisms are inadmissible, because of the injury they would produce upon the tissues. In the strength ordinarily used, the chief antiseptics—carbolic acid, corrosive sublimate, bichloride of mercury, and formalin—admittedly take some time to exert their effects, and that is a disadvantage; also they must have good access to the bacteria or they are powerless. Moreover, while they act fairly rapidly against the majority of bacteria, they have comparatively little effect upon the spore-bearing organisms. Luckily, however, most of these latter are non-pathogenic, and this is not really an argument against the use of chemical antiseptics. The chief argument brought against them is that, besides being lacking in bactericidal power, they damage the vitality of the tissues when introduced into a wound, and thus may be an actual source of harm, for they may prevent the tissues from dealing with any organisms that may have gained access to them, while failing to inhibit the growth of the organisms themselves.

This is a serious indictment, and if proved would suffice to condemn the use of antiseptics during an operation. Everyone will admit that to pour strong antiseptics into a wound must undoubtedly damage the tissues and this, therefore, should not be practised in aseptic cases; but ample experience has shown that no bad results follow the introduction of the small amounts of dilute antiseptics that occurs in the method we employ at King's College Hospital, and as, in addition, there is at least the possibility that they may exert an inhibitive influence on the development of bacteria, I see no reason for discontinuing their use. The methods of purification of the hands and skin will be dealt with later.

Having thus considered the possible sources of infection and the means by which they can be overcome, it will be well to proceed to the details of the operative technique based upon them.

The ideal method of guarding against infection from all these sources would be to operate in an air-tight glass chamber large enough to contain the patient, the persons, and the apparatus concerned in the operation, and supplied with sterilized air through satisfactory filters; while the spectators, who can see through the walls of the chamber, are at the same time precluded from encroaching upon the operation area. All those taking part in the operation would be entirely clothed in garments sterilized by heat, and would wear, in addition, sterilized rubber gloves, sterilized caps, and sterilized coverings for the nose, mouth, and beard. All clothing about the patient would also be sterilized, as well as the instruments, swabs, towels, ligatures, etc., bowls, and basins. This would only leave the disinfection of the patient's skin to be provided for, and would presumably be accomplished partly by prolonged washing with soap and water, and possibly with some strong antiseptic. This ideal method can hardly be carried out even in the best-equipped hospitals, although attempts in that direction have actually been made, and large sums of money have been spent upon them. Even if such a condition of perfection could be reached, however, it would be detrimental to surgical progress, for, although it might lead to slightly improved healing in a wound, it would be the reverse of beneficial to surgical treatment as a whole, since it would place those who have not similar conveniences at their command at a very serious disadvantage, for if they have never been brought up to deal with any other methods, they will not be likely to cope properly with the emergencies that they may have to face. I need not spend more time in discussing this method. It is practically beyond the reach of present-day conditions, and its mere complexity is sufficient to condemn it.

The method most in vogue at the present time is that in which disinfection is chiefly effected by heat, while the use of chemical antiseptics during and after the operation is avoided. In the third method that I shall mention—the one that I prefer—heat is also used for sterilizing certain materials that can be boiled without injury, whilst in addition antiseptic lotions are used during the course of an operation, both for soaking the towels surrounding the field of operation, for the sponges, and also for rinsing the hands and, to a very limited extent, for the occasional washing out of the wound. Moreover, antiseptics are used in the dressings applied at the end of the operation. It is upon the relative merits of these two latter methods of treatment that the discussion will probably turn to-day, and it will, therefore, perhaps be well to compare these before proceeding to deal in detail with the steps of the methods.

When antiseptics are not used during the course of the operation the instruments and the silk and silkworm gut used for sutures or ligatures are sterilized either by boiling or by exposure to superheated steam; they are then laid out either upon a dry sterilized towel or a dry sterilized dish, or else they are immersed in sterilized water or normal salt solution where they remain untouched by any antiseptic throughout the operation. All the towels, the surgeon's overalls, the abdominal cloths, and any other objects likely to touch the wound or the field of operation are similarly sterilized, and, instead of sponges, masses of sterilized absorbent wool wrapped in muslin or gauze are used as swabs. Generally also the dishes, bowls, and trays that are to be used during the operation are treated in a similar manner. The swabs are sterilized in a suitable packet of Gamgee tissue or in a sterilizing box or in a sterilized basin, and in that they are handed to the surgeon, who selects his swabs as he wants them.

Disinfection of the skin is effected much in the same way by those who do not use antiseptics during the operation as by those who do. The steps of this I shall mention in detail later on.

Finally, there remains only infection from the air to be provided against, and here those who reject the use of antiseptics during an operation disregard the chances of infection through the atmosphere almost entirely. They provide the theatre with an air filter designed to supply warmed and purified air during the course of an operation, and they aim, further, at reducing the dust to a minimum by having the operating room as bare as possible both of furniture and spectators.

After the operation dressings are applied which consist of simple absorbent gauze, wool, or muslin sterilized either by dry or moist heat, and containing no antiseptics whatever.

As an example of the method in which antiseptics are used, let me briefly enumerate the methods that I employ and the reasons for them. All instruments, except the sharp steel ones, such as knives and needles, are disinfected by boiling for half an hour; needles and knives are plunged in liquefied carbolic acid, which is a very rapidly acting and most powerful antiseptic, for five minutes; and this is also done with any instrument required for use during an operation which has not been disinfected by boiling beforehand. After disinfection all instruments lie in a 1 in 20 carbolic lotion. Ligatures are of Lister's chromic catgut, and are soaked in a 1 in 20 carbolic solution for at least a week before use. Silk and silkworm gut are sterilized by boiling first of all, and are then kept in 1 in 20 carbolic acid. Instruments, ligatures, and sutures are dipped in 1 in 2 000 sublimate solution to wash off the carbolic acid before they are allowed to touch the wound. The hands and the patient's skin are disinfected in the manner that I shall describe immediately. The field of operation is surrounded with towels that have been boiled, and then immersed in a hot 1 in 2,000 lotion. Marine sponges are used throughout the operation, purified in the manner I shall mention directly, and rinsed out in 1 in 2,000 sublimate solution during the course of the operation. The operator and his assistants also rinse their hands repeatedly in a similar lotion. After the wound has been closed, dressings impregnated with double cyanide gauze wet with 1 in 4,000 sublimate solution are applied.

It will thus be seen that, apart from details, such as the use of sponges and catgut, the chief difference between the two schools lies in their treatment of the question of aërial infection. The surgeon who relies upon heat sterilization and rejects antiseptics takes little account of this. The surgeon who favours the use of antiseptics during the course of an operation, however, provides against aërial infection in a systematic way. He realizes that it is not only the small superficial area of the wound that is open to the deposit of organisms from the air, but that the larger area comprised

in the towels surrounding the field of operation, the hands of the operator and his assistants, the surrounding skin and the instruments, the trays or towels upon which they lie, and even the sponges or swabs themselves may become contaminated from the air, and may, in turn, contaminate the wound. Therefore, he tries to neutralize this by having all the towels surrounding the area of operation thoroughly wetted in an antiseptic solution, so that anything falling upon them may be "fixed," and possibly rendered inert; and, moreover, he keeps his instruments in similar antiseptic solutions after sterilization, and likewise the sponges that he employs during the operation. In addition to this, he provides a means of keeping the hands constantly aseptic by rinsing them during the operation in a bowl of antiseptic, placed conveniently near the field of operation. Lastly, he may wash out the wound occasionally with a dilute antiseptic, although increasing experience shows that this is perhaps the least important part of the method. After the operation the surgeon uses dressings impregnated with antiseptics, which are designed to retard the development of any pathogenic or putrefactive organisms that may have accidentally gained access to the wound or its immediate neighbourhood.

Having thus briefly indicated the two chief methods in use, there remain a few points of detail to discuss, the first being the disinfection of the skin.

Disinfection of the Skin.—The majority of surgeons are agreed that chemical disinfection must be relied upon here, and a great number of methods have been introduced. Most observers have come to the conclusion that simple washing, no matter how careful or how prolonged, is quite powerless to produce complete asepsis. It is only fair to say that certain observers also say that the use of chemical antiseptics is also unable to secure asepsis with any uniformity. Those who hold this view have no alternative but to operate in sterilized gloves, which should preferably be of rubber. Many surgeons use them; personally I think them objectionable for several reasons. In the first place, it is very hard to acquire the requisite manual dexterity with them, even after long practice. In the second place, they are always liable to injury from the instruments or from rough edges of bone or from the needle-points, and then the danger is great, as there is an admittedly undisinfected hand within them. In my opinion, the use of these gloves should be confined to virulent septic cases in which the surgeon desires not only to avoid infecting any aseptic case upon which he has to operate subsequently, but also desires to avoid septic infection of his own hands. Gloves are also useful for sisters and dressers, who can thus hand sponges or instruments in perfect safety.

The skin is admittedly difficult to disinfect, and all experience shows that its satisfactory disinfection is a matter of patient and thorough application. Every one who has worked at aseptic surgery must have found that, as time has elapsed, his efforts in this direction have met with increasing success, and he must be struck with the fact that where the skin is thin, supple, and free from hard epidermis the amount of cleansing required for disinfection is much less than where the operation has to be done in the neighbourhood of rough, scaly, fissured or hairy skin, such as is found, for instance, in the perineum or the front of the knee. In actual practice I have found little difficulty in the disinfection of my own skin. After repeated trials and careful observation I prefer the following method for the hands: The nails are cut close and all dirt is removed from beneath them. Then the hands are scrubbed for five minutes with a nail-brush and soap made with pumice powder. This acts as a mechanical cleansing process, rubbing down dead epithelium and removing roughness from the hands. The hands are then dried and immersed in turpentine in order to remove all fat, and subsequently the turpentine is washed off with soap and nail-brush in a running stream of hot water for at least three minutes longer. Finally, the hands, still wet, are immersed for two minutes in a solution that we call the "strong mixture," which is a 1 in 20 watery solution of carbolic acid with $\frac{1}{500}$ part of corrosive sublimate added. A final rinse in a 1 in 2,000 sublimate solution washes off the strong lotion, and the surgeon is ready to commence the operation. The hands are not dried subsequent to the immersion in the antiseptic. The whole process takes at least ten minutes.

A somewhat similar procedure is followed in disinfecting the patient's skin. When possible, the skin is prepared some hours before the operation, first by shaving, then by a thorough wash with soap, warm water, and a soft nail-brush (sterilized by boiling), after which it is dried with cyanide gauze. Then turpentine is poured over the cleansed area, and this is washed away with strong mixture, nail-brush, and soap, which in its turn is washed off with 1 in 2,000 sublimate solution. Over the whole purified area several layers of gauze, wet with 1 in 2,000 sublimate solution, are placed, and the dressing is bandaged on and allowed to dry; no gutta-percha tissue is placed outside it. This dressing is left on until the patient is on the table, when it is removed and a fresh purification is carried out, and a piece of gauze dripping in 1 in 2 000 sublimate lotion is laid over the wound area until the surgeon is ready to begin. If this method of purification be carried out with thoroughness I can vouch for its absolutely uniform success from personal experience. In a large experience of the method, both in hospital and private practice, I have seen very little skin irritation result from it.

Sponges.—This is another point on which the two schools of aseptic surgeons differ in practice. Those who reject antiseptics use swabs sterilized by superheated steam; we who use antiseptics prefer the ordinary marine sponge, which is constantly wet with a 1 in 2 000 sublimate solution. Those who use sponges reject swabs, partly because they do not absorb blood with the same facility; partly because the swabs, as commonly used, are disinfected by dry, superheated steam, and are therefore liable to be only partially disinfected; and partly, also, because threads and pieces of the swab are apt to be left in the wound, and may be a serious source of irritation should pathogenic organisms have also found entrance. Another reason is that the swabs are dry, and therefore are liable to receive infection from the air and to transmit it unchanged to the wound.

Most people who have worked with both sponges and swabs will, I think, agree as to the superiority of the sponge in absorbing blood. The reason that has led many surgeons to abandon the marine sponge is the impression that it cannot be made absolutely aseptic. I believe, from a long experience, that such fears are groundless. I always use marine sponges in aseptic cases, and I have never had reason to suspect their perfect aseptcity; and, if they are properly prepared, there is no objection to their use. After the new sponges have been freed from mineral matter in the usual way, they are immersed in a 1 in 20 watery solution of carbolic acid in a glass jar with a dust-proof cover, and in this they lie until required for use, when they are taken out of the jar with forceps and dropped into a 1 in 2,000 sublimate solution, in which they remain throughout the operation, and out of which they are frequently squeezed in order to free them from blood, etc. Three or four times during the course of the operation the bowl of lotion in which they lie is changed, although this is not absolutely essential. By these means the sponges are kept clean, and the antiseptic in them is constantly renewed. At the same time very little antiseptic reaches the wound, as the sponge is squeezed by the assistant each time it leaves the basin and before it reaches the wound. In the hospital the sister, who purifies her hands as carefully as does the house-surgeon, squeezes and hands the sponges; in private practice the sponges are cleansed and squeezed by the surgeon or his assistant. Only three or four sponges are necessary, as they can be used over and over again after being rinsed; this renders it unnecessary to carry about a large number, while, however big the operation, there is no risk of the supply running short. The question of overlooking sponges, which has recently come into unpleasant prominence, can here offer no difficulty. After use, the sponges are rinsed several times in tepid water, after which they lie in cold water for twenty-four hours to free them from the coagulated fibrin, which would otherwise be difficult to remove. At the end of this time they are washed several times with soap and hot soda and water, then rinsed in clean water, and finally thrown into a jar of 1 in 20 carbolic solution, in which they must remain at least forty-eight hours before they are again used. This applies only to sponges that have been used for aseptic cases; we keep entirely different sets for aseptic, tuberculous, and for frankly septic cases. None of these sets are ever allowed to be mixed. If any sponge has become contaminated by sepsis it is at once committed to the group of septic sponges.

Ligatures and Sutures.—Silk and silkworm gut, which by many are used exclusively for ligatures and sutures, may be sterilized by boiling. The material does not undergo deterioration, and is thoroughly reliable. With us, silk is sterilized after winding it loosely on to reels upon which it is boiled for about half an hour. The reels are then dropped into a jar of 1 in 20 carbolic acid, with a dust-proof lid, in which they remain until they are required for use, when the silk is passed through a 1 in 2,000 sublimate solution before it reaches the wound. Some surgeons boil their silk each time before

use, but this renders it very brittle; if once it is rendered sterile by boiling, all that is necessary is to keep it in a reliable antiseptic afterwards. I do not find in practice that the little antiseptic it contains causes any irritation along the stitch tracks.

Many of those who rely on heat sterilization alone have abandoned the use of catgut—which is a very convenient material for ligatures—because it cannot be readily sterilized by superheated steam, and because the sterilization of catgut must be very perfect, as it is an animal structure infested with organisms. For many years past I have used Lister's chromic catgut for ligatures and some varieties of suture with excellent results, and I have never seen any reason for departing from its use. Undoubtedly it is safe to use fine silk for ligatures, but, as silk is a practically unabsorbable substance, there are possible disadvantages in crowding a wound with a number of these ligatures: and, although immediate healing may take place satisfactorily, at some future time there may be some extrusion of the suture, whereas, if catgut can be made absolutely sterile, it becomes absorbed in a comparatively short time, and therefore does not remain permanently as a foreign body in the wound. My experience of catgut proves that it can be made sterile with perfect regularity; it is only necessary to observe certain precautions.

In preparing our catgut it is wound from the hanks as it comes from the makers loosely upon reels which are immersed in a jar of 1 in 20 carbolic. This suffices to render the catgut quite safe so long as the antiseptic has sufficient time to gain access to the entire thickness of the material. It is therefore a rule that no catgut shall be used until it has been soaking in the 1 in 20 carbolic solution continuously for a week. This is the method that is carried out in hospital practice and which I have mainly followed in my own private practice, and I have never known any case in which there has been suppuration that could be traced to the faulty preparation of the catgut, except in two instances that occurred at the hospital, where the catgut was allowed to be used before it had been soaking for twelve hours. These cases occurred on the same day in the different wards and with different assistants, but with the same catgut used in the two cases, and inquiry elicited the fact mentioned above.

I have been recently trying in my private practice the sterilization of catgut by boiling it under pressure in xylol or absolute alcohol. This I have tried, not because I am dissatisfied with the results obtained from the catgut prepared in the ordinary way, but because the one inconvenience attaching to the catgut disinfected by immersion in watery solutions is that it swells up, and therefore it is difficult to get it fine enough for some purposes. This objection does not apply to catgut treated with xylol or absolute alcohol, and this makes a very excellent preparation. The other method is, however, simpler, at any rate for hospital purposes, and is quite satisfactory. Both silk and catgut are immersed in 1 in 2,000 sublimate previous to use to wash off the carbolic acid before coming in contact with the wound.

Preparation of Towels.—In the simple sterilization plan the towels are exposed to superheated steam and are then arranged round the field of operation dry. No antiseptic lotion comes into contact with them throughout the operation. In the method we practise we regard the towels as important factors in the prevention of sepsis from the air. We prefer to boil them in preference to using superheated steam, for the reasons I have already given. The towels are immersed in a hot 1 in 2,000 sublimate solution direct from the sterilizer, and from that are wrung out and laid round the wound area over thin jaconet mackintoshes. The object of these wet towels is to fix any dust that falls upon them, and, secondly, that, being wet with an antiseptic, they shall as far as possible destroy the harmfulness of any pathogenic organisms that may accidentally fall upon them. These towels are changed from time to time during a long operation. I have heard it stated that these wet towels must become cold and so chill the patient, and therefore are bad. As a matter of fact they are not in contact with the patient except just around the wound margins; elsewhere mackintosh intervenes, so that there is really little more risk of chill than from the edges of the dry sterilized towels, which must become wet with blood.

Dressings.—The two schools of treatment also differ with regard to the dressings. If it were possible to bring all wounds together by a subcutaneous stitch and to prevent any subsequent oozing of blood, no dressing whatever would be necessary; the edges would adhere rapidly, delicate scabs would form over the line of incision, and primary union would occur. Indeed, after proper disinfection of the skin and ordinary suturing, primary union would no doubt occur in the absence of any dressing, provided that the part were protected against friction from bedclothes, etc., and that no subsequent oozing took place. The case is different, however, when drainage has to be carried out, or when there is oozing from the wound which lasts for some time. Here there is a medium in which organisms from the air may develop, and infection of the deeper parts may take place from infection of the surface, either through the wound itself, if this gapes anywhere, or down the drainage tube, or along the stitch tracks. Hence some form of dressing is wanted in the majority of cases to soak up any discharge that may occur, and to protect the wound from direct contact with organisms from the air. Those of us who rely largely upon the use of antiseptics prefer dressings impregnated with an antiseptic such as double cyanide of zinc and mercury, not only because it insures perfect asepticity of the dressing when it is put on, but because it is also calculated to inhibit the development of sepsis should pathogenic organisms reach the outside of the dressing subsequently. We always apply the dressings wet out of the 1 in 2,000 or 4,000 sublimate solution in which they have been soaking for some time before use. No impermeable covering is put on outside, so that the dressing dries in a few hours.

Those who rely on heat sterilization alone use for dressings simple absorbent gauze, wool, or muslin sterilized by superheated steam. This no doubt suffices in many cases, as many wounds dry up, scab over, and heal at once, but such a dressing is obviously open to infection from the air as it is being applied, and may therefore convey infection direct to the wound. Furthermore, if discharge from the wound soaks through to the surface of the dressing, the superficial layers, being liable to infection from the air, bedclothes, etc., may cause infection of the discharge, and sepsis may spread back to the wound, being unhindered by any chemical material. An objection urged against antiseptics in dressings—namely, that some skins are excessively irritable and are blistered by them—is no doubt true, but such cases are few, and if a mild antiseptic (such as 1 in 4,000 sublimate) be used, it is both reliable and scarcely ever irritating. Therefore I am not prepared to give up antiseptic dressings.

Conclusions.

Whilst agreeing that the method without antiseptics may possess the balance of advantages when perfectly carried out to its logical conclusion, we who use antiseptics contend that this can only be done under exceptional circumstances by skilled bacteriologists, and then we doubt if it can be consistently carried out with success, even in the most elaborately-fitted hospital operating theatre. In private practice, on the other hand, particularly in the country for which we have to educate so many of the coming generation of surgeons, this elaborate method becomes well-nigh impossible. There are thousands of operations that have to be done under the most disadvantageous circumstances, far from help and without appliances of any kind, and in these situations the rigid sterilization system must inevitably break down. We feel that the limited use of antiseptics adds a second line of defence which may minimize any defects that may occur, if it does not completely counteract them. The method, moreover, is simpler and more within the reach of the surgeon in everyday practice who has not at his command all the resources of a perfectly-equipped operating theatre. From personal observation we know it to be a most valuable training for those who are learning surgery, and one that in no way conflicts with the scrupulous attention to cleanliness that underlies the simple sterilization method; indeed, it actually supplements this and makes it more stringent. We know from a long personal experience that the results obtained by it leave nothing to be desired by the most exacting: indeed, if this had not been the case we should have abandoned the method years ago. We have scrutinized our results carefully, especially for the last five or six years, in order to see if there is any detail in which they left anything to be desired; this we have failed to find, and we therefore do not feel inclined to abandon the method in favour of one which, however highly we may think of it theoretically, convinces us that the requisites for success are so numerous, and the possible causes of failure are so many, that it is almost beyond expectation that uniformly good results will follow. The simple heat-sterilization method has done much good to surgical practice generally. It has emphasized the value of true cleanliness and scrupulous attention to detail. It has

laid great stress upon the importance of not lowering tissue vitality by the injudicious use of strong antiseptics, and it has provided us with some very excellent details; but I venture to think that it is in danger of being carried too far, and I believe that, although the method that I have advocated is not the one most in favour at the present time, yet the time will come when the results of the more fashionable method will lead to a reaction in its favour.

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THE STERILIZATION OF THE HANDS.

As a contribution to the discussion on asepsis and antisepsis, I propose to read a brief statement of the conclusions I have reached, after a series of experiments, on the relative values of certain methods advocated for sterilizing the surgeon's hands. The time at my disposal this morning does not permit me to describe the details of the experiments, nor to discuss the methods adopted, save in the briefest manner. For these I must refer you to the full statement, which is now in the press. This morning I can only deal with the conclusions I have arrived at as the result of the experiments.

The object of my first inquiry was to learn the value of a simple mechanical cleansing of the hands. By mechanical cleansing I mean those measures by which we seek merely to remove the microbes, without any attempt being made to destroy them. From earlier experiments (an account of which I published in 1896),[1] I knew that it was impossible to sterilize the hands by such means, notwithstanding the many statements made to the contrary. I deemed it, however, advisable to repeat the experiments in the light of greater experience, in order to learn, if possible, more exactly the value of the mechanical cleansing.

Numerous tests conclusively proved that, not only is it impossible to sterilize the hands by the most prolonged and energetic scrubbing with soap and hot water, but also that it is not possible materially to diminish the number of microbes on them by this means; and the same conclusion holds good whether sea sand, marble dust, or Schleich's soap be employed.

Having satisfied myself that it was a practical impossibility adequately to cleanse the hands by simply washing them with soap, I was still wishful to learn its approximate value in removing the microbes. For this purpose I tested the hands both before and after washing, and also several of the bowls of soap solution in which they had been washed. I was surprised to find that in almost every case the hands were apparently far less infected before than after the most prolonged washing. That this was not really so was obvious, because all the waters in which the washing or rinsing had taken place teemed with microbes which had been removed from the hands. That their increase was not due to accidental infection from the air was soon proved by a few experiments on artificially-infected hands. Whence, then, the reason of the increase in the number of microbes? It was not from the cleansing agents, for they were sterile beyond doubt. It was clear that the increase arose merely from the bacteria coming off the skin more readily. The prolonged maceration in the hot water and alkaline soap had loosened and detached the surface epithelium, so that when the hands were tested the ivory slip brought away a greater amount of débris. Before washing, the dry smooth skin does not easily give up the microbes on its surface.

Therefore, though the mechanical removal of dirt by washing is probably an essential part of all sterilizing methods, it must be remembered (1) that the number of microbes left on the hands is always very considerable; and (2) that the skin has been so altered as greatly to facilitate their detachment.

A series of experiments was then made to ascertain the value of turpentine and such fat solvents as benzoline, ether, and xylol; but it was found that these agents did not appreciably improve the results.

I next turned my attention to certain antiseptics in aqueous solutions. These I carefully tested both as regards their bactericidal power upon pure cultures of pus-producing organisms and also their efficiency as sterilizing agents for the hands.

The antiseptics tested were aqueous solutions of perchloride of mercury (1 in 1,000), biniodide of mercury (1 in 1,000), carbolic acid (1 in 40), and lysol 2 per cent. The experiments showed clearly that the common microbes of suppuration are not readily affected by the antiseptics in general use, and that there can be no certainty of destroying them within a reasonable time, unless the antiseptic exceeds the strength which can be tolerated by the skin. It must be noted that the microbes in these test-tube experiments were purposely so placed as to be fully exposed to the action of the antiseptic; but this is a condition not fulfilled in the case of microbes on the hands. For in this case the bacteria are mixed with the dirt and débris, and so are protected from the action of any antiseptic. It scarcely requires any experiments to demonstrate the fact that microbes, when embedded in albumen or fatty matter, are far less influenced by watery antiseptic solutions than when freed from such protection. Having seen how slight was the influence which these antiseptics had on the micro-organisms in these test-tube experiments, I did not anticipate any great improvement in the results when testing them on the hands.

I was not, therefore, surprised to find that the aqueous solutions of carbolic acid, lysol, perchloride or biniodide of mercury are practically powerless to affect the micro-organisms situated on the hands, and the use of these antiseptics, even after a thorough preliminary washing of the hands, utterly fails to render them sterile.

Experiments were then made with permanganate of potash. This antiseptic has been used in various ways, but the following method suggested by Kelly[2] is the one largely resorted to in this country and in America.

After the hands have been well washed with soap and water, they are soaked in a hot saturated solution of permanganate of potash. This has the effect of staining the skin a deep mahogany brown. They are then rubbed with a hot saturated solution of oxalic acid, which quickly removes the brown stain. The method is agreeable to use, for, though the strong oxalic acid solution produces a prickling sensation, especially on the skin of the forearm, yet the process neither roughens nor injures the skin in any way, and may be repeatedly used on the same day. It also possesses the not immaterial virtue of enabling the surgeon readily to control the disinfection of his assistant's hands. According to Kelly, who tested the method bacteriologically, the hands may easily be sterilized by this process, and he judged the method to be far superior to all others in use, not even excepting the spirit-sublimate method of Fürbringer.

My experiments did not confirm this statement, for I found that in one half of the cases the hands proved to be strongly infected.

On theoretical grounds it would, indeed, be surprising if the use of permanganate of potash as advocated by Kelly proved successful in sterilizing the hands. It stands far below the mercuric salts as a bactericidal agent. It can claim no special power of penetrating the epithelium, nor is the chemical action which causes the decolorization of the permanganate by the oxalic acid one likely to have any marked influence in the sterilization.

The next antiseptic tested was one which has been recently introduced and strongly advocated by Krönig and Blumberg[3] as being far superior to all others. This is made by the well-known firm of manufacturing chemists, E. Schering, of Berlin, and has appeared in the market under the name of "Sublamin." It is a preparation containing mercuric sulphate and ethylenediamine in chemical combination. The presence of ethylenediamine is said entirely to do away with the irritating action on the skin and to secure a greater penetrative power for the metallic disinfectant, for by its means the coagulation of the albuminous substances of the skin, usually produced by metallic agents, is prevented.

I made a series of experiments with this antiseptic, testing it both as regards its power of destroying pure cultures of pus micro-organisms when fully exposed to its action, and also its sterilizing efficiency as applied to the hands, and I came to the conclusion that the bactericidal power of the new antiseptic "sublamin" is considerably below that of perchloride of mercury and as a sterilizing agent for the hands is of little value, and cannot be compared in efficiency with the alcohol sublimate method of Fürbringer, which it was introduced to supplant.

A natural desire to simplify and shorten the process of hand disinfection has led many to suggest that the antiseptic should either be combined with the soap or used at the same time. It is stated that in doing so the efficiency of many antiseptics is increased through a gain in penetrating power.

[1] *Deut. med. Woch.*, No. 23, 1896; BRITISH MEDICAL JOURNAL, October, 1896.

[2] *American Journal of Obstetrics and Diseases of Women*, 1891.

[3] *Beiträge zur Handedesinfektion*, Leipzig, 1902; and, again, *Münchener medicinische Wochenschrift*, 1900, Nos. 29 and 30.

It is, however, open to question whether the combination will not hinder the action of each—the antiseptic impairing the cleansing properties of the soap, and the soap at the same time reducing the chemical activity of the antiseptic. It is obvious, for instance, that the combination of an antiseptic like perchloride of mercury with soap would at once neutralize the disinfecting power of the sublimate by converting it into inert calomel.

I contented myself with examining two of the most promising of the antiseptic soaps—namely, biniodide of mercury soap, as suggested by McClintock, and one of lysol. They were tested both as regards their power of disinfecting the hands and their action upon infected threads and glass beads. The result showed no improvement on the previous test, and in the case of the infected silk and beads it went to show that the efficiency of the antiseptic was diminished, not increased, by the admixture of soap.

Before I was aware of the disadvantage of combining the spirit with soap it had occurred to me that possibly an antiseptic might with advantage be added to the spirit-soap. I selected biniodide of mercury, and added it to the amount of 1 in 1,000 to the spirit-soap, but with very unsatisfactory results.

Almost all investigators now agree that alcohol is the most efficient of all the agents at present suggested, though there is still much controversy as to the degree of sterility which it is possible to attain even by its use.

In order to obtain the complete benefit of the spirit method, it is necessary to employ the alcohol for the full five minutes, and, as Ahlfeld has rightly insisted, the whole procedure must be carried out with vigour and intelligence. It was interesting to notice the difference in the ease or difficulty with which the hands of different persons were sterilized: and this quite apart from the energy and intelligence with which the cleansing was performed. Several of the experimentalists seemed absolutely unable to render their hands anything approaching a state of sterility. Others did so with ease and almost certainty. Energy, determination, and experience, though they counted for much, did not influence the result so much as the character of the hands and nails. Hairy hands with coarse skin, broken or ill-kept nails, greatly increase the difficulty of sterilization.

It must be owned that my figures (64 per cent. of sterility) are somewhat discouraging, and fall far short of the claims put forward by Ahlfeld for this process. Had I restricted my test to one or two pairs of selected hands, as has been the custom of most experimentalists, I have no doubt that I should have obtained a considerable improvement in my figures. But I was anxious to learn for my own guidance, not so much the utmost possibilities of this method as the frequency with which I might expect my assistants (house-surgeons and nurses) to succeed in rendering their hands sterile.

From my experiments I am forced to conclude that, though the spirit be employed for not less than five minutes, and the hands be in an exemplary cosmetic condition, yet a perfect sterility cannot be obtained, and, in a considerable proportion of cases, the hands are still surgically infective. When they have been artificially infected either with pure culture of a resistant microbe, or with purulent fluids, the likelihood of their being rendered sterile is still further diminished.

The desire to shorten the hot-water-alcohol disinfection method of Ahlfeld led Mikulicz[4] to try the effect of combining the soap with the alcohol. And he was surprised to find that, by using spirit-soap (*Pharmacopoeia Germanica*) in place of Ahlfeld's method, he not only was able materially to shorten the time spent in cleansing the hands, but he also obtained better results. Hanel[5] agrees with Mikulicz that sterilization can easily be obtained by spirit-soap.

The advantages claimed for this method are a considerable shortening of the process—a preliminary wash with soap and water being unnecessary—and the saving of the skin from the irritation of the plain alcohol. The method, moreover, is so simple and convenient that it has been widely adopted. To estimate its advantages I tested it side by side with the hot-water-alcohol method. The result of the test showed that the spirit-soap is far inferior. The experiments were repeated with other preparations of spirit-soap, but with very similar results. In every case the hot-water-alcohol method proved to be vastly superior to the spirit-soap.

There has been much discussion in recent years as to whether alcohol possesses definite bactericidal powers or not. According to Koch's classical experiments upon anthrax spores, it has little or no such property; for, even after four months' immersion in absolute alcohol, the spores were not killed. These experiments, however, have since been repeated and modified in many ways by Ahlfeld,[6] Epstein,[7] Minervini,[8] and many others, and they show that evidently alcohol possesses a greater germicidal power than Koch was led to conclude.

As I was wishful to learn the degree of resistance of my cultures of pyogenic micro organisms, etc., to alcohol, I proceeded to repeat the experiments which I had made with the antiseptics. My best results were obtained with a 70 per cent. spirit, when the non-spore-bearing organisms were generally destroyed within five minutes, sometimes within two minutes. This would seem to show that alcohol of 70 per cent. has a greater germicidal power than solution of sublimate (1 in 1,000), biniodide of mercury (1 in 1 000), "sublamin" (3 in 1 000), or than a saturated solution of permanganate of potash. In order to determine the accuracy of this I made another long series of experiments, in which I tested the comparative sterilizing power of alcohol, perchloride of mercury, and biniodide of mercury. The results of these experiments definitely show that dilute alcohol has a much greater bactericidal power than it has been usually credited with. In all the experiments—and they were very numerous—in which the silk threads or glass beads were inoculated with non-spore-bearing micro-organisms, 70 per cent. alcohol proved to be much more powerful than a watery solution (1 in 1,000) of either perchloride or biniodide of mercury. The infected threads which were immersed in 70 per cent. alcohol were almost invariably sterilized within five minutes; whilst those placed in the mercury solutions were never sterilized within the half-hour. The micro-organisms tested in this way were the staphylococcus aureus, bacillus pyocyaneus, and sarcinae.

Similar experiments were then made with test-objects infected with the spores of the anthrax bacillus. Here the results were very different. The alcohol seemed to be powerless to affect these resistant spores, for even after the lapse of a week (the longest period tested) the spores were uninjured. The mercury solutions in this case proved to be the stronger sterilizing agent, for all the spores were generally killed within twenty-four hours, though in no instance within six hours.

When I remarked that with a 70 per cent. alcohol I found the staphylococcus and other non-spore-bearing micro-organisms to be destroyed within five minutes, it was with the reservation that this occurred when the test-objects were coated with the thinnest possible layer of microbes. But when the silk threads were soaked for twenty-four hours in the broth culture, or the glass beads (previously coated with an emulsion of micro-organisms) were dried in the incubator for some hours, or when by any other means the bacteria were made less accessible or more resistant, then the time taken by the spirit to sterilize the test-objects was always greatly prolonged. Therefore, whilst it must be admitted that dilute alcohol possesses a distinct bactericidal power, and, provided it come into direct contact with the microbes, is able to destroy the pyogenic cocci within a few minutes, yet it has not the power of destroying the micro-organisms as they are situated on our hands, with any certainty, within a reasonable time.

The efficiency of the alcohol in the sterilization of the hand does not therefore depend primarily upon its bactericidal powers. The best proof of the truth of this statement lies in the fact that, if the spirit in which the hands have been cleansed be filtered, living micro-organisms may generally be cultivated from the sediment, even where the tested hands have proved sterile.

Krönig[9] early drew attention to the power which alcohol, especially in the more concentrated forms, possesses of hardening and fixing the epithelial cells so that they adhere more firmly to the skin. The good results in Reinicke's experiments he attributed to this property, and denounced the sterilization by alcohol as an "apparent sterilization," the microbes being neither removed nor destroyed, but merely rendered less easily detached.

This astringent action has been the cause of much confusion in estimating the real value of alcohol in the disinfection of the hands; for if the hands are tested, as is often the case, immediately after treatment with alcohol, a very

[4] *Deut. med. Woch.*, 1899, No. 24.
[5] *Bei zur klin. Chir.*, 1900, Bd. 26.
[6] *Deut. med. Woch.*, 1896, No. 6.
[7] *Zeitschr. f. Hygiene*, Bd. 24, 1897.
[8] Ibid., Bd. 29, 1898.
[9] *Centralbl. f. Gynäk.*, No. 52, 1894.

high percentage of sterility will be obtained, notwithstanding previous infection with resistant microbes, the dry, hard, spirit-polished skin not readily giving up either its epithelial scales or its microbes. This is obviously an insufficient test; for what we want to ascertain is whether the hands, when wet and macerated with the warm, albuminous fluids of the body—the conditions met with in surgical practice—are sterile or at least will not prove infective.

In my own experiments I have sought to imitate the macerating action of the blood and serous fluids by soaking and gently rubbing the two hands together in either a warm saline solution or albuminous fluid from five to ten minutes, afterwards testing the hands when still wet. As the result of my experiments I find that when the hands are soaked in either solution the hardening effect of the alcohol upon the epithelium is too rapidly lost to warrant the surgeon relying upon its action save for short operations. Not only did the hands in a relatively large proportion of cases prove infected—see experiments with alcohol—but the fluid in which they were soaked contained numerous living microbes also, an experience in accordance with that of Haegler[10] and Paul and Sarwey.[11]

It has occurred to many that Fürbringer's method might be considerably shortened, and possibly rendered more efficacious, by the simple expedient of combining the sublimate with the alcohol. But, unfortunately, it has been demonstrated by Koch, and confirmed by Epstein, Minervini, and many others, that strong alcoholic solutions of chemical antiseptics act far less powerfully than simple aqueous ones; indeed, solutions of perchloride of mercury, or of carbolic acid in absolute alcohol, are practically devoid of any bactericidal action. Apparently the strong spirit, by rapidly hardening the surface of the cells, prevents the entrance of the antiseptics.

I was, however, wishful to learn whether the addition of a small percentage of alcohol to a watery solution of perchloride of mercury increased or diminished its germicidal power. On this point I made a prolonged series of experiments, a very few of which showed that when the sublimate was dissolved in absolute alcohol it had practically no antiseptic value. It was also found that, with the exception of absolute and very high percentages of alcohol, the spirituous solutions of the sublimate were markedly superior to the watery solutions in sterilizing power. The efficiency increased in direct ratio to the percentage of alcohol in the solution up to about 70 per cent., when any further increase in the proportion of the alcohol caused a reduction in the sterilizing power of the antiseptic. It required many experiments to determine the exact percentage of alcohol necessary to obtain the best results, but finally it seemed that when the sublimate was dissolved in 70 per cent. alcohol its sterilizing power was at its greatest.

As 70 per cent. of alcohol proved most powerful when the plain alcohols were tested, it now became necessary to determine whether the addition of the perchloride of mercury increased the sterilizing power of the alcohol at all. I found that when 70 per cent. simple alcohol was tested side by side with 70 per cent. sublimate alcohol, with test-objects infected with staphylococcus, bacilli pyocyaneus, or sarcinae, no decided superiority of one over the other could be detected. They both sterilized the threads or beads in from two to five minutes. But, on the other hand, when they were tested with anthrax spores the sublimate alcohol proved the more powerful. In this case the simple spirit (70 per cent.) seemed almost powerless to affect the resistant spores, for even after a week's immersion the spores readily developed. When, however, the 70 per cent. spirit contained sublimate to the strength of 1 in 1,000, the spores ceased to grow after from twelve to twenty-four hours' treatment.

The sterilization of the hands by Fürbringer's method is comprised of three different parts:

(1) The removal of the microbes by the mechanical cleansing power of the soap and the alcohol;

(2) The hardening action of the alcohol on the epidermis, so that the micro-organisms are less easily detached; and

(3) The destruction of the organisms by the germicidal action of the spirit and of the sublimate.

We have reason to believe that the second is the most important, and that the third is the least so.

Now, although the scrubbing with the sublimate solution plays a part in the sterilization of the hand (its omission giving rise to inferior results), it is obvious that the use of it lessens the hardening effects of the alcohol: the watery antiseptic solution extracting the spirit, and once more softening and loosening the surface of the epithelium. We are, so to speak, building up with one hand and pulling down with the other. If, therefore, we can replace the aqueous solution of sublimate with a still more efficient alcoholic one, we shall avoid this macerating action, and may look for a material improvement in our results. With a view to testing this, I compared the results of Fürbringer's method with those of the following modification:

Soap and water	5 min.
Spirit. vini meth.	2 ,,
Weak alcoholic solution of perchloride of mercury	2 ,,

The results of these tests showed that the substitution of an alcoholic antiseptic for the watery one in Fürbringer's method was followed by a slight improvement in the efficiency of the process. But the above statement does not, I think, adequately indicate the advantage of substituting an alcoholic antiseptic for an aqueous one. The chief advantage lies, as I have already mentioned, in that the hardening action of the plain alcohol upon the skin has not been reduced by a subsequent soaking and scrubbing in the watery antiseptic. If, after the use of the sublimate-alcohol, the hands are rubbed dry with sterilized gauze or towel, the surface of the dried skin becomes hard and polished, so that the epithelial scales are detached with difficulty. This being so, one was naturally led to consider whether it is necessary, or advisable, to use both plain alcohol and sublimate-alcohol in the cleansing process. Would not the method be equally efficient if simply the 70 per cent. sublimate-alcohol were used after the preliminary wash in hot water? Though such a modification simplifies the process, and gives equally efficient results, it has certain disadvantages. Sublimate-alcohol has a more powerful action on the skin than the plain spirit, and if its use be prolonged for more than two or three minutes, the hands may suffer; and that amount of time is hardly sufficient to obtain the maximum results by the cleansing process. It is rather an advantage than otherwise that the cleansing method adopted requires the use of two forms of alcohol. It prevents the undesirable habit of attempting to cleanse the hands in one bowl of fluid.

It must always be borne in mind that the hands of different persons vary greatly in their character, and a method suitable to one person is not necessarily so to another. The personal factor, therefore, in the disinfection of the hands should not be overlooked.

I regret that I have no time in which to enter into the consideration of the important question of the duration of the sterility of the hands. I can only briefly state that as the result of experiments I have found that hands proved to be practically sterile directly after the cleansing process gradually become more and more infective, as under the imbition of the water the alcohol-hardened epithelium becomes loosened.

As no method of cleansing the hands guarantees sterility, it is desirable that impermeable gloves be worn when the nature of the operation will permit, whether the wound be aseptic or septic. In the former case they protect the patient, in the latter the surgeon, from risk of infection.

In consideration of the difficulty and uncertainty of sterilizing a severely infected hand, I think we are justified in concluding that the institution of a period of abstention from operative work, such as is observed in midwifery practice, after contact with specially virulent septic matter, would be a reasonable and valuable ordinance in general surgery also.

Mr. President and gentlemen, I thank you for your patient hearing of my remarks, which, I fear, have unavoidably been imperfect and incomplete.

[10] *Händereinigung*, Basel, 1900.
[11] *Münch. med. Woch.*, December, 1899.

III.—GILBERT BARLING, M.B., F.R.C.S.,

Professor of Surgery, University of Birmingham.

MR. GILBERT BARLING said that he believed that there was practical agreement as to Lister's teaching with regard to wound diseases, that these arose from the presence of micro-organisms of various kinds, which set up suppuration and septic changes generally. The bitter controversies and the asperities of the past were practically set at rest. When, however, the sources of wound infections were discussed it might be found that there were divergencies of opinion as to the importance of the various sources from which infection was derived. The possibilities were numerous—the surface of the surgeon's hands, the skin of the patient, the sponges or other materials substituted for sponges, the instruments, the

ligatures, the air, water, and some things which need not be enumerated. Some of these sources of danger might easily be provided against, for heat as a sterilizer was absolutely efficient with regard to many of the impedimenta of the operating surgeon, as in the case of his instruments, his lint or cotton wool swabs, water, and so on. But heat was not always available, and then the less reliable method of chemical disinfection had to be adopted. How unreliable this might be was often shown in the case of catgut, a material which could undoubtedly be rendered sterile, but which, as supplied commercially, was very apt to be infected. An example of this kind was quoted from the examination of a catgut which has been for some years on the market and is represented as thoroughly sterile. A dozen bottles of this gut were freshly opened, and in every case a growth was obtained by immersing some of this gut in broth. This shows how little reliance can be placed on material of this kind supplied by manufacturers.

This source of infection, however, can be eliminated by proper preparation of catgut with chemical disinfections. When, however, we turn to the skin of the operator and the skin of the patient, we find that complete disinfection is almost impossible, for, however sterile the surface of the skin may be at the commencement of operation, during the course of operation micro-organisms from the deeper layers of the epidermis work to the surface and a growth can generally be obtained.

A striking example of this can be shown by taking a sterilized scalpel, making the first incision through properly prepared skin, and then drawing the scalpel through sterilized agar, when it will usually be found that the knife is already infected even after such a brief exposure. Whilst heat is sometimes available and sometimes chemical disinfection, there is one element for which neither can effect much—namely, air infection. The speaker had recently had tested the atmosphere of various operating rooms, Petri dishes being exposed close to the field of operation during the whole of the course of its performance. In a single dish, colonies of growth varying in number from tens to hundreds might be obtained in three-quarters of an hour's exposure. Time has not yet allowed the separation of these organisms, but some of them were certainly pathogenic. In these observations the number of colonies varied greatly in different buildings, and the most important factor in diminishing the number of the colonies was, as might be expected, stillness of the atmosphere.

It is probably no exaggeration to assert that, except in the case of small subcutaneous operations, it is hardly possible to make a wound which is absolutely free from infection, and this is confirmed by testing the surface of wounds before the sutures are applied; a light scraping of the raw surface with a sterilized spoon, which is then inserted into a cultivation medium, practically always gives a growth of micro-organisms.

The question arises, How are we to meet our difficulties? Certain sources of infection we can certainly exclude, others we cannot with certainty, and we must accept a certain degree of infection as present after any extensive exposure such as is involved in the modern operation for cancer of the breast or in an amputation. To meet this infection we may either resort to the use of fairly potent antiseptics applied to the wounded tissues for the purpose of destroying any micro-organisms present, or, as an alternative course, we may leave the tissues themselves to destroy the infection.

Both of these courses have their advocates, but the speaker is in favour of leaving the tissues to fight their own battles, rather than to resort to the use of chemicals in solution which would be of doubtful value in destroying micro-organic life and yet would probably diminish the resisting power of the wounded tissues.

Whichever course is adopted it should not be forgotten that other well-recognized details should be scrupulously attended to, their importance could hardly be exaggerated. Clean-cut wounds should be made, bruising of tissue should be carefully avoided, minute haemostasis should be secured by drainage or by pressure or by both, the wound cavity should be kept emptied of all fluids, and the part should as far as possible be immobilized. These points are sometimes forgotten in the cloud of details imposed by modern surgery. The potency of this antiseptic or of that, of gauze dressings of various kinds, has tended to obscure other matters of more importance.

IV.—H. J. Stiles, F.R.C.S.Edin.,

Surgeon, Royal Hospital for Sick Children and Chalmers's Hospital, Edinburgh.

Mr. Stiles said all were agreed as to the general principles involved in the technique of aseptic surgery, using the term "aseptic" in the widest sense of the word. It was well known that equally good results could be obtained by different methods. He wished to point out that it was not so much the particular method that was employed as the care and thoroughness with which the particular method was carried out. As regards the patient's skin, Mr. Stiles believed that the surgeon was sometimes over-zealous in this direction, and that the skin was often injured unduly by the too prolonged use of powerful antiseptics. A point of great importance was for the surgeon to keep the skin of his hands smooth. He desired to sound a word of warning against applying a carbolic poultice dressing over a large skin surface overnight. Dr. Kruger, in an able thesis for which he was awarded the Syme Surgical Fellowship, had shown what a large amount of carbolic acid was absorbed by the skin, especially after it had been previously scrubbed with soap and hot water. In children this constituted a real danger. Personally, Mr. Stiles said he preferred a mixture of green soap, spirit, and lysol for the first washing. This mixture had powerful cleansing properties, and all the time the mechanical cleansing was going on lysol—a very penetrating antiseptic—was being rubbed in. This was followed by a 1 in 20 carbolic solution, after which a dry sterile gauze dressing was applied. The same process was repeated on the morning of the operation.

For the deep dressing Mr. Stiles used sterilized gauze, which he preferred to apply wrung out of a 1 in 40 carbolic or a 1 in 4,000 sublimate solution, if, as in an excision of the knee, for example, the dressing was to be left on for three weeks. Mr. Stiles quite agreed with Mr. Burghard as to the inefficiency of many of the steam sterilizers, from the circumstance that in some the steam did not always penetrate all through the dressings. The most reliable sterilizer was that in which the steam, under pressure, was continuously circulating through the sterilizer, being conveyed directly into it by a pipe leading from a high-pressure boiler such as most hospitals possessed for laundry work or for heating the hospital. The one used by Mr. Stiles, which was similar to that used by Professor Kocher, of Bern, worked at a pressure of 45 lb. A thermometer placed in the midst of the dressings registered 36° C. above boiling point.

At the operation no antiseptic was allowed to come in contact with the wound. Catgut sterilized by boiling in superheated alcohol, according to Jellett's method, was used for ligatures. Mr. Stiles never used silk. For sutures he preferred silkworm gut and horsehair, the latter being specially cleansed before it was boiled. He desired especially to emphasize the importance of a careful supervision by the surgeon of all who assisted at the operation. He believed that the breakdown of an otherwise efficient technique was due to direct contamination by the hands of an assistant or nurse who had a short time previously been allowed to dress a septic case. His theatre sister (specially trained for the purpose) was not allowed to take any part in the routine work in the wards; neither she nor the house-surgeon was allowed to dress a septic case; if for some reason the latter was compelled to do so, he put on rubber gloves. Mr. Stiles was not afraid of air infection in a clean and well-ventilated hospital. Out of the last hundred radical cures of hernia in young children, in which the sutured wound, apart from being dusted freely with boracic powder, was left completely uncovered (a cage being put over the child to keep the clothes from coming in contact with the wound), in only one was there the slightest trace of suppuration. Mr. Stiles maintained that the so-called aseptic technique could be carried out equally well in private practice. With regard to rubber gloves, he only used them in a septic case to protect the next patient who might have to be operated on.

V.—K. W. Monsarrat, M.B., F.R.C.S.E.,

Surgeon, Northern Hospital, Liverpool.

Mr. Monsarrat said that just as Lister founded his practice on the observations of Pasteur, so in aiming at perfection in aseptic technique it was necessary to found our methods on bacteriological observations; empiricism in methods should not be relied upon, and each surgeon must test his method bacteriologically and modify it according to the results. In working out a practical system it was well first to differentiate the various sources of possible infection. They were three in number: the patient himself, the surgeon and his assistants, and, thirdly, instruments, comprehending under the latter term all material brought in contact with the wound during the operation. The first source was the most difficult to deal with, and certain localities, the axilla and the groin, more difficult to clean than others. Such localities required longer

preparation than others. He commenced the skin preparation forty-eight to sixty hours before operation, and relied upon soap and water, followed by a solution of biniodide of mercury in 50 per cent. spirit with 5 per cent. glycerine added. This solution was kept in contact with the skin for ten minutes at each cleansing, and this was repeated five times before operation, the skin area in the intervals being simply protected with sterile lint. A small but important item in the avoidance of skin infection was the use of the subcutaneous in place of the percutaneous suture whenever possible. Bacteriologists had proved, in his opinion, the necessity for wearing impermeable sterile gloves; the getting used to their wearing was simply a matter of practice. It was used as an argument against their employment that the hands sweated much if they were worn, and if the gloves tore the risk of infection was increased by the perspiration; if they were put on the hands in a basin of dilute antiseptic this risk could be largely discounted; if, again, sufficiently thick gloves were worn they rarely tore, and the "sweating" argument was in reality a strong reason for the wearing of gloves, seeing that the ungloved hands also sweated considerably during a long operation, and were then dangerous, however carefully they had been prepared. With regard to instruments, towels, swabs, dressings, etc., moist heat applied in one way or another was absolutely satisfactory, if used with discrimination and controlled by the bacteriologist. Air infection could be, for the most part, discounted; there were a series of experiments which were well worth notice, those by which it had been shown that speaking and coughing disseminated mouth organisms readily over a considerable area. Mere mechanical washing with sterile water appeared to be sufficient to deal with air infection, and was advisable when raw surfaces had been unavoidably exposed for a considerable length of time; no valid argument had been brought forward to support the use of antiseptics for the washing of presumably clean wounds. No surgeon, of course, thought of banishing antiseptic chemicals from his armamentarium; they were of value for cleansing the skin, for protecting instruments, ligatures, etc., from reinfection after heat sterilization, and for diminishing the infection in septic wounds; but, wherever possible, moist heat should be employed, and if used under the control of bacteriological tests was absolutely reliable.

VI.—G. G. HAMILTON, F.R.C.S.,

Surgeon, Royal Infirmary, Liverpool.

MR. HAMILTON said: Mr. Watson Cheyne preceded me as a pupil of Lord Lister's by a couple of years, and he will remember how our much-loved teacher prophesied that one day some much simpler method than the one he taught would become universal. Since then we have done away with sprays, etc., but many have introduced methods just as complicated as his were. To simplify should be our object, and, above all, in the case of failure, it should ever be our aim to be able to put our finger on the cause of such failure. I have here a list of a little over a year's work, carefully prepared by my house-surgeons and myself. The method has been the same in all, and, briefly, has been the following. The skin has been shaved and sterilized with soap and water and 1 in 5,000 iodic hydrarg., the same solution, with the addition of a little spirit, being swabbed over the skin and immediately washed off at the time of operation; nothing but sterilized water has been used during the operation. The swabs and dressings, both for the wards and theatre, have been prepared in the Kny-Scherer sterilizer by one theatre sister. Assistants, with the exception of one, have been entirely done away with. This one wears gloves, and his fingers are never allowed in the wound. I myself have not worn gloves. The hands have been sterilized by the permanganate and oxalic acid method. In my new operating theatre are placed a square metal sterilizer large enough to hold a large platter, and a smaller one for a metal instrument tray. The jackets of both sterilizers are in connexion with pipes, which throughout the Liverpool Royal Infirmary contain steam. In half a minute the water in these sterilizers is boiling. A segregator holds needles and silkworm gut for skin suture, and I thread my own needles with silk for deep suture, and this is boiled with the instruments. Hammersley's flock silk ligatures have been used throughout. Turning now to the list of results, I would point out that the cases related are consecutive, and are those in which we were able to test the system owing to the skin being free from sinuses, or other unremovable septic infection. I know how fallacious statistics are, and I wish to compare them only with my own of former years, and I would here say that they are vastly superior to anything I have had before. There has really been only one decided failure out of 154 operations, and that was the breast case: the other five were mere stitch troubles. The main points in my contribution to this discussion are: (1) To do away with assistants; (2) to thread your own needles, and handle instruments, ligatures, and sutures direct from the sterilizer: (3) use no sponges and asepsis after your incision is made; (4) dress your wound with a light covering of sterilized gauze only.

Consecutive Cases from May 1st 1903, to June 30th, 1904.

Femoral herniae	4	Cholecystotomy	3
Contained appendix	1	Nephropexy	2
Strangulated	3	Removal of testicle	4
Inguinal herniae	22	Amputations	9
Umbilical herniae	4	Ovariotomy	1
Loose body in knee-joint	5	Appendicitis (quiescent)	4
Wiring patella	3	Gastro-enterostomy	1
Nephrectomy	3	Hour-glass contraction of stomach	1
Hydronephrosis	1	Brachial cyst	1
Laparotomy	12	Cervical glands	9
Perforating gastric ulcer	3	Excision of hip	4
Varicocele	8	Submaxillary cysts	2
Varicose veins (6 to 8 incisions)	11	Excision of smaller tumours	13
Excision of elbow	5	Trephining	2
Osteotomy	7		
Carcinoma of breast (axilla cleared)	6	Total	154

Analysis of 6 Cases out of 154.

1. *Strangulated hernia*, large quantity of septic fluid in sac.
2. *Varicose veins*, eczema and septic thrombosis existed before operation.
3. *Breast case*, remained aseptic for a week, probably infected in ward.
4. *Excision of elbow*, tuberculous.
5. *Trephining* for intracranial haemorrhage (adrenal pack).
6. *Large umbilical herniae*. Stitch abscess.

None were serious.

VII.—J. PAUL BUSH, C.M.G.,

Surgeon, Bristol Royal Infirmary.

MR. PAUL BUSH described the methods that he was in the habit of using at Bristol. As regards hands, he relied on the use of the sterile nail-brush and soap, followed by carbolic and perchloride of mercury lotions alternately. He had found the frequent application of a 70 per cent. alcohol—as advised by previous speakers—very trying indeed for the hands; he strongly advised that no antiseptics be used to wash out the wound after operation.

VIII.—W. L. RODMAN, M.D., LL.D.,

Professor of Surgery, Medico-Chirurgical College, Philadelphia.

PROFESSOR RODMAN said: I consider it both a pleasure and privilege to have been here this morning and to have listened to the most excellent papers and thorough discussion. I would have preferred to remain a contented listener, inasmuch as the ground has been so well covered by the different speakers that only points already made can be emphasized rather than new ones introduced at this late stage in the discussion. There are a few points to which I will refer briefly.

As has been said, it is simply impossible to so sterilize the hands that they will remain sterile throughout an operation. A temporary surface sterility may be produced by any of the excellent methods already mentioned, but it does not abide, as the skin is constantly excreting effete material, more so than usual during a long surgical procedure in a hot room. Frequent rinsing of the hands in sterile water minimizes but does not do away with the danger altogether.

The method of Stimson, which has found favour with many American surgeons, has not been mentioned. It consists of using chlorinated lime made into a paste and then rubbed well into the hands and forearms; powdered carbonate of soda is then added to the paste and well rubbed into the skin. A cooling sensation follows the preliminary heating caused by the lime. The hands and forearms are now washed in 1 per cent. ammonia water to remove the odour of chlorine. Finally they are rinsed in sterile water. The objection to the method is that it is most trying on the hands, and many cannot employ it. This is true, however, to a greater or less extent of all methods yet introduced where chemicals are employed. They are irritating, slacken and chap the hands, thereby making future disinfection next to impossible. Therefore it would seem questionable, at least, if they should be used. A thorough mechanical purification, using soft soap, brush, and nail cleaner vigorously for at least five, preferably ten, minutes, will, if supplemented by alcohol, which removes all epithelial débris, place the hands in a condition to defy the closest bacteriological scrutiny. The additional use of chemicals is largely a work of supereroga-

tion. Further, those who use them are sometimes more or less perfunctory in the mechanical purification—certainly the more important step.

I believe that rubber gloves should very generally, if not always, be worn for the reason already given, namely, that however carefully the hands are sterilized, they do not long remain sterile. We also have to think of the hands of assistants and nurses, who do not always know how to prepare their hands for an aseptic operation. They are only safe with gloves. Undoubtedly, at first, they slightly interfere with tactile sensation, but one soon becomes accustomed to their use and operates as well with as without them. An excellent method of sterilizing catgut not yet referred to, and one we are very partial to in America, is the Cumol process. It requires for its preparation a special apparatus and must be handled carefully, as it is an inflammable, but more combustible, hydrocarbon. Its boiling-point is 170° C., and it is unnecessary to raise the temperature so high. It is never carried beyond 165° C. It makes a beautiful, strong and satisfactory gut.

I would emphasize the fact that sharp knives should always be used in operating—never blunt instruments. Blunt dissections and tearing the tissues with the fingers partially devitalize them and invite suppuration.

It is unnecessary, as pointed out by Mr. Stiles, to infuse the skin of the patient to encompass practical, if not ideal, sterility.

Too energetic scrubbing with a brush is oftentimes harmful, as it makes fresh wounds for bacteria to enter, sets free germs hitherto innocuous, and causes post-operative pain. The free and prolonged use of soap and water and gentle scrubbing with a sterile brush, or, better, perhaps, with gauze if the skin is thin, will, if conscientiously used, make the use of chemicals unnecessary.

It has been said that steam—not even high-tension or superheated—does not come in contact with the interior of dressings in a package. If so, it is the fault of the sterilizer. With 10 lb. to 20 lb. pressure to the square inch and steam entering from the top—never the bottom—it remains saturated as the air is promptly forced out and has great power of penetration. The Kny-Scherer apparatus has an attachment by which a vacuum can be at once produced. This is absolutely essential for the best results.

Further, and lastly, the wound should be thoroughly irrigated with hot water before closing it, as clots are removed, haemorrhage arrested, and the necessity for drainage lessened.

Chemicals cause a superficial necrosis, even when in very weak solutions, and the irritation set up by them, followed as it is by copious weeping, makes drainage often necessary. Moreover, they are decomposed by contact with blood and secretions, and are comparatively inert. Bichloride of mercury quickly forms an albuminate when in contact with blood.

In conclusion, permit me to congratulate British surgery upon having given to the world antiseptic surgery, one of the, if not the, greatest of discoveries.

IX.—Charles W. Cathcart, F.R.C.S.,

Surgeon, Royal Infirmary, Edinburgh.

Mr. Cathcart stated that the point of view from which he looked at the subject under discussion was that of a teacher in a large medical school. He had learned from Lord Lister to consider that antiseptic surgery could be carried out in private practice in every grade of society; consequently, that students must be taught its principles and practice if they were to be able to give their patients the benefits of the method. For this purpose they must both see what was done, and, as far as possible, actually assist in the work.

Although the developments of Lord Lister's methods in some quarters had excluded the student to a great extent both from seeing operations and from helping in them, Mr. Cathcart had not been convinced of the real need of this. He had striven to improve his methods, while still leaving the student as a factor in the operating theatre, and he thought that it might be of service to state what the conditions of his surgical work in his wards in the Royal Infirmary, Edinburgh, at present were, and give the results obtained. He was an adherent of the antiseptic method.

As to students, no restriction was put upon their attending the *post-mortem* theatre or dissecting-room while they were acting as clerks or dressers in the wards. The one operating theatre was also the clinical lecture-room, and often contained more than a hundred students. No special clothing was worn by the visitors at operations; only those students helping at operations were clothed with overalls. The area for operations was made as close as possible to the benches, and these were designed for obtaining a good view of the operation by rising rapidly above one another.

As to staff, the only permanent official was the ward sister, who had a general superintendence over two wards and the theatre work. There was no theatre nurse. The probationers and ward nurses were frequently changed. The house-surgeon assisted at most of the operations, and was changed every six months; the instrument clerk was changed every three weeks.

As to details in method, instruments were sterilized by boiling in soda solution; dressings and swabs were sterilized by steam. Other details that he thought it necessary to mention were: Catgut was sterilized by boiling in absolute alcohol in a closed vessel (Jellet's modification of Fowler's method), and was employed almost exclusively for ligatures. It was used from a 20 per cent. solution of carbolic acid in oil, which was the storage solution Mr. Cathcart preferred. Silk used for intestinal suturing was sterilized like the catgut, and was stored in 1 in 1,000 corrosive sublimate in absolute alcohol.

The patient's skin was carefully scrubbed and shaved the night before operation, soaked all night with strong soda solution, re-scrubbed an hour before operation, and covered with 1 in 2,000 corrosive sublimate cloth. Finally, just before the operation, it was well swabbed with Lockwood's strong solution of biniodide of mercury. The house-surgeon was responsible for the skin in the male wards, the sister in the female wards.

The surgeon's hands were scrubbed for ten minutes in several relays of very hot water and green soap, for five minutes in methylated spirit, and were rinsed in 1 in 2,000 corrosive sublimate before and frequently during the operation. No gloves were worn by the operator in non-suppurating cases. Rubber gloves were used in septic cases. The tissues were handled as little as possible, and the parts of the ligatures touched by the fingers in tying the knots were cut off. The house-surgeon, on the other hand, always wore rubber gloves when assisting in aseptic cases, as in his daily work his hands were frequently obliged to touch septic matter. The wounds were douched with 1 in 2,000 corrosive sublimate solution before being closed. An antiseptic was preferred for flushing as giving a margin of safety in the fluid itself.

During the past summer session—that is, from the beginning of May till the middle of July—there had been 23 operations through unbroken skin, and bacteriological investigation of these cases was carried out by Mr. Cathcart's clinical tutor, Dr. W. Porter. These cases were: scirrhus mammae, 3; multiple adenomata of breast, 1; radical cure of inguinal hernia, 4; varicose veins (multiple excision), 2; stretching great sciatic nerve, 2; stretching ulnar nerve, 1; excision of tuberculous glands of neck, 5; recurrent appendicitis, 1; multiple wens of scalp, 1; tuberculous testis, 1; double osteotomy for bow-legs, 1; strangulated hernia, 1. Of these wounds, 16 healed by first intention within a week and showed either no organism on culture, or were so dry at the first dressing that no culture was attempted. These cases were: Radical cure of inguinal hernia, 3; varicose veins, 1; stretching great sciatic, 2; stretching ulnar nerve, 1; multiple veins, 1; excision of mamma for adenomata, 1; excision of tuberculous glands, 5; tuberculous testis, 1; osteotomy for bow-legs, 1. Of the remaining cases, 5 showed slight stitch suppuration due to the staphylococcus albus, but were healed within a fortnight, most of them without any rise of temperature, some had an evening temperature of 100° once or twice, then returned to normal. These were scirrhus mammae, 2 (in both there was difficulty in getting the skin edges together and parts died at the margin from the tension); recurrent appendicitis, 1 (pustules on the skin at the time of operation); varicose veins, 1; subacute phlebitis was present at one place at the operation, and it was there that the slight suppuration occurred; strangulated hernia, 1 (operated on at night on admission).

Of the 2 remaining cases, 1 was a radical cure of hernia with distinct stitch suppuration from staphylococcus albus, healed in three weeks; one was a case of scirrhus in a fat old woman in rather feeble health. There was removal of much skin and much tension on the flaps, and suppuration from mixed infection took place under one of the flaps and delayed the healing at this part. Wound was closed in about eight weeks.

Thus, out of the 23 cases, there was only 1 (the breast case) in which the patient's stay in hospital was prolonged owing to the condition of the wound, and none in which the state of the wound gave rise to any anxiety as to the patient's general condition.

Although these observations had been limited to the comparatively short time over which accurate bacteriological notes were taken, the general results closely corresponded to those obtained for the last two or three years.

The causes of failure to secure perfect asepsis might be attributed chiefly to imperfect purification of the patients' skin; but where skin was under considerable tension it was doubtful if any method would be free from occasional failure from this source.

These results seemed to show that healing by first intention was not prevented or delayed by the douching of the wound with 1 in 2,000 corrosive sublimate and the other methods employed; while the free access of students to the theatre and wards, and their employment in the area of the theatre, seemed still as feasible and safe as it was always considered by the founder of the antiseptic system.

X.—Sir William Macewen, F.R.C.S., F.R.S.,
Professor of Surgery, University of Glasgow.

Sir William Macewen said that assuming the distinction which had been adopted in the discussion, he found himself on the side of the aseptic rather than that of the antiseptic method. Aseptic methods were by no means necessarily complicated, rather the contrary. For preparing the patient's skin he relied upon soft soap, followed by 1 in 40 carbolic acid, and extended the preparation over two or three days. He added glycerine to the carbolic acid which he used for his hands, and he was in the habit of having the sterility of his hands and those of his assistant constantly controlled by bacteriological tests. These tests had shown that by soap and water alone sterilization of the hands could be carried out nearly perfectly. He used gloves only to protect his hands in septic wounds. He used dry sterile swabs, and never put antiseptic lotions into wounds; it was quite certain that the best results were obtained by avoiding antiseptics. He considered that these aseptic methods were easily carried out in private practice. Although students were admitted to hospital operations, he always kept them at some distance from the operating table.

XI.—Hugh Davies, M.B., B.S.Lond., F.R.C.S.Eng.,
Surgeon, Miller Hospital, Greenwich.

Mr. Davies said: I find that a liquid soap composed of ether, soft soap, and spirit is a very efficient remover of epithelial débris and dirt, aided by scrubbing with a nail-brush kept in methylated spirit. The hot water first used should be poured away, and a second lot of very hot water used and the process of scrubbing repeated. I then immerse my hands for three minutes in a mixture of equal parts of alcohol and 1 in 1,000 sublimate solution. The patient's skin is prepared beforehand by washing with soft soap and water, shaved, and then washed with a 1 in 40 carbolic solution, to which an ounce of glycerine has been added, or with 1 in 1,000 perchloride lotion, then an antiseptic compress is put on for twenty-four hours. Just before operating the skin is swabbed over with the alcoholic sublimate lotion. I do not think the surrounding air or the table, or anything of that nature, has any influence on the operation, provided that the immediate neighbourhood of the operation be kept sterile by means of wet carbolized cloths. The instruments should be handled by the operator, and not passed by an assistant. The operator should thread his needles beforehand, and keep them in a piece of lint in a solution of 1 in 20 carbolic solution. I use salmon gut as much as possible, and find it more reliable, because less absorbent, than any other material, and I find it no detriment even to suture the peritoneum with it—in fact an advantage, no stitch abscess following. I do not think it advisable to use lotions to irrigate wounds. The most important factor is to keep the wounds dry, to use ligatures as seldom as possible, thereby introducing as little foreign material into the wound as is possible. With regard to dressings I do not think it matters much what dressings one uses, provided one has kept the wound dry. In important cases it is wise for each surgeon to be his own dresser as far as possible; and at the operation and at the first dressing I wear a mackintosh coat covered with an overall wrung dry out of 1 in 20 carbolic lotion.

XII.—J. Ward Cousins, M.D., F.R.C.S.,
Surgeon, Royal Portsmouth Hospital.

Mr. Ward Cousins said: The question for every surgeon to-day is this: What are the results of his own antiseptic surgery? Our success must be ever in direct proportion to our capacity (1) for obtaining sterility of the inside and outside of the wounds we have to make, and (2) of preventing the entrance of micro-organisms. Every great innovation is marked by improvement. During the last few years many changes have been suggested, and many new materials, new antiseptics, and new details have been brought out. Have we, then, obtained a system capable of absolutely excluding our microscopic enemies? It is my opinion that the real difficulty is not in our technique, but rather in its complete and perfect application. We are dependent upon the services of a skilful and trained assistant for a perfectly clean operating room, and for the thorough sterilization of all instruments, dressings, and the preparation of sponges, of silk, of wool swabs and towels, as well as the skin of the patient. We are responsible for personal aseptic cleanliness, and especially for the condition of our hands. I do not myself wear gloves, and I believe they are as much trouble as the hands themselves to keep in good condition for surgical work, and at the same time they are a great hindrance to delicate manipulation. For complete sterilization of the skin I prefer ether, soft soap, and perchloride of mercury. As regards cutting instruments, they must not be boiled. I dip my knives in strong solutions of carbolic acid and then in absolute alcohol, and finally wipe them dry in aseptic gauze pads. I never use a knife more than once. When every preliminary precaution has been taken before and preparatory to the operation, other precautions during the operation are equally necessary to prevent the entrance of our microscopic enemies: (1) Antiseptic solutions should be used during the operation, and their free application before the wound is closed; I have the greatest confidence in their utility during and after every surgical interference, even in small and cutaneous wounds. (2) The operator's hand must be frequently and freely washed in a weak antiseptic solution during the operation. (3) All haemorrhage must be arrested, the wound carefully dried, and the edges brought into close apposition. With patients, then, properly prepared, free from any local or general septic disturbance, I believe we have a right to anticipate the best results from the antiseptic methods now generally adopted. Lord Lister was the first man to recognize the real significance of Pasteur's researches into molecular mysteries. Pasteur investigated fermentation and spontaneous generation, and he proved that the former was due to outside specific contamination, and that the latter had no existence. He then sterilized fluids by prolonged boiling, and proved that the decomposition of organic substances was not caused by the gaseous constituents of the air, but by microbes suspended in it. Lord Lister took hold of these great facts with the idea of destroying the activity of these germs. He purified the part of the body to be operated on and everything that touched it—hands, sponges, instruments—and this was then effected by the free use of carbolic acid. Lord Lister thus commenced his great revolution in surgical treatment, and began to block the door opened by the surgeon's knife by which sepsis had been admitted, and in this way he applied Pasteur's researches to surgery and crowned them with imperishable value. Septic conditions were at first regarded as the result of putrefaction; but experiment and observation brought new light. Micro-organisms were found to consist of a great variety of species, and their association with putrefaction was not essential to the development of the most virulent forms of sepsis. Lord Lister demonstrated the existence of distinct species of organisms. What a battle he had to fight against the prejudices of his contemporaries! He soon won disciples, and at length the world of science.

XIII.—A. B. Mitchell, F.R.C.S.I.,
Surgeon, Royal Victoria Hospital, Belfast.

Mr. Mitchell said the danger of infection increased with the duration of the operation. Surgical operations were generally too long; the wound was subject to prolonged exposure, the hand of the operator became septic, and the patient's vitality lowered by too prolonged anaesthesia. One way of diminishing sepsis was to cultivate rapid operative habits. All needles should be threaded before boiling, and needle and thread boiled together. If after preliminary washing the hands were partially dried and then rubbed together, an

obvious danger of epidemics could readily be removed and seen, after which the hands should be again washed.

XIV.—J. D. Malcolm, M.B., F.R.C.S.Edin.,
Surgeon, Samaritan Free Hospital.

Mr. Malcolm expressed great difficulty in saying anything in favour of antiseptics after what had been said by Sir William Macewen, but, nevertheless, he ventured to support their use. Especially he differed from Professor Macewen when he said that in private practice aseptic surgery was quite easy. In the houses of the rich that was so, but in other cases it was different. The speaker had been called recently to a house, fairly respectable looking, but filthy everywhere. The patient required immediate operation, but was filthy also, and it was maintained that in such a case it would have been unsafe to allow any fluid to come near the divided surfaces without chemical purification. In training students it was necessary to teach them how to meet such cases, although aseptic surgery was theoretically the more perfect method.

XV.—James Laurie, M.B., C.M.Glasg.,
Surgeon, Greenock Infirmary.

Mr. Laurie said: I desire in this discussion to associate myself with the remarks of Mr. Stiles and Sir William Macewen. In the preparation of the skin my best results have been obtained by the use of a saturated solution of soft soap in methylated spirits and thorough shampooing of the skin with this and 4 per cent. hot lysol solution. No nail-brush is used, only gauze, or a boiled nail-brush enveloped in gauze. This is followed by turpentine and spirit. If time permits the patient is prepared the day before or several times before operation, and the part and a wide area beyond has a 1 in 40 liq. carbol. dressing applied. The whole procedure is repeated at the time of operation. The skin is carefully shaved at the first washing and again at operation. The hands are cleansed by many minutes' washing (not three or five) in hot lysol solution and soap. I believe there is too much "rubbing and scrubbing" and not enough "soaking and soaping." Thereafter spirit is poured over the hands, etc. Needless to say, all ligatures and instruments should be boiled and dressings sterilized. I have long been of opinion that for practical purposes aërial infection may be discounted. It has been my lot to do a fair number of operations in working-class houses, and I have found no harm to ensue. Lately, on four hours' notice, I did a Caesarean section, and the Jubilee Nurses of my town converted the small kitchen into a nice theatre; water was boiled in the kitchen kettles, and I took my own towels and dressings with me. The wound healed without suppuration in surroundings that many would not credit. If gauze is placed around the wound, and no unnecessary handling indulged in, and frequent dipping of the operator's hands in 1 in 2,000 hot biniodide solution, no infection is likely to ensue; and it will be found when the gauze is removed at the end of the operation that the wound is dry and that there are no blood clots. All that remains to do is to wash out the wound with sterilized normal saline solution, dry with sterilized gauze, and close without drainage. In many cases I seal the wound with collodion and gauze. It has been said that it is impossible to carry out asepsis in private practice, and this is one of the arguments urged against it by those who practise antisepsis. My experience has been all contrary to this, as it ensures accuracy of the surgeon's detail and personal supervision of all the preliminaries. In hospital work a nurse attends to this, one whose duty is solely theatre work, and who has no ward duty. I would further point out that I know of no British manufacturer who puts dressings on the market and guarantees their sterility, and until they do we must sterilize them ourselves.

XVI.—W. T. Brook-Fox, M.B., C.M.,
Blythe.

Dr. Brook-Fox said: I wish to express my cordial agreement with the views expressed by Mr. Cathcart. We have heard different opinions this morning as to the comparative values of the aseptic and the antiseptic systems. Two points appear to have been clearly established: First, that the use of the scrubbing-brush has the effect of bringing fresh germs to the surface, and also has the effect of so bruising the tissues as to distinctly lower their vitality; secondly, the admirable paper of Mr. Leedham-Green has shown that it is practically impossible to thoroughly sterilize the hands. The majority of the speakers this morning are—if I have heard them aright—in favour of excluding the student (clinical clerk) as far as possible from the neighbourhood of the operating table, his place being taken by the nurse, who, of course, is more permanent than the former. This is only one step in the direction of banishing the student altogether from the operating theatre, as it is easy to argue that, germ-laden as he is, he should not breathe the same air as the patient. In Edinburgh, I am glad to say—as Mr. Cathcart has already pointed out—the theatres are still built with the view of letting the student see as much as possible. It appears to me that we already have too much theoretical teaching in our profession by means of long courses of lectures, etc., and if this is to be increased instead of lessened, what of our surgeons of the future? I do not plead for a more empirical knowledge, but I do think that if there is one subject that must be taught practically it is surgery. And I do not see why a student acting as clerk cannot, under proper supervision, be rendered as innocuous to the patient as a nurse.

THE PRESENT POSITION OF ASEPTIC SURGERY.*

By W. WATSON CHEYNE, C.B., F.R.S.,
Professor of Clinical Surgery, King's College.

The discussion which I have been asked to open is on the present position of aseptic and antiseptic surgery. As there is a great deal of confusion with regard to the meaning of the terms "aseptic" and "antiseptic" as applied to surgery, and as the antagonism assumed by some arises from what I believe to be an erroneous definition, I may begin by stating my position with regard to them. This I have already done many years ago in my large book on *Antiseptic Surgery*, and I have not seen any reason to depart from the position laid down there.

Aseptic surgery is the method of treatment directed to the maintenance of an aseptic condition in the tissues of the wound presumably existing at the time of the operation. This method, therefore, can only have to do with operation wounds made into non-infected tissues through unbroken skin. The efforts of the surgeon are here essentially directed against the access of living, active pathogenic organisms to the wound and the maintenance of the aseptic condition of the tissues. On the other hand, antiseptic surgery has to deal with tissues which have been already infected, whether with or without a breach of the surface, and here the surgeon's efforts are directed to diminishing the effects of already-existing sepsis, or it may be in a few cases even to eradicating it.

The problem of antiseptic surgery is a twofold one, according as the infection of the wound is quite recent, as in operating through mucous membranes or in wounds accidentally inflicted just before the surgeon sees the patient, or is of older standing. In either case the problem is a totally different one from that of aseptic surgery, and there is no antagonism between them.

At the present time a good deal of confusion has arisen because the terms aseptic and antiseptic are used in reference to the methods employed to keep a wound aseptic, "antiseptic" being employed where chemical antiseptics are used, and "aseptic" where chemical antiseptics are excluded. This, however, has reference merely to matters of detail, and does not involve any great principle, and to employ the terms in this way is only to magnify comparatively minor details and to miss the essential great principles underlying wound treatment, and it thus causes great confusion of thought and imperfect practical results. The subject for discussion to-day is, then, the present position of aseptic surgery and the best methods of attaining the object desired—namely, asepsis of the wound.

1. The first point to be considered in dealing with the problem of an aseptic operation is the chief sources of infection during its performance. These may be classified into two great groups—namely, (*a*) sources where the organisms are actively growing, and (*b*) those where they are more or less dry, being chiefly deposited in the form of dust from the air or as dried-up scales from the skin, etc. Of these the former are by far the most important. The chief organisms which we have to fear in connexion with wounds belong to the class of cocci, and these lose their vitality comparatively quickly when they become dry; so that as regards these organisms dust, if thoroughly dry, is comparatively innocuous. It is

* This paper was written with the view of opening the discussion on the above subject at the Oxford meeting, but unfortunately I was prevented from attending the meeting.

true that we have also to deal with pathogenic organisms belonging to the class of bacilli and forming spores which are unaffected by drying, such as the tetanus bacillus, the various forms of bacilli causing gangrenous processes in wounds, etc., but these are hardly likely to be present in the air of an ordinary room, and only enter wounds under special circumstances.

(*a*) As regards actively-growing pathogenic organisms, the chief source of infection is the surface of the body. The mucous membranes are constantly bathed with fluid which is highly nutritive for bacteria, and pyogenic organisms are always present and ready to enter the tissues when there is a breach of surface. Organisms are also present on the skin, especially in parts where epithelium collects or where moisture is present, as in the axilla, perineum, between the toes, etc. The common coccus of the skin is apparently slightly, if at all, pyogenic, but the ordinary pyogenic cocci are also present in varying numbers according to the thickness of the epithelium and the moisture of the part. They are especially present about the finger-nails. How far these organisms penetrate into the skin is a point about which there is considerable difference of opinion, some stating that they penetrate into the sweat and sebaceous glands. I must say that I do not believe this. I have in my life examined many sections of skin microscopically, and I have never found micro-organisms in the deeper layers of the healthy skin, and we know that if pyogenic cocci penetrate or are rubbed into sweat and sebaceous glands they will give rise to pustules, boils, or abscesses. I do not believe that they extend deeper than the layers of actively-growing epithelium in the case of healthy skin.

Another source of infection is pus or other fluids in which the organisms are actively growing, and which may be conveyed to the wounds by imperfectly cleansed instruments, hands, sponges, towels, etc.

(*b*) As regards other sources of infection, the organisms are more or less dry, and the non-sporebearing ones are thereby deprived of their vitality. In ordinary dust floating in the air comparatively few pyogenic, or indeed pathogenic, organisms of any kind are present. At the same time I do not think that the air of hospitals, especially in wards, should be trusted too much. More important than the dust floating in the air is the dust in clothing, blankets, towels, etc. This consists to a considerable extent of epithelial scales, which may very readily contain pyogenic cocci, and this is more especially the case with towels.

2. *Methods of Dealing with these Organisms under Different Circumstances.*—There are two methods of destroying bacteria which are applicable in connexion with operative work—namely, (*a*) the use of heat, and (*b*) the use of chemical disinfectants.

(*a*) *Heat.*—This may be used in the form of boiling, of hot air, or of steam. For all practical purposes boiling, if properly carried out, is the most satisfactory method wherever applicable, and I make it a rule to continue the boiling for at least twenty minutes. The surgeon must keep a careful watch on this as on every other method of disinfection. Nurses are very apt to forget that even boiling water does not act instantaneously, and I constantly find them dipping fresh instruments in boiling water and handing them after a few seconds as properly disinfected. Hot air is not of any particular value as a disinfectant in operative work. It must be at something like 270° F., and to kill spores must be continued for an hour, and this is apt to spoil various materials. If dryness is required, then superheated steam must be employed, but it must be remembered that it must be in motion or otherwise it may not penetrate the material. Further, the towels, dressings, etc., must not be tightly packed, otherwise the interior may not become properly heated. I must say that I always feel a little doubtful about the towels, etc., which are disinfected by steam. They are often packed tightly in little tin boxes with small holes in the side, and I never feel sure that under these circumstances the interior has been properly heated. Wherever it is possible I prefer boiling.

(*b*) *Chemical Disinfectants.*—A number of chemical substances are very potent in destroying bacterial life. I need not go into the various disinfectants that are used, but two are of special value in surgical work—namely, carbolic acid and mercuric salts (best, I believe, bichloride of mercury). Two conditions are necessary to secure efficiency—namely, plenty of time to act with free access to the organisms and their presence in a suitable medium.

The length of time required for the action of the antiseptics depends on their strength and on the form of the organisms, whether naked adult organisms, such as cocci, or spores. For example, 5 per cent. carbolic acid watery solution will kill cocci in a very short time, certainly in from five to ten minutes, but twenty-four hours must be allowed for the destruction of spores. Fortunately, as I have already said, we have essentially to deal with cocci, which are quite readily killed provided they can come thoroughly in contact with the lotion.

That brings us to the second condition—namely, that the antiseptic shall have free access to the cocci. Cocci may escape rapid destruction if they are embedded in a mass of old epithelium which the antiseptic can only penetrate after a considerable time, similarly if they are in a mass instead of more or less singly. Again, if they are in a strongly albuminous fluid, many antiseptics, notably carbolic acid and bichloride of mercury, precipitate the albumen, and thus the organisms become covered by an albuminous layer which markedly retards the action of the antiseptic, and thus, instead of killing them in a few minutes, several hours may be necessary. Similarly, if there is much oil present, their action is much slower, and, in the case of corrosive sublimate especially, may be quite ineffective. These are examples of some of the points which must be borne in mind, but, properly used, chemical antiseptics have a very important place in aseptic surgery.

We may now consider the application of these two methods of disinfection to the chief points in the aseptic treatment of wounds.

(*a*) *Disinfection of the Skin.*—This is, perhaps, the most important of the various procedures in asepsis, and one about which the greatest difficulty and difference of opinion have arisen. Some unfortunately look on true disinfection of the skin as almost an impossibility, and consequently carry out this important detail in a very perfunctory and inefficient manner. That disinfection of the skin is difficult in certain parts of the body is quite true, but that it is impossible I would deny most emphatically. The idea seems to have arisen from the view that the bacteria penetrate into the sweat and sebaceous glands, a view for which, as I have already said, there is no real evidence at all. In former years I made many experiments, which I never published, on various methods of disinfection of the skin, and I satisfied myself that there was no insurmountable difficulty in doing so; in fact, as regards the skin of the trunk, arms, etc.—that is, parts where the skin is thin and the epidermis not in masses, and more especially in children—there is no difficulty whatever in thorough disinfection. Special care must of course be taken with the surgeon's hands and nails, but the difficulty is not so great that it is in my opinion necessary to tie ligatures with forceps, wear gloves, etc. For the disinfection of the skin chemical antiseptics are of course necessary, but I do not like the plan of soaking the skin in antiseptics for a long time (a day or two) before the operation. I do not think that it is necessary for disinfection; it leads to the formation of a mass of dead epithelium, which is an excellent nidus for subsequent bacillary growth, and there is apt to be considerable subsequent irritation of the skin. On the other hand, to be content to wash the hands, however thoroughly, in sterilized water alone is to my mind, to say the least, very imprudent and unscientific.

(*b*) *Towels or Cloths Surrounding the Area of Operation.*—It is necessary to surround the field of operation with aseptic cloths, and these are best disinfected by heat. For my own part, I feel safer if the towels have been boiled than if they have been in the autoclave, the only objection being that they are wet and apt to cool. To obviate this I put mackintosh between the towel and the skin. I also have the towels wrung out of a 1 in 2,000 sublimate after boiling, not from any idea of additional disinfection, but because dust falling on them or infective material touching them has a chance of having any cocci in it destroyed. I think, however, that this is a small matter, and if I felt that I could trust the disinfection by steam I have no particular objection to cloths treated in that way.

(*c*) *Instruments.*—The most certain and expeditious way of disinfecting instruments is by boiling. In toothed instruments this is quite essential. I do not think that it is necessary for highly polished instruments, such as knives, and I prefer to soak my knives in 1 in 20 carbolic acid for ten minutes to boiling or heating them. I think it spoils the edge less, and is quite efficient. A difficulty arises about the use of instruments wanted during an operation and not previously prepared. One cannot wait long enough to have them efficiently boiled, and I have often seen them just dipped into boiling water and handed to the surgeon. My own plan

in the case of an instrument wanted in a hurry is to immerse it in undiluted carbolic acid for a minute or two, which will kill anything, and then have it rinsed thoroughly in carbolic and sublimate lotions or in sterilized salt solution, if preferred, before it is handed to the surgeon.

(*d*) *Ligatures and Stitches.*—With the exception of catgut and other animal substances, these can all be boiled, and the only point is to take care that they shall not become contaminated again from the air or surrounding objects or from the skin. Here I believe that the use of chemical disinfectants is necessary. If some time elapses between the sterilization of the ligatures and their use, contamination is very likely to occur, whether they are lying on a dry sterilized cloth or in sterilized salt solution, and this is more especially likely to be the case if the surgeon despairs of the possibility of sterilizing the skin and is content with washing in sterilized water. For my own part, I practically never have the difficulties with stitches and ligatures, in the way of extrusion, stitch abscesses, etc., which seems to be such a bugbear to some surgeons, and I believe the reason is that I prevent contamination of these materials after they have been sterilized by keeping them in antiseptic solutions, and that I pay great attention to the proper disinfection of the hands and skin. One word about catgut. It seems to me a great pity that its use is falling into abeyance, for it is a most useful and handy material. For my own part I use it extensively, employing the sulpho-chromic catgut, prepared according to Lister's formula and sterilized by prolonged immersion in 5 per cent. carbolic acid solution. I always use the finest gut for ligatures and have never seen any trouble result.

(*e*) *Sponges.*—Two kinds of sponges are used, namely, swabs and marine sponges. The former are sterilized by heat, and for the reasons above given I prefer boiling, and, to prevent recontamination before use, I keep them in a 1 in 2,000 sublimate solution. They are the best for septic cases, as they are thrown away afterwards. I prefer marine sponges, however, for aseptic cases, and I have never seen contamination from their use. They are soaked in several changes of 1 in 20 carbolic solution for at least a week before they are used and then rinsed out in 1 in 2,000 sublimate lotion, or, if preferred, in sterilized salt solution, before use.

(*f*) *Drainage.*—While in the great majority of cases no drainage is necessary, there are circumstances under which it is advisable to let blood and serum escape from a wound for a day or two. These are essentially cases where a cavity is left which is not closed when the dressing is applied, where the patient is very fat, etc. For this purpose two forms of drains are used, either tubes (rubber or glass) or gauze drains. The former are the most efficient, and I know of no objection to their use. The latter is an imperfect reintroduction of Lister's capillary drain, and is not to be compared in efficiency with drainage by open tubes. The strands of the gauze become choked by blood clot, cells, etc., and soon cease to act properly; and it is not uncommon when one of these plugs is removed to see a gush of serum which has been prevented by the plug from escaping. To leave the subject of aseptic surgery for an instant, I would especially deprecate the employment of gauze drains in preference to tubes for the drainage of suppurating cavities. They do not let the thick pus escape properly; in fact, they dam it back, and, becoming soaked with septic pus, act like the old seton and prevent the healing of the wound. I have repeatedly seen wounds which would not heal close quickly on the substitution of a drainage tube for the gauze plug.

(*g*) *Dressings.*—Opinions vary a good deal at the present time as regards the best dressings to be employed after an operation, and more especially whether they need or need not contain a chemical antiseptic. In this connexion it must be remembered that the wound is already closed, and that an antiseptic in the dressing will not penetrate into and affect the healing of the wound in any way. The point is whether or not it is advisable to add an antiseptic to the discharge after it escapes from the wound, so as to render it an unfit soil for bacterial growth. Although the antiseptic cannot get into the wound, bacteria growing in the discharges on the surface may quite well do so, more especially along the stitch tracks or drain openings. There are many small wounds which closely stitched up have practically no discharge, or the small amount of discharge which escapes dries up very quickly over the line of incision, so that there is nothing for the bacteria to grow in, and little or no dressing is required—at most a little sterilized wool fixed on with collodion. But in other cases there may be a considerable amount of discharge, which will quickly soak through a fairly thick dressing, and, if it has not acquired some antiseptic in its course, bacteria will grow in it and quickly reach the wound. True, they may not penetrate to the interior, but I fancy a good many of the stitch abscesses which seem to trouble some surgeons originate from infection in this way. I see no reason why a slightly soluble antiseptic should not be stored up in the dressing, and I always use the double cyanide of mercury and zinc in the gauze and salicylic acid in the wool. The only objection is that some skins are more easily irritated than others, and in that case plain sterilized dressings may be substituted, but should be changed when the discharge shows through. As regards the antiseptic dressings, it must be remembered that, though they contain an antiseptic, they are not sterile as they come from the shops, and must be sterilized just as carefully as if they contained no antiseptic.

(*h*) *Aërial Infection.*—The question of infection from the air is a very interesting one. In early days it was looked on as of extreme importance, and various means, carbolic spray, etc., were employed to counteract it. It was gradually found, however, on the one hand, that the means employed were insufficient and, on the other, that the importance of aërial infection was slight. It was more especially found that the organisms carried in aërial dust were essentially saprophytic, that the ordinary pyogenic cocci died when dried, and were only rarely present, and that the chief organisms in aërial dust were fungi and spore-bearing bacilli which were not pathogenic and could not grow in the tissues. Hence, except in badly-ventilated rooms where septic cases are present, the question of aërial infection is one of very slight importance. Curiously enough, however, in spite of these facts, perhaps the greatest amount of labour and money is spent at the present day by some surgeons to guard against aërial infection, and elaborate operating theatres are built with all sorts of arrangements to prevent the accumulation of a speck of dust in any part. This is, no doubt, well enough; it is only right to take every precaution, but unfortunately these arrangements are apt to assume an exaggerated importance, and the real essentials—namely, the disinfection of the skin and the avoidance of contamination during an operation—are apt to be relegated to a secondary place.

When the spray was given up, douching of the wound with antiseptics was substituted for it, but this is also inefficient as a means of getting rid of bacteria which have entered during the operation, and it has been more and more given up, till now I hardly employ it. Some wash the wound out with sterilized salt solution at the end of the operation, and, if it is at hand, there is no objection to it. As a matter of fact, however, one leaves the wound dry before stitching up, and the matter is not of much consequence, seeing that if proper precautions have been taken before and during the operation only some non-pathogenic bacteria will have fallen in from the air, and will, for the most part, have been wiped out during the sponging.

From the foregoing, the position which I take up as to the relative value of these two methods of disinfection in connexion with operative work will be evident, and it is not possible, in my opinion, to carry out a really aseptic operation without using antiseptics as well as heat. Heat may be employed for the disinfection of towels, cloths, linen aprons, instruments, ligatures and stitches, swabs, drainage tubes, and dressings. Antiseptics must be employed for the disinfection of the skin and hands before and during the operation, for instruments wanted in a hurry, for catgut and marine sponges, and generally to prevent reinfection of instruments, etc. Aërial infection may, as a rule, be disregarded.

3. In spite of all the precautions there is no doubt that bacteria do enter wounds from the air, but, being saprophytes, they do not as a rule do any harm. Although I do not think that pathogenic organisms often enter wounds during an aseptic operation conducted on the lines of a proper bacteriological experiment, there is no doubt that they do often enter wounds, and yet there is not necessarily any suppuration or other trouble as the result. This is due to various reasons, of which the chief are the kind and dose of bacteria, on the one hand, and the healthiness of the blood clot and tissues on the other. The kind and virulence of the bacteria which enter are very important elements; thus streptococci are much more likely to take root than staphylococci, streptococcus pyogenes aureus than staphylococcus pyogenes citreus, staphylococci from a suppurative peritonitis or an acute osteomyelitis than staphylococci simply growing on the skin, etc.

The number getting in, or rather the concentration, is also a matter of the greatest importance. It is now over eighteen

years since it occurred to me that it would be worth while ascertaining whether the number of bacteria entering the body in the first instance—in other words, the dosage—was a matter of importance; and I found that, corresponding to the kind of bacteria, the number which entered in the first instance had a very marked influence both on the actual occurrence of infection and also on its severity. These results have since been repeatedly confirmed, and the importance of the initial dosage is now an accepted axiom. In aseptic surgery, even though the operation may not be conducted in an ideal bacteriological manner, there is no doubt that the dosage of bacteria entering is very much less than in former times.

But once bacteria enter wounds the question of the result does not lie wholly with the bacteria; the body itself opposes a strong resistance to their growth. Healthy recently-clotted blood is not at all a favourable nidus for growth; indeed, it was the fact shown by Lister that one or two single bacteria would not infect the clot, but that a considerable number were necessary, that led me to investigate the question of dosage as regards the body generally. The tissues themselves have, as we all know, a very strong opposing power to the growth of bacteria, and unless the latter are sufficiently virulent and numerous they very quickly die out. Much depends on the vigour and health of the tissues, and the less they are injured during the course of the operation the better they will be able to resist infection should bacteria have got in. All the same, prevention is better than cure; and it is better to prevent the organisms entering a wound than to trust to their doing so in small doses and finding the tissues sufficiently resisting.

There is very little more to say about the present position of aseptic surgery; the principles remain the same, the only divergence—I cannot say in all respects advance—is in the matter of details.

The principles underlying aseptic surgery are to exclude bacteria from wounds altogether, or admit them in as small numbers as possible, and at the same time to place the tissues under as favourable circumstances as possible to destroy bacteria should they enter. In the early days the chief stress was laid on the exclusion of bacteria rather than on keeping up the resistance of the tissues, and the results, on the whole, were very excellent and remarkable. No doubt there are many objections to the lavish use of antiseptics in wounds, such as irritation and absorption of the antiseptics, and unless the methods are intelligently employed bacteria may enter in spite of the flood of antiseptics, and find a damaged wound in which they can grow more readily than might otherwise have been the case. At the present time the pendulum has swung round to the other extreme, and more attention is being paid to the avoidance of injury to the tissues than to the complete exclusion of bacteria. It is difficult to say why such an extreme swing should have taken place; my own idea is that in spite of the use of antiseptics, many errors were committed in the bacteriological technique, and the disastrous results were attributed to the antiseptics rather than to errors in manipulation. Already there are signs that the pendulum is beginning to swing back, and that some of the extreme surgeons are having so much trouble with stitch abscesses, ligatures, etc., that they are beginning to take more care in the exclusion of bacteria. I believe that, as in other cases, the truth lies between the two extremes, and that the best results will be obtained by the judicious use of all the means of sterilization at our disposal, aiming, on the one hand, at the complete exclusion of bacteria and, on the other hand, at avoiding injury to the tissues as far as possible by chemical antiseptics or mechanical violence. These are the lines on which I have always worked, and I cannot desire anything better than the rapidity and smoothness and constancy with which wounds heal when treated on these lines.

CYSTS IN THE MEDIAN LINE OF THE FRONT OF THE NECK:

A SERIES OF ILLUSTRATIVE CASES.

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CYSTS occurring in the median line of the front of the neck are viewed with considerable interest, not merely from a clinical standpoint, but also because they illustrate in many cases some error in the development of this part of the body. In the series which I now bring before the Section of Surgery there are examples due to different causes. These I have grouped as follows:

A. Thyreoglossal—(1) infrahyoid, (2) suprahyoid.
B. Ranula.
C. Dermoid.
D. Sebaceous.

A.—Thyreoglossal (1) Infrahyoid.

CASE I. *Tubular Cyst with Contiguous Abscess Low Down.*—J. B., male, aged 17, was sent to see me by Dr. J. Stirling Robertson, of Clydebank, on account of "an inflammatory swelling in the neck, of about a year's duration." The swelling was said to have begun below the chin in connexion with some ulceration of the mouth, and to have gradually fallen to a position just above the manubrium sterni. The boy was well-nourished, and of good height, and apparently healthy. Just above the manubrium was an abscess—a fluctuant swelling about the size of a walnut, and adherent to the overlying skin, which was reddened. On examining this swelling a cord like structure was distinctly felt extending from its upper margin upwards in the middle line to behind the body of the hyoid bone. Traction downwards on the swelling caused the cord to become prominent, and to project the skin of the neck in a median ridge (Fig. 1). This feature led me to diagnose

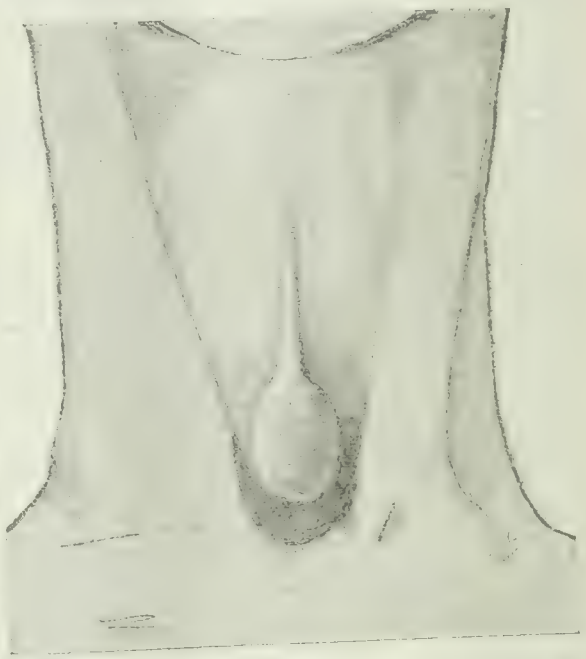


Fig. 1.—Thyreoglossal cyst; abscess cavity above episternal notch; median ridge extending up to hyoid bone. (Case 1.)

the condition as probably a cyst in connexion with a persistent thyreoglossal tract, in the lower extremity of which suppuration had occurred. Excision was advised.

Operation.—March 27th, 1902. A median incision was made extending from above the hyoid bone to the upper edge of the swelling; the inflamed skin over the swelling was included in an ellipse, and the incision thereafter prolonged to the upper margin of the manubrium. On retracting the edges of the wound there was found lying in the subcutaneous tissue a firm cylindrical cord of about 0.5 cm. in diameter. It descended from behind the hyoid bone, and gradually increased in thickness towards its lower extremity, where it terminated in a bulbous dilatation which measured 2 cm. in diameter. The cord was separated without difficulty from the subjacent tissues, partly by cutting and partly by the handle of the knife. It was observed that traction during the process of separation gave rise to respiratory difficulty. The lower third of the structure was connected with numerous veins of large size, which passed outwards from it on either side; these were ligatured and divided. The cord was then cut through on the thyrohyoid membrane, just where it passed upwards behind the hyoid bone, and the specimen, which measured 7 cm. in length, was removed. From the cut upper extremity of the cord a drop of clear yellowish glairy fluid exuded. The skin wound was sutured, and gauze drains were inserted. Healing proceeded uninterruptedly, and at the end of a fortnight the wound was completely closed.

Histological Report.—Dr. J. H. Teacher very kindly examined the specimen, and reported as follows: "The specimen was hardened in formalin (Kaiserling's solution), and, after examination, mounted in glycerine. On splitting it longitudinally, vertically to the skin, it was found that a tubular cyst, of diameter varying very irregularly up to 7 mm., extended down the upper half of the specimen. The lower half appeared to be a chronic abscess. Microscopic examinations confirmed these impressions. The cyst was filled with purulent secretion; it had

a wall of dense fibrous tissue lined with compound epithelium, which was flattened by pressure and infiltrated with leucocytes, but in places showed characters similar to that which lines the trachea (Fig. 2). Very few of the cilia remained. Towards its upper end it bifurcated antero-posteriorly, and both tubes terminated blindly a short distance below the upper end of the specimen, tailing off gradually into thin cords of epithelium, and then ceasing altogether. This was demonstrated by serial sections. On the deep side of the tube near its upper end the epithelium showed a transition to the squamous type seen in the upper part of the larynx and the pharynx. At its lower end the tube ended blindly in a rounded bulb, between which and the abscess no communication could be demonstrated. The abscess had the appearance of a chronic one, and at one or two points in its wall structures resembling tubercles were found. It is possible that it may have formed inside a cyst, but no trace of epithelium-lined tube could be seen in the lower half of the specimen, and the very definite termination of the tube above it rather indicates that it did not.

"I do not find any sign of its having been a lymphatic gland, but, of course, in such an advanced state of disease as it was in, this is not surprising. There had certainly been an acute suppurative process superimposed upon both the cyst and the chronic inflammatory process below it.

"Glandular tissue resembling the thyroid was not found in the sections examined."

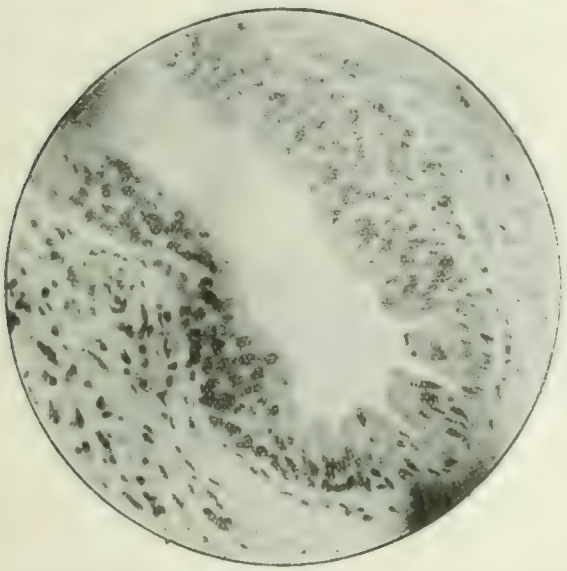


Fig. 2.—Thyreoglossal cyst. Portion of one of the ducts lined with columnar ciliated epithelium × 300. (From photo-micrograph by Dr. J. H. Teacher. Case I.)

Subsequent History.—When I saw the patient at the end of September, six months after the operation, the scar had become considerably broadened in its lower third. At the upper end, situated over the body of the hyoid bone, was a spherical nodule measuring about 0.5 cm. in diameter. The patient stated that on washing himself there was "leeting" from this nodule, sometimes watery, sometimes purulent. A fine probe could detect no canal, but the attempt caused the evacuation of a drop of muco-pus.

Neither Dr. Teacher nor I think that the glandular abscess is undoubtedly tuberculous. The history in this case pointed to the condition being primarily one of glandular abscess, secondary to ulceration in the mouth. It is not usual to find lymphatic glands in the middle line of the neck in its lower part, but such do occur sometimes.[1] The diagnosis was cleared up by the palpable cord running to the hyoid bone. Swelling of the thyreoglossal tract following throat trouble has been mentioned by R. Johnson[2] and by Durham[3] in his excellent paper. The latter writer looks on infective material having probably made its way from the fauces down a patent canal, but in the case now recorded we have quite possibly to deal with an adenitis originally independent of the cyst and in connexion with the mouth condition. The absence of epithelium from the upper end of the specimen, as shown by the microscope, does not necessarily indicate complete extirpation; the after-history of the case substantiates this statement. The explanation lies in the partial obliteration of the epithelium, so as merely to break the continuity of the tract. The superficial situation of the cyst is hardly what one would expect, but corresponds to that described by Marshall.[4]

Case II. *Ovoid Cyst: Inflammation and Haemorrhage: High Situation.*—D. McK., male, aged 61, a patient of Dr. Kennedy, Ballachulish, was admitted to Ward 19 of the Western Infirmary on June 11th, 1904, with a swelling in the front of the neck. Three months previously he had noticed for the first time a small swelling under the chin, and he thought that irritation by his collar had had something to do with it. It subsequently enlarged considerably and became much softer, but it was never painful. There was a large ovoid cystic swelling situated over the body of the hyoid bone, and extending down almost to the crico-thyroid space. Although occupying the median line, its chief bulk was towards the right side. It moved with the larynx on deglutition, but did not appear to be firmly fixed to that organ. On account of its shape and its overlapping the body of the hyoid bone no cord-like structure could be felt, and it was diagnosed as probably an enlarged bursa.

Operation.—June 13th, 1904. A median incision was made over the swelling. The cyst lay beneath the deep fascia, and was exposed by dissecting off the latter on either side. On puncturing the cyst wall, dark brown slimy fluid welled out. The anterior wall was then split throughout its length, so as to allow inspection of the inner surface of the sac. This was smooth and shining, and the pomum, thyrohyoid membrane and body of the hyoid bone were plainly visible through the posterior wall which they projected, and which covered them like a serous membrane (Fig. 3). This wall of the sac passed up in front of and a short distance beyond the hyoid bone. There was further a small recess directed upwards in the middle line behind the hyoid. The cyst wall, including this small diverticulum, was dissected away with ease: there was no very firm attachment to the bone. After removal of the cyst, inspection of the right sternohyoid muscle, which had been in close relation with the wall, showed the existence of a pouch-like recess on its inner margin. This depression was lined by a smooth wall, which was very thin. In order to avoid cutting and damaging the muscle, this smooth surface was well rubbed with a piece of dry gauze. The muscles and deep fascia were united in the middle line with catgut, and the skin wound was closed with silkworm gut.

Through a tube inserted at the upper end of the wound there came a few drops of discharge. On the 18th the skin stitches were removed and collodion was applied.

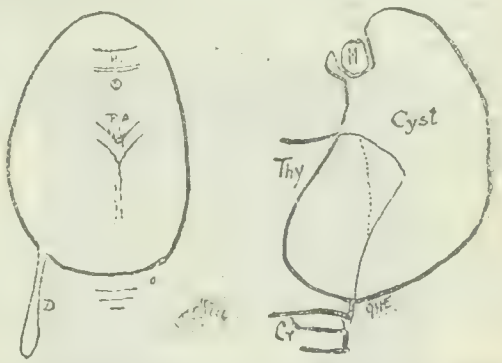


Fig. 3.—Thyreoglossal cyst. Left-hand figure shows the appearance after the cyst was laid open. Right-hand figure shows relationships, in profile. H. Hyoid bone with recess passing upwards behind the bone. P.A. Pomum Adami. D. Diverticulum in sternohyoid muscle. THY. Thyroid cartilage. CR. Cricoid cartilage. (Case II, diagrammatic.)

Histological Report.—Dr. Teacher reported as follows: "The deep brown mucous contents show the following cellular elements: (1) Polymorphonuclear leucocytes; (2) large mononuclear cells, many of which are loaded with yellow pigment; (3) shadowy non-nucleated bodies, probably remains of red corpuscles. There is also free yellow pigment. The cyst wall is thick, firm, and fibrous, for the most part rather sparsely cellular, and lined with the remains of epithelium. In one niche a shred of epithelium shows columnar cells, like what one would find lining the trachea, but badly preserved; probably this indicates what was the type of the epithelial lining. Other parts of the wall, again, present the character of fairly old granulation tissue. In such areas the epithelium may be entirely wanting, and many of the cells in the interstices of the tissue are similar to the pigmented cells of the fluid. These parts would suggest recent inflammation of subacute character in the cyst, probably with some haemorrhage into the cavity."

Subsequent History.—Dr. Kennedy writes on June 30th that "the neck has healed perfectly. . . . There is no sign of a fistulous opening, and he feels perfectly comfortable."

The history of irritation by the collar, the shape of the cyst and its late appearance were in keeping with what one would find in bursitis. The likelihood of the sac being bursal was strengthened by its appearance when cut into, and the question was only settled by microscopic examination. The result of the examination supports the views of Butlin[5] and Durham,[6] and is also in accord with what Dr. Willis Anderson has stated in a recent paper on bursae of the neck as to the importance of histological examination as an aid to diagnosis.

Case III. *Tubular Cyst: Fistula: High Situation: Accessory Thyroid.*—B.M., aged 19, a private in the Scottish Rifles, came to the out-patient

epartment of the Western Infirmary on June 13th, 1904, with a discharging sinus in the middle line of the neck, just above the pomum Adami. He stated that the opening had been present since infancy, and that the act of eating was accompanied by an increase in the quantity of the discharge. The medical officer who sent him to me reported that the sinus had been opened up and touched with caustic, but without success. A depressed orifice, not admitting an ordinary probe, was present in the situation above mentioned. From this opening a drop of glairy mucous discharge followed attempts to introduce the probe. The muscular movements accompanying deglutition expressed a further quantity of discharge. On pinching the skin above the opening a distinct cord was felt extending up to the hyoid bone.

Operation.—June 20th, 1904. A median incision from above the hyoid was carried down towards the orifice of the sinus, which, with its surrounding skin, was isolated by an ellipse. The cord-like structure was then dissected up from the thyrohyoid membrane. It was firmly adherent to the periosteum of the body of the hyoid bone, from which it was cut off close. There was considerable bleeding, mainly venous. The deep cervical fascia was not recognized. The wound was sutured with silkworm gut, and a small drainage tube inserted. Respiratory difficulty was encountered during the operation when pulling on the parts, as in Case I.

Histological Report.—Dr. Teacher found the specimen to consist of several tubules lined with stratified, columnar, ciliated epithelium, embedded in dense connective tissue. In the lower sections spaces lined with cubical epithelium occurred. These did not show colloid contents, but were evidently of the nature of thyroid gland. While the blind upper extremity of at least two tubules was seen, the highest sections showed also the lumen of one or more tubules cut across. It was therefore presumed that some portions of epithelium had been left behind.

Subsequent History.—June 23rd. Dressed. Slight glairy discharge from lower end of wound. June 27th. Stitches removed. Slight glairy discharge. June 30th. Healed. Some puffiness in submental region. July 4th. Discharge of pus from upper end of wound: this was reopened and packed with iodoform gauze. July 14th. Small bud of granulations surround an orifice from which a drop of glairy discharge can be squeezed.

This case illustrates two points in the general history of such cysts. These are (1) intractable fistula, and (2) the presence of thyroid tissue, in addition to tubes lined with ciliated epithelium. With regard to the fistula, no history of preceding swelling[2] was forthcoming; but this, of course, is no proof that such did not exist.

(2) *Suprahyoid.*

CASE IV. *Cyst of Ductus lingualis.*—M. R., female, aged 4 months, was sent to the outdoor department of the Western Infirmary in August, 1903, by Dr. Macpherson, Bothwell. The child's mother stated that there was a swelling under the tongue and in the neck below the chin. This was observed at birth, and it had since undergone slow enlargement. The child had a distinct "double chin" from swelling in the submental region. There was also a bulging in the floor of the mouth.

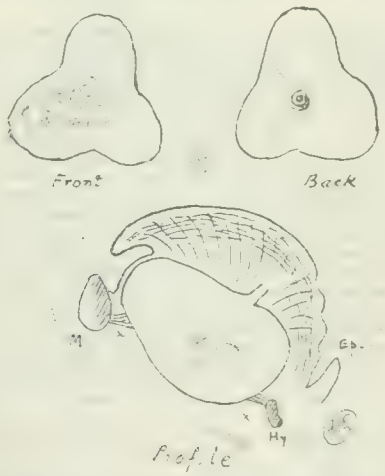


Fig. 4.—Thyreoglossal cyst (suprahyoid). Shows different views of the cyst. M. mandible. Hy. hyoid bone. * * attachments of cyst to those structures. Ep. epiglottis. (Diagrammatic, Case IV.)

This was in the situation of a ranula, and was covered by mucous membrane. The swelling differed from an ordinary ranula in that there was no translucency, and the mucous membrane appeared of normal thickness. The swelling extended laterally on either side to the ranine vein. On bimanual palpation, fluctuation was communicated from within the mouth to the submental swelling and vice versa. Taking into consideration the appearance of the mucous membrane of the floor of the mouth I diagnosed a cyst, more deeply situated than ranula and extending also into the neck. From its position I hazarded the opinion that the condition was probably a cyst in connexion with the upper part of the thyreoglossal tract (ductus lingualis).

Operation.—August 31st, 1903. The cyst, for so it proved to be, was exposed by a transverse submental incision extending across the neck between the angles of the lower jaw. On separating the right and left suprahyoid muscles from one onother in the middle line, the capsule of the cyst came into view. Blunt dissection served to separate it from its surroundings save at three points—a distinct band (Fig. 4 * *) passed down to the body of the hyoid, and another forwards to be attached to the region of the genioid tubercles. After these bands had been divided, a white cord-like structure was found leading backwards into the muscles of the tongue; this arose from the middle of the postero-superior aspect of the cyst. The cord was cut across and the cyst removed. The remains of the cord were removed from the depth of the tongue as completely as possible, with scissors. The space occupied by the cyst was between the genio-hyoglossi muscles. After removal the cyst was seen to be trilobate, and measured 3.75 cm. in length, by 3 cm. in breadth: its antero-posterior measurement was 1.75 cm. Healing was uneventful. There was no history of fistula resulting.

Histological Report.—Dr. Teacher examined the specimen and reported as follows: "(Lingual sebaceous cyst). The wall consists of a thin capsule (about 1 mm. thick) of dense connective tissue lined with greatly flattened, atrophied, stratified squamous epithelium. The small duct (that is, the cord-like process cut through) shows the character of this more plain (Fig. 5). That the portion removed did not include the



Fig. 5.—Thyreoglossal cyst (suprahyoid). Transverse section of duct, with lining of stratified squamous epithelium, passing upwards and backwards into substance of tongue. × 60. (From a photomicrograph by Dr. J. H. Teacher. Case IV.)

extremity of the duct was demonstrated by serial sections." [*Note.*—The portion of duct cut away secondarily was not submitted to Dr. Teacher, it not having been preserved.]

Although differing in its epithelial lining from the preceding three cases, this specimen is nevertheless a cystic development in the thyreoglossal tract. In this case it is the upper portion of the tract or ductus lingualis which has undergone the change. The fact of its possessing the character of a sebaceous cyst is in agreement with the findings of other observers. The attachments to the genioid tubercles and to the hyoid bone resemble what occurs in "lingual dermoids," but the striking feature is the duct passing upwards and backwards towards the dorsum of the tongue. The cyst was excised through the neck for two reasons: (1) The difficulty in carrying out the necessary manipulations in the small cavity of an infant's mouth, and (2) the danger of sepsis in a deep, irregular cavity.

General Remarks on Thyreoglossal Cysts.

All the above cases belong to the same category; they arise in connexion with epithelial "rests" of the thyreoglossal tract. Professor His in his original work[3] described this tract as a duct, but some years later,[8] and as the result of his further investigation of the matter, he substituted the expression "tract" as being more correct.

Relation to the Hyoid Bone.—These cases illustrate the fact that the continuity of the thyreoglossal tract is interrupted at the seat of the hyoid bone. This interruption, which would seem to occur before the actual formation of the bone, serves as a ground for classifying the cysts as suprahyoid and infrahyoid. In both classes one point is to be noted—namely, the firm attachment to the body of the hyoid. This attachment forms the great difficulty in the successful treatment of the condition of thyreoglossal cyst. Remnants of epithelium may escape the surgeon's knife not only from their firm

attachment to the periosteum, but also because, in some cases, the epithelium lies in the interior of the bone. In these last, resection of a portion of the hyoid may be called for.

In Cases I and II the upper end of the cyst lay behind the hyoid, while in Case III it was attached to the periosteum on the front of that bone. In Case IV the cyst was attached to the upper part of the bone.

As regards their relation to the cervical fascia, Case I was superficial except at its upper extremity; Case II was distinctly beneath the deep fascia; in Case III the relation was not made out, but the tubules were probably beneath the deep fascia. Butlin [10] states that they lie beneath the fascia and septum of the sterno-hyoid muscles. In Case IV we have the usual relationship of the cyst to the genio-hyoglossi muscles.

Epithelium.—The difference in character of the epithelium in suprahyoid and infrahyoid cysts might give rise to difference of opinion as to their common origin, but we have the same transition from squamous to ciliated epithelium in the respiratory passages, and even in the infrahyoid cysts (*cf.* Case I). The presence of the duct passing towards the dorsum of the tongue leaves no doubt of the nature of the suprahyoid cyst (Case IV), and disposes of the idea of its being a dermoid.

Shape.—The different appearances or shapes which a thyreoglossal cyst may take are illustrated by Cases I, II, and III. In Case I there is the abscess low down in the middle line of the neck, with a palpable cord extending up to the hyoid bone. Case II took the form of an ovoid swelling in the thyrohyoid region, partly median but also partly unilateral. It was diagnosed as a bursal swelling, and this view was apparently confirmed by the naked-eye appearance of its interior. In Case III, however, we have a stage further than what obtained in Cases I and II, namely, formation of a fistula.

Median Situation.—In Case II we have the tendency for the cyst to be unilateral. This apparent departure from the usual position of such a cyst has been noticed by Waterhouse, [11] and his explanation that it is due to its large size seems to be sound. A cyst in the thyrohyoid region, if enlarging, will find more room on the side of the thyroid cartilage than what is possible between the pomum and the deep cervical fascia.

Fistula.—While this was only present in one of the cases (III) there is little doubt that in time it would have appeared in Cases I and II. It should be noted, however, that no direct connexion could be traced in Case I between the tubular cyst and the abscess cavity, even on microscopic examination. Still, bearing in mind the suppurative condition within the cyst, there is no doubt that after the abscess had been opened or had burst spontaneously, the cavity of the cyst would have come sooner or later to communicate with the surface of the body.

Age.—While the condition is founded on an embryological fault, there is a wide variety in the ages at which the condition obtruded itself: At birth in Cases III and IV, at 16 in Case I, and at 61 in Case II. So far as Cases I and II are concerned we may have to look on oral sepsis and external injury respectively as exciting causes.

In bringing the above examples of thyreoglossal cyst under your notice it is well, I think, to mention three other cases, each of them the subject of a cyst in the median line of the neck, all of which were due to very different causes, namely, ranula, epiblastic inclusion (dermoid), and obstruction of the duct of a sebaceous gland. The notes of these cases are briefly as follows:

B.—Ranula.

Case V. *Sublingual Ranula: Later Submental Development.*—A. K., male, aged 5, was brought to the dispensary of the Western Infirmary on October 5th, 1903, with a large swelling below the chin (see Figs. 6 and 7). The swelling, which was translucent, extended across the neck, but was larger on the right side. The patient had been treated twelve months before for a ranula in the floor of the mouth. The treatment had consisted in cutting out a window, evacuating the contents of the sac, touching the interior with carbolic acid, and packing with iodoform gauze. He had remained well for eight months, when a swelling was observed below the chin. This slowly increased in size till it presented the appearance mentioned above. A small ranula was present in the floor of the mouth as a slight bluish swelling on the right side; fluctuation was communicable from this to the swelling in the neck. On both sides Wharton's duct was patent, and from the orifice saliva issued. Pressure on the cyst did not cause any increase of flow, nor had any alteration been noticed in the size of the cyst during eating.

Operation.—October, 1903. The swelling was exposed by a transverse incision extending across the neck. It proved to be a thin-walled cyst of a bluish colour, and lay in the subcutaneous tissues. It extended from close behind the symphysis down over the thyrohyoid space; laterally it extended to near the sterno-mastoid muscle on the right, and not so far on the left. Several large veins were divided on clearing its surface. The digastric and mylohyoid muscles of one side were separated from their fellows by the cyst. In the course of dis-



Fig. 6.—Ranula, projecting below chin. (Case V, from a photograph by Dr. David Riddell.)

section the cyst wall was opened at its left extremity, and glairy contents, like those of a ranula, issued. On enlarging the opening the finger was introduced and passed up to the right of a median muscular bar (genio-hyoid and genio-glossi) into the sublingual cavity, in which the corresponding gland lay. The finger could also be passed into the left



Fig. 7.—Ranula, projecting below chin. (Case V, from a photograph by Dr. David Riddell.)

sublingual region, but the cavity here was smaller. The extent and relations of the cavity in the coronal plane are shown diagrammatically in Fig. 8. With the finger in the cavity, the cervical portion of the sac was cut away, and at the upper part, where it communicated with the right sublingual region, some gland was removed with it. The mylohyoid and digastric muscles were sutured in the middle line, a gauze drain being inserted into the right sublingual cavity, and another into the subcutaneous space. Four days later the wound was dressed and the drain removed. There was a quantity of glairy material on the dressing, and more followed during the removal of the gauze drains. Eleven days after the operation the wound was healed, but there was ranula present in the floor of the mouth.

Histological Report by Dr. Teacher: "The cyst was of very irregular shape, with many loculi; sections were prepared from several parts of it. The wall consisted of a dense, moderately cellular fibrous tissue varying from 1 or 2 mm. up to 20 mm. in thickness. There was no epithelial lining; the internal surface was a rather more cellular layer of the connective tissue capsule—practically an old granulation tissue surface. Here and there remains of the contents were seen, consisting of soft albuminous coagulum containing globular swollen epithelial cells. In one or two places there was a fairly regular single layer of such swollen cells, which suggested that the epithelium had been a single layer of cubical cells. There was a good deal of voluntary muscular fibre around the cyst-wall as it was received."

Subsequent History.—When seen three months later, the neck wound

was sound, but there was a history of swelling in the floor of the mouth repeatedly rising, bursting, and collapsing. Further treatment was refused. In September, 1904, he presented himself absolutely well, and stated that he had been so for the last eight months.

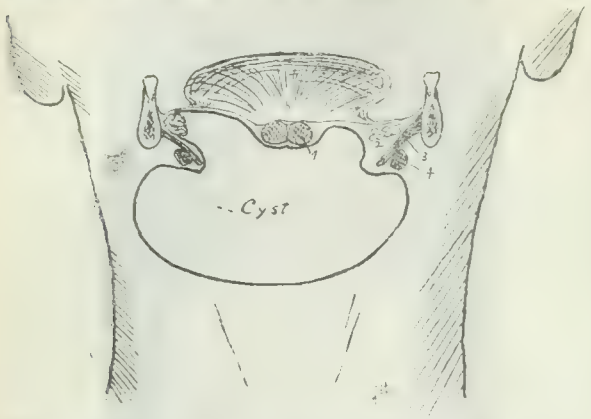


Fig. 8.—Ranula projecting below chin. Relationship of parts in coronal plane. 1. Genio-hyoid and genio-hyo-glossi muscles. 2. Sublingual gland. 3. Mylo-hyoid. 4. Digastric muscles. (Case v, diagrammatic.)

In various works one finds mention made of bulging in the submaxillary region in cases of ranula, but I have not met with a detailed description of any case such as the one above. Syme[12] wrote: "Hardly any limits can be assigned to the extent of such formations, if allowed to increase without interference . . . the cavity of the mouth is completely occupied by the tumour—and it also appears under the chin." I had looked upon the appearance in the neck as due to partial obliteration of the original intrabuccal ranula by treatment which had not been sufficient to completely destroy the sac. A different light, however, is shed on the matter by a paper by Morestin, quoted by Butlin and Spencer.[13] Morestin has found, on dissection, prolongations of sublingual lobules between the fibres of the mylohyoid muscle appearing on the under surface, and he conjectures that a ranula may form in this position. If this has been the anatomical condition in my patient then probably the correct view to take is that of widespread formation of ranula in a widespread sublingual gland. This, while hardly accounting for the separation of the muscles in the line of their raphé, would explain the absence of a tendency to re-formation in the neck. The microscopical character of the cyst-wall corresponds to that of an ordinary ranula. There was no difficulty in diagnosis presented here, when one considered the past history of the case.*

C.—Dermoid.

CASE VI. *Dermoid (Superficial) in Thyrohyoid Region.*—M. A., female, aged 11, was sent to the Western Infirmary Dispensary by Dr. Stirling Robertson on December 10th, 1903, on account of a cystic swelling in the front of the neck, which had been noticed only fourteen days previously, was not increasing in size, and was not painful. Occupying the median line opposite the thyrohyoid space was a cystic swelling of about the size of a hazel-nut. It was not apparently attached to either the hyoid bone or the thyroid cartilage.

Operation.—December 14th, 1903. A median incision exposed a translucent, thin-walled cyst in the subcutaneous tissue. Accidental puncture was followed by collapse, and the escape of thin clear fluid. The wall was removed along with surrounding adipose tissue.

Histological Report by Dr. Logan Taylor: "The wall of the cyst is composed of a fairly dense fibrous tissue. It would almost appear that at one time there had been an epithelial lining to the cyst, but that has disappeared, and granulation tissue has now taken its place. My reason for thinking so is that there is the remains of a hair-bulb to be seen, round about which there is a round celled infiltration. This would point to there having been at one time other epithelial structures present. Probably suppuration has taken place."

The results of the microscopic examination of the case came as a surprise. To the naked eye the condition appeared to be either a distended thin-walled bursa, or a small hydrocele. In view, however, of Dr. Taylor's report, the case must be looked on as a dermoid cyst, probably formed in connexion with the closure of the parts in the embryo.

D.—Sebaceous.

CASE VII. *Sebaceous Cyst.*—D. McA., male, aged 48, was seen at the Western Infirmary Dispensary on March 31st, 1904. A spherical swelling of the size of a small Tangerine orange was present below the chin and slightly to the left of the middle line. The mass was semi-fluctuant, and was freely movable on the parts beneath. It extended from above the hyoid bone to well down over the thyroid cartilage. In the skin over the swelling was a small orifice plugged by sebaceous matter; there were numerous pea-like sebaceous cysts scattered about the neighbourhood. The large swelling had appeared seven years previously and had slowly enlarged; growth, however, had been much more rapid for the preceding few months.

In this case there was no difficulty in the diagnosis. The appearance of the parts was alone sufficient, and, if it had not been, the presence of the other smaller cysts was conclusive.

In concluding, I wish to express my great indebtedness to Drs. Teacher and Logan Taylor for their kindness in undertaking the histological examination of the specimens, and more especially to Dr. Teacher, whose photo-micrographs I have been enabled to reproduce above. I have also to thank Dr. Riddell, late House-Surgeon in the Western Infirmary, for the photographs of Case v.

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Dr. T. EASTES (Folkestone) said: I will just mention the only case of this kind that I have met with. A girl, aged 17, had a movable cyst in the middle line of the neck between the hyoid bone and the thyroid, about the size of a cherry, and fluctuating. It was diagnosed as a thyreoglossal cyst, and removed through a small transverse incision, which was afterwards closed by subcutaneous sutures, and left a very slight scar. The cyst was very easily separated, except that it had a very tough fibrous attachment to the posterior margin of the hyoid bone, which had to be cut through. This attachment was solid, and not a duct. The cyst contained a clear fluid, and there was no suppuration or inflammation about it.

* Since writing the above I have had my attention directed to a similar case published in the BRITISH MEDICAL JOURNAL, vol. i, 1902, p. 502.

THE OPERATIVE TREATMENT OF HERNIA IN INFANTS AND YOUNG CHILDREN; 360 CONSECUTIVE CASES.

By HAROLD J. STILES, M.B., F.R.C.S., Edin.,

Surgeon to the Royal Hospital for Sick Children and to Chalmers' Hospital, Edinburgh.

AT the annual meeting of this association, held at Cheltenham three years ago, I communicated a paper[1] on 100 operations for the radical cure of inguinal hernia in children. Since then I have added 260 cases to the list. The frequency of hernia in children, the trouble and anxiety it gives the parents, and the degree to which the hernia hampers the patient during school and adult life all go to invest the subject with an importance second to none in the whole field of the surgery of children.

Some idea of the frequency of hernia in childhood may be gathered from the fact that of the total number of surgical cases seen at the out-patient department of the Royal Edinburgh Hospital for Sick Children during the past five years 7 per cent. suffered from inguinal hernia. It seems to me that the time has arrived when surgeons ought to be in a position to give a more unanimous verdict in regard to the vexed question of trusses *versus* operation. After a personal experience of 360 operations for the radical cure of hernia in children I think I am warranted in advocating operative treatment, and in expressing somewhat emphatic opinions on matters which some may still regard as open to question.

It is difficult to form a true estimate of the frequency with which a truss brings about an actual cure of the hernia, a cure, that is to say, in the sense of bringing about obliteration of the patent funicular process. In the cases in which the parents have decided to give the truss a trial before having recourse to operation, I have, by carefully rolling the cord between the forefinger and thumb, almost invariably been able to satisfy myself of the presence of an empty sac in cases in which the hernia is supposed to have been cured, and in quite a number of instances the bowel has, as the result of some extra strain, or an attack of whooping-cough, etc., actually descended into the sac. It is well known that it is just in

those cases in which the hernia is supposed to have been cured by a truss during childhood that strangulation is liable to occur during young adult life if, as the result of some severe strain, the bowel be suddenly forced into the empty sac. It would be interesting to know the mortality from strangulation in these cases, and to see how it compares with the death-rate from the radical operation during infancy and childhood; I am not aware of the existence of such statistics, but I should be inclined to put the former as the higher of the two.

Coley, as the result of a careful inquiry into the histories of 15,000 cases of inguinal hernia in adults, found that no less than one-third were ruptured during childhood. If it be true that the majority—some say all—of inguinal hernias in young and middle life are of congenital origin, it seems to me that it is clearly the duty of the surgeon to step in and cure the hernia once and for all at a period of life which is at once the most suitable from the point of view alike of the patient, the relations, and the surgeon. By operating during infancy or childhood the patient is not rendered *hors de combat* at a period of life when he is a useful member of the community; if belonging to the poorer classes, the wife and family do not suffer from the interruption of the weekly wage, nor is the drain upon hospital charity so great. In the upper classes the advantages are equally on the side of operation in early life.

As regards the operation itself, it must be remembered that the walls of the inguinal canal are not primarily at fault, that, as a rule, they are well developed, and should therefore be interfered with as little as possible. Bassini's operation, which is indicated in special cases (notably in those strangulated hernias in which it has been found necessary to divide the whole of the anterior wall of the inguinal canal before the bowel can be returned), is to be condemned as a routine operation in children.

In performing the radical cure in a child, the indications are to isolate and ligature the neck of the sac with the least possible damage to the inguinal canal. The operation I prefer in children is practically the operation introduced long ago for adults by Sir Mitchell Banks. In describing the operation as I am in the habit of performing it, I shall endeavour to emphasize one or two practical points which, I venture to think, will help those who have little or no experience of the operation in young children.

As regards the preparation of the patient, a word of warning must be given against the application of a carbolic poultice overnight for the purpose of disinfecting the skin. Such a procedure may lead, in a young child, to the absorption of an amount of carbolic acid capable of producing severe general depression, or indeed even a fatal collapse, which, should the carboluria escape notice, may be mistaken for shock, the result of the operation. After disinfecting the skin the evening before the operation, a boracic poultice or a sterilized gauze dressing should be applied overnight. The skin is again disinfected when the patient is under the anaesthetic.

The incision, which is made a little above and parallel to Poupart's ligament, should not extend down into the scrotum. The difficulty of isolating the patent funicular process in the child has been greatly exaggerated, and has no doubt assisted in prejudicing some surgeons against the operation. No difficulty will be experienced if the following plan be adopted: After exposing the spermatic cord and the pillars of the external abdominal ring, the former, along with its coverings, is freed from the surrounding subcutaneous tissue. The coverings of the cord are now caught up laterally at the lower part of the wound by two pairs of forceps, which are held by the assistant in such a way as to stretch and spread them out in the form of a flattened band. The coverings are then divided longitudinally, layer by layer, with as sharp a knife as possible. The muscular fibres of the cremasteric fascia are easily recognizable, and frequently well developed even in young children. By turning aside this fascia and grasping its cut edges with catch-forceps, the cord is still further stretched out, and the pampiniform plexus of veins covered by the thin fascia transversalis can now be seen on its lateral aspect. The peritoneum of the patent funicular process is exposed by incising the fascia transversalis parallel and just internal to the plexus of veins. The fascia transversalis, along with the spermatic veins, is now carefully stripped off the sac by means of a blunt dissector, or by dissecting forceps. The vas deferens and its vessels, which lie more posteriorly, are treated in the same way. The fascia transversalis is next stripped off the inner aspect of the funicular process, which is finally freed around its entire circumference. The separation of the above structures is continued downwards, until the fundus of the sac is isolated and drawn out of the wound. Should the sac extend well into the scrotum, or be continuous with the tunica vaginalis testis, it may be cut across a little below the external ring. The isolated sac is now grasped with a pair of artery forceps, and held a little on the stretch while the constituents of the cord are being separated from it in an upward direction as far as the internal abdominal ring. In the child the inguinal canal is so short that by thoroughly freeing the sac, and putting it on the stretch, the neck can be brought down to the level of the apex of the external ring without slitting up the anterior wall of the canal. The freeing of the neck of the sac from the spermatic vessels and the vas deferens is facilitated by the extraperitoneal fat being more abundant in this situation than lower down in the cord. In spite of the fact that the bladder arises above the brim of the pelvis in the child, I have never brought it into view in freeing or applying a ligature to the neck of the sac, nor have I seen any blood in the urine after any of the operations. Except when the neck of the sac is unusually wide, and the walls of the canal specially weak, it is quite unnecessary to fix the stump to the anterior abdominal wall; the ends of the ligature applied to the neck of the sac may be cut short, and the latter may be allowed to slip back up the canal. If the sac be properly freed at its neck, and put well on the stretch, the ligature will be applied high enough up so as not to leave behind a funnel-shaped depression at the level of the internal ring. In the average case the isolation and ligature of the neck of the sac at the level of the internal ring is accompanied with so little damage to the walls of the canal that the closure of the latter becomes a very simple matter; all that is necessary in the majority of cases is to introduce a single catgut suture through the outer pillar close to Poupart's ligament, across the canal superficial to the cord, and then from within outwards through the conjoined tendon (or through the muscular fibres of the internal oblique and transversalis muscles before they join the tendon) and the inner pillar of the ring. By reducing the size of the external ring and including the conjoined tendon in the suture, the liability to the development of an acquired hernia in after-life is diminished.

I need hardly say that catgut, provided it is properly sterilized, is preferable to silk in the radical cure of hernia—at any rate, in children. For passing the suture, I may again draw attention to the advantage of the Cleveland pedicle needle (kindly brought to my notice by my friend Dr. Walker, of St. John's, New Brunswick) over the Macewen needle and its modifications.

It is important to avoid the use of a drain in children. All haemorrhage must, therefore, be carefully arrested, and care should be taken to obliterate the space beneath the subcutaneous tissue of the somewhat undermined wound. This can be done either by the introduction of one or two buried catgut sutures, or, preferably, by the introduction of a single silkworm-gut mattress suture through the skin and subcutaneous tissue so as to bring the deep surfaces of the flaps into broad contact. The skin edges are then brought into accurate apposition by means of superficial horsehair stitches, which should be interrupted rather than continuous, as the latter interferes with the escape of the small amount of healthy wound exudation.

In a child of 5 or 6 years and upwards an ordinary gauze dressing and bandage may be applied, provided the patient be confined in some form of double long-splint to keep the body quiet and the lower extremities extended and abducted. To prevent any urine reaching the dressing the penis is retained in the neck of a urine glass by means of a plug of cotton wool. In infants a gauze dressing is not to be recommended, as it does not afford sufficient security against urinary contamination. There is no necessity whatever to apply over the dressing a plaster of Paris or paraffin bandage, nor is it necessary, as recommended by Mr. B. H. Nicholson,[2] to stitch a rubber tube over the penis to conduct away the urine.

The after-treatment I have found to give the best results in infants and young children is that in which the sutured wound, apart from being smeared over with iodoform out of a 1 in 1,000 sublimate solution and thickly dusted with boracic powder, is left completely exposed, no further dressing of any kind being applied. On its return to bed the infant is kept flat on its back by means of a strap passed behind the shoulders and through the armholes of a flannel band passing across the front of the chest (Fig. 1). The ends of the strap are carried under the frame of the bed, where they are tied,

or, better still, buckled, together. This simple apparatus, which is known to the nurses as the "reins," keeps the shoulders flat down against the mattress. A small draw-sheet is folded into four layers and placed under the pelvis to receive the faeces. To keep the lower limbs extended and

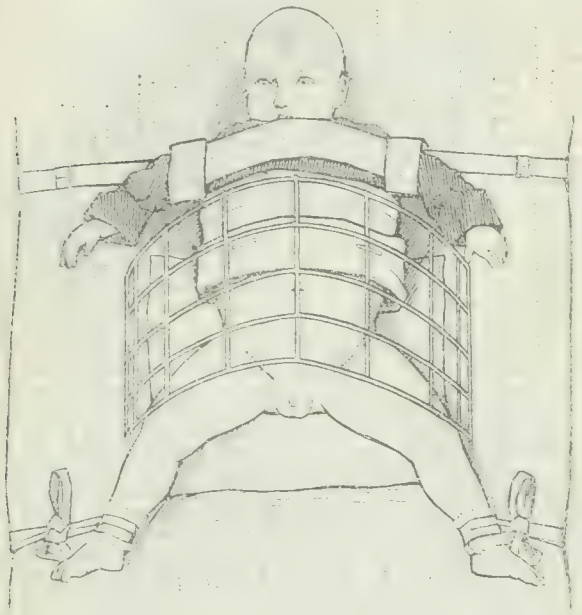


Fig. 1.

abducted a strip of bandage is secured to the ankles by means of a clove-hitch knot, the extremities of which are tied to the sides of the cot. In a child about two years old, if unusually restless, the limbs may be fixed in the same way above the knees. A metal cage is now placed over the child's body to keep the bed-clothes from coming in contact with the

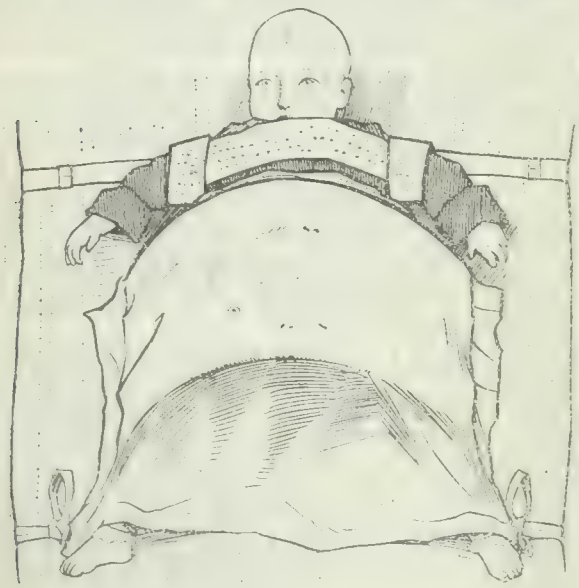


Fig. 2.

wound. The nightdress is pinned up and covered with a binder, so as to leave the lower part of the abdomen exposed. A piece of boracic lint, dusted with boracic powder, is pinned round the lower edge of the folded-up clothes in case they should accidentally come too near the wound. On the outside of the cage is placed a sheet of flannelette long enough to hang like a curtain over its lower end (Fig. 2). When the infant micturates it will be found that the whole of

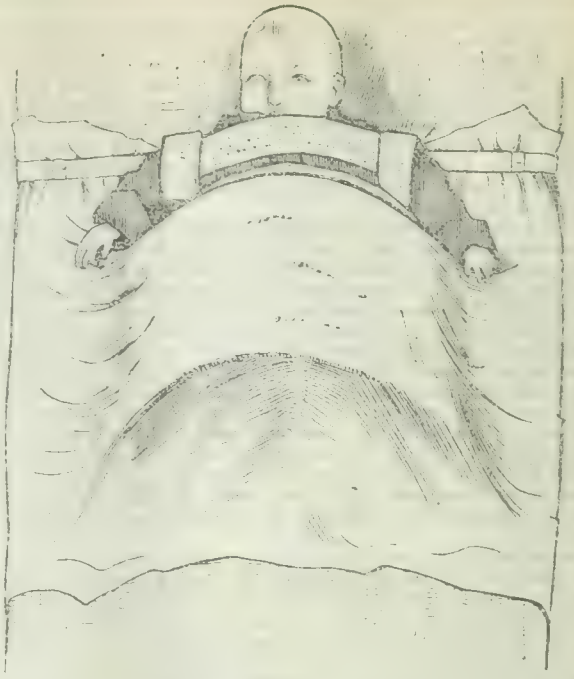


Fig. 3.

the stream plays upon the flannelette, which is removed as often as it is soiled. In this way not a drop of urine reaches the wound. To ensure the child's hands being kept

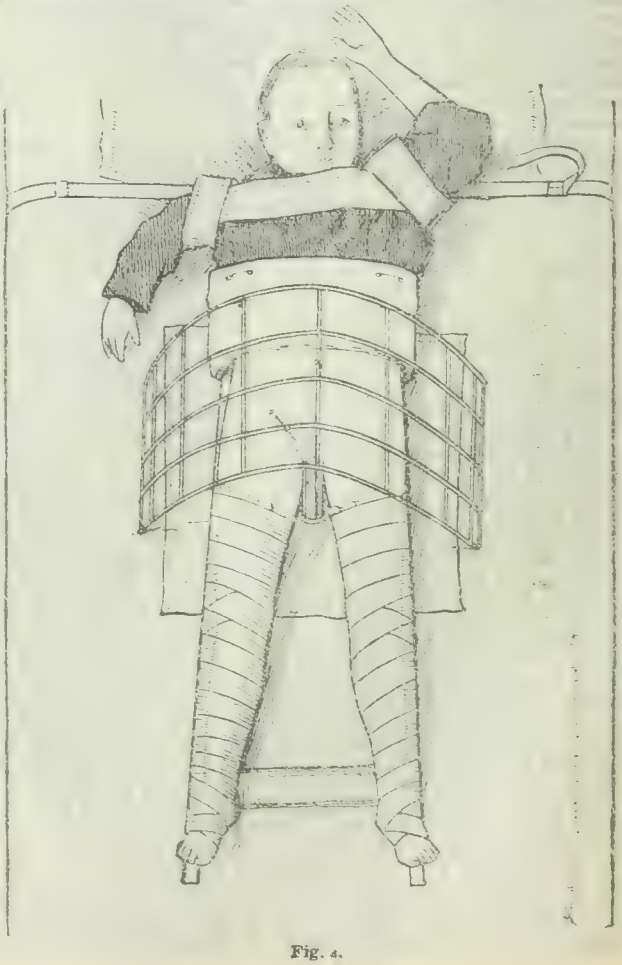


Fig. 4.

out of harm's way a draw-sheet is placed over the flannelette covering the cage and is then carried under the arms and fixed by being tucked under the "reins" which strap down the shoulders (Fig. 3). If the operation be done without undue tearing of the tissues, if all haemorrhage be carefully arrested before the sutures are introduced, and if the latter are so applied as to bring the deeper as well as the superficial parts into close apposition, the amount of exudation is so slight that it is confined by the boracic powder to the actual seat of the wound. All that is necessary is to keep the wound thickly dusted with boracic powder, or, if preferred, with a mixture of boracic and iodoform.

By this method of treatment—in the hands of an experienced nurse—not a drop of urine need come near the wound, which, by being kept perfectly dry and free from all mechanical irritation, heals very rapidly. The mattress suture is removed on the third day, and the horsehair sutures on the sixth or seventh day. As a rule the infant is sent home on the eighth or ninth day after the operation. Of the last 100 cases treated in this way, in only one did the wound suppurate; in none of the others was there a trace of suppuration either in the wound or the stitch openings. Since I have adopted the after-treatment above described I have come to regard the radical cure of hernia in infants as an operation which gives the surgeon and patient less trouble than a circumcision.

Between the ages of 3 and 5 years the wound may still be treated without a dressing, but in addition to the reins for fixing the shoulders a double long-splint is used to keep the lower part of the body and the lower limbs perfectly quiet. At this age urinary contamination is best prevented by the means already described—namely, by securing the penis inside the mouth of a urine glass (Fig. 4).

Including both infants and older children I find that the average duration of the child's stay in hospital after operation is rather less than a fortnight. This means that, by keeping not more than four out of the forty-two surgical beds at my disposal at the Royal Edinburgh Hospital for Sick Children constantly occupied by children suffering from hernia, one can get through just about 100 radical cures in the year. Even the most exacting political economist will, I think, admit that it would be difficult to get more value out of four beds.

I cannot help thinking that the reluctance which many surgeons evince towards performing the radical cure in infants and young children is based on something more than unlimited confidence in the power of Nature to bring about her own cure, and that it is largely due to an exaggerated idea of the difficulties associated at this early age with the treatment of a wound so close to the external genitals, and possibly also to an equally exaggerated idea of the traditional shock with which such operations were supposed to be attended in young children.

While I do not propose to burden you with statistics, I think I may with advantage endeavour to summarize the more important clinical facts to be gathered from the study of this series of 360 cases. As regards sex, 36 (10 per cent.) were girls; and I may here mention that I have only once operated on a femoral hernia in a child, a girl aged 8 years. With reference to the side affected, it is interesting to note that in boys the hernia was right-sided in three cases out of four, while in girls it was right-sided in two cases out of three. This marked preponderance of right-sided hernias in boys is accounted for by the later closure of the vaginal process on that side. Zuckerkandl examined the bodies of 100 infants up to 3 months old and found the processus vaginalis patulous upon both sides twenty times, upon the right side twelve times, and upon the left side five times. The preponderance of the patulous processus on the right side is believed to be due to the later descent of the testicle on that side. The preponderance of right-sided inguinal hernia in girls is more difficult to explain, unless it be in some way dependent on the greater development on the right side of those fibres corresponding to the gubernaculum testis which are attached to the peritoneum in the region of the caecum and of the right iliac fossa.

In the boys 78 per cent. of the hernias were first observed during infancy, while in the girls only 26 per cent. appeared during that period.

The exact type of sac was noticed in 300 consecutive operations on boys; in only 5 per cent. did it communicate with the tunica vaginalis testis. It follows, therefore, that in by far the commonest form of hernia in children the sac resembles that of the so-called acquired oblique inguinal hernia of the adult. It is more than probable, therefore, that the majority of—according to Russel, "all"—oblique inguinal hernias which are met with during adolescence and in young adults are essentially congenital.

It would appear that normally the obliteration of the vaginal process begins below the external abdominal ring, and travels in both directions. If this be the case, it is only reasonable to suppose that the process of obliteration may occasionally not quite reach as far as the internal abdominal ring, and that the small pouch which is left in the upper part of the inguinal canal may be the starting-point of a hernia, the subsequent development of which differs in no way from that of an acquired hernia in the adult. It is not always easy, therefore, to say how far the hernia in a child is congenital and how far it is acquired.

The sac is often so thin that it may be safely ligatured and removed without opening into it. The operation then becomes practically extraperitoneal.

Not uncommonly the sac extends well down into the scrotum without opening into the tunica vaginalis testis, and if the tunica vaginalis testis at the same time extends for some distance up the cord, the result will be a slight degree of the infantile type of hernia. These incomplete forms of infantile hernia are, however, of no special importance, but if the dissection to open the sac be performed low down it is easy to say how three layers of peritoneum would have to be divided before the interior of the sac is reached. I must confess, however, that I have never met with the typical—or what may be regarded as the fully developed—infantile hernia such as the textbooks describe. Another variation in the sac is that in which there is an hourglass constriction, situated generally some little distance below the level of the internal ring. The constriction occasionally gives rise to a difficulty in reducing the hernia, and cases have been reported in which it has led to strangulation.

The encysted hydroceles of the cord, which not infrequently exist along with the hernia, are no doubt in most instances due to a cutting off of what was originally the fundus of the sac by complete closure taking place at the seat of any hourglass contraction. It is quite possible also that the constriction may at one time have been situated at or close to the internal ring, and that an acquired hernial sac had subsequently developed above it.

Out of the 360 cases, 30 (8.3 per cent.) were sent to hospital as urgent, the hernia being irreducible and attended with acute symptoms. In the majority of instances the hernia had been in existence for some time, and the mother had previously been able to reduce it. In some cases, more especially in young infants, the rupture had become irreducible or strangulated on its first appearance. The descent of the bowel was usually stated to have been caused by a severe fit of crying, and in one or two instances by straining at stool, or during micturition, more frequently the former. When the bowel is grasped by the walls of the inguinal canal a griping pain is set up, which, by provoking further crying, forces more bowel down. No doubt, also, a further cause of irreducibility is the reflex contraction of the lower fibres of the internal oblique and transversalis muscles, which, along with Poupart's ligament, act like a half sphincter thrown into a state of spasm. The griping pains in the bowel are generally so severe that vomiting sets in, and this again serves to aggravate the condition. It does not follow, however, that because the child has an irreducible hernia and is vomiting, the bowel is strangulated.

If gentle manipulation fail to reduce the hernia, the child should be put into a hot bath, and hot fomentations—which, I think, are preferable to an icebag—should be applied over the abdomen, and a general sedative should be administered. In young children it often happens that a rupture which at first appears to be irreducible becomes spontaneously reduced if sleep can be procured, a fact which seems to show that reflex spasm of the muscular fibres already referred to plays a prominent part in preventing the return of the bowel.

If the means above mentioned fail to bring about reduction chloroform will often succeed in doing so, even without any manipulation whatever of the hernia. If taxis be resorted to it must be carried out with the greatest care. In three cases the taxis employed before the children reached hospital left its mark in the shape of bruising of the coverings and bowel: and in a fourth case, which will be referred to later on, the taxis was the direct cause of the fatal result.

In fifteen out of the thirty cases sent to hospital as urgent the bowel could not be returned without division of the constriction. These, therefore, amounting to 4.2 per cent. of the total number operated on, may be regarded as more or less

strangulated. On comparing the symptoms in these cases with those in which the hernia had been irreducible, but not strangulated, we find that while vomiting was present in both groups, in the strangulated cases there was generally some evidence of intestinal obstruction. Occasionally the mothers stated that no urine had been passed for a whole day previous to the child's arrival at hospital—a piece of information of much significance, as it points strongly to strangulation.

I need not refer to the local signs of strangulation, as they do not differ from those found in the adult. There is one point, however, to which I may draw attention—namely, that occasionally there was some doubt as to whether one had to do with a strangulated hernia with exudation into the sac, or with a hydrocele extending into the inguinal canal. Sometimes the hydrocele develops very rapidly, and the history which the mother often gives in such cases may lead to an erroneous diagnosis unless careful attention be paid to the general as well as to the local symptoms. If there be persistent vomiting the chances are we have to do with a hernia, and if to this symptom be added constipation and an absence of urine, strangulated hernia is to be diagnosed, no matter how closely the swelling resembles a hydrocele; and, vice versa, the absence of general symptoms points to hydrocele. I have twice been sent for in an emergency to operate on the kind of hydrocele above referred to under the impression that it was a strangulated hernia. Perhaps the wisest course to pursue, in the interests of all concerned, is to perform a radical cure of the hydrocele. On one occasion I myself made the more serious error of mistaking a strangulated hernia in an infant 5 weeks old for an acute hydrocele. The following day the symptoms enabled me to correct the diagnosis and to step in in time to save the child. The sac contained a loop of deeply congested small intestine, along with a considerable quantity of blood-stained serum.

Of the comparatively few cases of strangulated hernia that have been reported in children, it is a noteworthy fact that almost all occurred in infancy. One must not conclude that such cases are reported merely to draw attention to the early age at which they occurred. My own statistics afford abundant evidence that strangulation is comparatively rare in children, and that it almost invariably happens during infancy. Of the fifteen children in whom strangulation occurred, only one was older than 18 months. The youngest was only 14 days old; seven (practically half) were under 3 months old.

The worsted truss, formerly so largely employed in infants, is entirely untrustworthy; in my opinion it is a snare and a delusion, and the sooner it is discarded the better for the credit of surgical therapeutics. Owing to the greater elasticity of the inguinal canal, and the comparative absence of chronic inflammatory thickening of the neck of the sac, the strangulation is much more gradual and much less severe in children than in adults. The prognosis is, therefore, distinctly more favourable in children, as there is ample time to arrive at a diagnosis and to afford relief by operation before the bowel becomes gangrenous. In none of my fifteen strangulated cases was the bowel gangrenous; although frequently deeply congested, and of a dark purple colour, it was deemed safe to return it in all cases. In one case, however, it was considered advisable to invert a small portion of the lumen of the gut. According to Estor, the mortality after operation for strangulated hernia in infants is very high, being almost equal to that in patients over 70. Coley, who has operated on eleven strangulated cases under 2 years of age with but one death, is of opinion that the death-rate in infants ought not to be very high. Personally I have not had a death in my fifteen strangulated cases.

With regard to the operation in strangulated cases in children, there is one point to which I should like to refer—namely, that it is seldom necessary to divide the neck of the sac from the inside by means of a hernia knife guided by a grooved director, as the constriction is not due to thickening of the neck of the sac. In children, the constriction is usually at the apex of the external abdominal ring, and all that is necessary, as a rule, is to divide the arched fibres of the external oblique and the subjacent cremaster, along, sometimes, with a few of the lower fibres of the transversalis. These structures should be cautiously divided, layer by layer, from without with an ordinary sharp-pointed bistoury. In this way the bowel can be returned without dividing the neck of the sac, which is then ligatured and cut across. The stump is sutured to the fascia and muscles at a higher level, and the radical cure is completed according to Bassini's method.

The caecum was found in the sac in twenty-four instances (7 per cent.). These hernias can generally be recognized clinically, owing to the readiness with which the vermiform appendix can be felt through the scrotum; they are, as a rule, larger than the ordinary variety containing simply small intestine, they are more difficult to keep up with a truss, and, what is more important, they are much more liable to become irreducible, incarcerated, or strangulated. It is interesting to note that all the fifteen strangulated cases were right sided, and that the caecum was the part of the bowel noticed as prolapsed in seven instances. Compared with adults the caecum in children enjoys a greater range of movement, and, relatively to the small intestine, is not so large as in the adult; hence, it is more liable to find its way into the sac. In all the caecal hernias I have seen the sac was complete; in two instances the lower end of the mesentery was attached to its posterior wall, and had to be divided before the bowel could be returned sufficiently well within the abdomen to allow of the neck of the sac being ligatured sufficiently high up. In one case the irreducibility was due to tuberculous enlargement of the ileocaecal glands, which had become prolapsed along with the bowel. At first it was my habit in caecal hernias to remove the appendix only when it showed some trace of disease or anatomical abnormality; subsequently, however, I have taken the opportunity of removing it in every case, whether diseased or not, as it only adds a few minutes to the operation.

In 5 out of the 36 cases in girls the sac contained the ovary and Fallopian tube, and these were removed in three instances in which the attachment of the broad ligament extended along the posterior wall of the sac in such a way as to interfere with complete reduction. It is interesting to note that, with one exception, all the cases of hernia of the ovary occurred in very young infants—a fact which is strongly in favour of the congenital origin of the sac. Possibly in the older child the closure of the canal of Nuck had been incomplete, the starting-point of the hernia being the small pouch which was left extending for a short distance into the inguinal canal. The presence of the ovary in the sac of an inguinal hernia appears to be much commoner in the child than in the adult. The explanation of this lies, I think, in the fact that in the child the vagina is relatively longer and the pelvis relatively smaller than in the adult, so that in the former the ovary comes to lie in the false rather than in the true pelvis, and is thus brought in close relation to the internal abdominal ring. In order to test this point I have in several instances pushed a pair of forceps through the neck of the sac into the abdomen and gently seized and pulled down the first structure they happened to engage; this structure was almost invariably the Fallopian tube. Sometimes the ovary could be pulled down as well, but in other instances only the tube. The clinical features of hernia of the ovary in the child are very characteristic; in size, shape, and consistence the prolapsed ovary feels exactly like a partially descended and imperfectly developed testicle, and it glides up and down the inguinal canal in the same manner. The only other condition it might be mistaken for is a small encysted hydrocele. Its free mobility distinguishes it from a lymphatic gland. Only one of the strangulated hernias occurred in a girl, and that in an infant aged 5 months, in whom the hernia was double. It was the right side that was strangulated. The hernia was caecal. On pulling down more of the bowel, after dividing the constriction, the ovary at once made its appearance. In seven instances (2 per cent.) the sac was tuberculous, the disease taking the form of more or less thickening of the peritoneum, projecting from which were small granular sago-like tubercles, usually most numerous towards the fundus of the sac. In all cases palpation of the abdomen under chloroform revealed the presence of enlarged mesenteric glands, but in some instances the enlargement was so slight and the child looked so healthy that, were it not for the condition of the sac, abdominal tuberculosis would never have been suspected. At the operation it was found that the constituents of the cord were more adherent to the sac than natural, so that some difficulty was experienced in separating them. In one instance it was necessary to excise the testicle along with the sac. Healing by first intention occurred in all but one case—namely, one in which 10 oz. of fluid escaped from the abdomen when the sac was opened; the sinus closed in six weeks. Apart from the enlargement of the mesenteric glands, the diagnosis of a tuberculous sac can usually be made, or at any rate rendered highly probable, by the unusual thickening to be felt in the cord after the bowel has been replaced. It occasionally happens that the funicular process

becomes converted into a solid cylinder of tuberculous tissue. In the *Edinburgh Hospital Reports* for 1894 I published, with illustrations, the report of a case of this kind in which the tuberculous disease had extended down into the tunica vaginalis testis, producing a solid pear-shaped scrotal tumour so closely resembling a sarcoma of the testicle that the real nature of the condition was not revealed until the "tumour" was bisected, when the healthy testicle was seen to be embedded in the centre of the mass.

As regards recurrence, many of the cases have been too recently operated on to enable me to give definite statistics. At present I am only aware of four cases having recurred. Two were strangulated hernias (both since cured by a second operation), in which the structures at the neck of the sac were very freely divided before the bowel was returned; the third was a child with epispadias, in whom there was also separation of the pubes and imperfect development of the muscles of the abdominal wall. The fourth was a delicate infant, aged 5 months, who developed a slight bubonocele six months after operation. The child had distinct phimosis at the time of operation, but the mother was so averse to circumcision that I yielded to her persuasion not to do it. This operation, however, was done soon after the bubonocele was noticed, and I am informed that there is now merely some slight weakness of the abdominal wall in the inguinal region.

With regard to the death-rate, I have to record 5 deaths out of the 360 operations, a mortality of 1.4 per cent. Three of these occurred in my first 100 cases, leaving only 2 to be accounted for in the remainder. One of these occurred in a very delicate child, aged 4 months, born prematurely with a double rupture. Within the two days immediately preceding its admission into hospital the right side had twice been incarcerated, and in both instances taxis under chloroform had to be resorted to before the hernia could be reduced. The infant died from cardiac failure under chloroform at the commencement of the operation. Of the other three deaths, one was the direct result of the taxis employed before the child reached hospital. In this case the hernia became spontaneously reduced while the child was being anaesthetized for the operation. At the operation, which was of short duration, the sac was found to be empty, and there were then no symptoms to indicate that the bowel had been so severely damaged. During the night there was frequent vomiting, and the child became collapsed and died the following morning. At the *post-mortem* examination 4 in. of small intestine were found to be very severely bruised, and there was extensive extravasation of blood in the adjacent mesentery.

The fifth death occurred in a delicate and unhealthy child of 14 months, sent to hospital because trusses had failed to keep up the hernia. The wound suppurated, and the child died some weeks after operation from exhaustion and bedsores of the scalp.

Since the Cheltenham meeting in 1901, when I advocated that routine operative treatment should take the place of trusses, I have been gratified to see that Mr. Robert Campbell has published[3] a paper in which he expresses the same view, supported by 114 consecutive cases without a death. Another paper (by Mr. P. Lockhart Mummery) in support of operative treatment, will be found in the June number of the *British Journal of Children's Diseases*.

If it can be shown that the operative treatment of hernia in young children is practically free from risk, that it is not followed by recurrence, and that no truss requires to be worn after operation, it seems to me that surgeons should no longer hesitate to recommend it as preferable to the treatment by trusses. By operation we are enabled to cure the rupture in a fortnight, while trusses may either fail altogether, or bring about an uncertain cure only after one, or it may be several, years of a treatment which, to say the least of it, is exceedingly tedious, often attended with much discomfort, and occasionally with danger to the patient from strangulation.

There can, I think, be no question that operative treatment is the right thing in the poorer classes, as they have neither the money, the inclination, nor the skill to carry out the truss treatment. I have not used a truss in the Royal Edinburgh Hospital for Sick Children for the past four or five years. In private practice I order one only when the parents refuse operation, which I invariably recommend provided the child is in a fit state of health to stand it.

The only point which, in my opinion, there should be any question about, is the age at which operation should be recommended. This must depend on the circumstances of the case, each being judged on its own merits. I trust I shall be able to show that the operation is practically as safe in a young infant as it is later on. If asked at what age I prefer to operate, I should say just before teething. In a young and delicate infant with a rupture which appeared at or within a few weeks after birth, my rule is to wait a month or two and see what happens. In the interval I do not think anything is to be gained by ordering a truss, as it is just at this age that it is so difficult to manage, and unless it keeps up the rupture constantly it is useless, indeed, worse than useless. The mother is told that if at any time the child becomes seized with vomiting, and if she finds that the bowel cannot be pushed back into the abdomen, she is to seek advice at once. It is true, as we have already seen, that strangulation, when it does occur in children, almost invariably happens during infancy, especially within the first few weeks of life. But, after all, strangulation is a very rare complication, and it is such a gradual process that there is ample time to afford relief by operation before the bowel becomes gangrenous. In cases in which there is repeated difficulty in reducing the rupture, operation should be advised, no matter how young the child. Twenty-six per cent. of my operations have been performed on children under twelve months old.

References.
[1] British Medical Journal, September 7th, 1901. [2] Ibid., vol. i, 1904, p. 841. [3] *Lancet*, January 9th, 1904.

ON THE REMOTE RESULTS OF OPERATIONS FOR THE RADICAL CURE OF OBLIQUE INGUINAL HERNIA: 103 CASES.

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The test of an operation undertaken for the cure of inguinal hernia is the permanency of the cure which it effects. I have practised three recognized methods of operating—namely, Macewen's, Kocher's and Bassini's; but for several years past have almost exclusively practised an operation differing from all of these.

In publishing my series of cases, I do so not with the object of contrasting the remote results obtained by the different methods of operating illustrated—for the number of cases is too small for that—but with the object of showing the remote results of the cases which were operated on by the method which I now almost exclusively practise.

There are, in my opinion, objections to the three recognized methods I have named. In the first place, Macewen's operation presents two points which, I think, might be improved upon, first, in so far that the sac, being retained and puckered up into a pad, intended to be placed within the internal abdominal ring, cannot always be successfully drawn into the desired position, no matter how carefully the operation is performed in accordance with its author's description. If it does not take the intended position, then it takes a position short of it or beyond it, and therefore, in either case, leaves a small pouch at the internal abdominal ring—the proximal part of the sac—which pouch will form the starting-point for a new sac, and thus result in recurrence.

In the second place, the method of closing the aperture in the abdominal wall is an inefficient one, because the closure of the internal ring is not effected by bringing down merely the conjoined tendon into contact with Poupart's ligament, as described by the author of this operation, and the more effective method of stitching the arched lower border of the trasversalis and internal oblique muscles to Poupart's ligament cannot be properly accomplished by means of sutures carried in by Macewen's needles through the external ring. These two points in this operation will favour recurrence.

In Kocher's method, again, the mode of closing the inguinal canal is not efficient, seeing that the closure is merely effected by means of stitches applied along the external oblique tendon where it forms the anterior wall of the inguinal canal. The deeper structures are not touched. As long as the sac was dealt with as originally described by Kocher, this operation could not be considered a good one, but his second method of dealing with the sac by invagination is, in my opinion, the best method of dealing with the sac ever published.

In Bassini's method, a method which has obtained almost universal favour, while the conception of the operation is perfect, still, practically, there are one or two points associated

with this operation which I think should prevent its adoption. The chief objection is that the external oblique is split in order to reach the internal oblique and transversalis for the purpose of stitching them to the inner aspect of Poupart's ligament. No matter how perfectly the external oblique tendon is repaired after the deeper stitching is done, yet, should a recurrence of the hernia take place at any time, the scar in the external oblique tendon is almost sure to dilate, and thus the recurrence will not be an oblique inguinal hernia, but will come straight out of the abdomen opposite the internal ring, thus constituting a ventral hernia. Thus, the last condition of such a patient will be worse than his first.

In both of the recurrences which fall to be recorded out of ten operations performed by this method, this was the kind of hernia which developed. It is right to say that in both cases the original oblique inguinal herniae were large, descending into the scrotum, and that in one of the cases the patient's condition was highly unfavourable as regards the after result, seeing that he developed bronchitis shortly after the operation. The constant coughing, therefore, would certainly be most unfavourable to the result. This hernia recurred within two months of the operation, and now—namely, fully two years after the operation—the hernia is about the size of a Tangerine orange and protrudes midway between the anterior superior spine and the pubis, opposite the internal ring, and on reducing it the aperture through which it comes leads straight into the abdomen and admits three fingers. On examining the external ring it is found to be perfectly closed. The hernia has thus come straight through from the internal ring and expanded the line of union in the external oblique, and is thus a ventral hernia and much worse to remedy than an oblique inguinal hernia (Fig. 1).



Fig. 1.—Ventral hernia in inguinal region developing after Bassini's operation for oblique inguinal hernia.

The operation, when it succeeds, as it usually does, is an excellent one, but it is well to remember that should a recurrence unfortunately occur, it will be of a worse type than that of the original hernia. This, in my opinion, is a fatal objection to all methods of operation for inguinal hernia which require division of the external oblique tendon.

Another objection is that the inguinal canal is sometimes rendered too narrow, and the compression of the structures of the cord may therefore be rather more than is desirable, and may require excision of some of the veins before suturing the external oblique. Also by the mode of removal of the sac a small pit may be left at its junction with the peritoneum, even although correctly ligatured close up to the parietal peritoneum, which pit may lead to the formation of a new sac.

The operation which I have now for several years practised may be described shortly as follows: The sac is dealt with after Kocher's latest method, that is, it is invaginated into the abdomen and brought out through the abdominal wall, peritoneal surface out, ligatured and cut off, and the internal oblique and transversalis are stitched to the deep aspect of Poupart's ligament, as efficiently as in Bassini's method, but without cutting the external oblique tendon. The cord, however, does not take the course as in Bassini's, but passes directly into the abdomen at the point opposite the external ring.

I have treated the sac by Kocher's latest method in all the operations which I have done by this method. The details of the operation are as follows:

1. Incision over the inguinal canal in the usual way until the tendon of the external oblique and external ring are exposed.

2. The contents of the scrotum are withdrawn and the sac isolated and the testicle and cord returned to the scrotum, and the sac is isolated from its surroundings up to the internal ring by means of the finger inserted into the canal.

3. The lowest point of the sac is then grasped by a Kocher's or other suitable forceps, and the sac invaginated until its lowest point is carried up to a point about ¾ in. above and to the outside of the internal ring. The point of the forceps is then made to press outwards at this point, and bulge the abdominal wall outwards. A very small puncture is then made on to the point of the forceps with a knife, and the forceps pressed through and the invaginated sac seized. The forceps are then removed, and the invaginated sac pulled out through the small opening in the abdominal wall, and, of course, the peritoneal lining is now outermost. The sac is then transfixed at its base by a curved needle threaded with catgut, and ligatured, and fixed with the ends of the same ligature to the abdominal wall. The sac is then cut off close to the ligature. This completes the first part of the operation, namely, the treatment of the sac, and it is seen that this is treated exactly as Kocher does in his more recent method.

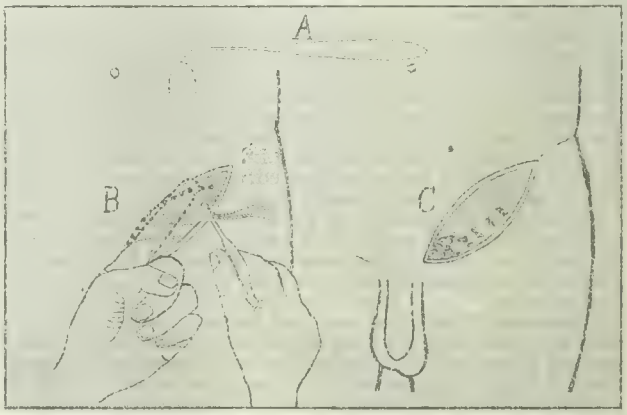


Fig. 2.—A. Needle employed (threaded): B, finger in canal and placed below the edge of the transversalis and internal oblique (curved dotted line), which two muscles are being transfixed by the threaded needle inserted through Poupart's ligament; C, obliteration of canal complete. Shows five sutures which hold the transversalis and internal oblique in contact with Poupart's ligament.

The second part of the operation consists in uniting the internal oblique and transversalis muscular fibres to the deep aspect of Poupart's ligament, and this is done as follows:

First, the cord is kept to the inner aspect of the external ring out of the way by making traction on the testicle, or on the cord itself. The forefinger of the left hand is then introduced into the inguinal canal and feels the border of muscle (internal oblique, and transversalis), which has to be drawn down to Poupart's ligament. The finger takes up its position on the deep aspect of the transversalis edge, with the palmar surface directed forwards. The special needle (Fig. 2, A), threaded with strong catgut, is then passed through Poupart's ligament at a point opposite to the outer end of the inguinal canal. The point of the needle within the inguinal canal is carried upwards and the point made to transfix the lower edge of the combined internal oblique and transversalis, the point being received on the forefinger, which supports the muscles while they are being transfixed (Fig. 3, I). Pressing the point of the needle against the forefinger, the transfixed muscles are now pulled down until in contact with Poupart's ligament (Fig. 3, II). When this is done it will be

found that only the curved portion of the needle remains in the tissues. The handle of the needle is then carried upwards, describing a semicircle, until it is in contact with the anterior abdominal wall. By this movement the point of the needle will now have emerged through Poupart's ligament at a point a little below the point of entrance (Fig. 3, III). The suture is now removed from the eye of the needle by means of a blunt hook, and the needle withdrawn, leaving the suture in place. The first suture is now in place, and it thus passes through the border of the internal oblique and transversalis, with its two ends passing through Poupart's ligament (Fig. 3, IV).

A second suture of the same kind is placed about ½ in. nearer the middle line, and succeeding stitches, separated by similar intervals, are placed until the external ring is reached. The stitches are then tied, thus bringing the combined internal oblique and transversalis into close contact with Poupart's ligament, and completely obliterating the inguinal canal. The opening remaining between the internal oblique and outer pillar is then reduced by similar stitches until the gap in the abdominal wall is as small as compatible with safety to the structures of the cord (Fig. 2, C). The number of stitches required to effect a satisfactory

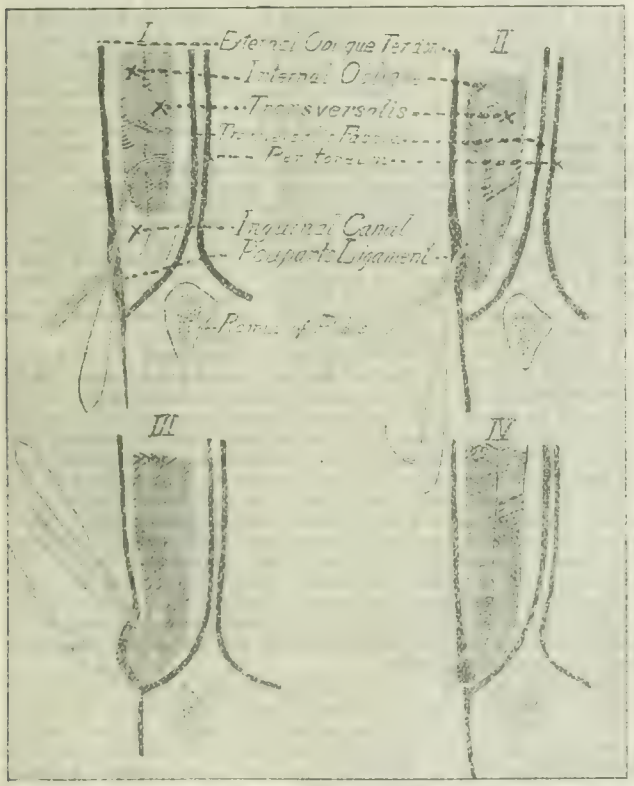


Fig. 3.—Sections showing four steps in the obliteration of the inguinal canal.

closure is, in an adult, about five, and in a child, two or three. The wound is then completely closed by a continuous suture.

The needle necessary to place the deep sutures satisfactorily somewhat resembles an aneurysm needle (Fig. 2, A). It is about 6½ in. long, and the curved portion represents the quadrant of a circle ½ in. in radius. The curved part is somewhat flattened out and the eye passes from the concavity to the convexity. The needle is made blunt enough to prevent it wounding any small vessel which it might meet. After this operation the patient is kept in bed for a month.

In giving the statistics of my operations I have excluded all those which were done recently, as my object is to give the results at a date remote from the operation. Of cases in which the operation was done not less than a year ago there have been in all 103, of which 96 were males and 7 females. The hernia was on the right side in 60 cases and on the left in 29 cases, and on both sides in 7 cases.

The youngest patient on whom the operation was performed was 6 months old, that being a strangulated hernia, and the oldest was 74, the operation being called for on account of the presence also of a large hydrocele. Both these patients are now well and free from recurrence, the older patient being now 78 and still able for his work.

The various ages at which operation was performed were as follows: From 6 months to 3 years, 20 cases; from over 3 to 10, 9 cases; from over 10 to 20, 14 cases; from over 20 to 50, 41 cases; from over 50 to 74, 19 cases.

Six of the cases were strangulated at the time of operation, but the condition of the patient was so good that the radical operation was performed, and all did well. The condition of the sac found at the operation showed that in 45.63 per cent. of the cases the hernia had been due to non-obliteration of the funicular process, the sac presenting the characters of congenital or infantile type. In no case was it necessary in congenital sacs to cut out a sac, leaving a portion of the sac for the cord, as figured by Macewen in his paper in the British Medical Journal; for in every case on opening the sac it was found that its peritoneal lining, with some connective tissue, could easily be stripped off, leaving the outer layers of the sac, the cord also being left embedded in these outer layers. This stripped-off sac was quite capable of being dealt with on the Kocher invagination principle. If the tunica vaginalis was continuous with the sac this stripped-off layer of peritoneum was simply cut across above the testicle. The ages at which congenital hernia was found were as follows: Over 20 years of age, 7 cases; from 10 to 20, 12 cases; under 10, 28 cases. The oldest was 54. Some of the older patients, although having hernia of a congenital type, had no history of having suffered from hernia until a year or two before presenting themselves for operation.

As regards the contents of the sac the only points to record are that in 6 cases they consisted of the caput caecum and appendix. In two of these cases the operation was done for strangulated hernia, one at 6 months of age, and one, a female, at 59 years of age. In the latter case the condition was apparently appendicitis instead of strangulated hernia, and the appendix was removed. In one case, a girl of 8 years, the sac contained the ovary and tube. These were returned and the radical operation performed.

In one case the hernial sac and its contents (omentum) were studded with what appeared to be tubercles. There was considerable ascites present, and the fluid was allowed to drain away through the opened sac before performing the radical operation by Bassini's method. The operation was performed in March, 1902, and this patient, when seen on June 28th, 1904, was found to be in perfect health and had been attending his work since shortly after the operation. There were no signs of ascites.

As regards the mortality, all the cases recovered except one child who some weeks after the operation died of tuberculous meningitis. The child was 1 year old and had an unhealthy appearance. The operation was undertaken on account of the large size of the hernia and the difficulty, and at times impossibility, of reducing it; strangulation being, therefore, feared.

In order to obtain statistics of the remote results the cases, or as many of them as could be traced, were examined within the last two or three weeks, and the following table gives the results. In every instance in which the hernia recurred it did so within a few months of the operation.

Table Showing the Number of Recurrences After the Operation for the Radical Cure of Oblique Inguinal Hernia by Different Methods.

Number of Years which have Elapsed since Operation was Performed.	Author's.		Bassini's.		Kocher's.		Macewen's.		Total Number of Cases.
	Total Number.	Number Traced.	Recurrences.	Total Number.	Number Traced.	Recurrences.	Total Number.	Number Traced.	Recurrences.	Total Number.	Number Traced.	Recurrences.	
1 to 2	10	10	0				—	—	—	—	—	—	0
2 to 3	24	19	1										1
3 to 4	19	15	0	1	1	0				1	1		1
4 to 5	14	8	0	7	5	1							1
5 to 6	2	1	0							4			0
6 to 7	—	—	—							11	7	1	1
Over 7	—	—	—							4	2	1	1
Totals	70	53	1	8	6	1				20	11	2	4

The majority of these cases were operated upon in the Western Infirmary—some while I was in charge of wards and

others while assistant to Dr. Patterson, now Consulting Surgeon to the hospital, to whom my sincere thanks are due for his great kindness in giving me in the past many opportunities of performing these operations. The cases, mainly belonging to the hospital class, therefore, are, many of them, rather difficult to trace after the lapse of several years. Every effort was made to trace them all, and the above table represents the result.

TWO CASES OF RENAL CALCULUS IN WHICH THE *X* RAYS FAILED TO INDICATE THE PRESENCE OF A STONE.

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THE following cases, in both of which calculi were found and removed by operation from the kidney after expert skiagraphists had failed to detect their presence, are published to show that too great reliance must not be placed on any one method of forming a diagnosis.

The immense advantage to surgery gained by the introduction of the Roentgen rays is appreciated by all who have a large surgical experience; but it is, perhaps, somewhat unfortunate that the *x*-ray diagnosis of renal calculus should have been somewhat over-lauded, and that having found its way into the lay press, it should have taken so strong a hold on the mind of the public to the exclusion of other methods of diagnosis.

It is by no means uncommon now to find a patient insisting on a diagnosis by this means alone, and determined to abide by it, however characteristic other symptoms may be, and however important it may be for his own welfare that an operation should be undertaken without delay. It is with sadness that I mention a fatal issue in a case in which the symptoms of renal colic and renal haemorrhage were very characteristic, and associated at times with suppression of urine, indicative of obstruction to a single kidney, which occurred without operation, owing to delay caused by the *x* rays failing to show the presence of a stone. This patient I saw in consultation with Dr. St. John of Eltham, about a year ago. She reacted very strongly to the "flexion and stamping test," to which I shall again allude, but she pleaded for further delay as the Roëntgen rays gave negative evidence, and in the meanwhile an attack occurred which, after continuing some time, ended in a fatal collapse.

I. The first of the two cases on which this paper is founded was one in which the stone was small and angular, and occurred in a very stout married lady. She was a patient of Dr. T. J. Fisher of South Hackney, with whom I saw her first on April 2nd, 1903. She had been married twelve years, and had given birth to five children. There was no history of consumption, gout, or stone in the family so far as she knew. Her last confinement was two years and nine months before being seen. About three months after this she first noticed blood in her urine, which she showed to the nurse in attendance. It would last three or four days, and then disappear. Sometimes it was bright red, at others thick and dark like coffee. It would cease for weeks or months, and then appear again. The last time it was noticed was two months before being seen, after taking a hot bath. For two years she had suffered pain in the right lumbar region, extending through to the front. The loin was always aching, but at times the pain came on acutely, accompanied by nausea and frequently by vomiting. Deep pressure back and front caused sudden pain. The flexion and stamping test brought on a characteristic attack of colic. When attacked with colic she had found that, after lying down on her back, all pain would cease, and she would get up quite well, which is very characteristic of a movable stone. She was skiagraphed, but with an absolutely negative result.

She was operated on May 13th, 1903, in the presence of Drs. Fisher and Oliver. An oblique incision was made immediately below the last rib, and the muscles having been divided, the kidney was reached high up beneath the ribs. Owing to the immense depth, the greatest difficulty was experienced in manipulating the kidney, and except for an operating table that could be bent up in the middle, it would have been practically impossible to complete the operation. By enlarging the wound vertically and by stretching the loin across an angular table, it became possible to extract a small angular stone, which was very movable, from the pelvis of the kidney. The stone removed was triangular in shape, having three sharp angles, one of which had almost a needle point. Of the three sides the longest was concave and ¾ in., the other two being ½ in. In thickness it was about ¼ in. It was dark reddish-brown in colour, composed of oxalate of lime, with a little phosphate on the surface. The wound was closed, except at the posterior angle, where a drainage tube was inserted; cyanide and wool dressings were applied. She made an uninterrupted recovery, without any untoward symptom.

II. The second case was an assistant-surgeon in the Indian army, 27 years of age, who was admitted under my care in Guy's Hospital on May 30th, 1903. There was no history of phthisis in his family. He remembered being told that when very young some gravel became impacted in his urethra, from which situation it was removed by operation. When 13 years of age he first began to suffer from an aching pain in his right lumbar region, and this had continued more or less ever since, with intervals of freedom from pain. Five years ago, on one occasion only, the pain changed its character and took the form of an attack of acute renal colic. For a long time he had noticed sediments in his urine, which at different periods had consisted of phosphates, urates and pus. He is about 2 st. lighter than he was a few years ago. He had noticed blood in his urine at intervals evenly mixed with it. He had no increased frequency of micturition during the day, but at night he had to rise four or five times. On admission he was a tall, pale, slight man, appearing very ill. He complained of a dull aching pain in his right lumbar region of about the same intensity night and day. At times it extended to his thigh and right testis. The urine was neutral and had a thick sediment containing a large quantity of pus, phosphates, blood, and albumen. On bimanual examination the right kidney could be felt enlarged, but was not painful to pressure. A Roentgen-ray photograph showed no sign of stone. The flexion and stamping test also failed to in any way increase the pain. Baffled in this way, and having regard to the large amount of pus in the urine, and the chronic nature of the symptoms, we were inclined to regard the disease as of tuberculous origin, but repeated bacteriological examinations failed to detect any bacillus in the sediment. The daily amount of urea excreted averaged only 162 gr., showing much damage to kidney structure.

On June 22nd, 1903, he was placed on his left side, stretched over a round pillow, and an oblique incision was made below the last rib down to the perinephritic fat. An enlarged kidney was readily brought into view, showing on its surface dilated pouches of a lighter colour, indicating abscesses beneath. The fat showed signs of inflammation, and was adherent about the pelvis of the kidney. Through this a stone of large size could be felt. The part below the kidney was packed with gauze, and the pelvis opened, when a large quantity of very fetid pus escaped. A large branched stone absolutely fixed by extensions into dilated calyces with narrow openings was then exposed. The first portions removed were facetted, showing signs of old fracture. Other large club-shaped masses of phosphatic stone were extracted from various cavities by dilating with the finger their narrow necks. The stones removed weighed 278 gr. When the cavities had been dilated up and the branches of stone removed, the kidney was little more than a bag of pus, but owing to the small output of urea Mr. Lucas determined to leave it. It was washed out with boric acid lotion and a large drainage tube inserted. He progressed well after the operation, and was discharged with the wound healed on August 6th, 1903.

I publish these cases together to show that if we are to have our operations limited to those in which a stone can be demonstrated by the Roentgen rays a large number of persons in great suffering may remain unrelieved. In the first case, the stoutness of the patient and the consequent great depth of the kidney from the surface and the small size of the stone are sufficient to account for the failure of the rays. But the mobility of the stone and its pointed angles rendered the ordinary symptoms very characteristic. Moreover, it enabled me to demonstrate with great certainty by means of "the flexion and stamping test" the presence of a real calculus. For she began to complain of pain during extreme flexion, caused no doubt by the angles of the stone being pressed against the sensitive renal pelvis, and after the stamping she went home to suffer from an attack of colic.

This test, which I first published last year in a lecture before the Hunterian Society, will be found of great service in doubtful cases, especially when the stone is movable. I do not pretend that it is infallible, or will invariably succeed, but it is based on sound physiological and mechanical principles. During extreme flexion of the thigh upon the abdomen some pressure is brought to bear upon the kidney, especially if the kidney is pressed down by the diaphragm in deep inspiration; the psoas muscle tends at the same time to displace the kidney forwards and outwards. When the knee is suddenly released, and the patient told to bring the heel down forcibly on the ground, the kidney loses its muscular support, and is taken at a disadvantage, so that it is exposed to a sudden shaking. This will often displace a movable stone from a calyx, and bring it into the sensitive lower part of the renal pelvis, and so start an attack of colic. Haemorrhage may also follow its employment as a test. The test succeeds relatively to the amount of movement imparted to the stone in the kidney, and to its impinging on a more sensitive part than that on which it had been previously lying. It should be remembered that an unduly movable kidney may be shaken out of its bed by this test, and pain and colic may be induced in this way; but a movable kidney is to be detected by manual examination, and this fallacy can so be excluded.

No blame could possibly attach to a skiagraphist who failed to detect so small a stone in so stout a person as the first patient; but it seems strange at first sight that in the second case so large a stone in a thin man should have escaped de-

tection. It will be remembered that this was a large branching phosphatic stone immersed in pus. Phosphatic stones give shadows intermediate in density between oxalates, which are more opaque, and urates, which are least so. But my former experience is that the radiographers have failed in similar cases when phosphatic stones have been associated with pyonephrosis, and it would seem that the pus within and the adhesions outside the kidney may be the cause of the failure.

It will be noted also that my "flexion and stamping test" also failed to indicate the presence of a stone; and I take a pleasure in pointing this out, as supporting my general argument that no one test, symptom, or other means of making a diagnosis, is ever implicitly to be relied upon. The reason my test failed will be sufficiently obvious. The stone was a large branched one absolutely fixed by its prolongations into the various suppurating cavities through narrow necks. The pelvis of the kidney was distended and filled with protecting pus like a water bed for the stone, and the kidney itself was firmly adherent to the surrounding parts, so that no shake or jar could take effect either upon the kidney or upon the stone contained within it. Consequently no pain, haemorrhage, or colic followed the application of the test.

Still, this test will be found of very great service as an aid to diagnosis in many doubtful cases, and, as it is a purely clinical test, dependent on no expensive apparatus, it is one always available to every medical man. I wish to repeat that its efficacy depends on the mobility of the stone and to its being brought into contact with a sensitive part of the kidney. The amount of pain produced may vary; but the result is sometimes so severe and immediate as to settle at once all question of diagnosis, and to require that the patient should be at once put to rest. Every means of gaining information is of importance in framing a diagnosis when an operation is in question, and I put this forward as an additional aid in coming to a correct conclusion.

HEPATIC DRAINAGE.

By John B. Deaver, M.D.,
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In selecting the subject, Hepatic Drainage, upon which to read before the Surgical Section of your distinguished Association, which has honoured me by this invitation, I have been influenced by the great amount of good work done by your countrymen in the field of gall-stone surgery.

Infection and disease of the ducts of the liver and gall bladder have been studied with such great minuteness by pathologists and surgeons during the past decade that their treatment is beginning to rest on a sound and rational basis. In the study of cholelithiasis we have first to answer the question of etiology, and at the beginning were confronted with the problem of the extent to which morbid conditions of the bile were responsible for the production of gall stones. At the present time the opinion is general that certain phenomena produced by the action of bacteria in the biliary tract—certain inflammatory changes—are responsible in every instance for the formation of gall stones. Multiple pregnancies, tight lacing, indiscretions in diet, sedentary habits, a dependent fundus and torpidity of the bile secretion may predispose to or favour disease of the gall bladder walls, but have no influence whatever in the formation of the calculi. The liver, the gall bladder, and the biliary tract become infected by the ascent of bacteria from the duodenum by way of the common bile duct, or by an infection of the liver from the blood in the portal vein.

Experimental investigations, *post-mortem* proof, and clinical experience are teaching that the ascending infection, heretofore believed to be the nearly sole source, cannot be responsible for all of the infections of the bile tract.

Quoting from Adami[1] we may assume (1) That the colon bacilli in small numbers are, in the healthy individual, constantly finding their way into the finer branches of the portal circulation; and (2) that one of the functions of the liver is to arrest the further passage of these bacilli into the general circulation, and to destroy them through the agency of the specific cell of the organ.

Accepting such statements, it is quite apparent that when the specific action of the liver cells has been disabled by the toxic products of the bacteria which are invading the organ, the bacteria may reach the bile and spread through the gall bladder and ducts.

Could not this route of infection explain some of the cases of cholecystitis, often phlegmonous in type, which are not accompanied by jaundice?

The influence and action of the typhoid bacillus affords full confirmation of this way of infection. Involvement of the liver and gall bladder invariably occur in typhoid fever, and in but few instances *post mortem* does a culture of the gall bladder fail to produce the typhoid bacillus in pure culture. They gain entrance to the gall bladder by means of the portal circulation through the intestines, and are eliminated by the bile. Direct infection from the intestines by way of the common and cystic ducts is of course possible, but in such an event the bacilli would have to make their way against the bile current, and would probably be contaminated with other micro-organisms.

I have recently operated upon a patient with gall-stone disease in which the typhoid bacillus was obtained in pure culture from the bile aspirated at operation; the patient positively asserts that she had never had typhoid fever nor any condition resembling that disease. Her blood gave a positive Widal reaction, and the case suggested a cause for the occasional positive reaction obtained in patients who do not present any of the clinical features of typhoid fever.

In another case, seen twenty years after an attack of typhoid fever, a contracted gall bladder was found distended with calculi, three of which had passed into the common duct. In this case it is reasonable to suppose that the typhoid bacilli in the gall bladder were followed by a catarrhal condition of the gall bladder and hepatic ducts, the formation of stones, and, finally, their expulsion into the common duct.

The entrance of bacteria into the biliary tract from the duodenum presumably should follow some disturbance in the biliary outflow or a preliminary infection or catarrh of the walls of the duodenum.

I have been unable to accurately determine this previous attack in many of my cases, because all patients are subject at some time during their life to more or less numerous attacks of abdominal colic, usually ascribed to an error in diet, and forgotten or made little of. Many patients, however, will give the history of one or more attacks of catarrhal jaundice, bilious fever, etc., which have subsided rapidly under treatment, and for many years a period of perfect health has been enjoyed. During these years the slow precipitation of cholesterin and bilirubinate of calcium upon a clump of bacteria, a ball of mucus, or a shred of epithelium may accumulate into a gall stone. Such calculi frequently remain quiescent, and are only ascertained at a chance *post-mortem* examination, when death has occurred from some other disease.

In other cases the calculi, small and numerous, suddenly give rise to intense symptoms, and become propelled through the cystic and common ducts by some force arising from an inflammatory reaction in the walls of the biliary tract from an infection. The distension of the gall bladder by the outpouring of mucus and serum, the dragging upon delicate nerve endings by the stretching of the swollen muscular walls is sufficient to produce the attack of biliary colic with pain referred to the right shoulder so familiar to us all.

The passage of the stone along the common duct is of great moment to the patient, not alone from the intense and agonizing colic which it engenders, but also of the possible occurrence of complications. Ulceration, perforation, or stricture of the ducts may become immediate sequelae, and biliary cirrhosis or pancreatitis the more remote results.

In other cases there is no passage of stones into the cystic duct, and in the mild infections the inflammatory symptoms may subside into a period of latency, the bile once more flow in and out of the gall bladder, and the stones, resting quietly, giving no symptoms. Frequently during attacks of cholecystitis the inflammatory process extends through the coats of the gall bladder and gives rise to adhesions to the liver, colon, stomach, duodenum or omentum, which cause vague pains and gastro-intestinal disturbances after the attack has passed, a combination termed recently by Mayo "the association of surgical lesions in the upper abdomen."

Recurring attacks of inflammation in the gall bladder will gradually thicken its walls and lead to shrinkage of the organ, with, perhaps, strictures or contortions. The mucosa shows signs of chronic degeneration, with round-celled infiltration, giving place to connective-tissue proliferation and hypertrophy of the muscular coat.

Cirrhosis of the liver may be the direct result of infection ascending the common duct from the duodenum, or through the portal circulation from the intestine. The literature contains many references to instances of this type of cirrhosis,

most of which have been the result of congenital deficiencies of the bile ducts, but in many instances directly traceable to gall stones. Several observers have shown that, when infected bile is obstructed by ligature, the number of bacteria behind the point of obstruction becomes enormously increased, and Adami has demonstrated the frequent presence of forms of the colon bacillus within the liver; therefore, when bile, previously infected, becomes obstructed by a calculus, it is reasonable to suppose that the bacilli may exercise a direct inhibitory action upon the liver cells. Many writers believe that the retained bile *per se* does not occasion biliary cirrhosis, but that there must also occur inflammation of the bile ducts, cholangitis, subsequent to the stasis. In the great majority of common-duct obstruction cases upon which I have operated, the bacteriological examination of the bile has revealed the presence of some micro-organisms, the colon bacillus, typhoid bacillus, staphylococcus, or streptococcus. It has, therefore, been apparent in my experience that with a knowledge that complete bile stasis rarely occurs in common duct obstruction, infection must exert a positive influence in the production of the cirrhosis. I can therefore agree with Ford[2] in his conclusions "that the damming back of the bile caused by the obliteration of the ducts does not always lead to the cirrhosis *per se*, but may lead to it as well by causing a certain amount of inflammation of the bile channels," by adding, because of the infectious nature of the retained bile.

In urging the possibility of biliary cirrhosis resulting from neglected gall-stone cases, I am not unmindful of the criticism that jaundice is conspicuous by its absence in the majority of gall-stone cases, and that most of the instances reported of biliary cirrhosis have followed a long-continued obstruction of the ducts with persistent jaundice. But as Weber[3] aptly expresses it, "to say that because bile passes into the duodenum, chronic obstruction in the common duct cannot be a cause of the hepatic cirrhosis, is like saying that because a man with urethral stricture or enlarged prostate has been able to pass urine obstruction in the urethra cannot have been the cause of his dilated ureters and chronic interstitial nephritis."

Following the obstruction, the biliary ducts become greatly distended with bile, and the entire liver generally enlarged and tense. It is greenish in colour, with more rounded edges, and presenting a peculiar streaked appearance. In a patient on whom I have recently operated the anterior border of the liver was obliterated to such degree as to equal the posterior border. The surface of the organ may present a granular or slightly puckered appearance from the contraction of the connective tissue, but little or none of the coarse hobnail irregularity often seen in ordinary cirrhosis.[4] Microscopically, such a liver reveals dilated bile channels and blood vessels, and some pathologists have observed a reduplication of the bile ducts supposed to have arisen from chronically inflamed liver cells which have degenerated and become connected with the former bile passages. Others claim that they are simply elongations and enlargement of the previously existing channels. About these channels is an increase of fibrous tissue, and the cells of the lobules are frequently atrophic.

The spleen is usually enlarged, probably from hyperplasia of the splenic pulp, due to infection by the blood, or a condition of autointoxication caused by the diseased liver.

Adhesions of the gall bladder and ducts to surrounding viscera will follow nearly all severe inflammations of the liver from a pericholecystitis and embarrass the functions of the contiguous organs involved by the adhesions. In the suppurative form of cholecystitis such adhesions are apt to be more extensive from the extension of the infection to the surrounding viscera and peritoneum. The anatomical relations of the gall bladder to the hepatic flexure of the colon, to the duodenum, pylorus, pancreas, and great omentum is so intimate that these structures are rendered very liable to involvement in this adhesive peritonitis.

The importance which the presence of gall stones bears to disease of the pancreas has been well emphasized by Mr. Robson in the Hunterian Lectures upon Diseases of the Pancreas, and by the numerous contributions of Opie, in America.

The impaction of a gall stone in the ampulla of Vater, uniting the duct of Wirsung to the common bile duct, with its infected contents, seems at present the best explanation for many of the observed cases of acute pancreatitis.

That gall stones do not always induce acute pancreatitis is explained from the anatomic standpoint, when we consider that in two-thirds of subjects an accessory pancreatic duct (duct of Santorini) exists, and that in about 10 per cent. the common bile duct and the duct of Wirsung open by separate orifices into the duodenum. In addition, the gall stones may remain in the gall bladder, become impacted in the common duct at a point where no pressure is exerted upon the pancreas, or escape into the bowel without becoming checked in the ampulla.

Chronic pancreatitis is also frequently due to some obstruction of the duct of the pancreas by gall stones. This is particularly apparent where the biliary calculus is large in size and so situated that the duct of Wirsung is occluded without the entrance of the bile into the pancreas. When obstruction occurs the secretion is gradually dammed back upon the gland, infection is favoured, and the pancreas becomes damaged. The gland, especially the head, enlarges, and to the palpating hand is hard, frequently nodular.

A gall bladder once infected remains infected, and may serve as a fertile reservoir for the periodic or continued discharge of bacteria. In the event of obstruction to the common duct these bacteria may give rise to the liver lesions before mentioned; should the obstruction take place at the ampulla of Vater, pancreatitis may result from infection. The gall bladder must be recognized as the source of infection in the etiology not only of these two infections, but in almost 90 per cent. of all the cases of common duct disease (Mayo), and operation performed before the infection and the stones invade and damage the common duct.

The question, When is the time of election for performing a surgical operation upon patients suffering from cholelithiasis? has been answered time and again by surgeons. Mayo Robson, in January, 1903, wrote that "as soon as gall stones give serious trouble, their removal by operation is the most rational method of treatment, since it is only from the complications, which in many cases of cholelithiasis arise sooner or later, that any danger after operation may be apprehended."

It is my opinion, after a rich experience in complicated as well as uncomplicated cases, that operation should be resorted to as soon as it is definitely known that gall stones are present. The inability to find a drug capable of dissolving the calculi or to effect their dislodgement from the biliary tract, has led to this conclusion, together with the brilliant results of surgeons whose experience with this disease has been extensive in those cases without grave complications.

Olive oil has been employed for years as a remedy for cholelithiasis, from its supposed effect upon the secretion of bile, increasing its quantity and diminishing its consistency. This action has been explained by the splitting of the oil into fatty acids and glycerine in the duodenum, the well-known hygroscopic powers of the glycerine causing hyperaemia, and, through irritation, contraction of the muscular coat of the bile ducts. If we possessed such an agent, capable of contracting the gall bladder to such a degree as to expel its contents, the risk would be greater than the good accomplished, from obstruction of the cystic or common ducts by a stone too large to pass through them.

In general it may be said that the indications for medical treatment are:

1. Acute obstruction of the common duct. The stone, having left the gall bladder, is moving through the common duct and may reach the duodenum. When the disease drags on, however, with fever and increased pulse-rate, then the time has arrived when to defer operation is no longer warrantable. During the acute stage the pain may be alleviated with small doses of morphine, absolute rest enjoined, and hot applications applied to the hypochondriac region. The stools should be searched for the presence of stones. After the subsidence of the attack, intestinal antiseptics may be administered and the bowels kept freely moving. Digestion should be regulated, regular exercise and warm bathing ordered, and the patient carefully watched. Should symptoms of obstruction return after apparent relief, indicating a fixed position of the stone, operation should be immediately advised.

2. Mild attacks of colic without any inflammatory symptoms, unless chronic invalidism is threatened. Such cases are markedly benefited by the Carlsbad treatment. In those of sluggish habits and torpid constitutions the regular mode of living, the soothing effect of the warm medicated waters, and the laxative action of the springs are all conducive to a powerful and beneficial stimulation of the tissues. The efficacy of the Carlsbad treatment lies in the subsidence of the inflammatory process, not in the expulsion or the dissolving of the calculi. The stimulation of the liver and the portal

system in general aids very materially towards bringing about this temporary cure.

3. In cases of marked obesity or on account of diabetes, heart, lung, kidney, or liver disease, in which the shock of operation would result fatally. It is well to remember that a stone may obstruct the pancreatic duct, causing pancreatitis, and that in advanced chronic pancreatitis the islands of Langerhans may be implicated and glycosuria result.

4. Carcinoma of the biliary apparatus, unless the obstruction requires a palliative operation.

The five operations most commonly performed upon the biliary tract are:

1. Cholecystotomy (the so-called "ideal" operation).
2. Cholecystostomy (the formation of an external fistula).
3. Choledochotomy (with or without tube drainage).
4. Cholecystectomy.
5. Cholecystenterostomy, cholecystcolostomy, cholecystgastrostomy.

Cholecystotomy without drainage, the so-called "ideal" operation, or cystendysis was formerly frequently performed, but at the present time has been justly abandoned. If we believe that the mere presence of gall stones within the gall bladder does not give rise to symptoms *per se* nor cause lesions other than carcinoma, the operation is never indicated. Drainage of infected bile is always indicated in biliary tract disease, and of course is impossible by this method.

Cholecystostomy, incision and drainage of the gall bladder is the operation of choice in the majority of lesions of the biliary tract. It is an operation of great simplicity and yet of great practical application. It is indicated in most of the inflammatory affections of the gall bladder itself.

The liver may be drained of infectious bile without injury of its passages, and with the ability to restore the function of the gall bladder. When the common duct is obstructed by inflammatory swelling of its own lumen, or of the head of the pancreas, cholecystostomy relieves the pressure of bile and places the inflamed parts in a condition of rest.

The operation is indicated in (*a*) every acute infection of the gall bladder; (*b*) whenever cysticotomy or choledochotomy is performed, except when cholecystectomy is also done; (*c*) in chronic conditions, except when cholecystectomy is indicated; (*d*) in chronic pancreatitis.

Acute infections of the gall bladder practically always presuppose infection of the common and hepatic ducts, probably also of the liver; and, as drainage is essential, the gall bladder must be preserved if possible. While the liver can be drained by tubage of the common or hepatic ducts, such drainage is attended by more risk and less likely to be as complete as through the gall bladder. The greater the distance of the opening from the abdominal wall the more readily will the granulation tissue force early closure of the fistula.

Cholecystectomy should be an operation of necessity only in acute infections of the gall bladder. Fixed and fast rules, we will all admit, cannot be laid down to cover all conditions, but the judgement of the surgeon must determine the particular operative procedure in every given case.

The practice of simple drainage of the gall bladder in certain cases of empyema with involvement of the surrounding structures fearing the dissemination of sepsis is, to my mind, irrational; as, for example, where the cystic duct is occluded by a stone, the removal of which and the establishment of bile drainage is essential for a favourable outcome of the case.

The technique of the operation varies with different operators. I rarely at the present time practise the method whereby the gall bladder is stitched to the aponeurosis and peritoneum. The gall bladder having been aspirated, opened, and any stones or concretions removed, a rubber drainage tube is introduced for a distance of about 1.5 cm., and fastened by a catgut suture to the edges of the gall bladder wound. The latter are then invaginated, together with the tube, and a purse-string Lembert suture introduced, holding the rubber tube firmly in position. Gauze drainage is introduced beyond the tube and stitched to the gall bladder with catgut, guarding the intestinal side by rubber tissue. Before opening the gall bladder, the ducts should be palpated to determine the presence of any obstruction from a stone, and, most important, the patency of the cystic duct must be assured before completing the operation. The gauze should be sutured in order to prevent the movements of the diaphragm and the liver disturbing the original position until adhesions have formed about the drainage tube.

The only exception to be made to the method of gall-bladder drainage which I practise would be in the class of infectious cases where prolonged drainage was required. In these cases the method of suturing the edges of the gall bladder opening to the parietal peritoneum and aponeurosis offers a better opportunity to keep the opening longer patulous.

Cholecystectomy is indicated:

1. In chronic obstruction of the cystic duct due to a stricture following old ulceration, or to impaction of a calculus or calculi within the spiral folds of the mucous membrane, and producing hydrops of the gall bladder.

2. In chronic calculous cholecystitis of a shrunken, functionless gall bladder with thickened walls, provided the common duct is free and there have been no clinical symptoms indicating an existing infection.

3. In empyema of the gall bladder when the organ is seriously damaged.

4. In gangrene of the gall bladder.

5. In carcinoma of the gall bladder.

Hydrops of the gall bladder is always due to a catarrhal inflammation (the result of infection) of the mucous membrane of the gall bladder, with but slight, if any, existing infection. The mucous glands are stimulated to an advanced activity, and the condition presupposes an obstruction to the cystic duct by a stone, stricture, or swelling. Cholecystectomy is nearly always indicated, and it is only in certain cases, where the infection of the smaller hepatic ducts is supposed to be persisting, that a cholecystostomy is necessary for the purpose of drainage. In these cases, where cholecystectomy is desired, together with the temporary benefit of bile drainage, the suggestion of Mayo is very advantageous, whereby the fundus of the gall bladder alone is removed, using the base as a pocket, after removing its mucous membrane, into which the drainage tube can be fastened to the cut end of the cystic duct; or else the gall bladder and cystic duct may be removed, cutting flush with the common duct, as is my practice where the Mayo method does not seem advisable, and using the orifice of the cystic duct to drain the liver when the gall bladder is removed; the stump of the cystic duct should always be as short as possible to prevent retention therein of fragments of stone, mucus, etc., and the formation of a diverticulum.

In performing cholecystectomy one should remember that the gall bladder and the cystic duct hold the same relation to the common duct as do the caecum and anterior longitudinal muscular band to the appendix. Traction upon the former makes evident the common duct in the right free border of the gastrohepatic omentum, as does traction upon the caecum and anterior longitudinal muscular band make evident the base of the appendix.

The gall bladder should be dissected free from the liver, by commencing the dissection at the neck and carrying it toward the fundus, after ligating the cystic duct and the cystic artery. It is better to tie the cystic duct with catgut. If much oozing should occur from any denuded surface of the liver, a few sutures, or even the actual cautery, may be demanded, and thorough gauze packing made against the bleeding surfaces. In some of these cases Dr. Mayo's operation of enucleating the mucous membrane may be performed with good results.

When choledochotomy is performed to remove a stone in the common or hepatic duct without regard to the symptoms suffered by the patient, the ducts should be carefully explored.

Some discrimination is required to determine between a stone, a nodular pancreas, or an enlarged lymphatic gland, each of which may produce jaundice. If there is any doubt in the mind of the operator as to the presence or absence of a stone in the common duct after its palpation, and especially if jaundice, intermittent fever, or chills are present, the duct must be opened, explored with probe and finger, and drained.

The technique of the operation varies with the location. When the stone is located as being in the ampulla, and cannot be carried back into the common duct, it is best to open the duodenum and slit up the papilla. If the calculus is somewhat to the proximal side of the ampulla of Vater, and cannot be reached by slitting the latter, nor carried up into the duct, a choledochotomy must be performed, after dividing the peritoneum to the outer side of the duodenum, and lifting the latter upward. The wound in the duct may be closed by suture, but it is my practice to drain all of these cases. With a higher position of the stone the duct is usually dilated, and the calculus can be pushed up to the cystic duct, and by a choledochotomy removed, and, if not

able to carry the stone into the proximal portion of the common duct, the duct may be opened at the site of the stone.

In all cases of common duct obstruction an infectious cholangitis may be considered as present, and tube drainage of the common and hepatic ducts is indicated. At present I rarely introduce my tube up to the hepatic duct (hepaticus drainage), preferring to simply suture it to the opening in the common duct and surround it with gauze, also adding sutures to the side of the opening around the tube. In addition to the common duct drainage, cholecystostomy should also be performed.

Cholecystenterostomy is indicated:

1. In benign inoperable obstruction, stricture of the duct, with dense adhesions.
2. In malignant disease, if the patient can bear operation.
3. Occasionally in chronic pancreatitis.
4. In conjunction with a plastic operation upon the gall bladder for the relief of a persisting fistula in order to relieve tension upon the organ.

Anastomosis of the gall bladder to some part of the intestinal tract has frequently been resorted to where an exit for the bile has been desired without the annoyance occasioned by an external fistula.

But with the greater perfection in the technique of gall-bladder operations this method is much less often performed than formerly. It is undoubtedly true that the enormous amount of literature upon the diseases of the biliary tract which has been written in England, upon the Continent, and in America has exerted an influence toward the more frequent early diagnosis of biliary affections. Severe ulceration and perforation of the common duct are but rarely met at present, and, with the modern technique, inability to reach impacted calculi in the common duct is rarely encountered, and choledochotomy with drainage requires no more time to perform than cholecystenterostomy.

So the operation will practically narrow itself to the relief of the obstruction to the bile from malignant disease of the head of the pancreas, bile duct, or neighbouring organs, and occasionally in certain cases of pancreatitis, when the pancreas is large, of stony hardness, and suspicions are entertained of its benignancy. Such a pancreas, the seat of chronic pancreatitis, by reason of the production of extensive connective tissue may persist, and resist efforts at cure by the formation of a temporary external fistula.

Again, when the enlargement of the pancreas is not great, the jaundice is not marked with enough colour to the stools to indicate an open common duct, and when the gall bladder appears fairly normal in appearance, an internal fistula by a cholecystduodenostomy is curative. The first indication—namely, that of benign inoperable obstruction—will occasionally be observed at a second operation following a primary choledochotomy, although the wonderful reparative power of the common duct will limit such indications to but few instances.

In performing cholecystenterostomy I do not vary in the technique performed by most surgeons. The duodenum is the most favourable part of the intestine for the anastomosis, not only because of the close proximity of the gall bladder, but also because the bile normally enters this portion of the intestinal canal. In some cases adhesions prevent this, and the jejunum can be chosen and brought over the hepatic flexure of the colon, or the colon itself can readily be used to make the anastomosis.

I have used the last portion of the gut several times with very satisfactory results. Both Robson and Mayo have used the colon successfully, and the risk of a late infection from the colonic contents seems to be a purely theoretic objection. I usually employ the Murphy button to make the anastomosis, chiefly because of the rapidity of execution which it allows, and for the same reason would not perform a supplementary enteroenterostomy, to divert the faecal current, as proposed by Maragliano.[5]

It should be understood that these fistulae will ultimately close, but such closure does not occur until the obstruction to the common duct no longer exists.

The effect of surgical treatment in infection of the bile passages is eminently satisfactory if operation is sought at an early period and before the advent of complications. In the absence of the latter an imperfect result can almost always be traced to incomplete or faulty technique. Less than 5 per cent. of operated cases will require a reoperation, and the mortality from operation upon uncomplicated cases at present has been reduced to less than 2 per cent. (Robson, 281 cases, 1.06 per cent.; Mayo, 208 cases, 1 per cent.; Czerny, 1.3 per cent.; Kehr, 2.1 per cent.).

The dangers of delayed operation may become manifest to both the patient and the surgeon. The former suffers from gangrene of the gall bladder, impacted stones with bile stasis, septic cholangitis, perforation and peritonitis, and pancreatitis. The operator must perform a most difficult operation, encounter dense and hindering adhesions often containing concealed fistulae liable to infect the peritoneal cavity, or must control extensive oozing of blood. These complications are of most serious import to the future welfare of the patient, even if he recovers from the operation itself, and especially when performed by surgeons whose experience with gall-bladder disease has been limited.

Just as in appendicitis, where the danger-line is reached when the ulceration of the wall permits the escape of infection into the surrounding peritoneum, so in gall-bladder disease does the lesion assume greater proportions when the simple case of gall stones in the gall bladder is converted into the deadly common duct obstruction.

The cure of a patient with gall-stone disease rests in the hands of the general practitioner who has the ability to diagnose the condition and the judgement to advise surgical treatment at the time of election. A low operative mortality will be attained by the surgeon who can wisely discriminate between the cases requiring excision of the gall bladder and those calling for drainage of infected bile for a more or less prolonged period.

There are certain details which may exercise an important bearing upon the success of the individual cases, certain occasional failures to cure the disease which may be spoken of briefly.

The Robson technique, with its free, well-placed incision, the sand pillow arching the back into a reversed Trendelenburg position, and the dislocation of the liver downward and outward, enable us to bring the ducts into easy access, even in the obese. The frequency of overlooking stones in the cystic and common ducts must, therefore, be much less often than heretofore, though even with probe and finger small calculi in the common duct have escaped detection and given rise to future trouble. A year ago I operated upon a patient with severe cholangitis and cholecystitis due to infection by the streptococcus. At the operation the gall bladder was found to contain a few cubic centimetres of pus, but no stones. Cholecystostomy was performed, but the bile fistula persisted. After three months a second operation revealed a stone a centimetre above the ampulla of Vater, and its removal was followed by a complete and uneventful recovery.

In another case encountered during the present year the following interesting condition was observed:

The patient was suffering from acute infection of the liver ducts and gall bladder, with the usual symptoms of jaundice, intermittent fever, chills, and pain, indicative of common duct obstruction. At operation a stone measuring $1\frac{1}{4}$ in. by $\frac{3}{4}$ in. was found in the hepatic duct just above the opening of the cystic duct; the gall bladder was shrunken, containing nothing. The hepatic duct was opened and the stone extracted; a drainage tube was introduced both into this duct and into the gall bladder.

Following operation, the temperature rapidly returned to normal, the jaundice subsided, and the patient was seemingly on the road to recovery, when, ten days after operation, death occurred with symptoms of haemorrhage.

At the *post-mortem* examination the right lobe of the liver was found containing a large nest of stones, though the common and hepatic ducts were clear. The stones in the liver were surrounded by pus. The haemorrhage occurred from ulceration of several of the larger branches of the portal vein.

As Mayo points out, the occasional return of a colic a few months after operation must not be considered indicative of a stone, for in the majority of instances the colics do not recur, and are probably due to the recent adhesions surrounding a crippled gall bladder which has not emptied properly. I have both personally observed this condition several times and have had my attention directed to it by the attending physician after the patient had left the hospital. I have advised various forms of gymnastics of the abdominal muscles and over-extension of the spine, in order to aid the relaxation of the adhesions.

Czerny's recent statistics,[6] showing that in 8 per cent. of cases gall stones were subsequently discharged through the fistula and in 3 per cent. were otherwise discovered, are much higher than those of other surgeons.

Imperfect drainage is sometimes responsible for failure, and may be caused primarily by obstruction of the cystic duct or by the too early removal of the rubber tube. Owing to the former reason cholecystectomy must always be carefully considered when the cystic duct is damaged, because, even though recovery may ensue after a few weeks' drainage of the organ, the contraction of the healing ulcerated mucous membrane of the cystic duct may produce attacks of colic when the mucous secretion is forced through the narrowed duct, or may eventually result in hydrops. The drainage of the gall bladder must be continued until the bile becomes sterile, or even longer.

Fistula following cholecystostomy after the method recommended in this paper should close in a few weeks after removal of the tube drainage, and the permanence is due to the continuance of obstruction in the common duct, either from a stone, stricture, adhesions, enlargement of the head of the pancreas, neoplasm of the duct, or a possible chronic enlargement of one of the lymphatic glands anatomically related to the common duct. When the persisting fistula arises from the gall bladder, a plastic operation should be attempted. Failing by this means, the gall bladder must be isolated, the fistulous opening closed, a cholecystoduodenostomy performed or the gall bladder removed, it being understood that the common duct is patulous.

In my experience, fistulae from the common duct will ultimately heal, though often such healing is slow and tedious. Especial caution must be observed not to inject caustic or other irritating fluids into the fistula. If an operation is indicated, the opening must be sought and the stone or stricture removed.

The treatment is somewhat difficult to decide. Perhaps the safest plan, and when the stricture is not absolute, would be to provide for a fistula from the gall bladder to the duodenum. Where drainage of the hepatic duct was desired, or when the perfect patency of the cystic duct was questioned, the stricture should be divided, and a T-shaped rubber tube inserted, one arm extending into the hepatic duct, the other downward towards the duodenum, while the upright is brought out of the wound, as in any drainage operation. The object in using a T-shaped drainage tube is to immediately establish direct communication between the two ends of the duct and to promote the formation of adhesions and exudates and the subsequent transfer into the walls of a new duct, as in the retention of a catheter in stricture of the urethra in perineal section.

Another method I have followed is to introduce a drainage tube into the hepaticus, and a second tube down the common duct to the head of the pancreas, but not so far as to obstruct the pancreatic duct. These tubes can be connected by a piece of glass tubing. Failing by all these methods, a permanent external or internal fistula would have to be encouraged.

Adhesions following operation may inhibit the movements of surrounding viscera and give rise to annoying disturbance of the gastro-intestinal tract, particularly of the stomach and duodenum. The use of gauze for drainage should be limited as far as is compatible with safety, and the gauze should be guarded upon the intestinal side by rubber tissue. By this means the adhesions which result are thin and filmy in character, in a very short time becoming stretched and giving rise to no trouble. When the gauze is unguarded by rubber the contact with the visceral peritoneum produces dense adhesions, and its removal is followed by firm and dense bands of adhesions, which may even require reoperation for the relief of pain or vomiting. The removal of such adhesions may be a difficult operation and accompanied by considerable haemorrhage, especially from torn surfaces of the liver, most of which may be checked by prolonged gauze pressure.

Hernia should but rarely occur after gall bladder operations, because of the high location of the Robson incision.

At present my experience justifies the following conclusions:

Inflammatory lesions of the liver, gall-bladder, and their ducts, are the result of an infection which is usually persisting up to the time of operation.

The mortality of biliary-tract surgery is proportionate to the extent of the complications.

Early diagnosis and prompt operation are essential for a low mortality, whether gall-stones are present or absent.

The salvation of the infectious cases is prolonged drainage of the bile.

Cholecystostomy is the operation of choice in such cases, and cholecystectomy only to be resorted to where pathologic alterations of the gall bladder require excision. Hepaticus or choledochus drainage should not be considered, if cholecystostomy is feasible, unless it is necessary to open the common or hepatic ducts for the extraction of a stone.

Hepatotomy in the absence of a circumscribed collection of pus will accomplish so little in the way of drainage, and can cause enough bleeding to endanger the patient's life, that I do not think it, as an operation, is worth considering in liver infections.

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Mr. JORDAN LLOYD referred to those cases in which, after cholecystotomy, complete and permanent recovery does not follow. Such, he said, were not always due to an overlooked calculus; indeed, they more often depended on stenosis of the cystic duct, the result of pre-existing stones. These cases called for cholecystectomy, and not simple drainage. He agreed with Professor Deaver that the best way of removing the gall bladder was to begin below, by first ligaturing the cystic duct and the cystic artery, and then removing the viscus below upwards. He agreed as to the advantages of early from operations, but would be glad to learn from Dr. Deaver how such early diagnoses could be positively made.

CARCINOMA OF THE MAMMARY GLAND:

EARLY DIAGNOSIS AND RADICAL OPERATION NECESSARY FOR ITS CURE.

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In the first place, I must express my sincere thanks to the officers of the Section for the courteous invitation extended me to read a paper at this meeting. The honour is as much appreciated as it was unexpected. I am deeply grateful for the privilege of again spending my vacation in Great Britain, as my memory of the meeting at Manchester in 1902, with its wealth of scientific work and brilliant entertainments, has only enhanced my desire to attend this meeting at beautiful and historic classic Oxford.

In introducing for your consideration the always interesting subject of cancer of the breast, I do so with no hope of presenting anything strikingly new, but with the purpose of emphasizing that which seems to me true. In fact, I hesitated to select a topic so ably and fully discussed by the leading surgeons of Great Britain (Banks, Bryant, Cheyne, Drew, Sheild, and others) during the past few years, and only did so for two reasons: first, the widespread interest felt in this pitiless enemy to civilization, which is increasing in such a startling manner in both England and America; secondly, because the modern or complete method of operating had its birth in London in 1867, and was enlarged and its benefits extended in Baltimore in 1894.

Too much credit cannot be given to Moore of London, who conceived and introduced, and to Sir William Banks of Liverpool and S. W. Gross of Philadelphia, who popularized with English-speaking peoples the present plan of operating radically or not at all. The futility of incomplete operations was demonstrated by each of them; nay, more: they were shown to be positively harmful in many instances, stimulating, as they did, infected tissue, necessarily left behind, to an unwonted growth.

Halsted, of Baltimore, and Meyer, of New York, almost simultaneously advocated the removal of the pectoral muscles in every case, regardless of apparent infection, so that all cancerous tissue and lymph-bearing channels might be removed in one mass, and a better and safer dissection of the axilla could be made. Halsted went further than Meyer in two important particulars, namely, to sacrifice so much skin as to make grafting usually, if not invariably, necessary; and to explore the posterior triangle of the neck in every case, removing, if present, enlarged glands and infected fat. He said that no one could rightly affirm or deny the existence of enlarged axillary glands until the space was carefully explored from base to apex, and that the same rule should obtain with the subclavian triangle, though admittedly less frequently involved.

Though a decade has passed since Halsted's publication, nothing more radical has been or is likely to be offered, and many, I might justly say most, surgeons yet hesitate to go so far as he advised. Therefore, we are justified in viewing the complete method, as we now understand it, as a composite

procedure, the combined work of English and American surgeons, or an Anglo-American operation truly.

Diagnosis.—No one will question that better results in the future, if they are to be had, must follow earlier rather than more extensive operations. It is desirable, as Sir William Banks pointed out a quarter of a century ago, to operate for cancer of the breast when the growth is no larger than a pea, if patients only applied to us then, or the diagnosis could be made. Unfortunately, things have improved but little, and general practitioners do not send us their cases of breast cancer much sooner than they did then, owing partly to their inability to make an accurate diagnosis, but more to their want of faith in the ability of surgery to cure them. This is not to be wondered at when we recall that Sands of New York and Agnew of Philadelphia each said, after an illustrious career in surgery, that he had seen no case of mammary carcinoma cured by operation. Pessimism is so easy, optimism so difficult, when dealing with cancer, that we can only hope to counteract the false teaching of a past era by "a long pull, a strong pull, and a pull all together," which cannot, for the good of suffering women, be too oft repeated. An accurate clinical diagnosis is not always possible, as in 305 malignant tumours treated at the Johns Hopkins Hospital a diagnosis could not be made with sufficient positiveness to warrant a complete operation before exploratory incision in 28 of them, or 9 per cent.[1] It is even more difficult to recognize clinically benign neoplasms—solid and cystic. Adeno-fibromata and intracanalicular myxomata, when deeply placed and covered by an excess of fat, cannot be palpated and differentiated. Cysts may be as troublesome. Bryant,[2] in an analysis of 242 mammary tumours, found cysts simulating cancer in the proportion of nearly 1 to 3 (25 cysts to 74 carcinomata). In doubtful cases there is a conservative and, I believe, safe course to follow. Instead of making, as many advise, an incision into the growth for diagnostic purposes, and then closing the wound—a practice not altogether satisfactory and certainly not free from danger—I prepare for and get the consent of the patient to a complete operation. A competent microscopist is asked to be near at hand when the operation is begun, with his apparatus prepared for rapid yet accurate work. If the chances strongly favour benignity, the tumour and its capsule *only* are removed and submitted for an immediate examination and opinion.



Fig. 1.—Warren's incisions in removal of breast for cancer (*International Textbook of Surgery*).

Usually in less than ten minutes the report is returned. If there is a strong suspicion of malignancy a portion of the growth, near its centre, is removed, the wound at once plugged with gauze, and nothing further done until the pathologist reports. If malignant, the complete operation is immediately performed. I have followed this practice for eleven years; have never known a mistake made in diagnosis; nor been moved to suspicion that harm had resulted from the liberation of cancer cells which infected adjacent healthy tissue. I think, however, that plugging the wound made into the growth is important, and this should not be disturbed until the entire breast, with the muscles, has been removed. Therefore, it would seem that the danger can be minimized, if not actually prevented, and the slight risk incurred is as nothing to the definite information gained. I can point to at least a half-dozen women, happily married and with practically perfect breasts, where everything might have, probably would, been different had not this precaution been taken in operations for benign growths before marriage. Further, I have been prevented from mistakes in at least two malignant tumours. Both were cancers in young women, aged 25 and 28 respectively, located in the upper and inner quadrant of the breast, where benign growths are usually found; and each was, moreover, freely movable, without puckering, dimpling, or change of colour in the superlying skin. The somewhat rapid growth alone excited my suspicion, and caused me to proceed cautiously. One of them died eleven months after operation from metastasis in the lungs and multiple shot-like deposits in the skin over the chest. The other has been operated upon three times during the past five years, and at the present time is free from regional recurrence. I was sceptical as to the accuracy of the microscopical report, and did a less radical operation than usual, though removing the entire breast and the fascia covering the pectoral muscles. Less skin was sacrificed than should have been, presumably, as she returned to me in less than a year with regional recurrence near the inner end of the cicatrix. There was at the time marked enlargement of the supraclavicular glands. In November, 1900, I did a most extensive operation for the recurring growth, removing both muscles, and making the largest skin wound I have ever made. I show a photograph taken after it was sutured. (Fig. 2). The one showing the wound before suturing was spoiled. As she suffered from shock and previously had ether pneumonia, I thought it best to defer the neck operation for a week. One supraclavicular gland, as large as a walnut, and other smaller ones, were then removed. She remained well for thirty months—able to do all of her own work, and did not think it necessary to consult me. In October, 1903, when I had supposed her dead, she again consulted me, and I removed a part of the sternum and two ribs. The pleura was healthy. A systematic course of *x*-ray treatment was begun, and the wound allowed to fill in by granulations. The photograph, taken only a few days before I left America, shows that she is free from regional recurrence. She thinks herself well, as she has gained flesh and is able to do hard work without fatigue. Doubtless another recurrence will follow. I have reported this case somewhat fully for two reasons: first, to show that a seemingly benign growth was in fact a most malignant one; secondly, that marked enlargement of the supraclavicular glands does not, as many think, indicate inoperability. It is now nearly four years since the neck operation, and there has been no recurrence in that direction.

The experience at the Johns Hopkins Hospital has been similar to my own, and the surgeons there do not hesitate to employ incision for diagnostic purposes where it is followed by immediate radical operation. In the 28 cases of malignant tumour in which it was employed 25 were cured[1]—a sufficient answer, I should think, to those who condemn the practice, yet continue to make mistakes in diagnosis.

When operating apart from a well-appointed hospital and its pathologist, the microscopic appearance of the tumour, its colour, consistency, resistance to the knife, and, above all, the presence or absence of a capsule, supplementing such examination, when necessary, by Stiles's nitric acid test, will practically always prevent a mistake in diagnosis. I think,

with Mr. Sheild, that a diagnosis made in this way is practically reliable, though every growth removed in my practice is eventually submitted to the microscope. In doubtful cases—in women past 40—malignancy should be assumed, for the chances in its favour are as 13 to 1; in fact, it should be a rule to assume malignancy in all cases not demonstrably benign.

Age.—Admitting that the age of the patient is perhaps still our surest guide in diagnosis, I am nevertheless convinced that carcinoma in its encroachments is breaking down barriers hitherto recognized. I have latterly seen more cases of cancer in all parts of the body in young subjects than formerly. I have operated upon five cases of cancer of the breast in the past six years, aged 23, 25, 25, 27, and 28 respectively. All but one (aged 23) were typical scirrhus growths. The exception was an adeno-carcinoma. S. W. Gross, with a much larger experience, saw but one case as young as 28. Henry's case, aged 21, was often quoted by Gross as the youngest on record. A. J. McCosh reports to me by letter a case operated on at 19, M. Richardson one aged 21, and Roswell Park and J. Collins Warren one each at 22. Many of the fifty members of the American Surgical Association have written to report cases of 25 and under. I would here emphasize what I believe to be the fact—that when young subjects are the victims of cancer the prognosis, with or without operation, should be guarded, as its course is acute. This is what we should reasonably expect, as the lymphatic channels are both numerous and patent in young and succulent breasts. *Per contra*, in the aged many of the lymphatic vessels atrophy, which probably explains the frequent chronicity of cancer in them (Chas. H. Mayo, Porrier, and Cuneo). Therefore, the prognosis should, for anatomical reasons, be what it is found to be clinically, namely, best in the old, worst in the young.



Fig. 2.—Showing a very large wound closed by Warren's method.

Race.—It is just as certain that geographical and racial barriers are yielding before its encroachments. The North-American Indians and negroes were practically immune to cancer until their changed environments made them susceptible. Both races still enjoy a relative immunity, the Indians particularly, to carcinoma in general, but the negro is quite as susceptible to malignant disease of the breast, and more obnoxious to cancer of the uterus than the whites.

Topography.—As much as—possibly more than—age and race does the location of the growth influence the prognosis for better or worse. If situated in the sternal quadrants of the gland, which fortunately is not usually the case, but, according to my experience, more commonly so than is generally believed, the growths run a more rapidly destructive course than similar ones in the axillary quadrants. Every surgeon written to save one, and expressing himself upon this subject (15), stated it as his belief that cancer of the sternal quadrants gave a worse prognosis than similar growths in the axillary half of the gland. For anatomical reasons we should expect this, as it is impossible to attack the mediastinum as we do the axilla. Metastases are doubtless less apt to occur, but when they do are almost necessarily fatal. A better understanding of the lymphatic vessels of the inner half of the mamma, for which we are mainly indebted to Stiles, offers a ready explanation of a clinical fact which has not been properly emphasized.

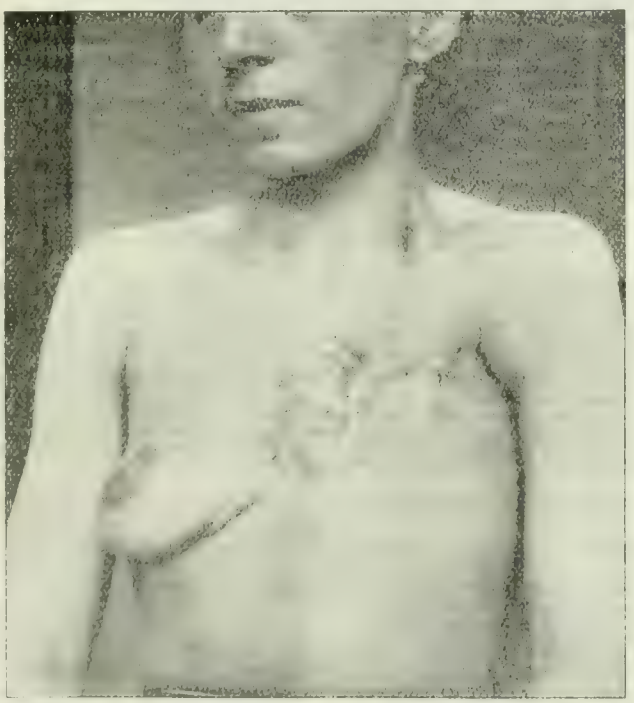


Fig. 3.—Photograph of patient three years after removal of a very large mass of glands in the neck. No recurrence.

Pathological Variety.—The variety of the growth and its duration more materially influence the prognosis than either its site, the age, or race of its host. The tendency to axillary and other lymphatic involvement is notably greater in encephaloid and scirrhus, circumscribed and infiltrating, than in adeno-carcinoma.

The statistics of the Johns Hopkins Hospital, kindly furnished by Dr. Joseph C. Bloodgood, are convincing upon this point. I quote freely from his letter: "I cannot give you the percentage of axillary involvement. In only 2 cases not cured did the axillary glands show no metastasis. These two patients died of mediastinal metastasis. Of the cured cases adeno-carcinoma cystic, about 4 out of 13 cases showed no metastasis to axillary glands. Of the adeno-carcinoma comedo, 4 out of 8 cases, or 50 per cent., showed no involvement of the axilla. Of the medullary carcinoma, 3 out of 8 cases showed no metastasis to the axillary glands. Of the circumscribed scirrhus 2 out of 14 cases showed no metastasis to axillary glands. Of the small infiltrating scirrhus, 4 out of 24 showed no metastasis. Of the large infiltrating scirrhus all 10 cases showed metastasis."

Anatomy of Breast.—We cannot, in operating for cancer, too often gratefully recall the painstaking work of Stiles, of Edinburgh, who demonstrated in 1892 that the mammary gland was far more extensive than had been previously supposed, and that parts of it were almost necessarily left behind in operations prior to that time, as the gland is diffused, not encapsuled, and frequently has outlying or detached portions. By so doing he contributed greatly to the modern or complete operation. The lymphatic vessels are also far more numerous and complicated than Sappey and former anatomists had taught, for instead of all such vessels converging to the nipple and thence passing by main channels beneath the skin to the axillary nodes, we now appreciate from the discoveries of Heidenhain, Küster, Stiles, Mascagni, Grossmann, Rotter, Oelsner, Poirier, and Cunéo, that there are other important if not as much frequented channels. There are at least six important and fairly constant routes; of these three are superficial and three deep. In addition there are inconstant or accessory channels.

Superficial Lymphatics.

1. The principal set of Sappey, already described, which forms a plexus at the areola, thence passing by main channels to the axillary glands.

2. This set drains the skin over the sternal half of the gland, passing through the second and fourth intercostal spaces to discharge their contents into the nodes of the anterior mediastinum. Some of them interlace with those of the opposite breast occasionally, which explains the involvement of the axillary glands on the right side in tumours of the left breast, and vice versâ (Reiffel, Oelsner, etc.).

3. A cutaneous set of vessels recently described by Poirier and Cunéo which drains the upper part of the breast and passes directly over the clavicle, emptying into the supraclavicular glands.

Deep Lymphatics.

4. This set begins in the mucous membrane of the milk ducts and acini, drains the deeper portions of the axillary half of the gland, joins the superficial set in the axilla, and forms with it a network which surrounds the axillary vein, almost or quite up to the clavicle.

5. A second deep set drains the deeper portions of the sternal half of the gland, perforates the second and fourth intercostal spaces, following the course of the internal mammary artery, to empty, together with the superficial set, into the mediastinal glands. On the right side they intermingle with the lymphatics of the liver. Hence it is easy to explain the implication of the mediastinal glands, resulting in the prominence of the bone, or "sternal symptom" of Snow in cancers originating in the inner half of the gland.

6. A third set drains the middle of the base of the gland and retromammary tissues. Some are lost in the fascia covering the pectoralis major, whilst others perforate the intercostal muscle to follow the intercostal vessels to the spine, thereby affording a ready explanation of those cases ultimately complicated with spinal symptoms, even paraplegia; such cases are wrongly spoken of as general infection, as they are caused by local extension along the lymphatics.

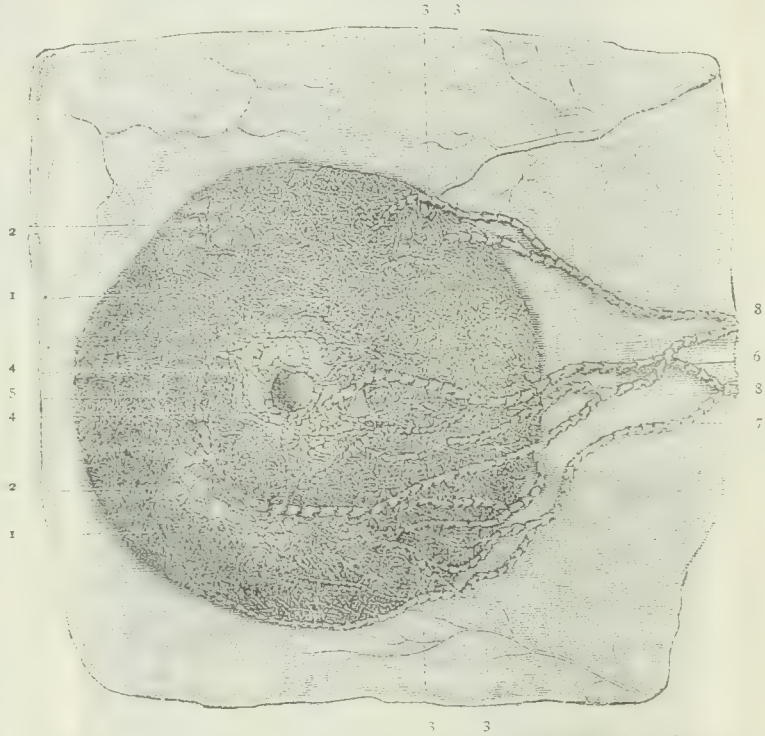


Fig. 1.—Lymphatic vessels of the anterior surface of the breast: the subareolar plexus and the trunks which run from it (Sappey). 1, 1. Lymphatic network of the anterior surface of the mammary gland. 2, 2. Lobules of the gland, the peripheral network of which has not been injected in order that the circumlobular network which encircles it may be seen. 3, 3, 3, 3. Trunks which arise from the upper and lower parts of the gland. 4, 4. Subareolar lymphatic plexus. 5. Lymphatic vessel which arises from the inner part of this plexus. 6. Vessel arising from the outer part of the same plexus. 7. Vessel coming from the lower part of the gland; after a long course it unites with the preceding to form one of two trunks in which all the others end. 8, 8. The two principal lymphatic trunks which extend transversely from the mamma to the axillary glands. (*The Lymphatics*, C. H. Leaf.)

In addition to these usual avenues of infection, in early or average cases of breast cancer, there are additional or accessory channels in cases where the breast is immobile and adherent to the pectoral muscles beneath. Grossmann injected three times in thirty subjects a lymph-bearing vessel from the mammary gland, which perforated the great pectoral, running between it and the pectoralis minor, to empty finally into the subclavian or topmost axillary glands. Along the course of this vessel are several small retropectoral glands, which are enlarged in 50 per cent. of all cases of cancer (Rotter).

Lymphatic Glands of the Axilla.—There are usually from twelve to thirty-six axillary glands, which are of the greatest importance from a surgical standpoint, as they receive the afferent lymph vessels from the arm, skin of the chest, mammary gland, and subjacent muscles. They are arbitrarily subdivided into groups: (1) Humoral chain which follows and surrounds the axillary vein. (2) Thoracic chain, which lies upon the inner wall of the axilla, being hidden, partly or entirely, by the insertion of the pectoralis major muscle. (3) The scapular group, which follows the subscapular artery, and is found on the posterior axillary wall. (4) Central group between the preceding chains. (5) Subclavian chain, perhaps the most important of all, consisting of three to twelve glands, situated above the tendon of the lesser pectoral in the space of Mohrenheim, and receiving the afferent vessels from all of the axillary glands below. These glands are intimately associated with the axillary vein, lying to its inner aspect at the point where it receives the cephalic vein. When these glands are enlarged or adherent to the vessels, injury is easily done to the axillary or cephalic vein, unless removal is done under the eye by careful dissection.

Treatment.

One should ever be mindful of the fact that internal metastases occur early—oftentimes before we suspect them, and, therefore, not a day should be lost unnecessarily in waiting for an operation. The writer has had, as doubtless others present have, several sad experiences where the operation seemed both timely and thorough, no regional recurrence took place, yet the autopsy demonstrated internal metastasis. To recognize early metastases is clearly impossible, and the only safe course to follow is immediate operation by the complete method as soon as a tumour of suspicious nature appears in the breast.

Believing that women are prone to overlook and then conceal mammary tumours, and, further, that general practitioners, who will be first consulted, are not usually as prompt in referring such cases as their gravity requires, axillary involvement will almost inevitably have taken place when the surgeon is first consulted. Upon this point I wish to speak positively, as I have never operated for scirrhus cancer where there was not both microscopic and macroscopic involvement of the axillary glands. Practically all of the fifty American surgeons expressing themselves upon this point agree that the axillary glands are invariably found infected at operation. The few who do not place the percentage high—75 and upwards.

The somewhat rare adeno-carcinomata are much less liable to cause early glandular involvement. Therefore, in planning an incision, one should think as much of the axilla as the breast, both for practical purposes being looked upon as certainly infected.

The next thought should be of tissues probably infected; and under this heading will fall the intervening lymph channels between breast and axilla, the fascia covering the pectoralis major in most instances, and the sternal portion of the muscle itself (or glands within its substance) in a very much greater number of cases than hitherto suspected (Grossmann, Rotter).

It is certainly desirable to remove all infected tissue *en masse*, thereby avoiding the possible liberation of cancer

cells, if it can be done without increasing the mortality, lengthening the convalescence, or materially impairing the patient's subsequent usefulness. The operative mortality is so low that it may practically be disregarded, being very much less than minor operations on the breast were ten years ago.

In more than 2,100 operations performed by American surgeons since 1893, and reported to me by letter, there was slightly less than 1 per cent. mortality (2,133 operations, 21 deaths). The convalescence is not much, if at all, lengthened by the major operation. The average stay in the hospital of my own cases has been ten days, almost invariably less than a fortnight. The last case was sitting up in twenty-four hours, and left the hospital for her home in an adjoining State on the sixth day. I had never previously allowed one to leave prior to the eighth day, but there were good reasons for doing so in this case, and she was perfectly able to make the journey, not having had a symptom after operation. The average time in the hospital reported by forty surgeons is sixteen days.

The usefulness of the arm is not affected by the removal of the muscles. Beyond a temporary impairment, lasting a few weeks, the arm is as useful as ever. Patients can dress their back hair, and do everything practically that they could do before operation. The week I left Philadelphia five of my cured cases, responding to letters, were in my office, and all but one assured me that there was absolutely no difference in the strength and usefulness of their arms. W. J. Taylor reports that one of his patients with "both breasts removed, as well as both pectoral muscles on each side, has made her living for a number of years cutting out clothing." That a temporary impairment occurs in most cases and a permanent one in a few is undeniable. When it does occur, however, it is, in my opinion, always due to loss of skin—not the muscles—and is just as likely to result in cases where they (muscles) are intact. In one of my cured cases—the exception noted above—the arm was nearly as good as ever. It was seemingly as strong, but could not be extended above the head so well as the other, evidently due to a bridge of skin in the cicatrix at the anterior axillary fold where the arm joins the chest. Simple division would have relieved it, and I so told her, but she answered that she "had done everything with it for four years that she wanted to, was perfectly satisfied, and did not wish anything done." It was one of my first cases where a new technique was employed, and the incisions were, perhaps, not so well planned as in subsequent ones. Occasionally, only once in my experience, one operates upon a case that is literally hide-bound, and where there is difficulty in closing a very large wound by plastic flaps. The closure was perfect in the exception pointed out, but the tension was great, and a number of sutures were cut the following day, when the drainage tube was removed. There was gaping towards the centre to an extent equal in size to a crown piece or more. This was allowed to heal by granulation, as the patient objected to having it closed by skin grafting. There is undeniably somewhat of a prejudice against grafting both among persons in and out of the profession, with the former because they do not understand it, the latter because it is time-consuming, and must be rightly done lest failure result. My own results have generally, not always, been entirely satisfactory, and I am resorting to it in an increasing number of cases in general surgery, as it certainly gives a more elastic and supple cicatrix than that following a granulating surface. I have had little occasion to use it after excision of the breast, but when doing so have had no cause to regret it. The great advantage in its favour is that when one grafts one thinks little about the amount of skin being removed, and is therefore likely to cut widely of the disease, which is the prime consideration. Frequently an otherwise perfect operation is marred, and an abiding result made next to impossible by the paucity of skin removed. It should be constantly remembered that recurrences are very generally in the skin. The answers received from fifty surgeons show that skin grafting after breast excision is not generally practical; only a few do it, and of these quite as many graft secondarily as primarily.

A strong argument—to me the best—for removing the muscles is that the axilla is uncovered at once, its contents clearly exposed, and only inexcusable blundering would result in injury to the vessels. However skilful and patient one may be, there is either danger of injury to the vein, or of leaving infected tissue behind, which would render the operation futile if the axilla is attacked with the muscles *in situ*. I formerly thought that I did a thorough axillary dissection before practising removal of the muscles as a routine procedure, but now realize that the space of Mohrenheim must have been imperfectly cleared in many, if not most, cases of high axillary involvement. I recently operated on a young seamstress, and her physician was very anxious that the muscles be saved if possible, fearing that their loss might handicap her subsequently. There was fortunately only moderate involvement of the lower axillary glands, and for the moral effect the muscles were spared, contenting myself with the removal of the anterior fascia and superficial fibres of the great pectoral. It required at least thirty minutes longer than it would have done to do a more complete operation, though I hope for as good an ultimate result, as the case was a favourable one, inasmuch as there was but limited axillary infection.

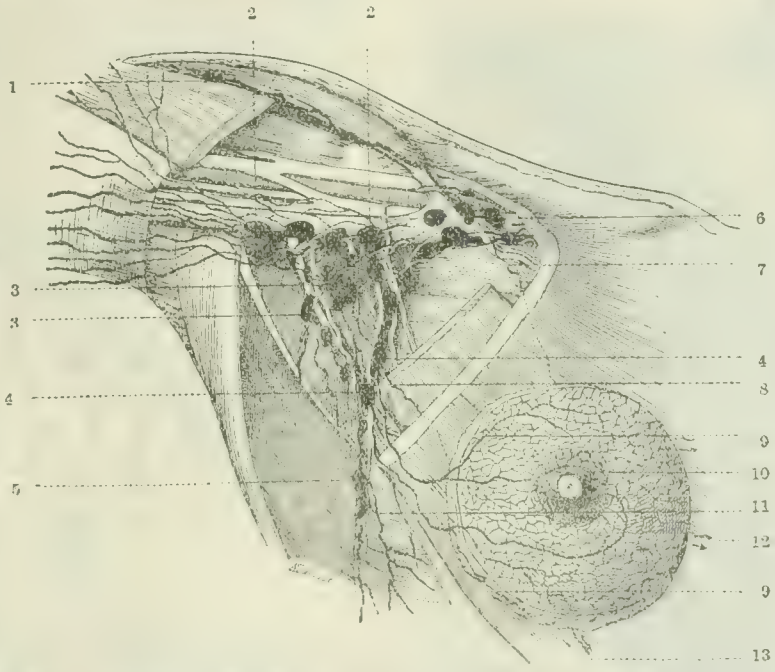


Fig. 5.—Lymphatics of the breast and axillary glands (semi-diagrammatic). 1. Delto-pectoral gland. 2, 2. Glands of the humeral chain. 3, 3. Glands of the central group and the scapular chain. 4, 4. Glands of the thoracic chain (supero-internal group). 5. Gland of the thoracic chain (infero-external group). 6. Subclavian glands. 7. Mammary lymphatic ending in the subclavian glands (inconstant). 8, 9. Mammary collecting trunks, ending in glands of the thoracic chain. 10. Subareolar plexus. 11. Cutaneous collecting trunk of the lateral walls of the thorax. 12, 13. Mammary collecting trunks about to end in the internal mammary glands. (*The Lymphatics*, C. H. Leaf.)

Volkmann[4] was probably the first to remove the pectoral muscles—major in 38 cases, minor much less frequently, and his results in this series, though more advanced cases, with cancerous infiltration of one or both muscles, was much better so far as regional and local recurrences are concerned, than after his milder and altogether more favourable cases where the muscles were not removed because apparently healthy.

To Halsted is due the credit of advising the removal of the muscles in every case regardless of infection. I quote from his paper of 1894: "The pectoralis major muscle, entire or all except its clavicular portion, should be excised in every case of cancer of the breast, because the operator is enabled to remove in one piece all of the suspected tissues. The suspected tissues should be removed in one piece (1) lest the wound become infected by the division of tissues invaded by the disease, or of lymphatic vessels containing cancer cells, and (2) because shreds or pieces of cancerous tissue might readily be overlooked in a piecemeal extirpation."

Recent investigations by Grossmann and Rotter, already referred to, indicate clearly the wisdom of removing the muscles always, as the major muscle is involved in nearly 50 per cent. of all cases, and it is simply impossible to remove infected tissue—lymphatic vessels and glands between them—without doing so. I have latterly—and prefer it—removed the muscles from insertion to origin, reversing Halsted's technic. I see by referring to Willy Meyer's article in 1894, and to a personal communication just received from him, that he always has followed this plan. A letter recently received from Professor J. C. Warren informs me that he, too, begins at the insertion of the muscles and works towards, instead of from, the sternum. I am of opinion that this is better for several reasons: (1) The axilla is uncovered at once; (2) haemorrhage is more easily controlled; (3) the axilla is cleared from above downwards and not from below upwards; (4) the

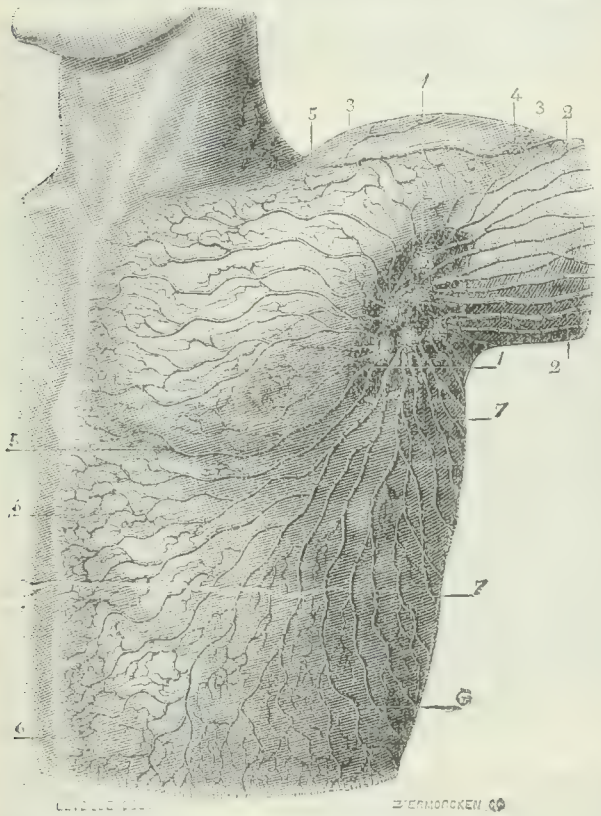


Fig. 6.—Lymphatic vessels of the antero-lateral portions of the thorax (Sappey). 1, 1. Axillary glands. 2, 2. Superficial lymphatic trunks of the upper limb. 3, 3. Large trunks which also come from the integuments of the upper limb, but which, instead of ending in the glands of the axilla, run in the space between the deltoid and pectoralis major, and terminate in a subclavicular gland. 4. A gland which is sometimes seen in the course of this trunk. 5, 5. Lymphatic vessels of the anterior superior part of the thorax. 6, 6, 7, 7. Lymphatic vessels which start from the integuments of the thorax. (*The Lymphatics*, C. H. Leaf.)

large heavy mass containing the breast is not in the way while the tedious axillary dissection is going on; (5) one can more readily and more certainly remove all infected tissue in one piece. In following Halsted's technic I have several times had the large and pendulous breast pull upon and break the narrow and more friable apex being loosened from the axilla; (6) it makes unnecessary—and this is of the greatest importance—handling of the breast by surgeon and assistants which may result in expressing cancer cells upon healthy tissues. The skin incision I also plan differently from Halsted, and is that of Warren modified. I begin what may be called the stem of a pear-shaped incision lower on the arm than he does, and when making the body of the pear slant my knife in such a way as to markedly undermine the skin, which insures that no part of the breast will be left behind, and facilitates approximation of the edges of the wound as well.

In case the tumour is a peripheral one, I follow the plan of Mr. Watson Cheyne, and do not allow the incision to come nearer than 2 in. to what seems to be its outer limit. When necessary to resort to plastic work so as to close the wound without tension—the rule with me as so much skin is sacrificed—a perpendicular incision is made from the middle of the lower side of the breast to the extent of 2 in. to 3 in.; it is then curved both right and left so as to resemble the letter Y inverted and the arms exaggerated.

I have in one case, the largest wound seen, duplicated it above as well, and by so doing was able to close the wound, secure primary union, and had the patient leave the hospital on the thirteenth day. She could have gone sooner but for an ether bronchitis.

Drainage.—It is my belief that drainage should always be made after an axillary dissection, for unless it be done much time must be given to arresting every particle of haemorrhage, otherwise a large clot will form in the dead space left behind and invite suppuration. Of twenty-five surgeons expressing themselves upon this point, all but three (Bloodgood, Halsted, and Richardson) invariably drain.

It is of interest to note that injuries to the axillary vein in recent years, with aseptic precautions, has not been a serious accident whether inflicted accidentally or intentionally. Of twenty-four deliberate resections of one or more inches of the vein on account of adhesions to infected glands, reported by thirteen surgeons, no death occurred, and what is more gratifying and surprising, oedema (slight) resulted in four cases only.

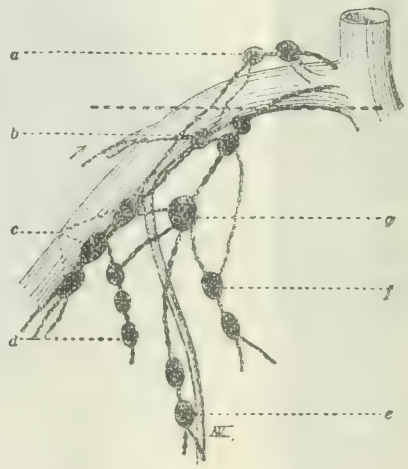


Fig. 7.—Scheme of the axillary glands. *a*. Supraclavicular glands. *b*. Subclavian glands. *c*. Humeral chain. *d*. Scapular chain. *e*. Infero-external portion of the thoracic chain. *f*. Supero-internal portion of the thoracic chain. *g*. Central group. The dark dotted line indicates the situation of the clavicle. (*The Lymphatics*, C. H. Leaf.)

A few accidental injuries (number not specified) were treated by ligature or lateral suture, and all recovered.

I have never wounded the axillary vein, but have resected it three times, removing, in one instance, at least 4 in., on account of evident infection of its walls, as it passed directly through a large mass of cancerous glands. There was no oedema in any case.

During my service as hospital interne, and subsequently until about 1895, I saw the vein wounded three or four times, and all were fatal from sepsis.

Supraclavicular Glands.—In 1892 Halsted first practised removal of the supraclavicular glands, and advised that it be done as a routine procedure in his paper of 1894.[6] It has never been generally practised by American surgeons, and few, if any, outside of Johns Hopkins Hospital have removed the glands of the neck unless palpably enlarged or there was macroscopic involvement of the topmost axillary glands. I know of none who have, and all of the twenty-five surgeons replying to this question state that they have not entered the neck unless there were special reasons for doing so. Two—J. Chalmers Da Costa and W. J. Mayo—believe that it should be done more often on account of recent anatomical discoveries. Halsted[6] and his associates at the Johns Hopkins are removing the glands of the neck in a decreasing number of cases, and it is equally true, I think, that other American surgeons are operating upon the neck in an increasing number; so that

Halsted's original position, while possibly extreme and overstepping the mark, has been productive of good and brought the rest of us up to it. I do not question the wisdom of doing so if there is noticeable enlargement of the supraclavicular glands or if the subclavian chain of the axillary ones are at all enlarged.

Recent anatomical discoveries, as heretofore indicated, entirely support Halsted in his contention that the neck should be often explored. To give his exact position I quote from a recent letter from him: "Of 76 cases cured three or more years, the supraclavicular glands were involved (and of course removed) in 7 (9 per cent.). The involvement of the supraclavicular glands is, of course, much greater than 9 per cent. where all cases in which the complete operation has been performed are included. The proof, then, is definite and ample that the supraclavicular operation is indicated in many, perhaps most, cases of carcinoma of the breast."

I am now, I think, prepared to accept the above as my own opinion; and, in view of recent anatomical discoveries, would be disposed in every case of cancer situated superiorly and near the margin of the breast, to explore the subclavian triangle of the neck, as the lymphatic vessels draining the skin and superficial portions of the gland, in this situation, pass upwards and over the clavicle to empty directly into the supraclavicular glands.

I cannot claim to have cured a patient with neck involvement, but have one alive more than three years after operation without regional recurrence in the neck, who has had recurrences in the breast incision. If not cured, it has at least taught me that very decided enlargement of cervical glands low down—they all together made a mass as large as a small lemon—does not necessarily mean inoperability. If glands in the higher triangles are involved, the case is clearly inoperable.

Three-year Limit.—Volkmann's law has been so generally accepted that it is well to quote his words once more: "I unhesitatingly make this statement for all cancers, that when a whole year has passed, and the most careful examination can detect neither a local recurrence nor swollen glands, nor any symptom of internal disease, one may begin to hope that a permanent cure may be effected; but after two years usually, and after three years almost without exception, one may feel sure of the result." Billroth was more optimistic, and felt that a cure could be counted upon if there were no local or general evidences of recurrence at the end of a year.

Out of 23 surgeons answering the question, "Do you consider the usual three-year limit of Volkmann ample; if not, how long would you extend the time?" only 7 answer "Yes," and nearly all of them qualify their answers by stating that exceptions to the rule have been observed. Warren, of Boston, though still using the three-year limit, has had nine cases, in which the average period of recurrence was five years and five months. Fifteen out of 23 answer "No." A majority would extend the time to five years, a few to ten, and one indefinitely (Richardson).

It would seem that the time should be extended to five years at least, and even then, I fear, it will occasionally be with chastened hopes that we face the pitiless logic of events.

Ultimate Result.

I very much regret that it was not possible for me to get definite statistics from a larger number of surgeons communicated with. Many had gone on their vacations, others were about leaving, and the majority of those answering other questions found it impossible in the time allowed to give definite statistics bearing upon the result in their cases. Many gave impressions which were, of course, excluded.

Of six surgeons (Abbe, Crile, Halsted, Powers, Warren, and Rodman) reporting 629 operations—favourable and unfavourable cases—there were 44.16 per cent. of cures or patients who had passed the three-year limit without evidence of either local or general recurrence. Several of the cured cases were recurring ones (Warren, Halsted, Oelsner, Powers, Taylor, Park, Abbe, Willard, and Da Costa and Richardson), and one patient, a case of my own, operated upon for a second recurrence of a scirrhus carcinoma, is perfectly well more than six years after the third operation. The first and second operations were done by other surgeons. In a small series of private cases treated since my removal to Philadelphia in 1898, every one having been definitely traced, 54.54 per cent. are living and well, 36.36 per cent. dead, and 9.09 per cent. are living with recurrences.

I had but eleven private cases of breast cancer during 1898, 1899, and 1900. One is perfectly well more than six years after operation; 2 more than five years (operated October, 1898, and January, 1899, respectively); 1 over four years (May, 1900); 1 three and a half years (December, 1900); 1 three years and five months; 1 is living with recurrence. I cannot give the result in all of my hospital cases, therefore they are excluded. However painstaking one may be, it is simply impossible to trace definitely all hospital cases with a chronic disease like cancer. They move from place to place, will not answer letters, and when recurrences overtake them are liable to go into the nearest hospital. The number of cases I am able to report is small—too few for conclusions to be drawn from—but represent, as I have said, all private cases operated upon during the time. Unfortunately the records of cases operated upon during my residence in Louisville are not available. I may say, however, that I know of but one case of all my earlier operations which remains well.

Conclusions.

1. Cancer is not only increasing in frequency, but in doing so is breaking down barriers hitherto recognized. It occurs more frequently than formerly in young subjects, and has become common in races at one time immune.

2. When affecting young subjects the prognosis is distinctly less favourable, as the lymphatics are both numerous and patent, whereas in the aged many lymph vessels atrophy.

3. An early diagnosis should be made, and no time lost in waiting for an operation, as metastases to the axillary glands and internal organs occur early, often before they are suspected. In 9 per cent. of all cases it is impossible to make a clinical diagnosis.

4. When in doubt as to malignancy a complete operation should be arranged for; but before removing the breast an exploratory incision should be made into the growth, and a piece from near its centre submitted to a competent pathologist, who, as a rule, will give an accurate report in ten minutes. If malignant, a complete operation should be done immediately. In women past 40 the chances in favour of malignancy are as 13 to 1, and should, therefore, be assumed.

5. Carcinomata of the sternal hemisphere are less common than similar growths in the axillary half of the gland, but are probably more frequent than they are thought to be. The prognosis is worse in them than in cancers of the axillary hemisphere.

6. Recurrences being usually in the skin, its removal cannot be too free. Skin grafting, or closure of the wound by plastic flaps—the preferable method—will frequently, if not usually, be necessary.

7. The pectoral muscles, major and minor, should always be removed, regardless of infection, so that all diseased tissues can be removed in one piece, and the axillary dissection both more thoroughly and safely made. Their loss neither increases the mortality, lengthens the convalescence, nor seriously impairs the subsequent usefulness of the arm.

8. The supraclavicular glands should be removed if palpably enlarged, or if the topmost axillary glands show macroscopic involvement; otherwise, their removal is unnecessary.

9. Wounds of the axillary vessels have been infrequent since the muscles have been removed as a routine practice. When occurring in an aseptic operation they have always been recovered from. Of 24 deliberate resections of the axillary vein none were fatal. Moreover, the oedema following was inconstant and transitory, and never a troublesome symptom.

10. Drainage should always be made.

11. The three-year limit of Volkmann is insufficient, and should be extended to at least five years. Recurrences may occur after ten or more years.

12. The operative mortality in 2,133 operations performed since 1893 by twenty-one American surgeons reporting to me was 9 per cent. This seems almost incredible when contrasted with the 15 to 25 per cent. mortality for incomplete operations on the breast in preantiseptic days.

13. Radical operation, if early, should give more than 50 per cent. of cures.

References.

[1] Bloodgood, *Detroit Medical Journal*, February, 1904. [2] British Medical Journal, May 7th, 1902. [3] Bloodgood, loc. cit. [4] Halsted, *Annals of Surgery*, 1894. [5] Ibid. [6] Private communication, J. C. Bloodgood.

ON CERTAIN DEFECTS IN THE PRESENT OPERATION FOR MAMMARY CANCER.

By W. SAMPSON HANDLEY, M.S.Lond., F.R.C.S.Eng.,

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IN the following brief paper it is proposed to suggest, on pathological grounds, certain modifications in the operation for breast cancer, and also to consider how best the skin incision may be designed, consistently with its main objects, so as to secure the best functional result from the patient's point of view. In both these respects the modern operation appears open to criticism.

Attention seems to have been, I will not say too closely, but too exclusively, concentrated on the early infection of the axillary glands by particles swept down the lymph stream, and the importance and extent of the infection of the deep fascia have been underestimated and its nature misunderstood. The belief that cancer spreads along the skin has also to some extent acted as a bar to progress. In a paper recently published[1] I have attempted to show that without any assistance derived from the current of lymph, breast cancer in a comparatively early stage spreads centrifugally beyond the breast in the plane of the deep fascia by actually growing along, and filling up, the coarser meshes of the lymphatic plexus which is found in this situation.

The first area of the deep fascia to be invaded is, of course, the pectoral fascia underlying the breast, a fact which, since Stiles's classical researches, has been well recognized. But the point on which stress needs to be laid is that the lymphatic plexus of the pectoral fascia is but a part of the network of fine lymph vessels which is found in the deep fascia over the whole extent of the body. At the edges of the pectoral fascia the growth finds no obstacle to its further centrifugal spread, and in a late stage of some cases of breast cancer I have found that the channels of the deep fascial lymphatic plexus may be obstructed by growth, even as far as the groins. Only the distal portions of the limbs appear to escape in these advanced cases, for all other parts of the body are liable to the subcutaneous nodules which are a secondary consequence of this fascial invasion.

So far as the skin itself is concerned, it is generally believed that breast cancer spreads in the deep cutaneous plexus of lymphatics. At first sight the way in which subcutaneous secondary nodules make their appearance—at first near the primary growth and later at points further and further removed from it—seems to support this belief. But certain facts show that cancer only spreads along the skin slowly and with great difficulty, and that the subcutaneous nodules are vertical offshoots from the affected deep fascial plexus below. The cancer-filled lymphatics of the deep fascia may be mentally pictured as analogous to the mycelium of a mould (for example, mucor mucedo), while the subcutaneous nodules represent the terminal inflorescence of the gonidiophores which spring from the mycelium. In support of these statements, it will be sufficient to mention that wherever a subcutaneous nodule is found the deep fascia beneath will be found to show lymphatics choked by cancer, that the circle of invasion of the deep fascia is always a larger one than the line circumscribing the remotest subcutaneous nodules, and that, as Stiles pointed out, a cancerous lymphatic can often be seen running from the skin-nodule to the deep fascia. The nodules are, therefore, the consequence and not the cause of the fascial invasion. Additional points in support of the view here advanced are given in detail in the paper to which reference has already been made.

There is every reason to believe that the secondary bone deposits of carcinoma mammae are, like deposits in the skin, due to extension by continuity from the infected deep fascial plexus. The received opinion that bone deposits are due to the embolic arrest of particles carried by the blood stream receives no support from the evidence I have been able to collect. It will be found that the bones distal to the knee and to the elbow are only in the rarest instances the seat of metastases, a fact which appears inconsistent with the embolic theory; moreover, the bones nearest to the site of the primary growth, speaking generally, suffer more than the remoter portions of the skeleton.

The distribution area of bone metastases, therefore, practically coincides with that of subcutaneous nodules. Neither in the bones nor in the skin are metastases found distal to the knee and to the elbow. The patient dies before the centrifugal extension of the growth in the deep fascial plexus, to which the osseous and subcutaneous metastases are secondary, has had time to spread to the distal portions of the limbs.

I would ask you, then, to picture the cancerous epithelium growing along the deep fascial lymphatic plexus like a waterweed along a network of irrigation channels, and infecting the deep fascia in ever wider circles round the primary growth. In a later stage, wherever the cancer can overcome the resistance to its growth along the small vertical tributaries of the fascial plexus, extension outwards to the skin, or inwards to the bones, may occur, and metastases will appear in these situations. Why it is that the growth so long remains limited by the walls of the lymphatic vessels and grows widely along them before breaking through into the surrounding tissues is a question for further investigation. I believe it is partially due to the fact that the fascial lymphatic plexus is so largely surrounded by fat—a tissue very unfavourable to the growth of cancer. The question may be asked whether the centrifugal growth of cancer by continuity along the deep fascial lymphatic plexus is a step towards the production of visceral metastases, or whether it leads only to deposits in the skin and bones. So far as my investigations have gone they indicate that the transport of cancerous particles by the lymph stream to the axillary and supraclavicular glands, and their discharge into the blood stream, plays an entirely subsidiary rôle in the production of visceral deposits. I propose to deal with this subject in the Hunterian Lectures which it will be my privilege to deliver, during the ensuing year, at the Royal College of Surgeons. Here it need only be stated that cancerous invasion of the deep fascial lymphatic plexus frequently extends to the abdominal organs by direct infiltration of the anterior abdominal wall in the epigastric angle—a fact which lends additional emphasis to the plea for a wide removal of the deep fascia in a downward direction.

It is evident that the facts I have briefly summarized have a very direct bearing on the operative treatment of breast cancer, and to this question we must now turn.

Removal of Skin.

Since breast cancer spreads primarily in the parietes along the deep fascia, and not along the skin, it appears to be unnecessary in all but exceptional cases to remove such a large area of skin as to prevent complete suturing of the wound. It should be noted that Halsted, who removes so large an area of skin that he always resorts to skin-grafting, has yet a larger percentage of skin recurrences than Cheyne, who generally succeeds in sewing up the wound, though he, too, insists on a wide removal of skin, believing that the growth spreads along it. Though, as we have seen, invasion of the skin is a later event than invasion of the deep fascia, and secondary to it, and though cancer does not spread in the plane of the skin, the necessity of a wide removal of skin is none the less evident, so as to include the area where cutaneous efflorescences may have sprung from the advanced fascial infection. The practice of most English surgeons, the removal af a circular area of skin round the growth, as wide as is consistent with the possibility of suturing the wound, seems therefore to be sound. Except in very late cases, further removal of the skin tends to produce an unsightly and adherent scar without increasing the patient's security.

Removal of Deep Fascia.

It is a fortunate circumstance that breast cancer spreads primarily in the parietes along the deep fascia and not along the skin. For while removal of the skin has, in some hands, reached its furthest possible limits, without any corresponding improvement in results, it is possible to remove the deep fascia over a wider area than is yet the usual custom. It seems probable that the careful and deliberate removal of as wide an area as possible of the deep fascia will lead to a further and considerable improvement in the results of operation. There is no technical difficulty involved, if only the skin flaps are sufficiently undermined, a step whose importance has been long emphasized by my friend and teacher, Mr. Jacobson, and one which is carried out to a greater or less extent by most English surgeons.

It is a significant fact that Watson Cheyne, who has the best published operative results, lays great stress on the removal of a wide area of deep fascia, following the lines laid down by Stiles. Cheyne says:

> . . . . . the skin incisions when made should not go straight down to the muscle. After the skin incisions have been mapped out, the skin and just sufficient fat to enable it to retain its vitality should be dissected up, and the muscular fibres should not be exposed till just below

the clavicle above, beyond the middle line in front, over the origin of the abdominal muscles below, and over the edge of the latissimus behind.

It is clear from what has been said in the early portion of this paper that the operator's aim should be, not simply the ablation of the pectoral fascia, but to remove as widely as is practicable a circular area of deep fascia with its centre at the primary growth. It may be borne in mind, however, that growth extends in the fascia rather more readily in the long axis of the body.

Above, externally, and internally Cheyne's removal of deep fascia seems to extend almost as far as is practicable. It will be found, however, that, judged by the standard set up, it is very deficient in a downward direction, for the abdominal muscles arise well above the costal margin. So far, then, as can be made out from his writings, Cheyne's removal of deep fascia does not extend downwards beyond the edge of the ribs, if so far, whereas a circle drawn from the nipple as centre, with its distance from the clavicle as radius—a circle which represents perhaps the limit of possible removal of the deep

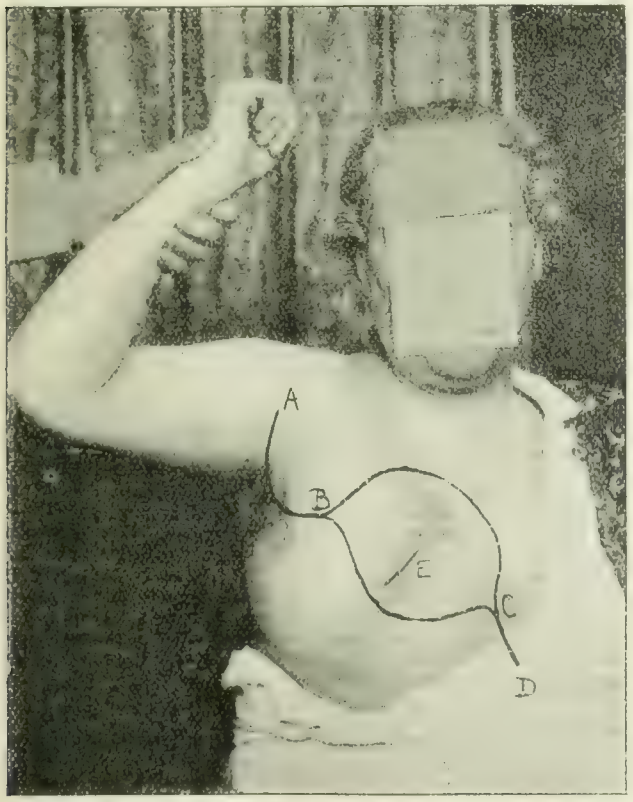


Fig. 1.—Case of mammary carcinoma, adherent to skin and muscle, operated upon at the Samaritan Hospital, January, 1903. A B, axillary flap incision; B C, annular incision circumscribing the growth; C D, incision to allow of removal of epigastric deep fascia. E is a deep pucker in the skin, produced by the contraction of the growth. The epigastric part of the incision C D, though indicated for convenience on this figure, was not actually carried out in this case, since I had not at the time realized its importance. The deep fascia was, however, very widely removed.

fascia will reach down from 2 in. to 3 in. below the tip of the ensiform cartilage.

I wish, then, on pathological grounds, to advocate the modification of the operation for removal of the breast, as described by Watson Cheyne, by the removal of the deep fascia in a downward direction as far as a horizontal line running 3 in. below the tip of the ensiform cartilage. Great care should be taken to remove every particle of the origin of the great pectoral from the rectus sheath, and the surface of the latter, on both sides of the middle line, should be most carefully cleared as far down as the level indicated.

The Skin Incision in the Operation for Breast Cancer.

The scar left by the operation for removal of the breast is usually a straight line running from the lower edge of the insertion of the great pectoral, along the anterior fold of the axilla, to a point somewhere just above the ensiform cartilage.

A case illustrating the disadvantages of such a scar recently came under my notice in the out-patient department of the Samaritan Hospital. Where it followed the anterior axillary fold the scar formed a sharp bridle-like prominence. The arm could not be raised more than 30° from the side, and even this degree of movement produced pain along the line of the scar and passing back to the left scapula, which the patient described as "like being screwed up in a vice." She asked for a further operation, not because of any recurrence of the growth, but in order to relieve this pain on movement.

It appears that the skin incision in removal of the breast should fulfil the following conditions:

(*a*) The sutured incision should not form a straight line. If it does the skin tension must be all in one direction—that is, at right angles to the line of the sutured incision, whereas when the incision is curved or sinuous, or triradiate, the pull of the stitches acts in various directions, and the surrounding skin will be dragged in from all the points of the compass, and will more easily cover the raw area.

During the contraction of the scar the disadvantages of a straight incision are as manifest as at the time of

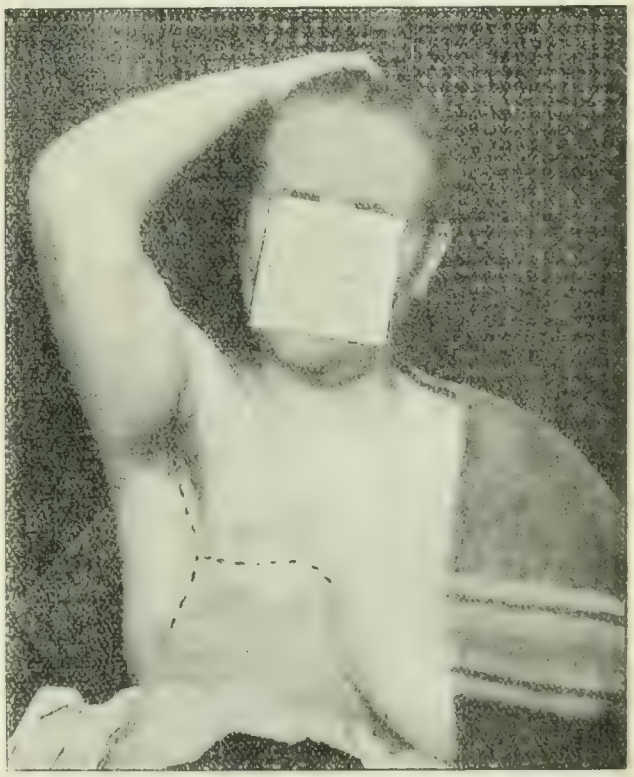


Fig. 2.—A recent photograph of the same case, showing the triradiate scar resulting from the incision A B C in Fig. 1. No recurrence has so far taken place (July, 1904). The scar has become freely movable on the thorax, and the pull of the arm has stretched it nearly to the width of an inch. The movements of the arm are practically unimpaired.

operation. The contraction of a curved scar must necessarily tend to loosen it from its adhesions to the thorax, while this effect is practically absent in the case of a rectilinear one, and there can be no doubt that, after excision of the breast, a mobile scar is an essential condition of a useful arm.

(*b*) The incision should not be parallel with the fibres of the pectoral muscle, and should not lie along the anterior fold of the axilla. In this situation its contraction will tend to bind the arm to the side, and it is along the anterior fold of the axilla, in the line of the lower border of the great pectoral, that a reserve of loose skin is required to allow for abduction of the arm. If possible, therefore, the line of the axillary scar should avoid this situation.

Moreover, when a straight adherent scar lies along the lower border of the great pectoral, the pull of the arm in abduction is met by the resistance of the whole length of the scar, and there is little prospect of the scar becoming mobile on the thorax. If, however, the scar lies more at right angles to the line of skin tension during abduction of the arm, it can offer but a weak resistance to the force tending to

loosen it, and the prospects of a mobile scar are much increased.

Lastly, the incision along the anterior fold of the axilla is in a situation where the patient can readily see and feel it, and the aesthetic factor in the operation should not be neglected, save for good reason. It is, I believe, possible to devise an incision which, without any sacrifice of safety or convenience, will fulfil the preceding conditions. The incision I have made use of in the case represented in the annexed figure (Fig. 1) may be considered as consisting of three parts:

(*a*) A ring incision, as practised by Mitchell Banks, accurately centred on the growth and surrounding it at a safe distance, slightly tailing off into (1), above, and into (2) below.

(*b*) A curvilinear incision for giving access to the axilla. The axilla is opened by turning forward a flap of skin whose base lies along the anterior axillary fold. The axillary incision begins at the lower edge of the great pectoral, close to its insertion. It ends—also at the lower edge of the great pectoral—by joining the annular incision (*a*). It crosses the base of the axilla, and marks out an almost semicircular flap of skin, whose convexity reaches back nearly to the edge of the latissimus dorsi. It affords perfect access to the axilla and good drainage afterwards.

(*c*) A linear incision coming off from the lower and inner part of the annular incision and passing downwards for about 2 in. along the linea alba. Its object is to give access for the removal of the deep fascia over the upper part of the abdominal wall. Without it this important step in the operation cannot be properly carried out.

The most convenient way of suturing this incision must be a matter of trial in each case, according to the precise situation of the growth in the breast. Usually, perhaps, it will be best sutured in a triradiate form. It will, however, never result in a rectilinear scar, nor in one lying along the anterior axillary fold, and therefore avoids the faults of the usual incision without, as the writer believes, any corresponding disadvantages. The degree of mobility of the arm which may be looked for when it is adopted is shown in Fig. 2. The pull of the arm being at right angles to the direction of the scar, the latter has become perfectly mobile upon the chest, and has stretched to such an extent that in places it is nearly an inch wide.

REFERENCE.

The Centrifugal Spread of Mammary Carcinoma in the Parietes, *Archives of the Middlesex Hospital*, July, 1904.

Mr. STILES desired to express his thanks to Professor Rodman for the kind and generous reference to the work done by him on the anatomy and pathology of the mamma in its relation to the operative treatment of cancer of the breast. Mr. Stiles felt especially indebted to Professor Rodman for bringing this important subject again before the profession, because he felt that even yet many surgeons did not appreciate either the anatomical extent of the breast tissue, or the extent of the lymphatic dissemination of the disease at the time of operation. He agreed with Professor Rodman as to the necessity of removing both pectoral muscles in all cases, as it was impossible to say to what extent the disease had invaded the lymphatics. He maintained, with Professor Rodman, that unless these muscles were removed it was quite impossible to remove all the lymphatic structures, including the sheath around the first part of the axillary vein. It had been clearly demonstrated that recurrence took place more frequently in the pectoral muscles and retropectoral fascia than was generally supposed. He also pointed out that by removing the pectoral muscles the skin could be more extensively removed, and yet the wound closed, because the prominent anterior axillary fold was removed. Experience had shown that the removal of the pectoral muscles did not impair the usefulness of the limb, provided the wound be treated from the outset with the arm abducted to the level of the shoulder. He wished to thank Mr. Handley for his very interesting anatomical and pathological observations showing the spread of the disease in its more advanced stages.

Mr. G. G. HAMILTON for many years had seen the cases operated on by Sir William Banks, and had to examine them when they returned to the out-patient room. From a very large number of cases closely observed he had seen only two where the lymphatics over the deltoid were marked out by as many as thirty to forty small nodules, as described by Mr. Handley. His experience after the Liverpool method of removal was that the return was seldom in the pectoral muscle, but almost always in the lymphatics towards the axilla. It was difficult to say where to stop in following the lymphatic extension, and each case must be treated on its own merits.

Mr. K. W. MONSARRAT agreed that removal of the pectorals was necessary for a complete dissection of the axilla; he thought that the dissection from above downwards was best carried out if the muscles were first cut at their origins. With regard to Mr. Handley's observations, he remarked that recent histological researches had all gone to support the conception that carcinoma spread by solid outgrowth, and little by embolic processes. He did not think that Mr. Handley's researches had shown the necessity for any new operative technique; they served, however, to emphasize the recognized necessity of keeping wide of the growth; in every case the skin incision and the extent of removal of the deeper structures must be planned according to the situation and extent of the growth at the time of operation. No formal procedure was suited to all cases in this respect.

Mr. C. P. CHILDE strongly advocated the removal of both pectoral muscles for the reason that, in his opinion, it was quite impossible to thoroughly clear out the axilla unless this manœuvre were adopted. He did no tthink it was necessary to perform plastic operations to close the wound, because by freely undercutting the skin and using deep silver wire sutures, the wound could in almost all cases be brought together and made to heal by first intention. It was necessary, however, to remove these silver sutures within forty-eight hours, as they caused considerable tension, and if left longer gave rise to inflammation and suffocation along their track. He did not think the recommendation of Professor Rodman to examine tumours microscopically at the time of operation a practicable one in private practice, though it might be carried out in fully equipped hospitals where a skilled microscopist was on the spot.

Professor RODMAN, U.S.A., in reply, said: I very much enjoyed both the paper and demonstration by Mr. Handley, and think his suggestions of distinct value. The last speaker, Mr. Childe, I will answer first. His criticism is perfectly just. Exploratory incision, as recommended, can only be carried out in a well equipped hospital. One must, when operating in the country or in private houses, depend upon the macroscopic appearance of the growth, which will nearly always be sufficient, supplementing it if necessary by Stiles's nitric acid test. Further, I agree that one often, if not generally, can close a large wound by undermining; but as I think the principal step in an operation is the free removal of skin, I prefer to close by plastic flaps or grafting, either plan leaving a more useful arm than bringing edges together with the slightest tension. I am glad to see that the last edition of Kocher's *Operative Surgery*, though formerly advocating leaving the muscles, now advises their removal. All must, I think, come to it. One has only to operate upon two cases successively by the two methods to observe the great difference in the facility and thoroughness of the axillary dissection where the muscles are removed. How can it be possible to remove glands to the outside of the rim in the space of Mohrenheim with the muscles *in situ*? Formerly I thought that I could, and only realized the difference when removing the muscles. Retractors assist very materially, but cannot lift the muscles entirely out of the way. There are many reasons for removing the muscles—surgical and pathological—none that I can see for leaving them. The arm is as strong and useful as ever in a vast majority of instances. Any impairment resulting is due to loss of skin and not the muscles, and occurs as often when they are left intact. I was also much interested and impressed by Mr. Hamilton's remarks. A week ago to-day it was my privilege to be in Liverpool, and to see Sir William Banks operate upon two cases of mammary cancer. He certainly does remove the skin freely, and I am not surprised to learn that recurrences in the practice of the surgeons at the Royal Infirmary—if all operate as Sir William does—are infrequent in the skin. I was most favourably impressed by these operations, and understand why Sir William Banks has secured such excellent results. But Mr. Hamilton's statement that recurrences with them are not uncommon in the axilla leads me to suggest that their method, excellent as it is, would be followed by even better results if the muscles were removed, because a more complete axillary dissection can be done. It is questionable, to say the least, if the topmost axillary glands can be removed if the muscles are intact. I cannot get at them. Our anatomical knowledge of the breast was

materially advanced by the researches of Mr. Stiles, who showed that the gland is larger, more diffused, and not infrequently with outlying portions that will be left unless a very free incision is made. I consider that he contributed greatly to the complete operation. I also agree with Mr. Stiles that the sheath of the axillary sinus should be removed, and invariably do so.

Mr. Handley, in reply, said he believed limitation of the movements of the arm after excision of the breast was due neither to removal of muscles nor of skin, but to adhesion of the scar to the chest wall. He admitted the force of Mr. Stiles's criticism that the cases he had investigated were all late ones, which had died of the disease; but, on the other hand, Mr. Stiles's material, which consisted of breasts excised from the living subject, was probably obtained at too early a stage to give a complete view of the pathology of the disease. He had found no difficulty in excising the deep fascia up to the clavicle through the incision suggested, nor had the axillary part of it given rise to septic trouble.

He was much interested in Mr. Monsarrat's remarks on the pathology of uterine cancer, and believed that the dissemination of carcinoma would be proved to result in the main from actual growth, by continuity along the lymph channels—not from embolism along the blood vessels or lymphatics. He desired to thank other speakers for their criticisms, and the meeting for the patient hearing it had given him.

ON FORCEPS-TOURNIQUET FOR THE CONTROL OF HAEMORRHAGE DURING OPERATIONS UPON THE EXTREMITIES

AND IN INTERSCAPULO-THORACIC AMPUTATIONS.

By J. Lynn Thomas, C.B., F.R.C.S.Eng.,

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In the *Lancet* of April 23rd, 1898, I suggested the use of a long forceps for the control of haemorrhage during amputation at the hip joint, and later on in an article entitled, "Reminiscences of the Welsh Hospital in South Africa," in the British Medical Journal of April 20th, 1901. Since that time its utility has been extended to many other operations, and I have found it very satisfactory in all my cases.

I have used the forceps-tourniquet in all operations upon the extremities since that time, and three of my colleagues at the Cardiff Infirmary have also used it for some of their major amputations with equally satisfactory results.

The list comprises the following cases:

(*a*) Three amputations through the hip-joint, three recoveries.

(*b*) Seven amputations above the knee, seven recoveries.

(*c*) Two amputations through elbow, two recoveries.

(*d*) Three interscapulo-thoracic amputations, three recoveries.

(*e*) One arterio-venous aneurysm in Hunter's canal, one recovery.

(*f*) Two attempted suicides by division of the femoral vessels, one recovery.

(*a*) One of the amputations through the hip-joint for sarcoma has already been published by my colleague, Mr. Cornelius Griffiths, the other two are unpublished; one was by Mr. Rhys Griffiths for disease of the hip-joint with faecal fistula, and the other by myself for advanced tuberculous disease of the hip-joint, in which the acetabulum and portions of the adjacent bones had to be removed. The forceps-tourniquet gave complete control over the haemorrhage.

Fig. 3 illustrates the method of its application for hip-joint amputations.

(*b*) In the seven amputations above the knee I applied the forceps to the common femoral vessels in the same manner as for disarticulation of the hip-joint; two were for sarcoma of the femur, two for traumatism, two for epithelioma of the skin, and one for chronic osteitis of the femur. None of the cases call for special comment, but I would like to mention that I always use two pairs of forceps-tourniquet for such amputations, one being for control of the common femoral vessels, and the other one is applied to the distal portion of the limb in order to prevent blood flowing backwards to soil the field of operation. By adopting this method the field of operation is made a comparatively bloodless one. In some cases it is advisable to apply an extra pair of forceps-tourniquet to control the blood vessels in the posterior flap, this being usually done through the skin incisions of the operation.



Fig. 1.—Method of applying forceps-tourniquet in interscapulo-thoracic amputations. (First stage.)

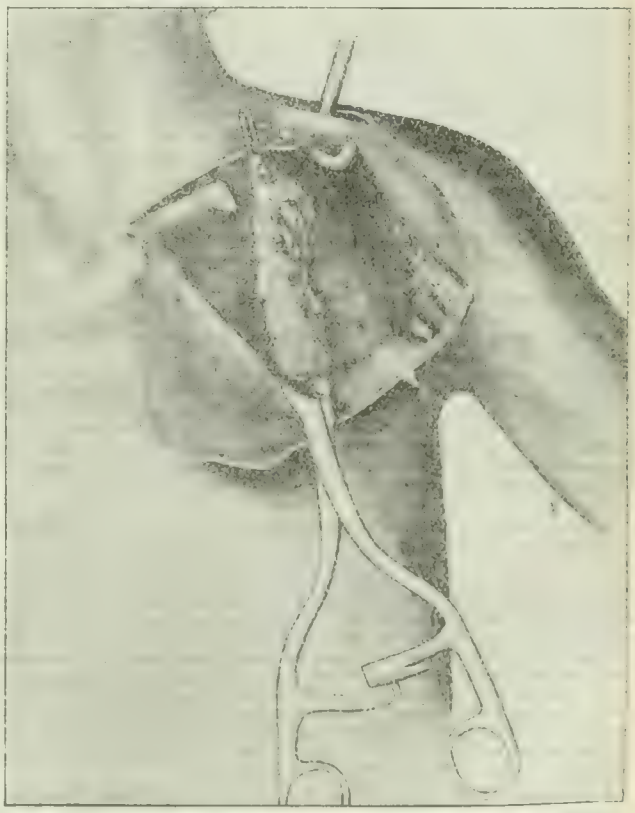


Fig. 2.—Method of applying forceps-tourniquet in interscapulo-thoracic amputation. (Second stage.)

(*c*) Two amputations at the elbow were for traumatism, and the method of applying the forceps-tourniquet was the same as that already described and illustrated in the British Medical Journal, April 20th, 1901.

(*d*) The interscapulo-thoracic amputations are not hitherto

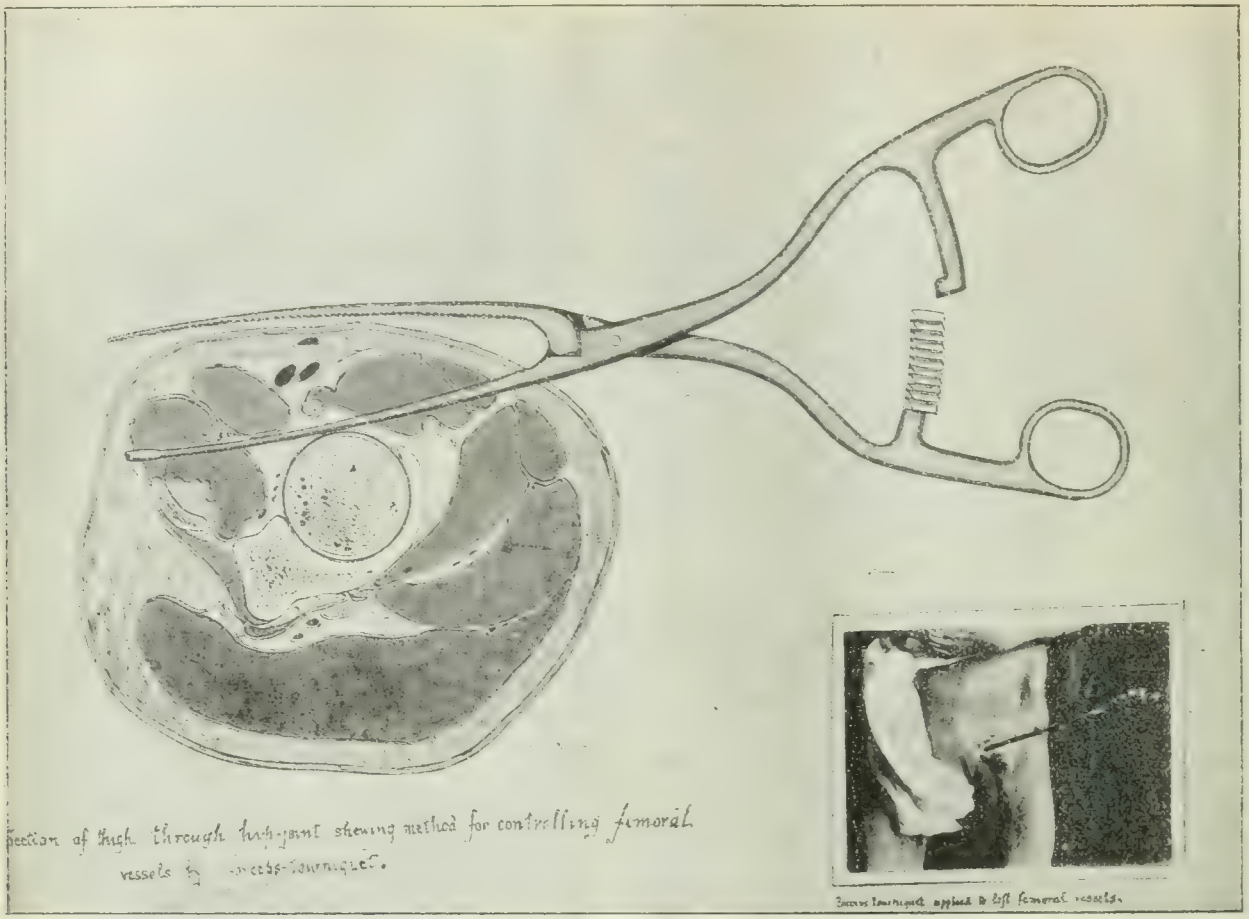


Fig. 3.—Horizontal section through hip-joint (Hughes after Braune), showing tourniquet *in situ*.

recorded; one was by my colleague, Dr. Cook, for sarcoma of the upper limb, with extensive secondary growths in the axilla, and the other two were under my own care and have the following history:

CASE I.—*Mixed Round-celled Periosteal Sarcoma of Ulna. Infected Glands in Axilla and Posterior Triangle of Neck.*

Amputation at the elbow joint had been performed about eight months before I performed Paul Berger's interscapulo-thoracic amputation at the Cardiff Infirmary on November 11th, 1902. After making the skin incision along the outer half of clavicle and carrying it down to the anterior fold of the axilla and reflecting the skin inwards, the clavicle was divided by Gigli's saw and the forceps-tourniquet applied in the manner shown in the illustrations 1 and 2. The operation was then proceeded with in the ordinary way. The patient stood the operation well and left the infirmary with a sound scar on November 29th.

CASE II.—*Removal of the Whole Clavicle and Scapula with the Upper Limb for Sarcoma of Right Humerus. Secondary Growths in Axilla and Under Clavicle.*

April 12th, 1904. J.J., aged 37, woodman, had an enormous periosteal sarcoma of right humerus with very large infected glands in the axilla. The operation was carried out in the same manner as in the previous case, but the inner half of the clavicle had to be removed in order to get at glands near the posterior border of the sterno-mastoid. There was much shock for about twenty hours, but by means of free stimulation with strychnine, digitalis, alcohol, coffee, and transfusion of four pints of saline solution by the house surgeon, Mr. Brownlee, the patient gradually came round. His recovery afterwards was rapid and the wound healed well. He left the hospital in three weeks. Dr. Powell, Newcastle Emlyn, sent me the case for treatment.

I believe that the following statement from Kocher's *Operative Surgery* (Stiles, 1903): "The application of a tourniquet is out of the question," is a correct statement of the existing opinion amongst surgeons as to the practicability of the use of tourniquets in cases of interscapulo-thoracic amputations. The forceps-tourniquet answers very well in this operation, as it controls not only the subclavian vessels but also in one of my cases it clamped the suprascapular artery and also the blood vessels which run under the pectoralis major to anatomose with the intercostals.

In applying the forceps it is advisable to push boldly a finger underneath the lower edge of the pectoralis major, in order to feel the boundary of the chest wall in the axilla; then the blunt, probe-pointed blade of the forceps is pushed up and brought out above the region of the divided clavicle. The illustrations 1 and 2 were kindly made by Mr. S. W. Allen from photographs taken of the tourniquet *in situ* in the cadaver.

(*e*) In arterio-venous aneurysm of the superficial femoral vessels I found the tourniquet satisfactory. It is necessary to have two pairs, one to control the blood vessels at the upper end of the skin incision, and the other at the lower end.

In this operation I made the skin incision through the superficial fat down to the fascia lata, but not injuring it, as it formed the outer barrier to the traumatic aneurysm; the probe-shaped blade of the tourniquet was pushed boldly through in the direction of the inner aspect of the femur, and driven in as far as it would go, and then clamped (the flat blade being, of course, outside the skin), and the other forceps tourniquet was applied in a similar manner at the lower border of the skin incision. The fascia lata was then divided, and the blood clots turned out; the partially divided artery and vein were easily found, divided, and ligatured. The case in which I carried out the above operation occurred in the practice of Dr. Lewis of Pontypridd, and it was performed late one evening by artificial light. Control of haemorrhage was as complete as if one had the blood vessels divided between two ordinary pairs of haemostatic forceps.

(*f*) *Two Cases of Attempted Suicide by Division of the Common Femoral Vessels.*—I have had two cases of a curious method of attempted suicide by division of the common femoral vessels immediately below Poupart's ligament. The operative treatment of such cases must be extremely rare unless surgical aid be prompt. There is much difficulty in controlling haemorrhage, except by direct pressure, when the wound is immediately below Poupart's ligament; and it is in

this particular situation that the forceps-tourniquet will be found invaluable. It can be literally applied in a second to effectually control haemorrhage. One of the cases was under my care at the Cardiff Infirmary in April last. The femoral vein was divided completely, and the femoral artery only partially. The bleeding had been temporarily stopped by local pressure and by collapse, and the patient had been transfused before admission into the Cardiff Infirmary by Drs. Chave and Roche. He made a rapid recovery. One of the reasons why no gangrene followed such an operation was due to the fact that the patient had had the limb amputated

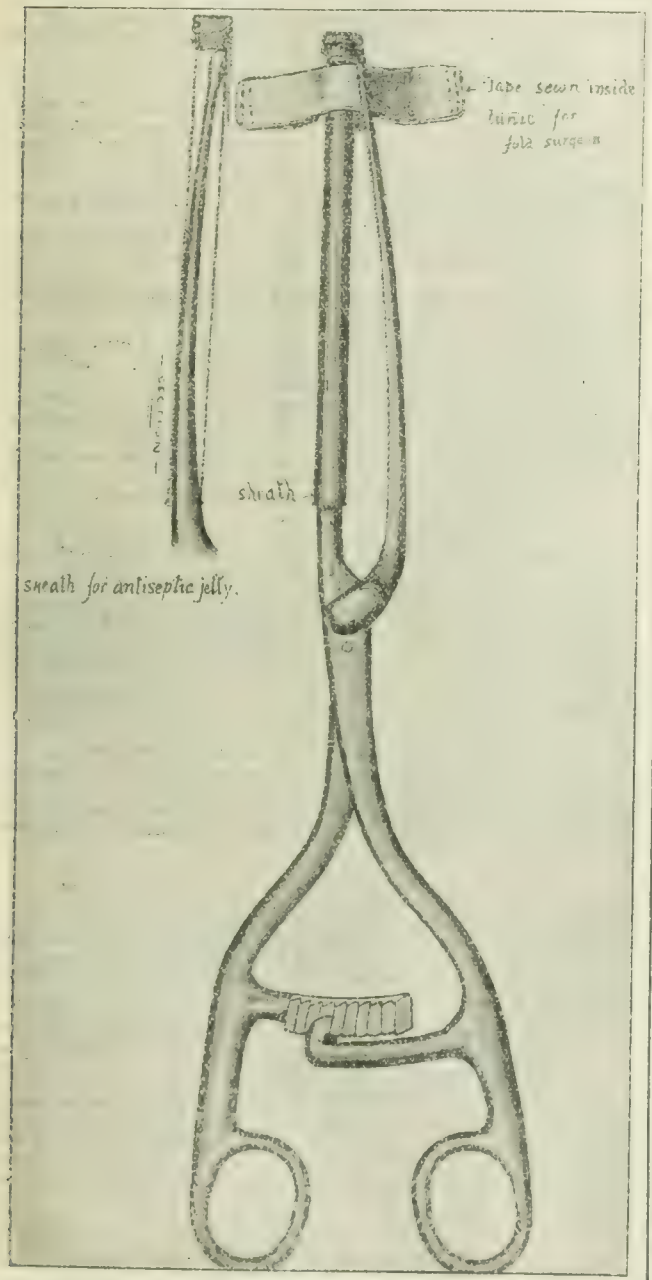


Fig. 4.—Method of carrying forceps-tourniquet for field service.

at the knee-joint some years before. In my second case of attempted suicide I happened to have a pair of forceps-tourniquet on me when I saw the patient a few seconds after division of the femoral artery, and I was able to effectually stop the haemorrhage in a moment, but the patient did not recover on account of existing heart disease.

In conclusion, I would venture to suggest the use of forceps-tourniquet for field surgeons, as I believe it would be found of value under certain conditions.

The illustration (4) represents the method I employed in the late Boer war in South Africa for carrying the forceps-tourniquet by clamping it on to a piece of tape sewn inside the tunic. The shield which I have had made for the probe-pointed blade of the tourniquet—that is, the blade pushed subcutaneously—is to contain an antiseptic jelly, so that it may be kept sterile for use in emergencies such as occur on the battlefield.

After unsheathing the probe-pointed blade it can be quickly inserted through wounds made by bullets or fragments of shell in such a manner as to effectually control the main blood vessels of the limb. On one occasion I found it of considerable help in a case of injury to the femoral vessels, the probe-pointed blade being pushed in through the original wound which caused the haemorrhage, I was able to clamp the vessels effectually in the course of a few moments with absolute certainty.

THE INTRAVESICAL SEPARATION OF THE URINES COMING FROM THE TWO URETERS

AS AN AID TO DIAGNOSIS IN SURGICAL DISEASE OF THE KIDNEYS.

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Introductory.

While the surgery of the kidney and ureter has in recent years made great progress, our power of accurate diagnosis in surgical diseases of the kidney has by no means kept pace with these advances. We have only got to consider the question for a few moments to realize how much—in the past—has had to be left to chance.

Owing to the imperfection of our methods of diagnosis most operations upon the kidney are, in the first instance, "exploratory operations"; but an exploratory operation, while it may—and often does—suddenly confront us with the question as to whether the kidney under examination should be excised or not, gives us no information whatever as to the condition of the kidney upon the opposite side.

It is of vital importance to us to be provided with this information, and in every case of surgical disease of the kidney where an operation is contemplated we ought, in the first instance, to obtain all the knowledge we can as to the relative efficiency of the two kidneys, and as to the exact manner in which each of them is doing its work.

It is only by obtaining separate samples of the urine excreted on each side, and by noting the appearance, the chemical composition, and the character of the flow of the urine from each kidney that we are at all likely to get the information which we require.

It is unnecessary on the present occasion to enumerate the various attempts—more or less successful—which have from time to time been made to secure these separate specimens.

In the method of "intravesical separation," as brought to its present pitch of perfection by the ingenuity of our French *confrères*, we have now actually secured a means of examining the work done by each kidney separately, and we can do this by a procedure so simple, and so marvellously accurate in its results, that it only requires to be more widely known to be universally adopted in this country, as it already is on the Continent.

Descriptive.

The method consists in placing temporarily in the bladder a vertical watertight septum, in such a manner as to divide it into two equal lateral halves. The urine from each kidney as it enters its own half of the divided bladder is immediately drained away by catheter tubes, which form part of the apparatus, and it is collected in a suitable receptacle attached to the handle of the instrument, without ever having become mixed with the urine from the opposite side.

Mr. Moynihan's illustrations of the instruments devised by Dr. Luys and by Dr. Cathelin, in the British Medical Journal of July 2nd, and Mr. Lynn Thomas's interesting note on his experience with Dr. Cathelin's "separator," are still fresh in our minds, and will already have drawn the attention of members who were not previously familiar with them to these two most exceedingly ingenious contrivances. I have on several occasions had opportunities of seeing these instruments employed by Dr. Luys and by Dr. Cathelin themselves, and I myself use both types of "separator."

On the present occasion, at all events, I should prefer not to enter into the controversy as to which is the best of these

two patterns. As a matter of fact, my experience with the Luys "separator" is not only longer but it is at the present time a good deal more extensive than it is with Cathelin's. Luys's instrument has always given me the greatest satisfaction, and a considerable and constantly growing experience only adds still further to my appreciation of it.

I show the two instruments here, and you will observe that

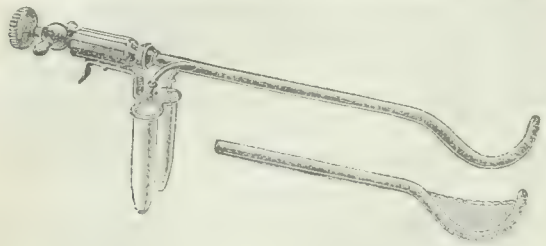


Fig. 1.—The "séparateur" of Dr. Luys. (The lower figure shows the appearance of the instrument when the rubber septum is raised.)

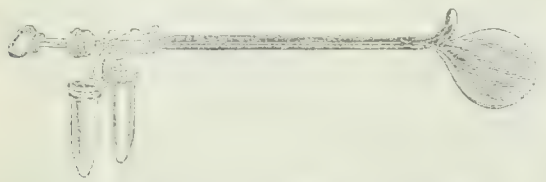


Fig. 2.—The "diviseur vésical gradué" of Dr. Cathelin.

whereas in the Luys separator the rubber septum is drawn up by pulling on a little chain which, when tight, forms a cord across the curved portion of the instrument, in Cathelin's the septum is a thin rubber membrane, shaped like a racquet, and mounted on a frame of thin steel wire. This can be drawn back into a hollow in the interior of the instrument, and it lies there, folded on itself, while the instrument is being passed; when the instrument is in the bladder the septum is pushed forward again, and it regains its shape owing to the elasticity of its steel-wire frame.

The third instrument which I show is a Luys separator of a size suitable for children, and I have used this on children with success. I had this actual instrument specially made for me, with a shank long enough to use in adult males, in case I should ever meet with a patient where a narrow urethra or a contracted bladder made the employment of the ordinary sized instrument difficult. In size this little separator corresponds to No. 8 (English scale).

It will, of course, be understood that, before commencing a "separation," the bladder must first be washed thoroughly clean, then, when the instrument is passed and the septum is raised, the observer has now only to wait patiently while the urines from the right and left kidneys flow directly, by the two lateral catheters, into their respective collecting tubes.

No anaesthetic is required, and it is not a little surprising to find how little discomfort is generally caused, provided always that the various manipulations are conducted quietly and without hurry, and with the most scrupulous care and gentleness.

There is, of course, a regular technique for the procedure, which must be religiously and conscientiously followed, if success is to be ensured; the observations take time and patience is required. I have dealt fully with the whole subject of Intravesical Separation, and with the technique required for Luys's method, in a previous paper (*Lancet*, March 26th, 1904), and time will not permit me to say more on this head now, for I have still to show by my cases and specimens what kind of results we may expect to obtain.

In the following cases—selected from my series to illustrate this paper—the "separation" was in each instance done with Luys's instrument; the specimens of "separated" urine are all here for demonstration, and the condition of the diseased kidney, as confirmed by operation, is fully given.

As regards the specimens themselves, each pair of tubes contains the actual urines as they were obtained at one and the same time from the right and left kidney. The specimen has, in each case, been shaken up with a drop of chloroform to preserve it, and the tube itself has then been sealed up with a blow-pipe. For the most part, the individual specimens have well retained their original appearance.

SYNOPSIS OF CASES AND SPECIMENS.

GROUP I.—Cases illustrative of ABSENCE OF ONE KIDNEY, or functional inactivity of a kidney due to disease, or to blocking of its ureter.

GROUP II.—Haematuria.

GROUP III.—"Pus-kidney," calculus-pyonephrosis, etc.

GROUP I.

ONE KIDNEY ABSENT OR FUNCTIONALLY INACTIVE.

CASE I.—APPLICATION OF THE SEPARATOR AFTER EXCISION OF THE RIGHT KIDNEY.

Patient, a man, aged 27. (December 22nd, 1903.)

Separation continued for 10 minutes, with result as below:—

LEFT SIDE: 6 c.cm. of urine, high coloured, with heavy deposit of lithates.

RIGHT SIDE: Not one drop of fluid.

CASE II.—LEFT KIDNEY FUNCTIONALLY VERY DEFICIENT AFTER NEPHRITIC, OR PERINEPHRITIC, ABSCESS, WHICH HAD BEEN OPENED AND DRAINED SIX YEARS PREVIOUSLY.

Girl, aged 17. (November 15th, 1903.)

Separation continued for 45 minutes.

RIGHT SIDE: 11 c.cm. of clear healthy urine, depositing mucus and lithates on cooling.

LEFT SIDE: Only 10 or 12 drops of urine; these came singly, and were distributed at very regular intervals over the whole sitting.

A subsequent operation confirmed the view that the left kidney was almost completely atrophied.

CASE III.—LEFT HYDRONEPHROSIS, DUE TO STRICTURE OF URETER, AT ITS JUNCTION WITH THE RENAL PELVIS.

Woman, aged 21. (January 10th, 1904.)

This condition had been found at operation, and a plastic operation had been performed to remedy it. There was ample evidence that this had been partially successful, but not entirely so.

Six months after the operation the separator was applied, and kept in position for 30 minutes; it gave this result:—

RIGHT SIDE: 3 c.cm. of clear urine, depositing lithates.

LEFT SIDE: Not one drop of fluid.

CASE XIV.—PYURIA, WITH MARKED ENLARGEMENT OF THE *Right* KIDNEY.

Patient, a girl aged 10 years. (July 6th, 1904.)

The enlarged right kidney had been exposed, incised, and its pelvis explored with the finger. With the exception of its large size, no abnormality was detected, and nothing further was done.

Three weeks later the separator was applied for 20 minutes, with this result:—

RIGHT SIDE:—12 c.cm. of urine, clear, and of good colour, depositing a little mucus and urates; it flowed regularly, in well-marked normal ejaculations.

LEFT SIDE:—1 c.cm. of fluid, quite "milky" with *pus*. It flowed irregularly, in single drops, at long and very variable intervals.

It was the *Right* Kidney which had been suspected, and it had narrowly escaped excision:—The "separation" showed that the disease was actually upon the *Left* side.

CASE XVIII.—COMPLETE OBSTRUCTION OF *Right* URETER.

Man, aged 22. (July 24th, 1904.)

Three prolonged and serious attacks of *Left* lumbar pain, all within 10 months. The *urine* was healthy, and there was no history of any alteration in its appearance at the times of these attacks.

An application of the separator for 10 minutes gave the following result:—

RIGHT SIDE:—5 c.cm. of urine. This flowed in a perfectly normal manner, and in appearance and general character was exactly like a catheter specimen taken from the bladder just before the separator was introduced.

LEFT SIDE:—*Not one drop of fluid.*

Operation the following day showed the Left Kidney to be greatly distended, a mere shell, containing clear fluid. The ureter also was distended almost to the size of the small intestine. No stone was found in the kidney, and none could be felt in the ureter. A probe passed down the latter went as far as the bladder, but could not be made to enter it.

The kidney was excised.

GROUP II.

CASES OF HAEMATURIA.

CASE XIII.—A man, aged 38. (July 1st, 1904.)

He had pain in the *Left* loin, accompanied by haematuria. Frequent attacks during last three months; never before.

There was constantly a small quantity of pus in the urine, but so slight as almost to escape notice. After a sharp walk, or any slight exertion, the next urine was always brightly stained with blood.

Application of the separator for 30 minutes gave the following result:—

RIGHT SIDE:—9½ c.cm. of clear urine of a high colour, and depositing abundant urates on cooling. *Urea*, 3.39 per cent.

LEFT SIDE:—5½ c.cm. of turbid urine, stained evenly throughout a bright red colour from the presence of blood. *Urea*, 1.7 per cent.

Contrary to what might perhaps have been expected, this was not a case of calculus, but a typical Tuberculous Kidney. It was excised. In the upper third only was there any healthy renal tissue; the lower two-thirds of the Kidney was occupied by four or five large abscess cavities.

GROUP III.

"PUS-KIDNEY," CALCULUS-PYONEPHROSIS, ETC.

CASE IX.—RENAL COLIC (RIGHT SIDE), ATTACKS VERY SEVERE AND FREQUENT:—PYURIA.

Woman, aged 37. (June 2nd, 1904.)

Frequent attacks of right-sided renal colic during the last three or four years.

October, 1903. Operation; two calculi (calcium-carbonate) removed from right ureter. Recurrence of attacks.

February, 1904. Second operation. Phosphatic calculus removed from Right Kidney, which was found to be partially atrophied. Recurrence of attacks more frequent, but on the whole less severe. *Urine* always contained *pus* in small quantities—sometimes in large quantities—especially just after an attack; occasionally *blood*.

June 2nd. Application of Separator. (Within a few hours of the cessation of a rather severe attack of Renal Colic.) The bladder urine being found to contain a considerable quantity of pus, and to be rather pale, and of a low specific gravity. The Separator was kept in position for 30 *minutes*, with this result:

	RIGHT SIDE.	LEFT SIDE.
Amount	20 c.cm.	13 c.cm.
Character of flow	MOST IRREGULAR, IN BIG GUSHES WITH LONG INTERVALS BETWEEN THEM.	Perfectly steady, with regular, normal ejaculations.
Appearance ...	Like water, but remaining a little "milky," even after long standing.	Of good colour, and perfectly clear.
Deposit	Very heavy—thick *Pus*	Nothing but a faint cloud of mucus.
Urea	0.14 per cent.....	1.48 per cent.
Albumen.....	Much	A trace.
Cryoscopy	—1.20° C.....	—1.62° C.

The specimens shown are the fluids which flowed into the first pair of collecting tubes used—that is, during the first 15 minutes of the observation.

It being established by this separation that *the Left Kidney was healthy*, the Right Kidney was excised a few days later. Its pelvis was found to be so dilated that it would have held about 2 oz. of fluid, and the renal tissue itself was very thin.

The patient did well.

CASE X.—A woman, aged 31. (June 2nd, 1904.)

AILING FOR 2 OR 3 YEARS WITH PAINS IN THE LOINS, ESPECIALLY ON THE LEFT SIDE; LATER SHE HAD TO LIE UP ALTOGETHER, SHE WAS ILL, HAD A HECTIC TEMPERATURE, HER URINE WAS ACID, AND CONSTANTLY CONTAINED PUS.

In this case the Separator was used upon three different occasions, at intervals of 2 or 3 weeks. At each of the first two sittings, which lasted for 10 minutes and for 30 minutes respectively, the same result was obtained, namely:

From the RIGHT SIDE:—Came clear urine, flowing in a perfectly normal manner, no trace of pus.

From the LEFT SIDE:—Not one drop of fluid.

Clearly the pus in the bladder urine must come from the Left Kidney, but clearly, also, it must come only at intervals, intermittently. None was coming on either of these two occasions.

Third application of the Separator:—

A two-grain pill of methylene blue having been given 2 hours previously, and the bladder urine being stained quite a bright blue, the Separator was kept in position for *fifty-four minutes*, with the following result:—

RIGHT SIDE:—100 c.cm. of urine, perfectly clear, colourless when passed, showing signs of staining later, after addition of a drop of chloroform to preserve the specimen *(see specimen shown)*.

Urea, 0.67 per cent.

Albumen, none.

Flow rapid, but constant throughout, in perfectly normal and regular ejaculations.

LEFT SIDE:—Only 27 c.cm. of fluid, quite turbid with pus.

Colourless when passed.

Urea, practically absent (0.07 per cent.).

Albumen, a large quantity.

Character of flow *very irregular*. During the first eleven minutes nothing at all came from this side.

This third separation, together with the two previous ones, show quite clearly that the Right Kidney is healthy, and that it is doing all the work; on the other hand, the Left Kidney appears to be valueless.

A point of some interest in connexion with the specimens shown from this case is the colourless condition of the urines from both the right and left sides as they flowed from the Separator. In spite of their being colourless, they none the less contain methylene blue, but in the form of colourless chromogen. For, on adding a few drops of acetic acid to a specimen of the Right urine, and then boiling it, it quickly becomes bright blue; the Left urine also could in this manner be made to show the presence of the blue, but here it was in smaller quantity. *(Specimens shown.)*

OPERATION showed that this was a typical *tuberculous* Kidney.

It was nearly twice the natural size, the upper two-thirds of it being very thin walled, and distended with pus.

The kidney was removed.

CASE XI. RECURRENT ATTACKS OF *Left lumbar pain* ASSOCIATED WITH *Pyuria*.

Woman, aged 42. (June, 1904.)

Had been ailing for 1½ years with periodic attacks of pain in *Left* loin, lasting for 2 or 3 days. Interval of 4 or 5 weeks between these attacks.

Urine.—Shortly after the commencement of an attack the urine contains much pus; during the intervals it is almost clean and clear.

June 23rd. The bladder urine containing much pus, and being stained bright blue by a dose of *Methylene-blue* (2 gr. in pill) previously administered, the Separator was applied, and kept in position for 50 *mins*.

RIGHT SIDE:—69 c.cm. of urine, stained deep blue, and perfectly clear.

The character of the flow was rapid, but even and regular throughout, with well-marked ejaculations.

LEFT SIDE:—5 c.cm. of fluid only, colourless, and depositing much thick white pus.

Flow very irregular, *no fluid at all came from this side during the first 40 mins.*

During this Separation, 7 pairs of collecting tubes were successively employed.

In the first *five pairs*, the Right collecting tube was filled (13 c.cm.) with great regularity in about eight minutes in each case.

Not a drop of fluid flowed into the collecting tube of the left side during this time (40 mins. in all).

While the sixth pair of tubes were in position, purulent fluid began to flow on the Left side.

The specimens shown are the actual fluids collected in the seventh, and last, pair of tubes.

Two other "Separations" were made in this case, and while they confirmed the above result, they gave this additional information, viz., that

	Urea.	Albumen.
Fluid from Right side contained	2.40 per cent. . .	*None*.
,, ,, Left side ,,	*None* . .	Much.

These three applications of the Separator made it quite clear that the Right Kidney was perfectly healthy, and that it was in reality doing the whole work, while the Left Kidney was practically valueless.

The *operation confirmed this*, for the Left Kidney was little more than a bag distended with thin fluid, slightly "milky" with pus.

Remarks on the Foregoing Cases.

Certain points have impressed themselves very strongly on my mind as the result of my experience with the "separation of the urines." As these points have special reference to cases of "pus-kidney" I draw your attention now specially to Group III and to the three cases and specimens selected to illustrate it.

So perfectly does the Luys separator do its work that the impulse of the rhythmically recurring ejaculations of the normal ureter is transmitted along the column of fluid in the catheter tubes, and we see its reflection very perfectly in the manner in which the urine flows from these into the collecting tubes; under normal conditions it always flows in rhythmically recurring groups of drops, with a longer or shorter interval between each group.

My first point is this: that it is of the utmost importance to note carefully the character of the flow of urine from a kidney. This is scarcely less important than the chemical examination of the urine itself. I would almost go so far as to say this—that when we notice an absence of any indication of the normal ejaculations we may be sure that one of two things is the cause of this—either (1) the "separation" is not a good one (owing to faulty position of the instrument or of the patient), or (2) the kidney is not a good one; and the converse of this is also true.

In all cases of "pus-kidney" there is some interference with these normal ejaculations, and there is generally great irregularity in the character of the flow. Case IX is a good instance of this, where the urine came in gushes of about 5 c.cm. at a time, at intervals of about seven minutes. The intervals may be very irregular—they may be longer or shorter than this; sometimes they are much longer. Sometimes, even, they may be so long that during the whole period during which an observation is continued no fluid at all flows from the diseased side.

In Case X, a woman whose urine constantly contained pus, I used the separator on two different occasions—for ten minutes and for thirty minutes respectively—getting clear, healthy urine from the sound kidney, but not one drop of fluid from the side upon which the disease was suspected. A third application of the separator seemed, at first, likely to

end in a similar result, but after the first ten minutes of this sitting purulent urine began to flow from the diseased side, at first slowly, in single drops, then more rapidly, slowing off again gradually, and at the end of three-quarters of an hour finally ceasing altogether. All this time the urine from the sound side had been coming perfectly evenly and regularly, in normal ejaculations, which scarcely varied in the least from one end of the sitting to the other. As might be expected, when the intervals at which urine flows from a pus-kidney are long, the gush of fluid which follows may be correspondingly large. (Case IX is an instance of this.)

Yet another case in point—Case VII in my series (not shown). This was a man with calculus-pyonephrosis, on whom I was using the Luys separator after having given a dose of methylene blue. I had barely got to work, and had only just seen clear bright blue urine beginning to flow from the sound side, when suddenly a great gush of white pus came first from the side of the disease, and then, after a scarcely appreciable interval, from the sound side also.

At the time this result greatly puzzled me: it seemed as though an abscess must have ruptured directly into the bladder. But a kidney in the condition of pyonephrosis is practically an abscess, and it only differs from an ordinary abscess in the fact that a greater or less amount of urine may still continue to be excreted into the abscess cavity. The ureter, possibly already partially obstructed, may easily become completely blocked by shreds and curdy pus, and the length of time the block will continue depends merely upon the time taken by the kidney to get up a sufficient pressure to force the passage again.

Subsequent experience of pus-kidneys, and the further history of this particular patient, makes it quite easy for me to understand what had actually happened here. At the "separation" just referred to, I had happened to hit off a moment when a large collection of pus and urine found vent from the distended pelvis of the diseased kidney; it poured into the bladder in such volume that the catheter tube of its own side was quite unable to carry it off quickly enough; it flowed over the septum on to the sound side of the bladder, and made its escape by the catheter tube on this side also.

An occurrence of this kind must be rare, for this is my only experience of it; it deprived me of what would have been an interesting pair of specimens for demonstration; but it should not be regarded in any way as a failure of the instrument or of the method. It was a most interesting observation, and, when properly interpreted, it gave most valuable and important information.

On one occasion, while attempting to get a "separation" in a patient with a pus-kidney, I had the instrument in position for over fifty minutes, and not only did I obtain no urine at all from the side of the disease, but I got only some thirty drops of high-coloured, very concentrated urine from the sound kidney.

There could be no question here of the instrument being blocked; on withdrawing it at last, when the patient's and my own patience were exhausted, a catheter was at once passed into the bladder, but not a drop of urine could be obtained. This may, perhaps, be regarded as an instance of temporary suppression of the sound kidney, or, as is more likely, it may have been nothing more than a temporary lull in its natural working.

I generally guard against the possibility of this sort of thing by making the patient take a big drink about three-quarters of an hour before commencing operations. But even in cases where this has been omitted, I have not infrequently noticed a condition of temporary polyuria coincident with the period of the observation, and which, I think, may possibly be due to the instrumentation. A temporary polyuria, whether induced by a big drink, or naturally, in some reflex manner, I regard as rather an advantage than otherwise. As one would expect, the sound kidney responds to it in a very much greater degree than does the diseased one, and any difference which may happen to exist between the relative efficiency of the two is thereby made even more evident than usual.

It occasionally happens (as in Case IX) that the actual amount of fluid obtained from a pus-kidney is greater than that obtained from the sound kidney on the other side. Here, of course, we must remember that the amount obtained may be due to the emptying of a distended kidney pelvis, and may not represent the actual amount secreted. But even in cases where this explanation cannot be accepted, the larger amount of fluid from the diseased kidney need present no real difficulty. The amount of urea excreted is a better criterion of the efficiency of a kidney than is the amount of water passed through it; and it may well happen that, as in cases of chronic nephritis so in certain cases of unilateral disease, the actual amount of water passed through the diseased kidney is increased rather than diminished.

A word now as to the value of a preliminary dose of methylene blue. Whatever may be said as to the value of this method of testing the efficiency of the kidneys, regarding both organs together as forming a single excretory apparatus, there can be no question, with a pair of specimens like those shown in Case XI before us, that in cases where we are able to obtain separate specimens of each of the two urines the method is of the very greatest value. For while incidentally it demonstrates the absolute perfection with which the separation has been effected, in a case of this kind it is impossible to resist the inference that where methylene blue will not pass through a kidney, that kidney has very little functional value.

But when we use methylene blue, we must be on our guard against error. Cases occur in which after we have given methylene blue, the dye does not stain the urine, or only stains it after the lapse of a much longer time than usual. It is unsafe to assume at once that the unstained urine does not contain the blue. Occasionally methylene blue passes through the kidneys, and is excreted as colourless "chromogen." If under these circumstances we add a few drops of acetic acid to the colourless urine, and boil it briskly, the blue coloration is quickly produced; and I have met with at least one case in which a failure to apply this simple test would have led to grave error.

I have now concluded the remarks which I have to make, as the result of my experience in the "Intravesical Separation of the Urines" up to the present time. It remains only for me once again to draw attention to the easiness and simplicity of the whole proceeding, and to the fascinating manner in which it places within our reach a whole mass of detailed information which we can obtain in no other way.

I trust that the specimens which I have shown will afford convincing evidence of the perfection with which the "separation" can be effected, and of the reliability of the results which are obtained. If I have succeeded in making my points with sufficient clearness to convince you of the value of the method, you can scarcely fail to agree with me in the following proposition—namely: That "at the present day no kidney should be excised, or even explored, until we have first acquired all the information which an 'intravesical separation of the two urines' can possibly give us." If it is essential to come to a correct diagnosis as to the nature and extent of the disease affecting a kidney which we may possibly have to remove, it is even more essential that we should be in a position to form an opinion as to the efficiency of the kidney which we propose to leave behind.

REVIEWS.

TEXTBOOKS OF SURGERY.

DRS. ALEXIS THOMSON and MILES have lost no time in completing their *Manual of Surgery*,[1] which in a recent review of the first volume we were led to regard as an able and important addition to the many excellent works of a like kind that have of late been prepared for the use of the surgical student. The two volumes—the first dealing with general, the second with regional surgery—constitute a comprehensive treatise on both the principles and the practice of surgical work, in which the authors' teaching is clearly and fully expressed, and presented in a convenient and attractive form, well printed, and with abundance of illustrations. In the second volume, as is implied by its title, the injuries and surgical diseases of different parts of the body are described in the usual anatomical order from the head to the genital organs. Notwithstanding the necessity for compressing matter in any work on general surgery, the authors have prefixed to each chapter a very useful preliminary section on surgical anatomy. Throughout the book the various subjects have one by one been fully and, we believe, impartially treated with respect both to clinical instruction and therapeutical directions. The chapters on Diseases of the Brain and Membranes, and that on Appendicitis, may be taken as good instances of

[1] *Manual of Surgery*. By Alexis Thomson, M.D., F.R.C.S.Ed., Assistant Surgeon, Edinburgh Royal Infirmary; and Alexander Miles, M.D., F.R.C.S.Ed., Assistant Surgeon, Edinburgh Royal Infirmary. Volume II.: Regional Surgery. Edinburgh and London: Young J. Pentland. 1904. (Crown 8vo, pp. 723. 156 illustrations. 10s. 6d.)

the authors' thorough and careful manner. The former includes an instructive review of the valuable work done by Sir William Macewen on septic diseases of the brain, and the latter is evidently the outcome of much practical experience of the subject, and of a careful study of the doubtful points in its pathology and treatment. The illustrations, which with very few exceptions are original, vary in quality. Some, like that on umbilical hernia at page 380, certainly fail to add to the value of the book, whilst others, particularly those of intestinal suturing, are excellent as well as new.

In the preface to a new edition of his well-known work on special surgery,[2] Professor Koenig states that, in recognition of the difficulty of dealing single-handed with the rapid accumulation of fresh material in surgical literature, he has selected as a colleague in the preparation of this issue, his son Professor Fritz Koenig, of Altona. This book, it seems, is to be extended, as the two bulky volumes in which the whole of the subject of special surgery has hitherto been included will be followed in the course of the year by a third volume of equal proportions. As the first and second volumes of the new edition deal with the same subjects as the two volumes of former complete editions, it may be assumed that the forthcoming third volume will contain original additions and deal amongst other fresh matter with the diseases of the ovaries and uterus. A fresh edition of the introductory volume on general surgery is now being prepared with the aid of Professor Hildebrand of Basle. The new and well revised edition that has recently been published will be welcomed by surgical teachers, for although on account of a somewhat heavy and pedantic style and of some difficulty in translation, it is not so well known to English-speaking practitioners as those of other German writers on the subject, Koenig's *Lehrbuch* remains one of the soundest and most comprehensive works on modern surgery.

Dr. Moynac's book on the Elements of Surgical Pathology and Practice[3] has evidently been regarded with much favour by French students, as this is the tenth edition. It has from time to time been revised and improved by the author, and, as an inevitable result of such care and of an endeavour to note the progress of modern surgery, the work has increased in size, it being now found necessary to increase the number of volumes from two to three. The bulk of the work, however, seems to have been unduly enlarged by the inclusion of lengthy sections on quite special subjects, such as diseases of the eye, of the ear and throat, and of the uterus and its appendages. The clerical descriptions are full, lucid, and very practical, and the whole work, though uneven, will be found by French readers a good elementary textbook on general surgery.

PHYSIOLOGY.

The first Italian edition of Professor Luciani's[4] textbook of human physiology was published in 1901. The first part of the German translation issued recently deals with general physiology, including protoplasm, which is discussed very much as in other well-known textbooks. The "vital" activities of cells are treated so as to show the identity of the processes in animal and vegetable organisms. The old form of a *vita vegetativa* of the organs is retained. To the consideration of the blood 58 pages are devoted in which the blood is referred to as the centre of the vegetative, that is, nutritive, phenomena and the medium of general metabolism. There are some excellent illustrations, including a coloured plate giving the spectrum of the chief compounds or derivatives of haemoglobin. The protoplasm is fully described and particular attention is given to isotonic solutions and to cryoscopy and osmotic pressures. Chapter VI gives a summary of the discovery of the circulation of the blood, in which Harvey is represented as one who by his works perfected the scheme outlined by Cesalpinus. At this time we may safely leave Harvey's fame, merit, and services to the unprejudiced historian. Justly Luciani recalls the "certain great thing" which Marcellus Malpighi in 1661 saw first in a dried frog's lung—the capillaries: "Talia mihi videre contigit ut non immerito illud Homeri usurpare possim ad rem praesentem melius: magnum certum opus oculis video." As was to be expected from one whose name is indissolubly linked with the investigation of the physiology of the heart, Luciani has written an admirable account of cardiac physiology. The discussion of the question of an active diastole of the heart, as described by Stefani and Luciani, bulks more largely than in English textbooks. Moreover, the vagus is regarded as a diastolic nerve, as it causes in an active manner an increase in the volume of the heart by changing the physiological conditions of the cardiac muscle. Then follows a careful analysis of the cardiac impulse and its causes, the whole treated from a historical point of view. The few paragraphs on the work of the heart are all too short, the newer methods for its estimation being left out of account. The story of blood pressure is admirably given. Italian sphygmomanometers take the place of those that are usually described in English textbooks, but the principles are the same, and the differences are chiefly in mechanical details. Luciani regards the sphygmograph as of little clinical value. The instruments figured are all of the older type, the handy Dudgeon form not being included. This is natural, having regard to the view held as to the comparative uselessness of the instrument for clinical purposes. We do not find Stewart's electric method for determining the velocity of the blood. It would also seem as if English textbooks and scientific papers have not received so much study in Rome as those of Germany and France. In the physiology of the myocardium Luciani is on his own ground; the subject is admirably treated, and the myogenic or neurogenic rhythm and conduction in the heart fully discussed. In the literature on cardiac nerves we miss some well-known English papers dealing with this subject. The description of the action of vaso-constrictor and vaso-dilator nerves is admirable, in most cases the names of the investigators and the year of their work being cited, which gives the student a better grasp of the comparatively recent advances in this subject than is usually obtained from English textbooks, where names and dates are often omitted. Parts of the ninth and tenth chapters are founded on the well-known work of R. Tigerstedt on the circulation of the blood. The last twenty pages are taken up with the introduction to the study of the problems of respiration. The historical part is well worthy of perusal, apart altogether from the purely didactic description of repiratory processes. Altogether the summary is excellent.

The first edition of Professor F. Röhmann's *Handbook of Medical Chemistry*[5] appeared in 1890, and was intended for practitioners; the second is meant for use both during and after the University course of study. The first part (pp. 1-22) gives excellent tables for the analysis of inorganic substances in which the reactions of bases and acids are set forth as ion reactions. The second part treats of physiological chemistry, dealing in succession with the sugars, fats, egg yolk, proteids, gastric and pancreatic juices and their action, products of putrefaction of proteids, liver and bile, blood, muscle, milk, and wine. Several figures of crystals are given, but the magnifying power is omitted. Fig. 1 is a rather poor representation of glucosazone, but no lactosazone or maltosazone, or other related osazone sugar compound is given for comparison. On p. 37 it should be stated how a sufficient amount of saliva is to be obtained. Mett's important method for digestion of proteids is merely given as a reference. The method of Kühne for separating the mucous membrane of the stomach might have been described. The use of milk instead of a pure neutral fat for ascertaining the presence of steapsin in pancreatic extract is advised. In the chapter on blood the Hüfner and other methods for the estimation of oxygen tension is not mentioned. Throughout the work is chemical, and its clinical bearings are omitted, for example, in the colour tests for acidity of the gastric juice the disturbing influence of the products of digestion are omitted. Various references to journals, chiefly German, are quoted. The work is one that the physiologist may use occasionally, but we do not think that it shows any great advance on similar well-known works in English.

[2] *Lehrbuch der Speciellen Chirurgie fur Aerzte und Studirende.* [Textbook of Special Surgery for Practitioners and Students.] By Dr. Franz Koenig, Professor of Surgery and Director of the Surgical Clinic in the University of Berlin. Eighth Edition, two volumes. Berlin: August Hirschwald. 1904. (Demy 8vo, pp. 1770, 271 illustrations. M. 32.)

[3] *Elements de Pathologie et de Clinique Chirurgicales.* [Elements of Surgical Pathology and Practice.] Par Dr. Léon Moynac, Ancien interne des Hôpitaux de Paris. Eighth edition. Three volumes. Paris: G. Steinheil. 1903. (Crown 8vo, pp. 1858. 361 illustrations.)

[4] *Physiologie des Menschen.* By Dr. Luigi Luciani, Professor of Physiology in Rome. Translated into German by Dr. S. Baglioni and Dr. H. Winterstein, with introduction by Professor M. Verworn. Parts I. and II. Jena: Fischer. 1904. (Demy 8vo, pp. 322. M. 4 each.)

[5] *Anleitung zum Chemischen Arbeiten für Mediciner.* Von Professor F. Röhmann, Breslau. Zweite Auflage. Berlin: S. Kargor; and London: Williams and Norgate. 1904. (Demy 8vo, pp. 104. 32 illustrations. 4s.)

Professor ORNDORFF has made a very careful translation of Professor SALKOWSKI'S well-known *Laboratory Manual of Physiological and Pathological Chemistry*.[6] He has wisely omitted the large section which deals with inorganic chemistry in the original, and which is certainly out of place in a work on physiological chemistry, and has corrected some errors and made some additions in footnotes. The plate of absorption spectra, however, still leaves much to be desired. Salkowski's book should find a place on the shelves of every physiological laboratory as a work of reference to which investigators can go in carrying out many of the chemical operations of physiological and pathological research. The arrangement of its material is not systematic enough to render it useful to students, or to teachers engaged in taking practical classes. This fault, we imagine, is the reason why the book has not come into more general use.

PRESCRIBING AND DISPENSING.

ONE of the difficulties which the pharmacist has to contend with is the interpretation of prescriptions in which the active constituent is ordered in terms per cent. of finished product. This difficulty has led Mr. DUDDERIDGE[7] to write a booklet dealing with percentage calculations, in which the subject is treated lucidly from the pharmaceutical student's point of view. In scientific work, as is well known, a percentage solution is one containing *n* parts by weight in 100 parts by weight; owing, however, to the fact that liquids are rarely weighed in this country, it is customary to dispense percentage solutions so as to contain *n* parts (by measure if liquid or by weight if solid) in 100 parts by measure of finished product. Such a solution would contain *n* minims in 100 minims, or *n* grains or grams in 100 fluid grains or 100 c.cm. The intention of the prescriber is not always clear, for he may be thinking (in the case of solutions of solids) of *n* grains in 100 minims, which would yield a preparation about one-eleventh stronger than the preceding. Mr. Dudderidge has our support in advocating the former interpretation, which alone has any scientific basis, but an authoritative statement in the *Pharmacopoeia* would remove all doubts on the subject. Meanwhile, we commend the booklet, as being clear and accurate, to any medical man interested in the subject, and after its perusal no doubt a recruit will have been enlisted in favour of the metric system.

SQUIRE'S *Companion to the British Pharmacopoeia*[8] has long filled an important position in medical and pharmaceutical literature; thus, when it was announced some time ago that a pocket edition was in course of preparation, its appearance was eagerly looked for. The older *Companion* is a reference book not only for medical men and dispensers, but also for pharmacists carrying out manufacturing processes. In order to satisfy the needs of this wide class of readers, such a mass of information was necessary as to render the work somewhat cumbersome. This difficulty became accentuated year by year, until the author has now hit on the happy idea of separating out matter suitable for different classes of readers, and publishing two books instead of one. Thus, in the *Pocket Companion to the British Pharmacopoeia* all matter which is only of interest to the manufacturing pharmacist has been omitted, such alone being retained as is of value to medical men and dispensers. This division has allowed the latter class of information to be extended in the new book, whilst the older form of *Companion* will be produced and kept up to date as hitherto. As in the older work, the alphabetical arrangement is followed; but in some instances, particularly in the case of drugs with fancy names, those similar in composition are grouped together. For example, under "Argenti Nitras," we have all the new organo-silver compounds grouped together for comparison. This is as it should be, the giving of a separate monograph to these substances being usually more than they merit, and inferior as a means of reference for the reader. The prescribing notes have been largely extended, and should prove of great value; they are thoroughly practical, and have the advantage of having been compiled from the results of experiments instead of from "armchair" work.

[6] *A Laboratory Manual of Physiological and Pathological Chemistry.* By Dr. E. Salkowski, Berlin. Translated by W. R. Orndorff, A.B., Ph.D., Cornell University. New York: J. Wiley and Sons; and London: Chapman and Hall. 1904. (Demy 8vo, pp. 273; 11 illustrations. 10s. 6d.)

[7] *Notes on Percentage Calculations*, with examples. By Frank R. Dudderidge, F.C.S. Newcastle-on-Tyne: T. and G. Allan. (Fcap. 8vo. pp. 13. 6d.)

[8] *The Pocket Companion to the British Pharmacopoeia.* By Peter Wyatt Squire. London: J. and A. Churchill. 1904. (Fcap. 8vo, pp. 766. 7s. 6d.)

NOTES ON BOOKS.

CHEMISTRY.

MR. P. A. ELLIS RICHARDS'S *Practical Chemistry*,[1] which has been written specially for medical and dental students, covers the ground of the revised syllabus of the Conjoint Board Preliminary Science Examination and also that of the London University Preliminary Scientific. We note (p. 47) that thiosulphuric acid is called thiosulphurous, and that the formula given is really that of tetrathionic acid. Amongst so much detail, however, errors are certain to creep in, and, generally speaking, the book is accurate. The arrangement is good, and a section on elementary practical toxicology is sure to prove useful.

Some time ago we commented favourably on Professor HOLLEMAN'S *Textbook of Organic Chemistry*, and now we have received a copy of his *Laboratory Manual of Organic Chemistry*,[2] which, like the former, has been translated from the Dutch by Dr. JAMIESON WALKER. It is really an appendix to the textbook, and should be used in conjunction with it. It gives details for preparing and noting the characteristic reactions of the different types of organic compounds, following the same order as the textbook. We commend the author's accuracy and clearness of expression, and feel certain that the book will be largely used by students of organic chemistry.

Aluminium being one of the most abundant and widely distributed of the elements, it is not surprising that Messrs. LANGWORTHY and AUSTEN have collected such a mass of information in their book on the *Occurrence of Aluminium*.[3] The book is a contribution to the bibliography of aluminium, and deals with its occurrence in vegetable products, animal products, natural waters, and a few miscellaneous materials. The information given is arranged alphabetically under the names of the different investigators, whose results are recorded, but an excellent index enables one to find easily the records regarding any substance mentioned—a good index being, of course, essential in a book of this kind. There is nothing surprising in the widespread occurrence of aluminium in vegetable products, as revealed by this collection of analytical records; plants take in anything which reaches the root hairs in solution, provided it is capable of osmosis, and hence all plants are likely to contain some aluminium. The presence of considerable quantities, however, leads one to conclude either that the aluminium taken up is used in constructive processes, or enters into fresh combinations through decompositions going on in the plant. Either of these changes would upset osmotic equilibrium, and result in the ingress and accumulation of more aluminium. The presence of aluminium in vegetable products being accounted for, its occurrence in animal products follows as a matter of course, and natural waters are all likely to contain an element so abundantly distributed in the earth's crust. The data regarding the presence of aluminium in flour and bread are of interest, and should make analysts think before recommending prosecutions for alum adulteration. The compilers have used discrimination in their task of selection, and the bibliography of the subject has been enriched by a useful reference book.

The writer of *Obiter Scripta: the Excursions of an Improvident Philosopher*,[4] succeeds in conveying to his readers a certain sense of the zest with which he has begun and carried through his holiday excursions. About half his volume is concerned with a journey to the Black Sea, through the Caucasus, over the Caspian, and up the Volga, and this is the best part of the book; partly, perhaps, because the country traversed is unfamiliar to most readers, and partly because the writer enjoyed it more. In spite of a style which would be the better for a little chastening, he manages to give the sense of atmosphere and space, and to transfer to his pages

[1] *Practical Chemistry, including Simple Volumetric Analysis and Toxicology.* By P. A. Ellis Richards, F.I.C. London: Baillière, Tindall, and Cox. 1904. (Crown 8vo, pp. 136. 3s.)

[2] *A Laboratory Manual of Organic Chemistry.* By Dr. A. F. Holleman. Translated from the Dutch by A. Jamieson Walker, Ph.D., B.A. New York: John Wiley and Sons; and London: Chapman and Hall. 1904. (Crown 8vo, pp. 92. 1 dollar.)

[3] *The Occurrence of Aluminium in Vegetable Products, Animal Products, and Natural Waters.* By C. F. Langworthy, Ph.D., and Peter T. Austen, Ph.D. New York: John Wiley and Sons, and London: Chapman and Hall. 1904. (Demy 8vo, pp. 168. 8s. 6d.)

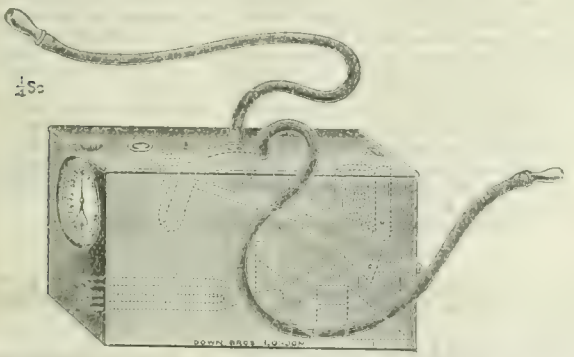
[4] Norwich: Agas H. Goose. (1s. net.)

he holiday mood in which he saw and wrote. Like most other Western observers, he is puzzled to forecast the future of Russia; he feels the Russians to be "a fine race intrinsically, needing only to develop the faculty of organization." Their lack of sanitation, he adds—and in this matter he speaks, we have reason to think, with authority—insures the survival only of the strongest, so that "the Russian workman is the superior of the average Britisher in physique and animal healthiness. If he were as well educated, and had as good food, he would beat him hollow;" but the Volga peasantry he found "generally pallid, the result of too much bread and too little animal food in their dietary." The Improvident Philosopher believes that the present war, by discrediting the oligarchy, will lead to some internal reorganization on the basis of the Mir and Zemstvo (village and county councils). But it is not for such speculations that the book will be read, but rather for its hints for future holidays.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

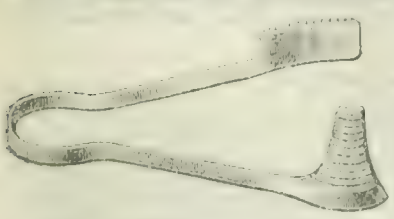
MEDICAL AND SURGICAL APPLIANCES.

An Audiometer.—St. Geo. Caulfeild Reid, M.R.C.S.Eng. (Thornton Heath), has devised an audiometer for noting the auditory appreciation in cases of deafness and other diseases of the ear. It consists of a box fitted with one or more



tuning forks, and as the force which sets the fork in action is always the same, and as the sound is heard by the operator and patient under the same conditions and at the same time, an exact record of the time of appreciation can be kept, and forms a valuable reference in the future treatment of the case, or for noting the effect of particular treatment, inflation, paracentesis, etc., on audition. The C fork is the ordinary test. The terminals are of glass, and can be removed after use for cleansing. It can be obtained from the makers, Messrs. Down Bros., St. Thomas's Street, Borough, S.E.

A New Retractor.—Mr. A. Roberts, F.R.C.S.Edin., Aural Surgeon, Royal Berkshire Hospital, writes: The annexed woodcut illustrates a retractor made for me by Messrs. Mayer and Meltzer for use in mastoid operations. It is an automatic spring retractor, consisting of two arms of well-tempered steel, to one of which is fitted a retractor in shape somewhat like an aural speculum, cut in half, the outer side grooved horizontally to prevent slipping. This blade fits into the meatus and pushes the pinna forward out of the way of the operator. The other arm of the spring terminates in a plate slightly convex on its external aspect, and having teeth set on at right angles to the plate; this pushes back the opposite side of the wound. The retractor is made in two sizes, with varying strength in the spring, for operation on children or adults. It has proved of great value in my hands. It is self-retaining, and will be found a great convenience by those who object to assistants' hands in the neighbourhood of the wound.



LONDON COUNTY COUNCIL.

PUBLIC CONTROL DEPARTMENT.

We have received a copy of the annual report of the Chief Officer of the Public Control Department of the London County Council for the year ended March 31st, 1904. We give an abstract of those parts of the report which have a direct interest for the medical profession.

Coroners' Inquests.

Seven thousand two hundred and forty-five inquests were held in the County of London during the year 1903, which is at the rate of 1.5 inquests per 1,000 of the estimation population—4,589,273. The number of inquests held in London during the past five years were: 1899, 8,271; 1900, 8,027; 1901, 7,932; 1902, 7,729; 1903, 7,245.

Cases Reported to Coroners.

The number of cases reported to coroners in 1903 fell below that of 1902 by 594, and there were 484 fewer inquests than in 1902. 3,313 of the inquests resulted in verdicts of "Death from natural causes," and it is considered possible that in many of these cases an alteration in the present inquest system on the lines of the Council's proposals would have rendered an inquest unnecessary. In that case much of the cost of these inquests (which amounted to £8,216) would have been saved.

Post-mortem Examinations.

The number of *post-mortem* examinations made in 1903 was 3,719, a reduction of 314 on that of 1902. The lowest percentage occurred as usual in the Eastern district, while the highest (99 per cent.) was in the Westminster and South-Western districts.

Attention has again been directed to the question of *post-mortem* examinations in special inquest cases. The Council in July, 1902, passed the following resolution:

> That coroners be informed that in the opinion of the Council it is desirable that *post-mortem* examinations in inquest cases of a special nature should be entrusted to a specially-skilled pathologist.

London coroners have been furnished with the names of specially-skilled pathologists able and willing to make *post-mortem* examinations, and give evidence in special cases at the ordinary fee of two guineas; and it has been intimated to coroners that in such cases where the coroner is of opinion that the medical practitioner in attendance on on the deceased can give evidence material to the inquiry, he may also be called and paid the fee prescribed by the Coroners Act. Moreover, should it be deemed of advantage that the medical practitioner should be present to watch the *post-mortem* examination made by the special pathologist, the coroner has been authorized to pay a fee of one guinea for such attendance. The report says:

> These arrangements appear to meet the objections which have been raised from time to time by medical practitioners concerned in such cases, and would, if given effect to by all London coroners, give promise of a more thorough investigation into the cause of death in difficult cases. Except, however, in one or two districts, advantage does not appear to have been taken of these arrangements.

Skilled Pathologists.

The following is the amended list of pathologists who are willing to undertake *post-mortem* examinations and give evidence in inquest cases of a special nature:

Broadbent, John F. H., M.R.C.P. (St. Mary's Hospital), 35, Seymour Street, W.

Byrne, Peter Kevin, M.D., M.R.C.S., L.R.C.P.Lond. (London Temperance Hospital), 40, York Place, Portman Square, W.

Creighton, C., M.D., 34, Great Ormond Street, W.C.

Daniel, P. L., F.R.C.S. (Charing Cross Hospital), 5, Devonshire Street, Portland Place.

Dawson, Bertrand, M.D. (London Hospital), 110, Harley Street, W.

Freyberger, Ludwig, M.D., M.R.C.P., M.R.C.S., 41, Regent's Park Road, N.W.

Hosford, John Stroud, M.R.C.S., L.R.C.P.Lond. (London Temperance Hospital), 20, St. James's Place, St. James's Street, S.W.

Oliver, F. Hewitt, L.R.C.P. (Charing Cross Hospital), 2, Kingsland Road, N.E.

Parkins, J. J., M.D., F.R.C.P. (St. Thomas's Hospital), 41, Wimpole Street, W.

Russell, A. E., M.D.Lond., M.R.C.P. (St. Thomas's Hospital), 107, Palace Road, Lambeth, S.E.

Salaman, R. N., M.D. (London Hospital), London Hospital, E.

Scott, Sydney R., L.R.C.P.Lond., F.R.C.S. (London Temperance Hospital), 62, Belsize Park Gardens, Hampstead, N.W.

Smith, Lewis, M.D. (London Hospital), 7, Wimpole Street, W.

Smith, W. R., M.D. (Professor, King's College Hospital), 74, Great Russell Street, W.C.

Trevor, R. S., M.D. (St. George's Hospital), 21, Fitzgeorge Avenue, West Kensington.

Voelcker, Arthur Francis, M.D. (Middlesex Hospital), 101, Harley Street, W.

Whipham, T. R., M.D. (St. George's Hospital), 11, Grosvenor Street, W.

Young, Robert A., M.D. (Middlesex Hospital), Middlesex Hospital Residential College, Cleveland Street, W.

All inquests during the year were held in coroners' courts, hospitals, or other public buildings, no inquests being held in public-houses.

DEPUTY-CORONERS.

Only one appointment of deputy-coroner was made during the year—namely, that of Dr. Robert Lyall Guthrie, as deputy in the North-Eastern District, in place of Dr. G. E. Yarrow. The appointment was approved by the Chairman of the Council, in accordance with the Coroners Act, 1892.

Salaries.—Coroners' salaries are revised every five years at the instance of the council or the coroner, the revised salary being calculated on the average number of inquests held in the five years immediately preceding. The salaries of the Southern and Southwark Districts were so revised during 1903. As regards the Southern District, the average number of inquests held during the quinquennial period was 625 inquests per annum, which, on the basis of 30s. per inquest, gave a salary of £934 14s., and this salary has been paid as from October 1st, 1902. In the case of the Southwark District the coroner would not accept the salary offered by the council, and appealed to the Home Secretary to revise and fix a salary under the provisions of 23 and 24 Vict., cap. 116. The Home Secretary, however, endorsed the Council's decision, and fixed the salary for the current five years at £126 19s. 4d., the sum proposed by the Council. The salary claimed by the coroner was £440 13s. 4d.

COSTS OF INQUESTS.

A return is given showing the expenditure for inquests during the last ten years. A further reduction is recorded, notwithstanding an increase of £439 10s. 11d. on the cost of salaries, due to recent revisions, and this is attributed partly to a reduction in the number of inquests held, and partly to a reduction in the average disbursements per inquest.

The expenses do not include payments made to borough councils for the use of coroners' courts, which last year amounted to £1,180. Seven courts have also been erected by the Council itself at a capital expenditure of over £23,000. The annual maintenance of these seven courts is about £200, so that calculating the interest on capital at 3 per cent., and adding the cost of maintenance and the amount paid for rents, the total cost for courts during the year amounted to about £2,070. If this be added to the amount for disbursements and salaries, it will be seen that the cost for inquests in London (excluding the City) during the year amounted to over £30,000.

CORONERS' LAW AMENDMENT.

The following resolutions for the amendment of the law were passed by the Council in 1895, and have been submitted to successive Lord Chancellors and Home Secretaries. Representations were again made to the Home Secretary during last year, particularly in view of the difficulties caused by the presence of franchise coroners' districts in London:

(*a*) That in no case should a death be registered without production of a certificate of the cause of death, signed by a registered medical practitioner or by a coroner after inquiry.

(*b*) That a medical practitioner in attendance should be required, before giving a certificate of death, to personally inspect the body and identify it as the body of the person he has attended; and should include in his certificate a statement pointing to the absence of accident, poison, violence, or criminal neglect; and that the coroners be required to hear evidence from representatives of the families of the deceased whenever it is alleged that death has been caused by accident.

(*c*) That a form of certificate of death should be prescribed, and that, in giving a certificate, medical practitioners should be required to use such form.

(*d*) That medical practitioners should be required to send certificates of death to the registrar instead of handing them to representatives of the deceased.

(*e*) That it should be made a penal offence to bury, or otherwise dispose, of a body without an order from the registrar stating the place and mode of disposal, which order, after it has been acted upon, should be returned to the registrar who issued it.

(*f*) That it should be made an offence to retain a dead body unburied, or otherwise legally disposed of, beyond a period not exceeding eight days, except by permission of a magistrate.

(*g*) That the certificate should be endorsed by the burial authority, with the date of interment or disposal, and the place where the body is buried, and returned to the registrar by the burial authority.

(*h*) That when the medical practitioner is unable to certify, he should be required to report direct to the coroner. Relations, friends, and others having cognizance of suspected cases should also be required to report them to the coroner.

(*i*) That every case of death after surgical operation should be reported to the coroner with a view to preliminary inquiry and, if necessary, the holding of an inquest.

(*j*) That medical investigators should be appointed—

1. To inquire into causes of all uncertified deaths, assisted by qualified and responsible inquiry officers.
2. To examine the body in all such cases, and make *post-mortem* examination where necessary.
3. To report the result to the coroner sitting in court, who will then decide as to necessity for holding formal inquest.
4. To give evidence at inquest and act as medical adviser to the coroner.

(*k*) That London should be divided into districts so arranged as to give approximately equal amount of work, and that coroners be paid by salary not dependent on the number of inquests held.

(*l*) That franchise districts should be abolished.

(*m*) That a court or courts should be provided for each district, with a coroner, clerk, inquiry officers, and other necessary officials as in police courts.

(*n*) That one or more medical investigators should be attached to each court, and be paid by salary.

(*o*) That the office of deputy-coroner should be abolished as unnecessary in London.

(*p*) That inquests should be held and evidence taken by the coroners in all cases where the reports of the medical investigators show further inquiry to be necessary, and in all cases of violent or suspicious death.

(*q*) That viewing the body by a jury should no longer be obligatory.

(*r*) That the number of jurymen should be reduced to one-half the present number—that is, to not less than six or more than eleven.

(*s*) That in cases involving subsequent criminal proceedings, such as murder or manslaughter, or other criminal offence, the coroner should have full power to bind over all witnesses.

(*t*) That proper records of all cases dealt with by the court, whether inquests be held or not, should be kept as records of the county.

(*u*) That the court should have jurisdiction in cases of accident, etc., where more than one death has taken place, when the jurisdiction should be with the court for the district in which such accident, etc., occurred.

(*v*) . . . That coroners' juries should be summoned by rota.

BREAD ACT.

The Act relating to the sale of bread (3 Geo. IV, cap. 106), which operates within ten miles of the Royal Exchange, requires:

(*a*) That all bread shall be sold by weight.

(*b*) That in every shop where bread is sold, scales and weights or other weighing appliances shall be fixed in some conspicuous place on or near the counter.

(*c*) That scales and weights shall be carried in every vehicle in which bread is carried for sale, other than a vehicle drawn by hand.

Fancy bread is, however, exempted from the operation of these provisions.

No executive authority is appointed by the Act, but the Council's inspectors of weights and measures are instructed to enforce the provisions of the Act so far as they can do so in connexion with their other duties; 12,249 inspections at bakers' and other premises were made by the inspectors during the year, 59 persons were cautioned in writing by the Council, and 165 prosecuted for infringements of the Act. In 161 cases convictions were obtained and penalties imposed amounting to £141 11s. In one case the summons was dismissed, and the three remaining cases the defendants had removed, and could not be traced.

Amendment of the Law.

The Bread Acts not only deal with the manner in which bread shall be sold, but also with the ingredients used in its manufacture, but the Council has only concerned itself with the weight of bread. The present law is admittedly defective and unsatisfactory both to the public and to the trade, and the Council has waited for a long time for some common expression of opinion from the trade on the subject, so that a Bill might be prepared which, while protecting the public, would satisfy the trade. Frequent consultations with various sections of the trade has convinced the Public Control Committee that general agreement is impracticable, and the Committee has formulated the following conclusions as a basis for legislation:

(1) That all bread (other than fancy bread) shall be sold by weight, in quantities of 1 lb. or multiples of 1 lb.

(2) That all bread as aforesaid shall, when sold, be weighed in the

presence of the purchaser, excepting that when delivered otherwise than at a shop, it need be weighed only at the request of the purchaser or his servant, or an inspector of weights and measures.

(3) That there shall be a penalty of £5 for a first, or £10 for a second or subsequent, offence:

(a) For selling bread otherwise than as prescribed.

(b) For selling or delivering bread of short weight.

(4) That fancy bread be defined to be bread made up into separate rolls, twists, or other shapes, each of which is less than 1 lb. in weight.

(5) That inspectors of weights and measures be given power to enforce the provisions of the Act.

(6) That Sections III, IV, VI, and VII of 3 George IV, cap. 106, and Section XXXII of the Weights and Measures Act, 1889, be repealed.

(To be continued.)

THE MIDDLESEX HOSPITAL CANCER RESEARCH LABORATORIES.

THE *Third Report from the Cancer Research Laboratories of the Middlesex Hospital*[1] is edited for the Cancer Investigation Committee by W. S. Lazarus-Barlow, M.D., F.R.C.P., and contains twelve separate papers.

Statistics of the Middlesex Hospital.

The records of cases in hospital during 1903 are placed first, and concern 137 cases of carcinoma and sarcoma from the *post-mortem* room and operation theatres, all examined histologically. Details of the situation of secondary growths are given, together with other information, and added to those previously reported we have a valuable series of over 800 cases in which precise and detailed information is available for reference.

The Fascia and the Spread of Carcinoma.

The second paper is by Mr. W. S. Handley on the centrifugal spread of mammary carcinoma in the parietes and its bearing on operative treatment. Mr. Handley aims at showing that the chief plane of extension in mammary cancer is that of the deep fascia and that skin nodules are secondary upgrowths from this, and that this has not been sufficiently recognized by surgeons, so that the deep fascia is, by most, insufficiently removed. The evidence on which these views are based is derived from the study of the distribution of secondary skin nodules indicating the centrifugal extension of the disease by continuity in the deep fascial plane. Mr. Handley also holds as a corollary that the distribution of secondary foci in the skeleton is also based primarily on the centrifugal spread of the disease and communication to the bones through the medium of fascial attachments. Mr. Handley makes out a good case for the view that, at any rate in many instances, the blood stream is not the medium of distribution to the skeleton; beyond this the evidence will not go. Concerning the removal of the deep fascia, no hard-and-fast rule is to be followed in regard to the direction and the extent of the dissection necessary, and probably the majority of surgeons already practise what Mr. Handley's work indicates—that the deep fascia must be taken away along with the other structures over a wide area with the growth as its centre.

Failure of a Supposed Specific.

Mr. J. W. Glenton Myler describes the results of the treatment of nine cases with Dr. Otto Schmidt's supposed specific for cancer. It will be remembered that a paper read before the Abernethian Society by Dr. Jossé Johnson first brought this remedy to the notice of English surgeons. Facilities were afforded to Dr. Johnson at the Middlesex Hospital for testing the method further. None of the nine cases derived any benefit from the treatment, nor was any reaction caused by the injections, as claimed by Dr. Schmidt. The tests showed, therefore, that the injections were neither diagnostic nor curative.

Endothelioma of the Tongue.

Dr. Lazarus-Barlow writes an interesting paper on four cases of endothelioma of the tongue. All the patients were males, and their ages were 42, 44, 51, and 61. The disease ran a fairly rapid course. Endothelioma of the tongue has not been previously described, and Dr. Lazarus-Barlow writes on the difficulty of distinguishing such a growth from an epithelioma originating in the Malpighian layer in which the cells remain of the undifferentiated type characteristic of this layer. Considerable aid in differentiation was obtained in these cases from the study of the metastases; in the first case metastases were found in the submaxillary glands and liver; in the second no metastases were found during the short period the patient was under observation; in the third they were found in submaxillary glands and lungs, and in the fourth in glands and liver.

Cancer in India and England Compared.

Two papers follow this on statistics of malignant disease from the Mayo Hospital, Lahore, by Captain D. W. Sutherland, I.M.S., and on the comparison of these with the Middlesex Hospital statistics by Dr. Lazarus-Barlow. Some interesting facts arise from the comparison. Carcinoma of the penis is comparatively exceedingly common in the Mayo Hospital tables, and occurs almost exclusively in Hindus; the freedom of Mohammedans is ascribed by Dr. Sutherland to the practice of circumcision. Carcinoma of the skin in the Mayo series shows a percentage to the whole number of 17·6, in the Middlesex figures of only 3·8. Stomach cancer is comparatively infrequent at the Mayo Hospital, while rectal and anal cancer shows a higher proportion than the Middlesex figures. Eurasians appears to possess a comparative immunity from the disease generally, but the figures available are too small for definite statement. Regarding age-periods, the greatest incidence appears to occur ten years earlier in the Mayo Hospital series, and the disease is more prevalent between the ages of 20 and 40.

Specific Gravity of the Blood in Cancer.

Dr. J. J. Douglas contributed some observations on the specific gravity of the blood in malignant disease, from which he concludes that in carcinoma the specific gravity is lowered, varying directly with the degree of cachexia. The fall in the specific gravity concerns chiefly the plasma, but in extreme cachexia that of the corpuscles is also lowered.

Secondary Carcinoma of the Skull.

Mr. R. J. Gladstone describes the secondary carcinomatous deposits in the skeleton of a case of carcinoma mammae. The deposits were present in the skull, where they were distributed along the course of the branches of the middle meningeal arteries, and also in some of the ribs, the right clavicle, and both femora.

Dissemination along Thoracic Duct.

Mr. W. T. Hillier gives an account of some unusual cases of carcinoma admitted to the hospital in the period 1900-3, the most interesting of which are those in which the dissemination of the disease was traced along the thoracic duct.

Periodic and Age Incidence.

An elaborate and valuable statistical study of the records of cancer in the Middlesex and St. George's Hospitals is presented by Dr. Lazarus-Barlow and Mr. W. Gordon Taylor. The records have been examined from a new standpoint. The cases have been tabulated on the basis of the year of birth, and 26,901 have been thus dealt with. A striking concordance is shown between the two series, and the points of greatest importance discovered are (1) that in females the cancer mortality gradually rose up to about the year 1870 and has been stationary since, and (2) that the males at both hospitals have shown a persistent rise in cancer mortality throughout. In addition, both hospitals agree that there is a tendency for cancer to affect persons, whether males or females, at an earlier age than formerly, and that a general diminution of incidence in old age has taken place.

Multiple Primary Growths.

The subject of multiple primary malignant growths is discussed by Dr. R. A. Young, and 8 new cases of this condition are described. In 5 the growths were of different histological characters, in 3 they were of the same type. In 2 of the latter the independence of the growths appears to be somewhat doubtful. A table of similar cases from literature is given by Dr. Young. This is by no means exhaustive; it does not contain the cases recorded by Gloy, Müller, Sturzenegger, Deetz, and others.

Papilliferous Ovarian Cysts.

The last paper in the volume is an interesting account of the cytological examination of 3 cases of papilliferous ovarian cysts by Dr. W. F. Victor Bonney. In 1 the clinical aspects of the growth indicated a simple character, and this was confirmed by the absence of any but somatic mitoses in the sections. The other 2 were considered malignant at the time of removal; both showed in characteristic fashion

[1] *Archives of Middlesex Hospital.* Volume III. Third Report from the Cancer Research Laboratories. Edited by W. S. Lazarus-Barlow, M.D., F.R.C.P. London: Macmillan and Co. 1904. (Demy 8vo, pp. 195. 5s.)

numerous heterotype and hom type mitoses, as described by Farmer, Moore, and Walker These observations confirm the view that cytological exam nation is likely to prove a valuable aid in differentiating the malignant from the simple growths.

ENTRANCE SCHOLARSHIPS.

St. Mary's Hospital Medical School (University of London).—The examination for entrance scholarships at this School has resulted as follows—Open Scholarship of £145: W. L. Cowardin, St. Paul's School. Open Scholarships of 50 guineas each: E. W. Archer, St. Mary's Hospital; A. B. Porteous, City of London School; T. A. F. Tyrrell, University College School. University Scholarships of 60 guineas: I.—C. H. Rothera, B.A., Emmanuel College, Cambridge: II.—P. P. Laidlaw, B.A., St. John's College, Cambridge: K. A. Lees, B A.. King's College, Cambrige, equal. The Epsom College Scholarship of £145 has been awarded to T. C. C. Evans, on the nomination of the Head Master.

St. Thomas's Hospital Medical School (University of London).—The Entrance Scholarship in Natural Science, of the value of £150 at this School, has been awarded to Mr. Ernest William Witney; and the University Scholarship, of the value of £50 to Mr. Charles Ernest Whitehead, B.A., of Caius College, Cambridge.

MEDICAL NEWS.

The Kurhaus at Bad Nauheim will remain open this year until October 15th. The bath-houses are open all the year.

The Education Committee of the Surrey County Council has appointed a special committee to consider a proposal to establish a residential county school for defective children.

The annual dinner of the Association of Public Vaccinators of England and Wales will be held at the Hotel Cecil on Friday, October 28th, at 7 p.m.

A course of lectures on evolution in the vegetable kingdom will be given at Gresham College, E.C., by Dr. E. Symes Thompson on October 4th and the three following days, at 6 p.m. on each day.

The West-London Medico-Chirurgical Society will hold the first meeting of its twenty-third session on October 7th at the West-London Hospital at 8.30 p.m., when an address on progress in psychology will be delivered by the President, Mr. C. M. Tuke.

The new administrative buildings of the epileptic colony at Chalfont of the National Society for the Employment of Epileptics, towards the cost of which Mr. Passmore Edwards has contributed £3,000, will be opened by Lord and Lady Rothschild on October 20th.

The Sultan has conferred the Order of the Shefakat, first class, in brilliants, on Mrs. Watt-Smyth, wife of Mr. T. Watt-Smyth, late Judge of the High Court of the Punjab, India, in recognition of her literary work in connexion with the Turkish empire.

Travelling in Egypt.—Messrs. Cook's steamers will begin to run between Cairo and the First Cataract in November, with connecting steamers between the First and Second Cataracts. Combined tickets are issued for steamers and railways, and tickets are issued to Khartoum and Gondokoro.

A meeting of the South-Eastern Division of the Medico-Psychological Association will be held at The Priory, Roehampton, on Thursday, October 6th, when Dr. Chambers will entertain the members at luncheon at 1.30 p.m. At the general meeting, commencing at 2.45, papers will be read by Dr. F. W. Mott, F.R.S., on the morbid changes in the brain in sleeping sickness, by Dr. F. Graham Crookshank on the management of early and ill-defined cases of mental disorder, and by Dr. R. Hunter Steen on mental disease with exophthalmic goitre. The members will dine together at the Café Monico, Piccadilly Circus, at 7 p.m.

Golden Wedding.—At Tideswell, near Buxton, on the evening of September 21st, Dr. J. L. Parke and Mrs. Parke were presented, on the occasion of their golden wedding, with an illuminated address, a gilt bronze clock and vases, an album containing the signatures of 1,065 townspeople who had subscribed one shilling—the amount having been limited to that sum—and a copy of their marriage certificate. Both the address and an inscription on the clock testified to the high esteem and affection in which Dr. and Mrs. Parke had been held by the inhabitants of Tideswell and the surrounding district for fifty years. The venerable doctor and Mrs. Parke were accompanied, among others, by Dr. John L. Parke (their eldest son) and Mrs. J. L. Parke, of Milnsbridge, Dr. and Mrs. Demetriadi (their daughter), of Huddersfield, and Dr. T. H. Parke and Miss Parke (their son and daughter), of Tideswell. Several speeches were made by inhabitants of long standing in the neighbourhood, including one by a lady of 86 who had lived the whole of her life in Tideswell, all voicing a deep regard. Dr. Parke, who is now nearly 80, has practised in Tideswell continuously for over 54 years.

The West Kent Medico-Chirurgical Society will hold the first meeting of its forty-ninth session on October 7th at the Royal Kent Dispensary, Greenwich Road, S.E., at 8.45 p.m. After the adoption of the report of the Council, and the election of new officers, etc., there will be a clinical meeting at which cases will be shown. The existing executive officers are Dr. R. E. Scholefield, President, Mr. J. P. Purvis, Treasurer, and Dr. J. P. Henry, 41, Welbeck Street, Honorary Secretary.

Hospital Reform.—A general meeting of the East London Medical Society will be held on Tuesday, October 4th, at 3.30 p.m., at the King's Assembly Rooms, Cottage Grove, Mile End Road, opposite the District Railway Station of that name. The report of the committee upon the steps which have been taken, since the formation of the society in the spring, with regard to hospital abuse, especially in connexion with the London Hospital, will be presented and discussed. All medical men willing to join in the movement indicated are invited to be present.

Bequests to Medical Charities.—The sum of £100 is directed to be paid to the York Hospital and the York Blind School by the will of the late Mr. George Whitehead, of Escrik, Yorkshire; as also to the East Suffolk and Ipswich Hospital, under the will of Mr. Charles William Sutton of Ipswich, who died on May 14th. In Bexley Cottage Hospital is to be founded a "John Best Bed" upon the decease of certain nieces of the late Mrs. Elizabeth Best of Bexley Heath. To the General Hospital, Birmingham, £2,000 has been left by Mr. Charles James Shaw of Leamington, who died on June 30th; a similar sum to the Warneford and Leamington and South Warwickshire General Hospital; and £1,000 to the Midland Home for Incurables. The Stroud General Hospital and the Gloucester Hospital each receive £300 under the will of Mrs. Elizabeth Winterbottom of Dursley, who died on July 13th.

Post-graduate Schools.—A course of clinical lectures will be given during the winter term at the National Hospital for the Paralysed and Epileptic by members of the staff. The first lecture will be given on Tuesday, October 4th, by Dr. Risien Russell on anatomy of the spinal cord. Further particulars can be obtained on application to the Dean of the Medical School at the Hospital, Queen Square, Bloomsbury.—We have received a syllabus of lectures and demonstrations which are to be given in connexion with the North-East London Post-graduate College at the Tottenham Hospital. Speaking generally, the lectures or demonstrations are given twice a week throughout the year, in the winter, spring, and summer sessions, and they are open without fee to all medical practitioners who wish to attend. During the ensuing year, in addition to lectures and demonstrations on clinical medicine and surgery, obstetrics, gynaecology, and diseases of the skin, eye, nose, throat, and ear by the consulting and acting staff of the hospital, others are given by specialists not members of the hospital staff, among which are those on fevers (at the adjacent North-Eastern Fever Hospital, St. Ann's Road), tropical diseases, psychological medicine, and State medicine, while demonstrations are also given on anaesthetics and electrodiagnosis. For members of the Post-graduate School, besides personal opportunities for taking part in the clinical work of the hospital, demonstrations are given in the wards and in the out-patient department, including the special departments. The accessibility of the hospital has been recently increased by the opening of the electric tram service from Finsbury Park, the cars of which pass the door. The opening lecture of the winter session will be given by Mr. Walter Edmunds at 4.30 p.m. on Thursday, October 20th, in the lecture room at the hospital, High Road, South Tottenham, N. A syllabus of lectures may be obtained on application to the Dean of the College.—The lectures of the winter term of the Samaritan Free Hospital for Women, Marylebone Road, will begin on October 6th, when Mr. Alban Doran will give a lecture on diseases of the fallopian tubes clinically considered.

BRITISH MEDICAL ASSOCIATION.

Subscriptions to the British Medical Association for the year 1904 are now due and should be forwarded by postal order or cheque to the amount of 25s. to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, OCTOBER 1ST, 1904.

THE PRESENT POSITION OF ASEPTIC SURGERY.

THE discussion on the present position of the aseptic treatment of wounds in the Section of Surgery at the annual meeting at Oxford this year brought out very clearly one chief point: that while the principle which guides attempts to obtain asepsis is upheld on all hands, there is yet a considerable diversity among English surgeons in the details of their practice. When further attention is directed to this diversity, it appears that there are in the main two categories of opinion: in the first place that of those who pay the more attention to the teaching of their operative experience, the less to that of the laboratory; in the second place that of those who reverse this order and find little weight in the empiric argument. The extremists of either of these points of view, if any were present, did not raise their voices in the discussion, and while the differences in practice were expressed, there appeared to be a general readiness to admit that possibly the same end might be attained with some variety in the means employed. Professor Watson Cheyne, who was to have opened the discussion, was prevented from attending, but we are able to publish the paper which he intended to read. In this he well says that a good deal of confusion has arisen in regard to the use of the terms "aseptic" and "antiseptic." It is to be hoped that the discussion will aid in finally disposing of the habit of using these terms to denote a divergence of principle: they should never have been opposed; asepsis is the desired end, antisepsis is a means, and the employment of heat is just as truly an antiseptic measure as the use of bactericidal chemicals.

The discussion of antiseptic technique is very liable to go round in a circle with little profit. Laboratory experience has brought about a considerable distrust of the chemical antiseptic, and those on whom this unreliability has been impressed by bacteriological work have also from experiment obtained evidence for the view that in effective strength these chemicals are not innocuous to the cells of the animal body. They have therefore cried "Away with them!" On the other hand, a considerable number of surgeons of repute, while not calling in question the statements coming from the laboratory, appeal to their experience to prove that the chemical antiseptics may be relied upon to bring about a virtual asepsis—for example, in the case of the hands—and that the injury to the tissue cells is inconsiderable and may be neglected. Mr. F. F. Burghard is able to say that, having scrutinized his results carefully for some years, he has been unable to find that there is any detail in which they leave anything to be desired. Mr. Burghard relies upon chemical antiseptics for the cleansing of his hands, and introduces these antiseptics also into wounds in the course of operation. Mr. C. Leedham-Green, who followed Mr. Burghard in the discussion, gave details of experiments which went to show that none of the chemical antiseptics commonly used can be relied upon to make the hands bacteriologically sterile, and drew the conclusion that heat-sterilized gloves should be worn.

In the face of these and other parallel observations the conclusion is inevitable that, provided the technique be thoroughly carried out, some diversity in practice is not incompatible with uniformly good results; the essential thing is thoroughness.

While admitting the legitimacy of diversity in practice, it must nevertheless be conceded that the surgeon who relies upon heat sterilization under all possible circumstances, including the hand question, has the weight of evidence on his side, and may justifiably feel the greater confidence that he is taking every possible precaution to avoid infection.

Owing to the variety of the possible sources of infection, evidence from the clinical experience of different surgeons is of little value: it cannot be efficiently analysed. The experience of surgeons who have definitely changed their methods and are able to compare the two sets of results are of some limited use, but no such series was brought forward by any of those who took part in the discussion.

A point of some importance was raised by Mr. C. W. Cathcart regarding the admission of students to the proximity of the operating table and their employment as instrument dressers. If the inexperienced and the unclean are actually associated with the operation, some special precautions are certainly necessary in the interests of the patient. How these are best carried out must be decided in accordance with the attendant conditions. Most surgeons have decided the matter of theatre instruction by sacrificing the student, and have felt justified in so doing by the consideration that as regards many operations the student sees just as much and just as little 60 ft. away as 6, and that he does not in any case add much to his surgical knowledge in the theatre.

An argument used in the discussion in favour of what may be called the more extended use of antiseptic chemicals, was that the general practitioner cannot exclusively rely upon heat sterilization for the material he uses at operations because of the elaborate apparatus necessary, and that therefore sterilization by chemicals must be employed in hospitals for the education of the student. This is undoubtedly a point for consideration.

Is it true that complicated apparatus is necessary? In the most elaborate theatre moist heat is used for the preparation of instruments, ligatures and sutures, swabs, dressings, towels, gloves, and water; all these can be efficiently dealt with by the kitchen saucepan. It may be, however, that it is particularly the surroundings—the rooms in which the general practitioner has to work—which are held to necessitate a second line of defence, but it is probable that, in most rooms cleared of furniture and newly scrubbed, air infection is just as little a real danger as in the operating theatre. Of those who spoke on this point, Sir William Macewen, in particular, held that the so-called aseptic methods were by no means necessarily complicated, rather the contrary, and that they were easily carried out in private practice. Sir William Macewen also

stated that, in his experience, it was quite certain that the best results were obtained by avoiding antiseptic chemicals.

There is one sphere from which the use of antiseptic chemicals will probably never be ousted—namely, the preparation of the skin; but by using heat-sterilized gloves many surgeons find it necessary to rely on this chemical disinfection only for the skin of the patient. The literature of skin cleansing is voluminous; the introduction of dilute alcohol into the process has led to a great improvement in the results of test experiments, and those of Mr. Leedham-Green entirely confirm the experience of other workers in this respect.

Moist heat is so readily employed, so universally available and so entirely reliable that all surgeons in performing operations on uninfected tissues, whether general practitioners or not, may well simplify their aseptic technique down to chemical sterilization for the patient's skin and heat sterilization for everything else. Any further use of antiseptic chemicals instead of simplifying complicates technique; it is advisable sometimes when operations have to be done in unfavourable surroundings, but these occasions must be regarded as exceptional, and under ordinary circumstances those who employ them outside the limits named are beginning to find some difficulty in maintaining a logical justification. Such, at least, is the impression left by this discussion.

THE UNITY OF THE HEALING ART.

PROFESSOR CLIFFORD ALLBUTT'S address on the Historical Relations between Medicine and Surgery, delivered at the International Congress of Arts and Sciences just held at St. Louis, is a powerful plea for a recognition of the essential unity of the healing art. To Hippocrates surgery was a part of medicine, and, as Professor Clifford Allbutt says, the Greek physicians had no more scruple in using their hands in the exercise of their art than had Pheidias or Archimedes. In the work of Celsus, which may be taken to reflect the state of the healing art in the reign of Augustus, although the author was probably not a practitioner, surgery and obstetrics are included as falling within the scope of the title *De Medicina*. Galen also took all medical learning for his province, and practised surgery as well as physic. In short, till the clear stream of Greek science and observation was lost in what Carlyle would have called the "foul Lethean quagmires" of mediaeval barbarism and superstition, medicine was, like the Republic of 1793, one and indivisible. In the thirteenth and fourteenth centuries surgery was divorced from medicine, and degenerated into a despised handicraft. Surgeons were looked upon as "base mechanicals," and, with the apothecaries, were mere instruments for the carrying out of the directions of the physician, who would have thought it beneath his dignity to bleed or even to make a digital exploration. This was doubtless due, as Professor Clifford Allbutt says, to the scorn of manual work—including the art of writing—which was a characteristic of feudalism. But it was also to some extent the outcome of the prohibition by the Church of the practice of operative surgery by clerics. The famous canon *Ecclesia abhorret a sanguine*, to which later the irony of events gave so sinister a significance, was originally aimed at the suppression of what the modern practitioner will agree with the mediaeval Church—though from a different point of view—in regarding as a serious abuse. The monk of the thirteenth century who suffered from the *furor secandi* was looked upon as infringing the spirit of his rule, not so much because he mangled the bodies of the confiding persons who submitted themselves to the tender mercies of his knife, as because he endangered his own soul by too great devotion to a merely mundane pursuit. With what success some of the monkish surgeons must have studied their art is shown by the fact that Theodoric, a Dominican friar, foreshadowed aseptic surgery and invented a *spongia somnifera* for the production of anaesthesia.

The combined influences of feudalism and the Church led to a severance of surgery from medicine, and by the jealousy of the physicians the judicial separation was in no long time transformed into active antagonism. The physicians, especially in France, used every engine of oppression which they could command to keep the surgeons in the strictest subordination. No means were too malicious or too petty to be used for this purpose. The most determined efforts were made to deprive the surgeons of opportunities of learning the scientific basis of their craft, and the doctors of the *saluberrima Facultas* of Paris did not disdain to enter into an ignoble alliance, first with barbers and afterwards with bath attendants, in order more effectually to resist the emancipation of the surgeons. The quarrel lasted till the middle of the eighteenth century, and if it had not been for the protection extended by Sovereigns to men of commanding intellect and strong character like Henry of Mondeville, Guy de Chauliac, Ambroise Paré, and others, surgery might even now be held in leading-strings by medicine.

The unnatural separation between the two great divisions of the healing art seriously hindered the development of both. The physician, avoiding contact with fact as an intellectual pollution, lost himself in vain imaginings. Instead of going to Nature he swore by Galen; having eyes, he saw not because he preferred to speculate, and his theories were such stuff as dreams are made of. The surgeon, on the other hand, was too often a hand without a brain.

It is only within living memory—at least, in this country—that surgery succeeded in freeing itself from the traditional trammels which made it the handmaiden of medicine. At a date so comparatively recent as 1852 surgeons were excluded from St. Paul's Cathedral on the occasion of the funeral of the Duke of Wellington, while physicians were admitted. Less than thirty years ago a new field in which modern surgery has won one of its most noteworthy triumphs was nearly closed by an edict of the London College of Physicians, which forbade its Fellows to use the knife except within an arbitrarily-restricted sphere. Now surgeons are seeking to turn the tables on specialist physicians by claiming certain provinces of practice as their own preserves.

This is a survival of the disintegration of the healing art which had its origin in the darkness of the Middle Ages. Feudalism is dead, but it has left many traces in our institutions and social conditions. One of the most notable of these is the gulf which is still fixed between medicine and surgery. It is true that the handmaiden has risen so high that she threatens to take precedence of her former mistress. Surgery has almost reached the dignity of an exact science, and the sign of the knife is in the ascendant. But the idea of division or rivalry between medicine and surgery is unscientific. Neither of them can stand alone,

and the perfection of the healing art is found in their combination. At the present day no man can be a mere surgeon like Syme, who was content with the sweet simplicity of two kinds of fever—*synochus* and *synocha*—or a mere physician like Graves, who had never set foot in a surgical ward. Natural taste or aptitude will, of course, incline a man towards one or other of the great branches of medical science, and the limitation of human faculties may lead him to further specialization. But Hippocrates is still the highest type of the medical practitioner. The true healer should know the whole of his art, and be able to bring all its resources to bear on any particular case.

Professor Clifford Allbutt has done a great service to the advance of medical science by helping to dissipate into thin air the last fragments of the mediaeval superstition which, by degrading the work of the hand, made medicine a mere cobweb of fancies having no relation to fact.

SANITATION OF UNDERGROUND BAKEHOUSES.

It is now possible to form some opinion as to the practical effect of the legislation concerning underground bakehouses in the Factory and Workshop Act, 1901. It will be remembered that bakehouses have been the subject of special legislation since the passing of the Bakehouse Regulation Act of 1863, and since January 1st, 1896, it has been unlawful to establish any new bakehouse underground. The Factory and Workshop Act of 1901 introduced some stringent measures with regard to these places, and it was therein enacted that after January 1st, 1904, no existing underground bakehouse should be used unless certified by the sanitary authority to be "suitable as regards construction, light, ventilation, and in all other respects." The evident intention of the Legislature was the ultimate abolition of underground bakehouses, and it therefore became the duty of the sanitary authorities to adopt a high standard of sanitary requirements before granting the certificates. The whole subject accordingly received the attention of the authorities during 1902 and 1903, and in the medical officers' reports for the latter year, now to hand, particulars are given of the works which have been carried out.

Broadly speaking, it is evident that the Act has operated in the direction of improvement of existing underground bakehouses rather than in their closure. In the metropolis it appears that the largest number of underground bakehouses in proportion to those existing have been closed in Battersea, Woolwich, and the City of London. In the last-named district 37 per cent. of the underground bakehouses have been closed as unsuitable, and in Battersea 32 per cent. In central districts, such as Westminster, Holborn, Finsbury, and Shoreditch, the percentage of underground bakeries closed varied from 10 to 20. In several districts only about 5 per cent. were closed. These variations were due, doubtless, in part to differences of administration, but in greater degree to the exigencies of the district.

An examination of the census returns respecting the density of houses to the acre in London will reveal a condition of things which could not fail to exercise a potent influence on this question. The average number of houses per acre throughout the metropolis is 8.2; but in Shoreditch it is 21.5, in Southwark 19.7, in Bethnal Green 19.3, and in Finsbury 19.1, whilst in Woolwich it is 2.2, in Wandsworth 4.3, in Hampstead 5.3, and so forth. Now it is evident that districts where there is available space for the construction of bakery premises above ground stand in a very different position to those densely-crowded areas where no such space is available. In the latter districts it stands to reason that the Act could not be administered equitably without consideration of this condition; and there can be little doubt that those medical officers who judged each underground bakehouse on its own merits, or rather demerits, in conjunction with all the circumstances of the case, adopted the only wise course. The Incorporated Society of Medical Officers of Health drew up a number of suggestions which did, in point of fact, act in some measure as a standard both in London and in the provinces. This was a desirable, if not a necessary, step, and tended to make more uniform the operation of the Act, although slavish adherence to such a standard might under some conditions have led to some degree of injustice. At first sight it appears to be matter for regret that, on the whole, the percentage of closures has been low. But a careful examination of all the facts, of the increased sanitation of bakehouses prior to the Act of 1901, of the comparatively low mortality of bakers, of the rarity of any conveyance of disease through the consumption of bread, and of the exigencies of trade and space in large towns, will lead to the conclusion that this is one of those sanitary questions in which a slow but steady improvement rather than very radical alteration is the wiser course.

That substantial improvement has taken place there can be no doubt, and this statement applies to the large towns in the provinces as much as to London. In Manchester, for instance, there has been a steady levelling up of the standard since 1894; since that date, 112 underground bakehouses have been altered and improved, and 165 have been closed. In Liverpool, since the passing of the Act of 1901, 59 underground bakehouses have ceased to be used for baking purposes.

The requirements of the Act may be stated generally to be, first, statutory obligations of a hard-and-fast character, and secondly, statutory obligations to be interpreted by each local authority acting in its discretion. Under the first series of obligations are general fitness on sanitary grounds and provisions concerning water supply, drainage, impervious walls, etc., all of which requirements apply to all bakehouses without option. Among the second series of requirements are the conditions suitable for underground bakehouses in regard to construction, light, ventilation, and "all other respects." In many of the reports of medical officers which we have received the alterations and improvements made in each bakehouse in particular are discussed, especially facts dealing with cubic capacity, light, ventilation, etc. From a study of these particulars it may be gathered that an immense amount of work has been carried out, and that the sanitation of bakehouses throughout the country has been overhauled in a way and to a degree never before approached. On the whole but little serious difficulty has been experienced in getting bakehouses brought into compliance with the new provisions. Here and there some reluctance to satisfy the requirements of the regulations was displayed, but, in the end, the cases of actual closure and refusal of certificate were comparatively few. Several cases found their way into the police-courts, where the Act was, with few exceptions, vigorously upheld. The net result has been a great improvement in the structural conditions of underground bakehouses, and it now only remains for the sanitary authorities to insist on maintaining a high standard of cleanliness in future.

THE PROBLEM OF FEEDING SCHOOL CHILDREN.

Sir John Gorst's remarks at Cambridge on the question of underfed school children have stirred up the public, and drawn from individuals interested and indignant a shower of letters and articles. The outcome of all these opinions is that if the State insists on compulsorily educating children, it is also the duty of the State to see that the children attending school are physically equal to the mental strain they have to undergo. We may at once say that many of the suggestions put forward in the papers are excellent, some show enthusiasm, some kindness of heart, all are well meant; but objections may be raised to them all, and the problem has yet to be solved in such a way that the ratepayers shall not have this extra burden put upon them, while no method should be accepted which would tend to the pauperizing of the nation. It is fair that parents should, at any rate, feed their children. Often some sacrifice will be necessary, but this will only serve to attach them the more to their children. Last winter, in a series of articles on "Physical Deterioration," we touched upon the subject of feeding underfed school children. Above all things the methods employed should be systematic and general. It is more and more urged every day that cooking and a proper knowledge of the properties of foods should be made universal and compulsory in schools —this on account of the homes and the health of the people. We would go so far as to say that boys also should be taught. A knowledge of cooking would be of inestimable value to a young man going to the Colonies, and at home might save many from marrying too young, and, when they did marry, from being absolutely dependent upon a wife, possibly a slattern, unable or unwilling to serve decent meals. Then, again, there are those with special talent who might take up cooking as a profession. Now, the great objection to universal teaching of cooking in schools is the expense. We believe that the system suggested in the articles published last year might be made self-supporting; not only this, but the problem of underfed children would at the same time be solved. Let it be assumed that every child in the school, both boys and girls, learns cooking. The cooking classes would be held in the mornings, and the children would take turns to cook. There are complaints that unpractical, utterly unsuitable cooking is taught in schools. Here the dishes selected would be of the most nourishing and simple kind, such as meat, vegetables, and pudding, or soup and pudding, or fish and pudding—those being selected which have the most nourishing properties for the price paid. Every child in the school would dine off that meal, paying a fixed sum; the underfed would get a good nourishing meal, while those who are properly fed would certainly not be worse off than if they dined at home. Those parents absolutely unable to pay could be assisted by those charitable organizations for feeding the underfed which now exist, but which necessarily must often pass over necessitous cases and feed undeserving ones. The whole thing would be carried on in a business-like way, accounts being kept by the mistresses in charge of the cooking classes. Dining under the eye and example of a refined teacher, the children would learn to behave properly, and they should take turns to wait at table, and thus become skilled in domestic service. To sum up, all children would learn cooking and the properties of food; they would all be sure of one nourishing meal a day; they would learn how to behave and how to wait at table; the sum paid by the parents for the children's dinners would probably cover the cost of the food usually paid for in demonstration lessons by the school authorities. The only other possible means of sifting out the starving child from the sufficiently fed is by medical examination. As at Boston and in other American towns, a local practitioner should take the school in his rounds every morning, and, in a room set apart for him, examine those children sent in to him by the teacher. But although medical examination is so essential for the check of infectious and other diseases that we are bound to adopt it sooner or later, yet, perhaps, as a solution of the underfeeding question, the suggestion first made is more sweeping and sure. Surely some great moving spirit, like Mr. John Burns, will put his shoulder to the plough and show that the scheme is practicable.

ADULT PHTHISIS AND INFANTS' MILK.

Professor v. Behring has in a recent essay[1] stated his conviction that though there are no impediments to the carrying out of his method for eradicating tuberculosis in cattle, it is otherwise with regard to the application of the method to human beings. Certain medical and hygienic dogmas, which he believes to be erroneous, stand in the way, and medical as well as public opinion requires to be further educated. In connexion with the term "laws of nature" (which, he truly says, are laws formulated by men to express what appears to them to be the rules by which natural phenomena are governed), he quotes approvingly, and at length, from Claude Bernard's *Introduction à l'Etude de la Médecine Expérimentale*. Professor v. Behring's views on the etiology of tuberculosis are well known though they do not meet with universal acceptance, and he devotes a considerable portion of his essay to criticizing his critics. In discussing the genesis of phthisis and the combating of tuberculosis, he considers the causation of pulmonary tuberculosis from the standpoint of his own interpretation of his experimental work, especially with regard to the meaning of "predisposition." His view, as here expressed, is that those who eventually become phthisical owe their so-called "predisposition" to an infantile infection with the tuberculous virus, which at first affected, not the lungs, but the lymph vessels and the blood. Consumption in the adult, according to this theory, instead of being the result of a primary infection of the lung by inhalation of tuberculous virus, is the later stage of a disease contracted in the cradle. The prevention of pulmonary consumption thus resolves itself into the prevention of tuberculous infection through the mouth in infancy, especially by means of cow's milk. Holding such a view as to the importance of the influence of cow's milk in the causation of tuberculosis in the human subject, Professor von Behring naturally attaches much importance to the prevention of tuberculosis in cows, to milk conservation, and the rearing of calves, and he records numerous observations and experiments bearing on these important matters.

THE *MEDICAL REGISTER*.

The importance of keeping the *Medical Register* correct in the interests both of the individual practitioner and of the profession at large can hardly be exaggerated. The Medical Act imposes on the General Medical Council the duty of keeping the *Register* correct, and authorizes the Registrar to write a letter to any registered person, addressed to him according to his address on the *Register*, to inquire whether he has ceased to practise, or has changed his residence: if no answer be returned to this letter within the period of six months, it is lawful for the Registrar to erase the name of such person from the *Register*. The Registrar to the General Medical Council informs us that this year circulars of inquiry have been sent to all practitioners who originally registered at the office of the Branch Council for England whose names begin with the letters from H to O inclusive. Any person so registered whose name falls within those letters and who has not received a circular, should communicate with the Registrar, 299, Oxford Street, London, W., without delay, and any registered person who is doubtful whether his address is correctly inscribed on the *Register* should write to the office without delay. We are informed that some registered practitioners appear to confuse the *Medical Register* with the *Medical Directory*, and the Registrar begs that he may be notified by practitioners themselves of any change of address; a post-card will be sent in acknowledgement.

[1] *Beiträge zur experimentellen Therapie*. Herausgegeben von Professor Dr. E. v. Behring. Heft 8. Tuberculoseentstehung, Tuberculosebekämpfung, und Säuglingsernährung. Berlin: A. Hirschwald. 1904. (Demy 8vo. pp. 138, M. 3.60.)

AGE INCIDENCE IN ZYMOTIC DISEASES.

In a paper contributed to the Royal Philosophical Society of Glasgow, Dr. John Brownlee, the Physician-Superintendent of the Belvidere Hospital, has contributed some interesting considerations on this subject. To reconcile discordant observations he employs certain mathematical developments of the theory of probability which are especially associated with the name of Professor Karl Pearson. The discrepancy between the theoretical curve and the actual facts may be due to inadequacy of the number of observations, or it may indicate the presence of some special factor requiring further investigation. An example of this latter case occurs in the age-incidence of measles in Glasgow. The curve of age-incidence of this disease usually decreases with each year of life from 4 years upwards, but in Glasgow a marked secondary rise occurs between the ages of 17 to 30, due to immigration from country districts of susceptible persons. The age-incidence of enteric fever is another instance in which the curve does not fit theoretical considerations. When the fever statistics of London are examined, it is found that at the age of from 40 to 55 years the actual numbers are in excess of the theoretical ones. These are the years in which the effects of habitual alcoholism begin to be felt; and it appears likely that not only are alcoholic subjects more prone to die when attacked by enteric fever, but that they are also more liable to attack by the disease. We do not pretend to have exhausted the points of interest of Dr. Brownlee's paper. It is one which deserves study as a whole, and an indication of the added meaning given to statistics by the higher methods of testing them now available.

THE BOER PRISONERS IN CEYLON.

The *Medical History of the Prisoners of War in Ceylon*,[1] by Dr. Allan Perry, is a record of good work done by the Civil Medical Department of the island in addition to the duties which devolve upon the professional staff of the Department under normal conditions. Accommodation had to be provided for some 5,000 men, together with the necessary guard; and, when the site for the camps had been decided upon, the provision for an adequate water supply as well as for the necessary sanitary requirements had to be arranged. For two and a-half years this large number of men of not very cleanly habits were congregated together under conditions which were by no means favourable from the health point of view. On arrival they were wearied by the fatigues of a campaign and depressed by defeat; accustomed to a free and active life, they were, as prisoners of war, necessarily confined within their own encampment. The comparatively low mortality amongst these prisoners during the period of their residence in Ceylon affords proof of the completeness of the sanitary provision and of the medical supervision of the camps. The main camp was situated at Diyatalawa in the province of Uva, 157 miles from Colombo by rail and 4,140 ft. above sea-level, in a valley of rolling downs surrounded by ranges of hills. In addition to the 5,000 prisoners, a battalion of British troops 1,000 strong was employed as guard, and, with the coolies, scavengers, etc., the total population of Diyatalawa amounted to something very near 7,000 persons. Practically all were accommodated in corrugated iron huts, those for the prisoners being each 120 ft. by 20 ft. by 12 ft., with ventilated wooden floors, and intended for 64 prisoners. This number was eventually reduced to 54 for each hut, which gave a cubic space of about 533 cubic ft. to each man. The water supply was obtained from two sources, from one and a-half to two miles from the camp, underground iron pipes conveying the water from the catchment areas to the camp, where it was distributed to standpipes at convenient points. The quantity averaged over 12 gallons a head a day, exclusive of the swimming bath. The food was on the same scale as the Army ration. Due provision was made for outdoor exercise and recreation. Subsidiary camps—four in number—were afterwards established: One at Ragama, nine miles from Colombo, for 360 foreigners and troublesome prisoners; one at Mount Lavinia, about seven miles to the south of Colombo, for 150 convalescents on parole, and two others. The first cause of anxiety to the medical staff was a severe epidemic of measles with 251 cases and 7 deaths. Two epidemics of enteric fever occurred, the first giving 711 cases with 62 deaths, the second 44 cases with 6 deaths. Dr. Perry's report on these outbreaks was noticed in the British Medical Journal at the time.[2] An outbreak of mumps also occurred, giving 26 cases with no deaths. With the exception of the epidemics, the general health of the prisoners of war was, on the whole, good. Bowel diseases, including dysentery, caused a number of admissions to hospital, and towards the end of the time that Diyatalawa was occupied these diseases assumed a more severe character and accounted for a great proportion of the deaths. There were 92 admissions for malaria during the first year, falling to 32 cases in the second year; by far the great majority had had previous attacks in South Africa. Amongst the prisoners of war were four medical men who were employed in the Netherlands Ambulance, and had been taken prisoners on account of certain dispatches found in their possession. All offered their services during the epidemics, but it was not found necessary to employ them. Dr. Perry includes in his report an interesting summary of some bacteriological investigations which one of these medical men, Dr. Van Houten, carried out in regard to leprosy, at the Government Bacteriological Institute in Colombo, where he was given leave to live on parole. A map and photograph of the camp at Diyatalawa add to the completeness of this most interesting report.

THE DETECTION AND LIMITS OF ARSENIC IN PHARMACOPOEIAL DRUGS.

After the Royal Commission on Arsenical Poisoning had suggested to the General Medical Council the desirability of investigating the sufficiency of the pharmacopoeial tests for the detection of arsenic in drugs, the Pharmacopoeia Committee of the Council arranged that the question should be fully examined under Professor Dunstan's direction. This has now been done in the laboratories of the Imperial Institute, and the results are embodied in the report and recommendations presented to the Pharmacopoeia Committee by Professor Wyndham R. Dunstan, F.R.S., and Mr. H. Robinson, M.A., F.C.S. In requesting that the examination should be carried out, the Pharmacopoeia Committee very wisely stipulated that the tests recommended should be such as could be readily carried out by a pharmacist without complicated apparatus, and that practical requirements should be kept in mind so as to avoid the risk of prescribing standards of purity such as would greatly enhance the cost of drugs. In conformity with the first stipulation, the Marsh-Berzelius test, which is the most delicate, has been passed over, since it requires extreme purity in the reagents employed, complicated apparatus, and continuous attention. The test recommended is that originally proposed by Mayençon and Bergeret (often incorrectly called the "Gutzeit" test); this depends on the fact that arseniuretted hydrogen stains paper which has been impregnated with mercuric chloride. No extreme degree of purity in acid and zinc is required and "arsenium" is detected in both the arsenious and arsenic states of combination. Necessarily, as a general test, it has been hedged round with precautions which appear somewhat formidable on paper, but we think that it is the best possible, and with care and practice can be readily and accurately carried out. Many drugs, however, by reason of their chemical properties, cannot be tested by any such general method without preliminary treatment; after laborious experimental work special directions have been drawn up for the treatment of each drug falling under this category. In suggesting the limiting quantity of arsenic which

[1] *A Medical History of Prisoners of War in Ceylon, 1900-2.* By Allan Perry, M.D., D.P.H., Principal Civil Medical Officer and Inspector-General of Hospitals, Ceylon. Colombo: G. J. A. Skeen. 1904. (Demy 8vo, pp. 39.)

[2] British Medical Journal, vol. I, 1902, p. 679.

should be regarded as rendering a drug impure the authors appear to have striven to hold the balance evenly between medical requirements and manufacturing possibilities; generally speaking, the suggestions seem reasonable, though some of the standards may be found unduly severe; at any rate, there is no doubt that they fulfil all medical requirements. For the majority of drugs which are administered in small doses a limit of three parts of arsenium per million is recommended; this limit is equivalent to one-thirty-sixth of a grain of white arsenic in a pound, and thus half a pound would contain less than a small medicinal dose (one-sixtieth of a grain), and two pounds less than a large medicinal dose (one-fifteenth of a grain) of the impurity. Tartaric and citric acids being largely used in foods and drinks, the suggested limit is the same as that of the Royal Commission—one-hundredth of a grain of arsenious oxide to the pound. The mineral acids and solution of ammonia being used in the preparation of many other substances are selected for stringent treatment, and it is doubtful whether the limits for the former are practicable without a large increase in cost, with, perhaps, no commensurate gain. We note with pleasure that the principle of fixing definite limits has been recommended; this is far in advance of the vague and unsatisfactory tests for arsenical contamination in the present *Pharmacopoeia*. Standards of purity which are now generally recognized in prosecutions under the Food and Drugs Act cannot be too clearly defined, and the Pharmacopoeia Committee has been fortunate to secure the services of Professor Dunstan and Mr. Robinson in attacking this difficult and important question.

MILKBORNE EPIDEMIC OF DIPHTHERIA.

The *Oxford Gazette and Berks County Paper* of September 3rd contains an interesting report by Dr. Alfred Ashby, of Reading, of the recent diphtheria epidemic at Twyford. The date of onset was July 31st, and between that date and the end of August, 75 cases of diphtheria occurred. The average number of cases in infected households was 1.74. There were multiple cases in the same houses in fourteen instances. Only 36 per cent. of the patients were under 15 years of age, and about half the patients lived in houses of rentals varying from £10 to £56. Of the total number of inhabited houses in Twyford, 12.1 per cent. were invaded. On making the usual investigations Dr. Ashby found that the outbreak showed many of the characteristics now associated with milkborne infection. The outbreak was sudden, widely distributed through two parishes, and appeared to have been due to some common cause acting with scarcely any intermission, while the only thing in common between the two villages and between many of the invaded houses was the milk supply. There were, as is frequently the case in milkborne outbreaks, certain cases of which the only possible explanation seemed to be an infected milk supply. Moreover, there were multiple cases, the social position of those attacked was good, a large proportion of those affected were adults, and the incidence upon the houses supplied by a certain dairyman was exceptionally high. Dr. Ashby was unable to trace the exact source of the infection of the milk, but it is significant that five of the cows belonging to the implicated dairy farm presented ulcers on the teats or the udder. Dr. Ashby took swabs from the ulcers on the teats of the worst of these cows, and forwarded them to the Clinical Research Association for bacteriological examination, by whom "suspicious organisms" were isolated. It appears that a proposal of the Wokingham Rural District Council, which presides over the sanitary conditions of Twyford, to print and circulate Dr. Ashby's valuable report, was defeated by nine votes to four, "on the score of expense." A farmer, who vigorously defended the cow as "the healthiest animal in existence," seems to have led the opposition. But surely it is time for daylight and public opinion to be brought to bear upon this subject of using diseased cows for dairy purposes, and we trust that a full report on the whole outbreak will shortly be published.

AMERICAN NURSES IN JAPAN.

It appears that the American nurses who volunteered their services at the outbreak of the war have not been enthusiastically welcomed by the Japanese. A special correspondent, quoted by the New York *Medical Record*, says: "Of all the difficulties the Japanese Government has been compelled to contend with since the beginning of the war the most perplexing were the newspaper men and the American nurses. Neither were wanted, and both have been inexpressible nuisances. The nurses have been splendidly treated; they have been almost killed by politeness and buried under gifts, and have been sent to the other end of Japan, where they are supposed to be nursing sick soldiers and prisoners of war, but at the same time they have been a source of the greatest annoyance and anxiety to the Government. The medical officers of the army regard them as an incubus. While grateful for the self-sacrifice shown in travelling so many thousand miles to nurse wounded and sick Japanese soldiers and sailors, the medical department has been frightfully embarrassed by these attentions. The nurses cannot speak or understand Japanese, nor any other language but English. Consequently, few of the army surgeons or soldiers can converse with them. Obviously, this ignorance of the language is an almost complete bar to the usefulness of the nurses, and nullifies their good intentions. But further than this, the American nurses cannot eat Japanese food or live in Japanese style. Therefore the medical department has had to spend a great deal of money and take a lot of trouble to remodel one of the houses at the Hiroshima Hospital in modern style and employ European cooks to make their unwelcome guests comfortable. In fact, they have been in the nature of a white elephant." Finally, the nurses were not needed as Japan possesses an army medical organization unsurpassed, and probably unequalled, by that of any other nation. The correspondent, however, seeks to comfort the "lovely American nurses" with the assurance that, "as a social event, and as a manifestation of the sympathy and kindly sentiment of the American women for Japan, their visit has been an eminent success."

ANKYLOSTOMIASIS A SKIN INFECTION.

A few years ago a well-known helminthologist, Professor Looss, gave expression to the opinion that ingestion by the mouth was not the only way in which the larvae of ankylostoma duodenale might gain access to the intestine, the alternative portal of entry being the skin. This view did not meet with general acceptance. The theory of Professor Looss has, however, been considered of sufficient importance to call for an independent investigation, which has been undertaken by Dr. Fritz Schaudinn, of the German Imperial Board of Health. Dr. Schaudinn now publishes[1] a preliminary communication on the results he has so far obtained. His experiments have been performed on young monkeys, proved, by repeated examinations of their faeces, to be free from the parasites. Over a small patch between their shoulder-blades the hair was cut close, and five or six drops of a watery suspension of ankylostoma larvae were spread on the skin. During this procedure the monkey was held in position by an attendant, and was not released until all the fluid had dried and the bare patch of skin and its surroundings had been thoroughly washed with absolute alcohol. The first experiment was made on May 28th. The animal died on June 10th, and in the upper third of the small intestine thirty-six living ankylostomata were found. The stage of development in all was from the tenth to the twelfth day. A second monkey was infected in the same way on three successive occasions—namely, the 11th, 29th, and 30th of June, and it was killed and examined six hours after the last infection. Worms were found in the intestine and numerous larvae in the skin; of the latter, some were in the hair follicles and some in the corium. Dr. Schaudinn now finds himself in a position to confirm the observations previously made by Professor

[1] *Deut. med. Woch.*, September 8th, 1904.

Looss. The larvae penetrate the skin, gain entrance into the subcutaneous veins, and thence by way of the right heart, lung capillaries, alveoli, bronchi, trachea, larynx, oesophagus, and stomach reach the intestine. Dr. Schaudinn has had the opportunity of examining the preparations made by Professor Looss, and states that they demonstrate all the stages in this devious journey; moreover, in the second of his own experiments on monkeys he has found the larvae both in the heart's blood and in the lungs. The full details of Dr. Schaudinn's experiments will be awaited with interest. In the meantime the observations of Dr. C. A. Bentley, of Assam, on the relationship of "ground-itch" to the larvae of ankylostoma duodenale[2] are worth recalling. This disease is very frequently met with among the coolies working in tea plantations. It is an affection of the skin, confined entirely to the lower extremities, and is characterized by a primary erythema, followed by a vesicular eruption, which frequently becomes pustular. The coolies are of notoriously dirty habits, take no sanitary precautions in the disposal of excreta, and are frequently liable to tread upon this material. Moreover, intestinal ankylostomaisis is very common amongst them. In Dr. Bentley's opinion there is a causal relationship between these facts. He regards "ground-itch" as due to, or, at least, essentially associated with, the presence of ankylostomum larvae in the soil of the affected areas. The larvae enter the skin and set up the typical eruption, though the acuteness of the inflammation which often accompanies an attack of "ground-itch" is most probably to be accounted for by the large number of other organisms which accompany the larvae in their passage through the skin. Dr. Bentley records a number of observations and experiments, which illustrate the association between the prevalence of ground-itch and the presence of the larvae in exposed faecal material, and demonstrate the capacity of these larvae, when applied to the skin, to produce typical lesions.

THE DOOM OF SPECTACLES.

Mr. Stephen Smith, L.S.A. 1884, M.R.C.S. 1900, whose name was till lately known only to a select circle of anti-vivisectionists, awoke, like Byron, one morning this week and found himself famous—in the columns of the sensational papers. He is, it would appear, surgeon of the Eye Department of the Battersea Park Hospital, and he is said to have disclosed before "a critical and representative audience" a new plan for treating persons who hitherto have found it essential to wear spectacles as an aid to defective eyesight. On Saturday, September 24th, a date which we are careful to mention since it promises to prove memorable, he had, we learn, been "thinking out and developing this plan for the past twelve months;" up to that time he appears to have shared the common belief that in errors of refraction the only thing to do is to give the patients glasses which sufficiently compensate the defect. It seems a pity that he did not do his thinking a little earlier, as in that case—not to mention the wasted labours of ophthalmic surgeons—the Spectacle Makers' Company might have saved itself the trouble of inventing its new diploma; but anyhow, he thought at last, and thought to some purpose, since, whatever the new plan of treatment may do for patients, it certainly seems destined to prove an eye-opener to Mr. Stephen Smith's professional brethren. As for the former, we are told that by following his new plan Mr. Stephen Smith "is able to deal with his patients in such fashion that when the cure is effected they are able to dispense entirely with the use of glasses." Some may be disposed to think that the chief significance of this statement lies in the word "when," and the sceptical may perhaps say with Coleridge—not Stephen but Samuel Taylor—"Ah woful when!" Not content with making a simple announcement of his epoch-making discovery, Mr. Stephen Smith showed his "critical audience" a number of cases of myopia, hypermetropia, and astigmatism, which, with one exception, had been so far cured by him as to make the use of glasses superfluous. As for the nature of the treatment, we are told that it consists of "manipulation or eye massage"; that it is gentle and gradual; that there is never the slightest ill effect; that the patient is treated for a few minutes daily; that "some are treated for a week, but in all cases the cure is rapid." We regret very much that this is all the information we are able to give our readers about the matter, for, owing doubtless to a mere oversight, we were not invited to the press demonstration of this interesting discovery, and thus had no opportunity of forming part of the critical audience present. We have heard in our time a good deal about massage, and of many things good, bad, and indifferent being ascribed to its practice, but we have not before heard of its being credited with the power of permanently and beneficially altering the shape of a living elastic globe. Doubtless, therefore, to a good many of our readers it will seem incredible that any form of massage or manipulation should be able to remove defects which depend upon the actual physical formation of the eye. Others, again, may be surprised that so important a fact has hitherto never even been suspected. In view, too, of the circumstance that the value of the new treatment is one susceptible of almost mathematical proof and demonstration, there will be many who will refuse to believe the news until such demonstration has been given; others, again, will be suspicious because Mr. Stephen Smith has elected to make his revelation, not before one of the medical societies which exist in London, but before a collection of press correspondents ready to give a free advertisement to any one who will provide them with a piece of sensational news, true or false. It seems scarcely necessary to point out to Mr. Stephen Smith that it is his duty, both to himself and his fellows, at once to submit his plan to other ophthalmic surgeons to be examined and tested by them. If he does this, and the treatment proves to have the merits publicly claimed for it by its inventor, no one will rejoice more heartily than ourselves. In the contrary case, however, and in view of the decidedly curious fashion in which he has chosen to make the matter public, Mr. Stephen Smith will have only himself to blame if the profession puts its own interpretation on his conduct.

[2] British Medical Journal, January 25th, 1902, p. 190.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.

The twenty-first anniversary of the opening of the University College of South Wales and Monmouthshire, Cardiff, will be celebrated on October 14th by a reception given by the President and Council in the Park Hall, Cardiff, at 7 30 p.m. The Principal hopes that all past students of the College who can be present will indicate their continued interest in it and their affection for their old college by attending the reception. Those who have not as yet received invitations will, if they forward to the Registrar of the College a post-card containing their present address, receive the tickets which will entitle them to admission. The Registrar will also be glad to receive the addresses of past students even if they are unable to attend the reception on October 14th.

The North-East London Clinical Society, which meets at the Tottenham Hospital on the first Thursday in each month at 4 p.m., will commence its winter session on October 6th, when Sir R. Douglas Powell will give a lecture on the Antiseptic Principle in Medicine. All qualified practitioners are invited to be present. The executive officers for the session are: Dr. R. Murray Leslie, President; Dr. A. E. Giles, Treasurer; Dr. A. J. Whiting, Honorary Librarian; and Messrs. H. W. Carson and C. E. Hutt, Honorary Secretaries.

New Pasteur Institutes in America.—The New Orleans Charity Hospital has recently established a Pasteur Institute in which free treatment will be given to persons residing in Louisiana, Alabama, and Mississippi. The State Legislature of Texas has made a grant of £1,000 for the establishment of a Pasteur Institute as an annexe to the State Lunatic Asylum at Austin.

Ireland.

ROYAL ACADEMY OF MEDICINE.

It is understood that Mr. J. Story, General Secretary, Royal Academy of Medicine, will not seek re-election at the annual meeting on the last Friday of October. The candidates at present in the field are Dr. James Craig, Physician, Meath Hospital: Dr. R. Travers-Smith, Physician, Richmond, Whitworth, and Hardwicke Hospitals; and Dr. Cronin, Medical Officer, South Dublin Union.

SALICYLIC ACID IN GINGER WINE.

An appeal was heard before the Recorder of Belfast on September 23rd against the decision of the magistrates at the Belfast Petty Sessions imposing a fine of 20s. for selling ginger wine containing 7.2 gr. per pint of salicylic acid. The prosecution had been instituted by the inspector, and was brought under Section 6 of the Food and Drugs Act, which prescribed a penalty for the adulteration of any article of food, unless the ingredient used was not injurious to health and was required for the production or manufacture of the said food preparation as an article of commerce. It was contended that ginger wine was known for upwards of a century, and that salicylic acid was quite a modern preparation and could not, therefore, be essential to the manufacture of the drink; that the larger manufacturers did not use it at all, and that it was injurious. For the defence it was alleged that alcohol or some similar ingredient was necessary to prevent refermentation in the wine, and that in the quantities used it was not injurious.

Mr. Barklie, City Analyst, proved that there were 7.2 gr. of salicylic acid per pint and 12.2 per cent. of alcohol, which latter would have been quite sufficient to preserve it; he said he had given evidence in a similar case in the County Tyrone, where 8.2 gr. per pint had been found, and that the case had been dismissed.

Dr. Henry O'Neill, a member of the consulting staff of the Royal Victoria Hospital, said he had been twenty-seven years practising medicine and surgery, and before that had had practical experience of the manufacture, use, and sale of ginger wine. He read out formulae for its preparation published in Muspratt's *Dictionary of Chemistry*, 1860, and also in the *Chemist and Druggist* of 1890 by Peter MacEwan. It contained 5 to 12 per cent. of alcohol produced by fermentation during its manufacture, and this was a sufficient preservative. Salicylic acid was a dangerous drug, with a definite dosage and well-known physiological action. Dr. O'Neill described in detail its preparation and its action, and said he considered it especially dangerous when given in any quantity to persons suffering from inflammation of the heart, liver, or kidneys, and that it was not necessary to add any preservative to ginger wine, which naturally contained as much alcohol as claret, porter, or ale, or even more.

Dr. Stanley B. Coates and Dr. Torrens (Belfast) both agreed with Dr. O'Neill.

For the appellant's case, Mr. Charles Huxtable said he was a pharmaceutical and analytical chemist of London, and had experience of the manufacture of ginger wine for the last four years; it was absolutely necessary to have a preservative for ginger wine; in the proportion of 7.2 gr. per pint salicylic acid would be quite harmless, and less than this quantity was not effective as a preservative; ginger wine would not produce 16 to 20 per cent. of alcohol in fermentation: it might produce that percentage of proof spirit; that would not be sufficient as a preservative to prevent the possibility of refermentation. Counsel for the prosecution quoted the evidence of Dr. E. H. Starling in the report of the Royal Commission on Food and Drugs, 1901, to instance authority's opinion that salicylic acid had the tendency of preventing the action of the gastric juices and retarding digestion; but witness said he had carried out experiments on this point, and found that with salicylic acid up to 10 gr. per pint there was no such effect upon the digestive organs as had been suggested.

Sir William Whitla, M.D., Professor of Materia Medica, Queen's College, Belfast, said the pharmacopoeial dose of salicylic acid was 5 gr. to 20 gr., but it was not unusual to give up to 120 gr. in a day. Any one taking 120 gr. of salicylic acid through the wine into his system would also have to take half a stone of sugar; he did not believe that in small doses there was a particle of evidence to show that it did harm. He believed the statements continually made in books about salicylic acid and its effects upon the heart and kidneys arose at the time when it was impossible to get the drug pure; the heart depression was produced by the impurities and not by the drug; with the present methods of purification, the cardiac depression was not found even when enormous doses were given. He thought salicylic acid preferable as a preservative to alcohol. He had heard that it was being introduced into light beer, claret, and other light wines; but did not think that if a man took a couple of bottles of beer, a bottle of cider and a bottle of claret he would absorb 30 gr. of the acid; and that if he did, he thought it would do him less harm than the alcohol. Barthellot, Dr. J. S. Cameron, Professor Caulfield, Dr. E. H. Starling, Dr. McLagan, and Sir T. Stevenson were all quoted to show that the drug was considered dangerous as a constituent of food, but witness maintained his opinion that small doses of the drug were quite harmless; he would not say that there would be a temptation to use an impure acid if it were cheaper.

Dr. A. Montgomery (Belfast) gave corroborative evidence.

His Honour said that the question resolved itself into whether the drug was necessary or whether there was any doubt as to whether it was injurious; because if not necessary it should not be introduced; and if injurious it should not be introduced. Ginger wine had existed long before the drug was introduced into it. Was the wine better than it used to be? Having been existent so long without the drug, he could not see how the drug was necessary, and, if not required, it appeared to him that it ought not to be introduced into the wine. He therefore confirmed the decision of the magistrates in imposing the fine.

ULSTER MEDICAL SOCIETY.

At a special meeting of the Ulster Medical Society held on September 22nd, in the Medical Institute, Belfast, Dr. William Calwell, Belfast, was unanimously elected President for the next two years, in the place of Professor Lorrain Smith, who resigned, owing to his leaving for Manchester.

DUMPING OF LUNATICS INTO CORK DISTRICT ASYLUM.

This is a grievance which the Committee of Management of the Cork District Asylum find hard to rectify. It seems that no matter to what part of the country persons belong who may become insane on the inward or outward journey of the transatlantic steamers, they are landed at Queenstown, which is the first port of call, and sent on to the Cork District Asylum. Last week no less than two became insane while awaiting embarkation at Queenstown, and were conveyed to Cork, while a third was deported from Scotland, where he had been in a private asylum, but when his means ran out he was sent over to the Cork Asylum. The resident medical superintendent, it appears, is legally bound to admit such cases, and the only effective remedy is the introduction of an Act of Parliament. That such a system should prevail is manifestly unfair to Cork. It is hard to imagine that the state of the law at the present time is such that Scotland has the power of returning pauper lunatics to Ireland, while Ireland is debarred from the exercise of a reciprocal power. At a meeting of the Cork Corporation, held on September 23rd, the Lord Mayor proposed the following resolution:

> That we, the Council of the County Borough of Cork, call upon the Government to make such alterations in the laws dealing with lunatics in this country as will necessitate the transfer of any insane person committed at the Petty Sessions to the asylum of the district in which such person resides or resided. That copies of this resolution be forwarded by the Town Clerk to the Chief Secretary for Ireland, the Chief Inspector of Lunatic Asylums, and the Irish Parliamentary members.

VISIT OF FRENCH PHYSICIANS AND SURGEONS.

A MEETING of the Executive Committee to make arrangements for the visit of French physicians and surgeons to London on October 10th, 11th, and 12th, was held at the Examination Hall, Victoria Embankment, on Monday, September 26th, under the chairmanship of Sir William Broadbent. Among those present were: Mr. Henry T. Butlin (Dean of the Medical Faculty, University of London), Dr. A. D. Waller (Physiological Laboratories, University of London), Professor C. Stewart (Conservator of Museum, Royal College of Surgeons), Dr. Morley Fletcher and Mr. D'Arcy Power (St. Bartholomew's Hospital), Mr. G. H. Makins (St. Thomas's Hospital), Mr. C. H. Golding-Bird and Dr. Hale White (Guy's Hospital), Sir R. Douglas Powell, Bart., and Dr. Pasteur (Middlesex Hospital), Dr. William Ewart (St. George's Hospital), Mr. Henry Juler and Dr. Sidney Phillips (St. Mary's Hospital), Dr. Frederick Roberts and Dr. Sidney Martin (University College Hospital), Dr. Donald Hood (West London Hospital), Dr. C. Theodore Williams and Dr. S. H. Habershon (Brompton Hospital for Consumption), Dr. F. E. Batten (National Hospital for Paralysed and Epileptic), Dr. E. F. Bashford (Imperial Cancer Research Fund), Dr. C. J. Martin (Lister Institute of Preventive Medicine), Mr. L. A. Bidwell (West London Post-Graduate College), Dr. F. W. Mott, F.R.S., Mr. T. Wakley, jun., Dr. Boyd Joll, Dr. Dundas Grant (Treasurer), Dr. Dawson Williams and Dr. Jobson Horne (Secretaries).

Correspondence with the Chairman of the Organization Committee in Paris was read stating that the party would probably number 150, and would include some 15 professors of the Faculty of Medicine in Paris and about 30 physicians and surgeons to the hospitals of Paris. Representatives of some of the medical schools of the hospitals present gave particulars as to the arrangements which they were prepared to make for the reception of the visitors, and it was reported

that the French Ambassador in London, who would be absent at the date of the meeting, had nominated M. Daeschner, the First Secretary of the Legation, to represent him at the banquet to be given at the Hotel Cecil on Wednesday, October 12th.

The party will arrive on October 9th, and will visit the hospitals and laboratories in London on the three following days.

The Dean of the Faculty of Medicine of the University of London (Mr. H. T. Butlin, F.R.C.S.) will entertain the visitors at luncheon on Tuesday, October 11th.

The Asylums Committee of the London County Council cordially invite the party to visit any of the London County asylums, including the newly opened working colony for insane epileptics at Ewell. The Chairman of the Asylums Committee, Dr. Cooper, and the Chairman of the Pathologist Subcommittee, Mr. F. J. Horniman, will extend an invitation to a limited party to visit the pathological laboratory at Claybury on October 12th. The visitors will be received and shown over the laboratory by Dr. F. W. Mott, F.R.S., Director, and will be entertained at luncheon by Mr. Horniman.

We are requested by the General Purposes Committee to state that several physicians and surgeons have expressed a wish to entertain a certain number of French guests at dinner or lunch; others would no doubt be glad in this way to enhance the cordiality of the reception. It is feared, however, that if the invitations are left to individual initiative there will be confusion. This may be avoided if gentlemen will at once communicate with Dr. Donald Hood, 43, Green Street, Park Lane, W., giving the names of any French visitors they would specially wish to invite, and leaving it to the General Purposes Committee here or to the French Organizing Committee to suggest a given number of others who might belong or not to any special department.

First List of Subscriptions.

	Subscriptions. £ s. d.	Further Guarantees. £ s. d.
Sir William Broadbent, Bart.	5 5 0	5 5 0
Sir Thomas Barlow, Bart.	2 2 0	3 3 0
Sir Joseph Fayrer, Bart.	2 2 0	3 3 0
Sir R. Douglas Powell, Bart.	2 2 0	3 3 0
Sir Anderson Critchett	5 5 0	—
Sir Dyce Duckworth	2 2 0	3 3 0
Dr. Abercrombie	2 2 0	3 3 0
Dr. E. F. Bashford	1 1 0	1 1 0
Mr. Bidwell	2 2 0	3 3 0
Mr. H. T. Butlin	2 2 0	3 3 0
Mr. Radcliffe Crocker	2 2 0	3 3 0
Mr. George Eastes	2 2 0	3 3 0
Dr. Ewart	1 1 0	1 1 0
Dr. Ferrier	2 2 0	3 3 0
Mr. Golding-Bird	2 2 0	3 3 0
Dr. Dundas Grant	2 2 0	3 3 0
Dr. Habershon	2 2 0	3 3 0
Dr. Donald Hood	2 2 0	3 3 0
Dr. Robert Hutchison	2 2 0	3 3 0
Dr. Jobson Horne	2 2 0	3 3 0
Dr. Percy Jakins	2 2 0	3 3 0
Mr. H. Juler	2 2 0	3 3 0
Mr. Makins	2 2 0	3 3 0
Dr. George Ogilvie	2 2 0	3 3 0
Mr. H. Openshaw	2 2 0	3 3 0
Dr. Pavy	2 2 0	3 3 0
Dr. D'Arcy Power	2 2 0	3 3 0
Dr. Pasteur	2 2 0	—
Dr. Sidney Phillips	2 2 0	3 3 0
Dr. Fred. Roberts	2 2 0	3 3 0
Dr. Sandwith	2 2 0	3 3 0
Mr. Walter Spencer	2 2 0	3 3 0
Dr. Frederick Taylor	2 2 0	3 3 0
Mr. T. Wakley, jun.	2 2 0	3 3 0
Dr. A. D. Waller	2 2 0	3 3 0
Dr. Hale White	2 2 0	3 3 0
Dr. Dawson Williams	2 2 0	3 3 0
Dr. Theodore Williams	2 2 0	3 3 0
Dr. Andrew Wylie	1 1 0	1 1 0
Dr. Carvell	2 2 0	—
Dr. Colman	2 2 0	—
Dr. Knowsley Sibley	2 2 0	—

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 84.

AUTOMOBILES FOR MEDICAL MEN.

The report upon the small car reliability trials held by the Automobile Club of Great Britain and Ireland at Hereford, which was issued by the judges thereat, was hailed by the greater part of the automobile press with much approbation; and not without reason. The writers might have contented themselves with a mere statement of the official results of the competition, but instead of this they reviewed a number of points in car construction in a masterly manner. They were in a position to do this, because after the termination of the trials they submitted each competing vehicle to a minute examination, and thus, in cars of, roughly-speaking, corresponding construction, they were able to show clearly that certain differences in mechanical detail, though small in themselves, were sufficient to explain the partial failure of some cars and the marked success of others. Valuable as the report is, it is somewhat too technical for the average purchaser, so instead of simply reproducing it, its main conclusions will be here summarised, and by way of making things clearer still the use of tables of results will, as far as proves possible, be avoided.

The Nature of the Trials.

Before dealing with results, however, it will be well to give some account of the trials themselves. They were limited to cars which are put upon the market at the price of £200 or less, and the conditions under which the cars were tried were designed to resemble as closely as might be those under which each car would conceivably be used by a private owner. Thus, if a car were built to carry two persons only, it carried only two persons during the runs; if four, then either four persons or the weight of four persons, the weight of one person being taken in every case as not less than 11 st.

During the whole week which the trials lasted the cars engaged were kept under the strict supervision of the club officials, but the owners were allowed to overhaul and clean them once a day. The time allowed for this varied with the state of the weather and roads, but it was always strictly limited, and was never allowed to exceed the time which any ordinarily careful car user would naturally devote to the same purpose before starting on a day's work, however perfect he might believe his car to be.

The essence of the trials was the opportunity afforded to the cars to prove their ability to perform a number of consecutive non-stop runs of considerable length, and once the day's journey was commenced it was not permissible for the cars to be stopped on any excuse whatever so far as the cars and their drivers were concerned. If a car did so stop for a single second before the out and home run was completed, its chance for that journey was at once lost, since it could no longer count a non-stop run.

Furthermore, if the cause which brought about a stoppage (unless a tyre trouble) required more than twenty minutes for its removal and the restarting of the journey, the car was at once knocked out of the competition altogether, since it became no longer eligible for any non-stop award, good or bad, however successful it had been before. This latter rule, though perfectly sound in itself, worked rather hardly in the case of one or two cars, as will be seen hereafter, and to that extent vitiated the final results.

There were two of these journeys or runs on each day, one in the morning starting at 8 a.m. and one in the afternoon at 2 p.m. Each run was a little over 50 miles in length, so that the total distance traversed during the week was about 620 miles. Each run, too, started from the same spot, Hereford market place, the cars leaving in regular succession at 20-second intervals. It must have required some ingenuity to select the journeys, but the officials of the Automobile Club are adepts at this work and managed to map out a new circular tour of the required length for each day, the same route being traversed a second time in the afternoon. The roads for the most part were good so far as surface condition was concerned, but those who know Herefordshire and the Welsh border do not need to be told that they were very hilly.

As for pace, it was not permissible, on pain of disqualification, for any car to average more than 18 miles an hour or less than 12 (in the case of two or three very cheap cars which were entered the minimum was reduced to 10). Most of the cars did their journeys at the rate of about 17 miles, or, in other words, completed their 50-mile runs in about three hours. As, however, there were in each day's tour a great number of hills and not a few straggling villages (through which the pace was ordered to be reduced to 10 miles), they must at times

have been travelling at a much higher speed than 17 miles an hour.

In addition to the running test the judges submitted the cars to examination in regard to such things as brake power, petrol consumption, vibration, ease of manipulation, comfort of passengers, hill-climbing, and horse-power as shown by the speed attained in the hill tests. Of these points, however, only the latter could affect the non-stop awards, the hill-climbing results being held in reserve to differentiate, if need be, between cars whose record was otherwise identical. To sum up, it may be said generally that in view of the size of the cars, the speed maintained, the length and repetition of the runs, the restrictions imposed, the number of hills and the extreme steepness of some of them, the work done at these trials was very decidedly severe, while at the same time comparable with that which a busy practitioner in the country might reasonably expect his car to perform efficiently.

The Cars Entered.

The number of cars which were entered was 38, but only 36 arrived. With certain exceptions, they were all of distinct make, and were entered by different makers. In the few cases in which more than one car was entered by the same manufacturer, the two cars, unless of an absolutely dissimilar character, had to be run as a team, the maker standing or falling by the performance of the least successful of the two. The cars thus entered were divided into four classes: *A*, *B*, *C*, and *D*.

Class A (for cars of which the selling price was £125 or less) consisted of 3 cars only.

Class B (for cars sold at over £125, but not exceeding £150) of 6 cars.

Class C (£150 to £175) of 12 cars.

Class D (£175 to £200) of 17.

This division into classes was merely nominal, for the rules were identical for all, with the small exception already noted, though cars carrying more than two passengers were given an allowance in the hill-climbing tests for each passenger over two.

Result of the Runs.

Out of this number 26 cars completed the 620 miles with the following varying success as regards non-stop runs which we detail chiefly for the sake of showing the average results obtained and the limits of variation. The highest possible number of non-stop runs of course was 12, and the figures after the names of the cars show the number of non-stop runs each performed.

Siddeley, 12; Croxted, 12; Wolseley (*a*), 12; Wolseley (*b*), 11; De Dion Bouton (*a*), 12; De Dion Bouton (*b*), 11; Humberette (6½ h.p.), 11; Humberette (7½ h.p.), 11; Swift (1 cyl.), 10; Oldsmobile (9 h.p.), 10; Swift (2 cyl.), 10; Alldays (*a*), 10; Alldays (*b*), 9; Little Star (*a*), 10; Little Star (*b*), 8; Prosper Lambert, 9; Mobile (6 h.p.), 8; Speedwell (6 h.p.), 7; Mobile (8 h.p.), 7; Speedwell (9 h.p.), 6; Pelham, 5; Brown, 5; Anglian, 5; Jackson (*a*), 6; Jackson (*b*), 3; Clyde, 4.

This, however, does not constitute the non-stop award list, for some of the aforementioned cars, although they completed the runs, became ineligible for a place in the list, owing to the fact that on some one or more occasions they stopped, and did not commence running again, for more than twenty minutes.

The non-stop awards, it is to be remembered, resulted automatically from the rules, and were as follows:—

Class A.—First award, the 6 h.p. Speedwell. No second award.

Class B.—No car eligible.

Class C.—First award, the 6 h.p. Siddeley; second, the 6 h.p. Wolseley team; third, the 6 h.p. Humberette; fourth, the Alldays; fifth, the Little Star; sixth, the 6 h.p. Mobile; seventh, the 9 h.p. Speedwell; eighth, the Brown.

Class D.—First award, the Croxted; second, the 7 h.p. Humberette; third, the 7 h.p. Alldays; fourth, the 7 h.p. Little Star; fifth, the 8 h.p. Mobile; sixth, the Anglian.

In addition to these cars the judges picked out certain cars which, though ineligible under the rules for the Non-stop Award list, they considered deserving of special mention in connection with it. These were the De Dion Bouton team in Class B, "Very Highly Commended," and the 1-cylinder Swift, in Class C, "Highly Commended," the same note being made as regards the 2-cylinder Swift in Class D.

The Medal Distribution.

Not too much importance, however, is to be attached to the Non-stop Award list. Results reached by the automatic working of regulations can only prove absolutely correct when the trials to which they apply are carried on over a very long period. This being practically out of the question, there is always a possibility that chance and the rules combined may so work together as to produce results which, though relatively valuable, would yet be misleading if taken alone. A comparison of the two lists which we have given will show that in the present trials this was to some extent the case, and that on the one hand, certain cars which stopped very frequently, yet managed to avoid exclusion from the list, while others, with a far superior average record, nevertheless fell out of it, under the twenty-minutes'-stop rule. It was recognized from the beginning that this possibility of relatively misleading results existed, and, to provide against it, the club placed it in the power of the judges to distribute, if they thought fit, a certain number of medals. In the distribution of these the judges were left absolutely free to exercise their own discretion, forming their opinions and basing their awards, not on the results of the running test alone, but on the result also of their investigation into all the points which have been mentioned in the early part of this article. The medal awards, therefore, should be scanned closely by the possible purchaser, and he should not forget to pay attention to the grounds assigned by the judges for each award in carefully-chosen terms. The original report contains a large number of tables, in which the judges give the results of their examination of various points *seriatim* as regards every car which completed the runs. For our purpose this complete record is superfluous, so we have compiled from the tables a brief summary as regards each principal medallist, and here give them, stating in advance that three gold, three silver, and six bronze medals were awarded.

Siddeley: Gold medal; 2-seated car, price £175; Horse power, 6 nominal, proved 5.06; in Hill-climbing, 5th; in Petrol consumption, 3rd; in Vibration, 2nd grade; in Noise, 5th grade; in Ease of manipulation, 1st grade; in Comfort of passengers, 2nd grade. This car completed the runs without a single stop. Ground of Medal Award: General excellence of design, construction, and workmanship, and for hill climbing.

Wolseley: Gold medal; a team of two cars, price £175; Horse power, nominal 6, proved 5.57 and 4.77; in Hill climbing, 1st and 5th; in Petrol consumption, 13th and 18th; in Vibration, 3rd grade and 4th grade; in Noise, 4th grade and 6th grade; in Ease of manipulation, 1st grade; in Comfort of passengers, 3rd grade. One of these cars completed the runs without a stop, the other lost one run, having to stop for petrol. Ground of Medal Award: General excellence of design, construction, and workmanship, and for hill-climbing.

The Swift: Gold medal; two 2-seated cars: (*a*) one-cylinder, price £175; (*b*) two-cylinder, price £200; Horse power, nominal 7, proved (*a*) 4.87, (*b*) 5.19; in Hill-climbing, 3rd and 4th; in Petrol consumption, 2nd and 21st; in Vibration, 3rd grade and 1st grade; in Noise, 3rd and 1st grade; in Ease of manipulation, 1st grade; in Comfort of passengers, 1st grade. Car (*a*) lost two runs, one owing to missing its gear once, and the other a delay before starting. Car (*b*) also missed two runs, once owing to missed gear going up-hill, and the other owing to both inlet valves sticking. They dropped out of the non-stop award under the 20-minutes rule, but were both "Highly Commended." Ground of Medal Award: General excellence of construction and workmanship, for hill-climbing, and for smoothness of running.

The De Dion Bouton: Silver medal; a team of two 2-seated cars, price £200; horse power, nominal 6, proved (*a*) 4.92, (*b*) 4.26; in Hill-climbing, 2nd and 10th; in Petrol consumption, 9th; in Vibration, 5th grade; in Noise, 5th grade; in Ease of manipulation, 3rd grade; in Comfort of passengers, 4th grade. These cars suffered more severely than any other from the twenty-minutes-stop rule, to which reference has been made. One of them completed the whole of the runs without a stop, the other had a single stop on the last day owing to a tiny cause, which could have been put right in a second if recognized. Unfortunately the driver, Miss Levitt, though otherwise very expert, was not familiar with de Dion cars, and did not find out what was wrong until too late. Hence the team lost the high place which it would otherwise have gained in the non-stop award list; it was, however, "Very Highly Commended." Ground of Medal Award: Excellence of workmanship, for consistent running, and for hill-climbing.

Royal Humberette: Silver medal; for one of the two cars entered under this name; a two-cylinder, 2-seated car, price £200; horse-power, nominal 7½, proved 4.64; in Hill-climbing, 13th; in Petrol consumption, 25th; in Vibration, 4th grade; in Noise, 3rd grade; in Ease of manipulation, 2nd grade; in Comfort of passengers, 4th grade. This car lost one run, having three stops—two due to want of petrol and one to a carburetter trouble. Ground of Medal Award: General excellence and attention to detail.

Alldays: Silver medal; a team of two cars; (*a*) 2-seated car, price £165; (*b*) 3-seated car, price £200; horse power, nominal 7, proved (*a*) 3.77, (*b*) 5.13; in Hill-climbing, 11th and 17th; in Petrol consumption, 5th and 6th; in Vibration, 3rd grade and 4th grade; in Noise, 2nd grade and 3rd grade; in Ease of manipulation, 2nd grade; in Comfort of passengers, 3rd grade. (*a*) Car lost three runs, having to drop a passenger on two hills, and two-minute stop to screw up inlet pipe; (*b*) car lost two runs—one from a puncture, the other from a tire trouble. Ground of Medal Award: General construction, neatness of design, and smoothness of running.

Of the six Bronze medals, one went to the 6-horse power, 2-seated

Speedwell, price £123, with seven non-stop runs out of twelve, for "its construction and performance considered with reference to price"; a second to the 8-horse power Brown, price £150, with five non-stop runs, for "the quality and construction of details"; a third to the two Little Stars, prices £175 and £190, with ten and eight non-stop runs respectively, for "hill-climbing and for construction with reference to price;" a fourth went to the 9-horse power Oldsmobile, a 3-seated car, price £200, with ten non-stop runs, "for ease of manipulation and for details of construction"; a fifth to the 8-horse power Prosper Lambert, a 2-seated car, price £185, with nine non-stop runs, for "the design and construction of parts of it"; a sixth to the 8-horse power Croxted, a 2 seated car, price £200, which completed all the runs without a stop, for "its performance and for its construction considered with reference to price." In addition to these, the Clyde, price £175, with four non-stop runs, received honourable mention for "its low petrol consumption"; and the Mobile, a 4-seated car, price £200, with seven non-stop runs, for "its general performance as a 4-seated vehicle."

A careful study of this report will enable would-be purchasers to gather clearly what they can expect a car, at the price of £200 or less, to do; and, taking the trials all round, it is clear that very much more can now be expected than was the case a year or two ago. In short, great progress has been made, and though, from the number of more or less marked failures, it is obvious that many, if not the majority, of cheap cars still stand in need of improvement, it is equally obvious that the man of modest aspirations can "horse" himself satisfactorily for £200 or less, provided he uses sufficient discrimination. Certainly more attention should be paid to the grounds of the medal awards than to the non-stop list, and perhaps, too, in selecting a maker rather more attention should be paid to the general repute of the firm, the frequency of the appearance of its productions in reliability trials, and the consistency of their average success than to the marked success of some one car on one particular occasion. As for the price of running—as regards petrol consumption—these trials showed it to be about ½d. a mile, or considerably less than has hitherto been estimated. The style in which the more successful cars surmounted Frome Hill—a climb in some cases of 1 in 8—is also noteworthy, for they went up at the rate of 10 miles an hour.

THE PELLATT FUND.

The Treasurer, Surgeon-Colonel F. H. Welch, 8, Brandram Road, Lee, S.E., begs to acknowledge the receipt of the following sums on behalf of Miss E. B. Pellatt, L.S.A., additional to those already published:

	£	s.	d.		£	s.	d.
Dr. H. E. Symes-Thompson	1	1	0	Dr. Ethel Bentham	0	10	6
Dr. Gertrude Keith	1	1	0	Dr. Ethel Williams	0	10	6
Mrs. Rose Stride	5	0	0	Surg.-Lt.-Col. E. A. H. Roe, M.S.	1	1	0
Rev. G. J. A. d'Arcy	0	10	2	Dr. Edith Neild	1	0	0
Dr. Mary C. Murdock ...	3	3	0	"H."	0	10	6
Dr. Amy Sheppard	2	2	0	Mr. A. T. Jones	1	1	0
Dr. Frances Ede	2	2	0	Miss Green	0	5	0
Dr. Caroline Sturge	1	1	0	Miss A. de Steiger, M.B. ...	1	0	0
Miss Margaret Joyce, M.B.	0	10	6	Dr. C. Hodgins Brown ...	1	0	0
Dr. W. Lyne Blight	2	2	0	Miss Paine, M.B.	1	1	0
Dr. John Anderson	1	1	0	Mrs. and Misses Bell ...	1	2	6
Miss Adela Bosanquet ...	1	1	0	Mr. T. J. Bokenham	1	1	0
Miss Mary B. Dowie, M.B. ...	3	3	0	Miss Mary E. Rye, M.B. ...	1	1	0
Miss E. Hancock	0	5	0	Anon.	2	0	0
Mr. Cook	1	0	0	Capt. Crosthwait, R.A.M.C.	1	0	0
Dr. G. H. Keyworth	1	0	0	Dr. Charlotte E. Ferguson-Davie	1	1	0
Dr. E. Newlyn Smith ...	0	10	6	Dr. Alice H. A. Boyle ...	2	2	0
Miss Helen B. Hanson ...	0	10	6	Dr. Clara A. S. Fitter ...	3	3	0
"Lucerne"	0	5	0	Dr. Rose Bale	1	1	0
Mr. Henry T. Butlin	2	2	0	Anon.	25	0	0
Mrs. Gwyn	1	0	0	Mrs. Gutch	1	0	0
Anon.	0	10	6	Dr. Marion S. Linton ...	1	1	0
Miss A. Bonham-Carter ...	5	0	0				
Dr. Lucie Whitby	0	5	0				

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ending August 27th and September 3rd, the deaths from plague in India numbered 8,304, and 9,914, respectively. This shows an increase of over 2,000 and 3,000 respectively compared with the week ending August 20th. The principal figures are: Bombay City, 57 and 56; Bombay Districts, 4,840 and 5,257; Calcutta, 5 and 7; Bengal Districts, 345 and 368; North-West Provinces and Oudh, 395 and 634; Punjab, 90 and 73; Rajputana, 200 and 385; Kashmir, 0 and 7; Karachi, 3 and 4; Central Provinces and Berar, 194 and 323; Central India, 388 and 590; Hyderabad State, 385 and 417; Mysore State, 704 and 946; Madras Districts, 546 and 432; Coorg, 3 and 417. The increase in plague is chiefly in the Southern and Western Districts.

South Africa.

Port Elizabeth.—During the weeks ending August 27th and September 3rd the fresh cases of plague numbered 3 and 0, and the deaths from the disease 1 and 0. Plague-infected mice and rats continue to be found in Port Elizabeth and East London.

Hong Kong.

During the weeks ending September 10th and 17th the fresh cases of plague numbered 3 and 4, and the deaths from the disease, 3 and 4 respectively. A telegram received September 23rd announces: "Clean bills of health resumed."

Mauritius.

During the weeks ending September 15th and 22nd the fresh cases of plague numbered 6 and 7, and the deaths from the disease 5 and 5.

Port Said.

On September 26th a case of plague was declared at Port Said.

THE HOLMAN TESTIMONIAL FUND.

The Treasurer acknowledges the following further subscriptions:

	£	s.	d.		£	s.	d.
Robert Farquharson, M.D., M.P.	1	0	0	St Clair Thomson, M.D., F.R.C.S.	1	1	0
C. E. Douglas, M.D., F.R.C.S.	1	1	0	J. H. Ewart, Esq.	1	1	0
S. G. Sloman, Esq.	1	1	0				

Further subscriptions will be received by Dr. John H. Galton, Chunam, Sylvan Road, Norwood, S.E., or Mr. W. A. Berridge, Oakfield, Redhill.

THE PREVENTION OF CONSUMPTION.

Durham.

The Stanhope Sanatorium, which was founded at Horn Hall by the Durham Society for the Prevention and Cure of Consumption, has evidently been much appreciated by the county in which and for which it has done such useful work. Commencing with only 12 beds, it has increased until, with the addition of a new block containing 14 beds, which was opened on September 17th, the Stanhope Sanatorium has now accommodation for 45 patients.

Mr. Samuel Storey, as Chairman of the Durham County Council, in performing the ceremony of opening the new building, drew attention to the origin of the institution, which owed its existence to the energy, enterprise, and self-sacrifice of a number of ladies and gentlemen throughout the county. Seeing, however, the importance of the work done by this and similar institutions, it did not seem right that their establishment should be left entirely to private action. The prevention and cure of consumption was a matter of such magnitude and importance that it deserved public consideration and action by the recognized authorities of the country. There were many calls upon the public purse, but money spent in this way would be well spent. Dr. Robinson, Chairman of the Committee, to whose initiation the movement for the foundation of a sanatorium largely owes its origin, mentioned that during the four years that the sanatorium had been in existence 146 early cases had been treated, out of which 113 were able to go back to work, and 99 were at work to-day. Of 122 more advanced cases, only 60 were able to go back to work, and 35 of these were still at work. These results compare favourably with those of any other sanatorium.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A Meeting of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 19th of October, at **2 o'clock** in the afternoon.

September, 1904. Guy Elliston, *General Secretary.*

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: COVENTRY DIVISION.—The annual dinner of this Division will be held at the Drill Hall, Queen Victoria Road, Coventry, on Thursday, October 6th, at 7.15 p.m. After the dinner the Chairman (Dr. Webb Fowler) will give his address as chairman for the year. Mr. J. Smith Whitaker, the Medical Secretary of the Association, has accepted an invitation to be present. Dinner tickets, including wine, will be 15s. each. It will be open to members to introduce guests, who must be either medical men or registered dentists. The Secretary will be obliged if members will let him know at an early date whether they will be present, and whether they will be introducing guests. Members wishing to read papers or to show specimens or cases during the current session are requested to communicate their wishes to the Honorary Secretary, E. H. SNELL, Knighton House, Coventry.

SOUTH-EASTERN BRANCH: CROYDON DIVISION.—The next meeting will be held at the Cock Hotel, Sutton, on Thursday, October 20th, at 4 p.m., Mr. G. Bower (Sutton) in the chair. The dinner will take place at 6 p.m., charge 7s., exclusive of wine. All members of the South-Eastern Branch are entitled to attend and to introduce professional friends. Papers have been promised by Mr. Dundas Grant, Dr. W. H. Tunnicliffe, Dr. A. E. Giles. The subjects of these papers will be announced at a later date. N.B.—The Honorary Secretary would be much obliged if members would kindly inform him by post-card whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner. By doing so they will materially facilitate arrangements, and promote the success of the meeting.—E. H. WILLOCK, Honorary Secretary, 113, London Road, Croydon.

SOUTHERN BRANCH.—This is to give notice that in October the Branch will proceed to elect a representative on the Central Council of the Association. The names of candidates, nominated each by three electors in writing, should be sent to me not later than October 10th.—H. J. MANNING, Honorary Secretary, Laverstock, Salisbury.

BORDER COUNTIES BRANCH.—The autumn general meeting of this Branch will be held in Penrith on Friday, October 28th. Gentlemen having communications to present to the meeting are requested to inform the Secretary of their intention at their earliest convenience.—FRANCIS R. HILL, Honorary Secretary, 62, Warwick Road, Carlisle.

BORDER COUNTIES BRANCH: SCOTTISH DIVISION.—A meeting of this Division will be held in the Douglas Arms Hotel, Castle Douglas, on Thursday, October 6th, at 2.30 p.m.—GEORGE R. LIVINGSTON, Honorary Secretary.

ULSTER BRANCH.—The autumn meeting of this Branch will be held in the Medical Institute, Belfast, on Wednesday, October 5th, at 3.30 p.m., and not 3 o'clock, as previously arranged, when Professor Lindsay will deliver his Presidential Address.—CECIL SHAW, Honorary Secretary.

SPECIAL CORRESPONDENCE.

MANCHESTER.

Shortage of Water Supply.—How Small-pox is Spread.—Association for Improving Unwholesome Dwellings.—Procedure for Election of Honorary Medical Staff of Infirmary.—What is "Rum"?

LAST year at this time the reservoirs contained a supply of water for over one hundred days, and in the previous year at the same period a supply for sixty days. Owing to the drought we are now reduced to a supply for less than thirty days. Notice was given by the Waterworks Committee that owing to the excessive consumption of water by the public during the present dry weather, they were forced to cut off the supply from 7 p.m. to 6 a.m. from the 25th ult. The average daily consumption of water is about 35,000,000 gallons, but recently it has reached even 39,000,000. No relief can be obtained from Thirlmere for some time, as the second pipe to Manchester has to be laid in very difficult ground in the hard rocks of Westmorland. This second pipe will add 8,000,000 to 10,000,000 gallons a day. There is a feeling abroad that with the experience of a drought three years ago the shortage should have been foreseen, or at least ample provision should have been made by this time. The shortage of the summer of 1901 extended over four months, and before the rain fell early in November the store had fallen to less than twenty days' supply. There were also serious shortages in 1870, 1884, 1887, and 1893. The only remedies applied are ceasing to water the streets and cutting off the supply at night. But "Supply, not restriction," should be the motto. In ancient Rome the supply of water per head of the population was 300 gallons per day.

There was recently an outbreak of small-pox at Hyde, and now we have a record of several prosecutions of individuals—a labourer and some mill hands—for omitting to notify cases of small-pox; another was fined for going out while ill: while one worthy lady was found working in a mill with the rash on her, but in her humble opinion the marks on her person were "blood-rash."

Important civic movements often originate outside city councils, and the well-matured opinion of those zealous in the interests of the well-being of their fellow-citizens is one of the powerful influences that help to guide the practice and policy of our City Fathers. "The Citizens' Association for the Improvement of the Unwholesome Dwellings and Surroundings of the People" has forwarded a copy of its programme to the members of the City Council, who are asked to give an expression of their views upon it. The Association is anxious to co-operate whenever possible with the members of the town councils, and, in the event of any or all of their proposals meeting with approval, the Association invites a reply as to what steps ought to be taken to carry these proposals to a successful issue. The proposals include the suggestion that

A comprehensive housing policy be formed for the whole Manchester-Salford area. Until such a policy is adopted we cannot hope for a solution of our difficulties. At present, while houses in the poorer districts are being closed, new residential districts are arising which, for lack of a real policy, will before many years be little better than slums. A comprehensive policy, as we understand it, would provide not only for the demolition of unwholesome dwellings and the statutory obligation to rehouse the occupants, but would also definitely provide for the growth of the towns, planning roads, streets, and open spaces for the new districts long before they are actually required for building. New building by-laws are needed, and the provision of these also forms part of a real housing policy.

This policy can only be carried out if the Association has the support, both material and moral, of a large body of citizens of Manchester and Salford. The project, so far, has already cost £1,000. It is proposed to form branches of the Association in the town and borough; the public opinion must be educated, and the efforts of the Association in this respect are most praiseworthy. The need is indisputable of a "comprehensive housing policy," one designed, not to meet merely local or focal needs, but a wise and bold and well-digested policy to control the ever-growing expansion of the city, and to see that in the suburbs there is not perpetuated the same condensation of houses on restricted areas—unrelieved by breathing spaces, broad streets, green sward—and ensure the erection of houses into which the sun's rays can penetrate and round which air may freely circulate. To this end the Association rightly lays stress on the need for wider legislative powers with regard to the holding of land by the municipality, and on the rating of unoccupied sites. Cubic air space within is not enough; it must obtain without as well.

The Infirmary Lay Board has approved of the names of 150 trustees, selected with every desire to make the list as representative as possible, to be submitted to the whole body of trustees, who will select from the number 30 to serve on the subcommittee for the election of the honorary medical officers. The sum of £20,000 has been paid into the infirmary rebuilding fund by the Manchester Corporation, this being part of the purchase-money of the Piccadilly site.

What is "rum"? We have recently had decisions as regards brandy, but rum, formerly beloved by the navy, is still without a legal definition as to its ingredients. A test case was heard in the Stockport Court on September 20th, in which two publicans were summoned for selling rum containing 70 or 80 per cent. of "silent" spirit. The prosecution stated that the rum had been imported from Demerara, and that, "instead of containing ether, which gave it medicinal properties, and caused it to be used as such by the medical profession and by the army and navy," it contained "silent" spirit, which might be produced from sugar, grain, potatoes, or other articles of that kind. The defence contended that the prosecution had not established any standard upon which they could judge how much potent spirit there should be in Demerara rum. The case was dismissed with costs. We are, therefore, still without a legal definition or a standard of purity of Demerara "rum"; but "rum," like some other alcoholic beverages, is no longer what it was.

SYDNEY.

The Health of Pilots.—Vital Statistics.—Bacterial Origin of Vegetable Gums.—Bubonic Plague.

As some of our readers are probably aware, one of the large P. and O. mail steamers was recently wrecked off Port Philip Heads while entering the bay in charge of one of the pilots, and she has since become a total wreck. A medical examination of the pilot revealed the fact that he was suffering from a serious defect in vision, and was also suffering from some cardiac and renal disease. This occurrence, unfortunate from the point of view of the loss of this large amount of

valuable property, has fortunately drawn the attention of the State Governments to the necessity of periodical examination of pilots. The periodical examination of all persons engaged either on land or sea, such as railway men and sailors, to whom are entrusted the lives of a very large number of the travelling public, has been urged upon the State Governments by special resolutions passed at the Intercolonial Medical Congress held in New Zealand in 1896, and again in Tasmania in 1902. A recent issue of the *Government Gazette* contains a regulation that every pilot in New South Wales shall, at any time when required by the superintendent, submit himself for examination by a Government medical officer; and, further, that no person appointed as a first-class pilot shall be deemed eligible to continue to hold such position, and to discharge the duties, unless, at least once in each year, he attends before a medical officer appointed by the Treasurer, and obtains a certificate that he is in good health, and not afflicted with any bodily or mental complaint or infirmity rendering him unfit to perform his duties, particularly as to sight, hearing, and speech.

The report of the Government Statistician on the vital statistics for the month of July shows that the mortality-rate for the month was the lowest, with the exception of that for the year 1899, during the last ten years, being about 14 per cent. below the average. In respect of young children, the rate is particularly favourable, the infantile death-rate for Sydney and suburbs only reaching 70 deaths of infants per 1,000 births. Among the individual causes of death, pulmonary phthisis caused 55 deaths, which is considerably more than the usual mortality from this cause; and cancer was assigned as the cause of 24 deaths, which is 5 below the average. Some striking facts are brought to light in the annual report of Dr. W. G. Armstrong, the City Health Officer, on the death-rates from tuberculous disease, and the influence of protective measures on these figures. The total number of deaths from all forms of tuberculous disease in the metropolis during the year 1903 was 599. This represents over 10 per cent. of the deaths registered from all causes, and is equal to a death-rate of 1.19 per 1,000 of the estimated mean population. It is 15 more than the number of deaths registered from the same causes in 1902. Of this number, 483 deaths were due to tuberculosis of the lungs, 56 to tuberculous meningitis, and 60 to other forms of tuberculosis. The death-rate from phthisis alone was 0.96 per 1,000. The monthly mortality from phthisis was highest in April, and lowest in November. The death-rate from this cause shows a falling tendency since the year 1885. Dr. Armstrong quotes some local statistics which exemplify very clearly what can be accomplished by even partial measures directed against the spread of this disease. For several years before 1901 the death-rates from phthisis, both in the city and suburbs, had been nearly stationary, with the death-rate of the city ranging at from 30 to 50 per cent. above that in the suburbs. In 1901 the City Council began to enforce reforms in the general sanitation of dwellings within the city, which are of a nature known to be hostile to pulmonary phthisis. Improved ventilation of dwelling rooms, especially in the poorer class of houses, and measures for remedying dampness of habitation, were insisted upon. During the years 1901-3 no less than 5,636 dwellings in the city had defective ventilation of dwelling rooms improved, while over 4,000 dwellings benefited by the removal of conditions conducive to dampness. Measures directed more immediately against pulmonary consumption were the disinfection by the Council of dwellings in which deaths had occurred, and the enactment of a by-law prohibiting expectoration on the footpaths. The result of these measures is seen in the steady decline in the number of deaths from tuberculous disease of the lungs. Among other points noted in Dr. Armstrong's report is the fact that the birth-rate shows an almost unvarying decline since the year 1894. In that year the rate was 31.07 per 1,000, while in 1903 it was only 25.29 per 1,000—the lowest on record except that for the year 1901, when it was 25.01 per 1,000.

At a recent meeting of the Sydney section of the Society of Chemical Industry a paper on the bacterial origin of vegetable gums was read by Dr. Greig Smith, the Macleay bacteriologist to the Linnean Society. This was a continuation of one recently read to the Society, in which the highly important announcement was made that gum arabic was secreted in wattle and other trees by a bacillus living on the sap, and was not a product of the tree itself. It was shown that the formation of other vegetable gums was due to a similar cause. It is now possible to inoculate healthy trees with a suitable culture of the gum-forming bacillus so as to induce the secretion of the most valuable varieties of gum arabic. It was pointed out that this discovery is of great economic importance, since it puts into our hands the means of extending indefinitely the world's production of gum arabic.

The discovery of a large number of plague-infected rats in the vicinity of the wharves at Miller's Point was followed by the occurrence of another case of the disease in a human being. A shipping clerk, whose duties took him daily into the infected area, was found to be suffering severely from the disease, and he died within twenty-four hours of his case being notified to the Health Board. This is the tenth case during the present outbreak; three of the ten cases have died. It has been pointed out that successfully to keep plague rats from gaining a hold on the foreshores of the harbour it is necessary to build a stone wall along the foreshore of Darling Harbour. This wall would present a smooth face, which would be fatal to any encroachment by rats, and it would be readily cleansed and kept in a sanitary condition. This wall has been strongly recommended by the Board of Health, the Chamber of Commerce, and other authorities, and the Harbour Trust is ready to begin operations for its construction as soon as the money is provided. It is estimated that it will cost about £90,000.

CORRESPONDENCE.

THE HOLMAN FUND.

Sir,—At a meeting of the Committee held this afternoon it was decided to close the fund in a fortnight from the present date. In the meantime I may so far anticipate the final report as to state that the amount received will leave a net balance of a little over £400 to be expended on the object to which it was decided that the fund should be devoted: the erection of a room in connexion with Epsom College, which will be a reading room for the boys out of school hours, and will also serve as a studio in which drawing may be taught while they are in school.

The original estimate was £500; and, while £400 can be made to serve the purpose, it is greatly to be desired that the comfort and convenience and appearance of the room should be enhanced by a little extra expenditure.

There must still be medical men who would wish to take part in the recognition of Sir Constantine Holman's valuable services, local and general, to the profession and the public, and more particularly of his unremitting and persevering work on behalf of the Epsom College, and it is hoped that they will send their subscriptions to the treasurer, Dr. Galton, without further delay.—I am, etc.,

London, W., Sept. 27th. W. H. Broadbent.

THE CO-ORDINATION OF THE WORK OF THE DIVISIONS.

Sir,—The letters at present appearing in the British Medical Journal under the above heading are both interesting and instructive.

In reference to getting men to join the Association, the members of the Committee of the Division should each have a certain area of the Division allotted to them, in which it would be their duty to personally canvass for members by calling on all new-comers immediately, and by calling on established practitioners at least once a year. The Association is prepared to establish these areas under the title of "sections." The secretaries of Divisions have quite enough to do without giving them this further work.

To get hold of the younger men, I think the Association should be prepared to appoint lecturers to give about half a dozen lectures to students at the beginning of their fifth year on medico-political and medico-ethical subjects. I believe the heads of colleges would welcome such assistance, even if they themselves did not appoint a lecturer.

The difficulty does not lie so much with the younger men as with those general practitioners who were members of the Association up to, say, five years ago, and who resigned because they thought the Association was then doing nothing for them. The means by which a number of such have recently been induced to join was by sending them an occasional copy of the Supplement showing the work now being done on their behalf.

Trusting that we will not be satisfied until every reputable member of the profession is a member of the Association,—I am, etc.,

Southampton, Sept. 21st. A. A. Mackeith.

SIR,—Dr. Cox's idea of multiple secretaries of Branches is a good one, but should not be carried too far at the commencement, lest the old saying of "too many cooks" should prove true. Last January I contended in the BRITISH MEDICAL JOURNAL for an honorary secretary for each Branch, and a paid or unpaid organizing secretary to relieve the former. We know that many of the old secretaries of Branches prior to the reorganization consisted of young consultants who had spare time and ability, and it afforded a legitimate means of advertising among their fellows and neighbours. These we cannot expect to do much in organizing and co-ordinating of Branches and Divisions. A general practitioner might be better for the new office.

The payment of an organizing secretary of a Branch would not be an innovation, because there has been a succession of honorary secretaries in some Branches who have had handsome presents from the funds of the Branch. Why not abolish this system, and have a straightforward payment annually of either one or both the secretaries mentioned?

The next thing to be arrived at is, surely, the co-ordination of the Divisions in each Branch, and then will follow that of the Branches with each other and of all the Divisions, as occasion requires; and it should be an understood rule that, by virtue of their office, Representatives and the various secretaries should have no diffidence in approaching each other, although they have never met. This, I think, would be a great help in clearing the way. From what I have seen of Representatives for two years there will, I am sure, be cordial concurrence in this.

As to want of co-ordination, I heard of a striking example recently. An energetic Divisional Secretary made a great effort to have a successful meeting, with dinner, etc., and sent invitations to other Divisions for members to attend. This he had made known for many weeks, when, behold, on the very day on which it was held the meeting of the Branch took place thirty miles away! Such a case happening ought to be a warning, not only in that Branch but in others.

With respect to the absence of a list of the new officers of each Branch for the present year, the want has already been felt in Manchester. Last week the members of the Medical Guild, all of whom are members of the British Medical Association, received a notice as to the fees for attending on midwives' calls of urgency. Some of us thought that, with a view to joint action of the profession throughout the country, it would have been well to send a copy to all Branch and Divisional Secretaries, but we were powerless, as no list of new officers has been published in the BRITISH MEDICAL JOURNAL.—I am, etc.,

Manchester, Sept. 26th. G. H. BROADBENT.

THE ASSOCIATION AND MEDICAL DEFENCE.

SIR,—Some time ago our coroner issued to the registrars of death a notice that every death occurring within fourteen days of any surgical operation must be reported to him, in order that he might decide whether an inquest should be held. In order to contest such a remarkable regulation, I appealed to the Medical Defence Union, of which I am a member. Dr. Bateman replied courteously and promptly to my letters, but, beyond the suggestion that I should write to the Registrar-General, no help of any practical use was received from the Medical Defence Union.

The application to the Medical Defence Union resulting in nothing, a letter was sent to and appeared in the BRITISH MEDICAL JOURNAL of February 14th, 1903. Whilst publishing my letter, the Editor of the JOURNAL suggested that I should draw the attention of the General Secretary of the Association to our case. This was done, and I received from the Secretary of the Medico-Political Committee a promise of active help much more reassuring and encouraging than the courteous but impotent letters from the Medical Defence Union. Mr. Smith Whitaker, the Secretary, wrote that Sir Victor Horsley and the Committee had empowered him to take up our case, fight the coroner, and, if necessary, come down to Huddersfield to confer with us and to make inquiries on the spot. We were on the point of arranging for Mr. Smith Whitaker to meet us when the coroner withdrew the obnoxious regulation.

These facts seem to me to emphasize the great power the Association has to defend and protect its members; and in this case I "grasped a shadow" when I applied to the Medical Defence Union, but "found the substance," to use Dr. Bateman's figure of speech, in our Association.

It is to be hoped that the promoters of medical defence by the Association will not be disheartened by the small response of the members. Our profession as a body is proverbially difficult to rouse. But, once let men realize how far-reaching and powerful an influence the Association can exert, they will not be slow to avail themselves of the advantages.—I am, etc.,

Huddersfield, Sept. 24th. NORMAN PORRITT.

SIR,—Dr. Bateman alleges that the Medical Defence Union cannot amalgamate with any other society, because it has no legal power to do so. This attitude of *non possumus* is no novelty. Probably no reform has ever been suggested without being opposed at first by the same old tactics, which, although repeatedly shown to be futile, reappear with unfailing regularity whenever any new question arises.

As a matter of fact, the procedure is very simple. If the two leading medical defence societies desire to amalgamate both would have to be wound up, and a new amalgamated society would be formed, which would be joined by the members of the two societies. Such reconstructions are of daily occurrence in the commercial world, and are easily and expeditiously effected under the Companies Acts.

Many years ago the Incorporated Law Society joined with the Metropolitan and Provincial Law Association to form the present society, and at the present time the two County Medical Defence Societies of New York are arranging a similar union. Many other instances of amalgamation can be cited, and this impossible feat seems often enough to have been performed.

Dr. Bateman has made clear my contention that the stumbling block to amalgamation is the unwillingness of the Medical Defence Union to join with other societies either to form a medical defence department of the Association or to create an independent amalgamated society. It is not unlikely that the Medical Defence Union will succeed in wrecking the amalgamation scheme which has been brought forward, and this selfish policy, which puts the narrow interests of a small society before the larger interests of the medical profession, is in truth reactionary and much to be deplored. No plan can be evolved by the Council of the Association to include the Medical Defence Union in their scheme, unless the officials of that society are willing to co-operate.

If Dr. Bateman had pushed his researches into the work of the Incorporated Law Society beyond "the law journals and the daily papers," he would have found that the passing of the "statute law, which is far-reaching in its operation and easily workable," and which certainly very effectively protects solicitors, was in great measure due to the Incorporated Law Society. Had we had such a body in our profession when the Medical Acts were passed, Dr. Bateman would probably not have had occasion to describe them as "a cumbersome and almost useless machine." No doubt the Incorporated Law Society suffers to a certain extent to-day from dry rot, but this may also be said with truth of some other societies.

Finally, in closing this friendly discussion I may point out that I have asked Dr. Bateman to explain why the officials of the Medical Defence Union should publicly state that the Union welcomes competition, when to the ordinary man co-operation and not competition seems the most urgent need of the medical profession.

Dr. Bateman has not, however, explained this wise saying, probably because an explanation is not possible.—I am, etc.,

Hemel Hempstead, Sept. 25th. A. G. WELSFORD.

CRIMINAL RESPONSIBILITY.

SIR,—It is to be regretted that the inherent difficulty, of being in two places at the same time, prevented the members of the Psychiatric Section of the Association from discussing Dr. Fred. J. Smith's paper on Criminal Responsibility; the more so, as they were, for the most part, primed with the subject. On the general question, which was pretty well threshed out in the Psychiatric Section, I have nothing to add; but I think Dr. Smith's statements and proposals, which seem to have been reached *a priori*, and without any very extensive acquaintance with the insane, should not be allowed to pass without a protest. In my judgement, it would be regrettable, if it were supposed, by members of the legal profession, or by the world at large, that Dr. Smith's paper represents any considerable body of expert opinion. It would be tedious to traverse every one of his statements which seems to me open to objection: I will confine myself to the most important.

"Medical science . . . has already proved conclusively and satisfactorily that all well-marked insanity . . . essentially consists of disease of a part or of the whole brain." I am

afraid that medical science can claim no such achievement. It is true that we do "conclusively presume" that insanity is disorder of cerebral function; and so the law conclusively presumes that every citizen knows the law; but presumption, even conclusive presumption, is not proof. The supposition, that insanity is disorder of cerebral function, is a convenient working hypothesis; but it is not proved, and I think it is not susceptible of proof.

"The law . . . only can consider 'conduct,' and takes but minimum notice of the original springs of that conduct." How far back we are to go, to arrive at the original springs of conduct, I do not know; but it is certain that the law takes, not merely minimum notice, but formal and prominent notice, of motive. A homicide is indited for wilful murder; he is charged with malice aforethought; and if it is proved that the killing was not wilful, or was not done with malice aforethought, he is entitled to an acquittal.

Dr. Smith holds that the legal view and the medical view need not be absolutely antagonistic; and so do I, but I doubt whether they can be reconciled by harmonizing views which do not truly represent either.

The reasons, alleged by Dr. Smith to actuate society in executing a sane murderer, do not appear to me exhaustive; and, as to his reasons for executing insane murderers, he approaches the matter from such a peculiar point of view, that it is difficult to place oneself on the same plane of thought. He bases one of his reasons on the fact that some people consider Prince, the murderer of Mr. Terriss, quite sane. If there is any one of opinion that Prince was sane at the time of the murder, then I maintain that the person who holds that opinion is outside of all consideration in any argument about the responsibility of the insane. We might as well argue about the cause of the precession of the equinoxes with a person who holds that the earth is flat, and the universe geocentric. There is no common ground for argument. The suggestion that a man may, by such an example, be lured into shamming insanity and committing murder, in order "to be taken care of for the rest of his life," may be left until there is some ground for suspecting that such a case has occurred.

Dr. Smith's second argument is almost as bizarre. It seems to assume that there is a homicidal mania, whose victims have a permanent craving for homicide, comparable with the craving of drunkards for drink. Such a notion is grotesque to those who have intimate knowledge of the insane. In the vast majority of cases, the homicidal act of a lunatic is an isolated act, never likely to be repeated.

What good end, asks Dr. Smith, can possibly be served by keeping these homicidal lunatics alive, provided we can rid the world of them by some absolutely painless and unobjectionable method? He can see no reason; by which he means, I take it, no end sufficiently good. Well, I can conceive an end which appears to me adequate, but I will not advance it, for I fear it would scarcely satisfy Dr. Smith; but I will point out that his principle is susceptible of a wider application than he, perhaps, discerned. First let me say that *keeping* alive is scarcely what we are doing. We refrain from despatching them; and Dr. Smith asks *Cui bono?* Since they serve no good end, let us rid the world of them by a painless and unobjectionable method. If this reasoning is valid, then it will justify, nay, it will necessitate, the application of the same painless and unobjectionable method to all our aged paupers—indeed, I know not why it should be limited to the aged. Think of the relief it would be to the rates, think what a burden would be lifted off the community, if the door of the workhouse were but the entrance to a lethal chamber! Why not? What good end is served by keeping our paupers alive? Carry out this principle, and workhouses, prisons and lunatic asylums, will be cleared off the face of the earth.

The prospect is sufficiently alluring; but the benefits of Dr. Smith's painless and unobjectionable method are not yet exhausted. Why confine them to the pauper, the criminal and the lunatic? Are there not thousands and tens of thousands of old people whose work in the world is done; who are merely a burden to their families; whose tempers are to be borne; whose whims are to be consulted; whose testaments have long been executed, and whose heirs are impatient to enter into possession? What good end can possibly be served by keeping them alive? "I confess, I see no reason." But even these are but a fraction of those who are waiting for the application of the painless and unobjectionable method. These are but useless; *a fortiori* ought the method to be applied to those who are actively noxious. The lethal chamber yawns for the propagators of erroneous and pernicious doctrines. What good end can possibly be served by keeping alive those false prophets who disseminate erroneous views on the fiscal question, on the decimal system, and, let me add, on criminal responsibility? "I confess, I see no reason."

No, Sir, the affairs of men are not conducted on the principle of selfish utilitarianism. Charity, long suffering, loving kindness—the words are antiquated, but the sentiments they denote are not extinct. Treat every man according to his deserts, and who shall 'scape whipping? Apply the painless and unobjectionable method to every one whose existence, on the face of it, appears to serve no good end, and how many hospital physicians will be left to draw the bodies of the rest of us out of the lethal chamber? I have known criminal lunatics, whose friendship I have valued, and of whose good opinion I have no reason to be ashamed: I have not known one so misguided as to advocate the indiscriminate slaughter of the unfortunate. The hand of stern justice must fall, and ought to fall, upon the wilful evil doer; but for the unhappy wretches who err by reason of their insanity, we still hear, across the gulf of many centuries, the divine behest—Forgive them, for they know not what they do.

Dr. Smith's proposal has a specious appearance of up-to-dateness, which may captivate the unthinking; in reality, it is twenty centuries behind the age.—I am, etc.,

Catford, Sept. 23rd. CHAS. MERCIER.

CHLOROFORM ANAESTHESIA.

[*In reply to a criticism by Mr. Vernon Harcourt of a report by Dr. Waller and Mr. Wells, presented to the Special Chloroform Committee of the British Medical Association, in July, 1903, published in the* Lancet *in July, 1904.*]

SIR,—At p. 728 of the BRITISH MEDICAL JOURNAL for September 24th Mr. Vernon Harcourt expresses himself as follows:

With regard to the rate of inhalation of chloroform, I stated that it was greater when the breathing was deep than when it was shallow; Dr. Waller stated that the reverse was the case.

Mr. Vernon Harcourt is mistaken. I have stated as clearly as was possible that with low ventilation the percentage is higher and the absolute amount inhaled smaller; with high ventilation the percentage is lower and the absolute amount inhaled greater. The table on p. 726 is given to illustrate the point.

Mr. Vernon Harcourt appears to think that I regard as the point of most importance the increase in the proportion of chloroform which is likely to arise from the shaking of his bottle. I certainly consider it to be a point of importance, but not that of most importance. My chief objection to the apparatus is that it involves the well-known danger of inhalation through a Woulfe flask containing liquid chloroform—that is, the vicious circle of rising chloroform percentage with falling respiration. The irregularities of intake by reason of an imperfectly closed facepiece and of a shaken bottle, although practically important, are, in my opinion, less serious than the vice of principle, in accordance with which overcharging of the blood by chloroform, causing reduced respiration, leads to further overcharge.

With regard to Mr. Vernon Harcourt's particular comments on certain very minor points occurring in the report of 1903 by Waller and Wells, I may take the opportunity of replying to them seriatim:

1. The experiments on a Junker were made under the ordinary clinical conditions of use, and it is not at all an impossible result under such conditions for a particular reading at 15° to come out higher than a particular reading at 17°, nor for a particular reading at 3 in. depth of tube to be higher than a particular reading at 6 in. depth of tube. The readings, moreover, were taken to satisfy Mr. Harcourt (and the Committee) by a very unsuitable method for the purpose.

2. Table IV contains a first trial of results with lower ventilation and a higher temperature than Mr. Harcourt thinks proper. I think that it is quite proper *inter alia* to take readings at, say, quarter normal ventilation and in hot weather.

Table VI gives readings with ventilation above as well as below normal, but still at a temperature higher than that for which Mr. Harcourt's apparatus was adjusted—13° to 15° C., or 55° to 60° F. My observations were made in the early days of July, 1903, when the thermometer in my laboratory stood at 20° to 22° C. (about 70° F.), and I cannot admit as serious the objection raised by Mr. Harcourt to tests of chloroform delivery made during a warm month of the year. But the

point is not worth labouring; it was obviously necessary to make such tests under various conditions of ventilation and temperature as stated in the report.

Mr. Vernon Harcourt gives an incorrect account of a "singular hypothesis" underlying certain results presented to the Committee by Dr. Waller and Dr. Geets early in the inquiry. There is nothing of the kind in that report.[1] Mr. Harcourt has been misled by his imperfect recollection of an error of calculation discovered by him (and accepted by me) in a first draft of the laboratory notes. The draft, as finally presented, did not contain the error, and I fail to see any useful purpose served by Mr. Harcourt's fanciful account of a proceeding in Committee.

Mr. Vernon Harcourt is mistaken in his suppositions that Dr. Waller did not take into account temperature and pressure corrections, and that he (Dr. W.) apparently thought that an abbreviated formula would serve to introduce corrections for varying temperature and pressure. The abbreviation was, of course, intended to give quickly the corrected percentage at the average temperature and pressure obtaining during a series of observations. If Mr. Harcourt will again read the footnote, as well as that at the end of my paper, I think he will recognize that his suppositions are mistaken.

The objection taken to writing out a result in grams obtained from a formula designed for milligrammes is hardly serious. It surely does not matter whether a litre of air is stated as weighing 1.293 grams or 1293 milligrames. It is convenient to have a formula for milligrammes, since the readings are in milligrammes, and, if one weighs decimilligrammes, it becomes more natural to write 0.0284 gram than 28.4 milligrammes.

Mr. Harcourt's paragraph relating to Dr. Brodie's tap, demonstrating at some length the obvious fact that a current of air by +1 mm. of an inlet is equal to that by −1 mm. at an outlet, and, I hope, the concluding comment, would have been omitted if Mr. Harcourt had read what he was criticizing. The comparison made was between percentages of an ordinary experiment: (*a*) with air driven through the tap by means of the artificial respiration pump; (*b*) with air drawn through by ordinary respiration. As stated in my report, the volume of air was greater in (*a*) than in (*b*).

Mr. Harcourt has painted a fancy picture, has published it as my picture, and has easily shown that the picture is grotesque. Without troubling to compare his travesty with the original he thinks proper to ask, "what can be thought of experimental work which is undertaken with the object of examining a non-existent cause, and which shows it to produce an immense effect?" I do not think that this question requires any answer.

Mr. Vernon Harcourt has selected for his criticism certain particular details of a particular paper published in the *Lancet* of July, 1904, and presented to the Special Chloroform Committee of the British Medical Association in July, 1903. I have thought proper to deal with all the items of Mr. Harcourt's criticism, which conveys the first indication I have received of the cause of the suppression of that report. I think that the suppression indicates a very defective procedure on the part of a scientific committee and of the Council of the British Medical Association.—I am, etc.,

London, N.W., Sept. 28th. A. D. WALLER.

CLINICAL ASPECT OF THE SPECIAL CHLOROFORM COMMITTEE'S REPORT.

SIR,—When Dr. Embley's paper on the "dangers" of vagus inhibition under chloroform was read before the Society of Anaesthetists Dr. Martin was careful to add that the vagus reflexes, whose true meaning had long before been clearly elucidated by the Hyderabad Commission, were due to deliberate overdosing with the anaesthetic. In the last issue of the BRITISH MEDICAL JOURNAL, p. 722, Dr. Dudley Buxton is reported to have said that:

> The clinical evidence which supports these physiological investigations, my experience permits me to assert, is ample. Under certain circumstances the exigencies of surgery render it necessary to push the anaesthetic until the narcosis is very profound, and I have repeatedly seen reflex interference with respiration and circulation so serious as to call for prompt and energetic measures to resuscitate the patient.

Whether the exigencies of surgery ever make it necessary to overdose people with chloroform, either in high or in low percentages, I leave it to others to say; personally, I would never allow it to be done in any case of my own. But serious reflex interference with respiration and circulation cannot occur if chloroform, no matter in what percentage, is properly administered on Syme's principles perfected by the Hyderabad Commission. These principles are fully described in my book on Chloroform. It is pertinent to inquire, therefore, for what purpose Dr. Dudley Buxton is endeavouring to force a new patent safety chloroform inhaler on the medical profession. Is it in order to protect the patient from those anaesthetists who still refuse to learn how to give chloroform on Syme's principles, which alone are compatible with uniform safety? I venture to think that the majority of the profession will agree with me that the public has the right to demand much more effective protection against anaesthetists of this kind than is afforded by Mr. Harcourt's chloroform inhaler.—I am, etc.,

London W., Sept. 26th. EDWARD LAWRIE.

[1] Waller and Geets, BRITISH MEDICAL JOURNAL, June 20th, 1903, p. 1421.

THE NOMENCLATURE OF MALARIA.

SIR,—In a recent number (August 27th, 1904) of the BRITISH MEDICAL JOURNAL, Captain Blake Knox, R.A.M.C., revives the question of change of the nomenclature of malarial fever. His proposed classification is apparently similar to that suggested by Lieutenant-Colonel Bruce, R.A.M.C., in the JOURNAL of January 3rd, 1903, although the terms used are not identical.

Lieutenant-Colonel Bruce's classification is very complete, and would be most acceptable, I should think, to all medical practitioners having to treat malarial fever, and would certainly help in the correct preparation of statistical reports.

Such criticism of Bruce's classification as may arise can only have reference to the terms used, and in the JOURNAL of April 4th, 1903, I ventured to make certain suggestions in that respect.

It would be a distinct advantage were authorities, such as Manson and Ross, to publish in the JOURNAL a note of their views as to classification of this interesting and important disease.—I am, etc.,

GEORGE A. WILLIAMSON, M.A., M.D.

Larnaca, Cyprus, Sept. 16th.

THE ABSORPTION OF SILK SUTURES.

SIR,—I was surprised to read in the BRITISH MEDICAL JOURNAL of July 30th, 1904, p. 237, that in the opinion of so great an authority as Sir William Macewen "sterilized silk is practically non-absorbable."

Having buried a good many silk sutures in the course of operations on tendons during the last few years, and having supposed that these were absorbed in time, as none of them has given any trouble, I was yet without positive evidence of absorption until last year, when I had occasion to excise a tendon which I had lengthened and sutured with silk fourteen months previously. The case was one of hemiplegia in a woman of 22. The flexor carpi radialis was exposed, lengthened by the Z method, and the ends secured by four silk sutures. The wound healed in a week. Improvement in the position of the hand was temporary, for the contraction returned, and I therefore removed 1½ in. of the tendon at the site of the previous lengthening. To the naked eye no sign of division or sutures could be discerned. Microscopic sections were made for me by the Clinical Research Association, who reported as follows:

> A longitudinal section of this tendon displays a fairly uniform wavy structure, and it is impossible now to detect the seat of operation, except by the remnants of the silk suture. These will be seen in the centre of a focus of young cellular tissue by which they are becoming absorbed.

It will be noticed that three out of the four sutures had entirely disappeared. What remained of the fourth is only visible under the microscope.—I am, etc.,

London, W., Sept. 24th. E. MUIRHEAD LITTLE.

INFANT MORTALITY IN LIVERPOOL.

SIR,—Having had in the near past an extended experience of the conditions conducive to the high rate of mortality amongst infants in Liverpool and district, and also having spent the greater part of my professional career in the close study of infantile diarrhoea as regards its etiology, pathology, prevention and treatment, I may be pardoned for joining in a controversy now being carried on in the JOURNAL. In the issue of September 17th is a letter from Dr. A. C. Rendle, which is a mild but faithful account of the abominable sanitary surroundings of the smaller class of houses inhabited by the poorer residents on both sides of the Mersey. It has been repeatedly brought to the notice of the various district sanitary authorities by their medical officers and others, yet

not the slightest attempt has ever been made to effect an amendment on the lines indicated.

Dr. T. R. Bradshaw has apparently advocated the free use of preservatives in the milk trade, and has been quite properly taken to task by Dr. A. S. Grünbaum. In a small book entitled *Intestinal Intoxication in Infants* (Rebman, 1897), I have dealt fully with many of the problems occurring, more especially as regards milk during its transit and storage by the vendor and consumer. My materials were gleaned as the result of observations in the Liverpool district, and were further extended and compared with data derived from the practice of the Children's Hospital, Paddington Green, London, where I was clinical assistant in the out-patient department for some considerable time. It cannot be denied that, as Dr. Bradshaw says, "diarrhoea occurs at a time when food becomes rapidly putrescent." Nevertheless, it cannot be admitted that the above furnishes justification for undoubtedly harmful "faking" (my own words) of the infants' milk by either vendor or consumer. Is this not rather an instance where science should endeavour to circumvent more easily, simply, and less injuriously the peculiar combination of circumstances?

"Putrescence" with its concomitant toxic changes is dependent on temperature and moisture. The temperature we cannot help, but we certainly can remove the factor, "moisture." It is only during the summer months, say from June to September, that the infantile death-rate throughout the whole of Great Britain goes up. Further, it is only during those months, July, August, and September, when the earth thermometer reaches a well-known elevation that the disease is most fatal. Taking all known factors into consideration—for example, temperature, commercial and domestic sanitary surroundings, etc.—it has occurred to me that if it were possible to obtain a cheap, pure, sterile, soluble, and palatable natural "whole-milk powder," we could eliminate a great deal of our difficulties, and effect an enormous saving in infantile life.

It is well known that dried vaccine lymph is quite active, and that dried diphtheria antitoxin and dried antivenene are also efficacious; what, then, is to prevent dried milk, made from fresh, pure cows' milk, containing every possible normal constituent of milk, from being the material which will enable us to evade the factors for ill appertaining to infantile feeding during the three or four months in question? Pure dried milk cannot possibly be less nourishing than boiled or sterilized ordinary milk, and has this surpassing advantage, that it is very difficult to contaminate from the same sources by which ordinary milk is made so lethal.

I have been using with much success a dried milk powder easily soluble in all proportions in boiling water, and destitute of any trace of cheesy or "mawkish" flavour, which furnishes to all appearances a good, sound, fresh milk, which "creams" on standing in the cold. I am sure Messrs. Freud and Co., of 19, St. Dunstan's Hill, will be pleased to furnish samples to any of your readers interested in the subject, having spent much time, thought and money for years past in circumventing the difficulties of producing a stable, soluble, and pleasant milk powder—a hitherto unachieved task. This milk powder is prepared from "fresh" sterilized cow's milk, and simply has the water extracted almost instantaneously, and is infinitely more valuable as a food than any precipitated or condensed milk preparation, and, indeed, ordinary milk under certain conditions. The advantages of dried milk powder can be summarized as follows: (1) It keeps longer than ordinary milk. (2) It cannot be easily contaminated by the same agents as ordinary milk when kept dry. (3) It is handy and quickly obtained in all places and at all times, if once commercially introduced. (4) It ensures an infant getting a pure, non-poisonous, warm feed. (5) It is usable in all proportions of albumen, fat, sugar, salts, etc., and can be used to prepare "humanized" milk. (6) It keeps in all climates. (7) It is more nutritious and safer than ordinary milk. (8) It is as nourishing as boiled milk, or more so. (9) It can be prepared as wanted, and no more need be liquefied than is needed. (10) I know, at the present moment, of no sound objection to its universal adoption. (11) It is as cheap, and, if its advantages are considered, it is cheaper many times than ordinary milk. (12) It can be used alternately with new milk, if the new milk be good, though scarce. I trust that the above will be of service in elucidating, not material for controversy, but material to aid in combating the most terrible scourge known to mankind.—I am, etc.,

F. W. Forbes Ross,
M.D.Edin., F.R.C.S.Eng., D.P.H.Lond., etc.

London, Sept. 22nd.

Sir,—Neither Dr. A. S. F. Grünbaum nor any one else has, so far, attempted to discuss my contradictions of his statements, so when he writes that to discuss them "further" will hardly serve any useful purpose, I presume that he means that it is useless to discuss them at all. If Dr. Grünbaum means that to discuss them will not improve his position I entirely agree with him, for I have simply stated facts which I am prepared, if necessary, to prove up to the hilt—facts which dispose effectually of Dr. Grünbaum's contentions.

Dr. Grünbaum desires proof that food is certain not to undergo decomposition if preservatives are employed. There are few remedies of which we can guarantee the success with certainty. However, Dr. Grünbaum himself admits, in his letter of August 17th, that preservatives do stop putrefaction.—I am, etc.,

Liverpool, Sept. 24th. Thos. R. Bradshaw.

ARTERIO-SCLEROSIS, CONSTIPATION, AND ANIMAL FOOD.

Sir,—In the British Medical Journal for June 4th, 1904, Dr. William Russell, in his address on Arterio-sclerosis and Hypertonus, speaks of the effect of a proteid diet in producing constipation. My experience is still small, but since coming to Corea I have seen more than 1,000 patients, and have been greatly struck by the absence of this trouble amongst them. Whilst in an English hospital the average out-patient is generally in need of aperients, I have found here very few, I think less than a dozen, who have any constipation at all; and the usual answer to a question as to the number of motions, is two or three times a day. I do not remember either to have felt among them a pulse which had not a low tension. I am impelled to mention these facts to you, as animal food is very little used by Coreans, whose staple diet is rice, helped down by pickles and dried fish.—I am, etc.,

Chemulpo, Corea, July 31st. Hugh H. Weir.

THE REGISTRATION OF MEDICAL AND DENTAL STUDENTS.

Sir,—I had hoped that some abler pen than mine would have seconded Mr. Wesley Wilson's suggestion as set forth under the above heading in the British Medical Journal of August 20th. His suggestion, briefly stated, was that any legislative measure with the view of strengthening the finances of the General Medical Council be opposed by the general practitioners of the United Kingdom, unless the compensatory privilege of increased direct representation be given them. Indeed, I consider, especially as the General Council's proposition is to tax the embryo practitioner, Mr. Wesley Wilson's suggestion appears very reasonable. The election of additional representatives cannot affect the prospects of the proposed Medical Acts Amendment Bill. Meanwhile we should be gaining something "on account" by the introduction into the Council of additional direct representatives intimately and practically acquainted with the conditions under which we general practitioners labour.—I am, etc.,

September 26th. M.B., Etc., Edin.

POOR-LAW MEDICAL RELIEF IN SCOTLAND.

Sir,—I would thank "Practical" for relieving me of the necessity of pointing out the differences between Highland and Lowland Poor-law medical officers.

If "Fair Play" will procure a copy of the *Daily Scotsman* for May 7th, 1904, he will obtain therein abundant practical information bearing on the injustices to which Highland and Island medical officers are subjected.

I really cannot ask the Editor of the British Medical Journal to recapitulate grievances which have been shown up over and over again in these pages and those of the *Lancet*, and which are now sufficiently notorious to have prevented self-respecting men from accepting appointments in the Highlands of Scotland.

The Report (vol. i) of the Departmental Committee appointed by the Local Government Board to inquire into the system of Poor-law medical relief in Scotland can be obtained from Oliver and Boyd, publishers, Edinburgh, for 1s. 1d., and ought to be read, marked, learned, and inwardly digested by all Scotch Poor-law medical officers. Vol. ii contains the evidence verbatim. It is well worth 2s. 6d., and reads like a novel.

I must adhere to my point regarding the powers of the Local Government Board. Until the stereotype imposed in

Section XXII (4) of the Local Government (Scotland) Act, 1889, is removed the Board can enforce no measures of justice for their medical officers. The local Bumbles have unlimited power.

The Local Government Board, in their instructions to parish councils, state that "payment for lunacy certificates and quarterly visits to pauper lunatics are not to be included in the cost of maintenance, and any claim in respect of such payments will be disallowed." This does not seem to indicate that the Board have power to enforce payment of lunacy fees. No, Sir, the Local Government Board do not concern themselves whether we are paid or not; that is our look-out.

I do not say parish councils compel doctors to do lunacy work for their Poor-law salary. They offer a lump sum, in which payments for lunacy work and vaccination are included. The doctor can accept these terms and stay, or refuse them and walk, just as he choses.

"Fair Play" will remember I only refer to the existing conditions in a number of Highland and Island parishes. The whole system is a jumble, full of pitfalls for the unwary medical officer.

Until all the *mays* are expunged from the Rules, etc., of the Local Government Board, and replaced by *shalls*, the recommendations of the Board are not worth the paper wasted in recording them.

It hardly becomes us to criticize the Local Government Board too severely, nor is it politic at the present moment. I for one cannot forget their generous recommendation in regard to the difficulty we experience in getting a holiday—a concession which shows that they have some sympathy for us in our hard lot. That sympathy we cannot afford to lose. We are glad of even that crumb.

Surely "Fair Play" is a member of the Scottish Poor Law Medical Officers' Association; if not, I would refer him to the recent annual report of that institution for fuller information.

Fixity of tenure will allow us to assert our legal rights and carry out the intentions of the Legislature in regard to the poor without fear of dismissal, but it is questionable if the Local Government Board will give any consideration to those anomalies, the removal of which would make us contented public officials. In conclusion, let me thank "Fair Play" for the courteous manner in which he has criticized my letter.—I am, etc.,

September 23rd. ANTI-BUMBLEDOM.

ALL FOR THE WORST.

SIR,—Dr. E. D. Marriott's pessimistic views of the medical profession, which appear in the BRITISH MEDICAL JOURNAL of September 24th, sienify, no doubt, the true pressure symptoms of advanced civilization; but such views are nevertheless equally applicable to other businesses of mankind generally. It is hardly a pessimistic philosophy that Dr. Marriott expresses; it is more the pessimistic views of present conditions. A man with a pessimistic philosophy is always of a cheerful disposition, for nothing makes him sadder than setting too great a value on things appertaining to philosophy proper. An optimistic philosophy disappoints at every turn. Therefore, as Dr. Marriott hints, the student who elects to go in for medicine must accept the situation in the same spirit as he accepts a wife—"for better, for worse." His pessimistic philosophy would serve him well in the long run, for things then would "pan out" better than he had expected.

It is quite true that the profession is numerically overstocked; there are now no "bare spots" for beginners. But the idea that the general medical practitioner is on the road to extinction is erroneous. You may change his name and call him a "compound specialist," but you cannot change the part he plays. Hospital organizers, specialists, medical women, municipal medical appointments, etc., are merely phases of fashion, and appear or disappear according to chance or season; but the general medical practitioner is fated to stick to the ship. The general practitioner is not driven from the field by nibbling aggressors; he is not now produced as in days past. Every branch of the profession has its special school, but no other than the school of Nature can produce a general practitioner. The school of Nature admits of no make-shift, no substitute.

The present system of medical education, therefore, tends to produce less numbers of practitioners here referred to. It would seem strange, when the number of medical men is greater than ever, that medical women should enter the arena. But "man's extremity is woman's opportunity." This is as it ever was; in war as well as in its modification—peace. When ever men begin to fail, women appear on the scene to "support the lingering star with lessening ray." Those, therefore, who regard women as antagonistic competitors would do well to consider the shrinkage in their own capacities, and the resulting vacuum that is filled by women.

In the meantime, let the young practitioner take his "baphometic fire baptism" with that cheerfulness always afforded by pessimistic philosophy, that he may prove well seasoned when he begins to "try the world" and to "find mankind an unco' squad," lest the sweet words about "honour" and "nobility" he has swallowed at inaugural addresses return undigested from his sick understanding.—I am, etc.,

Wolverhampton, Sept. 24th. DOBSON POOLE.

THE METRIC SYSTEM.

SIR,—There is much common sense in the remarks of your correspondent, Surgeon-Colonel Nicholson, in the BRITISH MEDICAL JOURNAL of September 24th, p. 779. To my mind the difficulty is not so much in the decimal system as in the unit. Let us by no means give up the grain for the gram, or the foot for the metre; then we might have a system readily learnt, easy of calculation, and practically free from the difficulties necessitated by such a revolution in arithmetic as would, for long, puzzle even educated people if the French system in its entirety were adopted.—I am, etc.,

Newbury, Sept. 25th. W. T. PARKER DOUGLAS.

WRONG USE OF PRESCRIPTIONS.

SIR,—We must all be aware of the great abuse which exists in the handing of prescriptions from one to another because of some fancied resemblance in the symptoms to those which existed in the patient for whom the prescription was first written.

I would suggest as a remedy for this wrong and dangerous practice, that chemists should destroy the prescription after making it up, instead of returning it to the patient, to be by him treasured up as an heirloom. I see no difficulty in carrying out this plan, as the prescription is merely a written direction to the chemist, and has nothing to do with the patient. For purposes of repetition the chemist's entry and the number on the bottle would be quite sufficient.—I am, etc.,

Belfast, Sept. 24th. H. NORMAN BARNETT, F.R.C.S.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF DURHAM.

FIRST EXAMINATION FOR THE M.B.—The following candidates have satisfied the examiners in the subjects mentioned:

Elementary Anatomy and Biology, Chemistry and Physics.—*C. F. M. Saint, †H. G. Davison, N. St. C. B. Cummins, P. Hall, I. Hodgkinson, H. R. McAleenan, S. McZumder, J. D. Turnbull.

Chemistry and Physics.—K. B. Allan, L. F. Browne, L. W. Evans, F. H. Fawkes, R. C. H. Francis, A. C. Greene, H. C. Kellgren, Annie V. Mack, F. Rabitkens, F. A. Robinson, Matilda A. Sinclair, Rev. R. H. Smallwood, M.A., T. W. Stallybrass, B. Taylor, A. H. L. Thomas, Dorothea M. Tudor.

Elementary Anatomy and Biology.—J. M. L. F. Coquelin, I. S. Gabe, C. P. R. Harvey, E. P. L. Hughes, F. W. Melvin, C. J. Neilan, S. L. Randolph, D. Wilson.

SECOND EXAMINATION FOR THE M.B.—The following candidates have satisfied the examiners in Anatomy, Physiology, and Materia Medica:

*H. M. Levinson, †E. P. H. Joynt, †C. G. Kemp, †R. W. Pearson, M.R.C.S., L.R.C.P.; O. Arbott, H. H. Blake, F. W. Cheese, M.R.C.S., L.R.C.P., W. H. Edgar, G. R. Ellis, J. Everidge, J. E. Hanna, H. F. Joynt, S. D. Metcalfe, W. Rollin, J. W. Smith, L. H. Walker, G. Walker, L. L. Westrope.

THIRD EXAMINATION FOR THE M.B.—The following candidates have satisfied the examiners:

†N. A. Eddlestone, †R. W. Swayne, V. E. Badcock, F. W. Cheese, M.R.C.S., L.R.C.P., J. B. Cooke, G. Denholm, S. G. V. Harris, Florence B. Lambert, A. O. H. McCullagh, F. C. Pybus, G. R. Philipson, N. Spedding, T. L. Wormald.

* First-class Honours. † Second-class Honours.

UNIVERSITY OF MANCHESTER.

Public Health Laboratories.—The new public health laboratories are now approaching completion, and will be ready for lectures and practical work in public health on Friday October 14th. The courses in veterinary hygiene will start on Monday, the 17th, at the same laboratories.

Opening of Winter Session.—Professor Lorrain Smith, in his inaugural address at the opening of the medical session at the University, has chosen for the subject of his address The Study of Pathology in Medical Education.

THE King has been pleased to approve of the appointment of Lieutenant-Colonel Richard Philip Samut (Chief Government Medical Officer, and Superintendent of Public Health) to be a member of the Executive Council and an official member of the Council of Government of the Island of Malta.

OBITUARY.

NIELS RYBERG FINSEN, M.D.,

Copenhagen.

Dr. Niels Ryberg Finsen, whose name is known to the whole civilized world as the inventor of the method of treating certain diseases of the skin by the application of decolourized light rays, died at Copenhagen on Saturday, September 24th, in the 44th year of his age.

He was born at Thorshavn in the Faroe Islands in 1860. He began the study of medicine at the medical school of Reykjavik, the capital of the Islands, and later proceeded to Copenhagen, where he took his Doctor's degree in 1890. For a year after graduation he was Demonstrator of Anatomy in the University of Copenhagen. During that time he made researches on the effect of light on biological processes. The bactericidal effect of light had been noted by previous observers. Experiments on this point led Duclaux to the conclusion that sunlight was at once the most universal, the most economic, and the most active agent in sanitation, private or public, and the researches of Downes and Blunt showed that this effect was due in great part, if not exclusively, to the chemical rays. It had often been observed that horses and horned cattle are, like man, subject to solar erythema, affecting almost exclusively non-pigmented parts of the skin. Charcot had in 1859 expressed the opinion that it was the chemical and not the heat rays which cause erythema, and that the dermatitis caused by a powerful electric light was identical with sunburn. The scientific proof of this hypothesis was given by Widmark of Stockholm in 1889, who proved that the ultra-violet rays are the most active in producing this effect. The fact that inflammation of the healthy skin could be produced by the influence of chemical rays suggested to Finsen the possibility of utilizing this action on diseased skin. On this assumption was based a proposal made by him in 1893 that sufferers from small-pox should be kept in rooms from which the chemical rays were excluded by interposed red glasses or thick red curtains. The result of this treatment was, according to him, that the vesicles did not suppurate and no scars were left. A like method was, as is well known, used by John of Gaddesden in the treatment of a Prince of Wales in the fourteenth century, and had long been in use, as Finsen himself pointed out, as a popular remedy in Roumania, Tonquin, and Japan. This, however, in no way lessens the credit due to Finsen for his scientific demonstration of a treatment which previously had no better foundation than the rudest empiricism. The first report of his experiments and observations on the subject was published in the Copenhagen *Hospitalstidende* of July 6th, 1893; in the following year there appeared a monograph, entitled *Chemical Rays and Variola*, and further observations on the red-light treatment of small-pox were contained in papers by Finsen published in the British Medical Journal of December 7th, 1895, and June 6th, 1903. As to the real value of the treatment there is considerable difference of opinion, and Finsen's conclusions were adversely criticized by more than one competent observer on the ground of practical experience gained during the recent epidemic of small-pox in America.



The bactericidal properties of the chemical rays were later applied by Finsen to the treatment of lupus vulgaris; and so striking were the results, that in 1896 an institute was founded at Copenhagen "for the prosecution of investigations as to the action of light on living organisms, and principally for the furtherance of the application of the results to the purposes of practical medicine." This Institute, of which Dr. Finsen was appointed Director, was erected largely at the expense of two public-spirited citizens, Messrs. G. A. Hagemann and Vilh. Jörgensen, and received a subvention from the State. The method is too well known to need description here. A full account of it was given (with Finsen's authority) by his assistant, Dr. Valdemar Bie, in the British Medical Journal of September 30th, 1899. At that time some 350 cases of lupus vulgaris had been treated, in all of which the result was said to be satisfactory. In lupus erythematosus the effect, though in many cases excellent, was said to be not nearly so certain as in lupus vulgaris. Finsen's latest publication on the subject, which brings the record up to October 1st, 1902, gives the total number of cases treated up to that date as 804, of which 412 were "cured" and 192 "nearly cured." After allowing for cases in which the patients died from intercurrent diseases or for one reason or another discontinued the treatment, there were only 16 in which the result was described as "not satisfactory"—in other words, the failures were only 2 per cent.

The Light Institute of Copenhagen has grown from small beginnings to a kind of medical Mecca whither patients and physicians from all parts of the world have flocked during the last half-dozen years. It has now a staff of six medical men and sixty nurses, and some 1,800 patients have been treated.

The time has not yet come for a definitive estimate of the value of Finsen's work. It was natural that so brilliant an addition to our therapeutic resources should have been hailed with enthusiasm by the medical profession; but it must be added that this enthusiasm has led to a certain amount of exaggeration. Finsen, who was the most modest and honest of scientific workers, became the prey of the journalist, who cares more for effect than for sober truth, and the plain facts have been shown to the public through a highly-magnifying medium. What is worse, Finsen's discovery has been exploited as a means of advertising institutions needing no such questionable aid. The method has been described as painless and infallible—epithets which are simply misleading. Authorities are still much divided as to the true place of the method in therapeutics. However the fact is to be explained, the ultimate results of the treatment have not been so satisfactory in the hands of most practitioners in other countries as those recorded at Copenhagen. Whatever discount it may be necessary to make on this score, it must be allowed that Finsen has written his name in imperishable characters in the history of medicine. Although both solar and electric light had previously, as he himself acknowledged, been employed for the treatment of lupus, to him belongs the credit of having placed the method on a scientific basis and of having devised most ingenious apparatus for its practical application. He had indeed an inventive genius that might have won for him vast wealth had he deigned to put the gift to commercial use. Among his inventions are said to have been such widely different things as an improved breech-loader, a cooking apparatus, and a cool summer-house.

The work accomplished by Finsen is all the more remarkable since during the greater part of his professional life he suffered from a degree of ill-health that would have made most men incapable of work of any kind. During the last three years he had been practically confined to his bed. Up to the last, however, his mind remained clear and vigorous, and he was keenly interested in the progress of science, and in everything concerning the Institute of which he was the founder. His countrymen were naturally proud of him, and from the Royal Family of Denmark, from our own Queen,

and from several other crowned heads, he received many marks of esteem and friendship. The German Emperor, who visited him in his sick room, is said to have declared that he ought to have a monument erected to him during his life. The regard of these Royal personages is the more remarkable since he was a strong Radical in political opinion, and spoke his mind with perfect freedom.

Although a poor man, Finsen insisted on handing over to the Light Institute a considerable part of the Nobel Prize which was awarded to him last year. His discovery brought him fame, but not wealth. All the profit he derived from it was a salary of £300 a year, paid him by the Danish Government.

Few men have been more animated by disinterested zeal for the benefit of humanity than Niels Finsen. His life was in his work, and the record of that work is comprised in three or four papers which together make up a booklet not exceeding an average pamphlet in size. Small as it is, he had a difficulty in finding a publisher in Germany. An English translation of it, by Dr. J. H. Sequeira, of the London Hospital, was published, under the title of *Phototherapy*, in 1901.

Finsen was a man of the most straightforward and honourable character, and of very amiable disposition. The long martyrdom of a complicated illness was endured with cheerful fortitude and he looked forward to death, which for him was the wreck of larger hopes of achievement and glory than are given to most men, with philosophic resignation. He bore the load of honours thrust upon him from all quarters with charming modesty, and he received the intimation that the Nobel Prize had been awarded to him with the quiet remark that it was given to him because it was known that he would not be alive to receive it later.

Finsen, from taste as well as owing to the conditions of his life, was more a scientist than a physician. None the less, he was one of the men of whom the medical profession has most reason to be proud.

A Danish correspondent sends us the following particulars as to the award of the Nobel Prize to Professor Finsen:

Unfortunately, on account of illness, Professor Finsen was prevented from being present at the meeting in Stockholm in order to receive the prize and the gold medal. The prize amounted to 140,000 kroner, of which he at once gave 50,000 to the Institute. This example was followed by two of the greatest benefactors of the Institute, Director Hagemann and Etatsraad Jörgensen, who each presented the same amount to the Institute. On December 11th, 1903, a great festivity took place at the Institute. At the conclusion of the day's work, the Committee and staff assembled in the large room where the treatment is carried on, and Director Hagemann suggested that the Committee should present to Professor Finsen their congratulations in his own room, which he was unable to leave. There their deputation was received by Professor Finsen and his family. Director Hagemann then said:

Dear Professor Finsen,—The Committee for Finsen's medical institution present here, through me, their heartiest congratulations on the honour which has been conferred upon you. Not that we here in Denmark need further testimony to the value of the discovery for which your name is blessed by the suffering humanity. No, such a testimony has this Institution itself, which has been made a sanctuary for your thoughts and your genius. But the fact that all learned men from all countries have thought you worthy of the prize, and that the Committee of the Nobel Prizes has awarded it fills us with joy and pride. It is on this account that we bring you our thanks and congratulations. Small countries have no other victories to gain than those of the mind; but are these not also the best and most valuable? If we thus at the present moment enjoy the thought of belonging to such a small nation, it is because Denmark to-day has gained such a victory of the mind with and through you.

In reply, Professor Finsen said: I thank the committee, the doctors, and the nurses for the honour they have shown me in personally bringing me their congratulations. I thank you, Director Hagemann, for your beautiful and kind words, which could not but give me delight and satisfaction. If I regard the Nobel Prize an honour principally shown me personally, I could not then altogether receive your congratulations, because only a small part of the work which is done here is due to me. It is, on the contrary, the common work carried out by the committee, the doctors, and nurses, with the support of the State and private people. I look upon it in this light, that the Nobel Prize is presented to me chiefly as the medical representative of the Light institution, and as such it is with pleasure and pride that I receive your congratulations. For the institute the Prize is of the greatest importance. It gives an institution which is still quite young, and which is built on new ideas, a recognition which could not be more conspicuous, and it is my highest wish that the institute will understand how to profit by this happy event. The institute is still in its infancy, and there are still many important questions unanswered. I am chiefly thinking of the effect of the light on the organism. The institute has, moreover, lately had to fight for its existence in a pecuniary respect, and has thus been hindered in its progress. I trust the Nobel Prize may give it a start, so that it may develop and grow great and powerful, so that it may be able to fulfil its great task—experimenting and utilizing the powers of the elements, the life-giving light-rays. The Prize brings honour and money. I wish that the institute may understand how to use both in the right way. I hope it will understand that the honour involves responsibility, which I regard as the highest in all science—namely, truth, trustworthiness, and a discreet and sound criticism. I hope, too, that the money may be of use, and I look upon it as a good omen that the valuable gifts of Director Hagemann and Etatsraad Jörgensen and myself may have been the means of freeing the institute from debt. I wish to express, on behalf of the institute, my best thanks for this new mark of your great love and interest in the Light institute. I conclude with a wish, in which all will join, for the success and prosperity of the Light institute, our love and our pride.

Professor Finsen then suggested, and the committee passed, a grant of a month's salary to the staff of nurses.

SURGEON-GENERAL JAMESON, M.D., C.B., LL.D.,

Late Director-General, Army Medical Service.

WE have received the following note from Professor McCall Anderson of Glasgow:

In the BRITISH MEDICAL JOURNAL of September 24th there is a short notice of the death of Surgeon-General Jameson, giving a few particulars of his career; but I think it may be of interest to many of your readers to know more of him and of his personality, from the point of view of one who knew him well and intimately during the greater part of his life.

He was born in 1837, and was educated at Glasgow High School and Glasgow University, and immediately after qualifying he entered the Army Medical Service, in which he did much good work, as has been already stated in the JOURNAL.

His distinguished career culminated in his appointment in 1896 to the onerous post of Director-General of the Army Medical Department, which appointment he held until 1901. His last years of office were ones of great anxiety and strenuous work caused by the outbreak of the Boer war, and there can be little doubt that these labours told upon his health, and undermined a constitution of great natural vigour.

During his term of office his constant aim was to improve the position of the Army Medical Department, and the members of the Royal Army Medical Corps are well aware that they are greatly indebted to him for their improved status and emoluments.

He was known to be a splendid organizer, as was amply shown by the way in which hospitals, medical men, and nurses were sent out to South Africa to meet the emergency caused by the epidemic of enteric on such an unprecedented scale.

The estimation in which he was held, both by the civil and military members of the profession, was amply shown by the great banquet, attended by leading members of the profession from all parts of the British Isles, given to him at the Hotel Cecil when he demitted office, and by the portrait presented by his fellow-officers, which now adorns the walls of the R.A.M.C. mess-house at Aldershot. His illness lasted for six weeks, and for a time recovery was hopefully anticipated, but more serious symptoms developed, and a varied and useful life closed on September 13th.

He is survived by his wife—a Canadian lady, sister of Sir Richard Cartwright—a daughter, and five sons, two of whom are in the Royal Army Medical Corps, and one in the Naval Medical Service, and for whom much sympathy is felt.

His loss will be keenly felt by many, especially by those who had the pleasure of knowing him unofficially and in private life. His genial presence was always welcome, and he entered into the life and interests of his friends with a whole-heartedness which made them feel that he was to be depended upon for sympathy both in joy and in sorrow.

A friend and contemporary of the late Director-General sends us the following reminiscences of him:

The death of Jameson came as a shock and surprise to his friends both in and out of the service. His robust frame and active habits seemed to afford some guarantee of a long life, but it was unexpectedly cut short through cardiac complications.

His early friends and contemporaries of over forty years ago can recall him as a quiet, unassuming young Scot, tenacious in will, of strong physique and great activity; foremost in athletics, a good all-round sportsman, but pre-eminently a keen and skilful angler. Few, indeed, could handle a fishing-rod better, whether casting for the nimble trout or lordly salmon, for he was bred to the gentle craft among his native streams and lochs, and perfected in it through the accident of his early service falling in Canada.

While always an efficient and reliable officer, his spells of service in Canada and the West Indies prevented his seeing active service in the field, as did most of his contemporaries, but, nevertheless, brought some compensation. While serving as an assistant surgeon in the Bahamas, one of those periodic epidemics of yellow fever, which in the Fifties and Sixties decimated the West Indies, broke out in Trinidad, and Jameson was sent there. For conspicuous services in this hazardous duty he received special promotion to the rank of Surgeon in 1870, when in his thirteenth year of service—a small boon as may now be thought, but something in those days when his contemporaries had to wait fifteen weary years for the same step by seniority! No one grudged the promotion, which, fortunately, enabled him to assume a higher position in the British ambulance during the Franco-German war, at the siege of Paris, and the campaign on the Loire, where he rendered good service.

After years of uneventful service in India and elsewhere, he ultimately became Deputy to Sir William Mackinnon in the War Office, and succeeded him as Director-General. His career in the latter capacity, if comparatively recent, is already, in the whirl of events, fading history; but, in his quiet and unostentatious way, he did big work at head quarters. He will be personally remembered as accessible, sympathetic, and impartial; courteous, but no courtier; firm almost to obstinacy, seeking no popularity whether from above or below. As is well known, his retirement from his high office was premature, but the true causes which led to it have never been publicly stated. This much, however, must be admitted, even by the least generous critics of the Army Medical Service, that his efforts, assisted by very able deputies, in organizing and keeping up his department during the Boer war were really immense, and, what is better, are now recognized as having been remarkably successful.

And what was his reward for such strenuous labour? Not even thanks, so far as the public knows; for although he received the full pension of his office on retirement, the customary K.C.B. and other honours were withheld. He himself was far too manly, self-contained, and independent to murmur at an obvious official slight, and so retained his self-respect and the esteem of all who knew him.

Public recognition of his services soon followed, first at the hands of his civil medical brethren in a banquet, and then by his brother officers who subscribed for a portrait. Only a year ago a replica of the portrait was unveiled in the mess-room of the R.A.M.C. in Aldershot, which it now adorns, and hangs as a memorial of the Director General, during whose tenure of that office the medical service of the army became a Royal corps.

D. writes: The death of Surgeon-General Jameson recalls the remarkable connexion between Scottish Universities and past director-generals. The first D.-G. (Sir James McGregor) was a graduate of Aberdeen; Sir Andrew Smith was a graduate of Edinburgh or Glasgow; Director-General T. Alexander was an alumnus of Edinburgh; Sir James Brown Gibson and Sir Thomas Galbraith Logan were graduates of Glasgow; Sir William M. Muir was a graduate of Edinburgh or Glasgow; Sir Thomas Crawford was a graduate of Edinburgh; Sir William Mackinnon was an alumnus of Glasgow; Surgeon-General Jameson was also a graduate of Glasgow, as is the present D.-G., Sir William Taylor.

SAMUEL JOHN HUTCHINSON, M.R.C.S.Eng., L.D.S.

We regret to announce the death, at a comparative early age, of Mr. Samuel John Hutchinson. He was born in 1848 at Helmsley, in Yorkshire, and his professional career began at University College in 1870, where he entered as a dental student but took the full curriculum; he became Licentiate of Dental Surgery, Royal College of Surgeons in England, in 1872, and a Member in 1874. He also studied at King's College and at the National Dental Hospital, to which he was subsequently appointed Assistant Surgeon, and later Surgeon, holding these appointments for eleven years. He also lectured on Dental Surgery and Pathology at the school attached to that hospital. He also held the office of Dental Surgeon, and later of Consulting Dental Surgeon, to University College Hospital, and was an Examiner in Dental Surgery to the Royal College of Surgeons. He was also Consulting Dental Surgeon to the National Dental Hospital.

He commenced practice in partnership with the late Mr. Sercomb. Mr. Sercomb died in the prime of life, but Mr. Hutchinson retained a large part of the practice, and thus became busily engaged at an age when many are only waiting for practice. This did not, however, prevent his devoting a portion of his time to public work, such as that of the Odontological Society of Great Britain, of which he was successively Honorary Secretary, Curator, President, and Treasurer. He was also President of the Representative Board of the British Dental Association, was President of that Association when it held its general meeting in London in 1901, and was Trustee of the Benevolent Fund. He also took an active interest in the affairs of the British Medical Association, and served his time on the Council of the Metropolitan Counties Branch. He thus exemplified how the busiest men in private life are always the most ready to contribute their services to public work. In addition to all this intellectual activity and the arduous work of his profession, he suffered from severe attacks of influenza, and, when these were followed by domestic anxiety, his health began to fail, for he was never very robust, and during the last summer had lived chiefly in Bournemouth, where he died on September 15th, at the age of 56 years. He was buried at Hampstead Cemetery on September 20th.

Dr. Radcliffe Crocker writes: I knew Samuel Hutchinson throughout his professional career, as we entered at University College in the same year, and our friendship, then commenced, remained unchanged throughout the remainder of his life. As a student, I well remember how keen he was in the preliminary subjects in which we worked together and

how he gained the respect and esteem of his fellow-students—for he showed then in a marked degree the ability and industry which led to h s conspicuous success in the branch of surgery he had chosen. He was a warm and staunch friend, and while amiable in private life he held strong and decided opinions, which he always had the courage to express when he felt called upon to do so either in public or private.

Mr. C. S. Tomes, F.R.S., writes: By the premature death of Mr. S. J. Hutchinson, the dental branch of the profession has lost one of those who have constantly taken an active part in its public affairs. Throwing himself with energy and success into the discharge of all the duties of many offices, and at the same time carrying on a large private practice, it is possible that he was at times overtaxed, the more that he was of a somewhat anxious disposition. Some years ago he suffered from a severe attack of tachycardia, from which he appeared to have made a complete recovery. Recently, however, signs of valvular incompetence became apparent, and rapidly increased, and to this he finally succumbed.

Major John Henry Greenway, R.A.M.C., who died in Cape Colony in August, was the third son of Captain C. Greenway, and received his medical education at Guy's Hospital. He became L.S.A. in 1881 and M.R.C.S. in 1884, and in August of the following year joined the Army Medical Service. At the time of his death he had thus completed nineteen years' service. Of this nearly six years were passed in India and eight in South Africa. At the outbreak of the war he was attached to the Berkshire Regiment at Naaupoort, and then went to Orange River in charge of a field hospital under Lord Methuen. In the fighting march to Bloemfontein he was in command of the 19th Brigade Bearer Company with Smith-Dorrien's column, and was thus present at the engagements at Jacobsdal, Paardeberg, and Driefontein, eventually receiving the Queen's medal with four clasps. Arrived at Bloemfontein, he was placed in charge of the Convent Hospital, and remained in this position until invalided home in 1901. He was sent out, however, again at the beginning of this year, and died in the Military Hospital at Wynberg on August 8th. He was a very popular and highly-esteemed officer, and his funeral was attended by a representative of the Governor as well as by a very large number of officers and civilians.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Fleet Surgeon J. C. Dow, M.B., has been placed on the retired list, with the honorary rank of Deputy Inspector-General, September 21st. He was appointed Surgeon, September 30th, 1876; Staff Surgeon, September 30th, 1883; and Fleet Surgeon, June 4th, 1893.

The following appointments have been made at the Admiralty: George A. Dreaper, Fleet Surgeon, to the *Hermione*, on the *Fox* paying off, undated; Alfred H. L. Cox, Staff Surgeon, to the *Hermione* on commissioning, October 11th, and to the *Fox*, on recommissioning, undated; Christopher L. W. Bunton, M.B., Staff Surgeon, to the *Acheron*, October 11th; John Bryan, Surgeon, to the Royal Naval Hospital at the Cape of Good Hope, September 24th; Alexander G. W. Bowen, M.B., Surgeon, to the *Vernon*, additional, for the *Niger*, September 24th; George A. Waters, M.D., Fleet Surgeon, to the *President*, additional, for three months' course of study at a civil hospital, October 3rd; John W. Slaughter, M.B., B.A., Fleet Surgeon, to the *Boscawen*, additional, for the *Boscawen II*, October 3rd.

ARMY MEDICAL STAFF.

Brigade-Surgeon William Ashton, M.B., died at Cheltenham on September 19th, aged 69. His commissions were thus dated:—Assistant Surgeon, September 15th, 1857; Surgeon, March 27th, 1872; Surgeon-Major, March 1st, 1873; and Brigade Surgeon, October 5th, 1882. He served in the Indian Mutiny campaign in 1857-9, and was present at the capture of Rampore Kussia, the passage of the Gogra at Fyzabad, the action of Toolsepore, and some minor affairs (medal).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel E. M. Wilson, C.B., C.M.G., D.S.O., retires on retired pay, September 28th. He was appointed Surgeon, July 30th, 1881: Surgeon-Major, July 30th 1893; and Lieutenant-Colonel, July 30th, 1901. His war record is as follows:—Zulu war, 1879, as Civil Surgeon (medal with clasp); Soudan campaign, 1884-5 (medal with clasp, and Khedive's bronze star); Soudan Frontier Field Force, 1885-6; expedition up the Gambia against the Native Chief, Fodey Kabba, 1891-2; Ashanti expedition in 1895-6 in command of Base Hospital (honourably mentioned, nominated C.M.G., star); Nile expedition in 1898 including the battle of Khartoum (mentioned in dispatches, appointed D.S.O., and granted the British medal and the Egyptian medal with clasp).

Lieutenant A. W. A. Irwin is promoted to be Captain, July 1st. His first appointment dates from July 1st, 1901.

Lieutenant C. G. Thomson is also promoted to be Captain, August 3rd. His commission as Lieutenant is dated August 3rd, 1901.

Lieutenant-Colonel P. M. Ellis, now commanding the 9th Company, R.A.M.C., at Colchester, has been appointed Principal Medical Officer of the 7th Division, 3rd Army Corps, at the Curragh.

Colonel E. H. Fenn, C.I.E., now in Bermuda, has been appointed Principal Medical Officer, Thames and Woolwich Districts.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel G. Bomford, M.D., C.I.E., Bengal Establishment, is granted the temporary rank of Surgeon-General, from August 15th, while officiating as Director-General Indian Medical Service, and Sanitary Commissioner with the Government of India.

Lieutenant-Colonel T. E. L. Bate, C.I.E., Bengal Establishment, is granted the temporary rank of Colonel, from August 15th, while officiating as Inspector-General of Civil Hospitals, Punjab.

Major D. G. Marshall, M.B., Bengal Establishment, is transferred to the temporary half-pay list, from September 25th. He was appointed Surgeon-Captain, March 31st, 1888, and Major twelve years thereafter. He was with the Burmese expedition in 1891-2 (medal with clasp); with the Isazai expedition in 1892: in the campaign in the North West Frontier of India in 1897-8 (medal with clasp); and with the expedition to China in 1900 (medal with clasp).

Lieutenant-Colonel R. D. Murray, M.B., Bengal Establishment, is appointed to officiate as Principal Medical Officer, Lahore District.

Lieutenant-Colonel K. R. Kirtikar, Bombay Establishment, has retired from the service, from May 24th. He joined as Assistant-Surgeon, March 31st, 1877, and became Brigade-Surgeon-Lieutenant-Colonel, March 31st, 1897. He was in the Afghan war in 1879-80, being present at the battle of Maiwand at the siege of Kandahar (medal); and was mentioned in dispatches.

The retirement from the service of Lieutenant-Colonel G. S. Griffiths, Bengal Establishment, which has been already announced in the British Medical Journal, has received the approval of the King.

His Majesty has also sanctioned the retirement of Major N. P. Sinha, of the Bengal Establishment, from June 1st. Major Sinha was appointed Surgeon, April 1st, 1886, and Surgeon-Major, April 1st, 1898. He served with the Burmese expeditions in 1885-9, receiving the Frontier medal with two clasps.

VOLUNTEER OFFICERS' DECORATION.

The King has conferred the Volunteer Officers' Decoration upon the following officers: Surgeon-Major A. Lingard, 3rd Middlesex Royal Garrison Artillery (Volunteers); Brigade-Surgeon-Lieutenant-Colonel W. D. Waterhouse, 4th Volunteer Battalion the Royal Fusiliers (City of London Regiment); Surgeon-Lieutenant-Colonel A. K. Crossfield (deceased), 2nd Devonshire Royal Garrison Artillery (Volunteers); Surgeon-Major E. Haydon, M.B., 5th (the Hay Tor) Volunteer Battalion the Devonshire Regiment; Surgeon-Lieutenant-Colonel F. K. Pigott, 1st Volunteer Battalion the King's (Shropshire Light Infantry); Surgeon-Major J. G. Saville, retired, 5th (Ardwick) Volunteer Battalion the Manchester Regiment; Surgeon-Major W. L. Stewart, M.D., retired, 1st Banff Royal Garrison Artillery (Volunteers); Surgeon-Major R. Kirk, M.D., 8th Volunteer Battalion the Royal Scots (Lothian Regiment); Brigade-Surgeon-Lieutenant-Colonel F. H. Appleby, 4th (Nottinghamshire) Volunteer Battalion the Sherwood Foresters (Nottinghamshire and Derbyshire Regiment).

MEDICO-LEGAL AND MEDICO-ETHICAL.

FORGED DEATH CERTIFICATES.

A case under Subsection II of Section XL of the Births and Deaths Registration Act of 1874 was tried on September 17th at Liverpool, the prosecutor being the Registrar-General, and the defendant a man named John Tucker, *alias* Henry Dale. The defendant was charged with having forged and issued death certificates in the name of Henry Gould, a registered medical practitioner, formerly of Cheadle Hulme, on July 28th and 29th, these two occasions having been selected out of a number of other possible informations.

The defendant pleaded guilty, and in mitigation of penalty his counsel stated that, although unqualified in England, the defendant had since 1873 held the degree of M.D. Pennsylvania. In 1876 he commenced work in England and had been employed by various medical men. In 1879 he lost his sight, but recovered it in 1891, and had since then worked in various parts of the country. This year he bought a practice in Liverpool and engaged the gentleman whose name he forged as an assistant with a view to partnership. The partnership arrangement, however, had never been completed, but the defendant had had permission to use his prospective partner's name as long as they were together, and the latter had seen the two children in respect of whom the defendant had signed the certificates upon which the information was laid.

In reply the prosecution pointed out that the latter part of this statement must be untrue, as it was known that the gentleman whose name had been forged had departed to South Africa eighteen months ago and was still there. The defending counsel admitted that he was unable to support his statement except by calling the defendant, which he did not propose to do. The Court, after pointing out that the defendant was liable, on indictment, to be sent to gaol for seven years, inflicted a fine of £10 and £5 costs in each of the two cases.

Since this case the same defendant has been charged with an attempt to obtain £450 and £25 from David Lauder Lindsay by false pretences on August 9th and other dates. He pleaded "Not guilty," and was remanded upon bail.

TRAUMATIC DIABETES OR DIABETES FROM SHOCK.

A case in which the relation of diabetes to injury gave rise to considerable difference of medical opinion was tried recently before His Honour Judge William Evans at the County Court at Blaenau Festiniog. The action was brought by a widow to recover compensation for the death of her husband, who on February 10th was injured in the leg by the fall of a slab of slate, and about a month later was found to be suffering from acute diabetes, of which he died on April 7th. The judge ultimately summed up in favour of the plaintiff, and judgement was given for the sum of £180 17s. The defence raised was: (1) That the diabetes, if due to the accident, would have occurred within forty-eight hours: (2) that although diabetes occurs from injury, it is only after injury to the head or abdomen and not from injuries to the leg. One witness is reported to have said: "To accept the theory that diabetes

resulted from shock accompanying an accident to the leg sustained over four weeks before would be to upset scientific medicine of the last fifty years."

We can only say that the decision of the judge was not at variance with modern scientific opinion; the diabetes following shock has often not been discovered for weeks after the accident; diabetes undoubtedly occurs from shock, irrespective of the part of the body injured. It is, of course, possible that an injury may merely aggravate previously-existing diabetes, but in this case the evidence before the court was strongly against the view that the man was other than perfectly healthy before he met with the injury. The true connexion between injury and diabetes is either by direct injury to nerves or nerve centres or through shock. In this case, although the injury did not affect the nerves or nerve centres, there was good evidence of shock, and we are therefore of opinion that the decision of the judge was in accordance with the present state of medical knowledge on the subject.

WORKMEN'S COMPENSATION.

A General Practitioner writes: A man I am attending has suddenly had his compensation stopped by his employers, since they think him fit to work, after obtaining the advice of their (employers) medical man. What power have medical referees, under the Workmen's Compensation Act, in such a case, and are the latter attached to any special district or county court? In defending such an action would the evidence of a referee, as referred to above, necessarily carry more weight than that of a surgeon attached to a large provincial hospital?

*** Medical referees are appointed for every county-court district. The workman mentioned may go to the medical referee and ask him for an examination and certificate provided for in the Workmen's Compensation Act. The workman has to pay the fee. If the case goes into court and the judge is dissatisfied with the medical evidence, he may request the medical referee to give a report upon the case. The medical referee is not called to give evidence in court, as his certificate and report upon the condition of the injured workman is final, and cannot be disputed. When the judge orders a reference the fee is paid by the State.

MEDICAL ADVERTISING.

A registered medical practitioner asks whether such an advertisement as the following would endanger her position on the *Medical Register*: "A lady doctor (M.B.), who has had considerable mental experience, will receive into her house one or two mental patients (children preferred). Apply 'Mental,' care of Editor, B.M.J."

*** There is no ethical objection to such an advertisement in a medical journal, nor do we know of any pronouncement of the General Medical Council to the contrary.

TOUTING FOR PATIENTS.

M.D. writes: Whilst staying at a boarding-house recently at a large and fashionable watering-place on the South Coast, my wife was informed by the landlady that, in return for her recommendation of a certain doctor to her visitors in case of illness occurring during their stay, this gentleman undertook to attend her own family gratuitously during the year. The information occasioning an expression of surprise on my wife's part, she was promptly assured that such an arrangement was by no means unique, but was "the usual thing all over the town, and that she believed all the doctors did the same." Now, Sir, there was some time ago a loud outcry about commissions to medical men, and accusations were freely made, and in their turn as vigorously denied. I take this to be a flagrant example of the practice, and it would be interesting to know how far such a custom obtains in our health resorts.

*** Such an arrangement would, of course, be improper.

PARTNERSHIP AGREEMENTS.

Ebor writes that he engaged to buy a practice of A., who agreed to give him a fortnight's introduction, and that during that time he should reside at his house. On his arrival he was told that rooms had been taken for him, as it was not convenient for A. to have him at his house. Is he entitled to charge A. for his board and lodging during the fortnight, or should he have half the receipts of the practice during that time?

*** These matters ought to have been specifically arranged beforehand. It is a very usual arrangement that the receipts should be shared between the vendor and purchaser during the introduction of the latter to the practice.

PAYING PATIENTS AND PUBLIC HOSPITALS.

We have received a copy of a circular which is being sent out by the Dorset County Hospital to the medical practitioners in the neighbourhood drawing attention to the new facilities afforded by the hospital, which consist of "an excellent operating room and surgical appliances, including the Roentgen, or *x* rays, installation." The letter says: "The Governors are anxious to make these advantages more generally useful by admitting, on the recommendation of the medical attendant, a class of patient hitherto not considered eligible, but who cannot afford surgical treatment and nursing in their own homes." They can select whichever member of the hospital staff they prefer to admit them, and they can obtain the services of their own medical attendant at operations, but there will be no fixed charge at present for the usual hospital treatment. The writer trusts that this privilege may be brought to the notice of any of such patients as may be glad to make use of the County Hospital in the manner proposed.

The print enclosed contains a copy of the new rule, which says: "The Committee shall have power to admit patients requiring surgical treatment who are able to pay the whole or part of the cost of such treatment; such cases to be admitted only on the recommendation of a medical practitioner, and when there is ample accommodation, and when in the opinion of the Committee they require assistance." It goes on to say that all applicants for admission must bring an in-patient ticket, and be recommended by their medical attendant. They will be admitted under the care of one of the honorary staff, but may obtain the services of their own medical attendant to assist at operations, in which case they must make their own arrangements for his fee. The number of patients so admitted is not to exceed two males and two females. They are to make no payment to the hospital, but "it is hoped that on leaving they will make a donation to the funds in accordance with their means."

*** This arrangement does not appear to differ substantially from what exists at present in many large hospitals. That is to say, it is quite common for persons who are unable to pay surgical fees to be admitted, with the consent of their own medical advisers, to the hospital for surgical or Weir-Mitchell treatment; and it is also usual for such patients to make a donation to the hospital on leaving. As nothing is said about any payment to the operating surgeon, we assume that none will be made; but this point should be cleared up, as the question of the payment of fees to the staff of the hospital by patients is one which needs careful regulation.

MEDICAL ETIQUETTE OR LAW?

Clinicus writes: (1) A. enters into an agreement with a practitioner in a colony for a two-years assistantship, with certainty of partnership if found suitable in a few months' time. A.'s passage is paid. A. is found satisfactory, and a promise of a partnership is made by B., who goes on leave and dies. A. finds he has to pay for a licence to practise in the colony, though this was not mentioned in any agreement or letter. Can A. claim that B. should pay for this licence during the time A. was B.'s assistant or acting for him? (2) A. is engaged to do B.'s professional work only, but acts as assistant registrar of births and deaths. Is A. entitled to the fees for the same, as no mention is made in the agreement? A. has received the fees and paid them to B.'s agents. Can A. recover these fees? A. holds money of B.'s received before his death. Can he deduct the fees from this money? A. has paid for his licence at the rate of £5 a year for fifteen months.

*** (1) We think that A. would have a claim on B. to recover the money paid for his professional licence if he remained as assistant. (2) The general rule is that an assistant gives his whole time to his employer and is not entitled to retain for himself any fees received when acting upon his employer's behalf. On this principle A. would have no right to retain the fees received by him as registrar. There are doubtless legal aspects to both these questions depending upon the construction of the agreement, which we have not seen. Our answer is based upon their ethical bearings.

HOSPITAL AND DISPENSARY MANAGEMENT.

DURHAM COUNTY ASYLUM.

The annual report of the Medical Superintendent, Dr. W. St. J. Skeen, for the year 1903 shows that on January 1st, 1903, there were resident 1,461 patients and on December 31st, 1903, 1,519 patients, an increase on the previous year of 58. The average number present was 1,406, an increase of 43 on the year 1902. During the year 428 were admitted, this number including 69 readmissions, 18 transfers from other asylums, 4 transfers from criminal to pauper and from pauper to private lists and 2 recertifications. The admissions show an excess of 54 over the previous year. Of the admissions there were 167 cases of mania, 104 of melancholia, 50 of dementia, 13 cases of imbecility and no less than 42 cases of general paralysis. This is an increase of 19 general paralytics on the previous year, constituting a percentage on admissions of 9.8. This is in excess of the average throughout the country by 3.2, and prevails in both sexes, those for the whole country being: males 11, females 2.3; and those in the Durham County Asylum—males 14, and females 2.9. Dr. Clouston in the last edition of his *Clinical Lectures on Mental Diseases*, speaking of the effect of intemperance, syphilis, and riotous living, says that "the Durham miner, when earning good wages, fulfils the most perfect conditions yet known for the production of general paralysis." We notice, however, that of the 428 admissions to this asylum only 47 were coal miners, and it would be interesting to know what proportion of these were general paralytics. Of the preponderating influence of syphilis in the causation of general paralysis there cannot be any doubt, but it is possible that the many busy seaports of this county have much to do with the dissemination of syphilis, and in consequence, of general paralysis in this district. In this connexion it occasions some surprise to read that in only one of the admissions is venereal disease accredited as a cause of insanity. Of the causes of insanity in the admissions, intemperance in drink takes front place, being assigned in 57—that is, in a proportion of 13.3 per cent.; ill-health in 52; hereditary influences in 60—that is, in 14 per cent.; domestic trouble in 26; accident or injury in 31, and old age in 22. During the year 164 were discharged as recovered—a percentage recovery rate on admissions of 38.3; 14 as relieved; 13 as not improved; and there were 178 deaths. This gives a percentage death-rate on the average daily numbers resident of 11.9. The chief causes of death were: General paralysis 39, pneumonia 25, congestion of lungs 14, epilepsy 13, phthisis 34, and general tuberculosis 9. The tuberculous death-rate—excluding the possibility of a tuberculous origin in two cases of empyema and its being a contributory factor in other deaths—was thus 2.4 per cent. of the deaths. The provided accommodation of this asylum is not mentioned in the report, nor the existence of overcrowding if such obtains; but we note that in the year 1903 plans for the erection of a new reception and observation ward, capable of accommodating ninety female patients, were submitted to the Commissioners, who, however, declined to sanction such a large extension, and expressed their opinion that another asylum should be built in the northern part of the county. The general health appears to have been good, though there was a slight outbreak of scarlet fever.

GARTLOCH ASYLUM REPORT.

The seventh annual report of Gartloch Asylum—one of the two large asylums under the Glasgow Lunacy District Board—issued by Dr. W. A. Parker, the Medical Superintendent, deals with the year ending May 15th, 1904. At that date there were 654 patients on the register, which was an

increase of 33 on the number for the previous year. During the year 251 cases were admitted, while 218 were discharged or died. The patients who were discharged as "recovered" numbered 84, those "relieved" 68, and there were 66 deaths. There were 872 cases under care during the year, and 635·9 was the average number in residence. The admissions this year were considerably fewer than last, but they were, on the whole, in a bad condition, and no less than 64·5 per cent. of them had been ill over a year before admission or had had similar illness before. It is also pointed out that there seems to be a tendency to an increased proportion of admissions in the period of decline (over 50 years of age), a period in which but few recoveries can be looked for. In discussing the etiology of the new cases—251 in number—Dr Parker points out that, as usual, alcohol is at the head of the list. Alcohol was a main factor in the causation of the insanity in 88 of those cases, or 35 per cent. This is serious enough but does not become less so when the question of hereditary predisposition is considered. A large number of intemperate persons, who may not themselves become insane through drink, are preparing a legacy for the future in the form of insane offspring to be cared for. Thus, during the past two years 96 cases were admitted to Gartloch under 26 years of age, in 54 of whom there was a history of alcoholic excess in the direct line of descent—that is, in 78.2 per cent. It is difficult to say how this large proportion of alcohol-caused insanity can be lessened; but there is no doubt that the first step must be the awakening of the public generally to the realization of the evil. Of the patients discharged, 84 were recovered, or 33.46 per cent. calculated on the admissions. A large number of those classified as relieved were boarded out, and thus much overcrowding of the asylum buildings was avoided. Of the deaths, no less than one-fourth was due to general paralysis, while tuberculosis was responsible for 8 deaths—a larger number than during the previous year. Quite a number of the deaths were at very advanced ages—one at 98.

LUNACY IN QUEENSLAND.

WE have received from Dr. J. B. Hogg Inspector of Asylums, his annual report for 1903 presented to the Houses of Parliament, and containing also the annual report of Dr. J. R. Nicoll, Medical Superintendent of the Toowoomba Hospital for the Insane. The State institutions for the insane are those of Goodna, Ipswich, and Toowoomba, and there are also reception-houses at Brisbane, Maryborough, Rockhampton, and Townsville. From the reception-houses the patients are sent to the asylums, but they also serve a useful purpose in saving the milder cases of insanity from being sent away from their districts and friends. On the last day of 1903 the total numbers under care in the State institutions were 1,852, of whom 7 were in reception houses. This number—1,852—is an increase on the previous year of 39. This is considerably under the average increase, which for the last eight years works out at 58. The proportion of insane to the general population, Dr. Hogg says, has been slowly but steadily increasing in all the States, and at the end of 1902 it was 3.34 in New South Wales, 3.77 in Victoria, 2.68 in South Australia, and 3.5 in New Zealand per 1,000. This, it will be noted, is in excess of the ratio obtaining in England and Wales, which for 1901 was 3 or. There were under treatment during the year 2,145 patients, the average number daily resident being 1,827. The admissions for the year numbered 337, of whom 50 were relapsed cases. Of the total admissions, 50 per cent. were natives of Great Britain—England and Wales 88, Ireland 63, Scotland 16—and 37 per cent. natives of Australia. The remaining 13 per cent. comprised native of various European States, of Asia, and the South Sea Islands. Of the causation of insanity in the admissions, intemperance in drink was assigned in 60, previous attacks in 30, hereditary influence in 32, congenital defect in 6, epilepsy in 21, diseases of brain and skull in 15, and other bodily diseases and disorders in 25. Venereal disease is given as a cause in 11, and in 93 the cause was unknown. Moral causes appear in only 11. The predominating factor, therefore, appears to have been alcohol, and in this connexion it is to be noted that of 243 cases admitted to the reception-houses 17 were cases of delirium tremens. As to the forms of mental disease, there were 176 cases of mania, 49 of melancholia, 67 of dementia, 13 of general paralysis, 22 of epileptic insanity, 7 of imbecility, 2 of idiocy, and 1 of myxoedema; 135 were discharged as recovered—a recovery-rate on admissions of 40·06; 31 as relieved, 1 as not improved, and 133 died, a death-rate on average numbers daily resident of 7.22; 31 deaths were due to disease of the nervous system, 22 to tuberculous disease (of whom only 6 were noted as suffering from tubercle on admission), 18 to pneumonia, 16 to heart disease, 7 to chronic Bright's disease, 4 to dysentery, and 2 to typhoid fever. The general health is not mentioned, but the hospitals were, in common with the surrounding districts, invaded by a contagious ophthalmia from which several hundreds of the patients suffered, but without any permanent ill effects.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,234 births and 4 688 deaths were registered during the week ending Saturday last, September 24th. The annual rate of mortality in these towns, which had been 18 2, 17·5, and 17.0 per 1,000 in the three preceding weeks, further declined to 16.0 per 1,000 last week. The rates in the several towns ranged from 7 0 in Burton-on-Trent, 7.1 in Hornsey, 8.3 in Willesden, 10.3 in Walthamstow, 10 5 in Barrow-in-Furness, and 10 9 in Bristol and in York, to 21.7 in Warrington, 21.8 in Burnley, 22 2 in Merthyr-Tydfil, 23 1 in Sunderland, 23 2 in Rotherham, 23.7 in Salford and in Middlesbrough, 24 6 in Bolton, and 25 3 in Hanley. In London the rate of mortality was 13.7 per 1,000, while it averaged 17.0 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 3.3 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1.7 per 1,000, while among the seventy-five other large towns the rates ranged upwards to 6.0 in Stockton-on-Tees and in West Hartlepool, 6 4 in Oldham, 7.0 in Hull, 8.3 in Bolton, 8 6 in Grimsby, 8 9 in Rotherham, 9.7 in Sunderland, 10 6 in Hanley, and 10 8 in Warrington. Measles caused a death-rate of 1.8 in Birkenhead; whooping-cough of 1 4 in Sunderland, 1.5 in South Shields, 1 6 in Grimsby, and 2.1 in Rhondda; and diarrhoea of 5.3 in Wolverhampton and in West Hartlepool, 5 7 in Merthyr Tydvil, 5 9 in Middlesbrough and in Tynemouth, 6.0 in Hull, 6.2 in Grimsby and in Burnley, 7.2 in Sunderland, 7.4 in Bolton, 9 0 in Hanley, and 10.1 in Warrington. The mortality from scarlet fever, from diphtheria, and from enteric fever showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Oldham, and 1 in Stockton-on-Tees, but none in any other of the seventy-six towns. The number of small-pox patients in the Metropolitan Asylums Hospitals, which had been 9, 8, and 5 on the three preceding Saturdays, was again 5 on Saturday last, September 24th; no new cases were admitted during the week, against 2, 2, and 1 in the three preceding weeks. The number of scarlet fever cases remaining under treatment in these hospitals and in the London Fever Hospital at the end of last week was 1,969, against 1,820, 1,816, and 1,929 at the end of the three preceding weeks; 284 new cases were admitted during the week, against 266, 234, and 340 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, September 24th, 883 births and 520 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.0, 15.7, and 16.5 per 1,000 in the three preceding weeks, declined again last week to 16.0 per 1,000, and was equal to the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 11.2 in Greenock and 13 6 in Leith, to 17.9 in Dundee and 26 2 in Perth. The death-rate from the principal infectious diseases averaged 2.6 per 1,000, the highest rates being recorded in Dundee and Perth. The 243 deaths registered in Glasgow included 9 which were referred to whooping-cough and 30 to diarrhoea. Two fatal cases of scarlet fever, 4 of whooping-cough, 2 of "fever," and 4 of diarrhoea were recorded in Edinburgh; 2 of whooping-cough and 16 of diarrhoea in Dundee; 4 of diarrhoea in Aberdeen; 2 of whooping-cough in Paisley; and 3 of diarrhoea in Leith and 2 in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, September 17th, 519 births and 290 deaths were registered in six of the principal Irish towns, against 640 births and 330 deaths in the preceding period. The mean annual death-rate of these towns, which had been 15.8, 17 2, and 16.2 per 1,000 in the three preceding weeks, rose to 16.5 per 1,000 in the week under notice, this figure being 1.5 per 1,000 lower than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 5.5 in Limerick and 11 3 in Londonderry to 18.5 in Cork and 27.3 in Waterford. The zymotic death-rate during the same period and in the same six towns averaged 2.2 per 1,000, or 1.3 per 1,000 lower than during the preceding period, the highest figure, 7.8, being reached in Waterford. In this town the high rate was due to cases of diarrhoeal disease. No death from small-pox was registered in any part of Ireland, but in Belfast 1 death was ascribed to typhus fever.

STORAGE OF YEAST IN A WATERCLOSET.

S. M. states that a wholesale yeast merchant in his district stores his yeast under the seat of a watercloset. Is this, he asks, healthy, and can the M.O.H. take any action?

*** (1) It does not appear to be desirable or healthy to store any article used as food for man in a sanitary convenience as described, though it might be difficult to prove in what way in any particular instance it was unhealthy. (2) If the yeast appears to be unsatisfactory or "unfit," the medical officer of health may act under Section CXVI of the Public Health Act, 1875. If not, possibly action might be taken under Section XI. of the same Act, on the point that the sanitary convenience was so kept as likely to give rise to injury to health. Or it may be that there are local by-laws controlling the places where food is sold or stored. If none of these courses is available, the medical officer of health might write a letter to the owner, pointing out the necessity of not storing food in such places. Probably such action would result in a discontinuance of the practice.

THE NOTIFICATION OF MEASLES IN A RURAL DISTRICT.

M.O.H. writes: The council of a rural district twenty-five miles long, with a population of 13 000, meditate making measles a notifiable disease. What would be (1) the probable number of cases per annum; (2) the effect on measles and scarlet fever epidemics; and (3) what rise of salary the medical officer of health ought to receive on £80 per annum?

*** (1) Unless there is an exceptional prevalence, the cases would perhaps, number between 50 and 100. (2) Notification of itself would exercise little, if any, effect. Such results as did accrue would depend upon ultimate measures, disinfection, isolation, etc., and upon their efficacy. (3) We can form no opinion. Mere notification in such a district would not involve much extra work for the medical officer of health.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BRECON AND RADNOR LUNATIC ASYLUM, Talgarth.—Medical Superintendent. Salary, £450 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Junior House-Surgeon, resident. Salary at the rate of £50 per annum.

CROYDON GENERAL HOSPITAL.—Junior House-Surgeon, resident. Salary, £60 per annum.

DERBY: COUNTY ASYLUM, Mickleover.—Senior Assistant Medical Officer (Male), resident. Salary, £150 per annum, rising to £180.

DOVER: ROYAL VICTORIA HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

ESSEX COUNTY ASYLUM, Brentwood.—Fourth Assistant Medical Officer, resident. Salary, £151 per annum.

GORDON HOSPITAL FOR FISTULA, ETC., Vauxhall Bridge Road.—House-Surgeon. Honorarium, £15 15s for six months, and £40 for twelve months.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Third House-Surgeon, resident. Salary, £80 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Honorarium, £25 for six months.

LEICESTER INFIRMARY.—Assistant House-Surgeon, resident. Salary, £86 per annum.

MANCHESTER: CHILDREN'S HOSPITAL.—(1) Junior Physician; (2) Junior Surgeon. Honorarium, £50 each. Junior Physician, to act also as Pathologist, with honorarium, £25.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Two Resident Medical Officers. Salaries, £80 and £70 per annum respectively.

PORTSMOUTH: ROYAL PORTSMOUTH HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £50 per annum.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Morning House Anæsthetist. Honorarium, £50 per annum.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—Assistant Anæsthetist.

ST. BARTHOLOMEW'S HOSPITAL, E.C.—(1) Surgeon. (2) Assistant Physician.

SEAMEN'S HOSPITAL SOCIETY. (1) Junior Resident Medical Officer, Dreadnought Hospital, Greenwich. (2) House-Surgeon, Branch Hospital, Royal Victoria and Albert Docks. Salary, £40 and £50 per annum respectively.

NORTHAMPTON GENERAL HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Physician, resident. Salary, £100 per annum.

APPOINTMENTS.

HUDSON, J. S., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Watford Union.

JOHNSON Wm. Crosby M.B., Ch.B Vict., Honorary Physician to the Pendleton Branch Dispensary of the Salford Royal Hospital, *vice* Dr. F. Craven Moore, resigned.

LOW, C. W., M.B. Durh., Medical Officer of Health, Thedwastre Rural District.

MATHEWS, Frank, L.R.C.P.Lond., M.R.C.S.Eng., Medical Officer for the Nantwich District of the Nantwich Union, *vice* A. H. Munro, M.D.Edin., resigned.

OVERY, Harry, M.R., Ch.B Edin., F.R.C.S.Eng., Casualty Officer and Pathologist to the Metropolitan Hospital, N.E.

PETHYBRIDGE, W. L., M.D., B.Sc.Lond., Honorary Physician to the Plymouth Public Dispensary, Honorary Pathologist to the South Devon Hospital, and Ophthalmologist to the Plymouth Education Authority.

RODGER, T. E., M.B., Ch.B.Glasg., Certifying Factory Surgeon for the Sanquhar District, Dumfries.

ROUND, John, L.R.C.P., L.R.C.S., Physician's Assistant to the Plymouth Public Dispensary, *vice* J. P. S. Ward, M.R.C.S., L.S.A., L.R.C.P., resigned.

WILCOX, H., M.B.Aberd., M.R.C.S.Eng., Medical Officer of Health, Fleet Urban District.

WILLIAMS, J. O., M.R.C.S., L.R.C.P.Lond., Medical Officer of Health, Barmouth Urban District.

ST. BARTHOLOMEW'S HOSPITAL.—The following appointments have been made:

House-Physicians.—(Senior): C. M. H. Howell, A. E. Nelligan, J. E. Payne, C. H. D. Adams, H. V. Wenham. (Junior): E. H. White, B. Hudson, C. A. Anderson, F. A. Hepworth, C. F. Schofield.

House-Surgeons.—(Senior): H. D. Ledward, H. W. Wilson, R. B. Etherington-Smith, H. N. Burroughes, C. B. A. Baggard. (Junior): G. H. Colt, H. J. D. Birkett, C. T. H. Plowright, L. Cripps, J. Barfield.

Resident Midwifery Assistant.—H. A. Gould.

Ophthalmic House-Surgeon.—L. Soom.

Assistant Chloroformists.—W. P. Cross and H. E. G. Boyle.

Extern Midwifery Assistants.—N. Macfadyen and A. H. Hogarth.

Chief Assistants:

Department for Diseases of Women.—H. Williamson, M.B.Cantab., M.R.C.P.

Department for Diseases of the Eye.—R. W. Brewerton, F.R.C.S.

Department for Diseases of the Ear.—C. B. West, M.B.Oxon., F.R.C.S.; S. R. Scott, M.B., B.S.Lond., F.R.C.S.

Department for Diseases of the Throat and Nose.—W. Jobson Horne, M.D.Cantab.; F. A. Rose, M.B.Cantab., F.R.C.S.

Department of Orthopædics.—G. F. Gask, F.R.C.S.

Department for Diseases of the Skin.—F. J. Horder, M.D., B.Sc.Lond., M.R.C.P.; H. Thursfield, M.D.Oxon., M.R.C.P.

Department of Electro-Therapeutics.—H. Walsham, M.D.Cantab., F.R.C.P.; J. M. Flavelle, M.R.C.S.

Dental Department.—F. Coleman, M.R.C.S., L.D.S.; B. Stevenson, L.D.S.Glasg.

DIARY FOR NEXT WEEK.

WEDNESDAY.

Obstetrical Society of London, 20, Hanover Square, W., 8 p.m.—Specimens: Dr. Lockyer: Carcinoma Uteri secondary to Carcinoma of both Ovaries. Dr. Handfield-Jones and others: Papers by J. W. Munro Kerr: Certain Details regarding the Operation of Cæsarean Section in Cases of Contracted Pelvis, based upon a Series of Thirty Cases.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital: Thursday, 4 p.m.—Medical Cases.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Eyes.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 2s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BATTERSBY.—On September 22nd, 1904, at South Parade House, Doncaster, the wife of J. H. Battersby, M.D., of a daughter.

GOING.—On September 28th, at Erinagh, Littlehampton, the wife of R. M. Going, F.R.C.S.Eng., of a daughter.

LEWARNE.—On Wednesday, September 21st, at Cricklade, Wilts, the wife of Frank Lewarne, M.R.C.S., L.R.C.P., of a daughter.

MATHEW.—At Port Elizabeth, Cape Colony, on August 30th, 1904, the wife of G. Porter Mathew, M.D.Camb., of a son.

MARRIAGES.

ANDERSON—STEPHENSON.—On September 21st, at Holy Trinity Church, Seghill, Northumberland, by the Rev. C. H. O'Byrne, B.A., Vicar of the Parish, James Anderson, M.A., M.B., B.Ch., Seaton Delaval, to Elisabeth Jane, eldest daughter of John Stephenson, Delaval House, Seaton Delaval.

BERRY—ADAM.—On September 21st, at Bolton, Lancashire, Herbert Martin Berry, M.B., Ch.B Vict., of Broxwich, Staffordshire, to Julia G. Adam of Horwich, Lancashire.

MARSHALL—HOLLAND.—On September 15th at St Alban's Church, Teddington, by the Rev. F. L. Bond, Vicar of Teddington, Charles de Zouche Marshall, M.R.C.S.Eng., L.R.C.P.Lond. of Thorverton, near Exeter, Devon, second son of John L. de Zouche Marshall, L.R.C.S.I. of Tedsington (late of Hastings and Lamberhurst, Sussex), to Ethel, eldest daughter of F. Holland, Esq., of Strawberry Hill, Twickenham, Middlesex.

DEATHS.

BRANDT.—On September 19th, at Royat (Puy de Dome), Annie, wife of Dr. G. H. Brandt, after a very short illness.

COUPER.—On September 26th, at Aviemore, Alexandra Road, South Shore, Blackpool, Marion, the beloved daughter of Dr. and Mrs. Sinclair Couper, aged 4 years.

SILVER.—At Walmer House, Aldridge, Walsall, on September 22nd (suddenly), George James Silver, M.B., C.M.Aberd.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

TELEPHONE (National):—EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2430, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

W. G. would be greatly obliged if any member could indicate a line of treatment likely to prove more satisfactory than usual for leucoderma on the face of a boy of 13.

H. S. asks for information as to the state of general medical practice in Queensland, Australia.

TREATMENT OF ACROMEGALY.

QUARENS writes: I shall be much obliged if any contributor to the BRITISH MEDICAL JOURNAL who has had experience in treating or watching cases of acromegaly will give the opinions and results he formed or has witnessed as to the value of treatment, and especially as to the tendency to become arrested or even go on to partial recovery.

PERIOD OF ISOLATION AFTER DIPHTHERIA.

E. S. writes: I should like to have your opinion, and that of any fellow practitioner, as to whether the period of isolation in diphtheria remains the same as in the pre-serum treatment days. A case has just occurred which makes this (as it must do to other practitioners) a matter of great importance. A. B., a medical practitioner, became infected by a case (subsequently fatal), and the first symptoms appeared on the evening of the 15th. On the 16th, membrane was found on the fauces, and a full dose of serum was administered, and the other usual remedies applied. The case was one of uninterrupted recovery, and on the 20th all throat and other symptoms had disappeared, and by the 25th he was in perfect health, and able to go out in the garden. Now does it not seem absurd that the old rule of at least three weeks' isolation should be enforced? If he is still infectious wherein is he so?

FEES FOR JUDGING AMBULANCE COMPETITIONS.

DR. E. JEPSON (Durham) writes: What should be the remuneration for judging at an ambulance competition—say, six teams are competing, occupying three hours: each item to be marked, and a careful decision arrived at; perhaps a journey of twenty miles to the place of competition, the whole business occupying most of one day? The St. John Ambulance Association, I am told, has suggested £2 2s. and expenses as the proper remuneration, but some of us think that this is not enough.

*** The amount suggested—namely, £2 2s. and expenses—seems to be in proportion to the usual remuneration offered by the St. John Ambulance Association for ambulance examinations. It is, however, hardly adequate in this case, considering the time occupied and the responsibility of the work, as a competition differs from an ordinary examination. Three guineas and expenses would seem to be a fair remuneration under the circumstances.

ANSWERS.

S. S.—(1) On hanging up a cloth soaked with lead acetate the latter becomes partly converted into lead subacetate. When the alum is added, decomposition takes place, aluminium hydroxide, aluminium acetate, and lead sulphate being produced. The first is at once deposited on the fibre, the second loses acetic acid and also deposits aluminium hydroxide, whilst the last appears as a white powder on the cloth. The formula of the deposit on the fibre is probably $Al_2(OH)_3$ or Al_2O_3 after drying; that of the white powder is $PbSO_4$. (2) There is no ground for assuming that glucose, if pure, is unwholesome.

ANTITYPHOID VACCINATION.

DR. SELBY.—(1) The practice of antityphoid vaccination among the troops in India and elsewhere has been suspended pending the result of the investigation into the subject now being made by a special commission. (2) There are no statistics which at present can be considered absolutely satisfactory, but those of Professor Wright himself (BRITISH MEDICAL JOURNAL, January 20th, 1900) may well be consulted. They relate to 11,225 British soldiers, of whom 2,835 were inoculated. The subsequent attack-rate was 0·05 for the inoculated and 2·5 for the uninoculated. Dealing with 250 officers invalided for various causes from South Africa, Colonel Crombie, I.M.S., showed that 27 per cent. of the inoculated had had typhoid, against 51 per cent. of the uninoculated. (3) There is no general consensus of medical opinion either in favour of or against this method of prophylaxis. Some think it quite useless, but among those who have paid special attention to the subject, and who are entirely

independent, may be met many who hold strongly that, as regards young men, the use of Wright's serum very materially lessens the incidence and decreases the mortality of typhoid fever, a single injection being preferred. (4) The serum does not appear to be on sale anywhere. Our correspondent might communicate with Professor Wright at St. Mary's Hospital Medical School. (5) We should certainly not "consider it advisable that every civilian going to India should be inoculated," but it would be a reasonable precaution to take in the case of a young man, especially as there is no reason whatever to suppose that the injection properly administered can do any harm. The treatment usually causes a certain amount of feverishness for a day or two and some local stiffness, neither of an important character. For this reason the injection would best be given either before starting or on the voyage, when the patient could lie by for a day or two without inconvenience, and not deferred until landing in India.

INCOME-TAX.

FAR EAST is entitled to a refund of income-tax on so much of his income as is derived from railway shares and rents, provided his total income from all sources does not exceed £160.

TREATMENT OF OBSTINATE RINGWORM.

DR. ALFRED C. JORDAN (London, E.C.) writes: There is a strong consensus of opinion in favour of the use of formalin, but your correspondents are not aware that by far the most effective way of applying it is in glycerine, in the strength of 4 per cent., made at the time of use by mixing together 5 minims of formalin (full strength) and 2 fluid drachms of pure glycerine. Remove all grease from the scalp by turpentine followed by soap and warm water. Apply the formalin and glycerine, and continue the application for at least an hour, so as to give the glycerine time to soak through the thickened skin and into the interior of the diseased hairs. The application hardly ever needs to be repeated, and there is no advantage in using stronger solutions. Vide *Lancet*, February 16th, 1901, p. 468.

A. C. writes: I have found the following ointment most useful in the treatment of ringworm: Ac. salicyl gr. xx, ung. hydrag. nit. 5ij, ac. chrysoph. gr. x, vaseline 5ij.

LETTERS, NOTES, Etc.

THE DAVID LEWIS EPILEPTIC COLONY AT SANDLEBRIDGE, CHESHIRE.

DR. JOHN MILSON RHODES (Didsbury) writes: I should be glad if you would allow me to correct a mistake I made in one of the names of the generous legatees of the late Mr. David Lewis. The correct names are Mr. B. W. Levy, of London, and Mr. George J. Cohen, Sydney, New South Wales. The homes, I may mention, are now ready to receive patients.

MOTOR-CAR ACCIDENTS.

DR. G. DUNDAS EDWARDS (Assouan, Egypt), writes: There has been considerable correspondence of late in the BRITISH MEDICAL JOURNAL on the subject of "Motors for Medical Men," but I do not think that sufficient stress has been laid on the importance of insurance against injury to a third party. A medical man must remember that when he becomes a motorist he forfeits all claims to justice. Let me cite my own case. Last summer I drove a small voiturette down to the meeting at Swansea, and near Ross had an accident, in which a horse and rider were involved. The rider—a local farmer—brought an action for damages against me. At the trial, which came on at the recent assizes at Hereford before Mr. Justice Lawrence and a special jury, two witnesses for the plaintiff—one a woman and the other her son, a lad of about 14—deposed that the car came down the hill at a very great pace and dashed into the horse. The rider was thrown to the ground, and then the front wheels of the car rested (*sic*) on the body of the plaintiff. Rested! notwithstanding that at the moment of the impact the car was stated to have been going at about 30 miles an hour. Having rested thus for about ten seconds the car backed three or four yards up the hill. I brought forward witnesses to prove that the car had no reversing gear, but this had no effect on judge or jury. A verdict was found for the plaintiff, with heavy damages and costs.

HOSPITAL ABUSE.

NEWCASTLE writes: Some time ago the practitioners of South-East London sounded a note of alarm when the news became known that King's College Hospital was going to be transferred to Denmark Hill. I have lately been working in that district, and I can easily understand the reason for their anxiety. The method of administering relief by the London hospitals is simply scandalous; I now only cite a few cases in proof of this statement. A commercial traveller paying £50 a year rent has been receiving charity from an ophthalmic hospital; two tradesmen, each paying £45 a year rent, have been to King's and Brompton respectively; the wife of a Civil Service clerk has been to Brompton; another tradesman paying £45 rental has been to a "nerve" hospital. I could give any number of instances. It is a pity that consultants should lend themselves to such work instead of trying to assist the general practitioner in getting a mere livelihood. Hospitals should pay their medical men, and people needing relief should be compelled to get a certificate as to means from a medical man. Failing this, there should be "a strike," and the public would soon be brought to its senses. The brewer is paid and the baker, and the doctor should be. Things are, however, getting worse, and will be almost unbearable when Carnegie's charities come south. Something should be done, and quickly too, to check the abuse of hospital charities.

"SKIPPING."

IN an article on skipping as a form of exercise which recently appeared in the BRITISH MEDICAL JOURNAL, Mr. Chamberlain was referred to as a man who maintained himself in health without taking exercise. The article moved a writer in the *World* to deliver himself of the following epigram:

> The wisest journal sometimes trips,
> Though all its care it use
> In efforts against little slips:
> I fancy Joseph often skips,
> *E.g.*, the *Daily News*.

WE would request correspondents who desire to ask questions in this column not to make use of such signatures as "A Member," "A Member B.M.A.," "Enquirer," and so on. By attention to this request much confusion would be avoided. Correspondents are asked to write upon one side of the paper only.

LETTERS, COMMUNICATIONS, ETC., have been received from:
A Anxious; A. C.; Mr. J. T. Armstrong, London; Dr. T. McC. Anderson, Glasgow; Anti-Bumbledom; Mr. F. Algar, London; Mr. H. E. Allen, London. **B** Mr. L. A. Bidwell, London; Mr. W. L'H. Bleukarne, Worthing; Sir W. H. Bennett, K.C.V.O., London; Mr. T. M. Blaikie, Swatow; Dr. P. Boobbyer, Nottingham; Dr. A. N. Boycott, St. Albans; Dr. T. R. Bradshaw, Liverpool; Mr. F. J. A. Baldwin, Bathurst; Mr. J. Booth, Broken Hill; Mr. R. A. Bickersteth, Menai Bridge; Mr. G. H. Broadbent, Manchester; Mr. H. N. Barnett, Belfast; Dr. J. M. Barnett, Bexhill-on-Sea; Mr. D. M. Browne, London; Dr. C. E. Beevor, London. **C** Clinicus; Mr. C. R. H. Crawford, Pembury; Mr. J. N. Collie, Portree; Mr. A. Cooper, London; Dr. G. Crichton, London; A. Court, M.B., Staveley. **D** Mr. E. Down, Devonport; De Dion Bouton, Limited, Secretary of, London; Messrs. Drake and Corham, London; Dr. A. Duke, London; W. T. P. Douglas, M.B., Newbury. **E** Mr. H. H. Ellis, Lelant; Surgeon-General G. Evatt, C.B., Havant; Dr. A. Elliot, London. **F** Mr. J. Fox, Leeds; E. R. Fothergill, M.B., London. **G** Dr. A. S. Grünbaum, Liverpool; Miss M. E. Garton, London; Dr. W. Gregg, Birmingham; Dr. J. H. Galton, London; Mr. C. Greenwood, London; Mr. W. J. Greer, Newport, Mon.; T. H. Godfrey, M.B., London; Mr. J. T. M. Giffen, Chester. **H** H. W.; W. D. Harmer, M.B., London; Dr. J. P. Henry, London; Messrs. Hirschfeld Bros., London. **I** Income-Tax Reclamation Association, Secretary of, London; Interested; Institute of Hygiene, Secretary of, London. **J** Mr. H. H. Jennings, London; Dr. E. Jepson, Durham; Dr. A. C. Jordan, London; J. G. S. **K** Mr. W. G. King, London; King's College, Secretary of, London. **L** Leeds, Town Clerk of, Leeds; Mr. R. T. Lang, London; G. R. Livingston, M.B., Dumfries; L. B.; Mr. E. M. Little, London; R. E. Legat, M.B., Cromer; Lieutenant-Colonel E. Lawrie, London. **M** Mr. H. A. McMahon, London; Mr. E. D. Marriott, Nottingham; Mr. B. E. Matthews, London; G. B. Muriel, M.B., Whitehaven; A. A. MacKeith, M.B., Southampton; Mr. H. C. Martin, Clacton-on-Sea; Dr. J. E. Moorhouse, Stirling; A. Murchison, M.B., Uig; P. O Malabre, M.B., Southport; C. A. Mercier, M.B., London; Member; Miss E. B. Meakin, M.B., Bombay; Messrs. Macmillan and Co., London. **N** Dr. J. T. C. Nash, Southend-on-Sea. **O** Sir I. Owen, London; Mr. J. F. O'Ryan, Tipperary; H. Overy, M.B., London; Dr. H. O'Neill, Belfast. **P** Perplexed; Dr. T. D. Poole, Wolverhampton; Dr. N. Porritt, Huddersfield; Mr. T. H. Parke, Buxton; Captain A. E. H. Pinch, London. **R** J. Rigg, M.B., Preston; Dr. S. J. Ross, Bedford; Dr. J. C. Renton, Glasgow; Dr. H. Renney, Sunderland; Major J. Ritchie, R.A.M.C., Singapore; Dr. F. W. F. Ross, London; Mr. J. Round, Plymouth. **S** P. S. Sturrock, M.B., Dunfermline; Dr. W. Salisbury-Sharpe, London; B. Strachan, M.B., Sunderland; C. Smith, M.B., Sheffield; Dr. H. Snow, London; Dr. W. Sykes, Exeter; Messrs. G. Street and Co., London; Baroness Stockheim-Janoni, Porto; Mr. H. Smith, Egremont; Mr. H. R. Spackman, Wolverhampton; Messrs. R. Sumner and Co., Liverpool; Dr. C. E. Shaw, Belfast; A. M. Sheild, M.B., London. **T** Mr. E. Tuckfield, London; E. Trotter, M.B., Holmfirth; Mr. F. I. Trimmer, Alston. **U** University College, Dean of, London. **W** Mr. A. Wiglesworth, Liverpool; Mr. H. H. Weir, Chemulpo; Messrs. J. Wiley and Sons, New York; Dr. F. J. Wethered, London; Dr. A. G. Welsford, Hemel Hempstead; Dr. G. A. Williamson, Larnaca; Dr. F. Willcocks, London; R. A. Welsh, M.B., Felton, etc.

BOOKS, ETC., RECEIVED.

Manual of Gynaecology. By D. Berry Hart, M.D., F.R.C.P.E., F.R.S.E., and H. Freeland Barbour, M.A., B.Sc., M.D., F.R.C.P.E., F.R.S.E. Sixth edition. Edinburgh and London: W. and A. H. Johnston, Limited. 1904.

Jahresbericht über die Leistungen und Fortschritte auf dem Gebiete der Neurologie und Psychiatrie. Redigiert von Professor Dr. E. Mendel und Privatdozent Dr. L. Jacobsohn. VII. Jahrgang: Bericht über das Jahr 1903. Erste hälfte. Berlin: S. Karger; and London: Williams and Norgate. 1904. 10s.

Studies from the Rockefeller Institute for Medical Research. Reprints. Vol. II. 1904.

The Plague. By A. Mitra, L.R.C.P., L.R.C.S. Second edition. Kashmir: Central Jail Press. 1904. 1 rupee.

A Report on the Outbreak of Plague in Kashmir from November 19th, 1903, to July 31st, 1904. By A. Mitra, L.R.C.P., L.R.C.S. Edin. Kashmir: Central Jail Press: 1904.

The Practice of Obstetrics. By J. Clifton Edgar. Second edition. London: Rebman Limited. 1904. £1 10s.

Syphilis and Gonorrhœa. By C. F. Marshall, M.D., Ch.B., B.Sc. Vict., F.R.C.S. Eng. London and New York: Rebman Limited. 1904. 8s.

Japanese Grammar Self-taught. By H. J. Weintz. London: E. Marlborough and Co. 1904.

The Suppression of Tuberculosis. By Professor E. von Behring. Translation by C. Bolduan, M.D. First edition. New York: John Wiley and Sons. London: Chapman and Hall, Limited. 1904. 4s. 6d.

Municipal Shortcomings. "The Example of Liverpool." A series of Articles contributed to the "Liverpool Journal of Commerce." By T. Myddelton Shallcross. Second edition. London: Elliot Stock. 1s.

The Population, Poverty, and Physical Degeneration Problems Showing the remedy, and how charity in all forms increases the evils. Compiled from the writings of Malthus, John Stuart Mill, Herbert Spencer, Huxley, Tolstoy, etc. London: Rowers Brothers. 1s.

Adenoid Growths of the Naso-Pharynx. By G. A. Garry Simpson, M.B.C.S. Eng. London: John Bale, Sons, and Danielsson. 1904. 3s. 6d.

The Nervous Affections of the Heart. By George Alexander Gibson, M.D., D.Sc., F.R.C.P.Ed., F.R.S.E. The Morison Lectures, 1902 and 1903. Edinburgh and London: Young J. Pentland. 1904.

A Textbook of Operative Surgery. By Warren Stone Bickham, Phar.M., M.D. Second edition. Philadelphia, New York, and London: W. B. Saunders and Co. 1904. £1 5s.

Lemco Dishes for all Seasons. By Eva Tinte. London: Lemco Offices.

*** In forwarding books the publishers are requested to state the selling price.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

Eight lines and under	£0	4	2
Each additional line	0	0	6
A whole column	2	0	0
A page	5	5	0

An average line contains six words.

Advertisements should be delivered, addressed to the Manager, at the Office, not later than first post on Wednesday morning preceding publication; and if not paid for at the time, should be accompanied by a reference.

Post-Office Orders should be made payable to the British Medical Association at the General Post-Office, London. Small amounts may be paid in postage-stamps.

N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

The Huxley Lecture

ON

THE FUNCTION OF THE CAECUM AND APPENDIX.

Delivered at the Opening of the Winter Session of Charing Cross Hospital Medical School on October 3rd, 1904.

By Sir WILLIAM MACEWEN, M.D., F.R.S.,
Regius Professor of Surgery in the University of Glasgow.

[After some introductory remarks Sir William Macewen proceeded:]

What Huxley owed to the various teachers in Charing Cross Medical School may be difficult to gauge and hopeless to apportion; doubtless each had its subtle influence. Some teachers supply material which enables students to pass examinations and nothing more. Here and there one finds a teacher who not only imparts information, but who can do much more for receptive students—he can teach them to observe, and, better still, he may induce them to think. When we do happen to come in contact with one of these, we should stand by silently and watch him work. Such teachers are true fertilizers of youth.

There were two people who, Huxley acknowledged, aided in forming his early mind. The one was Professor of Physiology in Charing Cross School of Medicine. Mr. Wharton Jones, of whom Huxley says, "I don't know that I have ever felt so much respect for anybody, as a teacher, before or since"—the importance of that teaching may be gathered when it is remembered that Huxley made comparative anatomy and physiology his life-study. The other was a man with whom Huxley hardly ever came into personal contact, and whose life-work lay far removed from scientific pursuits, one who has been called many hard names, and who will live long after the libellers have been forgotten; one who wrote his works in the silence and seclusion of the lonely countryside. We may see in Huxley's whole life the immense influence exerted over him by this great teacher. He not only led him to look into German literature and to reap the fruit of the extension of that study into German science, but Huxley's life-work seems to have been framed upon Carlyle's principal *motif*. Huxley acknowledges his great indebtedness to *Sartor Resartus*—and perhaps I may be permitted also to acknowledge that influence. The first time I read *Sartor Resartus*, it was a sealed book to me—my mind being quite unprepared for it, it fell flat. Years after, having passed through a furnace of doubt and difficulty in the meantime, I happened to light accidentally upon *Sartor Resartus*, and opening its pages read and reread it, day and night, pursuing its discourse with restless eagerness until it was consumed and digested. Its true meaning and bearing on life was revealed—it proved a draught of deepest joy and refreshment to a thirsty soul. It is evident that *Sartor Resartus* made a deep impression upon Huxley. Look, for instance, at what Carlyle says on the pursuit of truth:

"One circumstance I note," says he, "After all the nameless woe that inquiry which for me, what it is not always, was genuine love of truth, had wrought me, I nevertheless still loved truth, and would bate no jot of my allegiance to her. Truth, I cried, though the heavens crush me for following her; no falsehood, though a whole celestial lubberland were the price of Apostacy."

That same cry has been repeated through Huxley's life. We recognize it as the guiding spirit of his work, that which made him hate shams and strike them hard when he found them.

In commenting upon the many hard names he had been called, Huxley says: "One thing people will not call me with justice, and that is 'A liar!'" He regarded truth as the apple of his eye. He would willingly own the monkey as an ancestor should facts prove it to be so, and would shun any one who used great gifts to obscure truth. It was that ruthless endeavour to reach truth and cling to it for its own sake that made Huxley what he was. His creed may be summed up in his own words: "Sit down before fact as a little child, be prepared to give up every preconceived notion, follow humbly wherever and to whatever abysses Nature leads, or you shall learn nothing."

No doubt most of you are familiar with that delightful life of Huxley written by his son, and the many glimpses into his character which one gets there. Allow me to give another.

Many years ago a paper was prepared by me on the transplantation of bone, and a friend suggested that it should be sent to the Royal Society. Not knowing one single person belonging to that Society, I rather hesitated about complying with the suggestion, believing that the paper might not be received. Finally, however, it was agreed to let the Royal Society have the refusal of it, so the paper was sent, addressed to "The Secretary." Shortly after, I received a letter from Huxley, who was secretary at that time, inviting me to be present for the reading of the paper, which he had taken the responsibility of placing directly before the Society, without requiring, as usual, that it be first submitted to the Council for consideration. The recollection of that first meeting with Huxley has ever since filled me with warm admiration of his kindly personality. I came before him an absolutely unknown person and a stranger, yet he took me by the hand, seated himself beside me, and soon we were oblivious to all save the matter of our conversation. He asked me many questions concerning the subject of the paper, and gave me in return information regarding the persistence of vitality in parts removed from the lower forms of organism and other kindred subjects. He further gave much useful advice on the best manner of presenting the paper to the Society. The summary read was successful in awaking the interest of the members in the subject treated, and a discussion followed the reading, in which Mr. Busk, Mr. Bowman, Emeritus Professor Allen Thomson, Professor Huxley, and others took part. But I believe it was mainly the kindly interest evinced by Huxley toward the subject which brought about its favourable reception.

Is this body of ours so very imperfect that we require to submit it to the numerous rectifications which are sometimes recommended to be carried out after it comes into the world?

The Arabs, not content with the beautiful ovoid form of the cranium, apply boards and flatten the heads of their offspring. Certain Africans and South Sea Islanders transfix their nasal cartilages and place rings and skewers through them. The Chinese produce a very high arch in the feet of their ladies by bringing the toes and heels together. We smile at these "improvements" and call them distortions. When a child is born in this country some consider it necessary that he be circumcised. A few years later the tonsils are removed; this is followed by the removal of the pharyngeal tonsil; a few years later the appendix becomes an ever-increasing terror, which is only allayed when that organ has been placed in a glass jar. Next, there is at present openly expressed discontent about the alimentary tract. Some are persuaded that there is an intestinal whorl too much, and that this extra whorl requires to be "short-circuited." It is further alleged that the stomach is an organ which the human body would be well to be rid of, and though it be the chief seat of digestion of albuminous substances, yet that the small intestine should take its place. One author goes on to say that many creatures that have found the opportunity of obtaining their nourishment in a highly-digestible condition have lost more or less completely the digestive organs; that parasites such as the tapeworm live in the human digestive tract, bathed in nutritive fluid which they absorb directly, they having no digestive tract. From the trend of this author's remarks, one would gather that he believed that man has been evolved in the wrong direction, though he does not go the length of proposing that man should receive his nutriment through the medium of his morning tub. It would not be surprising if some one, going on the same lines, were to state that he had arrived at the conclusion that the olfactory and gustatory nerves were but remnants of a bygone age when our primitive ancestors had to sniff the air to guide them to their food, and for its proper selection had to depend on their sense of taste; as these nerves were no longer of use for our protection and comfort, were in fact a source of considerable inconvenience, their devolution would add greatly to the happiness of mankind; that mastication was out of fashion, teeth a failure, deglutition a bore (especially as the tongue was now constantly occupied in a "higher sphere"), and digestion a discomfort; that eating and drinking, with all their attendant evils, being remnants of a pre-civilized age, ought to be abolished, and each human being, shortly after birth, should have an enterostomy performed (quite a simple matter—an incision, a loop of bowel,

a few stitches), and ever after that be happy. A few pellets of concentrated essences, delicately adjusted by chemical processes, might easily be dropped into this minute aperture, where they would speedily be converted into pabulum sufficient to sustain man in all his wants without any waste products remaining. Instead of the nation being burdened by the maintenance of the largest fleet in the world held for protection and transit of ships loaded with food-stuffs which pass into our markets day by day, some firms of chemists would simply enlarge their premises, and send out food supplies in the shape of tabloids, which could be delivered by the local postman. What a social revolution this would accomplish—how much time and labour would be saved—the abolition of the epicure and the diner-out, champagne and turtle soup a matter of history! No more teetotal societies or black lists, and the consequent empty gaols, to say nothing of the solution of the domestic servant problem! It is scarcely likely that in the City of London, at least, such a proposition would become popular.

Again, the large intestine is by some physiologists regarded as a useless inheritance bequeathed to us by our animal ancestors, of little importance as far as digestion goes, and mainly discharging a function similar to that of the urinary bladder. The urine, continually secreted by the kidneys, accumulates in the reservoir provided by the bladder. In like manner, after digestion, the remaining waste matter accumulates in the intestinal receptacle, the colon, where it remains for a period, but where it may stagnate, the products of putrefaction being absorbed and thereby becoming harmful to the individual. It is boldly asserted that the large intestine and its appendix are at best superfluous, generally antagonistic to health, and baneful to the life of man, and that their removal would be attended by happy results.

Some who hesitate to go so far as to advocate the removal of the colon have no scruple in condemning the caecal or vermiform appendix. All agree that this is a rudimentary and useless organ, through the incompetency of which life is constantly threatened and many times lost. Some persons have been so much impressed by this idea that they are uneasy until the appendix has been removed: and some surgeons say that, while operating for other purposes, they never miss the opportunity of relieving their patients of a possible source of danger by removing the normal appendix from the abdomen.

With all such proposals before us, one is forced to ask, Is this human body of ours so badly constructed that it contains many useless parts and requires so much tinkering? Possibly I may be out of fashion with the times, as I cannot find such imperfections in the normal human body as are alleged. On the contrary, the more one looks into the human body and sees it work, the better one understands it, and the more one is struck with the wondrous utility, beauty, and harmony of all its parts. There are many parts of the human body whose structure is unknown, and the function of which is hidden. Have we a right to conclude that every part of the human anatomy whose structure and function we do not understand is useless? The theory of evolution does not lead us to such a conclusion. Evolution there certainly has been, and it still goes on; but it would be fallacious to conclude that every organ whose use is not clear to us must be a remnant of a past existence, and therefore of no further use.

Man, like all other animals, has undergone and is doubtless still undergoing slight modification as the thousands of years pass, but when that fact is granted, we have still to ask whether man has outlived the use of any particular part of his anatomy. Others argue on different lines, stating that they have removed the healthy appendix and that as the persons have thereafter maintained undisturbed health, it was clear to them that the appendix could perform "no function useful to man." Is this argument not equally fallacious? One has been compelled to remove the spleen and certain portions of the brain, one of the lungs and one of the kidneys, and the patients recovering were in after-life able to go about their work without detriment apparent to the ordinary observer; but it would be ridiculous to say that therefore the spleen and those portions of the brain, kidneys, and lungs were useless in normal human beings and should be removed, or that man would be as well without these organs.

One would prefer normal man as he comes into this world to the pared and mutilated animal which would be produced if the attempts at betterment which some folks propose were carried into effect. With all his alleged imperfections, normal man is a much more perfect animal than the physiologist or the surgeon can make him. Human effort toward the repair and perfecting of normal man has hitherto been poor compared with Nature.

It is, however, seen that the appendix is often the seat of disease, sometimes arising with startling abruptness, sometimes approaching insidiously, and usually selecting the youth of both sexes, striking them down with appalling suddenness. To combat this disease thousands of operations are required, many individual surgeons performing hundreds of operations for the relief of this affection which would in the majority of instances otherwise have ended fatally. All this removal of diseased appendices, however, does not bring us one step nearer the causation of the disease or the prevention of the malady, nor does the solution of these seem probable as long as one regards the appendix as useless. If the appendix be really a useless organ, and at the same time a menace to the life of its possessor, should it not be removed at an early period of existence? Many imbued with this idea beg to have their appendices taken away.

In the midst of this serious indictment against the appendix, dare one say a word in its favour?

The great majority of mankind seems to do very well with the appendix; it gives rise to no annoyance in them, for it is, after all, a small percentage of the community that becomes the victims of appendicitis. Is the appendix really a useless organ? In endeavouring to answer this question it is seen that the appendix is so closely connected with the caecum, that it is necessary in any such inquiry to consider the structure and function of the caecum and appendix together. While physiologists have done much work on digestion in man, they have confined their attention principally to the upper portion of the alimentary canal, seldom descending further than that part of the small intestine where the bile and the pancreatic juice are poured into it. The large intestine is treated by them as a whole, the caecum is not differentiated, and the processus vermiformis is either not mentioned at all or dismissed in a few lines dealing with its histology. It is only recently that anatomical textbooks have paid attention to the structure and position of the appendix, the attention of anatomists having been directed to it by the surgical work that was being done in that region. In the same way, people learn geography by the wars that are being waged in various parts of the world. Speaking generally, the colon—including the caecum—is regarded by physiologists mainly as a receptacle for the refuse of the food-stuff from which the nutriment has been removed. The absorption of the soluble constituents, especially of water, is completed in this tube, and it is probable that cellulose may be digested by fermentive changes occurring therein.

Is it not possible that in man the caecum and appendix play an important part in the process of digestion? In considering this question let us first look briefly at the lessons which may be gained from a study of digestion in the lower animals. Comparative anatomy shows us that in the lower forms of life, such as in fish, batrachians, and reptiles, the caecal appendages do not exist, the small and large intestines forming a continuous tube. Higher in the scale of life, as in birds and mammals, one sees at the junction of the small with the large intestine one and sometimes two pouches, in which the food undergoes a certain process of digestion before it is passed into the colon. There are, however, considerable differences in the caeca among the mammals and birds, dependent on the nature of the food which they consume and on whether there is special provision for its digestion.

In the carnivorous mammals, as in dogs and cats, the caecum is rudimentary or absent, and the colon is short and uncomplicated. The gland secretion from the upper part of the alimentary tract is abundant, and so strong as to produce a powerful digestive effect, which process is carried out in the stomach and small intestine, the latter of which also absorbs the principal nutritious elements. It is quite different in the complicated digestive apparatus of the herbivora, in whose immense caeca the digestive process goes on, and in some of which it forms the most important part of the digestive apparatus.

In those of the herbivora whose food not only is poor in nutritious substances but is enclosed in resisting cellulose envelopes, the digestive apparatus is complex and often specialized. The ruminants have not only powerful masticatory apparatus and abundant saliva, but they have several pouches and stomachs in which the food is prepared, and they possess long intestinal tracts and well-developed caeca.

On the other hand, in the monogastric herbivora, as the horse and rabbit, which do not chew the cud and which often bolt their food, the stomach is small and the digestion is principally caecal, the caecum having become compensatorily enlarged. The caecum in these animals is enormously developed, being much larger than the stomach and forming an immense pocket occupying the greater portion of the abdomen. Besides having numerous folds of mucous membrane, it is abundantly endowed with gland follicles and large lymphatics. The caecum is thus a compensatory organ to the stomach. In those herbivora that feed principally on tender vegetables and fruits, capable of being easily digested, the caecum is small. In those that feed upon bulky vegetables, difficult to digest and rich in cellulose, besides having specialized organs made for digestion in the upper part of the alimentary tract, they have enlarged caeca, in which an important part of the digestion occurs; while in those herbivora whose stomach is small the principal part of their digestion occurs in the caecum. The caecum of the solipeds takes the place of the ruminant's stomach.

In birds the same facts are demonstrated. The vegetable eaters among them have greatly developed caeca, abundantly supplied with glands secreting a digestive fluid, also with villi for absorption, and the mucous membrane is thrown into folds to further multiply the surface. In flesh-eating birds the caeca are rudimentary or absent, digestion in their case being completed in the stomach and small intestine. In such birds as pigeons and geese with double crops—analogues of the ruminant's pouches—the process of grinding and mixing the food with digestive fluid is so thorough that the digestion is completed in the upper portion of the alimentary canal and the caeca are absent. The crop and gizzard fulfil the same end as the caeca. It is seen in the herbivora that a large amount of undigested food is found in the caecum, while in the colon most of the undigested matter has disappeared, showing that digestion has occurred in the caecum. Many recognize that the caecum acts as a reservoir for fluids and undigested food-stuffs coming from the small intestine, the caecal reaction and temperature favouring fermentive change. While cellulose has passed through the small intestine unacted on by the saliva, gastric juice, and pancreatic secretion, it becomes digested in the caecum, where it may be converted into marsh-gas and possibly into sugar, the latter of which is absorbed.

To summarize: one sees that the digestion in carnivorous birds and animals takes place principally in the stomach and small intestine, the caeca being rudimentary or absent; while in the herbivora the caecum is enormously developed and in the solipeds the caecum is the chief digestive organ, the stomach occupying a secondary place.

Man, if not an omnivorous animal, is at least a carnivorous and herbivorous one; therefore, by analogy, one would expect man to possess not only a stomach and small intestine, but also a caecum—just as he has. As the vegetable food which he consumes is generally of the more tender and nutritive varieties, the caecum is only of moderate size.

Data obtained from Observations on Man.

During practice frequent opportunities present themselves by means of openings made for the relief of pathological conditions or brought about by traumatism or disease, for observation on digestion, as carried out in the various portions of the alimentary tract. While such observations have from the very nature of things been fragmentary and incomplete, and in this respect not comparable to direct experiment practised on the lower animals, and further having the disadvantage of being seen through pathological surroundings, still they possess some compensating value from having been made upon man himself.

The effect upon the patient of the escape of food-stuffs from the alimentary canal through fistulous openings varies according to their position relatively to their distance from the stomach. The nearer the stomach the more serious the result. For our present purpose it is sufficient to look to the effects of the escape of chyme from such openings as may occur toward the distal end of the small intestine, the caecum, and the colon.

When openings have formed toward the distal extremity of the ileum, of sufficient magnitude to allow the chyme and intestinal secretions to escape freely, the patient suffers from inanition. A somewhat similar result is seen when the artificial opening has occurred in the caecum of sufficient size and patency to allow of the free escape of the contents. The strength of the patient becomes less and is difficult to maintain, especially when ordinary food is administered.

In marked contrast to this is the condition of the patient affected with an artificial opening in the descending colon near the sigmoid. He does not lose weight; on the contrary this is often increased, his health and strength are maintained, and he is capable of carrying out his usual avocation with vigour. These facts go to prove that the entire nutriment obtainable from food is not removed during its passage through the small intestine, otherwise there would be no perceptible loss when the chyme is removed at the end of it. Whereas, it is only when the chyme is allowed to pass along the whole length of the large intestine as far as the sigmoid flexure that the patient derives the full good of the ingested matter. It is further seen that if a large opening be made in the caecum, not only permitting the contents to escape freely, but also interfering seriously with its secreting surface, troublesome diarrhoea is apt to occur, accompanied by a watery secretion from the mucous membrane. This diarrhoea, which is apt to ensue, constitutes one of the difficulties in dealing with such cases, and arises not only from the interference with the caecal function, but also probably with the influence controlling the ileo-caecal valve.

If the caecum be entirely removed, the patient recovers and maintains fair health as long as special diet be taken, but he is subject to attacks of diarrhoea, alternating with constipation, on the ingestion of ordinary food. In six cases of this kind operated on by me, two only had a tendency to diarrhoea, alternating with constipation, and they complained of frequent indigestion, while four others complained of diarrhoea as being of frequent occurrence. Though for months after the operation which relieved them of their previous pathological conditions these patients improved greatly in strength and weight, yet ultimately they appeared thin and impoverished, the diarrhoea being still apt to occur.

In one patient, whose caecum, ileo-colic valve, and a large portion of the ascending colon had to be removed, the ultimate diarrhoea was an annoying and a marked symptom, commencing, as the patient stated, "on the slightest excuse," and continuing for an indefinite period thereafter—often for weeks. This patient likewise became weak and lost flesh, and though living for many years after the operation never regained normal weight. (It has been reported that the ligation of the caeca in chickens produces diarrhoea with loss of flesh, which ultimately causes death from inanition.)

Those cases illustrate the fact that the arrest of the function of the caecum results in disturbed digestion manifested in diarrhoea and in lowering of the strength, though these results may be modified by special diet.

In observing the caecum through defects in the abdominal wall it is seen that, when in a physiological condition and undisturbed, it undergoes considerable alterations in form, sometimes being broader and sometimes elongated, and occasionally there is a churning movement. At first such movements seem to be erratic, but there are at least some of them which apparently are excited by the taking of food and by its passage through the small intestine. In some patients, immediately on taking food into the stomach there was a caecal movement commencing from below upwards, as if expulsive. In one instance this seemed to correspond to a peristaltic action of the small intestine, but in others such movement in the small intestine could not be discovered, and in them it followed the ingestion of food too quickly to permit of the peristalsis acting through the whole length of the small intestine. It was, therefore, regarded as probably due to reflex action. Once this movement was excited in the caecum it traversed the colon, and, in one instance at least, it reached as far as the sigmoid.

Some of these caecal movements originate in the appendix, the undulating movement running upward from the appendix, and causing the contraction of the caecum. There were other movements in the caecum whose point of origin was not ascertained. Observations on the interior of the caecum, seen through defects in its walls, showed that there were differences in the amount and fluidity of the secretion exuding from its mucous surface. When irritated mechanically, the flow of exudate was greater and more fluid. At a variable interval after a meal—one or two hours—peristaltic effects in the colon ensued, resulting in the extrusion of its contents, and shortly after a clear thick fluid was poured from the secreting caecal surface, and in several instances was seen to exude in considerable quantity from the appendicular orifice. As far as could be ascertained, there was no cause for this

flow other than a reflex action, possibly stimulated by the presence of food and the exudation from the upper part of the small intestine.

In a case where the anterior wall of the caecum had been removed (by an explosion), the ileo-caecal valve and the appendicular orifice being exposed after recovery from the shock several observations were made. First it was seen that there was a considerable flow of glairy mucus from the appendix and caecal surface which did not constantly exude, or, at least, did so to a greater extent shortly after food was introduced into the stomach, and to a marked extent just before food began to pass through the ileo-caecal valve. On one occasion quite a stream of fluid poured from the appendix just before the chyme began to pass through the ileo-caecal valve. When chyme passed through this valve it did so in small quantities at a time, and there were occasional pauses in which the ileo-caecal valve seemed to close—probably by a reflex action. This fluid from the caecum and appendix was invariably alkaline.

This patient, who was very observant, took quite a philosophic interest in his condition, and was rather proud that his misfortune could be made of service. It was seen that his will power had no effect upon either the secretion or on the control of the ileo-caecal valve; but one day, when he was much disturbed by the reception of "bad news," which could not be kept from him, and after which he said he had indigestion or was "bilious," the secretion in the caecum was at first very watery, and then the surface became drier than at any previous time, and apparently the contents of the small intestine were more quickly evacuated, and overflowing gave rise to smarting and irritation on the sides of the wound. The caecal secretion, being scanty, was not sufficient to neutralize the acid chyme which was poured in. Usually the flow from the ileo caecal valve was slow, the material passing into the caecum in small quantities, which slide over the orifice of the appendix and get smeared by the exudation therefrom, as well as mixed with the exudation from the general caecal cavity.

It seems as though there were a control over the ileo-caecal valve regulating the amount of material which passes from the small intestine into the caecum. If the valve by any means be rendered patent, the contents of the small intestine flow quickly into the caecum, and a troublesome escape of semi digested material ensues—material which has missed the caecal digestion. One of the troubles of operation in this region consists in the arrest of the control of the ileo-caecal valve and the flow of the fluid contents from the small intestine into the caecum at a rate greater than the caecum and appendix can deal with. Is this regulation of the flow into the caecum due to reflex action, induced by the impression on the nerves of the mucous membrane of the caecum and appendix, brought about by the quantity and quality of the contents of the small intestine which are received into the caecum? Such is a probable solution.

Attempts were made to stimulate artificially the exudation from the caecum and appendix. The passage of the finger lightly over the caecal surface from the ileo-caecal valve downwards toward the base of the caecum did not succeed in increasing the exudation. A camel-hair brush, moistened in the chyme issuing from the ileo colic valve, and drawn several times downwards over the mouth of the appendix, was followed on several occasions by an increased exudation—while oftener it had no such result.

The fold of mucous membrane about the orifice of the appendix has been seen to close and cover the orifice, and in the same patient has been seen to recede and to expose the opening. Artificial means were not successful in bringing the folds of mucous membrane over the aperture, by inducing reflex action.

You are all aware that, by a beautiful experiment performed on the upper part of the digestive tract of dogs, Pawlow has recently shown that there was, what he named an acid reflex, which controlled the pyloric extremity of the stomach and prevented the acid contents of the stomach from issuing in too great quantity at a given time, whereas, with alkaline contents, the reflex of the pyloric valve did not exist. It appears to me that at the ileo caecal valve there is a controlling reflex agency regulating the flow of partially-digested food into the caecum. It regulates the flow of material at a rate which enables the caecum and its juices to deal with it. When this agency is interfered with caecal indigestion occurs which generally ends in diarrhœa of partially-digested matter, but which occasionally leads to masses of matter gathering in the caecum and causing constipation, with subsequent fermentive action of a kind which is apt to result in irritation of the mucous membrane and appendix.

NERVOUS MECHANISM OF APPENDIX.

The appendix is regarded as a mere diverticulum of the caecum, and yet its vascular and nervous supply pertain more to that of the small intestine than that of the colon. The appendix is supplied by the terminal branches of the same group of nerves as supply the small intestine—the superior mesenteric plexus of the sympathetic. Reflex action may be easily set agoing in the appendix by stimuli from the small intestine, and each part may react on the other.

When it is recollected that the circular muscles of the caecum are continuous with those of the appendix, and that the longitudinal caecal bands end themselves on the appendix, it will be understood how easily the nervous apparatus of the appendix may initiate the larger movements of the caecum by first inducing movements in the appendix, and how inhibition of these movements may cause caecal disturbance. The same agency, by control of the vascular supply, will regulate the exudation from the appendix, and that in accordance with the impulse received from the small intestine. It is known that the mind has an influence on the small intestine through the vagi, sometimes exciting peristalsis and sometimes arresting it. The appendix is subject to the same mental effects. An instance of the result of mental disturbance on the caecal secretions having been already quoted, one can see that a concentrated brain effort or profound mental distress has the power of producing effects upon the appendix and caecum and their secretion.

Thoughts passing through the mind are well known to affect the secretion of the salivary glands. In two cases which were under my notice, in both of which the duct had formed a communication with the skin on the cheek—while the natural opening into the mouth had closed—we could produce an astonishingly free flow of saliva by mere suggestion of foods, especially of acid fruits. One of the patients had to beg of his friends not to introduce food topics into their conversation, in order that he might be relieved from mopping up the flow. While his mind was fully occupied, as when he felt cornered in chess, there was cessation of the salivary flow.

In the foregoing we have seen that there is a nervous mechanism regulating the movements of the appendix and caecum, and also controlling the ileo-caecal valve. We have also seen that the exudation of the appendix and caecum is augmented and diminished under certain circumstances. Let us look now to the character and power of this exudation emanating from the appendix and caecum.

THE SECRETING SURFACE OF THE CAECUM AND APPENDIX.

In the first part of the large intestine, and especially in the caecum and appendix, the lymphatic follicles and the glands of Lieberkühn are very numerous and well developed, the latter being larger, deeper, and broader than the corresponding cells in the small intestine, and the goblet cells which they contain are larger and more abundant. This all histologists admit. So closely are those glands packed together in the caecum, that the united surface presented by them is immensely larger than the ridges between the glands, which is all that is left at this place for absorption. So that the histological structure would point to the caecum and appendix being made for digestive purposes rather than for absorption.

The succus entericus which is exuded by these cells of Lieberkühn has hitherto received scant attention by physiologists, and it has been stated that even in the small intestine it is of little moment in digestion. But in the small intestine the succus entericus is of great assistance in digestion, possessing the capability of increasing the activity of the pancreatic ferments and "more especially the proteolytic," the latter to a marked degree. The succus entericus appears to Pawlow as a ferment of other ferments, which he names enterokinase. So powerful is this kinase that, while pancreatic juice alone took six hours to dissolve fibrin in a thermostat, and had not even attacked white of egg after ten hours, the addition of some succus entericus to the pancreatic juice dissolved the fibrin in from three to ten minutes, and the coagulated white of egg in three to six minutes.

Now, if we remember that the glands of Lieberkühn are far more numerous and better developed in the upper part of the colon, the caecum, and appendix than in the small intestine, it will be apparent what a powerful adjuvant to the completion of digestion is to be found in the caecal succus entericus, which is poured out so abundantly from those parts upon the semi digested matter received from the small intestine.

Taking the appendix apart, though there are individual differences, one sees in most appendices that the surface is covered with glands of Lieberkühn in an active state of secretion during health. If one takes the appendix at an average of $3\frac{1}{2}$ in. and lines that space with glands of Lieberkühn encircling the interior, it is seen that a considerable amount of succus entericus may be exuded from that surface alone, more especially as it is abundantly supplied with blood; therefore, the secretion of the appendix, viewed alone in this sense, would be a valuable aid to digestion.

The Actions of Micro-organisms on Caecal Digestion.

There is, however, another agent at work in the final disintegration of pabulum poured into the caecum, and that is the micro-organisms. They find in the caecum and appendix abundance of alkaline medium in which they can grow and pabulum in the chyme for their development. They undoubtedly perform a part in disintegrating compounds which have resisted the action of the gastric and intestinal exudations. These organisms are found in all the recesses of the caecum and colon, and are constantly found in the cavity of the appendix, the exudation from which aids in stimulating and at the same time in controlling the action of the organisms and in preventing them from acting injuriously upon their host. The leucocytes in the solitary lymphatic follicles and the nuclein aid in maintaining this control. Bizzozero has shown that the cells of the appendix in healthy rabbits contain enormous numbers of degenerated micro-organisms, and Ruffer has counted more than 200 micro-organisms in a single field of a section of the vermiform appendix. It looks as if the cells and nuclein of the solitary follicles in the appendix have a controlling action on the organisms, and one of the functions of the appendix may be to maintain cultures of these organisms in a fit state to perform their function on the pabulum poured into the caecum. On the inhibition of this function, the germs may be capable of damaging the coats of the caecum and appendix which have been thereby lowered in vitality. When a purgative action has produced its effect and cleared out most of the germs from the caecum and colon, those in the appendix will still maintain a fresh culture for renewed action. The chyme from the ileo-caecal valve is directed toward the orifice of the appendix and receives there its portion of succus entericus and germs fitting it for the completion of digestion.

Some Anatomical Relations of the Appendix and Ileo-colic Valve.

When one looks at the disposition and arrangement of the various parts in the interior of the caecum, one sees that the ileo-caecal valve, besides performing its other functions, is so formed that it sheds the chyle over the orifice of the appendix in its descent into the caecum (see schematized drawing of interior of caecum and appendix).



Scheme of caecum, ileo-caecal valve, and appendix, in section.

The appendix, while in itself having the muscular mechanism and nervous apparatus necessary for emptying its contents in any position it may normally be placed in, is in the majority of instances so situated that the action of gravity favours the escape of the contents into the caecum. The action of gravity, on the other hand, favours the retention of the chyme in the caecum until the caecal digestion is completed, when muscular movements are originated for its expulsion.

Causation of Appendicitis.

In the foregoing it has been shown that the caecum and appendix perform an important part in the final stages of digestion. If this be so, one would expect *a priori* that serious interference with the function of those parts would give rise to disease. This is exactly what occurs. Though the causes of appendicitis are varied, the majority are intimately associated with the digestive process and the factors controlling it. Thus Deaver, who has perhaps performed more operations for appendicitis than any one, says that the disturbances of digestion have been so pre-eminent in the etiology of appendicitis "that it is unhesitatingly asserted that appropriate inquiry will elicit a history of such disturbance in almost all cases." "Indigestion" is a very vague and loosely employed term to indicate discomforts of many kinds occurring in the alimentary tract. The differentiation of caecal indigestion from other forms requires further study before the symptoms pertaining thereto are accurately defined. This presents certain difficulties—first, because caecal digestive incompetency must have an effect upon the upper part of the intestinal canal, while indigestion, arising in the small intestine, will likewise act upon the caecum; secondly, because the irritation and inflammatory changes in the appendix produce, through the superior mesenteric plexus, pains in the abdomen generally, but especially over the region of the umbilicus. From these two reasons there is difficulty in the early stages in properly localizing the lesion, and often the patient is believed to be suffering from a form of indigestion attributable to the stomach or upper parts of the small intestine, when in reality it arises from the caecum itself. If caecal disturbance of function continue both caecum and appendix suffer. There will be want of proper exudation of succus entericus in quantity and in quality, and lowering of the activity of the solitary lymphatic glands, which will no longer control the germs which swarm in that cavity. The bacillus coli communis, which is the surgeon's terror, serves in its proper place a beneficent purpose in effecting the disintegration of some of the undigested matter, but when uncontrolled by the healthy organs and their exudations is apt to cause ravages in the tissues, and to produce toxins which are lethal.

If from inhibition of the appendicular and caecal movements, or the want of exudation of the succus entericus, or if the caecum receives material which the succus entericus cannot digest, a stasis occurs in the contents of the caecum, and the constipation which is so often a feature of the appendicitis ensues. At a later stage fermentative disintegration of the faecal contents, with absorption of toxins and damage to the wall of the parts, is apt to ensue. These are followed by diarrhoea, which is sometimes curative.

Doubtless the appendix and caecum are affected together, but, just as pyogenic organisms affecting the throat spread by continuity of structure to the middle ear and mastoid cells and produce serious damage there long after the throat has healed, so the appendicular inflammation, once started, may continue to produce serious effects within the appendix after the caecum has recovered from the primary effects.

As to prevention of appendicitis, there are some lessons to be derived from the foregoing. Primitive man had to search for his food, and sometimes he had a hard physical fight to get it. When he found it, as he had been looking forward to it, he was fit for it and enjoyed it; consequently, he had an abundant flow of all the digestive juices which were ready to receive the food and give it a warm welcome. Present-day man is said to be in an evolutionary stage. With his indoor occupations and his ever-engrossing mental pursuits, he forgets that he has to live, and that in order to do so he has to eat and digest, and that his duty to himself and to the community is to do both well in order that he continue in health. But, from the way prevalent in many places, he seems to act as if food should be thrown into the stomach, as a sandwich into a pocket, and the lid closed. Then he wonders that he has indigestion and appendicitis. Though, in a sense, digestion is independent of the direct control of the brain, yet powerful

mental impressions exert an influence over the glands concerned in digestion—from the salivary down to the glands of Lieberkühn in the caecum and appendix. The mental influence is such that when the mind is engrossed in other affairs than the taking of food, those gland secretions are apt to be scanty and indigestion is apt to follow. If a person is mentally engrossed he ought to refrain from eating, or eat very sparingly.

The standing lunch, eaten against time, while the mind is fully occupied with business or professional examinations—the food, instead of being chewed and mixed with saliva, being simply washed down as a bolus with some fluid—is one of the best ways of not only producing indigestion, but of ultimately causing caecal and appendicular mischief. Man has neither a crop like a bird nor a caecum like a horse, and, therefore, he has no provision for bolted food. One has heard of children being forced to take foods which they dislike because "it was good for them." The digestive juices will not flow under these circumstances. The brain of children is so often burdened with "tasks" committed to memory and engrossed with educational enigmas that there is no time for digestion. Mastication is not taught in schools, digestion has no place in national education, and there are no certificates given for sound digestion, but we appoint Royal Commissions to inquire into the causes of the physical deterioration of the race.

Although the caecum aids in digestion it does so by receiving partially-digested food which contains the proper amount of secretions from other glands. It does compensate somewhat for their defects, but cannot do so entirely.

Therefore it is a matter of great moment to commence the digestive process well. A free mind, with the prospect of enjoyment of food, thorough mastication until the saliva is efficiently mixed with the food, and then the process of gastric digestion will have a good beginning, and the food thus prepared will be received in due course with abundant digestive juices in the other parts of the canal.

At a consultation on one occasion, the lady of the house (French by origin), who was not a patient, being in perfect health, twitted the local Scotch doctor with the rainy weather they kept in Scotland. He replied: "But, my lady, it seems to suit you, as you are always in good health." "Yes," she said, "thanks to you, doctor; you always keep me in good health." The doctor laughed, and explained that the lady always asked for advice, but never took the medicine. The lady said that at least she always had the prescription made up. That it was the same wherever she went—London, Paris, or elsewhere; she consulted the best authorities, and had a general chat with them about her condition, and how best to maintain health, and, when they were good enough to give her a prescription, she had it made up and dated, and placed both prescription and drug in a cabinet made for the purpose. "But," she added, "indeed, I have never been ill. I believe the greater number of maladies arise from indigestion, and that indigestion occurs mainly from too fast eating; whereas I eat slowly, and many times I am ashamed, as I am the last to put down my fork." There was a method in that lady's madness.

For many years I have believed that the human caecum and appendix are of value in digestion. The facts pointing in that direction have accumulated slowly, and are not all garnered; many require still to be investigated. One would have preferred to have waited until they were gone over again, re-tested, and either verified or dropped out. But "Art is so long" that I have ventured to present you with an unfinished picture, which I hope some of you will be able to correct and finish. What has been said is merely a contribution to the subject. In dealing with it in the future remember what Huxley says: "Let us sit down before fact as a little child, be prepared to give up every pre-conceived notion, and to follow humbly wherever Nature may lead."

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ACCORDING to American medical journals, Dr. W. L. Smith, of Boston, who was travelling for pleasure, was recently detained at Ispahan during an outbreak of plague. During his detention he treated the natives with success. The Shah, who was suffering from malaria, sent for Dr. Smith and has now, it is said, appointed him his physician in ordinary.

An Address

ON

THE FUTURE RELATION OF KING'S COLLEGE TO ITS MEDICAL SCHOOL AND HOSPITAL.

Delivered at King's College at the Opening of the Medical Session on October 4th, 1904.

BY THOMAS BUZZARD, M.D., F.R.C.P.,

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BEFORE proceeding to address you on the subject of the future relation of King's College to its Medical School and Hospital I should like to say a few words on the more general topic of the medical life and practice. And first let me congratulate the students who have been winners in the competition for the highest distinctions awarded in the Medical Department, and have received to-day the welcome recognition of their industry and ability. There is no need for me to enlarge upon this theme. The legitimate satisfaction at their success which they must feel is far and away more grateful to them than would be any words of mine. But I should like to remind those of my hearers who have industriously competed without in the end finding a place in the list of the more fortunate recipients that they cannot be described as "losers." They are simply "non-winners," and, indeed, so far from having lost anything, it is certain that they have gained very much, for the time expended in working cannot but be attended with infinite advantage to themselves. It has been wisely said: "The reward is in the race we run, not in the prize." Nothing can deprive them of the precious service to their own mental development rendered by their hours of industrious occupation, and the last thing they would need or desire from us would be any expression of condolence.

It would be a truism to say that the medical students of this College are on the threshold of an honourable profession. Speaking as one who has been a member of it for very many years, I should like to say, for their encouragement, that I believe they have chosen well. They will have the opportunity of living the fullest, and it will be their own fault if it is not the most useful, of lives. What better has existence to offer than this? I took my place as a first year's student in this College on the occasion of an introductory address by the late Dr. Todd, and of all the many sentences which fell from his silver tongue there is but one which I now remember (and that was a quotation): "To scorn delights and live laborious days"; and the words were applied, of course, to a medical career. The aptness of the latter part of the quotation cannot be denied. There is probably no more laborious life than that of a medical man, and, doubtless, in the sense in which the words were employed by the poet (as will be acknowledged by those who remember the context), the former half is also true. But I am ready to assert with confidence that in no walk of life can the highest forms of delight—those which belong to the acquisition of knowledge, and those which never fail to attend the faithful performance of duty—be looked for and found more certainly than in that upon which many of those before me are now entering. Did time permit, I would gladly pursue this general topic—one upon which the experience of a long and active professional life probably gives me some authority to dwell. But I will content myself with saying a few words upon a practical point which may, perhaps, prove useful to some of those whom I am addressing.

I would earnestly counsel all those who have the opportunity—and there must be very few who have not—to aim at the highest; not to be satisfied, I mean, with that qualification for practice which is most easily obtained. Addressing as I am an assembly of medical students the majority of whom are probably intending to enter family practice, I would point out to them that in these days graduation at a university is in the air. The times have passed when it was only necessary in our profession for the consulting physician to obtain a degree. In such greater numbers every day are family practitioners adopting this course that one need not be possessed of any gift of prophecy to say that in a few years those who are without a good medical degree will lag behind in the race for success, and still more so for distinction. As

is well known, Cambridge and Oxford are attracting large and increasing numbers. The more recently founded and important universities in the northern counties of England are providing admirable facilities for students coming from the provinces. London, however, with its unrivalled resources for clinical teaching and experience, must in the future become more and more the most esteemed centre of all for the acquisition of medical knowledge. In its lately-developed form the University of London is, if I am not mistaken, certainly coming to occupy the highest place in the education of the medical profession. The well-recognized esteem in which its medical degrees have always been held has suffered no diminution since the change in its constitution, whilst the direct representation on its Senate of all the most important colleges and public bodies in London has vastly increased and extended its influence upon education. I should certainly advise every student I am addressing to aim at obtaining a degree in the Faculty of Medicine of the University of London. As I said before, graduation is in the air. The time is rapidly coming when members of all professions will naturally be expected to hold a university degree. It is not so many years since it was a rare exception for a solicitor to have graduated at a university, and as for the engineer or the architect they were practically never seen in the ranks of university graduates. All this, as we well know, is changing daily. Even in the military profession graduation is asserting its influence, and the Army Council is arranging with the universities to carry on military education during the undergraduate period, granting a commission upon examination to selected candidates when the degree has been taken, and antedating it by a twelvemonth to the recipient of honours. I say that you cannot afford to lose the opportunity which you now enjoy of taking a London degree. I daresay that it will appear to some of you impossible that you can ever require it. That is what you cannot possibly foresee. I have the best of reasons for knowing that the possession of the London degree may make a vital difference in the whole career of him who holds it.

Nor is the advantage of it at all confined to consultants. I was consulting a few weeks ago with a very able practitioner of medicine in one of the London suburbs, and observing that he held the M.D.Lond. degree, I asked him if he thought that this had made any difference to him. He did not hesitate, but said that it had made all the difference in the world to him. He was junior partner in a firm of three, of which the two others were also graduates of London, and he would not have been permitted to join them but for his possession of a London degree. He told me also that in his experience the public were steadily learning to appreciate the value of these degrees. Nor are there wanting signs that the State is likely in the future to avail itself more and more of the services of high-class members of our profession in public duties, especially perhaps in the investigation of causes of disease in various parts of our world-wide empire, and in the organization of measures for their prevention and treatment. For such appointments the mark of higher education furnished by the possession of a London degree cannot fail to be of great value.

I would remind those now entering that the curriculum is of the same length—five years—both for a London degree and the diploma of the Conjoint Board. Let them try, if they will, for both. That they will have to work extremely hard there is no doubt. So much the better. I feel inclined to repeat what President Roosevelt says in one of his addresses, "Your work is hard. Do you suppose I mention that because I pity you? No, not a bit. I don't pity any man who does hard work worth doing."

Are the London degrees obtained with any more ease than was formerly the case? I do not think so. Perhaps the larger choice of subjects in the Matriculation Examination may facilitate matters a little. A little grace, too, is given in another direction. In the General Preliminary Scientific Examination a student may be examined in each of the three subjects separately. Students who have failed in one or more subjects of the examination may offer themselves for re-examination in these subjects, either separately or together, at any subsequent examination. And in the General Intermediate Examination in Medicine students who have failed in one subject only may offer themselves for re-examination in this subject, if permitted to do so by the examiners. Personally I should be inclined to extend such facilities, and favour the candidate being allowed to take his subjects in a somewhat piecemeal fashion. It is amusing to see a juggler keep half a dozen balls in the air at the same time, but there is no particular use in the achievement. The necessity of passing in several subjects on one and the same occasion disposes, I think, to cramming, and, in my judgement, should be discountenanced. However this may be, it may be taken that the London degrees are at least as valuable as they ever were, and no less difficult to obtain. Can it be doubted that a student should strain every nerve to obtain such a distinction? It has been remarked that a severe examination always excludes fools and sometimes persons of genius. Let me commend the consideration of the latter alternative to those who have the misfortune to fail.

Let me now turn to the important subject upon which I have promised to say a few words. It will be readily understood that the approaching removal of our hospital to Camberwell has necessitated the most careful and anxious consideration of the relations which should subsist in the future between the College and its Medical School. The disadvantage which has always to some extent been felt in the past from the circumstance that the School and the Hospital were not under the same roof (as is almost invariably the case with the medical schools generally) would naturally be much intensified by the greatly increased distance between them, unless measures could be taken to obviate the difficulty. It was at once evident that with a distance of nearly four miles between the College and the new hospital, continuance of the Medical School on existing lines was not practicable. In certain respects, too, it must be remembered the step we are about to take is unexampled in the medical history of the metropolis. It is true that hospitals without medical schools have before now been transferred successfully to new sites. And we also have the example (I think a solitary one) of St. Thomas's Hospital (possessing, as we all know, a very important medical school), which was removed from the Borough to its present position in Lambeth, after a temporary sojourn in the Surrey Gardens at Walworth. In that instance, the school, along with the hospital, was successfully removed, and possibly there are those who would say that there is no reason why we should not simply imitate the example which has thus been set. I think I can show you why this is out of the question. In the first place, since the old days when St. Thomas's was leaving the Borough, some forty or more years ago, a great change has come over the academical arrangements for the education of the medical student. At that time (and I am speaking of things within my personal knowledge) the old idea of "walking the hospitals," as representing the first step to be taken in medical education, had not altogether died out, and the notion that the student ought to prepare himself, by some years of scientific study, to profit by the opportunities of clinical experience at the hospital had not advanced into practical working. Accordingly the student of medicine entered the wards of the hospital on the day that he joined a medical school. In some cases this would be only a month or two after he had ceased to be a schoolboy. In many instances he would have passed some years as an apprentice dispensing his master's prescriptions. The expression, "preliminary and intermediate studies," was then unknown. In these days, as is well known to the teachers though the fact may not be widely recognized by the public, the student does not, or ought not to, make his appearance in the wards of the hospital until he has been studying for some two years or more, and has passed examinations in a number of scientific subjects. Sometimes, it is true, he may put in a little work as an out-patient dresser or clerk. But this, I understand, is rapidly becoming a thing of the past, and his appearance in the hospital itself in the earlier half of his education is now in some institutions forbidden, and in all discouraged. For that reason alone the removal of our Medical School to Camberwell, so far as the preliminary and intermediate studies are concerned, with the necessary vast expenditure which would have to be incurred in connexion with lecture rooms, apparatus, laboratories, etc., would clearly be motiveless; it will not bear a moment's contemplation.

But there is also another and a yet more convincing reason. King's College, on account of its Science Faculty and because of its recognition by the University of London as a complete Collegiate Institution, must, in any event, still retain the teaching of these purely scientific subjects, and it is in the College itself, and not in the hospital, that they must be taught. It must be remembered that this is not simply a question of a hospital, linked on to which is a school of such scientific subjects (and those only) as concern the medical student. King's College is an institution which may be

described as of university character. It possesses Faculties of Theology, Arts, Science, Engineering and Applied Sciences, and Medicine, besides having a Women's Department and a Boys' School. A very large and important professorial staff has to be maintained for the service of the various faculties, and the medical student who enters here has the great advantage of sitting under professors whose business in life it is to teach the particular subjects in which their eminence is acknowledged. The only other institution in the metropolis with which it is comparable is University College. These two Colleges are described in the University of London Statutes as "Schools of the University in all the Faculties in which they respectively afford instruction." The medical schools of the metropolis generally are designated "Schools in the Faculty of Medicine."

There is no necessary obligation for the Schools in the Faculty of Medicine to concern themselves with the teaching of the preliminary and intermediate studies. It is notorious that the burden of provision for the teaching of such subjects has often been, and is now in many instances, a grievous one. There has never been any financial advantage in it. On the contrary, it signifies a constant outlay upon the various requirements for the exposition of the subjects, and this, with the progress of science is becoming and cannot fail still to become a more and more serious demand. It means the absorption of space which would be of the greatest possible value in supplying the needs for properly teaching the essentially hospital studies. In means that very often a man whose abilities lie in the direction of medicine and surgery rather than in that of pure science, and who is conscientious in his work, spends a large amount of time in cultivating his knowledge of and teaching a subject the pursuit of which, whilst it is of no use whatever to him, probably displaces research in another direction which might be of great service to the science or art of his profession. How much better it would be if this work were undertaken by those who have made the study of these sciences their life-work and the teaching of them their profession.

It is easy to understand how the medical schools have almost insensibly piled up on their shoulders the burthen under which many now groan. The task of supplying such requirements in the old days was not a very severe one. But year by year the difficulty has increased, until it has become insupportable. The process, no doubt, has been a very gradual one, and in the earlier days, indeed, the idea of obtaining elsewhere than in the hospital the necessary teaching of more or less preliminary subjects did not enter into consideration. A young man entered at one of the hospitals and found there, as he expected, all that he needed for each step in the process necessary for acquiring a degree or diploma. The idea of going outside the hospital for any part of his education was practically never entertained.

All that is now changed. The student of medicine may obtain, and as a matter of fact frequently does obtain, the teaching of such subjects as chemistry, physics, and biology where he likes, so long only as he conforms to the regulations of the examining body by which his knowledge is to be tested. It is also notorious that the large majority of the students who pass their examinations in the early studies at Cambridge or Oxford, up to and including anatomy and physiology, come to London for their hospital studies, and enter at any hospital they may choose to select. The idea that the student should necessarily carry out his "hospital studies" at Oxford or Cambridge is never contemplated.

In the case of the many London students who do not go to the older universities, and whose aim it is to obtain a degree at the University of London or the diploma of the Conjoint Board, it is evident that King's College has peculiar advantages to offer as a school for the preliminary and intermediate studies. Owing to its constitution as a complete collegiate institution it is necessarily equipped in its Science Faculty with all the requisites for education in the purely scientific subjects—those studies which have to be completed before the student need determine at which hospital he will enter to carry out his advanced or hospital studies. How to extend these advantages and turn them to the best account in the new departure in which we are engaged has occupied the very earnest consideration of the Council, in which it has received most valuable help from the professorial staff of the Medical Department.

It has appeared to us probable that some of the medical schools of the metropolis who wish to rid themselves of the incubus of providing education in the preliminary and intermediate studies (which, as I have said, is really no necessary part of the work of a medical school) might be glad to come to some mutual arrangement by which King's College would carry out this portion of the curriculum in its Science Faculty, leaving the student free at its close to complete his education by pursuing the advanced studies elsewhere. So long as King's College continued, as in the past, to receive practically only those students who intended to carry out their whole professional education under its wing, it would, I need scarcely say, have been useless to expect that other schools would send their students to it for the early studies. In our new departure it is recognized that King's College, by the peculiarity of its constitution, has probably an increasingly-important part to play in the education of the student in the early studies, provided that the interests of the other medical schools are properly safeguarded. Surely this should not be beyond the reach of arrangement.

I believe I am correct in stating that University College is proceeding on similar lines. By a curious coincidence the two first Colleges of the University of London—University and King's—find themselves simultaneously—the former by its forthcoming incorporation with the University, the latter by the impending removal of its hospital to Camberwell—in an unusually favourable position for completely separating the department for the later medical studies from that which is concerned only with the preliminary and intermediate subjects. In each case the arrangements for teaching these latter will be so ordered that they will be able to be made use of by as many of the other schools as may desire to do so consistent with the amount of accommodation they are in a position to afford. The Institute of Medical Sciences projected by the Senate of the University will provide, in process of time, and when the very large amount of funds requisite for the purpose are obtained, a third centre of the kind.

It has recently been suggested by a very eminent authority that a centre for the preliminary and intermediate studies would be necessary on the south side of the Thames. I confess that I am quite unable to agree with him as to this requirement.

These earlier studies are acknowledged to be independent of hospital association—witness the number of students who obtain their teaching in them at Oxford and Cambridge. The mere circumstance, therefore, that there will presently be three large general hospitals on the other side of the Thames can have no possible bearing on the matter. Surely the more central and easily accessible the place for these studies the better. The very large cost, too, of founding such an institution would be a most serious objection even if the scheme were otherwise desirable.

Without venturing to enter upon details, the consideration of which would be evidently premature at this moment, and might possibly be misleading, I think I may sketch very broadly for your information and interest what is proposed to be done by King's College.

In the first place, except as regards the name, there will be a complete and entire separation of the Hospital from the College. It is desired that, as far as possible, this separation should take effect at an early date. Accommodation will not be provided at the new hospital for any of the preliminary subjects, including under this head physics, chemistry, zoology, botany, anatomy, physiology, materia medica, and pharmacology. These subjects will all be dealt with at the College, as indeed they are at the present time. With the exception of anatomy, materia medica, and pharmacology, the subjects in question already form part of our Science Faculty, and could not therefore be removed from the College, even were it desirable. Anatomy will be retained as a preliminary subject at the College, where adequate accommodation is provided, and it will be transferred from the Faculty of Medicine to that of Science. Physiology, practical physiology and histology, together with experimental psychology, will continue to be taught at the College, in the Faculty of Science. The laboratories of experimental pathology and also of neuro-pathology cannot conveniently be transferred to the new hospital, for the Council and hospital staff are agreed that original researches in these subjects, which may involve experiments on living animals, shall find no place within its walls. The teaching of State medicine will be continued in the College.

Accommodation will be provided at the new hospital for teaching each and all of the following subjects:—Medicine (including advanced therapeutics, diseases of children, and psychological medicine), surgery (including operative surgery and surgical anatomy), obstetric medicine and gynaecology, pathology (including general pathology, bacteriology, patho-

logical anatomy, and clinical pathology), forensic medicine (including toxicology), hygiene (by lectures only), the more special clinical subjects (including ophthalmology, otology, laryngology, rhinology, dermatology, odontology), the administration of anaesthetics, orthopaedics, *x*-ray and cognate work. It is intended that opportunity should be provided for the study of operative surgery at the College as well as at the Hospital. General pathology and bacteriology will be carried on at the Hospital as well as at the College under conditions which are not yet quite determined. Such is a brief statement of the arrangements for teaching which are in contemplation.

In view of the intended absolute separation of the Hospital from the College it is proposed that no member of the new Hospital Staff shall retain his position as a teacher of a preliminary or intermediate subject at the College. For the same reason composition fees will be abandoned, and the student who has entered at King's College for the early studies will not be unduly tempted to proceed to the Camberwell Hospital for his advanced studies by any advantageous financial arrangement. He will be absolutely free to select for his advanced studies the hospital which attracts him most. Just as it is believed that there will be many students at the new hospital who have never been near King's College, so it will be open for any students entering at King's College for the early studies to close their connexion with the College when these are finished, and pursue their advanced studies at the hospital of their choice.

At all events this is our aim. Although from considerations of sentiment it is evidently imperative to retain the name of "King's" at the new hospital, yet our purpose is that these two institutions, the College and the Hospital, should stand to all intents and purposes independent of one another—each prepared to provide for any student of medicine who applies the opportunity of study in the particular subjects of his requirement.

An Address

ON

THE METHODS OF ACQUIRING KNOWLEDGE: ITS HELPS AND HINDRANCES.

Delivered at the opening of the Medical Faculty of the University of Birmingham on October 3rd.

By PHILIP H. PYE-SMITH, M.D., F.R.C.P., F.R.S.,

Vice-Chancellor, University of London; Member of the General Medical Council, and Consulting Physician to Guy's Hospital.

Let me first congratulate you upon the progress which this great University has already made since it received its charter. Like Manchester and Liverpool, it has left a connexion with the University of London which for so many years existed, and, as representing the parent body, I may say that we are convinced it was for our benefit as well as for yours. May Birmingham become as noted for learning and national progress as the greatest universities of our own or any other country; and, as Greek colonies preserved a slight but real tie of connexion with their metropolis, as the New Englanders who live in Boston visit Boston in Old England, so may this University perhaps regard with special goodwill the institution which protected its infancy and provided incitements to study among its first disciples!

If we look over the history of the connexion between the University of London and its Colleges, we see the constant rivalry for importance between teaching and examining.

In 1827, when a new institution was founded, without the recommendation of age or wealth, with no traditions and with sadly inadequate resources, there were two directions in which it developed. The one was that of conferring degrees and other academic distinctions only as the result of impartial and external examination. The other was to offer to intelligent youths opportunities for acquiring knowledge independently of wealth or of the trammels of scholastic discipline. At first there was no power to confer degrees, and when it was granted by the foundation of a new university in 1836, it was deemed necessary to separate entirely the teaching from the examining bodies. The whole course of public opinion in the seventy years which have since elapsed has tended to diminish the importance attached to competition and greatly to add to the value attributed to education as distinct from instruction. The one criticism was expressed in the term applied to the University of a graduating machine, and the other called University College a knowledge shop. I think, and you here think, that competition is a valuable stimulus to work, and that many of us owe much to the necessity of acquiring knowledge, often distasteful to oneself, by the necessities of the curriculum; we also believe in the mere accumulation of knowledge, as we see it in clever children, whose memory is always superior to their judgement, and whose aptitude for imbibing information is as remarkable as their imperfect power of using it. We agree, therefore, that neither competitive examinations nor acquiring facts, even if unconnected, are to be discarded because they have been abused. But if we participate in the public opinion, which on the whole is educated opinion, we shall put before knowledge and before competition, in the first place, what is properly called education—the drawing out of the powers of the mind, the discipline which strengthens the mental sinews, and prepares the intellect by a kind of gymnastics for the duties of which it is capable. Side by side, moreover, with the justly increased importance now attached to discipline and healthy development of mind and body, we have also learnt to regard a college or university as a very imperfect instrument for good if it only educates its students, and does not at the same time teach them to add to the sum of human knowledge. But these different aims, like most other aims which are just and practical, are far from being opposed one to another. It is an admirable thing for the memory to be strong and tenacious. It is an admirable thing for a boy or girl to delight in omnivorous reading, to acquire the art of learning quickly, to discern the main and important points to be understood, and to form fresh and tenacious receptacles for every new branch of knowledge which they encounter. It is well that by an honourable ambition young men and maidens should be willing to scorn delights and live laborious days in the hope of attaining the fair garland which adorns the learned brow; and the very power which has been gained by such discipline is that which can be applied to investigation and expansion of knowledge.

First, then, of knowledge. A child learns to name objects, then it connects objects with qualities, and in time forms chains of connexion between related events. It learns that sugar is sweet and that fire burns. It learns to trust to the evidence of its senses, and to measure distances not only by vision, but by the muscular sense of the eye and of locomotion. Before long, an intelligent child is not satisfied with knowing that this and that is a thing with certain colours and shape and movements. He asks himself how he knows that this and that is a fact, and he soon learns that the direct perceptions of the senses are insufficient. He finds that combination of two senses corrects mistakes and strengthens his assurance of fact. He learns to make allowance for atmospheric perspective, for the duration of movements and of visual impressions. He begins to detect various delusions into which observation by the senses will lead him. Before long he will have gained the important conviction that all knowledge derived from the senses is but mediate, that it is not the eye that sees, or the ear that hears, or the finger that feels—that touch and vision, and perception and sound, and pleasure and pain, are processes of the brain, not of the sense-organs. They are states of consciousness, and their continuity makes up the course of life. Even in sleep there are dreams, and on awaking from sleep self-consciousness recognizes the continuity of the time before and the time after unconsciousness.

So much for the development of knowledge by the senses. A further step is taken when a child begins to reason. In following the propositions of Euclid, in learning the elements of logic, he sees how one fact inevitably depends upon another. But an intelligent boy will soon observe that the beautiful sequence of argument in mathematics depends for its perfection upon the absence of reality. A line without breadth, a point without magnitude, a perfect circle, these are not objects of the senses, they are figments of the imagination; and the student finds in the domain of deductive logic that a syllogism is open to the defect of pretending to prove what is really stated in the first premiss. The apparently inevitable process of reasoning which ended in contradiction, the logical fallacies like Sorites, and the conflicting results of the arguments of nominalist and realist schoolmen, led to the conclusion that, however excellent as a method of sharpening the wits, mere argumentation serves only as a sign of warning, "No thoroughfare" by this path.

There is, however, as men at last learnt, another method of arriving at true results than that of tracing the in-

tellectual sequence of ideas and stripping natural objects of some of their properties in order to deal with them as flawless imaginations. This course of investigation we call Experience, or, if we determine the experience for ourselves, Experiment, and, when experiment is repeated again and again and results are constant, then we have on what seems sure ground the demonstration of the connexion between cause and effect. Moreover, there is a satisfactory test of the justness of our conclusions in the result of fresh experiment. When astronomers were able to predict eclipses they showed that their science was a real and trustworthy one, and so in the art of medicine the all-sufficient proof of diagnosis is the verification of prognosis.

Very soon in the education of the child it is desirable that he should, according to his powers, investigate, that he should try, as one clever child, who was afterwards Clerk Maxwell, tried, to find out the "go" of every plaything or machine that he observes. It is most important that he should be encouraged to search out for himself, and, when he has succeeded in his quest, should be encouraged to remake the object which he has reduced to its elements. He should never be put off by explanations which are delusive, as, for instance, explaining the fact that one can't see through a stone wall by the assurance that it depends on the opacity of stone, or the fact that we can set paper burning with a lens and sunlight by calling the paper inflammable. In all cases we should try to answer the question "why" by substituting the question "how"; for, as intelligent women often remind scientific men, the explanations of science always leave something else to be explained and carry us but a very little way.

It is remarkable how slowly natural science, or the investigation of the sequence of events, has developed. Logic was familiar to Aristotle, and the same great man who wrote the *Ethics*, also published a wonderfully full and, for the most part, accurate account of the animal kingdom. But Aristotle had no successor in anatomy except as a handmaid to medicine.

The term "science" meant, until almost our own days, knowledge generally, not reasoning or induction. The "Physiologus" of the Middle Ages was a successor of Pliny, not of Aristotle. Natural history was not contrasted with natural science, but with civil history. The first steps in what we now call science—the theory of the universe, the sequence and dependence of events—were made by the astronomers of the Renaissance, by Tycho Brahe, and Kepler and Copernicus, by Gilbert, the father of magnetism; by Harvey and Mayow, the physiologists; by Boyle, the chemist. Indeed, the work of Newton and the early natural philosophers impeded rather than advanced the progress of medical science by leading to the iatro-chemical and iatro-mechanical schools. The pioneers of modern natural history were the collectors, the founders of museums of animals and plants in the sixteenth and seventeenth centuries. Their labours were scorned by philosophers, and were treated by intelligent men like Addison and Johnson as laborious trifling. "The proper study of mankind was man," not as an animal or a machine, but in his mental and moral aspect. Even in the nineteenth century "scientific" was an adjective applied to literary eminence. For three centuries natural history was valued only for its direct use in medicine or agriculture, and even in our own day some ancient physicians spoke of morbid anatomy as useless in practical medicine, and some scientific men lectured on the "Philosophy of a Candle." Physiology began with the "use" attributed to each several muscle or viscus, and was more cultivated by surgeons than by physicians.

What kinds of knowledge are most essential for education, considered apart from their practical use? Technical education is no doubt an admirable thing, but whenever a boy at school is put on the modern side because he is intended to be a merchant or a druggist, his education for its own sake, his liberal education has ended. He may go on, if well grounded, to an indefinite degree of excellence, but he has already begun the important task of providing for himself and those dependent on him. A liberal education is that which brings no immediate profit, which is from one point of view, useless; and whether a boy is taken from a Board School to learn shoemaking, or whether he is taken from the broad curriculum of a public school to learn to be a doctor or a sailor, alike he has finished his liberal education and has begun technical instruction.

Of all kinds of scientific knowledge there are two which seem to me to be almost universally desirable as a means of liberal education. The first is botany, commended by the beauty of the objects with which it is concerned and their abundance in every country, by the need of careful and patient discrimination, by the opportunity and almost compulsion which it gives to carry on the interest of the study into mature life. A botanist need never be dull, whatever his trade and in whatever part of the world he lives. Moreover, it is the cleanest, the gentlest, and the least costly of all branches of science.

If botany is the most convenient and useful science to teach observation, may we not say that the study of physics in its elementary mechanical stages is the most valuable and convenient introduction to scientific reasoning? The action of the levers of machinery and of those of our own bodies, the expansion and contraction of liquids and solids, the lifting and traction of weights, these are instructive and constantly applicable in daily life. They enable a boy to take an interest in machines of all kinds, to understand the construction and use of candles, of gas jets, of electric lighting, of bicycles, and of motor cars. Such knowledge is practical and useful, but it also enlarges the mind and adds greatly to the intellectual pleasures of life.

There is, however, another method of arriving at knowledge—that is, at true results—which is distinct in its methods from those of deductive or experimental science. I mean the knowledge of literature and of art. In what way can it be said that we know that the *Iliad* is a great poem, that the "Bacchus and Ariadne" is a great painting? Certainly no process of logical reasoning, no scientific investigation can demonstrate the fact, and yet it is abundantly certain. The *Iliad*, as soon as we find it mentioned, was regarded with admiration; it was admired by the earliest Greek listeners, it was admired still more by the bright consummate flower of Athenian intellect in the time of Pericles. It was regarded with veneration by Virgil, by Horace, and by all great writers since. It only ceased to be admired when its language ceased to be understood; and with the revival of letters its glory has continued increasing rather than diminishing over the whole civilized world. Surely we may say with sober certainty that the *Iliad* is a great poem. Again Titian's paintings were reputed as of the highest excellence, while he was living, by all the painters of the greatest period of art. Successive generations have equally admired them, and we may now say that ever since his paintings were produced, in all parts of the world and wherever art is cultivated, they are regarded as among the noblest and the best. Deductions must here and there be made for prejudice of various kinds, and there is always room for individual preference for this or the other among the greatest and most beautiful works of literature or of art. But the final verdict rests with time—that is to say, with the unchanging conviction of those who are best qualified to judge. Here, again, we have the final test which gives its sanction to the conclusions of science—the power of prediction; for we would say to any one who refuses to bow the knee to the masterpieces of Greek literature or Italian art, or German music: Study the subject; make yourself familiar with the writings of Athens, or the paintings of Venice, or the sonatas of Beethoven; learn to write yourself, or learn to draw or to play. As you gain knowledge and gain skill you will, we can prophesy, feel more and more admiration for the masterpieces of literature or art, and this prophecy has never yet been found to fail.

May we not say that in another region of human thought the same certainty of conviction may be gained by practice and by action? May we not say that though it cannot be proved that truth is better than falsehood, or virtue than vice, yet these conclusions are held more and more firmly by those who daily become better qualified to judge, and that if any one denies them we may appeal to his conscience—that is, to himself—to bear witness to the falseness of his statement.

No argument, however subtle, can prove the truth of such beliefs, no experiment can demonstrate their reality; but they are held by all who act in accordance with them, and the longer and more perfectly they are acted on the stronger and more absolutely they are believed. Some ears cannot appreciate the music of Mozart, some minds have no pleasure in the poetry of Milton, but all can understand the goodness of the great soldier who died at his post in Khartoum, who, unlike most men, "did not wish for money and did not fear death," or the self-sacrifice of the humble priest who deliberately undertook a forlorn hope, and gave up his life for the lepers of the Pacific.

May I offer some adages (*ad agendum apta*) which may possibly be of service to those who are learning: Learn to use your senses; be quick to notice any changes in the house you

live in, or in the clouds and sky; open your eyes to sights of birds and insects as you walk, your ears to their songs, and your heart and intellect to the impressions of Nature. Look as well as see, listen as well as hear, touch as well as feel. Practise judging distances and making allowance for different kinds of illumination; learn to detect the optical and sensory fallacies of which you read in books on mental physiology. Exercise not only your muscles but your power of discriminating weights. Cultivate walking, and make it a pleasure as well as a convenience. Take every opportunity of learning any bodily exercise, whether riding or swimming, rowing or sailing, and, whatever you do, do it, as Fox said he did, with all your resources at the time. Learn, as you may very well, without ever being artists, to draw sufficiently to explain your meaning. Cultivate your memory, form the habit of recalling things at the proper time, and make provision for spare minutes in the day or sleepless hours at night by fixing poems in your memory or by repeating the geological strata of England, the atomic weights of the elements, the heights of mountains, or the decisive battles of the world. Never fear filling your mind too full of fresh knowledge, or suppose that the one fact will displace the other, as water poured into a full vessel adds nothing to its contents, for the mind is a physiological not a mechanical structure; the more it receives the more it will contain, and there is no limit (or none that we ordinary people can see) to the growth of knowledge so long as life endures. Never be satisfied with sham explanation or with conventional reasons, or with assertions that will not stand criticism. Beware of the commonplaces of argument, of declamation, and of criticism. Never waste time over worthless literature, and, in order to be sure of what is good, read chiefly that which has withstood devouring time, and remains to us as the carefully winnowed and approved result of the imagination, the wisdom, and the wit of past centuries. Beware of prejudices—prejudices of your profession, prejudices of your education, prejudices of your country. Remember that all you think of England, and rightly ought to think, is also thought by French and Germans and Americans and Hungarians and Japanese concerning their own country—the strength of its inhabitants, the beauty of its women, the courage of its soldiers, and its excellence in all arts and refinements of life. It is not without reason that Frenchmen speak of "La grande Nation" and Germans of "Deutschland über alles," but such phrases do not lend themselves to translation.

Remember that in the important department of popular education little countries like Saxony and Scotland were for many years far ahead of larger and wealthier nations. And of all nations since the Reformation the most remarkable achievements in war and in navigation, in exploring and colonizing, in art, in learning, and in science, have been gained, not by the great nations, but by the little people of the Netherlands.

Here, in Birmingham, you are rightly proud of your municipal record. But just as this civic emulation does not diminish but strengthens your national patriotism, so believe that the glorious history of these little islands does not need disparagement of our neighbours. By knowledge of their history and their literature, by sympathy with their great qualities, we become more fair-minded, more liberal, and more humane.

In literature, in science, in manufactures, in pathology, in preventive medicine our fathers have left us a noble heritage; let it be ours to hand it on increased to our children.

MIDDLESEX HOSPITAL.

By Frank J. Wethered, M.D., F.R.C.P.,
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PRACTICE AND THEORY IN MEDICAL STUDY.

[Abstract.]

After some introductory remarks, Dr. Wethered proceeded: The object of the five years' curriculum is to fashion you into well-qualified medical practitioners. In order to pass the requisite examinations you will have to possess yourselves of certain knowledge. You will naturally wish to pass each examination at the first attempt, and in order to do this I strongly recommend you to remember one word, "practice." Theoretical knowledge is of course also requisite, but above all things you must be practical.

Reading and attendance on lectures are certainly essential. Reading enables you to supplement the knowledge you have obtained by practical work, and the lectures will assist you in systematizing that knowledge. Throughout the whole of your student days you will do well to remember that for book learning there is a substitute—practical work; for practical work there is no substitute. To see much and to see it well is the sole means of attaining perfection in all the sciences of observation.

The necessity for practical work will commence from the first day of your studies; for instance, anatomy can only be learned by actual dissection, and you should, therefore, spend several hours daily in the dissecting room. The same principle, although with perhaps a little less force, applies to physiology and chemistry; work in the laboratories will engraft facts in your memory as nothing else will. More particularly I would lay stress on the fact that it is impossible to learn medicine and surgery from books; a knowledge of these subjects can only be obtained by observation and study of the patients in the wards and out-patient rooms. Speaking in the broadest sense, medicine is not only a science: it is a practical art. As an art, medicine is infinitely difficult; the phenomena with which we have to become acquainted are so numerous, so various, so complicated, that not only natural talents, but long observation are requisite to make us familiar with them.

I need hardly remind you that all who follow the medical profession must be students for ever—students as much in the fifth year of their curriculum as in the first, students as much at the end of their life's work as when confronted with their earliest patients. A physician or surgeon may draw a lesson from every case which he sees, and here again we find the difference between book-learning and the knowledge which is the outcome of practical observation. To a certain extent the need for book-learning may be finite, and to a great extent this need is modified by the idiosyncrasies of the individual. But no man from the moment that he places his foot on the lowest rung of the ladder of medicine can dispense with practical observation or its results. This need is never finite.

To carry the exercise of theory and practice in another direction. It is the custom of medical practitioners to give precise directions as to the amount and kind of exercise their patients should take. Should not the doctors set the example of what they preach? I would ask you as students to commence that practice early. If the embryo physicians and surgeons would pay more attention to the study of physical improvement as exemplified by gymnastics and manly sports I believe it would be to the benefit of the community in general. We should then hear less about the physical degeneration of the nation, and the country might be spared the expense of appointing another committee to inquire into the matter. It is now a recognized fact that a man can excel both in his studies as well as in athletic pursuits, and there is no reason why a healthy participation in manly games should interfere with professional duties. It is usually a fatal error for any one who has been accustomed to an active life to give up all forms of regular exercise; still worse is it when the lassitude is due to indulgence in alcohol, tobacco, and late hours.

A greatly-improved tone has been apparent amongst the boys of public schools since games have been made compulsory and loafing sternly discountenanced. The continuance of some form of physical exercise after school life has scarcely been sufficiently insisted on by many medical men. Moreover, the regular pursuit of some form of athletics greatly raises the moral tone of a man. The individual who wishes to improve his physical powers must cultivate habits of intemperance and self-control. Evil habits, which the self-indulgent and slovenly man so easily falls a prey to, are obnoxious to the athletic and healthy-bodied, for late hours and their numerous evil consequences will be perforce eschewed. Let the medical student, then, learn to live that he may be able to draw from his personal experience when in the future he advises his patients as to the best ways of keeping well.

An opening address at the present day can scarcely be considered complete without some reference to the London University. In the history of that institution I venture to suggest we have another illustration of theory *versus* practice. It seems strange that for so many years the largest city in the world has not possessed a teaching university. Hitherto the students of the London schools who desired to obtain a degree of Doctor of Medicine have had either to pass what is practically an honour degree or else complete their professional

education at a provincial or foreign university. London University was for many years a theoretical University, simply an examining body; now, however, it is gradually blossoming forth into a practical or teaching one.

The concentration of the earlier professional studies will probably be one of the first developments of the new régime, and for this purpose a strong effort is being made to give practical effect to the recommendation of the Royal Commissioners appointed to consider the Charter in 1894. For this purpose steps are being taken to secure a site and funds to enable the Senate to establish an institute of medical sciences in the near neighbourhood of the University. The advanced studies will then be carried out at the various hospitals, which would then become veritable clinical schools.

It is to be hoped that we shall see Chairs of Medicine and Surgery endowed at the University, so that the professors who are appointed may be able to devote their whole energies to educational purposes.

In conclusion, I would remind you that the great element of success in professional life is the accumulation of experience. The experience can only be obtained by constantly applying yourselves to practical work.

If during your student days, and subsequently when you hold resident appointments, you make full and intelligent use of the countless opportunities which will present themselves of observing the course of disease, you will never repent the labour thus expended. You will thus early gain the confidence of your patients, and may it be said of you:

> His years but young, but his experience old,
> His head unmellow'd but his judgement ripe.

UNIVERSITY OF MANCHESTER.

By J. LORRAIN SMITH, M.D.,
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ON THE STUDY OF PATHOLOGY IN MEDICAL EDUCATION.

[ABSTRACT.]

THE decision which has recently been taken by the University to divide the Department of Pathology into two sections has been the direct result of the rapid growth of this subject in recent years. For a considerable period that department in this school has taken a leading place in bringing about the expansion of pathology, especially in its application to public health, and under the new arrangements Professor Delépine will continue his work in a department devoted to bacteriology and comparative pathology. To him will fall the duty of teaching students of public health, and he will at the same time be provided with the means of applying bacteriological methods of investigation to the problems which arise in public sanitary administration in Manchester and its neighbourhood. In this department, the direction of which has been entrusted to my care, the student will receive instruction in general pathology and morbid anatomy.

A knowledge of the pathological changes in the human subject of disease retains all its importance for the student who intends to practise medicine, and this occasion affords a fitting opportunity for the consideration of pathology in relation to cognate subjects in the medical curriculum. In studying pathology the student finds himself in the same field as the clinician. The same subject is studied, but from a different point of view. The clinician studies the signs of disease and the mode of treatment with the purpose of discovering and applying the cure. When the study is carried a stage further, and the methods of physical science are applied to discover the nature of the changes in function and structure in the diseased tissues and organs the investigation becomes pathological.

The ultimate unity of pathology and clinical medicine is clear, however, and it is futile to attempt to divorce them from each other. The pathologist must in due measure be familiar with clinical medicine, and the clinician must keep in his mind's eye the guiding lights of pathological research.

Pathology is ultimately an experimental science, but the study of disease must in the first instance pass through a preliminary stage in which the facts regarding its occurrence and form are merely observed. At this stage it is investigated in the hospital ward and in the *post-mortem* room. When sufficient knowledge has accumulated to give some clue to the cause of the disease the investigation is transferred to the laboratory. In the laboratory pathology is studied as a biological science. The facts and methods which the student has learnt in the earlier years of his course are applied to new problems, but no tissue is found in pathological structures that is not present in the normal body. No new chemical process is seen that has not been already exemplified in normal metabolism. In the laboratory, when the conditions are under our control, it is possible to study the obscure but all-important first stages of the process of disease.

It is in this way that pathology progresses as a science, and in order to master the subject a student must pass through a course of study which gives him the means of following the development of the science in all its stages. Pathology must be studied both in the hospital and in the laboratory.

Among the recent developments of pathology which call for the student's attention one of the most striking is that of clinical pathology. This branch of pathology comprises observations on cases of disease in the making of which the observer acquires familiarity with laboratory methods and appliances. The best example is the clinical pathology of the blood. The blood is studied by chemical and microscopical methods in relation to almost every form of disease. We may learn, for example, not only the presence of bacterial infection in the circulation or in the tissues, but also the degree of resistance which is offered to the invasion. We may further find in these phenomena the clue to the principles of treatment. Again, the study of malaria and allied conditions resolves itself into a microscopical study of the blood. Similarly, the large group of diseases affecting the constituents of the blood is studied by the methods of clinical pathology. This branch of the science is daily increasing in importance, and requires the most earnest attention of the student. It is most appropriately studied in relation to cases in the hospital wards.

When we turn to the study of pathology as a natural science we have to consider its relation to the sciences with which the student has become acquainted in the earlier years of his course. During the period in which a student is working at these sciences he ought to be forming in his mind the standards according to which his life-work is to be carried out, but it is the unfortunate experience of teachers to find that often relatively little permanent benefit has been derived from this early discipline. This results from the hurried way in which the subjects are taken up and dismissed one after the other. When the inevitable examination is passed the knowledge which a student has acquired is often rapidly lost, and there is too little result for the amount of work done. The present curriculum is crowded with disjointed subjects. Some process of conservation is required to prevent the dilapidation of knowledge.

It was formerly the custom of Examining Boards to examine the student, when he came up for his degree, in the earlier as well as in the later subjects of the curriculum. This mode of conserving the student's knowledge has become impossible, but no means have yet been discovered to effect the purpose of this old regulation.

The study of pathology as an experimental science in the final period of the medical curriculum to a certain extent prevents the educational waste to which I have referred. In the recent study of immunity under the guidance of Ehrlich, of the pathology of inflammation as it has been taken up by Metchnikoff, or of cancer as it has been explained by Farmer, we find ready illustrations of the way in which pathology keeps alive in the student's mind this physiological, biological, and botanical knowledge which he has already acquired. The study of pathology might become more valuable in this respect were it possible to teach the student the subject by introducing him directly to research. It is difficult to see how this could be done with the average student. He has neither the time nor the experience required for profitable work at research. Students who take special courses and post-graduate students do find it possible, and it is to them of inestimable value. The case of the average student is to some extent met by practical teaching. This is, however, only a partial solution of the difficulty. Practical teaching lacks the stimulus to spontaneous observation which is characteristic of research, nor does it provide the same incentive to conserve and use the knowledge derived from cognate sciences. The impulse to pathological research arises not only from the intellectual desire to pursue the scientific investigation of the subject, but also from the practical demand for the means to break the power of disease.

The student who masters pathology in all its aspects, and who is able to apply all the learning of the schools in his

daily work of preventing the ravages of disease, will often wonder that knowledge so important and so desirable is so difficult to attain. Our immediate perceptions do not carry us very far, but to investigate the facts and processes which lie beyond the reach of our immediate senses we can apply the experimental method. Patient investigation by this method gradually adds to the sum of our knowledge. There is no ground for pessimism. We must pass through the earlier stages before we reach the later ones. Many of the conclusions to which we have now come may require to be modified, but further progress is possible only because we have already reached the present stage. We cannot adopt the views of the distinguished President of the British Association for the Advancement of Science, who remarked in his opening address that "the beliefs of all mankind about its material surroundings are not only imperfect but fundamentally wrong." Still more depressing is his explanation of this circumstance: "Presumably, however, this is either because too direct a vision of physical reality was a hindrance and not a help in the struggle for existence, because falsehood was more useful than truth, or else because, with so imperfect a material as living tissue, no better results could be obtained." To discuss what is meant by the phrase "direct vision of physical reality" would involve us in metaphysics. It is sufficient to know that it is a method of knowledge which is denied to the scientific investigator. The far-reaching discoveries which occasioned Mr. Balfour's remarks do not differ from the former results and discoveries of physical science. They have been reached by the same methods as those applied in the earlier stages of the science, and by these methods the progress of the science will still continue.

The announcement of a far-reaching discovery in any of the natural sciences is hardly a fitting opportunity for proclaiming the defects of the scientific method. It remains, rather, for investigators to continue their work with a yet firmer assurance, persuaded that scientific knowledge does not suffer from defects which it is their duty to eliminate.

UNIVERSITY COLLEGE, LONDON.

By Norman Collie, Ph.D., F.R.S.,
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THE RELATION OF CHEMISTRY TO MEDICINE.

[Abstract.]

In dealing with the subject, the relation of chemistry to medicine, it is quite impossible in an address to do more than merely touch on the many important relations of chemical science to that of medicine. Even in the earliest times, the manufacture of drugs, the production of new ones, also many of the theories explaining the physiological action of medical compounds, were all largely due to chemists. Nowadays, owing to the enormous progress in science, it is more than ever imperative that the medical man should be able to follow much of the work being done in chemical laboratories. In former times, the alchemist during his search for the philosopher's stone or the elixir vitae was always producing new substances; these, although they did not fulfil the desired aim, yet served in the hands of the physician often as valuable drugs. Again, the chemist by his analytical methods helped medicine largely in many ways, testing, purifying, and improving drugs and foods.

Although the Egyptians possessed a considerable knowledge of both chemistry and medicine, it was not till the eighth to the tenth century that there is any historical connexion between the two. The Arabians at Bagdad, and the Moors at Cordova established universities famous throughout the civilized world. Public hospitals and libraries of vast size for the study of diseases and the preparation of medicines existed, and students flocked there from all Europe. The materia medica of the Arabians consequently being a great improvement on that of the Greeks and Romans. The chief writer of that date was Avicenna, most of whose chemical ideas were borrowed from the Arabian chemist, Geber. After the decay of the power of the Moors in Spain there was no further progress for several centuries. Early in the fourteenth century an alchemist, Basil Valentine, benefited medicine by bringing into use antimony salts: his writings, however, are extremely obscure. At the end of the sixteenth century was born a man whose writings revolutionized both chemistry and medicine. Paracelsus, a man in many ways most contemptible, yet was one of those who have left their mark in history. It was Paracelsus who raised the latent energies of the human mind that had been torpid for so many centuries. He advocated the importance of chemical medicines and of chemical investigations to the physician. As a result a vast collection of new drugs were prepared and tried. Some of these were better and some of these were worse than the medicine of the Galenists. After Paracelsus the ideas promulgated by van Helmont and the Iatrochemists produced another revolution in both medicine and chemistry. These ideas, which were a mixture of deductions drawn from the chemical facts of those days, of spiritualism, and of a vast number of wild theories and speculations, ruled supreme in the medical world; till Robert Boyle, towards the end of the seventeenth century, was largely instrumental in overturning these absurd doctrines by means of a lengthy treatise called the *Sceptical Chemist*.

After Boyle's time, for almost a century the chemical, and through it the medical, horizon was darkened by another erroneous theory: the Phlogiston Theory. Also in the meantime chemical knowledge was getting more out of touch with that of medicine. The discovery towards the end of the eighteenth century of the most common of the vegetable acids by Scheele, and later the isolation of many of the pure active principles of plants were valuable to the physicians. But in those days the chemist was engaged chiefly on facts dealing with the atomic theory and the ultimate constitution of matter; the question as to the constitution or the molecular composition of starches or of albumens, or the nature of the action of ferments: these were entirely beyond his powers. In fact, even at the present time the chemist is the first to admit that the chemistry of the living plant or animal is by far the most difficult and at the same time one of the most fascinating problems of the science.

The chief discoveries in chemistry during the last half of the nineteenth century that have a bearing on medicine are extremely numerous. Anaesthetics, antiseptics, new drugs, are some of the more obvious. Indirectly, the work of Fischer on the sugars is also of interest. Not only has he produced synthetically grape and fruit sugar, but he has also made a large number of artificial sugars. Most of these he has found to be undecomposed by such ferments as yeast. Again, others are decomposed by ferments more rapidly, and are probably of more value as foods; and as the sugars and the allied starches are the most important of all foods (albuminoid substances excepted), their chemical investigation is of the highest importance to the medical man. This question of the action of ferments must ultimately be answered by the chemist, and, as these processes of fermentation are largely connected with vital phenomena, their significance cannot be overrated.

The physiological action of toxins and antitoxins has for some time largely engaged the attention of medical science, but it will probably be the chemist, after he has determined their molecular structure, that will be able to explain how and why they are produced. In the process of the assimilation of food the changes that occur are purely chemical. The composition of the various secretions, also, can only be arrived at by an analysis in a chemical laboratory. The composition of the excreta is also of the utmost importance in diagnosing whether the living machine is in proper working order, and whether each particular organ is producing its own proper waste products. In every case the chemist must be consulted; he may be a pathological, a physiological, or a pure chemist. Physicians, the scientific representatives of practical medicine, to be eminently successful in their profession must without doubt be able to understand the general aims and objects of these various branches of chemistry, and this they are unable to do unless they have at least mastered the elements of the science. In the case of specialists it is even more necessary, for the human body is the most wonderful laboratory in existence. In it the raw material is changed to the most complex products. These in turn are used for their proper purposes, thrown aside, and finally got rid of. It is the province of the physician to keep this marvellous laboratory in working order; but how is this possible should he be ignorant of the general methods of how these changes go on? It is useless to expect that by merely oiling a motor-car the effects of using bad petrol or of defective sparking can be eliminated. Obviously, therefore, the medical man who is able to understand the bearing of chemical research on the problems connected with this human laboratory is far more competent to direct the working of it, than one who is ignorant of these chemical investigations, for he has a wider horizon, more knowledge, consequently greater power.

SEVENTY-SECOND ANNUAL MEETING
OF THE
British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICINE.

Walter Tyrrell Brooks, M.B., President.

DISCUSSION ON THE TREATMENT OF CHRONIC RENAL DISEASE.

I.—W. Hale White, M.D., F.R.C.P.,
Physician and Lecturer on Medicine, Guy's Hospital.

Dr. Hale White said: The title of this discussion is the treatment of chronic renal disease, but the conditions of kidney known as chronic nephritis, chronic Bright's disease, and granular kidney are so much more frequent than other chronic diseases of the kidney, that I shall, as time is short, confine myself to them. At the outset I must apologize for the imperfections of my remarks, but the difficulties of the subject are very great; for, although we are familiar with the morbid histology of chronic Bright's disease, we are quite ignorant of its pathology, and are often unaware why it is fatal; also, the health of sufferers from it fluctuates so, apart from treatment, that it may be difficult to say whether any particular treatment is beneficial. Therefore, it is probably best to discuss it under two heads—namely, the treatment of particular symptoms, and that employed owing to theoretical views as to the nature of the disease.

A symptom which has been energetically treated is albuminuria, in my opinion quite wrongly, and often with disastrous results. The mere presence of albumen in the urine is usually of itself of little importance except as a help to diagnosis. It is so often met with in specific fevers, heart disease, renal calculus, cystitis, and other disorders, that about half the invalids who have albuminuria do not suffer from Bright's disease, and yet those who try to treat it when it is associated with Bright's disease neglect it in other maladies, and forget its frequent occurrence in healthy youths. All doctors of long experience can call to mind persons who have passed albumen in their urine for twenty years or more without harm. A little calculation will show that a few grams only are passed daily in most cases of chronic Bright's disease, and the loss of proteid in this way is quite trifling, and could easily be compensated by a little more in the food. Whoever heard of death due to albuminuria? I have great sympathy with a celebrated physician who, when the treatment of albuminuria was much in vogue, said if he ever had it he trusted he would never know it. Much harm may be done to patients with chronic Bright's disease by frequent examination of the urine, for they become depressed unnecessarily if the quantity of albumen increases a little, and unduly elated if it decreases. Often, too, the examinations are valueless for comparison, as only a rough percentage of albumen is stated, without any reference to the total amount of urine passed in twenty-four hours. Albuminuria is a very important help to the diagnosis of all forms of Bright's disease, and steady fluctuations in its quantity are of great aid in enabling us to estimate the progress of acute and subacute cases; otherwise it is unimportant, and is, indeed, often slight for some time before death from chronic Bright's disease. But not only is the mere symptomatic treatment of the albuminuria wrong, but, as I pointed out in a paper written eleven years ago, a milk diet, which is chiefly relied upon to reduce albuminuria, frequently fails to do so, and the sufferer from chronic Bright's disease is in many ways worse for the milk.[1]

We now pass on to symptoms connected with the cardio-vascular system. We meet with two extremes—both bad—in chronic Bright's disease. Some patients have such a hypertrophied heart and high-tension pulse that they die of cerebral haemorrhage; others have a feeble pulse of low tension, a dilated heart, possibly mitral regurgitation, and they die from cardiac failure. Those of the first group must keep down their arterial tension; physical exercise must be gentle, excitement must be avoided, the bowels must be loosely open once every day, partly because so doing helps to keep the pressure low and partly to avoid straining at stool, for that, like any sudden exertion, raises the blood pressure. Cerebral haemorrhage has often occurred in the watercloset. Meals must be small; alcohol and much meat or preparations of it, as soup, beef-tea, and meat essences, must not be taken, as both alcohol and the extractives of meat raise blood pressure. Little fluid should be drunk; digitalis and other drugs which raise blood pressure are specially harmful, but an occasional venesection is beneficial.

Those in whom the pressure is low and the heart weak often owe their condition to treatment. They have been kept too exclusively on milk or farinaceous diet. Over and over again it is forgotten when treating disease that you cannot starve one part of the body without starving the whole. Under the impression that a small supply of milk is the best diet for diminishing the work of the kidneys, the patient with chronic nephritis is starved and his heart suffers starvation—a state of affairs made worse by the fact that as the arteries thicken the heart's work increases. In the paper to which I have alluded, cases are given which show how such patients improve when they are allowed an ordinary diet containing a moderate amount of meat, often, too, a little alcohol helps them. Not only does their circulation benefit, but as they are no longer starved they feel better in every way. Some patients with chronic Bright's disease are kept too much in bed; the heart, like the rest of the body, becomes flabby, improvement in all directions follows getting up and about, the circulation and digestion are strengthened, and the patient feels better. In order not to be misunderstood I may, in passing, say I think that many acute and subacute cases are not kept in bed long enough, but it would lead us astray from our subject of chronic disease to discuss this. Much judgement is required to estimate the amount of exercise a patient may take. Some, by their doctor's orders, take too little and become fat; this is particularly bad in chronic Bright's disease, for the heart often has as it is too much work owing to the arterial thickening, and therefore only harm can follow if it has to pump the blood through an additional amount of fatty tissue.

Whether, when symptoms of uraemia supervene, much fluid should be drunk will be discussed later, but for the greater part of the life of a sufferer from chronic Bright's disease he will be best if he only drinks a normal quantity, for that will be best for the circulation, although probably the evil effect on the heart of a large amount of fluid in the vessels has been exaggerated. Many diabetics drink largely, and yet the heart in diabetes is small, and I know of no evidence to show that those who drink much water, for example, stokers in the Red Sea, suffer from cardiac hypertrophy, still, as just mentioned, we shall usually be safest with only an average quantity of fluid. The error of so lowering the blood tension by diminishing the intake of fluid so as to give the heart too little work is hardly ever likely to occur. To sum up, the whole object as regards the circulation is to keep the vascular tension normal without the aid of drugs.

Oedema, if we except that caused by cardiac failure—and then it is best treated by trying to strengthen the heart—is not sufficiently common in chronic intestinal nephritis for it to often require treatment, but it does in the chronic tubal variety. Slight or moderate degrees are best treated by posture; the legs may be raised if the oedema is of the feet, or the patient may be turned first on one side and then the other if it is of the back or lungs. Much may be done by limiting the amount of fluid drunk and also by seeing that the bowels are regularly well open and that the motions are rather watery. We can often do very well without diuretics, but if the state of the kidneys is very chronic and the blood tension is low some caffeine or a pill containing a grain of each of mercury, powdered digitalis, and powdered squill may be of use, but it is a mistake to depend much upon diuretics to relieve renal dropsy. Diaphoretics are of help; they will be discussed when speaking of uraemia. The most efficient way to get rid of oedema is either with needles or Southey's tubes to puncture the legs, which are then kept dependent; but there is no operation in which aseptic precautions are more necessary, for oedematous tissues are an easy prey to streptococci, and fatal inflammation easily supervenes. Care must be taken that any antiseptics used are not absorbed from a sore, as poisoning readily occurs in Bright's

[1] On the Influence of Various Diets upon the Composition of the Urine and the General Condition of Patients Suffering from Chronic Bright's Disease. *Medico-Chirurgical Transactions*, vol. lxxvi, p. 279. London, 1893.

disease. Removal of the fluid from one part leads to its disappearance from another; thus puncture of the legs will cause a diminution of pleural effusion. I think a *post-mortem* examination often gives an erroneous impression concerning the time during which fluid has been effused, for it is sometimes poured out very rapidly during the agony. This I have often proved by failing to find it with an exploring needle inserted into the chest, although much has been discovered at the *post-mortem* examination a few hours after.

Turning to the theoretical part of our subject, we find that the treatment advised has two objects: First, substances are withheld which it is thought will irritate the kidneys or will be excreted with difficulty by these organs as they are diseased; secondly, attempts are made to deal with the poison which is supposed to cause the symptoms which are collectively known as uraemia. There is no doubt that some drugs—for example, carbolic acid, cantharides, and turpentine—must not be used for patients with Bright's disease; but we occasionally see blisters recklessly applied, and I have known turpentine given for the haematuria of acute Bright's disease; also, probably, most of us think it undesirable to give diuretic drugs; undoubtedly it is in the acute and subacute stages of the disease, and possibly in all stages, but in some instances of interstitial nephritis which have lasted a long while the harm is least. Drugs which are excreted with difficulty by the diseased kidneys must be used with great care; therefore mercury, lead, and digitalis should never be given for long periods. There is much difference of opinion about morphine. Certainly it often benefits the convulsions of uraemia, but equally certainly we occasionally find patients suffering from Bright's disease who are killed by much smaller doses than would be fatal to healthy persons; this hypersensitiveness may be due in part to deficient excretion, in part to the fact that the respiratory centre is already depressed by the feeble circulation, or, perhaps, by the poison which is the cause of the uraemia. Therefore I would suggest that morphine should very rarely be given to the sufferers from Bright's disease. Sulphonal and trional, also, should not be prescribed, as they may induce haematoporphyrinuria.

Passing on to articles of diet, alcohol is the first to consider. Whether hard drinking causes chronic Bright's disease is foreign to our subject, for no doctor would think of permitting large amounts to be taken. We now know that nearly all the alcohol a man ordinarily drinks is used in the body, only 3 to 5 per cent. is excreted, and only some of this in the urine. Therefore the probability of harm to the kidneys themselves is negligible if only moderate quantities are taken, and the renal disease is chronic. But, as already mentioned, if the pulse tension is high, alcohol will be harmful; on the other hand, if the heart is feeble and the tension low, a moderate or small quantity will do good, as it also may if digestion is weak or the patient cannot sleep. But, as alcohol in excess certainly leads to degeneration of tissue, and chronic Bright's disease may be regarded from one point of view as a premature degeneration of the vessels and kidney, we must make sure that, if it is used, the quantity is really moderate.

The greater number of sufferers from chronic Bright's disease have the variety usually known as interstitial nephritis or contracted granular kidney. This disease is frequently treated too zealously; in the desire to spare the kidney the patient is starved as regards some or other class of foods; this is obviously bad, for the renal trouble is largely a degenerative process, and this can only be retarded by keeping the patient as near as possible to a condition of good health, it certainly will be accelerated if he is starved. Frequently I have seen patients benefited by increasing their food. On the other hand, some eat too much. We do not know for certain that when taken in moderation any articles of ordinary diet are harmful to a granular kidney; therefore, the patient is best dieted who has ordinary plain digestible meals containing a correct proportion of proteids, fats, carbohydrates, and salts, much the same as most of us, in such quantity as that he feels well and keeps his weight about normal. The food should be plainly but properly cooked, so that it may be appetising. Sauces, condiments, and such things should not be allowed unless they are taken in small quantities, for they are not foods, and, while it has not been proved they do harm, they may. Beyond this it is unnecessary to go, provided that what has already been said about the effect of food on the circulation is remembered. We must all often meet patients who have been told they may have chicken and fish but not beef or mutton, or mutton but not beef, or red meat and not white, but in what periodical shall we find published a series of cases to show that the duration of the disease is proportionate to the colour of the meat? Not only are many restrictions often placed on diet unnecessary, they are harmful, for they make the patient a miserable introspective valetudinarian.

What has just been said about the diet of chronic interstitial nephritis applies to a large extent to the chronic parenchymatous variety, but here the perverse dieting is often more energetic, and so the misery to the patient is greater, for frequently it is not recognized that the sufferer has reached a stage in which no hope of recovery is possible, and yet he is dieted although he has come to loathe the sight of the monotonous diet of milk and farinaceous food to which he has been condemned. A doctor does not often have a better opportunity of bestowing happiness, and at the same time benefiting his patient, than when he tells some dejected sufferer dying from chronic tubal nephritis that he may have ordinary meals, for the miserable lethargic person becomes bright and cheerful, and during his last weeks he is not depressed in mind as well as body. Considerable judgement is required to recognize when acute and subacute cases have reached a stage at which recovery is impossible, and it is of great importance to do so, for so long as recovery is possible, and therefore the case does not come under the head of chronic nephritis, much care is necessary when prescribing diet, but as time is short I must omit the consideration of this matter and keep strictly to the title of the discussion. Tea, coffee, and tobacco should all be used with great moderation for sufferers from chronic nephritis, as we have already seen in discussing the tension of the pulse how important it is to keep the circulation effective, and we know that either of these in excess renders the pulse irregular and rapid. Much misapprehension exists about the amount of water patients with chronic nephritis should drink; it arose from the wish to flush the kidneys and clear away dead epithelium of tubal nephritis, and the treatment has been extended to interstitial cases. But just in proportion as the disease is chiefly of the tubal epithelium, so is the oedema greatest, and this will have no chance of subsiding if there is several times a day a condition of hydraemic plethora. Further, the common opinion that excessive water drinking increases nitrogenous metabolism has been confirmed by the work of Edsell and others, and as the kidneys are diseased, and therefore the body has great difficulty in getting rid of the products of metabolism, the last thing we want to do is to abnormally increase these. Then, too, there is the possibly harmful effect of an excess of water on the heart, but this has already been discussed. Therefore, as a rule, much water drinking is bad; the quantity of fluid in the diet is nearly always quite enough, but in a few cases of tubal nephritis an extra pint of water a day may be given for a time with the view of sweeping away dead renal epithelium if none of the above contraindications exist. It may be alkaline in the hope that a soap may be formed with the fatty epithelium, and thus it may be more easily loosened.

Most of us watching a death from uraemia cannot resist the belief that it is a form of poisoning. What the poison is we do not know; so ignorant are we, that we cannot even suspect its nature. There is no evidence that it is derived from food, for the onset of uraemia has not been shown to be associated with any particular article of diet, and large amounts of food do not lead to uraemia in healthy people, as was shown in some metabolism experiments published by Dr. Spriggs and myself.[2] The subject was a small woman, who was being treated by overfeeding; she took the enormous amount of about 5,000 kilo-calories of food a day for fifty-five days. We found that even if all her gain in weight had been proteid, nitrogenous equilibrium was not reached, and she retained at least 120 grams of nitrogen. There is a loose sort of belief about that uraemia is due to a retention of nitrogenous substances; but if that were so, the retention of nitrogen in health ought to cause uraemia, but this case shows that it does not, and I have often seen uraemia develop in a patient taking farinaceous diet. Further, Butler and French,[3] making consecutive observations for forty days on a patient with chronic parenchymatous nephritis, found that during uraemia the output of nitrogen was in excess of the intake.

As we cannot connect uraemia with food we believe the patient to be suffering from auto-intoxication. We know of no antidote nor of any means of limiting the formation of the

[2] On Metabolism in Forced Feeding, *Journal of Physiology*, vol. xxvi, p. 151.

[3] A Research on the Nitrogenous Metabolism of a Case of Bright's Disease, *Guy's Hospital Reports*, vol. lvi, p. 49.

poison, therefore the only treatment is to help all the excretory organs in the hope that the poison will be eliminated through some of them. It is often urged against this view that the poison is not detected in the excretions, for example, the sweat, but supposing it is as powerful as nicotine, what chance would a chemist have of detecting the minute amount excreted in the little sweat he could collect if he knew nothing of the nature of the poison? and as regards physiological testing it may be that it is not poisonous to lower animals. It is of little use trying to help the diseased kidneys, but if there are undoubted symptoms of uraemia a hydragogue purge such as jalap should be given and sweating should be started preferably by a hot-air bath of some sort, followed by hot pack; the attempt may be made more effectually to wash the patient out by way of his sweat glands by making him drink plenty of hot fluid such as very weak hot tea, or he may be transfused with saline solution, but it should be, as Stern reminds us, hypotonic as the serum has already a high osmotic pressure (he advises a 0.5 per cent. sodium chloride solution), or, again, the sweating may be increased by the subcutaneous injection of nitrate of pilocarpin; often too much of this is given, forgetting that it is a powerful cardiac depressant and that it causes much increase of bronchial secretion, in consequence of which the tubes of the already oedematous lungs become so full of fluid that the patient dies asphyxiated. Bleeding often does great good, probably by removing some of the circulatory poison and sometimes by relieving an overdistended heart. Severe uraemic convulsions can often be relieved by the inhalation of chloroform; the giving of morphine has already been discussed.

It seems reasonable also to try to avert uraemia by the same plan, therefore if a patient suffers from chronic Bright's disease the bowels should be well open daily; the sweat glands should be kept mildly active, but frequent excessive sweating is very undesirable, for it cannot be induced without damaging the circulation, and, as has been already pointed out, this must be maintained as healthy as possible. But the patient may have a warm bath every night, rub the skin quickly after it, and then instantly get into a warm bed. Woollen garments should be worn next to the skin. Egypt is the ideal climate, for the temperature is high and the humidity very low, hence the perspiration rapidly evaporates, and the patient is not oppressed by his sweating. But as the humidity is so low the air feels very cold at night, especially if there is a wind, consequently the patient will often require to clothe very warmly after sunset, and this is especially true if he is on a boat on the Nile. Further, far up the Nile, as at Assouan, it may be difficult to get food proper for an invalid. For a few patients an occasional Turkish bath may be allowed, but usually not, on account of the harm that may be done to the circulation. Keeping the sweat glands active not only aids elimination but helps to prevent or remove oedema. Perhaps this is the best place to draw attention to the fact, often forgotten, that a close relationship exists between the skin and the kidneys. I have frequently seen patients with Bright's disease made much worse by getting the skin chilled. The harm may happen in more ways than one: excretion by sweat is stopped, contraction of the cutaneous vessels tends to raise blood pressure and throw more blood into the kidneys; it also tends to raise heat production, and possibly therefore to increase some poisonous products of metabolism. To avoid chilling of the skin clothing should be warm, and it is especially necessary to change any that has become wet either from rain or sweat.

There is not much to say about the treatment of individual symptoms of uraemia beyond what has been said about that of uraemia generally. We should not be too hasty in our attempts to check diarrhoea and vomiting, for it should be remembered that they are eliminative. The severe headache so often associated with a high-tension pulse is sometimes relieved by nitrites, and both it and the sleeplessness may be diminished by a hot bath immediately before going to bed. If a hypnotic is required chloralamide is one of the best. Uraemic dyspnoea is often very hard to deal with. In addition to the general treatment of uraemia nitrite of amyl may give relief, and sometimes oxygen is of use.

I have tried, shortly, to put before you as a basis of discussion the principles upon which I believe we should treat chronic Bright's disease. They are the outcome of experience gained in clinical work, and I have been for many years accustomed to teach them. Two mistakes, I think, occur more often than others: one is, the patient is overtreated; the other is that not enough attention is paid to the circulation. I am proud to believe that I am justified in gathering from the writings of our distinguished guest, Professor von Noorden, that the principles of treatment just laid down are virtually the same as those enumerated by him as salutary for those who suffer from chronic Bright's disease. The shortness of time at my disposal has compelled me to keep strictly to the title of the discussion and to omit the treatment of acute and subacute Bright's disease, although acute and subacute attacks often supervene in the course of the chronic disorder. In such cases I believe the treatment advised by Professor von Noorden is the most rational yet devised and the most likely to lead to good results.

It would profit but little if I were to say much of modes of treatment outside the field of my own experience. These gaps will be best filled by subsequent speakers, who will, I hope, tell us whether they have observed good to follow lumbar puncture when the patient has uraemia, whether they have tried the suggestion of MM. Widal and Javel of giving no sodium chloride when oedema is present, whether they have punctured the kidney or fed the patient on renal extract, and whether they have found benefit to follow decapsulation of the kidney. To my mind, the published results of this operation do not encourage us to think it will hold a lasting place among the methods of treating Bright's disease, and it must be remembered that the subjects of this disease bear operations badly and that therefore a serious operation should not be undertaken unless there is a considerable prospect that benefit will follow.

II.—Professor VON NOORDEN, M.D.,
Frankfort-on-Maine.

PROFESSOR VON NOORDEN said: At the Manchester meeting of the British Medical Association I had the honour to bring forward several points in the treatment of chronic Bright's disease. The first point was concerned with the difference between white and dark meat, and I advanced the opinion that neither clinical experience nor chemical analysis nor investigations on metabolism authorize us to give preference to white meat in the treatment of chronic Bright's disease. It now affords me pleasure to say that all publications on this subject which have since then appeared have confirmed my opinion. How much this facilitates the dietetic treatment of Bright's disease I need hardly say. It is understood that a too great allowance of meat in the diet should certainly never be given; but if we allow any at all, we then have an unlimited choice as to the different kinds, and we can more easily satisfy the desires of our patients.

The second point had to do with the amount of water allowed in chronic Bright's disease. Having reference to a clinical experience of many years and to a great number of investigations on metabolism in Bright's disease, I held it unnecessary to flush the body of the patient by giving greater quantities of fluid. I also drew attention to the danger to which the heart of the person suffering from Bright's disease is exposed by allowing too large quantities of fluid, and emphasized the benefit which can be drawn, in such cases as well as in diseases of the heart, from a wise limitation of beverages.

This thesis has not been without contradiction; Dr. Strauss, in Berlin, especially opposed the results in his investigations on blood. But other reseachers have agreed with me—among such I may name Professor Pel in Amsterdam, and Professor Koranyi in Buda Pesth. My own clinical experience on this matter has in the meantime increased, and I must again emphasize the enormous benefit which many patients may derive from the restriction of fluid, if only 1½ litre daily is allowed. The favourable result on the dilatation of the heart as well as on the asthmatic complaints is most remarkable, even in very advanced stages of the disease.

During the last two years I have devoted my attention to a third point—that is, to the influence of systematic muscular exertion on the course of Bright's disease. I do not know what position the practitioner in England takes up on this question, but with us in Germany it is customary to restrain all muscular work as soon as Bright's disease is diagnosed, and many German physicians even go so far as to begin the treatment by putting the patients to bed for several months. I perfectly agree that all fatiguing exertion must be forbidden, but it is certainly not for the benefit of the patient to forbid all muscular exercise; on the contrary, I am of opinion that much good can be done to most by accustoming them to systematic training of the muscles. The consequence will probably be that at first the amount of albumen in the

urine rises, but this is only transitory. After a few days, or at longest after the lapse of one or two weeks, it decreases again and becomes often less than before the training began, but I do not insist upon this; more important is it that the state of the heart will greatly improve. I have seen many cases in which the stenocardic complaints, arising before the training after the slightest exertion, totally disappeared after training. It is thus placed in our power to bring back the sense and feeling of health and strength to many who had given up all hope of a useful life.

In the training it will be found best to adopt the rules which Dr. Oertel has given for the treatment of heart diseases, and it will soon be found that the result in Bright's disease is just as favourable. The beginning is not quite easy, and patients treated in their own homes will hardly overcome the first difficulties. A total failure is then the result; this is the reason why treatment in hospitals or in health resorts is more advisable. Of the watering-places, I prefer those which have at their disposal carbonic-acid water for baths and weak saline springs for drinking cures. According to my experience, the saline springs exert a much stronger influence on the eliminating action of the kidneys and on the clearing of the blood in Bright's disease than do the alkaline waters. There must be combined with these therapeutical factors a carefully-watched training in gymnastics, walking, and climbing. I am sure that most places afford the opportunity for this, but I must say that my own experiences are based on cases treated in Homburg or in my clinic.

A fourth essential point which I wish to note is the connexion of Bright's disease with obesity—one of the most frequent and most dangerous complications. Both illnesses lead to the overtraining and early wearing out of the heart, and care should be taken to remove the obesity as soon as the diagnosis of Bright's disease becomes certain. But the greatest caution is required; it is absolutely necessary to proceed very slowly and carefully. Whilst the weight of healthy obese persons may be reduced without any danger by 4 or 6 kilo. in four weeks, just as many months should be taken for gaining the same result if obesity is accompanied by Bright's disease.

The danger which results from obesity is a further reason why milk diet should not be too strongly recommended in chronic Bright's disease, as the abundant taking of milk, on the one hand, favours the putting on of fat, and, on the other, inundates it with too much fluid.

III.—Sir John W. Moore, M.D.Dub., F.R.C.P.I., D.Sc.Oxon.,
Physician, Meath Hospital and County Dublin Infirmary; Professor of Practice of Medicine, Royal College of Surgeons, Ireland.

I.

Diseases of the urinary system are undoubtedly rife and fatal in Dublin. According to the returns published by the Registrar-General for Ireland, the yearly average number of deaths from these diseases to every 10,000 persons living in the Dublin registration area, with its population of 378,994 (in 1901), was 6.0 in the ten years, 1893-1902. The corresponding figure for 1903 was 6 9. The deaths from all causes registered in the decade 1893-1902 were 260.9 per 10,000 of the population; those registered in 1903 were 238.7 per 10,000.

In the Registrar-General's tables, "diseases of the urinary system" are set out as "acute nephritis," "Bright's disease (albuminuria)," and "other diseases of the urinary system." With the first we have nothing to do at present. The third division counts but little in the statistics.

From a pathological point of view, cases of parenchymatous nephritis, with its terminations in cirrhotic atrophy, fatty degeneration, and amyloid degeneration, outnumber those of chronic interstitial nephritis, or true cirrhosis of the kidney.

Considered from an etiological standpoint, scarlatina, pneumonia, and other acute infections play but an insignificant part in the production of chronic parenchymatous nephritis, of which the prime causes are intemperance and exposure to cold and wet. Of chronic interstitial nephritis, gout is an infrequent cause in the Irish metropolis. The cases are usually the result of chronic plumbism in house painters and plumbers, and, of course, alcoholic intemperance plays its part also.

I cannot pass from the subject of etiology without alluding to a form of chronic renal disease which is happily becoming rare in Ireland—namely, calculous pyelitis. When I was a medical student, some six and thirty years ago, operations for stone in the bladder were of almost every-day occurrence. To-day they are strangely infrequent, because "stone" has itself become infrequent. This satisfactory change may fairly be ascribed to the substitution of an abundant supply of pure soft water from the Vartry River for the hard lime waters derived from the Grand Canal and the Royal Canal in former days. In confirmation of this explanation, I may mention that calculous disease, which in the past was rife in certain towns in Ulster, such as Lisburn and Lurgan, has greatly lessened in frequency since a soft water supply has been drawn from that inland sea—Lough Neagh. Bearing in mind the fact that calculous disease usually affects one kidney only, while the sound kidney takes on compensatory action and undergoes hypertrophy, we get a valuable clue to the radical and successful cure of this malady by nephrectomy. Only, before we operate in a given case, let us make sure by cystoscopy or other means that the patient has two kidneys.

In 1903 Dr. Ramon Guiteras of New York recorded 3 cases of congenital single kidney. The first of these was that of a labourer, aged 21 years, on whom he operated for tuberculosis of the kidney. The first patient passed 10 oz. of urine on the day following the removal of the diseased kidney. After this not a drop passed either spontaneously or by catheterization. The man died without uraemic convulsions or coma on the eighth day after operation. The autopsy revealed the absence of both kidneys, the left one having been removed. Mr. Henry Morris considers that one kidney is congenitally absent in 1 out of 2,400 bodies.

II.

It may seem a truism to state that before we plan a line of treatment in a case of chronic kidney disease it is desirable—indeed essential—not only to make an accurate diagnosis, but also to determine as far as possible the renal sufficiency in general, and even the functional power of each kidney. In their recently-published work on *Functional Diagnosis of Kidney Disease* Privat-Docent Leopold Casper and Dr. Paul Friederich Richter, of Berlin, discuss the method of determining renal sufficiency in general under the headings: (1) The elimination of nitrogen; (2) the elimination of chlorides; (3) the determination of the molecular concentration of the urine (cryoscopy); (4) the elimination of artificially-introduced substances (methylene blue); (5) the chemical activity of the kidneys; (6) the toxicity of the urine; (7) the determination of the molecular concentration of the blood. The determination of the functional activity of each kidney depends on the observation of: (1) The concentration of the secretion of the kidneys collected simultaneously and separately; (2) the elimination of nitrogen by each kidney; (3) the "molecular concentration" of each kidney; (4) the methylene-blue test; (5) the phloridzin method.

A few words of explanation of the expressions "molecular concentration," the "methylene-blue test," and the "phloridzin method" may be acceptable. In his admirable *Clinical Handbook of Urine Analysis*, Dr. Charles H. Bedford, Professor of Chemistry in the Calcutta Medical College, defines cryoscopy as a means of obtaining from the freezing point of the blood and urine an indication of the excretory activity of the kidneys. The process, he says, is based on the fact that the greater the number of molecules in solution the lower is the freezing point—that is to say, the freezing point shows the degree of molecular concentration (or, as it is termed, "osmotic pressure") in the fluid, while the specific gravity shows the weight of solids in solution in it. For example, in blood the freezing point normally varies only from 0.55° to to 0 57° C. below that of distilled water, while the specific gravity varies from 1046 to 1057. So long as even one of the kidneys is healthy, the freezing point of the blood never falls below 0.56° C. On the other hand, renal inadequacy results in a marked increase in the blood's molecular concentration, and the freezing point falls below —0.56° C. If the freezing point is found to be —0.65° or — 0 68° C., it would clearly point to inadequate excretion in the case of both kidneys. Professor Bedford claims that in chronic forms of nephritis, and especially in interstitial nephritis, the method of cryoscopy gives valuable indications of the lessened excretory power of the kidneys and acts in many cases as a danger signal.

The methylene-blue test for the permeability of the kidney consists in the injection of 1 c.cm. of 1 in 20 solution of the aniline derivative, methylene blue, into the gluteus maximus. If the filtering power of the kidneys is unimpaired the urine passed at the end of half an hour has a

pale green colour, and within three or four hours after the injection the colour deepens to a dark green. The coloration finally disappears in normal cases within two days of the experiment.

Phloridzin—as is well known—is a glucoside, obtained from the bark of the stem and root of the apple, pear, plum, and cherry. It possesses the remarkable property of inducing artificial glycosuria in animals to which it is administered. In using it as a test of renal inadequacy it is, of course, necessary to determine whether glucose is already present in the urine. If it is, the test is inapplicable. The phloridzin test consists in injecting subcutaneously 5 mg. of phloridzin dissolved by the aid of sodium carbonate in 20 to 30 minims of water immediately after the patient has emptied the bladder. If the kidneys are adequate, glucose should appear in the urine in half an hour, when its amount may be estimated by Fehling's or by Pavy's method.

Dr. Bedford states that, in acute and subacute parenchymatous nephritis, glucose is not excreted, although methylene blue is; in interstitial nephritis (even when there is no albuminuria), the excretion of both methylene blue and of sugar is diminished, or the appearance of the chromogen or sugar is delayed, or the excretion period may be prolonged.[1]

III.

Treatment of chronic kidney disease should proceed on three main lines:

1. Dietetic, of which the object is to avoid extra strain upon the already embarrassed and insufficient kidneys.

2. Eliminative, whereby we endeavour to rid the system of the poisonous products of tissue waste which are retained in the blood owing to renal failure.

3. Cardiac, by which we relieve the heart of the strain caused by long-continued high arterial tension in the earlier stages of kidney disease, and compensate its flagging power in the later stages. In speaking of high arterial tension in kidney disease, we are ready to accept the view of late put forward that it may be in great part due to the forcible action of the heart caused by "the circulation in the blood of increased amounts of nitrogenous metabolites, such as urea and its allies" (J. Rose Bradford).

1. It is scarcely necessary to go into details as to dietary in chronic nephritis. The kidneys should be kept flushed by water—but it must be soft water, like our splendid Vartry water in Dublin, or distilled water. Among natural mineral waters, Contrexéville enjoys a well-deserved reputation in all forms of renal disease. Of course, the amount of liquid imbibed should not be unlimited, and care must be taken not unduly to increase vascular pressure by a too liberal allowance even of water. Nitrogenous food should be given sparingly, but we must not let the patient suffer the pangs of starvation or waste for want of it. Milk is well borne in most cases, and is permissible—so, also, are the lighter animal broths, like chicken or veal broth. The farinaceous foods are of use. If milk is disliked or disagrees, equal parts of whey and egg water may be substituted—indeed, egg albumen should be given in all cases where the drain of albumen from the system is excessive. Unless in most exceptional circumstances, renal patients are better without alcohol, even in small quantities or in diluted forms. Some patients dislike a "slop diet," and crave solid food. White meats and white fish may be allowed in these circumstances—in fact, many renal patients thrive on chickens, rabbits boiled in milk, and such fresh fish as sole, plaice, and whiting. The objection to "red meats" does not hold in chronic nephritis; and beef and mutton may be allowed in moderate quantities, if the patient so desires. Let us always treat our patients and not their diseases.

2. Elimination is effected through the kidneys themselves by increasing the glomerular pressure through copious draughts of pure, soft water. But special attention must be paid to the skin and bowels, an increased functional activity of which is everywhere recognized as of paramount importance in compensating for renal insufficiency.

But there is another path of elimination to which I wish to draw attention—namely the lungs. If the blood is to be purified, if anaemia is to be prevented or combated, if the power of the heart is to be maintained, free oxygenation must take place in the lungs. In a word, the open-air treatment, which is rightly regarded as indispensable in the management of pulmonary tuberculosis, is no less indispensable in dealing effectively with chronic renal disease. A warm atmosphere and warm clothing of non-conducting materials are, no doubt, necessary. But these requirements must not interfere with an abundant supply of fresh air. Where expense is no object, the cold and damp of a northern winter and spring must be avoided by a sojourn in a warm, dry, and equable climate like that of Egypt. Algeria, Cyprus, or Sicily may also be mentioned in this connexion. In unfavourable weather during a British winter, oxygen may be allowed to escape slowly from cylinders into the atmosphere of the apartment occupied by a renal case. And, incidentally, I may here refer to the great use of oxygen inhalations in the so called "renal asthma" of uraemia.

Although over-exertion should be avoided, daily walking exercise in the open air is most desirable—the blood is aërated, the absorbents are stimulated, the appetite is improved, and the heart is strengthened by moderate muscular action.

To the long list of drugs which are named in connexion with the eliminative treatment of chronic kidney disease I would add two—benzoate of sodium and urotropin. Over and over again I have seen the drowsiness of impending uraemic coma overcome by 20-gr. doses of the benzoate. To Dr. James Little, Regius Professor of Physic in the University of Dublin, I owe the following prescription:

℞ Sodii benzoatis ... ... gr. 240
Tincturae limonis ... ℥j
Aquae ... ... ad ℥vi

Signa: A tablespoonful by measure in half a tumblerful of hot water in the early morning, or as required.

Urotropin—or, to call it by its chemical name, "hexamethylene-tetramin"—is a valuable urinary antiseptic and diuretic. It should be exhibited cautiously, and only for a day or two, in 5 gr. doses thrice daily. It is easily soluble in water, or it may be prescribed in the tablet form or as a granular effervescent powder (4 gr. to the drachm).

While speaking of elimination, may I be allowed to express the opinion that general dropsy acts the part of an eliminant? Certain it is that uraemia is much more likely to occur in non-dropsical cases, such as are often encountered in chronic interstitial nephritis.

During the past session in the Meath Hospital and County Dublin Infirmary there were two cases of chronic parenchymatous nephritis which may be regarded as types of the opposite extremes in the matter of dropsy. One of these two patients was a woman, aged 50, who was in an apparently dying state. There was excessive general anasarca, her lungs were waterlogged, and 398 oz. of ascitic fluid were evacuated by paracentesis abdominis. The embarrassed heart was at once relieved by the withdrawal of the vast peritoneal effusion. The other patient was a lad of 17 years, who had suffered from kidney disease for several months. There was no trace of dropsy either in the skin, or in the lungs, or in the serous cavities. The only explanation of this remarkable circumstance was to be found in the physical condition of the heart, which was greatly hypertrophied, both ventricles contracting forcibly, and driving the blood headlong through both the systemic and the lesser circulation. The apex beat was $2\frac{1}{2}$ in. below and $\frac{1}{2}$ in. to the outside of the left nipple.

The last case illustrates a point upon which I wish to lay particular emphasis—namely, that the physical state of the heart and circulation is the paramount factor in the prognosis of chronic renal disease. The indications for treatment are: (1) To strengthen and aid the left ventricle in its work; (2) to relieve tension in the right ventricle; (3) to reduce high arterial tension towards (but not to) normal arterial tension.

1. If the cardiac failure is urgent, a hypodermic injection of $\frac{1}{30}$ gr. of strychnine and $\frac{1}{100}$ gr. of digitalis every sixth or eighth hour answers well.

Although blistering is theoretically contraindicated, I have never known anything but good to result from painting a small circular space of the cardiac area ($1\frac{1}{2}$ in. in diameter) with the official "liquor epispasticus."

The various cardiac tonics may be prescribed as seems best in individual cases. Among them, digitalis still easily ranks first. There are two drawbacks to this drug—it increases arterial tension and it nauseates. The first objection may be met by giving an iodide with it—the sodium salt is certainly less depressing than the potassium salt, and the addition of aromatic spirit of ammonium will be useful. Or a nitrite may be prescribed in combination with the digitalis. The second drawback is obviated by prescribing the drug in effervescence with effervescent citrate of

[1] Cf. Achard and Castaigne, *Monographies Cliniques*, No. 23, 1900. Paris: Masson and Co.

caffein. For this purpose a suitable quantity of a mixture containing in every ounce 10 minims each of tincture of digitalis, spirit of chloroform, and tincture of orange may be added to a claretglassful of water and a teaspoonful or dessertspoonful of the caffein preparation. Iron, arsenic, and strychnine are an excellent triad of heart tonics for cases such as we are considering, and all three may be combined in the same prescription as solution of the perchloride of iron, hydrochloric solution of arsenic, and solution of strychnine hydrochloride.

2. To relieve the pressure on the right ventricle, a full dose of saline laxatives, such as the sulphates of sodium and magnesium, given in the granular effervescent form, will be found effective. A morning dose may be preceded by an aperient pill at bedtime the previous night. Hot-air baths do good by promoting free diaphoresis, or pilocarpin may be given cautiously for the same purpose. It is a treacherous drug, however, and may play one false by inducing bronchial effusion and pulmonary oedema—I speak from experience. Should haemoptysis set in we should be in no hurry to stop it by the unscientific exhibition of styptics. On the contrary, the bleeding may do good by relieving heart-strain. The same remark applies to the "gastric crises" of uraemia, which often do good and seldom, if ever, do harm.

3. Arterial tension, if running dangerously high, must be reduced gradually by laxatives, the various nitrites, the iodides, and a restricted diet. Iodide of iron may be combined with iodide of potassium, particularly in lardaceous disease. A suggestion by Dr. W. Howship Dickinson[2] seems to me to be admirably suited for the treatment of high arterial tension, whether it is due to chronic interstitial nephritis or not—namely, long soaking of the body in a bath of water of blood-heat, say 98° or thereabouts. He adds that this might be preceded by a brief immersion in a weak solution of bicarbonate of potassium.

In closing these remarks, I wish to draw attention to a novel method of treatment of chronic renal disease lately recommended and practised by Professor Renaut, M.D., of Lyons. It consists in the administration of macerated pork kidneys. The preparation is made as follows: Take one, more frequently two, absolutely fresh pork kidneys, chop them up fine, and then wash them thoroughly in water so as to remove any stagnant urine they may contain. The chopped meat is then pounded up in a mortar with about 12 oz. of salt water (half a teaspoonful of salt). The mixture is left to macerate for four hours, and the liquid extract is then decanted. The patient will take it in three or four doses in the day. In order to make it more palatable, or rather less repugnant, to the patient, Dr. Renaut generally adds to it a little warm broth (soupe julienne).

The administration of macerated kidney should not be continued for more than ten consecutive days, after which a rest of five days should be ordered, and the treatment then recommenced. It is needless to add that fresh kidneys should be procured every day.

It is claimed for this treatment that it acts as a powerful diuretic, checks albuminuria, or causes the symptom to disappear for long periods, and so affords a chance of restoration of the renal epithelium whenever this is histologically possible.

I have tried this method of treatment during the past spring in two cases, but with no very definite or satisfactory results. The preparation is certainly distasteful to the palate, and this counts for a good deal in the capricious appetite of Bright's disease. In my cases, also, the remedy appeared even to increase the loss of albumen, perhaps through over-stimulation of the tubal epithelium by an active principle, which, by analogy, we may call "renalin."

In conclusion, let us never despair in a case of chronic nephritis—intractable though the malady is, recovery is not impossible; and, even when this cannot be looked for, life may be prolonged for many years by judicious management and loving care. To attain this end, I take it, is the object which those who arranged this discussion had in view. May the discussion lead to the relief of human suffering, advance the cause of medical science, and prove worthy of the great Association to which we have the honour and privilege to belong.

IV.—James Tyson, M.D.,
Philadelphia.

Dr. Tyson expressed his concurrence with the general principles of treatment as laid down by Dr. Hale White and Professor von Noorden. In general he thought the treatment of chronic nephritis resolved itself largely into such dietetic and hygienic measures as co-operated with the natural tendency to recover which existed more or less in all cases. On the other hand, he desired to emphasize what was said as to the harmful extreme to which the antiproteid treatment was sometimes carried, and the confusion which had arisen in the minds of some patients, carried to the degree that they sometimes believed that white meat was not meat. The same was true of water ingestion which was sometimes carried to a like harmful extreme, especially by dilating the heart and interfering with the removal of dropsy. In the matter of the treatment of special symptoms, he agreed with the caution enjoined in the use of morphine, although aware that some magical results were sometimes reported in the treatment of uraemic convulsions by hypodermic injection of morphine. He thought he had found a reason for this in the fact that cases in which the good results followed were cases of parenchymatous nephritis, while the cases in which morphine was seemingly dangerous were cases of interstitial nephritis. He thought this view confirmed by comparatively recent experiments with methylene blue, which it was found was freely secreted by the kidney in chronic parenchymatous nephritis, and very tardily and sparsely separated by the contracted kidney. Dr. Tyson was pleased to confirm the favourable experience with chloralamide under circumstances when soporifics and sedatives were indicated. He desired to call attention to an excited condition produced by too large doses, an excitement which was, however, harmless, and as to which the patient was entirely unconscious. He agreed with what was said of the danger of oedema of the lungs sometimes produced by pilocarpin, but called attention to the fact that this symptom might be overcome by a hypodermic injection of $\frac{1}{150}$ gr. of atropine, though this too had its dangers in a tendency to produce anuria. So-called renal asthma he regarded as most frequently the result of cardiac failure and dilatation, and a true uraemic asthma was rare. In its treatment he would use anodynes as far as safe and remedies reputed to increase cardiac strength, such as digitalis and strychnine, associated, perhaps, with the nitrites. He had had some experience in the use of the operation of decapsulation—the so-called Edebohls's operation—for the cure of chronic nephritis, and had come to some conclusions as to the value of the operation. In certain cases of chronic parenchymatous nephritis life might be prolonged a year or longer, as instanced by cases in his own experience and under his observation. One such case was narrated in which life was prolonged without a symptom, except albuminuria, for fifteen months, when the patient died of a terminal infection. On the other hand, he personally knew of no case in which the operation was followed by recovery, and he thought the operation should be done only after other measures had failed. Nor did he consider the operation so likely to be of benefit in chronic interstitial nephritis as in the parenchymatous form.

V.—Sir William H. Broadbent, Bart., K.C.V.O., M.D., F.R.C.P., F.R.S.,
Physician in Ordinary to H.M. the King.

Sir William Broadbent, after expressing his general agreement with the dietetic treatment recommended by Dr. Hale White and Professor von Noorden, said: The patient must not be starved under the pretext of avoiding throwing work on the kidneys. As regards water, much depends on the time at which the water is taken; a good tumbler night and morning is more effective as an eliminant than larger amounts in connexion with, or soon after, food. Dr. Hale White has once more exploded the idea that the amount of albumen was a measure of the danger attending the disease; a more important observation is the specific gravity. The indication as regards prognosis and treatment to which I attach greatest importance is the pulse tension. In interstitial nephritis the tension is usually high, but there are exceptional cases. There may be low tension, which is primary, and due to imperfect resistance in the periphery. This is very rare, and the cause is absolutely unknown. More commonly the cause is heart failure, the resistance in the peripheral circulation remains, but the heart has given way under it, and has become dilated. Under these conditions there may be dropsy, which is often attributed to intercurrent tubular nephritis. A measure in which my experience has given me confidence for the reduction of high tension is the employment of mild mercurial aperients. The effect of purgatives on the tension is not proportionate to the amount of

[2] Allbutt's *System of Medicine*, vol. iv, p. 394.

purgation, and the effect on the arterial tension of a single grain of some mercurial preparation with slight aperient action is much greater than repeated liquid motions induced by salines. There appears to be an eliminant effect by mercury which is not merely aperient, and it must be remembered that the high pulse tension may precede the actual development of the renal disease. There is some antecedent cause of the renal affection, some impurity in the blood which acts as an irritant, and by elimination of this the renal disease may be prevented. Uraemia and its various effects, again, I look upon as circulatory. Dr. Hale White has again told us that there is no poison to which uraemic phenomena can be attributed. It is forgotten that convulsions can be induced by bleeding and by other ways in which the circulation in the brain is suspended. My own interpretation of uraemic convulsions is that the cortical circulation is arrested. The intracranial pressure is determined by the arterial pressure, and when this intracranial pressure is such that the circulation in the convolutions is interfered with by the pressure against the cranial vault, or when the action of the heart is so weakened that it is incapable of overcoming the resistance here, so that there is stasis in the cortical circulation, the convulsions take place. I have more than once seen convulsions brought on by a hot-air bath; this I attribute to the depressing effect on the heart. I have several times seen convulsions not distinguishable from those seen in uraemia, in which there has never been albuminuria or other evidence of renal disease. One case of the kind I have related previously. A medical man of about my own age, whom I knew to be the subject of very high arterial tension, called upon me one morning, saying that he had been sent by his wife, who said he had had a severe convulsion in the night. He did not believe this himself, but I found his forehead dotted over by minute ecchymoses, which were evidence of severe convulsion. Early next morning I was sent for, and found that he had been going from one convulsion into another without recovering consciousness, and had only been kept alive by artificial respiration. By this time the heart was so exhausted that the pulse tension was subnormal, but I acted on my previous knowledge, and the patient was bled to 30 oz. One convulsion occurred as the blood was flowing, but no more, and the doctor is still alive. I have frequently had occasion to order venesection in uraemic convulsions. But when uraemia is threatened, the preventive treatment I have had recourse to is free administration of calomel. With the lowering of arterial tension produced in this way, the premonitory symptoms almost certainly disappear. The nightly attacks of renal asthma I have also seen prevented by 5 gr. of calomel, and recurrence obviated by small occasional doses. In the attack the arteries are tightened up to an extreme degree, and the asthma is essentially cardiac, the left ventricle being beaten by the resistance in the peripheral circulation.

VI.—ROBERT SAUNDBY, M.D., F.R.C.P.,

Professor of Medicine, University of Birmingham; Senior Physician, Birmingham General Hospital.

PROFESSOR SAUNDBY said: I hope this discussion will show that there is at the present time a general agreement upon the broad lines of treatment of chronic Bright's disease, and that this is rational and fairly satisfactory. This result has been brought about not so much by advances in our knowledge of the pathological conditions involved as by the gradual accumulation of experience and our better acquaintance with the clinical history of the disease.

Thirty years ago it was commonly taught that chronic Bright's disease was not only incurable but ran its fatal course in a very few years. So long as this gloomy creed was accepted there was little encouragement to therapeutic efforts, while the rules laid down as to diet and hygiene were naturally of the severest kind. Every patient with albuminuria was considered to be in imminent danger, treated as a serious invalid, and kept upon the strictest diet, his mode of life was regulated to the quietest routine, business had to be given up, and often home abandoned, while the unhappy patient dragged out his miserable existence under a sentence of death postponed, at most, for two or three years.

Within the last month I have examined for life insurance a man of 49 who had been rejected on account of albuminuria in 1884. At that time his urine was examined repeatedly; albumen was said to be constantly present in considerable quantities, and he was told by two well-known physicians that with great care and an entire alteration in his mode of life he might live two years. He was a great runner and cricketer, and spent much time in outdoor sports and games, but he did not take the advice given him, and continued to live as before. When seen he was a well-developed muscular man, not too stout; he said that he felt perfectly well, and that he could run sixty yards as well as ever; but on examination he had a hard radial pulse, the heart's apex beat was in the vertical nipple line, and the urine contained 0.15 per cent. albumen (Esbach) and deposited numerous slender hyaline casts. This is an example of chronic Bright's disease which has apparently lasted twenty years, and still seems, happily, to be by no means in the last stage.

The discovery that all albuminuria, even all renal albuminuria, does not necessarily mean Bright's disease is only second in importance to the fact that chronic Bright's disease may be cured, or subside and all symptoms disappear, or persist and be compatible with life for twenty or thirty years or more. The curability of chronic Bright's disease is commonly seen in those cases which have been caused by pregnancy, and where complete recovery takes place when child bearing ceases. But other cases of at least apparent cure must be known to most. In 1893 and 1894 I on several occasions saw a young solicitor who had general anasarca with copious albuminuria and casts. He was long confined to his bed and the house, but eventually lost his dropsy and visited Ceylon for the sake of his health. His means enabled him to winter abroad if necessary, and no doubt he did whatever he was advised, but he was not seen after 1894. Lately his medical adviser reports "that he is and has been quite well, and that his urine, when examined last year, contained no albumen." This was a case that, clinically, presented the symptoms of the type called the large white kidney, and although I have long since abandoned the attempt to make such a pathological diagnosis I have no doubt that it was a case of chronic Bright's disease following an acute attack. I know a man, now about 55, who, since an attack of scarlatina at the age of 18, has constantly passed urine which contains albumen with epithelial and hyaline casts. Although not now in good health, he has no dropsy, heart failure, or other sign of the approaching end.

It is the misfortune of those whose practice is confined to hospitals and consultations that they lose sight of their patients. Moreover, hospital patients often live under unfavourable conditions, to which, when suffering from serious organic disease, they naturally succumb, so that hospital physicians get early impressed with the cases that do badly, and this impression is not easily effaced.

Undoubtedly all cases that appear to recover are not cured. The disease may make steady although latent progress, and at the end of ten years or more may manifest itself again and prove rapidly fatal. A young man just before going up to Cambridge had attacks of haematuria, followed by the persistence of albuminuria with casts. He was lost sight of for more than ten years, during which time he supposed himself to be quite well, when he turned up again with albuminuric retinitis, albuminuria, and cardiac hypertrophy; he died after a few weeks' illness, the onset of which had been marked by an attack of gout. Could the disease in this case have been arrested had the patient been induced to follow a definite regimen, or are the recoveries which occur merely happy accidents? Undoubtedly there is some factor we do not know which determines the development of chronic Bright's disease; apparently a toxin is formed within the body, perhaps in the bowel, more commonly in males at or after middle age, but not unknown in the young of both sexes: beyond this we do not understand its nature, nor can we formulate the conditions under which it arises, except that there is a predisposition to it in certain families, while chronic poisoning by many agents, of which lead, alcohol, uric acid, and chronic infective processes are the best known, favour its action, but whether they do so by stimulating its production or by rendering the kidneys more vulnerable is not completely known, though certain facts favour the latter hypothesis.

It will be generally admitted that the subject of chronic Bright's disease should live in a dry, equable climate, where he can escape changes of temperature and moisture; but these conditions can hardly be secured in any single place, and we are for the most part obliged to put up with what we can get—a change during the more inclement portion of the year and such protection as may be afforded by suitable woollen clothing at other times. The use of alcohol should be forbidden absolutely, as it only does harm, and we are not in a position to say how much harm; this may vary with in-

dividuals, but it is better excluded altogether. It is hardly necessary to protest against the foolish but popular idea that either whisky or gin is free from the injurious properties which are willingly allowed to all other alcoholic drinks, if only the favoured one is left out of the general indictment. In other matters of diet we may be more liberal, and, while permitting any non-alcoholic beverages, we may in patients free from special symptoms allow a moderate mixed diet. Butchers' meat, not exceeding 5 oz., should not be eaten more than once a day, and soup, if taken at all, should be made without meat stock. Where symptoms, especially nervous troubles such as headaches, are present, it is better to stop all butchers' meat, poultry, and game, and to restrict the patient to white fish, with milk and butter, farinaceous foods, fruit, and vegetables. In still graver circumstances the fish must disappear, and even the fruit, vegetables, and farinaceous food, the patient being reduced to a diet of pure milk diluted with barley water, soda water, or Vichy water.

The accidents and complications of chronic Bright's disease are too numerous to be even glanced at in detail. It is only possible to refer to very few. Dropsy is either a symptom which has persisted from an acute initial or intercurrent attack or is the result of heart failure in the later stages. In the former case it disappears as the case gets better, and its disappearance is a measure of the improvement; if the dropsy persists and resists treatment the case is a bad one and will end fatally, but this does not imply that its rapid disappearance should be looked for, or that many months may not be required during which diuresis, diaphoresis, and purging should be steadily employed. Where the swelling remains chiefly in the legs much may be effected by elevating these, rubbing them towards the trunk, and bandaging. In the dropsy from heart failure we must trust to nux vomica, digitalis and similar cardiac tonics; and if these fail—as they generally do sooner or later—we must recognize that the heart is worn out and bow to the inevitable.

In so called uraemic cases the diet must be simplified, the digestive organs regulated, and then erythrol-tetra-nitrate should be given in $\frac{1}{2}$ gr. doses every four hours, alternately with Nativelle's digitaline (gr. $\frac{1}{2\frac{1}{2}0}$).

In convulsive or comatose uraemia the hot-air bath has seemed to be the most useful remedy, although in an emergency bleeding may be the proper means to try. In persistent convulsions an enema of chloral (1 drachm to 2 drachms) may be given. The use of morphine hypodermically is, if not so dangerous as at one time supposed, by no means free from risk, and, unfortunately, we do not know how to distinguish the cases which can stand it from those which cannot; on more than one occasion death has followed the well-meant efforts of a house-physician to relieve the distress of a patient verging on uraemia; where the excretion of urea has been persistently low for some weeks morphine should not be given. In the uraemia of acute nephritis or that following pregnancy the conditions are different, and the use of morphine is not attended by the same danger.

With respect to the surgical treatment of chronic Bright's disease by Edebohls and others I can say nothing, as I have never ventured to ask a surgeon to perform such an operation, nor have I met with a case so treated. It is certainly difficult to understand how the further destruction of the cortex of the kidneys can benefit cases already suffering from deficiency of renal substance, but I do not wish to prejudge a question of which I know so little.

VII.—Samuel West, M.D., F.R.C.P.,

Physician, St. Bartholomew's Hospital and Royal Free Hospital.

Dr. West said: The term "chronic renal disease" includes two affections to a great extent distinct from one another—namely, chronic tubal or parenchymatous nephritis—the later stage, that is to say, of acute nephritis—and granular kidney. Granular kidney does not owe its origin in most cases to acute inflammation, and the distinction often made between the contracted white and the contracted red kidney rests, in my opinion, upon no sufficient evidence.

The points to which I shall address myself have reference first to diet, secondly to drugs, and lastly to certain more or less essential symptoms and their treatment.

Diet.

In acute nephritis it is usual to place the patient upon a milk diet; and rightly, considering that it is mainly by the kidneys that effete nitrogenous products are eliminated. Yet the time comes when the patient requires more liberal feeding. Milk is not the best food for an adult, and, though adults may live on milk for a long time, their nutrition suffers, their tissues and muscles lose tone and become soft and flabby. Recovery from acute nephritis is only possible when the old damaged cells are shed and new ones have grown to take their place. It is a process of growth and seasoning, and the growing cells must be well fed; the advantages of a change from milk to a more varied and liberal diet is a matter of daily experience. With granular kidney the case is different. These patients do not, in my experience, thrive upon a purely milk diet.

Albuminuria seems to be usually taken as the guide to treatment, the rule apparently being that, where much albumen is present in the urine, as little albumen as possible should be given in the food. Albuminuria is, however, only a sign or symptom, and not a disease of itself. The amount of albumen lost is in most cases trifling, and even large amounts may be passed for a long time without the health seriously suffering.

If, therefore, the albuminuria be not the real cause of the loss of health, it should not be treated as if it were. Cases are frequently met with who were, as they believed, in good health until albumen was accidentally discovered in their urine, and they were placed upon a restricted or milk diet. The health then began to flag, and was not regained until they were restored to ordinary food.

The strict diet, therefore, that may be good for acute nephritis is not necessary or good for chronic parenchymatous nephritis, still less for granular kidney. The kinds of food that should be specially avoided are meat extracts and concentrated soups, which have little nutritive value, and throw extra work upon the kidneys, as it is by this channel that extractives are chiefly got rid of. Besides extracts, the thing to be chiefly avoided is excess of alcohol, work, and worry. Speaking generally, in all forms of chronic renal disease everything should be done to maintain the general health, and thus it is that a liberal but rational diet has its uses.

The treatment of granular kidney must be largely symptomatic, the symptoms standing in close relation with the extent of the damage in the kidney. Many of the symptoms are doubtless the result of defective elimination—that is, to the retention in the body of substances which the kidney ought to get rid of, but cannot. But the possibility of the kidney being a secretory as well as excretory gland cannot be dismissed, and many of the symptoms might be due to the defective supply of an internal secretion which the normal kidney supplies. The evidence in favour of an internal renal secretion is, so far, inconclusive. Physiological experiments are divergent, and so, too, are clinical observations. It is possible that the effects of renal extracts may vary with the kind of animal from which they are obtained, and most of these have been vegetable feeders. The difficulty of finding renal extracts which are presumably efficient is very great, and it is probable that extracts prepared daily from fresh kidney would be more effective than any of the preserved and manufactured preparations. I think I have seen benefit follow the administration of such fresh extracts, but I admit that even then it is impossible to be certain that the improvement observed was due to them alone.

Of the essential symptoms of chronic renal disease the most important is the arterial tension.

In my student days we were taught that in acute nephritis, where there was much blood in the urine, the two best remedies were digitalis and antimony. I do not remember any reason except observation being given for the use of two drugs so opposed in their physiological action, but I presume it is to be found in their effect upon the arterial tension, digitalis being useful when the tension was low and antimony when it was high. In chronic parenchymatous nephritis, the tension is almost always low, and in this condition digitalis is the stock remedy and the best, because of its action on the heart as well as on the arteries. The normal tension in granular kidney is raised, but it may vary in either direction, the high tension being also either further raised or even becoming low. It is best for a patient not to have granular kidney at all, but if he have granular kidney, it is better that the tension should be moderately raised rather than low. It is obvious that digitalis would be a useful remedy in the one case and possibly harmful in the other. This explains the different views of the use of digitalis in granular kidney. It may do good or harm according to the condition of tension which exists. If the tension be low the patient will be better if it be raised, and this can be done by digitalis. If the tension be high, digitalis would

do harm, and some other remedy must be used which will lower tension. Antimony, which has been referred to already, is not a good remedy in granular kidney, for it produces much depression. Of the other drugs which reduce tension, the most important are the nitrites, and after them pilocarpin. Although pilocarpin is generally administered in full dose for its diaphoretic or sudorific effect, doses too small to produce these effects often give relief to many symptoms such as headache, cramp, and restlessness. Of its beneficial effect in many cases I have no doubt, and I think it acts by reducing tension.

The only other condition I will refer to is acute uraemia. Chronic uraemia or the cachexia and associated symptoms, which develops in chronic renal disease, has probably an entirely different pathology. Chronic uraemia is just such a general deterioration of health as the want of an internal secretion might produce, and it is for this especially that renal extracts have been given. Acute uraemia, acute renal toxaemia, is a very different condition, but of its essential pathology we know little or nothing. It is an acute poisoning due, we may assume, to some substance produced in the body from its own tissue, and not by the kidney itself.

It is probably one of the intermediate products of albuminoid decomposition which are so venomous, but why it should be so suddenly and inexplicably developed we cannot tell. Once produced it appears to be cumulative, and its effects go on increasing until death occurs within a few hours or so of the onset of symptoms.

If acute uraemia be due to some toxic substance circulating in the blood, a rational method of treatment would seem to be abstraction of blood, associated or not with intravenous saline injection. Both these measures, separately or together, have been employed with temporary improvement, but the limitations of such treatment are obvious. On the other hand, as these intermediate products are very unstable, they might be rendered inert by chemical means—if only we had more knowledge to guide us. Intravenous injections have their own disadvantages, and hitherto have proved of little, if any, value. One other method of more promise is the saturation of the blood with oxygen, with the object of oxidizing these venomous substances, and thereby diminishing or removing their toxicity.

I have used the inhalation of oxygen in many cases of acute uraemia of granular kidney and with great advantage. The acute uraemia of granular kidney is the last symptom in a mortal disease, and though I have seen temporary benefit, I have never seen a case recover, when the uraemic state was fully developed. In the early stages, where uraemia is only threatened, the symptoms are dryness of the mouth, headache, restlessness, and twitching. These I have on several occasions seen disappear under the action of pilocarpin and purgation—with the inhalation of oxygen—supplemented, if need be by free venesection; and in cases of acute uraemia, of acute inflammatory or congestive nephritis, I have seen complete recovery follow.

VIII.—JAMES BARR, M.D., F.R.C.P., F.R.S.Edin.,
Physician, Royal Hospital, Liverpool.

DR. BARR said: Chronic renal disease, as its name implies, is one which runs a very slow course, and its development is usually a matter of many years, so there is quite as much room for prevention as for the so-called attempts at cure, which are not, fortunately, quite so common in this country as they are at German health resorts. Sir William Gull and Dr. Sutton did much for this affection when they showed that chronic granular kidney was only part of a general arterio-capillary fibrosis. The functional activity of healthy kidneys is in excess of the requirements of the system, and even one kidney may suffice for the requirements of the system. No doubt if the functional activity of the kidneys be impaired through disease there must be an accumulation of waste products in the system, but long before there is any kidney affection there may be excessive nitrogenous waste products in the blood, and in the attempts to eliminate these effete materials the kidneys become involved in the general process of arterial degeneration. For some time my assistants and myself have been examining the blood in cases of arterio-sclerosis with the cryoscope, and so far as we have gone we have invariably found the freezing point below that of normal blood, irrespective of the condition of the kidneys. If, therefore, we are to prevent the evolution of this disease we must try and keep the blood as pure as possible. In the production of the disease alcohol is usually credited with a prominent place, and no doubt directly, and indirectly through the induction of gouty conditions, it is responsible for much mischief. Digestive disturbances, such as those associated with dilated stomach, often lead to degeneration of the arterial system, including that of the kidneys. In treatment alcohol should be eliminated and nitrogenous elements of food cut down to the lowest possible quantity. The treatment of the disease when established and its complications is a matter of common sense.

IX.—DAVID NEWMAN, M.D., C.M.,
Surgeon, Glasgow Royal Infirmary.

DR. DAVID NEWMAN said: Even a few years ago if a surgeon ventured to enter this Section to discuss the question of the treatment of the diseased conditions usually included under the term of "chronic Bright's disease" he would have been justly considered by you to have gone beyond his proper sphere. Now the surgical treatment of Bright's disease is freely advocated in our medical journals and at our societies. To concentrate this discussion within the limited space at our disposal, those who have had the arrangement of it have wisely restricted the remarks of speakers to treatment only; but while this may have its advantages, it is almost impossible to discuss treatment with profit without reference to the pathology of the subject. The able introducer of this debate has got rid of this difficulty by practically saying that the pathology of Bright's disease is not yet known. In this I differ from him. It is known about as well as the pathology of any other chronic disease, but this is not now the matter before us.

To the physician on the one hand and to the surgeon on the other, chronic inflammatory affections of the kidney present themselves in different aspects. Speaking generally as regards origin, the former sees chiefly those that are not pyogenic, the latter mostly the pyogenic which, even in the most chronic forms, cannot be included within the limits of the diseases we are now discussing. Of the non-pyogenic we have two divisions, the infective and the non-infective. The former is generally unilateral, the latter bilateral, and it is by no means easy to distinguish between them, except by the employment of the most careful methods of examination. These include, in addition to the general and ordinary physical examination, most painstaking examination of the urine under aseptic conditions—chemical, microscopical, and bacteriological—in every case where we suspect we have to deal with chronic nephritis; examination including cryoscopy and the phloridzin test, cystoscopy, ureteral catheterization or segregation of the urine from each kidney, and radioscopy. In infective nephritis the clinical aspects of the case differ from the non-infective principally in the bacteriological results. The chemical and the microscopical are not to be relied upon. I have found in cases of infective nephritis the bacillus coli to be the chief infective organism, and, as a rule, the infection is unilateral, and it may affect the whole or only a part of the organ. These are the cases which are most suitable for surgical treatment.

As far as I can gather from my own experience and from a study of the subject, the attempt to cure non-infective inflammatory conditions of the kidney has proved a failure. If renal incision or decapsulation is to do any good it must be resorted to in the early stages of chronic nephritis, and not when irreparable damage has been inflicted upon the kidneys and the vascular and the nervous systems. I protest against the indiscriminate employment of surgical treatment in all cases of chronic Bright's disease which has been advocated very strongly in certain quarters. In the JOURNAL of this Association, April 30th, 1904, I discussed the relative merits of decapsulation and incision, and claimed the right of priority in the performance of an operation for the relief of tension in a case of albuminuria associated with suppression of urine, renal colic, headache, nausea and vomiting, in which incision of the kidney was followed by relief of the pain and disappearance of the albuminuria. The operation was performed in 1888.

The conclusions I have come to regarding the efficiency of incision of the capsule or of cleavage of the cortex are:

1. That the operation gives marked relief to the renal pain of chronic Bright's disease.

2. That in cases of haemorrhage, in which the bleeding is practically limited to one side, the operation should be recommended, as it has been frequently followed by cessation of the haemorrhage in chronic Bright's disease.

3. In cases of movable kidney associated with albuminuria, haematuria, tube casts, or blood casts, when due to causes resulting from the displacement, after the operation of

incision and fixation, these symptoms disappear permanently, but when coincident with chronic Bright's disease only temporary good is effected by operation.

4. Anuria in chronic Bright's disease may be temporarily relieved, and the patient's life prolonged; dropsy and dyspnoea may subside for a time, but cure is not to be looked for in chronic non-infective nephritis as an effect of surgical treatment.

5. That in anuria with uraemic symptoms arising in the course of acute or subacute infective nephritis, free incision of the capsule and cortex, by relieving the tension and congestion of the parenchyma, enables the organ to resume its function, as shown by active secretion of urine from both kidneys after the operation.

[Dr. Newman referred very briefly to a valuable series of 26 cases, in a large proportion of which pain and albuminuria had been relieved, these symptoms having permanently disappeared in 11 cases; and, continuing, said:]

The question of bleeding in cases of uraemic poisoning has been referred to by several speakers, and I simply say in a word that I believe that, either by venesection or by wet cupping over the kidney, it is a mode of treatment of the highest value. There is only one other point I desire to refer to in the treatment of conditions arising from Bright's disease, namely, the method of drawing off serum in cases of anasarca. A method which I have employed is simple and efficacious. I make two parallel incisions through the skin a quarter of an inch long and a quarter of an inch apart. I then take an ordinary glass filler, the bell end of which is 1½ in. in diameter. It, together with 3 ft. of rubber tubing, is filled with boracic solution, and the bell of the filler is placed over the incision, and the free end of the rubber tube is carried to a receptacle on the floor. The traction of the column of water is sufficient to maintain the filler in position and to exhaust the serum from the subcutaneous tissue, in some instances at the rate of over one gallon in twenty-four hours. I find this method simpler and more satisfactory than the employment of Southey's tube, in that there is no possibility of blockage taking place.

X.—W. Ringrose Gore, M.B.,

Llandrindod Wells.

Dr. Gore said: In considering the treatment of chronic renal disease, it must always be remembered that inflammation of the kidney is no exception to the general rule that inflammatory processes mean the reaction of the organ in which they occur to toxic influences, that inflammation is the effort of the organism to neutralize or get rid of toxic bodies produced in the tissues, so that our success in the treatment of Bright's disease will depend upon our identifying the source of the toxins that cause the disease.

The principal function of the kidney is to eliminate the effete products poured into the blood as the result of tissue change, to which may be added the elimination of some of the effects of excess of albuminous food, and such of the toxins resulting from the bacterial decomposition of food in the intestines as are absorbed from the intestinal canal. As in the case of all our organs, the normal capacity of the kidneys for the elimination of these bodies is in excess of the requirements, and even when in great excess their elimination, being part of the general function of the kidney, would give rise to no irritation. But there are circumstances in which the kidneys are called upon to eliminate other toxic bodies than those that it is functionally intended to get rid of: and, curiously enough, the kidney is extremely intolerant of these toxins, such as the toxins of the specific fevers, more especially scarlatina, erysipelas, influenza, and diphtheria, or gout, lead, and alcohol, any of which may produce different forms of acute or chronic nephritis. Also the kidney is unable to eliminate some of the intestinal toxins other than those normally produced; and, more important than all, it cannot get rid of the poisons eliminated by that large organ, the skin. I consider the onset of acute nephritis from the effects of chill to be due to a sudden cessation of the action of the skin by which its eliminating function is thrown upon the kidneys, which cannot, if the cessation be at all prolonged, execute it, becoming acutely inflamed in the attempt, especially so if the kidney is already damaged.

In the production of chronic nephritis I suggest, then, that a double influence is at work. The kidneys have an increased strain thrown upon them, on the one hand, due to a deficient elimination by the skin; on the other, to absorption of excess of the toxins generated in the intestinal canal. If it fails in its effort to eliminate these various poisonous bodies, the kidney becomes inflamed, its secreting cells proliferate, die, become cast off, fatty degeneration ensues, and an increased formation of connective tissue takes place, all of which processes we know to be the effect of continual irritation on other organs: the different toxins cause proliferation of different portions of the kidney—as the toxins of scarlatina and influenza tend to produce the large white kidney, so lead or the toxin of gout will produce the cirrhotic variety of the disease.

Clinical evidence and the occupations of those in whom kidney disease occur strongly support this view of the pathology of chronic renal disease; all clinical evidence—evidence which cannot be disregarded—goes to prove the great influence the skin and the intestinal canal have upon the production of kidney disease.

As regards the production of uraemia, experimental and surgical evidence is so strongly against its being due to the retention of the results of tissue change alone that I think it must be caused by what one might call a mixed infection—that is to say, that if at any time when the action of the kidneys is greatly impaired, the skin does not eliminate well, and an increased amount of the break up of albuminous food is absorbed from the intestine, the blood becomes rapidly loaded with intensely toxic material which is imperfectly eliminated—that is to say, what causes kidney disease originally will produce uraemia when the kidneys are disorganized to a greater extent, or even are temporarily thrown out of action, as in pregnancy. Again, the clinical evidence and effects of treatment are in support of this view. We all know the effect of milk diet, free purgation, and profuse sweating in the treatment of impending uraemia.

The oedema of Bright's disease, when occurring in the serous cavities, is probably due to an effort by the lining membrane of these cavities to eliminate the toxins accumulating in the blood when the disorganization of the kidney has proceeded to a certain degree; general anasarca when not due to circulatory changes seems analogous to that seen in urticaria and other diseases due to the action of the toxins circulating in the blood upon the capillaries. From the occasional induction of uraemic symptoms when the dropsical fluid in Bright's disease is suddenly absorbed into the circulation owing to treatment being too rapidly commenced, it seems probable that the fluid absorbed is toxic in character.

Any value these remarks may have will be in encouragement of the treatment we have already found by experience to be of use in the treatment of Bright's disease, and is a rational explanation of the value of that treatment. In the treatment of chronic renal disease it should always be borne in mind that there are two great sources of the poisons that contaminate the blood stream which the kidneys cannot completely eliminate—the one absorption from the intestinal canal, the other retention of effete products which should be eliminated by the skin; imperfect elimination destroys health, stoppage of elimination destroys life.

Different cases require different treatment, and treatment must be adapted to circumstances; but, speaking generally, absorption from within can be prevented to a great extent by a diet which will consist of food easily digested, small in quantity, and leaving little residue; the periodical administration of saline aperients, so as to ensure the bowels being frequently cleansed, and a certain amount of excretory matter being removed from the blood; an occasional dose of calomel assists this action, and has also an antiseptic effect. The effects of retention by deficient skin elimination are best treated by frequent hot baths, or vapour baths of short duration, sufficient to cause the skin to act freely, and the taking of a fair amount of open-air exercise, with the same object in view.

The important point about these measures, and the one often neglected, is that, if this treatment is begun as soon as the kidney mischief is discovered and continued systematically afterwards, the progress of the disease would be lessened and life appreciably prolonged; the changes in the kidney would be slower if the supply of irritating and toxic material was lessened by continual treatment. In acute nephritis, if the supply of toxins is cut off, the kidney rapidly regains its normal condition; the same might happen in chronic nephritis if the disease was discovered early enough. It so often happens that these methods of treatment are not adopted until grave symptoms have appeared and the kidneys disorganized to a great degree. The importance of treatment in kidney disease is that it should be commenced early, that it should be systematic, and, above all, continuous—directed principally with the idea of preventing the formation of toxic material when possible, and of eliminating it when formed.

DISCUSSION ON
THE PRESENT STATE OF SERUM-THERAPEUTICS.

I.—E. W. Goodall, M.D.Lond.,
Medical Superintendent, Eastern Fever Hospital, Homerton, N.E.

Dr. Goodall said: It is now just ten years ago since the inauguration of the era of serum-therapeutics. It is true that experimental research undertaken with the view of ascertaining the true nature of immunity had led, some two or three years previously, to the discovery of antitoxic serum and its use in a few cases of diphtheria in the human subject, both in Germany and France. But it was not till the publication of Roux's celebrated paper, read at the International Congress of Hygiene at Buda-Pesth in September, 1894, that the employment of the serum of animals immunized against certain diseases came into general use. It is fitting, therefore, that after a lapse of ten years we should review our experience in this method of treatment, with the object of improving our past results, whether they have been successes or whether they have been failures.

In these remarks I intend to refer only to antitoxic serums proper, by which I mean the blood serum of animals immunized against certain diseases, usually bacterial. It is not within the scope of this discussion to deal with the question of the value of bacterial toxins, such as tuberculin, or of bacteria themselves attenuated in virulence in some way or other, the so-called vaccines, such as the typhoid, cholera, and plague organisms employed in Wright's and Haffkine's methods.

Confining ourselves, therefore, to the antiserums, I will remind you that they are of two kinds: the one antitoxic, neutralizing the toxic products of a micro-organism, the other antimicrobic, destroying the organism itself or inhibiting its action. Similarly the diseases in which these remedies are employed are of two kinds: the intoxications and the infections, of which diphtheria is a familiar example of the former and plague of the latter class. As a rule, in preparing antitoxic serums immunization is carried out by means of toxins; while for antimicrobic serums the micro-organisms themselves are employed.

Since the introduction of the antitoxic treatment of diphtheria with its successful results (if I may be allowed to anticipate what I shall say presently), attempts have been made to cure all sorts of diseases on similar lines. The following list includes, I believe, all these diseases, arranged according to the nature of the serum employed; and, inasmuch as the true cause of many of them is still unknown, we are ignorant whether the alleged antiserum is antitoxic or antimicrobic. In some instances, both antitoxic and antimicrobic serums are stated to have been used for the same diseases. These, therefore, appear under two headings.

I.—*Diseases Treated by Antitoxic Serums.*

Diphtheria.	Dysentery (Shiga's bacillus).
Tetanus.	Plague.
Snake-bite.	Typhoid fever.
Hay fever.	Tuberculosis.

II.—*Diseases Treated by Antimicrobic Serums.*

Streptococcal infection (primary or secondary).	Anthrax.
Plague.	Tuberculosis.
Typhoid fever.	Malta fever.
Dysentery.	Relapsing fever.
Acute pneumonia.	Staphylococcal infection.

III.—*Diseases Treated by Serums of Uncertain Nature.*

Small-pox.	General paralysis of the insane.
Pertussis.	Epilepsy.
Yellow fever.	Cancer.
Syphilis.	

Now, amongst this list of diseases there are only a few of which the serum treatment is at present worthy of serious discussion at a meeting such as this. Of those mentioned in the third class the treatment can hardly be said to be in the laboratory stage, far less out of it. Indeed, I apprehend you must think I have mentioned some of them only as objects *pour rire*. But it is a fact that instances of the serum treatment of these diseases have been published in all seriousness. I do not propose to waste your time by discussing the so-called results. At present there is not a shadow of a proof that serum has been of any avail in the curative treatment of these affections. But I will take this opportunity of uttering a word of protest against the unseemly haste with which the untimely appearance of these stillborns is proclaimed, a course which, in my opinion, is deserving of severe censure. Not only does the subsequent exposure of the absurdity bring ridicule upon the profession, but still worse, the hope of many an unfortunate sufferer is raised, only to be speedily and cruelly dashed to the ground.

Turning now to Classes I and II in the list given above, we may certainly dismiss the antiserums of staphylococcal infection, Malta fever and relapsing fever, for lack of evidence as to their value.

With regard to *tuberculosis* both Maragliano and Marmorek have prepared antiserums. Mircoli has given statistics of 2,899 cases treated with Maragliano's serum, which is stated to be both antitoxic and antimicrobic; 14 per cent. of the cases were said to have been cured, and 59 per cent. improved. But in the hands of others the serum has failed to give satisfactory results. Maragliano is still very sanguine, and has hopes not only of obtaining a vaccine against tuberculosis, but also discusses the possibility of so immunizing various animals against the disease that their very flesh shall possess prophylactic virtues. As for Marmorek's serum, which is antitoxic rather than antimicrobic, so far no results are forthcoming to show that it is of any value.

Acute pneumonia is another disease the serum-therapy of which is disappointing. There is no doubt that a serum has been, and can be, prepared, which will protect animals against pneumococcal infection; but as a curative measure in the human subject it has so far not been efficacious.

As to *anthrax*, Sclavo of Sienna, by adopting a method of combined active and passive immunization in asses, has produced a serum which has yielded fair results both in man and animals. Legge quotes 158 cases treated with Sclavo's serum with a mortality of 6 per cent., as compared with 24 per cent. in the figures published for the whole of Italy; and 26 per cent. for 211 cases of industrial anthrax reported to the Chief Inspector of Factories in England during the years 1899 to 1903. I have not been able to refer to Sclavo's paper, so that I am not in a position to state to what forms of the disease his figures refer. This is an important point, for it is well known that the severity of anthrax varies with its site.

We have now reduced our list to the following disorders: Diphtheria, tetanus, snake-bite, hay fever, plague, typhoid fever, streptococcal infection, and dysentery. I propose briefly to present to you the results which up to the present time have been attained in serum-therapeutics as applied to these diseases.

Diphtheria.—To take diphtheria in the first place: It was in this disease that the antitoxic treatment was first employed on a large scale. In addition to serum-therapy the past decade has witnessed some very remarkable developments in our methods of diagnosis and treatment; the Roentgen rays, the effects of various light rays, and radium, for instance, to mention only the most striking discoveries. But though in every instance the attention of the profession was acutely excited, I doubt whether interest was mingled with hostile criticism to the extent it was in the case of the antitoxin treatment of diphtheria. From a certain small but noisy section of the public, which, apparently, hates to think that animals should suffer or die except for its own selfish amusement, enmity was to be expected. But I confess that I was surprised at the hostility displayed at the time against the new treatment in the ranks of our profession, an hostility which was shown by pronouncing against the method without a trial at a time when an excellent prima facie case in its favour, to say nothing more, had been made out. We can, however, now with truth speak of "our friend, the enemy," of those days for the opposition led to such searching inquiry on the part of the impartially-minded that I venture to say few therapeutic measures are more firmly established than the serum treatment of diphtheria.

It will, I suppose, be necessary for me to bring forward some proof of this assertion. Time will not allow me to enter into elaborate details; but I will give you what, to my mind, constitutes the most convincing evidence, and I do not think that I can do better than confine myself to the results which have been obtained in the fever hospitals of the Metropolitan Asylums Board, in which institutions hundreds of cases of diphtheria have been treated annually for nearly sixteen years past.

The antitoxin treatment was first introduced towards the end of 1894; it was employed to a very considerable extent during 1895 and 1896, and more fully in 1897 and subsequent

years. Two very elaborate reports on the subject—for 1895 and 1896—were drawn up by the medical superintendents of the fever hospitals, and published by the Board. These reports dealt with upwards of 10,700 cases of diphtheria, of which nearly 5,000 were treated with antitoxin. These numbers are quite large enough to give results which can be relied upon; but, in order to eliminate all sources of error, the reports dealt carefully with such details as age-incidence, period of the illness at which the treatment commenced, nature of the cases, and dosage. The facts brought forward in these reports were strikingly in favour of the treatment—so much so, indeed, that it has not been deemed necessary to publish any further results in the same detail; but a reference to the annual statistics of the Board will show that the reduction of fatality which followed upon the introduction of antitoxin has been sustained with unbroken regularity during subsequent years, as the following figures testify:

Table I.

Year.	Case Mortality.	Percentage Treated with Antitoxin.
1888	59.3	—
1889	40.7	—
1890	33.5	—
1891	30.6	—
1892	29.5	—
1893	30.4	—
1894	29.2	—
1895	22.8	61.8
1896	21.2	66.2
1897	17.6	80.2
1898	15.3	81.4
1899	13.9	87.8
1900	12.2	88.3
1901	11.1	86.5
1902	11.0	87.9
1903	9.6	89.2

Very few cases of diphtheria were treated in the Board's hospitals in 1888 and 1889.

But though no further detailed reports were published, for three years following the 1896 report the Statistical Committee gave tables in its annual report showing the ages of the diphtheria patients treated for the years before and after the introduction of antitoxin, and these tables are sufficient to show that the improvement in the fatality recorded for 1895 and 1896 was no mere coincidence. Referring to the table for 1899, the Committee points out that the difference in the mortality-rates during the two periods is most striking, and most particularly so as regards young children. Amongst cases in the first year of life the rate had fallen from 61.8 to 37.8 per cent., in the second year from 63.1 to 33.5, in the third year from 55.1 to 26.5, in the fourth year from 48.3 to 23.0, and in the fifth year from 39.0 to 20.7. Amongst cases from 5 to 10 years of age it had fallen from 28.1 to 15.0. The total mortality had fallen from 30.3 to 17.0. This table was published in 1899. Since that year no tables combining the cases of several years have been given, but the ordinary annual tables show that the diminution in the mortality at the different ages has been maintained. These figures appear to me convincing; still more so, however, are the results in the tracheotomy cases.

Before antitoxin was introduced, the records of the Asylums Board show that during the years 1889 to 1894 inclusive there were 765 cases of tracheotomy for primary diphtheria, of which 227 recovered, or 29.6 per cent. Since the introduction of antitoxin up to the end of 1902 there have been 2,363 similar tracheotomies with 1,487 recoveries, or 62.9 per cent.—that is to say, the recovery-rate has been more than doubled. I may add that during the years 1898 to 1902 there have also been at the Eastern and Park Hospitals 93 cases of intubation for primary diphtheria with 75 recoveries, or 80.6 per cent. But for intubation these cases would certainly have been subjected to tracheotomy. Without serum there is little to choose, as regards the recovery-rate, between tracheotomy and intubation, but with serum the success of the later operation is considerably enhanced.

The facts with respect to the behaviour of the paralysis that follows diphtheria are, to my mind, very strong—if not the strongest—evidence on behalf of the reality of the influence of antitoxin. Paralysis is a sequel of the more severe forms of diphtheria; consequently, if you prevent a mild case of diphtheria from becoming severe you will prevent the occurrence of paralysis. Now, since the introduction of the antitoxin treatment the paralysis-rate has gone up. This appears to be a contradiction to what I have just stated. But let us consider the matter a little more closely. In the preantitoxin days it did not matter, with respect to the occurrence of paralysis, whether the patient was admitted to hospital on the first, second, or any other day of the attack; he was just as likely, if he survived, to get paralysis if he were admitted early as if he were admitted late. But with the antitoxin treatment it is a very different matter. The earlier the patient is brought under treatment the much less likely is he to develop paralysis. Thus, in 2,000 cases of diphtheria analysed by my friend and former colleague, Dr. Woollacott, the incidence of paralysis increased from 4.7 per cent. in those cases brought under treatment on the first day of the disease to 24.4 in those treated for the first time on the fifth day or later. The increase has been found to be entirely amongst the cases brought under treatment at a late stage. In preantitoxin days many of these cases would have proved fatal before there had been time for paralytic symptoms to have shown themselves. But nowadays more of them recover, or, at any rate, live for a longer time, so that there is greater opportunity for paralysis to supervene. Again, formerly there was no relation between the severity of the paralysis and the period of the disease at which treatment was commenced. A first-day case might go from bad to worse, and even if you tided it through the acute stage of the malady, two or three weeks later extensive palsy might set in and prove fatal. But now we can say with certainty that if the patient is only brought under treatment sufficiently early, not only will the chance of his getting paralysis be slight, but if he does, it will be only to a very limited and harmless extent. It is only in the cases that are brought under treatment late that severe and fatal paralysis is seen. For details of this question I must refer you to Dr. Woollacott's papers in the Asylums Board's report for 1898 and the *Lancet* for August 26th, 1899.

These facts and figures are very remarkable, and from them only one conclusion can be drawn—namely, that as applied to diphtheria the serum treatment has been extremely successful. And this success has not been confined to one particular group of hospitals in one particular city. Statistics from every region of the globe where diphtheria has been prevalent show the same result, namely—a marked lowering of the case mortality. In 1899 Bayeux collected the published statistics from all parts of the world, comprising upwards of 200,000 cases, and the case mortality was 16.2 per cent. I would remind you, also, that within two or three years of the time when this treatment came into general use, in more than one country a special committee of medical men was appointed to investigate its claims, and, as far as I am aware, in no single instance was even a neutral report made, still less an unfavourable one. I will leave it to others to enter into further details as regards diphtheria, and will simply state that the immense value of the serum treatment appears in the case of that disease to be amply proved.

Tetanus.—The experimental evidence in favour of the value of the tetanus antitoxin is, as in the case of diphtheria, very strong. But, when we come to consider the treatment as applied to the disease in the human being, the results are not so striking as those we have seen to occur in diphtheria. Indeed, markedly favourable results were hardly to be expected. The spasms of tetanus correspond in point of time to those of hydrophobia and to the paralysis of diphtheria: they are all remote effects of the absorption of the toxin from the focus where the toxin-producing bacterium is or has been growing. Consequently, the treatment of tetanus by antitoxin is, strictly speaking comparable only to its employment in the treatment of diphtherial paralysis; though there is this difference, that the paralysis of diphtheria is the expression of well-marked and extensive nerve degeneration, whereas the toxin of tetanus does not produce any gross lesions. As it is, however, we can hardly expect such favourable results in the case of tetanus as in that of diphtheria. Again, it is extremely difficult to compare the results of the antitoxin and the non-antitoxin treatment in this instance. Tetanus is not, fortunately, so frequently met with as diphtheria—a disease which lends itself very readily to investigation by the statistical method. We lack in tetanus the long series of cases arising under the same circumstances and treated by the same observer. Our knowledge of its treatment is almost entirely derived from the publication of single cases. Moreover, in nearly all the cases that have been treated with antitoxin accounts of which I have read in various publications, I have observed

that some other remedy has been exhibited at the same time—such as chloral hydrate or bromide of potassium—the effects of which it is difficult to unravel from the action of the antitoxin. The best authorities put the case mortality of acute tetanus at from 80 to 90 per cent. and of chronic tetanus at from 40 to 50 per cent. A considerable number of cases treated with antitoxin have been collected and analysed by Lambert, R. T. Hewlett, Köhler, Lund, Holsti, Behring, and others. According to these observers the mortality varies from 34 to 45 per cent. These figures apply to the total cases, acute and chronic; but it is generally agreed that the chronic cases have furnished the best results. Thus, in Lambert's account, the mortality of 124 acute cases was 71 7 per cent., and of 128 chronic cases 15.9 per cent. In my opinion all these facts go to show that every case of tetanus should be treated with antitoxin. If, however, I rightly understood the President of the Pathological Section in his address on immunity delivered two or three days ago, in a reference he made to certain experiments on the action of toxins and antitoxins, at present the outlook in the case of tetanus is not very encouraging.

Snake-Bite.—The similarity between the constituents of snake venom and some of the products of bacterial activity led to the experiments of Calmette, Fraser, and others on the immunization of animals against snake-bite. Here, as in the case of diphtheria and tetanus, the experimental basis of treatment is sound. But, as regards the treatment of human beings bitten by venomous snakes, there have not been many cases in which serum has been used. In spite of the fact that about 20 000 persons annually perish from snake-bite in British India, there are two difficulties in the way of the wide application of this remedy. In the first place, the victims are mostly natives, who are rather averse, I believe, from this sort of treatment, and who reside in places too remote to permit of their being brought under its influence sufficiently early, if at all. Secondly, the antiserum of one sort of venom is not efficacious against other kinds; so that in localities where more than one kind of venomous snake is found, a polyvalent serum is necessary. I understand that the Pasteur Institute of India is taking steps to distribute antivenene more widely, so that we hope to be furnished with definite clinical results at no very distant time.

Hay Fever.—In the diseases we have been discussing the criterion of success has been the improvement in the mortality-rate. Hay fever, however, is not a fatal affection, though it is an exceedingly unpleasant one. It may become serious when it attacks a person suffering from some organic disease. The effects of treatment have, therefore, to be estimated clinically. But there is this point to be remembered, that hay fever occurs with great regularity in the same individuals, and the effects of a new remedy can be compared with those of other remedies used on previous occasions. During the past two years Dunbar of Hamburg has succeeded in extracting from the pollen, chiefly of rye and maize, a toxic albuminous substance. According to Kamman, this proteid is of so high a degree of toxicity that $\frac{1}{20000}$ mg. in solution applied to the conjunctival sac of a person subject to hay fever will cause itching and redness lasting for some hours. The toxin when injected subcutaneously into a susceptible person produces the local and general symptoms of hay fever. By injecting this toxin into young thoroughbred horses Dunbar rendered their serum antitoxic. This antitoxin, when applied locally, acts as a remedy in hay fever. In the few cases in which the antitoxin has been injected subcutaneously beneficial effects have been observed. Of 222 cases of European hay fever collected by Glegg, 57 per cent. were cured, 32 per cent. were relieved, and 11 per cent. were unaffected; while of 63 cases of American hay fever collected by the same writer, 70 per cent. were cured, 19 were relieved, and 11 received no benefit. In America the most frequent cause of hay fever is the pollen of golden rod and wormwood. A perusal of detailed accounts of these cases certainly carries the conviction that in "pollantin," as it has been termed by Dunbar, we have the most efficacious remedy for hay fever that has been brought forward.

Plague.—This is a disease which is caused by a definite micro-organism. It has, also, been extremely prevalent for some years past in India and other Eastern countries, and even nearer home. There has been, therefore, ample opportunity to test the value of the serum prepared by Yersin, Lustig, and others. So far, however, it cannot be said that the results have been particularly successful. The case mortality of plague appears to vary considerably according to the nature of the epidemic, the clinical aspect of the disease, and the nationality, age, and sex of the patients. In the Bombay public hospitals the mortality was about 80 per cent. Choksy treated two series of 480 cases simultaneously, the one with, the other without, serum (Lustig's). The cases were not selected. In the cases not treated with serum the mortality was 79.6 per cent.; while in those treated with serum it was 68.3 per cent. Making allowance for moribund and convalescent cases in each series, the mortality of the serum cases was 60 4 per cent., and of the other cases 79.8 per cent. According to Calmette and Salimbeni, in the epidemic of plague at Oporto the mortality of 142 cases treated with Roux's serum was 14 8 per cent.; while the mortality of 135 cases not so treated was 54 8. Cairns at Glasgow (1900) and Duprat at Rio Grande, Brazil (1903), used Yersin's serum in a few cases with apparently favourable results. The evidence, therefore, so far as it goes, is certainly in favour of the serum treatment. On the other hand, the Indian Plague Commission did not report favourably upon it. I may add that while Yersin's is stated to be an antimicrobic, Lustig's is said to be an antitoxic serum.

Typhoid Fever.—In this disease, again, there is great difficulty in arriving at correct conclusions as to the results of treatment from the enumeration of a few cases, inasmuch as it is one with a mortality that varies greatly within limited periods of time. I would emphasize this fact especially with respect to typhoid fever, for with no other of the acute infectious diseases are claims on behalf of special lines of treatment put forward with so much frequency. Moreover, as regards serum treatment in particular, it appears to be very difficult to produce an immunizing or curative serum. Chantemesse, however, claims to have succeeded. With his claims I will leave the bacteriologists to deal, and will confine my attention to the results of his method as applied to typhoid fever in the human subject. From April 1st, 1901, to December 1st, 1902, there were 186 cases treated in a certain hospital in Paris with 7 deaths, a mortality of 3.7 per cent. During the same period in the other hospitals of Paris, 1,478 cases were treated with ordinary methods, and there were 286 deaths, a mortality of 19.3 per cent. Previously to this period, Chantemesse had treated 170 cases by his method, with 10 deaths, so that up to December, 1902, he had had 356 cases with 17 deaths, a mortality of 4.7 per cent. This is certainly very low. To these cases may be added 151 with 13 deaths, or 8 7 per cent. mortality, treated by Planté and Foucault with Chantemesse's serum. These figures are encouraging, and afford grounds for hope and further inquiry, but I do not think that more can be said. It is greatly to be desired that special attention should be paid by those who record their results to the ages of the patients treated, as this factor is of great importance in comparing mortality-rates; and I am afraid that not a few excellent clinical observers are far too casual in this respect. For instance, Josias reports 50 cases of typhoid fever in children treated with Chantemesse's serum, with a mortality of 4 per cent. only; but this mortality can hardly be said to be in favour of this special treatment when it is remembered that the mortality amongst patients under 15 years of age is commonly 4 to 6 per cent. Thus the mortality amongst 491 children under 15 years admitted to the Asylums Board Hospitals during 1902 was 6 3 per cent.

As you are doubtless aware, Macfadyen within the last year or two has succeeded, by crushing typhoid cultures exposed to the temperature of liquid air, in making a toxic typhoid plasma, by means of which monkeys have been immunized and their serum rendered antitoxic as well as antibacterial. But whether this serum is likely to be of use in the treatment of typhoid fever remains to be seen.

Antistreptococcus Serum.—This, which is an antimicrobic serum, has now been employed in a number of septic conditions, especially in erysipelas, puerperal fever, malignant endocarditis, and pyaemia. It is extremely difficult, however, to get at the results of serum treatment in these affections. In the first place, from a biological standpoint, some of these diseases are somewhat vague, since different micro-organisms may produce practically the same clinical symptoms. In the second place, if, ignoring bacteriological considerations, we decide to rely upon clinical results, it is by no means easy to show these results statistically for want of fairly comparable series of cases. There is a disposition amongst practitioners to record successful, but to leave unrecorded unsuccessful, cases. I believe that the condition in which antistreptococcus serum has been most employed is that vague one known as puerperal fever. Under this term are included several septic conditions, septicaemic and

toxaemic. We hardly know what the case mortalities of these different forms of blood poisoning are with ordinary methods of treatment, at any rate not with any accuracy, so that we have no data with which to compare the serum-treated cases. In 1899 a Committee of the American Gynaecological Society reported on some 350 cases of puerperal infection treated by many observers. Amongst other conclusions, the Committee stated that it found nothing in the clinical or experimental literature or in its own experience to indicate that the employment of antistreptococcal serum would materially improve the general results in the treatment of streptococcic puerperal infection. I think that this conclusion would be endorsed by most gynaecologists at the present time. Antistreptococcus serum is not likely to do any good in sapraemic cases, nor in those where organisms other than streptococci are the cause of the illness. Further, we now know that there are streptococci and streptococci, and that the serum from a horse immunized against one streptococcus will not avail against another; there being, in fact, different strains of streptococci. In consequence, horses have been immunized against different varieties of this organism at the same time, and a polyvalent serum has thus been produced. But I am not aware, so far, of any body of evidence proving that this sort of serum has been more successful than the univalent kind. As far as clinical evidence goes, it does appear, however, that in cases of erysipelas and phlegmonous inflammation of the skin or mucous membranes, antistreptococcus serum is beneficial, but that in other septic conditions its value is doubtful. The antistreptococcus serum produced by Marmorek some years ago was stated to be a cure for scarlet fever as well as for other infections. This statement has, however, not been substantiated. Within the last two years Moser and Aronson have prepared serums for the treatment of scarlet fever. The former, for immunizing his animals, employed streptococci from the blood of patients ill with fever; the latter streptococci from the bone medulla of fatal cases. These serums have been tried in a comparatively few cases, with results upon which no definite opinion can be pronounced. At the present day scarlet fever is a disease with so low a fatality and of so mild a character that it is very difficult to draw accurate conclusions as to the value of any sort of treatment whatsoever.

Dysentery.—So far as I can learn there still appears to be considerable doubt whether this disease is to be regarded as a toxaemia or an infection. It is stated that approximately the same toxin can be obtained from both Shiga's and Kruse's bacilli, and that when it is injected subcutaneously into rabbits it gives rise to the symptoms of dysentery, including lesions of the large intestine. If that is so it would point to these lesions being the remote expression of a toxaemia produced by the bacilli. Shiga claims to have prepared an efficient antimicrobic serum, while Todd has recently made an antitoxic one, which, however, has not been tried clinically. Shiga treated 298 cases with his serum. The fatality was half that of cases treated at the same time without serum. The duration of the disease was much diminished. More recently Rosenthal has treated 157 cases in Moscow with a serum prepared by Shiga's method; there were eight deaths, a fatality of 5 per cent. The previous fatality in that hospital and the contemporaneous fatality in other Moscow hospitals was 10 or 11 per cent. I have read recently that the Russian Government has sent a large quantity of antidysenteric serum for use in its army in the East, so that further clinical evidence should be forthcoming.

Prophylactic Use of Serums.—From the point of view of prophylaxis so great a measure of success is not to be expected with antiserums as with vaccines, for the latter confer a much more lasting protection than do the former. The passive immunity conferred by the antiserums very seldom, if ever, lasts for more than a few weeks. In diphtheria, however, it has been shown on a considerable number of occasions that the antitoxin may be employed with advantage as a prophylactic. When cases of diphtheria are frequently recurring, two or three at a time, in a community where there are many children—such as a school, an orphanage, or a children's hospital—by removing the affected children and giving all the rest a dose of antitoxin, the further occurrence of the disease may almost certainly be stayed, more especially if bacteriological examination of the contacts is at the same time practised. As regards tetanus, in this country, fortunately, the disease cannot be said to exist in an epidemic form. But in countries where the disease is at all frequent it would certainly be wise to employ the serum prophylactically in wounds contaminated by earth and dirt: this was indeed done with apparent success by Herhold in China amongst the German troops which took part in the expedition to Pekin three years ago. It has been suggested that in operations where infection by streptococci is likely to take place, prophylactic injections of antistreptococcus serum should be given. But whether this suggestion has been carried out to any extent I have no information.

Dosage.—Before discussing the question of dosage, I must first say something about standardization, for this is one of the factors upon which a satisfactory dosage must be based. It appears to me, speaking as one who has no practical acquaintance with the laboratory methods employed, that in this matter much clearer definition is required. I gather from what I have read that a fairly accurate standard has been fixed in the case of diphtheria, and that Ehrlich's "unit" is accepted as the standard in nearly every country. I say "nearly every" because I understand that in France a different unit, devised by Roux, is still employed. Diphtheria antitoxin is given by the hundred or thousand units, and not by the cubic centimetre; the volume containing any given number of units varies. But in connexion with the dosage of tetanus antitoxin and of antivenene, both of which are antitoxic serums, we find the dosage recommended is always expressed in terms of so many cubic centimetres. Behring has devised a method of standardizing tetanus antitoxin analogous to, though not quite identical with, that used for diphtheria. Why, therefore, cannot tetanus antitoxin also be given by the unit? With tetanus, too, we still have the difficulty that the standard varies with the laboratory. In the case of antivenene the standardization and dosage appear to be in a still more unsatisfactory state. As far as I know, no definite agreement has been arrived at with regard to the method of standardization, dosage is still by the cubic centimetre, and there is the further difficulty that just as snake poisons vary, so their antivenenes vary also. With regard to "pollantin" the basis of standardization is the effect of the toxin of hay fever on the conjunctival mucous membrane of two particular individuals, which does not appear to me to be a particularly scientific method. I am aware that the difficulties in the way of obtaining exact standards in the case of these toxins must be very great. Still greater must they be in the case of the antimicrobic serums. It has always appeared to me, speaking again as one not familiar with the practical side of laboratory work, that the estimation of the "minimal lethal dose," which appears to be the basis of all methods of standardization, must be highly uncertain and variable, simply on account of the fact that the living micro-organisms in the minimal lethal dose may rapidly increase in numbers after their injection, and so become much more than the "minimal lethal dose." But even if I am wrong in this opinion, it is quite clear to me—from what the bacteriologists themselves have to say on the question—that the standardization of the antimicrobic serums is at present in a chaotic state. In a recently-published book on serum-therapy, written by a well-known bacteriologist, fourteen pages are occupied with an account of the standardization of diphtheria antitoxin, but six lines suffice for that of antistreptococcus serum, which is stated to be one of the most important of the antimicrobic serums. From which I conclude that very little is really known about the subject. This, doubtless, partly accounts for the want of success which has, on the whole, attended the use of these serums. A question which is well worth consideration is whether all serums should not be, where possible, subject to official testing under the supervision of the State. In my opinion this is desirable.

To turn now to the matter of dosage: In diphtheria I think that we have arrived at some unanimity as to the amount of serum that is necessary. A few years ago it was thought that better results would follow the employment of large doses of from 30,000 to 60,000 units. But I believe that this supposition has not been realized by experience. My own experience leads me to believe that to give more than 16 000 units within twenty-four hours of the commencement of the treatment is to waste so much serum. Some years ago I classified 475 cases of diphtheria with respect to dosage and other points. They were consecutive cases discharged or dying during the year 1896, and I divided them into four groups of three months each. The accompanying table gives the details of these cases; and though the dosage of the 117 cases treated during the third quarter was more than three times the average of the 98 cases included in the first quarter, yet there was no striking difference in the mortality-rates. As far as one can form a conclusion from the data, the cases in the third quarter were, if anything, rather less severe than those included in

TABLE II.

1896.	Fatality Per Cent.	Average Dose in Units of Cases that Recovered.	Average Dose in Units of Fatal Cases.	Average Dose in Units of All Cases.	Percentage of Cases in which More than One Mucous Membrane was Involved.	Percentage of Laryngeal Cases.	Percentage of Cases Under 5.	Percentage of Cases from 5 to 10.	Percentage of Cases from 10 to 15.	Percentage of Cases Over 15.	Fatality, Per Cent., of Cases Under 5.	Percentage of Cases Admitted during First Three Days of Disease.	Fatality, Per Cent., of Cases Admitted on First Three Days.	Paralysis-rate Per Cent on All Cases.
Jan. to March ..	19.3	2,018	4,219	2,453	59 1	21.4	47.9	37 7	9.1	5.1	23.4	38.7	15.7	20.4
April to June ..	19.1	4 930	11,798	6,245	67 5	19.1	52.5	35 8	9 1	2.5	22.2	42 5	9.8	25.0
July to Sept. ..	19 6	6,877	14,826	8,453	42.7	12.0	48.7	30.7	13 6	6 8	26.3	32 4	15.7	25 6
Oct. to Dec. ..	19.2	6,133	10,148	6,907	52.1	18.5	47.8	42.1	6.4	3.5	25 3	33 5	6.3	27.8

The number of cases for each quarter was as follows: 58, 120, 117, 140; total, 475.

the first. I may also remind you of another fact, which was pointed out to me some years ago by Lord Lister, who was doing me the honour of discussing with me the question of the dosage of diphtheria antitoxin, that the most notable results of the serum treatment of diphtheria were observed within a very short time of its introduction, when the antitoxic values of the serums in use were considerably less than those of serums prepared and employed two or three years later.

Intimately connected with the question of dosage is the question of the period of the disease at which the treatment is commenced. Statistics from all parts of the world show most clearly that the earlier the treatment is undertaken the less likelihood is there of an unfavourable result, not only as regards the termination of the case, but also with respect to the occurrence of complications and to the invasion of fresh portions or regions of mucous membrane. I will not weary you with statistics on these points, but in illustration of my statement will refer to the results as seen in post scarlatinal diphtheria in the fever hospitals of London and to the experience of Chicago. Diphtheria occurring among patients convalescing from scarlet fever has by the use of antitoxin been robbed of nearly all its terrors. Before the introduction of the serum treatment its mortality was 50 per cent. It is nowadays about 5 per cent. This wonderful improvement is principally due to the fact that the patients come under treatment at an early stage, since being in hospital they are under observation at the time when the disease shows itself. For information respecting diphtheria in Chicago I am indebted to Dr. Arthur R. Reynolds, the Commissioner of Health. In October, 1895, the Health Department undertook to supply antitoxin gratuitously to the poor, and its administration was advised and offered immediately upon the receipt of the notification of the case. Before October, 1895, the case-mortality had been about 35 per cent. The action of the department was followed immediately by a fall in the case-mortality to 6 or 7 per cent.; and at this rate it has remained ever since. The course adopted by the Chicago Health Department is one that might well be imitated by other municipal bodies.

With respect to the limitation of the disease locally on mucous membranes I need only refer to the fact that, whereas in the preantitoxin days it was no uncommon event for laryngeal symptoms to appear for the first time a few days after the admission of the patient to hospital, it is now most exceptional for such a contingency to arise. In nearly every case of laryngeal diphtheria I see at the present day the larynx has been attacked before the patient has been brought under the antitoxin treatment.

Of paralysis in relation to antitoxin I have already spoken. For details respecting the effects of serum on other complications I may refer you to the Clinical Society's report of 1898, in which the question is discussed in detail.

The dose of diphtheria antitoxin which I am in the habit of prescribing varies according to the severity of the attack and the stage of the disease. From 2,000 to 15,000 units are given within twenty-four hours of the commencement of the treatment, either in one dose or in two or three at intervals of a few hours. The age of the patient need not be taken into consideration, though perhaps I may remind you that what is little more than a trivial local disease in an adult may often represent a severe attack in a child, so that I think you will find as a rule that children require and should receive larger doses than adults.

Of the dosage of the other antiserums I am sorry I cannot speak with such confidence, not only because of the scantiness of my own personal experience, but also because of the difficulties of standardization to which I have already referred. In tetanus 20 to 30 c.cm. should be given, followed by 10 c.cm. every few hours while any symptoms are present. The dose of antivenene is stated to be at least 40 c.cm. of Calmette's serum. There is some reason for believing that in plague sufficiently large doses were not employed in the early days, and an improvement in the results is expected to follow the use of more liberal doses—150 to 300 c.cm. of Yersin's serum. The dose of Chantemesse's antityphoid serum is stated to be 10 or 12 c.cm., followed a few days later by half that amount if the symptoms of the disease persist. Antistreptococcus serum should be given in doses of 10 to 20 c.cm. two or three times a day. Should no improvement follow the use of one brand in a couple of days it will not be amiss to have recourse to another. In hay fever pollantin gives the best results when employed in a solid form; the serum is dried, finely powdered, and mixed with sterile milk sugar; it can then be sniffed up the nostrils. The prophylactic doses of the antiserums are from one-third to one-half the curative doses.

The usual method of administering these serums is by subcutaneous injection under strict aseptic precautions; and this, I think, will continue to be the method most in vogue. It is convenient and efficacious, the serum being absorbed with sufficient rapidity. But experimentally the most efficacious mode is by intravenous injection. Hence this form of administration is certainly to be recommended in severe cases, especially in diseases in which the micro-organism gets into the blood. In tetanus, on theoretic grounds, the antitoxin has been in some cases injected into the subdural space and into the substance of the brain. But whether this is really a more efficacious method remains to be proved. It has been suggested, chiefly by individuals who have little familiarity with the subject, that serums can be given with good effect by the mouth or rectum. But of this no valid clinical proof has so far been advanced with which I am acquainted; and experimental evidence is entirely against this method. It is not one, therefore, to be recommended. It is advisable to use all serums in as fresh a state as possible. The serums of high antitoxic value deteriorate more quickly than those of less value. Apparently antitoxic serums keep their value longer than do antimicrobic serums.

There are one or two other points to which I should like to refer before I bring these remarks to an end. First, it is well known that serums produce certain effects, other than curative, in human beings. These are cutaneous rashes and inflammations in or about joints. My experience of these effects is almost entirely derived from the serum treatment of diphtheria; but as a matter of fact they follow the use of serum taken from various animals, whether they have been immunized or not. I have found that the occurrence of these sequelae varies extremely. One sample of serum will give rise to a rash in nearly every case, while another will cause hardly any or no rash at all. Again—though, as a rule, a single injection is followed by one rash—I have several times known it to be followed by two different kinds of erythema, the appearance of which has been separated by a distinct interval; and on two or three occasions I have seen three different rashes result from one injection. I understand that the serums of different species of animals and of different individuals of the same species, and even of the same individual animal at different times vary as regards their rash-producing qualities. I believe I am right when I say that, in order to produce serums of a mean antitoxic value, serums of high and low valencies are mixed. This will account for the occurrence of more than one variety of rash after a single injection. These rashes, though not in themselves dangerous, are at times very unpleasant; and I would ask the bacteriologists whether anything can be done to lessen their occurrence. Both the rashes and the pains in the joints are as frequent as

in the early days of serum-therapeutics, but they are not so severe. It is stated that if an antitoxic serum is heated to 59·5° to 60.0° C. for half an hour it loses its rash-producing properties without the impairment of its antitoxic value. I have tried serum thus heated in a few cases quite recently and in one there was an abundant rash, so that the statement just mentioned is not quite accurate.

I have observed a very curious fact in connexion with the serum treatment of relapses and second attacks in diphtheria, which is that if a person who has been treated with antitoxin in a primary attack of diphtheria gets a relapse or second attack, and is again treated with antitoxin, it is very likely that a rash will come out within a few minutes or hours of the injection, instead of after an interval of several days, as is usually the case. Occasionally there will also be a rise of temperature and shivering. I am not aware whether similar phenomena are to be met with in experimental diphtheria in animals.

Secondly, are there any contraindications to the administration of antitoxin? I do not think that there are. You may recollect that when the serum treatment of diphtheria was first introduced there was a great deal of talk about its injurious effects upon the kidneys. This, I believe, came chiefly from observers who, previously without experience of diphtheria, were gaining a clinical knowledge of the disease from serum-treated cases, and mistook the effects of the disease for those of the treatment. I should not refer to this subject did I not believe that there are still not a few practitioners who are afraid to give a hypodermic injection of serum in diphtheria. But, I repeat, there is, as far as my experience goes, no contraindication to its use. I have given it in diphtheria complicated with all sorts of other complaints, including several instances of acute and chronic nephritis, and I have never seen any harm come to the patient in consequence.

I will conclude with a summary of our position at the present time. There can be no question that in diphtheria serum-therapy has won a great triumph. With regard to no other disease can we speak with such assurance. The nature of tetanus and the conditions associated with the reception of snake-bites forbid us to hope for striking results in the way of cure in these diseases, but, as a prophylactic, serum has been proved to be of value in the one disease, and should be of value in the other. In hay fever the outlook is promising. With regard to plague, typhoid fever, dysentery and streptococcal infection, there is sufficient evidence of the benefit of serum treatment to stimulate to further endeavours. It will be noticed that the most striking success, clinical as well as experimental, has been reached in the toxaemic diseases. Recent observations lead one to doubt whether an immunizing antimicrobic serum contains all that is necessary for the destruction of the bacteria against which it is directed. There is still much to seek as regards standardization, dosage, and the avoidance of unpleasant complications. But for all that, I think it can be said with truth that the closing years of the nineteenth century furnish a brilliant and inspiriting page in the history of medicine.

II.—C. J. Martin, M.D., D.Sc.,

Director, Lister Institute.

Dr. Martin said: Discussion signifies difference, or at least amplification, but I find myself in such entire agreement and so completely content with the admirable survey of the present position of serum-therapeutics which we have just listened to from Dr. Goodall, that I cannot even pretend to discuss it. Under these circumstances I feel that the best thing I can do is to take this opportunity of laying before you some experiments which have an important bearing upon the practical application of those serums the real value of which is undisputed. These experiments show, to my mind, that under some circumstances the therapeutic value of antitoxic serums is very greatly enhanced by intravenous administration.

As long ago as 1896 Fraser[1] pointed out, in connexion with his experiments upon antivenene, the great discrepancy between the quantity of serum required to save an animal from 1½ lethal doses of cobra venom, according to whether the two were previously mixed together in a glass, or were simultaneously but separately injected under the skin.

During 1897 I repeated these observations of Fraser's with another snake venom and antivenene, and carried out at the same time a further series of experiments in which the same venom solution was introduced subcutaneously and the serum intravenously.[2] As the serum at my disposal was a weak one and I had only a small quantity of it, I was obliged to work with only two fatal doses of venom. The animals used were rabbits. Briefly stated, the results of the experiments were the following:

I.—*Venom and Serum Mixed together Fifteen Minutes before Injection.*

No. of Fatal Doses.	Amount of Serum.	Result.
2	1.5 c.cm.	Died
2	2.0 c.cm.	Died.
2	2.2 c.cm.	Lived.
2	2.4 c.cm.	Lived.

II.—*Venom Injected Subcutaneously and Immediately afterwards Serum Introduced into a Vein.*

No. of Fatal Doses.	Amount of Serum.	Result.
2	1.5 c.cm.	Died.
2	2.0 c.cm.	Died.
2	2.2 c.cm.	Lived.
2	2.4 c.cm.	Lived.

III.—*Venom and Serum Injected Simultaneously but Separately under the Skin.*

No. of Fatal Doses.	Amount of Serum.	Result.
2	10 c.cm.	Died.
2	20 c.cm.	Died.
2	25 c.cm.	Died.

That the proportion of toxin to antitoxin necessary for neutralization should be approximately the same, whether they be (1) mixed in a glass or (2) the antitoxin be injected into the blood stream and the toxin subcutaneously, might be expected, as the nature of the antagonism between them is chemical, for if antivenene be introduced into the blood stream the anti-toxin is there ready to neutralize the toxin as it is absorbed.

The much higher proportion of antitoxin to toxin required when they are separately introduced under the skin necessitates the inference that antitoxin is, relatively to the venom, slowly absorbed from the subcutaneous spaces. Our chemical knowledge of this poison in hoplocephalus venom and of the active principle in antivenene, together with what is known of the physiological mechanism of absorption, is quite in accordance with the view that this antitoxin is only capable of slowly penetrating the capillary wall, whereas the venom passes through fairly rapidly. The constituent of the venom which was used in the above experiments is an albumose. It dialyzes slowly, can be filtered through a film of gelatine under pressure, although it does not pass through so readily as water, or bodies of simpler molecular constitution.[3] It is rapidly absorbed by the blood vessels. An animal can be killed by subcutaneous injection of a large dose in a few minutes, and the result is not retarded by previous ligature of the lymphatics from the limb and the thoracic duct.[4]

On the other hand, Brodie[5] filtered antitoxic serum of diphtheria through gelatine, and found that the active properties of the serum remained with the proteids on the outside of the filter. Cherry and I confirmed this result with diphtheria antitoxin, and found the same for antivenene.[6] Both these antitoxins are bodies of great molecular size comparable with proteids, and are, indeed, in all probability merely serum proteids with some slight modification of their molecular architecture. The walls of the capillaries of the limbs are membranes possessed of permeabilities approximating to those of a film of gelatine, for Starling showed they were relatively, although not absolutely, impermeable to proteids.[7] If molecular size is the obstacle to proteid absorption from subcutaneous spaces, the same would apply to antitoxins.

Calmette has made the statement that antivenene is more rapidly absorbed than venom. He does not adduce any experimental proof for such a statement, and I cannot see that these results can bear any other interpretation than that the poison with which I was working is absorbed ten to twenty times as rapidly as the active principle in antivenomous serum.

The same fact cannot be so well demonstrated for diphtheria toxin owing to the latent period which always elapses before the onset of symptoms after the injection of diphtheria toxin,

[1] *Nature*, April, 1896, p. 569.

[2] *Proc. Roy. Soc. Lond.*, vol lxiv, p. 88.

[3] C. J. Martin, *Proc. Roy. Soc., N.S.W.*, August, 1896.

[4] Ibid, July, 1895.

[5] *Journ. of Path.*, 1897.

[6] *Proc. Roy. Soc. Lond.*, May, 1898.

[7] Starling, *Journ. of Physiol.*, vol. xix, 1895-6, p. 312.

but Behring has estimated that eight hours are saved by the introduction of diphtheria antitoxin intravenously.

From the analogy between the toxin of diphtheria and this constituent of the venom as regards the order of magnitude of their molecules, I felt justified in recommending my clinical friends in Australia to employ intravenous injections of antitoxin in all bad cases of diphtheria.[8] This has been the routine practice in both the General Hospital and Children's Hospital at Melbourne during the last six years, and the results have been most encouraging, and in no case were the injections followed by any untoward results.

Intravenous injection of curative serum was employed by Calmette and Salimbeni[9] in the outbreak of plague at Oporto in May, 1899. From the results of their experience these authors strongly recommend this method of treatment, and Cairns[10] also formed a favourable opinion of intravenous injections in the small outbreak at Glasgow in 1901.

In 1902 Cairns[11] published an account of twenty severe cases of diphtheria, most of them suffering from pulmonary complications, in which he injected from 20,000 to 35,000 units into a vein. He was more than satisfied with the results; indeed he says, "The almost immediate improvement after intravenous injection of serum in such cases (pulmonary) is as striking in its resuls as it is difficult of explanation."

The experience in Melbourne, amounting to some hundreds of cases, has been equally gratifying, so that I would suggest that if at any time the physician desires to obtain the action of antitoxic serum in a hurry, he should put it into a vein.

There is no difficulty in performing the injection if the veins of the arm are distended by means of a ligature as in the operation of venesection. The skin over a prominent vein is cleansed and the needle passed directly into the vein. The fact that it is in the vein can be ascertained by its mobility. The serum is then introduced and *afterwards* the ligature is removed.

NOTE.—In a paper communicated to the Section for Tropical Diseases (BRITISH MEDICAL JOURNAL, September 17th, 1904, p. 670), Captain Leonard Rogers, I.M.S., has repeated these experiments with identical results.

III.—F. FOORD CAIGER, M.D., F.R.C.P.,

Medical Superintendent, South-Western Fever Hospital, Stockwell, S.W.

DR. CAIGER said: My own experience of the serum treatment of disease has been almost entirely limited to diphtheria and other infective throat conditions, and I therefore propose to confine my remarks to its application in that particular field.

Dr. Goodall has rightly said that the antitoxin treatment of diphtheria has passed beyond the experimental stage, and has become accepted all over the world as the recognized treatment of the disease. It is no exaggeration to say that it is the only treatment for diphtheria with which we are acquainted.

The evidence which Behring adduced in its favour at the time of its inception was such as to certainly justify the most favourable anticipations, and it was recognized that the proposed treatment by antitoxin was founded on a firm experimental basis. At the same time, we had a sort of recollection that expectations built upon results obtained in the laboratory, though apparently of a most convincing nature, had before now proved somewhat unduly optimistic in practice.

The treatment may be said to have been adopted as a routine practice in most of the metropolitan fever hospitals early in the year 1895, though it had been tested in a series of cases in the Eastern Fever Hospital by Goodall, Washbourn, and Card during the autumn of 1894; and owing to the kindness of Dr. Armand Ruffer, who was then Director of the British Institute of Preventive Medicine, in supplying me with the serum, I was enabled to treat all the diphtheria cases with it at the South-Western Hospital from the beginning of December.

After a year's experience of the treatment the medical superintendents of the fever hospitals drew up, as Dr. Goodall has said, a combined report on the results attained with it. This report, dealing with between 2,000 and 3,000 cases, was received with no small amount of attention, as it was the first record of any large series of cases published in this country. It was widely reviewed, and evoked much hostile criticism of the usual character from that section of the public whose faculty for misrepresentation is in excess of its logic. In addition to the substantial reduction of the death-rate which the figures displayed, we formulated, after very critical discussion, a statement as to certain clinical effects on the disease which we had observed to follow the administration of antitoxin in cases brought under treatment at a reasonably early stage. They were as follows:

1. A diminution of the faucial swelling and consequent distress.
2. A lessening, if not an entire cessation, of the irritating and offensive discharge from the nose.
3. A limitation of the spread, and an earlier separation of the exudation.
4. An improvement in the general condition and aspect of the patient.
5. A prolongation of life in cases which terminate fatally to an extent not obtained with former methods.

Now, it is satisfactory to note that a further experience of eight years since that report was written has confirmed the truth of those propositions in every particular, and of the six men who signed the report there is not one who, with the riper experience of to-day, would wish to repudiate any of the opinions he then subscribed to.

Further trial has emphasized above all things the importance of early treatment. Indeed, so true is this, that Behring's claim that the mortality of cases brought under treatment with antitoxin within the first twenty-four hours should not exceed 5 per cent. has been shown to be more than justified in practice. No better proof could be adduced than the records of the antitoxin-treated cases at the Brook Hospital. MacCombie has published a continuous record of his cases since 1897, classified according to the day of disease on which they came under the treatment. The number treated has been 4,812. The death-rate for first-day cases was 0 per cent.; second-day cases, 4.3 per cent.; third-day cases, 12 per cent.; fourth-day cases, 17.1 per cent.; fifth day cases, 19.7 per cent. Additional evidence in the same direction is afforded by the striking results which, as Dr. Goodall has already mentioned, have been obtained with antitoxin in cases of post-scarlatinal diphtheria, a condition which, though formerly regarded as the scourge of the scarlet-fever wards, has been practically wiped out by its employment. Valuable knowledge, too, has been gained as to the limitations of antitoxin, its drawbacks, and its proper dosage.

We are often able to predict its probable failure to save in certain cases, even though brought under treatment at a comparatively early stage of the disease. A characteristic feature of such cases is an early inflammatory infiltration of the deeper lymphatic glands in the neck, coupled with profuse discharge from the naso-faucial cavities, and fetor of the breath from the outset.

The clinical appearances in this class of attack suggest that the septic factor is predominant; but although the presence of both streptococci and staphylococci can be readily demonstrated by bacteriological examination, their relative contributory influence in the attack is not so easy to determine. It has often been asserted—but, I think, without sufficient proof—that the haemorrhagic developments in malignant diphtheria are of septic origin. It has always appeared to me more reasonable to regard them as manifestations of the essential or specific toxaemia, as in the case of malignant forms of scarlet fever, small-pox, typhus, and measles.

The need of further information as to the rôle played by the various septic micro-organisms, both when acting in concert with each other and in association with the Klebs-Loeffler bacillus, is a pressing one, and is deserving of yet further investigation at the hands of bacteriologists than it has received up to the present, for there seems little doubt that it is in the direction of polyvalent serums that we must look for further advance in the matter of treatment.

I have tried the combination of antistreptococcal and antidiphtheritic serum in several of the severe attacks which I have referred to as uninfluenced by the latter, but I fear the result has been disappointing. Racial differences amongst the streptococcal family may have been the cause of failure, if, indeed, they, and not the staphylococci, were the responsible agents.

It has always appealed to me as a matter for regret that the exceptional opportunities for research provided by the hospitals of the Metropolitan Asylums Board have not been more fully utilized than is possible with the staff at present provided, and I look forward to the time when the Board may follow the lead of the County Council and sanction the appointment of a pathologist, who, untrammelled by any

[8] The Advisability of Administering Diphtheria Antitoxin Intravenously, *Intercol. Med. Journ.*, 1897.
[9] *Ann. Past. Inst.*, 1899, p. 899.
[10] *Lancet*, 1901, i, p. 1746.
[11] Ibid., 1902, ii, p. 1685.

administrative duties, might be in a position to devote his whole time to the prosecution of scientific inquiry.

Now, as to certain unpleasant after-effects which are directly attributable to the injection of antitoxic serum. Apart from the occasional formation of an abscess at the seat of injection, which with due care may be avoided, the objective manifestations which are liable to assert themselves (and in some cases, from the patient's point of view, in a very aggressive manner) comprise an urticarial or erythematous rash, arthritic or muscular pains, occasionally attended with distinct effusion into the joints, and a variable degree of pyrexia.

The rash, if urticarial in character, is quite distinctive, but, if erythematous, it usually presents a morbilliform appearance, and then may closely simulate the early rash of either measles or rubella. It is often indistinguishable from the eruptions which occasionally arise during the later stage of septic scarlet fever and streptococcus throat infections. In most instances, however, though strikingly morbilliform, a careful scrutiny of the rash will reveal, perhaps, at one single point alone an urticarial tendency. The detection of a single isolated wheal will settle any doubt which may exist as to its true nature, as such, I believe, is never met with in any of the other eruptions I have mentioned.

The rash is far more common than the arthritis, the relative incidence in cases treated with adequate doses of serum being about 50 per cent. and 5 per cent respectively. The arthritis, too, rarely occurs without the rash being also present, and the temperature is usually raised several degrees above the normal. Occasionally the eruption is unattended with any pyrexia, and sometimes pyrexia of an irregular remittent character, and lasting several days, is the only symptom noticeable. The occurrence of this group of symptoms is evidence of a definite systemic reaction, and the fact of its not appearing until after the lapse of a considerable interval, which is a remarkably constant one—namely, eight or nine days after the inoculation—suggests an interesting analogy with the incubation period of an ordinary infective process. The analogy, moreover, is heightened by the fact that a definite relapse of these symptoms, after a protracted interval, is occasionally observed, just as in the case of certain of the specific fevers.

The severity of this reaction, like the chance of its occurrence, will be influenced by three different factors:

1. The idiosyncrasy of the patient.
2. The particular tap of serum employed, or, in other words, the idiosyncrasy of the horse furnishing it.
3. The dosage.

As to the nature of the changes in the blood, of which this "serum reaction," as it might not inappropriately be termed, is the expression, or as to the special constituent of the serum which is responsible for it, we have as yet, I believe, no information; but this may simply be but an expression of my own ignorance, in which case, I trust, one of my pathological friends will kindly correct me. However, be this as it may, it is well to remember that the constitutional disturbance referred to bears no relation with the antitoxic equivalent of the serum, being just as likely to arise after the inoculation of ordinary horse serum as with specific serums of the highest potency.

The bearing of this fact on the question of dosage, and the potency of the serum, would be of considerable importance were the constitutional disturbance set up by the serum likely to be at all severe.

Fortunately, however, it rarely is. But I have seen a serum reaction comparable in its clinical aspect and severity with a really sharp attack of rheumatic fever, the temperature averaging over 103° for more than a week, but without, however, any cardiac involvement. Luckily, the attack of diphtheria had been a mild one.

Under these exceptional circumstances one is quite prepared to believe that the occurrence of this reaction in a case which is verging on cardiac failure might prove to be "the last straw which breaks the camel's back," and directly determine a fatal issue. This possibility, however, is no argument against the use of antitoxin, as we know by past experience that the class of case in which this unfortunate situation is likely to arise would almost inevitably have proved fatal at an earlier stage if it had not been treated with it.

In occasional instances the skin irritation set up by the rash is excessive. This may prove a source of acute distress to the patient, who may be ready to "tear himself to pieces," as the saying goes, in consequence of the intolerable itching. Under these circumstances the rash is always urticarial, and I have seen instances in which some of the wheals were as large as the palm of the hand, and the unfortunate patient's condition one of absolute misery.

In addition to the constitutional disturbance which I have referred to under the term "serum reaction," which usually arises during the second week after inoculation, some patients complain of really severe local pain and tenderness in the neighbourhood of the site of inoculation. This may continue for two or even three days after the operation. For this reason I am in the habit of selecting the flank or abdomen, rather than the back, as the most favourable site for the injection.

In my experience, this local trouble is far more common in adults than in children. The amount of discomfort attending an injection varies greatly in different individuals, and one can never tell beforehand what the result will be in this respect.

I have known children so little disturbed by it as to actually sleep through the operation; on the other hand, I have a vivid recollection of a medical man who for several days after I had given him the serum was practically unable to stir in bed. He had previously regarded me as a friend, and he still refers to those few days as the bitterest experience of his life.

Such, then, are the symptoms which are liable to follow the injection of antitoxin. Though frequently troublesome, and occasionally distressing, they are of little moment in comparison with the danger of diphtheria. They cannot, however, be entirely ignored.

I am often asked whether I would give antitoxin in all cases of diphtheria, and the question is a practical one. My advice is to give antitoxin at the earliest possible moment in every case of diphtheria when the patient is a young child, even on suspicion, in view of the rapidity with which the disease is liable to develop in them, their relatively feeble power of resistance to it, and their proneness to laryngeal involvement. But in the case of adults and older children one can afford to exercise some discrimination.

In practice one is mainly guided by the opinion one forms as to the type of the attack: whether, if the case be mild, it promises to remain so, or whether there is a likelihood of its assuming serious proportions. An authoritative opinion on this point unfortunately can only be derived from clinical experience; but under circumstances where it is possible to keep the case under practically continuous observation, as in a hospital or where the patient lives close by the doctor, it may be not only permissible to stay one's hand, but it may even be desirable to do so in the better interests of the patient. This applies with special force to the use of antitoxic serum as a prophylactic measure in adults. I have met with instances not a few where not only were the injections a pure waste of antitoxin, but the subsequent experiences of the injected were productive of a good deal of plain speaking. "When in doubt play trumps" is an admirable maxim, but the hand should be played with discrimination.

Finally, a few words on the question of dosage. It has been the practice of some physicians to give the serum in one large dose immediately the case comes under treatment, and one only. My own experience has led me to regard this method as a mistake, and I am convinced that it is better to spread the administration over a longer period, in severe cases several days—so long, in fact, as there is any evidence of activity in the local process. I have tried the serum in very different amounts, ranging from a dose of 300 or 400 units, followed by a second dose of half the amount on the following day, as was originally recommended, up to one of 4,000 units, repeated every four hours, and continued for several days. I have now come to regard as sufficient the injection of 6,000 to 8,000 units, repeated every twelve or twenty-four hours, according to the urgency of the symptoms, until such time as the membrane shall have become definitely shrunken, and be obviously separating. The milder cases will, therefore, usually receive a couple of doses, and occasionally but one; whereas in severe attacks the number of injections given will be from three to five. I do not believe that anything is gained by giving more than 8,000 units at a time, and it is quite possible that sufficient antitoxic effect may be maintained with subsequent doses of half that amount.

In regulating the dosage I quite agree with Dr. Goodall that no regard should be paid to the age or size of the patient, but that one should be entirely guided by the urgency of the symptoms and the stage at which the treatment is commenced. An extensive exudation, especially when thick and oedematous in appearance, glandular infiltration, rhinorrhoea, and even a

suspicion of stridulous breathing, are indications for repeating the injection at intervals of twelve hours rather than twenty-four, and the need is greater in proportion as the case is late in coming under treatment.

Dr. Goodall has stated that in his opinion there are no contraindications to antitoxin. If in saying this he is referring to the chance of aggravating the disease or of setting up permanent mischief, I am entirely in agreement with his contention; but if, on the other hand, he is of opinion that the severe constitutional disturbance which occasionally occurs as the direct result of the injection—an immunity from which can never be guaranteed—should count for nothing in our decision as to the treatment of mild diphtheria, I can only express my dissent.

My experience of the intravenous injection of antitoxin is very limited, but I am quite prepared to believe that its effect is more rapid than when injected into the tissues. I have never ventured to give antitoxin either by the mouth or by the rectum.

ON A DISSEMINATED FORM OF CROUPOUS PNEUMONIA IN CHILDREN, OR PRIMARY BRONCHOPNEUMONIA.

By SAMUEL WEST, M.D., F.R.C.P.,

Physician, St. Bartholomew's Hospital and Royal Free Hospital.

MY object in this communication is to draw attention to the fact that acute pneumococcal inflammation in the child often occurs in a disseminated form.

Acute inflammation of the lung presents itself in two forms: in the one as a massive consolidation, in the other as disseminated patches. The massive consolidation is the type in the adult; it often comes on without previous illness or obvious cause, and is therefore called idiopathic or primary. The patchy or disseminated form is the type in the child. It usually follows bronchitis, and is therefore called secondary consecutive pneumonia, or more commonly bronchopneumonia. Massive consolidation is rarely met with in children. At St. Bartholomew's Hospital, during a period of ten years, there were admitted 412 cases of bronchopneumonia, of which 82 per cent. were under 5 years of age. During the same period, 1,786 cases of lobar pneumonia were admitted, of whom only 14 per cent. were under the age of 5 years, the relative frequency of bronchopneumonia at this age-period being as 6 to 1.

The description usually given of bronchopneumonia in children would lead to the conclusion that it was rare, except as the result of bronchitis. Yet this is not so. On the contrary, a considerable number of the cases occur without antecedent bronchitis, begin and end just like the acute pneumonia of the adult, and might be regarded as such, except that during life the physical signs show, and in fatal cases the *post mortem* examination demonstrates, not massive consolidation, but disseminated patches. The two cases which follow illustrate the two clinical types.

The first was an ordinary bronchopneumonia following bronchitis after measles in a child of 17 months of age. The temperature was of a

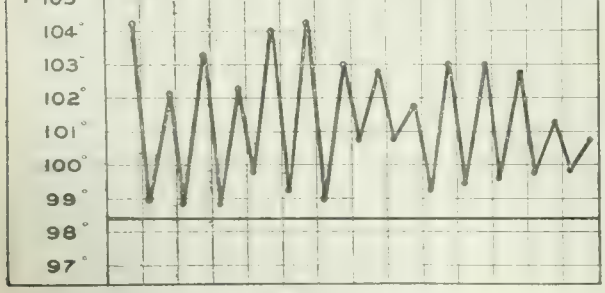


Chart 1.

distinctly hectic type, oscillating daily between 103° or 104° and 99°. The condition continued for about a fortnight, when the child died somewhat suddenly.

The second case was clinically one of acute pneumonia. The child, 9 months of age, was well till a given day, when it was taken ill with acute chest symptoms and high fever. The physical signs were those of bronchopneumonia. The fever ended abruptly by crisis on the seventh day. The child was much collapsed, never rallied, but died the following day. The *post-mortem* examination showed numerous

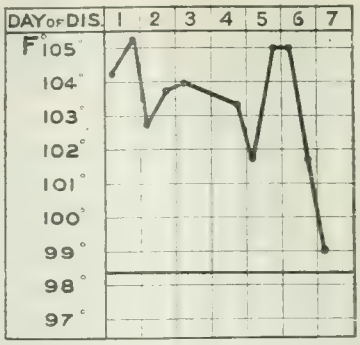


Chart 2.

scattered patches of consolidation, characteristic of broncho-pneumonia.

Such cases might easily be multiplied, but these two suffice to show that there are two types of broncho-pneumonia in children, both showing similar pathological lesions in the lungs. The two types stand in strong clinical contrast with one another. In the one the disease is of gradual onset, and preceded by some affection of the air tubes. The temperature is hectic in character, the course prolonged and interrupted by frequent relapses, the termination is by lysis; finally the mortality is high.

In the other there is no antecedent bronchitis, the affection is of sudden onset and short duration, without any tendency to relapse: the temperature is persistently high, the termination by crisis, and the mortality low. The clinical symptoms are those of lobar pneumonia, but the lesions those of bronchopneumonia. These two forms may be called primary and secondary bronchopneumonia respectively. The secondary stands in close relation with bronchitis, the primary with lobar pneumonia.

To make the case complete bacteriological evidence is required. In most of the investigations the distinction between the two forms has not been drawn, so that the results are of a general kind, but still they show clearly the great frequency with which the pneumococcus is found, either alone or in association with other pathogenic bacteria.

I have combined various published statistics, and they show that in 167 cases the pneumococcus was found alone in 50, that is, in 30 per cent., and associated with other bacteria in about as many more.

In an investigation recorded by Holt, in his *Diseases of Childhood*, the primary and secondary forms of broncho-pneumonia were separated. In 19 primary cases the pneumococcus was present in all but 2—in 8 alone, and in 9 others in association with other bacteria. In 14 secondary cases the pneumococcus was found alone in 2 only, and associated with other bacteria in 9.

Bacteriological evidence, then, so far as it goes, shows that in the primary cases of bronchopneumonia the pneumococcus is almost as frequently found as it is in the acute pneumonia of the adult, and thus confirms the conclusion to which clinical observation leads—that primary bronchopneumonia is of pneumococcal origin. It seems, therefore, fair to draw the following conclusions:

1. That the primary and secondary bronchopneumonia have a different bacteriology.
2. That primary bronchopneumonia is of pneumococcal origin.
3. That pneumococcal inflammation is almost as common in the child as in the adult.
4. That it takes a different form in each, usually leading to massive consolidation in the adult but to disseminated patches in the child.

In other words, lobar pneumonia and primary broncho-pneumonia are the same disease. There are many peculiarities of structure in the child's lung which seem adequate to explain why inflammation of the lung in a child should take a different form from that which it presents in the adult. If, then, as I contend, the primary and secondary broncho-pneumonia of children are distinguished from each other, not only in clinical history, course, results, but also bacteriologically, the case for the recognition of the two forms is clearly established.

I append a table showing in a diagrammatic form the views I am expressing:

Inflammation of the Lung.	Clinical History.	Bacteriology.	Remarks.
Bronchopneumonia—lobular, patchy, disseminated	Onset, gradual: tendency to relapse. Fever hectic, markedly remittent, of long duration, with gradual fall. Mortality high	Streptococcus chiefly; and others	Secondary broncho-pneumonia after bronchitis, measles, etc.
	Onset sudden; no tendency to relapse. Fever high, not markedly remittent, of short duration, with sudden fall. Mortality low	Pneumococcus chiefly	Primary broncho-pneumonia
Croupous pneumonia, lobar, massive	Similar in all respects	Pneumococcus chiefly	Croupous pneumonia.

FUNCTIONAL ALBUMINURIA.

By Henry George Armstrong, M.R.C.S.,
Medical Officer, Wellington College.

The subject which is under consideration is of considerable importance and one which has not hitherto received the amount of attention it deserves from the generality of medical men. My experience of it has been gained as medical officer of a large public school for the last twenty years, during which time more than 3 000 boys have passed through my hands.

The first reference to it was in a paper by the late Dr. Moxon in the *Guy's Hospital Reports* for 1878, entitled Albuminuria in the Apparently Healthy. Sir William Gull shortly added the observation that the condition was found more especially in youths about the time of puberty. Subsequent observers have been Dukes, Broadbent, Ralfe, Garrod, West, Stirling, and others in this country; Marie, Tessier, and Méry in France; Leube, Senator, and Pribram in Germany.

The condition has received various titles, according to the views of different observers as to the importance of certain characteristics of the disorder: thus, Stirling and Broadbent prefer the term "postural"; Marie following the same view, "orthostatic," and Hebner uses the word "orthotic"; Gull and Clement Dukes, "the albuminuria of adolescents"; Leube, Pribram, and other German writers, "the albuminuria of puberty"; Samuel West thinks "albuminuria in the apparently healthy" to be the best. It has also been described as "intermittent" or "cyclical albuminuria," and others, again, term it "physiological." None of the titles seem to me to be altogether satisfactory, but some are distinctly misleading, as, for instance, that of "albuminuria in the apparently healthy"; for, as I hope to show, individuals suffering under this condition, which has, I believe, a definite pathology, present well-defined clinical symptoms. Although it is not quite satisfactory, I adhere to the term "functional albuminuria" as more nearly expressing what we want than any other. The term "functional" is defined in Hoblyn's *Dictionary of Medicine* as being a confession of ignorance, but in using it I mean to imply that there is no definite structural change in the renal apparatus, but, in spite of this the kidneys are unable to adequately perform their secreting functions.

Dr. Samuel West, in his Lettsomian lectures, arranges albuminuria in five groups:

Albuminuria	Prerenal	1 Obvious cause, such as morbus cordis, fevers, etc.	Physiological.
		2 No obvious cause	
	Renal	3 No obvious cause	
		4 Evident renal disease.	
	Postrenal	5 From urinary passages, generative organs, etc.	Accidental.

Albuminuria may also occur accidentally from errors in diet, especially if it be excessively albuminous, such as eggs in large quantities, from violent muscular exercise, from cold bathing and from exposure to cold. For the subject under consideration to-day we are only concerned with Groups II and III, which West describes as "Physiological."

Statistics.

Those who have paid special attention to the subject have found that in young people up to a late adolescence a large number from time to time have albumen in the urine, one special feature being that its appearance is of an intermittent nature, in some appearing in some specimens secreted each day, and in others long periods elapsing between the manifestations. So far as I am aware all the observations have been made on males, but there is no reason to doubt that the same condition exists in the other sex, though investigation is obviously more difficult to carry out. For the purpose of statistics the cases have been divided into two groups—from 10 to 18 years, that is the period of school life, and from 18 to 25 years, young adults.

In the first group the following figures are given by West in the Lettsomian lectures:

Stirling	369 boys	...	20.8 per cent.
Ribbert	240 ,,	...	22.0 ,,
Grainger Stewart	100 ,,	...	17.0 ,,
Dukes (general experience)			22.0 ,,

In the second group—observations mostly made on young soldiers:

Leube	119 cases	...	20.4 per cent.
Grainger Stewart	205 ,,	...	27.0 ,,
Tieman	186 ,,	...	27.4 ,,
Zechnisen... ...	144 ,,	...	14.6 ,,
Levison	103 ,,	...	47.25 ,,

All these statistics seem to me, apart from the fact that they indicate the great frequency of the condition, to be of little value; partly because, owing to the special characteristic of the condition—namely, its intermittence—a practically continuous observation of all specimens passed would have to be made, and that over a considerable period; and also special care must be taken to eliminate the cases described as "accidental." If these be included, I can easily imagine that the rate would be higher even than any given here; but, without having made any observations which can merit the title of statistics, I am inclined to think that the proportion of true cases of "functional albuminuria" during the school age is from 12 to 15 per cent., and that the rate is much higher for the summer than the winter.

The subject under discussion is the appearance in the urine, generally intermittently, of young people between the ages of 10 and 25 years, who have no obvious structural disease of the urinary secreting organs, and who are for the most part, at all events between the attacks, apparently in fairly, if not in quite, good health. Among these, two groups may be recognized, one consisting of florid, robust subjects, with a good tension-pulse; the other pale, flabby, and anaemic, with a pulse of low tension. Broadbent says that the antecedent most common is a neurotic family history. This is also my experience; so far as I have been able to collect details—which is, in my position, often difficult—I have generally found that there is a condition of neurosis in one or both parents, and often that there is a history of some other member of the family suffering from some gross lesion of the nervous system, such as epilepsy or chorea, or some minor one, such as stammering or sleep-walking. Family predisposition is also shown by the fact that often several members of the same family present the condition, and in more than one instance I have come across cases in which all the boys in a family have been known to be albuminurics, and in which from his description of symptoms occurring during his adolescence, the father probably was so also. The importance of the factor of direct hereditary influence, however, cannot be determined till careful observation has been made for a much longer time than has been at present possible. A boy at school, with this condition, generally comes before the doctor for the following reasons:

1. His master has observed that he is not doing his work as well as usual, that he is looking pulled down, and showing a general apathy both to work and games.

2. Because he has fainted. Now, this question of fainting is a very important feature. A boy faints practically always under two conditions—(*a*) either when he is standing up in chapel, or (*b*) when he is standing at ease at school drill or rifle corps parade. He hardly ever faints when he is occupied in doing something, either standing up at work in form, or when performing movements as at drill. It is when he is standing up doing nothing, and probably thinking of nothing but himself, that he does so. On one occasion, last summer, I had occasion to inspect the school rifle corps before going to camp. For this purpose they were drawn up in squads, standing at ease. During the inspection, which did not last more than a quarter of an hour, three boys fell down in a fainting condition. In each case, on examining the urine I found a considerable quantity of albumen.

On examining into such a case, the boy will tell you that he has been feeling rather slack lately, but that he did not

think much of it as he often felt like that, but it soon passed off. His pulse-rate is much quickened, and varies greatly even under examination. The tension is generally low, but variable. The urine will invariably be found to contain albumen, often in large quantities. Microscopic examination, however, will reveal no casts. Clement Dukes many years ago said that in his experience every boy who fainted in chapel would be found to have albumen in his urine; this, too, is my experience. Following his observation, I invariably examine the urine of any boy who comes to me for this reason, and I have never failed to find it present.

The heart will present the following condition: Violent impulse, general enlargement due to dilatation, the apex beat being often well outside the left nipple line, and a reduplication of the second sound, especially when the patient lies down. There is often, also, a soft systolic murmur at the base, of a transitory nature. To quote again from Broadbent, who says: "The condition invariably existing in the patients is that of cardio-vascular instability. The pulse varies greatly in frequency and tension, often while under examination, certainly at different periods of the day, and is unduly influenced by changes of position, such as lying down or standing up. The action of the heart affords further evidence of the instability of the circulatory system. There is a violent cardiac impulse. According to my experience, it is the impulse of the right ventricle which is forcible, the apex beat being weak." It seems to me, however, that it is not only the right, but also the left, ventricle, or rather, indeed, the whole organ which is dilated. If such a case be put to bed, and kept in the recumbent position for a few hours, all the symptoms disappear; the heart resumes its normal size and impulse, the pulse tension becomes normal, and the albumen disappears from the urine, only to recur again on the patient getting up. This may go on for a few days or a week, and then altogether disappear for months, not to recur again till the occasion of another attack, or there may be occasional appearances in some specimens passed each day, especially in that passed a few hours after first rising. This fact of the disappearance of symptoms and albumen, the absence of casts, and coupled with a high specific gravity of the urine, as is generally the case, are the main features distinguishing between albuminuria due to functional derangement and that due to structural disease of the kidney, morbus cordis, fevers, etc.

One interesting feature is, as pointed out by Ralfe, that in some cases the colouring matter of the blood escapes as well as the serum, and the condition of haemoglobinuria is produced. I have had several instances of known albuminurics in which this has happened. Epistaxis also is by no means uncommon, another evidence of the vascular instability.

The clinical picture, then, is this. A boy or young man, the son of neurotic parents or parent, himself probably neurotic, gradually becomes slack and apathetic, his heart subject to intermittent attacks of dilatation and violent impulse, pulse frequent and varying in rapidity and tension, albumen in the urine during the day when in the upright position but absent when in the recumbent position, urine of good specific gravity and without tube casts—such is the case which comes under the denomination, "functional albuminuria."

What is the pathology? Stated shortly, it seems to be this: In certain individuals, under conditions of heredity, and possibly environment, during the great period of growth and change, represented by puberty and early adolescence, the tonicity of the nervous system, and especially of the sympathetic, gets upset; the inhibitory influence of the vaso-motor nervous system is interfered with, and, as a consequence, the heart and arteries easily dilate. The arterioles of the Malpighian bodies are stretched and thinned, and permit the percolation through them of a certain amount of serum. The central point is the unstable condition of the nervous system and the consequent vaso-motor instability; the altered and varying tension, and the resulting changes in the hydrostatic conditions.

Treatment.—Under this head the most important thing is to persuade the individual and his parents that he has nothing serious the matter with him; the boy at school should do the same as his schoolfellows—work and play according to his ability. Good air, good food, and good healthy exercise are the important factors. An exception may be made to long distance running or rowing, especially in competition, as there might be too great a strain on the heart. The principal object of the doctor should be to impose as few restrictions as possible, and to do all that he can to prevent his patient becoming introspective and inquiring into his internal economy—a condition of things which is almost certain to produce the very symptoms he is trying to cure. As to drugs, the robust class of case requires none, unless it be an occasional purgative; for the anaemic and flabby type, the occasional exhibition of tonics—strychnine, iron, and arsenic—will be advantageous. A combination of Blaud's pill and arsenic I have found to be generally efficacious. It is unnecessary and probably undesirable to prescribe wine or other stimulant.

Prognosis.—Broadbent says: "The prognosis is favourable. I have never known a case of true postural albuminuria to resist treatment or to develop into actual renal disease. . . If these cases are treated for renal disease, put on milk diet, protected from cold and forbidden to take exercise, they will probably go from bad to worse, and I have met with several instances of confirmed nervous valetudinarianism apparently attributable to this error in early life." Pribram speaks as positively: "Cases always recover, even those which have been known to last for several years. Albuminuria of puberty never develops into actual nephritis, passing even through fevers without contracting it." These are most important statements, with which from my experience I heartily concur. Doubtless many boys leave school with occasional recurrences of the condition: certainly it is found amongst undergraduates at the universities; but in most, if not in all, cases it has ceased to recur before the age of 25. If it be found to persist after that age, probably a more serious view of the case should be taken. As an illustration that the condition during boyhood does not interfere with a man's usefulness and activity in after life, I might mention that one of the worst and most persistent cases that I have had under me is now serving with the expedition in Thibet.

The question of prognosis has an important bearing on that of life insurance. Up to the age of 25, when the appearance of albumen is intermittent and disappears on lying down, the urine normal in quantity and of good specific gravity—absence of cast or other evidence of organic disease—I think the life may be accepted at ordinary rates; but several examinations ought to be made before the proposer is definitely accepted or rejected. After 25, the case assumes a different aspect, and the continued presence of albumen, even if it be intermittent, may point to a condition which should lead the medical examiner to either increase the premium or altogether reject. After 40, the latter course is probably the best.

I have referred to two reasons why a boy with this disorder comes under the notice of the school doctor. There is yet another one—unfortunately a large class—namely, those in which a boy comes from home with a report that he has some disorder of either his heart or digestion, which renders him unfit to take part in the ordinary affairs of school life, and that he requires special regimen and exemption from school games. In these cases their true nature is almost invariably missed, and the fact that the patient is subject to this form of albuminuria is unsuspected because unlooked for. During my twenty years at Wellington College, of the 3 000 boys that have passed through my hands, at a low estimate, at least 500 have probably been at some part of their school life functional albuminurics, but in only two instances have I received the information from home that this was the case. On the other hand, the number of these cases that have come with the statement from the home doctor or specialists that their hearts or digestions were impaired can be reckoned by dozens.

The following are some recent typical examples:

C. J., aged 17, returned to school in October term, 1903, with the report from his doctor that he had serious mischief of his heart, and that he was quite unfit to take part in school runs or any violent exercise; that he had seen a London specialist, who confirmed his view, but thought that the heart might rather be described as an irritable one than as diseased. He, however, thought that his exercise should be considerably restricted.

N. J., aged 16, returned after Christmas with a letter stating that during the Christmas holidays he had fainted for no special reason; heart somewhat enlarged and very excitable: no examination of urine made; games, such as football, hockey, paper-chases, rackets, etc., to be forbidden, as likely to cause breakdown and unfit him for his studies.

J. P., aged 14, was brought back to school this term by his father, bearing a letter from the doctor stating that he had "amyloid indigestion," and that he must have a special dietary, including rusks, toast, and such-like. By examining the urine in the father's presence I was able to demonstrate to him the true nature of the case, as it gave an almost solid precipitate on boiling, and he willingly agreed with me that no alteration of the boy's routine was necessary.

The recital of other cases would be tedious, but these are typical of dozens which I and my colleagues in medical charge of boys in schools have brought under their notice. The surprising thing is not so much that a different view should be taken as to the proper treatment of the case, but that so very rarely is its true nature even suspected, and the condition of the urine not inquired into. I am inclined to think that one reason for the neglect to make more systematic search for the presence of albumen is the want of portability and convenience of the usual tests. Those commonly relied upon, heat and nitric acid, are inconvenient to carry about. In salicyl-sulphonic acid, however, we have a test which is quite as reliable as either of them, and can be carried about without risk, as it is non-caustic and non-poisonous. If no precipitate occurs there is no albumen present; if there is a precipitate, it is necessary to boil to distinguish albumen, which does not clear up on heating, from proteoses which do. If the salicyl-sulphonic acid be kept in the form of 1-gr. tablets, and one of these be dropped into an ordinary pipette and the suspected fluid drawn up into it, even a test tube and the attendant inconveniences of pouring the urine into it can be dispensed with. If a constriction be made in the pipette about ½ in. from the end to prevent the tablet dropping to the bottom, the difference between the cloudy fluid below and the clear above is very easy to distinguish. Messrs. Allen and Hanburys have made the tablets for me, and this small apparatus, which can be easily carried in the waistcoat pocket.

HUMAN AND BOVINE TUBERCULOSIS.

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Since the International Congress on Tuberculosis, held in London, 1901, where Professor Koch made his famous declaration, scientific inquiry all over the world has been stimulated to a high pitch, and the different results and views on the question demonstrate the great difficulty and intricacy of the problem. Amongst a host of varying opinions by many distinguished scientists, two are of interest—namely, Professor Koch and Professor Behring.

Their views are briefly as follows. Koch holds that human and bovine tuberculosis are separate and distinct diseases, and that bovine tuberculosis, if conveyed to man, cannot set up human tuberculosis. Koch, in addition, believes that phthisis is conveyed from one person to another by direct infection, especially from contact with an advanced case of the disease, and that this is by far the commonest cause of the spread of phthisis pulmonalis. Behring, on the other hand, holds diametrically opposite views. He says that human and bovine tuberculosis are the same disease, and that nearly all tuberculosis is the result of infection during infancy by means of infected milk, and that direct infection from person to person is not proved.

What, then, are we to think when such great men differ? I venture to think that the problem will not be solved by experiments in the laboratory alone, but rather that some light will be thrown on it by extensive clinical observation and pathological study, and noting carefully the behaviour of tuberculosis in humans and other domestic animals. With this end in view I venture to place before you my views, which are the result of observation of over 3,000 cases of phthisis and other forms of tuberculosis, with, in addition, a study of nearly 600 autopsies on such cases.

In general one takes for granted that the infection with tuberculosis must progress through the body, so that the nearest organ must become affected first and more severely so than all the other organs. According to this "law of localization," for example, we must take the phthisis of lungs to be the result of an infection by inhalation, whereas the primary tuberculosis of the intestines must be the result of infection by nutrition (Hueppe). The phthisis of lungs of the adult depends on the predisposition of the lungs, and the tuberculosis of the intestines of children depends on the predisposition of the intestines.

The tubercle material for the infection of children in my opinion is generally infected milk, and certainly most often the milk of cattle with *Perlsucht*.

In short my view is this: the lungs are generally affected by inhalation of bacilli from a previous case of phthisis, or accidental inhalation of dried tubercle bacilli. This is by far the commonest way, and accounts for the great majority of cases of phthisis pulmonalis.

In a few cases, however, the apex of the lung is attacked by the extension down the neck of tuberculous lymphatic glands, and I have myself seen two instances of this. The lungs are frequently attacked, especially in children, by direct lymphatic extension from the mesenteric glands, through the diaphragm to the pleura and lung. This often follows an intestinal infection from milk.

I hold that human and bovine tuberculosis are distinct and different varieties of the same species, and are capable of setting up a different train of symptoms at different periods of life, and according to localization of infection, and that intestinal tuberculosis and tabes mesenterica are not human tuberculosis but bovine in origin; the intestinal infection may remain localized and limited by the mesenteric glands in children, as it often does, or it may extend to the peritoneum and through the diaphragm, thus causing acute miliary tuberculosis, which I hold is always bovine tuberculosis.

Now, it must be admitted that the great body of experimental evidence is in favour of Koch's first contention that the two diseases are distinct, and that it is almost impossible to produce a general tuberculous infection in cattle by inoculating them with human bacilli from sputum. But it does not necessarily follow because human bacilli have a low virulence for cattle, that therefore bovine bacilli have only a slight pathogenic power for man, especially when we consider that bovine bacilli are not only virulent for cattle but for various other animals, such as the rabbit, horse, pig, dog, and sheep. It therefore appears reasonable to suppose they would be virulent to man, since it is a fact that "all the disease-producing bacteria that are common to all the domesticated animals are also pathogenic to man" (MacFadyean). In short, Koch argues that bovine tuberculosis, being a distinct disease from human tuberculosis, cannot produce the human variety in the body.

With this view I agree, but I am of opinion that man is attacked by two distinct varieties of tubercle, one conveyed by infection from one person to another, the other by receiving into the body the bovine bacilli in milk or meat.

During the last few years I have had under observation over 3,000 cases of phthisis pulmonalis, and I have been particularly impressed with the fact that the tuberculous process is nearly always confined strictly to the lungs. The patient usually gives a history first of cough, then of expectoration; the disease often progresses to death, and the necropsy reveals destructive lesions of the lungs and nothing more. Out of these cases of phthisis pulmonalis I have only seen the glands and the joints affected in 14 cases, and in the late stages one sees the intestine and peritoneum involved. Phthisis pulmonalis is essentially a disease of young adult life. It is rare to see it as a primary affection under the age of 12, the great majority of deaths taking place between the ages of 30 and 40. On the other hand, strumous or tuberculous joints, enlarged glands, spinal disease, and abdominal tuberculosis with tabes mesenterica, are essentially diseases of infancy and childhood, and are only rarely seen in adult life.

I have given particular attention to the clinical manifestations of these various tuberculous affections, and it is rare to see a patient with enlarged glands, strumous joints, or spinal disease develop true phthisis pulmonalis. In fact, clinically they appear to be antagonistic to each other, attacking the body at quite different periods of life, and exhibiting generally opposite symptoms. There are at the present time 123 cases of phthisis pulmonalis in the hospital, and in no case is there any other gross tuberculous lesion evident, which would certainly be the case if they were caused by one identical bacillus which would be free to be conveyed all over the body.

Again, I have had the opportunity of seeing over 600 necropsies on cases of tuberculosis, and I have noticed that even the lungs are attacked by two distinct varieties of tuberculosis—one of a slow and insidious nature, the other rapid and acute and generally associated with tubercle in other parts of the body. If one compares the appearances seen in cattle dying with tuberculosis with those of children dying of tabes mesenterica and abdominal tubercle the almost exact counterpart is seen.

From these general clinical and pathological observations I am inclined to think that primary intestinal tuberculosis, tabes mesenterica, and other tuberculous affections of the serous membranes in children, are probably bovine tuberculosis conveyed by milk, and are not true human tuberculosis, although the bacillus of Koch is found in them all.

Tabes Mesenterica.

Now, let us take first of all tabes mesenterica. By this disease we mean what is popularly called "consumption of the bowels," and it is one of the most common forms of abdominal tuberculosis in children.

Infants and children suffer from tuberculosis of the intestines and glands, but it is, perhaps, more common before the age of 2 years than afterwards.

My own experience of this affection is limited to 293 cases; of what I have diagnosed clinically as tabes mesenterica only 63 have come to *post-mortem* examination.

I grant it is extremely difficult to exactly diagnose the onset of tabes mesenterica, and it is not to be assumed that a great many of the cases of diarrhoea, wasting, and general inanition in children are tuberculous, as they certainly are not; but I believe that tabes mesenterica is a great deal more common than is generally believed, and, what is more, a great number of children who receive a mild infection which is confined to the mesenteric glands, recover absolutely. I have seen this frequently in the hospital, where enlarged palpable mesenteric glands have slowly subsided, and under proper treatment the child has quite recovered. In five cases in which I have opened the abdomen during life for hernia and other abdominal disorders, I have seen the mesenteric glands much enlarged and apparently cheesy, with sometimes nodules on the peritoneum, yet these children were not suspected of being tuberculous, and they all left the hospital well. Many other surgeons and physicians will be able to confirm this point. Assuming these mesenteric glands to be tuberculous, the question arises, How do the tubercle bacilli find their entrance?

This difficult problem cannot be proved like an ordinary scientific experiment, since it is impossible to inoculate the human being, and I sincerely hope it will never be attempted. But by careful consideration of all the known facts bearing on the question we ought to be able to find an answer which in all human probability will be approximately accurate.

I will claim your indulgence when I attempt to lay before you all the evidence which I can in support of my view that tabes mesenterica is caused by bovine tubercle bacilli in milk. If we consider for a moment the remarkable diminution in human phthisis during the last fifty years, amounting to over 45 per cent., we would naturally expect that other forms of tuberculosis would have fallen in the same ratio were they caused by the same bacillus. But this is not so; on the contrary, the death-rate from abdominal tuberculosis in children has increased, and what is more significant, tuberculosis in English cattle is rapidly increasing.

Veterinary authorities, such as Nocard, Bang, Dollar, and MacFadyean, agree that about 20 per cent. of dairy cattle suffer from tuberculosis, and recent official figures from different parts of England show that in London dairies 25 per cent., in Edinburgh 40 per cent., Midlothian 23 per cent., Durham 19 per cent., and Yorkshire 25 per cent., of the cows are tuberculous.

If, however, every tuberculous cow produced milk containing living tubercle bacilli the whole community would be in danger, but it is now generally admitted by experts that only cows with a tuberculous infection of the udder are really dangerous, and the percentage of such cases is very small, only amounting to 2 to 3 per cent.

The average number of cattle in a dairy supplying a large town is about twenty, so that probably only one cow is dangerous, and possibly none at all. The milk is generally all mixed together before delivery, thus apparently increasing the danger; but experiments by Sidney Martin have proved that the fewer the bacilli contained in the milk the milder the infection; in fact, it seemed to be confined to the mesenteric glands, and in one case the mesenteric glands were affected without any lesion of the intestine, the bacilli having apparently passed through the healthy mucosa without causing any ulceration. The danger from one tuberculous cow is thus apparently much greater than from the diluted milk of a whole dairy; and Nocard says, "The ingestion of virulent milk is only dangerous when the milk contains a great number of bacilli and is ingested in considerable quantity. Bollinger found that 16.6 per cent. of samples of commercial milk contained tubercle bacilli; Martin, in Paris, 33 per cent.; Bang, in Copenhagen, 15.5 per cent.; Delépine, in Manchester, 25 per cent. There is thus no doubt that the milk as sold to the public is seriously contaminated all over the world, and if drunk in the raw state is a most serious danger.

It is my custom at the infirmary to carefully inquire into the milk history of all children admitted with abdominal tuberculosis, and the usual history is as follows: Child fed on the breast for a few months, afterwards cow's milk, which is generally bought in halfpennyworths or pennyworths at the milkshop. I have made most careful inquiries during the last five years, and I have never seen a case of tabes mesenterica which had not been fed for some weeks or months on cow's milk. This I consider a most significant fact.

With a view to excluding infection from parents or family at home I have made a careful inquiry on this point, and of the 34 deaths only 2 had a phthisical parent, so that the probability of infection in this direction is extremely small.

Now, it is argued by some observers that the tubercle bacilli are not primarily introduced into the body through the mesenteric glands, but that they become affected later on from some other part. If this is so, I ask, How is it that adults suffering from phthisis do not become affected in the mesenteric glands in the same way? It is a fact they rarely do so, and it is very unusual to see the mesenteric glands affected in phthisis pulmonalis, except as a late affection following secondary intestinal ulceration.

The next link in the chain is the clinical history of a case of tabes mesenterica. In a Poor-law infirmary we often see the child from the commencement of the illness, chronic intestinal catarrh, with diarrhoea of offensive yellow stools, with, perhaps, streaks of blood, a general wasting, and distension of the abdomen. I have examined very carefully several such cases, and have invariably found the chest quite healthy in the early stages of the illness. As the disease slowly progresses, and the atrophy and wasting consequent on the diseased mesenteric gland continues, the general tuberculous symptoms are more pronounced; the temperature becomes hectic, the child begins to cough, and on examination the lungs are found to be tuberculous, and the child invariably dies. The point I wish to make is this. The infection commences in the mesenteric glands from the intestine, slowly spreads to the retroperitoneal glands, then through the diaphragm to the glands in the posterior mediastinum, and, finally, to the lungs. If the child live long enough, the brain may be affected too. At the *post-mortem* examination this process has been corroborated again and again.

In 9 fatal cases the lungs have not been attacked at all, the disease being confined to the abdomen. If we compare the course of this infection with that seen in the calf which is fed on tuberculous milk, we see an exact mimicry of the disease in every detail. The direction of the lymph stream would certainly be strongly in favour of infection from the intestine to the thoracic organs.

The experiments recently reported in the BRITISH MEDICAL JOURNAL by MacFadyean and McConkey are most interesting, and show that active tubercle bacilli are at present in a large number of cases not suspected of being tuberculous.

"The experiments have shown that in the non-tuberculous cases virulent tubercle bacilli were present to the extent of 25 per cent. The tubercle bacilli, it appears from these experiments, are present much more frequently in the mesenteric glands than ordinary *post-mortem* examination would lead one to suppose." This evidence strongly supports the view that I have for a long time had, that a great many children receive a mild infection of mesenteric tuberculosis through cow's milk and recover absolutely, the infection getting no further than the glands.

We have all seen cases of tuberculous peritonitis completely recover after opening and draining the abdomen and nothing more. So far, no satisfactory explanation of this result has been given. My own opinion is that it is a localized bovine tuberculosis which has died out, and that relief of the fluid is sufficient to cure the patient.

Taking all these facts into consideration, I am of opinion that bovine tuberculosis is very virulent for children, and is accountable for tabes mesenterica and other varieties of abdominal tuberculosis; in fact, I believe it to be more virulent for children than human tuberculosis.

In arriving at this conclusion I lay great stress on the fact that out of nearly 300 cases of tabes mesenterica observed during the last twelve years, I have never known one to occur in a child which has been fed strictly on the breast, the whole of them without exception having been reared on cow's milk for some considerable period.

Scrofula.

We all know now that scrofula, so-called, is nothing more or less than tuberculosis of the lymphatic glands, but is it human tuberculosis?

I must confess to a difficulty in understanding how it is that these local tuberculous lesions, such as enlarged glands in the neck, pulpy joints, and caries of the spine, should generally develop in childhood, and in the majority of cases recover and never be heard of again. For it must be admitted that these cases rarely develop tuberculosis of the lung, excepting in the process of a general infection.

In my series of cases I have only seen enlarged cervical glands in 7, and although one occasionally, but very rarely, sees phthisis pulmonalis follow operation on these glands, it might be explained by direct extension of the deep cervical lymphatic glands to the apex of the lung.

How many scores of strong, healthy, vigorous children and adults do we see who have suffered from tuberculous glands in the neck with never a symptom in after life? Surely these people cannot be classed as tuberculous. They have suffered from a mild infection of tubercle bacilli, which was, in all probability, bovine in origin and absorbed from milk.

The most reasonable theory is that scrofulous glands in the neck are produced by the absorption of tubercle bacilli in milk through the tonsils and pharynx, and is, as a rule, a purely local affection. This view is supported by feeding experiments on animals. If pigs are fed on tuberculous milk they invariably develop enlarged tuberculous glands of the neck and throat, which, on inoculation, produce bovine tuberculosis in cattle, and tuberculous lymphatic glands from the human, when injected into calves, have produced a general tuberculous infection. This is strong presumptive evidence of their bovine origin.

If this view is correct it would help to explain the occurrence of acute general tuberculosis occurring in those suffering from an unhealed focus, such as a gland, a strumous joint, or a psoas abscess, for we are all aware of the danger of operating on caries of the spine, a tuberculous bone lesion, or removal of glands, lest a general blood infection should follow. If we observe closely this acute general tuberculosis we find it closely resembles that seen in cattle, affecting chiefly the serous membranes and the lungs—a condition which rarely accompanies phthisis pulmonalis.

Tuberculous Meningitis.

It is often a matter of perplexity to the doctor to explain the onset in a previously healthy child of an attack of tuberculous meningitis.

Sometimes it is confined to the brain, at others it is part of a general infection. Perhaps it is a bovine tuberculosis, as we have all seen necropsies where there has been no other discoverable evidence of tubercle.

Time will not permit me to further elaborate my theory, but it is of great value to know the distribution of tubercle in children in other parts of the world. India is the most instructive. Tuberculosis in India amongst cattle is a very rare disease, and all milk is boiled or converted into ghee before use. In spite of this, human tuberculosis or phthisis is a very prevalent disease, whilst it is rare to see tuberculosis of the abdominal and cervical lymph glands even in children. All authorities are agreed as to the rarity of tuberculous disease amongst children in India, whilst Dr. Crombie never saw a case of hip-joint disease in a child. In Egypt, where all children are fed on the breast up to 2 years old and even 3, tuberculous glands and abdominal tubercle are rarely seen, whilst in the Malay Peninsula, Hong Kong, and other parts where tubercle in cattle is rare, tuberculosis in children is rarely seen.

From a general survey in hospital of the manifestations of tubercle, I am strongly of opinion that in all countries where tuberculous milk is taken a very large number of children are infected through the intestines and mesenteric glands. The infection may pass the intestinal mucosa leaving no visible trace, and become limited to the mesenteric glands, setting up what we call "tabes mesenterica."

It may end there, or it may lie dormant for some time and then extend to the peritoneum by lymphatic extension, involving all the abdominal viscera, especially the coverings of the liver, spleen, and other organs, thus accounting for some cases of perihepatitis and perisplenitis seen in after-life. The infection may spread further through the diaphragm to the pleura, causing tuberculous pleurisy and even bovine phthisis of an advanced type, or it may extend directly to the brain, setting up tuberculous meningitis, which I hold is a lymphatic infection from the deep cervical glands. This bovine infection may extend in children to the spine direct from tuberculous glands in the abdomen; to the sacro-iliac joint, or, as I have seen in two instances, directly from the abdomen to the hip joint.

Briefly, in my opinion, nearly all these bone joint and gland lesions in children are bovine tuberculosis, and not true human tubercle. In Liverpool I have noticed a great diminution in abdominal tuberculosis and enlarged glands in the neck during the last two years, due in a great measure to the rigorous inspection of all dairies, and the supply by the city of sterilized milk for the poor. In fact, I believe that when tubercle is stamped out from cattle, surgical tuberculosis in children will to a great extent disappear with it.

The report of the English Royal Commission is not yet complete, but is highly significant. Out of twenty different strains of tubercle they produced in 7 cases a virulent infection in cattle, thus suggesting that they were of bovine origin. They, however, report in favour of the two diseases being due to the same organism, directly opposed to the finding of the German Imperial Commission.

The first report of the German Imperial Health Office has been published, and their results are most interesting. The report is the result of extensive inoculation experiments with bacilli of various origins, and they find that in the overwhelming majority of cases the cultural and morphological differences are most marked between human bacilli and bovine bacilli, and that they are able to distinguish easily between human and bovine bacilli. Again, they were unable to produce a general tuberculosis in a calf by inoculating it with adult tubercle, but they produced a general virulent infection after inoculation from a child suffering from abdominal tubercle. This is highly significant, and greatly supports the view held by Koch that there is a distinction between tubercle in man and tubercle in cattle.

The theory which I put forward twelve months ago at the British Medical Association in Swansea is thus supported by eminent authority—namely, that the human body is affected by two varieties of tubercle, one producing phthisis pulmonalis, and generally attacking adults; the other bovine tuberculosis, attacking children during the milk-drinking period, and producing bovine tuberculosis in children. In my original paper I expressed the opinion that these two diseases were antagonistic to each other in the human body, and that children who have suffered from bovine tuberculosis in the form of strumous glands, spinal disease, strumous joints, etc., did not develop true phthisis pulmonalis in later life—in fact, I argued that this mild bovine infection conferred a certain immunity against phthisis in the same way as vaccination and small-pox.

This theory has also received great support by the work of Dr. Römer of Marburg, who has been endeavouring to immunize cattle against tubercle. The only strain of tubercle bacilli which he finds produces complete immunity is the human strain, and by using human bacilli he has been able to immunize over 1,000 cattle, not one of which has contracted tubercle although repeatedly exposed to infection by living in the same stalls with infected cattle.

If human bacilli will protect cattle, it is natural to suppose the converse—that bovine tubercle in children will protect them against human tubercle or phthisis. I am engaged at present in collecting the blood of animals killed for tuberculosis and securing the serum, which, after careful preparation, I propose to use in the treatment of phthisis. The results I hope to communicate at a later date.

I conclude by expressing the opinion, based almost exclusively on clinical and pathological evidence, that human and bovine tuberculosis are separate and distinct varieties of disease, as shown by Professor Koch; but that the human body is susceptible to both, and especially to bovine tuberculosis in the early periods of life.

The two diseases are so rarely seen together in the human that there seems to be some ground for presuming that they are antagonistic to each other, and that bovine tuberculosis may possibly confer an immunity against human tuberculosis. If this opinion should prove correct, I venture to submit that it would reconcile the conflicting opinions which have been so frequently expressed during the last two years on this most terrible of all diseases.

THE CLINICAL FEATURES OF SPLENIC ANAEMIA.

By W. Mitchell Stevens, M.D.Lond., M.R.C.P.Lond.,
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In my observations upon the clinical features of splenic anaemia I shall, after a few preliminary remarks, confine myself

as closely as possible to the results of my own experience. It has been recognized for many years that cases occur of unknown etiology characterized by splenic enlargement associated with more or less anaemia but unaccompanied by leucocytosis, and this condition has been spoken of under various names, such as "primitive splenomegaly," "pseudo-leukaemia," "splenic anaemia," and "Banti's disease." Even at the present time, however, there are many who are unwilling to recognize as a distinct "clinical entity" an affection which, in my opinion, is not rare and may be most appropriately termed "splenic anaemia."

Splenic enlargement associated with anaemia may, of course, be due to many causes, such as rickets, syphilis, malaria, albuminoid disease, tuberculosis, leukaemia, Hodgkin's disease, hepatic cirrhosis, and even, in rare cases, to pernicious anaemia, and it is, therefore, only when the above affections can be excluded that "idiopathic" splenic anaemia can be diagnosed; it is not, however, only by the method of exclusion that this disease can be recognized, for in addition there are certain clinical features which, when taken *in toto*, constitute a fairly well-marked symptom-group. Though it is not my intention to trace in any detail the history of our knowledge of splenic anaemia, I think it is only right that I should make a brief reference to it.

In 1866 Gretzel described a case of idiopathic enlargement of the spleen with anaemia in a young child; in 1871 Wood, of Philadelphia, drew attention to the affection; in 1882 Banti described the clinical features of splenic anaemia, and particularly noted its occasional association with ascites and hepatic cirrhosis, and it is to this variety of the disease that some have applied the term "Banti's disease"; in 1900 Osler gave an account of 15 cases, and it is to this writer in America and to Rolleston in this country that we owe much of our knowledge concerning splenic anaemia. In 1902 only some 30 or 40 cases were on record, from which it would naturally seem that the disease is a rare one, but when we consider that 15 cases were described by one observer, and that many cases have probably been considered as examples of gastric ulcer, leukaemia, pernicious anaemia, hepatic cirrhosis, etc., it is not at all surprising that splenic anaemia has received far less attention than its comparative frequency would warrant.

How true it is that the more we bear certain diseases in mind the oftener we come across cases. During the last two years I have had under my observation 8 cases of splenic anaemia, 2 in private practice and 6 among my out-patients at the Cardiff Infirmary. As the time at my disposal will not allow me to refer to all the cases, I will give brief notes of 4 only, but will draw my conclusions from an analysis of the whole number. All mention of cases in young children will be omitted, as in them it is so difficult to eliminate such etiological factors as rickets and congenital syphilis, and I will state at once, in order to prevent repetition, that every care was taken in each case to exclude, as far as possible, the various known causes (already mentioned) of splenic enlargement associated with anaemia.

Case I.—H. G., a boy aged 14, has been under my care for eighteen months. He enjoyed good health until three and a half years ago when it was first noticed that "his stomach was swollen." When seen he complained of shortness of breath and abdominal uneasiness, but no actual pain. He was somewhat pale, but well nourished. There was extreme ascites; the spleen was very large, extending 2 in. below the navel, and hard, uniform and not tender; the liver was not enlarged; other organs were normal; blood examination showed red corpuscles 4,194,000, leucocytes 2,980, haemoglobin 40 per cent.; no poikilocytosis, no nucleated red corpuscles, and relative proportion of different varieties of leucocytes normal. He was tapped, and for the first six months after the operation there was some slight reaccumulation of fluid, but during the last twelve months there has been no obvious increase. During the time he has been under observation, however, the spleen has increased in size, and is now enormous, and the anaemic appearance of the boy is more marked, though it is not a striking feature of the case. He has had no haemorrhages or pain. His blood has been examined on several occasions, and at the present time the red corpuscles number 4,820,000, leucocytes 1,600, and haemoglobin 58 per cent. He has been on arsenic most of the time, and it is interesting to note that although the leucocytes have greatly diminished in numbers since the first count, the red corpuscles have slightly increased, and the haemoglobin index also.

Case II.—J. S., a single woman, aged 22, came under my care in March, 1903, for repeated atttacks of haematemesis. She had enjoyed good health until five years before (except for occasional attacks of epistaxis since childhood), when she states she "strained" her left side in moving some furniture, since which she has suffered from shortness of breath and pain in the left side. She first noticed a swelling below the left ribs two years before. During the three weeks before admission she had four attacks of severe haematemesis, the last being six days previous. She was a well-nourished woman, but very anaemic. There was a small subconjunctival haemorrhage in the left eye; the spleen was much enlarged, extending two finger-breadths below the navel, and was slightly tender; the liver was felt 1 in. below the costal margin; there was no epigastric tenderness. The temperature was subfebrile (99° to 100 5°), and loud haemic murmurs were present over the cardiac region. A blood examination showed red corpuscles 1,168,000, leucocytes 500, haemoglobin 15 per cent., and slight poikilocytosis. I have not seen this patient for the last few months, but, while under observation, she had no recurrence of haemorrhage.

Case III.—Mrs. S., aged 38, came under my care six months ago. She complained of weakness, shortness of breath, and pain in the left hypochondrium. She had been suffering from these symptoms for over five years, and her doctor had told her then that she had "a large spleen." She was poorly nourished, with a pale, sallow appearance, and very weak. The spleen extended beyond the navel; the liver could not be felt, and there were no other signs beyond those of anaemia. The blood examination showed red corpuscles 4,920,000, leucocytes 1,000, haemoglobin 75 per cent.; no poikilocytosis, and differential count of varieties of leucocytes normal. This patient has never had any haemorrhages, and has remained *in statu quo* while under observation.

Case IV.—A. R., an unmarried woman, aged 22, came under my care twelve months ago with the ordinary symptoms of marked chlorosis. She had been suffering for about a year, previous to which her health had been excellent. Examination showed, beside marked anaemia, an enlarged, hard spleen reaching to within a finger-breadth of the navel. Blood examination showed red corpuscles 3,140,000, leucocytes 8,000, and haemoglobin 40 per cent.

I shall now give a brief summary of the chief points of clinical interest, compiled from a critical analysis of all the cases that I have observed:

1. *History.*—In none of the cases were there any evidences of the recognized causes of splenic enlargement already mentioned, or, in other words, the splenomegaly was "primitive," "primary," or "idiopathic." In one case there was the history of a "strain," and in another case (of which I have notes, and in which I made a *post-mortem* examination with my friend, Dr. Llewellyn of Penygraig) of a very severe accident.

2. *Duration.*—I believe that all the cases are still alive, except the one above mentioned and another one who died from severe haematemesis. In most cases the disease was "chronic," and in several there was a very long duration of the illness. No doubt some cases are comparatively acute, but this does not alter the fact that the disease is essentially a chronic one. Acute cases have been described by West in Clifford Allbutt's *System of Medicine*.

3. *Anaemia* is always present, though it may not be a marked symptom, nor does it seem to bear any direct relation to the size of the spleen.

4. *The Splenic Enlargement.*—This varies in degree, but has a tendency to become very marked, and, indeed, in Case 2 the spleen is absolutely enormous. Since in every case the spleen can only reach a great size gradually, it is illogical to wait until the organ is very large before diagnosing splenic anaemia when other clinical evidence points to that affection, and this point becomes all the more important when we consider that splenectomy has been attended with good results. In a minority of cases there is some pain and tenderness over the splenic region.

5. *Haemorrhages.*—In three out of the eight cases there was haematemesis.

6. *Liver.*—This was slightly enlarged in two cases.

7. *Ascites.*—This was present in Case 1. The course of this case does not point to the ascites being due to hepatic cirrhosis. This form of splenic anaemia is often spoken of as Banti's disease.

8. *The Condition of the Blood.*—(*a*) Red corpuscles: The average count was 3,150,000, the lowest being 1,168,000 and the highest 4,920,000. Poikilocytosis to a slight degree was present in two cases. The haemoglobin index was diminished in all cases. (*b*) Leucocytes: Leucocytosis was absent in all cases. The leucocyte count was normal in three cases, in the others diminished, being in three cases markedly diminished (leukopenia), the lowest being only 500. The differential counts of the varieties of leucocytes presented nothing abnormal.

In conclusion, I think one may fairly say: There is a clinical affection of unknown etiology (that is, independent of the recognized causes of splenomegaly) characterized by splenic enlargement associated with more or less pallor; the blood shows the "chlorotic type" of anaemia with an absence of leucocytosis and often the presence of leukopenia. It is usually a chronic affection; haematemesis frequently occurs, and sometimes ascites is present; and, lastly, the recognition of the disease (which may be called "splenic anaemia") is important, especially as there is reason to believe that many cases are curable by splenectomy.

GRAPHIC TRACINGS OF THE FARADIC AND OTHER INTERRUPTED CURRENTS.

By H. Lewis Jones, M.D., F.R.C.P.,
Medical Officer in Charge of the Electrical Department, St. Bartholomew's Hospital.

The object of this paper is to bring to the notice of the medical profession the results of an examination of the characteristic curves of certain medical induction coils. These have been taken by means of an instrument known as Duddell's oscillograph. The interest of these curves lies in the indications which they seem to afford as to the proper construction of medical coils. To supplement them I have also to show some tracings taken in the same way of other forms of interrupted currents, and hope to make a few remarks upon these as well.

I do not propose to enter at any length into the electrical technicalities of the subject, because I do not consider that the Section of Medicine is the proper place for such details, however interesting they may be to those who have specially studied the applications of electricity to medical practice; and I feel very great regret at the action of the British Medical Association in not affording its members the facilities of a subsection in electro-therapeutics, a deficiency which I sincerely hope to see rectified in time.

Although the honour of bringing these results to the notice of this meeting is mine, I wish to state at the outset that this paper is the outcome of work done in conjunction with Dr. Head and Dr. Reginald Morton.

The interest which I have long felt in the measurement of induction-coil currents for purposes of exact diagnosis received a fresh stimulus last winter from the problems brought to me by Dr. Head in regard to medical coils and their effect upon sensory nerves. In pursuing the questions raised by him the idea of trying to obtain tracings by means of the oscillograph occurred to us, and later on Dr. Head brought me some actual tracings of medical coil currents obtained with that instrument. We were so impressed with the clearness of these tracings that we decided to investigate further, with the results which I now am about to show to this meeting. A difficulty which arose at the outset was due to the irregular action of the interrupting hammer devices used with coils, and we then called in the mechanical skill of Dr. Reginald Morton, the medical officer in charge of the electrical department at the London Hospital, and he has himself constructed for us some of the apparatus upon the table, without which it would have been almost impossible to proceed with our investigations.

The discharges of a medical coil, if we consider those of the secondary winding, which are most commonly employed, consist, as is well known, of a series of electrical impulses or waves of current, alternating in direction and unsymmetrical. From theoretical considerations this must be so, but the actual shapes of the waves, and their actual duration have not hitherto been demonstrated in the clear way in which they can be done to-day. In an examination into this point made by myself in 1892, towards the expenses of which I received a grant from the funds of this Association, I was able to show that the discharges of a coil might be of comparatively long duration, much longer than was believed at that time to be the case, and also that the two waves—namely, those at make and at break—might interfere with each other under certain conditions of the vibrating hammer. It is necessary to mention that Dr. Kellogg had taken tracings of induction-coil currents some years earlier, and that the same points can be discerned in his tracings, if due allowance be made for the inertia of his recording apparatus, which had the effect of degrading the finer variations of his curves to a certain degree.

By way of definition, let me say that in considering the medical coil we have to think of three separate currents or circuits: (1) The secondary current, which is an alternating current; (2) the exciting current or inducing current or magnetizing current—that is to say, the flow from the battery through the primary coil and interruptor; (3) the extra current of the primary, which is a current induced in the exciting circuit at the moment of rupture of the exciting current, and one which can be led off by suitable connexions for purposes of medical testing and treatment. This requires special arrangements, if it is to be traced by the oscillograph, and is not shown in the tracings to-day. In many of the tracings the curve of the exciting current is shown above the induced current, an arrangement which adds to their value by making their interpretation more easy. In Fig. 6 it is below.

In order to illustrate the appearance of oscillograph tracings, and to explain what is to follow, I will first show two slides which are not tracings of induction coils, but which I have made to show the effect of iron in altering the time element of a circuit carrying a varying current. The first is a circuit of very low inductance, and consequently the current rises almost instantaneously to a maximum, at which it remains steady until broken, when the return to zero is also almost instantaneous. The second is the same circuit, when modified by the introduction of a coil of a few hundred turns of wire wound round an iron core. In the first the current reaches its full value in a time which is not

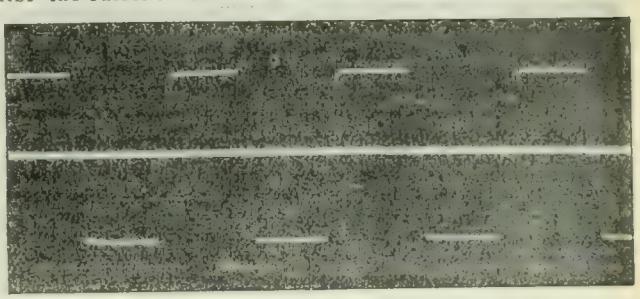


Fig. 1.

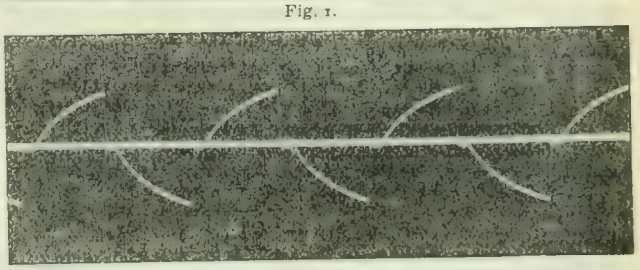


Fig. 2.

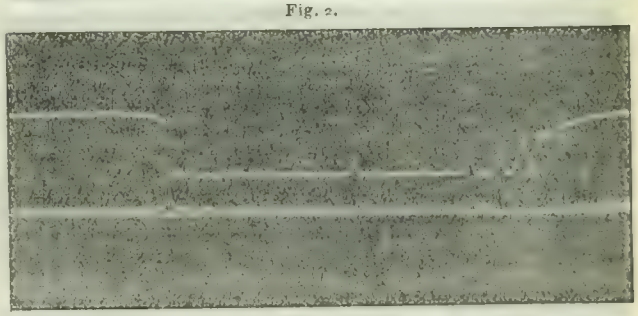


Fig. 3.

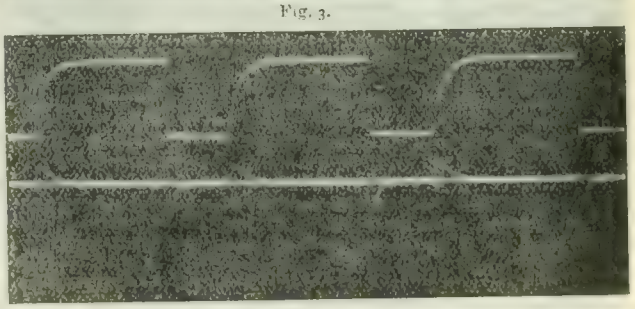


Fig. 4.

more than $\frac{1}{100}$ of a second; in the latter it has not reached a steady state after $\frac{2}{100}$ of a second, but is still rising when the break comes (Figs. 1 and 2).

The tracings taken by the oscillograph employed in this investigation are taken on a moving photographic plate. The speed of the plate is four metres per second in all cases, and this permits of measurements of the duration of the different current waves, and also of their direct comparison, so far as times are concerned. The length of each slide represents about $\frac{1}{25}$ of a second. The actual height of the rise and fall of the waves is adjusted to suit the capabilities of the measuring instrument, just as the magnitudes of current might be adjusted before application to the human subject.

Proceeding now to an examination of the current waves of medical coils, we find that several points are illustrated by the tracings of the oscillograph. First, it shows that the vibrating hammer, used commonly as an interruptor, is in need of attention, for it is apt to be a defective device, and does not always produce clean, sharp makes and breaks. In the next figure a tracing is given of the exciting current, as influenced by a form of interruptor in common use, and in it six inadequate attempts at contact can be counted before the proper establishment of the steady flow at make, while at the break of circuit there are also two irregularities (Fig. 3)

As each of these partial contacts is reflected in the curve of

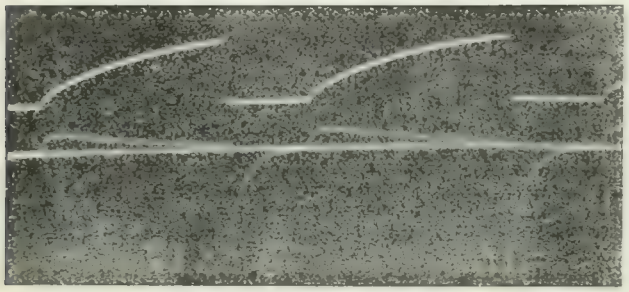


Fig. 5.

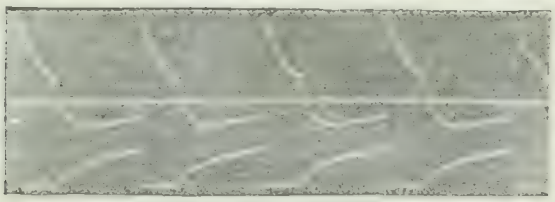


Fig. 6.

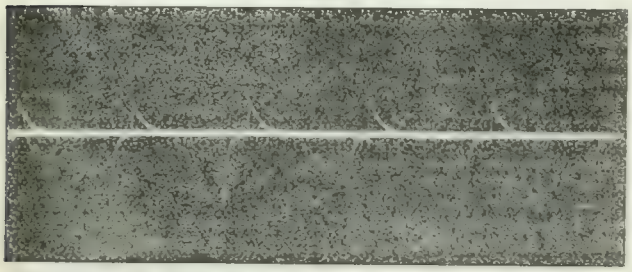


Fig. 7.

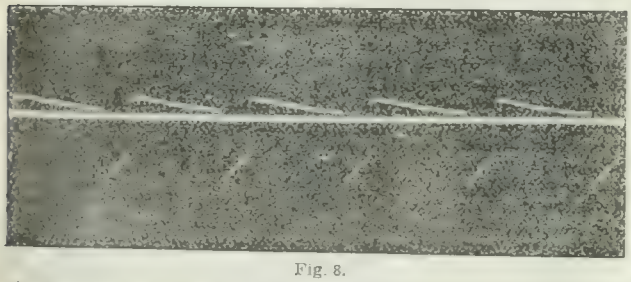


Fig. 8.

the secondary circuit, it is thus seen that the secondary current of a coil so fitted is one of great complexity, and one finds in practice that it is highly disagreeable. We also learn from the tracing that the rate of this type of interruptor is slow. In the slide shown each interval lasts $\frac{1}{20}$ of a second, and each impulse about $\frac{1}{50}$ or more; the whole cycle, therefore, occupies $\frac{1}{70}$ of a second, a frequency which is not very suitable for medical application.

Induction coils with auxiliary electro-magnets for operating the hammer, especially when the hammer itself is heavy and vibrates up and down, give these irregular currents of low frequency. The shocks of such coils are disagreeable, and they are bad forms of instrument for electrical testing, and for most forms of electrical treatment.

The next figure shows the character of the current waves of a coil with a long secondary and auxiliary electro magnet as it occurs when the iron core is removed. The effect of the iron of the auxiliary magnet is still present. The upper curves show the growth, the period of steady flow, and the abrupt rupture of the exciting circuit, while the lower show the currents induced in the secondary coil. It is easy to see which one of the waves corresponds in time to the make and which to the break of the exciting circuit; the former rises less abruptly from the zero line, and is a lower and a longer wave than the latter, and their respective durations as measured are $\frac{1}{300}$ and $\frac{1}{500}$ of a second, and the frequency of the interruptions in this particular instance is one of 80 per second (Fig. 4).

In the next figure everything is as before except that the iron core has been inserted. The change in the contours of the tracings is profound, for the wave of current at break now lasts more than twice as long (or about $\frac{1}{300}$ of a second), while the current at make is prolonged to more than $\frac{1}{100}$ of a second, that is to say, it has a duration five times as long as was the case when no iron core was present (Fig. 5).

It is also instructive to compare the upper curve which represents the exciting current. Its rise is slow, so slow that it has not reached its steady state at the moment of rupture, although the rate of interruption is a slow one.

Another interesting point is the effect of alterations in the speed of the interruptor. As would naturally be expected from the duration of the waves, a speed can be reached at which the waves at make and at break begin to tread upon each other's heels, so to speak, so that before the make wave is over it is suddenly reversed by the wave at break, and vice versa. The next figure shows this point clearly (Fig. 6).

Fig. 7 is a tracing which, in my opinion, represents an almost perfect type of induction current. Note the quick rise and fall and the distinct interval between the pairs of impulses. If the make current (the upper wave) could be made equal to the wave at break, without increasing its duration, it would represent a very good current for muscular stimulation. The introduction of an iron core ruins it, as the next slide shows (Fig. 8).

The point which comes out most strongly in these tracings is the influence exerted by the iron core upon the duration of the currents of a coil. The effect of long lengths of wire is similar, but is less in degree, and in both cases the effect is an effect of the inductance of the circuit. Briefly, it may be said that the inductance of a long coil is greater than that of a short coil, while the presence of an iron core increases both proportionately and very largely.

Duchenne long ago maintained that the physiological effects from long secondary windings were not identical with those from short windings. At that time electrical science could offer no explanation of this. It was suggested that the difference was a matter of electromotive force, which is greater with a long secondary. This did not satisfy Duchenne, because the differences observed by him were independent of the mere strength of the electromotive force or current. Differences in these points may be adjusted, and were adjusted by him, but the innate differences in quality remained, in spite of adjustments. The essence of Duchenne's contention was this, that the ratio of motor to sensory effect was not identical in the two types of secondary coil. With long coils the sensory effects were strong at weak degrees of motor effect, with short coils sensory effects were weak at strong degrees of motor effect.

These tracings afford an explanation. They show that duration of wave is an important factor, and further tell us that the presence or absence of an iron core determines the duration of the impulses even more than the length of the windings. Dr. Head has been able to satisfy himself that sensory effect and pain predominate in discharges of long duration, and are at a minimum in those of shortest duration. In my own work I have found that for testing muscles with comfort to the patient the shortest impulses are the best. Waller, working with condenser discharges, has found the same thing.

The work which has been done by Dr. Head, by Dr. Reginald Morton, and by myself with the various coil currents whose tracings you have just seen, indicates that for painless, or nearly painless, testing of muscles the shortest impulses are best, and coils with short windings and without iron cores afford the most agreeable form of current.

As induction coils must have an iron core if they are to be operated by the ordinary vibrating spring contact-breaker, we are at once confronted by a constructional difficulty, and must inquire afresh as to whether it is possible to employ an iron core without sacrificing any essential point, and the

answer to this is in the affirmative, provided we are prepared to be content with something a little less than the best, and will take pains with the manufacture of our contact-breaker by making it very light and springy. Moreover, we may greatly reduce the slowing effect of the iron if we use as a regulator to the coil the device of a metallic tube or sleeve to slide over the core or over the primary windings, as is commonly done.

When all has been said and done with regard to medical induction coils, we have to confess that the instrument labours under very serious objections if accurate work is wanted. The inequality of the impulses at make and break, the unknown duration of the intervals between successive impulses, and the capriciousness of the hammer vibrator render measurements of current not only untrustworthy but actually misleading as a guide to physiological effect. The instruments used in measurement measure the mean or average current, but the physiological effect depends not on the average current, but on the magnitude, the suddenness, and the duration of the individual waves which compose it. Thus an instrument suitable for use with coils in general cannot be constructed, although instruments have been made which can give useful indications of measurement when working with an individual coil.

When the question of the use of coil currents in diagnosis is examined we find that there is no apparent reason why interrupted currents from other sources should not be used in their stead. Dr. S. Leduc (Nantes) has recently called attention afresh to this matter, and by using a continuous current source and a mechanical interruptor he has been able to produce all the effects upon muscle which are generally considered to be peculiar to the induction current or "faradism" as it is commonly called by medical men.

The interruptor of Leduc is a very ingenious device which permits of alterations in the durations of the impulses without altering their frequency, and he has drawn some very valuable information from his experiments with this apparatus, an account of which and of his investigations will be found in the *Archives d'Electricité Médicale* for September, 1903.

Recently I have been working with a mechanical interruptor which differs from that of Leduc in giving alternating impulses instead of simple interruptions. To my mind this has an advantage, because the chemical effects of electrolysis are eliminated. I have found this instrument of great value for purposes of diagnosis, and have employed it, to the complete exclusion of the induction coil, for nearly six months in the electrical department at St. Bartholomew's Hospital.

Its advantages are as follows: The current used in testing can be measured directly in milliampères; the volts applied can be measured equally well if desired, the frequency of the interruptions can be regulated and measured in a moment, and, finally, the painful effect upon the sensory nerves of the patient is reduced. I believe that, with certain minor modifications, such as the addition of a speed counter, and of a means of shortening the duration of individual impulses by extending the intervals of no current, this instrument is bound to supersede the induction coil altogether when exact work and measurement of results are wanted, although, no doubt, the coil in a modified form, perhaps, will continue to hold its ground for a long time to come as a means of producing simple excitation of nerves and muscles.

The curve of this machine I now show once more on the screen in order to draw attention to its abrupt rise and fall, to the symmetry in its alternate impulses, to its duration, and the duration of the periods of no current (Fig. 1).

The photograph was taken when the duration of each impulse was $\frac{1}{300}$ of a second and the frequency was about 100 per second. Leduc has specified the best duration of an impulse for muscle stimulation to be $\frac{1}{1000}$ of a second, and he also attaches importance to the duration period of the intervals of no current; and I hope on some future occasion to be able to show a modified apparatus on these lines in which these points may be realized, and a scientific instrument placed in the hands of those who wish to make use of interrupted currents for purposes of diagnosis.

BRADYCARDIA.

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[Abstract.]

Bradycardia must be divided into two different types true and false, the former denoting infrequency of heart action, the latter reduced rate of peripheral pulsation, without corresponding infrequency of the heart. With the former alone this contribution is concerned.

The causes of bradycardia may be divided into exoteric and esoteric. Under the former group must be classed constitutional influences which sometimes appear as family idiosyncrasies; nervous effects, whether in the form of organic changes in the nerve centres or the inhibitory nerve trunks—including reflex influences from hepatic, gastric, renal, and other distant causes of irritation—or functional, as in conditions like melancholia or hypochondriasis, and in certain remarkable instances which have frequently been referred to, in which, by volition, the rate of the heart may be profoundly affected; toxic, in which a large number of different poisons produce remarkable effects—amongst these are inorganic poisons, as some of the heavy metals, vegetable poisons, as tobacco and digitalis, microbic poisons, such as diphtheria and influenza, and retained waste substances, as in jaundice and uraemia; affections of the heart and arteries constitute the most important group of all cases of true bradycardia, interstitial myocarditis and arterio-sclerosis forming the most powerful factors in bringing about senile bradycardia. Amongst the esoteric causes must be considered the intrinsic factors concerned with the heart which lead to the infrequency of its pulsation. Undoubtedly there are instances in which the whole heart participates in the lessened rate, and in which, therefore, it is probable that the venous sinuses have lost some of their irritability. In other instances there can be no doubt that the auricular portion of the heart beats two or three times for each ventricular systole. Several instances of this have been proved by simultaneous tracings from the jugular veins and the apex beat or radial pulse. In certain of these instances neither apex beat nor radial pulse shows the least sign of any movement corresponding to the auricular systole, but in others tracings both from the apex beat and from the radial pulse show little impulses corresponding to the auricular systole. The question arises in such cases whether the auricular contraction is in itself sufficiently powerful to send an impulse by means of the ventricle and the arterial column of blood, or whether a slight and ineffectual ventricular pulsation takes place. From every point of view the former supposition appears to be the most probable. In either event it must be obvious that a block takes place at Gaskell's bridge.

There are two chief varieties of the affection: one in which the alteration in rate is constant, the other in which it is paroxysmal. It must be admitted that these two varieties occasionally pass into each other. Some patients who have been under my own observation have, after a few attacks of paroxysmal bradycardia, settled down into the persistent type; while, on the other hand, a persistent bradycardia of about 40 pulsations per minute may have paroxysmal attacks in which the rate sinks to about 20.

The clinical features attendant upon bradycardia may be inconspicuous, or, on the other hand, may be profoundly disturbing. In mild cases of persistent bradycardia the usual clinical features are those of weakness and breathlessness, sometimes along with anginous attacks. On the other hand, in paroxysmal bradycardia there is apt to be faintness and giddiness along with apoplectic or epileptic attacks. In many instances considerable digestive disturbances are found, while more rarely glycosuria or some other apparently bulbar symptom may be present.

In attempting to formulate any pathological explanation it is necessary to bear in mind the distinction between persistent and paroxysmal bradycardia. It is probable that in the former the great factors inducing the condition are the myocardial and arterial lesions (with the exception of such cases as depend upon lesions of the medulla or vagi), while, in the latter, changes in the cerebral vessels are probably the causal factors. In sclerosis of the cerebral vessels the blood supply to the brain is inadequate to meet any stress, and ineffective when the stress goes beyond a certain point. As the result of this incompetence there is a condition of irritable weakness of the inhibitory mechanism, and impulses are sent down to the heart which lead to the features of the attack.

As regards treatment, there can be no doubt that rest is the most important therapeutic agent. But, along with this, various respiratory exercises are of real importance, while attention to the digestive processes is imperatively necessary. Amongst drugs, iodides and hydriodic acid are most beneficial in the attempt to restore a healthy condition of heart and vessels; nitro-glycerin, or some other nitrite, is useful if there is any tendency to vascular spasm; the

bromides have a certain utility, probably by lessening the action of the vagus; while strychnine and digitalis, or strophanthus, are undoubtedly beneficial when cardiac failure threatens to ensue.

ATELEIOSIS AND PROGERIA:

CONTINUOUS YOUTH AND PREMATURE OLD AGE.

By HASTINGS GILFORD, F.R.C.S.Eng.

ATELEIOSIS (ἀτελείωσις: not arriving at perfection) and progeria (πρόγηρος: prematurely old) are the names which have been given to two opposite forms of disorders of development. In ateleiosis the development of the body is delayed or arrested; in progeria it is accelerated. In both the interference with the normal course of development is so extreme and so abrupt as to characterize disease and not a mere variation within the limits of health. Both make their appearance without apparent cause, and give rise to characteristic physiognomies. They are therefore quite distinct from ordinary symptomatic infantilism and senilism.

Ateleiosis.[1]

Of ateleiosis there are apparently two varieties. In the one, which may be termed the asexual variety, there is conspicuous delay of development of the whole body, some organs or parts being affected more than others, the sexual organs being most backward of all. In the second, or sexual variety, there is in early life a similar delay of development of the body as a whole until puberty is reached. The sexual organs then ripen, fusion of the epiphyses takes place, and the individual affected becomes set or stereotyped into a being who is in some respects a child and in others a miniature man or woman. An adult of the asexual variety retains the coarser features of a time of life near that at which his disease began: while an adult of the sexual variety combines with the stature, proportions, and physiognomy of childhood all other indications of maturity. These, again, let it be said, are *apparently* two varieties of the same disease, but possibly their differences are so great that some may regard them as specific diseases. The reason for and against these respective views will appear after some cases have been described.



Fig. 1.—E. G. (on the left), aged 12 years, standing beside his normal brother of 6 years. Except that his face is more lined, E. G. looks the more juvenile of the two. His physiognomy, proportions, the rounded shape of his body and limbs, and especially his sexual organs, are all childish.

A. *Ateleiosis with Defective Development of the Sexual Organs: Asexual Ateleiosis.*

This is a form of infantilism, but, unlike ordinary infantilism, it does not seem to have any connexion with cretinism, syphilis, congenital heart disease, pancreatic insufficiency or any other of the known causes of delayed development. It is not a symptom, but apparently a disease in itself. It is more correct to speak of it as a delay of development than as an arrest, for those affected with it may continue to grow and develop for many years after these processes commonly cease. It resembles cretinism in the time of its appearance, for though it may begin at almost any period of life it favours that of infancy. As in cretinism, too, the features presented by those affected with the disease differ according to the time of onset. It is, consequently, best divided into three forms according as it begins, (1) before birth, (2) in infancy or early childhood, or (3) in the later stages of development.

It will therefore be recognized that though it is perhaps right to say it is a form of infantilism, its subjects are not necessarily dwarfs, for it may not show itself until the average height has been reached.

CASE I.

E. G., aged 12 years, was born in London, is the eighth child, and the only abnormal member of the family. When between 6 and 7 months old he was taken to a children's hospital as an out-patient, but the mother is unable to say what was the nature of the ailment. She says "the child was plump, but had no proper bones, only gristle": so it is probable that he was affected with rickets. He soon improved, and in a few months was apparently quite well. When about 2 years of age he seemed to stop growing, though he was in good health at the time, and no cause could be found for the delay of development. At 6 years of age he had slight diphtheria, and at 8 measles. During this latter illness he had convulsions, which continued on and off for two hours. After this he had them occasionally until he was 10, but he has had none since. First dentition began at six months, but the mother cannot say when the permanent teeth first showed themselves. No measurements have been taken, though the mother is sure he has grown a little since he was 3 years old. He now wears the same sized clothes that he wore at 7, but the boots are a little larger.

General Appearance.—He is an intelligent-looking boy, with a broad, flat face, retroussé nose, and thin lips. The head is flattened on the top. The hair, which is fine and of a light-brown colour, encroaches on the forehead and reaches half-way down the temples. The whole configuration is that of early childhood. The physiognomy and shape of the head are childish, the ears being set low down and in a forward position with regard to the vertex and occiput, as in early childhood. The head is large in relation to the rest of the body, while the limbs are short. Hence the middle of total length is more than 3 cm. above the pubes and not close to the pubes as it should be at his age. He has square, high shoulders. There is an exaggeration of the antero-posterior curve of the dorso-lumbar spine. There is no enlargement of the epiphyses, beading of ribs, nodosity of skull bones, notched teeth, nor any other sign of rickets or syphilis. The thyroid gland seems to be of normal size, consistency, and shape for one of his height. He shows no sign of cretinism. He is in the third standard at school, and is said to be quick of comprehension and to have a fair memory. Though fond of play, he possesses more restraint and is older in manner than his brother of 6, who is a head taller than himself. He is about as strong and eats as much as do most boys of his size. The faeces are said to be normal. His urine is of specific gravity 1018, and contains no abnormal constituents. The bones of the skeleton are slightly formed, and the muscular prominences not easily felt. A radiograph of the hand when compared with a radiograph of the hand of his brother of 6 shows that while the bones of E. G. are smaller and slighter, his epiphysial ossification is about one year behind that of his brother—that is, it is like that of a normal boy of 5 or 6. Dentition is backward, and the teeth are crowded. One molar of the temporary set still remains, while the right lateral upper incisor is only half through the gum. The anterior part of an upper molar is showing on the right side, and there is a corresponding molar of the lower jaw, but no other molar teeth are present, the incisors, canines, and premolars apparently filling the alveolus. The lower incisors are small, but the other teeth seem to be of the usual size. Four of them are carious. The external organs of generation are like those of an infant in size and appearance, and the testes

apparently have not descended, for they cannot be felt. He is much more backward in this respect than his brother of 6.

Remarks.—It will be noticed that while the development of E. G. is backward all round, some parts are more backward than others; in other words, the delay of development is irregular. Hence, if we estimate his age from the condition



Fig. 2.—Radiograph of the hand of E. G., aged 12, showing actual size and the state of ossification, which is like that which is usual in children of about half his age.

of the generative organs, we should say he would be no older than an infant at birth; his physiognomy and configuration of the head resemble that of a child during its second or third year, while the head circumference is a little less than that which is usual at 2 years, and the height and proportions of the body and limbs are those of a boy of a little over 3 years. Judged by the size and appearance of his bones he is only 3, but their epiphysial age is equal to that which is usual at 6 or 7. His teeth are apparently those of a boy of 11, and his actual age is 12. Hence the development of different parts of his body varies greatly. Variation is, of course, natural to all living things, but not to such a degree; and for a boy of his age to differ so considerably in the development of different parts must be regarded as an indication of disorder.



Fig. 3.—Case IV, aged 10. The sizes of the bones and of the whole hand and arm are about equal to those of a normal child of 3 years: carpal and epiphysial ossification is like that which is usual at 5. Compare with radiograph of Case I.

B. *Ateleiosis with Normal Development of the Sexual Organs: Sexual Ateleiosis; "Tom Thumb" Dwarfs.*

This variety, if it be a variety of ateleiosis, differs from the preceding or asexual form in the following particulars:

1. It is more often hereditary. Asexual ateleiosis cannot, of course, be passed on from parent to offspring by direct descent, and no instances are known in which it is seen among brothers and sisters, whereas in a large proportion of

the sexual variety one or other of these forms of heredity occurs.

2. The sexual organs apparently mature at the usual age, and their maturation is accompanied with some of the more remote indications of puberty—namely, the appearance of sexual hair, and in women the increased development of the pelvis and of the breasts.

3. In men the muscular system develops to a greater extent than it does in asexual ateleiosis,

4. and also the skeleton.

But it is remarkable that, though the epiphyses fuse with their diaphyses at puberty, seemingly as they do in normal individuals, there is hardly any of that growth of bones in length and in thickness which is so characteristic of normal puberty.

Perhaps the best typical instance of this form of dwarfism that we know is furnished by "Tom Thumb" and his wife. These had the large heads, short limbs, short, broad, flat faces and bridgeless noses of early childhood. In short, their whole configuration was childish like that of asexual ateleiotics.

Charles Stratton, or "General Tom Thumb," born in 1832, was above the average size at birth, but seemed to stop growing when about 5 months old. He did not, however, cease to grow at this age, for his later photographs show that he was undoubtedly bigger than when his earlier photographs were taken. He married Lavinia Warren in 1863 when 31 years old, and had one child of ordinary size, who was born in 1866 and died from meningitis the same year. He died in 1883, at the age of 51, from apoplexy.[2] Mrs. Stratton was quite as typical an instance of the disorder as her husband. She was equally child-like in size and proportions, and her physiognomy so resembled that of Tom Thumb that the two looked more like brother and sister than man and wife.



Fig. 4. Cases III and IV. On the left is a man of ordinary stature, next to him is Case III, aged 38 (photograph taken two years after the account was written), next to him his son of 12, and on his left his sister, aged 8.

It will be found that, while other instances of this form of dwarfism more or less closely resemble Tom Thumb in appearance, the likeness in others was not so striking. This may be said of the cases about to be described. Yet in them, as in other instances, the divergence is, in the main, a superficial one, and is only to such an extent as may be noticed in all diseases. They possess those characters which serve to distinguish this variety of ateleiosis from all other disorders. Their dwarfism is of very pronounced degree, is apparently idiopathic, is hereditary, takes a form which, apart from stature, sharply defines those of the family who are dwarfs from those who are not dwarfs, and gives to the dwarfs some of the features of infantilism.

This sexual form of ateleiosis approaches so nearly to the normal that, inasmuch as it is sometimes transmitted from father to son, there seems a possible danger of the propagation of dwarf families and the perpetuation of a dwarf type. But, if we may judge from the case about to be described, this evil is guarded against by the fact that there is a tendency for such beings to become sterile. In other words, the propagation of sexual ateleiosis may terminate in asexual ateleiosis.

CASE II.

A. A., aged 38, unmarried, is said to have been a small child, "like a doll," at birth. She continued growing until she was 13 or 14, and definitely ceased growing at 16, about a year after menstruation began. The mother was of ordinary stature, but her father, who lived to 78, was only about 120 cm. high. He was exhibited as a dwarf in shows for twenty-one years, part of the time being with Robert Hales, the well-known Norfolk giant. A. A.'s uncle, on the father's side, was a tall man, who was in the police force in London. She has one brother, who is a dwarf like herself, and also a dwarf nephew, both of whom will be described presently. A. A. is a lively woman of good intelligence, the mistress of a county post and telegraph office. She wears gloves of 00 size and shoes of "children's sevens." She looks healthy and shows a tendency to obesity. Her features are small; her face is inclined to flatness, and the type is childish. She resembles her brother in appearance. The hair is abundant; the nails delicate and well formed. The teeth are crowded: the lower incisors seem smaller than usual; many teeth are absent or decayed, and the last molars have not erupted. The knuckles of the hand are prominent and the lobules of the ear almost absent. The head is flattened on the top and is almost cone-shaped, with the rounded apex of the cone in front. The heart sounds are normal and the thyroid gland of fair size, in proportion to that of the body. Liver dullness is natural. Pubic and sexual hair are abundant and the breasts of fair virgin development. So far as one can judge, the digestive, urinary, and generative organs are normal. Her muscles are of good development for one of her size, and she can walk three or four miles without getting tired.

CASE III.

R. A., aged 36, brother to the above, is a boot rivetter earning 15s. a week. He was of the usual size at birth, but nearly bled to death from some defect in the tying of the umbilical cord. It was first noticed that he was not growing when he was about 1 year old, but he thinks he grew more quickly at 14 or 15, and ceased altogether at 17 or 18. He had inflammation of the lungs when 11 years old, but has had good health since. Puberty set in when he was between 16 and 17, but he said his facial hair did not grow thickly until he had turned 20. He married at 25, and has had seven children. Four died when about 3 months old, one of whom was a male, while three were females. All four are said to have been dwarfs, but of this one cannot be positive. Of the three now living, the first is the dwarf-boy of 10, who will be described as Case IV; the second and third are well-developed girls. He is very like his sister in physiognomy. His head is like that of his sister, cone or pyramid-shaped, with the angles worn down and rather flat on the top. Its circumference is that which is usual at about 12, while his height is that of a boy of 10. He is of average intelligence, talkative, and of good disposition. His teeth are all of the permanent

set, and are crowded and irregular, many of them being decayed or absent. Of the molars only the first are erupted. His digestive, urinary, circulatory, and reproductive organs seem to be normal. The thyroid gland is of proportionate size. He is of fair muscular development, and can work all day without getting tired. A radiograph of his hand shows that ossification is completed, and that the bones and thicker than is usual in those of his age.

CASE IV.

C. A., a boy, aged 10, son of the above, was like other babies at birth, and it is not known when growth became abnormal. The father thinks he first noticed that his boy was not so big as he should be when he was about a year old. Since then he has grown very slowly, but no measurements have been taken. There is a normal sister of 6, who is taller than he is. The head is shaped like that of his father and aunt. Its circumference is that which is usual at 2. The face and the proportions of the whole body are like those of a child of about 4. He has passed the second standard at school, and seems to be well-behaved and of good intelligence. The thyroid gland is present, and is apparently normal. The teeth are of the first dentition, with the exception that two central lower incisors are just appearing through the gums, one milk incisor being absent and the other loose. The heart and other organs are normal, with the exception of the reproductive, the scrotum being like that of an infant, while the testes cannot be felt; but the penis does not seem to be quite so backward in development as the testes and scrotum. A radiograph shows that his epiphysial and carpal ossification resemble that which is customary at 5.



Fig. 5.—"Tom Thumb" and his wife, Lavinia Warren, are in the middle, "Commodore Nutt" and Minnie Warren at either end. All have the big heads, short limbs, rounded figures, and facial characters of childhood.

Remarks.

The adult male dwarf (Case III) is so well proportioned, seems so healthy, and, except in regard to his size, is so commonplace that one is at first inclined to regard him as an instance of normal dwarfism. But there are three strong objections to this view. In the first place, it is hardly possible that such an extreme shortness of stature should be due to mere natural variation. In the second place, apart from his facial hair, he has the physiognomy of childhood. His features are undeveloped and tend to the broad, flat form of early life rather than the long and more pronounced form of the adult. The lower part of the face from the nose to the chin is short when compared with the upper part. One can with confidence put him in the same class of dwarfism with Tom Thumb, and that the dwarfism of Tom Thumb was pathological there can be very little doubt. In the third place, and most important of all, his dwarfism is transmitted to his sons, and one of them is distinctly pathological, for not only is he a dwarf of pronounced character but he is a cryptorchid.

The cryptorchid dwarf is of special interest from another point of view. There has seemed to be good reason for believing that the form of nanismus, or nanosomia, which is termed ateleiosis, consists of two varieties—the sexual and asexual, but hitherto this opinion has been formed solely upon the structural affinities of these two forms of dwarfism. But here is a man whom we have good reason to believe is a sexual ateleiotic, and among his children is a boy who is apparently an excellent example of asexual ateleiosis. Compare this boy (Case IV) with a boy of nearly the same age who is undoubtedly an asexual ateleiotic (Case I), and it will be recognized that they are of the same type of dwarfism. They are, indeed, so much alike that when they were shown at the annual meeting of the British Medical Association, those who saw them supposed they were brothers, and when they were apart the one was frequently mistaken for the other. Further, these two boys are progressing at nearly the same rate, for since the above was written two years have elapsed, and it is found that while Case I has gained exactly 3.1 cm. in that period, Case IV has gained 2.8 cm., a trifle less. Both have gone up two standards at school, and both look as if they had not altered in the least in the two years since they were last seen.

Chief Measurements of Cases I to IV.

	Case I. Age 13½.	Case II. Age 38.	Case III. Age 37½.	Case IV. Age 12.
	Kg.		Kg.	Kg.
Weight	15.42	—	33.11	16.32
	Cm.	Cm.	Cm.	Cm.
Height	93.1	98.5	132	95.3
Sole of foot to fork	41.3	—	57.8	42.5
,, ,, pubes	43.8	—	62.8	46.4
,, ,, navel	54.6	—	72.4	54.2
,, ,, top of sternum ...	78	—	1.06	80.3
Face.—Vertex to base of nose ...	11.4	—	15.4	12.7
,, chin	15.4	—	17.5	16.8
Head.—Diameter	13.5	13.7	14.8	13.8
Length	16.7	17.1	18.4	16.7
Circumference	47.8	49.5	53.2	51
Chest.—Circumference	48.8	67	75	—
Upper limb.—Across extended arms.	90.7	—	132	95.5
Acromia to external condyle	14.5	16.1	22	15.5
External condyle to styloid process	13.7	15.5	20.5	13.8
Styloid process to knuckle of middle finger	5	5.6	7.5	5.3
Middle finger	6.1	6	8.7	7
Lower limb.—Trochanter to lower edge of patella	23	29.4	33	24.5
Lower edge of patella to internal malleolus	19.8	25	27.7	20.2
Internal malleolus to ground	3.7	4	5.3	4.5
Heel to first metatarsal joint	10.6	11	14.8	10.7
Great toe	3.4	4	5	3.7
Between anterior superior spines of ilia	—	18.6	—	—

Progeria.

In progeria we have a disease which is in some respects the exact opposite to the foregoing, and in other respects is allied with it. Only two well-marked instances have so far been recorded.[3] Of one there are portraits extant which show very plainly the progress made by the disease from its onset at first dentition until death, which took place from angina pectoris at 18. An examination of the body was made after death. The other was so extraordinarily like the above that there can be no question of the disease being the same. In this case death occurred from syncope at 17.

The main features of the disease may be divided into three categories, according as they show premature old age, delayed development, or some approach to normal development.

Accelerated development, or senilism, was shown in the facial and general appearance, attitude, loss of hair, muscular and fatty emaciation, and in the mode of death. After death extensive atheroma of the heart and aorta, slightly fibrous (senile) kidneys, shrivelled suprarenal capsules, and atrophied intestines confirmed the view taken during life.

Delayed development or infantilism was shown by the stature and proportions of the body, which were those of late childhood, by the backward development of the membrane-formed bones, and by the dentition.

A near approach to the normal was indicated by the size of the liver, the relative size of the cartilage-formed bones, and by the condition of the brain and sexual organs.

In both of these cases the most striking feature was undoubtedly the premature senile degeneration. This could be traced in the photographs from the beginning. After 16, or thereabouts, it was very conspicuous, and gave the dwarfs an appearance which attracted very embarrassing attention when they were among strangers. Their behaviour in general, and manner of standing and walking, were elderly; their hands were knotted, and the backs of the hands and wrists showed swollen veins and conspicuous tendons. Their faces were wizened and emaciated, and were surmounted by a scalp, which at a distance seemed absolutely bald, but on coming nearer it was evident that it was sparsely covered with a growth of fine white hair, and was intersected

with a network of extremely conspicuous veins. The whole body was almost devoid of fat, the skin was dry and shrivelled, and the muscles so emaciated that the ribs and bony prominences stood out like those of a living skeleton.

For such a condition no name seems more fitting than progeria, or premature old age. It furnishes a striking contrast to the asexual form of ateleiosis (not arriving at perfection). These two names of progeria and ateleiosis have been arrived at after much consideration, and for them I have to express my indebtedness to Mr. James Rhoades and Professor Arthur Sidgwick.

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THE MATERNAL HEART IN PREGNANCY AND THE MANAGEMENT OF PREGNANCY COMPLICATED BY HEART DISEASE.

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Burnley.

In the routine duties of a general practitioner questions of the greatest importance have to be faced, and life or damaged health, or it may be death itself, depends on the answer given. This serious responsibility is almost certain to fall upon every practitioner in connexion with the question of pregnancy and heart disease. The occurrence of valvular disease of the heart is of such great frequency that its complication with pregnancy is bound to arise. In my limited experience I have seen not a few deaths directly due to indiscreet conception, and many lives ruined by shattered health on the same account.

One of my earliest experiences during the first year of entrance upon general practice was the attendance upon a woman with mitral stenosis, who died undelivered during labour from failure of the heart. Extensive dropsy was present, and she was so enormously swollen that when labour set in she could only lie in bed propped up in one position, and it was impossible to make even a satisfactory vaginal examination. Her breathing was so embarrassed that attempts to administer chloroform only added to her distress, and she implored to be left alone. After thirty hours of labour and suffering she died.

From that time the question of heart disease complicating pregnancy has been to me a matter for careful inquiry. For many years I conducted systematic investigation into the circulation of pregnant women with healthy hearts to find out the natural changes in the circulation, in order to obtain the explanation how these changes have such a deleterious influence on patients afflicted with valvular disease. Although the results I have obtained are far from fully explaining the whole matter, they have, however, brought to light a great variety of phenomena whose interpretation will yet throw a flood of light on many of the most obscure problems of cardiac action. As I do not understand the meaning of many of these changes, I shall only refer here to those which I have been able to interpret, and which have a bearing on the question in hand.

Limiting myself strictly to the evidences affecting the circulation, I found a series of changes arise which, though in one sense abnormal, might in another sense be considered as incidental to the pregnant state. These conditions were:

(*a*) Limitation of the field of cardiac response.
(*b*) Changes in rate and rhythm of the heart.
(*c*) Dilatation of the right side of the heart.
(*d*) Tendency to oedema of the lungs.
(*e*) Tendency to overfilling of the veins of the legs.
(*f*) The occurrence of marked pulsation in the veins of the neck.

I will not spend time in entering fully into these evidences and will touch on some of these points very briefly. One of the most reliable signs of cardiac inefficiency is to be found in the manner in which the heart responds to effort. This is generally shown by a shortness of breath or attacks of palpitation on such exertion that the individual was wont to perform with the greatest comfort—what I have called a limitation of the field of cardiac response. From the earliest times in pregnancy after the first or second month, and long before the bulk of the uterine contents call for an appreciably increased supply of blood or greater force of the heart's action, one may observe that the heart is not as efficient as before. This is frequently accompanied by changes in the rate and rhythm of the heart's action. There is not only a greater increase in the rate on slight exertion as from lying down to standing up, but unusual variations may be found continuously occurring, more particularly influenced by the respiratory movements—that is, an increase of the rate during inspiration and a slowing during expiration. Irregularity of a more disorderly type is present at one time or another in more than half of my cases. This irregularity consisted in the occurrence, sometimes at very rare intervals, sometimes with great frequency, of extra systoles of the ventricle—that is to say, where the ventricle would contract prematurely and before the auricle. To the finger the pulse would seem to miss a beat. In a sphygmographic tracing a small beat occurring may be shown, followed by a long pause. A simultaneous tracing of the jugular pulse with the radial would show the waves in the jugular due to the auricle appearing at regular intervals, while the small radial pulse due to the ventricular extra systole would be found to occur with or before the auricular wave in the jugular (Fig. 1). Less frequently I found the extra systole to be of auricular origin.

Note.—In the following tracings the movements in the jugular vein and of the apex are registered simultaneously with the radial pulse. As the presence of a pulse-beat in the radial is an evidence of a contraction of the left ventricle, the radial pulse is taken as a standard to determine the position in the cardiac cycle of any movement at the apex or in the jugular vein. The space E indicates in all the tracings the period of ventricular systole during which the semilunar valves are open, the effects of the ventricular systole being a little later in the radial than in the carotid or jugular. The time marked equals one fifth of a second.

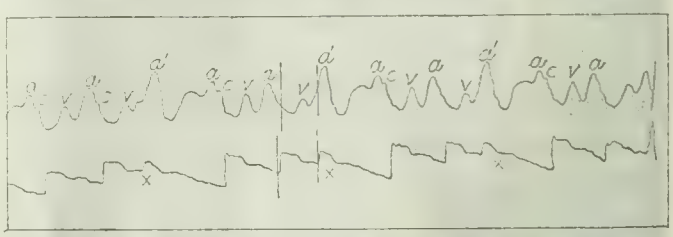


Fig. 1.—The beats marked × in the radial pulse can be seen to occur before the auricular waves *a'*, demonstrating that at these periods the ventricle has contracted prior to and independent of the stimulus from the auricle. Type of irregularity frequent in pregnancy.

If one watched a case during the later months of pregnancy, one would detect not only an increase of the cardiac dullness to the right of the sternum, but one could often detect distinct pulsation to the right of the sternum. I have not placed much reliance on the changes on the left side, because I found the results were marred by an alteration in the shape of the thorax. With increase of the abdominal tumour the apex beat may be felt in the fourth interspace. I have made a series of measurements of the chest during pregnancy and after labour in a large number of cases, and have found that the lower chest wall becomes considerably expanded. In some I have found the circumference of the chest before delivery 29 in., and some days after labour 25 in. One can see with this disturbing element how vain it is to rely for evidence on the percussion of the heart and the position of the apex beat. To add to the difficulty there is the great increase in the size of the breasts. This expansion of the chest adds further to the embarrassment of the heart's work, as indicated by the symptoms already described.

The circulation in the lungs is achieved chiefly by the right ventricle, assisted by the movements of respiration. The diminished expansion of the lungs shown by these measurements tends to embarrass the pulmonary circulation. When the patient lies for several hours in bed, the ribs pressed against the bed so that little movement is possible, the respiration is then mainly carried on in the upper part of the chest and is more shallow. On this account the blood is apt to become stagnant at the bases, and if we examine a pregnant woman towards the end of term we shall find at the bases of the lung behind, on the side on which she laid, numerous fine crepitations with the first deep inspiration. The significance of this sign has not been sufficiently appreciated. I have carefully noted in a great variety of conditions, such as in the early stages of failing compensation with valvular disease of the heart, in old people confined to bed by an accident, or after an operation, in such exhausting diseases as typhoid

fever, and found it often the first sign of the beginning of oedema of the lungs. The crepitations may disappear in the first instance after a deep inspiration, later they do not disappear, and I have frequently found the conditions gradually advance till there was dullness on percussion and absence of breath sounds, and at *post-mortem* examination the lungs were found engorged and sodden with dark blood. In normal pregnancies the condition rarely goes beyond the first stage, but I insist on it here as another sign of the nature of the circulatory changes caused by pregnancy.

The last symptom I have mentioned is the tendency for the jugular veins to become distended by waves of blood being thrown back by the right auricle and ventricle (Fig. 2).

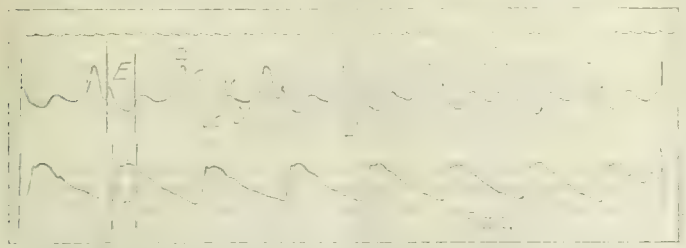


Fig. 2.—The jugular pulse is of the auricular type, and shows a wave, *a*, which, as it precedes the period E, can only be due to the systole of the right auricle. The fall *x* is due to the diastole of the auricle, and the wave *c* is due to the impact of the carotid pulse. From a female, aged 35, with mitral stenosis in the sixth month of her third pregnancy.

Although not present in all cases, yet it is such a frequent symptom in pregnancy, that I have come to look upon it not as an abnormal sign, but as merely an evidence of the distension of the right side of the heart. Apart from this, it is a symptom of the greatest value, as it affords us the means of recognizing the changes that take place in the right side of the heart; and I shall have occasion later to demonstrate its great importance in interpreting certain changes in the heart's action.

The symptoms just described indicate an inefficiency in the action of the left ventricle and an embarrassment of the work of the right ventricle and auricle. It is held that in pregnancy there is hypertrophy of the left ventricle, and a study of the evidence on which it is based leads me to accept the view. My own observations, however, do not help me to an opinion, as the facts I have cited point to a distinct inefficiency in the action of the heart. The hypertrophy, therefore, is not compensatory in the sense that it enables the pregnant woman to be as active as before conception. A consideration of the probable causes of these changes may lead us to understand their true meaning. That these changes are not alone due to increase of the heart's work, because the field supplied by the maternal heart is increased by the addition of the placental circulation, is evident, when we find that these symptoms occur before the placental circulation has increased to a marked extent. The view expressed first, so far as I know, by Clifford Allbutt, that there is retained in the system some material which causes a constriction of the arterioles, and so more work is thrown upon the heart, seems to provide a reasonable explanation. The point I wish to emphasize is this, that these changes point to such an embarrassment of the circulation that it aggravates the heart failure secondary to diseases of the mitral valve.

The main object of this discussion is to find some sure ground on which the medical practitioner may base his action: first, in advising his patients in regard to their safety in undertaking the burden of maternity; secondly, when conception has already taken place, to give the indication that may permit the pregnancy to go on to full term; thirdly, to give the indication when he should interfere and put a stop to the pregnancy.

In attempting to accomplish this object I find that it practically resolves itself into passing an opinion on the prognosis of valvular diseases. When one reflects on the innumerable treatises in which the prognosis has been dealt with, and on the discussions of learned societies on this subject, it might be assumed that the last word on the matter had been said. Fortunately, however, for the science of medicine, clinical study of heart affections is far from having exhausted the information to be derived from its continued pursuit. New light is continually being thrown upon obscure symptoms, and the careful watching of individual patients through long periods of years gives us the best means of determining the value of any given symptom. That in the past much harm has been done by our imperfect appreciation of the value of many symptoms comes home to every practitioner who outlives the period of assurance which results from his examination knowledge. I must frankly confess that I feel ashamed when I meet in the street individuals in good health whom I rejected for life insurance over twenty years ago because of a valvular murmur.

In endeavouring to obtain some safe grounds for useful and practical purposes, I shall limit myself to heart affections where there is organic disease of the mitral valves. In comparison with mitral lesions, aortic lesions in pregnant women are comparatively rare, and I have only had two cases under my own observation. As a general statement it may be said that where there are marked signs of failure of compensation, as evidenced by the occurrence of dropsy, enlarged liver, and great enlargement of the heart, no woman should be permitted to undertake the burdens of pregnancy. But when such evident signs of cardiac failure are wanting it requires a careful examination to decide the question, and I shall point out certain features that, in my opinion, will guide one to safe conclusions.

The Apex Beat.—The apex beat is a term used in clinical medicine so loosely that it may mean a totally different thing from the real physiological apex beat. What is really meant by the apex beat is that impulse given by the sudden projection of the left ventricle against the chest wall as it hardens and moves forward during systole. The clinical definition is the lowest part of the heart and the part furthest to the left which impinges against the chest wall. This part may be the left ventricle, and, if so, we get the normal apex beat; on the other hand, it may be due to the right ventricle, and we get a movement of a totally different kind. This is at once seen if a tracing be taken of the movements of the heart. An apex tracing due to the left ventricle shows a "systolic plateau" during ventricular systole, because the hardened ventricle is kept pressed against the chest

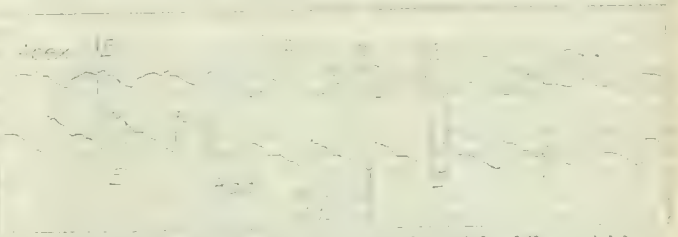


Fig. 3.—The apex tracing shows a rise during the systole of the ventricle E, and the jugular pulse is of the auricular type, as in Fig. 2. The shading underneath shows the time in the cardiac cycle of the presystolic murmur. Taken in 1896 from a woman in the sixth month of her third pregnancy.

wall during the whole period of ventricular systole. Such tracings are seen in Figs. 3 and 5, when the period E represents the time of ventricular systole. Fig. 3 was taken in 1896 from the same patient as gave Fig. 4 and from the same portion of the chest. In Fig. 4 during the

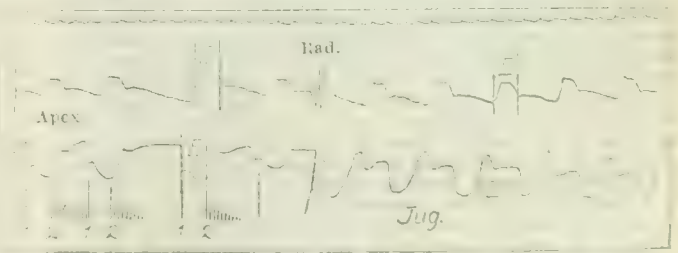


Fig. 4.—Taken in 1904 from the same patient as gave Fig. 3. The first part of the tracing was taken from the apex (lower tracing) with the radial pulse, and the latter part from the jugular with the radial. The apex tracing shows now a great fall during the ventricular systole, showing that the movement here is now due to the right ventricle. The jugular pulse is now of the ventricular type, there being no wave due to the auricle, as in Fig 3, but one large wave synchronous with and due to the systole of the right ventricle. The shading shows the murmur to be entirely diastolic in time, the presystolic murmur of the crescendo character having disappeared. The pulse is also irregular. These features indicate the paralysis of the auricle.

period E there is no longer a systolic plateau in the apex tracing, but a systolic depression. The meaning of this difference is that in 1896 the left ventricle approached the chest wall, and that now dilatation of the right heart has pushed the left outward, so that the right ventricle is the lowest part of the heart that approaches the chest wall. To recognize this difference it is not necessary to take tracings, for now that I have had my attention directed to the subject, I can recognize with the greatest ease the indrawing of the chest wall during ventricular systole. The reason for this difference between the movements of the right and left ventricles is simply this, that it is only the left ventricle that possesses the peculiar action of twisting round and projecting forward its apex during systole, while it diminishes in size. The right ventricle, like the bladder, recedes from the external wall when it becomes smaller during its emptying. There is another feature in connexion with the position of the apex to which I must draw attention. As one watches the gradual increase in the size of the heart, at one time the apex of the left ventricle may be felt beating under the nipple. With increase of the heart's size, this left ventricular apex may no longer be felt, and the movement then under the nipple is the one I have described as due to the right ventricle. Later on the apex beat may be felt well beyond the nipple line, and it may be in the sixth interspace, and here it has the character again of the true left ventricular apex beat. The reason for this change is simply that the left ventricle has been pushed outward, and, though it still forms a portion of the anterior surface of the heart, its movement was obscured by the covering lung. In course of time the pressure of the heart displaces the lung, so that it recedes till the left ventricle again approaches the chest wall. That this is the true explanation is obvious from the study of the position of the heart at *post-mortem* examination.

The point I wish to illustrate by this reference to the apex beat is this: that when the left ventricle is felt against the chest wall, and there is little or no displacement of the apex, then it is a favourable sign that no serious enlargement of the heart has taken place. On the other hand, if the movement is due to the right ventricle, then it forms an evidence that dilatation has so far advanced as to constitute an element of danger.

Murmurs.—I wish to draw attention to only a few points of special significance in regard to the murmurs due to valvular disease. Systolic murmurs at base and apex of slight intensity are extremely common both during pregnancy and the puerperium, and, apart from other evidence of heart failure, are of little importance, being due to slight and, as a rule, temporary dilatation of the heart. In mitral regurgitation due to disease of the mitral valve, the loudness of the murmur is now generally recognized as being a sign rather favourable than otherwise, implying not only a very small leakage, but also indicating that the regurgitant stream is sent back with considerable force, and that therefore the left ventricle must be healthy and powerful. In this respect I need only refer to one case of mine, a woman now 50 years of age, who had rheumatic fever at 18 years of age. When I attended her first, nineteen years ago, in confinement with her third child, she had a loud systolic mitral murmur. Since then she has had five children, and is to-day actively engaged in her household duties, the heart slightly enlarged and the murmur as loud as ever. Mitral stenosis is essentially the disease which produces the gravest complications in pregnant women. One grave element in the danger is that while earlier pregnancies may be well borne, and a degree of security be falsely enjoyed by both practitioner and patient, later pregnancy may be fraught with the greatest danger. The reason for this is to be sought in the condition of the mitral orifice. It is often assumed that once the damage is done to valves by endocarditis the injury remains stationary unless succeeding inflammation cause further mischief. On the contrary in mitral stenosis the narrowing of the orifice is in most cases progressive, and with increase of the narrowing there is a great increase of the embarrassment of the heart's work. If one looks at the buttonhole slit found *post mortem*, it requires little imagination to realize that this was not the condition in which the orifice was left after the endocarditis, but that the narrowing must have been slow and progressive. Careful watching of individual cases will also afford clinical evidence of the narrowing. In one patient, now 40 years of age, whom I attended in her first confinement in 1890 and her second in 1892, there was a loud regurgitant mitral murmur and there was a previous history of rheumatic fever. In 1893 she had another attack of rheumatic fever, and after it I detected a purring tremor during the diastole. So well marked was this tremor that I have taken a number of apex tracings, extending over

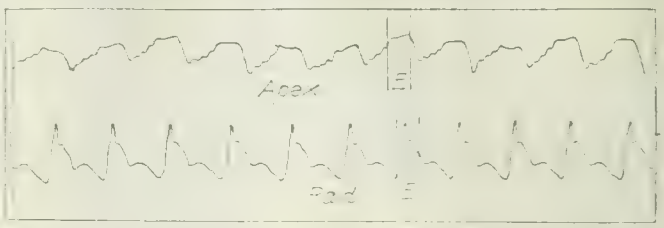


Fig. 5.—The apex tracing shows a rise during the left ventricular systole E. The wavy character of the rising line during diastole is due to vibrations set up by the blood flowing through a stenosed mitral valve. This vibration was observed and traced ten years before the appearance of a presystolic murmur.

a period of four years, where the small waves during diastole have been a marked feature (Fig. 5). Since this attack I have attended her in three other pregnancies and have examined her at frequent intervals, and until this year there has never been a presystolic murmur. Now there is present a loud, rough, presystolic murmur, and her field of cardiac response is distinctly limited. I infer from these facts that this patient's mitral orifice is undergoing a process of narrowing. In 1896 I attended a woman, from whom Figs. 3 and 4 were taken, pregnant with her third child, who had a loud and somewhat long presystolic murmur. She came through the confinement fairly well, but there were certain signs which showed that her field of cardiac response was seriously limited, and I strongly advised her against further conception. In a few years' time, in addition to the presystolic murmur, there developed a diastolic murmur, heard only at the apex. For the last four years the presystolic murmur has disappeared, and there now only remains the diastolic murmur. The meaning of these changes is that in 1896 the orifice was only so narrowed that the murmur occurred when blood was forced through by the auricular systole. This narrowing has increased so that the passage of the blood during the first part of the diastole produces a murmur, and finally this increasing narrowing has embarrassed the auricle till it has become so over-distended that it has ceased to contract—it has become paralysed from over-distension.

Auricular Paralysis.—As the recognition of auricular paralysis is of vital importance in arriving at a decision in regard to the question of pregnancy, I will deal somewhat fully with the proofs for the paralysis of the auricle. The diagnosis is based on three symptoms: (1) The presence of a diastolic murmur at the apex, without a presystolic murmur of the crescendo type; (2) the occurrence of continued irregularity of the heart's action; (3) the alteration of the jugular pulse, from the auricular type to the ventricular. The disappearance of the auricular systolic or presystolic murmur has already been dealt with in the case from whom Figs. 3 and 4 were taken. A further study of the symptoms present in this case elucidate the other two factors. So frequent is irregularity in mitral disease that a certain form of pulse is spoken of as the mitral pulse. It is difficult to exactly describe the form of irregularity in words, and a

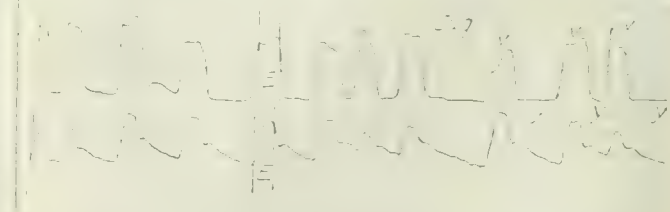


Fig. 6.—The jugular tracings show but one large wave synchronous with and due to the systole of the right ventricle. There is no sign of a wave due to the auricle, and the rhythm is irregular, indicating that the auricle is paralysed.

better idea can be gained by studying its character in a tracing. As a rule it is continually irregular, the cardiac cycles being of unequal duration, as in Figs. 4, 6, and 9.

When a patient once acquires this irregularity it usually persists for the remainder of her life. I have tracings of individual cases extending over periods from five to ten years who have never once shown a regular pulse. The reason for this irregularity is that the auricle has become so distended that it either ceases to contract, or the stimulus for contraction ceases to arise in the auricle, but proceeds from the ventricle, and we have in consequence a ventricular rhythm, which is very frequently an irregular rhythm. I can prove this statement in a variety of ways; but, unfortunately, so few people have taken the trouble to understand the grounds on which the proof is based, that I am placed somewhat at a disadvantage in demonstrating the facts to you. If you will look at the jugular tracings in Fig. 3 you will observe that preceding the ventricular systole (which is represented in the tracing by the space E) that there is a wave *a*, which, from its position in the cardiac cycle, can only be due to the systole of the auricle. The great fall after the wave is due to the emptying of the vein, because the blood then streams from the jugular into the dilating auricle. This tracing was taken from a pregnant woman in 1896. In 1900 her pulse was found irregular, and it has continued so ever since. The character of the jugular pulse had also completely altered, as you will see in Fig. 4. There is now no wave due to the auricular systole preceding the ventricular systole E, and no fall due to the auricular diastole, as in 1896, but a great rise synchronous with, and due to, the systole of the right ventricle. If you will consider a moment you will realize that if the auricle contracted it is bound to affect the column of blood in the jugular vein, as in the jugular tracing of Fig. 3; but if the auricle remained a passive bag, a wave, due to the ventricular systole would be synchronous with the arterial pulse, as you find in Fig. 4. From the disappearance of all signs in the veins of an auricular contraction, and from the fact that a presystolic murmur disappears at the same time, I have assumed that the auricle is paralysed.

I have had several opportunities for observing the manner in which this occurs. Figs. 7 to 10 are from a patient whom I attended for rheumatic fever and endocarditis twenty-four years ago. He has been under my observation more or less ever since. During the last few years his heart has presented some interesting features,

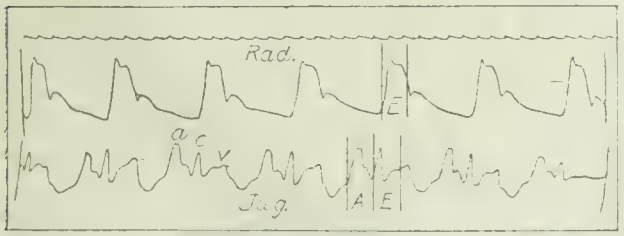


Fig. 7 shows a regular pulse, with a well-marked wave, *a*, due to the right auricular systole.

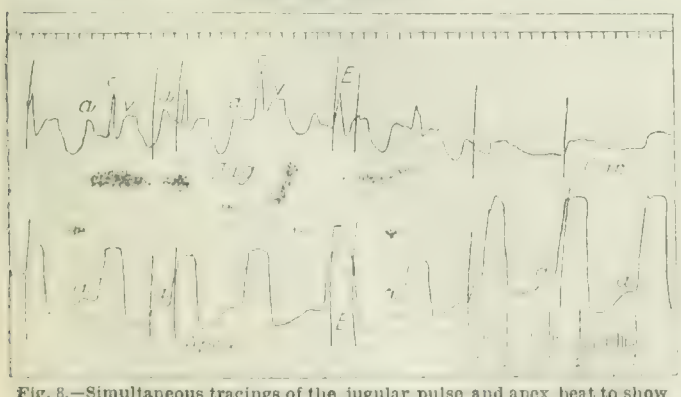


Fig. 8.—Simultaneous tracings of the jugular pulse and apex beat to show that the wave *a* in the jugular due to the right auricle is synchronous with the wave *a* in the apex tracing, due to left auricle. The shading shows the time of the murmurs present in this case. The diastolic murmur was suddenly increased in intensity towards the end, and diminished before the first sound. The time of this increase corresponded to the auricular wave in jugular and apex tracings, but is not very accurately drawn in the tracing. From the same patient as gave Figs. 7, 9, and 10.

and he visits me at regular and frequent intervals. He has now well-marked mitral stenosis. His pulse up till April 17th of this year had been for years perfectly

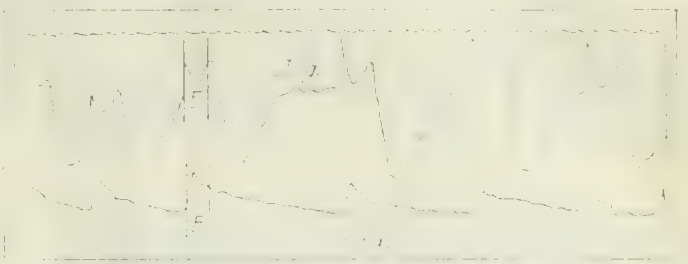


Fig. 9 shows the disappearance of the auricular wave, *a* (see Figs. 7 and 8), coinciding with an irregular rhythm of the heart, indicating paralysis of the auricle. (Taken April 17th, 1904.)

regular, and I have taken a large number of tracings from him. Fig 7 shows a perfectly regular pulse. The wave *a* is due to the auricular systole, and you will observe it

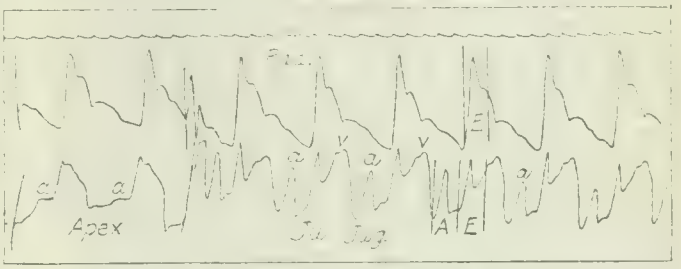


Fig. 10.—Taken from the same patient a week after Fig. 9 was taken, and shows again an auricular wave, *a*, indicating that the auricle is restored to activity. The pulse has also become quite regular.

is separated by a distinct interval from the carotid wave *c*. In many cases it is impossible to take a tracing of the jugular without registering also the impact of the carotid beat, and it often serves as a useful landmark. I shall not deal at present with the cause of the wide separation shown here of the auricular wave from the carotid.

In this patient there was a well-marked apex beat, and on taking tracings of it I found a distinct wave due to the auricle (Fig. 8). You will observe that the wave *a* in the apex tracing due to the left auricle is exactly synchronous with the wave *a* due to the right auricle in the jugular pulse. On April 17th, when this patient called, his pulse was irregular, as shown in Fig. 9. Observe the jugular pulse: there is no sign of a wave due to the auricle: when there is a long pause preceding the ventricular systole, the tracing gradually rises on account of the gradual distension of the vein through stasis, but neither here nor when there is a short pause is there the slightest evidence of a wave due to the auricular systole. When next this patient was examined the pulse was perfectly regular, and you will find in Fig. 10, taken a week later, that the auricular wave is a distinct feature in the tracing. I have now on several occasions observed the appearance of irregularity to coincide with a disappearance of the auricular wave from the jugular pulse, and the return to regularity to be accompanied by the reappearance of the auricular wave in the jugular pulse.

In regard to the question of pregnancy occurring in women with valvular disease, the following conclusions are to be drawn from this study:

1. When there is distinct evidence of failure of compensation, or when the patient is liable to frequent attacks of failure of compensation, pregnancy should be forbidden.

2. With fair compensation, if there should be paralysis of the auricle, as evidenced by the presence of a diastolic murmur and the absence of a presystolic murmur, or of a continued irregularity of the pulse, or of a jugular pulse of the ventricular type, pregnancy should be forbidden.

3. With fair compensation, with a mitral murmur systolic or presystolic in time, with the apex beat within the nipple line, and due to the left ventricle, the patient may undertake the burden of pregnancy.

In all cases of valvular disease, when conception has

taken place, the patient should be kept under close observation. One feature of great prognostic significance is the presence or absence of symptoms of oedema of the lungs.

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WITH regard to the changes that take place in the cardio-vascular system in pregnancy, there is still no unanimous verdict of opinion, though it is now generally agreed that certain circulatory changes do occur, not only in pregnancy and labour, but also during the puerperium.

The Heart in Pregnancy.

The normal heart possesses great functional durability, and is not readily fatigued; it is capable of increasing or decreasing the amount of work it performs in accordance with the resistance in the peripheral circulation. Normally, too, in spite of a marked increase in the peripheral resistance, the output of blood from the left ventricle into the aorta at each systole remains very constant in quantity, for the muscle contracts more forcibly. More residual blood then remains in the ventricle at the end of its systole, and if the heightened arterio-capillary resistance is long continued, the muscular walls lose their tone, and dilatation of the cavity will sooner or later occur. During pregnancy, however normal it may be, the work of the heart is certainly increased, partly, perhaps, from the extra quantity of blood in the vessels, but chiefly on account of the increased resistance in the peripheral circulation, and as a result all its chambers become dilated. The right side of the heart is generally dilated to a proportionately greater extent than the left, and both sides of the organ may subsequently undergo some hypertrophy. Clifford Allbutt has shown that constant strain thrown upon the heart produces dilatation of the chambers in the first instance, and this may be followed, in well-nourished and well-developed young subjects, by hypertrophy of the muscular walls; otherwise dilatation may remain as the most pronounced change in the heart. Under certain conditions, where the increased peripheral resistance has been very extensive and persistent, as happens sometimes in robust young primiparae who develop eclamptic symptoms, the hypertrophy of the left ventricle is a much more marked feature than its dilatation.

The Enlargement of the Heart in Pregnancy.

Many of the changes which occur in the heart and circulation in connexion with pregnancy strongly suggest the presence of some toxic substance in the blood capable of causing increased resistance in the peripheral vessels. The substance, whatever its origin and nature, acts upon the arteries and arterioles in the same manner as digitalis or suprarenal extract, and, no doubt, like these active principles, it also acts upon the heart itself. Thus if increased peripheral resistance is the main factor in the production of the "heart of pregnancy," one can imagine that the additional work may be imposed very gradually on the organ, because the stimulating vaso-constricting substance, though it causes a diminution in the calibre of the arteries and arterioles, yet at the same time powerfully increases the tonus of the cardiac muscle. In this way, unless additional factors come into play, the heart may sometimes suffer only slight dilatation throughout the course of gestation. Such an explanation of the physiological enlargement of the heart in pregnancy is at least useful, because it readily enables one to understand why in some instances the organ is simply dilated; in other instances its right side alone is markedly enlarged; while in other cases still there is very distinct hypertrophy, mainly affecting the left ventricle. The degree and situation of dilatation or hypertrophy met with in any case of pregnancy may thus indicate in a general way the manner in which the toxic substance has acted upon the cardio-vascular system—whether mainly upon the heart, stimulating it to increased contraction, and to a smaller extent upon the vessels, or vice versa. I think, therefore, one may state that the maternal heart in normal pregnancy gradually becomes enlarged; that this is due to a variable amount of dilatation, and generally to some hypertrophy; and that these changes are the result of additional work performed by the organ in driving on its contents against an increased peripheral resistance.

Of the substances which produce constriction of the arteries and arterioles in pregnancy we know nothing, but I am not convinced of the necessity of supposing that they are always toxins in the true sense of the word. Our knowledge of the influence of the secretion of the thyroid and suprarenal glands respectively upon the arterial calibre has shed some new light upon this subject, and in several recent communications I have thrown out the suggestion that a prolonged continuance of arterial and arteriole contraction may be determined by a too active condition of the adrenal secretion. In some cases, indeed, this contraction may become so extreme that the blood supply to the renal glomeruli is virtually shut off, and anuria with subsequent eclampsia may result.

Pregnancy and Blood Pressure.

As regards the influence of normal pregnancy upon the blood pressure no very uniform results have been obtained, in spite of a large amount of investigation. In general it may be stated that the pressure is not markedly or permanently increased until the onset of the labour pains; then it always becomes raised, and sometimes very considerably. This increase of pressure seems to be definitely connected with the contractions of the uterus and not with the accompanying action of the abdominal muscles.

From what has been already said regarding increased resistance in the peripheral circulation during pregnancy, it would seem probable that there must always be a distinct rise in arterial pressure. Practically, however, this supposition cannot be confirmed. I have made pretty numerous estimations in the various stages of pregnancy, both in primiparae and in multiparae, and it was only seldom that I found the pressure strikingly raised. In such cases one frequently found that several symptoms of autointoxication were present—for example, headache, nausea, vomiting, constipation; and sometimes one could rightly anticipate the development of eclampsia. As a rule the pressure was on a somewhat higher level in primiparae than in multiparae, and in some of the latter it was considerably below the normal limit. Again, it is not unusual to find evidences of increased resistance in the peripheral arteries in conjunction with a normal, and sometimes with a decidedly low, blood pressure. This is a question of great interest, for it is generally believed that if the arteries contract the pressure must of necessity rise considerably. I think this law holds good—partially at least—in the case of robust young primiparae, and in them the pressure may become distinctly raised for a time; but whether this occurs to any great extent depends upon other factors, especially upon the pumping capacity of the heart and its field of response to increased work. I do not think the blood pressure is often permanently raised, except in some of the renal diseases of pregnancy, and in some cases where eclampsia is impending. In these conditions hypertrophy of the left ventricle is the most striking feature about the heart, and it would seem reasonable to suppose that the vaso-constricting substance in the circulation has exerted its influence as fully upon the ventricular walls as upon the arteries and arterioles.

Immediately after delivery, if the pressure has been considerably raised during the passage of the child, there is a distinct fall of comparatively short duration. At this time there is frequently a very noticeable and curious alteration in the character of the pulse, the force of the pulse is very gradually developed, and the usual sudden impact to the finger is missed. The sphygmogram is very similar to that from a case of aortic aneurysm; the maximum force of the wave occurs towards the end of the systole of the ventricle. I cannot as yet give any explanation of this phenomenon, but it seems to mark the occurrence of some important alteration in the maternal circulation. Dr. Mackenzie thinks that simultaneous tracings from the jugular and radial pulses, taken before and immediately after delivery, would give a clue to the nature of this pressure change, and I hope shortly to investigate the matter. In the majority of cases, there is about the third day of the puerperium, or even earlier, a definite increase of arterial pressure, the cause of which is at present quite imperfectly understood.

The Tonus of the Arteries and Arterioles in Pregnancy.

Normally the arteries possess what may be called an average tone, which signifies that they are in a state of semi-contraction. During pregnancy this tonus becomes increased—there is a hypertonus—and there is therefore a diminution in the calibre of the arteries. At different periods of their pregnancy women exhibit cardio-vascular phenomena which appear to me to bear an important relationship to the state of tone of their arteries and arterioles. According to the degree of tonus present, as estimated from a study of the condition

of the heart and pulse, I think one is entitled to say that there are two well-marked types of circulation in pregnant women. Each type is readily recognized by definite circulatory features. In the first type there is, during the last months of pregnancy, a marked and constant tendency to hypertonus, to which the heart is able to respond by an increase in the force of its contraction. Under such circumstances the changes in the heart are most marked in the left ventricle, which may become considerably hypertrophied, and evidences of dilatation of the right side of the organ are not always present. The pulse is generally somewhat slow, and is of higher pressure than normal; sometimes it is unusually rapid, hard, and of small volume. Such a type of circulation is chiefly found in healthy young primiparae, whose general muscular tone is above the average; it is not often present in women who have undergone the strain of repeated pregnancies.

In the second type of circulation the tone of the arteries towards the end of pregnancy has become normal, or it may be distinctly diminished. A hypotonus is then present. In such cases the heart has lost its power of easily adapting itself to the demands of the circulation, and an examination shows that its right chambers are dilated. Dilatation of the left side is also present, and this is not compensated for by hypertrophy. The pulse is quickened, is of pretty low pressure, and the superficial arterioles are well dilated. This type of circulation is present in the majority of women who have borne several children, and also, commonly enough, in young primiparae whose general muscular system is flabby. The hypertonic type of circulation in a marked form is generally found in association with a heart possessing a large margin of reserve, which enables it to respond readily to the altered vascular changes of pregnancy. The hypotonic type, on the other hand, is found in connexion with a heart whose field of response to increased work is strictly limited. The driving power of the ventricles, then, is a factor of supreme importance in the estimation of the influence of pregnancy upon the maternal circulation; therefore, when pregnancy occurs in association with valvular disease of any severity, I do not think that the hypertonic type of circulation is ever markedly developed.

Management of Pregnancy Complicated by Heart Disease.

There are only one or two points in the management of cardiac affections during pregnancy which I should like to mention briefly; my remarks refer specially to mitral valve lesions. During the later months of pregnancy, perhaps particularly in cases of mitral stenosis, I am convinced of the advisability of using small doses of mercury—either in the form of calomel or blue pill—about twice a week, or oftener if there is much venous congestion and dropsy. No vegetable aperient can at all compare with this remedy. It is a common practice with some to prescribe digitalis with a view to assist the heart in its work and restore compensation. When pregnancy is advanced, I do not like to use any drug which tends to increase the resistance in the peripheral arteries, and, if digitalis is given, it should only be used in small doses and in combination with nitrites. When the heart is seriously embarrassed, and compensation is obviously failing, I think treatment by vaso-dilator remedies is more rational. During the past year I have attended two multiparae with mitral disease who developed such urgent cardiac symptoms in the last month of pregnancy that the advisability of inducing premature labour seemed to be clearly indicated. Marked hydramnios was also present in one of these cases, and in the other there was an enormous amount of general dropsy. In both the urine was scanty and highly albuminous. There was great dyspnoea and precordial distress at times.

These patients were kept in bed, and were treated with blue pill and fairly large doses of thyroid extract (15 gr. to 30 gr. daily), as a good vaso-dilator. Under this treatment the symptoms were sufficiently controlled to enable one to wait for the spontaneous onset of labour. The thyroid, besides fully dilating the peripheral arterioles, thus relieving the engorgement of the heart, caused very great diuresis. It produced no alarming symptoms of any kind, and the pulse improved under its use. Both mothers recovered very well, the symptoms disappearing rapidly after delivery.

There is only one point I wish to refer to regarding the obstetrical treatment of these cases, and that is connected with the third stage of labour. The great danger at this time is that death may occur pretty suddenly from over-distension of the right side of the heart. Therefore, it is most important to do nothing, for some time at least, to check the free haemorrhage which, I think, almost always takes place in these cases. I believe that a sufficient quantity of blood to relieve the overfilled venous circulation will generally be lost if the practitioner can banish from his mind the idea of a serious *post-partum* haemorrhage, and wait for the flow to cease spontaneously. If, in spite of pretty free bleeding, alarming cardiac symptoms appear, the use of amyl nitrite, as recommended by Fraser Wright, should certainly be tried, and venesection may require to be performed in addition.

REVIEWS.

CLINICAL LABORATORY TEXTBOOKS.

The first volume of a monograph dealing with the means of diagnosis of disease, edited by Professors Eulenburg, Kolle, and Weintrand,[1] has been issued and another volume dealing with each disease and its systematic investigation is promised. If the second volume proves as satisfactory to the clinician as the first is to the pathologist, the editors may be congratulated upon the success of their task. The tendency of modern investigation is shown most vividly in the volume before us—in the introduction, the writers admit the impossibility for any one man dealing authoritatively with all the departments of pathological investigation, and they have wisely chosen to depute to different workers the many and varied subjects discussed in this volume. The result has led to much repetition and unnecessary increase of the bulk of the volume, but the advantage remains that we are supplied with the ripe experience and views of such workers as Blumenthal, Czaplewski, Grawitz, v. Hansemann, Vierordt, Kümmel, and Zuelzer, to mention but a few of the contributors. Some of the collaborators are directors of pathological institutes, others are clinicians, so that we are provided with a survey of the technical skill of the former and of the estimate of the pure clinician of the practical results of their fellow workers' efforts. Owing to the immense amount of material passing through their hands, the opinions of the pathological workers are very helpful, for they are obliged to make use only of methods which are not only reliable but expeditious. This is nowhere more evident that in the sections contributed by Dr. Czaplewski. A large part of the volume is devoted to chemical and microscopic investigation. The latter part is given up to physical diagnosis, but the reader must not expect to find the more ordinary methods of investigation only: sixty pages are devoted to the topics of auscultation and percussion, whereas over a hundred pages are taken up by a consideration of radiography. Dr. Scholtz contributes an admirable section on the bacteriology of the urine, and considerable information will be found on the subject of acid bacteriuria—a matter which has hardly received at the hands of the clinician as much attention as it deserves. Such difficult and technical matters as the quantitative and qualitative examination of beta-oxybutyric acid are treated most fully, and the same thoroughness is shown in dealing with the many other subjects of chemical investigation, so that it is impossible to find any subject of modern inquiry insufficiently studied. We heartily commend the volume to all pathological workers; it is beyond criticism because the subjects are dealt with by men whose reputation and knowledge are of the highest.

The work on clinical microscopy and chemistry[2] is designed by the author, Professor Lenhartz, for the use of students and practitioners; it will be found of use in clinical laboratories as well, if for no other purpose than to show to what extent contemporary workers in Germany are applying the more modern developments of bacteriology, chemistry, and physico-chemistry in the investigation of disease. The book is divided into six sections, dealing respectively with the examination for vegetable and animal parasites, with the examination of the blood, of the sputum, of various excretions and secretions, including those of the stomach, bowel and kidneys, as well as of various fluids removed from the body cavities by puncture. The methods of examination

[1] *Lehrbuch der klinischen Untersuchungsmethoden und ihrer Anwendung an die specielle aerztliche Diagnostik.* [A Textbook on Methods of Clinical Investigations and their Application to the Diagnosis of Special Diseases.] Edited by Professors A. Eulenburg, W. Kolle, and W. Weintrand. Vol. I. Berlin and Vienna: Urban and Schwarzenberg. 1904. (Royal 8vo, pp. 707; 178 illustrations. M.18.)

[2] *Mikroscopie und Chemie am Krankenbett.* [Clinical Microscopy and Chemistry.] Von Dr. Hermann Lenhartz, Professor of Medicine and Director of the Eppendorf Hospital, Hamburg. Berlin: Julius Springer, 1904. (Demy 8vo, pp. 377; 81 illustrations. M.8.)

are those already familiar to English workers, but they are scattered about in more ambitious treatises, so that the volume will be found extremely useful for reference. Here and there the author has been tempted to interpose discussions on such matters as the pathogeny of leucocythaemia and the relationships of urobilin to the bile pigments, all interesting, no doubt, but a little foreign to the scope of such a book. Schutz's Arão-saccharimeter is described, but judging from the author's experience, the results are not much more satisfactory than the more homely method devised by Sir William Roberts for the estimation of the sugar present in diabetic urine, by changes in the specific gravity as a result of fermentation.

The *Précis d'Urologie Clinique*[3] of M. M. LÉTIENNE and MASSELIN deals with the investigation of urine in disease, and the usual details of chemical and microscopical examination are fully considered. Besides detailing the ordinary methods of investigation the authors discuss other methods of examination, largely elaborated by the French school, many of which have fallen short of expectation, despite the industry of many workers. This is nowhere more evident than in the effort made to arrive at a more accurate estimate of the metabolic activity of the body by making use of what are styled "urological coefficients," instead of estimating in any one individual the total output for twenty-four hours of the various constituents of the urine, the results are given in so many grams per kilogram weight of the body. It was thought that it would be possible, by reference to tables of normal excretion, to establish the degree of metabolic disturbance. Unfortunately such measures have failed, for an individual of sixty years shows urological coefficients not at all mathematically related to those of an adult of thirty years; even individuals of the same age and body-weight show variations of such extent as to render comparisons in disease quite valueless. In childhood, however, the matter is different: all children up to a certain age appear to show coefficients which are for each period of a few years closely in agreement, so that a comparison of the various coefficients met with in disease is a help in estimating the departure from health. Another subject to which the French have devoted much attention is the estimation of renal permeability and adequacy. This is done in part by testing the toxicity of the urine in the way advocated by Bouchard. Here, again, many of the results have been called in question on the ground that the lethal effects of the urine when injected into rabbits were not all due to toxic action, but were in part due to a want of isotonic equilibrium between the urine injected and the blood of the animal experimented on; however, as one of the authors has experimentally shown, there is no doubt that toxic effects account for part of the result of Bouchard's observations, but all his work needs to be revised from the point of view of physical effect, in order to render his work of practical value. Achard's use of methylene blue and of Marcel Deschamps's phloridzin test are discussed. Achard found that, in cases of granular kidney, methylene blue or the chromogen into which it is converted, was excreted more slowly than in health: Deschamps, too, found that in cases of grave unilateral renal disease, the affected kidney had less power under the stimulating influence of phloridzin to form sugar from proteid. We gather that the experience of the present authors is in agreement with the view generally held that such enquiries are of more service in the elucidation of cases of unilateral disease than when both kidneys are the seat of degenerative processes. As might be expected, the writers give a very full account of the theoretical and practical aspects of cryoscopy; here again the value of the method is greater in surgical than in medical affections of the kidneys, though such advantage is greatly reduced by the inherent difficulties of catheterization of the ureters. These difficulties, thanks to the ingenuity of Luys and Cathelin, as shown in a recent issue, are apparently now almost resolved. The section dealing with the proteids of the urine contains much information of interest. A point of very considerable interest is the readiness with which albumoses are detected in the urine by means of Jacquemet's test. Urines containing albumoses when shaken up with sulphuric ether become gelatinous, to such a degree at times that the test tube may be inverted without loss of the contents. We have met with the same phenomenon in the serum of the patient whose urine also gave the same reaction. The bacteriological investigation of cystitis and bacteriuria is discussed in a most instructive way. The bacillus coli communis is the chief cause more especially in the chronic cases; acute cystitis may be due to a variety of other organisms, especially cocci. Various organisms, other than the micrococcus ureae discovered by Pasteur, are capable of producing ammoniacal decomposition of the urine, and amongst them are staphylococci, streptococci, some sarcinæ and the bacillus crassus. We do not remember to have read a more suggestive treatise than this; not only will it be found to be full of practical help but the reader cannot fail to be greatly impressed with the vigour and insight with which the French school is attacking the problems of the toxic causation of renal disease and of the detection of both functional and organic renal defect.

[3] *Précis d'Urologie Clinique.* (Clinical Urinology). Par Auguste Létienne et Jules Masselin. Paris: C. Naud. 1904. (Demy 8vo, pp. 463, 59 illustrations. Fr. 12.)

Dr. LÉON MOYNAC's general pathology and diagnosis,[4] which now reaches its sixth edition, has been revised and considerably enlarged by Dr. Constant Hillemand. The first volume deals in a scrappy and elementary fashion with the general causes of disease, bacteriology, the morbid processes connected with the nervous, vascular, and other systems, and tumour formation. The second volume is concerned with clinical diagnosis and therapeutics, and in addition to an account of such methods of examining blood and urine as are in vogue in clinical laboratories, occupies a good deal of its space with information as to the clinical examination of patients. Disorders of menstruation, the clinical examination of the chest and abdomen, and disorders of the nervous system are amongst the subjects dealt with. In short, the book tells us a little about a great many things, but nothing very thoroughly, and we cannot recommend it to the medical student as being either interesting or particularly useful.

[4] *Manuel de Pathologie Générale et de Diagnostic.* Par le Dr. Léon Moynac. Sixième Edition par Constant Hillemand. Tomes I et II. Paris: G. Steinheil. 1903. (Crown 8vo, vol i, pp. 751; vol. ii, pp. 827. Frs. 12.)

CLINICAL TEXTBOOKS.

FOR more than twenty years the *Manual and Atlas of Medical Ophthalmoscopy*,[5] by Sir WILLIAM GOWERS, the fourth edition of which is now before us, has occupied the position of a medical classic. It has been all this time, as it is to-day, in the English language *facile princeps* on the subject of which it treats. The conjoint editing of the two later editions has been a happy idea, for Mr. MARCUS GUNN, whose knowledge of what is to be learned by the ophthalmoscopic study of the fundus oculi is, in this country at least, perhaps unrivalled, has brought his accumulated lore and experience to assist in the production of an almost ideal book. The book itself remains substantially what it was in the former edition, and to praise its subject-matter, which is approximately exhaustive, and its plates, which are not only instructive but artistic, would be at this stage of medical history quite unnecessary and almost impertinent; suffice it to say that such additions have been made as were considered needful to represent adequately current knowledge. There is one striking change in the *Atlas* the wisdom of which may be open to question; the plates, formerly in colours, are now in monochrome, reduced reproductions of sepia drawings having been considered preferable on the ground that the absence of colour will compel attention to the more important elements of form. Almost equal to the intrinsic value of the work is its service as a standing appeal to medical practitioners to cultivate the ophthalmoscopic method in clinical medicine. Not many of the vital organs are open to inspection, but if the lung, for example, could be looked at by some simple instrument, how every one concerned with the healing art would hasten to acquire that instrument and the skill to use it. In the retina there is what is practically a portion of the brain open to direct vision for any one who can use the ophthalmoscope, and how often is the condition of the optic disc a crucial point in the diagnosis of obscure disease, and sometimes even the one point on which an opinion as to the urgency of an operation depends. Every medical practitioner, the book plainly says, should be an ophthalmoscopist, and we may add, without any misgiving, that every would-be ophthalmoscopist might well make himself the possessor of this trustworthy and admirable guide to that end.

[5] *Manual and Atlas of Medical Ophthalmoscopy.* By Sir William R. Gowers, M.D., F.R.C.P., F.R.S. Fourth Edition, edited by the Author and Mr. Marcus Gunn, M.B., F.R.C.S. London: J. and A. Churchill. 1904. (Demy 8vo. pp. 330. 14s.)

The first edition of Dr. CHARLES E. SIMON'S *Manual of*

Clinical Diagnosis by Means of Microscopical and Chemical Methods[6] appeared in 1896, the second in 1897, the third (a review of which was published in the British Medical Journal of June 1st, 1901, p. 1348) in 1900, and the fifth is now before us. Nothing further in the way of evidence of the excellences of the book need now be said, but we would remark that the present amplified edition more than justifies the favourable opinion we expressed regarding the third. The section dealing with blood has been almost entirely rewritten; special pains have been taken with the chapter on the technique of blood examinations; and the sections on the bacteriology and parasitology of the blood have been enlarged.

OTOLOGY.

Dr. Dench's exhaustive work on *Diseases of the Ear*[7] appeared first in 1895, and, in view of the completeness of the treatment of the subject, there is no doubt that at the present time the third edition must be in the hands of a very large number of the profession. The author is eminently progressive in his practice and teaching and is imbued with the idea of making the local operative treatment of the middle ear as fine an art as that of the oculist in the region of the eye. While the more universally received methods of treatment are described with sufficient minuteness, the methods of operation are dwelt on with almost loving detail and illustrated with a thoroughness which is almost unique. As he states in his first edition, "in detailing the various manipulative procedures, I have preferred to err on the side of prolixity, for the benefit of those not familiar with the subject." Those familiar with the subject will find Dr. Dench's statements useful and his optimism most encouraging. Much depends on the judicious selection of cases, and from this point of view the work will be found very useful. Functional examination is apt to be carried out in a somewhat perfunctory way by those who think they can found their diagnosis upon the appearance of the tympanic membrane, but it is dealt with in very considerable detail in the work before us. The author has evidently made himself very well acquainted with the works of German otologists, and has placed a great deal of their teaching, with indications for reference, at the disposal of his readers. The third edition has been carefully revised in view of the advances made in otological surgery during the last few years, and the description of the radical mastoid operation and of the treatment of complications of suppuration of the middle ear have been brought well up to date. The various methods of encouraging the lining of the cavity left by the Stacke operation include Panse's and Körner's flaps, Jansen's dissection of the cartilage, Ballance's flap and skin grafting, Passow's, Kretschmann's, and practically every method in use. The author only stops at the deliberate laying open of the labyrinth, which he will no doubt speedily incorporate and formulate with his usual detail. There are some excellent coloured plates to show the anatomy of the internal jugular vein. Diseases of the perceptive mechanism are described somewhat shortly, but with great clearness. There is little, however, of practical value omitted. The effects on the organs of hearing produced by acute and chronic general diseases and by various medicinal subjects form material for two more instructive chapters. The author holds (p. 660) that such drugs as salicin, salicylic acid, and quinine bring about a congestion both of the middle ear and of the labyrinthine structures. He consequently deprecates the use of these remedies when the ear is already the seat of a chronic inflammatory process. He is sceptical as to the possibility of tobacco exerting any specific action on the organ of hearing while the general nervous mechanism escapes. Among artificial aids to hearing he refers to an instrument acting upon the principle of the telephone, which certainly helps some patients, but he considers it burdensome and that it possesses no very great advantages over the more simple instruments of the trumpet class. The book is full of special points of its own, and no practitioner who wishes to study any particular class of ear disease in all its aspects can afford to dispense with a perusal of the section devoted to it in the work before us.

[6] *A Manual of Clinical Diagnosis.* By Charles E. Simon, M.D. Fifth Edition. London: Henry Kimpton. 1904 (Demy 8vo, pp. 695. 21s.)

[7] *Diseases of the Ear.* A Textbook for Practitioners and Students of Medicine. By Edward Bradford Dench, Ph.B., M.D., Professor of Diseases of the Ear in the University and Bellevue Hospital Medical College, etc. Third Edition. New York and London: D. Appleton and Co. 1903. Demy 8vo, pp. 744; 15 plates, 158 illustrations. 21s.)

DIETETICS.

The efforts that have been made to place the subject of dietaries upon a scientific basis have led to little more than establishing averages; the physician has not yet reached the stage of ordering diets in accordance with the analytical study of the intake and the assimilation of various foods, though in certain cases, in which observations on metabolism are being carried out, this practice is essential. When, however, the administrative authorities of a public institution, such as a hospital, sanatorium, prison, or reformatory, require data upon which to forecast the expenditure on food for the ensuing year on physiological principles, it would be of the greatest assistance to be able to refer to such tabulations as are supplied by Dr. Albrand.[8] Making use of the analytical researches on foods carried out by König, Munk, Uffelmann, and others, he shows that within certain limits such forecasts can be made; he gives details not only of the various articles of food, such as meat, bread, vegetables, soups, sauces, etc., but also supplies us with the calorific values of each foodstuff, and has provided a list of average prices. Accuracy within even wide limits is scarcely attainable, because not only has due consideration to be paid to the needs of individuals of various classes in the social scale, but also to the nature of food found palatable to people coming from different parts of the German Empire, fat, for example, being much more largely used in some districts than in others. Dr. Albrand does not attempt to supply comprehensive dietaries to meet all such requirements, but confines himself largely to a consideration of the dietaries of insane patients, subdividing the details according as the patients are ordinary or better class, and whether able to work or not; he even supplies dietaries for the nursing staff and physicians. No direct application of the contents of this pamphlet can be made so as to deal with the food requirements of our own institutions, but they may serve as a pattern of the method that might be adopted for a corresponding work.

Dr. Springer has long felt that in France the study of the physical development of children has been too much neglected: in England, Sweden, and Germany he says "puericulture" is far more developed than in his own country. We find in the opening chapters of his book on the energy of growth[9] a very lucid exposition of modern theories of nutrition and absorption, and of the physico-chemical laws which control the interchange of material between cells and intracellular fluids. He shows how the modern physico-chemical views of Van 'tHoff and Arrhénius have been turned to account by physiologists, in the explanation of the processes of transference of intracellular and extracellular matter; we are reminded that differences of osmotic pressure depend entirely on molecular concentration, and that electrolytic dissociation, by increasing the number of free molecules, still further enhances the osmotic pressure of a solution. Dr. Springer then proceeds to show that probably fertilization of an ovum is due largely to an increase of the osmotic pressure of its contents which has been brought about by the dehydrating effect of the fertilizing spermatozoon; that mere alterations of osmotic pressure can exert important vital changes in an ovum is shown by the researches of Delage, Loeb, and Bataillon; segmentation to a considerable degree will occur if an unimpregnated ovum is immersed first in a solution of magnesium chloride and then in one of sodium chloride. The impregnated ovum may be taken as a prototype of all growing cells; cells depend for their growth upon the presence of lecithins, of potassium salts, ferments, and water; the lecithins form the nutritive material, and are broken up by the action of various intracellular ferments (oxydases); the movement of the cellular secretions (generally combined as they are with potassium salts) towards the serum, and of the serum containing nutritive material combined with sodium salts towards the cells, is brought about by the potassium and sodium salts, which act by reason of the different osmotic pressures of their solutions; water is a necessity of growth, because by its means the electrolytic dissociation of salts is rendered possible. Electromotive force is a necessity, too;

[8] *Die Kostordnung an Heil- und Pflege-Anstalten.* [The Regulation of Dietaries in Hospitals and other Public Institutions.] Von Dr. Walter Albrand. Leipzig: H. Hartmann and Sohn. 1903. (Cr. 8vo, pp. 79. M.1.80.)

[9] *L'Energie de Croissance et les Lécithines dans les Décoctions de Céréales.* [The Energy of Growth and the Influence exerted upon Growth by the Lecithins contained in Decoctions of various Cereals.] Par Maurice Springer. Paris: Masson et Cie. (Cr. 8vo, pp. 170. Fr. 2.50.)

and, according to Dr. Springer, is derived from the electricity of the atmosphere; under its influence the micro-organisms of the soil fix the free nitrogen of the air and form various compounds; plants helped by this same force absorb these compounds, and build them up into bodies of the nature of lecithin; animals fed on vegetables and absorbing these lecithins build them up into constituents of cellular protoplasm. Thus Dr. Springer develops his ideas, and in the second section of the volume we read how children—especially the weakly and rickety—and women who are unable to suckle their children, should be given plentiful drinks of decoctions of such cereals as wheat, barley, maize, etc., these decoctions being rich in lecithins, potash salts, ferments, etc. Apparently the treatment may be extended to the cure of other conditions of wasting, as in typhoid fever, etc. We feel a little suspicious that the writer expects too much from the employment of these decoctions, but at the same time we admit there is ample support, experimental and clinical, for the contentions which he puts forward.

DISEASES OF THE THYROID AND PARATHYROID GLANDS.

DR. JEANDELIZE'S monograph[10] is one of the most important modern publications dealing with the question of the internal secretion of the thyroid and parathyroid glands, and the functional relationship existing between these two structures. It is fortunate that at this period such a complete summary of knowledge of the subject should have been published, for since the remarkable results obtained in the treatment of cretinism and myxoedema by means of thyroid preparations, there has been a tendency to regard the matter as closed, and to think that the treatment of myxoedema is completely established. In a large proportion of cases the success of such treatment is undoubted, but no observer can long remain ignorant of the fact that, for some reason or another, cases of myxoedema, after an initial period of improvement, become refractory to further thyroid treatment, gradually develop psychical depression or exaltation, fall into a cachectic condition and die. The mere difficulties of diagnosis in certain forms of myxoedema are well known, and support the author's efforts to group cases according to the degree of manifestation of symptoms—for example, he speaks of complete forms of myxoedema "fruste" (Reverdin), and of "partial" forms (Brissaud), the latter being characterized by predominance of symptoms and signs referable to the mental condition, or the state of the integumentary, skeletal, or genital systems. The subject of exophthalmic goitre still remains a pathological riddle. Among the more remarkable phenomena associated with disorder of the thyroid and parathyroid glands is the occurrence of tetany, of epileptiform convulsions and other manifestations referable to disturbance of nervous function by toxic causes, the nature and mode of action of which are almost quite unknown to us. In sections dealing with the results of experimental suppression in various animals of the thyroid and parathyroid gland tissues, either singly or together, it is shown that the effects differ very materially when all the thyroid or all the parathyroid tissues have been removed. In the latter case it is contended that the resultant symptoms are much more acute, and that they are mainly convulsant in nature; after thyroidectomy, however, quite a different picture results: the animal becomes lethargic, and evinces marked nutritional depression, which is slowly progressive in type. As the writer maintains, many of the discordant results of various investigators are due either to the inherent difficulties met with in removing only thyroid or only parathyroid tissues, or else that animals of the same species differ at different times in the way they react to the unusual conditions of experimentation. As to the nature of the functional relationship existing between the two glandular tissues, thanks largely to the labours of Gley, Generali and Vassali, Lusena, Moussu, Munk, and in this country Horsley and Walter Edmunds, we are able to arrive at a satisfactory hypothesis. The view that the parathyroid tissue acts as a reserve to the thyroid gland, capable of undergoing hypertrophy and performing the functions of this gland when the latter has been removed, is no longer maintained by Gley and others; Moussu, too, has abandoned his theory of "interparathyroid supplementation." These two earlier views are now discredited, because it has been shown that the parathyroidal tissue left after extirpation of the thyroid gland has undergone hypertrophy, not to compensate for the loss of thyroidal tissue but of the parathyroidal tissue lying within or near the thyroid gland and removed with it. Moussu first began to suspect that the action of the parathyroid was not merely vicarious, but that it really had a specific action of its own, functionally related to but quite different from that of the thyroid gland. The remarkable work of Lusena, Generali, and Vassali contributed largely to the success of the renewed efforts of Gley to establish this functional relationship. Especially important is Lusena's observation that when tetany developed after the removal of the parathyroid, subsequent abolition of the thyroid was followed by disappearance of this symptom. This led to the modern theory of interaction of these two glands, the thyroid secretion promoting metabolic changes in the body tissues and the parathyroid forming material which renders the products of such metabolism innocuous, absence of the thyroid producing slowly-progressive nutritional disturbance, and absence of the parathyroids leading to acuter toxic effects largely of a convulsant nature. This view is ably maintained by French and Italian workers. Subsequent sections are devoted to the symptomatology of spontaneous insufficiency of the thyroid gland occurring in man and animals, and of post-operative myxoedema and tetany. The author offers very suggestive ideas on the possible relationship between absence of the parathyroid glands in man and the occurrence of epilepsy, eclampsia, and infantile convulsions. He suggests that some at least of such cases way prove to be amenable to the influence of parathyroidal medication. Little remains to do but to commend this volume to those specially interested in the subject. It is the latest and most complete statement of the progress of one of the most brilliant of modern discoveries. The references are extremely useful, and considerable attention has been given to the bibliographic details.

The diagnosis of cretinism from conditions which are, clinically, at least, very similar is one which in modern times has been greatly aided by the therapeutic test of the effect of the use of preparations of the thyroid gland; by this means usually it is possible to arrive at fairly accurate differentiations, though the failure on the part of some cases of myxoedema to react will warn us not to be too sanguine of the certainty of such a test. Dr. BAYON'S[11] essay will, therefore, come as a welcome addition to the study of the disorders so closely allied to cretinism, not only because of the summary he supplies on the study of this malady, but also because of the information he gives of the means of diagnosis of these conditions, frequently offering difficulty of recognition—for example, microcephaly, hydrocephalus, rickets, idiocy, and various congenital conditions, as congenital obesity and micromelia. We might add that assistance would be most welcome in diagnosing some of the atypical forms of Mongolism. Before the advent of the advances made in the study of the functions of the thyroid gland and the symptoms produced by its suppression, much reliance was placed on the condition of the epiphysial cartilages. Those cases in which synostosis had occurred earlier than usual were looked upon as cases of simple dwarfishness, and those in which synostosis was delayed were considered examples of cretinism. Dr. Bayon shows in the succeeding pages how such distinctions and those of mere stature or state of mental development were superseded by other tests; the assistance rendered by the application of radiography soon revealed the uselessness of the above classification. The publication deals finally with a historical essay on cretinism, to which is appended an exhaustive list of the literature dealing with the subject.

MINERAL SPRINGS AND HEALTH RESORTS.

DR. BURNEY YEO published a good many years ago a book of *Climate and Health Resorts* which met with much success, but has long been out of print. He has now issued a new volume on the same subject entitled *The Therapeutics of Mineral Springs and Climates*.[12] The authority and long experience of the author, not less than the systematic arrangement of the text, will insure the success of the volume as a ready work of

[10] *Insuffisance Thyroidienne et Parathyroidienne* (Thyroid and Parathyroid Insufficiency). Par le Dr. P. Jeandelize. Paris: J. B. Baillière et Fils. 1903. (Royal 8vo, pp. 822. 73 illustrations. Fr. 14.)

[11] *Beitrag zur Diagnose und Lehre vom Cretinismus unter besonderer Berücksichtigung der Differenteil-diagnose mit anderen Formen von Zwergwuchs und Schwachsinn* [A Contribution to the Study of Cretinism, with special Reference to the Differential Diagnosis from other Forms of Dwarfism and Weak-mindedness]. Von Dr. G. P. Bayon. Würzburg: A. Stuber. 1903. (Demy 8vo, pp. 120.)

[12] *The Therapeutics of Mineral Springs and Climates.* By I. Burney Yeo, M.D., F.R.C.P. London: Cassell and Co. 1904. (Cr. 8vo, pp. 762, 12s. 6d.)

reference for the consulting-room table. It consists of two parts. The first is devoted to mineral springs and the second part to climate and climatic resorts. In Part I the nature, composition, classification, and modes of application of mineral waters are discussed, as well as the accessory measures employed in connexion with mineral water treatment, but the greater portion (330 pages) of this part consists of a concise description of the principal springs and mineral water resorts arranged in alphabetical order. Part II is divided into a number of chapters under the following headings: "Climate and Climates," "Sea or Mountain," "Seaside Resorts in the United Kingdom," "Continental Seaside Resorts," "Mountain Climatic Resorts," "Winter Quarters," "the Western Riviera," "Sea Voyages," etc. Of course, these chapters are not entirely new, and the author states that the second part follows more closely the method he adopted in his former work. The chapters, in each part of the work, on the application and selection of mineral waters, climates, and health resorts for different diseases and different cases make the book very comprehensive in its scope, although it cannot be termed an unduly bulky volume. The indices make reference easy.

NOTES ON BOOKS.

In a pamphlet entitled the *Surgery of Ritual Circumcision*, Dr. Snowman[1] who is medical officer of the Initiation Society, deals with the Jewish rite of circumcision regarded from the surgeon's standpoint. A distinct want is thus supplied, as the operation is largely, and as it appears often necessarily, performed by persons without any surgical qualification or training. The society to which Dr. Snowman is attached, has recently taken means to guarantee that the operators should be more carefully instructed than formerly in the principles of the operation and in the precautions necessary to prevent septic infection; his pamphlet will form a convenient textbook for this instruction. The exact method of operating in order to satisfy ritual requirements and surgical neatness is explained in some detail, while the causes and results of infection are described, and some account is given of the first principles of antiseptic surgery. It may be hoped that in future we shall less often hear of unfortunate accidents following on the circumcision of Jewish infants.

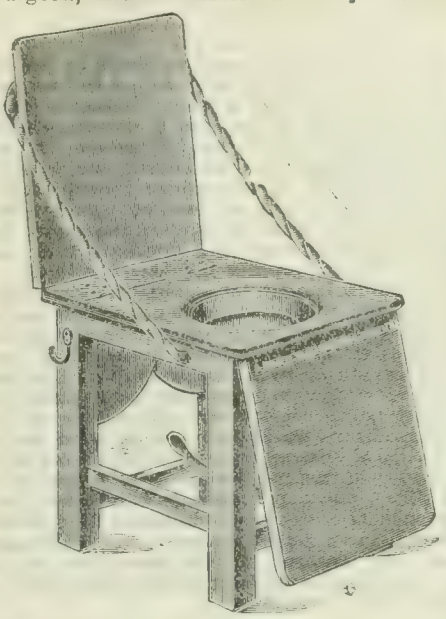
The second volume of the *Transactions of the Therapeutical Society*[2] contains several valuable papers which individual Fellows will doubtless be glad to have in permanent record, and which might be consulted with advantage by others. Among the more important are one by Professor R. B. Wild on the saponins, in which a warning note is struck as to their unguarded employment, and three on aconite and its alkaloids, by Professor Wyndham Dunstan, Dr. Staff, and Professor J. T. Cash. Other valuable papers are on the drugs that act on the pulmonary vessels, on the suprarenal gland products and on the ichthyol compounds.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

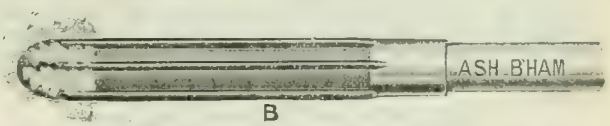
MEDICAL AND SURGICAL APPLIANCES.

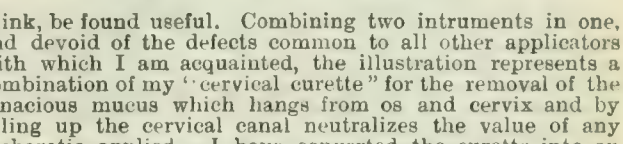
The Metbain Cover.—The "Metbain" cover (The Metbain Company, Accrington) is a contrivance intended to secure a seat free from suspicion of uncleanliness for every user of a public or semi-public watercloset. It consists of a metal case suitable for application to the front of any watercloset, and containing a number of pieces of soft strong paper so cut and shaped that each in its turn may be made to cover the front and sides of the seat, and then be torn off and destroyed. It is an appliance not without practical merits, and might be introduced with advantage into any watercloset used by a number of different people, and not constantly in charge of an attendant.

A New Commode.—The annexed illustration represents a commode which has been manufactured by Messrs. Arnold, according to the specification of Mr. Lionel Stretton, Senior Surgeon, Kidderminster Infirmary. It is so constructed as to allow a patient to use it while in the reclining, or sitting, or any intermediate position. It may thus be used either as a substitute for the bed pan or as an ordinary commode. The lower flap is made in two pieces, and thus a patient who desires to sit up and at the same time keep one leg horizontal may easily do so. When not in use for its specific purpose, the commode can be employed as, and looks like, an ordinary bedside table. Mr. Stretton has found it of great use for patients who cannot use a bed-pan, and also for those who though able to use a bed-pan prefer not to do so.



Uterine Applicator and Blunt Curette Combined.—Dr. Alexander Duke (London, W.) writes: For those gynaecologists who prefer the application of liquid escharotics to the cervical canal and uterine cavity as in cases of cervicitis, chronic endometritis, etc., the instrument depicted will, I think, be found useful. Combining two intruments in one, and devoid of the defects common to all other applicators with which I am acquainted, the illustration represents a combination of my "cervical curette" for the removal of the tenacious mucus which hangs from os and cervix and by filling up the cervical canal neutralizes the value of any escharotic applied. I have converted the curette into an applicator by making the cage removable (after use as curette A). When well cleansed, unscrewed, and a small piece of cotton wool inserted the cage B is then screwed on and dipped into the escharotic chosen, which is then introduced into the uterus. The pressure of thumb and the support of fingers on the side rests will push up the central piston and the contents of the cotton wool be extruded where required. The instrument has been neatly made for me by Mr. Ash, instrument maker, Birmingham. The advantages claimed for it are: (1) The surface to which caustic is to be applied can and should be first cleaned with a curette, the rotary action of which is meant to cage and remove mucus, etc. (2) No fluid can be squeezed out by contraction of cervical canal on the cotton wool, which always happened with other applicators, and so prevented the escharotic reaching the part to be acted on. (3) Free exit for any excess of caustic during withdrawal of applicator, which should not occur if cotton wool has been properly charged. By the use of my combination instrument the cure of chronic endometritis, etc., will be hastened, the choice of escharotics being left to the judgement of the operator, as each case must be treated on its own merits.





[1] *The Surgery of Ritual Circumcision.* By Jacob Snowman, M.D., M.R.C.S., M.R.C.P. Lond. London: Medical Board of the Initiation Society, 1904. Fcap. 8vo. pp 48.)

[2] London: Published by the Society. (Demy 8vo, pp 103. 5s.)

LONDON COUNTY COUNCIL.

PUBLIC CONTROL DEPARTMENT.

(*Continued from page 845.*)

SHOP ASSISTANTS.

Shop Hours Acts, 1892-5.

THESE Acts regulate the employment in shops of persons under the age of 18 years, and limit the period of such employment to seventy-four hours a week, including meal-times. The definition of shop in the Acts is comprehensive, and includes wholesale and retail shops, markets, stalls, and warehouses and hotels, licensed public houses, and refreshment-houses of any kind. The Acts also provide that a notice setting forth the provisions of the Acts shall be kept exhibited in a conspicuous place on the premises, so that employers and their representatives and young persons concerned may become familiar with the Acts.

The Acts are enforced in London by a staff of 9 inspectors, 6 male and 3 female, and the total inspections made during the year by these officers amounted to 128,541, an increase of 3,000 on the previous year. Every shop is visited at least once a year, and those at which infringements of the Acts have been discovered, or which require closer supervision, are inspected more frequently; 7,705 irregularities were discovered, a reduction of 1,574 on the number reported during the previous year; 536 of these were cases of excessive hours of work, and 7,214 cases of non-exhibition of the notice of the provisions of the Acts. Legal proceedings were taken in 63 cases, in 59 of which convictions were obtained and penalties amounting to £86 2s. 6d. imposed; 2 cases were withdrawn and 2 dismissed; 630 written cautions were sent by the Council, and the remaining irregularities were dealt with by oral cautions by the inspectors.

Seats for Shop Assistants Act, 1899.

This Act requires that

In all rooms of a shop or other premises where goods are actually retailed to the public, and where female assistants are employed for the retailing of goods to the public, the employer carrying on business in such premises shall provide seats behind the counter or in such other position as may be suitable for the purpose, and such seats shall be in the proportion of not less than one seat to every three female assistants employed in each room.

This Act is enforced by the shop hours' inspectors in the ordinary course of their duties. During the past year it was necessary to take legal proceedings in only 2 cases, when penalties amounting to £2 15s. were imposed. In 52 cases of a less serious nature less drastic measures secured compliance with the law. The infringements now found are usually confined to new premises or new occupiers, or to shops where the staff of female assistants has increased, without a corresponding increase having been made in the seating accommodation, or where the seats have been allowed to get out of repair.

EMPLOYMENT OF CHILDREN ACT, 1903.

This Act came into operation at the beginning of the year. Its most important provisions are those which give local authorities power of making by-laws for regulating employment of children generally, and for regulating street trading by persons under the age of 16; but whether this power is exercised or not is entirely a matter for the discretion of each local authority.

Section XI provides hat licences for the employment of children in public entertainments granted by courts of summary jurisdiction under Section III of the Prevention of Cruelty to Children Act, 1894, shall no longer be granted to children under 10, and it gives local authorities powers of inspection similar those given by the former Act to factory inspectors. Under the Act of 1894 children over 7 could be licensed to perform in public entertainments.

By-Laws.—The provisions which enable local authorities to make by-laws regulating the employment of children generally and street trading by persons under 16 are contained in Sections I and II, and cover all occupations in which children are employed (excepting those already regulated by the Factory and Workshop Act and the Mines Regulation Acts), including home industries and small laundries not under the Factory Act. The by-laws may—

1. Prescribe for all children, or for boys and girls separately, and for all or specified occupations:
   (*a*) The age below which employment is illegal.
   (*b*) The hours between which employment is illegal.
   (*c*) The number of daily and weekly hours beyond which employment is illegal.
2. Prohibit or permit under conditions employment in any specified occupation.
3. Regulate the employment of young persons under 16 in street trading, with special regard to the desirability of preventing the employment of girls under 16 in streets or public places.

The Parliamentary return on the employment of school children shows that in 1899 over 144,000 children under 14 years of age were employed in and out of school hours. London's proportion of which appears to have been over 30,000, or more than one-fifth. This return was, however, admittedly incomplete, and probably did not include many of the children working out of school hours. Probably the number of London children engaged in paid employment is over 50,000. Many of these are employed in occupations prejudicial to young children, and one of the important objects of the by-laws will be to prohibit employment in such occupations. Draft by-laws have been prepared by the committee and submitted for the observations of the Home Secretary, the confirming authority.

SMOKE CONSUMPTION.

Under the Public Health (London) Act the Council has no direct control over smoke nuisance, the duty resting with the various metropolitan borough councils. Under Section 6, however, the Council has a general power of acting in default, and the Council's coal officers have therefore been instructed to report any nuisance from black smoke of serious duration. Evidence of 7,866 cases of smoke nuisance has been furnished by the Council to the various borough councils.

At the beginning of the year a large amount of serious nuisance was reported in Stepney, but ultimately the Borough Council took proceedings in several cases, securing the abatement of the more serious nuisances, and it was not found necessary to declare the Borough Council in default.

Owing to the serious nature of the nuisances experienced in the East End of London through dense clouds of smoke from the factories on the east bank of the river Lea the Poplar Borough Council was urged to take action. Proceedings were accordingly taken against some of the worst offenders, the Council's officer giving supporting evidence, and a considerable abatement of the nuisance has been obtained.

A useful point of law has been settled this year in connexion with smoke abatement. The Westminster City Council took proceedings against a club for allowing black smoke to issue from a chimney on the premises. For the defence it was urged that the building was to all intents and purposes a private dwelling-house, and therefore exempt from the operations of the section as to black smoke. The magistrate agreed with this view and the City Council lost the case; but on appeal the Divisional Court reversed this decision, holding that the premises could not be considered a private dwelling-house within the meaning of the Act, and remitted the case to the magistrate for conviction.

Two years ago the Public Control Committee recommended that the following alterations in the provisions as to smoke nuisance in the Public Health (London) Act, 1891, were desirable, namely: To strengthen Section XXIV*b* by adding the words "or other smoke" after the words "black smoke," so as to make the section cover any serious emission of smoke from a chimney, and to impose a direct penalty of not exceeding £10 for the first offence, increasing for subsequent offences, instead of applying to smoke nuisance, as at present, the complicated procedure that may be properly applicable to a sanitary nuisance. These recommendations were referred to the Public Health Committee, with the object of including them in any contemplated amendment of the Act.

INFANT LIFE PROTECTION ACT, 1897.

This Act requires that persons who undertake the care of—

(*a*) More than one infant under the age of 5 years for a longer period than forty-eight hours for hire or reward; or

(*b*) A single infant under the age of 2 years in consideration of a lump sum payment of not exceeding £20,

shall notify the local authority of the fact.

Notice is also required to be given to the coroner of the death of any infant subject to the Act.

Nearly 1,000 infants have come under the supervision of the Council's inspectors at notified houses during the past year. These have been systematically visited by the women inspectors appointed under the Act, who are required to satisfy themselves as to the proper maintenance of the infants, and to give any necessary advice or directions as to such maintenance; 2,265 visits have been made by the women inspectors to notified houses. The nurse mothers continue to

be, on the whole, satisfactory, and the majority of the infants are kept under fairly sanitary conditions. It was, however, necessary in three cases to issue orders under Section VII for the removal to the workhouse of infants whose health had become endangered, five infants in all being so removed.

A low infantile death-rate at notified houses is recorded. The number of deaths during the year was 61 out of a total of 972.

The low death-rate amongst the notified infants may, it is thought, to some extent be attributed to a cool summer, and the consequent immunity from infantile diarrhoea, but it may also indicate the value of supervision. The frequent examination of the infants by competent inspectors ensures a degree of care probably beyond that generally received.

One of the inspectors—Miss Jacobi—resigned her appointment in July last, and Miss F. E. H. Marshall, a trained nurse with special experience in the care and management of infants, has been appointed to fill the vacancy. The work of supervision of notified infants is increasing, and the Council is about to appoint a third woman inspector.

In addition to the female staff, two male inspectors are employed in detective work under the Act. These inspectors are in touch with local and parochial officials, and endeavour to discover persons infringing the Act. Forty-two infringements were detected during the year, in six of which convictions ensued, and fines and penalties amounting to £19 18s. were imposed.

Amendment of the Law.

Previous reports have dealt at length with the inadequacy of the present law properly to safeguard the lives of infants placed out for hire or reward. A Bill for the amendment of the Infant Life Act is before the House of Commons, which proposes:

1. To extend the provisions of the Act to cases where single infants are kept.
2. To increase the age of infants subject to the Act from 5 to 7 years.
3. To make the Act apply to all infants adopted for lump-sum payments, irrespective of the amount of the premium, and to provide a penalty for a breach of the section dealing with adopted infants.
4. To enable the local authority to order the removal of any nurse-infant from the care of an unfit person or from unsuitable premises. (Under the present law this can only be done when the health of an infant has become endangered.)

So far as London is concerned the Council's experience has not shown any necessity for the amendments indicated in proposals 1 and 2, but proposals 3 and 4 would, if adopted, considerably assist local authorities.

The suggestions for the amendment of the Act previously approved by the Council are as follows:

1. Additional powers for more adequately safeguarding the lives of adopted infants.

This could probably best be effected by repealing Section V (the adoption clause) and substituting a clause to—

(*a*) Raise the statutory age of infants from 2 to 5 years.
(*b*) Make the Act apply to all cases of adoption, irrespective of the amount of premium.
(*c*) Require that notifications as to the adoption of infants shall contain particulars as required by Section II, and, in addition, to compel any person adopting a nurse-infant to notify any change of address.
(*d*) Prohibit the retention or reception of more than one adopted infant without written sanction of the local authority.
(*e*) Prevent the transference of an adopted infant without the consent of local authority.
(*f*) Provide a similar penalty for breach of section as is imposed for offences against other sections of Act, in addition to liability to forfeit the adoption premium.

2. Further inspectorial powers in order to bring under supervision—
(*a*) Persons who systematically advertise or answer advertisements for the care or adoption of nurse infants.
(*b*) Lying-in houses, whose keepers should be required to keep a register containing particulars of every infant born in such houses, and the name and address of the person to whose care each infant is transferred.

3. Power to local authority to enforce provisions of Prevention of Cruelty to Children Act, in respect of acts of cruelty to infants coming under the Infant Life Protection Act.

CONTRACT MEDICAL PRACTICE.

NOTICE AS TO DISTRICTS IN WHICH DISPUTES EXIST.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 84.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held on September 29th, at 6, Suffolk Street, Pall Mall, Mr. E. PARKER YOUNG in the chair.

Alleged Misconduct of Midwives.

The first business on the agenda paper was the consideration of a letter from the Secretary of the London Obstetrical Society, informing the Board that after consideration of the case of a certain certified midwife the Council of the Society had resolved that her L.O.S. certificate should be forfeited. It was decided by the Central Midwives Board that evidence should be called for in support of the statements contained in the correspondence.

A letter was read from a medical practitioner in the country complaining of the conduct of a certified midwife who, in his opinion, had interfered in the treatment of a child under his charge; his letter to her on the subject had brought an answer from the midwife that the doctor might take legal proceedings whenever he liked; that he was to "please to mind" his own business, if he knew how; and that it was "much like" his "impotence" (*sic*) to write to her. The further consideration of this case of polite letter writing was postponed until the Board had received a report on the matter from the local supervising authority. Under Section VIII of the Midwives Act, 1902, it is provided that county councils and borough councils are to be the local supervising authorities over midwives within their areas, and these authorities are charged with several duties, one being to investigate complaints of malpractice, negligence, or misconduct on the part of any midwife practising within their areas, and to report the same to the Central Midwives Board should a prima-facie case be established.

Ultra Vires.

The Board then considered a letter from the Medical Superintendent of the Brentford Union Infirmary, asking for an opinion as to the best position for the building of new lying-in wards. Dr. Sinclair said that it would not be advisable for the Board to undertake any such responsibility. Miss Wilson wished the matter to be referred to Dr. Cullingworth for his advice, but Dr. Sinclair showed that could only be done by appointing Dr. Cullingworth to act as a sub-committee, and he then proceeded to urge that the Board was quite unable to give a decision on the matter. After the Chairman had warned the Board that it must be careful about taking up the position of an architect, Miss Wilson moved and Miss Oldham seconded a resolution, that a letter of advice should be sent in reply to the communication from the Medical Superintendent of the Brentford Union Infirmary. This was carried by the votes of these two ladies against the vote of Dr. Sinclair, who demanded that his protest should be noted. He contended that it was undignified for the Board to assume functions and give advice on matters for the consideration of which it was not constituted by the Midwives Act, 1902.

Compensation of Suspended Midwives.

A letter was then read from the Town Clerk of Poplar, urging the Board to promote legislation to empower local supervising authorities to grant compensation to midwives suspended from practice under Section VIII (3) of the Midwives Act, 1902. According to the Act, one of the duties of the local supervising authorities over midwives is to suspend any midwife from practice, in accordance with the rules under the Act, if such suspension appears necessary in order to prevent the spread of infection. The Chairman observed that the Act ought to have contained some provision for compensating a midwife deprived, through no fault of her own, of the opportunity of earning her living. Dr. Sinclair thought that the Board had absolutely nothing to do with any questions of compensation, to which Mr. Parker Young replied that if they found an injustice was done by the Act then they might take care that in any future legislation this injustice was remedied. Dr. Sinclair's rejoinder to this was that the duty of Parliament was to legislate, and the duty of that Board was to administer a certain Act of Parliament. Miss Wilson, seconded by Miss Paget, then moved that the Secretary of the Central Midwives Board be instructed to take note of the suggestion about compensation contained in the letter from the Town Clerk of Poplar. Dr. Sinclair thereupon moved as an amendment that the Secretary be instructed to inform the Town Clerk of Poplar that the Central Midwives Board has no right to deal

with questions of compensation. This amendment, however, was not seconded, so, on the votes of Miss Wilson and Miss Paget, their resolution was carried. Dr. Sinclair wished for his proposed amendment to be entered on the minutes, but this was not allowed, on the ground that the proposed amendment had not been seconded; however, Dr. Sinclair successfully demanded that his name should be entered on the minutes as objecting to the resolution proposed by Miss Wilson and seconded by Miss Paget.

Midwives not Practising Independently.

A letter from the Medical Officer of the County of Nottingham was then read, stating that several midwives who had received certificates had not notified their intention to practise because they only attended cases with a medical man. Any decision on this question must turn on the interpretation of the wording of Section x of the Midwives Act, which begins as follows:

Every woman certified under this Act shall, before holding herself out as a practising midwife or commencing to practise as a midwife in any area, give notice in writing of her intention so to do to the local supervising authority.

Dr. Sinclair suggested that as a serious principle was involved in the matter, and as the letter was not formally included in the agenda for that meeting of the Board, it would be best to postpone its consideration. It was thereupon resolved that the question be postponed.

Next Meeting.

The next meeting of the Board will be held on October 27th.

METROPOLITAN ASYLUMS BOARD.

CHILDREN'S COMMITTEE (1903).

IT is perhaps not generally known that the Metropolitan Asylums Board have for the last six years been making provision for five distinct classes of pauper children requiring to be separated from those in workhouses, and that it has now established a school for ophthalmic cases, two ringworm schools, two seaside homes for convalescent or delicate children, five homes for defective children, and three for children remanded by magistrates. Mr. E. Treacher Collins, in reporting on the ophthalmic schools, gives the total admissions for the year as 625, and notes among these no less than 292 cases of trachoma, the larger number of the latter coming from districts in the vicinity of the docks; 64 cases of trachoma are reported as discharged cured. Dr. T. Colcott Fox reports that 219 cases of ringworm were under treatment at Bridge School during the year 1903, and of these 63 were discharged cured; and at the Downs School, of 618 children admitted, 151 were discharged cured. It would appear that Microsporon ringworm was diagnosed in 342 cases at the two schools, Trichophyton ringworm in 150 cases, the latter being described as "an insidious ringworm, many cases of which may easily escape detection." Of the Margate Home Mr. W. Greenwood Sutcliffe, F.R.C.S., speaks highly with regard to its facilities for the open-air treatment of surgical tuberculous disease, and estimates that as many as 500 cases per annum could be received. Twenty-one cases of tuberculous cervical glands had been satisfactorily treated by operation and fresh air, and some excellent results had been obtained in spinal cases without operation. The reports of the several homes for defective children are signed by Miss Rosa Turner, L.R.C.P.E., the Medical Officer. Very little illness, and nothing infectious beyond mumps and follicular tonsillitis, seems to have occurred at the homes, which is remarkable, as the inmates attend the special schools with miscellaneous children. Mental and moral improvement is generally observed, and good discipline is promoted by drill and one penny weekly good conduct money. Miss Turner advocates the starting of homes for mentally deficient infants from 3 to 7; and in the other direction the Committee has arranged for separate houses for elder boys attending school, and for training institutions for those between 16 and 21. The remand homes seem to be doing useful work.

TRAINING SHIP "EXMOUTH."

The multifarious character of the operations of this Board has recently been referred to in the BRITISH MEDICAL JOURNAL, p. 696. One of its most useful enterprises is the provision of a training-ship (moored in the Thames off Grays, Essex) for boys chargeable to metropolitan parishes and unions, where they are trained for the navy, army, or mercantile marine. From the very business-like report issued by the Committee of Management we learn that during last year 221 boys were admitted to the ship and 240 discharged. Of the latter 42 went to the navy, 54 to the army, and 95 to the mercantile marine; 48 were discharged to their friends or their unions; and one boy died. Mr. T. H. Openshaw, C.M.G., F.R.C.S., has been appointed honorary consulting surgeon to the ship; and Dr. A. J. Partridge is the visiting medical officer. The general health appears to have been satisfactory. With the exception of several cases of ophthalmia no contagious affection is recorded; the solitary death was due to acute nephritis. The Captain-Superintendent refers in his report to the low physique of boys sent him from metropolitan unions, and a certain admixture of country boys (who are admissible to places on the ship not claimed by the London parishes) is physically as well as financially an advantage. One would think that no better antidote to the physical deterioration of which so much is heard nowadays could be found than in the healthy life and wholesome discipline of a training ship, and we are surprised to find that the 600 cots are not all claimed for London cases.

REPORT OF THE MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD, 1902-3.

THE following is a summary of some of the more important observations recorded in this report:

THE INFECTIVITY OF OYSTERS.

Dr. Bulstrode reports upon his investigations into certain outbreaks of enteric fever and other illness which occurred simultaneously at Winchester, Southampton, and other places, and were ascribed to the eating of oysters. On November 10th, 1902, mayoral banquets were held at Winchester and Southampton, 134 guests being present at the former and 133 at the latter. In each instance, either immediately or within three or four days after the conclusion of the banquet a large number of the guests suffered from gastro-intestinal disturbances; and in from two to three weeks after the banquets a minority of the guests developed typhoid fever, which, in some instances, proved fatal. The number of enteric cases following the Winchester banquet was 10, whilst at Southampton the number was 11; of gastro-enteritis not designated typhoid fever there were 52 attacks at Winchester and 44 at Southampton. Dr. Bulstrode ascertained from every guest what articles of diet on the menu cards had been partaken of and what had been avoided, and also whether any illness had followed the meal. Analysis of this information made it obvious that all the articles of diet could be regarded as free from suspicion with the exception of oysters, but that the consumption of these exhibited a very close parallel with the incidence of illness. It was then ascertained that the oysters provided at both banquets had been obtained from certain oyster ponds at Emsworth. These ponds, as is demonstrated in the map which accompanies Dr. Bulstrode's report, were subject in a high degree to risk of contamination from Emsworth sewage. Moreover, at the time in question the Emsworth sewers were receiving the dejecta of typhoid patients. At about the same period Dr. Bulstrode found, on further investigation, in certain cases of typhoid fever at Portsmouth, Ventnor, and other towns there was a strong suspicion of the infection being due to Emsworth oysters. The dangerous proximity of the Emsworth oyster ponds to sewage outlets is no new discovery. It was pointed out by Dr. Bulstrode himself in 1896. Whatever efforts may have been made to remedy these defects since that date, Dr. Bulstrode's present report emphasizes the fact that at the time of his investigating these recent outbreaks this dangerous state of affairs was still in existence. In his introductory letter Mr. Power, the Senior Medical Officer, emphasizes strongly the unsatisfactory condition revealed by Dr. Bulstrode's report, and concludes his comments as follows:

It is impossible to consider the circumstances of these Winchester and Southampton outbreaks, along with similar data which from time to time come to the notice of the Medical Department, without being impressed with the need, upon public health grounds, that control of the inter-relations of the various procedures of shellfish culture and sewage disposal should be without delay vested in competent authority.

PLAGUE IN 1902.

Dr. Bruce Low reports upon the incidence of plague throughout the world in 1902. India, where 1901 had proved a record year for high plague mortality, suffered in 1902 from a further

extension of the disease and large additional mortality. With the exception of the Presidency of Bengal, where plague incidence was less than half that of the previous year, there was an increase in all the provinces and States where plague had previously occurred, and in several of them the mortality of 1901 was more than doubled. Outside India, the only far eastern country to suffer heavily was China, the disease occurring mainly in her southern provinces. In Australia there were limited outbreaks at Sydney and Brisbane and also in the Sandwich Islands. In America, plague prevailed in a minor degree in Paraguay, the Argentine, Brazil, and to some extent in San Francisco, Colorado, and Mexico. In South Africa there were 40 cases at Port Elizabeth, and at Durban an outbreak commenced in December and was continuing in the early months of 1903. In East Africa and Madagascar there were small outbreaks which were soon brought under control. On trade and pilgrim routes between Europe and the East there was less plague in 1902 than in antecedent years; there was a limited amount in Bagdad and Assyr, and in Egypt there were 481 cases with 291 deaths. Europe was free from the disease except on its eastern borders, there being a limited recrudescence at Constantinople, Smyrna, Odessa, Astrachan, and other places. In the British Islands, only twenty-one vessels arrived under suspicion of plague, and of these only one had actual plague on board at the date of her arrival.

Rat Plague.

In a cargo vessel which was unloaded at Bristol after arrival from Smyrna, at that time plague-infected, a number of dead rats were found. One of these was sent to Dr. Klein for bacteriological examination. In smear preparations from the spleen and lungs of this animal bipolar-staining organisms were found which were not unlike B. pestis. Subcutaneous inoculation of the material into guinea-pigs and rats produced a haemorrhagic septicaemia with *post-mortem* appearances not unlike those of plague, except that the spleen was not much enlarged. The tissues were found to be infected with a single definite bacillus which "showed in its general morphology and staining power a remarkable similarity to B. pestis." Nevertheless, on the ground of other animal experiments and of certain cultural characters, Dr. Klein states that "it was definitely ascertained that the microbe was not B. pestis, but a microbe related partly to bacillus coli and partly to the bacterium lactis aërogenes." He has endowed it with the name of "bacterium Bristolense." These observations are regarded as illustrating the care which is requisite before an accurate diagnosis of plague in the rat can be established.

Dr. Klein would divide true plague into two definite types: "(1) A virulent type, bred in the human subject, which on gelatine exhibits raised colonies with filmy, irregular margins, and the bacilli of which are cylindrical in shape when taken from recent cultures; and (2) a less virulent type, bred in the rat, exhibiting rounded translucent colonies on gelatine, with coccus-like forms on culture." Whilst admitting that the virulent type is capable of transmission through the rat, he is disposed to regard the latter, or less virulent type, as "proper" to the rat.

Bacterial Air Pollution.

Dr. Gordon has performed a lengthy series of experiments with the object of ascertaining the extent to which the surrounding air becomes contaminated with bacteria-laden material given off from the human mouth in the act of speaking. In his preliminary operations he followed the method of Flügge and his pupils, which was to artificially infect the mouth before speaking with a living culture of B. prodigiosus. Relying on this organism as an index, and placing culture plates in suitable positions in the room used for his experiments, he showed, in confirmation of Flügge's results, that during the continued act of loud speaking material from the mouth was dispersed to a distance of 40 ft. in front of and even 12 ft. behind the speaker. He then devised a method for detecting droplets of saliva in the air of a room without the employment of any artificial bacterial indicator. From samples of saliva collected from 25 normal persons it was found that the characteristic organisms present in all cases were streptococci, and that the numbers of these organisms present per centimetre varied from 10 to 100 million. The chief types of the streptococci present were the brevis, medius, longus, and conglomeratus. From the abundance and constancy of its presence, streptococcus brevis was selected as the most suitable for diagnostic purposes; from one ten-millionth to one hundred-millionth part of a cubic centimetre of saliva was found sufficient to demonstrate the presence of this organism. The culture medium employed was neutral red broth, incubated anaërobically for forty-eight hours at 37° C. Experiments conducted with the object of discovering the extent of dissemination of this organism confirmed those made with B. prodigiosus, the presence of particles of saliva being indicated at a distance of 40 ft. in front of and 12 ft. behind the speaker. On some occasions a certain "air streptococcus" was present in the room before the experiments commenced; this organism, however, was readily distinguished from the streptococci characteristic of saliva. Experiments made to determine the aërial contamination associated with silence and with ordinary quiet conversation failed to show the dissemination of droplets of saliva. Salivary streptococci were found to be comparatively rare in the open air.

(*To be continued.*)

THE FIFTH INTERNATIONAL CONGRESS OF DERMATOLOGY, BERLIN, 1904.

This very successful Congress was opened by an informal reception at the Hotel Kaiserhof, when the members from many parts of the world got into touch with one another.

Inaugural Meeting.

The real work commenced on the following morning, Monday, September 12th, with the formal and official opening of the Congress in the theatre of the Langenbeckhaus by the President, Professor Lesser (Berlin). The assembled members were then welcomed by representatives of the German Empire, of the Prussian State, and of the City of Berlin. These bodies associated themselves with the labours of the Congress, and lent not only their moral support to it, but also material assistance. The members were also welcomed by the University of Berlin and by the Faculty of Medicine.

The scientific work of the Congress then commenced.

Syphilis and the Anthropoid Apes.

Professor Neisser (Breslau) arrived at the following conclusions as the result of some of his experiments: The serum of human subjects, with recent syphilis, injected in large quantities into a chimpanzee gave rise to no sign or symptom of syphilis; nor did the serum injections immunize the animal against inoculation with syphilis, the latter being successful, though undertaken immediately after the last injection of serum. Neisser expressed the opinion that this experiment confirmed the attitude of those who maintained that Colles's law was to be explained by the infection of the mother, and not by her immunization.[1]

Dr. Metchnikoff (Paris) stated that the chimpanzee reacted readily to the syphilitic virus; nine animals were inoculated, with positive results in all cases. As to a micro-organism, the search had been in vain. He referred to the researches of Klingmüller and Baermann (Breslau), who had inoculated themselves with the filtrate of fresh syphilitic material passed through a Berkefeld filter, and with negative results.[2] On the other hand, Metchnikoff had been able to show that the material left in the filter inoculated in the chimpanzee gave rise to syphilis in the animal. With regard to the experimental inoculation of the bonnet-macacus, a chancre was produced, but was not followed by secondary lesions of the skin and mucous membranes. This attenuation of the virus opened up the possibility of a vaccine being obtained at some future time.

Professor Lassar (Berlin), who had also carried out experiments in the same direction, had not been able to convince himself, any more than had Professor Neisser, of the possibility of inoculating syphilis to the lower apes.

Leprosy.

The morning sitting of Tuesday, September 13th, was devoted to leprosy. A number of reports on the prevalence of leprosy and the means taken to deal with the disease since the Berlin Conference of 1897 had been sent in from various parts of the world. These had been very practically dealt with by publication in volume form, a copy being handed to members. This did away with a great deal of loss of time, which would have been the result of reading the reports. As far as the British Empire is concerned, the following gentlemen acted as reporters—namely: Mr. George Pernet, of London (Great

[1] See also Neisser, *Deut. med. Woch.*, No. 38, 1904, p. 1369.
[2] For details see *Deut. med. Woch.*, No. 21, 1904.

Britain and Ireland, India and the Colonies, Australia and South Africa excepted); Mr. Wellesley C. Bailey, of Edinburgh (British India from the statistical non-medical point of view); and Dr. J. Ashburton Thompson, of Sydney (Australia).[3]

In his report concerning North America, Dr. Isadore Dyer (New Orleans) also touched on British possessions.

In his conclusions, Mr. Pernet pointed out that much had been done to prevent the spread of the disease and alleviate the sufferings of lepers. He insisted on the enormous mass of leprosy with which the British had to cope. The magnitude of the task needed no emphasizing when the number and variety of the native races, the hugeness of the population, and the vastness of the area under the sway of the English were considered.

Professor Neisser (Breslau) acted as general reporter on the whole subject. He drew attention to the fact that leprosy was spread from man to man, be it directly or indirectly. The fish theory was incidentally mentioned, but only to be rejected. Theoretically segregation was the method to employ, but in practice cases had to be dealt with on their merits and in accordance with circumstances. Professor Neisser recommended that in all countries leprosy should be a notifiable disease, so that cases could be kept under observation and statistics prepared on the same international basis, so as to ensure uniformity. Powers should also be given to administrations to separate children from their diseased parents. Every country should have the right to prevent the immigration of lepers or of suspected lepers. As regards this point, an international agreement would have to be arrived at.

Several important papers on leprosy were read. Those of M. Jeanselme (Paris) and of Dr. Nonne (Hamburg) on the nerve lesions of leprosy; and of Dr. Klingmüller (Breslau) and Dr. Lie (Bergen) on the histology of anaesthetic leprosy, were of special interest.

Professor Wolff (Strasburg) made an important communication on an instance of leprosy contagion, in the neighbourhood of Strassburg, observed by him, in which the uncle, who had contracted leprosy abroad, infected a nephew who had never been out of the country. The latter had shared the same bed with his leprous uncle. This case may be compared with the similar one observed and recorded by Dr. Hawtrey Benson in Ireland. Other papers on leprosy were also read.

Finsen Light Treatment.

In the afternoon Drs. Forchhammer and Reyn, of the Finsen Light Institute (Copenhagen), gave an account of the light treatment. The technique of the method had not varied during the last few years. The experimental employment of the "iron" lamp and also of sensitization had not given any practical results. The authors' references to the treatment of lupus vulgaris and lupus erythematosus need not detain us. Various forms of acne derived some benefit, other treatment being concurrently employed.

Defective Metabolism and Diseases of the Skin.

This subject was dealt with by Dr. Duncan Bulkley (New York), Professor von Noorden (Frankfort), and Dr. Radcliffe Crocker (London). The speakers dealt with this large and intricate subject under its many aspects, which cannot very well be summarized in this place owing to want of space. Needless to add that it is one of importance and interest to the dermatologist and the general physician alike.

Syphilis of the Blood Vessels.

This subject was reported upon by Professor von Duhring (Kiel) and Dr. Jullien (Paris) and discussed by various speakers. Syphilitic changes in the blood vessels, arteries, and veins may occur, as is well known, in all the stages of the disease.

Epitheliomata of the Skin and their Treatment.

The sitting of Friday morning was given up to the subject of epithelioma of the skin, including rodent ulcer. Dr. Darier (Paris) presented a report on the classification of these growths. He was of opinion that the great majority, if not all, of the growths described as endotheliomata were epitheliomata. Space will not permit of the details of this report being given here.

Dr. F. H. Fordyce (New York) gave a lantern demonstration of photomicrographs, illustrating some of the histological features of epithelioma cutis.

[3] See V. Internationaler Dermatologen-Kongress, Berlin, 1904. Verhandlungen und Berichte (1 Band, pp. 16, 82, 101).

The Non-Surgical Treatment of Cancer of the Skin.

This subject was introduced by Professor von Petersen (St. Petersburg), and led to an animated discussion, Professor von Bergmann (Berlin) insisting on the advantages of surgical treatment as opposed to that by light, x rays, and radium, except in cases that were inoperable. Professor Lesser (Berlin) pointed out that it was necessary to distinguish the types. Rodent ulcer, a superficial condition, had been successfully treated by the rays, but it was quite a different thing when one had to deal with deep cancers of the skin. Professor Veiel (Kannstatt) spoke in favour of surgical interference, be the aesthetic result what it might. Dr. Leredde (Paris) and others supported the x-ray treatment in a general way. It would have been better had the subject been divided up, and rodent ulcer and true cancer (epithelioma cutis) dealt with and discussed separately.

The number of papers on the agenda was a very large one, and their presentation interfered with full discussion of the specially-selected subjects. The question arises whether it would not be more advantageous at future congresses to devote each sitting to the discussion of a special subject. The papers of the reporters on each subject could be printed beforehand and placed in the hands of the members, thus doing away with the necessity of reading out the papers. This line was taken by Dr. Dubois-Havenith, the General Secretary and Organizer of the Brussels Conference on the Prophylaxis of Syphilis, and worked well. As to individual contributions, an abstract could be published in a similar way, the papers being taken as read, and printed in full in the *Transactions*. The daily meetings were held in the theatre of the Pathological Museum in the grounds of the Charité Hospital.

Demonstrations and Exhibits.

One of the most interesting features of the Congress was the daily exhibition of living cases every morning in the auditorium and corridors of the second medical clinic of the Charité. A number of anomalous and rare diseases of the skin, and also many showing results of treatment, were brought before the notice of the members. The example in this direction had been set at the Dermatological Congress which met in London in 1896. A number of drawings, photographs, models, microscopical sections, and so forth had been brought together in the Pathological Museum. A trade exhibition of instruments, drugs, etc., also proved of interest.

Hospitality.

Apart from private invitations, a banquet was given to the foreign members by their German colleagues at the Hotel Kaiserhof. This was attended by representatives of the State and of the City of Berlin. It was very successful. A number of speeches were made by our German hosts and by representatives of various countries.

On Friday evening, September 16th, there was a reception in the Town Hall at the invitation of the representatives of the city.

The Congress wound up with an excursion on the Spree for members and ladies, with supper at the Abtei.

Our German hosts were most hospitable, and vied with one another in their kindly reception of the strangers within their gates. In every way—scientific and social—the Berlin International Congress of Dermatology of 1904 will leave a lasting impression on all those who had the good fortune to be present on the occasion.

Next Meeting.

The next International Congress of Dermatology will be held in New York, under the Presidency of Dr. James C. White, of Boston, U.S.A.

Fourth Pan-American Medical Congress.—The President of the Republic of Panama has appointed the following officers of the Fourth Pan-American Medical Congress, which, as already announced in the British Medical Journal, is to be held in Panama the first week in January, 1905: Dr. Julio Ycaza, President; Dr. Manuel Coroalles, Vice President; Dr. José E. Calvo, Secretary; Dr. Pedro de Obarrio, Treasurer. There will be four Sections: Surgery, Medicine, Hygiene, and the Specialities, to which the following officers have been appointed: Surgical Section—Major Louis LaGarde, President; Dr. E. B. Harrick, Secretary. Medical Section—Dr. Moritz Stern, President; Dr. Daniel R. Oduber, Secretary. Section on Hygiene—Colonel W. C. Gorgas, President; Dr. Henry E. Carter, Secretary. Section on Specialities—Dr. W. Spratling, President; Dr. Charles A. Cooke Secretary.

THE PREVENTION OF CONSUMPTION.

Sanatorium for Workmen.

The scheme for providing a Sanatorium for Workmen Suffering from Tuberculosis, which has been for some time under consideration by a Special Committee of Delegates of the Metropolitan Hospital Saturday Fund, seems to be getting into practical shape, and apparently we may look forward to the erection of the sanatorium before very long. The intention is to provide accommodation for 200 patients, at a cost for site, building, furnishing, etc., of £50,000. The cost of maintenance is calculated at £65 a bed per annum, and it is hoped that the institution will be self-supporting. A large number of the beds will be endowed and retained by the various workmen's organizations. The employés of the Post Office are expected to require forty beds, and the Hospital Saturday Fund is to be asked by delegates to secure fifteen beds, in addition to contributing £500 towards the cost of building. One important modification in the original scheme is announced: instead of confining the benefits of the sanatorium to London workers, it has been decided to extend the movement to all parts of the United Kingdom. In this way it is hoped that the support and co-operation of the united Friendly Societies and other working-class organizations will be enlisted in the scheme.

A special feature of the scheme is that it is proposed to provide some form of light employment, under hygienic conditions, for those who need a protracted stay in the sanatorium. In this way the cost of the individual's maintenance will be diminished by the result of his labour, and those whose occupations are unsuitable can learn some other work fitted to their condition. The committee is evidently very much in earnest and determined to bring the scheme to a successful issue.

MEDICAL NEWS.

The Odontological Society of Great Britain will hold the first meeting of its winter session at 20, Hanover Square, W., on October 24th, at 8 p.m. A presidential address will be delivered by Mr. F. J. Bennett, and be followed by a paper, illustrated by lantern slides, on "Some Recent Additions to the Museum of the Society," by Mr. J. F. Collyer. This Society it may be noted is prepared to receive applications for grants in aid of the furtherance of scientific research in connexion with dentistry. Particulars and forms of application can be obtained from the Honorary Secretary, Scientific Research Committee, Odontological Society, 20, Hanover Square, W.

At a meeting of the Society for the Study of Inebriety to be held in the rooms of the Medical Society of London, Chandos Street, W., on Tuesday, October 11th, at 4 p.m., Dr. Charles F. Harford, Principal of Livingstone College, will open a discussion on "The Drinking Habits of Uncivilized and Semi-civilized Races."

The first meeting of the Childhood Society for the present session will be held in the Library of the Sanitary Institute, 72, Margaret Street, W., on Thursday, October 20th, at 8 p.m., when a discussion on physical deterioration will be opened by Mr. E. W. Brabrook, C.B., F.S.A., and continued by Mrs. Watt Smyth, Dr. Robert Hutchison, Dr. G. E. Shuttleworth, and Dr. Francis Warner. The chair will be taken by Sir T. Lauder Brunton.

At the third annual general meeting of the Medico-Legal Society, to be held at 22, Albemarle Street, W., on October 11th, at 8.15 p.m., after the annual report has been presented and the new Council elected, a resolution will be moved rescinding the existing rule as to the presidency and making that office tenable for three consecutive years. It is also proposed to make the annual subscription £1 1s., and to fix a composition fee for life membership.

A Tuberculosis Commission in Georgia.—A Bill was passed at the last session of the Georgia State Legislature creating a Commission for the study and investigation of tuberculosis in that State. The Commission will be composed of one physician from each Congressional district and ten from the State at large. The Commissioners are to investigate the prevalence of the disease in the State, and to suggest such measures as may tend to check its spread and safeguard the public against infection. The members of the Commission are to be appointed by the Governor.

The Medico-Psychological Association.—A meeting of the Northern and Midland Division of the Medico-Psychological Association will be held at the Cheshire County Asylum, Parkside, Macclesfield, on Thursday, October 13th, at 2.30 p.m., when Dr. Sheldon will entertain the members at luncheon. Clinical cases will be shown and papers read by Drs. McConaghey and Thompson at 2.15, after which the report of the Statistical Committee will be considered. The members will dine together at the Midland Hotel, Manchester, at 7.30.

Italian Congress of Internal Medicine.—The fifteenth Italian Congress of Internal Medicine, will open on October 24th, under the presidency of Professor Baccelli. The sittings will last four days. The following are the subjects proposed for discussion: Fevers of unknown origin (to be opened by Professor Bozzolo of Turin), physics and chemistry in diagnosis and treatment (to be opened by Professors Cerconi and Zoja), the centres of the pupillary reflex (to be opened by Professor Marina of Trieste). Professors Rubino (Naples), and Schupfer (Rome), will report on the advances recently made in the fields of treatment and diagnosis.

Italian Obstetrical Society.—The Italian Obstetrical and Gynaecological Society will hold its tenth Congress at Palermo from October 20th to 23rd. The questions proposed for discussion are: (1) The treatment of endometritis; (2) tuberculosis and pregnancy. Among the communications promised are the following: Professor Bossi, of Genoa: The considerations that should guide the practitioner in the selection of methods of intervention in obstetrics; Professor Patellani, of Milan: The serum diagnosis of pregnancy; Dr. Mirto, of Milan: Effects of the hypodermic injection of adrenalin in certain obstetrical and gynaecological cases; Professor Merletti, of Ferrara: The systematic ligature of the internal iliac vessels as the first step in abdominal panhysterectomy.

Presentation.—The occasion of the departure of Dr. A. Bradshaw, of Wattlesborough, to take up practice in Birmingham, was seized by his friends and patients in the neighbourhood to give expression to the esteem which they had acquired for him during his eleven years' residence among them. It took the form of an illuminated address, together with a gold watch and marble clock, all of which were duly presented to him at a public meeting last week. The local lodge of Druids on the same occasion presented Dr. Bradshaw with a regalia case in acknowledgement of the services rendered by him as a manager of their school.

Gifts to Charities.—Mr. John Earley Cooke, of Cobham, Surrey, has bequeathed about £50,000 to charities. Among the bequests are immediate annuities of £60 to the London Hospital, and one of £30 to St. Bartholomew's Hospital, and reversionary bequests of £2,000 to the London Hospital; £1,500 to St. Bartholomew's Hospital, the income of which he desired should be devoted to continuing or providing a bed in the Rustington Home and the balance for the Samaritan Fund of the Hospital; £1,000 to the Metropolitan Convalescent Institution, £500 to the Earlswood Asylum, £300 to the All Saints Convalescent Home at Eastbourne, and £200 each to the Margate Infirmary and the Seaside Convalescent Home at Seaford. The ultimate residue of his estate is to be devoted to such charitable purposes as his trustees shall think fit.—Mrs. Mainwaring Jones has given £1,000 to the Charing Cross Hospital for the endowment of a bed in the new wing in memory of her husband, Lieutenant-Colonel Mainwaring Jones, of the Honourable Artillery Company.

International Congress on Tuberculosis.—An International Congress on Tuberculosis will be held in Paris from October 2nd to 7th, 1905. In the Pathological Section, of which Professor Lannelongue is President, the following questions will be discussed: (1) The treatment of lupus by the new methods; (2) the early diagnosis of tuberculosis by the new methods; (3) comparative study of different tuberculoses. The discussion on the first of these points will be opened by Drs. Jeanselme and Chatin; the second by Dr. Achard; the third by Professor Arloing. In the Social Section, which will be presided over by Professor Landouzy, the questions to be discussed are: (1) The etiological factors of tuberculosis, to be opened by M. Romme; (2) the part of dispensaries and sanatoriums in the campaign against tuberculosis, to be opened by M. Courtois-Suffit; (3) assurance and sick fund societies in the fight against tuberculosis, to be opened by M. E. Fuster.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1904.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, OCTOBER 8TH, 1904.

THE HUXLEY LECTURE.

For the Huxley Lecture, delivered at the opening of the winter session of Charing Cross Hospital Medical School, Sir William Macewen chose a subject admirably suited to the occasion. The physiology of the caecum and appendix forms a study of the highest interest from the point of view of comparative zoology, and a problem of the interdependence of structure and function of the kind which the genius of Huxley was so pre-eminently successful in elucidating.

As Sir William Macewen pointed out, hard things have been said by many of the appendix caeci as to its uselessness and its influence as a danger centre in the abdomen. The more impatient have been disposed to abuse it for persisting at all in the animal man, and have often taken the law into their own hands, and, diseased or not, contemptuously removed it whenever opportunity occurred. Nor has criticism been content to confine itself to the appendix; it has in some quarters advanced on to the caecum and spread itself over the colon, so that some at least have shown a disposition to look upon the latter as a drainpipe of inconvenient length and unnecessary curves. The possible evolution of this tendency to improve out of existence certain of the structural components of the human body was traced by Sir William Macewen, and he pleaded for the payment of greater respect, both by the public and more particularly by the medical profession, to the human organism as it is. He would have the public remember that for the present certainly, and for the future probably, digestion is a process which can be carried to a conclusion satisfactorily only by the observance of the "rules of the game," that the standing lunch and the five-minutes' breakfast do not come within the compass of these rules, and that Nemesis overtakes those who break them. He would have the medical profession acknowledge that physiological research has still much to discover with regard to the function of organs, and not least with regard to those of the digestive system. Are the caecum and appendix the useless structures which some believe them to be? There is a considerable mass of evidence to be gathered from both human and comparative anatomy, which goes to negative such a view, and to indicate that both these organs take a not unimportant share in that many-sided process, food digestion. It must be admitted that a good case can be made out for the caecum, and at least something can be said for the despised appendix.

In the herbivora, the caecum takes a most important share in the digestive process, and a comparative study of the caeca of other animals has shown that the development of this organ varies directly with the amount of vegetable food comprised in the diet. Man being in part herbivorous, there is here presumptive evidence that the caecum plays a useful part in human digestion, and there is direct evidence also. Patients who are the subjects of intestinal fistula of the small bowel invariably suffer from an inanition which must be ascribed to the loss of caecal and colic digestion, and, when the caecum is removed by operation, a special diet must be followed if health is to be maintained.

Some highly interesting facts derived from the study of the interior of the caecum seen through defects in its walls were described by Sir William Macewen, showing the regulation of the caecal secretion by reflex excitation. This secretion is intermittent: it appears to be excited by the introduction of food into the stomach, but more especially can it be seen to become active just before the discharge of the contents of the ileum through the ileo-caecal valve. The caecal surface is studded with Lieberkühn's follicles; they are much more numerous here than in the small intestine, and the discharge of succus entericus from these is proportionately important in final digestion.

Not only is the caecal secretion apparently under reflex nervous control, but the discharge of the contents of the ileum appears also to be regulated by some nervous mechanism, controlling the ileo-caecal valve. The experiments of Pawlow on the regulation of the flow of food through the pylorus are well known: he has shown how there is an "acid reflex" which controls the pyloric orifice, and prevents the escape of stomach contents in too great quantity. It is probable that some similar reflex regulates the ileo-caecal valve.

It is not clear that the appendix takes any particular share in the regulation of this mechanism, but the muscular and nervous relations of this structure suggest that it is related to the initiation of caecal muscular contractions. Muscularly, it belongs to the caecum, but in respect of its nervous supply it belongs to the small intestine, as it is supplied by the terminal branches of the same group of nerves—the superior mesenteric plexus—that supply the latter. Caecal movements begin frequently, if not always, in the appendix, and the impulses which start these movements are very probably transmitted from the small bowel above.

There is other evidence of the usefulness of the appendix. In health, its surface is covered with Lieberkühn's glands in a state of active secretion; the succus entericus derived from these cannot but be of assistance in caecal digestion. Further, the appendix has probably an important influence on the presence of those micro-organisms which in the large bowel share in the process of the final disintegration of the food. Its cavity constantly contains great numbers of these organisms which must be discharged into the caecum when contraction occurs; numbers also undergo destruction in the appendicular follicles. These facts appear to indicate that one of the functions of the appendix is to maintain cultures of these organisms in a fit state to act upon the caecal contents and to control their multiplication.

Caecal indigestion is a common complaint, but is not often easily differentiated from other forms. The disorder which constitutes this condition consists in part of derangement of the ileo-caecal reflex mechanism, in part of inhibition of the movements of the appendix and

caecum, and in part of a defective secretion of succus entericus. All these are probably dependent on the defective performance of the digestive process in the stomach and small bowel. Appendicitis and typhlitis follow this derangement of function, being first due to the stasis in the contents of the caecum, and secondly to the disturbance of the micro-organismal fermentation leading to damage to the intestinal wall.

It is very probable that, apart from their own interest and value, the investigations of Sir William Macewen will stimulate others to further research on this most important subject. There is much that still remains unknown regarding the comparative anatomy of the appendix; in fact, it is surprising how little work has been done on the subject. Caecal digestion is largely, if not entirely, an uncultivated field for research. The contribution of Sir William Macewen to these questions is one of great value

AUTO-REGENERATION OF NERVES.

Ranvier long ago pointed out that the leading facts about regeneration of nerves were not in dispute, the great difficulty being the interpretation of these facts. In recent years several surgeons have maintained that nerve fibres, though separated from the central nervous system, after undergoing complete degeneration can, more or less, completely re-form axis-cylinders and medullary sheaths that is, that nerve fibres in the peripheral end of a severed nerve are reproduced autogenetically. Ballance and Purves Stewart, and more recently Bethe, have supported this view, and Bethe adds the instructive fact that nerves separated from the central nervous system in young mammals are regenerated. The only point in dispute is this: Are the regenerated fibres found in the peripheral parts of the nerve formed *in loco*—that is, regenerated autogenetically—or are they nerve fibres that have grown out from more centrally-placed fibres, on the doctrine that nerve fibres grow by peripheral expansion and tend to push their way into surrounding tissues?

Most observers hitherto have contented themselves with excising a long part of a nerve, or tearing a nerve out by its roots, and then observing the results of degeneration and subsequent regeneration in adults and young animals alike. A certain number of medullated fibres are generally found to be "regenerated" in the peripheral end. Sometimes they are numerous and sometimes only few; these fibres when stimulated may cause muscular contraction in the muscle fibres with which they form connexions.

Langley and Anderson have satisfied themselves that this method does not suffice, because adjoining nerve fibres connected with the central nervous ganglia have a continual tendency to grow from adjoining nerves into the neurome or cicatrix at the end of the peripheral segment. After removing portions of nerves in kittens, and waiting for two hundred or more days, until regeneration of nerve fibres had taken place, they again cut the central end of the nerve already divided, and at the same time severed any other nerve which might possibly have established a connexion with the peripheral end of the nerve to be examined. The second operation would leave unaffected any fibres which had regenerated autogenetically, and not made a central connexion.

Even with all these precautions experiment showed that, in the case of the crural nerve, there was still reunion of the peripheral crural with the central nervous system; a few sound medullated fibres were found, and it was practically certain that these had wandered in or pushed themselves in from abdominal nerves. When, however, the sciatic nerve of a kitten or young rabbit was operated on, and with the same precautions, it was found that the second section caused degeneration of every one of the medullated fibres in the sciatic and in the branches of the sciatic below the point of the first section, and stimulation of the sciatic and its branches had no motor effect.

It has long been known that the peripheral end of a cut nerve, when sewn into the skin or left lying amongst muscles, may make connexion with the central nervous system by means of the nerves of the surrounding cut tissues, although it makes no connexion with its own central end. This is the fact to be borne in mind in assuming that nerve fibres are subject to auto-regeneration in the peripheral nerves of limbs.

The neuron theory has been fruitful in its influence on our conception of the morphology of the central nervous system, and if it is part of the business of neurons to push out processes, as axis-cylinders, and to form connexions with outlying territories, in regenerating nerve they simply continue this process and push outwards in the direction of least resistance or greatest attraction. Even sensory nerve, ending in the epidermis, must be continually growing, as was shown long ago by Ranvier. It would seem, therefore, from the experiments of Langley and Anderson, that the old view of peripheral expansion of nerves is the key to the explanation of their regeneration and formation of axis-cylinders, although there is some evidence that the peripheral end of the nerve exercises a considerable influence in the formation of myelin. While admitting regeneration of nerves in young animals, they were unable to find that the peripheral end of a nerve permanently separated from the central nervous system acquired a motor function, and they are of opinion that their "experiments, so far as they go, are decidedly against the autogenetic theory."

THE RELATION OF DIABETES TO INJURY AND SHOCK.

The recent legislation in favour of workmen's compensation has given increased importance to the relation of diabetes to injury and shock. Already several cases have come under our notice, and we drew attention a short time ago to one tried before the County Court at Blaenau Festiniog, in which a widow claimed compensation for the loss of her husband, who died from diabetes about six weeks after receiving an injury in a slate quarry. He was unloading slates when a slab weighing 2 cwt. fell on the calf of his leg. He was greatly frightened and suffered from shock, but the injury to the leg was a punctured wound penetrating to the bone. When brought home he was pale and nervous, his pulse 120, and his nervousness increased as time went on. He was anxious to resume work, and, knowing that he was a poor man, his medical attendant allowed him to return to work before the wound had thoroughly healed. This was twenty-four days after the accident, but three days later he came home very ill, and two days after he was found to be suffering from acute diabetes, from which he died. The case was defended mainly on the ground that it was impossible for the man to have contracted diabetes either from the accident or from the shock; that the only injuries known to cause diabetes were those of the head and abdomen, and

that, if the diabetes had resulted from shock, it would have shown itself within forty-eight hours. Counsel for the plaintiff was, however, able to quote the authority of Professor Osler in favour of his contention that diabetes might follow an injury to the limbs, and the decision of the court was given in favour of the plaintiff, who was awarded £180 17s.

Although such cases are not very common, it cannot be denied that diabetes may follow an injury, and instances are on record in which, as in the subject of these legal proceedings, it has taken a very acute form and proved rapidly fatal. As a rule, however, the cases thus associated with injury are only moderately severe and offer a reasonable prospect of recovery. It is also undeniable that the symptoms of diabetes have frequently not been observed for weeks or months after the accident. Professor Senator[1] has pointed out that it is not necessary that the organs which are especially associated with diabetes should be directly injured, and he explains this on the ground that these organs become affected, either as the result of the general disturbance of the body, although without any visible signs of injury, or in consequence of mental shock or traumatic neurosis. Professor Tyson[2] says that "blows upon the back, legs, thorax, kidney, and liver have all been followed by symptoms of diabetes"; while the late Dr. R. Schmitz of Neuenahr, who had an unrivalled experience of diabetes, regarded care, worry, serious emotions, and nervous shocks as conditions which might aggravate existing diabetes or produce the disease. Fright has in many cases been the precursor of diabetes, as, in two cases recently published by Lorand,[3] in one of which the patient, a lady, narrowly escaped a collision in an electric tramcar, while in the other a young girl of 16 was frightened by being followed by a man; both cases ran an acute course and proved fatal. Professor Naunyn[4] relates the following case which illustrates the occurrence diabetes without any obvious injury to the abdomen or head. A railway station assistant, aged 40, fell about 3 ft. from a ladder by the breaking of a rung, but he alighted upon his feet; he did not faint or lose consciousness, and his only complaint was of pain in the right hip. The accident happened on July 6th, 1894; he afterwards complained of specks before his eyes, gave up work, and placed himself under medical treatment; in August sugar was found in his urine; in January of the next year he resumed his work, although he still suffered from pains about the hips, and there was some impairment of memory; his sleep was always bad, and he suffered from tremor; his handwriting and speech were hurried and irregular, and his intelligence was distinctly affected. There were no ataxic signs; the patellar and pupil reactions were good; there was no diminution of the field of vision nor any inability to stand with his eyes shut. The urine was of specific gravity 1036, and contained 5 per cent. of sugar, but under treatment by diet the sugar disappeared. It may be noted that in this case the symptoms of diabetes were not observed for about a month. Professor von Noorden gives twelve months as the period within which the symptoms of diabetes must develop in order to establish a connexion between the injury and the disease. Lenné[5] describes a case of diabetes which occurred six months after a violent wrestling bout. The patient was a very powerfully-built man aged 51; he said he had never felt well since the wrestling, in which he had put forth all his strength.

The cases quoted, we think, are evidence that (1) diabetes may occur without injury to the head or abdomen; (2) that it may come on from shock without injury at all; (3) that it may be weeks, and in some cases months, after the injury or shock before symptoms of diabetes present themselves and sugar is discovered in the urine.

[1] *Monats. f. Unfallhkde.*, viii, 1, p. 1, 1900.
[2] *Treatise on Bright's Disease and Diabetes*, Philadelphia, 1891.
[3] *Petersburg med. Woch.*, xx, p. 22, 1903.
[4] *Der Diabetes mellitus*, 1898, p. 65.
[5] *Der Zuckerkrankheit*, Berlin, 1898, p. 49.

PROPOSED CENTRAL HOSPITAL COMMITTEE FOR BRIGHTON.

THE Mayor of Brighton, with the co-operation of the Mayor of Hove, summoned a meeting last Monday to consider a proposal to form a Central Hospital Board for Brighton and Hove. The attendance was large and representative, and the Mayor of Brighton explained the object in view was to prevent overlapping and hospital abuse. There were seven institutions in Brighton doing indoor work. With regard to children's diseases, there was overlapping between the County Hospital and the Children's Hospital; with regard to the diseases peculiar to women, between the County and the Women's Hospitals; with regard to diseases of the eye, between the County and the Eye Hospitals; and the same remark applied to diseases of the throat and ear, and, in certain particulars, the County Hospital and the Dispensary also. On the subject of finance the Mayor said the cost of the maintenance of a bed in the County Hospital was £86 per annum, but at the Women's Hospital, where the number of beds was small, it was £168 per annum. He referred also to an appeal issued at the beginning of the year by the Committee of the Women's Hospital for a sum of £20,000 to build a new hospital. In consequence of this a conference was held with the honorary medical staff of the Sussex Hospital, the Children's Hospital, and the Women's Hospital, and eventually the Committee of the Women's Hospital agreed to place its control in the hands of a Central Hospitals Board if it could be formed. In conclusion he moved a resolution in favour of the formation of a Brighton, Hove, and Sussex Hospitals Board (1) to obviate overlapping of local medical charities; (2) to promote economy of administration, particularly in connexion with capital outlay on buildings; and (3) to prevent the abuse of medical charities by persons not proper objects for charitable assistance. The resolution was seconded by the Mayor of Hove, and, after some discussion, was carried by a large majority. Subsequently a resolution was adopted instructing the Committee to enter into communication with all the medical charities in Brighton and Hove with the view of obtaining information, and to raise subscriptions to meet the expenses of the Board. Finally, a motion was proposed by Mr. H. J. Verrall, proposing the nomination of a large number of gentlemen, including medical representatives; and, this after some modification, was adopted.

VISIT OF FRENCH PHYSICIANS AND SURGEONS TO LONDON.

THE arrangements for the visit of French physicians and surgeons to London next week are now nearly complete. The party will be received on Monday at 10 a.m. at the Royal College of Surgeons by the President, Mr. John Tweedy, and several members of Council, and by Professor Stewart, the Conservator; they will be conducted over the College Museum, including the Hunterian collection. On the same morning the medical staffs of Charing Cross and King's College Hospitals will be prepared to receive the visitors, and at noon the Editors of the *Lancet* will give a luncheon to a large party; in the afternoon it is proposed that the main body of the visitors shall visit St. Bartholomew's Hospital; the National Hospital for the Paralysed and Epileptic, the Hospital for Sick Children, Great Ormond Street, the Royal Free Hospital, and the West London Hospital and Post-Graduate College will also

be open to receive parties. The London School of Tropical Medicine, too, will be open for inspection, as well as the Medical Graduates' College and Polyclinic. On Tuesday the visitors will assemble at the French Hospital at 9.30 a.m., and at 10 a.m. the parties will visit the laboratories of the University of London for advanced physiology. Charing Cross, King's College, St. Mary's, Queen Charlotte's Lying-in and the Royal London Ophthalmic Hospitals and the Islington Infirmary at Highgate will also be prepared to receive visitors. At noon the Dean of the Faculty of Medicine of the University of London and Mrs. Butlin will entertain the party at luncheon in the Whitehall Rooms of the Hôtel Métropole. In the afternoon visits will be paid to Guy's Hospital and St. Thomas's Hospital; parties will also be invited to view the Middlesex Hospital and its cancer laboratories, and the Alexandra Hospital for Hip Disease. The Samaritan Free Hospital, St. Mary's Hospital, and the West London Hospital, as well as the Medical Graduates' College and Polyclinic, will also be prepared to receive parties of visitors. On Wednesday morning visits will be paid to the Imperial Cancer Research Laboratories, to the Lister Institute of Preventive Medicine, and, in addition to some of the hospitals already mentioned, to the Chelsea Hospital for Women. A party, limited to thirty, will be invited to visit the pathological laboratory of the London County Asylums Committee at Claybury: after being entertained at luncheon by Mr. E. J. Horniman, the chairman of the Pathologists Subcommittee, they will be conducted over the laboratory by Dr. Mott, F.R.S., the Director. In the afternoon a visit will be paid to the London Hospital, and parties will also be invited to visit the Royal Free Hospital, St. George's Hospital, University College Hospital, St. Peter's Hospital for Stone, St. Mark's Hospital, the Hospital for Consumption, Brompton, and the Victoria Hospital for Children. At 4.30 a special meeting of the Dermatological Society of London will be held, and a large number of cases having relation to general medicine will probably be demonstrated. The visit will be brought to a close by a banquet at the Hotel Cecil at 7.15 p.m., when the chair will be taken by Sir William Broadbent, Bart., the Chairman of the London Executive Committee, and among those who will be present are: M. Daeschner, the First Secretary of the French Legation in London, the Vice-Chancellor of the University of London, and the Dean of the Medical Faculty of the University of London.

UNIVERSITY OF LEEDS.

The first congregation to inaugurate the University of Leeds was to be held on Thursday afternoon, October 6th, too late for us to report the proceedings in this issue of the British Medical Journal. The ceremony was to take place in the Town Hall, and six processions were to be formed, in the following order: The county, civic, and educational authorities; Associates of the Yorkshire College; the University staff; the University Council; the Honorary Graduates, and the Chancellor. Arrangements had been made for confering a large number of honorary degrees, the first recipient being Lady Frederick Cavendish. Among others intended to receive the honorary degree of Doctor of Laws were the Archbishop of York, the Duke of Devonshire, the Lords Lieutenant of the West and of the East Ridings of Yorkshire, and Viscount Cross. For the honorary degree of Doctor of Science were named Sir William Broadbent, Sir Arthur Rücker (Principal of the University of London), Mr. C. G. Wheelhouse, Mr. Jonathan Hutchinson, Mr. T. Pridgin Teale, Dr. Hughlings Jackson, and Mr. Mayo Robson.

THE EARLSWOOD ASYLUM.

The recent appointment of a Royal Commission to consider the methods of dealing with mentally defective persons gives more than ordinary interest to the report for 1904 of this institution, which has been established for more than half a century. The Board of Management deserve the generous sympathy of the benevolent public in the arduous task they find devolving upon them of practically rebuilding the asylum, structural defects having of late come to light which render it actually unsafe in its present condition. In the meantime, we can but wish Dr. Caldecott and his resident staff and patients well through the discomforts and inconveniences which such a reconstruction will inevitably entail. We congratulate the Board upon the acquisition (at any rate provisionally), through the benevolence of their colleague, Mr. Densham, of a seaside home at Walton-on-the-Naze, and we trust that it may prove practicable, as suggested by the Medical Superintendent, to arrange for its permanent occupation all the year round, since sea air is an important ameliorative agent in the treatment of scrofulous and other physical degenerations so commonly co-existent with mental defect. From the report of the Medical Superintendent, Dr. Caldecott, who has now the help of two assistant medical officers, we learn that at the end of the year 1903 there were 501 patients in the asylum (336 males and 165 females), and that the average number resident during the year had been 513. There had been 45 primary admissions, and 33 re-admissions; 48 cases had been discharged "relieved," and 21 had died during the year. The average age at admission is stated to have been—for males 16 years, for females 13½ years, an average that strikes us as somewhat high for a "Training Home for the Feeble-minded," but possibly due to the school organizations now available in the larger towns for dealing with defective children. We believe that the period of training at Earlswood has recently been extended (for elected cases) from five to seven years—undoubtedly a move in the right direction; but it would be interesting to learn what proportion of the 48 cases discharged "relieved" at the end of their term are considered to require permanent care, for which re-election for a further term, accorded in some few cases, is but a temporary expedient. The total number of deaths was 21, giving a percentage death-rate of 4.09 on the average number resident, being the highest recorded at Earlswood for nine years. Though there had been no epidemic disease, with the exception of influenza, catarrhal and other minor affections had been more than usually prevalent; and Dr. Caldecott attributes these to the exceptionally wet weather prevailing and to disturbance caused by structural alterations. Of the whole number of deaths, tuberculous diseases claim as many as 11 (over 50 per cent.), and epilepsy 3. In view of the high mortality from tubercle the medical superintendent's suggestion to utilize a separate detached house belonging to the Board as an annexe for tuberculous patients seems worthy of serious consideration. Earlswood is fast becoming a venerable institution, and as 6 patients have been maintained there for over fifty years, and 50 for over forty years, the death-rate may naturally be expected to advance. At present only about 35 per cent. of the inmates are under 20 years of age, and about the same percentage range between 35 and 74. These facts emphasize the desirability of what Dr. Caldecott has forcibly urged in previous reports—the separation of untrainable or custodial cases (preferably in a separate building) from the more trainable pupils. The arrangements for school and industrial instruction have always been excellent at Earlswood; and a profit last year of £239 10s. 1d. on handicrafts is evidence of the skilful management of the workshops. The farm and garden—most valuable training-grounds for the stronger boys—unfortunately show, owing to adverse weather, a loss on the year's work. That Earlswood is a deserving charity is abundantly evident from the report before us: that the means at its disposal are not adequate to overtake all the work called for by the large number of mentally defectives is equally apparent; and we trust that the Royal Commission will succeed in recommending suitable co-ordination amongst the many agencies interested in the subject.

MURRAY'S ROYAL ASYLUM, PERTH.

On September 29th the new chapel at this asylum was dedicated and the new villas for the reception of male and female patients formally opened. The asylum, one of the seven Royal Asylums for Scotland, was first opened in

1827 for the accommodation of private patients, and has been completely remodelled during the last thirty years, two hospital wings having been built in 1887, the first special hospitals erected, and the institution developed as a central asylum, with succursal homes for mild cases or those requiring special treatment. Under the able administration of Dr. Urquhart, who for many years has been its Medical Superintendent, its sphere of usefulness has been markedly extended, so that to-day there are seven separate establishments for the reception of patients, the two villas opened last month having been completed during the present year. These villas, in harmony with modern views, are variously designed, and aim at providing accommodation for the patients which shall, as far as possible, reproduce their natural home environment. The asylum has also been furnished with two open-air sanatoriums for consumptive cases. Exclusive of furnishings, the villas have cost about £2,200 each, and the whole works, including the chapel, have been carried out according to the plans of Dr. Urquhart, himself an authority on asylum construction and decoration. The chapel, which has been erected by the contributions of patients and friends of the institution, awakened in the mind of Sir James Crichton-Browne, who was one of the numerous guests at the ceremony, recollections of a visit forty years ago to the ruined chapel of Strath Fillan, in Perthshire, for long a shrine for the cure of the mentally deranged. In felicitous phrases he traced the tardy evolution of the treatment of insanity from the time when St. Fillans was in vogue, when insanity was regarded as a demoniacal possession to be healed by exorcism, and when the sufferers were subjected to nameless barbarities, to the present time, when medical science, and medical science alone, had procured for them comfortable provision and skilled and solicitous care. In conclusion, he paid a well-merited tribute to the scientific attainments and administrative ability of the Medical Superintendent, Dr. Urquhart.

TUBERCULOSIS AND OCCUPATION.

IN his fifteenth annual report as Medical Officer of Health for Nottingham, Dr. Boobbyer again draws attention to the salient facts with respect to the death-rate amongst occupied and unoccupied males and females respectively in certain age-periods. Under the age of 15 years there is no mortality from tubercle amongst the "industrially" occupied males; the mortality from this cause under 15 years of unoccupied males is 1.496 per 1,000. In males over 15 years the mortality amongst the unoccupied falls to 1.377 per 1,000; whereas among the occupied males the tuberculosis death-rate is nearly double this—namely, 2.408 per 1,000. In the case of females over 15 years the proportionate mortality among the occupied and unoccupied respectively is reversed, for the unoccupied have a death-rate of 1.5 per 1,000, and the occupied one of 0.881. It is also interesting to note that on examination of the death-rate of the two sexes, where men and women of similar age and social circumstances are engaged side by side in the same industry, we find a difference, and usually a large difference, in favour of the women. Thus, the men employed in all sections of the lace trade have a mortality from tuberculosis of 1.8 per 1,000, the women a corresponding rate of only 0.09; similarly, in the hosiery trade, the men have a death-rate of 2.3 per 1,000, the women one of 0.75. It is not that the death rate among the men employed in these industries is exceptionally high, but that the female death-rates are for the most part very low. It would have been interesting if Dr. Boobbyer had offered some suggestions as to the probable causes of this marked difference in the mortality from tuberculosis between the occupied males and the occupied females. The total number of deaths ascribed to tuberculosis in Nottingham during 1903 was 414, which is below the average (436) for the last ten years. Of these deaths, the greater number (302) were from tuberculosis of the lung (phthisis). The total death rate from tuberculosis for both sexes was equal to 1.68 per 1,000; the male rate being equal to 2.07, the female to 1.28. The difference in favour of females is much more marked above the 45th year; the male deaths above this point numbered 71, the female only 22. The above figures show a difference in favour of females greater than usual. Dr. Boobbyer expresses regret that Nottingham has proved so backward as compared with other large towns in failing to recognize the desirability of some form of notification of phthisis.

THE OPEN-AIR TREATMENT OF SMALL-POX.

AN interesting part of Dr. Boobbyer's annual report relates to small-pox. As in various other parts of England, that disease prevailed somewhat in Nottingham in 1903, there having been a total of 152 cases. The type was remarkably mild, only 4 deaths having occurred in the 152 cases, and even as to these deaths it is noted that 2 were due to causes other than small-pox. On September 21st, 1901, p. 821, under the title of "A 'Sport' of Small-pox," we briefly discussed the extraordinarily mild epidemic at that time prevailing in America, and called attention to the occasional existence of similar outbreaks of modified small-pox in Jenner's time. In this country, during the past year or two, the epidemic has exhibited more or less similar characters. How long this may continue no one can tell, but in the meantime the percentages of deaths which are being recorded are trivial compared with the pandemic of the early Seventies and subsequent outbreaks. In his report Dr. Boobbyer mentions that he has lately adopted a uniform practice of nursing all serious cases singly in bell tents with open sides—that is, practically in the open air. This carries the cool regimen in small-pox to an extent not attempted even by its great author, Sydenham. Dr. Boobbyer states that the results of the open-air treatment have been excellent, and it is to be hoped that he will give some more detailed record of the facts than can be expected in a report to a health committee of laymen. Data as to atmospheric temperature and other conditions, such as wind and rain, and as to the condition of the patients themselves in the way of temperature, eruption, complications, and so forth, would be of interest. The question whether an epidemic of ordinarily severe type could be so dealt with is one regarding which Dr. Boobbyer's opinion would be valuable; it rather appears as if he would be inclined to an affirmative answer, seeing that, as above noted, he states that he had lately adopted the practice uniformly in all serious cases. As regards the Finsen red-light treatment, Dr. Boobbyer agrees with Drs. Ricketts and Byles that it is quite useless in preventing suppuration of the rash. At the same time, the effects of direct sunlight have been found deleterious. Concerning vaccination, though the total figures are small, their teaching coincides with that of universal experience. Of 128 vaccinated patients, 1 died; and of 24 unvaccinated, 3 died. The two who, as noted above, died from causes other than small-pox are included in these four, one of them being unvaccinated, and the other being the sole vaccinated patient who died. The part played by tramps in spreading the infection is also noted by Dr. Boobbyer.

DISEASE IN FICTION.

WRITERS of fiction have, full many a time and oft, been taken to task for having ventured, like little wanton boys that swim on bladders, to weave anatomical complications into their plots without verifying their references. But what of their pathology? It is true that certain authors portray the symptoms of their hero—for authors are seldom gynaecologists—with an accuracy, one might almost say severity, that justifies the suspicion of the collaboration of a medical friend. Even the medical friend, however, sometimes lapses into inconsistencies; he places the eruptive cart before the febrile horse. These, after all, viewed as literary blemishes, are venial offences. We have less indulgence for authors, apparently "too weak to bear the insupportable fatigue of thought," who invent morbid conditions that cannot by any ingenuity be brought into the official list of diseases; in short, they are, from first to last, purely literary affections. Not to go further afield than Mr. Watts-Dunton's monumental novel, *Aylwin*, the hero falls a prey to a concatenation of symptoms which baffles our diagnostic powers. By way

of etiology there is an emotional midnight hour spent with his beloved in a tide-locked cove, followed by a manful struggle through the buffeting waves, much mental perturbation, and a decided chill. So far everything works harmoniously, but within an hour a throbbing is "at" the temples, a rolling fire at the back of the eyeballs and a thirst in a parched throat warn the hapless hero that "some kind of fever" is upon him. This was followed by a "red heat at the brain," and shortly after "his knees gave way, his head swam, his stomach heaved with a deadly nausea and he fell like a log on the floor." These symptoms rather point to acute alcoholic poisoning, but there is nothing in the history of the case to warrant any such inference. Moreover, the subsequent course of the malady renders this hypothesis untenable though it is equally irreconcilable with any recognized nosological conception. In any event the hero does not appear to have quite lost consciousness although he was either cataleptic or paraplegic, for he was acutely apprehensive of being unable to rise. He was put back to bed, the noise he made in falling having awakened the light-sleeping servants at the other end of the castle, and, "feeling that his moments of consciousness were brief," he sent for his mother, with whom he had a most argumentatively disagreeable scene; thereupon the delirium of fever came upon him and he lay tossing as upon a sea of fire. Seven or eight days later he "woke again to consciousness," had another row with his mother, and then a serious relapse. Again a few days pass and there is another dreadful scene, and "another dangerous relapse," followed by two days' delirium. The next we hear of him is his departure on a journey to North Wales, from which we may assume he was better. The medical interest of this case, the notes whereof are regrettably lacking in detail and precision, lies in the difficulty which the professional reader finds in guessing at the probable nature of the malady. The only antecedents in the patient's personal history were a broken leg and a love-stricken heart, and neither of these afford a clue to the problem. If the author evolved all these distressing episodes from his imagination, memory not serving, no further explanation is required, but we would respectfully submit that the artistic homogeneity of the work is impaired by creating morbid conditions of a wholly unauthorized type just in order to elaborate situations.

THE DOOM OF SPECTACLES.

As most of our readers are probably aware, Mr. Stephen Smith, to whom reference was made last week, has been challenged by Mr. Aitchison, an enterprising manufacturer of spectacles and optical instruments, to prove the virtues of his alleged discovery of a successful massage cure for errors of refraction. The optician is to send for treatment some certified cases of myopia and other allied conditions, and undertakes to pay £100 to a charitable institution if Mr. Stephen Smith succeeds in removing even one-third of their defect. The challenge is a very sporting offer, and to that extent attractive, but the general conditions upon which it has been accepted, together with the appointment of the editor of the *Daily Mail* as a kind of judge and general referee, practically deprive it of all scientific interest. Nothing more therefore need be said about it here. Elsewhere, however, our readers will find a letter from Mr. Smith himself, and will gather from it that he is very much annoyed—so much annoyed, in fact, that he actually becomes amusing. Mr. Stephen Smith cannot blame us if, until some further light is thrown on the matter, we decline to accept his "discovery" at his own valuation. Nor do we consider Mr. Smith's explanation of the circumstances of the Press demonstration which he gave at all satisfactory, for we cannot accept as a compensation for our own absence the fact that some of his colleagues were present, or that he invited an unnamed ophthalmic surgeon who did not put in an appearance. Sir James Thornton, of course, sounds well; but, after all, Sir James Thornton retired many years ago from active service, and, so far as we are aware, has given no proof of the possession of any special knowledge of optics. For the rest, even if this pillar of the antivivisection faith really were present—and this is not distinctly stated—we could scarcely accept that fact as conclusive evidence that Mr. Smith was genuinely anxious that his demonstration should be witnessed by skilled independent observers.

SIR ISAMBARD OWEN.

Sir Isambard Owen has accepted the appointment of Principal of the Armstrong College in the University of Durham, formerly known as the Durham College of Science. The College, which is a constituent part of the University of Durham, has its local habitation in Newcastle; it possesses two Faculties—that of Science, which is the larger, and that of Arts. It has at the present time about 500 students, and in addition holds evening classes, which are largely attended. Sir Isambard Owen has down to the present time been physician and lecturer on the principles and practice of physic at St. George's Hospital, and was at one time Dean of the Medical School. The great services which he rendered to the University of Wales, during the period immediately preceding its foundation and since, are well known, and he is at the present time Senior Deputy-Chancellor of that University. The great interest which he has shown in educational questions, and the large practical experience which he has gained as an officer of the Universities of Wales and of London qualify him in a special manner for the post which he has now accepted, but his departure from London will be a source of great regret to his many friends. What, however, is London's loss is Newcastle's gain, and we feel sure that under his stimulating influence the Armstrong College will win for itself a still higher reputation. We understand that Sir Isambard Owen takes up the duties of his new office on Saturday, October 8th.

THE CAMPAIGN AGAINST TUBERCULOSIS IN GERMANY.

On April 1st, 1905, the campaign against tuberculosis in Germany will enter on a new phase. In Berlin and the neighbouring cities of Charlottenburg, Schoeneberg, and Rixdorf, a station will be opened in every postal district, where all necessary information about the disease and the best methods of combating or preventing it can be obtained by any member of the public. Leaflets on the subject will be distributed gratuitously at these stations, and advice will be given to patients and their friends. At the head of each station will be a physician who is an expert on lung diseases, and he will be assisted by a Sister of Mercy. The Berlin office of the Imperial Insurance Department will contribute 10,000 marks to meet expenses, and it is expected that other public and private bodies, as well as large employers of labour, will contribute as well.

FUNERAL OF PROFESSOR FINSEN.

The funeral of the late Professor Finsen took place on September 29th. The service at the Frederick Church was attended by the King of Denmark and the King of the Hellenes, the Crown Prince of Denmark, the Princes Waldemar, Karl, and Hans, the entire Cabinet, and other high dignitaries, and several hundreds of doctors and students of the Copenhagen medical schools, as well as by many patients who have undergone treatment at the Finsen Light Institute. The German Emperor was represented by Prince Henry of Prussia. Queen Alexandra, the Danish Crown Princess, and the Princesses Victoria, Maud, and Thyra were also present, occupying seats in the transept. The coffin was hidden beneath a mass of beautiful wreaths, among which were tributes from King Edward and Queen Alexandra, and other members of the Royal family, the German Emperor, and the German Imperial Chancellor. Sir William Goschen, the British Minister in Copenhagen, handed to the widow of Professor Finsen an autograph letter from King Edward expressing His Majesty's condolence with her in her bereavement.

A NEW SCHOOL OF MASSAGE.

A SCHOOL for the teaching of massage has been opened at the National Hospital for the Paralysed and Epileptic, Queen Square. The arrangements for the establishment of the school have been in the hands of a Committee appointed by the medical staff and the Board, consisting of the Chairman of the hospital (Mr. J. Danvers Power), Dr. Risien Russell, and Dr. Aldren Turner. The school will be held in the hospital and is under the direction of Madame Gripenwald. Only female pupils have entered for the past term, but it is proposed to appoint a male instructor and to take male pupils when a sufficient number shall have entered their names. The Chairman of the hospital, in addressing the pupils on October 3rd, said that massage had been taught for some years in the hospital, but that it was considered desirable to extend the teaching owing to the more general prescription of Swedish movements by the medical profession in England. He thought that it was questionable whether an individual who himself took fees for teaching massage and Swedish movements was the right person to give a certificate of proficiency. The National Hospital had appointed a competent Swedish lady teacher to instruct the pupils, and to present them for an examination, which would be held by medical men, to ensure that the candidates were competent to carry out the instructions and proper persons to receive the certificate of the hospital. In Sweden the course of instruction extended over at least two years, but in that country the practice of massage and gymnastic movements was very much more developed. The Committee of the National Hospital had come to the conclusion that if the pupils were fairly well educated to begin with, and devoted three months' severe study to practical work and to elementary anatomy and physiology, they would have laid the foundation of what was required in an ordinary way. It was hoped eventually to establish a co-operation of medical rubbers holding the National Hospital certificate, and only those who could be relied upon would be placed upon the list. Further particulars can be obtained on application to the Secretary at the hospital.

NURSES FOR THE MIDDLE CLASSES.

WE are informed that a philanthropist has volunteered to provide the necessary capital for establishing a home or homes for visiting nurses to attend upon patients of the middle classes in their own houses, in the same way as the nurses of the Metropolitan District Nursing Associations now attend upon the sick poor. The homes for nurses for the middle class, if established, would be administered by local committees, and the services of the nurses would be given free only in those cases in which, in the opinion of the committee, payment could not be suitably required. The classes for whom it is intended to provide are the poorer clergy, tradesmen, and clerks. Those who have promoted the scheme are impressed by the need for such institutions, and we are asked to elicit opinions from general practitioners in London, as to whether the proposed homes would fill a real want. Any expression of opinion addressed to the Editor will be forwarded to the proper quarter.

THE REGISTRATION OF NURSES IN AMERICA.

WITHIN the last year a society of nurses has been organized in the State of Pennsylvania which has for its object the "promotion of the welfare, and the upholding of the honour of the nursing profession, for the benefit of the public whom it serves." The first step in this direction is, it is pointed out in a circular issued by the Graduated Nurses' Association of the State of Pennsylvania, the establishment of a standard of education, fitness, and ability, and, through proper legislation, the maintenance of such a standard. A Bill providing for the registration of nurses will be prepared and introduced at the next session of the State Legislature.

WE learn with regret that the army will shortly lose the services of Sir William Taylor, K.C.B., whose period of appointment as Director-General A.M.S. terminates early in December next, and are authorized to contradict the statement that Sir Frederick Treves is to succeed to the office. It is difficult to understand how such a rumour obtained currency.

WE understand that owing to the pressure of his engagements Sir Alfred Fripp has felt himself compelled to resign his position as a member of the Advisory Board for Army Medical Services. Sir Alfred has been a member of the Board since it was established three years ago.

IT is announced that a committee has been formed at Copenhagen to collect funds for the erection of a monument to Professor Finsen.

SIR DYCE DUCKWORTH has been appointed to the vacancy in the offices of Medical Referee to the Treasury, and Medical Adviser to the Pensions Commutation Board, caused by the resignation of Dr. Lionel Beale, F.R.S.

THE foundation of a German Physiological Society is one of the outcomes of the meeting of German scientists and physicians recently held at Breslau. Professor Schenk of Marburg is President and Professor Hürthle of Breslau treasurer of the new Society. The first meeting of the Society will be held at Marburg at Whitsuntide, 1905.

BETHLEM ROYAL HOSPITAL, we are informed, will be again ready for the reception of patients on October 17th. During the period of closure many important improvements have been carried out. Among them are a new system of drainage, more thorough precautions against fire, installation of the electric light, redecoration of the wards, and many other alterations for the benefit of the patients.

THE first general meeting of the Medical Society of London will be held on Monday, October 10th, at 8 p.m., and the first ordinary meeting at 8.30 p.m. on the same day, when the President, Mr. John Langton, will deliver the opening address and papers will be read. The Lettsomian Lectures will be delivered before the Society during February and March, 1905, by Dr. Savage. The first lecture, on February 6th, will deal with functional mental disorders; the second, on February 20th, with toxic mental disorders; and the third, on March 6th, with mental disorders of decay.

THE Managing Committee of the Cumberland Infirmary has accepted with an expression of deep regret the resignation by Dr. Roderick Maclaren of the post of Senior Surgeon to the Infirmary. Dr. Maclaren joined the staff in 1874, and delivered the Address in Surgery at the meeting of the British Medical Association at Carlisle eight years ago. It is understood that he will continue his connexion with the Infirmary by accepting appointment as consulting surgeon.

THE Annual Medical State Service in St. Paul's Cathedral, organized by the Guild of St. Luke, will take place this year on October 24th, at 7.30 p.m., when the Bishop of Southwark will preach the sermon. A choir of 300 voices, provided by the London Gregorian Choral Association, will render the music. Members of the medical profession are invited to attend in academical robes. Admission to the space under the dome will be by tickets only.

THE new isolation buildings for Leeds, which are to be officially known as the Seacroft Fever Hospital, were formally opened last week. They represent what is perhaps the most comprehensive scheme of the same sort which has yet been undertaken by a corporation or a municipality. The ground occupied extends to forty-two acres, and, in addition to the buildings intended for the reception of the sick, is furnished with a school, gymnasia, and other means of healthful exercise for convalescents and with administrative quarters of an elaborate kind. The expenditure has been £266,000.

Scotland.

University of Edinburgh.

The Senatus Academicus of the University of Edinburgh has learned with much regret of the death of the distinguished Danish professor, Dr. Niels R. Finsen of Copenhagen. Professor Finsen was this year awarded the Cameron Prize in practical therapeutics in recognition of his application of rays to the treatment of disease. The state of his health, unfortunately, prevented Professor Finsen from coming to Edinburgh to give a lecture on the subject with which his name is so honourably associated.

Opening of the Winter Session: University of Edinburgh.

The Annus Academicus of the University of Edinburgh began on Saturday, October 1st, and with it practically anatomy began. The first half of the month will be occupied with Bursary, Preliminary, and other Examinations, while the various classes in the Faculty of Medicine will begin on Tuesday, October 18th. There will be a Special Graduation Ceremonial on Saturday, October 22nd, at 10.15 a.m. The General Council will meet on Friday, October 28th, at 3 p.m., when two assessors fall to be elected.

Edinburgh Royal Infirmary.

At the weekly meeting of the managers of the Edinburgh Royal Infirmary on October 3rd, Dr. C. E. Underhill presiding, Dr. D. A. M'Allum was reappointed instructor in anaesthesia for the ensuing winter and summer sessions to the clinical class under the care of Dr. D. Berry Hart. The following appointments were made for the ensuing six months as from October 1st:

Resident physician—Mr. Angus Buchanan, M.B., Ch.B., to Professor Wyllie. Resident surgeon—Mr. Lewis Beesly, L.R.C.P. and S.Edin., to Dr. MacGillivray. Non-resident house-surgeon—Mr. L. C. Peel Ritchie, M.B., Ch.B., to Mr. Wallace. Clinical assistants—Mr. Arthur J. Lewis, M.B., Ch.B., to Professor Wyllie; Mr. V. T. Carruthers, M.B., Ch.B., to Mr. Cotterill; Mr. R. J. Johnston, M.B., C.M., and Mr. I. Ligertwood Green, M.B., Ch.B. (juniors), to Dr. M'Kenzie Johnston.

The West of Scotland Marine Biological Association.

The Marine Biological Station at Millport has been undergoing extensive enlargements, which were formally opened by Sir John Ure Primrose, the Lord Provost of Glasgow, on the afternoon of September 28th. On the invitation of the Committee a large company of ladies and gentlemen interested in the institution were present, and spent a very enjoyable day. After the opening ceremony many members of the party had a dredging excursion in the Association's steam yacht, the *Mermaid*. The new buildings are the gift of Mr. James Coats, of Ferguslie, Paisley, who has already proved himself a generous friend of the Association. The extensions comprise a new class laboratory, with tables for about forty students; also research rooms, large additions to the tank room and library, and increased accommodation in the curator's house. So far as buildings and equipment are concerned, the Association is now excellently provided for. There is, however, great need of an endowment fund to supplement the annual income earned by fees and subscriptions. With the example of the Ben Nevis Observatory before it, however, the Committee is anxious, if possible, to be independent of Government aid, although similar institutions in Italy and Germany receive large grants annually from their Governments.

Quarrier's Orphan Homes.

Home for Epileptics.

The late Mr. Quarrier—the founder of the well-known homes for orphan children at Bridge of Weir, and more recently of the Consumption Sanatoriums there, which have already done much good work for the poor consumptive women of Glasgow and neighbourhood—was during the last few years of his life much interested in the neglected condition of the unfortunate sufferers from epilepsy. He determined to establish a Colony of Mercy for Epileptics, and, although he did not live to see the work more than begun, the trustees of the homes have gone on with the scheme, and on September 29th a large company of those interested in the institution witnessed the laying of the foundation-stone of the first Home for Epileptics in Scotland by Miss Mary Quarrier. The home is a plain building of brick with red stone facings. It is planned so as to be wholly on the ground-floor level—so far as used by patients—so that there may be no stairs for them to ascend. The centre part of the building is two stories high, the upper floor containing sleeping apartments for the matron, nurses, and servants. Besides dormitories, sitting-rooms, and dining-room, a large recreation room is provided, so that recreation may be used as a prominent feature in the treatment of the patients.

Small-pox in Scotland.

During the month of September 51 cases of small-pox have been intimated to the Local Government Board. These were distributed over eight counties. The disease appeared at eight localities where no cases had been intimated to the Board during the present year. As to number of cases, Larbert heads the list with 11, Glasgow is next with 7, Perth 6, Coatbridge Burgh has 5, and Stirling 5.

Ireland.

Belfast Asylum Administration.

The Auditor and the Asylum Committee.

The report of the Local Government Board Auditor on his audit of the Belfast Asylum accounts for the last half-year has been published, although some of its statements are disputed by the Asylum Committee, and the deductions held to be wrong. From a statement of the Resident Medical Superintendent (Dr. W. Graham) and a report of a Subcommittee of the Committee of Management, it appears that one of the objections raised by the auditor is on the question of dietary. Dr. Graham upholds the elastic system as against the rigid; he points out that the latter would be much more convenient for officials; but, "if the interests of the patients and of the ratepayers are to be considered, there can be no doubt whatever, speaking from experience of both systems, that the elastic scale is in asylums the only common-sense and economical one." The rigid scale presupposes an even or normal or average appetite throughout the whole year; it causes a great waste of food, and makes the official careful of the correctness of his calculations, but does not minister to good dieting of the patient, or general economy of management. The experimental elastic scale superseded the fixed scale on January 1st, and numerous instances of saving are cited; for instance, on four days of the week, 8 oz. a head of fresh beef were allowed as a maximum for Irish stew and Scotch broth, whereas only 2 oz. were used; this great reduction is partly due to the fact that on the day previous either roast or boiled beef formed the dinner, and the amount of meat stock over was utilized for the succeeding day. The maximum of the old scale has not in any instance been increased. Mention is also made of the varying diet of workers and non-workers. The Subcommittee refers very favourably to this plan, and says that the Resident Medical Superintendent should have the fullest discretion in the matter of patients' diet: it gives him the most cordial support in his endeavours to adopt a rational scheme, of which the resulting economy has already justified the efforts made.

Lunacy in Ireland.

The fifty-third report of the Inspectors of Lunatics on the district, criminal, and private lunatic asylums in Ireland has just been published. The total number in asylums of various kinds, including workhouses, on January 1st, 1903, was 22,138, and on January 1st, 1904, 22,794, showing a total increase of 656, the corresponding increase for the previous year having been 508. With one exception (1898) it is the greatest increase recorded since 1895, when the increase amounted to 702. From 1880 to 1903 an increase of 9,812 has taken place in the total number, the main increase being in the district asylums. In 1881 the admissions to district asylums numbered 2,502; in 1903 they had increased to 3,950. Similarly, in private asylums, the numbers for 1881 were 145, and for 1903 they had increased to 237. It will thus be seen that in the district asylums the figures for 1903 show an increase of over 57 per cent. as compared with 1881, while in the private asylums the corresponding increase was over 63 per cent. During the same period the numbers actually resident in the district asylums have increased by almost 109 per cent., while in the private asylums and institutions they have increased by less than 25 per cent.

The census forms show the remarkable increase in the number of lunatics and idiots in a series of years—1851, 9,980; 1861, 14,098; 1871, 16,505; 1881, 18,413; 1891, 21,188; 1901, 25,050. The counties having the highest ratios were: Waterford County and City, Meath, Clare, Kilkenny, Kings, Carlow,

Tipperary, and Wexford. The lowest ratios are in Antrim County and Belfast City, Dublin County and City, Londonderry County and City, Down, Wicklow, Mayo, Fermanagh, and Donegal. The number of insane under care has increased from 250 per 100,000 in 1880 to 516 per 100,000 in 1903. The percentage of recoveries on the admissions was 36.7, being 2 2 per cent. higher than that for the previous year. From 1890 to 1903 there were 15,438 deaths; of these, 4,253 were attributed to consumption, 513 to general paralysis of the insane, and 775 to epilepsy. For the maintenance of an average number of 17,930 lunatics, including the repayments in respect of loans for building purposes, purchase of land, and other capital charges, a sum of £547,088 0s. 1d. was expended during the year. The average cost calculated on the gross expenditure was £30 9s. 7d. The highest gross average cost per patient was in the case of the Richmond and Portrane Asylums, where it amounted to £42 6s. 2d., and the lowest in the case of Castlebar, in which the amount was £23 18s. 10d.

There are 3,660 persons of unsound mind in Irish workhouses.

VISIT OF FRENCH PHYSICIANS AND SURGEONS.

THE approaching visit of French physicians and surgeons to London on October 10th, 11th, and 12th has excited much interest in London, and the fund opened for the entertainment of the French visitors at dinner at the Hotel Cecil on Wednesday evening, October 12th, and to defray incidental expenses of printing, etc., has been very liberally supported.

The programme drawn up is of as comprehensive a character as the limited duration of the visit will permit. Some details are printed elsewhere. The full programme will be printed in a pamphlet after the manner of the Daily Journals issued during the annual meetings of the British Medical Association, and issued to all the visitors.

The following is a further list of subscriptions. The first list was published last week (page 855).

Second List of Subscriptions.

	Subscriptions. £ s. d.	Further Guarantees. £ s. d.
Dr. Tilley	2 2 0	3 3 0
Dr. Murrell	2 2 0	3 3 0
Mr. Kerry	2 2 0	3 3 0
Mr. W. Arbuthnot Lane	2 2 0	3 3 0
Professor Howard Marsh	2 2 0	—
Dr. Eddowes	2 2 0	—
Dr. Savage	2 2 0	—
Dr. Davis	2 2 0	—
Dr. Luff	2 2 0	—
Mr. Clement Lucas	2 2 0	3 3 0
Mr. Gunn	2 2 0	3 3 0
Dr. Parkes Weber	2 2 0	1 1 0
Mr. Jessop	2 2 0	3 3 0
Mr. H. Fenwick	2 2 0	3 3 0
Mr. Godlee	2 2 0	—
Dr. F. Champneys	4 4 0	—
Dr. Turney	2 2 0	—
Mr. Barnard	2 2 0	—
Dr. Gay	2 2 0	—
Dr. Percy Smith	2 2 0	—
Mr. Nunn	2 2 0	—
Dr. Handfield-Jones	2 2 0	—
Dr. McCarthy	2 2 0	—
Sir Stephen Mackenzie	2 2 0	—
Mr. Pearce Gould	3 3 0	—
Dr. Routh	2 2 0	3 3 0
Dr. Hewitt, M.V.O.	2 2 0	—
Dr. Whitfield	2 2 0	—
Mr. J. H. Morgan	2 2 0	—
Dr. Lawford	2 2 0	—
Mr. Stanley Boyd	3 3 0	—
Mr. Kellock	2 2 0	—
Dr. Sharkey	2 2 0	3 3 0
Mr. Tweedy	5 5 0	—
Dr. Herman	2 2 0	3 3 0
Mr. Malcolm Morris	2 2 0	3 3 0
Dr. Charlton Bastian	2 2 0	3 3 0
Dr. James Taylor	2 2 0	2 2 0
Dr. Leonard Williams	2 2 0	—
Mr. Keetley	2 2 0	—
Mr. Cuthbert Wallace	2 2 0	2 2 0
Mr. H. H. Clutton	2 2 0	3 3 0
Dr. Tyson	2 2 0	—
Dr. Schorstein	2 2 0	3 3 0
Mr. Langton	2 2 0	2 2 0
Dr. Urban Pritchard	2 2 0	—
Dr. StClair Thomson	2 2 0	1 1 0
Mr. Watson Cheyne, C.B.	4 4 0	—
Dr. Mott	2 2 0	—
Mr. Herbert Page	2 2 0	3 3 0
Mr. Reginald Harrison	2 2 0	3 3 0
Mr. Ballance	4 4 0	—
Sir William Gowers	2 2 0	—
Sir William Bennett, K.C.V.O.	2 2 0	5 5 0
Mr. J. Hutchinson	2 2 0	3 3 0
Sir Thomas Smith, Bart.	2 2 0	3 3 0
Dr. Rivers Pollock	2 2 0	—
Dr. Dakin	2 2 0	2 2 0
Mr. Bowlby, C.M.G.	2 2 0	2 2 0
Dr. Robert Jones	2 2 0	—
Mr. J. Hutchinson, Jun.	2 2 0	—
Dr. Brailey	2 2 0	0 10 6
Dr. Philip Frank	2 2 0	3 3 0
Mr. Mansell Moullin	2 2 0	—
Dr. Sunderland	2 2 0	2 2 0
Dr. Sansom	2 2 0	—
Sir John Kirk	2 2 0	2 2 0
Sir Hermann Weber	3 3 0	—
Dr. Macevoy	2 2 0	—
Mr. Malcolm McHardy	5 5 0	—
Dr. Cheadle	2 2 0	5 5 0
Dr. Herbert Spencer	2 2 0	3 3 0
Dr. Herbert Hawkins	2 2 0	—
Dr. Penrose	2 2 0	—
Mr. Percy Flemming	2 2 0	—
Dr. Pringle	2 2 0	3 3 0
Dr. Savill	2 2 0	1 1 0
Dr. Stansly	1 1 0	—
Sir William Church, Bart., K.C.B.	2 2 0	5 5 0
Dr. Outterson Wood	2 2 0	3 3 0
Dr. Frederick Batten	—	2 2 0
Dr. Percy Kidd	2 2 0	—
Sir Henry Howse	—	2 2 0
Dr. Percy Boulton	2 2 0	1 1 0
Mr. Betham Robinson	2 2 0	3 3 0
Dr. de Havilland Hall	2 2 0	—
Mr. Doran	2 2 0	—
Dr. Laming Evans	2 2 0	—
Dr. Wm. Lang	2 2 0	1 1 0
Mrs. Garrett Anderson, M.D.	2 2 0	3 3 0
Sir John Tyler, M.D.	2 2 0	3 3 0
Dr. Boyd Joll	2 2 0	—
Mr. Arthur Shillitoe	2 2 0	—
Mr. Fred. Wallis	2 2 0	—
Dr. T. W. Eden	2 2 0	—
Dr. O merod	2 2 0	—
Dr. Liveing	2 2 0	—
Mrs. Scharlieb, M.D.	2 2 0	—
Dr. Granville Bantock	2 2 0	1 1 0
Dr. Norman Dalton	2 2 0	1 1 0
Mr. Clinton Dent	2 2 0	—
Dr. George Cathcart	2 2 0	1 1 0
Mr. Fred. Gant	2 2 0	—
Dr. Vintras	2 2 0	—
Dr. Herringham	2 2 0	3 3 0
Mr. E. G. Moon	2 2 0	—
Mr. Arthur Barker	2 2 0	2 2 0
Mr. T. Buzzard	2 2 0	3 3 0
Mr. George Stoker, C.M.G.	2 2 0	—
Mr. Kiallmark	2 2 0	—
Mr. Waggett	2 2 0	—
Sir Patrick Manson, K.C.M.G.	2 2 0	—
Dr. Rhodes	2 2 0	—
Dr. Haig	2 2 0	—
Dr. Hughlings Jackson	2 2 0	3 3 0
Mr. George Pernet	2 2 0	—
Dr. Caley	2 2 0	1 1 0
Mr. Walter Carr	2 2 0	—
Mr. Mayo Robson	2 2 0	—
Mr. Edmund Owen	2 2 0	3 3 0
Mr. P. J. Freyer	2 2 0	3 3 0
Dr. J. F. Goodhart	2 2 0	3 3 0
Dr. Cullingworth	2 2 0	—
Dr. J. H Gibson	2 2 0	3 3 0
Dr. Horrocks	2 2 0	—
Mr. Charters Symonds	2 2 0	3 3 0
Dr. Lauriston Shaw	2 2 0	—
Mr. Lockwood	2 2 0	3 3 0
Mr. Comyns Berkeley	2 2 0	—
Dr. Lenton Heath	2 2 0	—
Mr. Swinford Edwards	2 2 0	3 3 0
Mr. Charles Ryall	2 2 0	3 3 0
Dr. Batty Shaw	1 1 0	—
Dr. Albert Venn	2 2 0	3 3 0
Sir Alfred Cooper	2 2 0	3 3 0
Dr. Charles Beevor	2 2 0	—
Dr. Walter Tate	2 2 0	—
Mr. Goodsall	3 3 0	—
Dr. Macnamara	2 2 0	—
Dr. Clifford Beale	2 2 0	—
Dr. Archibald Garrod	2 2 0	—
Mr. Charles Heath	2 2 0	—
Dr. W. J. Simpson	2 2 0	—
Dr. Alfred Gubb	2 2 0	—
Mr. Thomas H. Wakley, F.R.C.S.	5 5 0	—
Dr. Fitzgerald Powell	2 2 0	—

LORD LUDLOW has been appointed a member of the weekly Board of the Middlesex Hospital.

BEQUESTS TO HOSPITALS.—The late Miss Ellen Hayman, of Chelsea, subject to a life interest, bequeathed £300 to the Royal Hospital for Incurables at Putney, and left the ultimate residue of her estate to the Royal Hospital for Incurables and the Brompton Hospital.—Under the will of the late Mr. Archibald Day, of Blackheath, a sum of £200 each was left to the Norfolk and Norwich Hospital, the London Hospital, Guy's Hospital, and the Seamen's Hospital.

OPENING OF THE WINTER SESSION IN THE MEDICAL SCHOOLS.

ST. BARTHOLOMEW'S HOSPITAL.

The annual Old Students' dinner took place in the Great Hall on Monday, October 3rd. Dr. Samuel West took the chair, and 154 gentlemen sat down to dinner. The guests included Sir Ernest Flower, M.P., Sir Arthur Rücker, Mr. Acton Davis, the Dean of Christchurch, the Provost of Queen's, Captain Nott Bower, Professor Langley, and the Master of the Apothecaries' Society. After the usual loyal toasts the Chairman proposed "The Hospital and the Medical School," which was responded to by Mr. Acton Davis, Almoner of the Hospital. The toast of "The Guests" was proposed by Mr. Butlin. Sir Ernest Flower, M.P., in his reply spoke hopefully of the appeal, and mentioned that a history of the Hospital, written by Dr. Norman Moore, and illustrated by Mr. Penton, would be sold for the benefit of the appeal fund. Sir Arthur Rücker and the Dean of Christchurch also replied. The Chairman's health was proposed by Sir Dyce Duckworth; and, after the usual health to the Secretary, the company adjourned to the Library for tea and the exchange of greetings and reminiscences of student days.

CHARING CROSS HOSPITAL.

The annual dinner of the past and present students of Charing Cross Hospital was held on October 3rd at the Hôtel Métropole, London, the chair being occupied by Colonel H. E. R. James, R.A.M.C., F.R.C.S. The toast list was not a long one, and the commendable brevity of the speeches enabled the guests to utilize a fair proportion of the time after the tables had been cleared in general conversation. This popular method of arranging a public dinner accounts for the satisfactory attendance of guests at the annual dinner of this hospital. After the toast of "The King" had been duly honoured, the Chairman submitted "The Charing Cross Hospital and Medical School." When he joined as a student the hospital was small and dirty, but now it was a spacious building containing marble halls and palatial chambers, in which art and utility were most suitably blended. His description of the old students' quarters was greeted with such loud laughter that his words were only well heard by those seated near him; but, as far as could be gathered, the students then worked in dark cellars under the hospital, cheerfully sharing their gloomy quarters with rats and organ-grinders. He concluded by expressing his regret that Charing Cross Hospital did not send up more men for the Royal Army Medical Service.

Dr. F. W. Mott on rising to respond was greeted with such a prolonged round of applause that it was some little time before he could begin to speak. His contribution to the enjoyment of the evening afforded an excellent example of the best style of after-dinner speaking. He praised the students for arranging the dinner without any help from the medical staff, which, he said, would probably have been fatal to its success. He neatly turned the Chairman's remarks about the splendour of the hospital into an apt appeal for substantial support to that institution, and finished by stating that the Royal Army Medical Corps now offered a career worthy of every medical student's favourable consideration. Later, in response to oft repeated calls, he gave an excellent rendering of a well-known drinking song. The toast of "The Guests," amongst whom were Sir William Macewen and Mr. Bland-Sutton, was proposed by the Dean of the hospital, Mr. H. F. Waterhouse, who eulogized the work of the famous Glasgow surgeon. Sir W. Macewen, in responding with a short speech, cordially thanked those present on behalf of himself and the other guests. The health of the Chairman was submitted by Mr. J. H. Morgan, and, after suitable acknowledgement by Colonel James, the formal proceedings of the evening came to an end.

ST. GEORGE'S HOSPITAL.

The St. George's Hospital dinner was held on October 1st at the Whitehall Rooms of the Hôtel Métropole, Dr. William Ewart being in the chair. About 114 past and present students attended, and the guests included Professor Macalister, F.R.S., of Cambridge, who in the afternoon delivered the introductory lecture to a large and interested audience. Mr. Francis Jaffrey (the Dean) alluded to the successes gained by St. George's students, mentioning that Mr. H. B. Drake and Mr. Matson had obtained the first place in the examinations for the Indian Medical Service in January and August in this year, while Mr. Byam was placed first on the list for the medical service of the army. Mr. Clinton Dent, too, had been appointed Chief Surgeon to the Metropolitan Police, and the Order of the Saviour had been conferred upon Sir William Bennett, K.C.V.O., by the King of Greece. The entries at the Medical School were more numerous than had been the case for some years past. "The health of the new Director-General of the Medical Department of the Navy, Dr. Mackay Ellis," an old St. George's man, was warmly received, as was also the name of Dr. E. A. Wilson, one of the surgeons on board the recently-returned *Discovery*. The evening was very successful, and greatly enjoyed by those present.

GUY'S HOSPITAL.

The opening of the winter session was celebrated as usual at Guy's Hospital by a dinner in the Students' Club. The guest of the evening was Mr. Robert Gordon, the President of the Club's Union Council, and one of the Governors of the Hospital. Sir Thomas Stevenson was in the chair, and he was supported by the Treasurer of the Hospital, Mr. Cosmo O. Bonsor, and by several members of the staff. The Dining Hall was crowded with old and new Guy's men and the proceedings were carried on with much enthusiasm.

After the royal toasts had been duly honoured, the Chairman proposed the health of the "Students' Club," and in the course of an excellent speech pointed out the manifold advantages that accrued to the present students as compared with those existing in his own day. He reminded his hearers that when he was a student the custom was to find some alehouse near at hand and to endure rather than enjoy such refreshment as was offered to them instead of foregathering in a large and spacious hall where everything was spotlessly clean and the comfort of the student especially regarded.

The health of Mr. Robert Gordon was proposed by the President of the Residents—Mr. C. D. Pye-Smith—who reminded the meeting of many of Mr. Gordon's benefactions both to the hospital and also to the medical school. The announcement of Mr. Gordon's most recent gift, namely, that of a new museum to the medical school, evoked the greatest enthusiasm.

Mr. Gordon, in reply, thanked those present for their generous welcome, and in a speech of great feeling and interest he reminded the newcomers that the ideal of a medical man was not to amass money, but rather to obtain influence and use it for the good of his fellows; that if they had come with the idea of making a fortune he was afraid they would, at any rate most of them, be disappointed.

Mr. Cosmo Bonsor proposed the health of "The Chairman." Sir Thomas Stevenson's services to the nation had earned him the honour of a knighthood; his services to the hospital had earned him the esteem of his colleagues on the staff and of the whole body of Guy's men.

Dr. Stevenson, in reply, acknowledged that his services had been at the disposal of the nation and also of the hospital for a long time, but the uniform kindness he had received and the fact that he did not think he had ever had an enemy in the hospital had enabled him to carry on his work with pleasure and success.

The health of the Secretary of the club was proposed by Mr. Charles Higgens, and after the Secretary had replied the proceedings terminated.

During the evening the students supplied some excellent music. The arrangements were all admirably carried out.

KING'S COLLEGE HOSPITAL.

The annual dinner of the old students took place at the Hotel Cecil on the evening of October 4th. The 4th was selected because the inaugural address of the session was to be delivered by Dr. Buzzard in the afternoon of that day at King's College in the Strand. Dr. Urban Pritchard, F.R.C.S., who presided at the dinner, was remarkably well supported, the number of old students of King's present being within a few of the maximum on record. The Rev. Dr. Headlam, Principal of King's College, was the guest of the evening, and among the seniors were Buzzard, Walters, Arnold Royle, Allfrey, Richardson Cross, Cockburn, and many others. Nearly all the staff were present and the four quarters of England were represented by men from Harrogate, Folkestone, Southsea, and St. Ives. There were certain notable absentees in the persons of Mr. Watson Cheyne and of Messrs. Wood (a son of John Wood) and Waddelow Smith, all of whom were engaged in attendance on Lady Curzon; King's men, how-

ever, were proud to know that their staff and old students are taking such a prominent part in the great struggle against disease which is going on in Walmer Castle.

LONDON HOSPITAL MEDICAL COLLEGE.

The winter session of the London Hospital Medical College was inaugurated by a dinner, held in the Library of the College, on October 3rd. The large gathering, which included many members of the staff, was presided over by Dr. Percy Kidd. In proposing the toast of the evening, Dr. Percy Kidd referred to the great progress the new buildings of the hospital had made during the past year, and expressed the obligations of all "London" men to the untiring activity of the House Committee. He was glad to be able to report a very satisfactory entry of new students. During the past year the number of successes of "London" students at the Universities and Royal Colleges had been unusually high; they included four gold medals and two scholarships at the University of London. In athletics the "London" had had the most successful year on record, and the hospital at present held no fewer than eleven of the challenge cups and shields offered for competition among the hospitals of London. Dr. Kidd also made reference to the movement on foot to present Mr. Munro Scott, Warden of the College, with his portrait in oils, as an acknowledgement of his completion of twenty-five years' devoted service to the hospital and College. He believed this proposal would meet with the warmest approval of all past and present London Hospital students. Dr. Kidd concluded with a touching tribute to the memory of the late Dr. Gilbart-Smith, whose recent sudden death came as such a sad surprise. At the conclusion of the dinner the opportunity was taken by many to visit the new buildings, including the magnificent kitchens and laundries, now in full working order. Special arrangements had been made by Mr. Morris, Secretary of the hospital, for this purpose, and were much appreciated by all.

LONDON SCHOOL OF MEDICINE FOR WOMEN.

The London (Royal Free Hospital) School of Medicine for Women opened its Winter Session on Monday, October 3rd, with an address from Miss Murdoch, L.R.C.P. and S. The chair was taken by the Dean, Miss Cock, M.D., who, in a short speech of welcome to the new students, said she could wish for them nothing better than that they should find their life at the school as full of interest and of pleasure as she herself had done. She referred to the loss the School had sustained by the retirement of Mr. Stanley Boyd from the lectureship in anatomy which he had held for so many years, while she felt sure that in Mr. Parsons, Mr. Boyd's successor in the lectureship, the school had secured a teacher who would uphold its best traditions. She emphasized the value of a spirit of loyalty to one's school, one's teachers, and one's colleagues, and, while fully admitting the value of criticism, of which she felt sure there would always be a wholesome amount, she deprecated the existence of a spirit of petty fault-finding as fatal to good work in the school. It was because Miss Murdoch had always been so loyal a student of the school, both in past days, and in her present busy life in a northern town, that they were so glad to welcome her here to-day. She then called upon Miss Murdoch to address the students.

Miss Murdoch prefaced her address by saying how much she appreciated the honour conferred upon her by an invitation to speak in her own Alma Mater on the first day of a new session, to students crossing the threshold of the door which led to her own chosen profession. In the name of the Council, in the name of all past students, in the name of all medical women, lastly in her own name, she held out to them the right hand of welcome and of fellowship. They were wanted and needed. Medicine was a profession ever in need of fresh hands and fresh brains. Medicine, if they worshipped her in spirit and in truth, would amply repay them for any privations they might endure in her service. They came to-day into a great inheritance, and she wanted them, while working in the school, to look back with gratitude to the earnest band of women who first stepped into the arena and made it so easy for them to come there: women, too, who had left behind a mental atmosphere which was distinctly good. They must see to it that when they went they left it as pure and wholesome as they found it. She wished that day to speak to them quite simply, and to give them a few practical hints which might help them along the thorny but happy path of a medical student's life. She urged them to care for their bodies, to nourish them well, and not to over-fatigue them, and warned them that neglect of sleep or food or exercise would not only injure their present work but their future lives. Unless the body were well cared for the mind at the end of five years would be of little use. As regarded their mental welfare she implored them not to be that monstrosity, a narrow-minded doctor. They had in London a storehouse of mental food, and each must take advantage of the variety to suit her particular mind. They must not fall into the narrow error of thinking that their profession was the only work worth doing. It was a mere drop in the ocean of women's work in the world. She urged them all to interest themselves in political matters, because it was only when men and women co operated in the work of a nation that that nation really succeeded. They must realize their responsibility in life, and she would have them control not their words and deeds only, but also their thoughts; and so create around them the sort of mental and moral atmosphere in which it was a pleasure to live. Let them remember the fundamental truth, that it was better to be true than false, better to be brave than cowardly, and let them be true to the inner life which made for righteousness. In conclusion, she wished them all a healthy mind in a healthy body, and those of them who knew what perfect health was would understand that her wish for them was the *summum bonum* of every life.

Sir John Cockburn, K.C.M.G., proposed a vote of thanks to Miss Murdoch, whose words he felt sure would be of use to many in the audience besides the students to whom they were directly addressed. While listening to Miss Murdoch he had completely forgotten the speaker in the speech, which now, as in the days of Greek oratory, was the highest testimony to the power of the orator. He agreed with almost everything Miss Murdoch had said, and hoped that the students would long remember her advice and follow it, not only during their student days, but in their future careers. He would like, however, while remembering the Dean's remarks on criticism, to take exception to two points—the hours of study proposed and the condemnation of tea. He thought six or seven hours daily was as much as any student could profitably give to solid work; and, as regarded hours of sleep, he would recommend each to take as much as she possibly could. They all knew the proverbial amount recommended—seven hours for a man, eight for a woman, and nine for a fool. For his part, he had usually taken ten, and felt much the better for it. As regarded tea, he thought it an excellent drink; in his Australian days he had proved it so, and for many years he had drunk nothing else. Good drinks were very hard to find, and he thought tea one of the best. These, however, were very minor criticisms, and he commended to all of them the spirit inculcated in Miss Murdoch's address, in order that they might make the most of their lives as medical students, and might forward the good work which other women in that school had begun.

Mrs. Berry, M.D., seconded the vote of thanks, which was cordially carried.

ST. MARY'S HOSPITAL.

The annual dinner of the past and present students of St. Mary's Hospital was held at the Whitehall Rooms of the Hôtel Métropole on Monday evening, October 3rd, under the presidency of Mr. Silcock, Surgeon to the hospital. About 130 were present. The toast of "The King" and that of "The Queen, the Prince of Wales (President of the hospital), the Princess of Wales, and the Rest of the Royal Family" were duly honoured.

In proposing the toast of "St. Mary's Hospital and Medical School" Mr. Silcock drew attention to the intimate relation subsisting between these two institutions and to the necessity for increased expenditure on both. He spoke also of the urgent need for special endowments for medical research and teaching, with a view to the acquisition of increased knowledge of disease and of improvements in treatment. Very great advance had been made in recent years, but the consequent expense had seriously crippled the medical schools. He thought that some form of endowment by the State was needed if private munificence failed. He concluded by expressing thanks to Mr. Harben, the Chairman of the Board, who had generously given a considerable sum, and had induced others also to make special contributions to promote the efficiency of the medical school.

In replying on behalf of the hospital, Mr. Harben, L.C.C., spoke of the interest which he felt in the welfare and progress of the school. He thought that if any form of public assis-

tance were necessary, it would be the municipalities rather than the State to whom the appeal should be made.

Dr. Caley, the Dean, replied on behalf of the medical school and on that of the past students. He said that St. Mary's Hospital had developed greatly during the last few years, and that further changes might be expected in the near future. Before long a portion at least of the new Clarence Wing would be in constant use, and every part of the work of the hospital would be extended. The entry of new students was very satisfactory, being about the same as last year.

Dr. Lees proposed the health of the Chairman, which was acknowledged by Mr. Silcock. The remainder of the evening was devoted to music and conversation.

THE MIDDLESEX HOSPITAL.

The annual dinner of the past and present students of the Middlesex Hospital Medical School and their friends took place on Monday evening, October 3rd, in the Empire Hall of the Trocadero. Dr. Sidney Coupland, M.D., F.R.C.P., one of the Consulting Physicians of the hospital, presided, and covers were laid for over one hundred and thirty. Amongst those present were Sir Squire Bancroft, the guest of the evening, who had kindly taken the place of H.S.H. Prince Francis of Teck at the opening ceremony in the afternoon, and a goodly number of the teaching staff. There was also a most gratifying attendance of present and past students, many of the latter having travelled long distances to do honour to their old friend and teacher in the chair. The dinner was particularly interesting and successful owing to the admirable arrangements made by the Joint Secretaries, Dr. Essex Wynter and Dr. Comyns Berkeley, to the eloquent and amusing way in which the Chairman proposed the toasts allotted to him, and to the splendid programme of music carried out under the direction of Chevalier Wilhelm Ganz, by Señor Guetary, Mr. R. Green, and Herr K. Rónay.

The chairman, after the usual loyal toasts, called upon Sir R. Douglas Powell, K.C.V.O., to propose "The Services," and this toast was responded to by Lieutenant-Colonel Tomes, I.M.S., and Major Duncan. Then came "The Middlesex Hospital and Medical School," proposed by the Chairman in a speech full of pleasant reminiscences of the past and of enthusiasm for the splendid way in which the hospital had kept abreast of the times. He also contrasted the hospital when first he knew it in 1872 with the present structure, and dilated upon the manifold advantages now offered. In responding to this toast on behalf of the hospital, Mr. Henry Morris, in a very amusing speech, took upon himself the task of representing first the Weekly Board and afterwards the Surgical Staff, to the great delight of his audience. Mr. John Murray (the Dean) replied on behalf of the school, speaking of the promising nature of the new entries this session, and in alluding to the alterations in the school régime for the present year, made a reference in particular to the arrangements which had been made to provide instruction for the Preliminary Science Examination of the University of London. Mr. Bain, the Broderip Scholar, expressed, in an excellent speech, the sentiments of the students towards their teachers and athletics. Mr. Hern proposed the toast of "The Visitors," and Dr. Frederick Needham and Mr. Ganz responded on their behalf. In conclusion, Dr. W. Pasteur proposed, in a very feeling manner, the health of the Chairman, which was drunk with the utmost enthusiasm. The proceedings terminated soon after 11 p.m.

ST. THOMAS'S HOSPITAL.

The annual dinner of the old students of St. Thomas's Hospital was held on Saturday, October 1st, in the Victoria Hall, Hotel Cecil, when Mr. George Wherry, Senior Surgeon to Addenbrooke's Hospital, Cambridge, occupied the chair. One hundred and forty-four gentlemen were present, including the Treasurer, Mr. J. G. Wainwright, Alderman T. Crosby, Mr. C. T. Harris, and most of the members of the medical and surgical staff of the hospital. An excellent dinner was served, while Pitman's Blue Viennese Orchestra played in the gallery.

After the usual loyal toasts had been honoured, the Chairman made a short speech in proposing "St. Thomas's Hospital and Medical School, Past and Present." He recalled the hospital as he had first known it in its temporary quarters in Surrey Gardens and the opening of the present buildings in 1871 by Her Majesty the late Queen Victoria. Mr. Wainwright, in replying for the hospital, reminded his audience how keen a controversy had been aroused by the selection of the site of the present hospital. One gentleman had even stated in the columns of the *Times* that it was a scandal to propose to erect the largest hospital in London on the banks of London's largest sewer. Time, however, had justified the choice. Time, too, had made necessary very great alterations in the original buildings. A new block for the nurses was now approaching completion; 90 nurses were needed when first the hospital was opened; 146 were now none too many. This building for the nurses made it necessary to remove the administrative offices, and these had now been built in a much more convenient situation in the Central Quadrangle. The Governors had already authorized the expenditure of £136,000 on alterations, but even more was required. He held strongly that the special departments should be developed; to do this, increased accommodation for both in-patients and out-patients must be provided. In every direction the work of the hospital was expanding; in proof of this he quoted figures to show that the ordinary expenses of up-keep had increased by some £20,000 in the last twelve years. The hospital was second to none in the kingdom, and he appealed to all present to help to bring the medical school to a similar position.

The Dean, Mr. J. H. Fisher, in replying for the school, reviewed the changes of the past year. Dr. Cullingworth and Mr. Abbott had retired; Mr. E. M. Corner had been appointed surgeon to out-patients; and Mr. H. J. Marriage to a similar position in the ear department. In examinations, Mr. Sears had won the gold medal in medicine at the London M.B. examination, and Mr. Harwood Yarred had brought the Murchison medal back to St. Thomas's. He spoke, too, of those whom St. Thomas's had lost during the year: Sir John Simon, Mr. Mackellar, Dr. L. L. Gruner, Captain Haymes, and Mr. Unsworth. In conclusion he drew attention to the facilities now offered by the hospital for post-graduate study. Dr. J. F. Payne proposed the health of the Chairman in a short speech. The toast was accorded musical honours. Mr. Wherry replied expressing the pleasure the evening had been to him. The remainder of the evening was devoted to conversation, the gathering not dispersing until a late hour.

UNIVERSITY COLLEGE HOSPITAL.

The annual dinner of the past and present students was held at the Hotel Cecil on October 3rd, the chair being taken by Mr. John Tweedy, President of the Royal College of Surgeons. There was an excellent attendance, covers being laid for upwards of 120 guests, including Mr. Christopher Heath, Sir William Gowers, Dr. Charlton Bastian, Dr. Gregory Foster (Principal of University College, London), Dr. F. T. Roberts (Senior Physician) and Mr. A. E. Barker (Senior Surgeon to University College Hospital), Mr. R. J. Godlee, Sir Victor Horsley, Dr. H. R. Spencer, Dr. Norman Collie, F.R.S., Mr. Harry Littlewood (Leeds), Dr. Sidney Martin (Dean of the Faculty), and Dr. Tempest Anderson.

The Chairman, in proposing the health of the King, paid high tribute to the interest His Majesty takes in the welfare of the hospitals of London, and in the Royal Colleges of Physicians and Surgeons, of both of which corporations he is a Fellow.

Mr. Littlewood proposed the toast of "The Medical Faculty of University College, London, and University College Hospital," and referred to the high traditions of the school as established by the efforts of its distinguished teachers, amongst whom the names of Sir William Jenner, Sir John Erichsen, Mr. Marcus Beck, Sir John Williams, Mr Christopher Heath, and Sir Thomas Barlow would always be remembered. He also referred to the great development of medical education throughout the country which had characterized recent years, and to the birth of the new University of Leeds, which during the present week, at its inaugural ceremony, was about to confer honorary degrees on men distinguished by their enthusiasm for the advancement of education.

The toast was responded to by Dr. Sidney Martin and Dr. Gregory Foster. The former pointed out the new impetus given to University College Hospital by the magnificent generosity of the late Sir Blundell Maple, who had not only provided funds for the rebuilding of the hospital but also for its enlargement. Sympathetic reference was made to the untiring efforts of Dr. G. V. Poore to secure adequate lighting and ventilation of the new wards, the successful achievement of which had helped to make the hospital a model of what such institutions should be. He spoke too of Sir Donald Currie's timely and generous donation of £100,000, by which adequate means were provided for the building of a school of advanced medical studies—pathology, medicine,

surgery, etc.—for its maintenance and endowment, and for the provision of suitable buildings for a nurses' home. The earlier medical studies—biology, chemistry, physics, anatomy, physiology, etc.—would continue to be taught in the College.

Dr. Gregory Foster, in an able speech, gave a history of university education in London, and showed how the University of London, by its reconstitution, had assumed not only examining but also teaching functions, and so had realized the hopes of Lord Brougham and others. No longer was teaching to be hampered by the requirements of examination, but examination would in the future be controlled by teaching. As a first step in the reorganization of the University of London, the incorporation of University College, London, in the University would shortly take place; University College Hospital would in the future be governed independently of the College, and the latter institution would be controlled by the Senate of the University through a local Committee, which would replace the present Council of University College, London. The teaching of the subjects of the medical curriculum would, therefore go on as hitherto, the earlier ones in the College buildings, the later ones in the school of advanced medical studies and in the hospital. Dr. Gregory Foster, amid great applause, laid stress on the need for the establishment of a register and directory of the past students of the College, so that, though scattered all over the world it would be possible to discover their whereabouts and enlist their sympathy and co-operation.

Dr. F. T. Roberts, in an appreciative and humorous speech, proposed the health of "The Chairman," and congratulated him on his election to a second year of office as President of the Royal College of Surgeons.

Mr. Tweedy, in his reply, referred with gratitude and pleasure to the honour which had been conferred upon him by his election to that responsible position, and recalled the names of other members of the hospital staff who had held the position before him—Richard Quain, Mr. John Marshall, Sir John Eric Erichsen, and Mr. Christopher Heath.

Dr. F. T. Roberts, Dr. Mason, Dr. Stoddart, and Mr. George Pernet contributed largely to the pleasure of the dinner by their musical performances, and the proceedings were terminated by a vote of thanks to the Honorary Secretaries, Mr. Raymond Johnson and Dr. Batty Shaw.

WESTMINSTER HOSPITAL.

THE annual dinner of past and present students of the Westminster Hospital was held on Monday evening, October 3rd, under the genial presidency of Dr. Rivers Pollock, Obstetric Physician to the Hospital. There was an excellent muster of Westminster men, and they thoroughly enjoyed an evening which was in every sense a reunion. After the loyal toasts had been honoured, the Chairman proposed "The Past and Present Students," extolling the virulence of that infective malady, enthusiasm. This toast was responded to by Major de Courcy Scanlan, who referred to the cordial welcome always extended by members of the staff to old students returning in after-years to the wards of the hospital for clinical refreshment; and by Mr. Browne, who ably and humorously represented the present students. "Prosperity to the Hospital and Medical School" was proposed by Mr. Hautenville Cope, an active member of the House Committee, and acknowledged by the Senior Surgeon, Mr. Stonham, and (in the absence of the Dean, Mr. Paton) by Dr. Abrahams, the Subdean. Both these gentlemen sang the virtues of the small school of medicine as opposed to the large, and predicted a brilliant future for Westminster as a field for clinical study. "The Chairman" was proposed by Dr. Colcott Fox with his accustomed grace, and it is needless to say that the toast was drunk with acclamation. The labours of the Secretary, Mr. Arthur Evans, were suitably acknowledged, and a speech by Dr. W. A. Wills terminated a thoroughly successful evening.

ENTRANCE SCHOLARSHIPS.

THE following scholarships have been awarded, in addition to those mentioned last week:

St. Bartholomew's Hospital Medical School.—Two Senior Scholarships in Science, of the value of £75 each, to Messrs. E. P. Cumberbatch and G. Graham; the Junior Entrance Scholarship in Science, value £150, to Mr. T. S. Lukes; Preliminary Scientific Exhibition, value £50, to Mr. G. Rigby Lynn; the Jeaffreson Exhibition, of £20, to Mr. K. C. Bomford.

London Hospital Medical College.—The first "Price" Science Scholarship, of £120, to Mr. A. H. Penistan; the second, of £60, to Mr. C. Ilderton Wright; the third, of £35, to Mr. Ronald Candy; Honorary Certificate to Mr. E. B. Morley; the "Price" Scholarship in Anatomy and Physiology, of £60, to Mr. R. B. Lloyd, Emmanuel College, Cambridge; the Epsom Scholarship, of £120, to Mr. J. P. Little.

The Middlesex Hospital Medical School.—The first Entrance Scholarship, value £100, to Mr. A. O. English; the second, value £60, to Mr. P. S. B. Langton; the University Scholarship, of £60, to Mr. E. L. Kennaway, B.A.Oxon.; the Freer Lucas Scholarship, value £126, to Mr. E. A. Saunders.

King's College Hospital Medical School.—The Medical Entrance Scholarship, of £50, Messrs. E. D. Clayton and A. F. Comyn, equal; the Sambrooke Scholarship, value £100, to Mr. B. Hughes; the two Warneford Scholarships, of £100 each, to Messrs. T. H. Whittington and G. Matthews; the Epsom Scholarship, to Mr. H. A. Milner.

Charing Cross Hospital Medical School.—The Epsom Scholarship, of 100 guineas, to Mr. L. H. Taylor; the Livingstone Scholarship, of 100 guineas, to Mr. C. J. Fox; the Huxley Scholarship, of 55 guineas, to Mr. H. F. L. Hugo; Universities Scholarships, each 72 guineas, to Mr. C. Beards and Mr. T. W. Wade. Entrance Scholarships have also been awarded to Mr. L. M. Webber, of 60 guineas; to Mr. E. S. Calthrop, of 40 guineas; to Mr. R. G. Dainty, of 30 guineas; and a Universities Exhibition, of 36 guineas, to Mr. J. J. S. Rowe.

THE MEDICAL SCHOOL OF SALERNO.

"SALERNO, the Oldest Home of Medicine in Mediaeval Europe," was the subject of an address delivered by Professor Stirling on the occasion of opening the course of lectures on physiology in the University of Manchester on October 4th. This University having admitted women to degrees in Medicine, it seemed fitting, he thought, to say something of the earliest school in which medicine was professed, taught, and practised, and which opened both its teaching and its degrees to members of the fair sex. The account he gave was as follows:

In one of his Epistles, Horace asks his friend Vala to tell him of the climate, the natives, and the way to Salernum, which in his day was a celebrated health resort. Its origin as a medical school is lost in obscurity. Whatever its origin, clerical or secular, in the heyday of its greatest renown, from 1000 to 1200 A.D., its faculty of medicine was essentially a lay institution, though clerics did practise medicine, and some of its teachers were clerics. Its essentially secular character was shown by the fact that Jew and Gentile alike were admitted as teachers and students, that its Prior or Praepositus was married, and that women taught and wrote in its Schola.

Salerno had distinguished physicians in the ninth century. For more than two centuries its fame as a medical school was quite as high as that of Bologna for law or Paris for scholasticism, and indeed the great mediaeval revival of the eleventh century took place earlier in matters medical than in legal, theological, or didactic studies, and Salerno was the seat of this revival. The Greek language long survived in Southern Italy, and its ports were in continual commercial intercourse with Constantinople, which before its fall was the centre of Greek culture.

This connexion with the East, and the retention of Greek culture in Southern Italy after the fall of the Roman empire, perhaps greatly helped the introduction of Greek medicine into Southern Italy, and may in part explain its renown as the *Civitas Hippocratica*. In its best days its practice was that of the ancient Greek physicians. Later, after the advent of Constantinus Africanus (1075), Arabic doctrines began to be introduced, until in the long run the Arabic influence became potent, not only in Salerno, but also in medical schools of newer growth.

When the warriors led by the sons of Tancred de Hauteville appeared in Italy, first as emigrants and stipendiary soldiers, the condition of Southern Italy was such as to make it an easy prey to that great soldier and conqueror, Robert Guiscard, who captured Apulia in 1040, and made Salerno his capital in 1060. Robert "though bred in arms knew the value of a philosopher," and nurtured its medical school, conferring privileges on its teachers. Roger II, who fixed his capital in Palermo, framed a code of laws affecting the practice of medicine, which was expanded and given a wider application by Frederick II (1194-1250) one of the greatest Emperors of mediaeval times. He forbade the practice of medicine in his dominions without a Royal licence

obtained from himself or his representative, and the subsequent conferring of a degree by the Masters of Salerno. Every student had to study logic for three years, and then devote five years to medical subjects. If he desired to become a surgeon an additional year had to be devoted to anatomy, and he had to become thoroughly experienced in the way in which operations are successfully performed and healing is brought about afterwards. The quaint ceremonial of graduation, with the attendant ceremony of laying the hand on the closed and on the open book, the symbolic marriage and indication of the knightly rank by the use of the ring, the crowning with laurel, and the dismissal of the graduate with a kiss of peace are picturesque items that made up a graduation ceremonial of which but few traces survive.

Frederick framed an excellent code of laws of public hygiene. He enjoined that graves must be dug a certain depth. Slaughter houses had to be erected outside the city walls, all carcasses of dead animals had to be disposed of outside the city. He believed in keeping the air pure and uncontaminated. His laws as to the sale of drugs and, above all, in regard to their adulteration were specially drastic. Under his despotic yet enlightened edicts Salerno lost its autonomy, but it still continued to grant degrees in medicine, even after the establishment of its rival, Naples. At first the title conferred was Magister, and Renzi finds the earliest mention of "Doctor in Physica" in 1200. In the earlier days of Copho, students had to be content with the "anatomia porci," involving, as Longfellow puts it:

> Dissections of the bodies of swine
> As likest the human form divine.

In Frederick's time, however, instructions were given that a human body should be dissected once in five years.

The discovery in 1837 of the famous Breslau Codex marked *Herbarius*, the publication of the *Collectio Salernitana* of S. Renzi in 1850, and the more recent work of P. Giacosa have done much to extend our knowledge of its earlier history. The Breslau Codex belongs to the end of the twelfth century, and gives us some of the works of Gariopontus, Platearius, Copho, Tortula, and others who wrote in the eleventh century.

One of the most important treatises is *De Aegritudinum Curatione*, which is a veritable encyclopaedia of all the medical art, exclusive of surgery. It was written by Salernitan physicians, and shows the state of medicine in the eleventh century, when Salerno was still a true Hippocratic school. The works on materia medica, including the "Antidotarium" of Johannes Platearius and the "Circa instans," formed the basis of all future pharmacopoeias. The descriptions of disease are true to nature, while great attention is paid to fevers, the pulse, and the study of the urine.

One of the interesting Tractates is that of Arimatthaeus, *De Adventu Medici ad Aegrotum*, which was obviously written for the young physician, and may be entitled "A Doctor's Visit." It lays down a code of ethics which in some respects might not meet with the approval of the Royal College of Physicians of to-day

Of all the "Mulieres Salernitanae," by far the most famous was Torluta, or Trotula, who was probably the wife of Nicolaus Praepositus, the prior or head of the school. The Breslau *Herbarius* contains many short articles bearing her name and dealing with subjects other than diseases of women, which was her principal work.

The most famous Salernitan treatise is the *Regimen Sanitatis Salernitanum*, written at the end of the eleventh century, and dedicated to Robert Duke of Normandy. It deals in pithy Latin verse with the six non-naturals of Galen—air, food, exercise, sleep, excretion, and the passions; and so popular was it that over two hundred editions are known. It was translated into every civilized language, and an edition appeared even as late as 1871.

The decline of Salerno set in at the end of the twelfth century, when Henry VI, grandson of Barbarossa, took the city and left its inhabitants to the tender mercies of his mediaeval soldiery. It still lingered on as a school of medicine until Napoleon, in 1811, gave it the *coup de grace*.

Salerno was the earliest and greatest international school of medicine; it was not dominated by the Church, it formed one of the channels by which Greek medicine and culture were introduced into Europe, and through it Arabic medicine and drugs were transmitted from the East to the West. It was the first school to lay down laws for the State examination in medicine and to admit women to be students, teachers, and graduates.

SCHOOL OF PHARMACY OF THE PHARMACEUTICAL SOCIETY.

At the opening of the sixty-third session of the School of Pharmacy of the Pharmaceutical Society, on October 3rd, Dr. A. W. Crossley, Professor of Chemistry, delivered an inaugural address, which may be briefly summarized as a plea for the fuller and wider recognition of pharmacy both as a science and as a profession. His experience as a member of the Pharmaceutical Society's Examining Board had shown him that few of the candidates approached their work in a really scientific spirit, but that, rather, they adopted the *British Pharmacopoeia* as the alpha and omega of the life of a pharmacist, as if anything not contained therein was neither of them nor for them. The speaker proceeded to consider the claim of pharmacy to rank as a profession in addition to being a great science. He deplored the lack of the use of scientific knowledge, which characterized so many business men in this country, and had, perhaps, fostered the great distinction made between business and profession. Knowledge, in the wide sense, was deemed the monopoly of the professions, but, rightly regarded, nothing was more necessary to the engaging in any large business than a thorough and scientific comprehension of those underlying causes which influenced that business. According to one distinction, the buying and selling of tangible goods was a business, whereas the dispensing of knowledge was a profession. But surely there was scant difference between the actual processes of buying and selling goods and of buying and selling knowledge. "It is not the actual method of procedure which distinguishes between a business and a profession, but the difference is, rather, due to the character, work, and mental powers of those engaged, which, if of a sufficiently high order, may raise any calling to the rank of a profession." Professor Crossley quoted passages from Ruskin's *Unto This Last*, in which the five great intellectual professions were defined as those of the soldier, the pastor, the physician, the lawyer, and the merchant. The merchant, it was argued, had scope equal to that of any other calling for becoming a great professional man. Pharmacy consisted not merely of a knowledge of simple chemical bodies, but also of acquiring an insight into the methods of extraction, purification and properties, both chemical and physiological, of some of the most complicated vegetable substances. Pharmacy was thus one of the greatest of applied sciences, and also had clearly a double claim to rank as a profession, for the pharmacist must be considered as being in part a merchant and in part a physician. The Professor strongly urged the necessity for every student of pharmacy and for every pharmacist to engage in research at every stage of his career. The lack of observation, he suggested, was the primary reason why research was so rare among students. This want of observation was fostered by the textbooks of the day, in which all problems were so fully elucidated that little or nothing was left to stimulate the reasoning powers of the student himself. It should be the endeavour of every student to spend some time in a research laboratory, for it was there, and there only, that any serious attempt was made to teach a student to observe and to think for himself. Following this train of thought, Professor Crossley dwelt at some length on the inroads which physics had made into the domain of chemical research, and said he would have every student who wished to advance in his profession acquire all possible knowledge of physics, including a necessary amount of mathematics. This need had evidently been recognized by the Pharmaceutical Society, which had recently made extensive alterations in its School and additions for the teaching of practical physics.

LITERARY NOTES.

The Irish Medical Association intends to publish for the coming year a Directory of all Registered Medical Practitioners resident in Ireland—about 2,400 in number. A copy will be sent gratis to every practitioner in Ireland. The book will also be on sale to the public.

Messrs. Cassell and Co. will shortly publish *The Other Side of the Lantern*, by Sir Frederick Treves, Bart., K.C.V.O., C.B., LL.D., Serjeant-Surgeon to H.M. the King, etc. The work gives an account of Sir Frederick Treves's recent tour round the world. In the portion of the work relating to India he describes not alone the chief scenes of the Mutiny which he visited, but many places and temples that are not usually shown to Europeans but to which he had access. From India he

passed through Burmah, where he was cordially welcomed by the chief authorities. He reached Japan just after the outbreak of the war, and was received with every consideration by the Emperor. He was also most warmly received and entertained by the leading men of the medical profession and by the most distinguished of the military staff. Of this portion of his tour he relates stories of great interest. Sir Frederick Treves crossed to America, where he was received by President Roosevelt at Washington, and his impressions of the United States will be welcomed as the views of a keen observer. The book contains numerous full-page illustrations prepared from photographs taken by the author.

According to the *Publishers' Circular*, Mrs. Sarah A. Tooley has written a *Life of Florence Nightingale*, which will be published early next month by Messrs. Bousfield and Co., 12, Portugal Street. The volume is intended to commemorate the jubilee of Miss Nightingale and the system of trained nursing which she initiated in 1854, when she took out her band of "angel women" to tend the sick and wounded in the Crimea. Mrs. Tooley has spent several months in the vicinity of Miss Nightingale's old home in Derbyshire, and has collected much new biographical material. The book will be illustrated by twenty-six portraits and views, many of which are new.

The legacy of £25 000, left by the late Professor Puschmann, of Vienna, to the University of Leipzig, is to be applied to the study of the history of medicine. It is proposed to found a historical museum of medicine, and a special seminary for training persons in medico-historical research and in historiography, with a salaried director and assistant. The names of Dr. Sudhoff and Dr. von Oefele have already been suggested, both eminent in the science of the history of medicine. Professor Puschmann was professor of the history of medicine at Leipzig until 1879, when he accepted a call to a similar chair at Vienna. He died in 1899, and his will was at first contested, but the money has now been paid to the University.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A MEETING of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 19th of October, at **2 o'clock** in the afternoon.

September, 1904. GUY ELLISTON, *General Secretary.*

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

BORDER COUNTIES BRANCH.—The autumn general meeting of this Branch will take place in the George Hotel, Penrith, on Friday, October 28th. It is proposed to have a discussion upon the Economical Value of Motor Cars in Medical Practice, and it is hoped that a considerable number of medical men will bring their cars with them, to enable members to see the different makes and judge for themselves. Papers have been promised by Drs. Sedgwick and Maclaren, of Carlisle, Dr. Edington (Penrith), and Dr. Syme (Glasgow). It is also intended that members should dine together afterwards. Details of all arrangements will be posted to each member later on.—FRANCIS R. HILL, 62, Warwick Road, Carlisle, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: KENSINGTON DIVISION.—An ordinary meeting of the Division will be held in the Physiological Laboratory of the University of London, South Kensington, at 5 p.m. on Thursday, October 13th, to which some French colleagues, then visiting London, have been invited. Tea and refreshment beforehand. Business:—A. D. Waller, M.D., F.R.S.: A Physiological Contribution to the Problem of Chloroform Anaesthesia. (1) Are accidental deaths during chloroform anaesthesia due to "overdose," or to "underdose"? (2) Experimental demonstration of apparatus for the graduated administration of chloroform; (*a*) Dubois's apparatus; (*b*) Waller's apparatus. (Suggested) Model Rule for Divisions, from Organization Committee: Vacancies among Officers: In the event of the death or resignation of any officer of the Division, or of his ceasing to be a member of the Division, the Executive Committee shall appoint some member of the Division to hold the office thereby vacated until the next annual meeting. Motion by the Honorary Secretary: Suggested alteration in By-law VI. namely, The officers shall be elected annually at the annual meeting of the Division. The Chairman may not hold office for longer than two consecutive years. Motion by Mr. Dennis Vinrace: That the maximum time allowed for the reading of papers at the meetings be thirty minutes, unless otherwise sanctioned by the Executive Committee. That the time suggested or allotted for the reading of the same shall appear on the agenda notice of the meeting at which such paper is to be read.—G. CRAWFORD THOMSON, M.D., 111, Sinclair Road, West Kensington, W., Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WANDSWORTH DIVISION.—An ordinary meeting will be held on Thursday, October 27th, at 3.30 p.m., at Tooting Bec Asylum, by the invitation of the Medical Superintendent. Agenda: (1) Minutes. (2) Correspondence. (3) Questions. (4) Resolutions for the Representatives meeting at Leicester. (5) A paper by J. L. Gordon, M.B.: Notes on the Certification of Alleged Lunatics. Patients will be subsequently shown. Members are invited to bring their medical friends. —E. ROWLAND FOTHERGILL, M.B., Torquay House, Southfields, S.W., Honorary Secretary.

NORTHERN COUNTIES OF SCOTLAND BRANCH.—The autumn general meeting of this Branch will be held in the Cluny Hill Hydropathic, Forres, on Saturday, October 22nd. Members having cases to show, or desirous of reading papers, will oblige the Secretary by intimating their intention of doing so before October 15th. Notices will be sent to members intimating arrangements.—J. MUNRO MOIR, M.D., 4, Ardross Terrace, Inverness, Honorary Secretary.

SOUTH-EASTERN BRANCH: CROYDON DIVISION.—The next meeting will be held at the Cock Hotel, Sutton, on Thursday, October 20th, at 4 p.m., Mr. G. Bower (Sutton) in the chair. The dinner will take place at 6 p.m., charge 7s., exclusive of wine. All members of the South-Eastern Branch are entitled to attend and to introduce professional friends. Papers have been promised by Mr. Dundas Grant, Dr. W. H. Tunnicliffe, Dr. A. E. Giles. The subjects of these papers will be announced at a later date. N.B.—The Honorary Secretary would be much obliged if members would kindly inform him by post-card whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner. By doing so they will materially facilitate arrangements, and promote the success of the meeting.—E. H. WILLOCK, Honorary Secretary, 113, London Road, Croydon.

SOUTHERN BRANCH.—This is to give notice that in October the Branch will proceed to elect a representative on the Central Council of the Association. The names of candidates, nominated each by three electors in writing, should be sent to me not later than October 10th.—H. J. MANNING, Honorary Secretary, Laverstock, Salisbury.

SOUTH-WESTERN BRANCH.—The autumn meeting of this Branch will be held at the Royal Devon and Exeter Hospital on Friday, October 21st, at 4.30 p.m., when Mr. J. Smith Whitaker, Medical Secretary of the Association, will give an address on The Benefits to the Medical Profession resulting from the work of Divisions of the Association. A meeting of the Branch Council will be held at 2.30 p.m., and at 3 p.m. a conference will take place between the Medical Secretary and the officers of the Branch and its Divisions. All officers, therefore, are earnestly requested to make every effort to attend. Tea will be provided at the Hospital from 4 o to 4.30 p.m. The Committee of the Exeter Medical Dinner cordially invites members of the Branch to the annual dinner, which is to take place on Friday, October 21st, at the Guildhall Restaurant at 6.45 p.m. Tickets, 10s. 6d. each (of which 7s. 6d. will be refunded if the ticket is not used), may be obtained from the Honorary Secretary of the Dinner Committee, Dr. Ransom Pickard, 31, East Southernhay, Exeter.—G. YOUNG EALES, 1, Matlock Terrace, Torquay, Honorary Secretary.

STIRLING BRANCH.—The autumn general meeting of this Branch will be held at the Station Hotel, Larbert, on Thursday, October 20th, at 2.15 p.m. Dr. Clouston (Edinburgh) will be present, and will read a paper on The Light Thrown on Mental Disturbance by Recent Investigations in Cerebral Pathology, to be illustrated by microscopic specimens and lantern slides. Members having any communications to present to the meeting are requested to communicate with the Secretary as soon as possible.—J. E. MOORHOUSE, Stirling, Honorary Secretary.

WEST SOMERSET, DORSET, AND WEST HANTS BRANCH.—A combined meeting will be held at St. John's Schools, Yeovil, on Thursday, October 13th. Agenda:—Election of officers for 1905: President, two Vice-Presidents, Honorary Secretary and Treasurer. Place of the May meeting. The combined meeting will be held at 4 p.m., Chairman, Mr. A. W. Sinclair, President of the West Somerset Branch. Discussion: Anaesthetics in General Practice; to be opened by Mr. P. J. Kingston, one of the Vice-Presidents of the Dorset and West Hants Branch. Communications: Mr. A. W. Sinclair: Neurasthenia. Dr. Walter: (1) A Case of Acute Rheumatism with Hyperpyrexia; (2) a Case of Lupus of Twenty-five Years' Standing Treated with Thyroid Extract. Dr. Page: (1) Notes on the Sewage Disposal (Bacterial) and Water Supply of Yeovil; (2) a Specimen of Hernia of the Liver in the Fetus. Dr. Moorhead: Further Observations on Radium. Dr. Colclough: Curetting for Inevitable Abortion. Mr. Bernard Scott: On Operation for Thyroid Enlargement under Local Eucaine Anaesthesia. Dr. Lush: Jottings from Hospital Practice. The business meeting of the Dorset and West Hants Branch will be held at 3.15 p.m., Chairman, Mr. A. J. H. Crespi, President of the Branch. Dinner at the Choughs Hotel at 5.45 p.m.; charge 5s. 6d. each, without wine. Members intending to be present are requested to communicate with Mr. Marsh by Tuesday, October 11th. The members of the Branch

resident in Yeovil will be pleased to see any members and friends at luncheon, at the Choughs Hotel, from 1.30 to 3 p.m. Between the luncheon and the meeting opportunity will be afforded for the inspection of the new operation theatre at the hospital. Dr. Page, Medical Officer of Health, will be pleased to conduct members over the sewage works. Messrs. Gatward and Wright will give demonstrations of *x* rays at St. John's Schools, and Messrs. Down Bros., Ltd., an exhibition of instruments.—WILLIAM VAWDREY LUSH, Weymouth; WADHAM BRUCE WINCKWORTH, Taunton, Honorary Secretaries.

YORKSHIRE BRANCH.—The next meeting of this Branch will be held at the Grand Hotel, Scarborough, on Saturday, October 15th. Members intending to read papers, to propose new members, or to make any communication, are requested to write to the Secretary at once. Special week-end terms will be arranged for. Members will dine together at 6.30 p.m. Golf tournament, Saturday morning.—ADOLPH BRONNER, 33, Manor Road, Bradford, Honorary Secretary.

SPECIAL CORRESPONDENCE.

BERLIN.

Professor Koch.—Geheimrath Schaper and the Charité Hospital.—Nomenclature of Diseases.—The Drawbacks to the Medical Career.

ROBERT KOCH has retired from his professorship in the Berlin University and from his other office as Director of the institute which bears his name, but it is understood that he will hold himself at the disposal of the Prussian Government for special researches, rooms, apparatus, etc., being specially reserved for his use. Koch intends to return to Africa in the course of the winter to take up a set of bacteriological investigations begun during his former stay—investigations connected with the tick as a bearer of infectious diseases in cattle.

Another retirement, which will leave a great blank, is that of Geheimrath Schaper, who for the last twelve years has been Physician-in-Chief to the Charité Hospital. His health is unfortunately no longer equal to the load of work which this office brings with it. Schaper, who comes of a distinguished medical family, took part in the campaigns of 1866 and 1870-1 as army surgeon, and afterwards worked as assistant in Bardeleben's surgical clinic, then in Schöller's obstetric clinic, and finally in Henoch's children's clinic. In 1873 he was appointed body surgeon to Prince Albrecht of Prussia. He accompanied the Prince to Brunswick when elected Regent, and made long and interesting travels as one of his suite. In 1892 he was appointed Chief Physician (*Aerztlicher Direktor*) of the Charité, a post for which he was specially fitted by his great powers of organization. He took a prominent part in working out the plans for the rebuilding and modernization of the Charité, and his name will always remain connected with the transformation of the great institute. Geheimrath Schaper, like so many medical men in Germany, is a great lover of music, and is known as one of the best amateur violoncellists of the day.

The Imperial Statistical Office and the Imperial Board of Health having conjointly determined to draw up a revised and general nomenclature and new statistics of diseases and mortality for all the Federal States of Germany, work has been begun in good earnest in a special building rented by the State in the City of Leipzig. Here no fewer than a hundred Government clerks have been at work since last April, and it has been computed that three years may elapse before they get to the end of their task. Under the circumstances, the sum of M. 325,000 (£16,250) voted for the purpose by the Reichstag does not seem by any means excessive.

A pamphlet, the object of which is to dissuade youths from entering the medical career, has been published by the Central League of German Medical Societies, and addressed to the head masters of 482 Gymnasien, or classical schools, and 131 Real-gymnasien, or modern schools, with the request that they may be distributed amongst the pupils about to go up for their matriculation examination. The pamphlet describes the unfavourable pecuniary chances of medicine as a profession, and the straitened, and even distressed, condition of a great number of German doctors. The reasons given for this sad state of things are: (*a*) The overcrowding of the profession; (*b*) the repeal of the interdiction on quacks; (*c*) the new sick-club legislation. The increase in numbers of late years is really appalling. In 1876 there were in Germany 13,728 practitioners; in 1887, 15,824; in 1898, 24,225; and in 1902, 29,133!—that is, the number has more than doubled since 1876. And now that the medical career has been opened to women and to modern school pupils, a greater rush even than heretofore may be expected. Moreover, a full year—the so-called "practical year"—has lately been added on to the course of study, which is thus rendered materially more expensive than formerly. In short, the chances of being able to make, while still comparatively young, a living suited to a gentleman's habits are almost *nil* in the medical profession in Germany, and intending students will do well to lay this honest warning to heart.

MANCHESTER.

Opening of the Medical Session.—The Joint Matriculation Examination.

SOME years have passed since the opening of the medical session was inaugurated by an address. The great developments that are going on, whereby the bonds between the University and the various hospitals are being steadily strengthened, to the mutual benefit of all concerned, made the inaugural address by Dr. Lorrain Smith, the newly-elected Professor of Pathology, all the more welcome (see p. 884). Dr. Judson Bury, in moving a vote of thanks to the lecturer, said that Dr. Lorrain Smith was about to occupy an important position at the infirmary.

The University may now be regarded as in full working order on the new and independent basis. Last week saw the publication of the results of the examination held by the Joint Matriculation Board for the three Universities of Manchester, Liverpool, and Leeds. The meshes of the net seem, on the whole, to have been very small, a very considerable number of aspirants not reaching the required standard.

CORRESPONDENCE.

THE CO ORDINATION OF THE WORK OF THE DIVISIONS.

SIR,—The correspondence that has been published on this subject during the last few weeks, together with private communications received, is sufficient justification for concluding that there is a wish that something should be begun that may reasonably be expected to succeed, in harmonizing the at present isolated endeavours of the various Branches and Divisions.

The hope is that all may, by some plan, get to know what is being done, what it is desirable to do, and the best way to do it.

We cannot expect to progress in numbers or influence until we have put our several houses in order; are agreed what needs are most pressing and require immediate combined attention; are determined to see those needs carried to a successful issue; and can point to the good resulting from our combined efforts.

A circular letter is being issued to all secretaries asking them, if they wish to avail themselves of this proposed mode of intercommunication, to send in their names. Should any member be interested in this endeavour, would he at once draw his secretary's attention to the matter in case he may through an oversight be omitted?

One does not at first expect large numbers to respond; they will come in gradually. But a compact body of keen men definitely agreed on what they are aiming at can do a lot to help in making this Association what it is the wish it should become—the "be-all" and "end-all" for the medical profession.—I am, etc.,

Southfields, S.W., Oct. 3rd. E. ROWLAND FOTHERGILL, Honorary Secretary, Wandsworth Division.

[ENCLOSURES.]

3rd *OCTOBER*, 1904.

Dear Sir,

Possibly you have seen the correspondence in the JOURNAL from the 10th September onwards referring to "the Co-ordination of the Work of the Divisions."

In order to harmonize this work and allow of interchange of suggestions, it is proposed to put into communication with one another those Secretaries of Branches and Divisions who are desirous of helping towards the success of this suggestion.

These various documents could from time to time be laid before the standing committee of Divisional Secretaries that no doubt your Branch will form, as well as the committees of the various Divisions. Any resolution or proposal appearing could be at once discussed and acted on if felt desirable and useful.

A list is being prepared of those Secretaries who desire to avail themselves of this proposal, and I shall be glad to hear from you on enclosed post-card by the 10th inst., if you would care to be included.

Yours faithfully,

E. ROWLAND FOTHERGILL,

SOUTHFIELDS, S.W. *Hon. Secretary*, Wandsworth Division.

[POSTCARD.]

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Would you please add my name to the list of those who are desirous to have copies of all Agendas, Reports, etc., that may be issued by other Divisions and Branches?

I will reciprocate this by seeing that they receive promptly and regularly all documents I may issue, and shall be pleased to communicate with any who may desire fuller information on any subject we may be specially dealing with.

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THE PRESENT POSITION OF ASEPTIC SURGERY.

SIR,—The recent discussion on this subject at the annual meeting of the British Medical Association, so fully reported in the current number of the BRITISH MEDICAL JOURNAL, seems to me to call for some criticism. So jealous do some men seem to be of the fame of Lord Lister—a fame which may be left to take care of itself—that they have divorced the term "antiseptic" from its original meaning, and attempt to reconcile the use of the terms "antiseptic" and "aseptic" as being synonymous. Antiseptic in its original use was meant to signify the use of means to destroy or kill microbes that might gain access to a wound, and for this purpose a chemical substance which was at that time supposed to be capable of effecting the object in view was employed, and for a long time that was the only and legitimate meaning of the word. Therefore the expression "antiseptic operation" was quite correct; but ere long it became known that microbes resisted an amount of the so-called bactericide that would destroy the tissues themselves. Then came the search for a substitute, and we were run through the gamut of thymol, corrosive sublimate, and other substances—all of which were proved to be unsatisfactory, until it was found advisable to avoid altogether the application of microbicidal substances to the raw tissues. The term "antiseptic" was therefore no longer thought suitable, and in the desire to keep the idea of sepsis before the mind the term "aseptic" was invented.

Now, I object to the term "aseptic" as applied to an operation that has just been completed—or, if thought better, to a method of operating—as entirely inapplicable. While it is quite correct to say, on the completion of an operation, "that is an antiseptic operation," it is only worthy of ridicule to say, under the same circumstances, "that is an aseptic operation," and for the simple reason that one has to wait for the result to know whether it proves to be septic or aseptic.

Admiring the judicious course which the writer of your leading article has pursued I agree with him in saying that "asepsis is the desired end, antisepsis the means," and that "the employment of heat is just as truly an antiseptic measure as the use of bactericidal chemicals." But you cannot apply this heat to the patient, not even for the so-called disinfection of the skin. Hence the terms are not synonymous: they are distinctly antithetical and therefore antagonistic. The end and the means are different things. The antiseptic method aims at the destruction of the microbes that may gain access to a wound: the aseptic aims at their exclusion. Surely this is not the same thing. And both are impossible.

We hear a great deal about the septic condition of the normal and apparently healthy skin (the majority of the speakers dwelt on this point), and that for successful work it is incumbent to destroy the so-called septic organisms that lurk therein. Is it reasonable to speak of the normal condition of the skin as being septic because it contains micro-organisms? At the present time this seems to be the greatest bugbear, and we hear of all sorts of processes for getting rid of them, but not one of them has as yet proved efficient. Is it not time to look somewhere else for the causes of failure? Even Mr. Watson Cheyne says "there is no doubt that they (pathogenic organisms) do often enter wounds, and yet there is not necessarily any suppuration or other trouble as the result." Not content with this statement of opinion or belief, he ventures to give "a reason for the faith that is in him." The essence of his reason is pure assumption.

Coming now to more practical matters, Mr. Cathcart gives us the results of twenty-three operations recently performed "through unbroken skin." Of these twenty-three operations only sixteen healed by "first intention." In the remaining seven there was local or both local and constitutional disturbance. "One was a radical cure of hernia with distinct stitch suppuration from staphylococcus albus." Another "was a case of scirrhus in a fat old woman in feeble health. There was removal of much skin, and much tension on the flaps, and suppuration from mixed infection took place." Why call in the aid of mixed infection under these circumstances? Why ignore the effect of tension on the flaps and consequent necrosis of tissue, with the consequent appearance of so-called pathogenic bacteria? What was the use of all that minute attention to the details of preparation—the various processes employed for the sterilization of the hands of the operator, the skin of the patient, and of the various appliances too numerous to specify? And when all these things were done, and outward appearances pleased the eye, the result was a failure. Under these circumstances one is forcibly reminded of the scathing text, "Woe unto you . . .! for ye are like unto whited sepulchres which indeed appear beautiful outward, but are within full of dead men's bones (effete matter) and of all uncleanness."

It is admitted that in country districts, in the case of the general practitioner in general, and outside hospitals, all the details spoken of (and they were very numerous and various), and the apparatus necessary for carrying them out, are an impossibility. Fortunately, experience tells us that they are unnecessary. I appeal to my own experience for confirmation of this, as well as to the results of operations upon the eye, the mouth, rectum, and vagina.

After having put the Listerian method to the test, and having proved it to be not only a failure but even a source of injury (now generally admitted) in its effects, I resorted to what I called simple cleanliness, and for more than twenty years I have not used any antiseptic either in the preparation for, or during, an operation, and I have every reason to be satisfied with my results. I appeal to a record of 90 successive ovariotomies without a death in a public hospital, while there was a considerable mortality in the antiseptic wards.

Disapproving of the term "aseptic" as being impossible of demonstration, I am still content to speak of my method as one of simple cleanliness and simplicity of apparatus, and if Sir William Macewen had said that *effective* "methods were by no means necessarily complicated, rather the contrary," we should be entirely in accord, as we are when he says: "It is quite certain that the best results are obtained by avoiding antiseptics," and when Mr. Malcolm tells us that (so-called) aseptic surgery is *theoretically* the more perfect method, I would suggest the substitution of the word "practically."

Apologizing for the length of this letter,—I am, etc.,

London, N.W., Oct. 1st. GEO. GRANVILLE BANTOCK.

ASSISTANTS AND ASEPSIS.

SIR,—I notice, in the discussion on the present position of the aseptic treatment of wounds published in the BRITISH MEDICAL JOURNAL of October 1st, that Mr. G. G. Hamilton, of Liverpool, holds that, to ensure success in surgery, assistants ought to be done away with. Surely this would be hard on the rising generation of medical men, and prejudicial to the future of the profession.

I am sure there are many younger practitioners who, like myself, have, in emergencies felt truly grateful that they have been, as students, assistants, and not merely attendants and onlookers, in the operating theatre at King's College Hospital.—I am, etc.,

Wells, Somerset, Oct. 2nd. A. A. MYERS.

THE DIAGNOSTIC VALUE OF SKIAGRAPHS IN RENAL CALCULUS.

SIR,—I am sure all workers with the *x* rays will welcome Mr. R. Clement Lucas's timely words of warning in the BRITISH MEDICAL JOURNAL of October 1st against accepting too absolutely the negative evidence of the skiagraph in cases of suspected renal calculus. In the *Clinical Journal* for July 17th, 1901, I wrote as follows:

Some radiographers maintain that all calculi of a certain chemical composition can be detected by the Roentgen rays. In fact, some would go so far as to say that, in a case of suspected renal calculus, if the patient has been examined by the *x* rays, and the result be a negative one, the opinion can be confidently expressed that a renal stone is not present. With these observers I cannot agree. To give my own experience, we will take twelve consecutive cases that were *x*-rayed in the Electrical Department of St. Bartholomew's Hospital for suspected stone in the kidney. In three out of the twelve I could say definitely that a stone was present. In the rest I could give no opinion one way or the other. Yet in one of these cases a large calculus was subsequently removed by Mr. W. J. Walsham, the surgeon in charge of the case. Again, for a renal calculus to be detected by the *x* rays, it must be of a certain size. Probably stones which are smaller than a good-sized pea will escape detection altogether.

Since the above was written in 1901 I have seen no reason to modify the opinion there expressed; on the contrary cumulative experience has more and more convinced me of its truth.

The failure to obtain a shadow of the stone in the first of Mr. Clement Lucas's cases is not surprising. As far as my experience goes it is next to impossible to find the shadow of a renal calculus in a stout patient. Even Mr. Lucas's second case will not, I venture to think, appear strange to those with large experience in *x*-ray work. Such cases must have occurred to them all. Such a case at least has occurred to myself. A lady who was passing a considerable amount of pus was *x*-rayed for a stone in the kidney. The skiagraph showed nothing but an obscure mottling on the right side, but subsequently fragments of a phosphatic stone were passed. If we remember the density of the pus-shadow I think we need not be surprised if we fail to find a stone that is surrounded by pus in the pelvis of the kidney.—I am, etc.,

London, W., Oct. 2nd. HUGH WALSHAM.

INDIAN FEVERS.

SIR,—I have read with great interest my friend Dr. Crombie's address at the Tropical Section of the Oxford meeting. As he has not, however, been quite successful in conveying a correct impression of my views on the points he criticizes, I beg leave to make a few remarks on the subject.

In the first place, Dr. Crombie's reiteration of his old view that typhoid fever is very rare in natives comes as a surprise after his admission, in a speech at the Liverpool Hygienic Congress of last year, that the evidence I had given on the point, and especially the serum tests, had convinced him that the long-continued type of fever occurring in natives under 30, which he had described under the term "non-malarial remittent," was really typhoid. His present contention that the serum reaction is only reliable in the case of Europeans, because the blood of a few natives gave reactions in low dilutions, for the most part of an incomplete nature, cannot logically be held to invalidate the evidence of the positive serum tests which I have now obtained in upwards of forty continued fevers in natives; because in 80 per cent. of them complete reactions were got in dilutions of 1 in 100 to 1 in 500, the diagnostic value of which is beyond question. Moreover, *post-mortem* evidence is not so wanting as Dr. Crombie assumes, for during the last twelve years no less than 16 cases of typhoid in natives have been verified *post mortem* in the Medical College Hospital alone, and that, too, in spite of the fact that the majority of the cases occur at ages at which necropsies are rarely obtained on account of relatives claiming the bodies, so these formed but a small fraction of the total cases in the hospital during this time. Further, a very similar proportion of cases is on record in the previous two decades of *post-mortem* examinations.

Dr. Crombie's return to his old view appears from his address to be due to the discovery of the Leishman-Donovan bodies in cachexial fever, although this fever is as remote in its type from the continued fever which he described as "non-malarial remittent" as it is possible to imagine. Moreover, on referring to his original address at the Calcutta Congress, I can find nothing in it to indicate that he considered the cases hitherto known as "malarial cachexia" as being a non-malarial fever, while he particularly mentions a double daily remission as evidence of the malarial nature of a remittent fever, although I have recently shown that this is the one characteristic feature of the fever due to the new parasites during the remittent exacerbations which occur occasionally in the generally intermittent course of this fever. Moreover, in the paper which he criticizes, I expressly excluded this class of fever from the cases I tabulated, and dealt only with the "acute remittent" and "continued" fevers as defined; and, in summing up my conclusions, I wrote that I could only find two such fevers "at any rate of long duration." Further, in discussing the short fevers which Crombie calls "febricula" and "simple continued fever," I wrote that they required further investigation, and I was not prepared to state that there were not non-malarial fevers of this type, but believed they formed much less than 75 per cent. of these short fevers, as Crombie maintained; so that he is not correct in attributing to me the view that all such short fevers are necessarily malarial.

Lastly, with regard to the diagnostic value of the large mononuclear increase, I was, I believe, the first to point out two years ago that this increase is present in both "malarial cachexia" and kala-azar, so that the recent proof that both these fevers are due to the new parasite at once showed that the leucocyte count is not pathognomonic of malaria alone. It therefore becomes an open question whether some of the cases I considered to be malarial remittents may not have been an early stage of cachexial fever, and I am reinvestigating this point. The main contention of my paper is not, however, materially affected by this qualification of my deductions from the facts recorded, for all the "continued" fevers of long duration were shown to belong to the typhoid group (including paratyphoid), and they could be clearly differentiated in the vast majority of cases by the absence of any large mononuclear increase and the frequent presence of a lymphocytosis from the other group, showing an excess of large mononuclears, which included the malarial remittents, and possibly also some cases of the early stages of cachexial fever; while I was also able to lay down some clinical rules for their differentiation as a result of a close investigation of some 200 consecutive continued and remittent fevers, such as had not, I believe, been previously undertaken in the tropics. Moreover, vigorous quinine treatment is indicated in both malarial remittents and also in the early stages of cachexial fever (when alone it may be expected to yield good results for the reason I have recently pointed out), while this stage alone presents any difficulty in diagnosis from the typhoid group; so the leucocyte test, which has the enormous advantage of being immediately available in the frequent absence of facilities for the serum test in the tropics, retains its practical value unimpaired by the recent discovery of the new parasite.—I am, etc.,

Calcutta. LEONARD ROGERS, I.M.S.

DIPHTHERIA IN BRISTOL.

SIR,—We are obliged to Dr. Louis Cobbett for his kind and temperate criticism contained in the BRITISH MEDICAL JOURNAL of September 24th, 1904, p. 781: the more so as the question of the best means of prevention in diphtheria will bear full discussion in the general public interest.

Our reasons for belief in the advent of a new and virulent form of bacillus into the city are contained in the annual reports for Bristol for the past four years, and are based upon the observed behaviour of the disease from its introduction in February, 1900, into a southern district of the city, through its subsequent migration, step by step, into district after district. Laboratory observations had also been continuously made from 1895 onwards; but it would take up too much space to detail here fully the circumstances which have led us, after mature consideration, to this decision.

The alternative supposition, advanced by Dr. Cobbett, does not appear to us to meet the facts of the outbreak. We have fully taken into consideration the protection by "natural" antitoxin afforded to possibly one-half of the children in any community, and prefer to accept the supposition that this is the result of an unrecognized affection produced by some form of the diphtheria bacillus: it is possible that the 50 per cent. harbouring Hofmann's bacillus may not be unrelated to the 50 per cent. showing this "natural" immunity.

The existence of such a partially-immune portion of the population fulfils all the conditions necessary to our supposition, and there seems to be no difficulty in accepting the possibility of a newly-introduced virulent variety of diphtheria attacking certain of the unprotected half of the community in serious and fatal form, and possessing, in addition, sufficient virulence to break down in some degree the resistance of the partially-protected half, who had previously been able, by virtue of their "natural" immunity, to resist the less virulent variety.

The partly-inhibited growth of the virulent variety upon this unsuitable soil results, as it seems to us, in an unusual number of mild, veiled, or unrecognized cases, to be found, according to our experience, amongst a population attacked by a virulent variety of diphtheria. This experience has extended over four years in a population numbering 340,000 persons.

Dr. Cobbett agrees with us that diphtheria is kept alive by unrecognized cases, but differs from us in allowing no bad influence to Hofmann's bacillus. We do not, of course, ascribe all clinically unrecognized cases to Hofmann's bacillus, though it is possible to read such an interpretation into the extract quoted, apart from the context: very many such cases show upon examination, as every one knows, virulent bacilli to be present. We do believe, however, that Hofmann's bacillus cannot be neglected as a potential cause

of the spread of diphtheria, *when it occurs side by side with marked clinical cases.*[1]

It is possible that *most* cases showing Hofmann's bacillus only are not active agents in the spread of diphtheria; but some few of them are, we feel convinced, serious elements of danger, and, unfortunately, neither laboratory experiments nor any other means of observation at present open to us can determine which forms may, by suitable transference from person to person, reacquire virulence. The methods applied in Bristol since 1895 to deal with the spread of diphtheria (namely, bacteriological examination and control of contacts), and subsequently adopted in Cambridge and Colchester, were, of course, not original in either case, but are founded upon the excellent work initiated and carried out for many years abroad, and particularly in the United States.

We agree with Dr. Cobbett that it is useless to examine contacts and to isolate and treat such as harbour the diphtheria bacillus while those infected with Hofmann's bacillus are allowed to go free; and it is on record in more than one of the medical officer of health's annual reports that in Bristol we have attempted, with fair success, to apply local treatment for Hofmann-bearing *contacts* at out-patient institutions organized for the purpose. We think Bristol stands alone in this somewhat heroic endeavour.

Dr. Cobbett's concluding paragraph seems to admit that measures including the neglect of Hofmann will succeed in the discovery only of the *great majority* of those who spread infection; we agree, but the residuum of those who spread infection includes, we believe, certain potentially infective Hofmann-bearing *contacts*, whose treatment must also be undertaken if we are to adopt the fully best means of combating the spread of diphtheria.

We may here note, as germane to the control of diphtheria, that Dr. Cobbett, in addition to minimizing the importance of Hofmann's bacillus, also appears, as we gather from his published reports, to attribute small importance to the occurrence of the diphtheria bacillus in the nasal cavities, although it would appear that the origin of the disease, as recorded in his account of the Cambridge outbreak, was due to a case of this kind.

It is impolitic and fatal, in the present position of our knowledge, to neglect any chance, however small, of the carriage of this infection.—We are, etc.,

D. S. DAVIES, M.D.,
Medical Officer of Health, City of Bristol.
JOHN C. HEAVEN,
Deputy Medical Officer of Health, City of Bristol.

Bristol, Oct. 3rd.

THE DOOM OF SPECTACLES.

SIR,—It has come to my knowledge that you sent the press an advance proof of your recent article concerning myself. You remark that I omitted to invite the BRITISH MEDICAL JOURNAL to the demonstration, perhaps by oversight. It may have been oversight. Or it might have been because you have boycotted this hospital, refusing to insert our advertisement for a house-surgeon. This little information and explanation you omitted—probably an oversight.

You imply that I invited no medical men. Had you not by oversight omitted to inquire, I could have told you that I invited the following medical men: Sir James Thornton, all the staff of the hospital, and several others, including an ophthalmic surgeon, who, however, did not come. The patients exhibited were a dozen clerks and school teachers, with two daughters of a well-known clergyman. I may have bribed them to say what is untrue. Or I may have hypnotized them into believing that they were once short sighted, but are so no more. Your whole article implies that I did one of the two. Obviously, the only evidence you have is your inner consciousness. This latter point you omitted to indicate—probably an oversight. Your long article contains one suggestion, neither scurrilous nor silly—perhaps an oversight. You say I ought to give a demonstration before a medical society. I shall take no initiative, but if asked by the Ophthalmological Society to read a paper and exhibit cases, the invitation will be accepted.—I am, etc.,

STEPHEN SMITH, M.R.C.S.

SIR THOMAS BROWNE: *AUDI ALTERAM PARTEM.*

SIR,—Of Dr. Conolly Norman's original objections to the erection of a memorial to Sir Thomas Browne, the first, namely, that of inhumanity and unprincipled dishonesty in giving evidence against the Bury witches, falls to the ground at once, since (*a*) it is inconsistent with the second objection to Sir Thomas Browne's lack of science in believing in witchcraft, and (*b*) Dr. Conolly Norman himself, in his last letter, says: "Of course Sir Thomas Browne believed in witches." *Ergo*, he did not knowingly give false or inhumane evidence in this case.—*Q.E.D.*

The second objection, to Sir Thomas Browne's deficiency in contemporary scientific knowledge, so far as his belief in witchcraft is concerned, also fails for lack of evidence, since, with the single exception of Montaigne, the witnesses produced to establish the charge are either hostile to it or irrelevant. Hobbes (who was, as Sir Thomas Browne wrote, as a notorious unbeliever, "upon consequence, one of a sort, not of infidels, but of atheists") believed that witches should be hanged for evil intention, if not burnt for impossible achievement. Samuel Butler referred, not to witches *qua* witches, but to the notorious Matthew Hopkins, who was hanged, not on account of the non-existence of witchcraft, but as a wizard himself. The various contemporary dates supplied by Dr. Conolly Norman, such as that of the incorporation of the Royal Society, etc., are quite beside the question. We know that one of its most distinguished Fellows believes in spiritualism in 1904; we do not know what his predecessors held concerning witchcraft in 1664. These dates have, indeed, as much evidential value as to Sir Thomas Browne's comparative scientific attainments as Tenterden Steeple had to the origin of Goodwin Sands, in quaint Bishop Latimer's illustration.

As evidence, however, of the condition of public opinion, scientific and other, on the reality of witchcraft, at a period long subsequent to Sir Thomas Browne's, we have the fact that a witch and her 9-year-old daughter were publicly hanged at Nottingham as late as 1715, without any protest from the representatives of science, while witchcraft as a criminal offence was only removed from the Statute Book in 1736, more than half a century after Sir T. Browne's death.

As to Sir Thomas Browne's faults of style—namely "perversity, priggishness, and pedantry," may I venture to say that while the number of editions of his works testifies to his popularity, both abroad and at home, the fact that he was appreciated by such judges of English prose as Coleridge, Wordsworth, Charles Lamb, Washington Irving, is sufficient reply to such criticisms? If more were needed, I would refer your readers to De Quincey's whole-hearted appreciation of Sir Thomas Browne's style,[1] where he prefers him to Milton, and says that he and Jeremy Taylor "if not absolutely foremost in the accomplishment of art, were undoubtedly the richest, the most dazzling, and, with reference to their matter, the most captivating of all rhetoricians"—a reasoned eulogy from a master of style, which I commend to Dr. Conolly Norman. That Bishop Ken plagiarized from Sir Thomas Browne in his admired evening hymn I boldly assert. What the man and the physician was, let a friend show: "Parsimonious in nothing but his time . . . when he had any time to spare from his practice, he was scarce patient of any diversion from his study; so impatient of sloth and idleness was he, that he would say, '*He could not do nothing.*' He understood most of the European languages, Latin and Greek critically, and a little Hebrew. He went to church constantly, when he was not prevented by his practice, and never missed the Sacrament of his parish when he was in town." Such a man surely deserves respectful admiration, not criticism, at our hands.—I am, etc.,

Paignton, S. Devon, Sept. 29th. W. SYKES, M.D., F.S.A.

[1] Cf. Heaven, Diphtheria as a Disease of Person not of Place, *Public Health*, June, 1903.

[1] Masson's edition of De Quincey's works, 18, vol. x, p. 104.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

SURGEON FREDERICK C. ROBINSON has been appointed to the *Vivid*, for disposal, September 28th.

Surgeon HENRY EDWARD RAPER died at the Royal Naval Hospital, Malta, of Mediterranean fever, on September 27th, aged 30. He was appointed Surgeon, May 23rd, 1898.

ARMY MEDICAL SERVICE.

BRIGADE-SURGEON EDWIN WILSON died suddenly at Bray, on September 27th, aged 78 years. He was appointed Assistant-Surgeon, May 19th, 1855; Surgeon, November 25th, 1868; Surgeon-Major, March 1st, 1873; and Honorary Brigade-Surgeon on retirement from the service, February 28th, 1884. He served with the 71st Highlanders in the Central India Field Force in 1858, and was at the battle of Koonch, the affairs during the advance on Calpee, the battle of Golowlee, the capture of Calpee, the

action of Morar, the recapture of Gwalior, and in medical charge of a Flying Column in pursuit of Burgore Sing. He had received the Mutiny medal with clasp.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel T. M. Corker, M.D., who has recently returned from South Africa, has been appointed Principal Medical Officer, 9th Division, 3rd Army Corps, and will assume charge of his duties at Belfast on October 11th.

Lieutenant-Colonel P. H. Johnston, M.D., at present stationed at Belfast, proceeds to Canterbury for duty, on the arrival at Belfast of Lieutenant-Colonel Corker.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel S. Borah, M.B., Bengal Establishment, is permitted to retire, from September 10th. He was appointed Assistant Surgeon, March 31st, 1875, and became Surgeon-Lieutenant-Colonel, March 31st, 1895. He was with the Naga Hills Expedition in 1879-80, receiving the medal with clasp.

Major J. T. W. Leslie, M.B., Bengal Establishment, is appointed Sanitary Commissioner with the Government of India.

Lieutenant-Colonel W. A. Sykes, M.B., D.S.O., Bengal Establishment, is confirmed as Agency Surgeon and Administrative Medical Officer in Beloochistan, from June 25th.

Lieutenant-Colonel F. A. Weir, M.B., Bengal Establishment, is confirmed as Administrative Medical Officer, North-West Frontier Provinces, from June 25th.

Major J. R. Roberts, M.B., Bengal Establishment, is confirmed as Administrative Medical Officer in Central India, from June 25th.

Colonel H. Hamilton, M.D., C.B., Bengal Establishment, has been awarded a good service pension. He entered as Assistant Surgeon, March 31st, 1876, and became Surgeon-Colonel, October 1st, 1902. His war record includes: Afghan war, 1878-80, including action of Charasiah, operations at and around Kabul in December, 1879; affair of Saidabad, march from Kabul to relief of Kandahar, and battle of September 1st (mentioned in dispatches, medal with three clasps, and bronze decoration); Chitral Relief Force, 1895 (medal with clasp); North-West Frontier of India, 1897-8, including operations on the Samana and in the Kurram Valley during August and September, 1897, and with Flying Column under Colonel Richardson, August 20th to October 1st, 1897 (mentioned in dispatches, two clasps); Tirah Expeditionary Force, 1897-8 (mentioned in dispatches, clasp, promoted Brigade-Surgeon-Lieutenant-Colonel).

ROYAL NAVAL VOLUNTEER RESERVE.

Elliot W. Woodbridge, M.B., M.R.C.S., L.R.C.P., has been appointed Surgeon, September 27th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The undermentioned Lieutenants in the Glasgow Companies to be Captains, dated October 5th: G. H. Elington, M.D.; M. Dunning, M.B.; S. M. Sloan, M.B.; H. W. Thomson, M.B.; A. Young, M.B.; F. J. Charteris, M.B.

The resignation of Major T. H. Openshaw, M.B., F.R.C.S., C.M.G., the London Companies, which was announced in the *London Gazette* of September 2nd, is cancelled.

Captain H. W. Webber, M.D., Devon Bearer Company, resigns his commission, October 5th.

MEDICO-LEGAL AND MEDICO-ETHICAL.

LIABILITY FOR ACCIDENT.

W. writes that a short time ago he was accosted by a cyclist, who asked him to go to a village, distant five miles, to attend to a boy who had been knocked down by his bicycle. He did so, and attended the patient for a broken leg, and on his convalescence sent in a bill to the cyclist for £2 10s. The latter refused to pay, on the ground that the accident was due to the patient's fault and that his parents ought to pay the doctor's bill, but he sent a guinea later on, at the same time denying all liability. The parents refuse to pay the balance, and W. would like to know from whom he can recover it.

*** Our correspondent was right in charging the cyclist, who is clearly liable, and would probably be ordered to pay the balance if sued in the county court. The case, however, is one in which it might be wise to employ a solicitor.

FEES PAID TO *LOCUM TENENS*.

D. B. writes that he always understood that there was an unwritten law whereby the *locum tenens* by right retained half the money left after paying expenses and other little details in the case of inquest and *post-mortem* fees, and he would like to know "on what legal instance the point has been settled."

*** We do not know of any "legal instance," nor do we consider one necessary. If a medical man pays another to carry on his practice for him he naturally expects to have all the receipts therefrom handed over to him. No doubt the coroners and courts of law will only pay fees to the actual witnesses, but if a *locum tenens* on this ground were to try to retain them he might be summarily compelled to pay them over to his principal.

POST-MORTEM EXAMINATIONS.

K. C.—The authorities of a hospital in which a patient dies are in lawful possession of his body, and in default of known and accessible relatives it would under ordinary circumstances rest with them to give or withhold permission for the performance of a *post-mortem* examination. In the case in point, however, the authorities appear to have exacted or accepted an undertaking from a third party that he would take charge of the body in the event of death, thus placing him in the position of a relative. Having accepted responsibilities with the consent or at the request of the authorities, the third and otherwise uninterested party also acquires rights, and these, though possibly not legally enforceable, cannot in equity be set aside by those who originally held them.

WORKMEN'S COMPENSATION.

A. C. writes: I have been asked to examine a workman who is receiving as compensation the sum of £1 per week. He has permanently lost all sight in his right eye. In addition to the medical examination I have been also asked to state as between master and man what I consider would be a fair sum (after cessation of his weekly payments) as compensation under the Act (1) If he continues in their employment at the same rate of wages; (2) if he is discharged from his employer's service.

*** After the cessation of his weekly payments if the injured man continued his old employment at the same rate of wages he would not be entitled to any additional payment. If the man is discharged the amount to be paid to him weekly is the difference between the amount of his average weekly wages before the accident and the amount he is able to earn after. The medical opinion at this stage is a matter of much importance and will weigh considerably if there is any arbitration. The employer alone can ask for a commutation of the weekly payments and the arbitrator has a free hand in fixing the amount. The workman cannot demand a lump sum. A man with one eye is always quite unfitted for some kinds of work (such as mills and forges and foundries where sparks and drops of hot iron are flying about), because given an injury to his sound eye he might become totally blind. On the other hand, for certain kinds of employment he is not handicapped. In the Bill as originally drafted the amount for commutation was limited to 312 times the weekly payment. This was struck out to leave the arbitrator a free hand, but it may form a guide as to the amount offered if the man in question is discharged and cannot get other employment.

NOTIFICATION OF LEAD POISONING.

J. G. S.—Any case diagnosed as lead poisoning, and believed to have been contracted in any factory or workshop, must, under the Factory and Workshops Act, 1901, Section LXXIII, be notified forthwith by the attendant medical practitioner to the Chief Inspector of Factories, Home Office, London, S.W. No postage need be paid, and the notifier receives the usual notification fee of 2s. 6d. In addition to being duly signed and dated, the name, address, and occupation of the patient must be stated, and the factory or workshop mentioned at which it is believed that he or she contracted the disease. The same clause of the Act applies to phosphorus, arsenic, and mercury poisoning, and also to anthrax. Observance of the rule is enforced by a penalty.

MEDICAL ETIQUETTE.

Dygalad writes: Whilst A. is away on his holiday, a patient of his becomes dissatisfied with his *locum tenens* and calls in B. B. attends without communicating with the *locum tenens*, and continues to attend after A.'s return. Some five weeks later he mentions the matter to A. casually, and adds that he has agreed to attend the patient in her first confinement. The patient's husband was at one time a patient of B.'s. (1) Was B. justified in taking over the case for himself without any reference to the *locum tenens* or to A. on his return? (2) Is B. further justified in agreeing to attend at the confinement?

*** (1) The duty of communicating with the *locum tenens* devolved upon the patient when she made the change. (2) B. should have communicated with A. on his return, and have offered, with the consent of the patient, to give up the case. (3) A practitioner should not take advantage of the temporary absence of another practitioner to acquire permanent charge of a case.

MEDICAL ADVERTISING.

G. E.—We agree that the practice of advertising the return of fashionable physicians to their London residences is a bad one, as although not in itself serious, it sets an example which may be followed in much more objectionable ways. The matter will be referred to the Ethical Committee.

ADVERTISING IN SURGERY WINDOWS.

H. R. asks whether there is any serious objection to placing a statement that "The fee for consultation at this surgery is 1s.; no additional charge is made for medicine," in a surgery window in a working-class district. He adds that he saw such a notice in an East-end surgery window the other day and he wondered if the General Medical Council would object.

*** We think any announcement beyond the name, qualifications, the word "surgery" and the hours of attendance, is undesirable.

SUBSEQUENT PRACTICE BY *LOCUM TENENS*.

A. asks at what distance may a medical man start in practice from the residence of one to whom he had previously acted as *locum tenens* without contravening the laws of medical etiquette?

*** In the absence of a special agreement a *locum tenens* is under no legal obligation not to practise at a future time in his principal's neighbourhood, but he should regard himself as under an honourable obligation not to take advantage of his position by doing so. If, however, a considerable time had elapsed this obligation would no longer exist, nor do we think that in a large town any objection could be taken to his starting outside a two-mile radius from the residence of his former principal.

DR. HALL'S HYGIENE COMPANY.

G. H. G. Davie, M.B.—We understand that the Medical Defence Union has the matter in hand.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

EXAMINATION IN PREVENTIVE MEDICINE AND PUBLIC HEALTH (D.P.H. OXON.)

THE names of candidates for this examination, which will commence at 10 a.m., on Tuesday, November 22nd, must be transmitted to the Secretary of the Board of Faculties, Clarendon Building, Broad Street, Oxford, not later than 10.30 a.m., on Tuesday, November 8th.

Candidates, who need not be members of the University, must produce evidence of having satisfied the requirements of the General Medical Council relating to diplomas in public health.

The examination is in two parts, which may be taken together or at separate examinations. The fee for each part is £5. Part I comprises the application of Chemistry and Physics to General Hygiene. Part II comprises the following subjects: General Pathology, with special relation to Infectious Diseases; the Laws Relating to Public Health, Sanitary Engineering, and Vital Statistics. The examinations are conducted partly in writing, partly viva voce, and in each subject are partly practical.

UNIVERSITY OF LONDON.

Meeting of Convocation.

AT the general meeting of Convocation to be held at the University on Tuesday, October 11th, at 5 p.m., two resolutions are to be proposed. One, by Mr. L. F. Wintle, LL.B., suggests that an appeal be made to the graduates who are not members of Convocation, and who number upwards of 4,000, to join Convocation. The other, to be proposed by Mr. H. Hanford, B.A., states that attempts might be made to render the *London University Gazette* more fully representative of the life and thought of the University: and it proceeds to show the various directions in which attempts to achieve the purpose might be made.

Physiological Laboratory.

During the first term, a course of eight lectures on the physiology of muscle and nerve will be given by Dr. A. D. Waller, F.R.S., on Tuesday, October 18th, and the following eight Tuesdays, at 5 p.m. During the second term, Sir T. Lauder Brunton, F.R.S., will give a course of lectures on Tuesdays, beginning January 17th. Any member of a London school of medicine, whether an undergraduate of the University or not, may obtain a card of admission on application to the Academic Registrar.

UNIVERSITY OF GLASGOW.

THE following candidates have satisfied the examiners in the subjects indicated:

First Professional Examination—A. Aitchison (C.), D. Anderson (C.), J. G. Anderson (B., P.), *W. Anderson (Z., C.), T. Archibald (B., P.), W. H. S. Armstrong (B., Z.), A. Ballantyne (B., Z., C.), W. Barr (B., P., C.), C. Bennett (B., P.), *R. R. Bow (Z., C.), C. Brash (Z., C.), W. B. Brownlie (B., P.), *D. Y. Buchanan (B., P., C.), J. A. G. Burton (B.), H. M. Calder (B., Z., C.), J. Cameron (C.), D. J. Clark (B., P., C.), J. L. Cochrane (B.), A. J. Cooper (C.), R. Cramb (B.), *J. Cruikshank (B., P.), J. C. Dick (C.), C. Duguid (B.), W. H. Duncan (Z.), P. Figdor (B.), R. D. B. Frew (B., Z.), D. Gibson (B.), A. G. Gilchrist (B., P.), *W. Gilmour (B., P.), G. S. Gordon (B., P.), H. M. Gossman (C.), E. O'D. Graham (B., C.), J. Granger (B., P.), G. Haddow (B.), W. Hamilton (P., C.), M. Harkin (B., Z., P., C.), J. P. Hay (B., Z.), J. M'L. Hendry (B., Z.), S. J. Henry (B., P.), J. H. Hislop (C.), W. A. Hislop (B.), C. Hunter (B.), C. Johnston (B., Z.), *W. H. Kiep (B., Z., P., C.), J. P. Kinloch (B.), D. N. Knox (B., P.), J. Lang (B., P.), G. S. Livingston (Z.), W. C. Macartney (B.), *F. C. Macaulay (B., P.), R. M'Carlie (B.), W. M'Connell (B., P.), D. M'Dougall (B., Z.), N. MacInnes, M.A. (C.); *W. M'Kendrick (B., Z.), F. W. Mackichan (Z., C.), T. Mackinlay (B., P.), A. M'Kinnon (B., P.), J. J. Mackintosh (B., Z.), J. MacMillan (Z., C.), *P. R. M'Naught (B., P.), *J. W. M'Nee (B., P.), M. MacPhail (B., Z., C.), T. Marlin (B., P.), W. A. L. Marriott (B.), *F. N. Marsh (B., P.), D. R. Mathieson (B.), D. Meek (B., Z.), W. S. Melville (B.), K. C. Middlemiss (B., P.), R. S. Miller, (P.), J. Mowat (B., Z.), *W. A. Muir (B., C.), C. S. M'K. Murison (Z.), C. A. Murray (B.), W. Noble (B., P.), B. Papiermeister (B., Z.), *A. R. Paterson (B., P.), A. Patrick, M.A. (C.); M. Purvis (B., P.), E. Quigley (B., C.), R. Rae (C.), H. N. Rankin (B., Z., P., C.), N. M'N. Rankin (P., C.), J. Robertson (Z.), R. C. Robertson (B., P.), A. Roemmele (B., P.), *W. W. Rorke (B., P.), W. Rutherford (B., P.), R. E. Selby (C.), W. A. Sewell (B., P.), J. B. Sim (B., C.), J. J. Sinclair (B.), J. S. Somerville (B.), A. Stewart (B.), D. Stewart (B., Z.), E. E. Stewart (B., P., C.), R. W. Sutherland (B., P.), D. Taylor (B., P.), D. M. Taylor (B., P.), *D. A. Thomson, M.A. (Z., P.), J. S. Thomson (B., P.), A. Turnbull (B., C.), R. M'N. Walker (B., P.), W. S. Waterhouse (B.), T. P. Watson (Z., C.), H. Wellwood (Z., C.), J. B. Whitfield (B., P.), W. C. Whittingham (B., P.), C. P. Williamson (C.), J. A. Wilson (B., P.), H. J. Windsor (B., P.), H. Young (Z., C.), *J. Young (Z., C.).

Women.—M. Foley (B., Z.), E. A. Hay (B., Z.), E. S. Hill, M.A. (B., Z.), J. W. Jones (B., Z.), H. S. Keer (B., Z.), J. A. Macvea (B.), M. C. Mitchell (B., Z.), F. Morrison (C.), J. D. Rankin (B., Z., C.), O. Robertson (C.), W. M. Ross (B., Z., C.), J. C. Russell (B., Z.), M. E. Rutherfurd (P.), J. Wallace (B.), E. M. Walters (B., Z.).

B., Botany; C., Chemistry; P., Physics; Z., Zoology.

Second Professional Examination.—J. M. Anderson (A., P.), *J. Anderson, M.A., B.Sc. (A., P., M.); T. Barbour, B.Sc. (M.); W. R. Cammock (A., P., M.), G. Campbell (A., P., M.), J. S. Clark, M.A. (M.); T. L. Craig (M.), R. Douald (A., P., M.), J. R. Dreyer, M.A. (A., P., M.); R. J. Driscoll (P.), J. Dunbar (P.), E. M. Eaton (M.), W. M. Fairlie (P.), J. Ferguson (A., P., M.), T. H. Forrest (A.), J. W. Georgeson (A., M.), W. Gilfillan (A., P., M.), A. H. Gray (M.), W. T. Hardie (P., M.), L. Hislop (A.), J. Keys (M.), J. D. Kidd (M.), J. T. Kirkland (A.), R. W. Leckie (M.), G. Ligertwood (P.), E. B. Macaulay (A.), A. M'Call (A., M.), T. M'Clrick, M.A., B.Sc. (A., P.); W. A. M'Kellar (A., P.), M. D. Mackenzie (A., P.), A. A. C. M'Neill (M.), R. Marshall (M.), A. F. Miller (A.), J. R. Mitchell (A., P., M.), *P. Mitchell, M.A. (M.); R. W. Mitchell (P.); J. H. Paul (M.), A. G. Paxton (A.), D. M'K. Reid (P., M.), M. M. Rodger (P.), A. C. Sharp (M.), J. C. D. Simpson (A.), J. J. Sinclair (M.), W. Smellie (M.), J. Stevenson (M.), J. T. W. Stewart (P.), R. Todd (A., P.), M. Turnbull (A.), G. Wallace (A.), H. F. Watson (P.), H. White (A., P.), D. J. Williams (A., P.), T. Winning, M.A. (P.), M. Youdelevitz (M.).

Women.—J. M. Andrew (M.), A. R. Hird (P.), K. R. M. Lucas (M.), E. Oversby (A.), V. D. Reis (M.), M. B. Taylor (A.).

A., Anatomy: M., Materia Medica; P., Physiology.

Third Professional Examination.—A. S. Aitken (M.), G. A. Allan (M.), A. W. Anderson (P.), J. Bain, M.A. (P., M.), G. T. Bogle (M.), C. Burns (P.), J. M. H. Caldwell (P.), D. L. Carmichael (M.), C. G. A. Chislett (P.), J. S. Dunn, M.A. (M.), W. Gilchrist (P., M.), J. I. Greig, M.A., B.Sc. (P., M.), W. Grier (M.), J. Hammond (P.), C. F. D. Hammond (P.), J. D. Hart (M.), F. Hauxwell (M.), R. M'C. Hill (M.), R. V. Howell (P.), A. Hunter (P.), D. G. Hunter, M.A. (P., M.), J. Hunter (M.), A. Y. Hutchison (M.), H. S. Hutchison, B.Sc. (P., M.), A. E. Jones (P., M.), G. N. Kirkwood (M.), A. Leggat (P., M.), T. M'Cosh (M.), D. M'Ewan (M.), J. Macintyre (P.), W. Macleod (M.), J. M'Millan (P., M.), H. MacNaught (M.), N. S. MacNaughtan (M.), R. C. Macpherson (P., M.), *W. B. M. Martin (P., M.), R. May (P., M.), H. J. Milligan (P.), G. D. Muir (P.), J. D. Nisbet (P.), P. J. O'Hare (M.), T. H. Rankin (P.), T. T. Rankin (M.), J. Reid (P.), W. Holland (M.), J. C. Russell, M.A. (P., M.); E. L. A. Sieger (P.), A. A. Stewart, (M.), D. Stewart (P., M.), J. L. Stewart, M.A. (P., M.); J. R. Sutherland (P., M.), T. Thom (M.), W. L. Walker, M.A. (M.); A. MacM. Watson (P.), J. Wyper (M.).

Women.—J. T. Clark (M.), *E. M. M'Vail (M.), J. D. Rankin, M.A., B.Sc. (M.); J. R. Shaw (P.), M. Spence (P.), C. G. Thomlinson (M.).

P., Pathology; M., Medical Jurisprudence.

* With distinction in one or more subjects.

TRINITY COLLEGE, DUBLIN.

SCHOOL FOR ROYAL MEDICAL SERVICES.

THE school for the Royal Medical Services, which was started in Trinity College during the beginning of the year and has proved successful at recent R.A.M.C. and I.M.S. examinations, will commence its second session on November 7th.

The object of the school is to enable Irish medical students who desire to adopt the army or navy as a profession to prepare themselves in Ireland. The school, we are informed, has begun to attract candidates from Great Britain. It combines clinical work with lectures and practical work, and offers special facilities for operative surgery.

OBITUARY.

DR. ROBERT ELLIS DUDGEON, who died at Carlton Hill, N.W., last month, at the age of 84, was in his way a notable personage, and certainly one of the most distinguished followers of whom the cult of homoeopathy has been able to boast during the past half-century. A Licentiate of the Royal College of Surgeons of Edinburgh in 1839, Dr. Dudgeon spent a year or two abroad in Paris and Vienna, and then graduated M.D. at Edinburgh. Not long afterwards he became editor of the *British Journal of Homoeopathy*, and occupied the post for some forty years, at the same time carrying on a considerable practice, and serving upon the staff of the Homoeopathic Hospital. He was a man of unusual mental and physical activity, and this not being fully absorbed by his ordinary work, found outlet in very miscellaneous ways. On the physical side, volunteering, swimming, and golf all claimed him as a devotee; while, on the mental side, his literary output was large and varied in character. The subject of optics, in particular, had a great attraction for him, and, in addition to several papers dealing with the subject contributed to the *Philosophical Magazine* and other periodicals, he invented a pair of spectacles for use under water. A man of much humour and a very original turn of mind, he was the esteemed friend of a considerable number of persons of distinction, social and literary, and amongst others of Samuel Butler, the author of *Erewhon*. It was probably under his influence that Dudgeon was induced to turn some of his superfluous energy into the writing of a kind of novel, a romance called *Colymbia*, dealing with an imaginary country situated under the sea, and with the ways of its inhabitants. It was not exactly a success, but contains, nevertheless, a great deal of clever writing of a kind typical of the author's peculiar turn of mind. A more useful piece of work, however, and the one which best entitles Dudgeon to a permanent place in the memory of his fellows, was the invention of the sphygmograph which bears his name—one which is, perhaps, the handiest and most generally useful of those which have been brought out. Dr. Dudgeon's activity persisted until a very late period of life; he continued to see a certain number of patients until quite recently, and his latest literary effort was published only four years ago, when its author had almost reached the age of eighty; it is called *The Prolongation of Life*.

THE LATE PROFESSOR FINSEN.—In the obituary notice of Professor Niels Finsen, which appeared in the BRITISH MEDICAL JOURNAL of October 1st, Reykjavik, where the discoverer of the light treatment began his medical studies, was by a slip of the pen described as the capital of the Faroe Islands. Reykjavik is the capital of Iceland.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,401 births and 4,571 deaths were registered during the week ending Saturday last, October 1st. The annual rate of mortality in these towns, which had been 17.5, 17.0, and 16.0 per 1,000 in the three preceding weeks, further declined last week to 15.6 per 1,000. The rates in the several towns ranged from 6.4 in Hornsey, 7.5 in Kings Norton, 7.9 in Willesden, 8.6 in Smethwick, 8.7 in Handsworth (Staffs), 9.4 in Leyton, and 9.6 in Reading, to 21.0 in Stockton-on-Tees, 22.1 in Salford, 22.6 in Liverpool and in West Hartlepool, 23.3 in Blackburn, 23.5 in Sunderland, 23.6 in Blackburn, 25.7 in Wigan, and 26.5 in St. Helens. In London the rate of mortality was 14.3 per 1,000, while it averaged 16.2 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 2.9 per 1,000 in the seventy-six towns; in London this death-rate was equal to 1.6 per 1,000, while among the seventy-five other large towns the death-rates from the principal infectious diseases ranged upwards to 5.6 in Liverpool and in Bolton, 5.9 in Sunderland, 6.1 in Salford, 6.2 in Burnley and in Hull, 7.0 in Warrington and in Stockton-on-Tees, 7.9 in Blackburn, and 8.2 in Preston. Measles caused a death-rate of 1.5 in Liverpool, 1.6 in Grimsby, and 2.0 in Tynemouth; scarlet fever of 2.1 in Northampton and in Huddersfield; diphtheria of 1.1 in Salford and in Huddersfield, 1.6 in Swansea, 1.8 in Portsmouth, and 2.0 in Stockton-on-Tees; and diarrhoea of 5.0 in Stockton-on-Tees, 5.2 in Sunderland, 5.4 in Warrington, 5.6 in Bolton, 5.7 in Burnley, 7.3 in Preston, and 7.5 in Blackburn. The mortality from whooping-cough and from "fever" showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Gateshead, but not one in any other of the seventy-six towns. The Metropolitan Asylums Hospitals contained 3 small-pox patients on Saturday last, October 1st, against 8, 5, and 5 on the three preceding Saturdays; no new cases were admitted during the week, against 2, 1, and none in the three preceding weeks. The number of scarlet-fever cases in these hospitals and in the London Fever Hospital, which had been 1,816, 1,929, and 1,969 at the end of the three preceding weeks, had further risen to 2,158 at the end of last week: 406 new cases were admitted during the week, against 234, 340, and 284 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, October 1st, 885 births and 550 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 15.7, 16.5, and 16.0 per 1,000 in the three preceding weeks, rose again last week to 16.6 per 1,000, and was 1.0 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 13.6 in Paisley and 14.8 in Edinburgh to 20.0 in Perth and 26.2 in Greenock. The death-rate from the principal infectious diseases in these towns averaged 3.1 per 1,000, the highest rates being recorded in Dundee and Greenock. The 249 deaths registered in Glasgow included 3 which were referred to scarlet fever, 15 to whooping-cough, 3 to "fever," and 28 to diarrhoea. Five fatal cases of whooping cough and 9 of diarrhoea were recorded in Edinburgh. Nine deaths from diarrhoea occurred in Dundee, 4 in Aberdeen, 4 in Leith, and 3 in Paisley; and 7 from "fever" in Greenock.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, September 24th, 505 births and 361 deaths were registered in six of the principal Irish towns against 519 births and 299 deaths in the preceding period. The mean annual death-rate of these towns, which had been 17.2, 16.2, and 16.5 per 1,000 in the three preceding weeks, rose to 18.7 in the week under notice, this figure being 2.7 per 1,000 higher than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 13.6 in Waterford and 14.4 in Cork to 21.9 in Limerick and 26.7 in Dublin. The zymotic death-rate during the same period and in the same six Irish towns averaged 3.0 per 1,000, or 0.8 per 1,000 higher than during the preceding period, the highest figure, 4.7, being reached in Dublin. To diarrhoeal diseases 28 deaths were ascribed in Dublin, and 12 in Belfast. The measles and whooping-cough death-rates also showed a tendency to rise in these towns. In Belfast enteric was responsible for 6 deaths.

COMPETITION FOR POOR-LAW MEDICAL APPOINTMENTS.

In the British Medical Journal of June 25th, at page 1522, an account was published of the circumstances of a recent election to a Poor-law appointment as narrated in a Cambridgeshire weekly paper. The point of the case was that one of the guardians put forward a proposal to appoint one of the two candidates who offered themselves at a lower salary than that advertised, stating that the candidate in question was prepared, if appointed, to accept the reduced salary because his circumstances enabled him to do the work more cheaply. The guardians, however, did not accept the suggestion, and the candidate in question was not elected. We drew attention to the matter as a case which, upon the surface, appeared to be one of attempted underselling of one medical man by another. We are glad, therefore, to be able to state that at a meeting last month the matter was fully investigated by the West Suffolk Division of the British Medical Association, to which Dr. T. H. Goodman, the medical man concerned, belongs, and that after hearing what he had to say, it was resolved that his explanation of the affair was entirely satisfactory.

VACCINATION FEES.

VARIOLA asks whether a public vaccinator of one district of a union can claim a fee for vaccinating in an adjoining district in the same union, the inmates of a house one of the members of which he was attending for an attack of small-pox. In a recent case the clerk has disallowed the fees.

"*" We fear not, for the Vaccination Act, 1867, Section 11. says: "Where a district shall have been or shall be assigned to a vacainator, he shall not be entitled to be paid a fee in respect of the vaccination or revaccination of any child or other persons resident out of his district, except in case of a vacancy in the office of vaccinator in any adjoining district, or of the default of the vaccinator therein, of which default notice shall have been given to him in writing by the guardians, or when a relieving officer of his union or parish shall in writing refer any child to him for vaccination." In the case quoted it would have been well for the vaccinator to have notified the vaccinator of the other district, and to have requested him to call at the house.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BANBURY: HORTON INFIRMARY.—House-Surgeon, resident. Salary, £80 per annum.

BRECON AND RADNOR LUNATIC ASYLUM, Talgarth.—Medical Superintendent. Salary, £450 per annum.

BURY ST. EDMUNDS: WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, resident. Salary, £100 per annum.

CHARTHAM: KENT COUNTY ASYLUM.—Third Assistant Medical Officer, resident. Salary, £140 per annum.

CROYDON GENERAL HOSPITAL.—Junior House-Surgeon, resident. Salary, £60 per annum.

DARLINGTON HOSPITAL AND DISPENSARY.—House-Surgeon, resident. Salary, £120 per annum.

DERBY: COUNTY ASYLUM, Mickleover.—Senior Assistant Medical Officer, resident. Salary, £150, rising to £180 per annum.

DEWSBURY BOROUGH.—Resident Medical Officer at Small-pox Hospital.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell.—Resident Medical Officer. Salary, £100 per annum.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—Anaesthetist. Honorarium, 25 guineas per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Two Resident Medical Officers. Salaries, £80 and £70 per annum respectively.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—(1) House-Physician; (2) House-Surgeon. Salary at the rate of 50 guineas per annum each.

PORTSMOUTH: ROYAL PORTSMOUTH HOSPITAL.—Assistant House-Surgeon, resident. Salary at the rate of £50 per annum.

QUEEN'S JUBILEE HOSPITAL, Earl's Court, S.W.—House-Surgeon, resident. Salary at the rate of £52 per annum.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—(1) Two House-Physicians (2) Casualty House-Surgeon; (3) House-Surgeon. Appointments for six months.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Resident Medical Officer. Salary at the rate of £120 per annum.

ST. GEORGE'S HOSPITAL, S.W.—Assistant Physician.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician, resident. Salary, £50 per annum.

APPOINTMENTS.

ALWAY, W. R., M.D.Toronto, Clinical Assistant, Chelsea Hospital for Women.

ANDERSON, A. W., M.B., Ch.B.St.And., Junior House-Surgeon, Infirmary for Children Liverpool.

ATTWOOD, R. D., M.R.C.S., L.R.C.P., Resident Assistant Medical Officer of the Southwark Union Infirmary.

BOWEN, H. W., F.R.C.S., L.R.C.P., Assistant Surgeon, Royal Ear Hospital, Soho.

COCKE, R. Sturgeon, M.R.C.S., L.R.C.P., Assistant Surgeon, Royal Ear Hospital, Soho.

COOGAN, T., M.B., Ch.B.Vict., Junior Resident Medical Officer, Withington Workhouse Hospital.

JUDSON, A. H., M.D.Toronto, Clinical Assistant, Chelsea Hospital for Women.

MEAKIN, Miss Ethilde B., M.B., B.S.Lond., Physician-in-Charge, Victoria Hospital for Women, Calcutta.

MURISON, A. Logan, M.R.C.S., L.R.C.P., Assistant Surgeon, Royal Ear Hospital, Soho.

PRING, H. Reginald, M.R.C.S., L.R.C.P., L.D.S.Eng., Assistant Dental Surgeon to the National Dental Hospital.

SHEPHERD, J. Hay, M.B., Ch.B., M.A.Aberd., Senior House-Surgeon, Infirmary for Children, Liverpool.

TYLECOTE, J. H. L., M.B.Vict., Medical Officer and Public Vaccinator for the Cullingworth District of the Keighley Union.

EDINBURGH ROYAL INFIRMARY.—The following appointments were confirmed on September 26th:

Clinical Tutors for the ensuing winter and summer sessions.—James Burnet, M.A., M.B., Ch.B., M.R.C.P.E., to Dr. Andrew Smart's wards; Malcolm Campbell, M.B., Ch.B., F.R.C.S.E., to Dr. D. Berry Hart (Gynaecological Department); Henry Wade, F.R.C.S.Edin., to Mr. Caird's ward.

The following appointments were made for the six months from October 1st:

Resident Physicians.—J. W. Keay, M.B., Ch.B., to Professor Sir T. R. Fraser; R. Balfour Barnetson, M.B., Ch.B., to Professor Simpson; W. Sibbald Robertson, M.B., Ch.B., to Dr. Smart; George M'Neill Smith, M.B., Ch.B., to Dr. James.

Resident Surgeons.—Robert Veitch, M.B., Ch.B., to Professor Chiene, C.B.; William J. Fraser, M.B., Ch.B., to Mr. Caird.

Clinical Assistants.—Robert A. Chalmers, M.B., Ch.B., to Professor Sir T. R. Fraser; Lindsay S. Milne, M.B., Ch.B., to Professor Greenfield; L. H. I. Bell, M.B., Ch.B., to Professor Chiene, C.B.; Robert J. Mackessack, M.A., M.B., Ch.B., to Dr. James; Hugh A. Stewart, M.B., Ch.B., to Dr George A. Gibson; John A. H. Duncan, M.D., F.R.C.S.Edin. (senior), to Dr. M'Kenzie Johnston; John M. Bowie, M.D., etc., to Dr. W. Allan Jamieson; William M'Lachlan, M.B., Ch.B., to Dr. Russell (medical waiting-room); Frederick Porter, M.B., C.M., to Dr. Lovell Gulland (medical waiting-room); Harold Downes, L.R.C.P. and S.Edin., to Dr. Boyd (medical waiting-room).

Resident Medical Officer at the Convalescent House, Murrayfield.—Frank Inglis Dawson, M.B., Ch.B.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

COLE.—On Sunday, October 2nd, at 80, Clarendon Square, Leamington, the wife of T. E. Cecil Cole, M.A., M.D.Oxon., of a son.

MARRIAGES.

O'HAGAN—EGAN.—On September 27th, at Rathgar Church, Dublin, by the Right Rev. Mons. Fitzpatrick, assisted by the Rev. Fr. Finlay, S.J., Surgeon-Captain O'Hagan, M.B., F.R.C.S.I., of Liverpool, to Edith, eldest daughter of the late Patrick Egan, Esq., of the Hall, Tullamore, and granddaughter of the late Michael Moorhead, M.D., F.R.C.S.

SCOTT—IRWIN.—On Thursday, September 29th, at St. Mark's Church, Armagh, by His Grace the Lord Primate, assisted by the Rev. C. E. Scott, Rector of Rushbrook, Diocese of Cloyne, Rev. H. G. Scott, Rector of Creggan, Diocese of Armagh (brothers of the bridegroom), and Rev. C. K. Irwin, Rector of Brn try, Diocese of Armagh (brother of the bride), James Crossle Scott, M.D.Dub., youngest son of the late William Scott, M.D., Fellow of the Royal College of Surgeons of England, of The Bawn, Aughnacloy, co. Tyrone, to Elizabeth Ensor, eldest daughter of the Venerable the Archdeacon of Armagh.

DEATHS.

LISHMAN.—On September 16th, at Casa Montana, Port Orotava, Tenerife, Stella Margaret, only child of Frederick and Lucy Lishman, aged 4 years and 3 months.

YOURELL.—On September 28th, at 8, Upper Avenue Road, Swiss Cottage, London, N.W. Dr. John Rall Yourell, aged 64.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 11, Chandos Street, Cavendish Square, W., 8 p.m.—General meeting, 8.30 p.m.—Ordinary Meeting. Mr. John Langton, President, Opening Address. Mr. Marmaduke Sheild: A Case of Gigantic Renal Calculus, with remarks upon cases where renal stones form obvious tumours.

WEDNESDAY.

Dermatological Society of London, 11, Chandos Street, Cavendish Square, W., 5.15 p.m.—Demonstration of cases of interest.

South-West London Medical Society, Bolingbroke Hospital, Wandsworth Common, 8.45 p.m.—Dr. de Havilland Hall: Errors of Diagnosis.

THURSDAY.

British Gynaecological Society, 20, Hanover Square, W., 8 p.m.—Mr. Christopher Martin: The Treatment of Severe Prolapse by Extirpation of the Uterus and Vagina. Specimens will be shown by Dr. Edge, Mr. Purneaux Jordan, Dr. William Duncan, Dr. Macnaughton Jones, and others.

FRIDAY.

Clinical Society of London, 20, Hanover Square, W., 8.30 p.m.—After an Address by the President the following papers will be read:—Dr. Wilfred Harris and Mr. V. Warren Low: The Cure of Infantile Paralysis of the Shoulder by Nerve Grafting (with case to be exhibited). Mr. W. G. Spencer: Cases of Inflammation in and around the Liver. Dr. F. D. Turner and Mr. Raymond Johnson: Traumatic Axillary Aneurysm Successfully Treated, after Extravasation had occurred, by Proximal Ligature.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital, Thursday, 4 p.m.—Surgical cases.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—Clinical demonstrations have been arranged at 4 p.m. as follows: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Throat. Lectures will be delivered at 5.15 p.m. as follows: Monday, The Treatment of Syphilis; Tuesday, Museum Lecture; Wednesday, Graves's Disease and its Treatment; Thursday, Pachydermia Laryngis.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Central Out-patient Department, 7, Fitzroy Square, W.—Thursday, 5 p.m., Introductory Address on Certain Aspects of Pleurisy.

National Hospital for the Paralysed and Epileptic, Tuesday and Friday, 3.30 p.m.—Cerebral Anatomy and Localization.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Monday, 3 p.m., Demonstration in Surgical Wards. Wednesday, 4.15 p.m., Demonstration in Medical Wards. Thursday, 3 p.m., Demonstration in Medical Wards; 5 p.m., Opening Address by the Right Rev. the Lord Bishop of Oxford. Friday, 5 p.m., Air Meteorology.

Samaritan Free Hospital for Women, Marylebone Road, N.W.—Thursday, 3 p.m., Cases from the wards.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
EDITOR, 2631, Gerrard.
GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

J. W. B. asks for advice as to the suitability or the reverse of the climate of Jerusalem in a case of phthisis pulmonalis affecting one lung, not far advanced.

ANXIOUS asks for information and reference to literature on the recently vaunted so-called nerve-cell tonics of the nuclein order and their applicability to the treatment of neurasthenic states.

FEES PAID BY EDUCATION AUTHORITIES FOR LECTURES.

AMBULANCE asks: What would be a proper fee for a course of ambulance lectures delivered to a class of night scholars under a School Board—the number of lectures to be twenty, one every week, beginning at 8 p.m., and each lasting from one hour to an hour and a-half? The Education Department defrays 3s. 4d. of the expense of the lectures and the School Board the balance. The amount offered was 5s. a lecture!

*** The late School Board for London paid its numerous medical lecturers on hygiene and on ambulance at the rate of a guinea a lecture of one and a-half hours. This work is being continued at the same rates by the London County Council. It is highly inadvisable that medical men should lecture for educational authorities under any circumstances for smaller fees.

ANSWERS.

X. C.—There is no reason to believe chloride of ethyl in appropriate doses is less safe for children than for adults. As, however, total exclusion of air must be practised, it is not taken so easily as the mixtures of chloroform and ether. A tightly-fitting facepiece is difficult to adapt to an infant's face, and often terrifies the little patient.

ISOLATION AFTER DIPHTHERIA.

DR. S. J. ROSS (Bedford, writes: In reply to "E. S.," I do not think any case of diphtheria can be regarded as free from infection unless a "throat sweep," examined bacteriologically, yields a negative result. In fact, in such cases I personally adopt the plan of taking three throat sweeps, at intervals of four days, after all clinical evidence of the disease has disappeared.

INCONTINENCE OF URINE.

FLEET SURGEON, R.N., writes, in reply to the query by "Surgeon, R.N." in the BRITISH MEDICAL JOURNAL of September 24th: I have found a great deal of benefit, and, in most cases, apparent cures, to result in several instances of incontinence of urine in young adults by a cold spinal douche every night before turning in. The lad is stripped, and a stream of cold water from a hose is suddenly directed on to the spine, especially the lumbar region; or several basins of ice-cold water are suddenly thrown over the back. The unexpected shock is of itself a benefit, apart from the tonic influence of the cold affusion. The treatment is equally of benefit in the case of malingerers who sometimes resort to wetting their beds in the hope of being invalided out of the service. Of course, the administration of belladonna and general tonic treatment should be combined with the above.

H. C. M. writes: The case of incontinence of urine referred to would seem to be a suitable one for trial of the procedure recommended by Strumpf (*Bulletin de Thérapeutique*), which consists in causing the patient to sleep with the head somewhat lower than the pelvis, thus creating a mechanical obstacle to the passage of the urine, which then no longer irritates the urethral sphincter. Several rebellious cases are stated to have been cured by this method. The duration of the treatment is about three weeks, after which the normal position may be resumed.

LETTERS, COMMUNICATIONS, ETC., have been received from:
A Mr. H. E. Allen, London; Anxious; Mr. J. McK. Acland, Exeter; Another Convict Dr. T. R. Atkinson, Chadwell Heath. **B** Mr. F. Brooks, Birmingham; Mr. E. J. Beards Birmingham; Dr. W. Bulloch, London; Dr. C. Buttar, London; Mr. L. A. Bidwell London; Dr. G. G. Bantock, London; Mr. J. Brewer, London; R. A. Bickersteth, M.B., Liverpool; G. Burford, M.B., London; Mr. W. J. Burroughs, London. **C** Cedar G. A. Casalis, M.B., Cape Town; H. S. Clogg, M.B., London; W. J. Caie, M.B., Bury St. Edmunds; W. R. Carter, M.B., London. **D** Dygalad; Sir D. Duckworth, London Dr. H. Dutch, London; Dr. D. S. Davies, Bristol; D.M.O.; D.G.N. **E** Mr. H. Elliot-Blake, Bognor; Etiquette; E. S.; Dr. G. Elam, London; Electro-Sulphur and Light Syndicate, Ltd., Manager of, London; Mr. G. Y. Eales, Torquay; Mr. E. D. Evans Wrexham; Dr. A. W. Esler, Williamstown; Dr. R. Emmett, Portsmouth. **F** Mrs. France, Southport; Fosco Manufacturing Co., Manager of, Liverpool; E. R. Fothergill, M.B., London; Mr. J. E. Foster, Cambridge. **G** Dr. J. H. Galton, London Mr. W. F. L. Green, Weymouth; Galen Manufacturing Co., Manager of, London Mr. E. H. Griffiths, Cardiff; Dr. W. Gordon, Exeter; Dr. P. G. Griffith, London W. Gripper, M.B., Wallington; Mr. K. W. Goadby, London; Dr. G. A. Gibson, Edinburgh; Dr. J. Galloway, London; Gatton. **H** F. R. Hill, M.B., Carlisle; Mr. J. C. P. Higgs, Beckenham; H. C. M.; Mr. F. Haydon, London; H. R. **J** Dr. H. L. Jones, London; Jeyes Sanitary Compounds Co., Manager of, London; Mr. C. H. F. Johnston, London; Mr. J. B. James, London; J. W. B. **K** P. Kinmont, M.B., Newark. **L** Laterna. **M** M.B.Edin.; Mr. B. E. Matthews, London; Mr. H. C. Martin, Clacton-on-Sea; Mr. E. M. Marx, Brighton; Mr. A. A. Myers, Wells; Dr. T. Mitchell, Gorseinon Sir W. Macewen, Glasgow; C. Mackey, M.B., Manchester; C. J. Martin, M.B., London; Dr. J. H. Mummery, London; Dr. J. E. Moorhouse, Stirling; J. Macrury, M.B., Millport; Dr. H. Mackenzie, London. **N** Mr. A. J. Neeby, London; B. H. Nicholson, M.B., Colchester; Notification; National Hospital for the Paralysed and Epileptic, Secretary of, London; Nil Desperandum. **O** Messrs. Oppenheimer Son and Co., London: One of the Old School. **P** Perplexed and Anxious Member; Dr. F. Page, Newcastle-on-Tyne; Dr. W. L. Pethybridge, Plymouth; Mr. R. W. Partridge, London; "Pharmaceutical Journal," Editor of the, London; R. Parker, M.B., Liverpool; H. W. Page, M.B., London; Captain A. E. H. Pinch, London; Paulensis; Mr. E. J. Pritchard, London; Dr. P. H. Pye-Smith, London. **R** Dr. S. J. Ross, Bedford; Mr. W. H. Rowthorn, Rotherham; Mr. M. Roche, London; Dr. H. D. Rolleston, London. **S** Dr. W. Sykes, Paignton; Messrs. G. Street and Co., London; J. H. Shepherd, M.B., Liverpool; Mr. R. R. Sleman, London; Dr. J. L. Smith, Belfast; Dr. J. H. Swanton, London; Mr. W. W. Seton, London; Mr. S. Smith, London; Mr. A. T. Scott, London; Dr. W. Sheen, Cardiff; Spiteful. **T** Mr. H. H. Tidswell, Torquay; Dr. E. D. Tomlinson, Folkestone; Dr. S. Taylor, Liverpool; Thorax; Dr. W. P. Turner, London; Dr. G. C. Thomson, London. **U** Dr. A. R. Urquhart, Perth. **V** Variola. **W** Mr. A. Wigglesworth, Liverpool; Dr. A. D. Waller, London; Surgeon-Colonel F. H. Welch, London Mr. W. E. Waller, York; Dr. A. Wolff, Berlin; Dr. W. G. Walford, London; Mr. T. M. Watt, Goxhill; Dr. H. Walsham, London; Dr. F. Willcocks, London; Mr. R. H. Wellington, London. **Y** Mr. T. E. Young, London.

BOOKS, ETC., RECEIVED.

Clinical and Pathological Observations on Acute Abdominal Diseases. The Erasmus Wilson Lectures, 1904. By Edred M. Corner, B.Sc.Lond., M.A., M.B., B.C.Cantab., F.R.C.S.Eng. London: Archibald Constable and Co., Ltd. 1904. 3s. 6d.

Les Rayons N et les Rayons N,. Par Dr. H. Bordier. Paris: J. B. Baillière et Fils. 1905. Fr.1.50.

Deaths in Childbed: a Preventable Mortality. Being the Milroy Lectures delivered at the Royal College of Physicians, 1904. By W. Williams, M.A., M.D., D.P.H.Oxon. London: H. K. Lewis. 1904. 2s. 6d.

On the Sterilisation of the Hands. By Charles Leedham-Green M.B., F.R.C.S. Birmingham: Cornish Bros., Ltd. 1904. 2s. 6d.

*** In forwarding books the publishers are requested to state the selling price.

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SEVENTY-SECOND ANNUAL MEETING
OF THE
British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF PSYCHOLOGICAL MEDICINE.

Charles A. Mercier, M.B.Lond., F.R.C.P., President.

CRIMINAL RESPONSIBILITY.

By Charles A. Mercier, M.B.Lond., F.R.C.P.,
Lecturer on Neurology and Insanity at the Westminster Hospital: President of the Section.

On this subject there has been a difference of very long standing between the professions of law and medicine, a difference which I am sanguine enough to believe may be reconciled. The difference of opinion is largely due to the difference of aim, and there is little prospect of agreement until the object in view shall be the same for both parties to the dispute. It will be admitted that the legal mind approaches the question of criminal responsibility mainly and primarily with the object of protecting the community from wrongdoers; while the medical mind is apt to regard primarily, and perhaps too exclusively, the individual offender, and the justice or hardship of the punishment that is inflicted on him, and to strive for the mitigation of punishment in individual cases in which the law seems to bear with undue hardship on the criminal. The first thing to be done in order to reconcile the opponents is to show that these two objects are not necessarily antagonistic, but rather that they are two aspects of the same problem; that neither can be attained without the attainment of the other, that the complete solution of the problem would secure the attainment of both, and that the one suffers as much as the other from a faulty law, or from the faulty administration of a good law.

Moreover, I venture to suggest that neither the protection of the community from wrongdoers, nor the protection of individual wrongdoers from excessive punishment, is the highest or the ultimate aim in dealing with criminals. Both of these, it seems to me, are subsidiary to the attainment of a still more desirable end—the strengthening of the sense of responsibility throughout the whole community. And may I point out that this sense of responsibility suffers as much from an unduly severe as from an unduly negligent infliction of punishment. In the bad old days, before Sir Samuel Romilly, the general sense of responsibility was not strengthened by savage punishment, but weakened. The standard of morality was not higher but lower, when twenty felons—men and women—were hanged at Tyburn every Monday morning; when 200, 300, 500 condemned prisoners were lying in Newgate at the same time, under commuted sentence of death, waiting for the ship to take them to Botany Bay; when children were hanged for petty offences; when, on the one hand, an innocent man could be hanged on the evidence of Jonathan Wild, and on the other, no weight of damning evidence could secure a conviction if there were some trumpery verbal flaw in the drafting of the indictment. The most important elements in punishment are discrimination, and certainty of infliction; and, under the circumstances of which I remind you, these elements were not merely lamentably defective, but appeared to be deliberately and intentionally minimized. Could anything more ruinous to the sense of responsibility be devised? It would seem impossible; but in this, as in so many other things, the ingenuity of a later day has achieved the impossible. Let us set ourselves seriously to the task. Let us seek means by which we can so corrupt the conscience and debauch the mind of the man of passion who is trembling on the brink of crime, or of the man of feeble will who is tempted by circumstance, that he may deliberately cast the fear of punishment behind him, and say with eager choice, Evil! be thou my good! Could not we do so most effectually by addressing him thus? By saying to him, "You are not as other men are. You belong to a separate class of human beings. You are marked off from the rest of your race from your birth, and are devoted and predestined to a life of crime. You are incapable of regulating your life according to the canons of rectitude: they do not apply to you. Your skull is oxycephalic; it is unsymmetrical; its frontal curve is less, and its parietal curve is greater, than those of other men. Your forehead recedes; or, worse, it projects. Your chin projects; or, worse, it recedes. You have no wisdom teeth. Your ears are too large; they are too small; they are misshapen. Your hair is thick; your beard is thin. You are dark in complexion. You are unusually fair. You have a fixed look in your eye; you have a glassy stare; you look like a bird of prey; you have a singular air of *bonhomie*; you have an angel face; you have the appearance of a wild beast; and the glance of a tiger; you have a peculiarly benevolent aspect. In addition to these stigmata, which mark you as a born criminal, you are shorter than the average; you are taller than most men. Moreover, you have tattoo marks on your arms, and perhaps on your body also.

"This being so, we regard you as irresponsible. You are a criminal, it is true; but the fault is not yours. It is not in the habit you have formed of yielding to your passions. It is not in your self-indulgence; your laziness; your slavery to impulse; your selfishness; your cultivated lack of self-control. No! It is impressed upon you by your inheritance. You, poor fellow, are visited with the sins of your father and grandfather, even unto the third and fourth generation of ancestry. You are a thief, a murderer, a violator, it is true; but this is not your fault. You are a criminal, as Falstaff was a coward, by instinct.

"In one word, you are a Degenerate, and, since your crimes are no fault of yours, you shall not be punished for them. On the contrary, you shall be entertained, amused and instructed. You shall be treated with Turkish baths and massage, until your criminality departs from you. You shall exercise in a gymnasium, to the strains of a band of music, played by your fellow criminals. You are of weak mind; and therefore you shall be aesthetically cultured by a course of lectures on Chaucer, and Shakespeare, and Emerson, and Browning. You are a semi-imbecile; and therefore you shall be put through a course of Jowett's *Plato*. As a means of elevating your character, you shall be taught—journalism; and be provided with a newspaper to edit, whose contributors and readers shall be your fellow prisoners."

No, gentlemen, these are not the ravings of Bedlam; these are the teachings of the writers who call themselves criminologists, translated, out of a somewhat exuberant verbosity, into naked English. This is the serious programme, seriously carried out, of the Elmira reformatory. Now, I wish to draw your attention to one circumstance that does not appear in the report of Elmira, and is not alluded to by any of the distinguished writers whose accounts of the criminal I have laid under contribution. These luxuries, by which the wicked man is to be turned away from his wickedness that he has committed, and made to do that which is lawful and right, do not grow spontaneously out of the ground: nor do they fall, like manna, from heaven. They are provided, for the use and delight of the criminal, by the thrift, the labour, the self-denial, of law-abiding men. If criminals and scoundrels of every order are to be thus pampered and coddled, I want to know what is to be done for the upright man, for the honest, self-restrained, law-abiding citizen, who sees, at the end of a lifetime of ill-rewarded toil and privation, borne with uncomplaining fortitude, no resting-place for his old age more luxurious than the workhouse—that workhouse which is scorned and derided by the occupants of these comfortable gaols. If the luxury of Elmira is not too good for the criminal, what degree of splendour is good enough for the honest poor man, who, in the teeth of penury, has preserved his integrity? Even granting all that the fanatics of criminal-pampering claim for the results of their methods—even granting that a certain small proportion of scoundrels may, by a course of Turkish baths, and lectures on English literature, and the study of Plato, be weaned, for a time at least, from a career of crime—is the game worth the candle? Is it fair, is it just to the taxpayer, often a poor man, and sometimes an honest man, that many hundreds, or it may be thousands of pounds of public money should be spent in turning a few criminals into indifferent citizens? There is joy in heaven, we are told, over one sinner that repenteth; but if the repentance were not to be secured save by an increase in the celestial income tax, it is fair to suppose that the joy would be but a mitigated and chastened felicity.

But, apart from the unfairness of such a mode of treating the criminal, an even more important consequence of this doctrine of innate criminality, upon which the practice is

founded, is the weakening of that sense of responsibility which it should be the aim of every system of criminal law to foster and strengthen. What will be the natural result of teaching an evildoer that his wickedness is the fault, not of his own vice, self-indulgence, dissipation and facility to temptation, but of the organization that he inherits from his ancestry? Will it not certainly be, that he will relinquish any struggles toward a better life that he may have begun, and will complacently pursue that course of crime that he is told is, for him, inevitable? A more pernicious and immoral doctrine it is difficult to imagine. For my own part, and in the name of the profession to whose suffrages I owe the position that I occupy to-day, I abhor and repudiate the doctrine with all the vehemence of which I am capable. Crime, as my friend Dr. Urquhart has said of drunkenness, is not a disease to be treated, but a vice to be punished. The more is it incumbent on us to see that the punishment is prompt, is certain, is apt, is adequate, and no more than adequate, to the offence.

Of these elements in punishment, the majority must be left in other hands than ours. For its promptness, its certainty, its appropriateness, we must be content to trust the police the judge and the prison authorities. The main question that we have come here to-day to discuss is, Who ought to be punished, and with how much punishment?

To the first question I answer—Wrongdoers, by which is meant, those who for their own gratification, and without justifying provocation, wilfully do harm to others. The whole gist of my argument lies in this definition; which has this advantage, that if it be accepted, it excludes from wrongness certain cases of doing harm, and provides the same criterion of responsibility, that is of liability to punishment, to both the sane and the insane.

For I repeat here the proposition which, when I first propounded it, was met with clamorous execration, and which even now is repudiated by many of my colleagues, in words (though they endorse it by their acts), that insanity in the wrongdoer does not of itself necessarily exempt him from punishment, though it ought, I think, always to mitigate the punishment that a sane man would receive for the same offence.

Insanity may exonerate from punishment the man who injures another, but only by enabling him to satisfy the same condition that exonerates a sane person,—only by bringing him within the exonerating clauses of the definition of wrongdoing,—only by bringing him within the meaning of the answers given by the judges in 1843. What was the meaning of these answers, so much disputed and so heartily condemned? Ambiguous we must admit them to be: confused and ungrammatical in expression; answering questions that were not asked; failing to answer what was asked; yet, underlying them, there is one general principle, which shines through them all, and cannot, in my opinion, be controverted. It is this, that, in the insane as in the sane, the responsibility for guilt lies in the *animus nocendi* or *scelerandi*. When their lordships said that "to establish a defence on the ground of insanity, it must be clearly proved that . . . the accused party was labouring under such a defect of reason . . . as not to know the nature and quality of the act he was doing," they were but saying that if from want of knowledge the *animus nocendi* was absent, the plea was established. It is true that their answer was not the general answer, that the *animus nocendi* is essential to guilt; but the particular answer, that, when this *animus* was absent from a particular cause, the prisoner is not guilty; but then it ought always to be remembered, though it never is remembered, that the judges were not asked the general question, "Under what circumstances does insanity in a criminal exonerate him from punishment?" but the very restricted question, "What are the proper questions to be submitted to the jury when a person afflicted with insane delusion respecting one or more subjects or persons is charged with the commission of crime, and insanity is set up as a defence?"

The contention of this address is that the judges were right; that the *animus nocendi* is essential to guilt, and that the constituents of this *animus* are contained in the definition that I have given of wrongdoing, which must be completely satisfied in order to render the doer of harm righteously punishable.

First, harm done, with no intention of obtaining gratification by the doing, is not wrong, and is not punishable. The difference between the salutary wound inflicted by the surgeon, and the malicious wound inflicted by the assassin, is in the respective intention of the actors, not in the consent or non-consent of the sufferer, nor in the result of the wounding. The surgeon may act without the consent of his patient, who may be unconscious from that fracture of the skull which the operator is about to trephine; yet the trephining is not wrong. Or the surgeon may do harm instead of good, and unwittingly hasten instead of retarding the fatal result of disease; still his act is not wrong, for he did not do the harm for his own gratification. But if he did the operation merely to display his skill, or to obtain practice in his art, he does wrong, even though by his operation he cures the patient. It matters not whether the intention is sane or insane; whether the skilled surgeon opens the cranium to excise a tumour, or whether a blundering madman splits the skull open to let out a headache; so long as there is no intention to gain gratification for himself by harming another, no wrong is done.

Secondly; provocation or threat justifies retaliation in measure—in such measure as will prevent the threatened injury. I may stun, maim, or even kill, him who is, in my firm and settled belief, about to kill me; and my exoneration is complete, whether my belief is just and true; or whether it is a sane mistake; or whether it is an insane delusion. In either case, the *animus nocendi* is wanting.

Thirdly, the harm must be done wilfully, or there is no wrong done, and therefore no wrongdoer to be punished. The law allows the principle. A prisoner is indicted, not for murder *simpliciter*, but for wilful murder. Wilful action implies and requires knowledge of the nature of the act, and of its obvious and natural consequences; and, further, implies and requires volition,—intention to do the act, and to cause, by so doing, the said consequences. If either the knowledge or the will is wanting, the act is not wilful; it is not wrong; it is not punishable.

With respect to knowledge, the words of the judges' answers may be adequate to protect the innocent worker of harm, or they may not, according as they are interpreted. If the motive which, I assert, undoubtedly lay behind them, is kept in mind; if the existence of the *animus nocendi* is made essential to guilt; then I believe they may, and will, always be so interpreted as to protect the innocent. But, in order that they may be so interpreted, it is necessary to recognize that the faculty of judging may be impaired without being abolished; that a man may know that his act is wrong, without being able to appreciate how wrong it is. Take a very frequent case. A man suffers from the insane delusion that his neighbour or his wife inflicts tortures upon him by means of telephones and electric shocks and radium; and to rid himself of his torment he kills the torturer, or, if he is unable to identify the individual to whom his torments are due, he attempts the life of some prominent person, in order to "draw attention to his case." On such a motive, the lives of many prominent persons have been taken or attempted. It was on the prompting of this motive that Henri IV was slain by Ravaillac, that Queen Victoria was fired at by Perrin; that Terriss the actor was slain by Prince; that Sir George Jessel was shot at in open court; that President Carnot was slain; and that many murders are committed or attempted every year. In such cases, the criminal undoubtedly knows the nature and quality of the act, and that it is wrong; but he does not appreciate how wrong it is. He knows that he is assaulting his victim with intent to murder, and he knows that murder is wrong, both legally and morally. He would assent to the general proposition, but he would regard his own case as exceptional, and his act as justified, at any rate in part, by the provocation to which he has been subjected, and by his inability to obtain redress in other ways.

Suppose for a moment that his belief is true, and that he really does suffer perpetual torture from the fiendish art of some mesmerist, or some disciple of Marconi, who is able to operate on him from a distance; and suppose that, finding the law impotent to protect him, he gives his persecutor a sound horsewhipping at last. Suppose the facts proved to the satisfaction of a jury: would the jury convict? and, if it did, would the judge inflict more than a nominal punishment? Surely not. His belief does, therefore, constitute a partial exoneration from the punishment otherwise due to his crime. But, in fact, he does not stop at horsewhipping, but goes on to murder. Yes, but he is not sane, but insane. That same defect of reason, which prevents him from recognizing the absurdity and impossibility of his delusion, prevents him also from estimating in their true relations all the facts and circumstances connected with this delusion. If his belief were true, and if he were in fact a sane man persecuted in the way that he imagines, he might assault, or

even murder, his actual persecutor: but it surely would never occur to a sane man, however pitilessly persecuted, to murder some prominent personage, whom he knew to be entirely unconnected either with his persecutor or himself; and to commit this murder merely to draw attention to his case! The fact that the provocation is an insane delusion, and that the means taken to stop it are insane in character, sufficiently establish the insanity of the reasoning that is brought to bear upon the act; sufficiently prove that, although the criminal may know quite well, in one sense of knowing, that he is committing murder, and that murder is wrong: yet he does not fully recognize the wrongness of his act. Illegal, he well knows it is; *contra bonos mores*, as a general rule, he will freely admit. But, in the special circumstances of his own case, he regards it merely as a technical illegality, such as is committed by the passive resister who refuses to pay his school rate. The enormity of the wrong, which he thinks is done to him, assumes in his mind such gigantic proportions, that beside it, the mere loss of life appears an insignificant evil; and, in depriving his supposed persecutor, or any one else, of life, he considers that he is doing that which is morally justifiable, though it renders him, as he well knows, obnoxious to the law.

It is this confusion of mind; it is this inability to think clearly about anything connected with the delusion, which prevents the insane malefactor from knowing how wrong is that act, which he well knows is wrong in some degree. Let me illustrate this mental confusion by another very frequent case, altogether outside the region of criminality. Every one, who has had a month's experience of insanity, has met with a king, an emperor, a multimillionaire, contentedly doing the menial work of an asylum pauper, subject to the orders of *servi servorum*, and glad to beg a few coppers for a bit of tobacco. How the beliefs in their own magnificence and wealth can subsist side by side with their daily experience, is a standing puzzle to every observer; but there they are. The confusion of mind, which is an inseparable element in every case of insanity, prevents the true knowledge from being put into juxtaposition with the false belief; and, impossible as it seems, the two subsist side by side. So it is in every case of delusion. Around the area of mind that is occupied by the delusion, there is a penumbra of illogicality, in which the ordinary processes of reasoning have no validity;—do not, it seems, exist;—and, in respect of everything connected with his delusion, the deluded person does not "know" in any proper sense of knowing. It is for this reason that I contend that, although insane persons are not, as such, necessarily exempt from punishment, yet, as to every act connected with, or prompted by, delusion, they ought to be wholly or very largely exempted; and, since we can never be sure how far the penumbra of illogicality extends, they ought to be partially exonerated for any misdeed they may do.

Then with respect to Will. I have already asserted that no onus lies on me to prove that there is no wrongdoing without the will to do wrong. The criminal law takes account of those acts only that are wilful. To constitute a wilful act, not knowledge only, but Will is necessary. The actor must will to do the act, and must intend that the usual and natural consequences shall follow the act; or must be reckless whether these consequences do or do not follow. It is surely unnecessary to labour the thesis. A man ought not to be convicted of *wilful* murder unless the killing was done with the full co-operation of his volition, nor unless he intended that his act should be followed by the death of his victim, or was reckless whether it would or would not be so followed. To constitute a wilful act, it is not enough that the actor know the consequences of the act, he must also intend those consequences. If he accidentally fires a gun, and so causes the death of a companion; he is held innocent because the act was not wilful. If, walking in his sleep with a naked light, he set fire to the house; he is held innocent because his will had no part in the incendiarism. If, in the dreamlike state that constitutes some forms of insanity, he does a similar act, with some nebulous half-formed intention, but not with full intention; with some appreciation of the natural consequences, but with insufficient appreciation of those consequences, then he ought to be punished, if at all, with a mitigated severity.

In pleading for the necessity of proving the wilfulness of an act, in order to establish its criminality, I desire to guard myself from being understood to advocate the doctrine of irresistible impulse as the only alternative defence to the ignorance of right and wrong. I would not formally exclude irresistible or uncontrollable impulse, when it can be proved to exist and to impel to crime, from the exonerating conditions that I desire to establish; but, in the first place, I regard it as one only of several modes or occasions in which acts are done without the concurrence of the will of the actor; and in the second, acts of uncontrollable impulsiveness, properly so termed, are so rare, except in persons deeply and unmistakably insane, that the question of their irresponsibility scarcely ever arises in a court of law.

In my opinion, the doctrine of uncontrollable impulse has been invented to cover those cases in which crimes have been committed by persons who are plainly insane, but who cannot reasonably be said not to know the nature and quality and wrongness of their act; and the one doctrine has had to be stretched and distorted as much as the other in order to bring about the desired result. What has been intended when irresistible impulse has been pleaded, was not really irresistible impulse, but absence of will to do the deed—absence of that *animus nocendi* which I am contending to be necessary to wrongdoing.

Irresistible impulse, in the technical sense of a sudden outburst of maniacal violence, so rarely comes within the purview of a court of law, that, with a pretty extensive acquaintance with the subject, I am unable to cite a single case. The only case in which irresistible coercion of the will can properly be pleaded, is the case of obsession; and in this case, the act is not necessarily impulsive in the technical sense, although it must be regarded as irresistible. Obsession is a terrible malady. It is rightly regarded with suspicion and distrust by jurists, anxious to maintain the standard of individual responsibility; but of its existence there is not a shadow of a doubt, and in any given case, this existence is to be proved to the satisfaction of the Court by evidence given according to the ordinary rules. Doctors practising in insanity are, not seldom, consulted by persons, who complain, with the greatest distress, that they feel a horrible impulsion to do some act which is utterly abhorrent to them; to set fire, it may be, to their own property; to kill, it may be themselves, it may be those dearest to them. Against this impulsion they struggle with dismay and with horror. Sometimes they overcome it, and it fades away. Often they place themselves voluntarily under control in asylums to keep themselves out of temptation. Occasionally they apply to the police to be forcibly restrained. Sometimes they succumb, and the deed is done. In this last case, should they be punished? To him who would answer in the affirmative, I would say, "Have you never had a bar of music, a line of poetry, a proverb, a scrap of conversation, 'running in your head'? and have you been able to banish it when you desired? Has it not sometimes been after all uttered aloud, in spite of your desire to get rid of it? Can you say that this has never happened to you? If you cannot, then I say, *de te fabula narratur*. As Nathan said unto David, Thou art the man!"

Such cases rarely, however, occur in our criminal courts. Much more frequent are cases of another kind, in which, while knowledge of the wrongness of the act is present, the *animus nocendi* is absent, from want of will to do harm. For how many generations has the act of Virginius, in killing his daughter to save her from a fate worse than death, been applauded by the moral sense of mankind? How many times has it not been emulated by officers of our own army, whose womenfolk have been on the point of falling into the hands of savage foes? Cases in which children are killed by their parents, wives by their husbands, on a motive similar in character but insane, are very frequent in our courts. It was in such a case that that great judge, Lord Blackburn, finding that the prisoner could not be exonerated on the ground of not knowing that her act was wrong, told the jury that there were exceptional cases; a doctrine scarcely satisfactory if such cases were rare; but surely to be deprecated when they are very frequent. The application of the rule, that the *animus nocendi* is essential to guilt, would render it unnecessary to treat such cases as exceptional. The will and intention of the actors is, not to harm the victims, but to do them good. They are killed in order that they may be benefited. Of alternative evils, believed to threaten them, the less is chosen for them; and, the *animus nocendi* being absent, the actor, whether sane or insane, should not be punished.

The advantages of the course that I advocate are many. It introduces no new principle of law; it demands no legislation; it needs no definition of insanity; it does not disturb the famous answers of the judges; and, I say it without hesitation, it can be applied to every case, without stretching the principle, without straining or distorting the plain meaning of the language in which it is expressed. All that is needed is that the charge in the indictment should be proved or not

proved; that when a prisoner is charged with wilful wrongdoing, he shall not be punished if the wrongdoing was not wilful.

There is yet one further morbid affection of mind to be dealt with. Disorder of knowing and disorder of willing are comparatively simple affections; but when desire itself is disordered, the case becomes extremely difficult. A man's desires are so much an integral part of his very self, that it is extremely difficult to make a separation, and any division that we make must be largely arbitrary. *Mens cujusque, is est quisque.* If a man has a morbid desire, say to eat clay, to wound or maim himself, we regard the desire and the man as insane. We hold him irresponsible for such acts. But how if his morbid desire is to feed his children on clay, or to maim or injure them? Or, to come to a case of very frequent occurrence, how are we to regard those unnaturally constituted persons whose sexual desires take a morbid direction, assume a morbid intensity, and seek gratification in unnatural ways? There are, on the one hand, Draconic judges who hold that, as the gratification of desires to do wrong must be held in check by fear of punishment, so, the more intense the desire, the more drastic must the punishment be made in order the more effectually to counteract the desire. On the other hand, there are those who would take the most merciful view, "*Tout comprendre, c'est tout pardonner*"—the man is morbid; and shall we punish him for his disease?

Compromise does not usually commend itself to me, but in this case I do think that safety lies in the middle way. Experience shows that excessive severity is not an effectual deterrent; and most of us would recoil from treating, with great severity, acts which we feel to be, in part at least, the outcome of disease. Nevertheless, universal experience forbids us to suppose that desire cannot be resisted by will, or that the will to abstain from action may not be reinforced by fear of incurring punishment. In such cases, then, I suggest that a mitigated punishment may well satisfy the needs of justice.

Sir Herbert Stephen, Bart., said that, having read the abstract of Dr. Mercier's paper, he found himself in almost complete agreement with it. In illustration of what he, as a lawyer concerned in the administration of criminal law, conceived to be the principles there enunciated, he offered the following observations:

I. The question whether or not there existed what was called a "criminal neurosis"—by which phrase he understood a set of peculiarities of bodily construction, which in concurrence were always or generally accompanied by a strong disposition to commit crimes—was a question not of law, but of medicine. All he had to say upon it was: (1) That, following the opinions he had heard expressed by Dr. Maudsley and Dr. Mercier, he did not believe it existed; (2) that if its existence were, in his judgement, proved, or decidedly probable, he should allow medical evidence to be given that a person accused of crime had a criminal neurosis, and should advise juries that this was evidence (strong or otherwise, according to circumstances) tending to prove the accused person to be guilty; (3) he should further regard the condition of criminal neurosis in convicted criminals as a reason for depriving them of their liberty to commit crimes for as long a period as seemed convenient, subject to their treatment being as little injurious to them as was consistent with public policy.

II. He believed that the point which it was essential to understand for the proper legal treatment of insane persons who committed crimes was that some criminals who were insane should nevertheless be treated as criminals—though it might frequently, or even usually, happen that their insanity should be considered a reason for mitigating the severity of their punishment. In explanation of this belief he offered a few remarks concerning cases of crime committed by persons suffering from insanity of different kinds, which ought to have—and in English law substantially did lead to—different results.

A. A case of which he had had to do with several examples was that where a person suffering from some disease classed as epilepsy killed some one, generally a friend or lover, often in the presence of several persons, and almost always by cutting the throat. In these cases it appeared probable, as far as could be discovered, that the epileptic had no subsequent memory of the act of killing, or, in a minority of the cases, had only a faint and clouded memory like the memory of a dream. In these cases it seemed clear that only physical restraint (and probably very strong physical restraint) at the critical moment of the seizure would have prevented the killing; also that the act was unaccompanied by anything that could properly be called consciousness. It appeared to him that those who did these more or less unconscious acts ought not to be punished therefor, but ought to be regarded as unfortunate instruments in a misfortune, as a man would usually be regarded who accidentally killed another by convulsive movements caused by a nightmare or a fit of delirium. He thought they ought to be treated merely medically, and should suffer no more restraint than was necessary as a precaution against a recurrence of the epileptic attack.

B. An example of a different class of acts of insane persons occurred in the constantly-recurring case where a woman—generally soon after pregnancy—killed her own child, oftener by drowning than in any other manner, but also not infrequently by cutting. In these cases, as well as could be discovered, she knew that she was killing the child, and meant to kill it, and did so because, being passionately fond of it, she had an obsession of mind sufficiently abnormal to be called insane, to the effect that death was highly desirable for the child. In these cases, as a rule, the woman could, when the mental obsession had passed off, remember what she had done, and deeply regretted having done it, but remembered also the thoughts which made her do it. He did not consider mere punishment suitable for such cases as these, but he thought there should, in any event, and irrespectively of the health of the sufferer, be a considerable period of enforced seclusion and submission to some form of discipline, because although the patient's knowledge of what she was doing, and of its general nature, was entirely overcome for the moment by the violence of her mental obsession, it was never entirely suspended as in the cases in Class A. He judged this kind of mental obsession to be a thing against which the sufferer could and ought to have struggled, though the struggle in many cases might prove ineffective.

C. A third sort of case which came before the criminal courts rather less frequently than the two he had discussed was where the insane affection of the mind was a much more remote cause of the crime. Again, he took homicide as an example, because it was almost always in cases of homicide—and generally of murder—that these questions arise. In this class of case the patient, in consequence of a morbid affection of the mind, conceived a violent hostility towards some person who might be reasonably deserving of hostility to a considerable extent, or to a moderate extent, or not at all. The insane man, then, in gratification of his hostility, proceeded to murder his victim, employing for that purpose all the intellectual resources of the sane. He showed premeditation, care, resolution, and skill in arranging for his own escape. There was no reason to doubt that he knew as well as possible that he was committing murder, that murder was sinful, and a crime, and that he might be punished if he were caught. His immediate motive was hatred, and cruelty and treachery were probably features in his action, just as if he had been sane. The actual existence of all the provocation that he might conceive himself to have had would not in the least have affected either the immorality or the illegality of his act. He thought that insane criminals belonging to this class ought to be punished. He would treat them not as invalids unfortunately concerned in crime, but as criminals who happened to be suffering from a disease, which might or might not be a reason for mitigating the severity of their punishment. In some cases—though not very many—he thought the full penalty for the offence should follow the conviction, exactly as if the offender were perfectly sane. In others, where the extent of morbid delusion and insane behaviour appeared to be comparatively great, he thought that conviction for crime should follow the offence, but that the punishment should be mitigated. He included in this class the cases where mental disorder amounting to insanity was the originating cause of criminal indulgence of the sexual passion, whether the resulting crime was murder or rape. He could not recall a case of an insane person tried for a crime of this character in which it did not appear that he knew perfectly well what he was about. He was inclined to think, after twenty years' experience of the administration of criminal justice in England, that the above category of criminal acts committed by insane persons was practically exhaustive.

Mr. A. Douglas Cowburn (Barrister-at-Law) submitted that "wrongdoer" was too vague, too indefinite; that distinction should be drawn between crimes, torts, breaches of contract, and mere moral obliquity. Crime, on the one hand, was an act or omission punished by society as a wrong against itself. Tort, on the other, was a "wrong inflicted by a man on his

fellow, not regarded as a wrong done to the State, but as giving rise to a civil action for damages." This distinction was important. He assumed that by "wrongdoer" was meant a "convicted criminal;" then he objected to and repudiated the proposition that insanity does not of itself necessarily exonerate him from punishment. He thought that it should. Then Dr. Mercier expressed his satisfaction with the answers of the judges in 1843. That was not the opinion of Lord Brampton and Lord Coleridge; those answers had been repudiated by many States of America, by Italy, and even by Russia. He submitted that the only real, true test was that laid down by the State of New York: "No act done by a person in a state of insanity can be punished as an offence," and applied by the State of New Hampshire in the case of the State *v.* Jones (50, New Hampshire, 1872, p. 369, *et sequitur*). This simply left to the jury, as matters of fact, whether the accused committed the crime in question, and whether at the time he was suffering from any disease of the mind, and left it there. The difference between mental health and mental disease was a scientific fact which was entirely within the purview of medicine, and with the particular forms of insanity and its essential characteristics the law, as such, should have nothing to do. *Per contra*, responsibility (by which was meant liability to punishment) was a matter purely for the law, and if the law, as voiced by the jury under the guidance of the judge, did not determine who were to be punished, it determined nothing. In dealing with this question, they were perhaps too prone to forget that they had to deal with juries. They were simple, perhaps, but they were very conscientious. They did not understand elaborate psychological considerations, neither did they understand elaborate legal criteria, and they probably paid no attention to either. They convicted if they thought that the act was committed by an ordinary criminal. They acquitted if they thought that the actor was insane. He submitted that if the law of England would follow the American example, and would hold that no man should be held criminally accountable for an act which was the offspring of mental disease, it would be more in accordance with the dictates of reason, common sense, and humanity, and would be more likely to solve the difficulties which arose at present. It might be objected that this amounted to no definition at all, that it was too vague, too indefinite, to be accepted; then he submitted that it was far better, in a region where there was so much difficulty and uncertainty, that the law should not define at all, rather than make a bad definition which, while contrary to its purpose, would be perpetuated by its authority. *Omnis definitio in jure periculosa* was specially true of this subject. They did not want definitions of insanity; they did not want criteria of responsibility; they wanted recognition of the only humane principle, that no man should be criminally accountable for an act which was the offspring of mental disease.

Dr. Claye Shaw said that: If by "degeneracy" was meant that there was no criminal type, Dr. Mercier was probably right, but that there were many degenerate people who were more liable to commit crimes than others. He traversed the statement that insanity did not exonerate him from punishment, or that the *animus nocendi* settled the question between the lunatic and the criminal. The act of will, quâ will, was the same in the lunatic as in the sound man in its elements, but not perhaps in the strength and intensity of some of the elements. It was the trend of consciousness, the personality of the person, which had to be considered. Society had nothing to do with the punishment of the externality of the crime; but it had to do with the criminal character in terms of its own causation, and this character (which was the cause of will) was undeterminable.

Mr. Havelock Ellis, in an extract from a letter, after referring to his own book on the criminal, said that his standpoint was substantially the same as that occupied by Professor Aschaffenburg in his recent book, *Das Verbrechen und seine Bekämpfung*. He was, however, glad to hear that the matter was to be thoroughly discussed, and trusted that good would come of the discussion. But he was strongly of opinion that the only agreement possible between medical and legal opinion was an agreement to retain quite different points of view. He held that, from the strictly medical point of view, they were not entitled to use the word "responsibility." "Responsibility" was not a medical conception; it was a metaphysico-legal conception. "Irresponsibility" was not a pathological state; it was a legal state which might be associated with pathological conditions—a distinction which involved a very important difference indeed. The doctor was concerned with scientific facts, and not with metaphysics. It was the lawyer's business to determine "responsibility" as nearly as he could in accordance with the facts the doctor supplied to him. If the lawyer asked the doctor, "Is this man responsible?" it was the doctor's business to reply—as politely as possible—"That is your affair, not mine; I am only concerned with the facts." They should have to recognize, sooner or later, that it was on this base alone that the existing confusion could be brought to an end. Practical agreement was possible, but on the theoretical basis of responsibility no agreement was possible.

Dr. G. H. Savage said that he did not agree that degeneracy was not compatible with oppositive mental state, just as the weakminded giant and the feeble or vicious dwarf were met in the same show. They had really to deal with medical not legal terms, therefore they had better leave out responsibility and its definition. Though some were more mad than bad, and others more bad than mad, and some ought to be punished, yet if guided by one legal principle this must be, if insane, not punishable. He did not agree with all Sir H. Stephen said as to the third class of persons who, though insane, yet knew the quality of their acts, and so should be punished. Those who have had to deal with the insane might be accused of inconsistency in reducing the privileges of patients as a result of some act done by them; in fact, punishing them. There was, doubtless, mitigated responsibility, yet if governed by legal definitions they must say any one proved to be insane was not to be fully punished. Some insane, he admitted, were criminal apart from insanity. He believed the plea of impulsive insanity was rarely raised now, but there were crimes the result not only of epileptic impulse but of unrestrained feeling. One patient described his state as that of "suggestive consciousness."

Dr. David Yellowlees (Glasgow) asserted that the legal principle "insane or not insane" was untrue to nature. There was no such definite and absolute division. Humanity stood on a great slope. On the top were the sane, stable, reasonable, self-guiding people; at the bottom were the idiotic, the hopelessly demented, and deluded. On the slope, and at varying heights on it, were many persons defective according to their height on the slope; their mental stability, knowledge, judgement, power of self-guidance and self-control were, in varying degrees, less than in ordinary sane people. Whatever the law might say, those persons on the slope must be dealt with specially. They were not like other men, and when they committed crime they should be judged more leniently and punished less severely (if at all), according to their position on the slope. There had been at least three cases in the Scottish law-courts where this principle had been acted upon, and in which punishment was mitigated on account of the mental deficiency, and sentence of death was not abrogated, but commuted to penal servitude for life. A course of insanity, with clinical teaching, should be made part of the legal training.

Dr. Blandford said that the degeneracy of the criminal classes was very much a question of environment. Children taken away from their surroundings and placed in reformatory schools or on board ship would become as healthy and well-behaved citizens as any others. With regard to the responsibility of the insane, there could be no doubt that many insane knew right from wrong, but they knew it with an insane, not a sane, mind. Children knew right from wrong, but they knew it with a childish mind. The insane knew it with an insane mind, and punishment, though justifiable, ought to be regulated by the condition of the insane individual.

Dr. Conolly Norman (Dublin) drew attention to the fact that the modern Continental theories of "degeneration," which had never found much favour in England, were singularly different from the doctrines laid down by Morel in his original treatise. He proceeded to comment on the violence which often (happily not to-day) characterized the discussions on this subject. It seemed to him that there was a tendency to obsession both on the part of the physicians and the lawyers—one side oppressed with the fear lest those of unsound mind might be unjustly and cruelly punished, the other lest wicked criminals should escape their merits through the machinations of foolish doctors. He listened with surprise to Sir Herbert Stephen's letter because, as the speaker understood the statement, his "class three" was so constituted as to include every case in the least degree doubtful, and the great majority of those cases in which any question could arise. The speaker believed in the solidarity of the

mental functions, and did not at all consider that the fact that a man understood the nature and qualities of the acts he performed carried with it responsibility. They could not separate the will from the other functions, or refuse to allow of its existence at all, as Hobbes did when he called it merely the latest motion in deliberation. As to the question of responsibility in court, the speaker held that this was not a question for the physician, and pointed out that Griesinger had long ago laid down this maxim, and had acted upon it when called upon for his opinion on this point. With reference to impulse, this plea had, of course, been abused, but he was glad to see that Dr. Mercier had clearly recognized that there was a distinct condition of impulse. Every clinical observer knew that this state had its very distinct and recognizable mental and even physical symptoms, and that the condition could rarely or ever be doubtful.

Dr. ROBERT JONES referred to the President's address as calling attention to three special points, to which he would refer—namely, the question of punishment, that of responsibility, and the status of the offender as a degenerate. Punishment referred to by Dr. Mercier showed the evolution of human thought in regard to the infliction of suffering upon the wrongdoer; first, the legal aspect—namely, the protection of society, by which punishment was retaliatory or retributive—an eye for an eye, a tooth for a tooth, measure for measure. With the progress of human society, the growth of sympathy and altruism, consideration for the individual arose, and the protection of society was combined with thoughts for the offender, so that punishment became disciplinary and temporary, as the President had referred to in regard to Elmira. The principle of the similarity of punishment was inequitable under the view that offenders might vary in the apprehension of the effects of their actions, and similarity of punishment was ineffective, in so far that punishment did not prevent the offender from further offending. Dr. Robert Jones considered there was considerable misunderstanding abroad in regard to the use of the word "punishment," and some maintained that the offender should not be punished but educated. In what scheme of human education were right and wrong insisted upon without the dread of pain accompanying forbidden actions? and it might be said that retribution was a motive to virtue with most of the best persons. He agreed with the statement made that, psychologically, the mind of the insane person was precisely similarly constituted to that of the sane. Motives weighed with both, but there were, in the experience of all present, a condition in which motives, on the one hand, were not adequately counterbalanced by motives on the other. There were states of mind in which, owing to delusions perverting thought, persons were not able to judge of the nature of their actions, and as they knew of grades of affection of sight from impairment to complete loss of colour vision, and as there were also cases of the same modifications in regard to acoustic sensation and tunes, so he maintained there was impairment of thought and the processes of mind from slight abnormality to complete dementia, so that responsibility was attenuated, and punishment should be mitigated. In regard to responsibility, he did not agree that it was the exclusive province of the lawyer; the alteration in the various psychological constituents of responsibility was for the consideration of the medical man quite as much, for they assisted him to form his own conclusion as to the mental state under consideration. For these reasons he certainly dissented from the conclusion of the President that insanity did not necessarily exonerate from punishment. With regard to the degenerate, they all knew that divergence from a type did occur, but it would be impossible to state that stigmata were invariably connected with crime.

Professor ERNEST W. WHITE, M.B., said that the ground had been fairly covered by former speakers. They all recognized that a man was not a criminal until convicted. Most of them were of opinion that insanity should exonerate from penal servitude, but not from going to a criminal asylum, where the individual would be subjected to moral discipline and surroundings not congenial to his nature and to a deprivation of freedom nearly allied to punishment. When he contrasted the internal arrangements of public asylums to-day with those which obtained thirty-two years ago, when he first entered the public asylum service, and asked himself how the marked improvement had been brought about, he was bound to admit it had mainly resulted from the application of moral discipline (or he would rather term it "school" discipline) with classification. Probably nearly all the insane other than aments and dements had some knowledge of right and wrong, and could be controlled accordingly. By the use of this "school discipline," which was not punishment, they now had law, order, and refinement, where formerly all was disorder and evidences of demoralization. Homelike wards and well-kept flower gardens had replaced sparsely furnished galleries and barren airing courts in which the patients grovelled. Let the lawyers study psychological medicine practically in our institutions to-day, and they would see that there were degrees of responsibility in connexion with the insane which ought to have due consideration; that the graduated slope so well described by Dr. Yellowlees did exist, and not the precipice, with sanity on its summit and insanity at its base.

Dr. G. E. SHUTTLEWORTH ventured to offer a few observations in this discussion as one approaching the subject from the point of view of experience not of deranged or disordered intellects, but with those originally defective. He was in general agreement with the President's views that a merely imperfect condition of understanding should excuse the offender from plenary punishment, and long ago he expressed the opinion that with certain imbecile delinquents it was not desirable to regard them as utterly devoid of responsibility, but that each case should be considered on its own merits and dealt with according to the degree of understanding that existed, and the degree of punishment adjusted accordingly. In this view they had the support of that distinguished jurist, the late Sir James Fitzjames Stephen, who, in one of his treatises on criminal law, gave rather a fantastic illustration somewhat of this character. (He quoted only from memory.) He spoke of an idiot who cut off the head of a man while asleep, "just for the fun of seeing what he would do when he woke up and found he had lost his head"; and his view was that such an offender should be punished for mischief, not for murder. Stephen, at any rate, acknowledged gradations in the capacity to understand the nature and quality of an offence, and consequently the desirability of corresponding gradations or modifications of punishment. To make the punishment fit not only the crime, but also the criminal, should surely be the aim of those who administered justice. Many criminals were no doubt feeble-minded and feeble-willed without evidencing the physical stigmata so amusingly alluded to by Dr. Mercier. Congenital moral imbeciles undoubtedly existed without physical stigmata at all—children who came into the world with a "double dose of original sin," and punishment was probably thrown away upon them; but there were other children whose moral defects were less marked, and were capable of being influenced by environment and by appropriate punishment. "Poor thing, he cannot help it!" was a saying too often heard from injudicious parents with regard to their degenerate progeny; and consequently the children were spoiled for want of proper discipline, as those who devote themselves to the medical care of defective children too often have occasion to observe. They had the highest authority for stating that "he who knew his Lord's will and did it not should be beaten with many stripes, but he who knew it not . . . should be beaten with few stripes." Surely there was scriptural support for Dr. Mercier's doctrine of mitigated punishment adjusted according to the degree of understanding of wrongdoing.

CRIMINAL RESPONSIBILITY AND DEGENERACY.

By EUGENE S. TALBOT, M.S., D.D.S., M.D., LL.D.,
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THE relationship of degeneracy and responsibility is determined by scientific definitions, modified by varying legal conditions. Of these legal conditions that of the English common law is by far the most just, viewed alike from the standpoint of abstract justice and the rights of the individual in his relations to society. The basic principle of the English common law is that every one accused must be presumed to be innocent until proven guilty beyond a reasonable doubt. Furthermore, that if any circumstance is capable of a reasonable explanation on the theory of innocence, it must be so explained by judge and jury alike. This common-law principle does not obtain in all English-speaking communities. In Scotland, it is modified by Roman law elements which, even after the Revolution of 1688, made judicial torture a part of Scotch jurisprudence. In Ireland, the English common law has never obtained since chaotically contradictory statutes substituted Roman law for the principles of English common law already existent in the

Irish Brehon law. In the United States, the English common law and all statutes passed up to 1606, as modified by the National and State constitutions, rule in the absence of specific statutes or of codes. In California and former Spanish colonies as well as in Louisiana, there is an injection of the Roman law with its sacrifice of the individual to the State. The famous right and wrong test which since 1843 has governed in England and in many of the States of the American Union was injected into the law in violation of the presumption of innocence by an illegal performance by the judges summoned by the House of Lords. The presumption of innocence inevitably led in the United States and in Australia, as well as to a certain extent in Canada, to an organized system of appeals in civil and criminal cases, on the principle that it were better that ten guilty should escape than that one innocent should suffer. The common law has always, as Green points out, been marred by illegal judicial law-making.

This is clear from the statement of Justice Maule to the effect that the mental state described in the first question by the House of Lords was not a matter of law but of physiology, and not of that obvious and familiar kind as to be inferred without proof. The question how far the presumption of innocence is involved in the presumption of sanity must always be a moot point. The fact that the majority of citizens are law-abiding, and the further fact that crime is the expression of an unusual mental state, certainly raises the question whether crime be an expression of physiologic causes constituting motive, or whether it be an expression of pathologic conditions. The term "pathologic" is here used in the Virchow sense of something that disturbs the physiologic balance previously existing in the type or in the individual. Under the strictest application of the principle of the presumption of innocence, crime in itself raises a doubt as to the mental state of the criminal, which may be thoroughly offset by the circumstances and conditions under which the crime was committed. This view obtains in the decisions of many of the State supreme courts of the American Union. Where the common law most thoroughly obtains in the United States the burden of proof falls on the State. Assuming, however, that a knowledge of right and wrong is a test of responsibility, criminals, much more frequently than the insane, present this lack of knowledge. The criminal whose secondary ego is so deficient that he cannot see the rights of others to opinion, property, or life when opposed to his interests, is far more common than the lunatic of the same type. If all degenerates were, as they are supposed to be popularly, of the type just described, the right and wrong test would make them responsible. Degeneracy, however, is a physiologic process which becomes malign or pathologic only when it attacks the higher acquirements of the race, but is benign when in embryogeny it sweeps away primitive structure for the benefit of higher structures and potentialities. There is, as Roux has shown, a struggle for existence between different organs and structures which through the law of economy of growth, pointed out by Aristotle and cleared from obscurity by Goethe and Geoffroy St. Hilaire, determines whether there is degeneracy of an organ, structure, or potentiality for the benefit of the whole organism, or whether the whole organism shall degenerate for the benefit of a given structure, organ, or potentiality. In the last case, the ethical, intellectual, or physical balance constituting health is disturbed, and, as I have elsewhere shown, ethical, intellectual, sensory, spinal, nutritive, or potentiality degeneracy may result. Ethical degeneracy implies conditions in which the secondary ego is absent, conditions in which it is temporarily disturbed, and, finally, conditions in which moral checks are so weakened that a slighter determining motive is needed. Under the common law, these last types would be ranged under the category of the manslaughters in the heat of passion. The intellectual degeneracies resemble the ethical in being conditions which are permanent, which are recurrent, or which are unstable, requiring but a slight determining cause to produce the expression of degeneracy. The question of responsibility here must be judged by the test applied in the particular English-speaking country where the degeneracy expression occurs. From the standpoint of the common law, stigmata of degeneracy raise a doubt as to responsibility which must be overcome by evidence ere just conviction can occur. Stigmata of degeneracy are, as Kiernan has said, a prophecy of what may be, not indications of a destiny which must be. This was clearly evident in two cases recently adjudicated in Chicago. In the case of Lux *v.* Chicago City Railway Company, Dr. Kiernan, who found in the plaintiff nasal, aural, optic, palatal, and facial stigmata of degeneracy, but also found that, while up to the appearance of the first permanent molar general development had been normal, the boy's mental gains had ceased at the age of 6, when he had met with a railroad accident. In consequence, Dr. Kiernan testified that the arrest of development had been due to the accident, and that, unless a special training was given, this arrest would be permanent. The jury awarded £1,000 damages. In the case of Rickow *v.* Chicago City Railway Company, Dr. Kiernan found that the plaintiff had, in addition to the stigmata of the previous case, a left supernumerary nipple 1 in. below the normal one. The plaintiff, then 21, had left school in the primary grade at 11. The accident had occurred at 18. The mental state was that of a boy of 6, added to an inventive stupidity often found in ethically defective feeble-minded youths. The jury, being of opinion that this played a part in the accident, found the company not guilty. It is evident from these cases that degeneracy may evince itself in physical stigmata for the benefit of the fore-brain. On the other hand, the fore-brain, in its relations to the higher acquirements of the race, may be sacrificed to secure a physically external perfection. In some cases, physical, intellectual, and ethical stigmata all occur. In other cases, the environment at the uterine periods of stress, around which are grouped the disappearance of primitive structures and potentiality, determines whether there shall be stigmata, and how these shall affect the organism. The same is true of the period of the first dentition, of the period of the second dentition, of the period of puberty and adolescence, of the period centring around prostate and menopause changes, and of the period of senile involution. The chief relation of degeneracy to responsibility is, however, found in the guide which degeneracy stigmata furnish the attorney—whose first duty is to his client as the physician's first duty is to his patient—to evidence needed and to a proper theory of the case.

HEREDITY IN ITS BIOLOGICAL AND PSYCHIATRICAL ASPECTS.

By J. Beard, D.Sc.,
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In opening the discussion upon the very important subject of heredity, it may be well first of all to explain one or two things of fundamental import. It is almost certain that in the subsequent discussion much will be said about the inheritance or non-inheritance of "acquired characters." This term should not be employed at all, for its use only leads to misconception. Moreover, it will appear in the sequel that the line of heredity never passes through any individual, but that it is along a continuous series of germ cells. This being so, it is only scientific to distinguish between somatic characters, those pertaining to the individual, and genetic characters, those which attach to the germ cells. In the same way we must speak of somatic and genetic variations. If we do this, if we sharply define somatic variations from genetic ones, we shall be in no danger of waging an empty war of words over the futile question of the supposed inheritance of "acquired" characters. Once we have distinguished between somatic and genetic variations we have disposed of the question of the inheritance of acquired characters; for, as it will be seen that nothing at all is handed on from the individual to the germ cells, somatic characters or variations are not inherited, somatic variations do not become genetic ones.

As in heredity there is no direct handing on of anything at all from one generation to the next, we must endeavour to form a new conception of what we really mean by "heredity." As long as it was possible to regard any individual as "a chip of the old block," as long as the germ might be said to be, in Huxley's words, "simply a detached living portion of the substance of a pre-existing living body," so long it was right to speak of "parents," "ancestors," "offspring," and "reversion." But in the light of recent discoveries it is clear that we can have no "parents" except unicellular ones, that we possess no "offspring," and that, as we have no "ancestors" beyond unicellular organisms, there can be no such thing as "reversion." The main facts upon which the following remarks depend may now be stated. Each egg or sperm must for various reasons be regarded as containing a complete set, and one only, of all the characters or qualities necessary to form an individual of the species. Fertilization of the egg is not in any sense the mingling or mixing of two such sets to form one set, but it is merely the joining

together, loose and without blending, of two potential sets of characters, of two individualities. If time allowed, it would be interesting to show how important this duplication of characters, resulting in more or less perfect balance, really is. I may remind you that in dual brain action we have something very similar in its workings. The next point to mention is that prior to a new union of two such germ cells—that is, before there can be a new formation of gametes or conjugating cells—this duplicated set of characters must be diminished to one complete set, by the elimination of one set. This diminution happens in the passage of oogonia into oocytes, of spermatogonia into spermatocytes. It coincides with, but is possibly not identical with, the reduction of chromosomes, and at this epoch, as elsewhere demonstrated, the phenomena of the determination of sex come to pass.*

It is necessary to realize that the germ cells are not somatic in origin; that they exist before there is any embryo; that the latter is, indeed, formed by the self-sacrifice of one germ cell for the good of the rest; and that, on the formation of an embryo, the germ cells wander or migrate into it, making use of its body as a harbour of refuge for a certain span of time. In this way it becomes clear that the formation of an embryo or individual is merely an incident in a certain chain of phenomena. I show upon the screen slides to illustrate the duplication of nuclei in germ cells, their wanderings into the embryo or individual, the course of the life-cycle—the track of heredity, according to Weismann and Boveri, on the one hand, and as revealed by my researches upon the other. It will be observed that the slide showing the track of heredity, according to Weismann, only covers it for five cell cleavages, while the figure taken from one of my own papers completely fills in the whole course from one generation to the next.

The following remarks traverse a very wide field, and time will not permit of any detailed consideration of various important questions raised. With a view to the subsequent discussion, I have thought it best to lay down a considerable number of theses, any of which I am prepared to defend and maintain either here or elsewhere.

The phenomena of heredity and genetic variation appertain to the germ cells, that is to say, they are germinal in nature, all ancestry passing through a continuous line of germ cells, and never through the cells of the individual (somatic cells) containing the germ cells; in the sense of a handing-on of anything there is no such thing as heredity. The individual is merely a lateral and terminal offshoot. As a recent writer, A. Robinson, has well said, "The germ cells are the alpha and omega: they pass from a beginning, of which we have no knowledge, to an end, which we cannot conceive." Since other existing theories either assume an intangible germ plasm, or make the line of descent pass through the individuals, with the exception of Galton's "stirp" they have no sort of identity with the "understudy theory of heredity" set up by the writer as one result of the discovery of a morphological continuity of germ cells. In the higher animals direct development, epigenesis, and a somatic origin of germ cells do not exist. The recapitulation theory, according to which every animal in the course of its development "climbs its own genealogical tree," is merely an illusion of the imagination and without any basis in fact. The mode of the development is not "egg-embryo egg-embryo, etc.," but in a mammal or a man it is "egg (zygote)—asexual generation (chorion)—primary germ cells—secondary germ cells (oogonia, etc.)—oocytes, etc.—gametes (eggs and sperms)," "the embryo" arising by the unfolding of one primary germ cell. The formation of an embryo is a mere incident in a certain chain of events. The phenomena to which the term heredity is applied have their basis in certain facts of embryology. Given in any life-history the period of the formation of the primary germ cells, and for simplicity let there be of these but two, AB and BA—on one will fall the lot of developing into an embryo, while the other will furnish the sexual products of this. The two cells are in all respects similar or equivalent, so much so that if both form embryos these are identical twins. In the ancestry neither cell had ever been a higher animal, neither they nor their ancestors had ever formed parts, that is to say, been somatic cells, of an animal body. But this ancestry is continuous with a long line of germ cells, and at regular intervals these were exactly like certain sister-cells, which did develop and form individuals. Although one of the two, AB, does not itself give rise to an embryo, in the meantime it retains for itself and for all its immediate progeny the properties of BA, those characters which, were it or any of its progeny to develop, would make it or them identical twins with BA, the other cell, which did develop. But the foregoing takes no account of two things, that the conjugation of two germ cells at fertilization is the joining together, loose and without blending, of two complete sets of potential characters, of two individualities, and that as living entities the germ cells, like all living things, must be influenced by and react to their total environment. This introduces the important factor of genetic variation.

As Wallace has said, the foundation of the Darwinian theory is the variability of species. It does not attempt to explain the cause of variation, but starts from the fact of its existence. Under this theory resulting from the struggle for existence there is a survival of the fittest. The only adequate cause of genetic variation yet suggested is Weismann's germinal selection. This is purely a mental concept, in its nature it is very complicated, and being quite without connexion with any known phenomenon or epoch of the development, it hangs entirely in the air. As defined by Weismann, the process would furnish a very great variety of gametes or conjugating cells, and these would be so varied in their characters or qualities that the resemblances rather than the differences among the progeny would require explanation. The problem of the true cause of variation belongs to embryology. For various reasons each and every egg or sperm must be regarded as containing *one* complete set of all the characters or qualities necessary to form an individual of the species. At fertilization two sets of these are somewhat loosely joined together. In the developing embryo only one complete set of characters is made use of, and, while the other corresponding qualities remain more or less dormant in its cells, that set or pack actually employed may be made up of any characters taken from either of the two packs, but so as to make up one complete pack. Turning, then, to the germ-cells, each of these possesses the duplicated set, and later on at the so-called "reduction"—that is, at the final division of the oogonia into oocytes, and of the spermatogonia into spermatocytes, prior to the formation of conjugating cells or gametes—the twofold set becomes diminished to one pack only by the elimination of one complete pack. The true meaning underlying the reduction of chromosomes is the elimination of one set of characters or qualities, such that if among those of the original sets there be any unsuitable ones these are rejected. The union of two sets of characters at conjugation is in animals retained by the germ cells until the period of the reduction, by the embryonic cell until the commencement of its development, when it becomes latent and in plants during the whole life-period of the flowering plant (*sporophyte*). The two sets cannot be identical at the start. As living organisms they must be influenced by the total environment, nutrition, climate, disease, toxins, etc. To all these influences they will react. The effect of all the factors will be a different one on the differently constituted characters. Some it will favour, and these will flourish and increase in import. Others will be unfavourably influenced or neglected, and these will diminish. At the reduction there will be a settling-up, and if the environment has not been a constant one, some of the characters will have become better than other corresponding ones, a new pack will be chosen, and the less favourable characters will be rejected. This elimination of characters may on occasion become an elimination of complete individualities, or what is the same thing as a casting out of "ancestors." Moreover, because the two sets have been conjoined under the influences of the environment, and have reacted to this, the process becomes a self-adjusting mechanism, the up-and-down oscillations of the characters of the two sets endeavouring to follow and compensate the changes in the environment, and the result must be variation. This process may be defined as germinal election and elimination in adaptation to the environment. The Darwinian theory is undoubtedly largely based upon the analogy of artificial selection. Nature is supposed by natural selection, resulting from the struggle for existence, to eliminate all the unsuitable individuals, and thereby to select those for the continuance of the race which are most or more suitable for the environment. Even if she did this its results would be as nothing compared with those of germinal election of fit with elimination of unsuitable characters, which at its basis is also a weeding-out of unsuitable individualities. A selection of individuals can give no certain result for either natural or artificial selection. Nature goes to the root of the matter; she makes no selection of individuals, for about these she

* The "characters" of germ cells are not entities, but rather potentialities or "memories." These can be multiplied, but not separated, by cell division.

cares nothing. She can exert her choice and she does it, among the germ cells, and not merely in these, but among the characters or qualities the germ cells possess. In this it would be futile to bind her down by cast-iron laws of inheritance, to dictate that "the average contribution" of a father should be so much, of a grandfather so much, and so on. This may hold good in cases, but only with a constant environment. When the latter obtain, if all the characters or qualities be equally good, then, as in the Mendelian experiments in intercrossing peas, the election and elimination may be left to the mathematical laws of probability; they may be taken apparently at random, and in this way it may become possible to speak of sexual reproduction as sometimes an "amphimixis" or mingling of characters, and to set up laws of inheritance by average contribution. With a constant environment, or with what is assumed to be such, man first rejects (individuals of) certain varieties, and in this way favours (individuals of) some particular variety. By closely intercrossing these he accentuates particular points, because, of course, even in the characters of germ cells suited to a particular environment there may be degrees. In this man takes a course the reverse of that adopted by Nature. Her method may be slower, but it is sure. When she causes variation she initiates it by altering the environment. While some one or more varieties of a species may be able to adapt themselves to the new conditions, others will fail in this, and these will be eliminated either as individuals, or even if fertile with the favourable variety or varieties, then by germinal elimination. Germinal election and elimination appear to offer adequate and simple explanations of all the phenomena—at any rate, the author has encountered no real difficulties. They throw light upon the Mendelian cases of intercrossing peas, etc., on mimicry, protective coloration, bud-variation, and the loss of organs, such as the hind limb of the Greenland whale, for which latter cases Weismann found it necessary to call in a new principle—that of "panmixis," or the cessation of natural selection. They explain why the giraffe, for example, has a long neck; this is not because, as the Lamarckians assert, it was in the habit of stretching its neck, the effects of this being handed on by the inheritance of acquired characters; and again, not because, as the Darwinians maintain, by natural selection Nature picked out those individuals whose necks tended to be long, and destroyed those with shorter necks; but simply because Nature eliminated in the germ cells those characters which tended to the production of a short neck, while she fostered those other characters of the other parental line which tended to the formation of a longer neck, and she increased the value of these characters from generation to generation. The principle resulting in the self-regulating mechanism offers a simple construction of all the phenomena of variation, an ultimate and a far more natural one than "natural selection" or the "germinal selection" of Weismann. Indeed, under it there is no necessity to invoke these: by germinal election and elimination their positions are completely and decisively outflanked and rendered untenable.

Under the views here advanced the words "parent," "ancestor," "offspring," and "reversion" become meaningless. In the same way an "appeal to ancestry" (Weldon) is barred by the absence of any "ancestors" to appeal to. In the union of egg and sperm we witness the joining-together of *but two* sets of characters and not that of "x" sets, derived from as many "ancestors." In the development of the individual for any given character only *one* of the two becomes manifest, but the other may reappear in the gametes. As in the reproduction of dioecious individua's these unite with the gametes of other individuals, in this union *a priori* there would be for any particular character *four* possibilities. To illustrate this, take the four grandparents, and consider only one character in the gamete of each. Assume, further, that in the two following generations there be no complete elimination of any character, and that this reappear in some of the gametes. The characters may be called A, b, C, d, the first two being conjoined in the germ cells of the father, the second two in those of the mother, and the large letters being dominant or prepotent. In the gametes of the parents the representative of this character may be either the dominant one or the latent one. That is to say, any particular gamete may contain any one of the four characters, A, b, C, d, and suppose then that b and C be conjoined to form the grandchild, and that C be dominant in it, its gametes will then contain either character b or character C. Therefore, if this character b unite with another e, and if in the development b be the dominant one, the result will give the appearance of a "reversion" to the grandparent b, after a dormancy through two generations. But there is no room for more "ancestors." Similarly, the latency may extend over more generations, but always in such a way that, prior to the actual ripening of the egg and sperm destined ultimately to produce as one product a particular embryo, only four characters come in question. Much attention is being devoted to the statistical study of variation in the hope of increasing our knowledge of heredity. Such investigations, to be of value, should include all the essential factors. But in none of the published investigations is due heed given to the influences of the environment. For the modern biometrician the environment as a factor might be non-existent. He attaches as little weight to its influence as he does to the importance of making any distinction between somatic and genetic variations. In his published researches he ignores the influence of the environment, and slumps somatic and genetic variations together. Environment is all-powerful for the individual and for the germ cells too. A constant environment induces no change, and thus permits of the operation of the mathematical laws of probability in the selection and elimination of characters. A bad environment, leading to the mating of the unfit with the unfit, and in this way to the selection of the unsuitable, not among the individuals but among the characters or qualities of the germ cells, can but result in deterioration and physical and moral degeneration. Finally, a good and favourable environment, with an approach at complete adaptation to it on the parts of the individuals and of the germ cells, must be the prime cause of advance, and with this of the ever greater and greater improvement of the stock.*

THE PROBLEM OF HEREDITY FROM THE PSYCHIATRICAL ASPECT.

By W. König, M.D.,
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The results of Dr. Beard's important investigations have, I am sure, impressed us as a very distinct biological advance. By proving the direct continuity of germ cells from generation to generation and establishing antithetic alteration of generations in the metazoa, Dr. Beard has displaced theory by solid anatomical facts and given us a clearer insight into the problem of heredity.

I have been asked to examine the bearing of Dr. Beard's findings on insane heredity viewed from the clinical aspect, and to consider the question of mental heredity with special reference to the inheritance of acquired qualities.

You are all only too well acquainted with the difficulties experienced in trying to obtain trustworthy evidence of heredity as well as with the fact that but in a small minority of instances we are enabled to reliably trace the chain of hereditary continuity beyond the fourth generation. We are consequently not yet in possession of sufficient facts to warrant the laying down of any definite laws regarding mental heredity. Another obstacle in the path of progressive knowledge is the impossibility in most varieties of alienism to decide the question in what number of cases mental derangement propagated to the offspring has been actually acquired by the parent. It is within our knowledge that certain types of mental disturbance are or may be acquired. This applies above all to adult general paralysis and the various forms of alcoholism, in a small measure to epilepsy, and, lastly, to the post-traumatic disorders of the cerebro-spinal system.

To gain, therefore, a clear and comprehensive view of the extent to which clinical experience is prepared to support Dr. Beard's teaching, I shall first of all consider these four types of mental unsoundness.

In taking up the investigations of these conditions with regard to the purpose we have in mind, three principal groups of heredity may be distinguished throughout this paper, to wit, homologous, dissimilar, and what I shall term "mixed" heredity—that is, homologous heredity on the side of one parent and dissimilar on the part of the other. Our attention to-day will be mainly focussed on instances of the first group—ancestor and descendant exhibiting the same variety of mental affection.

The main questions we shall have to discuss in the light of my material and with regard to Dr. Beard's findings are:

* For fuller information the reader should consult: J. Beard, A Morphological Continuity of Germ Cells as the Basis of Heredity and Variation; in *Review of Neurology and Psychiatry*, vol. ii, 1904; and W. Ford Robertson, The Pathology of Chronic Alcoholism, in *British Journal of Inebriety*, April 1904.

1. Is there any clinical evidence of acquired mental abnormalities being transmitted to the offspring?

2. To what extent in insanity does environment influence the germ cells, and under what circumstances does it affect the same?

My experience, covering two decades of metropolitan asylum life, is based on the histories of 3,329 cases, which I considered sufficiently reliable, and which have been selected from 12 000 odd records of Dalldorf Asylum. Taking into account the time-limit at my disposal I shall strictly discard every unnecessary detail, reserving all particulars for a fuller memoir at a future date, and confine the scope of this paper to the most salient facts as suggested by my material.

In adult general paralysis we have a true type of acquired mental derangement. As regards the etiology, I find myself in complete concurrence with those who hold that in most instances the invasion of the organism by the syphilitic virus is a necessary step in the production of the disease. Too much insistence cannot be laid on this point. Environmental influences such as stress furnished by the circumstances of life, particularly inebriety so frequently occurring in those who have been syphilitic, I regard as predisposing factors, and as agents very often accelerating the morbid process. A much greater allowance, however, has to be made for the force of hereditary predisposition, all the more when we realize the preponderance of syphilitic victims who never develop general paralysis or any other nervous complaint.

Among 1,151 male and female paralytics a small proportion were constituted by congenitally weak minds, and sometimes there was a history of early convulsions. In very numerous examples a distinct family history of insanity has been obtained, and, according to recent researches by Drs. Arnott and Junius of Dalldorf Asylum, particular weight attaches to the incidence of bilateral heredity, in which cases they could state on an average a three years' earlier onset of the disease than in instances having a less pronounced hereditary record.

Frequently there is a negative report of direct inheritance, while the pressure of collateral heredity or the occurrence of identical or allied affections in brothers, sisters, or relatives may afford indication of some degree of mental abnormality in the remoter ancestry.

In very few examples I have contrived to trace back heredity beyond the fourth generation. The offspring of paralytic parents are frequently imbeciles, idiots, victims of infantile cerebral paralysis, sufferers from early epilepsy, chorea, meningitis, congenital syphilis, and various other neurotic ailments. There would be a considerably larger number of these youthful invalids but for the high rate of sterility, miscarriages, stillborn and short-lived offspring. I have recorded 150 absolutely sterile marriages, not including those productive of a more or less long train of abortions.

Among the adult descendants I have noted a fair number of paranoiacs, cases belonging to the dementia praecox group, and other types of organic and functional disorder. On the other hand, a not infrequent record of exclusively sound children could be obtained. In one instance of paralysis in a parent, there were seven healthy children and no miscarriages.

The very marked influence of a paralytic parent is well illustrated by the case of a man who previous to infection had three healthy children by his first wife; by a second wife, after contracting syphilis, he had no issue.

By way of further illustration, let me now present to you a string of genealogic examples in which the paralytic descendants exhibit various forms of heredity.

1. A case of mediate dissimilar heredity: Paternal and maternal grandmother insane; father's sister insane: parents healthy; son general paralytic (had a stillborn child).

In the next two instances there is an uninterrupted chain of heredity:

2. Grandfather insane; father imbecile: son general paralytic.

3. Maternal grandfather insane: father insane: maternal aunt epileptic; son general paralytic.

The following case is one of mediate heredity revealing itself in four sons:

4. Grandfather insane, committed suicide: parents healthy. Four sons suffer from mania, alcoholism, nervousness, and general paralysis respectively, the latter having had syphilis.

Instances of this kind are by no means rare.

An epileptic father, for example, had two sons, one an imbecile, the other a general paralytic.

There are, doubtless, paralytics innocent of any demonstrable ancestral taint, as exemplified by the following instance: Grandparents on both sides healthy; parents healthy; son general paralytic.

Of still greater moment are cases of homologous heredity, and such where several brothers, sisters, or relatives exhibit the same type of insanity. Some cases in point, which I could easily multiply, are the following:

Father apoplectic; maternal uncle general paralytic; two sons general paralytics.

In the next four instances there was a paralytic father:

1. Four sons, of which two were general paralytics, and two insane.

2. Three sons, of which two were general paralytics, and one committed suicide.

3. Two sons, of which one was a general paralytic, and one an epileptic.

4. Three sons, of which one was a general paralytic, one insane, and one peculiar.

In a fifth case, both parents and the only son were paralytic, and in a sixth a tabetic father had a paralytic son.

It is worthy of note that in quite a number of these "homologous" cases both ascendant and descendant had a clear history of syphilis.

Now, all these examples forcibly point to an inherited disposition, of which in some families all descendants participate, and which undoubtedly increases the chance of syphilitically-infected descendants to develop paralysis.

Although general paralysis is an acquired disorder which is never propagated to posterity—with the necessary exception of the juvenile form—there are conclusive reasons for assuming that in all individuals burdened with heredity the parental germ cells may be adversely affected, and so encourage "parasyphilitic" changes in the infected offspring, this being particularly true in instances of homologous heredity.

It would also appear that in certain families there is an uncommonly high degree of predisposition for the parasyphilitic sequelae of specific poisoning.

A leading rôle must be imparted to environmental agency in those types of insanity induced by alcoholic indulgence, to which we now pass on. I have inquired into the history of 556 cases whose insanity was attributed to steady abuse of intoxicants, of which number 494 were males. The main facts elicited are an enormous prevalence of homologous—namely, alcoholic—heredity, a rather low rate of hereditarily untainted individuals, and an intermediate proportion of dissimilar heredity. Apart from the numerous inebriates walking in the intemperate footsteps of their progenitors, I have found among the descendants instances of true paranoia, katatonia, dementia praecox, epilepsy, imbecility, and quite a fair sprinkling of organic cerebral disorders, including general paralysis.

The younger alcoholic offspring exhibit a serious record of early epileptic fits, shortened vitality, and idiocy. With respect to the incidence of miscarriages, stillborn children, and sterility, much smaller figures have been obtained than those encountered in the families of the paralytic parent; occasionally luetic antecedents in this class of alcoholic families were ascertainable.

The association between alcoholism and epilepsy is a very close one. In 111 instances fits were developed in the course of an intemperate life, the time of onset varying between 2 and 41 years after drink was started. Illustration of the different types of heredity in habitual inebriates is furnished by the following examples:

1. A case of dissimilar mediate heredity: great-grandfather, grandfather two paternal aunts, and one uncle insane; parents healthy; son alcoholic.

2. A case of mixed immediate heredity; father alcoholic; mother epileptic; son alcoholic.

3. A case of cumulative homologous heredity: great-grandfather, grandfather, father, and son alcoholic.

The evidence of clinical experience therefore discloses the fact that the majority of habitual drinkers have a neurotic history, and that the severity of the heritage is more prominent in those having a direct alcoholic ancestry. Moreover, clinical study does not support the suggestion that the acquired habit of drink or even any craving is transmitted, but the inference is rather in favour of the germ cells being so modified as to render the offspring particularly liable to the injurious influence of alcohol. Some of the alcoholic descendants are congenitally intolerant. If the mother be addicted to drink additional damage may be done to the soma during intrauterine life.

I agree with Dr. Robertson that there is an inheritance of environmental influences. If it were possible to transfer all the offspring of alcoholic parentage into a healthy and moral atmosphere, and to wisely regulate their lives in every

respect, the number of chronic alcoholics would be rapidly reduced in spite of adverse hereditary antecedents. Alcoholism, we may take it, is largely the product of environmental agency, based on a neurotic diathesis. No other form of mental irregularity is to the same extent dependent on the environment. The intimate connexion between alcoholism and epilepsy leads us now to the consideration of the latter affection.

Idiopathic epilepsy is the type of mental disorder which discloses the disastrous consequences of heredity perhaps more distinctly than any other nervous condition. We frequently encounter veritable family endemics. In one of my observations as many as ten children suffered with fits. Epileptics, like alcoholics, exhibit also in numerous instances a record of dissimilar heredity traceable through several generations.

The following are characteristic examples of cumulative heredity in epileptics:

1. Paternal grandmother insane: mother neurotic; son epileptic.
2. Paternal grandfather alcoholic; maternal grandfather and mother insane: son epileptic.
3. Grandfather and father apoplectic: son epileptic.

Sometimes there is an alternation of homologous and dissimilar heredity in grandparent and parent, for example:

Maternal grandmother epileptic; father alcoholic; son epileptic.

Or we note homologous heredity of a cumulative description as in the following observations:

Paternal grandfather, paternal aunt, father, epileptic; mother consumptive; three children epileptic.

In passing, I want to remark that in my opinion ancestral tuberculosis is of some hereditary importance generally, and distinctly so in the history of idiocy and infantile cerebral paralysis, in assisting the formation of neuropathic disposition.

In cases of acquired epilepsy subsequent to cranial traumatism or infectious fevers, there is a large proportion with a neuropathic history. Among those with an apparently clean bill of heredity I have not met with a single instance where the acquired disease was manifestly handed down to the offspring.

We may, however, assume that in idiopathic epilepsy the germ cells are so seriously modified that even without any additional environmental influences on the soma the inherited disposition is duly developed. Sound hygienic conditions will, it is true, often reduce the number and intensity of the attacks, and injurious extraneous agents may aggravate the patient's condition, but otherwise environmental factors in essential epilepsy are probably not operative.

With regard to post-traumatic neuroses, I have likewise no positive proof of hereditary transmission. Respecting the group of senile dementia and other types of insanity due to arterio-sclerotic changes, we find a frequent hereditary predisposition for atheromatous degeneration. Instances of homologous heredity are distinctly rare in senility; sometimes several brothers and sisters are identically affected.

My closing remarks shall touch the large class of functional psychoses. I can afford to be very brief, chiefly by reason of the fact that clinical testimony of transmission of acquired characters in this group is absolutely negative.

Paranoiacs, and most sufferers from the other types of functional disturbance—namely, dementia praecox, katatonia, mania, melancholia, the recurrent forms of insanity, and hysteria—show a more or less powerful hereditary disposition to insanity and other nervous disorders. Apparently hereditary modification of the germ cells in one respect is of a two-fold nature. Sometimes—take a typical case of essential paranoia—the morbid character of the germ cell will probably develop at one time or other in the face of the most favourable surrounding factors, while in other cases—for example, in the litigious type of paranoia—environmental agents such as disappointment over a lost law-suit, may give instigation to a gradually-progressive development either of a dormant disposition or of a rudimentary disorder hitherto less conspicuous, and perhaps of a stationary character. The same applies to the different forms of insanity connected with child-bearing and the climacteric period, where there are numerous factors which may act as exciting causes.

Regarding the incidence of homologous heredity in the various types of functional psychoses, it is impossible, according to my experience, to formulate any definite law at the present moment. There are examples of homologous heredity in every class. As far as I can judge, however, transformation is more frequently the rule.

Summing up, I may say that, generally speaking, clinical experience does not clash with the results of Dr. Beard's investigations. There is, first, no clinical evidence of acquired mental abnormalities being transmitted to the offspring. It is, secondly, highly probable that—to quote Dr. Beard—the influences of the environment are reflected on the germ cells. Thirdly, the hereditary potentialities of the germ cells may in some cases develop in early or later life, unaided by any traceable environmental influence; in other cases they certainly remain dormant or in a rudimentary state of development until roused to life by inimical extrinsic factors.

Appendix to Genealogic Tables.

A.—*Dementia Praecox.*

(*a*) Parents healthy (father's brother epileptic); two daughters epileptic: two sons dementia praecox.

(*b*) Parents healthy (father's sister infantile cerebral paralysis); mother's sister epileptic; son dementia praecox.

(*c*) Grandfather suicide; parents healthy (mother's brother suicide); son dementia praecox.

(*d*) Grandfather insane: father simple: daughter dementia praecox.

(*e*) Maternal grandfather insane; father insane; mother suicide; daughter dementia praecox.

(*f*) Paternal grandfather diabetes; maternal uncle diabetes; mother's two sisters epileptic and insane respectively; daughter imbecile and dementia praecox.

(*g*) Parents healthy; father's brother epileptic: mother's sister insane; daughter dementia praecox; son suicide.

(*h*) Great-grandfather, grandfather, father, alcoholics; daughter dementia praecox.

(*i*) Grandfather insane: father insane and alcoholic; daughter dementia praecox.

(*k*) Grandfather and father, phthisis; daughter dementia praecox.

(*l*) Great-grandfather suicide: grandfather suicide; mother insane; daughter dementia praecox.

(*m*) Grandfather insane; father normal: two sons dementia praecox.

B.—*Recurrent Insanity.*

(*a*) Maternal grandfather insane: maternal granduncle insane; father insane: two descendants recurrent insanity; one insane.

(*b*) Great-grandfather and grandfather alcoholic; parents healthy; two paternal cousins insane; one daughter recurrent insanity.

(*c*) Maternal grandfather insane; maternal uncle insane; father insane; two descendants recurrent insanity; one insane.

C.—*Paranoia.*

(*a*) Father alcoholic; father's brother and sister phthisis; mother paranoia; daughter paranoia (communicated from mother).

(*b*) Grandfather alcoholic; father imbecile; two descendants paranoiac and choreatic respectively.

(*c*) Great-grandmother insane; mother imbecile; one descendant paranoiac, one insane.

(*d*) Maternal grandmother insane; mother imbecile; one descendant paranoiac, one insane.

(*e*) Grandmother neurotic; parents healthy; three daughters paranoia.

(*f*) Paternal grandfather insane; father alcoholic; mother neurotic; son paranoia.

(*g*) Maternal grandmother suicide; father suicide (paternal uncle insane); daughter paranoia.

(*h*) Grandfather alcoholic; parents healthy (maternal brother alcoholic); son paranoia.

(*i*) Maternal grandmother paranoia; parents healthy; one son paranoia, one insane.

(*k*) Paternal grandfather suicide; father suicide; one son paranoia, one son imbecile.

(*l*) Mother paranoia; one son paranoia, one epileptic.

(*m*) Parents healthy; father's brother and mother's brother insane one son paranoia.

(*n*) Maternal grandmother suicide; mother criminal; one son paranoia, one alcoholic.

D.—*General Paralysis.*

(*a*) In father and descendants: (1) Father and one son, 10 cases; (2) Father and two sons, 3 cases.

(*b*) In two brothers, 13 cases.

(*c*) In mother and son, 2 cases.

(*d*) In other relatives of paralytic patients: Mother's brother general paralytic, 2 cases.

E.—*Non-paralytic Heredity in Grandparents.*

(*a*) Paternal and maternal grandmother insane: parents healthy; father's sister insane; one son general paralytic; one son insane; one daughter peculiar.

(*b*) Father alcoholic and epileptic: two sons general paralytics.

(*c*) Father alcoholic; one son general paralytic, one dementia senilis.

(*d*) Grandfather insane: father imbecile: son general paralytic.

(*e*) Father epileptic; one son general paralytic; one son imbecile.

(*f*) Mother's brother insane; parents healthy; one son general paralytic; one paranoia, one suicide, one alcoholic.

(*g*) Father apoplectic: one son general paralysis; one son tabes.

(*h*) Grandmother and mother insane; son general paralytic.

(*i*) Maternal great-grandmother and mother's sister insane; son general paralytic.

F.—*Epilepsy.*

(*a*) Paternal grandmother insane; mother neurotic; son epileptic.

(*b*) Paternal grandfather alcoholic; maternal grandmother insane; parents healthy; son epileptic.
(*c*) Paternal grandfather and father apoplectic; mother dementia senilis; mother's brother epileptic; son epileptic.
(*d*) Maternal grandmother epileptic; father alcoholic; son epileptic.
(*e*) Paternal grandfather epileptic; father alcoholic and epileptic; paternal aunt epileptic; mother phthisis; three descendants epileptic.
(*f*) Paternal grandfather suicide; father alcoholic; paternal aunt insane; two descendants epileptic.
(*g*) Maternal grandfather epileptic; father alcoholic; mother's brother epileptic; son epileptic.
(*h*) Grandfather and father alcoholic; son epileptic.
(*i*) Grandmother epileptic; father alcoholic and epileptic; son epileptic.

Mr. C. R. Straton described the alternation of generation in the case of biorhiza aptera and teras terminalis, in order to explain the material path by which peculiarities in cases of atavism, either mental or bodily, could be transmitted from grandfather to grandson. He showed that the polar bodies were the primary germ and sperm cells, that the polar bodies were invariably fertilized, and were received back into the germ tracks of the developing fly to become the germ plasm of the alternate generation, so that biorhiza aptera could only produce teras terminalis, and teras terminalis could only produce biorhiza aptera. In these cases, as shown by Dr. Hermann Adler in *Alternating Generations*, atavism was normal, and they served to explain how insanity occurring in alternating generations was actually transmitted in the human race.

Dr. A. S. Grünbaum said the investigations of Dr. Beard were of the utmost embryological importance; but they seemed practically to confirm the possibility of transmission of acquired characters, inasmuch as alterations in the parent, due to environment or other causes, were admitted to produce alterations in the germ cell. Formerly, although the deductions were correct the premisses were false. These had been rectified by Dr. Beard.

Dr. F. W. Edridge-Green said there were several varieties of characters which might be transmitted to the offspring. A distinction must be made between acquired characters, such as mutilations and instincts. He believed that an individual was able to benefit his race through heredity by improving certain faculties, and that this explained the acquired instincts of sporting dogs and the evolution of the colour sense. On many points biologists were inconsistent; for instance, the atrophy of an organ was explained by its disuse, and yet they denied that mutilations, as, for instance, the removal of a tail, produced any effect on the offspring. What could more effectually prevent the use of an organ than its removal?

Dr. W. Lloyd Andriezen said that right views of heredity were needed to enable them to influence for good the future of their race; for if heredity was not fatalistic a way might be found to mitigate the malign hereditary tendencies of disease. He traversed Dr. Beard's statement that the individual animal or plant was "a mere lateral offshoot of the germ cell" as a misinterpretation, which contradicted both anatomical and physiological facts, and was the outcome of a preconceived metaphysical hypothesis. In the process of development the germ cell gave rise to many chains of cells, each with its special destiny in development, in so far as reaction of cell with cell and cell with environment constituted the destiny of development. And meanwhile the future germ cells that were to be—that first appeared as "primordial germ-cells," so called after several blastomeric divisions or cell generations, counting from the impregnated ovum, and which during that time were as subject to toxic and other influences of the maternal plasma as any other cells differentiating at the same time were—those primordial germ cells and their descendants through a long line of cell-generations till the offspring was born, and, furthermore, for the period of many years to the date of sexual maturity. oogenesis and spermatogenesis, and maturation of ova and spermatozoa—that is, for the long period of sixteen years at least—were in the human subject continually subjected to agencies which altered and modified them for good or evil; they were subjected to the action of nutritive, toxic, thermal (pyrexial) changes in the blood plasma which bathed the ovaries and the testes. Though this plasmic environment could not vary excessively without causing death to parent and germ and sperm cells alike, yet within the limits which permitted vital processes to continue the action of pathogenic agencies, disease, and other constitutional lesions of nutrition sustained by parents, continually acted on the germ and sperm cells they carried. There was not any charmed life led by these cells; they were exposed to and affected by noxious as well as to beneficial agencies—by changes in food supply, warmth, oxygen, as well as affected by impure gases (for example, slum-life), toxins of defective renal and bowel elimination (for example, eclampsia), cytolytic substances and toxins admitted into the maternal circulation, such as alcoholism and plumbism, and other factors. And when the girl became a mother her impregnated ovum, if it had emerged scatheless and immaculate after its life-period of sixteen years or more, had to go through its pre-embryonic and embryonic stages of growth and development and its long fetal development before it was born. This amphibolic factor in the constitution of the germinal units, the ova and spermatozoa, from their origin to their maturation and conjugation, and to their further development till birth as a newborn offspring, which had then ceased to inhabit the maternal body—this factor was as old a thing in the history of life as the earliest beginnings of sexual differentiation and of gamogenesis in the animal kingdom. The only correct and, indeed, philosophical view to take was that the amphibolic factor, by its continued presence and influence (which, however, ever varied in character and intensity) on the germ cells and sperm cells, the pre-embryo, embryo, and its primordial germ cells, etc., rendered it impossible for the germ elements (or, if you please, germ plasma) to live the charmed life of isolation so long taught by the school of Weismann. Under the law of persistence of force, the amphibolic factor lasted for ever, just as, according to the laws of the indestructibility of matter, the atoms of CHON, and perhaps PSK Na and Cl, which constituted the germ plasma, lasted for ever, by continued substitution of incoming for outgoing atoms; thus, in the progress of time the germ plasma *ex necessitate* underwent modification under the mutual action and reaction of these two factors which constituted it. Dr. Beard's view, like Weismann's, looked only at the one aspect or factor, and seemed to overlook and ignore the equal importance of the other. Yet the two factors were inseparate and inseparable in the progress of all life. Dr. Andriezen then referred to the experiments of Féré on eggs, to amphimixis—in which he quoted the views of Weismann and Haycraft (antagonistic in their interpretation of the simplest facts)—to the experiments of Chauvin and Delamare at the Pasteur Institute, which demonstrated the pathways and nexus of cause and effect by which the germ cells and the embryo were effected; in a word, the *modus operandi* whereby conditions of disease, diathesis, severe constitutional lesion, and degeneracy acquired by parents could be transmitted to the child. He congratulated Dr. König on having demonstrated these pathological facts—by such a wealth of fact and induction as was embodied in his paper—and he described Professor Ewart's experiments showing what effect a "slum environment," as contrasted with a good hygienic environment, had on the pregnant rabbit and her offspring. He also traversed several of Dr. Beard's statements regarding the exact number of cell generations between egg and egg in classes of the animal kingdom, which did not accord with the findings of Eigenmann, Weismann, and other embryologists. He could not satisfy himself, on morphological grounds, that a continuity of germ cells *stricto sensu* was demonstrated; he rather was inclined to agree with Weismann's doctrine of the continuity of the germ plasma, often through action of somatic (pre-embryonic) cells.

Dr. A. T. Schofield said he rose to emphasize the statement of Dr. König that of all hereditary tendencies that of alcohol was most subject to the forces of environment. He was all the more pleased to hear this on account of the pessimistic note struck at Swansea in a paper read by Dr. Reid, that riveted the alcohol habit by a long chain of links, some of which were very weak. They must remember that the public followed with the keenest interest their remarks in this Section, and especially on this subject. They longed to be delivered from the "dead hand" of heredity, and so eagerly did they welcome any door of hope that he noticed last year that when one speaker controverted Dr. Reid's paper and pointed out that after all what was inherited was merely a tendency which could be resisted and overcome, and that therefore there was no need for fatalism, that statement was copied into most English newspapers. He therefore was very glad to emphasize Dr. König's statement that inherited alcoholism followed the law of Herbert Spencer, that a man was more like the company that he kept than that from which he was descended. But this force of environment applied not

only to alcohol, it applied to crime. Those who knew anything of Mrs. Meredith's work at Addlestone (now carried on by Miss Lloyd) would bear him out that children were in these village homes taken from their mothers in prison with four generations of hereditary crime, and that these children were so acted on by their perfect environment that those tendencies which became criminal in their parents were directed into good channels, so that they grew up into good, honest, and moral men and women. This led him to mention one more point of hope in which he believed all present would agree, and that was that what was inherited was not vices or virtues, or even diseases, but *tendencies* which by bad training and surroundings could be degraded into vices or diseases, or by good could be elevated into virtues or health. He believed, moreover, that it had been abundantly proved that a tendency to disease—say gout—successfully resisted through three generations, was stamped out in the fourth. That was to say, the fourth generation was born absolutely without any weakness or tendency to the formation of uric acid that might lead to gout. These, then, were the two points that he wished to emphasize in order that a truer idea of heredity might be formed: First, that in environment they had a greater power than in heredity, and one that by wise use could overcome its force, and, secondly, that they inherited not vices or diseases which would logically lead to fatalism, but inherited potentialities which delivered us from it.

Dr. C. R. Drysdale agreed with Dr. Beard that environment made up 99 per cent. of all the question of improvement of the race. Heredity was far too difficult a question for us to act upon as practical physicians or hygienists. We were told by Dr. Rentoul, Dr. Chapple (New Zealand), and others that we should sterilize the epileptic, the insane, the inebriate, and confirmed paupers by some surgical operation. This view he considered to be antimedical and quite inadmissible. What wonder was there that there should be much degeneration in our country when 77 per cent. of us lived in towns and cities, so that of 11,000 young men in Manchester who wanted to serve their country as soldiers only 2,000 could satisfy the low standard of 5 ft. 3 in. in height. Very few of the inhabitants of cities were up to the high mark approved of by hygienists. His own view was that the way in which society must act in the future by way of getting rid of degeneration was by improving the condition of the people. At present the upper class were most prudent not to bring more children into life if they could not give them all necessary comforts and education. We could get rid of phthisis to a great extent if people were not poor. In Brussels the mortality from phthisis was 6.6 times as great as it was among the rich classes living around the park.

Dr. Robert Jones stated that the truth lay usually between two extremes—probably, in this instance, between the doctrine of Karl Pearson, which declared that consciousness and mental qualities were as directly transmitted as were the height, measure, and physical characters, and the doctrine of Dr. Beard, who, with great biological experience, declared that there was absolutely nothing in heredity. Personally, with an extensive practical knowledge of insanity, he did believe there was a very great deal in heredity, and this had been confirmed in the able, practical paper of Dr. König. Those who knew their patients, also knew their friends, and their friends' peculiarities and failings, but, happily, in this matter there was redemption, and redemption was obtained in the environment. The irritability of protoplasm to which Dr. Beard referred included very definitely its response to varying surroundings. Dr. Jones related his experiences in the examination of slum and country children, and in slum children after the beneficial effects of a new environment. He contended that there was more in the question of heredity than could be established by the microscope, which was Dr. Beard's ultimate criterion. He considered that the chemical and bio-chemical nutritional varieties, which were unascertainable with the highest powers of the microscope, opened up fresh fields for investigation and research, whereas hitherto clinical experience alone had opened the way to definite conclusions.

Dr. James Stewart (Clifton) stated that of the large number of cases he had had under his care during the last twenty years quite half were the children of a neurotic parent. The latter might not have been himself or herself an alcoholic, but one in whom there was some nerve irregularity—a degenerate, in fact. On the other hand, he had found in many cases children of inebriate parents affected by one form or other of nerve disease, epilepsy being one of the most frequent. As practical physicians they could not close their eyes to the effects of hereditary predisposition, but they must recognize as well the baneful or advantageous effects of environment. Place, for instance, the child of an inebriate parent in favourable surroundings, and he would probably escape the risk of becoming himself an alcoholic.

Dr. T. Seymour Tuke wished to inquire of Dr. König whether he had any record of a general paralytic father producing a son who in later life suffered from general paralysis without personal predisposing cause, such being contrary to his own experience. Could all mankind bring up their offspring in the best surroundings there would be less trouble, and *mens sana in corpore sano* was an old saying. Some cases, especially those of savage children, who after removal from their surroundings, and apparently great alteration, suddenly returned to their old habits, were puzzling to explain, as were also the undoubtedly "inherited" tendencies of dogs.

Dr. G. F. Blandford said that in the course of a long experience of insane families he had not known one in which there had not been sane as well as insane members. The reason of this was a question hard to answer. Probably the environment had much to do with it, and if we could rescue the children of insane parents and have them brought up in healthy conditions, far fewer would become insane.

Dr. David Yellowlees had long believed that there were things no fellow could understand, and this was one of them. The hereditary tendencies were, they were told, focussed or condensed into something called a "germ cell," which no one had ever seen, but which was said to create or form or determine altogether the body in which it dwelt. This germ cell itself was greatly influenced by its local environment, or the environment of the body in which it dwelt. The man was thus neither the child nor the spoil of circumstances, but the inevitable result; and if so moral responsibility was a myth and conscience a delusion. The transmission of parental qualities in feature, habits, bodily and mental characteristics, could not be doubted for a moment by any asylum physician, and the fact should greatly influence and emphasize the advice they gave to the friends and children of the patients.

Dr. May Dickinson Berry said she wished to ask Dr. König whether he had found any difference in the degree of hereditary tendencies in the children born before or after the father had become affected by insanity; and also whether investigations on a large scale had been made as regards other chronic diseases—that is, did children born of a tuberculous father show a greater tendency to tuberculosis or other signs of debility than children born while the father was healthy? The father alone was mentioned to exclude the influence of environment during intrauterine life upon the embryo, and limit the question to the influence on the germ cell.

Dr. G. Archdall Reid wrote: Dr. Beard's discoveries in embryology were without doubt very important, but he must confess to have considerable difficulty in following some of his deductions from them. After a close study of his work he was forced to admit that there was a good deal that he did not understand, or, if he did understand, that there was a good deal he was compelled to disagree with. He did not know why he should speak of "an intangible germ plasm, as if there were a doubt of the existence of that substance. The germ plasm had been defined as "the bearer of heredity. It was a convenient term, which could be so used as not to commit them to any unscientific guesses about matters that were quite unknown. For instance, they need not accept Weismann's imaginative morphological speculations concerning the architecture of the germ plasm. But some such substance there must be—some substance which was the bearer of heredity. They might, if they pleased, identify it with the whole of the germ cell, or with its nucleus, or with the chromatin of the nucleus, or they might refuse to identify it with any known or visible object. Nevertheless they were entitled to declare that, since there was such a thing as heredity, it must be connected with a substance which, whatsever it may be, they called germ plasm. Spencer, Darwin and others supposed that the soma of the individual emitted minute living particles which entered the germ cells, and that in this way the characters of the individual, including his acquirements, were "handed on" to offspring. But the majority of biologists have long abandoned this hypothesis. They believed there was "continuity of germ plasm." In other

words, they held that germ plasm was not formed anew in every individual, but that it merely passed through every individual. According to this view, the individual was nothing more than an incident in the career of the germ plasm. Successive individuals were only successive dwelling places which the germ plasm built about itself, within which it obtained shelter and nutrition, and which it inhabited till they tended to become worn out, when it passed to new individuals. Dr. Beard was therefore quite right in declaring that the characters of the parent were not handed to the child; but in this he was merely in accord with other writers. For instance, these writers did not suppose that the parent parted with his nose, or any portion of it, to the child, leaving himself derelict. Biologists used the expression "the parent hands his characters on to the child," or the expression "the child inherits the characters of the parent," only to avoid tiresome circumlocutions. They believed quite as strongly as Dr. Beard that the child was like the parent, not because his soma contained portions of the parent's soma, but because the germ plasm whence he arose was very like the germ plasm whence the parent arose. It was an ungracious task to criticize adversely views which had been arrived at as the result of prolonged and strenuous labour; but he thought that one of two things was very evident. Either Dr. Beard had not contrived to make his meaning clear, or else he had founded large assumptions on insufficient data. Here were one or two examples. He quoted Mendel's experiments. Mendel crossed *varieties* of peas. The offspring, in definite proportions, inherited certain characters (in which the varieties differed) exclusively from one variety. Some of their descendants, again in definite proportions, reverted to the other variety. But Mendel's results did not express a fact that could be shown to be universally true of biparental reproduction. Apparently they only expressed the truth concerning what might happen under very abnormal circumstances. Even when varieties were crossed the offspring, as regards any character, did not seem by any means always to inherit exclusively from one parent. Often there might be blended inheritance, and very often the special characters of both varieties were dropped, and the offspring reverted to the remote ancestral type whence they were both derived. When the breeding was between members of the same variety blended inheritance was the rule, as when a dark man mated with a fair woman. The "loose joining together" of paternal and maternal qualities was, in fact, the rare exception. It occurred only when the qualities were incompatible, and not always then, for as they saw, both qualities might be suppressed. Dr. Beard might maintain, of course, that all blended inheritance was particulate inheritance in which the characters of the parents were very finely divided. But this had yet to be proved. In any case, the hypothesis was not a sufficient foundation on which to found a far-reaching morphological theory of inheritance. Proceeding, apparently, on the assumption that Mendel's results were universally true, Dr. Beard supposed that, as regards any character, one germinal element or the other was suppressed in the germ cell, while the other became potentially active, the choice being exercised by the environment, which selected as a rule the more suitable element. This Dr. Beard calls germinal election, and he thought it "outflanked and rendered untenable" Darwin's theory of natural selection. To his mind this assumption was, to say the least, tremendously improbable. They had only to examine concrete cases to perceive the fallacy which underlay it. For example, keenness of vision was important to many animals. Darwin supposed it underwent evolution through the survival of, as a rule, only the keener-sighted individuals. His hypothesis was at least intelligible. Dr. Beard supposed it underwent evolution through the election by the environment of the more suitable elements in the germ cells—elements which, as yet, were mere potentialities. In other words, he supposed the environment possessed prophetic powers, that it exercised a miraculous foresight. Again, he supposed that the rival elements in the germ cells must as living entities "be influenced by the total environment, nutrition, climate, disease, toxins, etc." Now, no one doubted that the germ plasm, like other living entities, was capable of being influenced by its surroundings; but there was ample evidence that it was not easily influenced in the particular way that Dr. Beard supposed. He supposed not merely that the germ plasm was weakened or strengthened, poisoned or nourished, but also that it was altered *in its hereditary tendencies.*" In this he was in accord with most medical men, who assumed that parental disease was a frequent cause of variation in offspring. The belief was almost universal, and, therefore, it was all the more necessary that it should be founded on clear evidence, not on pure *a priori* assumption. Such evidence should be easy to obtain. Let them take a concrete instance. Malaria had powerful toxins; it was a disease of long duration in the individual; in some regions of the earth it affected, and for ages had affected, almost every individual. If the toxins altered the hereditary tendencies of the germ plasm, there ought to have been by this time some evidence of the fact. But what did they observe? They observed only that negroes and other races that had long been afflicted by malaria had become highly resistant to it. Apparently, therefore, the sufferings of the negroes had had no effect on the race, but the deaths of the negroes had had an immense effect. The toxins circulating in the blood had not altered the hereditary tendencies of the germ plasm, but the weeding-out of the unfit had altered it greatly. Darwin's hypothesis was decisively confirmed; Dr. Beard's was as decisively negatived. They constantly heard it argued that, since toxins injured the somatic cells, they must injure the germ cells also. That argument would have some validity if it were proved that the somatic cells were injured in the manner in which it was supposed that the germ cells were. Suppose a lymphatic gland had been tuberculous for twenty years. Then for twenty years the lymphatic cells in it had been multiplying under toxic influences. If the general health of the individual improved they sometimes got more or less complete recovery in the gland. If they then examined the gland did they not find an entirely new variety of lymphatic cells? Every pathologist knew that they did not. The hereditary tendencies of the cells remained unaltered; no matter how long they might have been exposed to toxic influences, they still reproduced quite ordinary gland cells. If the germ plasm were so easily altered by adverse influences, as Dr. Beard and a great many medical men supposed, no individual could recover from disease, and, under adverse circumstances, every species would drift helplessly to extinction. Dr. Beard's election of favourable elements in the germ cell would not help. For, even though in each pair the unfavourable element were suppressed, yet the more favourable one would still suffer injury. The child would, therefore, always be inferior to the more favourable parent; the race would constantly degenerate.

Dr. BEARD, in replying, said: Two things must be emphasized: (1) There is no general "law of inheritance," for the phenomena to which the term heredity is applied depend upon the interactions of the duplicated sets of characters and the environment. No doubt sometimes results are obtained with such constancy and regularity that, as in the Mendelian experiments, one can set up a rule, but as elsewhere insisted, these only come to pass with a constant environment. (2) For every character presented by a Metazoan individual, a man, for example, there is always a second character latent or dormant in his germ cells. The dominant character in any "offspring" may thus be any one of four present (prior to the reduction) in the germ cells of the father and mother; but it need not of necessity be the dominant character of either father or mother, and it may, on occasion, be one which has lain latent over many generations. Taking the remarks of the various speakers in order, we have first to consider the document contributed to the discussion by Dr. Archdall Reid. It was quite superfluous for the author to have attached any importance whatsoever to my embryological work upon the germ cells and the course of the life-cycle, for in the sequel he dispensed so entirely with the facts and discoveries that these might just as well have been non-existent. The divergence between us is revealed at the outset of his paper. A germ plasm, the germ plasm, is in his eyes so essential that it must exist, even though "we may refuse to identify it with any known or visible object," such as, presumably, a germ cell. In postulating the existence of a germ plasm Dr. Reid begs the whole question, for he offers no evidence whatever upon the point. Absolutely nothing is known about the existence of any germ plasm: that of Dr. Reid's invention is just as mythical as Weismann's. The known "bearers of heredity" are the germ cells; the phenomena of heredity are attributes of the unicellular organisms termed germ cells. Dr. Reid adopts Weismann's name "germ plasm" for a hypothetical intangible substance of whose existence he furnishes no proof; whilst he rejects Weismann's "imaginative morphological speculations" concerning its architecture. Weismann's conceptions of a germ plasm are now well known, for has he not elaborated them during more than twenty

years of arduous research? On the other hand, Dr. Reid's germ plasm, which according to him is not identical with Weismann's, has still to be exactly defined, and in such a way that it shall not be confused with its older namesake. Doubtless, until the author has found time to elaborate and define clearly the germ plasm of his creation, the germ cells alone will suffice, as they have done for untold millions of years, to explain and accomplish the phenomena of heredity. As to "a continuity of a germ plasm" being the common belief of every "biologist," or, in other words, that zoologists, anatomists, and embryologists rejected the somatic origin of "germ plasm" or germ cells, I can only express astonishment that any one should make such an assertion. Even now (1904) a strong belief in the somatic origin of the "hereditary substance"—call it germ cell or intangible invisible germ plasm—is, I imagine, a very common one; indeed, it has been defended anew within the last few months in the pages of the *American Journal of Anatomy*. Certainly, until the first account of my researches appeared in the closing days of 1900, it was almost the universal belief of zoologists, anatomists, and embryologists. And when Dr. Reid points out that "the individual is nothing more than an incident in the career of the germ cells," he is only paraphrasing one of the most important of my conclusions, for as long ago as 1900 I wrote, and it was certainly then written for the first time, "the formation of an embryo is a mere incident in a certain chain of phenomena." With gratification, not unmixed with surprise, one learns from Dr. Reid that "biologists" accept so much of what for many years past I have endeavoured, not without much labour, to demonstrate to them concerning the origin and history of the germ cells and the true course of heredity! At the same time, it must be confessed, the scientific literature extant either coyly conceals or bluntly denies this marvellous consensus of opinion. Facts are awkward things, and perhaps Dr. Reid can explain how it came about that until 1902 no textbook—English, French, or German—advocated a morphological continuity of germ cells, but that, one and all, they accepted Waldeyer's conclusions of 1870, now rejected by Professor Waldeyer himself, of the somatic origin of germ cells, and thus, if Dr. Reid will, of germ plasm. Dr. Reid then refers to Mendel's experiments, and quite erroneously supposes I assume them to be "universally true of biparental reproduction." He overlooks the fact that the Mendelian results were elsewhere cited by me as forming at first glance a difficulty in the way of my conclusions. I have never for a moment assumed their universal truth, for I am well aware of their limitations. Indeed, did such results universally obtain in Metazoan reproduction, my conclusions would be entirely wrong, and, moreover, genetic variation would be impossible. Dr. Reid says that the Mendelian results "only express the truth concerning what may happen under very abnormal circumstances." This dictum has at least the merit of novelty, but it is laid down without evidence, and it is utterly opposed to the experiences of those—de Vries, Correns, Tschermak, Bateson and Saunders and others—who have worked at the Mendelian cases. In what way are the circumstances "abnormal"? I cannot follow Dr. Reid when he speaks of "blended inheritance" and "reversion," for I deny the existence of these point blank. And what, with deference, is "the rule" when a dark man mates with a fair woman? Where does it exist in the literature of science as well as in the human imagination? Moreover, one may not forget or ignore the fact that the germ cells of the "dark man" and of the "fair woman" contain duplicated sets of characters; that, while we have but two "parents," we possess four "grandparents": and that these latter are often far more important in heredity than the former. The "loose joining-together," which, without observation, Dr. Reid denies, is none the less the rule, for it, and it alone, is in accord with and explains all the facts, while "blended inheritance" is impossible. Like a subsequent speaker, Dr. Reid contrasts my germinal election with the Darwinian theory of natural selection, to the discredit of the former. The results—the phenomena termed heredity in the higher animals—are due to the breeding of dioecious individuals bearing germ cells. In the phenomena of heredity we have to do with a continuous series of cycles of unicellular organisms (germ cells), and the Metazoan individuals are, in a sense, negligible quantities, or, at any rate, persons of no great consequence, as Dr. Reid himself has admitted. If the Darwinian theory, with its chance elimination of individuals, be the true explanation of things, it must be proven that the said individuals are eliminated before they breed. Once they have bred, no elimination of them will be of the slightest value. It has been assumed, but never proved, that the elimination takes place in this way, and I maintain that the observed results are not brought about by a futile elimination of individuals (natural selection), but by germinal elimination of characters unsuited or less well adapted to the environment. Darwin, quite rightly, perceived that there must be an elimination of the unfit, or the less fit, but, as was only natural in the then state of embryological science, he and his followers failed to localize it, and they erroneously assumed it was an elimination of individuals, whereas really it is one of characters or qualities in germ cells. I am not in the least concerned to dispute the existence of an elimination of individuals, but whether it be of the fit or of the unfit is another question. Almost certainly it is of both, and this "life or death" natural selection, under which the merest trifle is magnified into a serious crime, fatal beyond hope to the individual, possesses no import whatever for problems of heredity or variation. The theory of natural selection explains nothing at all beyond the state of science in certain years of the nineteenth century. Unfortunately, the belief has become a superstition, and natural selection is now the personification of a mysterious deity, roaming about armed with a two-edged sword, and so confident is he—or his followers—in the supernatural powers of his weapon, that he can with contempt ignore all the obvious influences of the environment, "food, climate, etc." Dr. Reid is mistaken in supposing that I have ever conferred powers of election upon the environment. I have said that at the reduction, for example, in the passage of oogonia into oocytes, of any two characters in a germ cell the one which is better suited to the environment, probably by the victory of the stronger, will be chosen, while the other will be eliminated. The environment only influences and stimulates the characters, it does not elect, and—I never said that it did. My critic possesses a fatalistic power for misunderstanding even the simplest and plainest words I have written. It was never stated that the "rival elements in the germ cells," as Dr. Reid terms them, the duplicated characters, as I call them, were "living entities." What was written, and more than once, was that the germ cells were living entities or adult organisms with a life-cyle of their own. The malaria example is not a happy one for Dr. Reid's argument. In Africa certain tribes are practically immune to malaria, while others, living in the highlands and away from its continued influences, are highly susceptible. This immunity must have been acquired in one of two ways: either by an elimination of individuals or by one of less favourable characters in the germ cells. Characters—and presumably the less favourable—are without doubt eliminated in the germ cells; there would be no object in retaining the less fit, and moreover this could only happen if all reproductions were Mendelian. But it has yet to be shown that here, as in other cases also, the individuals were eliminated before they bred. In the closing lines of his remarks upon the malaria example Dr. Reid made not fewer than six dogmatic assertions, each of which was given without a vestige of evidence. They are: that the sufferings of the negroes have had no effect on the race; that the deaths have had an immense effect—presumably as shown by the weekly or yearly returns; that the toxins have not altered the hereditary tendencies of the germ plasm; that the weeding-out of the unfit (individuals) has altered it greatly; that Darwin's hypothesis is decisively confirmed; and that mine is as decisively negatived. Whence was the information as to the sufferings and deaths of the negroes obtained? As to the possibility of toxins altering hereditary tendencies, that is a thing I for one have never dreamt of. But it is a known fact that toxins weaken cells, and therefore germ cells, and this is all that is required under my views. Unlike my critic, I do not need to assume anything beyond the commonplaces of physiology, that a germ cell, as an adult living organism with a life-cycle of its own, must, like all living cells, feed, grow, reproduce, and exhibit irritability. When Dr. Reid states that the unfit individuals are weeded out, he is once more begging the question, and again he is assuming that this happens before they breed. If, by this instance, "Darwin's hypothesis is decisively confirmed" by Dr. Reid, *it is the first time in the history of Darwinism that this has happened!* But something more decisive than Dr. Reid's assertions will be needed to refute my conclusions; for one of the clearest facts of embryology, one upon which my thesis is based, is that in the passage of oogonia into oocytes, of spermatogonia into spermatocytes, prior to the formation of conjugating cells, there is a

disappearance, a loss of half the characters or qualities, the result being that each egg or sperm contains one complete set, not two or more. But my critic shows no disposition to tackle the fundamental facts of embryology. The final example of the leucocytes and the tuberculous gland is a very fine specimen of special pleading and fallacious reasoning. Lymph cells are somatic cells, not germ cells with a cycle of their own. Therefore, they can only exhibit somatic variation, not genetic. They are killed in thousands by tuberculous toxins, and there is no evidence to show that the leucocytes in the gland at the end of twenty years were either any of those who underwent and survived the tuberculous influences, or even the progeny of any of these. But shall one regard this argument of Dr. Reid seriously? Can it for a moment be supposed outside of Bedlam that a tuberculous toxin, which slays its millions of cells and its thousands of individuals, can be a favourable factor in inducing somatic or genetic variation? Dr. Reid's theories are not based on actual research, and it is, therefore, not wonderful that they do not fit into the facts which my investigations of the last fifteen years have laid bare, or that the latter should fail to find a sympathetic reception at the hands of one who declares that his views must stand or fall on the truth or falsity of that crudest of superstitions, the recapitulation theory. Mr. Straton's description of the life-history of the oak-gall insect, interesting though it be, has no bearings upon the discussion. In his remarks the President, Dr. Mercier, objected that under the views advanced by me he was robbed of his parents, and in particular he deplored the taking away of his mother. Sentiment has no place in the problems of heredity. Possibly it may console him to know that whilst, by the mode in which she effects Metazoan development and the phenomena of heredity, Nature denies him any parents except unicellular ones, she permits him to have any number of brothers and sisters! The reason of these facts being that every individual is merely a lateral offshoot from continuous chain of germ cells. To Dr. Mercier the total environment of the germ cell is the body of the individual containing it, but the real environment of the germ cell is much more than this. I am afraid that the President eliminates the environment very much as the ostrich is (erroneously) said to do by burying its head in the sand. The influences of the environment are apparent enough to those who do not shut their eyes to them. Dr. Grünbaum, with whose remarks I largely agree, hardly appreciates the true difference between "transmission" and "reflection." The tubercle bacillus is not transmitted, but its influences may be reflected upon the germ cells. The next speaker, Dr. Edridge-Green, did not properly distinguish between somatic and genetic variations. When he demands that the experiments on mice should be carried over at least a thousand generations, he may be reminded that this would require a period of not less than two hundred and fifty years. Dr. Andriezen, who spoke of my "illusive theories," made any number of fallacious statements. According to him it is not a fact that the germ cells are differentiated very early, and in particular this does not take place in man. This question is entirely one of observation; the facts concerning the early history of human germ cells are largely unknown; and while a very early appearance of germ cells prior to the formation of an embryo has now been established in many instances from various divisions of the animal kingdom—a list which is constantly being added to—no single case is known where beyond doubt there is a late origin after the appearance of an embryo. The speaker quoted (I think wrongly, for I am well acquainted with it) Eigenmann's work. He informed us that in certain cases germ cells arose only after sixteen to eighteen generations of cells, and that this period was even longer in the higher forms. He also spoke of the "multiplication of germ cells" in a mammal. Against all this may be placed the facts that in the human female all its germ cells are in existence long before birth, and that at the moment no instance can be adduced where the germ cells are certainly known to arise later than in the skate—that is, with the tenth division of the fertilized egg. What evidence is there of anything being handed on? or how, if the life-cycle be such as I have shown upon the screen, can anything at all be handed on? Certainly, I do not recall ever having described Darwin's theory as a complete fallacy. My respect for Darwin's memory is too great. Moreover, the existence of what Darwin termed "natural selection" cannot be denied. But I think that elsewhere I have demonstrated that it does not account for the facts. Evidently, Dr. Andriezen's acquaintance with recent literature leaves something to be desired. He cannot have read my works, and he misquotes Weismann, who states that amphimixis is "not the real root of variation." With the main drift of the remarks of Drs. Schofield and Drysdale, who spoke of the influences and import of the environment, I cordially agree. To Dr. Robert Jones I reply that I do not assume that this question of heredity is "a mere matter of the microscope," nor do I hold that "there is nothing in heredity." It is the sense in which the term is used that is false, for there is no handing-on of anything from the individual to the germ cells which form the next and succeeding generations. Dr. Jones does not appear to know my writings. Dr. Blandford asks why only certain members of a family become insane, whilst others do not. Why, on the other hand, does not "natural selection" eliminate the insane unfit? A problem which may be commended to Dr. Reid! These things are just the kind of puzzle which my results are calculated to explain. The final speaker, Dr. Yellowlees, made fun of the germ cells. Unfortunately, there is no joke about the matter, for the germ cells are the tyrants of the world. Before sitting down, Mr. President, I should much like to tender my thanks to yourself and the Section for the opportunity afforded me of addressing you, as well as for the very kind reception I have received. May I add that I have listened with intense interest to Dr. König's very fine address?

DEMENTIA PRAECOX.

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IN recent years the doctrine of "precocious dementia," as deduced from the later works of Professor Kräpelin of Munich, has acquired a great vogue. Its author, during the long period when he filled the Chair of Psychiatry at Heidelberg, attained the highest eminence as a teacher and as a writer. His work in psycho-physics has much enhanced his reputation for exact observation. Even the fact that the successive editions of his *Textbook* contain variations and modifications of former views, very unusual in such volumes, has only served to increase the confidence felt in his frankness and good faith.

His theories as to classification have been very generally accepted in Germany, France, and Italy, and have attracted much attention in America. It is true that in England they have been comparatively little noticed, but that is probably less due to any feeling of their unsoundness than to the very general neglect of the progress of clinical psychiatry which has prevailed of late years in this country.

We are not at present concerned, save indirectly, with Kräpelin's views with reference to other classificatory points. The most remarkable feature in his grouping of mental disease is the prominence which he has given lately to that division which he terms "dementia praecox."

Now the existence, either as a distinct entity (which Kräpelin does not affirm, though some of his followers do) or as a practically useful homogeneous clinical group, of any condition which can be called by the name "dementia praecox" does not, in my opinion, admit of proof, and is, therefore, here disputed. I would lay before the meeting the following grounds for my contention. The collective grouping of hebephrenia, katatonia, and the paranoid forms makes so vast a congeries that it is impossible to perceive any connecting link between the items of the mass, save in their origin at the age of adolescence and in their supposed unfavourable termination. So much is endeavoured to be put within one loose definition that the continent bursts and the contents escape from our grasp.

The two first forms—katatonia and hebephrenia—seem to me to have considerable value as types of mental disease. Well-marked cases have, as we probably all recognize, very remarkable facies. It does not detract from their value as types that they run into each other. A good case of katatonia seems at first sight so distinct, by its mental and physical symptoms, that we feel almost compelled to believe that here at least we have a specific disease. The studies of Bruce and others point strongly in this direction also; but our arrival at this conclusion is barred by the difficulty which intermediate forms interpose—forms that are many times more frequent than the pure and typical cases. The very term "dementia praecox," applied in common to affections such as katatonia on one hand, and, on the other, those forms of chronic delusional trouble which need much refinement to distinguish them from ordinary paranoia, would seem to indicate that the

striking mental and physical features of katatonia are not sufficient to constitute it a separate disease. The same may be said of hebephrenia. While its exquisite forms seem to establish at least a remarkable type, its margins are so indefinite that it eludes satisfactory definition.

But the chief difficulty in the clinical comprehension of dementia praecox is to be found in the paranoid forms. There is absolutely no criterion whereby we can distinguish these from paranoia unless we suddenly drop the method of inclusion which we have been hitherto following, and, reverting to the method of exclusion, hold that nothing can be called paranoia except the most exquisite pure and typical cases. This, however, will hardly save us from the followers of Kräpelin, one of whom has not long since, in the *Zeitschrift f. Psychiatrie*, freshly described at great length a case given by Kräpelin in his clinical lectures as an example of paranoia; but the disciple has outrun his master, for in commenting on this case he submits the view that it is really an example of precocious dementia. Even Lugaro exhibits the same tendency and makes a remarkable deduction in recently describing a case of an elderly man who, after an attack of depression with attempted suicide and consequent trauma capitis became liable to recurrences of delusions of persecution associated with auditory hallucinations. This case Lugaro seems to consider was probably one of precocious dementia. It is difficult to see what value is to be attached to a term so loosely used. For what I cannot but call the extravagances of some of those who have adopted and amplified his views it would, no doubt, be wrong to blame Kräpelin, but the danger which results from endeavouring to use as a scientific verity what is really at best a clinical term of convenience is shown in another direction by the statement which one has recently read with astonishment as an authoritative dictum, to wit, that dementia praecox is as distinct a disease as pneumonia!

With regard to origin at the adolescent period, the peculiarities of cases which begin at this epoch are largely the physiological characteristics of a particular period of mental growth exaggerated and distorted by disease, and are therefore not to be regarded as indications of a specific affection. Disease attacking an undeveloped organ has a natural tendency to interfere with its further development. This we see in every tissue from dental to cerebral. Hence it may often be that cases commencing at the period between puberty and adolescence, and not recovering, retain the impress peculiar to the adolescent mind when the patient's actual age is far past adolescence, but this does not go to prove that there is anything specific in the affection running this course.

And here two or three points must be noted. Kräpelin admits that any of the symptoms characterizing dementia praecox — verbigeration, playing with words, automatic obedience, stereotypy, catalepsy, grimacing, etc.—may occur in individual cases of other forms of insanity besides precocious dementia. Furthermore, though 60 per cent. of cases occur before the 25th year, yet cases may begin much later; nay, Kräpelin quotes with approval an observation of Schröder's of a case beginning at 56. Again, Kräpelin emphasizes the fact that in 20 per cent. of cases which overtly appear at the usual period, investigation proves eccentricity, etc., from the very earliest age. Finally, "causes" are described for dementia praecox as for other mental affections, and among these causes are typhoid, scarlet fever, imprisonment, the puerperal state, etc.

Surely these are very hard sayings. It is difficult to ask us to believe in the existence of a disease so little differentiated from everything else.

But it needs here also to be again pointed out that Kräpelin does not claim so much for his precocious dementia as do his followers. He expressly states that the existence of dementia praecox as a separate and distinct disease is doubtful, and he points to the prognostic advantage of stringing together what may after all later on prove to be separate affections by the common thread of their tendency to dementia.

I would, however, submit that the term "dementia" is practically the equivalent of incurability; for we are told that dementia praecox—though there are occasional cases of more or less perfect recovery—commonly terminates in one of eight different forms of mental breakdown, which time will not permit me here to deal with further than to say that they extend from chattering confusion to mere stupid apathy.

It is contended that the special sign of the special form of disease which we are required to acknowledge is to be found in a dementia which is apparent from the first, carrying with it the virtually fatal prognosis which we usually associate with this latter term. But when we try to analyse the new "dementia" it evades us. We are told that its chief characteristic is failure of judgement and a profound silliness, without extreme confusion, without destruction of the formal modes of thought, and without radical emotional disturbance. But, not to mention that none of these distinctions is perfectly absolute, inasmuch as all the conditions in question may be present episodically in other forms, the differentiation thus made neither, in my opinion, corresponds to clinical facts nor is it tenable theoretically. There is neither the remarkable engagement of memory, nor the failure of apprehension, nor the lack of any measure of true and false which characterize such a condition as general paralysis. There is, of course, failure of judgement in a sense; there is, of course, silliness in a sense; but, excluding the consideration that the most adult of all the mental functions—the judgement—might reasonably be expected to suffer in an ailment affecting the mind before its maturity, and occurring while that function is still imperfectly developed, we must observe that the judgement, etc., are not more engaged here than in every other type of insanity. Where is the judgement in a case of acute mania or agitated melancholia or paranoia or amentia? (The last-named form is admitted in Kräpelin's classification.) Is it not evident that this new form of insanity, so far from having definite indications of its own, is made up of negative symptoms—is, in fact, insanity, which is not mania, not paranoia, not melancholia, and not dysnoia? (confusion). Now, unless we believe that delusion creates the weakness of judgement which accepts delusion, unless we think that the want of a proper sense of the realities of life which occur in mania or in melancholia are due to the emotional condition that we find in these cases, how are we to accept the notion that symptoms common to all these forms constitute a separate disease when occurring without the strongly-marked emotional or delusional troubles which serve in certain states to mask the weakmindedness concurrent with all mental disturbance?

This term is open to the old objection to many classifications—namely, that they contain what might be termed in asylum slang "a refractory ward," into which everything goes that will not fit elsewhere. The disposition to deal thus with dementia praecox is very evident. It is growing to be a name for incurable insanity. But in a serious classification it is not allowable to include incurability in our definition unless we can point to definite destructive changes in the nervous tissue as the cause of the disease. For so far these are purely hypothetical.

Dr. Clouston's axiom—"Mental disease is a tendency to dementia,"* may be recalled, and it may be admitted that adolescent cases not recovering have, as that author pointed out, a special liability to run into dementia, using this term in its ordinary old-fashioned sense. Into the classification of which dementia praecox forms so large a feature secondary dementia is not admitted, while we are taught to believe that dementia is from the beginning the note of the three types—hebephrenia, katatonia, and the paranoid forms. An elaborate description is given of the flightiness, the oddities, the deficient attention, the incapacity for mental exertion, the unformed or unused judgement, and we are told that this is dementia; but it is submitted that of the adolescent types of insanity, so far as they are distinct, dementia, in any sense in which the word was ever used before, is not the essential characteristic. To see this it is only necessary to compare this so-called dementia with the break-up of the elementary thinking processes which occurs in general paresis or in dotage. In the latter two conditions the change may be likened to the paralysis which in one always, and in the other generally, occurs, but in "precocious dementia" as described there is rather an ataxy of the mind. There is inco-ordination, not paralysis. This view has not escaped Kräpelin, who uses these terms himself. It may be replied here that this is only the language of analogy, and that in fact inco-ordination may be a symptom of incurable disease just as much as paralysis. But this, again, implies that dementia is merely the equivalent of incurability. Let us leave abstractions for a moment and consider clinical phenomena with which we are all familiar.

You ask an adolescent what is his name, and he answers absurdly, "Trebor Mutton—at least, you know, Robert Lamb," giggling at his own wit. You ask a general paralytic,

* See that author's masterly presidential address, delivered at the annual meeting of the Medico-Psychological Association at Edinburgh in 1888, *Journal of Mental Science*, vol. xxxiv, p. 325.

and he answers correctly, "John White, and I've five children, and they all have new boots." It is surely a very crude form of psychical analysis that finds "dementia" in both these cases. The word thus used is so loose as to be meaningless, unless, indeed, one takes it as an equivalent for insanity. Truly both cases are insane; but, if there is any internal value in psychic symptoms—in other words, if they have any meaning beyond broadly indicating that an individual is of unsound mind—there is surely a wide difference between the state of the self-conscious boy who quite voluntarily plays with words to show his cleverness, and is in some sense quite aware how silly he is, and that of the man who in good faith, and profoundly unconscious of his mental state, reveals to us that all normal thought associations are dislocated or broken up in his mind. Must there not be a difference between the childishness which is affectation and the childishness which arises from a destruction of the adult forms of thought? But, you will say, the affectation is not in the fullest sense voluntary; it is itself the result of disease. True, and the same can be said of hysteria; but it is one of the commonest tasks of the physician to distinguish between hysterical and organic palsy. I do not wish to press the analogy further than it can fairly go, and I admit that it may be merely an analogy; but the distinction is equally profound in the pairs of cases, though it may be by no means identical in nature.

Thus it would appear that "dementia" is a very faulty term to use here. The qualifying adjective "precocious" is also to be deprecated. To call anything precocious merely because it occurs in early life is a perversion of terms, for "precocious" implies too early arrival at an inevitable end. It can only be used by poetic licence as equivalent to youthful. Neither are these mere verbal quibbles, for the epithets beg the question. It is admitted, however, that dementia praecox is not absolutely incurable, and we are even advised, as Wernicke has pointed out, to treat cases early so as to give them the best chance of recovery. It is, then, wrong to dub them by a name which may encourage neglect.

Fiat justitia ruat coelum, and if it be true that insanity occurring at the period of adolescence is an absolutely incurable form of premature mental decay, we are bound as men of science to say so, at least in the study; but unless we are prepared to demonstrate this proposition beyond the possibility of doubt, we are equally bound not to prejudge nor obscure the issue by question-begging epithets.

With regard to the history of this form of disease there is a word that I wish to say. It is singular how entirely Dr. Clouston's *Hereditary Insanity of Adolescence* seems to have been forgotten. In his edition of Skae's Morisonian Lectures on Insanity, delivered in 1873, and published in the two following years in the *Journal of Mental Science*, Dr. Clouston describes[1] under this name cases occurring in families where there is a profound neurotic taint, which breaks out without any immediate exciting cause between the ages of 18 and 25, and runs an unfavourable course. With his usual loyalty to his deceased friend, whose work he was editing and completing, Clouston takes pains to tell us that Dr. Skae, shortly before his death, had expressed his general adhesion to the doctrine of his successor as to the existence of this form, but to Clouston is due its earliest differentiation. It may be of interest, now that the subject has assumed so much importance, to summarize this observer's original account. "In very many cases the patients have been most promising and healthy up to the time of their attack. . . Such persons come to maturity sooner than usual. . . *In cases of this sort, almost more than any others, are the bright hopes and fond anticipations of parents blasted and crushed; for the majority of such cases never recover at all*, and those who do are very apt to have relapses. After a short attack of excitement the mania passes away, leaving the mental powers dulled and weakened, and, after a few irregular spurts of excitement or transitory brightenings up, the patient sinks into hopeless dementia. . . . *Such cases form a considerable part of the dements that fill our asylum wards.* . . . They only inherited brain power enough to carry them up to adolescence. . . . It is a sort of premature dotage of the brain between 18 and 25." This last phrase is very nearly an anticipation of the term "precocious dementia." I have italicized two other sentences from this description published in 1875. Kräpelin, in the seventh edition of his *Textbook*, published 1904, says: "Indeed these patients, since they do not rapidly die off and often spend their whole life in the institution, actually constitute the bulk of the insane who need care." Again, speaking of partial recoveries from hebephrenia, he says, in the same work: "Many industrious, and even often particularly gifted, pupils belong to this group, individuals who at the beginning justified the highest hopes, and yet afterwards, in spite of every effort and conscientious endeavour, to the disappointment of their teachers only accomplish with the greatest trouble what their far less highly endowed companions attain to with ease."

As far as there is a particular type of adolescent insanity, Clouston's description is as good as anything which has since appeared, and deserves the praise of priority. It is true that he seemed to think that hereditary adolescent cases always begin with a short attack of mania, but his views have become modified with regard to this particular, as is shown in his more recent admirable *Neuroses of Development*, in which this condition is again more fully dealt with.[2]

Now, although I cannot subscribe to the doctrine of precocious dementia, I still hold with Serbsky that a great deal of good has been done by its enunciation. The frequently ominous character of insanity appearing at the adolescent period, which had not wholly escaped the older observers, had been fully recognized by Clouston thirty years ago, and Hecker and Kahlbaum had given us the remarkable types, hebephrenia and katatonia. But the field of dementia had remained rather a desert, and, while I do not think that its exploration will reveal a gold mine in the shape of any new disease, I am confident that careful cultivation will show its fertility. Even ruin must have its laws, and the laws of the ruin of our structure form the science of pathology. I still hold, provisionally, the doctrine of secondary dementia, but I would wish to see a more complete study of the condition so named. Such study has been discouraged by the position given to dementia by most writers and teachers. It is a great merit for Kräpelin that he has so powerfully contributed to renew our interest in this subject. Granting that dementia is mere wreck, from the manner of that wreck we may deduce the nature of the forces that have produced it, the nature of the organism that has succumbed. There must be reasons, if we could only find them, for the special order in which the mental faculties are attacked in great groups of cases, and for the singular survival of certain mental powers that remain among the denudations effected by the moving weight of morbid action. The task is a difficult one; but here, as elsewhere in the history of cerebral physiology and of psychology, the dissections made by disease may teach us things relating to the intimate structure of the mind which we would have otherwise never guessed.

There is another and more immediately practical reason why we should be glad that the whole subject of dementia has been stirred up. Though dementia is as readily recognized as any other form of mental disturbance, the elements which compose it are difficult to analyse, and no affection is harder to describe. It wants the picturesqueness of other forms, and its qualities are largely negative. When a case is catalogued as having become demented or weak-minded, further details are rarely considered necessary, and it would often puzzle the person using the phrase to say on what facts the designation is founded.

In conclusion, therefore, I would say that considerable value attaches to the discussion of Kräpelin's doctrine of precocious dementia, though we may draw conclusions quite the opposite of his. First of all, in opposition to the notions current a quarter of a century ago, it is important to clearly recognize that all cases of mental disturbance are not favourable according to the youthfulness of the person attacked, but that a large number of people in whom insanity appears before the mind has fully developed suffer from the consequences of a permanent arrest of mental growth, do not recover, and exhibit during, perhaps, a life-long illness the peculiarities of the period of life at which their development stopped.

That there are any definite indications by which such unfavourable cases can be recognized or foretold, and that they form a definite, even though a multiform, group of mental diseases, must be held to be entirely unproven.

Classification is not a very important thing in the existing state of psychiatry, except for convenience in teaching, and the mere nomenclature of disease is of little value save as an index of our knowledge or ignorance. Taking note, however, of natural groups is of vast importance with a view to prognosis and to treatment, and it is therefore safer and more scientific to have no classification than one which confuses together under one denomination groups that have no natural

connexion, more particularly when such classification tends to establish counsels of despair.

References.

[1] *Journal of Mental Science*, vol xxi, p. 205, July, 1875. [2] *The Neuroses of Development*: The Morison Lectures for 1890. See also Dr. Clouston's Presidential address above referred to, where he says: "I have had many cases where there was no preliminary attack of mania or any other acute form of insanity. . . . The patients simply became less acute in emotion and judgement, less powerful in volition, less able to do their work and take care of themselves, and less social and more "silly," these symptoms gradually going on to marked dementia."

Dr. Dawson said that all would agree as to the desirability of reconsideration of the diseases grouped under the term "dementia." "Dementia praecox," a term first used by Morel to denote what would now be called "hebephrenia," was inadmissible. He would not even allow, in view of the age of some cases, that "praecox" could be used as equal to "youthful." The use of the term "dementia" for cases not necessarily hopeless proved the necessity for some convenient term for mental weakness, which did not connote incurability. The history of dementia praecox was interesting as showing the cycle through which the classification of insanity had gone. Kahlbaum announced his classification as based on a superior principle, a consideration of all the factors and not of symptoms only. Yet Kräpelin in his recent lectures appears to have gone back to the old mental classification, in that he considers the really essential symptom of dementia praecox to be a peculiar form of dementia. The speaker thought that, if forced to give a classification, as for teaching purposes, a simple provisional classification, such as the old one from mental symptoms, was alone admissible as yet. Their knowledge of insanity was like a not very strong solution from which crystals were being separated out and some redissolved, while some apparent crystals might only turn out to be "bits o' dirt." Whether dementia praecox was a crystal or a "bit o' dirt" remained to be proved. All they could say was that cases corresponding to the descriptions were not infrequent, but in the absence of any real knowledge of their pathology, they could only accept dementia praecox as a group of clinical and to some extent prognostic convenience, with the clear understanding that the state was not "praecox" and was not "dementia" in the ordinary sense of the term.

Professor Ernest W. White said he did not like the term "dementia praecox." "Premature dementia" seemed to him a better title for this mental decadence occurring between puberty and adolescence. During the last few years their terminology had been so saturated by the fertile brains of the Continent that with the crystallizing out of such imperfect forms as hebephrenia, katatonia, paranoia, and dementia praecox, "all made in Germany or France," they were at a loss to strictly define the various forms of disease with which alienists deal. Were they to include in dementia praecox all early dementias, except those of general paralysis—epilepsy alcoholism, mental stupor, and the secondary forms? During the past ten years he had seen many cases of premature dementia—both of the so-called paranoiac and hebephrenic varieties—among the better educated and highly-strung patients of the private class. Amongst the rate-paid it was comparatively rare, and he imagined in asylums fed from agricultural districts rarer still. It must be a disease of civilization in which the original nerve vitality of the individual was limited, and the powers of resistance proved unequal to the strain to which the brain was subjected before development was fully completed. He had had quite a number of these patients who in early youth had been exceptionally bright and clever, who had passed difficult examinations, excelled in music and in other ways, yet suddenly, and often without definite cause, had hopelessly broken down and become demented. He had carefully investigated the etiology of this disease, to find in nearly all cases a neurotic inheritance in town dwellers where hypercivilization obtained. The exciting causes arrived at had been—over-education, febrile disorders, influenza, and stress. He did not believe in self-abuse as an exciting cause; certainly he had failed to trace it. Many of these patients had come to hand at a relatively early stage of the disease, but although they had applied every recognized form of treatment, he did not remember any one patient who had really recovered. They got better for a short time, but the improvement was illusive and transitory. The prognosis was most unfavourable, and he was inclined to look upon it as an incurable malady. The defect was in reality a developmental one, where the nerve-cell vitality proved unequal to the stress of life.

Dr. W. J. König said he quite agreed with every word that had fallen from Dr. Dawson, and his clinical experience was in harmony with Professor White. There was undoubtedly a distinct class of cases that might be conveniently termed dementia praecox. Some of these were congenitally weak-minded; a greater percentage, however, exhibited a normal state of intelligence. Regarding the prognosis, he never ventured to give a definite opinion before one or two years of observation. He had never seen a case permanently recover.

Dr. David Bower expressed general agreement with the views of the previous speakers and his disappointment that nothing had been put forward to aid in making the diagnosis, which he had not been able to make till incurability had been established by lapse of time and till it was of no value from the point of view of prognosis.

Dr. G. E. Shuttleworth said that he had little light to throw upon the subject of debate. He had been on the look-out for dementia praecox among young patients for some years past, but had only come across one which had exhibited the classical symptoms set forth by Kräpelin and others. This was the case of a youth first seen three years ago, who at the age of 17 broke down mentally after a brilliant school career, for a time was maniacal, afterwards melancholic, and subsequently seemed to be sinking into a state of dementia. Sent from his London surroundings to a quiet country retreat, where he gradually improved, became interested in gardening and farming, and after a year became so much better that he was able to return to town, and he was now employed in an office. In this case there was a highly neurotic family history, and on investigation it was found there were certain peculiarities noticed even in early childhood, which gave rise to the suspicion that in fact there had been an original mental defect. Long ago the late Dr. Langdon-Down described similar cases as "developmental"—that was to say, cases in which there was an innate inherent defect, which, however, did not produce marked mental symptoms until the period of stress occurring at adolescence. Fundamentally there would seem to be as much amentia as dementia in the cases described. Reference had already been made to the admirable book published twenty or thirty years ago by Dr. Clouston on the *Neuroses of Development*, in which cases of a similar character were described. Last week the President of the Medico-Psychological Association had done much to demolish another "mental disease" manufactured in Germany (paranoia) and he thought Dr. Conolly Norman had similarly cleared their minds with regard to dementia praecox. It seemed to him that a scientific nomenclature of disease should not be merely based upon a collocation of symptoms, but be built up upon the more solid foundation of pathological observation.

Dr. W. Lloyd Andriezen said that dementia praecox was, in the early days of psychiatry (Pinel and Esquirol), unrecognized as such, being included along with idiocy under the term "idiotism" by French authors. Morel (1858) was the first to differentiate and use the descriptive term "dementia praecox," meaning thereby a premature form of dementia affecting youths and adolescents, characterized by early mental deterioration, and the occurrence of which was regarded as a "stigma of degeneration" in the special sense in which Morel used that term. The later work of Hecker, Kahlbaum, and especially Kräpelin, had done much to increase their clinical knowledge and give them clearer conceptions of its pathogenesis. He referred to the "substratum of deterioration" as the central feature of dementia praecox, and regarded the other phenomena—such as the acute and subacute states of hallucinatory confusion and of simple or katatonic stupor—as superadded phenomena due to the action of toxic agencies and other exciting causes. By the "substratum of deterioration" he meant the mental and moral deterioration which constituted, in combination with certain bodily neurasthenic symptoms (such as apathy, muscular atony, cephalalgia), the prodromal stage and the onset stage of dementia praecox. The subjects of dementia praecox in childhood frequently did exhibit peculiarities such as seclusiveness, impulsive acts and ties, precocious piety, great susceptibility (that is, undue reaction and vulnerability) to alcohol, while a few (about 8 or 10 per cent.) were feeble-minded from infancy. All these characteristics of early history, prodromes, and onset marked them out as a peculiar class, and their special inability to develop and manifest their disease during the epoch of puberty and adolescence (fifteen to thirty years) was another common feature of affinity. Dementia praecox differed from the vesanial—it was not a mania, still less a melan-

cholia, or a circular manio-melancholic disorder of mind. Delusions did not play a part in its pathogenesis. In the hebephrenic form there prevailed a dream-like delirium interrupted by impulsive attacks, but there was no evolution of delusions—slow, gradual, and systematic, such as characteristic paranoia, nor was there the mental lucidity of the paranoiac. He would not enter into further differential details, but stated that while he agreed with Kräpelin in recognizing the three forms of dementia praecox—namely, the hebephrenic, katatonic, and paranoid form (the last of which was, in his personal experience of the past twelve years, rare), he had met also with a simple form (dementia praecox simplex) and a criminal form (dementia praecox criminalis), but he would not further advert to these, as he had published a paper dealing with the subject last year. He believed the causes of dementia praecox to be, first, a psychopathic heredity; secondly, the stresses undergone during the cerebral and bodily changes, and rapid developments of puberty and adolescence; and, thirdly, in a minor degree, overstrain and masturbation. On the whole, therefore, though its morbid anatomy was imperfectly known, he favoured the use of the term as a proper designation for a characteristic group of affections.

Dr. Seymour Tuke protested against the use of so many terms, especially those which confused and gave new meanings to words that had long conveyed to their minds certain clinical conditions. Though fully recognizing how much they were indebted to the psychologists of other nations, there seemed no reason to burden their minds with everything they were told, especially if they thought they were already in possession of the facts under other names. A previous speaker described several cases, but they seemed to differ in very little degree from cases known to them as adolescent insanity and insanity of puberty, for they were all young, and they were well aware of such cases. He agreed with Dr. König that an absolutely pessimistic prognosis should not be given at once, though the cases as a rule did badly when thoroughly developed, and the outlook was generally far from promising.

Dr. E. S. Pasmore said that in the course of his experience in lunacy he found that some cases giving this train of symptoms, especially katatonia, were associated with sugar in the urine. In other cases, on going into a full history of the case, he found that some patients had had fits in early life. In using abstruse terms, they only hid their ignorance, and he was of opinion that all cases showing these trains of symptoms should be separately investigated, and probably they would find some physical basis.

Dr. Conolly Norman, in reply, said: With regard to Dr. Dawson's observations, Serbsky, in a recent article, mentions that Morel used the phrase *démence précoce*, but the speaker is not familiar with the work quoted. The term does not occur in Morel's great book published in 1858. Dehlendorf, on the other hand, says the term dementia praecox was first used by Pick in 1891. Whoever coined the word, Kräpelin has made it his own. In opening the discussion Dr. Norman had based his remarks on the last edition of Kräpelin's textbook, published this year. He quite understood Kräpelin's contention that the dementia is characteristic in its nature throughout, but he held that this is not in accordance with facts. The character given to this dementia was chiefly negative. In other words, we come back to the old rude prognosis: Mental troubles, with well-marked symptoms, are, generally, favourable; those with less definite characters, unfavourable. If toxic theories explain anything so large, various, and indefinite as dementia praecox, then mental symptoms are of no worth. But toxic theories are inconsistent with the notion of a disease which may be developmental in some cases, and which in others may be associated with causes so little akin as typhoid fever and the puerperal state. Professor White spoke of the influence of education and class in producing adolescent insanity. The passages which the speaker had quoted from Clouston and Kräpelin showed pretty clearly that the same thing was running in their minds. This can be fairly used as an argument that the disease is not a distinct one. The same reasoning has been made use of with reference to paranoia in connexion with the greater frequency of organized delusion among the educated classes. Dr. Norman was glad to express his hearty concurrence with Kräpelin's view that sexual depravity has little to do with this, or, indeed, any other mental disease. He gathered that Dr. König seemed also to notice the liability of the bright and clever youth to this premature mental decay, but Dr. König used the term "precocious dementia" rather as one of convenience than with a very definite meaning. He and Dr. Bower and others would appear to make their diagnosis from the course of the disease. But this is useless. It is easy to call a case "dementia" which does not recover and sinks into weak-mindedness, but the very knot of the question lies here: is this condition truly primitive, or are such cases merely secondary dementia? The prognostic value of the whole matter is contained in the answer to this. With reference to Dr. Shuttleworth's remarks on the value of work and employment in the treatment of adolescent cases the speaker entirely concurred, but he would point out this only confirms his view that there is no such thing as precocious dementia either in the sense of a developmental or toxic condition of inevitable and complete mental depreciation. Kräpelin's greatest opponent — Wernicke — had already argued in the same way with regard to treatment. Kräpelin distinguishes between amentia and dementia praecox, the former being on the whole very much the more hopeful. Replying to Dr. Andriezen, the speaker said that no doubt certain peculiarities of adolescent insanity were known even to the fathers of psychiatry, Pinel and Esquirol, and if they confounded them with symptoms of a very different value under the name of idiocy, he could not see that the latest classificatory refinement in the shape of dementia praecox was any more scientific, for the latter disease rested purely on symptomatic considerations, and was as ill-defined as any of the older terms. Here, too, we are met with the old stories of forms that mingle and of errors in diagnosis shown by the disease not running its prescribed course. As to the essential nature of dementia praecox, Kräpelin's opinions appear to be indefinite. He seems to oscillate between the notions that the condition is congenital, that it is developmental, and that it is an auto-intoxication, but inclines most strongly to the last. Dr. Andriezen has himself described five forms, and of these the paranoid is the rarest—rarer, apparently, than even the moral and impulsive forms. Now, Kräpelin tells us that katatonia and hebephrenia together constitute 5 to 6 per cent. of cases of dementia praecox, while the rest (94 to 95 per cent.) are paranoids! Either, then, there is no certainty what the paranoid form is, or its prevalence is indeterminate. Dr. Seymour Tuke speaks of adolescent cases in which with the marked symptoms—such as mutism—a remarkable amount of observation and sense remains. That is so in this as in so many other forms of insanity, but it does not indicate dementia—quite the reverse: therefore, this observation tends to confirm the speaker's opinion. Dr. Pasmore's reference to cases of dementia paranoides associated with glycosuria, convulsions in childhood, and trauma strongly suggest that we are here dealing with a merely symptomatic condition. The designation, in other words, is a mere cover for our ignorance. Finally, Dr. Mercier says in effect that dementia praecox is a mere name, and that if it does not mean merely insanity there is nothing behind the name. Dementia, being mere mental degradation, is the goal of all insanity, and comes more surely and more quickly the more severe the case. This is no doubt true, but it is, of course, the plea of the believers in dementia praecox that they have discovered a condition which serves as a criterion of severity from the beginning. This the speaker holds not to be proved, but he is not disposed to regard the failure of proof as a matter for raillery. On the contrary, he regards Professor Kräpelin's failure to frame a satisfactory classification—a failure no more complete than that of Skae and Clouston, than that of v. Krafft Ebing, than that of Dr. Mercier himself—as a somewhat pathetic evidence of the limits of our knowledge, which are so strait that the keenest observation and the most conscientious search after truth will not protect us from error when we endeavour to define what is at present quite insusceptible of exact definition.

THE CURE OF QUACKERY.

By A. T. Schofield, M.D.
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After the highly technical discussion to which we have just listened, the simple language of my paper will come with a sense of bathos. Not only so, but my subject being connected rather with the medical curriculum than with psychology proper, I must be allowed to express my sense of the courtesy of Dr. Mercier in allowing it a place in this Section. That it has a connexion with modern psychology at any rate will, I think, appear, though psychologists present may not wholly agree with the terminology I use.

Without further preface, therefore, I will submit what I can condense into ten minutes or so on "The Cure of Quackery." That the subject of quackery deserves the serious attention of the medical profession, and especially of the British Medical Association, no one conversant with the times can doubt; and if I can succeed, in the course of a few minutes, in throwing any light upon its perennial vitality, and indicating any effectual mode of dealing with it, the time certainly will not have been spent in vain.

We should first be clear what we are talking about under the broad word "quackery." I think we must include at the present time under this term not only the, in one way, more respectable and old-fashioned patent medicines, but the new mystic importations under high-sounding names from America—forms that are peculiarly objectionable to so many in that they often contain a pseudo-religious element. Besides these medical quackeries, we have surgical bone-setting and orthopaedic quacks of many varieties. But while including these, we must definitely and decidedly refuse to follow the lead of a few amongst us who would brand as quackery most "natural" remedies that were not used thirty years ago. Now the use of natural and hygienic remedies, among which we may include many forms of electric currents, electricity used as heat and light, plain or coloured, and applied in every conceivable way; mineral waters, open air treatment, sun baths, rest, massage, medical exercises, curative baths of various sorts—including soda-water and mud—hypnotism, etc., are not to be called quackery, nor those who prescribe them quacks, so long as they are used by the profession in a professional spirit and in a professional manner. But they one and all may come under the head of quackery when used by unqualified men, or if they are advertised and puffed unprofessionally, or connected with any sort of fraud or wilful exaggeration.

The medical profession is very sensitive on this point, and rightly so; but it is not just, as has been done, to give hard names to novel remedies simply because they are new in character, and may not involve the writing of a prescription.

It is unnecessary to occupy your time to-day with pointing out the vast extent of this evil of quackery, which has laid such a firm hold, not, as we should expect, only upon the uneducated and ignorant masses, but upon the cultured and educated classes, from whom come the best of our patients. I will venture to say, so widely spread is the evil, that there is no doctor sitting here to-day but what has suffered from it in some way. As we all know, too, it is of very old standing. Sir James Paget, in his day, bewailed the power of quackery in a pathetic letter to Sir H. Acland of this city,[1] which I will read. It is dated 1865. He writes:

"What unsatisfactory cases these are! This clever, charming, and widely-known lady will some day disgrace us all by being juggled out of her maladies by some bold quack, who by mere force of assertion will give her the will to bear, or forget, or suppress all the turbulences of her nervous system."

This illuminating letter mirrors unconsciously, as in a glass, the attitude of the medical mind in 1866, and in this respect it is not much changed now.

Sir J. Paget does not for a moment deny the reality, the value, or the permanency of the bold quack's cure. What he does do is to foresee that he and Sir H. Acland will some day be disgraced by it, and this, too, in the person of some educated clever lady, whom Sir J. Paget admits he is powerless to cure. It is a deplorable picture, and none can study it without feeling there must be something fundamentally wrong to render such an attitude possible.

What makes it worse is that the lady herself would care little whether she was cured by legitimate medicine or "juggled by mere force of assertion," so long as, in the very words of Sir J. Paget, she was given the "will to bear, or forget, or suppress all the turbulences of her nervous system."

Speaking of diagnosis, treatment, and cure, it is obvious the standpoints of the profession and of the public are very different. The last is of all-importance to the lay mind, while the first is the point to the medical man.

The evil, then, being admitted and deplored by all thoughtful men both before and since Sir J. Paget, let us consider for one moment what cure of quackery has been already suggested.

I think we are perhaps a little tired by now of the *laissez-faire* attitude and the prophecy that quackery will disappear when the people are better educated, for certainly the reverse obtains. Not only are we flooded with new varieties of the plague and our best patients taken, but the very crudest forms of quackery, such as charms and relics, etc., are being remarkably revived. No superstition seems too gross for educated people to adopt. It is useless, therefore, to wait for more general education as a cure for quackery. Dr. Hutchison, quite recently, speaking of the older quack patent medicines, said that doctors must "do what they could in their private capacities to fight the evil. The public looked to the medical profession for guidance in these matters, as in everything relating to health. If necessary the public must be educated in the elements of physiology! and the process must be begun in the higher ranks of life, for quackery was not confined to any particular section of the community; it was certainly as rife in Belgravia as in Bethnal Green. The upper classes believed in patent medicines and quackery to an extent which was almost incredible." Dr. Hutchison concluded by the admirable opinion "that it ought never to be possible for a patent medicine vendor to say with truth that he had succeeded in curing a case where a doctor had failed. That meant that practitioners must give more attention to the treatment of disease, and particularly to the treatment of minor ills, than they did at the present time."

I do not know how far it may be thought that the remedies here suggested are likely to be effectual. They include, in short—the better education of the educated classes in physiology, and that doctors should pay attention to the treatment of disease—specially of minor ills. The first suggestion seems to me futile and the other hardly intelligible nor indeed flattering to the profession; while both as cures of quackery are as a mop to the Atlantic.

Our Journal recently prophesied that quackery would continue to prosper "whilst the majority of mankind were unthinking in medical matters, and unable to throw off the occultism of the nursery."

We fear this does not bring us much nearer, for quackery is really not due to these agencies at all. The only plan worthy of even being called a remedy comes from the home of quackery—America.

The Post Office Department, together with that of Justice, have already analysed over 100 specimens of quack medicine and have found one cause at any rate of their popularity in that they contain from 16 to 44 per cent. of alcohol. They propose to refuse to allow bogus nostrums or those newspapers that advertise them to pass through the post at all: thus striking a strong blow at their existence. But we must go deeper still to find a cure. The continued success of quackery is due to two causes.

In the first place, after all discounts in the cause of truth have been made, there remain a large number of true cases of cure, and a surprising number of these have previously been to doctors in vain, and Dr. Hutchison's pious opinion that no quack ought to be able to say with truth "that he had succeeded in curing a case where a doctor had failed" is further from being fulfilled than even in Sir J. Paget's time.

In the second place, such cures as are effected, whatever the ostensible means used, ranging as they do from the mysteries of Christian Science and occultism to the simplicity of a bread pill, are one and all mainly due to the underlying therapeutic power of the unconscious mind over the body: a power which is practically ignored by our profession, and is not taught in our schools.

To establish this last statement I cannot do better than to quote from an Educational Number of our Journal, not long ago, which says: "Disease of the body is much influenced by the mind. . . . This is *not learnt* at hospitals." As regards cure, the *Lancet* observes (Edit. 1883): "In disease the therapeutic value of faith and hope, *though not in our textbooks*, is often enough to turn the scale in favour of recovery."

The British Medical Journal shows that mental therapeutics is not "learned in hospitals," and the *Lancet* that it "is not in our textbooks." These facts, however deplorable, would not in themselves be so disastrous were it not that we have in quacks a large and unscrupulous body of men, who, however ignorant they may be of medical science, properly so-called, are very clever and keen in using this remarkable power of the unconscious mind for their own ends, and so successfully that, as Sir J. Paget shows, they can sometimes effect cures where the cleverest doctor fails.

We are now getting to the root of the matter. The continued success of quackery, in spite of the spread of education and the advances in medical science, has been largely due to the great fact that medicine has not advanced, in this instance, in the direction that is needed. No "teaching of physiology," no "greater attention to treatment and minor disorders," or any palliation of this nature will affect quackery one jot.

But the recognition by the profession of the great powers of the unconscious mind over the body, of the scientific and practical value of mental therapeutics *will*: because it lets light into the whole *modus operandi*, and the jugglery of the bold quack is no longer a mystery to any. The only medium that dispels darkness is light. It is true, leaders of our profession have, in all ages, practically recognized the mental factor in medicine; but it is none the less true that it is generally ignored to-day, save by quacks: and hence the needless loss of so many of our best patients.

I advocate no special system of mental therapeutics, but I most earnestly desire to get the profession seriously to consider whether as honest men it is not their bounden duty to study and to seek to understand every great power concerned in the cause and cure of disease.

I have no time now to prove the reality of this power. I have written books to show it in every way I could,[3] and if further evidence is needed—as Sir J. Paget shows—we have only to look at quackery.

I ask in all earnestness: Is it right, is it scientific, is it fair that a medical man can go laboriously through college and hospital, sick ward and lecture theatre, and learn all that the medicine of to-day has to teach him and yet be left in such ignorance of psycho-therapeutics? The day is for ever past when a physician can bound his knowledge or his practice by the physical, and the recognition of the mental factor in medicine is no retrogression but a great advance in the study of medicine. A doctor should certainly be taught enough intelligently to answer these two questions, which should be ever before him at every sick bed: "What part does mind play in causing this disease?" and "How far can it be made to assist in its cure?" and this he is not taught at present.

It may be asked, How can this be taught? I have no time to answer this question here. Suffice it to say it is a most interesting field of study, but that a good textbook for it has yet to be written. Psychological medicine need not be chiefly confined, as now (and the fact speaks volumes), to the study of mind when it has become pathological, but could be extended to the investigation of its powers in causing and curing disease when sane, and to the general interaction of body and mind. Once the matter is considered, the first point that is pressed home upon the mind is the magnitude and importance of the subject.

A great reproach certainly rests at present upon the profession on account of their attitude in this matter; and they suffer a corresponding great loss, not to be measured merely in thousands of pounds, as it well might, but in their forfeiting the confidence of so many of their patients, who get cured, quite simply, outside the profession, by the application of definite laws of the powers of mind over matter, which doctors are never taught in their student days.

Darkness and quackery disappear as the true light and science enter; and the simple reason why the advance in medicine has affected quackery so little is simply because there has been little or no advance in this direction, which is the only one that could affect it.

Now, however, such an advance is specially needed, for a knowledge of pyscho-therapeutics lays bare specially the *modus operandi* of all these new psycho-cults, which, hailing from America, have so overrun this country, and, depriving them of all mystery, places the powers quacks ignorantly use on a scientific basis, and accords these powers their due place in the practice of legitimate medicine.

Critics and cynics may point out many difficulties, but, when they have said all, I think thoughtful men will see there is still ground for believing that psycho-therapeutics may yet form a new and profitable branch of medical study and lay the foundation for the downfall of quackery.

References.

[1] *Sir James Paget: Life and Letters.* Longman: 4th edition, p. 277. (Extract of letter to Sir H. Acland.) [2] British Medical Journal, December 26th, 1903. [3] *The Mental Factor in Medicine, The Unconscious Mind, Unconscious Therapeutics*, etc.

Dr. Edridge-Green said he was agreed as to the value of suggestion in the treatment of hysteria. It was not necessary to hypnotize the patient, but only to suggest that the disease should run a certain course.

Dr. James Stewart (Clifton) said his experience differed from that of the last speaker. Upwards of 40 per cent. of the inebriates he had had under his care had previously been in the hands of quacks.

Dr. E. S. Pasmore emphasized the fact of the importance of psycho-therapeutics in medicine, especially in its bearing on mental disease.

Mr. G. Stevens Pope did not desire to minimize the evils of quackery and quack medicines, but would desire to draw attention to one or two points. It was the incurable cases that went to the quack. These people had tried every specialist and legitimate source without relief, and then in despair went to the quack or used quack remedies, and in so going were a great relief to the physician, who had hitherto sent them to foreign spas and cures. The other point was that the regrettable mystery and false secrecy which often masked ignorance in their profession drove many people to quacks. It was always advisable that such people should be taken into their confidence.

In reply, Dr. Schofield said that the position of the second and other speakers did not seem materially altered with regard to quackery from its position in 1866, in the days of Sir James Paget. There was the same pessimism, the same voting these patients a nuisance, the same recommendation to send them abroad to travel, not so much with a hope of benefiting them as to get rid of them. Could it be wondered that, in the face of such confessed impotence, quackery should flourish? He did not wish further to take up the time of this Section, but should like, in conclusion, to emphasize his three points, which he considered of great importance in dealing seriously with this question. The first was that quacks used a real and valuable therapeutic agent—namely, the power of the mind over the body; secondly, this force was practically ignored in the profession, in its textbooks, hospitals, and schools; thirdly, psycho-therapeutics should become a definite branch of study in the medical curriculum. Might he, in conclusion, express a wish, and that was that the day was not far distant when the scope of this Section of Psychology would be definitely enlarged, and no longer practically limited to the discussion of the mind when insane, but extended so as to include the definite study of the mind when sane in relation to its powers in producing and curing disease.

LESIONS OF THE POSTERIOR COLUMNS IN GENERAL PARALYSIS.

By David Orr, M.D.Edin., and R. G. Rows, M.D.Lond.

In this paper we give a preliminary note of a study of the lesions in the posterior columns of cords taken from the following cases:

1. General paralysis with acute and constant excitement.
2. General paralysis with bed-sores.
3. General paralysis with right-sided pyopneumothorax.
4. General paralysis with staphylococcus infection.
5. Two cases of general paralysis with convulsions.
6. Two cases of acute general paralysis.

The spinal cords from these cases were treated by the Marchi method, each segment from the lowest sacral to the upper cervical being cut in serial section.

The Marchi method was chosen as being the most delicate means we possess for determining the early degenerative changes in the fibres. At the same time a modification of Weigert's medullary sheath method was used to demonstrate sclerosis if present.

It has not been our object in this work to study the degenerations in the motor tracts, as these are well recognized, but we have devoted special attention to the degenerations found in the posterior columns. Here we have constantly found a definite degeneration varying in degree in the different cases, and as the work has developed, the importance of a correct understanding of the origin of these lesions and the light which they throw upon the etiology of tabes have been impressed upon us.

As the lesions had in no instance reached the stage of secondary sclerosis, their starting-point has been without difficulty determined.

It is this starting-point and the regions occupied by the degenerated fibres which we propose to show you to-day.

Conclusions.

In every case which we have examined we have found the following constant features:

1. The portion of root between cord and posterior root ganglia shows no degeneration.

2. Degeneration of the internal division of the sensory root in its intramedullary path, commencing at the point of entrance into the cord.

3. The external division, or Lissauer's area, remains almost intact.

4. The collaterals and terminals passing into the grey matter share in the degenerative process.

5. The long fibres derived from segments situated low down in the cord are also affected, as shown by the presence and position of the degenerated fibres in Goll's column in the upper parts of the cord.

We believe that the sensory fibres are specially vulnerable just where they enter the cord owing to the absence of the neurilemma. At this point, too, the medullated sheath is thinned, and, according to some authorities, is absent Therefore toxins, either circulating in the cerebro-spinal lymph, or ascending by the nerve sheaths from the limbs, must attack the fibres at this point. It is now recognized that the lymph in the nerves ascends towards the cord, and from the posterior roots passes into the posterior columns, there to pass upwards as well as forwards towards the central canal. This point has been recently most thoroughly worked out by Homén by means of the injection of organisms into the sciatic nerves of animals. Further, it has been found that, with the presence of organisms in the capsule of the root ganglia, the toxins spread up the perineural sheath without attacking the nerve, but that degeneration takes place immediately beyond the point at which the neurilemma is lost. But, although the fibres are attacked at this point, it must not be forgotten that in their course upwards in the cord they are still exposed to the toxins in the ascending lymph stream.

As to the question of the nature of the degeneration, the absence of any change in the roots between the ganglia and the cord entirely excludes the view that the above-described appearances are secondary to nerve-cell destruction or to any lesion of the nerves in their extra-medullary path. The degeneration is therefore a primary one, due to the direct action of toxins on the myelin sheath and axis-cylinder. Owing to the damage inflicted on this latter, however, there becomes added to the original primary degeneration a secondary one.

If we compare the areas affected in our cases with those seen to be degenerated and sclerosed in early tabes, we find that they coincide anatomically, both as regards their position in the columns and as regards the degeneration of the terminals and collaterals in the grey matter. As our cases show no sclerosis, and as we have been able to determine absolutely the starting-point of the degenerative lesion, not only in each case but in each segment of the cords examined, we hold that tabes dorsalis starts in the same manner, and is a chronic affection of the sensory fibres, due to the primary influence of a toxin in the posterior lymph system which attacks the nerves at the vulnerable point. The fibres affected must be assumed to be weaker than those which are not, but the lesion spreads to the latter owing to the secondary changes induced by the degenerative products. Thus degeneration slowly merges into sclerosis.

HOW TO TAKE A FAMILY HISTORY.

By E. S. Pasmore, M.D.,

Medical Superintendent, Croydon Mental Hospital, Warlingham, Surrey.

[Abstract.]

Heredity is considered to play a very important part as the predisposing element in many pathological states. At present there is no system or rule by which an accurate and reliable family history can be taken. I shall endeavour in the following short paper to point out and to illustrate by diagram an easy method of taking such a history in a complete manner.

The object of my paper to-day is not to discuss what classes of diseases are hereditary, but rather to point out a ready means by which a succinct and reliable history may be obtained. Many students, and even general practitioners, have remarked to me the absence of any system of how to go about getting a family history, where to start or where to end. I have during the last few years been accustomed to proceed on a plan which I have formulated for my own convenience, and which I have found easy to remember.

It is my intention, therefore, to describe this plan for those who may find difficulty in that direction, and may therefore find some use in its adoption.

The three chief characters to bear in mind in taking a family history are of course:

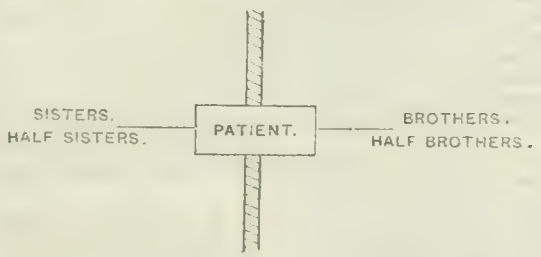
1. The patient.
2. The father of the patient.
3. The mother of the patient.

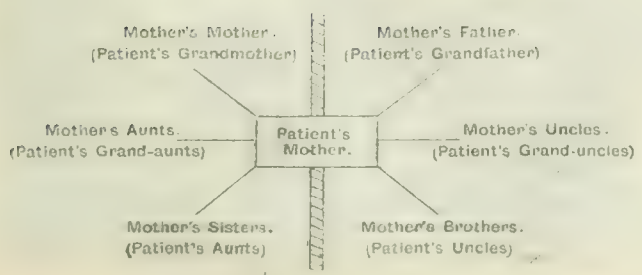
With these as our starting-point we can build up our history at will. I have formulated a scheme for remembrance in the following manner: I put down the patient, patient's father, and patient's mother first. I now draw a vertical line through each, and on the left side of the line I place all the female collateral relatives, and on the right-hand side all the male collateral relatives (see figure below).

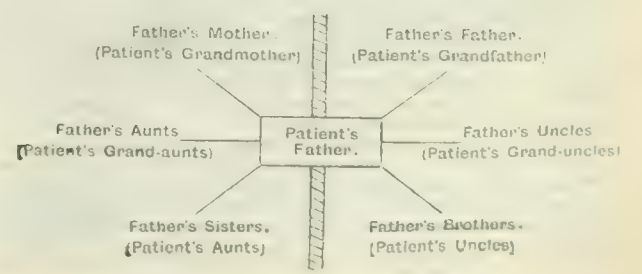
Thus in taking a family history all one requires to remember are the father and mother of the patient, and with these two starting-points we proceed to go through a systematic history. We ask first of all about the father or the mother, and go through the female possible relatives, and then take the male possible relatives, noting the information obtained under each head in its proper position.

Having taken the history of the father and mother, we proceed to the patient himself, and ascertain his male and female collateral relatives—that is, his brothers and sisters, not forgetting half-blood relations.

It will be seen from the diagram that one can trace a family history for three generations in the direct line, and in my experience of the taking of such histories (and I have during the last ten years taken nearly 1,000) no reliable data can be gained beyond the third generation.







SECTION OF DERMATOLOGY.

THOMAS COLCOTT FOX, M.B., President.

DISCUSSION ON THE TREATMENT OF PRURITUS ANI.

I.—MALCOLM MORRIS, F.R.C.S.Edin.,

Consulting Surgeon to the Skin Department, St. Mary's Hospital.

MR. MALCOLM MORRIS said: Pruritus ani scarcely needs definition. For the purposes of discussion, however, it may be well to state that I limit the term to a condition characterized by intense itching about the lower orifice of the bowel, sometimes extending internally an inch or so up the rectum, and externally affecting the circular area of skin puckered by the action of the little muscle called by the late Professor Viner Ellis the "corrugator cutis ani."

Etiology.

Pruritus is often a symptom, sometimes an essential disease. As a symptom, it may depend on general or on local causes. Among the former the most prominent place should probably be given to gout; pruritus ani not infrequently alternates with acute attacks in the toe. It is common in persons who suffer from disorders of the digestive, and especially of the chylopoietic, apparatus. Certain articles of diet, such as shell-fish and strawberries, are apt to give rise to it in some persons. In others, tobacco has a like effect. Often, too, pruritus ani is as it were, a by-product of rheumatism, albuminuria, and diabetes. Among the local causes the most frequent are piles and a constipated state of the bowels; fissure, fistula, ulceration, foreign bodies, worms, parasites, especially pediculi, growths, irritating discharges from the bowel or neighbouring parts, and diseases of the sebaceous or sweat glands, all have a place among the ætiological factors. Cutaneous diseases, such as eczema, psoriasis, erythema, herpes, ringworm, folliculitis or boils, either having their starting-point in the part or spreading thereto from neighbouring regions, may produce the symptom or aggravate it when already existent. Lastly, pruritus ani may be a reflex symptom dependent on disease of the genito-urinary apparatus (uterus, urethra, prostate, bladder, etc.), on pregnancy, on gall stones, on tumours in the rectum or in the pelvis—in fact, on anything that obstructs the venous circulation in the lower abdomen and causes congestion of the veins of the pelvis or lower part of the intestine. As an essential disease there is little to be said about it. It is a sensory neurosis often originating in emotional disturbances of a depressing character, or in a sense of failure or unfitness for the duties and struggle of life. Pruritus ani may also be a special manifestation of abnormal excitability of the nerves of the skin. Bronson who has given much attention to the general subject of itching, says that the most important predisposing cause, whether it is an essential disease or a symptom, is hyperæsthesia. The general diseases producing it may be idiopathic neuroses, such as hysteria or hypochondriasis, and other affections of the nervous centres, or general nutritive diseases affecting the nervous system secondarily, such as arthritism or diabetes mellitus. Physiologically the tactile sensibility of the anus is very great. A. Pilliet[1] has proved the presence of Pacinian bodies in the mucous membrane of the part.

It has been said that pruritus ani may occur at any age. There is a certain relation of particular causes to particular ages. Thus, in children the itching is likely to be due to worms; in young men from congestion of the rectal veins by sitting at work and study, or to gonorrhœa, balanitis, or other affections of the genitals; in young women to excessive menstruation, leucorrhœa, or other vaginal discharge; in middle age to piles, fistula, constipation, prostatic disease or urethra stricture, or to mental disturbance from the worries of life or the anxieties of business; in women at the climacteric to one or other of the manifold disorders, reflex and purely neurotic, of the menopause; in old age to sluggishness of the circulation leading to venous stagnation, the pressure of growths, or the irritation of ulcers.

Symptomatology.—Whether pruritus ani is a symptom or a disease, the itching is generally of such intensity as to lead the patient to seek relief in violent scratching, with the result that more or less excoriation of the skin and mucous membrane, and secondary lesions—pustular, ulcerative, or eczematous type—are produced. In many cases, especially in persons of markedly neurotic temperament, the itching may be so severe as to make life a burden: the patient secludes himself from society, he is worn out by loss of sleep, and his mind may become more or less unhinged. The itching is often paroxysmal, being especially liable to exacerbations at night when the patient becomes warm in bed. The complaint attacks both sexes pretty impartially, but shows a certain predilection for males. It may occur at any age, but is most common in middle-aged and elderly people. It affects the well-to-do more frequently than the poorer classes. This is probably due to the fact that in many cases, even when an objective cause is answerable, there is a neurotic element in the disease. Another reason is over-indulgence in highly-seasoned food, alcohol, stimulants, coffee, etc. Perhaps also it may to some extent depend on the less perfect emptying of the bowel, which is the result of the unphysiological position imposed on society by the seats of waterclosets as ordinarily constructed. A person who stands on the seat or performs the act of defæcation in the natural, that is to say the crouching position empties the bowel in a manner at once more complete and more cleanly. An unclean condition of the anal region may be the direct cause of pruritus, and is often a predisposing factor. This is seen in cases in which for any reason the power of the sphincter is diminished, the mucus from the bowel escapes involuntarily and dries on the skin, causing irritation. The majority of cases are, in my experience, due to the irritation caused by decomposed sweat in those who perspire profusely, or to excessive sebaceous secretion leading to the development of eczema.

The objective symptoms of pruritus ani, apart from conditions which either produce the itching or depend on a common cause therewith, consist in secondary lesions (excoriation, fissures, etc.) caused by scratching. It is needless here to describe eczema and other skin diseases as they affect the anus. They are known to all, and any one of an inquiring mind will find the facts fully set forth in any textbook of dermatology. In ordinary cases of pruritus ani the affected area looks red and often sodden, or in old-standing cases the skin may be roughened and thickened, its surface broken by radiating cracks the anus sometimes presents an infundibular appearance (Hyde and Montgomery). A secretion having a peculiar, unpleasant smell is frequently present. According to Adler[2], a characteristic symptom is loss of the natural pigment of the part. Allingham also notes the appearance; but it must, I think, be exceptional, for I have rarely observed it. In some very old cases, where the lesions caused by scratching have been somewhat severe, a white, parchment-like condition of the skin about the anus is left. In cases in which the pruritus has been due to eczema a darkening of the natural pigment is left, as is observed in the leg and elsewhere.

The diagnosis of pruritus ani "imposes itself," as the French say; the only difficulty that can arise is in discovering the cause. For this the most comprehensive general and local examination will often be necessary. A characteristic feature of the neurotic form is the eagerness of the patient to submit to local inspection; he will almost pull himself asunder to give a good view of the seat of the trouble. Occasionally in such cases it is possible, as in vaginismus, to localize the centre of disturbance in a particular spot, doubtless corresponding to nerve endings; the mucous membrane is often excoriated there.

Treatment.

Pruritus ani is often very refractory to treatment, but the practitioner should never despair, as few cases are incurable, though many will tax his therapeutic ingenuity to the uttermost limit. The first thing to be done is to seek for the cause, and remove it or neutralize its action. Each group of cases—that is to say, those dependent on constitutional disorders, those produced by reflex disturbances, those due to a local condition, and those that are the expression of a neurosis—must be dealt with by measures appropriate to the causation. There are certain principles of therapeusis applicable to each of these several groups; but in the details of treatment each case must be dealt with in accordance with its special features and with the idiosyncrasy of the patient. In all cases, therefore, a careful examination, general and local, must be made before any system of treatment is instituted. Any disorder of the liver, the stomach, the intestine,

[1] Note sur la Presénce des Corpuscules de Pacini dans la Muqueuse Anale de l'Homme, *Bull. de la Soc. Anat. de Paris*, 1892.

[2] *Philadelphia Polyclinic*, 1895, N. S. 9, 45, and 10; quoted by Stelwagon, *Treatise of Diseases of the Skin*, 1902.

the genito-urinary apparatus, must be suitably treated; gout, diabetes, rheumatism must be dealt with by appropriate medicines; and local conditions causing or keeping up irritation must be rectified. In all cases it will be well to begin by regulating the bowels and recommending a bland but nutritious diet. Condiments, rich sauces, highly-seasoned dishes and game should be forbidden. Abstinence from alcohol should be insisted on, or, if a stimulant seems to be required, its use should be sanctioned only in the strictest moderation. Coffee should also be placed on the dietetic index.

Auto-intoxication must be prevented by antisepsis of what it is now the fashion to call the intestinal "cesspool." Short courses of calomel in small doses are particularly useful; if given at night, with some saline in the morning for a few days, will clear the canal of toxines. Ichthyol (5 gr.) taken on an empty stomach in the morning and late at night, is useful for the same purpose. Salol is also a useful intestinal antiseptic. The bowels should afterwards be kept regular with cascara sagrada, or any laxative that may suit the patient better. Aloes is contraindicated because of its irritating action on the rectum. Tonics are called for if the appetite is poor, the patient depressed, and nutrition is failing. Quinine, arsenic, and nux vomica should be given according to circumstances. Sedatives and narcotics should never be given, except in response to the clearest indication. Opium is especially unsuitable, as in certain persons it has a tendency to cause itching. If the pruritus is so severe and continuous as, like Macbeth, to murder sleep, succus conii ℥j three times a day, or bromide, with a little sulphonal or chloral, at night, may be cautiously allowed. Thorough flushing of the system with large quantities of weak alkaline waters is often a potent aid to local treatment. In certain cases in which other treatment has failed a course at Harrogate, Strathpeffer, Bath, Buxton, Contrexéville, Vichy, Ems, Carlsbad, or Marienbad often proves successful.

The first principle of local treatment is to remove any cause of irritation (piles, parasites, discharges, etc.) or skin affection that may be present. It would be superfluous here to describe methods of dealing with conditions familiar to all practitioners of medicine. It is with the treatment of pruritus as such that we are concerned here. The most scrupulous cleanliness must be enjoined. In the folds of skin about the margin of the anus epithelial débris and small portions of faecal matter are apt to lodge. The use of paper in the ordinary way is quite insufficient to clear any of these accumulations. Indeed, Adler holds that the use of harsh paper, especially if printed on, is a cause of pruritus. The recommendation to wash the part with soap and water after every evacuation, which is found in a medical work of considerable authority largely read by the public, is a counsel of perfection which is obviously impossible to carry out unless the patient devotes himself to the care of his anus with the singleness of purpose which a hermit bestows on his soul.

It would be difficult and somewhat expensive to carry about a supply of sponges. Pledgets of cotton wool dipped in the pan of the watercloset when it has been allowed to refill after emptying does very well. The anal region should also be thoroughly cleansed as part of the routine of the morning tub, and it should also be washed at night with warm water and coal-tar soap. The application of water as hot as it can be borne is one of the most efficacious methods known to me; the patient should either sit in a hip bath for five or ten minutes or should bathe the part with a sponge wrung out of hot water. Oatmeal, bran, borax, or carbonate of soda may with advantage be added to the water. Some patients find that very cold water gives greater relief. In persons who sweat profusely carbolic acid lotion (1 in 60), saturated solution of boric acid or permanganate of potash lotion should be used.

After bathing a soothing or cooling remedy should be applied. The names of substances recommended for the purpose is legion—a sure sign that none is infallible. It is impossible for the most experienced practitioner to tell beforehand what will give relief in the particular case before him. He must, therefore, proceed tentatively, and be prepared, if need be, to run through the whole list of known medicaments till he hits on the one that produces the desired effect. Local remedies for pruritus ani may be classified under three heads—anodyne, antiseptic, and caustic. I should abuse your patience if I were to attempt to give an exhaustive list of applications that may be used in the treatment of this troublesome affection. I will only rapidly pass in review those on which my own experience has taught me chiefly to rely.

Among anodynes, I am disposed to give the place of honour to cocaine, which in my own practice has been the means of curing many cases that had proved refractory to every other method of treatment. It is most conveniently applied in the form of a suppository containing half a grain of the substance, or of an ointment (4 per cent.), with lano-vaseline or boric-acid ointment as a base. It may also be used in lotions with glycerine. A word of warning must here be uttered as to the danger of allowing the patient the opportunity of using this agent too freely or for too long a time. The substitution of the cocaine habit for pruritus ani would be expelling a devil to bring in a worse one. Menthol has a cooling effect that is very grateful to the patient. It may be combined with cocaine in an ointment, or it may be applied in a solution of 10 gr. in 1 oz. of dilute alcohol. It should be borne in mind that the primarily cooling action of menthol is apt to be followed by heat and tingling. An excellent sedative for irritation about the anus is a strong solution of bicarbonate or bisulphate of soda frequently applied in a poultice (Allingham). Carbolic acid often acts like a charm; it may be used either as a watery solution (gr. ij to gr. vi to ℥j), or a liniment containing 1 part of carbolic acid in 19 of olive oil. Compresses soaked in these applications may be used at such intervals as the patient's sensations may render necessary. Carbolic acid may be combined with cocaine either in an ointment or a lotion, or with mercury in an ointment. The following formulae have proved useful in my hands:

Acid. carbolici, mxx.
Cocaine hydrochlorat., gr.x.
Vaselin., ℥j
Fiat ung.

Acid carbol., ℥ss.
Cocainae, ʒss.
Aq. laurocerasi, ℥j.
Aq. rosae, ℥ij.
Fiat lot.

Acid. carbol., ℥ss.
Hyd. perchlor., gr.ij.
Ol. olivae, ℥ij.
Ung. zinci oxid. benzoat., ad ℥j.
Fiat ung.

Tarry preparations are useful. The sapo carbonis detergens may be used for ablutions; the lotio picis carbonis may be employed in calamine lotion as a vehicle (℥j of the former to ℥viij of the latter). Tar, combined with bismuth, may also be applied in the form of an ointment, composed as follows:

Ung. picis liquidae, ℥j.
Bismuthi subnitratis, gr.xx.
Adipis, ad ℥j.
Fiat ung.

Compresses soaked in oil of cade are often very useful. Peruvian balsam in vaseline is a good application. A suppository of extract of belladonna (⅓ gr.) at bedtime, will often prevent the nocturnal exacerbation. Painting the part with lead in spirit and water is a soothing remedy. Nitrate of silver in sweet spirits of nitre (gr. iij to ℥j) is often useful. Among other sedative remedies which may be tried are menthol, ichthyol, chloral hydrate, borax, benzoin, and tincture of iodine. When piles are the cause of the trouble, the unguentum gallae will often relieve the itching as well; painting or injecting with hamamelis is also useful for the same purpose. Oxide of zinc is best applied in the form of a cream as follows:

Zinci oxidi, ℥j.
Lanolini, ℥ij.
Ol. olivae, ʒss.
Aquae calcis, ʒss.

Chloroform ointment is recommended by Ball.[3]

Among antiseptics, the most useful is mercury. A very convenient form is the oleate, which may advantageously be combined with oleate of morphine. An ointment composed of calomel ʒss to an ounce of vaseline is also serviceable. Black wash is particularly useful; it may be used either alone or in a vehicle of mucilage or tragacanth as follows:

Lot. nigrae } āā ʒiv.
Liq. calcis }
Mucilag. tragacanth, ℥j

Another useful mercurial lotion is the following:

Hyd. perchloridi, gr.ij.
Glycerin i, ʒss.
Aq chlorof., ad ℥viij.

Ammoniated mercury in benzoated lard (gr.xx ad ℥j) is also valuable. Calomel in powder may render excellent service.

An American physician, Dr. S. D. Johns, has had excellent

[3] *The Rectum and Anus.* Ch. xxvi, p. 402.

results from the local application of calomel. The patient is directed to wash the anus after every movement of the bowels, and, after drying the part with absorbent cotton or soft linen, apply about 20 grains of calomel with the fingers. Dr. Johns says he has never failed to cure a case with this treatment. He cured one man who told him he had been afflicted for forty years. He supplements the local treatment with small doses of Epsom salts.[4] "The calomel stops the itching at once, and the patient is well in a couple of weeks." Orthoform powder is a useful application.

Of caustics nitrate of silver is the most generally useful. It may be applied in solution ℥ss to ℥j of spiritus aetheris nitrosi. The actual cautery may sometimes be applied with great advantage. Sir W. Mitchell Banks says he has used it in several cases.[5] The patient is anaesthetized and the affected surface lightly run over with the big bulb of a thermo-cautery, heated to a white heat, so as to produce a superficial burn. The operation is followed by the application of a lotion of carbonate of soda. Deep cauterization is not required, only "a superficial fizzling." If there is much thickened skin it should be burnt or cut away. Hyperaesthetic spots or nodules should be destroyed with galvano-cautery or excised. If there is spasmodic tightness of the sphincter these measures may usefully be supplemented by stretching the muscular ring or forcible dilatation of the orifice. Continuous pressure on the sides of the anal passage may be kept up by wearing an ivory or bone plug provided with a shield to prevent it slipping into the bowel. This appliance often makes life tolerable in elderly people. The passage of a cold rectal sound once or twice a day has been recommended.

The patient should be kept cool in bed. He should sleep between linen sheets, under a cradle if need be; this may easily be ventilated by two shafts of paper communicating at each side with the air outside the bed.

Static electricity was recommended by Leloir: strong galvanic currents are said to have given good results, and high frequency currents have also, it is said, proved useful. I think it right here to sound a note of warning against over-treatment. It is impossible to lay down exact laws for application of local remedies: the practitioner must be guided by the character of the lesions, and by the presence or absence of causative or complicating skin diseases, especially eczema. Here, as elsewhere, the rule is to soothe, never to irritate. The only general formula for the treatment of pruritis ani that can be given is scrupulous cleanliness, frequent bathing with hot water, followed by gentle drying, and the application of a powder like bismuth, oxide of zinc and starch, or orthoform. This hygienic routine, combined with the use of one or other of the antipruritic remedies that have been mentioned, will generally conquer the trouble. But the right remedy can be found only by trying all things and holding fast to the good. Perseverance will be necessary on the part of the doctor as well as the patient.

In the purely neurotic forms of pruritus ani the less local treatment is used the better it will be for the patient. Moral suasion—by which I mean arousing the sufferer to a sense of his duties and responsibilities, and encouraging him to go forward bravely in the battle of life—will often do more good than any kind of medication. Much tact and not a little firmness will be needed in dealing with these patients, who have generally little or no self-control. They will lie in bed and curse their fate, and are in danger of becoming moral or social wrecks. In such cases I have found a little "straight talking" more efficacious than drugs. Tonics may be required in some cases; quinine and strychnine are probably the best. Feeding up and change of scene will also do good. But, above all, the patient must not be suffered to wallow in self-abandonment to his ignoble affliction. I know of a few cases in which hypnotic suggestion has been tried with success by my friend Dr. Milne Bramwell in the neurotic form of pruritus ani.

One word by way of conclusion: the disease is trivial in itself, but it is by no means a trifle to the patient. The practitioner will be most successful who gives the greatest attention to detail, studying each case as a distinct problem, and leaving untried no resource of his art that can help in its solution.

II.—Dr. ELIZA WALKER DUNBAR, M.D., L.R.C.P.I.,
Senior Surgeon, Bristol Private Hospital for Women and Children.

Dr. DUNBAR said that pruritus ani sometimes followed influenza, alternating with other neuroses, and she had found antipyrin often efficacious. Pruritus ani always took a long time to cure. It was often difficult to find the cause, especially in cases of mental and emotional trouble. Such troubles could not always be talked of, but if it was explained that one did not want to know the nature of the trouble but only the fact of its existence, one might arrive at the truth. The patient must have some kind of application, and sulphate of atropine ointment, 4 gr. to the ounce, was one of the best.

[4] *Therapeutic Gazette.*

[5] The Treatment of Pruritus Ani. *Retrospect of Medicine*, 1886.

III.—GEORGE PERNET, M.R.C.S Eng., L.R.C.P.Lond.,
Assistant to the Skin Department, University College Hospital.

MR. PERNET did not wish to add to the long list of formulae or drugs which had been mentioned in the discussion, but he would call attention to the value of the bicycle in some cases. Where constipation was present he had observed that gentle bicycling exercise was beneficial.

DISCUSSION ON THE COMPARATIVE VALUE OF THE OLD AND NEW METHODS OF TREATMENT OF LUPUS VULGARIS AND CERTAIN OTHER SKIN DISEASES.

I.—By J. H. SEQUEIRA, M.D.,
Physician to the Skin Department, London Hospital.

DR. SEQUEIRA said: The very fact that your Council has thought proper to sanction a debate upon phototherapy and radiotherapy, and particularly upon a comparison of their efficacy with that of the older methods of treatment, is an indication that the exact position of these measures in modern therapeutics is at present a little indefinite. At a meeting like this, where we have a unique opportunity of comparing our experiences, we ought, I think, to be able to make a notable advance in the settlement of this question.

Lupus Vulgaris.

I propose to direct attention first and chiefly to lupus vulgaris. We are agreed that it is due to a local bacterial infection, and, as such, that it is only possible to cure it by the complete removal or the sterilization of the infected area. We must remove or sterilize not only the visible diseased tissue, but also the surrounding zone already invaded by the specific organism, but not yet presenting the characteristic lesions. In the case of a disease commonly affecting conspicuous parts, like the face, cosmetic considerations must have due weight, and if there is more than one efficient measure, that which causes the least disfigurement must be chosen. In determining, therefore, the value of any method of treatment we have to ask two questions: (1) Is it curative? and (2) What will be the amount of disfigurement? Where the disease is situated on inconspicuous parts, such as the trunk and limbs, the second question becomes of minor importance.

Excision.

The most radical method is undoubtedly the complete ablation of the diseased area, and when the lupus is diagnosed early, where a complete removal of the whole of the obviously affected area with a wide margin of healthy skin is possible, and primary union can be obtained, the result is good. But in most cases when first seen, at any rate by the dermatologist, the disease, particularly when the face is involved, is of such dimensions that thorough ablation is only possible at the expense of grave disfigurement. Even the most careful grafting is not altogether satisfactory from the cosmetic point of view, the graft being of different colour to the surrounding skin. The want of success in many cases of excision is doubtless due to the fear of doing too much, the surgeon naturally trying to limit the amount of disfigurement. Even in the most skilful hands excision is by no means always curative. Lang himself only records 48 per cent. of cases without recurrence (Congress, Paris, 1900). I would limit excision to cases of lupus of the trunk and extremities.

Scraping in the past has probably been the method most commonly adopted in this country for the treatment of lupus vulgaris, and all will agree that the results in the main have been most unsatisfactory. We all know of cases where repeated scrapings have failed to check the disease; I have

had under my care a girl of 15 who had had as many as 50 such operations.

The object of scraping is to remove the lupus nodules. The margin of infected tissue around them, but not visibly diseased, is, as a rule, untouched, and when we remember the ruthless way in which lymphatic spaces, the natural channels for tuberculous infection, are torn open, and the want of care in sterilizing the curettes between the removal of individual nodules, it is not surprising that the disease so often spreads after operation.

As a curative measure scraping cannot be recommended. I would limit its use to the removal of exuberant granulations, and possibly to the destruction of nodules imbedded in scar areas. It should always be followed by the application of caustics or the cautery, and should never be employed at the margins of a lupoid patch. The scars left by scraping are so disfiguring that on cosmetic grounds its use should be abandoned.

Caustics and the cautery are under similar disadvantages. To sterilize thoroughly the tissues the caustic action must be sufficiently strong to reach the deep nodules, and as it is extremely difficult to limit this action, the scarring is often terrible. Some years ago I saw an old man who had been treated by the late Mr. Hilton. An extensive lupus of the nose had been cured for nearly half a century. Strong nitric acid was the caustic used. The scar was perfectly sound, and there had been no recurrence, but the deformity was hideous. To be of value the caustic must be applied round the obviously affected area, and on the face cosmetic considerations practically prohibit its use.

For lupus of the mucous membranes, especially where there are fungating granulations about the nose and mouth, caustics and the cautery are useful adjuvants to other treatment. Two caustics, pyrogallic acid and permanganate of potash, I have found of value in the treatment of thick warty masses, as well as to fungating granulations. Their application is attended with pain, and they do not act sufficiently to destroy deep nodules. Scarification has only one recommendation. It produces a beautiful scar, though not so fine as that of photo-therapy. It is a tedious process, and is only applicable to superficial lupus.

Phototherapy.

The Finsen treatment, with certain limitations to be considered later, is undoubtedly the best method of treatment for lupus of the skin of the face. The direct action of the light and the inflammatory reaction set up by it sterilize the tissues, and this sterilization is accomplished with the minimum amount of disfigurement. A very important part of the treatment is the application of the light to the margin of the lupus patch. This apparently sound but in reality already infected tissue is sterilized without the production of any scar at all. As a result of the care bestowed upon the margin we very rarely see fresh nodules developing outside a lupus area treated by light. If after treatment nodules do appear, it is within the area, and this is evidence of the escape of some of the deep nodules at the first treatment. After the margin has been treated the obviously diseased tissue is attacked, and you are all familiar with the admirable soft supple scar which results. The original Finsen lamp and the newer Finsen Reyn are the only instruments which penetrate sufficiently to reach the deeper nodules. Superficial lupus can be cured by the Lortet apparatus, but in most cases I find that with this lamp the sittings have to last an hour. The lamps specially devised to develop a maximum of ultra-violet rays are too superficial in their action, and their claim to produce results equal to that of Finsen's apparatus in a few minutes has been found in practice to be unfounded. Concentration of the light is important. It is not unnecessary to insist that constant attention is required. The light must be directed vertically to the surface treated. The pressure glass must be applied properly. All this means labour, and this is the cause of the expense of the treatment. The Finsen treatment cannot be carried out cheaply.

I have recently been trying the preliminary injection of erythrosin as carried out by Dreyer. With a 0·2 per cent. solution I get a very intense reaction, but there is severe pain. I believe that in some deep-seated lesions this modification may be advantageous, but further observations are necessary. Any measure which will shorten the time required for treatment is worth trying, and the idea of sensitizing the tissues is a good one. Excessive pigmentation and thick scar tissue are great drawbacks. The best results are, therefore, obtained with virgin cases. Concurrent affection of the mucous membranes is, perhaps, the most serious trouble. I find that 40 per cent. of my cases have some affection of mucous membranes, and only a small minority of these can be reached by Finsen treatment. Ulcerous surfaces require preliminary treatment, and, as already mentioned, thick warty masses require to be thinned down by pyrogallic acid or other caustic. Some very extensive cases I have found intractable, and have had to give up the light treatment.

I append the statistics of the Light Department of the London Hospital. The department was opened in May, 1900.

Completed Cases.

Patients known to be well to date:		
Discharged in 1900 and 1901	49	
,, 1902	60	
,, 1903	69	
,, 1904 (half year)	38	
		216
Patients discharged, but of whom we have no recent information		8
Died (2 from phthisis, 1 from general tuberculosis)		3
Cases found incurable by light after prolonged treatment		11
		238

Incomplete Cases.

Treatment suspended; under observation	43
Patients who left for treatment elsewhere	22
Patients who left for other causes (domestic reasons, ill-health, etc.)	23
Treatment incompleted. (In a large number the skin is free from disease; mucous membrane lesions requiring treatment)	213
	539

X Rays.

The *x* rays are of immense value in the treatment of lupus vulgaris. They can be applied to larger areas, and where the disease is of the ulcerous form, a condition to which the Finsen treatment is inapplicable, the most striking results are obtained. The ulcerated area heals rapidly under them, but in nearly every case isolated nodules are visible in the scar, and these require other treatment. In the common form of lupus of the skin the results are certainly not so good as those from Finsen's treatment; for even when pushed to produce dermatitis of some severity, nodules persist, which are potential foci for fresh outbreaks. I admit that the scar is often excellent; but if the treatment is pushed until there is a dermatitis of even moderate severity, the resulting cicatrix is often unsightly, being covered with telangiectases, and these telangiectases sometimes do not appear until the dermatitis has subsided for several weeks. Then the scar is often the seat of irritation, and the possibility of the development of epithelioma in it after a prolonged course is not remote, as the condition of the hands of some operators has only too vividly brought to our notice.

For lupus of the ulcerous form I always begin with *x* rays, and finish the treatment with light. For four years I have used the *x* rays with advantage, but unfortunately there are frequent relapses. I venture to suggest that those who have written so favourably of the *x* ray treatment of lupus have either had an excessive number of mucous membrane cases, to which the Finsen treatment is so rarely applicable, or they have seen but little of the results of phototherapy, for there can be no two opinions as to the superiority of the latter in lupus of the skin.

Radium.

I have not been able to treat many cases with radium. The quantity at disposal is so small that it can only be applied to very early cases. A definite reaction must be obtained, and I have usually found that three or four hours' application of a specimen of high radio-activity is sufficient. I have cases in which there has been a complete disappearance of lupus nodules, but it is as yet too early to speak of cure. I think it has a field of usefulness in some mucous membrane cases which cannot be reached otherwise, and I am now employing it in some nasal cases.

High Frequency.

The only condition for which I have found high frequency beneficial is in the treatment of ulcerated surfaces, which are stimulated to heal by the effluve. The high-frequency treatment does not destroy lupus nodules.

Choice of Measures.

For moderate cases of lupus of the skin of the face, Finsen treatment; preceded by *x* rays if the surface is ulcerated; preceded by pyrogallic acid or permanganate of potash if warty or fungating.

For lupus of mucous membranes, *x* rays; if fungating' cautery followed by *x* rays.

For dry areas on the limbs and trunk, excision, and, if necessary, grafting where possible; if ulcerated, *x* rays.

For wide dissemination, probably the best results are to be expected from tuberculin injections, as recently demonstrated by Dr. Wright.

Lupus Erythematosus.

We have every reason to believe that this disease is dependent upon general causes, and, therefore, it is impossible to expect a cure by local measures. Excision, scraping, scarification, local caustics, *x* rays, and the Finsen treatment all remove the local lesions in some cases. The diseased patch is replaced by scar, but the underlying cause is untouched, and recurrence is the rule. I have cases in which one application of the Finsen light is followed by the disappearance of the lesions, but in a few weeks or months the patient returns with fresh spots. In many cases there is little or no improvement. I have found the high-frequency treatment most unreliable. Some improvement is to be recorded in a few cases.

Rodent Ulcer.

I suppose we are all in agreement that the treatment of rodent ulcer by scraping, caustic, and the cautery is quite unsatisfactory. We have to choose between excision and the use of the *x* rays and radium. Much that has been said about excision in lupus applies here. Small rodents which can be completely excised without disfigurement are more easily and effectually removed in this way. But in most, the deformity resulting from operation and the impracticability of complete removal by the knife make the *x* rays a necessity. Where the edge is much raised, I prefer to save time by curetting or by simply paring the growth away and then applying the rays to the raw surface. Ulcerations almost always fill up satisfactorily. Where the cavity of the orbit is involved, the complete enucleation of the eyeball and the contents of the orbit, followed by the application of the rays, gives the best results. Of 128 cases treated at the London Hospital by the *x* rays 4 proved intractable. In 2 an epithelioma developed, but I do not think that this can be attributed to the rays, for we have all seen cases of epithelioma developing upon rodent ulcer before *x* rays were used. Of 89 completed cases 30 have had more than one course of treatment, that is, in about 33 per cent., cases apparently cured have relapsed. In all of them the relapses were easily removed. In one case where the *x* rays failed radium was successful. In another now under treatment no improvement was manifest under the *x* ray, but here again radium seems likely to cure. Small rodent ulcers do very well with radium. I have used it with advantage in cases where the ulcer was upon the eyelids, a position in which the application of the *x* rays is difficult. Here a small tube of radium laid for an hour a day for several days gives admirable results.

Epithelioma.

My experience with epithelioma has been discouraging. In several instances I have seen a superficial epithelioma of the skin removed by *x* rays, but the glandular tumours secondary have not been affected. I have only used the rays where operation was refused or impracticable. Radium has caused the disappearance of small warty epitheliomata which develop upon old cases of the red variety of lupus.

In mycosis fungoides, the results of *x*-ray treatment are far superior to any other method. In my 2 cases large tumours have disappeared, and the published cases of Stainer and Jamieson are striking examples of its efficacy.

II.—ALFRED EDDOWES, M.D., M.R.C.P.,
Physician, St. John's Hospital, London.

DR. EDDOWES said that among his cases of lupus a large majority were bad. When the disease invaded mucous membranes he always passed them on for special treatment, but he had had promising results with radium tube used in the nostrils. Some patches could be greatly benefited by mercurial injections. Scraping alone was inviting disaster. He always used cautery finely after scraping, and found resulting disfigurement was very little if the wound had been skilfully dressed after operation. He had lived long enough to see many lupus cases contract pulmonary phthisis, therefore radical treatment was desirable. He had found yellow oxide of mercury (4 gr. to the oz.) most useful for lupus involving the eyes. It should be thoroughly applied and bandaged on during the night. The good this treatment did to eyes led him to use it largely for skin lupus. All nodules resisting the ointment were punctured accurately with sharpened matches dipped in nitric acid so as to destroy the roof of the cyst-like bodies, to allow the ointment to enter and the tubercle to be discharged out.

III.—G. H. GRAHAM, M.D.,
Medical Officer, Electrical Department, East London Hospital for Children.

DR. GRAHAM said he would like to offer his congratulation to Dr. Sequeira on his excellent paper. He quite agreed with him on the superiority of Finsen treatment over *x* rays in the treatment of lupus vulgaris, as the latter, in his experience, had not the same curative effect. He should like to emphasize the point mentioned by Dr. Sequeira—that the Finsen light should be thoroughly applied to the healthy skin at the margin of a lupus patch. In his cases he always commenced treatment at the margin. Repeated applications on the same spot had been commonly made, as many as seven or eight being given with the large Finsen lamp, and he had given even more with the Finsen Reyn lamp. Patients with very dark skin were not good subjects for Finsen treatment, and those with scars following surgical methods of treatment give some trouble in healing up the reaction caused by the Finsen light. With regard to the injection of erythrosin before applying light he had no personal experience, but he had been informed that the experiments that had been conducted at Finsen's Institute had not been altogether satisfactory, much pain being caused, and in some cases actual sloughing of the skin following an injection of erythrosin (1 in 4,000). Radium he had used in combination with Finsen light for lupus vulgaris, and it seemed to have had the effect of lessening the number of sittings that would be otherwise necessary with the Finsen. Alone it had a good effect, but had not cured the cases he had tried it on. He had found that a few applications of radium on the subcutaneous nodules of Bazin's disease before the central necrosis had taken place that led to the ulceration which they all knew was so prolonged and difficult to heal, had entirely cleared up the nodules. To prevent that ulceration should be the endeavour in the treatment of all those cases.

IV.—GRAHAM LITTLE, M.D., M.R.C.S.,
Physician to the Skin Department, St. Mary's Hospital, and the East London Hospital for Children.

DR. LITTLE said he had some hesitation in intervening in this debate, as it happened that at both of the hospitals to which he was attached there were special *x*-ray officers, and his position was that of the interested onlooker. But onlookers were said sometimes to see most of the game, and he would like to give some of his impressions of this treatment. He had a vivid recollection of several cases of lupus observed at the Middlesex Hospital in which the number of exposures necessary to effect any marked improvement was over 300. This seemed to him to be a confession of failure on the face of it. But it was probable that a more scientific application of *x* rays would be possible in the near future, and recent work, especially in France, seemed to hold out hope that accurate dosage with *x* rays would reduce the number of sittings necessary to quite a small figure. He was disappointed in this sense that no references had been made to treatment of ringworm of the scalp which had apparently been reduced in France to such a degree of precision that the duration of the treatment had averaged under four months for the most severe cases. He would like to refer to the method of inoculation practised by Dr. Wright at St. Mary's Hospital which he had had opportunities of observing. He was convinced that for sycosis of the staphylococcus variety this method was far superior to that with *x* rays. The inoculation need not be nearly so frequent as the sittings for *x* rays, and the whole duration of the treatment was much shorter. In chronic tuberculous lesions of the skin especially over an area too large for the use of *x* rays, the method of inoculation was again to his mind very hopeful. With the admirable methods perfected by Dr. Wright it was possible to make accurate estimation of the phagocytic reaction of the patient before and after treatment and the improvement or otherwise which resulted from this.

V.—GEORGE B. BATTEN, M.D.

DR. BATTEN congratulated and thanked Dr. Sequeira for his paper. In these days of booming of newer methods in medical and lay press, it was always interesting and valuable

to hear and read everything that Dr. Sequeira wrote on this subject in his judicial and just manner as the result of his really vast experience. He then discussed the use of the comparatively new high-vacuum electrodes which produce *x* rays with the high-frequency machine for the treatment of mucous membranes affected by rodent ulcer and lupus which could not be reached by other similar methods of treatment. He related a case of cancer *en cuirasse* which was really a subcutaneous scirrhus carcinoma, as had been proved by excision of a portion and microscopic examination. This was a very extensive case of long standing, with considerable ulceration. This was treated by *x* rays through a hole in a lead screen, while the whole of the rest of the area was treated by high frequency, with the result that the part treated by *x* rays was greatly benefited, the ulceration completely healing, whereas all the rest continued to spread; since then it had been a race between application of *x* rays and the tendency of the disease to spread superficially. The areas where the *x* rays were applied were rapidly benefited, the nodules melting away rapidly, but it was very difficult to keep pace with the disease. He further suggested that some of our dermatological pathologists should investigate rodent ulcers and superficial carcinomas on the lines of Professor Farmer's nuclear division theory, as shown in that building, by examination of cells before, during, and after treatment, which would give us really valuable knowledge with regard to cancer and the treatment thereof.

VI.—George Pernet, M.R.C.S.Eng., L.R.C.P.Lond.,

Assistant, Skin Department; and in charge of Light Department, University College Hospital, London.

Mr. George Pernet was decidedly of opinion that, notwithstanding the excellent results obtained by the *x* rays and Finsen's light method in lupus vulgaris, there was room for the continued use of excision, scarification, scraping, and caustics in appropriate cases. The point was to treat each case on its merits. The time and expense connected with the light and ray treatment was a serious consideration in the case of people who had to earn their living, or were dependent on their friends. Lupus vulgaris was rare among the well-to-do. The new tuberculin also had its place, but it should be used on the lines laid down by Professor Wright, whose investigations had revolutionized the method of its application. The Lortet-Genoud lamp did not give the good results obtained by Finsen's original apparatus, yet in limited patches a satisfactory result was obtainable. The treatment should be continued notwithstanding soreness. As to radium, Mr. Pernet had removed by it a pea-sized growth of mycosis fungoides; but, of course, in that condition the *x* rays were the best, exerting, as it were, almost a specific action on that form of granuloma. With regard to rodent ulcer, recurrences were not infrequent after *x* ray exposures. It appeared to Mr. Pernet that in the very aged rodent ulcer was more rebellious to the rays than was the case in younger patients. He had also observed good local results in leprosy with the rays, but, of course, they were not curative, the disease being a general infection; but by their means improvement of the face could be obtained in advanced cases.

VII.—J. M. H. MacLeod, M.D., M.R.C.P.,

Assistant-Physician, Skin Department, Charing Cross Hospital; and Physician, Skin Department, Victoria Hospital for Children.

Dr. J. M. H. McLeod said that he was in agreement with Dr. Sequeira in the main. He thought, however, that perhaps the use of the *x* rays had been somewhat undervalued in the treatment of larger patches of lupus, and that with the newer apparatus and tubes it was now possible to apply *x* rays more safely, and to, in some extent, measure the irridiation. He referred to the use of the various methods together. Now that their uses and limitations were better understood the value of a judicious combination of various methods was being appreciated. With regard to previous treatment of vegetating lupus by cauterization before the application of *x* rays, he considered that scraping before the *x* rays gave excellent results.

VIII.—J. Hall-Edwards, L.R.C.P.Edin.,

Radiographer to the General Hospital, Birmingham.

Mr. Hall-Edwards said Dr. Sequeira was to be congratulated not only for opening a discussion which should now yield a positive expression of opinion, but for the impartial manner in which he had dealt with the various methods of treating lupus and other skin diseases. The speaker's experience was mainly confined to the use of *x* rays, and he had found that the cases which appeared to present the greatest difficulties had yielded the best results. He mentioned a case of lupus of seventeen years' standing, which had been scraped and otherwise operated upon times out of number, which had been almost completely cured by persistence in *x*-ray treatment, with occasional paintings with a saturated solution of permanganate of potash. (Photographs of the case before and after treatment were handed round for inspection.) He was of opinion that many failures were due to our faulty methods of administration and want of proper methods of measuring dosage. He was glad to see an improved apparatus in the exhibition which rendered it possible to gain an accurate knowledge of the dose given, and to so regulate the dose that it could be repeated time after time with certainty. From what had been said it was to be concluded that the original Finsen lamp produced the best results. The initial cost of this instrument and the time occupied in its proper administration were disadvantages which could not be overlooked. Few hospitals could afford the outlay, to say nothing of the upkeep. He was pleased to hear the results of sensitizing the tissues by the injection of erythrosin. He had made experiments in that direction, but instead of injecting the stain he had driven it into the tissues by cataphoresis, and had obtained good results, the amount of reaction after the use of the stain being much greater than that produced by the lamp alone. The sensitizing of the tissues to light was a subject which required further investigation, and one which would in the future be productive of (perhaps) unforeseen results. He was pleased to see that there was no marked divergence of opinion upon the points raised in the discussion.

IX.—H. E. Gamlen, M.B., B.S., D.P.H.,

West Hartlepool.

Mr. Gamlen said the paper by Dr. Sequeira was most instructive, and he agreed with the bulk of it. He wished to approach the treatments of these various ailments from an experimentalist's point of view, having had under his care no less than forty-six cases of lupus vulgaris, two of lupus erythematosus, and eight of rodent ulcer. Thirty cases of lupus vulgaris had been treated by *x* rays, the majority had been clinically cured over two years, whilst in some cases a period of over three years had elapsed. Ten cases had been treated with the Finsen Reyn lamp and six with the Bartholomew lamp. In several cases for individual patches he had used high-frequency discharges, and, again, a few he had treated with radium.

With regard to lupus vulgaris, wherever situated, no accessory treatment, in his opinion, was necessary. Lupus of the mucous membranes he treated with *x* rays only, thus excluding excision, caustics, scarification, and scraping. He had on many occasions scraped, but no permanent good result had ensued; now he relied entirely upon *x* rays and phototherapy, the latter, speaking generally, being the best and most effective treatment, provided money and time were no object.

The Finsen-Reyn lamp had penetrating qualities far in excess of any other lamp. Experimentally, he had tried to obtain better and quicker results than Finsen, but had failed. He had had his carbons loaded with silver, cadmium, and aluminium, and, though the consequent reactions had been more severe, yet if a nodule were deeply seated he had had to fall back upon ordinary carbons. Sensitizing the tissues under treatment, thus creating a more severe reaction, he had also tried, but could not say this improved matters. He, like Dr. Dore, never allowed the reaction of one application to die away before giving another, and found that three sittings were generally sufficient to eradicate deeply-seated nodules.

In the treatment of lupus by the *x* rays he always created a fairly severe reaction with a low-vacuum tube, having an alternate spark gap of 1 in. or under. He gave short sittings, always maintaining a reaction, and was thus able to treat cases quickly by giving sittings every third, fourth, or seventh day. Good results were also derived from high tubes, but much longer sittings were necessary. X-ray treatment occasionally left slight disfigurement, owing to the cured patch becoming blanched, whilst the surrounding area was pigmented. The next point at issue was the treatment of lupus vulgaris and other disease by the use of the ultra-violet rays, in the form of the Bartholomew lamp and here he wished to be most emphatic, particularly as it had been written that the lamp was of no use in cases of lupus. He

did not recommend the lamp in preference to other treatment; its effect upon deep-seated nodules was very slow, but for some ordinary cases of lupus it was most effective.

To prove this he successfully experimented upon two very obstinate cases which had previously been treated at two London hospitals without result. In one, the lupus was on the right cheek, the nodules being in dense scar tissue and feeling like large shot corns when the fingers were put in the mouth. Yet they were all successfully removed ten months ago and there had been no return. The treatment certainly was slow but very effectual, and in many other ailments this lamp was beneficial.

His experience of radium in the treatment of lupus had been too limited to justify his venturing an opinion. He had thoroughly tried the high-frequency brush discharge on some lupus patches, but found it of no use in the removal of nodules. A highly-exhausted glass vacuum tube was sometimes beneficial, but he did not recommend it in preference to other treatment.

Lupus Erythematosus.—In one case *x* rays succeeded in removing some of the patches, the Bartholomew lamp in others, whilst in the second case the Finsen lamp was successful with some nodules, in others so far all treatment had failed.

In his cases of rodent ulcer all, with one exception, had been clinically cured, some dating back three years; there had in no case been any recurrence. He always, especially upon the hard rolled growing edge, created a reaction so severe that on ordinary skin a blister would be raised. The effect of this was to break down the edge, and then the rodent quickly disappeared.

He had found the *x* rays most effective in the treatment of parasitic eczema, acute and chronic eczema, ringworm, psoriasis, keloid and varicose ulcers. In all these cases he created a severe reaction. In acute eczema the effect of the rays at first was to aggravate the disease. This gradually improved, when he again warmed it up; sometimes this was necessary several times before the eczema disappeared. So far all his cases had remained cured, some over a period of a year.

Psoriasis.—He had had one very severe case of nineteen years' duration, the sufferer being a medical man. His attacks came on regularly twice or thrice a year. Under *x* rays he effectually removed all patches by giving him severe applications, the superficial layers of the skin being removed. Nine months had passed, and there had been no return. Time alone would tell whether or not the result would be permanent.

One medical man considered it criminal to treat epithelioma of the lip and tongue with *x* rays. He likewise considered it criminal under some circumstances not to do so. He had treated over 30 cases of severe malignant disease, most of which were inoperable. A few of them were operable, but refused to have them surgically interfered with. In every case of malignant disease, where possible, he had recommended operation, but when the patients had persistently refused not only himself but other surgeons, he had put them under *x* ray treatment, when, in some cases, at the end of a few sittings, he had so far succeeded in winning the patients' confidence that they had consented to operation. He always followed up the operation by *x*-ray treatment. Most malignant cases under *x* rays failed to receive permanent benefit, but three of them had been clinically cured.

The first man had a large epithelioma of the tongue; specimens were made and reports obtained from three sources. The case was seen by numerous medical men, both before and after treatment. He had had him before the Northumberland and Durham Clinical meeting during and after treatment. It was now several months since treatment was stopped; there was not the slightest sign of return either in the growth or the glands.

The second case was an epithelioma of the soft palate of one month's duration. A report was procured of its malignancy, and, after a lapse of four years, there was no return.

The third was a recurrent scirrhus of the breast, which had invaded the old scar of operation, and also the substance of the second third, and fourth ribs. It had apparently entirely disappeared, though only a few months had elapsed since cessation of treatment.

With regard to tuberculous glands, it was the popular belief that *x* ray treatment (because of its non-bactericidal properties) was ineffectual. His experience in several cases was exactly the opposite to what had been written. All his cases had received benefit and most of them were clinical cures. He did not recommend the treatment—operation was much more effectual. These glands, as a rule, could be removed by giving long applications with high-vacuum tubes, but it took several months' treatment to do so.

Finally, the varying results obtained by different medical men in the treatment of the diseases under discussion was not due, as was said, to idiosyncrasy in the patient, but in his opinion it was due to the medical man himself.

With regard to the very able paper by Dr. Hall-Edwards, he agreed with all he had said, for he was also a sufferer and had often remarked upon the effect on the heart. Developing solutions, especially where metal was used, should not be allowed to touch the hands. Ordinary gloves with a few applications of white lead paint would effectually stop the rays which caused the dermatitis. The best application for chronic dermatitis was plenty of hot water, the free use of the knife for removing the corns, and an ointment made up of one part ung. hyd. nitratis and two parts of lanoline. The hands should be gloved at night and the ointment freely applied.

DISCUSSION ON
THE RELATIVE IMPORTANCE OF BACTERIAL AND OTHER FACTORS IN THE CAUSATION OF SKIN DISEASES.

I.—Arthur Whitfield, M.D., M.R.C.P.,
Assistant Physician in Charge of Skin Department, King's College; Physician, Skin Department, Great Northern Hospital.

Dr. Whitfield said: At the present day those who devote their attention to the special study of skin diseases have been directing their attention to the macroscopic and microscopic morbid anatomy of these, and by careful study of the micro-organisms present have done much to elucidate many problems of etiology. At the same time it is possible that in some cases undue importance has been attributed to the organisms present, and owing to the immense difficulty, if not absolute impossibility, of applying Koch's laws to the bacteria obtained from various diseases, it still remains a matter of doubt in many cases what is the precise relation of the organism to the disease. I therefore propose to discuss this relationship, and examine the facts which we have at our command.

In order to simplify matters and avoid unnecessary waste of time it will be better to introduce some sort of order into the diseases in which organisms have been found, and I submit the following as a useful provisional classification:

1. Diseases of which the contagiousness is marked, and the organism known as one special to the disease and not habitually present on the apparently normal skin—ringworm, glanders, soft chancre.

2. Diseases of which the contagiousness is not marked and inoculation difficult, but the organism is known as one special to the disease and not habitually present on the apparently normal skin—pityriasis versicolor, erythrasma.

3. Diseases in which contagion or inoculability is certain, but in which the causal organisms are habitually present on the skin—impetigo and suppurative diseases.

4. Diseases in which contagion is doubtful, in which organisms are usually, if not invariably, present, but owing to their habitual presence on the skin are of doubtful significance.

The importance of organisms of the first class is so obviously paramount that I do not propose to dwell further upon them. In the second class of disease their importance is also evidently great, but we must also remember that as inoculation is difficult, if not impossible, we have the introduction of another factor—namely, that of specific suitability of soil. In the case of pityriasis versicolor also we must remember that although the organism grows apparently in the horny layer alone, it evidently finds some suitable medium for its growth in the more sweaty and sebaceous regions of the body. The third class—namely, that in which the disease is undoubtedly caused by the inoculation of organisms habitually present in isolated instances on the surface of the apparently normal skin, is one of great interest. We have to deal here with diseases which may certainly be produced in most, if not in all, persons, though the necessary dose is probably a very variable factor in different persons. At the same time, no one denies the importance of the organism. Yet, even in this case, if we consider these extremely important organisms as the only point worthy of attention,

we shall make lamentable blunders in our practice. Let us, for instance, take the case of a child infected first with pediculosis capitis and secondarily with the streptococcus. What would be the result of identifying the streptococcus and failing to detect the pediculosis? This is, of course, such a simple instance that it is ridiculous, yet I think we may frequently make this mistake or an analogous one by directing our attention too exclusively to the organism present in cutaneous diseases. How do the pediculi act in setting up this impetigo contagiosa of head and face? Is it simply that by their puncture or the scratching to which they give rise they determine the inoculation of the streptococcus or is it something more? This is a point which has a great interest, it seems to me, and the view which I am about to put forward will, I expect, meet with great opposition.

At one time I believed that the pediculi simply acted as the instruments of inoculation, especially when associated with scratching to which they gave rise, but then I was struck by other pruritic diseases of the scalp in which impetigo was the exception rather than the rule. I then thought it possible that in those schools in which pediculosis capitis was particularly frequent impetigo contagiosa was also rife, and the child that caught the former would have a splendid chance of catching the latter also. This would not, however, account for the frequency with which I have noticed the two to be associated in adult servant girls, who from neglect become infected with pediculosis; and I now believe that the irritation of the pediculi has a special action in preparing the skin for the infection with streptococcus, that action not being dependent on the mere pruritus. In those cases where impetigo contagiosa assumes epidemic characters apart from animal parasites, it is probably due to a specially-educated streptococcus of high cutaneous contagiousness. We know that the streptococcus is the aptest of pupils in being educated to attack different parts of the body. Thus, by repeatedly injecting it into rabbits with damaged joints, it may be trained to attack the joints of a healthy rabbit with especial vigour, and it is probable that the streptococcus obtained from impetigo contagiosa is specially qualified to reproduce this disease.

Turning now to the staphylococcus pyogenes, we find this necessity for something beyond a mere casual inoculation more evident. Staphylococcic impetigo does not seem to be a very contagious disorder; the folliculitis commonly known as sycosis certainly appears to be contagious, since one so frequently sees cases in which a definite history of infection at a barber's is given. I think however, that these cases will be found, on close examination in their early stages, to be associated with ordinary impetigo contagiosa—a much more contagious disorder. We know from the excellent work of Sabouraud that a staphylococcic impetigo is a most frequent sequel of streptococcic impetigo, and I believe that in those cases where a marked history of contagion is obtained one will find that the precedent attack of impetigo contagiosa is the rule rather than the exception. By no means in all cases is this impetigo contagiosa followed by sycosis, and there is usually a defect in the general or local health, if I may use the term, which predisposes to this obstinate disease. We are all, I suppose, familiar with it as occurring among those who work among much dust, especially coal porters, and the presence of a sycosis of the upper lip always suggests the examination for chronic discharge from the nose. Scattered follicular impetigo on the body or extremities, again, is usually associated with the application of some irritant application, such as mercurial ointment, turpentine liniment, or a plaster. In every instance the suppuration is produced by the staphylococcus pyogenes, but this is not the prime cause of the inflammatory disturbance.

We now come to our last class of diseases—namely, those in which organisms are invariably present—but as these organisms are present on apparently healthy skin it is difficult to assign to them their proper causal value. There is a perfect host of diseases, squamous, erythemato-squamous, papular, subvesicular, and vesicular in type, of whose nature we are almost if not entirely ignorant. We may admit that our knowledge is practically limited to two facts—namely, that they occur in persons who usually show some slight defect in health, and that they are associated with the presence of certain micro-organisms.

In view of this association I should like to make some remarks on what has been termed the normal flora of the skin. Sabouraud has said that there is no normal flora of the skin, and that on a perfectly healthy skin such organisms as are found are present only as units and are lying on the surface of the horny layer, and in any crevice or angle, no colonies being present at all. With this statement I am in perfect agreement with a single reservation, in fact I have already insisted on it elsewhere. The reservation I would make, and which I believe to be all-important, is that while micro-organisms do not grow on the perfectly normal epidermis alone, its secretions are evidently suitable culture media, and, provided that they accumulate upon the skin, colonies of organisms will soon be found. It appears to me that Sabouraud has overlooked this point, and it is most astounding to me that he has done so, because he is undoubtedly a most acute observer and competent bacteriologist. In addition, he has identified one of the organisms with which I shall have to deal with the micrococcus ureae, and has pointed out how fond this organism is of the excretions of man generally, and yet he does not seem to attach any further importance to the fact.

Take, for instance, a perfectly healthy man, and induce him to take sufficient exercise to cause free sweating, and you will find if the sweat is allowed to stagnate upon the surface of the skin that it will decompose with the development of a strong sour odour. Now, the organism which decomposes that sweat will be in a state of active growth, since organisms do not produce their products of metabolism unless they are actively growing. Thus we meet at once with an objection to considering the statement of Sabouraud in too absolute a manner, and I believe that the bearing in mind of this reservation is all-important for a proper appreciation of the part played by some of the doubtful micro-organisms in the production.

There are three main organisms which are found commonly on the skin in certain parts and whose occurrence in colonies leads to the suspicion that they have some definite action. These organisms are the micro-bacillus of Sabouraud, the bottle bacillus, and the non-liquefying coccus. This last is called by Sabouraud the grey coccus, but inasmuch as its cultures are often fawn-coloured to sometimes a deep-brown on potato, a medium on which Sabouraud erroneously says that it does not grow easily, and lastly, that it never liquefies gelatine, I think it better to give it this name provisionally.

Let us take first of all the relations of the micro-bacillus. It is found in all cases of very oily skin, it is found enclosed in the comedo of acne, it is present in most cases of baldness associated with greasy hair.

There are three distinct anatomical symptoms—namely, excessive secretion, horny plugging in the case of the comedo, and atrophy of the hair bulb. The question of its relationship to the excessive secretion is difficult to answer for at least one obvious reason—namely, it necessitates an answer to the previous question, what is excessive secretion? In the negro the skin appears to be normally extremely oily, possibly as a protection against the hot sun, and it occurred to me that it might be of some service to examine the skin of a negro for micro-bacilli. By the kindness of Professor Hewlett, of the Seamen's Hospital, I was enabled to examine the skin of the face in six negroes. One was suffering from severe dysentery and had a harsh and slightly desquamating skin with apparent cessation of all secretion, and in this case I obtained no micro-bacilli. The other five were suffering from various complaints which would not presumably interfere with their skin nutrition, and in all these plentiful micro-bacilli were found. In no case were there any symptoms of acne or falling hair. For what it is worth, therefore, the evidence is in favour of the development of the bacillus in abundant secretion altogether apart from the question of the amounts being normal or abnormal. Secondly, it is found in the comedo. In this position it has, I believe, a certain definite effect, and I would trace the course of events as follows: The patient has a very abundant secretion of sebum, and large follicles with patulous orifices. In this abundant secretion the micro-bacillus finds a suitable medium, and grows. Some of the bacilli will grow down into the follicle, and there, acting as foreign bodies, become encysted with horny material, so that a comedo is produced. I believe, therefore, that the micro-bacillus is the cause of comedo, where it grows in great abundance but I do not believe it is the cause of the excessive secretion. It is, perhaps, worth reminding you that in the acne of adolescence the sebaceous secretion is extremely excessive, and one might almost say that the acne is in proportion to the seborrhœa. Now, the sebaceous glands become greatly developed both anatomically and functionally, at this time, and I think it is frequent for excessive secretion to take place at such a stage. Take the mammary glands in girls, and observe how frequently

a slight secretion and mild mastitis occur at the same age, also in boys a mild degree of spermatorrhoea is almost the rule at this period. So that my conception of the case is that, with a perfectly aseptic skin, there would be seborrhoea, but no acne, and that from the point of view of treatment it is almost hopeless to attempt to cure the acne, which I regard as an external complication, without at the same time attacking the hyperse retion which lays the patient open to the subsequent infection.

Turning now, briefly, to the part played by the micro-bacillus in the causation of hair fall, I think I may say that it is very doubtful if the bacillus has any relation at all to the loss of hair. From the examination of a large number of cases in this country, I have come to the following conclusions: First, that in practically all cases of loss of hair, accompanied by a greasy condition of the scalp, the micro-bacillus is found in abundance; secondly, in almost if not quite all cases of acne in women the scalp shows abundance of micro-bacilli, although loss of hair may not be present: thirdly, that cases of progressive calvities in men with a dry scalp and absence of the micro bacillus are much more frequently met with than Sabouraud admits; lastly, as was pointed out to me by Dr. Colcott Fox, cases of marked facial hirsuties in women are commonly associated with seborrhoea and the presence of the micro-bacillus.

Let us now for a few moments turn to the bottle bacillus. Sabouraud has pointed out that it is the invariable associate of the common pityriasis of the scalp, and has, moreover, by vertical section demonstrated that it lies beneath the broken-up part of the horny layer in a position exactly similar to that occupied by the microsporon furfur in pityriasis versicolor. Also that it is not found indiscriminately in all cases of scaly skin, being absent in psoriasis. In controlling these results I took care to obtain my psoriasis material from the scalp, and I can fully corroborate his statements. In spite of the presence of this organism in dry scaly conditions it has evidently some relation to the sebaceous secretion, since it is almost invariably found in parts where sebaceous glands are well developed, but this does not weaken its claim to be considered a parasite of the horny layer, since the same is true of the microsporon furfur. That the pityriasis condition is so common as to be almost universal in the scalp would rather tend to show that if it is caused by the bottle bacillus the latter is very easily inoculable, and it does not. I think, offer any difficulty in accepting the contagious nature of the disease, since no precautions are taken against its spread; and I may instance the enormous frequency with which ringworm of the beard was present in ancient Rome when no precautions were taken against its inoculation from patient to patient. From its position, from its limitation to the special type of pityriasis, and from the method of spread of the disorder with which it is associated, I think it is almost certain that Sabouraud is correct in regarding it as the causal agent. One point of interest I may mention with regard to it, and that is that it is found in great abundance associated with the grouped comedo of infants, whereas the micro-bacillus was much less abundant in the case which I examined histologically.

Thirdly, we have to deal with the non-liquefying coccus. This is an organism with which I have considerable familiarity, having worked with it for a year. As far as I can make out, it is the habitual denizen of the skin, being present in units only, unless there is a fluid medium present, such as sweat or sebum or exuded serum. I have found it in the blisters produced by heat, from the vesicles of seborrhoeic eczema so-called, in the dry pityriasis of children's faces, which Sabouraud, as I think wrongly, attributes to the streptococcus, and in sweating axillae. It is to be found in most of these conditions in colony form, and in hardly any instance have I found it pure on culture, the exception being one case of the pityriasis of the child's face, on which I would not lay great stress. I therefore believe it to be devoid of special parasitic properties, but to grow in any suitable fluid medium found on the surface of the body. It has, however, the property of causing a marked and offensive smell when grown on media at blood heat, and I believe that it is one, if not the, great cause of irritation in free sweaters. The repeated inoculation of this organism on my own skin has never produced any appreciable disturbance, and this is one reason for my belief in the ne essity of a fluid medium on the skin. If we analyse the cases of well-marked seborrhoeic eczema we shall, I think, find two factors constant—one is free sweating and the other a certain irritability of the skin.

Now, Sabouraud has said that a vigorous scrubbing tends rather to increase infection of the skin than to diminish it, and, therefore, if this organism were markedly parasitic, it should help its spread. Also, if the ringed seborrhoeic eczema of the chest were of parasitic origin, it should be rendered worse by washing. Now, it is, I suppose, the experience of all that a bath with soap is all that is required to remove the commencing attack of this form—a fact which harmonizes well with the idea that the eruption is due to the irritation of decomposed secretion, and is in marked opposition to the idea of a definite parasitic nature.

In the case of the faces of children, which might for a moment seem to be opposed to the view I am putting forward as to the action of the coccus, the discrepancy is apparent only. I find that these children almost invariably slobber on their pillows, and thus have what is practically a saliva poultice on their faces at night, and as the eruption is usually marked round the mouth we see that this again falls neatly into line with the secretion idea. I must admit that I have been unable to demonstrate any organism histologically in the scales, but since Sabouraud's publication of his theory with regard to the streptococcus being the causal agent, I have repeated my experiments of 1899 with the same results. I may point out here that in my earlier experiments liquid media were always used at first.

Lastly, what is to be said upon the factors other than bacterial in the production of these various conditions? I have already occupied so much time that it is only possible for me to touch on this very shortly, in addition to which so little is known of the variations of metabolism and their effect on the skin that I cannot offer much information. We do know, however, that faults in the metabolism, especially those connected with faulty digestion, have a marked effect in altering the irritability of the skin, and although we cannot easily collect enough sweat or sebum to observe any possible alteration in them, we can argue by the analogy of the urine that a marked influence is probable. Clinically, I regard it as an established fact that irritation of and toxic absorption from the alimentary canal are among the most fruitful causes of ill-defined cutaneous eruptions. Finally, I should like to add that although this contribution may seem rather to depreciate the value of bacteriological work in connexion with superficial eruptions, I do not in any way intend it to do so. Because we believe that another error underlies the bacterial infection, making the patient more prone to it, it is no reason for neglecting to ascertain all that we may about these organisms. The internal and the external factors work together in almost all cases of eruption, and even in such a constitutional disease as syphilis it is admitted that an external factor may determine the site of the eruption, and it is, therefore, important to know all that is possible about these external factors, though we must look to a further knowledge of the difficult and obscure processes of metabolism for the completion of our knowledge. Also, if I have found myself, after much time spent in following Sabouraud's work and, as far as I could, controlling it, to a certain degree in opposition to his views, I should like to make it clear that I have no wish to belittle his great researches, which I regard as some of the most accurate, painstaking, and luminous in the whole range of cutaneous medicine.

II.—A. Douglas Heath, M.D., M.R.C.P.,
Casualty Assistant Physician, General Hospital, Birmingham.

Dr. Douglas Heath thought that the symptoms of micro-organisms in the skin required special investigation. He thought that several of the more obscure varieties of acne were probably due to the actions of the toxins of micro-bacilli and staphylococci on each other and on the tissues. This combined action, or possibly hostile action, might account for the walling-up of the diseased tissue in acne-varioliformis, instead of leading to the formation of peri-follicular abscesses, as seen in boils.

III.—S. E. Dore, M.A., M.B., B.C.,
Clinical Assistant, Skin Department, Middlesex Hospital.

Dr. Dore spoke of the difficulty he had experienced in cultivating Sabouraud's micro-bacillus from the hairs in alopecia areata, although they could be demonstrated by staining in a certain small proportion of cases. The difficulties of using special media and the need for standardization of media were referred to.

IV.—Graham Little, M.D., M.R.C.P.,
Physician for Diseases of the Skin, St. Mary's Hospital, and East-End Hospital for Children, Shadwell.

Dr. Little said: With regard to Dr. Douglas Heath's remarks it may be of interest to refer to the experience with anti-staphylococcus injection in mixed acne. Those of us who were present at the demonstration on this subject at the London Dermatological Society a few weeks ago must have been struck with the ease in which antistaphylococcic infection in mixed acne had resulted in complete suppression of pustulation and nodosity, leaving the typical comedo of uninflamed acne intact. This, to my mind, is strong corroborative evidence of the double infection responsible for inflamed acne. Dr. Fox has referred to the bacteriology of certain vesicular eruptions, and I should like to mention that in a case of dermatitis herpetiformis in a child shown at the Dermatological Society of London, I found on two separate occasions from a clear vesicle pure cultures of streptococcus. The greatest care was taken in sterilizing the vessels before taking the culture. The surface was carefully washed with soap and water, ether, and absolute alcohol; a sterilized hypodermic syringe was used to make the puncture, and the fluid drawn up was put on a platinum loop and inoculated in sterile fluid media: it is improbable, to my thinking, that faulty technique was responsible for the presence of the organism. I may mention, in passing, that I do not think fluid media are necessarily better for the growth of streptococcus occurring in impetigo contagiosa. Solid media are used by preference at St. Mary's in Wright's investigations, and with perfect success, in the culture of the organism from impetigo.

V.—W. Kenneth Wills, M.A., M.B., B.C.,
Radiographer and Assistant, Finsen Department, Bristol General Hospital.

Dr. Wills said: The effect of *x* rays upon acne, sycosis, and pustular forms of eczema is interesting from a bacteriological point of view. We are told that the action of the rays is practically *nil* in the laboratory, and yet actually the micro-organisms decrease in the living skin and their effects with them after treatment with the *x* rays. Is this due to (1) The action of rays upon the organisms direct? (2) The known action of the rays in diminishing the secretion in which the organisms live? or (3) The stimulation of the living cells to deal with the organisms present?

A CASE OF ACNE-KELOID

(DERMATITIS PAPILLOMATOSA CAPILLITII KAPOSI).

By A. Douglas Heath, M.D., M.R.C.P.,
Casualty Assistant Physician, General Hospital, Birmingham.

Examples of so-called acne-keloid have been hitherto so rare in this country that the following account of a case with some histological observations may, I hope, be of interest to the members of this Section:

History.—The patient is a bricklayer by occupation, and is now (1904) 35 years of age. The eruption began in 1880. An area as large as a five-shilling piece became sore on the left side of the face in front of the ear, and its surface subsequently broke into several small holes. The eruption spread upwards over the malar bone, small "watery blisters" being, according to the patient's account, dotted over the dull-red area. The ear and lower part of the face were at this time unaffected. In 1892, that is, twelve years after its onset, the eruption began to spread downwards on to the neck, and also outwards to the ear. Great thickening of the tissues of the face and ear gradually followed. During 1902 papules and a few pustules began to appear at the nape of the neck, and these have recently (1904) become much more numerous. Within the past two or three months a few scattered papules have appeared on the right side of the neck in the beard area. The skin of the trunk and limbs has always been free from eruption: and the general health throughout the whole course of the disease has remained unaffected. For the past three years the patient has been under my care, and I have been able to see him from time to time.

During this period the smooth almost hairless scar surface on the left side of the face and ear has remained *in statu quo*, except that a few small flat abscesses have appeared in it. These, at first rather deeply set, have gradually come to the surface and then ruptured, or have dried into a small scab which has remained adherent for some time. These small abscesses, one or more of which could often be seen in the scar tissue over the cheek, were mostly unconnected with hair follicles, these having already disappeared. Now and then a few of these purulent areas opened into others, and formed superficial ulcers, which have been occasionally as large as a threepenny piece, and rarely even larger. These ulcers have been as frequent on the ear as on the cheek. They have always rapidly healed and have left scars depressed slightly below the level of the surrounding tumour tissue.

Numerous large papules have appeared on the left side of the neck under the jaw during the past three years, and these have always been connected with the hair follicles of the beard. Many of them have coalesced with the large tumour-like mass above, and a few have apparently aborted. The hair has been rapidly lost over these papules and pustules, and a few straggling hairs only have been left where the scar tissue is well marked.

At the present time the patient presents the appearances seen in the photographs, which have recently been taken for me by Mr. J. Hall Edwards, of the General Hospital X Ray Department. The photographs show very clearly the sharply-defined and enormously-thickened lower margin of the scar mass, which extends from the centre of the chin backwards to the posterior limits of the mastoid process. This portion of the scar mass is freely movable over the neck and jaw, and the fingers can be readily passed in under it, showing that the growth only involves the skin itself. The whole surface of the diseased area on the face and ear is smooth and scar-like, but from the fact that some of the scars have contracted more than others, a coarsely-granular appearance has been produced. This causes the enormously enlarged ear to resemble rather closely the ear seen in nodular leprosy, especially as at the present time there is an ulcer three quarters of an inch in diameter on the under surface of the lobule.

The anterior and upper margins of the eruption over the cheek and temples are very much less thickened than the lower margins, yet they are sharply marked off from the neighbouring healthy skin, and no outlying papules can be seen beyond these margins.

The surface of the tumour mass is almost hairless over the greater part of its extent, both the coarse hair of the beard and the fine downy hair of the face having been lost. A few scattered hairs, however, are visible here and there, and along the lower margins of the scar mass under the chin crypts can be seen, into which a probe can be passed, which contain from four to ten hairs grouped together into little brushes. This curious appearance almost exactly resembles that given in the coloured plate accompanying Morrant Baker's case of acne-keloid, shown before the Pathological Society in 1882. This grouping of the hairs is, however, in my patient, only to be seen under the chin. In other situations, both on the face and at the back of the neck, no such arrangement is visible, and the hairs remain single until they are lost.

On the back of the nape of the neck and extending upwards into the scalp, as shown in the second photograph, are several large and small pustules and papules. Many of these have become grouped together to form a smooth, pink, tumour-like mass lying across the back of the neck. The surface of this area is smooth and hairless, but a fringe of hair growing almost horizontally can be seen around its base. From most of the larger papules in this situation the hair has been already lost, but the central hair is still attached in many of the earliest small pustules, although it is quite loose and easily extracted. On some of the more recent pustules a small scab can still be seen at the summit around the remains of the hair follicle. The hairs, even when most carefully extracted from the earlier pustules, break off, as a rule, above the bulb, and the lower part of the air shaft is nearly always dry and unthickened.

The patient, as can be seen from the photograph, is nearly bald, but around the few feeble hairs that are left on the vertex a considerable number of small dry scabs and a few pustules can be seen. On the scalp surface between these hairs numerous small depressions, from which the scabs have been shed, are visible. This eruption (acne varioliformis) only affects the vertex, the remainder of the scalp and forehead being quite healthy.

The skin having been carefully sterilized, I have taken pus from the pustules before the hair has been lost in both early and late stages of evolution. This pus, inoculated on various media, has been followed almost invariably by an abundant growth of staphylococcus aureus in pure culture. The pus taken from very early and small abscesses, situated on the older and hairless portions of the tumour, has often been sterile, but larger abscesses generally give on culture staphylococcus aureus. In very early papules and pustules I have failed again and again to get any growth of micro-bacilli on slightly acid media.

The patient's consent having been obtained, a narrow strip of skin, which included a very small early pustule, a large

pustule, and a portion of the older tumour mass at the back of the neck, was excised. Through the kindness of Professor Leith, of Birmingham University, I am able to show photo-micrographs of several of the sections kindly taken for me by Mr. Dencer Whittles.

In the most recent papule, as will be seen from the first photo-micrograph, the earliest noteworthy sign of the diseased process consists in a small perifollicular collection of cells in the upper part of the reticular layer of the corium, the papillary layer being at this time unaffected. The hair follicle is somewhat dilated about its neck, and occasionally largely dilated, but it appears to be normal, except that some leucocytes can be seen between the cells of the prickle layer in the immediate neighbourhood of the perifollicular collection of cells. Only now and then can any pus cells be found inside the follicle. Outside the follicle numerous small round cells are present, which are possibly inflammatory, as similar collections of cells are visible round the distended blood vessels of the corium in the neighbourhood of the follicle.

This great vascularity of the corium is most marked at the level of the subpapillary plexus. The blood vessels in the lower part of the corium are not distended in early stages of the disease. The perifollicular collection of cells extends gradually downwards by the sides of the hair follicles, which are deeply placed, and the sebaceous glands are not invaded until a later stage. They then appear to be cased in by these cells and more spindle-shaped cells and perish from atrophy.

No giant cells can be seen at this stage, and the connective-tissue bundles have a normal arrangement, and stain well right up to the margins of the cellular masses. In sections from a larger but still recent nodule, about $\frac{1}{4}$ in. in diameter, only the deeply set hair follicles remained, and from the majority of them the sebaceous glands had disappeared.

In this second nodule, as shown in the photo-micrograph, there is a very large collection of round and cubicle (plasma) cells, surrounding the hair follicle in the lower part of the reticular layer of the corium. Immediately above this mass of cells, a group of giant cells or chorioplaques with many nuclei can be seen. This collection of giant cells, with smaller rounded cells intervening, is bounded by more or less spindle-shaped connective tissue cells, and forms a definite bundle which runs through all my sections of this nodule. In these giant cells the nuclei are generally arranged irregularly, but in a few instances they form a complete circle around the margins of the cell, leaving the centre free.

From the hair follicle surrounded by these masses of cells, the sebaceous glands have been lost entirely, as they have also from two neighbouring hair follicles. They can, however, be still seen in connexion with follicles on the margins of the excised papule, showing that the diseased process spreads centrifugally, and has not yet reached them. The hairs inside the affected follicles have the character of lanugo hairs, and have no medulla. The arrectores pilorum appear to be resistant, and can still be seen. The coil glands lying deeply in the corium and hypoderm appear to be normal, and their ducts can be seen here and there passing upwards to the surface.

The connective-tissue bundles below the level of the hair follicles seem to be quite normal in arrangement, and the hypoderm remains unaffected in all stages of the disease. In consequence of the appearance of these large collections of cellular elements, the reticular layer of the corium is very greatly enlarged and thickened. In early stages of the disease the small rounded cells seem to be arranged in lines parallel to the direction of the follicle, possibly because they pass downwards along the lines of the blood vessels. They appear to press aside the connective tissue bundles out of their normal position. In old portions of the tumour, as seen in sections taken from the largest mass at the back of the neck, the whole corium shows important changes.

In the whole of the reticular layer great masses of cubical and rounded cells (plasma cells) can be seen separating the connective-tissue bundles. Bounding and mixed up with these cells are numerous spindle-shaped cells, which stain in an exactly similar way to the more rounded cells, and in a different manner to the older connective-tissue bundles of the corium. These spindle-shaped connective-tissue cells become more and more elongated, and they form, with other similar cells, long lines of connective tissue, which envelop the original connective-tissue bundles and force them widely apart.

In some parts of the sections the appearances suggest that these rounded, cubical, and spindle-shaped cells may envelop and destroy by pressure portions of the older connective tissue of the deeper parts of the corium. It can thus be seen that a tissue of new formation is taking the place of the structures normal to the corium.

These large cellular collections are only moderately vascular, and the rounded cells are not more numerous in the neighbourhood of the vessels than elsewhere. In fact, the vessels often appear to be surrounded by a thick mass of spindle-shaped cells.

No giant cells or chorioplaques can be seen in any of my sections of old portions of the tumour. They appear to belong to only an early stage of the disease. Mast cells are very numerous amongst the great masses of plasma cells, which occupy the site of hair follicles that have been destroyed, but they are not numerous elsewhere in the corium.

The papillary processes of the corium are enlarged in late stages of the disease, and show numbers of large blood vessels and lymph spaces. Cubical and rounded cells are here also very numerous, but much less so than in the reticular layer.

The epidermis does not show any changes of importance in the earlier stages of the disease. The stratum corneum and stratum granulosum are unaltered, but the interpapillary processes of the prickle cell layer are somewhat diminished over the central portion of the early pustule, and the prickle-cell layer is thin over the apex of the papilla.

In old portions of the tumour, however, the prickle cell layer is very generally thickened, and there is in my sections a very marked acanthosis at the margins of the nodule excised, the interpapillary processes being enormously enlarged and lengthened. The interpapillary processes are everywhere irregular in size and shape, and appear here and there to be enlarging at the expense of the corium. No infiltration of round cells between the prickle cells could be seen in any of my sections.

It is to be remembered, however, that there was no catarrh of the skin when the nodule was excised. In the cases described by Fritz Porges and others, catarrh was a noteworthy feature clinically, and may account for the different appearances described by them.

In conclusion, my histological observations most closely correspond to those of Mibelli, Dubreuilh, Besnier, and others, who ascribe all the important characteristics of the disease to changes in the corium. Histologically the disease does not resemble acne or sycosis, and the curiously irregular cellular masses distinguish it from keloid. It appears from the manner of its extension to be a benign new growth or diffuse fibroma of the corium, set up by the entry of staphylococcus aureus into the follicles.

That the disease, when once established, can also spread widely, independently of any follicular disease in its immediate neighbourhood, appears probable, as it is otherwise difficult to explain the great involvement of the ear and cheek that this patient presents.

Clinically there seems to be at least two or three varieties of the disease described by Kaposi as dermatitis papillomatosa capillitii, and by Bazin and the French school as acne-keloid.

In Kaposi's earlier cases, and, in fact, in most of the recorded cases, the back of the neck was the first seat of the disease, and it followed some more acute catarrhal affection of the skin (cases of Kaposi, Porges, and others). The French and Italian cases seem to have been more like those of Roger Williams and Morrant Baker, and free from any general catarrh. One of Morrant Baker's cases, however, was recognized by Kaposi as an example of the disease he had described, showing that he was acquainted with a less inflammatory form of the disease.

I have not been able to find a record of any case in which the side of the face, away from the beard area, has been so largely affected as in the patient I am showing, and the enlargement of the ear is also, as far as I am aware, a very rare feature in the disease.

Dr. J. M. H. MACLEOD remarked on the singular resemblance between the histological architecture of this case and that which occurs in nodular lupus, and pointed out that there was strong evidence that the staphylococcus aureus, probably in a state of diminished virulence, might be capable of producing such a granuloma, and that numerous conditions which had from time to time been labelled from their histological appearances as tuberculous were really simply pro-

duced by staphylococci. He also pointed out the close resemblance between certain cases of Oriental sore, Delhi boil, etc., in their histological architecture to the present case.

Dr. Brooke (Manchester) thought the President might not have seen a case of this character, which had, as this case, been exposed to *x* rays for some time. He had had a case of the ordinary condition on the nucha which during its evolution presented, after long exposure to *x* rays, exactly the same obliterated look as in the present instance. The result of the phototherapy had been successful.

BENIGN CYSTIC EPITHELIOMA AND ITS RELATIONSHIP TO SO-CALLED SYRINGOCYSTADENOMA, SYRINGOCYSTOMA, AND HAEMANGIOENDOTHELIOMA.

By M. B. Hartzell, M.D.,

Associate in Dermatology, University of Pennsylvania.

Within the past twenty years a small but constantly-growing number of cases of a peculiar neoplasm of the skin have been reported by observers in France, England, Austria, and America, which, while differing in some minor details, such as the distribution and location of the tumours, yet have so many clinical and histological features in common as to suggest, if not identity, at least near kinship. In the great majority of cases the number of lesions was considerable—sometimes amounting to a hundred or more—but exceptionally the number was quite small, even, in a few cases, limited to a single nodule. The malady was characterized by the presence of hempseed-sized to large pea-sized—rarely larger—yellowish, yellowish-pink—less frequently bluish—tumours, seated, in a certain proportion of cases, upon the forehead, nose, and cheeks; in others, more or less strictly limited to the anterior surface of the upper two-thirds of the trunk. The lesions usually first appeared in youth or early adult life, and slowly increased in numbers with the advancing years of the patient. The course pursued by the disease was an extremely chronic one, and in most cases the tumours ceased to grow after reaching a certain size, and underwent no further change. It should be noted, however, that in a few instances ulceration—such as takes place in epithelioma—occurred after some years, Jarisch, Hallopeau, and White having each reported an example of this complication. Subjective symptoms were entirely absent; indeed, in a considerable number of cases the growths were discovered accidentally while the patient was seeking advice for some other ailment.

While these cases, as already remarked, had much in common clinically, the pictures presented by their microscopic structure, while agreeing in certain points, presented such variations as to lead to considerable differences of opinion among the reporters concerning their real nature. Viewed from a histological standpoint, they may be divided into two groups. In the first the tumours were made up of large, rounded, or irregularly-shaped masses of columnar-celled epithelium in which there was a marked tendency to degeneration of the central cells and consequent formation of pseudo-cystic cavities containing either granular débris or colloid material, and in a few instances considerable masses of pigment. The origin of the neoplasm could usually be readily traced to the basal cells of the epidermis or to the cylindrical cells of the hair follicles, or to both, both modes of origin being seen in the same tumour, and even in the same section occasionally. These are the cases which have been described by Brooke, Fordyce, Hartzell, and others as benign cystic epithelioma, and for which Jarisch proposed the name trichoepithelioma, to indicate its association with the hair follicles. Here, too, probably belong some at least of the cases described as adenoma sebaceum. In the majority of instances the lesions of this group were found in some portion of the face, the trunk being entirely free; but there were exceptions to this rule, as in one of the cases which I reported some two years ago in which the lesions were strictly limited to the subclavicular and scapular regions. In the second group the lesions, while resembling in their external appearance those of the first, were usually found upon the trunk, on its anterior surface between the clavicles and the umbilicus, and were composed of long, slender, frequently branching tracts of spindle-shaped epithelial cells resembling those of benign cystic epithelioma, these tracts being as a rule only a few rows of cells wide, and frequently terminating in cysts with epithelial-cell walls filled with hyaline or colloid material. Among the first reported of such cases were those of Darier and Jaquet, who gave them the name hydradénome éruptif; later Török and Phillipson reported similar ones observed in Unna's clinic, the former naming the neoplasm syringocystadenoma. As syringocystoma Neumann has also published two cases to which we shall refer more particularly later. Jarisch, Elschnig, Guth, Wolters, and others have reported one or more cases each under still another name, haemangioendothelioma. Very recently Gassmann and Winkler have each published in detail 5 cases under the title naevi cystepitheliomatosi. Lastly, all are agreed that the affection described under so many names is identical with the malady first described by Kaposi some years ago under the name lymphangioma tuberosum multiplex.

Concerning the first group of cases, those of Brooke, Fordyce, and others, there seems to be very little difference of opinion; it is generally agreed that these are benign epithelial neoplasms which originate in the basal-cell layer of the epidermis and in the hair follicles, either or both. But, as is evident from the great variety of names given them, no such agreement exists concerning the second group. Darier and Jacquet, Török, Unna, and Neumann consider the lesions in this group of cases to be epithelial growths, having their origin in the excretory ducts of the sweat glands. Torok, as already mentioned, reported his case as an adenoma arising from the sweat duct, a view in which he was supported by Unna, but in the section upon adenoma of the sweat glands, written for Mracek's *Handbook of Skin Diseases*, he admits that he was in error in describing this case as one of adenoma: but he still maintains, however, that the neoplasm probably had its origin in aberrant embryonic sweat gland cells, a quite unnecessary hypothesis, as it seems to me.

Gassmann and Winkler also consider the tumours to be epithelial in character, but would place them among the naevi. On the other hand, Jarisch, Wolters, and some others believe the lesions to be endothelial new growths which have their origin in the endothelial cells of the blood vessels.

In a paper, published some two years ago, in which I reported two cases of benign cystic epithelioma of the type described by Brooke, I concluded that all these cases probably represented three microscopically distinct affections, although scarcely distinguishable from one another clinically: but a further study of the literature of the subject, and more especially the careful study of the case which I am about to report, have changed my opinion somewhat as to the real nature of this malady so variously named. It appears to me extremely doubtful whether the origin of any of the cases in any portion of the sweat gland apparatus has been actually demonstrated; nor do I believe the endothelial character of the so-called haemangioendothelioma established beyond question. The following case, seen in May of last year, seems to me to be especially interesting and instructive in connexion with this subject: E. B., a young girl, 14 years old, came to the skin dispensary of the University Hospital for advice concerning a growth upon the chin which presented itself as a small, firm, button-like disc with a slightly concave surface, yellowish-pink in colour, which could be readily picked up between the thumb and finger. Upon close inspection a small number of minute, whitish bodies, resembling milia, were seen imbedded in the substance of the tumour. Upon inquiry it was learned that it had begun about four years before as a small "pimple," which at first attracted but little attention from the patient or the members of her family. There were no subjective symptoms of any kind associated with it, but as it was steadily, although slowly, enlarging and becoming quite noticeable, the patient was anxious to have it removed. It was accordingly excised. It should be noted that there were no other lesions of a similar kind upon any other part of the body.

Microscopical examination of the tumour revealed a structure consisting of numerous slender tracts of epithelial cells running in all directions through a fibrous stroma, and many round and oval cysts with epithelial walls, filled with a hyaline material which usually showed a more or less laminated arrangement. The tracts of epithelium, which was of the cylindrical variety, were in many instances quite long, sometimes branched, and usually not more than two or three rows of cells wide, presenting somewhat the appearance of the excretory ducts of the coil glands. Occasionally tracts were seen which terminated in cysts, but this was not a frequent occurrence. Owing to the resemblance to sweat ducts, careful search was made for a central lumen, but in vain;

and no connexion with any part of the sweat-gland apparatus could be demonstrated, although many series of sections were carefully examined with this in view. Search for a possible connexion between the cell tracts and the vessels was equally fruitless. In many sections the hair follicles presented striking evidences of abnormal growth. Frequently long, slender, epithelial branches were seen extending from the sides of the follicles, these lateral branches being observed most frequently in its upper third; and in a few instances the lower extremity of the follicle presented numerous budding processes. In addition to this abnormal growth of the epithelium, many of the follicles contained cystic cavities in various stages of development, in most of which the hairs were still present. In a word, it was strikingly evident that the neoplasm had its origin in the disturbed growth of the hair follicles, presenting an exquisite example of a pure tricho-epithelioma. Not only did the epithelial meshwork start from the cells of the follicles, but the cysts, which were an equally striking feature of the tumour, likewise had their origin in these structures.

Now, in which of the two groups mentioned earlier should this case be placed? A very cursory examination of the sections is sufficient, I believe, to show that the neoplasm is identical in structure with the cases described as syringocystoma, hydradenoma, and haemangioendothelioma; but it seems to me equally clear that it is an epithelial neoplasm springing from the hair follicles, and in no way connected with either the sweat glands or their ducts, or the blood vessels. The two cases which Neumann has reported as syringocystoma are without doubt precisely such cases as the one I have just described; a comparison of the plates accompanying Neumann's paper with the photomicrographs of some of the sections of my case will readily convince any one of their complete identity. I wish to call special attention to one of Neumann's figures, showing a transverse section of a hair follicle, which is quite evidently undergoing such a budding process as I have described above. While Neumann calls attention to this peculiar abnormality, he seems to have missed its significance altogether.

From the foregoing, it seems to me that one of two conclusions is inevitable: either, neoplasms differing widely in origin and nature may resemble one another so closely histologically, as to be practically indistinguishable, which is unlikely; or, those who believed that they were able to trace the origin of these growths to the sweat glands ducts or to the blood vessels, based their conclusions upon insufficient evidence. A word as to the relationship between neoplasms of this variety and benign cystic epithelioma of the Brooke-Fordyce type. Although, at first glance, there seems to be considerable differences of structure between them, a closer examination shows that these differences are more apparent than real. Clinically, they are scarcely, if at all, to be distinguished from one another; and histologically, both are composed of cylindrical epithelium; both undergo cystic degeneration; both have their origin in the hair follicles; and finally, both are chronic benign growth of indefinite duration. In conclusion, I believe it is altogether permissible, in the existing state of our knowledge of the subject, to regard all these cases which have been so lavishly named, as simply varieties of one and the same affection, for which the name benign cystic epithelioma is entirely suitable.

THE BACILLUS PYOCYANEUS AND PEMPHIGUS VEGETANS.

By GEORGE PERNET, M.R.C.S., L.R.C.P.Lond.,
Assistant to the Skin Department, University College Hospital: late Pathologist to the Hospital for Diseases of the Skin, Blackfriars.

IN January, 1900, whilst I was pathologist to the Hospital for Diseases of the Skin, Dr. P. S. Abraham asked me to see a case of his at the West London Hospital, which he thought would interest me. I came to the decided conclusion the patient was suffering from pemphigus vegetans.

I am indebted to Dr. P. S. Abraham for the following account of his case, which I transcribe from his manuscript:

Thomas J., aged 38, came to the West London Hospital, and was admitted by me suffering from fungating ulcers on the feet, about the groin, scrotum, various parts of the body and face—especially the lips and mucous membrane of the mouth. The lesions on the feet at first sight looked like phagedaenic syphilitic ulceration, while those about the perineum reminded one of large masses of condylomata; a few bullae, however, were to be found upon the lips and elsewhere, and I soon arrived at the diagnosis that it was a well-marked case of the rare pemphigus vegetans.

The man had been occupied for some years in paving and occasionally in laying drains. He had been married eleven years, with one child, and his wife had had one miscarriage following influenza. There was no history of syphilis, nor anything particular in the family history. According to his and his wife's account, about six months before admission he had been working in connexion with some sewers, and got a bad sore throat, which was said by the doctor to be diphtheritic. This lasted for four months, when blisters began to appear on the chest, with swelling of the head and tongue, pain at the back of the head, and great weakness. He has been in bed ever since, blisters coming out in the groin and upon the head, and he was then treated for erysipelas. The feet subsequently became affected. There was always swelling, itching and burning before the blisters appeared.

He was at once placed upon an iron and arsenic mixture, the fungating lesions bathed with a weak creolin lotion, and dressed with a mild mercury and lead ointment. A weak chinosol solution was used for the conjunctivae, which had become inflamed, and an antiseptic mouth wash for the ulcerated buccal mucous membrane. His condition did not improve, and unfortunately there was a change of house-physicians at the time. His wife became dissatisfied and removed him against the advice of the resident staff about a fortnight after he came in. I subsequently heard that he died two or three weeks later,

The case interested me because I suspected that working in the sewers might possibly have something to answer for in the matter of etiology, as there had been a man with anomalous pemphigus at University College Hospital in May, 1899, in whom the disease started in the mouth soon after cleaning out some old stable drains. This case terminated fatally, but a bacteriological examination of the blood and contents of bullae during life, carried out by Dr. W. G. Savage, at that time Assistant to the Professor of Pathology, University College, was negative.

In February, 1900, one of the resident staff of the West London Hospital,* was kind enough to send on to me at Blackfriars a pipette containing fluid drawn from a bulla of Dr. Abraham's case. From this fluid I obtained pure cultures of bacillus pyocyaneus on gelatine and agar. The cultures were pure from the first. As this result was quite unexpected, I sent a culture to Dr. William Bulloch, Bacteriologist to the London Hospital, and he replied that it was undoubtedly a pure culture of bacterium pyocyaneum, quite typical in every respect. It is unfortunate that Dr. Abraham's patient left the hospital so suddenly and was lost sight of, as it would have been of great interest to have examined the blood, etc., and also to have made a necropsy.

As to bacillus pyocyaneus, it is well known to be pathogenic to man, and may give rise to marked constitutional disturbances, including pyrexia, albuminuria, etc. The skin may be involved, exhibiting bullae and haemorrhages. I may just recall here the fact that Ehlers[1] observed two cases of dermatitis gangrenosa—ecthyma térébrant, ecthyma gangrenosum—(brother and sister), one of which terminated fatally, and in which Ehlers found the pyocyanic bacillus in the skin lesions (*ante mortem*) and in the blood of the heart (*post mortem*). Since then Hitschmann and Kreibich[2] have published three similar cases, in which the same bacillus was looked upon as the cause of the disease. Oettinger[3] also found the bacillus in a case of bullous eruption, in which the bullae broke down, leaving ulcerated areas which became diphtheroid-looking and emitted a gangrenous odour. Neumann,[4] of Berlin, in two cases of pyocyanic infection in children, records intestinal and cutaneous haemorrhages. Those interested in the matter will also find additional experimental details in the thesis of Legars.[5]

The point I wish to draw special attention to in this note is the fact that the bacillus pyocyaneus has been found in water, dung, earth (agricultural soil),[6] and in sewage effluent, the bacillus pyocyaneus passing readily through the beds.[7] According to Bonjean,[8] it was present in large numbers in samples of Zemzem water—that is, from Hagar's well—which Mohammedans bring back with them from their pilgrimage. It may be noted, too, that the bacillus pyocyaneus produces six different enzymes.[9]

In conclusion, I consider that, although links are missing in the chain, there is some evidence as to the possibility of man becoming infected by bacillus pyocyaneus from sewage, perhaps through some solution of continuity in the buccal mucous membrane, or otherwise, and developing a serious general morbid condition with cutaneous manifestations clinically like those of pemphigus vegetans.

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* I regret I do not know the gentleman's name. I am therefore unable to thank him by name as I would wish.

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ON CHRONIC X-RAY DERMATITIS.

By J. Hall-Edwards, L.R.C.P.Edin.,
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A large number of the early workers with the *x* rays are now suffering from a severe chronic disease, which apparently defies all treatment and which renders their lives little short of a misery. It is with the hope of obtaining some suggestions for treatment that I take the liberty of addressing this Section. As a sufferer myself I speak from my heart when I say that any suggestion which may be forthcoming will be thankfully received by sufferers throughout the world.



Fig. 1.—Chronic *x*-ray dermatitis. Condition of left hand, August, 1903.

Chronic *x*-ray dermatitis is one of the most persistent, painful, and disfiguring maladies it has been my misfortune to meet, and although, in the light of our present knowledge, it is avoidable, there appears little or no hope for those who have contracted it.

Shortly after Professor Roentgen's discovery, and long before it was recognized that the *x* rays had any physiological or therapeutic effect, it was a common practice for experimentors to expose their hands freely to the rays. With no knowledge of the fearful results which were to follow, this practice was continued until a dermatitis made its appearance, and it was then too late to take preventive measures, even had we known of them. The time at my disposal is far too short to allow of my entering upon a discussion of the many accidental and acute forms of the disease which have been brought about purposely, or by over-exposure and ignorance. I shall, therefore, entirely confine my remarks to the chronic form of the disease, and must ask subsequent speakers to follow me in this respect.

In helping us to formulate some idea of the progress of the disease I will detail the history of my own case. I commenced my experiments with the *x* rays a few weeks after the publication of Professor Roentgen's masterly paper, and during my gaining a knowledge of their capabilities I constantly exposed my hands to the rays. Early in 1896 I gave a series of demonstrations lasting four evenings. On each occasion I exposed my hands to the rays for several hours. Some two or three weeks later I noticed that the skin round the roots of the nails was red and painful. I thought little of this, and attributed it to the constant use of a developer containing metol. How I could have done so I do not know, as I had constantly used such a developer for years without any bad result. I rather fancy that the suggestion came from others, for it must be remembered that some persons are peculiarly susceptible to its action. Anyway, I took no precautions to protect myself from the rays, and, although I did not perhaps expose my hands quite so freely, I still continued to use them when testing the penetrative power of my tubes. The redness and soreness gradually disappeared, and transverse lines appeared upon the nails, which also became so brittle that they broke or cracked upon the slightest pressure. Longitudinal cracks now made their appearance, and the quicks became dry, and showed a tendency to separate from the nails.



Fig. 2.—Chronic *x* ray dermatitis. Condition of right hand, August, 1903.

The nails of the index fingers were the most affected. These began to thicken, and the substance of the nails to degenerate, until they became shapeless masses. Both these nails have come off on several occasions. About this time, between three and four years back, warty growths first made their appearance. From the time I started from England until I commenced work in South Africa (a period of two months) I was not once subjected to the rays; nevertheless, the amount of improvement in the general condition of the hands was so small as to be only just observable.

The skin over the backs of the hands gradually became dry

and wrinkled, and the warty growths and increased epithelial growth became daily more marked. Apart from the disfigurement I suffered no inconvenience. Some six months back I first began to experience pain; this was of a dull, grinding character, and appeared to come chiefly from the bones. Four months back I first noticed a small sore over the knuckle of the right middle finger. This has resisted all attempts to heal it, and is very painful and exceedingly sensitive to the slightest touch. Another sore has now appeared upon the index finger. The warts continue to increase in size, and can only be kept down by the aid of fine sandpaper or by cutting them down with a razor. Unless this is continually done the hard skin over the knuckles entirely loses its elasticity, and cracks with the slightest extra exertion. These cracks are very painful and difficult to heal. I find painting them with a solution of nitrate of silver (10 gr. to the ounce) in sp. aetheris nitrosi relieves the pain. Lately I have experienced a marked increase in the pain, especially when the hands are held in a dependent position. I have also noted a loss of power and some pain in the arms.

The skin on the back of the hands is red, and a sensation of burning and extreme itching are constantly present. The itching is so bad at times that it requires no small amount of control to keep from scratching. In an article upon the subject by Dr. John Pitkin,[1] the pain of an advanced case of chronic *x*-ray dermatitis is thus described:



Fig. 3.—Chronic *x*-ray dermatitis. Condition of left hand, August, 1904.

For a description of the pain and suffering, hyperaesthesia, paraesthesia, no language, sacred or profane, is adequate. The sting of the honey-bees or the passage of a renal calculus is painful enough, but are comparative pleasures, because being paroxysmal they have a time limitation.

Extreme tenderness to the slightest touch. Hot and cold waves and flashes, warmth, tingling, prickling, throbbing, stinging, crawling, boring, and burning sensations, as if the parts were on fire and contained bugs and other living things. Feelings as if the anatomical structures were being moved from one position to another. All of these sensations are proportionate to the depth of the inflammatory process. All forms of radiant energy, light, heat, magnetism, ultraviolet rays, etc., increase the suffering. The parts are irritated by soap solutions or attempts to use them for any purpose. The suffering is also augmented if the affected members are allowed to become dependent, hence the afflicted operator holds his hands high above his head, even sleeping with them in that posture. If the inflammation in his hands is severe muscular action will be temporarily lost, the fingers immobile. He must be dressed, undressed, and fed by attendants.

The application of water adds to the pain and discomfort; as, however, the hands must be washed, I have found the use of fairly hot water and superfatted soap to cause the least irritation.

Personally, I have not experienced any effects upon other parts of my body. Several cases have been reported in which the face was affected. I have myself noted one or two cases where a conjunctivitis was caused by only a very short exposure. On the other hand, I have no hesitation in exposing the eye to a series of applications in cases of rodent ulcer and other disease involving the eyelids, and, moreover, I have only in one or two instances noted any ill effect.

Acute *x*-ray burns are divided into four classes in the same way as ordinary burns, and chronic *x*-ray dermatitis may be looked upon as a fifth form. It is seen only in *x*-ray workers and in manufacturers of apparatus, especially of tubes. It takes different forms in different individuals, no two cases presenting exactly the same appearance. Godman[2] describes this condition as follows:

In the less pronounced forms the skin appears chapped and roughened, and the normal markings are destroyed: at the knuckles the folds of the skin are swollen and stiff, while between there is a peculiar dotting resembling small capillary haemorrhages. The nutrition of the nails is affected, so that the longitudinal striations become marked and the substance becomes brittle. Blebs may be formed, exfoliation of epidermis, and loss of nails may take place. In the worst form the skin is entirely destroyed in places, the nails do not reappear, and the tendons and joints are damaged.



Fig. 4.—Chronic *x*-ray dermatitis. Condition of right hand, August, 1904.

Pusey says:

The skin of the affected areas, usually the backs of the hands, become atrophic, and thin and cracked like parchment. It may be smooth and glassy in appearance, with entire absence of the follicular openings and hairs, and with a tendency to crack about the joints. The skin is pinkish-white, mottled with small reddish vascular patches and with decided redness about the knuckles.

In my own case there has been an almost and complete absence of telangiectasis, but there has at all times existed a tendency to hyperkeratosis. Pusey says that these keratoses have a peculiar predisposition to epitheliomatous degeneration, and that there is a possibility of epitheliomata developing. Johnston[3] has called attention to this keratosis as "precancerous keratosis." Albers-Schönberg states that, on the whole, the action of the *x* rays on the normal and abnormal skin is similar. He attributes the changes in the finger-nails to a disturbance of the nutrition of the parts. The

disease is extremely chronic, and a very lengthy rest, with constant treatment, is necessary to bring about even a slight improvement. Several medical men have abandoned the use of the *x* rays; and in a case within my knowledge eighteen months' rest, with constant treatment, has produced but slight improvement.

Having once contracted the disease the slightest exposure to the rays, even at a considerable distance from the tube, does untold harm. I am perfectly certain of this—that a second's exposure to even a weak radiation does more harm than a month's rest, with treatment, does good. I would advise all workers to shun a tube in action as they would the plague, and to adopt every possible precaution to protect themselves and their patients.

I will not enter into a discussion upon the pathological changes which occur in the tissues, as there appears to be a considerable difference of opinion upon these points, and much knowledge is needed to place us in a position to argue these changes with advantage. There can be no doubt, however, that the sebaceous and sudorific glands are permanently destroyed.

Apart altogether from the effects of the rays upon the hands, various writers have described chronic effects upon the face and head, marked by scars, pits, warts, pigmentation, and baldness.[1] Dr. Wagner, of Chicago, has drawn attention to small cicatrices which occur at the labial commissures which draw down the angles of the mouth and give the operator a sad expression of countenance.

Certain changes take place in the blood.[2]

Mantè has carefully studied the cellular composition of the blood in cases treated by radiotherapy, and has noticed that during the hour following exposure (two to six minutes) there is an appreciable modification of the cellular equilibrium of the blood which is attended by an increase in the number of both the white and coloured corpuscles, the percentage of polynuclear and large and small mononuclear cells being greater than normal.

Heinecke's experiments go to prove that the lymphoid structures of the body are ever more susceptible to the *x* rays than the cutis. In small animals exposed to the rays for some hours the spleen showed an excessive increase in pigment, a disappearance of the follicles, and a general destruction of the splenic pulp.

The rays have an influence upon the nervous system, but further clinical observation is necessary before their exact action can be learned.

Dr. Pitkin mentions the following sequelae as occasionally occurring after prolonged exposure to *x* rays:

Hyperaemia or anaemia, usually the former, the latter being confined to circumscribed patches.

Hyperaesthesia to all forms of radiant energy.

Increased vasomotor activity.

Diminution or loss of the sense of touch in circumscribed areas.

Small abscesses at the roots of the teeth.

Temporary decrease of sexual power.

Mr. Edison reports that the focussing power of one of his eyes has been lessened by the rays.

This formidable list of possible ill-results from prolonged exposure is sufficient to deter any one from taking up *x*-ray work, but it must not be forgotten that, even in the present state of our knowledge, all of them can be combated, and the new generation of *x*-ray workers need know nothing of them. The action of the rays is greatest near the tube, and it diminishes as the parts are removed to a distance, but, having once contracted a chronic dermatitis, I feel sure that even living in a room with an excited tube is dangerous.

Apart from the effects upon my hands and arms, the only symptom I have noticed is an occasional action upon the heart, causing palpitation and irregularity.

The irritation caused by the *x* rays is in many cases undoubtedly intensified by the use of photographic developers, especially those containing metol, and in the early days most of the effects were put down to this cause; but, inasmuch as chronic *x*-ray dermatitis is frequently present in workers who do not develop their own plates, it follows that the developer cannot be the exciting cause. That metol and other photographic chemicals are an occasional source of skin irritation is generally acknowledged, but many photographers have developed a chronic dermatitis since applying the *x* rays who did not have it before, although they develop no more plates now than they did previously.[6]

There can be no doubt whatever as to the source of the dermatitis or of the power of the *x* rays to keep it up, even when the parts are subjected to homoeopathic doses.

By taking proper precautions, the hands and faces of operators can be efficiently protected. It is hardly necessary for me to enter into a discussion of the methods of protection, as the chief aim of this paper is to elicit opinions as to treatment. Upon this point there exists a very great diversity of opinion, some authorities advising methods which others pronounce fatal. On the one hand, electricity, ultra-violet rays, and sunlight have been advised, whilst on the other all forms of radiation have been said to do harm. Dr. Pitkin advises:

Physiological rest, an elevated position, exclusion from all forms of actinic rays, the burning away of deciduous material with dioxygen, the employment of formaldehyde (10 per cent. solution) as an antiseptic wash, and a thick dressing of equal parts of vaseline and powdered starch, evacuation of pustules, and the wearing of kid gloves for several months after the acuteness of the attack has passed, will afford considerable relief to the sufferer.

The painting of the skin with a saturated solution of picric acid has been advised.

Personally, I have tried a very large number of drugs, but few have given me even temporary relief, and despite all precautions and continued treatment, the condition of my hands is daily getting worse. The following ointment is soothing, and it relieves some of the pain:

℞	Acid salycilic	20 gr.
	Menthol	20 ..
	Cocaine	1 ..
	Lanoline	1 oz.

Ft. Ung.

For an acute attack I have found nothing so good as the constant application of an evaporating lead lotion. A few months back I was consulted by a young man who had been demonstrating the *x* rays at a charity bazaar. During the week he exhibited his right hand to many hundreds of people. Ten days later he felt great pain in the hand, which gradually inflamed, the inflammation ending in a large blister, which raised the epidermis over the whole of the back of the hand. I advised the use of evaporating lead lotion, and perfect rest. Much to my astonishment the hand was completely well in a fortnight, and the patient has suffered no further inconvenience, although the skin is much altered in appearance.

Case.—In this case [case shown] an acute dermatitis occurred some five years back, and the hands have occasionally been subjected to the rays since. The disease has now become chronic, but, apart from the disfigurement, the patient suffers no inconvenience. The difference between these hands and my own is marked.

I have before mentioned that, having once contracted a dermatitis, there is an increasing tendency to be affected by the rays. The patient just shown is in a condition to develop serious symptoms unless he take extra precautions to protect himself. In speaking upon this point, Dr. Western A. Price (Cleveland, U.S.A.) says:

Four or five years ago I used to spend from one to four hours a day experimenting along various lines with my apparatus. I would work for hours before my tube without any protection whatever, of course maintaining a respectful distance, and without any apparent effect. Now five minutes will cause more irritation than five hours would at that time.

He goes on to say that in his opinion the whole of the body should be protected, and advises the use of a special rubber cloth which is now largely used in America.

I have not mentioned that several constant workers have sustained a chronic dermatitis in their feet, despite the presence of boots, which one would imagine to form ample protection. There can be no doubt that simply to protect one's hands and person from the direct action of the *x* rays is not sufficient. The whole tube should be covered in with the exception of a small window through which the rays can reach the patient, as there is a possibility that secondary radiations coming from the walls of the room and from various objects contained in it are also a source of considerable danger.

In conclusion, I should like to draw your attention to the distribution of the warty growths upon my hands. Although the right hand is much the worst, there is a symmetrical arrangement which is significant. The growths upon the index and middle fingers of the right hand have become confluent, so that it is difficult to see where they started, but on comparing the other fingers and the backs of the hands the symmetry of the arrangement is obvious. This goes to prove that the nerves play an important part in their production. (See Illustrations.)

Finally, I cannot too strongly urge young workers to take every possible precaution before it becomes too late.

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Dr. V. H. RUTHERFORD (London) showed a well-marked case of urticaria pigmentosa, in a boy aged 17, of four years' duration, distributed thickly over the limbs and body, the face, palms, and soles alone escaping. Most of the lesions were about the size of half a pea, slightly elevated, nodular, and red. A few were flat and macular. The buccal mucous membrane presented symmetrical white patches with a tendency to fine exfoliation. Itching had been conspicuous by its absence throughout the course of the disease, and there was no history of wheals or bullae, but factitious urticaria was easily and prominently developed on gentle friction. Personal and family history good. No new lesions had appeared during the last seven months while the patient had been under observation. The microscopic section presented (1) an increase in the ordinary pigment in the epidermal palisade cells, and (2) characteristic infiltration of mast cells crowded in the papillae and upper layers of the corium.

ON THE NON-PARASITIC CUTANEOUS REACTIONS.

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THE tendency of the last hundred years, to say nothing of the pre-scientific ages, has been to individualize diseases of the skin; and this was but natural, for whatever has form, size, and colour has three objective characters by which it can be recognized in the same way that individual things in Nature can be recognized. Hence, when one disease assumes the aspect of red scaly patches, while another appears in the form of red papules, the human mind instinctively individualizes these forms. The attention of the observer is concentrated on the form and colour. If the observer be learned in the language of dermatology he clothes his individual diseases in garments woven out of words. Open any textbook on dermatology, and see how largely the doctrine of the efflorescence looms in the mind of the writer. Page is piled on page to describe spots and patches. How minutely he describes their sizes and colour!

It has been well said that Life is a lesson in the falsehood of appearances, and in no department of knowledge is it more imperative that "the judgement of the senses must be corrected constantly by experience" than in dermatology.

But man is slow to learn. It is now a hundred years since Willan published his classical work on *Diseases of the Skin*. His was the age of artificial botanical classifications. The regions he and his early successors traversed were unexplored. Everything was fresh, and every object they stumbled across was a delightful discovery. With the increasing use of the microscope much was hoped for, and truly the harvest was great.

But, after all, we have not found all we set out to seek; indeed, problems of causation have grown more intricate—not simpler, as we hoped they would. The sooner we learn the fact, the better it will be for us, that the microscope does not reveal causation, although it has created the science of pathological anatomy. It has enlarged our vision. What was formerly a mass now resolves itself into cells and fibres. Our thoughts have thus gained enormously in precision, and our views of morbid processes in clearness of definition. It is true that in the case of the parasitic reactions the microscope reveals a foreign organism in the tissues, but it does not prove that the micro-organism is the cause of the disease. The proof of this is afforded by experiment and by observation of the contagious propagation of the disease.

But if we exclude the parasitic diseases there remains a very large class which includes some of the commonest and most frequent diseases of the skin. This class includes urticaria, the erythemata, the eczemas, psoriasis, lichen, dermatitis exfoliation, and various forms of hydroa.

The most careful and prolonged investigation by many able observers has failed to reveal any causal relationship between these reactions and foreign micro-organisms. We can search the tissues through and through, but the microscope reveals little more than the fact that there has been a redistribution of matter. It imparts information regarding the cellular character of the infiltration, and we are able to note whether the tissues have departed from the normal in the direction of growth or of degeneration. But the accumulated clinical experience of a hundred years has failed to show that any one of the diseases enumerated in this class is the outcome of any definite and constant sequence of events.

Surely here are indications which forcibly impress us with the belief that the time has arrived when we ought to examine our methods of research, and I am glad to see that other dermatologists are of the same opinion too. Already a new departure has been made by Philippson, Török, and Brocq. At the very outset we are called upon to remodel our conception of causation. It is almost a medical instinct to understand by the word "cause" something of the nature of entity—something which is definite, which is mechanically separable from the body, or some definite pathological state of metabolism, such as gout or rheumatism. Now, so far as diseases of the skin are concerned, this is true only of the parasitic diseases. In these we certainly have some causal agent which is mechanically separable from the body, and which has an independent life outside the human subject. But such is not the case with the non-parasitic diseases. Take, for example, a certain number of consecutive cases of urticaria: they have all the same objective characters, and yet they are not necessarily all the same disease. And for this reason, that the sequence of events which has culminated in the reaction we call urticaria may be different in each individual patient. It is the sequence which makes the disease, not the anatomical lesion. The same principle underlies the erythemata, as Besnier long ago pointed out, and also eczema.

The modern teaching of cutaneous reaction, which finds its most ardent advocate in Brocq, is directly opposed to the old doctrine of the efflorescence. It was the fatal error of the old teaching that it tended to lead the pupil to regard the eruption as a thing standing still.

Now, the principles of cutaneous reactions rest on the laws of dynamics, and not on morphology. They are deduced not from observations of dead skin, but from the study of living skin. Those who maintain these principles—and among them I include myself—recognize that the skin is a system of active moving parts held in a state of equilibrium by certain conditions. Healthy skin is a living system in true equilibrium: diseased skin is a system in false equilibrium. We shall be the better able to grasp the meaning of these terms, true and false equilibrium—terms which I admit sound strange and uncouth in the dead house or in a histological laboratory, but which are familiar enough to the physiologist and to the student of physical chemistry—if we study the parts of living skin, and see how in health they act and react on each other; in a word, how they can exist together.

In respect of the diseases which we are now considering, the whole skin does not share in the reaction. We are indebted to the microscope for revealing the fact that the reactions concern the papillary body, or that part of the derma which lies immediately under the epithelium, and which I should prefer to call the reactive layer, or, perhaps, more simply, the metaderm.

This layer and the epithelium lying over it form only a thin margin, a mere fraction of the entire thickness of the skin. But so intimate are the natural relationships of the epithelium and the reactive layer of the derm that some dermatologists are of opinion that the two constitute an organic tissue, the two parts of which cannot be separated physiologically or pathologically. It is in this thin outer margin, composed of epiderm and metaderm, that all the non-parasitic reactive diseases play their part. Whatever their "causes" may be, they must operate in these limited fields of force.

The problem which I should like to explain, though I can hardly expect to succeed where the difficulties are so great, is to show what are the substances which participate in the normal equilibrium between the epiderm and metaderm. I shall take no account of the molecular complexity of protoplasm: that is entirely beyond our vision for the present.

Excluding for the moment the consideration of external environment, we observe an opposite action and reaction between the epiderm and the cells and capillaries of the metaderm. The epidermis is a continuously growing tissue of low organization which absorbs fluid from the metaderm by imbibition. In embryonic life the buds, or proliferating downgrowths of epithelium which eventually develop into follicles and glands, are met by a corresponding reaction in the metaderm which takes the form of a new formation of cells and special development of capillaries. In this way the hair follicle growing inwards is met by the dermal papilla growing outwards and is embraced by a richer network of capillaries than the non-follicular part.

If we extend our observations to the sebaceous and sudoriparous glands we can generalize this statement, and say that when one part of the epiderm proliferates more rapidly than

another, the increased growth is always met by a corresponding reaction in the metaderm. The same law is observed in extrauterine life, as, for example, in the case of the corns and epitheliomas and rodent ulcer.

We must now pass to the consideration of the conditions of equilibrium between the blood and lymph, so far as we understand them. Physiologists during the last ten years have added considerably to our knowledge of the factors which enter into the formation of tissue lymph. The problem of explaining the balance of equilibrium between the blood and lymph is complicated by the fact that they are not pure liquids, but liquids holding in solution a large number of chemical substances of great molecular complexity. We have, therefore, to determine the conditions of equilibrium between the solvent on the one hand, and that of each of the solutes, as the matter in solution is called, on the other. Now, to define the condition of equilibrium of each solute is at present utterly beyond our power. We can, however, approach the problem by considering the entire solutes of the blood and lymph as paired off into two opposing fields of force, the one being the colloidal solutes, the other the crystalloid solutes.

Physiologists inform us that lymph differs from blood but little so far as concerns inorganic constituents, but greatly as regards the amount of proteids, so that in a normal state the crystalloids of the blood balance the crystalloids of the lymph. According to Professor Starling, the relation of the blood proteids to the lymph proteids differs in different capillary regions, although under normal conditions the blood is richer in proteids than the lymph. Thus, taking the proportion of proteids in the blood as 8 per cent., the hepatic lymph is found to contain 6 per cent. of proteids, the intestinal lymph 4 5 per cent of proteids, while in the limbs the proteids of the lymph amount to about 2 per cent. Since the concentration of the blood and lymph is in proportion to the quantity of their colloidal solutes, we may briefly express these analytical facts by saying that the blood is, under normal conditions of equilibrium, more concentrated than the lymph, and that the concentration of the lymph varies in different regions of the body, being highest in the liver and least in the skin. Now, if the surroundings of the blood and lymph were inert or passive, and acted like dead animal membranes, we should have no other forces to consider than those of endosmosis and exosmosis. Professor Lazarus-Barlow[1] found, when experimenting with the osmotic powers of blood plasmas of different specific gravities, that the osmotic current was always from the negative towards the positive—that is, from the lower proteid value to the higher proteid value. How, then, is normal transudation possible, considering that the colloidal solutes of the blood are of greater concentration than the colloidal solutes of the tissue lymph? According to this observation, filtration should always pass from the tissues to the blood. "In consideration of these facts," says Professor Lazarus Barlow,[2] "it is extremely difficult to understand how osmosis can play any part whatever in normal lymph formation. The artificial scheme* would seem to indicate that the only effect of osmosis in such a case would be to lead, in time, to the absorption of every particle of fluid which is outside the blood vessels."

A solution of this difficulty may probably be found in the fact that the blood and lymph never are, while under conditions of health, in stationary equilibrium. If the natural tendency is for the osmotic currents to flow from the tissues into the blood, contrary forces are never long absent, which turn the currents in the opposite direction towards the tissues. These contrary forces we may regard as factors in lymph formation, and they are of four distinct orders:

1. Capillary pressure.
2. Permeability of capillary walls.
3. Lymphagogues.
4. Surface tension.

1. *Capillary Pressure.*

Physiologists of the present day are divided in their opinions as to the relative importance to be attached to this factor in lymph formation. According to Professor Starling it is the dominant factor, and the one to which he attaches the greatest importance. He says[3] (1) "With increased capillary pressure there must be increased transudation until equilibrium is established at a somewhat higher point, when there is a more dilute fluid in the tissue spaces, and therefore a higher absorbing force to balance the increased capillary pressure. With diminished capillary pressure there will be an osmotic absorption of salt solution from the extravascular fluid until this becomes richer in proteids, and the difference between its (proteid) osmotic pressure and that of the intravascular plasma is equal to the diminished capillary pressure." That capillary pressure plays a leading part in the formation of lymph in the liver and intestines no one can doubt who has read the protocols of Professor Starling's experiments, but my present object is to consider the lymph factors as they operate in the skin. The pressure in the capillaries may be indirectly determined by estimating the pressures of the arterial influx and venous outflow of the selected region. The pressure in the capillaries must lie between the two estimations, or they may be experimentally determined after the direct pressure methods pursued by v. Kries and Roy.

The indirect method is not altogether satisfactory. For between the arterial pressure and the pressure in the veins is the unknown pressure in the arterioles. With the open arteriole the capillaries become distended with fresh increments of blood. But this does not of itself lead to any increased capillary pressure, for so long as the lax veins are capable of holding the larger volume, the capillary pressure does not rise, since the blood flows away from the capillaries as rapidly as it enters them.† Nor does the open arteriole necessarily lead to increased filtration through the walls of the capillaries into the surrounding tissues. For before this can occur the pressure in the veins must rise to a considerable height. The necessary height to which the venous pressure must rise before its influence can effect transudation through the capillary walls varies, no doubt, in different regions of the body, and probably in different regions of the skin, and also in different species of animals. Thus Lazarus-Barlow[4] "found that when a ligature is placed round the hind limb of a dog sufficiently tight to raise the venous pressure to a height of 50 mm. of mercury (arterial pressure being 100 mm. Hg.), the amount of lymph flow from the lymphatics of the limb taken on the distal side of the ligature is either identical with or slightly less than the amount formed when the venous pressure is normal, in no case was it greater." Two inferences may be drawn from this experiment: first, that the pressure in the peripheral veins may rise without it leading to increased transudation through the capillary walls; and, secondly, that the permeability of the capillaries in the limb is considerably less than in the internal organs. It is not sufficient to determine a rise in the venous pressure and infer that consequently the pressure in the capillaries has risen also. The venous pressure must rise beyond a certain point, a point which varies in different species, in individuals of the same species and in different regions of the body, before increased transudation begins.

Further, there is no proof that increase of venous pressure enters at all into the formation of inflammatory lymph. Indeed, the experimental evidence points the other way. It was shown nearly thirty years ago by v. Kries[5] that arterial hyperæmia produced by irritation of the surface, as by hot water or the inductive current, does not lead to any increase of capillary pressure.

2. *Permeability of the Capillary Walls.*

This is, no doubt, an important factor in lymph formation. Starling regards the greater concentration of the hepatic lymph as due in part to the greater permeability of the capillary walls in the liver. "The more permeable the medium the greater is the effect of changes in the pressure of the filtering fluid, and the greater is the ease with which dissolved proteids pass through it." The capillaries of the limbs have only a small permeability, and the amount of transudation through them is but little affected by fairly large changes in the pressure of the blood within them. This, however, is true only so long as the molecular condition of the endothelial wall of the capillary is perfect. It was shown by Cohnheim long ago that if a dog's foot be kept in water at 60° C. for five minutes the peripheral vessels undergo some alteration and their permeability is increased. The normal pressure to which they are subjected now suffices to cause a transudation of lymph which is too great to be carried off by the lymphatics, and therefore accumulates in the interstices of the tissue, giving rise to œdema. The lymph at the same time becomes more concentrated, due to the larger amount of proteids in it. As a factor in the formation of inflammatory lymph increased permeability of the capillary walls must play a very important part. If heat alone will affect the capillary walls, how much more must mechanical trauma,

* That is, of the osmosis, through a dead animal membrane.

† This argument presumes that the molecular condition of the walls of the capillaries is normal.

such as scratching, affect their texture, and we all know the effect of scratching upon eczema?

3. *Lymphagogues.*

It is maintained by some physiologists that certain substances exercise a specific influence on the formation of lymph quite apart from the influence of pressure. According to Heidenhain's theory, injected substances pass from the blood to the lymph by diffusion, and this process is assisted by the activity of the endothelial cells of the capillaries. Although this hypothesis still awaits experimental proof, it must be admitted that Heidenhain and his pupils have brought forward evidence which appears to favour it. Dr. George Oliver,[6] in the Oliver-Sharpey Lectures of this year, maintains that certain food elements have the effect of increasing the output of lymph from the capillaries. He finds that cold water, starch, fats, gelatine, proteid—for example, myosin and egg albumen—the sugars (cane-sugar, glucose, maltose, galactose, mannose, dextrose, and inulin), pepsin, and hydrochloric acid do not cause any increased flow of lymph. He observed that a meal of roast beef had a marked influence in increasing the outflow of lymph, while a meal of boiled meat had very little effect on the quantity of lymph. Other substances, such as glycogen, levulose, lichenin, sodium chloride, muscle extractives, such as are afforded by beef-tea, had a decisive effect in increasing the output of lymph. Dr. Oliver's views of the action of lymphagogues derive support from the experimental observations of Lazarus-Barlow,[7] who found that the intravenous injection of large quantities of weak solutions of sodium chloride, urea, and glucose, and of small quantities of concentrated solutions of the same substances, led to increase of pressure in the inferior vena cava, and at the same time to an increased flow of lymph from the thoracic duct. Sodium chloride produced a relatively greater flow than glucose, and glucose greater than urea. It is important to note, as bearing directly on the question of cutaneous reactions, that these substances when injected into the circulation produced a rise in the specific gravity of the blood, which was experimentally shown in two cases to depend upon an actual diminution in the volume of the plasma.

4. *Surface Tension.*

This is a factor of prime importance in the pathological processes of the skin, and more especially in the non-parasitic reactions. I employ the word as a convenient phrase to denote the total effect of all exterior influences on the skin. The surface of the skin is perpetually kept in a state of excitement by the pressure on it of air, clothes, and contact with other bodies. Other factors besides pressure are heat, electrical and magnetic forces, light rays, *x* rays, and gravitation. If these forces acted directly on the capillaries of the skin the entire peripheral circulation would be arrested, since the passage of the blood through the tissues depends on the molecular condition of the walls of the capillaries. The tissue which intervenes between the dermal capillaries and the surface is characterized by inertia. It is put there to absorb, break, or arrest these exterior forces, so that by the time their influence reaches the capillaries their action shall be beneficial to the organisms, and not injurious. From a certain practical point of view we may even disregard the histological character of the tissues, and may consider them as mere mass-inertia. So important is this factor of mass-inertia that it cannot be omitted from the etiology of any of the reactions of the skin. It cannot be neglected when we are considering the effect of any radiant, chemical, or physical force on the skin. It cannot be disregarded when we choose a remedy to subdue inflammatory conditions of the skin, or if we do we shall make grievous mistakes. Much of what is vaguely called idiosyncrasy is due to extraordinary variations in the mass-inertia of the skin. When one person is severely burnt by the sun's rays, while another is hardly touched by them, the difference is due to variations in the mass-inertia of the skins of the two individuals.

But similar variations may be observed in the same individual. For example, expose the palms of the hands and the face to brilliant sunlight, or the back of one hand in contrast with the palm of the other, and after the lapse of sufficient time the burning will be found to bear a definite ratio to the thickness of the tissue—that is, to the degree of mass-inertia; the thick-skinned palms have escaped while the face and the backs of the hands are burnt. The same law applies also to heat rays and *x* rays, and to all forms of physical disturbances occurring in the immediate neighbourhood of the body or on the surface of the skin, such as the presence of hard bodies, the irritation of clothes, but, above all, the pernicious effects of scratching.

The inertia of the skin is diminished as the quantity of vapour and water—sweat—passing outwards by the surface increases. This fact is the natural result of a diminution of the rigidity of the epidermis. A rigid epiderm and metaderm would afford perfect protection to the capillaries, but while rigidity is never attained under normal conditions, we may say that the nearer it approaches to it the greater is the protection afforded, and the further it departs from it the less the protection and the greater the danger to the capillaries.

Consider the effect of a cold climate as compared with that of a hot climate in the relation to the question of mass-inertia. The cool, dry skin suffers no inconvenience from the wearing of clothes, whereas the man in the tropics is familiar with the torments of prickly heat. There would be no difficulty in filling many pages with cases culled from daily practice in which eczema has been the outcome of a lessened inertia of the skin, in consequence of which the permeability of the capillary walls have been increased by subjection to traumatic influences. I am in complete agreement with Dr. Whitfield's opinion that eczema is usually related to habits of life, and I would add that these habits of life produce eczema when they act on a skin in which diminution of mass-inertia has unconsciously occurred. I agree with Brocq that it would be better to speak of eczematization of the skin than of eczema of the skin. Eczema is not an entity; it is a cutaneous reaction attended by increased transudation of lymph, richer in proteids than the normal lymph, and which attempts to escape from the tissues by exfoliation of the epidermis. While I admit that the infiltration may become contaminated by microbes and so lead to secondary complication, there is no need to invent microbes to explain its origin. Whenever the equilibrium between the surface tension and the capillaries is constrained the natural reaction is eczematization of the skin.

As a corollary of the doctrine of cutaneous reactions it may be affirmed that there is no dividing line sharply separating one form of reaction from another. Where is the dividing line between eczema and psoriasis? Urticaria may be associated with erythema in the same person. Eczematization may pass into lichenification. The formation of lichen may coincide with the formation of bullae.

We do not yet know what are the conditions which determine that in one person the reaction shall take the form of vesicular eczema, in another psoriasis, in a third lichen, and so on. We do not yet know what share in the causation to ascribe to hereditary influence, to dietetic influence, to auto-intoxication, to nervous and moral disturbances, but this I can say, that, according to the dynamic doctrine of cutaneous reactions, none of these perturbations are competent to produce any of these diseases unless they succeed in shifting the balance of equilibrium between the several parts which make up the epiderm and metaderm.

References.

[1] Lazarus-Barlow, *Journ. of Phys.*, vol. xx, p. 145, 1896. [2] Ibid., p. 155. [3] Starling, *Journ. of Phys.*, vol. xix, p. 324, 1895-6. [4] Lazarus-Barlow, *Journ. of Phys.*, vol. xix, p. 459, 1895 6. [5] N. v. Kries, Ueber den Druck in den Blutcapillaren der menschlichen Haut, *Ludwig's Physiologischen Arbeiten*, p. 149, 1875. [6] *Lancet*, April 30th, 1904. [7] Lazarus-Barlow, *Journ. of Phys.*, vol. xix, p. 459, 1895 6.

THE INFLUENCE OF PERIPHERAL NERVE-IRRITATION UPON DISEASES OF THE SKIN.

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[Abstract.]

Ever since the introduction by Leloir of the term "dermato-neurosis," the influence of the nervous system upon the cutaneous has been recognized. Trophic disorders of the skin are well known, but local irritation of terminal peripheral nerve filaments has not been so widely credited with any special influence upon the production of cutaneous diseases. Irritation proceeding from the cranial nerves—such as the ocular and the dental branches of the fifth—appear to possess an appreciable influence over the progress of certain forms of alopecia areata. The "dental theory" propounded by M. Jaquet affords an instance in point. Errors

of refraction have also been found to be associated with some kinds of alopecia by Pernet and Whitfield. Is there any ground for believing that dental irritation plays a really important part in the production of infantile eczema? Not much. The appearance of herpetic eruptions upon areas of the skin which have been injured, or in which the nerve filaments are irritated—as after cuts, etc.—is frequently seen. Gaucher has considered that this is due to the contusion of minute terminal nerve filaments. Lichen planus is also sometimes met with in the vicinity of old fractures, or in scratch marks. "Trophic influence" cannot always be brought in as an explanation. Conditions of "nervous erethism" are often responsible for cutaneous disorders.

KAPOSI'S DISEASE.

Mr. Paulin Martin, of Abingdon, showed a case of Kaposi's so-called idiopathic multiple haemorrhagic sarcoma in a man aged 75 years, who had resided in the Vineyard, Abingdon, all his life, a ropemaker by trade since he was a boy. In 1894 he first noticed a black spot upon his left toe; this looked like a black bruise, and is still visible. In about three years after the appearance of this first spot, several other similar black spots appeared on the soles of both feet, on the calves and thighs, on the backs and fronts of hands and arms, but not any upon his trunk. These black, bruise-like spots after three weeks began to have round currant-shaped bosses upon the black base; many such projections can be seen now; some are single, more are arranged in clusters upon the black, bruise-like base. Once formed, these bruises never disappear, but the currant-shaped bosses that frequently form upon the black base do occasionally disappear, leaving a smooth, black surface. Very frequently the projections ulcerate, and become excessively tender for two or more months, when ultimately they heal. Any pressure applied for a short time will cause ulceration of the projections, but not of the smooth black places. For years he has had a systolic murmur at the apex of the heart. At the present time the soles of his feet are literally crowded with the black currant-like pimples, one of which is now ulcerating. Oedema of both legs has been constant for nearly three years. He has taken, amongst other remedies, adrenalin; but whilst taking it his mind became affected, and it was given up. He has been seen by all the staff at St. Bartholomew's Hospital, where I sent him in 1903, and he was exhibited to the Dermatological Society.

SECTION OF MEDICINE.

Walter Tyrrell Brooks, M.B., President.

DISCUSSION ON THE TREATMENT OF TUBERCULOUS PLEURAL EFFUSION AND PNEUMOTHORAX.

I.—William Osler, M.D., F.R.S.,
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At the threshold of the discussion we are met with the question, Which are the tuberculous pleurisies? Clinically we may recognize three great groups of pleurisy with effusion: (*a*) pyogenic, (*b*) the meta-pneumonic, and (*c*) the tuberculous. During the past twenty-five years the evidence has been accumulating in favour of the tuberculous nature of a large proportion of all cases of simple sero-fibrinous pleurisy. The exact percentage is hard to determine, but, in the absence of pneumonia or sepsis, the very existence of a pleural exudate is in itself sufficient to raise a suspicion of tuberculosis. This view is based upon:

First: The finding of tubercles in cases of sudden death in pleurisy with effusion. The literature contains many such instances in which, as a rule, tuberculosis had not been suspected, but the pleurisy had been attributed to cold, to injury, or to rheumatism.

On April 24th, 1904, a girl, aged 16 years, was admitted with chorea, which had followed an attack of arthritis on the 14th. She had had rheumatic fever when 11 years of age. She had signs of mitral and aortic valve disease, and subcutaneous fibroid nodules were present. The choreic movements gradually ceased. The fever disappeared, and the convalescence was well established. On May 23rd and 24th she became feverish, and complained of sore throat and pain on the left side. The attack was very sudden, and on the 25th she had much respiratory distress with slight cyanosis. At first the signs on the left side suggested pneumothorax, so pronounced was the tympanitic note in front, but there was loud tubular breathing and flatness behind. On the 26th she had an attack of urgent dyspnoea, with gasping respirations and syncope. These recurred on the 27th, and in one of these she died. There was marked leucopenia—1,000 leucocytes per c.m. The autopsy showed old valvular changes with fresh endocarditis. There was an acute tuberculous pleurisy on the left side, both membranes were covered with fine granulations. There was no pneumonia. The bronchial glands were caseous. Without the *post-mortem* examination this would have been regarded as a typical instance of rheumatic pleurisy.

The traumatic cases are still more striking, and the evidence has been accumulating to show the tuberculous character of the pleurisy which follows falls or blows in the chest.[1]

Secondly: The frequency with which healed tuberculous pleurisy is met with in the *post-mortem* room. From Létulle's laboratory an interesting study has been recently published by Trouvé[2]: among 303 cases in which healed tuberculosis was found in persons dead of other diseases, the pleura was involved alone in 59.

Thirdly: A study of the exudate:

(*a*) The general characters present nothing distinctive. In acute cases it may be of a turbid and dark brown colour, with much fibrin, and not infrequently blood. In the more chronic cases it is clear, or has a slightly greenish or opalescent tint. The fluid is sterile as a rule, or the bacilli are difficult to find.

(*b*) Cytological. The studies of Widal, Gull, and others have shown that in tuberculous cases the exudate contains small mononuclear leucocytes. On this point our experience tallies with that of other observers.[3]

(*c*) Bacteriological. The tuberculous exudate is stated to be sterile, but with the newer methods the bacilli may be found in a considerable proportion of the cases. After contracting into a fairly small volume the coagulum is removed and placed in a pepsin HCl mixture. When well digested in the thermostat the fluid is centrifugalized and the sediment searched for bacilli. Of the last 20 cases in my series bacilli were present in the exudate in 4. The importance of this method of examination was illustrated in a recent case. A robust, athletic young fellow had caught cold after a shower-bath, taken while heated, after a game of tennis. On the following day he had pain in the chest and stiffness of the muscles. He was admitted May 14th, about a week after the onset. The right side of the chest was full of fluid, 1,700 c.cm. of which were withdrawn. The digested sediment showed perfectly characteristic tubercle bacilli.

(*d*) Inoculation. When the centrifugalized sediment or a large amount of the exudate is used the results have proved positive in a large number of cases—65 per cent. (Eichhorst) to 85 per cent. (Le Damany) in 55 cases quoted by Chevastelon.

(*e*) The observations in the agglutination test are, as far as I know, not extensive enough to warrant conclusions to be drawn from them.

Fourthly: The presence of tuberculous foci in other parts—an old bone lesion, an adenitis, a fistula in ano, an epididymitis, or a chronic peritonitis. A latent pulmonary focus is not infrequent. Of 195 cases of pleurisy with effusion admitted to my wards, exclusive of all patients with obvious pulmonary tuberculosis, there were 30 in which tubercle bacilli were demonstrated in the scanty sputa. Repeated examinations were made in each case, and even when the patient insisted that he had no cough, he was urged to try to spit out anything he could. In one case fully a score of examinations were made before bacilli were found.

Fifthly: Many cases of pleurisy with effusion subsequently became phthisical, the percentage varies from 15 per cent. (Cabot) to 45 per cent. (Hodge). Of 86 cases from my wards in which the after-histories were studied by Dr. Hamman, 34.8 per cent. became tuberculous and died. Grouping together the statistics which have been gathered on this point, the percentage is about 30.

Sixthly: A characteristic tuberculin reaction has been obtained. Beck[4] gave tuberculin to 68 patients with pleurisy, and 50 reacted (73.2 per cent.); F. W. White[5] gave tuberculin to 8 cases of acute pleurisy, and 7 reacted.

[1] Chevastelon, *De la Nature Tuberculeuse des Pleurésies Séro-fibrineuse d'Origine Traumatique*. Paris, 1902.
[2] *Thèse de Paris*, 1902.
[3] Bunting, *Johns Hopkins Hospital Bulletin*, July, 1903.
[4] *Deut. med. Woch.*, 1899, March 2nd.
[5] *Boston Medical and Surgical Journal*, August 5th, 1897.

And, lastly, certain clinical features, as insidious onset, protracted course, early thickening with retraction, haemorrhagic character of the exudate, etc.

It is not always possible, nor is it necessary, to obtain this positive evidence. It makes no difference in the local treatment and for general purposes it is best to assume every case to be tuberculous, unless there is very good reason to think otherwise. The acute sero-fibrinous and the subacute and chronic serous forms are the most important in connexion with this discussion. It is interesting to note how often the acute form is a terminal event in chronic diseases, but a considerable proportion of the cases in young, healthy persons belong to this group, in which the suddenness of the onset and the intensity of the symptoms may be marked. The exudate is sero-fibrinous, and there is much fibrinous plastering on the surfaces. The fluid has a brownish tint, and is not infrequently bloody. In the subacute and chronic serous form the exudate is more often opalescent, with scanty cell elements, and there are no fibrin flakes on the pleural surfaces, which are smooth and not acutely inflamed. The purulent tuberculous pleurisies are usually chronic, but there is an acute suppurative form running a course of great intensity, with abundant bacilli in the pus. To be profitable a discussion should be limited to questions still in dispute, or to points which new knowledge has brought into prominence. I propose for discussion, first, the value of early and repeated aspirations in the acute forms: secondly, the uselessness of drug treatment; and, thirdly, the need of more careful after-treatment, local and general.

I. Aspiration has been in use for more than half a century, but it has been as an adjunct or supplementary to other measures, not as the treatment itself. Most of us have followed H. I. Bowditch's original indications (1850)—to tap when the symptoms were urgent, or the side was full, or in a moderate effusion, if it had lasted more than a few weeks, and was disposed to resist ordinary modes of treatment. Of late years there has been a tendency to resort to tapping much earlier, and not to wait until the fever has subsided—to make tapping an *indicatio morbi*, not simply an *indicatio vitalis*, or symptomatic, as, following Bowditch and Trousseau, we have hitherto done. The advantage of this plan was emphasized by Castiaux as early as 1873.[6] The question was forcibly brought before the profession about eighteen months ago, when Dr. Delafield[7] reported 200 cases of pleurisy, with effusion, treated at the Roosevelt Hospital, New York, from 1886 to 1901. In the first 82 cases medical treatment and aspiration were employed, in 118 aspiration alone. One hundred and eighty-two patients left the hospital cured, 6 left the hospital within ten days after aspiration and probably recovered; 6 were improved, but the results were uncertain, and in 6 there was no improvement. Sixty four patients were cured within a week of the aspiration. There were no deaths. Dr. Delafield remarks that in private practice the results are still better: "In the fortunate cases, within twenty-four hours there is no more fluid and no more pleurisy. In a large number of cases the pleurisy is cured within a week." Those who know the highly-trained clinical judgement of Dr. Delafield will be able to appreciate at its true value this important contribution. I have been in the habit of treating pleurisy with effusion either by what is called the "thirst" method or by tapping and the administration of tonics and occasionally of the iodides and the use of counter-irritation. I had no settled plan, but dealt with each case as it seemed best. In the eighteen months since the appearauce of Dr. Delafield's paper we have had 22 cases in the wards, 2 of which were admitted as the effusion was subsiding, and were not tapped. In the others the effusion was treated by aspiration alone. In 5 the condition was chronic on admission, the effusion having lasted for two or more months. Four of these left the hospital improved and 1 well. The other 15 were discharged well. Only 3 of these cases were admitted in the first week, and the earliest tapping was done on the tenth day. Five cases were tapped twice, 2 three times, and 1 four times.

Of this group of 20 cases, 7 were shown to be tuberculous; in 4 bacilli were demonstrated in the exudate, in 2 bacilli were found in the sputa, both acute cases, which had not been under treatment for any pulmonary disease. One patient, ill for two and a half months on admission, was discharged improved, and was readmitted with miliary tuberculosis ten weeks later. I cannot say that these results are very brilliant, and not to be compared with Delafield's. The average stay in hospital was thirty-two days, the shortest was six days. There were 4 prolonged tuberculous cases of more than two months' duration, which considerably lengthened the average.

The removal of the fluid seems sometimes to be directly curative as the fever subsides, and the patient rapidly gets well. The fluid itself may be noxious, and the symptoms due to the absorption of toxins. Relief of pressure on the pleural surfaces may be followed by clearing of the lymph channels, or, as in tuberculous peritonitis, the operation *per se* does good in some inexplicable way.

Additional advantages of early tapping are the prevention of the formation of dense adhesions, with the subsequent retraction of the chest wall and limitation of the mobility of the lung. It does no harm, at any rate. So long a series as Delafield's 200 cases were treated without an accident. In my series of 195 cases there were only two instances of albuminous expectoration. Pneumothorax has followed tapping in a few cases, but it is interesting to note that in the cases in which this occurred in my clinic, not one was in acute pleurisy with effusion.[8] The greatest difficulty is met with in the chronic serous exudate, in which, during months of treatment, the fluid reaccumulates. In such, if frequent aspirations with pulmonary gymnastics and an open-air life fail to relieve, West's suggestion of free incision and drainage should be carried out. I have not had an instance in which this has been done, nor have I practised injection of sterilized air or salt solution, or adrenalin as recommended by Barr.

II. The second question which I would submit for discussion is, Have we any remedies which directly influence the absorption of a pleural exudate? The general treatment need not detain us; we are all agreed upon the main points. Perhaps, in passing, the need and the value of hydrotherapy—ice-bag to the chest and spongings—in the cases with protracted and high fever, may be emphasized. By many the salicylates are believed to lessen the severity of the attack, and to promote the absorption of the fluid. They are given on the ground that a large number of cases are of rheumatic origin. A pleurisy which in the course of rheumatic fever, or in a child with one or other manifestation of the rheumatism cycle, may perhaps be helped, more I think in the reduction of the fever and in the diminution of the pain than in any special influence in the exudate itself. In the tuberculous—that is, in the ordinary cases—I have never been able to convince myself that they did any good, and I have long since abandoned their use.

By many the iodide of potassium is used as a routine treatment, when there is any delay in the absorption of the fluid. It is not easy to say whether it is directly helpful. It is rarely used alone, and the rapid disappearance which sometimes takes place, may be a natural process, following aspiration. What makes one a bit sceptical is its inefficacy in those very chronic cases in which it may be used for weeks and months without the slightest benefit. Indirect measures—sweating, purging, and the thirst plan—may be necessary in a few cases; not very many, as Delafield's record shows, if early and repeated tapping is practised. A big blister sometimes stimulates absorption in the chronic cases.

III. The importance of local and of general measures. Damage to the lung in a tuberculous pleural effusion may result from local conditions favouring the spread of a small latent focus at the apex, or a subpleural nodule from which the acute process has originated. Thickening of the pleura, organization of fibrinous exudate, and proliferative subpleural processes may cause rapid shrinkage of the affected side, with atrophy of muscles and marked restriction of the breathing capacity. Tuberculosis of the lung may follow shortly after an acute pleurisy; more remote serious results are chronic fibroid changes, with or without bronchiectasis. So soon as the fever has fallen in an acute case, systematic pulmonary gymnastics should be started. It is not necessary to wait for the absorption of all the fluid: the exercise may indeed favour the removal. Inhalation of compressed air in the pneumatic cabinet may be used, but the simpler method of expiratory or inspiratory gymnastics are much more readily carried out in general work. While the patient is still in bed he may forcibly blow water from one Wolff's bottle to another. For many years we have used this plan, particularly in children after empyema, and it is remarkable how rapidly and how completely the affected side of the chest may be restored to the normal size. After the patient is up any variety of inspiratory exercise is useful, if persisted in.

[6] Quoted by Brainwell, *Clinical Studies*, April, 1904.
[7] *American Monthly Journal of the Medical Sciences*, December, 1902.
[8] See Dr. Emerson's Monograph on Pneumothorax, *Johns Hopkins Hospital Reports*, vol. xi.

The chair form employed in Naunyn's clinic is particularly suitable to these tuberculous cases with great thickening of the membrane and shrinkage. The patient sits upright on a chair, grasps strongly with the hand of the sound side the margin or the upper bar, then compresses forcibly by muscular effort and by pressure of the arm the unaffected side of the chest, at the same time making strong inspiratory efforts, which are then directed entirely to the affected side, forcibly expanding it. At first this should be done cautiously, as stretching of adhesions may cause pain, but persisted in it gives excellent results. Later, systematic ordinary breathing exercises should be practised morning and evening. And lastly, every patient with pleural effusion should be regarded with suspicion, and receive the benefit of the doubt, have an after-treatment designed to re-establish fully the general health. Létulle's figures show how large is the number of persons who recover completely from pleural tuberculosis, and this is encouraging. On the other hand, we must always bear in mind the statistics of the late history of the case, that from 25 per cent. to 35 per cent. became tuberculous—a percentage which in the future should be greatly reduced.

Pneumothorax.

As a rule, the associated conditions render the treatment of pneumothorax very unsatisfactory. The mortality is very high—75 per cent. according to West. Of the 49 cases of all sorts at the Johns Hopkins Hospital, upon which Dr. Emerson based his exhaustive monograph,[9] 33 died, 67.3 per cent. So far as treatment is concerned there are three groups of cases.

First, a very large one in which it seems best to do nothing. The symptoms are not urgent, and the condition is either tolerated for weeks or months, or even for years, as it rapidly improves and the air disappears. The cases of so-called spontaneous pneumothorax, many of the traumatic, and a considerable portion of the tuberculous come in this group.

Secondly, from whatever cause the acute suffocative pneumothorax, described originally by Benjamin Bell, the pneumothorax acutissimus of Unverricht demands immediate operation. Death may occur in a few hours. Free incision of the pleura may save a patient in a desperate state.[10] The ordinary trocar may suffice, as in Pearce Gould's case.[11] As Unverricht has shown, in these cases a valvular is to be converted into an open pneumothorax, and the important point is to have a perfectly free opening in the chest wall.

Thirdly. A group of chronic cases demanding the more radical operation as advocated by West, when pus is present, if the patient's condition justifies it, and in a tuberculous case if the disease is confined to one lung, and if the pneumothorax is chronic, operation may be tried. Of our series 9 cases were operated upon—one or more ribs resected—2 cases recovered, 2 left the hospital much improved, and 5 died.

II.—George A. Gibson, M.D., F.R.C.P.Edin.,

Physician, Edinburgh Royal Infirmary: Lecturer on Medicine, Edinburgh Medical School.

Dr. Gibson said that he would not attempt to follow the whole of the subjects laid before the Section by Professor Osler, but would confine his remarks to one or two aspects of the subjects under discussion. One point to which he desired to direct attention was the difficulty of determining what really was tuberculous pleurisy. Neither by cytodiagnosis nor bacteriology could in some cases a decided conclusion be reached. Sometimes in such instances the bacteriological examination of the urine threw a light on the nature of the infection. One type of cause might be referred to as by no means uncommon—the diplococcus of acute rheumatism. Several such cases had been under his care since the publication of the researches of Poynton and Paine. The organism was most difficult of detection in serous exudations, as in the tissues of the body, but it was common in the urine in rheumatic cases of pleurisy. As to the treatment of tuberculous pleurisy, he had but little to add to the wise remarks of Professor Osler. He was in favour of not hurrying too much at first, but when symptoms demanded such measures he did not hesitate to aspirate. Repeated aspiration might be demanded, and the immediate result after such interference might be quite satisfactory. Occasionally he had employed one or other of the forms of tuberculin in obstinate cases with a certain amount of success. After complete removal of the effusion, respiratory exercises were of the greatest utility. Dr. Gibson went on to say that he wished to direct attention to a form of pneumothorax occurring in weakly persons, who had apparently healthy lungs, but who were probably of tuberculous ancestry. Such idiopathic cases, usually taking place during severe exertion, resulted, as a rule, in complete recovery, with a brief period of rest followed by well-planned respiratory exercises and fresh air. In regard to the management of the ordinary types of pneumothorax he had nothing to add to the general principles laid down by Professor Osler.

III.—Stanley Boyd, B.S., F.R.C.S.,

Surgeon, Charing Cross Hospital and Brompton Hospital for Consumption.

Mr. Stanley Boyd referred to the cases of pneumothorax in which the early trouble was weathered, the general condition fair, with some serous fluid, the other lung only slightly affected or believed to be sound. The patient was able to get about, and perhaps do a little light work. Such was the case which was said sometimes to recover, and which might go on even for a few years if treated on medical lines and aspirated occasionally. But the patient was hardly in a condition to enjoy life, and sooner or later—generally within a year—the fluid became purulent, and finally made its way into the lung or through the chest wall. Something must then be done. All the time the lung had been collapsed, and the pleura had been thickening over it. The general condition, too, could not be regarded as favouring recovery from tubercle of the lungs. The main points to be remembered were that the patient did live, and was fairly comfortable for a time. The question was whether the usual treatment of such a case was really the best, or whether any operative interference would make matters better? His experience of such cases was small. Aspiration seemed right if ground were gained; but if not, would not drainage through a small cannula improve matters? It would do away with pus pressure: put the lung at rest, perhaps, allow the hole to heal and render expansion of the lung to some extent possible, allow the falling-in of the chest to begin, and reduce the size of the cavity to be ultimately dealt with. The danger was that tubercle might spread outwards along the track, and a sinus be established along which pyococci would spread in; and thus the later stages would be hastened, and, with this, the treatment of the later stages—namely, freer drainage. But was this wholly a disadvantage? If earlier healing of the lung fistula could be obtained by early drainage before the pleura had much thickened, greater expansion of the lung and drawing over of the mediastinum were of immense importance in reducing the severity of the final steps. Constant drainage in no way prevented general treatment, and a patient with a pleural cavity well drained was as comfortable as one with a pyopneumothorax. He was therefore disposed to think that in the more hopeful cases of the kind, which hung fire or got slowly worse under the usual treatment, drainage should be had recourse to earlier than at present. If pus were present when the case was first seen and there was any hope that the lungs might recover, let them drain at once with every precaution against sepsis. The patient should be got up as soon as possible, and gentle gymnastics used when the fistula was closed. The general condition, weight, and urine should be watched, and operation done when the highest point seemed to have been reached. There was the crux—the resisting powers of these patients were so feeble. [Illustrative cases were quoted.]

IV.—Samuel West, M.D., F.R.C.P.,

Physician, St. Bartholomew's Hospital and Royal Free Hospital.

Dr. West said: Tubercle is a far more common cause of pleurisy of all kinds than was formerly supposed, but it is not easy at a given time to say whether any particular case is tuberculous or not. It is interesting to know the cause but not so important as it might be thought, for it does not affect treatment so much as modify prognosis.

Tubercle may be associated with every variety of pleurisy—dry, serous, and purulent. Of dry tuberculous pleurisy I have nothing special to say.

1. *Tuberculous serous effusion* should be dealt with on the ordinary lines. If a needle be inserted, the greatest care must be taken that the operation is aseptic and the needle clean. Serous effusions very rarely spontaneously change their character, but they are easily infected. To convert

[9] *Johns Hopkins Hospital Reports*, Vol. xi.
[10] Gaillard's Emerson's Monograph, No. 343
[11] Ibid. No. 183.

a serous effusion of tuberculous origin into a purulent one is a serious matter, and, with care, ought never to happen.

The aspirator is a dangerous instrument, and, if possible, should never be used. All that is necessary in paracentesis for serous effusion is a cannula and a piece of india-rubber tubing reaching to the floor. This forms a siphon of 24 in. or thereabout in length, through which the fluid flows gently and slowly. To remove the fluid under considerable negative pressure by suction, as used to be done with the aspirator, has many objections. The fluid is removed too fast, and this may produce respiratory embarrassment, cough, or pain, so that the operation may have to be suspended, while there is the additional risk of tearing the lung if adhesions have formed, thus producing pneumothorax.

The early evacuation of the chest used to be advocated, on the grounds that if left long in the chest the fluid would become purulent, and that if the lung remained long collapsed it would become adherent and incapable of re-expansion. But, as I have said, the effusion does not change its character unless infected, and the lungs do not so readily contract adhesions so as to be incapable of re-expansion. I have recorded a case in which the fluid had been eighteen months in the chest; yet it still was serous, and the lungs re-expanded quite readily when the fluid was removed. The effusion had been left untouched so long in obedience to the old-fashioned teaching that the fluid, by compressing the lung, prevented the development of tubercle in it. This is incorrect, and, if it were the fact, there is still a danger of another kind—namely, that tubercle may develop with rapidity in the opposite lung from the squeezing of the tuberculous sputum from the collapsed lung into the air tube of the opposite side, thus infecting the other lung.

2. *Tuberculous empyemata* have in general a far less favourable prognosis than empyemata of other origin, but the indications for operation are the same in all cases. The pus is often thick and flaky, especially if the empyema be of some duration. The cavity should then be irrigated, and all flakes and curds completely washed out.

There is no risk in irrigation of the pleura. I cannot trace the origin of the belief which is still prevalent that washing out the pleura may cause serious collapse or even sudden death. I have washed the pleura out many hundred times, and have never seen anything of the kind occur. So that this presumed risk may be disregarded.

The routine excision of a portion of the ribs is not necessary. Its object is to ensure free drainage, and, if this can be obtained without, as it in most cases can, there is no need of excision. It is said that, if excision be not done at the time, it may be rendered necessary by necrosis of the rib from the pressure of the tube. This may happen, but I have seen it occur after excision. Even when the bone is felt rough and bare where the tube has lain, necrosis rarely occurs, but as soon as the tube is removed the bare place is rapidly covered again with periosteum, and no further trouble follows.

After operation the lungs re-expand rapidly, so that in a day or two the cavity left consists of little more than the tract in which the tube lies. The cavity should always be examined carefully with a probe, so as to gauge its size and position and ascertain whether the tube is so placed as to drain the cavity well.

Estländer's operation is hardly ever necessary. A true Estländer is a fearful operation in itself, and, when successful, as it rarely is, results in terrible deformity. In a tuberculous case it should, in my opinion, never be performed. A so-called modified Estländer is not an Estländer at all.

3. *Pneumothorax.*—More than 90 per cent. of all the cases of pneumothorax are produced by the rupture of a tuberculous cavity in the lung.

The sudden dyspnoea which attends its onset is produced by the sudden respiratory and cardiac embarrassment, which may be so extreme that death may ensue in an hour or two, with signs of suffocation and cardiac failure. The prognosis improves with every hour that life is maintained by giving the lungs and heart time to adjust themselves to the altered conditions. As the dangers are largely due to mechanical causes, no patient should be allowed to die without an attempt to relieve the distress. This can easily be done by paracentesis repeated as often as necessary; every precaution must be taken to avoid infection, and the mouth of the tube attached to the needle should be placed in sterilized water so that no air may be sucked up if violent inspirations occur.

Paracentesis, repeated if necessary, is sufficient in most cases to relieve the distress, but where the symptoms return rapidly after paracentesis various forms of valved tubes, which can be left in the side, have been advocated. In such cases I should much prefer to make a free incision. In either case an empyema would result, and the prognosis would then become that of a tuberculous empyema.

It is well to postpone paracentesis as long as possible, so that time be given for the hole in the lung to close, for even tuberculous perforations close easily and become quickly sealed. It is clear that an aspirator should never be used, for the weakest spot is the healing hole, and suction would certainly reopen it.

If the urgent symptoms subside, no operation is necessary to remove the air, for it is easily and rapidly absorbed, and as it is removed the lung re-expands. In this way many cases of pneumothorax heal, and that even when the tuberculous mischief is actively progressing. In other cases fluid forms, and this may be serous or purulent.

In the former case, that of hydropneumothorax, the air may be completely absorbed and serous fluid take its place. The treatment of hydropneumothorax is simply that of serous effusion, but, if paracentesis be necessary, the aspirator must on no account be employed.

In pyopneumothorax, where the effusion is purulent, the case should be treated on ordinary lines as if it were an empyema: the side should be incised, washed out if necessary, and drained.

We have hitherto been taught not to operate on pyopneumothorax on these grounds:

1. That pyopneumothorax is necessarily fatal.
2. That operation only accelerates the fatal result.
3. That the compression of the lung checks the progress of the tubercle, upon which the pneumothorax depended.

None of these reasons is valid.

If an empyema be neglected the patient may succumb, unless it evacuate itself. The same is true of a neglected pyopneumothorax. The natural conclusion would then be to neglect neither, but to operate early. Experience justifies this view, and I have of recent years published several successful cases of the kind.

I do not doubt that if pyopneumothorax be treated on general lines like an empyema, its prognosis would be hardly, if at all, worse than that of tuberculous empyema.

To sum: (1) At the time of onset, so soon as the condition is recognized, the pressure symptoms should be relieved, if necessary, by paracentesis or even by incision; (2) in the later stages, when effusions form, the case should be dealt with on the ordinary lines of serous effusion on the one hand, and of empyema on the other.

If pneumothorax be treated in a common-sense way, without subservience to antiquated and incorrect theories, I am convinced that the results will be greatly improved, and that pneumothorax will cease to be regarded so gravely as it now is.

V.—NATHAN RAW, M.D.,

Physician, Mill Road Infirmary, Liverpool.

DR. RAW confined himself to the treatment of tuberculous pneumothorax, and based his remarks on an observation of thirteen cases. His experience was that pneumothorax occurring in the course of phthisis ought not to be interfered with unless urgent symptoms presented themselves. In pneumothorax associated with a large amount of fluid in the chest repeated aspiration should be practised. The air was sometimes difficult to extract, and in some cases considerable pressure had to be employed. When pus was present it was better, if possible, to remove it by aspiration rather than by incision, as his experience of two cases was not favourable. In two of his cases where pyopneumothorax was treated by aspiration recovery followed.

VI.—R. W. PHILIP, M.D., F.R.C.P.Edin., F.R.S.E.,

Assistant Physician, Royal Infirmary, Edinburgh; Physician, Victoria Hospital for Consumption, Edinburgh.

DR. R. W. PHILIP said that the most important aspect of the present discussion seemed to him the determination of the question, what constituted a tuberculous pleurisy. How many of the ordinarily occurring pleurisies with effusion were to be interpreted as tuberculous? There existed a vagueness of conception and statement on the subject which was most undesirable and apt to lead to disaster. Cases—undoubtedly tuberculous—were far too often vaguely described as simple pleurisies or rheumatic, or pleurisy from cold, etc. Cases of this sort were allowed to drift and failed to receive

adequate treatment in respect of their ultimate character It was hardly possible at the present stage to state the exact proportion of cases which were to be regarded as tuberculous. None the less it was true that the vast majority were of this nature. It seemed a sound working principle to regard every case as of that nature unless there was evident reason to the contrary. In doubtful cases help was sometimes afforded by the presence of a lymphocytosis. The tuberculin test had proved in his experience of service. Cases varied much in respect of clinical cause, but the general principles of treatment remained the same. Open-air treatment, in the fullest sense, was of the greatest value. The older protective attitude was hopelessly wrong. On open-air lines—day and night—the clinical cause was rendered much simpler, as evidenced by the patient's aspect and temperature and the progress of the effusion. Zomotherapy—or the institution of a raw-meat dietary—was of service. Whether we accepted the suggestion of MM. Richel and Héricourt that the raw product contained an antagonistic principle, without doubt clinical experience testified emphatically to its value. In respect of aspiration, he favoured early tapping. His observation of the method, which extended over a large number of years, corroborated entirely the experience and views reported by Dr. Delafield. Early tapping undoubtedly diminished to a remarkable degree the need for further interference. He deprecated the routine exhibition of iodide of potassium, which was often actually harmful. Drugs, apart from ordinary tonic treatment, were seldom required. In conclusion, he emphasized the extreme need for a prolonged after-treatment and surveillance of the patient, because of the likelihood of further tuberculous manifestations.

VII.—Theodore Dyke Acland, M.D., F.R.C.P.,

Physician, St. Thomas's Hospital and Brompton Consumption Hospital.

Dr. Acland thought that the difficulty of treating tuberculous pleural effusions commenced when the fluid was known to be purulent. Serous effusions should be treated on the same general principles, whether they were tuberculous or not. He did not believe that in acute cases paracentesis was necessary in the early stages—that is, during the febrile period—of serous effusions, except in cases in which, from the extent of the effusion, there was embarrassment of the respiration, and he doubted whether the formation of pleural adhesions was lessened by the early removal of small effusions by aspiration. As regards haemorrhagic tuberculous effusions, he believed that, if the amount of effusion was large, repeated aspiration was the best form of treatment, but not excision of rib and drainage. The treatment of purulent effusions depended, he thought, on the correlated conditions. If there was active tuberculous disease in the lung the effusion was best left alone, unless it was necessary to remove a sufficient quantity of fluid to relieve pressure symptoms. He believed that, if necessary, not only could the pleural cavity be washed out with perfect safety, but he thought that purulent effusions could be withdrawn and replaced by antiseptic solutions with advantage to the patient. He believed that where there was no effusion, pneumothorax was best left alone unless there was urgent need of removing intrathoracic pressure. If there was serous fluid present it was best removed by aspiration. If the fluid was pus he doubted whether free excision should be undertaken except in those cases in which there was bronchial fistula, an external opening, scanty signs of pulmonary tubercle, or an amount of fluid so great as to cause interference with respiration. He doubted whether as a rule freely opening the pleural cavity in such cases prolonged life—that, at any rate, each case should be considered on its merits: that any routine of operation by incision and drainage in many cases aggravated the condition and in few cases was followed by improvement, and only in very exceptional cases resulted in cure.

VIII.—James Barr, M.D., F.R.C.P., F.R.S.E.,

Physician, Royal Infirmary, Liverpool.

Dr. Barr said: A very large number of cases of pleural effusion are tuberculous, but I do not think that the treatment should materially differ from that of any other serous effusion into the pleural cavity. Where there is no tuberculous mischief detected in the lungs it is sometimes a matter of some difficulty to differentiate between the tuberculous cases and those arising from some other infective process, as in some undoubtedly tuberculous cases no tubercle bacilli can be found in the serum, and even the injection of that fluid into a guinea-pig may give a negative result. However, our diagnosis is considerably assisted by an examination of the cellular elements in the fluid, which in tuberculous cases are nearly all lymphocytes, whereas in cases associated with other infective processes the polymorphonuclear predominate, and in cases of transudation endothelial cells are chiefly found.

I have long held that in all cases of pleural effusion the early abstraction of the fluid is desirable, and for the last two years I have been injecting into the pleural cavity a solution of adrenalin chloride in order to check further secretion of fluid. Since I began this treatment I have had only one case of pleurisy requiring a second tapping. Soon after I began this method—to which no one has laid any prior claim—I commenced the introduction of sterilized air to replace the fluid which I had withdrawn.

In the British Medical Journal of March 19th, 1904, I published a clinical lecture on the treatment of serous effusions, in which I fully described my method and apparatus for treating effusions into all the serous cavities. At that time the idea of injecting sterilized air was quite original so far as I was concerned, and some of the leading members of the medical profession to whom I spoke on the subject had never heard of any such practice, but I have since found that several others, to whose writings I shall presently refer, had been in the field before me.

In the *Edinburgh Medical Journal* of November, 1886, Dr. Theobald A. Palm published an account of 3 cases where he allowed air to enter the pleural cavity after aspiration. One case recovered after one tapping, another after two, and the third "case took an unfavourable course, and in the course of some months the patient died." So far as I know, Dr. Palm has not carried out this treatment since. In 1888 Professor Potain, of Paris, successfully treated a case of hydropneumothorax by the injection of sterilized air after the removal of the serous fluid. His object was to keep the lung compressed until the pleuropulmonary fistula had healed, and to prevent the reproduction of the liquid. About or before 1900 Professor Ayerza and his pupil—Dr. Bungé, of Buenos Aires—treated cases of acute and chronic tuberculous pleurisies by the abstraction of the liquid and the injection of oxygen gas. They used oxygen as a specific medication against the tubercle bacilli, but, as oxygen is much more readily absorbed than nitrogen, in no case did the pneumothorax last longer than fourteen days.

In 1901-2 MM. Vaquez and Quiserne, of Paris, successfully treated two cases of chronic pleurisy by aspirating the liquid and injecting in each case 3 to 4 litres of sterile air. One case had previously been aspirated twelve times and the other five.

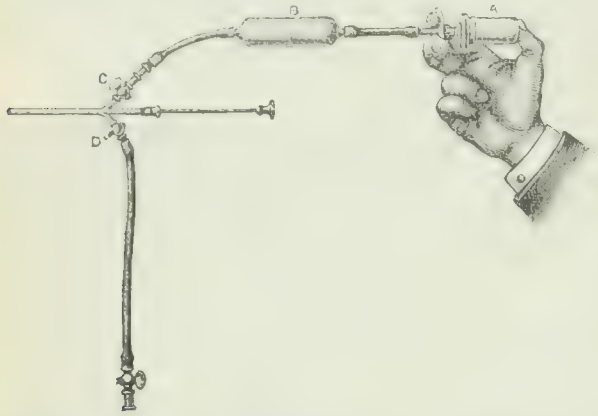
In Italy several papers appeared on this subject between 1888 and 1902 by Drs. G. Lava, G. Cavallero, S. Riva-Rocci, and Professor Forlanini. In the *Gazetta Medica Italiana* of March 3rd, 1904, there appeared a communication on thoracocentesis with the introduction of sterilized air after the method of Professor Forlanini, by Dr. Antonio Pisani. He records the case of a child of 9 years from whom he removed 1,600 c.cm. of fluid, which had probably been in the pleura for eleven weeks. During the operation he insufflated 1,000 c.cm. of air filtered through cottonwool and slightly impregnated with formaldehyde. At the end of the operation part of the air was removed by aspiration.

As is well known, it is often perilous to aspirate all the fluid out of the pleural cavity. In people with rigid chest walls attempts of this kind have not infrequently been followed by collateral hyperaemia, oedema of the lungs, and the death of the patient. In all cases, if the negative pressure be reduced beyond the expansile capacity of the lung, the operation is attended with great pain and much distress to the patient. All these inconveniences and risks are obviated by the method which I carry out. After siphoning off a pint or two of liquid, and certainly at the very first appearance of any distress, I inject a quantity of filtered air of about the same bulk as the liquid which I have withdrawn; I then siphon off the whole of the remaining liquid, and inject an additional amount of air to bring up the bulk to two-thirds or three-quarters of that of the liquid which I have taken away; finally I inject from 4 to 8 c.cm. of a solution of adrenalin chloride 1 in 1,000.

I now exhibit the apparatus.[1] If thought necessary a manometer can be placed in the circuit to estimate the intrapleural tension of the liquid and finally of the air. I am now carrying out the treatment both in public and private in all cases of pleural effusion of a serous character. Dr. Hay has

[1] The apparatus is manufactured by Messrs. R. Sumner and Co., 50A, Lord Street, Liverpool.

drawn up for me a short abstract of some cases which I have treated in the Royal Infirmary, and I now append it. In no case have I required to do a second tapping, but I can readily conceive that in many chronic cases the lung may have been so long compressed that it may be impossible for it to expand sufficiently to fill up the actual cavity. In such cases thoracoplastic operations may be required in the future as they have been in the past.



On July 15th I saw with Dr. Wright, of Parkfield Road, Liverpool, a case of hydropneumothorax in a tuberculous patient, from whom I siphoned off 4 pints of liquid and injected 3 pints of filtered air and 8 c.cm. of solution of adrenalin chloride. I saw him again on July 22nd, when the artificial pneumothorax was present, but there was no liquid. The pneumothorax occurred about seven months ago when in a sanatorium. It happened during the night, and the distress was so great that he did not expect to live to the morning. Afterwards fluid accumulated in his chest and an aspiration was performed in the sanatorium. That caused so much distress that the doctor had to remain with him for some hours, and the patient rather dreaded this operation, but when it was over he expressed himself as highly gratified.

It is well known that in cases of tuberculous pleurisy with effusion, in the ordinary process of aspiration after the removal of the pressure of the fluid, the expanding lung becomes engorged with blood, and any tuberculous process in it is apt to rapidly spread; this is obviated by the substitution of air for the liquid, which only allows the lung to slowly expand as the air gets absorbed. I prefer air to oxygen, as the nitrogen is less readily absorbed, and consequently remains for a long time in the pleural cavity. The injection of air into the pleural cavity saves the patient from the distress caused by the removal of the liquid and the establishment of a great negative pressure in the pleural cavity; it prevents hyperaemia and oedema of the lungs, and finally lessens the number of pleural adhesions.

I have had two cases of tuberculous peritonitis cured by this method of treatment. I have had no further cases of pericarditis since the one I recorded in my lecture in the British Medical Journal. Some of my friends are now using adrenalin in cases of hydrocele, bursae, etc., with what success I shall leave them to state.

In this short account of the cases, whenever the term "adrenalin solution" is used it refers to a solution of adrenalin hydrochloride 1 in 1,000.

Pleurisy with Effusion.

D. J., aged 21, admitted August 28th, 1902. Six days before admission was attacked by pleurisy. He was admitted with fluid in his left pleura, which steadily increased in amount, till on September 2nd paracentesis thoracis was performed, and 13 oz. of clear fluid were withdrawn; 3j of adrenalin solution was injected into the pleural cavity. There was no reaccumulation of fluid. Discharged cured September 29th.

Rheumatism, Acute: Pericarditis and Pleurisy with Effusion.

J. S., aged 23, admitted December 11th, 1902. The attack of acute rheumatism began five weeks before admission. When admitted, pericardial friction was observed, and also the physical signs of pleurisy with effusion at the left base.

December 26th. Paracentesis thoracis: 42 oz. of fluid were withdrawn, and 3j adrenalin solution injected. This was followed by a spasm and an attack of dyspnoea. Amyl-nitrite was inhaled, and liquor atropinae and morphine injected hypodermically. There was steady improvement; no reaccumulation of the fluid. Discharged cured January 22nd, 1903.

Pleurisy with Effusion.

J. H., aged 60, admitted March 23rd, 1903. Four months before admission he suffered from pleurisy, and since then has been troubled with pain in the chest and shortness of breath. On admission there were very marked signs of fluid in the left pleura; 48 oz. were drawn off, and 3j of adrenalin solution injected. He was aspirated again on April 2nd, and 40 oz. of fluid removed; 3j of adrenalin solution again injected. The fluid did not reaccumulate, and patient was discharged cured.

Pleurisy with Effusion.

W. J., aged 26, admitted May 30th, 1903. Patient gave a history of having been ill for a month previous to admission. He was found to have a very considerable effusion of fluid into the right pleural cavity. The heart was displaced to the left and the liver depressed.

May 30th. Paracentesis thoracis; 95 oz. of straw coloured fluid were withdrawn and 3j of adrenalin solution introduced into the pleural cavity. There was no reaccumulation of fluid, and patient was discharged June 8th cured.

Pericarditis with Effusion: Pleurisy with Effusion.

A. J., aged 9, admitted June 8th, 1903. In March same year he had suffered from an attack of rheumatism and purpura, accompanied by dyspnoea. Since then he experienced pain in the right side and front of the chest, with some shortness of breath.

On admission examination revealed the typical signs of pericarditis, with considerable effusion, and also the existence of fluid in both pleural cavities, more especially the left.

June 19th. Pericardium tapped, and 19 oz. of clear yellow fluid withdrawn; fluid rapidly reaccumulated, till, on June 24th, it was necessary to aspirate again; 20 oz. of dark, straw-coloured fluid were removed, and 40 minims of adenalin solution injected into the pericardial sac.

The progress of the case for the next month was irregular. On August 21st the left pleural cavity was tapped, 10 oz. of clear fluid removed, and 3j of ardenalin solution injected.

September 27th. Patient discharged, there being no sign of reaccumulation of fluid either in the pericardium or the pleura.

A month later he was readmitted; oedematous, and with signs of fluid at the right base.

October 29th. The right pleura was tapped, and 51 oz. of fluid withdrawn; 3j of ardenalin solution injected and a quantity of sterilized air.

There has been steady improvement up to the present time (July, 1904), with no reaccumulation of fluid.

Tuberculous Pleurisy.

M. C., aged 7, admitted January 11th, 1904; well-nourished, healthy-looking child, admitted with marked signs of fluid in the left side of the chest; the heart displaced to the right, otherwise normal.

January 15th, 1904. One pint of fluid withdrawn, and 3j of adrenalin chloride and 1 pint of sterilized air introduced into the chest

Fluid was centrifugalized, cells examined, and 95 per cent. were found to be mononuclear lymphocytes. There was no reaccumulation of fluid, and the child was discharged cured on January 22nd.

Left Pleurisy with Effusion.

C. C., aged 54, admitted April 7th. On April 2nd severe pain in the left side of the chest; admitted cyanosed with definite signs of fluid in the left pleural cavity.

April 11th. The left chest was aspirated, and 75 oz. of fluid were withdrawn, followed by the injection of 5 c.cm. adrenalin solution and 1½ pint of sterilized air.

Following this there was slow but steady improvement. Fluid did not reaccumulate, and patient was discharged on May 29th.

Pleurisy with Effusion, Left Side.

H. H., aged 47, admitted June 21st. Patient had been tapped thrice previous to admission. On May 21st, when 1 pint was withdrawn, the latter portion of the fluid haemorrhagic. June 2nd. Thirty ounces of fluid, haemorrhagic in quality, removed. Admitted June 21st, with marked signs of fluid in the left side of the chest. The next day the chest was aspirated, and 62 oz. of an orange-tinted fluid removed. Of the cells obtained by centrifugalization, 100 per cent. were mononuclear. Following the aspiration, 3 pints of sterile air and 6 c.cm. of adrenalin solution were introduced. There was no reaccumulation of fluid.

Double Pleurisy following Pneumonia.

W. S., aged 33, admitted July. Ten days before admission patient was attacked by double pneumonia. On admission he was suffering from double pleurisy. There was marked orthopnoea, and signs of fluid at each base.

July 12th. A few drachms were withdrawn. The fluid was somewhat turbid, and contained numerous polymorphonuclear cells and some diplococci.

July 13th. The left pleural cavity tapped: 18 oz. of deep-coloured reddish-brown fluid removed. One pint of sterilized air and 6 c.cm. of adrenalin-chloride solution injected. There has been no reaccumulation.

IX.—J. E. Squire, M.D., M.R.C.P.,

Physician, Mount Vernon Hospital for Consumption.

Dr. Squire said: Coming late in a discussion, much that one would like to say has already been said. In this instance,

most of what I had intended to say has been put before you much better than I could have done it. If I may be allowed to do so, I would ask you to consider Dr. West's remarks as embodying my views. I have not the ability or the very large experience of pneumothorax and pleural effusion which Dr. West possesses, but my own smaller experience—not altogether inconsiderable—leads me to endorse almost all that Dr. West has said. One slight point on which I would make some modification: I have had a fair number of cases of tuberculous pneumothorax, and in the great majority of these there was no need to aspirate. The urgent symptoms which always follow immediately after the perforation have in my experience comparatively rarely been so urgent as to need operative relief. My experience leads me to agree with Dr. Raw that many cases are best left alone. I am not altogether disposed to agree with Dr. Acland that purulent tuberculous effusions in the pleural sac should not be evacuated. Just as I advise the removal of local collections of pus in other parts, such as the limbs, in cases of pulmonary tuberculosis, so I should and do recommend the removal of pus from the pleural sac in these cases. I should like to endorse what Dr. Philip said as to the importance of keeping patients under observation for some time after the pleurisy is cured. It is just at this time that advance of the tuberculous process in the lung may go on without recognition, if the patient is not kept under observation. Hygienic conditions of life, including a plentiful supply of fresh air, are important aids to the successful treatment of tuberculous and other pleural effusions.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

SUPPURATIVE GOITRE.

Cases of suppurative goitre due to a cryptogenetic infection appear to be sufficiently rare to justify a brief note. Eighteen months ago I was asked to examine a very large goitre in an old man of 74, that had suddenly become painful. I did so, and found a small focus of softening in the dense, evidently calcareous, mass. Incision was declined, and the abscess burst externally a few days later. I could find no obvious source of infection, but ever since the mass has been steadily undergoing a suppurative infiltration and without any surrounding cellulitis, disintegration, or apparent change in the general health of the patient, except that induced by the conviction that he is the victim of cancer. The only two other similar cases I have been able to collect occurred, as one would expect, in old persons over 70, with goitres that had been the seat of calcareous infiltration, but I find many experienced surgeons of forty years' standing have never seen a similar case, neither is the subject mentioned in textbooks, and an active thyroid is, with good reason, assumed to have an antipyogenic action. Goitres of the adenomatous type are extremely common around Ullswater. The rocks are volcanic, chiefly lava and volcanic ash, without limestone. The water supply is presumably very similar to Manchester, being derived chiefly from the other side of the watershed to Thirlmere, and the people healthy except for disorders of the alimentary canal.

Ashton-under-Lyne. Arthur G. Wilkins, M.B., Ch.B.Vict.

PROTECTIVE POWER OF VACCINATION.

On May 9th, 1904, I vaccinated A. L., aged 4½ months, residing at 78, Back Durham Street, in this city, with calf lymph procured from the Local Government Board, and on May 16th following, when I visited again to dress the baby's arm, found its mother in bed with a smart attack of discrete small-pox coming out and suckling the child at her breast. On examining the baby's arm I was gratified to find four good crops of vesicles had developed. The mother was removed at once to small-pox hospital; the father and rest of family were all revaccinated and sent to the isolation home, and the baby weaned from its mother. It has continued well ever since, and I saw it on July 20th in perfect health.

J. Acworth Angus, M.R.C.S.Eng., L.S.A.Lond.
Newcastle-upon-Tyne.

Of 950 ladies seeking admission to the Female Medical Institute of St. Petersburg 250 have been selected.

Introductory Addresses

AT THE

OPENING OF THE MEDICAL SCHOOLS.

LONDON SCHOOL OF TROPICAL MEDICINE.

By Sir Charles Bruce, G.C.M.G.,
Late Governor of Mauritius.

COLONIAL SANITARY ADMINISTRATION AND TROPICAL DISEASES.

I have greatly appreciated the honour conferred on me by the London School of Tropical Medicine in inviting me to deliver an inaugural address at the opening of a new session. When it was announced that I had accepted the invitation, a friend asked me the pertinent question, "Are you a doctor?" "No," I replied, "I am not a doctor, but in the treatment of disease there are always two parties concerned—the doctor and the patient. What I might find to say I shall say as a patient on behalf of patients." For over thirty-five years I have lived constantly in an environment of tropical disease. Early in my Colonial service I suffered so severely from the effects of malarial fever that Dr. Charles Murchison, a physician of celebrity in the treatment of tropical diseases, urged me to abandon my career, as so many of my contemporaries and colleagues have been forced to do. During the years that have since elapsed I have had abundant opportunity of learning by experience how seriously imperial and local interests in the administration of public affairs, in commerce, and in industry are impeded by those diseases which the London School of Tropical Medicine was established to study.

My first Colonial experience was in Mauritius in the year 1868. An epidemic of malarial fever of exceptional fatality had broken out shortly before and was still raging. Up to the time of this epidemic Mauritius had been one of the healthiest Colonies of the empire; a naval and military station of unsurpassed, it may perhaps be said of unrivalled, salubrity; a favourite health resort for Indian civilians on furlough; while commercial and agricultural enterprises were carried on amid surroundings which seemed to combine every charm of the tropics with the most favourable conditions of life in temperate climates. The centre of business and of pleasure was Port Louis. The Prince of Wales, on his return from his Imperial progress in 1901, spoke of the society of Mauritius as retaining many of the charming characteristics of old France. At the time of the outbreak of malarial fever to which I have referred, this society had grouped itself in and around Port Louis, where also were the military head quarters. It was in Port Louis that the fever commenced. Slowly but constantly it encroached on the suburban districts and on the line of sea level around the coast. As it advanced the residences of the wealthier society were removed to a higher elevation. The Port Louis Line Barracks were first abandoned, and subsequently, as the fever advanced along the coast, other military posts. In illustration of the gradual advance of the malarial area, I may mention that in 1870 the Government commenced the erection of the Royal Alfred Observatory at great cost. The site, in the district of Pamplemousses, not much above sea level, has since become so unhealthy that the Government has been urged to abandon it. In the hope that this necessity may be avoided, every measure of antimalarial sanitation advised by Sir Patrick Manson and the Schools of Tropical Medicine has been adopted. In 1880 it was thought that settlements at a height of 700 or 800 ft. above sea level were safe from malarial influences, and the Government undertook the erection of a vast and costly central prison at Beau-Bassin, then a favourite centre of society. Of late, however, the unhealthiness of this prison has caused grave anxiety, malarial fever having invaded the district in which it is situated with such intensity that military officers are no longer allowed to reside within it. Here, also, active measures of antimalarial sanitation have been taken in hand, and it is hoped that the results may be such as have followed similar operations in other parts of the world.

The census of 1901 showed very clearly the consequences of the migration caused by the malarial epidemic which prevailed during the last half of the decade 1860-70. It was found that the population of the district of Port Louis had decreased from 74,420 at the census of 1861 to 52,740; while the population of the district of Plaines Wilhelms, to which the refugee

community had resorted, had increased from 28,020 to 63,624. The district of Plaines Wilhelms rises to an altitude of about 1,800 ft., and embraces a number of centres in which society has established itself. The military have recently erected extensive ranges of barracks in this quarter. The barracks, and the district generally above the altitude of 1,000 ft., are at present beyond the area of intense malarial infection; but if the progress of the disease is not arrested it seems certain that the whole district will be absorbed in the area of malarial influence. I believe I am justified in saying that the Government of Mauritius has been fully alive to the importance of sanitation and the value of the researches conducted by the schools of tropical medicine and other agencies; and that nothing is being left undone to perfect a system of antimalarial measures on the lines which investigation and experience have found to be best.

Looking at the records of the epidemic of 1866 by the light of recent knowledge, it is, I believe, accepted that it originated with the introduction of the malaria-bearing mosquito with immigrants from India. Had all that recent research has discovered been at the time within the range of medical knowledge, there seems to be little reason to doubt that the measures of prophylaxis and treatment which would have been at once adopted would have arrested the epidemic and saved the Colony from the consequences I have indicated—an enormous mortality, an endemic disease, a vast depreciation of property, and the displacement of the homes of a large section of the community.

In 1878 my services were transferred to Ceylon, and my appointment as Director of Public Instruction gave me exceptional facilities for visiting outlying districts and making myself acquainted with the condition of the people. In many parts of Ceylon, as in the tropics generally, epidemic and endemic diseases have a great influence on school attendance; but I propose to limit my observations on the present occasion to the North Central Province, where schools were few and very far between. They were also difficult of access; and in this way it happened that a school established in a village known by the ominous designation of Fever Village escaped a visit from the department for some years. An inspector sent with special instructions to visit the school found it, with some difficulty, seventy miles from the site where it had been established. The explanation was that the village, with its school, had, following a system known as "Chena" cultivation, migrated to successive locations, from each of which it had been driven by visitations of fever until it had reached the spot where it was found by the inspector. I mention this incident because it may be said to be typical of the history of the North Central Province of Ceylon. Historically this province is the most interesting district in the Colony. It contains the city of Anuradhapura, with its sacred Bo-tree, its fallen temples and palaces; the sacred rock of Mihintale; the ruined city of Pollanarruva, and innumerable monuments of a great religious and political past. At the present day the province, once the most richly cultivated and the most thickly-populated part of the island, is a region of abandoned lands, the home of a sparse and anaemic population. It may never be possible to trace to its origin the cause of the desolation of this once prosperous and wealthy centre of Oriental life, but of the cause there can be no doubt. I have indicated some of the results of forty years of malarial fever in Mauritius; the same cause operating through centuries has produced the ruin and depopulation of the North Central Province of Ceylon. Since the days of Sir William Gregory much has been done in the hope of restoring prosperity to the province. The realization of this hope seems now to have been brought within the range of practical measures, and to await only the adoption of an appropriate system of antimalarial sanitation. Restored to sanitary conditions such as generally prevail in the Colony, in the area of European commercial and agricultural enterprises, and in the chief centres of administration, the North-Western Province would probably be found to possess capabilities of development inferior to no other province of Ceylon. The construction of a railway through the province is likely to prove an interesting experiment. Railway construction through malarial areas in Ceylon, as elsewhere, has hitherto been accompanied by high rates of disease and mortality. It must be hoped that the precautionary measures recommended by experience, such as that of Drs. Sambon and Low in the Roman Campagna, will enable the work of railway construction to be prosecuted without danger. While I refer particularly to the North Central Province, malaria is a powerful factor in the disease and death-rate in many parts of Ceylon. Other tropical diseases are also endemic, so that Ceylon, although it must be counted amongst the healthiest of the tropical colonies, may well be reckoned among the colonies likely to derive gain from recent discoveries and studies in tropical medicine and hygiene.

From 1885 to 1893 I served in British Guiana. It was a period of great interest, owing mainly to the impetus given to the development of the resources of the interior, including the gold fields. While looking back with pleasure and satisfaction to these years of my public life, my experience taught me that there are few colonies in which administration, industry, and commerce meet graver obstacles in the various forms of tropical disease. Endemic malaria, epidemics of yellow fever, and the ever-intrusive mosquito are formidable enemies and have to be met by strict measures of precaution. As I was responsible for the passing of the British Guiana Immigration Ordinance, 1891, an enactment recently much discussed in Parliament, I may point out that some provisions of the Ordinance severely criticized were introduced not in a spirit of despotism for the profit of the employer of labour but for the benefit of the coolie, and to ensure his adequate protection from disease on unhealthy estates. The outbreak of beri-beri among the Chinese imported into South Africa seems to have promptly justified analogous provisions in the Transvaal Labour Ordinance.

At the time of my residence in British Guiana it was not known that mosquitos and fever stood to each other in the relation of cause and effect. As the tropical diseases that have there principally imperilled life and property are all mosquito-borne, the results of recent researches and experiments in the prophylaxis and treatment of such diseases and an appropriate system of sanitation are likely to be of as great gain in British Guiana as in any part of our tropical possessions.

My residence in the tropics led me long ago to form a very strong opinion on the inadequacy of the *British Pharmacopoeia* to meet the requirements of our Colonial Empire. An incident in British Guiana tended to confirm this opinion. Early in 1889 a member of my family had a severe attack of pernicious fever. The fever having continued for some days, and extensive haemorrhage having set in, my medical adviser, a dear friend of long Colonial practice and experience, suggested, as a last resource, the calling in of a local empiric. The next day he brought with him a native lady, who at once treated the patient with herbs gathered by herself in the garden of Government House. Within three hours the fever broke, and the patient, though in extreme exhaustion, was cured.

My views have been shared by many others, and I have naturally taken much interest in the work of a revision of the *Pharmacopoeia* by the adoption of the medical herbs and substances of proved efficacy, either in substitution of or in addition to, the recognized drugs. This important work has now for some years engaged the attention of the General Medical Council, and has already resulted in the publication, in 1900, of an Indian and Colonial Addendum. This is, however, only a preliminary step to the ultimate production of a complete imperial pharmacopoeia. Dr. Donald MacAlister, Chairman of the Pharmacopoeia Committee of the General Medical Council, has informed me that the work is being proceeded with, and he has been assured by the Secretaries of State for the Colonies and for India that the fullest official assistance will be given to the Pharmacopoeia Committee. I avail myself of this opportunity to express a hope that some, at least, of the students of the London School of Tropical Medicine will devote themselves to the investigation of herbs and other substances which they may find in empiric use in the sphere of their future labours.

In 1893 I was appointed Governor of the Windward Islands, and my knowledge of tropical diseases was enlarged by my experience of the loathsome disease known as "yaws," very prevalent in the islands. The position to be assigned to yaws among classified diseases is a subject about which considerable diversity of opinion seems still to exist. The volume of selections from Colonial Medical Reports for 1901-2, published as a Blue Book in July last, contains as an annexure to the St. Vincent Report a paper summarizing the additions made to our knowledge of the disease since 1901. Although a hope is expressed that satisfactory conclusions as to the true nature and treatment of the disease may soon be arrived at, it is evident that science has not yet revealed the secrets of yaws, a terrible scourge to the communities among which it prevails. Whatever may be found to be its true nature, the circumstances of the population among whom it is found

indicate beyond doubt that bodily nourishment has much to do with the susceptibility to infection and the severity and duration of the attack.

Although the head quarters of the Government of the Windward Islands are in Grenada, a very healthy island, the establishment of a protected coaling station and the maintenance of a large garrison at St. Lucia have raised that island to a position of great imperial importance. St. Lucia has suffered from endemic malaria and epidemics of yellow fever so severely that it has acquired an unenviable notoriety. Towards the end of the year 1894 an outbreak of yellow fever attacked the Training Squadron in Castries Harbour and the garrison, and caused grave anxiety. I observe from the latest reports that the Medical Department of St. Lucia have adopted the measures of sanitation which have proved of such efficacy against malaria in other tropical colonies, on the Suez Canal and elsewhere, and against yellow fever in Havana. There seems, therefore, to be a reasonable expectation that malaria and yellow fever may disappear, and that the fears that have been entertained on the subject of the health of the officers and men of the army and navy quartered in or visiting St. Lucia may soon be banished.

In 1897 I returned to Mauritius as Governor, and the period of my administration to the close of last year was rendered arduous by visitations of malaria, bubonic plague, and the epizooty known as surra. The prevalence of these diseases has made the question of sanitation the first concern of the Government. As regards malaria, to which I referred particularly at the commencement of my address, an organized and systematic campaign of antimalarial sanitation has been carried out. Mauritius has not been behind other colonies in the scientific study of the causes of malarial fever, as well as of other endemic diseases, and in the adoption of prophylactic and curative measures. For five years the exigencies of bubonic plague have taxed to the utmost the abilities of the Medical Department and the resources of the Colony. There are conditions in the physical formation and circumstances of the island which make it especially hard to deal with rats. There are no natural enemies of the rat in Mauritius, and the introduction of such enemies is attended with difficulties. The plague first appeared in 1899, in which year there were reported 1,417 cases and 1,117 deaths. From that date cases and deaths have steadily decreased, with the exception of the year 1901, when there was a serious recrudescence. During the nine months ending September 30th, 1903, there were reported 369 cases and 283 deaths. The colonial expenditure on plague account during the period indicated amounted to over a million and a half rupees—a large sum, but proportionately less than the expenditure on plague account in other colonies.

Up to the year 1902 my experience of tropical diseases was limited to the diseases that attack man. In 1902 an outbreak of the disease known as surra caused such a loss of animals as to destroy the system of transport of the Colony dependent on animal draught. I then learnt to recognize the necessity of extending the study of tropical diseases to those that attack animals. It became necessary, at an enormous cost, to substitute mechanical for animal transport by means of light railways, tramways, and traction engines, and the consequences of the disease not only imperilled the sugar industry upon which the public fortune of Mauritius depends, it affected every department of public and private activity. I am able, therefore, to appreciate the reciprocal arrangements which have been made for the association of this school with the Royal Veterinary College.

This brief narrative of my experiences, which are not exceptional but common to colonial service in tropical colonies, may be found, I hope, to justify my profession that for over five-and-thirty years I have lived in an environment of tropical diseases, and you will understand that my object has been to illustrate the importance and the responsibility of the duties the students of the London School of Tropical Medicine are fitting themselves to undertake. I would help them to realize to the full the multitude of the lives, the magnitude of the interests they are qualifying themselves to protect.

In the five years that have passed since your School was opened, much has been done in the way of education and research. The 400 students who have received instruction here have entered the service of the Colonial and Foreign Offices, the Admiralty, and the War Office; they are the agents of missionary societies; they are in the employment of railway companies, of trading and mineral corporations; they are members of foreign government services and foreign universities. They have gone out into all the tropical world preaching the gospel of sanitation—*Sanitas sanitum omnia sanitas*. In an address delivered here in December last, Sir Patrick Manson gave some illustrations of the research work done by your men, and I learn from him that fresh discoveries of pathological interest and probably of practical importance are now being studied.

But if much has been done, much remains to be done. If I may be permitted, as a layman, to attempt to sum up the results of the study of tropical medicine during the last few years, commencing with the work of Sir Patrick Manson and Major Ross, I would say that the medical profession in tropical colonies are no longer called upon to fight a vague generalization styled "climate," but specific infections by discovered agencies working in accordance with ascertained natural laws. In the new system the London and Liverpool Schools of Tropical Medicine may be described as the Intelligence Department of the Army of Medicine in the tropics. On the work of the Department the welfare of our tropical possessions and protectorates depends.

In the conduct of a campaign against a specific infection the militant officers will probably look to the Intelligence Department for information as to the agents of infection, the means to be adopted for their reduction or extermination, methods of protection, and remedial agents. In the case of malaria the militant officers seem to be equipped at all points. Taking it for granted that malarial fever is contracted only from the bite of a mosquito (the *Anopheles* variety) that carries fever agency in its poison secretion, and that the *Anopheles* can get these germs only by previously biting persons carrying the malarial germs in the blood, the Intelligence Department has devised an antimalarial system of sanitation which experiments have proved to be adequate to reduce the agent of infection. It must, however, be borne in mind that much time and vast expenditure will be necessary before the antimalarial measures that have been applied with success in townships can be carried out so as to secure immunity in territories or extensive areas, such as the North-Central Province of Ceylon or the malarious districts of British Guiana. In the meantime the Intelligence Department has investigated and taught measures for the complete protection of residents in malarial areas, and a specific remedial agent has been found in quinine.

In respect of other tropical diseases—including yellow fever, as is shown by the fact that the Liverpool School is sending out a further yellow-fever expedition to the Amazon—much further research is necessary. The bacillus of plague has been found, and the chief source of danger and the carrying agent is known to be the rat; but there are other agents, and the multiplicity and habits of the agents make it almost hopeless to secure an immunity similar to the immunity obtained in dealing with malarial fever by the destruction of *Anopheles*. As regards prophylaxis and cure, the serum of Yersin and Haffkine's fluid secure a brief temporary immunity; but Haffkine's fluid is only prophylactic, and the complete curative adequacy of Yersin is not established. Such, at least, is the opinion of the medical staff in Mauritius, who have now had much experience of the disease. In any case the fact is that after years of scientific research and costly experiments the victims of plague are numbered by thousands a week.

It must suffice for me now to remind you only of the special need for further research in respect of the infection of man and the lower animals by the parasite trypanosoma, associated, as you are aware, with the propagation of some of the deadliest diseases to which man and animals are liable. It may seem impertinent to dwell on the importance of further research on trypanosomiasis in a school to which the world is mainly indebted for the knowledge that the trypanosoma is the cause of sleeping sickness: but I have in my mind the disastrous consequences to Mauritius of surra—an infection of animals by the same or a variety of the same parasite. Coincidently with the prevalence of surra in Mauritius, the disease was raging with no less violence in the Philippine Islands when the enormous loss of animals led the Manila Biological Laboratory to undertake an exhaustive inquiry into trypanosomiasis with special reference to surra. Such was the fatality of this disease in Mauritius, that I believe I am correct in saying that no equine attacked by the disease recovered, although under certain treatment the parasite for a time disappeared from the blood.

You are aware of the researches into trypanosomiasis prosecuted by your colleagues in Liverpool. A few days ago I received the reports of their recent expedition to the Congo.

It is stated that the question of a curative agent has for a considerable time engaged the attention of the members of the expedition, and that experiments are now in progress to find a remedial agent which would have the same effect in trypanosomiasis that quinine has in malaria.

Speaking as a layman, the phrase seems to hit the nail on the head, and to be applicable to other groups of diseases besides trypanosomiasis. Research into no form of tropical disease would appear to be complete short of the discovery of such a remedial agent, or of a prophylactic serum not less efficacious than vaccine lymph against small-pox.

The recently-discovered Leishman-Donovan parasite has already been met with not only in India and Assam but in Tunis and the Soudan, and it will probably be found to have a much wider distribution, and to be of greater pathological importance than was at first suspected. If it should be proved to be the cause of the deadly kala-azar of Assam and Upper Bengal, long confounded with malaria, and no less fatal than plague, the discovery will be of great importance, and may be the first step towards the prevention and cure of a disease which has hitherto baffled medical skill. Whatever may be the ultimate results, the investigation of this parasite, which will engage your inquiry, cannot fail to throw light on some obscure points of tropical pathology.

Much, therefore, remains to be done in the way of research and experiment, and I venture to express a hope that the coming session of the London School of Tropical Medicine may be not less fruitful of good work than the sessions that have preceded it. It must be gratifying to all who have laboured for the school to find that the number of students entered for the forthcoming course is the largest ever entered on the opening day.

Before bringing to a close these desultory notes, which are all I have to offer you as an inaugural address, I cannot refrain, as one who held high Colonial office during the whole period of Mr. Chamberlain's administration, from expressing my sense of the service he has rendered to the health of the empire, and certainly not the least of his services has been the establishment of this school.

UNIVERSITY COLLEGE, BRISTOL.

By FRANCIS BROOKS, M.A.Oxon.,
Professor of Greek and Latin, University College, Bristol.

THE CLAIMS OF THE CLASSICS.

[ABSTRACT.]

AFTER pointing out that the supremacy which the classics enjoyed in education during the 400 years which followed the first revival of learning had within the last generation been seriously and successfully assailed, Professor Brooks said that in some quarters they were explicitly assailed as unscientific and what was called unpractical. In others they were not so much assailed as ignored, an attitude even more fatal to their interests than one of overt hostility. As a case which was not from time to time restated was apt to be considered to go by default, it might not, he thought, be inappropriate to examine briefly the current objections brought against the classics, and to set forth also their positive claims to consideration.

THE ALLEGED OPPOSITION BETWEEN CLASSICS AND SCIENCE.

In regard to the asserted opposition between classics and science, he hoped to show that this was a false antithesis due to the prevalent ignorance of what was really involved in classical study, and that, while it might be true that the classics were not present in science, the methods of science were, on the other hand exemplified in the study of the classics. When it was said that classics did not enter into science there was one important exception to be made. It had been his privilege ever since it was first started to take in the *Stethoscope*, the organ of the Bristol Medical School. Nothing was more encouraging to a student of the classics than to observe how, in the technical articles of that journal, the vocabulary was almost wholly taken from the Greek; the small amount that was not Greek was Latin, and sometimes the two languages were combined with lawless dexterity in one and the same word. The dependence upon them was so absolute that one was driven irresistibly to the conclusion that if the Greek and Latin languages did not fortunately already exist it would have been necessary for the purpose of medical science to invent them. The same practice was followed in the other sciences. Sir William Ramsay, for instance, as he welcomed each newborn element into the world duly endowed it with its Greek surname. Either it is "crypton," the hidden; "xenon," the stranger; or "neon," the new. All countries agreed in this tendency. Germany alone, in an excess of patriotic fervour, tried for a time the experiment of placing Teutonic roots side by side. The result was not philologically pleasing, and the attempt had been in great measure abandoned. It was surely a curious and somewhat pathetic tribute to the richness and flexibility of the ancient tongues that their modern rivals should have been thus compelled to resort to them for their phraseology.

CLASSICAL STUDY A BRANCH OF SCIENCE.

It was undoubtedly true that there was opposition between classics and science, more in detail so far as their subject-matter was concerned: for the one dealt with words and thoughts, and the other with substances and forces and the theories connected with them. But the test of experience showed that it ceased to be true with regard to the mental processes involved in each. The principles which underlay the pursuit of all science underlay also the study of the classics. In fact, from this point of view, they were a branch of science. The chief reason why they were so was that, owing to their remoteness in time, the language in which they were cast had been reduced to a system of exact and ordered law. It was exempt from the laxity and innovations and varying standard of usage which inevitably attended a spoken language. Again, it was highly inflectional. The change of meaning which was expressed in English by means of prepositions and auxiliaries was expressed in Greek and Latin by a change in the form of the word itself, so that one Greek or Latin word was often equivalent to three or four or even five English ones. Then, too, the order of the words in the ancient languages did not follow what we should regard as the natural order of the thought. The subject did not necessarily begin the sentence, the object constantly preceded its verb, and there was a tendency, especially strong in Latin, to reserve the verb for the last place in the sentence.

THE FACULTIES EXERCISED IN CLASSICAL STUDY.

In the study of the classics the faculties called into play were precisely those which were called into exercise in all science—memory, observation, accuracy, and, above all, the power of reasoning by analogy, of bearing in mind the main types of word-formation with which it was the student's first business to become acquainted, and then of recognizing in individual forms the signs which enabled him to refer them back each to its proper type. And not only had he to observe accurately, but the practice of composition in Greek and Latin forced him to reproduce accurately what he had observed. In all this there was mental discipline of a kind similar and equal to that bestowed by science, and exercised upon a sufficiently exacting subject-matter. Any one who had been able to master Latin grammar had a vice-like grip of the principles of all other grammar, our own included, and any one who had studied Latin syntax had had the benefit unwittingly of a course of systematized logic. Furthermore, the ancient languages were scientific not only in their formation but also in their interpretation, which consisted in the application of fixed laws to particular conditions. The general laws of the language must not be violated. On the other hand, the claims of the particular context must be considered, and the nice adjustment between the two in which right rendering lay could often be attained only by a long reasoning process. The classical student could not, if he would, escape the salutary fatigue of thought. He was necessarily and constantly engaged with the consideration of evidence, the drawing of inferences, and the passing of judgement. Primarily, and in not the least important of their aspects from an educational point of view, the classics were a branch of science, and must in the first instance be both studied and taught as such. Science, in fact, denoted a certain method of investigation rather than the particular objects of investigation with which it was connected in the popular mind, and a good deal of heated and mistaken controversy might have been avoided if this had been more generally recognized.

It was a curious but undoubted fact that the scientific spirit in which the classics had to be approached was often most conspicuously lacking in those students of them who were drawn from science. In saying this he was thinking of the matriculation forms in public schools in which were gathered the boys of the Science 6th, many of them holders of open scholarships who required to keep up a certain

amount of Greek and Latin in order to enter at Oxford or Cambridge or to pass the London Matriculation. Those who had had charge of such forms were well aware that the last thing as a rule which their pupils exhibited when confronted with the phenomena of language was any trace of scientific method. Whether any significance was to be attached to this fact they might inquire later. For the present they had to consider the converse question which would naturally be asked, What appearance does the classical student present when engaged upon science? Upon that point, so far as the ancient universities were concerned, no evidence was forthcoming, for the simple reason that he was not called upon to subject himself to the test at all. Far too many classical scholars, it was to be feared, were in the same position as a well-known Oxford don who once said of himself in print: "Of science I know nothing; I have not even examined in it." The case was far different when they came to such a product of modern ideas as the London University. That University from the first made Greek only an optional subject in its matriculation. For a long time it made Latin and the sciences equally compulsory, but within the last two or three years, at the time of its transformation into a teaching university, while retaining science as compulsory it made Latin optional, so that the preponderance had for the first time swung round the other way. The change was significant and affected a vast number of candidates of all ages and conditions; for there was no examination which appealed more strongly to youthful and even to middle-aged ambition. For a generation and more it had been in education very much what a clearing-house was in banking—gathering to itself for a time the most diverse types and then dismissing them each on its appointed way. No doubt it would be possible within the limits of that examination to obtain statistics for comparison, and to find candidates good on the literary side who were correspondingly bad at science.

Modern Languages Inadequate Substitutes.

Proceeding, Professor Brooks said: It is the absence in modern languages of those peculiar characteristics which give to the classics their scientific basis that makes it impossible for the former to take the place of the latter as an instrument of education, if, that is, as we are all agreed, the element of science must enter into all education. The modern languages, by the nature of their being, had attained to no fixed and final type; they were not inflectional, and the thought followed for the most part the order of the words. Their surpassing literary merits were beyond dispute, but no one had seriously contended that the external form in which they were cast made sufficient demands upon the scientific intelligence for them to be comparable in that respect with the ancient tongues. They do not present that combination of the difficult and the unfamiliar which is needful for the student to sharpen his mental teeth upon. If we feel inclined to congratulate ourselves upon the superior ease and convenience, as it seems to us, of the modern modes of expression, our self-complacence may be slightly tempered if we reflect upon the historical facts of their first origin.

Our habit of using a multiplicity of words for one, and of altering the form and natural order of words as little as possible, takes its rise ultimately from the inability of the barbarian subjects and the barbarian conquerors of Rome to master the structure of the Latin language with which they were brought into contact. Traces of this inability linger among our young barbarians of to-day, those, for instance, who, when they are asked to decline the Latin word "plus" in full, decline it with only too much fullness as "plus," "pla," "plum"; in their case the desire to become immaculate is likely to remain ungratified. The barbarian inheritors of the Empire of Rome broke up the mighty fabric of language which they were unable to assimilate, and reduced it, as it were, to a lower denomination, and the different modern languages which were the result still show in their formation nothing like the mental grip and concentration of the speech from which they were derived.

Classical Training not Unpractical.

The second chief objection brought against the classics is that they are "unpractical." This is a loose term and loosely used, but in some one or other of its possible meanings it represents so prevalent an attitude of mind that it is necessary to take it into account. Many people when they use the word have in their minds the undoubted fact that the subject-matter and associations of the classics have no necessary connexion with the ordinary occupations of the world around us. Success in those occupations is seen to be perfectly compatible with entire ignorance of the classics, and it is felt that from the standpoint of those occupations the classics have no market value. And it is often asked, Why spend time and energy on acquiring knowledge which brings in no material return instead of upon subjects which have an immediate bearing upon one's future life-work? The argument is specious, and might seem likely, if acted upon, to tend to the production of that efficiency of which we nowadays hear so much; but it is none the less mistaken. Its supporters would no doubt claim for it that it is in accordance with the dictates of common sense; but that is by no means an infallible guide. It is easy to see, to take an extreme case, that to discharge people upon the world equipped with a knowledge of shorthand and commercial French is in no sense to send them forth educated, even if to commercial French are added commercial German and Spanish. Though these acquirements may have an immediate market value, success in commerce is, as a rule, reserved for those who come to it with a more widely developed intelligence. And the same principle holds even in the case o those avocations which make considerable intellectual demands in themselves. From one point of view, education consists in teaching how to learn, or as it was once excellently expressed at a conference in our own neighbourhood—"Its object is not to cram with facts but to equip with faculties." Judged from this standpoint, the classical training must be pronounced to have been a success in regard to at least two of the chief careers open to Englishmen. The profession of the Law in its highest branch is entered by men at the end of their university course, who, up to the age of 22 or 23 years, have for the most part never opened a law book, but whose previous training gives them an astonishingly rapid grasp of a new subject; and the same is the case with the administrative duties of the Home and Indian Civil Service.

Whether science will prove equally successful in producing general capacity remains to be seen; in that rôle it is still young and untried in the world, for it has hitherto existed only in reference to itself.

So far we have been endeavouring to meet the "practical man" upon his own ground, and to show that, even from his own not very exalted standpoint, the exclusion from education of what is not immediately and obviously marketable is a mistake. But it is possible to take other and higher ground. It is a real moral service for a young learner that the element of conscious self seeking should be removed from his education; and that if he asks, as he is very likely to do, What is the good of this? he should be told, "This is good in itself, and therefore you are set to study it." He is thus brought to the conception of knowledge as a thing desirable for its own sake, and not solely as a means to an end; and the more remote the subject is from everyday needs, the more clearly that valuable lesson will be enforced upon him. It has been the experience of most of us with regard to mathematics, which is the readiest instance to take, since it is the one subject which forms a part of all education. Except for those who have since turned to scientific and technical pursuits, the rest of us make no use whatever in daily life of our mathematical training, the first four rules of arithmetic and some remembrance of the easier tables being our only and sufficient guide. But that does not in the least affect our debt of gratitude for the introduction which it gave us to severe and abstract reasoning. It was the mental experience which was all-important, and not the possibility of application in practice.

There is another point of view from which the classics are often described as unpractical, and that is in reference to their own subject-matter. It is vaguely assumed that they are concerned chiefly with the creations of poetry and the imagination. While it is true that their excellence in that sphere is one of their greatest glories, the impression that they have no other side is one which may be dispelled by the simple process of reading them. One finds then that they contain not only the literary presentment of the legends of mythology, but an accurate reflection of the different forms of ancient life—agricultural, social, military, and political—and that various highly concrete and technical matters engage the reader's attention. Either he is keeping bees with Virgil, or hunting the hare over the snow with Xenophon, or bridging the Rhine with Caesar, or drawing lines of blockade round Syracuse or Plataea with Thucydides, or meeting charges of bribery or extortion with Cicero, or investigating maritime law and disputed will cases with Demosthenes and the Attic orators. On all these subjects he has to become for the time being an

expert, and receives, it may be sometimes even against his will, a miniature training in many different arts.

What the Classics offer in Themselves.

Proceeding to consider what the classics have to offer in themselves, Professor Brooks said: We find in them a vast storehouse of the best that has been thought and felt in the world expressed in the best way. Nowhere else have the great human emotions and experiences been more deeply realized, more clearly and firmly depicted, and more profoundly commented upon. The great irregular art of Shakespeare alone places him apart—"Others abide our question, thou art free"—but with that exception the supreme excellence of the ancient writers, both in the knowledge and delineation of human nature and the criticism of life, is universally conceded. They have given us, too, the highest expression of the different types of literature. Lastly, their writings contain the embalmed record of the past history of mankind. May it not, then, be reasonably urged that these studies, which touch humanity at every point—in its thought and passion, in political and social life, in statecraft and citizenship, afford the best foundation for the building up of human character? This is the great function they have fulfilled in the past; they have not merely developed the intelligence but they have been trainers of men.

"The present age is predominantly scientific." So we are assured on all hands, and so our own senses seem to assure us, for we are surrounded on all sides by the visible and audible results of science. Have these advances, however, improved the quality of life, or is it possible that the American Thoreau was right when he said of the mechanical triumphs of the age: "These things are improved means to an unimproved end"? Whatever the moral effect and value of these improved external conditions, and however impressive we may find them, they are not more than conditions: what remains of supreme importance to us is the human drama, the fate of individuals and nations which is played out within those conditions. Instead of saying that the present age is predominantly scientific, it would be more correct to say that the present age, like its predecessors, is predominantly human, with a scientific setting.

Another misconception into which we are insensibly led is to suppose that because our age makes familiar use of the discoveries of science, it therefore has also an adequate intellectual grasp of them. Are we not most of us really in the same position with regard to them as the lady who, when some one in her presence thoughtfully exclaimed: "I wonder what causes electricity?" replied, with an air of bright surprise, "Oh, don't you know? One turns a sort of revolving thing downwards, and the light comes." Upon these easy terms we can all of us enter upon the heritage of science, and it is precisely upon these terms that the vast majority of us do enter upon it. The intellectual merit involved in this attitude is of the slightest; in fact, it is almost non-existent.

Passing to the examination of some of the special attributes of the classics, Professor Brooks said they might be considered as supplying a kind of historical background to modern life. No doubt the world would still be a supremely interesting place, even if one had only been born into it at some time during the Eighties of the last century and knew nothing of its previous history, but its interest and significance were immeasurably enhanced if one was able to look upon its present in the light of its past. Eliminate Greek and Latin from the world, and it was as though the history of the human race did not extend further back than the year 1500 of our own era. The modern world owed to Rome the basis of its code of law. Besides law, they owed to Rome the general framework of government and administration, the forces of order and method which made society an organized structure. On the other hand, the greater part of the intellectual basis of the modern world came from Greece, which inaugurated the free and right use of reason and scientific method, and laid the foundations of the sciences themselves.

The Classics and the Formation of Character.

Continuing, Professor Brooks said:

Let us now examine the part which the study of the classics has played in the formation of English character. The great majority of the men who have influenced public affairs—our statesmen, soldiers, and administrators—have received it as the normal and traditional training of their country. Are we dissatisfied with the type it has produced? and does it appear from the past record of England to have failed beneath the test of experience? Can we feel confident that a more circumscribed and a less human training will produce a better result, or even a result as good? Is it a light thing to break with what has been the tradition and inspiration of our fathers and fathers' fathers, and will the national life and intelligence become narrower and poorer in consequence? Not the least testimony to the value of the classical discipline has been the way in which leading Englishmen in the past have recurred in the hour of trial for comfort and encouragement to the great thoughts and images contained in its literature. And it is scarcely less noticeable how the classics have been the daily friends and companions of men of affairs.

It is sometimes urged that though the classical training may be well suited to members of the governing class who will be called to high positions in the world, it is not suited to the great majority who follow quite ordinary and comparatively humble occupations. A little consideration will show that precisely the opposite conclusion should be drawn. The less interesting and varied one's life-work may be, the more important it is that one should have resources outside it in oneself. If life is to be spent solely in providing the means of life, then, indeed, as Ruskin said, in a phrase of profound and mournful significance, "It passes as a tale which is *not* told." To guard against this danger is one of the functions of education which fits us primarily for work, but secondly for the rational enjoyment of life; it gives us an outlook wider than the sphere of our particular employment, the capacity for appreciating and following up with pleasure to ourselves this or that intellectual interest. There are happily many such, and amongst them the attractions of classical antiquity will hold certainly not the lowest place. A boy who may not have much chance of becoming an ambassador, a general, a judge, or the governor of a colony or dependency, will at least become a citizen. It is another less obvious, but no less real, function of education to prepare him for citizenship, and this will be best done by giving him the most widely-developed intelligence possible, with the power of taking comprehensive views of questions, and coming to right judgements upon them.

The Future of the Classics.

After considering the relations of the classics to modern literature, Professor Brooks concluded:

There are other important aspects of the classics upon which I might dwell if there were time, but I have touched upon the chief. The omens with regard to their future are not altogether good. They have to contend with ignorance, and the indifference or sometimes hostility which springs from ignorance, with misconception, and with a hasty, unintelligent, and at present panic-stricken desire for material gain, which has not even the wit to see that in injuring education it is over-reaching itself. Imagine out of Dickens a combination of Gradgrind and Jonas Chuzzlewit, and we can estimate the effect of the intrusion of such a spirit into the delicate task of rearing human souls. Undoubtedly these are formidable antagonists, but the cause of the classics is, I think, destined to survive. If it is eclipsed for a time it will have a new renascence, for its anchorage is in the general heart of mankind, it is interwoven with the stuff and fabric of human life, with the past history of man and his future destinies, his emotion and morality, his feeling for conduct, and his sense of beauty. So long as the human spirit seeks above all for human sustenance—in other words, so long as humanity remains in man—so long, I imagine, will these studies retain an eternal fascination and an eternal appeal.

Medical Students and Graduates in the United States.—According to the *Journal of the American Medical Association*, the number of medical students in the United States for the year ending June 30th, 1904, was 26,138, being 1,477 less than in the year 1903. Of this number, 23,622 were in attendance at the regular schools; 1,105 at the homoeopathic; 1,014 at the eclectic, and 357 at the physio-medical and non-descript schools. There was a decrease in the attendance of the regular schools of 1,266 as compared with the previous year, and a decrease of 1,216 as compared with 1902. In the homoeopathic schools there was a decrease of 393 as compared with 1903, and of 512 as compared with 1902. In 1904, 1,014 students attended the eclectic schools, an increase of 166 over the attendance in 1903. These schools have been increasing steadily since 1900. The total number of graduates for the year ending June 30th, 1904, was 5,747, an increase of 49 over the preceding year. The increase in 1903 over 1902 was 699, so that the increase in 1903-4 was much less than that of the year previous.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

SOUTH-EASTERN BRANCH: ISLE OF THANET DIVISION.

At a meeting held at Broadstairs on September 27th, Dr. Broughman in the chair, Dr. Biddle read Notes on a Case of Large Pleuritic Effusion. The patient had contracted pleurisy fourteen days previous to arriving in England from Australia, and had not consulted a doctor. When examined she was found to have a large pleuritic effusion, yet there were but slight signs of distress, though the pulse was 130 and the heart pushed far over; 4½ pints of fluid were withdrawn on the first occasion, and the operation had to be repeated in five days' time, when two pints were withdrawn. The patient made a good recovery and was now well. The points of interest specially drawn attention to in commenting on the case were the large amount of fluid withdrawn and the fact that no medical advice had been sought till the effusion had assumed large proportions.—The case was discussed by Drs. Halstead, Tamplin, and the Chairman.—Dr. Raven read a paper on Some Cases of Pancreatic Disease. Notes of two cases of carcinoma of the pancreas and two of chronic pancreatitis were read, showing several points in common, that is, permanent jaundice with distension of the gall bladder, hepatic congestion, and subsequent toxaemic symptoms from the unrelieved cholaemia. Some points were made for diagnosis between the two pathological conditions and the etiological factors in the production of chronic pancreatitis discussed, the importance of chronic irritation by a stone being pointed out. The occurrence of pancreatic glycosuria and its more frequent occurrence in chronic pancreatitis than in cancer of the organ, due to the interacinar portions of the gland becoming affected in chronic inflammation were considered. The diagnosis of this class of case from cases of gall stones was discussed, and stress was laid on Courvoisier's sign, that is, distension of the gall bladder with complete obstructive jaundice, pointing to obstruction due to tumour and very rarely due to stone. In conclusion, treatment by anastomosing the gall bladder and duodenum was advocated, as by this means the physiological action of the bile was again called into play, and relief was given to the serious and miserable symptoms set up by the permanent poisoning of the system with bile. The paper was discussed by the Chairman, and Drs. Gosse, Tamplin, Halstead, and Sutcliffe. Dr. Raven replied.—Skiagraphs of several injected anatomical specimens of the human body were shown and viewed with a Wheatstone stereoscope.

ULSTER BRANCH.

Belfast, Wednesday, October 5th, 1904.

Dr. Thomas MacLaughlin in the Chair.

President's Address.—The President (Professor J. A. Lindsay, M.D.) delivered his inaugural address, choosing as his subject the serum treatment of disease. The history of the methods which had preceded and led up to modern serum treatment was referred to, more especially the work of Jenner, Pasteur, and Koch. The pathological theory which underlies serum treatment and the modern doctrine of immunity as propounded by Buchner and others were considered. The practical results of serum treatment were then fully dealt with. It was shown that in the case of diphtheria the use of antitoxin had led to a diminution in the mortality from the disease of about 50 per cent., and that this was no casual fluctuation due to diminished virulence of the disease was proved by the fact that this lessened mortality-rate was found equally in London and New York, Berlin and Paris, Vienna and Chicago. A common effect visible over a world-wide area suggested the operation of a common cause, and in this case the only common cause which could be suggested was the introduction of a new remedy. Further, the fact that the value of antitoxin varied widely according to the day of its administration could hardly be reconciled with any view except that of the efficacy of the remedy. It had been shown that where antitoxin was given on the first day of diphtheria the mortality from the disease was about 5 per cent.; if given on the second day about 8 per cent., on the third 12 per cent., on the fourth 23 per cent., and if the remedy were delayed until the fifth day the mortality rose as high as nearly 40 per cent. If further proof were needed, the fact that since the introduction of antitoxin the mortality from tracheotomy operations in diphtheria had fallen from 71 to about 47 per cent. supplied invaluable confirmation of the value of antitoxin. As regards the dosage and mode of administration of antitoxin he had found doses of 2,000 units, repeated at intervals of twelve hours until all alarming symptoms had subsided, and given subcutaneously, a very satisfactory mode of treatment; but the tendency was now towards giving larger doses—namely, 8,000 to 10,000 units—and some authorities advised that in severe cases the intravenous mode of administration should be adopted, the median basilic vein being usually selected. It was also advised that the remedy should be warmed to about 58° C. before administration. The drawbacks to the use of antitoxin were not serious. Various skin rashes were frequent but unimportant. Pains in the joints and albuminuria were sometimes met with, but were not of serious import. Sudden death had in a few very rare cases followed the use of antitoxin, but might fairly be attributed to the disease rather than to the remedy. Antitoxin also possessed prophylactic power against diphtheria and should be given in doses of 300 to 500 units where there had been definite exposure to contagion. The great point was to give antitoxin in time. Its efficacy seemed to be conditional upon its being given during the first four days of diphtheria, and the earlier the better. The use of tetanus antitoxin would appear from the statistics of Lambert and others to have materially reduced the mortality in that affection. The triumphs of the antirabic inoculations of Pasteur did not need to be recounted again. The Pasteurian treatment had reduced the mortality in the cases of those bitten by rabid animals from about 10 per cent. to less than ½ per cent. The work of Haffkine and Yersin in connexion with plague was considered. The Indian Plague Commission had reported favourably regarding the value of Haffkine's prophylactic vaccine, and experience during the Oporto epidemic afforded presumptive proof of the efficacy of Yersin's serum. The work of Wright and Chantemesse in connexion with typhoid fever was of hopeful augury. Wright's vaccine had had a considerable trial in South Africa, Egypt, Malta, and India, and the evidence went to show that its use diminished both the percentage incidence and the percentage death-rate of typhoid fever. The case of tuberculosis was next dealt with, and the early history of tuberculin referred to as a warning that pathological theories in all cases needed the control of clinical experience. Four remedies for tuberculosis of a specific character were now in the field—namely, the old tuberculin of Koch, the new tuberculin of Koch, the serum of Maragliano, and the serum of Marmorek. As regarded the use of the old tuberculin of Koch as a means of diagnosis, there was a good deal of evidence to show that its use was valuable and free from risk. This remedy was useful in lupus, but was not to be recommended in phthisis or other forms of internal tubercle. The new tuberculin of Koch was commended by many good observers as a remedy in phthisis. He (Professor Lindsay) had no personal experience of its use, but thought that an open mind should be at present preserved as regards its utility. The remedy was worthy of further trial. The serums of Maragliano and of Marmorek were still in the experimental stage. In septicaemia and other forms of streptococcal infection, various serums had been tried. The evidence of their utility was still doubtful. Serum treatment had also been tried in pneumonia, acute rheumatism, cancer, Graves's disease, and other conditions. Further evidence was required as to the effect of these remedies. As to the future prospects of serum treatment, a hopeful outlook seemed permissible. Serum treatment was more than an empiric fact. It involved a new principle and supplied a new method. How far that principle and method would prove of general application to infective disease the future must determine.

Pancreatic Infantilism.—Dr. J. L. Rentoul (Lisburn) read notes of a case of pancreatic infantilism. The patient was a girl of 18 whose growth was arrested at the age of 11 apparently, and who suffered from chronic diarrhoea. The nature of the case was suggested to Dr. Rentoul by a paper of Dr. Byrom Bramwell's, and on writing to that gentleman about his case he agreed with Dr. Rentoul that the case was a well-marked one of pancreatic infantilism. Under appropriate feeding, the patient had in five months gained over 4 lb. in weight and 2 in. in height, and had become much brighter and more intelligent, thus confirming the diagnosis.

Cases.—Mr. A. Fullerton (Belfast) showed: (1) A case in

which he had removed the sigmoid flexure for extensive carcinoma; (2) a case of congenital dislocation of the hip, treated by the bloodless operation of Lorenz, with skiagraphs; (3) microscopic sections from a case of tubercle of the tongue. —Mr. R. J. Johnstone (Belfast) read notes and showed specimen of a case of retroperitoneal tumour weighing 19¾ lb.—Dr. John Campbell (Belfast) read notes of three cases of intestinal surgery: (1) A case of obstruction by a band; (2) a case of enterectomy for fibrous stricture; (3) a case of obstruction due to a concretion, the concretion being shown. —Dr. Cecil Shaw (Belfast) showed a case of associated movement of the left upper eyelid and the jaw, and gave a brief account of the explanation suggested by Mr. N. B. Harman, that it was an atavistic anomaly, explicable only by the history of the origin of the pterygoid and orbicularis muscles. —Dr. A. B. Mitchell showed a case for diagnosis.—Dr. McQuitty (Belfast) showed two cases of myxoedema, one of which developed at the age of 43, and the other at 18; also two cretins, one of whom was 5 years of age and had been under treatment for two years, while the other had been untreated. All the cases were females. He also showed a case of atrophic paralysis where the diagnosis lay between central progressive muscular atrophy and Erb's juvenile form of myopathy.

REPORTS OF SOCIETIES.

MEDICAL SOCIETY OF LONDON.

John Langton, F.R.C.S., President, in the Chair.

Monday, October 10th, 1904.

Presidential Address.

Mr. John Langton, the newly-elected President, after some personal remarks, alluded to the loss the Society had lately sustained through the death of Dr. Gilbart Smith and of Sir William Mitchell Banks. He then passed in review some of the surgical problems that had been solved in comparatively recent times in regard to such general conditions as tuberculosis, sepsis, and cancer, and particularly to the more special matter of the permanent cure of hernia in infants.

Renal Calculus.

Mr. Marmaduke Sheild described a case of gigantic renal calculus removed by operation, and made some remarks on renal calculi which appeared as abdominal tumours. The stone in the case described extended up into the dome of the diaphragm, and weighed in the dry state 16¼ oz.; its circumference was 10 in. The symptoms were slight, and but little incapacitating. It was pointed out that the more severe symptoms were caused by small jagged stones. The value of the Roentgen rays in the diagnosis of renal calculus depended largely on the skill of the exhibitor. The occurrence of massive abdominal tumours due to renal calculi was insisted on. The best method of dealing with such cases, when the kidney substance was disorganized, was held to be the anterior removal of the kidney in the first instance. The present calculus seemed to be the largest that had ever been removed from the body of a living person.

Mr. Mayo Robson alluded to the formation of abdominal tumours in renal disease with large calculi and the tendency to mistake their nature. A ready means of diagnosis was by distending the colon with air. The Roentgen rays for the discovery of calculi would not show lithic acid calculi as a rule, unless of large size; but those containing lime salts were usually revealed, as the oxalic acid calculus. The positive evidence was therefore valuable, but not the negative.

The President had had similar experience with the Roentgen rays. A source of fallacy might arise from skiagraphs taken with the patient's clothing on. The movable stones were those which caused the most severe symptoms. He agreed that in such cases the kidney should be removed.

Mr. Swinford Edwards had not removed a renal calculus larger than 3 oz. The Roentgen rays in renal calculus were disappointing. When in doubt it was probable that nephrectomy should be the operation of choice.

M. Professor Monprofit (Angers), speaking in French, described an interesting case of a large ramifying renal calculus under his care, in which the kidney was left behind, with the resulting formation of a fistula requiring a second operation for the removal of the remains of the kidney.

Mr. Sheild replied.

REVIEWS.

INSANITY.

The sixth edition of Professor Clouston's well-known and widely-read textbook, *Clinical Lectures on Mental Diseases*,[1] will be welcomed by all who have read and appreciated the former editions. Outwardly it is a facsimile of its predecessors, but scientific views about mental diseases have undergone so much change in recent years in regard to their etiology, classification, and, above all, their pathology, that it was only to be expected that considerable alteration and amplification would be required to bring this book into line with modern views. This has been done, and it says much for the original soundness and thoroughness of the author's system of classification that this could be accomplished without any dislocation of its former structure. It is, in fact, a satisfactory test of any comprehensive theory and treatment of any science if newly-discovered facts are found to dovetail rather than to break into the original plan. To a very large extent this is due in the present case to the fact that Professor Clouston has always regarded, and taught his students to regard, the phenonema of mental disease from the clinical and etiological rather than the merely symptomatological standpoint. The fact that this is the sixth edition is sufficient evidence of its high value and general use, and absolves us from the necessity of reviewing it in detail. It is necessary, however, to mention the principal additions and also one or two points of divergence from views which are becoming generally recognized. We have not received the fifth edition, but, compared with the fourth, reviewed in the British Medical Journal of April 4th, 1896, considerable amplification has been made. To mention only salient features, the microscopical pathology has throughout received large additions, and is illustrated with numerous and excellent photomicrographs of various morbid conditions. For the latter Dr. Clouston is indebted mostly to Dr. Ford Robertson and Dr. Middlemass of the Scottish Asylums Laboratory. The pathology of general paralysis is afforded a particularly careful exposition, and the several theories as to its causation are discussed. The latest of these is what Professor Clouston calls the toxic-bacteriological theory, and is described as being now certainly in the ascendant both on the Continent and in this country. This theory has found its most enthusiastic exponent in this country in Dr. Robertson, a summary of whose views was published in the Journal of October 24th, 1903. According to him there is in general paralysis usually a predisposing cause—syphilitic, alcoholic, or plumbic, but the real *sine qua non* is a specific toxin acting on the cortex. For the production of this toxin there must have been a previous bacterial invasion, and he has demonstrated the universal presence in general paralysis of a bacillus resembling in cultural and morphological characters the Klebs-Loeffler bacillus. This, he believes, is in all probability the specific organism of general paralysis. Professor Clouston concedes that this theory is fascinating, but sees many difficulties in the way of its acceptance, as it does not explain the part which syphilis plays in the etiology of this disease; nor the predilection of the toxin, whatever it be, for the cortex, nor the steady progress to death; and he is inclined to see in general paralysis a true specific nerve degeneration. In this we imagine Professor Clouston is in agreement with the majority of authorities; and in stating that the toxic-bacteriological theory is in the ascendant—if by that it is meant that it has a preponderating hold on current expert opinion—his estimate is probably beyond the mark. With regard to textual alterations, there are numerous minor additions throughout the work. In the chapter on states of fixed and limited delusions, the classification now adopted is that of monomania of grandeur and pride, monomania of persecution, suspicion and unseen agency, and systematized delusional insanity (Magnan). With regard to the last, he says that few Scottish monomaniacs follow the lines of this special form. The term "paranoia," so largely used in Germany and America to describe progressive systematized insanity, does not meet with Professor Clouston's approval, and its description as summarized from other authors does not take up more than two pages. The term is, nevertheless, very useful, and is attached to a definite and considerable class of the insane, although, as has been pointed out by Kraepelin,

[1] *Clinical Lectures on Mental Diseases.* By T. S. Clouston, M.D., F.R.C.P. Sixth edition. London: J. and A. Churchill. 1904. (Crown 8vo, pp. 738; 23 illustrations. 14s.)

owing to the patients maintaining their outward bearing, the malady is, as a rule, only recognized when it is of many years' standing, and the patients come seldom or late into the asylum, and then only for special reasons. The term, also, has not the obvious disadvantage of being a misnomer, as is monomania, such a condition as pure monomania being almost certainly impossible. Another modern classification to which Professor Clouston objects is that of dementia praecox, on the ground that "dementia" should not be applied to any recent and curable disease, and that Kraepelin has taken this term and applied it to practically the whole of his (Clouston's) group of adolescent insanities. The term is certainly not free from objection, though not altogether for the reasons urged by Professor Clouston, but it must be pointed out that Kraepelin has stated repeatedly that the most frequent result of dementia praecox is a condition of incurable mental infirmity, and that whether it is susceptible of complete and permanent recovery is very doubtful. It seems, in fact, that dementia praecox connotes too much and adolescent insanity too little. One of the most interesting chapters is that on "phthisical insanity." By this the author does not mean the mere coincidence of phthisis and insanity in any one case, but a particular form of insanity with characteristic symptoms and course having special relation to a phthisical diathesis. The occurrence of insanity and phthisis in the same family is, he says, too frequent to be a mere coincidence. Professor Clouston's experience shows that in typical cases its characters are well marked, and that it differs from any of the other forms of anaemic or diathetic insanities, and its existence and amount have no fixed relationship to the death-rate from phthisis in an institution. Many others have supported these contentions, and Maudsley has said that he has seen many cases of "phthisical-mindedness" not amounting to technical insanity. The lucidity of expression and the broad views of the author of this book, the sharp delineation of clinical types, and the constant endeavour to refer morbid mental phenomena to underlying neural changes, make it probable that it will for long maintain its high place amongst systematic treatises on insanity.

Amongst Continental alienists it would be difficult to choose any author a translation of whose works could do more to stimulate scientific interest and enthusiasm in the study of mental disease and which should prove of wider acceptance than the distinguished Munich Professor of Psychiatry, Dr. Emil Kraepelin. Characterized by great originality and independence of thought, keen mental acuity and an enviable power of accurate and graphic description, his works are deeply impressing contemporary opinion, and gradually effecting a change in the nomenclature of mental diseases following a recognition of the validity, in the main, of his classification of clinical types. The present work, *Lectures on Clinical Psychiatry*,[2] composed of thirty lectures, and comparable to those of Sir W. Gowers and Dr. Weir Mitchell in the field of neurology, is throughout eminently practical and covers the whole ground of mental diseases from the clinical point of view. The examples of disease, carefully selected as types from many years' study of an enormous amount of clinical material, are described, analyzed, and compared—their differential diagnosis being always kept in the foreground—and interwoven with illuminating commentary in so excellent a manner that they admirably fulfil their author's purpose of furnishing a guide to the clinical investigation of the insane. Throughout the book the importance is repeatedly emphasized of recognizing that conditions which belong to the same examples of disease may appear extraordinarily different, whilst pictures which have an entirely different clinical signification are often enough very similar; and it is therefore urged that the practitioner should be clear as to the special clinical meaning of each symptom in each case. Taking, for example, sad or apprehensive depression, Dr. Kraepelin shows that this of itself permits of no conclusion as to the disease through which it is engendered, for though

under some circumstances we can draw important conclusions as to the nature of the underlying disease merely from the kind of depression, from its duration, from its repeated return, from its trifling depth, and so on, often enough it is the consideration of the other symptoms of disease which will lay us on the right track.

Further on he says:

Mania to a certain degree is not only a true subversion of states of circular depression, but in itself is nothing but a stage of *maniacal-depressive insanity*.

This as the editor, Dr. Johnstone, mentions, had already been pointed out by Sir J. Batty Tuke, who, in speaking of these states, says that although in many cases the character of depression or exaltation is maintained throughout, a large class exists in which it is impossible to say whether they are melancholic maniacs or maniacal melancholics. This apparent symptomatological confusion is reduced by Kraepelin's separation of the phenomena into universal concomitants and distinguishing disturbances.

Those symptoms which change in the course of the same disease, and on the other hand return in the same form in different courses of disease, are to be regarded as *universal* concomitant phenomena of mental disturbances, just like fever, pulse acceleration, and pain in physical illness. They do not admit of our forming any reliable conclusions upon the particular nature of the malady in question, and from this point of view are to be regarded only as accidental symptoms, be they ever so striking and dangerous. Opposed to this are the *distinguishing disturbances*, often apparently much more insignificant, but in reality diagnostically essential, which we invariably find in the most diverse cases of the same disease, and which reveal to us, therefore, the nature of the underlying malady.

Notes of cases which are models of that careful and minute dissection of mental phenomena which has resulted in the inclusion under some one group, be it maniacal-depressive insanity, dementia praecox, or progressive systematized insanity (paranoia), of cases which would formerly have been considered unrelated and unconformable, occur frequently in every chapter. The distinction between maniacal and katatonic-motor excitement and between impediment of the will and negativism, of which the two first used to be comprehended as necessity of movement, and the two last under the name of stupor, may be mentioned as examples. The necessity for attaching significance to the distinguishing disturbances, obscured as they may be by concomitant features, is urged in the chapter on dementia praecox, in which it is said that the loss of mental activity and of interest in particular and the failure of every impulse to energy, together with weakness of judgement, are such characteristic and fundamental indications that, compared with these, all other disturbances, hallucinations, and delusions, however prominent in individual cases, must be regarded as merely transitory and not absolutely diagnostic features. So much is this so that the author says that it may be considered a rule that states of depression, which are accompanied at the very beginning by vivid hallucinations or confused delusions, usually form the prelude to dementia praecox. We have merely indicated some of the main features of this valuable work, in the hope that many will be induced to peruse it carefully. With the exception of isolated clerical errors, the translation is thoroughly satisfactory, and Dr. Johnstone is to be thanked for having brought these lectures before the English public.

Dr. Younger's *Insanity in Everyday Practice*[3] is an exceedingly useful little book, wherein the medical man with no special acquaintance with mental diseases may find an aid to diagnosis and, more particularly, instruction how to deal promptly with cases of emergency. The instruction given as to the examination with a view to certification is careful and succinct, and the information as to the legal bearings clear and sufficiently comprehensive. It should have been mentioned, however, in the paragraphs relating to Scotland that in that country a patient can be treated, with a view to cure, anywhere out of an asylum for six months without formal certificates if a medical recommendation to that effect and intimation are sent to the Commissioners of Lunacy. This is found to work very well in Scotland, and, apart from its interest in connexion with the debate on a Bill to amend the Lunacy Acts of May 12th last, should have found mention in this chapter. The description of the various forms of insanity is of necessity brief, but is, on the whole, sufficient; and in the chapters relating to special forms of insanity an attempt has been made to bring the classification of mental diseases in common use in Great Britain into greater harmony with the modern requirements of psychiatry. Under the physical signs of general paralysis the pupil changes noted are inequality and irregularity, but the most common change of partial or complete absence of light or convergence reflex is

[2] *Lectures on Clinical Psychiatry*. By Dr. Emil Kraepelin, Professor of Psychiatry in the University of Munich. Revised and edited by Thomas Johnstone, M.D., M.R.C.P. London: Baillière, Tindall, and Cox. 1904. (Demy 8vo, pp. 303. 10s. 6d.)

[3] *Insanity in Everyday Practice*. Medical Monograph Series. No. 8. By E. G. Younger, M.D.Brux., M.R.C.P.Lond., D.P.H., etc. London: Baillière, Tindall, and Cox. 1904. (Crown 8vo, pp. 110. 2s. 6d.)

not mentioned. The book can be confidently recommended as an outline map for general practitioners who wish for a guide to procedure in a hurry.

ANATOMY.

IN PROFESSOR PATERSON'S Hunterian Lectures on *The Human Sternum*,[4] now published in volume form, many interesting points of morphology are raised and more or less decisively answered. It is demonstrated, so far as the human sternum is concerned, that in the male the bone as a whole is larger than in the female. The presternal portion, in the former, being shorter and wider, and its mesosternal portion longer and narrower, than the corresponding parts in the latter. The varieties of human sterna are carefully considered, and stress is laid upon the rarity of the so-called cleft sternum in association with Professor Paterson's opinion that the sternum is originally an unpaired mesial structure. The chondrification and ossification are described at length, and it is noted that, as a general rule, all the centres of ossification of the presternal and mesosternal portions of the bone are present before birth. The morphology of the bone is discussed, and those who are interested in the history of the sternum will find food for thought in this portion of the book, for in it the evidence utilized, in the whole discussion, is centred in an attempt to prove that the sternum is a median unpaired bone, closely associated with the shoulder girdle, and having no genetic but only a secondary association with the ribs. The idea is not new, and the reader must decide for himself whether the evidence now produced substantiates it.

The monograph by Dr. HURTADO[5] on the architecture of bone is a concise disquisition on the structural arrangements of bone and the alterations which they undergo under varying conditions. The subject-matter is divided into two main parts. It commences with a general account of the microscopic structure and the arrangement of the blood supply of bone. The later part of the first section is devoted to the consideration of the arrangement of the lamellae and trabeculae of the bony substance, and in it the author demonstrates the effects of pressure and tension on bones by a series of mathematical calculations. In the second section, in which the static elements of the texture of bone are more especially considered, Dr. Hurtado points out that there are slight differences in the texture of bone in different groups of animals. In man, the bear, the dog, and the pig, the spongy substance is of delicate character and its stronger elements lie near the medullary cavity. In ruminants the cancellous substance is stronger and more laminar in character. In the felidae the trabeculae are more rounded and less laminar, whilst in rodents the structure of the cancellous tissue is simpler, the trabeculae being diminished in number and augmented in size. In the concluding pages the alterations in structure due to alterations in external form, and the alterations in external form and internal structure due to pathological conditions, are briefly discussed. The majority of the illustrations which accompany the text are representations of Dr. Hurtado's own specimens, and, judging from the reproductions, the preparations themselves must be of a very high order of excellence. Unfortunately, however, the illustrations are all representations of sections: and in connexion with this it must be noted that Dr. Hurtado's thesis is not quite complete, for it does not include any consideration of the knowledge which has been gained by skiagraphs of bones. This is the more unfortunate inasmuch as, from the evidence of sections, it has generally been believed that the laminae in bones run in straight lines or curves, in the directions of the pressure and tension which play upon the bone: whilst, as Professor Dixon has shown, in the case of the human femur, and as seems probable in the cases of other bones, many of the lamellae are arranged in a spiral manner, and a consequent increase of strength is obtained.

Professor FICK'S description of the anatomy of the joints forms the first section of the second portion of the handbook of anatomy,[6] edited by Professor Karl von Bardeleben, and it constitutes a welcome addition to the literature dealing with human joints. It is welcome, not because it introduces any new facts or ideas, but because it presents such a clear exposition of the knowledge of the anatomy of joints, and because it contains so many strong and well-executed illustrations. The illustrations themselves demonstrate, in a most clear and emphatic manner, all the essential points of the bony and ligamentous portions of human joints, and give also an approximate idea of the sizes of the bursae which communicate with the joint cavities. It is only here and there, and then only in matters of details, that any objection can be raised as regards the figures. Thus in connexion with Fig. 93, which represents the back of the carpal region, it might be urged that the various bands depicted are somewhat artificial; and in Fig. 112 the relation of the attachment of the external head of the gastrocnemius to the capsule of the knee-joint is not only schematically, but also somewhat incorrectly, represented. With regard to the general arrangement, the book follows the course usually taken in treatises of this description. It commences with a classification which is very satisfactory and inclusive, though it differs in details from the classifications usually adopted in this country. It is not, however, on the whole, quite so admirable as the classification adopted by Professor Macalister, and the minor objections which Professor Fick urges against Professor Macalister's classification have but little weight as detractions, when placed against the great conveniences of the broad ground plan which Professor Macalister suggested. The classification is followed by a description of the component parts of joints, and, afterwards, the joints of the head, the body, and the extremities are dealt with in detail. Notes on variations and morphology are introduced in association with the accounts of all the more important joints, and here and there remarks are made upon practical considerations. It is interesting to note, from some observations which Professor Fick makes in the course of his preface, that there is, in Germany, some friction between the teachers of science and the practitioners of surgery and medicine. What the friction is due to we do not know, but Professor Fick takes a firm stand with regard to the position of anatomy, claiming for it its proper place as a science, and refusing to allow it to be reduced to the position of a "handmaid of medicine." Professor Fick regrets the misunderstanding which at present exists between scientific institutions and the practitioners, and hopes for its removal, and he does not fail to recognize that, for the sake of medical students, practical considerations must always be dealt with in anatomical departments, but he does not think that on that account it is necessary to reduce the anatomical departments to the positions of technical schools.

The contents of the fourth section of Professor TOLDT'S *Atlas of Human Anatomy*[7] include the organs of digestion, the respiratory organs, the topographical anatomy of the thoracic and abdominal viscera, the genito-urinary apparatus, the muscles of the perineum, and the topographical anatomy of the pelvic viscera. It must be admitted that some of the structures and regions dealt with in this section are not so well adapted for illustrative purposes as many of those in the preceding sections of the *Atlas*, and it is probably on this account that the present volume scarcely appears so effective and strong as its predecessors, which attained a very high level of excellence. It is, in our opinion, somewhat inferior to those which preceded it, nevertheless, as a whole, it is good, and the illustrations, for the main part, are well chosen and suggestive. There are, however, some figures which are defective either in exactness or in technique. Thus, in Fig. 687 the common carotid artery is depicted as dividing at the lower border of the digastric muscle and above the great cornu of the hyoid bone, and no note is made with regard to the peculiarity of this high division. All the representations of the liver give a most misleading idea of the appearance of its surface, which is normally smooth, and not roughly granular, as the illustrations suggest. In the section devoted to the topography of the thoracic and abdominal viscera the omentum shown in Fig. 802 can scarcely be deemed typical either in its relative extent or with regard to the deposition of fat in its substance; and the projection Figs. 816 and 817, if

[4] *The Human Sternum.* By Professor A. M. Paterson, M.D. London: Williams and Norgate. 1904. (Crown 8vo, pp. 89: 10 plates. 10s.)

[5] *Arquitectura del Aparato de Sustentación en los Vertebrados.* Por el Dr. Saturnino Garcia Hurtado. Madrid: Idamor Moreno. 1904. (Demy 8vo, pp. 52: 65 illustrations.)

[6] *Handbuch der Anatomie und Mechanik der Gelenke.* Von Rudolf Fick. Erst Teil: Anatomie der Gelenke. Jena: Gustav Fischer. 1904. (Royal 8vo, pp. 524: 162 illustrations. M. 16.)

[7] *An Atlas of Human Anatomy.* By Carl Toldt, M.D., assisted by Professor A. D. Rosa, M.D. Translated from the Third German Edition by M. E. Paul, M.D., M.R.C.S., L.R.C.P. Fourth Section: Splanchnology. Fifth Section: Angeiology. London: Rebman, Ltd. 1904. (Demy 4to, IV, pp. 172, 292 illustrations, 9s. 6d.; V, pp. 216, 191 illustrations, 13s. 6d.)

they are to gain their full utility as guides to the positions of the deeper organs of the thorax in relation to the surface markings, should have the outlines of the ribs and costal cartilages more definitely indicated. The figures on page 524, which are intended to illustrate the development of the external organs of generation, are scarcely satisfactory, for it would not be possible, from a study of them, to obtain any idea of the mode of formation of the glans portion of the male urethra or of the differentiation of the prepuce. As a whole, however, the figures in this section of the *Atlas* will serve as very useful guides both to students of anatomy and to surgeons who wish to refresh their knowledge of anatomical relations before undertaking operations for special purposes. The fifth section of the *Atlas* is devoted to the illustration of the appearances and relations of the various parts of the vascular system. It contains many very good figures both of dissections and sections, but, in the first part, the figures of the heart scarcely give an adequate idea of the proper shape of that organ as it appears after being hardened in position in the body. Taken as a whole, however, this section sustains the reputation of the earlier volumes.

Herr Hansemann's small pamphlet on the human skeleton[8] contains a short account of the bones of the human body, and a brief description of their general appearances. The descriptions are mere outlines, yet they are sufficient for their purpose, since they are only intended to help archaeologists and anthropologists who have had no medical training to recognize the various bones, and to estimate the completeness or incompleteness of the skeletons they may find and wish to describe.

As Dr. Taylor admits in the preface, his *Treatise on Applied Anatomy*[9] might more properly be called a treatise on surgery from an anatomical standpoint, but, at the same time, it is an excellent combination of the two subjects. The anatomy of some of the parts—for example, the scalp, the ear, the eye, the palm, the palate, the areas of the abdomen, etc.—is discussed with considerable detail, but the reader is left to depend upon his own knowledge of the muscular attachments when displacements of broken bones and movements and dislocations of joints are under consideration. In other words, the book is intended for, and is well adapted to, the requirements of senior students, practitioners, and specialists. In addition to the anatomical descriptions, the development of the various regions is considered whenever it is necessary for the explanation of deformities and abnormalities. The illustrations are a distinct feature of the book; they are both numerous and excellent, and they admirably serve their purpose of making still more clear the already lucid text. In our opinion the book is one of the best of its kind, and we can cordially recommend it for accuracy, clearness, and the interesting manner in which it is written, to all who wish to revise their knowledge of a region of the body in which they are surgically interested.

The first volume of the treatise on the abdomen,[10] by Drs. Bourcart and Cautru, deals with the kidney, and is written by Dr. Bourcart alone. The object of both the volumes is to set forth the value of massage in the treatment of abnormal conditions of the abdominal organs, and the method of the application of this form of treatment to abnormal renal conditions is considered in the present volume. Whilst, however, the application of massage to the kidney receives adequate attention, the greater part of the volume is devoted to the consideration of the anatomy of the abdomen in relation to the kidneys, and to the question of intra-abdominal equilibrium in association with movable kidney. Both these subjects are dealt with under the light which has been thrown upon them by the experimental researches of Wolkow and Delitzin. As regards movable kidney, Dr. Bourcart is decidedly of the opinion that it is bad treatment to attempt to fix a normally movable organ by operative procedure, more especially as less drastic means give most favourable results, and place the patient in no danger. Movable kidney itself he looks upon merely as an indication of a pathological condition, of which the essence is an insufficient development of the paravertebral spaces in which the kidneys lie. The development of these spaces depends largely upon the adequate growth of the abdominal muscles, whose sufficiency or insufficiency can frequently be determined by a mere inspection of the body. Incidentally, in the consideration of movable kidney, it is pointed out that the amount of fat around the organ has but little effect upon its mobility or immobility, although the perirenal fat has usually been supposed to be of considerable importance in preventing displacements of the kidney. It is also demonstrated that the fascial bands which pass through the fat from the perinephric fascia to the kidney, and indirectly connect the kidney with adjacent muscles and organs, have but little influence as retentive agents; except, perhaps, those which pass from the upper part of the kidney to the diaphragm; and even when these are divided there is no total displacement of the organ, but merely a prolapse of its upper part. The illustrations serve their purpose, and the whole book is extremely interesting, although one cannot agree with all the authors' conclusions.

In his clinical commentaries, based upon the morphology of the human body,[11] Professor De Giovanni attempts to demonstrate the connexion between structure and disease. He recognizes that in every individual, at every period of life, there is a definite relationship between the individual parts of the body, and he assumes that this entails a definite tendency to the attacks of disease, along certain lines, at each period. Most clinicians work under this idea more or less intuitively, and more than one attempt has been made to group individualities for clinical purposes. In these attempts the general external appearances of the individuals or more or less special characteristics of various parts of their bodies have been used for classifying purposes. Professor De Giovanni, however, adopts a most elaborate system of measurements of the body as a whole, of its main parts, and of some of its organs, and by these means he recognizes three definite morphological conditions, each of which includes many variants. Professor De Giovanni's discussion of the relationships between structure and disease are most interesting and instructive, but his system for the recognition of morphological states is too complicated to have any hope of passing into general use.

NOTES ON BOOKS.

Pathological Handbooks.

Dr. Cattell, whose name is already well known to our readers as one of the editors of the English translation of Ziegler's work on General and Special Pathology, has in *Post-mortem Pathology*,[1] written an excellent guide to the proper carrying out of *post-mortem* examinations. This volume will prove to be a most useful reference book on matters connected with every branch of the subject; where description fails to convey the meaning of some manipulations, excellent illustrations make matters quite clear. There is no doubt that many practitioners feel the want of some such aid, for in the past we fear our own curriculum of medical education has been defective in not insisting upon closer attention to such matters. To English as well as American readers this volume will be of service in this direction, and considerable help will be found in the chapter dealing with difficult questions of medico-legal character. Dr. Cattell's great experience in pathological inquiries gives him the right to produce a work of this kind, and, as might be surmised, there is little room for criticism of the statements made; though the reader may disagree with some of the methods recommended—as, for example, the method of opening the skull—such differences are of minor importance. After discussing the choice of instruments and the design of *post-mortem* rooms and refrigerating apparatus, an account is given of the various pathological appearances met with in various systems in different diseases. Special guidance will be found for the examination of children, and for what are called restricted *post-mortem* examinations. Harke's method for securing a view of the nasopharynx by median

[8] *Das menschliche Skelett.* Von D. v. Hansemann. Berlin: August Hirschwald. 1904. (Demy 8vo, pp. 14; 5 plates. M.0.80.)

[9] *A Treatise on Applied Anatomy.* By Edward H. Taylor, M.D., F.R.C.S.I. London: Charles Griffin and Co. 1904. (Demy 8vo, pp. 766; 178 figures. 30s.)

[10] *Le Ventre.* Par Dr. M. Bourcart et Dr. F. Cautru. I. Le Rein, par Dr. M. Bourcart. Paris: F. Alcan, et Geneva: H. Kundig. 1904. (Demy 8vo, pp. 302; 134 figures. Fr. 10.)

[11] *Commentarii di Clinica Medica desunti della Morfologia del Corpore Umano.* Par Prof. Achille De Giovanni. Seconda edisione. Milan: Ulrico Hoepli. 1904. (Demy 8vo, pp. 570; 7 illustrations. L.8.)

[1] *Post-mortem Pathology.* By Henry W. Cattell, A.M., M.D. Philadelphia and London: J. B. Lippincott Company, 1903. (Demy 8vo, pp. 372. 112 illustrations. 15s.)

section of the skull after the calvarium has been removed is described, and a useful account is given of the methods to be adopted for preserving bodies for subsequent examination and for embalming. Amongst other general information will be found an account of the methods to be adopted to fix permanently the colours of the tissues in museum specimens (Kaiserling), of the early diagnosis of rabies by the method elaborated by Babès, van Gehuchten, and Nélis, and of Uhlenhuth's precipitin test for human blood. The volume closes with a useful analysis of the various modes of death which occur in different diseases.

Medical Microscopy[2] has been written not only for the student but also with the hope of providing the general practitioner with a guide by means of which he may establish a small laboratory for the microscopical examination of various tissues, fluids, etc. It does not aim at being a reference book, so that we need not expect to find it overweighted with matters that are more than elementary. After giving a brief sketch of the optical principles upon which the microscope is constructed, Dr. Oertel devotes considerable space to the description of various methods of bacteriological research, and this is followed by a brief summary of the main characteristic of the more common pathogenic organisms. The section dealing with morbid anatomy is very satisfactory, in so far as methods of fixation, embedding, and staining are concerned; but it is unfortunate that the photomicrographs, especially Figs. 84, 85, 87, and 91, are so crude. A very satisfactory account of the examination of the blood follows, and information, as simple as the subject admits, of the malarial parasite of tertian, quartan, and aestivo-autumnal fever. In the final sections the author deals with the examination of the urine; the preliminary remarks on the specific gravity, quantity, etc., are out of place, but the pictures of various deposits are adequate and one may say familiar. Dr. Oertel makes no pretence at originality in the information contained in this volume beyond treating the subject simply and in this direction has used a wise discretion in his choice of only one or two of the tests and processes used in the clinical laboratory. Any practitioner who has time to spare for such examinations will find this volume very useful, but medical students would require a wider reading to give them broad views of the subjects dealt with.

THE HUXLEY MEMORIAL LECTURE OF THE ANTHROPOLOGICAL INSTITUTE.

The Huxley Memorial Lecture of the Anthropological Institute of Great Britain and Ireland was delivered on Friday, October 7th, by Dr. J. Deniker, President of the Anthropological Society of Paris. Dr. Deniker is the first foreigner to receive the Huxley memorial medal of the Institute for distinguished service to anthropology.

The lecturer opened his discourse with a graceful acknowledgement of the honour conferred upon him by the Anthropological Institute, and paid a respectful tribute to the memory of Huxley, who was the first to make the twofold division of the peoples of Europe into xanthochroid and melanochroid races. With the name of Huxley he coupled the names of Beddoe and Broca as pioneers in European ethnographical research. To the two races mentioned above a third was soon added—the Mediterranean race—and the lecturer himself had in 1870 made a further step by dividing the population of Europe into six main races. He then dealt with criticisms which had been passed upon his own theories, chiefly by the American ethnologist Ripley, and stated that the further researches upon which he had continually been engaged since that date, and of which he was about to lay the results before the audience, had confirmed him in his first opinion. During a considerable number of years he had been diligently collecting statistics concerning the stature, colour of eyes and hair, and head measurements of the various nationalities, and now, in spite of certain lacunae, some of which he regretted to observe occurred in Britain, he was able to say that he possessed data covering the whole of Europe.

In dealing with head-measurements the lecturer first enunciated his own classification of types according to the cephalic index (the figure produced by reducing the greatest breadth of head to a percentage of the extreme length):

Hyperdolichocephalic (very long-headed) ...	73—75·9
Dolichocephalic (long-headed)	76—77·9
Sub-dolichocephalic (moderately long-headed)	78—78.9
Mesocephalic (medium headed)	80—81.9
Sub-brachycephalic (moderately short-headed)	82—83.9
Brachycephalic (short-headed)	84—85.9
Hyperbrachycephalic (very short-headed) ...	86—88.9

He then went on to show that Europe can be divided into four regions.

1. A region of long-headed people with medium-headed areas in the north-west.

2. A region in the south-west characterized by even greater length of head.

3. A very short-headed region in western central Europe, and in the immediate west of the Balkan Peninsula.

4. A region comprising Russia and Poland sub-divided into three, moderately long-headed in the centre, and medium-headed on the east and west.

The first group is on the whole distinguished by tall stature and fair complexion, and the second by short or medium stature and brown complexion. After discussing these regions in detail he proceeded to the subject of stature. He remarked that the great mass of his data was compiled from measurements taken on conscripts, and explained an ingenious method by which these measurements could be modified so that they represented fairly the typical stature of the male population. In Europe there were no people of very short stature according to the classification invented by Topinard (under 1,600 mm.); on the other hand, this continent was distinguished by the tallest race known, the Highlanders of Scotland. Hence, for the purpose of this lecture, he would speak of statures ranging between 1,650 mm. and 1 675 mm. as medium, those below these measurements as short, and those above as tall. Tall statures were, with a few exceptions, particularly well represented in the North-West; the rest of the population of Europe was, again with certain exceptions, chiefly in the Balkan Peninsula, of medium or short stature. People of medium stature were found grouped round the regions where the tall peoples occurred, and connected the tall races of the North with those of the South. Short statures he divided into three groups, Eastern, Western, and Southern, and showed how the Eastern Zone communicated by narrow "channels" with other centres of short stature. The limits of the Southern group practically coincide with those of his Ibero-insular race.

In grouping the peoples of Europe with regard to colour of complexion, eyes, and hair, he had taken as the basis of his classification the brunette type (eyes and hair dark brown or black) as the most easy of recognition. Those peoples among whom were found from 17 to 30 per cent. of brunettes might be called intermediate. Where less than 17 per cent. occurred the population was termed blonde; where more than 30 per cent. dark.

According to this grouping the two extremes were the Swedish (3 per cent.) brunettes and Italy (70 per cent.). From this point of view the map showed that North Europe was mainly blonde, South Europe dark, and Central Europe intermediate. He traced the southern limit of the blonde races through the various countries, showing that it nowhere reached below the 50th parallel, and also the more irregular northern limit of the dark peoples. In the intermediate zone blonde areas were rare (one of these occurred in south England, that is: Berkshire, Oxfordshire, Hampshire, Sussex, and Middlesex), dark areas fairly numerous but individually very small. Intermediate areas in the blonde zone were only found in the British Isles, but in the dark zone were fairly frequent in Western Europe. From these data and certain other considerations relating to shape of face and nose, character of hair, etc., he had been confirmed in his theory that the present population of Europe is composed of six main races. These he proceeded to enumerate, giving their typical characteristics, tracing their positions throughout the map, and indicating the proportions in which they had intermingled to form the existing populations of the various countries. The following is an abbreviated sketch of his classification:

1. A race, blonde, wavy-haired, long-headed, very tall, with long face, a straight prominent nose; the Northern race, so called because its representatives are confined almost exclusively to north Europe. This is the Cymric race of Broca, the Germanic or Reihengräber race of German authors, the Teutonic race of Ripley, or the Homo Europaeus of Lapouge. With this race is connected a sub race, blonde or intermediate, straight-haired, medium-headed, of tall or medium stature, angular face, and *retroussé* nose, the Sub-Northern race, found in the neighbourhood of the Northern.

2. A race, blonde, straight-haired, moderately short-headed, and of short stature, broad square face, nose often *retroussé*: the Eastern race, so named since its principal home is in Eastern Europe. Connected

[2] *Medical Microscopy.* By Dr. T. E. Oertel. London: Rebman Limited. 1903. (Demy 8vo, pp. 362, 131 illustrations. 9s.)

with this is a sub-race, blonde or intermediate, medium-headed, of very short stature. The Vistulan race, occurring in Poland, parts of Prussia, and probably Saxony and Silesia.

3. A race, dark, hair sometimes curly, long-headed, of very short stature, straight or *retroussé* nose; the Ibero-insular race. This is the Mediterranean race, or Homo Mediterraniensis of certain authors, found chiefly in the Iberian Peninsula and the islands of the Western Mediterranean.

4. A race, dark, very short and round-headed, of short stature, round face, broad nose, and thick-set body; the Cevenole or Western race. This type occurs in its greatest purity in the extreme West of Europe, though found sporadically elsewhere. This is the race called variously by other authors Celtic, Celto-Ligurian, Celto-Slavonic, Sarmatian, Rhetian, Ligurian, or Homo Alpinus.

5. A race, very dark, moderately long-headed, and fairly tall; the Littoral, or Atlanto-Mediterranean race, situated on the coast of the Mediterranean, from Gibraltar to the Tiber, and in occasional groups on the Atlantic Littoral, but never more than 150 miles from the sea.

6. A race, dark, short-headed, tall, nose slender and straight or arched; the Adriatic or Dinaric race, which is found grouped round the Northern Adriatic, particularly in Bosnia, Dalmatia, Croatia, and the centre of the Balkan Peninsula, but found also sporadically and with somewhat modified characteristics in Central Europe.

With the last two races are connected two secondary races, which are, perhaps, no more than types, produced by the admixture of the two former with each other or with the Northern, Sub-Northern, and Western races.

(*a*) Intermediate, long, or medium-headed, situated between the Northern and Atlanto-Mediterranean races.

(*b*) Intermediate, moderately short-headed, more rarely short-headed, of medium stature; probably the result of admixture between the Adriatic and Sub-Northern and Western races.

REPORT OF THE MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD, 1902-3.

(Continued from p. 931.)

Diarrhoea-producing Bacteria.

In continuation of his work on the bacteriological chemistry of the diarrhoea producing organisms, Dr. Sidney Martin reports on the toxic characters of proteus vulgaris. He finds that in the bodies of this micro-organism there is a toxic substance closely connected with a proteid which is not an albumose, and that this substance is readily extracted from the dried bodies of the bacterium by distilled water. This substance produces in the rabbit a great lowering of body temperature, rapid evacuation of the intestinal contents, great bodily weakness, and sometimes sudden collapse and death. At the same time there is no appreciable effect on the arterial blood pressure. This toxic body is found, moreover, in the filtrate of broth cultures, and is present in greatest quantity in those which are under fourteen days old, diminishing in cultures which are one or two months old. Dr. Martin therefore regards the toxic body present in the broth as an excretion of the organism, which tends to become destroyed as the cultivation progresses. He finds that the other products of the proteus, which are more correctly described as the putrefactive products, such as the aromatic alcoholic extract, and the foul-smelling bodies, which are removed by distillation, have only a slight physiological action. The toxic body produced by the proteus is compared, as regards its physiological properties, to the toxins present in the bodies of the typhoid bacillus, the bacillus coli communis, the bacillus enteritidis (Gaertner), and the bacillus dysenteriae (Shiga). But proteus toxin differs from these in the fact that it is readily excreted from the bacillus in broth cultures.

Diagnosis of Human Faecal Contamination.

With a view to throwing some light on the interpretation which ought to be placed on the detection of organisms of the coli group in drinking water, Dr. Houston has isolated 100 samples of B. coli from the faeces of healthy persons and worked out their cultural characters in detail. He found that 90 per cent. of the samples exhibited attributes of such a distinctive character as to justify their being called "typical" B. coli, whereas "atypical" B. coli, which is so commonly met with in sewage and in water repeatedly liable to objectionable contamination, was comparatively rare in healthy human excreta. The numerical abundance in human faeces of "typical" coli organisms is so great that, in Dr. Houston's opinion, "any departure from the normal type in the case of a coli-like microbe isolated from water must be regarded as of doubtful source, though there may underlie such doubt surmise that a loss or weakening of positive attributes may be real, not merely apparent, when B. coli, divorced from the animal host, exists under saprophytic conditions." Dr. Houston recommends the application of the following tests:—(1) Gas in ordinary gelatine "shake" cultures; (2) indol in broth cultures; (3) acidity and clotting in litmus cultures; (4) fluorescence in neutral red broth cultures; (5) acid and gas in lactose-peptone cultures.

The Drigalski-Conradi Medium.

The value for diagnostic purposes of the Drigalski-Conradi medium has been investigated by Drs. Klein and Houston. They find it helpful in the rapid diagnosis of B. coli communis and allied forms, since, after twenty-four hours' incubation at 37° C., the colonies of these organisms are noticeable by their red colour and the red halo around them. The medium, therefore, possesses the advantage that in the search for typhoid bacilli in stools red colonies can be excluded. Moreover, since this medium tends to inhibit the growth of saprophytic microbes, it is likely to prove of value in the search for B. coli in materials other than stools which are suspected of containing organisms of the coli group. Its utility is also conceded for the diagnosis of typhoid bacilluria, and for testing substances other than urine which contain typhoid bacilli in abundance, though for these purposes other useful methods are also available. But, as regards the stools of typhoid cases, they have only occasionally been able to establish even a tentative diagnosis in twenty-four hours, and then tests by subcultures were found necessary before the diagnosis could be definitely determined. The establishment of so much as a tentative diagnosis was dependent on the fact that in these cases typhoid bacilli were excreted in particularly large numbers, and that consequently some of them remained present when a high dilution of the stool had been made. High dilutions were found necessary because in these alone were the red coli colonies sufficiently reduced in number to allow recognition of the blue typhoid colonies. Where the number of typhoid bacilli present in the stool was small, either actually or relatively to the coli organisms, the Drigalski-Conradi method, which does not alter the initial proportion of these two organisms, has not proved any more successful than many other well known methods; and, in the opinion of Drs. Klein and Houston, no method which does not alter the initial proportions of these organisms is ever likely to meet with more than partial success. They also point out that all the blue colonies which grow are not necessarily those of B. typhosus, and that their differentiation takes some time, and cannot always be settled by a direct application of the agglutination test.

Researches upon Vaccine Lymph.

Dr. Blaxall finds that the germicidal action of glycerine upon the extraneous organisms in calf lymph is dependent upon temperature, being much more rapid at a high than at a low temperature. At 0° C. the germicidal action on an emulsion, though kept for a considerable time, was practically *nil*; whilst other portions of the same emulsion stored at higher temperatures showed a progressive increase of germicidal effect, until, at a temperature of 38° C., three or four days, or even less, sufficed to make the emulsion germ-free. The increase of temperature, however, had also, in a minor degree, a damaging effect upon the specific organism of lymph. Other things being equal, the duration of the potency of a glycerinated lymph diminishes with increase of temperature at which it is stored, and increases with the lowering of the temperature.

Dr. Blaxall and Mr. Fremlin make the interesting observation that a mesenteric gland removed from a monkey fed with vaccinous material was capable of producing vesiculation on a calf.

Dr. Green, in continuation of his work on the use of chloroform in the preparation of vaccine, describes an improved method which he has introduced in the execution of this process. With regard to the length of time necessary for the destruction of extraneous organisms, he finds that either of two methods may be adopted: (1) The current of air and chloroform vapour can be passed through the vaccine emulsions for one and a half to two hours, the inlet and outlet tubes then being clamped and the material placed in the ice chest for from eighteen to forty-two hours. (2) The current of air and chloroform vapour may be passed continuously for six hours. So far he has never found, on application of bacteriological plate-culture tests, that any further passage of chloroform vapour is necessary. Should, however, the lymph still contain extraneous organisms, the chloroform process may be repeated without any risk of damaging the lymph.

This fact he has demonstrated by chloroforming lymph for five hours a day during eight successive days without diminishing its potency. Up to the time of writing, forty-five chloroformed vaccines had been prepared and issued for general vaccinating purposes. They had been used for 48,027 cases, and gave a case success of 97·6 per cent., and an insertion success of 91·3 per cent. Owing to its rapidity, Dr. Green thinks his chloroform method will prove of particular value when there is a sudden and urgent demand for lymph, and in hot climates where vaccine does not retain its potency for long.

ASSOCIATION OF CERTIFYING FACTORY SURGEONS.

ANNUAL MEETING.

THE annual gathering of the members of this Association took place on October 7th at the Grand Hotel, Birmingham. There was an excellent attendance of members, the Midlands, as could only be expected, being particularly well represented.

Owing to the retiring President being absent on a voyage to South Africa, Dr. J. C. EAMES took the chair, and, after the confirmation of minutes, called upon Dr. W. F. DEARDEN to move a resolution on the first item of the agenda, the appointment of President. Dr. H. Langley Browne, of West Bromwich, had been selected by the Council for this honour, and in recommending his election Dr. Dearden referred to the great interest he had always exhibited in the doings of their organization, the services he had rendered on the Council of the British Medical Association in the matter of the certifying surgeons' reports on factory accidents, his advocacy of the establishment of a section on industrial hygiene at the annual meeting of the British Medical Association, and the able way in which he had established to the satisfaction of the Departmental Committee the use which might be made of the factory surgeon as medical referee under the Compensation for Injuries Act.

Dr. E. RAYNER (Stockport), in seconding, paid a high tribute to the public-spirited way in which Dr. Langley Browne had devoted time and service for the benefit of the medical profession.

Dr. LANGLEY BROWNE, on the completion of his election, took the chair and thanked the members present for the honour conferred upon him. He drew attention to the great improvement in their prospects which had taken place since the attempt to abolish the office in the Factory Bill of 1891, and contrasted the condition of things existing at that time with the importance now universally attached to their duties. He referred to the evidence he had given before the Committee on Workmen's Compensation, and pointed out the great likelihood of the view he had expounded to them respecting the appointment of certifying surgeons as medical referees being acted upon. He agreed with the recommendation that these officers should be independent of private practice, and thought the suggestion that six appointments should be made for a period of three years in large industrial centres, as a preliminary experiment, to be an exceedingly good one. In referring to the recently-granted power of inspection of processes before granting certificates of fitness for employment, he spoke strongly on the useful nature of and practical results from this extension, giving several interesting examples from his own experiences. He concluded an interesting address by expressing the hope that his year of office would see the position of certifying factory surgeon greatly increased in value, importance, and usefulness.

The HONORARY SECRETARY, in giving a summary of the work of the Association during the year, stated that the members now numbered 355, which, though the total number in the country holding the appointment was only a little short of 2,000, he considered fairly satisfactory, in view of the fact that only 120 surgeons made over 1,000 examinations in a year. He read a letter, which had been forwarded to the Home Office, asking for certain important concessions—namely, the abolition of the sixpenny examination fee, the increase of the remuneration now paid for investigations in connexion with industrial poisoning and accident cases, the payment of a fee for the annual report, the extension of the certificate of fitness qualification to females over 16 years of age, and the establishment of medical examination for young people employed in workshops. The Chief Inspector had acknowledged the letter and promised that the contents should be brought before the Home Secretary for his consideration. He dealt with the report of the Physical Deterioration Committee, and pointed out the extensions to the present duties of certifying surgeons which were recommended therein; among them were the assisting in the projected anthropometric survey, the certifying of young persons over 16 years of age, the examination of young persons employed in mines and workshops, and the certifying of women returning to work after confinement. In giving some interesting statistics he was able to show that the members who had sent in particulars had accounted for 205,000 examinations during the year 1903, and of these they had rejected 1.1 per cent. for all reasons and 0.6 per cent. for physical incapacity alone.

The following is a list of officers and council elected for the year:

Vice-Presidents: Drs. T. F. Young (Liverpool), J. Prosser White (Wigan), H. S. Purdon (Belfast), R. W. Edginton (Birmingham), E. S. Machin (Birmingham), C. A. Greaves (Derby), Alex. Scott (Glasgow), and J. H. Keay (Greenwich). *Honorary Treasurer:* Dr. T. Watts (Hyde). *Honorary Secretary:* Dr. W. F. Dearden (Manchester). *Honorary Corresponding Secretaries:* Dr. A. Campbell (Dundee) and Dr. W. H. F. Oxley (London). *Council:* Drs. W. A. Atkinson (Camberwell), J. Barr (Rishton), J. Brassey Brierley (Manchester), R. C. Brown (Preston), J. M. Crocker (Bingley), J. G. Curtis (Cork), J. C. Eames (Farnworth), J. A. Eatock (Widnes), T. Ford (Oldham), W. B. Hallowes (Newark), J. Holmes (Bury), S. M. Inkster (Sheffield), W. H. Marsh Jackson (Smethwick), H. C. Lamport (Lancaster), J. Lawson (Hebden Bridge), T. O. Mayor (Bristol), E. Moore (Preston), E. Rice Morgan (Morriston), R. Patrick (Bolton), W. Patrick Glasgow), F. M Pierce (Manchester), E. Rayner (Stockport), W. C. Rigby (Adlington), R. Settle (Bolton), C. W. Thorp (Todmorden), H. E. Watkins (Newton), J. Watson (Manchester), H. M. Wise (Greenwich), C. J. Wright (Leeds), and J. Crossley Wright (Halifax).

The annual dinner, which followed the meeting, was well patronized by both members and guests. A letter was read from Mr. Joseph Chamberlain explaining that his absence from Birmingham prevented his accepting the invitation to be present at the dinner.

THE BRITISH MEDICAL BENEVOLENT FUND.

WE take pleasure in reprinting the following letter which appeared in the *Times* a short time ago from the President of the British Medical Benevolent Fund. We strongly commend the appeal to our readers, for we understand that the fund has been very much pressed lately, and is greatly in need of immediate assistance.

Sir,—The medical profession usually provides for misfortune and distress within its own ranks without appealing to the public: but this year, through aggravation of the need on the one hand and, on the other, diminished margin of income due to the prevailing financial depression, which affects medical men even more than other classes, the funds available for the relief of the aged or invalided, and of the widows and children left unprovided for, are quite inadequate.

For a very large proportion of medical men to save much out of their earnings is impossible. A bare and often very meagre sustenance is all they can obtain by hard and trying work. If they break down in health, they may be quite unable to provide for the future; and if they die early, which is very common, from disease contracted in the course of duty, or from the night work and other hardships incident to the practice of medicine and surgery, their income dies with them, and widow and children may be left on the border of destitution.

The British Medical Benevolent Fund gives 120 annuities to disabled medical men and their widows or unmarried daughters over the age of 60, and these are provided for by investments; but it also attempts to relieve the distress which may become acute at an earlier stage through illness or bereavement, and tries to help in the maintenance of children left unprovided for.

There are no buildings to maintain, no office expenses, no salaried officials. All money contributed goes straight to the sufferers, with no other deduction than the inevitable expenses of the collection and distribution. The annuitants are appointed and the grants made without the delay and cost of an election, entirely on the merits and according to the urgency of the cases which come before the Committee at their monthly meetings. At the one in July there were 23 applications for help, but the Fund already owed £70 and it was impossible to grant anything; in September the number had risen to 34, and, with a balance of £37 in hand, the Committee made grants of £97 to the most urgent cases, with leave to apply again. Winter is always the time when the

need is greatest, and I may quote briefly two or three of the cases which came before us for consideration this month:

Widow, aged 42, of Edinburgh graduate, who lost all his practice and exhausted his savings during a long illness ending in death. Applicant has no income, and tries to maintain herself and her four children by keeping a small confectioner's shop.

M.R.C.S., aged 82. Held public appointments for many years while practising in Devonshire, but now, incapacitated by old age and infirmities, is dependent on a few shillings weekly contributed by medical men in the district.

Daughter, aged 62, of M.D., who has supported herself for many years as a governess; has now exhausted her savings through a long and severe illness, and finds great difficulty in obtaining another post.

The payment of the country doctor's bill is a very inadequate return for the work done in all weathers and at all hours of the day and night, and the public generally owes a heavy debt of gratitude to the medical profession, which, by constantly inculcating the laws of health, does away with his own sources of income. Typhus and cholera have been banished; small-pox might follow; typhoid is decreasing, and it is the doctors who lead the way in the crusade against consumption. Is it too much to ask that some part of this obligation may be discharged in the form of help to the British Medical Benevolent Fund?

Subscriptions and donations may be sent to the Honorary Treasurer, Dr. Samuel West, 15, Wimpole Street, W., or to me.—I am, etc.,

84, Brook Street, Sept. 28th. W. H. Broadbent.

LONDON SCHOOL OF TROPICAL MEDICINE.

The winter session of the London School of Tropical Medicine was opened on October 7th, when an introductory address was delivered by Sir Charles Bruce, G.C.M.G. Sir John Craggs, M.V.O., was in the chair. Among those present were Sir Frederick Young, K.C.M.G.; Sir Patrick Manson, K.C.M.G., M.D.; Sir Cecil Clementi Smith, G.C.M.G.; Sir Francis Lovell, C.M.G. (Dean of the School); Sir Noel Walker; Commander Hodgkinson, R.N.; Sir Thomas Smith; Professor W. J. Simpson, M.D.; and Mr. A. Lister Harrison, J.P. The address will be found at p. 1005.

A vote of thanks to Sir Charles Bruce was moved by Sir Frederick Young, supported by Sir John Craggs, and carried unanimously.

In moving a vote of thanks to the Chairman, Sir Patrick Manson said that Sir John Craggs had not only placed them under a considerable obligation by presiding on that occasion, but he had also placed them under a very heavy obligation by the generous way in which he had come to their assistance on more than one occasion. Sir John Craggs had done a very great deal for the prosperity of the Empire by enabling those engaged in the study of tropical medicine to add facts to the common stock of knowledge, and thereby extend the usefulness of medical science. Soon after the school was established Sir John Craggs presented it with a scholarship of £300 per annum, tenable for three years. Sir Patrick Manson ventured to say this was the best investment Sir John had ever made. It enabled the school to send out their present superintendent, Dr. Low, to the West Indies, where he gave information to the Colony of Barbadoes, which, were that Colony sufficiently enlightened, it would certainly avail itself of and thus rid itself of one of the most loathsome diseases that ever afflicted man. It had not, however, acted upon the information so far. It also enabled them to send Dr. Low to the Roman Campagna to successfully carry out the experiment which Sir Charles Bruce had already alluded to, and to Uganda to investigate sleeping sickness in conjunction with Dr. Castellani. Sir John Craggs had further presented the school with an annual sum of £50 to be given to the student who had during the year made the most valuable contribution to tropical medicine. Last year, when the prize became due for the first time, it was awarded to Dr. Castellani, who, as they knew, was the discoverer of the cause of sleeping sickness. This year another student of the school, Dr. Catto, had made a very important discovery in parasitology. One could not say how important this discovery might prove, but it would throw additional light upon another disease which constituted one of the many plagues to which Egypt was subject at present as in the years gone by. The information which had been gained entitled Sir John Craggs not only to their gratitude, but to the gratitude of all mankind. He had done good not only in this direct way, but he had done good by setting a splendid example, which he hoped many men would emulate. Their success in the past only served as an incentive to go forward, but they were greatly cramped for want of funds. It was never a pleasant want, as they all knew, in all charitable and educational institutions, but they were more especially cramped, and at the same time he thought they were more especially deserving. Medical practice, unless based on science, was quackery, and they desired that their medical practice should be based, not on quackery, but on science. They had come to recognize that a scientific appreciation of tropical medicine depended upon the fact that the great causes of disease in the tropics were not bacteria but protozoa and larger parasites. These had never been adequately studied in this country. The most important information had been gathered from the Continent—from France and Germany. This was not as it should be, and they proposed to do their best to remove the reproach by inviting those who could provide the funds to place such a sum of money in their hands as would enable them to train two men, one as a protozoologist, and the other as a helminthologist. Already the Government had promised them more or less definitely that they would be allowed a sum of £500 per annum for five years to be devoted to the subject of protozoology and to enable them to start one man on that subject, but they wanted another £500 to embark another man as a helminthologist. Where the money was to come from he did not know, but one thing he did know, and that was that it ought to come. Mr. Balfour, in his recent speech at Edinburgh, said—talking about fiscal policy—that one could not run an empire with an eye always on the national ledger. Sir Patrick Manson would apply the same remark to public health. His opinion was that there were better things than a big balance at the bank. His own opinion of good finance was a large expenditure and never mind the revenue.

Sir Cecil Clementi Smith, who seconded the motion, pointed out that until recently men joining the Colonial Medical Service went out to their posts fresh from the hospitals, and absolutely ignorant of the diseases with which they were confronted in the tropics. Now, thanks to the instruction which they received in the London School of Tropical Medicine, they went out fully equipped to deal with the conditions which they had to meet.

The vote was passed by acclamation.

The visitors were afforded every opportunity of inspecting the School and the Hospital. Great interest was shown in the laboratory and in the pathological museum, which contains illustrations of most tropical diseases. In the wards they were shown several cases of beri-beri, filariasis, bilharzia and malaria in various stages. There are in the hospital at present two Europeans suffering from leprosy who are isolated from the other patients.

The completeness and excellence of the arrangements, both in the School and in the Hospital, called forth many expressions of admiration from the visitors.

During the five years the School has been in existence 400 students have passed through a full course of instruction in tropical diseases. The number who have entered for the present term is 32, the largest on record. Of these, 13 belong to the Colonial Service (Gold Coast, Antigua, Mauritius, West Africa, South Nigeria, Fiji, Lagos, Singapore, Federated Malay States, West Indies, Northern Nigeria), 1 to the Foreign Office (Mombasa), 7 to various missionary societies (India, China, Uganda), 1 to the Government of Malta, while 10 are private students who intend to proceed to India, Panama, Cuba, Rhodesia, the Gold Coast, and elsewhere. Among the students are graduates of Havana, New York, McGill University, Montreal, Malta, and Bogotà. Four are ladies.

PUPILS' PHYSICAL SOCIETY, GUY'S HOSPITAL.

Sir Samuel Wilks on his Recent Illness.

The opening meeting of this Society was held at the College, Guy's Hospital, at 8.30 p.m. on Saturday, October 8th, the Presidents and their guests having previously dined together at the Students' Club. A large number of past and present Guy's men attended and gave a most hearty reception to their Honorary President, Sir Samuel Wilks, Bart., and to Professor Macalister, who delivered a very interesting and instructive address on Some Pioneer Medical Books, which will be published next week.

Mr. Morton Palmer proposed and Mr. Mollison seconded a vote of thanks to Professor Macalister, and this was carried by acclamation.

Sir Samuel Wilks, having paid a warm tribute to Professor Macalister, reminded the meeting that, although the

was much that was crude and amusing to them at the present day in those ancient books, yet they must not forget that they illustrated the history of the growth of medical science, and contained a great deal of valuable information and numerous accurate observations made under great difficulties. He was by no means certain that our advance had been so great as we sometimes fondly imagined. This was proved by the blind belief of modern man in new drugs empirically used and widely advertised.

Mr. Bell Walker, in proposing a vote of thanks to Sir Samuel Wilks, gracefully expressed the pleasure of every one present at seeing Sir Samuel at Guy's again, and looking so well after his very serious illness.

Sir Samuel Wilks, in reply, spoke of his recent illness, and said that one might style his remarks a clinical lecture. He, the patient, stood before them almost as a resurrection, and a living example of the learning and great skill and judgement of the men of Guy's. He had been an example of the disease of late known by that dreadful name "appendicitis." It had been described in 1836 by Addison, who stated that disease of the appendix was the most frequent, but not the only, cause of abscess in the region of the caecum; wherefore he gave the name of typhlitis or perityphlitis to inflammation and suppuration in the right iliac region. These terms were clinical, and better in the nomenclature of disease than pathological terms, which implied finality and truths which had not yet been reached. Typhlitis was the correct term to use, as was done in the case of His Majesty the King. He (the speaker) never suspected the existence of this disease in himself, and consequently in no way assisted his doctors in the diagnosis of his malady. Only a day or two before the operation was there any local pain or swelling to indicate its nature, and then evidently there was only one thing to be done. Mr. Brydone administered the anaesthetic, and very soon he, the patient, sank into forgetfulness. A large calculus was found, and the appendix sloughing or almost gangrenous. Must there be a nucleus to determine the formation of the concretion, or was it a mineralization of the wax-like secretion so often found in the appendix? The sloughy state of the bowel caused his attendants much anxiety for two or three days, when very remarkably, considering his age, a healing process commenced, and the turn went in his favour for a time. But after some days symptoms of septic poisoning set in and lasted weeks. He was often delirious and unconscious and his life was despaired of. The whole mucous membrane of his alimentary canal was affected, or, in common parlance, acutely inflamed; his tongue and throat were intensely red, and, the epithelium being gone, everything which was not of the blandest description made it smart, so that the very finest champagne and Bordeaux wine scalded him; all swallowing was painful, and when the food reached the stomach the direst gastralgia or heartburn came on. Most of the fluids taken returned, and this with the diarrhoea and paralysis of the bowel completed his trouble. As in the exanthemata and many other forms of blood poisoning the effect was shown more markedly on the mucous membranes within and the skin without (scarlatina, for example), so his skin became dry and papular, and on the legs the rash was eczematous. Little food was taken, and this not being assimilated he wasted away until all his bones could be seen, and the end seemed rapidly approaching. Of course, the best treatment in the way of nourishment and medicine was given, but that which impressed him most was the day when he told Mr. Symonds that the thing which relieved him most was the alkaline lozenge made by Dr William Roberts, composed (he believed) of soda and calcium. To clear his stomach out Mr. Symonds thought he could swallow fluid and then reject it, so he swallowed a tumblerful of water containing a large quantity of bicarbonate of soda—the pleasantest drink he had then had for a long time—and then brought it up again; and he repeated the dose and again rejected it; also, on two occasions a pint of water was injected through the skin; and, eventually, he had wonderfully recovered. He surmised that all morbid processes ran a definite course, and that living organisms of the bacterial kind had a life-history of their own, and that probably there was a natural ending to his case, and that (as in typhoid) probably many forms of bacterial and septic poisoning had their own distinct natural history and duration, that which accompanied his own illness being of their number. Finally, when he rose from his bed he was unable to stand, so wasted and weak had his muscular system become; but when his limbs had recovered their strength he had still great difficulty in walking upstairs and rising from his chair. He thought it probable that the muscular tissues of the abdominal walls had been implicated in the amount of peritonitis which had existed. Just as in pericarditis and endocarditis, the muscular tissue of the heart might be involved, causing dilatation and the fibroid degeneration which was sometimes accidentally met with. And, as in pleurisy of the lower part of the chest, one occasionally found the muscular tissue of the diaphragm quite destroyed, so that it was one of the causes of shortness of breath. They would see from the thoughts which occupied him during convalescence that the ruling passion (pathology) still possessed him.

Professor Macalister's collection of books having been eagerly examined, a very successful meeting terminated at 10.30 p.m.

LITERARY NOTES.

Mr. Frederick Graves, a graduate in medicine of Edinburgh University, has written a story of medical student life in that city. The book, the title of which is *Ombra* will be published shortly by Mr. George A. Morton of Edinburgh.

Dr. Neuburger, who has for many years been *Privatdocent* of the history of medicine in the University of Vienna, has lately been appointed Extraordinary Professor. The same title has been conferred on Baron von Toeply, who has worked much at the same subject.

An autobiography of the famous anatomist Karl Gegenbauer has just been published under the title *Erlebtes und Erstrebtes*, by W. Engelmann of Leipzig. The book gives an interesting account of his student life in Germany, his *Wanderjahr* in Italy and elsewhere, and his career as a teacher at Würzburg, Jena, and Heidelberg. Incidentally expression is given to his views on the evolution of scientific anatomy and physiology, Darwinism, and many other matters.

The following story affords a striking illustration of the methods and results of the Russian Censorship. Vassili Yaruishkin, a brilliant graduate of Moscow University, recently died there in poverty at the age of 50. Twenty-three years ago he wrote a work on physiology, embodying a number of discoveries which were considered by his scientific friends to be of great importance. The manuscript went to the censor in 1883. It never came back. Again and again the author applied for permission to print, and for the return of his manuscript. He accumulated a drawer-full of formal replies, stating that the matter would receive attention. Soured and disappointed he never undertook other work. On the morning of the funeral a packet of manuscript arrived at the house where he died, with the stereotyped approval of the censor expressed in a formal note.

The difference between the modern treatment of the insane and that of only a century ago is contrasted by a writer in *Our Hospitals and Charities Illustrated* for September. In the basement of St. Luke's Hospital, in Old Street, one may still see wooden staples to which the incurable patients were permanently secured by a chain round their middle, allowing them a fair amount of lateral movement, with a heap of loose straw to sleep on. Other patients had a wooden trough fixed into the wall, with a handful of straw for bedding, and only the invalids were allowed the luxury of coarse sacking. There were no baths beyond a cold-water tank in the basement, into which the patients were thrown periodically. There were only about 10 male and female keepers to 300 patients. Only the noisy cases were kept in seclusion: the more violent were simply chained to their bedsteads, yet its management was then looked on throughout Europe as a model of humanity. At the present day there are well-furnished wards, with pianos and billiard tables, and comfortably-equipped little bedrooms, where the patients are at liberty to store their own cherished personal possessions. It is not surprising to read that one hundred years ago cures were extremely rare, whereas the average of recoveries is now 53 per cent.

The opening meeting of the sixtieth session of the Glasgow Southern Medical Society was held on October 6th, the following executive appointments being then made:—*President:* Dr. J. Hamilton. *Vice-Presidents:* Professors Stockman and T. K. Monro. *Treasurer:* Dr. T. Forrest. *Secretary:* Dr. J. Weir. *Editorial Secretary:* Dr. R. W. Forrest. *Seal Keeper:* Dr. A. Wauchope.

THE PELLATT FUND.

The Treasurer, Surgeon-Colonel F. H. Welch, S, Brandram Road, Lee, S.E., begs to acknowledge the receipt of the following sums, on behalf of Miss E. B. Pellatt, L.S.A., additional to those already published:

	£	s.	d.
Miss Violet A. P. Coghill, M.B.	0	10	0
Dr. Alice D. Vickery	1	1	0
Dr. Constance Long	1	1	0
Dr. R. Jessop	0	10	6
Dr. Alice V. Johnson	1	0	0
Miss A. G. Grogan, M.B.	2	0	0
Mrs. Dowson	1	0	0
Mr. J. E. Dowson	1	0	0
Mrs. Maples	0	10	0
Dr. Beatrice F. Lovibond	0	5	0
Dr. I. Burney Yeo	1	1	0
Dr. Adeline M. Roberts	1	1	0
Miss Edith M Wigan	5	0	0
"A Friend"	1	0	0
Mr. Lionel V. Cargill	1	1	0
Anon.	0	5	0
Dr. Flora Butcher	0	10	6
Dr. Mary Sturge	0	10	0
Anon.	1	1	0
Miss A. K. Pellatt	1	0	0
"A thank-offering, a Poor Clergyman"	0	5	0
Mrs. Scharlieb, M.D.	10	10	0
Mrs. Bishop	5	0	0
Miss Beck	1	1	0
Rev. W. Osburn B. Allen	1	0	0
Dr. Eveline A. Cargill	1	1	0
Miss Dove	1	0	0
Miss Grierson	1	0	0
Miss Kintoul	1	0	0
Dr. Katherine Maguire	1	1	0
Rev. C. E. Bowden	0	2	6
Dr. Agatha Porter	0	10	6
Dr. Amelia M. Le Pelley	2	2	0
Mrs. Roscoe	1	10	0
Rev. F. G. and Mrs. Latham (second donation)	0	10	6
Dr. Sophia Jex-Blake	2	2	0
Mr. James B. Jordan	1	0	0
A. V.	0	2	6
C. E. T.	1	0	0
A. J. T.	1	0	0
Anon.	0	5	0
Miss L. Hollis	0	2	6
Miss Florence Dismore	1	1	0
Dr. Charles Steele (second donation)	1	1	0
Mr. H Gaselee	5	0	0
Dr. Helen M. Wilson	2	2	0
Mr. James Clark	1	0	0
Mrs. James Clark	5	0	0
Mrs. W. S. Clark	2	0	0
Mrs. B C	1	1	0
Dr. Annie E. Clark	3	3	0
Lady Joicey	5	0	0
Dr. Letta M. Scruby	0	10	6

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 91.

Fees for Consultations.

Gatton writes that, on charging a fee for a consultation with a physician in the case of a club patient, the club drew its attention to one of its rules which forbade such a charge. He encloses the rules in question. One of them lays down that it is the duty of the surgeon to meet a consultant without extra charge if a member desires him to do so, and to countersign any prescription directed by the consultant. "Gatton" asks: (1) What is the usual practice of club doctors with regard to claiming a fee for consultations? (2) Is a club within its rights in framing rules forbidding such a claim? (3) Ought a medical man to refuse to act for a club which imposed such a condition?

*** (1) Such a claim is usually repudiated by clubs, but consultations are held only when they are considered necessary by the club medical officer, and with his consent. (2) A club is presumably within its rights in framing any rule not forbidden by law. (3) No medical man ought to consent to be bound by such a rule as No. X (3) in the book forwarded by our correspondent.

MEDICAL NEWS.

On November 17th, the University of Kasan will complete the hundredth year of its existence. On account of the war, the festal celebration of the centenary will be postponed.

The annual dinner of the Society of Anaesthetists will take place on Friday, October 21st, at the Imperial Restaurant, Regent Street, W. The President of the Society, Mr. C. Carter Braine, F.R.C.S., will be in the chair.

The opening lectures at Great Ormond Street Hospital for Sick Children will be, on the medical side, one by Dr. D. B. Lees, on Hydrocephalus, on October 20th, and on the surgical side one by Mr. T. H. Kellock, on the Treatment of Hernia, on October 27th.

The annual dinner of the Edinburgh University Graduates' Club, Birmingham and Midlands, will take place at the Grand Hotel, Birmingham, on October 20th. Sir J. Halliday Croom will be the guest of the evening. Graduates intending to be present should notify the Honorary Secretary (21, Broad Street, Birmingham) as soon as possible.

At the presentation of certificates to the successful members of the Leeds Post Office St. John Ambulance Society, on October 5th, Mr. H. Brown, M.B., was presented with a smoker's cabinet in oak as a recognition of his services as instructor.

A provincial sessional meeting of the Sanitary Institute will be held at the Municipal Offices, Southampton, on Saturday, October 29th, at 11 a.m., when a discussion on infectious fever hospitals will be introduced by Mr. Robert E. Lauder, F.R.C.S., D.P.H., Medical Officer of Health for Southampton. The chair will be taken by Mr. W. Whitaker, F.R.S., Chairman of Council of the Institute.

Bequests to Hospitals.—Under the will of the late Mr. Charles William Waters of Streatham, £1,000 each has been bequeathed to the London Fever Hospital, University College Hospital, the London Hospital, Charing Cross Hospital, and the Royal Free Hospital.

The second annual festival of the Birmingham Branch of the Guild of St. Luke will be held on St. Luke's Day, October 18th, in St. Philip's Church, Birmingham, when a sermon will be delivered by the Lord Bishop of Worcester. This Branch of the Guild has been in existence for more than a year. The Honorary Secretary is Mr. W. T. Elliott, 65, Temple Row, Birmingham, from whom any information may be obtained.

The Fellows of the British Balneological and Climatological Society will dine together on October 27th at Pagani's Restaurant, and then proceed to 20, Hanover Square, where the introduction of the President-elect (Dr. W. Bowen Davies, Llandrindod Wells), the adoption of the Treasurer's report, and other business will be completed. At 9 p.m., Dr. Bowen Davies will deliver a presidential address on the Spa Treatment of Arthritis Deformans.

Glasgow Eastern Medical Society held its opening meeting on October 5th, when the new President, Dr. James Dunlop, delivered an address on the Sanatorial Treatment of Consumption. The other executive officers for the session are as follows:—*Vice-President:* Dr. Miller Semple. *Treasurer:* Dr. J. Wilson Mathie. *Secretary:* Dr. P. S. Buchanan. *Reporting Secretary:* Dr. H. H. Borland. *Seal Keeper:* Dr. Th. Russell.

Mr. E. C. Bousfield, the bacteriologist of Camberwell and Hackney, has received from Lord Knollys a letter stating that the King has been pleased to accept a photograph sent to him, and that His Majesty wishes his appreciation of the gift to be conveyed to the occupants of the Leper Home, Jamaica, who are thereby represented. Mr. Bousfield, during a short stay in Jamaica this summer, visited the leper establishment on Emancipation Day and photographed its inmates, some 150 in number. They were unwilling to pose at first, but consented upon his giving a promise that he would send an enlargement of the picture to the King, together with an expression of their sentiments of loyalty toward the Throne.

Medical Sickness and Accident Society.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity and Life Assurance Society was held on September 30th, at 429, Strand, London, W.C., Dr. de Havilland Hall in the chair. The accounts presented showed a great improvement in the amount and number of sickness claims over the experience of the first half of the year. The claim list of the Society has always been long during the months of late winter and early spring, while during the later months of the year the rate has always been sufficiently low to more than balance the heavy disbursement thus rendered necessary. Every year's working of the Society has shown a considerable increase of its financial stability, and the funds have steadily grown until they now amount to more than £180,000. Prospectuses and all particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

The War against Mosquitos in America.—At a recent meeting of the New Jersey State Commission on Mosquito Extermination, the State entomologist, Professor John B. Smith, reported that in the two large operations carried on during the past season absolute success had been obtained. The first operation was in the region about the mouth of the Shrewsbury River and the Government Reservation on Sandy Hook. Beginning early in the season, more than 250,000 ft. of ditching were cut through the salt meadows, and throughout the region drained by these ditches not one mosquito had been bred during the summer. The evidence of the good results of this operation was so marked that the North Long Branch authorities were anxious to join in the work, and complete the drainage of the mosquito-breeding places in that section. The second big operation in the salt meadows contiguous to Newark, Professor Smith declared, would result in the complete suppression of mosquito breeding in that section.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1904.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, OCTOBER 15TH, 1904.

THE VISIT OF FRENCH PHYSICIANS AND SURGEONS TO LONDON.

The medical profession in London has had the pleasure this week of welcoming a large party of French physicians and surgeons, and we can only hope that the visit has been as agreeable to the guests as it has been to their hosts. The party, which numbered over a hundred and fifty, arrived from Paris on Sunday evening, and on the three following days visited most of the principal hospitals and laboratories in London. It included many representatives of the rising generation of teachers in Paris—*professeurs-agrégés* and *médecins des hôpitaux*—many general practitioners in Paris, a number of internes of Paris hospitals, and some representatives of the provinces. It was accompanied also by several senior members of the medical faculty of Paris—by Professor Poirier, whose wit and eloquence have charmed every audience which has had the privilege of listening to his exquisite enunciation; by M. Lucas-Championnière, the pioneer of antiseptic surgery in France, who paid so charming a tribute to his master in the Lister Number of the British Medical Journal; and by Professor Huchard, whose contributions to cardiac therapeutics are well known in this country.

As soon as it was known that the party which would visit London would be large, and would be composed of men really anxious to see the practice of the hospitals in London, the staff of every medical school in London, as well as the directors of laboratories, expressed their readiness to afford every facility. Our French guests have responded in the same spirit, and during the too short period of their visit have been eager to see hospitals, museums, and laboratories. The first event was very appropriately a visit to the Royal College of Surgeons, where the whole party was received by the President, the Vice-Presidents, and many members of the Council. After Mr. Tweedy had spoken a few words of welcome, the great museum of the College, which includes the collection formed by John Hunter, was inspected, and the party broke up, to meet again in the afternoon at St. Bartholomew's Hospital, where it was received by the medical and surgical staff in the great hall, and afterwards shown over the hospital and medical school. On Tuesday morning, after assembling at the French Hospital, the party broke up into sections; some visited the laboratory for advanced physiology of the University of London, where they were addressed by the Director; others attended a demonstration given in the laboratories of St. Mary's Hospital by Drs. Wright and Bulloch; while others visited various other hospitals. In the afternoon large parties were shown over St. Thomas's and Guy's Hospitals, and many others witnessed operations at other hospitals.

Of the impression produced on the minds of our guests by all that they have been shown we shall not venture to say more than this—that we gather that they have been struck by the brightness and cheerfulness of the wards, and have admired the excellence of the nursing arrangements. Of their opinion on other matters we shall perhaps learn more in time. Meanwhile, they cannot have any doubt of the warmth and sincerity of the welcome which they have met in London. The visit has, we hope and believe, stimulated the growth of that *camaraderie* which ought to exist among the members of a profession which has no politics and knows no frontiers.

On the English side the visit was rendered memorable by the fact that, for the first time, the University of London took its rightful place in an international assembly of men of science in London. The guests were received by the Principal, were addressed by Dr. Waller, the Director of the University laboratories of advanced physiology, and were entertained with lavish hospitality by the Dean of the Medical Faculty. To our French visitors the welcome and the hospitality shown by the University was, we have reason to know, most gratifying; to Londoners it was something more. It marked, as we may hope, the beginning of a new era, and Mr. Butlin has earned the gratitude of every teacher, of every graduate, and of every student present and future of the University of London by the manner in which he came forward on this occasion.

THE IMPERIAL ASPECTS OF TROPICAL DISEASE.

The introductory address delivered at the opening of the London School of Tropical Medicine on October 7th by Sir Charles Bruce, G.C.M.G., the text of which will be found at p. 1005, once more directs attention to the supreme importance to the nation of the work done by such institutions. Tropical disease is one of the greatest obstacles to the consolidation of the empire, and constitutes a standing menace to its preservation. Some striking illustrations of this truth, still so imperfectly understood by most statesmen, are contained in the address, which is an embodiment of the experience of a most able Colonial administrator, who, to use his own words, for thirty years lived constantly in an environment of tropical disease. At the very beginning of his official career in Mauritius in 1868 he was brought face to face with the disastrous effects of disease on the prosperity of a colony. A very severe epidemic of malarial fever was then raging in the island. Up to the time of that visitation Mauritius had been one of the healthiest colonies of the empire; so great was its reputation in this respect that it was a favourite health resort for Indian civilians on furlough. It was, moreover, a naval and military station of unrivalled salubrity; trade and agriculture flourished, and social life was made pleasant by surroundings in which the advantages of the tropics were combined with those of temperate climes. King Edward VII, who has seen more men and cities than Ulysses, said that the society of Mauritius retained many of the charming characteristics of old France. Into this earthly paradise malaria was imported from India by immigrants, who brought with them the mosquito which carries in it the seeds of evil as deadly as any in Pandora's box.

Beginning at Port Louis the fever crept inland and along the coast, causing the migration of society to higher

ground and the abandonment of barracks and observatories built at great expense, and even of settlements in situations 700 or 800 feet above sea-level, believed to be beyond the sphere of influence of the malaria poison. To what an extent the *Anopheles* has driven before it the wealthier part of the population is shown by the fact that since the invasion the number of inhabitants at Port Louis has fallen by nearly 22,000, while the district of Plaines Wilhelm, where the fugitives sought refuge, has increased by some 35,000. But the conquering gnat threatens to invade even that territory, although it rises to an altitude of 1,800 feet.

A few years ago sanitary science would have been almost helpless against this insidious enemy; now, thanks mainly to Sir Patrick Manson and Professor Ronald Ross, there is good ground for hope that the Government of Mauritius will be able to oppose a successful resistance to its progress. Had the means of warfare against the poison-bearing mosquito which science has now placed in the hands of administrators been available when it was first brought into Mauritius, an enormous loss of life and health, an immense waste of public money, and the partial ruin of a prosperous colony, might have been averted.

An even more striking example of the ravages of malaria is afforded by the condition of the North Central district of Ceylon. That region was once the centre of the religious and political life of the island. Centuries of disease have made it an almost depopulated waste strewn with the ruined monuments of a great past. Something has already been done to restore prosperity to the province, and it is gratifying to learn from Sir Charles Bruce that there is good hope of a successful result being attained by the adoption of appropriate measures of antimalarial sanitation. Similar lessons are taught by his experience in British Guiana and the Windward Islands, where, in addition to malaria, yellow fever has till lately been an ever-present danger. There, too, the far-reaching discovery of the part played by mosquitos in the dissemination of these diseases affords a warrant for the hope that the white man will before long be able to overcome the dangers which have made his burden in the tropics so heavy and so deadly.

Sir Charles Bruce paid a well-deserved tribute to the work of the Liverpool School of Medicine, and referred hopefully to the prospect of the discovery of a remedy which would have the same effect in trypanosomiasis that quinine has in malaria. Almost as he was speaking came the news that M. Laveran, whose discovery of the parasite of malaria opened the way for the fruitful researches of Manson and Ross, has found such a remedy. The publication of the paper in which he is said to have announced this discovery to the Académie de Médecine will be awaited with the keenest interest. The fact that the trypanosoma attacks animals as well as men has an important bearing on colonization. An epidemic of surra among beasts of burden in Mauritius threw the whole system of transport into confusion, imperilled the sugar industry on which the island depends, and affected every department of public and private activity. It is easy to imagine how similar outbreaks might paralyse the mobility of troops in war, and lead to the loss of a colony.

It is the object of the Schools of Tropical Medicine in London and Liverpool to make such disasters impossible. In Sir Charles Bruce's happy phrase, they form the intelligence department of the army of medicine in the tropics, and on the work of that department the welfare of our tropical possessions and protectorates depends. We welcome this expression of opinion all the more that, as coming from a man who has successfully governed several colonies, it may possibly make some impression on the Olympian indifference of Downing Street. Mr. Chamberlain is the only leading statesman who has shown an intelligent apprehension of the true place of medicine and hygiene in colonial administration, and for this, had he no other title to the gratitude of the country, he must always be numbered among those who in these days have deserved best of the commonweal. The public cares for none of these things, and newspapers which should instruct them, while always ready to devote columns to any form of quackery, can apparently find no space to help a work which is the highest degree beneficial to mankind, and which, more than trade, or statecraft, or conquest, tends to consolidate our empire. The richest mines, the most fruitful plantations are useless to us so long as they are in the keeping of invisible guardians more dreadful than the dragon that watched over the gardens of the Hesperides. The London School of Tropical Medicine receives some measure of Government support, and it has found some munificent private benefactors. But far more is required to enable it to discharge efficiently the great work which its founders, men who in the truest sense thought imperially, had in view: the discovery of the causes of tropical diseases and the means of preventing them, and the training of missionaries who shall carry the gospel of health to the places which till now have been the white man's grave. It will be at once a national disgrace and a national misfortune if an institution of such importance to the well-being and security of our empire is allowed to be crippled by want of funds.

REORGANIZATION OF THE INDIAN SANITARY DEPARTMENT.

A very long resolution on Sanitary Administration in India has just been issued in Simla, which promises to be the beginning of an important advance. It opens by stating that the improvement of the sanitary department has for long been under consideration. In reviewing the history of sanitary organization in India, it begins with the Royal Commission on the Sanitary State of the Army in India which reported in 1863. As a result of this Report a Sanitary Commission was appointed for each Presidency, consisting of a civilian officer as president, and two medical and two military officers as members. Since then a number of changes have been made, Sanitary Commissioners having been appointed for each of the principal provinces, while in the smaller ones the administrative medical officer has also carried on the duties of sanitary commissioner. In 1895 the Government of India asked the Local Governments to formulate plans for the reorganization and extension of the sanitary departments, and the views of Lord Elgin's Government were expressed in another resolution in 1898, since which time the gradual spread of plague has so fully occupied the attention of the authorities that the question of the sanitary department has remained in abeyance. The recommendations of the Plague Commission, that the sanitary department should be strengthened and scientific experts added, the whole being made into a separate department, and placed directly under the Sanitary Commissioner with the Government of India, brought the question to the front once more. On further consideration of this proposal, it

was found that the Local Governments very strongly objected to their sanitary officers being placed under the orders of the head of the sanitary department for all India, as an "impossible abrogation of the powers of the Local Governments." On the other hand, they agreed that the officers employed exclusively on scientific duties might be placed under the Sanitary Commissioner with the Government of India, provided they were required to undertake inquiries at the direction of the Local Governments.

After thus tracing the history of the attempts at reorganization of the sanitary department, the resolution goes on to discuss what the Government proposes to do at the present time in order to make a start in the right direction. "Progress must therefore, in any case, be gradual, but it appears to the Governor-General in Council that one step should be taken without delay in anticipation of the creation of a new department or inception of any detailed scheme of reform. That step is clearly the provision of a sanitary adviser whose whole time can be devoted to sanitary work only; who will assist the Government of India with his counsel, and will at the same time supervise the existing sanitary machinery and direct and inspire the measures taken for its improvement." To attain this end it is proposed to separate the office of the Sanitary Commissioner of the Government of India from that of the Director-General of the Indian Medical Service, as was the case prior to 1880, when Dr. J. M. Cunningham, then Sanitary Commissioner, was found to possess exceptional qualifications for both posts, and was therefore appointed to the charge of the double office, an arrangement which has continued ever since. It is now proposed to revive the post of a separate Sanitary Commissioner with the Government of India, who will consult with the Local Governments both on the principles on which advance should be made and on the manner of giving effect to these principles under varying local conditions. Further, he will organize and direct research throughout India, which will steadily increase with the progress of the scheme already sanctioned for the establishment of fully-equipped institutes for the study of health problems in India, including a central laboratory devoted mainly to general original research and the making of antivenene and curative serums. In each of the larger provinces there will also be local laboratories for bacteriological diagnosis and research. The new officer will control all these investigations and decide what work shall be done and by whom it shall be undertaken. The salary of the new appointment will be Rs.2,000 to Rs.2,500 per mensem, it will usually be held by an officer of the Indian Medical Service specially selected without reference to strict seniority, and the appointment will be for five years, which may be extended, and he will be independent of the Director-General.

The relations of this new Imperial officer to the Local Governments are also defined. He will "consult and confer" with them upon matters connected with sanitation, and correspond unofficially with the provincial sanitary commissioners and heads of provincial laboratories on forms, statistics, etc. For the execution of these duties the resolution admits that much tact will be necessary, while "it is essential that the officer should be thoroughly acquainted with the people, the conditions under which they live in India, and with the social and religious motives which regulate their daily existence."

Major Leslie, I.M.S., who has been Secretary to the Director General and Sanitary Commissioner with the Government of India in Simla for the last ten years, has been selected for this important post, and it is to be hoped that the new department will soon be provided with some other officers, as several who have been placed on special duty during the last few years for various researches will be available. The progress of the new scheme will be watched with great interest, as it is certainly a step in the right direction, and only liberal treatment is necessary to ensure its ultimate success.

THE FAREWELL DINNER TO THE FRENCH VISITORS.

The banquet given to the French physicians and surgeons by their English colleagues on Wednesday night was the last formal event of the French visit, and brought it to an end in a pleasant and typically English style. A detailed account of the proceedings will be found elsewhere; here it will be sufficient to say that it was a very cheerful evening, full of interest in various ways, and well worth attending, even by those not either blessed with a good appetite or endowed with any marked capacity for conversing in foreign tongues. The room selected for the meeting was the Victoria Chamber of the Cecil Hotel, which was appropriately decorated; there were nearly 400 persons present, and the arrangements made for their reception by Dr. Ogilvie, who acted in this matter for the London Committee, were in every way excellent. To any one strolling about the reception room, and later watching the different tables, it was obvious that the past three days had not been time ill spent; that any ice which may have originally existed had been thoroughly broken up; that very many of the hosts and their guests had already established relations of a truly personal character, which in some cases were well on the way to become something still more cordial and lasting. In short, it was pleasantly evident that the expression used in our leading article to the effect that the profession of medicine is one in which true *camaraderie* exists, untrammelled by politics and frontiers, is no mere figure of speech. The dinner itself was not too long, and left plenty of time for the speeches. With so many Frenchmen present it was natural that the general level of the oratory should be high; but it was pleasant, also, to observe that there was not the slighest disposition to flounder on the part of the English speakers called to the unaccustomed task of addressing an audience in a foreign tongue. For the rest, all present seemed to enjoy themselves; around the tables one heard English and French in almost equal proportion, Frenchmen talking English, and Englishmen talking French, *sans peur* and without evoking *reproche*. Indeed, hosts and guests alike threw themselves into the conversational breach with the same courage and spirit which the two nations have ever exhibited in one another's presence; in short, it was *magnifique*, and fortunately anything but *la guerre*.

THE BRITISH MEDICAL BENEVOLENT FUND.

We print elsewhere an appeal signed by Sir William Broadbent, President of the British Medical Benevolent Fund, for increased contributions to its resources. The fund comprises annuity and grant departments; its income from investments in 1903 was, in round figures, £2,500, and the total number of annuities paid £2,300, so that the income from investments does little more than cover the amount paid out in annuities. In 1903 the amount paid to 117 annuitants was £2,300. It is the stated policy of the Committee to invest all legacies in trust securities, and to employ the assured income thus obtained in increasing the number of annuitants. The funds for the grant department must therefore be entirely provided by donations and subscriptions, and, looking at the table printed in the annual report for 1903, it does not appear that the

income from this source shows any steady increase; it was, in round numbers, £1,800 in 1903, as compared with £1,500 in 1902; but in 1900 the amount received from this source amounted to £1,880. In October, 1903, the grant account at the bank was overdrawn, and we understand that it is completely exhausted at the present time. It may, of course, be retorted that the Committee should practise economy, but any one who will read the majority of the cases given in some detail in the annual report will sympathize with the Committee when they state that they could not bring themselves to refuse the applications made to them; 161 applicants received relief during 1903, the amount distributed being £1,658. The report states that the cost of administration only just exceeds 5 per cent. Most of the recipients of relief have once been in good positions, of which they have been deprived by calamity literally beyond their control, and what they receive from the fund is often all that stands between them and parish relief. The Treasurer of the fund is Dr. Samuel West, 15, Wimpole Street, London, W. We may add our testimony to the existence of the need for such a benevolent institution as this. Cases of heart-rending distress are brought to our notice only too frequently, and we believe that in those cases, which on investigation prove to be genuine, the British Medical Benevolent Fund acts with promptness and with as much liberality as its funds will permit.

ST. BARTHOLOMEW'S HOSPITAL.

We hear that last week the Treasurer of St. Bartholomew's Hospital, Sir Trevor Lawrence, K.C.V.O., handed in his resignation to the Court of Governors, and that at the same time was received that of the Clerk of the Hospital, Mr. W. H. Cross. Both these resignations have been long expected, and it is to the credit of both these gentlemen that they have deferred making their final demission of office until now. In view of the severe crisis through which the affairs of the hospital were passing during last year and in the early part of this spring, they were unwilling, it is understood, to create a further difficulty by vacating the important offices respectively held by them. The initial steps of the rebuilding scheme have, however, been successfully accomplished, so it is quite proper that they should leave the further realization and development of the general plan in view to new and younger men. This, indeed, would seem to be in any case desirable, for the steps already taken involve what for this hospital is a completely new departure, and will necessitate for their success a complete abandonment of many traditional ways, most of which have had their day, and have ceased to be useful, or, indeed, quite compatible with the best interests of the hospital. Both Sir Trevor Lawrence and Mr. Cross, though their resignations are final, are, we learn, quite willing to carry on the work until such time as suitable successors have been found; the Governors, therefore, will, if they choose, have plenty of time before them to acquit themselves of a task which may well prove difficult. The power wielded both by a Treasurer and a Clerk of a great hospital and the influence which, consciously and unconsciously, they may have upon its prosperity are very considerable. The Treasurer should at least be a man of good business capabilities, of broad mind, able, if need be, to make a good speech, with plenty of time to spare, and with the energy and disposition to use it entirely for the well-being of the institution in his charge. The Clerk, for his part, in addition to being thoroughly trained from a business point of view, should have such personal qualities as make it likely that he will treat every one with whom he comes in contact with perfect consideration, and insist upon his subordinates doing the same. Many a rich donation has been lost to hospitals by the manner in which casual visitors have been received, and the excellent custom, in vogue at some hospitals, and at the London Hospital in particular, of treating every inquirer or visitor as a possible angel coming unawares might well be adopted by all. Moreover no hospital has yet proved continuously prosperous which has had as its chief executive officer a man with any tendency in him to lose sight of the essential limitations of his office, or who has lacked the mental endowments necessary to enable him to study the problems of medicine and surgery so far as to appreciate, if not thoroughly to assimilate, the views and desires of the professional staff. Of the two posts now vacant, that of the Treasurer may possibly prove the more difficult to fill, while that of the Clerk is the more important. Fortunately, however, the field from which a selection may be made is very much wider, and, as the salary attached is, we understand, large, there might well be a large number of candidates from whom to make a choice. It is desirable, therefore, that the Governors should not confine their search within too narrow a circle, and our readers will share our earnest hope that the choice made will prove a wise one.

THE CAUSES OF INSANITY.

We have on more than one occasion commented on the variable results obtained by medical officers of asylums in their inquiry into the probable and assignable causes of insanity arranged under No. X of the statistical tables of the Medico-Psychological Association of Great Britain. As was pointed out on September 17th, in relation to alcohol and insanity, it is impossible to obtain from a patient or his friends even a fairly accurate account of his personal and family history, and deductions based on these results are, for scientific purposes, absolutely nugatory. In the annual report of the Govan Asylum, the Medical Superintendent, Dr. W. R. Watson, also inveighs against the use of this table, and in reference to the movement on foot to make this statistical statement compulsory, he says, "The *imprimatur* of the State would have a tendency to confer on this table, like the stamp on a packet of patent medicine, an importance out of all proportion to the real value of its contents, and might, by encouraging ill-considered State legislation, render it not merely useless, but actually pernicious." Dr. Watson then refers to some of the chief fallacies inseparable from such statistics, and, further, takes careful account of the necessary personal qualifications of the observer, the tact, mental acuity, and, above all, the impartial scientific spirit which should be brought to bear upon the investigation. The question is, in fact, biological, and cannot be settled by this method of investigation.

THE SPECIFICITY OF ANTIVENOMOUS SERUMS.

In continuation of his earlier work on this subject, Captain G. Lamb, I.M.S.,[1] publishes further results in the tenth number (new series) of the *Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India*.[2] He finds that, whereas the serum of a horse immunized with pure cobra venom is strongly antitoxic for the venom used in its preparation, it possesses only a slight neutralizing power, even when used in large quantity, against the venom of *Enhydrina valakadien*, one of the common sea-snakes; and that, when tested against the venom of the king cobra, a species belonging to the same genus as the cobra, though it delays death, it does not, even in large doses, completely neutralize the effects of the poison. The antitoxic effect against these two venoms is so slight that in cases of bites from these snakes the serum would be of very little therapeutic use. And against the venom of *Bungarus coeruleus* and *Bungarus fasciatus* (the common krait and the banded krait) the serum contains no antitoxic substances. Again, the serum of a horse immunized with the pure venom of *Hoplocephalus curtus* (Australian tiger snake), though strongly antitoxic for its corresponding poison, has no neutralizing power for the toxins of the Indian colubrine snakes, nor for the toxin of the common sea-snake. Experiments on haemolytic action also emphasize the high degree of

[1] British Medical Journal, December 17th, 1903, p. 1546.
[2] Calcutta: Government Printing Office, 1904. (Demy 4to. pp. 25. 9d.)

specificity of different snake venoms, and Captain Lamb finds that even with two species of the same genus this constituent of their poisons cannot be affirmed to be alike.

CANON JESSOPP AND SIR CONAN DOYLE ON MEDICINE.

THE opening of the Norwich Medico-Chirurgical Society was celebrated last week by the usual dinner. Dr. D. G. Thomson, the President for the year, took the chair, and besides the members, there were many guests. Among them were the Reverend Canon Jessopp and Sir Arthur Conan Doyle, whose presence lent the occasion additional interest. The former made an excellent speech, in which the element of humour was supplied by his account of his experiences as an amateur doctor in early life. He was, it appears, at the age of 23 forced to take charge of a large parish, in which he found himself responsible not only for the spiritual but also for the physical well-being of his people. He recounted some of his experiences, and said that in the light of since acquired knowledge, he looked back with horror upon his performances, and was thankful to have escaped a charge of manslaughter. A part of his speech which possessed more serious interest was the detailed comparison which he made between Medicine and the Church. The former as a profession was going up by leaps and bounds, while the trend of the latter, viewed equally as a profession, was steadily downwards. When he remembered the long course of profound study through which young men had to pass before they received recognition as medical men, he was filled with admiration, and he viewed with some shame and certainly much regret the width of the portal leading to the Church. The weakness of his own profession was that men entirely unfit for their positions might yet continue to occupy them, and that all alike were afraid to reform their beliefs; yet he hoped that in time better conditions would prevail, and in the interval there was much in which members of the two professions could help one another. Dr. Cooper Pattin, in proposing the toast of "Literature," said that only those writings could be classed as literature which possessed the power of stimulating thought in the reader, and with thought, feeling. After a sketch of the unbroken association of medicine and literature from the days of Nebsecht—self-styled "The Lord of Healing"—who flourished full 4,000 years ago, and noting particularly the glory reflected by the profession upon Norwich through Sir Thomas Browne, Dr. Pattin credited Sir Conan Doyle with having performed the most marvellous of *post-mortem* operations in resurrecting Sherlock Holmes. Sir Conan Doyle, in responding, said there was no pleasure so great to him as that of meeting his fellow medical men. He always, when he met them, had a feeling that he was a deserter who had been brought back to his old regiment. In his short and chequered career as a doctor he served as a ship's surgeon and as an army doctor; he had practised in the country and in the slums of a great city. And at one time he had even attained the dignity of a waiting room in Wimpole Street. Who did most waiting there he would rather not say. But one conviction had always remained with him, and that was that whatever line of life a man went into, as long as he had to use his brain, the medical training was actually the best a man could undergo. There was a time when a young man who was going to do anything in the world was passed mechanically through the Bar. He believed the time would come when similar young men would be passed through medicine, because he knew no other means by which a young man could get to the fundamental and absolute facts of life. If our young army officers had five years' study in the same sense that our young medical men had five years' study we should become the terror of Europe.

AS OTHERS SEE US.

DR. GUSTAV DINTENFASS has devoted some time to the study of London hospitals and medical practice, and has embodied the results of his investigations in an article which appeared some time ago in the *Wiener klinische Wochenschrift*. He is a careful, sympathetic, and on the whole well informed observer, and his conclusions are generally worthy of attention. He commences by pointing out that in England there is a much greater disposition to take unpaid duties, municipal or charitable, seriously than on the Continent. As our hospitals are mainly supported by voluntary subscriptions, the public comes into much closer relationship with them than is the case elsewhere. Taking *Burdett's Directory* as his authority, Dr. Dintenfass reckons the number of beds available for clinical instruction in London as roughly 4,000, compared with 2,000 in Vienna, 1,600 in Berlin, and 2,100 in Paris. Excluding asylums and infirmaries he calculates that there are 10,300 beds in the hospitals of London, or 2 to every 1,000 inhabitants. In Paris there are 21,000, in Berlin 4,000, and Vienna 6,450, the proportions per 1,000 being 7.8, 4.5, and 4.0 respectively. Including infirmaries and asylums the respective figures are 23,300, 28,200, 13,420, and 9,260, and the proportions 4.5, 10.4, 7.1, and 5.8 per mille. The author attributes the relatively small number of beds in London partly to the general status of the inhabitants, who can afford and usually prefer to call in private medical practitioners, and partly—though we must confess our inability to follow his reasoning—to the fact that the hospitals are neither under State nor municipal control. It is quite true that as he points out—with the cogent example of our present vaccination laws—the State has very little influence over an Englishman's private affairs, but he is evidently unaware that this very fact is closely associated with the greatest possible reluctance to seek the aid of State-supported institutions. Dr. Dintenfass gives statistics as to the manner in which the huge sums needed for the maintenance of our hospitals are raised and points out that the resultant partial lay control has sometimes led to serious practical difficulties. He attributes these partly to the "puritanical" opposition to vivisection which he says drives many Englishmen to complete their studies abroad. He devotes particular attention to the question of hospital expenditure, the general average of which in England is much raised by the existence of so many small institutions. He calculates that the cost of maintenance of a patient in an English hospital is from two to three times as great as in Berlin or Vienna, the excess being due partly to the higher price of provisions, partly to the average duration of the stay in hospital being longer, and partly to greater expenditure upon administration. He is enthusiastic in praise of the system of inquiry by almoners into the circumstances of out-patients, which, he thinks, might with advantage be adopted in Germany. He shows that the cost of obtaining a registrable qualification is far greater in England than on the Continent. We could wish that there was solid ground for his statement that the opportunities for practice in the Colonies and the Services keep the profession from being overcrowded. On the other hand, he draws far too gruesome a picture of the liability of English doctors to actions for damages and for malpraxis; such horrible instances as the one he gives must be very rare. On the whole, he appears to think that a medical man is better off here than in Austria or Germany—a conclusion which is no doubt generally true; perhaps the latter might be still more comfortable if he read and took to heart some of Dr. Dintenfass's kindly criticisms.

DETERMINATION OF SEX.

A FEW weeks ago a telegram from America announced, upon the authority of a professor of the University of California, that it was possible to control the sex of newly-formed cells, and to say whether or not the generated body should be male or female. This was interesting if not specially good news; it is satisfactory, therefore, to have its truth confirmed by one of those distinguished writers upon science who do so much by their letters to enliven the columns of the daily papers and illuminate the minds of their readers. The writer in this case, Mr. C. Mackenzie Kennedy, as may be deduced from his own statement,

does not belong to the "higher circles of biological research," but this circumstance need not detract from his authority. In fact, rather the reverse; for most scientific labourers at the subject, seemingly, have been not only working in the dark but wantonly butting their heads against blank walls, when all the time a well-lighted doorway has been open to them. While, in short, Mr. Kennedy considers anabolic and katabolic lines of investigation all very well in their way, he seems to think it quite unnecessary to pursue them, since the Chaldeans thoroughly understood the principles of sex determination thousands of years ago, and those who want to know all about them have only to look up the matter in the Talmud. It seems rather a pity, however, that Mr. Kennedy, in his letter to the *St. James's Gazette*, should have contented himself with merely citing the work instead of giving a quotation. To the rest of the letter we somewhat hesitate to refer, since its correlation with the earlier part is not quite clear. Possibly Mr. Kennedy has not had the advantage either of listening to Professor Clifford Allbutt or of reading his *Notes on the Composition of Scientific Papers*. He may, therefore, not really mean precisely what he says. Apparently, he wishes it to be known that, in his opinion, the begetting of a son or daughter is an art of the highest antiquity. This view we believe to be entirely correct, and to ourselves it even seems likely that the continued practice of the art accounts, in great measure, if not entirely, for the overpopulation said to exist in this and other countries. The concluding passage of the letter is what, in view of the recent visit of our French colleagues, we may be permitted to call *intrigant*; in other words, it is one which whets without in any way satisfying curiosity. Read in one sense, allusion would appear to be made to some one of those "high life" scandals so thickly strewn throughout history, and to an allegation that a French king surprised and took a mean, ungentlemanly advantage of the secret of a friend. We cannot believe this; and if, on the other hand, the suggestion is that the Royal personage held himself out as a practical exponent of a method of begetting either a male child or a female child at will, we must decline to accept him as an authority. The possibility of a *post hoc propter hoc* conclusion with all its weakness at once creeps in. Doubtless His Majesty believed what he said; but after all, if it be, even at this day, a wise child that knows its own father, it must have been, in Court circles and in bygone times, an even wiser father who knew his own child.

MOSQUITO REDUCTION.

At the International Congress of Arts and Science recently held in St. Louis, Professor Ronald Ross, F.R.S., delivered an address on the logical basis of the sanitary policy of mosquito reduction in the Section of Preventive Medicine. Reviewing the work that had been done in the attempt to exterminate mosquitos, he said that no experiments made in that direction had as yet proved very satisfactory, owing to the fact that no accurate method had been found of estimating the number of gnats in any given locality. Personal impressions as to the number being large or small might be correct; but in the absence of any criterion to estimate the actual numbers in figures this could not be accepted as proof that the number had been really reduced. The question of mosquito reduction was only part of a larger subject—that of the local reduction of any animal organism. Although all the mosquitos in any given area could not be killed, their propagation could be arrested for so long a time as was desired, provided all breeding places were obliterated or the larvae persistently destroyed. The number of gnats or of any animals within an area must always be a function of four variables—that is, the birth rate, the death-rate, immigration into and emigration out of the country. If such an area be surrounded by a net, all gnats within that net would be natives. On the other hand, if propagation were arrested in a certain given area, the gnat population must necessarily consist entirely of immigrants. By the law of probables it was assumed that a very small proportion of mosquitos would travel the limit of migration, and the vast majority would remain in the neighbourhood of their birth and die there. The limit of migration was the extreme limit the animal might travel in a straight line during its entire life. A very small proportion would travel back and forth, or in a circle, or at various angles, always remaining not far from the place of birth, and finally dying in that neighbourhood. By dividing the life of the mosquito into certain arbitrary stages, it was assumed from the calculus of probables that a certain number would reach the extreme limit of migration, proceeding in one direction during all the stages of their existence; a larger number would reach a point somewhat short of the limit of migration, a still larger number reach a point short of that, and so on, until it would be found that the greatest number would be in the neighbourhood of the birthplace. If an area of country was then treated, and the propagation of mosquitos arrested in that area, there would be a certain point—the limit of migration of the mosquito—which would be entirely mosquito-free, and approaching this mosquito-free district there would be a line in which the number of mosquitos would become less and less, until the point of the limit of migration had been reached. If, however, the area thus treated were not large enough, and did not extend beyond the limit of migration, there would always be a number of mosquitos, even though propagation was arrested; for there would be emigrants constantly entering the area from without, though the country would be entirely free from native gnats, and the point of greatest density would be near the line of the treated and untreated country, and diminish at an undetermined rate; the further advance was made into the no-propagation country until the point of the limit of migration was reached, when the mosquitos would cease altogether. The analysis, imperfect though it was, contained four theorems: First, mosquito density could be reduced at any point as much as was desired by making the radius of the antipropagation operations large enough. Secondly, in order to reduce the density at any point to absolute zero, the radius of operations must be greater than the limit of migration. Thirdly, at the boundary of the no-propagation country the mosquito density should be one-half the normal density, provided the radius of operations was not less than one-half the limit of migration. Fourthly, the effect of the operations would be felt not only within the antipropagation area, but to a distance quite to the limit of migration beyond it.

THE DOOM OF SPECTACLES.

We have received a letter from Sir James Thornton, in which he states briefly that, though invited by Mr. Stephen Smith to witness the demonstration of his treatment of errors of refraction, he was unable to be present thereat; and that he considers our remarks about himself to be uncalled-for and in very bad taste. As to this point we must leave our readers to judge; some allusion to Sir James Thornton was inevitable, since Mr. Stephen Smith, in the letter which we published last week, apparently cited him as a skilled witness of the demonstration, and brought in his name as a complete answer to our criticism. We contented ourselves, however, with a simple statement of fact, and we are not surprised to find that this is not satisfactory to Sir James Thornton; for plain statements of fact have ever been displeasing to members of the antivivisectionist party. We have also received a letter from Mr. James Aitchison, who explains that the offer which he has made to Mr. Stephen Smith has more claim to scientific consideration than was accorded to it in our note upon the subject. The Editor of the *Daily Mail* is, he says, only concerned in the matter in that it is to him that the choice is left of an ophthalmic surgeon who shall act as judge at the trial in view. He also tells us that the conditions of the trial are not yet finally determined. In order to meet, as far as may be, any possible medical criticism, he has placed himself in the hands of Dr. William Ettles, of

the Minories, who has undertaken to settle preliminaries with Mr. Stephen Smith. The latter, although according to press statements he claimed to be able to cure myopia, would not accept the test proposed to him by Mr. Aitchison, namely, that he should reduce, by only one-third, the defect in six cases of myopia of between four and six dioptres, which Mr. Aitchison offered to send to him. He proposed as an alternative two myopes, four hypermetropes, and four astigmatics. Recognizing that personal factors enter largely into the two last classes of defect, Dr. Ettles, though not refusing the test, asked that two more myopes should be added to equalize the sections. Mr. Smith declined this, and negotiations are now going on. Some of the minor conditions at present insisted upon by Mr. Smith as to judging the results, are considered by Dr. Ettles to be incompatible with a serious trial. Our readers will see, therefore, that it is not certain at present that this trial, such as it is, will ever come off. We are rather curious to know whether the time element has been taken into consideration, for, as was clearly shown during the South African war, mere visual habit often accounts for some part of a refraction defect, and it was long ago proved, as Dr. Maddox reminds us this week, that eye manipulation was capable of producing temporary amelioration such as that which follows upon change of work. This, however, is a very different thing from removal of the underlying defect, or in other words of curing cases of myopia, hypermetropia, and astigmatism.

A DISEASE IN BIRMINGHAM SIMULATING CRAW-CRAW.

A DISEASE which is very similar in many of its symptoms to craw-craw, a common affection on the West Coast of Africa, has made its appearance in Birmingham, and public attention has been drawn to it by articles in several of the local newspapers. That such a disease is present in Birmingham there seems to be little doubt, since the nematode worms have been demonstrated in the blood of several persons by Mr. J. D. Whittles, Lecturer on Dental Histology and Pathology at the University. Mr. Whittles published a paper entitled "Is it Craw-Craw?" on this subject in the *Midland Medical Journal*, 1903. The nematode worms seem to resemble filaria perstans or filaria nocturna. The chief symptom from which the persons afflicted suffer is an intense itching of the skin, especially over the shoulders, arms, and thighs, which comes on in paroxysms and which is very severe at the time. On passing the hand over the skin, a few small papules can usually be felt, but otherwise there does not appear to be any skin eruption, which is a marked symptom of craw-craw as found in West Africa. Whether this be a form of craw-craw it seems impossible to say until further work has been done on the subject. It is very remarkable indeed that such a disease has made its appearance in Birmingham, and it would be interesting to know how the patients could have been infected by this parasite.

THE PARLIAMENTARY REPRESENTATION OF THE UNIVERSITIES OF GLASGOW AND ABERDEEN.

As will be seen by a note from our Aberdeen correspondent (p. 1030), the approaching vacancy in the parliamentary representation of the Universities of Glasgow and Aberdeen is beginning to excite much attention in Aberdeen. The Right Honourable J. A. Campbell, who has represented the universities for many years past, announced last April that it was not his intention to seek re-election to Parliament. There has been no contest in the constituency for some twenty-four years. In November, 1900, a Conservative and Liberal Unionist Association for the two universities was formed under the presidency of the late Duke of Richmond and Gordon. Other Conservative associations for Glasgow and for Aberdeen selected Sir Henry Craik as a candidate. This nomination was not accepted by the 1900 Association, which on October 6th issued a letter to every graduate of the two universities recommending Professor W. R. Smith, M.D.Aberd., D.Sc.Edin., as a suitable candidate. We are informed that in response to this appeal the Committee has received communications from some 1,200 or 1,300 graduates, who have expressed their approval of Professor Smith's candidature, and intimated their desire to join the general committee to promote his election. The Universities of Glasgow and Aberdeen Conservative and Liberal Unionist Association expressed the opinion that the candidate on this occasion should be a member of the medical profession, and that he should be a graduate of one of the two universities. In arriving at the first recommendation, the Association was mainly influenced by a consideration of the following facts:—(*a*) That the Medical Faculties, important constituents as they are of the universities, had never been directly represented in Parliament; (*b*) that the medical profession was quite inadequately represented in Parliament; (*c*) that the Government was, with but one real exception, entirely without medical advice and support in Parliament; (*d*) that questions of a public health character affecting the interests of all classes of the community were frequently before Parliament, and that a medical representative of experience would be most likely to take a prominent position and reflect credit upon the conjoined Universities' constituency. In reference to the second recommendation, the Association felt that they could but yield to the general representations made to them by both Glasgow and Aberdeen graduates; that it was but an act of simple justice that the representative, on this occasion, should be directly connected with the Aberdeen University. The Association recognized the fact that the representative for the past twenty-four years had been connected with the University of Glasgow, and indeed that prior to that time, since the year 1868, when a member was first granted to the Universities, he had been a member of the legal profession, and without direct connexion with the University of Aberdeen, although a general understanding exists that the nomination should be exercised alternately in favour of a graduate of each University.

THE HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

A NEW operating theatre at the National Hospital for the Paralysed and Epileptic, Queen Square, was formally opened on Saturday last by H.R.H. the Duchess of Albany. Mr. Danvers Power, the Chairman of the Hospital, welcomed Her Royal Highness in a short speech, reminding those present that the institution had been enlarged as a memorial to the late Duke of Albany. A theatre in correspondence with modern ideas had long been wanted, but until the King Edward's Hospital Fund came forward with a donation of £500 the Board had not felt justified in commencing its erection. It was not a pretentious building, but had been constructed under the supervision of the surgical staff, met with its approval, and would fulfil all requirements for a great many years to come. The Duchess of Albany, having made a brief reply, thereon declared the theatre open, a proceeding which was followed by a short prayer from Bishop Welldon. Sir Victor Horsley then proposed a vote of thanks to the Duchess on behalf of the medical staff. They were greatly indebted to the new Board of Management of the hospital for providing this theatre, which was replete with all the requirements of modern surgery. The pathological department of the hospital was also receiving the active attention of the new Board, and a donation of £1,000 had been received from the Jessie Alice Palmer Charitable Fund for the purpose of endowing a work-table in the museum: they would thus be able to secure the services of an investigator for the important work of research. Later on in the afternoon a Harvest Festival service was held in the chapel attached to the hospital. The total cost of building and fitting the new theatre was £1,200, towards which donations are now being sought.

ENLARGEMENT OF STANLEY HOSPITAL, LIVERPOOL.

On Saturday, October 8th, an important addition to the Stanley Hospital was inaugurated by Lord Derby. The addition comprises a new operating theatre and an extension to the out patient department. The theatre stands apart from the main building, from which it is reached either through the anaesthetizing room or by a short passage opening off the main corridor, and provided at either end with closely-fitting metal doors. It has a good light from the north and east, and is painted throughout with white Torbay paint on the walls and ceilings, which are finished in Parian cement on a Portland cement ground. The floor is paved with terrazzo, the angles and edges being rounded off in the most approved fashion. The basins and sinks have been specially made, and are fitted with knee-action taps; the ventilation is by direct inlets (the air being filtered through fine sieves) and by a large extraction shaft worked by an electric fan. Adjoining the theatre, and opening from it, is the preparation room, built in the same way and containing a large sterilizer for dressings, another for hot water, and a third for instruments. The instrument case is of glass, and is conveniently fixed in the wall between the theatre and the preparation room, so that it can be viewed from either. All the rooms are fitted with electric light fixtures, specially designed by Messrs. Edison and Swan, the lamps and switches being watertight, so that they can all be washed down with the hose. The additions to the out-patient department, which was only built about three years ago, and was even then the best in Liverpool, consist of a surgeon's consulting room, two dressing rooms, and a theatre for minor operations, with two recovery rooms opening off it. There was a large attendance, and a tour was made of the wards and the new buildings, after which the opening ceremony was performed in the large out-patient waiting-room. The Lord Mayor (Sir Robert Hampson), who is President of the Hospital, occupied the chair, and explained that the new buildings had been erected at the expense of two anonymous donors. He then presented a golden key to Lady Derby, who thereupon declared the theatre and out-patient extension open "to alleviate suffering humanity and for the advancement of science." Mr. F. C. Larkin, Senior Surgeon, in supporting a vote of thanks to the two anonymous donors, said that the new theatre would relieve the surgeon of great anxiety and the patient of many risks. A vote of thanks to Lady Derby was proposed by Mr. G. B. Heyworth, Chairman of the Finance Committee, and seconded by Dr. A. Gordon Gullan, Chairman of the Medical Board. Lord Derby, in replying, expressed his satisfaction at the admirable condition of the hospital, and said that he and Lady Derby wished to give £500 to complete the equipment of the new theatre with instruments. This generous offer was acknowledged by loud cheers. The Stanley Hospital is the only general hospital in Liverpool which has a regular out-patient department in which all applicants are supplied with advice and medicine. The financial support accorded to it was for many years so inadequate that some of the wards were closed, and so the number of beds permanently occupied was not sufficient to enable the staff to claim recognition for the institution as a teaching hospital. Consequently, the valuable material for clinical study in the large out-patient department was of little use for clinical instruction. The committee has worked hard to meet the wishes of the staff in this matter, and early this year the hospital received recognition from the University of Liverpool and the other licensing bodies. We are informed that it is probable that it will not be long before a considerable extension of the out patient departments of the other general hospitals will be made so as to meet the wants of the students in the University.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The present session is the hundredth year of the existence of the Royal Medical and Chirurgical Society, and it is intended that special social and other arrangements shall be made to mark the event, of which due notice will be given. The opening meeting of the centenary session of the Society will be held at the Society's house, 20, Hanover Square, W., on the evening of Tuesday, October 25th, at 8.30 p.m. At this meeting two papers will be read on the non-epidemic form of parotitis. Mr. Rupert Bucknall will contend that the condition is due to a septic infection of Stenson's duct with the micro-organisms of the mouth, this occurring invariably in association with certain predisposing causes. The argument is based on previously published cases, together with 6 successive cases personally observed. In the second paper by Dr. B. N. Tebbs, which is based on 74 original cases, this variety of parotitis is attributed to a septic infection through the blood stream, occurring in the presence of a particular predisposing cause, to wit, suppressed secretion of the gland. With these two contrary views before the Society it is anticipated that an interesting discussion will take place. The Society welcomes the presence of visitors, who are invited to take part in the discussion. Gentlemen intending to be present may obtain abstracts of the papers on application to the Secretary, 20, Hanover Square, W.

The King, on the recommendation of the Home Secretary, has been pleased to add the name of Dr. Donkin, one of His Majesty's Commissioners of Prisons, to the Royal Commission appointed to inquire into the care of the feeble-minded.

The appointment of Dr. William Osler, F.R.S., to the office of Regius Professor of Physic in the University of Oxford is gazetted, and the paper by him published in our columns this week will therefore probably be the last at the head of which he will be described as Professor of Medicine in the Johns Hopkins University, Baltimore.

His Majesty the King has graciously consented to give his patronage to the Sanitary Institute. The Institute was founded in 1876, and it is carrying on a large work in teaching and examining in hygiene and sanitary science, both in the United Kingdom and in other parts of the Empire. It maintains in London a permanent museum of sanitary appliances, open free to the public. Its members and associates number over 3,000.

Sir Patrick Manson, K.C.M.G., M.D., will deliver an address on the significance of fever in patients from warm climates at the autumn meeting of the West Somerset Branch to be held at the Taunton and Somerset Hospital, Taunton, on Friday, November 4th, at 4 p.m. On the same evening the fifth annual dinner for medical men residing in West Somerset will be held at the London Hotel, Taunton, at 6.30 p.m., Mr. A. W. Sinclair, of South Petherton, in the chair.

Medical Graduation in Germany.—Official statistics recently published show that in the twenty universities of the German Empire, the degree of Doctor of Medicine was conferred on 611 candidates in the academic year 1903-04. The number in the previous year 730. The number of graduates in the several Universities was as follows: Berlin, 26; Bonn, 36; Breslau, 24; Erlangen, 16; Freiburg, 26; Giessen, 10; Göttingen, 19; Greifswald, 37; Halle, 12; Heidelberg, 10; Jena, 17; Kiel, 50; Königsberg, 16; Leipzig, 101; Marburg, 19; Munich, 88; Rostock, 25; Strassburg, 30; Tübingen, 12; Würzburg, 30. Among the graduates were 23 foreigners, distributed as follows: Berlin, 7; Freiburg, 2; Königsberg, 1; Leipzig, 3; Marburg, 1; Munich, 4; Rostock, 1; Strassburg, 2; Würzburg, 2. Nine of the newly-capped doctors were women, 2 of whom graduated at Bonn, 3 at Breslau, 1 at Freiburg, 2 at Halle, and 1 at Strassburg. Of the total number of graduates—exclusive of those who received their degree from the University of Leipzig, from which no return was obtained—6, of whom 2 were women, were marked as "distinguished"; 1 as "excellent"; 72 as "very good"; and 243 as "good."

Canada.

Professor Osler.

Canadians are, naturally, much interested in the honour conferred upon Dr. William Osler, as he always remained a Canadian and took the deepest interest in that country and in all that concerned the profession there, while he was ever ready to do all in his power for Canadians. He will be much missed at their Medical Associations, while Baltimore, which was the Mecca of young post-graduate students on this side of the Atlantic, has lost its greatest attraction. All will concur fully in what the *Telegram* (Toronto) says:

Greatness, on the line of Dr. William Osler's genius, is difficult of attainment and unapproached in the blessings it conveys to suffering humanity. Such greatness is not honoured with the applause that rewards other and cheaper types of human greatness. But medical science has her heroes no less renowned than those of art or literature, sport or finance, and William Osler is a sovereign figure in the realm of modern medicine. There is, perhaps, no greater living Canadian than Dr. Osler, if greatness is measured by its humane and helpful qualities. Canada is honoured in the honour that comes in King Edward's appointment of Dr. Osler to the place of Regius Professor of Medicine at the University of Oxford.

The North-West Territories.

The annual report of the Department of Agriculture of the North-West Territories for the year 1903, just published, contains a great deal of interesting information with regard to the conditions of existence in this land, which is so rapidly being settled from all parts of Europe and the United States. Tables are supplied, giving the mean daily temperature, precipitation, and crop returns for a large number of stations scattered over this immense tract of land. For example, Edmonton, N. lat. 53.33, W. long. 113.30, 2,158 ft. elevation above sea level, has a mean February temperature of 17.6°, June, 60.3°; an average precipitation of 18 44 in., and a wheat yield of 20 bushels an acre. The total number of settlers who entered during the year was 51,704 and the amount of land taken up was 7,952,243 acres, of which 4,488 000 were taken by homestead entries. There were a few outbreaks of infectious disease during the year, and on account of the sparse population of many parts of the country, it has been hard to deal with them effectively, but the mortality has not been high. A considerable number of cases of small pox have been reported among the Indians and half-breeds. The total number of deaths was 1,681; from epidemic diseases 291; there were 139 deaths from tuberculosis. The number of births was 4 556; marriages 1,521. There are now twelve public hospitals in these territories, and, in spite of the drawbacks of sparse population and primitive conditions, they are doing good work; they are greatly needed in a country where distances are so great that it is practically impossible for serious cases to receive adequate attendance in any other way. A fund—owing its existence to the kind efforts of Lady Minto, and bearing her name—has been raised in the older parts of Canada for the assistance of this work, and, though insufficient to meet all demands, has helped very materially in the solution of the problem.

Ontario.

The twenty-second annual report of the Provincial Board of Health of Ontario for the year 1903, issued recently, contains a great many items of interest. The problems arising in connexion with medical attendance and inspection in the large unsettled districts, in the lumber woods, and in mining and construction camps, are different from those met under ordinary circumstances, and the account of the way in which they have been met and overcome will be of value in any country where the conditions are at all similar. An Act was passed by the Legislature a short time ago requiring firms employing labour in places where no medical man was resident to contract with a physician, and to supply adequate hospital accommodation. The report of the inspector shows that a large number of firms have adopted this plan, and it is found very satisfactory, while it supplies occupation for many young men entering their professional career. The report of the bacteriologist shows that during the year 3 126 specimens were examined, including 1,153 specimens of sputum in cases of suspected tuberculosis.

Sanitary Statistics of Toronto.

The report of the City Engineer of Toronto for the year 1903 is to hand, and contains many interesting facts as to the management of a city which is famed throughout a continent for its clean streets and generally healthy conditions. The scavenging department occasioned an expenditure of 89,001 dollars for the collection and disposal of 157,222 loads. Citizens are required to provide proper receptacles for garbage, and ashes are to be kept separate. Factory refuse up to a certain amount is removed free of charge; for more than the stated amount a charge is made. The garbage is disposed of in two destructors; about 50 tons are incinerated during the twenty-four hours. In the summer no fuel is required; in the winter about half a ton of slack is needed to keep the fire going; the residue averages about 7 cubic yards a day, of no commercial value, and the cost of maintenance is 12 30 dollars a day. The consumption of water per day was 29 933 347 gal., an increase of 10 per cent. over last year, and the total cost of operating the pumping station was 93 591 dollars. The streets were watered by trolley operated by the Street Railway Company and by carts; in all 77 210,750 gal. of water were used. Cleaning streets, including removal of snow, cost 66 578.78 dollars. All dogs are required to have the tag provided by the city showing that the licence has been paid, and an annual raid is made for the capture of unlicensed dogs: 233 were captured, of which 77 were released, the rest being destroyed in a lethal chamber. The following statistics are given: The population of the city is about 250,757; there are 265,260 miles of streets and 84 miles of lanes; there are 238 miles of sewers and 266,955 miles of water pipes; there are 22 public parks, containing 1,329 acres.

The University of Toronto.

The session of the University of Toronto will open on October 3rd, Dr. J. A. Temple delivering the opening lecture in the Faculty of Medicine. The Toronto General Hospital has received a gift of 100 000 dollars from Mr. Cawthra Mulock for the building, equipping, and furnishing of a new out-patient department in which the poor can receive the best treatment, and which will increase in a marked degree the clinical facilities of the Medical Department of Toronto University.

Quack Advertisements.

On August 2nd, at the close of the session of the Dominion Parliament, Sir William Mulock introduced an amendment to the Post Office Act, in order to restrict quack advertisements, which read as follows:

It shall not be lawful to transmit by mail any books, magazines, periodicals, circulars, newspapers, or other publications which contain advertisements representing marvellous, extravagant, or grossly improbable cures, or curative or healing powers, by means of medicines, appliances, or devices referred to in such advertisements.

Naturally, a good deal of opposition was at once developed to the measure, and the leader of the Opposition asked that its consideration be deferred until next session, as it was far-reaching in its effects, and time had not been afforded for its consideration. To this the mover acceded, but the gratitude of the profession is due to him for the introduction of this much-needed legislation.

Scotland.

Opening of the Medical Session in Glasgow.

The medical classes at the University of Glasgow and the extramural colleges were resumed for the winter session on Thursday, October 13th. As is usual, there was no formal opening ceremony. At the University, however, several important ceremonies will take place within the next week or two. In addition to the ordinary autumn graduation ceremony, there will be the formal installation of Lord Kelvin as Chancellor of the University, in place of the late Lord Stair. It has also been arranged that the Lord Rector, the Right Honourable George Wyndham, Chief Secretary for Ireland, shall deliver his address to the students early in the session.

Glasgow and Aberdeen Universities.

Representation in Parliament.

Considerable surprise has been expressed, particularly in University and medical circles, at the recent issue of a circular announcing the selection of Professor W. R. Smith, London, as Conservative and Unionist candidate for the representation of the above Universities in Parliament. Little, if anything, of this matter was known in Aberdeen until the circular was sprung upon the members of Council, and, though the

signatories of the circular are well-known men, it seems doubtful if, in the peculiar circumstances of its origin, it can carry much weight. The qualifications, both legal and medical, of Professor Smith for such a position are undoubtedly strong, and the fact that he is a graduate of one of the Universities would not detract from these: at the same time it would appear to have been advisable that the associations in Aberdeen and Glasgow should have been consulted before such an appeal was issued. Not only so, but the fact remains that in May last, on the announcement of the retirement of Dr. J. A. Campbell, M.P., the officials of the Gla-gow and Aberdeen Conservative and Unionist (University) Association met and agreed to adopt Sir Henry Craik, Secretary of the Education Department, as their candidate at the next Parliamentary election, and it is known that they still adhere to this recommendation. Moreover, Sir Henry Craik has also expressed his willingness to contest the seat. Many of the statements in the circular will meet with the approval of medical graduates, particularly in regard to the importance of increased representation of the profession in Parliament, but this method of going about the matter would not appear likely to carry success with it. Further developments will certainly be looked forward to with interest.

Recurrence of Small-pox in Edinburgh.

After having enjoyed a prolonged period of immunity, Edinburgh has again to record the existence of small-pox. At a meeting of the Town Council held on Tuesday, October 11th, the Convener of the Public Health Committee said he regretted to report a case that had come from the Larbert district.

Edinburgh Royal Infirmary.

At the weekly meeting of the managers on Monday, October 10th, Dr. W. Macrae Taylor was appointed Clinical Tutor in the wards under the care of Mr. C. W. MacGillivray, and Dr. J. D. Lithgrow, Clinical Tutor in Dr. R. Mackenzie Johnston's (ear, nose, throat) wards. Both appointments are for the ensuing winter and summer sessions. The following appointments for six months were also ratified as from October 1st:

Resident surgeon—Duncan Lorimer, B.Sc., M.B., Ch.B, to Dr. D Berry Hart, in place of D. Brown, M.B., Ch.B. (resigned). Non-resident house surgeon—Kenmure Melville, M.D., Ch.B., to Mr. Berry, in the eye department. Clinical assistants—E. M. Lithgow, M.B., Ch.B., to Dr. George Mackay, and William Darling, M.A., M.B., to Dr. Philip; John Sullivan, M.B., Ch.B., to Dr. Graham Brown, in the medical waiting-room.

Ireland.

Irish Workhouse Association.

The annual conference of the Irish Workhouse Association was held in Limerick recently, under the presidency of Mr. R. Coll.

Bishop O'Dwyer, in a letter, expressed his conviction that workhouses were utterly unfit places in which to educate children. He believed that the two systems—a central school and boarding-out—had advantages and disadvantages, and that both should be maintained to supplement each other.

Dr. Conolly Norman read a paper on the treatment and classification of lunatics. He believed that in certain districts in Ireland the disused workhouses could be employed as centres from which lunatic patients could be boarded in the houses of the people of the neighbourhood. In other countries family care of the insane had been found to be perfectly humane and economical. In Scotland 2,631 were under family care, 954 being placed with relatives. The cost was 7s. a week, or £18 4s. a year. The average cost of the patients in asylums in Scotland was £32 per head. Those boarded with relatives cost 5s. a week. It was better for patients to be placed in family surroundings—better physically, mentally, and socially.

Canon O'Brien differed as to the wisdom of the system suggested.

Dr. Hayes would not place the insane with relatives. He thought lunatics in houses were, generally speaking, in better health than those in the asylums.

Lord Monteagle said if there was one point on which they were all agreed it was that these patients should be got out of the workhouses. He hoped Dr. Conolly Norman's suggestion would be widely considered. The economical advantages were scarcely less important than the health considerations.

Dr. Norman, in reply, said the institution system was bad for the patients, the ratepayers, and the staff.

Dr. Alfred E. Boyd, of Dublin, read a paper on the treatment and classification of pauper consumptives. In 1902, 11,837 died of tuberculosis in Ireland. There were no sanatoriums in this country for the very poor, but he hoped one in Cork and another in Belfast would soon be available. Provision should be made in the workhouses for the complete isolation of consumptives. In over half of the Irish workhouses this separate accommodation was now provided. He urged that in any schemes for amalgamation of Poor-law unions provision should be made for the setting apart of existing buildings—remodelled—for the open-air treatment of such cases as were likely to be benefited. He described the methods followed in Glasgow and Liverpool, and said he believed the death-rate from tuberculosis could be materially reduced.

St. Vincent's Hospital, Dublin.

At the opening of the winter session at St. Vincent's Hospital, Dublin, on Wednesday, Dr. M. McHugh delivered the introductory address. He dealt with the position and demands of the dispensary doctors, who, he said, numbered, roughly, 50 per cent. of the profession in Ireland. The claims which had been formulated were certainly legitimate. If they erred at all, it was on the side of moderation.

Mr. O'Neill, Chairman of the Dublin District Council, in moving a vote of thanks to Dr. McHugh, said that whenever the local bodies made an effort to do even a minor justice to the unfortunate dispensary doctors, the Local Government Board erected every barrier and obstacle that they could possibly conceive in order to prevent these remedial measures being carried out. His advice to the profession was to organize and agitate.

Dr. Cox seconded.

The Chairman (Mr. Waldron, M.P.) thought the demands reasonable.

Surgeon-General Evatt, C.B., was moved to the second chair, and a vote of thanks was passed to Mr. Waldron on the motion of Mr. McArdle, seconded by Mr. Tobin.

Infant Mortality.

Dr. Coly Biggar, Local Government Board Inspector, has just reported upon the high death-rate among the children in the Roman Catholic Nursery of the North Union Workhouse, Dublin. He points out that in the three years ending June 30th, 1904, 1,285 children were admitted to the nursery. Many of these were admitted more than once; probably the actual number would be less than 1,000. Of these, 298 were transferred to extern hospitals for infectious diseases. During the three years there were 327 deaths of children under 2 years in this nursery, 69 died in extern hospitals, so that the total number of deaths was 396 out of probably less than 1,000 children. The causes of death showed the unhealthy state of the children admitted. He was informed that the nursery was built on the site of the old graveyard, and some time ago was infested by rats. He recommended the building of another wing and addition to the nursing staff. The report was ordered to be sent to each guardian, and a special meeting of the committee is to be held to consider it.

Meath Hospital.

The session at the Meath Hospital was opened on Tuesday by Mr. Conway Dwyer, who delivered an interesting address on "The Evolution of Modern Surgery." Sir Francis Cruise, M.D., occupied the chair. On the motion of Sir Thomas Myles, seconded by Sir Lambert Ormsby, a vote of thanks was passed to Mr. Dwyer. A similar vote to the Chairman was passed, on the motion of Sir John Moore.

Small-pox in Armagh.

The Armagh Board of Guardians are taking active steps to stamp out the incipient epidemic of small-pox. It has directed Dr. Herron, medical officer of the workhouse, to attend nightly at the workhouse to inspect and vaccinate casuals, and it has authorized Drs. Gray and Dorman to attend at the residences of persons residing in the infected areas and offer revaccination. The Board has also requested clergymen of all denominations to urge upon their hearers the necessity of revaccination. Nineteen cases of small-pox are still in hospital.

Visit of French Physicians and Surgeons to London.

The party of French physicians and surgeons who arrived in London on Sunday evening numbered over 150. Among the senior members were M. Lucas-Championnière, Professor Poirier, and M. Huchard. The party was received at the station by Sir William Broadbent and other members of the London Executive Committee. An informal reception was held the same evening at the Hotel Russell, when the register of visitors was completed.

Royal College of Surgeons.

On Monday morning, at 10 a.m., the visitors, to the number of over 150, were received at the Royal College of Surgeons by Mr. Tweedy, President, Mr. Mayo Robson, and Mr. Butlin, Vice-Presidents, and many members of the Council. Arrayed in the gorgeous robes of his office, and standing halfway up the main staircase, Mr. Tweedy welcomed his French *confrères* to the building in their own language, "Au nom de la solidarité des sciences médicales et biologiques." He observed that, in spite of a difference of languages, they all belonged to the same family, they all had Asclepios for their father, they were all co-heirs of Hippocrates and Galen, and they were all disciples of Paré and Bichat, of Harvey and of John Hunter. To the genius of the latter the adjoining museum bore abiding testimony, and, in welcoming them to the building, he invited them to inspect what that great surgeon had bequeathed to science.

Dr. Lucas-Championnière, of Paris (who was the first surgeon to introduce Listerian principles into French surgical practice), thanked the President and Council for the cordial reception that had been extended to them; whereupon the party broke up into "personally conducted" sections to visit the museum. The greatest admiration was expressed both of the building and of the beauty of the collections which it contains.

Luncheon by the Editors of the "Lancet."

A complimentary lunch was given by the Editors of the *Lancet* on Monday at the Imperial Restaurant to some sixty guests, among whom were Professor Baudry, Dr. Triboulet, Dr. Lucas-Championnière, Dr. Hallopeau, Professor Huchard, and Dr. Chauffard. On the English side were Sir William S. Church, Sir William Broadbent, Sir Dyce Duckworth, Sir Anderson Critchett, Sir Joseph Fayrer, Dr. Theodore Williams, etc.

Mr. Thomas Wakley, jun., occupied the chair. After the toast to the King and the President of the French Republic, Dr. Ogilvie, speaking on behalf of the Editors of the *Lancet*, translated into French a letter from Mr. Wakley, Sen., who regretted being unable to attend by reason of his advanced age, and referred in glowing terms to his personal experience of the French hospitals in his own student days. He expressed the hope that if the visitors did not add greatly to their medical knowledge on this occasion they would at any rate take back with them a sense of durable friendship with their English *confrères*. The letter concluded by wishing them, "*Salut, prospérité et longue amitié.*" In some gracefully-turned phrases in French Dr. Ogilvie then expressed the pleasure he and his English *confrères* felt at the presence of their visitors, and hoped they would carry away the conviction that the English *corps médical* entertained nothing but warm sympathy for their fellows across the Channel.

Dr. Lucas-Championnière recalled the sympathetic attitude of the King, then Prince of Wales, on the occasion of the International Congress in 1881, adding that things had changed during the the last twenty-five years, for he was himself then only an *interne*. Speaking as an old journalist himself, he expressed his gratitude to his English *confrères* for the peculiarly cordial reception which he and his fellow visitors had received, more especially by the Editors of the *Lancet*. He concluded by a graceful allusion to the time-honoured hospitality of the English.

Sir Wm. Broadbent proposed that a telegram of thanks should be sent to Mr. Wakley, sen.; this was enthusiastically agreed to.

Professor Poirier regretted not being able to return thanks to their host in the beautiful language of Shakespeare, but he was fain to take refuge in the language of Molière and Pasteur. He was indebted to the *Lancet* for much aliment for the brain, and to this indebtedness he must now add the *reconnaissance de l'estomac*. He desired to avail himself of the opportunity to drink with heartfelt sympathy to the health of the great Mr. Wakley and to his son, who so faithfully continued the traditions of his world-read journal. He regarded the present visit as an incident of the *entente cordiale* between the two countries, and he asked them to drink to the union of all peoples in the pursuit of science.

Dr. Triboulet bore testimony to the courtesy of their eminent English *confrères* who had met them on their arrival. He thanked the Executive Committee of Ladies who had organized excursions for the lady visitors throughout London, and he proposed the health of the members of that Committee. To judge from the power and status of the English medical press the *corps médical* in England must be a powerful body. He concluded by thanking his *confrères* in English for their hearty and hospitable reception.

Dr. Blondel said that, as Paris correspondent of the *Lancet* for the last twelve years, he was in a position to testify to the prominent position it held among the medical journals of the world—one, too, which rendered immense service in respect of public health. It did not restrict itself to practical medicine, but extended its care to the general interests of the professional man. He drank to the success of the Editors of the *Lancet*.

Dr. Monprofit pointed out that his position was probably unique, in that he was surgeon to a provincial hospital in France founded by an English King, Henry II. Duke of Anjou, who in 1150 founded and endowed a hospital at Angers. A commemorative *plaque* recording the fact was still to be seen at the hospital.

Visit to St. Bartholomew's Hospital.

A goodly number of the visitors availed themselves of the invitation to visit St. Bartholomew's Hospital on Monday afternoon, when they were received by the medical and surgical staff, assisted by a numerous body of students. They were divided into three sections, according to the departments they desired to visit and were then taken round the wards and laboratories. The general arrangement of the hospital appeared to meet with their hearty approval, special admiration being expressed for the home-like comfort of the wards and the large amount of floor space allotted to each patient.

Having partaken of tea and coffee in the magnificent Board-room of the hospital, the visitors adjourned to the adjacent church of St. Bartholomew, on the archaeological interest whereof it is unnecessary to enlarge. The Vicar, Sir Borradaile Savory, gave a brief history of the church, which was translated into French for the better understanding of the visitors.

London School of Tropical Medicine.

A number of the French physicians visited the London School of Tropical Medicine and Seamen's Hospital in the Royal Albert Docks on Monday afternoon. They were received by Sir Patrick Manson, K.C.M.G., Sir Francis Lovell, C.M.G. (Dean), and other members of the staff. The wards of the institution were first visited, and Sir Patrick Manson demonstrated cases of beri-beri, dysentery, bilharzial disease, filariasis, and other tropical ailments. Microscopic preparations of living bilharzial ova and filaria nocturna excited great interest amongst the visitors. Mr. J. Cantlie, F.R.C.S., next showed a method of dealing with tropical liver abscess in the surgical wards. After tea the Tropical School buildings were inspected, and microscopic specimens of malaria, filaria, trypanosomes, Leishman-Donovan bodies, mosquitos, and other objects of interest were displayed.

Other Hospitals.

Visits were also paid on Monday afternoon to the National Hospital for the Paralysed and Epileptic, and to the Hospital for Sick Children, Great Ormond Street; at the latter institution some time was spent by the visitors in witnessing surgical operations.

The French Hospital.

On Tuesday morning the greater number of the French visitors assembled at the French Hospital, Shaftesbury Avenue, where they were received by Dr. Vintras, Mr. Edmund Owen, and other members of the medical staff.

Dr. Triboulet, in introducing the party, said that it was very agreeable to Frenchmen to find in that building a little

corner of their native land, and to know that their poor compatriots who found themselves in London could seek refuge and help there.

Dr. Vintras, in welcoming the visitors, expressed the pleasure with which he met his fellow-countrymen there, and then led the party over the building and through the various wards.

The University of London.

Visit to the Laboratories of Advanced Physiology.

On Tuesday morning many of the visitors found their way to the University of London, Imperial Institute, where they were receievd by the Vice-Chancellor, Dr. Pye Smith, and the Principal, Sir Arthur Rücker. They were conducted to the laboratories of advanced physiology, which are situated on the top floor of the building. The circumstances leading to the foundation of the laboratory were explained to them in an address by Dr. Waller, who said that it was owing to the public-spirited action of the physiologists of London, who had supported the university by undertaking to deliver lectures gratuitously, by the action of the university itself in allocating valuable space for the purpose, and through a timely gift of £2,000 from Mr. Walter Palmer, that the nucleus of a school of advanced physiology had been brought into existence. The example set by physiologists had been followed by the teachers of botany, who gave similar courses of lectures at the Physic Garden, Chelsea, and by the zoologists who had likewise combined to give a course of lectures. It was, he considered, a most hopeful sign that in the new univer-ity the highest departments of science would be fully dealt with by masters of their subjects. The various rooms comprising the laboratories were then inspected, and Dr. Waller gave a demonstration on chloroform anaesthesia.

Luncheon given by the Dean of the Medical Faculty and Mrs. Butlin.

A complimentary luncheon was given by the Dean of the Faculty of Medicine of the University of London and Mrs. Butlin to practically the entire contingent of our visitors, including the ladies of the party; so that as the company included many members of the profession in London, the entertainment attained very large proportions, one of the large Whitehall Rooms being filled to repletion.

After luncheon, Mr. Butlin addressed the company in the French language, and said that Mrs. Butlin and he felt much flattered at this response to the invitation. The Medical Faculty of the University of London was still very young; indeed, it only came into being some four years ago. This visit was consequently the first occasion that had presented itself for an act of international courtesy. People talked a good deal of universal peace and of the friendship of nations in aid whereof they had international treaties, conferences of diplomatists, and arbitration courts. All these means were excellent, but the visit of their French *confrères*, so spontaneous and so well-conceived, would, he thought, do more to promote the amicable relationship of the two nations and for peace than all the treaties and arbitration courts in the world. They owed this opportunity to science, which took no cognizance of race, country, or frontiers. The presence of the charming and gracious ladies who honoured them with their company contributed greatly to the success of the reunion. He asked their indulgence for addressing them so imperfectly in their own language, seeing that they had faced the perils of the Channel passage and the irksomeness of a long journey. He would, however, point out to them that if his words were ill-chosen and worse pronounced, they came from the heart, and, in drinking to their health, he addressed to them his respectful and sincere homage.

Mr. Butlin's speech was received with a triple round of applause, and, when that had ceased, the Toastmaster requested silence for

Dr. Lucas-Championnière, who said he proposed a toast to Mrs. Butlin and to the Dean of the Faculty of Medicine. He said he was glad to find himself once again in England among the scenes of his youth, with the souvenir fresh in his mind of the wonderful English hospitality, and of the friendships which he had formed with his contemporaries. He thanked their host and hostess not only for their splendid reception, but also for the fact that this trip had rejuvenated his heart by making him feel young again—a sentiment that might not appeal to the ladies who were listening, but which would possibly be appreciated by men of his own years. He referred to the fact that Mrs. Butlin had gone all over France on foot, while Mrs. Makins had done the same thing on a cycle, so that they probably knew France better than many French women. He assured his host that their warm reception would remain graven in the hearts of himself and his fellow-guests, and he urged the younger among the latter to carry away from England the three things he had prized in his youth—first, science, much science, for he was proud to say that French surgery had made its great progress after his trip to England; secondly, the friendships of many of their English colleagues, many of whom, alas! were since dead, so that he now met their pupils and successors; and, lastly, he would impress upon them the desirability of taking back with them, or of acquiring a knowledge of, the English language, which he hoped they would learn to speak better than he did himself.

Professor Poirier then, on behalf of his fellow countrymen and countrywomen, tendered his warmest thanks for the magnificent reception with which they had been honoured, not only on the present but on various other occasions, notably at the splendid scientific institutions which they had been privileged to visit. In the short time at their disposal they had already seen a great deal. They had previously been enabled to appreciate the scientific work of their English colleagues through the press, but now they had the advantage of knowing them personally, so that in future to their admiration for their scientific attainments would be added a feeling of affection. He eulogized the individual initiative that had done so much in England, and could not but contrast it with their own organization which depended entirely on the State. It was not for him to institute any comparison between the two systems, or to discuss their respective advantages; but he certainly thought that the republican spirit might advantageously copy certain traditions of English monarchy. If they had to learn some things, it was also necessary to unlearn certain others. In France they were taught that the Englishman was phlegmatic and cold. He asked them to examine the Englishmen among them under the microscope, and to correct their views on the subject. They had all admired the English surgeon, who preserved complete *sang-froid* throughout the most difficult and trying operations, but this was a quality, not a drawback. He knew their chairman by reputation, but instead of the dreamer he had imagined he found a bright and genial comrade, whose delicate attention did not cease with the amplification of the *menu*, but who even carried his courtesy into the table decoration, which comprised the tricolor that recalled their own land. He hoped the two countries would in future march heart to heart, hand in hand, in the community of feeling of which the conjoined flagstaffs on the *menu* were the emblem. In wishing their entertainers health and prosperity he asked his fellow-guests to join him in drinking to the health of the amiable band of ladies who had contributed their amiable smiles and anatomical perfections to grace this auspicious occasion. Speaking on behalf of the French ladies present, he begged to assure their English sisters of their grateful sentiments. He concluded by asking them to join him in drinking to the future greatness and prosperity of the young Faculty of Medicine of the University of London.

Mr. Butlin, in acknowledging the toast, said that Mrs. Butlin and he were greatly touched by the remarks which had fallen from the lips of Professor Poirier. He desired, however, to say that all credit was due to Mrs. Butlin, who had prepared everything—even to the tricolor on the table. She had done that, not for his personal satisfaction, but because she loved France and the French.

St. Thomas's Hospital.

One section devoted the greater part of the afternoon to the inspection of St. Thomas's Hospital, where they were received by Mr. Wainwright, the Treasurer, Messrs Minet and Bonham Carter on behalf of the Governors, as well as by Dr. Sharkey and Mr. Makins. The elaborate arrangements for the filtration of the air supplied to the theatres and out patient department excited general astonishment, and much interest was displayed in the application of the Finsen light treatment. The long-drawn corridors of the huge building gave the visitors a good idea of its extent. They were obviously much impressed by the tasteful decoration of the children's wards and by the general air of comfort and happiness that surrounded the little patients. The party then split up, some to visit the operating theatres, some to inspect the laboratories, and others to be shown cases of medical interest in the wards.

Guy's Hospital.

A visit was also paid to Guy's Hospital, where the party was received in the Board-room by Mr. Cosmo Bonsor, the

Treasurer, Lord Revelstoke, and the members of the medical and surgical staff. The visitors were then conducted over the out-patient department, wards, operating theatres, the Gordon Laboratory, the pathological and anatomical museums, the dental department, the College, the Wills' library, and the nursing home.

St. Mary's Hospital.

At St. Mary's Hospital the visitors were received by Sir William Broadbent and by Dr. H. A. Caley, Dean of the Medical School, other members of the staff present being Dr. J. Broadbent, Dr. S. Phillips, Mr. Juler, and Mr. Spillsbury.

A demonstration was given by Dr. A. E. Wright, Pathologist to the hospital, assisted by Dr. W. Bulloch, of a number of cases in illustration of the effects which may be obtained both in various staphylococcal skin affections and in tuberculous disease by the use of vaccines of the corresponding micro-organisms. Some of the cases shown had proved absolutely intractable to all other treatment, but appeared to be entirely cured after a course of inoculations as practised by Dr. Wright. In addition to showing the cases, Dr. Wright gave a brief description in French of the experiments which had led him to formulate the treatment and of the considerations which underlay it. These concern the interactions which occur between the cocci and bacilli in question and the elements of human blood; some account of them was given by Dr. Wright at the discussion on Immunity at the meeting of the British Medical Association at Oxford, while a complete record of them is contained in two papers by Dr. Wright and Captain S. R. Douglas, accepted by the Royal Society in July. In the course of the necessarily brief explanation of a very intricate subject which Dr. Wright gave to the French visitors, he showed that the power of a human being to recover from the invasion of a pathogenic organism depended upon the extent to which his tissues proved inimical to the development of the latter; whatever power he possessed depended upon the bactericidal properties of the blood, and these again upon the presence of opsonins and, in a case of tuberculosis in particular, of tuberculotropic elements in the blood. The former was a term which he had coined to denote a condition in the blood serum which so acted upon the bacteria as to render them liable to phagocytosis by the corpuscles, while tuberculotropic was a phrase which, in accordance with the scheme of terminology introduced by Ehrlich, he used to connote the property possessed by certain elements of the blood of entering into chemical combination with the tubercle bacillus. Dr. Wright further showed that the potency of the properties described could be increased by the use of suitably prepared vaccines, and stated that that which he had so far employed was a modification of TR. tuberculin prepared by heating the latter to 60 C. for one hour and then diluting it with sterilized salt solution containing 0.25 per cent. lysol. Before commencing treatment he always determined the existing opsonic power of the patient's blood and, reinoculating every ten days, retested his blood on each occasion, expressing the result as a curve.

Middlesex Hospital.

The visitors to the Middlesex Hospital were received by Dr. Pasteur and Dr. Pringle, and were shown the bacteriological, chemical, and clinical laboratories. A visit was then paid to the cancer wards and the cancer research laboratory, where Dr. Lazarus-Barlow explained the objects of the inquiries now being carried out, and gave a microscopical demonstration.

Other Hospitals.

Visits were also paid to the Charing Cross Hospital, King's College Hospital, Alexandra Hospital for Children with hip disease, the Samaritan Free Hospital for Women, the St. Mark's Hospital for Fistula, the West London Hospital, Queen Charlotte's Lying-in Hospital, the Royal London Ophthalmic Hospital, and the Medical Graduates' College and Polyclinic.

Islington Infirmary, Highgate.

As a typical example of one of the modern poor-law infirmaries of the metropolis the visitors were invited to inspect St. Mary's, Islington, Infirmary, Highgate Hill. In spite of the yellow fog on Tuesday morning which interfered with the arrangements a number of visitors eventually found their way to this institution where they were received by Dr. A. H. Robinson, the Medical Superintendent, the Chairman and other members of the Committee of the Hospital.

The Lister Institute.

On Wednesday morning a party of visitors were received by the staff of the Lister Institute, and were shown over the laboratories. Among the visitors were several representatives of the Institut Pasteur, Paris, and Professor Netter of the Paris Institut d'Hygiène. Special interest was displayed in the apparatus for triturating pathogenic micro-organisms by the aid of liquid air, devised by Dr. Macfadyen and Mr. Sydney Rowland, the object of the process being to abstract and isolate the soluble toxins of the various bacteria with a view to their therapeutical application. The process is still in the experimental stage, but it constitutes a novel departure in this line of research, hence the interest with which the various steps were watched. In the afternoon a small party visited the serum farm at Elstree.

Imperial Cancer Research Laboratories.

On Wednesday a party visited the laboratories of the Imperial Cancer Research Fund where the general work of the laboratory was explained and demonstrations were given in illustration of the distribution and character of cancer in the vertebrates and of the nature of the transmissibility of cancer.

Pathological Laboratory of the London County Council's Asylums at Claybury.

On Wednesday a party of the French physicians and surgeons was entertained to luncheon at the Claybury Asylum of the London County Asylums by the Chairman of the Pathological Subcommittee of the Asylums Committee of the London County Council, Mr. E. J. Horniman. The party left Liverpool Street Station at about 12 o'clock, and on arriving at Woodford found conveyances ready to take them up to the Claybury Asylum, where the guests were received by Dr. Cooper, Chairman of the Claybury Asylums Committee, and by Mr. E. J. Horniman, each guest being introduced by Dr. F. W. Mott, the Director of the laboratory.

The visitors were then conducted by Dr. Robert Jones, the Medical Superintendent, round the asylum, after which the company sat down to lunch in the recreation room of the nurses' quarters. Among those present were Dr. Pierre Marie, Dr. Chassevant, Dr. Maurice Villaret, Dr. Octave Crouzon, Dr. Gustave Scherb, Dr. Raoul Bensaude, Dr. Andre Léri, Dr. Leon Tixier, Dr. Marcel Briand, Dr. G. Renaud, Dr. Jeannel, Dr. Edouard Margnat, Dr. Hugo Marcus, Dr. Legry, Dr. Touchard, Dr. Maute, Dr. Sabrazès, Dr. Netter, and Dr. Jousset.

Mr. Horniman, after lunch, welcomed the French visitors not only in the name of the Pathological Subcommittee o which he was Chairman, but also on behalf of the London County Council. He thanked them heartily for having come so far to see the laboratory.

Dr. Pierre Marie, who sat on the right of the Chairman, said that they were all very happy to come to Claybury, and were delighted at their amiable and hearty reception. Such was the warmth of their welcome that they could not feel they were strangers, but that they were acknowledged as members of the one great family of medicine.

Dr. Hugo Marcus then proposed the toast of "The London County Council," whose works, he said, all intelligent men must so much admire.

Dr. Cooper assured the visitors that the London County Council were proud of being associated with the representatives of French medicine who came from a nation which had always been foremost in science and literature, and had done so much in the cause of humanity.

Dr. Scherb proposed the health of Dr. Robert Jones, the Medical Superintendent, by whose courtesy the luncheon was served in the asylum buildings: and Dr. Jones replied.

The company then repaired, under the direction of Dr. Mott, to the Pathological Laboratory, which has the distinction of being the only municipal pathological laboratory in England. The pathologists among the visitors evinced the greatest interest in the chemical, histological, psycho-physical, and photographic departments. The best-appreciated part of the visit was a demonstration by Dr. Mott of some specimens of trypanosomes from the blood of sleeping-sickness patients. There was exhibited a specimen of a trypanosome in the blood of a European who died of sleeping sickness, and a small vessel from the medulla of a rabbit inoculated with trypanosoma evansii. Dr. Mott pointed out that there was

no inflammatory reaction around the vessel. There were several other specimens from cases of chronic sleeping sickness demonstrated, and then Dr. Mott showed his visitors another series of specimens of nickel-carbonyl poisoning. These specimens numbered twelve in all, and after they had been seen the visitors passed on into another department, where eleven specimens, showing the visual area of the cortex and the line of Gennari and its termination, detained the company for some time. Surprise was expressed by many of the visitors that such a valuable laboratory, drawing its material from the London County Council Asylums, should be practically wasted for the purposes of general instruction by being located at such a distance from the metropolis. Surely, they asked, it would be possible to overcome the legal difficulties connected with a removal to London, and it was not easy to explain satisfactorily how it was that the laboratory was not situated in town and affiliated to the University of London. A pleasant visit was concluded by a drive back through Epping Forest to Woodford Station.

The London Hospital.

The London Hospital was visited on Wednesday afternoon, when the party was received by a number of the members of the medical staff, and two representatives of the House Committee. The whole of the hospital was inspected, including the large receiving room, the out-patient department, with the attached special departments, and those for treatment by the Finsen light and *x* rays. The party then visited the Medical College, where they were received by Mr. Munro Scott, Warden, and were shown over the laboratories and lecture rooms; subsequently a visit was paid to the nurses' home.

Some of the party afterwards paid a visit to the Whitechapel Infirmary in order to institute a comparison between the wards there and at the general hospitals.

University College Hospital.

At University College Hospital surgical operations were witnessed on Monday and Tuesday, and a further party of visitors inspected the general arrangements of the hospital on Wednesday, when they were received by the Dean, Dr. Sidney Martin, and other members of the staff.

King Edward VII Hospital for Sick and Wounded Officers.

On Wednesday morning an intimation was received that the King had graciously extended an invitation to the French visitors to visit the King Edward VII Hospital for Sick and Wounded Officers, in Grosvenor Place, established during the first year of the South African war through the efforts of Miss Keyser. A party of some forty visitors was received in the afternoon by Sir William Broadbent, Sir Thomas Smith, Mr. Makins, and other honorary members of the medical staff; they visited the wards and operating rooms. The visitors expressed their admiration at the manner in which a private house, while retaining its comfortable aspect, had been converted to the purposes of a small hospital.

Other Hospitals.

On Wednesday visits were paid to the Hospital for Consumption, Brompton, the St. Peter's Hospital for Stone, and the City Orthopaedic Hospital, the Chelsea Hospital for Women, the Throat Hospital, Golden Square, and the Victoria Hospital for Children. On this and other days many of the visitors availed themselves of the opportunities afforded of observing surgical technique as followed by the hospitals at which operations had been previously announced.

The Ladies' Committee.

Some of the members of the party were accompanied by ladies, and the task of providing for their amusement and comfort during the visit was undertaken by a special committee of ladies.

On Wednesday the lady visitors were entertained at luncheon at the Zoological Gardens by Mrs. Garrett Anderson and members of the teaching staff of the London School of Medicine for Women.

While the male visitors were joining in the feast of reason and the flow of soul at the dinner on Wednesday evening at the Hotel Cecil, the ladies of the party were taken to see the *Entente Cordiale* at the Alhambra, where fifty seats had been retained, and the management had generously placed two boxes at the disposal of the Ladies Committee.

The Banquet.

The visit was brought to a close on Wednesday evening, when the French guests were entertained at dinner at the Hotel Cecil by many members of the medical profession in London; covers were laid for about 400. The chair was taken by Sir William Broadbent, and among those present were the Duke of Abercorn, the Vice-Chancellor of the University of London, the Dean of the Medical Faculty of the University of London, the Principal of the University of London, the President of the Royal College of Physicians, and the President and Vice-Presidents of the Royal College of Surgeons.

Among those present also was Dr. Sillonville, of Aix les Bains, to whom is due, in the first place, the idea of the visit. He mooted the project during a visit to London last March, and acted as intermediary between the Committee formed subsequently in Paris and London.

A congratulatory telegram was received from the members of the Continental Anglo-American Medical Society, who held their annual meeting in Paris on the same day.

At the end of dinner Sir William Broadbent rose and said:

The King.

Messieurs mes Confrères Français et Anglais,—Mon premier devoir est de vous prier de boire à la santé du Roi, mon Maitre. Il serait bien assez de dire tout simplement "Le Roi," comme l'ont fait mes collègues, M. Butlin hier, et M. Wakley avant-hier; ce serait même la manière la plus effective de présenter ce toast, mais je demande la permission d'ajouter quelques paroles. Nous avons bien le droit d'être fiers de notre Roi. Comme Prince de Galles il s'est fait une haute idée de ses devoirs envers la nation et il s'est dévoué à son service, mais il a fallu le champs d'action plus large, la haute position du trône, pour montrer à la vue du monde entier les qualités d'un grand homme d'état, pour developper ses idées vraiment royales et pour exercer les vertus mâles et positifs du monarque. Vous ne savez probablement pas que sa Majesté est médecin et chirurgien. Je ne dis pas qu'il exerce, mais il a fait l'honneur aux deux collèges de médecine et de chirurgie d'accepter les titres de Honorary Fellow of the Royal College of Physicians et de Honorary Fellow of the Royal College of Surgeons, et il prend ses devoirs très à coeur, et s'occupe de tout ce qui appartient aux sciences médicales et à la santé publique. Sa Majesté est patron et a été le Président de l'Association Nationale contre la Tuberculose, le patron aussi du Cancer Research. De plus il prête son influence puissante et une assistance matérielle très importante aux hôpitaux de Londres. Il a eu la grande et belle idée d'instituer le King Edward VII Hospital Fund qui leur distribue £50 000 par an.

Sir William Broadbent then read the following telegram, received from His Majesty the King, signed by Lord Knollys: "I am commanded by the King to inform you that he has noticed with great satisfaction that so large a number of French professors, physicians, and surgeons have come to England to inspect the hospitals in London. His Majesty has always taken a warm interest in these institutions. He has observed, therefore, with much gratification the success which has attended the visit of these gentlemen, and he hopes that mutual benefit to both countries will ensue from it. The King remembers with great pleasure that on the occasion of the International Medical Congress in London he had an opportunity of making the acquaintance of their distinguished countryman, the late M. Pasteur."

The reading of the telegram was received with loud cheers, and the following answer was sent to His Majesty: "Au nom des médecins Français venus à Londres le Professeur Lucas-Championnière, président, et les professeurs Huchard, Poirier, et Chauffard, de la Faculté de Médecine de Paris, prient sa Majesté d'agréer l'expression de leurs sentiments les plus respectueux et la remerc m nt de son gr ac eux message."

Sir William Broadbent, resuming, said: Il n'est pas nécessaire de vous dire combien notre Roi aime la France; c'est entendu de tout le monde. Sa Majesté connait bien son Paris, et s'est souvent promené incognito sur les boulevards; souvent aussi il a assisté aux courses des Yachts sur le littoral de la Méditerranée. Il a témoigné son intérêt dans votre visite par le télégramme que j'ai eu l'honneur de recevoir. Mais Sa Majesté a des droits encore plus sérieux et plus élevés à notre admiration et à notre révérence. Il y avait un moment où de sombres nuages se sont montrés dans l'Est; il était à craindre que les sentiments des deux nations ne suivissent nos alliances opposées; alors le Roi a fait sa mémorable visite à Paris. Il s'est fait le paratonnerre de

l'Europe; l'orage a été conjuré Le Roi a déjà gravé son nom sur la page de l'histoire, Edward VII the Peace Maker. Mais si vous voulez bien regarder les livres sterling que vous portez tous dans vos poches—dont j'espère que vous avez même plusieurs, quoiqu'ils coutent 25 francs et quelques sous—vous verrez cette légende, Eduardus Septimus dei Gratia Omnium Britanniarum Rex Indiae Imperator. Vous pouvez donc, républicains convaincus, crier ici "Vive l'Empereur." En tout cas je vous engage à boire de tout votre coeur à la santé du Roi.

Je veux ajouter un petit post-scriptum au toast que vous venéz de célébrer. A la Santé de la Reine—toujours jeune, toujours très jeune—toujours belle, toujours tres belle, toujours gracieuse, toujours très gracieuse. A la Santé du Prince de Galles et de la Princesse de Galles, à la Santé de toute la Famille Royale.

This toast having been duly honoured,

The President of the French Republic.

Sir William Broadbent said: Gentlemen, we have just drunk with enthusiasm the health of the King and of the Royal Family; I have now the honour to propose a toast which I am sure you will receive with corresponding enthusiasm, the health of the "Président de la République Française." Every seven years France chooses from among her citizens a man whom she delights to honour, one who has served her well, for whom she has the highest respect, and from whom she expects the greatest service, and places him at the head of the State, makes him President of the French Republic. From that moment he represents the might and majesty of France, and takes his place with emperors and kings. This high position is at present held by M. Loubet, and we have seen with what dignity he has upheld the honour of France at St. Petersburg, at Rome, and in London. No royal visit ever commanded greater interest than that of President Loubet to London; and, whether in royal palaces or as a simple citizen driving his modest phaeton in the Champs Elysees, he commands our admiration. Gentlemen, the health of M. Loubet, Président de la République Française.

M. Daeschner, Premier Secrétaire de l'Ambassade Française à Londres, replying to the toast of the President of the Republic, said: Je remercie Sir William Broadbent des termes dans lesquels il a proposé la santé du President de la République et de la manière dont il s'est associé à ce toast, un procédé nullement extraordinaire dans ce pays ou ce toast est toujours si bien reçu. Le Président l'ajoutera aux souvenirs qu'il a remportés de la cordialité qui a caracterisé sa récente visite en Angleterre et du bon accueil qui lui a été fait en cette occasion. Je suis chargé d'exprimer les regrets de l'Ambassadeur de France de n'avoir pu assister à cette fête, ayant été empêché par des engagements antérieurs mais il m'a chargé de vous dire l'intérêt qu'il prend à cette entreprise qui réunit la profession médicale des deux pays. Il espère que la visite des médecins Français à ce pays, pratique et scientifique en même temps, aura d'heureux et bienfaisants résultats. Il aurait voulu lui-même remercier le corps médical anglais pour l'accueil chaleureux qu'il a fait aux confrères Français, accueil que MM. les Anglais savent si bien faire. N'ayant pu exprimer lui-même son appréciation l'Ambassadeur m'a chargé de ce soin et je suis heureux de le faire à sa place.

Welcome and Au Revoir.

Sir William Broadbent rose again and said: Mes Collègues et Confrères Français,—Au nom des convives autour de ces tables—au nom des médecins et des chirurgiens des hôpitaux de Londres—au nom du monde médical entier de notre pays, je vous dis "Welcome." Vous avez déjà, j'espère, entendu le mot "welcome." Je suis sûr que vous en avez senti la signification et la réalité depuis lundi matin quand le Président et le Conseil du Royal College de Chirurgiens se sont réunis pour vous recevoir, jusqu'à ce soir ou nous devons vous dire adieu. Ce n'est pas le moment de peser les résultats de la visite amicale que vous nous avez fait l'honneur de nous faire. Il en est un qui est certain—c'est de serrer encore plus étroitement les liens intellectuels de respect et d'admiration mutuels qui nous unissent déjà et d'en ajouter un autre, un lien du côté du coeur, de sympathie et d'affection. L'entente cordiale médicale entre la France et l'Angleterre existe depuis bien longtemps. Nous avons dépassé de beaucoup cet étage de l'amitié. C'est une vraie fraternité qui existe entre nous; nous sommes de la même famille scientifique; continuons donc de chercher et poursuivre ensemble la vérité, de nous rivaliser dans nos efforts pour avancer la science, et surtout de travailler pour le soulagement de nos frères souffrants! Au revoir.

Our Guests.

Dr. George Ogilvie proposed the toast of "Our Guests," as follows: Monsieur le Président et Messieurs,—Il faut que je remercie d'avance mes collègues Anglais de l'honneur qu'ils m'ont fait de me charger de l'organization du banquet, et de porter le toast à nos invités. Messieurs, vous avez dû remarquer que le menu présente un choix exclusif de mets Anglais, que nous avons abondamment arrosés de vins Français, pour les rendre moins lourds. Et vous avez vu, sans doute, que j'y ai mis en bonne place, le fameux jambon d'York, mais le comité a pensé qu'il fallait y ajouter un large morceau de langue—Ecossaise. Pour cette raison ils ont fait choix de ma petite personne. En plus, mon titre d'Ecossais vous rappellera certainement les liens antiques qui rattachaient l'Ecosse à la France. Ces liens faisaient présager ceux qui existent heureusement à cette heure entre votre pays, Messieurs, et le nôtre. Messieurs, vous avez quitté la belle France, et la Ville Lumière, le pays de Molière, de Laplace, et de Pasteur. Et vous voici dans notre petite île, la ville aux brouillards, mais le pays de Shakespeare, de Newton, et de Jenner. Vous pensiez peut-être trouver ici de froids Anglais. Vous avez été désappointés, j'espère, et vous avez vu dans notre réception tout notre désir de vous témoigner notre cordialité, et notre bonne camaraderie. Car nous sommes tous médecins—non des morticoles, dont on a dit "leur seule fin est de constater"—mais nous puisons dans notre coeur des sentiments humains pour ceux qui souffrent, car nous savons si c'est la curiosité des maladies qui fait le savant, c'est l'amour des malades qui fait le médecin. J'espère donc que votre venue parmi nous ne vous aura pas été inutile, que vous aurez tiré quelque profit de votre visite à nos musées, nos hôpitaux, et nos laboratoires, et que vous n'êtes pas encore en proie à une nostalgie a l'état aigu. On a dit souvent qu'il n'y à point de frontières pour la science. Quand deux pays comme la France et l'Angleterre sont liés par une entente cordiale, l'union est encore plus complète entre ceux qui, comme nous, travaillent pour le soulagement de leurs semblables, et à l'extension progressive de leur pouvoir scientifique. Messieurs, je regrette de ne pouvoir porter le toast avec la verve gauloise du Professeur Poirier, mais j'ai tâché de le faire avec cette fougue impétueuse qu'on appelle chez nous *ingenium perfervidum Scotorum*, et je lève mon verre à l'union entière des médecins Français et des médecins Anglais. Qu'ils continuent à marcher la main dans la main, n'ayant qu'un seul but—la grande cause de l'humanité.

In responding to the toast of "The Visitors," M. Lucas-Championnière said: Votre réception après tant de réceptions brillantes et chaleureuses me rend très difficile la tâche d'exprimer convenablement nos remerciments. Il ne rentre par dans mes habitudes d'avoir à remercier les rois mais ce n'est par la première fois que j'ai été touché par sa bonté vis-à-vis de ses hôtes. Je me rappelle qu'au Congrès de 1881 nous avons été très fiers d'être honorés de sa présence et son discours inaugural nous a fait grand plaisir. Je n'ai pas non plus l'habitude d'assister aux banquets avec un duc et je le remercie d'avoir bien voulu participer à cette fête internationale. Il me serait plus difficile encore d'exprimer mes remerciments si je n'étais beaucoup plus âgé que la plupart de mes compatriotes ici. Cela me permet de remonter au temps où je me suis présenté comme jeune chirurgien chez M. Lister, à Edimbourg, où je comptais passer trois mois. Il m'a assuré, avec la bienveillance que vous lui connaissez, que l'on ne pouvait abuser de l'hospitalité anglaise. Il me dit, "Nous ne nous plaignons jamais que vous en prenez trop mais souvent que vous n'en prenez pas assez." Il m'a dit d'apporter ma malle et qu'il aurait grand plaisir à me recevoir. Il est très cher à mon cœur et il m'a appris comment me comporter en fait de remerciments en Angleterre où l'on n'aime pas qu'on en abuse. Je dois beaucoup de mon éducation à l'Angleterre et lorsqu'on est venu me proposer de conduire cette caravane scientifique avec M. Triboulet j'ai trouvé la proposition excellente car je crois que nos deux pays sont destinés à l'union parfaite non seulement politique mais aussi scientifique—cela parceque nous ne nous ressemblons pas l'un à l'autre. La vraie amitié est basée sur ces différences. Mes amis remporteront une impression de l'esprit anglais—de l'esprit méthodique, et pratique, et c'est beaucoup, pour nos deux pays et pour le monde, car, comme vous savez, la science ne connait pas de frontières. J'ai reçu ce matin une communication de Lord Lister et je voudrais envoyer à cet homme de science émerite un salut de notre part. J'ai l'habitude de dire

que Lister n'a pas amélioré la chirurgie mais qu'il l'a créée. On m'a reproché un manque de patriotisme mais c'est la simple vérité. The orator concluded, in the English language, by expressing the hope that his French confrères would carry back to France an impression of the English people similar to that which he himself had formed in the days of his youth. He felt sure that in future they would be only too anxious to return to this country to meet once again their friends. He himself was an old man, but the memory of that occasion would remain indelibly impressed on his heart, and if Almighty God spared him he would certainly return to England, not, indeed, to such a reception as this one, but to enjoy the friendships that he had formed. He expressed to the Chairman, on behalf of his fellows, the heartiest thanks, coupled with the hope of future reunions, not only at Paris but elsewhere.

Professor Huchard, who also responded, said: M. le Président, M. le Duc, Messieurs,—C'est à Sir William Broadbent, le dévoué Président du comité anglais de cette inoubliable réception, c'est au medecin partout aimé et partout respecté, c'est à tout le corps médical de Londres et de l'Angleterre dont il personnifie si hautement la science et l'honneur, que j'apporte le salut reconnaissant et amical des praticiens Français. Je dis "praticiens," parceque je ne désire être le porte-paroles, ni d'une Université, ni d'une Académie, ni du corps médical des hôpitaux, mais des médecins de notre pays. Ils ont tous un titre égal à vos yeux comme aux nôtres, puisque tous ils aiment avec la même sincérité, avec les mêmes vibrations du cœur, nos chers confrères Anglais. Nous sommes venus ici les mains tendus vers vous, parceque nous aussi, nous avons voulu, par notre présence, consacrer en quelque sorte cette "entente cordiale" dont la nouvelle a été partout accueillie avec bonheur et avec reconnaissance; avec une infinie et une très respectueuse reconnaissance pour votre auguste Souverain dont la parole royale vient d'être entendue avec tant de recueillement, dont le nom sera grand dans l'histoire parcequ'il aura aimé les fécondes et calmes conquêtes de la paix! Nous nous réjouissons du mémorable événement qui rapproche en même temps les médecins des deux pays. Par exemple, nous n'ignorons pas qui qu'il y a, de par le monde, des alliés qui ne s'entendent pas toujours d'une façon absolument cordiale, tandis que ceux qui commencent par s'entendre sur tout ce qui peut les diviser, sont forcément plus et mieux que des alliés: des amis. Et, entre médecins, cette amitié procède souvent d'abord d'une certaine communauté de travaux, comme le démontre le fait suivant que vous me permettrez de vous rappeler, mon cher Sir Broadbent, ne serait-ce que pour vous rendre la justice que vous vous refusez trop généreusement à vous-même. Il y a quelques semaines, sans avoir encore l'honneur d'être personnellement connu de vous, vous avez bien voulu m'écrire spontanément que vous partagiez mes idées sur le rôle considérable de l'hypertension artérielle dans la production de nombreuses maladies. Votre grande modestie, unie à trop de bienveillance, vous a fait commettre une erreur: c'est nous qui partageons vos idées, et il y a plus de vingt années, alors que nous commençions nos recherches à ce sujet, vous nous aviez déjà révélé quelques uns des dangers de cette hypertension. Et c'est ainsi que, comme M. Jourdain faisait autrefois de la prose sans le savoir, nous avons fait ensemble de la bonne et scientifique diplomatie saus nous en douter, puisque l'entente cardiaque entre nous a de longtemps précédé l'entente cordiale. Peut-il en être autrement, et la science n'est elle pas le grand diplomate qui unit les peuples au lieu de les séparer, comme le rappelait encore hier votre vénéré doyen, M. Butlin, avec la belle simplicité d'une éloquence inspirée par son cœur? La science est la force, parce qu'elle est la douceur; elle est, elle doit être la messagère de la paix parcequ'elle veut adoucir et constamment épargner les vies humaines, et les frontières des nations s'aplanissent sur son large horizon, toujours infini; de sorte qu'une seule chose, que la houle rend parfois un peu amère, nous sépare maintenant: le Pas de Calais, à moins qu'un jour, une communication plus facile et plus clémente pour certains estomacs, parvienne à nous réunir plus complètement encore . . . Alors, à ce moment, comme autrefois un de nos rois s'écriait: "Il n'y a plus de Pyrénées," nous pourrons dire à notre tour: "Il n'y a plus de Pas de Calais . . . ni de ligue contre le mal de mer." Mais, je m'arrête, ayant déjà dépassé les limites de la brièveté qui est "l'âme de l'esprit," comme un de vos proverbes le dit si bien: "Brevity is the soul of wit." Laissez-moi, gentlemen, terminer par un souvenir qui ne peut vous être désagréable, et par une espérance qui remplit nos cœurs d'allégresse. Il y a quelques années c'était vers l'an 1066, si je me rappelle bien—il parait qu'avec Guillaume de Normandie nous vous avons un peu conquis, ce qui prouve que les ancêtres de nos familles datent d'assez loin. Et voilà que, depuis longtemps déjà, qu'aujourdhui surtout, par une véritable et délicate pensée de réciprocité, vous nous avez tous conquis à notre tour, de la façon la plus aimable, de la façon la plus charmante. La première conquête est pérennisée depuis près de 900 ans. Que la seconde conquête ait une égale durée! C'est notre vœu le plus cher, notre plus ardent souhait; c'est là notre ferme espérance!

Dr. Pye-Smith, who made his remarks in French, spoke to the following effect in proposing the toast of "The Faculty of Medicine of Paris": I have the honour to propose the toast of "The Faculty of Medicine of Paris," an ancient and illustrious body that has always stood foremost in our commonwealth, and is to-day as vigorous as ever. It recalls the names of Ambroise Paré, of Pecquet, of Astruc, Réaumur, Bichât, Laënnec (with his happy citation of the dictum of Hippocrates, *Pouvoir explorer est à mon avis une grande partie de l'art*), Andral, Cruveilhier (*Virgilium vidi tantum*), and those whom I had the privilege to learn from—Velpeau and Bouillaud, Claude Bernard, Trousseau, Hardy, and Charcot. I speak of those only who are no longer with us, but around these tables we see ample proof that the great traditions of the Faculty of Paris are worthily upheld by those who carry on the torch of science to enlighten and of sympathy to warm.

Et quasi cursores vitaï lampada tradunt.

But it is not only as comrades, to whom we open freely, as they always do to us, whatever improvements we make—for there are no secrets in our honourable profession—it is also as representatives of the noble nation of the French that we greet our visitors. "France, our sweet enemy," was Sidney's harshest term; and, in the frequent wars which taught each nation to view the other "with the stern joy that warriors feel in foemen worthy of their steel," there were numberless instances, from Poictiers to Fontenoy, of this mutual respect. Let me recall only two: On the bloody field of Salamanca two squadrons met, and a French trooper raised his sabre to cut down an English officer; but, seeing that he had already lost an arm, the gallant Frenchman lowered his sword to the salute and passed on to find a less defenceless foe. At the Guildhall banquet which celebrated the Coronation of our late beloved Queen Victoria, it was the Duke of Wellington who proposed the health of the Ambassador of France, his redoubtable adversary on many a contested field, but then his honoured guest at Apsley House, Marshall Soult. May I adapt these lines from Béranger?

J'ai vu la Paix descendre sur la terre,
Semant de l'or, des fleurs et des épis;
Ah, disait-elle, égaux par la vaillance,
Français, Anglais, Russe, ou Germain,
Peuples formez une sainte alliance,
Et donnez vous la main!

This meeting will, I am persuaded, foster the good understanding now so happily established between the two nations; for to know Frenchmen better is to esteem them more highly, and to converse with French ladies is a liberal education. You know the charade: "Mon premier est le premier de son espèce, mon second n'a pas de second, mon tout—je ne puis pas vous le dire."—Messieurs et confrères, I will not say Adieu, I will say, Au revoir.

Professor Poirier, responding to the toast, said: Notre réunion de ce soir, dont il me serait difficile de dire si elle est plus somptueuse qu'amicale ou plus amicale que somptueuse, nous mène à la fin de celle excursion médicale qui vivra dans notre mémoire et dans notre cœur à titre de souvenir durable et impérissable. Puisque l'heure de la séparation va bientôt sonner permettez-moi de faire devant vous, dans toute sincerité et à la bonne franquette, le bilan de notre excursion et de dire ce que nous Francais, libres, moqueurs, critiques par excellence, dans le train, sur le bateau et chez nous, dirons à nos amis et collègues de Paris, de notre réception. Ma confession sera courte, d'abord je vous dirai que nous vous quittons avec regret, avec beaucoup de regrets. Nous avons tant vu, tant admiré, tant appris, de choses intéressantes que nous sentons qu'il en reste bien d'autres dans votre immensité, encore plus belles, plus intéressantes peut-être, que nous pourrions voir à notre avantage. Le temps a été trop court, les trois jours se sont passés comme un éclair, á l'encontre de ce qui arrive à l'occasion des visites officielles ordinaires. Celle-ci nous a paru par trop courte. Après avoir exprimé ces regrets il nous reste à exprimer notre admiration pour vos méthodes, et nous ne

manquerons pas de renouveller cette expression d'admiration au sujet de nombre de choses et d'institutions. Les énumerer seulement demanderait trop de temps. Je puis cependant citer les choses qui nous ont frappés particulièrement, d'abord le caractère si parfaitement pratique de vos institutions qui s'allient à leur grandeur et à leurs buts élevés. Les résultats grandioses de l'initiatif individuel et collectif excitent notre admiration mais c'est surtout cette entente passionée qui vous caractérise, alliée au respect profond pour la religion et la tradition. Lorsque nous pénétrons dans vos salles remplies de malheureux, embellies par les fleurs et par les silhouettes charmantes de vos nurses si gracieuses, il nous semble pénétrer dans des salles enchantées. Quant au caractère amical de votre réception il m'est impossible de lui rendre justice. Notre langue Française, pourtant si riche, manque d'adjectifs et la verve gauloise reste coite, je n'en trouve pas pour exprimer suffisamment ce que j'en pense. Je ferai un vœu, que malgré le brouillard qui nous a assombri il nous restera un souvenir vivace de notre voyage. Mais que pourrons nous faire lorsque vous venez nous voir à Paris pour vous recevoir —je ne dirai pas d'une manière comparable mais même suffisante? Enfin, nous ferons de notre mieux. Nous nous consolerons le cœur avec un geste cordial, nous vous inviterons à partager notre moitié d'orange. De la part de mes honorables collègues de Paris je vous adresse nos plus profonds remerciments. Si ces sentiments passent par les lèvres ils viennent du cœur, non pas du péricarde mais du muscle, des structures les plus intimes du cœur. Il est d'habitude de terminer par un toast. Je ne sais si cela est favorable à la digestion et à l'entente cordiale entre les mets Anglais et les vins de France, mais, conformément à cette coutume je vous demande de vous joindre à moi pour boire "à le fécondité de l'union que nous faisons contre la barbarie, l'ignorance, la pauvreté intellectuelle et physique, et à la grandeur de l'humanité."

Professor Chauffard, speaking on behalf of the Professeurs Agrégés de la Faculté de Paris, said: J'offre à nos collègues de Londres l'expression de notre gratitude profonde pour la réception qui nous a été faite. Les quelques jours que nous avons passés ici laisseront à nous tous le souvenir le plus profond et j'essaierai de vous donner quelques-unes des impressions qui resteront dans notre mémoire. Assurément il n'y a qu'une science médicale dont tous également nous essayons d'être les adeptes. Mais il y a la pratique médicale et chirurgicale qui peut être très differente. Chaque peuple a sa manière personnelle de la comprendre et de l'appliquer. Eh bien, il me semble qui si nous n'avions su apprécier les traits le plus caractéristiques le but de notre visite aurait été manqué. L'Anglais est essentiellement pratique, il cherche et il trouve le moyen le plus simple d'atteindre son but. Dans vos hôpitaux nous avons trouvé partout cette ingéniosité extrême, cette immense attention au détail. L'Anglais porte partout avec lui son admiration pour son "home" et les malades dans vos hôpitaux paraissent jouer un rôle familial. Vous les considérez non pas comme des cas pathologiques mais comme des frères malheureux, comme si vous aviez un devoir double de les soigner et de les aimer en même temps. Quelles douces visions que vos salles, si propres, si intimes, avec la beauté des fleurs et le sourire de vos nurses. Il doit être agréable d'être traité et guéri dans un tel milieu. Nous avons trouvé dans votre administration hospitalière la même liberté d'allures que dans votre vie politique, dans la manière dans laquelle vous construisez vos hôpitaux, que vous les aggrandissez, et tout par l'initiatif privé, par souscriptions individuelles. Enfin, Messieurs, nous savions longtemps avant de venir ici où il fallait chercher et trouver le parfait gentleman, dont toute réunion présente de si nombreux échantillons; aussi quelle simplicité cordiale, quel accueil grandiose! Rien de tout cela ne sera oublié. He concluded his remarks in English as follows: "I invite you to drink the health of our excellent Chairman of the Executive Committee, Sir William Broadbent, of Dr. Ogilvie, and of the numerous distinguished physicians and surgeons who have organized this fête; also to the progress and greatness of the Faculty of Medicine of the University of London."

Dr. Triboulet said: Il y a ici beaucoup de figures heureuses. La seule triste figure est celle du secrétaire Français qui se trouve appelé à parler à la suite de tant d'orateurs distingués. L'idée géniale de cette excursion est venue du Dr. Sillonville et est tombé sur une terrain admirablement préparée pour la recevoir pour qu'elle devint la belle fleur que vous voyez ici, representée par l'étroite union des deux drapeaux que voici. Des ingénieurs ont beaucoup travaillé au rapprochement des deux peuples en supprimant le détroit mais les réunions comme celle-ci feront beaucoup plus qu'eux pour atteindre ce but. Cette réception a été une merveille pour tout le monde.

Concluding his remarks by a few words in English, he added: "In the name of my fellow-practitioners I am happy to tender you our best thanks, especially to the English Executive Committee, who have displayed an indefatigable zeal; also to the English ladies, who are not present, but to whom he begged to offer the assurance of "ses sentiments les plus profonds." (Applause.)

The Chairman thanked the speakers in suitable terms.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF MEETING.

A Meeting of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 19th of October, at **2 o'clock** in the afternoon.

The following Committees will also meet:

Tuesday, October 18th, 1904.—Premises and Library Committee, 2.0 p.m.—Committee on the Payment of Fees to Members of Committees attending Meetings in London, 4.0 p.m.—Arrangement Committee, 4.30 p.m. *Wednesday, October 19th, 1904.*—Journal and Finance Committee, 10.0 a.m.

October 11th, 1904. Guy Elliston, *General Secretary.*

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

BRANCH MEETINGS TO BE HELD.

Aberdeen Branch.—The annual meeting of this Branch will be held in the Grand Hotel, Aberdeen, on Saturday, October 22nd, at 1.15 p.m. Business: Minutes: Council's report: Treasurer's report: election of office-bearers for the ensuing year: selection of place for next June meeting. The members will afterwards lunch together in the hotel.—H. M. W. Gray, M.B., 5, Bonaccord Square, Aberdeen, and J. F. Christie, M.B., 230, Rosemount Place, Aberdeen, Honorary Secretaries.

Dundee District Branch.—A special meeting will be held in University College, Dundee, on Friday, October 21st, to consider certain proposed amendments of the Branch Rules, of which notice has been given. On the termination of the special meeting an ordinary meeting will be held for the consideration of medical certificates of unfitness to attend school and other business.—R. C. Buist, M.D., A. P. Low, M.B., Honorary Secretaries.

Border Counties Branch.—The autumn general meeting of this Branch will take place in the George Hotel, Penrith, on Friday, October 28th. It is proposed to have a discussion upon the Economical Value of Motor Cars in Medical Practice, and it is hoped that a considerable number of medical men will bring their cars with them, to enable members to see the different makes and judge for themselves. Papers have been promised by Drs. Sedgwick and Maclaren, of Carlisle, Dr. Edington (Penrith), and Dr. Syme (Glasgow). It is also intended that members should dine together afterwards. Details of all arrangements will be posted to each member later on.—Francis R. Hill, 62, Warwick Road, Carlisle, Honorary Secretary.

Metropolitan Counties Branch: Wandsworth Division.—An ordinary meeting will be held on Thursday, October 27th, at 3.30 p.m., at Tooting Bec Asylum, by the invitation of the Medical Superintendent. Agenda: (1) Minutes. (2) Correspondence. (3) Questions. (4) Resolutions for the Representatives meeting at Leicester. (5) A paper by J. L. Gordon, M.B.: Notes on the Certification of Alleged Lunatics. Patients will be subsequently shown. Members are invited to bring their medical friends.—E. Rowland Fothergill, M.B., Torquay House, Southfields, S.W., Honorary Secretary.

Northern Counties of Scotland Branch.—The autumn general meeting of this Branch will be held in the Cluny Hill Hydropathic, Forres, on Saturday, October 22nd. Members having cases to show, or desirous of reading papers, will oblige the Secretary by intimating their intention of doing so before October 15th. Notices will be sent to members intimating arrangements.—J. Munro Moir, M.D., 4, Ardross Terrace, Inverness, Honorary Secretary.

South-Eastern Branch: Croydon Division.—The next meeting will be held at the Cock Hotel, Sutton, on Thursday, October 20th, at 4 p.m., Mr. G. Bower (Sutton) in the chair. The dinner will take place at 6 p.m., charge 7s., exclusive of wine. All members of the South-Eastern Branch are entitled to attend and to introduce professional friends. Papers have been promised by Mr. Dundas Grant, Dr. W. H. Tunnicliffe, Dr. A. E. Giles. The subjects of these papers will be announced at a later date. N.B.—The Honorary Secretary would be much obliged if members

would kindly inform him by post-card whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner. By doing so they will materially facilitate arrangements, and promote the success of the meeting.—E. H. Willock, Honorary Secretary, 113, London Road, Croydon.

South-Eastern Branch: Faversham and Canterbury Divisions.—A combined meeting of these Divisions will be held at Western House, Whitstable (the residence of Dr. Hayward), on Thursday, October 20th, at 3 p.m. Agenda: (1) Confirmation of the minutes of the last meeting. (2) The advisability of permanently combining the two Divisions. The above business to be transacted by each Division separately. (3) Time and place of next meeting. (4) On the suggested Division of the South-Eastern Branch by the Folkestone Division at the annual meeting. (5) Report of the Representatives Meeting, dealing especially with its views on Medical Defence. A resolution for the Medical Defence Committee will be suggested. (6) Midwives Act. Resolution of the Medical Guild: "That when medical practitioners chose to attend confinements at the request of midwives, the minimum fee charged should be a guinea." (7) Dr. Gowlland will open a discussion on Pernicious Anaemia. (8) Any other business. All members of the South-Eastern Branch are invited to attend these meetings and to introduce professional friends.—A. R. Henchley, William Gosse, Honorary Division Secretaries.

South-Eastern Branch: Reigate Division.—A meeting will be held at Baker's Hotel, Redhill, on Thursday, October 20th, at 5.15 p.m., at which important Association business will be transacted. The Chairman, Dr John Walters, will give an account of the Oxford meeting, which he attended as Representative of the Reigate Division. The meeting will then proceed to elect officers for the ensuing year: (1) Electing a Chairman. (2) Electing a Vice-Chairman. (3) Electing a Representative on the South-Eastern Branch Council. (4) Electing a Representative of the Division at the next annual meeting at Leicester. (5) To consider the draft model rules of a Division (not itself a Branch) to regulate the procedure thereof in ethical matters. (6) To elect an Ethical Committee. (7) To consider the desirability of dividing the South-Eastern Branch. (8) To consider a memorandum from the Exeter Division. (9) To consider the Midwives Act, 1902, and the Rules of the Central Midwives Board. Also a memorandum from the Medical Guild, Manchester. The Medical Secretary of the Association, Mr. J. Smith Whitaker, will be present and will explain any points members desire information about the work of the Association. The Treasurer of the South-Eastern Branch, Dr. H. M. Stewart, will be present if possible. Dinner at 7 p.m.: charge 6s., exclusive of wine (morning dress). By the courtesy of the President and Honorary Secretary of the Reigate Medical Society, the dinner will be a conjoint dinner with that Society.—W. A. Berridge, 158, Station Road, Redhill, Honorary Secretary.

South Midland Branch.—A meeting of the Branch Council will be held at the Library, General Hospital, Northampton, at 12 o'clock noon, on Thursday, November 3rd, under the presidency of Dr. Keunish. Luncheon at Franklin's Restaurant, Guildhall Road, at about 1 o'clock. Price 2s. 6d. Agenda: Minutes of last meeting. Election of following new members: Bernard Kelton, M.R.C.S., Rugby; J. C. Baker, M.B., Aylesbury; C. H. T. Bailey, M.R.C.S., Bedford; J. M. Dupont, M.B., Ch.B., Bedford; W. K. Parbury, M.R.C.S., Sharnbrook; H. E. May, M.B., St. Albans; C. H. Nicholson, L.S.A., Clophill, Beds.; A. F. Goldsmith, M.R.C.S., Bedford; V. S. A. Bell, M.R.C.S., Bedford; A. L. Chignell, L.R.C.S., Wing, Bucks; H. Kerr, M.D., Stone, Aylesbury; H. F. Bellamy, M.D., Abbots Langley, Herts; J. F. Matheson, M.B., Moulton, Northampton; Abraham Leach, M.B., Kettering Hospital. To discuss divisional grants (referred from annual meeting). Letters and communications. At 2.30 on the same day the autumnal meeting of the Branch will be held at the Board-room, Northampton General Hospital. The following papers are promised:—Dr. Milligan: Case of Appendicitis in which Laparotomy was performed twice; recovery. Mr. C. J. Evans: Treatment of Gastric Ulcer. Dr. Hichens: Actinomycosis of Lung; notes of a case with specimens of sputum. Any member desiring to read a paper or show specimens must communicate with the Honorary Secretary not later than October 24th.—E. Harries Jones, Honorary Secretary.

South Midland Branch: Aylesbury Division.—The autumn meeting of this Division will be held on Tuesday, October 18th, at 3.40 p.m., in the Board-room of the Royal Bucks Hospital, Aylesbury. A paper has been promised by Mr. Herbert Tilley, F.R.C.S., on the Diagnosis and Treatment of some of the Common Diseases of the Nose and Throat. The time of the meeting has been arranged for the convenience of members who come by train. Agenda: (1) The minutes of the last meeting. (2) The reply from the Education Secretary *re* medical certificates for school children. (3) To consider the following model rule for Divisions, suggested by the Organization Committee, namely: Vacancies among Officers—in the event of death or resignation of any officer of the Division, or of his ceasing to be a member of the Division, the Executive Committee shall appoint some member of the Division to hold the office thereby vacated until the next annual meeting. (4) To consider the following memorandum from the Exeter Division: "The success of a policy depends ultimately on the principles which underlie it. There are three main principles of medical policy not yet fully grasped by the profession, which it seems desirable to enunciate for consideration: (1) The true interests of the profession and those of the public at large are identical. It was the recognition of this principle which, after many years of failure, made a success of the Army Medical Corps movement. It was its non-recognition by a large section of the profession which led to the passing of an unsatisfactory Midwives Act. (2) No public body which contains no medical members can be safely entrusted with the conduct of medical public affairs. This has been well exemplified in the case of the National Hospital for the Paralysed and Epileptic in London. (3) The present government of the medical profession is unconstitutional and detrimental. The medical profession is governed by an alien body consisting of its schoolmasters; this government is wholly supported by the profession, yet the profession has practically no voice in its decisions. That this government is detrimental is obvious from its recent refusal to remedy the disgraceful condition of the preliminary general educational requirements for medical students. It is to be hoped that these three prime principles will be steadily kept before the profession whilst it is shaping the details of its general policy.—Horace Rose, Honorary Secretary.

South Wales and Monmouthshire Branch: Cardiff Division.—A special meeting of the Division will be held at the rooms of the Cardiff Medical Society, 141, Queen Street, on Thursday, October 20th, commencing at 3.15 o'clock, to be followed immediately by the autumn general meeting. Attention is specially requested to the standing orders adopted by the Division and the fixture card for the session, copies of which have been forwarded to each member, together with the important ethical rules. The meeting of January 19th will be devoted to the discussion of clinical cases and specimens. Members are asked to invite medical friends to the general meetings of the Division. Medical non-members will be made welcome, and are invited to join in the discussions, though they are not entitled to vote. Agenda: Special meeting.—(1) To consider and, if approved, to adopt a rule covering casual vacancies among officers. Ordinary meeting.—(1) Minutes of previous meeting. (2) To elect an additional Representative of the Division on the Branch Council. (The Executive Committee would recommend the election of a member resident in any of the districts of the Division outside Cardiff, such districts being at present unrepresented.) (3) Final report of Midwives Training Centre Committee. (4) To consider and, if approved, to adopt the Division ethical rules. (5) A case of Tuberculous Kidney (Cornelius Griffiths).—Ewen J. Maclean, 12, Park Place, Cardiff, Honorary Secretary.

South-Western Branch.—The autumn meeting of this Branch will be held at the Royal Devon and Exeter Hospital on Friday, October 21st, at 4.30 p.m., when Mr. J. Smith Whitaker, Medical Secretary of the Association, will give an address on The Benefits to the Medical Profession resulting from the work of Divisions of the Association. A meeting of the Branch Council will be held at 2.30 p.m., and at 3 p.m. a conference will take place between the Medical Secretary and the officers of the Branch and its Divisions. All officers, therefore, are earnestly requested to make every effort to attend. Tea will be provided at the Hospital from 4 o to 4.30 p.m. The Committee of the Exeter Medical Dinner cordially invites members of the Branch to the annual dinner, which is to take place on Friday, October 21st, at the Guildhall Restaurant at 6.45 p.m. Tickets, 10s. 6d. each (of which 7s. 6d. will be refunded if the ticket is not used), may be obtained from the Honorary Secretary of the Dinner Committee, Dr. Ransom Pickard, 31, East Southernhay, Exeter.—G. Young Eales, 1, Matlock Terrace, Torquay, Honorary Secretary.

Stirling Branch.—The autumn general meeting of this Branch will be held at the Station Hotel, Larbert, on Thursday, October 20th, at 2.15 p.m. Dr. Clouston (Edinburgh) will be present, and will read a paper on The Light Thrown on Mental Disturbance by Recent Investigations in Cerebral Pathology, to be illustrated by microscopic specimens and lantern slides. Members having any communications to present to the meeting are requested to communicate with the Secretary as soon as possible.—J. E. Moorhouse, Stirling, Honorary Secretary.

West Somerset Branch.—The autumn meeting of this Branch will be held at the Taunton and Somerset Hospital, on Friday, November 4th, at 4 p.m., when the President, Mr. A. W. Sinclair, will take the chair. Sir Patrick Manson, M.D., K.C.M.G., has kindly consented to give an address on the Significance of Fever in Patients from Warm Climates. The fifth annual dinner for medical men residing in West Somerset will be held at the London Hotel, Taunton, on Friday, November 4th, at 6 for 6.30 p.m. Chairman, Mr. A. W. Sinclair, of South Petherton. Guests may be introduced, and the charge for dinner will be 6s. per head. Those who wish to be present are requested to intimate their intention by Monday, October 31st, to W. B. Winckworth, Honorary Secretary, Sussex Lodge, Taunton.

Yorkshire Branch.—The next meeting of this Branch will be held at the Grand Hotel, Scarborough, on Saturday, October 15th, at 4.45 p.m., when the following business will be transacted and papers read: (1) Dr. Churton (Leeds), the Treatment of Ménière's Disease. (2) Mr. Whitehead (Leeds), a case of Acute Cerebral Abscess. (3) Dr. Trevelyan (Leeds), on a case of Chorea Gravidarum Insaniens. (4) Dr. Edgecombe (Harrogate), the Treatment of Sciatica. A special meeting will be held at 4.30 to consider proposed alteration of Rule 3, as follows—(the alterations are in italics): "The management of the affairs of the Branch shall be vested in the Branch Council, which shall consist of the President, *President-Elect*, Vice-Presidents (Past Presidents), *the members of the Central Council elected by the Branch*, the Treasurer, the Secretary or Secretaries, and the members specially elected by the Divisions." Proposed by Drs. Pye-Smith and Sinclair White. The Council meeting will be held at 4.10 p.m. The names of the following gentlemen will be submitted to the Council for election as members: Vaughan Bateson, L.R.C.P. and S., 89, New Cross Street, Bradford; George H. Bristow, F.R.C.S., M.R.C.S., 4, Alma Square, Scarborough; Sidney Clark, M.R.C.S., L.R.C.P., 25, Blenheim Terrace, Leeds; John T. Crowe, L.S.A., Sackville Street, Skipton; Arthur H. Firth, M.A., M.B., Wadsley Asylum, Sheffield; Daniel Gillespie, M.B., B.Ch., Wadsley Asylum, Sheffield; Robert B. Greaves, M.D., B.S., 253, Cemetery Road, Sheffield; Samuel H. Sharpe, M.A., M.D., Wadsley Asylum, Sheffield; William A. H. Waite, M.B., B.S., Old Chapel House, Richmond House, Leeds; A. G. Wilson, M.B., F.R.C.S., High Street, Sheffield. The members and friends will dine at the Grand Hotel at 6.30. Members who intend staying for the dinner, or for the week-end, are requested to communicate with the Manager, Grand Hotel, Scarborough. Special terms at the rate of 10s. 6d. per day, including the dinner, have been arranged for. Cheap return tickets can be obtained at Leeds. There are golf links at Ganton and at Scarborough. Members who intend golfing at Ganton on Saturday morning are requested to communicate with the Honorary Secretary. The Committee of the Scarborough Town Golf Club have kindly offered to make members of the Yorkshire Branch honorary members of their club from October 14th to 17th.—Adolph Bronner, 33, Manor Road, Bradford, Honorary Secretary.

The Chelsea Clinical Society will hold the opening meeting of its winter session at 8.30 p.m. on October 18th, at the Chelsea Dispensary, Manor Street, King's Road. The proceedings will consist of a short address by the President, Dr. Vincent Dickinson, followed by a smoking concert. The Honorary Secretary is Dr. A. Ashley Cooper, Chelsea Dispensary.

SPECIAL CORRESPONDENCE.

PARIS.

Académie de Médecine: M. Regnier on Embolus following Movement in Phlebitis; M. Laveran on the Prophylaxis of Malaria in Madagascar; The Appointment of a Commission to Control Water Supply in Garrison Towns; Professor Koch in Paris.

The first meeting of the Académie de Médecine after the summer vacation was held on October 4th. M. Paul Regnier criticized the report of Dr. Lucas-Championnière on the treatment of varicose veins by massage and exercise, analysed in a previous letter. M. Regnier has strong personal reasons for not holding the same views as Dr. Lucas-Championnière, because when he himself had pneumonia, on the fifteenth day of the disease, having no idea that he had phlebitis, he got out of bed for an instant, and on getting back fell suddenly asphyxiated as if a rope had been tightened round his throat; movement had undoubtedly caused the embolus from which he was lucky to escape with his life. M. Regnier also reported the case of a friend to whom he was called immediately after listening to Dr. Lucas-Championnière's report at the Académie de Médecine. The patient, who had been in bed for forty days with phlebitis of the saphenous vein, had still slight oedema of the thigh; he received permission to get up for the first time, but he fell a few moments later killed by an embolus. M. Regnier had always seen emboli exhibit some movement, and advised immobility of the limb for as long as any pain lasted and until it was reasonable to hope that the clot had been transformed and become adherent. If the vein was thrombosed and infection in progress of evolution, immobility was necessary, as it localized the inflammation and removed congestion in a marvellous way. Movement, on the contrary, might provoke fresh outbreaks of phlebitis. If movement in the limb, owing to thrombosis in a large vein, returned too slowly, baths in certain watering-places remedied the trouble without the dangers of massage and movement. In old cases of phlebitis with obliterated veins there was nothing to prove that there might not be a slumbering microbe which massage might awake, as some patients after massage had had fresh attacks of phlebitis or had died in consequence. In cases of non-inflamed varicose veins, walking might be permitted as long as the legs were bandaged and supported in elastic stockings. Patients with old phlebitis should always fear prolonged walks, and they could not walk fast because the obliterated vein hindered the return of the venous blood. Prolonged walks were generally followed by a little oedema and often by little painful points in the veins due to small partial phlebitis. The tension was increased by the muscular contractions and very painful cramps were felt in the limbs in which phlebitis had occurred. The pain could be removed by rendering the limb bloodless with a bandage from foot to thigh.

M. Laveran made an interesting communication on malaria in Madagascar, and the prophylactic measures necessary in the island. He had received a great number of *Culicidae* from all the different regions of the island, and had been able to indicate, for each of the seventy-one localities studied, the frequence and the species of *Anopheles*, the extent and the gravity of the endemic condition. Dividing the localities into three regions: (1) The Central Plateau; (2) the Eastern, and (3) the Western Coasts, M. Laveran found that the abundance of *Culicidae*, and of *Anopheles* in particular, in Madagascar was in ratio with the frequency and the gravity of the malaria in the island. One of the causes which favoured the persistence of malaria in Madagascar was latent infection in the young natives; this scarcely attracted attention, but their blood had been shown on repeated examinations to be infested with the haematozoa; moreover, it was very difficult to deal with this infantile malaria, as it was not easy to administer quinine. Another important explanation of the extension of malaria in Madagascar was the method of rice culture. After gathering in the grain the natives leave the stalks to rot on the ground, in order to obtain a manure suitable to the culture and to diminish their expenses; but as a result the water stagnates and affords a splendid culture ground for the larvae of the mosquito. This mode of propagating the disease did not exist formerly, when the Betsileos cultivated the rice with running water. Moreover, before the war the natives used to group their villages on the tops of the hills, as a defence against marauding bands; but now that peace reigned they had descended into the plains, so as to be nearer their rice fields, and consequently they ran more frequent risks of infection. To contend against these different causes of infection, M. Laveran proposed, in addition to the usual prophylactic measures, special regulations for the rice fields. After the rice harvest the natives should dry the rice fields; rice culture should only be carried on with running water; the dwelling-houses of the natives should not be established nearer than two kilometres to the rice fields; the natives should be protected against paludism by the use of metallic screens to their huts at night; quinine should be distributed gratuitously to the natives both for prevention and cure.

The Minister of War having asked the Académie de Médecine to appoint a mixed commission, composed of delegates from the War Office and the Municipality, with the object of creating in all garrison towns a constant control of the springs, reservoirs, and water supply generally, the Académie has appointed Drs. Brouardel, Chantemesse, Colin, Gariel, Pouchet, Roux, and Vallin to form part of the commission.

Professor Koch, who has been staying in Paris on his way to Africa, has been present as Foreign Associate at the last two meetings of the Académie de Médecine, and has paid lengthy visits to the Pasteur Institute.

MANCHESTER.

The Instruction of Medical Students in Midwifery.—Scheme for Establishing Convalescent Homes for Workpeople.—Leaving Age for School Children: Adoption of Midwives Supervision Act.—Address on Errors in Diagnosis.

If one may judge from the evidences of activity in all the Faculties of the University, the Privy Council has good reason to rejoice at what for all practical purposes may be called the tripartite division of the once federal Victoria University. Signs of renewed activity, it might almost be called a new birth, are manifest everywhere—not only within the Medical Faculty itself, but in those institutions which stand in close relation to it. Professor Sinclair, on the occasion of the opening of the class on gynaecology, gave a lecture on Medicine in Canada. Canada, he said, was not a good place for doctors, as there were plenty there already. The Canadians themselves were far too modest. Montreal, with a population about as large as that of Manchester, possessed one of the finest hospitals of America. Professor Sinclair announced that there was a prospect of Manchester possessing better facilities for instruction in midwifery and diseases of women than had hitherto been the case in its medical school. In years past many of the students of Victoria University resorted to the Rotunda in Dublin to "take out" their cases in midwifery. It had been definitely settled that, with the consent of the subscribers to the two hospitals, there was to be an amalgamation of St. Mary's Hospital and the Southern Hospital, and probably, sooner or later, there would be about one hundred beds for lying-in cases and one hundred beds for women and a certain proportion of beds for children. It would be necessary to organize the arrangements both for medical treatment and for teaching in the two hospitals. The remote districts, where some poor women required attendance, must be reached, and it would also be necessary to make arrangements for ordinary admission and for sending emergency cases into the lying-in hospital. Lastly, the complex arrangements for clinical teaching would have to be reorganized. Professor Sinclair stated that owing to the enlightened public spirit of the gentlemen who managed the business affairs of the hospitals, the Manchester School of Medicine was about to be put in the first place in the United Kingdom with regard to the facilities for the teaching of midwifery.

With a view to establishing convalescent homes for the workpeople of Manchester, Salford, and district, a scheme has been launched to found self-supporting homes on lines similar to those of Leeds and Birmingham. In aid of the scheme a million pennies fund has been started, and towards the end of next year it is proposed to hold a bazaar by which it is hoped to raise £10,000. After the initial cost the home is to be maintained out of the subscriptions of the workpeople, and in return for a subscription of 1d. a week a man and his wife would be entitled, as a right, to go to the home after sickness or in case of a threatened breakdown in health. It was stated that in Birmingham workpeople subscribed £18,000 a year for the maintenance of three homes, and in Leeds £12,000 was contributed for two homes. On the other hand,

Manchester only subscribed £8,000 a year to the Hospital Saturday and Sunday Funds. A resolution was passed at a meeting of workpeople and others approving of the scheme.

A very important discussion took place in the City Council on October 5th regarding the by-law of the Education Committee which provides for attendance at school till the age of 14. A resolution that school attendance beyond the age of 13 should not be compulsory was opposed by many members, including several of the representatives of labour. It was pointed out, however, that in Germany, Switzerland, and the United States children were kept at school later than the age of 13, and did not go to work till their mental and physical energies were well developed; and also that there were in the Manchester schools 25,000 children. During the past year 4 897 applications for exemption from the regulation requiring that children should attend school till the age of 14 had been made to the Committee, and about 70 per cent. of that number had been granted. This showed that the regulation was approved by the great majority of the parents, less than 20 per cent. claiming exemption. The resolution was defeated. At the same meeting the Council adopted the report of their Special Committee appointed to deal with the new Midwives Supervision Act. The Act will have a far-reaching effect in Manchester, where about 13,000 births annually are attended by midwives.

The Medical Society had a "record" gathering on the occasion of the first meeting of the session, when Dr. Byrom Bramwell delivered an address on Errors in Diagnosis. The address was replete with critically analysed cases, showing the factors that lead to errors in diagnosis, either through want of sufficient data, through conditions in the patient, imperfect acquaintance with his art on the part of the physician, or other causes.

SOUTH WALES.

Small-pox Outbreak.—The Cardiff Medical School.—The Midwives Act.—An Opposed Sewage Scheme.

An outbreak of small-pox occurred at the end of last month at Senghenith, in the Caerphilly district. The first case came from the neighbourhood of Bristol, and all the other cases, some six in number, were traced as having been in contact with the imported case. All the cases were isolated in the District Council's Small-pox Hospital and as the latest case was removed on September 30th, it is hoped now that no other may occur.

The reopening of Cardiff Medical School took place on October 7th, when the inaugural address was delivered by Dr. A. F. Dixon, Professor of Anatomy, Trinity College, Dublin. He was formerly a professor at the Cardiff School, where he is well known and popular with students, so his address had a specially favourable reception.

The classes in connexion with the training of women desirous of becoming midwives have now commenced at the Cardiff Medical School. The first lecture was delivered on October 4th by Dr. E. J. Maclean, M.R.C.P., F.R.S.Eng., and there was a very large attendance. The Glamorgan County Council and the Cardiff Corporation are giving a certain number of scholarships annually in connexion with these classes. The number of midwifery students now enrolled is 38. In addition to 7 free studentships which have how been awarded, the Glamorgan County Council is contributing £100 a year towards general expenses; while for its part the Cardiff Corporation has established and awarded 3 Free Studentships, and has promised £50 towards the outlay involved by the classes.

A Board of Trade inquiry has been held at the Guildhall, Swansea, by Messrs. W. Mathews and Fry, the former representing the Board of Trade and the latter the Sea Fisheries Board, to take evidence in respect of a proposal by the Swansea Corporation to erect a sewer outfall at Brynmill at a cost of £53,000. Great interest was taken in the proceedings by the members of the Corporation and by those of adjoining district councils, and by owners of property adjoining the foreshore. In support of the scheme evidence was given by Mr. Wyrill, borough engineer, the Medical Officer of Health, and others. On the other hand, it was opposed by the Oystermouth District Council, represented by Mr. J. T. Eayres, M.I.C.E., Birmingham, and others, on the ground that the sewage if discharged at the proposed point would probably pollute the oyster beds and storage pits in the bay. Dr. T. Dryslwyn Griffiths, D.Sc., late President of the British Medical Association, speaking as a ratepayer, opposed the application in strong terms. Dr. W. Williams, Medical Officer of Health to the Glamorgan County Council, appeared as an independent witness; the general tenour of his evidence was in strong opposition to the scheme.

CORRESPONDENCE.

PRINCIPALS AND ASSISTANTS IN MEDICAL PRACTICE.

Sir,—May I ask the following questions in your pages, and ask for some answers, either in the British Medical Journal or to my address as below?

As you are aware, in certain parts of the three kingdoms the system of assistancies is quite unknown, and young medical men at once assume direct charge of practices and districts. I am anxious for opinions on the scientific and, shall I say, ethical, value of the assistancy system.

I would ask from principals:

Has the system by which a young medical man fresh from the schools spends a certain time as an assistant to a medical man before himself entering on independent practice any advantages—

(A) In scientific development of the young medical man's views as to what are called trivial diseases—infectious ailments, women's diseases, and other illnesses?

(B) Ethically, in increasing the young medical man's ideas of attention to patients in private practice after coming from the hurried experiences of the out-patient department of hospitals; in punctuality and general discipline of life; in the elimination of the drunkard, or the utterly neglectful, who at times get diplomas?

From gentlemen acting, or who have acted, as assistants I would ask:

(A) Is there any advantage gained by getting some experience as an assistant to a medical man in general practice as far as scientific knowledge of disease is concerned?

(B) Does any injury occur to a medical man's idea of accurate care of the sick by being first employed as an assistant? and would better care be given if a young man went direct into practice for himself? In other words, does the assistancy system tend to crystallize and maintain defective traditional and routine methods of practice which would die out if young doctors began practice for themselves direct from great central hospitals?

Personally, I think these questions are of importance when I see young medical men placed at once in charge of remote practices or official districts far away from other medical men.—I am, etc.,

George Evatt, Surgeon-General.

Junior United Service Club, London, S.W., Sept. 30th.

MEDICAL DEFENCE AND PERSONAL DEFENCE.

Sir,—This question, with its present state, as it occupies the attention of the Association, depends on the condition which has arisen from the Representative Meeting referring the drafted scheme back to the Central Committee. Surely that important decision more properly concerns the interest of the personal side of defence. Since that reference the Medical Defence Union has made it plain that it declines to see eye to eye with the British Medical Association, at any rate in one certain particular, so far as merging and obliterating its success into an Association scheme.

Meanwhile, the proposal to occupy the energy of the British Medical Association for general medical defence has not been interfered with, but remains consistently justified. My view has been from the first, though retaining it, to part it essentially from the side of personal defence. Further, in the face of the decline of the old medical defence, and by the gradual cessation of the older corporations, to continue an active policy on our behalf, it has become absolutely necessary to look for our protective interests to be guarded elsewhere. No other body now except the British Medical Association could better move or take up the required continuous preservation. But that differentiated side of public medical defence cannot be served by a company dealing exclusively with the personal side of defence; and that materially divides the question.

Personal defence is a benefit, and therefore a useful privilege for members willing to avail themselves of it; but this, I trust, the Committee on defence will seek to arrange for with the existing defence societies, at a subscription of, say, about 8s. 6d., and not launch out into what may well be regarded as a weakening shift of a separate society.

The argument opposed to this proposition has appeared to be that members can already join a personal society. Perhaps I may be allowed to show the following miscellanea, *per contra: (a)* Members would obtain more confidence through the Association's backing of personal defence; and, in good part, that desire has led to their stoutly pressing for a scheme supported by the Association, and it stopped their

joining the societies. (*b*) For the defence societies not to respect this diffidence, and welcome such an arrangement, would be acknowledged to be decidedly not perspicacious, as the incoming members of the Association would increase their funds; and the opportunity would support a continual authorized inducement to join them. (*c*) Members would feel and be at an advantage if they had the power at their backs of the occasional help of the standing Defence Committee. (*d*) In many cases where expert opinion was required, the aid of the extra defence committee, supplemental to the society's council, would become mutually, though not necessarily available, and would carry considerably greater weight before a court of law, in its scientific and not too abundantly interested capacity.—I am, etc.,

Bognor, Oct. 4th. H. ELLIOT-BLAKE.

THE PRESENT POSITION OF ASEPTIC SURGERY.

SIR,—As I believe the reports printed in the BRITISH MEDICAL JOURNAL concerning the present position of aseptic surgery are read by many general practitioners with much interest, I am impelled after reading the latest contribution by Dr. Bantock to send the result of my experience.

I should like Dr. Bantock to consider the position of a provincial doctor who has accidents from collieries, quarries, factories, etc., frequently coming to his surgery. This doctor finds it absolutely impossible to convert the black, greasy, lacerated and painful limb to a condition approaching simple cleanliness (chloroform cases are excepted). He does his best in this direction, then washes it in 1 in 40 carbolic lotion, and 1 in 2,000 sublimate solution and afterwards applies a double cyanide gauze and wool dressing, and with this gets a very much larger proportion of cases healed without suppuration than he used formerly to get.

Does Dr. Bantock think that under these circumstances "aseptic" surgery is practically the more perfect method, and that antiseptic surgery is not only a failure, but even a source of injury? If so I can only say that after nearly twenty years' experience of this sort of surgical work I have come to an entirely different conclusion, believing that the antiseptics employed are the only cause of the great improvement.—I am, etc.,

Darwen, Oct. 10th. G. T. GIFFORD, M.D.

SIR,—As a member of the surgical staff of a small hospital in a country town, where the ties of general practice prevent one from journeying to the larger centres to learn the latest methods on surgical matters, I took up the number of the JOURNAL dealing with the above subject with considerable avidity. I had hoped to reap much benefit from its perusal and learn from those at the top of the profession how one might obtain good results in operations performed "through unbroken skin." But, alas, the results of reading and re-reading were disappointing. One had hoped to obtain some definite pronouncement, especially on matters of detail. But, no; one was left in a state of still greater perplexity. One authority informs us that "no method of cleansing the hands guarantees sterility." Another tells us that he emphatically denies that disinfection of the skin is impossible. Again, we are told that the aseptic method in private practice, and especially in the country, is "well-nigh impossible." On the other hand, another speaker contends that "aseptic methods are easily carried out in private practice." Other apparent differences of opinion and of fact crop up throughout the discussion.

In your issue of October 8th you insert a letter from Dr. George G. Bantock which has the effect of still further bewildering one. He states that he put the Listerian method to the test, but found it wanting, and cites a record of 90 consecutive ovariotomies, without a single death, performed apparently without the aid of antiseptics. Now, Sir, I ask, what is any one in a position like myself—and there must be many throughout the country—to believe; how are we to improve our results? Our cases do moderately well, but they may not heal by "first intention," and we want them to do so. We will be told to pay greater attention to the details of the operations. Quite so; but the leaders in surgery differ on these details; how can we of lesser account hope to have "settled convictions" on them?

Dr. Bantock relies on "simple cleanliness," and is satisfied with his results. I think it would add considerably to Dr. Bantock's side of the question if he were good enough to give the details of how he performs his operations so successfully by "simple cleanliness and simplicity of apparatus." I am not asking this information in a critical or querulous spirit—and I trust Dr. Bantock will look on my query in this light—but purely for the sake of further enlightenment. Particularly would I like to know if all his ovariotomy incisions healed without ligature or stitch abscesses.

Montrose, Oct. 10th. MIDDLETON CONNON, M.D.

NECROPSIES AND MIDWIFERY.

SIR,—In the BRITISH MEDICAL JOURNAL of October 1st Mr. Leedham-Green, in his article on sterilization of the hands, remarks that a period of abstention from midwifery is usually observed after contact with specially virulent septic matter. The question is—Of what duration should be the period?

In two cases within the last seven months I have made two *post-mortem* examinations by order of the coroner. The examinations were thorough, no gloves being worn. After the necropsies midwifery calls were declined until 48 hours had elapsed. But within 48 hours after each *post-mortem* a summons to a maternity case was accepted. In one of these the labour was abnormal—a primipara age 31—twins, turning difficult. No abnormal symptoms occurred in the puerperium.

The second case was one of threatened labour at the seventh month—no confinement took place. The hands and arms were disinfected twice over by the method advocated by Dr. Horrocks in the BRITISH MEDICAL JOURNAL, of February 13th.

An authoritative pronouncement on the question submitted would, I believe, be valuable to many engaged in midwifery practice. Neither in Dr. Horrocks's valuable paper nor in the discussion that followed in the pages of the JOURNAL, was it mentioned that a possible cause of puerperal septicaemia is the application of cloths which have been insufficiently cleansed by boiling. Among the richer people the use of portions of Gamgee tissue which are destroyed after use, seems usual, but among the poor linen cloths which have been previously used and washed, are frequently applied to take the discharges. The late Dr. Braxton Hicks believed this to have been the cause of an outbreak of septicaemia in one of the lying-in hospitals.—I am, etc.,

HENRY H. STURGE,
Honorary Medical Officer, Royal Maternity Charity.

London, W., Oct. 10th.

MASSAGE IN THE TREATMENT OF ERRORS OF REFRACTION.

SIR,—So far, all comments in your pages on the massage treatment of errors of refraction take for granted that the idea is new, and only doubt the truth of the results. The fact is that the results are true in measure, but the treatment is very far from new. The want of information on this subject appears extraordinary, when on no less public an occasion than the International Ophthalmological Congress at Utrecht in 1899 Professor Darier (since President of the Ophthalmological Society of Paris) read a paper on Massage in Ocular Therapy, and referred to Domec's pressure massage for errors of refraction with approval.

Dr. Domec of Dijon has worked extensively for many years at this subject. After reading a long and interesting paper by him in the *Clinique Ophtalmologique* for April 25th of this year, I had an opportunity of testing his method on that very day. An earnest student for Woolwich, aged 16, and studying at Haileybury, had been told, to his intense disappointment, that his sight was much below the required standard of $\frac{6}{6}$ for each eye. And, indeed, he had, through about 2 D. of myopia, only $\frac{6}{6}$ with each eye, slightly better with the right than the left. Hitherto sceptical as to Dr. Domec's treatment, I thought I would try it and see. Day by day under his treatment the sight without glasses improved, till on May 3rd he could easily manage $\frac{6}{6}$. Nor was it only in the consulting-room that improvement was manifest, for his mother said, "It was wonderful to me the difference it made to him in things about the house."

Were such results only permanent how great the boon would be! But, alas! after another term of work at Haileybury, in spite of the greatest care in the observance of ocular hygiene, the treatment being of necessity suspended, only the slightest trace of the improvement remained, though resumption of treatment soon made it reappear. It is evidently unsatisfactory to obtain results of such a transient nature, and, indeed, Dr. Domec lays stress on repeated courses. I cannot but think it possible that even permanent improvement might follow treatment sufficiently persistent, and it is much to be hoped that it will be taken up by careful members of the profession and that Dr. Domec's suggestions be given

a thorough trial. Some of the immediate improvement of sight is of a fictitious nature, being due to contraction of the pupil from stimulation of the sphincter and increased blood-flow in the iris. This, naturally, soon passes off. The more lasting improvement is due to pressing the eye into a different shape, from which it takes some time to fully recover, just as a trampled daisy only slowly becomes erect again. It may also be contributed to by the increased nutrition of the retina from improvement in the circulation.

In Darier's book on *Ocular Therapeutics*, translated by Sydney Stephenson, is to be found an interesting discussion of the subject.—I am, etc.,

Bournemouth, Oct. 8th. ERNEST E. MADDOX.

NATIONAL DEPOSIT FRIENDLY SOCIETY.

SIR,—The attention of the governing body of this Society has just been drawn to the resolutions concerning this Society which were passed by the British Medical Association at its last annual meeting, and which were published in the BRITISH MEDICAL JOURNAL on July 30th, p. 107. We learnt of those proceedings quite by accident, and I am instructed, in the first place, to express the surprise of my Society that the British Medical Association should have deemed it fitting to take no steps to acquaint us with the proceedings thus taken against us.

It would appear that these resolutions firstly adopted a report of the "Medico-Political Committee" of the Association (which appears to have been passed some months ago), expressing the "opinion" that "until the rules of the National Deposit Friendly Society are amended, it is not, in the opinion of the Committee, desirable that individual medical men should allow themselves to be recognized directly or indirectly as specially acting for the Society in any district, or as willing to accept payment on the scale laid down in the rules of the Society;" and, secondly, provided that the above resolution "should be transmitted by the Medico-Political Committee to the Divisions of the British Medical Association with proposals for concerted action," but we have failed to discover upon what grounds the Medico-Political Committee based its opinion; and, curiously enough, those reasons do not seem to have been communicated to the annual meeting of the Association, which appears to have simply accepted the "opinions" of the Medico-Political Committee.

The custom of refraining from condemning any person or persons until they have been permitted a hearing in their own defence is so rarely disregarded in this country that my Committee must confess its astonishment at learning that the British Medical Association has permitted a small committee to condemn a large and important Friendly Society without first affording that Society the opportunity of defending itself; and that a general meeting of that Association should not have been informed, before it adopted the findings of that Committee, that the Society had been condemned unheard. As soon as I learnt of the resolutions in question I wrote an official letter to you on September 20th, which has not been published in the JOURNAL.

Finally, my Committee is astonished that the British Medical Association should have singled out my Society from all the Friendly Societies of the kingdom for condemnation, and feel justified in asking your Association to explain why this has been done.

My Society has worked so amicably and harmoniously with thousands of medical men in the past, and has such a high respect for the medical profession, that it would wish to treat with the utmost deference any opinions expressed by the British Medical Association. But I would venture to submit that it can scarcely give due consideration to proceedings of which, through some strange inadvertence, it has been kept in ignorance, and with which, some months afterwards, it has only accidentally and unofficially become acquainted.

On that ground, therefore, and as a matter of most elementary justice, I am now directed to request that your Medico-Political Committee will, at its earliest convenience, inform me upon what grounds it has condemned our Society, and to which of our rules it takes exception; so that we may, even after condemnation has been pronounced, be permitted some small opportunity of defending ourselves. My Committee presumes that you would prefer that discussion on this matter should take place in the columns of the JOURNAL rather than in those of the metropolitan and provincial press, and I am therefore directed to request you to publish this letter in the JOURNAL; and as soon as we know whereof we are accused, we shall trespass on your courtesy to afford us space for our defence.—I am, etc.,

London, W.C., Oct. 11th. C. TUCKFIELD, General Secretary.

*** The report of the Committee, containing the recommendation which the Representative Meeting adopted and the grounds for the recommendation, were published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of May 28th, 1904. This report was drawn up after communication with the Secretary of the National Deposit Friendly Society, and was an addendum to the interim report of the same Committee on contract practice, published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of May 7th, which dealt with the relations of the profession to Friendly Societies of the ordinary type.

SCOTTISH POOR-LAW MEDICAL SERVICE.

WE have received a communication from a member of the Association resident in Scotland protesting against the tone of some remarks in a letter under this head signed "Practical," and published in the BRITISH MEDICAL JOURNAL of September 17th, 1904, p. 704. We have communicated with our correspondent, who desires to express regret if any remarks in that letter have given offence. He thinks, however, that the protestor may have overlooked the essential differences between the position of the medical officers in the remoter parishes and those in the South of Scotland. In this connexion we may quote the following sentences from paragraph 173 of the *Report*, presented to Parliament last March, of the Departmental Committee appointed by the Local Government Board for Scotland to inquire into the system of Poor-law medical relief:

"Our great difficulty, in pursuing our investigations in this matter, has been to get direct evidence from medical officers who are personally aggrieved, the reason for withholding it being that it might be used against those that supplied it."

"According to a Parliamentary return[1] it appears that during the seven years 1895-1901 sixteen medical officers were dismissed by parish councils within the Highland crofting counties of Argyll, Caithness, Inverness, Orkney, Ross, Sutherland, and Zetland. In ten cases no cause was assigned for the dismissal."

"According to another Parliamentary return[2] it appears that in 42 per cent. of the parishes within the same counties, the office of resident parochial medical officer was vacant once or oftener during the last seven years: in one case it was seven times vacant. The maximum time that the office remained continuously vacant in any parish was fifteen months."

"We think it right to place on record that between the years 1855 and 1902 inclusive 139 complaints against parochial medical officers have been made to the Central Department. After inquiry it was ascertained that in 88 cases the complaint was unfounded. In 28 cases the medical officer was censured; in 12 cases he was allowed to resign; and in 11 cases only was it found necessary for the Central Department to dismiss him from his office. Looking to the fact that there are about one thousand medical officers always in office throughout Scotland, we consider such a record, extending as it does over the long period of forty-eight years, eminently satisfactory. It contrasts very strongly with the figures given above as to dismissals without assigned cause by parish councils in the crofting counties. The inference we draw is that the sanction of the Central Department is needed in the interests of efficiency and of justice."

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LEEDS.

INAUGURATION CEREMONY.

THE youngest of the Northern Universities—that of Leeds—accomplished its first public function on October 6th, the occasion being graced by various ceremonies, the anticipated form of which we outlined in the BRITISH MEDICAL JOURNAL of October 8th, p. 937. The principal feature was the conferment of honorary degrees upon a number of persons who have already attained distinction in some one or other walk of life.

THE INITIAL PROCEEDINGS.

The great hall of the City Buildings was the place chosen for the proceedings, and the gathering was very large. One end of the chamber was occupied by a platform which had broad steps leading up to it from the floor of the hall and at the back tiers of rising seats. These were occupied by students of the University, who therefore, besides having a good view of everything which went on, formed at once an excellent background to the scene and a chorus to greet the

[1] House of Commons Return, dated August 8th, 1902 (349-1902).
[2] House of Commons Return, dated August 13th, 1903 (349-1903).

various arrivals and punctuate the addresses delivered in explanation of the honours conferred.

The initial ceremony was a series of processions from the vestibule to the platform. Of these the first was composed of representatives of various civic and other bodies. At its head was the Lord Mayor of Leeds, who was followed by the Mayors of the principal towns in Yorkshire, each accompanied by his town clerk attired in wig and gown. The next procession was that of the chairmen and vice-chairmen of county and borough education authorities. This was followed by the University procession, headed by the Associates of the Yorkshire College, amongst whom were a considerable number of girl graduates duly attired in academic costume; then came the members of the University staff, and finally the Council. When these had taken their places, the persons selected for the first honorary degree of the University were ushered by the Registrar, Mr. W. F. Hubbard, to the seats reserved for them immediately below the platform.

All being now ready, the Chancellor of the University, the Marquess of Ripon, K.G., made his entry, accompanied by the Vice-Chancellor, Dr. Bodington. The Chancellor wore a robe of some heavy green material braided with gold, his train being carried by two small pages; the Vice-Chancellor's robe was also of green, but was braided with silver instead of with gold.

THE CONFERMENT OF DEGREES.

Lord Ripon having taken his seat, rose and said:

This congregation of the University is held for the purpose of inaugurating our University by conferring certain honorary degrees in accordance with the grace passed by the Court of the University. All those to whom these degrees were passed are present, I believe, except Lord Spencer and Lord Masham. Lord Spencer has desired me to express to the University his deep regret at being prevented from attending. We all know, and we all deeply regret, the cause of his absence. Lord Masham's great age has rendered him unable to be present here to-day.

The conferment of degrees was then commenced. The recipients were presented by Dr. Bodington to the Chancellor, and the latter, taking the hand of each in turn, declared his admission in due form, the eulogy of the recipient being delivered by the orator selected by each of the Faculties concerned—those, namely, of Law, Arts, and Science. The Vice-Chancellor delivered the orations in respect of the Doctors of Law, and the first person of whom he had to speak was Lady Frederick Cavendish. Of her, Dr. Bodington said:

The first degree conferred in this University could have no more appropriate recipient than Lady Frederick Cavendish, who bears a name held in affectionate remembrance amongst us. On this day especially we cannot forget the inestimable and devoted services rendered to the Yorkshire College by the first President, under whom the foundations were so wisely laid that "every success gained has been a step to something higher." Lady Frederick was the true helpmeet of her husband in his work for the Yorkshire College, as in his work for the nation. We are also glad of an opportunity of recognizing the valuable assistance which Lady Frederick has personally rendered to education as the indefatigable President of the Yorkshire Ladies' Council of Education, an association which has with signal success promoted the training of women in many departments of useful work.

OTHER RECIPIENTS OF THE LL.D.

The other recipients of this degree were as follows: The Archbishop of York, Dr. Maclagan, a Primate who adorned a historic position by his personal qualities and who had left the Army for the Church; the Duke of Devonshire, a statesman of lofty patriotism and unchallenged disinterestedness and a great Yorkshire landowner; the Earl of Harewood, Lord-Lieutenant of the West Riding, one who recognized that the strength of the nation lay not in military efficiency alone but in mental discipline and training; Viscount Cross, an old servant of the Crown especially associated with Yorkshire by his munificence towards its College; Lord Herries, Lord-Lieutenant of the East Riding, and a strong supporter of education in general and especially of agricultural training: and Lord Allerton, a strenuous business man firmly convinced of the industrial value of scientific knowledge. Next came the Right Honourable A. H. D. Ackland, Sir Francis Powell, and Sir John Barran, all of them more or less connected with education and with Yorkshire, the latter being treasurer of the new University.

A number of musicians followed, namely, Sir Hubert Parry, Sir Alexander Mackenzie, Sir Charles Stanford, Sir Edward Elgar, Dr. Walford Davies, and Dr. Charles Wood. These, with Mr. W. Bousfield, Chairman of the Representative Managers of London Board schools, and Mr. C. M. Gaskell, Chairman of the Yorkshire County Council, completed the list of Doctors of Law.

DOCTORS OF ARTS.

Then came the turn of the Doctors of Arts, for whom the Dean of the Faculty, Professor Grant, spoke. They included Sir Albert Rollit, a worthy example of the union of academic attainments with distinction in public affairs; Mr. Alfred Austin, the Poet Laureate; the Rev. Dr. Fairbairn, under whose guidance Mansfield College, Oxford, had become one of the great formative forces in the religious life of the country: and, finally, Professor Wright, author of the *Dialect Dictionary*, and a man whose treatise on the Windhill dialect had been declared a masterpiece of loving care and scientific method.

DOCTORS OF SCIENCE.

The Doctors of Science came last, the eulogies in respect of most of them being delivered by Professor Smithell. Amongst these were the Earl of Rosse, an active supporter of many scientific movements; Lord Kelvin, acclaimed throughout the world as the greatest master in a golden age of science; Sir I. Lowthian Bell, an ironmaster who had sedulously trimmed the lamp of science amid the roar of the furnace and the thunder of the steam-hammer; Sir J. Kitson, a great leader of industry and late President of the Iron and Steel Institute; Sir Arthur Rücker, one of the pioneers of University education in Yorkshire and now Principal of the University of London; Sir T. E. Thorpe, the first Professor of Chemistry at the Yorkshire College and now Director of the Government laboratories; Professor L. C. Miall, the only survivor of the original staff of Yorkshire College, a great biologist and an unrivalled teacher; and Dr. Tempest Anderson, who to notable achievements in ophthalmology had added eminent service to all students of volcanoes.

MEDICAL AND SURGICAL RECIPIENTS.

The other recipients of the D.Sc. are all well known to our readers, and the descriptions of them which follow their names are extracted from the orations delivered by Professor de Burgh Birch. First came Sir William Henry Broadbent:

A native of this county, and a distinguished physician whose labours in the fields of physiology and practical medicine have earned the gracious recognition of his Sovereign and the cordial approval of his professional brethren throughout the world.

Mr. C. G. Wheelhouse, a man to whom medical education in Leeds owed much:

Himself one of the earliest at the Leeds School of Medicine, he was afterwards and for many years one of its most brilliant teachers; possessed of wide sympathies, he was for forty years a member of the staff of the General Infirmary, and an accomplished surgeon who acquired fame far beyond the limits of his native county.

Mr. Jonathan Hutchinson was described as one who had a place in the front rank of living surgeons,

who by long years of research and patient clinical observation had advanced the knowledge of surgical pathology. His endowment of his native town of Selby with a museum bore testimony to his interest in science and to his patriotism as a Yorkshireman.

Mr. T. Pridgin Teale, Consulting Surgeon to the Leeds Infirmary, was

an operator of transcendent skill both in general and ophthalmic surgery, of luminous powers as an imparter of knowledge, a zealous advocate of reform in medical education, and a pioneer in the furtherance of sanitary improvements.

Dr. John Hughlings Jackson was a native of Yorkshire, and one of

the greatest living authorities upon the treatment of diseases of the brain and central nervous system.

Finally came Mr. A. W. Mayo Robson, another of the consulting staff of the Leeds Infirmary,

a man who was at first a pioneer and now one of the leading exponents of the science and practice of abdominal surgery.

CONCLUSION OF PROCEEDINGS.

The conferment of degrees concluded, the Duke of Devonshire made a short speech at the invitation of the Chancellor. Referring to the degrees distributed, he said the value of such things did not depend solely upon the antiquity of the University which conferred them, and it was open to them at least to hope that the intellectual eminence and efficiency to which Leeds University might attain would make its degrees in no wit less desirable than those of its older rivals. He then made brief reference to the controversies and difficulties which had surrounded the disruption of the Victoria University, and the transformation of the Yorkshire College into the Leeds University. All those concerned in them had been influenced by the best motives, and he himself was well acquainted with them, since he was at the time President of the Privy Council. The striking point in the constitution of the University, as laid down in its Charter, was the exceptional share in its government accorded to local authorities.

He thought it wise, because it was desirable that wide popular interest should be taken in the work of the infant University. At the same time he felt sure that the strong common sense for which Yorkshiremen were noted would lead them to entrust the greater part of the direction of the studies and work of the University to those who had qualified themselves by educational work. He felt, also, equally certain that there would be no desire to make the training too exclusively utilitarian, and that they would recognize that what they should aim at was sound general education, no specialism in any one direction being allowed too early. If these points were kept in mind he saw a great and bright future in store for the University.

Upon the conclusion of the Duke of Devonshire's speech, the proceedings came to an end.

UNIVERSITY OF OXFORD.

THE following members of the University have been elected to Entrance Scholarships at London Medical Schools: E. P. Cumberbatch, B.A., Keble College, to a Senior Scholarship in Science at St. Bartholomew's Hospital; E. L. Kennaway, B.A., New College, to the University Scholarship at the Middlesex Hospital; C. Beards, B.A., Jesus College, to a Universities' Scholarship at Charing Cross Hospital.

UNIVERSITY OF CAMBRIDGE.

MR. J. J. LISTER, F.R.S., has been appointed University Demonstrator in Comparative Anatomy.

The Council of the Senate has proposed an important scheme for the mutual recognition of its various entrance examinations (Responsions, Previous, Matriculation etc.) by the Universities of Cambridge, Oxford, and London. This step would go far to reduce the perplexing "multiplicity" of examinations of which schoolmasters justly complain.

Mr. K. Lucas and Mr. N. R Campbell have been elected to Fellowships at Trinity College for distinction in Natural Science.

ABERDEEN UNIVERSITY.

THE CHAIR OF MATHEMATICS.

A SPECIAL meeting of the Aberdeen University Court was held last week for the purpose of appointing a Professor of Mathematics in the room of the late Professor Pirie. After careful and prolonged consideration the Court unanimously appointed Mr Hector Munro Macdonald, M.A. (Aberdeen and Cantab.), F.R.S., Fellow of Clare College, Cambridge, and University Lecturer in Mathematics at Cambridge. The new professor, a native of Fearn, Ross-shire, has had a very remarkable career, and is recognized as one of the foremost mathematicians in the country. He graduated in Aberdeen University in 1886, gaining the chief mathematical prizes, and was fourth Wrangler at Cambridge in 1889. Later he was awarded the Smiths Prize, and in 1901 the Adams Prize was gained by him with an essay on "Electric Waves," and in the same year he was elected a Fellow of the Royal Society. The appointment is looked upon as a most fortunate one, and cannot fail to add to the strength of the Professoriate of the University.

THE FERGUSON SCHOLARSHIPS.

For the second time in the history of the University these Scholarships—the blue ribands of scholarships in mathematics, philosophy, and classics in Scotland—have been gained by Aberdeen students. The Classical Scholarship is gained by Alexander Petrie, M.A., Aberdeen, the Philosophical by Jessie Elliot Murdoch, M.A., Aberdeen, and the Mathematical is divided between Peter Fraser, M.A., Aberdeen, and Edward Burns Ross, M.A., Edinburgh. This is the first occasion on which one of these scholarships has been gained by a lady.

UNIVERSITY OF LONDON.

CONVOCATION.

A GENERAL meeting took place on Tuesday, October 11th. Several minutes elapsed after the time announced for the meeting (5 p.m.) before a quorum of members was assembled; the Chairman then took the chair.

Library.—The Chairman reported, in reference to a recent vote of Convocation respecting the University Library, that the Senate had requested the acting Librarian to furnish a report upon the Library. So that it might be presumed that the subject of the Library was now in a fair way of settlement.

Graduates and Convocation.—Mr. F. L. Wintle, LL.B., moved a resolution which had for its object an endeavour to induce a larger proportion of the graduates not now registered as members of Convocation to join that body. He said that Convocation numbered about 5,300 members, and that there were about 4,000 graduates who had not joined it; that there seemed to be a growing tendency in recent years not to join. Very few lady graduates were members. He suggested that a circular setting forth the privileges of membership of Convocation might be sent to the above 4,000 graduates. Mr. Spratling, B.Sc., seconded the resolution, which was debated at length. It was stated that, amongst the privileges enjoyed by members of Convocation were the following: the election of the member of Parliament for the University; the election of the Chancellor, of the Chairman of Convocation, and of sixteen members of the Senate. The original resolution proposed by Mr. Wintle was amended, and was eventually passed in the following form: "That Convocation desires to point out to the Senate that the graduates now qualified, but not registered, as members of Convocation number upwards of four thousand, and to suggest the issue to those graduates whose addresses can be traced of an invitation to join Convocation, accompanied by a statement of the advantages thereof."

The London University Gazette.—The resolution proposed by Mr. H. Hanford, B.A., having for its object the insertion in the *Gazette* of various matters of general interest to the graduates, was withdrawn.

UNIVERSITY OF LIVERPOOL.

APPOINTMENT OF LECTURERS.

At a meeting of the Council of the University held on October 4th the following appointments were made in the Faculty of Medicine.—Clinical Lecturer on Dermatology: H. Leslie Roberts, M.D.Edin., Dermatologist to the Royal Infirmary. Clinical Lecturer on Laryngology: J. Middlemass Hunt, M.B.Glasg., Laryngologist to the Royal Infirmary. Lecturer on Clinical Pathology: Ernest E. Glynn, M.A., M.B.Camb., M.R.C.P.Lond., Assistant Physician and Pathologist to the Royal Infirmary. Lecturer on Neuropathology: W. B. Warrington, M.D.Viet., M.R.C.P.Lond., Physician to the David Lewis Northern Hospital.

These Lectureships are all newly-created posts. The first two carry with them seats on the Medical Faculty.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL ARMY MEDICAL CORPS.

EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 8s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

CAPTAIN, R.A.M.C., arrived home January last, is willing to exchange abroad. India preferred. Apply, stating terms, to "N.," care of Holt and Co.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON C. L. NOLAN, M.B., has been placed on the retired list at his own request, October 6th. He was appointed Surgeon, August 21st, and Fleet Surgeon, August 21st, 1900.

The following appointments have been made at the Admiralty: CYRIL SHEPHERD, Surgeon, to the *Fire Queen*, to be lent to the R.N. College, Osborne, October 4th; GORDON MOIR, NORMAN B. V. JACOB, HERBERT STONE, M.B., B.A., JOHN D. KEIR, A. B MARSH, JOHN M. GORDON, THOMAS E. BLUNT, and FRANCIS E McCUNE, M.B., B.A., Surgeons, all to the *Fire Queen*, additional, for disposal, November 10th; WILLIAM F. HINGSTON and HENRY A. KELLOND-KNIGHT, Surgeons, to the *Vivid*, additional, to be lent to Plymouth; HUGH B. GERMAN, GERALD NUNN, GEORGE E. HAMILTON, M.B., JAMES MCCUTCHEON, M.B., B.A., and WILLIAM H. HORSFALL, M.B., Surgeons, to the *Vivid*, additional, for disposal, November 10th; WILLIAM L. HAWKINS, GEORGE O. M. DICKENSON, M.B., and WALTER T. HAYDON, Surgeons, to the *Wildfire*, additional, for disposal, November 10th; DOUGLAS D. TURNER, ALFRED B. COX, M.B., BRITON S. ROBSON, M.B., ALFRED A. CHANCELLOR, M.B., and FRANK K. FEATHERSTONE, M.B., Surgeons, to the *Pembroke*, additional, for disposal, November 10th; ARTHUR S. G. BELL, Staff Surgeon, to the *Spartan*, additional temporary, October 13th; GEORGE S. SMITH, Fleet Surgeon, to the *Pembroke*, additional, for Chatham Dockyard, November 1st; ALEXANDER L. CHRISTIE, M.B., Fleet Surgeon, to the *Pembroke*, November 1st; HAROLD R. OSBORNE, Fleet Surgeon, to the *Mars*, October 15th; LAURENCE BIDWELL, Staff Surgeon, and EVELYN R. TOWNSEND, Surgeon, to the *Hogue*, on commissioning, October 27th; HENRY W. G. GREEN, Staff Surgeon, to the *Medea*, October 27th; HAROLD E. FRYER, Surgeon, to the *Shearwater*, additional, and on recommissioning, October 8th.

MEDICO-LEGAL AND MEDICO-ETHICAL.

NOTIFICATION "FORTHWITH."

A. SAW a case of scarlet fever on Sunday and had it removed to the fever hospital. He did not notify it to the sanitary authority till Monday evening. Has A. carried out the provisions of the Act requiring the practitioner to notify such a case "forthwith"? Would the sanitary authority be justified in prosecuting A. if they consider the case was not "forthwith" notified? Would a court of summary jurisdiction have power to decide the meaning of the word "forthwith"?

*** The legal meaning of the word "forthwith" is "immediately." A. has therefore not carried out the provisions of the Act in this respect. Although, strictly speaking, A. might be prosecuted for his omission, a sanitary authority under the circumstances would not be justified in taking such a step without some special reason, and if they did the Court would only inflict a nominal fine. There could be no dispute as to the meaning of the word "forthwith." It is the duty of a practitioner to notify a case of infectious disease immediately he comes to the conclusion that it is one of those infectious diseases scheduled by the Act, or added to that number by a lawful by-law of the sanitary authority.

In answer to "Nemo" we may supplement the above reply by saying that the Infectious Diseases (Notification) Act, Section IV, requires a separate form to be used for each case, and the indicated particulars properly filled in. A practitioner who makes a notification in due form is entitled to be paid a fee. If the patient so notified exposes himself, the matter may be dealt with by the local authority under Section CXXVI of the Public Health Act, 1875. With regard to the puerperal case mentioned by our correspondent, there is prima facie evidence that it was one of puerperal peritonitis. But further than that it is not practicable to go. It would be a difficult matter to prove in a court of law that the medical practitioner ought to have notified the case.

WORKMEN'S COMPENSATION.

M. C. writes: A man, aged 27, previously healthy, has worked for several years in the cellar of a grocer lifting heavy cases and weights. He is muscularly very strong, but, under the continued over-exertion, his heart hypertrophies, and the aortic valve weakens and becomes incompetent. Compensation is sufficient for a time, but at last this breaks down, and the man is hopelessly laid up, for months at least. Has he a fair claim against his employer under the Workmen's Compensation Act?

*** The man would have no claim against his employer under the Workmen's Compensation Act. There has been no accident, and the Act does not provide for compensation for diseases of employment.

NOTICE TO BE GIVEN BY ASSISTANT.

PAULENSIS.—If there are no express terms in a contract between an assistant and his principal as to the manner of its dissolution, the assistant would be required to give a reasonable notice. If he is paid a salary monthly, a month's notice would be sufficient. While the notice was running he would not be justified in putting a *locum tenens* in his place, as it is a principle of law that *delegatus non potest delegare*. If a month's notice be duly given, there can be no necessity for the assistant to inform his principal that he is looking out for another engagement.

LEGAL FEES IN ACCIDENT CASE.

THORAX writes that he has been attending a patient for a fractured leg, the result of a cycling accident. The patient is bringing an action against the cyclist who caused the injury, and his solicitor has written asking for a written statement, and saying the doctor's evidence will be required at the trial of the action. What fees should he ask for?

*** Unless he has confidence that his patient will pay his charges, he should refuse to give any written report before receiving his fee. He can make his own charge, but one guinea is a common charge for an ordinary report on a simple case. With regard to giving evidence, he is bound to attend the court on receiving a subpoena and conduct money (travelling expenses). His only remedy then is to ask the judge, before he is sworn, to order that his lawful fees shall be paid before he gives his evidence. These will often amount to no more than a guinea a day.

CERTIFICATION OF LUNATIC IN WORKHOUSE.

D.M.O. writes that he was recently asked by the master of the workhouse to examine and certify as to the lunacy of two inmates. He filled in the usual certificates, and gave evidence before a magistrate who was present. He is one of the district medical officers of that Union, but has nothing to do with the workhouse, and the patients examined do not belong to his district. He wishes to know what fee he is entitled to.

*** He is entitled to whatever fee the magistrate may see fit to order the guardians to pay him. The matter is governed by Section CCLXXXV of the Lunacy Act, 1890, where it is laid down that the magistrate may make an order on the guardians to pay the practitioner reasonable remuneration. It is therefore not compulsory on the magistrate to order any fee, and failing such an order the practitioner has no redress. But magistrates, except under very special circumstances, invariably do order the guardians to pay what they consider a reasonable fee, and our correspondent should write to the magistrate before whom he certified, and ask for adequate payment, when probably he will be given satisfaction.

THE ADVERTISING OF HEALTH LECTURES.

DWYFAWR RIGA writes: A. and B. are members of the same chapel and practise in the same village. After service on a Sunday evening it is announced by one of the elders that Dr. B. will deliver a lecture at the institute on "Consumption, its Causes and Treatment," admission free. Afterwards the elder, in the Welsh language, exhorts all members to be present to hear this lecture on the important subject of consumption, making a special point of the *free admission*. Dr. A. was present at the service and was much annoyed at what he considered a professional puff.

*** Lectures dealing in a popular manner with questions of interest to the public health are very general all over the country, and the means by which these can be brought to the notice of the people for whom they are intended in the least objectionable manner has often been under our consideration. They are often announced by posters upon which the name of the lecturer figures in large type, or advertised in newspapers, or handbills are distributed in the street. We are not sure that the method complained of by our correspondent is more objectionable than these. There is a strong opinion, inside and outside the profession, in favour of the view that it is the duty of the medical profession to instruct the public in the general principles of hygiene and the preservation of health, and, if this is admitted, there must be some form of announcement of the lectures in question, and it is urged that it would be useless to advertise the lectures without at the same time giving the name of the lecturer.

LIABILITY OF POLICE.

A CORRESPONDENT dissents from the opinion expressed in the BRITISH MEDICAL JOURNAL of September 24th, p. 785, relative to the responsibility of an inspector of police to pay a fee to the medical practitioner he had improperly called in. He quotes from p. 23 of the *Medical Directory*: "If a deputy overseer, or even a mere stranger, direct a surgeon to attend a poor man, such person is liable for the surgeon's bill."

*** This is very likely true as it stands, but it would be otherwise if the overseer or stranger at the time of engaging the surgeon specially repudiated personal liability for the surgeon's charges. In the case in point the inspector made it clear to the medical man that he was pledging some one else's credit and not his own.

MEDICAL LECTURES TO POPULAR AUDIENCES.

GENERAL PRACTITIONER writes that he has been asked by the secretary of a Court of Foresters to read a paper on the prevention of consumption at one of their monthly meetings. He asks whether there would be any ethical objection to his doing so, and adds that the lecture will not be advertised, and the meeting will be confined to members of the Lodge?

*** Such lectures are often given by medical practitioners, and in this case the proceedings would be free from the objections often urged against them.

MEDICAL ETIQUETTE.

SPITEFUL sends us a copy of a medicine-bottle label, which contains his name with the statement that he is a "Physician, Surgeon, Accoucheur, and Dentist," and his address; at one end it says "Teeth carefully extracted," at the other "Vaccination every Tuesday from 10 to 11 a.m.," while at the bottom are his hours of attendance: the middle contains the direction, "Two tablespoonsful of this mixture to be taken every four hours." He says he would be glad if we would kindly reply through the BRITISH MEDICAL JOURNAL as to the correctness of this label, and expresses his own opinion that there is nothing against the etiquette of the profession in it.

*** As a rule, the label on medicine bottles should contain nothing but directions to the patient respecting the use of the remedy.

ETIQUETTE writes: A neighbouring practitioner, when a patient of his leaves him for another man, frequently goes to the house of his former patient and asks for an explanation of and reason for the change. Is this custom one to be supported, or in accordance with the recognized usage of the profession?

*** If the patient leaves a practitioner without giving him notice, there can be no ethical objection to his calling to inquire the reason, provided he behaves courteously, but the wisdom of his action may well be doubted.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,528 births and 4,421 deaths were registered during the week ending Saturday last, October 8th. The annual rate of mortality in these towns, which had been 17.0, 16.0, and 15.6 per 1,000 in the three preceding weeks, further declined last week to 15.1 per 1,000. The rates in the several towns ranged from 2.6 in Hornsey, 5.2 in Handsworth, 8.4 in Aston Manor, 8.7 in Barrow-in-Furness, 9.0 in Devonport, 9.6 in Reading, 9.7 in Bournemouth, and 9.8 in East Ham and in Walthamstow, to 20.0 in Great Yarmouth, 20.2 in West Bromwich, 20.5 in Walsall, 20.7 in Liverpool, 21.0 in Middlesbrough, 21.3 in Burnley and in Preston, 21.5 in Stockport, and 24.4 in Salford. In London the rate of mortality was 13.9 per 1,000, while it averaged 15.6 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 2.1 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1.2 per 1,000, while among the seventy-five other large towns the death-rates from the principal infectious diseases ranged upwards to 4.3 in Blackburn, in Hull, and in Middlesbrough, 4.5 in Oldham, 4.6 in Liverpool, 4.7 in Grimsby, 5.1 in Walsall, 5.5 in Salford, 7.3 in Burnley, and 7.7 in Warrington. Measles caused a death-rate of 1.0 in Liverpool, 1.1 in Huddersfield, 1.4 in Salford, and 2.3 in Birkenhead; scarlet fever of 1.5 in Huddersfield and 1.6 in Hanley; diphtheria of 1.1 in Rudderfield and 2.2 in East Ham; and diarrhoea of 3.1 in Grimsby, 3.2 in Middlesbrough, 3.3 in Bolton, 3.9 in West Bromwich and in Blackburn, 4.1 in Preston, 4.6 in Walsall, 5.7 in Burnley, and 6.2 in Warrington. The mortality from whooping-cough and from enteric fever showed no marked excess in any of the large towns. Two fatal cases of small-pox were registered in Oldham, 1 in Bury, and 1 in Gateshead, but none in any other of the seventy-six towns. The Metropolitan Asylums Hospitals contained 2 small-pox patients on Saturday last, October 8th, against 5, 5, and 3 on the three preceding Saturdays; 1 new case was admitted last week, against 1, 0, and 0 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1,929, 1,969 and 2,158 at the end of the three preceding weeks, had further risen to 2,341 at the end of last week; 400 new cases were admitted during the week, against 340, 234, and 406 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, October 8th, 011 births and 501 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.5, 16.0, and 16.6 per 1,000 in the three preceding weeks, declined again last week to 15.1 per 1,000, and was equal to the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 12.4 in Aberdeen and 12.7 in Edinburgh to 20.2 in Greenock and 26.4 in Dundee. The death-rate from the principal infectious diseases in these towns averaged 2.1 per 1,000, the highest rates being recorded in Dundee and Paisley. The 233 deaths registered in Glasgow included 10 which were referred to whooping-cough and 18 to diarrhoea. Two fatal cases of whooping-cough and 8 of diarrhoea were recorded in Edinburgh. Three deaths from diphtheria, 2 from whooping-cough, and 8 from diarrhoea occurred in Dundee, 2 from whooping-cough in Aberdeen, 4 from whooping-cough and 2 from diarrhoea in Paisley, and 4 from "fever" in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, October 1st, 599 births and 338 deaths were registered in six of the principal Irish towns against 505 births and 361 deaths in the preceding period. The mean annual death-rate of these towns, which had been 16.2, 16.5, and 18.7 per 1,000 in the three preceding weeks, rose to 21.3 in the week under notice, this figure being 5.7 per 1,000 higher than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 11.3 in Londonderry and 17.6 in Belfast to 22.6 in Cork and 36.9 in Limerick. The zymotic death-rate in the same six Irish towns averaged 3.1 per 1,000, or practically the same as during the preceding period, the highest figure, 3.8, being registered in Londonderry, while Limerick recorded no death under this heading at all. From small-pox, scarlet fever, and diphtheria no deaths were recorded anywhere, but in Belfast 2 deaths were due to measles and 1 to typhus. From diarrhoeal diseases 16 deaths occurred in Dublin and 10 in Belfast.

POSTAGE OF VACCINATION FORMS.

A PUBLIC VACCINATOR writes: As public vaccinator it is compulsory for me to return "Form H" to the vaccination officer within a certain date of receiving it. Is it necessary for me to stamp the envelope, or is it sufficient for me to address the letter to the vaccinating officer and put O.H.M.S. on the top of the envelope? I may point out that vaccination certificates are all stamped, and further that if I return lymph to the Department or communicate with it in my capacity as public vaccinator I do not stamp my letters, but put O.H.M.S. on the envelope.

*** The stamp is necessary. The notice of requirement of vaccination with the enclosed certificate forms is stamped for return by post to the vaccination officer, but this is quite different from being sent "On His Majesty's Service." This privilege is only accorded in the case of official communications to and from Government offices.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BELGRAVE HOSPITAL FOR CHILDREN, S.W.—Assistant Surgeon.

BIRMINGHAM CONVALESCENT HOSPITAL AND HOME FOR CHILDREN, Moseley Hall.—Honorary Acting Surgeon.

BIRMINGHAM GENERAL HOSPITAL.—(1) House-Surgeon. (2) House-Surgeon for Special Departments. Salaries at the rate of £50 per annum.

BURY INFIRMARY.—Junior House-Surgeon, resident. Salary, £80 per annum, increasing to £90 after six months.

BURY ST. EDMUNDS: WEST SUFFOLK GENERAL HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

DARLINGTON HOSPITAL AND DISPENSARY.—House-Surgeon, resident. Salary, £120 per annum.

DERBY: COUNTY ASYLUM, Mickleover.—Senior Assistant Medical Officer, resident. Salary, £150, rising to £180 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell.—Resident Medical Officer. Salary, £110 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—(1) House-Physician; (2) House-Surgeon; (3) Assistant House-Surgeon. Salary for (1) and (2), £80 per annum, and for (3) £70 per annum.

HOSPITAL FOR WOMEN, Soho Square, W.—(1) Pathologist and Curator of Museum. Honorarium, 50 guineas per annum. (2) House-Physician. Salary, £50 for six months.

LEEDS: HOSPITAL FOR WOMEN AND CHILDREN.—Resident House-Surgeon. Salary at the rate of £80 per annum.

MANCHESTER CORPORATION.—Fourth Medical Assistant at the Monsall Fever Hospital. Salary, £100 per annum.

MARGATE: ROYAL SEA-BATHING HOSPITAL.—Resident Surgeon, to act as Junior for six months and then as Senior. Salary at the rate of £80 and £120 per annum respectively.

NEW HOSPITAL FOR WOMEN, Euston Road.—Senior Assistant in the Out-patient Department.

PADDINGTON GREEN CHILDREN'S HOSPITAL.—(1) House-Physician; (2) House-Surgeon. Salary at the rate of 50 guineas per annum each.

PORT ELIZABETH MUNICIPAL CORPORATION.—Medical Officer of Health. Salary, £650 per annum, rising to £750.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—(1) Two House-Physicians; (2) Casualty House-Surgeon; (3) House-Surgeon. Appointments for six months.

RUISLIP NORTHWOOD URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary, £20 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician, resident. Salary, £50 per annum.

SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, resident. Salary, £160 per annum, increasing to £200.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House-Surgeon. Salary at the rate of £50 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Physician. Salary, £100 per annum.

APPOINTMENTS.

AITKEN, Robert Y., M.D., F.R.C.S., Honorary Surgeon to the Blackburn and East Lancashire Infirmary.

BEATTIE, F. A., L.S.A., Medical Officer of Health, Hoylandswaine Urban District.

COLQUHOUN, J. S., L.R.C.P. and S.Edin., L.F.P.S.Glas., District Surgeon at Underberg, Natal.

CORSON, J. F., M.B., Ch.B.Vict., Resident Assistant Medical Officer, Salford Union Infirmary.

ELLIS, F. W., Junior Resident Assistant Medical Superintendent, St. Pancras Infirmary.

ESLER, Alfred W., M.D., M.Ch., M.A.O.R.U.I., Honorary Surgeon, Williamstown Hospital, Victoria, Australia.

FELL, R. W., M.B., C.M., District and Workhouse Medical Officer of the Buntingford Union.

GUNN, Albert A., M.B., Ch.B.Edin., Honorary Assistant Physician to the Blackburn and East Lancashire Infirmary.

HARDWICKE, G., District Medical Officer of the Scarborough Union.

LEGAT, R. E., M.B., C.M.Edin., Public Vaccinator for the Cromer District of the Erpingham Union.

LEWIS, J. W., L.R.C.P. and S.Edin., L.F.P.S.Glas., Certifying Factory Surgeon for the Brynamman District of the counties of Carmarthen and Glamorgan.

LISTER, H. S., M.B., Ch.B.Vict., Second Resident Assistant Medical Officer, Manchester Workhouse.

MANNING, T. E., M.B., District Medical Officer of the Milford and Lamphey Union.

MARTIN, John M. H., M.D., F.R.C.S., J.P., Honorary Consulting Surgeon to the Blackburn and East Lancashire Infirmary.

MASON, J. R., L.R.C.P. and S.Edin., L.F.P.S.Glas., District Medical Officer, Newcastle-on-Tyne Union.

MITCHELL, George, M.B., Ch.B.Aberd., Junior Assistant to the Professor of Physiology, Aberdeen University.

NAYLOR, Miss M. H., M.B., B.S.Lond., Junior Assistant Medical Officer at the Camberwell Parish Infirmary.

REDAHAN, Thomas, L.R.C.P. and S.Irel., Certifying Factory Surgeon for the Mohill District, county Leitrim.

SAWYER, James E. H., M.A., M.D.Oxon., M.R.C.P., Pathologist at the General Hospital, Birmingham.

STEDMAN, P. T. H., M.B.Lond., M.R.C.S., Medical Officer of Health, Wing Rural District.

STEVENSON, Roland, A., L.R.C.P.Lond., M.R.C.S.Eng., Medical Superintendent at the London Open-Air Sanatorium, Pinewood, Wokingham, Berks.

THOMPSON, S. W., M.R.C.S., L.S.A., District Medical Officer of the Greenwich Union.

TYLECOTE, F. E., M.B., Ch.B.Vict., Senior Resident Assistant Medical Officer, Manchester Workhouse.

WADMORE, J. Christopher, L.R.C.P.Lond., M.R.C.S.Eng., Assistant Resident Medical Officer at the London Open-Air Sanatorium, Pinewood, Wokingham, Berks.

WATT, Alexander, M.A., M.B., Ch.B., D.P.H.Abdn., First Assistant to the Inspector of Asylums for Cape Colony.

WOLVERSON, F., M.B., C.M.Glas., Medical Officer and Public Vaccinator, Aldridge Division of Walsall Union.

DIARY FOR NEXT WEEK.

TUESDAY.

Pathological Society of London. 20, Hanover Square, 8.30 p.m.—Mr. S. G. Shattock: Prehistoric Calculus. Dr. J. F. H. Broadbent: Some Cases of Toxæmic Jaundice and Interstitial Hepatitis. Dr. W. F. Victor Bonney: Karyokinetic Figures in Papilliferous Ovarian Cysts. Dr. F. W. Price: Cystic Kidney.

WEDNESDAY.

Royal Microscopical Society. 20, Hanover Square, W., 8 p.m.—Dr. Dukenfield H. Scott: President: The Reconstruction of a Fossil Plant.

THURSDAY.

The Childhood Society. 72, Margaret Street, 8 p.m.—Discussion on Physical Deterioration, to be opened by Mr. E. W. Brabrook, C.B., F.S.A., Sir T. Lauder Brunton in the chair.

FRIDAY.

Society for the Study of Disease in Children. 11, Chandos Street, Cavendish Square, W., 5.30 p.m.—Papers: Mr. R. Clement Lucas: An Ill-developed Upper Lateral Incisor Tooth as a Forerunner of Harelip or Cleft Palate. Dr. Sidney Gilford: Two Cases of Congenital Diaphragmatic Hernia. Cases will be shown by Messrs. C. O. Hawthorne, Robert Hutchison, Sidney Stephenson, Leonard Guthrie, Arthur Edmunds, E. Cautley, G. Pernet, and others.

POST-GRADUATE COURSES AND LECTURES.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m. — Hydrocephalus.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C. — The following clinical demonstrations have been arranged for next week at 4 p.m.: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Throat. Lectures will be delivered at 5.15 p.m. as follows: Monday, The Treatment of Gonorrhœa; Tuesday, Disorders of Menstruation; Wednesday, Recent Variations in the Technique of Certain Common Operations; Thursday, Facial Paralysis.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Central Out-patient Department, 7, Fitzroy Square, W.—Thursday, 5 p.m., The After-Effects of Pleurisy.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C. — Tuesday, 3.30 p.m., Methods of Examining Cases; Friday, 3.30 p.m., Electrical Testing.

North-East London Post-Graduate College, Tottenham Hospital, N. — Wednesday, 2.30 p.m., Demonstration on Fevers (North-Eastern Fever Hospital, St. Ann's Road); Thursday, 4.30 p.m., Lecture on Diseases of the Prostate.

Post-Graduate College, West London Hospital, Hammersmith Road, W., 5 p.m.—Monday, Causation of Insanity, and How Prevented by Medical Teaching. Tuesday, Two Serious Forms of Valvular Disease of the Heart. Wednesday, Practical Medicine. Thursday, Treatment of Movable Kidney. Friday, Skin Cases.

Samaritan Free Hospital for Women, Marylebone Road, N.W.—Thursday, 3 p.m., The Management of Cases of Abdominal Surgery.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

CLARK.—On Thursday, October 6th, at 44, Beckenham Road, Penge, S.E., the wife of W. Adams Clark, M.D., of a son.

MARRIAGE.

COLLIS—GURNEY.—On October 6th, at All Saints, Gosport, by the Rev. Dean Kitchin, D.D., assisted by the Rev. W. M. Davidson, M.A., Arthur J. Collis, M.A., M.D.Cantab., third son of William Blow Collis, of Swinford House, Stourbridge, to Dorothy Mary Wren, fifth daughter of the late Rev. Henry Palin Gurney, D.C.L., and Mrs. Gurney, of Roseworth, Gosforth, Newcastle-on-Tyne.

DEATH.

MACKENZIE.—On the 25th of September, at Bombay, John Alexander Mackenzie, M.D., late of Balham, London, eldest son of the Rev. D. S. MacKenzie, The Manse, Gairloch, Ross-shire, and son-in-law of the late John Livy, M.D., of Bolton-le-Moors, aged 51.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 7, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Alitheday, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

I. asks if any observers have noticed any connexion between snuff-taking and cerebral haemorrhage. He has been told of a list of twelve cases lately of snuff-takers who have died from cerebral haemorrhage.

E. H. B., who wishes to fit up an electric bath, asks where he can get the necessary information and details of working.

J. P. would be glad if any member could recommend an inexpensive chair couch for use in extraction of teeth and minor operations at the surgery under chloride of ethyl.

LATERNA would be glad to be informed of the address of a London firm where lantern slides of cases of myxoedema before and after treatment by thyroid extract may be obtained.

THORAX asks for suggestions as to treatment of a girl of 20 who has never learnt to talk owing to deafness. The latter is not absolute, and her condition is largely due to parental neglect.

*** The girl evidently requires oral teaching such as could be obtained at the College, 11, Fitzroy Square, W., or at the Training College, Castlebar Hill, Ealing. Mr. W. Van Praagh is Director of the former, Mrs. Kinsey Superintendent of the latter. Either would supply information.

TREATMENT OF TINNITUS.

L. H. would be glad of suggestions for treatment of an obstinate case of tinnitus and neuralgia of aural origin, with deafness and vertigo. An aurist considers that the case is unlikely to derive benefit from local treatment. Bromides alone seem to give relief. Is it wise to continue their use for a long period? Aspirin, quinine, and salicylates have not proved of any service. The patient is a woman, aged about 45, and not yet reached the climacteric.

LETTERS, NOTES, Etc.

ERRATUM.—In an article upon Earlswood Asylum, published on October 8th, at p. 937, the number of readmissions was stated by inadvertence to have been 33. The real number was three only, and it was that figure which we had in mind when remarking that it would be interesting to know what proportion of the 48 patients discharged relieved at the end of their term were deemed to require that permanent care for which the re-election for a further term, accorded in some *few* cases, was but a temporary expedient.

WORK OF THE APPENDIX.

DR. ALEX. FORSYTH (Leytonstone) writes: Let me add one broad line to Sir William Macewen's picture of a rehabilitated appendix (BRITISH MEDICAL JOURNAL, October 8th, 1904, p. 873). Not only does it perform its functions quietly and well in health, as he has observed, but when abnormal conditions arise it performs abnormal work vicariously. An indication of the kind of work that is forced on it is shown in the "Experiment with the Vermiform Appendix" (*Lancet*, August 13th, 1904, p. 493).

THE TEACHING OF MEDICAL ETHICS.

DR. W. J. DIXON (Somerset) writes: Why is it that our medical schools have no department where the student might be taught proper views on medical ethics, including such important subjects as "hospital abuse," and "sweating of medical men by Friendly Societies," etc.? If a young man starting in practice had the advantage of such teaching in the difficulties which sometimes arise with his professional brethren, and more frequently arise with medical aid societies, surely he would feel more confident in doing the right thing, and would not be so ready to do anything mean or unprofessional. Again, sir, why do not the teachers at the medical schools point out to men in their final year the great advantage of joining the British Medical Association, and also a medical defence association? Then, sir, we might hope to have 38,000 members in the British Medical Association instead of 19,000, as at present; and the Medical Defence Associations, whether connected with the British Medical Association or not, would be placed on a satisfactory financial basis.

THE PROPHYLAXIS OF MALARIA.

COLONEL M. D. O'CONNELL, R.A.M.C., writes: In the papers read on the prophylaxis of malaria at the Oxford meeting, published in the BRITISH MEDICAL JOURNAL of September 17th, very little reference is made to those natural enemies of the mosquito which abound, and are so well known to all. Only two—the dragon-fly and the fish—are apparently even mentioned. There are countless others always available in and around houses in warm countries to help in the campaign against mosquitos if we only let them.

Many of your readers must be aware how destructive of mosquitos the spider is; for it is not unusual to find cobwebs laden with the remains of mosquitos in bathrooms and dark corners of Indian houses where they may escape observation. Spiders spin their webs for mosquitos and flies in dark corners because they are not tolerated elsewhere. If given the least encouragement they quickly come out of the dark corners, and cover especially all doors and windows or other openings with their cobwebs. Here, at hand and ready, is the means of converting an ordinary house into a mosquito-proof house with little or no trouble or expense. By fitting the doors and windows with a light trellis-work or even loose twine netting, and encouraging the spider to weave her web over it, we provide a most perfect obstacle to mosquitos penetrating into the dwelling-house. The old-fashioned mosquito net surrounding the bed might be replaced by a similar frame supporting a screen of cobwebs. Within such a screen the dweller in the tropics could take his rest secure against night attacks of even what some one called the "bloodthirsty *Anopheles*." In other ways, also, cobwebs are not open to the objections raised against wire gauze or mosquito netting. They are obviously a better protection against mosquitos. They would not interfere with the cooling or ventilation of the house as wire gauze does. And they cost—nothing!

Amongst other enemies of mosquitos to be found in or near the Indian house are the lizards, frogs, and birds, and in the garden or verandah insectivorous plants. From these could be organized a "mosquito brigade" far more effective than that which is at present known by this title.

Cobwebs are apparently not only, as suggested above, a protection against malaria, but also perhaps against enteric fever. For the view that enteric fever is spread by house flies seems to be gaining ground. Put forward at first, if I remember rightly, in India, it seems to have been taken up both in England and America.

LETTERS, COMMUNICATIONS, ETC., have been received from:

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SEVENTY-SECOND ANNUAL MEETING
OF THE
British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

Francis Henry Champneys, M.D., F.R.C.P., President.

DISCUSSION ON THE TREATMENT OF ACCIDENTAL HAEMORRHAGE.

I.—Sir Arthur Vernon Macan,
President, Royal College of Physicians of Ireland.

My first duty and pleasure is to thank your Council for the honour they have done me in asking me to introduce the discussion on the treatment of accidental haemorrhage here to-day.

It is now just twenty-five years since a similar honour was done me, when I read a paper on "Haemorrhage from the Organs of Generation during Pregnancy and Parturition" at the meeting of this Association held in Cork in the year 1879.

When asked to introduce the discussion on accidental haemorrhage at this meeting I hastily concluded that it would be a much easier task than my former one, as the subject covered an area so much more restricted. In that expectation I have been grievously disappointed, and I have been at times almost in despair of bringing my labours to anything like a satisfactory conclusion. Nor is it likely that any definite conclusion will be arrived at to-day, but we may, I think, hope that the discussion will at least clear the atmosphere and make it evident what questions still remain unanswered and what problems still require to be solved in order to enable us to give a satisfactory answer to the question, What is the best treatment of accidental haemorrhage?

At the very outset I would like to express my indebtedness, while investigating this subject, to an elaborate paper by Dr. W. R. W. Holmes,[1] and to a thoughtful and hardly less important one by Dr. W. F. Colclough,[2] who was Extern Maternity Assistant in the Rotunda Hospital, under the late Master of the Hospital, Dr. Purefoy, which may be found in the *Journal of Obstetrics and Gynaecology of the British Empire* for August, 1902.

There is at the present time no question in the whole range of obstetrics, not even that of the origin and treatment of eclampsia, about which such opposite views are held as the one that has been fixed on by your Council for our discussion here to-day, namely, the Treatment of Accidental Haemorrhage. This is true not only in regard to the more serious and unusual forms of treatment, such as the Caesarean section and *accouchement forcé*, but of the simplest and most generally adopted, such as rupture of the membranes or plugging the vagina. To account for this there must, I think, be some corresponding difference in the views held as to the origin or mechanism of the haemorrhage, or perhaps some unrecognized difficulty in the diagnosis, or it may be that the different methods of treatment are not applied under any fixed rule, but more by haphazard, and so are used in cases to which they are not suitable. Finally, there is the supposition, that applies equally to all cases where there is a great difference of opinion as to several forms of treatment, namely, that none of the methods is very effective, and that a really satisfactory form of treatment has not yet been found out.

This is the conclusion to which Dr. Holmes has arrived, for he acknowledges that he has failed to ascertain "the indications for more accurately placing the lines of treatment,"[3] and where he has failed it would be rash in me to look for success. At the same time I do not hesitate to express my opinion thus early that in systematic plugging of the vagina, combined with the application of a firm binder and perineal bandage, we have an efficient method of treating all cases of accidental haemorrhage except the most violent ones, and perhaps even these.

I purpose, therefore, before passing on to the treatment, to make a few observations and to offer a few suggestions on the (1) Etiology, (2) Mechanism, and (3) Diagnosis of Accidental Haemorrhage.

Etiology.

The causes of accidental haemorrhage may be divided into three classes.

1. Those due to accident.
2. Those due to disease.
3. Those due to some failure in the mechanism of labour.

It is hard to determine from our present statistics the relative frequency of these three classes, but the tendency of all modern views is that in the great majority of cases accidental haemorrhage is due to disease and not to accident. Naturally the diseases on which it most frequently depends are those of the decidua or placenta, while disease of the uterine wall, if not a direct cause, enormously increases the danger of the haemorrhage, as does any disease of the blood itself, such as scurvy or haemophilia.

I have no intention of going through the list of all the accidents and diseases that may cause accidental haemorrhage; but it is probable that most of the diseases act either by weakening the vessels of the placental site or by increasing the tension in them, while it is obvious that an accident will more easily cause rupture of these vessels if they are already the seat of disease. Diseases of the blood itself may not only cause a weakening of the vessels but may make any rupture much more serious by lessening the coagulability of the blood, while disease of the uterine wall allows a dangerous amount of haemorrhage to accumulate in the uterus, prolongs the period of the haemorrhage indefinitely, and, even when the child is born, will probably endanger the patient's life from *post-partum* haemorrhage, only to be stopped by plugging the uterus, or perhaps by its removal by Porro's operation.

The third class, those due to some failure in the mechanism of labour, are: (1) Where the bag of membranes persists far into the second stage and, by pulling on the placenta, causes its separation; (2) where, during difficult labour, the contraction ring mounts very high in the abdomen, and the placental site becomes so diminished in size that the placenta becomes separated; this is particularly likely to happen in cases of neglected transverse presentation, when all the waters have drained off, and so lessened the pressure on the fetal surface of the placenta; (3) if the cord is very short, or twisted round the child's neck, it may, as the child descends, pull on the placenta and separate it; (4) in breech cases, where there is delay in the delivery of the head, the placental site may become so small as to lead to separation of the placenta; (5) and lastly, we have the separation of the placenta that sometimes follows the birth of the first of twins, or the sudden escape of excessive liquor amnii, which the late Professor Schroeder thought were frequent causes of accidental haemorrhage. In these cases the separation is evidently due both to the diminution in the site of the placenta and to the removal of intra-uterine pressure from its fetal surface.

The Mechanism of Accidental Haemorrhage.

Before passing on to consider the mechanism of accidental haemorrhage, there are certain postulates that I would wish to lay down as beyond dispute; these are:

1. That the healthy uterus cannot be distended to any considerable extent by the force of the blood pressure.
2. That the placenta has great power of accommodating itself to changes in the size of its site.
3. That the placenta is not so easily separated as the membranes, and that they are both equally separable over their entire area.
4. That the effect of gravity, and of the peristaltic action of the uterus, need not be considered.
5. That the haemorrhage in spreading will follow the line of least resistance.

These being granted, there are five important questions as to the mechanism of accidental haemorrhage.

I. What is the mechanical cause of the haemorrhage?

II. What are the conditions that tend to arrest the haemorrhage?

III. What are the conditions that tend to its increase and spreading?

[1] Ablatio Placentae, *American Journal of Obstetrics*, vol. xliv.
[2] *The Treatment of Accidental Haemorrhage.*
[3] Loc. cit., p. 771.

IV. What are the conditions that cause the haemorrhage to remain internal?
V. What are the conditions that cause it to become external?

I. The mechanical causes of the haemorrhage are:
1. Increased action of the heart.
2. Obstruction to the escape of venous blood from uterus.
3. Disease of the vessels.
4. Sudden lessening of intrauterine tension.
5. Diminution in the size of the placenta site.

II. The conditions that tend to stop the haemorrhage are:
1. Weakening of the heart's action.
2. Increased resistance to the escape of the blood from the open vessels, from increase of the intrauterine tension due to—
   (*a*) The blood that has been effused;
   (*b*) Uterine contraction;
   (*c*) Adhesions round the effused blood;
3. The formation of thrombi.

III. The conditions that tend to the increase of the haemorrhage are:
1. Increase of the *vis a tergo*, increased action of the heart.
2. Diminished intrauterine tension, from—
   (*a*) Giving way of the uterine walls;
   (*b*) The absence of contractions;
   (*c*) The haemorrhage escaping from under the placenta;
   (*d*) The haemorrhage becoming external.
   (*e*) The rupture of the membranes.
3. Fresh separation of the placenta.
4. Diminished coagulability of the blood, as in scurvy and haemophilia.
5. A rapid flow of the blood preventing the formation of thrombi.
6. The absence of firm adhesions between the placenta and membranes and the uterine walls.

IV. The conditions that cause the haemorrhage to remain internal are:
1. Its small amount.
2. The position of the first haemorrhage—that is, its distance from the edge of the placenta and from the inner os.
3. The presence of firm adhesions between the placenta or membranes and wall of the uterus.
4. Distensibility of the uterine wall.
5. The bleeding bursting into the sac of the amnion.
6. Conglutination of os uteri (Holmes).
7. The retention of the blood by the presenting part.

V. On the other hand, the haemorrhage will become external, according as:
1. The original point of haemorrhage is nearer the margin of the placenta and nearer the inner os.
2. The amount of the haemorrhage is considerable.
3. According to the ease with which the haemorrhage can escape from the uterus—that is, the absence of adhesions.
4. The tone of the uterus prevents it accumulating in its cavity.
5. And as the presentation does not block the lower uterine segment.

The chief practical questions about the mechanism are:
1. What is the effect of rupturing the membranes?
2. What is the effect of contractions of the uterus on the haemorrhage?

The direct effect of rupturing the membranes must always be to lessen intrauterine tension, and so increase the haemorrhage. It is said that in a secondary way it tends to check the haemorrhage by bringing on uterine action. In answer to this, it has been urged that, in the first place, if contractions are not present it is quite uncertain how long it will be before they come on; and, secondly, that uterine contractions can only check the haemorrhage directly during their continuance, and not during the intervals.

The second point here raised at once leads on to the consideration of the second question—namely, What effect have uterine contractions on the haemorrhage? The reasons why uterine contractions cannot be looked on as stopping the haemorrhage during the intervals are:

1. It is the retraction that stops haemorrhage during the intervals and not the contraction, and we cannot have sufficient retraction of the placental site to stop haemorrhage as long as the fetus is *in utero*.

This is freely acknowledged by many authorities, who, when speaking of the treatment, say that the only certain way to stop accidental haemorrhage is to empty the uterus. Further, in many cases the haemorrhage does not come on till after labour has commenced, and continues in spite of uterine contractions. Lastly, if uterine contractions stopped the haemorrhage, how could accidental haemorrhage occur at all during the course of labour?

There are also some cases in which uterine contractions cause accidental haemorrhage, as:

1. When the contraction ring has risen high up in the abdomen, and the placenta site has become contracted.
2. When there is delay in the birth of the after-coming head.
3. In cases of neglected shoulder presentation.
4. After the birth of the first of twins, or the escape of excessive liquor amnii, the uterus often contracts down and separates the placenta—but the retraction of the uterus, though much greater than in an ordinary case, is not sufficient to prevent the haemorrhage. The detachment of the placenta in these two cases, however, is the exception and not the rule; it is very possible that some amount of disease may be present to account for the separation.

But there is no doubt that during a contraction the haemorrhage is arrested—for, first of all, the supply of blood to the uterus is cut off; and, secondly, the intrauterine tension is increased, so that no blood can escape from the vessels.

A great many authors hold that uterine contractions tend to flatten out the effused blood and so cause further separation of the placenta, or force the haemorrhage to become external, and amongst them is Dr. Holmes, who likens it to Schultze's mechanism of the third stage. This is, in my opinion, a great mistake, for when the uterus contracts the intrauterine tension is increased, and the portion of the placenta that is still undetached is pressed so firmly against the uterine wall that further detachment is impossible. Moreover, in proportion as the intrauterine tension increases, in the same proportion the difficulty of separating the placenta from the uterine wall is increased. Further, if uterine contractions tended to separate more of the placenta, how could they be looked on as checking the haemorrhage? The fact is that it is during the interval, and entirely owing to the vascular tension, that the haemorrhage spreads and separates fresh portions of the placenta, and, finally, becomes external. During a pain the haemorrhage cannot travel, for it is pressed equally in every direction; therefore, it is not the uterine contractions that determine whether the haemorrhage will become external or continue internal, but the general condition of the uterine wall during an interval, with the other factors already mentioned—namely, the amount and the position of the haemorrhage, and the presence or absence of morbid adhesions. But as during a contraction the blood everywhere comes to a standstill, time is given for thrombi to form in the mouths of the vessels, and in this manner and to this degree uterine contractions tend to stop the haemorrhage.

Diagnosis.

External Haemorrhage.—If blood escapes from the uterus of a pregnant woman towards the end of gestation the first question to settle is whether the haemorrhage is accidental or unavoidable. This cannot be answered until the os is sufficiently dilated to admit a finger, when, if the placenta is felt, the diagnosis is made. But we are not justified in concluding that, if the placenta is not felt at the os, the haemorrhage is not due to a low insertion of the placenta. I am of opinion that it is not by any means always possible to make this diagnosis. Dr. Holmes considers that it is. He says that "a failure to feel placenta makes the diagnosis very certain."[4] At the same time he objects to Dr. Rigby making the diagnosis depend on feeling or not feeling the placenta at the os. I confess that I do not know how to diagnose haemorrhage due to low insertion of the placenta from external accidental haemorrhage; but it is not likely to be confounded with internal accidental haemorrhage or even with combined haemorrhage. There is another difficulty in the diagnosis—namely, when the circular vein of the placenta ruptures and causes haemorrhage.

I do not think that either of these conditions can be diagnosed till after the expulsion of the placenta. The latter subject has recently aroused a great deal of interest in France, and Budin has written a monograph upon it.

Internal Haemorrhage.—There are two steps in the diagnosis of internal accidental haemorrhage. The first is to settle that there is a haemorrhage, and the second to recognize that the

[4] Loc. cit., p. 769.

haemorrhage is due to a premature separation of the placenta. We must not forget that every case of accidental haemorrhage is at the commencement an internal haemorrhage. Also that there can be no doubt that a small amount of haemorrhage between the placenta and uterine wall is by no means uncommon, as was pointed out years ago by Spiegelberg. Now, supposing a woman in the last few months of her pregnancy is suddenly attacked with abdominal pain and a feeling of weakness, or even faints, how are we to diagnose whether this is or is not due to internal accidental haemorrhage? In many cases the diagnosis is impossible till after the expulsion of the placenta. Hence a great many cases of slight accidental haemorrhage quite elude our observation.

However, once the symptoms of anaemia are well marked, and are accompanied with much pain and tension or localized swelling, there is usually not much trouble about the diagnosis.

In the case of combined accidental haemorrhage the diagnosis depends on our recognizing that the symptoms are out of proportion to the amount of blood that has escaped. As the haemorrhage is often recurrent, and the blood may have been removed, or may have soaked through the bedclothes, this diagnosis is not always easy. So I think it is of great importance that our first thought in every case of accidental haemorrhage should be—How much of the haemorrhage is internal?

Treatment.

The prophylactic treatment comes first, and can be readily applied to those cases of accidental haemorrhage due either to accident or any failure in the mechanism of labour.

The prophylactic treatment of accidental haemorrhage due to disease is as yet only in its infancy, and opens up an immense field for investigation and experiment, into which I shall not venture to enter to-day, but shall content myself by pointing out that we can fulfil the indications in many cases by curing endometritis, or by lessening arterial tension and venous congestion by appropriate remedies, or by dealing with nephritis or other complications that may be present, or by administering medicines that tend to increase the coagulability of the blood.

The indications for treatment are:

1. To arrest the haemorrhage without emptying the uterus; or, if this is not possible,

2. To empty the uterus before the patient succumbs to the haemorrhage, in whatever way is least likely to cause rupture of the soft parts, with the consequent *post-partum* haemorrhage and shock.

3. To treat any *post-partum* haemorrhage that may occur.

4. To combat the anaemia.

The means at our disposal for fulfilling the first indication—namely, stopping the haemorrhage without emptying the uterus—are: (1) Lessening the *vis a tergo;* (2) increasing the intrauterine tension, or *vis a fronte;* (3) favouring the formation of thrombi.

We can quiet the heart's action by rest and opium, and lessen congestion by salines, etc. We can increase the intrauterine tension (1) by causing contraction and retraction of the uterus; (2) by preventing the escape of the blood by plugging the vagina or cervix; (3) by firm pressure on the uterus, either by the hand (Kristeller) or by the vaginal plug and abdominal binder (Smyly), or by the vaginal plug and abdominal binder, aided by a firm perineal bandage (Purefoy).

The formation of thrombi is favoured by every method that retards the flow of blood. Dr. Tweedy thinks systematic plugging does this by stopping the circulation in the uterine arteries.

The most important of the methods of stopping haemorrhage without emptying the uterus is, however, plugging the vagina. This method of treatment is very ancient, and I have not attempted to trace it to its source, but Rigby, in his book, gives the following description of Leroux's method:

> This consists in introducing such a quantity of lint, moistened with vinegar, into the vagina as will completely fill it, and which, by pressing mechanically upon the os uteri, will prevent the external escape of any more blood, and consequently make that coagulate which is retained, and which obviously must press on the placenta, and, at least for a time, stop the discharge. He (Leroux) is of opinion that by doing this such a check may be put to the flooding as will admit of the surgeons waiting securely until the uterus is sufficiently dilated to allow of artificial delivery, or until Nature herself be able to accomplish it.[5]

This treatment was applied by Leroux to all cases of uterine haemorrhage, even to *post-partum* haemorrhage, of which application of it Rigby seems to approve.[6]

[5] Rigby, *On Uterine Haemorrhages*, p. 63.
[6] Rigby, Preface, p. xvii.

Leroux's method is quoted by Cazeaux, who used it even after the rupture of the membranes. If the haemorrhage was severe and there were pains present he preferred rupturing the membranes to plugging the vagina.[7]

Plugging the vagina was also recommended by the late Professor Schroeder in his celebrated work on midwifery, but only in cases where the membranes were not ruptured, and even then the occurrence of internal haemorrhage was to be watched for.

But of recent years plugging has not been looked on with much favour in this country. Barnes, in his *Obstetric Operations*, does not give it as one of the treatments of accidental haemorrhage. Galabin ruptures the membranes, and only uses a vaginal plug if the membranes are inaccessible.[8] Dr. Herman calls it "a clumsy and painful way" of "stimulating the uterus to contraction."[9] And still more startling is the conclusion arrived at by Dr. Holmes, who says: "The tampon should have no place in the treatment of accidental haemorrhage."[10]

It is undoubtedly to Dr. W. J. Smyly that we owe the reintroduction of the vaginal plug for the treatment of accidental haemorrhage. He was led to adopt this method by the very bad results that followed more active interference in the cases he was called on to treat soon after being appointed Master of the Rotunda Hospital, and in a paper read before this Association at the meeting at Bristol in 1895 he claimed for plugging that it (1) prevented external bleeding, (2) excited labour pains, (3) increased rapid dilatation of the os, and (4) caused increased intrauterine tension; but he restricted its use to cases of external accidental haemorrhage before the rupture of the membranes. Dr. Jellett gives a good account of this treatment in the last edition of his *Midwifery*, and he applies it even after the membranes are ruptured, provided strong uterine action is present.

Dr. Purefoy, who followed Dr. Smyly as Master of the Rotunda, has developed this method still further, and now holds that it is capable of controlling not only external accidental haemorrhage, but even the worst forms of internal haemorrhage.

I take the description of his method from Dr. Colclough's paper. He says (p. 153):

> The plugs used are small tampons of sterilized cotton wool, about the size of a large walnut. Lysol, creolin, and perchloride of mercury are the antiseptics used. After all the necessary antiseptic precautions used for any obstetric operation have been taken, a catheter is passed, and the operator proceeds to plug. The patient is placed in the lithotomy position, and the fingers of the hand which was not used for cleaning the vulva, etc., may be used for plugging, and the other hand acts as a speculum. The plugs are taken out of the solution separately, and wrung almost dry; the first one is placed in the posterior fornix, and the fornices are systematically packed with a fair amount of pressure. Each plug is put in position with a purpose to form a ring round the cervix, and packing is continued systematically downwards until no more can be introduced into the vagina. The operator then takes a large strip of iodoform gauze and places it over the plug, which will be projecting from the vagina, instructing an assistant with clean hands to hold the gauze in position while the binder and T bandages are put on. The iodoform gauze is not always used, but the author has found it of great practical value.
>
> Chloroform as an anaesthetic need not be given; it will only be required if the patient is very restless, and it is a remarkable fact how little is necessary to render the patient quiet—merely a few whiffs. . .
>
> The binder should have been placed under the patient before the plugging was commenced. It is now brought down into position, while the patient is swung round into the bed. Strong pins and a stout binder are needed. The first pin must be placed above the fundus, as near to the ensiform cartilage as possible, and the binder secured extremely tightly downwards as far as the symphysis. Lastly, the perineal bandage is put on, pinned well up the binder in front, three couples of pins being required. The patient is then rolled over on to her side, and the bandage secured at the back in the same way, the assistant keeping up steady pressure with his hand on the iodoform gauze. The plugs are thus kept in place until thoroughly secured by the tight perineal bandage. In this manner pressure is made on the front of the uterus and abdomen by the tight binder, and the uterus is forced downwards as well as on to the firm mass of plugs. The abdomen and the abdominal veins will also be compressed.

Dr. Colclough's paper is founded on 83 cases of accidental haemorrhage, in 43 of which the plug and binder were used. The after-treatment consists in warmth, warm nourishment, and ½ gr. of morphine subcutaneously.

The medical attendant is sent for if (1) pains come on; (2) plugs begin to bulge; (3) haemorrhage comes through plugs; or (4) if patient has any faintness (p. 161).

[7] Cazeaux, ninth edition, pp. 804-5.
[8] Galabin, i 86, first edition, p. 389.
[9] Herman's *Difficult Labour*, 1894, p. 297.
[10] Loc. cit.

As a result of his experience he concludes:

If the uterine walls are so diseased that, as the result of intra-uterine pressure, they distend, then it is claimed that the plug and binder, applied in the manner which has been described, render them capable of withstanding the pressure of the escaping blood, and so control the haemorrhage (p. 163).

All risk of *post-partum* haemorrhage is done away with (p. 164). The plug can be easily applied, etc.

As the object of the Rotunda method is to allow of a natural delivery, the membranes must therefore not be ruptured until as late as possible. Great judgement is required on this point (p. 164).

If the pains become vigorous the perineal bandage should be taken off and a few of the plugs removed. The contraction of the uterus will force out the rest; only then should the membranes be ruptured if they are still intact (p. 164).

Out of 43 cases so treated only 2 died. One of these died of the haemorrhage, undelivered, and the second died with rupture of the lower part of the uterus, after she had delivered herself.

During the last year of his Mastership Dr. Purefoy had 13 cases of accidental haemorrhage, in 7 of which the vaginal plugging was used, as he says, "with the admirable results which, as our former reports amply demonstrate, follow its use."

Thus, in favour of plugging, we have Dr. Smyly, who read a paper on the subject before this Association in 1895 at Bristol; Dr. Purefoy, the ex-Master, to whom the credit is due of having recognized the enormous importance of pressure applied externally, and invented the efficient method of applying it which I have brought under your notice to-day: Dr. Tweedy, the present Master, the author of an excellent paper on the use of the vaginal plug in the treatment of accidental haemorrhage, in which he claims that by its proper application you can stop the circulation in the uterine arteries, and who is still as enthusiastic as ever in favour of the method; and, lastly, the author of the paper I have had the honour of reading here to-day, whose views you have listened to so long and so patiently. Thus, curiously enough, you have the last four Masters of the Rotunda Hospital firm believers in—I may say, supporters of—the method.

If the claims that Dr. Purefoy makes for his method of treating accidental haemorrhage should prove to be well founded, as I have little doubt that they will, it will simplify enormously the treatment of accidental haemorrhage; it will save many a lonely practitioner from hours of mental and moral anguish; it will be the means of preserving many a valuable life that without it would be lost; and it will for ever redound to the credit of the Dublin School of Midwifery, to which we are all four proud to belong, and of which its worthy originator is such a distinguished ornament.

To fulfil the second indication we must divide the cases into those where the cervix is dilated and those where it is not. When the cervix is dilated I do not think the exact method of delivery is of such importance, and we are guided in our choice by well-known general principles.

The treatment of accidental haemorrhage is very shortly stated by Bumm in his well-known work on obstetrics. He says:

1. If the os is dilated, deliver at once;
2. If the os is closed, dilate if there is time; if not—
3. Deliver by vaginal Caesarean section.

This seems very simple, but when we look at it more closely we find that most of the difficulties of treatment are hidden, or obscured, under the phrase "dilate if there is time." For no matter what method of dilatation you choose—and personally I do not think the choice of the method is the important point—you will, sooner or later, be put in the dilemma of losing your patient from the haemorrhage if you delay, or losing her from rupture of the soft parts if you hurry. We possess no set of rules which will tell a man under these circumstances how much time he has for effecting dilatation, and I know of no position in midwifery so trying as when we are called on to make our choice between letting the patient die of the haemorrhage or run the risk of causing her death by delivering too quickly through an undilated cervix.

Nor when the case is over does our experience help us much by pointing out in which direction we have erred. For if our patient dies of the haemorrhage without being delivered, we cannot be sure that she would have been saved if we had delivered her through the undilated cervix. And if she dies from the injury to the cervix, we can never be quite sure that she would not have died from the haemorrhage if we had taken enough time in the dilatation to avoid rupture of the soft parts.

Personally, the memory of several cases makes me entirely in favour of performing Caesarean section, rather than attempting to solve the difficulties of the above dilemma. And, if Caesarean section is our choice, the opinion of the profession abroad is becoming more and more in favour of Dührssen's vaginal operation.

If, however, we determine on trying to deliver the patient by dilatation we can choose between (1) manual, or (2) instrumental dilatation. Under manual dilatation I would include not only dilatation with the fingers, but also bipolar version, and bringing down a leg. While under instrumental dilatation I would include all the various forms of bags, Barnes's, Brauns's, or Champetier de Ribes's, either with or without the addition of elastic traction, and Hegar's and Bossi's dilators. The latter instrument has undergone several modifications since its first introduction, and there can be no doubt that by increasing the number of blades in the dilator from four to eight, as Frommer has done in the instrument that I now show you, the risk of causing rupture of the cervix has been considerably reduced.

But no method of dilatation gives any answer to the questions: How long have I got to effect dilatation of the soft parts before the patient dies of haemorrhage? or, How long will the soft parts require for dilatation without risk of producing serious rupture of the cervix? Unless we adopt the method of treatment by plugging, as already fully described, these questions must remain for ever the unsolved difficulties in the treatment of bad cases of accidental haemorrhage.

Conclusions.

1. That in the absence of disease all accidental haemorrhage has a natural tendency to stop.
2. That all accidental haemorrhage commences as internal haemorrhage, and that many cases of internal haemorrhage cease spontaneously, and are not diagnosed at all or only by finding old clots on the surface of the placenta *post partum*.
3. That a large proportion of cases of so-called accidental haemorrhage is due to low insertion of the placenta, and that the diagnosis of this is difficult, and cannot always be made with the finger.
4. That haemorrhage from low insertion of the placenta is not likely to cause either internal or combined haemorrhage.
5. That rupture of the circular sinus of the placenta gives symptoms that are very similar to those of internal haemorrhage, or even combined haemorrhage.
6. That there are other factors, besides want of tone in the uterine walls, that tend to cause the haemorrhage to remain internal—for example, lessening of the *vis a tergo*, the position of the first haemorrhage, and its amount, as well as firm adhesions around it.
7. That in the worst cases, where the cervix is long and os rigid, it is (probably?) necessary to deliver the woman immediately.
8. That the Caesarean section, either vaginal or abdominal, is a better way of doing this than the *accouchement forcé*.
9. That less severe cases, when the cervix is long and os rigid, should be treated by a properly applied vaginal plug.
10. That in writing or speaking English it is better to use the terms "plug" and "plugging," than the terms "tampon" and "tamponading."
11. That uterine contraction may cause the haemorrhage to cease during the contraction, but not during the intervals, except indirectly as favouring thrombosis.
12. That if uterine contractions stopped the haemorrhage accidental haemorrhage during labour would not occur.
13. That accidental haemorrhage is often due to uterine contractions—for example, after the sudden escape of excessive liquor amnii and after the birth of the first of twins.
14. That when the haemorrhage escapes from under the placenta the tendency to further separation of the placenta is lessened, because the membranes (unless morbidly adherent) are easier separated than the placenta.
15. That this is even more the case once the haemorrhage has become external.
16. That rupturing the membranes must always cause a diminution in the intrauterine tension.
17. That it is uncertain how soon pains will supervene.
18. That rupture of the membranes makes it more difficult to increase the intrauterine tension by plugging the vagina.
19. Therefore rupture of the membranes is not good treatment for ordinary cases of accidental haemorrhage, unless it causes rapid expulsion of the child.
20. That rupture of the membranes is a most efficient way of stopping accidental haemorrhage which is caused by a persistence of the bag of waters far into the second stage.

21. For an exactly similar reason, rupture of the membranes is most efficient in stopping haemorrhage from low insertions of the placenta.

22. That the great danger in effecting delivery of the child *per vias naturales* when the cervix is only partially dilated is due to the great difficulty there is in judging how much time is at our disposal to effect the dilatation.

23. That in plugging the vagina and the application of a tight binder and a firm perineal bandage we have a most efficient method of treating all but the worst cases of accidental haemorrhage, perhaps even these.

24. That if the haemorrhage has been recurrent the same symptoms are more urgent than where the haemorrhage appears for the first time.

25. That adhesions may stop internal accidental haemorrhage by causing localized increase of tension, but we cannot diagnose their presence.

26. That if the original seat of the haemorrhage is at the very centre of the placenta, the whole of the placenta will become detached, and if the placenta is situated exactly at the fundus, the membranes also will be all separated before the haemorrhage becomes external.

27. That prolapse of the placenta depends on both these conditions being present.

28. That all cases of accidental haemorrhage should be reported and not the severe cases only, and the position of the rupture in the membranes carefully noted.

Questions for Discussion.

1. In what direction may we hope to find the clearest indications for the prophylactic treatment of accidental haemorrhage?

2. Is rupture of the membranes to be recommended as a routine treatment in every case of accidental haemorrhage?

3. If not, to what cases should its use be restricted?

4. Can we confidently expect that uterine contractions will arrest accidental haemorrhage?

5. Is Caesarean section or the *accouchement forcé* the better method of delivering the worst cases of accidental haemorrhage?

6. Does instrumental dilatation of the cervix offer any great advantages over bipolar version and bringing down a foot?

7. Does the term "ablatio placentae," detachment or separation of the placenta, proposed by Dr. Holmes, convey any more accurate idea of the condition we are discussing than the usual one—accidental haemorrhage; or does it not entirely fail in differentiating this condition from that of separation of the placenta when it is praevia?

8. Have we in systematic plugging of the vagina, combined with firm pressure on the uterus and a strong perineal bandage, a safe, simple, and reliable method of treating all cases of accidental haemorrhage?

II.—A. L. Galabin, M.D., F.R.C.P.,

Consulting Obstetric Physician, Guy's Hospital.

Dr. Galabin said that he had very little criticism or addition to suggest to Sir A. Macan's admirable and exhaustive discussion of the pathology of accidental haemorrhage. One cause he had met with which had not been mentioned, namely, a partial vesicular degeneration of the placenta in conjunction with a living fetus in the later months. He had found this to cause that condition which, in his experience, was a very rare one, namely, concealed accidental haemorrhage without a drop of blood escaping. This, according to Guy's Hospital statistics, occurred only once in 200 cases of accidental haemorrhage. He did not agree with Sir Arthur Macan's view that, while the uterus is unemptied, uterine contractions can only check haemorrhage during the pains. If this were true, puncture of the membranes would be bad treatment in all cases of *ante-partum* haemorrhage. But the same quality of the uterus which maintained retraction caused some muscular toxicity in intervals of pains. He believed that this was greatly increased by the onset of labour, and especially by the stimulation of the uterus by contact with the fetus after the escape of the liquor amnii. When carried to excess it became the continuous action of the uterus which was a well-known sign of danger in protracted labour. He was especially interested in the Rotunda method of treatment by plugging the vagina, because in the first edition of his *Midwifery*, more than twenty years ago, he had recommended plugging the vagina for cases in which the cervix was undilated and labour not commenced. This had been advocated by Spiegelberg and, even at that date, by some Irish authorities. But the majority of authorities, and especially of examiners, considered it dangerous, and students found that the suggestion of it was apt to lead to their rejection. He had therefore had to omit the recommendation from subsequent editions until the last two, in which he had advocated the plan as practised by the Rotunda school. Many theoretical arguments might be adduced on either side, and the true test was that of experience. He thought that some of the Dublin school had exaggerated the mortality which occurred under the old method. In the Rotunda statistics, collected by Dr. Colclough in his paper published in the *Journal of Obstetrics and Gynaecology*, the mortality of the treatment by plugging was under 5 per cent. Compared with Guy's Hospital statistics—giving a mortality of 11 per cent.—this seemed a great improvement. But it was better to compare statistics of the same institution where other conditions were equal. He had therefore examined the statistics from the Rotunda given by Sinclair and Johnston about fifty years ago, when the treatment was by early puncture of membranes, with acceleration of delivery by forceps or version. The mortality of these was only slightly greater, being also under 5 per cent., and the deaths directly from haemorrhage were actually less. He therefore looked with great interest to this discussion, in the hope of hearing comparative statistics which would show the relative advantage of the treatment by plugging. Experience, also, could alone determine whether Caesarean section is advisable for cases in which the patient is in great danger, and the cervix undilated. He believed most of the Dublin school did not advise plugging for concealed accidental haemorrhage, but rather Caesarean section. But in Colclough's tables there were three cases of concealed accidental haemorrhage treated by plugging, which all recovered, and one treated by Porro's operation which ended fatally. He did not agree with Sir Arthur Macan that there was no haemorrhage in Caesarean section, especially if the uterus were removed. Moreover, the additional shock of an abdominal section might make a difference to a patient who was already in imminent risk of dying from haemorrhage. At present he was inclined to prefer the use of a Champetier de Ribes's bag, if the liquor amnii had escaped; or, if the upper cervical canal were expanded, cautious dilatation with Bossi's dilator.

III.—Munro Kerr, M.D.,

Obstetric Physician, Glasgow Maternity Hospital.

Dr. Munro Kerr said: The remarks which I make will have reference entirely to the treatment of this most serious condition, and these remarks will be based upon the experience we in the Glasgow Maternity Hospital have had of accidental haemorrhage during the last three years. In that time we have had 20 cases of more or less severe accidental haemorrhage. I have left out many cases of only slight haemorrhage which has occurred during the first or second stages. Of these 20 cases, in 4 the haemorrhage was extremely severe, in 8 severe, and in 6 moderate. The maternal mortality was 4, or 20 per cent., and the infantile mortality was 19, or 95 per cent. Looking at the table of treatment which my house-surgeon has furnished me with, the first striking feature is that in 6 cases the haemorrhage became arrested spontaneously—that is to say, in a certain number of cases Nature will herself take the treatment into her own hands. Further, this spontaneous arrest of haemorrhage is a strong argument in favour of the Dublin method of plugging. This treatment I most strongly favour. In the cases in which plugging was adopted the results were all satisfactory; but it is only the less serious cases in which this treatment is sufficient. Rupture of the membranes alone was only adopted in 1 case, but version, or bringing down a foot if the presentation was a breech, was performed in 4 cases, and this, I believe, is a safer proceeding than simple rupture of the membranes. But it is the severe cases that are of chief interest, and in such cases the only treatment that will save the patient is to empty the uterus, and that can only be done if the cervix is not dilated by *accouchement forcé* or Caesarean section, followed by hysterectomy. Now, results from *accouchement forcé*, either by the use of the hand or the various forms of metal dilators, have been most disastrous—3 deaths in 4 cases, consequently in these very severe cases I am inclined in future to have recourse to Caesarean section, either abdominal or vaginal, and follow this up by hysterectomy.

IV.—JOHN W. BYERS, M.A., M.D., M.A.O. (Hon. Causâ),
Professor of Midwifery, Queen's College, Belfast, etc.

PROFESSOR BYERS, after thanking Sir Arthur Macan for his interesting contribution in introducing the discussion, said, looking at the question from a practical point of view, there were two types of cases of accidental haemorrhage: (1) those in which the blood remained in the uterus, none appearing externally—the so-called concealed accidental haemorrhage; and (2) those in which there was external haemorrhage. The first type, say, a patient seized in the seventh month of pregnancy with all the signs of internal uterine bleeding (nothing appearing externally), was one of the most serious complications of obstetrics, and of the two methods of treatment suggested, *accouchement forcé* or Caesarean section (with or without hysterectomy), he thought the latter was to be preferred, as, owing to the condition of shock in which the patient was, any attempt to dilate the cervix and deliver was almost invariably fatal.

As to the second type of cases of accidental haemorrhage, in which the blood appeared externally, the line of treatment to be followed was much more clearly defined. It depended on whether the patient was in labour or not when the haemorrhage appeared; in other words, whether uterine contraction and retraction were going on. If the patient was in labour, rupture of the membranes was the proper course to follow, as in this way the part presenting could advance without pulling on the placenta, and when the liquor amnii escaped the uterus contracted down on the child, and, its cavity being in this way lessened, there was also a diminution in the area of the placenta. Suppose, however, external haemorrhage appeared, and there was an entire absence of labour pains, then he thought the Rotunda method of treatment gave the best results—that is, thorough plugging of the vagina combined with a tight abdominal binder and a firm perineal bandage. The advantages of this method of treatment were: (1) it checked bleeding; (2) it induced labour: (3) the labour brought on in this way was a gradual process, and gave the patient time to be rallied from her collapse (by salines, strychnine, etc.); and (4) even if the bleeding was not stopped (a very rare condition) this method did not prevent any other plan being adopted. He could not quite follow Sir A. Macan's explanation of the cause of the bleeding in accidental haemorrhage, but he thought the *rationale* of this plan of treatment consisted in the fact that by the plugging external bleeding was prevented, and as soon as the intrauterine pressure equalled that of the blood pressure the bleeding stopped. Unfortunately in concealed accidental haemorrhage the tonicity of the uterine fibre was at fault, and so the uterus dilated and allowed the blood to collect in its cavity. When, on the other hand, blood appeared externally, as a rule there was some power of contraction left in the uterine muscle which enabled it to overcome the blood pressure, provided by plugging no blood was allowed to escape.

Dr. Galabin asked for statistics of the Rotunda plan of treatment. Here were the results, as given by Dr. Jellett: In the Rotunda Hospital 56 cases of accidental haemorrhage of all degrees of severity were treated between November, 1889, and November, 1893. *Accouchement forcé* was adopted in all serious cases, and there were 6 deaths. From November, 1893, to November, 1900, 57 cases were treated. *Accouchement forcé* was never done, plugging being used instead, and of this number only 1 died. Since November, 1900, Dr. Purefoy reports that cases treated by plugging continue to do well, and in his last two reports there were 34 cases without a death. The plan of treatment—by rupture of the membranes in every case—did not give anything like such good results; it assumed that the uterus would contract in all cases as soon as the membranes were punctured, but this did not always follow, and when the uterus failed to contract, then a space was left for more blood to collect in the uterine cavity; plugging was then useless, and nothing remained but the *accouchement forcé*—dilatation of the cervix (instrumental or otherwise) with delivery of the fetus—which in an already exhausted patient was a most dangerous, and in his (Professor Byers's) experience, most fatal, operation. He thought all must admit a good case had been established for the plan of treatment known as plugging of the vagina, with the combination of the abdominal binder and perineal bandage, in those cases of accidental haemorrhage where blood escaped externally and in which labour had not yet set in.

V.—JOHN CAMPBELL, M.D.,
Senior Physician, Samaritan Hospital for Women, Belfast.

DR. CAMPBELL said: As our aim is the emptying of the uterus, the condition of the cervix appears to me to afford the key to the situation. We may divide cases roughly into two classes, namely: (1) Those in which dilatation is insufficient to admit of delivery without force, and (2) those in which dilatation will enable us to deliver with moderate ease. (1) Where there is no dilatation or little dilatation, my practice is to pass a speculum, give a vaginal douche, lower the cervix by the vulsellum, and pack the cervix as fully as possible with sterilized gauze. This favours dilatation. Then I pack the vagina, put on a firm perineal and abdominal bandage, and wait. (2) Where there is dilatation enough, I deliver by forceps or turning at once. As regards the various recently-introduced dilators, I have nothing favourable to say. I believe they will soon die a natural death. *Accouchement forcé*, whether carried out by these dilators or not, is sure to yield as bad results in the future as it has done in the past. We are not yet in a position to advocate Caesarean section as a routine treatment for all severe cases. At present it is resorted to only in cases which have become almost hopeless in spite of other methods of treatment, or in which the case is almost hopeless when first seen. As the people say, "there is no hope except by operation." Really, operation in such cases affords very little hope, and is hardly worth doing. An odd case may be saved by it; the majority will die, in spite of it. In conclusion, the principles of treatment may be briefly summed up thus: At present plugging the cervix and vagina affords the best results in all cases which cannot be delivered at once and with ease. *Accouchement forcé* and Caesarean section are almost equally likely to fail in the desperate cases. Until we have advanced so far as to be able to advise Caesarean section in all cases of serious accidental haemorrhage, and as a substitute for all other methods, its mortality will remain high—almost as high as that of *accouchement forcé*. The question is not whether we should choose Caesarean section rather than *accouchement forcé* in the worst cases (undoubtedly we should) but whether Caesarean section will not come to be the routine treatment for all the more serious cases in which the cervix is not well dilated rather than remain the last resource in cases which are almost beyond all hope.

VI.—H. OLIPHANT NICHOLSON, M.D., F.R.C.P.Edin.,
Assistant Physician, Royal Maternity Hospital, Edinburgh; Obstetric Physician, New Town Dispensary, Edinburgh.

DR. NICHOLSON said: When haemorrhage is at all severe the cervix must be dilated and the uterus emptied as soon as possible, for the main object of treatment is to diminish the area from which the bleeding is taking place. If the cervix is dilated or easily dilatable some retraction of the uterus may be obtained by rupturing the membranes, and then delivery can be hastened if necessary. In such cases it is better to puncture the membranes pretty high up so that the liquor amnii may trickle away slowly. In some cases this may be sufficient to control the haemorrhage, and labour may be allowed to go on naturally. If the os is not dilated it may be necessary at first to use a Champetier de Ribes's bag in such a way as to fill the whole vagina, and thus prepare the way for dilatation of the cervix. As soon as possible bipolar version should be carried out and the leg of the child brought down to act as a plug. When the os admits two fingers this is easily done; and in certain cases, where there is a fairly large amount of liquor amnii, it is not necessary to lose the valuable time required for the bipolar method. The membranes may be ruptured at once; and by making the arm in the vagina serve as a plug to keep the waters in the uterus, it is easy with the other hand on the abdomen to turn the child round in any direction. With one or both legs brought down the case can often safely go on by itself. Before carrying out bipolar version it is advisable to give a hypodermic of ergotin, and other drugs, such as digitalis and quinine, which act in a similar manner upon the uterine muscle, are of undoubted value. In all such cases I order a pill containing these three remedies to be given thrice daily during the first week after delivery. Sometimes after labour is over there is a constant dribbling of blood, which may continue for twenty-four hours or more. It is most difficult to stop by the ordinary methods used in the treatment of *post-partum* haemorrhage, and in a patient who has already lost a large quantity of blood it may be extremely dangerous. This bleeding seems to come from the lower uterine segment; it certainly does not always come from a torn cervix, as is commonly supposed. It is best treated by packing the upper part of the vagina with iodoform gauze wrung out of adrenalin solution. The stimulation of the patient by the submammary injection of saline solution,

with or without the addition of adrenalin, as recommended by Crile, is a most important measure, and should be carried out while the case is in progress. At all events it should be done before there are obvious symptoms of serious shock or collapse.

VII.—Francis Henry Champneys, M.D., F.R.C.P.,
Obstetric Physician, St. Bartholomew's Hospital, etc.; President of the Section.

The President wished to ask Sir A. Macan: 1. Whether uterine contraction did not spread the blood by the "force of the restoration of shape"? 2. What effect was really produced by thrombi if the thrombi are not adherent? He had generally regarded thrombi as the result rather than the cause of arrest of haemorrhage. 3. Can uterine contractions separate the placenta before the fetus is delivered? The analogy of the separation of the placenta in normal labour seems against this. He (Dr. Champneys) had always taught that the cases naturally fell into three classes: (*a*) Cases in which Nature is managing the case well in her own way; (*b*) cases which are nearly desperate; (*c*) cases which will do well if well treated and ill if ill treated. Cases in which puncture of the membranes does good may possibly belong only to class (*a*); (*b*) includes cases in which the uterus requires to be emptied, by Caesarean section or otherwise; probably plugging of the vagina extends into this class. Plugging of the vagina principally concerns cases of class (*c*), but may extend into classes (*a*) and (*b*). He had for some years recommended it in his lectures.

VIII.—Heywood Smith, M.D., M.R.C.P.,
Late Senior Physician, Hospital for Women, Soho Square.

Dr. Heywood Smith said he would only make one remark on the method of plugging the vagina. Sir Arthur Macan had advised the using of small plugs the size of a walnut. Now, our object is to save time, and as the plugging, to be effectual, has to be tight enough to exert pressure on the cervix, it would take far too long, especially in cases with a capacious vagina, to use such small plugs. He would therefore strongly advise either that the plugs of sterilized wool should be made much larger—say, the size of a fist—or that pocket-handkerchiefs wrung out of perchloride solution should be used until the vagina is full.

IX.—F. W. Forbes Ross, M.D., F.R.C.S.Eng.,
London.

Dr. Forbes Ross said that the difference between rupturing the membranes and plugging the vagina was really very small in one respect—namely, both procedures tended to cause the uterus to go into repeated and prolonged contraction—only that vaginal plugging was somewhat more efficacious. As regards the abdominal binder acting efficiently before emptying the uterus, it appeared that here there was a large body to be compressed against the aorta, and in the case of the empty uterus continuing to bleed the body compressed against the spine was too small to efficiently compress the large vessels and the aorta, and only succeeded in retarding the venous return, and thus increased the haemorrhage, as occurred in cases of *post-partum* haemorrhage following *accouchement forcé*. Most cases of continuous trickling haemorrhage were due to rupture or tear of the cervix in the region of the internal os, and not visible to inspection. He had found the prolonged and continuous application of cold to the abdomen, accompanied by application of heat to the extremities, with or without rectal injections of brandy or saline, a most signal and rapid method of controlling haemorrhage and removing the effects of shock and ensuring a return to an improved condition of the circulation by causing contraction of the abdominal vessels and the transference of the blood to the head and extremities.

Sir Arthur Macan's Reply.

Sir Arthur Macan said: In such a large subject it was not to be wondered at that some points were not dealt with, but the omission of the relative statistics of the results was quite intentional. The results that follow an operation should not be accepted as proofs that it has been successful or otherwise. Statistics, if they prove anything, prove that the rupture of the membranes is a thoroughly reliable method of treating accidental haemorrhage. For of 63 cases treated by Rigby by expectancy not one died. This would almost go to show that our discussion here to-day was almost unnecessary. On the other hand, Atthill and Hicks consider rupture of the membranes to be a most dangerous method of treatment, so many cases died in which it was used. Again, of 5 cases treated by Kristeller not one died. As to the result of uterine contractions changing the shape of the tumour formed on the outside of the uterus by the haemorrhage below the placenta, I would like to point out that there is a subplacental tension as well as a general intrauterine tension, and that once the haemorrhage reaches the membranes at the placental margin this subplacental tension is lessened, and so the elevation at the site of placenta is smoothed down.

Remarks by Professor B. S. Schultze.

Professor Schultze said: In regard to my diagrams of the contraction of the womb which Sir Arthur Macan has honoured me by bringing over to illustrate his paper, it is a great pleasure to me to see them so used. But these plates from my earlier edition do not correspond in all details to the improved knowledge of to-day; as Schroeder's observations have shown, and as may be measured by a pair of compasses: in the opening period, the womb in contraction becomes rounder, in the expelling period longer. The figures do not accurately represent the difference in thickness of the walls of the corpus, inferior segment, and cervix. These inaccuracies I have corrected in a recent revised edition of the plates.

DISCUSSION ON THE SO-CALLED "OVARIAN" PAIN: ITS CAUSES AND TREATMENT.

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It is common for women to complain of pain referred to a spot about 2 in. internal to the anterior superior iliac spine. It is common, also, to find that deep pressure over this spot causes manifestations of pain. This pain is often spoken of as "ovarian" pain. It has often been taken for granted that pressure over this spot caused pain, because the ovary has been pressed upon. A further inference has often been drawn—namely, that, because the ovary was painful and tender, therefore it must be diseased.

The object of to-day's discussion is to elicit facts and opinions bearing on the questions (1) whether such pain and tenderness depend on disease of the ovary; and (2), if so, what is the disease? On the answers given to these questions the proper treatment of the pain depends.

I would first ask, Is it certain that, when deep pressure is made over a point about 2 in. internal to the anterior superior iliac spine, the ovary is pressed upon? I doubt it. Many years ago I made some experiments in the *post-mortem* room. I drove needles through the abdominal walls down into the pelvis, at the point pressure over which was supposed to affect the ovary, to see how often the ovary was transfixed. I have not preserved a numerical record of the result; but I know it was quite seldom that the needle, inserted where pressure is supposed to affect the ovary, succeeded in touching that organ. But, even were the relation between this point on the skin and the ovary more close than it is, it is to be remembered that the ovary is movable, and lies surrounded and overlaid by movable and yielding parts, bowels and broad ligament; so that, even were the pressure applied exactly over the ovary, its only effect would be to produce a slight change in the position of the ovary, not to compress it. But a doubt on anatomical grounds is only important if anatomical considerations are urged as a reason for calling this pain and tenderness ovarian.

A more important reason for questioning the ovarian nature of this pain is that among neurologists the idea that this tenderness is due to the ovary is quite given up, principally for the reason that exactly similar tenderness is met with in hysterical men. This fact is conclusive that such pain and tenderness may be due to causes other than the ovary.

But to show that this pain and tenderness is not always in the ovary is not to prove that it is never in the ovary. If it is not necessarily in the ovary, we have to ask, What is its cause?

In discussing ovarian pain we have three things to consider: (I) the pain; (II) the changes in the ovary which may produce it; (III) the effect of treatment.

I. The Pain.

We are better able to understand pain now than we were ten years ago, chiefly owing to the light which has been thrown

upon the subject by my colleague, Dr. Henry Head, F.R.S. In distinguishing between the different kinds of pain that may be felt in what is called the ovarian region, I have been much indebted to Dr. Head, not only for his articles in *Brain* (1893), and in *Quain's Dictionary of Medicine* (Article, Pain), but also for personal help.

Four kinds of pain may be felt in what is called the ovarian region.

1. *Peritoneal Pain.*

The peritoneum contains abundance of Pacinian bodies, and when it is inflamed it becomes painful. This pain is local: it is felt in the inflamed spot and not in the back. When there is pelvic peritonitis the peritoneum over the ovary is often affected, and sometimes the inflammation spreads to the substance of the ovary, and thus pelvic peritonitis may be associated with genuine ovarian pain. Pelvic peritonitis leads to the exudation and organization of lymph, whereby the movement of the uterus is restricted and a palpable swelling in its neighbourhood produced. No one disputes the existence of this kind of pain, but it is not the subject of our discussion to-day.

2. *Reflected Pain.*

In describing this pain, I cannot do better than quote from Dr. Head's article in *Quain's Dictionary:* "When impulses pass up sensory sympathetic nerves from an organ which is diseased, they set up a disturbance in the segment of the nervous system to which they are conducted. Now any second sensory impulse from another part—for example, from the surface of the body—which passes into this same segment will be profoundly altered, for it no longer falls into a normal and quiescent segment of the nervous system, but into one whose activity is already disturbed. The resultant stimulus conducted upward towards the brain therefore differs from that which would have passed onwards from that segment under normal circumstances. The second stimulus will appear to be exaggerated, or may, perhaps, undergo some actual increase in its passage through the excited segment. Thus any otherwise painless stimulation applied to the surface of the body falling within the area supplied by fibres that enter the disturbed segment will appear to be painful, and the skin will be said to be tender." All abnormal states of the female genitalia are liable to lead to widespread reflected pain accompanied by superficial tenderness over the areas supplied by nerves coming from the tenth dorsal to the second lumbar, and from the first to the fourth sacral segments. The ovary appears to be mainly associated with the tenth dorsal. The tenderness is ascertained by pinching up the skin between the fingers and thumb, or by touching the skin with the head of a pin.

When the tender area is reached, the patient winces and says that it hurts. This reflected pain, with the accompanying superficial tenderness, differs from that of peritonitis in that it is present in the loin and over the sacrum and upper part of the thighs. As a rule it is relieved by deep pressure; with peritonitis there is no superficial tenderness, and deep pressure increases the pain in proportion to the amount of force used. This reflected pain and superficial tenderness may be felt over the whole of the area supplied by the segment involved—that is, in the case of the tenth dorsal segment, over a more or less horizontal band running from the middle line of the back to the middle line in front; or, if less acute, it may be present only at certain points of maximum sensitiveness. The maximum point is about halfway between the umbilicus and anterior superior iliac spine. Pain and tenderness in this spot may be produced by disease of the ovary. But it may also be produced by disease of the bowel, uterus, Fallopian tube, liver, gall bladder, kidney, or ureter. Although often spoken of as ovarian pain, it is pain and tenderness of the skin, not of the ovary. Pain felt in what is called the ovarian region may thus be produced by disease of the generative organs other than the ovary: erosion of the cervix, prolapse, retroflexion, cancer, and, above all, disease of the Fallopian tubes. The latter condition is especially to be remembered here, because it so often leads to disease of the ovary and to peritonitis. Inflammation of the Fallopian tubes may at first cause only reflected pain and afterwards peritoneal pain, when the inflammation has reached the peritoneum. The origin of reflected pain is in most cases to be determined by the physical signs.

There are certain causes, not accompanied by physical signs of disease, which may produce the so-called ovarian pain. (*a*) Certain patients get it from indulgence in alcohol. When the alcohol is stopped the pain goes. (*b*) There are patients in whom pain, and often too copious and frequent menstruation, are associated with habitually incomplete sexual intercourse; and when, as a result of advice or treatment, sexual intercourse has become habitually complete, the pain goes. (*c*) In severe and long-continued dysmenorrhoea the recurring monthly pain may break down the resistance of the central nervous system, so that the reflected pain tends to last longer each month, and may at length become almost continuous. The genital organs are peculiar in being so bound up with the higher emotions that disease of them has an effect upon the neuro-physical state that is not produced by disease of any other part. Hence the reflected pain due to visceral disease often becomes associated with pain of another kind.

3. *Neurasthenic Pain.*

Any condition which decreases the resistance of the nervous system, or relaxes the control of the higher centres, will cause widespread visceral reflected pain. Among the common causes which illustrate this law are (*a*) anaemia. Directly a small focus of visceral reflected pain arises in those who are anaemic or chlorotic, the pain and tenderness spread out of all proportion to their primal cause. Moreover, if the cause of the primary focus is removed, the pain does not cease, at any rate immediately. (*b*) The cachexia caused by wasting diseases may also lead to wide-spreading tenderness. Widespread pain and tenderness of the reflected type accompanies some cases of pulmonary tuberculosis. (*c*) A sudden rise of temperature may produce widespread tenderness without our being able to recognize any area of primary disturbance. This condition is produced most easily by true epidemic influenza, in which disease the patient notoriously complains of "pains all over"; and these pains are associated with tenderness of the skin. (*d*) Menstruation is associated with diminished resistance to pain: during menstruation trivial causes may lead to widespread pain and tenderness.

This breakdown of resistance and spread of pain and tenderness may also be produced by mental causes; or may be due to some inherent defect in the nervous system of the individual. Thus the so called "neurotic" is noticeable for the ease with which a slight visceral cause produces widespread pain and tenderness, and patients suffering from neurasthenia are particularly liable to widespread visceral pain.

In the case of pain due to anaemia, to cachexia, to fever, or to menstruation there is seldom misconception as to the cause of the pain, because these conditions are easily recognized. Neurasthenia is a chronic condition: it may be inherited; it may be acquired in early life from unfavourable circumstances during development such as educational over-pressure: or it may be produced later, by the strain of childbearing and rearing, or the long persistence of visceral pain. The cases which cause perplexity are those in which so-called ovarian pain is present in a neurasthenic patient. In such cases the relation of the pain to the neurasthenia may be one of three kinds. (*a*) The neurasthenia may have been produced by long-continued pelvic pain. (*b*) The pain may be due to some trivial local cause, inadequate to produce similar pain in a healthy subject. (*c*) The pain may be entirely due to neurasthenia. It may be very difficult to say which of these three conditions is present. Before advising and promising much from local treatment, we must remember that in (*a*) the neurasthenic condition may cause pain to persist after its first cause has been removed; in (*b*) if the source of pain is removed the patient remains liable to fresh attacks of pain from other equally trivial causes, so that benefit may not be very apparent to the patient or her friends; and in (*c*) local treatment is useless.

One feature of pain due to, or increased and extended by, the breaking-down of resistance in the higher centres is that, owing to the lesser strength of the left side of the body, pain is more common on the left side. Champneys[1] found that in uterine cancer left-sided pain preponderated over right-sided pain in the proportion of 6 to 1, although cancer has no preference for the left side. I found[2] that with retroversion of the uterus pain occurs three times oftener on the left side than on the right, although there is nothing unilateral about the displacement. The greater frequency of so-called "chronic ovarian pain" on the left side has been taught in textbooks for many years, with fanciful explanations, such as the left ovarian ligament and left Fallopian tube being shorter than the right, the course of the left ovarian vein, etc., which it is needless to dwell upon.

[1] *Obst. Trans.*, vol. xxii, 1880.
[2] Ibid., vol. xxxv, 1893.

4. *Hysterical Pain.*

A great change has come over the opinion of neurologists as to this disease during the last ten years. It is no longer regarded as a thing to be inferred from the patient's history, manner, and the general character of the symptoms, but as a disease of the cerebral cortex, having definite physical signs by which it is to be recognized. Among its principal phenomena are disturbances of sensation, anaesthesia and hyperaesthesia, analgesia and hyperalgesia. Hysterical pain differs from pain due to weakened resistance in the nervous centres, in that it is not felt in areas corresponding to definite segments of the central nervous system, but over areas such as would suggest themselves to the patient as being natural divisions of her body—for example, a foot, a knee, the eye, the whole belly. The diagnosis rests on the discovery of the objective signs of hysteria—(*a*) anaesthesia, either of half the body or in patches, loss of faradic sensibility; (*b*) loss of pharyngeal reflex; (*c*) limitation of the field of vision; (*d*) hysterogenous zones. When, with pain distributed as described above, there are these physical signs and no physical signs of local disease, the pain can be recognized as hysterical.

A patient may suffer both from hysteria and neurasthenia. An inherited tendency to hysteria may remain latent until some depressing influence brings about neurasthenia, or a patient already the subject of hysterical disease may become neurasthenic also. According to Binschwanger,[3] there are not only cases in which hysteria and neurasthenia are combined, but there is a mixed form, something between hysteria and neurasthenia. But into these subtleties I will not enter.

The name hysteria implies that hysteria depends upon the womb; and the view that disease of the pelvic organs produces hysteria still lingers in some textbooks of gynaecology. But I think I am right in saying that by neurologists this view is altogether given up. To them, hysteria with pelvic disease is simply pelvic disease in a hysterical subject.

The important fact to recognize for our present purpose is that cases occur in which the so-called ovarian pain is present, and is due to neurasthenia or hysteria or a combination of them, there being no disease of the ovary or of any other pelvic organ. In such cases local treatment will be a failure and may be injurious. In this respect there is a difference between neurasthenia and hysteria. In neurasthenic pain, local treatment, if not of a painful or mutilating kind, does no particular harm. In hysterical pain, local treatment is the worst possible treatment; it fixes the patient's attention upon her pain, and thus aggravates and extends it. The only exception to this rule is in cases in which the mischief of fixing the patient's attention on a particular part by local exploration and treatment has already been done. In some such cases harmless local treatment of a different kind may be used as a means of cure by suggestion.

Chronic ovarian pain in clinical usage thus comprises four kinds of pain: Peritoneal pain, which needs no discussion; neurasthenic and hysterical pain, which may exist without local disease; and reflected pain from visceral disease. Among the visceral diseases which cause reflected pain, some would include disease of the ovary. Therefore I have next to consider the diseases which it is thought cause chronic ovarian pain.

II. The Conditions of the Ovary that are Supposed to Produce Pain.

The question is, what conditions in the ovary, other than those that are effects of peritonitis, or that lead to peritonitis, may cause reflected pain and tenderness of the skin?

There are two diseases that are said to do this. One is what is called "sclero-cystic" disease of the ovary; the other is so-called "cirrhosis" of the ovary.

1. *Sclero-cystic Disease of the Ovary.*

The most recent and one of the best accounts of this condition is contained in a thesis by Ghazarossian,[4] in which he has quoted most previous writers on the subject. According to him and his predecessors, the disease begins with congestion and oedema of the ovary, under the influence of which "primordial" ova become ripe ones, so that the ovary becomes enlarged by the formation of many small cysts, and, finally, fibrous tissue becomes organized between and around these cysts.

[3] *Die Hysterie*, s. 18.
[4] *Thèse de Paris*, 1903.

Pfannenstiel[5] has described the same changes under the title of "chronic oöphoritis." He remarks how often these changes occur with fibroids, and with cancer; and that often with an ovarian tumour on one side there is "chronic oöphoritis" on the other. He says it is also a result of pelvic inflammation. He states that its final result is either cystic disease, or else atrophy of the follicles, shrinking and thickening of the parenchyma, so that ultimately "cirrhosis" of the ovary arises. The interest of Pfannenstiel's article would have been greater had he explained how he had found out this latter fact. Possibly by repeated abdominal section upon the same patient he has observed the ovaries to be at one time sclero-cystic and at a later date cirrhotic; or it may be that by bimanual examinations made at intervals during the course of years he has observed ovaries at first large and tender gradually become small and tender. If so, it would be instructive to know the details of such cases; how many of them have been watched, how often they were examined, and how long the process took. In the absence of such information, it is impossible to help wondering whether this statement is anything more than a conjecture, not having any basis in fact.

Galabin[6] describes the same two conditions of the ovary, and he says: "It appears that the former variety" (sclero-cystic) "is the earlier, and the latter" (cirrhotic) "the later stage of a condition which may be variously regarded as chronic inflammation or as congestive hypertrophy followed by fibroid degeneration." But he neither adduces nor refers to any evidence in support of this statement.

With regard to this hypothetical pathology, it may be pointed out that if it is true the ovary is an exception to a rule that holds good of every other part of the body. In chronic inflammation of other parts, the painful stage is when the part is swollen and tense; when the inflammation has so far subsided that fibrous tissue begins to be formed, pain ceases.

I have seen many ovaries which presented this sclero-cystic condition. It is in my experience commonly associated with large uterine fibroids; but unless there has been peritonitis such patients are usually free from pain.

Galabin, speaking of the two conditions of the ovary described, says: "It is not proved as to either of them that it is necessarily a cause of pain; on the contrary, similar ovaries are sometimes found when there has been no special complaint of ovarian pain."

It is well known that cystic disease of the ovary is, as a rule, unattended with pain until pressure symptoms or peritonitis arise. Mr. Doran has recently published a paper on "Painful and Tender Incipient Ovarian Tumours."[7] He has, as we all know, throughout a long professional life devoted himself with untiring zeal to the study of the morbid conditions of the ovary, and has had unrivalled opportunities of doing so, and the result of his vast experience is that he can relate 9 cases in which small ovarian tumours were painful and tender, and in two of these the pain was peritoneal, for there were adhesions. Landau[8] has published a case in which a dermoid cyst was accompanied with great deep-seated tenderness. The dermoid was removed, but the place where it had been remained as tender as before.

2. *Cirrhosis of the Ovary.*

Doran describes cirrhosis of the ovaries as a result of chronic inflammation. "Inflammation of the ovaries," he says, "can hardly ever be uncomplicated."[9] Cirrhosis of ovaries without peritonitis seems a thing out of his experience; nor does he think sclero-cystic disease of the ovaries a disease having such peculiar characters as to deserve separate description.

Pozzi[10] speaks of "chronic sclerosis" of the ovary which is cirrhotic. He says: "This aspect of the ovary is seen often enough in women who have long passed the menopause; and one would be consequently tempted to see in it a senile state of the organ rather than a pathological lesion. But on the one hand this aspect is not constant in old women; on the other hand, nothing proves that among those in whom it is fortuitously found out at the autopsy there were not during genital life more or less marked morbid troubles. However, it may be this aspect corresponds histologically to the definite lesions of total sclerosis, and clinically, in women yet young,

[5] Veit's *Handbuch der Gynäkologie*, Wiesbaden, 1898.
[6] *Diseases of Women*, sixth edition, p. 475.
[7] *Journal of Obstetrics and Gynaecology of the British Empire*, May, 1904.
[8] Quoted by Lomer, *Zur Beurtheilung des Schmerzes in der Gynäkologie*, Wiesbaden, 1899.
Quain's Dictionary of Medicine, Article, Ovaries.
[10] *Rev. de Gynéc. et de Chirur. Abdominale*, t. 1, 1897, p. 11.

to dysmenorrhoeic troubles sometimes intolerable. The removal of such ovaries can alone bring about cure." Can it? This is the question. Pozzi would have us assume that a patient in whose body shrunken ovaries are found suffered pain, unless we have evidence that pelvic troubles were absent. But it seems to me that the burden of proof is the other way—that shrunken ovaries are generally painless, and that it is for those who say they are painful to prove it, and to show why they are painful, and how they may be distinguished from shrunken ovaries that are not painful.

The best description, although an imperfect one, of cirrhosis of the ovaries is that given by Mr. Bland-Sutton.[11] It has the merit of recognizing the limitation of our knowledge. He says: "Ovaries are occasionally met with in women between 20 and 40 years of age, presenting a peculiar wrinkled appearance. Such ovaries are said to be cirrhotic, because the ultimate effect on the proper tissue of the ovary is similar to that seen in hepatic renal and pulmonary cirrhosis—that is, to destroy the proper tissues of the liver, kidney, or lung, as the case may be. The great difference in fibrosis of the ovary as compared with this change in other organs is that in the ovary the connective tissue of the stroma shows no evidence of inflammation. In cirrhotic livers the interstitial tissue is infiltrated with small round cells, but in cirrhotic or fibroid ovaries this is not the case, even when this change occurs in the ovaries of women who also have cirrhotic livers." These changes, Mr. Bland-Sutton goes on to say, "require investigation." Even the cause or causes producing the change are imperfectly understood.

I would point out two more differences between cirrhosis of the ovary and cirrhosis of the lung, liver, and kidney. One is that cirrhosis of lung, liver, and kidney are not diseases that cause pain. Another is that it is only since abdominal section has become frequent that cirrhosis of the ovary has been considered morbid. At the time of the wave of enthusiasm for morbid anatomy which brought about the foundation of the Pathological Society of London, cirrhosis of liver, lung, and kidney were recognized as diseases and investigated with care. The ovary did not escape attention: Wilson Fox and others studied it minutely, in the hope of finding out the origin of ovarian cysts; and these morbid anatomists must have often handled cirrhotic ovaries, but none of them seem for a moment to have thought that they were looking at disease. Cirrhosis of the ovary was not thought a disease till it came to be a practice to open the abdomens of nervous women because they had pain.

Seeing that shrinking of the ovary undoubtedly takes place as age advances, without pain or ill-effect on health, it cannot be said that a shrunken ovary is diseased unless it is more shrunken than is usual in healthy women of the patient's age. To assert this we ought to know the normal rate of shrinking at different ages. At present we have hardly any knowledge of the age changes which take place in the ovary. Here again Mr. Bland-Sutton's account is the best I can find, and it amounts to little enough. He says: "From the age of 45 onward the ovary diminishes in size. As the organ shrinks its surface becomes irregular, and often marked with deep wrinkles. The ova and ovarian follicles gradually disappear, until in very advanced life nothing is left but a corrugated body consisting of fibrous tissue marked by a few blood vessels. The alteration in the size of the organ may be expressed by giving the difference in weight. The ovary of a healthy woman of 20 weighs on an average 6 grams; in an old woman of 70 years it may only weigh 1 gram. The senile changes just described may be regarded as physiological atrophy: when they occur at an early period in the sexual life of a woman they are then described as pathological. Our knowledge of premature atrophy of the ovary is not very precise."

Clinically, Mr. Bland-Sutton says, the patients themselves form two groups: (*a*) extremely neurotic women, usually single, (*b*) married women, mostly sterile, usually spirit drinkers. In class (*a*) he adds, "removal of the ovaries only disappoints." To make this an accurate account of clinical experience, I suspect that after "patients," the words ought to be inserted, "upon whom abdominal section has been performed."

In brief: I find two conditions stated to be causes of ovarian pain, sclero-cystic disease, and cirrhosis of the ovary. It is stated that cirrhosis is the final stage of sclero-cystic disease, but those who say it have adduced no evidence to show that this is so. Sclero cystic disease is often present without pain. I find no criteria by which a sclero-cystic ovary which caused pain can be distinguished from one that did not. I find no criteria by which cirrhosis of the ovary can be distinguished from the natural shrinking due to age which is not painful, nor by which a shrunken ovary which caused pain can be distinguished from one that did not.

[11] *Surgical Diseases of the Ovaries and Fallopian Tubes*, 1896, p. 39.

III. The Effect of Treatment.

Whatever be the opinions held as to the nature of the pain, or as to the pathological nature of certain changes in the ovary, practice will be determined by the effect of treatment. If surgical treatment is found to cure the so-called chronic ovarian pain, it will continue to be done in spite of any theoretical arguments against it.

Before examining the results of treatment, some general considerations need to be borne in mind.

The treatment of peritoneal pain is not in question. The treatment of reflected pain is the removal of its cause. By the cure of an erosion of the cervix, the support of a retroverted or prolapsed uterus, the prohibition of alcohol, the conversion of habitually incomplete sexual intercourse into complete, the cure of dysmenorrhoea, or the removal of other less common causes of reflected pain, the pain can be cured.

Reflected pain from dysmenorrhoea is the one kind of so-called ovarian pain that is cured by removal of the ovaries. Here there is no question of any disease of the ovaries: they are removed, not because they are diseased, but to stop menstruation. If the case is one of severe dysmenorrhoea, unrelieved by treatment, and the history shows that at one time the patient was free from pain between her menstruations, and then reflected pain came to linger for a longer and longer time afterwards, this reflected pain can be cured by stopping menstruation. This is not curing ovarian pain, it is curing dysmenorrhoea. When the dysmenorrhoea has been cured by stopping menstruation the reflected pain does not always cease immediately; it may last for months. In every such case it is necessary to consider carefully whether the benefit of freedom from pain is so great as to compensate the patient for the injury done her by depriving her of her ovaries. But this is a different question from the one whether removal of the ovaries will cure the pain.

The treatment of neurasthenic pain is to cure the neurasthenia. The treatment of neurasthenia consists essentially in rest, food, and sleep, and the removal of the conditions which brought about neurasthenia. The treatment known as the "Weir Mitchell" treatment is a means of securing the requisites for recovery, but it is not the only way of doing so. If the patient is anaemic she should have iron. If after improvement has been attained by the Weir Mitchell treatment or otherwise the patient goes back to the mode of life by which the neurasthenia was brought about, she will inevitably relapse. If she continues to eat and sleep well, and refrains from overtaxing her nervous energy, she will continue well. In comparison with these essentials, drugs are of minor importance. Quinine, nux vomica, iron, and hypophosphites are beneficial, but without rest, sleep, and food they will not cure the neurasthenic patient; and such a patient, if she has rest, sound sleep, and good food, will, if the neurasthenic condition is of recent development, get well without drugs. But there are cases in which the causes of neurasthenia have commenced to act so early and have acted so long that nothing will cure.

Hysterical manifestations can be changed, or for a time repressed, by suggestion and by moral treatment. Operation for the purpose of suggestion is by neurologists uniformly regarded as a dangerous and useless mode of suggestion. Benefit attained in this way is, from the patient's point of view, very dearly purchased. But when an operation is done it is a very powerful means of suggestion, nevertheless. The moral influence of trained nurses on hysterical patients is usually beneficial.

When an operation is done for pain it is often the case that the patient has had some days or weeks of other treatment beforehand, either in the hope of avoiding operation or as preparatory to operation. Then comes the operation—a most effective means of suggestion. After it come a few weeks more of rest, good food, sleep, and then change to a convalescent home. The immediate result is most satisfactory. The patient goes home free from pain. But if the pain was neurasthenic, when the patient goes back to the life of strain which produced the breakdown her pain is certain to return. If the pain was hysterical, unless firm moral treatment is continued, the patient will return with some fresh manifestation of hysteria.

Hysteria is the outcome of heredity plus the surroundings.

Heredity supplies the inclination, and then the surroundings produce the disease. The influences which in a predisposed patient will produce hysteria are repeated suggestions of disease, with want of control. If the patient remains in the surroundings in which the disease arose it will be kept up by constant suggestion. The moral treatment of hysteria means the removal of the patient from suggestions of disease and placing her under control.

It follows from the foregoing considerations that no conclusions as to the value of operative treatment in curing the so-called ovarian pain can safely be drawn, except from cases watched for a long time subsequent to operation.

I have treated cases of so-called ovarian pain by ignipuncture of the ovary, by resection of the ovary, and by removal of one or both ovaries. I think it unnecessary to relate details, because the results have been with singular uniformity those that I have stated in the foregoing paragraphs. The immediate results of each of these operations have been most pleasing; the patients have left the hospital delighted, but after a few weeks or months they have come back as bad as ever. The only exception to this general statement has been in cases of reflected pain secondary to dysmenorrhoea.

Ghazarossian[12] brings forward, in support of the view that sclero-cystic disease of the ovaries is a cause of pain, 21 cases, 5 observed by himself, 16 published by others. In 1 case no operation was done; the sclero-cystic condition was inferred because the ovaries were large and tender, and there was retroversion, itself a cause of reflected pain. The retroversion was corrected, and the patient got well, in spite of her sclero-cystic ovaries. In 9 of the cases the ovaries were surgically treated, and something else was done as well, so that these cases do not demonstrate the effects of ovarian treatment. Out of the 9 in only 2 was there lasting improvement; in 3 there was no benefit: in 1 the pain was relieved for a time, but quickly recurred; and in 3 there is no record of the course of the case after leaving the hospital. Five cases were treated by the removal of one sclero-cystic ovary; 2 were not relieved; in 1 the pain was relieved for a time, but speedily recurred; and the other 2 were not watched. In 6 cases both ovaries were removed; as to 5 of them there is no record after they left the hospital; in the remaining 1 the pain recurred. Ghazarossian's evidence is, to my mind, not adequate to show that sclero-cystic disease of the ovary is a cause of pain.

Pozzi[13] has published a table of 62 cases treated either by ignipuncture or resection of the ovaries. But in many of these there were adhesions, so that peritoneal pain was present; and in many others something else was done beside the operation on the ovary. I only find 15 cases in which the surgical treatment of the ovary was the only thing done, and there were no adhesions. In 9 out of these 15 the pain recurred.

In brief, I know of no morbid change in a freely movable ovary that causes chronic pain. The so-called "chronic ovarian pain" is either a reflected pain due to some cause other than the ovary, or is due to neurasthenia, or is a manifestation of hysteria. It is not curable either by surgical treatment of the ovaries or by their removal. The only exception to this statement is the reflected pain due to dysmenorrhoea, which is cured when menstruation is stopped. To prevent misconception, let me add that every kind of pain is worse during menstruation. Pain is not due to dysmenorrhoea because it is worse during menstruation. Its origin in dysmenorrhoea must be shown, and other causes excluded, before we can predict cure by stopping menstruation.

II.—Frederick Bowreman Jessett, F.R.C.S.,

Surgeon, Cancer Hospital, Brompton.

Mr. Jessett, after expressing his appreciation of the able manner in which Dr. Herman had placed the subject before the meeting, said he fully recognized the importance of the point raised in the paper, and, while in many respects agreeing with the conclusions arrived at by Dr. Herman, yet on a few important points he ventured to differ. He questioned whether true ovarian pain was not much more frequently real than fancied. It was quite true persistent pain referred to a spot mentioned in the paper was often traced to mischief in the other organs named, but there was one other which was not named — the appendix. Often pain situated here was most difficult to differentiate from pain due to disease of the ovary, and in some cases impossible. He (Mr. Jessett) had found in a few cases when operating for ovarian or tubal mischief the appendix firmly adherent to the ovary or the Fallopian tube. In no such case, even by the most careful examination, either by abdomen, bimanually, or by the rectum, was it possible to diagnose the true condition of things; but he would venture to say that in ordinary cases of married women an examination bimanually would at once exclude pain due to disease of the liver, gall bladder, kidney, or intestines—excepting, perhaps, in the case of very fat women. In unmarried women the diagnosis would be more difficult, but in such he would strongly urge their being placed under an anaesthetic, so that the position of the uterus and the ovaries might be carefully examined. It was quite true that often one found pain referred to other organs when the disease was in the ovary; this was attributable to the nerve distribution so well explained by Dr. Herman.

In his (Mr. Jessett's) experience, he had known many women who had been martyrs to pain for years, who had been treated by different drugs, sedatives, counter-irritants, hot douches, etc., and kept on their backs for weeks and months, with only temporary relief, the pain returning as soon as they resumed their active duties; many women were fitted with pessaries of various designs, for the purpose of supporting the uterus and in some cases, with temporary benefit, by relieving congestion and preventing any dragging upon the broad ligaments, but in none of these cases was a permanent cure effected, if the ovaries were the seat of cirrhosis or sclerosis. In many of these cases the capsule of the ovary would be found to be thickened and corrugated with fibrous stroma dipping down into the ovarian substance, often a single or multiple cysts would be found incorporated in these ovaries, and it was these which, being bound down by the dense fibrous capsule were the cause of the pain. These cases were often permanently relieved by operation, by cutting into the ovary and enucleating the cysts, the cut edges of the ovary being closed by catgut suture. By this operation the functions of the ovary were but little interfered with. In some cases it would be found that the ovarian substance was so thickened and hard that it would be impossible satisfactorily to remove any cyst should they exist; in such cases the ovary must be sacrificed, but even here he would advise that a small portion of ovarian tissue should be preserved, as in his opinion, in young subjects especially, this would overcome the chance of that mental depression which was so liable to supervene on the removal of the whole of both ovaries, thus anticipating the menopause. It was always a serious matter the unsexing of a woman, especially a young woman, who was, perhaps, anxious to become a mother, and in no case should it be done without explaining to the patient and her mother the consequence of such an operation. There were certainly many mechanical causes of ovarian pain, among which he would mention prolapse; adhesion due to old pelvic peritonitis; pressure by a retroverted or retroflexed uterus. All of these could be cured by operation, fixing the ovary up in its place by a few catgut sutures, the breaking down of adhesions or the replacing the uterus, either by ventrifixation or suspension, a properly-fitting pessary being worn. That pain did exist and in many instances was due to sclero-cystic disease or to cirrhosis, when occurring in women before the menopause, he had no doubt whatever, but he quite agreed with the author of the paper that cirrhosis, resembling changes which normally take place as a result of age, caused little or no pain.

Mr. Jessett could not agree that chronic pain in the ovary was either reflected or neurasthenic. He believed it was the other way about: that the diseased, painful ovary reflected its pain to other organs, but not disease of other organs which reflected their pain to the ovary.

Mr. Jessett firmly believed that these diseases of the ovary were in many cases, if not in the majority, due to masturbation. In this particular there was yet a good deal to be learned, and he would suggest to younger men the importance of studying the pathology of this disease and the causes, as he was convinced that while pain due to congestion was curable by rest, the sclerotic ovary could only be treated with any chance of relief to the patient by operation.

Undoubtedly cases were aggravated and the pain exaggerated in anaemic, badly-nourished women, and in such cases no doubt rest, good food, and sleep were essential. The question of suggestion and moral treatment was a very important one, and one which required the most careful handling.

[12] Op. cit.
[13] Op. cit.

III.—JOHN CAMPBELL, M.D.,
Belfast.

DR. CAMPBELL said: With the greater part of what Dr. Herman has said I think the majority of us are in full accord. There is one point on which he has touched only indirectly, and on which I should like to have his opinion. I refer to the possibility of a considerable number of cases of pain in the ovarian region being due to varicocele of the broad ligament. We are all aware that severe and wearing pain occurs in the male sex as a result of varicocele. Why should not a similar condition cause pain in the female? In young women, especially in those who lead a sedentary or unhealthy life, such as teachers and dressmakers, I submit that this is an important cause of pain. Often there is a varicose condition of the superficial veins, but more frequently there is not, so that this can hardly be regarded as a reason for concluding that varicocele is present or absent. The cases I refer to agree in having a history of chronic constipation, in leading a sedentary or an unhealthy life, and in presenting no tangible cause, either in the pelvis or in any other part of the body, for the pain. They are extremely hard to treat, mainly because they are prone to consult one authority after another and to get different opinions or varied pathological explanations. Consequently, if we admit that many cases are due to varicocele, it would be extremely important if we could come to some understanding as to what advice such cases without recognizable disease should get. Only by so doing can we induce the patient to believe that her condition does not call for radical treatment or deserve too much thought from her. To give her confidence is a very important step in the treatment. The Weir Mitchell treatment, followed by iron and arsenic tonics, careful attention to the bowels, moderate exercise, and a healthier mode of life, will give as good results as we can get. Local treatment is not of much value. Probably it does harm by directing undue attention to the pelvic organs.

IV.—HERBERT SNOW, M.D.,
Senior Surgeon, Cancer Hospital, Brompton.

DR. SNOW said: I am sure we shall all concur in recognizing the value of Dr. Herman's very lucid and exhaustive address. The point which most appealed to myself personally was his scepticism upon "cirrhosis" and "sclerocystic disease" of the ovary. In some quarters there is a tendency to multiply new and strange ovarian lesions; and a few years since an enterprising lady doctor across the Atlantic described some six or seven of these on the ground of microscopic evidence alone. I think we should hesitate to accept histological ovarian changes as morbid without careful scrutiny; and, so far as I have seen, the conditions which in the ovarian region cause pain are almost always external to that organ, depending upon peritoneal or visceral adhesions. I consider that Dr. Herman's scepticism is fully warranted. In the second place, I would remark that certain habits of civilization tend to keep the pelvic organs of women in a highly irritable condition. The corset is the chief offender; next comes the neglect of daily rectal evacuation. The effect of the latter is emphasized by the point that the pain is almost always—certainly in the great majority of instances—referred to the left ovary. That I take to be explained by its proximity to the rectum. In combating these ill-habits we may reasonably appeal to the influence of our increasingly numerous lady members. Thirdly, is Dr. Herman justified in differentiating the hysterical from the neurasthenic patient? Do not the two states merge into each other? And is there not really a physical basis for the symptom in most, if not all, of the cases he would term "neurasthenic"? If all the patients complaining of ovarian pain were polled it would be found that the huge majority consisted of married women who are suffering from the consequences of parturition. They have "endocervicitis," a congestive condition of the cervical canal, accompanied by the secretion of profuse and irritating discharge. The common "granular erosion" is only a casual, and far from invariable, sign of the irritation caused by this secretion. Pain in the ovary is always complained of, and promptly disappears for good and all if, under anaesthesia, Paquelin's cautery is applied to the cervical canal. That is a perfectly harmless measure—far preferable to curetting. And I would urge that the patient should, as a rule, be subjected to this before the question of abdominal section for obscure pains in the ovarian region can be seriously entertained.

V.—MRS. STANLEY BOYD, M.D.,
Senior Surgeon, New Hospital for Women.

MRS. BOYD said: Dr. Herman had made a point of the presence of sclero-cystic ovaries without accompanying pain (as in fibroid). Variability in the amount of pain suffered was seen in many forms of pelvic disease—as, for instance, in retroversion—and she thought that the presence or absence of pathological conditions in the ovary could not be diagnosed from pain alone. She agreed with Dr. John Campbell as to the presence of varicocele of the broad ligament being a cause of pain, and had had the opportunity of verifying it in certain cases of abdominal section. In this connexion she had noted as a clinical fact that these severe cases of ovarian pain occurred frequently in patients whose occupation necessitated much standing—that is, nurses. With regard to treatment by operation, her experience had not been quite as disappointing as Dr. Herman's, although she agreed that frequently there was a recurrence of symptoms after operation. Operation need not consist in removing the ovaries; a conservative operation—resection of cystic portions and suture with catgut—was the operation she preferred, and the patient was left with an ovary capable of function, as had been proved by the occurrence of pregnancy in certain cases. With regard to the rôle played by operation, it was difficult in cases like this, where the nervous system was profoundly involved, to speak certainly. Dr. Herman seemed to say that where operation was beneficial it was the effect of suggestion. She could only say that she had seen good result from operation in cases where no relief had been obtained from prolonged treatment directed to neurasthenia, yet, after a conservative operation, the patient had been so far benefited as to be able to return to her work. That she considered was sufficient justification for operation. She fully agreed with Dr. Herman that it was necessary to follow up such cases, both for treatment and for observation. Unfortunately, in many cases, that would involve following them into other people's consulting rooms.

VI.—EWEN J. MACLEAN, M.D., M.R.C.P.Lond., F.R.S.E.,
Lecturer in Midwifery, Cardiff University College: Senior Gynaecologist, Cardiff Infirmary.

DR. MACLEAN referred to the difficulty which often existed in referring a given case specifically to one of the classes suggested by Dr. Herman. He (Dr. Maclean) presumed the discussion was limited to those cases complaining of ovarian pain and where the physical signs of the pelvis were practically normal. In that sense he recognized two types of patients who complained of the pain under discussion: (1) Those whose appearance suggested good health, single, or, if married, sterile, and who described the pain in exaggerated terms; dysmenorrhoea and leucorrhoea with constipation might or might not be present. These patients gave the impression that they were jealous of their reputation as invalids, and moral suasion was not always successful. It should be remembered that where operation was resorted to in those cases the patients were often loth to admit they were better. (2) Those who were depressed, anaemic, and generally out of health, and who had borne many children, or whose strength was exhausted by prolonged nursing. As to the removal of the ovaries, one should very seriously consider the effects on the patient apart from the possible alleviation of the pain. The latter result did not always follow the operation, but it was undoubted that oöphorectomy seriously altered in many instances the social and domestic value of the patient. In the same class of cases under discussion he doubted the value of resection of the ovary or ovaries.

VII.—HEYWOOD SMITH, M.D.,
Late Physician, Hospital for Women, Soho Square.

DR. HEYWOOD SMITH thought all must have been glad to have heard Dr. Herman's masterly exposition of reflexive and neurasthenic pain; but he (Dr. Smith) would point out that whereas the spot marked on the chart, midway between the umbilicus and spinous process, was often the seat of so-called ovarian pain, yet the region of evidence of pain arising from disease of the ovary was lower down and nearer the groin. They must remember that there was pain *and* pain; that whereas pain naturally arose from progressive ovarian disease, yet, in cases where diagnosis could not readily be made, they fled for the subterfuge of "neuralgia" as covering a considerable amount of ignorance as to the origin of the pain. There was no doubt that the ovaries, in their progress towards sclerosis, were often both the seat of pain and movable. It was necessary to make observations as to

the character of the pain—whether the pain, when it became intermenstrual, was of the same character as the dysmenorrheal pain. No doubt the process of sclerosis and of cirrhosis was painful in all three stages: (1) In the stage of congestion through tension of the blood vessels; then (2) the thickening of the stroma; and (3) the indrawing or contraction of the fibrous stroma resulting in the corrugation of the surface, giving a cerebral appearance. In all these stages the tension of the blood pressure at the menstrual molimen was the cause of the pain. He removed the ovaries in a case which presented the unusual condition of one ovary being cirrhosed, with the usual corrugated surface, whereas the other was quite smooth and the envelope was thickened and very tough. It was extremely interesting that in that case the fibrosis had these several manifestations of indrawing in the one case and thick binding down of the envelope in the other. In these cases of fully-developed cirrhosis the ovary shrinks in middle life and not only after the menopause. With regard to resection of ovaries, it was greatly to be wished not only that that method of operating should be more followed, but that operators should make careful observations as to the condition of both ovaries at the time and also the subsequent progress of the case, especially as regards the pain.

VIII.—Cuthbert Lockyer, M.D., F.R.C.S., M.R.C.P.,

Physician, Out-patients, Samaritan Free Hospital for Women.

Dr. Cuthbert Lockyer said: Having attempted to deal with the causes of chronic ovarian pain in a post-graduate lecture last February, I was pleased to find that this subject was one for discussion in the Obstetric Section of the British Medical Association for this year. I felt that an expression of the views of English obstetricians on what has been termed "the bugbear of gynaecologists" would supply a distinct want. I propose to confine the few remarks I wish to make to those cases of chronic ovarian pain in which the ovaries and adjacent structures are quite movable, and shall exclude gross inflammatory lesions and neoplasms.

In studying the question of chronic ovarian pain I have taken Head's areas as my guide for purposes of diagnosis. Head was perhaps the first to point out the sharp distinction which exists between the characters of visceral and peritoneal pain. Ovarian pain belongs to the former class, and, like all other visceral pains, is characterized by:

1. The fact that it is referred.
2. It is associated with superficial or surface tenderness.
3. It tends to become generalized or diffused.
4. It follows the lines of spinal segmentation and not that of peripheral nerves.
5. It is associated with exaggerated superficial reflexes.
6. It is closely connected with the neurasthenic state.

From the fact that it follows the areas of spinal segmentation we find it existing over a definite band around the body. This band corresponds to the tenth dorsal segment, and its maxima correspond to two points in front and behind. The anterior maximum point is situated 2 in. internal to the anterior superior spine, whilst the posterior lies just above and in a line with the sacro-iliac amphiarthrosis. Ovarian pain is more generally referred to the left side of the body for the reason pointed out by Champneys and Herman—that the left side is weaker than the right, and it may be said that this remark applies to the pain and tenderness of all visceral diseases. In extreme cases chronic ovarian pain is referred to the sixth dorsal or inframammary region, especially of the left side. What is the cause of such ovarian pain?

It is frequently noticed when first menstruation starts. It begins some days—a week or more (fourteen days in one of my cases)—before the flow, and gets worse just before or during the early days of the period; the flow may be scanty, but the main feature is the pain and tenderness over the tenth dorsal area. Galabin says it is relieved by marriage, Herman says it is aggravated thereby, and my own experience supports the latter statement. Nothing is known as to its cause. It is a common association of neurasthenia, and, given this coincidence, the pain and tenderness may be extreme.

In searching for conditions which are associated with chronic ovarian pain, I have revised the histories of 381 cases of pelvic pain compained of by women in my out-patient clinic. I find that in 111 of these cases, the pain was situated in the region described by Head as "ovarian"—namely, the tenth dorsal area. Of these 111 cases, there were 49 in which no gross pelvic lesion—no prolapse of the pelvic floor nor displacement of the uterus—could be found. In these 49 cases the uterus and adnexa were freely movable: 43 of the women were married, 6 were single. Now I see that 9 of these 43 cases—that is to say, over 18 per cent.—concerned women who had large families or were suffering at the time of examination from hyperlactation.

Case I.—Pain in left tenth dorsal area. Left ovary tender on examination bimanually, but quite mobile. Aged 37; married sixteen years; eleven children; last confinement seven months ago.

Case II.—Pain in the left tenth dorsal area. Erosion of the cervix. Aged 30; married ten years; six children; last confinement fifteen months ago.

Case III.—Pain in the left tenth dorsal area. Married: aged 24; three children; last confinement with twins fourteen months ago; still nursing; lactation atrophy of mobile uterus.

Case IV.—Pain in tenth dorsal area. Aged 27; married three years; two children; nursing a baby 10 weeks old; cervix lacerated.

Case V.—Pain in tenth dorsal area. Aged 26; married six years; three children; nursing a 10 months' old baby.

Case VI.—Pain in tenth dorsal area. Aged 31: married five years; two children; nursing a baby 5 months old. Erosion of cervix.

Case VII.—Pain in left tenth dorsal area. Aged 21; married fourteen months; nursing a baby 7 months old; erosion of cervix.

Case VIII.—Pain in left tenth dorsal area. Aged 31; married five years; two children; nursing a baby 5 months old.

Case IX.—Pain in tenth dorsal area. Aged 39; married twenty years; eleven children, five abortions, last eighteen months ago.

These cases show us that childbearing and lactation are fruitful sources of chronic ovarian pain.

In the remaining cases (62) the causes were not so easy to classify. In some the ovarian pain dated from the time of the first menstrual period, and seemed to constitute a definite type of dysmenorrhoea. In others it seemed to be the outcome of spasmodic dysmenorrhoea. In several cases it was associated with symptoms of the menopause, such as globus hystericus, pseudocyesis, neurovascular disturbance, in women between the ages of 45 and 50.

For the rest, the symptom of chronic ovarian pain was associated with organic lesions too various to classify and too numerous to include in the present discussion. A routine pathological examination of specimens received during the last three and a half years from operators in various parts of the kingdom has included many pairs of ovaries which were removed presumably for pain. I have examined sections of the entire gland in every case, and, whilst being able to note abnormal conditions in the stroma or follicles, or both, in almost every instance, I cannot say that as pathologists we are able to diagnose a painful ovary under the microscope. Every change noted in such ovaries as I refer to, which have been removed by operation, can be found in these organs when removed *post mortem* from subjects whose clinical history never pointed to ovarian lesions, and in which no mention has been made of chronic ovarian pain.

It is certain that many ovaries are removed which are quite functional, by which I mean normal Graafian follicles, and healthy corpora lutea can be found in them. When a pathologist is confronted with tissues of this kind to report upon, the only explanation he can find to account for the operation is that the excuse was ovarian pain. He therefore naturally asks himself what good can follow from the removal of tissues capable of performing their proper function if left alone. To my mind, it would be quite as justifiable for a dentist to extract both healthy canine teeth for trigeminal neuralgia as for a surgeon to remove both ovaries which are functionally perfect.

Just as I would lay stress upon the fact that chronic ovarian pain is frequently met with unassociated by any lesion discoverable by clinical methods, so I would emphasize the statement that in my experience there is nothing in the histology of a painful ovary sufficiently characteristic to show that it was ever the seat of pain or of tenderness. I am led, therefore, to regard the results of spaying with extreme scepticism, and would shrink from employing such a measure myself for such cases as those to which I have limited my discussion—namely, ovaries which are painful, but which are not associated with any gross lesion diagnosable clinically.

In the treatment of such a condition we must be content with the relief which is to be obtained by a judicious application of the general principles of medicine, and make a point

of assuring those patients who seem desirous of undergoing an operation that surgery would in their case only add fuel to the fire.

IX.—J. Inglis Parsons, M.D., M.R.C.P.,
Physician, Chelsea Hospital for Women.

Dr. Inglis Parsons thought that Dr. Herman's paper had brought out one very important point which was not generally realized—namely, the causes of pain in the left ovarian region were so many that this pain had no diagnostic value, and was probably not due to ovarian disease at all. No doubt this pain did occur in neurasthenia, but in his experience pains in other parts of the body were more common. But given a case of pain in the left ovarian region, in which one could find no apparent disease of the pelvis or other organs, what was to be done when the rest treatment of neurasthenia and other treatment had failed? Did sclero-cystic disease of the ovary ever, not always, cause pain? He believed it did in some cases. In 1895 he saw Mrs. J. with his friend, Dr. Aikman, of Guernsey. She was a married woman, aged 28, three children, the last 5 years old; menstruation regular, two days, loss small, a good deal of discharge. She complained of more or less constant pain in the left ovarian region, sometimes on the right. The pain was worse on walking, and was sometimes better the week before the period. She was a thin, unhealthy-looking woman. On examination there was nothing abnormal to be found. The uterus was in position, and slightly larger than normal. No organic disease could be found. He gave his opinion that it was a case of neurasthenia, and advised rest treatment. This was tried; only slight improvement followed and then she relapsed; so Dr. Aikman, in 1896, curetted, but no benefit followed. The discharge was much better, but the pain remained. In 1897 Dr. A. Routh curetted, but without curing the pain.

In 1899 she consulted Mr. Paul Swayne, of Plymouth, who advised abdominal section. In 1900 she came to Dr. Inglis Parsons again, with exactly the same constant pain. Thinking it might be a case of pelvic neuralgia, he advised the application of the constant current, through the pelvis. Her pain got better for a time, but soon recurred as bad as ever; pessaries were tried, also, without avail. In October, 1902, he found distinct tenderness in the left ovary, so he advised abdominal section, but thought she should have another opinion, so sent her to Dr. Burney Yeo, and told her to ask for an opinion quite independently of anything he had said. Dr. Burney Yeo thought there must be some peritoneal adhesions to account for the pain, and advised operation.

In January, 1903, in consultation with Dr. Crosby, the family physician, it was decided to have Sir John Williams's opinion. He was averse from operation, and advised rest, fresh air, and general tonic treatment, but the pain remained just the same; so in June, 1903, with Dr. Crosby present, Dr. Parsons opened the abdomen. There were no adhesions as he expected, but the right ovary was atrophied, quite hard, the size of a marble. The left was rather larger than normal, studded with cysts and with a great increase in the stroma. The condition, in other words, was typical of sclero-cystic disease.

He saw this patient again recently, one year after the operation, and she had remained quite free from her pain, and could now walk any ordinary distance, in spite of flushing and other symptoms of the menopause.

Although he agreed with Dr. Herman that it was rare for the ovary to cause pain, he felt convinced that rare cases did occur where the ovary was at fault, and he thought the case he had brought forward proved it conclusively. They should, however, be cautious, and not operate until every other treatment had been given a long and careful trial. He quite agreed with Dr. Campbell that varicocele of the broad ligament might cause this pain, but he failed to understand how a diagnosis of this condition could be made. One cause of ovarian pain in strong single women was sometimes due to sexual excitement without gratification. Bromide of potassium usually cured this form of congestion.

X.—A. Rabagliati, M.D.,
Honorary Gynaecologist, Bradford Royal Infirmary.

Dr. Rabagliati thought that the pain referred to the ileo-inguinal regions in these cases was seldom either ovarian or neuralgic. It was, in his opinion, in the connective tissue, and he ventured to think some advantage would accrue if the name "initis" were used for it. It was quite easy to show that the connective tissue all over the body was affected, because, on being touched almost anywhere in the body, these patients ached; and they were frequently also peliotic. These theoretic statements were of the utmost importance, because they led to the only, or at least much the best, form of treatment, which was proper diet and methodized exercises performed in an intermittent or intermitted manner. Dr. Rabagliati believed that this initis was set up in the first instance by dyspepsia, which led, of course, to bad blood formation, and hence to bad or malnutrition, and which, being originally brought on by the taking of too many meals, was then aggravated by the recourse had to too many meals of bread and butter and tea particularly, the heat of which was immediately so grateful to the patients, but remotely so damaging. His method of treatment, followed for a good many years and with very considerable success, was to put the women to bed for several weeks, giving them a very restricted diet of a pint of milk a day for about a fortnight. At the same time, he applied a linseed-meal poultice to the abdomen for an hour night and morning, applying a binder to the abdomen at intermediate times. For the second fortnight, half a pint of soup and bread, etc., were added to the diet, and the woman was recommended to get up and have five, or even ten, minutes of methodized exercises twice a day. After a month an ordinary dinner was given in the middle of the day, and the movements continued for fifteen minutes twice a day. After six weeks he could generally get patients on to two daily meals and get them up, and gradually return to natural life, recommending increasing amounts of walking, driving, bicycling, etc., within the limits of the strength of the women. Such treatment was the best for enabling them to do without those objectionable operations of oöphorectomy and hysterectomy, which must mutilate the women and so frequently fail to cure them.

XI.—W. E. Fothergill, M.D.,
Assistant Physician, Northern Hospital for Women, Manchester.

Dr. Fothergill had highly appreciated Dr. Herman's introduction, and wished for information as to the relation between ovulation and the so-called ovarian pain. He often saw cases in which attacks of pain occurred irregularly, but at more or less monthly intervals. The pain was sometimes on one side, sometimes on the other. The ovary on the painful side was enlarged and tender at the time, but was normal a few days later. In such cases was not the pain associated with the occurrence of ovulation, which might of course occur at any part of the menstrual cycle? Why should ovulation be painful in some women, not in others; why one month and not another? These were points on which the speaker desired information. He had obtained a history of mumps in several such cases. In one, the worst attack occurred while the parotid gland was irritated by a drainage tube in the neck. In cases of painful ovulation an explanation to the patient that her pain was due to an irregularity in a physiological function usually had the best result.

XII.—John B. Hellier, M.D.,
Honorary Obstetric Physician, Leeds General Infirmary.

Dr. Hellier said that he thought that the reproach of indiscriminate oöphorectomy, formerly brought against the gynaecologist, was no longer applicable. Sound teaching was found now in most textbooks, and the substantial agreement shown to-day in Dr. Herman's main contentions proved the same thing. His own teaching on the point was as follows: First, treat each case on its own merits. Make a thorough pelvic exploration *secundum artem*. If the persistent pain was found to be accompanied by palpable disease, it was a case to treat first by medical means, and then, if these failed, by surgical. But when there was persistent pain, without palpable disease, even though there be dysmenorrhoea and tender ovary, removal would usually be a great disappointment. Treatment of neurotic conditions by oöphorectomy was a grievous failure. When patients had all symptoms and no signs no operation was indicated. Were there any exceptions to this rule? When after all sorts of medical and expectant treatment the patient was still unrelieved, was it legitimate to open the abdomen and explore the appendages, and treat by puncture, resection, and partial or complete removal of ovarian tissue? Certain exceptional cases seemed to bear out this view.

XIII.—J. W. Byers, M.D.,
Professor of Midwifery and Diseases of Women, Queen's College, Belfast.

Professor Byers said the discussion raised three questions: (1) Is there a cause in the ovary giving rise to pain apart

from the conditions (peritoneal, reflected, neurasthenic, hysterical) mentioned by Dr. Herman? He (Professor Byers) agreed with Dr. Herman that there was not, and that in the sclero-cystic ovary it was the peritonitis which caused the pain. (2) Is pain, apart from abnormal conditions, felt in the ovarian region an indication for opening the abdomen? He felt that the results of abdominal section in such cases were bad. (3) Because in a patient with so-called ovarian pain every other treatment failed, should we operate? He doubted it, and he felt that in such cases the results, if good at first, failed afterwards. No doubt, perhaps, in some cases the operation acted for a time, just as suggestion did in a hysterical patient.

XIV.—F. W. Forbes-Ross, M.D.,
London.

Dr. Forbes-Ross pointed out that the Nabothian follicle of the cervix uteri was often a cause of reflex ovarian congestion, pain, and concomitant endometritis. He found that if the follicles were treated by puncture the ovarian pain was often relieved and the uterine condition at once mended. He strongly pressed that the Nabothian follicle be more carefully attended to than appeared usual. He agreed with Dr. Rabagliati that rheumatism was often the cause of ovarian pain, and he found that iodide of potassium was most efficacious in its removal. There was also present, in most cases, pain elsewhere in the body, as the pectoral muscles. He did not agree that broad-ligament varix was a cause of ovarian pain, nor was it comparable to the condition in the male, as the mechanism was not the same as in the female; the veins were more supported than in the male.

XV.—Frederick Edge, M.D., F.R.C.S.,
Surgeon, Wolverhampton Hospital for Women.

Dr. Edge said that he would condense his remarks into moving that a fifth group of causes should be added to the four groups which Dr. Herman had given and with which they were all agreed. The fifth group, which was indefinite, would be ovarian pain, due to conditions of the ovary which were obscure, but were, generally speaking, of a nature to cause increase of the fibrous tissue and thus offer resistance to changes in volume of the ovary, and especially to ovulation. The pain being so severe and chronic that after all general treatment the patient should have the benefit of exploratory abdominal section. He had had two cases exactly parallel to that of Dr. Inglis Parsons, where in the first instance he had, after every other treatment had been tried for years, opened the abdomen and found nothing more than a few follicles. Resection was performed, but with only temporary improvement, and after two years the abdomen was opened again and the ovaries removed. In one case, after four years, and in the other, after twelve months, the result was still striking. The patients could work and were not under treatment. Dr. Herman's so-called ovarian pain condition could only be established by the result of long treatment, and the final test was an exploratory abdominal operation, which would often find a cause which removed the case from the category of Dr. Herman's classification, and by ventro-suspension separation of adhesions or some other slight operation would relieve the condition which had produced "the so-called ovarian pain." They were all agreed that a healthy ovary should not be removed, and all the talk was about cases where they were not sure whether the ovary was healthy or not, and at the proper time looking inside would settle the question, not waiting.

XVI.—Sir Arthur Macan, M.B., P.R.C.P.I.,
King's Professor of Midwifery, University of Dublin.

Sir Arthur Macan said: The pain should not be called ovarian pain, but left iliac pain; I look on the left iliac pain as one of the most important single symptoms of uterine disease, very generally of some inflammation of the cervix. The instruction of the patient by the doctor in what is the matter with her enables her to go round and consult all her friends, and compare her symptoms with those of them who have been said to suffer from the same or similar diseases. I agree with Dr. Herman that neurasthenia and hysteria are quite distinct diseases, and in many cases of the latter we find one or more of the pathognomonic symptoms—anaesthesia of cornea, anaesthesia of the pharynx, and diminution in the field of vision. As to the operation, the removal of both ovaries produces a definite physiological change, and is quite on a different basis to the removal of an ovary for local pain. In performing resection, how can you recognize by sight the amount of tissue that is diseased? and as the ovary is normally full of cysts, how are these to be differentiated from pathological cysts, and vice versa?

Reply.

Dr. Herman, in reply, said that he had said nothing about peritoneal pain, not because it was unimportant, but because it was undisputed. Varicosities of the veins of the broad ligaments had been blamed for pain, just as varicocele in the male had been blamed for aching in the testis. But surgeons now did not think that the pain with varicocele was due to the state of the veins. The subject allotted to him was chronic ovarian pain, and therefore he had not touched upon some acute conditions that possibly might cause pain, such as ovulation. Sclero-cystic ovaries would, no doubt, often be properly removed, not because they were painful, but because they were cystic. To demonstrate the effect of sclero-cystic disease, and of cirrhosis of the ovaries, in causing pain, cases wanted watching, not for a few weeks or months, but for years.

ON THE STANDPOINT OF OPERATION FOR CANCER OF THE WOMB IN GERMANY.

By Professor Dr. Olshausen,
University of Berlin.

The great question regarding the operative treatment of carcinoma uteri to-day is whether we should choose the abdominal or the vaginal route. There cannot be any doubt that, in operating upon cancer cases, the chances for radical cure are much greater if we extend our operative procedure widely beyond the disease, and also remove the local lymphatic glands and connective tissue. It is the question, in my mind, how far this can be done in cases of carcinoma of the womb: also, whether the result can promise much compensation for the increased risk of this method.

In Germany and Austria those in favour of the extensive abdominal operation are very numerous. Those who believe in this extensive procedure are principally Wertheim (Vienna), Mackenrodt (Berlin), Rosthorn (Heidelberg); also Amann (Munich), Döderlein (Tübingen), and others.

On the other hand, Pfannensteil (Giessen), Chrobak (Vienna), Schauta (Vienna), Zweifel (Leipzig), and myself believe that, for the majority of cases, the vaginal route should be selected; and Küstner's (Breslau) primary mortality was so great with the abdominal method that he has returned to the vaginal.

Also, in every cancer operation we may hope for a better result if we make a very extensive and thorough operation: still, we are in doubt whether this is the case in carcinoma of the womb.

Most of the operators who perform the extensive operation put a great stress upon removing the glands. Some of them, such as Mackenrodt and Rosthorn, on this account wish to remove all the glands that can be reached. Others, such as Wertheim, remove only such portions of the glands as appear to them to be diseased.

Now, the numerous anatomical researches teach us the following facts:

It is impossible to see which glands are affected, or if the glands are affected at all; and though commonly the glands do not become affected in carcinoma uteri until very late in the course of the disease, still in some cases they become affected very early.

While we are operating it is impossible to tell by inspection whether the glands are affected or not. Small glands may contain cancer cells, large ones may be normal. Therefore, if one does not trust to luck, one is compelled to remove all the glands; but does any benefit ensue if we remove the glands without removing the surrounding connective tissue? The latter procedure is, of course, an impossibility. Such a dissection as that performed in the axilla in the modern operation for mammary cancer is absolutely impossible in the pelvis, and, on account of the anatomical relation, will always remain so. For this reason the abdominal operation will never promise a radical cure if the cancer has progressed beyond the uterine tissue.

And now consider the great primary mortality. Only one operator in Germany—Rosthorn—has had primary satisfactory results. In 33 cases operated on by him he had 2 deaths. All other operators had a very much larger mor-

tality—for instance, Wertheim, in 120 cases 24 deaths—that is, 20 per cent.

Now, to the high mortality we must also reckon the injuries to the adjacent organs, especially to the urinary tract. Rosthorn in 33 cases injured the bladder in 8, in 1 there came necrosis of the bladder, in 2 necrosis of the ureters, in 1 lesion of the rectum occurred. The percentage of injuries, therefore, was 39. Wertheim in 120 cases mentions 9 cases in which necrosis of the ureter occurred.

Besides the glands the connective tissue plays an important part, perhaps the most important, and this structure should be removed as completely as possible. This is possible as regards that part of the connective tissue lying in the ligamenta lata immediately around the uterus, but not in other regions. Whoever talks of the cleaning it out completely only misleads himself. At any rate, as soon as the cancer is no longer confined to the uterus itself, the chances of a radical cure are improbable by any method of operating. If the cancer is still confined to the uterine tissue, the vaginal operation is certainly sufficient.

We have also made great progress with the vaginal method of operating. In 1881 I commenced to perform this operation in 19 per cent. of the cases of cancer seen by me. The percentage of operability gradually increased, and in 1901-2 I operated radically through the vagina in 210 cases, equal to 61 per cent.

Regarding the primary mortality, three years ago I reported 671 cases, with a death-rate of 6 per cent. From 1903 until the present date I can report an additional 137 cases, with 6 deaths, or 4.4 per cent. In these 137 cases the adjacent organs were injured five times, equal to 3.6 per cent.

Now, I do not wish to state that the abdominal operation is to be excluded entirely. I myself perform it in those cases where I fear the cancer has spread and surrounded the ureters.

The ureter is more easily accessible by the abdominal than by the vaginal route. Clearing out the glands I do not advise, because when they are once affected the cases must progress and end fatally, perhaps with very few exceptions, whether operated on or not. The operation with exeresis of the glands is too dangerous, and has too great a mortality.

It has by no means been yet shown that by the abdominal operation a greater number of cases have been cured radically than by the vaginal method. The choice of the vaginal operation is therefore justified up to the present time, and possibly will remain so for the future.

Sir ARTHUR MACAN was sure that the Section had listened with great pleasure to Professor Olshausen's paper on the relative value of the vaginal and abdominal operations. The effort to apply to the uterus and the pelvis the same method that the surgeons had adopted in the operation for the removal of the breast for carcinoma and the glands of the axilla had, in Professor Olshausen's opinion, proved impossible. He was not able to express any personal opinion as to the relative difficulties of the vaginal and radical abdominal operations, nor was that the question that Professor Olshausen wished them to consider, but whether the results obtained by the more extensive operation were sufficient to make up for the increased danger of the operation itself. It was, however, difficult to acquire the mastery of such an operation without having command of very extensive material; and he was therefore glad to hear that Professor Olshausen used the vaginal route for all cases, except when the disease had involved the ureters.

Dr. HELME wished, as a representative of the North, to associate himself with the expressions of appreciation of Professor Olshausen's address. The name of Professor Olshausen stood out pre-eminently among those of our Continental *confrères* as inspiring a sense of trust and confidence in this country, and the Section was to be congratulated on the advantage of hearing the conclusions Professor Olshausen had drawn from his experience. There was in the North a tendency to leave the vaginal for the abdominal route as the routine measure of choice, not reserving it for cases where the vaginal route offered greater difficulties than the abdominal, and the address was therefore most opportune.

Dr. F. W. FORBES-ROSS thanked Professor Olshausen for his valuable and interesting paper, and thought that although the tendency was rightly to continue to advocate the vaginal route for hysterectomy, still, it appeared that there must be some cases where the abdominal route was much to be preferred, and he could not see why, if with our improved methods it were right to remove the uterus and appendages by the abdominal route for one reason, the same did not hold good for another. Professor Olshausen mentioned that the abdominal route was advocated by those who advocated the need of removing the connective tissue as well as glands, and laid stress on the fact that it was most difficult to do so. He (Dr. Forbes-Ross), however, thought that the difficulty as regards the connective tissue outside the uterus resolved itself into two heads—one in which the connective tissue was too extensively involved by direct anatomical continuity with the primary growth, and the other head where the connective tissue was apparently not involved. In the first event neither the vaginal nor abdominal operation would be attempted; in the latter event it did not appear to be necessary to remove the connective tissue as well as the glands, for clinical experience showed that in cancer of the tongue it was not necessary to remove all the tissues between the primary disease and the secondary glands. Therefore, this difficulty of the removal of the connective tissues should not stand in the way and lead to the total abandonment of removal of the uterus and glands by the abdominal route. Besides, most cases of vaginal hysterectomy which were successful, in that recurrence did not take place at the seat or neighbourhood of the original disease, but elsewhere, as in the deep glands or liver, were really just those cases which would have done well if the uterus were removed by the abdominal route and the connective tissue left behind, but the glands, as far as possible, excised. He thought that the abdominal route afforded easier access to the diseased areas and permitted of a more orthodox anticancerous operation than the vaginal route, though, of course, there were many cases in which the vaginal operation was the most correct method, both from the surgeon's and patient's point of view.

Dr. F. EDGE wished to express his gratitude to Professor Olshausen for the able and weighty paper he had brought before them. There was one special aspect of the case which strongly appealed to him. This was the position of the surgeon towards the woman suffering from uterine cancer. Of late there had been such numerous and impressive papers advocating the abdominal method of dissecting widely that one had begun to doubt whether all was being done for the patient that could be done when the uterus and adnexa were removed vaginally. Now, however, on such an authority as Professor Olshausen, so universally respected and believed, they had it that the vaginal method was as successful as the abdominal method in radically curing the cases: and, so far as mortality was concerned, they knew there was a great advantage in the vaginal method. They all opened the abdomen when there were difficulties of technique in removing the uterus, but, speaking of the abdominal method with dissection of the glands and connective tissue of the pelvis, it was satisfactory to know that the prevailing view that the pelvis was not another axilla was supported by Professor Olshausen. And therefore, apart from vaginal stenosis and peritonitic adhesions, or uterine fixation—that is, difficulties of technique—vaginal hysterectomy was the justified and accepted operation, and the surgeon might rest assured that he had done his duty towards his patient and not shirked his responsibility.

Mrs. SCHARLIEB, M.D., said that each case must be judged on its own merits. The vaginal route was sometimes nearly impossible, especially in elderly nullipara, and many cases of cancer uteri occurred in women who had had former inflammatory troubles, and in whom there were serious, though not cancerous, adhesions to intestine and other structures. These cases could be better dealt with through the abdominal route. On comparing two uteri—one removed per vaginam and the other per abdomen—it was evident that the removal had been wider and freer—and therefore better—in the latter. The percentage of mortality appeared to be about the same (5 per cent.) by both methods.

Professor OLSHAUSEN, in reply, said: I cannot answer all the remarks about my paper, because I am not sure that I have understood all of it correctly. I am asked how many of my patients operated upon are still living. I can say the following: In the years until 1895 I operated upon 40 to 50 per cent. of all cancer cases seen by me; 38 per cent. of these patients were healthy five years after operation. Of the extended abdominal operation statistics are available for only two years after operation. Two years and five years is a great difference regarding the recurrence. In many hundred operations I had more than 70 per cent. without recurrence for two years, but after five years only 38 per cent.

FURTHER NOTES ON THE TREATMENT OF BIRTH PARALYSIS OF THE UPPER EXTREMITY BY SUTURE OF THE FIFTH AND SIXTH CERVICAL NERVES.

By Robert Kennedy, M.A., M.D., D.Sc.,
Assistant Surgeon, Western Infirmary, Glasgow: Examiner in Surgery, University of St. Andrews.

In January, 1903, I published in the British Medical Journal reports of three cases of birth paralysis of the upper extremity in which I had exposed the lesion in the brachial plexus, excised the damaged portions of the nerves, and brought the divided ends of the nerves into contact by means of suture. In one case at the date of publication this operative procedure had been followed by such a degree of recovery that perfect restoration of function was almost assured, but in the other two the time which had elapsed since the operation was not sufficient to warrant a definite judgement of the prospects of the cases. Since the publication of that paper I have seen other four cases of this injury, upon two of which I have operated, and in the present communication I propose to give the further histories of my first series of cases together with the histories of my new cases.

1. *The Further Histories of the Cases Published in the* British Medical Journal *in 1903.*

Case I.—This patient continued to make excellent progress, and a few months after the publication of the case had regained the function of the arm completely. There is no difference now between the arms:

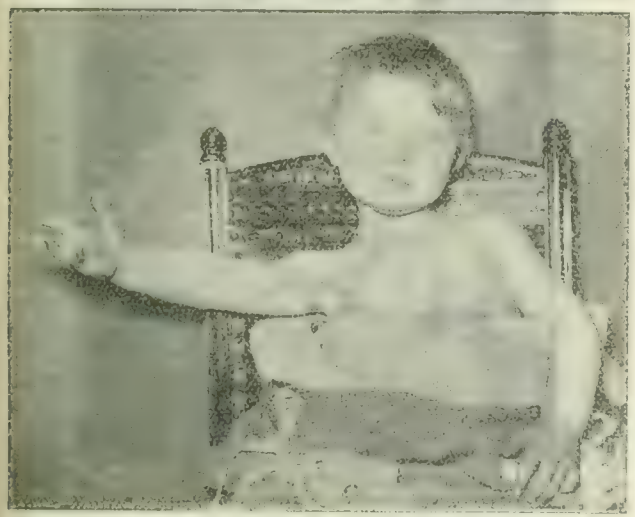


Fig. 1.—Case I; Duchenne's paralysis of right arm, after operation; showing recovery of supinators.

elevation of the arm can be carried out to the full extent, and so also with flexion at the elbow-joint, and the supinators, which at the date of publication were still very deficient, are now restored to the normal (Figs. 1 and 2). The two photographs of the case were taken on April 9th, 1904.

Case II.—In this case the patient was 14 years of age when the operation was performed, and presented congenital torticollis at the same time. On account of the age of the patient only very slow progress could be expected. At five months, when the case was previously published, no improvement had occurred in the movements, but now, at about two years after the operation, the movements have greatly improved. The forearm can now be flexed voluntarily through a range of 60°, and voluntary abduction of the arm is possible through a range of 45°. While these movements are being made, the biceps and deltoid can be felt to contract. The atrophy of the deltoid is also greatly repaired, and so with the biceps. The affected muscles also now give excellent contractions when stimulated with the faradic current, both when the electrode is applied to the motor points of the muscles and when applied over the nerve in the neck. It is therefore certain that this case, although operated upon at a date so very remote from the injury, is slowly but surely making headway.

Case III.—This case was operated upon six months after birth, and when published three months later there were merely slightly-improved electrical reactions to record. For a short time afterwards improvement continued, but movements were never regained, and the electrical reactions gradually disappeared. It was therefore clear that something had interfered with the restoration of the nerves, and another operation was decided upon. This was done on July 11th, 1904, with the result that the cause of the failure was found to be compression at the seat of suture by cicatricial tissue external to the nerve. The reunion of the trunks had been excellent, no trace of the exact seat of suture being visible, the appearance of the fifth and sixth nerves and their junction and divisions and branches, even to the branch to the subclavius being quite normal. Stimulation of the fifth and sixth nerves by the unipolar method with the faradic current gave distinct contractions in the deltoid and biceps, but no other muscle could be ascertained to contract. It was not considered in the interests of the patient to isolate the seventh nerve for purposes of stimulation, but when the electrode was applied just over its position the triceps was thrown into strong contraction. The stimulation therefore showed that the union of the nerves was good, and that the failure was due to compression external to the nerve. The second operation consisted therefore, merely of liberating the nerve. While the child was under the anaesthetic direct stimulation of the muscles was practised by making punctures through the skin over the deltoid and biceps and inserting the wire electrode down to the muscles. Stimulated in this way both muscles gave contractions to the faradic, although they gave none when stimulated by strong currents in the ordinary way.

2. *Histories of Two New Cases Operated upon.*

Case IV.—Female, born January 1st, 1903; second child, cranial presentation; forceps and considerable difficulty experienced; paralysis of right arm noticed on day after birth. When 40 days old, when I first saw the patient, no improvement had occurred, and the following report was made: Typical Duchenne's paralysis of right arm, paralysis of the supraspinatus and infraspinatus, teres minor, deltoid, biceps, brachialis anticus, and supinators being present. When the child was 2 months old no improvement had occurred, either in attitude, movements, or reactions (Fig. 3, p. 1066). Operation

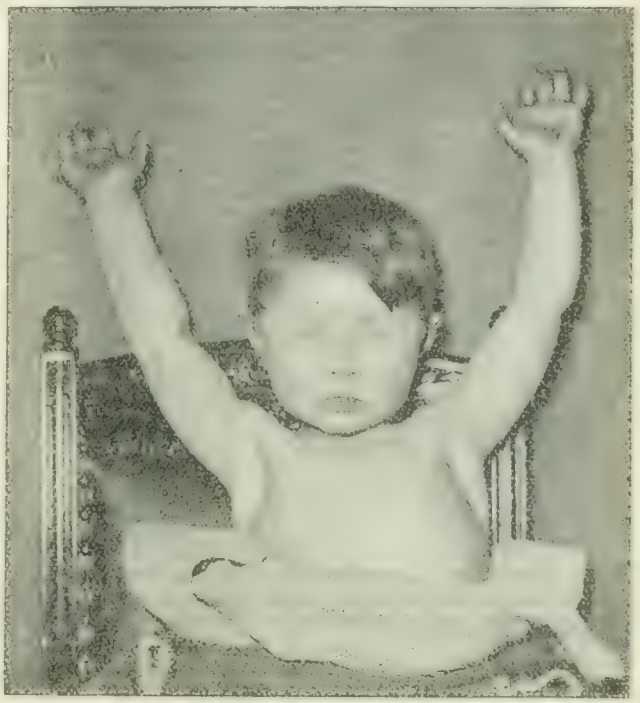


Fig. 2.—Case II; showing recovery of deltoid.

was performed on March 8th, 1903. The junction of the fifth and sixth cervical nerves was found to be cicatricial and the conductivity of the nerves lost, and excision with suture was performed as in the previous cases. Slight improvements in movements commenced at the end of May—that is, two and three-quarter months after operation. At four months the child could raise the arm at the shoulder to a slight extent, and by October 15th, 1903, she was using the arm in a fairly normal manner, and had been so for about three months. Examination showed almost complete recovery of deltoid, biceps, and brachialis anticus, but still no improvement in the supinators.

The photograph (Fig. 4, p. 1066) was taken on April 17th, 1904, and shows the supinators to be defective still.

When last seen, in July, 1904, the arm could be raised almost to the full extent, flexion of the forearm was normal, and also external rotation. Supination was defective. Faradic irritability present in all the muscles, both when stimulated directly and through the nerve.

Case V.—Male, born December 8th, 1902; fifth child; cranial presentation; forceps; right shoulder caught at pubic arch, and traction was made by hooking the finger into the left axilla. Paralysis of the right arm noticed as soon as child was born.

The case was first seen by me on February 26th, 1903, and in addition to the muscles usually involved the extensor muscles of the hand also were paralysed. Therefore the attitude of the arm was the typical one, with the addition of flexion of the hand and fingers.

Operation on March 3rd, 1903, the child being 3 months old. The junction of the fifth and sixth was found buried in dense cicatricial tissue, and on clearing this away the plexus was found to present the variation where the seventh cervical joins the junction of the fifth and sixth before it divides into the branches to the external and posterior cords (Fig. 5, p. 1067). This may explain the involvement of the extensors of the hand in this case. Conductivity of the fifth and six was found to be destroyed, and that of seventh present. The junction had not the dense cicatricial appearance which it presented in the other cases, and it was a question whether to leave it or to excise it. I would probably have excised it rather than have trusted to it becoming a functional piece of nerve, but a difficulty with the anaesthetic rendered it imperative to terminate the operation at this point.

Slight improvement in the movements was noticed on July 1st, 1903—that is, four months after operation.

On December 17th—that is, nine and a half months after operation, there was further improvement, and the extensors of the hand were greatly improved.

On February 25th, 1904, about a year after operation, the child could abduct the arm to 90° and flex the forearm to the same degree. There was also distinct faradic irritability of the affected muscles.

On June 16th, 1904, slight further improvement in movements was noted. Faradic irritability of the affected muscles was normal both to direct stimulation and to stimulation through the nerve by applying the electrode in the neck.



Fig. 3.—Case IV; Duchenne's paralysis of right arm, before operation.

3. The Influence of the Presentation of the Child at Birth on the Occurrence of the Lesion.

All four cases which I have seen during the last eighteen months were cranial presentations at birth, but in my previous cases one was a cranial, one a breech, and one a transverse. On looking over the literature of the subject I find that these observations are in agreement with the observations of others, and therefore this lesion may occur no matter what is the presentation of the child. I take it, however, that in a large majority of cases the presentation has been cranial.

4. The Position of the Child During Birth which gives Rise to the Lesion.

Some writers upon this subject have held that the lesion is produced by extreme elevation of the shoulder by means of which the brachial plexus is crushed between the transverse processes and the clavicle, but from investigations which I have made upon the cadaver I agree with those who hold that it is not produced in this way, but, instead, by stretching of the nerve cords. This stretching is at once brought about when the shoulder is forcibly depressed and the head bent to the opposite side and rotated one way or another. In this position the junction of the fifth and sixth nerves is under the maximum tension, the lowest cords scarcely being at all affected. This position may be brought about in any presentation by forcible traction, and therefore the lesion may be produced no matter what the presentation of the child.

5. The Exact Localization of the Lesion.

In all the cases upon which I have operated the lesion has involved the junction of the anterior divisions of the fifth and sixth cervical nerves (Fig. 5). In one this portion of the plexus was subjected to the pressure of cicatricial surroundings, the nerve appearing as if it had not been torn at birth at all, but in the other cases this portion of the nerve was distinctly a cicatricial mass undoubtedly due to complete rupture. The operation, therefore, in these cases consisted of excision of this cicatricial mass by dividing the fifth and sixth nerves above the lesion, and the suprascapular, the branch to the outer and the branch to the posterior cord of the plexus all below the lesion, and of joining the two central ends to the three peripheral ends by catgut suture. This was the procedure adopted in all the cases, except Case v, in which liberation of the nerves from adhesions alone was practised.



Fig. 4.—Case IV; Duchenne's paralysis of right arm, after operation; shows recovery of abduction of arm and flexion of forearm.

My observations, therefore, are in accord with the accepted view of the localization of the lesion in Duchenne's paralysis, which is that it is situated in a position which involves not only the fifth but also the sixth cervical nerve. This view has been recently opposed by Wilfred Harris and Warren Low,[1] the fifth nerve alone being held to be destroyed by the lesion.

In all my cases I have carefully determined the situation of the lesion before proceeding to divide the nerves at all. All the three cases which I published in my former paper were operated upon in the Western Infirmary in the presence of several observers, and in each the nerves of the plexus were stimulated by the faradic current by the bipolar method before any division of the nerves was effected, and the effect of these stimulations in the musculature of the arm noted. The result in each of the cases was to show that conductivity was completely lost not only in the fifth but also in the sixth cervical nerve, for stimulations of these two trunks above the lesion, and also stimulations in the three peripheral divisions, were followed by no contractions whatever, and the same result followed the stimulation of the nerves by the continuous current. As soon, however, as the electrodes touched the seventh cervical nerve vigorous muscular contraction resulted.

In Cases IV and V electrical stimulation was not employed, but, instead, mechanical stimulation, which brought out exactly the same results.

Apart also from the information gained by stimulations

previous to division of the nerves, it would, of course, have been impossible, had the sixth nerve been conducting, to have severed it at the operation without producing full contractions of all the muscles which it innervated, which contractions would have been abundantly apparent. No contractions, however, resulted when the fifth or sixth nerves were divided. Further, if in my cases the sixth nerve had been conducting there would not only have been muscular twitches produced on dividing it, but also afterwards there would have been additional paralysis produced of all the muscles which the sound trunk had previously innervated. In no case, however, was any additional paralysis produced by the operative procedure. From these observations I therefore conclude that the generally-accepted view of the localization is correct, and it is fairly well in accord with the experimental observations of Sherrington. At the time of publishing my previous paper I did not think it necessary, in a paper which was condensed as much as possible, to give details of the electrical stimulations and other observations by which I ascertained the actual condition of the nerves, seeing that these observations brought out nothing contrary to accepted facts, but take this opportunity of doing so, now that the accuracy of the accepted view has been disputed.

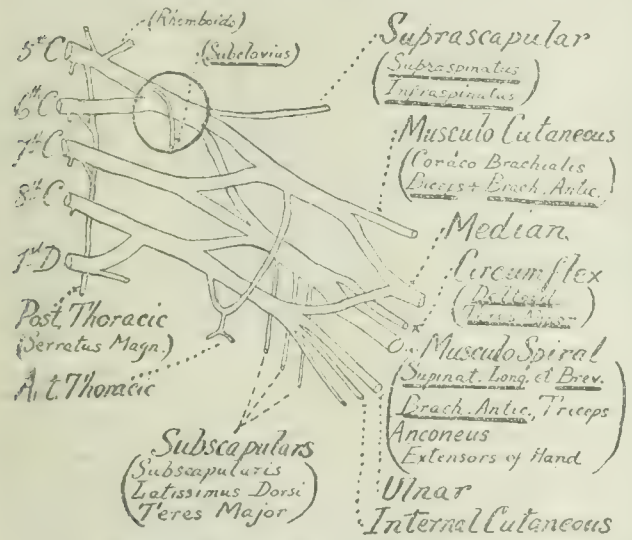


Fig. 5.—Diagram of brachial plexus; circle drawn round the portion affected in the cases; names of muscles supplied by the nerves placed in brackets, the paralysed muscles being also underlined; no muscles supplied by median or ulnar affected.

6. Excision of the Nerve Cicatrix and Reunion of the Nerve Trunks by Suture versus Nerve Anastomosis.

In my former paper I indicated that the proper mode of dealing with these cases was excision of the scar tissue and reunion by means of suture, and that in the three cases published there was no difficulty in effecting reunion without the slightest tension. In the case in which I have since excised and sutured, it was also an easy matter to draw the divided trunks into apposition after excision of the scar. I also pointed out in that paper that in the event of being unable to get the ends to meet by suture, I should draw them as close as possible, and trust to the nerve fibres bridging the gap in an aseptic wound and becoming effective paths for the impulses, preferring this to the chances to be obtained by means of treatment by nerve anastomosis. Recently, however, Harris and Low[1] published two cases of Erb's paralysis, which is essentially the same as Duchenne's birth paralysis, in which the treatment adopted was in one the grafting of the fifth into the seventh, and in the other the fifth into the sixth. At the time of publishing their paper sufficient time had not elapsed to give the results of these operations.

Nerve anastomosis is a justifiable procedure where the distribution of a paralysed nerve can in no other way be supplied, especially if a sound nerve of relatively little importance can be obtained in the neighbourhood, as in the case of the spinal accessory being used to supply the facial nerve distribution. When, however, the only nerve into which the grafting can be made is one of equal importance to that which is paralysed, then there should be strong reasons why anastomosis should be performed; for, if the result failed, the damage inflicted in the sound nerve necessary to make an efficient graft might result in additional muscles participating in the paralysis, and the case being thus left worse than before the treatment. This comparatively slight risk might be taken if anastomosis gave the only chance of improving the condition, but certainly not when excision and suture is the alternative procedure. The degree of restoration which can be attained by means of nerve anastomosis, judging from the cases which have hitherto been published—for example, spino-facial anastomosis—has in no instance shown a perfect recovery, but it is well known that *restitutio ad integrum* is the rule after excision of a nerve cicatrix and reunion of the ends by means of suture.

Anastomosis can therefore only be regarded as a procedure to be adopted when the more perfect plan of reuniting the nerves cannot be adopted. In Erb's or Duchenne's paralysis, if, as in my cases, it is easy to make the reunion, then the method of anastomosis certainly ought not to be practised.

7. The Most Suitable Age for Operation.

If it is decided that the case is not likely to undergo complete spontaneous cure, the sooner the operation is done the better. The interval of time necessary for recovery of the muscles after an operation on a nerve, undertaken not less than a month after the accident, is not the same for each case, but increases in a certain proportion to the degree of degeneration of the muscles and to the length of time which has elapsed from the accident to the date of operation up to a certain limit. When the interval before operation increases to something like a year, then the interval which elapses before recovery of motion shows itself would appear to be constant, no matter how much greater the interval which has elapsed before operation. If the nerve be sutured or liberated within 1 month of the accident, commencing recovery of motion may be expected at 8 weeks after operation: if within 2 months, recovery may be looked for in about 3 months; if within 3 months, then 3½ or 4 months ought to see recovery commencing; while if 5 or 6 months elapse before the operation is undertaken, then 7 or 8 months will probably elapse before the patient will exhibit any signs of returning motion. These figures I give as approximations only, and they are calculated from the 40 cases which I have personally observed. Of course, in individual cases complicating factors may disturb the normal development of recovery.

In the 8 cases of birth paralysis and other lesions of the brachial plexus in which I have operated, 7 have been so far successful, or are progressing satisfactorily, and the following shows the relationship between the date of operation and the first appearance of recovery.

Nature of Case.	Time Elapsed Between Accident and Operation.	Time Elapsed After Operation Before Commencing Recovery of Movements.
Duchenne's birth paralysis	2 months	2½ months
,, ,, ...	14 years	1—1½ years
,, ,, ...	2 months	2½ months
,, ,, ...	3 months	4 months
Erb's paralysis	5½ months	8 months
Compression of brachial plexus by cicatrices after fracture	2½ months	3 months
Compression of brachial plexus by aneurysm	1½ months	2 months

It is therefore seen that, as far as a speedy result is concerned, it is desirable to repair the damage as soon as possible. The only point, therefore, to determine is whether the lesion will be likely to be spontaneously recovered from or not. In some cases recovery takes place completely, although at birth all the typical signs are exhibited, and it is therefore necessary to wait a reasonable time in all cases before recommending operation. I referred in my former paper to a case in which electrical reactions commenced to improve within two months, and in which further delay was made, with the result that spontaneous recovery took place. I also recommended two months as a reasonable time to wait before operating. Movements may not have commenced by that time, but in all probability improvement in the electrical reactions will have commenced if spontaneous recovery is going to take place.

In some cases, however, the improvement does not show

till a relatively late period, but, as a rule in such cases, the further improvement is very slow and also imperfect, and such cases should not, I think, be raised as an objection to early operating, as the likelihood of late recovery is too uncertain to be depended upon. I therefore adhere to my former recommendation of two months as the earliest date at which operation should be undertaken.

On the other hand, I do not think that operative intervention should be withheld on account of the age of the patient being thought to be too advanced. Apparently something can be made of muscles by restoring their nerve supply although they have been long deprived of that nerve supply. I have frequently found in examining the reactions of muscles that apparently no responses were to be obtained either with the faradic or with the galvanic currents, applied in the ordinary way through the skin, even although very strong currents were used and the patient anaesthetized. The conclusion therefore might have been that no muscle substance remained at all, but this conclusion was at once shown to be erroneous when a small stab was made with a tenotome through the skin down to the muscle, and through this puncture direct stimulation of the muscle made by means of a sterilized wire electrode. By this means the reactions of a muscle long separated from its nerve supply and atrophied may be accurately tested.

The improvement gradually being exhibited in one of my cases in which the operation was not performed for fourteen years shows that there are possibilites of recovery even at periods very remote from the date of injury.

REFERENCE.

1 Harris and Low, BRITISH MEDICAL JOURNAL, vol. ii, 1903, p. 1035.

Dr. WILFRED HARRIS was unable to agree that the type of paralysis of deltoid, spinati, biceps, and supinator longus was due to involvement of both fifth and sixth cervical nerves, for he had found, in cases of operation with Mr. Low on four cases of brachial plexus lesion, that these muscles derived their motor supply practically solely from the fifth cervical nerve. Traction on the neck, as in pulling the head to one side, would be most likely to damage the more vertical and thinner fifth nerve than the stronger junction of the fifth and sixth.

Dr. DEMPSEY remarked that this form of paralysis was neither extremely rare nor caused by bad practice. Birth paralysis was seen, perhaps not frequently, but fairly often, and in these cases no fault could be found with the accoucheur. It was usually caused in a patient with a small or deformed pelvis. When the child was large and the shoulder got caught in the brim, strain was placed on the nerves of the neck and caused rupture. The operation which Dr. Kennedy performed was extremely satisfactory.

Dr. ROBERT CAMPBELL desired to express his pleasure in having heard the very valuable paper read by Dr. Robert Kennedy. In his capacity as surgeon to a children's hospital he had seen, during the past five years, at least twenty of these cases, and in some of them there was no question of traumatism having been inflicted by the accoucheur. When Dr. Kennedy's first paper was published, Dr. Campbell had operated on one typical case, which had made a perfect recovery; since then he had operated on five others. Two of these had already greatly improved, while two cases in which the whole brachial plexus was involved and one typical case had not been operated on long enough yet for one to form an idea of the ultimate result. Dr. Campbell considered the Section greatly indebted to Dr. Kennedy for his valuable communication.

Dr. KENNEDY, in reply, thanked the Section for the reception given to his paper, and said that the reason why Duchenne had called the affection "birth paralysis," and that it was right that it should be called by this name, was that the lesion was produced during the birth of the child. The paper had been brought before the Obstetrical Section because this lesion occurred in the hands of obstetricians, and it was, therefore, they who had the opportunity of seeing these cases at the earliest possible date, when surgical aid would be followed by the best and quickest results. He had personally no experience of obstetrical work, but as all his cases had been sent from men whom he considered most competent, he should say that this lesion meant no fault on the part of the accoucheur. In each case some exceptional difficulty had arisen during birth, necessitating either force or hurry. If the force was of the kind which caused depression of the shoulder and bending of the head to the opposite side, this lesion was apt to be produced. As regards Dr. Harris's remarks on the anatomy, Dr. Kennedy stated that all his cases showed the lesion to be seated in the same place, and that this position was in accordance both with experimental work and with the clinical observations of others.

LARGE FIBROMYOMA OF THE LEFT OVARY.

By J. SINGLETON DARLING, M.B.,
Lurgan.

M. M. A., unmarried, nullipara, aged 38, was admitted to Lurgan Infirmary on May 23rd, 1894. She is tall, dark, spare, with pinched, sallow features; had typhoid twelve years before, and since then has suffered from migraine; no other illness until November, 1892, when she took severe spasmodic pain in right side, running from tip of twelfth rib to labium; a fixed pain in corresponding region of left side soon came on. She was then menstruating, and has never seen anything from that time, but was "regular" up to that period. She now, for the first time, noticed herself enlarged. She says the swelling was uniform, and not more in one side than the other. In spite of progressive enlargement, she improved in health and suffered less pain, so that she followed her employment as a cambric weaver until Easter of this year, when, another attack of pain coming on, Dr. Dougan saw her, and found a large hard tumour in lower half of abdomen. He informs me that in the six weeks before her admission it had grown rapidly.

Her abdomen is now very large, the right deep epigastric vessels very big, the artery giving a thrill when pressed against the tumour. The abdominal cavity seems to be wholly occupied by a smooth, hard, rounded mass, with a sulcus at level of left anterior superior spine. There is tenderness in several places, and dullness on percussion is absolute, except in hepatic region and right loin. Here there is a loud resonant note with, between anterior and posterior axillary lines at level of sixth and seventh ribs, an oval patch of dullness about size of an egg. The resonant area slightly increases when patient is in upright position. Per vaginam the pelvic brim is occupied by tumour, but the uterus can be moved independently, and is not enlarged. The urine is normal.

After several consultations with my colleagues, when much diversity of opinion was expressed, relying on Dr. Dougan's observation that in March the tumour was in lower half of abdomen, I decided to operate, and on June 6th, in presence of Drs. Agnew, Bracken, Dougan, Pedlow and Boyd, Dr. Hadden assisting me, I opened the peritoneal cavity with difficulty, owing to the vascularity of the abdominal walls, and their dense adhesions to the tumour, requiring many ligatures. I was at length able to satisfy myself that the tumour was ovarian. I extended my incision from ensiform cartilage to near pubes, and even when all adhesions were separated, it was with great difficulty, owing to atmospheric pressure, I was able to deliver it through the wound. The pedicle was fairly long and easily tied. The liver was pressed up into the vault of diaphragm, and only showed its presence, before operation, by the small patch of isolated dullness I have mentioned. There was a broad-ligament cyst the size of an egg, which I removed. The whole operation lasted 1¼ hour. The patient was collapsed, but slowly rallied, and on following evening she passed flatus and bowels moved. She was given nutrient enemata for some days; by fourth day she could take milk and beef-juice by mouth; on fifth day had beaten-up egg, and she seemed to be progressing favourably; her temperature normal, and pulse much improved. On morning of 11th (sixth day) I found she had had a restless night and been somewhat delirious, but had taken nourishment freely. She was stupid and apathetic, but not delirious at time of my visit; her abdomen flat and painless, bowels and kidneys acting. Her temperature, for first time, was up to 99.2°. Her pulse gradually rose to 132°, her respirations quickened, and on morning of seventh day there was consolidation of left base; her temperature was 102°, and that afternoon she died. I was only able to examine the abdominal cavity through the wound. There was no sign of peritonitis. The peritoneum was bright and uninjected, and there was no fluid present. The tumour, which I show, was weighed after operation in the presence of my colleagues, and turned the scale at just over 22⅓ lb.

The ovary, about size of an orange, can be seen partially embedded in it, the Fallopian tube preserving its relation with it. The mass is very hard, and does not show on section any degenerating portions; there is a constriction surrounding it extending from the ovary, making the sulcus

felt during life. Professor Bennett (Trinity College) reports that its structure is almost pure fibrous tissue, with a small quantity of unstriped muscle. Its size is exceptional. Alban Doran's, of 16 lbs., is the largest I can find record of in this country. Kelly, I think, mentions one of over 17 lbs. in U.S.A. The amount of adhesion, too, is unusual in a myoma. Can it be that to the large blood supply gained in this way, it is owing that it grew to such a size?

Dr. C. E. Purslow (Birmingham) suggested that the tumour was a broad ligament fibroid, as the ovary appeared to be distinct from the tumour, and he thought that in true ovarian fibroids the ovary was to a great extent taken up in the tumour.

Dr. Fairbairn agreed with the last speaker that the tumour was probably a fibroid of the broad ligament or of the ovarian ligament. That it had not arisen from the ovary itself was shown by the fact that the ovary was present as a separate mass on the surface, and was not spread out over the tumour itself. In ovarian fibromata the growth usually develops within the gland, and spreads it out as a thin capsule on its surface. Those tumours which grow from the ovary like a subperitoneal fibroid from the uterus are usually small and very hard, and do not reach the size of the present specimen.

Dr. Ewen Maclean was inclined to agree with Dr. Fairbairn as to the question of the nature of the tumour. Some of the symptoms, as well as the examination of the tumour, were not in accordance with what was commonly accepted as indicating fibromyoma of the ovary. He suggested that the Section should appoint a small committee to examine the specimen.

The motion was seconded by Dr. John Campbell, and a committee, consisting of the mover and seconder and Dr. Fairbairn, Honorary Secretary of the Section, was appointed.

The following is the report of the Committee on the specimen:

We, the undersigned, find that the state of this specimen prevents the expression of any definite opinion as to its anatomical relations. It has shrunk so much from its long preservation in spirit, that, without a careful microscopic examination of its various parts, it is impossible to state whether it is a fibroid of the ovary or broad ligament.

John Campbell,
John S. Fairbairn,
Ewen J. Maclean.

SECTION OF SURGERY.

H. P. Symonds, F.R.C.S.Edin., President of the Section.

DISCUSSION ON THE INDICATIONS FOR HYSTERECTOMY AND THE METHODS FOR PERFORMING IT.

I.—J. Bland-Sutton, F.R.C.S.,

Surgeon to the Chelsea Hospital for Women, and Surgeon to Out-patients, Middlesex Hospital, London.

Great as have been the advances of surgery in the treatment of diseases of the abdominal viscera, none can compare with the success which has rewarded the efforts of surgeons during the last ten years in the operative treatment of diseases of the uterus. One of the first consequences of what may be called surgical aggression among the viscera is the marked increase in the extent as well as in the accuracy of our knowledge of the pathology of the abdominal and pelvic organs. This has happened in the case of the uterus, and I shall endeavour to show that the surgery of this organ has been advanced and placed upon a secure foundation by the very fact that the efforts of surgeons made a proper clinical and pathological investigation of its diseases possible.

Cancer of the Uterus.

In considering the indications for hysterectomy, cancer of the uterus necessarily holds the foremost place, for it was the hope of combating this foul disease which led surgeons in the first instance to attempt the complete extirpation of this organ. The early efforts in this direction were made by the abdominal route, and were in most instances miserable failures; but the primary success which followed operative endeavours conducted through the vagina completely revolutionized the methods of dealing with this disease surgically, and the complete extirpation of the cancerous uterus soon replaced unsatisfactory niggling operations, such as scraping, cauterizing, and partial amputation of the cervix.

It soon became clear that the complete removal of a cancerous uterus, though it was attended by a low mortality in skilled hands, was followed by very unsatisfactory remote results, and this led to a more thorough inquiry into the nature, course, and modes by which cancer of the uterus destroyed its victims. From careful studies conducted in the wards and laboratories, the indications for performing hysterectomy in cases of uterine cancer can be fairly well formulated.

Cancer of the Cervix Uteri.—Without laying down any hard and fast rules, it may be stated that in suitable cases the uterus is best removed in this disease by the vaginal route, as it enables the surgeon to excise the tissues about the cervix uteri widely, and at the same time enables him to avoid the bladder, the ureters, and rectum.

In order to secure a good result it is of the highest importance to make a very careful selection of the cases. The disease should be limited to the cervical tissues, and the broad ligaments should be free from any suspicion of infiltration. These are matters which cannot be satisfactorily determined by the finger alone, but by examination under an anaesthetic. It is surprising how often a case seems favourable for operation when digitally explored, and yet woefully disappoints the surgeon when the parts are exposed with the help of a speculum in a good light.

My own hospital experience shows out of 100 consecutive patients with cancer of the neck of the uterus about 5 per cent. are favourable subjects for the purposes of operation. No doubt many think that I am too exclusive in selecting cases for operation, but I am satisfied that if hysterectomy is not to be discredited as a mode of treatment in this disease it is necessary to select the cases with very great care.

Cancer of the Neck of the Uterus and Pregnancy.—It may be stated without fear of contradiction that the most appalling complication of pregnancy is cancer of the neck of the uterus; unfortunately, it is not uncommon, but it is not often that the cancer obstructs labour, and this is explained on two grounds: (1) Cancer of the cervix predisposes to abortion; (2) when it has advanced to such a stage as to fill the vagina with an obstructive mass, it has had such an effect on the health of the mother that it endangers the life of the fetus, and leads to miscarriage.

A study of the literature relating to complication indicates that when a pregnant woman with early cancer of the cervix comes under observation in the early months her best hope lies in early vaginal hysterectomy. In the later months (four to seven) very good consequences have followed amputation of the cervix, and this operation has been performed without disturbing the pregnancy. In the latest stages the best consequences have followed the induction of labour and the immediate performance of vaginal hysterectomy, for, surprising as it may seem, the uterus, though enlarged by the pregnancy, can be safely extracted through the vagina. These methods, of course, only apply to cases where the cancer is in such a condition as to afford reasonable hope of a prolongation of life.

Cancer of the Body of the Uterus.—Pathological inquiry has let a flood of light into the dark corners of the uterus. The fog of names which formerly obscured the changes, malignant and otherwise, of the endometrium has been dispelled. "Cancer of the body of the uterus," as it is called in the loose phraseology of the wards, has been carefully studied, and is known to be less frequent than cancer of the cervix, and is more liable to arise in elderly spinsters and sterile married women than in those that are fertile. It is clear that there are two varieties, and that the disease spreads and destroys its victims in a manner different to cancer of the cervix. It may attack a uterus beset with fibroids, or arise in a senile atrophic organ. On the whole, it is less virulent than the cervical form, and is best dealt with by complete removal of the uterus, Fallopian tubes, and ovaries by the abdominal route.

The remote results of hysterectomy for cancer of the body of the uterus are very good when performed before the disease has perforated the uterine wall. The best results are met with in the rarer instances in which the disease arises in a senile uterus. The chief points which guide the surgeon in determining the particular route by which he will remove a cancerous uterus are in the main based upon the known proclivities of the disease. Cancer of the cervix by spreading circumferentially tends to implicate the bladder, rectum, vesical ends of the ureters and vaginal mucous membrane, and is most completely open to free operative removal from the vagina; and, as it is almost entirely confined to women who have been pregnant, the vagina is usually large enough to permit the necessary manipulation. That cancer in the corporeal endometrium tends to spread into the uterine sections

of the Fallopian tubes, making it imperative that these structures should be freely removed, is a fact in favour of the abdominal route, and this proceeding is in many instances enforced on the surgeon by the narrowness of the vagina in spinsters and sterile married women, even when the uterus is atrophic.

Cancer of the Fallopian Tube.

As an example of the manner in which the enterprises of modern surgery have reacted on the acquisition of reliable clinical knowledge, I may take this opportunity of drawing attention to cancer of the Fallopian tube. Our knowledge of this disease dates from 1888, and, making full allowance for cases in which it is possible and even probable that some cases recorded as examples of primary tubal cancer were instances of cancer of the endometrium extending into the uterine ends of the tubes, there is now a large body of carefully prepared evidence to prove that cancer may arise primarily in the tubal mucous membrane. The subject is one which must be considered here, for the signs of the disease are those exhibited by cancer of the body of the uterus—namely, irregular haemorrhages at, or more frequently subsequent to, the menopause. I am also of opinion that, in cases where the uterus has been dilated for diagnostic purposes, where the signs strongly indicated cancer of the body of the uterus, and no disease was found on examination, and the haemorrhage continued in some of those cases, there may have been cancer in the Fallopian tube.

Primary cancer of the tube is very malignant, and gives bad remote results to operative treatment, even when the uterus has been removed with the tubes. Certainly it seems that it is better not to remove the uterus, but we await with patience the results of more experience.

Deciduoma Malignum (Chorion-epithelioma).—This dreadful disease, for which complete extirpation of the uterus is at present the only available remedy, may be described in the phraseology so familiar to zoologists as "a species new to science"; it is "newer" than cancer of the Fallopian tube. Very few examples have been observed in England, and most of our knowledge concerning its pathology and clinical characters we owe to German workers. The most complete account of this disease accessible to British surgeons is an admirable paper furnished by Dr. John H. Teacher to the *Transactions of the Obstetrical Society of London*, 1903, which contains a tabular statement of the results of operative treatment of the disease, the result of an analysis of 188 recorded cases. His opinion may be given in his own words:

> It seems reasonable to conclude that operation offers a fair chance of recovery; and, further, that it may be done with some prospect of success in the face of the gravest signs of disease, and even of metastasis, having occurred.

Thus what I have said in regard to primary cancer of the Fallopian tube is equally applicable to deciduoma malignum; we must wait with patience the results of more experience.

Fibroids and Sarcoma of the Uterus.

The history of attempts made by surgeons to relieve women of troublesome and dangerous fibroids has an interest surpassing that of ovariotomy; indeed, the successful removal of a uterus beset with fibroids ranks, in some circumstances, among the greatest enterprises of modern surgery. It is also clear that the term "fibroid" is of generic value only. Many tumours are truly myomata; others with equal truth merit the name fibromyomata. There is also the soft jelly-like tumour met with most commonly in the interval from the twenty-fifth to the thirty-fifth year, associated with profuse menorrhagia, profound (toxic) anaemia, which on section after removal resembles a mass of trembling jelly (myxoma). This tumour, so often described as a degenerate fibroid, is not so in fact; it is a primary condition, and serves to bridge the interval between the true fibromyomata and sarcoma of the uterus. Many tumours described as uterine fibroids, which had undergone malignant change, were in all probability sarcomata in their beginning.

There is a consensus of opinion among surgeons and gynaecologists that operative interference with fibroids may be recommended in the following circumstances:

1. When the fibroids cause profuse and long-continuing menorrhagia.
2. When the fibroid is septic and gangrenous.
3. Impacted and irreducible fibroids, causing pain and retention of urine.
4. Fibroids which are growing rapidly, and those which are degenerate, softened and diffluent (cystic).
5. Cervix fibroids too large to allow of enucleation through the vagina.
6. Fibroids complicating pregnancy, delivery, and puerpery in certain circumstances.

When it is absolutely necessary to remove the uterus for fibroids complicating pregnancy, it is usually to the patient's advantage to perform supravaginal hysterectomy. In a case recently under my care, in order to give the patient every opportunity of possessing a living child, notwithstanding the fact that she had two large fibroids in her uterus, one of which blocked the pelvis, I abstained from operating. Unfortunately, she miscarried at the seventh month, and the fetus was so impacted in the pelvis by a cervical fibroid that I performed panhysterectomy. As far as my knowledge goes, this is the first case of a panhysterectomy being performed whilst the patient was in labour (Fig. 1).



Fig. 1.—A gravid uterus in sagittal section. The patient miscarried at the seventh month, and the arm presented. Delivery being impossible on account of a large cervical fibroid, the uterus, with its tumours, contents, and cervix, was removed (panhysterectomy). The patient, a primipara, aged 34 years, recovered (*Trans. Obstet. Soc. London*, 1904). This is probably the first recorded example of panhysterectomy during labour.

Although these conditions indicate and justify the surgical treatment of fibroids, there are certain points of difference among surgeons as to the best modes of carrying it out. It would have been interesting to trace the evolution of the present methods of performing hysterectomy, but I may state that its present position is due to the introduction of the aseptic ligature and the intraperitoneal method of treating the stump. A careful study of the subsequent course of the patient led observant operators to notice that, in a given series of cases, those patients did best in whom the cervix had been most freely removed, and this soon led to the introduction

panhysterectomy, or complete removal of the cervix, as well as the body of the uterus.

I have given all the methods a fair trial, and come to the following conclusions:

1. That, under certain conditions, myomectomy, abdominal enucleation, and hysterectomy are very useful measures.

2. That supravaginal hysterectomy is a very suitable and excellent operation in a large proportion of patients.

3. Panhysterectomy is as safe an operation as supravaginal hysterectomy; it is desirable in many cases to remove the whole cervix, but it is not necessary to do this as a routine procedure.

The reasons for these opinions must be considered in some detail. It is, I believe, admitted by most writers that the ideal method of dealing with fibroids requiring removal by coeliotomy is to remove them, either by ligature or by enucleation, and, in certain circumstances, by actually opening the uterine cavity, extracting the tumour, and then suturing the incision as after a Caesarean section, an operation to which I apply the term hysterotomy. In practice this ideal operation of removing the tumours and leaving the uterus and ovaries intact can only be carried out in a small proportion of cases, probably in less than 10 per cent., and it is fair to state that enucleation and hysterotomy are often more troublesome and serious operations than hysterectomy; also the preservation of the uterus is not always an advantage to the patient.

When a woman is submitted to hysterectomy for fibroids we can assure her that the tumours will not recur, but after a myomectomy or enucleation in a woman in the reproductive period of life we cannot give her this assurance, for she may have in her uterus many "seedlings," or what I prefer to call "latent fibroids," and one or several of these may grow into formidable tumours.

My rule of practice in this matter may be summarized thus:

A young woman contemplating marriage, or a married woman anxious for an offspring, may, if her tumour is single and admits of myomectomy or enucleation, have her uterus spared. Although I have carried out these measures on many occasions I only know of five patients who have subsequently borne children.

It is, however, a matter of greater interest to me to relate that, in several instances of pregnancy complicated with tumours and in which the signs were very urgent, on performing coeliotomy I have succeeded in removing the fibroid without disturbing the pregnancy, and it has gone safely to term, and the child has survived. Another legitimate class of case in which myomectomy is a very safe undertaking is in patients at, or after, the menopause where a stalked fibroid gives trouble by twisting its pedicle, or by shrinking to such a size that it falls into the true pelvis and becomes impacted, or more rarely the pedicle of such a tumour entangles a loop of small intestine and obstructs it.

In regard to the removal of the uterus for fibroids I hold very definite opinions. I prefer the method known as supravaginal hysterectomy; it is a simpler operation than panhysterectomy, attended with less shock, and involves less risk to the ureters. In a carefully performed supravaginal hysterectomy, within a few weeks of the operation the cervical stump is movable and the vaginal vault free and undamaged, and the condition of the parts is such that by digital examination or inspection it would be difficult to determine that the patient had lost her uterus.

The advocates of routine panhysterectomy write that the risk of danger to the ureters has been exaggerated, and urge that by leaving a cervical stump the patient runs a risk of acquiring malignant disease. They admit that the operation is somewhat more difficult and takes longer to perform than the supravaginal operation. It is impossible to ignore the fact that extirpation of the cervix, whether by the abdominal or the vaginal route, greatly imperils the integrity of the ureters. Sampson states that in 156 hysterectomies for cancer of the cervix the ureter was injured in 19 cases. The injuries were of various kinds, "as ligating, clamping, cauterizing, cutting," etc. These operations were performed in the Johns Hopkins Hospital from August, 1899, to January 1st, 1904.

In all questions of this kind it may be taken for granted that there is much to be said on both sides. There are cases where the simpler method is sufficient, safe, and satisfactory. Supravaginal hysterectomy in a spinster, or a childless married woman, with a large fibroid in a uterus with a long narrow neck and an undilated healthy cervical canal is as safe as any major operation in surgery, and if care is taken to bring the cervical flaps into strict contact they will unite by first intention, and the patient recover without a rise of temperature from the time of operation to complete recovery.

When hysterectomy is required in married women, and especially those who have had children, in whom the cervical canal is patulous, perhaps septic, and in many cases large and hard, or large and spongy, then it is to the patient's advantage to have the cervix completely removed, and especially if she be more than 40 years of age.

I have performed panhysterectomy one hundred times in order that I could speak with confidence on its merits and demerits. There are conditions such as I have mentioned above in which it is judicious to remove the cervix with the uterus, and that surgeon acts best towards his patient who does not follow any routine method, but modifies his operation according to the necessity of the case.

The superiority and safety of supravaginal hysterectomy or panhysterectomy turns, in the main, upon some very important questions which have been raised in regard to the liability of the cervical stump to be attacked by cancer. A number of observations have been recorded in which, after removal of the body of the uterus, cancer or sarcoma has attacked the cervix. But a careful analysis of the reputed cases proves clearly that in some of the patients the cervix was already cancerous at the time of removal of the body of the uterus, and in some the reporters state the tumours suspected to be fibroids at the time of the primary were in reality sarcomata. In a few instances cancer of the cervix appeared in the stump at such an interval after the hysterectomy as to entitle it to rank as a new invasion.

The bearing of these things is significant, for it teaches us to carefully examine the cervix for evidence of early cancer in association with fibroids, and to remove it if the appearances are suspicious. It also behoves us to have soft fibroids carefully examined, for a tumour we unsuspectingly regard as a benign fibroid may be in reality a sarcoma. I am very sceptical of what is called the metamorphosis of a fibroid into a sarcoma. It is also good to remember that carcinoma is not a degeneration! Lastly, it is important, when sufficient observations are forthcoming, to determine whether cancer of the cervix occurs more frequently in women who have undergone supravaginal hysterectomy than in other circumstances.

The Treatment of the Ovaries in Hysterectomy for Fibroids.

In performing hysterectomy, whether vaginal or abdominal, for fibroids it is an important matter to decide how to deal with the ovaries. In a paper communicated to the Obstetrical Society of London in October, 1897, I stated that when operative interference was necessary in the treatment of fibroids during the menstrual period of life I reversed the conditions of oöphorectomy, and, instead of excising the ovaries and leaving the uterus, removed the uterus with its tumour, leaving one or both ovaries with the corresponding Fallopian tube. The immediate results of the innovation were admirable and spared the patient at least the inconvenience of an acute menopause. I fully recognized that it was a method well worth a wider experience than the fourteen examples referred to on that occasion. Three months later Dr. Howard Kelly, of Baltimore, published a paper on the same subject in the British Medical Journal of January 29th, 1898, advocating from his own experience the same conservative idea. Since that time experience has taught me that the expected benefits were over-estimated, but that the preservation of ovarian tissue is of marked service to the patient within certain limits. Towards the end of 1901 Dr. Crewdson Thomas, who was then Registrar to the Chelsea Hospital for Women, attempted to determine these limits. He conducted an inquiry into the after-history of 100 consecutive cases of supravaginal hysterectomy performed in that institution and among the results of the analysis of his returns he came to the conclusion that supravaginal hysterectomy does not interfere with the sexual passion, and that the retention of an ovary is of striking value "in warding off the severity of an artificial menopause"; this is more especially the case when the patient is below 40 years: above that age the ovaries decrease in value every year.[1] As many of the patients which formed the subject of Crewdson Thomas's inquiries had been under my own care, I not unnaturally took great interest in his work, and was so satisfied with the great care he expended on the investigation that his conclusions satisfied me. And since the publication of his excellent paper I have, as a working rule, practically removed both ovaries when performing hysterectomy for fibroids in patients aged 40 years and upwards, and taken unusual

[1] *Lancet*, 1902, vol. i, p. 294.

pains to preserve at least one, when healthy, in women below that age.

Previous to Crewdson Thomas's inquiry my notes show that I left one or both ovaries in 50 per cent. of the cases in which hysterectomy was performed for fibroids; since 1901 the proportion has fallen below 20 per cent.

I have lost no opportunity of studying the fate of ovaries conserved in this way. On three occasions on which I have had an opportunity of studying the condition of these glands two, three, and five years after removal of the uterus, they had shrunk to small nodules about the size of cherry-stones. Thus any benefit which is derived from their retention is temporary, and its chief value lies in the circumstance that these patients are spared the annoyance and inconvenience of an acute and stormy menopause. Although I have left one or both ovaries in more than two hundred women in whom hysterectomy was performed for fibroids, in only one instance has it led to trouble. A lady, aged 50, had a large cervical stump, which suppurated after hysterectomy in March, 1898. This caused the right tube to become a pyosalpinx, and I removed it in November, 1900. At this date (1904) the patient is in admirable health.

There is another point in the age-value of the ovaries worth consideration. In a discussion at the meeting of the Association held at Portsmouth, 1899, I drew attention to the analogy in the pathological tendencies of the thyroid gland and the ovaries; and it interested me very greatly to read some remarks of Sir Victor Horsley that "the thyroid gland, which is such an extremely important organ in early life for the growth and development of the body, becomes of less importance every year after the age of 40 is passed, and most cases of carcinomata of the thyroid gland begin after the 45th year." Certainly this is true of the ovaries.

Adenomyoma of the Uterus (Adenomyoma Uteri Diffusum Benignum).

The term "adenomyoma" is applied to a pathological condition of the uterus, the leading features of which are admirably summarized by Cullen in the following terms: It "is diffuse in character, situated in the middle layer of the uterine wall, and is dependent on the uterine mucosa for its glandular elements." Although several observers, including Recklinghausen, have recorded isolated examples of this disease, Cullen seems to have been the first to draw attention to its clinical importance (1897).

In well-marked cases adenomyoma presents clinical features which cause it to resemble the common varieties of submucous fibroids. The ages of the patients vary from 20 to 50 years; the uterus is enlarged, there is profuse and, in some instances, uncontrollable menorrhagia and profound anaemia.

When the uterus is removed and divided longitudinally, the walls are seen to be greatly thickened, measuring in some specimens 5 cm. (2 in.) in thickness; this increase is due to the formation of new tissue between the outer wall of the uterus (the subserous stratum) and the superficial layer of the endometrium. There is no attempt at encapsulation, and the term "diffuse" is thoroughly justified. The new tissue consists mainly of bundles of plain muscle fibre, which, instead of being arranged in vortices, as is so common in the ordinary hard fibroid, are disposed in an irregular manner, and the spaces between the bundles are filled with the peculiar stroma of the uterine mucosa, containing gland tubules lined with columnar epithelium, and of the same type as the normal tubular glands of the endometrium. The glandular elements appear to be uniformly distributed throughout the adventitious tissue, and can be detected up to the limits of the thin muscular stratum underlying the peritoneal coat of the uterus.

My experience of this disease is limited to three cases, and in each operative interference was undertaken for what may without any exaggeration be described as uncontrollable menorrhagia, and in each it was supposed to be due to a submucous fibroid. In each instance the patient made an excellent recovery.

Adenomyoma of the uterus has been recently brought under the notice of British surgeons in an excellent paper by Mr. F. E. Taylor and Dr. Cameron in the *Journal of Obstetrics and Gynaecology of Great Britain*, March, 1904, p. 248.

Fibrosis of the Uterus.

Under this term I described in the British Medical Journal, 1899, vol. i, p. 839, a peculiar affection of the uterus, of which the leading clinical feature is uncontrollable menorrhagia. The regular abundant loss of blood is not merely uncontrollable from the point of view of drugs and rest, but also is irresistible to curetting, and in some of the cases which have been under my care the uterus has been repeatedly curetted by competent men. The disease, which is chiefly met with in women between 35 and 45 years of age, is associated with striking structural changes in the uterus. The organ is larger than usual and its walls thick and tough. On microscopic examination the muscle tissue of the uterus is seen to be replaced by an abnormal growth of fibrous tissue. The walls of the uterine arteries are thick and the lumina of the vessels narrowed and occasionally obliterated. The change in the tissues of the uterus is, I believe, a remote result of septic endometritis.

In unmarried women, and sometimes married (parous) women, the uncontrollable menorrhagia is sometimes simulated by diffuse adenomyoma of the uterus. The enlargement of the uterus in the latter disease should be a valuable diagnostic guide.



Fig. 2.—A uterus laid open along its anterior wall: it is lined with a thick decidua. From a case of tubal pregnancy. The drawing represents the "decidual" and the menstrual area of the uterus.

In cases of uncontrollable menorrhagia it is usual to perform bilateral oöphorectomy, but this is a mode of treatment which cannot be relied upon because in so many cases it has little and often no effect upon the bleeding. This may be partly due to the difficulty of completely excising the ovaries. It is far safer to remove the uterus and leave the ovaries, unless there be strong evidence of disease in these bodies. It is very necessary to remove completely the menstrual area of the uterus (Fig. 2). By this I mean that portion of the uterus which bleeds during menstruation.

In some patients I have carried out vaginal and in others abdominal hysterectomy. If the vagina is fairly capacious, and the uterus but little enlarged, it is the preferable route. The remote results of either form of hysterectomy for severe bleeding due to uterine fibrosis are admirable.

Since the publication of the original notice of this affection of the uterus I have performed hysterectomy for its relief on ten occasions—in each instance the operation was successful, and the remote results to the patient have been as remarkable as anything I have witnessed after the removal of any other abdominal viscus. The subsequent condition can only be described as admirable.

Extirpation of the Septic Uterus.

The consideration of uterine fibrosis, which, in my view of its pathology, is the remote sequel of a septic endometritis, leads us to the consideration of the treatment of the septic uterus in the acute stage.

Acute septic infection (puerperal) of the uterus, which is alas too frequent even in this antiseptic epoch, is a condition which scarcely lends itself to surgery. Attempts have been made to remove the uterus even in this desperate condition,

but with no encouraging measure of success. Michels recently published an account of a bold piece of surgery, wherein he followed Trendelenburg's example, and excised the thrombosed ovarian veins and saved the life of his patient.[2] Reflection on these facts leads me to strongly urge upon those who have the opportunity to investigate bacteriologically the clot in the ovarian veins in these conditions, for we need to know the nature of the micro-organism which establishes the clotting, as it may serve to throw light on those tragic cases in which, after abdominal operations, the patient appears to be convalescing smoothly, dies suddenly and without the slightest warning. I am strongly of opinion that sepsis is at the bottom of these surgical tragedies.

Acute Gonorrhoeal Endometritis.—The desirability or otherwise of removing the uterus in this condition is sometimes forced upon the surgeon when he is called upon to remove the Fallopian tubes and ovaries in acute or subacute salpingitis. Those who have had much experience of operating in this disease must have occasionally felt perplexed in regard to the best way of treating the septic stumps of the tubes: and as both tubes and ovaries are removed it appears not unreasonable to regard the uterus as a useless organ, and one that is not infrequently a source of troublesome bleeding due to its septic endometrium. Several surgeons—myself among the number—have, under these conditions, removed the uterus. It is, however, a proceeding which I cannot recommend, save in very exceptional circumstances, as some of the patients had a long and tedious convalescence. The subject has been carefully considered by Hartmann and others in France and Germany.

My present practice in these cases of septic uterus is to allow the infection to subside and a long interval to follow the bilateral oöphorectomy. In many no very inconvenient consequences arise, but if the patient is much disturbed by the metrorrhagia and her health and industry are seriously affected, then vaginal or abdominal hysterectomy may be recommended, and in these circumstances it is a straightforward and comparatively safe proceeding.

Septic Fibroids.—It is fortunate that in a large proportion of cases the uterus endeavours to extrude a septic fibroid, and it is equally true that a submucous fibroid becomes septic in consequence of being extruded by the uterus, but it is distressing to be asked to deal with a case in which a fibroid, perhaps no larger than a Tangerine orange, is hanging loosely irom the uterus and the patient is in the last stages of septicaemia, yet this tumour could have been removed by a nurse. The uterus in such cases is infiltrated with pyogenic organisms, and the septic material creeps along the Fallopian tubes and infects the pelvic peritoneum. Septic endometritis accompanying a septic fibroid is a very dangerous condition for hysterectomy, but if the uterus can be removed by the vaginal route it is often followed by good consequences, but nearly always entails a long convalescence. If the fibroid is so large as to need abdominal panhysterectomy then the risks of the operation and the length of convalescence are greatly increased.

Hysterectomy in Cases of Ectopic Pregnancy.

It is occasionally necessary in three of the great subdivisions of abnormal pregnancy embraced under this heading -namely, tubal, interstitial, and cornual pregnancy—to remove the uterus in order to efficiently control the bleeding, or for other reasons. In tubal pregnancy, such a necessity rarely arises, but cases have been observed and recorded in which the haemorrhage has torn up the tissues of the mesometrium, so that an experienced and conservative surgeon like Doran has found this step imperative, and I have had a similar experience.

In cases of interstitial or tubo-uterine pregnancy in which gestation has gone beyond the second month, the uterine tissues are so intimately incorporated with the gestation sac, that the operator who is called upon to deal with haemorrhage due to rupture of the sac, will find it the only expedient open to him in the majority of cases.

In the condition known as "pregnancy in the rudimentary horn of a so-called unicorn uterus," or, better, "cornual pregnancy," the removal of the uterus may be regarded as the routine method of treatment, not only in those cases where operation is urgently indicated on the score of bleeding in cases where the fetus was "quick," but also in the other variety in which the fetus was dead and sequestrated, and in one rare instance in which the fetus had undergone maceration and only its skeleton remained (Remfrey). There is a condition of cornual pregnancy in which the fully-developed cornu may be spared, namely, that in which the rudimentary but gravid cornu is connected with it by a distinct and usually solid "pedicle." Many such have been observed and very carefully described.

Haematometra.—The great difficulty of maintaining the patency of the opening made for the evacuation of the retained blood in this condition has induced several operators, myself among the number, to remove the uterus and distended tubes by coeliotomy. The results, immediate and remote, are excellent, and there is little doubt that hysterectomy will be the recognized means of dealing with this condition.

The Ethics of Hysterectomy.

In a discussion concerned with the removal of the uterus it is impossible to blink what may be called the ethical, or better, the sentimental, side of the question. So much mystery is shrouded in the phrase "reproduction of the species," and as much superstition and erroneous opinion clings about the uterus as poets have succeeded in securing for the heart; indeed, a professional wag, in discussing the uterus from the sentimental side, describes the womb as a second heart. It is, indeed, somewhat curious to find those who do not for one moment hesitate to amputate a damaged leg, a crushed arm, enucleate an eyeball, or excise a larynx, express very conservative notions when it is proposed to remove the uterus for a disease which gravely imperils life.

Let us for a few moments seriously consider the nature of the uterus. This musculo-glandular organ strictly should be classed like the ovaries among the temporary glands. Its normal period of activity is coincident with menstrual life, and in Great Britain lasts thirty years (15 to 45), and after the occurrence of the menopause a healthy uterus, like the ovaries, shrinks and usually becomes an atrophic and insignificant organ. This change accomplished, a woman usually enjoys a healthy vigorous existence and retains to the full her mental powers. This is sufficient proof that whatever uses the ovaries and the glandular elements of the uterus fulfil in relation to sexual functions, from the point of view of internal secretion, their arrest is in no way detrimental to the well-being of the individual.

It is established as a result of thousands of hysterectomies performed throughout the civilized world, that except amenorrhoea and sterility, when the operation is performed during the sexual period of life, the removal of the uterus is followed less frequently by unpleasant sequelae than any other major operation in surgery. Hysterectomy has a wonderful future, and this is a great thing to say of an operation which forty years ago had no more reality than the story of Jack the Giant-Killer.

Hysterectomy.

Hysterectomy is the name applied to the surgical operation for the removal of the uterus, and it can be effected by two methods. In one access is obtained to the uterus through an incision in the lower part of the belly wall; this is known as abdominal hysterectomy; in the other the uterus is extirpated through the vagina, and is on this account termed vaginal hysterectomy.

It is somewhat remarkable that although the object of both operations is the same, namely, removal of the uterus, in the abdominal method the surgeon takes every care to thoroughly close the peritoneum over the stump of the cervix, or the vaginal opening as the case may be, but in vaginal hysterectomy the edges of the gap in the peritoneum left by the removal of the uterus are, as a rule, allowed merely to fall into apposition.

It is also necessary to point out that the two methods differ in an important particular. The vaginal route allows the surgeon to deal thoroughly with diseased tissues in the immediate vicinity of the cervix, whereas the abdominal operation gives free access to, and affords the greatest scope for dealing with, complications associated with the Fallopian tubes, ovaries, and the mesometria.

The results of both methods in the hands of surgeons accustomed to this class of work are among the most remarkable in surgery; to ensure success it is necessary to obtain a rigid asepsis and perfect haemostasis, and any trespass in either is sure to be visited with penalties. Some surgeons believe that the peritoneum is capable of dealing successfully with a fair dose of pyogenic material as compared with connective tissue, and seek to explain in this way some of the extraordinary successes recorded in recent years. This is unfortunate, and may help to explain in part the high mortality of abdominal

[2] *Lancet*, 1903, vol. i, p. 1025.

hysterectomy in the general hospitals of London. It is essential to be extremely careful in the preparation of the patient for operation, as well as the materials and instruments used during the operation, and more especially of the surgeon's hands, for these are a notorious source of danger. My working rule is this:

Nothing should be allowed inside a patient's abdomen that has not been boiled specially for the operation, and as the surgeon's hands cannot be sterilized by heat he should wear rubber gloves which have been boiled.

As the patient cannot be treated in this way her preparation is a matter of some importance.

Preliminaries.—It is essential to have the assistance of two nurses specially trained in abdominal work; they understand the methods of douching the vagina and preparing the parts, are apt at passing the catheter, and carry out these details without fuss. It is a good plan to have a nurse in attendance forty-eight hours before operation, so that she may shave the hair from the pubes and labia, and after thoroughly washing the operation area with soap and warm water make the skin thoroughly clean with such antiseptic solutions as the surgeon is accustomed to use. A solution of perchloride of mercury (1 in 5,000) is a very efficient antiseptic agent for this purpose. The abdomen is swathed in compresses wrung out of this solution for twelve hours preceding the operation. The bowels should be thoroughly emptied by enemata, and the patient abstains from food or drink at least six hours preceding operation. The bladder is emptied by a glass catheter immediately before the administration of the anaesthetic.

All instruments should be of metal throughout, to permit them to be boiled for fifteen minutes. The ligature material should be silk of different thicknesses; silk wound on a reel can be boiled for one hour without impairing its strength.

Fishing or silkworm gut is useful for suturing the middle layer of the abdominal wound; it should be boiled for one hour. Catgut is a very dangerous material; it cannot be boiled, and should be discarded. For dabs, gamgee tissue cut in squares varying in size and carefully hemmed is excellent. The material is cheap, capable of easy and efficient sterilization by dry heat or boiling for an hour in water immediately before use, and should be burnt after each operation.

It is unnecessary to give minutely every detail in the preparation and sterilization of instruments and material, for it may be assumed that no one would undertake such a serious operation as the removal of a uterus without some previous experience in operative surgery; most surgeons have had opportunities of witnessing the operation, or, what is infinitely better, assisting a skilful surgeon in the performance of hysterectomy.

Abdominal Hysterectomy.

For the satisfactory performance of this operation the Trendelenburg position is indispensable; when the patient is in this position the arms should lie parallel with the trunk. This avoids pressure palsy of the arms and prevents the fingers being nipped when the table is restored to the horizontal position.

Instruments: Scalpel; twelve haemostatic forceps; dissecting forceps; scissors; needles, curved and straight; silk of various thicknesses; a volsella; a pair of long forceps with fenestrated blades; silkworm gut. The instruments should be immersed in warm sterilized water, and six dabs of various sizes: these should be washed in water (at 100° F.) during the operation.

The anaesthetic depends on choice. I select experienced anaesthetists and leave the matter to their discretion.

Steps of the Operation.—The operation area is isolated with sterilized towels, and the pelvis well tilted, and so arranged as to face a good light; the wall of the abdomen is freely incised in the middle line between the navel and the pubes. (This is conveniently referred to as the median subumbilical incision.) The actual length of the incision varies with the size of the uterus and the thickness of the abdominal wall. Its extent is of small moment and has no influence on the result of the operation. A free incision greatly facilitates manipulation, and in the case of very large tumours it may be necessary to carry it several inches above the navel.

The uterus is then exposed, and, if possible, drawn out of the abdomen, and the intestines with the omentum carefully isolated with dabs. In a simple case the mesometria are seized with haemostatic forceps and divided up to the uterus. If it is intended to preserve the ovaries the forceps are applied between the ovaries and the uterus, but if it be the intention to remove them, then the forceps are applied to the mesometria near the brim of the pelvis beyond the outer pole of the ovary. At this stage, also, it is convenient and an advantage to divide the round ligament of the uterus after securing it with forceps. It is well to do this, not merely to secure its artery, but also to prevent it unduly retracting the peritoneum. When the mesometria are freely divided, the uterine artery, with its companion veins, are seen at the sides of the uterus, and is, as a rule, easily secured with forceps. The surgeon then cuts a peritoneal flap from the anterior wall of the uterus and turns it downward, taking care not to injure the bladder. Then he fashions a similar flap from the posterior wall of the uterus. His subsequent proceedings will then depend on the manner in which he intends to treat the cervix.

If it be a simple case, and is suitable for supravaginal hysterectomy, he will then detach the uterus at a point corresponding to the internal os. Should he wish to remove the cervix, it will be necessary to open into the posterior cul-de-sac of the vagina, seize the tip of the cervix with a volsella, and then detach it from the vaginal wall by means of a scalpel (panhysterectomy). Suppose, in the first place, the surgeon thinks it will only be necessary to remove the body of the uterus, and after he has detached it finds that the cervix needs removal also, this can easily be enucleated with the assistance of a volsella.

For several years I have practised and recommended the following plan, which is intermediate between the typical supravaginal method and panhysterectomy. In cases where there has been no inflammation, if the cervix is well drawn

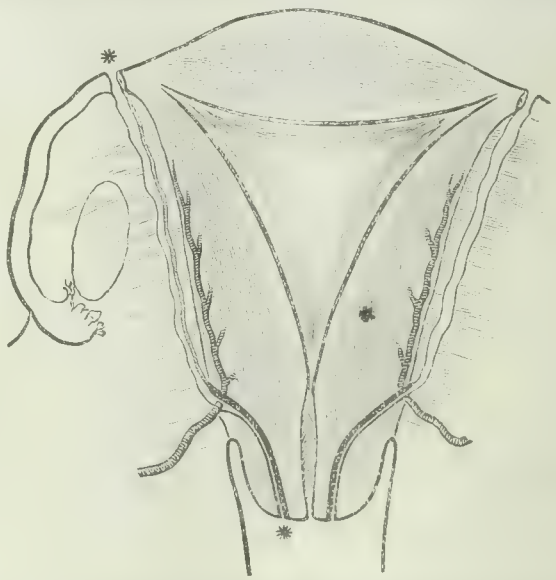


Fig. 3.—A diagram to show the amount of cervix removed in Mr. Bland-Sutton's operation of modified panhysterectomy.

up either by the uterus, or, if the latter has been cut away, by a volsella, the covering of mucous membrane derived from the vagina will invaginate like the finger of a glove or a stocking; this cap of mucous membrane can be divided near the extremity, and the whole of the cervical canal extirpated with the uterus. This method possesses nearly all the advantages claimed for panhysterectomy, and affords a safe insurance against damage to the ureters.

Whichever method the surgeon adopts in dealing with the stump there will be a certain number of bleeding points. These are most numerous when the cervix is enucleated because the territory of the vaginal arteries is invaded. When the vessels are carefully occluded with silk and the ovarian pedicles securely transfixed and ligatured, taking care not to forget the artery in each round ligament, the anterior and posterior flaps are brought into apposition by one or two mattress sutures. (In the case of panhysterectomy the opening in the vagina may with advantage be reduced by a suture at each lateral angle, but it is not wise to completely close it.) The peritoneal margins are then carefully united with a continuous suture of fine silk, beginning at the left ovarian pedicle and terminating at the right one, taking care not to prick the bladder. In a skilful and straightforward operation the floor of the pelvis should only show a narrow ridge in the line of suture.

The pelvis is cleared of blood and dabs; the intestines fall in their places and the omentum is spread over them. The dabs and forceps are counted to ensure that none is left in the belly. The incision is then sutured in layers; the peritoneal edges are joined with a continuous layer of very fine silk, the muscles and fascia with interrupted sutures of silkworm gut, and the skin with a continuous suture of fine silk. The chief advantage among many of this method of suturing the incision is that it has almost abolished the occurrence of post-operative hernia and the routine use of an abdominal belt.

The patient is restored to the horizontal position; any blood and clot that may have escaped into the vagina is carefully removed with gauze dabs; the bladder is emptied by means of a glass catheter. The wound is dressed with a piece of moist cyanide gauze, covered with sterilized gamgee tissue retained by a many-tailed flannel bandage.

The details of the operation set forth in this account refer to a simple or uncomplicated hysterectomy, and under these conditions it cannot be described as a difficult operation to any surgeon accustomed to dealing surgically with the abdomen, but the complications not infrequently met with in connexion with uterine fibroids are occasionally very formidable and tax the skill and resource of the boldest, for example, large incarcerated cervix fibroids complicated with a big fibroid in the fundus; fibroids with extensive adhesions to rectum, colon, or small intestine; large fibroids of the cervix displacing the bladder: fibroids associated with suppurating ovarian dermoids, or pyosalpinx.

Perhaps the most dangerous condition is the coexistence of unsuspected cancer of the upper part of the cervical canal complicating a large fibroid of the body of the uterus and perhaps implicating it. It is impossible to decide rules of operating under these difficult conditions; here skill and experience are required, and when successfully overcome mark the man.

Vaginal Hysterectomy.

The preparation of the patient has been already described in connexion with abdominal hysterectomy.

Instruments.—A crutch; a duck-bill speculum (Sims); a sound; two volsellae; scalpel; six haemostatic forceps; dissecting forceps; three or four long-handled forceps with fenestrated blades; silk of various thicknesses; six stout curved needles; six dabs or a roll of gauze; and a glass catheter.

Steps of the Operation.—The patient is anaesthetized, secured in the lithotomy position by means of a crutch (care being taken that the straps do not press unduly on the popliteal artery and cause gangrene of the foot, or on the musculo-cutaneous nerve and paralyse the peroneal muscles; both accidents have been observed) and so arranged that the perineum faces a good light. The vagina is then exposed by means of a duck-bill speculum, and its cavity thoroughly irrigated with a solution of perchloride of mercury (1 in 2,000), or something equally efficacious.

The surgeon, seated at a convenient level, passes the beak of the speculum into the vagina and seizes the cervix with a volsella. If there be much sprouting growth it is sometimes useful to scrape it away with the handle of the knife and then irrigate the parts. The assistant empties the bladder with a glass catheter, introduces a sound, and keeps the operator well informed of the relation of the bladder to the cervix throughout the first stage of the operation.

Stage 1.—This consists in seizing the cervix with a stout volsella, and then by means of a scalpel the mucous membrane on its anterior aspect is transversely divided at a point sufficiently low to avoid injury to the bladder. The bladder is then cautiously separated from the cervix with the forefinger, assisted, if necessary, with the handle of the scalpel; it is an advantage to divide the peritoneum forming the lower limit of the utero-vesical pouch, and gain access to the peritoneal cavity. Throughout this stage the operator constantly informs himself of the exact position of the bladder by manipulating the sound.

Stage 2.—The incision in the mucous membrane is now carried round each side of the uterus, and by means of scissors the recto-vaginal pouch is opened.

Stage 3.—The broad ligaments are dealt with in the following manner: A curved needle in forceps, armed with strong silk, is made to transfix the connective-tissue tract close by the side of the cervix, in order to avoid the ureter. The object of this ligature is to secure the uterine artery near the spot where it turns on to the side of the uterus. The ligature is firmly knotted. Very often the artery may be seen. It is then picked up with forceps and deliberately tied. When the artery has been secured on each side, and the tissue between the ligature and the uterus divided with scissors, the organ can now, as a rule, be drawn low down into the vagina, and the upper segments of the broad ligament transfixed with double silk ligatures. These embrace the Fallopian tubes with the ligament of the ovary, the ovarian artery and veins, and the round ligament of the uterus; the tissues between the uterus and the ligatures are divided, and the uterus is removed. Should an ovary or a Fallopian tube be found diseased, then they should be removed by transfixing the pedicle with silk.

If all the lateral ligatures have been securely applied, and hold, there should be no bleeding from the sides, but there is usually some oozing from the anterior and posterior folds. Any vessels which are freely bleeding should be seized with forceps and ligatured with fine silk. In regard to the posterior flaps, it is an advantage to compress its edges between the blades of fenestrated forceps, and leave them in position for a few hours (twelve to twenty-four). The same manœuvre may be adopted with oozing from the lateral cut surfaces, but these should not be clamped too deeply for fear of compressing a ureter.

The parts are then gently irrigated with sterilized water, carefully dried with mops of gauze, and a thin gauze drain inserted to allow blood and serum to easily escape. The bladder should be tested with a sound, the crutch removed, and the patient returned to bed.

The method described above is that exclusively employed by me. I have given other methods which have been advocated a fair trial, and have decided after many modifications to cast them aside for this one.

II.—Alban Doran, F.R.C.S.,
Surgeon, Samaritan Free Hospital.

FIBROMYOMA OF MESENTERY: 30 LB.: REMOVAL: RECOVERY: WITH NOTES ON THE SURGERY OF RETROPERITONEAL TUMOURS.

Bégouin, of Bordeaux, in his fine monograph on the treatment of solid and cystic tumours of the mesentery[1] showed that, according to statistics, the operative mortality was very high. He adds:

> We feel certain that the death-rate is in reality higher. Surgeons record their successes rather than their failures, and many cases followed by death have not been published. We ourselves know of two which would make these statistics much higher.[2]

I entirely agree, on the ground of similar experience, with M. Bégouin's opinion. Thus I know of more than one case of death after removal of a retroperitoneal lipoma, which would further increase the gravity of his statistics. Yet they remain unrecorded. One more instance has been related, the author being myself. I began my notes[3] by stating: "I consider it my duty to report this case of a large lipoma, not omental, but in every sense entirely retroperitoneal. Its removal proved extremely difficult, and the result, I regret to say, was death."

I may now be permitted to report another case where I removed a large solid retroperitoneal tumour, and the result, I am glad to say, was recovery. "Any one who has performed many laparotomies," says Lockwood,[4] "must have met with retroperitoneal tumours." We want to hear more about them, and I therefore make public my own operative experience, with due consideration of the opinions and practice of British and foreign authorities:

P. C., aged 34 years, was admitted into my wards in the Samaritan Free Hospital on March 26th, 1904, for an abdominal tumour. Although married for six years she had never been pregnant. There was no history of any severe illness since an attack of typhoid fever when she was 12 years old. She had recently consulted Dr. Aurelius Maybury, of Portsmouth, for swelling of the abdomen, which she had noticed for about five months, and Dr. Maybury detected a large tumour separate from the uterus, which was displaced backwards and to the left.

The patient on admission appeared fairly healthy, and somewhat spare. The abdomen was extremely distended. Girth at umbilical level, 43½ in.; ensiform cartilage to umbilicus, 9½ in.; umbilicus to symphysis pubis, 12⅜ in.; right anterior superior spine of ilium to umbilicus, 12¼ in.; left anterior superior spine of ilium to umbilicus, 12½ in. There was marked bulging anteriorly, with but little, relatively, in the flanks. The skin was tense, and the superficial veins distinctly dilated. On percussion there was clear resonance in the epigastrium, but none in either flank or over the tumour. A very distinct feeling of fluctuation was observed. The cervix uteri lay far back and to the left, displaced by the base of the tumour, which descended into the brim of the pelvis. The catamenia were regular, with moderate show of blood. Altogether the tumour simulated cystic disease of the right ovary. Operative interference was urgent; the bulk of the tumour caused

much distress, and the patient could not sleep except in a sitting posture.

I removed the tumour on March 31st; Mr. Butler-Smythe assisted, and the anaesthetic was administered by Mr. Arthur Morley. On dividing the parietal peritoneum, easily distinguished by the urachus, another membrane was exposed. The trocar was introduced, but no fluid escaped. I broke up some of the interior of the tumour near the incision. A quantity of yellow serum came away, without any perceptible reduction in size of the entire mass. It then became evident that the second membrane was also serous, the true wall of the tumour lying behind it. The abdominal wound was extended upwards for several inches above the umbilicus. Then I found that the tumour was entirely retroperitoneal. The lower part of the ascending colon lay on the outer and upper part of the capsule, the small intestines were closely related to its limits on the left. The omentum and the transverse and descending mesocolon were not opened up. Inferiorly, the right ovary, of normal size and appearance, just touched the capsule; the Fallopian tube and mesosalpinx were distinct, lying against the lowest limits of the tumour: the uterus was small and healthy, and the left appendages were quite unconnected with the capsule. There was no pelvic kidney, nor any other displaced organ in the pelvis or lumbar region.

I enucleated the tumour above, in front, and behind with ease. On raising it out of the wound, the lower connexions, bands of connective tissue as elsewhere, and very vascular, were clamped and divided, and the bulky tumour came away. I could distinguish and push back the right ureter, running normally in the connective tissue of the pelvis. Large vessels derived from the lumbar, mesenteric, ovarian, and round ligament arteries required ligature. There was no true pedicle of any kind, and no inflammatory changes in the retroperitoneal connective tissue, in which an extensive chasm was left after enucleation. The peritoneal cavity was quite healthy, no adhesions could be detected; saline solution was freely poured into it by my assistant whilst I was finishing the enucleation.

I packed the capsule with absorbent gauze, as it was impossible otherwise to stop the general oozing. I ligatured and removed the right tube and ovary in order to control thoroughly the vessels derived from the utero-ovarian anastomosis which had supplied the base of the tumour. After trimming off the cut edge of the capsule, it was fixed by suture to the lower angle of the abdominal wound; I made sure that it could so be fixed without any undue stretching, and I observed that there was no kinking of large or small intestine after the fixation of the capsule. A space was left below the sutures where the end of the gauze used for packing came out. Above, the capsule was carefully cut off by sutures from all connexion with the peritoneal cavity. Sutures were then applied to the abdominal wound, several pints of saline solution were poured into the peritoneal cavity, and the wound was closed, over a pint of the solution being left inside the abdomen.

Progress of the Case after Operation.—There was considerable shock, and large doses of strychnine and digitalis were given for several days. The question of shock will be discussed further on. The gauze packing was removed at the end of twenty-four hours, as the oozing appeared to have ceased, and the packing interfered with the passage of flatus. A rubber drainage tube was inserted into the capsule. On the morning of the second day an enema was given, and flatus with motion came away freely; there was no further difficulty about the bowels. The edge of the capsule was kept dry with tannic acid, boracic acid, and iodoform in powder. Drainage was discontinued at the end of a fortnight. The patient left the hospital on May 4th in very good health: there was a small sinus in the lower angle of the wound, which was closing by granulation. On June 27th, over three months after the operation, she reported herself as quite restored to health and strength. She was able to walk for a considerable distance without fatigue.

Description of the Tumour.—It was oval in shape, much flattened from before backwards, and fairly regular on the surface except at one point posteriorly and internally where there was an outgrowth of the size and shape of a kidney. It weighed 30 lb. an hour after removal; much serum had already escaped, when I broke up some of the interior of the mass at the beginning of the operation, and about two pints more oozed out into the basin before I weighed it. The interior showed trabeculae of white cords and bands running in all directions through a soft, semi-transparent material. It was carefully examined by my colleague, Dr. Cuthbert Lockyer, who kindly wrote out for me the following report: "The large tumour is of a flattened ovoid shape, with a perfectly smooth surface, excepting over an area 7 × 6 where it is very ragged. In circumference it measures 46 in. Its longest diameter is 18 in., its shortest 16 in. The growth has the consistency and appearance of a soft, semicystic fibroid. On section the cut surface presents large areas of glistening, jelly-like myxomatous material intersected by strands of firmer fibrous tissue. The entire surface oozes a limpid, pale, straw-coloured fluid, some of which on being collected in test tubes became spontaneously coagulable, forming a pale, milky clot. There are a few vessels of moderate size lying at the periphery of the growth, but the tumour as a whole is not very vascular. Several large vessels can be seen attached to the ragged area on the outer surface. There is no distinct differentiation of tissue into capsule and medulla, the myxomatous change being universal. Under the microscope the tumour is found to be a fibromyoma which has undergone diffuse myxomatous degeneration. By Van Gieson's stain (picro-säurefuchsin) the differentiation between muscle bundles and fibrous tissue is rendered very apparent, the muscle taking on a bright orange colour, whilst the fibrous tissue is magenta coloured. The periphery of the growth shows a thin strand of fibrous tissue succeeded by coarse muscular fasciculi arranged in longitudinal and transverse bundles and alternating with layers of delicate myxomatous fibrous tissue to form an indefinite capsule; this capsule formation was not at all apparent to the naked eye. The deeper parts of the growth consist of large bundles of involuntary muscle around which the myxomatous fibrous stroma has receded in the process of dehydration. The vessels are large and have thick walls, the increase in thickness affecting principally the middle and outer coats. The proportion of muscle to fibrous tissue is about equal."

Thus the tumour was a fibromyoma undergoing myxomatous degeneration. It is at present on view in the Pathological Museum, No. 658, with some microscopic sections, in the series prepared by Dr. Lockyer. (The specimen was exhibited in the Surgical Section during the reading of this paper.)

The Surgical Anatomy of the Capsule is a subject of great importance in respect to a tumour of this class and to the operative measures necessary for its removal. In this case there could be no doubt that the capsule was composed of peritoneum pushed forward by the growth of the tumour. It was equally evident that the pelvic peritoneum was hardly, if at all, involved in this displacement, as has been already explained. The relations of the ascending colon and small intestines to the tumour showed conclusively that its capsule consisted of the upper layer of the mesentery, which is continuous with the lower layer of the transverse mesocolon, and also with the peritoneum which invests to varying degrees in different subjects the ascending colon. Hence the small intestines lay mostly on the left border of the capsule, closely applied as though adherent, whilst the ascending colon ran along the opposite border. Had the tumour developed behind the ascending mesocolon, that portion of the large intestine would have run across the middle of the capsule or have been displaced considerably towards the inner or left side of the tumour. The transverse colon was not involved in the capsule, so that the tumour had not encroached on the upper folds of the peritoneum any more than it had invaded below the serous lining of the pelvic cavity. In short, the capsule was formed almost entirely out of the upper or right layer of the mesentery, behind which the tumour had originated.

This is the most favourable type of displacement for the surgeon who attempts the removal of any mesenteric tumour, solid or cystic, and fully accounts for the relative facility and safety with which I removed a bulky mass with abundant and vascular though not dense connexions. When both layers are more or less opened up the dangers of operation are great indeed. Whole coils of small intestine run on the surface of the tumour, to which they may be yet more intimately bound by dense inflammatory adhesions. Their separation may involve irreparable direct damage to their tissues, whilst their nutrient arteries and the adjacent lymph vessels, important agents in the nutrition of the whole system, are certain to be divided. Amongst the most formidable conditions for operation is the close association of a considerable length of intestine, perhaps several coils, with the capsule of a relatively small tumour. In the case of mesenteric cysts this complication is not rare (F. S. Eve,[5] Baumann[6]), and may give rise to obstruction; when the tumour is solid (Roux,[7] lipoma; Julliard,[8] angioma; Murphy, fibroma) extensive resection of intestine may be necessary. This question of resection, needed in operations for the removal of many types of mesenteric tumour, will be considered presently.

There is much confusion about the term "mesenteric" in association with tumours, for many writers—especially in France and Germany—do not limit the term to the mesentery of the small intestine. Thus, Julliard in his analytic review of *tumeurs solides du mésentère* writes: "The seat of the tumour also varies. In 62 cases where it was clearly specified, the tumour lay in the mesentery of the small intestine in 47, or 75.8 per cent.; in the ascending mesocolon in 10, or 16.1 per cent.; in the transverse mesocolon in 3, or 4.8 per cent.; and in the descending or sigmoid mesocolon in 2, or 3.2 per cent. only." It is best to confine ourselves to the consideration of such tumours as distinctly involve one or both layers of the mesentery properly so-called. But the precise peritoneal relations of a retroperitoneal tumour are of such importance that some allied types must be mentioned, the more so when we find how they are mixed up with true mesenteric tumours in statistical monographs, and how hard it is for the operator to determine the relation of the peritoneum to the new growth. Tumours of the great omentum must be excluded; cases by Meredith and Lennander have been erroneously included in Bégouin's tables, although both those writers distinctly state that the intestines lay behind the tumour. The surgery of

such cases is not always simple. Tumours of the lesser omentum are usually pancreatic or hydatid, but Ricard[9] operated on a big fibroma which extended downwards into Douglas's pouch, pushing the uterus forwards; it was diagnosed as a uterine fibroid. There were none of the painful and dyspeptic symptoms usually associated with tumours of the lesser omentum. Ricard found that it was entirely encapsuled in the posterior layer of that fold, which, being greatly stretched, bulged downwards into the pelvis, yet was quite independent of the pelvic peritoneum or viscera. It is important to bear in mind, should another tumour of this kind be encountered on the operating table, that the strongly adherent gall bladder had to be resected. The tumour weighed over 17 lb. The patient recovered. Growths which bear the ascending or descending colon on their capsule are usually renal, ovarian tumours occasionally push their way behind the peritoneum and large intestine, whilst some fibromas and allied solid growths have been found in the same position. Tumours of the sigmoid mesocolon are rare, if we exclude ovarian and broad-ligament growths which not infrequently burrow in that fold. Roux removed a lipoma over 7 lb. in weight from the sigmoid mesocolon, and Herbert Williamson's[10] fibromyoma connected with the sacral plexus was apparently encapsuled in the same manner.

Lastly, broad-ligament tumours must be borne in mind; lipoma has been noted,[11] but the great majority are derived from the uterus, ovary, or vestigial relics in the broad ligament itself. The relation between fibroma and fibromyoma of the broad ligament, distinct from the uterus, to retroperitoneal tumours above the pelvis has been discussed by myself elsewhere. Ströheker[12] has written a fine monograph in which over 200 cases are tabulated; it deserves study in association with the present subject, for the precise nature of a retroperitoneal tumour, to which class new growths of the broad ligament belong, is not always easily decided by the operator, so that he will do well to bear them in mind.* One point of some interest to the surgeon is discussed by Ströheker. The original blood supply of a retroperitoneal tumour he terms its "primary vascularization"; but when the growth extends far beyond its native corner in the abdomen it is largely nourished by "secondary vascularization," receiving vessels from the immediate vicinity of every region which it invades. Hence a big artery running into a big retroperitoneal tumour is no sure guide to the seat of origin of the new growth.

For further consideration of the peritoneal relations of retroperitoneal tumours, I may refer you to the late Mr. W. Anderson's Surgery of the Subperitoneal Tissue,[13] read at the Carlisle meeting of the Association in 1896, and to the well-known writings of Moynihan on the subject.

Clinical Features of the Case.—For the sake of comparison I will show how far this case resembles other instances of solid tumour of the mesentery already recorded. I will confine myself as much as possible to the more reliable reports of fibromyoma and allied tumours, not always clearly defined, pathologically speaking. I have drawn up the appended table of 13 cases of this class of new growth subjected to operation. Beginning with the question of sex, the patient was a woman in 10 out of the 13 cases, including my own (No. 13), but in three instances (Nos. 3, 10, and 11) the patient was a man. This proportion disproves the theory that fibroma of the mesentery is necessarily of uterine or broad-ligament origin, but tends to show that, like fibroma of the abdominal walls, the disease is far more frequent in female than in male subjects.[14] As for age, my patient was 34. The range in the table is from 10 to 56, the oldest being a male. The youngest patient was a girl, aged 10 (No. 5); the tissues of the tumour, which was easily enucleated, were healthy, but in the next youngest, a girl, aged 16 (No. 6), the tumour was sloughy. In Hackspill's case the patient was, I understand, an infant. In my case the time before operation when swelling of the abdomen was first noticed was about six months. It came on insidiously, as usual, and the tumour must have been in existence long before it was discovered. In most of the cases where time was considered worth notice, the swelling had been observed for a year or two. Shepherd's patient (No. 10) found, a year before operation, that his dress-clothes were becoming too small for him,[15] Sheild's (No. 9) was subject to distressing procidentia which turned her attention to her abdomen.[16] Spencer Wells's patient (No. 8) had noticed the swelling for nearly five years, but pain was present,[17] a symptom absent in my case (No. 13), as also in Nos. 1, 2, 3, 5, 6, 7, 9, 10, and 12. It was marked not only in No. 8, but also in Nos. 4 and 11; in the two latter resection of the intestine was needed, but it was not necessary in the painful case No. 8, whilst it had to be performed in Nos. 2, 10, and 12, where pain was absent. Thus the presence or absence of pain is no guide before operation to any estimate of possible complications due to close relations of intestine. As for size and weight, the tumour in my case appears to be the heaviest of its kind on record, in association with which fact the total absence of pain is worth recording. Lipoma of the mesentery may attain a far greater size and weight. Péan successfully removed a tumour of this class weighing 55 lb.; the patient had suffered little pain except from indigestion, though the tumour had caused great emaciation; further reference will be made to this case. The important questions of obstruction and resonance on percussion are best considered as factors in diagnosis.

Diagnosis.—I have already stated that the tumour seemed to be a multilocular ovarian cyst. The displacement of the uterus and the feeling of fluctuation due to the large amount of mucoid tissue in the tumour were highly deceptive symptoms.

The same diagnosis was made in Nos. 1 and 2, whilst No. 4 was taken for an ovarian dermoid, No. 7 for sarcoma of the ovary, and Nos. 9 and 12 for solid, apparently non-malignant, tumours of the ovary. Thus in 7 out of 10 cases of mesenteric tumour of the fibroma and myoma class in women, ovarian tumour was diagnosed. This error is very natural, for a doubtful abdominal growth in a woman, clearly separate from the uterus, often proves to be ovarian, and the factor of relative frequency is always an influence in diagnosis; at least, none of the tumours were taken for uterine fibroids, presumably because the uterus in all was distinct, and none were diagnosed as broad-ligament fibroids because the vaginal fornices were not occupied by the tumour, although it sometimes came down into the pelvic brim, out of which it could be pushed. Ovarian cyst or sarcoma was diagnosed in several recorded cases of solid mesenteric tumour of other types, such as sarcoma (Pilliet and Veau, Lockwood, Doléris[18]), or myxomatous lipoma, as in Madelung's case, where the new growth seemed to be an ovarian cyst even when exposed at the operation. Its true nature was not determined until it had been freely separated from its surroundings. Ricard's tumour of the lesser omentum was mistaken for a uterine fibroid. In the 3 cases of fibroma or fibromyoma of the mesentery where the patient was a man (Nos. 3, 10, and 11), no clear diagnosis was made. In Brookhouse's (No. 3) "the tumour looked and felt like an enormous fibroid in a woman."[19]

Theoretically we should expect to meet with two symptoms of high diagnostic value—intestinal obstruction and resonance on percussion; but experience teaches that both are usually absent. In the whole of the 13 cases in the table there was no clear instance of obstruction frequent in mesenteric cysts (Eve, Baumann), and observed in some cases of solid tumour (Julliard), though the colicky pains noted in one male patient (No. 11) might be classed as evidence of such a complication. The diarrhœa in No. 4, unique in the table, was probably due to interference with the circulation of the mesenteric vessels. It is more frequent after operation when those vessels have been damaged. The question of resonance is of the highest importance in diagnosis. Lockwood lays great stress on the detection of solid mesenteric tumours, by the aid of which a useless and fatal operation may sometimes be avoided. He is referring specially to sarcoma, and I must add that the same may be said of large lipomas; I have dwelt elsewhere on the perils of attempting their removal. Lockwood found that irregular and inconstant areas of dullness and resonance over the front of the tumour are strong indications that it lies more or less in the mesentery. The variation of resonance is, of course, due to distension or emptiness of a coil of intestine in the capsule.

Unfortunately, this conspicuous symptom is not constant—at least, in tumours of the fibroma class. In Nos. 1, 6, 10, and 13 dullness, pure and simple, was specified. No statement about resonance was recorded in Nos. 3, 5, 8, 11, and 12; in most of the others dullness seems implied, even in the mere statement that there was a solid tumour occupying the front of the abdomen. No. 10 is a little obscure, but the resonance in the "flanks" was, no doubt, external to the

* Von Knorre removed a myoma which was two-thirds retroperitoneal, and "reached up to the radix mesenterii." It was enucleated, and the retroperitoneal space drained through the vagina; the patient recovered (*Monats. f. Geb. u. Gyn.*, May, 1904, p. 782). It is not quite clear whether the tumour was uterine, or had developed originally in the broad ligament, which might have been the seat of origin of some of the mesenteric fibroids included in the table which is appended to this communication.

limits of the tumour, and not on its surface laterally. Dullness was presumably present in Nos. 4 and 9, which were diagnosed as ovarian. There remain 2 cases—namely, No. 2, where resonance was noted on portions of the left side of the tumour, and No. 7, where the most prominent part only was dull. Still, Lockwood's symptom was not specified in either of these cases, for it is not stated that the area of resonance varied. It is significant that in both Nos. 2 and 7, where resonance was noted, the two layers of the mesentery were opened up. In many cases, as in my own (No. 13), the upper layer was much more involved than the lower, so that the small intestines were pushed into the left flank.

Thus the diagnosis of fibroma of the mesentery is very difficult, probably impossible in many cases. When Lockwood's sign is absent, we must rely on negative evidence, such as the absence of the more definite characteristics of renal, splenic, omental, uterine, broad ligament, and, above all, ovarian tumours.

Surgical Treatment.—There can be no doubt that a fibroma or fibromyoma of the mesentery should be removed. The mortality is certainly high, and many fatal cases may remain unreported, although it is also very possible that in other unrecorded instances where recovery occurred the true nature of the tumour was overlooked. In the table, No. 12 must be set aside on account of the very short after-history, leaving 8 recoveries and 4 deaths. In one fatal case (No. 6) the tumour was sloughing, a complication not met with in any of the others; No. 2 was the only fatal case where resection was practised, and in this instance the tumour was not completely removed. No. 3 is said to have died of shock; in No. 7 suppuration occurred in the capsule, with sloughing of intestine. The 8 recoveries justify operation for this kind of tumour, and more so when we note that extensive resections of intestine were undertaken in Nos. 4, 11, and especially No. 10. Hence the bold operator need never despair. Unfortunately, the pathology of the tumour is not always to be determined at the operation. Sarcomatous elements, as Lockwood has reminded us, render operative interference very deadly and recurrence certain should the patient recover, whilst the mortality after the removal of a large mesenteric lipoma is apparently quite as high, greater certainly than I estimated in my report of a case two years ago. Lipoma, it must be remembered, may contain sarcomatous elements impossible to recognize at an operation. Dr. Lockyer declares that such was the case in the tumour which I removed in 1902. I have already shown that statistics of lipoma of the mesentery have been vitiated by the inclusion of two cases where a lipoma of the great omentum was successfully removed. Again, in some cases of pure lipoma thorough extirpation may prove impossible, lobes of fat running from the main growth between and behind the great vessels and their important primary branches. Monprofit recently exposed a retroperitoneal tumour of great bulk which held cavities containing over 8 pints of serous fluid.[50] So closely was it connected with the tail of the pancreas and the spleen that both were removed. The uterus and appendages were not involved. The patient recovered. The surgeon operating upon large retroperitoneal tumours may come upon abnormally-placed viscera. (Pelvic kidney associated with fibroma of broad ligament, Billroth's case, or with lipoma or liposarcoma of mesentery, author's case.)

These experiences remind us that when the surgeon exposes a retroperitoneal solid growth he must carefully ascertain its relations to the abdominal and pelvic viscera before he breaks down a single adhesion or sets free a single attachment of any other kind. He may have to resect intestine, or, as in Monprofit's case, much more than intestine; or, like Julliard, he may be forced to operate for obstruction and to leave the removal of the tumour for another occasion. Still, granting that the retroperitoneal growth be a fibroma or fibromyoma of the mesentery, it must be admitted that its extirpation will be relatively easy, safe, and satisfactory as to after-results.

Before discussing the details of an operation for the removal of a fibromyoma of the mesentery it is advisable to consider what experience teaches us about pure shock independent of any operative complication.

Shock.—This symptom was severe in the present case. Mr. A. P. Morley administered gas and ether, which he subsequently changed to chloroform, with the idea of avoiding bronchitis, as the operation took some time to complete. He noted marked shock during the enucleation, which he attributed to haemorrhage; but the patient was anaemic already, and the amount of blood actually lost seemed trifling. The patient's condition improved when the peritoneal cavity was flushed with saline solution, whilst at the same time Mr. Morley poured some ether into the mask as a stimulant with good effect. I still practise flushing in cases where shock and haemorrhage are unavoidable; because a method has been abused and over-rated that is no reason why it should be discarded where experience had shown that it is beneficial. Towards the end of the operation the shock recurred, and a hypodermic injection of 8 minims of liquor strychninae was given, whilst the abdominal cavity was again flushed. The patient revived. Mr. Morley laid stress on the preliminary administration of ether in cases where big tumours are removed, as he finds that it involves less likelihood of cardiac failure from shock than if chloroform alone be used.

The removal of a solid tumour of great weight, though much less bulky than many lipomas and cysts, in itself involved disturbance to the circulation, but fortunately the connective tissue, which alone bound the tumour to the surrounding parts, was uniformly loose and soft, so that traction on adjacent viscera, nerves, and blood vessels was but trifling, else the shock would have been greater.

As in all cases where I undertake the removal of a large abdominal growth, I administered liquor strychninae to the patient for several days before the operation, and for over a week afterwards. This line of treatment has already been advocated by Dr. W. Duncan in the *Lancet* (vol. i, 1900, p. 1114). I find the results most satisfactory. One or two modern authorities appear to object to the drug. I admit that in operations where the patient is strong, and there is more danger from sepsis than from pure shock, strychnine is of little value, if not absolutely deleterious.

In the table, death was ascribed to shock in No. 3, whilst in the remaining three fatal cases (Nos. 2, 6, and 7) it is certain that this complication was not the cause of the fatal result. But the chances of fatal shock are much higher when a lipoma of the mesentery is removed (Terrier, author). This factor renders a correct estimate of the dangers and mortality of resection of intestine impossible, as the procedure in itself may involve shock, whilst that complication in several cases where intestine was removed seemed most probably due to enucleation of the tumour from densely adherent surrounding tissues, with almost unavoidable loss of blood.

Enucleation.—In my own case the tumour was shelled out of its capsule of mesentery with ease. Care was taken to work the swabs and forceps and scissors, as well as the finger, close against the tumour, so as to leave the main vessels in the capsule as little disturbed as possible. All branches from the vessels running into the tumour were secured with pressure forceps before division, and tied afterwards. Posteriorly several vessels could not be treated in this manner; they were inadvertently divided, but easily recognized and secured as they spouted.

It is instructive to compare this case (No. 13) with the remaining 12 in the table. In 3 (Nos. 3, 8, and 13) the tumour was invested by the anterior or superior layer of mesentery alone. In 8 (Nos. 2, 4, 6, 7, 9, 10, 11, and 12) both layers of mesentery were opened up; whilst in 2 (Nos. 1 and 5) the nature of the encapsulation is not clearly specified. There can be little doubt of two facts: first, that as a rule both layers are opened up; and, secondly, that the less usual form of encapsulation, where the anterior layer is alone involved, is the most satisfactory for operation. For enucleation proved easy in six operations on the list, Nos. 3, 5, 6, 8, 12, and 13; and in half of them—Nos. 3, 8, and 13—only one layer of mesentery was involved. As for the remainder, in No. 6 the ease of enucleation was at least in part due to the tumour being soft and sloughy, whilst in No. 5 there were no adhesions, and the subject was very young; in neither was resection of intestine needed. In the remaining case, however (No. 12) much intestine had to be removed, although the enucleation was not attended with difficulty. But the table shows that the removal of a tumour encapsuled in one layer alone, though the enucleation may prove easy and involve little haemorrhage, and though no resection may be needed, may be followed by fatal results (No. 3).

Parietal adhesions complicated 4 (Nos. 1, 2, 9, and 10); in only 1 (No. 6) is it recorded that the omentum adhered. Close adhesions of the capsule which rendered enucleation difficult was noted in 7 cases (Nos. 1, 2, 4, 7, 9, 10, and 11). In Nos. 1, 4, and 11, the adhesion was, strictly speaking, a more or less distinct pedicle of dense connective tissue, containing large vessels, and holding the tumour to the lumbar spine. In Péan's case (No. 1) there was a second pedicle. Whether pathologically these pedicles be firm but

Table of Reported Cases of Fibroma and Fibromyoma of the Mesentery Removed by Operation.

No.	Reporter.	Sex and Age.	Clinical Symptoms.	Operation.	Weight and Nature of Tumour.	Result of Operation.
1	*Péan	Female, 40	Tumour reaching from epigastrium to pelvic cavity, dull on percussion, fluctuating at certain points. Diagnosis: Ovarian cyst	Old, vascular, parietal adhesions. On puncture no fluid came away. Enucleation, ligature of a pedicle of connective(?) tissue attached to lumbar spine, and of another pedicle inserted on pelvic brim. Both pedicles fixed to lower angle of abdominal wound	Over 7½ lb. Pure fibroma, very soft	Speedy recovery; no recurrence.
2	*Folet	Female, 20	Abdominal swelling about one year; pregnancy, and later ovarian cyst suspected. Tumour size of man's head, resonance over portions of its left side	Trifling parietal adhesions. On puncture no fluid came away. Layers of mesentery almost evenly opened up and strongly adherent to tumour. Damage to intestine much resected, segment fixed to abdominal wound. Enucleation, but base adherent to aorta, and vena cava not removed	Weight not given. A very firm, uniformly white, fibrous tumour	Death in twenty-four hours, the resection had proved a failure, turbid fluid in pelvis.
3	Brookhouse	Male, 56	Weak health two years, tumour noticed ten months, reached from epigastrium to pubes, and extended into flanks. Very hard, smooth, movable to a certain extent, painless	Anterior layer of mesentery, forming capsule to tumour divided. Enucleation (easy, little haemorrhage). A flap of redundant capsule cut off. Parietal wound closed	13½ lb. Dense fibrous tissue, small cystic cavities	Death in thirty-two hours, ascribed to shock, chiefly of the ganglionic nervous system. No blood in peritoneal cavity.
4	Müller (Aix-la-Chapelle)	Female, 33	Pains in abdomen several years; frequent diarrhoea. Tumour came down into pelvis. Diagnosis: Ovarian dermoid.	Tumour invested by both layers of mesentery corresponding to jejunum; 11 in. of adherent bowel resected; suspicious mesenteric glands removed; pedicle of connective tissue containing large vessels ligatured and divided; upper end of intestine implanted into lower end, the extremity of which was fixed to lower angle of wound	Weight not given. A large fibroma free from malignant elements	Early sloughing of divided end of lower part of intestine. Nine months later the patient was free from recurrence.
5	*Folet	Female, 10	A very movable hypogastric tumour of the size of two fists; no discomfort; discovered by accident	Tumour invested by mesentery; easy enucleation, little haemorrhage; capsule dropped and abdominal wound closed	Over 4 lb. 6 oz. A pure fibroma	Speedy recovery.
6	*Richelot	Female, 16	Two years' tumour in umbilical region; dull; as big as fetal head at term	Omental adhesions; tumour covered by intestines connected with its capsule; enucleation easy; tumour sloughy; fetid. Capsule fixed to parietes and drained	3 lb. Fibroma, sloughing in centre	Death seventh day. Purulent peritonitis around sutures fixing capsule and perforation of ascending colon by yielding of a slough.
7	*Binaud and Bégouin	Female, 50	One year tumour; hard, tuberous, movable; only most prominent part dull on percussion; situated chiefly in right iliac fossa. Sarcoma of ovary diagnosed	Tumour invested by mesentery; lower part of ileum crossed anterior surface of capsule. Incision parallel to vessels on capsule; enucleation; right ureter had to be dissected off lower pole; haemorrhage trifling. Inner surfaces of capsule brought together by sutures; peritoneal cavity closed, no drainage	Weight not given. A dense fibromyoma	Fetid stools after fourth day; sudden death eighteenth day. Superficial sloughs on intestine, abscess in capsule. No thrombosis of mesenteric veins, no pulmonary embolism; brain not examined.
8	Spencer Wells	Female, 40	Four years' pain in iliac region and abdominal enlargement, which at last increased rapidly, with apparent diminution at menstrual periods. Solid, central, movable, size of adult head	Solid tumour: "its origin was clearly in the cellular tissue at the root of the mesentery proper, near the lumbar vertebrae." Ascending colon in front and to right. Blood supply entirely from the mesenteric vessels. Enucleation, wound closed. No drainage	Weight not given. A fibroma or fibromyoma erroneously tabulated as "sarcoma" in works of several writers	The patient lived for over eighteen years, and died without any signs of malignant disease (private communication from Mr. R. Favell, of Sheffield, June, 1904).
9	Marmaduke Sheild	Female, 50	Complete procidentia for a year, abdominal swelling noticed four months. Tumour extending from ensiform cartilage down into pelvis, elastic, semi-fluctuating, but no thrill on percussion. Diagnosis: Ovarian tumour	Transverse colon and much small intestine flattened out on capsule of tumour. Strong adhesions of capsule to parietes and to tumour anteriorly; enucleation from tissues behind easy. Large vessels required ligature. Drainage	Over 9 lb. Oedematous (? myxomatous) soft fibro-myoma	Recovery.
10	Shepherd (Montreal)	Male, 28	No pain, good health, abdominal enlargement one year. Tumour detected three months; reached from ensiform cartilage to pubes, hard, freely movable. Dullness anteriorly, resonance in flanks	Firm parietal adhesions separated. Tumour intimately blended with its capsule of mesentery; 7 ft. 8 in. of ileum resected, end to end anastomosis	13 lb. Fibro-myxoma	Recovery. Troublesome diarrhoea at first, but patient in good health eight months after the operation.
11	Lexer	Male, 41	Colicky pains in abdomen; turned attention to hard tumour, size of a child's head, very movable	Tumour invested completely by mesentery; a pedicle posteriorly including connective tissue and vessels, and a long coil of intestine ran on front surface. Pedicle ligatured; about 6½ ft. intestine resected. Abdominal wound closed	5 lb. Fibroma with myxomatous portions	Discharged from hospital cured six weeks after operation.

N.B.—* Signifies that the case is entered here from Bégouin's tables, *Revue de Chirurgie*, vol. xix, 1899, pp. 414 to 418. Nos. 3, 4 and 8, also in same tables, are here modified from original reports. No. 8 was incorrectly included (loc. cit., p. 419) as "sarcoma." For statistics of retroperitoneal sarcoma see J. Dutton Steele, *Amer. Journ. Med. Sciences*, June, 1904.

Table of Reported Cases of Fibroma and Fibromyoma of the Mesentery Removed by Operation—(Continued).

No.	Reporter.	Sex and Age.	Clinical Symptoms.	Operation.	Weight and Nature of Tumour.	Result of Operation.
12	Murphy	Female, 26	Round, hard tumour in left side pelvic cavity and iliac fossa; could be pushed into abdomen. Moved independently of uterus. Diagnosis: Fibroma of ovary	Hard tumour, ovoid, only 3 in. in diameter; invested completely and evenly by the layers of the mesentery; 2 ft. of ileum resected; Murphy's button	No weight given. Fibroma of mesentery	The Murphy's button was passed on the twelfth day; no later history.
13	Doran	Female, 34	Painless swelling observed about six months. Bulky tumour filling abdomen and reaching pelvic brim, and pushing uterus backwards. Soft, dull, with thrill on percussion. Diagnosis: Ovarian cyst	Tumour tapped, little or no fluid came away; it was invested by anterior or upper layer of mesentery; small intestines closely applied to its left border. Enucleation easy; large vessels in posterior and inferior part of capsule required ligature. Lower part of capsule fixed to lower angle of wound and drained	30 lb., with 2 pints of serum. Fibromyoma undergoing myxomatous degeneration.	Recovered; in good health three months after the operation.

The author has been unable to obtain details of 2 cases quoted by Julliard. (14) Hackspill "Ein seltener Fall von Fibromyoma cavernosum mesenterii bei frühen Kindesalter." *Inaug. Dissert.* Würzburg, 1898. (15) Durnana, "Un caso de fibroma del mesenterio estirpado con reseccion del intestino." *Revista de la Sociedad med. Argentina*, vol. ix., 1901. Saneyosihi's case of multiple fibromyoma disseminated over the subperitoneal tissue from the hypochondrium to the pelvis (*Sci-i-Kuai*, June 12th, 1896, and Anderson, loc. cit.) was not strictly speaking an instance of mesenteric tumour.

localized adhesions, or representatives of some non-inflammatory condition, they must be carefully handled, as in other forms of mesenteric tumour (especially lipoma) they may be intimately blended with the pancreas or great vessels. No. 2 in this series represents a kindred complication; the base of the cyst was closely adherent to the aorta and vena cava, so that the operation was incomplete. In the remaining four cases the adhesion of the capsule was general, without any kind of pedicle. A detail in No. 7 must be remembered. A white cord was found firmly adherent to the back and lower pole of the tumour. This cord proved to be the ureter, and required careful dissection off the tumour. The position and relations of this duct are of extreme importance to the operator engaged in enucleation. In my case, I did not feel easy until I saw the ureter when searching along the brim of the pelvis as the tumour was being drawn forward. In No. 9 the operative difficulties due to close adhesion of the capsule to the tumour, complicated by parietal adhesions to the capsule, seemed greater than in any other case, and all the adhesions were vascular. Where there is the least doubt about the parietal peritoneum, the urachus should be carefully sought for and traced, as uncertainty about the relations of the serous folds may lead to disaster. In No. 10, as in No. 9, parietal complicated capsular adhesions. In No. 4, where a pedicle existed, the intestine itself strongly adhered to the tumour.

Resection of Intestine.—In the present case there was clearly no necessity for resection of any portion of the intestine, for I was able to detach the capsule without prejudice to the nutrition of the jejunum or ileum. Though, however, enucleation proved successful without resection in another (No. 8) of the three cases in the table where the anterior layer of mesentery alone was involved, in the third (No. 3) the patient died. When both layers of the mesentery are opened up resection may be unavoidable, as has already been explained. In the eight cases in the table where this condition was definitely registered in the original reports no resection was practised in three (Nos. 6, 7, and 9), with two deaths, but in No. 6 the tumour was sloughy. The other fatal case (No. 7) is of high interest, as fetid diarrhoea occurred, a familiar complication when nutrient vessels in the mesentery and other peritoneal folds are extensively damaged. It was observed in Terrillon's case, where a myxolipoma weighing 57 lb. was removed, and in Pilliet and Veau's, where the tumour was a sarcoma. Both ended fatally, and in both there was clearly damage to intestine. Pilliet and Veau state that the operator separated a great part of the transverse colon from its mesentery. I recently observed fetid diarrhoea after hysterectomy, which, fortunately, was followed by recovery. I was obliged to detach a bulky tumour from firm adhesion to the greater part of the under layer of the transverse mesocolon, which was, consequently, lacerated, but I carefully closed the rent by suture. Nevertheless, very severe fetid diarrhoea occurred. The nutrition of the colon was evidently compromised for a time, and was probably restored by the great omentum, so loyal in its adhesion to parts damaged in abdominal operations.

Experts in resection may urge that the above experiences of myself and others teach that intestine is best removed when its nutrition in endangered by evident damage to mesentery during the enucleation of a tumour. We must admit that there is force in their argument. In the eight cases where both layers of mesentery were involved, resection was practised in five (Nos. 2, 4, 10, 11, and 12). No. 2, a fatal case, may be rejected as an incomplete operation. The remaining four all recovered, and the resections were, to say the least, very thorough. The details will be found in the tables and in the original reports.[21] In Case 12 the operator was a distinguished living authority on intestinal surgery. In No. 10 the length of bowel that was removed was very great; the subsequent diarrhoea was a noteworthy symptom. It has been already observed that a relatively small tumour may involve much mesentery. Thus in Murphy's case (No. 12) the fibroid was but 3 in. in diameter, and, turning to the surgery of other forms of solid tumour of the mesentery, we find that Roux (in the third case published in his original report), when removing a small lipoma from a man aged 41, was obliged to take away over 4 ft. of ileum and perform complicated plastic procedures, the plan of which had to be changed in the middle of the operation. The lipoma was of the size of an orange, and so well encapsuled in the mesentery that it hung down and swung upon a pedicle composed of the two folds, a mesolipoma as we might call it; the attachment to the tumour had given rise to attacks of obstruction for thirty-four years, and the compromised intestine was found to be much diseased. The patient recovered. This case must not be overlooked, as a fibromyoma also has been known to possess a kind of mesentery (No. 11), rendering it freely movable. The mobility might make the surgeon fondly anticipate an easy operation. Sometimes only a small segment of bowel requires resection when a large tumour is removed. Thus Madelung, in his successful operation on a myxolipoma which weighed over 38 lb., did not resect more than 3 in. of ileum.

Julliard's case of cavernous angioma was so complicated by acute obstruction that it can hardly be compared with any in the table. Indeed, he had to do three operations within five days, removing the tumour with nearly 4 ft. of jejuno-ileum at the second sitting. The small intestine had to be opened within forty-eight hours, with temporary benefit, but the patient died of pneumonia six days later.

Thus resection of intestine is, in a large proportion of cases, a necessary step in operations on fibroma and fibromyoma of the mesentery, and an indefinite variety of complications may be encountered where this procedure is called for. Yet we see that fortune has favoured the bold and saved their patients.

Management of the Capsule.—In the present case the cut edge of the capsule was trimmed so as to remove all tissue bruised during the extraction of the tumour. A certain amount of abrasion is inevitable during enucleation, as a very free incision, safe enough in the case of the wound in the abdominal parietes, is dangerous in a capsule of mesentery where as few vessels as possible should be divided; as

the incision is on that account made short it is liable to be bruised. I refrained from excising a whole flap of the mesenteric capsule, a practice which may have played a share in the fatal result in Case 3. There was no difficulty in fixing the capsule to the lower end of the abdominal wound without dragging on or kinking the intestine, and as the capsule was very ample it was not likely to contract to such an extent as to endanger the free play and nutrition of the portion of the alimentary canal with which it was associated. Every bleeding point detected in the raw inner surface of the capsule was ligatured. General oozing could only be checked by pressure. I used gauze packing, which acted satisfactorily. Apposition of the raw inner surfaces of a mesenteric capsule by suture was practised by Péan after the removal of a lipoma weighing 55 lb., above mentioned. As Péan's patient was at the time of the operation in the second month of pregnancy, and not only recovered but was delivered at term, the practice proved beneficial or at least harmless in his case. But after some experience in the treatment of pelvic peritoneal capsules I find that the application of sutures to their raw surfaces involves danger of wounding veins and other important structures; when the capsule is mesenteric this danger must be yet greater. To let the capsule drop is questionable surgery, for if the incision made during the operation be left open, then, as Bégouin warns us, incarceration of intestine might occur, whilst if the incision be closed an enormous retroperitoneal haematoma might very possibly develop.

My own views as to the desirability of packing and drainage of large capsules have already been published and discussed.[22] Simple drainage with a tube was sufficient in No. 9; in my own case gauze seemed advisable; I removed it at the end of twenty-four hours as it had served its purpose, and, as usual, was beginning to interfere with the downward passage of flatus.[23] In days when this practice was employed too frequently, I often noted obstruction and high pulse when the packing was left in the cavity for forty-eight hours or more. The former symptom disappeared when the gauze was withdrawn; the high pulses meant iodoform poisoning. But iodoform gauze is discarded, and much of the undeserved obloquy now cast on packing and drainage should be laid on its former abuse, and must not lead us to discard it altogether. Both answered well in this case, and had oozing recurred some more gauze would have been applied.

As for the management of the bowels, I am entirely in accord with the modern school, for I have seen hundreds of instances of the evils following the bad old practice of keeping the bowels closed for many days. It always involved needless discomfort, usually caused torture from scybala, and not rarely led to death from sepsis or obstruction. In this case the administration of an enema on the second day, judiciously repeated and later on replaced by aperients, ensured the patient's safety and restored her to comfort.

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III.—Cuthbert Lockyer, M.D., F.R.C.S.,

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TRUE CERVICAL FIBROIDS, WITH COMMENTS UPON THEIR SPECIAL FEATURES AND MODE OF TREATMENT.

At the discussion on "When and how to Operate on Uterine Fibroids," which took place at Cheltenham in July, 1901, at the annual meeting of this Association, I read a paper on A Case of Cystic Fibromyoma in a Single Woman aged 22 Years. In the discussion which followed that paper, one member expressed a wish to know what happened to my patient "in a year's time." I am now in a position to answer that question, and to again negative the idea that the tumour which I showed both macroscopically and microscopically upon that occasion was a sarcoma. Indeed, the case mentioned above forms the subject of the first half of this paper. It is published in full in the October number of the British Medical Journal for the year 1901; but perhaps I may be allowed to recall the fact that the striking feature of the case at that time was the presence of a large spherical tumour reaching to above the umbilicus in a young woman aged 22 years. A nodule on the right side of the tumour, which constituted its only irregularity, was ascertained afterwards to be the fundus uteri. The indications for interference were excessive haemorrhage and the fact that the tumour presented at the external os uteri, which it had dilated to the fullest degree. The expanded os measured $3\frac{1}{2}$ in., and the capsule of the tumour presented like the unruptured membranes of a full-termed gestation sac. The tumour was removed by myomectomy, and the uterus measured only 2 in. on introducing a sound the day before the patient left hospital, a month after operation.

The tumour was very cystic, and its solid portions, which I again exhibit, looked not unlike sarcoma, but the sections proved it to be of a simple nature.

Two and a half years later (August, 1903) this patient came to see me again, as she thought something was wrong. She had then been married for two and a half years, but had not become pregnant; I had warned her against having children, as I found the true conjugate diameter to be only $2\frac{5}{8}$ in. After the operation of myomectomy the patient had kept in good health for two years and two months; she then complained of dysuria, and noticed a lump in the right iliac region which caused pain. This lump had increased rapidly in size during the last month previous to her second visit (July-August, 1903). It had caused dysuria and cramp down the right thigh, but no pressure on the bowel had been complained of.

On examination, a spherical mass was felt rising up out of the pelvis, through the hypogastric region, and reaching to the umbilicus; laterally it extended into both iliac regions. Per vaginam, this mass depressed all the vaginal fornices, fitting into the top of the vagina, like an egg in an egg-cup. The cervix was dragged up and obliterated, the os being felt high up under the symphysis as a shallow depression on the front of the globose mass. The tumour filled the pelvis; there was no lateral mobility, but it could be moved vertically upon bimanual examination. The periods had recently become excessive again, but there was no leucorrhoea.

The indication for operation was recurrence of a large uterine tumour leading to menorrhagia and signs of pressure. The operation, performed on August 13th, 1903, was abdominal panhysterectomy. It was very difficult to get the tumour out of the pelvis. After cutting through the vagina, the latter was swabbed out with 1 in 2,000 perchloride of mercury solution, and then closed by continuous silk suture, and, finally, one long continuous silk suture closed in the cut ends of the right broad ligament, the vaginal stump, and the raw surface of the left broad ligament in the corresponding order from right to left. The anterior abdominal wall was sewn up in three layers. After operation the only note made by the house-surgeon reads: "Patient made an uninterrupted recovery; stitches removed on the ninth day. Patient left hospital twenty-one days after operation. Union was firm and good."

Description of the Specimen.—The tumour is oval in shape, cystic in consistence. It measures 7 in. in the vertical and 6 in. in the transverse diameter. The body of the uterus projects beyond the upper oval extremity of the tumour, and

rather to the right of the mid-line. It is not involved in the growth, the latter arising in and being confined entirely to the cervix. The external os uteri is situated on the anterior aspect of the tumour, 1 in. from its lower pole. The cervix is drawn out and elongated, its canal measures 3½ in. in length. The tumour bulges into the patulous external os. On section through its sagittal diameter the tumour is seen to be definitely encapsuled in the posterior wall of the cervix. It is convex towards the cervical canal, and here the capsule is very thin, consisting of little more than mucous membrane in places. On hardening in Kaiserling-Pick's solution (which was done before section), the tumour was found to contract, and when cut open no true cysts were present, the cut surface consisting of many rounded pink masses, separated from each other by strands of myxomatous, soft, semi-transparent tissue; several of these growths proceeded from the capsule in a papillomatous manner. Whilst some on section resembled the coiled fibromyomata, others looked like homogeneous sarcomata (see drawing of recurring cervical fibroid). On microscopical section these bosses of growth showed no sarcoma elements, but had the characteristic appearance of myxomatous and oedematous fibroid.

The second case of cervical fibroid which I have recently met with concerns a patient aged 33 years. She had been married for four years, had never been pregnant. Menstruation began at the age of 15, and was regular until five years ago, when it became very excessive and painful, necessitating the use of four dozen diapers at each period. Six weeks before operation the patient had an attack of very violent abdominal pain, for which she consulted a medical man, who sent her to hospital. When I first saw her the patient had been losing blood continuously for five weeks. On examination I found a hard mass rising up out of the pelvis in the mid-line, but projecting more to the



Fig. 1.—True cervical fibroid, removed two and a half years after myomectomy for similar condition, the tumour having recurred, although quite benign. A, lips of os uteri externum; B, capsule of uterine wall; C, corpus uteri; D, cervical canal; E, lips of os uteri externum; F, capsule of uterine wall.

left than the right side. This mass was surmounted by a body which felt like the fundus uteri, and which could be moved to-and-fro on the tumour. Per vaginam, the vaginal fornices were obliterated by a hard globular mass which projected downwards from the interior of the cervix. The vaginal portion of the cervix was not to be felt, the tumour having expanded the whole lower segment and drawn the entire cervix up to form a capsule around the tumour. The os presented as a dimple on the front aspect of the spherical tumour. The latter was felt to be continuous with the mass in the abdomen. The diagnosis was true cervical fibroid. The tumour was removed by abdominal panhysterectomy on February 8th, 1904.

The operation was rendered difficult by many adhesions. Appendices epiploicae were attached to the fundus uteri in a most intimate manner. The sigmoid colon obscured the left appendages entirely until this portion of the bowel was freed from its adhesions to the uterus. The left tube and ovary being diseased were removed with the uterus. The right ovary and tube were left. I next tied and divided the broad ligaments to the level of the internal os, and then stripped down a flap of peritoneum from the front of the tumour, and slipping the index finger of my right hand under this flap I separated the tumour from the cellular tissues all round. Next I tied and divided the remaining structures in the base of the left broad ligament, then, working from left to right, divided the vagina and base of the right broad ligament, first putting a clamp on the latter before division. The tumour was then removed, and with a slight straining movement there welled out of the vagina a lot of clear mucus, which unfortunately soiled the neighbourhood at a time when oozing points required attention. I removed the protecting swabs, and cleansed the vagina with 1 in 500 perchloride of mercury solution. Continuous oozing from deep cellular tissues on the left side gave trouble, but was finally stopped. The right uterine artery was now tied and the clamp removed. The vagina was sewn up with continuous silk, and the floor of the pelvis closed as in Case 1, no drain being used for the extremely large cavity on the left side. The abdominal wall was sewn up in three layers.

The convalescence was marred by a haematoma forming to the left of the vaginal stump, and in the cellular tissues, which were so extensively opened up in the left half of the pelvis. Ten days after the operation, on examination I found about 2 oz. of foul pus in the vagina and a sinus opening into the top of the vagina and leading backwards and to the left. This I drained by a rubber tube, after flushing out with 1 in 2,000 perchloride of mercury solution. A second haematoma formed and suppurated at the top of the abdominal wound. This was small and the sinus soon closed. I attributed both seats of infection to contamination with vaginal mucus during the operation. The patient ultimately made a good recovery, and reports herself at my out-patient clinic from time to time as feeling quite well.

Description of the Specimen.—It consists of the uterus with cervical fibroid, the left tube, and the corresponding ovary. The uterus and tumour together measure 18 cm. in long diameter. The uterus is 13 cm. wide from cornu to cornu, and 6 cm. in vertical extent from the fundus to the internal os. Its wall varies in thickness from 3.5 cm. to 2 cm. The body of the uterus contains six small subperitoneal fibroids and three interstitial growths, the lowest being 1.5 cm. above the level of the internal os uteri. The cavity of the uterus is much dilated, its endometrium is much thickened, and there is one large submucous



Fig. 2.—Second case of true cervical fibroid.

fibroid, very yellow and oedematous-looking, situated near the right cornu. This measures 3 cm. by 2 cm. There are two pedunculated fibroid polypi of similar appearance also to be seen in the uterine cavity. The lowest is situated about 0.5 cm. above the internal os, and lies on the posterior wall.

The cervix is enormously expanded and lengthened by an oval, smooth fibroid in its posterior wall. This growth bulges into the canal of the cervix from behind. It does not occupy the entire length of the cervix, there being 1 cm. of the canal free at the lower end above the external os uteri. At the upper end the tumour reaches as high as the internal os. The canal of the cervix measures 10 cm. in the vertical; it is much expanded, measuring 6 cm. from side to side. In thickness the wall of the cervical canal measures 1.5 cm. The circumference of the cervix and its tumour measures 18 cm. The whole of the body of the uterus is covered by peritoneum, except at its sides, where the broad ligaments were attached. The outer aspect of the expanded cervix is ragged, corresponding to the connective-tissue bed, from which it was enucleated. The lips of the external os have not been stretched open to any great extent, the tumour not reaching so far by the space of 1 cm.

One point to note about growths of this description is that they are quite rare. Tumours have been described as cervical fibroids which have grown out from the cervix into the parametrium, just as a subperitoneal growth of the body will

extend into the coelomic space. These growths should be sharply distinguished from such as I have described above as "true cervical fibroids": the latter are interstitial, they are confined within the cervix, and are everywhere invested by a capsule of cervical tissue. They generally start in the posterior cervical wall. They do not trespass above the internal os. In their growth they elongate the cervical canal, and project into it so that part of the growth becomes covered only by cervical mucous membrane. The canal is not only elongated, but is stretched from side to side, so that a large portion of the anterior aspect of the tumour is submucous. The external os uteri lies, not at the lower pole of the growth, but at a variable distance of 1 in. to 2 in. from it on the anterior surface. The uterine body caps these growths like an adrenal gland does the kidney, and is often of inconsiderable size compared with that of the cervical tumour. These growths can be diagnosed, by feeling the small body of the uterus lying upon the tumour, by bimanual examination, and also by the extreme globular even expansion of the cervix, and the obliteration of the vaginal portion of the latter and the high position of the os uteri. Clinically, these growths render the uterus incapable of reproduction, and they give rise to excessive haemorrhage. They must always be removed. The question arises how best to do this.

This is the kind of tumour for which myomectomy is admirably suitable. If we can be certain of dealing with a case of uncomplicated true cervical fibroid—that is, a fibromyoma invested by a capsule derived entirely of cervical wall—the best mode of treatment is to raise the bladder, split the anterior wall of the cervical canal, and remove the tumour by *morcellement*. I have known cases where this procedure has resulted in unqualified success. But, although this is the recognized line of treatment, I have brought forward my two cases to show that some of these growths, when so treated, are capable of giving rise to disappointment. In Case 1, after myomectomy, I had eventually to remove a recurrent tumour by abdominal panhysterectomy. It might be argued that I should have repeated the operation of *morcellement*, but the fact that the growth recurred within two and a half years made me suspicious as to the nature of the recurrence, and led me to feel that it was safest to remove the uterus. A curious and unusual contrast was brought out by the two operations—namely, the patient nearly died of shock after the myomectomy, although she lost but little blood, whilst after abdominal panhysterectomy she gave rise to no anxiety whatever. This was quite contrary to the usual experience, it being generally noted that there is far less shock after *morcellement* than after hysterectomy.

In the second case, had I removed the cervical fibroid by *morcellement*, which would have been a very easy operation, I should have left a uterus behind which contained twelve other growths, three of which were submucous and polypoid. The dense adhesions between the sigmoid colon and the uterus would certainly have given rise to further trouble, so that the patient, although freed from the large cervical growth, would still have to run the risk of severe uterine haemorrhage and intestinal obstruction, and, in the light of experience gathered from Case 1, there was no guarantee that the cervical growth would not recur.

These two cases do not, however, lead me to change my view that for the majority of true cervical fibroids myomectomy is the best and easiest operation; but I have brought them forward to-day to show that there are cases in which this treatment is neither adequate nor suitable for fibroids confined entirely to the cervix uteri.

IV.—F. Bowreman Jessett, F.R.C.S.,

Surgeon, Cancer Hospital, Brompton.

Mr. Jessett said: Under the heading of Hysterectomy for Malignant Disease I have had a large experience; I have operated on 180 cases by vaginal hysterectomy. In the year 1899 I read a paper upon this subject and gave the result of 107 cases on which I had operated; of these 9 died from the operation—namely, 3 from shock, 2 from intestinal obstruction, and 4 from peritonitis. Since publishing these I have operated on 73 more cases, with 1 death. Of the first series 5 are still alive and free from recurrence. One of these cases was operated on in 1893 (eleven years ago), one in 1894, two in 1895, one in 1897; one which was operated on in 1896 died in 1903 from other causes, and one operated on in 1897 died in 1902. Two cases operated on in 1898 died within two years from recurrence. Twenty-seven cases had early recurrence, and several are known to have had recurrence within one or two years, and others have been lost sight of. Of the 73 in the second series, more care was taken in selecting the cases, and the technique of the operations was more thoroughly carried out, the consequence being that there was only 1 death. Of these 73 cases 12 are known to be alive and free from recurrence at periods varying from two to five years. Thirty-three cases of the whole number—180—lived for periods varying from three to seven years after operation; the majority of these had recurrence. These results are sufficiently encouraging to warrant one in performing the operation, as unquestionably, even apart from the cases which remained free from recurrence, in many of the others life was prolonged and the patients were relieved from a foul, badly-smelling discharge and rendered generally more comfortable. The question naturally arises: Is the vagina the best route to remove the diseased uterus? Personally, I think it is the one in which there is the least risk to the patient, but possibly other surgeons may prefer the abdominal route. In some cases, when the uterus is very enlarged, possibly this may be the better; at any rate, it is claimed for this route that the surgeon is enabled to remove any iliac glands which may be affected, as well as to get more free from the disease in the broad ligaments. In certain cases it is better, I think, to adopt the combined operation, first freeing the vault of the vagina and ligaturing the uterine arteries, and cutting or scraping away the diseased parts and cleansing with antiseptic solutions, subsequently removing the uterus by the abdomen. In cases of unmarried women or women with narrow, resisting vagina walls I usually make a free incision in the right ischio-rectal fossa, in some cases on both sides; but if such a course should be necessary it would be better to adopt the abdominal route. I have adopted this method only in three cases. My chief objection to the abdominal route is the risk of soiling the peritoneum with the foul discharge escaping from the diseased organ. The cases in which I have had the best results are: (1) In those where the disease is limited to the os, even should there be a large cauliflower growth; (2) in early cases where the disease is limited to the fundus or body of the uterus. Those which recur the earliest are those in which the disease has its origin in the cervical canal, as in these the cellular tissue becomes involved quite early, and the disease extends to the roof of the vagina and broad ligaments. As to the method of performing the operation, I always ligature the broad ligaments in segments with silk or chromic gut. As to the relative advantage and disadvantage of supravaginal hysterectomy and panhysterectomy, I do not think there can be much question, in the ordinary run of cases as they present themselves to our notice. That supravaginal hysterectomy can be performed more quickly, and therefore with less shock to the patient, is certain; and although I was a few years ago a strong advocate of performing panhysterectomy, I am now equally strongly in favour of the subperitoneal or supravaginal operation. There are, of course, exceptions. If there are found to be any fibroids in the cervix, then I am of opinion that panhysterectomy should be performed, as, if any of these small fibroids are left, they are pretty sure to cause trouble later on. Then, again, in those large interstitial fibroids which involve the uterine substances and draw the uterus so that there is practically no cervix, it would be much easier to open up the roof of the vagina and remove the whole organ.

V.—A. L. Galabin, M.D., F.R.C.P.,

Consulting Obstetric Physician, Guy's Hospital.

Dr. Galabin said that, in his historical sketch of hysterectomy for uterine cancer, Mr. Bland-Sutton, in saying that the abdominal method was first adopted and then proved disastrous, had omitted to note that the first successful vaginal hysterectomy for cancer was done several generations ago by Dr. Blundell, Obstetric Physician to Guy's Hospital.

As regards the choice of abdominal or vaginal operation for cancer he agreed with Mr. Bland-Sutton in generally choosing the vaginal operation for cancer of the cervix. When the glands along the iliac vessels were infected by cancer, he thought that the chance of successfully removing every one by an extended abdominal operation did not compensate for the increased risk of the operation. He believed that when a fatal result had followed the operation, after the removal of cancerous glands, other infected glands had generally been found left behind. If, however, Mr. Bland-Sutton chose the abdominal operation in all cases of cancer of the fundus, he did not altogether follow him, but believed the vaginal operations preferable when the uterus was not too much

enlarged, nor the disease extended to adherent viscera, on the ground that the risk of the operation was less and should be practically *nil*. The scope of the operation was much extended by the plan of making an incision from the vagina into the ischio-rectal fossa. He had recently operated in this way on a cancer of the fundus in an elderly maiden lady, who had kraurosis vulvae, so that even the little finger could not be inserted into the vagina without an anaesthetic. The operation was successfully accomplished, though complicated by the presence of several encapsuled fibroids, internal and external, which much increased the enlargement of the fundus.

He agreed with Mr. Bland-Sutton in preferring supravaginal amputations to panhysterectomy in the majority of cases, and he thought that if the cervix were quite healthy, and especially in single and nulliparous women, there was no appreciable risk of its afterwards becoming affected by cancer. But where there was any unhealthy condition of the cervix, especially if there were an old laceration, with adenomatous hypertrophy or granular inflammation, he was accustomed always to choose panhysterectomy. He had found patients to be more happy and comfortable after supravaginal hysterectomy, as no vaginal plug or change of dressing was required. Patients generally recovered with as little disturbance as after a simple ovariotomy, and nothing had to be touched till the stitches were removed at the end of ten days.

Like Mr. Bland-Sutton, he had found removal of fibroids by hysterotomy or enucleation from the peritoneal side available only in a small proportion of cases. The great disadvantage was the risk of recurrence, and there was also an increased risk in the operation. Fibroids which could be enucleated were always multiple, and almost inevitably some small centres of growth would be left behind. He had found that if patients were offered the chance of future pregnancy at the expense of some increase of risk and possibility of recurrence, they almost invariably preferred to have as much removed as possible.

The greatly diminished risk of hysterectomy justified its extension to cases of fibroid tumour in which formerly one would have advised patience. Provided there were no very serious anaemia or interference with the ureters or bladder, he thought that the decision might be left to the patient whether she suffered enough inconvenience from the fibroid to make her willing to face the slight risk of operation.

But in cases of continuous or irregular haemorrhage not cured by other means, he thought that operation should always be urged, on account of the risk of some complicating cancer of the endometrium, which might be missed even if the uterus were explored and curetted. In one such case he had eventually removed a very large fibroid, and found cancer in a recess, which had probably existed for two or three years, to judge by the duration of the metrorrhagia. Within two years of the operation the patient had a recurrence in the vaginal cicatrix. This he treated first with chloride of zinc, then with repeated applications of formalin at three weeks' interval. Eventually it healed up, and had remained apparently cured now for four or five years. Meanwhile, the patient's sister, who constantly looked after her, got cancer of the breast, had it removed by a distinguished surgeon, had a recurrence, and died from it. The first patient throughout had never had a suspicion that she had had cancer, or a recurrence of the disease. As regards the age value of the ovaries, he thought more evidence was required before it should be accepted that their value was reduced to very little at the age of 40, or that it only survived hysterectomy for a year or two. At any rate, he had known patients who retained sexual power far beyond the average, and others who suffered some ovarian pain on the side where the ovary was left as much as seven or eight years after hysterectomy.

VI.—MRS. BOYD, M.D.,

Surgeon, New Hospital for Women, London.

MRS. BOYD thought Mr. Bland-Sutton's paper laid them all under a still greater obligation to him than before for the work he had done in this particular direction. She fully agreed with him in his advocacy of hysterectomy for fibroid disease, and thought it unjustifiable that women should be allowed to suffer for years from the symptoms accompanying fibroids without being afforded the relief that surgery could give. With Mr. Bland-Sutton she preferred, in ordinary cases, supravaginal amputation to panhysterectomy, emphasizing, among the reasons already given, that of leaving the pelvic floor intact. On the choice of operative route for cancer of the cervix she differed from Mr. Bland-Sutton. The spread of cervical cancer was primarily by way of the connective tissue of the broad ligament and not by the vagina, as Mr. Bland-Sutton had stated, except in the rarer cases of squamous epithelioma of the vaginal portion. She thought that the principles which guided surgeons in the treatment of cancer elsewhere—that is, wide removal of surrounding connective tissues, with the contained lymphatics—should be applied to the uterus, and a comparison of specimens removed per abdomen and per vaginam would show that the abdominal route permitted a much wider and more free removal than did the vaginal. But the danger to the ureters was a real one in such a free removal. In abdominal hysterectomy for fibroid, on the other hand, where the uterus could be adhered to closely, the danger to the ureters was much less, and could, she thought, hardly be used as an argument here in favour of supravaginal hysterectomy *versus* panhysterectomy. In cancer cases it was different, and she had recently had experience of this in a case of abdominal panhysterectomy, where the ureter, though not directly damaged at the time of operation, was stripped of connective tissue right down to the bladder. A week later a uretero-vaginal or vesico-vaginal fistula developed, no doubt as the result of sloughing. Like other surgeons, she was anxious to avoid operation if symptoms could be controlled by milder means, and had tried the iodipin treatment in several cases. In two of them, after a fair trial, she had recently had to do an abdominal supravaginal hysterectomy for persistent or recurrent haemorrhage.

VII.—MRS. SCHARLIEB, M.D., M.S.,

Physician for Diseases of Women, Royal Free Hospital, London.

MRS. SCHARLIEB said: There cannot be one method of operation for all cases. In cases of malignant disease of the uterus the whole organ has to be removed, whether we approach it per vaginam or per abdomen, but the present question seems to be as to the rival methods of (*a*) supravaginal amputation, (*b*) panhysterectomy. Supravaginal amputation is a little easier and quicker to do, but there is no appreciable difference in the degree of shock or the subsequent convalescence. The arguments in favour of panhysterectomy appear to me to be: (1) It is practically as easy and as safe as supravaginal amputation; (2) it removes the most vulnerable part of the uterus; (3) it prevents future malignant and other disease of that part; (4) if the endometrium, or any part of the organ, be the seat of malignant disease at the time of operation, panhysterectomy saves us from leaving any portion of the organ. No one would knowingly leave the cervix of a uterus if there were malignant disease of the body at the time of operation, but that we may do it is proved by a case recently reported by Dr. Lewers to the Obstetrical Society. In making the section for supravaginal amputation of a fibroid-bearing uterus he saw something which aroused his suspicions, and on examining the interior of the body of the uterus he found malignant disease. Of course, he then removed the cervix. It is often impossible to determine by the naked eye whether a tumour is innocent or malignant, nor can we know whether the endometrium of a fibroid-bearing uterus is healthy in all its devious folds and angles. Out of my first consecutive hundred cases of operations for fibroids seven were panhysterectomies; one (in July, 1894) died, but the cause of death was not due to the method of operation, but to the fact that, having incised the perineum, to facilitate the extraction of a polypus the size of a fetal head at term, I sewed the incision with silk. This became soiled and started sepsis.

VIII.—MURDOCH CAMERON, M.D.,

Physician for Diseases of Women, Western Infirmary, Glasgow.

DR. MURDOCH CAMERON said: My experience of cancer cases is that in the great majority of cases the disease has advanced too far to permit of operation. As regards fibroids, I, as a rule, prefer the supravaginal method. The proposals to treat such growths by internal treatment and electrolysis, I think, should be put to a definite test—say on six cases. The result, I feel certain, would do more to arrest such treatment than many years' discussion. In conclusion, I may say that I quite agree with Mr. Bland-Sutton as to the lines laid down for operation.

IX.—JOHN A. SHAW-MACKENZIE, M.D.

DR. SHAW-MACKENZIE said: No one who is at all acquainted with the records of past authorities or who had listened to Professor Bland-Sutton could fail to be convinced of the vast

improvement in recent years in the surgical treatment of uterine fibroids or fail to appreciate the benefits conferred by Professor Bland-Sutton and others at the present day in many similar cases. Still, having long taken an interest in the non-operative or less operative and medicinal treatment of these affections, he (Dr. Shaw-Mackenzie) could not help thinking that the general conclusions as to the necessity of operations were founded on somewhat imperfect knowledge of the opinions and cases of past observers; that many cases were harmless and required no special treatment, while others could be materially benefited by medicinal treatment or other agencies, with consequent diminution in size, arrest of growth, and probable prevention of at least some of the degenerative or septic conditions which no doubt necessitate surgical interference. He thought many cases were cases of fibroid and perimetric or parametric inflammation, and that as a direct outcome of such teaching in the past, drugs such as mercury, iodine, calcium chloride, and ergot, were given with the object of reducing such associated inflammation and arresting growth, either by the cutting off of the nutrient supply or by directly acting on the vessels or muscular elements of the tumour.

Again, while natural atrophy at the menopause was admitted, growth at this period had been advanced in favour of operation. But in the past iodine by the mouth was advocated and successfully employed by Dr. Samuel Ashwell in fibroids growing at the menopause, in favour as it seems of the direct action of the drug as opposed to the present day teaching of atrophy from natural processes. Influenced by the works of Ashwell, he had been led to the employment of hypodermic injections of iodine in the form of iodipin, and, in conjunction with Dr. John Shaw, had obtained complete relief of symptoms in some cases, and probably, in one case at least, the disappearance of the tumour. In another case he had obtained almost complete disappearance of a large and undoubted fibroid in which hysterectomy had been previously recommended; and by analogy he might mention that complete ability to pass water followed similar treatment in a case of urinary retention and catheterism from enlarged prostate in an old man. The same recommendation may be made of intramuscular injections of benzoate of mercury—the haemostatic effects of which drug (mercury) in cases of uterine haemorrhage far surpass ergot. He was strongly of opinion that fair trial should be given to such methods of treatment in suitable cases before resorting to operation.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

DEATH UNDER CHLOROFORM.

On August 16th the patient, a man aged 30, an ex-soldier of somewhat slight physique and pale complexion, was anaesthetized in order to have a necrosed femur operated on. Examination prior to administration of the anaesthetic showed the chest, heart, and lungs to be apparently normal.

Chloroform was given from a drop bottle on a flannel mask. The patient passed easily to the second degree of anaesthesia, when he struggled with his arms for a second or two, and then went on quietly taking the anaesthetic until, the breathing being quiet and regular, pulse about 90 and of fair quality, pupils about 3½ mm., colour as at the commencement of anaesthesia, he was wheeled into the theatre from the adjacent room and put on the table. Directly this was done the face became pale, lips and ears cyanosed, the patient gave about eight or ten gasping inspirations like the inspirations of air hunger, and respiration ceased. Immediately on the alteration of the colour and respiration the head was lowered and artificial respiration was commenced; a hypodermic injection of strychnine and a brandy enema were given. The administration of the chloroform had been stopped whilst the patient was being lifted from the stretcher on to the table. The heart stopped when the change of colour took place, before the complete cessation of respiration; this observation was made by the surgeon of the case. Artificial respiration was persisted in for three-quarters of an hour, but without result. The administration of the anaesthetic had been in progress for seven minutes. The amount of chloroform used was 3½ drachms. No *post-mortem* examination was made.

E. Mountjoy Pearse,
Honorary Anaesthetist, Royal Infirmary, Bristol.

A CERVICAL TUMOUR.

The photograph shows a growth, which had been increasing in size since the patient, aged 18, was a little girl. The whole right side of the face had hypertrophied in order to carry the weight of the tumour. The skin was greatly thickened, the platysma was quite ½ in. in thickness, and the deep cervical fascia was almost tendinous. The tumour bulged into the mouth, the floor of which was completely gone. The tongue was pushed over to the left side, and the buccal cavity was so fully occupied by the tumour that eating was becoming impossible and speech reduced to inarticulate grunts. Six attempts had already been made to remove the tumour, but they were unsuccessful, and the patient accordingly came to Cape Coast Hospital seeking relief.



Operation.—A preliminary tracheotomy was out of the question there being only 1 in. between the suprasternal notch and the base of the tumour. Under chloroform an incision was quickly made in the middle line of the neck commencing from the chin and going down to within 2 in. of the base of the tumour. The cut was then extended outwards and upwards to the left; the blood vessels were secured and the platysma and cervical fascia opened up in the same way. Two fingers of an assistant were then inserted between the tumour and the trachea, with instructions to keep the tumour off the windpipe. A cut was then made across the right side of the neck as far as the angle of the jaw and the flaps turned up and down. The tumour, which turned out to be a lipoma, was fairly easily shelled out. It was, however, firmly attached to the root of the tongue and required to be carefully dissected off. On removal it was found to have been lying over the trachea and close on to the spinal column; it also extended up behind the pharynx to the base of the skull. The gap left was somewhat appalling. A floor for the mouth was fashioned out of the cervical fascia, the incisions stitched up, and a drainage tube inserted. During operation the patient was twice rather collapsed, but rallied well. The blood supply to the tumour was very large and the veins had grown almost out of recognition. The anterior jugular was the thickness of an ordinary pencil and great care had to be exercised in securing all the bleeding points.

After-history.—The patient was fed per rectum for the first three days. Afterwards a tube was passed along the mouth to the back of the throat and the patient fed with

milk and soup. Two days later the patient fed herself with the feeding cup. The subsequent history was uneventful, the drainage tube being removed on the fifteenth day. The tumour weighed just a little short of 4 lb., and was a typical fatty tumour. I must express my indebtedness to Nursing Sister Timbrell who in the absence of qualified assistance was a most efficient help and in the after-treatment saved me much trouble.

Cape Coast Castle. J. Wishart Kerr, M.B., Ch.B.

Intrauterine Infection of the Fetus in Small-pox.

In connexion with the cases recorded by Dr. Cowie G. Forbes in the British Medical Journal of June 25th, 1904, p. 1485, of intrauterine infection of the fetus in small-pox I am able to add another. On January 28th, 1893, a woman came from a house in Leeds, where there had been small-pox, into my district to be confined. She was confined on February 6th and developed small-pox on the 8th. The baby was vaccinated, showed small-pox on February 16th, and died on February 20th.

Knottingley. Thomas Percival.

REPORTS OF SOCIETIES.

CLINICAL SOCIETY OF LONDON.

Frederick Taylor, M.D., F.R.C.P., President, in the Chair.

Friday, October 14th, 1904.

Presidential Address.

Dr. Taylor thanked the members for the honour conferred upon him by his re election. The Society was flourishing, and the number of members had increased by about 60 per cent. during the last twenty years, and the meetings were well attended. During the last ten years surgical papers had rather outnumbered medical papers, and whilst three-fourths of the former dealt with treatment only one-fourth of the medical papers dealt primarily with therapeutics. Notwithstanding the recent great advances in treatment of cases regarded as purely medical by the use of new chemical compounds, serumtherapy, baths, light, and electricity, there was still much to be desired in the treatment of diseases other than by prevention or by surgical methods. Direct treatment was as yet applicable to very few of the general infectious diseases; whilst inflammatory processes in internal organs usually ran their course modified only by the resisting powers of the body. Degenerative processes and tumours were difficult to deal with, and prevention was all-important in the matter of new growths. Papers on the direct medical treatment of diseases would form valuable material for papers from the members.

Treatment of Infantile Paralysis of the Shoulder by Nerve Grafting.

Dr. Wilfred Harris and Mr. V. Warren Low, who contributed this case, referred to a paper which they read at the British Medical Association meeting at Swansea,[1] in which they described the operation in the case now exhibited, and in 2 cases of Erb's paralysis of the arm in adults, with the results of stimulation of the upper nerves of the plexus. After operation, flexion of the forearm was as good as before, but no improvement in the deltoid was seen for another six months, when attempts at abduction of the shoulder were first noticed. Progress, at first slow, had been rapid during the last three months, until now (October, 1904), fifteen months after operation, the child, who was exhibited, could hold the arm straight out from the shoulder, or put it straight up over the head. The muscle was also increasing in volume, and slight reaction to faradism had returned. The authors hoped that eventually complete, or nearly complete, recovery of power would return.

Mr. Bowlby said it was striking how rapidly motor nerves repaired early in life; and the fact was well illustrated in Dr. Harris's case.

Mr. C. H. Fagge said that functionally the child's arm seemed nearly perfect; but he thought that specially worthy of praise were the studious researches undertaken by Dr. Harris in his dissections and descriptions of the brachial plexus. Whether the paralysed muscles would have recovered at all without operation was of great interest; he did not wish to suggest that they would have recovered, but in cases of his own he had had the greatest difficulty in deciding for himself whether the time had arrived after which no further natural improvement would take place, and that, therefore, operation was advisable. Another matter on which he wished for information was as to the indications that muscular atrophy or changes in the nerve had reached so extreme a degree that nerve-grafting would be useless; as far as he knew, the absolute failure of the muscles to react to galvanism was a contra-indication. Was this correct? and were there any other contra-indications, such as a time limit, beyond which nerve-grafting would not be of benefit?

Dr. Farquhar Buzzard, while congratulating the authors on what appeared to be the successful result of their treatment, expressed some doubt as to whether the return of movement was due to the artificial innervation through the sixth cervical root, and not to the recovery of some deltoid fibres in that part of the fifth root which had been left intact. It was difficult to believe that in splitting the fifth root of a small child the surgeon had succeeded in dividing all the deltoid fibres from those supplying other muscles. As an instance of tardy recovery in a case of atrophic palsy of the deltoid muscle, he referred to a man whose paralysis had been complete and stationary for more than twelve months, but who had recovered completely with no surgical interference.

Mr. Low and Dr. Harris replied.

[1] British Medical Journal, October 24th, 1903.

Inflammation of Liver Treated Surgically.

Mr. W. G. Spencer described four cases. In all an alcoholic, syphilitic, biliary, or malarial causation was excluded. The cases had been under Drs. Hall and Murrell.

The first case was a middle-aged man, a teetotaler, who had a liver enlarged to the level of the umbilicus, and displacing the heart outwards. It had started after a chill, and persisted for four months. The case was diagnosed as one of hydatids. At the operation, very vascular adhesions were found, and the enlarged liver was very vascular. Considerable haemorrhage occurred, and it was then thought that the liver was malignant. But the patient regained good health, and a year later the liver showed no enlargement. Hence it was concluded that the disease had been caused by the chill. The second case was a middle-aged woman who had suffered from repeated gastric attacks, when she was seized with severe rigor, had deep jaundice, and a rapid pulse. Exploration showed nothing abnormal in the gall-bladder region, but the liver was greatly enlarged, the right lobe reaching to the crest of the ilium. The gall bladder was drained for a month; only bile, no pus, escaped. But the rigors stopped at once, and the patient recovered, when it was found that the liver had shrunk to be of normal size. Hence it was believed that the disease was due to absorption from ulceration of the stomach. A third case suffered from anaemia and heart disease. After a severe pulmonary attack she rapidly developed ascites and an enlarged spleen. As ascites reappeared after tapping, the abdomen was washed out and the omentum fixed in the epigastrium. The patient so far recovered as to return to work for nine months, and ceased to suffer from anaemia. Then she had another pulmonary attack, ascites reappeared, and she died. *Post mortem*, besides an enlarged spleen with infarcts there was chronic peritonitis in the region of the spleen and liver, whilst large vessels connected the omentum with the abdominal wall. Here it seemed probable that an influenzal (? pneumococcal) infection was the cause. In the fourth case the woman's illness began with a puerperal fever, which was followed by ascites, oedema of the ankles, and a cardiac murmur. She was tapped ten times in two years. Then the abdomen was washed out and the omentum fixed in the abdominal wall. Nine months later she was shown at the Medical Society. She was then doing her house work, had no sign of ascites nor of oedema of the ankles, and the cardiac murmur could not be heard. At the operation there was found evidences of chronic peritonitis, and it was considered that this had been started by some relatively mild puerperal infection.

OBSTETRICAL SOCIETY OF LONDON.

Edward Malins, M.D., F.R.C.P., President, in the Chair.

Wednesday, October 5th, 1904.

Caesarean Section in Cases of Contracted Pelvis.

Dr. J. M. Munro Kerr read a paper entitled Certain Details regarding the Operation of Caesarean Section in cases of Contracted Pelvis based upon a series of 30 cases. The author considered first the maternal mortality, which in his own cases, with two deaths, worked out at 6.6 per cent. He next considered morbidity, as based upon a temperature of 100.5° on more than one occasion, and found it was 26 per cent. The two fatal cases were detailed. In one the patient died on the fifth day, the *post-mortem* examination revealing the existence of septic peritonitis; in the other the patient died the day after operation of collapse. At the *post-mortem* examination a large quantity of blood was present in the abdominal cavity, and two or three of the uterine stitches were found untied. Three different methods of treating the

uterus after removing the child were discussed:—(*a*) Removal of the uterus by supravaginal hysterectomy: (*b*) retention of the uterus and sterilization by resection of the tubes: (*c*) retention of the uterus without sterilization—the conservative Caesarean section. From his own statistics and those of others he concluded that the best results were obtained by supravaginal hysterectomy; there was little time for preparing patients for operation. The arguments for and against the conservative operation were considered: (*a*) From the ethical standpoint; (*b*) from the standpoint of the danger to the patient of the repeated operation; (*c*) from the standpoint of the danger of rupture of the uterus in a subsequent pregnancy. From a full consideration of these, he believed that with patients who came under one's care before labour, the conservative operation was indicated in a large number of cases.

The President referred to local influences, which accounted for a large number of cases in particular localities. Twenty years elapsed between his first case and a second requiring Caesarean section for pelvic deformity. Two years ago he had performed the operation six times in fifteen months. Four of these were for contracted pelves, two for carcinoma. All the patients recovered from the operation and all the children were delivered alive.

Dr. G. E. Herman considered that Caesarean section, when performed early, was the simplest and easiest of all abdominal operations, because the parts concerned were healthy and normal; there were none of the difficulties that were sometimes met with in the removal of tumours. The procedure performed early ought to have no mortality at all, but it was not a safe operation if postponed until the patient was exhausted by protracted labour. For statistical purposes the cases should be divided into two groups. It was for the patient to decide whether she would be sterilized or not, and the way to do it was to remove the uterus.

Dr. W. S. A. Griffith said that there must be many operators who, like himself, had not published results, because they felt that the operation of Caesarean section by competent operators for contracted pelvis under favourable circumstances should have no mortality, and he believed that he had not lost a single case. He did not think a vaginal douche at all necessary in cases in which there was no evidence of infective inflammation. As regards sterilization of the patient, he had invariably done it by ligature of the tubes with fine silk.

Dr. Amand Routh said that, as regards the choice of operation, cases should be divided into two classes: (1) where the chance of another child was desired; (2) where it was decided to prevent further conception. In the first class, the risks should be placed fully before those interested, and, if they still desired it, a conservative Caesarean section should be performed. Such risks were, briefly, secondary haemorrhage and sepsis after the primary operation, yielding of the cicatrix and rupture during the next pregnancy, an 8 per cent. mortality in repeated Caesarean section, and the possibility of a disadvantageous environment when next at full term. If sterilization were decided upon, he held that removal of the ovaries was not advisable, owing to the proved value of their internal secretion, and that resection of the tubes did not always cause sterility; and he considered that the claims of hysterectomy as a means of sterilization should in each case be seriously considered, owing to its smaller mortality, the ease of the operation, the lessened risk of secondary haemorrhage and sepsis, and the certainty of sterilization.

Dr. Herbert R. Spencer referred to the diminishing mortality from Caesarean section. His own experience of the operation was limited to 8 cases—6 with contracted pelvis and 2 with obstruction by scars; the patients all recovered. He had also performed the operation four times for tumours; one of the patients died with kidney disease. In all cases of simple contracted pelvis which were not infected he performed the conservative operation without sterilization of the patients; for tumours and for infected uterus and for uncontrollable haemorrhage hysterectomy was sometimes required. He thought that as the cervix was likely to be implicated in infected cases it would be better to remove the whole uterus by total abdominal hysterectomy. He held the opinion that the question of sterilization should be decided entirely by the doctor, and that his duty was to deliver the woman and restore her as nearly as possible to a natural condition. If the patient became pregnant again the responsibility was not the doctor's, whose duty was to repeat the Caesarean section, which experience showed to be very safe. He thought it was not the business of a doctor to advise the use of preventives. With regard to the sutures employed in the conservative operation, he preferred silk owing to the safety of the knot.

Dr. C. J. Cullingworth had altered his opinion on the ethics of sterilization, and was now in agreement with Dr. Spencer on the subject. A woman possessing one living child might consent or even ask to be sterilized, rather than again have to face a serious operation; but, supposing her one child died, she might deeply regret having submitted to sterilization. Besides, a patient's husband might die, and the fact of her incapacity to bear a child might stand in the way of a second marriage. It had been shown that there was little, if any more, risk in a second or third Caesarean operation. He considered that undue stress had been laid by the author on danger of infection from the vagina. He doubted the soundness of the advice, emphasized in every textbook, to avoid the mucosa in suturing the uterine wound. He considered catgut sutures preferable to others which were non-absorbable.

Dr. Munro Kerr, in reply, pointed out that the prevalence of rickets among the working classes accounted for the large number of Caesarean sections in Glasgow. He saw no great disadvantage in including the mucosa, and thought it was of very great importance to stitch deeply and to include the whole thickness of the uterine wall in the suture. He thought it likely that if the sutures were tied very tightly the wound might be partially deprived of its blood supply, and that a less firm cicatrix might result.

Specimens.

Dr. Herbert Williamson: Section of the wall of an ovarian dermoid, showing giant cells. Dr. Lockyer: Carcinoma uteri secondary to carcinoma of both ovaries. Dr. Handfield-Jones: (1) Cancer and fibroids in the body of the uterus; (2) fibroids of the uterus with cystic degeneration of the surrounding tissues.

PATHOLOGICAL SOCIETY OF LONDON.

Rickman J. Godlee, M.S., Vice-President, in the Chair.

Tuesday, October 18th, 1904.

Effects of Vasectomy and Castration upon the Prostate.

Mr. C. S. Wallace read a paper upon this subject, which will appear in full in a future issue of the British Medical Journal. The paper dealt with the history of the surgical procedures alleged to produce atrophy of the prostate, and with a record of the speaker's own experiments carried out upon dogs. The result of his experiments confirmed the experimental work of others, and showed conclusively that, whilst double castration produces wasting of the normal prostate, double vasectomy produces neither wasting of the testicles nor atrophy of the normal prostate. The author, in his paper, discussed also the clinical side of the subject in respect of the effects produced upon the pathologically-enlarged prostate by such operations. The clinical observations and conclusions to be drawn from them were not clear in the case of double castration; but double vasectomy was quite valueless unless atrophy of the testes resulted from causes not essentially connected with the vasectomy, such as thrombosis of the vessels.

Mr. S. G. Shattock stated that the results obtained by Mr. C. G. Seligmann and himself in regard to vasectomy as leading to no interference with the growth of the testicle in the sheep and fowl accorded with those of Mr. Wallace. He added that in the sheep Cowper's glands—which were particularly large—suffered no atrophy from double vasectomy but notable atrophy after double castration. If castration were performed on one side and vasectomy on the other, both glands reached their full size. This observation tallied with that of Mr. Wallace's, which was that in the dog a one-sided castration produced no asymmetry of the prostate.

Toxaemic Jaundice.

Dr. J. F. H. Broadbent recounted five cases of the above, that is, where jaundice occurred without any biliary obstruction, and was associated with pyrexia and other marks of toxaemia. In one case the liver showed the changes of acute yellow atrophy; in the others it was cirrhosed as the result of a more chronic process. In the latter cases the onset of acute terminal symptoms was rapid, and the explanation of this was difficult. In children, many kinds of acute infective conditions probably acted upon the liver, which underwent a subsequent degenerative atrophy and cirrhosis; this had long been recognized as holding true in the case of scarlatina. Possibly the formation and absorption of intestinal toxins in children might produce

a like condition of degeneration of the hepatic parenchyma and accompanying fibrosis. In any case, the occurrence of cirrhosis in children—not due to alcoholism or to syphilis—was generally recognized, though its exact etiology needed much investigation.

Dr. F. J. POYNTON noticed that in experimental rheumatic endocarditis, etc., in rabbits he had found the micrococcus in the gall bladder. Nevertheless, he had never isolated it from the liver of the human subject in cases of rheumatic fever. He did not regard acute rheumatism as a common cause of cirrhosis; scarlatina was probably a frequent one.

HETEROTYPE MITOSIS.

Dr. W. F. VICTOR BONNEY exhibited microscopic preparations showing this in certain of the epithelial cells in cases of papilliferous ovarian cystoma. It was noteworthy that in four examples this occurrence coincided with the malignant histological character of the growth; whilst in two others the mitoses were somatic only, and here the histological characters were of the benign kind. He did not imagine that heterotype mitosis was the cause of carcinoma, though it was an accompaniment of the disease.

DERMATOLOGICAL SOCIETY OF LONDON.—At an ordinary meeting of the above Society on October 12th, Dr. J. J. PRINGLE in the chair, Dr. H. RADCLIFFE CROCKER, amongst other cases, showed (with Mr. G. PERNET) a woman, aged 45, suffering from leprosy. Another case shown by him was a private patient who had suffered from lupus erythematosus of both sides of the face for some years, and who had been treated by means of the *x* rays and high-frequency current with a high-vacuum electrode. This treatment was not carried out under Dr. Radcliffe Crocker's instructions, and the case was shown to bring out the fact that severe "burns" could be caused by the high-frequency apparatus, though it was considered by most people to be free from risk. The side of the face that had been treated by the *x* rays had never reacted, but a great deal of inflammation had been produced on the other side, which had been exposed to the high-frequency current.—Dr. W. HARTIGAN showed a girl who had been born with a large "port wine" naevus covering the left cheek and the left side of the nose. The area had been treated with radium for nine months, during which time thirty-nine exposures had been given, varying in duration from a half to one hour. There resulted from this the production of numerous pale areas of atrophic scarring. This result was considered distinctly encouraging.—Dr. J. GALLOWAY showed a man who had been suffering from lichen planus of the arms and mucous membranes of the mouth for a year, the special point of interest being that, although the main part of the eruption had faded, there was an extremely minute rash left consisting of tiny follicular papules. The patient had had no active treatment.—Dr. A. WHITFIELD showed a boy, aged 18 years, who had come to the hospital complaining of swollen glands in his neck. One of these was suppurating and was opened, but the history showed that he had suffered from chronic adenitis for years and that it was probably tuberculous. He also had a widespread, infiltrated follicular rash on the limbs, back, and abdomen, and it was discovered that he had had gonorrhoea about eight months ago, and there was a scar suggestive of a hard chancre on the glans penis. The glands in the groin on one side were large and hard, and the throat was typical of the secondary stage of syphilis. Dr. Whitfield pointed out that the rash would pass for either lichen scrofulorosum or the lichenoid syphilide, and the boy had apparently both tuberculosis and syphilis. He reminded the members of a similar case shown by Dr. J. J. Pringle, and said that this was now the fourth case he had seen in which recent operation on tuberculous glands in a syphilitic patient caused difficulty in assigning the true cause to the eruption. He considered this case to be syphilitic. Professor HALLOPEAU said that he considered the case one of great interest, but thought a positive differential diagnosis could not be made without watching the patient.

MIDLAND MEDICAL SOCIETY.—At the opening meeting on October 12th Dr. DOUGLAS STANLEY showed a boy, aged 8, who was admitted under his care as suffering from acute rheumatism. The highest temperature recorded was 101°. There was swelling and tenderness of both knees, which lasted an unusual time, and on which salicylates seemed to have but little effect. Some days after admission there was enlargement, with tenderness of the lymphatic glands in the right groin. The spleen was not felt. The patient's mother had had "rheumatism," and another child had "heart disease following rheumatism." Enlargement of the knees persisted, and the joints became stiff. There was interstitial keratitis of eight months' duration; this was considered by Mr. Martin Young to be syphilitic. There was no other evidence of syphilis. Dr. Stanley believed that the case was one of rheumatoid arthritis.—Mr. LEEDHAM-GREEN showed a specimen of a large melanotic sarcoma which he had removed from the middle portion of the rectum of a man aged 45. The growth appeared as a large, slightly-indurated ulcer nearly encircling the bowel. The patient made an excellent recovery from the operation, but died a month after from secondary deposits in the brain and other organs. On microscopic examination of the rectal growth it proved to be a spindle-celled melanotic sarcoma.—Mr. JORDAN LLOYD read a paper on Excision of the Tongue, Partial and Complete.

MANCHESTER MEDICAL SOCIETY.—At a meeting held on October 5th, the PRESIDENT (Dr. J. S. Bury) in the chair, Dr. BYROM BRAMWELL gave an address on Errors in Diagnosis. After insisting upon the importance of a full and accurate diagnosis, and giving illustrations of the grave errors in prognosis and treatment which may result from a mistaken diagnosis, he considered in detail the chief causes of diagnostic errors and mistakes, illustrating his remarks by some of the conditions which in his experience most frequently give rise to difficulties in practice. In the course of his remarks he incidentally considered the differential diagnosis of several different conditions, such as general paralysis of the insane and alcoholic insanity, and described in detail a number of interesting cases which had come under his own observation, and in which the diagnosis was, for some reason or another, attended with special difficulty.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BIRMINGHAM BRANCH.

Birmingham, Thursday, October 13th, 1904.

J. F. CHAVASSE, M.D., F.R.C.S., President-elect, in the Chair.

Exhibits.—Mr. WM. THOMAS exhibited a case of double hallux valgus, treated by excision of the heads of the metatarsal bones and by tomato splints. Mr. Thomas also exhibited an instrument he had designed for the application of various medicaments to the os uteri and vagina. It consisted of a glass cylinder, fitted with a syringe piston. A mass of absorbent cotton, with a string attached, was passed into the tube. The absorbent plug might be saturated with glycerine or its preparations, astringent lotion, or antiseptic powders of any sort. The cylinder would then be introduced into the vagina, the plug pressed out by the piston, and the instrument withdrawn, leaving the plug in the vagina. In cases of excessive vaginal discharge it was a useful measure to pass a plug of absorbent wool, which absorbed the secretion and prevented external escape.

Surgical Interference in Diseases of the Stomach.—Professor SAUNDBY read a paper on the indications for surgical interference in diseases of the stomach, of which the following is an abstract: (1) Operative interference is imperative in: (*a*) Imperforate stricture of the oesophagus; (*b*) perforated gastric ulcer; (*c*) subphrenic cases; (*d*) tumour in stomach region with pain and vomiting. (2) It is submitted that an operation is justified in all cases of chronic stomach disease where stasis is present. (3) Haemorrhage does not, as a rule, indicate operation. In duodenal and other ulcers where repeated bleeding occurs and does not yield to treatment, the question of operation should always be considered. (4) Operations should not be undertaken for purely nervous conditions, including primary atonic dilatation, as the results are not favourable. (5) Operations for cancer should be undertaken more freely. Good results can only be expected if the operation is performed early. The real obstacle is the difficulty of early diagnosis. If Rule 1 (*d*) be accepted and generally acted upon, it is to be hoped that a greater number of cases of cancer will be discovered in the early stage. The discussion on this paper was opened by the CHAIRMAN, and continued by MESSRS. DEANSLEY, BENNETT MAY, HEATON, and Drs. SIMON and KAUFFMANN.—Professor SAUNDBY then replied.

The Open-air Treatment of Phthisis.—Mr. HIGGINSON read a paper entitled "The Open-air Treatment of Phthisis, as

practised in Warwickshire in 1840," of which the following is an abstract: "The open-air treatment of phthisis one of the six recent triumphs in medicine. Life of George Bodington, 1800-2. Critical analysis of his monograph on 'The Treatment and Cure of Pulmonary Consumption' (Longmans, 1840, and New Sydenham Society, 1901). The disease viewed as a neuropathic necrosis: the treatment viewed as an exaltation of all the chief vital processes. Foundation of an open-air sanatorium. Bodington's record of six cases. His prognosis too optimistic. Modifications of Bodington's treatment rendered necessary through the discovery of the tubercle bacillus."

REVIEWS.

OBSTETRICS AND GYNAECOLOGY.

The *Introduction to the Study and Practice of Midwifery*, by Professor Farabeuf and Dr. Varnier,[1] is a large book, printed on excellent paper, with wide margins and well-spaced lines, with varied type, so that the important words shall catch the eye, and richly illustrated. The illustrations are not tiny, confused photographs, but large outline drawings, from the artistic hand of Professor Farabeuf. They not only show what they are designed to show, but are instinct with as much grace and beauty as is compatible with their object; for Professor Farabeuf draws with the pencil of a master. The plump curves of infancy and the taper fingers of the accoucheur will delight the eye of readers who appreciate draughtmanship. The main criticism that we have to make is illustrated both in the general title which stands above the main title of the book and in the proper title itself. In the general title it will be observed that the "fundamental principles of obstetrics" are stated to have been "verified, rectified, or established" by the help of "experiments upon the natural manikin" and of "observation on the parturient woman." Experiment, it will be noticed, comes first, observation of labour second. We may explain that by the "natural manikin" is meant the dead bodies of patients who have died from eclampsia either during labour or just after delivery, so that the genital passage was in a natural condition and dilatable; and the bodies were embalmed in glycerine, so that they were still supple. Dr. Farabeuf's experiments have been thus made, we gladly admit, under conditions most closely approximating to those of natural labour. In the proper title of the book a similar order is observed; study comes first and practice second. The "fundamental principles," which form the "introduction" to the study and practice of midwifery comprise a careful and systematic description of the anatomy of the pelvis and fetal head, the mechanism of natural delivery, the management of breech labours, internal version, and forceps delivery. These are just the things that can be demonstrated upon a manikin and a cadaver. They are important, and we will not waste space in disputing their claim to be considered "fundamental principles." But there are other things which it is equally—some may think more—important that the student should know before he undertakes to conduct a labour. The action of the uterus, the functions of the liquor amnii, the physiology of the first and third stages of labour seem to us to be entitled to be called fundamental principles. The diagnosis of the presentation by vaginal touch is very fully described; but we should have said a fundamental principle was, if possible, to do it by abdominal palpation, which Dr. Farabeuf hardly mentions. In the subjects which the authors so ably treat, and most minutely, methodically, and clearly describe, they sometimes seem to prefer the conclusions derived from experiments on the manikin to those derived from practice. Thus in forceps delivery, the reader is told that the forceps ought to be applied "on a lateral meridian"—that is, symmetrically, not over the ears, but a little in front of and above the ears. This, no doubt, can be done on the manikin, and looks pretty. But we believe the English practitioner usually passes the double-curved forceps (which Farabeuf uses) in the sides of the pelvis, and grasps the head, when the vertex presents, with one blade over a mastoid process and the other over the opposite malar bone; and that he finds this grasp entirely satisfactory, and much easier of attainment than grasping the head "on a lateral meridian." Extraction with forceps when the occiput is behind is described, but we are sure that all who have tried it will prefer to rotate the occiput manually to the front, and then apply forceps. Internal version is very fully and ably described, but we think the English practitioner, and, indeed, any well-informed accoucheur, will do external or bipolar version whenever he can, in preference to internal version. The book is one which will be invaluable to teachers of midwifery, and from which practitioners may gain useful suggestions. But we cannot regard it as a guide to practice, or as a complete exposition of the "fundamental principles of midwifery." We have no doubt the surviving author is well aware of this incompleteness. As a gallery of illustrations it is unique and admirable. Lastly, we cannot omit, in a notice of this work, to indicate our sense of the loss that obstetrical science, not only in France, but in the whole civilized world, has sustained in the death of one of its authors, Henri Varnier—an accurate, diligent, methodical worker, and clear expositor, snatched away far too young.

In the British Medical Journal for January 10th, 1901, we spoke in high terms, which competent authorities have not considered unjustifiable, of *Orthmann's Vademecum für Histopathologische Untersuchungen in der Gynäkologie*. We observed that the manual was so instructive and useful that it might well be translated or imitated, with due acknowledgement, by some British teacher. We congratulate Dr. Hubert Roberts on having undertaken this task and on the excellence of his translation. Teachers and students have looked forward with something like impatience to an English rendering of the German authority's excellent manual, but the *Handbook of Gynaecological Pathology*[2] required careful preparation. The translator is well known as the author of *Outlines of Gynaecological Pathology*, noted for its excellent demonstrations, in text and in fine engravings, of the morbid anatomy of the female genital tract, a work of great use to the advanced student, and still more valuable to the specialist. But, as we remarked three years since, *Orthmann's Handbook* is unencumbered with footnotes, authorities' names, or references, all necessary and useful in a treatise for the benefit of experts, but quite out of place in an educational work. It is devised to teach the student, qualified or unqualified, true—that is to say, scientific—gynaecology. The first part, devoted to technique, gives clear directions about the use of the microscope, the examination of fresh material, and the best methods for hardening preparations, embedding tissues, and staining sections. Now that gynaecology is beginning to be properly taught in British schools, these directions will be appreciated and followed. The main part of the work includes, of course, certain departments of this special branch of pathology which can be trusted to take care of themselves. We refer to papilloma, carcinoma, fibroma, and other new growths of the ovary, and to rare and interesting tumours of the Fallopian tube; in short, to all morbid conditions of the genital tract which are remediable, or argued to be so, by bold surgical measures. These affections are well demonstrated in the *Handbook*, but its chief merit consists in its careful exposition of the pathology of uterine, ovarian, and vaginal inflammation—maladies of relatively small surgical interest, but highly disagreeable to the patient. Therefore, it is advisable that their proper treatment should be understood, and successful treatment demands a sound knowledge of the nature of these diseases.

In a past age, when medical schools were few and far apart and surgical practice difficult of access save to the privileged, books of plates were conspicuous features in medical literature. The need for them passed away, but now they are somewhat in request again for operative procedures tend to multiply, and certain methods are often limited to a particular school or nation. Dr. Schaeffer has brought out his *Atlas and Epitome of Operative Gynaecology*,[3] to supply this

[1] Principes fondamentaux d'obstétrique, vérifiés et rectifiés, établis à l'aide de l'expérimentation sur le mannequin naturel et de l'observation sur la parturiente. *Introduction à l'Etude et à la Pratique des Accouchements.* Par le Professeur L. H. Farabeuf et le Docteur Henri Varnier. Préface du Professeur A. Pinard. Dessins démonstratifs de L. H. F., donnant avec les répétitions nécessaires: 362 figures. Nouvelle édition. Paris: Georges Steinheil. 1904. (Royal 8vo, p. 477. Fr.15.)

[2] *Orthmann's Handbook of Gynaecological Pathology for Practitioners and Students.* Translated by C. Hubert Roberts, M.D.Lond., F.R.C.S.Eng., M.R.C.P., Physician to the Samaritan Hospital, London; Physician to Out-patients, Queen Charlotte's Lying-in Hospital, London, etc. Assisted by Max L. Trechmann, F.R.C.S.Eng., M.B., C.M.Edin. London: John Bale, Sons, and Danielsson. 1904. (Demy 8vo, pp. 127; 73 plates. 5s.)

[3] *Atlas and Epitome of Operative Gynaecology.* By Dr. Oskar Schaeffer, Privat-docent of Obstetrics and Gynaecology in the University of Heidelberg. Authorized translation from the German with editorial notes and additions. Edited by J. Clarence Webster, M.D.Ed., etc., Professor of Obstetrics and Gynaecology in Rush Medical College, etc. London: W. B. Saunders and Co. 1904. (Crown 8vo, pp. 138. 42 plates. 13s.)

revived demand for instruction in surgery by pictorial art, and Professor CLARENCE WEBSTER deserves credit for his translation. A work of this class is open to obvious disadvantages. Illustrations and diagrams are undoubtedly of use to the student of anatomy for self-evident reasons, whilst it is equally clear that the true value of drawings as instructive of operative manœuvres must at the best be far more limited. Dr. Schaeffer has, however, brought out a work which is among the best of its kind. The stages of an operation are separately demonstrated, and the course of needles, sutures, forceps and knives is represented in a manner true to Nature. The colouring of the plates is also fairly successful. The only reasonable objection to their arrangement is the absence underneath them of descriptions, which is relegated to the text. Hence we repeatedly find the description of three or four illustrations opposite the first of them; this renders the study of the remainder rather awkward. It would be out of place to criticize the operations described here, for it is the way in which they are explained which has to be considered. Altogether the plastic procedures are very well depicted. Perineorrhaphy is one of the most difficult of all operations to demonstrate by the aid of the artist, and most samples of his work in familar textbooks are not highly successful. Plates 1 and 2 in this work are far above the average, the passage of a rectal suture is admirably portrayed. As with perineal operations so is it with the illustrations of all other plastic procedures, but the drawings demonstrating hysterectomy through an abdominal wound are less instructive as is always the case with plates drawn on a small scale. The book itself is very handy and will prove of value to the obstetrician who may be compelled to repair local damages and to the specialist who desires to understand new methods.

The sixth edition of a work so well known as Dr. GALABIN'S *Manual of Midwifery*[4] does not call for very exhaustive notice. The chief changes made have been in the section on development; in that treating of extrauterine gestation, in which is now included an account of primary abdominal gestation; and in that on accidental haemorrhage, in which the author goes back to his original recommendation of plugging the vagina for this condition. He holds that it is proved that plugging the vagina is good treatment, but not yet finally demonstrated that it is better than rupturing the membranes. Accidental haemorrhage is one of those conditions in which it is scarcely possible to draw any conclusion from numerical statements owing to the impossibility of drawing a line between slight and severe cases. Minor cases do well under any treatment. In the chapter dealing with rigidity of the cervix the author now describes and figures Bozzi's and Frommer's dilators, but refrains from any expression of opinion as to the cases in which these instruments are to be preferred to other dilating agents. The work now contains an account of "chorion-epithelioma." The view the author takes of its pathology may be inferred from the name he adopts for it. The main characteristics of the book remain as before.

Dr. KERMAUNER has prepared reports[5] of 40 cases of early tubal pregnancy under his observation in Graz and Heidelberg. Each specimen was examined with great care, both anatomically and microscopically. The illustrations are exceedingly good; we may single out Fig. 10 which demonstrates a tubal mole attached by a distinct pedicle to the wall of the Fallopian tube. Fig. 33, which represents a highly instructive section of a tubal abortion, and Fig. 41 where the ostium is seen opening out in a haematocele. The weakening of the tubal sac at the point of insertion is well demonstrated in Fig. 19 where a mole fills the sac. As for rupture we are shown in Fig. 42 how it may occur not at but opposite the seat of insertion. The conclusions of an author who has drawn up so complete a report deserve consideration. He devotes several pages to the vexed question of the relation of tubal gestation to salpingitis, and admits that it is not always possible to feel sure that tubal inflammation precedes the development of gestation in the inflamed tube. The significance of evidences of inflammation around the sac are differently understood by Petersen and Couvelaire who both founded their conclusions on practical research. Even more important than the theory of salpingitis is the decidua question with which the name of Clarence Webster is associated. Dr. Kermauner's evidence does not support the teaching that abnormal development of decidual tissue in the tube is the primary condition determining the implantation of the ovum. In only six specimens in the series could unmistakable evidence of decidua formation be detected in the tubal mucosa, and the author found that in none of the six was any trace of decidual tissue to be found in the opposite Fallopian tube.

[4] *A Manual of Midwifery.* By Alfred Lewis Galabin, M.A., M.D.Cantab., F.R.C.P.Lond., Consulting Obstetric Physician to Guy's Hospital, etc. Sixth edition. London: J. and A. Churchill. 1904. (Demy 8vo. pp. 913. 329 illustrations. 14s.)

[5] *Beiträge zur Anatomie der Tubenschwangerschaft.* [Contributions to the Anatomie of Tubal Pregnancy.] Von De Fritz Kermauner, Assistent an der Universitats Frauenklinik zu Heidelberg. Berlin: S. Karger; and London: Williams and Norgate. 1904. (Demy 8vo, pp. 138. 4s.)

SURGICAL ANAESTHESIA.

DR. DUMONT (Bern) has produced in his handbook of general and local anaesthesia[6] a really valuable addition to the many works recently produced upon the subject of anaesthesia. Unlike many Continental writers, Dr. Dumont has studied his facts at first hand. He has not been content with the literature as made in Germany or France, but finds room in his pages for a careful and discriminating review of the most recent developments of anaesthesia both in English-speaking countries and abroad. But for the regrettable omission of an index, the work would prove a small encyclopaedia of information dealing with the commoner anaesthetics, those more rare or recent, as well as all the now well-known and accepted plans for inducing local analgesia. Indeed, the sections dealing with local anaesthesia are especially clear and satisfactory, and have their descriptions rendered more easy of comprehension by some excellent woodcuts. In the chapters dealing with chloroform, ether, chloride of ethyl, nitrous oxide and its mixtures and successions, we are introduced to an amazing number of apparatus, many of which appear to be antiquated and dangerous. Had not Dr. Dumont taken such infinite pains to elaborate his subject, and afford information of all kinds and from most sources, we should almost have censured his impartiality, and wished for fewer claimants in the matter of methods, and more guidance from the hand of the writer. No doubt all the plans suggested have been or are in use, but we regret that they should be allowed to survive. In his descriptions, and in most of his illustrations, our author is highly felicitous. There are omissions, of course, and some of Dr. Dumont's predilections are not ours; but in a writer who is himself an acute observer, both as surgeon and anaesthetist, it is almost inevitable that habitual use of methods should in some cases prejudice him against less familiar apparatus. We can only hope that Dr. Dumont's book will be widely read in this country, for we are quite convinced that no one interested in surgery and her handmaid, anaesthesia, can afford to neglect his most valuable work.

Mr. C. HAMILTON WHITEFORD, the Senior Honorary Anaesthetist to the South Devon and East Cornwall Hospital, has in a pamphlet entitled *Anaesthetics in Surgery*[7] given the conclusions at which his experience of 2,000 consecutive inductions of general anaesthesia have caused him to arrive. He has seen reason to replace chloroform by ether, as his routine anaesthetic, adopting the nitrous oxide and ether, or ethyl chloride and ether sequences. A Clover's smaller inhaler supplies him with all the apparatus he requires. For ether and chloride of ethyl he works with the bag in position, but when chloroform or a mixture of that anaesthetic has to be given, he removes the bag and allows through breathing. His mortality in the first thousand cases of chloroform used as a routine anaesthetic was one, but it seems doubtful whether it arose from the anaesthetic. Frequent cases of collapse nearly ending in death led Mr. Whiteford to reject chloroform, except in exceptional cases. He traverses the arguments against ether, and advances very clear evidence that the so-called post-etherization lung sequelae are seldom due to the anaesthetic; indeed, we are given to understand that both chloroform and local anaesthesia cases are at least as liable to bronchitis, pneumonia, and other complications as are the cases in which patients have inhaled ether. The sections on the use of chloride of ethyl are clear and accurate. Besides advancing his personal opinions and the results of his experience, Mr. Whiteford has been at the pains of collecting the views upon his subject of authorities in this country and upon the Continent, and has achieved the somewhat unusual feat of

[6] *Handbuch der allgemeinen und lokalen Anaesthesie.* Von Professor Dr. F. L. Dumont (Bern). Berlin and Wien: Urban and Schwarzenberg. 1903. (Demy 8vo. pp. 234. M. 7.)

[7] *Anaesthetics in Surgery.* By C. H. Whiteford, M.R.C.S., L.R.C.P. Bristol: J. W. Arrowsmith. 1904. Demy 8vo, pp. 30. 1s. 6d.

presenting a considerable amount of really useful information in a small space.

The Surgery of the Head,[8] by Dr. Bayard Holmes, of Chicago, is the first of a series of volumes on "the every-day surgery of the human body" which the author proposes to issue under the general title *Surgical Emergencies*. This volume contains a number of clinical records, many of considerable interest, abstracted from various medical journals and from the writer's own practice. Appended to these records are remarks and general observations on the conditions which they illustrate. The author would have been wise to avoid a title which leads his readers to expect a complete handbook of head surgery, and the general designation of the promised series is quite inapposite in regard to this, the first, volume. The style in which the book is written is for the most part successful in impressing some important clinical facts upon the mind of the reader, but it is at times irritating. It is so, for example, when, after many pages spent on brain affections, a kind of summary is served up in the form of what are termed "adages," such as "brain surgery is a fruitless and melancholy subject." It is, however, not such minor matters only that call for criticism; there are serious sins of both omission and commission in the volume, and we may give examples of both classes. In regard to the first—why, in a volume which professes to cover the head and face, is no consideration given to injuries and diseases of the jaws? In regard to the second—we quote the following description of anthrax of the face:

> The pustule is surrounded by an area of excessive inflammation (malignant pustule), and the blood quickly becomes filled with the growing bacillus. Within twenty-four to forty-eight hours after infection the pusule is covered by a blister, in which large numbers of anthrax bacilli may be recognized. The lymph glands are quickly enlarged and form long chords (*sic*) of inflamed tissue. The temperature is high, and delirium and somnolence come on, and in the worst cases death follows in a few days. The diagnosis is easy and the treatment is unsatisfactory. Any disturbance of the primary focus seems to encourage general infection.

This is absolutely all the author has to say on anthrax of the face! The terms "inadequate" and "inaccurate" but mildly describe it. There are some good illustrations in the book reproduced from textbooks and journals, but many of those in the text are rough sketches of little value. The chapters on sigmoid sinus thrombosis and on fracture of the skull are perhaps the most successful, but even in these there are several grounds for complaint; the paragraph on the diagnosis of simple skull fracture is entirely inadequate, and the treatment recommended to "protect the head and thoroughly immobilize the skull by means of a skull cap made of starch or plaster-of-paris bandage" is likely to add to the discomfort of the patient without any corresponding advantage. There are many other matters in the book which are open to criticism. Dr. Holmes would be well advised to depart widely from the method of this volume in those which he proposes to issue later.

In his short treatise Dr. Lapointe gives an instructive review of present knowledge of torsion of the spermatic cord,[9] and adds some remarks on haemorrhagic infarction of the testis which occurs not only as a constant result, but also in some cases, quite independently, of this lesion. Torsion of the cord, which was first brought under the notice of surgeons in this country by Mr. Bryant in 1892, seems to be by no means a very rare affection, as 36 cases, including several published before this date, have been collected by Dr. Lapointe. Good use has been made of this material, on which the author has based a complete and useful description of the mechanism, symptoms, and diagnosis of what may be regarded as a distinct and important addition to the recognized affections of the testicle.

SURGERY OF STOMACH AND GALL BLADDER.

The monograph on *Diseases of the Stomach and their Surgical Treatment*, by Mr. Mayo Robson and Mr. Moynihan,[10] having reached a second edition, may be regarded as having established itself as a standard work on the subject; and although in a department which is making such rapid progress changes and modifications are to be expected from year to year, it affords unquestionably the best guide to the technique of these operations which has been published in this country. It is written essentially from the standpoint of the operating surgeon, and does not afford much aid to the general practitioner or physician who wishes help in coming to a conclusion on the very grave question which must now constantly arise in practice, whether a given case is or is not one in which surgical assistance should be invited. This is a matter which deserves more discussion. It is not right to say that all cases of chronic stomach trouble which do not yield to medical treatment should be handed over to the surgeon for operation, for in the large class of chronic nervous ailments without definite organic disease, or in simple atonic dilatation, the results of surgical operations have not been good and have even done harm. We cordially admit that the profession needs encouragement respecting stomach surgery, as if we are to obtain the best results it can only be by inviting surgical co-operation while the patient's condition remains relatively good; this is especially true of cancer of the stomach, in which early operation is essential to success. This is not the place to discuss the grounds upon which operations should be performed, but we hope the matter will receive greater attention than it has, and that physicians and surgeons will strive to arrive at a general agreement upon these points, which are so vital to the welfare of our patients. We should add a word of praise for the very admirable illustrations with which this instructive volume is embellished.

Dr. Hans Kehr, whose experience in gall-stone surgery extends over some 900 operations, publishes a *Report on 137 Laparotomies for Gall Stones during the Year—October 6th, 1902, to October 6th, 1903*,[11] and appends to this short notes on eighty cases of the condition to whom operation was not recommended. On account of his large experience Dr. Kehr's opinion on the indications for operation are of the greatest interest. It is his experience that expectant treatment by the Karlsbad and other "cures" produces latency of the condition in about 70 per cent. of cases. While showing no capacity for curing the affection, these methods of treatment are often of value as preliminaries to operation. The cases here recorded consist of 20 cystostomies without a death, 15 cystectomies with 1 death, 33 choledochotomies with 1 death, 30 cases in which an additional procedure had to be undertaken for some simple affection of the stomach, intestine, liver, or pancreas, with 4 deaths, and 24 cases where malignant complications were present with 14 deaths. Dr. Kehr sums up the question of mortality as follows:

> The removal of gall stones, whether the gall bladder is retained or excised or stones extracted from the common duct, is a comparatively safe proceeding, attended by a mortality of about 3 per cent., provided it is not complicated by diffuse cholangitis or carcinoma.

A separate publication on operative technique is in course of preparation. Dr. Kehr removes the gall bladder wherever this does not appreciably increase the risk of the operation, but does not agree with Riedel's extreme view that simple cystostomy is an unsurgical proceeding; he makes frequent use of drainage of the hepatic duct, and also, in many cases, obliterates the anterior subphrenic space by hepatopexy. The clinical records in this book illustrate in immense variety the complications and difficulties which may be met with, and the variations in procedure which have to be designed to overcome them; they constitute a contribution to gall-stone surgery of extreme value; the estimations of mortality and of end results which are given are also of great importance, based, as they are, upon an experience of unique extent.

SYPHILIS.

Dr. G. Mayer, of Aachen, has published four lectures on *Prognosis in Syphilis*,[12] which he delivered in the Aachen Postgraduate Course (1902-3). He reviews the subject of syphilis as it affects the various organs of the body, and

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[8] *Surgical Emergencies. A Textbook of Surgery for Practitioners of Medicine. 1. The Surgery of the Head.* By Bayard Holmes, B.S., M.D., Professor of Surgery in the University of Illinois. London: Sidney Appleton. 1904. (Demy 8vo, pp. 584; 90 illustrations, 14 plates. 12s.)

[9] *La Torsion du Cordon Spermatique et l'Infarctus Hémorrhagique du Testicule.* Par le Dr. André Lapointe, Ancien Interne Lauréat des Hôpitaux de Paris. Paris: A. Maloine. 1904. (Cr. 8vo, pp. 180; 8 illustrations. Fr. 3.)

[10] *Diseases of the Stomach and their Surgical Treatment.* By A. W. Mayo Robson, F.R.C.S., and B. G. A. Moynihan, M.S.Lond., F.R.C.S. Second Edition. London: Baillière, Tindall, and Cox. 1904. (Demy 8vo, pp. 522; 208 illustrations. 15s.)

[11] *Bericht über 137 Gallenstein Laparotomien aus dem letzten Jahre (6. 10. 1902. bis 6. 10. 1903), unter gleichzeitiger Berücksichtigung der nicht operirten Fälle* [Report on 137 Laparotomies for Gall Stone during the Last Year (October 6th, 1902, to October 6th, 1903), with a Consideration of the Cases of the same period which were not operated on]. Von Professor Dr. Hans Kehr in Halberstadt. München: J. F. Lehmann. 1904. (Demy 8vo, pp. 315. M.5.)

[12] *Ueber die Prognose der Syphilis* [Prognosis in Syphilis]. Von Dr. G. Mayer. Berlin: S. Karger. London: Williams and Norgate. 1904. (Demy 8vo, pp. 87. 2s.)

brings together many interesting references, which he points by details taken from his own case-books, showing the course of the disease and the results obtained at Aix-la-Chapelle. He insists on the necessity of early careful treatment, which he considers should be of the intermittent kind. Although inunction is, in the great majority of cases, well borne, he mentions the case of a fat woman, in whom it gave rise to eczema, which eventually carried her off—an occurrence which can now be practically excluded by the use of the new preparations for inunction. Once again the evil effects of alcohol in syphilis are touched upon. As to tabes, he thinks treatment can do something; and out of 202 cases he obtained a cure, or almost a cure, in 6 patients. There is, however, a fallacy about such results, for in some cases of tabes the symptoms and signs may remain unaltered for years, and give very little trouble to the patient, where no specific treatment of the tabes has been attempted at all. Would this unprogressive course of the disease be claimed as a cure, or almost a cure, or as an instance of arrest of the disease, supposing inunctions and so forth to have been carried out? On the other hand, specific treatment persevered with has undoubtedly led to improvement of some distressing symptoms and enabled the patient to get about his work with comfort. Other interesting points concerning syphilis of the brain, spinal cord, heart, lungs, liver, kidneys, etc., might be alluded to here did space allow. Dr. Mayer's lectures can be recommended with confidence. Although the book is small, an index would have enhanced its value for busy men.

Dr. GOTTFRIED TRAUTMANN'S bibliographical compilation[13] concerning the affections of the mucous membranes of the mouth and upper respiratory tract, which occur in various skin conditions and in syphilis, contains a large number of references culled from various sources. Needless to say that such a bibliography could be greatly expanded. The industrious author has, however, brought together many useful literary indications, and the value of the book is enhanced by an index of the authors cited, as well as by a short general index. Dr. Trautmann rightly calls attention also to the fact that affections of the mucous membranes are not always syphilitic, a mistake which many are prone to make and which leads to regrettable errors. As a work of reference the book will find a place on the shelf of those interested in the subject of skin diseases, laryngology, etc. It would have been better had the bibliographical references been classified at the end or given in footnotes instead of forming part of the running text.

The Differential Diagnosis of Syphilitic and Non-Syphilitic Affections of the Skin[14] is an expansion of a paper read by Mr. PERNET before the Medical Society of University College, London. It is perhaps as well that it had not to come under the eye of Professor Clifford Allbutt as a thesis for the M.D.Cantab. for the English composition leaves much to be desired. But the matter of the book is good, and important points are driven home as with a sledge-hammer. It is evident that Mr. Pernet's experience is the general one that the commonest error is the ignoring of other symptoms, and the making a diagnosis from the rash alone, and he refers to this with almost wearisome reiteration:

> Bear in mind that the diagnosis of syphilis rests on positive facts.
> I would again remind my reader to diagnose syphilis on positive grounds only.
> I would again take this opportunity of insisting on the fallacy of relying on one sign alone.
> Here it may be stated again that the cases should be taken as a whole, and every abnormal symptom noted.

That "the bullous lesions produced by iodide of potassium are really solid" is a curious statement, not, we think, in accord with general experience. Lupus erythematodes is usually regarded as a synonym for lupus erythematosus, but Mr. Pernet uses the term for the lupus vulgaire erythematoïde of Leloir. There are some common-sense remarks on the subject of loss of hair as an aid to diagnosis. The inquiry as to this Mr. Pernet refers to as "one of the usual questions which have come to be looked upon with a reverence that is almost touching." The author's travels abroad are responsible for the incidental discussion of a good many out-of-the-way diseases, some of them hardly likely to be confused with syphilis, though interesting in themselves. Most readers will learn something from the book. Although the composition lacks finish, there is a breezy virility in the sentences which makes it interesting and easily read, and the book supplies in a handy form a good deal of information not easily attainable elsewhere.

[13] *Zur Differentialdiagnose von Dermatosen und Lues bei den Schleimhauterkrankungen der Mundhöhle und Oberen Luftwege mit besonderer Berücksichtigung der Hautkrankheiten als Teilerscheinungen* [A Contribution to the Differential Diagnosis of Dermatoses and Syphilis in Affections of the Mucous Membranes of the Oral Cavity and Upper Respiratory Tract, with Special Reference to Concurrent Diseases of the Skin]. Von Dr. Gottfried Trautmann. Wiesbaden: J. F. Bergmann; and London: Williams and Norgate. 1903. (Roy. 8vo, pp. 191. 4s. 9d.)

[14] *The Differential Diagnosis of Syphilitic and Non-Syphilitic Affections of the Skin, including Tropical Diseases.* By George Pernet. London: Adlard and Son. 1904. (Demy 8vo, pp 230. 6s. 6d.)

NOTES ON BOOKS.

HANDBOOKS FOR MIDWIVES.

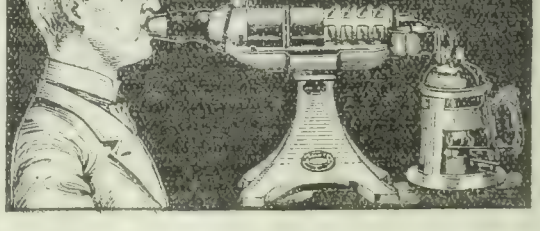
How to Become a Midwife[1] explains to the midwife who wants to be certified what she is to do. It reprints for her the regulations for midwives issued by the Central Midwives Board. It explains to her what her relation to the local supervising authority is, who this authority is, what are her duties to the local supervising authority, and the supervising authority's duties to her. The midwife who wishes to have this information in a handy and compendious form can supply her want by purchasing this book.

The two parts of which *Questions and Answers on Midwifery for Midwives with Syllabus of Lectures*[2] consists are placed in it in the reverse order to that observed in the title-page. The syllabus comes first, then the questions and answers. The work is accurately described by its title. It has been published at the request of members of the author's classes, who have found them helpful in preparation for examination. We can quite believe that, supplemented by oral explanations, the syllabus may prove helpful. The information given is put in the most compact possible way. The author does not err in the direction of over-elaboration.

REPORTS AND ANALYSES
AND
DESCRIPTIONS OF NEW INVENTIONS
IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

MEDICAL AND SURGICAL APPLIANCES.

An Inhaler.—Dr. BULLING'S "Thermo Variator" (Krasa and Co., 7, Wood Street Square, London, E.C.), of which an illustration is here given, is an apparatus with certain distinct merits. It can be used either as a simple atomiser or for the nasal or oral inhation of medicated solutions converted into vapour of any desired temperature; with one



small exception it is constructed entirely of white stone china and nickel; it can be kept absolutely clean without difficulty; it cannot easily be thrown out of working order; lastly, it has a thermometer inserted into the current of vapour, and an arrangement by which the temperature of the latter can be regulated from 80° C. downwards. The English vendors state that upwards of 4,000 inhalers of the same pattern are already in use in German and Austrian hospitals.

[1] *How to Become a Midwife, and the Legal Requirements under the Midwives Act.* By E. L. C. Appel, M.B., B.S., B.Sc.Lond. London: The Scientific Press. 1904. (Crown 8vo, pp. 35. 1s.)

[2] *Questions and Answers on Midwifery for Midwives*, with Syllabus of Lectures for the L.O.S. Delivered at the Fulham Midwifery Training School. By A. B. Calder, M.B., M.R.C.S. London: Baillière, Tindall, and Cox. 1904. (32mo, pp. 143. 1s. 6d.)

SOME PIONEER MEDICAL BOOKS.

Abstract of an Address delivered at the Pupils' Physical Society, Guy's Hospital.

By Alexander Macalister, M.D., LL.D., F.R.S.,
Professor of Anatomy, University of Cambridge.

When your President honoured me with an invitation to deliver the opening address for this session I found some difficulty in making choice of a subject upon which to speak. A Society like yours—of venerable antiquity, yet, from its very nature, instinct with a youthful, vigorous life—touches, on the one side, the history of the past, and reaches forth, on the other, to the achievements of the future. I hesitated, therefore, uncertain whether to choose some topic connected with the early history of medicine, or to essay a scientific forecast as to the future of some branch of our professional study. I have been led to select the former horn of the dilemma, as circumstances have caused me within the last few months to occupy myself with the history of the medical curriculum, which is the story of an evolution, the result of growth regulated and directed by environing conditions. As the consequence of that growth repeated divisions have taken place in the subject-matter of the course, so that what was originally a formless mass of doctrine, comprehended under the vague term "medicine," has become split up into a series of linked, though discrete, sciences. In reviewing the progress of these divisions it is worthy of note that the occurrence of each segmentation has been generally accompanied by the appearance of a new book dealing with the special subject which is budding off from the parent stem, and it seemed to me that an interesting hour might be spent in recalling some particulars concerning these pioneer works on medicine.

Few books are of so little market value as old editions of medical textbooks. They may be picked up off the barrows of the street vendor for fewer pence than they originally cost shillings, and, in general, they are not worth buying even at that small outlay. But there is a certain stage of antiquity at which a book begins to acquire a new value in accordance with the old rhyme:

> Keep a thing for seventy years and it a price will bring;
> Keep it seven times seventy years, it is a precious thing:
> But keep it seven times that again, and give it to the King.

It is mainly of books whose value is thus enhanced by age, as well as by circumstance, that I desire to speak this evening.

"Of the making many books there is no end." Even if we confine ourselves to the subject of pioneer books as defined just now, our catalogue will prove to be too long. We shall therefore require to limit our selected series, and I propose to take these in three groups: First, the most ancient series; secondly, an intermediate group, being those named as the subjects of instruction in the oldest statutes of the University of Cambridge, A.D. 1396; and, thirdly, a few of the more recent pioneer treatises which may be regarded as the precursors of our present-day textbooks.

At the head of the first class stands one which, according to the adage just quoted, has earned sufficient value to be a worthy Royal gift. Its age is a little over the seven times seven times seventy years, as it was written in the days of Amenhetp III, about B.C. 1500. There are about a score of Egyptian medical papyri known, but this is much the largest, consisting of 107 pages, and it is also the oldest medical work extant. It was found in a tomb at El Assassif in ancient Thebes, and was purchased by the late Professor Ebers, for the Leipzig Museum. We turn to it with expectancy to ascertain what was the wisdom of the Egyptians in the art of medicine, but I fear we shall turn away from it with a sense of disappointment. It begins with a high-sounding preface, which, leaving out some repetitions, runs somewhat thus:

> Beginning of the book of preparing remedies for all parts of the body. I come from Anu, with the priests of Hetuat, of the Lord of healing, the King of eternity and protector. I come from Sais with the Mother Goddess who guards me. There is given from the Lord of All, the word to remove all deadly disease of all sorts. There are sections for the head, neck, arms, flesh, limbs, to remove the hurt done by the Ruler of those who have brought diseases on my flesh. . . . It is his guide Tehuti, who gave me this word. Whom the God loves he makes to live. I am one whom the God loves He makes me live.

Then follows a magical spell to be repeated when the remedies are being prepared. The main bulk of the treatise consists of prescriptions, 811 in number, for diseases of the different parts. Interspersed are short diagnostic aphorisms, about 62 in number, mostly about abdominal diseases and swellings, and there are over a score of magical spells. As a sample of the prescriptions we take one purgative, consisting of equal parts of *uam* seeds, *anub* herb, *keseh't* fruit, honey, and *s'neft*. We have no means of knowing what these ingredients are, and cannot consequently ascertain their value. Where we can identify them they do not seem very active: thus, in the prescription on page 66, which professes to be the oldest—made by King Teta as a hair-oil for his mother Ses, about 4500 years B.C.—the ingredients are dogs' claws, an ass's hoof, and dates, all boiled and rubbed up together in oil. For blindness, take two pigs' eyes and the fluid belonging to them, eye powder, vermilion and honey equal parts, rub together, and put into the patient's ear, repeating this formula twice: "I have brought this thing and put it in its place; the crocodile is weak and powerless."

One sample of the aphorisms will suffice (page 25): "If ye see one with a swelling feeling like dough, his body is hard under it; he is sick in his *ro-ab*. It is a swelling of his body that finds no way out and there is no passage for it out; it is corruption in his body. Nothing comes out. It is the *hesept* worm. If it be not the worm it feels like a ball. If it empties he gets well; purge him, and immediately he will get well." Now, *ro* means "mouth" and *ab* "heart," so *ro-ab* is the mouth of the heart; but the descriptions fit most closely with something abdominal, probably intestinal. Ebers guessed that it might be the cardiac orifice of the stomach, but that is purely hypothetical. The prescriptions profess to come from many quarters. One was composed by the Goddess Tefnut, for Ra, and consists of *āmāā* flour, *s'neft* fruit, and goose grease pounded together six times, and useful for all wounds and sickness. Another was invented by Seb, and a third by Isis.

On pp. 99 and 100 there is a treatise on blood-vessels, the book of the secrets of the heart; these vessels are to be traced by the finger from the heart. At one time I thought it might be possible to recognize some real anatomical knowledge in this section, but, on careful revision, the whole is so fanciful that no reconstruction of the author's vascular system can come any way near to reality. Four vessels go from the heart to the nose, of which two carry slime; four divide at the back of the neck to nourish the hair; four go to the two ears, the breath of life goes to the right ear, the breath of death to the left; six vessels go to the two arms, six to the legs, two go to both testes, four to the liver, bringing moisture and vapour; four go to the intestine, two to the bladder, and four to the anus. A later recension of the anatomy is given on p. 103, which only gives two vessels each to the arm, to the leg, to the occiput, to the eyebrow, to the forehead, and to the nose.

The last section on p. 103 claims to have been in existence in the days of Hesepti, who lived about B.C. 4000: similar claims to antiquity are found in the medical papyri of London and Berlin, which, though smaller, have a general resemblance to this. This short sketch will suffice to show that the Egyptian medicine at the beginning of the new empire was little else than folk-lore, empiricism, priestly tradition, and magic, with no underlying knowledge of the structure of the body and no unifying theory of disease, except the elementary notion of malign influences.

In later times the Greeks learned Egyptian empiricism and engrafted it on a basis of philosophy. The other later Egyptian papyri down to the Greek period show no advance on the knowledge represented by the Papyrus Ebers.

We pass over a thousand years and from Egypt to Greece, and we take as our representative work of Greek medical literature the writings ascribed to Hippocrates. My copy is the Aldine, the first printed edition produced at Venice in 1525. The Father of Medicine, born at Cos, lived most of his active life at Larissa, in Thessaly, and died there about B.C. 390. Of the fifty-six works here ascribed to him, only seven are certainly genuine—the book on air, water, and soil, two of the three books on epidemics, the prognostics, the prorrhetics, or predictions, the aphorisms and the diet of acute diseases; possibly the "wounds of the head" may be genuine. Six others were almost certainly written by Polybus (his disciple), two probably by Thessalus (his son), and the others by later writers of the Dogmatic School which he founded. The seventh genuine work is the oath which he exacted of his disciples, which is one of the most significant evidences showing what manner of man he was. It runs somewhat thus:

> I swear by Apollo the Physician, by Asklepios, by his daughters Hygeia and Panacea, and by all the Gods and Goddesses, that to the best of my ability and judgement I will faithfully keep this oath and obligation. The master that has instructed me I will esteem as my parents, and

shall supply as occasion may require with the comforts and necessaries of life. His children I will regard as my own brothers, and, if they desire to learn, I will instruct them in the same art without any reward. The precepts, the explanations, and whatsoever else belongs to the art I will communicate to my own children and to such other pupils as have subscribed to this oath, and to no others. My patients shall be treated by me to the best of my power and judgement in the best manner without injury or violence. Neither will I be prevailed upon by another to administer pernicious physic, nor will I be the author of such advice myself. I shall never recommend means to produce abortion, but will live and practise chastely and religiously. I will not meddle with lithotomy, leaving that to operators of that art. Whatever house I am called to attend I will aim at making the patient's good my chief aim, avoiding all injury, corruption, and unchastity, and whatever I hear in the course of practice relating to the affairs of life that ought to remain secret nobody shall ever know from me. May I be prosperous, and honoured and esteemed by all men as I observe this solemn oath, and may the reverse be my lot if I violate it and forswear myself.

The works of Hippocrates would easily supply material for the whole time at our disposal, but they are accessible to you at any library in many editions in Greek, Latin, or English, and you will find them well worthy of perusal.

Along with Hippocrates as a pioneer we may bracket Theophrastus of Eresium, the first writer on materia medica. He was born about the date of Hippocrates's death, and became an active medical and philosophical teacher. He collected all the herbal lore of the day, and wrote this book on the history of plants, in which he described about 500 species, giving the medical properties of each. There is much of interest in it even yet, and it remained a classic authority on the subject down to the seventeenth century. His teleology and his reverence for the Great First Cause made his writings popular as long as education was controlled by the Church. My translation is the first Latin edition, printed and published at the famous press of Cratander of Basel, 1534. The translator, Theodore Gaza, was one of the most remarkable of the band of scholars who, after the dark ages, brought back the philosophy and culture of Greece to Europe in the early fifteenth century.

From Greece to Rome is a natural transition at the beginning of the Christian era. In the Golden Age of Latin literature medical writings are conspicuous by their absence. Cato and Pliny inveigh against those Greeks who practised the art in Rome, and reproached them for their evil practices. Among the earliest authors just at the beginning of the Silver Age, however, Cornelius Celsus takes a conspicuous position. His eight books *de re medica*, written probably in the time of Tiberius, in the first century A.D., constitute a part of the classics of the science, and have always been popular for their pure, elegant, and luminous style. They are worthy to be read to-day, not only on this account but also because they fill up the historic gap between the Greek dogmatists and Galen. They give us a record of the growth of opinion in the Alexandrian school, and the rise and progress of the medical sects of Empirics and Methodists. The first printed edition was that issued at Basel in 1528. This small duodecimo edition was printed by Tornæsius at Lyons in 1549, and is a beautiful example of italic typography. To the anatomist Celsus is especially interesting, as he gathers up some of the current descriptions of parts from sources which have disappeared. Critics are divided on the question whether he was a practising physician or not, and there is much evidence, both internal and external, in support of the view that his interest in medicine was chiefly, if not entirely, literary and philosophical. Pliny mentions him as a general writer, but ignores him as a medical author, and although his surgical descriptions are graphic they might easily be those of an onlooker not of a practitioner, and he never refers to any case which had been treated by himself. He wrote on rhetoric and other subjects, but these works are not extant. We, however, know so little of him personally that the question must remain an open one. He has often been confounded with his later namesake, the Epicurean Celsus of the time of Hadrian, whose attack on Christianity under the name "The true word" was so completely answered by Origen.

A century after Celsus another literary work appeared, this time in verse—the *De Medicina Praecepta Saluberrima* of Serenus Samonicus, who was put to death in the reign of Caracalla, circa 206 B.C. This writer, in more or less elegant hexameters, gives us the treatment of diseases as then practised. Whether he was a practitioner or no we have not much evidence. Spartianus mentions the manner of his death, and from another source we learn that he was the tutor of Gordianus. The chief interest of this work is that it was the precursor of a series of metric medical books. One well-known production of this description is extant, bearing the name of a little-known poet of the Golden Age—Aemilius Macer, a contemporary of Virgil; but it bears the marks of a much later authorship. It is called *De Virtutibus Herbarum*, and gives the medical properties of about eighty plants. The style is crude and the dogmata are essentially Galenical. It is in barbarous Leonine verse, and is probably a ninth-century production, by some attributed to a Frankish physician, Odobonus by name. Several editions are extant, the first being dated 1477. It was twice translated into English, one version being by Linacre in 1522. I show you here Tornæsius's edition of Serenus, 1549. A later edition, with a prodigiously bulky and dull commentary, was published by Humelberg in 1581.

I shall have occasion to refer to metric medical books later on, but may here note that such were not uncommon. The *Schola Salernitana* is the most famous of these, also in Leonine verse, written by John of Milan in 1099. Another and much later one, the *Sybilla Medica* of Carolus Sponius of Lyons, is a metric rendering of Hippocrates's *Aphorisms* and *Prognostics* in Latin verse, very eloquent and varying in metre, published in 1661. The same author reduced to verse a most prosaic subject, the origins and insertions of all the muscles of the body, under the title, *Musculorum Microcosmi origo et insertio*. He also varies the metre with the muscles in this book; thus he gives the sterno-mastoid in Sapphic stanzas with a versus Adonius every fourth line:

> Mastoideus solet auspicari,
> Munus e summi saliendo sterni
> Limite et clavi media lacertus,
> Pene bicorpor.
> Inque processu incita mammiformi
> Constituta ipsi fixit haereat cui
> Firmiter flexūs capitis patrare
> Quoslibet aptus.

Phineas Fletcher's *Purple Island* (1633) may, perhaps, be put in this category as a metric treatment of a physiological subject, but it was scarcely intended for the medical student.

The second group of pioneer works to which I shall now refer are those named in the Cambridge Statutes of 1396, as limiting the medical curriculum of the period. All medical education at that time, as for the ten preceding centuries, was strictly Galenical, so these are chiefly some selections from the works of that great reformer of medicine and a few commentaries on them. Of Galen I need only remind you that he came from Pergamon, and settled in Rome about A.D. 160, and that his voluminous and very dull commentaries on Hippocrates and other treatises became in the third century the standard works on medicine. The parts of his works named in the Cambridge syllabus are four: Techne Iatrike, called in the barbarous Latin of the period the *Liber Thegni*. The edition of this that I show is that edited by Hieronymus de Salys of Faenza and Michael de Cappella, published at Venice in 1527. In this four separate Latin translations of the Greek text of Galen are printed side by side. [These are the ancient translations by Constantius Africanus; a second made from the Arabic version of Galen by Hali ibn Rodoam, an Egyptian, in the twelfth century; a third by Nicolas Leonicetus in the fifteenth century; and a fourth by the ill-fated Laurentius Laurentianus, who drowned himself in 1515 when in pecuniary difficulties.] In this text the commentary of Hali ibn Rodoam, twice as long as the book itself, is included. This special commentary was not required, but the Cambridge course prescribes instead a brief introductory, the *Isagoge* of Johannicius, properly called Honein ibn Ishak, a Christian physician from Hira in Babylonia, who died in prison in A.D. 873. This author's work is here translated into Latin by Hieronymus. It takes up five and a-half pages, and is a most crabbed piece of contracted printing. The subjects dealt with in it are the elements, the humours of the body, the animal spirits, the colour of the hair—black from combustion, red from excessive blood, fair from absence of black bile, and grey from deficient natural heat. The eye is described as having seven coats, *rhetina, secundina, scliros, tela aranee, uvea, cornea*, and *conjunctiva*. The second Galenical book is the commentary on Hippocrates's *Aphorisms*, of which in this volume three translations are printed in parallel columns. The third and fourth are the *Prognostics* and the *De regimine acutorum*, which are given in this volume in Constantinus's translations. The translator was a remarkable man, a native of Carthage, who, after a life of many vicissitudes, became a Benedictine monk at Monte Cassino, and died in the convent of St. Agatha at Averso. Besides these, there are three small textbooks prescribed, not unlike our modern "cribs." Two of these were written by

Theophilus, who was a protospatharius, or colonel of the guards, as well as chief physician, at the Court of the Byzantine Emperor Heraclius in the seventh century. The first he wrote, under the pseudonym Philaretus, on the subject of the pulse. Arteries are here described as receptacles for air, natural spirits, and a little blood. They begin at the heart by a tube called by one translator *odorti*, by another *adhorta*. The method of feeling the pulse is carefully described, and its variations due to age, sex, season of the year, and locality are given. Ten pairs of varieties of pulse are mentioned—great and little, quick and gentle, vehement and languid, hard and soft, quick and slow, equal and unequal, regular and irregular, full and empty, deficient and intermitting, hot and cold. The other textbook is a longer work on the urine, published under his own name, Theophilus. According to him the urine is formed in the vena portae and brought to the kidneys by the vena cava; its colour, consistence, and sediments are described at length. I here show two versions of these, one by Hieronymus, in 1527: the other, in which urine is called *lotium*, by Albanus Torinus, Professor of Medicine at Basel, written at the beginning of the sixteenth century and printed at Basel by Petrus in 1533.

These works were intended to be learned by heart, but their very condensed form was found to be a difficulty by some. An English Benedictine monk in the twelfth century, John Giles by name, better known by his Latinized title, Joannes Aegidius, rendered both these works into Latin heroic verse. This was first printed by Wolfius of Basel, with a long commentary by Gentilis, of Foligno, in 1529, and is praised by its editor, Venantius Mutius of Camerino, as better than the prose of Philaretus, which in avoiding the Charybdis of confusion flies into the Scylla of brevity. As a specimen we may take the first few lines of the *De Urinis*, amusing for their notions of etymology:

> Dicitur Urina, quam fit in renibus una,
> Aut ab *Urith* Greco, quod demonstratio fertur,
> Aut quia quod tangit mordet desiccat, et urit.

The last canto contains an attack on the school of Montpellier, the rival of the Salernitan to which Egidius belonged, and especially on one Petrus Musandinus, whom he accuses of copying him. He also commemorates two authors on urine whose books are not extant, Urso and Maurus. This Giles is not to be confounded with the Portuguese Dominican of the same name. Some authors erroneously describe him as an Athenian.

Three other treatises are included in the Cambridge list. Two of these were written by Isaac Israelita Beimiram, a tenth-century physician. The larger one is on urine, and resembles that of Theophilus. In the edition which I show it is translated from an Arabic original, and is the subject of a long commentary by Petrus Hispanus. The smaller is a compendium of practice of medicine, which Constantinus, its translator, calls the *Viaticum*. Isaac was the adopted son of a certain Arabian King Solomon, and died A.D. 940. This edition of Isaac's works was edited by Andreas Turinus of Piscia, and printed at Lyons in 1515 at the famous press of Joannes de Platea. The *Viaticum* was translated from the Syriac and contains some good advice: for example, under the head, "De Ebrietate," he says: "Oportet vinum bibentes quantitatem vel qualitatem cavere que eos valeat inebriare." Of hair he says that it is produced by the vapour of hot humours, and when these vapours increase the hair grows, when they cease the hair falls out. As its translator says, it contains milk for sucklings, harder things for those with canine teeth.

The last work of the Cambridge list is on pharmacy, the *Antidotarium* of Nicolaus, Praepositus of Salernum written in the early part of the twelfth century. It was first printed by *Jensen* in 1471, but this edition is exceedingly rare; the copy I show is bound up with the works of the Arabian author Mesuë, and printed at Venice by Juntas, in 1549. It is a remarkable illustration of the polypharmacy of the Galenical School, and contains 140 formulae, one of which was said to have been composed by Ezra, when returning from the Babylonish captivity. While on this book I may mention that the *Antidotarium* continued in use until 1540, when it was replaced by the first European pharmacopoeia, that of Valerius Cordus of Nuremberg, which in this country gave way in 1618 to the first London *Pharmacopoeia*. Looking over this book one feels how thankful the present-day student should be for his deliverance from such a textbook. It contains 1,300 drugs, among which are puppies, earthworms, hedgehog, green frogs, sharks, moles, vipers, foxes, which must be killed by hunting and opened immediately. Human skull, mummy powder, human fat, faeces, urine, sweat, and saliva, are all official, as also the dung of the dog, wolf, mouse, goat, and horse, pearls, amber, calcedony, lapis lazuli, and other precious stones. In one plaster live frogs are constituent. In the antidote of *Mathiolus* 142 ingredients are contained in varying quantities, and one singular compound is called the electuary of warm gems. This consists among other ingredients, red rose petals, lavender, lign. aloes, liquorice, spodium, crocus, and mastich, white pearls, zedoary root, doronicum, lemon-peel, mace, bergamot, ambergris, red coral, amber, ebony shavings, sapphire, hyacinth stone, sard, garnet, emerald, cinnamon, zurembet, lichen root, cloves, ginger, long pepper, two forms of spica, cardamoms, gold leaf, silver leaf, and musk, all to be powdered and mixed, and kept closely excluded from the air.

The humanist revival of the fourteenth and fifteenth centuries revolutionized the study of medicine. No longer trammelled by servility to Galen, researches were instituted in all branches of knowledge. The line between theory and practice becomes sharply defined in the textbooks, and the former, under the term *Institutiones Medicinae*, becomes the subject of numerous treatises; the latter, under the title *Consilia Medica:* or *Consultationes* also develops a literature of its own. (The examples of these shown were Heurnius's *Institutiones Medicinae*, 1611, and his *Praxis Medicinae*, 1590.) Then anatomy became developed as an independent subject, and separated from the institutes with treatises of its own. (The books shown were Vesalius, 1543; Remmellinus, 1619, and the first edition of Halle, and an early edition of Vicary as the pioneer English works.) At first anatomy included physiology, but afterwards, when the discovery by Harvey of the circulation (1619-1628) had stirred up special and experimental interest in functions, this branch likewise became isolated, Haller's *Primae Lineae Physiologiae*, published at Göttingen in 1747, being the pioneer students' manual. Pathology, at first part of the institutes, became the subject of special treatment in the seventeenth century, the first English book under this title being Charleton's *Exercitationes Pathologicae*, but the most important of the earlier treatises was Morgagni's great folio, *de sedibus et causis morborum*. The microscope was used first in human anatomy by Malpighi, of whose work describing blood corpuscles, Malpighian tufts, and the Malpighian bodies in the spleen the edition shown was published in London in 1669. Hooke's *Micrographia* soon followed, the parent of our handbooks on histology. Thus by the middle of the eighteenth century the student had to hand books on anatomy, physiology, materia medica (not yet chemistry and physics), pathology, systematic therapeutics, nosology, and clinical medicine. (As a specimen of the first English treatise on midwifery Raynold's *Woman's Booke* was shown.) The literature of surgery, at first in classic times inseparable from medicine, appears in the mediaeval times independent. Salicet, Lanfranc, but especially Guy de Chauliac, who wrote in 1363 in the days of Clement VI, were among its principal pioneers. (The exceedingly rare Venice edition, 1490, edited by Thura de Castello, was shown.) His seven sections are on anatomy, on tumours, on wounds, on the algebra and extension and restoration of fractures and dislocations, on surgical sicknesses such as gutta and skin diseases, baldness, ophthalmia, and affections of the nose and mouth, and on antidotes. If his book may be taken as parent of the treatises on the theory of surgery, that of Scultetus deserves to be reckoned as parent of the works on practical surgery. His gruesome pictures have seldom been equalled and never surpassed. Scultetus published his book about 1640. The edition I show is the Dutch edition, with additions of 1693.

The sixteenth to the eighteenth centuries were marvellously prolific in medical books. There were no journals to be safety-valves for the professional *cacoëthes scribendi*, so every man who thought he had a message for his time produced a book. Most, of course, are worthless, the same statements dished up again and again, but grains of wheat can be gleaned here and there in the mountains of chaff; out of these were evolved the textbooks you have now in use, and the development from the eighteenth to the twentieth century is marvellous. They are not yet perfect. When our knowledge is such that from a complete series of general laws, founded on a solid basis of induction, all details can be directly deduced, then will come the millennium of medical literature, but that is a long way off yet.

NOVA ET VETERA.

TOBIAS SMOLLETT AND WILLIAM HUNTER.

For the following interesting communication we are indebted to Mr. Victor G. Plarr, M.A., Librarian of the Royal College of Surgeons of England:

Friday, October 21st, is the anniversary of the death of Tobias Smollett. He died at Pisa in 1771, but had been ill since 1762, when the death of his 15 year old only daughter so distressed him as to give a disastrous impetus to a long-standing disease. He travelled in England and abroad from 1762 onwards, and was assisted by a loan from William Hunter, whose help he craves in the following touching letter. It is without date, but doubtless belongs to the year 1762. We transcribe it exactly. The ship referred to was from Mrs. Smollett's little Jamaican property.

"Dear Hunter,

"I have been hedging & lurching these Six weeks, in expectation of that cursed Ship from Jamaica, which is at last arrived without Letter or Remittance—I do not know whether God will have it that you should endure the Persecution of my wants, without flinching or that I should at length tire you out, & be shaken off at once but certain it is, I am at present in consequence of little Demands which I have put off to the last day of Procrastination, in absolute necessity of eight or ten pieces, without which I can no longer answer the Occasions of my Family. This Declaration is by God himself! like wormwood & Brimstone to me: and were myself alone concerned, I would rather perish than have Recourse to such beggarly sollicitation:—for heaven's Sake, do not look upon me as one of those Sneaking Rascals who can stoop to subsist upon what they can borrow, without shame, Remorse, or purpose of Repayment. I am an unfortunate Dog whose Pride Providence thinks proper to punish with the Tortures of incessant Mortification: & I resent my Lot accordingly, but in the midst of those Littlenesses to which my Destiny drives me I am still with a due Sense of the Predicament in which I stand.

"Yours, &c.
"Ts. Smollett."

To this pathetic, but manly, begging letter the kindly Dr. Hunter replied with a remittance of £50. Smollett replies as follows:

"Dear Sir,

"I am much affected by the last mark of your Friendship which I received the day before I set out on my Journey; & hope you will give me leave to enjoy it in my own way. I have been at Southampton & crossed the Country from the New Forrest to Bath where I am now settled in private Lodgings. My Health was so indifferent during the whole Journey, that I was obliged to get out of Bed every night and Sit two hours untill the Difficulty of Breathing had abated. Since my arrival in Bath I have in spite of a fresh Cold, slept very well, without any Interruption from the Asthma. I drink moderately of the water: ride out every day on the Downs, eat like a horse, & if I could recover a little Flesh I should think myself already cured; but, the Truth is, I am thinner than when I last saw you & begin to be afraid of looking in the Glass of a morning. I believe my breathing so easily is owing to the warmth and moisture of the air at Bath, which seems to be peculiarly adapted to my lungs: yet I can feel a very sensible Effect from the waters. I have no sooner drank a large Glass of them hot from the springs than my Face my Hands & Feet begin to glow; and the Sensation is succeeded by an itching and tingling all over the Surface of my Body, resembling what is called the prickly Heat in the West Indies. I think I can plainly perceive these mineral waters opening up the obstructed Capillaries, & restoring the Perspiration which in the Extremities had been in a great measure lost. I intend in a few days to bathe with a view to open still more effectually the Strainer of the Skin. I beg pardon for taking up so much of your time: but the subject is interesting to

"(Dear Doctor,)
"your much obliged & affectionate
"humble Servt. Ts. Smollett.

"Bath Octr. 2 1762

"My Compts. to our friends, Dr. Macaulay & Pitcairn."

Smollett was not poor, but habitually overlived his income. Yet, though extravagant, he was honourably ashamed of debt. At the foot of the letter is a formal promise to pay the £50 back when required. It is signed by Smollett, whose MS. is very small and neat, and in contrast to William Hunter's endorsement on the verso of the letter, which runs as follows in a bold, clear hand:

"London 13th. May 1766. In case of my death I desire my Executors will not make any demand upon Dr. Smollett, because I sent the money to him as a present, never meaning to take it again. (Signed) William Hunter."

Doubtless this act of generosity has remained unnoticed up to the present. It is pleasant to be able to render honour where honour is due, even at a distance of nearly 140 years. As a matter of fact, Hunter long survived his friend, but his generous intention was no less honourable to him. He seems, indeed, often to have befriended his fellow-countryman, the great surgeon novelist. Smollett, on going abroad in 1763, addresses his patron in a strain of fine sentiment and gratitude, which throws a bright light on the character of one whom many regarded as utterly soured and misanthropic.

"Dear Doctor,

"In case I should not have the Pleasure of taking my Leave of you by word of mouth, I seize this opportunity of thanking you for the manifold Instances of your Friendship which I have received; Instances which I shall ever remember with the strongest emotions of Gratitude, Esteem, & Affection. Should I never return, I hope I shall leave effects sufficient to discharge all the Debts I have contracted. I am now ambitious of nothing so much, as of dying with the Character of an honest man. Such is the Tenderness of my nature enervated by ill Health & misfortune, that I cannot well stand the shock of parting from my best Friends. Pray tell my dear friend Dr. Macaulay that I shall write to him as soon as I arrive at Boulogne. I intended to have left with him a power of Attorney to transact some of my affairs; but his being taken ill prevented me from conferring with him upon that Subject, so that I have left a Power with Mr. Hamilton, and will explain this affair in my Letter to the Doctor. I heartily pray God you may proceed in the Path you are in to wealth and Honour, that you may enjoy every species of Happiness, and continue to do Honour to your Country as well as to your particular Friends, in the number of whom I flatter myself you will admit,

"Dear Sir,
"Your much obliged humble Servt.,
"Jermyn Street, June 14, 1763. Ts. Smollett.

"Dr. Hunter.

"I cannot help expressing an eager Desire that your Brother's future Conduct may entitle him to a revival of those favourable sentiments in you, which he has indiscreetly Forfeited."

The last allusion is to the coolness long existing between John and William Hunter. Four years afterwards Smollett again writes to Dr. William Hunter to tell him that he is "still crawling on the face of the earth," and he goes on to complain bitterly of literary persecutions. While abroad, from 1763 to 1765, he was "a pioneer of the Riviera as a health resort." Living mainly at Nice, the novelist-surgeon made careful meteorological observations, foresaw the great future "that lay before the Cornice Road" (afterwards designed by Napoleon), and discovered "the possibilities of Cannes, then 'a neat village,' as a sanatorium." Laurence Sterne met Smollett, probably in Italy, and gibbets him as "Smelfungus" in the *Sentimental Journey*. He advises the bitter invalid to "confide his grievances to his physician." As we have seen, Smollett did this and much besides.

Medical Students in Austria-Hungary.—Official statistics recently published by the Austrian Ministry of Education show that in the last summer semester the number of matriculated students of medicine in the University of Vienna was 833, of whom 24 were women; in that of Innsbruck, 109; and in that of Graz, 156, of whom 4 were women. In the German University of Prague the students of the Medical Faculty numbered 155, while the Czech University had 302, of whom 2 were women. In the University of Lemberg there were 81 medical students, of whom 11 were women, and in that of Cracow there were 118, of whom 15 were women. In all these Universities, in addition to the matriculated students, there was a considerable number of others attending special courses.

JAMAICA AS A HEALTH RESORT.

[From a Correspondent.]

First Impressions of the Island and its Communications.

The Voyage Out.

The offer of Messrs. Elder, Dempster and Co. to take out a number of physicians to examine into the capabilities of Jamaica as a health resort will serve again to direct the attention of the profession both to its natural advantages and also to the improved means of visiting it in the present day. The story of Columbus crumpling up a piece of paper in his hand and then showing it to Queen Isabella as a description of Jamaica is so good and apposite that it deserves to be historically true even if it be not so. It is indeed a crumpled country of most diversified beauty—hill and valley, beautiful ridge and sheer precipice, rough fissure and romantic glen, the whole enlivened and animated with cascades, streams, and rivers of all sizes and forms. The different altitudes render the climate very diverse, the temperature ranging from 80° to 86° in the plain and on the coast to 40° and 45° on the high mountains, where, indeed, ice has once been found.

How to get invalids to Jamaica has long been a difficult problem. Without going further back than the beginning of the last century, we find that in 1815 Mr. Matthew Gregory Lewis, M.P., better known in English literature as "Monk" Lewis, from the title of his most popular romance, left in his Journal a graphic account of his first visit to Jamaica. He embarked at Gravesend on November 10th, amid the squeaking of pigs, the quacking of ducks, and the screaming of the fowls who were being hoisted on board. The ship was the *Sir Godfrey Webster*, an old East Indian of 600 tons. She proceeded on her voyage three miles and then anchored for the night. The Downs were reached in the afternoon of November 12th, and the ship anchored about four miles off Deal. A westerly gale made the situation dangerous, and it was not until November 15th that the ship could proceed. However, on November 16th she was off the Isle of Wight; on November 17th the author of the story was "sick to death" and his mind "all disgust." On November 18th, or more than a week from starting, the Lizard was passed. Then came more bad weather. The ship rolled, and the passengers rolled with it until they were stopped by the cabin furniture. The captain snuffed out one of the candles, and, both being tied to the table, he could not relight it with the other; so the steward came to do it, when a sudden heel of the ship made him extinguish the second candle, and sent him rolling. Then came the intolerable noise—the cracking of bulkheads, the sawing of ropes, the screeching of the tiller, the trampling of the sailors, the clattering of the crockery—everything above deck and below all in motion at once; chairs, writing desks, books, boxes, bundles, firearms, and fenders flying to one end of the room, and the next moment, as if they had made a mistake, flying back again. Up to November 21st the weather continued intolerable: dead calms by day, violent storms by night. On December 7th matters improved. On December 14th we read of magical effects of sunset, a perfect clearness of atmosphere, and a smooth ocean. On Christmas Eve the ship crawled into the Caribbean Sea, and on December 30th Jamaica was in sight.

It seems needless to say that if a voyage like this had to be undertaken in order to reach Jamaica in the present day few English physicians would be found to recommend it; and it therefore appears desirable to describe rather fully the course of events on board the good ship *Port Royal*, which left Avonmouth for Kingston on September 10th, 1904. The passengers went aboard the previous evening, and by 9 a.m. the ship had got out of the dock and was steaming down the Bristol Channel in brilliant weather. We glided down the coast of Devonshire and Cornwall, passing quite close to Ilfracombe. The last point of English land seen was Lundy Island. The weather was fine and the sun shining most of the afternoon, and the sea quite smooth until we got well into the Atlantic Ocean; then there was a slight swell, but nothing to disturb any one, until at dinner one gentleman had to leave the table. From the time we started (9 a.m.) up to noon the next day we made about 360 knots, and this rate of progress was very nearly an average for the whole voyage. The next day was dull and wet, with some pitching and tossing, which upset several of the passengers of both sexes, who did not appear either at breakfast or lunch. This state of the weather continued for two or three days. For those who, like the writer, were fortunate enough to escape *mal de mer*, the course of events each day was much as follows: Rising at 6 a.m. or even earlier, we watched the sun rise—a magnificent spectacle, especially during the last week of the voyage. We then had a cold sea-water bath, warmed for those who liked it so, and a cup of tea or coffee and a biscuit was brought us by the steward, after which we dressed and paced the deck until 8.30, when breakfast was announced by the sounding of a bugle in all parts of the ship. After breakfast, conversation, smoking, and pacing the decks, or sitting about on lounge chairs, were the means of passing the time until between 11 and 12, when a supply of fruit, bananas, apples, etc., was handed round. We had half a dozen young children on board, and for their benefit a swing was put up, and some of the adults amused themselves swinging them. For the seniors there were games at quoits, cricket, etc., and in the afternoons and evenings chess was played in the smoking room without being more than once or twice upset by the rolling of the vessel. At 1 o'clock a hot luncheon of several courses was served, at 4 o'clock afternoon tea, and at 7 o'clock an excellent dinner. Music and singing in the saloon, and on one occasion on the lower deck, to which the sailors were invited, and in which several of them took part with good effect, helped to break the monotony of existence, so that some of us never really felt the voyage dull, and several towards the end expressed their regret at its approaching conclusion.

The greatest drawback which I personally felt, and of which I heard most complaint from other passengers, was the inability to sleep at night owing to the great heat during the latter part of the voyage. It is, I know, quite impracticable to suppose that a vessel can be constructed which shall be equally capable of protecting from heat in summer and cold in winter, but something might, perhaps, be done in the construction of new vessels to provide a few cabins suitable for invalids, in each of which there shall be an electric fan at work at night, and outside the ventilators of which an extractor or exhauster shall be at work to remove the heated air which has accumulated through the beating of the sun's rays on the sides of the cabins during the day. The thermometer showed on several trials that this amounted to no less than 86° or 87°, and sometimes in the daytime to 90° or 92°. As there is already an installation of electric light in all parts of the ship, the problem of thorough ventilation of the cabins, so necessary to the comfort of invalids, and even of travellers for pleasure, should present little difficulty.

THE SANITATION OF ELEMENTARY SCHOOLS.

The Education Authority for the county borough of Blackburn has issued a report by Dr. Alfred Greenwood, M.O.H., upon the sanitary condition of the public elementary schools in the borough. Although one result of the recent Education Act will be surveys of the schools in many districts, probably no other such detailed account as this will find its way into print. Apart from its usefulness locally, it will be of interest, as showing the futility, from the hygienic standpoint, of school inspection and control as carried out at present by a Government department.

The first chapter, mainly compiled from the rules for planning and fitting up of schools laid down by the Board of Education, recommends certain American standards of 15 sq. ft. floor space and 200 cub. ft. air space as minimum requirements; but these figures were really arrived at by the late Dr. E. Shaw as the largest possible allowance, having regard to the other necessities of the class room.

Chapter II (pp 31 to 334) consists of plans of each school, with detailed notes of "condition of buildings, playgrounds, sanitary conveniences and their measurements. Observations have been recorded also of the internal conditions as to heating, natural and artificial lighting, cloak-room accommodation, walls, floors, etc. Each room has been dealt with separately in respect to floor space, cubic space, ventilation (inlets and outlets), and lighting per scholar." The notes have been systematically taken, although there is much that is vague, and here and there omissions, as on page 121, where "the total lighting area measures 493 square ft., or about one-fifth the floor space," is found, without any reference to the fact shown on the plan that four windows are blocked by a building only 10 ft. off. The special recommendations put forward convey an optimistic impression of the condition of the schools, which antique plans, notes of dark rooms, trough closets flushed once a week, and floors washed once a year, will scarcely confirm. The print teems with such remarks on ventilation as "permanent inlet ventilation 2.6 square in.

per head, permanent outlet ventilation 20 4 square in. per head," and there are references to a desirable proportion between area or inlet and outlet, which, however, is nowhere defined. Ventilation is a subject on which a school hygienist cannot afford to have other than clear views.

Chapter III contains the results of chemical examinations of 107 rooms by the author, and 52 by Dr. Pickard; and Chapter IV has some bacteriological observations. The air was examined by Pettenkofer's test. In a modified form this affords sufficient rapidity for school use, but everything depends on the care with which the samples of air are taken. On December 21st sixteen samples were taken in eight schools. Some of the specimens at least were of doubtful value—for instance, in one school (samples 50 and 51) 4.04 parts of CO_2 (outer air 3.9) were found in a classroom with temperature 59° F., where 47 boys, having 108 cubic ft. air space a head had been working for over an hour; the next eight tests recorded on the same day all ranged between 10 and 20 parts. The author compares his average result with Dr. Pickard's and is satisfied, but if these tests are grouped into the half hours of the school session in which they were taken, the following average results are obtained for the CO_2 present:

Time of Tests ...	9.30	10	10.30	11	11.30
	■	2.30	3	3.30	4
	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Dr. Greenwood ...	11.3	11.■	9.0	11.1	9.43
Dr. Picard	9.3	7.0	8.0	6.8	9.4

There can be no doubt that in any series of observations in naturally-ventilated schoolrooms a progressive deterioration of the atmosphere is demonstrable during each school session, and the complete masking by other circumstances of any such effect in this set of observations throws considerable doubt on their value. Numerous tests of the air in the same rooms at a few minutes' interval and under the ordinary school conditions are necessary to judge the efficacy of ventilation. Single tests in separate rooms are not likely to be very instructive.

So much labour has been expended in acquiring the facts, it is to be regretted that the report has not been digested and classified so that types of buildings, rooms, and sanitary fittings could have been presented and discussed in a systematic way. Few medical officers could have found time to compile such a mass of facts apart from their ordinary work, and in the case of fewer still will these duties allow time for acquiring a working knowledge of the school as an organized machinery which is a necessity for the proper appreciation and setting forth of details in school hygiene.

INDIA IN 1902.

(Continued from page 774.)

NATIVE TROOPS.

SICKNESS rates were low but the death-rate (15.01) was higher than that of 1901 though below the decennial (16.62). Ague, as usual, was the chief cause of admission, and pneumonia and remittent fever of deaths. The Bombay command was the most unhealthy. There was a fall in influenza, and only 26 cases of cholera with 15 deaths occurred. From small-pox there were 75 admissions and 2 deaths. There was a fall both in ague and remittent fever. Some preventive efforts were made in the direction of destroying mosquitos and administering quinine prophylactically, but the operations were casual and inconclusive. The admission and death-rates for enteric fever were 0.4 and 0.10 against 16.7 and 4.29 in European troops. Discordant data are quoted on the subject of the immunity of natives from this disease. Only 4 cases of Malta fever were returned. There were 192 cases of plague with 95 deaths—a substantial increase. The largest number of admissions occurred at Bangalore. In the 3rd Madras Lancers "all the men and followers were inoculated and the regiment moved into camp, which checked the spread of the disease at once." Cerebro-spinal fever gave 28 admissions and 2 deaths. Reference is made to the habitual prevalence of the disease among the civil population of Miran Shah and the neighbourhood. Scurvy continues to cause numerous admissions, the number in 1902 being 302. The admission-rate from tubercle of the lungs rose, but the death-rate fell. The figures were 4.3 and 0.80, against 3.4 and 0.59 in European troops, and 10.0 and 4.9 in gaols. The elimination of the phthisical from the army must be taken into account, but the excess of consumption in prisons is still remarkable. There was an increase in the mortality caused by pneumonia, which is most fatal in Northern India. Dysentery caused more deaths and diarrhoea somewhat fewer. The admission-rate for venereal diseases was 32.8—about one-ninth of the European army ratio. From beri-beri there were 84 admissions—all but one in Madras regiments. The admissions from guinea-worm were 557, against 536 in gaols and none in the European army. "The health of the China garrison was better than in the previous year, that of the Somaliland Expeditionary Force was fair, and that of the Indian Coronation Contingent to England was good.

VACCINATION.

The number of operations performed in 1902-3 was 8,431,564. The vaccine year ends on March 31st, so as to include the whole of the working season and prevent interruption of business by preparing returns. This total represents an advance of 395,120 on 1901-2; and amounts to a rate per 1,000 of successful vaccinations of 33.14, against 31.36. There was an increase in all Provinces, except the Punjab. The percentage of success was 95.10 in primary and 68.20 in secondary operations—a slight advance. Assuming a birth-rate of 40, the proportion of protected children is only 39.15 per cent. The cost of vaccination amounted to Rs.1,165,753, and of each successful case 2 annas and 5 pie, or one pie less than in the previous year. The use of bovine and prepared lymph is on the increase. Experiments by Captain W. F. Harvey, I.M.S., indicate that glycerinated lymph is preferable to lanolinized. In the European army 563 vaccinations were done, and in the native army 10,686.

SANITARY ADMINISTRATION AND WORK.

With the exception of some of the larger towns there is no special sanitary organization in India. Sanitation is a part of the general administration, whether imperial, provincial, or local. Perhaps this is best, seeing that health questions and health work enter so intimately and essentially into the life—political, social, and domestic—of the people. A separate department would probably lead to the alienation from the common interest and energy that which is the concern of all. As a matter of fact, health considerations should dominate all others. Sanitary commissioners and engineers inform and advise the Government, and assist local bodies with their special knowledge, but do not direct. Sanitary Boards are also advisory. Sanitary responsibility rests with governing agencies and local authorities. The sanitary executive employed by the latter is the backbone of sanitation. The system of educating and training a sanitary executive, which has been initiated and carried out in Madras by Lieutenant-Colonel King, is an excellent one, and deserving of general adoption. Judged by the number of meetings held during the year, the sanitary Boards do not appear to have manifested any great activity during the year, but important work relative to sanitary projects seems to have been done by correspondence. The municipalities and district authorities have, as far as the information conveyed by the report indicates, devoted a fair share of their very considerable revenues to sanitary objects—water supply, drainage, conservancy, and cleansing. As regards special sanitary investigations the report does not supply much information, but there are indications that this essential element of health business is not altogether neglected.

MISCELLANEOUS.

The chapter entitled "General Remarks" is unusually interesting. Details are given regarding the Red Sea pilgrim traffic, which show that the precautions adopted to safeguard pilgrims to Mecca were elaborate and effectual. The medical and sanitary arrangements connected with the great Delhi Durbar were well devised and sufficient to meet the needs of the gathering. Plague was practically excluded from the large and motley and very inflammable assemblage. The important experiments undertaken at Mian Mir for the prevention of malaria are described at length. Their failure and the causes thereof formed a prominent subject of discussion in the Tropical Section at the recent Oxford meeting. The need of more searching and discriminating inquiry regarding the existence of Mediterranean fever in India is urged. A long dissertation—historical and descriptive—is given regarding trypanosomiasis and the facts recently elicited concerning the Leishman parasite are set forth in detail. Both these subjects were also elaborately handled at the Oxford meeting. Major Semple's excellent work at the Pasteur Institute at Kasauli is recorded. The institution is engaged not only in antirabic treatment, but also in general bacteriological work and the preparation of vaccines against typhoid, snake-bite, anthrax and diphtheria.

VISIT OF FRENCH PHYSICIANS AND SURGEONS TO LONDON.

The following is a final list of subscriptions to the fund for entertaining the French physicians and surgeons during their recent visit to London:

	Subscriptions. £ s. d.	Further Guarantees. £ s. d.
Dr. T. Henry Green ...	2 2 0	—
Dr. Mark ...	2 2 0	—
Mr. Astley Bloxam ...	2 2 0	—
Dr. R. A. Gibbons ...	2 2 0	—
Dr. Norman Moore ...	2 2 0	—
Dr. John Malcolm ...	2 2 0	1 1 0
Mr. Harrison Cripps ...	2 2 0	—
Sir Alfred Garrod ...	2 2 0	—
Dr. F. J. Smith ...	2 2 0	—
Mr. Macleod Yearsley ...	2 2 0	—
Dr. Ligertwood ...	2 2 0	—
Mr. Frederic Eve ...	2 2 0	2 2 0
Dr. J. Anderson ...	2 2 0	—
Mr. Battle ...	2 2 0	—
Mr. W. A. Meredith ...	2 2 0	3 3 0
Dr. Sidney Martin ...	2 2 0	—
Dr. Samuel West ...	2 2 0	—
Mr. Noble Smith ...	2 2 0	2 2 0
Mr. Raymond Johnson ...	2 2 0	—
Dr. Pye-Smith ...	2 2 0	3 3 0
Dr. Mitchell Bruce ...	5 5 0	—
Dr. McCann	2 2 0	—
Mr. Edgcombe Venning ...	2 2 0	—
Mr Stephen Paget ...	2 2 0	—
Dr. Galabin	2 2 0	—
Dr. Arthur Saunders ...	2 2 0	—
Dr. James Galloway ...	2 2 0	1 1 0
Dr. Murray Leslie ...	2 2 0	—
Mr. Bokenham ...	2 2 0	—
Dr. Steele Perkins ...	1 1 0	—
Dr. Tanner	2 2 0	—
Dr. Page May ...	2 2 0	—
Mr. Ernest Clarke ...	2 2 0	—
Mr. Ernest Lane ...	2 2 0	—
Dr. Baker	2 2 0	—
Dr. Nestor Tirard ...	2 2 0	—
Dr. Caton	2 2 0	—
Dr. Bunch	2 2 0	—
Dr. Payne	—	2 2 0
Dr. James Collier ...	2 2 0	—
Dr. Risien Russell ...	2 2 0	—
Dr. William Hill ...	2 2 0	—
Dr. Newton Pitt ...	2 2 0	—
Dr. Macleod	2 2 0	—
Dr. Morley Fletcher ...	2 2 0	—
Dr. Broadbent ...	2 2 0	—
Dr. Walter Broadbent ...	2 2 0	—
Dr. E. A. Roberts ...	2 2 0	—
Dr. Bryant	2 2 0	—
Dr. Kingston Fowler ...	2 2 0	—
Dr. Howard Tooth ...	2 2 0	—
Mr. Alfred Willett ...	2 2 0	—

THE HOLMAN TESTIMONIAL FUND.

The Treasurer acknowledges the following further and final subscriptions:

	£ s. d.		£ s. d.
J. Rand, F.R.C.S. (additional)	1 1 0	R. H. Kinsey, Esq.	1 1 0
G. Laurence Read, Esq. ...	1 1 0	G. P. Field, Esq.	2 2 0
W. Wilson, M.B., C.M. ...	2 2 0	Sir Stephen Mackenzie, M.D.	1 1 0

THE MIDWIVES ACT.

Payment of Medical Practitioners Summoned by Midwife.

We are requested to state that the Medical Guild, Manchester, at its last quarterly meeting, adopted the following resolution:

That when medical practitioners chose to attend confinements at the request of midwives, the minimum fee charged should be a guinea, to be paid at the time when possible. This should be carried out for the present as a tentative arrangement till fresh legislation, dealing with medical fees, has been brought forward.

THE PLAGUE.

Prevalence of the Disease.

India.

The plague returns for the weeks ending September 10th, 17th, and 24th show the deaths from the disease to amount to 11,791, 10,671, and 11,866 respectively. The principal centres of the plague and the death returns were as follows: Bombay, 57, 58, and 78; Bombay Districts, 6,518, 5,995, and 6,916; Bengal Districts, 500, 934, and 302; North-West Provinces and Oudh, 874, 943, and 648; Punjab, 102, 125, and 113; Central Provinces and Berar, 345, 715, and 480; Hyderabad State, 397, 997, and 486. Madras Districts, 736, 365, and 537. Although plague is increasing in India the returns are more favourable than during the corresponding weeks in 1903, when, during the second week of September, the deaths from plague numbered nearly 14,000.

South Africa.

Port Elizabeth.—During the weeks ending September 10th, 17th, and 24th, the plague returns in Port Elizabeth were as follows: Fresh cases, 2, 3, and 0; deaths from the disease, 1, 0, and 0; on September 24th 5 cases remained under treatment. In Port Elizabeth and East London plague-infected rats and mice continue to be found.

Mauritius.

During the weeks ending September 29th, October 6th and 13th, the fresh cases of plague in Mauritius numbered 14, 29, and 45; the deaths from the disease 9, 27, and 36 respectively.

Newcastle-on-Tyne.

On September 20th a sailor suffering from plague was removed from the ss. *Bishopgate*, lying in the Tyne. The ship had brought a cargo of wheat, maize, and bran from Rosario in the Argentine to Hamburg. On arrival in Hamburg on August 29th no one on board had plague, but the rats were found infected. The crew were discharged, a fresh crew engaged, the ship fumigated and cleaned. On arrival on the Tyne on September 20th one man was found suffering from plague, from which he is recovering. No other cases occurred on board ship.

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 80.

The Medical Profession and Club Practice.

According to a report in the *Yorkshire Post* of October 12th, the Grand Master of the Manchester Unity of Oddfellows in the course of an address at the Co-operative Hall, Barnsley, on the subject of medical aid for Friendly Societies, said that he was not using too strong a word when he said a conspiracy was at work to do away with the present system of club practice by medical men. For proof of this he referred to the Medical Acts Amendment Bill drafted by the British Medical Association, in which it was sought to make it infamous conduct on the part of a medical man if he accepted a club appointment. It is a pity the Grand Master did not study the Bill he professed to criticize a little more carefully before making such absurd statements. But the animus he displays suggests, if he has read the Bill at all, a consciousness that certain kinds of unprofessional conduct are very apt to occur in club practice. If this be so—we do not say that it is—it would be much better both for the medical officers and Friendly Societies that club practice should be abolished. On the whole, it is more probable that the Grand Master, like some other Friendly Society leaders, has not taken the trouble to study his subject.

THE PREVENTION OF CONSUMPTION.

Cumberland.

Opening of the Blencathra Sanatorium.

The Cumberland Sanatorium for Consumptives, at Blencathra, was formally opened recently by the Countess of Lonsdale, in the presence of a large gathering of people from all parts of the county. Sir William Broadbent, Chairman of the National Association for the Prevention of Consumption, was present, the institution having been founded by the county branch of the Association. The sanatorium, which provides accommodation for 20 patients (10 male and 10 female), is situated on the southern slope of Blencathra, about 900 ft. above the sea level and overlooking the Vale of St. John's, the Naddle Valley, and the mountains enclosing them. Each patient will have a separate cubicle, and the arrangements of the whole of the sanatorium have been carefully thought out and admirably executed. An address was read by the Rev. Canon Rawnsley, Chairman of the Committee, in the course of which reference was made to the assistance which had been given by Dr. Bird as Secretary of the Committee, and to the influence of Dr. Lockie, of Carlisle. Lady Lonsdale returned thanks and declared the building—on which there is still a debt of £2,000—open.

Sir William Broadbent then delivered an address, in which he referred to the work being carried out throughout the country by the National Association and its numerous branches, and pointed out the great advantages of a sanatorium not only as a curative establishment, but as an educational centre. The proceedings terminated with the customary votes of thanks.

It is expected that patients will be admitted before the end of the month, when the furnishing will be completed and the Resident Medical Officer (Dr. Goodchild) will have taken up residence in the sanatorium.

PAISLEY BRANCH OF THE NATIONAL ASSOCIATION.

A Branch of the National Association for the Prevention of Consumption was formed in Paisley in 1899, and has been doing good work in spreading information regarding the disease and its prevention. It was early decided to erect a sanatorium for the district, but great difficulty was found in securing any suitable site. Ultimately it was decided to approach the Quarrier Trustees to arrange, if practicable, for the accommodation of Paisley patients at the Bridge of Weir Homes, which are within quite a reasonable distance of the town. Such arrangements have now been satisfactorily made, and on October 15th the opening ceremony took place. One of the houses at Quarrier's Homes, known as "Hebron," has been placed at the disposal of the Association, who have now, at a cost of £1,000, altered and furnished it to meet the requirements of the open-air system of treating consumptives. This house will be used for male patients, and will accommodate 12, besides a nurse and attendants. In addition, the Association has arranged to have the first call on 12 beds in the existing female sanatorium at Bridge of Weir. The opening ceremony was performed by Sir Thomas Glen-Coats, of Paisley, and the Association is to be congratulated on the success that has now attended its efforts to provide a sanatorium.

CONSUMPTION IN THE ISLAND OF LEWIS.

A Sanatorium Needed.

An urgent appeal for funds to establish and endow a sanatorium for consumptives in the Island of Lewis has been issued by the Stornoway Parish Council, and is earnestly supported by the medical officer of health for the Lewis district, Dr. Charles M. Macrae. It appears that, though for a lengthened period the island enjoyed almost total immunity from consumption, the disease has of late years extended to the Lewis, and the death-rate has alarmingly increased. The conditions of life of the islanders tend to favour the spread and progress of the disease, whilst their poverty entirely prevents their going further afield for treatment, and local resources are quite inadequate to cope with the distress. Dr. Macrae expresses his opinion that a sanatorium of 30 beds is urgently needed, the cost of which is estimated at about £6,000, whilst an endowment fund of from £20,000 to £25,000 will also be required to ensure, with local effort, efficient maintenance and management. Subscriptions will be received by the National Bank of Scotland, Limited, and the British Linen Company Bank at their London officers. We commend this appeal especially to those who seek their holidays or their sport in the Western Highlands and Islands.

MEDICAL NEWS.

A new hospital, erected at the cost of £5,000, was opened at Crewkerne by Sir Frederick Treves on October 18th.

THE crematorium erected by the Corporation of the City of London at the City of London Cemetery, Little Ilford, Essex, will be opened on Tuesday next by Mr. W. J. Downes, Chairman of the Sanitary Committee.

NATIONAL DENTAL HOSPITAL.—The annual dinner of the past and present students will be held at the Trocadero Restaurant on Saturday, November 19th. The chair will be taken by Mr. Andrew Clark, D.Sc., F.R.C.S.

SUCCESSFUL VACCINATION.—Dr. J. Chestnutt, B.A., of Howden, East Yorkshire, has, for the third time, been awarded the special grant for efficient and satisfactory vaccination in his district.

PRESENTATION.—Dr. William Cox, of Winchcombe, Gloucestershire, who has given his services to the parish church as honorary choirmaster and organist for thirty-two years, has recently been presented by the congregation with a life-size painting of himself by Josiah Rushton, together with a tea service and salver in massive silver.

PSYCHOLOGICAL MEDICINE IN ITALY.—The Italian Phreniatric Society is holding its twelfth Congress at Genoa this week (October 18th to 22nd). The questions on the programme of discussions are as follows: (1) The anatomy and physiology of the extracellular and endocellular paths of nervous conduction; (2) the present conception of the diseases of the spinal cord; (3) psychoses in relation to physiological phases of life (puberty, menopause, senility); (4) the position of the alienist in regard to the law with reference to cases of civil capacity.

THE London companies of the Royal Army Medical Corps Volunteers will attend divine service at St. Bartholomew the Great, West Smithfield, on Sunday, October 30th, when a sermon will be preached by the Rev. Sir Borradaile Savory, Bart., Rector of the Church and acting Chaplain of the companies.

WE are informed that the Awards Committee of the St. Louis Exhibition has conferred upon the Wellcome Chemical Research Laboratories a grand prize and three gold medals, in recognition of the importance and educational value of the chemical and pharmacognostical researches conducted under the direction of Dr. Frederick B. Power.

THE annual dinner of the Bristol Medical School will be held on Friday, October 28th, at 7.30 p.m. at the Royal Hotel, Bristol. Dr. Lionel A. Weatherly will preside, and Sir William S. Church, President of the Royal College of Physicians, will be the guest of the evening. The prizes will be distributed in the Lecture Hall, University College, on the same afternoon.

POST-GRADUATION STUDY IN EDINBURGH.—In the article on Post-graduation Study which appeared in the BRITISH MEDICAL JOURNAL of September 3rd (Educational Number), under the head of "Edinburgh," the name of Dr. J. Malcolm Farquharson was accidentally omitted from the list of teachers. Dr. Farquharson is a recognized Lecturer on Diseases of the Ear, Nose, and Throat at the School of Medicine of the Royal Colleges of Edinburgh (New School), and Surgeon to the Throat Department of the Cambridge Street Infirmary, where he has classes for post-graduates.

THE Bristol Medico-Chirurgical Society held the first meeting of its winter session on October 12th, when Dr. Reginald Eager succeeded Mr. Paul Bush as President, and Mr. H. F. Mole was re-elected Honorary Secretary. The new president gave an address upon the difficulties and responsibilities connected with the certification of insanity: he advocated the treatment of early cases in suitable lunacy hospitals, a plan which might render existing methods of certification superfluous.

FEMALE MEDICAL STUDENTS IN SWITZERLAND.—Switzerland has always been a favourite resort for women ambitious, in the words of Molière's graduation ceremony, *entrare in nostro docto corpore*. They appear, indeed, to be thrusting aside the oppressor, man, who so long excluded them from what he fondly believed to be his heritage. According to recently-published statistics, in the winter semester, 1903-4, of a total number of 1,654 medical students in the Swiss universities, 891 were women and 763 men. There is a large number of foreigners, mostly Russians, among the female students.

ENTRANCE SCHOLARSHIPS: WESTMINSTER HOSPITAL MEDICAL SCHOOL.—The examinations for entrance scholarships at this school have resulted as follows: Epsom Scholarship of 110 guineas, Mr. H. F. R. Davison; Universities Scholarship of 40 guineas, Mr. R. W. Ironside; Natural Science Scholarship of 60 guineas, Mr. H. S. Hingston; Governors' Scholarship of 40 guineas, Mr. W. R. Asplen; First Scholarship in Arts of 60 guineas, Mr. C. G. Richardson; Second Scholarship in Arts of 30 guineas, Mr. H. Evans; Science Scholarship of 40 guineas, Mr. A. O. Mitchell.

ITALIAN CONGRESS ON CHILDREN'S DISEASES.—The fifth Italian Paediatric Congress will be held in Rome on October 28th to 31st. Two subjects are proposed for discussion, namely, infantile tuberculosis and anaemia in infants. The other work of the congress is divided into the following sections: (1) Acute and (2) chronic toxic infections; (3) milk and suckling; (4) digestion and diseases of the digestive canal; diseases of (*a*) the respiratory, (*b*) circulatory, and (*c*) genito-urinary apparatus; diseases of the nervous system; hygiene and therapeutics; general and orthopaedic surgery.

CONGRESS OF FRENCH SCIENTIFIC SOCIETIES.—The next congress of French scientific societies will be held at Algiers in 1905. The following are the questions proposed for discussion in the Section of Medicine: Tuberculosis and the means of diminishing contagion; sanatoriums at high altitudes and by the seaside; hygiene of hot countries; methods of disinfection against contagious diseases and the results obtained in towns, in rural districts, and in institutions where the disinfection of dwellings and living rooms is practised: the conveyance of water to towns; the different forms of plague and its propagation; the part played by insects in the dissemination of disease; the prophylaxis of malaria in Northern Africa; trypanosomiasis in Algeria.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1904.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, OCTOBER 22ND, 1904.

HOSPITAL REFORM.

For many years past the title Hospital Abuse has appeared with great frequency in the columns of the British Medical Journal and in those of our medical contemporaries. There is now reason to hope that it may in future be replaced by the title at the head of this article. The Hospitals Committee of the British Medical Association during the past year has made inquiries as to the administrative methods of many hospitals in Great Britain, and has received much valuable information. After full consideration of all the information available, the Committee drew up a series of principles for the administration of in-patient and out-patient departments, which might form the basis for a conference with representatives of the lay administration of hospitals. The report and the recommendations which it contained were approved by the Council and by the Annual Representative Meeting, and the Committee accordingly at its meeting on October 13th resolved to take steps to bring about such a conference.

The principles laid down by the Committee were printed in full in the Supplement of the British Medical Journal of July 16th, 1904, p. 50. They are twelve in number, and those of most importance stand first. Thus the first two propositions are that poverty and sickness shall be the consideration for admission of patients for hospital treatment, and that no payment for such treatment shall be exacted from any patient, though voluntary offerings from them may be accepted. From the fundamental principle embodied in these two propositions there follow two corollaries, first, that the production of subscribers' letters shall cease to be compulsory—a reform already carried out in many hospitals—and that where possible they shall be abolished altogether. The second corollary is that every hospital should have some means of investigating the circumstances of applicants for relief. These principles apply to both in-patients and out-patients. Two other principles apply more especially to in-patients. The first is that all cases of serious accident and severe sudden illness shall be attended to on their first application, and if ineligible for admission to a hospital referred for treatment elsewhere.

In the case of every patient applying for admission to a hospital, evidence must be produced that the patient is not in a position to pay for treatment, and that he is a suitable case for hospital treatment. With regard to out-patients it is recommended that all cases of trifling accident or illness deemed ineligible for the out-patient department shall, after being once attended, be referred for treatment elsewhere.

Other recommendations are made, but they are of relatively minor importance, and we have no doubt that if the proposed conference can be arranged, attention will in the first place be concentrated on the points enumerated above. There is, we think, good reason to believe that the present moment is particularly opportune for a frank discussion of questions of this order with laymen of experience in hospital administration, who will be competent to represent the interests of subscribers.

THE REPORT OF THE COMMISSIONERS IN LUNACY AND THE CAUSATION OF INSANITY.

That "facts are chiels that winna ding, and downa be disputed," is so obvious a truism that, in all probability, even fervent Burnsites take little satisfaction in this doggerel platitude. There is nothing greater than a fact, and there is certainly no body of men at once so reverent of fact, so cautious in their approach to, and so tenacious in their grip of it, as men of science. Now, there are no books more frequently quoted in support of any given contention, involving more important issues, than Blue Books. These are supposed to embody facts, and are, in the public eye, impressed with an unimpugnable authority. But "No statement we can possibly make can possibly be a *fact*—at the most, it may be *true* of the fact—and to forget this is to commit the most serious of philosophic crimes—namely, that of hypostasizing abstractions."[1] This truth holds good of Blue Books as of all other statements, and in none are the facts represented without some alloy introduced by the observer.

On September 19th we printed an abstract of the last Report of the Commissioners in Lunacy, and to this it seems desirable to make more extended reference. The reports of the Commissioners are based on the returns made to their office by the medical superintendents of asylums throughout England and Wales. These returns are prepared by the medical superintendents and their assistant medical officers, according to the statistical tables of the Medico-Psychological Association of Great Britain, and inasmuch as the results of their inquiries are quoted freely in all current textbooks, and may have, further, an important influence on lunacy legislation, some criticisms of the methods employed may not be inopportune.

The growth of insanity in this and other European countries is so considerable and so steadily progressive that all eyes are fixed upon it in apprehension, and its causation eagerly discussed. All manner of theories have been put forward in explanation, and the increase has been attributed to the most varied agencies, including increasing civilization, poverty, alcoholic intemperance, sexual excess, and even the undue mental strain of modern popular education. The apologists of some of these tenets seek for support in the statistical tables of the Commissioners' Reports on the assigned causes of insanity (Appendix A, Table XXII) which are themselves derived from information supplied by the medical officers of asylums in their statistical tables. In the table of probable and assigned causes (Table X of the Medico-Psychological Association) the medical officer is required to set forth the various so-called moral and physical factors, domestic trouble, religious excitement, intemperance, over-exertion, heredity, various somatic diseases, etc., which in his opinion have given rise to the insanities. Even were it a proved fact—which it is

[1] Schiller, F.C.S. *Riddles of the Sphin*.

not—that the growth or fluctuation of insanity could be causally tied to corresponding changes in the factors of this list, the difficulties in the way of ascertaining the facts are so enormous that deductions from results so obtained must be not only inaccurate but misleading. On the one hand, the information supplied by the patients or their friends is so imperfect, either through ignorance, mental defect or unwillingness to disclose damaging facts, that it is to be doubted whether the results bear even a proximate resemblance to the truth; and on the other hand, the successful prosecution of even part of this inquiry would necessitate on the part of the investigator so much tact, patience, and that still rarer gift of being able to divest the mind of every preconception and bias, that no uniformity of results is possible. "Men of this stamp," says Dr. W. R. Watson,[2] himself a medical superintendent, "are hard to find, and without disrespect to an estimable body of men, one may doubt if many medical officers of asylums even approach the standard." Turning to internal evidence, the reports of the various asylums show the widest divergencies under this heading. In some the "moral" causes take the most important place, in others they practically disappear: in some reports alcoholic intemperance appears as the cause of insanity in percentages of the admissions as low as 8, and in others as high as nearly 50, extreme differences often emanating from equally hard drinking districts; and the etiological significance of syphilis appears, generally speaking, to have no relation to the numbers of general paralytics admitted. We would lay stress on this last point, because it must be generally admitted that syphilis plays a most important part in the causation of this disease. The statistics of eminent authorities vary within fairly wide limits—Goldstein, Binswanger, Ziehen, Rieger, and others, observing certain syphilis in 40 per cent.: Mendel in 75 per cent.; and Hirschl, using Krafft-Ebing's material, in 56 per cent., with a further 25 per cent. of probable syphilis. The same average percentages are found by neurologists of repute in England, and it is therefore somewhat surprising to encounter in some one report the admission of forty-four general paralytics, and to find syphilis mentioned as the cause of insanity in only one case, in another fifteen general paralytics and no mention of veneral disease, and so on. In this connexion we remember to have seen quite different results obtained in the histories of the same series of tabetic patients by two observers, one of whom asked, "Have you had syphilis?" and the other, "When did you have syphilis?" The fact is that no statistical table, which leaves so much room for the introduction of the personal element as this, can yield satisfactory results, and must, so far as it affects current opinion, be harmful.

The question of the cause of insanity is not to be settled by any such haphazard methods, and the substitution for this table of tables setting out the various bodily lesions and stigmata met with both in the admissions and resident patients, and arranged under the forms of mental disorder, would enhance the value of these reports. In the words of Dr. John Macpherson,[3] quoted by Dr. Watson in his report, "It may be impossible in the present state of our knowledge to fully explain the comparative prevalence of insanity, or of any similar constitutional disease in a community, but it is possible to divert public attention from vague and speculative theories founded upon erroneous conceptions of a moral and physical character to the more scientific and more profitable channel of biological inquiry." There are one or two other points in connexion with these reports which are similarly open to question, but these we must leave for future consideration.

[2] W. R. Watson. Hawkhead Asylum Report. 1904.
[3] J. Macpherson, Commissioner in Lunacy for Scotland: Insanity in Relation to Fertility.

THE POOR DEMENT IN IRELAND.

FOR years past the reports of the Irish Commissioners of Lunacy have been anything but pleasant reading for those interested in the prosperity of the country. They have been invariably records of increasing insanity amongst a dwindling population, and their report for the year 1903 is no exception. They again record an increase in the admission to asylums, and that the increase is greater than before.

We find from the census returns that while in 1851 the total number returned as of unsound mind in Ireland, just then recovering from the economic crisis of the famine and with a population nearly double what it is now, was 10,000 persons, in 1901 it was 25,000. In 1851 there was only one dement to every 1,300 people; in 1901 there were five times as many. The cost has, of course, kept pace with the increase in numbers, and now amounts to more than half a million annually—a terrible tax on a poor country like Ireland.

Many minds have tried to solve the problem of the enormous increase of insanity. The medical superintendent of the County Wexford Asylum points out that in that county, where the ratio of insane under restraint is 1 in 192 of the general population, the drink bill amounts to £400,000 a year, and that the cost of the alcohol consumed in that county in fourteen days would support the asylum for a year. There seems little doubt that the excessive consumption of alcohol amongst a poorly-fed population is an important factor in the causation of insanity, but the craving for alcohol and other stimulants is rightly regarded as a symptom of cerebral deterioration.

When the social condition of the mass of the Irish peasantry is remembered there cannot be much difficulty in accounting for the great increase of mental disease. The country has for half a century been drained of the young and vigorous at the rate of 40,000 a year, and instead of the early marriages formerly the rule late marriages are now most common.

The chief cause of the growth of insanity in Ireland seems to be simply decadence. The statistics of either the Census Commissioners or the Lunacy Commissioners afford no clear proof of that mental and physical deterioration of the population of rural Ireland which those who have been in close contact with the people for years past believe to be taking place. They hold that the economic conditions cannot be altered, that emigration cannot be checked, and that the conditions of life are so wretched amongst the masses that the wonder is emigration is not doubled. The prospects of the small agriculturist grow worse year by year, and unfortunately in Ireland the struggle for existence has not the stimulating effect it has had elsewhere.

If this contention be correct, we think it behoves those charged with the cure of the insane and the provision of funds for their maintenance to consider whether means cannot be found to lessen a burden on the poverty-stricken ratepayers which seems likely to increase year by year.

Dr. Conolly Norman, the able Medical Superintendent

of the largest asylum in Ireland, has been advocating for some time past the home care of the milder cases of chronic mania. He broached the matter publicly some months ago at a meeting of asylum managers, and again made out a strong case for it at a conference of the Irish Workhouse Reform Association. Large numbers of mentally-affected inmates of asylums and workhouses are but little more demented than many who are nominally sane and are earning their living amongst the general population, and we trust that red tape will not strangle a movement which would not alone relieve the burden of taxation, but be a real benefit to the mentally-afflicted poor by placing them in social conditions far more conducive to the amelioration of their malady than either asylum or workhouse treatment can ever afford. If home treatment has been successful, not alone in France, Germany, and Belgium, but also in Scotland, why should it not be allowed a trial in Ireland, whose taxpayers can so ill afford the funds for the extension of their overcrowded asylums?

THE LATE PROFESSOR FINSEN.

It has already been announced in the British Medical Journal that a Committee has been formed at Copenhagen to collect funds for the erection of a monument in memory of the late Professor Finsen. Elsewhere we publish a letter from Mr. Malcolm Morris, whose name has from the first been prominently associated with the light treatment in this country, and who doubtless on that account has been asked by the Danish Committee to bring the proposal before the British public, professional and lay. The sound maxim that medicine has no frontiers has lately received very gratifying illustration here, and the proposal referred to by Mr. Morris affords us an opportunity of giving the sentiment further practical expression. Whether Professor Finsen's work will prove in itself a *monumentum ære perennius*, or whether it is destined, like so much else in the domain of scientific research, to be superseded by something better, his name will always be enshrined in the Valhalla of medicine as that of a man who gave his whole life with absolute singleness of purpose to the service of mankind, with the full knowledge that he was doomed to an early death, and therefore could not hope to enjoy any reward either in fame or in wealth. In spite of hindrances that would have discouraged most men, he laboured unselfishly to the end in the development of a method of treatment which has been the means of bringing relief to a large number of sufferers from a loathsome disease. Professor Finsen's discoveries have benefited many British patients and have attracted the sympathetic interest of our Sovereign and his gracious Consort, who have always shown themselves active in the furtherance of all that makes for the lessening of disease and the betterment of the condition of their people. We have no hesitation, therefore, in giving hearty support to Mr. Morris's appeal to the medical profession and to the public for help to do honour to the memory of a man who, as the pioneer in a new path of discovery which may lead to a land of promise yet undreamt of, deserved well of the human race.

HARVEY AND ALEXANDER REID.

At the twenty-third annual general meeting of the Fifeshire Medical Association, held at St. Andrews on October 7th, the business to be transacted in the way of accounts and elections was pleasantly sandwiched between two addresses given by Professor Musgrove (the President) and Professor Harris respectively. The former chose as a subject the topographical anatomy of the thorax and abdomen, illustrating his remarks by some models prepared by the late Professor His of Leipzig. The speaker, after paying a graceful tribute to the memory of the latter, stated that the beauty of the models seemed to him to prove that His's original method of preparing bodies by the injection of chromic acid was capable of favourable comparison with the formalin treatment now in use. Professor Harris took as his text a *Manual of Anatomy*, by Alexander Reid. The duodecimo volume which he showed was printed in 1638 and bore the initials "C. R." Professor Harris thought that these very probably represented Carolus Rex, and that the volume was a presentation copy accepted from the author by Charles I. That monarch, as is well known, took a great interest in science, and an oil painting of which engravings are fairly common shows him watching a demonstration by Harvey of the valves of the heart. As a matter of historical interest Professor Harris pointed out that although it was printed several years after the date of Harvey's discoveries, Reid's book still put forward the ancient Galenical ideas about the circulation. It may be suggested, however, that this was much less probably due to ignorance than to obstinacy. Reid, whose name is spelt in a great variety of ways, was a "dour" man, fully entitled by his position to form his own opinions, and exceedingly likely to adhere to them. In no way in advance of the times, he was yet in his own day quite as notable a person as Harvey; a successful and wealthy practitioner, a good lecturer, a writer of many books, chiefly on anatomy and surgery, he was held in as high esteem by the learned bodies of the time as he was by his fashionable patients. A Kincardineshire man and an Aberdeen graduate, Reid, after spending some years in France, settled down in North Wales, and practised there until 1618, when he moved to London, probably at the instance of Lord Gerard, who had had occasion to observe his skill. He died in 1641, having in the meantime mounted very rapidly, and having, moreover, been admitted as a Fellow by the College of Physicians, as a foreign brother by the Barber-Surgeons, and as a graduate *ad eundem* by the Universities of Oxford and Cambridge. His *Manual of Anatomy*, which is a digest of his lectures at the Barber-Surgeons' Hall, was first published in 1634.

CHRONIC *X*-RAY DERMATITIS.

The lay press has recently published a number of paragraphs on the evil effects of the *x* rays on the skin of those constantly manipulating them. A press cablegram relating to the death of Mr. Edison's assistant set the ball rolling. The fact is, as has already been pointed out in the columns of the British Medical Journal on various occasions, that the *x* rays may lead to complications when applied without due supervision and a full knowledge of the diseased condition which is under treatment. In this way burns have been produced, giving rise sometimes to ulceration of an extremely obstinate and special type, peculiarly irresponsive to the usual methods of treatment. In others, ugly scarring and telangiectases have resulted. Epithelioma following *x*-ray ulceration, and necrosis of the tibia after *x*-ray exposures have been recorded. It is needless to emphasize the necessity of dealing with every case on its merits, some individuals exhibiting less resistance to the rays, or a constitutional proneness to be injuriously affected by them, just as is the case with drugs and foods. As to *x*-ray operators and radiographers themselves, in the early days of the discovery, slight troubles about the hands were disregarded, and men continued to employ the new therapeutic agent daily, without taking means to protect themselves. But a time came when their attention had to be directed to the morbid conditions, especially of the hands, which developed. Dr. J. Hall-Edwards has so recently dealt with the subject in the Journal of October 15th, p. 993, with illustrations representing the state of his own hands, that it is not necessary to go into minute details here. But in view of the statements that have appeared from day to day in the Press, it is important to refer in this place specially to the question of cancer. There is no doubt that the warty and corn-like growths (keratoses), which form about the affected parts, as a result of the chronic dermatitis and of continued exposure to the *x* rays, may develop into epithelioma. It is certainly stated that skin cancer, necessitating amputation, supervened in the case of a medical radiographer now deceased. As to Mr. Edison's late assistant, there is no *a priori* reason

for doubting the possibility of cancer having developed in his case, and having led to the necessity for amputation. It is unfortunate that in the hurry to be firstwith news sensational statements are made before alleged facts can be examined in a calm and philosophical way. The case will receive the attention of the medical profession in the United States, and we shall soon be in possession of the real facts concerning it. The sensational paragraphs will have done some good, however, if they call the attention of those engaged in *x*-ray work to a real danger to themselves, for there is not the slightest doubt about the agony experienced by those suffering from chronic *x*-ray dermatitis at a certain stage of the disease. They may also, for a time at least, serve to warn the public against submitting to *x*-ray treatment except under direct medical supervision.

INTERNATIONAL OPHTHALMOLOGICAL CONGRESS AT LUCERNE.

This Congress was held at Lucerne last month. First of all it must be said that from a social point of view the meeting was a great success, and the municipal authorities combined with the medical faculty to give the visitors a right republican welcome. The festivities commenced with a reception at the Hôtel National, when the members of the Congress were welcomed by the Mayor and Corporation, and entertained to supper. On September 15th, after the morning session, the members assembled in great force at the Hôtel Schweitzerhof, and did ample justice to a *déjeuner*, and on the afternoon of the next day, Friday, September 16th, the members of the Congress and their families were entertained by the Corporation of Lucerne to a delightful afternoon's excursion on the lake. The Congress was brought to a brilliant termination in the evening by a display of fireworks and illumination of the principal buildings of the town. Passing to the scientific aspect of the Congress, it cannot be said that the meeting was so satisfactory. It may be that there is a dearth of fresh discovery and of original work in ophthalmology at the present time; but certainly justice was not done to several excellent papers, and much time was wasted over two subjects which the Committee had reserved for general discussion. Both were of a highly-controversial nature: (1) The relative value of a damaged eye, regarded mainly from an insurance point of view: and (2) the notification of visual acuity. No definite issue could be reached in either discussion on account of the diversity of aspects from which representatives of various nations regarded these questions, and in each case a committee of experts, consisting of one or more representatives from each country, was formed to collect evidence and report at the next Congress four years hence. These committees will have a difficult task, and it is hard to see how they can perform effective work when the members are scattered over the face of the globe. Three morning sessions of three hours apiece were held, and one afternoon session of three hours utilized for demonstrations with lantern slides, diagrams, etc. Two of the three morning sessions were almost completely occupied by the discussions above mentioned, so that a very insufficient time was left for the consideration of the various papers submitted by individual members, and many of them—including some of the most interesting—had to be passed over for want of time. We must be forgiven, too, if we criticize the chairmanship of the meetings. Far too much licence was permitted on the first two days; members being allowed not only to occupy the platform for too long a time, but also, in many instances, to speak several times upon one subject. In this way a great deal of valuable time was wasted; and had it not been that on the third day the proceedings were controlled by an energetic and inflexible chairman in the person of Dr. Argyll Robertson, the amount of satisfactory work performed would have been decidedly less. We do not wish to be thought carping and hypercritical, but make these remarks solely in the hope of reform in the directions above mentioned at the next congress, and feel certain that members will concur with what we have stated. Especially is it to be hoped that at the next congress, which is to be held at Naples, the reverse order of procedure will obtain, and that precedence over other business will be given to the discussion of contributions which have been deemed worthy of a place in the *Transactions* of the Congress. The Congress was very well attended, and fairly representative of Europe and America. Over 400 members were present; and though, as was to be expected from the site chosen for the meeting, there was a large preponderance of German-speaking representatives, still, other countries with few exceptions contributed a fair proportion of their leading ophthalmologists. Lastly, we must not forget to mention the exhibition of instruments, surgical and optical apparatus, and recent mechanical inventions, which formed a valuable and interesting feature of the meeting.

THE INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH.

The annual dinner of the Incorporated Society of Medical Officers of Health took place at the Criterion Restaurant on October 14th at the close of the annual general meeting. Dr. J. F. J. Sykes, Medical Officer of Health for St. Pancras and President of the Society, occupied the chair, and amongst those present, in addition to a large number of ordinary members, were the Vice-Chancellor of London University, the Chairman of Council of the British Medical Association, the Mayor of St. Pancras, Mr. Alderman Idris, Dr. Parsons of the Local Government Board, and Dr. J. F. W. Tatham, of Superintendent of Statistics, Registrar-General's Office. A considerable number of toasts were drunk, the first, after that of "The King" and of "The Royal Family," being that of "Municipal Authorities." This was proposed by Dr. Arthur Whitelegge, C.B., who spoke of the great and increasing responsibilities of local authorities and of the way in which some of them met them by the selection of medical officers of the right calibre. In particular he pointed to the long list of distinguished men who had successively worked for St. Pancras. Mr. Idris, whose name was coupled with this toast, gave, in reply, an amusing account of the constitution of the population of the borough mentioned. The toast of "The Incorporated Society of Medical Officers of Health" fell to Dr. Pye-Smith, who said that the work upon which its members were engaged constituted, upon the whole, the most scientific of all the various branches of medicine. The President, in his reply, sketched the history of the Society, and, after giving some details of its present success, called upon the Presidents of two of its Branches to take their share in acknowledging the toast. Dr. W. H. Roberts, of the Metropolitan Branch, and Dr. E. Davis, of the South Wales and West of England Branch, accordingly made brief speeches, the latter claiming to be the oldest medical officer of health still exercising office. The toast of "Kindred Societies" was proposed by Dr. Groves, who coupled with it the name of Mr. Andrew Clark, and spoke of the assistance which the British Medical Association had given in the endeavour to obtain fixity of tenure for all medical officers. Mr. Andrew Clark, in reply, spoke of the work of the Public Health Committee of the Association, one composed mainly of men directly engaged in public health work: through that Committee the Association was pressing forward a Bill which he hoped would become law next session, and thus among other things secure for medical officers of health that security of office which was so greatly to be desired in the public interest. The toast of "The Guests" having been duly proposed by the President, was acknowledged by Mr. T. W. Cutler, Dr. Beaton, and Mr. Parsons. Finally came the toast of "The Officers of the Society," proposed by Mr. Shirley Murphy, and responded to by the joint Honorary Secretaries, Dr. Priestley and Dr. Herbert Jones; Dr. Allen, the editor of the Society's *Journal*: Dr. Millson, the Treasurer, and Dr. H. Meredith, who has taken charge of the Society's library, lately augmented by the purchase of some twelve hundred standard works on public health which belonged to the late Dr. Barry.

A FAMOUS INOCULATOR.

The theft of the miniature of Baron Thomas Dimsdale from the National Portrait Gallery recalls attention to a remarkable member of the medical profession whose life extended over nearly the whole of the eighteenth century. The name of Dr. Dimsdale is associated in the minds of those who seek surcease from the worries of actual life in wanderings along the byeways of medical history with one of the largest fees ever paid to a physician. Thomas Dimsdale was born of Quaker stock at Theydon Gernon, in the county of Essex, in 1712. He was bred to medicine at St. Thomas's Hospital, where we are willing to believe that he was a diligent student; we find it difficult, however, to accept the statement of the *Dictionary of National Biography* that he began to practise his profession at Hertford in 1714 at the age of 2. He accompanied "Butcher" Cumberland as far as Carlisle in 1745, returning home when the English army surrendered. He inherited a fortune, but a second marriage having made his quiver inconveniently full, he got himself the degree of M.D. on the easy terms customary in those spacious days and resumed practice in 1761. Turning his attention to inoculation he published in 1767 a work on the subject which passed through several editions and made him so famous that in 1768 he received an invitation to proceed to St. Petersburg and inoculate the Empress Catherine and her son the Grand Duke Paul. That a man of fearful heart, as Touchstone says, might have staggered in this attempt is shown by the fact that Catherine had prepared for him relays of swift horses to carry him out of reach of the vengeance of her lieges in case the inoculation turned out badly. Fortunately both the illustrious patients did well, and as nothing succeeds like success, the fortunate physician was created by the grateful Empress a hereditary Councillor of State with the title of Baron, and received a fee of £10,000 with a sum of £2,000 for his expenses and an annuity of £500. Moreover, the Empress granted him an addition to his family arms in the shape of a wing of the Black Eagle of Russia, and presented him with a miniature of herself and her son set in diamonds. When Prince Omai was brought to England by Captain Cook in 1775 he was inoculated by Dimsdale, who in 1784 made a second journey to Russia to inoculate the Grand Duke Alexander and his brother Constantine. On that occasion the Empress presented him with her own muff made of the fur of the black fox, which only members of the imperial family are allowed to wear. Dimsdale also visited Frederick the Great at Sans-Souci and the Emperor Joseph at Vienna. In addition to the work already referred to, Dimsdale wrote several tracts on inoculation; he was the proprietor and director of an "inoculating house" at Hertford, and sat in two Parliaments as the Member for that place. He was a Fellow of the Royal Society. He died on December 30th, 1800, in the 89th year of his age. Few physicians have been more honoured or better rewarded. The stolen miniature is by Andrew Plimer, and is considered the best of that artist's works.

THE TRANSMISSION OF ACQUIRED IMMUNITIES.

Weismann's dictum of the non-transmissibility of acquired characters has been critically examined by many observers since its enunciation some twenty years ago. Oscar Hertwig, for instance, has affirmed that immunity against some infectious and toxic diseases may pass from parents to their offspring; and Ehrlich's experiments upon the effect of two poisons (abrine and ricine) upon rats have, in some measure, supported Hertwig's assertion. Ehrlich found that these animals could, by careful dosage, be rendered insusceptible to quantities of the poisons which would certainly under ordinary circumstances have proved immediately fatal; the immunity thus acquired, he discovered, was transmitted to the young ones, which were born immune and remained so. Weismann's reply was that the phenomena observed by Ehrlich were not instances of the true hereditary transmission of immunity by the germinal path, but were due to the passage of immunizing substances from the mother to the fetus by the placental route; in support of this conclusion he pointed out that such a transmission of immunity by the father had not been demonstrated. In order to exclude the possible factor of placental transmission, Professor A. Lustig[1] has carried out experiments upon birds. He produced a state of immunity against abrine in hens and cocks of the Arno breed in the years 1899-1902; he then observed the results in the case of eggs from an immune hen impregnated by a non-immune cock, in those from a non-immune hen impregnated by an immune cock, and in those from an immune hen impregnated by an immune cock. The chickens hatched from these eggs were carefully examined and tested by injections of abrine. It was found that immunity acquired by the father and mother was not transmitted to the offspring, who were hatched in a delicate or cachectic state, and resisted the abrine poison even less than ordinary healthy birds. The eggs of immune hens impregnated by normal or non-immune cocks and those of normal hens impregnated by immune cocks gave only a small number of chicks; in most of them there were found deformed embryos or mature chicks with teratological states. From these negative results Lustig concludes that there is no hereditary transmission of immunity from parents to offspring, and that, in consequence, Ehrlich's phenomena could only be interpreted, as Weismann suggested, by supposing that immunizing substances had passed from mother to fetus by the placental route. Lustig's experiments also showed that the birds were very susceptible to the poison of abrine, that they could easily be rendered immune against it, and that the immunity lasted for several years; they were therefore thoroughly suitable animals on which to make such observations.

[1] *Archives Italiennes de Biologie*, xli, 271, 1904.

AN EXHIBITION OF QUACKERY.

Germany, the holy land of science, is also the happy hunting ground of quacks. This is the result of the German law which, while penalizing usurpation of title, leaves the practice of the healing art free to all. Hence quacks increase and multiply in the Fatherland and, it may be inferred, find the exploitation of the pensive Teutonic public profitable. An investigation made throughout the German Empire from 1899 to 1901 revealed some significant facts. In Berlin in 1879 there were 29 known quacks, a proportion of 0.2 per 10,000 of population: in 1882 there were 142, or 1.2 per 10,000 inhabitants, allowance being made for the increase of population; in 1888 the number had risen to 227 (1.5 per 10,000); in 1894 to 335 (1.9 per 10,000); in 1897 to 476 (2.7 per 10,000). In 1902, according to statistics given in the official publication, *Das Gesundheitswesen des preussischen States*, there were in Berlin, including Charlottenburg, Schöneberg, and Rixdorf, 937 quacks, a proportion of 4.34 per 10,000 inhabitants. The number of legally qualified practitioners of medicine in the same area was 3,260. At Frankfort on the Oder there were nearly as many quacks as physicians; to speak by the card, there were 251 of the former to 294 of the latter. In the same year there were in the whole of Prussia 15,400 doctors and 4,104 quacks, and of the quacks even more than of the doctors it may be said "The cry is still, 'They come.'" So serious has the evil become that, as already stated in the British Medical Journal, a society was not long ago formed in Berlin for its abatement. This Society, as a part of its campaign, organized an Exhibition of Quackery, which was held at Breslau at the time of the meeting of the German Association of Scientists and Physicians. In that exhibition was displayed the whole of the apparatus of quackery grouped in a number of sections—advertisements of all kinds of panaceas and specifics; illustrations of various methods of treatment "without poison" and "without operation," quack institutes, "Nature-healing," faith healing, *et hoc genus omne*. The advertisements are subdivided into classes—those of the type familiar to all readers of newspapers, circulars, prospectuses, pamphlets, testimonies of cure. These are

often drawn up very cleverly, so as to keep clear of the meshes of the legal net. One marked difference between them and the ordinary English or American advertisement is the careful avoidance of the titles of "Dr." and "Professor." One of the fraternity, indeed, boldly signs himself *Nicht approbirter Arzt*, which recalls the Babu in *Kim*, who appended to his name the description "Failed Entrance Examination Allahabad University." There are, however, many instances in which the quack hires a qualified doctor, whose name he uses as a shield. One of the most interesting sections was that of secret remedies. There was to be seen the specific of a shepherd who diagnosed the disease from a lock of the sufferer's hair, and in this way made a large fortune; there, too, were an oil which was said to restore hearing to the deaf, a universal gastric juice, water impregnated with negative electricity, and countless other panaceas. In another section were an "invisible audiphone," an "anti-epidemic mask," chains said to afford protection against gout, and all kinds of bogus electrical apparatus. The literature of "Nature-healing" made a formidable show; it appears that the "works" of Bilz, Platen, and other hierophants of this cult command a large sale. Statistics collected by Dr. Reissig in 1901 showed that during the foregoing fifteen years the proceeds amounted to some £700,000. "Nature-healing" is a well-organized system with an organ—the *Naturarzt*—which is now in the thirty-second year of its existence, and has 125,000 subscribers; associations of various kinds, and well-drilled corps of lecturers and writers, who pursue an active propaganda in the press, on public platforms, in institutes, and on the walls of buildings. A section of the exhibition was devoted to means of repression employed by the German Antiquack Society. These so far have consisted chiefly in efforts to secure the co-operation of medical practitioners in the exposure of quacks, and in the publication of analyses of advertised specifics and records of convictions. As the law stands at present in Germany, however, no campaign against quacks can be more than partially successful. But a mere alteration of the law will be inadequate to remedy the evil, for, as the example of France shows, the law may be excellent on paper, but, owing to the indifference or ill-will of those who have to administer it, inoperative in practice.

THE INSURANCE OF MOTOR CARS.

EVERY medical practitioner who uses a motor car for professional purposes runs certain risks against which it is eminently desirable to insure. Although his own personal safety may be guaranteed by an ordinary accident policy, the driving of a motor car or bicycle involves the danger of injuring the persons or property of liege subjects who are travelling on the highway. Further, every motor, even in the hands of the most careful driver, is a complicated machine which may go wrong by accident at any time. An article which appeared in the *Law Times* some time ago contained a number of useful hints to those owners of motor cars who desire to insure. We are indebted to the anonymous author of that article for some of the following notes. The risks to be provided against are: (*a*) Accidents to the owner and his driver; (*b*) claims by the public for personal injuries; (*c*) accidents to the motor; (*d*) fire; (*e*) larceny. Some companies offer a comprehensive policy, under which, for a premium of £2, certain indemnities are offered under each heading. To the careful driver, however, this form of policy is eminently unsatisfactory. The great proportion of the risk undertaken is that of injury to life and limb, leaving but a small margin of indemnity to cover accidents to the motor itself. In these circumstances the medical practitioner who uses his motor in his practice will probably prefer to insure with some company which makes the safety of the machine itself the chief object of concern. The owner of a motor car or bicycle who insures against damage to the machine should notice that this does not include damage to tyres or lamps, nor does it protect him against fire. These things must be specifically mentioned. Further insurance against larceny or burglary does not necessarily protect the costly accessories of a motor unless they are specially mentioned. In considering the terms of a policy the insurer should direct his attention to the following points: Some policies contain a clause which excuses the company from liability if a certain limit of speed is exceeded. Such a policy should be avoided, as it may put upon the assured the task of showing that when the accident happened he was within the limit. It is often the practice of the company to insist that the assured shall pay a certain part of the bill for damages. Some companies require that the insurer shall pay the first 50s., others the first 40s. This is a point to be carefully considered by those who wish to be assured against accidents of all kinds, whether trifling or serious. Some policies contain a clause to the effect that the company shall be only liable to pay for damages occasioned to the motor when it is in the charge or custody of its owner or authorized driver. This provision may have the effect of rendering the policy practically useless, as mischief is often done to motors when they are left for a short time in the street, or in the yard or garage. We should recommend no practitioner to take out a policy which contains any such clause. Another matter to be considered, especially in policies which protect the motor against fire, is the area covered by the policy. One company, for instance, only insures motors against fire in their owner's shed. In the case of a total loss, whether by accident or larceny, a question will probably arise as to the value of the motor which has been insured. Some companies write off 40 and 50 per cent. from the original price, others claim to reduce it by 15 to 35 per cent. respectively, whilst one is content to rely on a condition that the value shall be deemed to be the price for which a similar vehicle or part thereof lost or damaged at the time of the loss or damage may be purchased, whichever is the lower. The amount of the premium payable by the owner of the car must, of course, vary with the magnitude of the risk undertaken by the company.

MENTALLY AND PHYSICALLY DEFECTIVE CHILDREN.

THE National Association for the Feeble minded and the National Special Schools Union are two bodies which have for common object the promotion of the interests of physically and mentally defective children. They attack the problems with which they are confronted, however, from different standpoints, the National Union devoting itself chiefly to educational difficulties, while the National Association deals principally with the social questions underlying the whole subject. Although, in consequence, they conduct their work upon independent lines, they both keep in view the desirability of fresh legislation, and, by way of bringing about a useful exchange of views, the two bodies held a joint conference last week at the Guildhall. The proceedings lasted two days, and consisted of the reading and discussion of some fifteen papers, these papers being classified, so far as their nature permitted, into eight divisions. The work of these divisions was, however, not conducted simultaneously, but a fresh chairman regulating the discussion at each of them. Among such chairmen, eight in all, were Lady Frederick Bruce, Dr. G. E. Shuttleworth, Mr. Damer Harrisson, Sir T. D. Acland, and Mrs. S. A. Barnett. A considerable number of medical men took part in the proceedings, either by contributing papers or by joining in the discussions. The papers of a more strictly medical character included one on the problem of the morally defective, in which Dr. W. A. Potts argued that those in whom "attenuated responsibility" existed should be kept in industrial homes, and there made partly to support themselves by work. In another paper Mr. Damer Harrisson dealt with the mentally defective from a physiological point of view, maintaining that in such children will power was lacking, and that it was their hands and hearts rather than their heads which should be educated. Dr. G. E. Shuttleworth discussed the question of the after-care of the feeble-minded, while Dr. Fletcher Beach described some of the anatomical conditions commonly met with

in mentally-defective children. The conference before it separated passed three resolutions; the first expressed the opinion that powers should be granted by the Legislature for detaining those who are certified to be so morally defective as to be incapable of protecting themselves, such certificates to be operative for one year only, and to be renewable annually by the certifying authority. The third and concluding resolution was: "That, subject to proper provision being made for periodical investigation into the circumstances of each case by an independent authority, power should be granted by Parliament for the permanent detention of those feeble-minded, in whose cases it can be shown that their liberty is likely to be harmful to themselves and to the community." Another resolution, based upon Dr. Shuttleworth's paper, endorsed the desirability of the establishment of After-Care Committees in connexion with every "Special School."

A BOARD OF CONTROL FOR MEDICAL PRACTITIONERS.

It will be remembered that the diploma conferred on the new-fledged doctor in the burlesque graduation ceremony which forms an epilogue to the *Malade Imaginaire* conveys the right *secandi, coupandi, taillandi et occidendi impune per totam terram.* A fellow-countryman of Molière, M. G. Tragin, appears to take this formula seriously, and, like Hamlet, wishes to reform it altogether. At present, he says, doctors can do exactly as they please. A patient may die under their hands without there being anything to show that he has been rightly treated. If the doctor is wrong, the patient pays for the mistake with his life. As a remedy for this, M. Tragin proposes that a law be enacted to the following effect: A patient's family is to be compelled to keep till he is cured or dies the prescriptions of the practitioners who have been in attendance. The State shall appoint as Commissioners competent men of acknowledged experience as medical controllers. There shall be one Commission for three or four departments; no Commission shall exercise its functions for more than two years in the same departments. The family shall have no power to prevent the making of a *post-mortem* examination, that means of control being of recognized utility for the public safety. The Commissioners are to go to villages, towns, and cities, and taking at random a case of death registered on the day of their visit, call for all the prescriptions given by the doctors. These they are to seal up, unread, in an envelope. Then they are to make a *post-mortem* examination, and draw up a report as to the cause of death. The sealed envelope is then to be opened, and the prescriptions examined with reference to the suitability of the remedies ordered to the disease. If the Commissioners decide that an error has been made, the practitioner is to forfeit his right to practise for six months, in order to give him the opportunity of finishing his studies. A second conviction is to entail permanent deprivation. It is difficult to believe that the author of this remarkable proposal can be serious. But it is pathognomonic of the "crank" that he is destitute of the saving grace of humour.

LADIES ON HOSPITAL COMMITTEES.

Under the genial leadership of Dean Lefroy, the Governors of the Norfolk and Norwich Hospital at their recent annual meeting carried by 30 votes to 24 a resolution that "it is desirable that ladies should be treated as eligible for election to the Board of Management, notwithstanding the resolution of the Board of Management of March 5th." The resolution was seconded by the Rev. Dr. Barrett, and supported by Dr. Beverley and by the majority of the speakers. The opposition was led by Major Edwards, V.C., and Dr. Barton, whose arguments reposed mainly on the facts that the past management had placed the hospital in the first rank of similar institutions in the country, and that on March 5th of the present year, the Board passed the following resolution: "That in the opinion of this Board it is undesirable that ladies should be elected members of the Board"; the motion before the meeting seemed, therefore, to convey a reflection upon the Board which it in no way deserved; moreover, in view of the success of the present management, and the absence of any reason for the proposed change, it was a step that was at least uncalled-for, and might prove injurious. Some correspondents appear to consider that we are called upon to express an opinion on the decision; but the Norwich Hospital is quite capable of managing its own affairs. Moreover, we cannot say we regard the departure made as in any respect a revolutionary one. Ladies have been for many years members of many Boards and committees and have shown their capacity for doing useful work. The occasion is, however, made the subject of an article in the *Eastern Daily Press* which expresses the extreme feminist view to an amusing extent. According to this journalistic philosopher there is absolutely no reason for distinguishing between men and women except in regard to their capability. He says: "We would not even defend Saturday's decision upon sex grounds, upon the ground of special fitness or special qualities of sympathy which women can bring to bear upon hospital work. That is an argument which forcible as it might be in this particular case or in the case of kindred philanthrophic work nevertheless contains within it something of the very idea of sex privilege against which women are now happily revolting in so many departments of human life. . . . No! the case for the admission of women on an equal footing with men into all these activities must rest, not upon any supposed sex qualifications, but upon the general claim of women to participate as intelligent human beings in the general interests and activities of the race, without any other test than the test to be applied equally to man, the test of personal capacity." If we are to accept this view we presume that in the millennium to which our journalist looks forward we shall have women as soldiers, policemen, railway porters, engine drivers, and so forth. Welcoming, as we do, the admission of women to so many spheres of work, and recognizing the value of their co-operation, the medical profession would be the last to admit the identity of women with men, or to accept the doctrine that sex differences, with their necessary effect upon character and fitness for certain duties, do not exist.

THE NEW YORK HEALTH DEPARTMENT AND CHILD MORTALITY.

At a recent meeting of the Medical Society of the County of New York, Dr. John J. Cronin, Assistant Chief Medical Inspector, reviewed the work of the Summer Corps of the New York Department of Health since its first beginning in 1876. In that year fifty sanitary inspectors were appointed, but at the end of five weeks their services were dispensed with. Soon after this work was taken up in earnest, and has been regularly carried out by the Department ever since. In 1893, Dr. Hermann M. Biggs conceived the idea that more good would be attained by visitations to parents of children, and instructing them in regard to any vicious habits of feeding, and other causes of illness. Pamphlets regarding the prevention of gastro-intestinal diseases were printed in several languages for distribution among mothers. Soon a sytem of house-to-house visitation was adopted, and advice was given to parents, especially regarding the care of babies when symptoms of summer diarrhœa appeared. When the illness was severe enough to warrant such a course a trained nurse was sent. If the sick child had been fed on store milk that store was visited, and if found to be unfit for use it was at once ordered to be "dumped." If it was not considered bad enough for this the keeper received a warning. Among 900 stores visited there were found 550 cases of violation of the sanitary ordinances; in 2 cases the temperature of the milk was found to be 84° F. Each year had shown improvement over previous years. Now when the inspector visits the baby he continues to see it; treatment is at once instituted, and, if necessary, a nurse is at once sent. The two factors which produced the high mortality were (1) hot weather, and (2) ignorance in caring for the children. It has been found that the second factor can to a large extent be eliminated by education of mothers and dis-

tribution of circulars of information. Orders are given that all milk shall at once be stopped when summer illness of babies appears; there is a difficulty, however, with Jews and Italians who will not stop the milk giving. The mothers are taught to bathe and sponge the babies, and this has proved of great service. On hot and damp days they are told to bathe the babies with salt water. The injurious effects of heat are best combated by ocean trips, and by visiting the piers and parks. The paved streets throw out heat during the night, making it difficult for the child to sleep; this could be obviated to a certain extent by flushing the streets after sundown. It was noted that one-third of the deaths occurred among children under two years old, who were fed on condensed milk and prepared cereals during the month of August. Dr. Cronin, as the result of his experience, felt justified in stating the heat *per se* is an important factor in causing the high mortality among children during the summer months.

HEALTH LECTURES TO CONVICTS.

UNDER the heading, "An Experiment in Prison Reform," an account was given in the BRITISH MEDICAL JOURNAL of August 20th of an attempt made by Miss Charlotte Smith-Rossie, Honorary Lecturer to the Hants County Council, to teach female convicts in Portsmouth Prison the elements of housekeeping, domestic hygiene, home nursing and the care of children. We note with satisfaction that this means of reform is no longer to be left to the private enterprise of philanthropic ladies, but has been adopted as an officially-recognized system. The Commissioners of Prisons, in their report for the year ended March 31st, 1904, state that a new departure has been made at Holloway Prison this year in a scheme for the regular provision of lectures on secular subjects, such as health, nursing, sanitation, etc. These lectures are given by different ladies, who most generously offer their services. They are greatly appreciated by the prisoners, who look upon them not only as a reward for good conduct, but as a source of useful instruction. A similar scheme has been initiated in several of the larger provincial prisons. The privilege of attending these lectures is confined to selected cases, and the ordinary discipline of the prison is in no way interfered with. So far the scheme is said to have worked with success.

ANTIVACCINATION IN DEWSBURY.

DEWSBURY has long been known as a place where vaccination is much neglected, and not unnaturally it is now suffering from an outbreak of small-pox. Its last serious invasion was in 1891-2, and formed a subject of inquiry by the Royal Commission on Vaccination, and of a long and valuable report by Dr. Sidney Coupland. The present prevalence is causing anxiety to the Local Government Board, which, returning good for evil, and desiring to save Dewsbury from the consequences of its past folly, has recommended that a station be temporarily opened in the centre of the town for the convenience of the public, amongst whom there is an increasing demand for vaccination and revaccination. The Guardians, however, have declined to give effect to the central authority's advice, and have agreed to reply to the Local Government Board's letter, and to state the considerations which have led to their refusal. These were given in a speech by one of the guardians, which is reported at great length in a local paper. We know that antivaccinators can talk nonsense, but some of the nonsense attributed to the Dewsbury orator is so wonderful as to suggest that the reporter has been having a little joke at the guardian's expense. Speaking of the Local Government Board, he is made to say that "they found that arm-to-arm vaccination was attended with enormous dangers, and the latter were so obvious that more than six years ago, they caused some medical man to invent calf lymph"! Under the heading "Analysis of Statistics," reference is made to the small amount of vaccination in the town of Leicester, and the question is triumphantly asked, "What was the result?" In reply, instead of mentioning that in Leicester within about twenty months there have been over 700 cases of small-pox, notwithstanding the heroic efforts of the medical officer in the way of vaccination and isolation—instead of discussing this as a "result" or explaining it as not a result,—the Dewsbury guardian goes on (as reported) to say "Let them take the report of the medical officer for Leeds," in which town he declares there had been in two and a half years 528 cases of small-pox. How this can be the "result" of Leicester's neglect of vaccination is not explained, but if it is meant that Leicester sent the infection to Leeds, that surely cannot be held to redound to the credit of the so-called "method," and if comparison is intended between prevalence of small-pox in Leeds and in Leicester, the fact that the much larger and better vaccinated town had in thirty months much less small-pox than the much smaller and much less vaccinated town had in twenty months, does not, to any one who is not standing on his head, suggest the abandonment of vaccination. Other "reasons" in the reported speech are scarcely less absurd, but the cogency of the argumentation has been sufficient to persuade the guardians to refuse to establish a station, so that the Dewsbury ratepayers will now have to pay the higher fees allowed for domiciliary vaccination, instead of the smaller charges for stational vaccination.

THE NEW CHIEF SURGEON TO THE METROPOLITAN POLICE.

ON Monday and Tuesday last the recently-appointed Chief Surgeon to the Metropolitan Police (Mr. C. T. Dent, F.R.C.S.) received at New Scotland Yard the divisional surgeons who, to the number of about 150, serve under him in the various metropolitan divisions. Owing to exigencies of space it was found necessary to have two receptions. Mr. Dent, in a few well-chosen sentences, assured the assembled police-surgeons of his real sympathy with them in their often arduous spheres of practice and his desire to improve, as much as lay in his power, the conditions under which their police duties were performed. He had called them together, he said, not only from a desire to make the acquaintance of those whom he had not already the pleasure of knowing, but also in order to confer with them on certain matters touching their police duties. He called on Dr. Alexander Mitchell—who was recently Acting Chief Surgeon—to open a discussion, which was continued by several other divisional surgeons. Mr. Dent, in closing the discussion, said he would take care to represent their views to the Commissioner of Police. A vote of thanks to the Chief Surgeon for calling them together was then passed by acclamation, and the meeting separated. We are in a position to state that this new departure taken by Mr. Dent is highly appreciated by the divisional surgeons generally.

THREE of this year's Rhodes scholars at Oxford are taking a course directly with a view to medicine.

IT is stated that the Nobel Prize for Medicine has this year been awarded to Professor Robert Koch.

THE Council of the British Medical Association met at 2 p.m. on Wednesday, October 19th, and sat until 6 p.m., when it was found necessary to adjourn to Wednesday, November 16th, at 2 p.m., in order to conclude the important business still remaining on the agenda.

ON the invitation of Professor von Bergmann, Professor Robert Koch is to deliver an address on diseases caused by trypanosomes at a meeting of the Berlin Medical Society on October 26th. This will, it is said, be the first address delivered by the distinguished bacteriologist before the Society.

THE Fitzpatrick Lectures before the Royal College of Physicians of London will be given on November 8th and 10th by Dr. J. F. Payne, the subject of the first lecture will be English Medicine in the Anglo-Norman Period, Gilbertus Anglicus: the subject of the second lecture will

be Ricardus Anglicus and the Teaching of Anatomy in the Middle Ages. The Bradshaw Lecture before this College will be given by Dr. F. Foord Caiger on November 15th, on the Treatment of Enteric Fever, and the Horace Dobell Lecture by Dr. E. Klein, F.R.S., on November 22nd, the subject being the Life-history of Saprophytic and Parasitic Bacteria and their Mutual Relation. At the Royal College of Surgeons of England the Bradshaw Lecture will be given on December 1st by Mr. A. W. Mayo Robson, Vice-President, on Cancer and its Treatment; the Hunterian Oration will be delivered by the President, Mr. John Tweedy, on February 14th, 1905.

Scotland.

The Parliamentary Representation of the Universities of Glasgow and Aberdeen.

A meeting of the Executive Committee of the Aberdeen University Unionist Association was held on October 14th in the office of the Secretary, Mr. Chalmers, Advocate, 18, Golden Square, Aberdeen. Among those present or who sent letters of apology were Professor Davidson, Mr. Fowlie, late schoolmaster, Inverurie; Rev. James Smith, St. George's-in-the-West; Professor Finlay, M.D.; Mr. D. M. M. Milligan, Advocate; Mr. James Duguid, Advocate; Mr. Ogilvie Forbes, of Boyndlie; Mr. Patrick Cooper, Advocate; Mr. Gillies, schoolmaster, Old Deer; Dr. Joseph Ogilvie, Rector of the E.C. Normal College of Banchory; Sir David Stewart; Mr. Geddes, schoolmaster, Rothiemay; Mr. Alexander, schoolmaster, Kemnay; Professor Dove Wilson; Rev. Dr. Dunn, the Manse, Birse. On the motion of Mr. Fowlie, Professor Davidson took the chair, in the absence, through indisposition, of Professor Dove Wilson, the Chairman of the Association. A letter from Mrs. Pirie thanking the Committee for its condolence on the death of her husband, the late Professor Pirie, was read. A considerable number of letters were submitted from graduates regarding the prospective vacancy in the Parliamentary representation of Glasgow and Aberdeen Universities, complaining that the writers had been misled by another association of a similar name, but with no connexion with the original Association, having been started in London. The Committee took steps to prevent the continuance of this, and the meeting, after full consideration of the circumstances, again heartily and unanimously approved of the prospective candidature of Sir Henry Craik, K.C.B., LL.D. The meeting, which was highly successful, closed with a vote of thanks to the Chairman for presiding, on the motion of Professor Finlay.

New Medical School Buildings at Dundee

Opening by Lord Balfour of Burleigh

Lord Balfour of Burleigh, Chancellor of the University of St. Andrews, on Monday, October 7th, formally opened the new buildings which have been erected at a cost of £20,000 for the accommodation of the Medical School of University College, Dundee, which is now an integral part of that ancient University. The work of this growing medical school has been seriously hindered by inadequate premises. The new buildings are in the rear of the west end of the main college buildings, and immediately behind the Technical College. The main front, 126 ft. long, faces south. The outside of the four-story block is of simple design, because the site does not lend itself to architectural display, and because the main object was to obtain the utmost possible efficiency with the available money. Attention, therefore, has been given to internal convenience and efficiency. There is an exceedingly fine dissecting room equipped with the most modern apparatus for the study of anatomy. The large lecture rooms, it is believed, will meet the needs of the school for some time to come. The buildings will accommodate classes in anatomy, physiology, pathology, materia medica, surgery, obstetrics, medical jurisprudence, ophthalmology, and in addition there will be museums and all the necessary adjuncts of a modern medical school. It will accommodate from 100 to 150 students. Of the total cost the University Court provided £14,000 and Sir William Ogilvy Dalgleish gave a donation of £5,000.

Monday was observed as an academic holiday by both St. Andrews University and Dundee University College. Professors and students—men and women in their scarlet gowns—met Lord Balfour at the Tay Bridge Station. He seated himself in an open carriage along with Principals Donaldson, Stewart, and Mackay, and the carriage was drawn by the male students to the college grounds, where a large marquee had been erected for the function. There was a large and distinguished company present.

Lord Balfour, in his address, said there were now facilities for a complete medical course in the College of Dundee. The professors were appointed by the University Court, but up to the present time the work had been carried out under very great disadvantages. The inauguration of these buildings was an important event in the history of Dundee College, and no less important for the whole University over which he had the honour to preside. There would be great opportunities in Dundee; there would be a favourable field for medical research, beneficial both to Dundee and to the cause of science. But more was needed; they must always be reaching forward to make things even better than they were at present. A library was wanted to house the important books scattered all over the buildings, and to provide a place in which they could be read and studied. A students' union was wanted, and already £4,000 had been raised for the purpose of fitting up the building which the University had purchased on some adjoining land, and it was likely to be furnished and inaugurated in the course of the present session. A gymnasium and a fives-court had been given by Mr. Fleming of London; the department of chemistry would receive additions to its appliances and buildings during the present session; and the University Court had spent about £4,000 in remodelling the heating arrangements.

Principal Donaldson, the Earl of Camperdown, and Principal Mackay also spoke. Thereafter the Chancellor, accompanied by the professors and students and general public, moved to the new building. The door was formally opened by Lord Balfour of Burleigh, and the company made a round of inspection of the whole building.

Public Luncheon.

Luncheon in the Queen's Hotel followed. Principal Donaldson presided. After covers had been removed Lord Balfour proposed, "Success to the New School of Medicine," and Sir William Ogilvy Dalgleish replied. Principal Donaldson proposed, "The Health of the Chancellor." In reply Lord Balfour said it was very difficult to reply to the toast. Principal Donaldson's kindness was overwhelming, and his indiscretions were very great. He had a theory that there were some people in Scotland anxious to get rid of him, and that that was the reason his name was so frequently mentioned, without the slightest justification, for a variety of offices. It reminded him of the story of the old poacher, of whom the community was so desirous of getting rid that when a vacancy occurred in a far-away parish they all sent him testimonials testifying to his suitableness for the place. When the poacher read the testimonials he said, "Weel, I never kent I was so weel likit afore, and I think I'll jist stay whaur I am." The plot did not succeed. But, speaking seriously, he did think one's friends of the newspapers perhaps sometimes took great liberties. There was a law of libel which kept them in order, but he sometimes thought there should be a law whereby a humble individual could get damages when rumours got about which gave him a certain amount of trouble and inconvenience. He was very happy where he was. He was far more than rewarded for what he had done, for he cared very much, not only for the cause of learning generally in Scotland, but above all for an ancient national institution like St. Andrews University. Sir John Leng proposed the health of Principal Donaldson, who replied. This ended the proceedings.

Opening of the Medical Schools.

The University and Extra-academical Schools were opened for the Winter Session on Tuesday last, October 18th. In most cases formal opening addresses were discarded and the serious work of the Session was at once begun.

Davos Sanatorium.

A meeting of Edinburgh citizens was held on October 18th, under the presidency of the Lord Provost, to consider the proposal for the establishment of a sanatorium at Davos in Switzerland, to which Her Majesty the Queen had given her patronage. Lord Balfour of Burleigh, Sir Charles Dalrymple, M.P., Sir Henry Littlejohn, and Sir A. O. Riddell spoke. It was reported that a site had been secured, that £6,000 of the £30,000 required had been raised, and that the amount patients would be asked to pay would be from 25s. to 30s. a

week. Lord Balfour said he was now going on a begging tour round the principal cities of England and Scotland, and he was hopeful that the proposal would appeal with success to the citizens of Edinburgh. Sir A. O. Riddell intimated his intention to subscribe 100 guineas to the fund.

SMALL-POX IN SCOTLAND.

During the period from October 1st to 15th, 18 cases of small-pox have been intimated to the Local Government Board. These were distributed over the counties of Ayr, Edinburgh, Lanark, Perth, and Stirling. The largest number, 7, occurred in Coatbridgeburgh. There were 3 cases in Stirling, 2 in Perth, and 1 in Edinburgh.

Ireland.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

THE annual meeting of the Royal Academy of Medicine was held in the Royal College of Physicians on October 14th, under the presidency of Sir Thornley Stoker. The Treasurer reported a credit balance of £84 6s. 1d. The special interest of the meeting lay in the election of a General Secretary in room of Mr. J. B. Story, who had intimated that he would not seek reappointment. At the close of the ballot the President announced that Dr. James Craig, Physician to the Meath Hospital, had been elected. The following is a list of the officers for the ensuing year:

President: Sir Thornley Stoker; General Secretary: James Craig; Secretary for Foreign Correspondence: Sir J. W. Moore.

Medical Section.—President: The President of the Royal College of Physicians; Council: J. B. Coleman, W. R. Dawson, H. C. Drury, T. P. Kirkpatrick, G. Peacocke, F. C. Purser, R. Travers-Smith, W. Langford Symes, W. J. Thompson, W. A. Winter.

Pathological Section.—President: H. C. Earl. Council: A. H. Benson, H. C. Mooney, T. G. Moorhead, A. C. O'Sullivan, A. R. Parsons, F. C. Purser, J. A. Scott, John B. Story, A. H. White.

Surgical Section.—President: President Royal College of Surgeons; Council: Alexander Blayney, T. E. Gordon, John Lentaigne, R. B. M'Causland, R. C. B. Maunsell, Sir Lambert Ormsby, John B. Story, E. H. Taylor, W. Taylor.

Section of Anatomy and Physiology.—President: E. H. Taylor; Council: A. Birmingham, D. J. Coffey, A. F. Dixon, A. Fraser, J. Alfred Scott.

Obstetrical Section.—President: A. J. Smith; Council: Paul Carton, R. H. Fleming, R. A. Flynn, J. H. Glenn, A. J. Horne, H. Jellett, F. W. Kidd, W. C. Neville, R. D. Purefoy, T. H. Wilson.

Section of State Medicine.—President: Sir John W. Moore; Council: W. R. Dawson, F. C. Martley, J. M. Redmond, W. A. Winter. Professor Fuchs, of Vienna, was elected an Honorary Fellow.

A resolution of thanks to the retiring General Secretary was unanimously adopted.

ALCOHOLIC STIMULANTS.

The auditor, in his report upon the accounts of the South Dublin Union, expresses satisfaction at finding that there is a reduction of £200 in the cost of alcoholic stimulants consumed during the half-year ending March 31st.

HEALTH OF BELFAST.

The monthly report of the Medical Superintendent Officer of Health to the City Council showed that 92 cases of typhoid fever, 81 of simple continued fever, 55 of scarlet fever, and 2 of small-pox had been notified in the last month. There had been 806 births and 494 deaths, of which 92 were from zymotic disease. The annual death-rate from all causes was 18.0.

LITERARY NOTES.

DR. WALTER BERNARD, of Londonderry, has for many years taken notes of the thoughts of other men and of his own experience while passing through three or four generations, and he has printed some selections therefrom. Jottings from the notebook of a trained observer who has always and everywhere kept his eyes and ears open are sure to contain much that is interesting and not a little that is important, and this general proposition applies with particular force to the notes of a man who has seen and heard and read so much as Dr. Bernard. We can best give an idea of the contents of the booklet by a few extracts. Under the heading "Lord Lister" there is the following reminiscence:

> At the Edinburgh meeting in 1875 Lord Lister startled me when I saw him plunge his knife in a masterly manner through the synovial membrane of the knee-joint. He had his pigmentation gentleman at his elbow, while the antiseptic spray played around. He afterwards exclaimed to his audience to demonstrate a better antiseptic method, and finished by saying, "For God's sake, do so, gentlemen."

The statement that "there is nothing so cruel as ignorance" is attributed to Gull. Under the heading "Bleeding" we are told that

> Graves, Stokes, Corrigan, and Hudson applied leeches behind the ears to relieve headache and to induce sleep, though the conditions for so doing were not at all times fully considered. Even the headaches of granular kidney were benefited, and Stokes relieved the pain due to the pressure effects of thoracic aneurysm by a few leeches, and after this Magee Finny recorded that, in malignant disease of the chest, he relieved localized pain by the same treatment. I myself have bled, from time to time, for fifty years with good results. I always carry my lancets in my pocket, and my experience is that the letting of blood gives immense relief to the over-distended right ventricle.

Under the heading "Wilks" there is the following note:

> Wilks said people have a great dread of acute diseases becoming chronic, whereas the great danger is that chronic diseases should become acute. Wilks, in July, 1872, taught me the nature of typhlitis.

As to cancer, Dr. Bernard's experience is that it may be dormant for many years until it is roused into action by an operation. The following note proves that in medicine at least Napoleon's saying that Providence is always on the side of the big battalions is not true:

> At the Belfast meeting of the British Medical Association in 1884 the Investigation Committee, being in the majority, sent forth that consumption was not contagious. I had data to go upon from the family, and personal histories that it was, but notwithstanding positive proof, I was with the minority.

We commend the following opinion on medical evidence to reformers of legal procedure:

> If you study the criminal law from the Wyndham case onwards you will come to the conclusion that, in giving our medical evidence, either for the plaintiff or defendant, we are intensified by that which influences the feelings of prejudice, and that passion, self-interest, and reputation dominate in our minds while in the witness-box. If this be so the State should fee a medical witness or witnesses who are not interested in either plaintiff or defendant.

Several of Dr. Bernard's notes are founded on papers published in the BRITISH MEDICAL JOURNAL.

At the congress of French alienists and neurologists held at Pau in the beginning of August, Dr. Henry Meige, of Paris, showed a series of reproductions of pictures, mostly of the Flemish and Dutch schools, representing surgical operations on the head. Sometimes these are simple procedures such as bleeding or the application of plasters for the relief of headache. In most of them, however, is depicted a piece of imposture largely practised by itinerant surgical quacks and known as the operation for stones in the head. Ignorant people were easily led to believe that mental disorder was caused by foreign bodies in the skull. Sometimes the evil was attributed to the presence of a wasp or a rat; most often, however, in the Low Countries, the cause was believed to be a stone. Naturally the quacks traded on this belief. For the removal of the "stone" they made a small incision on the forehead, and then flourished before the eyes of the patient an enormous forceps holding a stone supposed to have been extracted from the head. M. Meige pointed out that even at the present day many insane persons give vivid descriptions of sensations which they believe to be caused by stones or animals in their heads. The mediaeval physicians held much the same belief, although some of them explained the symptoms by a determination of "peccant humours" to the brain where they became "agglutinated." The removal of stones from the head formed the subject of pictures by Van Bosch, Van Hemessen, P. Bruegel, de Bry, Brouwer, Teniers, A. Both, N. Weydmans, Frans Hal the Younger, and particularly Jan Steen. In most of them the artist cleverly satirizes the credulity of the patients and the impudent quackery of the operators.

In the Section of Paediatrics at the International Congress of Arts and Science recently held at St. Louis, Dr. A. Jacobi (New York) sketched the history of the evolution of paediatrics as a special branch of medicine. Before 1769 there was no institution specially provided for sick children, but in that year Dr. G. Armstrong established a dispensary in London. In 1784 a similar institution was founded in Vienna. The first and largest children's hospital in Europe, the Hôpital des Enfants Malades, was founded in Paris in 1802. In St. Petersburg the Nicolai Hospital was established in 1834 by Dr. Friedburg, and in 1839 the Poor Children's Hospital in Buda-Pesth by Dr. Schopf Merei. Since that time the increasing interest in the diseases of children on the part of humanitarians and physicians and teachers has multiplied such institutions. The United States was the last country to participate in these endeavours. Medical schools, for the most part proprietary, did not find paediatric teaching to their advantage, and it took the hearts and purses of the

public a long time to open. The waves of humanitarianism and the demands of science finally overcame this apathy, and gradually many general hospitals opened special wards for children. Now there are paediatric hospitals in all the larger cities.

It is announced that *Southern Medicine*, published in Savannah, and *Gaillard's Medical Journal*, published in New York, have been amalgamated. The united journals are henceforth to be published in Savannah under the editorial management of Dr. William Edwards Fitch. In announcing the change, the editor says that "In 1897 the present editor of *Southern Medicine* established the *Georgia Journal of Medicine and Surgery*. On January 1st, 1904, *Southern Medicine* was thought to be a more appropriate name. *Gaillard's Medical Journal* was established at Richmond, Virginia, in 1866, by Dr. E. C. Gaillard, a Charlestonian, and a graduate in 1854 of the State Medical College of South Carolina. Dr. Gaillard was a prominent surgeon in the Confederacy, and *Gaillard's Medical Journal* has always been considered a Southern journal, though for many years past it has been published in New York City."

The *Journal des Praticiens* of October 15th contains an interesting account of an old medical worthy, Dr. Jean Hamon, whose portrait figures in the gallery of illustrious physicians of the University of Paris. Hamon was illustrious by the heart rather than by the head. Born in 1617, he took his Doctor's degree in the ordinary course, and practised his profession for a time in Paris. In 1649 he literally carried out the gospel precept by selling all he had and giving the proceeds to the poor. He joined the ascetic community of Port Royal, and acted as physician to the nuns. At first he had to suffer the ignoble competition of two quacks whose pills and powders were credited with thaumaturgic properties by the credulous women who naturally preferred that kind of treatment to the less flamboyant practice of Hamon. His conduct in these trying circumstances was marked by a simple dignity characteristic of the man. "The line I took," he says, "in these petty squabbles was to keep silence—a harmless remedy which never spoils anything. I should have been glad to be deaf; but at least I tried to be dumb." The nuns came to appreciate him better afterwards. By the country folk in the neighbourhood of the convent he was held in affectionate reverence. He went from village to village riding on an ass, reading as he went a book—either a psalter or a New Testament—fixed on a small desk attached to the saddle. He accepted no remuneration either in money or in kind. He died in 1687 blessing God, says Sainte Beuve, for the privilege of having been allowed to die among the saints with whom he had dwelt for thirty-seven years.

In the *Medical Library and Historical Journal* for July, 1904, Mr. C. P. Fisher, Librarian of the College of Physicians of Philadelphia, discusses medical libraries, medical publishers, and the medical profession. He says that at the present time there are large medical libraries in the principal cities of the United States, Great Britain, and Canada, which are free and open to the medical profession; and in the States there are many smaller ones which are rapidly growing. To the medical publisher the question of benefit must be taken from a business standpoint. A book in a medical library is used mainly for reference, until worn out, or until something more recent and better has taken its place; and for this reason the library does not interfere or cause a decrease in the number of copies sold; on the contrary, Mr. Fisher's own experience, and the information he has obtained from the librarians of other large medical libraries who follow the rule to keep the latest publications on view for a certain period of time, lead him to believe that it increases the sales of desirable books. The doctor prefers the library, where he can examine a book at his leisure, to a book shop; and when he sees a work that interests him, or that might be useful to him, he does not depend on the library, but orders the book for his own shelves. In regard to subscriptions to periodicals, the library is not a factor only in so far as it is benefited by the large gifts of journals from individuals who are the subscribers. The physician must have his medical periodicals, as the business man his newspaper or commercial weekly, in order to keep in touch with the important happenings of the day; after these are read they are, in most instances, cast aside, and eventually reach the library or the paper mill. Perhaps the only exception is in the case of journals relating to special subjects; these are still collected, bound, and retained by the men interested in their particular line of research. The use of the medical library to the publisher is, in the majority of cases, for the purpose of obtaining illustrations; yet he frequently finds it necessary to refer to books and journals for the verification of quotations and references.

A recent number of the *Echo Médical du Nord* contains an interesting paper by Dr. G. Potet on spiders' stings. These insects were long looked upon with respect, not only because they were believed to attract from every part the poisonous vapours which infected the air, but because they played an important part in the theory of final causes. "Spiders," said Nicolas de la Framboisière, "live on flies, fowls eat spiders, and men eat fowls. From this it is clear that beasts have been created for the use of man." About the middle of the seventeenth century the tarantula, a species of spider well known in Italy and Corsica, fell suddenly into evil repute as the cause of a fever of which one of the symptoms was convulsive dancing accompanied by wild laughter. The disease was treated by means of music. Two airs, the "Pastorale" and the "Tarantula" were played on the violin and other instruments. This set the patient dancing, and he was kept in motion till he was exhausted, when he was put to bed. After a sleep of twelve hours he awoke cured and oblivious of the attack. In old pharmacopoeias the spider figures as one of the ingredients in the preparation of certain electuaries and poultices. The spider was also believed to have aphrodisiac properties, and Larrey relates the case of a jealous wife who tried to poison her husband by mixing spiders with his food, and who was surprised that instead of dying he gave proof of increased vigour. The toxic action of spiders' stings was tested experimentally on themselves by entomologists such as Walckenaer and Duges, and by Schaller, a physician. They all came to the conclusion that as a rule the effect is nothing more than a slight inflammatory reaction which quickly disappears. Some cases have, however, been reported in which the effects have been serious. In the same number of the *Echo Médical du Nord*, Dr. Dubar, of Dunkirk, records a case in which a spider's sting caused gangrenous phlegmon of the foot.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF ADJOURNED MEETING.

The adjourned Meeting of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 16th of November, at **2 o'clock** in the afternoon.

GUY ELLISTON, *General Secretary.*

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

BRANCH MEETINGS TO BE HELD.

ABERDEEN BRANCH.—The annual meeting of this Branch will be held in the Grand Hotel, Aberdeen, on Saturday, October 22nd, at 1.15 p.m. Business: Minutes; Council's report; Treasurer's report; election of office-bearers for the ensuing year: selection of place for next June meeting. The members will afterwards lunch together in the hotel.—H. M. W. GRAY, M.B., 5, Bonaccord Square, Aberdeen, and J. F. CHRISTIE, M.B., 230, Rosemount Place, Aberdeen, Honorary Secretaries.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH: COVENTRY DIVISION.—The next meeting of this Division will be held at the Coventry and Warwickshire Hospital on Tuesday, November 1st, at 8.30 p.m. After the conclusion of the ordinary meeting, a special meeting will be held. Agenda of Ordinary Meeting:—(1) Specimens:—Dr. Day: Cirrhosis of Liver. Dr. H. Brown: Malignant Disease of Cervix Uteri. Mr. W. E. Bennett: Radiographs of Congenital Hip-disease Before, During, and After Treatment. (2) Dr. Harman Brown: Notes of Cases of Albuminuria in Pregnancy. (3) Correspondence: (*a*) From Medical Guild suggesting a minimum fee for midwives' cases. (*b*) From Wandsworth Division and from Imperial Vaccination League on vaccination and revaccination legislation. Agenda of Special Meeting:—To consider, with a view to adoption, the Ethical Rules of the Bradford Division. From 8 to 8.30 Messrs. Wyleys will give an exhibit of their specialities and preparations.—E. H. SNELL, Knighton House, Coventry, Honorary Secretary.

BORDER COUNTIES BRANCH.—The autumn general meeting of this Branch will be held in the George Hotel, Penrith, on Friday, October 28th, at 3 p.m. It has been arranged to have a discussion upon Motor Cars in Medical Practice, in which several gentlemen have promised to take part. The covered Market Hall close to the George Hotel has been taken for the

storage of cars brought to the meeting, and to enable those interested to inspect the various types. Over twenty medical motorists have promised to attend the meeting, and the following cars will probably be represented: Albion, Arrol-Johnston, Argyle, Bat (bicycle), Clyde, Dechamp, Darracq, Duryea, Daimler, De Dion, Singer (bicycle), Swift, and Wolseley. Papers have been promised by Drs. Sedgwick and Maclaren of Carlisle, Dr. Edington (Penrith), and Dr. Syme (Glasgow). It is intended that the members should dine together at the George after the meeting. Full particulars will be posted to each member later.—FRANCIS R. HILL, 62, Warwick Road, Carlisle, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—The first general meeting of the session will be held on Thursday, October 27th, at 4.30 p.m. in the Lincolnshire Room of the Great Eastern Hotel, Liverpool Street, E.C. (entrance in Bishopsgate Street). Dr. Dundas Grant will read a paper entitled Some Practical Hints in regard to Diseases of the Throat, Nose, and Ear, more especially in General Practice.—E. W. GOODALL, M.D., Honorary Secretary, the Eastern Hospital, Homerton, N.E.

METROPOLITAN COUNTIES BRANCH: HAMPSTEAD DIVISION.—The next meeting of the Division will be held at St. Peter's Lecture Hall, Belsize Square, Hampstead, N.W., on Friday, November 4th, at 4.30 p.m. Dr. Heath Strange will preside. Agenda: (1) Minutes. (2) Dr. W. S. Lazarus-Barlow, Director of Cancer Research Laboratories, Middlesex Hospital, will read paper on Statistics of Cancer at the Middlesex Hospital. (3) Mr. R. Henslowe Wellington, Deputy Coroner for Westminster and S.W. Division of London, will read his report on the Representative Meeting at Oxford. (4) Dr. Ford Anderson, Representative of the Branch on the Central Council of the Association, will move "That Divisions elect their own members." (5) General business.—J. DILL RUSSELL, F.R.C.S., Honorary Secretary, Osman House, Fortis Green, N.

METROPOLITAN COUNTIES BRANCH: ST. PANCRAS DIVISION.—An ordinary meeting will be held at the Great Central Northern Hospital, Holloway Road, N., on Friday, October 21st, at 4 p.m. Agenda: To confirm the minutes of the meeting held on May 27th, 1904. Address by the Chairman of the Division. To receive the Report of the Representative (Dr. Walter Smith) of the Annual Meeting of Representatives. Mr. Mower White will read a paper. To consider the question of a dinner. The Executive Committee hopes that all members will make an effort to attend.—R. M. POOLEY, Honorary Secretary, 35, Highbury Grove, N.

METROPOLITAN COUNTIES BRANCH: TOTTENHAM DIVISION.—There will be a meeting of this Division at the Tottenham Hospital on Friday evening, October 28th, at 9.15 p.m. Agenda: (1) Representative's report of Annual Meeting. (2) National Deposit Friendly Society. (3) Medical Contract Practice. Discussion on (2) and (3) to be opened by Mr. R. F. Tomlin. Visitors are cordially invited.—FRED. TRESILIAN, White Lodge, Enfield, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WANDSWORTH DIVISION.—An ordinary meeting will be held on Thursday, October 27th, at 3.30 p.m., at Tooting Bec Asylum, by the invitation of the Medical Superintendent. Agenda: (1) Minutes. (2) Correspondence. (3) Questions. (4) Resolutions for the Representative Meeting at Leicester. (5) A paper by J. L. Gordon, M.B.: Notes on the Certification of Alleged Lunatics. Patients will be subsequently shown. Members are invited to bring their medical friends.—E. ROWLAND FOTHERGILL, M.B., Torquay House, Southfields, S.W., Honorary Secretary.

NORTHERN COUNTIES OF SCOTLAND BRANCH.—The autumn general meeting of this Branch will be held in the Cluny Hill Hydropathic, Forres, on Saturday, October 22nd.—J. MUNRO MOIR, M.D., 4, Ardross Terrace, Inverness, Honorary Secretary.

SOUTH-EASTERN BRANCH: ISLE OF THANET DIVISION.—A clinical meeting of this Division will be held at the Sea-Bathing Hospital, Margate, on Friday, October 28th, at 4 p.m. Agenda: Mr. Sutcliffe and Mr. Bertram Thornton will show cases of interest. Mr. Heaton will demonstrate the x-ray apparatus.—HUGH M. RAVEN, Honorary Divisional Secretary, Barfield House, Broadstairs.

SOUTH MIDLAND BRANCH.—A meeting of the Branch Council will be held at the Library, General Hospital, Northampton, at 12 o'clock noon, on Thursday, November 3rd, under the presidency of Dr. Kennish. Luncheon at Franklin's Restaurant, Guildhall Road, at about 1 o'clock. Price 2s. 6d. Agenda: Minutes of last meeting. Election of following new members: Bernard Relton, M.R.C.S., Rugby; J. C. Baker, M.B., Aylesbury; C. H. T. Bailey, M.R.C.S., Bedford; J. M. Dupont, M.B., Ch.B., Bedford; W. K. Parbury, M.R.C.S., Sharnbrook; H. E. May, M.B., St. Albans; C. H. Nicholson, L.S.A., Clophill, Beds.; A. F. Goldsmith, M.R.C.S., Bedford; V. S. A. Bell, M.R.C.S., Bedford; A. L. Chignell, L.R.C.S., Wing, Bucks; H. Kerr, M.D., Stone, Aylesbury; H. F. Bellamy, M.D., Abbots Langley, Herts; J. F. Matheson, M.B., Moulton, Northampton; Abraham Leach, M.B., Kettering Hospital. To discuss divisional grants (referred from annual meeting). Letters and communications. At 2.30 on the same day the autumnal meeting of the Branch will be held at the Board-room, Northampton General Hospital. The following papers are promised:—Dr. Milligan: Case of Appendicitis in which Laparotomy was performed twice; recovery. Mr. C. J. Evans: Treatment of Gastric Ulcer. Dr. Hichens: Actinomycosis of Lung; notes of a case with specimens of sputum. Any member desiring to read a paper or show specimens must communicate with the Honorary Secretary not later than October 24th.—E. HARRIES JONES, Honorary Secretary.

SOUTH WALES AND MONMOUTHSHIRE BRANCH: SOUTH-WEST WALES DIVISION.—The autumn meeting of this Division will be held at the Cawdor's Hotel, Llandilo, on Tuesday, October 25th, at 1 p.m., when the following papers (all of which will be very short) and other matters will be discussed: (1) The President's address. (2) The resignation of the Honorary Secretary and Treasurer, and the election of a successor. (3) The adoption of the Draft Ethical Rules of the Division. (4) Other business. Papers: (5) Mr. D. J. Williams, F.R.C.S.: Surgery of the Fingers. (6) Dr. Edgar J. P. Davies, B.Sc.: Prostatectomy. (7) Dr. H. H. Roberts: Addison's Disease. (8) Dr. Glanville Morris (notes): Midwives Act, 1902. Members will be entertained at luncheon (1 p.m., Cawdor's Hotel) by the kind invitation and request of the Llandilo and District practitioners. Those who intend being present will oblige by sending a post-card to the Local Secretary, Dr. R. D. Evans, Llandilo, before October 24th.—S. GLANVILLE MORRIS, Honorary Secretary.

SOUTH-WESTERN BRANCH: BARNSTAPLE DIVISION.—A meeting of this Division will be held on Wednesday, October 26th, at the Montebello Hotel, Ilfracombe, at 2.15 p.m. Business:—To confirm minutes. To discuss the following resolutions: (1) That an advisory council should be created, representing the Departments of State within whose province all questions touching the physical well-being of the people fall. (2) That in every case of being called in by a midwife to attend any woman in or immediately after labour, the fee charged be not less than one guinea, for simple cases, and two guineas should an anaesthetic or instrumental assistance be required. (3) In every case of being called in to attend any woman before labour has actually commenced, or any lying-in woman, or any newly-born child, that the fees charged shall be such as are usual in the consultant's ordinary course of visiting. (4) That in all such cases, asking for the fee to be paid at once, or even before attendance is given, be recognized as professionally correct and advisable. Paper to be read: Dr. Toller: A Case of Trichinosis in Man. Mr. Kendle will exhibit several cases of cretinism improved by thyroid feeding. Hot lunch at 1.30. Tickets, 2s. 6d. Provision can only be made for those who send in their names to Dr. Slade-King, Ilfracombe, before October 24th. At the conclusion of the meeting arrangements have been made to show the members over the Isolation Hospital, after which Mrs. Slade King will entertain them at tea at Bickleighscombe.—F. WELLESLEY KENDLE, Honorary Secretary and Treasurer, South Molton.

WEST SOMERSET BRANCH.—The autumn meeting of this Branch will be held at the Taunton and Somerset Hospital, on Friday, November 4th, at 4 p.m., when the President, Mr. A. W. Sinclair, will take the chair. Sir Patrick Manson, M.D., K.C.M.G., has kindly consented to give an address on the Significance of Fever in Patients from Warm Climates. The fifth annual dinner for medical men residing in West Somerset will be held at the London Hotel, Taunton, on Friday, November 4th, at 6 for 6.30 p.m., Chairman, Mr. A. W. Sinclair, of South Petherton. Guests may be introduced, and the charge for dinner will be 6s. per head. Those who wish to be present are requested to intimate their intention by Monday, October 31st, to W. B. WINCKWORTH, Honorary Secretary, Sussex Lodge, Taunton.

SPECIAL CORRESPONDENCE.

MANCHESTER.

Manchester Cripples.—What is Brandy?—Penny Dinners for Poor Children.—Midwives Committee and Duties of its Medical Officers.—Water Supply.

MANCHESTER, it appears, is far behind London in its efforts on behalf of cripples. To stimulate interest, a meeting was held in Manchester at the University Settlement. It appears that the workers of the Settlement are ministering to nearly two hundred and fifty cripples living within an area of three-quarters of a mile round Ancoats Hall. The life of these poor folks is brightened, a friend being found for each one as far as possible. The society works with other societies. Even when every surgical help is given, it is necessary to have an organization to supplement the surgical attention. Without the supervision of visitors to the homes of the poor unfortunates, the surgeon's orders are apt to be neglected.

Magistrates are very chary of convicting in cases involving the qualities of alcoholic beverages. Recently the Stockport Bench dismissed a case where silent spirit—which is pure ethylic alcohol—was mixed with rum, and sold as Demerara rum. The Preston magistrates had before them a case in which a publican was summoned for having sold brandy to the prejudice of the purchaser. On analysis the brandy bought was found to be 16.9 per cent. under proof, and to contain about 60 per cent. of patent still spirit. It was contended by the analyst that the fluid sold as brandy did not contain the requisite ingredients, and therefore it was not brandy. It was submitted that there was nothing in the brandy that might not have been the product of the distillation of good wine. The case was dismissed, as the prosecution had failed to prove that the brandy contained anything which could not have been the product of the distillation of good wine.

The Manchester Education Committee has decided that during the coming winter provision should be made for supplying children in selected elementary schools with dinner at 1d. a head, and to hold a conference with other organizations on the subject of concerted action, with a view to providing free meals in cases of exceptional poverty among scholars. The selected schools are in areas where poverty does exist. Experience has shown that the 1d. tariff works admirably. The conference will meet on one day of each month, and the same persons who are in close touch with the

wants of the poorest children would attend. In all, thirty-eight schools have been selected. The now defunct School Board during its last winter of existence provided 140,000 dinners during the winter months for twenty-one schools, the cases being examined by the school attendance officers. None of the money came from the rates; the expenditure was met by voluntary contributions.

The Midwives Committee of Manchester has resolved to appoint a medical officer at a salary of £250 a year. The selected candidate must be a fully-qualified medical man, and be prepared to devote his whole time to the duties of the office. He will have to see to the registration and qualification of women practising as midwives.

With the water supply reduced to twenty-two days of a restricted amount, the recent rain has proved a welcome contribution to the severely-depleted reservoirs, and will perhaps enable Manchester to tide over its present difficulties in the matter of a continuous water supply.

SOUTH WALES.

Small-pox.—Teaching of Hygiene.—University College, Cardiff.

During the week ending October 15th four fresh cases have been notified from Senghenith, in the Caerphilly district. All are isolated in the hospital, and, with this exception and that of one case in the Margam district, Glamorgan is free from this disease.

A course of lectures in practical hygiene, especially designed to meet the requirements of school teachers, is about to be established in connexion with the Public Health Department of the Cardiff Medical School. It includes such subjects as elementary anatomy, physiology, school accidents and first aid, physical defects, physical exercises, physical conditions affecting health in schools, special organs, infectious and parasitic diseases, disinfectants and disinfection, municipal and legal sanitation, the education code, hygiene of schools, including sites and general arrangement of buildings, water supply, drainage, sanitary appliances, disposal of refuse, air, ventilation and warming. At the end of the course an examination will be held, open only to the members of the class who have been regular in attendance throughout: those who attain a satisfactory standard in the examination will be granted a certificate. It is stated that it is the intention of the Glamorgan County Council to increase the salary of any teacher who belongs to its area and who succeeds in obtaining a certificate, in addition to paying the candidates' railway fares whilst attending the lectures.

The twenty-first anniversary of University College, Cardiff, was celebrated on the 14th inst. Among those present were the President, Sir Alfred Thomas, M.P., Right Hon. Lord Tredegar, Principal Griffiths, and Principal Roberts (Aberystwith), together with many of the professors and lecturers and students, past and present, connected with the College and its Medical School. The audience was informed that Lord Tredegar had promised £5,000 towards the cost of the new buildings shortly to be erected in Cathays Park; other sums were also promised, making a total for the evening of £13,000, so that there is now in readiness between £70,000 and £80,000 towards the erection of the new buildings.

Society for Relief of Widows and Orphans of Medical Men.—A quarterly court of the directors of the society was held on October 12th at 11, Chandos Street, London, Dr. Blandford, Treasurer, being in the chair. Three new members were elected and the death of a member reported. There were no fresh applications for grants. The death of a widow was announced who had received £957 since January, 1879. Applications for renewal of grants were read from 52 widows, 13 orphans, and 3 orphans on the Copeland Fund, and it was resolved that £1,293 be distributed at the next court, subject to the report of the visitors. On the motion of the acting treasurer it was decided to give at Christmas £10 to each of the 52 widows, £3 to each of the 13 orphans, and £5 to each of the 3 orphans on the Copeland Fund, in all £574. The expenses of the quarter were £60 14s. 6d.

Medicine and Matrimony in Iowa.—The Dashiell Bill, providing that persons contemplating marriage should appear before a physician and receive instruction such as would tend to prevent the bearing of weak or defective children, was recently thrown out by a unanimous vote of the Iowa Legislature on the ground that the proposed measure was contrary to the principles of liberty and the pursuit of happiness.

CORRESPONDENCE.

THE LATE PROFESSOR FINSEN.

Sir,—A movement has been initiated in Denmark for the erection of a monument to the late Professor Finsen by national subscription. A Committee has been appointed to carry the proposal into effect. It is thought that many members of the medical profession and of the public outside Denmark would be willing to join in doing honour to the memory of a man who worked unselfishly for the good of mankind, and I have been asked by the Committee to bring the matter to the notice of my countrymen, and if possible to form a British Committee for the furtherance of the scheme. I shall be happy to receive the names of gentlemen willing to act.—I am, etc.,

8, Harley Street, W., Oct. 18th. Malcolm Morris.

THE PARLIAMENTARY REPRESENTATION OF GLASGOW AND ABERDEEN UNIVERSITIES.

Sir,—In any remarks you make, I feel sure your only wish is to be fair to both candidates for the representation of Glasgow and Aberdeen Universities in the next Parliament. But I fear your leaderette in last week's British Medical Journal is unintentionally calculated to mislead. You seem to favour the claims of Professor Smith chiefly on three grounds, which, I confess, are plausible enough. Let us consider what those contentions are really worth.

First, it is said there has been a general understanding that this time it is "the turn" of Aberdeen to fill the vacancy. As far as I ever heard no understanding has ever been come to by any recognized authority representing both Universities; and, indeed on the face of it, unless there were alternations, Parliament by Parliament, such an obligation would be so inequitable as to be ridiculous.

Secondly, the argument that the medical profession ought to have for their member in the House of Commons only one of their own number, is entirely fallacious. If, indeed it were sound, it would strike at the root of all proper Parliamentary representation. Only let us try to fancy a House of Commons where every section of the community would be specially represented? Surely, with Irish Nationalists, labour representatives, and I fear, other such coteries, we have too much and to spare of that kind of thing already.

And supposing we had such special representation, does any one seriously believe that the profession would be better off, when they already have such men elected on broad grounds as the two Fosters, Collins, Farquharson, Thompson, and Rutherford?

Again, it is surely not quite fair to advance such misstatements as the following, to quote one of several: "The Government with but one real exception is entirely without medical advice and support in Parliament," and would Professor Smith be such a tower of strength, if returned, that in his own person he could supply all deficiencies?

Thirdly, has Professor Smith's Association already secured 1,200 or 1,300 electors who are ready to vote on his behalf? The phrase used looks intentionally vague.

You, Sir, will agree with me that the curse, so to speak, of our age is that as a profession we do not value our privileges sufficiently and guard them as we should. If I may be allowed to speak from a very considerable experience of canvassing my medical brethren, I venture to prophesy, if the list comes to be published, that he has been misled; or has (of course) unconsciously exaggerated their numbers; and that they do not amount to more than one-fourth of what they are alleged to be.—I am, etc.,

Wm. Bruce, A.M., M.D.,
Dingwall, N.B., Oct. 17th. Hon. LL.D., Aberdeen University.

PRINCIPALS AND ASSISTANTS IN MEDICAL PRACTICE.

Sir,—All general practitioners must feel grateful to Surgeon-General Evatt for taking up the question of assistants. So few practitioners can spare the time necessary to work up a question of this kind, that it is to men like him we must look for help. I sincerely hope that in the near future the profession will have him in the House of Commons to champion its interests and help to safeguard its privileges, which at the present time are so sadly neglected.

As a principal, I beg to answer his questions as follows:

A. The scientific development of the young medical man is much assisted by being associated with a general practitioner

before starting practice on his own account. He has more leisure to read up cases than he had during the last year or two at hospital when he was holding busy appointments; it gives an opportunity of becoming acquainted with the classics of professional literature without the anxiety consequent on commencing practice on his own account. He learns the early stages of disease and the premonitory symptoms, of which he sees little at hospitals, especially those of the infectious diseases. His attention is directed to the prevention of disease and the importance of diet. He learns dispensing and bookkeeping, of which he knows very little, if anything.

B. Ethically, a young medical man who acts as assistant learns what is expected of him by the public. He realizes the responsibility of his work, and sees the necessity of cultivating what is termed "a good bedside manner." He is grounded in the traditions of the profession and the so-called "tricks of the trade." He finds out that in many cases it is the "patient" and not the "disease" that he has to treat, and if he goes wrong it does not affect him so seriously as if he were the principal. The most successful general practitioners are those who acted as assistant under the supervision of a good principal. I am assuming that the principal is a man of honour and one who realizes his duty to his assistant.

Unfortunately, at the present time there are so many ignorant, incompetent, careless, and utterly unreliable men in our profession that many practitioners dread the idea of having an assistant or a *locum tenens*. I am convinced that if all young medical men were compelled to obtain a certificate from a practitioner, to whom they had acted as assistant, as to their fitness for general practice on their own account, the status of our profession would soon become higher.

Our profession is overcrowded—but not by good men. Fees are cut down, mean actions are perpetrated, *esprit de corps* is destroyed, and the profession is lowered in the eyes of the public by men who, if our interests were properly looked after, never ought to have been admitted to our ranks.—I am, etc.,

Folkestone, Oct. 12th. ARTHUR E. LARKING.

SIR,—As a principal of some twenty years' experience, I beg to reply to Surgeon-General Evatt.

To question A. I think it is a great advantage in the development of a young man's scientific views of trivial diseases, and almost the beginning of his knowledge of the practical treatment of them.

To question B. In hospital practice and general practice the conditions are reversed. In one the student pays for treating the patient; in the other the patient pays for being treated. So the patient has to be considered as well as the disease, and with mutual advantage in an experience which tells me it is fatal to ignore the personal factor. Again, the hospital training teaches nothing practically on our conduct to our colleagues. The newly-graduated comes down into the country with a metropolitan opinion of his qualification to treat every ill the flesh is heir to, and begins by patronizing his patrons. It takes at least three months for him to readjust his perspective and realize that his salary is paid for services rendered. I think that most principals would be only too pleased to pay the first three months' salary to a man who was being trained at the expense of another's practice.

I do not think Surgeon-General Evatt need go out of the Service to find the need of special training for general practice; for how rarely do their wives and children employ Service doctors, although the R.A.M.C. officers have another severe examination after qualifying?

Now for a few reminiscences which some of my assistants have left behind. I have had only one that practised the principles of antiseptic midwifery; he is an Irish graduate. One, an Edinburgh graduate, attended a midwifery and left the placenta behind, which he had quite forgot; one, a Cambridge graduate, gave magnesium sulphate to an infant for diarrhœa (and he did not pretend to be a homœopath); one lost me a family of good patients through being unable to diagnose and treat impetigo.

One expects a qualified man to tie a reef knot. Although now I do not presume to require a clove-hitch, once I suggested one to sling the injured arm of an ancient mariner, which had the ignominious result of the patient saying, "Gie it me; I'll do it wi' won 'and," and he did. Another, an Oxford and Bristol man and a late house-surgeon, ordered an elaborate truss for a poor man with a psoas abscess, which I had afterwards to buy back of the widow.

Dispensing is an unfortunate necessity in nine out of ten practices, and only one in five of those who undertook that duty did not require strict supervision or could wrap up a bottle of medicine decently.

On the ethical side I have had more painful experiences. I have had total abstainers go on the drunk for a week together, and on my advice seek change of scene. I had to pay the fare of one man away to town three times before I could get rid of him; he was a fellow student, and a decent boy when I first knew him, but he had dissipated himself into a hopeless imbecile. One married man got into debt with the tradesmen to the extent of £50 in his first month, and afterwards brought an action against me for wrongful dismissal, which fell through because he was an undischarged bankrupt. Yet I think I have had average luck, and many of my late colleagues are still my friends and are doing well, which they kindly attribute in part to the practical training which they received in my practice.—I am, etc.,

October 18th. PRINCIPAL.

THE PRESENT POSITION OF ASEPTIC SURGERY.

SIR,—If you can grant me the necessary space I shall be happy to reply to your correspondents, Drs. Gifford and Connon. The latter asks in very courteous terms for "the details of how" I perform my "operations so successfully by 'simple cleanliness and simplicity of apparatus,'" and I readily respond.

Let me, then, take the case of ovariotomy, for example.

The lower abdomen is washed with soap and water and afterwards with plain water before the patient is put upon the table, and before beginning the operation I shave off (dry) all the hairs that may be in the way, but not off the whole pubes; my assistant and self wash our hands with soap and water, using the nail-brush not too roughly, and then rinse off the soap with fresh water—for the reason that soap irritates a raw surface; my instruments—scalpel, scissors, forceps, etc.—are put straight from their receptacle into shallow trays half filled with warm water; the silk is kept dry and on the reels as it comes from the manufacturer, and is used for intraperitoneal ligatures; the silkworm gut, stained for convenience by an aniline dye, is put into warm water to render it soft and pliable, and therefore not liable to crack; the catgut, used for buried sutures, as in closing the peritoneum separately, prepared by myself by immersion in ether for two or three weeks and kept in stock in sp. vin. rect., is put into warm water just before using to remove the alcohol; a wash-hand basin is near by containing warm water in which to wash my hands of blood or ovarian fluid, so that, whenever I have to put my hands or fingers into the peritoneal cavity, they are clean; into this basin are thrown any instruments that have been used, and they are thence removed into the trays ready for use again. I always employ sponges, and the older they are the better, so long as they are sound, for it takes two or three weeks' work in cleaning to get rid of all the sand and calcareous matter which new sponges—even as they are found prepared in the shops—contain. Perhaps I ought to add here, to save repetition, that after an operation the sponges are, as far as possible, freed from blood by washing in plain water, from fat—where necessary—by soaking in soda solution for twelve hours or so, and from the soda by rinsing in plain water; thence they are put to soak for a night in a solution of 1 part of pharmacopœial sulphurous acid to 9 of water, then rinsed again in cold water, and finally laid on a towel, if possible in the sun, to dry; when dry they are stored away in a linen bag. The sulphurous acid dissolves out any blood or albumen, etc., that may have escaped the previous processes, and at the same time, especially with the aid of sunlight, bleaches them, so that they always look like new. On the other hand, carbolic acid and sublimate fix the albumen, while the latter blackens the sponge and injures its properties.

I make no attempt to—as it is called—sterilize my instruments by moist or dry heat, and I use non-medicated absorbent gauze as it comes from the manufacturer and have never been induced to charge it with doing harm.

I do not know what Dr. Connon means by "ligature abscess," and I am unable, at short notice, to answer his question about "stitch abscess" (or suppuration) in the 90 cases referred to, as it would necessitate my going through all the cases; but this I do know, that if I happen to draw a suture too tight I strangulate the tissues and lower their vitality, and there will be, in the track of this suture, some suppuration which no antiseptic method can prevent, but which, however, does not affect the healing of the wound proper by "first intention." Therefore, in closing a wound I endeavour to avoid undue tension, to adjust the raw surfaces

carefully, keeping them together with very gentle pressure, and the more thoroughly I succeed in this the more satisfactory is the result, so that there will not be even a blush around a stitch hole.

In amputation of the breast I usually employ a continuous suture which reduces the risk of tension, and when so much skin has been removed as to involve a strain on the edges in closing the wound, I put in one, two, or more supporting double sutures from $\frac{1}{2}$ to $\frac{3}{4}$ in. from the edges, the loop and knot being prevented from cutting by a small roll of gauze. I have had only one failure and that was done under carbolic acid.

In removing a wen, I cut away with scissors the necessary amount of hair, slit the cyst, pull it out by means of a broad-pointed forceps, press the flaps into position with a damp sponge, the more readily to take up blood, and apply a graduated compress of dry absorbent gauze, which is kept in position by a firmly-applied bandage. Perfect union by "first intention" has resulted in every case within forty-eight hours. Many of these cases have been done in my consulting room, and yet we are told that the scalp is one of the most difficult parts of the skin to sterilize or disinfect.

I call the attention of your correspondents to the fact that in plastic operations about the vagina such as perineorrhaphy and Emmet's operation, one need not fear suppuration if the operation be properly performed. And here again you cannot sterilize or disinfect the parts, or keep them dry. I have never had a case of these two operations break down. I have seen some suppuration in the track of a suture in the former operation (my fault) but never in the latter. In the former the perineum is not kept covered with dressing after the first twenty-four hours, but simply kept clean by washing with a weak solution of sulphurous acid (1 in 20), and as dry as possible. I use the sulphurous acid because of its cleansing properties, not as an antiseptic.

I would remind them that if they allow the blood to coagulate by Nature's method upon a graze of an uncovered part of the skin, they will never have any trouble, and their own experience will, probably, have told them that if they wash it with carbolic acid or corrosive sublimate, the coagulation that may take place involves death of matter (blood or tissue), and there will be considerable serous oozing and a much less satisfactory result.

Dr. Gifford tells us that, in the case of accidents in collieries, quarries, factories, etc., after cleansing the parts as best he can, he washes the wound with "1 in 40 carbolic lotion and 1 in 2,000 sublimate solution, and afterwards applies a double cyanide gauze" (what he imagines the action of an insoluble substance—such as the double cyanide—to be, it would be interesting to know) "and wool dressing, and with this gets a very much larger proportion of cases healed without suppuration than he used formerly to get."

For Dr. Gifford's benefit I will give him an accident case in which the conditions for healing were much more unfavourable than in his cases. One of my horses met with a very serious accident, and in addition to several lacerated cuts, one on the inside of hock, 4 in. long with a flap, the coronet of one hoof was seriously cut, probably by the opposite shoe. The veterinary surgeon—a man occupying an important position—who was called in, expressed his great fear that it would involve the sacrifice of the animal. I took the treatment into my own hands. I washed the wound as clean as possible with a weak solution of sulphurous acid, and then applied a dry compress of absorbent gauze. This was the daily treatment. There was no suppuration, and the wound healed within a fortnight.

Dr. Gifford, with his twenty years' experience, was evidently nurtured on the Listerian method, and it would seem that he has not been able to leave the old path, to free himself from its trammels, nor to think and act for himself. I invite him to try the more simple method I have described, for I believe that if he will try it in those cases in which he is in the habit of using both carbolic acid and corrosive note the meaning of this adjective *corrosive*—sublimate, he will have no reason to be dissatisfied with his results.

May I, without its being regarded as an advertisement, invite your correspondent to read my pamphlet on the *Modern Doctrine of Bacteriology*? They will, I believe, find therein facts with which they were not previously acquainted.

Once more, I have seen a very celebrated surgeon take up more than half an hour in his preparation for a vaginal hysterectomy in a simple case. It is rare for my preparations to occupy me for a third of the time.

I trust my statement is a clear one, and that my method may claim to be characterized as one of "simple cleanliness and simplicity of apparatus," as it is undoubtedly one that yields satisfactory results.—I am, etc.,

London, N.W., Oct. 15th. GEO. GRANVILLE BANTOCK.

SIR,—I hope the letter of Dr. Bantock published in the BRITISH MEDICAL JOURNAL of October 8th will do much good by causing general practitioners and others to think for themselves.

I had four years' experience of pre-antiseptic surgery, and four years more of antiseptic surgery at one of our largest hospitals, and at the end of that time came to the conclusion that antiseptic surgery was worse than useless.

I have been in general practice for twenty years, chiefly among men employed in mines and ship yards, and as I do all my own surgery I get a variety of cases, from occasional abdominal sections and major amputations to lacerated scalps and fingers. When time allows, I get as much cleanliness as may be obtained by soap and water, but for lacerated scalps and fingers I often have just to get off as much grease and dirt as possible, and dress the case frequently, and I invariably get good results. I suppose most thinking men will now admit that chemical substances, such as solutions of carbolic acid and corrosive sublimate, are not sufficiently strong to kill malevolent germs, and yet strong enough to irritate raw wounds and retard healing, and are therefore worse than useless.

My clinical experience convinces me that both the antiseptic and aseptic systems of surgery are built up on a false foundation—namely, that germs exist in the normal clean skin or passages of the body which are malevolent, and must be got rid of to ensure a good result. If such were the case, how is it that Dr. Bantock's cases do so well? or how is it that the cases of general practitioners like myself, working often under very unfavourable conditions, do better than the records of some hospitals where antiseptic and aseptic surgery are most religiously practised?

In my experience the essentials of a successful operation are:

1. Cleanliness, without antiseptics.
2. Quickness and dexterity. (In the desire to obtain asepsis far too little attention is now given to the extra shock occasioned by the prolongation of an operation.)
3. Efficient drainage where there is any chance of effusion causing tension and dragging on the stitches.
4. The redressing of any case immediately there is any rise of temperature, or where the discharge comes through.
5. Carefulness not to unnecessarily injure tissue.

By trying to follow these rules I get better results than when I diligently used the most strict antiseptic precautions. In the bad old days that are so frequently mentioned, I believe that the surgeons at our big hospitals were very skilful operators, but the cases were subsequently left to more or less irresponsible dressers and nurses, and so contagion was introduced, and carried from case to case.

The moral of the whole thing is that in surgery common sense should reign, and that we should not allow our common sense and clinical experience to be overruled by the theories of men, however great their learning, who spend a large part of their time either in reading, or in the laboratory, or over the microscope, and whose theories (given out as facts) vary from year to year.—I am, etc.,

North Shields, Oct. 17th. F. C. MEARS.

ASSISTANTS AND ASEPSIS.

SIR,—In the BRITISH MEDICAL JOURNAL of October 8th I notice a criticism by Dr. A. A. Myers of my remarks on the present position of aseptic surgery at the Oxford meeting.

In reply, I wish to state that, recognizing the difficulty Dr. Myers speaks of, I take very great care that all my dressers watch and know every detail of every operation they see, and before they leave me I make each perform one or more operations, which I severely criticize.

Times have changed, and instead of a large number of students crowding into one large theatre and being able to see chiefly the backs of those immediately concerned in the performance of an operation, each surgeon with us has his own theatre and a few students who see every detail.

It is quite a mistake to think that a dresser must necessarily have his hands in a wound in order to learn how to perform an operation. He is first taught that a surgical operation is a serious matter and must be taken seriously, and if he learns absolute care in detail (and the simpler this detail is the

better), I find that so routine is my method that he performs his operation at the end of three months with as much certainty of an aseptic result as he would by threading any number of needles or handling any number of instruments.

I was sorry to find that so few surgeons brought forward their results in statistical form at Oxford. We heard a great deal about "good" results, but what one surgeon considers good another surgeon may consider extremely bad.

I used to have some trepidation when I opened a knee joint (a much more severe test, by the way, than Dr. Bantock's ovariotomy), but I have very little now. Since the meeting I have done so five times without the very slightest trouble.

I am certain that the "weeping" which invariably follows the use of any antiseptic is one of the great sources of danger.—I am, etc.,

GEORGE G. HAMILTON, F.R.C.S.,
Liverpool, Oct. 17th. Hon. Surgeon, Royal Infirmary, Liverpool.

DIPHTHERIA IN BRISTOL.

SIR,—I should like to thank Dr. Davies and Mr. Heaven for their courteous answer to my letter. The only important point upon which we appear to differ is the part played by Hofmann's bacillus. This often-discussed question must have already become tiresome to many, yet until it is settled public health officers will be unable to attack diphtheria with single aim, and to deal effectively with contacts. The subject is therefore of considerable practical importance.

I do not appear to have succeeded in making my meaning quite clear to Dr. Davies and Mr. Heaven, for they say that they

agree with Dr. Cobbett that it is useless to examine contacts and to isolate and treat such as harbour the diphtheria bacillus while those infected with Hofmann's bacillus are allowed to go free.

But this is the exact opposite of what I hold. My remark quoted was preceded by the words "if the bacillus of Hofmann plays the part prescribed to it by Dr. Davies." Further on they say:

Dr. Cobbett's concluding paragraph seems to admit that measures, including the neglect of Hofmann, will succeed in the discovery of only the great majority of those who spread infection: we agree, but the residuum of those who spread infection includes, we believe, certain potentially-infected Hofmann-bearing contacts.

This implies that I believe Hofmann's bacillus to take some small share in the spread of diphtheria. But I do not. The reason I said that we should discover only the great majority of infection bearers by examining contacts for diphtheria bacilli was that I was aware that, with all the means in our power, some who carried the true diphtheria bacilli would escape us. I must, therefore, repeat again my belief that the bacillus of Hofmann is entirely harmless.

It is not reasonable within the space of a letter to discuss this matter in detail, and I shall content myself with enumerating the reasons which have led me to believe this bacillus to be harmless and to have no relation to the diphtheria bacillus. They are based upon personal observations and experiments, which have already been reported in various numbers of the *Journal of Hygiene*.

1. It is found in the majority of all children attending our public elementary schools whenever it has been sought for.

2. It is not more frequent in the children of a district where diphtheria is prevalent than in those of one where it has long been absent. Neither is it more frequent in contacts or convalescents than in other children.

3. (*a*) It is always distinct from the diphtheria bacillus. Both micro-organisms can frequently be isolated from the same patient or convalescent, and in such cases they have all their distinctive characters unimpaired; (*b*) intermediate forms and partially-attenuated diphtheria bacilli have never been found by me, though carefully sought for; (*c*) diphtheria bacilli recovered from convalescents, even from cases in which the persistence of the micro-organism is very prolonged, have been found to retain their full virulence to the very end.

4. Hofmann's bacillus forms no acid out of glucose as does the diphtheria bacillus—an important physiological difference.

5. Hofmann's bacillus forms no toxin and no protoxoid—that is to say, mixtures of diphtheria toxin and antitoxin, which contain only the bare quantity of the latter necessary to render the former harmless, or nearly so, on injection into guinea-pigs do not become toxic or more toxic on the addition of filtered broth cultures of Hofmann's bacillus, as has been asserted.

6. The claims as to the conversion of one bacillus into the other have not been substantiated.

7. Though the bacillus of Hofmann in primary cultures from the human throat at times closely resembles the diphtheria bacillus, yet in such cases it always reverts in subculture to the typical form, which does not at all closely resemble the diphtheria bacillus.

8. Even if diphtheria bacilli do become attenuated, it is more probable that they change into the acid-forming non-virulent bacillus which closely resembles them, than into Hofmann's bacillus, which differs from them materially in appearance and chemical physiology.

These are the reasons which have led me by degrees to hold somewhat strongly that Hofmann's bacillus has no influence on diphtheria. I know no valid reasons which can be urged on the other side, and I am persuaded that the belief in the relationship of the two bacilli is grounded on the fact that observers, as is natural, search their cultures from convalescents and contacts more exhaustively than those from ordinary people, and so find the bacillus of Hofmann more frequently in the former class than in the latter, thus getting a false idea of its distribution.

Dr. Davies and Mr. Heaven suggest that "the 50 per cent. of children harbouring Hofmann's bacillus may not be unrelated to the 50 per cent. showing natural immunity." Surely, Sir, this is not probable, seeing that Hofmann's bacillus forms neither toxin nor toxoid, and that it is impossible to immunize laboratory animals by means of it.—I am, etc.,

Stansted, Oct. 12th. LOUIS COBBETT.

THE RELATIVE FERTILITY OF THE RICH AND THE POOR.

SIR,—As bearing on the subject of your leading article in the BRITISH MEDICAL JOURNAL of September 24th, *re* birth-rates, the following remarkable data, published by Bertillon of Paris in 1897, are well worth noting:

Table showing Births per 1,000 Women, aged 15 to 50, per annum in different quarters of London, Paris, Berlin and Vienna.

Classes of Population.	Average.	London.	Paris.	Berlin.	Vienna.
Very poor	153	147	108	157	200
Poor	132	140	95	129	164
Comfortable	112	107	72	114	155
Very comfortable	105	107	65	96	153
Rich	78	87	53	63	107
Very rich	51	63	34	47	71

It is evident that these data merit the earnest consideration of all those interested in the problems of social science, especially since it is now quite clear that the coming race—in this country—will be town-born, as well as town-bred, for, with us, the country has already ceased to provide for the renewal of the race.—I am, etc.,

Clifton, Bristol, Oct. 8th. W. ROGER WILLIAMS.

INFANT MORTALITY IN LIVERPOOL.

SIR,—I have read the latter part of the letter from Dr. Forbes H. Ross which appeared in the BRITISH MEDICAL JOURNAL of October 1st, p. 862, with much pleasure, for I have been working with dried milk for over twelve months. I have found that dried milk, when liquefied, provided the proper brand is obtained, is most satisfactory for feeding young children and invalids. It is very easy of digestion, owing to the outer cell wall of the casein cells being broken up during the process of manufacture. In infants suffering from summer diarrhoea and from the results of improper feeding, the improvement is very marked when they are put upon this form of milk. As the milk when made from the dried powder does not curdle in the stomach, it will be readily understood that it takes the place in many states of the digestive organs where ordinary fresh milk cannot be given.

I have spent much time and taken a great deal of trouble to find out the modes of shipment to this country by those who obtain their supplies from abroad, and the process and the subsequent treatment of the preparation by those who manufacture it in this country.

The importers and agents in this country have the dried milk sent to them, in the majority of cases, packed in sacks made of very flimsy material, and as often as not they have holes torn in them. Any of your readers who know anything of how things are stowed on board ship can picture to themselves the treatment they are subjected to. In this country it is put up in tins, which tins are taken straight from the

heap dumped down by the manufacturer of these articles. It does not appear that even the ordinary rudiments of cleanliness are observed. The packers and workers amongst this dried milk are not subjected to medical examination to ascertain whether they are free from any disease or have been in contact with any infectious disease.

Unfortunately, the importers and agents in this country consider that dried milk can be handled in, to put it very mildly, rather a rough manner, and they do not or will not know that this preparation can be very readily contaminated, despite what Dr. Forbes-Ross states. They require to be taught that dried milk must be imported and packed in this country under strict aseptic conditions, and that the tins ought to be germ-proof.

Those who manufacture the milk powder in this country, I am afraid, have not grasped the fact that the greatest cleanliness should be carried out in preparation and subsequent packing.

I have ascertained that there is one firm which imports its milk powder from abroad. The powder is packed in parchment paper bags which have been subjected to great heat and these bags are enclosed in new wooden casks of good strength. The powdered milk is then, in this country, repacked in sterilized germ-proof tins. I have examined many samples, and in many cases I have found bacilli which ought not to be there. In one sample I found a piece of worsted. How it got there, I cannot say, nor do I care to conjecture; perhaps some of your readers may be able to assign a cause for its presence.

Other samples contained matters which I am sure did not come from the udder of any known breed of cow, and which recalled to my mind the loathsome discoveries made by the late Dr. Glaister, M.O.H. of Clerkenwell, in ice-cream obtained in that district.

The manufacturers and packers of this dried milk must learn that it is not to be packed as most of our food stuffs are, and about which the least said the better, and also that this preparation is most easily contaminated. Good dried milk should have (1) a creamy colour: (2) no smell, the slightest cheesiness or mustiness condemning it; (3) a soft and flaky feeling to the touch, not gritty or lumpy; (4) a pleasant sweetish taste, leaving a smooth creamy taste in the mouth; no after-taste of soda should be present. When made into the liquid form the flavour should be that of warm milk, and there should be no unpleasant fatty odour. When it becomes cold the taste should be the same as ordinary fresh milk, and no deposit should be thrown down. If the milk powder be good a cream should rise to the top.

I have been unable to trace Messrs. Frend and Co. as manufacturers, but perhaps Dr. Forbes-Ross may be able to throw some light upon this, and state where they have their machines at work, that I may see them if in this country.—I am, etc.

London, N.W., Oct. 4th. STUART HALLOWS, M.D., D.P.H.

THE METRIC SYSTEM.

SIR,—In your issue of September 24th your correspondent, Brigade-Surgeon-Lieutenant-Colonel Edward Nicholson, finds fault with me, on the ground that I instigated the General Medical Council to pass a resolution in favour of the use of the metrical system in preparing and compounding medicines, making it, as he says, compulsory.

I am quite prepared to take any blame attributable to me in this matter, supported as I was unanimously by all the members of the Council, most of whom represent teaching and examining bodies, such as universities and medical corporations. It is, then, most probable that they are the persons best acquainted with the deficiencies in education, both general and special, as applied to the manifold requirements of the medical profession. As they were in favour of the change proposed, I think I may fairly argue that there is a considerable weight of authority in its favour, in spite of the opposition of Brigade-Surgeon Edward Nicholson. One of the greatest arguments in favour of the metrical system is the time-saving one, not only in actual practice, but in the teaching in schools. The saving of time has been variously estimated by different scholastic authorities as one to three years of the school-boy or school-girl's time, which, of course, could be devoted to other subjects. The Bill, referring to weights and measures only, not to money, passed the House of Lords. As it had the promised support of 332 members of the House of Commons, it would, doubtless, have been law during the past session of Parliament if it had not been for political exigencies which prevented its coming before the House of Commons. I presume that your correspondent has been influenced by the writings of the late Mr. Herbert Spencer. He objects to the metric system because, although it is a century old, it has not, even in France, entirely driven out some of the old denominations and units. In reply to this, it may be said that little research is required to reveal innumerable examples of persistence in the use of words and things for more than a hundred years after their betters were available.

It may also be observed that the division into decimals in accurate work is becoming almost universal. In machine shops the unit is generally the inch, and it is subdivided into tenths, hundredths, and thousandths, etc.; are we, then, as a presumably learned profession, to be behindhand?

I should like also to remind your correspondent that other nations than the Latin—such as the German—have adopted the metrical system.

It is well known that all scientific data are expressed in terms based on the metrical system. Doubtless all changes involve some inconvenience to the individual, but as Nature considers not the individual members of a race but the race itself as a whole, so must we, if we desire—as we all should do—to keep in the van of civilization and maintain, if possible, the position we now hold amongst civilized nations.—I am, etc.,

Plymouth, Oct. 10th. GEO. JACKSON.

THE DIAGNOSTIC VALUE OF SKIAGRAPHS IN RENAL CALCULUS.

SIR,—I think that the article by Mr. R. Clement Lucas and the letter of Dr. Walsham's on the above subject require further discussion. Both, and the latter especially, will tend to throw doubt in the minds of many practitioners on the value of an *x*-ray examination in kidney cases, and this to my mind is very undesirable.

It must be admitted by all that in a very large number of cases it is possible to demonstrate the presence of a stone in the kidney by means of *x* rays; and this, in these cases, gives the surgeon great confidence in both urging the necessity of, and performing successfully, the operation; and gives the patient a very great deal of the confidence necessary to submit to operation. But, whilst these positive results are so invaluable, in my opinion the negative diagnosis is almost, if not quite, as important; and, whilst fully admitting that mistakes must occur, nevertheless I think that the negative diagnosis of stone in the kidneys is more sure by *x* rays than by any other method, not excluding an exploratory operation.

In too many cases the technique is at fault; one plate is somewhat hurriedly exposed, no suspicious shadow appears, and at once an opinion is given that no stone is present; an operation follows, and a stone is found and removed, and therefore radiography is of no use. Examine these cases carefully, and we shall find that in the large majority it is the radiographer who is at fault, and not the *x* rays.

To make a successful negative diagnosis certain points are of the greatest importance:

1. A plate (or better, plates) must be obtained, in which there is differentiation of shadows in the soft structures lying between the iliac crest, the vertebral column, and the lower ribs. Unless such a plate (or plates) is obtained the negative evidence is useless—that is, a plate not showing this differentiation is not sufficient to base an opinion upon.

2. The plate must be obtained by an exposure given whilst the patient has not made any respiratory movements, and this means that the exposure cannot exceed about thirty seconds, or (though I do not feel quite confident as yet on this point) the exposure must be made through a metal tube which is pressed well down on to the abdomen, by which means apparently respiratory movements affecting the kidney are arrested on that side.

Given these two points, good plates showing plenty of differentiation of these soft tissue structures, and taken preferably whilst the breath is held, or else through a pressure tube, and my opinion is that a negative diagnosis is warranted, and, with a very small margin of error, will be correct.

In very stout persons it may not be possible to obtain plates fulfilling these conditions; then no opinion should be given. At the same time I have been able to demonstrate the presence of even a small stone in people fairly stout. Also it is possible that a stone may be so small that it could not be shown by *x* rays, but these cases must be rare, and I certainly do not remember having seen a stone removed by operation which was not large enough to have been shown by *x* rays.

In support of my contentions, I have *x* rays of a kidney stone in a well-nourished young adult, the stone about the size of a small bean; one taken in twenty seconds with the breath held: one taken through a tube in two minutes, breathing going on, both show the stone quite distinctly; whilst one plate exposed in the ordinary way for sixty seconds whilst respiration continued shows no shadow, and this notwithstanding that there is plenty of differentiation of the soft-tissue shadows; in this case the respiratory movements have blurred and obliterated the stone shadow.

Further, in two cases in which I could see the shadow of a stone on the screen, it was very plainly seen to move up and down with breathing. To a fairly large stone this might not matter; but with a small one it will probably be disastrous as far as the radiograph is concerned. Three times I have given a very definite opinion that no stone was present, and an operation has been soon afterwards performed. In neither of these cases was a stone present, the conditions being tuberculous disease in one case, an aneurysm pressing on the kidney in another, and what was probably a congenital condition of the kidney in the last: all had symptoms very strongly pointing to the presence of stone. In several other cases I have given a negative opinion, and operation has been deferred; in none of these cases has the after-history so far warranted the performance of the operation.

Personally, if I can obtain plates which fulfil the above conditions, I do not hesitate to give a decided opinion that no stone is present, although I fully recognize the possibility of an occasional error, which will be usually brought about by the small size of the stone; but how a large renal calculus could be missed—supposing satisfactory plates were obtained—I fail to understand.

C. Thurstan Holland, M.R.C.S., L.R.C.P.,
President of the Roentgen Society of London; Honorary Medical Officer in Charge of the *X*-ray Department, Royal Southern Hospital, Liverpool.

Liverpool, Oct. 9th.

ALL FOR THE WORST.

Sir,—Letters like that of Dr. Marriott, of Nottingham, in the British Medical Journal of September 24th, should appear more frequently. At the age of 16, or thereabouts, the unsuspecting man of science makes his choice. Needless here to detail the toil, the restricted horizon, the finality of his chances of further study, and the very limited reward the general practitioner can possibly obtain he wots not of. The honour he possibly accords himself; the glory is the kindly obituary notice in the Journal. It seems to me that the abuse of hospitals and the seine-net of the specialist are two great factors in his downfall. They are exaggerated by a public becoming more and more ignorant of the simplest rules of treatment and niggardly in their ideas towards the general practitioner. They are eaten up with an inordinate vanity in knowing the shibboleths of "microbe," "bacillus," "ptomaine," and the like, of which they think the specialist only has knowledge. The mother of a few years ago, with her medicine chest of castor oil, senna and camomile tea, liquorice powder, and syrup of rhubarb, is replaced by the lady with 1s. 1½d., who is satisfied with a bottle of anything which possesses a Government stamp.

Our profession is not really allowed to argue from any selfish standpoint. We can argue from the standpoint of the greatest good to the greatest number, and more particularly the laity.

The public can never do without the general practitioner. Their present attitude towards him is a menace to their well-being. The centralization of the large hospitals and specialists is a danger to the public, only a few of the serious and complicated cases needing their help having the time, opportunity, or funds to reach them. Therefore, to argue from the public standpoint, it is better that more accessible help should be obtainable, and skilled assistance more generally dispersed over the land. What is the *raison d'être* of an out-patient department? If a patient has no funds he can apply to the relieving officer and obtain the services of the district medical officer. If the abolition of the out-patient department overtaxes this official, all the better. He must give his whole time to the work, be better paid, and have means at his command to treat all cases. In each district there would rise up a small or big hospital, free of access, I should hope, to the general practitioners of that district. The rates and King's Fund must bear the expense. Students would still have their old hospitals for in-patients (and more careful study of individual cases would possibly lead to more mature deductions for cases in general). The smaller district hospitals would give free vent for initiative, and the general practitioner would attack an abdominal operation without shivering (or refusing altogether). The old system of apprenticeship could be revived under vastly better conditions than before. Surgeons and physicians of practical skill would be distributed over the land. A well-paid Poor-law service, with improved status, provided for large numbers of the profession, and all by the simultaneous resignation—after courteous notice—of all out-patient surgeons and physicians.

Otherwise, can it not be feared that, with his fatigue and expenses rising pro rata with the extent of his practice, more and more of his patients seeking the vaunted interview of twenty minutes with Sir Tell Ataglance or Mr. Lightning Opinion, the general practitioner, with his potentiality of bamboozling the public to his heart's content, may not degenerate into a quack so long as opium relieves acute dyspepsia and a serious diagnosis sends the patient to another doctor?

Refuting retorts of "sour grapes," and with the courage of Dr. Marriott, I subscribe my name and address.—I am, etc.,

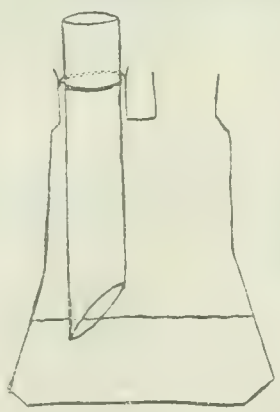
Weymouth, Sept. 27th. W. F. Liddon Green.

THE HARCOURT INHALER.

Sir,—Referring to the very important report of the Special Chloroform Committee,[1] and especially to the discussion on Mr. Harcourt's inhaler,[2] I should like to add my opinion.

The Committee declares 2 per cent. of chloroform vapour to be safe, and calls a narcosis with the use of Mr. Harcourt's inhaler a safe one. I agree entirely with Mr. Crouch (see the discussion) that the inhaler is only to be used fixed on a table or a stand, the facepiece being connected with the apparatus by a tube. I, with Mr. Crouch, do not believe in the exactness of the percentage when the glass bottle is shaken now and then or warmed by hot water (the hand does not answer the purpose). In the majority of cases it is impossible to obtain deep anaesthesia, and it requires too long to get a patient under. The so-called "increase tube" from the catalogue of Mr. Griffin (I cannot believe that it is an invention of Mr. Harcourt) seems to me to be a very curious one. Whichever end of the tube is inserted, the opening through which the air passes is quite the same, and it is impossible that those two positions should make any difference. I do not agree with the Committee, according to my experience, about syncopes (no deaths) in the beginning of a chloroform narcosis, that any percentage whatever is a safe one.

But still I am very satisfied with Mr. Harcourt's inhaler. I put a glass tube in the bottle, just fitting in the neck, surrounded by a small india-rubber ring, so that in every position I can prevent the air from passing round the glass tube. The lower end is cut off obliquely, and the tube is to be inserted so far that it touches the chloroform, as shown in the accompanying sketch. With this modification I have used Mr. Harcourt's inhaler up to now in 25 cases with perfect results. I give more than 2 per cent., it is true, but from a clinical point of view it is quite immaterial to me how much I am administering; the principal question is that I must be able to give enough to obtain deep anaesthesia. Now, the average time to get a patient under is ten to twelve minutes; with mask and drop bottle I used to take about eight minutes; and consequently, though I do not know how much I am administering with my increase tube, at all events I give a smaller percentage than I used to do with mask and drop bottle.



The two principal rules for good chloroformization are to begin slowly, regularly increasing, and to proceed as regularly as possible and as well mixed with air as possible. The former I can obtain with mask and drop bottle as well as with the inhaler, but as regards the second rule the apparatus has an obvious advantage. In comparison with the Dubois inhaler it is a drawback that the face-piece must fit so close,

[1] British Medical Journal, July 23rd, 1904.
[2] Ibid., September 24th, 1904.

but it is a very important advantage that Mr. Harcourt's inhaler is a portable one. I take the opportunity of expressing my thanks to Mr. Harcourt for his ingenious invention.—I am. etc.,

Amsterdam, Oct. 7th. TH. HAMMES.

DISPENSING BY MEDICAL MEN.

SIR,—I have of late seen many letters in your columns on this subject, and, as it will affect practitioners in country towns or in the poorer parts of large towns, I should like to give my experience. The early part of my professional career was spent in country town practice. I next established myself for many years in a non-dispensing practice in a good class suburb of London, from which I have retired nearly five years, so my views are quite disinterested.

I am of opinion that if medical men are prohibited from dispensing for their own patients, the general practitioner will be extinguished unless he is fortunate in possessing a wealthy *clientèle*. For it is absurd to think that struggling tradespeople and the less wealthy class of patients generally will be able or willing to pay a doctor for his advice, and then a chemist for medicine. Many such will at present pay a small doctor's bill, but will hardly attempt to pay a large one, and the country doctor has quite enough to struggle with as it is. Many will pay for medicine who will not pay for advice, and it is very doubtful if the patient will get so well served as at present.

It is to the interest of the man dispensing for his own patients to do it well, and cure them as soon as he can, or they will go to a rival. But the chemist has not the same interest, he simply wants to sell as many bottles as he can, and the cheaper their contents the better for him: and a change of doctor to the patient would probably not affect the chemist.

In my young days, when learning dispensing (this was not in private practice), I used often to appeal to my instructor for advice about some ingredient that was ordered. He used often to reply, "Oh, put in so-and-so; it won't be noticed, and will probably do just as well!" This taught me a lesson.

I had once to attend a commercial traveller who was staying for several days in the town where I was living, and who was improving rapidly on the iodide of potassium I was giving him in a mixture. He then asked me to give him a prescription so that he might get a supply when on his rounds. A fortnight later he returned, saying that he was not doing well, and could not get the same medicine, and he produced three bottles which he had had made up at three of the principal towns in the Eastern Counties. On testing their contents, I found that two contained no iodide of potassium and one only a trace.

A medical friend ordered a patient to get a small quantity of laudanum for some purpose or other. He obtained a drachm. Before he had even opened the bottle, a child of 2 or 3 years old got hold of it and drank the entire contents. I was at once called in, but, beyond a little excitability, the dose had no effect whatever.

If the country doctor is to have his dispensing taken away as well as his midwifery and attendance on young children, he will starve; and, with regard to the class he attends, things will revert to the prescribing druggist and a licentiate in midwifery, only that the latter will be a female, and not so well qualified as the old L.M. of the Apothecaries' Hall. This will be the natural result of Harley Street trying to legislate for Shoreditch.—I am, etc.,

London, N.W., Sept. 29th. WALTER G. WALFORD.

THE TREATMENT OF TUBERCULOUS PLEURAL EFFUSION AND PNEUMOTHORAX.

SIR,—In the discussion on the treatment of tuberculous pleural effusion, reported in the BRITISH MEDICAL JOURNAL of October 15th, p. 999, Dr. Barr's remarks convey the impression that in consequence of an unfavourable case I abandoned the practice of admitting filtered air into the pleura after aspiration. Though not a matter of much moment, will you allow me to correct this? The unfavourable case referred to was one in which unfiltered air was unintentionally admitted into the pleura during aspiration by the accidental detachment of the cannula from the aspirator, and in fact happened many years before it ever occurred to me to admit filtered air purposely. The accident was only mentioned by me by way of contrast to point the moral of the danger of admitting impure air. I have never hesitated to employ my practice of allowing air filtered through aseptic or antiseptic gauze to pass through the aspirator-cannula into the pleura, having first clamped the rubber tube of the aspirator with pressure forceps until the gauze fitter was fixed *in situ*. Unfortunately, the cases have been few and I have no records, but I have seen no unfavourable results. My practice was based on the principles of antiseptic surgery, and I admitted filtered and presumably sterile air to the pleura simply to equalize atmospheric pressure on both sides of the visceral pleura, and so to relieve distress and obviate the strain to which lung tissue is exposed by unequal expansion when any portion of the lung is bound down by adhesion, or otherwise incapable of expansion.—I am, etc.,

Wigton, Oct. 15th. T. A. PALM.

CYLLIN IN TUBERCULOSIS.

SIR,—May I again trespass on your columns to correct a few discrepancies that have arisen in the minds of several who have written to me in connexion with my letter of July 30th, as I have not sufficient time at my disposal to answer each one personally? In the first place, the use of cyllin in varying strengths referred to my early experiments with the drug, and led up to the production of the cyllin inhalant, which is the only form that I now use, and which should not be diluted. Again, the inhalation should be practised through the nasal, and not through the buccal cavity, the bulb should be sharply compressed about twenty-five times a minute, and the patient instructed to inhale deeply, regularly, and as slowly as possible, in order to try to replace the residual air by the nebula from the aërizer. During the cold weather the glass container should be held in the warm hand, or otherwise slightly heated before using.

Messrs. Oppenheimer are making from my design a double nosepiece with air aperture in the convexity of the curve, which I find more useful than the single tube. The larger aërizer is not well borne at first, but is no doubt useful, after the patient has learnt to thoroughly inhale the cyllin from the smaller one, as the larger nebula formed by its use is for some little time difficult to rapidly dispose of.

Cyllin is practically non-toxic and non-caustic, and, according to Klein's sworn testimony, "at least eleven times more powerful as a disinfectant for the tubercle bacilli of sputum than carbolic acid (phenol)." When properly used it causes no laryngeal or bronchial irritation. I have now a record of eleven cases in which it has been used, and in all of them there has been considerable improvement, especially in the lessening of cough and diminution in the quantity and consistence of the sputum. Of course at the same time the patient must be placed under the best available hygienic conditions with regard to good food, fresh air, the use of the spit-cup, and non-exposure to dust or any other infection.

I shall be at any time extremely glad to hear the results of the use of cyllin in the practice of others, and take this opportunity of thanking those who have already sent me reports.—I am, etc.,

W. CHARROTT LODWIDGE, M.R.C.S., L.R.C.P., D.P.H.

Walton-on-Thames, Oct. 3rd.

THE REGISTRATION OF MEDICAL AND DENTAL STUDENTS.

SIR.—That the present is an opportune moment to urge the propriety of direct representation of medical men on the General Medical Council cannot be denied. The steps which the Council contemplate to promote legislative measures for the registration of students renders the occasion peculiarly appropriate to our obtaining what "M.B.Edin.," in the BRITISH MEDICAL JOURNAL of October 1st, calls "something on account." I am sure that even if £2 or £3 be charged each student for registration, the medical practitioner will not object, providing the concession of adequate direct representatives to look after their interests be accorded them. Such a course will have a twofold advantage. It will prevent the undignified makeshifts the General Medical Council is reduced to to raise funds, and will be taken as a serious effort of the Council to solve those problems of overcrowding and which so seriously harass the general practitioner.—I am, etc.,

October 17th. SPECTATOR.

THE CENTRAL MIDWIVES BOARD AND IRISH MIDWIVES.

SIR,—As attention has lately been drawn to the proceedings of the Central Midwives Board in connexion with the status of Irish-trained midwifery nurses, I take the opportunity

through the BRITISH MEDICAL JOURNAL to announce that the points at issue between this Board and the Governors of the Rotunda Hospital have been amicably arranged.

The Central Midwives Board have formally intimated their intention to ask the Privy Council to modify their rules so as to allow our hospital to be placed on the register of institutions whose certificate will be accepted.

The settlement arrived at has been in the form of a compromise satisfactory to every one.—I am, etc.,

E. HASTINGS TWEEDY,
Master, Rotunda Hospital.

October 12th.

OBITUARY.

ROGER PORTINGTON GOODWORTH, J.P., M.R.C.S., ETC. ON October 7th there passed away a member of the British Medical Association of many years' standing, in the person of Dr. Roger Portington Goodworth, of Winterton near Doncaster. Born in 1846, Dr. Goodworth was a son of William Henry Goodworth, a surgeon at that time in practice at Hatfield, a village in the West Riding of Yorkshire, and in due course he was sent to school at Heversham. On the completion of his preliminary education, he was formally apprenticed to his father, and later on entered the medical school of the London Hospital. He became M.R.C.S.Eng., L.S.A.Lond., and L.R.C.P.Edin in 1867, and not long afterwards was taken into partnership by the late Mr. Sadler of Winterton. He thus became connected with a practice, the first establishment of which dates well back into the eighteenth century, and succeeded to it in its entirety upon Mr. Sadler's death. Dr. Goodworth carried it on with equal skill, energy, and success, until his own health began to fail some five years ago, when symptoms of chronic nephritis appeared, and were shortly afterwards followed by those of cardiac dilatation and insufficiency. Ever since then he had only been able to work at intervals, and he was very often extremely ill. For the last two or three years, indeed, he had perforce to lead the life of an invalid, but submitted to it with wonderful courage and patience, and often expressed the wish that his end might come in the way that eventually it did—painlessly and suddenly in the afternoon of a day when he had been chatting even more brightly than usual.

Dr. Goodworth's energies were not all absorbed by the cares of practice, and many years ago he was appointed a Justice of the Peace for the County of Lincoln; he also served for some years upon the County Council. In politics he was a Conservative, and made his influence felt in the neighbourhood, while he was a strong supporter of the Established Church, and carried out the duties of Churchwarden for several years. At one time he held a good many official appointments, but had gradually given them up. A man greatly and justly respected both in his professional and private capacity, he maintained his position in public esteem up to the time of his death, in spite of his having ceased to play any very active part in the affairs of the neighbourhood; his funeral at Winterton Church was attended by a large concourse of people from the neighbourhood, including representatives of local official bodies. Dr. Goodworth was twice married, his first wife being a daughter of Mr. John Scarborough of Winteringham, and his second the widow of Thomas Dudding. She died in 1899. A son and two daughters by his first wife survive him.

DR. FREDERICK HENRY HUME, of Devonshire Street, Islington, who died early last month, devoted the greater part of his professional career to work in that neighbourhood. A student of St. Thomas's Hospital Medical School, he became M.R.C.S.Eng. and L.S.A. in 1864, and graduated M.D. some twenty years later at St. Andrews. He was a member of the St. Pancras Division of the British Medical Association, and a Fellow of the Medical Society of London. He led a very active life until some few years ago, when his energies became crippled to some extent by gout. He held in his time a large number of appointments, and retained and conscientiously carried out the duties of some of them up to the time of his death; amongst such were the surgeoncy to the Royal Maternity Charity, and the consulting surgeoncy of the Islington and North London Provident Dispensary. He held, too, several posts connected with city corporations and allied bodies. His long connexion with Islington caused him to be as well known as he was highly respected throughout the neighbourhood. He was a religious-minded man, and identified the interests of St. Peter's Church, Islington, with his own.

THE death is reported from the West Coast of Africa of Dr. DANIEL PETER HUGHES TAYLOR, one of the earliest and most successful of the West African native practitioners of British medicine. He received his education at King's College, London, where he graduated in 1874. He lived at Bathurst, the principal town of the Gambia Protectorate; there he occupied the post of coroner and was also a Justice of the Peace for the Colony. Dr. Taylor was, we believe, the father of Mr. Samuel Coleridge Taylor, a writer of sacred music and the author of "Hiawatha."

DR. GAILLETON, Professor of Dermatology and Syphilology in the Medical School of Lyons, who died recently at the age of 75, was a man of remarkable ability and character. An enthusiast in his profession, he found time amid the absorbing cares of a large practice and his duties as Senior Physician to the Antiquaille, to take a prominent part in the civic life of Lyons. He was Mayor of that city for twenty years, and was seated by the side of President Carnot when he received the fatal wound at the hands of an assassin. Dr. Gailleton was the first medical man in attendance on the dying President.

DR. JUAN N. NAVARRO, Consul-General for Mexico in New York, who recently died of apoplexy, was for nearly twenty years of his life engaged in practice as a physician. He was born in Morelia, Michoacan, Mexico, in 1823, and graduated with honours at the School of Medicine in the City of Mexico. At the outbreak of the war between Mexico and the United States he entered the Mexican army, and soon rose to the rank of colonel. After the war he returned to the practice of his profession, but later was elected to the Mexican Senate. Throughout the war with the Emperor Maximilian he was Surgeon-General of the Mexican army. After its close he returned again to practice; but in 1863 he was appointed Consul-General at New York, where he spent the remainder of his life.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Albert Gombault, Physician to the Paris hospitals, and one of the men who with Charcot helped to establish the fame of the Salpêtrière as a school of neurology, aged 60; Dr. Franz Riegel, Professor of Special Pathology and Therapeutics in the University of Giessen, and author of numerous publications on bronchial asthma, diseases of the heart and larynx, inflammation of nerves, and experimental researches on the action of caffeine, jaborandi, apomorphine, and other drugs, aged 61; Dr. Bellanger, founder of the *Archives Provinciales de Chirurgie*; Dr. F. W. Zahn, Professor of Pathological Anatomy in the University of Geneva, and author of textbooks on tumours and on *post-mortem* examinations, and of numerous researches on thrombosis, the action of quinine on the white corpuscles of the blood, the fate of tissues implanted in the organism, etc., most of which were published in *Virchow's Archiv.* aged 59; Dr. Johann Neiding, Emeritus Professor of Forensic Medicine in the University of Moscow, aged 65; Dr. W. Nassen, Professor of Gynaecology and Obstetrics in the University of Odessa; Dr. Fayel, Professor of Physiology in the Medical School of Caen; Dr. A. Meurisset, of Noyon (Oise), in his 100th year; and Dr. Milone, Professor of Pathological Anatomy in the University of Buenos Aires.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

DEGREE days announced for this term are Thursday, October 20th; Thursday, November 10th; Saturday, December 17th. Examinations for scholarships in natural science are announced as follows:—December 6th: Balliol College, Christ Church, and Trinity College. December 13th: Lincoln and Magdalen Colleges. January 17th: Jesus College. March 14th: Keble College.

UNIVERSITY OF CAMBRIDGE.

DR. W. E. DIXON has been reappointed Assistant to the Downing Professor of Medicine.

Mr. P. V. Bevan has been appointed Demonstrator of Experimental Physics, and Mr. C. Chittock Assistant Demonstrator.

The election of a University member of the General Medical Council will take place on Monday, October 24th. Dr. D. MacAlister is re-eligible, and has been nominated.

The examinations for M.B. (First, Second, and Third, Part I) begin on December 12th. The Third Examination (Part II) and the M.C. Examination begin on December 13th. Names of candidates should be sent in by November 28th.

At the congregation on October 13th the following degrees were conferred:

M.B.—H. Falk, King's; P. N. Panton, Trinity; C. T. McL. Plowright, St. John's; J. G. Slade, Clare; D. Pennington and C. Roper, Caius; B. H. Pain, Emmanuel; H. C. S. Woodward, Downing.

B.C.—P. N. Panton, C. T. McL Plowright, J. G. Slade, D. Pennington, C. F. Pridham, Caius; B. H. Pain.

Examination in Sanitary Science.—The following candidates have satisfied the examiners in both parts of the examination:

E. G. Allport, J. M. Buist, C. J. Caddick, Anne F. Cleaver, S. W. R. Colyer, N. R. Dharmavir, Frances M. Harper, S. Jesudasan, A. Leitch, D. Macdougall, A. A. J. McNabb, K. T. Matthew, R. Prichard, E. H. Roberts, R. D. Smedley, L. S. Talbot, H. M. Tickell, M. K. Varughese, C. S. Vines, C. E. Williams.

UNIVERSITY OF GLASGOW.

Foundation of a Lectureship in Physiological Chemistry.

Towards the close of his introductory lecture to the course of Physiology, in the University on October 15th, Professor McKendrick spoke as follows:

I think there can be little doubt that the next great advance in physiology will be from the side of physiological chemistry. The phenomena of vital activity depend on chemical processes in which there are either the building up of complex substances from simpler ones, or the decomposition of complex bodies into simpler ones, in other words, processes that are of a synthetical or of an analytical nature. These chemical phenomena lead, on the one hand, either to the locking up, or, on the other, to the liberation of energy, and the energy in a living being may appear as mechanical motion, heat, electricity, and to some small extent and in special cases as light and sound. During the last sixty years many of the physical phenomena of the living being have been investigated by special methods. It seems to me that we cannot expect much more from the application of the graphic method of registration nor from the examination of the phenomena of electrical action in living tissues. The microscope and the methods of histological research have left little to be desired as to our knowledge of the structure of the elementary tissues and the structure of organs. A new departure must be made. No method of research seems so inviting or so promising as the rigid and methodical investigation of the chemical phenomena happening in living matter.

Hence the extreme importance of the chemist and the physiologist working hand in hand for the future advancement of physiological knowledge. At one time it was supposed that the chemical phenomena happening in the living body were of a different order from those occurring in dead matter. In 1824, however, Wöhler pointed to the first example of a synthetical process discovered within the animal organism. He showed that when benzoic acid is introduced into the stomach it appears as hippuric acid in one of the excretions, after coupling, probably in the liver, with amido-acetic acid or glycocoll. About the same time Hennell effected the synthesis of alcohol, and Wöhler formed urea from ammonium cyanate. As urea was then known only as a product of the animal organism, its synthesis from inorganic substances and in the laboratory was a feat of the first importance. This synthesis was the precursor of many others, so that we have now, at the lowest estimate, between 200 and 300 chemical substances found in plant and animal tissues that can also be built up synthetically by the organic chemist. Year by year we are adding to this extensive list. Some of these syntheses are striking examples of the knowledge and skill of the chemist of the present day. Such, to mention one brilliant series, are the artificial productions of the sugars by the labours of Fischer and his pupils. Take, again, the formation of the highly complex body camphor realized by Komppa and Vorlander. It may not be a day-dream if we contemplate the time when even the starches, fats, and proteids we use in our food may also be artificially formed. Physiological chemists have also done much in the way of studying the chemical changes happening to a substance during its passage through the body.

And yet we are far from solving the mystery of what we may call vital chemistry. When we think, for example, of the synthetical processes by which the chemist constructs complex bodies hitherto found only in the tissues of plants and animals, the question naturally occurs: How does Nature produce these complicated molecules without the use of strong reagents and high temperatures? This aspect of the question has been well discussed by my friend Professor R. Meldola, first, in an address as President of the Chemical Section of the British Association at the Ipswich meeting in 1885, and, second, in an important work, soon to be published, the proof sheets of which he has kindly allowed me to peruse, entitled *The Chemical Synthesis of Vital Products*. It is clear from a study of the examples given by Professor Meldola that the synthetical processes worked out by the chemist in his laboratory are quite unlike those occurring in plant and animal tissues, and yet the result is the same—namely, the production of a complex organic compound. We have been too much in the habit of supposing that when we could represent the process followed by the chemist by an equation, that this equation represented what occurred in the plant or animal tissue. Physiologists more than chemists have erred in this direction, and many of the statements in our textbooks are either superficial or grossly misleading. The chemist attains his end by violent means and with considerable rapidity, whereas, in the silent laboratory of the plant and animal cell, molecular processes are slowly carried on of which we know at present next to nothing. It is strange, for example, that we cannot yet follow all the steps of the process by which, under the action of sunlight, the green colouring matter in a vegetable cell can fix the carbon of the carbonic acid of the air and liberate the oxygen. Nor can we follow satisfactorily the steps of the synthesis by which the carbon is built up into such a substance as starch or sugar. Yet this is a synthesis accomplished every day by every green plant. Such phenomena in all probability are accomplished through the agency of enzymes or ferments, but their real nature is still obscure.

I have said enough to show you the vast importance of chemical investigation in the physiology of the future. Chemistry is but a highly-specialized branch of physics. In these days all the new discoveries in physical chemistry, such as the true nature of solutions, the facts of dissociation as exemplified by the splitting up of common salt into the ions chlorine and sodium, each ion charged with electricity, as occurs when we dissolve a pinch of salt in a tumblerful of water, and the laws of osmotic pressure, which no doubt regulate nutrition and the interchanges of blood and lymph, must be taken into account by the physiologist. Such research demands adequate laboratory accommodation and highly-trained specialists. I am glad to say our University will soon be in a position to take her share in this new development of physiological science. The splendid new laboratories now being built for physiology, public health, and materia medica will be a home for work of this kind, and the endowment of a Lectureship in Physiological Chemistry by the trustees of the late Dr. John Grieve (who left £8,000 for the foundation of a lectureship in connexion with the Medical Faculty of the University) will enable us to obtain the services of a trained specialist, who will give his undivided attention to this department of physiology. No subject more than physiology illustrates the truth that all science is one. Physics, chemistry, physiology, and all the others are only different ways of investigating the phenomena of Nature. The phenomena of life are, however, the most difficult of all to investigate, and it may safely be asserted that the highest skill in experimental research and the deepest knowledge of chemistry and physics are required for such work. Throughout the scientific world physico-chemical researches are now in progress into physiological and bacteriological processes, lectureships and laboratories are springing up here and there, and it is gratifying to be assured that the University of Glasgow will be able to take her share in this work.

UNIVERSITY OF LONDON.

The Faculty of Medicine.

The first meeting of the Faculty of Medicine in the Session 1904-5 will be held at the University Buildings, South Kensington, on Tuesday, November 1st, at 5 p.m. The chief business of the meeting will be the election of a Dean of the Faculty for the succeeding two years. Mr. Butlin has held the office of Dean since the establishment of the Faculty four years ago, and by the statutes of the University is not re-eligible. It will also be necessary to select a new Vice-Dean, this post having been vacated by Sir Isambard Owen on his recent appointment to the University of Durham. The question of the constitution of the Boards of Study for 1904-5 will be submitted to the Faculty.

University College.

The Chemistry of Proteids.—A course of ten lectures on the chemistry of proteids was commenced on Wednesday, October 19th, by Dr. S. B. Schryver, in the Physiological Theatre, University College: the succeeding lectures will be given on Wednesdays at 5 p.m. The lectures are open to all internal students of the University, and also to medical men on production of their cards.

The *Calendar* of the College for the session 1904-5 forms a portly volume of some 600 pages. It contains full particulars of the courses of instruction in the various faculties. Among the post-graduate lectures we observe courses on chemistry, including a course on radio-activity, which Sir William Ramsay began on October 18th; on physiology, on pathological chemistry, and pathology and morbid anatomy, and on hygiene and public health. Further particulars can be obtained from the Principal, Dr. Gregory Foster, at the College. The volume is published by Messrs. Taylor and Francis, Red Lion Court, E.C.

VICTORIA UNIVERSITY OF MANCHESTER.

Examination Lists, September, 1904.

The following candidates for the M.B. have satisfied the Examiners:

First Examination—Part I: N. Booth, Elsie Brown, W. H. Butler, L. S. Daly, H. L. Flint, J. H. M. Frobisher, E. Gandy, S. M. Hepworth, E. Howe, W. P. Marshall, T. M. Popple, M. C. Skillern-Lawrance, H. Vallow. Part II: J. A. Bateman, W. H. Butler, H. A. Dunkerley, H. L. Flint, J. H. C. Green, P. S. Green, E. Howe, T. M. Popple, J. Ramsbottom.

The Professor Tom Jones Surgical Fellowship has been divided between Philip Talbot, M.B.(Vict.), and A. E. Johnson, M.B.(Vict.).

ROYAL UNIVERSITY OF IRELAND.

The following is a list of the successful candidates at the autumn examinations:

First Examination in Medicine.—*C. Alexander, E. M. Condy, V. Cosgrave, *J. Counihan, *Caroline J. Crawford, J. B. Crawford, E. Doherty, *E. Dowling, *J. E. English, *C. A. Farrell, *J. Ferguson, B.A., C. J. Halpin, R. Harrington, W. F. Hooper, G. E. Hull, P. Keelan, *S. P. Kerrigan, *Caroline V. Lome, W. C. McCullough, M. McGing, *J. J. McGrath, J. A. McMurtry, M. J. Mulligan, *A. P. O'Connor (Sch.), *J. M. O'Connor, J. P. J. O'Connor, *S. P. Rea, J. Seymour, W. H. Sheffield, *W. S. R. Steven, *T. Taylor, E. Thorpe, V. Wiley.

Exempt from further Examination in Botany and Zoology.—H. A. Gillespie.

Second Examination in Medicine.—†J. D. Cummins, †T. S. S. Holmes, †M. F. Huston, †J. J. Kearney, †R. G. Kevin, †J. B. Lapsley, †M. Waldron, R. N. Berman, A. R. Boyd, W. Bradbury, D. Broderick, E. B. Brooke, T. G. Buchanan, J. D. G. Burke, R. J. Clarke, Mary Cowby, L. J. Curtin, J. Dewar, J. Dooley, J. S. Doyle, W. Faith, P. Ferris, Eleanor E. Finegan, T. Forde, J. B. Horgan, A. H. Joy, R. G. C. M. Kinkead, R. R. Kirwan, R. Lavallin, S. Levy, T. P. Lireham, W. McCready, A. P. MacMahon, G. H. Martin, J. F. Neary, E. O'Reilly, W. L. O'Reilly, C. F. X. O'Sullivan, J. J. Sheil, H. C. Swerty, E. I. Ward.

Exempt from further Examination in Anatomy and Physiology.—J. Clarke, C. Murphy, A. Stevenson.

Exempt from further Examination in Practical Chemistry.—W. Browne, D. O'Sullivan.

Third Examination in Medicine.—Upper Pass: J. J. A. Gannon, †C. R. Harvey, R. J. Ledlie, V. J. McAllister, †P. T. M'Ardle, †C. B. Pearson, P. B. Ridge, C. H. G. Ross, †J. Shaw, †T. Tobin, †J. Warnock, M.A. Pass: H. L. Bristow, F. X. J. Callaghan, J. A. Clarke, J. Dempsey, J. Dunlop, P. J. Dwyer, I. Flack, W. J. Hill, J. Horgan, C. G. Knight, S. W. Kyle, M. Leane, T. J. M'Allen, S. M'Cormac, R. A. M. L. M'Crea, J. B. Murphy, J. Nunan, J. A. O'Halloran, M. A. Power, W. B. Purdon, P. Reid, Maria Rowan, R. V. Slattery, B.A.; P. Walsh, E. F. Watson, Jemima B. White.

* Qualified to present themselves for Honours in one or more subjects.

† Qualified to present themselves for the further examination for Honours.

UNIVERSITY OF DURHAM.

At the Convocation on October 1st, the following degrees were conferred, namely:

M.D.—J. S. Hall, M.B., B.S.Durh; J. R. Halliday, M.B.Durh.; F. Jeffree, M.B.Durh.; A. Parkin, M.B., B.S.Durh., F.R.C.S.; G. de B. Turtle, M.B., B.S.Durh.; W. H. Wigham, M.B.Durh.

M.D. for Practitioners.—E. D. Bower, M.R.C.S., F.R.C.S.E.; B. H. Comerford, M.R.C.S., L.R.C.P.; P. H. Dunn, M.R.C.S., L.R.C.P.; J. K. Frost, M.R.C.S., L.S.A., D.P.H.; W. V. Furlong, L.R.C.S.I., L.R.C.P.E.; F. K. Holman, M.R.C.S., L.R.C.P.; R. M. Hugo, L.R.C.P.I., L.M., F.R.C.S.I.; T. S. Jones, M.R.C.S., L.R.C.P.; F. St. J. Kemm, L.R.C.P. and S., L.S.A.; A. C. A. Lovegrove, L.S.A.; T. H. Mitchell, L.R.C.P. and S.E.; H. E. Rowell, M.R.C.S., L.R.C.P.; G. J. Smith, L.R.C.P. and S., L.M.; J. B. Wall, L.R.C.P. and S.; G. R. Williams, M.R.C.S., L.R.C.P.

M.S.—L. G. Fraser, M.D., B.S.Durh.; A. H. Proctor, M.B., B.S.Durh.

M.B.—J. A. Bell, H. M. Braithwaite, A. Budd, L. A. H. Bulkeley, L. A. Clutterbuck, L.R.C.P. and S.Edin., L.R.C.P.I., W. E. Falconar, H. E. Featherstone, Margaret Douglas French, N. H. Hume, T. C. Hunter, Sophia Bangham Jackson, W. W. Jones, G. E. Lloyd, C. F. F. McDowall, S. Robson, W. T. Sewell, A. L. Sheppard, W. E. Stevenson, W. L. Tindle, Janet Arthur Vaughan, S. G. Webb.

B.S.—J. A. Bell, H. M. Braithwaite, A. Budd, L. A. H. Bulkeley, L. A. Clutterbuck, L.R.C.P. and S.Edin., L.R.C.P.I., H. E. Featherstone, Margaret Douglas French, N. H. Hume, T. C. Hunter, Sophia Bangham Jackson, W. W. Jones, G. E. Lloyd, C. F. F. McDowall, S. Robson, W. T. Sewell, A. L. Sheppard, W. E. Stevenson, Janet Arthur Vaughan, S. G. Webb.

The following received the Diploma in Public Health (D.P.H): C. R. Stewart, M.B., B.S.Durh., J. Stokes, M.D., B.S., L.S.Sc.Durh., M.R.C.S.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A quarterly Council was held on October 13th, Mr. John Tweedy, President, in the chair.

Votes of Condolence.

Votes of condolence were passed to Lady Banks on the death of Sir William Mitchell Banks, past member of the Council; and to Mrs. Jameson on the death of Surgeon-General James Jameson, C.B., Honorary Fellow of the College.

Annual Report of the Council.

The annual report on the College submitted by its Committee was adopted, and will be presented at the annual meeting of Fellows and Members to be held at the College on Thursday, November 17th, at 3 p.m.

Lecture Arrangements, 1904-5.

Bradshaw Lecture.—Mr. A. W. Mayo Robson, F.R.C.S.: One Lecture on Cancer and its Treatment, Thursday, December 1st, at 5 p.m.

Hunterian Oration.—Mr. John Tweedy, President: Tuesday, February 14th, at 4 p.m.

Erasmus Wilson Lectures.—Mr. L. S. Dudgeon, M.R.C.S., two Lectures, and Mr. P. W. G. Sargent, F.R.C.S., one Lecture, on Peritonitis, a Bacteriological Study, February 20th, 22nd, and 24th, at 5 p.m.

Hunterian Lectures.—Professor Stephen Mayou: Three Lectures on the Changes produced by Inflammation in the Conjunctiva, February 27th and March 1st and 3rd, at 5 p.m. Professor J. P. L Mummery: Three Lectures on the Physiology and Treatment of Surgical Shock and Collapse, March 6th, 8th, and 10th, at 5 p.m. Professor W. S. Handley: Three Lectures on the Dissemination of Mammary Carcinoma, March 13th, 15th, and 17th, at 5 p.m. Professor Clinton T. Dent: Three Lectures on Congenital Hypertrophic Stenosis of the Pylorus, and some other rarer Disorders of Children, March 20th, 22nd, and 24th, at 5 p.m.

Arris and Gale Lectures.—Mr. Donald Armour, F.R.C.S.: Three Lectures on the Anatomy, Physiology, Pathology, and Surgery of Gasserian Ganglion, March 27th, 29th, and 31st, at 5 p.m.

Jenks's Scholarship.—Mr. Charles Gibson was nominated by the Council for this scholarship.

Remuneration of Medical Officers in India.—A letter was read dated August 10th, 1904, from Mr. Andrew Clark, Chairman of Council of the British Medical Association, calling attention to a recently-issued order of the Government of India in regard to the remuneration of medical officers for attendance on native chiefs and nobles, the withdrawal of which, as an improper interference between the patient and the medical attendant, the British Medical Association are endeavouring to obtain, and suggesting that the licensing bodies might advantageously take up the question. The Council deemed it inexpedient to take action in regard to the matter.

CONJOINT BOARD IN SCOTLAND.

The following gentlemen, after examination, have been awarded the Diploma in Public Health:

J. Allison, K. D. Khambatta, A. R. Maclurkin, D. Mackinnon, R. Steward, A. Monat, L. K. Rodriguez, H. F. L. Taylor, H. De C. Woodcock, and D. D. Gold.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

Fellowship Examination.

Dr. R. M. Smyth, Assistant Superintendent, Natal Government Hospital, Durban, South Africa, having passed the necessary examination, has been admitted a Fellow of the College.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

Election of Officers.

At the annual meeting of the Royal College of Physicians of Ireland, held on St. Luke's Day, Tuesday, October 18th, the following officers were elected for the coming year: *President*: W. J. Smyly, M.D. *Vice-President*: E. E. Lennon. *Censors*: E. E. Lennon, Alfred R. Parsons, J. H. R. Glenn, M.D., W. R. Dawson, M.D.

Additional Examiners to take the place of an Absent Censor or Examiner.

Medicine: W. J. Thompson, M.D. Midwifery: W. C. Neville, M.D. Medical Jurisprudence and Hygiene: A. Nixon Montgomery. Examiners for the Licence to Practise Midwifery: A. J. Horne; H. Jellett, M.D. Examiners for the Membership: Clinical, J. Magee Finny, M.D., and E. E. Lennon. Practice of Medicine, W. G. Smith, M.D., and A. R. Parsons, M.D. Pathology, H. C. Earl, M.D., and A. C. O'Sullivan, M.D. Additional Examiners under the Conjoint Examination Scheme: Biology, E. M. Cosgrave, M.D. Chemistry, Professor Lapper, and N. M. Falkiner, M.D. Physics, G. J. Peacocke, M.D., and W. A. Winter, M.D. Pharmacy, Materia Medica, and Therapeutics, H. C. Drury, M.D., and M. Dempsey, M.D. Physiology, H. C. Earl, M.D. Pathology, A. C. O'Sullivan, M.D. Medicine, J. Murphy, and R. T. Smith, M.D. Hygiene and Forensic Medicine, H. T. Bewley, M.D. Examiners for the Conjoint Diploma in Public Health: Meteorology, Sir J. Moore, M.D.: Hygiene, H. T. Bewley, M.D.: Chemistry, Professor Lapper. Extern Examiners in Preliminary Education, Professor K. E. Thrift, F.T.C.D., and Mr. W. Kennedy, F.T.C.D. Representative on the General Medical Council, Sir J. Moore, M.D. Representatives on the Committee of Management, J. M. Finny, M.D., W. G. Smith, M.D., and J. Craig, M.D. Treasurer, H. T. Bewley, M.D.: Registrar, J. Craig, M.D.; Librarian, R. G. J. Phelps. Dr. J. A. Matson, Dr. T. P. C. Kirkpatrick, and Dr. F. C. Purser were elected Fellows of the College. In the evening the annual dinner of the President and Fellows took place in the College Hall.

SOCIETY OF APOTHECARIES.

The candidates undernoted have passed Examinations in the subjects mentioned:

Surgery.—Section I and II, A. Innes: Section II, C. C. Bernard.

Medicine.—H. P. Shanks; Section I and II, J. A. Davies, A. Innes, W. H. T. Lloyd; Section I, T. R. Roberts.

Forensic Medicine.—J. Bromley, J. A. Davies, A. Innes, J. M. Lynch, L. W. Roberts.

Midwifery.—E. J. Blewitt, E. J. Crew, A. Innes, J. M. Lynch, M. B. Potts, A. R. Dade.

Anatomy.—L. W. Bradshaw, A. C. Dickson, J. W. Harrison, L. R. Nézet, H. N. Ritchie, N. C. Wallis.

Physiology.—R. Beesley, L. W. Bradshaw, T. P. Braim, J. W. Harrison, W. P. Pinder, H. N. Ritchie, N. C. Wallis.

The diploma of the Society has been granted to the following; C. C. Bernard, J. Bromley, A. Innes, M. B. Potts, H. P. Shanks.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

School of Instruction, Haslar.

The autumn course of instruction for surgeons at the Royal Naval Hospital, Haslar, terminated on October 12th. Mr. Pickering Pick, Consulting Surgeon to St. George's Hospital, who had a son among the young officers, gave a short address, and distributed the following prizes: Gold medal, Surgeon G. O. M. Dickenson, University of Durham; microscope, Surgeon D. D. Turner, St. Thomas's Hospital; and silver medal and books, Surgeon W. N. Horsfall, Melbourne University. The Director-General of the Medical Department, Inspector-General H. M. Ellis, was also present.

The combined result of the entrance examination and that at the end of the course is as follows:

	Marks.		Marks.
W. P. Hingston (*a*)	—	J. M. Gordon	3,302
H. A. Kellond-Knight	4,238	J. D. Keir...	3,288
A. B. Cox	4,063	L. C. Robinson	3,223
H. B. German	3,901	F. R. Featherstone	3,164
D. D. Turner	3,865	G. Nunn	3,107
B. S. Robson	3,862	F. E. McCune	3,101
G. Moir	3,852	H. Stone	3,089
B. Pick	3,731	T. E. Blunt...	3,055
A. A. Chancellor...	3,678	J. McCutcheon	2,982
G. O. M. Dickenson	3,663	G. E. Hamilton	2,932
N. B. V. Jacob	3,603	W. T. Haydon	2,670
J. H. McDowall	3,490	W. L. Hawkins	2,656
A. B. Marsh	3,392	W. N. Horsfall (*b*)	—

(*a*) Entered by a previous examination, but permitted to complete a civil appointment; had only to qualify at Haslar.

(*b*) Entered by nomination (Australia).

Surgeons G. R. MacMahon, B.A., M.B., and R. T. Gilmour are promoted to be Staff Surgeons from May 16th, 1902. Their first commissions were dated May 16th, 1894.

Surgeon R. T. P. Eames to be Staff Surgeon from November 14th, 1902, his commission as Surgeon being dated November 14th, 1894.

Surgeon R. J. M'Keown, M.B., to be Staff Surgeon from May 15th, 1903; first commission, May 15th, 1895.

Surgeons E. S. Tuck, A. W. B. Livesay, M.B., and M. J. Smith, B.A., M.B., are also promoted to be Staff Surgeons from November 12th, 1903. Their commissions as Surgeons date from November 12th, 1895.

The following appointments have been made at the Admiralty: Thomas Austen, Staff Surgeon, to the *Melampus*, temporary, October 13th; George E. Macleod, Surgeon, to the *Wildfire*, additional, for disposal (to be lent to the *Andromache*, temporary), October 12th.

ARMY MEDICAL SERVICE.

It is officially announced that the Secretary of State for War has approved of the reappointment for a further period of three years of the present civilian members of the Advisory Board for the Army Medical Services: Sir C. B. Ball, M.Ch., Dr. J. Galloway, Sir E. Cooper Perry, M.D., Sir F. Treves, Bart., K.C.V.O., C.B.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel H. E. Deane retires on retired pay, October 8th. He was appointed Surgeon, July 29th, 1882; Surgeon-Major, July 29th, 1894, and Lieutenant-Colonel, July 29th, 1902. He served with the Tirah Expeditionary Force on the North-West Frontier of India in 1897-8, receiving a medal with two clasps.

Lieutenant-Colonel G. J. Coates, M.D., is placed on temporary half-pay on account of ill-health, September 26th. He entered the service as Surgeon, March 6th, 1880; became Surgeon-Major, February 5th, 1893, and Lieutenant-Colonel, February 5th, 1901. He was engaged in the campaign on the North-West Frontier of India in 1897-8, and received a medal with clasp.

The wound pension granted to Colonel A. T. Sloggett, C.M.G., who was dangerously wounded at the battle of Khartoum, has been made permanent.

Lieutenant-Colonel George Ryan died at Ryde, Isle of Wight, on the 7th instant, aged 59. His commissions were thus dated: Assistant Surgeon, March 1st, 1868; Surgeon, March 1st, 1873; Surgeon-Major, January 1st, 1881; and Lieutenant-Colonel, January 1st, 1889. He retired from the service, January 16th, 1889. He served in the Zulu war in 1879, and had received the South African medal.

Lieutenant-Colonel J. Maconachie, F.R.C.S Edin., is placed on temporary half-pay on account of ill-health, October 11th. He entered the service as Surgeon, February 5th, 1881: became Surgeon-Major, February 5th, 1893: and Lieutenant-Colonel, February 5th, 1901. He served in the Egyptian war in 1882 (medal, and Khedive's bronze star): and with the Soudan expedition in 1884-5, including the action at Abu Klea and the affairs during the return to Korti (two clasps).

Colonel J. F. Williamson, M.B., C.B., C.M.G., has been appointed an Administrative Medical Officer in India.

Colonel W. J. R. Rainsford, C.I.E., has been appointed Principal Medical Officer, Bermuda.

Lieutenant-Colonel P. H. Johnston, C.M.G., has been appointed Senior Medical Officer, Jamaica.

In the October *Monthly Army List*, the terms First, Second, Third, and Fourth Army Corps have been altered to the Aldershot, Southern, Irish, and Eastern commands respectively.

CHANGES OF STATION.

The following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the last month:

	From.	To.
Colonel E. H. Fenn, C.I.E.	Bermuda ...	Thames Dist.
Lt.-Col. F. B. Maclean...	Canterbury ...	Woolwich.
,, D. L. Irvine	Punjab	Aldershot.
,, R. E. R. Morse	York.	Newcastle-on-Tyne.
,, F. H. M. Burton, M.D.	Pembroke Dock	South Africa.
,, T. W. O'. H. Hamilton, M.B., C.M.G.	Malta	Dublin.
,, J. M. Reid, M.D.	Dover	Canterbury.
Major W. C. Beevor, M.B., C.M.G....	Home District	Bombay.
,, N. Manders	Salisbury Pln.	Mauritius.
,, N. C. Ferguson, M.B., C.M.G. ...	Aldershot ...	South Africa.
,, S. G. Allen	Woolwich ...	Punjab.
,, P. C. H. Gordon	Newcastle-on-Tyne	York.
,, F. A. Saw, M.B....	Portsmouth ...	Madras.
,, J. Fayrer, M.D.	Home District	Duke of York's School.
,, H. B. Mathias, D.S.O.	Newport ...	Punjab.
,, B. Forde, M.B.	Templemore ...	South Africa.
,, E. McK. Williams	Bengal	Home District.
Captain E. S. Clark, M.B.	Home District	Punjab.
,, C. K. Morgan, M.B....	Edinburgh ...	Egypt.
,, E. B. Steel, M.B.	D. of York's Schl.	Aldershot.
,, F. Kiddle, M.B.	Devonport ...	Bombay.
,, H. E. Staddon	Bulford ...	Mauritius.
,, W. P. Gwynn	Somaliland ...	Madras.
,, C. J. O'Gorman, D.S.O.	South Africa ...	Ordnance Coll.
,, G. J. A. Ormsby, M.D.	O. R. Colony ...	Dublin.
,, H. E. M. Douglas, V.C., D.S.O....	Somaliland ...	Punjab.
,, W. Bennett, M.B.	,, ...	Bengal.
,, A. E. Hamerton, D.S.O.	,, ...	Punjab.
,, J. H. Robinson	,, ...	,,
,, A. R. Greenwood	,, ...	Madras.
,, F. H. Hardy	King's Afr. Rif.	Aldershot.
,, W. M. Power	Somaliland ...	Bombay.
,, O. Challis	Colchester ...	R.A.M. Coll.
Lieutenant F. W. W. Dawson, M.B. ...	Aldershot ...	South Africa.
,, F. C. Lambert	Colchester ...	,,
,, J. F. Skey	Salisbury Plain	,,
,, T. S. Dudding	Portsmouth ...	,,
,, F. M. M. Ommanney	Aldershot ...	Under For. Off.
,, O. Ievers, M.B.	Belfast	South Africa.
,, N. D'E. Harvey, M.B.	Cork	,,
,, S. E. Lewis, M.B	Aldershot ...	,,

Lieutenant-Colonel J. Osburne, retired pay, has been placed in medical charge of troops at Galway.

Lieutenant-Colonel L. B. Ward, retired pay, has relinquished the medical charge of troops at Wrexham.

ARMY MEDICAL RESERVE.

Surgeon-Lieutenant J. W. Macmillan, 1st Hertfordshire Rifle Volunteer Corps, to be Surgeon-Lieutenant, October 8th.

Surgeon-Lieutenant C. R. Browne, M.D., 3rd Volunteer Battalion the Gloucestershire Regiment, to be Surgeon-Lieutenant, October 19th.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel W. G. H. Henderson, Bombay Establishment, is granted the temporary rank of Colonel while officiating as Principal Medical Officer, Aden District, from August 19th.

Major A. E. Roberts, M.B., Bengal Establishment, Statistical Officer to the Government of India in the Sanitary and Medical Departments, is appointed Secretary to the Director-General Indian Medical Service.

Lieutenant-Colonel F. R. Swaine, Bengal Establishment, is permitted to retire from the service from November 1st. He was appointed Assistant-Surgeon September 30th, 1873, and became Surgeon Lieutenant-Colonel, September 30th, 1893. He has no war record in the Army Lists.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Alfred R. Soltau, M.D., to be Lieutenant, October 8th.

MEDICAL OFFICERS AND THE INDIAN GAOL DEPARTMENT.

"Another Convict" writes: With reference to the letter of "Convict 59," in the British Medical Journal of August 27th, I can fully endorse all he says as to the position of medical officers in the Indian Gaol Department, but there is a further point which was not touched in that letter. The pay of a medical officer in regimental employment and of twenty years' service is Rs.1,250 per mensem, whereas in gaol employ his pay is only Rs.950 (that is apart from the Inspector-generalship, and, as "Convict 59" truly remarks, men now joining gaol department will have longer to wait than their predecessors). Most officers joining the department have had between five and six years' previous service in military or other civil employment, the pay rises to a maximum of Rs.950 until the completion of sixteen years in the department when the salary is increased to Rs.1,200, hence it follows that the officer will have about twenty-two years' total service before he draws this amount, and even then it is Rs.50 less per month than in military duty. The financial disadvantages of the department are now so well known that, in one province at least, no medical officers are willing to join and fill existing vacancies. There is also the fact that the life and work in the department are one of incessant worry and trouble, the result largely of the utterly corrupt and untrustworthy character of their subordinates.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

Surgeon-Major A. Lingard, 3rd Middlesex, to be Surgeon Lieutenant-Colonel, October 15th.

Surgeon-Captain J. V. W. Rutherford, 1st Northumberland, to be Surgeon-Major, October 15th.

VOLUNTEER RIFLES.

Surgeon-Major W. J. Morris, 4rd Volunteer Battalion the Royal Welsh Fusiliers, resigns his commission, retaining his rank and uniform, October 15th.

Joseph Hunter, M.B., to be Surgeon-Lieutenant in the Galloway Regiment, October 15th.

Surgeon-Lieutenant J. Hamilton, 2nd Volunteer Battalion the Queen's Own (Royal West Kent Regiment), to be Surgeon-Captain, October 15th.

THE VOLUNTEERS.

Surgeon-Major Reginald Sleman writes: A new edition of Volunteer Regulations has been published in which there are several changes affecting Volunteer medical officers. A step of honorary rank has been authorized for medical officers who have completed twenty years' service; time spent on active service counts double towards this. A new examination has been added for surgeon-captains and captains, R.A.M.C. (Vols.), before promotion to surgeon-major: officers who served in South Africa as surgeon-captains or captains are exempt from this examination. Forage allowance is now granted to mounted officers in camp. In the regulars, staff uniform has been abolished for all officers below the rank of colonel, and accordingly in future senior medical officers of Volunteer infantry brigades will wear regimental uniform, but the present staff dress may be worn out. The formation of brigade bearer companies has been suspended for the present.

MEDICO-LEGAL AND MEDICO-ETHICAL.

POLICE FEES TO MEDICAL WITNESSES.

A correspondent asks whether, in the recent regulations of the Home Office as to fees, there was any recommendation made as to examinations in cases of alleged rape, indecent assault, etc., or is the usual inadequate police fee generally paid? He adds that in a case of alleged carnal knowledge he had to travel seven miles to the case after 8 p.m., and asks what would be a fair fee to charge the police?

*** The recommendation of the Departmental Committee of the Home Office, which last year investigated the whole subject and reported upon it, was as follows: "For a medical examination in cases of sexual and kindred offences there may be allowed a special fee of one guinea for each person examined, in addition to any allowances for giving evidence." (See Report of Departmental Committee, p. 17.) We think that as our correspondent had to travel seven miles after 8 p.m. in order to examine the case, a fee of two guineas would be a perfectly fair and reasonable one, and that, if any objection is raised as to paying it, our correspondent should appeal to the Home Office, quoting the above extract from the Report of their own Committee. This Report is published by Eyre and Spottiswoode, of London, price 2½d., and was noticed in the British Medical Journal, July 18th, 1903, p. 142. We shall be glad to hear and publish the result in this case.

FEES BETWEEN MEDICAL MEN.

Puzzled writes: I am aware that no hard-and-fast rule can be laid down regarding this delicate question; each case must be judged on its individual merits. I venture, however, to ask for an expression of opinion as to my action in the following circumstances: It was my lot last year to attend a distinguished London physician, retired, through a serious illness, which overtook him while in my neighbourhood. At the close of my attendance I was begged by the patient and his wife to send in an account for my services. This I declined to do. After some little time a silver mug was sent, with a kind expression of thanks. This year my position was reversed. Being somewhat out of health myself I ventured to consult a London physician, who charged me the modified fee of one guinea for a short interview. I do not complain of this charge: I had no special claim on his consideration, and I took up some part of his valuable time. The question now to my mind is whether, if this consultant acted fairly in charging me a fee for his opinion, I did right in refusing to make a charge in the case of the consultant who was my patient during a serious and acute illness involving great anxiety and responsibility on my part. I once charged a fee for attendance during the last illness of a retired army surgeon, whose widow had a private and handsome income; but in three other cases I have attended retired

medical men in comfortable circumstances without making a charge or receiving any fee. I know that this is just what the majority of general practitioners would do, but, in the light of my experience as a patient, I cannot help asking whether the time has come to revise our codes of interprofessional ethics.

Another correspondent writes: I have been in practice twenty-one years, and as I represent the third generation here am well imbued with the traditions of the profession. Till lately I thought that the rule never to charge fees to medical men, their wives or families dependent upon them, was universal; but, to my horror, I find surgeons all over the country are charging the medical profession for operations. I know of at least three instances where struggling medical men had to pay as big fees for operations as other people. Surely the profession ought to stop this behaviour. I maintain that a surgeon or physician who makes a charge to a brother practitioner for attendance on him or his family is guilty of infamous conduct, and that the profession should absolutely decline to have anything to do with him, professionally or otherwise.

*** It would be unfair to consultants to lay down an absolute rule that they must give their services to any professional colleague demanding them without remuneration; but, although a medical man may have no right to such gratuitous services, we regard it as a salutary custom in the profession to make no charge to one another, and we believe the experience of "Puzzled" to have been unfortunate and exceptional. If etiquette demands that the fee should be tendered, it is equally certain that it should be declined. In the case of long-distance journeys it would be unfair to call down a consultant without warning him beforehand that he was asked to see a professional colleague, but it is usual in such cases to pay expenses. With regard to operations the same rule holds good; if the patient is able to pay he should offer a fee when making arrangements for the operation so there may be no subsequent misunderstanding, but the surgeon should refuse the fee or allow only such payment as may cover the necessary expenses. If the patient is unable to pay he should say so frankly at the outset. We presume that such a man would go, if possible, to some one upon whom he has a claim, such as an old teacher, and we are sure that he would be received with kindness and consideration. Finally, if a general practitioner attends a consultant he has a right to expect that payment should be offered, and in many circumstances he would be justified in accepting a fair remuneration for his services, where the attendance has been long and close. There can be no absolute rule, except that as far as possible it is desirable to maintain the principle that medical men should not charge one another for their services, and that they should be always as helpful to one another as possible in sickness.

GRATUITOUS PRACTICE.

B. H. complains that the medical superintendent of a large workhouse infirmary, while taking his holiday in a small country village, attended "as a friend" a case of pneumonia in a family which our correspondent is in the habit of attending. When the visitor's holiday came to an end and he had to give up the case, our correspondent was called in to continue the treatment, the above explanation being given him. He asks whether it is fair that a gentleman who receives a good salary, and presumably gets his holiday on full pay, should attend cases gratuitously, or at all, to the detriment of his professional brother?

*** We think it is distinctly unfair for medical men on their holidays to attend serious cases of illness, gratuitously or for payment, to the detriment of the local medical practitioner; they may, of course, meet him in consultation, or take part in the treatment in such a way as not to interfere with his interests, but they should remember that his income often largely depends upon the practice derived from visitors during the holiday season.

PUFFS OF MEDICAL PRACTITIONERS IN THE LAY PRESS.

AN anonymous correspondent sends us a cutting from the *Star* of October 7th, containing some paragraphs respecting Lady Curzon's illness, in which the names of the specialists summoned to attend upon her ladyship are given. The paper informs its readers that one of them is considered "the greatest authority on obstetrics in this country," and that he is 56 years of age. Our correspondent writes on the margin—"How is this for advertisement?"

*** We do not for a moment associate ourselves with the imputation that the gentlemen concerned are in any way responsible for this publication. It appears to us inevitable that in a case such as this one, in which the public takes a great interest, the names of the medical men in attendance should be published, whatever the profession may say. The appreciation of the professional position of these gentlemen by the newspaper in question should be taken at its true value as mere journalism, and we are sure that praise from such a quarter in such terms can only be distasteful to those concerned. Remonstrances addressed to a journal of this type would appear to be useless.

MEDICAL MEN AND CORONERS.

A. J. BRIANT (Helsby) writes: I was recently called out to see a child that had been overlaid. It was, of course, dead when I arrived on the scene. The next day I received a visit from the coroner's officer. He informed me that the coroner had given him instructions that in all cases of uncertifiable deaths he was to call on the medical man who had had to do with the case, and ask him for the cause of death, if he (the medical man) could do so without holding a *post-mortem* examination. I declined to tell the officer the cause of the death, and told him that if the coroner wished for my opinion as to the cause of the death he should summon me to attend the inquest. Next day I received a summons to attend the inquest, and I was called upon to give evidence as to the cause of death. Upon the conclusion of my evidence the coroner thought fit to lecture me on my want of courtesy to him in declining to give the officer the information he required, also saying that he had had a great mind to send for another medical man to examine the body and give evidence at the inquest. I have no wish to be discourteous to the coroner, but I should be glad if you will inform me in your next issue as to whether I was right or wrong in refusing to give this information to the officer before even I knew that an inquest was to be held.

*** Before a coroner decides as to the holding of an inquest it is the duty of his officer to collect all the information he can concerning the circumstances attending the death, and, if possible, the supposed cause of it. In pursuit of these duties the officer, often a police constable, calls upon the medical man last in attendance, or the one who may have inspected the body after death, to obtain from him such information as may assist the coroner in his preliminary investigations as to whether the death is likely to have arisen from violence of any kind or from some unknown natural cause, and usually the medical man is willing, if he is able, to afford this information. By so doing the coroner is better able to judge whether a *post-mortem* examination is required, and what witnesses should be summoned in the first instance. There is no special legal obligation on the part of the medical man to make statements to the inquiry officer that we know of; but should our correspondent prefer to remain silent, it is within the power of the coroner to seek other medical aid in the matter. It is, as the coroner in the case referred to said, a matter of courtesy, and as such it should remain.

RECOVERY OF FEES OF MEDICAL WITNESSES.

S. S. writes that he was called as witness in an action in the High Court, and that he attended and gave evidence on an understanding that he was to receive certain fees. He was paid after the trial a portion, and promised the balance. He has since been unable to recover the latter, and wishes to know what steps he can take to enforce payment.

*** It would appear that our correspondent was paid the costs allowed by the court, and something over. In the absence of a special agreement in writing, either from his patient, or the latter's solicitors, to pay the extra fees, in addition to those allowed by the Court, it is to be feared that nothing further could be recovered. An action could not be founded on the understanding he seems to have had with his patient's solicitors. He might apply to his patient, who is morally, if not legally, bound to pay him.

THE QUESTION OF BRANCH SURGERIES.

ANXIOUS writes: A. and B. are partners in a small town, and are consulted by many patients from a neighbouring village where there is a resident medical practitioner. Would they be justified in opening a branch surgery in the village for the convenience of the patients?

*** The resident practitioner has, of course, no monopoly, but branch surgeries several miles from the residence of a practitioner are open to abuse. They are necessary conveniences to patients and to practitioners in widely-scattered country districts, but it is always undesirable to undertake the treatment of a case which is beyond reach in an emergency. If, however, it is the intention that one of the partners or an assistant should live at the branch surgery this objection would not apply.

SHOULD MEDICAL PRACTITIONERS TAKE ANY PART IN THE SALE OF PATENT MEDICINES?

PATENT asks whether it would be a breach of professional conduct to have his name associated with a patent medicine—in fact, for it to be called by his name?

*** Undoubtedly it would be a grave breach of professional propriety.

MEDICAL ETIQUETTE.

G. P. puts the following case: He called in a consulting surgeon from a provincial town to see a patient, but was unavoidably twenty minutes late. In the meantime the consulting surgeon saw the case, which was one of suppurating appendicitis, and expressed the opinion that an operation ought to have been performed two days previously. On account of this expression of opinion on the part of the consultant, the father of the patient has refused to pay the general practitioner's account, and threatens him with an action for negligence. When appealed to the consulting surgeon refused to answer the question whether he made the statement or not. The general practitioner proposes to sue the father for the fees due, and asks whether the father can bring the proposed action for neglect? He adds that he had tried to get a surgical opinion on the previous day, but was unable to do so owing to the difficulties of Sunday trains, and that the case eventually did well.

*** It was unfortunate that our correspondent was late for the appointment, but if he was unable to wait the surgeon should have left his conclusions in writing in a closed envelope. The consultant cannot be compelled, except in the witness box, to say whether he made the statement complained of or not, and would probably not desire to commit himself if he made it. There is no means of preventing any person who supposes himself to be aggrieved from bringing an action for damages. These are the conditions under which the medical defence organizations are valuable to a threatened practitioner.

DR. YERSIN has resigned the position of Director of the Medical School of Hanoi, to become head of the Pasteur Institute of Nha Trang.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

VITAL STATISTICS OF LONDON DURING THE THIRD QUARTER OF 1904.

[Specially Reported for the British Medical Journal.]

In the accompanying table will be found summarized the vital statistics of the metropolitan boroughs and of the City of London, based upon the Registrar-General's returns for the third, or summer, quarter of the year. The mortality figures in the table relate to the deaths of persons actually belonging to the various boroughs, and are the result of a complete system of distribution of the deaths in public institutions among the several boroughs in which the deceased persons had previously resided.

The 32,034 births registered in London during the three months under notice were equal to an annual rate of 27.6 per 1,000 of the population, estimated at 4,648,950 persons in the middle of the year; in the corresponding quarters of the three preceding years the rates had been 28.9, 28.9, and 28.4 per 1,000 respectively, the average for the third quarters of the ten years 1894-1903 being 29.4 per 1,000. The birth-rates last quarter ranged from 14.9 in the City of London, 15.3 in the City of Westminster, 16.1 in Hampstead, 19.3 in Kensington, 20.8 in Chelsea, to 31.7 in Southwark, 32.0 in Shoreditch, 32.5 in Fulham, 33.2 in Poplar, 34.2 in Bethnal Green, 34.7 in Finsbury, and 35.4 in Stepney.

The 18,352 deaths of persons belonging to London registered during last quarter were equal to an annual rate of 15.8 per 1,000, against 16.6, 14.7, and 13.5 per 1,000 in the third quarters of the three preceding years; in the corresponding quarters of the ten preceding years the mean rate was 17.3 per 1,000. The death-rates last quarter in the various boroughs ranged from 8.9 in Hampstead, 10.9 in Lewisham, 11.6 in the City of London, 12.2 in the City of Westminster, and 13.0 in Kensington, to 19.1 in Poplar, 19.2 in Bermondsey, 19.4 in Stepney, 19.5 in Southwark, 21.6 in Shoreditch, and 22.5 in Finsbury.

During last quarter 4,869 deaths were referred to the principal infectious diseases; of these, 5 resulted from small-pox, 369 from measles, 87 from scarlet fever, 150 from diphtheria, 240 from whooping-cough, 85 from enteric fever, 2 from ill-defined pyrexia, and 3,031 from diarrhoea, but not any from typhus. These 4,869 deaths were equal to an annual rate of 4.20 per 1,000, against an average rate of 3.73 per 1,000 in the corresponding quarters of the ten preceding years. The lowest death-rates last quarter from these infectious diseases were 0.85 in the City of London, 0.88 in Hampstead, 1.63 in the City of Westminster, 2.45 in Stoke Newington, 2.64 in Chelsea, and 2.86 in Lewisham; while the highest rates were 5.23 in Southwark and in Fulham, 5.29 in Stepney, 5.79 in Bethnal Green, 6.39 in Bermondsey, 6.61 in Poplar, and 6.79 in Shoreditch. Measles showed the greatest proportional fatality in Islington, Holborn, Shoreditch, Bethnal Green, Deptford, and Greenwich; scarlet fever in St. Pancras, Finsbury, the City of London, Shoreditch, and Poplar; diphtheria in Hackney, Bethnal Green, Stepney, Poplar, and Woolwich; whooping-cough in Hammersmith, Chelsea, Holborn, Shoreditch, Poplar, Southwark, and Lambeth; "fever" in Hampstead, Hackney, Shoreditch, Stepney, and Bermondsey; and diarrhoea in Fulham, Shoreditch, Bethnal Green, Poplar, Southwark, and Bermondsey. Of the 5 fatal cases of small-pox, 2 belonged to Finsbury, 2 to Shoreditch, and 1 to Bethnal Green.

During the three months under notice 1,577 deaths from phthisis were registered, equal to an annual rate of 1.36 per 1,000, against 1.47, 1.38, and 1.42 per 1,000 in the corresponding quarters of the three preceding years. Among the various metropolitan boroughs the lowest death-rates from phthisis last quarter were recorded in Paddington, Hampstead, Hackney, Wandsworth, Greenwich, and Lewisham; and the highest rates in St. Pancras, Holborn, Finsbury, the City of London, Shoreditch, Stepney, and Southwark.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 208 per 1,000 last quarter: in the corresponding quarters of the three preceding years the rates had been 203, 149, and 139 per 1,000, the mean rate in the third quarters of the ten years 1894-1903 being 210 per 1,000. The lowest rates last quarter were registered in the City of Westminster, St. Marylebone, Hampstead, Stoke Newington, Holborn, the City of London, and Lewisham; and the highest rates in Fulham, St. Pancras, Hackney, Shoreditch, Stepney, Southwark, and Bermondsey.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,691 births and 4,439 deaths were registered during the week ending Saturday last, October 15th. The annual rate of mortality in these towns, which had been 16.0, 15.6, and 15.1 per 1,000 in the three preceding weeks, rose again to 15.2 per 1,000 last week. The rates in the several towns ranged from 5.1 in Tottenham, 7.6 in Devonport, 7.9 in Handsworth (Staffs.), 8.0 in Walthamstow and in Northampton, 8.3 in Hornsey and in Cardiff, and 9.0 in Willesden, to 20.9 in South Shields, 21.0 in Plymouth and in Stockton-on-Tees, 21.6 in Tynemouth, 22.3 in Swansea, 22.5 in Warrington, 22.8 in Sunderland, and 27.2 in Merthyr Tydfil. In London the rate of mortality was 14.2 per 1,000, while it averaged 15.6 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 2.0 per 1,000 in the seventy-six towns; in London this death-rate was equal to 1.3 per 1,000, while it ranged upwards in the seventy-five large provincial towns to 5.0 in Wigan, in Stockton-on-Tees, and in Merthyr Tydfil, 5.4 in Birkenhead, 5.9 in Preston, 6.7 in Burnley, 6.8 in Salford, and 7.0 in Grimsby. Measles caused a death-rate of 1.4 in Birkenhead and in Liverpool, 1.8 in St. Helens and in Salford, 1.9 in Halifax, and 2.3 in Walsall and in Grimsby; scarlet fever of 1.4 in Merthyr Tydfil, 1.6 in Hanley, and 1.7 in Barrow-in-Furness; diphtheria of 1.3 in Bradford, 1.6 in Stockport, 2.3 in Grimsby, and 3.0 in Stockton-on-Tees; and diarrhoea of 2.4 in Blackburn, 2.7 in Birkenhead, 3.2 in Salford, 3.6 in Merthyr Tydfil, 3.8 in Middlesbrough, 5.0 in Wigan, 5.4 in Preston, and 5.7 in Burnley. The mortality from whooping-cough and from "fever" showed no marked excess in any of the large towns. One death from small-pox was registered in Oldham, but none in any other of the seventy six towns. One case of small-pox remained under treatment in the Metropolitan Asylums Hospitals on Saturday last, October 15th, against 5, 3, and 2 on the three preceding Saturdays; no new case was admitted during the week. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1,969, 2,158, and 2,341 at the end of the three preceding weeks, had further risen to 2,516 at the end of last week; 377 new cases were admitted during the week, against 284, 406, and 409 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, October 15th, 970 births and 522 deaths were registered in eight of the principal Scotch towns. The

Analysis of the Vital Statistics of the Metropolitan Boroughs and of the City of London after Distribution of Deaths occurring in Public Institutions during the Third Quarter of 1904.

Boroughs.	Estimated Population middle of 1904.	Births.	Deaths.	Annual Rate per 1,000 Living.			Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Typhus.	Enteric Fever.	Simple and Ill-defined Fever.	Diarrhoea.	Phthisis.	Deaths of Children under 1 year of age to 1,000 Births.
				Births.	Deaths.	Principal Infectious Diseases.												
COUNTY OF LONDON	4,648,950	32,034	18,352	27.6	15.8	4.20	4,869	5	369	87	150	240	—	85	2	3,931	1,577	208
Paddington	146,975	820	484	22.4	13.2	3.17	116	—	—	4	2	3	—	2	—	105	31	201
Kensington	179,236	861	582	19.3	13.0	2.89	129	—	3	1	5	5	—	2	—	113	63	209
Hammersmith	117,412	800	428	27.3	14.6	3.93	115	—	1	1	2	14	—	1	—	96	45	203
Fulham	152,482	1,235	629	32.5	16.5	5.23	199	—	6	—	5	11	—	—	—	177	49	232
Chelsea	74,329	385	266	20.8	14.4	2.64	49	—	3	—	1	6	—	—	—	39	27	192
City of Westminster ...	177,321	676	538	15.3	12.2	1.63	72	—	5	3	—	4	—	4	1	55	56	154
St. Marylebone ...	130,337	1,004	471	30.9	14.5	2.99	97	—	5	2	3	2	—	—	—	85	38	142
Hampstead	86,663	347	192	16.1	8.9	0.88	19	—	—	1	1	—	—	3	—	14	18	121
St. Pancras	235,936	1,503	998	25.6	17.0	3.66	215	—	24	3	3	16	—	7	—	157	94	232
Islington	341,044	2,204	1,282	25.9	15.1	3.68	313	—	56	10	6	18	—	4	—	219	107	192
Stoke Newington ...	52,445	288	174	22.0	13.3	2.45	32	—	2	1	2	3	—	—	—	24	23	160
Hackney	226,266	1,580	874	28.0	15.5	4.95	279	—	15	2	15	9	—	9	—	229	56	226
Holborn	57,101	417	217	29.3	15.2	3.44	49	—	9	—	2	5	—	1	—	32	45	122
Finsbury	98,958	857	555	34.7	22.5	5.15	127	2	13	4	1	4	—	3	—	100	46	208
City of London ...	23,482	87	68	14.9	11.6	0.85	5	—	—	1	1	1	—	—	—	2	11	92
Shoreditch	117,033	933	631	32.0	21.6	6.97	198	2	19	5	4	10	—	4	—	154	53	288
Bethnal Green ...	130,207	1,110	614	34.2	18.9	5.79	188	1	21	4	14	9	—	2	—	137	50	219
Stepney	303,791	2,681	1,479	35.4	19.4	5.29	401	—	21	8	26	13	—	11	—	322	124	223
Poplar	169,905	1,405	807	33.2	19.1	6.61	280	—	17	7	13	14	—	5	—	224	63	221
Southwark	207,937	1,645	1,011	31.7	19.5	5.23	271	—	14	1	4	15	—	2	1	234	122	233
Bermondsey	129,397	980	619	30.4	19.2	6.39	206	—	16	4	6	4	—	8	—	168	48	240
Lambeth	310,359	2,218	1,200	28.7	15.5	4.38	339	—	49	3	7	29	—	1	—	259	101	201
Battersea	175,405	1,223	668	28.0	15.3	4.02	176	—	8	5	2	7	—	3	—	151	48	204
Wandsworth	257,448	1,703	858	26.5	13.4	3.49	224	—	14	3	5	7	—	2	—	193	56	191
Camberwell	268,384	1,822	1,028	27.2	15.4	3.84	257	—	16	5	5	13	—	5	—	213	70	215
Deptford	113,509	769	482	28.2	17.0	4.67	132	—	17	—	5	2	—	1	—	107	44	222
Greenwich	101,651	671	369	26.5	14.6	4.77	121	—	17	—	—	7	—	3	—	64	20	200
Lewisham	140,401	892	382	25.5	10.9	2.86	100	—	4	2	1	3	—	1	—	89	29	165
Woolwich	123,416	888	456	28.9	14.8	5.20	160	—	3	2	9	6	—	1	—	139	40	212

annual rate of mortality in these towns, which had been 16.0, 16.6, and 15.1 per 1,000 in the three preceding weeks, rose again last week to 15.8 per 1,000, and was 0.6 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 12.3 in Perth and 13.4 in Edinburgh to 18.8 in Leith, and 19.4 in Greenock. The death-rate from the principal infectious diseases in these towns averaged 2.3 per 1,000, the highest rates being recorded in Greenock and Perth. The 254 deaths registered in Glasgow included 3 which were referred to measles, 2 to scarlet fever, 2 to diphtheria, 12 to whooping-cough, 2 to "fever," and 15 to diarrhoea. Three deaths from diphtheria, 5 from whooping-cough, and 4 from diarrhoea were recorded in Edinburgh. Four deaths from diarrhoea occurred in Dundee, 2 from measles and 3 from diarrhoea in Aberdeen, 2 from whooping-cough and 2 from diarrhoea in Paisley, 2 from diarrhoea in Leith, and 2 from "fever" in Greenock.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, October 8th, 464 births and 311 deaths were registered in six of the principal Irish towns, against 599 births and 338 deaths in the preceding period. The mean annual death-rate of these towns, which had been 16.5, 18.7, and 21.3 per 1,000 in the three preceding weeks, fell abruptly to 15.6 in the week under notice, this figure being only 0.5 higher than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 10.0 in Limerick and 11.3 in Londonderry, to 18.5 in Cork and 19.2 in Belfast. The zymotic death-rate during the same period in the same six Irish towns averaged 1.8 per 1,000, or 1.3 per 1,000 lower than during the preceding period, the highest figure, 3.0, being registered in Waterford, while Limerick and Londonderry recorded no deaths under this heading at all. Diarrhoeal disease caused 23 deaths altogether, 7 in Belfast and 10 in Dublin. In Belfast 5 deaths from measles occurred and 5 from enteric. No deaths were ascribed anywhere to small-pox, scarlet fever, typhus, diphtheria, or simple continued fever.

During the week ending Saturday, October 15th, 516 births and 425 deaths were registered in six of the principal Irish towns against 464 births and 311 deaths in the preceding period. The mean annual death-rate of these towns, which had been 18.7, 21.3, and 15.6 per 1,000 in the three preceding weeks, rose to 16.8 per 1,000 in the week under notice, this figure being 1.0 higher than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 5.8 in Waterford to 22.3 in Dublin and 23.2 in Limerick. The zymotic death-rates during the same period and in the same six Irish towns averaged 1.3 per 1,000, or 0.5 lower than during the preceding period, the highest figure, 2.2, being recorded in Belfast, while Waterford registered no deaths under this heading at all. In Belfast 3 deaths were ascribed to measles and 3 to whooping-cough, the total number of deaths from diarrhoeal diseases throughout Ireland falling to 19.

SANITARY ADMINISTRATION AT WHITEHAVEN.

Mr. Power has presented to the Local Government Board a report on the sanitary condition of Whitehaven by Dr. Reginald Farrar, one of the Medical Inspectors of the Board. In 1902 Dr. Bulstrode reported to the Board upon an outbreak of enteric fever at Whitehaven, and he made a number of suggestions as to the better sanitation of the town. The present report is concerned with the sanitary progress which has been made since that date. It appears that the Town Council has been active in remedying some of the worst defects and in patching up a number of minor matters, but it has not grappled with the real problem before it. Dr. Farrar found 120 to 200 houses, mostly in back-to-back blocks and without proper ventilation and lighting, which ought to be demolished, not only as insanitary in themselves, but as obstructive dwellings. He proposes action under Part II of the Housing of the Working Classes Act, 1890. The squalor which exists in the slums of Whitehaven is evidently serious, and no measure short of an effective scheme of demolition and the provision of additional house accommodation in suitable sites will be of permanent benefit.

CONDITIONS ATTACHED TO POOR-LAW APPOINTMENTS.

A correspondent writes, drawing attention to a recent advertisement for a medical superintendent for their Infirmary by the Guardians of the St. George's Union. He states that two conditions have been laid down that in his opinion are illegal: (1) That the medical superintendent will be required to attend, without further fee, any of the indoor staff at the Infirmary, Workhouse, and Children's Home, who may be sick, and report thereon to the guardians, if required. (2) That for every alleged lunatic examined by order of a magistrate, he shall accept a fee, not exceeding 10s. 6d. per case.

*** Our correspondent's contention is probably correct. The matter ought to be brought under the notice of the Local Government Board. It is an innovation that Poor-law officials presumably well paid should get the medical attendance at the expense of the ratepayers. With regard to the endeavour to limit the fees allowed by magistrates for the examination of lunatics, the matter is altogther outside the jurisdiction of the Guardians, and the attempt to limit their officers' rights to such fees, is an interference with the statutory powers of the justices.

HOSPITAL AND DISPENSARY MANAGEMENT.

GLASGOW DISTRICT ASYLUM, WOODILEE.

The Medical Superintendent of this asylum, Dr. H. C. Marr, like Dr. Clouston of the Royal Edinburgh Asylum, has been deeply impressed by the large part which alcohol plays in the causation of insanity. "Insanity," he says, "apart from heredity, is chiefly the result of two factors—intemperance and venereal disease." Of his own admissions alcoholic excess played the chief part in the causation of insanity in 31.8 per cent.; and further on he continues: "A comparatively large percentage of cases of alcoholic insanity occurs in which the insanity is due solely to excess in the use of alcoholic liquors. When it is considered that the physiological limit in healthy adult persons is 2 oz. of absolute alcohol, and that this quantity is regularly exceeded by habitual drinkers and by those who take bouts of drinking, it is evident that the nervous system must be affected in some cases to such an extent as to cause insanity. The increasing percentage of alcoholic insanity in this asylum, and in most others throughout the country, is an evidence of the increase of those excessive drinking habits which, though they may not cause insanity in the drinker, are a fruitful source of nervous disease and degeneracy in his descendants." In at least 50 per cent. of the inebriates under review an ancestral history of insanity or drunkenness was ascertained. Dr. Marr comments on the fact that an asylum is not a place for the most effective treatment of these cases, for as soon as the patient recovers from an attack of insanity resulting from excessive drinking the law demands that he should be discharged, and in the case of inebriate homes the application of the Act is limited, and they are at present, Dr. Marr states, occupied mainly by a criminal class of the community. He therefore suggests co-operation on the part of the Lunacy Board, Parish Council, and Corporation to secure greater powers than are afforded at present, and recommends as a system the Austrian curatel. The statistical tables of the asylum show that on May 15th, 1903, there were 885 patients, and 881 on May 15th, 1904; the total cases under care during the year being 1,177. There were 292 admissions during the year, being an increase of 12 on the previous year. Of these 292, in 253 the attack was of less than twelve months' duration on admission, and in 231 the attack was the first attack. A good recovery-rate was therefore to be expected. There were 138 discharged as recovered, a percentage recovery-rate on admissions of 47.2, as not recovered 72, and there were 86 deaths. Of the admissions there were 14 cases of congenital or infantile deficiency, 10 cases of acquired epilepsy, and 31 cases of general paralysis. Of mania of all kinds there were 95 cases, of melancholia 68, and of dementia (including 18 cases of primary dementia) 65. The table giving the probable causes of insanity in the admissions is very complete. The striking feature is that already mentioned—namely, the extremely high percentage of cases in which alcohol is assigned as a cause. In this connexion we note that in only 41—that is, a percentage of 14.04—was the alcohol assigned as a sole cause, and in 53 other cases it was combined with other causes—for example, syphilis, heredity, phthisis, cerebral haemorrhage, myxoedema, etc. It is, therefore, an exceedingly nice point whether—leaving out of count a probable, unascertainable heredity—the mental condition should be attributed to the alcohol or, say, the syphilis or to both. Venereal disease was assigned in 21, and heredity was ascertained in 52. There were 86 deaths during the year, the outstanding features amongst the causes of death being general paralysis 14, phthisis 10, general tuberculosis 6, and exhaustion from acute mania 6. The general health appears to have been good, and there was practically no epidemic disease. A new laboratory for clinical and pathological work has been built on the most modern and approved system, providing rooms for pathological, bacteriological, and chemical investigation, and, in addition, accommodation for special research work, a room for photographic purposes, and a museum and library for the medical staff. The medical superintendent suitably acknowledges the liberality and foresight of the District Lunacy Board for this provision, which cannot but be of great service to the institution and its inmates.

DORSET COUNTY ASYLUM.

In a great number of asylums throughout the country there has been of late years an accumulation of chronic irrecoverable cases, resulting in overcrowding and a lowered recovery-rate. A number of medical superintendents, also, have noted an increasing proportion of these hopeless cases in the admissions, and we are therefore pleased to note that in the Dorset County Asylum the character of the admissions was, for the year 1903, much more hopeful than it has been for some time past. The type of mental disease was more acute; there were fewer melancholics, and many had youth and a fairly sound physical condition in their favour. In his report the Medical Superintendent, Dr. P. W. MacDonald, expresses his satisfaction that no children were admitted during the year, and that only 2 per cent. were under 20 years of age. In regard to this matter he says that "public authorities in general have come to realize how undesirable it is for children to be associated with the adult insane—where it is well-nigh impossible to prevent contamination—and however thorough the supervision may be there are but few opportunities of carrying out any systematic teaching or training of juvenile cases. The most advanced opinions are in favour of placing cases of congenital weakness in cottage homes; and this system has much to commend it, especially in districts where the population is sparse and the number of cases small." The numbers resident in the asylum on January 1st, 1903, were 746, and on December 31st, 1903, were 761, a total increase of 15, but the increase of county patients was only 4: 148 cases were admitted during the year, of these, 39 being private and 2 out-county cases, and in 125 the attack was of not more than twelve months on admission; 75 were cases of recent mania, 37 of recent melancholia; there were 5 cases of congenital mental deficiency, 3 of acquired epilepsy, and only 2 cases of general paralysis. The small remainder is fairly equally distributed over the usual chronic vesaniae. As to the causes of insanity in the admissions, Dr. MacDonald lays stress on the predominating influence of hereditary predisposition. "The subject," he says, "is worn threadbare, and one can only restate a momentous and disregarded truth—the evil results of consanguineous and tainted unions. From ascertained facts, 40 per cent. of the admissions had clear histories of a family predisposition to insanity; and when to this is added 15 per cent. in which there was strong circumstantial proof of mental weakness, the rôle of heredity assumes a position which exceeds in gravity and importance all other causes." Among the other prodromata, anxiety and worry, and the influence of bodily diseases and disorders is given in over 30 per cent. Intemperance in drink is mentioned as exciting cause in only 8 cases, and syphilis does not appear in any. With such a good class of admissions a good recovery-rate was to be expected, and we find it here in the unusually high proportion of 49.6 per cent., excluding transfers and irregular admissions; 63 were discharged as recovered, 3 as relieved, and 10 not improved during the year, a low death-rate on the average numbers resident of 7.4 per cent., and of these 9, excluding 1 case of pleurisy with effusion, were due to tuberculous disease. There were 12 deaths from pneumonia, 6 of heart disease, and 11 of cerebral diseases, including 6 from general paralysis. The general health throughout the year appears to have been excellent, and there were no cases of infectious disease.

ESSEX AND COLCHESTER HOSPITAL.

On September 21st, the Committee of the above institution made a new departure by holding an "At home" in the grounds of the hospital. Some 700 invitations were issued, and it was estimated that some 500 to 600 guests were present. The object of the gathering was to popularize the hospital, to bring its claims for support prominently before the chief residents of Colchester, and in this way attract fresh subscribers.

No effort was made to appeal directly, except that on entering each guest was handed a leaflet on which the more prominent claims of the hospital were brought forward. Thus it was pointed out that over 10,000 patients had been cared for during the eighty-five years of its existence, while the increase of the town would probably lead to a still larger increase of patients; also that the extension of medical science had led to increased expenditure for *x*-ray apparatus, apparatus for light treatment, etc., which was not being met by an increase of annual subscribers. The estimated debt against the hospital to the end of the current year was stated to be £740. The visitors were entertained to tea on the lawn, and were also invited to inspect the wards, out-patient department, and the *x* ray and other scientific departments, demonstrations taking place at intervals. The expenses of the "At home" will all probably be defrayed by private donations, and will not fall upon the hospital.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRKENHEAD: LYING-IN HOSPITAL AND LADIES' CHARITY.—Vacancy on Medical Staff.

BURY INFIRMARY.—Junior House-Surgeon, resident. Salary, £60 per annum, increasing to £90 after six months.

CITY OF LONDON ASYLUM, near Dartford.—Medical Superintendent. Salary commencing at £800 per annum.

DARLINGTON HOSPITAL AND DISPENSARY.—House-Surgeon, resident. Salary, £120 per annum.

DOWNPATRICK: DOWN DISTRICT LUNATIC ASYLUM.—Junior Male Assistant Medical Officer. Resident. Salary, £100 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—(1) House-Physician; (2) House-Surgeon; (3) Assistant House-Physician. Salary for (1) and (2), £80 per annum, and for (3) £70 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Surgeon. Salary, £20 for six months and £2 10s. washing allowance.

LEAMINGTON WARNEFORD HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

LIVERPOOL HOSPITAL FOR CONSUMPTION.—Honorary Assistant Physician.

MARGATE: ROYAL SEA-BATHING HOSPITAL.—Resident Surgeon, to act as Junior for six months and then as Senior. Salary at the rate of £80 and £120 per annum respectively.

NEW HOSPITAL FOR WOMEN, Euston Road, N.W.—Qualified woman as Clinical Assistant.

NOTTINGHAM CHILDREN'S HOSPITAL.—House-Surgeon. Resident. Salary at the rate of £100 per annum.

RHAYADER UNION.—Public Vaccinator for the whole Union.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Assistant Physician.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—Senior House Surgeon. Resident. Salary, £100 per annum.

ST. MARYLEBONE INFIRMARY.—Male Assistant Medical Officer. Resident. Salary, £150 per annum.

SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, resident. Salary, £160 per annum, increasing to £200.

STROUD GENERAL HOSPITAL.—House-Surgeon, resident. Salary, £50 per annum.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House-Surgeon. Salary at the rate of £50 per annum.

THROAT HOSPITAL, Golden Square, W.—Senior Clinical Assistant.

APPOINTMENTS.

ALEXANDER, W., M.D., Medical Officer of Health, Branksome Urban District.

CAIRNS, William, M.B., M.S.Glas., Health Officer for the Port of Whitianga, New Zealand.

CHESTNUTT, J., B.A.Irel., L.R.C.P. and S.Edin., Medical Officer to the Post Office officials in Howden and district.

CLARKE, W. T., M.D., Toronto, Clinical Assistant, Chelsea Hospital for Women.

COLERIDGE, A., M.R.C.S., L.R.C.P., Clinical Assistant, Chelsea Hospital for Women.

CUDMORE, Arthur M., F.R.C.S., L.R.C.P.Lond., Honorary Surgeon to the Adelaide Hospital.

DILLON, T. A., L.R.C.P. and S.Irel., Resident Assistant Medical Officer, Croydon Union Infirmary.

DENNY, A. W., M.R.C.S., L.R.C.P., District Medical Officer of the Newmarket Union.

GEE, C. A. H., M.R.C.S., L.R.C.P., District Medical Officer, Shepton Mallet Union.

HILL, A. W., M.D., Ophthalmic Surgeon to the Adelaide Hospital.

LITTLER, R. M., F.R.C.S., etc., Honorary Assistant Medical Officer to the Southport Infirmary.

MAGARRY, Frank, M.B., Ch.M. Syd., Assistant Surgeon to the Adelaide Hospital.

ROGERS, R. S., M.A., M.D., Honorary Physician to the Adelaide Hospital.

STORMONT, J. H., M.R.C.S., L.R.C.P., District Medical Officer, Solihull Union.

WARE, A. M., M.D., Clinical Assistant Chelsea Hospital for Women.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

ABRAM.—On October 15th, at Reading, the wife of G. Stewart Abram, B.A., M.B., of a son.

KERR.—On October 15th, at London Road, Sheffield, the wife of W. S. Kerr, M.B., F.R.C.S.E., of a son.

SWALES.—October 18th, at Oak Villa, West Kirby, Cheshire, the wife of Edward Swales, M.R.C.S., L.R.C.P.Lond., of a son.

MARRIAGES.

DENTON-COKER.—On October 12th, at Christ Church, Ealing, by the Rev. Temple-ton King, George Robert Denton, M.B., C.M.Edin., of Cowes, Isle of Wight, to Mabel Lilian, second daughter of O. C. Coker, Esq., M.R.C.S., etc., of Woodville Gardens, Ealing.

HOWE—REITH.—On October 12th, at West Parish Church, Aberdeen, by the Rev. And. Brown, assisted by the Rev. R. S. Kemp, C. W. Howe, M.B., D.P.H., Bulwell, Notts., youngest son of the late William Howe, to Bessie, youngest daughter of Dr. A. Reith, of Silconiston Park, Aberdeen.

KEARNEY-McDONNELL.—On October 11th, at Cork, by the Rev. R. McCarthy, Adm. Cathedral, Major John Kearney, R.A.M.C., to Katharine, elder daughter of John McDonnell, Sundays Well, Cork.

DEATHS.

GOODWORTH.—October 7th, at Winterton, Doncaster, suddenly, Roger Portington Goodworth, M.R.C.S.Eng., L.R.C.P.Edin., L.S.A., aged 58 years.

HARDING.—About October 4th, at Jesselton, British North Borneo, in his 31st year, W. J. Harding, M.B., F.R.C.S., late Civil Surgeon South African Field Force, only son of Fleet Engineer W. J. Harding, R.N. (retired). By cable.

MERCIER.—On October 12th, at Flower House, Catford, after terrible suffering, Laura, the dearly loved wife of Charles Arthur Mercier.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Discussion on the Diagnostic Value of Leucocytosis. To be introduced by Dr. J. H. Drysdale.

TUESDAY.

Royal Medical and Chirurgical Society, 20, Hanover Square, W., 8.30 p.m.—Papers: Mr. Rupert Bucknall, the Pathology and Prevention of Secondary Parotitis; Dr. B. N. Tebbs, Symptomatic Parotitis.

Therapeutical Society, Apothecaries' Hall, Water Lane, Blackfriars, E.C., 4 p.m.—Annual general meeting and election of officers. Papers: Dr. A. Harries, Some Therapeutical Applications of the Continuous Current; Dr. G. Crichton, the Metric System in Dispensing.

WEDNESDAY.

Hunterian Society, London Institution, Finsbury Circus, E.C., 8.30 p.m.—Clinical evening. Cases ready at 8 p.m.

THURSDAY.

British Balneological and Climatological Society, 20, Hanover Square, W., 8.30 p.m.—Annual general meeting. Paper: Dr. Bowen Davies, the Spa Treatment of Arthritis Deformans.

Neurological Society of the United Kingdom, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Exhibition of cases of Clinical interest.

The Childhood Society, 72, Margaret Street, 8 p.m.—Paper: T. J. Macnamara, LL.D., M.P., Physical Condition of Working Class Children.

FRIDAY.

Clinical Society of London, 20, Hanover Square, W., 8 p.m.—Exhibition of Clinical Cases, followed by Discussion. Patients will be in attendance from 8 p.m. till 9 p.m.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital, Thursday, 4 p.m.—Medical cases.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Treatment of Hernia in Infants.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m.: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Eyes. Lectures will be delivered at 5.15 p.m. as follows: Monday, Cystoscopy as an Aid to Urinary Diagnosis; Tuesday, Disorders of Menstruation; Wednesday, Recent Variations in the Technique of Certain Common Operations; Thursday, The Preventive Treatment and the Protective Treatment of Chronic Heart Disease.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Central Out-patient Department, 7, Fitzroy Square, W.—Thursday, 5 p.m., The Arrest of Pulmonary Tuberculosis.

North-East London Post-Graduate College, Tottenham Hospital, N.—Wednesday, 2.30 p.m., Demonstration on Fevers (North-Eastern Fever Hospital, St. Ann's Road); Thursday, 4.30 p.m., Lecture on Diagnosis of Pelvic Tumours.

Post-Graduate College, West London Hospital, Hammersmith Road, W., 5 p.m.—Monday, Practical Surgery. Tuesday, X Rays. Wednesday, Practical Medicine. Thursday, Practical Surgery. Friday, Water.

Samaritan Free Hospital for Women, Marylebone Road, N.W.—Thursday, 3 p.m., The Causation and Treatment of Sterility.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
EDITOR, 2631, Gerrard.
GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

SADDLE asks if any member knows of a bicycle saddle consisting of a frame and two pneumatic pads which can be adjusted to fit tuberosities of ischium, and where it can be procured.

DYSENTERY AND TROPICAL MEDICINE.

A CORRESPONDENT asks what varieties of dysentery are described, and what parasites are credited with the causation of each variety? (*b*) Also, is tropical abscess necessarily caused by amoeba coli infection?

*** (*a*) I.—Amoebic dysentery (or tropical dysentery). Causes assigned: (1) The amoeba coli (not proved); (2) Ziegler's bacillus; (3) bacterium coli (Maggiora); (4) proteus vulgaris (Maggiora); (5) Shiga and Ogata's bacillus; (6) Flexner's bacillus. Nos. 5 and 6 are accepted as the cause of tropical dysentery at the present time. II.—Chronic dysentery is a sequel of the acute. III.—Asylum dysentery (asylum colitis). (*b*) Tropical abscess of the liver is not proved to be due to amoeba coli infection. In the pus from a newly-opened liver abscess the amoeba is not found until the third day after operation.

ANSWERS.

TOBACCO.—As far as we are aware, all tobaccos contain nicotine and therefore affect the heart. We certainly do not think that Latakia is any exception.

WE would request correspondents who desire to ask questions in this column not to make use of such signatures as "A Member," "A Member B.M.A.," "Enquirer," and so on. By attention to this request much confusion would be avoided. Correspondents are asked to write upon one side of the paper only.

QUAESTOR.—The sooner the examination is made the better, within twenty-four hours if possible, though in healthy semen under suitable conditions the movements of the spermatozoa may continue for a much greater length of time.

N. B. U.—A foreign patient going to Aix-la-Chapelle would do well to go to an hotel or to one of the baths; rooms at the baths can be obtained at various prices. Full particulars can be obtained, in English if desired, by writing to the Kurdirektor, Bad-Aachen, Germany. The return fare from London to Aix-la-Chapelle via Dover and Ostend is, Messrs. Cook inform us, first class, £4 5s.; second, £3 1s. 9d.

E.—If the degree of mental enfeeblement be such as to justify certifying the case as "imbecile," application might be made to the Earlswood Asylum (Secretary, Mr. W. Howard, 36, King William Street, London Bridge, E.C.). Homes for crippled boys will not usually receive those of weak intellect, but the Secretary of the National Industrial Home for Crippled Boys, Wright's Lane, Kensington, might be communicated with.

A. V. S.—It is almost impossible to advise as to what occupation a young man just discharged from sanatorium treatment should take up, without knowing something of the individual—his training, means, and capabilities. There are, however, certain general principles which may guide him. What is to be aimed at is as follows: (1) Congenial work which is not arduous. (2) Most of the time to be spent in the open air, and stuffy or overcrowded rooms to be avoided entirely. (3) Life in the country, and preferably in some dry climate, where there is plenty of sunshine. Town life should be avoided, though we know men similarly circumstanced who keep well with work in London (for example, bank clerks) by living in the country and coming backwards and forwards daily. So, too, there are outdoor occupations in towns (for example, collectors and agents for insurance companies, etc.) which are comparatively healthy. It is, however, best to avoid London and other large towns. Of country occupations, the land agent, surveyer, farmer, or market gardener have plenty of outdoor life. There may be better openings for outdoor occupations in some of the Colonies, where also a more suitable climate is to be found (for example, farming in Canada), but no one not in robust health should go out without some definite billet being secured beforehand.

CHAIR COUCH FOR SURGERY.

DR. A. R. F. EVERSHED (London), for whom Messrs. Maple and Co. made a consulting-room combined chair and couch, recommends "J. P." to apply to that firm.

MR. J. M. CARVELL (London, W.) writes: I would advise "J. P." to write to the St. John Ambulance Association, St. John's Gate, Clerkenwell, E.C. It is about to bring out an inexpensive chair couch, which I think will meet his requirements.

CHRONIC SCIATICA.

DR. HAROLD W. JONES (St. Louis) writes: In answer to "X.Y.Z.'s" query in the BRITISH MEDICAL JOURNAL for August 27th, in regard to chronic sciatica, let me suggest that possibly the trouble may be due to an osteo-arthritis of the lumbar spine, since this is the case with many such obstinate cases. In this event fixation in a plastic jacket will almost invariably relieve. In case the spine has been carefully examined as to flexibility with the patient undressed, and has proved normal, I have nothing further to suggest.

LETTERS, NOTES, Etc.

THE TEACHING OF MEDICAL ETHICS.

E. R. F. writes: Dr. Dixon will no doubt be interested to hear (and those in other centres of teaching might well do likewise) that the following resolution is on the agenda for October 25th of the Metropolitan Counties Branch: "That it be referred to a small Committee to consider and report what steps it would be desirable to take in order to bring before the students and newly-qualified medical men at the London Medical Schools the aims and objects of the British Medical Association.

MEDICINE AND FRUIT-GROWING.

THE *Renmark Pioneer* states that Renmark, South Australia, a place with some 1,000 inhabitants chiefly engaged in fruit-growing, has no medical practitioner. Our contemporary thinks that some medical man who has made a competency may be found willing to settle there to take up fruit-growing and attend to the modest professional requirements of the settlement and district, and he adds that, as there are no paupers, all can afford to pay for medical advice. The dryness of the climate renders it suitable for those who suffer from weakness of the chest. We have no further information on the subject, but gather that the editor would answer inquiries.

LETTERS, COMMUNICATIONS, ETC., have been received from:
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SEVENTY-SECOND ANNUAL MEETING
OF THE
British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF SURGERY.

H. P. Symonds, F.R.C.S.Edin., President of the Section.

THE LIMITS OF FREYER'S OPERATION OF SUPRAPUBIC PROSTATECTOMY.

By J. W. Thomson Walker, M.B., C.M., F.R.C.S.,
Assistant Surgeon, North-West London Hospital and St. Peter's Hospital.

If a specimen of an enlarged prostate and its surroundings be removed from the cadaver and cut at right angles to the urethra, two masses of multiple adenomata will be seen lying one on either side of the urethra. These represent the lateral lobes of the prostate in the normal gland. Completely surrounding both these masses is a thick capsule which binds them together. This capsule consists of non-striped muscle intermixed with fibrous tissue. Outside this again is a sheath of fibrous tissue in the meshes of which lies the prostatic plexus, and beyond this, on each side, are the levatores ani, the rectum behind and cellular tissue in front. If a similar prostate be cut vertically, the portion projecting into the bladder is still surrounded by the fibro-muscular capsule, but the fibrous sheath is wanting, and the capsule is only covered by the mucous membrane of the bladder base. By dissection the adenomatous lobes may be shelled out from the interior of the mass, leaving behind the fibro-muscular capsule and the fibrous sheath outside the bladder, and the capsule and the mucous membrane inside the bladder. By dissection the adenomata with the surrounding fibro-muscular capsule can be shelled out, leaving behind the fibrous sheath outside the bladder and only the covering mucous membrane inside the bladder.

These represent two opposing views in regard to the operation in which Mr. Freyer claims to have removed the "whole of the enlarged prostate within its capsule."

According to Mr. Cuthbert Wallace, "there is always left behind a definite laminated envelope containing glandular tissue derived from the expanded outer portion of the organ," and "the parts removed may consist of adenomatous masses from the lateral parts, or of an adenomatous formation, completely surrounding the urethra."[1] In a paper read before the Royal Medical and Chirurgical Society[2] I stated that, in the specimens I had examined of the sheath left behind after prostatectomy, no layers of compressed gland tissue were found, and that the parts removed consisted of the whole of the enlarged prostate, surrounded by the thickened prostatic capsule.

What evidence has been adduced in support of these views? Mr. Wallace's statements depend upon the examination of one prostate removed during life and several *post-mortem* prostatectomies, the number of which he does not definitely state. The fallacy of *post-mortem* prostatectomies was impressed upon me when I first took up this subject. During the early days of this operation I endeavoured, with the help of Mr. Herbert Frankling, by means of operations on enlarged prostates in the dead body, to ascertain the limits of the operation Mr. Freyer was performing. I was not, however, satisfied with the result. For, although in one case no trace of glandular tissue could be found in the parts left behind, yet in the next I merely succeeded in shelling out some adenomata, which I was convinced did not represent the operation Mr. Freyer described. I now know, from more extended observation and from the experience of others, that these two procedures may find their counterpart in the living body, and that it is only to that in which all the enlarged prostate and its capsule are removed that Mr. Freyer lays claim to originality. Mr. Wallace himself admits that in these *post-mortem* prostatectomies "the amount of capsule removed with such tumour will then simply depend on the thickness of the envelope and the depth to which the finger happens to have penetrated in the process of enucleation." One of the most important features in Mr. Freyer's operation is that the capsule of the enlarged prostate is not penetrated at all. To avoid penetrating the capsule the finger only is used to strip the mucous membrane off the intravesical portion of the prostate, and the use of scissors avoided. He writes:

> Where scissors or scalpel are employed there is danger of entering the capsule, and, the guiding line being thus lost, the finger flounders about inside the capsule, enucleating isolated adenomatous tumours instead of the whole organ in its capsule.

In defining the limits of an operation such as prostatectomy it is not sufficient to describe the parts removed, and to draw inferences from even a number of such specimens as to the parts left behind. During this operation, which is very rapidly carried out by manipulations with the forefinger and not by dissection, shreds of tissue must frequently be torn from the surface of the parts removed. I have myself, in searching the bladder at the end of a prostatectomy, discovered by chance portions of the capsule of the prostrate lying loose in the bladder cavity, and also in the cavity from which the prostrate had been removed. Had I examined the enucleated specimen in this case, and judged all prostatectomies therefrom, my conclusions would obviously have been fallacious. It is, therefore, necessary to dissect specimens from *post-mortem* examinations on cases in which death occurred after the operation of prostatectomy, and to compare these with a large number of specimens of the parts removed, before coming to a conclusion in regard to the possibility of performing a complete prostatectomy.

From a careful study of *post-mortem* examinations on cases in which suprapubic prostatectomy had been performed during life and seventy-three prostates removed by Mr. Freyer, I have stated that the plane of enucleation in the operation which this surgeon practises lies between the capsule and the sheath of the gland. The details of this investigation are published elsewhere, and it is unnecessary to repeat the description previously given. It will suffice to take up a few important points.

In two *post-mortem* specimens, after examining microscopic sections from different parts, I could find no trace of prostatic tissue in the wall of the cavity from which the prostate had been removed. These patients had died eighteen hours and ten days respectively after prostatectomy had been performed. In a third case a portion of prostatic tissue, the size of a pin's head, was found adhering to the wall of the cavity.

What, then, is the structure of the wall of the cavity from which the prostate has been removed in these cases? It is found that the upper part of the wall is lined with circularly arranged fibres which pass down a little way on the wall. With the naked eye these fibres may be traced at the cut edge of the section and seen to pass upwards into the muscular wall of the bladder, and microscopic sections show that these fibres consist of non-striped muscle. This is the remains of the portion of bladder muscle which becomes incorporated with the capsule of the gland.

Dissection of the posterior wall shows that the upper half of this part of the wall is formed by the seminal vesicles and ejaculatory ducts. I have elsewhere pointed out that this position of the vesicles results from the enlarging prostate stripping them from the bladder base and pushing them backwards. In order to expose them from the prostatic cavity the thin layer of muscle just described and a layer of pelvic fascia which encloses them must be removed.

The rest of the wall of the cavity, except that immediately around the entrance of the urethra on the floor, is smooth. On microscopic section it is composed of fibrous bundles arranged in a vertical direction (Fig. 1). No non-striped muscle tissue is found between the layers of, or internal to this membrane, with the exception of the thin layer at the upper part. At some parts of the wall the meshes are filled with extravasated blood in considerable quantity. Between the layers of the wall at the anterior part of the cavity are found the large veins of the prostatic plexus. Immediately around the entrance of the urethra on the floor of the cavity are some circular fibres. On making microscopic sections of this part of the wall these fibres are seen to be composed of striped muscle, and may be traced alongside the urethra to become continuous with the constrictor urethrae muscle outside the wall of the cavity. This is a portion of the striped muscle of Henle, which I have shown insinuates itself between the sheath and the capsule of the prostate. The wall of the prostatic cavity is, therefore, formed by a layer of fibrous tissue arranged in vertical bundles, and this may be recognized as the layer of pelvic fascia which forms the sheath of the prostate. If this fascia is traced upwards in microscopic sections, it is found to become wedged between the layers of muscle of the bladder

wall, and tracing it downwards it is lost between the layers of the striped muscle of Henle.



Fig. 1.—Sheath after enucleation of prostate. *a*, Cavity from which prostate was removed; *b*, fibrous tissue forming sheath; *c*, outer surface of sheath

I have elsewhere recorded observations upon seventy-three specimens of enlarged prostate removed by Mr. Freyer, and it is therefore unnecessary to describe fully all the characters of these specimens again. I shall only take up such points as may throw light upon the limits of the operation. I may here add that more extended observation of enucleated specimens, amounting to over 100 in all, tends to corroborate the statements I had previously made in regard to these specimens.

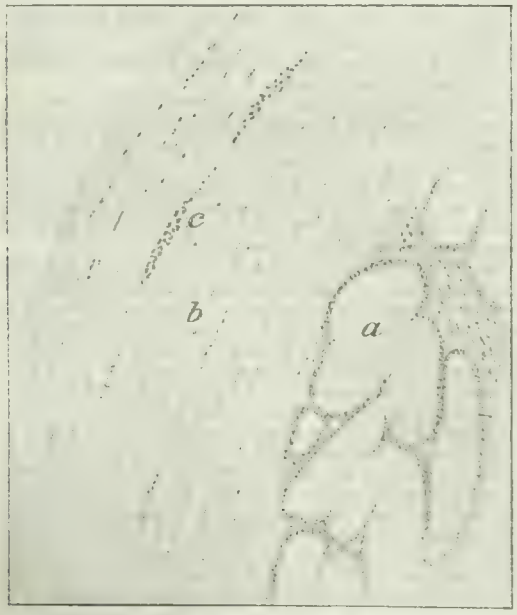


Fig. 2.—Capsule of enucleated prostate: *a*, Prostatic tubules; *b*, non-striped muscle of capsule; *c*, round-cell infiltration around blood vessels of capsule.

In sections of one of these specimens at right angles to the urethra, it will be seen that the extravesical portion consists of two lobes, between which is the more or less distorted urethra. The lobes are split up into numerous rounded lobules. The whole mass is surrounded by a firm capsule, the circular arrangement of the fibres of which is readily traced with the naked eye.

Under the microscope this capsule is found to consist of non-striped muscle, compactly arranged (Fig. 2). Here and there small blood vessels may be seen lying between the fibres, and these are usually surrounded by round-celled infiltration.

In examining a large number of sections, one or several flattened gland tubules may now and then be found embedded in the capsule.

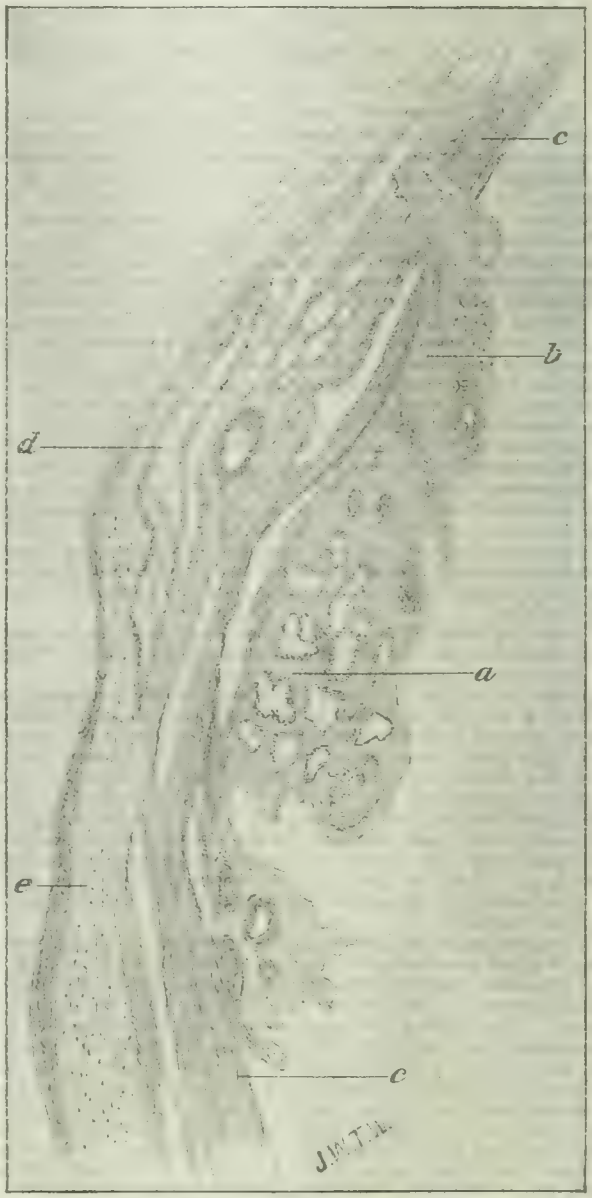


Fig. 3.—Section of wall of cavity after prostatectomy with nodule of prostatic tissue. *a*, Nodule of prostate; *b*, capsule; *c*, sheath; *d*, vein of prostatic plexus; *e*, blood extravasation in sheath.

Isolated fibres of striped muscle may be found in the capsule of some specimens, and in one enucleated prostate I found a ridge of striped muscle running vertically up the middle of the anterior surface of the specimen. Medullated nerves may also be found on the front of the capsule of some specimens.

The value of various anatomical points in estimating the limits of the operation must be carefully examined before coming to any conclusion. I have already referred to the fallacy of drawing conclusions from *post-mortem* prostat-

ectomies. In examining prostates enucleated during life there are several points which demand consideration.

The capsule which surrounds the enucleated mass consists of circularly arranged non-striped muscle fibres forming a thick, dense layer. In this capsule a few flattened gland tubules may be found in some specimens. In the *normal* prostate the thickness of the capsule varies greatly in different specimens and in different parts of the same specimen. At some parts the gland tubules may be found reaching almost to the surface of the capsule, while at other parts they lie far back and leave a relatively broad margin of fibro-muscular tissue. In enlargement of the organ it seems not unreasonable to suppose that these tubules which approach the surface become incorporated in the thickened capsule.

It has been said that the capsule surrounding the enlarged prostate consists of layers of compressed gland tubules. Flattened gland tubules are found, I admit, in the capsule, but they are few in number, and lie embedded here and there in the thick mass of non-striped muscle, and in some specimens are not found at all. Similar flattened tubules in greater numbers may be found inside the adenomatous lobes and alongside the urethra—but I have been unable to discover a capsule of flattened tubules surrounding



Fig. 4.—Ridge of striped muscle on capsule of enucleated prostate. *a*, Striped muscle fibres embedded in areolar tissue; *b*, portion of capsule.

the enucleated prostates. Further, on examining the nodule of prostatic tissue adhering to the sheath in one of the *post-mortem* specimens (Fig. 3) it is seen that the nodule is separated from the sheath by the scrap of capsule which was necessarily torn from the surface of the prostate before the nodule was detached from it. In this disc of capsule there is no appearance of flattened gland tubules.

I have, therefore, little hesitation in concluding that the capsule around the enucleated prostates is the greatly-thickened representative of the normal capsule.

The surface of this capsule in some specimens is ragged and irregular, and there is no doubt that in these the capsule is incomplete in the enucleated specimen. Portions of the capsule may, therefore, have been left adhering to the wall of the cavity from which the prostate has been removed. But, as I have pointed out, it is unsafe to conclude that this is so merely from the evidence of enucleated specimens, for shreds may be torn from the capsule of the prostate, after enucleation, when it is being removed from the prostatic cavity or from the bladder by serrated forceps. Any one who has experienced the difficulty which attends this part of the operation will readily appreciate how such accidents may occur.

In many of the specimens, however, there is no such irregularity of the surface, and there can be but little doubt that the whole of the capsule has been removed.

Another point which requires consideration is the presence of striped muscle in the capsule of the enucleated prostate. I have described a ridge of striped muscle lying vertically on the front of an enucleated prostate (Fig. 4), and have expressed the view that this corresponds to a layer of striped muscle lying between the sheath and the capsule of the normal prostate, and is a continuation upwards of Henle's muscle on the front of the prostate.

Mr. Cuthbert Wallace has devoted an article to the criticism of this.[3] His criticism consists in the statement that striped muscle fibres may also be found in front of the urethra in the stroma of the gland. This is a restatement of Henle's original description published in 1866, and these fibres had not escaped my observation. The point which I endeavoured to bring out was the massing of these striped muscle fibres into a definite layer lying between the capsule and the sheath, which prevents the separation by dissection of the sheath from the capsule along the middle line anteriorly. Further, this layer of striped muscle lies embedded in areolar tissue, while the isolated striped fibres within the prostate lie embedded in the non-striped muscle of the stroma. The same is observed in the enucleated



Fig. 5.—Portion of capsule of enucleated prostate. *a*, Isolated striped muscle fibres lying in capsule; *b*, artery with round-cell infiltration.

prostate. The fibres on the front of the capsule are separated by areolar tissue, while other isolated fibres are found lying in the non-striped muscle capsule (Fig. 5). I consider, therefore, that the presence of a mass of striped muscle on the capsule of the enucleated prostate is a valuable indication of the line of enucleation.

A further point, but one on which I do not wish to lay too much stress, is the presence of medullated nerve fibres on the surface of the capsule of an enucleated prostate. In normal prostates I have not found medullated nerve fibres penetrating the capsule of the gland, although they are plentiful enough in the sheath. Nor can I remember having read any description of nerve fibres in the stroma of the prostate. The presence of these nerve fibres on the capsule of the enucleated prostate would, therefore, seem to indicate that they had been torn from the sheath and that the line of enucleation must have passed between the sheath and the capsule.

The evidence in regard to the extent of the operation is, therefore, of a twofold nature. The most important is the examination of *post-mortem* specimens from cases which have died after prostatectomy. In two such specimens, only the fibrous sheath of the prostate formed the wall of the cavity from which the prostate had been removed. The whole of the prostate and its capsule had, therefore, been removed. In a third there was a small nodule of prostatic tissue adhering to

the sheath. Further evidence is obtained from the examination of the enucleated prostates, which I have already discussed, and this, taken in conjunction with the *post-mortem* specimens, is of the utmost value.

I believe that this evidence is sufficient to show that Mr. Freyer's contention that he has removed the whole of the enlarged prostate and its capsule must be accepted. That the operation is perfect in all its microscopic details in every case I do not think Mr. Freyer has ever claimed or now wishes to claim. In an operation where much of the success depends upon the rapidity of execution, and where the whole process of enucleation is carried out by manipulations with the finger, such delicate precision cannot justly be looked for in every case. That the operation consists of merely shelling out adenomata from within the prostate and that a capsule of compressed gland tissue is left behind I do not admit.

The line of cleavage in a perfect case lies between the capsule and the sheath of the prostate, and, according to the material I have studied, the operation is a complete prostatectomy.

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A FURTHER SERIES OF 57 CASES OF TOTAL EXTIRPATION OF THE PROSTATE FOR RADICAL CURE OF ENLARGEMENT OF THAT ORGAN.

By P. J. FREYER, M.A., M.D., M.Ch.,
Surgeon, King Edward VII Hospital for Officers, and St. Peter's Hospital, London.

AT the annual meeting of the Association held at Manchester in 1902 I had the honour of placing before the profession full details of the first 23 cases of my operation of total extirpation of the prostate for radical cure of enlargement of that organ.[1] Last year, at the Swansea meeting, I gave particulars of a further series of 32 cases of the operation.[2] I have now to report another series of 57 cases operated on between the date of that meeting and the end of June, 1904—13 in hospital and 44 in private practice—and to present for examination a large number of the prostates removed.

Full details of the first 20 of this latter series have already been published,[3] so that I shall confine my remarks almost entirely to the remaining 37 cases, referring to the former merely for statistical purposes.

CASE LXXIV.

Clergyman, aged 69, sent by Dr. H. F. Parker, Guildford; admitted to St. Peter's Hospital December 12th, 1903. Prostatic symptoms for five years. Retention of urine three years ago relieved by catheter, which has been regularly employed since. Micturition hourly with much pain; repeated attacks of cystitis and haematuria. Condition most distressing. Had inguinal colotomy six years ago, leaving a permanent faecal fistula. Suffers from right inguinal hernia. Residual urine 8 oz., contains pus, mucus, and albumen. Pulse irregular and intermittent. Prostate per rectum much enlarged, bilobed, soft, and movable. Cystoscopy revealed outgrowth of both lobes in bladder.

On January 6th, 1904, I removed the prostate, weighing 3¼ oz., the two lobes coming away separately. Commenced to pass urine per urethram January 25th; wound closed and the whole of the urine passed naturally February 4th. Went home February 7th, passing urine every three or four hours by day and once at night without difficulty or straining.

CASE LXXV.

On January 7th, 1904, I was summoned to Colchester to see, with Dr. J. MacGregor, a gentleman, aged 74. Retention of urine five years ago; relieved by catheter, which had been regularly employed since then; entirely dependent thereon during last month. Prostate extremely enlarged per rectum, soft, smooth, elastic, movable; easily felt bimanually. Urine acid, healthy.

On January 12th I enucleated the prostate entire in its capsule; time occupied* eight minutes. Considerable bleeding, which, however, soon ceased. The prostate, which was unusually soft, weighed 4¾ oz. Not a bad symptom supervened. Urine commenced passing per urethram February 2nd; wound closed February 15th. Went home February 26th in excellent health, passing and retaining urine, which was quite clear, as well as ever he did. On July 14th he wrote that he was in good health, untroubled by any urinary symptom. He had just returned from a cruise round Great Britain.

CASE LXXVI.

Gentleman, aged 70, seen with Mr. E. White (Putney), November 3rd, 1903. Prostatic symptoms for 15 years: entirely dependent on catheter for 10 years. Frequent attacks of cystitis. Urine stinking, containing much pus, mucus, and albumen. Prostate much enlarged per rectum, soft, elastic, movable; felt bimanually.

On January 14th, 1904, Mr. White being the anaesthetist, I enucleated the prostate, which weighed 3½ oz. entire. The left lobe, which was four or five times the bulk of the right, was prominent in the bladder, and the size and shape of a small pear. Scarcely any bleeding; no shock. Progress uninterrupted till January 26th, when orchitis supervened, followed by scrotal abscess, which much retarded recovery. Urine passed per urethram February 9th; wound dry February 15th. Went home February 15th in good health, passing and retaining urine normally.

CASE LXXVII.

J. C., aged 69, admitted to St. Peter's Hospital, January 11th, 1904, with prostatic symptoms of six years' duration. Retention several times during last four years, relieved by catheter, which was, however, only employed regularly for three months, during which patient was practically dependent thereon. Urine contained some pus and albumen but was acid. Prostate much enlarged per rectum, bilobed, soft, movable; easily felt bimanually. Prostate, weighing 3 oz., removed January 20th easily and rapidly, the time occupied being five minutes. The operation was borne well, and during the first few days favourable progress was made. Symptoms of septicaemia then set in, the urine becoming foul, the wound covered by phosphates and showing little

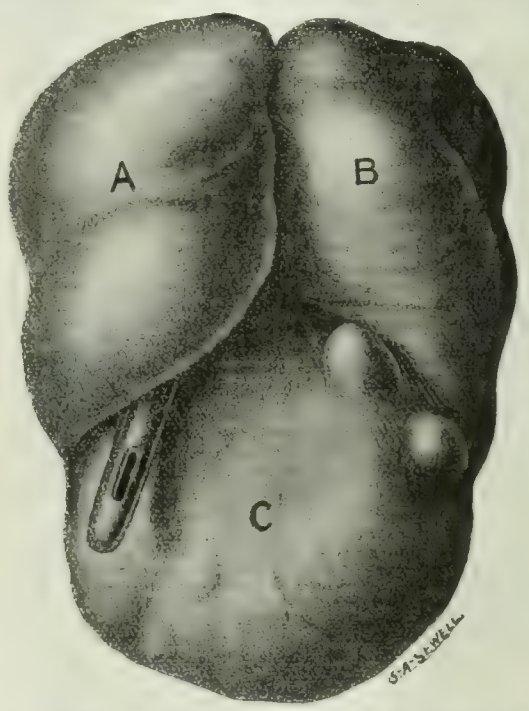


Fig. 1.—Prostate weighing 5½ oz. removed from patient aged 82 (Case LXXXV): actual size. A, left lobe; B, right lobe, continued into a tongue-shaped projection, C, in the bladder.

tendency to heal, though some urine passed naturally after February 8th. The patient gradually passed into a low, drowsy state, and died February 25th, thirty-six days after operation. At the autopsy the kidneys were found healthy; walls of the bladder thickened and covered with phosphates; prostatic cavity was lined with necrotic tissue, and contained stinking pus.

CASE LXXVIII.

Medical man, aged 59, seen with Dr. G. S. Hart, Measham, January 19th, 1904. Prostatic symptoms ten years; sounded three years ago, but no stone found. Profuse bleeding followed, and patient was laid up in a surgical home for six months, and became reduced to a skeleton; entirely dependent on catheter for three years. Double vasectomy by a London surgeon two and a half years ago with no improvement. Catheter used six or seven times daily; urine contained pus and albumen; catheter introduced 13 in. before urine flowed. Prostate much enlarged per rectum, bilobed, soft, movable; easily felt bimanually.

On January 27th, Sir William Thomson, of Dublin, and Dr. Hall being present, I removed the prostate, which weighed 4¾ oz., entire in its capsule. There was an enormous outgrowth in the bladder, the size and shape of a large pear, springing from the left lobe. Time occupied, five minutes. Much shock after operation, though no bleeding. After this, uninterrupted recovery. Urine passed per urethram February 9th; wound dry next day. Went home in good health February 27th; able to pass and retain urine "better than ever before," as he said. On May 29th he wrote that he was "in perfect health."

* For brevity the length of time that elapsed between commencing the suprapubic incision and delivery of the prostate from the bladder is here and subsequently referred to as the "time occupied."

CASE LXXIX.

Gentleman, aged 60, seen January 22nd, 1904. Prostatic symptoms for three years; retention on several occasions. Entirely dependent on catheter for ten days; urine contains blood and pus. Prostate bilaterally enlarged, smooth, soft, movable.

Prostate, which projected into the bladder on right side like a thumb, enucleated entire February 2nd; weight, 2 oz. Urine passed naturally February 20th; wound firmly closed February 26th; is now in excellent health, passing and retaining his urine as well as he ever did.

CASE LXXX.

A distinguished general, aged 76, came from Scotland to consult me, February 3rd, 1904, on the advice of Dr. Hall Calvert, Melrose. Prostatic symptoms fifteen years. Sounded in 1898 by a London surgeon, with negative result. Cystitis, with pyrexia, followed. Entirely dependent on catheter since then; employed every quarter to two hours, with much pain and difficulty in its introduction. Frequent attacks of cystitis and haemorrhage. Much pus and mucus in urine, though bladder washed out daily. Condition most distressing. Paralytic stroke three years before; nurse in attendance since then. Heart beats tumultuously at times, with irregular and intermittent pulse; very gouty. Prostate enlarged bilaterally. Seen projecting slightly into bladder by the cystoscope.

On February 7th, Mr. C. Braine anaesthetist, and Mr. Thomson Walker assisting, I enucleated the prostate, which weighed 2¾ oz., entire. Left lobe size and shape of a hen's egg; right thin, expanded, and concave. Operation borne well. Urine passed naturally March 3rd; wound finally closed March 26th. Went to Scotland April 7th in fairly good health, passing and retaining his urine normally. Convalescence very slow, owing to bad state of general health. Suffered much from indigestion. I had the advantage of Sir Thomas Barlow's co-operation in the case throughout. Dr. Hall Calvert writes that patient progresses favourably, though his general health is still indifferent.

CASE LXXXI.

H. P., aged 65, admitted to St. Peter's Hospital February 1st, 1904, with prostatic troubles which had existed seven years. Catheter employed for seven years; wholly dependent thereon for five, being used every one and a half to two hours. Haemorrhage occasionally. Urine thick with pus and mucus. Calculi present. Prostate much enlarged, tense, movable; felt bimanually.

On February 10th, having first removed six facetted phosphatic calculi, I then enucleated the prostate entire, which weighed 2¾ oz. A broad tongue formed from both lobes projected in the bladder, and was curved backwards; behind this the calculi lay. Time occupied eight minutes. The patient progressed most favourably for twelve days, when he became depressed, with disinclination for food and great thirst, the temperature remaining normal. He died suddenly next day (February 23rd) whilst on the bed pan. Both kidneys indicated chronic interstitial nephritis, and there was also pyelitis. The aortic valves were thickened and atheromatous; the mitral valve was thickened; and there was atheroma of the pulmonary and coronary arteries.

CASE LXXXII.

On December 28th, 1903, I was called to Sheffield to see in consultation with Drs. John Martin and Dyson a gentleman, aged 77, who had had retention of urine on several occasions during the previous year. Catheter used three times daily latterly, with some difficulty and haemorrhage. Had right hemiplegia in 1898; arm still affected. I passed a catheter with some difficulty. Urine contained some pus and albumen. Prostate decidedly enlarged, bilobed, soft, tense, movable. The prostate was regarded as easily removable, but postponement of operation was advised, as patient was very feeble, and I do not like operating immediately after acute retention if possible. Suppression of urine for thirty-six hours followed, and then a bad attack of broncho-pneumonia, for which patient was seen by Sir Thomas Barlow with the local doctors.

I saw patient again on February 8th, 1904, when convalescent, before he had left his room. The catheter had been given up; urine passed very frequently; bladder over-distended. The question arose as to whether it would not be better to operate before using the catheter again, as it always irritated and might give rise to suppression of urine again, and in consultation this course was decided on.

On February 12th I enucleated the prostate entire, weighing 2½ oz., Mr. A. M. Connell anaesthetist, Dr. Martin assisting, and Dr. Dyson being present in consultation. Time occupied, five minutes. Recovery without one unfavourable symptom. Urine commenced to pass naturally February 29th; wound dry March 10th, when patient was walking about the house. I saw him several times during the after-treatment, which was most skilfully carried out by Dr. Martin. Patient called to see me in London, May 11th, in excellent health; urine retained four or five hours and passed with the greatest ease.

CASE LXXXIII.

W. C., aged 74, admitted to St. Peter's Hospital February 13th, 1904. Prostatic symptoms for seven years. Stone crushed five years previously. Frequent retention of urine, relieved by catheter, which was regularly employed for three years, most of the urine being drawn off in this way. Urine contained pus and albumen. Prostate greatly enlarged per rectum, bilobed, soft, movable; easily felt bimanually.

On February 17th I removed the prostate in its capsule, weighing 7¼ oz. The portion in the bladder was shaped like a large pear with a groove along its upper aspect—the urethral opening. Time occupied, six minutes. Scarcely any haemorrhage and no shock. Patient did well for the first few days and gave no cause for anxiety. Septicaemia then set in, from which he died March 4th—sixteen days after operation.

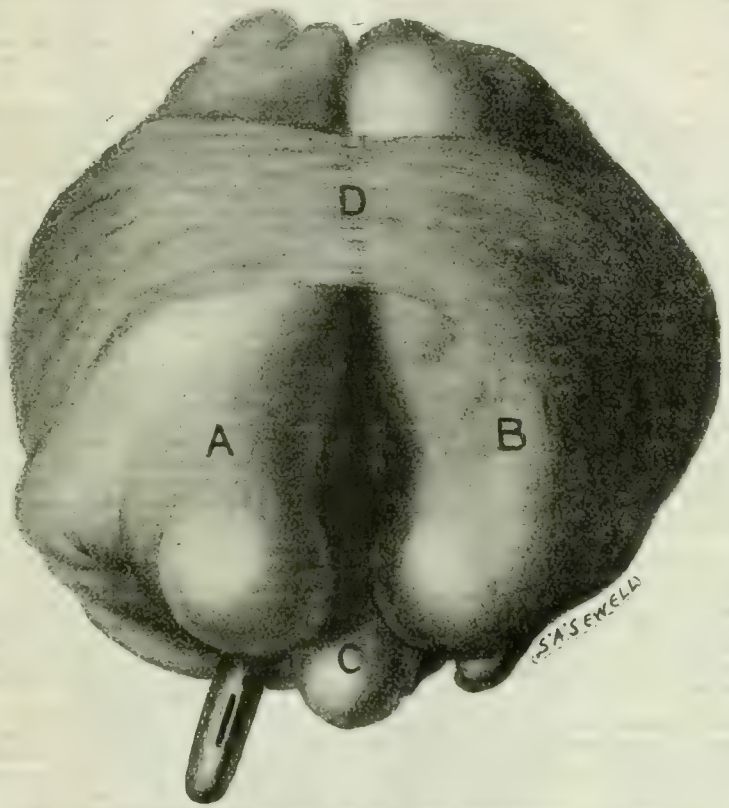


Fig. 2.—Prostate weighing 10⅝ oz. removed from patient aged 71 (Case CV); actual size. A, left lobe; B, right lobe; C, polypoid outgrowth from right lobe; D, thin band of sheath removed with prostate.

CASE LXXXIV.

Clergyman, aged 73, seen January 29th, 1904, on the advice of Drs. Cave, of Bath, and Ensor, of Tisbury, for prostatic symptoms which had existed several years. Much irritation of the bladder, with frequent attacks of cystitis. Catheter not employed regularly, though passed from time to time. Prostate enlarged per rectum, and rather hard; both lobes seen prominent in bladder by the cystoscope.

I removed the prostate entire, February 23rd, Dr. Ensor assisting. Weight, 1 oz. Urine commenced to pass naturally March 15th; wound closed April 2nd. Went home April 4th in good health, passing and retaining urine naturally.

CASE LXXXV.

Gentleman, aged 82, seen with Dr. J. L. Hewer, Highbury New Park, March 2nd, 1904. Prostatic symptoms for twenty years; entirely dependent on catheter for ten years. Great difficulty and pain in introducing catheter latterly, frequently two hours being spent in manipulating the instrument before it passed. Frequent attacks of cystitis, haemorrhage, and orchitis. Had seven operations for vesical calculus. Has inguinal hernia, requiring a truss. Prostate much enlarged, soft, tense, movable; felt bimanually. Urine contains pus and mucus.

On March 7th I removed the prostate entire in its capsule, Mr. C. Braine anaesthetist, and Dr. Hewer assisting. Time occupied, six minutes. Operation borne well, and recovery without any unfavourable symptom, the temperature remaining normal throughout. Urine passed naturally March 23rd; wound dry March 25th—eighteen days after operation. Patient is now in excellent health, attending to his business in the city daily. On July 19th he wrote me: "The result of your operation has been entirely satisfactory. I am now able to pass and retain the urine as well as I ever did."

The prostate (Fig. 1), which weighs 5¼ oz., presented a large tongue-shaped outgrowth in the bladder, growing from the right lobe. The rapidity with which the wound closed is remarkable in a patient aged 82.

CASE LXXXVI.

Gentleman, aged 61, sent by Dr. Dwight Morris, of Feltham, March 12th, 1904; prostatic symptoms three years; catheter employed for two years, entirely dependent thereon for six months; haemorrhage and

cystitis for five months: urine stinking, containing pus and blood: prostate very large, soft and movable.

On March 19th I enucleated the prostate entire (weight, 4¼ oz.). Dr. Morris assisting, also a small urate stone from the bladder. Urine passed naturally March 31st; wound closed April 9th. Went home perfectly well April 20th, passing urine as well as ever he did; retained the whole night, and from four to six hours by day.

CASE LXXXVII.

Gentleman, aged 67, consulted me March 15th, 1904, for prostatic symptoms of five years' duration. Calculi removed by crushing on three occasions. Catheter employed regularly for two years. Residual urine 8 oz., containing much pus, mucus, and blood. Calculus detected in bladder. Prostate enlarged, bilobed, movable.

On March 23rd, Drs. Morris, of Harrogate, and Deighton, of Cambridge, being present, I removed the stone, which was phosphatic and weighed 36 gr., and then enucleated the prostate (weight 1 oz.), the two lobes coming away separately. Passed some urine naturally April 10th; wound closed April 24th. The cystitis continued for some time. Saw patient July 19th in excellent health, passing and retaining his urine normally.

CASE LXXXVIII.

Gentleman, aged 60, sent from New Zealand for operation by Dr. T. Cahill, Wellington, and seen with Dr. Morris, Harrogate, March 22nd, 1904. Prostatic symptoms for five years. Cystitis in 1903. Entirely dependent on catheter for eight months. Urine contained pus, mucus, and albumen. Seen with Sir R. Douglas Powell March 24th. Prostate enlarged, bilobed, movable.

On March 28th, Sir Douglas Powell being present, I removed a large urate stone (weight 495 gr.), and enucleated the prostate entire, weighing 1 oz. The right lobe presented in the bladder in the form of a finger-like process. Some urine passed naturally April 3rd; wound dry April 12th.

On June 14th the patient called on me, in perfect health, able to pass and retain his urine as well as he ever did.

CASE LXXXIX.

Colonel H., aged 63, seen with Dr. Horace Duncan, London, March 21st, 1904. Prostatic symptoms for two years. Retention in February, 1904, relieved by catheter, which was used twice daily for some time, but latterly not employed. Intense frequency of micturition day and night. Residual urine 4 oz., containing pus. Prostate enlarged, rather hard, but movable. General health bad, with rapid loss of flesh.

I enucleated the prostate, weighing ¾ oz., March 26th. Not a bad symptom till April 6th, when severe dyspnoea and other symptoms of thrombosis of the lung occurred. Seen by Dr. Caesar Hawkins, with Dr. Duncan and myself. The symptoms gradually subsided, but on April 14th there was severe haemorrhage from the lungs, from which recovery was slow. Urine passed naturally April 16th; wound closed April 20th. Is now untroubled by any urinary symptom, and his general health is steadily improving.

CASE XC.

Gentleman, aged 63, sent by Mr. R. A. Bickersteth (Liverpool), March 17th, 1904. Catheter employed for seven years, entirely dependent thereon for three years. Repeated attacks of cystitis and orchitis, and haemorrhage occasionally. Convalescent from severe attack of cystitis, which laid him up for three months. Great loss of flesh latterly; anaemia and weakness. Urine contains pus and mucus. Prostate greatly enlarged, bilobed, smooth, tense, movable; very palpable bimanually.

On March 29th, Dr. F. Hewitt anaesthetist, and Mr. Bickersteth assisting. Dr. James Ross (Toronto) being present, I enucleated the prostate entire in its capsule; weight 5½ oz. Time occupied, eight minutes. Urine passed naturally April 10th: wound closed April 13th. Left the Surgical Home quite well April 20th. Came to see me May 4th before leaving London. Can pass his urine as easily as ever he did, and retain it for seven hours at night and four or five by day. I have heard from him recently that he is quite well.

CASE XCI.

Gentleman, aged 60, suffering from prostatic symptoms for seven years, complicated with stricture of the urethra. Frequent attacks of cystitis and retention. Urine foul, containing much pus and mucus.

I enucleated the prostate, weighing ¾ oz., March 30th, 1904. Passed urine naturally April 15th: wound closed April 18th. Is now in excellent health, able to pass and retain urine naturally.

CASE XCII.

Gentleman, aged 60, seen at Croydon April 12th, 1904, in consultation with Mr. G. E. Newby. Prostatic symptoms for five years. Retention, following a chill a fortnight previously. On his return to Croydon, April 7th, Mr. Newby drew off 85 oz. of urine. Catheter three times daily after this; during last few days difficulty in passing it, and accompanied by haemorrhage, so that a metal instrument had to be tied in the bladder. Urine very foul, containing pus, mucus, and blood. Prostate much enlarged bilaterally, soft, tense, and movable.

On April 18th, Dr. Dudley Buxton anaesthetist, and Mr. Newby assisting, Colonel C. P. Lukis, I.M.S., being present, I enucleated the prostate (weight 2½ oz.) entire in its capsule. Time occupied, six minutes. Scarcely any bleeding. Uninterrupted recovery. Some urine passed naturally May 2nd; wound closed May 10th. Went home May 10th perfectly well, passing and retaining his urine, which was quite clear, as well as he ever did.

CASE XCIII.

Eminent public man, age 72, seen with Dr. P. F. Barton (Wimbledon), March 26th, 1904. Did not notice any urinary troubles till November, 1903, when he had great frequency of micturition with foul urine, and great distension of the abdomen. Catheter passed by Dr. Barton, and 5½ pints of fetid urine drawn off. Entirely dependent on catheter since then: urine never free from pus; contains albumen and casts. Prostate not felt enlarged per rectum, but cystoscopic examination on April 13th revealed an outgrowth therefrom in the bladder. Health indifferent; had lost 17 lb. in weight in a few months.

On May 23rd, Dr. F. Hewitt anaethetist, Mr. Thomson Walker and Dr. Barton assisting, I removed the prostate weighing ⅝ oz. entire in its capsule. There was a lower lip ½ in. long projecting in the bladder and acting as a valve to the inner orifice, which was also stenosed. Urine commenced to pass naturally April 14th; wound closed May 22nd. Went home May 28th, able to pass and retain urine normally. I have seen the patient recently; he is in good health, and rapidly regaining weight.

CASE XCIV.

Clergyman, aged 63, seen with Mr. F. Curtis (Redhill), April 19th, 1904. Prostatic symptoms for ten years. Retention in 1899, relieved by catheter. This was followed by pyrexia. Catheter employed periodically since then: continuously for eighteen months, three or four times daily. Haemorrhages, cystitis, and difficulty in introducing catheter, which had to be tied in bladder for a week in November, 1903. Morphia used to relieve the pain and spasms. Prostate much enlarged per rectum, bilobed, elastic, movable. General health poor; wears a truss for inguinal hernia.

On April 26th I enucleated the prostate (weight 4 oz.) entire, Mr. C. Braine anaesthetist, Messrs. Walker and Curtis assisting, and Drs. Berridge (Redhill) and Haden-Haden (London) being present. Time occupied five minutes. Several ounces of urine passed naturally May 9th; wound dry May 11th. Convalescence was slow owing to the occurrence of a carbuncle on the right buttock, but patient went home May 20th in good health, passing and retaining urine normally. Dr. Berridge writes: "Mr. ——— came home comfortably. I congratulate you on the splendid result in his case."

CASE XCV.

Church dignitary, aged 65, sent by Dr. T. M. Young (Beckenham), November 2nd, 1903. Prostatic symptoms for six years. Residual urine 5 oz. Prostate not much enlarged per rectum. Advised to use catheter daily. Seen again April 29th, 1904, with Dr. Young. Symptoms much worse, and difficulty in introducing catheter. Cystoscopy revealed enlargement of right lobe of prostate in bladder the size of a cherry with a narrow pedicle.

Prostate enucleated entire May 5th, 1904, Dr. Young assisting. Weight ¾ oz. Scarcely any bleeding: no shock. Passed ½ pint urine naturally May 10th; wound closed May 18th. Went home in excellent health May 31st, untroubled by any urinary symptom.

CASE XCVI.

Eminent man of science, aged 81, seen with Dr. H. Huxley, London, February 17th, 1904. Prostatic symptoms for five years. In great distress with over-distended bladder. I passed a catheter and drew off 55 oz. fairly clear urine. Prostate much enlarged, rounded, smooth, movable. General health good. Passed some urine naturally for a few days, but eventually completely dependent on catheter. Seen again with Dr. Huxley, May 3rd, when he came to London for operation, as catheter life was unbearable. Health bad, very feeble; rapid loss of flesh during last two months.

I enucleated the prostate May 6th, Dr. Huxley and Mr. Thomson Walker assisting. Gland scarcely prominent in bladder: firmly bound down by sheath. Scarcely any bleeding. Weight of prostate 2½ oz. Progress most favourable till May 10th, when severe attack of gout set in, followed by severe inflammation of the parotid glands, which, however, did not suppurate. Though the wound kept clean throughout, progress was slow, owing to weak state of health. Urine passed naturally June 2nd, and entirely per urethram by June 11th. Patient left the surgical home June 16th, and next day suprapubic wound reopened. Catheter tied in till wound closed again. Can now pass and retain urine normally, and patient's health generally is rapidly improving.

CASE XCVII.

Gentleman, aged 64, seen May 2nd, 1904, on the advice of Dr. J. Ferris (Norwood). Prostatic symptoms for three years. Retention in June, 1903; catheter used since then: practically the whole of the urine drawn off. Much pain, cystitis, and haemorrhage. Rapid loss of flesh latterly: health bad. Sounded two months previously by another surgeon; no stone discovered. Prostate much enlarged per rectum, rather hard, and not very movable. Malignancy suspected, but operation advised.

On May 6th, Colonel C. P. Lukis, I.M.S., assisting, Colonel W. R. Murphy, I.M.S., and Major S. F. Freyer, R.A.M.C., being present, I opened the bladder suprapubically and removed twelve phosphatic calculi, weighing 5 dr., and then enucleated the prostate entire without difficulty. The prostate, which weighed 2½ oz., was symmetrically enlarged with an underlip involving both lobes; adenomatous, no trace of malignancy. Severe hiccough for several days, after which recovery rapid. Passed urine naturally May 22nd; wound dry May 28th. On June 11th went home in excellent health, able to pass and retain urine as well as ever, and is now quite well.

CASE XCVIII.

Hospital patient, aged 65, admitted May 7th, 1904, for prostatic sym-

ptoms, which had been gradually increasing for seven years. Catheter used for nine months twice daily. Haematuria from time to time. Residual urine 22 oz.; specific gravity 1010, otherwise healthy. Prostate decidedly enlarged, smooth, rounded, movable.

Prostate weighing 2½ oz. enucleated entire May 11th; time occupied, four minutes. Some urine passed naturally May 19th; wound dry May 25th. Discharged June 13th quite well, passing and retaining his urine normally.

CASE XCIX.

Hospital patient, aged 60, sent by Dr. Ayres, Hornsey, admitted May 10th, 1904. Prostatic symptoms for eight years, gradually increasing. Retention of urine three weeks ago, relieved by catheter, on which he was entirely dependent for twelve days, when urine passed naturally, but with great frequency and scalding. Haemorrhage on one occasion. Prostate enlarged, smooth, bilobed, movable; felt bimanually. Seen prominent in bladder by cystoscope.

On May 18th I enucleated the prostate entire in its capsule; weight 1¾ oz.; time occupied three minutes. Commenced to pass urine naturally May 30th; wound permanently closed May 31st, thirteen days after operation. Detained in hospital for some weeks in consequence of an accidental burn. Is now in excellent health; able to pass and retain his urine as well as he ever did.

CASE C.

Gentleman, aged 68, consulted me March 17th, 1904, on the advice of Dr. F. Rodgers (Cambridge) and Dr. W. Woollcombe (Plymouth). Catheter employed for six years, entirely dependent thereon for two years. Double vasectomy by another surgeon in 1901, with no relief, but followed by orchitis. Prostate enlarged per rectum, movable; felt bimanually. Urine kept fairly clear by washing bladder daily, but contained pus. Operation arranged for, but subsequently postponed owing to severe attack of pneumonia.

On May 25th I removed the prostate entire in its capsule, Dr. Woollcombe assisting, Colonels J. Moorehead and J. Anderson, I.M.S., and Dr. Deighton (Cambridge), being present. Thumb-like outgrowth from left lobe acting as a ball-valve to the urethral orifice. Weight of prostate, 1¼ oz.; time occupied, five and a half minutes. Urine passed naturally June 7th; wound dry June 11th. On June 21st he left the surgical home able to pass and retain urine as well as he ever did.

CASE CI.

Gentleman, aged 67, seen with Dr. J. C. Webb (London), May 2nd, 1904. Prostatic symptoms for two years. A month previously whilst staying at Bournemouth had a severe attack of nephritis with bloody urine, the lower limbs being greatly swollen and oedematous. Retention of urine supervened and a catheter had to be employed several times daily by Dr. E. H. Greves, who advised the patient to consult me with a view to having the prostate removed. I found 6 oz. residual urine containing much pus, mucus, and albumen. Patient in great distress, micturating hourly night and day with much pain. He could scarcely bear the passage of a catheter, and stated that he would submit to any risk from operation rather than use the catheter habitually. Prostate enlarged per rectum, bilobed, smooth, rather hard, movable. Cystoscopy showed both lobes slightly prominent in bladder. The case was regarded as a suitable one for prostatectomy, but delay in operating was advised till the patient should have recovered from the nephritis, if possible.

On May 25th I removed the prostate (weight 1½ oz.) entire in its capsule, the urethra being left behind. Dr. H. Law was anaesthetist; Mr. Thomson Walker and Dr. Webb assisted. Time occupied, five minutes. Scarcely any bleeding or shock. Uninterrupted recovery without rise of temperature. Passed urine naturally June 9th; wound dry June 22nd. Went home in excellent health June 27th; urine clear, with no albumen, passed and retained naturally.

CASE CII.

W. C., aged 63, sent by Dr. W. F. Lloyd, Windsor, admitted to St. Peter's Hospital, May 24th, 1904. Prostatic symptoms for eighteen years; retention sixteen years ago; catheter used ever since; entirely dependent thereon for ten years. Much pain and haematuria the last few months; urine contained pus, phosphates, and albumen. No enlargement of prostate felt per rectum, but the cystoscope revealed prominence of both lobes in bladder.

On June 1st I enucleated the prostate entire in its capsule; weight, 2 oz. Time occupied, three and a half minutes. Some urine passed naturally June 14th; wound closed July 2nd. Went home July 7th in perfect health, able to pass and retain urine as well as he ever did.

CASE CIII.

Gentleman, aged 65, just arrived from New Zealand, seen with Dr. Guthrie, Stirling, April 30th, 1904. Prostatic symptoms of a very distressing character for six years, but catheter not used. Great frequency of micturition, pain, and haematuria. Sounded, but no stone detected. Prostate not much enlarged per rectum, but cystoscope showed prominence of both lobes in bladder. Residual urine, 2 oz.

Prostate, weighing ¾ oz., enucleated entire June 9th, Dr. Guthrie assisting. Firmly bound down by sheath, causing stenosis of inner orifice of urethra. Some urine passed June 27th, but wound not finally closed till July 16th. Can now pass and retain his urine as well as he ever did, without pain or irritation of any kind.

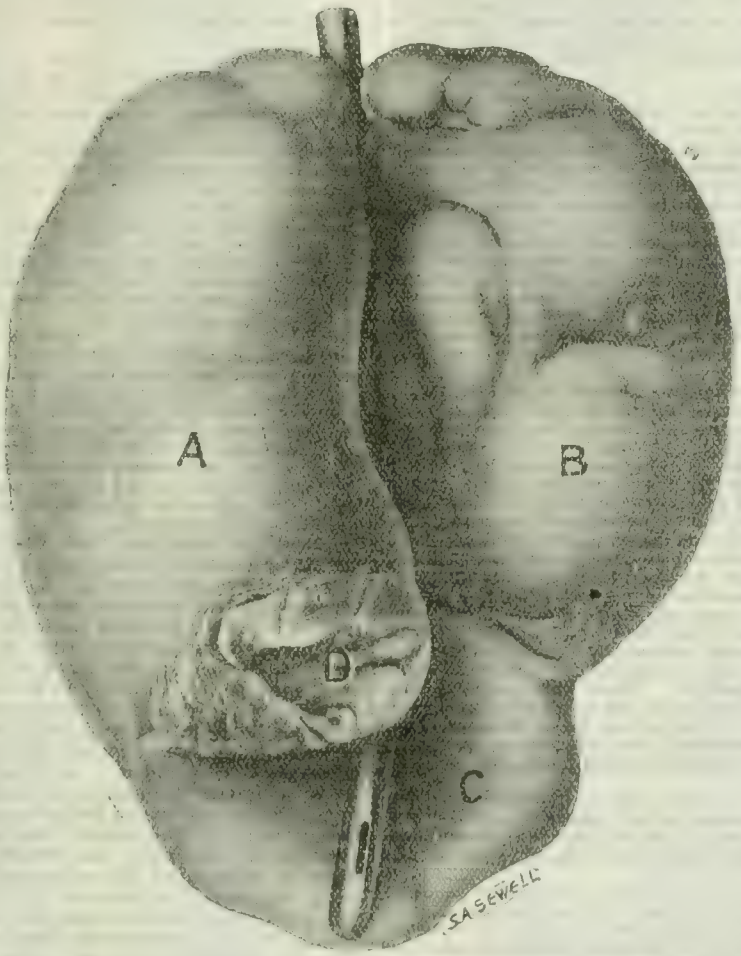


Fig. 3.—Enormous prostate, weighing 14½ oz., removed from patient, aged 73 (Case CVI.), actual size. A, left lobe, showing an ulcer at D, caused by vesical calculus; B, right lobe; C, saucer-shaped lip connecting the lateral lobes and prominent in bladder.

CASE CIV.

Hospital patient, aged 63, suffering from prostatic symptoms for many years. Calculi removed perineally in 1900; catheter never employed; residual urine 16 oz., containing pus and mucus. Symptoms of locomotor ataxy present. Prostate enlarged per rectum, and felt to contain calculi.

On June 8th I opened the bladder suprapubically, removed the calculi, and then enucleated the prostate, which formed a thick shell round them. Commenced to pass urine naturally July 3rd; wound closed July 19th. Discharged cured July 26th; able to pass and retain his urine, which was quite clear, normally.

CASE CV.

Gentleman, aged 71, sent by Dr. A. Emson, Dorchester, consulted me June 6th, 1904. Symptoms only dated from ten months previously, when he had retention, relieved by catheter, which was used twice daily for a fortnight. After this urine passed naturally, and patient remained fairly well till six weeks previously, when retention again occurred. Catheter passed occasionally since then; haemorrhage, and much pain from catheter; micturition every two hours; residual urine 12 oz.; contained much pus and blood; general health very bad; pulse irregular and intermittent. Prostate scarcely felt enlarged per rectum, but an enormous mass palpable bimanually, and cystoscopic examination revealed an enormous outgrowth in the bladder.

On June 13th, assisted by Dr. Emson (Dr. Guthrie, Stirling, being also present), I enucleated the prostate (weighing 10½ oz.) entire in its capsule. On opening the bladder suprapubically its cavity was found filled by an enormously enlarged prostate, with an irregular gaping urethral orifice, overhung above and on the left by a massive overgrowth of the left lobe (Fig. 2, A), and on the right by a large mass projecting from the right lobe (B), behind which was an ovoid polypoid outgrowth (C). The right and left lobes were separated by a deep gaping fissure. The prostate, which was almost entirely intravesical, was easily enucleated entire, the lobes opening out posteriorly, but remaining

united in front by a broad band (D). There was considerable bleeding, which, however, soon ceased under the influence of hot irrigations; operation borne well. There was some secondary haemorrhage on June 23rd, and again on June 26th, but the patient steadily improved; began to pass urine naturally July 3rd, and in volume July 10th: wound closed July 12th; sitting up daily for a week previously: drove out daily after July 12th; went home July 21st, in fairly good health, untroubled by any urinary symptom, and since then has much increased in strength.

The extremely feeble condition of this patient gave cause for considerable anxiety, especially as the kidneys were undoubtedly much affected; and the complete recovery is remarkable, taking this fact and the enormous size of the prostate into consideration. The short duration of the symptoms and the patient's not being reduced to dependence on the catheter are also very singular facts, considering the great size of the prostate. These circumstances I attribute to the enlarged prostate being almost entirely intravesical, so that the lobes were not bound down by the recto-vesical fascia, and lateral pressure on the urethra was thus obviated to a large extent. What a strange contrast this case presents to many others that I have recorded, in which comparatively slight enlargements of the gland, weighing from ¾ oz. to 1 oz., caused complete retention and dependence on the catheter, owing, I believe, to their being compressed by some peculiar formation of the recto-vesical fascia, which does not allow of free expansion of the prostate.

CASE CVI.

On June 4th, 1904, I was called to Ipswich to see, in consultation with Dr. Branford Edwards, a gentleman, aged 73, who had suffered from prostatic symptoms for over fifteen years. Retention of urine in 1889, relieved by catheter. Entirely dependent on catheter for ten years, during which has had repeated attacks of acute cystitis and haemorrhage. Calculi crushed on three occasions by another surgeon, the last being in February, 1904, since when the patient has been much worse, requiring a permanent nurse. Catheter used every two hours; bladder washed out three times daily; still urine very foul, containing much pus and mucus, and some blood. Much difficulty in introducing catheter, which passes in 14 in. before the urine flows. Patient in a very miserable condition, requiring opiates to relieve pain. Prostate enormously enlarged per rectum, filling the space between the pubic arch and the sacrum, round, tense, smooth, scarcely movable, owing to its size. Examination gave much pain.

On June 14th I enucleated the prostate entire fn its capsule, Mr. C. Braine anaesthetist, Mr. Thomson Walker assisting, Drs. Edwards and Brown, of Ipswich, and Professor Pye, of Galway, being present. On opening the bladder suprapubically I found both lobes (Fig. 3, A and B), enormously enlarged, filling its cavity. They were more or less symmetrical, separated by a deep fissure in front, continued forward to the vesical neck, and united behind by a thick, prominent, scoop-shaped lip (C). I could pass my finger down behind the prostate between it and the base of bladder for a space of 4 in., and in this position lay much phosphatic débris embedded in thick muco-pus. The prostate was enucleated as a whole into the bladder after severe manual, or rather digital, labour, great difficulty being experienced in separating the capsule from the sheath, owing to the great size of the gland, and its being jammed between the pubic arch and sacrum, like the fetal head in parturition. The suprapubic wound in the bladder had to be enlarged, and the lobes separated by the finger to facilitate delivery of the prostate. There was scarcely any bleeding—a remarkable fact, considering the enormous size of the prostate. There was no shock, the patient being cheerful, even jocular, during the day. Time occupied from commencing the suprapubic wound till the prostate was delivered from the bladder, fourteen minutes.

Recovery uneventful; in fact, patient felt no ill-effects after the operation, the temperature remaining normal throughout. Passed 4 oz. of urine naturally July 4th; wound closed July 12th. Went home July 19th in excellent health, able to pass and retain his urine as well as he ever did.

The prostate (Fig. 3) weighs 14¼ oz., and is the largest I have removed. It is a fine specimen, enucleated complete in the capsule. The lateral lobes (A, B) are almost symmetrical, and united behind by a thin, saucer-like lip (C), which interfered much with the introduction of the catheter. At D, the vesical end of the left lobe, is an ulcer, no doubt caused by pressure of a vesical calculus. The labour involved in removal of this prostate was very severe, and my fingers, hands, and arms ached for two or three days owing to the muscular exertion necessary.

CASE CVII.

I was called to Epsom, June 14th, 1904, to see, with Dr. Percy Rendall, of Ewell, a patient, aged 65. Retention fifteen years ago, relieved by catheter. Prostatic symptoms gradually increasing since then. Retention again five days previously. Numerous unsuccessful attempts by various surgeons to pass instruments before the case passed into the hands of Dr. Rendall, much blood being lost. Patient in great agony with a distended bladder, urine dribbling away, containing much pus, mucus, and blood. Prostate only slightly enlarged per rectum.

The patient being anaesthetized by Dr. Rendall, after trying catheters of kinds unsuccessfully, I passed a small steel sound, and gradually dilated the passage, when a metal catheter was introduced. The difficulty arose from the presence of false passages. Opened bladder suprapubically, and found the right lobe of prostate prominent therein, the size and shape of a greengage. Prostate enucleated; weight 1 oz. Five ounces of urine passed naturally July 10th.

On July 20th Dr. Rendall wrote: "No water through wound since July 12th. Urine passed five times in twenty-four hours, quite clear."

CASE CVIII.

Gentleman, aged 53, sent by Dr. A. M. Sydney-Turner, Brighton, May 16th, 1904. Prostatic symptoms for two years. Ten days previously had retention, the result of chill. Catheter passed, and "1½ chamberpotsful of urine drawn off." Entirely dependent on catheter since then. Pyrexia with extreme debility and laboured breathing. Urine thick with muco-pus. Prostate much enlarged per rectum, soft, tender, movable. With rest in bed and washing out the bladder the urine got clear, and the patient was able to travel to the seaside, where he had profuse haematuria. Micturition not being established, patient returned for operation.

On June 21st I removed the prostate entire. On opening the bladder I found the prostate projecting into it, long and narrow, like a banana with a groove in its upper aspect, extending forwards to the vesical orifice. Three-fourths of the prostate was intravesical. Time occupied, four minutes. Uninterrupted recovery. Passed 14 oz. urine naturally July 7th. Wound closed July 9th. On July 22nd he left London in excellent health, able to pass and retain his urine as well as he ever did.

This is the youngest patient on whom I have performed this operation. It is a remarkable fact that in a patient of this age the prostate should have enlarged to the extent of 2½ oz. Its shape is also very peculiar.

CASE CIX.

Gentleman, aged 67, seen with Dr. W. A. Sharpin, Bedford, June 8th 1904. Calculus crushed fourteen years previously. Retention seven years ago, and on several occasions since; relieved by catheter, which has been regularly employed for a year, attended by much haemorrhage and difficulty of introduction. Anaesthetic necessary on one occasion before catheter could be introduced. Prostate much enlarged, soft, smooth, movable. Residual urine 13 oz., containing pus and mucus. Cystitis recently.

On July 24th, Mr. Thomson Walker and Dr. Sharpin assisting, Mr. S. Mills, London, and Colonel H. Charles, I.M.S., being present, I enucleated the prostate entire, weighing 3 oz. Time occupied, four minutes. Passed urine naturally July 10th; wound dry July 17th. Is now in good health, able to pass and retain urine as well as he ever did.

CASE CX.

A gentleman, aged 66, sent by Dr. C. J. Manning (Rosemount, Barbadoes); seen June 16th, 1904. Catheter employed periodically for twelve years. Cystitis, much pain, and spasm. Residual urine 6 oz., containing much pus and mucus. Prostate somewhat enlarged per rectum; cystoscope revealed outgrowth of right lobe in the bladder.

On June 27th, Mr. C. Braine anaesthetist, I removed the prostate, weighing ⅞ oz., with scarcely any bleeding or shock. Urine passed per urethram July 15th; wound dry July 24th. Is now in excellent health, able to pass and retain urine as well as he ever did. The patient is about to be married shortly.

It will be observed that there were 3 deaths amongst these 37 operations—namely, one suddenly from heart disease and two from septicaemia. These are the only instances of septicaemia that occurred amongst 110 cases operated on by me. They were hospital patients occupying adjacent beds, and I cannot help feeling that the septicaemia was due to external causes, as the cases were both very hopeful ones and gave rise to no anxiety in the early days after operation. I have now performed the operation in 110 cases, the patients varying from 53 to 84 years, with an average age of 68 years, and the prostates weighing from ¾ oz. to 14¼ oz., with an average weight of 3¼ oz. In 3 instances the disease proved to be malignant, though in one instance only was the nature of the disease suspected before operation. One of these died twenty days after operation; the other two made fairly good recoveries. Excluding the carcinomatous cases, we have 107 cases of removal of the adenomatous prostate, 97 of which were completely successful. Of the 10 deaths that took place in connexion with the operation, only 4, or at most 5, can be possibly attributed thereto, the others being due to diseases incident to old age. But even if we accept all the deaths in connexion with the operation, the mortality is only about 9 per cent., in comparison with a death-rate of 33⅓ per cent. from lithotomy in the corresponding ages—according to statistics collected by the late Sir H. Thompson. Amongst my last 28 cases of the operation there was no mishap, all being completely successful.

REFERENCES.

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THE CAUSE OF ENLARGED PROSTATE, TOGETHER WITH A NOTE ON THE PROSTATIC GLANDS.

A PRELIMINARY COMMUNICATION ON THE EVIDENCE OF ITS INFLAMMATORY ORIGIN IN THE MAJORITY OF CASES.

By HERBERT T. HERRING, M.B., B.S.

IT is with some diffidence that I address you to-day, because the train of evidence which I propose to bring before you is

not so complete—due in a large extent to the lack of material—as I thought it would have been. I will, nevertheless, with your permission, place before you some preliminary remarks on this subject, stating what has been done, the line of investigation which, with the aid of my fellow workers, I intend to carry out in the future, and in the hope also that these remarks may stimulate others who have ample material, to confirm or refute the argument. Since I commenced these investigations some years ago, Ciechanowski, Assistant Professor of Pathology in the University of Krakau, has published his work entitled *Anatomical Researches on the So-called Prostatic Hypertrophy*, and, although I was ignorant of its existence until within the last six weeks, the facts here adduced apparently bear out many of his contentions.



Fig. 1.—Metal cast of a prostatic gland of simple structure.



Fig. 2.—Metal cast of a prostatic gland, showing great development of acini.

Prostatic enlargement has been attributed at various times to one of the following causes: (1) As being a part of a general arterio-sclerosis, (2) senile enlargement, (3) hypertrophy, and (4) more recently to the development of adenofibroma, adenomyoma, and adenoma within the gland itself. I do not think that any of these theories satisfactorily explain the condition most commonly met with, and I would therefore suggest that the enlargement is due in the generality of cases to chronic inflammatory changes occurring in the very complex glands with which the prostate is crowded, and in the fibrous and muscular tissues to a more limited extent.



Fig. 3.—Metal cast of a prostatic gland, showing early branching of the main duct.



Fig. 4.—Metal cast of a prostatic gland, showing undivided condition of main duct.

The most generally accepted definition of a typical adenoma occurring in a duct gland is that it develops from a "rest," or from embryonic tissue, and starts from a particular centre, that it is functionless, and ductless, or, at any rate, has no duct joining or connected with an existing normal duct. That the gland tissue composing the growth is of similar character to the normal gland, and that the alveolar spaces are not usually dilated, but to some extent encroached upon by additional layers of cells. Further, that when a portion of the growth is removed it does not rapidly shrink, but maintains its size as if a portion of the normal gland; and, lastly, that the tumour usually attains pronounced dimensions before middle life, and does not develop afterwards. If we now apply this definition to the common form of enlarged prostate it will in no way meet the requirements. For I believe it is now admitted that the enlargement is not of embryonic origin, and does not start from a particular centre; but, on the other hand, is distributed over the whole gland or series of glands. That it has ducts, and often enlarged ducts, the photographs I will exhibit clearly show, and their enlarged orifices in the prostatic urethra may also be seen in pathological specimens and illustrations. That the altered gland tissue secretes is demonstrated, first, by the fact that the products may be expressed in some cases during life, and, secondly, that they may be seen in microscopic preparations of the enlarged gland. The microscope also reveals that the gland structure materially differs from the normal prostatic glands—the greatly dilated alveoli filled with débris and its altered epithelial lining being particularly characteristic. Again, a portion of the enlarged prostate rapidly shrinks when removed, and, finally, the development of the enlargement is more pronounced after middle life. There is one



Fig. 5.—Metal cast of a prostatic gland of complex structure.

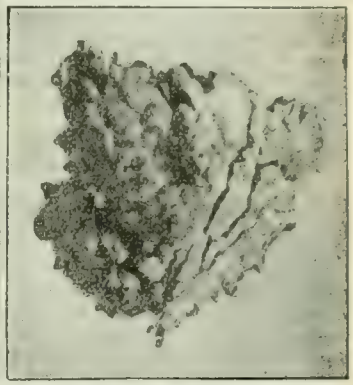


Fig. 6.—Metal cast of a prostatic gland of complex structure.



Fig. 7.—Metal cast of a prostatic gland and of part of the prostatic urethra, showing dilatation of the main ducts of the gland.

point, however, of similarity between them—namely, both are enclosed in a pseudo capsule, or pathological envelope, yet I do not think that this fact is sufficient to prove that prostatic enlargement is due to adenomatous growth.

The various heads under which work has been, and is being, done to establish the inflammatory origin of enlarged prostate, although at present incomplete, are the following:

1. The examination of serial microscopic sections of definitely diseased organs, comparing them with sections of healthy prostates removed from persons of all ages, and also with diseases of similar nature occurring in other organs of the body. (For instance, mastitis.)

2. To demonstrate by inoculation of suitable media that micro-organisms are present in enlarged prostates which have been removed by operation, and to determine what variety of organisms, if any, are present.

3. To detect the organisms microscopically in stained sections of the glands among the débris and in the tissues.

4. To investigate the cause and formation of the innumerable calculi which are so frequently seen, and which, when they occur in other organs, are now usually accepted as the result of microbic activity.

5. To examine more fully the débris which in many cases can be expressed from the enlarged prostate during life. Pus

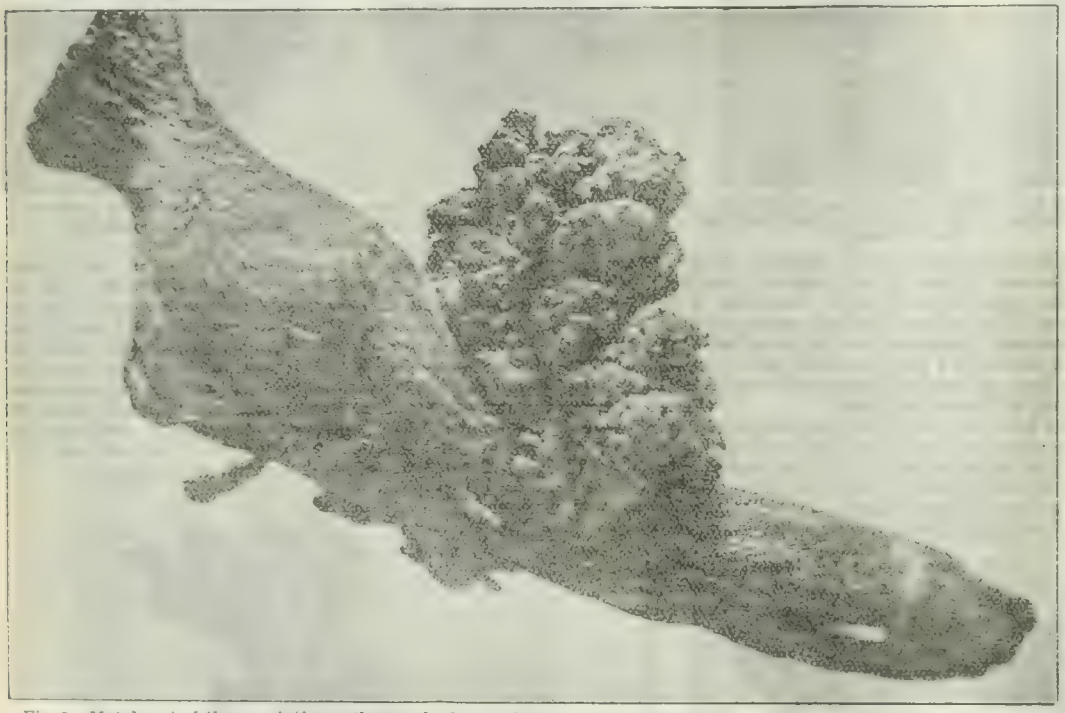


Fig. 8.—Metal cast of the prostatic urethra and of one of the prostatic glands, viewed from the right side. The main ducts and many of the acini of the gland are dilated.

is sometimes found, more often shreds composed of cells, etc., similar in every respect to the débris seen in the dilated alveoli, and to prove by inoculation whether these shreds contain micro-organisms.

6. To make further experiments by injecting fusible metal into obviously enlarged prostates, to establish whether all diseased glands are directly connected with the urethra by ducts, and also the structure, shape, and size of such glands.

I may say that these investigations up to the present have given much evidence in favour of the septic origin of enlarged prostate, and I regret that time prevents me from utilizing the large amount of material which has been collected to establish the proposition. Mr. Daniel, who has been a very ready worker in furthering the idea, will, perhaps, briefly state the conclusion drawn from the large number of sections of prostates of all ages which he has made. And I will now read the report of Mr. T. W. P. Lawrence on injecting the prostate with fusible metal. He has carried out, at my suggestion, a large number of experiments which, I think, forcibly bear out some of the statements already made.

"Note on the Prostatic Glands.

"The method of investigation employed is that of injection with fusible metal. The metal is injected into the prostatic glands and prostatic urethra either through the vesical orifice, or, in the opposite direction, through the membranous portion of the urethra. The prostates so far employed have been those of patients over middle life, who have died from diseases unconnected with the genito-urinary organs.

"The object aimed at is to ascertain what information a study of these casts yields as regards (1) the structure of normal prostatic glands, and (2) the changes exhibited by the glands in various diseases of the prostate. As regards the latter point, little progress has been made beyond an attempt to define the particulars by which a diseased gland may be distinguished from a normal one.

"It was necessary in the first place to determine how far it is possible to inject the prostatic glands. To allow the metal to flow into the urethra by its own weight, thus exposing the urethra to a pressure of only a few inches of metal, produces no injection of the glands, and a by no means complete distension of the urethra; to inject the metal under a pressure just sufficient to distend the urethra, produces no injection of the glands; to inject the metal forcibly produces in almost every case an injection of some of the glands, often an injection of many of them, but in no case an injection of all.

"This difficulty in obtaining anything approaching a complete cast of the glandular apparatus is conceivably due to the following among other causes:

"1. The injection being made into tubes which are closed at their distal extremities, the presence of secretion or of epithelial débris may prevent the entrance of the metal.

"2. The presence of minute calculi in the ducts may cause obstruction of the passages.

"3. The distension of the urethra by the metal causes the wall of the urethra to compress the terminal portions of the main ducts, and by this means the passage of fluid into them may be hindered or prevented.

"As regards the last-named cause, it is not improbable that some such mechanism as that referred to is normally present to prevent the regurgitation of urine into the glands in the distended condition of the prostatic urethra, and if this is the case a completely successful injection of the prostatic glands through the urethra is hardly to be looked for in the normal prostate. In the diseased gland the conditions are different; in many cases the ducts are dilated, and the metal passes freely into them.

"A further difficulty in obtaining a complete cast is due to the slender form of the main ducts. The casts of the individual glands usually break away from the urethral cast during the process of removal of the soft parts. Hence what is usually obtained is a cast of the urethra, showing perhaps small lengths of the terminal portions of the main ducts attached to it, together with a number of separate casts of the individual glands. In dealing with diseased glands this difficulty does not always arise; the main ducts are often dilated, and the casts of the glands are found to be attached by a thick stalk to the urethral portion of the cast.

"The prostatic glands are of the compound acinous or

acino-tubular type, and present great differences in size and complexity in the same prostate. Their structure and the variations in their form are exhibited in the accompanying series of photographs of metallic casts. The photographs have all been enlarged to the same scale (three and a half times linear), in order that a correct comparison of the several casts may be possible.

"Fig. 1 (p. 1137) shows a gland which is of only moderate complexity, and permits every detail of structure to be seen clearly. The gland may be taken as a type with which to compare the other glands in the series. It presents a single main duct, the length of which is about one-third the length of the entire gland. This duct divides into three branches, one of which remains undivided to its termination, whilst the others soon divide, and the secondary branches so produced either remain undivided to their terminations, or again divide, producing tertiary branches. All the branches pass off at a very acute angle, and their direction therefore deviates very slightly from that of the trunks from which they arise. On the sides of all the primary, secondary, and tertiary branches throughout their entire length, small hemispherical—in some places nearly spherical—bulgings or acini are present. These acini are largest, more nearly spherical, and more closely packed at the extremities of the terminal branches, and they become smaller, more scattered, and more hemispherical as the branches are followed towards the main duct. In their least developed form the acini appear as inconspicuous bulgings of the walls of the ducts. The main duct itself presents low bulgings placed at regular intervals throughout its length, and it is possible that these represent incipient acini.



Fig. 9.—Metal cast of the prostatic urethra and of one of the prostatic glands, viewed from behind. The main ducts and many of the acini of the gland are dilated. The urethra at the level of the diseased gland shows a lateral deviation to the side opposite to the gland.

"Adopting this description arbitrarily as being that of a typical prostatic gland, it will be found that variations from the type arise chiefly from variations in (1) the degree of ramification of the ducts, (2) the point on the main duct at which ramification commences, and (3) the degree of development of the acini. These three points are separately illustrated in the three following figures.

"The development of the acini may be enormously increased, as is seen in Fig. 2 (p. 1137). Here the acini are so thickly set as almost completely to hide the ducts. The main duct, which occupies about the lower third of the figure, gives off one or two minute and stunted branches, and is thickly covered with acini.

"Fig. 3 (p. 1137) shows that variation from the type which consists in the branching of the main duct nearer to the orifice of the gland. In this case the ramification of the ducts is more open and spreading in character than in the previously described specimens, and the development of acini is not abundant.

"Fig 4 (p. 1137) illustrates variation in the complexity of the ramification of the ducts in the direction of greater simplicity of structure. Here the main duct is continued without division almost to the extremity of the gland. In its course it gives off one or two minute branches surrounded with hemispherical acini, and it terminates in a rounded clump of acini arising doubtless from a tuft of small branches. In this figure the main duct appears to be abnormally wide; this is due to the flattening of the duct by the outward pressure of the wall of the urethra previously referred to.

"The three modes of variation just illustrated may combine to produce glands of great complexity. Such glands occur in the form of polyhedral or ovoidal masses, tapering off on one side to a point corresponding to the position of the main duct (see Figs. 5 and 6, p. 1137). These masses, when closely examined, are found to consist of columns and less regular clumps of acini, packed together in close proximity and completely hiding the ducts; they exemplify the fullest degree of development of the glands both as regards abundant ramification and acinus formation and in the utilization of almost the whole length of the main duct in the production of branches.

"One may conjecture that the gradually increasing complexity exhibited in the foregoing series of specimens may have its counterpart in the process of hypertrophy of the prostatic glands, and that, starting from a comparatively simple form, the glands may, by the throwing out of fresh branches, by an abundant development of acini, and by the utilization of the whole length of the main duct, develop into large and compact masses of glandular tissue, similar to those seen in Figs. 5 and 6.

"The prostatic ducts are found opening on the anterior, posterior, and lateral walls of the urethra, but no cast has been obtained showing ducts opening into the first part of the prostatic urethra for about the first centimetre of its length. The greater number of orifices are found, as is commonly stated, in the deepest part of the floor of the prostatic sinuses and in the floor of the urethra immediately above the caput gallinaginis. A few small ducts may open on the sides of the crista.

"As regards the direction taken by the main ducts, those opening in the anterior wall are directed downwards, those opening in the lateral wall downwards and backwards, and those opening into the sinus downwards and inwards.

"The liability of the terminal portions of the main ducts to be compressed in the distended condition of the prostatic urethra has been already mentioned.

"Turning now to the evidences of disease of the glands as traceable in the metallic casts, such evidences are to be looked for both in the urethral and in the glandular portions of the casts. As regards the glandular parts, these evidences appear to be chiefly the following: (1) A dilated condition of the ducts, and especially of the main ducts; (2) a dilated condition of the acini; (3) a loss of the regular spherical or hemispherical form of the acini, and the assumption by them of irregular, polyhedral, or flattened forms; and (4) an increase in the size of the glands. As regards the urethral portion of the casts, the most notable evidence of disease of the glands is deformity of the prostatic urethra.

"All of these points are illustrated in the following figures: Fig. 7 (p. 1137) shows dilatation of the main ducts; the same condition is shown in Figs. 8 (p. 1138) and 9 (p. 1139), which are different views of the same cast. Figs. 8 and 9 show also a dilated condition of some of the acini, a condition which is also present in Fig. 10. Irregular form of acini is shown in Figs. 10 and 11, and

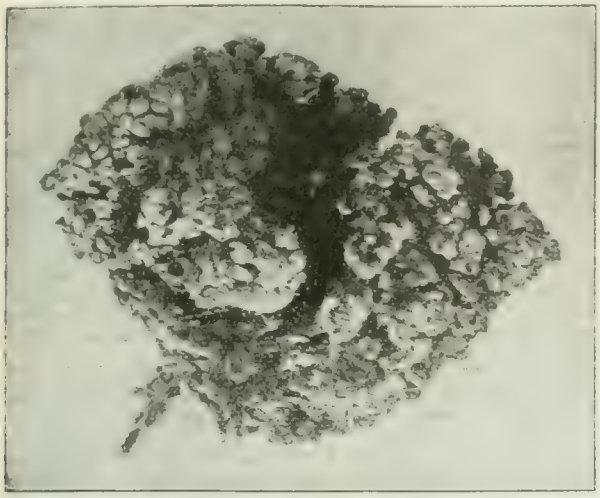


Fig. 10.—Metal cast of a prostatic gland, showing general enlargement of the gland and dilatation and irregular form of the acini.

Fig. 10 also illustrates enlargement of the whole gland, with the exception of the main duct, which in this case retains its normal size. Fig. 9 is interesting as showing deformity of the urethra due to the presence of disease of one of the



Fig. 11.—Metal cast of a prostatic gland, showing acini of irregular form.

prostatic glands. It will be noticed that the part of the urethra which is on a level with the diseased gland is deviated to the side opposite to the gland. In the fresh state the prostate from which this cast was taken would doubtless have presented a bulging of one lateral lobe into the urethra, such as occurs in what is termed hypertrophy, adenomatous-hypertrophy, adenoma, or chronic enlargement of the prostrate gland."

THE PATHOLOGY OF PROSTATIC ENLARGEMENT.

By P. L. DANIEL, F.R.C.S.,

Pathologist, Charing Cross Hospital; Assistant Surgeon, Metropolitan Hospital

IN approaching the subject of enlargement of the prostate, one was biassed by former teaching and the almost unanimously accepted view of the origin of the masses of glandular tissue found in enlarged prostates, but I was unable to reconcile the close similarity of the appearances seen under the microscope when examining sections of what were called adenomata and comparing them with sections of prostates which had been removed on the *post-mortem* table from subjects who had died of diseases unconnected with the genito-urinary apparatus, and who had been free from those symptoms hitherto attributed to enlarged prostate.

When Mr. Herring expounded his well-known views on the origin of prostatic enlargements, I felt convinced his explanation was the more probable. We determined to investigate the subject from the microscopical and bacteriological standpoint. With this object in view, serial sections were cut of prostates removed *post mortem* from cases varying in age from 3 days to 72 years, and who had no symptoms during life of prostatic disease.

The results of this study seem to me to prove conclusively that the sequence of changes which produce so-called adenomata of the prostate may be aptly described as analogous in their origin to certain septic diseases of other duct glands, especially the breast and pancreas. These diseases have recently been investigated, and been proved to originate from the irritation of bacteria which have gained entry along their main ducts, and give rise to catarrhal inflammation in the ducts leading to desquamation of their lining epithelium. The result of accumulation of the desquamated cells and the swelling of the mucosa is that the back pressure in the gland is increased, and the inflammatory condition gradually extends along the secondary ducts into the alveoli, there giving rise to those degenerative changes in the cells of the glandular spaces and certain physical results characteristic of these diseases—namely, those of (1) chronic interstitial mastitis, and (2) chronic pancreatitis.

The absorption of the toxins by the periglandular lymph spaces leads to chronic fibrosis in the connective tissue, and a vicious circle is established. The resulting structure shows a disorganized atypical condition of the glandular tissue, with fibrosis in the connective tissue or fibro-muscular stroma.

That differences should exist in the details of the final picture may be assumed when we remember the differences in the (*a*) structure, (*b*) function, and (*c*) environment of the two glands; yet the identity of the cause of the pathological process is well established and accepted. In like manner, the ultimate picture of the analogous septic disease, as seen in the prostate, differs from that of either of the above glands; and for the same reasons, but with one additional modifying factor of the utmost importance, the exact rôle of which we do not understand, but which Mr. Herring and I feel must play a great part in the pathology of the prostate—I refer to the urine and the act of micturition.

Briefly put, we consider that enlargement of the prostate is usually due to an inflammation in the urethra, extending along and infecting the gland ducts, and that the increase in bulk of the whole prostate is due chiefly to dilatation of the alveoli in a manner comparable to the condition of emphysema in the lungs, and, like the latter condition, it is not uniformly distributed throughout the organ, but affects certain only of the numerous lobules, while leaving others perfectly healthy.

Brief description of normal prostate, in so far as it affects glandular enlargements. The question of the morphology of the glands is immaterial in connexion with the present object, but the actual growth and arrangement of the glands are important. In the proximal or bladder portion of the prostate of even the youngest infants the amount of gland tissue is considerable. The glands are represented chiefly as ramifying ducts, or tubules, of varying complexity—that is, they do not all appear to be of equal length, nor to give rise to equal masses of glandular alveoli.

The alveoli themselves arise chiefly by expansion of the ends of ducts, both primary and secondary, into either pear-shaped or rounded masses, which, in the youngest infants, possess only a potential cavity, and may be likened somewhat in this respect to the atelectatic lung. Some appear to arise as buds or excrescences on the sides of the ducts.

The cells lining both ducts and alveoli in the young prostates are large cubical or low columnar in nature, with a subjacent basal layer of cells, which are flatter, and whose function is probably to replace the constantly breaking down cubical cells forming the actual lining of the ducts and alveoli.

The fibro-muscular stroma is arranged in a manner closely resembling sections of the muscular tissue of the human tongue—that is, in intersecting and irregularly arranged bundles of involuntary muscle tissue, with here and there striped muscle fibres. A large amount of undifferentiated cells exist, and a fair amount of elastic tissue is present.

The distal half of the prostate consists almost entirely of this fibro-muscular tissue.

The Adult Prostate.—About puberty the appearance of the alveoli has become greatly changed, and a most complex picture is present (Fig. 1). Each duct and its alveolar expansions may be called a lobule; each lobule at this period forms

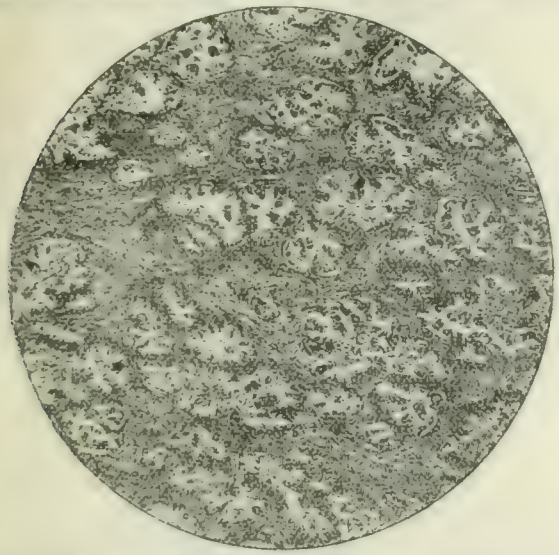


Fig. 1.—Shows transverse section of a comparative healthy lobule of glandular tissue in the prostate of a man of 20. The alveoli on the left show slight desquamation. The intra-alveolar papillary processes are visible (see in detail in Fig. 2). The presence of elastic fibres is indicated about the alveoli. (Magnification equivalent to $\frac{1}{3}$ objective.)

a mass either pear-shaped or more spherical, the stalk of which is represented by a narrow duct, which may be short or long; when viewed in transverse section each lobule is surrounded and isolated in some degree, usually imperfectly, by a pseudo-capsule, which consists of the ordinary fibro-muscular tissue of the prostate, but even the pseudo-capsule contains a few glandular alveoli, and is therefore not a real capsule.

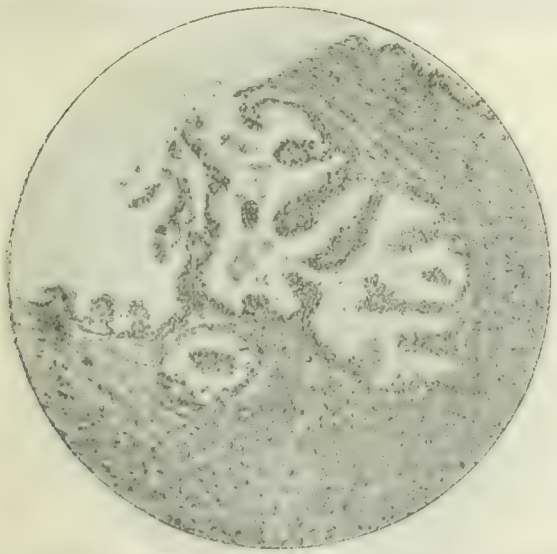


Fig. 2.—Taken from a patient, aged 64, to show the structure of an alveolus, with its prominent intra-alveolar papillary processes, lined by columnar epithelium, the outline of which is plainly visible. The surrounding stroma is healthy. Such normal alveoli may be seen in so-called adenomata (see Fig. 10). (Mag. $\frac{1}{4}$.)

The amount of fibro-muscular tissue between the healthy alveoli varies; a large amount of elastic fibres is always present.

The alveoli are now dilated, but instead of being merely hollow spheres or conical spaces (Fig. 2), the lining epithelium and the subepithelial tissue are invaginated and plicated, the plications apparently forming on section perfect intra-alveolar papillary processes, which resemble and are analogous to the plications of the mucosa of the Fallopian tube, the lumen of the alveoli being in this way greatly broken up. In thinly-cut sections the cells, now elongated, are of a long, perfect columnar type, the nuclei being

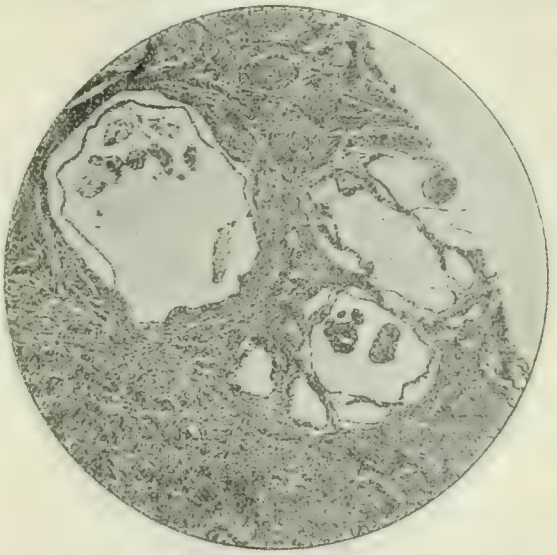


Fig. 3.—Shows dilatation of spaces, obliteration of intra-alveolar processes, atrophy of the stroma between adjacent alveoli, the presence of lecithin (amyloid) bodies, and some desquamated epithelium. The lining epithelium has become detached during manipulation, and the stroma is more fibroid than normal. This prostate was from a man aged 30 years. (Mag. $\frac{3}{4}$.)

often situated near the base and free edge in alternate cells, then giving the appearance of two rows of columnar cells, such as is also exhibited by the columnar epithelium in the upper part of the nasal cavity. In addition there is the basal layer of flattened cells. The protoplasm of the columnar cells has distinctive features evidently related to the special function of these cells, which, by breaking down, give rise to the prostatic secretion, which contains a considerable amount

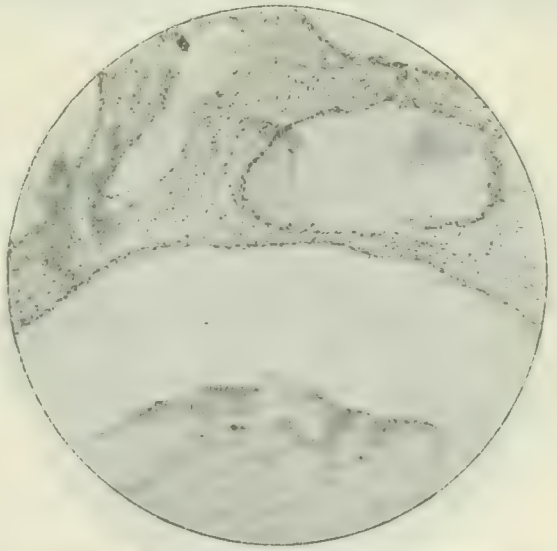


Fig. 4 (compare Fig. 2).—A photograph under higher power to show the flattened epithelium lining dilated alveoli. Such metaplasia is seen in prostatitis, at all ages, and in so-called adenomata (see Figs. 7 and 11). The mass below is albuminous fluid, stained during preparation of the specimen. In the immediate vicinity of the alveoli here depicted was a mass of perfectly normal gland tissue, separated by a small amount of fibro-muscular stroma. One represents diseased, the other healthy, glands. (Mag. $\frac{1}{4}$.)

of lecithin, and by analogy resembling the formation of milk. The ducts in proportion to their length possess a comparatively narrow lumen.

The direction the ducts run and the positions occupied by

the lobules vary greatly. Some ducts enter the urethra at right angles, others run for some distance parallel to the urethra before piercing it; but it is clear that the mucosa over the veru montanum and the upper (vesical) half of the urethra covers an enormous mass of gland tissue, which, when the alveoli become dilated, easily bulge into the lumen of the urethra.



Fig. 5.—Shows alveoli in varying degrees of dilatation, the lower ones dilated, walls thinned, lumen occupied by lecithin bodies in process of formation, also by desquamated epithelium. Above, the changes are less marked. There is here nothing to indicate that the dilated alveoli belong to a neoplasm, yet in the so-called adenomata similar admixture of normal and abnormal tissue exists. (Mag. $\frac{3}{4}$.)

It is also probable that the elevation, called the uvula vesicae, is due to underlying glands, and that the variation in prominence which it presents in different cases is due to the conditions existing in the underlying glands. It is certain that glands are present in this situation.

Having briefly described the normal condition of the glands, the subsequent changes which are present in the condition of prostatic enlargement are easily stated.



Fig. 6.—From the prostate of a man aged 25. To show a duct cut across; it contains lecithin bodies, desquamated epithelium, and pus cells; its lumen being completely filled. Around it is a dense, round-cell exudation, consisting chiefly of fibroblasts, and a small proportion of leucocytes. The stroma in this prostate was becoming fibrous. Many compressed alveoli are shown. (Mag. $\frac{3}{4}$.)

Taking the alveoli first, the following appearances are seen: (Fig. 3).

1. Dilatation of the spaces or lumen varying from one to a dozen or more dimensions. In many cases thinning and atrophy of the walls of the alveoli, such as is present in the condition of emphysema of the lungs. The dilatation usually results in spherical spaces, but may assume every conceivable variety of shape and size.

2. Obliteration, partial or complete, of the papillary processes (see Figs. 2, 3, and 9). In some alveoli small "papillae" remain; in others the walls are smooth and

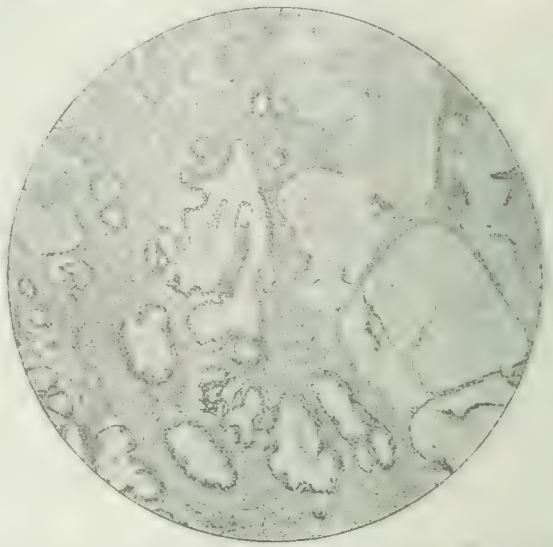


Fig. 7.—An "adenoma" (A) removed at operation. On the right it shows greatly dilated alveoli, with atrophied septa, obliteration of the intra-alveolar papillary processes, metaplasia of the epithelium, and some desquamated cells collected in the lumen. On the left evidence of the papillary processes persist, a considerable amount of desquamated epithelium is present in the alveoli, the lining cells here vary from normal columnar to low cubical. (Compare Figs. 3 and 4, also Fig. 8.) (Mag. $\frac{3}{4}$.)

quite devoid of intra-alveolar papillae. This change is constantly seen in distended Fallopian tubes, and other ducts and glands which normally possess such processes, when they undergo dilatation as a result of the action of inflammation.

3. The lining cells undergo metaplasia, the long, perfect, columnar cells became flattened by pressure and dilatation,



Fig. 8.—A section of interstital mastitis removed at operation and cut for diagnostic purposes. It shows dilated alveoli of varying severity, ranging down to alveoli which are of normal size but lined by cells which are not quite normal in appearance or staining properties. The "septa" between certain alveoli are much atrophied, that is, the stroma has been destroyed by the dilatation, just as it is in the prostate under similar circumstances. In this section there are no evidences of inflammation. (Mag. $\frac{3}{4}$.)

so that in the most marked instances they are represented by perfectly flattened cells (Fig. 4). All intermediate grades of

transition may be observed between the long columnar and the flattened cells. Desquamation of the cells is also a striking feature, and may be so severe as to entirely denude the alveoli. The great number of the lecithin or amyloid bodies seen under these conditions is directly related to the intensity of the

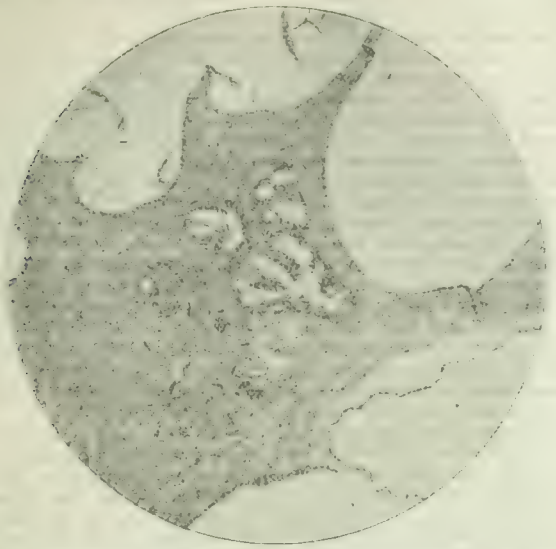


Fig. 9.—Another "adenoma" (B). In the centre of the field is a portion of gland tissue retaining the normal characteristics of the prostatic glands: Intra-alveolar papulary processes, lined by columnar epithelium, lumen devoid of solid débris or desquamated epithelium or lecithin bodies. Surrounding this area are alveoli so greatly distended that atrophy of the intervening septa has taken place and adjacent alveoli now form one space. The epithelium is quite flattened in some of these spaces, in others it is cubical. The lumen is void of contents in each. (? Lost in manipulation.) (Mag. ½.)

catarrh, and it is highly probable that the desquamated cells undergo changes, the final phases of which produce lecithin bodies.

4. The contents of the alveoli likewise vary in amount but are identical in nature. The abnormal contents seen consist of:

(*a*) Desquamated cells of all shapes and sizes.

(*b*) Débris, the products of breaking down of the protoplasm of normal and abnormal cells (Fig. 5).



Fig. 10.—Another field from the same "adenoma" as Fig. 9. The section is very thick and the resulting appearance is thus slightly different—a point of great importance in forming conclusions from microscopical sections. The glands here depicted are normal. The stroma forms a sort of pseudo-capsule to the upper alveoli. Considerable round-cell exudation is present in the stroma on the right. (Mag. ½.)

(*c*) Lecithin or amyloid bodies.

(*d*) Pus.

(*e*) Albuminous fluids.

(*f*) Phosphatic concretions.

In some cases the lumen is absolutely empty, in others it is completely filled by some or all of the above-mentioned constituents.



Fig. 11.—Another "adenoma" (C). Below is a duct cut obliquely. It is dilated, and contains a great number of desquamated epithelial cells and a few leucocytes. The alveoli in the upper part are in a similar condition, a few still show remains of papillary processes, while others seem to be compressed. The stroma is invaded by round cells which are chiefly fibroblasts, the muscle fibres are not well marked or numerous. (Mag. ½.)

The Changes in the Ducts.

Here the same products are seen as have been described above, but in particular one is struck by the frequency with which the ducts are obstructed by lecithin or amyloid bodies, desquamated epithelium, or pus cells (Fig. 6).

The ducts likewise are often greatly distended. Around them in many cases considerable round-cell exudation exists, the cells consisting, in varying proportion, of those which are characteristic of inflammation—namely, (1) Polymorphonuclear leucocytes, and (2) fibroblasts.

But there is little or no evidence to show that fibrosis lead-

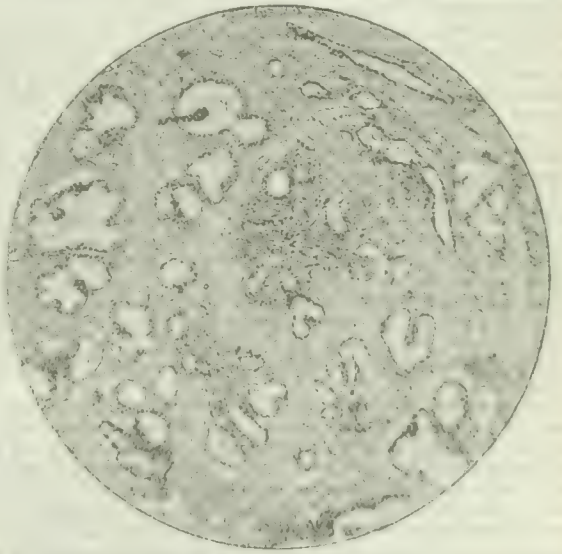


Fig. 12.—Another "adenoma" (D). Especially selected to show the round-cell exudation about certain of the ducts and alveoli. These cells are of undoubted inflammatory origin and in this adenoma foci of inflammation were numerous. All the other peculiarities of prostatitis are present. Although not shown in this field lecithin bodies in fair number were present in the gland. (Mag. ½.)

ing to constriction of the ducts is the cause of the dilatation of the ducts and alveoli. It is such a relatively infrequent condition, and the direct evidence of constriction is wanting,

whereas accumulation of desquamated cells, pus, and lecithin bodies is the rule, that it is more than probable that the dilatation of the alveoli is due to the accumulation in the ducts and alveoli, leading to a gradual distension after ineffectual efforts at expulsion.

The *interglandular and periglandular stroma* is in all cases less perfect than in the normal gland; everywhere fibrosis is proceeding. In some areas the round-cell exudation of recent subacute inflammation is present (see Fig. 12), in others well developed fibroblasts and young connective tissue is seen, while areas of severe sclerosis exist in some parts, especially in old prostates and in the periphery of the most intense inflammation.

The vessels vary in their appearance, but show nothing characteristic or related to the glandular changes present. Enormous venous sinuses are present underneath the mucosa. The changes in the urethra I must not now enter into.

The importance of the changes I have just described lies in the fact that they are characteristic not only of those prostates removed from the dead body of patients who have not complained of prostatic symptoms, and who were in many instances under 30 years of age, but *exactly describe* the appearances seen in (?) *adenomata* removed by operation from the living subject.

If I throw on the screen photomicrographs of sections of so-called adenoma—that is, portions of admittedly enlarged prostates removed by operation by well-known surgeons, and also sections of unselected prostates taken from the dead body, and which I call incipiently diseased, you will be unable to distinguish any difference in type between them—they are identical in all particulars, with the exception possibly of excess of desquamative products in the case of the younger glands. Further examination shows that the changes I describe are seen not only in prostates which clinically are not enlarged, and give rise to few symptoms, but also in the prostates of men of tender years; in my series, one of 20, one of 23, and another of 25 show perfectly all the changes enumerated.

Variations in the Fields under the Microscope.

One of the most striking features, both in the adenomata removed at operation and in the prostates removed at the *post-mortem* examination, which were devoid of obvious enlargement, is the constant admixture of normal and abnormal glands—that is, with dilated, desquamated, or irregularly-shaped alveoli and ducts (see Figs. 5, 7, 9, 10). This is shown in a similar manner in cases of interstitial mastitis of the breast (see Fig. 8), in which disease it is generally accepted that all the ducts and lobules are not always involved in the inflammatory process, and that the varying picture of normal, or almost normal, gland tissue intermixed with abnormal is explicable on the assumption that the septic process has involved the ducts and lobules of the abnormal, while the normal islets are the glands which have escaped the disease—that is, no one claims that the diseased lobules are adenomata of the breast.

In prostatic adenomata removed by operation the same peculiarity exists; one finds in the midst of the disease islets of perfectly normal prostatic gland tissue (see Fig. 9, also Figs. 5, 7, and 10), and not only as an isolated patch or two, but the admixture varies enormously; in some adenomata the markedly abnormal preponderates, in others the normal, or slightly diseased, is in excess. The explanation accepted in the case of the breast holds good here also—namely, that the alveoli of the lobules which are diseased drain into ducts which are affected by the catarrhal process, while the alveoli which are normal belong to ducts which have escaped the catarrhal process; on no other grounds can this peculiarity be explained.

Thus, granted the similarity of the picture in chronic prostatitis and the prostatic enlargements called adenoma, the presence in those prostates removed on the *post-mortem* table from patients of all ages, of dilated, desquamated alveoli and ducts, with flattened lining cells, in the midst of abundant masses of normal glands, cannot be explained by assuming that these dilated areas are all commencing adenomata, scattered like currants in a pudding; they are much more naturally explained by the theory I have borrowed from mastitis. Conversely, in so-called adenomata, which, according to all traditions, should be devoid of true normal gland tissue, the presence of considerable areas of absolutely normal gland tissue (see Fig. 10) amidst the diseased cannot be explained by saying, "Oh, yes, they are pieces of accidentally included normal gland." How comes normal functionating gland to be present enclosed in the capsule of an adenoma? Thus, neither by analogy nor morphology is this acceptable or reasonable: an adenoma consists entirely of atypical gland-tissue, although it may closely resemble the normal gland.

Besides, in the so-called adenomata, ducts are frequently seen (see Fig. 11)—ducts filled with desquamated cells, with lecithin (amyloid) bodies, and surrounded often by round-cell exudation (see Figs. 12 and 6), identically as are the ducts in the cases of the incipiently diseased prostates removed on the *post-mortem* table and assumed clinically to be healthy. Thus, in following the pathological changes observed through different ages, one is forced to the conclusion that the genesis of prostatic enlargement is inflammatory, and that its course is progressive, extending over a large number of years, so that its foundation may be laid twenty, thirty, or more years before the changes which result have attained such proportions or intensity as to become clinically apparent as an enlargement of the prostate.

Indeed, in a very large proportion of cases, as shown by my examination of prostates taken indiscriminately from *post mortem* bodies of all ages, and which macroscopically or microscopically show in some degree the changes characteristic of prostatic enlargement, the pathological process, while of frequent occurrence, may not result in sufficiently marked enlargement to call attention clinically to its presence in all cases.

It seems clear to me that one of the important factors likely to cause persistent and increasing changes, and thus to determine whether a prostate is going to give rise to symptoms or to increase to a large size, is the constant superaddition of fresh micro-organisms on to the already diseased urethra and gland ducts, thereby keeping alive and adding to the virulence of the inflammatory process.

Other factors are the nature of the micro-organisms present; the condition of the urine itself; the presence of unhealthy conditions in the penile and bulbous urethra, or in the kidney and bladder; and, not least, the general condition of the patient and his freedom from toxins generated elsewhere, such as in the mouth or gastro-intestinal tract, which both by their presence in the blood and during their elimination in the urine may induce or add to disease in the prostate.

Thus it is highly probable that the pathology of prostatic enlargement must be brought into line with those diseases lately shown to be the outcome of septic infection.

From the series of sections I have examined, the frequent bulging of "adenomata" into the urethra and lumen of the bladder is largely determined by the fact that under the veru montanum between the two ejaculatory ducts, and under the mucosa near the vesical orifice, an enormous mass of gland tissue lies quite superficially, and thus naturally encroaches upon the bladder when it becomes diseased. Sections of diseased patches show plainly the dilated alveoli and ducts separated from the lumen of the urethra only by a layer of epithelium; what happens when this protecting epithelium atrophies, or is torn by further distension or the introduction of instruments, must obviously be the immediate admission of urine into the prostatic glands during the act of micturition.

The peculiarity of the mode and site of entry of the ducts into the urethra needs to be further investigated. The bacteriological evidence, so far as staining methods go, is encouraging, and will be supplemented as opportunity offers.

Time precludes my entering on to the formation of what Mr. Herring calls the pathological envelope and into lines of cleavage due to compressure of ducts and glands along which enucleation of masses would be easy; also into the condition of the prostates left after large masses of glands have been removed, and which are quite likely, in the course of time, to again enlarge, to some extent, by repetition of the process I have already described. It is also important to investigate the factors which interfere with the expulsion of urine; suffice it here to express our opinion that they are more complex, and less easily explained, than is at present realized.

Professor JORDAN LLOYD (Birmingham) said that whatever might be the true explanation of the nature of the enlarged prostate, there could be no doubt that the work of Mr. Freyer had established new possibilities with regard to the treatment of this condition by operation, and that Freyer's operation—the entire removal of the prostate within its capsule—had never been performed or even thought of as a practicable measure until Freyer himself carried it out. Mr. Lloyd had had practical experience of the several forms of prostatectomy which had been from time to time brought

before the profession, and had satisfied himself that Freyer's operation differed from every other of the same class in this fact: that enucleation was made outside the prostatic capsule, between it and the retrovesical fascia; whereas in other prostatectomies enucleation was made inside the prostatic capsule, between it and the adenomatous masses which make up a prostatic enlargement. Upon the minute histology of this condition Mr. Lloyd claimed to give no opinion, but he thought in this as in other maladies that some of the theories of microscopists and bacteriologists might possibly be erroneous, more particularly as they were evidently not yet agreed between themselves. Mr. Lloyd exhibited a series of permanently mounted "natural" macroscopic sections of a consecutive series of prostates taken from the bodies of persons dying from all causes and at all ages. These sections showed that all the larger of the prostates were due to the formation, within their substance and about the urethra, of adenomatous masses, the prostatic tissue proper being outside and expanded by these masses so as to form a capsule for them. These adenomatous overgrowths were evident to the naked eye, and were met with in their smaller forms as early as the 40th year of age. The sections showed them at all ages above this and of all sizes. All these growths could easily be enucleated with the finger-nail.

CHRONIC APPENDICITIS.

By W. Blair Bell, M.D.Lond., M.R.C.S.Eng.,
Liverpool.

At the outset I must ask you to excuse my boldness in attempting to compress into such small compass as the allotted time allows an account of this important condition. Many defects, omissions, and disjunctions must necessarily occur from so much brevity, but I feel that so little consideration has been given to this aspect of appendicitis that I would like to open up as wide a field as possible for any discussion which may follow.

When considering appendicitis as a whole one is struck with the medley of varieties described by those who write the textbooks on surgery or medicine. A little thought will show that there is no need to do more than describe appendicitis as existing in an acute and chronic form. There is no reason, however, why the courses each may pursue should not be described—indeed, they ought to be—so long as the two main conditions are clearly kept in view.

The term "chronic appendicitis" is used very loosely; it should be placed on a more scientific footing, and dissociated, I think, from what is known as "chronic relapsing," or "intermittent appendicitis," of which we hear so much. These appellations apply to the results of attacks of acute appendicitis, itself rarely primary in origin; more often—in fact, generally—the ultimate result of long-standing chronic appendicitis unrecognized in this stage.

It is to this early chronic stage I wish to call your attention, and in passing I may add I am only dealing with the ordinary inflammatory processes, and leaving out of account such rarer conditions as tuberculous appendicitis and the like.

From what I have said, it is obvious how important it is to recognize the initial chronic disease, so insidious in its onset, so difficult, apparently, in its diagnosis, and to step in before even one acute attack has occurred. Any one who has seen, as I have, sudden and fatal attacks of what is known as perforating appendicitis, and who has been made aware of the fact that obvious disease of the appendix had existed in these cases for years before without an acute attack having supervened, must be alive to the duty which devolves on every one of us to be able to diagnose the disease in the earliest stages, and to prevent these catastrophes or even the serious risk associated with any acute attack.

I can imagine that some will say that surgery of this kind is too progressive, and that what has been said of surgeons in other countries will be said of those of us who advocate early interference, that we shall be appendectomizing every chronic dyspeptic in the country, and so on. While I have no hesitation in saying that I think a large number of these perpetual sufferers could be cured by the removal of their appendices in conjunction with subsequent treatment, I wish definitely to point out that a scientific and definite diagnosis can be made of chronic appendicitis, and that indiscriminate procedures are in no way justifiable. However, a very practical nemesis will pursue those who act without judgement, and who cannot or do not take the trouble to distinguish the indigestion associated with chronic appendicitis from other forms of alimentary trouble.

Etiology.

It is always stated that appendicitis is more common in men than women. I do not think myself that this is true; chronic appendicitis is very common in women; and my own observations have lately led me to the conclusion that it is really commoner in women than in men. But it is also certain that in men acute exacerbations more often supervene than they do in women, for reasons to be mentioned directly; and I think the fact that this early chronic stage is so rarely recognized accounts for the prevailing impression that women are not so prone to the disease as men, who frequently suffer from well-marked acute attacks.

In considering the reasons why chronic appendicitis is more frequently followed by acute attacks in men, we must look to the habits of life rather than to structural differences in the two sexes to supply the information required.

First, men take much more violent exercise than women do—at least, this used to be the case; and since women have tried to rival men in this respect acute attacks of appendicitis have become more common among them—and as a result of violent exercise faecal matter may be forced into the appendix, dilated perhaps itself, by the action of the abdominal muscles on a dilated caecum.

Secondly, I believe that dress has something to do with the matter—in fact, it is the only good office I can assign to the corset, apart from the pleasure we derive from the contemplation of the female figure—but there is no doubt that external abdominal pressure tends to prevent excessive dilatation of the colon and causes the gases to seek the exterior, following the course of lesser resistance.

I believe, then, the effect of violent exercise upon a dilated caecum is a fertile source of acute attacks supervening on chronic appendicitis. I think age of itself has little to do with appendicitis. That it is most common in young adults and in middle life is due to the same fallacy I have mentioned before of only considering acute appendicitis as appendicitis. That acute attacks are most frequent at these periods is due very much to the same reasons that make them more common in the male sex.

The most important determining causes of chronic appendicitis are related to food and feeding, and, therefore, it is very closely connected with indigestion. This connexion is twofold.

1. *Chronic Appendicitis may be Secondary to Indigestion.*—When this is the case, the indigestion is of the big bowel type. I mean that it is, as already indicated, secondary to chronic dilatation of the caecum and colon, with flatulence and constipation—a state of affairs nearly always the result of long-standing typhlitis, and perhaps colitis.

I think—and so will any one who considers the matter from an anatomical standpoint—that it must follow as a matter of course that inflammation of the caecum necessarily leads to a similar condition, but one which more rapidly becomes aggravated, in the appendix. Further, that dilatation of the caecum may lead to a similar condition in the appendix, or at the orifice, thus increasing the liability to the entrance of faecal matter, with the subsequent formation of a concretion, which may bring about an acute attack. I must call your attention—and this is a very important matter—to the fact that, whereas chronic typhlitis of itself does not give rise to any very urgent symptoms, chronic appendicitis, owing to the different anatomical structure and configuration of the appendix, may soon do so.

Our forefathers, with their "perityphlitis," were far nearer the mark than many a present-day pathologist would lead us to believe; some, such as Deaver, allude with scorn to "inflammation of the bowel" as being in any way connected with the disease, in their anxiety to be foremost in the boom. That there is a connexion, and an all-important one, is true none the less; and I am sure, as I have stated elsewhere,[1] that the swing of the pendulum from typhlitis to appendicitis has not bridged over the gap which contains the truth concerning the majority of cases—namely, that the disease we call appendicitis is usually typhlitis-cum-appendicitis in its commencement.

I need hardly point out that it is quite obvious, once this relationship is established, how an excess of indigestion, such as follows the bolting of much indigestible food, may precipitate an acute exacerbation.

1 *Liverpool Medico-Chirurgical Journal*, 1904.

2. *Chronic Appendicitis may of itself give rise to Indigestion.*—This is mainly brought about by the aggravation of the pre-existing typhlitis either directly, or in advanced cases by the formation of extensive adhesions to the caecum, which may lead to further dilatation of it in the same way that perigastric adhesions will cause dilatation of the stomach. Further, there is no doubt that chronic appendicitis contributes its share to those chronic intestinal toxaemias of which we know so little.

While considering the connexion between chronic appendicitis and indigestion, I would call your attention to the fact that chronic appendicitis may exist as part of a general inflammatory condition of the lymphoid structures of the alimentary tract. It is not unknown for the perforation of an ulcer to occur elsewhere in association with appendicitis. I question very much whether those ulcers are the result of septic absorption only.

Also, that a dilated colon is frequently associated with a dilated stomach, and this seems more than enough to prevent a correct diagnosis in many instances.

Pathology.

Chronic appendicitis may be preceded, as already stated, by a dilated appendix, which dilatation may be uniform as in Case A. Later the actual disease is the result of a slow inflammatory process continually going on in the appendix. It commences and may exist for a long time in the mucous membrane and the subjacent lymphoid tissue, and, as I have found, can be diagnosed in this early stage.

After the mucous lining and subjacent lymphoid tissue the muscular coats are affected, ultimately perhaps becoming fibroid, and, lastly, the peritoneal coat is involved. Treves's dictum that appendicitis is peritonitis is absolutely false. One might as well say that ulceration of the stomach always produced peritonitis.

I contend that we should be able to diagnose appendicitis in the early chronic stage and never allow the final condition of peritonitis to appear at all.

Any who are interested may see some sections I have brought of a few appendices, showing the earliest to the latest stages of chronic appendicitis, and although in one or two the peritoneum is involved, not a single one of these patients knew what they had, nor had they been treated for any trouble in the appendix region until they were unfortunate enough to fall into my hands. I need not recount the various diseases they were supposed to suffer from; they ranged from gastritis to gall stones.

Symptoms and Diagnosis.

You will understand why I cannot feel very apologetic about calling your attention, very briefly, to a few facts under this heading when I tell you that all the cases I have seen in the last eighteen months which have been previously treated have been incorrectly diagnosed, some of them by those whom we recognize as authorities on medicine and surgery.

Allowing that this chronic appendicitis is nearly always the sequence of typhlitis, the symptoms of that disease are usually well marked and, although so closely identified with chronic appendicitis, cannot be described in detail in the short time at my disposal. I wish more particularly to refer to points which I have found valuable, after determining the presence of chronic typhlitis, in assisting me to decide that the appendix has also become affected, for of course typhlitis can, and does at first, exist without the appendix being involved.

1. Should the history be typical of chronic typhlitis, but with exacerbations of pain at intervals which may be attacks of appendicular colic or attacks of a more obscure nature accompanied or not by a raised temperature, or vomiting—the pain being in the appendix region or referred elsewhere—then the appendix is involved.

2. Any case of chronic typhlitis which resists treatment by aperients, antiseptics, lavage, restricted and selected diet; and above all, any case aggravated instead of improved by a course of abdominal massage, is probably complicated by chronic appendicitis.

3. The following sign also is useful in determining involvement of the appendix. I would call it "the reflex-pain sign": If the patient complains of pain in the neighbourhood of the umbilicus, hypogastrium, or elsewhere, and that pain can be produced by pressure over the appendix, which may not be tender to pressure itself, then it will be found that the appendix is diseased. This sign, as far as I know, is not present in chronic typhlitis without the appendix is involved.

Treatment.

The general lines of treatment may be dismissed in a few words. The treatment of typhlitis is medical if diagnosed before the appendix is affected. When that is once involved, as discovered by some of the signs I have alluded to, then the surgeon must step in to save the patient from the fearful risk this piece of bowel holds in store when once diseased, and to enable the physician to cure the typhlitis, which he cannot do so long as a diseased appendix remains.

It is, then, most important to remember that those cases which apparently do not get well after an affected appendix has been removed, have only themselves or the physician to blame, for the latter should always take the case in hand when the surgeon has done his share. Yet, how rarely are appendectomized patients further treated. Fortunately, they often recover without further assistance when the main cause of irritation has been removed, but they do not always do so, and then the surgeon may be wrongly accused of having removed an innocent appendix.

It is a great pity that physicians and surgeons cannot combine over these cases. The surgeon, however, thinks that the right iliac fossa belongs to him, while the physician is too sore, because further territory has been annexed by the surgeon, to encourage any idea of joint occupation of the same.

Let us realize that the caecum in these cases is the physician's and the appendix the surgeon's—since specialization demands such exact boundaries nowadays—and that chronic appendicitis, the *fons et origo* of nearly all the other so-called "varieties," is really typhlitis-cum-appendicitis.

This would make an honourable draw of the tug-of-war which has gone on so long—much to the detriment of many a patient—between the physician who has hold of the caecum and the surgeon with both hands on the appendix.

There is one point of operative technique to which I would like to draw your attention. In closing the muscular and aponeurotic layers of the abdomen in these cases I have lately used as sutures thin strands of the external oblique tendon, which can easily be split off.

[Dr. Blair Bell then stated the main points of his method, which is more fully described in an Appendix to this paper.]

Illustrative Cases.

CASE A.—S. G., aged 30, head housemaid in a large house. Has large appetite, which has always been gratified with good food. Has suffered for two years from indigestion. Acute attacks of pain in the epigastrium come on occasionally irrespective of food: no vomiting. Bowels irregular, generally constipated: has been treated for gastralgia. There is marked dilatation of caecum, with gurgling on pressure; no tenderness in appendix region; no improvement after course of massage. Reflex pain sign well marked. Appendix removed: caecum very dilated.

Pathological Description.—Thicker than normal. Peritoneal surface smooth and free from adhesions. Lumen dilated throughout, and full of débris.

Microscopical Examination reveals probably the earliest stage recognizable in this condition: there is a dilated lumen, secondary to the dilatation of the caecum. On one side the glands of the mucous lining are fairly well represented, but the whole is thinned out. At the other side of the section there is some round-celled infiltration, with fewer mucous glands and some subjacent thickening of the submucosa.

CASE B.—M. O. B., aged 32, single lady. Has suffered for several years from "dyspepsia," for which she has been treated. This has been augmented by periodic "bilious attacks." No vomiting but much nausea, flatulence, and "crampy" pain in the lower abdomen. Not markedly constipated, but bowels irregular. Reflex-pain sign well marked, also some pain on deep pressure in the appendix region. Appendix removed; caecum quite sacculated.

Pathological Description.—Appendix about 4 in. long, bulbous extremity which on section was found to be distended with muco-pus; peritoneal surface smooth.

Microscopical Examination reveals destruction of the gland acini of the mucous membrane, with diffuse round-celled infiltration. Submucosa is much thickened and the muscular coat slightly hypertrophied.

CASE C.—J. W. W., aged 29, young gentleman who has led an active life, playing football, etc. Two years ago he lived for some time on very rich food in America; since then he has never been well. Has been treated for "sluggish liver." Has an enormous appetite, is markedly constipated, much troubled with a pain some hours after a meal, and passes large quantities of flatus. At times he is seized with "cramp" in his lower abdomen, which doubles him up for several minutes. Never vomits. Worse after course of massage. Reflex-pain sign marked. Appendix removed. Caecum much dilated and sacculated. Meso-appendix extensive, and contained many varicose and tortuous veins.

Pathological Description.—Appendix 5½ in. long; much thicker than normal; has bulbous extremity and fusiform swelling in the middle, and contains faecal matter to the extremity.

Microscopical Examination.—Mucous lining and submucosa much infiltrated with small round cells, though this inflammatory process has not

yet destroyed the lining epithelium or all the glands. Faecal matter, together with blood and leucocytes, occupies the lumen. Muscular coat is a little hypertrophied and there is some injection of the subperitoneal tissue, and where this is most marked there is roughening of the peritoneal coat.

Case D.—E. F., aged 30, lady's maid. Has lived for some time with her mistress in hotels, and has gratified her good appetite with plenty of rich food. Has suffered from "indigestion," constipation, and flatulence for some years. During the last two or three years she had frequent—lately every few weeks—attacks of acute abdominal pain. Sometimes she has vomited during these attacks. Pain acute for several hours, leaving her tender on the right side for a day or two. Reflex-pain sign to the epigastrium well marked, also tender over the appendix, last attack having occurred a few days previous to examination. Right kidney is movable, but not tender. Has been treated on the Riviera for gall stones. Appendix removed, a little straw-coloured fluid was evacuated and some imperceptible adhesions broken down, which left the appendix roughened at that spot. Normal in size.

Microscopical Examination.—Lumen much narrowed, due to great thickening and fibrosis of submucosa, the disease being, as seen in some of the other sections, mostly on one side. Peritoneal coat is vascular, and some early adhesions are well seen.

Case E.—E. J., aged 25, waitress. Has had many attacks of acute abdominal pain without vomiting. Suffers from indigestion, constipation, and flatulence. Has been treated for gastric ulcer. When she has pain it is always located in the epigastrium and "through the chest." Has never been laid up or incapacitated. Reflex-pain sign well marked. Appendix removed (by Mr. R. W. Murray, in hospital), and found adherent at the tip to the omentum, the very marked gastric pain being thus accounted for.

Pathological Description.—Appendix large and swollen, and rough on the surface.

Microscopical Examination shows much round-celled infiltration, especially on one side, with destruction of glands. Submucosa shows fibrosis and fatty degeneration extending to the muscular layer. Subperitoneal tissue is very vascular, and the peritoneum rough and vascular.

Case F.—T. G. W., aged 40, gentleman. Has suffered from indigestion and constipation from boyhood. Has always been fond of athletics and sport. Continually under treatment, but no diagnosis got nearer than "gastritis." All the pain is in the epigastrium. Never vomited, or had any pain or tenderness in appendix region. This was the first case in which I discovered the reflex-pain sign. It was so well marked that my attention was attracted to its importance. Not improved, but rather worse after course of massage. Appendix removed (by Mr. F. T. Paul, myself assisting), caecum very dilated and inflamed. Appendix entirely bound to caecum by dense adhesions.

Pathological Description.—Appendix large, thick and roughened on surface from separation of adhesions.

Microscopical Examination reveals universal thickening, most marked, perhaps, in subperitoneal coat. Submucosa shows great thickening and fibrosis, the latter extending to the muscular coat which also shows some fatty degeneration.

In conclusion I would like to add that I know of no case upon which I have operated for chronic appendicitis that has not been cured of all trouble by the end of six months, but it is most unwise to promise complete recovery, where typhlitis also exists, before this time has elapsed.

APPENDIX.

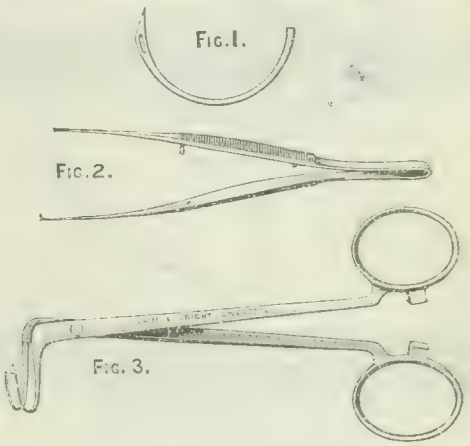
Autorrhaphy: A New Method of Closing Certain Wounds.

By the courtesy of the Editor, I am able to supplement the allusion I made in my paper on Chronic Appendicitis to this method of closing the abdominal wound, by a fuller and more explicit description of the method adopted.

I shall only describe the method as concerned in closing the abdominal wound after appendectomy, but it is obvious that the same or a modified method can be utilized to close wounds in other positions, not only in the abdominal wall but wherever aponeurotic tissue of sufficient strength is available. A fairly long skin incision is made, rather lower and nearer the anterior superior iliac spine than is usually indicated in the textbooks. It will be found that this is the most convenient incision for reaching the appendix at once, and it also gives better strands of the aponeurosis of the external oblique, which are to be utilized in closing the wound.

In a chronic case or in the "quiescent" period of an intermittent case, the best and usually adopted method of separating the muscles in the direction of their fibres should be employed. When the aponeurosis of the external oblique is reached, it must be very carefully cleared of its fascial investment, in order that the fibres may separate easily when required later. This done, a clear interfibrous space is found, and opened for the whole length of the wound with the knife. The divided aponeurosis is then raised with dissecting forceps, and undermined for about half an inch throughout the length of the incision on either side of its division.

Next, the internal oblique is divided in the ordinary way in the direction of its fibres and the transversalis fascia and peritoneum in the same direction; as a rule, quite a small hole is required through these structures in order to deliver and remove the appendix. The object of the operation being successfully accomplished, the divided external oblique aponeurosis is seized with dissecting forceps on the side nearest the umbilicus, and an interfibrous space sought for, about ½ in. from the edge. This space is opened with the point of the knife, and the handle, or a blunt dissector, used to split the isolated strand up to the ends of the original incision. This divided strand is removed with knife or scissors, and is either threaded on one of the special needles



About ½ scale. The upper blade of forceps in Fig. 2 terminates in a tooth, as in lower blade; this is not shown, owing to a defect in the block.

with a large eye (Fig. 1) by passing the fine points of the forceps (Fig. 2) through the eye, and drawing the tendon through, or it is seized at one extremity by the special forceps-needle (Fig. 3), which is a modification of the Cleveland forceps needle, and then passed through the internal oblique, the transversalis, and the peritoneum on either side of their division and tied. The process of tying the tendon is by no means easy, owing to its slippery nature, but it is very elastic and holds well when tied. Mr. R. W. Murray, who has recently tried this method, pointed out to me that the tying is very easily accomplished if a piece of silk ligature is first tied on to each end of the tendon after it has been passed. As a rule, one suture is quite sufficient to close the innermost layers, but should another be required it can be obtained in the same way and from the same side—that is, the one nearest the umbilicus, as the first.

Next, two other strands are separated in the same way, one on each side of the incision through the external oblique, that on the umbilical side being freed at the lower end of the wound (Fig. 4, A, B), while the other strand (C, D)—on the side nearest the anterior superior iliac spine—is freed at the top end of the incision. These strands are in turn threaded on the needle, or are grasped by the forceps needle, and the external oblique is then laced up from either end of the incision, the strands meeting and being tied in the middle (Fig. 5). The skin may then be closed with an ordinary, or, better, with a wire, subcutaneous suture.

If, however, all the muscular layers and peritoneum are divided in the same line, then, of course, four or more interrupted sutures—obtained in the same way as the one used in suturing the inner layers and described above—are used, care being taken to draw the external oblique aponeurosis well over the internal oblique towards the middle line of the incision before it is pierced with needle or forceps-needle, in order that there may be no interval in its fibres when the suturing is complete.

The advantages of this method are very obvious. No foreign material need be introduced into the abdominal wall, for, as a rule, the vessels can all be twisted; at most a few of them may require to be tied with thin gut. Instead of irritating sutures in the sensitive muscles, living material is used which belongs to the part and will go on living. Then, again, if the wound is kept aseptic there will be no danger to fear on that score from these sutures. And, finally, for those who are idealistic this method seems to have much to recommend it; it is efficient, safe, and as ideal as anything about the closure of a wound can be!

In conclusion, I must mention that after I had practised the method on several occasions my attention was called to a short note by Dr. L. L. McArthur, of Chicago,[1] in which the author suggests the use of the external oblique fibres for

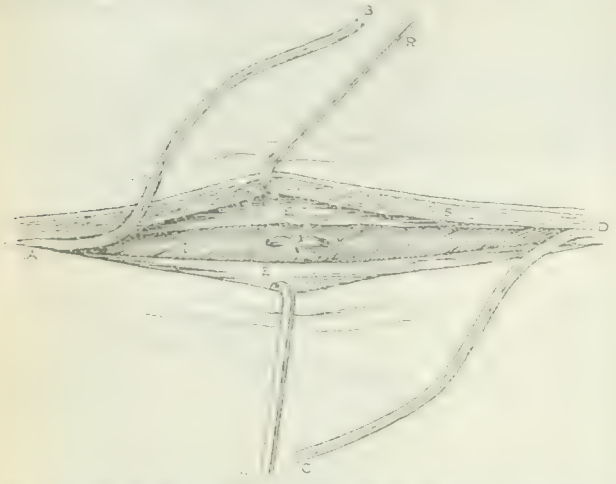


Fig. 4.—A, upper end of incision: A, B, separated strand of external oblique on umbilical side; C, D, ditto on the iliac side; E, external oblique aponeurosis; K, suture closing divided internal oblique, fascia transversalis and peritoneum; I, internal oblique; R, R, retractors; S, skin and subcutaneous tissues.

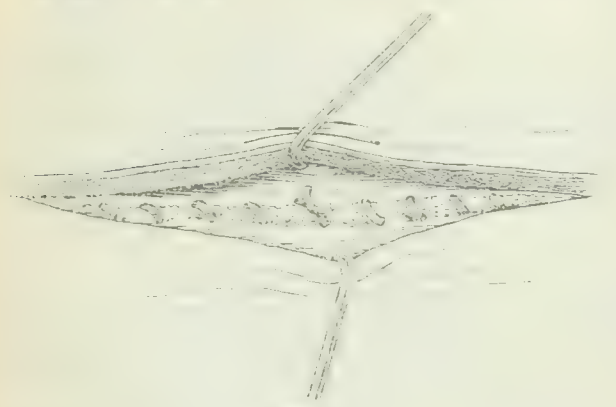


Fig. 5.

sutures, and states that he had made use of them for this purpose in a case of hernia. I had, however, written my paper on chronic appendicitis,[2] in which I alluded to the method I was employing, before I was aware that, although quite independently adopted by me, it had been more or less casually suggested before.

References.
[1] *Annals of Surgery*, April, 1901. [2] Read before the British Medical Association at Oxford, July 29th, 1904.

CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS.

FROM AN EXPERIENCE OF FIFTEEN CASES.

By Jas. H. Nicoll,

Professor of Surgery in Anderson's College, Glasgow, etc.

In July, 1900, I brought before the Surgical Section at Ipswich a case of this kind which had been successfully treated by operation, with an account of the literature of the affection so far as the somewhat scattered records could be collected.[1] That case was apparently the first successful operation for the condition, and has been somewhat extensively quoted as such. Subsequently we learned that very shortly before this case there had been a successful operation by M. Abel, the record of which reached this country in the belated fashion to which we have unfortunately become accustomed since we lost the invaluable *Index Medicus*, and have to rely on the German *Jahresbericht*, which, though excellent, is a year late when available.

The child in whose case I operated in 1899 remains in good health, having had no relapse of the symptoms.

Since that date I have seen fourteen further cases, in nine of which I have operated, losing three after operation and two which were not treated by operation. The recognition of the affection being comparatively recent, and as yet not too full, it may be of interest to briefly indicate the impressions as to diagnosis and treatment gathered in the experience of these fifteen cases, and of several erroneously diagnosed as pyloric.

Symptoms.

To our knowledge of these not much has been added since the publication of Dr. John Thomson's classic papers in 1896[2] and 1897,[3] and the papers of Drs. Rolleston and Hayne[4] and Dr. Meltzer.[5] To these papers, to my former paper,[6] and to the recently-published works on the stomach by Mayo Robson and Moynihan, and by Soltau Fenwick, reference may be made by those wishing more full information on the symptomatology and diagnosis than falls within the scope of the present contribution.

Essentially, the symptoms consist in obstinate vomiting, associated with constipation, and, ultimately, with the physical signs of gastric dilatation of moderate degree and progressive emaciation. The lesion is a hypertrophy of the muscular tissue of the pylorus constituting an annular thickening sufficiently bulky in some cases to be detected by abdominal palpation. A typical case, with comments on the symptoms, is given by Rolleston and Crofton-Atkins in the British Medical Journal of December 22nd, 1900. It must suffice here to indicate that in a typical case these symptoms in association constitute the diagnosis very clearly.

The *vomiting*, though due to a congenital cause, is usually not present, or does not arrest attention, till dilatation has commenced, and commonly is noted as setting in at a date from several days to several months after birth.

Constipation differentiates the case from cases of ordinary gastro-enteritic troubles, though in certain cases diarrhoea alternates with constipation, and in one of my cases, in which operation revealed a typical hypertrophic stenosis of the pylorus, diarrhoea had been present during the whole period between birth and operation, extending to seven weeks.

Gastric dilatation never attains the degree frequently produced by pyloric obstruction in the adult, probably because an infant vomits so readily. The absence of physical signs of dilatation, therefore, should not be given much weight to in the consideration of the diagnosis.

Emaciation is generally held to be very marked. It is so in the majority of typical cases. I have, however, in my possession the stomach of an infant showing typical hypertrophic pyloric obstruction. This child died of exhaustion consequent upon persistent vomiting, and, *post mortem*, I made the diagnosis of pyloric stenosis, which diagnosis I had, unfortunately, repeatedly dismissed during life on account of the child's plump and well-nourished appearance.

The presence of an *epigastric tumour* detectable by palpation is insisted on by several writers. To this I must demur. So far as my cases have shown—and more than half of them were examined under an anaesthetic—a palpable pyloric "tumour" is not present in more than 20 per cent. of the cases. In upwards of 80 per cent. nothing abnormal can be detected through the parietes. When palpation has revealed nothing under anaesthesia, and immediately succeeding laparotomy demonstrates a hypertrophic mass of some bulk, the question naturally arises as to whether the bulky, low-lying infantile liver may have prevented access to the pylorus. In connexion with the detection of a "tumour," it is to be noted that all cases of congenital obstruction of the pylorus are not hypertrophic; as first, I believe, pointed out by Hammer (*vide* my former paper), there are cases of congenital atresia. These, of course, necessarily present no "tumour."

Treatment.

The cases, when first seen, naturally fall in the matter of treatment into two groups—those in which exhaustion and emaciation are so pronounced that immediate operation offers the one chance of saving life, and those in which the stenosis is probably partial only, and in which the question of operative interference may be postponed and the child treated by dieting and rectal feeding. There is, of course, always an element of doubt in the diagnosis in the latter class, and until recently I was somewhat sceptical as to its existence.

I have, however, lately seen two cases, at present in the care respectively of Dr. Walter Hunter and Dr. McGregor Robertson,

of Glasgow, in which I fully concur in the tentative diagnosis made by these gentlemen, and in which improvement under dieting has been so considerable that operation meantime is not called for. Further, I operated in a case two years ago in which for several months improvement under dieting was distinct, and in which operation was ultimately decided on, not as an urgent necessity but as securing the child against a tendency to rickets, which appeared to be probably due to the artificially digested food which had to be resorted to on account of the stomach conditions. Whether a definite "cure" can be effected without operation or whether, as has been suggested, certain cases of benign pyloric stenosis in the adult are congenital, is a question in which meantime the evidence available does not appear to warrant a conclusion.

As to the operation to be selected, I have a decided opinion in favour of a combination of Loreta's operation with gastro-enterostomy, and from a conversation I had last October with Mr. Stiles, of Edinburgh, whose somewhat unique field in the surgery of childhood gives his opinion weight, I believe that my experience and its resulting conclusions do not stand alone in this matter. My first case (in 1899) was treated by a modified Loreta's operation, and remains well, having been promptly, and apparently completely, cured by the operation. Abel's case in the same year was treated by gastro-enterostomy. Naturally, after the successful event in my first case, I followed the same method (Loreta's) in others as they occurred. In doing so I was influenced not only by my previous success but by a consideration of Dr. John Thomson's well-known views on the etiology and pathology of the affection. And I still hold that the appropriate treatment of "hypertrophic stenosis of the pylorus" is to "burst up" the thickened pyloric ring by forcible overstretching from within, as one does an obstinate urethral stricture. This has been completely successful in several cases, so far as can at present be seen. In two cases, however, relapse has occurred, or, to be more accurate, in one case no relief was obtained, and the patient died six days after operation, while in the other apparent cure was followed by return of the vomiting at the end of two months. In my last cases, therefore, I have combined overstretching with gastro-enterostomy, having used both the anterior and the posterior method. Probably the correct operative procedure may be stated thus: Open the stomach, within easy reach of the pylorus, pass the sinus or dressing forceps through the incision into the stomach, and gradually force them through the contracted pylorus; stretch the pylorus until the peritoneal coat slightly ruptures. Then decide the further course of the operation by the infant's general condition. If collapse be imminent, close the stomach and abdomen rapidly by suture, regarding the operation as a temporary measure merely, as I did in my first case. If, however, the child's condition permit, complete the operation by a gastro-enterostomy, making use of the incision already made in the stomach wall. The decision as to performing the anterior or posterior route has in this case, I believe, a special feature. Through the anterior route, I have found the constriction dilated more thoroughly and safely than through the posterior. I have used both, and meantime, beyond that one point, have not formed an opinion as to final choice of route.

It has been suggested that pyloroplasty may prove a suitable operation. While without experience of this measure in an actual case, I have experimentally tested its performance *post mortem*, in the stomach of an infant affected by the disease, and believe that the thickness of the pyloric wall renders pyloroplasty unsuitable in this instance.

References.

[1] British Medical Journal, September 1st, 1900. [2] *Edinburgh Hospital Reports*, 1896, vol iv. [3] *Scottish Medical and Surgical Journal*, June, 1897. [4] British Medical Journal, April 23rd, 1898. [5] *New York Medical Record*, August 20th, 1898. [6] British Medical Journal, September 1st, 1900.

A SERIES OF CASES OF RESECTION OF MALIGNANT GROWTHS OF THE COLON.

By Charles A. Morton, F.R.C.S.,

Professor of Surgery in University College, Bristol, and Senior Surgeon to the General Hospital and Hospital for Women and Children.

I think the report of even a short series of consecutive cases of resection of malignant growths of the colon may be of interest at the present time, for we are now realizing that such operations may be performed without great risk, and that recurrence is not nearly so likely as was at one time feared. In my 7 cases there has been no death from the operation, and 1 case has lived for more than three years without recurrence, and in another, if the second growth was a recurrence, it was discovered nearly six years after the first was removed. In this case, at the first operation the whole caecum was removed for carcinoma, and last week I removed another large cancerous growth from the left half of the transverse colon. There was no growth in the caecal region, and none in the liver or glands. This makes the eighth resection, and I fear that it may be, or has been since I left Bristol the other day, the first fatal case of the series, for she was not doing at all well when I came to Oxford on Wednesday. In the case in which the patient is now quite well (I examined her the other day), three years after the operation, the growth in the sigmoid had reduced the lumen of the bowel to the size of a No. 3 catheter, and attacks of partial obstruction had been present for a year before operation. In 6 out of the 8 operations I have united the bowel by a suture around a Mayo Robson's decalcified bone bobbin.

In four of the cases obstruction had first to be relieved by colotomy. It is universally recognized that an attempt to resect a growth in a patient with distended intestine, and suffering from the depressing effects of obstruction, is likely to end in disaster. It has therefore been taught that the best method of procedure is to bring out the growth at the time of the colotomy and to fix it outside the abdomen, and then after the relief of the obstruction to cut it away, and finally to unite the ends of the bowel. It has also been recommended that the growth should be brought out of the abdomen, after tying off and dividing the corresponding portion of the mesocolon, and that then, after tying Paul's tubes into the bowel above and below the growth, it should be resected at once, but that the union of the ends should not be carried out until the obstruction has been completely relieved. If the final reunion of the divided ends can be accomplished without again opening the peritoneal cavity, by the method of separating the parietal peritoneum widely from the muscle of the abdominal wall around the ends, after adhesions have formed, which shut off the peritoneal cavity, that would be the best method to employ, because the safest. But it is not an easy matter to unite the ends without opening the peritoneal cavity, and if there is risk of such opening, it is far safer to temporarily close up the bowel and deliberately open the peritoneal cavity, and then carefully pack it off with gauze, before uniting the divided ends. It seems to me better not to resect the bowel before the obstruction has been relieved, for, even if we tie off the mesocolon before division and tie the ends of the bowel on each side of the growth firmly on to a Paul's tube, placed within its lumen, so that the resection will cause no loss of blood, yet time is taken up in the proceeding, and the chances of shock increased by the resection of the bowel at a time when the patient is only fit to bear the shortest administration of anaesthetic, and the least operative disturbance which will suffice to relieve the obstruction: and if the growth is not then resected, and the peritoneal cavity has to be opened for a later reunion of the divided ends, why should the growth be brought out at the time the colotomy is done? It only adds to the amount of bowel lying on the abdominal wall; and if the mesocolon or parietal peritoneum has to be divided to free it sufficiently to bring it out, such division is much more readily done when the distension of the coils within the abdomen has been relieved, for all manipulation within the abdomen, in the presence of great distension of the intestine, is to be avoided as far as possible. Even in the sigmoid flexure the contraction of the growth is sometimes so great that the mesocolon is much shortened, and in the ascending colon, hepatic and splenic flexures, particularly the latter, the parietal peritoneum may need extensive division before the colon can be brought outside the abdomen. Hence, I believe, the best method in these cases of obstruction from carcinoma of the colon, is to determine at the time of the colotomy if the growth is suitable for excision, and if so to bring out the bowel just above, or as near to the growth as we can, and open this, and then when the obstruction is relieved, in a few days' time, to sew up the opening in the bowel, detach it from the edges of the wound in the abdominal wall, bring out the growth, and resect it and the portion of bowel containing the artificial anus in one piece, and then unite the divided ends. The reopening of the peritoneal cavity after the distension of the coil has been relieved may give us an opportunity of feeling whether any growths are present on the liver or any glands enlarged at a distance

from the growth, which we could not do in the distended condition of the coils.

It is a very important question to decide, in cases of resection of malignant growths of the colon, as to what amount of adhesion to surrounding parts will make it undesirable to remove them. I should be very unwilling to break down any firm adhesions to surrounding parts without first most thoroughly packing off the peritoneal cavity with gauze for fear of tearing into the lumen of the bowel and infecting the peritoneum. Moreover, it would be impossible to say whether such dense attachment was merely adhesion, or infiltration by growth. But if the portion of intestine or stomach to which the growth was densely adherent could be resected with it, I see no reason why this should not be done. In one of my cases I resected a portion of the gall bladder with a large mass of growth involving the colon. If there is dense adhesion to the parietal peritoneum, I do not think that this should be regarded as a contraindication to removal, provided that we can dissect the parietal peritoneum up with the growth from the deeper layer of the abdominal wall, or if we find the subperitoneal tissue, or even the muscle or aponeurosis invaded. I see no reason why a considerable thickness of wall could not be removed with it, at any rate in certain positions. We should not hesitate to excise a sarcoma starting in the deep part of the anterior or lateral abdominal wall, and projecting into the peritoneal cavity. Why should we decide not to resect a malignant growth of the colon which has involved such a structure? If a colotomy had first to be done, the way in which the growth had become attached to the abdominal wall would be determined at the time of the colotomy, and the incision for its removal, together with the deeper parts of the wall, could be planned before the second operation was undertaken. In all cases the liver should as far as possible be examined for secondary growths before removal of the primary. With the intestines distended at the time of the colotomy this is generally impossible, but it can be sometimes done at the time of the second operation. If there are glands in the meso-colon, the portion of meso-colon containing them can be removed with the growth, and they should not, I think, be regarded as a contraindication to removal. We should not refuse to operate on an epithelioma of the tongue because there were a moderate number of freely movable glands under the jaw. Why, then, should we abstain from resecting a cancer of the colon because we can feel a number of glands in the adjoining meso-colon, but none elsewhere, provided that we can resect that portion of the meso-colon with the growth? In the case of growths of the caecum or ascending colon, such glands may be found under the reflexion of peritoneum from the colon towards the middle line, and may be shelled out from the loose subperitoneal connective tissue here.

Some surgeons have advocated resection of the growth, with union of the ends of the bowel, even if irremovable secondary growths are present, as the best way of dealing with the obstruction. I do not consider this advisable myself. A lateral anastomosis will relieve the obstruction, and is attended with less haemorrhage and shock than a resection of the growth.

I have found how important it is in these cases of resection and reunion of bowel to have sufficient length of bowel out of the abdomen before packing it off from the peritoneal cavity with gauze, or whatever we employ, preparatory to opening the bowel. We must allow plenty of room for work between the clamps and the growth, for we ought to resect an inch of healthy bowel on each side of the growth, and have plenty of bowel free enough to get the ends to meet easily over a bobbin, if we employ one. If we have too little bowel out for this, we run a great risk in disturbing the packing gauze in order to remove more bowel after it has been opened, and our hands are contaminated from the interior of the gut. The only trouble I have had with union over a bobbin was to get easy approximation over the upper part of the bobbin, as it lay in the bowel without any tension, and I am now inclined to cut the bowel just a little obliquely so as to have it slightly longer in this part. I believe it is important to see the interior of the bowel at the edge of the growth before cutting it through, and not to depend on palpation of the growth from without in order to define its limits, for we may find extension in the mucous membrane which only sight will reveal. This would, of course, be seen during or after the resection, but would necessitate a further section of the bowel. I have observed how this may happen in resection of rectal growths more often even than in colon growths.

In three of my cases the length of time symptoms of partial obstruction had been present before the growth was removed is striking. In one case such attacks had been present for eighteen months, and in two for a year. In the patient in whom they had existed for eighteen months, complete obstruction did not set in before operation, but a large mass of growth involved the hepatic flexure of the colon; in the other two cases, colotomy had to be done before the growth was excised.

One of my cases illustrates in a very striking way how insensitive the intestine is to cutting. In this case (one of my early ones) I did leave the growth outside the abdomen at the time of the colotomy, and resected it later on without an anaesthetic. The patient felt no pain at all at the seat of operation, but had a little "stomach-ache" while it was going on. In another case I sewed up the artificial anus left by the colotomy before washing up the abdomen preparatory to opening it for resection of the growth. The patient was not under an anaesthetic at the time, but she felt no pain from the stitching: but water not hot enough to be painful to the hand, when applied to the outer aspect of the colon during the process, gave her pain.

CASE I.—*Resection of Cancerous Growth of Colon after Relief of Intestinal Obstruction by Colotomy.*

M. M., a woman aged 51, was seen in consultation with Dr. Maddison, June 1st, 1898, with symptoms of chronic intestinal obstruction. Colotomy was performed on June 3rd, and a growth found in the sigmoid was then brought out through the wound, and a fortnight later removed, and two months later the artificial anus was closed by uniting the divided ends, and returning them into the abdomen. At the latter operation I found a small nodule had formed on the liver. Obstruction at the seat of junction occurred a few months later, and I had to open the bowel again. I believe the obstruction was due to kinking. The growth, however, eventually recurred, and she died from it, but without further obstruction, one year and nine months from the time of the removal of the primary growth. This case was reported by me in a clinical lecture published in the BRITISH MEDICAL JOURNAL, 1901, vol. i, p. 378.

CASE II.—*Excision of Caecum for Carcinoma.*

E. P., a woman aged 40, came under my care in the General Hospital with a history of pain in her right loin and right side of the abdomen, with occasional vomiting, but the bowels acted without difficulty. A hard mass could be felt in the abdomen in the caecal region, and was thought to be a movable kidney, but on exploration a large mass of growth was found in the caecum, and a few glands in the meso-caecum were removed. Microscopic sections showed the growth to be carcinoma. The ileum was joined to the ascending colon with a Murphy button. The case was reported in the BRITISH MEDICAL JOURNAL, 1901, vol. i, p. 878, and a photograph of the caecum invaded by the growth was there reproduced. The operation was done in November, 1898. She became very fat after the operation and remained well until February, 1904—for five years. When I saw her then she had some sickness and diarrhoea, but I could make out no recurrence of any swelling in the abdomen. I have not been able to communicate with her since.*

CASE III.—*Resection of Malignant Growth of the Sigmoid after Relief of Intestinal Obstruction by Colotomy.*

Miss D., aged 58, was seen in consultation with the late Dr. Coleman, on December 2nd, 1901, with symptoms of intestinal obstruction, and colotomy was performed on December 5th. At that time a growth was found in the sigmoid, and on December 10th the abdomen was again opened by detaching the adherent colon; and the portion of bowel which had been opened at the colotomy, and the growth just below it, was excised, and the ends of the colon were united over a bone bobbin. She made a good recovery from the operation. I did not see her again after she left the nursing home, but I hear she died with recurrence of growth in 1903, about eighteen months after the resection of the primary growth.

CASE IV.—*Resection of Malignant Growth of Sigmoid after Relief of Obstruction by Colotomy.*

Mrs. C., aged 42, was seen in consultation with Mr. Churton Pauli, April 24th, 1901, with intestinal obstruction. The attack had lasted ten days, but there had been slighter attacks which had yielded to treatment at intervals for a year. On the 25th I opened the abdomen over the sigmoid flexure, and found a growth there which I brought out and fixed by passing a glass rod under it, and a few stitches through the wall of the bowel and the skin. The bowel was opened next day and the obstruction relieved, and a few days later I resected the growth and united the bowel over a bone bobbin. The growth was a nodular ulcerating mass, and the lumen of the bowel was reduced to a No. 8 catheter. There was some leakage from the juncture, but, as the part was drained, this only retarded the healing. A minute opening has persisted ever since, but so minute and so free from discharge that it is no trouble to her. She is now very well, and there is no sign of recurrence.

* This patient came to see me after the above report was written. She then had a carcinomatous growth in the transverse colon, which I removed, but she did not recover from the operation. This is the fatal case of the series, and I have already referred to it.

Case v.—*Resection of the Caecum, Ascending Colon, and Hepatic Flexure, together with many inches of Small Intestine, for Malignant Growth.*

Mrs. M. H. was sent to me by Dr. Groves in June, 1903, with a large abdominal swelling, situated on the right side, extending from the costal margin to somewhat below the level of the umbilicus, and as far inwards as the umbilicus, and outwards to the loin. It was very hard and nodular, only movable within a very limited range, and not apparently extending into the renal region behind. It moved downwards only slightly with respiration, and I thought I could get between it and the liver. The patient had noticed the swelling for about five months, and for a short time before that she had experienced discomfort when lying on that side, and this had really called her attention to the swelling. She had only rarely had pain in it, but at times had had pain over the whole abdomen, but no vomiting. She was very constipated, but this was a very old trouble. There were no urinary symptoms and the urine was normal. When she was under the anaesthetic for operation on June 16th, much greater freedom of movement of the mass was obtained. It could then be pushed in the cleft of the umbilicus, right back into the loin, and to some extent downwards into the lower abdomen. On opening the abdomen I found a mass of growth involving the caecum and a considerable length of the lower ileum, the ascending colon, and the hepatic flexure, and I removed all these parts, and united the ileum to the transverse colon with a bobbin. She made a good recovery from the operation, and left the hospital a month after. I think the growth started at the ileo-caecal juncture. It formed a large mass, but the lumen of the bowel was nowhere excessively narrow. I saw this patient in May of this year, just about a year after the operation, and she is very well, the bowels act well, and there is no sign of any recurrence within the abdomen.*

Case vi.—*Resection of Hepatic Flexure of Colon and Part of Gall Bladder for Malignant Growth.*

Mr. F. C., aged 45, came under my care in the General Hospital in July, 1903. For eighteen months he had been subject to attacks of abdominal pain, and these attacks had been getting gradually worse, and had been very frequent and severe during the fortnight before I saw him. He very seldom vomited. At the time when the attacks of abdominal pain began he had alternate constipation and diarrhoea, but lately constipation alone. There was a history of considerable melaena five months after the attacks of pain began, but this had not recurred. A hard lump the size of a hen's egg could be felt just below the right costal margin at the outer border of the rectus—much in the position of the gall bladder. It was resonant, moved downwards with respiration, and I thought I could just get my finger above it and push it down slightly from the liver. It seemed likely to be a growth in the colon, especially as it was associated with the history of repeated attacks of colic. On July 24th I opened the abdomen and found a mass of hard nodular growth the size of an orange, which involved the hepatic flexure of the colon and a good deal of the transverse colon, and had invaded the fundus of the gall bladder and the neighbouring omentum, but had not caused any growth in the liver. Only two glands in the mesocolon were invaded, and these were removed. I removed all the involved portions of colon and omentum and united the colon with a bone bobbin. I also resected the growth from the gall bladder, but this only involved the outer coats, and the mucous membrane was not opened. The lumen of the bowel in the growth was only the size of a No. 12 catheter. He made a good recovery, and left the hospital six weeks after the operation. He remained well until a few months ago, and then began to suffer from pain, apparently in the distribution of the lower intercostal nerves of the right side, associated with great hyperaesthesia of the skin, and a growth could be felt invading the abdominal wall. This, on exploration in June of this year, proved too extensive for removal.

Case vii.—*Resection of Malignant Growth of Colon after Relief of Intestinal Obstruction by Colotomy.*

Mrs. M. J., aged 42, was admitted into the General Hospital on August 18th, 1903, after ten days' complete obstruction. The distension was very great, and the vomiting had been frequent. I opened the abdomen on the left side, and found a growth just below the splenic flexure, and brought out the transverse colon and inserted into it a large Paul's tube. The obstruction was satisfactorily relieved, and on September 4th I opened the abdomen again and resected the portion of colon containing the growth and the artificial anus, and united the bowel over a bone bobbin. The lumen of the bowel at the seat of growth had been reduced to the size of No. 5 catheter. She made an uninterrupted recovery after the removal of the growth, and when seen this June was quite well, and free from any swelling within the abdomen. The bowels acted comfortably.†

ON THE REMOTE RESULTS OF OPERATIONS FOR VARICOSE VEINS OF THE LOWER EXTREMITIES.

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Although varicose veins of the lower extremities are so common, and although they can occasion symptoms which cause the patient so much distress or even expose him to danger, it is only within the last few years that treatment approaching a radical nature has been available. Before, however, considering the best form of treatment it is necessary to examine certain points upon which the *rationale* of the treatment is founded.

The most important point in the pathological anatomy of varicose veins, as far as concerns the treatment, is the fact that their valves are incompetent. When removed from the leg, a stream of water can be injected in one direction quite as easily as in the other. On splitting up the vein it is seen that the valves are present, but they are certainly incompetent, although represented. Another important point is the fact that, the veins usually affected being tributaries of the internal saphena, run in the subcutaneous fat, and are therefore outside any muscular support, and in consequence are more liable to dilate.

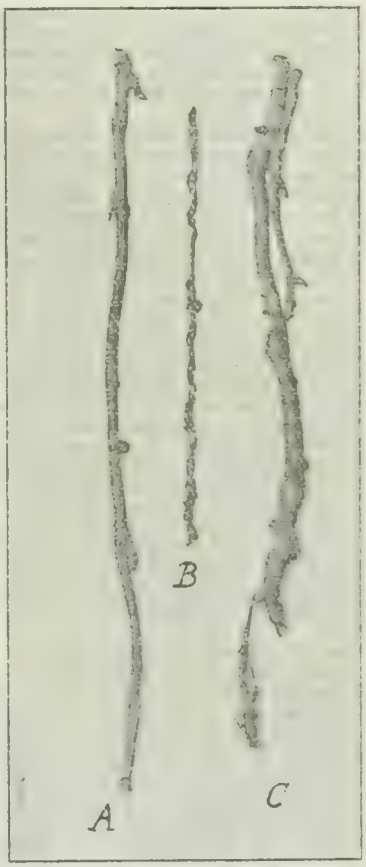


Fig. 1.—A, Normal internal saphena from the thigh of a cadaver (adult male), injected with paraffin. The injection would run only in the normal direction on account of the valves. B, Varicose vein removed from leg of a female, aged 21, and collapsed, as it was too thin-walled to bear injection. The patient presented no varix in the thigh; but C shows that the internal saphena vein, which was removed at the operation, was much distended when compared with the normal vein. Its valves were incompetent, and it was injected in the reverse direction. One-third natural size.

From the point of view of the treatment the causation is of importance, as this may determine the treatment appropriate to the case. These causes are generally admitted to be still somewhat obscure. The general cause to which they are usually attributed is any hindrance to the return of blood from the limb—for example, the gravid uterus, an abdominal tumour, a loaded colon. Also interference with the return of blood caused by hepatic and cardiac affections, occupations involving long standing or long walking, wearing of garters, senile degeneration of the veins, have all been brought forward as causative factors. There is, however, perhaps no other affection which has longer or more persistently been attributed to a set of causes which seem on closer examination to be so inadequate to explain the condition as it is most frequently seen. Even as regards the pressure of the gravid uterus, it has been pointed out that varicose veins not infrequently are exhibited long before the

* Microscopic sections of this growth show the structure of sarcoma; there is no evidence of epithelial growth.

† Microscopic sections of the growth show typical adeno-carcinoma.

uterus has increased in size sufficiently to exert pressure which could account for their presence. In only one of my cases was or had there been pregnancy, none presented abdominal tumours, few constipation, none had cardiac or hepatic troubles, and the majority had not been engaged in occupations which could be considered prone to occasion varicosity. Few of them had worn garters, and none were old, but, on the contrary, the condition had in almost all of them exhibited itself in youth. These causes, therefore, while they may contribute to the development of the varices, cannot be regarded as the primary causes, at least in the majority of cases.

Sir William Bennett[1] in 1889 called attention to the early appearance of this affection and expressed the view that the most probable cause of varicosity is a congenital defect whereby the valves are not normally competent, in consequence of which the support which the valves normally give to the circulation is diminished or lost, and, therefore, the whole weight of the column of blood rests on the tributaries, which in course of time dilate. Schambacher[2] has gone a step further and explains how the incompetence of the valves is due to congenital weakness of the vessel wall from the deficiency of elastic tissue.

In the 27 cases here recorded, which excludes those recently operated upon, varicosity appeared in 6 at the age of 10 or earlier; in 11 between the ages of 11 and 20; in 8 from 21 to 30; and in 1 at 35; while 1 patient, aged 60, was unable to give me information as to how long the varices had been present. In most of these cases a portion of the internal saphena in the thigh was removed at the operation, and examination proved that in every case the valves were incompetent although represented. This was the case even although before the operation there had been no sign of varicosity in the thigh, the complaint being of varicosity below the knee. Although not visible in the thigh, the vein was always found enlarged when it was exposed at the operation. The figure shows an injected internal saphenous vein (C) from the thigh of a female patient, aged 21, who showed merely some dilated tributaries (B) below the knee. It is seen to be considerably dilated when compared with a similarly injected normal internal saphena (A) which was removed from a cadaver and which is placed alongside of it for comparison.

On account, therefore, of the early age at which the condition was first exhibited in my cases and the incompetence of the valves always found in the internal saphena in the thigh, there is, I think, great probability that a congenital defect has much to do with the etiology of varicose veins of the lower extremities.

As regards the treatment of this affection, there is no doubt that in many cases relief of the chief symptoms may be obtained by the use of elastic support. In old people and in the case of excessive development of varicosity during pregnancy, or in any case in which the condition is merely a consequence of another affection, for example, cardiac or hepatic disease, or abdominal tumour, certainly elastic support should be used, except in very exceptional circumstances. In ordinary cases, however, in which the condition exhibits itself in early life, it is a mistake to advise palliative treatment, which must prove unsatisfactory in the long run, not to mention the constant care which it demands from the patient. For such cases removal of the affected veins is the proper treatment, as by this means the patient is completely, or practically completely, relieved of his affection. For an operation, however, to be lasting in its results, it must be done in a particular way. After certain operative procedures the benefit is only of a fleeting kind, complete or almost complete relapse being the rule.

The older methods of operation aimed merely at the obliteration of the most prominent varices at one or more points, and this was done either by injection of substances, which caused coagulation of the blood in the vein, or by ligature of the vein subcutaneously, or by open operation, and in the latter case, with or without division of the vein, or sometimes even with excision of a small portion of the vein at one or more points.

These operations have had their trial, and have been discarded because they were found to be quite futile in bringing about a cure. At the time that they were practised surgical technique was less perfect than it is to-day, and consequently these operations were often followed by disastrous results. It is the recollection of these disasters which apparently has caused some to have a prejudice against all operations on varicose veins even at the present day.

The treatment recommended by Sir William Bennett[1] in 1889 was excision of the entire varix or a large portion of it, and—so far at least as the immediate results were concerned—the procedure was a satisfactory one; but the remote results were not good. This operation I performed fully ten years ago, and although for a few months the results were good, yet the ultimate result in both cases was complete recurrence.

A considerable advance was made by Trendelenburg,[3] who published his observations in 1890. Trendelenburg brought out strongly the fact that the chief factor in the production of varicosity below the knee was the dilatation of the internal saphena in the thigh with incompetence of its valves. He showed that if the leg was emptied of blood by elevation and the finger then applied so as to compress the internal saphena at its point of entrance into the deep vein, and the patient then directed to stand up, then under these circumstances the varices below the knee filled only slowly and moderately—that is, so long as the finger kept up the compression. As soon as the compression was removed, blood ran into the internal saphena from the deep vein, flowed down the leg along the vein in the reverse direction, and distended the varices. Thus, according to Trendelenburg, the varices had blood flowing to them not only from below but also from above, and therefore the blood pressure would be increased in the varices, and this was the cause of their progressive dilatation. This increase of blood pressure has been demonstrated by Delbet[4] by means of manometers inserted into the vein.

Trendelenburg's method of operating is to ligature the internal saphena in the thigh, possibly with removal of a short segment. I have operated twice on the principles laid down by Trendelenburg, removing, however, a much larger part of the vein in the thigh than is usually done, but leaving the varices below the knee untouched. The result certainly is that the varices below the knee very speedily atrophy, but in certain cases they do not atrophy completely. In one case in which there were very bulky varices below the knee, operated upon four years ago, 16 in. of the vein in the thigh being removed, the varices below the knee never completely disappeared, and are now still present, although not so bad as before operation, and not causing the patient any trouble except on very hot days.

Trendelenburg's operation, therefore, although carried out very thoroughly as far as completeness of excision of the vein in the thigh is concerned, is liable to be not quite perfect in its results, as slight varices may persist.

The operation advocated by Schede and Petersen[5] depends on the view that the recurrence after excision is due to anastomoses. To prevent this, Schede since 1893 has made a complete circular incision below the knee, extending through the skin and subcutaneous tissue down to the deep fascia. The divided veins are then ligatured and the incision closed by suture. Thus all the veins around the entire circumference of the leg are divided. I have not performed this operation, for I think it unlikely that the thin band of scar tissue represented by a wound which heals by first intention would resist the formation of anastomoses. The small vessels formed in the thin scar would be liable to become dilated from the pressure of the dilated veins above. I have also seen a case in which complete recurrence quickly followed this operation. This is what might be expected, seeing that the cause, the internal saphena in the thigh, is left. If recurrence can so readily follow Schede's operation, it will do so much more certainly when under the name of Schede's operation an incision is made only partly round the leg as I have seen done. Such a procedure must produce only a very temporary amelioration of the condition.

For some years past the method which I have employed in dealing with varicose veins of the leg is to remove in every case the internal saphena in the thigh up to a point within 1½ in. or 2 in. of its termination at the saphenous opening, whether the vein in the thigh appears to be varicose or not. When the vein has been removed from the thigh, the removal of the vein is continued downwards into the leg, and the prominent varices are also removed as far down as they extend. Any prominent tributary in the leg is also removed. Thus the vein is removed from a point within about 2 in. of its ending at the saphenous opening down to the lowest point at which large varices show in the leg.

The total length of vein removed varies from 16 in. to 21 in., in one case as much as 34 in., usually about 10 in. to 16 in. of this being from the thigh, so that the internal saphena is almost entirely removed.

The immediate results of these operations have been perfectly satisfactory. In no case did the slightest untoward

Table of Cases of Varicose Veins of the Lower Extremity, Showing the Results of Excision of almost the Entire Internal Saphena in the Thigh, together with any Prominent Varices below the Knee.

No. of Case.	Time Elapsed since Operation.	Age and sex.	Situation of the Varices, etc.	Age at which Varices Appeared.	Total Length of Vein Excised.	Length of Incision in Thigh.	Present Condition.
	Years.						
1	5	M., 34	Left thigh and leg	26	17½ in.	10 in.	No varices to be seen. No symptoms of varices.
2	4½	M., 30	Right thigh and leg (also on left side)	24 (right) 15 (left)	18 in.	10 in.	No trace of varicose veins to be seen. No symptoms of varicose veins.
3	3½	M., 22	Right leg	19	20½ in.	12 in.	No trace of varicose veins. No symptoms of varicose veins.
4	3½	F., 12	Popliteal space	Since childhood	11 in.	10 in.	No trace of varicose veins to be seen and no symptoms of varicose veins.
5	3½	M., 18	Right leg	1 month previous to operation	20½ in.	12½ in.	Only trivial veins to be seen in the leg. No symptoms of varicose veins.
6	3½	M., 18	Left leg and thigh	9 months before operation	18 in.	12½ in.	Very slight veins to be seen in the leg. No symptoms of varicose veins.
7	3	M., 34	Right leg	24	21 in.	11 in.	No varicose veins present. No symptoms of varicose veins.
8	2	M., 28	Left leg and thigh	16	20 in.	14 in.	No trace of varicose veins to be seen. All the symptoms also have disappeared.
9	2	M., 26	Right leg and thigh (also on left)	16	16 in.	13 in.	No trace of varicose veins to be seen and no symptoms of varicose veins.
10	1½	M., 44	Left leg	10	21 in.	11 in.	No trace of varicose veins in the leg. One or two slight veins visible in dorsum of foot. No symptoms of varicose veins.
11	1½	M., 44	Right leg	11	21 in.	11 in.	No trace of varicose veins in leg. One or two very small veins visible in dorsum of foot. No symptoms of varicose veins.
12	1½	F., 21	Left leg	Since childhood	16½ in.	10½ in.	No trace of varices to be seen. Symptoms entirely disappeared.
13	1½	M., 20	Right leg and thigh	17	21½ in.	11½ in.	No trace of varices to be seen. Symptoms entirely disappeared.
14	1½	M., 38	Left leg and thigh, the leg being a mass of veins everywhere (exceptional case)	15	34 in.	13½ in.	Only trivial veins to be seen in the leg. Symptoms of varices entirely disappeared.

result follow the operation; and with the exception of two cases which had a history of syphilis, and in which healing was delayed not longer than a week or two by gummatous formation, the long wounds all healed up perfectly by first intention.

Some who have witnessed these operations have asked how the loss of the entire internal saphena will react on the circulation of the limb; but there need be no anxiety on this ground, for the vein which is removed has lost its function of returning blood long before the operation is undertaken, and has been acting rather as a means of hampering the circulation, and other veins have taken up its function.

Thrombus and phlebitis and embolism, which some still seem to dread so much, have never been observed in any of my cases.

Very soon after the patient is allowed up he regains the full use of his limbs, and finds himself completely rid of the symptoms of exhaustion and pain from which he previously suffered. The test, however, of the operation is not the immediate result, which indeed would be as good after an operation much less extensive, but it is the remote result. When the less extensive operation was done the remote results, as I have shown, usually left something to be desired, and where the varices below the knee, or below and at the knee only, were removed, the remote results were complete failures. In the series of cases, however, in which the more complete operation was done, the results in every instance have stood the test of time, as the patients when examined at the end of periods ranging up to five years subsequent to the operations, were found to be not only free from symptoms, but also to be free from any recurrence of dilated veins.

Excluding those which have been operated upon less than eighteen months ago, I have operated upon twenty-seven cases. Three of these cannot now be traced. There remain 24 cases, which I may classify as follows:

1. Two cases in which the varices alone were removed, namely, 8 in. and 9 in. of dilated vein respectively below and at the knee. Both cases recurred completely, the recurrence commencing a few months after the operation and being complete about a year later.

2. Seven cases in which the dilated veins were removed from the leg below the knee, and the internal saphena from the lower part of the thigh, the portion excised above the knee varying in length from 4 in. to 8½ in. These cases were examined at periods ranging from three and a half years to seven and a half years after operation, and in only one was the result perfect, that case being one operated upon three and a half years ago. In one case the recurrence was complete, that case having been operated upon seven and a half years ago. In the other five, varices were still more or less visible below the knee, although greatly reduced, and the symptoms of exhaustion after much exertion had nearly but not quite disappeared.

3. One case in which the varices below the knee were not interfered with, but in which the internal saphena was removed entirely from the thigh—namely, to the extent of 16 in. When examined at the end of four years the result was not perfect, for slight symptoms of exhaustion were still experienced in warm weather, and the varices in the leg, although much contracted, were still quite apparent.

4. Fourteen cases in which the chief varicose tributaries below the knee were removed, together with a large portion of the internal saphena in the thigh, these portions from the thigh measuring from 10 in. to 13½ in. in length measured in a straight line, without respect to any tortuosities of the vein. These were examined at periods ranging from one year and a half to five years after the operation. In none had recurrence taken place. All professed to be free from exhaustion and pain, even after prolonged standing or walking, and in none were varicose veins visible. In one or two slight veins could be seen as they can in normal legs, but certainly no varicose veins. The above table shows the results of these operations.

I conclude, therefore, that the operation which gives the best and most permanent results is that in which not only the varices are removed, but also the trunk of the internal saphena in the thigh, and think that the result will more certainly be permanent if this portion of the vein is very extensively resected. No doubt recurrence might develop even after this operation on account of anastomoses gradually developing from the upper end of the internal saphena which is allowed to remain, but my results have not hitherto shown a case of recurrence.

It has been said that no operation will effect a radical cure of varicose veins, but only an amelioration of the condition. It may be true that an operation cannot so certainly sweep away this affection as an operation can a benign tumour. Yet, when we find patients who, previous to operation, were unfit for any serious exertion or long standing, and who presented on their legs extensive and prominent varices, and who, years after the operation, neither show any appearance of varices nor complain of any disagreeable symptoms, surely the operation which effected this improvement is worth performing.

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THE USE OF PARAFFIN IN PLASTIC SURGERY.

By STEPHEN PAGET, F.R.C.S.,

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IT is about five years since this method came into use: and by this time we have a great mass of evidence about it, which has just been published in a book by Stein of Wiesbaden. Of course, at first there was a period of great uncertainty and many mistakes: men were not agreed what should be done and what should be left undone; the cases were not carefully selected, the paraffin was used, with a certain extravagance, for this or that patient who would have done as well, or better, without it; and there is room for doubt whether the failures were reported in exact proportion to the successes. What we want now is to see clearly what are the limitations and the faults of the method, what risks it may involve, what cases are suited for it, and what are not suited. We have got hold of a new idea in surgery. We are able now to put under the skin, or under the mucous membrane, without incision, a foreign body which we can mould with our fingers and then leave there. If this good method were only perfect, we should be able, as it were, to create processes or plaques or nodules, as hard as cartilage, and as strong as cartilage, of the right shape and size, just where we wanted them. But the method is not perfect, and never will be; it is very useful, and for the right sort of cases it is a most admirable method; still, there are ways of failure and even of disaster, and we are bound to be on our guard. Take the common use of paraffin to improve the shape of a sunken nose: what the patient wants is, as he says, something just to raise the skin a very little, so that he may not be stared at wherever he goes, and suspected, rightly or wrongly, of syphilis. Or take the use of paraffin to hold up a prolapse of the rectum or of the vagina: what the patient wants is a sort of submucous plug or pessary, which shall so stiffen and thicken and approximate the tissues as to prevent the slack redundant mucous membrane from turning itself inside-out, yet shall not cause any absolute obstruction. What can we do for these cases, and how great is the risk of failure, or of something worse than failure, and is this risk inevitable? There have been cases of suppuration, cases of chronic oedema of the tissues, and cases of embolism; and, of course, many cases which more or less failed, and ended in more disappointment than pleasure both for the patient and for the surgeon. Still, I am sure that we can, by a proper selection of cases, and by a strict observance of rules, avoid these risks, or anyhow reduce them almost to vanishing point; and that we can obtain a long series of good results in cases which would otherwise have nothing done for them. That is the point in these cases of sunken nose: it must be paraffin or nothing; and I have not a shadow of doubt that it ought to be paraffin; only, we must select our cases, and we must obey rules.

I have had about 70 cases of sunken nose, and 10 cases of prolapse. Let me say what I have learned from them, and let me begin with some general rules. We must take this treatment seriously, and not use it for cases that are trivial; we must prepare the patient as for an operation, and give an anaesthetic, and keep the patient under observation for two or three days afterwards. The paraffin and the syringe must be sterilized by boiling. Paraffins of different melting points, sterilized ready for use, are sold by Rogers, 327, Oxford Street. Syringes of various patterns are sold. I have come to think that the best pattern is a small syringe, all of metal, with a screw piston, such as Dröll of Frankfort makes for Dr. Stein: the same sort of syringe is sold by Messrs. Down of London. Being all of metal, it is easily cleaned and sterilized; and the screw piston gives it this great advantage—that the paraffin is injected steadily, without a jerk, and in a semi-solid state, issuing from the needle like paint out of an artist's colour tube. I hardly need say that we must not treat a case till we have rehearsed our part, and have learned the ways and tricks of the paraffin. To make the injection, melt the paraffin by putting the bottle up to its neck in very hot water; then keep it and the syringe in water about 5 degrees above the melting point of the paraffin. Having filled the syringe, dip the needle for a few seconds in very hot water, to prevent the paraffin from setting in the needle, then insert the needle well under the skin, and make the injection rather quickly—say a whole turn of the screw every five seconds.

The use of this method for sunken noses involves three considerations: (1) The selection of cases, (2) the practical rules for making the injection, (3) the general results.

1. The selection of cases. We must not pay too much attention to the state of the inside of the nose. The septum may be almost destroyed, and there may be ozaena, and it may not make the least hindrance to a good result. It does not matter, so long as no actual destruction of bone or cartilage is still going on, whether the septum and the mucous membrane are whole or diseased. What does matter is the state of the skin of the nose. If it is free and loose and soft and healthy and abundant, so that you can easily raise a full fold of it between your finger and thumb, then you can raise it with paraffin, and keep it raised. If it is rigid and set and strained, so that you cannot well raise it off the frame of the nose, you can hardly raise it, or keep it raised, with paraffin. Worst of all, if the skin is scarred and thin and adherent, stuck down here or there to what is left of the deeper structures, then the case is wholly unfavourable, and almost impracticable. Everything depends on the state of the skin. It is all a matter of tension. If the skin be stiff and not loose it will not submit to be raised—it will retaliate on the paraffin; they will settle it between them; the paraffin will yield a little, will stray a little down one or both of the naso-labial folds. If the skin be adherent—and it is easier to talk about freeing it with a tenotomy knife than to do it—then the paraffin may fail altogether; you might almost as well inject it under the leather covering of a saddle or a book. Therefore, the most unfavourable cases are those of tertiary syphilis with necrosis of the nasal bones, where the skin is wasted, cicatricial, and pinned down by adhesions. Neither are those cases favourable where the skin, though it be not adherent, is tight and rigid. The favourable cases are those where the skin is free, loose, and abundant; the nasal bones are depressed, it may be by an old injury, or by inherited syphilis, or by arrest of development during childhood; the tip of the nose is well formed, and lies in the middle line: there is nothing amiss, save only that the natural support of the skin ought to be more prominent.

2. The practical rules for making the injection. There have been two cases, and perhaps more, where the injection was followed, almost at once, by the signs of thrombosis or embolism of the orbital vessels, with complete and permanent loss of vision in one eye. I do not see how this terrible disaster can happen so long as we keep the following rules: (1) Use a screw syringe, so that the paraffin may be injected slowly and steadily, and not fluid but semi-solid; (2) Insert the needle low down, well away from the transverse nasal vein, in the middle line, just above the tip of the nose, and inject the paraffin upward. While you make the injection your assistant keeps firm, vigorous, carefully adjusted pressure all round the nose, joining his fingers and thumbs in a ring to prevent the paraffin from straying. Then at once lay aside the syringe, and mould the paraffin quickly and rather forcibly, while your assistant cools it, not as Stein advises with ethyl chloride, but with a stream of cold water. The paraffin begins to set at once, so soon as it is under the skin; but you have time to mould it, and, having moulded it, hold on gently for ten or fifteen minutes. Then lay a thick fold of cold wet lint lightly over the upper part of the face, which is comfortable to the patient, and keeps him from twitching the muscles of his eyes and nose. No clips or clamps or nasal splints are of any use. Seal the puncture made by the needle with a morsel of gauze dipped in collodion. Use a paraffin that melts at or about 115° F., and inject it at or about 120°. (3) Do not attempt too much; be content if you can just mask the patient's ugliness. Do not imagine that you can create Greek noses: we cannot, and, if we could, they would look hideous. All that the patient wants is to go through life without being stared at, chaffed, and accused of syphilis. One cubic centimetre of paraffin may be enough, and more than that may be too much. And I do not believe that so small an injection, rightly made, is likely to cause sloughing, embolism, or any other disaster.

3. The general results. I have had, among my 70 cases, no death, sloughing, or embolism; but, especially among my earlier cases, I have had many that left a great deal to be desired. I did not select my cases, I took everything that came; and, of course, it was just the most unfavourable cases that were most urgent that some attempt should be made to improve them. In some, where the skin was rigid or even adherent, I failed to make any real improvement; in a few I had afterwards to remove a small nodule of paraffin which had strayed. In two of my cases, and in two that I have seen in other men's practice, the injection was followed by chronic

inflammatory thickening of the tissues over it; and in three of these four cases it was necessary to undo what had been done, at the cost of inflicting a scar on the patient's face. And, in some of my earlier cases, the injection caused some redness of the skin, which was still there some months afterward. These faults were due partly to the use of Eckstein's paraffin, which has a very high melting-point, and is wholly undeserving of the praise which has been given to it; partly they were due to the use of an excess of paraffin; and partly to the non-exclusion of unfavourable cases. I know better now, and I am more sure than ever that the paraffin, rightly used, and used only for the right sort of cases, is a most admirable method, and must not be set aside as a mere "dodge." Only, we must select our cases; and, above all things, we must not attempt too much. All that the patient wants is a very slight improvement, and the least excess of paraffin is sure to bring disappointment and trouble.

For prolapse of the rectum or the vagina I have used the paraffin in ten cases. Of these, two have relapsed, and I regret to say that a third patient, who was treated six months ago for severe prolapse of the rectum, has lately been found to have a stricture, just inside the anus, for which she is now under treatment. Thus, out of ten cases, I have to tell of two that have failed, and of one that has been cured of her old trouble, but at the cost of a new trouble. Of course, the physical and mechanical conditions of prolapse are hard to overcome: and there is this further difficulty, that the paraffin in these prolapse cases is used as a last resource, a sort of forlorn hope, for patients who have already submitted, many of them, to many operations. I do not wish to claim too much for this method; but I do think well of it. Consider, too, the misery of a bad prolapse of the bowel or of the vagina. The first of my cases was an old man who had undergone excision of the rectum, many years before, for malignant disease. Ever since that time he had worn a plug up his rectum, and even so had not been able to keep clean. I narrowed the anal opening by raising two little submucous hummocks of paraffin just inside the anal ring, a year and a-half ago. He left off his plug at once, and keeps clean and comfortable. I could quote other cases of the same kind if time allowed it but I would rather spend these last few minutes in some general remarks on the injection in these cases of prolapse.

We have to hold up loose and heavy tissues, which are urged downward both by their own weight and by pressure above and around them. We have also, in prolapse of the rectum, to occlude the cavity of the bowel and make it watertight without permanent obstruction. There is no such strain put on the paraffin in these cases as in the nose cases; we may, therefore, use rather a softer paraffin, which is easier to manage—say one that melts at 105° F. The injection must be made just under the mucous membrane, and no deeper; and since the mucous membrane is so loose, it is easy to raise nodules or hummocks, or ridges of paraffin, which shall act like a plug or a pessary. Take, first, the cases of prolapse of the rectum. What is the condition of the sphincters? If they have lost their power or have been destroyed by some previous operation, and the anal opening is slack and dilated, then a plastic operation, such as Mayo Robson has described, should be added to the injection. To make the injection, take the prolapsed bowel between the finger and thumb, put the needle just under the mucous membrane, and no deeper, and inject the paraffin rather quickly; you produce a smooth, rounded swelling, about the size of half a walnut, which feels like a small submucous fibroid. Raise two, or three, or, in a bad case, four, of these hummocks, putting them, so far as you can, where they will so strengthen and occlude the lower inch or two inches of the bowel, approaching one toward another with a sort of valvular action, that the upper reaches of the rectum cannot be everted past them, and the escape of mucus and of faecal matter is prevented, yet the hummocks themselves are pushed aside when the bowels act, just as they can be pushed aside with the finger. When the paraffin is set hard, reduce the prolapse, and treat the case as one treats a case of haemorrhoids after operation. The patient must be very careful afterwards to keep the bowels in good order, neither constipated nor relaxed. The quantity of paraffin to be used is about 1 oz., or, in bad cases, 1½ oz.

Prolapse of the vagina is a very difficult matter, especially in women who have to work for their living. I have had only a few cases; with the one exception which I mentioned I believe that they have been successful, and I have had no disaster of any kind. It is easy enough, with a finger up the rectum for guidance, to thicken and hold up with paraffin the posterior vaginal wall, but it is impossible to deal that way with a bad cystocele. And, of course, the injection should not be made on a patient who is not past the age of childbearing. Perhaps it ought to be reserved for cases where everything else has been tried in vain, and where a pessary is useless or intolerable; perhaps it ought to be used, in this or that case, not to enable the patient to do without a pessary, but to enable her to do with a pessary. It is a good method, yet it has its limitations and its ways of failure. And that is true of all the many uses to which these paraffin injections have been put. Still, we have got hold of a most excellent discovery in surgery; but we must select our cases and must not attempt too much, even with the help of this new substance.

THE USE OF TEMPORARY SILK SUTURES FOR THE FIXATION OF MOVABLE KIDNEYS, AND THE RESULT OF THIS METHOD IN TEN CASES.

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[Abstract.]

Methods for fixing movable kidneys are many, but consist in the main of four:

A. Through posterior incision: (1) Simple suturing of (*a*) capsule, (*b*) kidney itself by means of prepared sutures; (2) utilization of living structures—for example, tendon of erector spina (Vulliet) or strips of capsule (Morris); (3) artificial formation of adhesions by means of manipulation, gauze, drainage tube, etc.

B. Through anterior incision. This consists of suturing only.

In selecting a method it is important to remember that (1) the kidney is naturally movable; (2) its substance friable and (3) its capsule sometimes very delicate; (4) no treatment is complete which does not recognize to the full that the subjects of movable kidneys are wasted, or are neurotic, or both.

Of all methods—other things being equal—the simplest is best. None is more effective than silk sutures passed deeply through the kidney substance. The great objection is the frequent suppuration and tedious separation. They are then temporary sutures, but are effectual.

Dr. Harvey Reid advocates sutures of silkworm gut passed through an anterior incision and brought out behind, one above and one below, and removed in fourteen days. Thirty cases recorded, of which all but one were successful.

The method here advocated is the passage of thick silk sutures deeply through the kidney substance, one near the upper, and another near the lower end. They are brought out through a lumbar incision, and kept sufficiently tight by being tied round pledgets of wool or gauze. They are removed in from three weeks to a month. Ten cases: no recurrence of symptoms in any, no abscess, urinary infiltration, general fibrosis, or any other serious drawbacks.

TWO CASES OF LIGHTNING-STROKE.

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On July 17th, 1903, two men belonging to the National Telephone Company were at work on the main road between Llanishen and Whitchurch when a severe thunderstorm with torrential rain came on; they took shelter under a large elm tree close by in a lane leading to a farmhouse. They were seen sitting by a friend of mine in a position shown in Fig. 1 a few seconds before they were struck by lightning. They were brought to the Cardiff Infirmary in an unconscious state, and remained under my care until they were convalescent. One of them was burnt, and had his clothes and boots torn off to the extent shown in the photograph of a dummy dressed in his clothes (it is on view in the Pathological Museum). The other man had no visible injury to his body and clothes, but had fracture of the base of his skull and haemorrhage from the left ear.

Before describing the course and the local physical effect of the lightning, I will confine my remarks to the more purely medical aspect of the cases.



Fig. 1.—Position of men *before* being struck by lightning.



Fig. 2.—Clothes of man marked A struck by lightning.



Fig. 3.—Position of men *after* being struck by lightning. –·–·····–·> Track of lightning.

1. The burnt man (marked A in Fig. 1) had his clothes torn off down the back, and was found practically naked in the lane, lying on his right side, groaning loudly, motionless, and was damming up the rain-water into a pool (marked A in Fig. 3). The lightning entered the body by boring a hole through the brim of his cap (see photograph)



Fig. 4.

and then removed a ½ in. strip of hair from that point vertically to the nape of the neck. The scalp under the removed hair was quite smooth; there was no evidence of singeing or burning, and it looked as if the hair had been gouged out by an exquisitely sharp instrument. On the nape of the neck there was a narrow brownish longitudinal line of discoloration for about 1 in. before the lightning current spread out into the burnt areas shown in the accompanying photographs, taken two days after the accident. The peculiar tints in the photographs are due to the yellowish discoloration of the skin by picrid acid dressings. The burns were mostly of the second and third degrees, and it is worthy of remark that the hollow over the spine escaped injury owing either to the current sparking across the gap or to its being conducted across by the shirt, which at the time was soaking wet. The burns on the ankle and sole of the right foot—the points where the current passed out—were more serious, the skin being irregularly torn, everted, and showing numerous punctiform scorches, suggesting violent egress through innumerable pin-point apertures of intensely hot electrical current. The face, front of the body, scrotum, and penis, one arm and both forearms had no burns (see photographs).

2. The man marked B, who had no burns and no injury to his clothes, is of interest when discussing the cause of haemorrhage from the ears, and also of the purely mechanical action of lightning upon the two men.

The Nature of the Lesions in the Tympanic Membranes.

The man who had superficial burns had slight haemorrhage from both ears. There was no perforation in either ear. The umbo and its immediate surroundings were intensely congested and ecchymotic when first examined six days after the accident. It is very likely that there were minute holes in the tympanic membranes, like the ones that are made by the spark of an induction coil upon a thin sheet of paper when held between the sparking points. The umbo being the most prominent point of the tympanic membrane in the tube of the external meatus, would, according to laws of electricity, be the point to take the intensest action in the condition of electrical currents in entering or leaving the drum; the action of such an electrical current would, I think, explain the condition found in the tympanic membranes. The appearance of the left tympanic membrane in the case that had no external injury showed a rent with coagulated blood near its periphery in the upper half of the tympanum; there was no evidence of injury to the umbo. and as the man had undoubted signs of fracture of the base of his skull through the petrous portion, I am inclined to believe that the fracture was the cause of the injury to the tympanum and not the lightning current.

My friend, Mr. Arthur Cheatle, King's College, London, has kindly given me the following references to

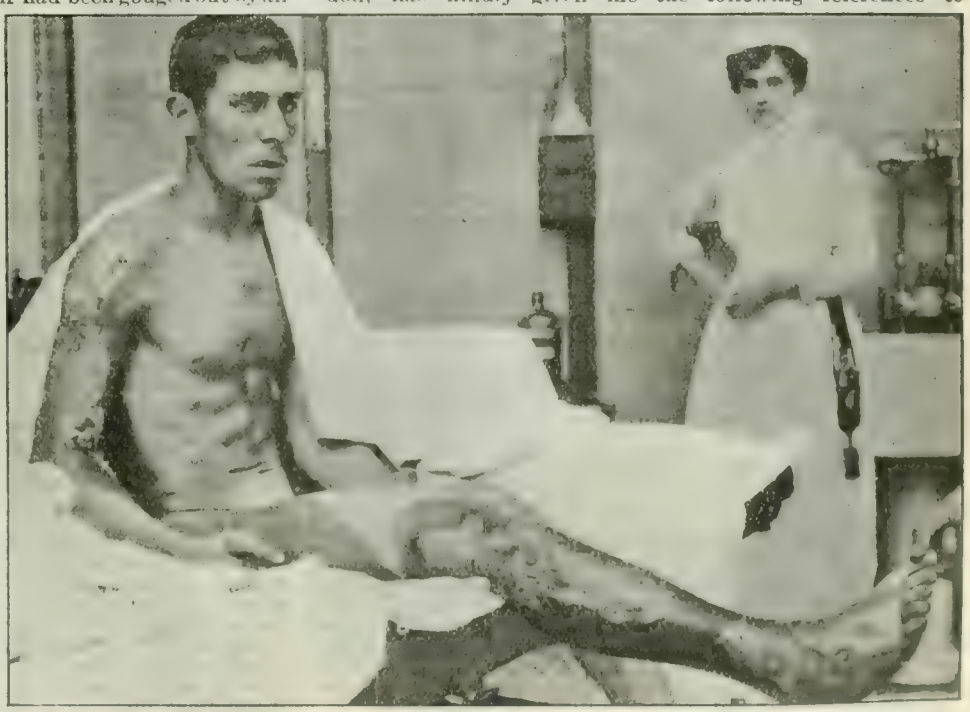


Fig. 5.

injuries of the tympanic membranes due to lightning-stroke: *Transactions of the Otological Society*, vol. iii. H. Macnaughton Jones. On a Case of Double Perforation of the Membrana Tympani, the Result of being

Struck by Lightning. Hinton's *Aural Surgery*, p. 124 (1874).

The relative position of the two men before and after being struck by lightning is of interest (see Figs. 1 and 3), and in order to demonstrate as clearly as possible the course of the track of the lightning I photographed the tree with two men sitting in the position the patients were in when seen a short time before they were struck.

The irregular slopes of the ground round the trunk of the tree at the spot at which they sat lends itself naturally to assuming that the above position is the most natural one under the circumstances.

E E^1 are marks on the tree facing east where part of the lightning escaped by blowing away the bark.

A A^1, the man who was burnt by the lightning entering through his cap and scattering his clothes in different directions, fragments of which were found on the branches at C 11 to 12 ft. away.

B B^1, the man who was not burnt and was subsequently found insensible at B^1 (Fig. 3).

X, bush which contained a bird's nest with young ones, and is in the direct course the man B must have travelled when thrown. Had he struck this bush in his flight the young birds probably would have been thrown out of the nest. They escaped unharmed.

One of the roots of the tree partially stripped of its bark passed obliquely in the interval between the men and partly under the left thigh of the man B to the lane.

On the opposite side of the lane where the lightning went to earth was a hole 2 ft. in diameter about 16 ft. from the men A and B.

The circumference of the tree at E is 8 ft. 6 in.

The lightning struck a branch of the tree near the top on its west aspect, and its track could be followed to the point E, where an exceptionally large piece of bark was blown away; part of the current then pierced the cap of the man A, and travelled down his back and right lower limb, burning the skin the whole way, and finally passing out by tearing the boots and blowing some of the nails away; another part of the current passed along a root of the tree which was situated between the two men, and partly under the left lower limb of the man B. Then the lightning crossed the hard smooth surface of the lane, and went to earth at a point 16 ft. distant by boring a 2 ft. trumpet-shaped hole in the soil. There was no evidence of intense heat in the soil.

The man A was found at A^1, a distance of about 3 ft., a few minutes after the accident, by a farm labourer, who was within 50 yards of the spot. He was motionless, "lying on his right side, nearly stark-naked, and groaning, you could have heard him miles off." He was carried into the farmhouse about 60 yards off, and when they returned to inspect the spot the farmer's wife noticed the boots and legs of the man B over the low hedge at the point B^1. He was "all of a heap, as if dead, with legs up in the air."

The distance from B to B^1 is about 11 ft. Hanging on to branches of the tree at C about 10 ft. above the ground in the same direction and about the same distance as the man B, were fragments of the clothes of the man A.

The mechanical force which shifted the men was an accompaniment of the lightning, and passed between the two men and partially inside the clothes of the man A. The burnt man was shifted at least a yard in a northerly direction, the other one, about whom the evidence is more exact, being hurled at least 11 ft. in an opposite southerly direction, together with the other man's clothes. The probability is that the latter was hurled up into the air and fell in the posture he was found in, lying on his face on sloping ground with his legs flexed at the knee, his feet up in the air and nearest to the spot whence he came. The chances are that he would have thrown the young birds out of the nest in the bush X had he travelled near the ground. The fracture of the skull may be due to either (*a*) a fall on his head — against this view is the fact that the ground he fell on was fairly soft — or (*b*) due to his head striking the trunk or a branch of the tree; (*c*) due to the mechanical force of the lightning itself, this would have to operate either from above on the vertex cranii or from below through the occipital condyles.



Fig. 6.

What the exact nature of the mechanical power which accompanies the electrical current of lightning is, we do not know; but it has been suggested, first, that some of the phenomena can be explained by sudden evolution of steam due to the action of intense heat upon water in the wet clothes; but the beautiful experiment of Sir Wm. Crookes, by which he demonstrated the mechanical power of infinitesimally small electrical currents *in vacuo* makes one ponder what can be the true explanation of the mechanical power of the mighty electrical current of lightning under ordinary atmospheric pressure, and travelling at almost incomprehensible speed. Secondly, a simpler factor in the possible cause of removal of the two men on receiving a powerful electrical shock whilst in a sitting posture is that of muscular action. All the muscles might, upon the receipt of stimulus from lightning current, suddenly contract, with the result that the men would involuntary jump to a considerable distance from the spot where they sat. Against such a view being the right one is the fact that the direction taken by the men in opposite directions would not tally with what one would expect from such muscular action; had the men been found in the lane in front of the spot where they sat, such an explanation would

be tenable, but the fact that fragments of the clothes of the man A were found at C, having been blown in the same direction as the man found at B', points to the generation of a common disruptive force taking place somewhere in the interval between the two men.

Thirdly, local earthquake might possible be evolved by the action of lightning going to earth, and a sudden violent upward movement of the soil in the area between them would under such conditions possibly account for their displacement. This view is negatived by the absence of disturbance of the soil, and also by the absence of fissures or cracks in the surface of the lane, which, as has already been mentioned, was hard and smooth, and would have cracked had there been sufficient uprise of the ground to throw the men to the places where they were found.

Lastly, sudden compression or condensation of the atmosphere at right angles to the direction of the path of the lightning would explain all the circumstances of the conditions found. We know of the existence of such atmospheric waves preceding and also accompanying the flight of bullets in the air, and it is quite reasonable to suggest that mighty waves of enormous potentiality under certain conditions are generated round the path of lightning current, and be strong enough to blow objects in the immediate vicinity of their course to a great distance.

In this particular case such a force would act more forcibly upon the man B than the man A, owing to the existence of a larger volume of air existing between the man B and the electrical current than between it and the man A, with whom it was in almost immediate contact.

I think it is difficult to assume that sudden generation of steam to such a degree as to be able to displace the men could take place without showing scalding effects upon the exposed parts of the head and hands of the two men, and especially in the hollow over the spine of the man A.

A CASE ILLUSTRATING THE OPERATIVE TREATMENT OF PARALYSIS OF THE SERRATUS MAGNUS BY MUSCLE GRAFTING.

By A. H. Tubby, M.S.Lond., F.R.C.S.Eng.,
Surgeon, Westminster Hospital.

I beg to be allowed to present a short account of a case of paralysis of the serratus magnus which has been treated successfully by an original method. This deformity is sometimes bilateral, but more often unilateral. It arises from a variety of causes which it is not needful here to enumerate. In the



Fig. 1.—Before operation. Scapula alata, paralysis of left serratus magnus.

case I am about to quote the origin of the trouble was probably infantile paralysis. The notes of the case are as follows:

W. E., aged 7 years, came under my observation at the Westminster Hospital on July 19th, 1903. The left scapula



Fig. 2.—Left scapula alata. Paralysis of serratus magnus. Before operation.



Fig. 3.—Showing line of scar after operation.

stood out from the body, giving the appearance of scapula alata. On abducting the arm to the horizontal position the scapula was nearer to the vertebral column than on the sound



Fig. 4.—After operation. Showing the result of grafting part of the pectoralis major with paralysed serratus magnus. The inferior part of the left scapula is well applied to the ribs.



Fig. 5.—After operation of grafting. The patient is able to thrust the arm forward. This shows that the power is restored to the serratus magnus.

side, and the posterior border stood out so much from the chest that the fingers could be inserted beneath it so as to grasp at least the lower third of the bone. When the left arm was put forward horizontally in front of the chest, the posterior edge of the scapula receded from the thorax, making a deep groove at this part. Elevation of the arm above the shoulder was much weakened, and there was considerable diminution in the length of the reach of the left arm (Figs. 1 and 2). The external thoracic nerve and the muscle itself, on being electrically tested, gave the reaction of degeneration.

It appeared to be hopeless to expect any improvement by the usual methods of massage, faradism, and galvanism, so I determined to see if it were not possible to transfer power from a healthy muscle. After a little reflection it occurred to me that, by utilizing a portion of the pectoralis major, the desired effect would be accomplished. An incision 6 in. in length was made, following the anterior border of the axilla. A flap of skin and subcutaneous tissue was then turned down, and by dissection and the free use of retractors a large part of the sternal portion of the pectoralis major was exposed. Its attachment into the humerus was then freed, and the muscular fibres of this portion separated from the surrounding tissues for a considerable distance. The next stage was to define the serratus magnus. This was found pale and atrophied. The object now to be achieved was to insert the cut end of the pectoralis major into as much of the width of the serratus magnus as possible, and this was done by dividing the cut end of the pectoralis into several fasciculi, then, drawing the paralysed serratus well forward, the fasciculi of the pectoralis were firmly stitched with silk to the serratus magnus over an area corresponding to four or five of the digitations of the latter. The arm was then put up in a sling with the elbow to the side and carried forward. The wound healed quite well, and after six weeks the following results were noted (Fig. 3). As the child stood there was no perceptible difference in the prominence of the inferior angles of the two scapulae. Further, the child could abduct the extended arm well above the horizontal position, and had acquired, also, the power of thrusting the arm forward as in fencing (Figs. 4 and 5). She has been seen at intervals since the operation, and the improvement has been fully maintained, while there is no loss of power in bringing the arm across the chest resulting from diversion of part of the fibres of the pectoralis major. This is a solitary case in which this treatment has been tried, but I venture to bring it to your notice with the hope that some of you may give it a trial and report the results.

CANCER FACTS AND CANCER FALLACIES: A PLEA FOR THE MORE SCIENTIFIC STUDY AND TREATMENT OF MALIGNANT DISEASES.

By HERBERT SNOW, M.D.Lond., etc.,
Senior Surgeon, Cancer Hospital.

[ABSTRACT.]

DR. SNOW drew attention to the rapidly-increasing cancer mortality in every part of the civilized world. He thought that by a proper exercise of its functions the Association might largely reduce this mortality by placing the facts already known respecting the origin and phenomena of cancer on a truly scientific basis, and advocated the formation of an Association Cancer Committee, whose duty should be to tabulate these and to put forward a precise nosology and classification of the numerous maladies now vaguely passing as "cancer." The present research schemes were greatly hampered by the want of such a preliminary measure, and could hardly be expected to succeed without it.

In England and Wales the ratio of registered cancer deaths to each million of living persons had progressively increased from 385 in 1864 to 461 in 1874,563 in 1884, and 713 in 1894. In 1901 "among males cancer was fatal at the crude rate of 691 per million, and among females at the rate of 985 per million."[1]

Statistics indicating the same phenomenon were cited from Scotland, Ireland, New York State, Connecticut, Massachusetts, Rhode Island, New Hampshire, Austria, Bavaria, Holland, Italy, Norway, Prussia, Amsterdam, Boston, Breslau, Brussels, San Francisco, Stuttgart, Vienna, St. Petersburg.

The word "cancer" was no less vague than "fever." It included ten genera, and a large number of species. The causes of each differed widely, as did the phenomena. The gross causation of each was well ascertained (Table appended);

[1] Registrar-General's Report, p. 59.

CAUSATION TABLE OF THE VARIOUS FORMS OF "CANCER."

No.	Disease.	Tissue-origin.	Ordinary Cause.
		I. *Non-congenital Cancer.*	
1	Epithelioma	Epithelium of the mucous membranes; epidermis	Always continued mechanical friction, commonly preceded by congestion, alcoholic or otherwise.
2	Carcinoma	Cells of acinar secreting glands, such as the mamma	In the mamma, any condition perverting or hindering the devolution of the organ after its period of functional activity. Several lesions may thus arise, carcinoma being only one of these. The invariable antecedents are trouble, anxiety, exhausting toil, prolonged illness, etc.; 11.5 per cent. of the cases are attributed to sudden violence, a blow or fall.
3	Sarcoma	The spindle-shaped cells of the connective tissues	Always of traumatic origin, the injury being usually single and sudden.
4	Cylindroma	The cells of tubular gland follicles in the alimentary canal	Chronic passive congestion precedes. Anxiety and distress of mind appear to excite.
5	Lymphocarcinoma	Cells of the lymph glands; also of the marrow, tonsils, and other lymphoid tissues	Muscular strain, inducing congestion. Mechanical injury. See table of 24 cases in *Cancers and the Cancer Process.*
6	Rodent ulcer	Cells of the short hair follicles, chiefly those of the outer root sheath	Continued friction.
7	Myosarcoma	Nuclei of organic muscle fibre	Usually a sequel of long-standing uterine myomata, but there is a primary form described by Lawson Tait as "soft oedematous myoma."
8	Glioma (rare)	The neuroglia. The nerve corpuscles (Virchow)	Most of the so-called gliomata appear to be derived from embryonic residua, but others spring from the neuroglia and are true sarcomata due to injury.
9	Endothelioma (an obscure and doubtful form)	Supposed to arise from endothelium	Unknown.
		II. *Congenital Cancer, complying with Cohnheim's Theory.*	
10	Blastoma	Embryonic residua, or vestiges	Apparently of spontaneous development.

Minor varieties or *species* of the preceding *genera*: Scirrhus (chronic mammary carcinoma), encephaloid (acute mammary carcinoma) colloid carcinoma, intracystic carcinoma (duct cancer), alveolar sarcoma, melanotic sarcoma, melanotic epithelioma, osteoid sarcoma, myxoma, chloroma, intracystic sarcoma, with several others of doubtful authenticity.

but statistical returns by confounding all together under one heading rendered the subject obscure. For example, epithelioma, the special "cancer" of the male sex, was always generated by direct mechanical friction; whereas carcinoma, that of the female, followed neurotic causes, perverting the natural devolution of glandular organs to their final resting-stage, after the close of their functional activity. Moreover, the infective nuclei or particles of protoplasm emitted by the former were permanently retained by the adjoining lymph-glands; those of the latter only temporarily so. Thus a highly important distinction, passed over by the prevailing nomenclature. In both instances the lymph-glands destroyed the cancer protoplasm up to a certain point. In a third variety—true sarcoma—they did so permanently. On the investigation of these distinctions, the question of a possible cure probably hinged; but at present the importance of the phenomenon seemed to pass unrecognized.

Of many current fallacies, heredity had long been shown by the exhaustive examination of numerous cases not to be a *vera causa* of ordinary cancer. Each separate case had its definite excitant, whether there was a history of "cancer in the family" or not. Malignant disease had been proved to bear no relation to soil, climate, or food.* The researches of Haviland had been tested by reference to the towns which he asserted to be specially liable because situated on rivers liable to inundation. The fact could not be substantiated, and any apparent prominence in the mortality returns had been found due to the presence of a large infirmary attracting patients from adjoining counties—as at Shrewsbury, for example.

The "constitutional origin" of cancer and the supposed necessity of its recurrence after operative removal were venerable fallacies dispelled by ascertainment that the bone marrow holds mammary cancer latent for five or six years.

* Alcohol, as causing chronic congestion of the mucous membranes, is the sole exception.

Within a certain margin of time prior to the establishment of marrow infection the disease can be removed radically by operation, but subsequently "recurrence" is inevitable.

REMARKS ON THE VALUE OF GASTRO-JEJUNOSTOMY AND JEJUNO-JEJUNOSTOMY IN CASES OF CHRONIC GASTRIC ULCER,

WITH AND WITHOUT ADHESIONS AND WITH AND WITHOUT DILATATION OF THE STOMACH.

By T. GELSTON ATKINS, B.A., M.D., M.Ch.

I WISH shortly to bring before the Section the results I have obtained in the surgical treatment of chronic gastric ulcer, with and without adhesions and with and without dilatation of the stomach, by treating these cases by the combined operation of gastro-jejunostomy and jejuno-jejunostomy.

I think we may take it as a fact that the class of cases I allude to are not amenable to any form of medical treatment with which we are at present acquainted, and, therefore, it is to surgery we have to look for help if such cases are to be cured at all. I am afraid, until within the last four or five years, none of us truly appreciated the very grave disease that gastric ulcer really is—none of us truly appreciated the various pathological conditions that it is capable of giving rise to; but now that we know the results produced by (1) rupture of the ulcer, either into the greater or lesser peritoneal sacs; and (2) the results produced by the cicatrization of the ulcer, and also the adhesions (produced by perigastritis) of the stomach to the other adjacent abdominal organs—as the liver, gall bladder, pancreas, colon, spleen—we are in a position to affirm that it is only by surgical measures that such conditions can be cured.

And I would here very earnestly appeal to our purely medical brethren to send on their cases to be dealt with by surgical means when once they have found that a properly-conducted course of medical treatment—such as rest, milk diet, morphine, etc.—has failed to give relief, for surgery cannot be expected to cure such cases when there is such a condition of pathological havoc produced as when the stomach is bound down by adhesions that it is neither possible nor safe to separate. These adhesions absolutely cripple the movements of the stomach, and the onward passage of the food towards the pylorus is either in whole or in part prevented, pyloric stenosis—due either to cicatricial contraction or pyloric spasm—is produced, and, as a secondary result, dilatation of the stomach.

It is not my purpose this morning in this short communication to either classify these cases, or to detail to you their various symptoms, nor the various methods now in use in diagnosticating them. These I hope to elaborate in a future communication.

Granted, then, that these cases must be treated by operation, my object in this communication is to bring before you the operation that, *with my present experience*, has yielded me the best results, and to elicit from the members their experiences in similar cases. For it is only by such interchange of our opinions and experience that we can hope to arrive at such conclusions as will be of practical value to us in our dealings with such cases.

The various operations that have been suggested for the relief or cure of such cases are:

1. Anterior and posterior gastro-enterostomy.
2. Kocher's operation, or inferior anticolic gastro-enterostomy.
3. Roux's operation, or gastro-enterostomy in Y shape, the implantation being either retro or antro colic.

Of these, the operation that I selected in my first few cases was the retro or posterior gastro-enterostomy of Von Hacker, not taking into consideration one most successful case where the anastomosis was made by means of a Murphy's button.

The first case was a simple case of chronic gastric ulcer, and as the patient very nearly died, I will shortly give details of the case, for there are many lessons to be learned from it.

H. K., aged 37, servant, had suffered from gastric ulcer for two years, during which time she was three times in hospital, and was treated by one of my medical colleagues, each time getting apparently well before she left hospital. She was now readmitted under my care on March 30th, 1904, with all the classical symptoms of gastric ulcer. She was extremely tender at a point midway between the umbilicus and ensiform cartilage.

TABLE I. *Cases of Gastric Ulcer and Dilatation.*

No.	Name and Date.	Sex.	Age.	Symptoms and Description.	Conditions Found: Operation.	Result.	Remarks.
1	A. J., July, 1901	M.	71	Ailing for 9 years, constant epigastric distress and distension, irregular vomiting of large quantities of decomposed food, contents of stomach putrid on withdrawing, HCl present	Largely dilated stomach, partial pyloric stenosis, whitish patches, remains of healed ulcer in anterior wall near pylorus; gastro-enterostomy, Murphy button	Cured	
2	C. H., Sept., 1901	M.		Had severe influenza, and complained of great stomach distress after food, great depression, constipation, insomnia	Stomach splash well marked, treated by dry diet, lavament of stomach, etc.	Not relieved	Convalescence slow; seen in September, 1903; was then quite well.
3	Miss D., Oct., 1901	F.	34	Ailing for several years, well marked gastric dilatation and gastrophysis, apparently due to large movable right kidney, very severe vomiting for months	Right kidney fixed, duodenum adherent to peritoneum over renal vessels	Cured	This case was peculiar; the severe vomiting was at once cured by the fixation of kidney, and ultimately all stomach symptoms ceased; she is now in perfect health.
4	D. O'L., Jan. 30, 1903	M.	37	Complaining for several years of symptoms of indigestion; was accustomed to eat largely of potatoes; for past 12 months has severe pain, which is getting much "more severe" for several weeks past 1½ to 2 hours after food, relieved by vomiting. Occasional attacks of vomiting of large quantities of "sour stuff"; haematemesis on two occasions, the last three weeks ago	Largely dilated stomach; ulcer at pylorus, which was a good deal contracted; gastro-jejunostomy	Cured	Vomited occasionally during convalescence; went home in five weeks; eating simple foods; weight, 5 lb. increased.
5	E. D., Feb. 5, 1903	M.	21	Ailing for 9 years, with constant distress after eating, lasting hours at a time; attacks of acute stomach distension causing great distress and cardiac disturbances and depression, insomnia, constant constipation; about 1 month before coming under treatment he had an attack of haematemesis, great loss of flesh, and languor	Gastro enterostomy; atonic dilated stomach; cicatrix of ulcer near pylorus, about ½ in. below lesser curvature; no adhesions	Cured	Every form of treatment was tried for 3 years without any benefit; now reports himself as a changed being; no stomach distress, depression gradually passing off, also insomnia and constipation; weight increased. Dr. Benson, Dublin, who saw case before operation, reports he could hardly conceive any surgical proceeding could make such a change in such a short time.
6	J. P., March 3, 1903	M.	54	Complaining for 20 years or more of chronic dyspepsia great distress for several hours after meals and constant belching off of very fetid gas; obstinate constipation; loss of flesh; weight 120 lb.; great depression and irregular sleep	Dilated stomach, several white patches on anterior wall of stomach; no adhesions; condition: atonic dilatation posterior gastro jejunostomy	Cured	On third day after operation had some regurgitant vomiting, which ceased when patient was put in upright posture. April 15, 1904. Says he feels better than he did for 40 years.
7	W. S., Feb. 1, 1904	M.	27	Complaining for 6 years of fullness and soreness 1 hour after meals; did not vomit; for past 12 months this distress is so great that he can hardly continue at his business; he has lost flesh, weight only about 1 year ago 117 lb., now only 104 lb.	Hourglass stomach, the pyloric pouch being small, and a large opening between that and the cardiac pouch; between the pouches was a V-shaped cicatrix the base of the V being downward; it was very hard and of a pure white colour; the jejunum was adherent for 7 or 8 in. to the under surface of the gastro-colic omentum, and the pylorus and duodenum were adherent to the gastro-hepatic omentum	Cured	Uneventful recovery, lost all symptoms; states he feels as if he had a new stomach; weight 114 lb., and is stronger than he has been for 18 months past.
8	J. C., March 2, 1904	M.	29	For 10 years past suffered from severe attacks of dyspepsia, due at first to irregular meals; for 4 years past great loss of appetite and heaviness after meals; no actual pain, great tendency to vomit in early mornings; has been very nervous, never remembers sleeping more than 1 hour at a time; awakened by stomach distress; now finds it impossible to continue at business, his distress is so great; all kinds of treatment have been tried by many different physicians with nothing but some slight temporary benefit; weight 139 lb., usual weight 1½ years ago 151 lb.; stomach extends to within 2 in. of symphysis pubis, under CO_2 gas	There were considerable adhesions of the pylorus to the gastro hepatic omentum, producing a kinking of the pylorus, which evidently narrowed its lumen; a cone-shaped ulcer, very hard and white, was found 2 in. from pylorus, near the lesser curvature; the posterior gastric surface was adherent to the gastro colic omentum; posterior gastro-jejunostomy, rapid recovery	Cured	Rapid and uninterrupted recovery; no vomiting after operation; is now free of all symptoms; sleeps soundly the night through and feels an entirely different person; in 6 weeks he has increased 8 lb. in weight.
9	H. M., Jan. 12, 1904	F.	27	Three and a half years ago ailed with severe menorrhagia and metrorrhagia. At Christmas, 1902, had pain after eating, which became much worse in March, 1903. In April, 1903, she noticed she always had pain 2 hours after eating, shooting under left breast, and in about 10 minutes after the onset of pain she used to vomit, and this would repeat itself 3 or 4 times. Towards end of April she had a severe attack of haematemesis, which recurred in 2 days, the vomit being very black. Under treatment she got relief, but in October the pain and vomiting recurred, and she had severe haematemesis early in December. She is emaciated and very anaemic. Weight 115 lb.; usual weight 176 lb. to 130 lb.	There was a hard indurated oval patch, about 1 in. long and ½ in. broad, situated in the centre of the anterior wall of the stomach; there were numerous adhesions about the pylorus and posterior wall of stomach	Cured	Kindly sent by Dr. Kelleher (Macroom) labelled "gastric ulcer"; rapid convalescence; eating fish and bread on fifth day after operation without the least discomfort. Was only able to take small quantities of peptonized milk for 4 months before operation. Left hospital 26 days after operation. At end of February she had vomiting of large quantities of yellowish fluid at night for about a week. Is now (April 26th) perfectly well; weight, 122 lb.
10	K. H., March, 1904	F.	37	Had several attacks of gastric ulcer, for which she was medically treated, etc. Vide Case 1 in paper	Vide Case 1 in paper. Operation, gastro-jejunostomy and secondary jejuno-jejunostomy 9 days after	Cured	September 1, 1904.—Is now quite free of all symptoms, is much stronger, anaemia gone; weight, 9 lb. increase.
11	B. O. N., April 16, 1904	F.	26	Ailing symptoms, gastric ulcer for 8 years; pain at first 10 minutes after food, vomiting, relief; several attacks. Haematemesis, bright-red blood; four attacks, in last haematemesis, severe pain 1½ to 2 hours after food	Gall bladder adherent to pylorus, and adjoining parts of stomach; considerable posterior adhesions, jejunum adherent to under surface, gastro-colic omentum. Operation, posterior gastro-jejunostomy and jejuno-jejunostomy	Cured	No symptoms after operation, convalescence smooth. September 2nd, 1904.—Seen to-day, is now quite well, lost all pain after eating; weight increased 9 lb.

12	J. R., April 19, 1904	M.	12	Ailing since childhood with gastric symptoms, chief of which was irregular vomiting; pain after food, at various times; great emaciation, intense neurasthenic symptoms, lassitude, headache, impossible to learn his lessons	Stenosis of pylorus and greatly dilated stomach; most probably this was a case of congenital stenosis of pylorus; gastro-jejunostomy and jejuno-jejunostomy	Cured	All gastric symptoms gone; can eat plain food without pain or discomfort; neurasthenic symptoms gradually disappearing; weight increased 11 lb.
13	W. M., May 10, 1904	M.	25	Ailing with symptoms of chronic indigestion for 1½ year. Treated in several hospitals; relieved for a time. On admission complained of continuous left epigastric pain; pain 1½ to 2 hours after food, relieved by vomiting. Has had one attack of haematemesis, which was not severe; blood bright red, about 3 oz.	Adhesion of pylorus to gall bladder, cicatrices of two ulcers, one on anterior wall, 1 in. below pylorus in greater curvature, the other on a corresponding situation in posterior wall. Gastro-jejunostomy and jejuno-jejunostomy	Relieved	He is free of all digestive symptoms, but still complains a good deal of the epigastric pain. This is the only case of the series that is *not cured*. Sept. 24, 1904.—The epigastric pain has nearly ceased.
14	J. M., May 10, 1904	M.	25	Complained for 5 or 6 years of severe epigastric pains, especially worse on any movement of the body, pain 3 hours after food relieved by vomiting, which occurs irregularly; never had haemorrhage, considerable emaciation, and loss of strength; unable to work. Case 11 in paper.	Vide Case 11 in paper. Gastro-jejunostomy and jejuno-jejunostomy	Cured	This was the worst gastric case I ever operated on. The stomach was literally dug out of a bed of adhesions, and yet, after the double operation, he never even vomited once. August 29, 1904.—Seen to day; is much stronger, no pain after food; had some diarrhoea; weight, 8 lb. increase.
15	M. I., May 18, 1904	M.	37	Ailing with symptoms of chronic indigestion for 7 or 8 years; pain after meals at various intervals of time; occasional vomiting large quantities of food; 1 attack of moderate haematemesis 3 weeks ago (and this is the reason for his seeking treatment); considerable emaciation. Height, 5 ft. 11 in., and weight, 8 st. 10 lb.	Adhesion of gall bladder to pylorus; adhesions of omentum and colon to stomach; cicatrix of ulcer 2 in. from pylorus on greater curvature; similar cicatrix on posterior wall; moderate dilatation; gastro-jejunostomy and jejuno-jejunostomy	Cured	Rapid and smooth convalescence; left hospital in 26 days; has since complained of some uneasiness after food, and had a severe attack of haemorrhoids September 6. His uneasiness after food has passed away. Weight, 9 st. 8 lb. Operated upon for haemorrhoids to-day Sept. 24.—Is now well.
16	L. C., June 2, 1904	F.	34	Has been 16 years in America; had uterine troubles—chronic endometritis and retroflexion for years; 3 years ago began to complain of pain after meals and used to get very hungry in 1 hour after eating a full meal, and since has complained of chronic indigestion and flatulence; never vomited blood; under dilatation with CO_2 gas stomach descends to symphysis; has lost flesh	Considerable gastric dilatation; narrowing and thickening of pylorus; cicatrix of ulcer 1 in. below pylorus in anterior wall; no adhesions; gastro-jejunostomy and jejuno-jejunostomy	Cured	Rapid and smooth convalescence; left the home in 27 days, eating simple foods without any discomfort, and put on 4 lb. weight.
17	K. F. June 21, 1904	F.	29	Has a rheumatic history since age of 16; since age of 18 has had a "delicate stomach"; has had numerous attacks of haematemesis, but never in large quantity. Last attack 14 days ago. Lost all her teeth at age of 19, and this affected her mastication. Appetite bad. Bowels constipated. Considerable pain varying from ½ to 1½ hours after food, which she felt very much in middle of her back; vomiting always relieved this pain; complains of constant pain to left of umbilicus and in left iliac region. She is very tender in region of right costo-sternal angle, and lower limit of stomach extends to level of umbilicus; exercise increased her pains, and she has a right movable kidney.	Lesser curvature adherent to abdominal wall by slender fibrous bands. Very dense adhesions of gall bladder to pylorus. Broad band of adhesion from under surface of liver to middle of anterior surface of stomach. Puckered cicatrix in pylorus, causing considerable narrowing of its lumen; cicatrix very white in both anterior and posterior walls, 1½ in. from pylorus; stomach dilated to level of umbilicus; gastro-jejunostomy and jejuno-jejunostomy	Cured	Rapid, smooth convalescence. Left hospital within the month, eating ordinary plain food without discomfort. Sept. 1, 1904.—Seen to-day; feels better than for years; vomited once since; weight increased by 6 lb.
18	B. O. K., July 2, 1904.	F.	50	Healthy up to 4 years ago, when she complained of pain after eating. During Aug., 1903, she complained of burning sensations in her stomach, vomiting mouthfuls of a watery acrid fluid; in Nov., 1903, she had chronic symptoms of gastric ulcer, was successfully treated in hospital by Dr. P. T. O'Sullivan for them, readmitted, now complains of constant epigastric pain, more severe towards 9th and 10th costal cartilage on left side, over which she is tender, also tender over gall bladder; has severe neurasthenic symptoms.	Gall bladder densely adherent to pylorus and adjacent part of greater curvature, gastro colic omentum unusually thick, and contained many very dilated veins; it was densely adherent to posterior wall of stomach; in breaking through some veins were torn, which caused troublesome haemorrhage; cicatrix of ulcer in posterior wall, gasto-jejunostomy, and jejuno-jejunostomy	Cured as regards gastric symptoms	Made an excellent convalescence, but not so smooth as some of the other cases; complains still of her neurasthenic symptoms, but in a lesser degree.
19	H. Q., July 9, 1904	F.	23	From puberty she ailed with menstrual irregularities. These are now all right; 3 or 4 months ago patient complained of pain in "centre of her stomach" pain after food, much increased if she lay on her back, never vomited food or blood; after a dose of calomel she vomited bright green bile; her case is characterized by an absence of symptoms, save pain after eating.	Liver adherent to diaphragm, gastro-hepatic omentum was a mass of adhesions, so that none of its anatomical constituents could be seen. There was no apparent separation of stomach from colon. Jejunum adherent to gastro-colic omentum and to other coils of itself. Liver directly adherent to stomach. On separating adhesions gall bladder was found distended with gall stones (26). Bleeding from deep adhesions, severe (checked with adrenalin chlor. sol.). On breaking through gastro-colic omentum, only a very small portion of stomach—which was very constricted—could be drawn through, so the gastro-jejunostomy was done by simple suture without clamps; there was a U-shaped cicatrix in posterior wall and a puckered cicatrix, surrounding the pylorus. Gastro-jejunostomy and jejuno-jejunostomy, and then cholecystotomy. Gall bladder drained for five days	Cured	The interesting feature of this case is the grave pathological conditions found and so few symptoms. She left hospital quite well on the 29th day after the operation.
20	A. S., July 13, 1904	F	20	Since age of 14, has been complaining of her stomach. June, 1903, had pain 1½ hour after eating and haematemesis; had several similar attacks since; has great tenderness over middle of epigastrium. Weight, 120 lb.; is too weak for an operation for a while	Operation a week after admission; gastro-jejunostomy and jejuno-jejunostomy, stomach slightly dilated, pylorus thickened, but peritoneal coat moved freely on deeper coats; the thickening was annular; the anterior wall of stomach was very white; gastro-colic omentum densely adherent to posterior wall of stomach in neighbourhood of pylorus; dense thick cicatrix in posterior wall	Cured	Recovery complete. Left hospital, August 23rd, free of all pain, and eating simple foods without distress or pain. Weight, 126 lb., being an increase of 6 lb. September 7th, 1904.—Seen to-day; weight, 130 lb.; fat and ruddy in appearance; eating all kinds of food without distress or pain.

Operation.—Posterior gastro-jejunostomy was performed on April 5th (Fig. 1), when the pylorus was found to be very hard

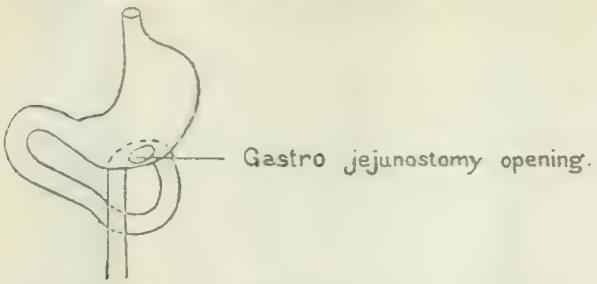


Fig. 1.

and thick, being considerably puckered by cicatricial contraction of an old ulcer; an ulcer was also noted in the posterior surface of the stomach, extending from the pylorus in the direction of the greater curvature. The gastro-colic omentum was densely adherent to the stomach in the region of this ulcer. A very oblique opening was made in the stomach in the direction from the greater curvature upwards towards the cardiac orifice. When the operation was complete I was perfectly satisfied with the position of the anastomosis. The abdomen was closed in three layers, which is my usual method. For the first four days after the operation she made a perfectly smooth convalescence; in fact, so smooth was her recovery so far, that she frequently stated she was unconscious she ever had an operation performed on her. Up to this she had had milk and a little bread without the least discomfort. There was not even any sickness due to the anaesthetic. On the evening of the fifth day, after a small dose of calomel, she vomited slightly, and this increased until she vomited frequently, bringing up from ½ pint to 2 pints of dark-green bile mixed with very ropy mucus. This vomiting used to subside for twelve or fifteen hours at a time, and then commence again. It was evident that a "vicious circle" had been set up, and, as no form of treatment had done her any good, I determined on the evening of April 16th—that is, nine days after the original operation—to reopen her abdomen. She had put up, in all, about 18 pints of bile and mucus in the nine days.

On reopening the abdomen I found the following condition of the parts: The stomach was dragged so by adhesions that the anastomotic opening pointed downward and to the left, instead of upward and to the left, as I had left it. The portion of the jejunum between the ligament of Treitz and the anastomosis to the stomach was dilated as large as an ordinary transverse colon; it was deeply congested, and it felt very thick. I thereupon jointed by a lateral anastomosis the proximal and distal loops of the jejunum (Fig. 2) by a double row of continuous sutures and rapidly

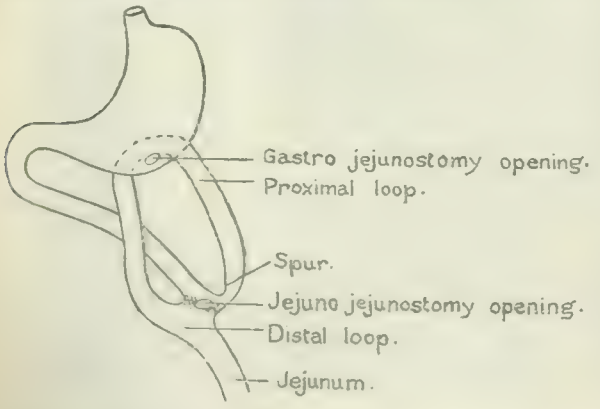


Fig. 2.

got the patient back to bed, for she was very weak, requiring several submammary saline injections. Subsequent to that operation she never even once vomited, and in twelve hours her condition had changed from an apparently dying woman to an almost convalescent patient. I do not ever remember having seen such a striking and rapid change in a patient's condition from any operative proceedings. Her further history was one of rapid convalescence. She left hospital twenty-three days after the jejuno-jejunostomy, eating freely of bread, eggs, fish, meat, and light puddings.

July 18th.—Patent seen to-day. She had one severe attack of vomiting a week after leaving hospital, but she has since been quite well and is in better health than she has been for years, her weight having increased 11 lb.

Now, gentlemen, in this case there was clearly a vicious circle set up—the most dangerous and deadly complication of gastro-jejunostomy. Mikulicz lost seven cases out of seventy-four operations from this regurgitant vomiting.

Now, the anatomical condition found at the second operation showed clearly that the *mal*position of the anastomosing loop was the cause of the vicious circle and the resulting regurgitant vomiting. This anastomosis I had satisfied myself was correctly placed in the original operation, but it was clearly displaced and put into the malposition by the formation of adhesions, and over this condition of things we have no control when once our operation is completed. The inference, I think, to be drawn from this is that it is unsafe to trust to a simple gastro-jejunostomy even in a simple case, as at any time adhesions may form, and so displace the anastomotic opening, causing the distal opening to assume a higher level than the proximal, and hence produce the anatomical condition of parts that enables a regurgitation of bile and pancreatic fluid to take place into the stomach. As a result, then, of my experience in this case, I determined in my next to supplement the gastro-jejunostomy with a jejuno-jejunostomy.

On April 19th I operated on a case of chronic gastric ulcer with all the symptoms of pyloric stenosis and a very largely-dilated stomach. The conditions found, on opening the abdomen, were omentum turned up over colon, and adherent to the anterior wall of the stomach, and then reflected on to the anterior abdominal wall, to which it was densely adherent. On separating these extensive adhesions the gall bladder was found adherent to the pylorus and greater curvature. There was a large inflammatory mass round the pylorus, as large as a moderate-sized orange, but this was not stony hard, nor was it bossed. There were numerous bands of adhesions connecting this swelling to the anterior abdominal wall. On invaginating the stomach the tip of the little finger could not enter the pylorus, the gastro-colic omentum was universally adherent to the posterior wall of the stomach, and on separating it with scissors a stellate cicatrix was found in the centre of the posterior wall, each limb of the cicatrix being about 1 in. long and as thick as a lead pencil. This cicatrix was pure white in colour, and very fibrous and hard. The stomach was dilated as low down as the symphysis pubis.

There was no difficulty in selecting a sight for the anastomosis, on account of the dilatation, and when this was completed, a jejuno-jejunostomy was done, as in the first case. This patient rapidly convalesced, never having been once sick, and left the hospital in a month feeling well and rapidly putting on flesh. This was the most complicated gastric operation I have yet performed, on account of the number and density of the adhesions. The results in these two cases, to my mind, establish the value of the jejuno-jejunostomy in addition to the gastro-jejunostomy. I have now carried out this double operation in sixteen cases, the details of which I will not weary you with to-day, and in not one of these has there been the least sign of regurgitant vomiting: in fact I know of no class of abdominal operation in which the recoveries have been so smooth and rapid, and so free from any symptoms. I now give these cases milk and water in small quantities in twenty-four hours after operation, and usually they eat simple foods on the fourth or fifth day.

I believe this operation is as efficient as the classical operation in Y of Roux, or its modification by Doyen, which has been described by Lücke as the best form of any method yet suggested, and it certainly is much simpler of performance, and I am sure is attended with much less shock—a not unimportant point in such cases.

There is one practical point I would wish to draw attention to, and that is that the jejuno-jejunal opening should be placed in the lowest possible part of the proximal jejunal loop and a spur formed (vide Fig. 2), so that, in the onward passage of the bile and pancreatic fluid, they must pass on into the distal loop, without any possibility of their entering the ascending portion of the proximal loop and so gaining an entrance to the stomach. I believe the posterior operation to be better and safer than the anterior one, and is the operation of election, and should always be performed, except when such strong adhesions prevent us getting an opening through the posterior gastro-colic omentum.

Results.

I have now to direct your attention to the benefits gained by the 20 cases I have operated on for chronic gastric ulcer and dilatation. So far I have not had a death. This is solely due to the fact that in the case I have detailed to you, and which was apparently dying, a judicious j-juno-j-junal anastomosis saved her life, and I feel sure if this operation is more frequently performed we shall hear less of vicious circle and regurgitant vomiting, which are the chief causes of death after gastro-jejunostomy.

I can truly say all the cases have been greatly benefited; 15 are absolutely free of all their old symptoms; 4 complain more or less of dyspeptic troubles, but much less than before operation, and one of the four complains still of pain after food; one patient stated that he was in better health than he had been for forty years. On being asked the question, If you knew beforehand the condition you would have been in immediately after the operation and the benefit derived from it since, would you undergo the operation again? all but one answered they willingly would. One case—my last—has been operated on too recently to include in these results.

(N.B.—Since writing the above this case can also be recorded as a complete cure.)

SECTION OF OBSTETRICS AND GYNAECOLOGY.

Francis Henry Champneys, M.D., F.R.C.P., President.

TWO CASES OF URETHRO-VAGINAL FISTULA TREATED BY OPERATION.

By Frederick J. McCann, M.D.Edin., F.R.C.S.Eng., M.R.C.P.Lond.,

Physician to In-Patients, Samaritan Free Hospital for Women, London.

Although the literature of vesico-vaginal fistula is so extensive, little mention is made of cases where the urethra is involved. Indeed, I have failed to find any recent cases described, and as the older references relate to a time when surgical technique was not so highly evolved, I shall content myself by referring to a paper already published by me in the British Medical Journal for May 7th, 1902, wherein will be found a short list of the principal contributions to the surgical treatment of vesico-vaginal fistula.

The improvement in obstetric knowledge and the earlier application of forceps in delayed labour have led to a marked diminution in the number of fistula cases. Doubtless many are not recorded because they are regarded by the medical attendant as evidence of lack of skill.

The extensive injury and sloughing resulting in the first case here described is an important object lesson, not only in the necessity for early application of forceps but also in the necessity for treating retention of urine after confinement.

The history of the first case has been kindly furnished to me by the doctor who attended the patient, and I shall give it in his own words.

Case I.

History given by her Medical Attendant.—A young woman aged 30 years, primipara. Labour commenced in the early morning of November 30th, 1902. When first seen at 11 a.m., pains were regular, but the os only admitted the finger. In the evening little progress had been made, although the pains continued throughout the day.

Early on December 1st the os was found to be nearly fully dilated. The position appeared to be the third vertex, but the large caput succedaneum rather interfered with diagnosis. The pains were strong but soon became weaker. Two hours later the os was fully dilated, but no descent or rotation of the head had occurred. In another hour, although the pains were fairly strong, no progress had been made. Patient was nervous, and could not put up with anything being done without an anaesthetic. As it was then about 7 a.m. there was some delay in obtaining the services of an anaesthetist, but soon after 8 a.m. chloroform was administered. An attempt was made to rotate the head, but this failing, forceps were applied, and after very great difficulty the head was delivered. The patient was under chloroform for one hour. No rotation had been effected, even with the forceps, although they had been several times reapplied. There was a rupture of the perineum which was sutured with chromic catgut. The placenta was expressed without difficulty and the uterus contracted well. An injection of ergotin was given before recovery from the anaesthetic. The patient was seen later in the day; she had not passed urine. The nurse was directed to foment the vulva with hot water.

Next morning, December 2nd, she had not passed urine. A catheter was therefore employed to empty the bladder.

On the following morning, December 3rd, I was told that urine had been passed, so the use of the catheter was discontinued.

A, Remains of upper part of the urethral orifice; B B, margin of the vaginal mucous membrane; C, incision prolonged backwards towards the cervix uteri, with a short anterior prolongation dividing the extroverted lining of the bladder; D D, muscular fibres of the bladder wall.

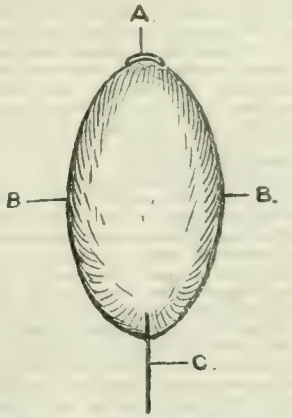


Fig. 1.—Illustrates the line of the incision around the orifice of the fistula prolonged backwards towards the cervix uteri (C), in order to permit free separation of the bladder and vaginal wall.

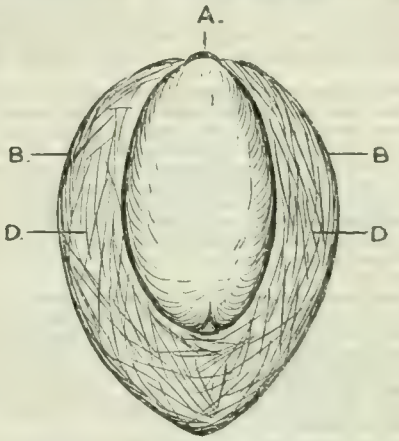


Fig. 2.—Represents the free separation of the bladder (1) from the retracted vaginal wall (B, B).

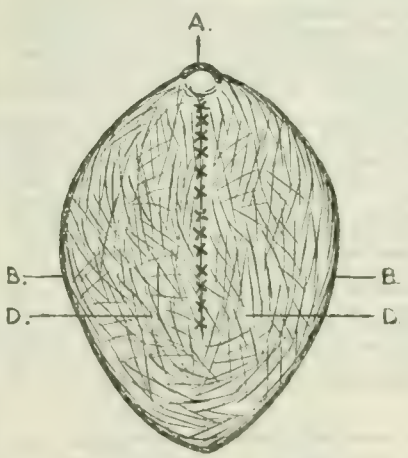


Fig. 3.—Represents the closure of the bladder and the formation of a new urethra.

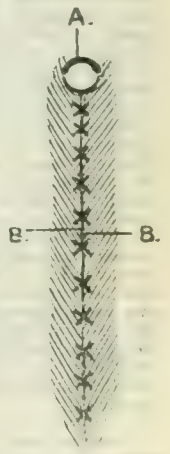


Fig. 4.—Represents the union of the vaginal wall covering the bladder and urethra.

During the next few days the patient appeared to progress in a natural manner, the only abnormal condition being a total absence of milk secretion. She complained of some soreness about the vulva, but urine was said to be passed naturally, and no incontinence said to exist.

On the tenth day the chromic gut sutures were removed, the wound had healed, and nothing was said about any difficulty with the urine. None was running away when the sutures were removed, and there was no urinous odour.

On the eleventh day patient complained of pain and swelling in the abdomen. The bladder was found to be distended and a large quantity of dark-coloured ammoniacal urine withdrawn from the bladder by passing a catheter. The retention continued, necessitating the use of the catheter twice daily for ten days. The condition of the urine improved, and lost the ammoniacal odour and became clearer. For a day or two the urine seemed to be passed naturally, but was clouded with phosphates, thick with mucus, and deficient in quantity. No urine was obtained when the catheter was passed. The vulva was irritated in consequence of the continual leakage of urine. An ineffectual attempt was made to wash out the bladder. The solution employed was not retained. A fistula or urethral injury was suspected, and removal to a hospital was advised.

The catheter No. 8 had been used regularly from the eleventh day, twice daily for a period of ten days. It was then used at irregular intervals for four or five days, as the urine was sometimes passed voluntarily. Complete incontinence then supervened.

The patient was admitted into my wards at the Samaritan Free Hospital for Women on January 1st, 1903. She looked and felt extremely ill. Her temperature was 103° F. Her complexion was sallow, with a hectic flush on both cheeks. She complained of pain in the hypogastric region, and complete incontinence of urine. On examination the labia were encrusted with a phosphatic deposit, and a grey rope-like slough was seen to protrude from the vaginal orifice. On passing the fingers into the vagina and tracing the origin of the slough the whole floor of the bladder appeared to be absent, the bladder and vagina being practically one continuous cavity coated with phosphatic deposit. The slough was continued into the lining of the bladder. The local condition was so bad and the general condition of the patient so feeble that I feared she would die. She was given quinine and stimulants (urotropin, 5 gr.) three times daily, and warm boracic douches. The labia were anointed with bismuth ointment. Her condition gradually improved, and finally a large slough was passed per vaginam.

At a later date she was examined under an anaesthetic, and it was then found that the floor of the bladder and the floor of the urethra were destroyed, and a large oval opening existed, so that the urine passed entirely into the vagina. The incrustation with phosphates still persisted, and as the edges of the aperture were not quite healthy in appearance it was decided to delay the attempt to close the opening. There was a well-marked scar on the vaginal vault to the left side of the cervix, which gave rise to the suspicion that the ureter might have been injured, but no aperture was discoverable. After a few weeks' local and general treatment an operation for closing the aperture was undertaken on April 15th, 1903.

Description of Operation.—The patient having been anaesthetized and placed in the elevated lithotomy position, the cervix was drawn down by a vulsellum. An incision was made around the opening as in Fig. 1. The oval incision was connected with a short median incision, which was prolonged anteriorly so as to divide a portion of the extruded vesical lining, and thus facilitate more accurate apposition of the sutures. The posterior prolongation enabled the vaginal mucous membrane to be more thoroughly separated.

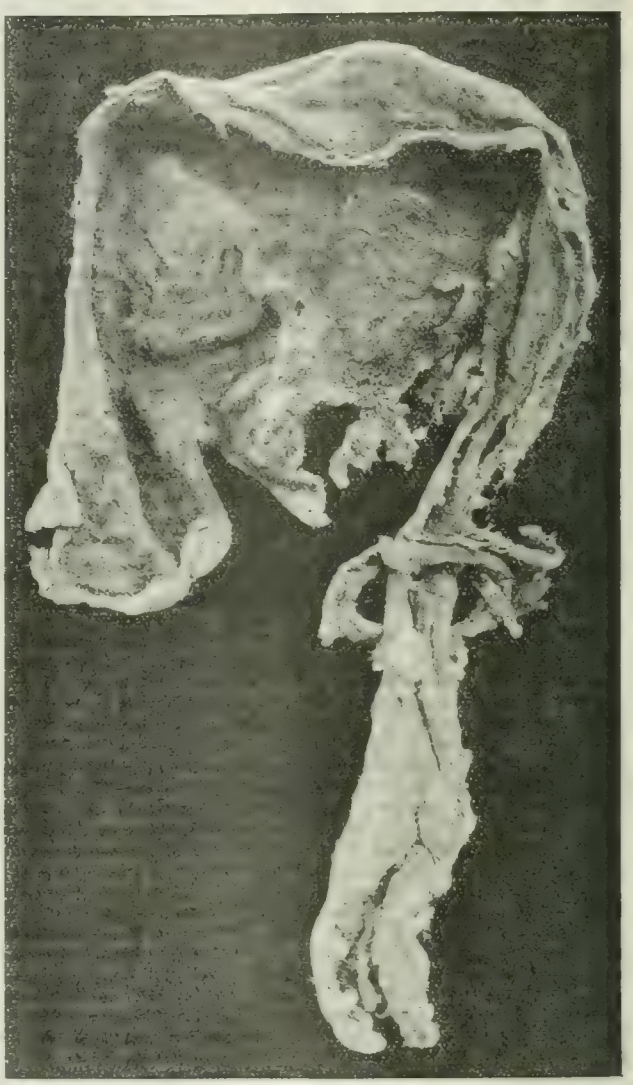
The vagina was separated freely from the bladder for a distance of about 1 in., so as to prevent any tension when the sutures were tied. The edges of the aperture in the bladder were brought together from behind forwards with catgut Lembert sutures. Thus not only was the bladder closed, but a floor was formed to the urethra, care being taken to extend it forwards (Fig. 3). The vaginal flaps were next united in the middle line with catgut sutures. The last catgut suture was also passed through the urethral orifice. A plug of gauze inserted into the vagina completed the operation.

After-History.—At first the patient retained urine, but soon incontinence returned, although the wound had healed well. The urine, however, flowed entirely through the urethra, as there was no leakage into the vagina after the operation. The bladder was completely closed and the urethra well formed. On passing a bladder sound it only penetrated 1½ in. in every direction. The bladder had lost its elasticity, and was in reality a fibrous sac totally incapable of acting as a reservoir. Several attempts were made to dilate the bladder by running into it boracic lotion under pressure, but as these caused the patient pain and slight elevation of temperature they were discontinued. The patient now wears a portable urinal and is in the enjoyment of good health. The result of the operation was surgically a complete success, but from the patient's point of view was a failure, for it did not cure the incontinence of urine. However, all local discomfort has been removed, and with the use of a simple ointment and dusting powder she has comparative comfort.

CASE II.

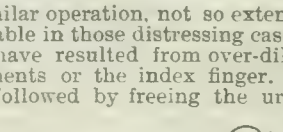
A patient, aged 22 years, who had a difficult and prolonged labour, necessitating version and craniotomy of the after-coming head. The urethra and adjoining portion of the base of the bladder were crushed between the foetal head and the symphysis pubis. As a result of the bruising a slough formed in this situation, and when the slough separated complete incontinence of urine resulted. She was admitted into the Samaritan Free Hospital for Women under my care on June 11th, 1903.

On examination the mucous membrane of the bladder was seen to protrude through a rounded orifice in the position of the urethra. Urine constantly flowed through this aperture, which was of sufficient size to admit the last phalanx of the thumb. After preliminary douching and the administration of urotropin internally, an operation of a similar character to that already described was performed. The operation was completely successful, the patient being able to retain her urine for three or four hours, and to continue her occupation as a professional dancer.



The photograph is a representation of the slough passed per vaginam. The lower rope-like portion protruded through the vulvar orifice. When traced upwards it is seen to pass through a ring-like piece of tissue, which was quite separate from the main mass. This ring-like portion was separated from the margin of the communication between the bladder and vagina. The greater portion of the slough lay in the bladder and was encrusted with phosphates. It is not merely a slough of the mucous coat, but it is composed in several parts of the muscular coat. Sections were cut from different portions of the slough and muscular fibres were seen in abundance. What now remains of the bladder appears to be largely composed of fibrous tissue.

A similar operation, not so extensive, would, I feel sure, be serviceable in those distressing cases of incontinence of urine which have resulted from over-dilatation of the urethra by instruments or the index finger. For, by an incision, as in Fig. 1, followed by freeing the urethral orifice in its lower



two-thirds, you can not only narrow the meatus by sutures, but also can succeed in extending forwards the lower part of the aperture, and thus imitate the normal downward and forward curve of the urethra.

After-Treatment.—In both the cases described in this

paper a small-sized glass catheter was passed every four hours for the first forty-eight hours and urotropin 5 gr. administered three times daily until the urine was free from pus. As already mentioned, the first patient was able to retain urine after the operation, but soon complete incontinence occurred. The second patient regained complete control.

It seems that when properly repaired either the power of the vesical sphincter becomes restored or that certain of the vesical muscle fibres take on a sphincteric action. No doubt the result was favoured by the age of the second patient. I believe, however, that by restoring the downward and forward curve of the urethra the power of retention is assisted. This view is supported by the results obtained in prolapse operations where the urethra is so displaced that it comes to lie in a straight line with the bladder, and whenever the patient coughs or sneezes a certain amount of urine is voided. If in performing these operations a certain amount of attention is paid to restoring the curve of the urethra it will be found that this loss of control is prevented.

I never use a self-retaining catheter after fistula operations, as I believe, in addition to the risks of cystitis, it induces a certain amount of vesical paresis.[1] A catheter should be passed at regular intervals until the patient can pass urine naturally. Where the urethra has been stitched a small-sized glass or metal catheter is best.

I am also strongly opposed to adopting the method of paring the edges of the fistula which has been associated with the name of Marion Sims. I have never performed this operation, for I believe it to be wrong in principle, and that, whilst you do not guard against tension, you also sacrifice valuable tissue by paring the edges. The method of flap-splitting can be utilized for fistulae involving the bladder, the urethra, or both. It is best to make good-sized flaps and to suture bladder or urethra separately from the vagina.

REFERENCE.

[1] Case of Vesico-vaginal Fistula cured by a Method believed to be New, with Remarks on the Surgical Treatment of Vesico-vaginal Fistula, BRITISH MEDICAL JOURNAL, May 17th, 1902.

The PRESIDENT asked the author how much pressure was used to dilate the bladder and how it was applied.

Dr. MCCANN said that it was applied by gravitation, with a fall of about 5 ft.

The PRESIDENT said that contraction of the bladder not infrequently followed a mere habit of frequent micturition. In such cases the bladder soon recovered its capacity if the patient simply held her water, by the clock, in increasing periods. He thought Dr. McCann had applied too much pressure, and that he might yet succeed if he used very small pressure, imitating the trickling of the urine from the ureters. In an interesting case recently under his care he could find no cause for incontinence, but he noticed that the meatus was a very little more open than usual. He repaired this, and the incontinence immediately ceased.

A FURTHER CONTRIBUTION TOWARDS THE STUDY OF THE NATURAL HISTORY OF TUBAL GESTATION.

By AUGUSTUS W. ADDINSELL, M.B., M.R.C.P.,
Physician, London Temperance Hospital.

THE subject of treatment in the many circumstances that may arise in the course of the different varieties of ectopic gestation is a very large one—and I make no attempt to discuss it here—but I offer a contribution to the study of the matter based upon my own experience.

The objective and subjective phenomena associated with the recognition of extrauterine pregnancy are so classic that they need not be referred to, but a lively controversy still rages round the question of treatment. Practically it amounts to this—ought we to operate at once or wait? In view of the opposite opinions that have been expressed by writers of authority I agree with Dr. Champneys when he says:

> The only way to arrive at a trustworthy rule to guide us is by the collection and publication of series of cases under one observer.

In the course of the last four years 15 cases have come under my notice with which I have been associated—of these 15, 4 have been operated on. The other 11 have been treated by the expectant method of absolute rest in bed—all 15 cases have recovered.

The subsequent history of these cases has been traced as far as possible, but some of the hospital cases have not replied. The intervals between the illness and the examination for the purpose of this paper vary from three and a half years to three months.

It is sometimes urged by those who advocate operation in every or almost every case of ectopic gestation, that even if the woman recovers from the internal haemorrhage and necessary shock at the time of the rupture, yet she is left with a mass inside which may undergo suppuration or give trouble in a variety of ways; this is undoubtedly correct: it may, but I believe it does not happen so often as is suggested, and all the cases I have examined since their discharge from the hospital have so far cleared up as to leave no gross lesion behind which is causing trouble or which calls for interference. (Possibly No. 13 may require operation later on; this is the only exception.—June 20th, 1904.)

Of the 4 cases operated on, 3 were by abdominal section, the sac removed; in the fourth case suppuration had taken place, a free incision was made into the vaginal roof and the abscess cavity well drained. In one of the 3 abdominal cases symptoms of appendicitis came on, and the operation was undertaken more directly for that complaint, otherwise the patient was doing well under treatment by rest alone.

In another of the abdominal cases there were several features of interest. The woman was 32, married, but living apart from her husband; she had one child 8 years old. The case was originally diagnosed by her doctor as appendicitis; afterwards another medical man suggested suppurating ovarian cyst. When I was called into consultation I found her in great pain, looking very ill; temperature 103°. There was a large tender swelling to the right of the umbilicus. The pouch of Douglas was filled by a mass extending into the right fornix. There was a history of two months' amenorrhoea; she suspected pregnancy, but believed herself to be miscarrying, as for the last ten days she had had a coloured discharge. I opened in the middle line. There was a large clot undergoing suppuration, and the ruptured tube was eloquent of the cause. Recovery was complete.

I regard it as of vital importance that absolute rest in bed should be insisted on from the first; for it is clear that haemorrhage may and does often recur; indeed, it is this fact which prompts some men to advise immediate operation, on the ground that there is less danger in operating than in waiting. The majority of cases that come to hospital are sent in as cases of miscarriage by the doctor attending, and this is the usual diagnosis of the patient herself, who, having missed one or more periods and experiencing the subjective symptoms of pregnancy, naturally regards the onset of a coloured discharge accompanied by pain as a miscarriage. Herein lies the danger. The woman has recovered from her first internal haemorrhage, due either to rupture or to tubal abortion, and the decidual discharge being only slight favours the erroneous assumption.

I believe it to be quite exceptional for the primary internal haemorrhage to be so severe as to kill outright; I have never known of a single case. I have known of a woman dying of internal haemorrhage from a ruptured tube; but after at least two recurrences—not one from the primary bleeding—usually syncope occurs, allowing clotting and natural haemostasis.

The paper published by Dr. Champneys in the *Journal of Obstetrics and Gynaecology* for June, 1902, furnished some very striking and important figures:

Of 75 cases—

34 were left alone = 45.3 per cent.
15 had *subsequent* vaginal operations.

49 = 65.3 per cent. recoveries.

There is no doubt that Dr. Champneys's paper had very far-reaching effects; it bade men pause. The operation wave was checked, and I am not aware of any instance in modern gynaecology where the publication of figures has been productive of such a marked change of policy, and I am free to confess that had it not been for his influence several of my cases would have been submitted to operative interference.

Conclusions.

Experience, then, brings me to the following conclusions:

1. If the patient has rallied from the first shock of bleeding and there is no evidence of it still going on wait.
2. If the bleeding returns, operate at once by the abdomen.
3. If the diagnosis is made of tubal pregnancy—before rupture or abortion, operate at once; but this is very difficult to diagnose and is very rarely done.

No.	Date of admission.	Initials.	Age.	Previous pregnancies.	History.	Time since last menstruation.	Physical signs.	Progress of case.	Treatment.	Result.	Remarks.
1	Dec. 20, 1903	M. G.	32	One 8 years ago; married 9 years	10 days ago had sudden pain, faintness, and vomiting, on getting out of bed; recovered in a few hours but felt ill, and slight show confirmed suspicion of pregnancy	2 months and 4 days	Distinct swelling in right iliac region, very tender. Mass in pouch of Douglas extending into right fornix. Uterus pushed over to the left, together with the bladder	Thought she was having miscarriage. First diagnosed as appendicitis, then as suppurating ovarian cyst, finally as extra-uterine gestation	Abdominal section. Right tube found to be ruptured. Large clot undergoing suppuration	Recovery	Examination in May, 1904 Uterus not freely movable. No pain; in good health.
2	May, 1902	M. B	33	Married 11 years; never pregnant	Was 10 days over her period. Sudden acute pain (lifting friend) in left side. Vomited; recovered in 4 hours sufficiently to get up and go out; pain returned with coloured discharge same night; said she passed piece of flesh. Decidual casts	40 days	Moisture in breasts. Mauve colour of vaginal mucous membrane; os soft. Mass tender ? boggy in left fornix and pouch of Douglas; uterus enlarged. Frequent micturition	Evidence of recurring hæmorrhage having ceased. Absorption was hoped for; kept in bed for 5 weeks	No operation	Recovery	Recent examination. No trace of trouble in pelvis. Patient in perfect health
3	May 11, 1900	M. M.	32	4 children	6 days ago pain in stomach and sickness, no relation to food. Faintness; recovered, and return of symptoms in 3 days more violent pain, which has continued. Looks ill	6 weeks	Cervix drawn up. Pouch of Douglas contains large mass extending into both iliac fossæ, reaches mid-line near level of anterior superior iliac spines. Breasts active. Later brown offensive discharge	—	Abscess opened per vaginam	Recovery	Examined in 1903. Uterus fixed. No tenderness. General health good.
4	May 17, 1901	F. S.	33	1 child	6 weeks ago severe pains. Faint, vomiting. Five similar attacks since. Cannot get up because of pain. Suspected pregnancy; told she was miscarrying	March 27	Cervix soft, points back. Pouch of Douglas, soft mass extending into left lateral fornix. Uterus tender and bulky. Acutely tender swelling above left Poupart's ligament. Offensive bloody discharge. Secretion in breasts	Evidence of recurring hæmorrhages. Looked very ill and anæmic. Kept in bed 7 weeks	No operation	Recovery	
5	April 19, 1901	A. M	27	2 children, last 4 years ago	Sudden pain 12th April. Pain and bleeding from uterus 4 days. Bleeding continues. Quite well up to 12th; seized with pain and vomiting when washing clothes	March 1st to 5th	Cervix points back; is soft, enlarged. Uterus easily defined. Pouch of Douglas contains mass extending into both lateral fornices. Uterus in front of mass (which fills up whole pelvis). This mass is soft, boggy, not very tender.	Absorption in this case was particularly rapid. Patient in good health at time of accident	No operation	Recovery	Examined May, 1904. Nothing abnormal was to found by vaginal examination. Health excellent. No local trouble.
6	March 16, 1902	S. K.	24	Miscarried 2 years ago	Sudden severe hypogastric pain 6 weeks ago. Discharge of blood; ill 4 weeks and well 14 days. Symptoms appeared again just before admission. Looks very ill; supposed she was miscarrying, as she suspected pregnancy	Jan. 3, 1902	Tender in right iliac fossa. Cervix to left, impaired mobility of uterus, tenderness on moving cervix. Right fornix full of dense mass, tender swelling in pouch of Douglas. Secretion in both breasts	Diagnosis was not quite easy on account of length of time since initial illness. Evidently bleeding recurred day before admission	No operation	Recovery	—
7	April 5, 1902	L. M.	28	2 children, last 4½ years ago	5 weeks ago pain in abdomen and vomiting. Blood-stained discharge since 4th March. Was suddenly seized when getting out of bed, recovered in 36 hours. Four relapses since; believed herself pregnant and miscarrying	Jan. 30	Os patulous, admits tip finger; hard swelling in mid-line; indefinite swelling in left hypochondrium; general tenderness; blood on examining finger. Decidual cast passed	All doubts were set at rest by passing very complete decidual cast	No operation	Recovery	The mass cleared up with great rapidity, and patient left in good health.
8	September 22, 1902	S. F.	24	1 child	Has had period every 2 weeks since childbirth. Pain in left side of abdomen and "bearing down" came on suddenly; caused vomiting. Faintness, followed by bleeding, which continues	7 weeks	Uterus enlarged, but movable. Os soft and patulous. Tender, ill-defined swelling in left broad ligament region. Secretion in both breasts. Discoloration of vaginal mucous membrane	The swelling felt in left fornix became less tender, and in three weeks had almost disappeared	No operation	Recovery	—

No.	Date of admission.	Initials.	Age.	Previous pregnancies.	History.	Time since last menstruation.	Physical signs.	Progress of case.	Treatment.	Result.	Remarks.
9	Nov. 20, 1902	F. S.	33	1 child, 15 years	November 10th, pain in left side of abdomen, blood-stained discharge; increasing dysuria. Did not faint, but felt sick and ill; went to bed; sudden pain returned just before admission	October 30	Os soft, patulous. Uterus bulky; immobile mass continuous with uterus firmly fixed in left iliac fossa. Mass tender, nodular, felt to occupy pouch of Douglas. Secretion in breasts, mass pressing forwards towards bladder	With rest in bed, absorption was slow, but evidently all processes in bladder ceased	No operation	Recovery	Examination June 10th, 1904. Impaired mobility of uterus; small lump in left fornix, not tender, and expresses herself as well.
10	April 14	N. W.	29	None	Had a loss in second week of March, 1902, and slight losses ever since intermission of week before April 14th. Much pain	Jan. 24, 1902	On left of abdomen above Poupart's ligament is hard movable nodular lump. *Per vaginam* cervix displaced to left. Uterus tilted forward. Behind uterus and to left is mass, size of small orange, attached to uterus; tender; the whole moves fairly freely. Vaginal discharge. Os patulous	This patient was doing well; but whilst in hospital sudden pain and swelling in appendicular region appeared and temperature rose. Operation showed appendicitis and left ruptured tube	Operation by abdominal section	Recovery	Examination June 10th, 1904. No trouble in pelvis. In good health.
11	May 29, 1903	R. L.	32	1 child 10	Suddenly taken ill Easter Thursday, 7 weeks ago; sick; felt faint; great pain, back abdomen, back; kept at work, but felt ill. Going to bed at intervals	10 weeks ago	Indefinite mass in pouch of Douglas, extending into both lateral fornices; secretion in breasts; os soft, blood-stained discharge; uterus enlarged above pubes. Decidual cast	Absorption was fairly rapid	No operation	Recovery	Examined in May, 1904. No trace in pelvis; general health good. Expresses herself as quite well.
12	July 31, 1903	P. B.	35	One 15 years ago	For 14 days losing irregularly. Seized with severe pain in right iliac fossa while straining at stool. Felt sick and sweated, did not faint. Brought straight to hospital and operated on	6 weeks ago	Signs of free fluid in peritoneum. Os soft and patulous, examination painful and rectum loaded. Breasts active. Patient's pulse increasing in frequency, blanching more marked. Ruptured right tube found	—	Operation by abdominal route	Recovery	Ruptured right tube. Examined in May, 1904. No complaints. Pelvis clear. Health good.
13	March 9, 1904	R. M.	29	One 11 months ago	Sudden violent pain in abdomen and bleeding on January 2nd, 1904, a week after she expected her period. Had pain on passing water, sudden pain; faintness and vomiting, followed by bleeding, in 6 hours. Symptoms returned in 48 hours; doctor said she was miscarrying; she suspected pregnancy	December, 1903	Os patulous and soft. Uterus enlarged and fixed. Vaginal vessels pulsating. Secretion in breasts. Violet discoloration of vulval mucous membrane; mass filled pouch of Douglas and right fornix; extended to right iliac spine above. Very tender and immobile	Patient had a cold and attributed delayed period to this cause though suspected she might be pregnant; remained in bed 3 weeks before admission. Getting out of bed she was again seized with pain and fainted, was very ill when brought to hospital	No operation	Recovery	Examined on June 20th. Lump still felt to right of uterus, not so tender; quite movable, but moves with uterus; not larger than an orange.
14	Feb. 15, 1904	M. C.	44	None	Sudden pain in lower abdomen 3 weeks ago; "bleeding" off and on 2 weeks. She had more pain and loss at last period. Vomited just before admission. Looks very ill; complains of pain. Micturition painful; was trying to open window when seized with pain	5 weeks before admission	Abdomen enlarged, mass rising from pelvis especially into right iliac fossa. Os soft and large. Uterus large. Pouch of Douglas and both fornices occupied by hard, very tender, fixed mass. Breasts active and secreting. Passed decidual cast. Vulval mucous membrane discoloured. Blood on examining finger	This patient looked so ill when first seen, vaginal examination revealed irregular dense, tender mass, that the first impression was of malignant disease of the fundus; but 5 weeks' rest in bed cleared up both the mass and the doubt	No operation	Recovery	Examined in May; still a little less mobility, but no tenderness; no pain; no pressure on bladder. General health good.
15	May 13, 1904	I. J.	30	4 children, married 9 years	12 years ago in-patient gastric ulcer; week ago had pain, which passed 3 days ago; washing; violent pain in right iliac region; sick, trembled, faint, diarrhœa; repeated attack May 12th. Again fainted. Brought to hospital to-day with third attack, pain in back. Very blanched, eyes glazed, unconscious, looks dying, pulseless	April 7, 5½ weeks ago	P. H., abdomen somewhat distended below umbilicus. Soft and flaccid. Tender mass in right iliac fossa and hypogastrium. *Per vaginam* cervix pushed to left, texture soft, canal admits tip of finger; body of uterus somewhat enlarged. Tenderness prevents bimanual examination. Mauve coloration of vagina and cervix. Blood on examining finger. Pouch of Douglas and right fornix filled with soft boggy tenderness	Saline solution was injected below breasts; strychnine hypodermically, but the case seemed quite hopeless. In spite of her desperate state she rallied and left hospital with very slight mass on right side, which was not tender	No operation	Recovery	Examined in June before leaving; absorption was remarkably rapid, and in one month left but few traces of the very grave mischief of May 13th.

4. If tubal abortion or rupture is recognized and the fetus still living in the early weeks—operate.

5. If a haematocele has formed in the pelvis, it is probably shut off by adhesions from the general peritoneal cavity—wait for absorption.

6. If the haematocele becomes infected, open freely through the vaginal roof. The bacillus coli communis will usually be found to have been at work with its characteristic odour; so let your drainage be very thorough.

Dr. C. E. PURSLOW drew attention to the good effect of putting on a firm abdominal compress in cases of very severe internal haemorrhage from ruptured tubal gestation when the patient was too bad for an operation to be performed. He believed that the compress, by increasing the general intra-abdominal tension, exercised some amount of pressure on the bleeding spot and so tended to arrest the haemorrhage, and it undoubtedly tended to prevent death from loss of blood by driving blood from the abdominal vessels to those of the heart and brain. He narrated a recent case in which the patient rallied rapidly from a pulseless condition under this treatment, and an operation was subsequently performed.

Dr. HEYWOOD SMITH said this question was of considerable importance because of the outlook for the patient's life. When they were called in to such a case they often found the patient not only very prostrate, but suffering pain, and at times with a rise of temperature. On looking over Dr. Addinsell's list of cases it appeared that many of the cases that were left unoperated upon were left with a lump, more or less marked, in the pelvis, and which might lead to a subsequent operation. If a patient was in a position to wait, well and good; but, as a rule, it being the object to get our patient well as soon as possible, it was better to operate than to leave her alone, and in these days, when the abdomen could be opened with very little risk, it was better to operate than not.

Dr. G. T. DAVIES (Liverpool) said the treatment of tubal gestation hung upon correct diagnosis. He was convinced that ectopic gestation occurred oftener than was supposed. Early cases were cured completely when let alone, left no subsequent physical signs, and often became normally pregnant again. More advanced cases, however, did leave subsequent ill effects. Physical examination revealed pelvic swelling; pains, bearing down, etc., were complained of, and most frequently sterility followed. The so-called fulminating cases with huge intraperitoneal haemorrhage and collapse were, he believed, very rare.

Dr. INGLIS PARSONS thought that the question of operating or not operating in these cases could not at present be determined, because they had not sufficient evidence of the relative mortality of non-interference and operation. In his opinion, if it was shown that the mortality from the latter was less than the former, then he would recommend that operation should be done in most cases, provided aseptic conditions could be assured, and the operator was one with experience in abdominal surgery.

Dr. FREDERICK EDGE said that the discussion might be prolonged indefinitely, because, after all, they were considering a general question analogous to that of operation in cases of appendicitis. It depended entirely upon a surgeon's diagnostic capacity, and the bearing of the results of his operations upon his mind, what standpoint the surgeon would and should take in treating these cases. Each case of tubal pregnancy must be taken on its own merits.

MEMORANDA;

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

SPASMODIC NEURALGIA TREATED WITH BROMIDE.

THE following case appears worth publishing in the interest of suffering humanity:

Z. Y., a woman aged 81, had suffered nearly all her life from attacks of neuralgia of the fifth nerve, and for the last three months from the spasmodic paroxysmal attacks so graphically described by A. A. Bowlby, who points out that "many of these patients commit suicide, so great is their suffering." The excision of Meckel's ganglion had been discussed, but the age of the patient was against it. Every drug commonly used in these cases had been tried, and injections of morphine were the only thing that gave even partial relief; quinine in gr.x doses had no effect; and I then decided to try the effect of large doses of bromide. I gave a teaspoonful of powdered potassium bromide in milk with immediate relief, and repeated the dose at night. Since the second dose she has had no pain, and now sleeps and eats well, and does not require morphine at night. This, of course, may be a case of *post hoc propter hoc*, but the patient is convinced it is the result of the medicine, as she says on no other occasion has the neuralgia left her so suddenly.

I hope others will give the drug a trial in full doses, and publish the result; for surely there is no functional disease less amenable to treatment, and none where relief is more desirable owing to the dreadful suffering experienced.

Porlock. J. H. POTTER.

REPORTS

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

PURNEAH CHARITABLE HOSPITAL, BENGAL.

WOUND OF THE DIAPHRAGM BY A WILD BOAR.

(Reported by W. D. HAYWARD, Captain I.M.S., Civil Surgeon, Purneah.)

ON February 3rd of this year, Sheikh Dukha, a boy of 10 years of age, was admitted suffering from a penetrating wound of the chest caused by a "cut" from a wild boar some twenty-six hours earlier at a place twenty miles away.

State on Admission.—The wound was on the left side of the chest, between the ninth and tenth ribs, through which protruded a portion of engorged and partially strangulated intestine, about the size of a golf ball or a little larger. There appeared to be no wound of the intestine: he was not collapsed, but the pulse was rather weak. He was said to have drunk milk after the accident, and there was no history of any extravasation.

Operation.—Chloroform was given, and the wound in the chest wall enlarged. The ninth and tenth ribs were found to be broken, and their fractured edges so sharp as to render any attempt at reduction of the gut dangerous. Parts of these ribs having been stripped and removed by bone forceps, the gut was reduced. The left side of the chest was found to be occupied by several other coils of intestine and by omentum; the edge of the lung could be seen moving up and down with respiration. A radiating wound of the diaphragm, about 3 in. long, was found, but it was impossible to return the intestine and omentum through it. I then opened the abdomen by a median incision, and drew back the gut and omentum into the abdomen. The enlarged spleen helped to keep the parts on the stretch whilst I sutured the wound in the diaphragm through the opening in the chest wall. Dressings were then applied, a tube being left in the chest wound.

Result.—At the conclusion of the operation the boy's pulse was very feeble; he was put to bed, with hot bottles to the feet and sides, and given injections of liq. strychniae and ether. He was also allowed a small quantity of milk by the mouth and some brandy the same evening. On the following day respiration was still rather hurried and the abdomen slightly tympanic. He was given a turpentine enema, and, after passing a number of scybala, slept well. From then on the progress was uneventful. The breath sounds on the left side gradually became normal in character as the wound closed, and the lung seemed to take up its work undamaged. By February 24th the abdominal wound was entirely healed. On March 4th, or just one month and a day after his admission, he was discharged, both wounds having completely closed.

REMARKS.—The boy, when recovered, gave a most graphic description of his encounter with the boar. He was, it seems, in the jungle, and was bending down picking up some sticks from the ground, when the pig rushed out behind, knocked him head over heels without cutting him, and then stood over him and cut him, one "tusk" taking effect and making the deep wound above described. On the whole, I think it may be allowed that the boy came very well out of his encounter in view of the nature of the wound and the hernia of intestine, both externally through the broken ribs and internally through the ruptured diaphragm.

STATION HOSPITAL, BIRR.

A CASE OF ASCARIASIS WITH "ENTERIC" TEMPERATURES.

(Reported by J. G. BERNE, Captain R.A.M.C.)

BOY L., aged 15, was admitted into Station Hospital on the morning of February 3rd, with a slight temperature, 100.4, headache and furred tongue but no diarrhoea. The chest and heart sounds were normal.

Progress.—He was placed on milk diet and given a mixture of quinine

and antipyrin. The temperature continued to rise in an irregular manner; the only symptoms usually complained of being headache, though pain was at times felt in the right iliac fossa. The tongue remained furred, and resembled that of enteric fever. This disease was suspected, the patient isolated and the stools carefully watched. Constipation was marked, and on the morning of February 16th an ounce of castor-oil was given.

On the evening of February 20th a female ascaris 10½ in. was found in the stools. The patient was given santonin gr. iij, castor oil ʒj. On February 23rd, 27th, and March 2nd the santonin was repeated, but no further parasite was found.

On March 3rd he was transferred to the local isolation hospital, enteric fever being suspected.

Result.—On March 8th a smaller worm was passed, but after this the patient rapidly improved and on the 15th he was discharged to duty.

Remarks.—The peculiar course followed by the temperature may be explained by the presence of the parasite. French writers—Marie, Lauchon—have described a febrile condition, associated with intermittent diarrhoea, due to the presence of the ascaris lumbricoides. It is termed by these observers typho-lumbricosis. Osler, however, doubts the existence of this condition.

The prominent symptoms noted in this case were severe headache and obstinate constipation. The condition of the patient was diagnosed as ascaris lumbricoides in the admission and discharge book, and in the monthly return.

[Note.—The clinical chart forwarded showed that the boy's temperature for thirty-one days after admission usually varied between 99° and 101.5° F., while the bowels were only moved on eleven days in spite of the administration of castor-oil.]

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Sir R. Douglas Powell, Bart., M.D., F.R.C.P., K.C.V.O., President, in the Chair.

Tuesday, October 25th, 1904.

Secondary Parotitis.

Mr. Rupert Bucknall read the first of two papers on this subject, and maintained, firstly, that it was due to infection of Stenson's duct with micro-organisms from the mouth; and, secondly, that it might be prevented. The evidence adduced was derived from personal examination of 12 cases and study of the published records of over 200 others, and it was shown that the ducts of the gland were choked with débris containing micro-organisms different from those usually causing the primary illness, that the inflammation began around the ducts in the centre of the lobule and spread later to the supporting framework of the gland in which the vessels were situated, and that several lobules were simultaneously affected. Reference was made to the experiments of Claisse and Duplay, which showed that before parotitis developed in animals organisms must be present at the mouth of the duct in large numbers and be of virulent type, that general vitality must be reduced, the gland secretion limited, and its bactericidal power lowered. Similar conditions were shown to be present in the human subject in those diseases and states in which parotitis occurred. It was urged that by preventing these conditions secondary parotitis could be avoided.

Dr. B. N. Tebbs contributed the second paper, which was based on 74 original cases; of these, 64 had been in St. George's Hospital. The cases were of two main groups—septic as in infective fevers, and toxic as in gout, and there was a subgroup of recurrent cases largely vasomotor. The causes were predisposing, a suppression of the secretion, probably reflex and exciting, and sepsis, the infection being probably by the blood stream and not ascending by the duct. The reasons given in support of this view were that most cases developing parotitis were septic; it was commonly associated with other septic complications of haemic origin; its severity varied with the severity of peritoneal infection, and of other septic complications; it had become relatively less frequent with improvements in antiseptic surgery; the socia parotidis was usually involved subsequently to the main gland; and oral disinfection had no influence in preventing the complication.

Mr. Stephen Paget said that all these cases of parotitis were cases of infection; its path seemed to be by the duct: but if the parotitis were only due to duct infection in a debilitated subject, why was it not common?

Mr. J. D. Malcolm also thought that the slides shown almost proved that infection was by the duct. The larger number of cases occurred, he believed, in the absence of septicaemia—at any rate, in connexion with ovarian tumours.

Mr. W. McAdam Eccles thought that both the views advanced were not unlikely true. He had seen cases of direct infection, and also others occurring rapidly after abdominal operations with sepsis, and almost certainly connected with septic absorption.

Dr. P. Lockhart Mummery referred to Professor Sherrington's experiments to show that any interference with the peritoneum was sufficient to raise considerably the specific gravity of the blood, and thought that this might account for the arrest of the secretion from the parotid gland. The non-implication of the larger vessels on the infective theory did not necessarily exclude the transmission of infection through the finest capillaries near the ducts.

Dr. Hawthorne also thought that the sections showed seemed to prove that in some cases the infection was by Stenson's duct.

Mr. Bucknall and Dr. Tebb replied.

MEDICAL SOCIETY OF LONDON.

John Langton, F.R.C.S., President, in the Chair.

Monday, October 24th, 1904.

Diagnostic Value of Leucocytoses.

Dr. J. H. Drysdale opened a discussion on this subject. After alluding to what might be considered the normal leucocyte count, and pointing out that the characteristic of the abnormal was the alteration in the relative proportion of the different varieties, he referred to physiological leucocytosis during digestion, pregnancy, childhood, etc. In pathological leucocytosis the increase might be due to any single variety or any combination of the various varieties. Polymorphonuclear leucocytosis was found in many pyogenic infections, in certain specific fevers, and in certain toxic states, accompanying certain secondary anaemias, especially in *post-partum* haemorrhagic anaemia, and in prolonged cachexias. The fallacy from disturbed distribution was pointed out. The physiological limit was placed between 10,000 and 15,000 per c.cm. The type of pyaemic leucocytosis was found in appendicitis, and its characters and significance were discussed. Especial reference was made to the leucocytosis of pneumonia and of other infective fevers. Lymphocytosis, eosinophilia, and basophilia were respectively described.

Dr. A. E. Wright asked why the leucocytosis in different conditions remained approximately constant. He objected to the chemiotactic theory and to the idea of toxic leucocytosis. Irritating substances in the blood might lead to leucocytosis, also an excess of the nutriment of leucocytes in the blood lead up to their increase in the limits of subsistence, such an excess as that following on the action of toxins on the tissues. Alterations in the number of leucocytes might depend on the dilution of the blood, hence the count might be of little diagnostic value.

Mr. C. Gordon Watson asked how could the dilution of the blood affect the relative proportion of the different leucocytes? In reference to the toxic theory, it was not clear why there should be no leucocytosis in tuberculous peritonitis and marked leucocytosis in peritonitis following appendicitis. What data were there in regard to operation in appendicitis when the leucocyte count was rising? He appealed for daily consecutive blood counts in certain cases, and asked as to the leucocytosis of enteric with perforation.

Mr. George Gask also held that leucocytosis by itself in cases of suspected suppuration was of no value, but, taken with other signs, was perhaps of as much value as a temperature chart.

Dr. John Broadbent thought counting the relative proportions of the leucocytes on a slide was in some ways preferable to the full differential count. The lymphocytes seemed to be in some way protective.

Dr. Drysdale replied.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

A. Stanford Morton, F.R.C.S., Vice-President, in the Chair.

Thursday, October 20th, 1904.

Blood Supply of the Optic Disc.

Mr. Nettleship communicated Notes on the Blood Vessels of the Optic Disc in certain mammals (18 species), and a few

marsupials (3 species); no monkeys were included. The eyeballs were sent to him by Mr. F. E. Beddard, F.R.S., from the *post-mortem* room of the Zoological Gardens. The observations were based on the microscopical examination of both transverse and longitudinal sections of the optic disc, and the contiguous parts of the optic nerve. It was found in many mammals that the retina was almost entirely supplied by arteries derived from the choroidal system—cilio-retinal vessels—that reach the retina by passing round the sclero-choroidal border of the disc. Ophthalmospically this arrangement often (as, for instance, in the carnivora) caused an appearance somewhat like that of a deep glaumatous cupping, and such cupping had been stated by Lindsay Johnson to be present in these eyes. But no cupping was found in any of the eyes examined microscopically by the author of the present paper, nor was the assumption of cupping necessary in order to account for the appearance. Another interesting observation was that even when the cilio-retinal vessels carried virtually the whole retinal supply, the central artery was seldom, if ever, quite absent, though often reduced to a minute vessel entering the optic nerve close to the eye. In some species such a minute arteria centralis became much enlarged at the lamina cribrosa by tributaries from choroid or sclerotic, the short trunk thus formed breaking up almost immediately in the disc for distribution to the retina: and ophthalmoscopic examination of such an eye would naturally lead to the erroneous conclusion that the supply was from a large arteria centralis as in man. Various other points were alluded to. The paper was illustrated by microscopical drawings.

Bacteriology of the Conjunctiva.

A paper on the bacteriology of the conjunctiva was read by Dr. W. B. Inglis Pollock, in which he reviewed and analysed 204 cases of conjunctivitis in which a bacteriological examination had been made. There were 145 cases of acute muco-purulent conjunctivitis, including the acute contagious conjunctivitis of Weeks. Of these 108 were due to the Weeks's bacillus, 7 to Morax's bacillus, 4 to pneumococcus, 2 to gonococcus, and 6 to staphyloccus pyogenes aureus. There were 3 of mixed infection, and 18 gave indefinite or negative results. In 20 cases of subacute conjunctivitis (Morax), the diplobacilli were found 14 times, Weeks's bacillus once, and there were 5 indefinite or negative results. In 9 cases of purulent conjunctivitis 4 were due to the gonococcus, 3 to Weeks's, one to pneumococcus, and one mixed with bacillus subtilis. In 10 cases of ophthalmia neonatorum, gonococci were found eight times, pneumococcus once, and once the result was negative. One case of membranous conjunctivitis was due to staphylococcus pyogenes aureus. Several other cases completed the series. The general symptomatology of the forms associated with individual organisms was discussed, and cases related bringing out special points. The advantage of a bacteriological examination of the conjunctiva prior to operation was illustrated by some cases. Cases of phlyctenular conjunctivitis only showed staphylococcus pyogenes aureus or the xerosis bacillus, and these, and especially the latter, were innocuous in the conjunctiva of almost all cases. They were consequently reduced to the theory of an endogenous origin, and Bruns had shown that by injecting sterilized tubercle bacilli into the arterial system he could obtain nodules very like phlyctenulae. It was not possible yet to adopt a pure bacteriological classification of conjunctivitis, but such was coming nearer. For ascertaining the presence of gonococcocci a bacteriological examination was essential, and it should be carried out in all cases of membranous conjunctivitis. The paper was illustrated by lantern slides which had been prepared for a course of lectures given by Dr. Freeland Fergus.

Demonstration.

Mr. Bishop Harman demonstrated a new ophthalmoscope; Mr. E. E. Maddox showed some pigmy needles for suturing cataract wounds and some delicate electric connexions for use after cataract extraction.

Liverpool Medical Institution.—At a meeting on October 20th, Dr. James Barr, President, in the chair, Mr. Charles G. Lee read a paper on the simple extraction of cataract by Teale's method. After detailing the disadvantages of the common operations involving incision at or behind the circumference of the cornea, he said he had himself frequently performed simple extraction, but, owing to the incision being placed at the periphery of the cornea, prolapse of the iris had too often occurred. Some twenty years ago he had seen Mr. Pridgin Teale extract cataracts without an iridectomy, by means of an incision wholly in the corneal structure, and almost midway between the centre of the pupil and the circumference of the cornea, so recently he determined to try this method, the characteristic features of which were the knife employed (Hartley's) and the site of the section. Details of the first eight cases which Mr. Lee had operated upon by this method were given, and it appeared that one patient obtained visual acuity of $\frac{6}{6}$, three obtained $\frac{6}{9}$, and none less than $\frac{6}{12}$. In no case was any difficulty experienced in carrying out the technique of the operation. Since these results had been obtained by an operator to whom the method was novel, Mr. Lee thought the operation was one well deserving of a trial by all who wished to advance the art of ophthalmic surgery. Dr. K. A. Grossmann said he had performed simple extraction for many years and was well satisfied with the results obtained; the cases submitted to it should, however, be carefully selected. He used a knife with a very narrow blade, as he considered the triangular-shaped knife too broad, for it hampered the freedom and delicacy of movement necessary in such an operation. Mr. George E. Walker described an operation which he had performed for upwards of twenty years; if aimed at the same result, but was, he considered, easier of performance. The puncture and counter-puncture were made in the sclerotic, and by a series of sawing movements the incision finished at a point midway between the centre of the pupil and the top of the cornea. In this operation prolapse of the iris, if it occurred, was seldom considerable and as a rule easily reduced. Mr. Charles H. B. Shears said that many of the most experienced operators in this country, on the Continent, and in America still performed the combined operation; and for his own part he employed it as the routine treatment, reserving the simple method for cases with hard, brown, lenses. Mr. R. J. Hamilton used a narrow-bladed knife and made the incision within the sclero-corneal margin. Mr. Richard Williams thought it mattered little which method of operating was adopted, provided the surgeon was expert in whatever method he selected. Personally, he preferred the combined method of operating, as he considered it the safer and the easier of the two.—Dr. W. Murray Cairns read a paper on the practice of asepsis in obstetrics, in which he made a strong plea for the more careful conduction of labour, while he differentiated between aseptic obstetrics and asepsis in obstetrics. Hope was expressed that a material more suitable for intrauterine manipulation than rubber had hitherto proved might be discovered. In regard to physiological labour, meddlesome manipulation was very strongly condemned; "hands off" was declared to be the keynote of aseptic labour. The use of lubricants was in general to be deprecated; if used at all, lubricants should, it was contended, be sterilized. Douching—*ante* and *post partum*—in strictly normal cases was unnecessary. In all infective conditions douching, both *ante* and *post partum*, was necessary, and it was recommended that it should always in such cases be antiseptic and administered by the surgeon.

Glasgow Pathological and Clinical Society.—At the first meeting of the session, held on October 10th, the President (Professor Muir) in the chair, Dr. T. K. Monro showed two cases of muscular atrophy of the peroneal type. The affection in both cases was attributed to an attack of measles, but the causal relationship was somewhat doubtful, since the first signs of paralysis, which developed very gradually, were only noticed about two years afterwards. The one patient was 13 and the other 10 years old; they were brother and sister. The paralysis and wasting were now five years in the one case and seven years in the other after the attack of measles, very marked.—Dr. Freeland Fergus described a new operation for ectropion, due to blepharitis marginalis, and showed a patient on whom the operation had been performed. The result appeared to be most satisfactory. Dr. Freeland Fergus made some remarks on tests for binocular fixation, showing various forms of stereoscope. None of them quite satisfied the requirements of Dr. Fergus in respect of ensuring that the three dimensions were really appreciated; he had found that the best tests were "plastographs."—Dr. Walker Downie and Dr. John H. Teacher showed a specimen of cancerous tumour of the thyroid gland, which had caused death by penetrating into the trachea.—Dr. Henry Rutherfurd described a case in which a hydronephrotic cyst, which contained seven pints of fluid, was

removed, through the abdomen, from a boy aged 7 years. The patient made a perfect recovery.—Dr. G. H. Edington showed as card specimens: (*a*) a ruptured kidney removed by operation; (*b*) an intussusception (iliac) removed by operation.

Northern and Midland Branch of the Medico-Psychological Association.—At the autumn meeting, held at the Parkside Asylum, Macclesfield, Dr. Sheldon in the chair, Dr. McConaghey, Assistant Medical Officer of the Cheshire County Asylum, Macclesfield, read a paper on dementia praecox. Commencing with a reference to Kahlbaum's original description of hebephrenia and katatonia, he briefly explained the teaching of Kraepelin and the varieties of dementia praecox described by him—namely, the hebephrenic, the katatonic, and paranoid forms—and described the various symptoms of each class. He next gave an analysis of the adolescent female cases admitted into the Parkside Asylum during the past twelve years, limiting the age to 30 years, and in all referring to 192 cases out of a total admission of 977 female patients, or 19.6 per cent. He pointed out the objections to the use of the term "dementia" to cases some of which recover, and thought the old term, "adolescent insanity," preferable. He suggested that it should be divided into three groups—(1) simple, (2) delusional, (3) katatonic. The simple form contained the excited and depressed cases that did not suffer from marked hallucinations and delusions; the delusional, those in whom delusions and hallucinations were a prominent factor; while the katatonic included the cases in which the muscular system was especially affected—for example, in cataleptic and passive stuporous cases. He found that of the simple type 53 per cent. recovered, of the delusional 47.6 per cent., and of the katatonic 36.9 per cent. Of the whole 192 cases, 38 remained under care—6 of the simple, 14 of the delusional, and 18 of the katatonic types. At the conclusion of the paper a number of patients illustrative of the forms of adolescent insanity as described were shown and the clinical features demonstrated. A discussion followed.—Dr. A. D. Thompson, Assistant Medical Officer of the Cheshire County Asylum, read a paper upon a case of pyaemia treated successfully with antistreptococcus serum. He afterwards showed three cases of microcephalic idiocy, and gave detailed particulars of each case: (*a*) E. B., female, aged 9, with a strong family history of pseudo-hypertrophic paralysis on the mother's side; circumference of head, 17 in.; she was unable to recognize her mother, could not speak, exhibited marked stereotypy, beating the floor with the left foot, but possessed much appreciation of music. (*b*) J. G., male, aged 31, one of a family of ten, had two brothers idiots; cranial circumference, 17½ in.; could utter a few words, had a fondness for music, liked to be taken notice of, and was attached to a cat. (*c*) C. B., male, aged 25, had a brother an idiot; cranial circumference, 17 in.; he was clean in habits, had no particular fondness for music or animals, was imitative, could speak, but agreed with almost anything said, had a peculiar gait like the festination of paralysis agitans. In neither of the three cases was there any history of parental syphilis or alcoholism. The remainder of the meeting was occupied by discussion of the proposed revision of statistical tables for asylum cases.

Glasgow Medico-Chirurgical Society.—At a meeting on October 7th, Dr. Newman, President, in the chair, Dr. T. K. Monro showed a case of sporadic cretinism in a female, aged 23. Born in Leeds, it was only when she was unable to speak or walk at the age of 12 months that any abnormality was suspected. She had never been able to speak intelligibly. She made no attempt to walk till she was 6 years old, and she could scarcely be said to walk even yet. She was able to sit up in bed, feed herself with a spoon, and recognize her friends, but was otherwise almost devoid of intelligence. She passed her evacuations in bed. The general features of the disease were quite characteristic. In the region of the thyroid there was a strip of tissue almost as thick as a piece of coarse thread, which might, perhaps, represent the gland. It was found on trial that 7 gr. of thyroid extract in two days was the maximum dose that she could be given with impunity, and under this treatment the patient's height increased from 41 in. to 43 in. in less than three months. The appearance of the face also improved, and the patient learned to retain her tongue within the mouth.—Dr. J. H. Nicol showed, among other exhibits, specimens from a series of 13 cases in which the vermiform appendix was found, on operation, in an abnormal site. The sites were the lower margin of the lower, the left iliac fossa, the right subphrenic region, Douglas's pouch, the recto-vesical pouch, the sac of right inguinal hernia, the sac of left inguinal hernia, right inguinal canal, the sac of right femoral hernia, and the sac of an umbilical hernia. He also demonstrated two cases of mastoidectomy, with preliminary occlusion of the internal jugular vein.—Dr. G. H. Edington read notes on the treatment of tuberculous glands in the neck by excision, and, after alluding to the various structures in the neck where enlarged glands were met with, he drew particular attention to the good results given by transverse incision (Kocher's method), whether the wound were sutured or left open.

British Gynaecological Society.—At a meeting on October 13th, Professor John W. Taylor, President, in the chair, Mr. Furneaux Jordan showed (1) a cystoma of the left ovary removed per vaginam from a pregnant woman without interfering with the pregnancy; and (2) a double tuberculous pyosalpinx. Dr. William Duncan said that ovarian tumours complicating pregnancy should be removed at whatever time they were detected, but insisted on the advantage of operating from the abdomen. The President thought that fluctuating ovarian cysts in pregnant women which were not dermoids were hardly ever adherent, and, especially if they blocked the pelvis below the pregnancy, were much more satisfactorily dealt with by the vagina. Dr. Macnaughton Jones considered the best time for removing such tumours was from the second to the fourth month. Dr. Tennison Collins preferred the abdominal operation. Dr. Bedford Fenwick had found that the removal of tuberculous pelvic disease had been followed by such improvement in the course of existing pulmonary tuberculosis that he considered that in young women whose lungs were affected, if there were any symptoms of pelvic disease, the question of an early operation merited grave consideration. The President agreed with Dr. Edge and Mr. Jordan that the view taken by Dr. Fenwick was too hopeful, and that the prognosis in such cases was very doubtful.—Dr. William Duncan showed a uterus with cancer of the body which, owing to the narrowness of the vagina, the extreme obesity of the patient, and to satisfactory elevation of the pelvis not being obtainable, he had removed by a combined abdominal and vaginal operation. Mr. Bowreman Jessett and Dr. F. A. Purcell pointed out the great help to be obtained in such cases by deep paravaginal incisions, known now as Schuchardt's incisions, but which they claimed they had developed independently at the Cancer Hospital.—Mr. Christopher Martin read a paper on the treatment of intractable prolapse by extirpation of the uterus and vagina. He described the technique of his operation,[1] and mentioned the similar operation independently devised by Edebohls of New York. He gave details of four cases in which he had now performed the operation with excellent results. He did not recommend his method except in cases in which the patient's discomfort was extreme and when other and milder measures have been tried in vain. The discussion of the paper was postponed.—Specimens were also shown and cases described by Dr. Bedford Fenwick, Mr. S. Scharlieb, M.D., and Dr. Macnaughton Jones.

[1] British Medical Journal, 1901, vol. ii, October 5th.

REVIEWS.

SURGERY.

In the new edition revised by the author and Mr. Jonathan Hutchinson, Jun., of Sir Frederick Treves's excellent *Handbook of Surgical Operations*,[1] we note some important additions. The further needs of both teacher and student, in accordance with recent advance in surgical therapeutics, have on the whole been met by careful and thorough revision, and the fresh matter on the surgery of the stomach, of the gall bladder and bile ducts, and of the intestinal canal (including the vermiform appendix), together with operations for the radical cure of hernia and for the excision of the Gasserian ganglion, has certainly added very much to the practical value of the book, and renders it a reliable guide for those engaged in practising operations on the dead subject. It seems difficult, however, to make out the reasons for omitting all mention of operations on the thorax, and for the

[1] *The Student's Handbook of Surgical Operations*, by Sir Frederick Treves, Bart., K.C.V.O., C.B., LL.D., F.R.C.S. New edition revised by the author and Jonathan Hutchinson, Jun., F.R.C.S., Surgeon to the London Hospital, Examiner in Surgery, Royal Army Medical Department. London: Cassell and Co. (Cr. 8vo, pp. 486, 121 illustrations. 7s. 6d.)

wholesale reduction of the chapters on excisions of the wrist and hip. Some grounds, we think, should be stated for the exclusive preference of the method here described of performing the first of these operations, and for the omission of any reference to the methods of Ollier and Boeckel, to which in previous editions of this handbook some importance was attached; and with regard to the second operation, the omission of the external or Langenbeck's method, which very probably is far more frequently indicated than the anterior method, seems to us to be rather a serious mistake.

Dr. Senn, of Lausanne, has, by translating Professor Kocher's book on *Fractures of the Humerus and Femur*,[2] rendered accessible to an extended range of professional readers an important addition to Professor Kocher's long list of able and instructive contributions to the literature of clinical surgery. This work, which deals exclusively with juxta-articular fractures of the humerus and femur, though containing much dry and bewildering detail, affords useful and interesting information with regard to both the diagnosis and the treatment of these more or less obscure and much-varied lesions. In common with other communications on surgical subjects from the same author, it is thoroughly practical, and, although its subject is one that has been fully discussed by other surgical authors, it contains much original matter. It is intended, Professor Kocher explains, to make known to younger and less experienced colleagues the results of his own careful study, during a long term of active surgical work, of these difficult and perplexing forms of fracture. The subjects discussed are fractures of the upper and the lower extremity of the humerus and of the upper extremity of the femur. The results of clinical observation, and also of experimental research, carried on during the past twenty years, have convinced the author that the descriptions of fractures near the shoulder, elbow, and hip that are to be found in many manuals are not sufficiently clear to serve as reliable guides to the practitioner, and that in most of these works the different forms of such fractures are not well distinguished. These different forms, which are clearly indicated in the numerous illustrations in this volume, have been made out by clinical and pathological observation, by the examination of osseous fragments removed by resection in cases of old and neglected fracture, and by experiments on the cadaver. The records of the numerous illustrative cases, although evidently the results of minute and careful observation, contain no mention of the use of the Roentgen rays. It is a singular, and, perhaps, might be regarded as a suggestive, fact that in a recent work on fractures abounding in original illustrations not a single copy of a skiagraph is to be found. Professor Kocher's monograph will, we believe, be found very useful as a work of reference in obscure cases of injury about the shoulder, elbow, and knee, especially those in which anxiety may be caused by the probability of a simple or a complicating luxation.

THE PROSTATE GLAND.

The work by Mr. W. G. Richardson, entitled *The Development and Anatomy of the Prostate Gland*,[3] deals with the anatomy, comparative anatomy, and diseases of the organ. The first part deals with anatomy, and the usual description is largely followed. The term "middle lobe" is retained and approved. The recto-vesical fascia and prostatic sheaths are spoken of as structures anatomically and developmentally distinct, the former belonging to the pelvic wall and the latter to the urogenital tract. The rectal fascia is considered to represent the division of the endodermal cloaca and the line of union and insertion of the levator ani muscles the division between the endodermal and ectodermal cloaca. The next section is occupied with the comparative anatomy and the development of the prostate, the growth of which is traced from a series of radially-disposed caecal tubes to the complex human organ. The author holds that the vesiculae seminales are not reservoirs, but that, like the prostate and Cowper's glands, they are secondary sexual glands engaged in secreting a fluid for the preservation of the male element. In support of this view it is pointed out that they are absent in some animals and in others open into the urethra independently of the vasa. The prostate is described as arising from an infolding of the urethral epithelium into the internal longitudinal muscular layer of that canal, and is held to be a collection of specialized mucous glands. The enclosure of the uterus masculinus in the prostate is an accident of development, the prostate in the male having nothing in common with the uterus in the female. The remainder of the work is occupied with the organ disease. The cause of the enlargement of the prostate is said to be old age; "it is not a disease process, it is a normal process." The first change takes place in the gland tissue; the cells become heaped up and then discharged into the lumen, which itself becomes dilated. Later the stroma becomes increased in quantity. This change may affect the whole or only part of the organ, and in numerous instances takes the form of enucleable tumours. The author is uncertain whether the change is to be regarded as a neoplasm. One of the most interesting parts of the work is the writer's opinion as to the nature of "total prostatectomy." He states that after such enucleation, there is always to be found a complete bed of prostatic tissue, and external to this the undamaged sheath of the prostate. This view is supported by the records of three cases. In the first the parts removed had the appearance of the complete prostate. They were removed in one mass, and contained the urethra. Death occurred the same night. Microscopical examination of the parts left in the body showed the presence of thinned-out prostatic tissue. In the second case two lateral lobes were removed. The left separated with great difficulty. Death supervened the same night. The *post-mortem* examination showed that the enucleating finger had passed through the "surgical capsule," and had entered the sheath and torn the veins. The nature of the accident is illustrated by a drawing. The third was a case of attempted enucleation. Great haemorrhage ensued, and the opening in the bladder was enlarged and the veins caught. The operation was completed with scissors. The parts removed consisted of the prostate, urethra, part of the vesiculae seminales, and fragments of the levator ani muscles. The patient recovered, but with an incurable stricture necessitating a permanent drain. This work is well written, well illustrated, and very interesting.

EXPERIMENTAL PHYSICS.

As a reason for increasing the number of textbooks on the subject Dr. Arnold Berliner[4] explains in the preface to his manual of experimental physics from an elementary standpoint that the term "elementary" has no definite limits. He claims this quality for his book on the three following grounds: (*a*) Fullness of description, (*b*) assumption of only a minimal knowledge of mathematics, and (*c*) simple arrangement of matter. In a short introduction Professor Herrmann, the distinguished physiologist in Königsberg, endorses these claims and recommends the book for students of medicine. The arrangement departs from the traditional order, heat being placed before sound, and electricity before light; these four divisions being, of course, preceded by the section on mechanics and the physical conditions of matter. This latter occupies nearly one-third of the whole book, light takes up one-quarter, electricity the same, and heat and sound the remainder. In the text there is hardly anything to be adversely criticized. The account of the microscope is very complete and interesting. The importance of diaphragms, from both the theoretical and the practical standpoint, in the construction of optical instruments, is suitably brought out. The current erroneous description of the Galilean telescope is corrected, and the modern prism binocular described. Only the more recent physico-chemical theories are inserted and explained, a specially full account of Nernst's osmotic theory of the galvanic cell being given. A complete and lucid description of the various forms of waves is a prominent feature of the book. Some subjects are, we think, treated rather too briefly, for example, wirelesss telegraphy, and we did not come across any reference to cryoscopy. The illustrations are considerably below the level of the text—a serious fault in an elementary book. The mathematical figures have very obscure lettering, and most of the diagrams (for example, that of the phonograph) are extremely crude. Many of the illustrations are borrowed from textbooks of twenty or more years ago. One good innovation consists of folding figures to explain

[2] *Les Fractures de l'Humérus et du Fémur.* Par le Dr. Theodore Kocher, Professeur de Clinique Chirurgicale à l'Université de Berne. Traduit de l'Allemand par le Dr. Senn, Chef de Clinique Chirurgicale de Lausanne. Geneva: Henry Kündig; and Paris: Felix Alcan. 1904. (Demy 8vo, pp. 286, 165 illustrations. Fr. 15.)

[3] *The Development and Anatomy of the Prostate Gland*, together with an account of its Injuries and Diseases and their Surgical Treatment. By W. G. Richardson, M.B., B.S., F.R.C.S., Assistant-Surgeon, Royal Infirmary, Newcastle-on-Tyne. London: J. and A. Churchill. 1904. (Demy 8vo, pp. 121, 46 illustrations. 10s. 6d.)

[4] *Lehrbuch der Experimentalphysik in elementarer Darstellung.* Dr. A. Berliner. Jena: Gustav Fischer. 1903. (Royal 8vo, pp. 874; 3 plates and 695 illustrations. M. 14.)

polarized light and double refraction; they make these difficult sections more easily understood than do perspective diagrams. The style is not very attractive nor easy, so that the book can hardly be recommended to the English doctor with German enough only for medical purposes. But the book is worth translating, since there is nothing quite like it in English.

SEWAGE DISPOSAL.

Mr. Dibdin claims—and probably the claim will not be disputed—that he was the first to bring before the public a practicable method of purifying sewage by bacteria. For that reason, and also because of his long experience in sewage purification, any contribution by him to our knowledge of the subject must be welcomed. But his pamphlet on *Recent Improvements in Methods for the Bacterial Treatment of Sewage*[5] is distinctly disappointing. There is nothing very recent in what he describes except a new method for the construction of bacteria beds, and the description of this forms the kernel of his remarks. He describes contact beds which he has constructed at Devizes, filled with waste slate débris. The slates, averaging about $\frac{1}{4}$ in. thick, lying in a horizontal position about 1 in. apart, are supported and separated by small slate blocks. This plan, he states, gives the beds a water capacity 80 per cent. of the total capacity, and doubles their effective working capacity, as compared with beds filled with coke and similar materials. The advantages gained by the use of this method are enumerated, and it is noticeable that Mr. Dibdin evidently still aims at the abolition of all settling tanks. Analyses of effluents from beds of this construction are given, and show a satisfactory amount of purification effected. One remarkable result claimed is the total removal of suspended matters, which does not seem to have yet been attained by any other form of contact bed with one contact only. The method is worthy of consideration, especially in districts where waste slates or tiles are readily obtained, but it appears as yet to be only in the experimental stage, and in any case its adoption would depend upon the cost of construction, upon which Mr. Dibdin does not enlighten us. The rest of the pamphlet is taken up with general remarks and conclusions on the subject of sewage purification, with some of which many readers will certainly not be in agreement. They are, however, not the less interesting on that account. The question of the necessity for preliminary anaërobic treatment of sewage is discussed and the fallacy of such a contention shown. Mr. Dibdin's evidence in favour of the opposite view is, however, not particularly happy, nor is he quite convincing in his illustrations of the way in which a filter acts. A third part of the pamphlet is given up to a synopsis of the reports of the Royal Commission on Sewage Disposal, which may be of value to those who have not the time to read through the reports themselves. One or two errors, or seeming errors, in a paper so likely to be widely circulated must be pointed out. In speaking of the septic tanks it is stated that a residuum of 50 to 70 per cent. of the solid matters collects in the tanks, whereas from the experience at Leeds and Manchester the more accurate figures would be 30 to 40 per cent. In discussing the requirements of the Local Government Board, Mr. Dibdin states that a bacterial effluent may be applied to land at the rate of 30,000 gallons per acre, based on the dry-weather flow, but the Local Government Board place the maximum amount of liquid to be applied to land at that figure, and ask that provision be made, as is stated on the same page in the pamphlet, for twice or thrice the dry-weather flow. Again, it is stated that the quantity of sewage which must be provided for is usually reckoned at the rate of 30 gallons per head per day, while 20 gallons is the more usual figure, and even a lower amount is allowed as the basis of calculation where accurate figures of water supply are available. It may be an expectation set too high that is the cause of the disappointment already mentioned, for Mr. Dibdin is always interesting and always has reasons to offer for his opinion.

The first volume of Contributions from the Berlin Institute for Investigating Questions relating to Water Supply and Sewage Disposal[6] appeared in 1902, and contained an account of the origin of the Institute, which appears to be conducted on lines similar to the "Central Authority," recommended by the Royal Commission on Sewage Disposal and Salmon Fisheries. It also contained contributions to our knowledge of the above subjects by the scientific workers of the Institute. The second volume appeared in 1903, and contained the account of the scientific work carried out at the Institute. The contributions are edited by the Director and his Chief Assistant, and we may expect further valuable reports from the same source. The third volume is entirely devoted to a report upon "Sewage Disposal in England," prepared as the result of a visit paid by A. Bredtschneider of Charlottenburg and Dr. K. Thum, of the above Institute, to this country in the early part of last year. The former is a well-recognized sanitary expert, and the latter is best known in this country through his association with Dr. Dunbar, of Hamburg, in carrying out experiments upon the biological treatment of sewage and trade waste. Their opinions are therefore valuable.

To prevent misunderstanding, the introduction explains the use of the many and often confusing technical terms incidental to sewage disposal. The object of the visit, it is stated, was to obtain a general idea of the position of sewage disposal in this country, and more particularly to see if biological methods have sufficiently stood the test of experience to warrant their use on a large scale in Germany. Eighteen purification works were visited, and the list shows them to have been fairly representative. Owing to want of time, the biological treatment of trade effluents could only be considered in so far as they formed part of the general sewage of a district. A chapter is devoted to general information with regard to the pollution of rivers and the manner of dealing with it in the country; and the topography, climate, and geology of the districts visited, and many other points relating to the subject are dealt with. The Acts of Parliament relating to the subject are detailed, and the various authorities established to enforce them, as well as the standards of purity aimed at, the requirements of the Local Government Board, and the chief recommendation of the Royal Commission.

The third chapter deals with the biological treatment of sewage, and gives a comparison of the English and German methods of examination of sewages and effluents. The English and German views are contrasted. In England, they say, it is generally considered that anaërobic fermentation should precede the aërobic treatment, and that micro-organisms are the purifying agents. In Germany the direct mineralization of the nitrogenous matter, in one stage, as it were, is considered to be the essence of bacterial treatment, and both chemical and physical actions are believed to take part in the purification process. In the case of contact beds, on the question as to whether the bacteria are most active when the beds are full or empty, the English are said to hold the former view, the Germans the latter. The fourth chapter contains detailed descriptions of the eighteen installations visited. The descriptions are ably given, and include accounts of experiments carried out at the various places, putting together information which otherwise must be looked up in many separate journals or proceedings, or in the Reports of the Royal Commission on Sewage Disposal. Six tables at the end of the chapter give the results of the investigations in a concise form, and contain for comparison the results culled from five German towns, and excellent plans and illustrations are appended. The final chapter is the most interesting in the book. A sketch of the development of the sewage problem under different conditions in England and Germany is followed by a series of paragraphs dealing with the many considerations which need to be carefully weighed by designers of sewage works. Then follow similar paragraphs on the separate portions of the sewage disposal works, forming a good summary of knowledge of septic tanks, contact beds, sprinklers, sprinkler filters, and the treatment of storm water. Special comparison is made between contact beds and sprinkling filters, or rather the advantages and disadvantages of both are ably depicted, and it is to be noted that these acute observers do not agree with the opinion recently so frequently and rashly urged by some of our experts that the day of contact beds is over. The question of initial cost and annual expense of both methods is also touched upon and compared with that of land irrigation. The volume forms an able review of the present state of sewage disposal in this country, and is well deserving of careful reading by all interested in the subject.

[5] *Recent Improvements in Methods for the Bacterial Treatment of Sewage.* By W. J. Dibdin, F.I.C., F.C.S. London: Sanitary Publishing Co. 1904. (Crown 8vo, pp. 32. 1s.)

[6] *Mitteilungen aus der königlichen Prüfungsanstalt für Wasser versorgung und Abwasserbeseitigung zu Berlin.* Edited by Dr. A. Schmidtmann and Dr. Carl Günther. Vol. iii. Berlin: August Hirschwald. 1903. (Demy 8vo, pp. 264; 46 illustrations. M. 12.)

WATER ANALYSIS.

ALTHOUGH there is no lack of books on this subject, the latest volume by Dr. THRESH, on *The Examination of Waters and Water Supplies*,[7] fills a distinct gap, and will be welcomed not only by advanced students, but by many officials and others who are professionally concerned with water supplies, and who will appreciate the value of a practical work covering the entire field of water investigation from the source to the consumer. The scheme of the book is well laid out, embracing, first of all, a study of the various types of water supply; the geological and physical features of the different sources; the likely and unlikely causes of defilement, and the methods of discovering the same by personal inspection. The information given as to the actual use of common salt, fluorescine, and even the bacillus prodigiosus, in the detection of pollution is extremely interesting. One statement to which some exception might be taken is that "when the collection of an acid water cannot be avoided arrangements should be made for filtering through some material capable of completely neutralizing the acid." Actual experience at several of the waterworks in the West Riding of Yorkshire, where acid moorland water is so common, has demonstrated the fact that filtration cannot be relied upon, except for a very limited period, to destroy this plumbo-solvent activity. Obviously so, because the filter loses the neutralizing constituent, and therefore additional treatment is necessary. Part II consists of a very complete treatise on the objects and the value of the various methods of examining water, and on the interpretation of results physically, chemically, microscopically, and bacteriologically. This section of the book will be found particularly valuable, for, besides presenting the latest views and the discarded standards of yesterday, it is rich with practical illustrations from the author's own experience, and not confined to any particular portion of the country. The necessity for periodical examinations of all well-waters, particularly shallow wells, is forcibly emphasized. Part III is concerned with the actual analytical processes, and it constitutes in itself an excellent handbook on the detailed chemical, biological, and bacteriological examination of drinking waters. The processes are carefully described with their various modifications, and are elucidated by calculations and actual examples. The disadvantages and limitations of different methods are discussed, and this section contains many practical hints and not a little new material. The estimation of saline constituents is specially dealt with in Chapter XIII, occupying some fifty pages of the work. The bacteriological examination of water is described in the same complete and up-to-date way. One conclusion of the author is that the bacteriological examination, if properly conducted, may be relied upon to detect pollution of water, even where such pollution does not correspond to more than 1 part of recent sewage in 1,000,000 parts of water. The chapter on microscopical and biological characters also forms a prominent feature, and is illustrated by a well-prepared series of plates.

One point which is constantly emphasized by Dr. Thresh throughout this work is the absolute necessity for the careful examination of the sources of supply, inasmuch as it is the gathering ground or source which imparts the character to the water. Such an inspection enables the interpretation of the laboratory results to be made in every case in the light of detailed knowledge of geological, topographical, and sanitary environments. Analysts and bacteriologists, who are called upon to make pronouncements on samples of water with no more local information than is given on the label, will agree as to the difficulties of forming an opinion, yet, as Dr. Thresh says, a water is either "safe" for use for domestic purposes or it is "unsafe." When the source is examined and studied along with laboratory data it is rarely necessary to use the terms "doubtful" or "suspicious." The question of standards, chemical and bacteriological, is carefully considered, and an extensive table is given showing the characters of typical waters from various parts of the country, as well as a table comparing laboratory and inspection results with the opinions arrived at in each case. On the subject of bacteriological versus chemical examinations, the book affords material for arriving at a very fair conclusion—namely, that each have their special use and that one can rarely replace the other. Minute pollutions by sewage cannot be discovered by the chemist, but, on the other hand, the bacteriologist supplies little information except as to microbial life in the sample at a particular moment. Finally, neither the chemist nor the bacteriologist can be safely relied on in all cases without careful local supervision at the source. The author has been at some pains to bring his notes up to date, even including the detection of radium and helium in waters. He has quoted largely from Drs. Houston and Klein, and from the reports of various Commissioners—British and foreign—and it would have added to their value if fuller reference had been given as to the source of some quotations, such as those from the Massachusetts Reports on pages 99, 104, and 105, and to others referred to on pages 102, 109, 140, and 146. To analysts, medical officers of health, and others who share the responsibility of supplying communities with drinking-waters, the citation by Dr. Thresh of numerous actual examples of mischief arising and being traced to its source, should prove of great value, as also the exposure of erroneous deductions based on incomplete data. Directions for the preparation of reagents and media are given concisely in the appendix, along with other useful memoranda. Altogether the book presents in a very handy form all that is really necessary for the detailed examination of waters, and for the correct interpretation of results.

[7] *The Examination of Waters and Water Supplies.* By John C. Thresh, D.Sc., M.D., D.P.H., Medical Officer of Health, Essex County Council. London: J. and A. Churchill. 1904. (Demy 8vo, pp. 476. 14s.)

HYGIENE.

IN his pamphlet on *The Infectivity of Enteric Fever*,[8] Dr. ALEXANDER COLLIE brings together a number of observations on the origin and incidence of the disease, particularly as illustrated in the outbreaks at Caius College, Cambridge; Festiniog, and Wicken-Bonant. The object is to show cause for a revision of our views on the etiology of the disease, the writer contending that enteric fever is an infectious disease communicable by direct personal intercourse, and that the water conveyance theory has not been established in several instances where it was believed to have been determined. Dr. Collie claims that the experience of the channels of infection in enteric at Homerton and the other fever hospitals of the Metropolitan Asylums Board is in support of the view that it is personally infectious and is commonly spread by personal contact. In 1900 Dr. E. W. Goodall drew the attention of the Epidemiological Society to the same fact, and adduced a number of cases in support of the view. But to show how little such views have obtained favour, Dr. Collie discusses the conditions and circumstances of three outbreaks of typhoid fever inquired into by Sir George Buchanan, where the infection was believed to have been waterborne. In particular he deals with the Caius College outbreak of 1873, pointing out that the inquiry ought really to have been into the incidence in Cambridge generally, that dependence upon a definitely known incubation period was unreliable, that personal infection was more likely than water carriage, and that the water-carriage theory did not explain the facts of the outbreak in the College.

Professor KIRCHNER has collected his numerous articles and addresses, which have appeared in various journals during the past fifteen years or more, and issued them in one volume under the title, Hygiene and the Crusade against Infectious Disease.[9] Several of the articles make interesting reading, but the collection as a whole is a patchwork affair, and cannot be regarded as constituting a standard work on the modern problems of hygiene. Most readers expect the information contained in a new publication to be brought up to date, particularly when it deals with a subject which has made rapid advances of recent years; and there is no subject in which it is more necessary to keep up with the times than the bacteriology of infectious diseases, with which the present volume mainly deals. A reprint of an article published in 1890 is hardly likely to satisfy them; they prefer writers who treat the art of bookmaking in a less easy-going fashion, and take the trouble to remodel their earlier observations and conclusions by the incorporation of valuable material which has subsequently been placed on record.

Mr. W. F. GOODRICH has written a book on *Refuse Disposal and Power Production*,[10] which contains some 400 pages and a

[8] *The Infectivity of Enteric Fever.* By Alexander Collie, M.D. Bristol: John Wright and Co. 1904. (Demy 8vo, pp. 47. 1s. 6d.)

[9] *Hygiene und Seuchenbekämpfung* Gesammelte Abhandlungen. Von Dr. Martin Kirchner. Berlin: Richard Schoetz. 1904. (Roy. 8vo, pp. 658. M. 18).

[10] *Refuse Disposal and Power Production.* By W. Francis Goodrich. London: A. Constable and Co. 1904. (Demy 8vo, pp. 400; 98 illustrations. 16s.)

large number of illustrations. If he had concentrated his work into a smaller volume and expressed his views in a less wordy style, we think the result would have been more satisfactory. The book is not well paragraphed, often descends to colloquial expressions, and is lacking in discrimination. Many of the illustrations are uninstructive, and were scarcely worth insertion in a book of this kind. At the same time, it must be allowed that the author has incorporated a large body of facts, through which the reader must find his way as best he may, illustrating the practice of towns in this country and abroad in respect of refuse disposal. The chapters describing British destructors, labour cost, etc., and the long chapter on the means adopted in different towns in England and Wales are the best in the book, and possess a certain value for engineering students. But even here the matter has not been altogether well arranged or scientifically considered. The sewage question is not adequately treated. Whilst it has been our duty to criticize, we have no doubt that, to superintendents of scavenging and refuse departments, the book will prove of value, and it will certainly be useful as a reference book to those who wish to know the methods adopted in various towns.

CONTRACT MEDICAL PRACTICE.

NOTICE AS TO DISTRICTS IN WHICH DISPUTES EXIST.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 84.

MEDICAL NEWS.

HIS MAJESTY THE KING has been graciously pleased to confer the title "Royal" upon the Sanitary Institute, and to signify his pleasure that the Institute be known as the Royal Sanitary Institute.

AN institute for the treatment of lupus has recently been opened in Vienna. Its establishment is mainly due to the initiative of Professor Lang.

THE King of Portugal has appointed Dr. Cabanis de Mello (Poona) a Knight Commander of the Order of the Immaculate Conception, in recognition of his services to the community in Poona, especially with regard to the advancement of pathology and the prevention of plague.

PRESENTATION.—On the occasion of his leaving Ballachulish Dr. A. D. Kennedy was presented by his friends with a purse of sovereigns, a case of medical instruments, and two medical books, as a mark of appreciation. The presentation was made by Dr. Grant.

DR. T. ORME DUDFIELD, M.O.H. Kensington, will open a discussion on the question of the need of sanatoriums for persons suffering from consumption and how it may be supplied, before a meeting of the Charity Organization Society, which will be held at the Royal United Service Institution, Whitehall, on Monday next, at 4.30 p.m.

DEFECTIVE CHILDREN.—A school for mentally and physically defective children was opened on October 22nd at Oldham by Dr. Yates, Chairman of the Local Education Committee. It is intended for the accommodation of 120 children, two departments having been kept in view in planning the building. One of these is to deal with children whose defects are mental, and the other with those who suffer from physical disabilities. The total cost was stated to have been £8,836.

THE number of medical men who hold high Masonic office has been increased this month by the appointment of Dr. Robert Kirk to be Provincial Grand Master for Linlithgowshire in the room of Bro. Colonel Thomas Hope. The ceremony of installation was performed on October 17th by the Acting Grand Master of Scotland in the presence of representatives of the various lodges concerned. Dr. Kirk is in practice at Bathgate, and is a Justice of the Peace for Linlithgowshire and a member of the Lothian Division of the British Medical Association.

COCAINE AND CRIME.—According to the New York *Medical Record*, a large number of crimes have lately been committed by the coloured population of Cincinnati, and the Chief of Police attributes this to the large increase in the cocaine habit, especially among negroes. It is estimated that 250 oz. of the drug are sold to them each month.

THE authorities of the North-Eastern Hospital for Children, Bethnal Green, announce that half its beds must be thrown out of use at the end of December unless in the meantime adequate assistance is obtained. With the approval and financial support of King Edward's Hospital Fund, the total number of beds in this hospital was raised from 57 to 114 some two years ago, and they have been constantly occupied; naturally, therefore, the expense of ordinary maintenance has nearly doubled. It was hoped that it would be met by a corresponding increase in annual contributions, but this not having proved to be the case, a maintenance debt of £4 000 has already been incurred, and the Committee does not feel justified in allowing it to increase. A special fund has been opened, in the hope that it may be possible to carry on the work through the winter, and subscriptions towards it will be received by the Secretary at the Hospital, Hackney Road, Bethnal Green.

A CONFERENCE arranged by the Sanitary Institute and the King Alfred School Society will take place at the Parkes Museum, Margaret Street, London, W., on Friday, November 11th, at 5 p.m., when a discussion on recent educational developments, with special reference to the new education code and the report of the Moseley Commission, will be opened by Dr. Alfred Greenwood and Mr. J. Osborne Smith; the chair will be taken by the Warden of Bradfield College. The conference will be suspended at 7 p.m. and resumed at 8 p.m., when the chair will be taken by Sir James Crichton-Browne, and the discussion will be continued by Dr. T. Gregory Foster and Mr. A. J. Shepheard, Vice-Chairman of the London County Council Education Committee.

SERVICES FOR THE MEDICAL PROFESSION.—The annual medical services at St. Paul's Cathedral, held under the auspices of the Guild of St. Luke, took place on Monday evening last, October 24th. A large congregation assembled, comprising probably 250 members of the medical profession. Of these, about 100, clad in academical costume, went in procession up the nave to the seats reserved for them under the dome. Among those present were the Archdeacon of London, Dr. Russell Wells (Provost of the Guild), and Sir Dyce Duckworth and Surgeon-Colonel Welch (Vice-Provosts). Minor Canon Lewis intoned the service; Dr. Belcher read the first and Dr. Lewis Lewis the second lesson. The choir consisted of 300 voices, provided by the London Gregorian Choral Association. The sermon was preached by the Bishop of Southwark from Ephes. iv, 12—"For the edifying of the body of Christ." They had met to manifest the true unity between the healing power of the body and that of the soul, and the physician of each was constantly the exponent of the principles of the other. They stood together in the enterprise of their linked professions facing the forces of evil. There was need of greater courage in all ranks in regard to religious conviction. Taking it all in all, England was profoundly religious. It was true that he who ran and only read superficially some article or passing book just written to sell—attracted, it might be, by some adventurous preacher whose chance of being heard was that he should be unusual—flung down his arms and said that England had lost her faith. He thought it likely that owing to the marvellous poverty of instruction given to the upper and middle classes in the science of religion, and instruction which for its inaccuracy and looseness would be laughed at as pretentious in the schools of any other science, men, and perhaps the most honest men, suspended judgement on this and that, and preferred on being challenged to say that they did not know. But down below this uncertainty rested a splendid repose of simple faith in God.—The annual service for the medical profession in Liverpool, Birkenhead, and district took place on Sunday, October 9th, in St. Luke's Church, Liverpool. The congregation, the largest on record, included the Lord Mayor and Lady Mayoress. The Bishop of Liverpool read the lesson and the Right Rev. Dr. Darcy, Bishop of Clogher, preached. The collection was for the Medical Benevolent Fund. The President of the Medical Institution (Dr. Barr) and Mrs. Barr afterwards received the members of the profession, the officiating clergy and their friends, at the institution where tea was provided.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1904.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, OCTOBER 29TH, 1904.

THE HEALTH OF THE NEW GENERAL SERVICE ARMY.

An Army Order was issued on October 20th directing that in future all enlistments for the infantry of the line shall until further orders be for a period of nine years with the colours and three in the reserve. This is in accordance with the Army reorganization scheme put forward by Mr. Arnold-Forster last July. We may conclude, therefore, that the Secretary of State for War has made up his mind to try the scheme on a large scale, and that from the political point of view the only element of uncertainty is the effect which it may have on recruiting.

We took occasion, however, on July 23rd (p. 210) to call attention to certain considerations in connexion with the health of the army which arise in consequence of the adoption of the scheme. It was there pointed out that the plan of enlisting men of the General Service Army for nine years (that is, six months at a dépôt and eight years and six months with the colours) would mean that a large proportion of the men serving in India would be above five years' service. Under the old system, where the maximum period was seven years, which might be extended if necessary to eight years, about 15,000 men out of a total average strength of about 65,000, were of five years' service and upwards, and we have given statistics of the mortality and invaliding at various ages and at various lengths of service in India showing high rates in both cases among these men. Conclusions drawn from these statistics will apply with all the greater force to men who may be kept in India for a still longer period.

There is, we believe, a general impression that the British soldier becomes seasoned after a few years' residence in India. As was pointed out in the article to which we have referred, this view is not supported by the statistics. It is true that the incidence of enteric fever upon the young soldier is much more severe than upon the older men, and this accounts to a large extent for the high mortality, 23.09 per 1,000 of strength among soldiers of less than one year's service in India, but the mortality steadily declines until it reaches a ratio of 10.92 per 1,000 of strength in the fifth year of service; after that it rises again and is 14.98 per 1,000 in strength among men of from five to ten years' service. The invaliding in this period is also high, 38.28 per 1,000 of strength—a ratio materially higher than at earlier periods. The soldier of longer service, though not so liable as the young soldier to enteric fever, suffers severely from other climatic diseases, dysentery, hepatic disease, and the ill-defined, because imperfectly understood, fevers of India of which the so-called Dum-dum fever is an example.

Since the alternative proposal that the period of service should not be lengthened has been rejected, there is the strongest obligation upon the War Office to take into immediate consideration the means which are available for diminishing the mortality and the invaliding which now occurs in India among soldiers of more than five years' service. We believe Mr. Arnold-Forster is deeply concerned for the health of the troops, but we are not convinced that he has as yet fully appreciated the great drain upon the service due to the diseases to which we have referred, or the importance of proceeding without delay to institute the scientific researches and inquiries necessary to elucidate their etiology.

In reply to a question put in the House of Commons by Sir Walter Foster last July, the Secretary of State for War stated that steps were being taken to investigate the mode of infection in Dum-dum fever; that a Special Committee was studying antityphoid inoculation: that another was investigating Malta fever; and that preventive measures against malarial fevers were being adopted at military stations in India, where such fevers were prevalent. The Malta Fever Commission is appointed jointly by the Admiralty, th War Office, and the Government of Malta, with assistance from the Royal Society, and the Committee on Antityphoid Inoculation is investigating a matter which affects chiefly the young soldier; so that it would appear that the War Office is at present carrying out only one special inquiry the results of which are likely to have any direct influence on the point to which we have here called attention. We are strongly of opinion that this is not by any means enough and that the Secretary of State for War would be well advised to institute at an early date more numerous inquiries into the etiology of those ill-defined diseases which until recently have been confused with malaria, with enteric fever, or with dysentery. We have reason to know that there are officers of the Royal Army Medical Corps, who are ready and competent to take advantage of any opportunities for research in this direction which may be afforded them. We believe that Mr. Arnold-Forster holds broad views as to the possibilities of a highly-trained medical service, and is in sympathy with the aspirations of the younger generation of Army medical officers. By encouraging them to take their due share in the progress of medical knowledge he will do very much for the ultimate success of his new scheme for a General Service Army. The prolonged crisis through which the Royal Army Medical Corps has been passing is not yet over. A great deal has been gained. The position of its officers as members of a corps essential to the welfare of the Army in peace as in war has been established, but the scientific character of the corps needs to be consolidated and confirmed under the guidance of men thoroughly imbued with the spirit of modern medical science and administration. We trust that considerations of this order may have due weight and we venture also to express the hope that at no distant date the Corps College soon, as we understand, to be housed in suitable buildings in London, will take its place as one of the great teaching institutions of London, affiliated to the University. While gaining from such affiliation academic distinction and guidance, it will furnish to the University a department of a complete medical faculty, which it at present lacks.

THE PSYCHOLOGY OF THE FEE.

A high priest of science, of whom it cannot be said as it was of the Merry Monarch that he never said a foolish thing, has lately thrown in the face of the medical profession the fact that it is "fee-paid." It is not at once apparent why payment by fee should be treated as something less honourable than payment by salary. It cannot be denied that a man who depends on fees for a livelihood has, as a rule, to work much harder than one who is paid by the State for his decorative value; and perhaps the explanation of the gibe is to be found in a survival of the feudal notion that work is in itself degrading. The discussion of this question would, however, lead us too far from the matter with which we are immediately concerned, which is the psychology of the fee. By this we mean the effect of the fee on the mind of the patient on the one hand, and on that of the practitioner on the other.

As regards the patient, his mental attitude towards the fee cannot be more tersely described than in the famous epigram of Enricus Cordus:

> Tres medicus facies habet: unam quando rogatur
> Angelicam; mox est cum juvat ipse Deus.
> Post ubi curato poscit sua praemia morbo
> Horridus apparet terribilisque Sathan.

Which for the benefit of future doctors of the learned University of London may be English'd thus:

> Three faces hath the Doctor: when we're ill
> He seems an Angel; when he's cured the evil,
> God's self we deem him; when the little bill
> Comes in long after, he's the very D——l!

From this mutability of mood, which is inherent in our fallen nature, the wisdom of the ancients deduced the precept attributed to the Father of Medicine, which is enshrined in the jingling hexameter:

> Exige dum dolet: post curam medicus olet.

The effect of the fee on the mind of the patient may also be regarded from another point of view. Most people estimate the value of a thing by its cost; hence a thing for which nothing is paid is counted as worthless, as most medical practitioners learn by experience. Here again the proverbial philosophy of the olden time puts the matter in a nutshell:

> Empta solet care multos medicina juvare:
> Si data sit gratis nil confert utilitatis.

This supplies the strongest argument from the strictly philanthropic standpoint against hospital abuse.

On the doctor's mind the fee, it is said, has the effect that sack, according to Falstaff, has on the brain. That excellent authority tells us that learning is a mere hoard of gold kept by a devil till sack sets it in act and use. The fee has a like stimulating influence on the doctor. Henri de Mondeville, who was surgeon to Philip the Fair, says that the leech who wishes to do his best for his patient should first make sure of his fee, as if he does not do this, he cannot give his whole attention to his patient. As he puts it, "the mind's eye is utterly darkened, and one may say of him with the Psalmist that he hath eyes and seeth not." But if he has secured his fee, "the blind man sees, the halt walketh, or rather runneth."

These prudent counsels have evidently been taken to heart by a surgeon whose name has of late been much in men's mouths in France. M. Doyen believes that he has discovered a cure for cancer, and he has naturally made the fact known. Among the patients who sought relief at his hands was an American lady suffering from cancer, which American physicians had declared to be incurable and on whom an English surgeon had operated without success. M. Doyen undertook to treat the case with his serum and asked for a fee of £4,000, which was paid a fortnight after the injections were begun. As the treatment seemed to make the patient worse her husband insisted that it should be discontinued. The lady died a few months later, and her husband has brought an action for the return of the fee. If he succeeds he proposes, according to the *Figaro*, to hand over the money to the Pasteur Institute where, he says, other serums are prepared, the formula of which is not a mystery and which are more efficacious than the one which has cost him so dear. M. Doyen, on his part, holds that a bargain is a bargain, and we learn from the *Temps* that he is in the habit of making his patients pay his fees beforehand. *Voyez vous*, he is quoted as saying, *c'est plus sûr!* Evidently he puts no trust in the gratitude of his patients.

The case is exciting great interest in Paris, and the *New York Herald* has interviewed several leading members of the medical profession on the question of the fee. According to our contemporary, Dr. Rochard thinks that although £200 or even £400, or in very exceptional cases £800, may be charged for an operation, it is impossible to conceive that injections of any serum could be worth £4,000. Dr. Paul Segond, while allowing a considerable latitude in the fee for an operation (from £120 to £600), does not agree with Mr. Justice Grantham that the rich must pay for the poor. He adds that, in his experience, fees are never paid beforehand. On this point there is a general agreement among the surgeons interviewed, among whom were Professor Poirier, Professor Sébileau, Dr. Picqué, and other men of light and leading. It may be added that they were all sceptical as to the efficacy of the serum.

We give these newspaper statements for what they may be worth, and we await the issue of the trial without impatience. What really interests us is the illustration which the case affords of the psychological effect of the fee. In justification of his habit of asking for payment beforehand M. Doyen may plead the teaching of a successful surgeon of the Dark Ages, and he has mediaeval authority for the belief which he doubtless holds that this cautious practice is inspired by a tender regard for the welfare the patient.

PROFESSOR SCHÄFER'S METHOD OF PERFORMING ARTIFICIAL RESPIRATION.

Although Silvester's method has for many years been accepted as the best all-round method for inflating the lungs, conditions exist in which other methods offer advantages. Indeed, there have not been wanting adverse criticisms upon the Silvester method, and recently Professor Schäfer has undertaken an experimental inquiry into the methods in vogue, and, further, has suggested a method which he claims combines both efficiency and simplicity. Taking the best-known methods in the order of their seniority, the Marshall Hall method comes first. In this the subject is placed in the prone and rolled from the prone to the lateral position and back again, pressure being made upon the back when the prone position is assumed. The rolling movements, however, necessitate the expenditure of some physical effort, and in the case of a heavy patient this may tax unduly the strength of the helpers, and so render their efforts less efficient. The actual ventilation effected by Marshall Hall's plan,

according to Professor Schäfer,[1] depends largely upon the alternating pressure exerted upon the back of the patient. Since, however, no inconsiderable part of the time expended in the process is occupied by the act of rolling the patient from the prone to the lateral and back to the prone positions, the actual amount of time during which air can be made to enter and leave the lungs is curtailed. The actual amount of air entering at each respiration is according to Professor Schäfer's figures, 254 c.cm., and the total for a minute 3,300, as against 450 c.cm. at each respiration, and 5,850 per minute in natural respiration in the prone posture. The method is therefore open to the objection that the amount of air forced in by the mechanical measures adopted is insufficient.

In the Silvester method the posture adopted is the supine, while arm traction is relied upon to effect inspiration and lateral pressure to assist expiration. The physical exertion involved in this method is very great, and the actual result, as is shown by Professor Schäfer, is small. For each respiration only 178 c.cm., and for the minute 2,280 c.cm., constituting the average amount of air entering the lungs.

The Howard pressure method, the patient being in the supine position, gives more satisfactory results, the air exchange at each respiration being 295 and 4,020 c.cm. per minute.

The prone posture with pressure applied as in Howard's plan, however, presents a far better result, giving 520 c.cm. at each respiration and 6,760 c.cm. per minute, or an amount of air exchange greater than the normal tidal air of the individual. It is this method which Professor Schäfer advocates, both upon the grounds of its offering a more effectual ventilation of the lungs and because it rests upon a more sound physiological basis. The work of Hering, Breuer, and Head has demonstrated that the main factor in exciting inspiration is the emptying and collapse of the lungs, and this is effected when expiration is active while inspiration is passive. Now, in the Howard and Schäfer methods emptying the lungs is the active process, while inspiration is the passive, and thus the physiological stimulus essential to inspiration is supplied, whereas in the Silvester method the converse obtains and the respiratory centre is left unstimulated. The supine position also presents obvious disadvantages when compared with the prone, such as the liability to falling back of the tongue. Further, in the case of the apparently drowned, it offers no facilities for the exit of water and mucus. Pressure exerted when the patient is in the supine position as in Howard's plan, may cause serious accidents, such as rupture of the liver. It is obvious that such occurrences are less likely when the patient lies face downward with a folded coat placed beneath the lower part of his chest, as in Professor Schäfer's plan. A point upon which Professor Schäfer insists is that the person applying his method shall place himself athwart the patient's body in a kneeling posture, with his face looking towards the head of the person operated on. The hands are placed upon the lower ribs, and firm rather than violent pressure is made. The operator's body is then slowly raised, the hands being kept in position so that his weight is gradually removed. The swaying to and fro of the operator's body is repeated every four or five seconds in a rhythmic manner, so that not only is the fluid induced to flow from the mouth, but the lungs become more filled with air.

[1] *Proceedings of Royal Society of Edinburgh*, vol. xxv, Part I, p. 49.

This method, although somewhat severely criticized by speakers in the debate before the Royal Medical and Chirurgical Society,[2] seems to be based upon accurate reasoning, and possesses the merit of being supported by experimental proof. We have referred in the main to the case of resuscitation of the apparently drowned; but the fact that the method of Professor Schäfer gives the greatest air exchange renders the procedure equally applicable to narcotic poisoning when other circumstances, such as the region under operation in the case of chloroform asphyxia, render the prone posture one which can be employed. It must not be forgotten that more patients cease breathing during chloroform narcosis before the operation is commenced than after, and there appears to be no adequate reason why, in future, Professor Schäfer's method, rather than that of Silvester, should not be applied in these cases.

SIR CONSTANTINE HOLMAN.

THE Council of the British Medical Association at its meeting on October 19th awarded to Sir Constantine Holman the gold medal for distinguished merit. Sir Constantine Holman has been a member of the British Medical Association for more than half a century. He joined the South-Eastern Branch in 1853, and assisted Messrs. Thomas and Peter Martin of Reigate in the secretaryship of the Branch and the subdivision in three counties into six Divisions for clinical work. In 1863 he became secretary of the Branch and was its president on the occasion of its twenty-fifth annual meeting. He was almost continuously a member of the old Committee of Council, and was a most regular attendant at its meetings. In 1887, at the annual meeting in Dublin, he was elected Treasurer of the Association, an office which he held for the usual term. During his long association with the conduct of its business he took a leading part in procuring the removal of the central offices of the Association to London, in bringing about the direct representation of Branches on the Council under the constitution which has only recently been replaced, and was engaged in assisting Dr. Waters, of Chester, in promoting the passage of the Medical Act of 1886. In addition to all this work, Sir Constantine Holman has given much time and energy to the benevolent institutions of the profession, and has, as Treasurer of Epsom College, recently placed that great educational institution on a sound financial basis. The Medal for Distinguished Merit was first awarded in 1877 to a number of medical men in recognition of their heroic conduct and humanity at a terrible colliery accident at Pontypridd, and in 1888 it was presented to Dr. F. Ormrod in recognition of his rescue work at a colliery accident at Workington. It was awarded to Surgeon-Major Reynolds, V.C., of Rorke's Drift, and Surgeon-Captain H. F. Whitchurch, of Chitral, and in 1890 to Surgeon Parke on his return from the Emin Pasha Relief Expedition. In 1880 it was awarded to Dr. William Farr for his labours in statistical and sanitary science, in 1886 to Dr. Edward Waters for his exertions in the cause of medical reform, and in 1897 to Mr. C. G. Wheelhouse and Sir Walter Foster for their services as direct representatives on the General Medical Council.

RURAL HOUSING.

THE annual meeting of the Rural Housing and Sanitation Association was held on October 26th, under the Chairmanship of Mr. Claude Hay, M.P., at 24, Park Lane, by permission of Lord and Lady Brassey. Mr. Rider Haggard said that the whole question resolved into the provision of decent houses for the rural population. The movement initiated by the Association necessarily excited a certain amount of opposition, especially from the landlords and

[2] *Transactions*, vol. lxxvii, p. 615.

others who had to pay. If, as might happen, England were called upon to fight for its life, its chief need would not be money, but men. They would have to be men of the right sort—the men from the countryside: but men were leaving the country for the towns, because there were no houses for them to live in. In what he called the back districts of England he saw everywhere ruined wretchedness made pretty for summer visitors with ivy and roses. Cottages were not built at the present time because cottage property was absolutely unremunerative. Any plan to force money from landlords with which to build unremunerative cottages would be unsound and inequitable. Miss Constance Cochrane considered that much of the evil condition of rural housing and water supply was the result of defective administration. In some districts a sanitary conscience was awakening, and some sanitary defects had been remedied. About half the rural districts in England had adopted by-laws which in some parts had placed very unfair restrictions on building with other materials than stone. Mr. C. E. Paget, Medical Officer of Health for the County of Northampton, sent a communication, in which he said that among the many suggestions made for the improvement of rural housing and sanitation those had his most cordial sympathy which aimed at perfecting existing powers. The supervision of the dwellings of rural labourers and other sanitary matters should be put on a higher level than that usually accorded it by rural district councils. Every inspector of nuisances should be a person whose competence had been proved by examination. All non-county boroughs and urban and rural districts should be required to obtain the consent of the county council for each appointment of an inspector of nuisances. Much could be done in preventing the fall into disrepair of cottages by timely interference on the part of a local authority. The small owners of cottage property were averse to repairs, and would do nothing unless pressed by a sanitary official. He quoted Section xxx of the Housing of the Working Classes Act, 1890, which directed the medical officer of health of every district to represent to the local authority any dwelling-houses injurious to health. This was usually done too late for repairs to be effective. After some further discussion the Chairman said that the remedy lay in organization and not in legislation. He compared the practice in England with other countries, especially Germany. If the public were really interested, the reconstitution of the Local Government Board would be demanded. A resolution was carried expressing the unanimous opinion that the condition of housing, sanitation, and water supply in many rural districts demands the immediate attention of the Local Government Board, sanitary authorities, and the public at large.

THE FALLACIES OF STATISTICS.

We have received a copy of the weekly report of the Commissioner of Health for the City of Chicago, dated October 8th, in which attention is drawn to the alarming fact, if fact it be, that "nearly 6 per cent. of Chicago's male population in early manhood is afflicted with Bright's disease"! Such is the inference, we are told, which is warranted by the results of the examinations made during the week by Department physicians of 489 applicants for appointment to the City Fire Department, and, it is added, "When it is reflected that the principal cause of such trouble is exposure to cold and wet 'after a drinking bout,' the figures do not speak well for the habits of Chicago's young men." The Commission then quotes figures from the annual reports to show the great increase in the annual mortality from Bright's disease since 1868, and attributes it to the high tension of modern life, with its temptations to irregular habits and excesses of various kinds and its great strain upon the complex and important mechanism of the body. We have no doubt that in Chicago, as in every great city, the hurry and bustle of life tell upon the population, and that the alcoholic habit which, even when not leading to drunkenness, is so widespread among urban populations in Europe as well as in America gives rise to conditions which at least figure in statistics as Bright's disease; but with regard to the cases in early manhood, it is open to serious doubt whether the facts warrant the conclusion at which the Commissioner arrives. The frequent occurrence of albuminuria in adolescents has been long known, and if we add to the genuine cases of renal albuminuria all those liable to be classed as such (for example, urethral discharges) in examinations made by a medical examiner for appointments of this class, we need not be surprised at the results, but we should certainly be very unwilling to admit that more than a very small proportion of these cases are likely to be suffering from organic disease of the kidneys. We may recall Dr. Stirling's figures obtained on a training ship, where out of 461 persons examined 118 had albuminuria, though the majority were presumably healthy boys.

NATIONAL SOCIETY FOR EMPLOYMENT OF EPILEPTICS.

Thursday, October 20th, was a red-letter day at the Chalfont Colony for Epileptics, for Lord and Lady Rothschild paid it a visit formally to inaugurate the new administrative building which has been erected by the munificence of Mr. Passmore Edwards; the latter in a sense may be designated the founder of the colony, since from first to last he has contributed no less than £18,500 to its funds. The proceedings opened in the recreation hall, which has recently been enlarged. Mr. E. Montefiore Micholls, Chairman of the Executive Committee, who presided, made a brief introductory statement, in the course of which he mentioned that the recreation hall had been built by the colonists themselves, and referred also to the prowess displayed by them in outdoor sports as recorded in their own magazine, the *Chalfont Colony Chronicle*. He then spoke of the new administrative house, which, he said, though a valuable addition to the resources of the colony, needed yet an additional £1,500 to be spent on it to complete it according to the original plans. The Society was doing as much good as it could with the means at its disposal, but these did not suffice for the pressing demands for assistance from all quarters. Sir William Broadbent proposed a vote of thanks to Lord and Lady Rothschild. He characterized the colony as a happy, useful, and well-occupied community, and referred to their obligations to Mr. Passmore Edwards in rendering its rapid growth and expansion possible. Dr. Buzzard, in seconding the motion, referred to the remarkable progress which the colony had made during the ten years of its existence, and to the inestimable benefits resulting to epileptic patients from suitable surroundings and interesting occupation. Lord Rothschild, having briefly acknowledged the vote of thanks, proceeded to open the new building, which has been named the Passmore Edwards House, and consists of matron's apartments, storerooms, offices, and a large well-lighted kitchen. Architecturally it harmonizes with the other houses in the colony, of which there are now no less than eight available for the residence of patients, each accommodating from 20 to 30 inmates. It is, perhaps, not generally known by the profession that one of the houses was originally designed as a convalescent home for epileptics, other convalescent homes objecting to receive patients subject to fits, and this is also available for epileptic cases under private or family care needing a country holiday. Particulars as to this or the admission of ordinary "colonists" may be obtained of the Secretary, Mr. Pearce Gaskell, 12, Buckingham Street, Strand, W.C.

M. DOYEN'S CANCER SERUM.

At the Surgical Congress recently held in Paris, M. Doyen, in the presence of a very large audience, presented a report on his researches on the treatment of cancer, mention of which was made in the British Medical Journal of February 27th, 1904, p. 507. He began by presenting to each member of the Committee of the Congress a large volume entitled *Etiologie et Traitement du Cancer*, illustrated with 174 photomicrographs which he had just completed. After referring to the communications on the etiology and treatment of cancer submitted by him in February

last to the Académie de Médecine, he went on to point out that he had never claimed to have discovered the great formula for the cure of cancer. He had merely described a method by means of which he had achieved results never yet attained by any one. He summarized these results as follows: 42 cures, confirmed on September 30th, 1904; 46 cases still under observation, many of which appear favourable: 20 cases of which nothing has been heard and which will be classified later; 128 bad cases in which the treatment had failed, having either been begun too late or interrupted against his will, before any lasting effects could be produced. There remain, said M. Doyen, 6 cases in which patients died accidentally when cure seemed certain. These have not been numbered among the cases of cure, as he wishes to include in the list of cures only patients who are alive and can can be examined by competent practitioners. In most of them it is easy to learn the condition previous to the "antineoplasic" treatment by reference to the practitioner under whose care they were at that period. The specimens have been preserved in his museum, and almost all the operations have been followed by microscopic examinations of the tumous, preparations of which may be examined in his laboratory. M. Doyen concluded by saying: "I place the verification of these facts at the disposal of my brethren. Let them come and see, that is all I ask; every one will then be able to convince himself that my statements are well founded." M. Doyen's communication was discussed by M. Reynès, of Marseilles, who said he could not conceive that a microbe such as the micrococcus neoformans could be capable of producing all kinds of growth, the histological structure varying according to the tissue into which it had been inoculated. M. Doyen's views seemed to him opposed to the accepted principles of pathology. Professor Poirier said the existence of the specific micrococcus described by M. Doyen seemed to him extremely doubtful, and this doubt necessarily extended to the efficacy of the serum of which it was the basis and the active element. M. Doyen's affirmations were supported by nothing in the nature of proof. He had isolated and christened the micrococcus neoformans in 1900, and had shown cultures at Berlin, Madrid, and elsewhere; but although control researches had been made in various laboratories in France and other countries, no confirmation had so far been forthcoming. Up to the present time M. Doyen remained the only person who had seen the micrococcus neoformans. "When," said Professor Poirier, "M. Doyen has got competent bacteriologists to recognize and admit the specificity of the micrococcus which he believes himself to have discovered, and the right of this micrococcus to the epithet "neoformans," we will with all our hearts and with pride salute in him a bacteriologist of genius and a benefactor of mankind." He concluded by inviting M. Doyen to show cases before and during, as well as after, treatment; only under such conditions could proof be obtained. M. Follet suggested the appointment of a committee of control to test the statements that had been made. M. Doyen refused to submit his cases to a committee which should claim to control his work and interrupt the therapeutic experiments that had been in progress for a year. He expressed his willingness, however, that the Congress in general meeting assembled should appoint a committee of some of its members, which in conjunction with himself should select patients to undergo the treatment and report on the results. The Congress, having considered the matter, came to the conclusion that, being merely a temporary gathering, it had no authority to appoint a permanent committee, and it suggested that the Pasteur Institute and the Société de Chirurgie should be invited to decide, in co-operation with M. Doyen, as to the best means of settling the whole question, from the bacteriological as well as the clinical point of view.

OUR FRENCH VISITORS.

AT the banquet which brought to a close the recent visit of French physicians and surgeons to London, Professor Poirier told us what our guests would say to each other in the train, on the boat, and to their countrymen at home, about the way in which they had been received. We have now had an opportunity of seeing these impressions reflected in the French medical journals. In the *Bulletin Médical*, Dr. Janicot is enthusiastic in appreciation of the open-hearted welcome given to the visitors, and the lavish hospitality with which they were entertained. The message from the King, he says, increased their surprise and regret at not seeing the French Ambassador at the banquet. The visitors were greatly struck by our hospitals, the comfort and organization of which were in sharp contrast with those of Paris. In certain respects, however, Dr. Janicot thinks we might learn a lesson from our neighbours, especially in regard to maternities. Nor has London anything that can be compared with the vast abundance of clinical material to be found at the Hôpital Saint Louis. But on the whole the balance of points worthy of imitation is largely in our favour. According to Dr. Janicot, however, imitation is not easy. The sinews of war are wanting; administrative centralization, subject to political influences, paralyses efforts towards reform; the want of healthy rivalry between the various hospitals leads to stagnation, while the fact that they are State-supported stays the hand of the private benefactor. These considerations may be commended to the serious attention of the Socialist *doctrinaires* and political anglers for working men's votes who advocate the municipalization of our hospitals. For the enlightenment of its stay-at-home readers, the *Bulletin Médical* is publishing a series of articles on the London hospitals by experts. Dr. Huchard in the *Journal des Praticiens*, of which he is editor, says the visitors brought away from London a charming and lasting remembrance of the exquisite courtesy with which they were received. The warmth of the welcome and the luxurious splendour of the hospitality extended to them by their English hosts will make an adequate return difficult when the time comes for the profession of Paris to play the part of hosts. This, says Dr. Huchard, will probably be in April or May, 1905, and he calls on his brethren to give the British visitors a welcome that shall be a worthy expression of the feeling of hearty good fellowship by which they are animated. Equally cordial sentiments are expressed by the *Journal de Médecine* and the *Gazette Hebdomadaire des Sciences Médicales*. It is pleasant to note that to Dr. Sillonville, whose modesty kept him somewhat in the background in London, the initiative in the matter is unanimously attributed by our French contemporaries; and that he and Dr. Triboulet, to whose organizing ability the success of the visit was largely due, are called upon to take the lead in making arrangements for the reception of the English visitors to Paris.

THE NEW PRINCIPAL OF QUEEN'S COLLEGE, CORK.

IT was announced on Tuesday that the King had been pleased to appoint Bertram Coghill Alan Windle, M.D., D.Sc., F.R.S., Professor of Anatomy and Anthropology in the University of Birmingham, to be Principal of the Queen's College, Cork, in the room of Sir Rowland Blennerhassett, Bart., resigned. This appointment, by which Cork gains a distinguished Principal, deprives Birmingham of one who, not less as Dean of the Medical Faculty than as Professor of Anatomy, has been for twenty years the corner-stone of the Medical School. Dr. Windle went to Birmingham as Pathologist to the General Hospital in 1882, and was afterwards, for a few months, Resident Medical Officer, but his natural bent was towards teaching rather than practice, so that when those who, in 1884, were carrying out the reorganization of the School at Queen's College, recognizing his character and ability, offered him the Chair of Anatomy, together with the position of Dean, he accepted the charge, and has amply justified their choice. We need only refer to the important changes in the Birmingham Medical School since Dr. Windle was appointed Dean; to the transfer of the School from Queen's College to Mason's College, and to the development of the latter into the

University of Birmingham; in these Dr. Windle took a prominent part, and their success was due in no small measure to his energy, knowledge, and tact. The new Principal is the son of the Rev. S. A. Windle, B.D., and was born at Mayfield, Staffordshire, in 1858. He was educated at Repton and Trinity College, Dublin, where he graduated in arts, science, and medicine. He is F.R.S. and F.S.A., and has written much not only on anatomy, but on anthropology and archaeology. His latest work, published this autumn, is on the *Remains of the Prehistoric Age in England*. He has always taken an active part in the public life of Birmingham, and was for some years one of the representatives on the school board of the Roman Catholics, to which religious community he belongs. He is the representative of the University of Birmingham on the General Medical Council, and chairman of its Education Committee; he is a member of the Consultative Committee to the Board of Education. When he quits Birmingham Dr. Windle will leave behind him numerous friends, and will carry with him the hearty good wishes of all who know him for his success in the new sphere of work to which he has been called.

A SUPPLEMENT OF QUACKERY.

George Eliot describes one of her characters as being "not only unexceptionable in point of breeding, but also interesting on the ground of her complaint, which puzzled the doctors, and seemed clearly a case wherein the fullness of professional knowledge might need the supplement of quackery." Nowadays, if one may believe the accounts of the patent medicine vendors, cases in which doctors fail and quack nostrums succeed are so exceedingly common that the condition of the lady in question would need to have presented other features than those recorded before exciting interest among her acquaintances in Middlemarch. The fancy for a "supplement of quackery" is, unfortunately, as prevalent nowadays as in the times described in the novel, and it is in pandering to this morbid eccentricity that the proprietors of the patent medicines find their opportunity and their market. The ingenuity displayed by these gentlemen in pushing their wares is so marked and so varied that it must compel our wonder, even if it entirely fail to command our approval. Only lately a pamphlet was thrust into our letter-box, and we had an opportunity of glancing at it on its passage to the dust-bin. On the outside it was described as an Egyptian Dream Book, but a brief inspection showed that its real object was to publish the miraculous virtues of Doan's "Backache Kidney Pills." It was arranged so that each page dealing with the interpretation of dreams was faced by another dealing with cases of urinary troubles where the pills had worked marvellous cures—a choice mingling of the spiritual and the mundane. To add to its attractions, the pamphlet was profusely illustrated on almost every page. Although the illustrations were in black and white, nevertheless they called up memories of those described by Dickens in the Holly Tree Inn as being "coloured with a hand so free and economical, that the bloom of Jonathan's countenance passed without any pause into the breeches of the ostler, and, smearing itself off into the next division became rum in a bottle." The writer of the pamphlet invites his readers not only to communicate with him if they are ill, but also to get their friends to do so, and he will send word if his medicine will do them good. He is so kindly and universal a philanthropist that his "ear and heart are open at all times to suffering humanity." Judging by what we read, however, we have a shrewd suspicion that in every case, if his advice is going to be followed, it would be well to save postage, and buy the pills straight away. The general public are evidently becoming sceptical on the subject of panaceas, and the change in opinion has been met by providing remedies purporting to act only on certain organs. Of Doan's pills, for instance, we are told: "Their whole action is on the kidneys and bladder—not on the bowels—and by doing one thing only they do that thing well." But this magnanimous confession of a limitation of function is hardly likely to be associated with any decrease of trade. According to the Dream Book, chilly feelings, being easily worried and annoyed over trifles, cold hands and feet, rheumatism, poor eyesight, headaches, and numerous other symptoms are indications of kidney trouble. "Any of the above symptoms" show that the kidneys are weak or diseased, "and these symptoms are warnings of more serious trouble to follow—Bright's disease and diabetes." Moreover, in the absence of any of these symptoms, we are advised to prevent their onset by a timely resort to the pills. So the narrowing of the mesh is really accompanied by an enlarging of the net. As usual, the ordinary cases are adduced in which the nostrum succeeds after doctors have repeatedly failed. There are two cases, however, of stricture, presumably of the urethra, one in a female, where the pills worked a cure after surgical interference was unavailing—a sufficiently marvellous result one might fancy. But the gems in the casket are the two following. In the first "the kidney secretions were irregular, there being sometimes a stoppage for forty-eight hours. The most remarkable feature of the case is the action of Doan's Backache Pills on the cause of this stoppage—a gall stone. The pills broke this up and passed it from the body in grit." The second is of a like nature, and heralded, as well it might be, in large type: "Doan's Backache Pills Relieved the Aching Back, Enabled Patient to Pass the Urine Naturally, and finally removed a Gall Stone as large as a Bean." The writer of the pamphlet is evidently so accustomed to miracles that he only comments on these cases as being "remarkable." We should have imagined that there was hardly anybody unaware that it is as impossible for gall stones to form in the kidney, as for hens to lay torpedoes. The pamphlet is diverting in some places, but it is pernicious in others. At the end of a section entitled "What to Drink" is the paragraph: "Beer, spirits, and tea affect the kidneys and nerves chiefly, but they may all be safely used *if you keep the kidneys well.*" The way, and the only way, to keep the kidneys well, we are repeatedly told, is to take the backache pills. In one passage, too, we note that "even the dreaded Bright's disease can be permanently cured by Doan's Backache Pills"; and, in another, that the same remedy cures "every form of kidney disease (even in advanced stages)." That it should be permissible to scatter pamphlets broadcast containing statements so pernicious as these last is far from a credit to our legislative methods. It is often charged against the medical profession by certain sections of the lay public that they will not examine into the claims put forward in favour of these so-called remedies. Some have even gone so far as to assert that the profession shirks such inquiries from a dread that the claims would be found so well established that a sense of moral duty would compel the conscientious inquirer to relinquish the greater part of the field of medical practice to the proprietors of the nostrums in question. But the examples given above of the evidence forthcoming in favour of such drugs—and they are fair samples of the usual ones—makes it evident that any serious inquiry is totally uncalled-for and unnecessary. The quack medicine-monger finds his dupes chiefly amongst the ignorant. He deludes them with false hopes—too often at times of poverty, sickness, and distress.

SEATS FOR TRAMWAY MEN.

At the meeting of the London County Council last Tuesday, the question of the provision of seats for drivers and conductors on the Council motor trams came up for consideration. Petitions had been presented last December by the London Committee of the Amalgamated Society of Tramway and Vehicle Workers, and from certain drivers and conductors, and also from a considerable number of medical men, praying that seats should be provided for the Council's tram men. These petitions were referred to the Highways Committee, and last Tuesday the Committee reported on the subject. As to the drivers, the Committee state that, "having regard to the operations which a motor man has to perform in dealing with the controller, the electric and

hand brakes, the foot-gong and the pedal, it would be quite incompatible, either with the efficient working of the tramways or the safety of the public, that the motor men should be allowed to sit down while at their work." And in regard to the conductors, the Committee were equally obdurate. They maintained "that the man has already serious difficulty in collecting all the fares between the different stages," and could not be allowed to sit down. Sir William Collins opposed the reception of the report, as he said he did not think the reasons adduced would carry conviction to the Council. It was not "quite incompatible" for the chauffeur of a motor-car to sit down, nor for the driver of the new Tilling motor 'buses between Peckham and Regent Street; indeed, the motor men habitually sat at their work, and he could not see why, with proper gearing, the motor-tram drivers should not work as well, or better, if seated. It was a question of construction of the gearing of the brake, etc. As to the conductors, he had made special observation, and he noticed that when not engaged in collecting fares they frequently leant against the brake wheel at the end not in use. There was no reason why instead of doing that they should not sit down. Hospital surgeons knew the effects of the "standing evil;" it was not only bad for women but bad for men, and predisposed to varicose veins, varicocele, and hernia. He regretted the scant attention and sympathy given by the Highways Committee to the petitions they had received. Mr. Burns, Mr. Spokes, and others, to some extent supported these views, which were opposed by Mr. Waterlow and Mr. Allen Baker, the Chairman of the Highways Committee, but the Council was obviously against the Committee, and we are glad to think the question has been referred back for further consideration.

AN INSIDE VIEW OF THE HOUSE OF COMMONS.

To the November number of *Longman's Magazine* Dr. Farquharson contributes a brightly-written article on the House of Commons from the inside, which is full of good advice to new members. We commend it to the attention of medical men who propose to offer themselves to the constituencies at the coming General Election. Dr. Farquharson has lost all the illusions with which most men enter on a parliamentary career, and his experience will help to give candidates for seats in the august Mother of Parliaments the advantage, insisted on with such iteration by Matthew Arnold, of seeing things as they really are, and may thus save them from misadventures which might compromise their usefulness. No one, he says, can get the full benefit of the House of Commons or do useful work there unless he makes politics his profession. "To make the most of that most critical and difficult assembly demands the complete energy, industry, and ability at the command of any one man." One has first to get over one's early disappointments—"not only the wormlike feeling of absolute insignificance," but the manifold and constant obstructions which the private member finds in his path. To begin with, he must ballot at the beginning of the session for Bills and motions, but as several hundred competitors are playing at the same game the chances of drawing a prize are small. The debate on the address gives an opportunity of ventilating grievances; but "no one pays serious attention to amendments moved then, and unless you get in early the guillotine cuts the head off your tale of woe." Questions provide an opening, and the Estimates offer a fairly good outlet for legislative gas; but here again, owing to tedious squabbling over trifles, and the infinite deal of nothing spoken by most orators, the private member with a mission often fails to find a vent. When, after much trouble, one has drawn a good day and arranged an important debate, "the Government, with the burglarious instincts of place and power, will take all the time of the House, and offer up your little one live lamb as an unwilling sacrifice on the altar of so-called public duty." To get the best out of political life, Dr. Farquharson says one must be always on the spot, scorning the delights of social life, living laborious days and watching the opportunity which often comes in the most unexpected manner. He attributes Disraeli's great success as leader to his continual attendance in the House, where he literally lived; dining and dreaming, and apparently sleeping until the moment came for action. The bad hygienic conditions of the House have been pleaded as an excuse for the slow progress of legislation and for the ill-temper too often manifested in debate. Dr. Farquharson, however, believes that "considering the sources of supply, the artificial methods of ventilation, the foreign material carried in by members' boots [why not also their clothes and their hats which, if one may judge from appearances, must often present a favourable soil for the growth of the most varied bacteriological flora?], and blown aloft by the currents of wind streaming through the perforated floor, and the habitual crowding of the House from time to time, the air is wonderfully pure and good and cannot do harm even to the most infirm legislator." Dr. Farquharson strongly advises politicians never to take less than eight hours in bed. Most of us, he says, as we get older wake earlier, but he urges the budding statesman not to be hypervirtuous and get up then. "Lying down rests the hard-worked heart and muscles and lungs, and the time between sleeping and waking is universally admitted to be the best time for thinking out any difficult problem—a coming speech, a magazine article, or the best way of refusing the numerous applications for subscriptions which shower on the green hand's table by every post." Breakfast, he adds, should be a deliberate meal, punctuated by the opening of letters and a leisurely skimming of the morning paper; and by way of encouraging the new member who has not yet lost the sense of his own importance with which he entered the House our kindly mentor assures him that in time he will get over the annoyance of finding that though his remarks were apparently well received by the House the night before, his name is omitted altogether or that by a crowning act of grace, he is permitted with others to "continue the discussion." The House of Commons is full of worries, disappointments, ambitions, and blighted hopes, but it is a wonderful school of discipline, and characters and tempers are moulded by living there under conditions of perfect equality and democratic good fellowship. But the new member must not take himself too seriously, and expect to be treated as Sir Oracle; there is nothing the House more resents than any appearance of presuming on an outside reputation of any kind. In accordance with the advice given to a young man on his entry into society, "When you have made a good impression, go away," Dr. Farquharson recommends the new member who has been lucky enough to score a success with his virgin effort to lie low for a long time afterwards.

WILLIAM HEY.

The name of William Hey, of Leeds, must still be familiar to medical men of the present time, but all may not be acquainted with some of the facts about this great surgeon, to which Mr. Edmund Owen drew attention recently in an address delivered before the Debating Society of the Leeds Medical School. Hey was born in Pudsey in 1736, and like many another genius, before and since, attained eminence in spite of physical defects which would have ruined the career of any less able man. Thus, when only a child of 4 he destroyed the sight of his right eye when cutting a piece of string with a penknife and in adult life had two accidents which left him permanently dependent upon a crutch; there is reason, too, to believe that he was the subject of tuberculous disease. He appears to have given proofs of unusual ability and industry when quite young, and like George Washington he is credited with having never told a lie. One of his sons had haemoptysis and other symptoms of early phthisis, from which he recovered after what appears to have been an early application of open-air treatment; not, it is true, at the suggestion of Hey himself, but upon the recommendation of one of his friends, Dr. Stewart, of Erskine, near Glasgow. Hey got into correspondence with

him when he found that keeping the patient in a warm room all the winter had done no good, and, acting upon Stewart's advice, he sent his son to Devonshire in 1813 to spend his time in the open air throughout the autumn and winter; the young man returned to his father cured. It was in this year that Hey resigned his surgeoncy to Leeds Infirmary after serving upon the staff for forty-five years; by that time he had attained a more than European reputation, and the governors of the Infirmary, in a graceful address upon his resignation, well designated him the parent of the institution. Hey kept at work, however, for a good many years after this, and it was not until he had attained the age of 83 that he fell ill after a long day's work which included visits to patients ten and twelve miles from Leeds; he died after a brief illness.

ST. BARTHOLOMEW'S HOSPITAL.

Those who have at heart the general interests of hospital work in London will observe with regret that an endeavour is being made to start a fresh campaign against St. Bartholomew's Hospital, together with its authorities and its schemes of reorganization. The *Daily Mail* dealt with the matter last year and again this spring, at such length and with so much less discretion than zeal, and so much more wearisome iteration than either, that it is not surprising that it has nothing really new to say upon the subject even after six months' meditation. We are now invited by it to believe that the appeal launched has proved a fiasco; that an application made to the Council of King Edward's Hospital Fund for a share in its annual distribution will necessarily fail; that the scheme of rebuilding upon which the appeal was originally based has been abandoned; and finally, that it is intended to spend a sum of nearly a million instead of barely half that sum. The calculation by which the *Daily Mail* endeavours to support this latter contention resembles that of the proverbial waiter—"Bread, twopence; butter, fourpence; soup, a shilling; chop, one and eightpence: no bread? one and tenpence; no butter? two shillings; total, half a crown." As for a collection of £75,000 proving the appeal to be a fiasco, we are not disposed to accept that view. Seeing that trade of every sort has been depressed, it would not have been surprising if the sum collected had been very much smaller, and a total of £75,000 in eight or nine months is probably not short of the anticipation of the promoters. It is to be remembered that from the beginning they expressed their intention of spreading their expenditure and the collection of funds over at least five years; nor does the building of a nurse's home, of new pathological rooms, and the relighting of certain wards imply any departure from the original plan. The two buildings in question were mentioned from the beginning as among those which should be undertaken as early as possible after the building of the new out-patient department had been got under way, while it has all along been intended that the wards should be kept in use until the time comes to replace them one by one, and that, therefore, money should be spent upon them.

HYGIENE AND ALCOHOL.

In view of the very businesslike interview that recently took place between a deputation representing nearly 15,000 medical men and the President of the Education Department the correspondence between that Department and the Cheshire Education Committee affords strange reading. Some time ago the Cheshire Education Committee passed a resolution asking the administrative subcommittees to make arrangements "for lectures upon alcohol being given upon suitable occasions in the elementary schools within their respective areas." The Vicar of Buglawton thereupon wrote to the Education Department stating that the lecturers it was proposed to send, or who were being sent, to enlighten the minds of the children among his flock were not trained certificated teachers. This, however, appears to be an error, as the teachers were fully certificated, and selected because they were specially qualified for the work. An attempt has been made, on grounds which we do not profess to understand, to prove that instruction as to the effect of alcohol upon the tissues of the human body is scarcely secular, and that therefore it should not come under the control of the Education Committee. The Board of Education supported the contention of the managers. The care of the physical health of children is one of the prime factors in national prosperity: and any cause interfering with that health, whether it be bad air, bad food, alcohol, overwork, want of rest, or the like, should be looked upon as a subject which, although it may not actually be mentioned in the Code, should certainly be allowed to come within the term of exceptional and extra work to be entered in the log-book for the approval of the Inspector and of the Board of Education. Hitherto, inspectors have approved of the teaching; at any rate, no attempt has been made to interfere with its being given. Teachers and pupils alike have, in many places, entered into the work most enthusiastically, and much good work has been done.

THE LATE PROFESSOR FINSEN.

The appeal issued to the Danish people for subscriptions towards the cost of a monument to the late Professor Finsen bears some 1,400 signatures. The list is headed by the name of Mr. Vilhelm Joergensen, President of the Light Institute of Copenhagen, and includes the names of all the Ministers, the members of the Rigsdag, the editors of all the newspapers in Denmark, and of many patients cured by the treatment.

The Council of the University of Leeds has appointed Dr. A. G. Barrs, Professor of Medicine, to be a member of the General Council of Medical Education and Registration of the United Kingdom.

The Bowman Lecture before the Ophthalmological Society of the United Kingdom will be delivered by Dr. F. W. Mott, F.R.S., on Thursday next, at 9 p.m., in the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square. The subject of the lecture will be The Visual Cortex. All members of the profession are invited to attend.

We are requested to draw the attention of members of the Faculty of Medicine of the University of London to the fact that while the meeting summoned by the Vice-Chancellor for the election of a Dean is fixed for 5.30, an ordinary meeting for the transaction of other important business will commence at 5 o'clock. Both meetings are to be held on Tuesday, November 1st, in the Jehangir Hall of the University buildings, South Kensington.

We are informed that Lieutenant-Colonel G. Bomford, M.D., C.I.E., has been appointed to officiate as Director-General of the Indian Medical Service for three months. It is believed in some quarters in India that this may foreshadow his permanent appointment to the office, which will fall vacant in January next. This selection would involve the supersession of ten officers senior to him. One of these officers—in fact, the senior on the list—is of the same rank as the present Director-General, and has shown his capacity on many occasions as an administrative officer.

We regret to have to record the death, in Edinburgh, on October 22nd, of Dr. J. B. Russell, in his 67th year. He succeeded Sir William Gairdner as Medical Officer of Health for Glasgow in 1872, and during the twenty-six years for which he held that office witnessed a great transformation, in which his influence and teaching counted for much. In 1898 he was appointed Medical Member of the Local Government Board for Scotland, and he died in harness. We hope to publish some account of his life in an early issue.

Ireland.

BELFAST DISTRICT ASYLUM.

THE seventy-fourth annual report (1903) of this asylum contains the usual statistical tables, and the report of the Medical Superintendent, Dr. W. Graham; the report of the Inspector of Lunatics for Ireland, Sir George O'Farrell; and also a paper read by Dr. Graham at the Conference of Asylum Committees of November 25th, 1903, on Ireland and the Insanity Problem. The chief interest is centred on the apparent and great growth of insanity in Ireland, and its probable causation. The statistical tables show a diminution of admissions in this asylum for 1903, as compared with 1902, of 13, and a decrease of first admissions of 27. Table XXIII, however, shows that during the last fourteen years there has been an uninterrupted rise in the asylum population from the 656 average daily residents of 1890 to the 1,021 of 1903, and accompanying this there has been a steadily diminishing recovery-rate and an increasing death-rate. The two years 1890-1 give an average percentage recovery-rate of 44.7 and a death-rate of 5.3 per cent.; the four years 1892-5 a recovery-rate of 39.4 and a death-rate of 6.3 per cent.; the four years 1896-9 a recovery-rate of 35.5 and a death-rate of 6.9; and the four years 1900-3 a recovery-rate of 27.7 and a death-rate of 8.1 per cent. We are unable to push the inquiry further back, as the tables begin at 1890, but the above facts are of some significance. Dr. Graham, in discussing this increase, reminds the reader that the outside population from which the asylum draws its inmates is increasing, and states, further, that many so-called first admissions are really transfers from the workhouse, thus qualifying to some extent the startling fact that in the first half of the last decade the first admissions averaged 188 as compared with an average of 328 during the latter half; he is nevertheless firmly convinced that this increase is real and not merely apparent. In an able and closely-reasoned paper on Ireland and the Insanity Problem he discusses the various opinions that have been put forth to prove that the increase is only apparent—a more searching investigation of the insane, accumulation of patients within the asylum owing to an increased longevity following improved care and surroundings, etc.—and maintains that no explanation by the advocates of accumulation can be offered to account for the fact that in Ireland, in spite of a diminishing general population, the first admissions were 1,925 in 1880 and 3,173 in 1902. "Turn the matter as we may in our minds, we are driven by the sheer force of facts to the conclusion that the mass of the increase is real and absolute, not apparent and relative." Turning to the probable causation of this increase, he examines the frequently-iterated conclusion "heredity and alcoholism." Dr. Graham does not put much faith in statistical statements relative to the causation of insanity, and with regard to hereditary influences says "there are no satisfactory statistics in existence on which a genuinely scientific conclusion can be built." This is in accord with the view lately expressed on this matter in the columns of the BRITISH MEDICAL JOURNAL. Alcoholism Dr. Graham regards as not only a cause but an effect as well, a symptom of an already existing degeneracy of brain and nervous system. The fact on which emphasis is to be laid is, for him, not the craving for drink, but the degeneracy of which it is most frequently the symptom; and the cause of this degeneracy is, he states, "the preponderance of bad blood over good." By this he means that those people who are the highest from the mental and physical standpoint—the cultured and leisured classes—shrink from the responsibility of large families and the discipline which such responsibility implies, and are becoming less and less productive, whilst the proletariat, untroubled by such scruples, multiply without regard to consequences. The lamentable result, he says, is that "Ireland to-day is depleted of her best and strongest elements, retaining the weak and unfit. In the past forty years we have lost about four millions of the physical and mental flower of the country." "Is it any wonder then," he asks, "that mental degeneration is on the increase amongst us? Would it not be miraculous were it otherwise?" and quotes from Karl Pearson in support of his contention:

> The physical characters which are the backbone of a State in the modern struggle of nations were not manufactured by home and school and college; they are bred in the bone, and for the last forty years the intellectual classes of the nation, enervated by wealth or by love of pleasure or following an erroneous standard of life, have ceased to give in due proportion the men wanted to carry on the ever-growing work of the empire.

Dr. Graham's view of this question is broader than most, but is probably not even yet sufficiently comprehensive. The Belfast District Asylum, in harmony with modern views of treatment, has received recent additions in the shape of villas, which will ultimately form, with the main building, a large villa colony. At present three villas, for the reception of female patients, are in use, and have proved an unqualified success. They accommodate fifty patients each, are excellent in construction, and have been erected, Sir George O'Farrell says, at the lowest cost per bed of any buildings of a similar character which have been erected in the United Kingdom within recent years. Plans have been prepared for the erection of two more, and will be proceeded with as soon as official sanction has been received. On January 1st, 1903, there were in the asylum 1,004 patients, and on December 31st, 1903, there were 1,059, this latter figure including 62 patients at Ballymena Workhouse. There were 254 admissions during the year—that is, 13 less than the previous year. Of these, 204 were first admissions, and were classed as to the forms of mental disease into mania of all forms, 130; melancholia of all forms, 78; dementia, 9; general paralysis of the insane, 19; acquired epilepsy, 14; and congenital or infantile defect, 4. The notable feature of this table is the large number (104) of cases of acute mania. Alcohol was assigned as a cause of insanity in only 19 (that is, 7.4 per cent. of the admissions); hereditary influences were ascertained in 29; previous attacks in 21; venereal disease in 17; "moral causes" were given in 54, in 47 no cause could be stated, and the remainder are distributed over the usually cited causes of insanity. During the year, 85 were discharged as recovered (a percentage recovery-rate on admissions of 33.5), 29 as relieved, 2 as unimproved, and there were 83 deaths, giving a death-rate on the average daily residents of 8.1 per cent. Of these, 19 died from general paralysis, 31 from other forms of cerebro-spinal disease, 10 from phthisis, and 1 from general tuberculosis (a low tuberculous death-rate of 13.2 per cent. on total deaths), 9 from various forms of chest disease, and 8 from senile decay. There were no deaths from diarrhoea or dysentery, none from violence or accident, and the general health throughout the year was good. Sir George O'Farrell comments in his report most favourably on the condition of the asylum and its administration, but is disagreeably impressed by the inclusion amongst the patients of idiotic children, who, in the absence of suitable training schools, have to be treated with the adult insane.

DEPARTURE OF PROFESSOR LORRAIN SMITH FROM BELFAST.

A meeting was held in the Queen's College to consider the proposal to give a dinner to Dr. Lorrain Smith, Musgrave Professor of Pathology to the Queen's College, Belfast, on his leaving Belfast for Manchester. The President of the College, Rev. Dr. Hamilton, occupied the chair, and referred to the excellent work that Dr. Smith had done, both as regards pathology in the College and the Royal Victoria Hospital, and also in connexion with the Public Health Committee. A small Committee was formed, and it was decided subsequently to hold the dinner in the Central Hotel on November 3rd. The Secretaries are Mr. William Crawford, Professor Symington, Mr. R. T. Martin, and Dr. R. J. Johnstone; and Mr. J. Taylor Blackwood (Ulster Bank) was appointed Treasurer. His old pupils have also decided to subscribe for a piece of plate with a suitable inscription, which will be presented to him at the dinner.

THE BELFAST MATERNITY HOSPITAL.

The new buildings for this old charity are fast nearing completion, and the Governors and Committee of Management have issued invitations to the formal opening by the Countess Grosvenor on November 7th, when it is confidently expected that a large and influential gathering will join in wishing every success to one of the oldest and most deserving institutions in the province.

INFECTIOUS DISEASE ACCOMMODATION IN BELFAST.

Unfortunately some eight fresh cases of small-pox have lately appeared in Belfast, and are now in Purdysburn Small-pox Hospital. The Board of Guardians have approved in principle of the transfer of all their fever cases to the new City Fever Hospital when it is ready, as it seemed undesirable that infectious diseases should be treated in such a large institution as the workhouse, with a total of 3,000 inmates.

The Poor-law Consumptive Sanatorium, Belfast.

A sealed order was received by the Belfast Board of Guardians from the Local Government Board sanctioning an expenditure of £5,000 for the purchase of the premises and lands known as the Abbey, Whiteabbey, for a Poor-law consumptive sanatorium. Technically it is bought as an auxiliary workhouse. The property will be taken over on November 1st, and immediate steps will, it is understood, be taken to make the necessary alterations.

Bangor Water Supply.

On October 21st Dr. Henry O'Neill, M.D., B.L., of Belfast, in company with the town surveyor of Bangor and Mr. Barclay, public analyst, visited Ballysallagh, where it is proposed to build new waterworks for an additional water supply for Bangor, co. Down. The catchment area and various farms in the vicinity were inspected and samples of water procured. The population of Bangor is estimated to rise from 7,000 in the winter months to nearly 11,500 in the summer: the present supply is 32½ gallons a head from a catchment area of 300 acres; it is proposed to take in 800 acres more, and erect a new reservoir holding 42,000,000 gallons, giving a large daily supply. The subject is one of considerable interest to Belfast, as Bangor is one of its most popular seaside resorts.

Cork District Lunatic Asylum.

At the last monthly meeting of the Committee of Management the Resident Medical Superintendent again had to report that the monthly admissions were above the average, one being an emigrant from Queenstown. At present there are in the Asylum 1,622, and 383 in the Auxiliary at Youghal. The male side has been relieved by the transfers to Youghal, but it is almost impossible to cope with the increasing numbers on the female side. As regards the superintendence of the Auxiliary Asylum at Youghal, the Rev. Dr. Brown, Bishop of Cloyne, seems determined if he possibly can to throw aside all medical superintendence of the Youghal Asylum, though an integral part of the Cork Asylum, and leave the management entirely in the hands of a community of nuns who are to be responsible to the Committee, the chaplain of the Auxiliary Asylum to come to Cork to represent the matron and lay any matters of business and small accounts before the Committee. It may be remembered that some time ago in opposition to the desire of the medical profession in Cork, the Committee appointed a visiting medical man to the Youghal institution, where 383 patients are housed, and now Bishop Brown wishes further to set aside the superintendence of the Resident Medical Superintendent at Cork. In speaking at the meeting his lordship defines the duties of the Cork Medical Superintendent as those of merely admitting or removing patients, and goes on to say "it was not essential that the manager of a lunatic asylum should be a doctor, but the fact of his being a doctor was no disqualification." Fortunately the Lord-Lieutenant is not of the same opinion as the Bishop, for he states in a letter which accompanied receipt of rules:

> The Resident Medical Superintendent of the Cork District Asylum is charged with the superintendence and regulation of this auxiliary asylum, it being a department of the Cork Asylum, and there is no power to transfer or to impose on any of the officers duties which appertain to the Resident Medical Superintendent, and which he is legally bound to discharge.

To meet this difficulty the Bishop proposed the following resolution:

> That whereas the Lord-Lieutenant by letter dated March 22nd, 1901, sanctioned the arrangement that the manager of the Youghal Auxiliary Asylum need not be a medical practitioner, we insist on our right to continue that system (according to the resolution unanimously adopted for this purpose), by which the matron is made responsible for the discipline and domestic management of the Auxiliary Asylum, without supervision from the Superintendent of the Cork District Asylum or other medical officer.

And to make his resolution doubly sure his Lordship proposed a second one:

> That we further request the Lord-Lieutenant to alter the rules and regulations of the Committee of the Cork District Lunatic Asylum so as to give effect to the above resolution by introducing the following rule: That the matron of the Youghal Auxiliary Asylum is to be responsible to the Committee of Management for the discipline and domestic management of the Auxiliary Asylum, and to modify any existing regulation as far as may be necessary.

Compulsory Vaccination in Brazil.—The Brazilian Chamber of Deputies recently passed by 122 votes to 35 a proposal to make vaccination and revaccination compulsory throughout the republic. The Bill had previously been passed by the Senate.

Scotland.

The Antiquity of the Edinburgh Chair of Midwifery.

In his opening lecture to the class of midwifery in the University of Edinburgh, Professor A. R. Simpson said that Professor Pestalozza (Florence) had lately sent him the address he had given on The Institution of the Medical School and Hospital of Florence in 1756, in which he gave a sketch of the life of G. Vespa, who was the first professor of midwifery there, and lectured from that date every Friday evening. Pestalozza investigated the history of the institution of the other Obstetric Chairs in Italy, and found that the Florentine was the earliest of them all. When Sir Alexander Grant was preparing, in 1884, his Story of the University of Edinburgh, Professor Simpson sought out the institution of the Edinburgh Chair of Midwifery, and showed in his lecture on The History of the Chair of Midwifery, 1883, that the first Professor, Joseph Gibson, was appointed in 1726. "On the same day (February 9th, 1726)," writes Sir Alexander Grant, "on which the town council added four new Professors to the staff of the College, they also proceeded to appoint a Professor of Midwifery, not, however, for the College, but for the city. It was hardly contemplated in those days that medical students should go through a course of obstetrics, the whole practice and profession of which was then left to females. But one—Mr. Joseph Gibson, a surgeon of Edinburgh—had outstepped his era, and had for some time practised this important art in the town of Leith, and, supported by the recommendations of members of the Colleges of Physicians and Surgeons, he now applied to the Town Council to create him a Professor, which they did, nominating him "Professor of Midwifery in this city and Privileges," with power to him "to profess and teach the said art in as large an extent as it is taught in any city or place where this profession is already instituted." And with this appointment they joined a system of rules for the regulation of the practice of midwifery in Edinburgh. At first, as in other cases, the Professorship of Midwifery was general and unattached, but subsequently it was incorporated into the University. When Gibson died, in 1739, he was succeeded by Mr. Robert Smith, who received a commission appointing him "Professor of Midwifery in this City's College," "with the same privileges and immunities which the other Professors in the said College do enjoy, or that are known to appertain to a Professor of Midwifery in any other well-regulated city or place." The researches of Professor Simpson lead to the conclusion that Joseph Gibson was the first person who ever received the title of "Professor of Midwifery." The University of Strassburg was the first on the Continent to have a Professorship of Midwifery, dating from 1728—that is, two years after Gibson had received his appointment in Edinburgh. The Town Council then, in speaking of "other cities and places where this profession is instituted," were unconscious that they were doing something original, and were not following but founding a precedent.

The Parliamentary Representation of the Universities of Glasgow and Aberdeen.

The adoption by the Universities of Glasgow and Aberdeen Conservative and Liberal Unionist Association of Professor W. R. Smith, as candidate for Parliamentary honours, continues to afford matter for a good deal of discussion in the local papers. In spite of many letters of explanation of their action by the London Committee, and in spite of a long communication written to show that it was really the "original" and "official" Conservative and Liberal Unionist Association of the two universities, the feeling in Aberdeen is that they have not proved their case, and that no sufficient reason has been made out for their untimely action. Professor Smith has now signified his intention of contesting the seat, Sir Henry Craik, the previously adopted candidate of the "local," not to offend by calling them longer the "official," Committees, is to stand, and *Alma Mater* of last week states that rumour names as a possible Liberal candidate, Sir Frederick Treves, LL.D. Aberdeen. There has so far been no confirmation of Sir Frederick's intention of becoming a candidate. This complicated condition of affairs is somewhat unsatisfactory, but no doubt the atmosphere will clear when the General Election draws nearer.

Proposed Age Limit.

At the Edinburgh Royal Infirmary a meeting of the joint Committee of Managers of and contributors to the Edinburgh

Royal Infirmary, appointed early in the year, as the result of the controversy regarding the proposal to fix an age limit for the members of the medical and surgical staffs, was held last week. It was proposed that at the age of 65 years the ordinary physicians and surgeons should retire, and objection was taken at the annual meeting of contributors to the exclusion of the University professors from the operation of that rule. A joint committee was therefore appointed to consider the matter, and it is understood to have agreed upon a report recommending that in future it should be left entirely to the managers to grant or refuse applications from members of the staff for an extension of five years in their appointment. There was a minority of two on the committee in favour of the adoption of the age-limit system. The question having unfortunately been raised, it remains to be seen whether the Court of Contributors will accept this decision as final and satisfactory.

PROPOSED COTTAGE HOSPITAL AT CRIEFF.

The question of a site for the erection of a cottage hospital at Crieff has at length been settled. A new site has now been selected, which is suitable in itself for the erection of a healthy cottage hospital, and is in a convenient position for the medical men who are most likely to have patients in such an institution. It meets with the approval of all parties concerned, and a Building Committee and a Medical Committee are now at work together upon the plans of the new institution.

PHYSICAL DETERIORATION.

THE Childhood Society held a discussion on Physical Deterioration, under the chairmanship of Sir T. LAUDER BRUNTON, on October 20th, at the Sanitary Institute, London, W.

Mr. E. W. BRABROOK, in opening the discussion, said that the Physical Deterioration Committee had overlooked the important evidence afforded by the great bulk of information which had been collected by Friendly Societies in regard to sickness. That information existed from very early periods in the history of Friendly Societies, and it related to the various conditions of life. This body of evidence proved that country populations were less liable to furnish cases of sickness than town populations. There was evidence to show that the liability to sickness in Friendly Societies was increasing, but the length of life was increasing at the same time, so it might only mean that the members of Friendly Societies had more time in which to be sick. That showed the great caution necessary in dealing with statistics. He then referred in detail to the immense improvement in sanitation during the last few years, and quoted the opinion of an Italian statistician, who, at the meeting of the British Association in Cambridge, had said that there was no deterioration going on in European countries, and least of all in England, where there was less relative poverty than in the other countries of Europe. Mr. Brabrook concluded by referring to the fifty-three suggestions made by the Physical Deterioration Committee, which he said deserved careful consideration and thought.

Mrs. A. WATT SMYTH said that recent inquiries, while they had proved that there was an alarming amount of physical unfitness among certain classes of the population, had, on the other hand, tended to favour the conclusion that there was no progressive or hereditary degeneration. That view, which was in harmony with the doctrine now so generally held by biologists that acquired characteristics were not transmitted, was a fresh incentive to devise means for removing those conditions which interfered with the proper development of the child, and produced unfitness in the individual. Nature would always endeavour to bring into existence an individual at or about the average, the variations above and below the mean being, under normal conditions, within narrow limits; but unless a mother was living under normal conditions, her infant would not come up to the average. The first thing, then, was to teach the mother to take care of herself, and for a reasonable period before and after the birth of the child she should be prevented by law from doing work likely to affect herself or her child injuriously. In France, where lately more had been done to combat physical deterioration than in any other country, the first object of the Consultations Médicales des Nourissons was to care for the health of mothers and to encourage them to nurse their own infants. The conclusions arrived at by the Committee on Physical Deterioration were in accord with those Mrs. Smyth had come to in her book on *Physical Deterioration* published some months before its report appeared. The Committee had dealt admirably with the milk question; it had laid particular stress on the necessity for the immediate establishment of infant milk dépôts. That recommendation, if carried out, would produce most valuable results. Unfortunately, the question of expense seemed to paralyse all efforts to go to the rescue of infants in England. The authorities of the Shadwell Hospital for Children were most anxious to establish an infants' milk dépôt under medical supervision on their hospital premises. Every detail had been settled for a year, but the appeal for £400 necessary to start that admirable work was still unanswered. The public failed to see that those scientifically-managed institutions (not municipal milk shops) were not only self-supporting, as had been proved in France, but laid the foundation of a strong and vigorous race. Professor Budin, who was the pioneer of that movement in Paris, had stated in a recent report to the Académie de Médecine that of those infants attending the Clinique Tarnier 95 per cent. were nursed by their mothers partly or entirely, leaving only 5 per cent. to be fed altogether by artificial means. While the general infant death-rate for Paris was 178 per 1,000, it was 36.5 among children attending the Clinique; and while the general rate from digestive diseases was 69 per 1,000, at the Clinique it was zero. The question of feeding school children appeared to have become the question of the day; but, important and essential as the feeding of school children undoubtedly was, to limit efforts to that problem while ignoring infant feeding and the period of childhood between infancy and school age was to deal only with a side issue of the main question. The many schemes set forth recently in the *Times* were impracticable, but the scheme she had published about a year ago could be made to work. Every child attending school should be taught cooking, and the older children should take turns to prepare dinners which each day would be eaten by all the children in the school, their parents being charged the lowest possible price. In the Lette Verein School, in Berlin, excellent dinners, consisting of meat and vegetables and pudding, or soup and pudding, were sold at one penny a head. Under such a scheme every underfed child would be fed, while the prosperous would not be worse off than if they ate their dinner at home. The simplest and most nourishing dishes, such as those the labouring classes could afford at home, should be selected, a clear explanation being given of the properties of the food stuffs used. Many a family not too badly off was starved through buying expensive food that did not necessarily contain the right properties. The cooking and eating of dinners should be a matter of school routine. The better-off parents would not raise any objection, while the assistance now administered by charitable societies could be given to those really unable to pay.

Dr. ROBERT HUTCHISON said that he could hardly agree with the last speaker that the mischief done in infancy was irreparable. One had only to look at the most notable improvement in the condition of boys in industrial schools after they had been swept up from the gutter. These boys after a year or two exhibited extraordinary improvement. With the progress of civilization the feeding of infants by their mothers had ceased to be a matter of natural instinct, and had become a science, if not a fine art. The untutored instinct of the mother was sufficient to secure the proper feeding of an infant where the natural methods of feeding and a natural life was followed, but modern civilization had now changed all that. The phenomenon that so many fewer children were now fed by the natural method was not peculiar to this country, and the fact must be faced that in future mothers must be trained in the feeding of their children. Simple directions should be handed to the parents of the children when a birth was registered. That plan was recommended by the Physical Deterioration Committee, and it was being carried out by some medical officers of health in certain districts. If it became a general and uniform procedure, it would be of great use in preventing the feeding of infants on wrong lines. There was no use, however, in instructing mothers to feed children with cow's milk unless the community awakened up to the fact that the supply of cow's milk in large towns was bad. It was, in fact, a disgrace to civilization; it was worse, perhaps, in England than in any other country in Europe. It was simply a question of rousing the public conscience to insist that the quality of the milk should be improved, and also that a sufficient quantity should be provided. In short, all mothers should be able to get plenty of good milk at a cheap rate with which to feed their infants. The two requisites during infancy, therefore, were proper instruction and a

proper milk supply. There could be no doubt that many school children also were inadequately fed; to some extent that was due to the inability of the parents to provide a sufficient supply of good food, but the ignorance of mothers and fathers as to the sort of food that children required had to be recognized. It was not an insufficient expenditure on food that was the cause in many cases, but it was an expenditure on the wrong kind of food. Within recent years many articles of food had become much cheaper—for instance, sugar. It was an advantage to the community and to the children, but brought with it a certain amount of danger, for the cheapness of that commodity and others tended to make the dietary of children contain too much carbohydrate. Instruction should be given as regards the values of food stuffs, so that the money would be expended more wisely. How that was to be done he was unable to say. It seemed almost hopeless to get an average mother in the lower classes to understand the differences between the values of food stuffs, but he thought that something might be done by teaching in the schools.

Dr. G. E. Shuttleworth said that it was possible to impute some of the apparent increase of unfitness in town children to the growing intolerance by society of any defects whatever, whether physical or mental. Owing to children being obliged to attend school now there were greater opportunities for noticing signs of physical unfitness. With regard to the proposed anthropometrical survey, he thought that not only physical measurements of the body should be recorded but also something about the action of the various parts of the bodies. He advocated instruction being given in the schools on the subject of the feeding of children, for people perished from lack of knowledge as much as from overcrowding in big towns.

Dr. F. Warner regretted that the Physical Deterioration Committee had not considered the conditions in child life determining defective growth of the head and of the brain. From the detailed examination of 100,000 children it was found that in the neighbourhood of Charing Cross and in parts where most of the modern municipal or philanthropic buildings for the working classes were situated, there the greatest number of children with small heads and defective development in growth were noted, and the parts where these children lived did not correspond with the greatest areas of poverty. He quoted statistics to show that the great mortality among male infants in the first twelve months of life fell upon the imperfectly-developed children. He advocated the establishment of milk dépôts, and pointed out that a large amount of improper feeding of infants occurred in the nurseries of the wealthy. He suggested that better arrangements should be made for the feeding of girls in the high schools. Referring to the anthropometrical recommendations of the Physical Deterioration Committee, he did not consider that the proposed measurements would supply data of sufficient importance.

Professor Sherrington (Liverpool) thought that if the school teachers were properly instructed they would aid the efforts of the medical men by intelligent co-operation.

Mr. Gray discussed the different measurements proposed for the anthropometrical survey. In his opinion it was most important that a note should be made of the environments in which the population lived. By studying the different conditions of life much could be learnt, and the proposed series of measurements was the first step towards the prevention of physical deterioration. He drew some practical lessons from the rise and fall of the Roman Empire, and concluded by emphasizing the necessity of the Government initiating the proposed anthropometrical survey.

Mr. Sidney Spokes pointed out that 85 per cent. of school children required dental treatment to enable them to deal with any food, except pap, that might be provided for them.

Mr. Pooley, Secretary of the Physical Deterioration Committee, advocated the formation of an advisory council to confer with the Local Government Board on questions affecting public health.

Miss Alice Ravenhill said that the methods of teaching cooking in schools in this country left much to be desired. She described the evening cookery classes held in Amsterdam. In Rotterdam instruction was given to young servants in regard to the relative value of food. She recommended the institution of "post-school studies." The training of teachers in this country was faulty in its methods, but there were signs of improvement. Children should be brought up in an atmosphere of hygiene rather than be subjected to stereotyped teaching.

The Rev. Mr. Laffan insisted on the importance of teaching the children in elementary schools how to play spontaneously; and he was followed by Mr. Hunt, who made a few remarks on the teaching of the children of the working classes.

Mrs. Burgwin (Superintendent of the Special Schools of the London County Council) said the working man's wife went out to augment the income of the home, and it was not so much ignorance on the part of the mother that was to blame as wilful neglect of her natural duties.

Dr. Kerr (Medical Officer of the London Education Committee) described the different types of children the authorities had to deal with. Early incidence of infectious diseases was an important factor in producing deterioration. Measles, for instance, was often the beginning of a long series of other illnesses in children. He thought that the anthropometrical measurements could hardly be too simple, and with regard to their number, the fewer the better.

Dr. A. B. Kingsford discussed the difficulty of teaching hygiene, in consequence of the general ignorance of the most elementary facts concerning physiology and chemistry.

Sir Lauder Brunton concluded the discussion, and emphasized the necessity of co-ordination amongst the societies interested in the health of the nation, so that pressure might be brought to bear on the Government.

THE WOUNDED NORTH SEA FISHERMEN.

The first party of wounded men from the *Crane*, sunk by the Russian Fleet on October 22nd, was landed in Hull on Tuesday night, October 25th, and immediately taken to the Royal Infirmary, where they are under the care of Mr. Hewlett. The names of the men are: Arthur Rea, second engineer; W. Smith, mate; and Albert Almond, coal trimmer.

Condition of Wounded admitted to the Royal Infirmary, Hull.

Rea is suffering from a wound of the chest, just below the second rib on the right side, with much surrounding bruising, and from this a piece of shell has been extracted. No bones have been injured.

Smith has a clean-cut wound below the right scapula, which penetrates under some of the extensor muscles but does not extend down to the bones. A fragment of shell has been extracted also from this wound.

Almond has a lacerated wound extending transversely across the ulnar surface of the left forearm, and severe enough to require suturing. Under the *x* rays a piece of shell is visible in the deeper tissues near the elbow, and will be removed.

Three other men are still on the mission ship, but it is expected that they will be fit to be moved and sent to the infirmary on October 28th. They are Hoggart, boatswain, whose right hand was blown away; he also has injuries of the right arm above the elbow, which, it is feared, will necessitate amputation; Nixon, chief engineer, with injuries to the back of the skull; and Ryder, deck hand, whose hip is wounded.

Post-mortem Examination of Men Killed.

Captain W. Smith: The face on the left side is blown away. The edge of the wound extends from over the right eyebrow, across the bridge of the nose, down the left side of the nose, across the left upper lip, laying the mouth open, thence returning up to the left temple; then the edge of the wound turns behind the left ear, and is continued by a ragged edge round the back of the occipital region, to the right side, where it terminates at a line drawn from the right eyebrow to the front of the right ear. All the parts inside the skull and above this line are gone—that is, cranial bones (except an occasional odd fragment) and cerebrum. The hard palate is broken into small pieces, with a small circular perforating wound just behind the central incisors. There are other small wounds of the soft palate. The base of the skull and the right superior maxilla are also fractured in various directions. A curious point is that the thick woollen jersey worn by the deceased, and fitting tightly up to the neck, has not a speck of blood on it.

W. Leggott, mate: The face, below the eyebrows, is uninjured. Above that line, the skull has been carried away, only a fringe of partially periosteum-attached fragments being left, on a line, extending from the eyebrows, across the level of the tips of the ears, to the occiput. The anterior fossa is split centrally, and longitudinally back to the "sella turcica." The cerebrum is gone, but the cerebellum remains in a pulped condition. The edges of the fractured fragments

of the skull (attached to the periosteum) show lines of fracture running obliquely through the skull bones and not at right angles to the plane of the bone at any site of fracture.

There is also a small abraded wound over the point of the left shoulder, and another over the front of the upper end of the left biceps.

Telegraphing on October 27th, our Hull correspondent adds: Smith's wound this morning looks healthy, though he has had somewhat raised temperature the last two nights: Rea is progressing favourably, as is also Almond, from whose forearm the remaining piece of shell was removed this morning. The fragments consisted of a piece of copper about 1½ in. in length, and shaped like a fish hook: probably it was a piece of the casing of some form of projectile fired from a quick-firing gun. The remaining wounded men have not, up to the hour of telegraphing, been landed.

LITERARY NOTES.

It is stated that the Archduke Joseph of Austria has completed a dictionary of medicinal plants, which will be published simultaneously in five languages.

The collected writings of the late Samuel Smiles, who, it will be remembered, began life as a medical practitioner, are to be issued by Mr. Murray in a three-and-sixpenny edition. The volumes will be illustrated.

Messrs. Heffer and Sons, Cambridge have in the press a book by Mr. S. W. Cole, M.A., of Trinity College, entitled *Exercises in Practical Physiological Chemistry*. The work, which is written for the use of medical students, is essentially a laboratory book, only those exercises being included which the author has found can be carried through in ordinary class work. At the same time the ground covered is considerable, including many new experiments illustrating the results of recent research. A special feature of the book is a series of notes following the exercises, indicating the modifications of the reactions and the precautions necessary to obtain success under various conditions, and giving brief explanations of the results obtained.

Molière should find a place in every history of the healing art as one of the greatest reformers of medicine. As Cervantes "laughed Spain's chivalry away," the author of *Le Malade Imaginaire* and *Le Médecin Malgré Lui* laughed away the mists of *a priori* reasoning, pedantry, and superstition which enshrouded men's minds and hid Nature from their eyes. He was what would in these days be called a therapeutic nihilist. When Argan asks his brother what one should do when one is ill the answer is, Nothing. The patient should simply remain quiet. Nature, when she is left alone, extricates herself from the difficulty into which she has fallen. But, if we are to believe a recent writer in the *Lyon Médical*, Molière, while placing his trust so fully in the *vis medicatrix Naturae*, was the advocate of so advanced a therapeutic measure as cold bathing in fever. The proof, according to the writer in question—M. F. Crozat—is to be found in Trissotin's Sonnet to the Princess Uranie on her fever. It runs as follows:

Votre prudence est endormie De traiter magnifiquement Et de loger superbement Votre plus cruelle ennemie.	Quoi! sans respecter votre rang, Elle s'attaque à votre sang, Et, nuit et jour, vous fait outrage.
Faites-la sortir, quoiqu'on die, De votre riche appartement Où cette ingrate insolement Attaque votre belle vie.	Si vous la conduisez aux bains, Sans la marchander davantage, Noyez-la de vos propres mains.

In the "superb lodging" given to the fever, M. Crozat sees the bedroom adorned with thick curtains and carpets, harbouring microbes, in which wealthy patients are usually seen, and in the "magnificent treatment" accorded to it, the display of all the resources of medical art. "Away with all this," says Trissotin, "and drown the enemy in a bath!" The exegesis is ingenious, and men are sometimes called precursors in this or that branch of scientific discovery on less solid grounds.

The October number of the *Journal of Anatomy and Physiology* just issued, contains papers by Professor G. S. Huntington, of Columbia University, on the derivation and significance of certain supernumerary muscles of the pectoral region; by Dr. T. L. Bunting, on the histology of lymphatic glands; by Mr. J. Dunlop Lickley, on the morphology of the human intertransverse muscles; and by Mr. O. Charnock Bradley, on the mammalian cerebellum. Dr. Peter Potter and Mr. S. Walter Ranson, of the St. Louis University, contribute a description of a heart presenting a septum across the left auricle; Mr. R. B. Seymour Sewell, a study of the astragalus: and Dr. S. E. Denyer, C.M.G., an account of an oesophageal pouch, with absence of signs of any pathological cause. Most of the papers are well illustrated.

We have received Part I of a new edition of *Living London: Its Work and its Play, its Humour and its Pathos, its Sights and its Scenes*, edited by Mr. George R. Sims. The special feature of the new edition, which is to be issued in fortnightly parts, will, it is stated by the publishers, Messrs. Cassell and Co., be a series of coloured plates of characteristic London types and typical London scenes, reproduced from original drawings by leading artists. Part I contains a prologue by the editor, and special articles by Mr. W. Pett Ridge (London Awakes), Major Arthur Griffiths (In London Barracks), Mrs. Belloc-Lowndes (Marrying London), Count E. Armfelt (Russia in East London), and Mr. George R. Sims (At the Front Door). Altogether the work, which is well and abundantly illustrated, gives a vivid picture of the infinite variety of life in London with its sharp contrasts of wealth and want, luxury and squalor.

In the new (fifty-sixth) volume of the *Transactions of the Pathological Society of London*, the plan of giving summaries of certain papers in Latin, introduced in the last volume by the Editor, Mr. S. G. Shattock, has again been adopted. Of the thirty-two communications contained in the volume, eight have thus been made intelligible *urbi et orbi* by their authors. The following list of these communications will serve to show the variety of the subjects so dealt with: Congenital cretinism in calves (Dr. C. G. Seligmann); examination of specimens of enlarged prostate (Mr. S. G. Shattock); a case of emphysematous gangrene caused by the colon bacillus (Drs. L. S. Dudgeon and Percy W. G. Sargent); on the relation of staphylococcus pyogenes aureus to rheumatic fever (Drs. F. J. Poynton and W. V. Shaw); a contribution to the pathology of the thymus gland (Dr. L. S. Dudgeon); an anatomical criticism of the procedure known as total prostatectomy (Mr. C. S. Wallace); an experimental inquiry concerning epidemic or bacillary dysentery (Lieutenant-Colonel R. H. Firth, R.A.M.C.); and the cytology of malignant tumours (Mr. C. E. Walker).

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF ADJOURNED MEETING.

The adjourned **Meeting of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 16th of November, at 2 o'clock in the afternoon.**

Guy Elliston, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

Birmingham and Midland Counties Branch: Coventry Division.—The next meeting of this Division will be held at the Coventry and Warwickshire Hospital on Tuesday, November 1st, at 8.30 p.m. After the conclusion of the ordinary meeting, a special meeting will be held. Agenda of Ordinary Meeting:—(1) Specimens:—Dr. Day: Cirrhosis of Liver. Dr. H. Brown: Malignant Disease of Cervix Uteri. Mr. W. E. Bennett: Radiographs of Congenital Hip-disease Before, During, and After Treatment. (2) Dr. Harman Brown: Notes of Cases of Albuminuria in Pregnancy. (3) Correspondence: (*a*) From Medical Guild suggesting a minimum fee for midwives' cases. (*b*) From Wandsworth Division and from Imperial Vaccination League on vaccination and revaccination legislation. Agenda of Special Meeting:—To consider, with a view to adoption, the Ethical Rules of the Bradford Division. From 8 to 8.30 Messrs. Wyleys will give an exhibit of their specialities and preparations.—E. H. Snell, Knighton House, Coventry, Honorary Secretary.

Metropolitan Counties Branch: Hampstead Division.—The next meeting of the Division will be held at St. Peter's Lecture Hall, Belsize Square, Hampstead, N.W., on Friday, November 4th, at 4.30 p.m. Dr. Heath Strange will preside. Agenda: (1) Minutes. (2) Dr. W. S. Lazarus-Barlow, Director of Cancer Research Laboratories, Middlesex Hospital, will read a paper on Statistics of Cancer at the Middlesex Hospital. (3) Mr. R. Henslowe Wellington, Deputy Coroner for Westminster and S.W. Division of London, will read his report on the Representative Meeting at Oxford. (4) Dr. Ford Anderson, Representative of the Branch on the Central Council of the Association, will move "That Divisions elect their own members." (5) General business.—J. Dill Russell, F.R.C.S., Honorary Secretary, Osman House, Fortis Green, N.

South-Eastern Branch: Norwood Division.—The next meeting of this Division will take place at the Streatham Hall (close to Streatham Station), on November 10th, at 4 p.m., W. F. R. Burgess, M.D., of Streatham, in the chair. Agenda: (1) Minutes of last meeting. (2) To decide

where the next meeting shall be held, and to nominate a member of the Division to take the chair thereat. (3) Report of Representative at Oxford meeting. (4) Division of South-Eastern Branch. Papers: Dr. Mitchell Bruce: The Value of Negative Observations. Dr. Horrocks: Some Cases of Uterine Haemorrhage, in which curetting failed to relieve the complaint. Dr. Savage: Morbid Mental Growths. Dinner at 6 p.m., charge 7s., exclusive of wine. All members of the South-Eastern Branch are invited to attend and to introduce professional friends, but will be unable to vote on Divisional questions.—Henry J. Prangley, Tudor House, Anerley, Honorary Secretary.

South Midland Branch.—A meeting of the Branch Council will be held at the Library, General Hospital, Northampton, at 12 o'clock noon, on Thursday, November 3rd, under the presidency of Dr. Kennish. Agenda: Minutes of last meeting. Election of following new members: Bernard Relton, M.R.C.S., Rugby; J. C. Baker, M.B., Aylesbury; C. H. T. Bailey, M.R.C.S., Bedford; J. M. Dupont, M.B., Ch.B., Bedford; W. K. Parbury, M.R.C.S., Sharnbrook; H. E. May, M.B., St. Albans; C. H. Nicholson, L.S.A., Clophill, Beds.; A. F. Goldsmith, M.R.C.S., Bedford; V. S. A. Bell, M.R.C.S., Bedford; A. L. Chignell, L.R.C.S., Wing, Bucks; H. Kerr, M.D., Stone, Aylesbury; H. F. Bellamy, M.D., Abbots Langley, Herts; J. F. Matheson, M.B., Moulton, Northampton; Abraham Leach, M.B., Kettering Hospital. To discuss divisional grants (referred from annual meeting). Letters and communications. At 2.30 on the same day the autumnal meeting of the Branch will be held at the Board-room, Northampton General Hospital. The following papers are promised:—Dr. Milligan: Case of Appendicitis in which Laparotomy was performed twice; recovery. Mr. C. J. Evans: Treatment of Gastric Ulcer. Dr. Hichens: Actinomycosis of Lung; notes of a case with specimens of sputum. Dr. H. C. Major (Bedford): The Brief Story of a Rash. Luncheon will be served at Franklin's Restaurant, Guildhall Road, Northampton, at 1 p.m. Price 2s. 6d. All members who wish to lunch are requested to communicate with the Honorary Secretary not later than October 31st.—E. Harries Jones, Honorary Secretary.

Staffordshire Branch.—A meeting of this Branch will be held at the North Stafford Hotel, Stoke-on-Trent, on Thursday, November 24th, when the chair will be taken by Dr. E. Deanesly, the President. Papers will be read by Mr. W. D. Spanton, Dr. Menzies, and Mr. H. H. Folker.—G. Petgrave Johnson, Honorary General Secretary.

West Somerset Branch.—The autumn meeting of this Branch will be held at the Taunton and Somerset Hospital, on Friday, November 4th, at 4 p.m., when the President, Mr. A. W. Sinclair, will take the chair. Sir Patrick Manson, M.D., K.C.M.G., has kindly consented to give an address on the Significance of Fever in Patients from Warm Climates. The fifth annual dinner for medical men residing in West Somerset will be held at the London Hotel, Taunton, on Friday, November 4th, at 6 for 6.30 p.m. Chairman, Mr. A. W. Sinclair, of South Petherton. Guests may be introduced, and the charge for dinner will be 6s. per head. Those who wish to be present are requested to intimate their intention by Monday, October 31st, to W. B. Winckworth, Honorary Secretary, Sussex Lodge, Taunton.

SPECIAL CORRESPONDENCE.

SYDNEY.

Medical Titles.—The Bubonic Plague.—Death of Dr. Angel Money.—Old-age Pensions.

The question of medical titles has been more or less prominently before the profession and the public since the annual meeting of the Association at Oxford. His Excellency Sir Harry Rawson, our State Governor, has received from Mr. Lyttelton, Secretary of State for the Colonies, an important dispatch, transmitting for the consideration of his Excellency's advisers a copy of a letter received by Mr. Lyttelton from Mr. Guy Elliston, General Secretary of the British Medical Association. In this letter Mr. Elliston states that the Association had passed a resolution to the effect that it is expedient that only medical qualifications which are available for registration in Great Britain and Ireland should be registrable in Australia. This letter has arrived at an opportune moment, as it is expected that it will materially help the passage of a short Bill to amend the Medical Act, which was drawn up at the suggestion of the Council of the New South Wales Branch of the British Medical Association. This Bill was then forwarded to the Medical Board, with the request that that body should consider it and forward it on to the Government, with a view to its being adopted as a Government measure. If the Government take this step, it is confidently expected that the Bill will be passed without amendment. It provides for reciprocity in medical registration, and gives the Secretary of the Board power to keep the register correct and up to date, a proceeding which is not provided for under the existing Acts.

Plague-infected rats continue to be found in certain parts of the city, principally in the neighbourhood of Sussex Street, where the produce stores are chiefly situated. Two rather rapidly fatal cases of plague in human beings have occurred at a large house situated some miles from the centre of the city, in a healthy suburb. The first case was that of a coachman who was employed at this house; he slept over the stables, which were found to be overrun with rats. Bacteriological examination of two dead rats from this house proved them to be plague-infected, and it is surmised that they were infected by other diseased rats carried to this house in fodder. The second case was that of a woman, aged 31, a housekeeper employed at the same house, who had gone to visit the sick coachman, and who herself became infected, and died in about forty hours. The occurrence of these two fresh cases has again called forth a warning from Dr. Ashburton Thompson, the President of the Board of Health, who reminds citizens that the recurrence of an unusual mortality amongst rats, and the finding of dead rodents in unusual places, would be considered as evidence of the existence of plague. Under these circumstances, if people so situated do not give the Health Department immediate information on the matter, they will be liable to prosecution.

I regret to record the sudden death of Dr. Angel Money, which occurred at his residence at Randwick, near Sydney, on September 2nd. Dr. Money was well-known, either personally or by repute, to a large number of your readers. He came to Sydney about twelve years ago, and soon acquired a large consulting practice. His health, however, last year gave way, but after some months' illness he was sufficiently recovered to take a sea trip to Vancouver, and returned apparently quite restored again. He resumed practice in Macquarie Street, but apparently he was not as well as was expected, since he complained a good deal during the last few days of some heart weakness; and when he was found dead in his bed in quite a natural attitude of sleep, his death was attributed to heart disease. At his funeral the next day at Waverley Cemetery a large number of friends and professional brethren assembled at the grave. He has left a widow and two young sons, aged 8 and 5 years, for whom deep sympathy is felt.

Some few years ago the Legislature of this State passed an Old-age Pensions Bill, the object being to provide a small annual sum to be paid to old residents of the State who were proved to be physically unable to earn a living and who had no means of support. When this Bill was before Parliament members were informed that it would result practically in the closing of the benevolent asylums, and thus a large saving would be effected in the vote for charitable institutions. Sir Normand MacLaurin, who was asked by the late Chief Secretary to report on the accommodation at the various benevolent asylums, has now furnished some particulars which go to show that, instead of these institutions having been practically closed by the old-age pensions, they are much overcrowded, additional accommodation being required, and this in the face of the fact that the charitable vote has not been decreased, and that the old-age pensions cost the country over £500,000 annually.

MANCHESTER.

Penny Meals for School Children.—Crumpsall Workhouse Infirmary.—The Skin Hospital.—Infectious Diseases.

The old School Board for Manchester, when it began to provide meals, gave free breakfasts, but after a time it was found that for the very poorest the great need was dinner. Where there were five or six persons in the family, and the income, exclusive of rent, did not amount to more than 3s. a head, it was considered that free meals for the children were justifiable. The meals were prepared by the teachers and the caretakers, and the statement of the late chairman of the Board is that "the devotion of the teachers and the genuine interest they took in the work during all those years was beyond praise." The expenditure was met by voluntary contributions, by proceeds of concerts, social meetings promoted by the teachers, etc. The sum required two years ago was £400. Last year when the voluntary schools took up the work, 275,000 free meals were given at a cost of £1,000. The Committee has been induced to make a charge of a penny for each meal, because the free-meals system was often abused, and there was a danger of parents losing a sense of their responsibility, to say nothing of their self-respect. Special provision will be made for needy cases where the parents are unable to find the necessary pennies. The Oldham Education Committee has since June provided free breakfasts for children of poor parents who attend the day schools of the borough, the funds required being raised by public subscription.

A visit of the Bishop to the great workhouse infirmary at Crumpsall has been the means of directing attention to this institution, one of the largest in the country. There are 42 wards and 1,300 beds. At present there are a thousand

patients, who come from the central parts of the city, where poverty and disease are most common. The infirmary serves a population of over 130,000. There are three resident medical men and a staff of about one hundred trained nurses. The hospital also does good work in training nurses. The step taken by the Manchester guardians when they introduced trained nurses was a wise one, and they were among the first in this country to do so, following in this respect the excellent example set by the late Mr. William Rathbone of Liverpool.

The trustees of the late Mr. Manasseh Gledhill have decided to give a donation of £5,000 to the New Hospital for Skin Diseases subject to a ward in the hospital being called the "Manasseh Gledhill Ward."

At one of the elementary schools in Ardwick it was discovered that two of the girl teachers were suffering from small-pox. They were removed to Clayton Vale Hospital. The school has been closed by an order of the Board of Education. Small-pox still lingers with us. There are in all five cases in hospital. The Corporation successfully prosecuted a bailiff's servant who, after being warned by the representative of the medical authority, actually distrained upon and removed the sofa on which a poor child lay suffering from diphtheria, afterwards exposing it for sale.

BRISTOL.

Post-graduate Course.—The Half-yearly Meeting of the Royal Infirmary.

A POST-GRADUATE course is about to be given in Bristol, this being probably the first of its kind held in the West of England. On inquiry it was found that there were a certain number of qualified medical men who desired to read for higher degrees or diplomas, or who wished to improve their technique in surgery or surgical methods; the medical faculties of the Royal Infirmary have, in consequence, instituted a course for graduates. For the present the higher instruction will be in surgery—that is, practice, theory, and pathology only—but there is no doubt that if a sufficient number of names are sent in, a similar course will be given in medicine. Information as to times of lectures, demonstrations, etc., as well as fees, can be obtained from the Dean of the Faculty, Royal Infirmary.

The half-yearly meeting of the Governors of the Royal Infirmary was held last week, Sir George White, President, occupying the chair. The report showed that in the past half-year there had been an increase of £406 17s. 1d. received from subscriptions and donations of all kinds; from dividends an increase of £33 4s. 8d.; and from Poor-law unions and fees an increase of £64 16s. 6d. On the other hand, there had been a decrease in expenditure of £65 5s. 2d., but the President pointed out that the total outlay could not be much diminished. During the past few years several new departments had been opened at considerable outlay and these had to be maintained. The committee had been able to purchase a large house next the nurses' home, which with its garden would give them much additional room as a pleasant place for recreation. They had, too, obtained some premises reaching down to Maudlin Street, and though these were not to be used at present, they would in time prove of great value. The annual fête in the Zoological Gardens next summer will be on behalf of the infirmary. The meeting closed with the ordinary votes of thanks.

CORRESPONDENCE.

THE REPORT OF THE COMMISSIONERS IN LUNACY AND THE CAUSATION OF INSANITY.

SIR,—Your remarks, upon the Report of the Commissioners in Lunacy and the Causation of Insanity, appear with peculiar appropriateness at a time when the form of the causation table is undergoing revision. You have pointed out some of the circumstances which vitiate the statistics given as those of the causation of insanity, but, behind and beyond these circumstances, there is another consideration which deprives the table of what validity remains to it after your handling. The Table enumerates certain conditions which are supposed, *a priori*, to be likely to produce insanity; and it sets forth the number of cases in which each of these conditions has been found to precede the insanity. It is then assumed that, whenever an assigned condition has preceded, it has also caused, the insanity. In a communication to the current number of the *Journal of Mental Science*, I have suggested that this misleading method should be abandoned; and that the Table should be regarded and denominated, not as a statement of the ascertained causation of insanity, but as an inquiry into its probable causation. I have suggested that, when we make a guess, it is better to call it a guess, and not to put it down as an ascertained fact; that it should be understood, and stated, that the statistics are not intended to be statements of what we know to be causes of insanity: but fishing inquiries as to whether certain conditions, which we suspect to be causes of insanity, are so in fact, or not. By the accumulation of statistics of the antecedents of insanity, and by the comparison of these statistics with those of the sane, we may hope to obtain, in the course of time, trustworthy information of the causes of insanity. At present, we are groping in *a priori* darkness.

Tables of bodily stigmata, such as you suggest, would be of undoubted value; but it would not be enough to substitute them alone for the existing table. Insanity is a function of two variables:—the grade of organization of the individual, and the potency of the stress brought to bear upon this organization. Stigmata, where they exist, give direct proof of defective organization: as, for instance, microcephaly, mongolism, cretinism. But we may often obtain trustworthy evidence of defective organization from other sources than stigmata. If a parent, and several brothers and sisters, of an insane person are insane, we may safely infer, without finding stigmata, that his original organization was defective.

The difficulties in the compilation of a causation Table of Insanity, are, as you have maintained, very great; but the greatest difficulty of all is that of getting those who have to deal with such Tables, either in compiling them, or in drawing inferences from them, to understand and appreciate the difference between evidence and proof.—I am, etc.,

Hotel Métropole, Oct. 21st. CHAS. MERCIER.

PRIMARY BRONCHOPNEUMONIA IN CHILDREN.

SIR,—The paper by Dr. Samuel West on the above subject in the BRITISH MEDICAL JOURNAL of October 8th is of such importance that it should not be allowed to pass without comment. That cases of so-called primary broncho-pneumonia occasionally occur in children, I am prepared to admit, but that they are at all common in comparison with those of the ordinary secondary forms, or with those of typical croupous pneumonia in the same subjects, I am equally prepared to deny. Unless I misread him, Dr. West would seem to take such cases of primary bronchopneumonia as the type of croupous pneumonia as seen in children, and makes the assertion "massive consolidation is rarely met with in children." Now it is the ordinary experience at children's hospitals, and not merely a personal one of my own, that cases of croupous pneumonia—identical in every particular with the same complaint as seen in adults—are as frequent in infancy even as at any subsequent equal period of life. Although the death-rate in croupous pneumonia in young children is small, there is abundant *post-mortem* evidence of the presence in them of massive croupous consolidation of the ordinary adult form.

There is one peculiarity found *post mortem* in such cases in children—and the younger the child the more it is marked—and this is the occurrence of numerous patches of pulmonary collapse and secondary bronchopneumonia, closely besetting and surrounding a well-defined croupous consolidation. As a rule these patches of secondary broncho-pneumonia reveal themselves by no detectable physical signs, or any that they might have presented are obscured by those of the dominant primary croupous pneumonia. Occasionally, however, I believe, the signs afforded by such secondary patches add difficulties of their own to a differential diagnosis between a croupous and a broncho pneumonia. Again, resolution in croupous pneumonia is more rapid in the child than in the adult, and it may be that the only signs found *post mortem* are those of a bronchopneumonia when the case really began as one of the croupous variety. Here it would not be unnatural to expect to find the pneumococcus as the prevalent responsible organism. Ignoring this peculiarity attending croupous pneumonia in young children is, I believe, one of the reasons that has led Dr. West into the fallacy of overestimating the frequency of primary bronchopneumonia, and also into the error that "massive consolidation is rarely met with in children."

The relative frequency of croupous and catarrhal pneumonias in children is an important and debatable question, and here I am unable to understand Dr. West's figures, if he is correctly reported. He writes: "At St. Bartholomew's

Hospital, during a period of ten years, there were admitted 412 cases of bronchopneumonia, of which 82 per cent. were under the age of 5 years. During the same period, 1,786 cases of lobar pneumonia were admitted, of whom only 14 per cent. were under the age of 5 years, the relative frequency of bronchopneumonia at this age-period being as 6 to 1." Now, from these figures it would seem to me that the numbers of cases of bronchopneumonia and croupous pneumonia, under the age of 5, at St. Bartholomew's were about 338 and 290 respectively, giving a totally different ratio than that of 6 to 1. In fact, Dr. West's statistics would seem to approximate, much more closely than others I know of, to those of my colleague, Dr. S. Vere Pearson, who found that cases of croupous and catarrhal pneumonia in young children were almost identically equal in number. I have made no statistics on the point, but personal impressions, founded on an ample experience, would lead me to regard bronchopneumonia as far the more frequent, at any rate in children under the age of 3 years.

It is a more congenial theme to express my appreciation of Dr. West's remarks, in the JOURNAL of October 15th, on the treatment of pleural effusion, more especially his advice regarding the treatment of empyema by simple incision and washing out the cavity. Surgeons, however, are still so wedded to the notion that rib resection is the sole desideratum in such cases that they are somewhat hard to convince that other methods may be necessary, or even desirable.—I am, etc.,

London, W., Oct. 22nd. J. A. COUTTS.

THE PRESENT POSITION OF ASEPTIC SURGERY.

SIR,—Some of your correspondents maintain that, after reading the account of the discussion on the aseptic treatment of wounds which took place at the recent meeting of the British Medical Association, it is impossible to arrive at any definite conclusions from the opinions there expressed. I venture to hope that this is not a widespread conviction, for, setting aside the quibble about obtaining asepsis by means of antiseptics, which appears to have led to some confusion and with which Dr. Bantock has already dealt in the BRITISH MEDICAL JOURNAL of October 8th, and allowing for the various circumstances under which different surgeons are accustomed to operate, I cannot but think that the discussion in question did sound no uncertain note—that it has, in fact, taught us a definite lesson. For my own part I was pleased—if not a little surprised—to find such uniformity in the opinions expressed by surgeons hailing from all parts of the British Isles and from America.

The majority of those who spoke advocated asepsis for the wound and antisepsis for its surroundings—the minimum handling of the tissues at the time of operation, after prolonged preparation of the surrounding parts with the help of a reliable chemical antiseptic and the use of gloves when practicable, but not as a substitute for thorough cleansing of the hands.

But these points, Sir, you have already clearly brought out in a leading article in the JOURNAL of October 1st.—I am etc.,

Oxford, Oct. 19th. HORATIO P. SYMONDS.

SIR,—I should like to be allowed to make some observations on the nomenclature of this subject, as it seems to me that an almost inextricable confusion has arisen from a varying interpretation of certain terms.

In the BRITISH MEDICAL JOURNAL of October 8th (p. 950), Dr. Bantock wrote that

> antiseptic in its original use was meant to signify the use of means to destroy or kill microbes that might gain access to a wound, and for this purpose a chemical substance . . . was employed.

He also stated that for more than twenty years he had

> not used any antiseptic either in the preparation for, or during, an operation.

In the last issue of the JOURNAL (p. 1115) Mr. F. C. Mears declared that he had come to the "conclusion that antiseptic surgery was worse that useless" and that chemical solutions were "worse than useless." But Lister defined his treatment thus:

> Antiseptic treatment consists of such management of a surgical case as shall effectually prevent the occurrence of putrefaction in the part concerned (Introductory Lecture, University of Edinburgh, 1869).

Obviously Dr. Bantock and Mr. Mears do not attach Lister's meaning to the word "antiseptic." It is true that Lister invented a complicated method which involved a free use of carbolic acid in solution, but Mr. G. G. Hamilton stated at Oxford that Lister prophesied many years ago that

> one day some much simpler method than the one he taught would become universal (BRITISH MEDICAL JOURNAL, October 1st, 1904, p. 802),

and the use of chemicals is certainly not a necessary part of antiseptic treatment as defined by its author so far back as 1869. Mr. Watson Cheyne says that

> confusion has arisen because the terms "aseptic" and "antiseptic" are used in reference to the methods employed to keep a wound aseptic, "antiseptic" being employed where chemical antiseptics are used, and "aseptic" when chemical antiseptics are excluded (ibid., p. 805).

He teaches that

> aseptic surgery is the method of treatment directed to the maintenance of an aseptic condition in the tissues of the wound presumably existing at the time of the operation (ibid.).

Mr. Burghard at Oxford described the term "aseptic treatment" as embracing

> all the measures adopted to keep the wound aseptic or free from the effects of septic organisms, throughout its entire course (ibid., p. 794).

These interpretations of "aseptic" treatment do not, however, distinguish it from the "antiseptic" treatment as defined by Lister. Aseptic is simply substituted for antiseptic. On the other hand, Mr. Cheyne and Mr. Burghard hold that "antiseptic surgery has to deal with tissues which have been already infected" (ibid., p. 805), an interpretation which differs from that of, and restricts the scope of, antiseptic treatment as defined by Lister.

It seems to me that the essential feature of the surgical methods which gave rise to the creation of a new name is that, by the newer plan, no chemical irritant is allowed to come in contact with raw tissues, and irritation of all kinds is reduced as much as possible. This asepsis, if it can be effectually secured by other means, is merely a modification of Lister's treatment and a fulfilment of his prophecy. To carry out these conditions is not necessarily antagonistic to his principles. But the meaning of the word "aseptic" (not putrid) as descriptive of the newer method does not explain its peculiarities, especially if the word is used in opposition to "antiseptic" (against putridity). Each method is, or should be, both antiseptic and aseptic. So far as putridity is concerned, chemical antiseptics are not objectionable. It is their irritating and destructive qualities that hurt. My reasons are different, but I agree with Dr. Bantock in criticizing the word "aseptic." This word seems to me badly selected for the description of any method. It can be retained for this purpose on one of two conditions:

First, it may have the entirely artificial interpretation which has been generally assumed for it, in which case the "aseptic" method indicates a procedure characterized by the absence of chemical irritation of raw tissues, whilst in all other connexions "aseptic" means non-putrid or non-infectious.

Secondly, the view of Mr. Cheyne and Mr. Burghard may be adopted, in which case the term "aseptic" must be detached from the meaning that has generally been attributed to it, and the term "antiseptic" must also be detached from the meaning attributed to it by Lister. Aseptic is, therefore, an altogether inappropriate term for the description of a method to be distinguished from the antiseptic method. Atoxic (not poisonous) or anoxic (not injurious) would define the method much more exactly. Of course every surgical method is antiseptic, according to Lister's interpretation, in proportion to the certainty with which it ensures primary union. To avoid irritation of tissues, heat, which is a perfect antiseptic, is now freely used instead of chemical germicides. Many surgeons—I think the majority—use turpentine, spirits of wine, corrosive sublimate, or other antiseptics for the purpose of cleaning the patient's skin and their own hands. To clean sponges and to wash wounds Dr. Bantock uses a solution of sulphurous acid, "because of its cleansing properties, not as an antiseptic" (ibid., p. 1115).

The details of treatment vary in the hands of individuals, and modifications may be advisable in particular cases and under particular circumstances, but the aims of the surgeon should be to "effectually prevent the occurrence of putrefaction in the part concerned," and to reduce irritation of the tissues in every way that is consistent with the insurance of perfect asepsis.—I am, etc.,

London, W., Oct. 22nd. JOHN D. MALCOLM.

SIR,—It is perhaps unwise to question Dr. Bantock's peculiar views on the subject of germs and their action, but it is certainly advisable that some of his practice should be controverted, lest in other hands it may lead to disaster

to patients before the surgeon learns the whole of Dr. Bantock's method.

These few words are not to convert Dr. Bantock, but to assist the less experienced and the operating general practitioner and those who are obliged to come into contact with active virulent organisms. If they have examined a puerperal fever case or soiled their hands with pus from an abscess, let them not trust to Dr. Bantock's soap and water before an ovariotomy. If their instruments have been soiled in a septic operation, let them be boiled, and not trust to simple cleaning. If they use silk straight from the manufacturer, it would be well to speak to the manufacturer, and tell him how they use it, and then dip it in boiling water for half an hour. If a little perchloride of mercury should be in the water, it need not distress the surgeon. This applies also to silkworm gut.

It is a coincidence that Dr. Bantock kills the germs of tetanus in the catgut by his process. But these are not perhaps germs of pus-forming character.

The sponges are better the older they are, but if used in a septic case a little fire is useful. Here, also, the sulphurous acid is useful, because the germs are not fond of this acid. However, gauze mops are cheaper.

If Dr. Bantock will boil his silk in corrosive sublimate solution he will find that there will be less suppuration in the track of his sutures, even if he draws them tight.

A wound which suppurates but which nevertheless heals by first intention is not to be hoped for by ordinary surgeons. In plastic operations practical sterilization of the parts operated upon can be obtained, and the whole success depends upon ordinary principles of wound surgery.

Sulphurous acid is a strong antiseptic, especially in the strength used by Dr. Bantock. Perhaps if Dr. Gifford allowed Dr. Bantock to treat some of the dirty wounds there might be some new opinion formed. No one questions Dr. Bantock's results. What I think is not quite sufficient in his description of his methods is the omission of the pre-operation means or precautions which he adopts to keep his hands, instruments, and implements clean, or, as I should say, free from sepsis.

Has he a large out-patient practice? Does he use rubber gloves in examining septic cases? When he has used instruments or sponges, or material at a septic case, what does he do? Has he a septic assistant as Professor Kocher, of Bern, has? I find that many men in general practice are unsettled in their views, and are asking for dogma. This is generally more readily supplied by the heterodox than by the orthodox teaching of the profession.

Because I think his methods, as at present described, are dangerous to patients if put into practice by the less experienced in the art and science of surgery, I have ventured to disagree and to differ with Dr. Bantock's teaching.—I am, etc.,

Wolverhampton, Oct. 22nd. F. EDGE.

SIR,—With your permission I will very shortly reply to Dr. Bantock's criticism of my note on the present position of aseptic surgery, and promise, as far as I am concerned, to there let the matter rest, as it is evident that Dr. Bantock's mind is made up, and my thoughts and actions (for, notwithstanding Dr. Bantock's strictures, I still claim to be capable of both) respecting aseptic and antiseptic surgery are unlikely to be altered by his effusions.

As Dr. Bantock thinks it would be interesting to know what I imagine the action of double cyanide to be (a substance which he states is insoluble) I will satisfy his curiosity by saying that, although it is practically insoluble in water, it is fairly soluble in blood serum—at any rate, to a sufficient extent to inhibit the growth of pathogenic and other bacteria. For this opinion I have the authority of Lord Lister, whose authority I certainly can rely upon.

I plead guilty to being nurtured on Listerian methods, and, fortunately for my patients, I feel satisfied enough with the results not to wish to leave those methods, which, by the way, have been so abundantly proved to have worked wonders for both surgery and midwifery, for such as Dr. Bantock professes.

Seemingly there were no surgeons who adopted methods of simple cleanliness in pre-antiseptic days!—I am, etc.,

Darwen, Oct. 25th. G. T. GIFFORD, M.D.

DIPHTHERIA IN BRISTOL.

SIR,—Like Dr. Cobbett, I am intensely interested in the question as to the existence or otherwise of a species of bacillus having morphological affinities with the Klebs-Loeffler bacillus, but absolutely negligible as a factor in the pathogenesis of diphtheria. Unlike him, I am not prepared, after an experience of more than twelve years and the examination of some seven or eight thousand throat specimens, to allow that there exists a non-pathogenic organism, found in throats suspected of diphtherial infection, resembling the true organism of the disease closely, but capable of absolute differentiation from it within the limit of time allowable for the diagnosis. Still less am I prepared to allow that such an organism occurs with such frequency as to make its recognition important for public health purposes.

I should very much like to ask Dr. Cobbett two questions: First, whether he would be prepared, on a diagnosis of the presence of "Hofmann's bacillus" in a culture from a suspicious throat, made after from twelve to eighteen hours' growth, to turn the patient loose as perfectly safe; secondly, with what frequency, in his experience, the organism in dispute occurs, not in throats generally, but in those sent in for examination for suspected diphtheria.

If 50 per cent. of children harbour this organism, it is not a little surprising that this should, in my experience, be about the proportion in which I find diphtheria bacilli—as I call them—in suspected primary cases. As these are almost invariably children, it would seem to follow that I do not really ever find the latter at all, but always "Hofmann's."

This frequency is the essential point. If, as has recently been stated in America (in Chicago, if I remember rightly), Hofmann's bacillus only occurs in 1 per cent. of the cases, the discussion is purely academical. The danger is that the numerous practitioners who do not pretend to any knowledge of bacteriology may have their faith in our methods, as a whole, shaken by discussions which are devoid of practical significance.

I write in no spirit of antagonism to Dr. Cobbett, but simply with a desire to elicit from him a definite answer on the two points I have raised—namely, the possibility of accurate diagnosis between the two organisms, such as to justify the absolute neglect of the one, in from twelve to eighteen hours, and the frequency of occurrence of the latter in suspected cases.—I am, etc.,

London, S.E., Oct. 21st. EDWARD C. BOUSFIELD.

THE METHOD OF FORMING A PERFECT STUMP AFTER ORDINARY ENUCLEATION OF THE EYE.

SIR,—During the recent International Ophthalmic Congress, held at Lucerne, I sent a communication on the above subject, describing an operation for introducing an artificial vitreous, in Tenon's capsule, after ordinary enucleation. The abstract of my paper had already been printed before I became aware that Mr. Adams Frost, of London, had forestalled me in this matter in a communication published, I believe, in 1886, of which, of course, I was wholly unaware. As soon as I found out this fact I wrote to Professor Mellinger, of Basle, informing him of this, but I learned from him that it would not be possible to insert this explanation in the published transactions.

In justice to Mr. Frost, I therefore beg to make this fact publicly known.—I am, etc.,

Manchester, Oct. 21st. A. EMRYS-JONES, M.D.

THE REGISTRATION OF MEDICAL AND DENTAL STUDENTS.

SIR,—It is with much pleasure I see your columns open to the discussion of the present state and the future prosperity of our profession. With your correspondents who have recently advocated that the present is an auspicious moment to press for the reform of the General Medical Council I am in hearty agreement. It is time, indeed, that the rank-and-file of the medical practitioners should have adequate representation on our Governing Council, more particularly when that Council has for so long been showing signals of distress in the management of its own domestic affairs. Unable or unwilling to effect such economy as will permit of its effective discharge of the powers entrusted to it by the Medical Acts, it is compelled to fall back upon the taxation of the practitioners, directly or indirectly.

But surely Mr. Wesley Wilson is mistaken in hinting that the General Medical Council contemplates realizing its Oxford Street premises. If he be right the situation becomes doubly deplorable; the disappearance of the visible sign of medical authority, as represented by 299, Oxford Street, is ominous of still further decadence. Nor can one avoid speculating on the prospect of even the present State-consti-

tuted authority successfully administering for the general professional good when its own domestic affairs are permitted to become so involved.

The infusion of fresh blood by the addition of increased representatives, as already suggested, appears to me to be the only satisfactory solution of the difficulty. It cannot be right that only five gentlemen should represent the 30,000 or more medical practitioners of the United Kingdom, to say nothing of the additional contingent represented in the army and naval services.

The General Medical Council more than any other medical corporation is considered the body responsible to the State for the initiation of reforms. This responsibility it has hitherto ignored. With confidence, however, I look to the British Medical Association as the means of bringing pressure upon the General Medical Council to open its doors to our augmented representation. By so doing it will make that body as effective in the reflection of the opinions of the general practitioners as of the licensing bodies, who for nearly half a century have dominated discussion and stupefied progress.

By causing a clause to be inserted into the proposed Bill for the registration of students amending the Medical Act of 1886, so as to increase materially our direct representatives, the way to the inauguration of a rational system of medical government will be secured, and far-reaching benefits conferred upon the public and the profession alike.

With your correspondents, I see no reason to wait for the passing of the proposed Medical Acts Amendment Bill which was so severely criticized by certain members of the Association at Oxford.—I am, etc.,

Netherton, Oct. 19th. A. St. Lawrance-Burke.

PRINCIPALS AND ASSISTANTS IN MEDICAL PRACTICE.

Sir,—I should like to be allowed to say a few words in answer to the questions raised by Surgeon-General Evatt in the British Medical Journal of October 15th, p. 1041, from the point of view of the younger members of the profession.

In answer to question A, I would say that without doubt it is of the greatest advantage to a man to have acted as an assistant in a busy general practice before starting in practice on his own account. On becoming qualified, the greater part of the knowledge a man possesses has been derived from text-books. He has very little practical knowledge of disease or its treatment; he has very little knowledge of dispensing; and of the proper treatment of the patients themselves, of bookkeeping and of medical etiquette, he knows practically nothing. All these have to be learnt after leaving hospital, and the only way to learn them properly is by acting as an assistant under a good principal. I would even say that, for those who intend to settle down in general practice—and this is the lot of the majority of us—it is better to spend a year in a good assistantship than in holding a house appointment. Of course, if one can have experience of both, so much the better; but, as regards training for general practice, I would place more importance on the former.

With regard to the questions under heading B, I would answer them in the negative. We are students to the end of our days; and I venture to think that a principal can learn some things from a good assistant, as an assistant can learn a great many things from a good principal. I well remember, on meeting my first principal, his saying, "I hope we shall work well together; I have no doubt I shall learn some useful things from you, and I hope you will learn a good many from me."

I am now in practice on my own account in a country district five miles distant from any other medical man. Many times I have been thankful for the knowledge, experience, and advice gained during my assistantships.

I cannot help thinking that it is a great mistake for a man to begin practice for himself direct from hospital. There are many things he will have to learn which are better learnt elsewhere than in his own practice.—I am, etc.,

October 24th. Young G. P.

DISPENSING BY MEDICAL MEN.

Sir,—A letter in the British Medical Journal of October 22nd, 1904, p. 1119, deals principally with the alleged inability or unwillingness of chemists to dispense correctly. The writer tells us that he retired from practice nearly five years ago, that for many years previously he was a non-dispensing practitioner, and I gather from his statements that most, if not all, of the incidents quoted by him in support of his view occurred at the outset of his professional career. This calculation brings us, if I mistake not, to a period about thirty-five or forty years ago. Men and methods have greatly changed since then both in pharmacy and medicine, and I think, Sir, it is hardly fair to bring up the irregularities of a past generation—contrary to rule even then—against the relatively efficient pharmacist of to-day. I have sometimes wondered why dispensing chemists do not interest themselves more prominently in the present controversy; and I should much like to know what answer they would make to such a letter as that of your correspondent. The latter is of opinion that the less wealthy patients would object to pay both doctor and chemist. I do not find that in practice this happens as a rule. Among the poor this difficulty might arise, but, on the other hand, it is to be remembered that medical men have something to do with guiding their decision, and also that chemists are by no means averse in the like case to a reduction of charges.

Prohibition, so far, is out of sight, and I should be very sorry to see it introduced without proper guarantees for the security of the medical practitioner.—I am, etc.,

London, N., Oct. 24th. B. G. Morison.

PROVIDENCE OR BENEVOLENCE.

Sir,—Sir William Broadbent's letter with regard to the financial position of the British Medical Benevolent Fund only serves to accentuate the crying need for some organized benevolent and provident work amongst the members of the British Medical Association. Scarcely a week passes by but there is some piteous appeal on behalf of some medical brother in distress. And when the appeal is responded to, what good is it in most cases beyond a merely temporary amelioration of the trouble? That such a state of affairs should exist in a profession whose everyday work is a constant source of danger to the breadwinner, with whose death in most cases the only source of income ceases, is almost incredible. Take the working classes for instance: almost all pay into their unions or clubs. Take a joiner who, with a wage of about 28s. to 34s. a week, pays about £2 18s. a year to his union; and yet from the medical profession nothing can be got

The idea that I am advocating and working for and which I hope to see realized is that for a subscription of £3 to the British Medical Association every man will obtain as his right of membership, medical defence and an assurance that if he dies his children will be educated and his wife not left to starve. Of the £3, 5s. would, and will cover the cost of medical defence, as already collective defence is carried out by the British Medical Association; and, as no defence scheme can be carried out till after the next Representative Meeting, there will be by that time a reserve fund of £10,000 from two years' profits.

The remaining 30s. per annum should be for medical, benevolent and provident work. This, with a membership of 19 000, will give an income of £28,500 per annum.

When such a plan can be worked we shall have an association such as I am aiming at, which shall be the all-in-all to the medical man. So much so that we shall find that no man will be able to afford to stay outside. And I confidently expect to find that we shall by this means become a united body. The provision of medical defence I regard as a most powerful lever in increasing our membership.—I am, etc.,

Accrington, Oct. 24th. Elwin H. T. Nash.

THE SANITATION OF ELEMENTARY SCHOOLS.

Sir,—In the British Medical Journal of October 22nd, your reviewer has criticized my report upon the sanitary condition of the public elementary schools of Blackburn, and as certain remarks are erroneous, I wish to have an opportunity of replying to them.

Firstly, he states that the American standards of 15 square feet floor space and 200 cubic feet air space "were really arrived at by the late Dr. E. Shaw as the largest possible allowance, having regard to the other necessities of the class room." This observation is incorrect. Dr. Shaw's own words in reference to these same standards are that they represent "the least amount of floor space and air space permissible for a schoolroom, when all the needs of health are fairly considered."

Secondly, the critic alleges an omission on page 121, where the lighting area of Room No. 6 is stated to be about one-fifth of the floor space, but that there is "no reference to the fact, as shown on the plan, that four windows are blocked by a

building only 10 ft. off." In spite of this, however, the room is not dark, and there are five good windows on the opposite side, nearest which the scholars sit.

Thirdly, he states: "The special recommendations put forward convey an optimistic impression of the condition of the schools, which antique plans, notes of dark rooms, trough closets flushed once a week, and floors washed once a year will scarcely confirm." I submit, sir, that it would have been a more just criticism if, in this connexion, he had read and quoted lines 11 to 15 on p. 6 of my report, as follows: "I have made certain general recommendations which are applicable to all the schools, and which should be considered as additional recommendations to those specially made for each school." This has been done so as to avoid repetition. Moreover, on pp. 417 to 420, I have referred in greater detail to these recommendations dealing with the points mentioned above.

Fourthly, in answer to the remarks on ventilation I would draw his attention to p. 18, on which I state that "a larger ventilation opening is necessary, even 6 or 8 sq. in. per head." These figures, of course, refer to inlets and outlets. The exact proportion is stated in the Building Rules issued by the Board of Education.

Fifthly, regarding the chemical examination of air, I repeat that the samples were taken and the analyses conducted with the greatest possible care. As stated on p. 341, my samples were collected in December, 1903, and January, 1904, when fogs occurred and gas was often burning in the rooms. Dr. Pickard's were collected at the end of March, 1904, when there were no fogs, and when no gas was burning in the rooms. I do not understand the remark about "complete masking by other circumstances." Is not this also vague?

Finally, I can assure your reviewer that in finding "time to compile such a mass of facts apart from ordinary work," the other duties of the medical officer of health to this town have not been neglected in any way.

At the same time I welcome the candid criticism of your reviewer and thank him for his valuable suggestions, which I hope to carry out. I do not resent his criticism in the least, but merely wish to answer certain erroneous impressions contained therein.—I am, etc.,

ALFRED GREENWOOD,
Medical Officer of Health.

Blackburn, Oct. 24th.

THE INCREASE OF SYPHILIS.

SIR,—In the course of a letter published in the BRITISH MEDICAL JOURNAL of October 3rd, 1903, I took occasion to express the opinion that, as far as my observation went, syphilis was on the increase in London since the South African war. Further observation has confirmed this opinion.

In this connexion it is interesting to note that, in his report for 1904, Dr. A. John Gregory, Medical Officer of Health for Cape Colony, calls attention to the alarming increase of syphilis in the Colony generally. The natives are hard hit by the disease. Dr. Gregory adds that, this being the case, the infection, to a greater or less extent, of the white population is inevitable. He regards it as one of the most serious health problems which the Colony has to face.—I am, etc.,

GEORGE PERNET.

Harley Street, W., Oct. 25th.

OBITUARY.

ANGEL MONEY, M.D.Lond., F.R.C.P.,

Formerly Assistant Physician, University College Hospital.

THE announcement contained in the letter of our Sydney correspondent of the sudden death of Dr. Angel Money will be read with great regret by those who knew him during his brilliant but too short career in London.

He entered as a student of the Medical Faculty of the University of London in 1874, and his ability and enthusiasm, coupled as they were with untiring industry, soon attracted attention. It is probable indeed that he overtaxed his strength, and the first of the many illnesses which were to mar his career occurred while he was still a student; the interruption in his course of studies due to this cause probably robbed him of some academic distinctions, but could not diminish the respect which was felt for the remarkable intellectual powers which he displayed. He held the position of House-Physician and House-Surgeon at University College Hospital. Subsequently he was appointed Physician to Out-patients and House-Surgeon to the General Lying-in Hospital, Lambeth, where he took advantage of his opportunities to study the condition of the heart in the later months of pregnancy. A paper upon this subject was one of his first contributions to medical literature, but the bent of his mind was not towards obstetrics; he desired to become a general physician while directing special attention to the study of disease in childhood and to neurology. He was appointed medical registrar to the Hospital for Sick Children, Great Ormond Street, and devoted himself to the work of that office. He was rewarded by being appointed assistant physician to the Hospital in 1885. In 1887 he became assistant physician and assistant professor of clinical medicine, University College Hospital. He worked hard in all his offices, he was a voluminous writer, among his books being *A Treatise on Disease in Children*; he was a constant attendant and a frequent speaker at the medical societies in London, and he was rapidly acquiring an important consulting practice when he was again attacked by illness. He was compelled by this cause to resign his appointments, and in 1892 he went out to Sydney. Here again, as our correspondent states elsewhere, he quickly acquired a considerable practice. He married, and for a time his friends hoped that he might still live a long and useful life, but his health again gave way and we now have to deplore the premature close of a life which at its opening was full of so much promise.

PAUL TILLAUX, M.D.,

Professor of Clinical Surgery, University of Paris.

PROFESSOR TILLAUX, the distinguished French surgeon and anatomist, whose death was announced a few days ago, was born at Aulnay-sur-Odon, in the department of Calvados, in December, 1834, and had therefore not quite completed his 70th year. He began his medical studies at Caen, where he was Prosector of Anatomy and interne at the Hôtel Dieu. Proceeding to Paris to complete his studies he gained by competition the post of interne in 1857. Four years later he was appointed Prosector, and in 1863 he became Surgeon to the Bureau Central, the first step in the ladder of the surgical hierarchy. In 1866 he won for himself the position of Professeur-agrégé of surgery, the subject of his dissertation being the surgical affections of the kidney. In 1868 he became Directeur des Travaux Anatomiques, and began to lecture on anatomy, and to give courses of instruction in operative surgery. In 1878 he was appointed surgeon to the Beaujon Hospital, and in the following year he was elected a Member of the Academy of Medicine, of which he was President at the time of his death. In 1886 he was transferred to the surgical staff of the Hôtel-Dieu, and in 1890 he succeeded Professor Duplay as Professor of Clinical Surgery at the Charité.

He was the author of a monograph in which he embodied the results of experimental and clinical researches on the mechanism of the production of backward dislocations of the hip, which was published in 1878; and of treatises on topographical anatomy and clinical surgery, which have had great vogue as textbooks.

Professor Tillaux was a most successful teacher, and was held in the highest esteem by his professional brethren for his uprightness of character, while his amiable disposition made him beloved by all who knew him.

JAMES WALLACE, J.P., M.D.,

Medical Officer of Health, Greenock.

THE death of Dr. James Wallace, which took place suddenly and painlessly on October 10th, removes one who for long played a very active part in the affairs of Greenock, and a prominent member of the medical profession in the south of Scotland. Dr. Wallace was born in Edinburgh, but was brought by his parents to Greenock at a very early age. There he received his general education and spent nearly the whole of a life of 78 years. He was originally intended for the Ministry, and with that object went to Glasgow University, where he graduated M.A. in 1845. Medicine, however, attracted him, and in 1850 he passed the examination for the M.D. of the same university. He became L.R.C.S.Edin. and F.F.P.S.Glasg. a few years later. After a term of service as House-Surgeon at Glasgow Infirmary Dr. Wallace returned to Greenock as House-Surgeon of the infirmary there, and not long afterwards started in private practice with the assistance of an appointment under the Parochial Board; he became Chief Medical Officer to the Board in 1857. It was not until 1875 that he became Medical Officer of Health for Greenock,

and in the meantime he had received various appointments, some of which he retained throughout his career.

Dr. Wallace's interest in medicine was many sided. He held office on the honorary staff of the infirmary for many years, and practised surgery actively until an operation wound partly deprived him of his manual dexterity. This was not, however, before he had made sufficient reputation as a surgeon for him to be referred to by Professor George Buchanan in an inaugural address at Glasgow as "one of the pioneers of surgery in Scotland." The University of Glasgow, moreover, selected him as an examiner in surgery and clinical surgery in 1877-80, and again in 1885-88, a high honour for one who at that time was carrying on a large general practice and was also throwing himself zealously into his work as medical officer of health. It was a characteristic, however, of Dr. Wallace that he kept himself up to date in most things. Other appointments held by him were the medical officership of the Greenock Asylum and Poor House and an Admiralty surgeoncy. The jubilee of his tenure of office under the parochial board was celebrated in 1902, and upon that occasion he was presented with his portrait in oils and with an illuminated address, while banquets were held in his honour at the Town Hall.

Much of the position he occupied in public respect Dr. Wallace no doubt owed to his active and useful participation in the general affairs of the neighbourhood. A strong advocate of education, he was a member of the first School Board and took an active part in founding the Greenock Academy, just as he had in that of the Brown Society, one which in the early days of Greenock was established in memory of a well-known local schoolmaster, and did much to assist the youth of the town in educational ways. Dr. Wallace was also a Justice of the Peace and in politics in earlier days a pillar of the local Liberal party, being an excellent and convincing platform speaker. Upon the news of his death becoming known a special meeting of the Corporation was held and resolutions of sympathy and regret passed. The funeral was attended by a large concourse of people and by representatives of all local bodies, by the member of Parliament for the district, by the president of the Faculty of Physicians and Surgeons of Glasgow, and by a representative of the Western Medical Club. Dr. Wallace leaves behind him two sons and two daughters, his wife having died some years ago.

ROBERT H. MOORE, F.R.C.S.I.,

Dublin.

The profession in Ireland has lost one of its most esteemed members in Mr. Robert H. Moore, who died on October 23rd, in his 89th year. Mr. Moore entered the profession early, having been apprenticed to Mr. McLean, a leading dentist. In 1844 he became a Fellow of the Royal College of Surgeons, and when the new dental hospital was established some years ago he was chosen consulting surgeon. He had an excellent practice and served as dental surgeon to several Viceroys, only ceasing to hold the appointment about three years ago. His activity was great, and until very lately he enjoyed excellent health. In the affection of his brethren he held a very high position not only because of his abilities as a dental surgeon, but for his great kindliness of disposition, and his unimpeachable character in all relations of life.

ERNEST WILMER PHILLIPS, M.R.C.S., L.R.C.P.

We regret to record the death of Mr. Wilmer Phillips of Southsea, from pneumonia, after a short illness, during which he received the constant and skilful attention of his friends Dr. Kelso and Dr. Palser. Mr. Wilmer Phillips obtained the diploma of M.R.C.S. in 1884 and that of L.R.C.P. in 1885. He then held the office of House Surgeon to the Royal Windsor Hospital for five years. Fourteen years ago he commenced practice in Southsea, and his marked professional skill and genial manner soon gained for him a large circle of friends. Mr. Wilmer Phillips was an active member of the British Medical Association, and a constant attendant at the local meetings. He was a very kind and earnest worker amongst the suffering poor, and for many years he acted as the honorary physician of the Portsmouth Maternity Charity. The funeral took place on October 15th, and around the grave were gathered a great number of his old professional friends. At the meeting of the Portsmouth Clinical Society on October 18th, the following resolution was unanimously adopted:

That the members of the Society deeply regret the loss they have sustained by the death of their much-esteemed friend Mr. Wilmer Phillips, and at the same time they desire to record their great appreciation of his high and honourable character and their sincere sympathy with Mrs. Wilmer Phillips and all the members of the family.

UNIVERSITIES AND COLLEGES.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Annual Report of the Council, 1904.

The annual report of the Council for the period from August, 1903, to August, 1904, has now been issued.

Annual Meeting of Fellows and Members.

The resolutions passed at the annual meeting of Fellows and Members on November 19th, 1903, are given and the resolutions adopted by the Council in regard to these are also recorded, the opinion of the Council concerning the question of the representation of Members of the College on the Council being that it is not expedient to reopen the subject.

First Examination of the Conjoint Examining Board.

The report contains the revised scheme for the first year of study and for the first examination of the Conjoint Examining Board to take effect from March, 1905. With regard to the letter received from the Registrar of the General Medical Council reporting resolutions adopted by that Council on May 27th, 1904, as to preliminary scientific education and examination, the report contains the following comment: "It was found that these resolutions did not recommend anything which was not already included in the revised regulations of the Conjoint Board."

Third Examination of the Conjoint Examining Board.

The third examination of the Board was inspected on behalf of the General Medical Council by Sir Charles Ball and Sir George Duffey in January, 1903, and the Council of the College record their reply to the criticisms of the Visitor and Inspector of the General Medical Council. In regard to a recommendation that, in addition to the oral clinical examination, candidates should be required to furnish a written report on at least one surgical case, the Council state that they do not agree with this recommendation, because it is impracticable, owing to the great number of patients that would be required. With reference to the criticism that "there is still no special examination in ophthalmic surgery or aural surgery," the Council state that "at the present time candidates are adequately examined in ophthalmic surgery," and that "if the principle be admitted that a special pass examination is to be required in ophthalmic surgery, it may soon be considered necessary to appoint special examiners in other branches of surgery, such as laryngology, otology, dermatology, and orthopaedics." The Council further point out that all candidates are liable to be examined in ophthalmic and in aural surgery, as well as in any other branch of surgery. With regard to the statement that "no examination in operative surgery on the cadaver is held," the Council state their opinion that a very good test of a candidate's knowledge is obtained by calling upon him to explain on the living model how he would perform an operation, to select and describe the instruments he would use, and to undergo examination as to the structures involved in such operation. The Council further observe that examination in operative surgery on the cadaver is at the best an uncertain test of a candidate's capability, and with numerous candidates and a scarcity of subjects it would be most difficult to maintain a uniform standard. The Council also record how they pointed out to the Visitor and Inspector of the General Medical Council the impossibility of obtaining a larger supply of subjects in London than that now available, thus rendering it impracticable to examine large numbers of candidates in operations on the cadaver without seriously diminishing the supply of subjects for dissection, and for the courses of operative surgery, which all candidates are required to attend. The Council are of opinion, in regard to the scheme of marks criticized by the Visitor and Inspector, that some modification may be desirable, and the proposed scheme of marks to be tried is given in detail.

Success of London Diplomates at Service Examinations.

The statistics compiled by Mr. F. W. Collingwood, M.R.C.S., relating to the examinations in 1903 for admission to the Navy, Army, and Indian Medical Services are stated to have been received, and the Council desire Mr. Colling-

wood's communication as "interesting." These figures show that candidates holding the L.R.C.P. Lond. and M.R.C.S. Eng. were: (*a*) 22 6 per cent. more successful than candidates drawn from all other sources; (*b*) 28 per cent. more successful than the candidates holding degrees and diplomas from Scotch and Irish universities and colleges; (*c*) 23.5 per cent. more successful than the Scotch and Irish graduates; (*d*) 15 8 per cent. more successful than the Edinburgh graduates; and (*e*) 34 3 per cent. more successful than the Dublin graduates. Mr. Collingwood also called attention to the following return relating to the same examinations during the years 1893 to 1902, compiled by Mr. Thomas Bryant, and communicated by him to the General Medical Council in May, 1903, namely:

	Number of Candidates.	Percentage of Rejections.
Conjoint, England	577	8.84
,, Scotland	138	36 23
,, Ireland	137	30.65
Society of Apothecaries, London	77	16.88
University of Edinburgh	203	14.28
,, Dublin	118	22.03
,, Ireland	64	15.62
,, London	40	*Nil.*
,, Aberdeen...	49	14.28
,, Glasgow	37	18.92
,, Cambridge	23	4 34
,, Durham	23	8.69
,, Victoria	17	*Nil.*

Registers of Medical and Dental Students.

Referring to the proposal of the General Medical Council to seek statutory powers to institute registers of medical and dental students, the Council state that it is obvious that if these powers asked for are granted the two English Royal Colleges "are likely to be deprived of the chartered rights and powers they at present possess." The Council approached the Privy Council in reference to the matter, and have received an assurance that no action will be taken in the matter without affording the bodies affected the fullest opportunity of expressing their views.

Regulations for Licence in Dental Surgery.

The alterations in the regulations for licence in dental surgery adopted by the Council, and the new conditions to take effect from November 1st, 1904, are set out in detail.

Diplomas in Tropical Medicine.

According to the report, the question of instituting an examination and diploma in Tropical Medicine and Hygiene by the Royal Colleges now stands as follows: The two Colleges have resolved that: (1) With the permission of the authorities of the School of Tropical Medicine, visitors be appointed by the Royal Colleges of Physicians and of Surgeons to attend the examinations of that school, and to report upon the scope of the course of study and of examination, and that a request be addressed to the Naval, Military, and Colonial authorities, to allow visitors appointed by the two Royal Colleges to attend their examinations in tropical medicine for a similar purpose. (2) That at the end of a year a report be addressed by these visitors to the Royal Colleges on the whole subject of tropical medicine.

Central Midwives Board.

A report regarding the proceedings of the Central Midwives Board from Mr. J. Ward Cousins, the member of the Board appointed by the Council under Section III of the Midwives Act, 1902, is printed in full. The report is dated February 2nd, 1904, and concludes by pointing out that the supervision of midwives is everywhere in the hands of local supervising authorities, and that it is quite certain that effectual supervision and the successful operation of the Midwives Act must in a great measure depend upon the co-operation and assistance of the medical men practising within the areas affected by the Act.

Diploma of Spectacle Makers' Company.

The Council report the receipt of a letter from the Worshipful Company of Spectacle Makers, asking for the views of the College upon the proposal to include sight testing in the examination held by the Company and to extend their diploma by certification of efficiency therein. The statement of the Council forwarded in reply is published in the report, and consists of a strongly-worded protest, showing that "in the ultimate interest of the public no countenance should be given to any proposal which is likely to foster the belief that tradesmen, whatever be their technical skill, and whether opticians, or orthopaedic or other surgical instrument makers, are safe and sufficient guides in the management and treatment of deformities or other diseased conditions."[1]

Relations of Medical Profession to Coroner's Court.

An account is given of what has already been done in regard to this matter by the British Medical Association, the London County Council, and the Medical Society of London. The opinion is expressed that there are ample proofs of the desirability of alterations in the present laws concerning this subject. The questions involved, however, are varied, and include matters of administraton, such as the rearrangement of coroners' districts, with which the medical profession is not immediately interested. Having regard, therefore, to the various interests concerned and to the failure of other institutions to induce the Government to initiate legislation, the Committee appointed by the Council to inquire into the relation of the medical profession to the coroner's court are of opinion that it would not be expedient for the College to take any action in the matter at the present time.

Grant of Medical Certificates to Soldiers on Leave of Absence.

The attention of the Council having been called to the fact that medical certificates are not infrequently made use of by soldiers to assist them in deserting and otherwise evading military discipline, the Council desire to call the attention of Fellows and Members to the abuse to which such certificates may be put and to the responsibility which is attached to their issue.

Physical Disability of Recruits for the Army.

After a careful perusal of some supplementary information supplied by the Privy Council since the last annual report, the Council now state that they see no grounds to modify the opinions previously expressed upon the subject of the physical disability of many of those who offer themselves as recruits.

Standard Weights of Children.

The National Society for the Prevention of Cruelty to Children wrote to the College for an opinion on "the assertion that has been largely made that the standard weights taken from Tidy's *Legal Medicine*, 1882, is not a fair one for to-day, as the race has deteriorated both in height and weight." The Council replied that they are of opinion that there is no reason to regard the standard given in Dr. Tidy's tables as too high for the present time.

Proposed Anthropometric Survey of the United Kingdom.

The report gives in some detail the scheme for an anthropometric survey of the United Kingdom submitted by Professor D. J. Cunningham and Mr. J. Gray of the Anthropometric Committee of the British Association. The Council consider that the adoption by Government of such a scheme is greatly to be desired.

Prizes, etc.

The concluding portion of the report contains information concerning the Jacksonian Prize, the College Triennial Prize, the President's Badge presented by Mr. J. Tweedy, lectures delivered during the year, and a statement that the gross income of the College for the past year amounted to £26,969, being £547 more than the gross income of the previous year. The balance of income over expenditure is £2,794, a larger sum than any realized for some years past.

Preparation of Antitoxic Serum.

The report notifies that the College propose to terminate the agreement for the supply of serum to the Metropolitan Asylums Board.

Diplomas, Officers, etc.

The usual paragraphs containing details of the issue of diplomas, of the deaths of office-holders, of the attendances of members of the Council, of the elections, of the museum and of the library, find a place in the report.

Meeting of Fellows and Members.

The report concludes with a notice that a meeting of Fellows and Members will be held at the College in Lincoln's Inn Fields on Thursday, November 17th, at 3 p.m., and that the report from the Council will be laid before the meeting.

[1] BRITISH MEDICAL JOURNAL, October 24th, 1903, p. 1102.

UNIVERSITY OF CAMBRIDGE.

Dr. D. MacAlister, St. John's College, was on October 24th unanimously re-elected to represent the University on the General Medical Council for a fourth period of five years.

The Readership in Botany is vacant by the resignation of Mr. Francis Darwin, M.B., F.R.S., of Christ's College.

The Gedge Prize in Physiology is awarded to Mr. Keith Lucas, Fellow of Trinity College.

Mr. Henry Evans, of Trinity College, has bequeathed to the University his cabinets and collections of lepidoptera.

The following have been appointed Examiners for Medical Degrees. *Physics:* P. V. Bevan and T. C. Fitzpatrick. *Chemistry:* J. E. Purvis and W. J. Sell, F.R.S. *Biology:* A. E. Shipley, F.R.S., and Professor H. Marshall Ward, F.R.S. *Anatomy:* Dr. A. Hill and F. G. Parsons. *Physiology:* F. G. Hopkins and Dr. T. G. Brodie, F.R.S. *Pharmacology:* Dr. J. B. Bradbury and Sir T. R. Fraser, F.R.S. *General Pathology:* Professor G. S. Woodhead and Professor S. Delépine.

UNIVERSITY OF ABERDEEN.

The following students have been awarded bursaries as the result of the recent medical bursary competition:

First Year's Students.—A. G. Stewart, H. G. R. Jamieson, and A. Gray.

Second Year's Students.—T. C. Boyd, T. B. Nicholls, F. Macrae, A. J. W. Stephen, and R. E. Flowerdew.

EDINBURGH UNIVERSITY.

Autumn Graduation Ceremonial.

The usual graduation ceremonial held at the beginning of the winter session took place in the McEwan Hall. The Vice-Chancellor and Principal (Sir William Turner) presided, and there was a large attendance of the professoriate.

The degree of Doctor of Medicine was conferred on Thomas Garnet Stirling Leary, Ireland, M.B., Ch.B., whose thesis was entitled, "Dengue: an account of an Epidemic."

The degrees of Bachelor of Medicine and Master in Surgery were conferred on James Walker Dawson, Scotland.

The degrees of Bachelor of Medicine and Bachelor of Surgery were conferred on A. W. Beveridge, F. H. Borthwick, R. Buchanan, A. G. Cook, J. Craw (with first-class honours), F. D. Crosthwaite, G. T. Drummond, C. L. Eyles, G. H. L. Fitzwilliams, N. J. H. Gavin, H. M. Gillespie, V. R. Gorakshakar, B.A., A. S. Gordon, O. C. Greenidge, J. Grieve, P. Hallam, L. C. V. Hardwicke, Annie Jackson, F. E. Larkins, S. A. M'Lintock, J. MacDonald, V. Moralejo, J. Morris, C. F. Oberländer, R. G. S. Orbell (*in absentiâ*), G. Ormrod, R. A. L. van Someren, H. J. Stewart, Effie G. Stuart, J. M. Taylor, W. C. P. White, W. F. J. Whitley, G. H. Winch.

Special University Certificates in Diseases of Tropical Climates were awarded to F. H. Borthwick, M.B., Ch.B.; A. G. Cook, M.B., B.Ch.; H. M. Gillespie, M.B., Ch.B; C. V. Hardwicke, M.B., Ch.B.; S. A. M'Clintock, M.B., Ch.B.; G. Ormrod, M.B., Ch.B.; J. D. Sinclair, M.R.C.S., L.R.C.P. (*in absentiâ*); R. A. L. van Someren, M.B., Ch.B.

ROYAL UNIVERSITY OF IRELAND.

The following candidates have passed the examination for the M.B., B.Ch., and B.A.O. degrees:

Upper Pass: W. Egan, R. C. S. P. Flood, D. P. H. Gardiner, *R. Johnston, D. J. Keane, *Isabella G. A. Ovenden, B.A., *Alice Vance, L. Welpey.

Pass: C. Armstrong, W. J. M. Baird, T. Barry, J. J. Clarke, R. G. Clements, R. G. G. Croly, T. Cronin, J. W. Dale, B.A., G. J. Jones, B.A., S. J. Killen, J. A. Lowry, J. McConaghy, R. H. McGiffin, G. B. Moffatt, A. D. O'Carroll, J. S. O'Neill, J. H. Power, B.A., M. A. Shiekwin, G. H. Stevenson, M. O. Wilson.

*Those marked with an asterisk may present themselves for the further examination for Honours.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

The following gentlemen have been admitted Fellows after requisite examination: W. Allport, M.B., B.S.Lond., M.R.C.S.Eng., L.R.C.P.Lond.; S. A. Ballantyne, M.B., Ch.B.Edin.; D. Duff, L.R.C.S.E.; H. Dyer, M.R.C.S.Eng., L.R.C.P.Lond.; D. C. L. Fitzwilliams, M.B., Ch.B.Edin.; J. Graham, M.B., C.M.Edin.; D. A. Hingston, M.D., Montreal; C. T. Holford, M.R.C.S.Eng., L.R.C.P.Lond.; E. H. Irwin, M.B., C.M.Edin.; R. B. Johnston, L.R.C.S.E.; N. J. Kalomiris, M.R.C.S.Eng., L.R.C.P.Lond.; J. G. McBride, M.B., Ch.B.Edin.; D. S. Mackay, M.D., C.M.McGill, L.R.C.S.E.; M. Mitra, L.M.and S., Punjab; W. Newlands, M.B., Ch.B.Edin.; R. Ramsey, M.B., Ch.B.Glasg.; A. J. H. Saw, M.D., Ch.B.Camb.; F. W. Sumner, M.B., Ch.B.Camb., M.R.C.S.Eng., L.R.C.P.Lond.; J. C. Verniker, M.D., Ch.B.Durh., M.R.C.S.Eng., L.R.C.P.Lond.; D. L. Williams, L.R.C.S.E.; O. S. Wraith, L.R.C.S.E., M.D.Durh.

SOCIETY OF APOTHECARIES OF LONDON.

The following candidates have satisfied the examiners in the subjects indicated:

Surgery.—Sections I and II, B. H. Hirst, E. E. Tucker.

Medicine.—*C. W. S. Boggs, S. F. Cheesman, W. H. A. Elliott (Sections I and II), B. H. Hirst (Sections I and II), M. E. Jeremy (Sections I and II), †J. R. R. Trist, A. M. Walker (Sections I and II).

Forensic Medicine.—A. A. Angelis, W. H. A. Elliott, C. H. J. Fagan, B. H. Hirst, P. F. Howden, C. T. Pellow, A. M. Walker.

Midwifery.—R. Heathcote, B. H. Hirst, J. R. R. Trist.

The diploma of the Society was granted to the following: A. A. Angelis, W. H. A. Elliott, B. H. Hirst, E. E. Tucker.

*Section I only. †Section II only.

The opening lecture of the winter session at the Hospital for Consumption and Diseases of the Chest, Brompton, will be given at 4 p.m. on Wednesday next, November 2nd, by Dr. Percy Kidd, the subject being "Some Points in the Prognosis and Treatment of Pneumonia." These lectures are free to all qualified medical practitioners and to students of medicine.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Staff Surgeon E. C. Lomas, D.S.O., M.B., has been promoted to be Fleet Surgeon, October 21st. He was appointed Surgeon, February 11th, 1891, and Staff Surgeon, October 21st, 1896. He was Surgeon of the *Terrible*, South Africa, in 1900, and landed with the Brigade for the defence of Durban and in the Ladysmith Relief Force (mentioned in dispatches, promoted to be Staff Surgeon, and made Companion of the Distinguished Service Order).

The following appointments have been made at the Admiralty: Alexander G. W. Bowen, M.B., B.A., Surgeon, to the *Vernon*, additional, for the *Seagull*: Arthur R. Schofield, Surgeon, to the *Eclus*, additional, for the *Sharpshooter*, undated; Thomas D. Halahan, M.B., B.A., Staff Surgeon, to the *Scylla*, November 8th; John H. Lightfoot, Surgeon, to the *Vivid*, November 1st; John W. Bird, Surgeon, to the *Vivid*, for Devonport Dockyard, October 21st; Robert R. Fasson, M.B., Surgeon, to the *Excellent*, temporary, October 21st; Hilary C. Arathoon, Surgeon, to the *Egmont*, October 21st.

John J. Walsh, M.B., civil practitioner, has been appointed Surgeon and Agent at Killybegs, undated. His appointment as Surgeon and Agent at Tribane has been cancelled.

ROYAL ARMY MEDICAL CORPS.

The Case of the Warrant Officers.

We have received a printed memorandum, which we are requested to notice, but on which it is obviously impossible for us to comment, except in a general way. It appears that hardship has arisen in the compulsory retirement of warrant officers, R.A.M.C., under 45 years of age, through the necessity of clearing the lists, which are congested owing to the abnormal promotion of young non-commissioned officers during the late war, and also consequent on a reorganization of the corps. Such blocks in promotion have always occurred in all branches of the service after a great war, and, though drastic remedies are required, they are usually applied with a minimum of loss and detriment to the individuals affected. It is stated that this is not being done in the present instance; for, in order to effect a clearance, the old warrant officers who have been five years in the rank, with a total of 21 years' service, are to be discharged with a minimum pension; if it be so, we think it is ungenerous, and contrary to official procedure in like cases of compulsory retirement. The difference between the maximum and minimum pension is great to the persons affected, but small to the State; in this case a small but most deserving and meritorious class is involved, and we trust greater liberality will be shown to it, and that it may not be made to suffer for the good of the service. It is stated that it is not "too late to reverse the policy, which commences to take effect from November 18th"; but if the policy cannot be reversed, we trust it will be carried out with a minimum of hardship and loss to the persons affected.

THE R.A.M.C. ADVISORY BOARD.

Sir C. B. Ball, M.Ch., Dr. J. Galloway, Sir E. Cooper Perry, M.D., and Sir F. Treves, Bart., K.C.V.O., C.B., have been reappointed members of the Advisory Board for Army Medical Services for a further period of three years.

ARMY MEDICAL RESERVE.

The following announcement is inserted in correction of the note published in the British Medical Journal of October 22nd, 1904, p. 1123: Surgeon-Lieutenant J. N. Macmullan, 1st Herefordshire Rifle Volunteer Corps, to be Surgeon-Lieutenant, October 8th.

INDIAN MEDICAL SERVICE.

The *Pioneer* (Allahabad) says:—"Officers in the Indian Medical Service in civil employ will be glad to learn that a despatch containing details of the proposals of the Government of India regarding their increased pay has at last been sent to the Secretary of State for India for approval. The delay originally arose owing to the necessity for consulting the local Governments. So long as a retrospective effect is given to the changes made, no great harm will have been done."

VOLUNTEER RIFLES.

Mr. James H. Hornsburgh to be Surgeon-Lieutenant in the 6th Volunteer Battalion the Royal Scots (Lothian Regiment), October 22nd.

Surgeon-Lieutenant C. M. Atkinson, 1st Volunteer Battalion the Buffs (East Kent Regiment), resigns his commission, October 22nd.

Brigade-Surgeon-Lieutenant-Colonel P. B. Giles, 1st Herefordshire, is granted the honorary rank of Surgeon-Colonel, October 22nd.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Surgeon-Lieutenant-Colonel J. Cantlie, M.B., 7th Middlesex (London Scottish) Volunteer Rifle Corps, and Honorary Lieutenant-Colonel Commandant Maidstone Companies, Royal Army Medical Corps (Volunteers), is appointed to the Honorary Colonelcy of the London Companies, October 22nd.

MEDICO-LEGAL AND MEDICO-ETHICAL.

ACTION FOR WRONGFUL DISMISSAL IN SCOTLAND.

Messrs. Hempsons, solicitors to the Medical Defence Union, Limited, write as follows with reference to the case of Lithgow *v* Gibb, a report of which was published in our columns of January 16th, 1904, p. 167:

This action, which involved matter of professional interest, was by the defenders carried to appeal from Mr. Sheriff Boyd's decision in favour of Dr. Lithgow to the Sheriff Principal (Mr. Sheriff Guthrie), who has adhered to Mr. Sheriff Boyd's judgement, and has awarded Dr. Lithgow costs of the appeal on the higher scale, as marking his sense of the importance of the issues which were concerned. The circumstances out of which the action arose were briefly these: Dr. Lithgow had held for twelve or thirteen years the appointment of medical officer to three works, being appointed thereto by a joint committee composed of the workmen and the employers. In February, 1903, Messrs. Thomas Gibb

and Sons, Limited (one of the three works in question), purported summarily to terminate Dr. Lithgow's appointment so far as their works only were concerned and to appoint another medical man to the position. The legality of this action on their part was challenged by the Medical Defence Union on behalf of Dr. Lithgow, with the result that an action was instituted, by way of testing the legal position, for recovery of the proportion of fees due to March 31st, 1903. This action was tried before Mr. Sheriff Boyd in December last at the Sheriff Court of Lanarkshire at Glasgow, when judgement was given in Dr. Lithgow's favour on all points. From this judgement the defenders appealed to the Sheriff Principal (Mr. Sheriff Guthrie), who on October 17th pronounced his judgement, adhering to Mr. Sheriff Boyd's decision, and condemning the appellants in costs on the higher scale. Enclosed we beg to hand you a full copy of Mr. Sheriff Guthrie's judgement, and if you can give space in your columns to this letter and the judgement in question, it appears to us that it might be of interest and service to members of the profession:

"Glasgow, 17th October, 1904: Having heard parties' Procurators, adheres to the Interlocutor appealed against: Finds the Appellants liable in the expenses of the Appeal as the same may be taxed on the higher scale, and decerns.

"(Signed) W. GUTHRIE.

"*Note.*—Without expressing an opinion as to the Pursuer's tenure of office and the manner in which it could be properly terminated, I am clearly of opinion, as Sheriff Boyd has held in his careful and cautious Interlocutor, that the Pursuer was not competently removed from his position as Medical Officer of the defenders' workmen by the letter of 27th February, 1903, and that the contributions deducted from wages by the defenders for him are payable so far as sued for.

"It was contended on various grounds that there is no contract of employment which can be enforced. The defenders, I think, have failed in each of their contentions.

"It is said that as the Pursuer founds on an Agreement to last for years made in 1892, that Agreement cannot be proved but by Writ or Oath. I do not think this is sound. There was an appointment or a contract—the name is not material—whereby the Pursuer became Medical Officer for three Works at Cleland. The appointment was made by a Committee of workmen, acting along with the employers, and it was agreed that the removal of the Pursuer should rest with the Committee which appointed him. It is, of course, not implied that that Committee should be composed of the same individuals. Obviously it was to be a Committee representing in the same way the three Works. Now the Pursuer continued for twelve or thirteen years to act as Doctor for the Works, and to receive payment in the usual way from the owners of the subscriptions of the men. It was a contract of service for a year if not reduced to writing, and it was continued from year to year by the actings of both parties. This is practically admitted by both parties, and it is simply a plea of despair to argue that the Pursuer must fail because he has not a written agreement.

"Again, it is said that the Agreement cannot be enforced against the Defenders because they are a Limited Company, which succeeded in 1898 or 1899 to the business of the same name which was a party to the arrangement of 1892. There is no plea or statement on record to this effect, and that fact is not surprising when it is considered that the defenders have been going on since they acquired the Works treating the Pursuer as the Medical Attendant of the Works and paying him the deducted contributions of their men.

"Other objections to the judgement were stated of an equally flimsy nature—so flimsy that it is needless to notice them.

"The sum of the matter so far as the present action is concerned is that the Defenders hold certain monies collected for the Medical Adviser of their men, and which can be paid to no one but the Pursuer so long as he holds that office. It is conceded on all hands that he held that office and was entitled to these monies till February 28th, 1902. It may be a question how the Pursuer could be validly removed from his office. For the purpose of ascertaining whether the balance of a quarter's drawings is properly retained, it is unnecessary to determine what was the correct method of putting an end to the Pursuer's engagement so far as it had to do with the Defenders' Works. But it is clear that such an engagement could only be terminated by reasonable warning. I am of opinion that warning for the end of the quarter is the very shortest that could be held sufficient and that is enough to support the judgement.

"I do not need, however, to observe this strict economy in assigning grounds of judgement. For I think that I agree with what was probably Sheriff's Boyd's opinion, that there is no sufficient evidence of any resolution of a majority even of the defenders' men to dispense with his services. Whether it was necessary that the other Works which were parties to the arrangement of 1892 should be consulted is, I think, a question that may be put aside.

"More than the mere money value recovered is concerned in this action, and I do not think it necessary to interfere with the judgement in the matter of expenses.

"(Intld.) W. G.

"A True Copy,
"(Sgd.) JNO. WOOD, S.C.D."

AN ACTION FOR FEES.

ON October 25th the case of Walker and Sturge *v.* Ferns and Wadsworth was heard in the King's Bench Division before Mr. Justice Grantham and a special jury. The action was brought by James Duncan Walker and William Howard Sturge, practising as physicians at Shaftesbury, against the defendants, executors of the will of Joseph Parke, deceased, to recover the sum of £207 18s. for medical attendances upon, and medicine supplied to, the deceased between July 15th and August 29th, 1903. The defendants contended (*inter alia*) that the charges were not fair and reasonable.

It appears that in July, 1903, the late Mr. Parke arrived at the Grosvenor Arms Hotel, Shaftesbury, suffering from dropsy and cancer. Dr. Walker was called in, and attended him both there and at a furnished house to which Mr. Parke subsequently went. Mr. Parke died in August, Dr. Walker spending the whole of the last eight nights with him. Each night he had to administer enemata, and he made a charge of 10 guineas a night. Previously to this the patient's condition necessitated an operation which lasted three hours, and required the attendance of two surgeons. For his attendance at the operation the plaintiffs had charged 25 guineas. All the time the patient told Dr. Walker that he would be well paid. The plaintiffs had charged 1 guinea a visit, and upon one occasion five visits had been paid in a day; for each of these 1 guinea was charged. Upon his death the patient left legacies to the amount of £30,000.

Mr. Walker gave evidence in support of the above statement. He contended that the charges were reasonable, as the patient was exacting and had specially desired his frequent attendance.

For the defendants, Dr. Brown, residing in Finchley Road, was called. He said that he was acquainted with the charges made by general practitioners. As a general rule a charge of 1 guinea a visit was excessive, but if the patient was well off it would not be excessive. He had not heard anything in this case which was out of the common. Apart from the special request of the patient there was no necessity for the doctor to attend for an hour five times in one day.

Dr. Williamson said he had been in practice at Otley, Yorks., for a number of years. His patients included persons in a good position. He had heard the evidence, and thought that 1 guinea a visit was unreasonable. When he slept in a patient's house he charged 5 guineas a night if he was getting up frequently. With regard to the operation which had been performed, this was very simple. Cross-examined: If he sat up for eight consecutive nights without taking his clothes off, and if he had to perform an unpleasant duty from time to time during the night, he would charge 5 guineas a night and 10s. 6d. for every time he was called up.

Dr. Harris, M.A., M.D.Cantab., said he had been called in to see Mr. Parke. The only danger about the operation was the grave condition of the patient. There was no anaesthetic used. His fee was discussed on the way home. He was paid 5 guineas altogether. The charges made by the plaintiff were higher than he himself had ever charged, but there were peculiar circumstances in the case. For instance, while he was attending at the operation the patient asked him whether there was anything which he could suggest to relieve him, as he had plenty of money he could afford to pay for it.

In the course of his summing up, Mr. Justice Grantham read extracts from the *Medico-Chirurgical Tariffs* prepared for the late Shropshire Ethical Branch of the British Medical Association by Dr. Jukes de Styrap, M.K.Q.C.P., etc. His Lordship said that no doubt the fees were high, but it was only fair to say that there was no body of men who worked harder for their money than country practitioners, and where a rich man wanted special attention the medical man was entitled to charge high; the charge depended on the circumstances of the case. Why should not a rich man pay for attention if he wanted it? His lordship knew no better way for a rich man who was dying to spend his money than to pay lavishly for anything that would comfort him during his last hours. That was apparently what this man did.

The jury, without leaving the box, found for the plaintiffs for the full amount, and judgement was entered accordingly, with costs.

THE RELATIONS OF MEDICAL OFFICERS OF HEALTH WITH THEIR PROFESSIONAL COLLEAGUES.

DR. A. GEORGE BATEMAN (London) writes: In the BRITISH MEDICAL JOURNAL of July 2nd you made an editorial statement, in reply to a correspondent, "that a medical officer of health has no right to intrude upon a patient and examine him except with the patient's consent, but the consent or presence of the regular medical attendant is not necessary." I ventured in a subsequent number to traverse the correctness of this reply, and based my contention upon a variety of orders issued from time to time by the Local Government Board.

May I be allowed to supplement those extracts by one of the very latest date, so as to prove that the opinion of the Board as expressed in the previous orders remains the same up to the present time?

In a letter written to the Borough Council of Hammersmith by the Local Government Board, dated October 22nd, 1904, the following appears: "It must be remembered that a personal examination can only be made with the consent of the patient or of those having charge of the patient; and it is desirable that the medical practitioner in charge of the case should always be communicated with, and that his co-operation should be secured where it is possible to do so without involving undue delay. The Board would point out the importance of exercising tact and discretion where a reconsideration of the diagnosis upon which the notification of the case had been based may be involved. The Board request that the Borough Council will be good enough to communicate these views to the medical officer of health." This letter was signed, "Noel T. Kershaw, Assistant Secretary."

It is of the utmost importance that medical officers of health should realize that their official position does not afford them any excuse for breach of ethical practice, and that if they visit patients of other men without their co-operation and consent they are acting not only contrary to the usages of the profession, but also against the regulations of their official superiors, the Local Government Board.

HOSPITAL ABUSE.

NEWCASTLE desires to call attention to two cases of hospital abuse which have recently come to his notice. (1) A young lady with a nasal affection went to a throat hospital, where she was operated upon and given to understand that her previous treatment was "radically wrong." Her parents pay a rental of £50 a year and are in a big way of business. (2) A man with a stationer's business in London and a private residence in the suburbs, for which he pays £55 a year, was treated at a "fistula hospital" (sic) as an out-patient, but was invited by the "doctor" to visit him at his private residence. "Newcastle" accuses the members of the profession who serve these hospitals of "sweating their brethren by their actions." He thinks that general practitioners, especially in south-east London, must wake up, and he asks, could not the Association do something?

*** We remark that the correspondent who sends this complaint gives an address in the north of England. Assuming the facts to be correctly stated, both cases would show that there is abuse at certain institutions. Reports of what the "doctor" said must always be accepted with caution, especially if reflecting upon the previous treatment; in our experience they are almost invariably gross misrepresentations of what has been uttered. Such cases illustrate the need for careful enquiry in all out-patient departments, but we believe hospital committees now generally admit this. A case came under our notice recently where a publican went to a hospital where an inquiry officer is employed, accompanied by his barman, who was to

pass the inquiry officer and then hand over the paper to his employer. Fortunately, the arrangements of the hospital made this proceeding impossible, and the little plot was discovered. The publican was asked to go to the office to see the secretary, but, needless to say, he did not do so. The story shows that even where an inquiry officer is present deliberate attempts may be made by unsuitable persons to obtain treatment, and it is impossible to say that these are always unsuccessful. We believe it is the general wish of the committees and staffs of hospitals to prevent abuse, and that, as a rule, they do their best to promote reasonable reforms in this direction. The whole subject is engaging the careful attention of the Hospitals Committee of the Association.

PAYMENT OF NOTIFICATION FEES.

A CORRESPONDENT writes that he has recently sent in an account to the sanitary authority for notification fees extending over a period of two years. He is now told that the auditor will only allow a portion of his account.

*** It is to be feared that our correspondent will only be able to recover a portion of his account. Such fees must be claimed within six months of their becoming due.

TRAVELLING EXPENSES OF MEDICAL WITNESSES AT CORONERS' INQUESTS.

R. M. M. writes: Is a medical man supposed to go any distance, say six miles, to attend and give evidence at an inquest and receive as remuneration £1 1s.? Ought not he be entitled to reasonable expenses to and from the coroner's court?

*** Nothing is said in the statute law regulating the fees payable to medical witnesses about travelling expenses. The payment to other witnesses and their travelling expenses are contained in a schedule approved by the county councils or the municipal authorities, and each local authority makes its own schedule. In the counties of London and Middlesex 2d. a mile travelling expenses is allowable over two miles, and we are of opinion that the medical witness could claim this at least, if not the actual expenses incurred in travelling—being the amount out of pocket.

MEDICAL MEN AND CORONERS.

DR. R. H. WOLSTENHOLME (Salford) writes: In your reply last week to a correspondent under "Medico-Legal," with reference to supplying information to coroners, you state that "usually the medical man is willing to afford this information," and also that "there is no special legal obligation on the part of the medical man to make statements to the inquiry officer." Would it not have been more satisfactory to the profession if you had referred your correspondent to the resolutions passed last July at Oxford? These were (abbreviated): (1) That no legal obligation rests at the present time on medical practitioners . . . other than that of making a *post-mortem* examination when ordered in writing by the coroner, and of attending to give evidence when duly summoned. (2) That under present circumstances the practice whereby medical practitioners furnish to coroners information of the kind considered in this memorandum, not being defined and required by law, is entirely informal and irregular.

CHANGE OF MEDICAL ATTENDANT.

A. B. H.—When a patient desires to dismiss his medical attendant it is incumbent upon him to write him, or cause him to be written, a courteous intimation to that effect, and the superseding practitioner should feel it his duty to ascertain that such intimation has been sent before he undertakes charge of the case. There is no obligation upon the superseding practitioner to write himself, and on the whole it is generally better that he should not.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

SALARIES OF MEDICAL OFFICERS OF HEALTH.

A FORTNIGHT ago the Edmonton District Council resolved to increase the salary of its medical officer (Dr. McFadden) from £150 to £350, conditional upon his giving his whole time to the duties of the office. Upon the sanction of the Local Government Board being sought to the proposal, a reply was received from the department stating that they had come to the conclusion that where the sanitary authority secured the services of a medical officer of health whose training had had special concern with public health work, apart from his ordinary professional qualifications, it was desirable to ensure that his position would be such as to enable him to perform his important duties impartially and independently, and be regarded as holding a position in no way inferior to that of other medical men who were engaged in the general practice of their profession. In order to obtain these results, it appeared to the department that the total salary paid to a medical officer of health, who was qualified as mentioned, and who was to devote the whole of his time to his work, should not be less than £500 per annum. In cases where the total remuneration did not reach £500 a year, the Board were only prepared to give their sanction on the understanding that while giving whole time to the Board, in other respects he should be at liberty to supplement his income by acting as a consultant in cases of infectious disease if invited to do so by any other medical practitioner, by performing analyses and other laboratory work, and by receiving qualified medical men as pupils for instruction in sanitary science, and in other public health work of a similar character not involving the ordinary work of a general medical practitioner. The Board has now decided to appoint Dr. McFadden at a salary of £350 per annum, on the terms contained in the latter part of the Local Government Board's letter.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,345 births and 4,651 deaths were registered during the week ending Saturday last, October 22nd. The annual rate of mortality in these towns, which had been 15.6, 15.1, and 15.2 per 1,000 in the three preceding weeks, further rose last week to 15.9 per 1,000. The rates in the several towns ranged from 7.1 in Hornsey, 8.3 in Willesden and in Wigan, 8.6 in Smethwick, 8.7 in Croydon and in Handsworth (Staffs.), and 8.9 in Reading, in Rotherham, and in Cardiff, to 20.0 in Middlesbrough, 20.3 in Bootle, 20.4 in Stockport, 22.4 in Liverpool, 22.6 in Tynemouth, 23.2 in Salford, 23.3 in Burnley, and 23.7 in Hanley. In London the rate of mortality was 16.6 per 1,000, while it averaged 15.6 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.8 per 1,000 in the seventy-six towns; in London this death-rate was equal to 1.3 per 1,000, while among the seventy-five other large towns the rates ranged upwards to 4.1 in Plymouth, 4.2 in Bootle, 4.3 in Hull, 4.5 in Liverpool, 5.2 in Burnley, 5.4 in Preston, 5.5 in Grimsby, and 6.1 in Salford. Measles caused a death-rate of 1.8 in Birkenhead and in Salford, 1.9 in Halifax, 2.0 in Tynemouth, 2.3 in Walsall, in Grimsby, and in Liverpool, and 3.2 in Plymouth; scarlet fever of 1.0 in Burnley; diphtheria of 1.7 in Bootle and 2.5 in Salford; "fever" of 1.1 in Stockport, 1.6 in Grimsby, and 1.7 in Wigan; and diarrhoea of 2.0 in Great Yarmouth, 2.1 in Rhondda, 2.6 in Oldham and in Burnley, 2.7 in Middlesbrough, and 3.6 in Preston. The mortality from whooping-cough showed no marked excess in any of the large towns. Two fatal cases of small-pox were registered in Newcastle-on-Tyne, and 1 each in Nottingham, Bury, and Preston, but none in any other of the seventy-six towns. The Metropolitan Asylums Hospitals contained one small-pox patient on Saturday last, October 22nd, against 3, 2, and 1 on the three preceding Saturdays. The number of scarlet fever cases under treatment in these hospitals and in the London Fever Hospital, which had been 2,158, 2,341, and 2,516 at the end of the three preceding weeks, had further risen to 2,687 at the end of last week; 389 new cases were admitted during the week, against 406, 409, and 377 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, October 22nd, 950 births and 547 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.6, 15.1, and 15.8 per 1,000 in the three preceding weeks, further rose last week to 16.5 per 1,000, and was 0.6 per 1,000 above the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 10.8 in Perth and 13.5 in Greenock, to 18.0 in Paisley, and 20.1 in Leith. The death-rate from the principal infectious diseases in these towns averaged 2.1 per 1,000, the highest rates being recorded in Glasgow and Aberdeen. The 253 deaths registered in Glasgow included 3 which were referred to measles, 5 to diphtheria, 15 to whooping-cough, 5 to "fever," and 17 to diarrhoea. Three deaths from diphtheria and 2 from diarrhoea were recorded in Edinburgh; 4 from diarrhoea in Dundee; 5 from measles and 2 from scarlet fever in Aberdeen; 2 from diarrhoea in Leith; and 2 from "fever" in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, October 22nd, 565 births and 362 deaths were registered in six of the principal Irish towns, against 516 births and 425 deaths in the preceding period. The mean annual death-rate of these towns, which had been 21.3, 15.6, and 16.8 per 1,000 in the three preceding weeks rose to 17.6 per 1,000 in the week under notice, this figure being 1.7 per 1,000 higher than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 5.8 in Waterford and 8.8 in Londonderry, to 26.3 in Dublin and 27.3 in Limerick. The zymotic death-rate during the same period and in the same six Irish towns averaged 0.7 per 1,000, or 0.6 lower than during the preceding period, the highest figure, 2.5, being recorded in Dublin, while Cork, Limerick, Londonderry, and Waterford registered no deaths under this heading at all. In Dublin 11 deaths were ascribed to diarrhoeal disease and 6 in Belfast, the total throughout Ireland being 19. Measles caused 1 death in Belfast and 6 in Dublin. No deaths occurred anywhere from small-pox.

PROVISION OF HOSPITALS FOR LOCAL AUTHORITIES.

THE chief additional powers to those provided by the Public Health Act, 1875, and the Isolation Hospital Act, 1893, are included in the Isolation Hospital Act, 1903. Stratton's *Public Health Acts* (Knight and Co., 7s. 6d.), new edition, contains particulars of these powers.

TRANSMISSION OF NOTIFICATION CERTIFICATES.

W. A. M.—(1) The law requires the medical attendant to send to the local authority the notification certificate, and if the medical attendant does not transmit that certificate in some reliable manner, he must take the responsibility of it failing to reach the authority. It is not the duty of the sanitary inspector to make inquiries of any kind or of any person respecting the notification certificate. If the authority does not receive the certificate they may proceed against the medical attendant. (2) The Public Health Act provides for a fee of half a crown for each case notified in private practice. It does not provide for postage or receipts.

THE INFECTION OF DIPHTHERIA.

S. A. writes to say that on September 7th he notified a case of diphtheria, and sent it to the Fever Hospital. He subsequently received the following letter from the Town Clerk:

"October 17th, 1904.

"Dear Sir,—The Public Health Committee are informed that Louisa ——— was admitted to ——— Hospital on your notification as having diphtheria on the 7th ult., and was certified on the 20th ult. as not having suffered from that or any other notifiable disease. The Committee understand that the bacteriological test offered by the Council was not used in this case, and I am directed to inquire whether any bacteriological test was used, and on what symptoms you relied in notifying the case as diphtheria?"

Our correspondent comments upon the length of time that elapsed between the date on which the patient was admitted and that on which she was certified as not having suffered from any notifiable disease, and points out that a bacteriological examination involves a delay of at least two days, and that in his opinion it is important not to lose time before sending the patient to the hospital for serum treatment. He

also objects to the question addressed to him in the latter part of the Town Clerk's letter.

*** We agree with our correspondent that the early diagnosis of diphtheria often presents insuperable difficulties, and that in order to obtain the advantages of early serum treatment it may sometimes be necessary to run the risk of giving a dose of serum to a patient who is not suffering from diphtheria. Some sanitary authorities afford facilities for administering the prophylactic dose of serum at home by supplying medical practitioners with serum and syringes on application. The sanitary authority has no legal power to demand a statement as to the symptoms upon which a medical practitioner has relied in notifying a case under the Infectious Diseases Notification Act. The practitioner is required by the Act to send in his notification forthwith; that is to say, as soon as his diagnosis is formed. This obligation is enforced by a penalty, and the courts interpret its provisions strictly. On the other hand, it is the custom of the profession to co-operate in every way possible with the sanitary authority and its officers in their investigations into the causes of infectious outbreaks, and in their attempts to limit their prevalence.

HOSPITAL AND DISPENSARY MANAGEMENT.

THE ROYAL ALBERT ASYLUM, LANCASTER.

The annual meeting of this charity, now described as "a Training Institution for the Feebleminded of the Northern Counties," was held on October 18th at the College of Medicine, Newcastle, under the presidency of the Duke of Northumberland. The fortieth annual report was presented by Mr. Diggens, Principal and Secretary. New and commodious workshops had been provided for the training in handicrafts by the munificence of Mr. Herbert Storey, High Sheriff of Lancaster. The total accommodation now afforded by the institution is for 650 cases, and the Central Committee express the opinion that "great care must be exercised in the selection of new candidates for admission, and that those only should be admitted who are likely to derive great benefit from the training." From the report of the Resident Medical Officer (Dr. A. R. Douglas), we learn that there were in the asylum on June 30th, 1904, 626 patients (406 males, 220 females), that 92 had been admitted during the previous twelve months, 44 had been discharged, and 12 (7 males, 5 females) had died. The average number resident had been 610. Amongst the admissions is mentioned a case of mental deterioration, apparently due to over-pressure at school, in which insanity supervened. Of the 44 patients discharged, it is stated that all but 10 had improved in greater or less degree, and 12 to such an extent that they might be expected to "do well away from the asylum, could sympathetic and intelligent supervision be secured for them." This essential after-care would seem to be the crux of the whole matter, and we are glad to find the institution doing what little it can to retain as paid assistants in various departments a few ex-patients competent for minor duties. Two patients had to be discharged on account of the development of insane tendencies. The death-rate was low—1.96 per cent. on the average number resident—and the general health, on the whole, good, the principal illnesses referred to being influenza of a mild type, 4 cases of scarlatina, 8 of measles, 11 of chicken-pox, and 1 each of whooping-cough and enteric fever. Amongst the causes of death, 2 cases of tuberculosis, 3 of phthisis, and 2 of meningitis are recorded; and Dr. Douglas discusses at some length the applicability of the open-air system to patients of the imbecile class, arguing that their limited mental capacity would militate against intelligent co-operation in its methods, and that the imperfections of the cardiac and vascular system existing in many cases might lead to dangerous consequences from unavoidable chills. Open-air chalets are, however, to be adopted in a few selected cases. The increased number of patients subject to epilepsy is adverted to, 103 cases under treatment and 4,316 fits having been recorded during the year. It is urged that, as epileptic imbeciles are usually unpromising cases for training, a more rigorous exclusion of such cases should be insisted on. The Royal Albert Asylum (as was pointed out at the meeting by its venerable chairman, Sir John Hibbert, K.C.B.) has done excellent work during the last thirty-four years in ameliorating the condition of the mentally-deficient children who have had the benefit of training within its walls. No less than 2,482 patients have been admitted since its opening in 1870, and of the 1,372 discharged 25.8 per cent. are classed as much improved, and 26.7 per cent. as moderately improved. There is no doubt of the great relief afforded to the patients' families during the period of training (seven years), but what is wanted to supplement this good work is permanent care for the majority in an industrial colony; and we trust that the Royal Commission now sitting will be able to suggest some practical scheme to effect this object, so necessary in the interests of posterity as well as of the present generation.

GOVAN DISTRICT ASYLUM.

Dr. W. R. Watson, in his report on this asylum, states that on May 15th, 1903, there were resident 490 patients, and on May 14th, 1904, there were 505. This increase of 15 is, however, only apparent, as the average daily numbers resident in 1902-3 were 492·3, and in 1903-4 were 480·2. Notwithstanding this slight decline, there has been a steady upward movement since the opening of this asylum in 1875; and as the population of the district from which it draws its patients is steadily increasing, the present margin of accommodation (37 beds) will soon be exhausted, and considerable extension of the asylum will be necessary to meet further requirements. The number of cases admitted during the year ending May 14th, 1904, was 360, of whom 92 were cases of mania, 45 of melancholia, 37 of dementia, 42 of alcoholic insanity, and 1 of general paralysis. There were also 5 cases of congenital or infantile mental deficiency, and 8 cases of acquired epilepsy. In 140 the cause of insanity is entered as unknown, intemperance in drink was assigned in 42 (a percentage of 10·15 of the admissions), previous attacks were present in 38, and the remainder are distributed fairly equally over the usually cited causes. Notwithstanding the admission of 15 general paralytics, venereal disease is not mentioned in one case as cause of this condition. The number of patients discharged as recovered during the year was 114 (a percentage of recoveries on admissions of 45.6), 19 as relieved, 46 as not improved, and there were 66 deaths (a percentage death-rate on average daily residents of 13.8). Of the deaths, 31 were due to cerebro-spinal disease, 14 to heart disease, chronic bronchitis, and pneumonia, and only 5 to phthisis. This, with 1 death from general tuberculosis, gives a low death-rate from tuberculous disease of 9.09 per cent. of the total deaths. The causes of death do not call in any other way for comment. *Post-mortem* examinations were made in 53 per cent. of the deaths, and the pathological department has been enlarged, and rooms for pathological, bacteriological, and chemical research added.

ENNISCORTHY ASYLUM FOR THE DISTRICT OF THE COUNTY OF WEXFORD.

The statistical tables of this asylum for the year ending November 31st, 1903, show that whilst the numbers, 480, remaining at the end of 1903 were in excess of those at the end of 1902 by 3 patients, the admissions were in excess of that year by 13, and, further, that there has been a steady increase in the average daily numbers resident since 1890, which is as far back as the tables of this report go. The Medical Superintendent, Dr. Thomas Drapes, is not hopeful, therefore, of any future reduction of their numbers, and attributes the increase to the great consumption of drink in the county of Wexford. He states that £13,000,000 is consumed in drink in Ireland every year, and of this Wexford contributes no less than £400,000, which is about twenty-seven times what it costs to keep up the asylum. He is convinced that poverty is not an appreciable cause, and says that, of the admissions last year, in not a single instance was the attack attributed by the patients' friends to adverse circumstances; and, further, "A recent investigation into the relative prevalence of the commoner causes of insanity in the whole of Ireland during a period of twenty years ending 1902 disclosed the fact that, comparing the first five years of that period with the last, while intemperance had increased as a cause by over 20 per cent., proverty and reverses had decreased by 35, domestic trouble by 41, and mental anxiety by 62 per cent. —that is, as far as statistics show, that the population of Ireland are, presumably, in a more prosperous condition than they were twenty years ago, and that, at the same time, their drinking propensities are greater." The figures which Dr. Drapes gives are interesting, and even significant, but the question is extraordinarily complicated, and not explicable in this simple fashion. Dr. Drapes further raises the question of discriminating between "those patients who have become insane through no fault of their own, and the class who drive themselves into madness by their own misdoings," and advocates the confinement within separate institutions, and detention for a definite and more or less prolonged period, of those who belong to the latter class. This sequestration for lengthy periods of the inebriate insane has been suggested by several medical superintendents, and has many points to recommend it, chief amongst these being the increased chance of effecting a permanent result, but the methods employed should be of a therapeutic and not a punitive character. Returning to the tables, we find that there were admitted during the year 110 patients; of these, 74 were cases of mania, 23 of melancholia, 1 of secondary dementia, 1 of general paralysis of the insane, 5 cases of acquired epilepsy, and 6 of congenital or infantile mental deficiency. This small proportion of dements is somewhat unusual, and ought to give a satisfactory recovery-rate. Of the causes of insanity in the admissions, hereditary influences were ascertained in 27, previous attacks in 12, and intemperance in drink was assigned in 24—that is, in 21.8 per cent. of the admissions. Moral causes appear in 8, and in 20 the cause was unknown; 63 patients were discharged during the year as recovered, giving a recovery-rate of 57.3 on admissions, 7 as relieved, 2 as not improved, and there were 35 deaths. Of the causes of death, the only outstanding features are maniacal or melancholiac exhaustion 12, and phthisis 12, giving a high percentage tuberculous death-rate on the total deaths of 34.28.

THE WARNEFORD HOSPITAL FOR MENTAL DISEASES, OXFORD.

The Committee of Management of this institution report that 1903 was a favourable financial year, leaving a balance of £1,304 8s. 2d. in the hands of the Treasurer at the end of the year. The asylum is an endowed and chartered corporation, conducted by a Board of Governors who have no pecuniary interest in its prosperity and whose main object is to afford to patients of the educated classes medical treatment on moderate terms. The normal charge is 2 guineas a week, but the Committee of Management has power to alter the terms of admission according to the circumstances of the case. Thus, though during 1903 the average cost per head to the institution was £1 10s. 7½d. per week, no less than 33.88 per cent. of the patients were received at various sums ranging from 6s. 5d. to 21s. a week, affording satisfactory evidence of the charitable work done by this hospital. There were, according to the report of the medical superintendent, Dr. James Neil, in the hospital on January 1st, 1903, 93 patients, and on December 31st there remained 92, the total cases under treatment during the year amounting to 121. There were 28 admissions during the year, of whom 26 were first admissions. Idiots, epileptics, and paralytics are ineligible for admission, and those admitted were either cases of mania (12) or melancholia (11), with 1 case of general paralysis. "Moral causes," mental anxiety, etc., were assigned in 7, intemperance in drink in 1, previous attacks in 5, somatic causes in 5, and hereditary influences were ascertained in 8. In only 5 cases was the attack of more than twelve months' duration prior to admission. During the year 13 were discharged as recovered, the high percentage recovery rate of 54.2 naturally ensuing from the favourable character of the admissions and the exclusion of unfavourable types. The average recovery rate on admissions since 1846 in this hospital is 45.6 per cent.; 4 were discharged as relieved, 7 as not improved, and there were 5 deaths. With the exception of 1 who died, aged 36, from exhaustion following excited melancholia, the deaths occurred at fairly advanced ages, namely, 59, 62, 72 and 85, and were due to general paralysis, cerebral haemorrhage, chronic nephritis and senile decay. The general health was good throughout the year, and with the exception of influenza of mild type there was no occurrence of epidemic disease. Everything possible is done for the comfort and well-being of the patients, and the Commissioners in Lunacy comment most favourably on the general state and management of this institution.

Medical Magistrate.—Dr. J. W. Blandford, of Norton, Stockton, has qualified as a magistrate for the county of Durham.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—(1) Clinical Assistant. (2) Surgical Assistant. Honorarium at the rate of 52 guineas per annum each.

BURMA RAILWAY COMPANY.—Medical Officer to supervise Company's Medical Establishment at Burma. Salary not less than 750 rupees per mensem.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road.—Registrar.

CITY OF LONDON ASYLUM, near Dartford.—Medical Superintendent. Salary, £800 per annum.

EDGBASTON: ROYAL INSTITUTION FOR THE INSTRUCTION OF DEAF AND DUMB CHILDREN. Medical Officer.

GUY'S HOSPITAL MEDICAL SCHOOL.—Gordon Lecturer on Experimental Pathology.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Surgeon. Salary, £20 for six months and £2 10s. washing allowance.

HULL ROYAL INFIRMARY.—Casualty House-Surgeon, resident. Salary, £50 per annum.

LIVERPOOL HOSPITAL FOR CONSUMPTION.—Honorary Assistant Physician.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—House-Physician, resident. Salary, £50 per annum.

NOTTINGHAM CHILDREN'S HOSPITAL.—House-Surgeon, resident. Salary at the rate of £100 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer. Salary, £100 per annum.

PORTSMOUTH: ROYAL PORTSMOUTH HOSPITAL.—Senior House-Surgeon, resident. Salary, £100 per annum.

QUEEN'S COLLEGE, Belfast.—Musgrave Professor of Pathology.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Assistant Physician.

ROYAL LONDON OPHTHALMIC HOSPITAL City Road, E.C.—Senior House-Surgeon, resident. Salary, £100 per annum.

ST. BARTHOLOMEW'S HOSPITAL, E.C.—Assistant Surgeon.

SOCIETY OF APOTHECARIES.—Gillson Scholarship in Pathology. Value £90, tenable for one year.

THROAT HOSPITAL, Golden Square, W.—Senior Clinical Assistant.

WEST RIDING ASYLUM, Menston.—Lady as Resident Clinical Clerk.

APPOINTMENTS.

BELL, J. H. Montgomerie, M.B., Ch.B.. Non-resident House-Surgeon to Dr. E. W. Philip at the Edinburgh Royal Infirmary.

BROCKBANK, Edward Mansfield, M.D., M.R.C.P., Junior Honorary Physician, Manchester Children's Hospital.

BROWN, R. G., M.B., B.S.Aberd., Resident Assistant Medical Officer, Lambeth Parish Infirmary.

CROSS, Harold R., L.S.A., Assistant Medical Officer, Storthes Hall Asylum, Kirkburton, near Huddersfield.

DAVIES, D. Livingstone, M.R.C.S., L.R.C.P.Lond., Medical Officer to the Post Offices of Criccieth, Chwilog, Garn Dolbenmaen and Llangybi.

PELTON, W. B., L.R.C.P. and S.Irel., District Medical Officer, St. Columb Major Union.

FERGUSON, James Haig, M.D., F.R.C.P.Edin., Assistant Accoucheur to Professor A. R. Simpson at the Edinburgh Royal Maternity and Simpson Memorial Hospital.

JONES, W. Ernest, M.R.C.S., L.R.C.P., Inspector-General of Asylums for the Insane in Victoria Australia.

KALOMIRIS, N., L.R.C.P., M.R.C.S., F.R.C.S., Clinical Assistant to the Chelsea Hospital for Women.

KERR, Harold, M.B., Ch.B.Edin., Resident Medical Officer to the Florence Nightingale Hospital for Infectious Diseases, Bury, Lancs.

LEICESTER, M. E., L.R.C.P. and S.Edin., L.F.P.S.Glasg., District Medical Officer of the Liskeard Union.

LOCKHEAD, James, M.B., Ch.B., House-Surgeon, Edinburgh Royal Maternity and Simpson Memorial Hospital.

PAINE, Alexander, M.D., B.S.Lond., D.P.H., Joint Pathologist with Dr. D. J. Morgan to the Cancer Hospital, Fulham Road.

PARSONS, Walter Brock, Assistant Anaesthetist to the Royal Dental Hospital, Leicester Square.

PIGEON, H. W., M.D., Resident Medical Officer at the Chatham Islands, New Zealand.

PINNIGER, A. E., L.R.C.P., M.R.C.S., Resident Assistant Medical Officer, Islington Parish Infirmary.

ROSS, J. A., M.A., M.B., Ch.B.Edin., Junior House-Surgeon at the Croydon Hospital, *vice* Dr. H. Gardner, promoted to the senior position.

SPENCE, D., M.B., Assistant Medical Officer, South Shields Union Workhouse.

SPRAIN, A. C., M.B., Ch.B., House-Surgeon, Edinburgh Royal Maternity and Simpson Memorial Hospital.

WALL, R. Cecil D., M.D.Oxon., Assistant Physician to the London Hospital.

WEBSTER, J. A., M.D., Honorary Medical Officer, Launceston Hospital, Tasmania, *vice* Dr. G. E. Clemens, resigned.

WILSON, W. Cheyne, M.D.Edin., Senior Physician to the Plymouth Public Dispensary, *vice* Dr. W. H. Pearse, resigned.

DIARY FOR NEXT WEEK.

TUESDAY.

Pathological Society of London, 20, Hanover Square, 8.30 p.m.—Dr. L. S. Dudgeon: Acute Lymphatic Leukaemia. Dr. C. F. Selous: Simultaneous Occurrence of Filariae and Malarial Parasites in the Blood. Mr. S. G. Shattock and C. F. Selous: Two Methods for Comparing Microscopically Abnormal and Normal Tissues. Mr. S. G. Shattock: The Nature of the So-called Dermoid Cyst of the Ovary.

WEDNESDAY.

Obstetrical Society of London, 20, Hanover Square, W., 8 p.m.—Specimens: Dr. J. H. Bamber: Case of Double Symmetrical Cystoma of Unusual Origin and Connexions, and others. Paper: Dr. Herbert R. Spencer, Three Cases of Cancer of the Cervix Complicating Labour in Advanced Pregnancy, the patients remaining well eleven, eight and a half, and eight years after high amputation of the cervix.

THURSDAY.

North-East London Clinical Society, Tottenham Hospital, 4 p.m.—Clinical Cases.

Ophthalmological Society of the United Kingdom, 11, Chandos Street, Cavendish Square, W., 8 p.m.—The Bowman Lecture will be delivered by Dr. F. W. Mott, F.R.S., the subject being The Visual Cortex.

FRIDAY.

West London Medico-Chirurgical Society, West London Hospital, Hammersmith, W., 8 p.m.—Clinical evening. Cases will be shown by Dr. P. S. Abraham, Dr. A. E. Russell, Mr. Aslett Baldwin, Mr. B. L. Paton, Mr. Garry Simpson, and others.

Society of Anaesthetists, 2, Hanover Square, W., at 8.30 p.m.—Discussion on the Vernon-Harcourt Chloroform Inhaler, to be opened by Mr. Edgar Willett. Dr. Dudley Buxton and Messrs. Silk, Probyn-Williams, Blumfield, Hillard, McCardie, and others will take part.

Laryngological Society of London, 20, Hanover Square, W., 5 p.m.—Cases, specimens, etc., will be shown by Mr. E. B. Waggett, Mr. P. de Santi, Dr. H. F. Potter, Mr. A. H. Cheatle, Mr. A. Roberts, Dr. Kelson, Mr. H. B. Robinson, and others.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital, Thursday, 4 p.m.—Dermatological Demonstration.

Hospital for Consumption and Diseases of the Chest, Brompton, Wednesday, 4 p.m.—Some Points in the Prognosis and Treatment of Pneumonia.

Hospital for Sick Children, Great Ormond Street, W.C.—Thursday, 4 p.m. Deformities of the Chest.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m.: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Throat. Lectures will be delivered at 5.15 p.m. as follows: Monday, Pain as a Symptom of Urinary Disease; Tuesday, The Surgical Treatment of Neuralgia; Wednesday, The Therapeutics of Some Common Ailments; Thursday, The Treatment of Acute Heart Disease and of Loss of Compensation.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Central Out-patient Department, 7, Fitzroy Square, W.—Thursday, 5 p.m., Principles of Treatment of Laryngeal Cases (illustrated by cases).

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Tuesday, 3.30 p.m., Cases in the Wards: Friday, 3.30 p.m., Cerebral Surgery.

North-East London Post-Graduate College, Tottenham Hospital, N.—Wednesday, 2.30 p.m., Demonstration on Fevers (North-Eastern Fever Hospital, St. Ann's Road).

Post-Graduate College, West London Hospital, Hammersmith Road, W.—Monday, 5 p.m., Practical Surgery. Tuesday, 3 p.m., Examination and Discussion of the Clinical Varieties of Insanity, at Claybury Asylum. Wednesday, 5 p.m., Uterine Displacements. Thursday, 5 p.m., Nephritis. Friday, 5 p.m., Surgical Cases.

Samaritan Free Hospital for Women, Marylebone Road, N.W.—Thursday, 3 p.m., The Diagnosis and Treatment of Early Extrauterine Gestation.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

JAMES.—On October 18th, at Hungerford, Berks, the wife of Robert Blake James M.R.C.S. Eng., L.R.C.P.Lond., of a son.

SHAW-MACKENZIE.—On October 18th, at the Manor, Southrepps, Norfolk, the wife of Dr. A. C. Shaw-Mackenzie, of a daughter.

MARRIAGE.

WILLIAMS—CAMPBELL.—On October 20th, at Trinity Presbyterian Church, Liverpool, S., by the Rev. George Johnstone, M.D., assisted by the Rev. John Watson, D.D., and the Rev. James Burns, M.A., John Larden Williams, B.A.Oxon., second son of Owen H. Williams, Esq., J.P., Fullwood Park, to Ethel May, younger daughter of W. Macfie Campbell, M.D., Princes Gate, Liverpool.

DEATH.

ODELL.—On October 14th, at Hertford, Hannah, widow of the late Thomas Odell, M.R.C.S., L.S.A., of that town, aged 69.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
EDITOR, 2631, Gerrard.
GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

H. J. W. asks for suggestions for the local treatment of a case of pruritus ani following an operation for fissure by complete division of sphincter ani. The pruritus has persisted for nearly four years. He imagines that a minute nerve ending has been involved in the scar.

CESTRIAN writes: Can any member advise me as to the treatment of a case in which retraction of the penis and testicles, accompanied by pain, is the most prominent symptom? It is brought on by cold and muscular exertion. The case is of five years' duration, and has resisted treatment by bromides and other drugs and the continuous current.

HIGH-FREQUENCY TREATMENT.

M.D. asks where he can obtain practical instruction in high-frequency treatment.

*** "M.D.'s" best plan would be to apply to the electrical medical officer at any of the London hospitals which have teaching schools. At most of them he could take out a course as clinical assistant to the department at a moderate fee.

ANSWERS.

SPERM.—It is impossible to give any useful advice on the case by way of correspondence, as there are many details which can only be ascertained from examination. Our correspondent might consult *The Pathology and Treatment of Sexual Impotence,* by Victor G. Vecki. (London: Rebman, Limited. 1899. 12s.)

M.A.—Giacomini (Turin, 1886) recorded a case in which the odontoid process was completely free and articulated with the axis by a diarthrodial

joint. Romiti (Sienne, 1886) recorded a case in which the odontoid was free from the axis and fused with the atlas. See also Development and Varieties of the Second Cervical Vertebra, by A. Macalister, *Journ. of Anat. and Phys.*, 1894.

TREATMENT OF ATONIC DILATATION OF THE STOMACH.

HARROGATE is referred to the article on Motor Insufficiency and Dilatation of the Stomach in the BRITISH MEDICAL JOURNAL for November 29th, 1902, p. 1693; details of treatment are given on p. 1695

ACARUS INFECTION.

M.N.O.—1. The length of the interval between infection and the appearance of symptoms would depend on the activity of the female acarus and the reaction of the patient. The symptoms commence as soon as itching occurs. In a general way it takes between a week and a fortnight for the first burrow to be formed. The ova have then to be hatched, and metamorphosis (from a six-legged larva) and fecundation of the female to take place, leading to the formation of fresh burrows. In cases where the distribution of the rash is pretty general the original infection can be reckoned as having occurred roughly from six weeks to three months previously. The rash varies very much in different individuals, such factors as age, sex, general condition, and hygiene of the patient, etc., having to be considered. In cleanly people and those employed in certain trades the rash may be slight in degree, although the distribution conforms to the scabies eruption. All grades of rash are found. 2. In the treatment of gonorrhoea, injections should be gradually decreased in strength with cessation of the discharge, and stopped in about a week or so, but the case kept under observation and hygienic precautions strictly carried out (no stimulants, etc.) as in the earlier stages. Every case must be dealt with on its merits.

PASTEUR'S TREATMENT OF HYDROPHOBIA.

H. H. TIDSWELL.—Pasteur's treatment of hydrophobia was the subject of an investigation by a committee appointed by the Local Government Board in 1896. The members were: Sir James Paget (Chairman), Dr. (now Sir) Lauder Brunton, Mr. George Fleming, Sir Joseph (now Lord) Lister, Sir Richard Quain, Mr. (now Sir) Henry E. Roscoe, and Dr. (now Sir) John Burdon Sanderson, with Mr. (now Sir) Victor Horsley as Secretary. The report of the Committee was presented to the House of Commons in 1877, and issued as a Blue Book.

ETHYL CHLORIDE AS A GENERAL ANAESTHETIC.

EUTROPINE.—Chloride of ethyl probably ranks next in order of safety to nitrous oxide gas. It can be given from an Ormsby inhaler, and some authorities regard this method as among the best. The Dental Manufacturing Company (Lexington Street, W.C.) supply the "Ideal inhaler," which answers its purpose extremely well. Messrs. Duncan and Flockhart also supply a very good inhaler called the "Simplex." Many other inhalers have been devised, but no elaboration is needed, and as the two mentioned are simple and portable, they may be taken as being as good as any and better than many.

REFERENCES TO BOOKS.

DR. W. FYFE (Johnstone), who writes to ask for references to comparatively recent literature on several medical and surgical subjects, would probably find what he needs in regard to them all on referring to the *Encyclopaedia Medica*; in thirteen volumes (Edinburgh: W. Green and Sons; 25s. each volume). The medical subjects he would find more fully discussed in Professor Allbutt's *System of Medicine*; in eight volumes (London: Macmillan and Co.; 25s. each volume); and the neurological in Oppenheim's *Diseases of the Nervous System*, translated by E. E. Mayer; second edition (London: J. B. Lippincott Co., 1904, 21s.).

TREATMENT OF RINGWORM.

MAJOR E. ECKERSLEY, R.A.M.C. (Pretoria), writes: In answer to the query on this subject in the BRITISH MEDICAL JOURNAL of September 10th, I would recommend a trial of the following: The ordinary tr. iodi, *B.P.*, is decolorized by the addition of calomel; the clear supernatant fluid is decanted. It is applied in the usual way with a camel-hair pencil, great care being exercised in its application, as vesication results from its too liberal use. This treatment, combined with epilation, is, as a rule, rapidly successful in the intractable form of the disease due to the microsporon Audouini succumbing in the course of a fortnight at most.

CIVIL SURGEONS IN CHARGE OF TROOPS.

C. H. V. N. is informed, in answer to his communication, that the civil surgeon in charge of troops may or may not engage in private practice, according to the terms of his agreement; if he is employed at "contract rates," then, of course, he may; if at a consolidated yearly salary, as apparently in the case in question, then we presume he is expected to devote all his time to his military charge. We have never heard of officers of the R.A.M.C. on full pay competing in private practice with their civil brethren. Our correspondent should obviously come to some arrangement with the contractor spoken of to attend cases of accidents at the works; without this, it is clear that, if he attends injured men who may individually call him in, he risks payment, which in any case is likely to be quite inadequate for professional services. We know of no scale of fees in such cases.

LETTERS, NOTES, Etc.

A WARNING.

DUPE, who writes from a northern city, says: I desire to draw the attention of the profession to a man who says he represents the "Economic Gas Fitting Co., Pearl Street, New York." He called upon me some time ago, selling self-lighting incandescent gas fittings. A special recommendation was the extra durability of the mantle and a renewal of all mantles within twelve months. These mantles proved no more reliable than any other. I accordingly wrote him three times without receiving a reply. My third letter was returned "Gone, no address."

LETTERS, COMMUNICATIONS, ETC., have been received from:
A Messrs. Arnold and Sons, London. Mr. S. Alexander, London; Dr. T. R. Atkinson, Chadwell Heath; Miss H. Athill, Hastings; Mr. T. Adam, Glasgow; M. A. Ashkenny, M.B., Hanslope. **B** Dr. W. H. Brodie, Bath; Mr. H. M. Batts, London; Messrs. Burroughs Wellcome and Co., London; Dr. A. Brunner, Bradford; Sir T. Lauder Brunton, London; Mr. E. C. Bousfield, London; Mr. G. E. Bellamy, London Dr. De B. Birch, Leeds; Dr. B. E. Brush, Croswell, Mich.; Mr. C. W. Bretner, Port Louis; Mr. W. A. Berridge, Redhill; Dr. A. Buchanan, Watford; Mr. H. Brown, Eversley; Dr. T. T. Brunyate, Rochester; Mr. L. A. Bidwell, London; Bradford; Dr. E. M. Brockbank, Manchester; Miss F. Blackett, Aberfoyle; Dr. W. B. Bell, Liverpool. **C** P. J. Cammidge, M.B., London; Cones; C. H. V. N.; Colonel, I.M.S.; Mrs. Cornwall, London; Dr. F. F. Caiger, London; Mr. H. R. Cross, Wakefield; Cambridge; Cestrian; M. Collier, M.B., London; Mr. H. C. Crouch, London; Lord William Cecil, London; Mr. H. W. Carson, London. **D** Director-General of the Medical Department of the Admiralty, London; Mr. H. Downes, London; Mr. F. Drewitt, London; W. Duncan, M.B., Oxford; J. S. Darling, M.B., Lurgan; Mr. D. L. Davies, Criccieth; Sir C. de Mello, Poona; Delta; Mr. H. Duncan, London; Dupe. **E** Dr. A. Emrys-Jones, Manchester; Edina; Mr. G. Y. Eales, Torquay; Dr. F. Edge, Wolverhampton; Mr. A. H. Ebell, Colombo; Dr. A. Elliott, London. **F** Dr. H. E. Fraser, Dundee; Mr. W. Fleming, London; Dr. D. W. Finlay, Aberdeen; E. E. Fothergill, M.B., London; C. H. Foley, M.B., Oranmore; Dr. E. D. Farmar-Bringhurst, London; G. C. H. Fulton, M.B., Eston. **G** Mr. A. Goodere, Nottingham; Mr. H. B. Gardner, London; Dr. A. Greenwood, Blackburn; Dr. G. T. Gifford, Darwen; Mr. R. B. Graham, Leven; Mr. D. Gillies, Glasgow. **H** Mr. J. B. Hamilton, Tenby Hospital Penny Fund, Secretary of, London; Messrs. W. Heffer and Sons, Cambridge Dr. D. Hepburn, Cardiff; W. D. Harmer, M.B., London; E. Howden, M.B., Newcastle-on-Tyne; Mr. F. Haydon, London; Harrogate; A. B. Harris, M.B., Loughton; Dr. S. H. Habershon, London; H. J. W. **I** Ignorant. **J** Mr. H. H. Jennings, London; Dr. G. P. Johnson, Stoke-on-Trent; Dr. A. Jubb, Glasgow. **K** Dr. H. Kornfeld Glewitz; Mr. W. G. King, London; Dr. E. Klein, London. **L** Mr. G. Lunan, Edinburgh Dr. J. D. Leigh, Bishop Auckland; Mr. C. S. Loch, London; Dr. A. C. Latham, London; F. H. Low, M.B., London; Listerite; Liverpool Medical Institution, Secretary of Liverpool. **M** Dr. S. G. Morris, Mardy; Mr. J. Marshall, London; Dr. W. A. Michie, London; Medical Supply Association, Manager of, London; Mr. T. J. McDonnell, Dublin; S. G. Moore, M.B., Huddersfield; M.D. Subscriber; Dr. J. M. Mason, Wellington, N.Z.; Mr. J. McKay, London; Mr. W. J. Morton, London: J. D. Malcolm, M.B., London; Dr. J. Mackenzie, Burnley; Mr. J. W. Macmullan, Penarth; Dr. C. F. Marshall, London; C. Mercier, M.B., London; E. W. S. Martin, M.B., Brithdir; Mancurian; Dr. B. G. Morison, London; Mr. B. Moore, Liverpool; Dr. E. J. Maclean, Cardiff. **N** Newcastle; Dr. J. T. C. Nash, Southend-on-Sea; Dr. A. G. Newell, Calcutta; Dr. H. J. Neilson, Nottingham; Mr. E. H. T. Nash, Accrington; Dr. A. Newsholme, Brighton. **O** Dr. H. O'Neill, Belfast; Oxford University, Dean of Medical Faculty of, Oxford; Mr. W. T. Owen, London. **P** Dr. H. C. Pattin, Norwich; Mr. J. F. Palmer, London; Dr. F. B. Power, London; Dr. B. Pierse, York; Mr. W. B. Parsons, London; Dr. F. J. Poynton, London. **R** Mr. H. Rose, Aylesbury; Mr. J. Robertson, Edinburgh; Mr. F. W. Russell, London; Dr. S. J. Ross, Bedford; Mr. W. H. Rowthorn, Rotherham; Messrs. Reynell and Son, London; Mr. A. Riley, London; Rajah; Dr. H. Renny, Sunderland. **S** School of Medicine for Women, Secretary of, London; Mr. P. S. Spokes, London; Dr. L. E. Shaw, London; St. Thomas's Hospital Medical School, Dean of, London Mr. H. P. Symonds, Oxford; Mr. A. St. Lawrence-Burke, Netherton; Society of Apothecaries, Beadle of, London; Miss M. D. Sturge, Birmingham; Salol; Sardam; Dr. G. F. Still, London; Mr. W. H. P. Sheehy, Totteridge; Scotia; Mr. A. W. Soper London; Southend. **T** Mr. M. R. Taylor, Helston; T. P. S. **W** Mr. H. Woodhouse, Manchester; Mr. V. Wood, London; Dr. W. C. Wilson, Plymouth; Mr E. W. Wallis, London; Mr. C. Ward, London; Dr. F. Willcocks, London; Mr. R. B. Wolstenholme, Salford; Mr. L. Wilkinson, London; Dr. C. E. Wheeler, Bristol Messrs. Woollard and Batten, London. **Y** Young G. P. **Z** Messrs. A. and M. Zimmermann, London.

BOOKS, Etc., RECEIVED.

Medical Electricity. By H. Lewis Jones. M.A., M.D. Fourth edition. London: H. K. Lewis. 1904. 12s. 6d.

Transactions of the Medico-Legal Society for the Years 1902, 1903, and 1904. Edited by Stanley B. Atkinson, M.A., M.B. Vol. I. London: Bailliere, Tindall and Cox. 7s. 6d.

Guide to the Examination of the Throat, Nose, and Ear. By William Lamb, M.D., C.M.Edin., M.R.C.P.Lond. London: Bailliere, Tindall and Cox. 1904. 6s.

Malignant Disease of the Larynx (Carcinoma and Sarcoma). By Philip R. W. de Santi, F.R.C.S. London: Bailliere, Tindall and Cox. 1904. 4s.

Handbook of the Anatomy and Diseases of the Eye and Ear. By D. B. St. John Roosa, M.D., LL.D., and A. Edward Davis, A.M., M.D. Philadelphia: F. A. Davis Co. 1904. 1 dol.

Diseases of the Nose, Throat, and Ear, and their Accessory Cavities. By Seth Scott Bishop, M.D., D.C.L., LL.D. Third edition. Philadelphia: F. A. Davis Co. 1904. 4 dols.

Beiträge zur wissenschaftlichen Medicin und Chemie. Festschrift zu Ehren des sechszigsten Geburtstages von Ernst Salkowski. Berlin: August Hirschwald. 1904. M. 12.

The Guide to South Africa for the Use of Tourists, Sportsmen, Invalids, and Settlers. Edited annually by A. Samler Brown and G. Gordon Brown for the Union-Castle Mail Steamship Co., Ltd., 1904-5. Twelfth edition. London: Sampson, Low, Marston and Co., Ltd. 2s. 6d.

A Handbook of Surgery. By Frederic Richardson Griffith, M.D. Philadelphia, New York, and London: W. B. Saunders and Co. 1904. 10s.

Examination of the Urine. By G. A. de Santos Saxe, M.D. Philadelphia, New York, and London: W. B. Saunders and Co. 1904. 6s. 6d.

A Textbook of Materia Medica. By Roberts A. Hatcher, Ph.G., M.D., and Torald Sollmann, M.D. Philadelphia, New York, and London: W. B. Saunders and Co. 1904. 10s.

A Manual of Personal Hygiene. By American Authors. Edited by Walter L. Pyle, A.M., M.D. Second edition Philadelphia, New York, and London W. B. Saunders and Co. 1904. 6s.

The Principles of Hygiene. By D. H. Bergey, A.M., M.D. Second edition. Philadelphia, New York, and London: W. B. Saunders and Co. 1904. 13s.

Pathological Technique. By Frank Burr Mallory, A.M., M.D., and James Homer Wright, A.M., M.D. Third edition. Philadelphia, New York, and London: W. B. Saunders and Co. 1904. 13s.

A Textbook of Clinical Diagnosis by Laboratory Methods. By L. Napoleon Boston, A.M., M.D. Philadelphia, New York, and London: W. B. Saunders and Co. 1904. 18s.

Organización Sanitaria de los ejércitos extranjeros (Especialmente para Campaña). Por Dr. Frank Howard. Obra traducida directamente del ingles y ampliada por el Dr. José Gamero Gómez. Madrid: Imprenta de Administración Militar. 1904. 7.50 pesetas.

*** In forwarding books the publishers are requested to state the selling price.

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Post-Office Orders should be made payable to the British Medical Association at the General Post Office, London. Small amounts may be paid in postage-stamps.

N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

SEVENTY-SECOND ANNUAL MEETING
OF THE
British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF LARYNGOLOGY AND OTOLOGY.

Charters J. Symonds, M.S., F.R.C.S., President.

PRESIDENT'S INTRODUCTORY REMARKS.

Allow me in the first place to welcome all to this Section Our visitors from America, from Canada, and from Paris and Buda-Pesth, I welcome in the name of the Association, and hope they will join in the discussions.

The large attendance seen to-day justifies, if justification were needed, the existence of this special Section. It is perhaps not inappropriate that one chiefly practising and teaching general surgery should occasionally preside over its deliberations. Recognizing, as I have for nearly twenty years, the importance of the special study of diseases of the nose and throat, I am jealous of the reputation of this branch of the Section and of the members who compose it, for the aural department has long been well established.

The addition of a clinic in laryngology and rhinology, at the hospitals to which medical schools are attached, has undoubtedly led to a fresh advance in the teaching of this special branch of medicine. To me fell the honour of creating such a clinic at Guy's Hospital now some eighteen years ago. The eagerness with which the leading students seek the appointments is the best proof of its value, and to day in that department alone some 1,500 new cases attend annually, and beds are also allotted in the hospital.

As one's own knowledge widened, as the literature of the subject increased, it became impossible to keep pace with all that was being done by the increasing number of workers, and at the same time carry on the operative and teaching duties of a large hospital and school. Nor do I think it possible for any one to accomplish both. I hope all of the large hospitals will see the wisdom of appointing a man who will devote himself exclusively to this subject; and yet not exclusively, for pure specialism as a rule tends to narrowness. I would see him hold, for a time at least, some minor post in general pathology or in general medicine or surgery, in order to control his observations and keep wide his mental horizon. "There must" (said Dr. Billings) "be specialities and specialists, and the result will be good and evil, but the evils fall largely upon those specialists who have an insufficient general education, who attempt to construct the pyramid of their knowledge with the small end as a foundation." There can be no question that the only way to check the evil of specialism is to bring to its practice a wide general education, and a training in the general subject of which it forms a part.

If this were always considered essential there would be less tendency to hasty publication, to claims for priority, and even notoriety, and to the confusion that must result from undue haste. The observation is apt to be deeply impressed with the bias of the observer. "In truth," said Paget, "the fault of specialism in not in narrowness, but in shallowness, in the belief in self-sufficiency with which it is apt to be associated."

If the field of any speciality be narrow it can be dug deeply. In science, as in mining, "a very narrow shaft, if only it be carried deep enough, may reach the richest stores of wealth, and find use for all the appliances of scientific art."

Nothing better expresses the evil and the good than these words of one of our greatest and wisest thinkers in medicine. The facts gained by such special search must, when brought to the surface, be submitted to the test of general knowledge, and if the expert do not possess this knowledge, then the evil is likely to prevail.

So in the special branches into which the practitioners of medicine are being divided there arises, it seems to me, a greater need for the presence and influence of the general practitioner, whose wider knowledge of his patients' ailments must prove of invaluable assistance to any special worker. Too much are the public neglecting this all-important association.

As Paget said again, "In all research it is well that each apparent fact should be observed by many; for things are not what they appear to each one's mind. In that which each man believes that he observes there is something of himself; and for certainty, even on matters of fact, we often need the agreement of many minds, that the personal element of each may be counteracted."

This, then, is the object of our meeting to-day, to hear the records of research; to criticize the marshalling of facts, and the deductions drawn from them. Thus will our range of work be widened, our interest deepened, our appreciation of the views of others will be clearer for the personal acquaintance, and our respect and regard for each other deepened.

To all it is not given to rise to the highest in any branch. To some manipulative dexterity comes naturally, and other eyes and hands can never reach the best performances. Let it be our aim to see that the good of our speciality shall prevail; let us ever bear in mind the dignity and responsibility of the position we assume. At the same time let us not arrogate to ourselves exclusive knowledge, or individually claim that what we cannot accomplish no other need attempt.

Let us in our progress remember the words of one of Oxford's greatest sons—Matthew Arnold:

> "Children of men! not that your age excel
> In pride of life the ages of your sires,
> But that *ye* think clear, feel deep, bear fruit well,
> The Friend of Man desires."

DISCUSSION ON THE TREATMENT OF NON-SUPPURATIVE DISEASE OF THE MIDDLE EAR.

I.—Urban Pritchard, M.D., F.R.C.S.Eng.,
Aural Surgeon, King's College Hospital.

The treatment of non-suppurative disease of the middle ear is, with certain exceptions, very unsatisfactory. My remarks will be brief, because a full abstract has already been published, and because I think it should be my function to initiate discussion rather than go into detail.

The classification of the conditions included under non-suppurative disease of the middle ear is not yet agreed upon, but for discussion of treatment the following rough divisions will suffice:

1. Acute non-suppurative otitis media.
2. Early stages of chronic non-suppurative catarrh.
3. Advanced stages of the same.
4. Middle-ear adhesions the result of former acute inflammation.
5. Sclerosis resulting from disease of the bony capsule enclosing the internal ear, and forming the inner wall of the tympanic cavity, and this is not a catarrh at all.

1. *Treatment of Non-suppurative Acute Otitis Media.*—Teach mothers to put a mustard leaf behind the ear instead of a septic onion and suchlike into the external meatus, and then fewer cases would run on to suppuration. In the earliest stages, gentle, not forcible, politzerization (not catheterization) will often relieve the pain at once, and tend to cut short the attack. Counter-irritation behind the ear is always most valuable, and will often arrest the otitis and relieve the pain. Instillations are only occasionally advisable; when used, should be strong anodyne solutions—for example, cocaine or morphine—in an antiseptic medium. Carbolic and glycerine has been strongly recommended; also adrenalin with cocaine; but I do not think them of much service.

Heat in the form of very hot fomentations, or hot bran bags, is very useful. Leeches in front and below the ear are valuable in very acute cases.

Incision of the membrane is called for when there is marked bulging of the membrane. The meatus must be purified and afterwards dressed antiseptically to avoid suppuration.

Purgatives are nearly always necessary. Phenacetin or antipyrin, etc., may be given to relieve the pain. Pharyngeal treatment is usually required, but nasal douches or irrigations must absolutely be avoided.

After-treatment.—Politzerization should always be employed; it will restore the hearing and prevent adhesions. If adenoids are present they must be removed.

2. *Treatment of the Early Stages of Chronic Non-suppurative Catarrh*, in which there is exudation into the mucous mem-

brane and from its surface, hence stenosis of the Eustachian tube and more or less fluid in the tympanic cavity.

Politzerization is preferable to catheterization. This should be repeated at intervals of one, two, or three days, according to the relief obtained as ascertained by the amount of improvement to hearing. This must not be continued when it increases the deafness.

Incision of the membrana tympani may be practised if there is much fluid in the tympanic cavity, but this is practically a rare condition. The operation should be performed antiseptically.

In this country there is rarely sufficient fluid in the tympanum to require it, but there may be a greater tendency to effusion in some places, such as Vienna, Berlin, or in the Indies.

Local medicinal treatment is most valuable. Sterile alkaline nasal irrigation (for example, borax and sodium bicarbonate) to be preferred to the nasal douche, as the latter occasionally will produce acute otitis. Mild astringent sprays are often beneficial. Inhalations of pine oil, eucalyptus oil, or still better, of fumes of ammonium chloride, are most valuable.

Adenoids and also enlarged tonsils, if present, must be operated on; and any nasal stenosis must also be removed, to allow of free nasal breathing.

Internal medicinal treatment is rarely needed, except for general health.

Climatic treatment is important. Damp situations, such as river valleys of gravel with clay subsoil, should be avoided; high, dry, and sunny positions selected. Warm and well-drained seaside resorts are good, whereas cold damp seashores with northern aspects must be avoided. High sunny alpine valleys are often very beneficial; but on rapidly descending from these Valsalva's inflation should be practised. Early and continued treatment of these stages of catarrh is most important, and will often prevent the advanced stages.

Oxford is typically a bad place because of its dampness and clay subsoil. Warm seaside resorts are good in England, but on the Continent they say we should never send such patients to the seaside; there the seaside resorts have northern aspects, with the exception of France. The Engadine is very good because it is high and sunny.

3. *Treatment of Advanced Stages of Chronic Middle-ear Catarrh.*—This is much less satisfactory, on account of the adhesions causing retraction of the membrane and fixation of the membrane and ossicles.

Mechanical.—Catheterization is often preferable to politzerization, but the value of courses of repeated inflations has been much overrated. Patients must be warned against the constant recourse to Valsalva's method of inflation; at the same time, cautiously employed it is of value. Gentle suction by means of Delstanche's masseur is occasionally of value, but may easily be overdone. We have yet to learn the value of the rapid suction massage recently introduced. The Eustachian bougie has been overrated. The objections to its use are: first, the risk of injury to the delicate ciliated mucous membrane; the narrow part of the tube being bony, it cannot be dilated except at the expense of this mucous membrane; secondly, in advanced cases the loss of hearing power is almost always due to changes in the tympanic cavity and not in the Eustachian tube.

Operations.—All these up to the present have been futile.

Local Medicinal Treatment.—Nasal irrigations of sterile alkaline and saline solutions are of much value. Inhalations of the ammonium chloride fumes, with cautious Valsalva's inflation to introduce them through the Eustachian tubes, form a most valuable treatment, but long-continued use, with intervals of rest, is necessary. Injections through the Eustachian catheter are much employed by some surgeons, and are occasionally of value; probably a sterile solution of sodium bicarbonate is the most efficacious.

Internal Medicinal Treatment.—Occasionally, when the mucous membrane is glazed and dry, small doses of potassium iodide with ammonia, so as to produce slight symptoms of coryza, combined with some form of inflation, will yield excellent results. Turkish baths are of value in some of the less advanced cases.

Climate.—The same holds good as with the early stages of the disease, but has far less effect.

4. The treatment of middle-ear adhesions of old standing is most unsatisfactory. Operative interference has as yet signally failed, though there may be a future for this. In fact, at present these cases only make the surgeon regret that active treatment was not adopted directly after the acute inflammation which resulted in the adhesions.

5. Treatment of sclerosis is still more hopeless, and in a pure case no treatment is of any avail—mechanical, medicinal, operative, and climatic treatments are alike useless. All that we can do is to use such general treatment—for example, iron, arsenic, etc.—as will keep up the general health, in the hope that this may help to arrest the disease. We have yet to learn whether the high-frequency electric treatment will yield any results.

In conclusion, although very much may be done in acute otitis and in the early stages of chronic catarrh, yet in the advanced stages of chronic catarrh the aural surgeon can do very little. This is very much to be deplored, as these cases are so very common.

Some of us are too apt to give up the advanced cases at once as quite hopeless, forgetting the fact that even a small improvement in hearing is of value to a very deaf patient; whereas others, being over enthusiastic, vaunt the value of this or that treatment which seems to have benefited, perhaps temporarily, one or two cases.

I know of no condition in which treatment should be considered more judicially, avoiding hasty conclusions for or against any proposed treatment. And certainly do not let us judge harshly of our over-enthusiastic *confrères* who may be unduly vaunting some new process, having been carried away by a few apparent successes.

II.—THOMAS BARR, M.D.,

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EXACTLY ten years ago I had the honour, in conjunction with Mr. George P. Field, of introducing a discussion at the Bristol meeting on the prognosis of non-suppurative otitis media. The discussion to-day may be regarded as complementary to the one in Bristol. I shall not attempt to traverse the whole field included in the title, as this has been done by my friend Dr. Pritchard, but shall limit my remarks to the non-exudative or dry forms of the disease, whatever their origin may have been. We are probably all pretty much agreed as to the treatment of the acute inflammatory and exudative forms. It is essentially satisfactory, and in some forms, such as the exudative affections of childhood, associated with post-nasal adenoids, the results of treatment are often brilliant.

The Nature of the Dry Forms.

The dry forms of middle-ear inflammation are by far the most frequent, and are the cases for which otologists everywhere eagerly and earnestly desire improved methods of treatment—they are therefore well fitted for investigation and discussion. We have here to deal with a more difficult problem than in the exudative forms. There are usually changes and products in the middle ear which may have originated long before, sometimes during early childhood, in acute inflammation, in simple exudative catarrh, or, worst of all, in gradual and scarcely perceptible changes of a dry nature from the beginning. When the patient comes before us the tympanic membrane may present nothing abnormal, as in the sclerotic form, or structural changes may be apparent to the eye, such as retraction, opacity, atrophy, or calcareous deposit. The Eustachian tubes may be more or less obstructed, or, on the other hand, they may be unduly permeable. The changes on the drum-head are, in many cases, not really the cause of the hearing defect. This was forcibly brought under my notice some years ago, when I had occasion to examine a large number of men of different occupations—boilermakers, riveters, iron-moulders, postmen—and found a considerable number presenting such and other abnormalities, while showing no hearing defect. Unfortunately, the changes actually causing the deafness are usually on the other side of the drum-head, and we may have in any given case but little means of determining their exact nature. We assume that there are adhesions or bands binding together structures which should be free and separate, or that there are stiffenings, rigidities, or immobilities of the ossicles, but the scientific character of the treatment is faulty because of the deficiency of our knowledge of the anatomical changes existing in any given tympanum, and efforts of treatment are on that account bound to be often empirical and to some extent experimental. As in all more or less incurable affections of the human body, the field of treatment is large, but not proportionately fruitful; it is manipulative, operative, medicinal, hygienic, and climatic.

Value of Treatment by Inflation.

Amidst the diversity of opinion regarding the value of the different methods of treatment, all otologists are agreed that inflation, in some form or another, but especially in the form of politzerization, is one of the most valuable. With such changes as fixation of the ossicles, especially of the stapes at its fenestra, it may be asked, What can be the good of inflation? Not much if we were perfectly sure, in any given case, that such changes were really and only present. We cannot, however, exclude the possibility that there are yielding adhesions, tubal catarrh, or swelling or secretion in the tympanum upon which inflation may have a good effect. In the use of Politzer's bag, it is important to know if the air pressure reaches the walls of the tympanic cavity, and I rely not only on auscultation, but also on inspection of the membrane during the compression of the bag. I find not infrequently that, while no sound is heard through the auscultation tube, or by the patient, inspection shows, by the movement of the membrane outwards, that the inflation has been effective. With good distension outwards, without any improvement in hearing, the prospects are unfavourable, as probably indicating stiffening and binding processes.

In view of the fact that we can rarely determine the precise condition of the intra-tympanic structures in any given case, we are not often justified in excluding the possibility of doing good, until we have applied the test of treatment, especially of effective inflation. I have seen cases where *a priori* one would not have expected improvement—cases in which the relatively weak bone-conduction, the long duration and gradual progress, and the slight objective changes seemed to preclude the chance of doing good—and yet substantial improvement has been achieved by inflation; while, on the other hand, I have seen notable changes on the tympanic membrane, with good bone-conduction, where nothing has been gained by inflation. As to how far the test of treatment may be pushed, there is room for difference of opinion. With absolutely no result, after a few effective inflations, most of us would hesitate to push it further, and regard the case as one of fixation of the stapes or an impaired nerve. Any increase in the deafness or in the intensity of the subjective sounds would call for an immediate halt, whereas improvement, even although comparatively slight, but, of course, more so if marked, would encourage the continuance of inflation. I agree with Politzer that inflation should not be practised too frequently, seldom more so than every second or third day; too prolonged treatment is bad. After three or four weeks there should be a pause of one, two, or three months, and in some cases short courses of such treatment may be required at intervals during the whole of the person's life.

Inflation by Patient or Friend.—Patients or their friends can usually be taught to inflate efficiently. I never, however, trust to verbal directions, but make sure by practical instruction and from my own observation, repeated more than once, that the patient or friend can really impel the air into the tympanum—only then do I intrust him with the bag. How often do we find that patients have been working with the bag for weeks, or even months, with no chance of doing good because of some defect, perhaps the omission of such an essential part of the process as closing the nostrils? Definite directions, as to the frequency and duration of the treatment, should be given, and I never omit to warn the patient that, if any increase in the deafness or subjective sounds be observed, the fact should be immediately reported. Otherwise, many patients, in their desire to be faithful to the doctor's instructions, will continue the treatment, in spite of unfavourable effects.

The Valsalva Experiment.—From the statements of patients, one must conclude that this method is frequently recommended, especially by general practitioners. Very seldom do I advise it in non-suppurative disease, because the patient is either unable to inflate his tympanum in this way, or if he succeeds, great mischief is done by the abuse of it; it is not uncommon to be told by a patient that he repeats it before every interview, probably twenty or thirty times in a day, acquiring such dexterity that no one observes the manœuvre. As we know, the improvement in hearing becomes less and less, and shorter and shorter, with gradually increasing damage to the tympanum. Still further, the strenuous efforts sometimes employed may have disastrous effects, especially in elderly persons, upon the cerebral circulation, and I have known a person to fall unconscious to the ground in the act of trying to inflate. Efforts to force vapours in this way through the Eustachian tube into the tympanum are, I am sure, generally futile. Probably, the best results from inflation are generally attained by the short impact of air yielded by Politzer's method, and I generally limit catheterization to the cases in which a stricture exists in the Eustachian tube, or for the introduction of solutions or vapours into the middle ear.

Obstruction of the Eustachian Tube.

In my experience patients suffering from deafness, of whatever nature, are often told by their medical advisers that it is due to "an obstruction in the passage between the nose and the ear." The practitioner is probably surprised to learn that serious loss of hearing from middle-ear disease is quite consistent with a freely, or even over-permeable, Eustachian tube. I am sometimes inclined to wish that the tube were obstructed, as offering a more favourable condition for doing good by treatment, especially if the obstruction were of the nature of tubal catarrh, near the pharyngeal orifice. This is no doubt common in these cases, and explains the fluctuations in the hearing often complained of, as well as the improvement effected in many cases by inflation and by applications introduced through the catheter into the Eustachian tube. There is a pretty general consensus of opinion that such applications are useful, although some are inclined to think that the accompanying inflation accounts for the therapeutic effect, but with this I cannot agree. My favourite applications are parolein solutions of iodine, menthol, camphor, cocaine, or adrenalin, introduced through the Eustachian catheter into the tube by means of an Oppenheimer nebulizer. Sometimes I introduce the catheter through the opposite nasal passage, hook it round the vomer, and direct the nebula straight upon the mouth of the Eustachian tube. After this, inflation is sometimes more effective. With no evidence of tubal catarrh I prefer the injection of solutions through the catheter, such as bicarbonate of soda or pilocarpin or fluid vaseline, with the object of bringing them in contact with the walls of the tympanic cavity. The effects of these are of course mixed up with the effects of inflation. The treatment of organic stricture is in my experience very unsatisfactory, and the attempt forcibly to dilate such a stricture by means of a bougie seldom leads to a permanently good result. Regarding electrolysis of the tube, I have had no experience, and should like to hear the opinion of those gentlemen who may have had experience of this agent.

Nasal Treatment.

The propriety of operative nasal treatment in these forms of middle-ear disease has given rise to very pronounced divergence of opinion, and may be almost regarded as a burning question in our specialty. Most of us probably approve of operating upon, or otherwise removing, marked obstructions in the nasal channels. There can be no doubt that such obstructions exercise an injurious influence upon the tympano-Eustachian apparatus—first, by the effect of suction during the act of swallowing; and, secondly, by inducing persistent or recurrent swellings of the Eustachian tube. Hence we are probably pretty well agreed as to the propriety of operative or other treatment for the removal of marked hypertrophies in the nasal passages, such as enlargement of the inferior turbinated, or very pronounced septal ridges or deflections causing considerable stenosis. Also, when post-nasal adenoids exist, most of us would approve of operating, without, however, expecting such brilliant results as in the case of the exudative catarrhs. Fortunately, the dry forms of middle-ear deafness are comparatively uncommon in childhood. On the other hand, the existence of a small spur or knob on the septum, interfering very little or not at all with nasal breathing, and producing no special tendency to catarrhal attacks, may wisely be ignored. It is to be remembered that intranasal operations occasionally seem to aggravate the deafness, perhaps through nervous shock, or from the entrance of blood into the Eustachian tube. There is probably unanimity as to the propriety of treating post-nasal catarrhs by the recognized methods, although it is not to be forgotten that these methods, such as the use of the nasal douche, may, in the absence of careful precautions, be productive of much harm.

Pneumatic Massage of the Tympanum.

Patients sometimes tell us that they find relief by pressing the tragus with the finger into the meatus, causing a rapid in-and-out movement, producing alternate condensation and rarefaction of the air and exposing the tympanum to rapid air vibration. The more effective employment of this by suitable apparatus is, I believe, of very considerable value,

especially when accompanied by inflation. We are all familiar with Siegle's pneumatic speculum and Delstanche's masseur, for which he was awarded the Lenval prize. By these instruments air massage of the tympanum may be effected. But, in order to increase and regulate the rapidity of the strokes and relieve the hand of the operator, an electro-motor is now used by many. The one that I am in the habit of employing consists of a suitable piston and cylinder, attached to a Siegle's speculum, propelled by an electro-motor, the current being derived from a 6-voltage storage battery. This is capable of producing up to 600 strokes a minute without any unpleasantness to the patient, who frequently expresses a distinct feeling of clearness and freedom from the tinnitus after from one to two minutes of its use. I generally adjust the piston for a stroke of $\frac{1}{4}$ in., but if the maximum speed is required the stroke is shortened to $\frac{1}{8}$ in. With long strokes there should be comparative slowness, with very short strokes, such as $\frac{1}{16}$ in., great rapidity is permissible; the rapid movement and the short stroke are, however, more adapted for labyrinthine affections. One disadvantage of the high speed is the noise produced by the machine, and a noiseless machine is a desideratum. There is a difference of opinion as to the time of each séance of treatment, and the frequency of repetition, as well as the duration of the course. On these I think further investigation is required. My own method is to continue it from one to one and a-half minute at each sitting, repeating the process twice a week, the duration of the treatment being dependent on the results. But I have known instances where a good effect was produced by repeating the treatment twice a day, after less frequent use had yielded no result. Some Continental otologists go the length of a thirty minutes' application, with daily repetitions.

My only experience of the so-called phone-massage has been with tuning-forks, which undoubtedly in many cases relieve tinnitus, but only for a very short time.

Lucae's pressure probe for application to the short process of the malleus, with Lester's addition of an electric motor, is, I think, rarely used in this country, and I have had personally no experience of it.

Friction or Massage Behind the Ear.

Another hint derived from patients is the use of friction, which they often say does them good when applied behind and below the ear. I am in the habit of advising friction with the aid of a stimulating ointment, such as camphor, oil of peppermint and vaseline, or an iodine preparation, applied behind and below the ear, employing the pressure downwards. Whatever the explanation, many persons seem to think that this does them good. Vesication seems to have a good effect at times, especially in the relief of tinnitus, and perhaps we might employ it oftener with advantage. Local blood-letting has been suggested, but of this I have had no experience.

Operations on the Tympanum.

In regard to the value of these there is remarkable diversity of opinion, as shown by the result of the investigation carried out by Mr. Arthur H. Cheatle, seven years ago, and reported in the *Practitioner* in 1897. Mr. Cheatle's most praiseworthy object was "to collect, contrast, and compare the views held on this subject by some of the leading aurists of the world." The results showed that otologists of this country were for the most part distinctly unfavourable to these operations; only a few expressed a very mild and restricted approval. The American aurists were much warmer, some almost enthusiastic, in their advocacy of these operations, such as Sexton, Dench, and Jack: while Roose and Knapp expressed themselves as decidedly unfavourable. Continental authorities expressed for the most part a cautious approval in regard to certain of the operations. These operations include myringectomy, or the production of an artificial opening in the membrane, either by a simple incision or by means of the galvano-cautery. This, as well as tenotomy of the tensor tympani, is a comparatively simple operation, and may be regarded as fairly free from the risk of doing harm. But it is otherwise when, with our present knowledge, we proceed to the removal of the whole tympanic membrane, including the malleus or malleus and incus, or when we expose the region of the stapes, and try to separate adhesions between its crura and the walls of its niche—so-called "synechotomy"—or attempt to mobilize the stapes and divide its incudal articulation, or, lastly, remove the stapes itself—stapedectomy. It may be said, in the first place, that with a narrow meatus some of these operations are wellnigh impossible, unless after resection of the membrano-cartilaginous meatus or the radical mastoid operation, while, in the absence of an exact knowledge of the pathological conditions present in the tympanum, the operator is in the position of one groping in the dark. That an artificial perforation with the galvanic cautery may in some cases improve the hearing or relieve tinnitus, at least temporarily, has been my own experience as well as that of others, and if such an opening could be rendered permanent—a desideratum still unsatisfied—there is here a distinct possibility of doing permanent good. But when we proceed to the other and deeper operative measures we are in danger of injuring rather than improving the hearing, and by producing a purulent condition we may even imperil life. Mr. Cheatle says that this risk of suppuration should not deter us if we operate by antiseptic methods; but is it not problematical whether asepsis or antisepsis is possible in the presence of an open Eustachian tube?

On the whole, the experience of most observers is that while improvement in the hearing or relief of the tinnitus not infrequently follows operation, such improvement is rarely permanent. To what extent opinion may be modified by improvements in the methods of operating or in the means of determining the exact pathological conditions present, the near future will, I hope, show. Of course no one would resort to such operations before exhausting other methods of treatment, and then only in cases of extreme deafness or intolerable tinnitus, at the same time taking care to explain to the patient the prospects, and especially the possibility of being made worse.

Electrical Treatment.

I remember, at an early period of my otological career, electrical treatment was for a time greatly in vogue, and both with the constant and the faradic current I treated many patients suffering from the conditions we are now discussing. Mainly, I suppose, from the feeling that the results were not commensurate with the trouble to patient and doctor, the electrical treatment gradually fell into abeyance. It has been again revived in the form of the high-frequency currents, and from past experience it is not surprising that many of us should feel sceptical of its value. As a remedy for defective hearing, these high-frequency currents were first suggested by Dr. J. C. Ferguson's paper in the BRITISH MEDICAL JOURNAL of October 24th, 1903, which, however, gave us very little information as to the cases suitable for the treatment. In Glasgow several of us have been putting it to the test during the past year, and my colleague, Dr. J. G. Connal, has already published the result of 32 cases treated in this manner. Curiously, the best results reported by Dr. Connal have been in sclerosis of the middle ear (gradually advancing and severe deafness, with normal-looking tympanic membranes, permeable Eustachian tubes, and relatively good bone-conduction). No doubt the number of these—namely, 5 cases, women between 20 and 30 years of age—has been small, but in all of them Dr. Connal reports appreciable improvement, both in the experience of the patient and by his own tests, not only in the hearing power, but in the relief of tinnitus. I saw two of these patients, and they expressed themselves as very much improved. In 14 cases of what he terms chronic catarrh, without labyrinthine involvement, there seemed to be little if any improvement in the hearing, certainly not as appreciated by the tests applied, but in 10 of them who suffered from tinnitus 8 reported improvement in that respect. My own experience has been limited to about a dozen cases, and, while it is perhaps premature to express an opinion, the results have not yet been so encouraging as those reported by Dr. Connal. Each of my patients had been previously treated in a thorough manner by other recognized remedies, and the hearing power had been carefully tested before beginning electrical treatment. In no one has the watch test shown more than a trifling improvement, but several expressed the conviction that they heard speech somewhat better. I am bound to say, however, that in these 12 cases there have not been anything like striking results. Still, as Dr. Connal is a competent and careful observer, I shall certainly give this mode further trial, especially in view of the somewhat remarkable results in his 5 cases of sclerosis. Dr. Walker Downie has also been testing the value of the high-frequency currents, and we shall be glad to learn with what results.

The treatment is pretty troublesome, as each of the patients received from twenty to forty applications of a quarter of an hour's duration, and at intervals of from four to six times a week. The currents were employed in two ways: First, by

means of the effluve taken from the resonator and applied to the side of the head. The multiple point electrode is held as near to the patient as possible without producing sparks, and at the same time another electrode, in the shape of a white metal disc, is pressed on the other side of the head. The other method is by means of thin metal rods covered with glass tubes, which are closed at the distal end and mounted on suitable handles. They are attached, one to each end of the high-frequency solonoid, and introduced into the external meatus. In this way the current is more completely concentrated on the ear than by the first method. The treatment is entirely empirical, and to what extent the effects are due to the general or local influence of the currents, or are psychical impressions, further experience is required to decide.

General Treatment.

The necessary limitations of this paper will not admit of my enlarging upon the medicinal, hygienic, and climatic treatment, which Dr. Pritchard has dealt with sufficiently fully. In every case general treatment requires careful consideration. The indications are, of course, clear when the ear condition is associated with anaemia, tuberculosis, specific disease, gout, rheumatism, or neurasthenia. Have medicines, taken internally, any special effect upon the morbid processes in the middle ear? Politzer believes that iodide of potassium, in large doses, in the early stages of otosclerosis, checks the ossifying process. Others believe that salicylic acid acts beneficially, presumably in rheumatic persons. Phosphorus, in considerable doses, continued over a great length of time, has been suggested of late by Siebenmann in osseous ankylosis of the stapes. Thyroid extract has had its exponents. Of the value of these I have no personal experience upon which to base an opinion, but would gladly hear the opinion of others who may have had such experience. For the relief of special symptoms, such as vertigo and tinnitus, special remedies are suggested and employed, such as the bromine compounds, including hydrobromic acid, also strychnine, etc. There is no doubt that a thoughtful and judicious selection of internal remedies may often prove useful, and some of us are perhaps apt to overlook the value of medicinal remedies.

Suggestions for Further Investigation.

In conclusion, gentlemen, allow me to suggest some of the directions in which we might hope to add to our power of dealing with these intractable cases. First, in order to obtain greater scientific accuracy as to the value of methods of treatment, committees of investigation might be appointed from time to time, and, by a well-defined and prearranged plan of working, determine if possible the true value of individual methods of treatment, such, for example, as the so-called pneumatic massage of the tympanum, the influence of nasal treatment, the value of applications introduced through the catheter, the value of tympanic operations, etc. What we much need is greater precision of knowledge as to the actual value of remedies. Secondly, to ascertain the opinions and practice of the leading authorities throughout the world on special forms of treatment, on a plan similar to that pursued by Mr. Cheatle, already referred to. And, thirdly, as it is of great importance to be able to differentiate more clearly the pathological conditions present in the ear in these cases, we should arrange for more frequent and thorough dissections of the organs of hearing of persons who have suffered from these affections. It would be essential that the specimens should be accompanied by careful clinical records as to the character of the hearing, the state of the bone-conduction as tested by tuning-forks, the aural history and the diagnosis during life. On these lines we might hope for more decided progress in the future than has been in the past in the treatment of these very common though intractable cases.

III.—Adolph Bronner, M.D.,

Senior Surgeon, Bradford Eye and Ear Hospital; Laryngologist, Bradford Royal Infirmary.

Dr. Bronner thought it was a pity that otologists adopted such different methods of treatment and had such different ideas. He did not agree with Dr. Pritchard regarding the use of the catheter, which he considered infinitely superior to politzerization; but it should not be used with an ordinary Politzer bag, in which there was a risk of damage to the drum membrane it should be used with gentle air pressure, which could be regulated. He did not think that slight nasal obstruction caused deafness, but some thought it did, and they should be more charitable with each other in these respects, so that when a patient consulted secondarily one who held the latter view, he should not be told that the obstruction should have been removed long ago, as was done so frequently.

Methods of Treatment.—Very little was known of the pathology of ear disease, and therefore any one was justified in trying anything he thought might do good. Reports of published cases were generally not of much use, because the history of the cases and the methods of treatment were not sufficiently carefully given, and cases said to have been improved as a result of certain treatment might have improved equally well under ordinary methods. With reference to the use of the catheter, he had had patients who showed no improvement with politzerization, but who had greatly improved under the catheter. Patients should not be allowed to use the bag themselves, but should go to their family doctor; neither should patients use Valsalva's method. He also considered constitutional treatment very important, as the nose was a part of the body. He formerly thought the seaside beneficial, but now believed it generally injurious. The south of England was better, but the north was bad, unless in July and August.

IV.—Professor Marcel Natier, M.D.,

Paris.

Professor Natier said it was difficult to speak in a foreign tongue, and showed several charts illustrating his method of treatment by means of tuning-forks. He said there should be a definition of deafness, which he would define as a deficiency in the normal hearing power. Theoretically there was no normal hearing power, but practically there was, and was found to vary from 32 to 35,000 vibrations per second. This could be tested by properly constructed tuning-forks, as oculists tested by lenses the normal visual range. The two methods he used were—distance and time. The former was more difficult than the latter, due to greater space required. He used resonators which harmonized with the tuning-forks and modified the sound. He then, in charts marked with various colours and abscissa lines, showed the results of his method.

V.—Walker Downie, M.B., C.M.,

Surgeon, Nose and Throat Department, Western Infirmary, Glasgow.

Dr. Walker Downie said he would confine his remarks to cases of old-standing sclerosis. The application of lubricants to the tympanum often helped in the movement of thick sclerosed membranes, and with it he combined Valsalva's method of inflation. The latter was spoken against because it was so frequently overdone. It should be done gently and quickly and not frequently, and was distinctly beneficial in many cases; it was analogous to passive movements in a stiff joint. He frequently employed a nebulizer similar to that mentioned by Dr. Barr, and while the patient swallowed a little water he put it into action. There was a difficulty in operating through the meatus unless it was wide and fairly straight. He had treated about a dozen cases with the high-frequency current, but only one had improved, and she had a daily application for fifteen minutes for six months. She could hear better for conversation, but there was no improvement in the watch test. Her general health had also improved.

VI.—F. Marsh, F.R.C.S.,

Consulting Surgeon, Queen's Hospital, Birmingham.

Mr. Marsh said he was quite in accord with Dr. Pritchard with regard to the treatment of the conditions in divisions 1 and 2, and he thought most of those present would in the main agree with the views he had expressed. In the treatment of advanced cases (division 3) it was important to remove any naso-pharyngeal or intranasal condition which interfered either with free drainage from those regions or the free passage of air to the Eustachian orifices. Of local applications, injections into the middle ear through the Eustachian catheter of liquid petroleum, combined with menthol and other drugs, had yielded the best results in his hands. Of Valsalva's method, he could only say that he had found far more harm than good result by its use, or rather its abuse. The inducement to the abuse of the method was so great that it was dangerous to advise a patient to adopt it. In the sclerotic group there was, in the majority of patients, a distinct gouty or rheumatic history, and in these cases a long course of iodide of potassium sometimes did good, and it also was important to place them on a careful dietary and improve the general health as much as possible. His experience of the high-frequency electric treatment was limited, but in the

few cases in which he had had it employed by skilled electricians the results had been disappointing, and in one case the tinnitus had been rather increased. He supported Dr. Barr's suggestion that small committees of investigation should be formed to test the value of remedies in the chronic cases, but feared it would not be practicable.

VII.—William Milligan, M.D.,
Honorary Surgeon, Manchester Ear Hospital; Aural Surgeon, Manchester Royal Infirmary.

Dr. Milligan said that two impressions had been produced on his mind—one was that what had been said emphasized the importance of otologists combining to insist upon the necessity of teaching otology as part of a general medical education, because most of the cases spoken of first came under the care of a general practitioner; the other was that otologists should combine to do more pathological work. The formation of committees for discussion was all very well, but the foundation of knowledge was more detailed and accurate information of what really happened in dry middle-ear catarrh. He was very particular in all cases of acute middle-ear catarrh to give rest by antiseptic packing, combined with rest in a warm room. Glycerine of carbolic acid had given good results, and was a valuable analgesic. He believed there was no alternative but an incision of the membrane when fluid was present and not absorbed by other methods of treatment. In many cases recurrent attacks took place, in which the membrane became thickened, and in which it was difficult to say whether or not any fluid was present. In such cases where other treatment gave no result he performed an exploratory incision, which he considered did no harm. With regard to the seaside, his experience was opposed to that of Dr. Pritchard, and he had found it injurious in these cases. He advised high altitudes, as the hilly districts of this country for those who could not go to Switzerland. The point, however, in the discussion really hung upon the value of operative interference. He regretted that Dr. Pritchard took so pessimistic a view. Though he, the speaker, could not give any definite statistics of operations, he believed there was a future before them, as he had had experience of cases operated upon and had seen results that had not been obtained by a previous trial of other methods. In one case where two years' treatment had been undergone with no result, the operation produced an encouraging effect. He deprecated attempts at operation through the meatus, whether wide or not, as a larger field was necessary. His experience of high-frequency currents was limited—four under treatment, and no one benefited, and one he considered worse, but of course the number was too limited to deduce much from the results. The only drug he had found of any value in sclerosis was potassium iodide in large doses, which gave a certain amount of relief. Other methods of treatment, as massage, inflation, thyroid extract, etc., he had found perfectly useless.

VIII.—L. Hemington Pegler, M.D.,
Surgeon, Metropolitan Ear, Nose, and Throat Hospital.

Dr. Pegler said he had had opportunities of watching a few cases of effusion into the tympanic cavity where he was in doubt as to the benefit of puncture, and experience had left him to discover that if the fluid were left alone it became absorbed, and if the hearing were carefully tested afterwards there was little alteration in the deafness compared with that before, and the patient had been saved the slight risk of operative interference. With regard to the tuning-fork test, one should bear in mind the neurasthenic element and that positive Rinne in such cases often pointed to this factor rather than to actual nerve lesion. There was great uncertainty as to what was really going on in a purely dry catarrh, or whether one was treating a purely dry catarrh or a mixed form, and therefore one should try various methods of treatment, and not give up after the use of one or two. He considered there was a future in the compressed-air treatment, and had had good results during the short time he had tried it. There might not be much improvement with the watch, but there certainly was to conversation. He hoped others would give it a trial and give afterwards exact statements of its results upon hearing. The amount of force should be carefully regulated, so that there might be no danger of too high pressure, but balance was easily restored by using external massage with a small motor pump. Mr. Marsh had wisely pointed out the importance of drainage in nasal obstruction. Spurs and obstructions, in cases where the use of the catheter was beneficial, should be removed if they interfered with its use, though they did not otherwise trouble the patient.

IX.—Scanes Spicer, M.D., B.Sc.,
Surgeon, Throat Department, St. Mary's Hospital.

Dr. Scanes Spicer said the openers of a debate had to be comprehensive and judicial, and he considered the resources of otology in dealing with these cases had been well reviewed. Dr. Pritchard had marshalled the accepted methods of treatment of the acute forms; he had dwelt on the hopelessness of treatment in primary otosclerosis; he had deplored the unsatisfactory results of treatment of advanced stages of chronic middle-ear catarrh and of adhesions. Such being the case, was it not a matter of national importance, for the arrest and prevention of the deafness of middle-ear catarrh, that these cases should be recognized and treated early, when a favourable result could be expected? If one could only convince the general body of the profession, and through them the public, that, while the advanced stages of the disease were admittedly hopeless one could do much at the onset, one could arrest and prevent, by removing such antecedent conditions as were known to be intimately associated with the onset, persistence and recurrence of chronic non-suppurative aural catarrh, which were amenable to the control of the practitioner. These were *in excelsis* the morbid states of the nose and naso-pharynx. The intimate connexion between naso-pharyngeal and tubo-tympanal catarrh, and the positive benefit to the ear derived from treatment of the former, was admitted with varying degrees of conviction by practically all otologists, and was acted on with varying degrees of thoroughness. He ventured to suggest, however, that the importance of the subject was as yet insufficiently grasped, the nature of the connexion imperfectly realized, and that the treatment was not sufficiently early, sufficiently thorough, or sufficiently prolonged to bring about the maximum improvement and the speediest arrest of chronic aural catarrh.

With reference to comprehension of the subject, he desired to lay stress on the great danger-signal of "cold in the head." The first duty of the practitioner in any such case was to estimate the true significance of what appeared to be only a "common cold in the head." Such cold might be a trifling and fugitive nothing resulting from slight chill or exposure. It might also be a symptom of some constitutional affection, as gout, syphilis, struma, or various other infections. These were generally known and attended to. But was it so generally known and appreciated that such a chronic head cold might be the manifestation of an inadequacy in the size of the nasal channels to admit the air required by the organism, without undue force and speed, during the act of inspiration? If this were so, did it not follow that they had a constantly acting force at work producing a rarefaction of the air in the naso-pharynx, a dry-cupping, and chronic congestion of the mucous membrane—a condition impairing the circulation and vitality thereof? Did it not follow that the liability to catarrhal states from infections and chills was increased, and that these at once spread to the tubo-tympanum, which was structurally part of the naso-pharynx? Admitting that much might be done to regulate the air tension in the naso-pharynx by correct habits of breathing, this would hardly suffice. Certainly they could prevent the abnormal rapid rarefaction of the air in the naso-pharynx by substituting for the shallow, rapid, forced inbreaths of ordinary abdominal respiration, a habit of full thoracic expansion and gradual, slower but complete lung inflation. But marked stenosis of the nasal passages, whether arising from traumatic displacements, inherited deficiencies, arrested development, or repeated infections, could hardly be entirely circumvented, and required active interference and constant attention both to the nasal stenosis and to the breathing, until nasal respiration was so performed that the air tension in the naso-pharynx no longer necessitated a state of chronic oedema, vascular engorgement, or "head cold." In the opinion of the speaker, in the near future the failure to recognize this relation would be considered a blunder, and the failure to treat it a crime, seeing the hopelessness of treating satisfactorily the deafness of advanced middle-ear catarrh. The question now arose—What are the physical signs of imperfect nasal respiration? The speaker would state them as follows:

1. Failure of the alae nasi to "lift" on inspiration.
2. Collapse of the alae nasi against the septum on inspiration.
3. "Sniffing" sound through the nose on inspiration in ordinary breathing at rest instead of a perfectly noiseless intake of air.

These signs could not be fully discussed on the present occasion, and it must suffice to state that in nearly every case they could be completely and permanently corrected.

A very important problem arose as to whether in any given case the chronic aural catarrh and consequent deafness had progressed too far to be influenced by the correction of the nasal stenosis and the restoration of proper breathing. The speaker was convinced that the solution was to be sought in the fact of the hearing being worse with every fresh "cold in the head" in preference to the other indications which had been suggested. As long as the patient was capable of further deterioration, active interference and treatment were indicated. No stone should be left unturned, for it was a great thing to preserve what hearing remained, and the prevention of naso-pharyngeal congestion and catarrh was the best of all known methods of prophylaxis.

Similarly, the treatment of a well-marked catarrhal element in any case was not contraindicated by the simultaneous existence of otosclerotic or nerve factors, though the prognosis must naturally be more guarded as to the actual effect on the hearing. Finally, the speaker thought but little could be done for even early stages of chronic aural catarrh except on the lines indicated.

X.—Henry Smurthwaite, M.D.,
Newcastle-on-Tyne.

Dr. Smurthwaite said that he endorsed every word of Dr. Scanes Spicer regarding nasal obstruction, and thought that all cases of chronic deafness were the result of constant colds in the head during youth, and consequently the causation should be treated. There was no doubt that in all cases of one-sided deafness there was obstruction due to the septum or turbinates. This was not necessarily visible at the time of examination, but would be perhaps a few hours after. There might be also adhesive changes in the middle ear, but such were aggravated by the catarrhal condition and by the nasal stenosis. With regard to Delstanche's method, they had a marked improvement in cases where tinnitus was marked. After a time the tinnitus might return.

XI.—Ernest B. Waggett, M.A., M.B., B.C.Camb.,
Surgeon, London Throat Hospital.

Mr. Waggett said that one should not talk of treating deafness, but of the pathological condition causing it. He believed that true otosclerosis was very much rarer than chronic catarrh. They should make up their minds whether they were dealing with a primary otosclerosis or a sclerotic condition of the middle ear—two totally different things. In the initial stage of chronic catarrh there were two conditions—uric acid as a prominent factor, and secondly, nasal obstruction, particularly at night. He had found that gr. iv carbolic acid to glycerine ℥j, a very valuable anodyne in myringitis.

XII.—Cecil Shaw, M.B., B.S.

Dr. Shaw said that for the relief of pain there was nothing better than 10 per cent. solution of carbolic acid and cocaine in water. He agreed with Dr. Bronner in the use of Politzer's bag, which should never be given to the patient, but to the medical attendant. He believed that it was impossible to tell beforehand in what cases injections into the tympanum would be beneficial. He consequently explained this to patients, and tried the effects for six weeks, once a week. He used parolein with menthol or thymol. If no improvement he did not persist at the end of six weeks. He had had no experience of vibration treatment.

XIII.—Charles H. Fagge, M.B., M.S.Lond., F.R.C.S.,
Surgeon, Ear Department, Guy's Hospital.

Dr. Fagge said he was disappointed in the discussion upon the opening papers. He considered that we required more definite pathological knowledge, and that the senior members should give fuller details of the symptoms, tests, and results of their cases. The first four sections of Dr. Pritchard arose, primarily, from middle-ear inflammation, but the last was a distinct type. One of the best ways to treat the first four was by prevention, which meant a much earlier incision of the membrane than was usually carried out. He did not think much was gained by the incision of a bulging drum, because in that stage inflammation was imminent. He did not think infection from the meatus probable after incision. In chronic cases he saw a great deal of the bougie abroad, but in most of the cases—that is, those that were most hopeless—they were unnecessary, as the tube was nearly always freely open. He did not see how one could treat a patient without making a diagnosis between otosclerosis and chronic middle-ear catarrh. Dr. Barr's conclusions regarding the result of electrical treatment were unsatisfactory because there was not sufficient information given. He had never done any good with such treatment, excepting in one case of the otosclerosis type.

XIV.—G. William Hill, M.D., B.Sc.Lond.,
Surgeon, Diseases of the Ear, St. Mary's Hospital.

Dr. Hill thought that the fifth class of Dr. Pritchard was the most hopeless, and about which one required more information. One could ascertain by the catheter whether the tubes were open. If such were the case he formed a pessimistic view, but he nevertheless tried the effect of Delstanche's masseur, which often relieved the tinnitus and occasionally improved the hearing for conversation. He in such cases concluded that the joints were stiff, and that further improvement was possible. An intelligent patient could apply some form of massage to his own ear, and in suitable cases he taught the self-use of the Eustachian catheter. In old-standing sclerosis with an open tube he had tried potassium iodide, but had never seen it do any good.

XV.—A. J. Brady, L.R.C.P., L.R.C.S.I.,
Honorary Surgeon, Ear, Throat, and Nose Department, Sydney Hospital, Australia.

Dr. Brady referred to the value of operation. He had removed the membrane and chain of ossicles, with great improvement in the hearing, although the operation was not done for such purpose.

XVI.—Dr. Newcomb,
New York.

Dr. Newcomb had had no experience with electricity, but in New York the younger men were trying it and had had some brilliant results. The older men did not think it did much good. There had been one or two unfortunate results from the use of the bougie, it having broken, a portion remaining in the tube.

XVII.—Jobson Horne, M.A., M.D., M.R.C.P.Lond.,
Surgeon, Metropolitan Ear, Nose, and Throat Hospital.

Dr. Jobson Horne considered that the introductory papers, together with the discussion which had followed, formed a fairly complete compendium of our knowledge of the treatment of the forms of ear disease they had had under discussion. But the multiplicity of remedies advocated and the diversity of opinions as to when and how they should be used were alone sufficient to condemn the present state of knowledge of these diseases. On that account he, with previous speakers, warmly welcomed the suggestions thrown out by Dr. Thomas Barr for organized and scientific investigation of these particular forms of deafness; and inasmuch as Dr. Barr was President of the Otological Society of the United Kingdom, he hoped that immediate steps would be taken to give practical effect to those suggestions. Some fifty years had passed away since Toynbee so greatly enriched our knowledge of aural diseases. Dr. Horne considered he was not overstating the facts by adding that in that interval of time but little had been done by means of research to ascertain the precise nature of the non-exudative diseases of the middle ear. He was well aware that there were obvious difficulties in obtaining the necessary material together with the full clinical facts upon which to base a research. At the same time, even one case of non-exudative disease completely worked up would be of greater help in arriving at a proper understanding of the matter than a mass of empirical and experimental treatment.

XVIII.—Charters J. Symonds., M.D., F.R.C.S.,
President of the Section.

The President, in calling upon the introducers of the discussion to reply, referred to the three general suggestions that had been made, two by Dr. Barr and one by Dr. Milligan. With regard to the formation of a Committee to collect information and lay down directions for treatment, the President thought that if this were not successful, any one reading the papers and the discussion could not fail to obtain

a clear notion as to the view of many otologists. The question of the ruling of such a committee on points of treatment, he thought, would not be generally accepted. The collection of pathological material he thought would be of great value, and hoped that some means would be found either by the Association or a society for the purpose. With regard to Dr. Milligan's suggestion of making the study of otology compulsory, he hoped that no further call would be made upon the time of the already over-worked student.

Replies.

Dr. PRITCHARD, in reply, said that he hardly considered any reply necessary. He did not mind pleading guilty in looking upon this subject from a pessimistic point of view, as he thought he ought to do so.

Dr. BARR said that the discussion had shown that there was something to be said in favour of further investigation by some means or another, and that mainly from the pathological point of view. They should perhaps, in connexion with the Otological Society of the United Kingdom, institute something in this direction. Single practitioners could not do much, as dissection of the organ of hearing was very difficult and tedious. There should be some central museum, where a skilled pathologist should be prepared to examine any temporal bone and report upon it. The specimen, with notes on the case, should be kept so that visitors to the museum could profit by it. He thought that practitioners should be furnished with a scheme of questions as to the facts which were expected to be given, so that the greatest amount of benefit might accrue from the specimen. He had no time in his reply to take up any individual points, but must confine himself to generalities. He was inclined to hope that there were cases that would be benefited by high-frequency current, though the opinion was generally one of pessimism.

Dr. BRONNER condemned the use by the patient of Politzer's bag, but he, the speaker, was quite sure that in many cases the practitioner did not employ politzerization in the way one would like, and, unless he knew that the practitioner was freely conversant with its use, he would prefer to trust to careful oral and practical instruction of the patient.

THE DISTURBANCES OF VISION AND DEVELOPMENT OF BLINDNESS OF NASAL ORIGIN INDUCED BY DISEASE OF THE POSTERIOR ACCESSORY SINUSES.

By Professor ONODI,
Buda-Pesth.

My investigations concerning the connexion between the optic nerves and the sphenoid cavities and the posterior ethmoid cells lead me to seize the opportunity to place this question before the British Medical Association, in the hope of hastening the solution in the future of questions still open to the common research and observation of rhinologists and ophthalmologists. With the object of learning the opinions and experiences of various eminent ophthalmologists I put to them the following questions:

1. Have you observed loss of sight or optic neuritis due to canalicular disease of the optic nerve produced by diseases of the sphenoid and ethmoid cavities? Was the causal connexion traceable and nasal treatment effective?

2. Have you noticed loss of sight or optic neuritis, caused by disease of the above-mentioned cavities and in causal connexion, confirmed by necropsy?

3. In one-sided neuritis, is optic atrophy characteristic of a causal connexion with diseases of these cavities? Have you observations of this?

4. Can blindness of both eyes coexist with long-standing empyema of the sphenoid without causal connexion? Have you observed this?

I will mention shortly the most important observations in the valuable and interesting reply. Herr Geheimrat Professor Th. Liber says:

The absence of objective observations, with exact *post-mortem* reports and histological examinations affording us information on the nature of this lesion and the mechanism of its origin, regarding which different possibilities are conceivable, is to be deplored. Although I have turned my attention for many years to the question of the connexion between the diseases of the posterior sinuses of the nose and those of the organs of sight, I have been able to note very little worthy of record with regard to the sphenoidal sinuses and the posterior ethmoid cells. I have reported one case of a tumour in the posterior upper part of the nose where retention of pus in the sphenoidal sinus occurred. Exophthalmos and recurrent inflammation of the orbital tissues were observed, and later blindness came on suddenly, without important ophthalmoscopic changes, and afterwards optic atrophy developed; death was caused by suppurative meningitis and thrombo phlebitis of the sinuses. The *post-mortem* examination, at which I could not be present, afforded no fixed essential fact as to the original cause of blindness; unfortunately, exact histological investigations could not be made. I do not doubt, however, that in this as in many other cases a connexion exists between the primary lesion and the blindness. It must not, however, be assumed that the connexion is such that it must always come into play in apparently similar circumstances. Stress may properly be laid on the fact that in severe disease of the sphenoidal sinus there is no necessary defect in the sight. Lately I had an opportunity of seeing such a case. It was an instance of one-sided exophthalmos which resulted from a tumour apparently of the ethmoid and sphenoid bones. The exophthalmos was still slight, and visual acuity and ophthalmoscopic appearances normal. An operation performed in the surgical clinic here disclosed a very large tumour formation, which involved the sinus frontalis; the upper and middle nasal passage extended to the antrum of Highmore, and filled the sphenoid bone cavity with a large projection. Recovery took place satisfactorily without damage to the eyes or vision, but we must await further results. I do not remember any other cases of disease of the optic nerves than those mentioned; at any rate, I believe that they are of very exceptional occurrence in ophthalmic practice.

Herr Geheimrat Professor Schmidt-Rimpler says:

I have never seen a case of disease of the optic nerve in sphenoid or ethmoid bone affections in which there was not thorough disease of the orbital wall and of the adipose tissue of the orbit; protrusion of the eye and exophthalmous disease of the optic nerve is, then, the result of affection of the adipose tissue. On the other hand, I have seen a case in which, *post mortem*, the whole of the sphenoid bone was infiltrated with sarcoma, which projected into the cranium, and in spite of this the optic nerve was intact on both sides: V = 1; the abducens, oculomotor trochlear nerves were, on the contrary, partially affected. My experiences afford me no proof that empyema of the sphenoid cavities can of itself cause an affection of the optic nerves.

Herr Geheimrat Professor H. Sattler says:

Since, on the whole, very few cases of diseases of the sinuses come here from the eye clinic, I can give very few from my own experience, in spite of the large amount of clinical material we have. Ad 3, one-sided optic neuritis, and optic atrophy is in no way characteristic of diseased sphenoid and ethmoid cavities. It might, however, arise from inflammation, haemorrhage, tumour at the cerebral end of the optic canal, or from toxic causes. In blindness of both eyes and simultaneous empyema caries of the sphenoid cavities or antrum of Highmore, a causal connexion is not to be rejected, so long as no other reason for blindness is discoverable. I can myself report no *post-mortem* examination of an affection of the optic nerves in which the above-mentioned cavities were diseased.

Herr Professor Axenfeld says:

It is my opinion that diseases of the optic nerves (neuritis, pressure atrophy) are, if we except actual tumours and perforating cases, much rarer than we might expect in diseases of the sphenoid. As to empyema I can only remember one double-sided case in which the connexion of retrobulbar neuritis with sphenoid empyema was possible. I have seen no other definite cases, although I have worked for years with Koerner and now with Killian and made rhinological investigations of all serious disturbances of sight and especially those of retrobulbar character. The expectation that the so called acute retrobulbar neuritis might be frequently due to disease of the sphenoid was not fulfilled. Two tumours of the mucous membrane of the sphenoid which I saw occasioned early one-sided sight disturbance: I have the preparation of one of them in which the disease of the optic nerve remained one-sided. The other led by interference with the chiasma to blindness. A third case came under my treatment simultaneously with double amauroses. In such cases there is nothing characteristic about the visual disturbance. It was surprising that the intensity of the visual disturbance was at first out of proportion to the ophthalmoscopic appearances as is found in so-called retrobulbar disease. If I leave out of consideration cases in which diseases of the ethmoid bone have encroached on the orbit, I cannot remember having observed a real case of disease of the optic nerve from this cause. Naturally I will not from the data question what has been written about optic neuritis in sphenoid empyema; but that it is relatively rare I must maintain. It is, of course, possible that occasionally disease of the sphenoid bone may accidentally occur at the same time as affection of the optic nerve, but this may be exceptional.

Herr Professor Hirschberg says:

I can, unfortunately, not answer with confidence the questions put to me. With regard to *post-mortem* examinations I have nothing at all to say.

Herren Sänger and Wildbrand say:

Unfortunately we have made no observations which would show causal connexion between optic neuritis and disease of the sphenoid and ethmoid cavities.

In my paper on the relationship of the optic nerve to the sphenoid cavities, and especially to the posterior ethmoid,[1] I have brought into prominence the fact that hitherto, owing to the almost mechanical acceptance of a canalicular disease of the nervus opticus, the sphenoid cavities and their diseases alone were thought of. My investi-

gations were unknown to Herr Professor Eversbuch before the publication of his monograph. I will summarize my conclusions concerning the connexion between the sulcus opticus, the foramen opticum, the canalis opticus and the chiasma, and the nervus opticus; I have the honour to demonstrate photographs—natural size—of my preparations. In six cases in which the posterior ethmoid cells on both sides extended into the sphenoid wings, there was an intimate relation between them and the optic nerve, in all with the median wall of the optic canal, and in two with the lower wall of the sulcus opticus. In three hemicraniums the posterior ethmoid cells alone formed the walls of the sulcus opticus, optic canal, and foramen opticum. In five cases the posterior ethmoid cells formed the median wall of the optic canal on the same side; in one case the upper wall of the optic canal was in relation to the posterior ethmoid cells on the same side. In one case the right posterior ethmoid cells, 17 mm. high, 22 mm. long, and 34 mm. broad, were in close contact with the chiasma and both optic nerves, so that the whole sulcus opticus and both posterior optic canals, as well as the superior wall of the posterior ethmoid cells, were exceedingly thin. In six cases the sphenoid cavities extended on to the sphenoid wings, and formed the wall of the optic canal. My investigations showed, therefore, that the posterior ethmoid cells frequently extended into the sphenoid wings, and that in these cases the sphenoid cavities have nothing to do with the region of the canal and optic nerve. The plates, which are true to Nature, throw instructive light on the relationships.

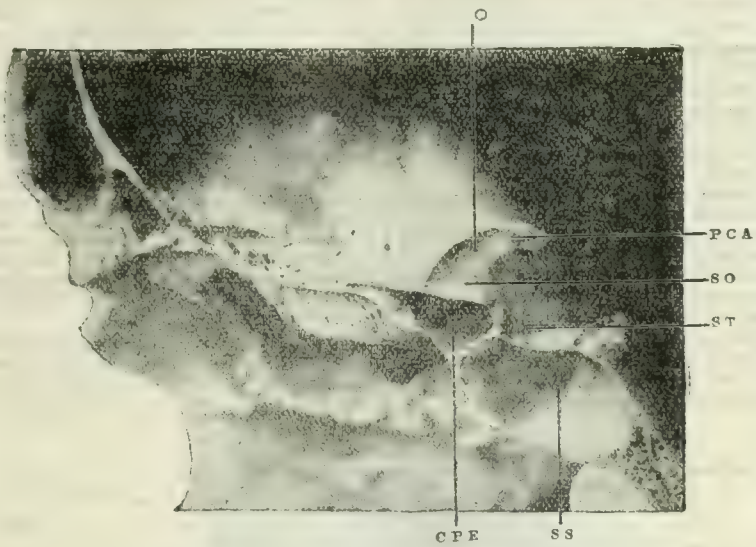


Fig. 1.—Natural size; F O, foramen opticum; P C A, processus clinoideus anticus; S T, sella turcica; S O, sulcus opticus; S S, sinus sphenoidealis; C P E, posterior cribriform bone cell.

Fig. 1 shows beautifully on a sagittal section the position and connexion of the posterior ethmoid cells to the foramen opticum (F O), nervus opticus, sulcus opticus (S O), and to the anterior part of the sella turcica (S T); it can be plainly seen that the sometimes large sphenoid cavity (S S) has no relation to the foramen opticum, the canal and optic nerve. The posterior ethmoid cell (C P E), 30 mm. long in the middle line and 18 mm. broad, extending under the sulcus opticus (S O), and the foramen opticum (F O) in the sphenoid wings, forms the whole wall of the sulcus opticus, and also the medial, lower, and lateral walls of the optic canal. Fig. 2 illustrates very clearly on both sides the relation of the posterior ethmoid cells (C P E) with the optic nerve. The posterior ethmoid cells extend to the foramen opticum, and form on both sides the medial and lower walls of the canalis opticus. Under the lower wall of the posterior ethmoid cells, close to the middle line, may be seen the openings (O S) of the sphenoid cells and the diminishing small anterior wall. Neither sphenoid cavities have any relation to the walls of the canalis opticus.

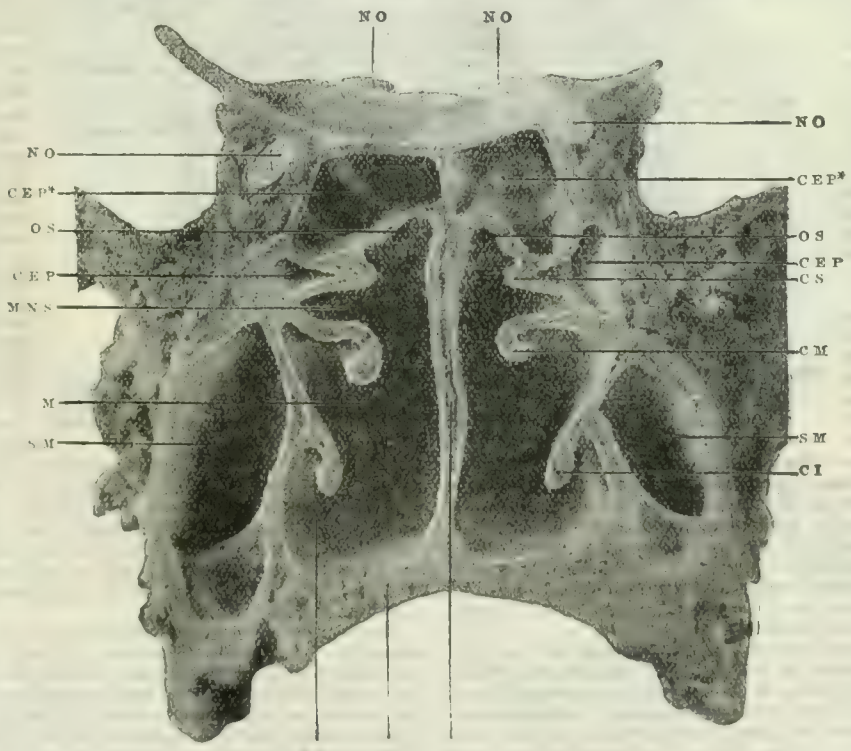


Fig. 2.—Natural size; N O, nervus opticus; C E P*, most posterior cribriform bone cell; C E P, posterior cribriform bone cell; O S, ostium sphenoideale; C S, upper muscle of the nose; M N S, upper nasal passage; C M, middle nasal muscle; M N M, middle nasal passage; S M, jaw cavity; C I, lower nasal muscle; M N I, lower nasal passage; P, hard palate; S, nasal septum.

Fig. 3 is very interesting: it shows the relation of the optic nerve (N O) and the optic canal (C O) on the one side to the sphenoid cavity (S S D), and on the other side to the posterior ethmoid cavity (C E P). This cavity is 28 mm. long, 30 mm. broad, 26 mm. high, and the optic canal containing the optic nerve lies for 12 mm. in the posterior ethmoid cavity. The medial upper lower walls of the optic canal are formed on the left by the posterior ethmoid cavity, and on the right the sphenoid cavities.

Fig. 4 shows a sagittal section, in which the relation of the posterior ethmoid cavity (C E P) to the optic canal and optic nerve (N O) may be well seen. The posterior ethmoid cavity is 34 mm. long, 16 mm. high, and extends behind the optic canal for 6 mm.

Fig. 5 shows on both sides the relationship of the optic nerves (N O) to the sphenoid cavities (S S). On both sides these cavities extend into the wings of the sphenoid and form the medial way of the optic canal.

Fig. 6 shows a frontal section in which may well be seen the connexion of the left optic nerve (N O) to the sphenoid (S S), to posterior ethmoid (C E P) and frontal cavities (S F) which extend to the foramen opticum on both sides. The lateral wall of the sphenoid cavity encloses in the middle line the optic nerve.

Figs. 7 and 8 show the corresponding sagittal section which was made in the middle line of the cranium. The right

posterior ethmoid cell (C E P) is situated above both the sphenoid cavities; its upper wall forms on both sides the lower wall of the optic canal. The right posterior ethmoid cell (C E P) is 17 mm. high, 22 mm. long, 38 mm. broad; it lies in contact with the chiasma and both optic nerves (N O), so that the whole sulcus opticus and the two optic canals, as well as the upper wall of the right posterior ethmoid cell, are formed by a thin common wall.

The following anatomical relations may exist.

1. The optic canal may be formed on both sides by the sphenoid cavities.
2. The optic canal may be connected on both sides with the posterior ethmoid cells only.
3. The optic canal may form on one side the sphenoid cavity, on the other the posterior ethmoid cell.
4. The optic canal on one side may be related either with the sphenoid cavity or with the posterior ethmoid cell.
5. The optic canal may be related on one side both with the sphenoid and with the posterior ethmoid cavities.
6. The optic canal may be related either with the sphenoid or with the posterior ethmoid cavity.

It thus appears that the optic canal is in close connexion just as frequently with the wedge-bone cavity as with the ethmoid cell. My investigations show further that in all cases in which the optic canal is connected with the posterior ethmoid cell the septum is always as thin as the thinnest paper. In 3 cases I found differences worthy of mention in the thickness of the wall of the sphenoid cavity, in the roof of the foramen opticum; in the first case, on the left it is 2 mm. thick, on the right as thin as paper; in the second case it is 1 mm. thick on the left and 5 mm. on the right; in the third case it is 4 mm. thick on the left, and 3mm. on the right. Berger and Tyrmann mention 2 cases; in one the wall of the sphenoid cavity was 4 to 6 mm. thick, in the other case it was thin as paper on one side and on the other side 7 mm. thick. In 300 cases I only once observed two punctiform defects in the wall of the canalis opticus, Gallmaerts in 200 cases twice, Holmes in 50 cases twice. With regard to the physiological origin of these apertures, we noticed in several craniums vascular openings (gaps), sometimes symmetrical on both sides, immediately under the lateral root of the wing of the sphenoid. In certain cases vascular grooves form the middle of the fissura orbitalis, and end in smaller, larger, or long apertures. Zuckerkandl noticed on the side wall small cavities or apertures which connected the sphenoid cavities with the middle cranium cavity. Spee in one case noticed a defect in the sulcus caroticus.

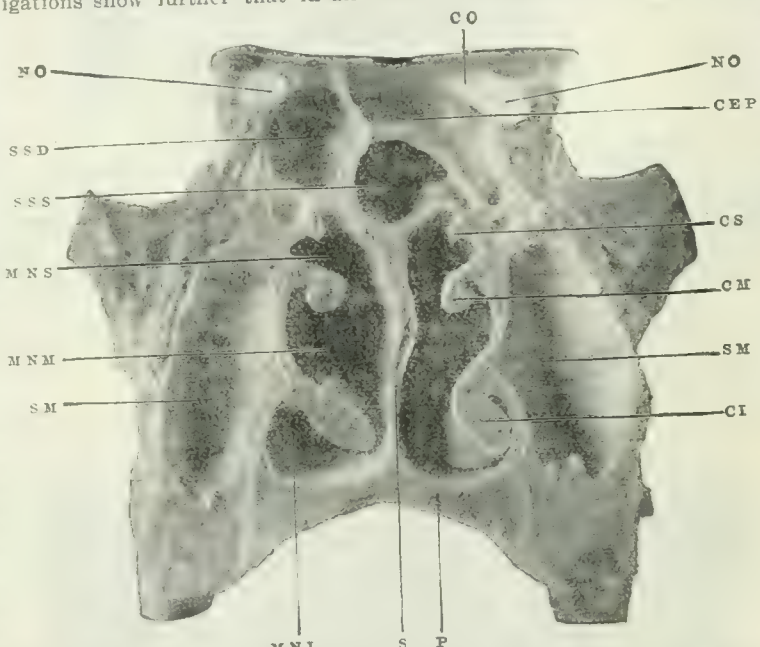


Fig. 3.—Natural size; NO, nervus opticus; CO, canalis opticus; CEP, most posterior cribriform bone cell; SSD, right wedge bone cavity; SSS, left wedge bone cavity; MNS, upper nasal passage; CS, upper nasal muscle; CM, middle nasal muscle; MNM, middle nasal passage; SM, jaw cavity; MNI, lower nasal passage; CI, lower muscle; S, nasal septum; P, hard palate.

Berger and Tyrmann turned their attention to the connexion between diseases of the sphenoid cavity and blindness. They collected 23 cases in the literature up to 1886, of which 6 were caries, the rest new formations and recurrences; in 2 of the 6 cases other tumours were present. Since that date very little has been written in the textbooks of diseases of the eyes and nose as to diseases of the sphenoid cavity producing by its close relation with the optic nerves blindness and visual defects. Even Eversbusch's newest monograph does not by any means exhaust this interesting and important subject. To ophthalmologists, many causes are known which produce optic neuritis or atrophy but have nothing to do with the adjoining cavities. Similarly intracranial changes are known to us which also are far removed from the adjoining cavities. Berger and Tyrmann notice in connexion with their statistics, already mentioned, of nasal blindness "that no defect in vision has been shown in a number of cases during the whole course of the affection of the sphenoid cavities in caries or in the growth of a tumour until the death of the patient." Mendel examined Professor Hirschberg's material, and found "that almost half the cases of one-sided optic nerve inflammation are traceable to a nasal source in a wider sense." He remarks that one-sided choked disc is mostly due to an affection of the orbit, double-sided mostly to an intercranial cause. Similarly, Lapersonne insists on the characteristic of one-sided disease:

> Optic neuritis is rarely seen in inflammation of the frontal sinus, more often in inflammation of the maxillary or ethmoid, but it is produced, if at all, by inflammation of the sphenoidal sinus. A chief characteristic of neuritis due solely to sinus inflammation is that it is unilateral. Although strictly speaking both nerves may be affected in the optic canal by inflammation of both sphenoidal sinuses, a double oedematous neuritis ought rather to make one think of an intracranial process.

If we compare, in the first place, the *post-mortem* records it is seen that these are generally cases of tumour or injury in the region of the canal and optic nerve. The mechanical lesion is clear in all those cases in which tumours of the naso-pharynx, of the sphenoid cavity, of the sphenoid bone, of the ethmoid cell, or of the ethmoid bone extend to the neighbourhood of the optic nerve and affect the optic nerve, or through pressure cause functional disturbances and changes in circulation. Similarly the mechanism of the lesion is clear in those cases in which injury, fractures and fissures, damage the optic nerves in the region of the wedge-bone. At the same time, *post-mortem* examinations show that tumours in the region of the body of the sphenoid leave the sight nerves intact. In Reinhardt's case, of cancroid of the upper jaw, the bones of the base of the cranium were at the same time greatly thinned by caries, the sella turcica being most affected, and the body of the sphenoid bone was so softened that it could be cut with a knife. According to the *post-mortem* report the optic and olfactory nerves were normal. In Bering's and Wickerkiewicz's case the sarcoma according to Ponfick had originated from the body of the sphenoid, and the optic nerve, though involved in the tumour, was normal. The above-mentioned observation of Schmidt-Rimpler's and one of my own show at any rate that in cases of sarcoma of the sphenoid both optic nerves may remain intact.

Those *post-mortem* conditions must be mentioned on the strength of which Virchow, Manz, and Ponfick have attributed blindness and exophthalmos to a disturbance in the development of the basis cranii in the earliest stage of existence, to a premature ossification of the basis cranii, to hyperostosis, and to strangulation of the sight nerve in consequence of the irregular contraction of the foramen opticum. In Ponfick's case the purulent meningitis was caused by a purulent catarrh of the nose, for the nasal cavity was connected with the anterior cranium cavity by an abnormally wide opening.

We add the following cases of *post-mortem* examination discoveries regarding suppuration. In Duplay's case of right-sided exophthalmos and absolute blindness there was meningitis of the base, especially of the sella turcica, purulent phlebitis of most of the sinuses, several purulent

collections in the orbital connective tissue, and pus in the sphenoid cavities and in the right ethmoid cells. In Horner's case of blindness and right exophthalmos *post-mortem* examination showed caries of the base of the sphenoid and adjoining parts. In Pana's case blindness, exophthalmos, and orbital abscess were due to ostitis of the sphenoid bone. In Rouge's case, divergent strabismus and loss of sight in the left eye, there was found *post mortem* suppurating periostitis and empyema of the left sphenoid cavity. In Russell's case of decrease of visual acuity, ptosis of the upper lid, and immobility of the left eye there was found *post-mortem* intradural abscess of the middle cranium cavity, empyema of the posterior ethmoid cavities, thromboses of the cavernous and petrosal sinuses and of the left vena ophthalmica.

In Raymond's case of blindness and double exophthalmos there was found *post mortem* basal meningitis, purulent exudation compressing the chiasma, thromboses of the sinus cavernosus and venae ophthalmicae, caries, and perforation of the sphenoid. In Ortmann's case there was extradural abscess of the sella turcica, thrombosis of both cavernous sinuses, periostitis, and empyema of the sphenoid cavities. In Grünwald's case basal meningitis and suppuration of the sphenoid and jaw cavities were found. In Demarquay's case of marked depression and immobility of the eye, insensibility to light on the right, the *post-mortem* appearances were that the sinus cavernosus was bathed in pus, and the sphenoidal, ethmoid, and Highmore cavities were filled with pus. In Vossius's case empyema of the sphenoid cavity, and of the left ethmoid labyrinths, with caries of the sphenoid, thrombo-phlebitis of the upper vena ophthalmica, of the left vena angularis and facialis anterior, and suppurative pachymeningitis and leptomeningitis were present.

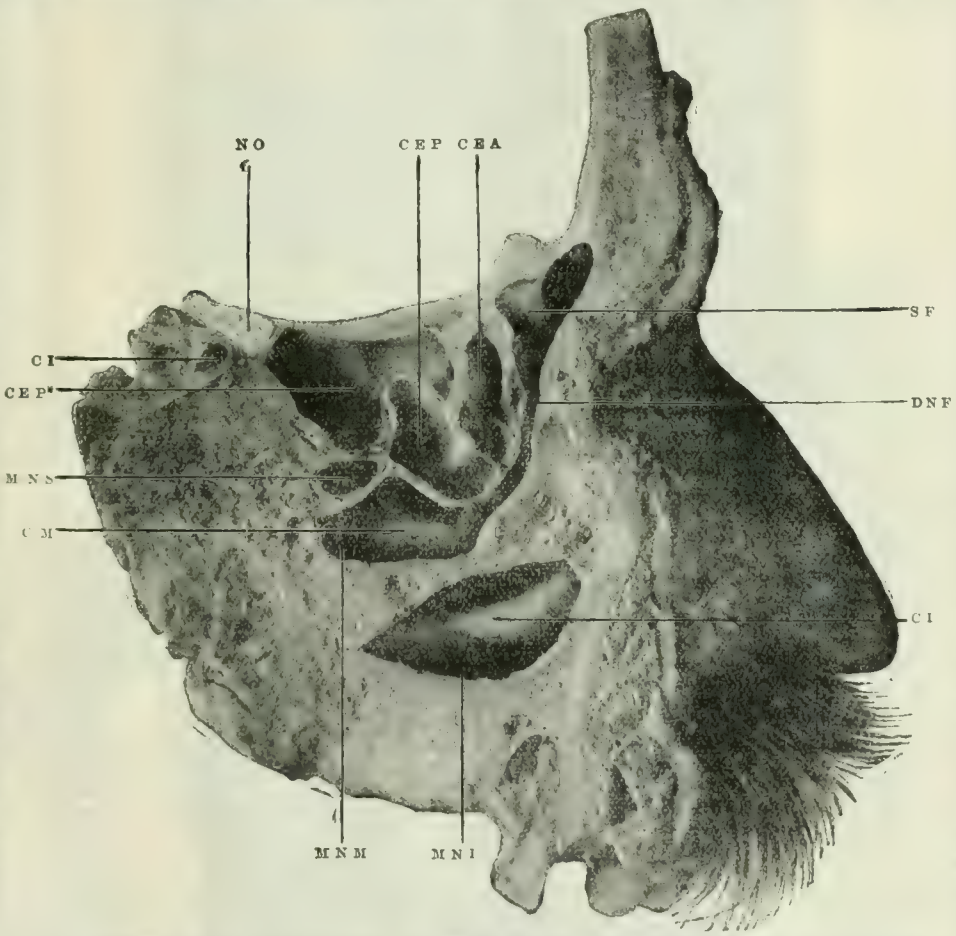


Fig. 4.—Natural size; NO, nervus opticus; CI, carotis interna; CEP*, most posterior cribriform bone cell; CEP, posterior cribriform bone cell; CEA, anterior cribriform bone cell; SF, sinus frontalis; DNF, ductus naso-frontalis; MNS, upper nasal passage; CM, middle muscle; MNM, middle nasal passage; MNI, lower nasal passage; CI, lower nasal muscle.

We must now refer to certain cases in which suppuration and destruction of the bone walls of the sphenoid cavity were described without disturbance of vision. Berger and Tyrmann mention a slow expulsion of certain parts of the sphenoid bone, without any disturbance of the sight, ending in meningitis. Baratoux describes a case in which a large part of the sphenoid was extruded through the nose without any consequent interference with the sight. Hajek saw in several cases considerable syphilitic affection of the anterior wall of the sphenoid bone cavity without any special symptoms. Flatau records 26 cases of empyema and caries of the sphenoid cavity, but mentions no interference with sight. Foucher describes the case of a girl of 15 who had necrosis of the turbinated bodies and sphenoid cavity. She underwent antisyphilitic treatment and a bony sequestrum was expelled; the girl died. Defective vision was not noticed. Hinkel treated 20 cases of sphenoidal empyema without being able to observe any changes in the field of vision or disease of the eyes. Schmiegelow has reported several cases of sphenoidal affections, without change in the functions of the optic nerves. In cases of sphenoidal empyema which I have seen and treated, there was never the slightest interference with the sight.

We turn now to those cases in which interference with sight had been noticed in association with disease of the adjoining cavities. Coppez and Lor have recorded in a girl of 22 a one-sided optic neuritis which healed although the patient refused to allow any surgical interference with the chronic sphenoidal empyema from which she suffered. In Post's case of necrosis of the small wing of the sphenoid with exophthalmos and amaurosis after the extraction of the necrotic bone, the eye resumed its normal position but the amaurosis remained. Lapersonne observed three cases in which one-sided neuritis with choked disc existed in association with sphenoidal empyema. The treatment of the empyema had no influence on the unfavourable course of the optic lesion. Snellen observed two cases of optic atrophy caused by empyema of the sphenoid bone. In Coppez's case of slight extrusion of the eyeball and disturbance of vision, the left optic nerve was veiled, and there was suppuration of the sphenoid cavity; a sequestrum 1 cm. long was expelled; the patient recovered. In Lor's case of one-sided neuritis with sudden blindness, cure was brought about by treatment of chronic sphenoidal empyema. Mendel describes a case of one-sided retrobulbar neuritis, where striking improvement took place after opening the suppurating outer and middle ethmoidal cells. In the Bergmeister-Hajek case of one-sided chronic neuritis, with empyema of the ethmoidal labyrinth, recovery took place. In Fleiss's case of retrobulbar neuritis and right-sided sphenoid cavity empyema, treatment was successful. Similarly, in Hoffmann's case, treatment of empyema of the sphenoid cavity and ethmoid cells was very successful. In Halstead's case of empyema of the right jaw and ethmoid and sphenoid cavities, with amaurosis of the left eye, treatment was effective, as also in Sargent F. Snow's case. A case of double-sided affection of the optic nerves in empyema of the ethmoidal cells is mentioned by Mendel, without a reference, as being recorded in English literature. Two cases of double-sided blindness which were brought before the Hungarian Society of Physicians were connected with sphenoidal empyema by Pollatschek and Polyak. Mendel

notices that cases of so-called retrobulbar neuritis may recover either spontaneously or under simple treatment. Besides this, literature affords cases of amaurosis in caries of an upper-jaw tooth in Manzigi's case, where the eye was always amaurotic if remains of food were present in the carious tooth cavity. Further, in Thamhayn's case, after inhaling ipecacuanha powder into the nostrils, the blindness disappeared in a few days. In Winkler's case retrobulbar neuritis disappeared after removal of hypertrophy of the lower turbinated body. In a case of Königshöfer the neuritis optica ceased after the removal of the adenoid vegetations. Bryan noticed in a case of chronic empyema of the frontal ethmoid maxillary a restriction of the field of vision for red and green. Castex mentions a case of double-sided hemianopsia, the result of ozaena, and Hirschmann of bitemporal hemianopsia in affection of the sphenoid.

In Baptie's case, after injecting a nasal polypus with carbolic acid, iritis and optic atrophy ensued. Finally, Hirschberg noticed, in one case, empyema of the right jaw, ethmoid and sphenoid cavities after the operation of opening the above-mentioned cavities. I have mentioned every case which throws light on this subject to-day, to prepare the way for the discussion of the questions at issue. Let us study more closely the four questions I have stated and put to ophthalmologists. A causal connexion and cure after treatment are asserted in the cases mentioned by Lor, Coppez, Bergmeister-Hajek, Fleiss, Hoffmann, Mendel, Halstead, and Sargent F. Snow. Causal connexion, confirmed by necropsy, are established in the cases of Duplay, Horner, Panas, Rouge, Russel, Raymond, Ottmann, Demarquay, and Vossius. One-sided disease is brought in to prominence as evidence of causal connexion by Lapersonne and Mendel; such one-sided diseases are recorded by Lapersonne, Snellen, Mendel, Post, Duplay, Horner, Panas, Rouge, Russel, Demarquay, Vossius, Leber, Eversbusch, Coppez, Lor, Bergmeister-Hajek, Fleiss, and Hoffmann. Double-sided blindness, existing for many years with empyema, or caries of the sphenoid bone cavity without causal connexion, is not mentioned; a causal connexion is accepted by Pollatschek and Polyak. If we consider those cases in which the theory of causal connexion is strengthened by the occurrence of recovery after treatment, we may, so long as there is no reason to the contrary, make the following remarks: Retrobulbar neuritis, as we have seen, may be the result of suppuration of adjoining cavities; it may also arise from other causes; may be cured spontaneously or by internal treatment, and just as it may be absent in cases of empyema and caries of the sphenoid cavity, there may also at the same time be present for other reasons a retrobulbar neuritis, which may recover spontaneously, as, for example, in the cases of Coppez and Lor; or, as has been shown in other cases, may be impossible to cure by treatment under these circumstances. Special attention should be given to those cases in which the removal of dental caries, hypertrophic rhinitis, or adenoid vegetation, also the ceasing of the use of ipecacuanha powder, is followed by recovery. We must contrast with these several facts which cannot be accounted for. The above-mentioned results of *post-mortem* examinations confirm the existence of suppuration of adjoining cavities, basal meningitis extradural and intradural abscess, caries, perforation of the sphenoid bone, thrombosis of the sinus cavernosus and vena ophthalmia. *Post-mortem* examinations are defective, microscopic investigations of the optic nerve are wanting as to all minute particulars of the relation of the optic nerve to the diseased or healthy adjoining cavities, and, finally, of the examination of the venae ethmoidales, of the vena centralis retinae, and of the veins of the diseased adjoining cavities. Were the characteristics of one-sided diseases understood, could they be discussed, an explanation of the anatomical relationships above described might also be given. The crossed amaurosis in Halstead and Sargent F. Snow's cases, as also the different causes of retrobulbar neuritis, do not seem to favour a general acceptance of the theory involved. Cases of double-sided blindness of many years' standing, with empyema, or caries of the sphenoid cavity, without causal connexion, are not mentioned in literature; the demonstration of a causal connexion in the cases given by Pollatschek and Polyak is doubtful. In Pollatschek's case the patient, aged 30, suffered for fifteen years from headache; for four years pieces of bone had come out of the nose (during antisyphilitic treatment the bridge of the nose fell in); for three years there had been defective sight, and finally blindness. The condition of the eyes reported was posterior synechia in the right eye, corneal maculae, and optic nerve atrophy, and neuritis of both eyes. The nose showed atrophy of the mucous membrane, defect of the septum, empyema, and

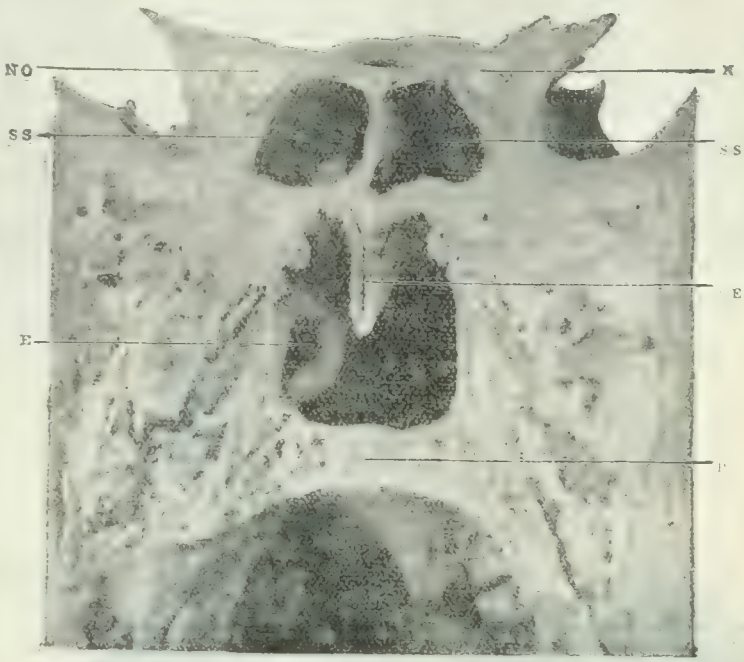


Fig. 5.—Natural size; NO, nervus opticus; SS, wedge-bone cavity; SE, nasal septum; E, Eustachian tubes; P, palate.

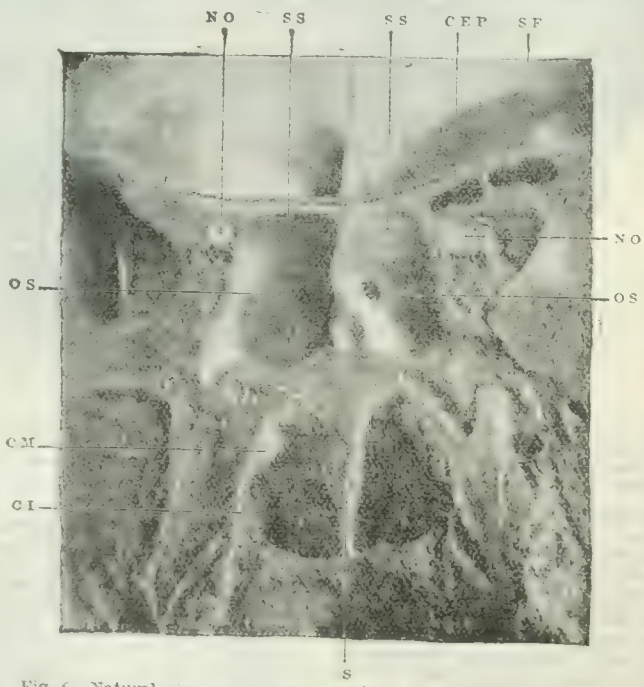


Fig. 6.—Natural size; NO, nervus opticus; SS, wedge-bone cavity; CEP, most posterior cribriform bone cell; SF, brow cavity; OS, opening of the wedge-bone cavity; CM, middle muscle; CI, lower nasal muscle; S, septum.

caries of the sphenoid cavity. In discussing this case we have emphasized the fact that there is no positive basis for the supposition of a causal connexion between double-sided blindness and caries of the sphenoid cavity. The headaches, which lasted fifteen years, the necroses of the nasal septum, the fallen-in nose, three years' blindness, and softness of the anterior wall of the wedge-bone cavity, point to syphilitic changes in the region of the optic nerve, even if the observer finds no evidence for syphilis. In Polyak's case there was latent multiple suppuration of the adjoining cavities, with formation of bone-bulla exophthalmos and atrophy of both optic nerves, and loss of sight for four years on the right, and for three years on the left side. His supposition "that the pus in the bone cells found its way into the adjoining cavity, first on the left, and then on the right side, and that, nowhere finding an outlet, it led to the dilatation of these cavities and to the pressure symptoms, was strengthened at the operation, at which a great quantity of matter (150 to 200 c.cm.) was withdrawn; further, it must also be taken into consideration that in a few minutes all the matter from the adjoining cavities was removed, this being only possible if the adjoining cavities formed a large communicating cavity. That the blindness which developed later in the left eye, owing to the pressure on the optic nerve in the optic canal, in the same way as in the right, gives, indeed, no further proof." The demonstration of a causal connexion was doubtful; the facts and investigations allow grounds for hypothesis only. Goldzicher doubts the nasal origin of double-sided blindness, and considers it probable that the processes are independent the one of the other. The patient has, so to speak, a tower skull with the characteristic exophthalmos. I have mentioned *post-mortem* examinations which throw light on the connexion of tower skull with exophthalmos and blindness.

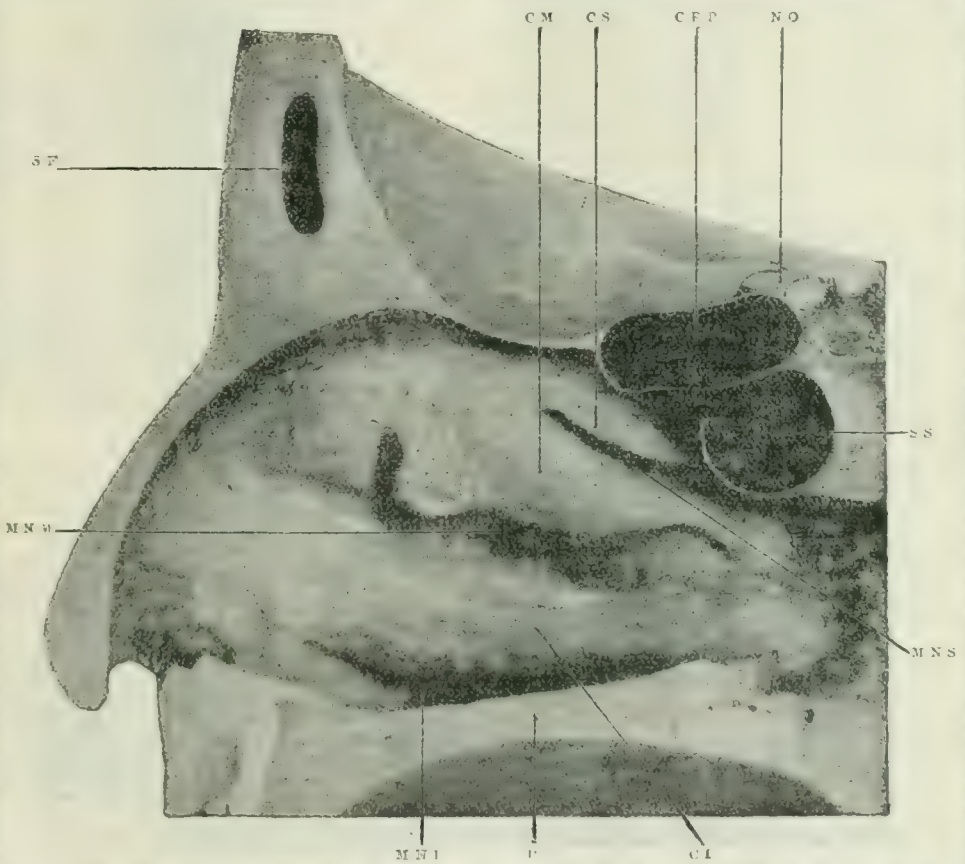


Fig. 7.—Natural size; right side—C E P, right posterior cribriform bone cell; N O, nervus opticus; S S, wedge-bone cavity; S F, brow cavity; C S, upper muscle; M N S, upper nasal passages; C M, middle nasal muscle; M N M, middle nasal passage; C I, lower nasal muscle; P, hard palate; M N I, lower nasal passage.

Goldzicher demonstrated 2 cases in which I found nothing beyond moderate adenoid vegetations, only a characteristic anosmia which, like the blindness, found its explanation in hyperostosis. In Ponfick's case, added to these premature interferences in development, were purulent nasal catarrh and suppurative meningitis. Empyema of the adjoining cavities may in the course of years be associated with such cases quite independently through exophthalmos caused by hyperostosis and blindness, and should by no means be made answerable for the original blindness arising from other causes. Diseases may exist side by side without having any real causal connexion.

We will now deal with the etiological considerations which raise the following questions. The mechanical injurious action of tumours and trauma we have already touched upon. Among etiological factors are infection, spread of inflammation, congenital bone defects, and circulatory disturbances. Our knowledge with regard to the network of veins and lymph passages of these cavities cannot yet be considered perfect; they play an important part in the spread of inflammation, but await further investigation. I have discovered and described one semicanal leading to the ethmoidal cells, the semicanalis ethmoidealis, which anomaly I consider important in the spread of inflammation as also in the origin of direct thrombo-phlebitis and circulatory defect. This semicanal, of varying length, extends from the foramen ethmoideale anterius to the anterior canal cavity on the wall of the frontal cavity or the cell of the orbit—namely, the ethmoid bone cell situated in the roof of the orbit. The arteria ethmoidealis anterior runs in this semicanal with the accompanying veins and the nervus ethmoidealis anterior. These structures, covered by the mucous membrane, lie free in the cavities mentioned; the mucous membrane is connected also with the orbital periosteum and the dura mater. The semicanalis ethmoidealis was noticed three times in the frontal cavity; the length varied between 5 and 8 mm. In the first orbital cell the semicanalis ethmoidealis appeared nine times; the length varied from 7 to 10 mm. In the second orbital cell the canalis ethmoidealis appeared four times, length from 4 to 10 mm. In 2 cases with congenital fissure of the lamina papyracea a semicanalis ethmoidealis 8 to 9 mm. long was to be seen in the orbit cells. The disease may proceed along this semicanal in both directions, cranial and orbital.

Further, owing to the connexion of the ethmoidal veins with the dural venous plexus and with the plexus ophthalmicus, circulatory defect and thrombo-phlebitis may be caused by the ethmoidal veins being covered by diseased mucous membrane, and may spread in the directions indicated. Those vascular cavities with their vascular furrows leading to the orbit, which I have often found on the anterior side wall of the sphenoid cavity, may also play a part, not only because these vascular furrows may show physiological fissures and consequently favour the spread of inflammation or the direct breaking through, but in these ways circulatory defects may arise. These vascular cavities and furrows connect the network of veins of the sphenoid cavity with the sinus cavernosus and with the plexus ophthalmicus.

The above-mentioned bone defects of the sphenoid cavity walls and in the canalis opticus are of importance in the spread of disease: they favour intracranial complications.

Importance attaches to this condition in that it is connected with the different conditions of the bone walls. I have shown that if the canalis opticus is formed by the posterior cribriform bone cells, the septum is always extremely thin—thin as paper—while the wall of the sphenoid cavity at the summit of the foramen opticum, as we have seen, may be of different thicknesses. That this fact plays a part in the spread of the process is not to be doubted. *Post-mortem* examinations have shown in particular cases perforation of the sphenoid cavity; more minute details are wanting, and it cannot be ascertained in spite of many experiments whether meningitis is directly infectious, whether erosion of the above-mentioned thin walls or the fissures and veins and vascular cavities play any part in the spread of disease. It is important to note that meningitis and thrombosis occur mostly in cases of one-sided affection, less frequently in double-sided. This fact throws doubt on double-sided cases of disease of the adjoining cavities and double-sided blindness, in which, on account of a hypothetical belief of causal connexion, the occurrence of intracranial meningeal complications (of many years' duration) in suppuration of adjoining cavities is constantly noticed and the already-mentioned doubt of causal connexion is justified.

We emphasize the fact that microscopic investigation in the future, in order to be of value, must in every case establish the fact of the connexion of the sphenoid cavities and the posterior ethmoid cells with the optic canal and nerve, the possibility of the spread of infection, interference with circulation in the network of veins, the state of the walls of the adjoining cavities, and the existence of the above-mentioned fissures and the semicanalis ethmoidealis. Histological investigation of the optic nerve should evidently not be omitted.

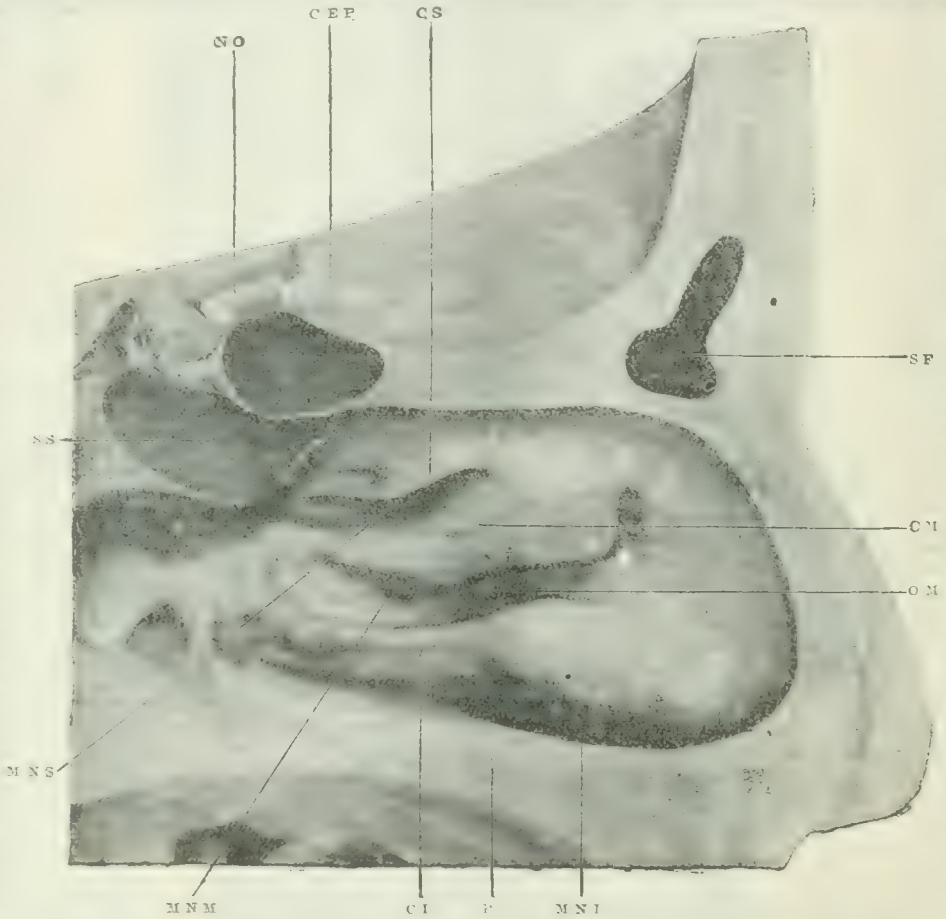


Fig. 8.—Natural size: left side—C E P, most posterior right cribriform bone cell; N O, nervus opticus; S S, wedge-bone cavity; C S, upper nasal muscle; S F, brow cavity; M N S, upper nasal passage; C M, middle nasal muscle; M N M, middle nasal passage; O M, ostium maxillare accessorium; C I, lower nasal muscle; M N I, lower nasal passage; P, hard palate.

The facts we have brought forward show that our knowledge of optic nerve lesions, and especially of the canalicular disease of the optic nerve of nasal origin, presents many lacunae; rhinological and ophthalmological research must go hand in hand in order to obtain a mere definite solution of several important questions now open. My rhinological standpoint in the question raised is the following: On the basis of my investigations the mechanical conception respecting the connexion with the optic nerve and the conclusion drawn from it to explain visual defects must be corrected, and the causal connexion of disease of the posterior ethmoid cavity must be cleared up. At the same time defects in empyema, caries, and necroses of the sphenoid cavity, the described connexion of the posterior cribriform-bone cell to the nervus opticus explain the frequent negative cases regarding sight. In those cases in which a close relationship exists between the sphenoid cavity and the optic nerve, the demonstrated varying thickness of the wedge-bone cavity wall at the summit of the foramen opticum may play a part in stopping the spread of disease. In those cases where the posterior ethmoid cell forms the wall of the optic canal, the extremely fine septum may favour the propagation of disease. The fissures described in the optic canal, and in the anterior side wall of the sphenoid cavity, may be the direct cause of perineuritis optica and intracranial meningeal complications. Opthalmologists, who know best the most various causes of optic neuritis and atrophy, may be able to state whether one-sided sight disturbance in disease of the sphenoid cavity can be looked upon as characteristic, as Lapersonne and Mendel have done. From our investigations we can only give the following explanation of one-sided sight disturbance in causal connexion with suppuration of the adjoining cavities. In the first place, it must be emphasized that if one-sided sight disturbance points to suppuration of adjoining cavities, causal connexion should not exclusively be attributed to the sphenoid cavity, but the posterior ethmoid cells must also be taken into account and subjected to complete examination. A close connexion on both sides between the optic nerve and either the sphenoid or the ethmoid cavities is infrequent. In most instances we find either on one side the sphenoid cavity and on the other the posterior ethmoid cells in relation with the optic canal, or this relation is present only on one side with either the sphenoid or the posterior ethmoid cavity. These relationships may in the frequent one-side sight defects be taken into consideration in connexion with disease of the sphenoid or ethmoid cavities. In the recorded cases of crossed amaurosis Halstead has shown a breaking through into the other sphenoid cavity and an old-standing neuritis; to explain this striking occurrence Hepburne suggests that there was first thrombosis of the vena centralis retinae; in the analogous cases of Sargent F. Snow amaurosis might have been due to this. Both hypotheses are not plausible. That crossed amaurosis may thus arise appears possible, since we have shown that an extended right posterior ethmoid cell may come in contact with both optic nerves; in the cases mentioned, in which empyema of the ethmoidal cells also existed, such an anomaly might also be possible if the posterior ethmoid cell on the other side had a semicanalis ethmoidealis; in that case crossed amaurosis through direct interference with circulation might easily be

accounted for. I will call attention to the existence of semicanalis ethmoidealis with ethmoidal veins in the frontal cavity and in ethmoidal cells as already described by me, as well as to those vascular cavities and furrows with emissaries into the anterior side wall of the sphenoid cavity, which are calculated to bring about direct disturbances in circulation, thrombosis in cases of empyema of the corresponding adjoining cavities. If the thrombosis of the vena centralis is observed on other grounds, it may arise from suppuration of the posterior adjoining cavities on the described foundation. In general double-sided sight disturbances are shown to be intracranial, even if the possibility of double-sided disease of the sphenoid cavity is admitted. Whilst we realize that double-sided sight defect may for the most part be intracranial, we notice that the optic nerve may have a close relation, not only with the sphenoid cavity, but also with the posterior cell, and accordingly in double-sided sight disturbance of nasal origin the etiological factor may be not only disease of both sides of the sphenoid cavities, but also disease of both sides of the ethmoid cells. Our observations admit also of the possibility that in disease of the posterior ethmoid cell of one side there may also be double-sided sight disturbance, since the above-mentioned large posterior ethmoid cell may be separated by a common wall, thin as paper, from the chiasma, and from both optic nerves, both within and without the cranium. I have always spoken of the disease of the posterior ethmoid cell on account of its close connexion with the optic nerve. It is, however, known, and taken as a matter of course, that the posterior ethmoid cell becomes diseased with the ethmoid labyrinth, or with the sphenoid cavity.

I have put together, on the basis of my investigations, all the material at my disposal to explain the present-day position of this question; to point to this question waiting for solution; to turn the general attention to this interesting and important subject. Whilst I commend these questions to the special attention of the ophthalmologists, I shall hope that the joint rhinological and ophthalmological study of this in many respects still unknown subject will lead to successful enlightenment.

REFERENCE.

[2] The Relationship of the Posterior Ethmoid Cells to the Optic Nerves, *Archiv. f. Laryng.*, Bd. 14, 15.

DISCUSSION ON THE ETIOLOGY, TREATMENT, AND PROGNOSIS OF INNOCENT LARYNGEAL GROWTHS.

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CONSIDERATION will be limited to non-malignant growths found in the interior of the larynx, and chiefly to those points in relation to them which are of practical importance with regard to treatment. The etiology is a question of practical weight, and it is to be regretted that it is often veiled in obscurity. The removal of the cause is an essential step in treatment in medicine, but to a less extent in surgery. In the particular branch of laryngology under discussion it is obviously of very secondary importance as compared with the operative removal or destruction of the growth, but in regard to prophylaxis and the prevention of recurrence after extirpation its consideration is indispensable.

Many growths in the larynx are so closely related to inflammatory products that they cannot be distinguished from them, and, indeed, are identical with them in their anatomical structure. Their diversity depends mainly upon which elements in the composite structure of the laryngeal mucous membrane are chiefly affected. Ruault, in his contribution at the recent meeting of the French Society of Otology and Laryngology, concludes with the statement that "the group of benign tumours of the laryngeal mucous membrane, clinically designated under the name of 'laryngeal polypi,' is purely artificial, and ought to be, in the present state of our knowledge, included with chronic laryngitis."[1] Chiari is quoted by Schech[2] as saying that genuine fibromata are rare, and that whatare described as such are almost always inflammatory products with hypertrophied epithelium and connective tissue, in which are found cavernous blood spaces, serous infiltrations, and haemorrhage. Chiari's own words are: "They ought not to be looked upon as fibromata, but only as circumscribed hypertrophies of all the superficial layers of the vocal cord—therefore polypi as understood by Eppinger. Their development from chronic inflammatory thickenings and swellings of the vocal cords can be proved by the examination of serial sections of two polypi of the vocal cord, as also by clinical observation. Each factor in the growth of the polypus is mainly a congestion which expresses itself partly in dilatation of vessels, partly in the formation of large connective-tissue spaces, partly in haemorrhages, and partly in serous effusion. Cavernous blood spaces, serous infiltrations, and haemorrhages with their sequences are among the conditions most frequently found, while the connective tissue generally, on the other hand, diminishes. Finally, we frequently find the hyaline substance already described by Eppinger, which, according to the results of staining, is very probably derived from fibrin. I might further remark that probably most of the other smaller growths on the vocal cords have the same structure, so that one ought correctly to describe them as 'vocal cord hypertrophies' and not 'fibromata.'"[3]

Among the commonest growths in the larynx we find papillomata (pachydermia verrucosa) essentially identical with the pachydermia found in its most typical form on the vocal processes and in the interarytenoid space. Such growths as fibromata, fibro-papillomata, fibro-adenomata, cysts, and angiomata are also explicable as the results of inflammatory conditions. In many cases the sequence of events from an acute to a chronic inflammation, with such subsequent hyperplasia as to constitute a tumour, is evident; in other cases it is most obscure.

Those parts of the vocal cords which undergo the greatest amount of mutual concussion and attrition, such as the junction of the anterior and middle thirds (the most frequent nodal point during phonation), the vocal processes, and the interarytenoid space, would seem to be most liable to chronic inflammatory and neoplastic changes. In the interarytenoid space the result is a diffuse thickening (pachydermia) at the vocal process—the typical pachydermic nodules. At the junction of the anterior and middle thirds of the cords there may be a "singer's nodule," consisting of a simple epithelial thickening (a miniature corn), a smaller or larger papilloma, generally of soft consistence, or a sessile or pendulous oedematous fibroma, which may exceptionally contain glandular structure. It is a principle recognized by dermatologists that continuous pressure gives rise to loss of tissue or ulceration, but intermittent pressure to hypertrophy. This principle, applied to the larynx, would account for the development of outgrowths at the "singer's nodule" point, also at the vocal processes.

Growths at the anterior commissure may depend on the same causes, but it seems likely that they are sometimes of developmental origin, and are really embryonic remains allied to those congenital diaphragms sometimes occupying more or less of the space between the anterior parts of the cords. In the description of a case showing such a diaphragm, exhibited before the Laryngological Society of London, Semon drew attention to this possibility in relation to the development of the larynx. He briefly summarized the description given by Roth[4] as follows: "At the commencement of fetal development the two halves of the larynx were glued together by epithelial masses, which gradually cleared up from behind. In normal cases the whole epithelial mass disappeared, whilst in cases of arrested development an adhesion remained, more or less developed, in the anterior part of the glottis, and thickest in the neighbourhood of and below the anterior commissure."[5]

The name "papilloma" may be objected to in view of the fact that such a growth has very seldom anything to do with a papilla. Eppinger[6] includes them along with what are generally termed "polypi," under the heading of "fibromata"; applying to the former the term "papillary fibroma" and to the latter that of "fibroma tuberosum," "fibroma," or simply "polypus." Wyatt Wingrave in 34 cases of laryngeal neoplasms found that 14 could be described as "squamous papillomata," 13 as "fibro-papillomata," 6 as "angio-fibromata," and 1 as a "cyst." Massei, in his analysis of 500 cases, found 183 papillomata and 156 fibromata.

The causes of new growths in the larynx are in general those of irritation of the larynx; among these are wrong use of the voice and irritating vapours or dusty atmosphere (for example, the blackboard chalk in the case of teachers. Vide

[1] *Bulletins et Mémoires de Soc. Franc. d'Otol. et Lar.*, tome xx, part i, p. 66.
[2] *Krankh. des Kehlkopf.*, Leipzig, 1903, p. 221.
[3] *Archiv für Lar.*, 1894, vol. ii, p. 13, 1894.
[4] *Heymann's Handbook*, vol. i, p. 120.
[5] *Proc. Lond. Lar. Soc.*, vol. vii, p. 70.
[6] *Klebs's Handbuch der Path.-Anat.*, Bd. ii, p. 183.

Case 1). Excess in tobacco smoke (especially by "inhalation") may also be quoted. Nasal obstruction leading to mouth-breathing or purulent nasal discharges inhaled into the larynx are among the most potent contributories. It is most probable that syphilis may induce such chronic inflammatory changes as predispose to the development of new growths (Cases II and X), but it is well known that the irritation of the microbes of pulmonary phthisis—the tubercle bacilli as well as the accompanying micrococci—is capable of exciting the growth of papillomata. Gouguenheim described several illustrative cases at the Paris meeting of the International Medical Congress, and I brought before the British Laryngological Association a very well-marked *post-mortem* specimen of such a condition, supplied to me by the late Mr. Walsham, with whom I had previously seen the case during life.[1]

A French writer on medicine has stated that in almost every consumptive who wears a moustache there will be found a wart in the neighbourhood of the first knuckle of the left hand, due to infection during the act of wiping the moustache. It is probable that laryngeal papillomata, when multiple, are due to microbic infection, but the bacteria found in them are usually so superficial that their presence there may be merely accidental, and, so far as our present knowledge goes, their etiological influence is unproved.

The following is a typical case of singers' nodules apparently due to overuse of the voice and the inhalation of atmosphere laden with chalk and other dust.

Case I.—Miss T., aged 31, School Board teacher, first seen on account of hoarseness, which was worse after using the voice, and better after rest of the voice. She was unable to teach the singing, although she had previously done so. There was found a small nodule at the seat of election on each vocal cord. She was advised complete rest from both speaking and singing, with the exception of Curtis's vocal exercises, which consisted mainly in the utterance of the sound "pmaw" in the "thin" register or the "head voice." She was instructed, however, to omit the exercises rather than to persist with them if the sounds failed to issue with ease. Within a few weeks she was able to return to her duties, and continued to teach without much difficulty. She now uses a wet sponge instead of a dry duster for the blackboard, and practises a better method of breathing and voice production.

In the following case there was probably a predisposition resulting from old specific infection with subsequent abuse of the voice.

Case II.—Mr. —, aged 45, complained of hoarseness of four months' duration and gradual in development. He had lived rather freely as regards food and alcohol, and had used his voice to excess in public speaking and also as an amateur "entertainer." There was a history of former specific infection. The fauces and pharynx were intensely congested, and the irritability of the parts was such that laryngoscopy was effected only with the greatest difficulty. A small papillated nodule was found on the edge of the left vocal cord at the junction of the anterior and middle thirds. He was ordered complete rest for the voice, the inhalation of benzoin and the internal administration of iodide of potassium. Six weeks later there was a slight diminution in the growth, and the irritability of the pharynx was sufficiently reduced to permit of the introduction of the writer's "safety" forceps and the complete removal of the growth. A month later there was no regrowth and the voice was quite satisfactory.

The prognosis of innocent laryngeal growths is dependent mainly upon their accessibility for removal, and the possibility of avoidance of the predisposing and exciting causes. If not removed, the tendency is to increase of growth leading to fatal obstruction to respiration, all the more rapid in supraglottic or intraglottic growths, also to continued and increased impairment of voice, more rapid in intraglottic or infraglottic growths (in the latter case, still more if the growth is sufficiently mobile to be driven up between the cords during expiration). Spontaneous disappearance is possible in the case of papillomata, but cannot be counted upon; in the same way a few cases have been reported in which the pedicle of an intralaryngeal polypus has given way and the growth has been coughed out.

After operation recurrence is probable unless the removal is complete. The writer's experience would lead him to the view that single pediculated growths at the anterior commissure are unlikely to recur, whereas sessile ones at the junction of the anterior and middle thirds of the vocal cord are very likely to do so, as also are multiple papillomata.

The question of malignant transformation of benign growths cannot be left unconsidered. Practically it only arises in connexion with papillomata which in exposed parts of the body have a tendency, under repeated or continued irritation, to develop into epitheliomata. There is no reason for immunity on the part of the larynx, but the results of Semon's collective investigation seem convincing as to its extreme rarity. Moreover, the evidence that while it occurred in 1 in 211 of the cases on which no operation was performed, and in only 1 in 249 of those operated on, allows a margin in favour of operation. This is a complete answer to those who have been inclined to attribute to the traumatism effected by intralaryngeal operation a tendency to bring about malignant changes in innocent laryngeal growths. In the few cases related by Fauvel, in which this change appeared to have taken place, the removal of the growth had been followed by long-continued cauterization with nitrate of silver.

[1] *Trans. B. L. A.*, vol. i, p. 47.

Treatment is not necessarily always operative. The avoidance of exciting and predisposing causes—for example, complete silence or limitation of voice to a whisper for several months—is sometimes sufficient in cases of very small nodules due to overuse or misuse of the voice. Coughing must be absolutely prohibited or prevented. Avoidance of smoking and smoky or dusty atmosphere, moderation or abstinence in regard to alcohol, and other causes of gastro-hepatic disturbance, are also valuable prophylactic and therapeutic factors. The correction of errors in voice-production is of vital importance. The writer is convinced of the beneficial effect of the vocal exercises devised by Holbrook Curtis and of a rational method of respiration in the use of the voice. The occasional application of astringents may contribute, but the all-important factor is complete rest for the voice.

The following cases illustrate the beneficial therapeutic effect of these non-operative methods:

Case III, aged 67, was referred to me in June, 1902, by Dr. Gage-Brown on account of hoarseness which had gradually developed during the previous month; there was a distinct papillary outgrowth on the middle of the edge of the right vocal cord: there had been a slight huskiness of the voice of a year's duration, starting with an attack of pneumonia, but the condition only became very marked during the previous month, after a cold induced by a chill after golfing. An astringent spray was employed, but the patient, who used his voice to a very considerable extent as chairman and director of companies, agreed to maintain silence as much as possible, and at all events not to speak above a whisper. In a month's time the papilloma had practically disappeared, and when he was seen nearly a year later there was no sign of regrowth.

It need hardly be said that in a case like the above the exclusion of early malignant disease from the diagnosis was made with a sense of great responsibility. The possibility, however remote, of its being present rendered it extremely undesirable that any instrumental or caustic treatment should be practised.

Case IV.—Miss J. W., aged 27, seen in March, 1897, on account of hoarseness and loss of control of voice, which had been extremely marked for four months. She was in the habit of hunting, shouting, bicycling, singing, and giving imitations of various animals for the entertainment of her tenants and poorer neighbours. For three or four years she had been unable to produce a good singing voice: she had well marked singers' nodules at the usual spot, and an elevation on the right vocal process. She was improved by "pmawing" on the thin register from C^4 down to C^1. One and two per cent. solutions of salicylic acid in absolute alcohol were applied on two occasions, and she was ordered to use a globe nebulizer, but the essential element in the treatment was complete rest of the voice. Being a lady of considerable force of character, she carried out these instructions most literally, with the result that when she returned six weeks later the right cord was absolutely normal, and the nodule on the left one was hardly perceptible.

In other growths removal is the only treatment, and it should be carried out *per vias naturales*. The form of instrument employed varies with the special experience of the operator.

The following practical hints, founded on the writer's practice, may meet with the approval of those who, like him, are accustomed to Morell Mackenzie's form of handle, and the forceps referred to are modifications of those with which that accomplished operator did much of his work:

Pendulous growths at the anterior commissure call for the cold snare, and, if it fails, Powell's or Lack's forceps with anteflexed tips. Similar growths on the edge of the cord may be removed with the snare or the writer's safety forceps (Fig. 1). For sessile growths on the edge of the cord the latter instrument is pre-eminently adapted.

A general surgeon who was placed at somewhat short notice in charge of the throat department of an important hospital soon after the introduction of this instrument, wrote to express his gratification at having, even without any considerable amount of experience in laryngeal operations, removed a growth from the vocal cord by means of this forceps at the first attempt. Dr. Poyet, of Paris, also by its means removed two singers' nodules and a fibroma without even the applica-

tion of cocaine. The writer exhibited before the London Laryngological Society in June, 1898, a patient with a small fibroma on the right vocal cord, and in whom the epiglottis was so extremely pendulous that it was only with the greatest difficulty that the cords could be seen, and the manipulations of the forceps in the larynx could only be practised *à l'aveugle:* he succeeded, however, in removing the growth in its entirety at two sittings. He considers that it would have been almost

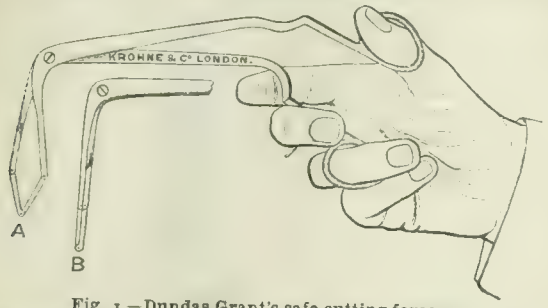


Fig. 1.—Dundas Grant's safe-cutting forceps.

impossible to effect this with an unguarded instrument. Dr. Herbert Tilley at the same meeting described an almost identical case in which he used successfully the writer's forceps.

For growths in the posterior commissure Wolfenden's or Lake's forceps, and for those on the upper surface of the cord Whistler's (Fig. 2) are very useful.

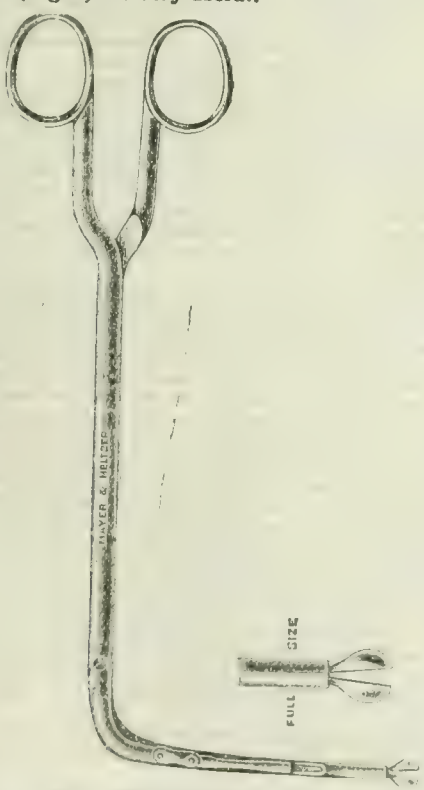


Fig. 2.—Whistler's laryngeal forceps.

The snare commends itself strongly on account of its safety, and some who have confined themselves almost entirely to it have achieved remarkable results; but, as the following case shows, its usefulness is limited even in the hands of one who was exceptionally expert in its manipulation.

Case v.—Laura W., aged 8, had for four months suffered from loss of voice and attacks of dyspnœa, due to the presence of several papillomata on both vocal cords, the laryngeal surface of the epiglottis, and posterior part of the left ventricular band. Numerous attempts were made to remove the growths by the snare, and she was handed over to me in order that I should remove them by thyrotomy; I was able, however, to effect their removal by degrees by means of Mackenzie's forceps. The treatment occupied a good many weeks, but the clearance was complete and recurrence did not afterwards take place.[8]

[8] *Trans. Hunt. Soc.*, 1890, p. 65.

This case was treated before the introduction of cocaine, and presented greater difficulties on that account than it would at the present day.

Krause's handle is much used abroad, and his is the best-known tube forceps. Various double curettes and other blades can be adapted to it. The advantages of these blades combined with a handle acting like that of Morell Mackenzie's, are obtained by means of Watson Williams's recently-devised instrument. A cutting punch forceps with blades adapted for the four cardinal points has been invented by Juraez, and the writer has found it invaluable for the removal of portions of growths for microscopical examination. Professor Rosenberg has devised a very delicate forceps for cutting in a vertical direction.

Cutting ring knives (Luc) and guillotines (Chappell) have been used by some, but British operators in general seem to pin their faith to some adaptation of Morell Mackenzie's instruments.

Anaesthesia by means of cocaine has rendered many of those operations easy which were formerly impossible. The best method seems to be the slow injection of about 5 minims of a 20 per cent. solution of hydrochloride of cocaine by means of a laryngeal syringe, so that the liquid is allowed to trickle over the edge of the epiglottis (Westerman). The combination of local anaesthesia (cocaine) and general anaesthesia (chloroform) introduced by Scanes Spicer has added still further to our possibilities. Lastly, the use of Mount-Bleyer's "epiglottis lifter" has greatly facilitated the writer's examinations and operations. Escat of Toulouse and Lambert Lack have devised somewhat similar instruments. Kirstein's method of autoscopy of the larynx is available for growths situated close to the upper orifice of the larynx.

The distance from the dorsum of the tongue to the vocal cord is sometimes very considerable, and beyond the reach of ordinary laryngeal forceps—say fully 4 in. In such a case the writer recently eradicated a papilloma of the size of a split pea by a few touches of the fine galvano-cautery point.

For the destruction of the stump various caustics have been employed, such as nitrate of silver, formalin, chromic, trichloracetic, or salicylic acid (the last-named being, in the writer's opinion, particularly valuable).

In the following case the final result would appear to be due to the use of salicylic acid:

Case vi.—Miss S., aged 24, referred to me by Dr. Anderson Smith on account of extreme hoarseness, was found to have the interior of the larynx almost entirely filled with a papillomatous mass, growing chiefly from the upper surface of the left vocal cord and the middle of the right vocal cord, and from the interior of the posterior part of the right aryepiglottic fold, probably arising from the posterior part of the vocal cord. The growth was removed to a considerable extent by means of forceps, then various applications were made to the stumps. Under a solution of perchloride of iron they seemed to be stationary, under tincture of thuja they became distinctly larger, and then it was decided to make applications of salicylic acid dissolved in spirit, increased by 1 per cent. daily from 1 to 6. The 4 per cent. seemed to have an astringent action, and speaking was easier; the 5 per cent. produced distinct whitening of the papillomata, the voice became clearer, the papilloma on the right cord much smaller, and that on the left one diminished. The remains of the papilloma on the left cord, in order to hasten matters, was removed with forceps. The voice became much clearer. An 8 per cent. solution produced an intensely white pultaceous appearance on the stumps, but caused no pain. This application was continued daily for about a fortnight, and the voice was better than the patient had ever known it. Six months later the voice was very distinct and fairly clear, and after a long interval no further recurrence could be made out.

Salicylic acid may be dissolved in sulpho-ricinate of soda to the extent of 10 per cent. for application to warty growths in the larynx.

The writer's recent experience has impressed him very favourably with the value and practicability of the fine galvano-caustic point. In using it it is essential that the extreme tip of the platinum point should become instantaneously red and as rapidly extinguished, for which purpose the contact maker should work very easily, and the tip of the point should be filed to the utmost degree of fineness. Each touch should be as light as possible, and carried out with the idea of doing "much less than seems necessary," as the effect is more extensive than would at first sight appear.

The following cases illustrate this:

Case vii.—The patient was a comparatively young vocalist and actress, whom I brought before the British Laryngological Association in July, 1894, having removed a small fibroma from the right vocal cord at the junction of the anterior and middle thirds. The removal by means of my own forceps was so complete that the patient was able to return to her avocation, and continued to act and occasionally to sing up to November, 1902, when she came again to me on account of a return of

her hoarseness. I found a fibroma on the same spot, but more sessile than the previous one, and I was able to effect only a partial removal by means of my forceps. I then lightly touched the spot with a fine galvano cautery point on three occasions, with the result that complete disappearance of the growth and perfect restoration of voice ensued. This has continued to the present day.

CASE VIII.—Mrs. W., aged 51 years, had been practically voiceless for three years. I found a sessile fibroma occupying nearly the whole of the anterior third of the vibratory portion of the left vocal cord and protruding to a considerable extent into the glottic slit. After removal of the main mass by means of my forceps I reduced the growth to dimensions somewhat less than indicated in the figure.

The following is Dr. V. H. Wyatt Wingrave's report as to microscopical structure:

The growth consisted of a medullary part composed of fibrous tissue containing small fusiform nuclei, with a few large, oval nucleated cells (epithelioid) and also some large granular leucocytes. The matrix was homogeneous. The vessels (arteries) showed considerable thickening and were numerous. The surface epithelium was very irregular in

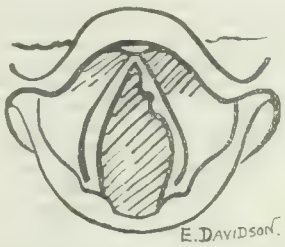


Fig. 3.—Condition before use of galvano-cautery.

arrangement, being corrugated and in parts dipping into the subjacent tissues, but was not fimbriated. It was typical stratified squamous on the surface, the deepest layer being columnar. There was no suggestion of active mitotic nuclear change and no nest or pearl formation. In parts there was some vacuolation. Its nature may be considered as a fibro-papilloma.

The small remaining stump was sufficient to prevent the emission of conversational voice, and the application of various astringents seemed to irritate the larynx without producing any diminution in the nodules. In spite of the difficulties in this particular case, to which I shall further allude, I succeeded in touching the stump with the galvano-cautery, and after five applications effected its complete removal, the voice becoming clear and strong, as it has remained till now.

The difficulties in this latter case were manifold. The patient was a somewhat rotund personage with an extremely protuberant "bust" and a short neck, so that there was little room for the hand of the assistant holding out the tongue and of the one holding the Mount-Bleyer or Escat tongue depressor, which the pendulousness of the epiglottis rendered necessary. In addition, the tongue was large in proportion to the size of the buccal cavity, even when the artificial teeth were removed. It was difficult even to introduce the laryngeal mirror. Finally, the epiglottis was pronouncedly "pendulous," and only very fleeting views of the seat of the disease were obtainable. It must be stated to the patient's credit that her good will and patience were most exemplary. The introduction of my forceps required the exercise of some force, and the manipulation inside the larynx was necessarily carried out *à l'aveugle* in a way which would have been scarcely possible with a less guarded instrument. The use of the galvano-cautery had to be practised on totally different lines. For this the most complete illumination was necessary, so that the application should be made under the guidance of the eye. I therefore made use in the first instance of Mount-Bleyer's epiglottis lifter (Fig. 4), the tip being placed in the



Fig. 4.—Mount-Bleyer's epiglottis lifter.

vallecula in front of the epiglottis, the pressure therein causing this to rise up, so that the anterior part of the glottis could be plainly seen. I found, however, that Escat's instrument (Fig. 5) caused less discomfort, and in this particular case permitted of as good a view of the larynx being obtained. I was thus enabled, after cocainization, to overcome the difficulties I have mentioned, and to effect the application of the galvano-cautery.



Fig. 5.—Escat's epiglottis lifter with handle modified by Grant.

CASE IX.—H. C., a shoemaker, who had formerly sung in a choir, applied to me on account of extreme hoarseness and feebleness of voice. There was on his left vocal cord a large sessile papilloma, which I was unable to reach by means of my longest laryngeal forceps. I therefore resorted to the galvano-cautery point, and found that I had to bend the copper shank downwards to the extent of 4 in. In four or five applications, at intervals of a fortnight, the growth was reduced to a vanishing point, and the voice satisfactorily restored.

CASE X.—A. C., aged 25, complained of hoarseness of six months' duration; the cords were both swollen and red, and there was a nodule of about the size of a pin's head on the right one at the junction of the anterior and middle thirds. He had practised comic singing habitually, without having had any training in music or voice production, and had a history of specific infection five years previously. He was ordered in the first instance to rest his voice, give up smoking, and to take a mixture of biniodide of mercury, but at the end of a week this had not caused the slightest improvement. The nodule on the right cord was then touched with the galvano-cautery and the left cord was scarified by means of Heryng's knife. When seen again five days later the nodule had disappeared; the scarifications were repeated and the voice was greatly improved.

CASE XI.—Mrs. P., aged 46, applied to me on account of practically complete loss of voice. On examination she was found to have a large sessile growth at the most anterior part of the left vocal cord, which projected between the cords, although it grew mainly from the upper surface. The projecting portion was removed as far as possible by means of forceps, and the sessile residue on the upper surface was completely destroyed after three applications of the galvano-cautery.

The writer is convinced that the galvano-cautery might be employed in the treatment of these growths much more frequently than appears to be usual.

Among other means must be mentioned an instrument like O'Dwyer's intubation tube with thin walls, having fenestrae cut in such positions as to engage the growth (usually papilloma in children), and snip it off. This is recommended by Löri and Monselles, among others.

Tracheotomy may be practised in children with papillomata, who may not be amenable to endolaryngeal treatment, more especially if breathing is obstructed, in the hope that spontaneous disappearance of the growths may take place. It is also useful for the removal of a growth so low in the larynx or trachea as to be beyond the reach of intralaryngeal instruments.

The following case illustrates the effect of a tracheal growth coincident with a laryngeal one, and necessitating tracheotomy:

CASE XII.—Willie F., aged 4, was first seen by me on account of hoarseness and difficulty in breathing on exertion (so that he was not able to run about and play like other children), of several months' duration. With considerable difficulty I was able to get a view of the larynx, in which I observed a papilloma as large as a currant. Under chloroform and cocaine, I was able to remove a portion of it so as to produce some improvement, which, however, was only temporary. I again operated and removed some more of the growths, but found that the breathing was not improved. I therefore performed tracheotomy. When the trachea was incised a large bleeding mass projected and filled it up, and I had great difficulty in introducing the cannula, the patient's breathing being still very imperfect; however, he very soon gave a violent cough, and expelled through the tube a papilloma of considerable size, which had evidently been growing from the wall of the trachea, and which explained the persistence of the dyspnoea. The tube was retained for several months before the patient could be induced to go without it, though endeavours were made to remove it from time to time.

That tracheotomy does not always lead to the disappearance of laryngeal papillomata will hardly be questioned. The following is a case in which, in spite of tracheotomy, the papilloma persisted for many years until removed:

Case XIII.—The patient, a girl aged 22, went to the hospital on June 12th, 1902. She had never uttered a vocal sound in her life, and at the age of 4 months she had had tracheotomy performed on account of papillomata of the larynx, which completely blocked up the larynx. When she came to me she could hardly breathe through her mouth, and spoke in a whisper, with the exaggerated movement of the lips which is so characteristic of functional aphonia. On laryngoscopic examination, there was found to be an enormous papilloma growing from the base of the right vocal cord, almost concealing it from view, and below it could be seen the base of another similar growth, rising from the posterior part of the under surface of the left vocal cord. I removed the former one by means of Gibbs's snare, and the latter by means of my own intralaryngeal forceps. This was accomplished at one sitting, and the tracheotomy tube was then removed and a strip of plaster applied over the fistula. It was then decided that the opening in the trachea should be closed up as soon as possible, so that the patient might learn the art of phonation. In order to close the opening so that it would stand the strain of coughing without giving way, I pared the edges and then undermined the skin so as to detach it from the deeper structures; firm catgut stitches were then passed, so as to bring the two deep detached edges into the firmest possible position. The margins of the skin were then brought together and firmly stitched by means of silkworm gut passed through and through from side to side, so that the cut edges pouted forward when the sutures were drawn tight. It was felt that, though this was rather unsightly, it was the best means of obtaining the extreme degree of strength required. The patient is at present receiving training in voice production, and is rapidly learning to talk in a loud and natural voice.

This is one of the cases in which the papillomata have not disappeared after tracheotomy. It is, however, a good practice to perform tracheotomy in young children who are the subjects of papillomata, as the growths sometimes undergo spontaneous disappearance as the result of the operation. The writer is unable to cite from his own experience instances of this spontaneous disappearance, but he is convinced that in several tracheotomized cases the tendency to redevelopment after intralaryngeal removal has been exceptionally inconspicuous.

Cysts on the lingual aspect of the epiglottis may be avulsed, or else they may be incised, preferably by means of the galvano-caustic knife. Mr. Bark has collected notes of three cases, in two of which the symptoms were extremely slight; but in the third, brought by the writer before the London Laryngological Society, there were repeated attacks of feelings of suffocation, which entirely disappeared after the removal of the cyst.

Angiomata may be destroyed by means of the galvano-cautery.

Are there any circumstances which call for removal of non-malignant intralaryngeal growths by external operation? Fauvel, with characteristic decision, rejected this absolutely. Certainly the cases in which it is justifiable are extremely few (we are not considering growths on the outer aspect of the framework of the larynx). When, however, all endolaryngeal methods in the most skilled hands available have failed, or the size, situation, or vascularity of the tumour make intralaryngeal methods impracticable, external methods are called for. Infrahyoid laryngotomy is adapted only for growths which should be reached through the mouth.

Thyrotomy had formerly a high mortality, but is practically as safe as tracheotomy. It should, however, be avoided for fear of impairment of voice as the result of imperfect coaptation of the vocal cords. No doubt a more complete extirpation may be effected in this way than by the natural passages, and recurrence is thus made less probable, but it is by no means excluded.

Case XIV.—In a case under the care of the late Mr. Lennox Browne a growth below the anterior commissure of the vocal cords of a middle-aged man eluded the snare in his hands and every form of forceps available in mine. Thyrotomy was then carried out by Mr. Browne, and the difficulty in the case was found to be due to the depth of the site of attachment of the growth, as also to the length of its pedicle, which allowed of its being pushed down by the forceps instead of being seized by them. The voice was completely restored by the operation.

Case XV.—In the following case, that of a little girl aged 6 years, affected with hoarseness almost amounting to aphonia and slight inspiratory stridor, I was specially enjoined to effect a complete removal at one operation. The child's temper could scarcely be described as other than "fiendish," and no doubt the violence of her fits of crying had led to the increase in the size of the growth, which I found by the laryngoscope to occupy the anterior commissure. The patient was put under chloroform by Dr. Hewitt, and then placed in the upright position upon a chair; 10 per cent. cocaine was applied to the pharynx, the tongue was pulled out by means of forceps, and Mount-Bleyer's epiglottis lifter was introduced and held in position by Dr. Jakins. A portion of the growth was removed with the snare, and some more of it by means of Lack's forceps; there still remained a small portion which appeared inaccessible to these instruments, and it was therefore decided to do thyrotomy. A median incision was made down to the cartilage, and the soft parts were detached for a short distance on either side to allow of the passage of needles with thick silver wire through the cartilage in two places. The cartilage was then divided from the outside in the middle line down to the silver wire; the middle of the wire was then drawn out in the shape of a loop; a small opening was made in the crico-thyroid membrane, and a grooved director, much curved at the point, was introduced through this, pushed upwards between the vocal cords and made to protrude at the notch of the thyroid cartilage; the point was then cut down on and pushed out, a curved probe-pointed bistoury was pushed along the groove of the director and made to cut the thyroid cartilage from within outwards, absolutely in the middle line. The halves of the cartilage were then drawn asunder, and it was found that the remains of the growth had been accurately bisected, and to be rather less in amount than the appearance in the laryngoscope suggested; it was removed by means of sharp spoon forceps, its site cauterized with pure phenol, and dried. The halves of the cartilage were then brought carefully together, the silver wire being tightened up so as to act after the fashion of a hare-lip pin, as around them were twisted threads of silkworm gut, which were allowed to protrude from the wound. The ends of the silver wire were threaded on needles and brought out through the skin on each side; they were lightly twisted together. The wound was then stitched up, dusted with iodoform, and covered with an aseptic gauze dressing. In the evening I was hurriedly called on account of the occurrence of some amount of subcutaneous emphysema extending over the face and a considerable part of the chest and abdomen. I took out the lower stitches to allow of the escape of air from the opening in the crico-thyroid membrane. Within four or five days the emphysema had entirely disappeared. When seen a year and a half later the voice was excellent and there was no sign of recurrence. There was probably a slight adhesion between the cords at their anterior extremity. As a coincidence there was a remarkable improvement in the patient's temper. It might have been better to have performed tracheotomy in the first instance in the hope that spontaneous disappearance would ensue, but the result seems to have justified the course pursued.

With regard to the removal of benign laryngeal growths only very wide rules can be laid down. The operator must be guided by the circumstances of the individual case and by his own experience. The writer, while of late increasingly impressed with the value of the galvano-cautery, would advocate a judicious electicism.

II.—Professor Dr. Albert Rosenberg, Berlin.

I consider it a great honour to be invited to open a discussion on the subject which has been assigned to me, the treatment of benign tumours; and I undertake it with pleasure and appreciate it all the more as the invitation came from a country which has been for a long time the home of laryngology, and where it has received the most zealous attention. It is nearly a century since an Edinburgh practitioner wrote on the pathology of the larynx and trachea, called attention to the occurrence of polypi, and made known even at this early date the importance of laryngology. In 1836 the College of Surgeons set as the subject for the Jacksonian prize essay the diseases of the larynx; it was won by Frederick Ryland. It is here that the father of laryngoscopy, Manuel Garcia, made and published his epoch-making observations fifty years ago.

As regards the discussion of this subject, Dr. Dundas Grant has already given you so excellent and detailed a report that very little remains for me to say; but I may supplement a little what he has said as to the treatment of benign tumours of the larynx.

The study of the history of medicine shows that even in laryngology old thoughts clothed in a new form may be fruitful; for in its essence the Kirstein autoscope, though in itself insufficient, really showed the way to the examination of the larynx and endolaryngeal operations. As early as 1750 Koderik of Brussels succeeded in seizing and removing with a running snare a laryngeal polypus through the mouth. In 1836 Regnoli of Pisa was able in the same way to remove a tumour of the epiglottis from a woman aged 70; in 1852 Horace Green performed the operation in one patient with a sponge sound, and in another with a blunt-pointed knife; in the following year Middeldorff operated with a looped cautery.

In the same way, previous to the laryngoscopic epoch, the coughing up of polypi had been observed—for example, by Otto in 1824; Renard describes a case in which the whole tumour was brought up in a fit of coughing.

It has often been observed in our own time that tumours spontaneously grow gradually smaller or even disappear altogether—an instance is afforded by the case of a child, a patient of Thorner's, after whooping-cough. I have myself seen the spontaneous cure of a papilloma of larynx after measles. This spontaneous cure is generally met with after recovery from an infectious disease, but it is a rare occurrence. Once, in the case of a man 50 years old, I saw a hemispherical smooth red tumour, situated in the anterior commissure and the middle third of the vocal cord, which we took to be a fibroma, gradually become smaller and finally disappear, although it was in the case of a patient who did not despise tobacco and alcohol, and who did not save his voice, for during spare hours he was a laryngoscopic subject used by other teachers and myself for many years in our classes.

On the other hand I have never observed spontaneous cure, as have Lennox Browne and others, after the removal of a nasal obstruction.

I have noticed no special benefit from inhalation, insufflation and injection; at the same time, in inflammatory nodules, as also in cases of the so called singers' nodules, something may be said for astringent treatment; but it remains an open question how far recovery is due to the simultaneous sparing of the voice—at least in female patients in whom I have seen this disappearance of growths after prolonged silence.

Jurasz recommends inhalation of sulphur water; Massei, 2 per cent. lactic acid, also formalin spray (1 in 2,000—250); Knight noticed the nodules disappear after the daily injection of adrenalin (1 in 5,000) for three weeks. Further, there comes the question, in the treatment of singers' nodules, of the thin flexible forceps of M. Schmidt, which have quite small, sharp blades, and, if the nodule does not project beyond the edge of the vocal cord, of the fine pointed galvano-cautery. In the treatment of papilloma in children, thiga occidentalis (J. M. Brown) is suggested and recommended; also alcohol and painting with 10 per cent. alcoholic solution of salicylic acid, especially for the prevention of recurrence (Grant). I myself have made many trials with summitalis sabinae, which is of great service in prominent condyloma, but with no result.

On the whole, however, the only right treatment for endolaryngeal tumours is operation; and all laryngologists are agreed that, with benign tumours, the endolaryngeal methods must, in the first place, and almost always, be applied; when dyspnoea threatens, or there is good reason to fear that the endolaryngeal interference will produce so much swelling of the mucous membrane as to cause serious dyspnoea, or when an operation *per vias naturales* may not have the desired result, an external operation at the very outset is necessary. If tracheotomy be not imperatively required, treatment should always be carried out by the natural passages.

There can be no doubt that the introduction of cocaine into laryngology was a great advance, because by the use of this anaesthetic it is possible for not very experienced practitioners to remove a laryngeal tumour without special inconvenience to the patient. On the other hand, against this advantage we must weigh the drawback that the vocal cord to which the growth is attached becomes lax, and does not become tightened by reflex stimulation, and so may be torn away, to a certain extent, with the new growth; so that there is a risk, by unskilful treatment, that more harm may now be done than formerly.

I cocainize in the same way as Grant, by letting fall a 20 per cent. solution drop by drop out of the laryngeal syringe; thus no more cocaine is needed than in painting, the dose can be exactly adjusted, and its localization precisely controlled with the eye.

General anaesthesia in adults is only necessary in the rare and exceptional cases, such as a quite exceptional reflex irritability, or nervousness; Lewin, Schrötter, and Schnitzler have used it in these circumstances; M. Schmidt, twice in children, has removed a papilloma under bromaethyl anaesthesia. In children general anaesthesia is often necessary.

In the course of more than twenty years' practice I have only once been obliged to use chloroform anaesthesia in an adult: a girl, aged 18, with a fibroma of the vocal cord, had such a dread of the operation that she would only consent to it on the condition that she was given chloroform. The anaesthesia should not be deep, otherwise the patient, who is in the sitting posture, becomes too limp, and cannot be maintained in a suitable position; and, further, the copious secretion of saliva covers the mirror, and, if a severe haemorrhage occurs, the blood will be inspired. Moreover, on the other hand, it is necessary to cocainize the larynx, as in the slighter degrees of anaesthesia the reflexes are not completely abolished.

Not only in children, but also in adults, if the epiglottis overhangs, or if the tumour to be removed takes origin from or near the anterior commissure, I have often employed with advantage an epiglottis retractor held by an assistant.

A special way of operating is that by which the tumour is removed without being seen, that is, the so-called sponge method recommended by Voltolini, to which his predecessors—and among them Horace Green already mentioned—had resorted. In many cases I have succeeded by these means, in multiple papillomata in children, in removing larger or smaller pieces of the tumours, and so relieving the difficulty in breathing—for it is occasionally necessary to act with this object in view—but I have never succeeded in producing a cure. So, like Baldwin, Cheatham, R. Levy, Ranke, and others, I have tried intubation with such children, with the same result. I would rather utter a warning with regard to these methods than recommend them; it is necessary when dyspnoea is threatening life, and when tracheotomy cannot immediately be performed, to intubate the patient, to meet the indicatio vitalis. But, owing to their apparent infectiousness, papillomata may be spread by the tube to formerly uninfected parts, and all the more when the mucous membrane is irritated by the pressure of the tube, and thus predisposed to the growth of papillomata, as Ranke's observation appears to show. A hollow cylinder with sharp-edged fenestra has been used by Bocker, Voltolini, Nemai, Monselles, and others; these instruments are placed over the tumour from below, and tear it away by means of the sharp-edged fenestra, when the instrument is withdrawn. Lichtwitz inserts a fenestrated tube, and removes the tumour through the aperture with the aid of other instruments.

All these methods come under consideration only in thin pedunculated and more or less movable tumours and in the case of little children. In some of these cases I have observed a better result when I used a cold snare; using the laryngoscope, and thus controlling the movement by the eye, I have pushed the loop round the tumour and then extracted. Recently, in the case of a child who allowed me to use the laryngoscope, even for a long time, I removed in this way, under the control of my eye, a papilloma as large as half the circumference of a finger from the anterior commissure, and thereby did away with the hoarseness and difficulty in breathing. With children who will not allow themselves to be operated on by the ordinary endolaryngeal methods, the autoscopic methods under anaesthesia come under consideration. In this way, Kirstein, Bruns, and others have removed papillomata in children, and I have myself succeeded in two cases.

If success is not obtainable in this way, one may often succeed by gradually accustoming the children to laryngoscopic examination and endolaryngeal treatment and then operating. If this does not succeed, one can wait at first, or if there is dyspnoea, tracheotomy can be performed and an attempt made to proceed on endolaryngeal lines. It may often be noticed, however, after the withdrawal of the current of air from the larynx, where it seems to produce an irritating and stimulating action, diminution and gradual disappearance of the papillomata may take place.

If, after the removal of these tumours, recurrence takes place, cauterization of their point of origin with lactic acid, chromic acid, the galvano-cautery, or similar means may be recommended. I prefer the galvano-cautery, which is more easily localized, and for broad-based tumours, lactic acid. Thyrotomy, according to my experience, has neither better nor worse results to show than other methods (if one does not take into account the risk to the voice), if it be deemed suitable for any particular case. It can in rare cases be undertaken without tracheotomy, but in most cases this is also necessary at the same time, and then care must be taken not to remove the cannula too soon (before about six months), as one is never safe from recurrence.

As regards endolaryngeal operation on other classes of tumour, especially those of adults, the same caustic and crushing methods have been adopted—especially since the introduction of cocaine—as were customary in the early years of laryngology, but shielded cutting instruments, which formerly were, perhaps, necessary, have been given up. We operate to-day, in principle, with the same instruments as are used under analogous circumstances with hand and eye in accessible parts of the body—knives, forceps, scissors, and snares.

Knives are seldom used now—they have been replaced by

the more adequate forceps—at the same time they may be needed occasionally; broad based polypi may be given a pedicle by cutting through the greater part of their base and then finally taken hold of with the forceps or snare and removed.

Those most in use are the cutting forceps—the blunt are quite given up. There are a great number of them; every operator has a preference for one or other. The Mackenzie forceps, on account of their long lever arm, require the employment of great strength and take up too much room. In most forceps the elbow is only a few centimetres above the cutting blade: the blades are generally closed, but may be open, as in the double curette, when possibly they are so held that the thumb lies in the upper and the middle finger in the under ring; if, however, the distance to the larynx is relatively great—as, for example, in very tall men, or, if the tumour is very far forward, one is often compelled to put the thumb in the under, the index finger in the upper, and the third and fourth on the forceps, and to turn the forceps with the little finger as a fulcrum. In this last manipulation, one has not the same sure control as in that first described. Care should be taken that the cutting edge be sharp, because when at all blunt it does not cut the tumour away clean at its base, but may carry away a piece of mucous membrane of the vocal cord with it. To make it possible to cut in all directions, from front to back, sideways and aslant, Alexander made the Fränkel forceps rotatory. For glottic tumours Scheinmann constructed forceps the blades of which are bent at a right angle, so that they can catch below the vocal cord without damaging it. I have often used in quite small tumours the fine flexible forceps of M. Schmidt constructed for this purpose. The double curettes, especially the Landgraf, cut, *ceteris paribus*, better; they demand exact and sure application, but are faulty in their curve, so that they easily leave a portion of the tumour remaining at both ends of the base. I have often experienced this drawback, and on that account constructed for myself a new curette. It has been made on the Landgraf principle, but its blade has a straight shank, so that when it is applied in the exact direction to the edge of the vocal cord, all that is above it can be removed with one cut cleanly and evenly. In this way I have entirely removed singers' nodules and broad, flat tumours projecting only a little beyond the edge of the vocal cord on which forceps slip easily.

With regard to snares, I have already mentioned their use in the operation for papillomata; they are especially useful when a large tumour with a relatively thin pedicle has to be removed, and the tissue to which it is attached has a certain firmness and can offer a certain resistance to the pull, so that the tissue from which the growth originates comes away with it. In other cases the galvano-cautery snare must be employed.

As to snares of this tearing character, in order to convert it into a really cutting instrument, I have had made a laryngeal snare on the principle of Jaenicke's nasal snare. It is possible with this snare, after it is drawn together by simply pushing forward the slide, to push the snare out again and catch the tumour in it, to cut it off clean. The snare falls back into a sharp-edged slit in the front part of the snareshaft in such a way that the tumour is within the snare; when this is drawn together it is cut off clean as with a knife. By this means I operated some time ago on a patient who had a prominent white papilloma on the whole of the left side of the vocal cord and ventricular band, which seemed to originate from the ventricle, but inserted in reality on the edge of the vocal cord; I surrounded it with the snare, which drew together firmly, and so removed the growth entirely and at once without, as in the case of ordinary snares, tearing it, but, as was seen later, cutting it clean. Had I used forceps I could only have removed it piecemeal on account of its size. For these tumours on the upper surface of the vocal or false cords I can strongly recommend this snare: if it is made flexible, or if the end of the snareshaft is made more vertical than horizontal, it can be used to remove tumours from other parts.

I need not go into further detail as to the choice of particular instruments for various tumours, for Dr. Dundas Grant has already reported on them, and I have little to add. In amyloid tumours a good effect may be produced by the administration of iodine, especially in what is rather a thickening due to amyloid deposit in the submucous tissue: if the attempt does not succeed, or if the tumour has a pedicle, the snare may be employed. The cold or hot snare can be employed with lipomata, myxomata, and adenomata, according as they have a pedicle or a broad base.

I may mention, cursorily, Rossbach's method—a combination of external interference and endolaryngeal treatment. If there is a tumour under the anterior commissure of the vocal cord, which cannot be treated by the ordinary endolaryngeal route, he inserts a knife, resembling a tenotomy knife, in the middle line of the thyroid cartilage below the vocal cord into the larynx, and cuts the tumour out with it, whilst he controls the movements of the knife by means of the laryngoscope and directs the instrument by sight. This idea of Rossbach's was carried out in another way, thirty-five years earlier, by Prinz. In a patient with a subglottic polypus he made an opening into the larynx through the crico-thyroid ligament, introduced scissors or snares, and illuminated the tumour from above with a mirror. With the greatly-improved technique of laryngological operations of the present day, such a procedure can scarcely be necessary, and, moreover, in such severe cases the endolaryngeal methods in skilful hands lead to good results.

Tumours of the thyroid gland, which are always broad-based and situated beneath the vocal cords, can only be treated by tracheotomy or laryngo-tracheotomy with, if necessary, division of the cricoid cartilage. In the same way an attempt should not be made to treat cavernous angioma of the larynx *per vias naturales*. I have observed one such broad-based tumour which bled freely when touched gently, so that I gave up the thought of treating it even with the galvano-cautery. In smaller angiomata with a broad base the galvano-cautery in the form of points or the hot-snare may occasionally be tried: caution is, however, always necessary on account of the danger from haemorrhage. Enchondromata, if small, accessible, and not broad-based, can be removed with the knife or forceps; if they are large and broad-based, an attempt may be made with electrolysis, as also in other growths not suitable for endolaryngeal extirpation. If, however, they are so large as to produce obstruction to breathing, tracheotomy must be performed, and if the patient is not content with this, but wishes to be freed from his tumour, laryngotomy must be performed, or, as in most of these cases of enchondroma the cricoid cartilage seems to be involved, it should be extirpated with the tumour, as Bocker has recommended. Whether the patient will afterwards be able to live without a cannula is very questionable. Bocker's patient, who recovered completely, could not do without a cannula. In some cases, total extirpation must be performed.

III.—N. C. Haring, M.B.Lond., M.R.C.S., B.Sc.Vict.,

Physician, Manchester Throat and Chest Hospital.

Dr. Haring thanked Dr. Grant for keeping the point so fixed before them—that a large number of the smaller growths of the larynx were due to inflammatory changes, and thought that this would give the key to treatment other than operative; as if due to inflammatory change the first thing was to give the patient as much voice rest as possible, particularly in the case of professional actors and singers, where there was danger in operation because of the results of a possible damage to the cords—and in singers a very slight damage might be serious. He had seen several cases of nodes of the cords, probably due to faulty voice production, which had got better under rest and mutism. In his experience about 75 per cent. of laryngeal growths showed also some form of nasal obstruction. With regard to medicinal treatment, he had found papillomata—especially the multiple growths—retarded in their development by the use of a spray of sodium phenol sulpho-ricinate, which caused them to become brittle, they then being easily picked off, and their recurrence was not so frequent. He thought that partial removal of multiple growths tended to cause an increase in the growth, which was checked by the use of the spray. With Kirstein's speculum, many growths could be removed from the posterior end of the larynx, particularly tuberculous and other growths in the neighbourhood of the arytenoids. To produce anaesthesia, he used a 20 per cent. solution of cocaine with an equal quantity of adrenalin. The latter made the anaesthesia more thorough, and contracted the tissues, thus rendering breathing easier, so that the looseness of the tissues mentioned by Professor Rosenberg was not experienced. With regard to forceps, each man was a law unto himself, the important point being to have the handle of the instrument below the line of sight. Another point, which was a personal one, was that the old Mackenzie forceps were used by him with greater certainty and facility than the lighter one now in fashion. It was difficult to be certain

where the end of the lighter forms was located when a long distance off, as in the larynx. Hard things had been said against thyrotomy, but he was afraid that endolaryngeal methods were not satisfactory in papillomata far down in the glottis, and he considered it was almost impossible to clear subglottic growth, especially when extending into the trachea. The presence of the tracheotomy tube caused irritation and further growth; therefore he objected to treatment by tracheotomy alone.

IV.—Greville Macdonald, M.D.,

Physician for Diseases of the Throat, King's College Hospital.

Dr. Greville Macdonald said that in his experience papillomata did not disappear spontaneously. Pharyngeal papillomata never seemed to change or disappear, and he very much doubted whether laryngeal growths of this kind ever disappeared. Small growths, however—as singers' nodules—did frequently disappear; but one should not rely too much upon spontaneous disappearance after rest, as they cropped up again, especially in singers, upon use of the voice; therefore the best treatment was to remove them, though small, rather than trouble patients with a long period of rest. Recurrence of papilloma often looked like not so much that of the actual growth removed as an infection of neighbouring parts, because the rapidity with which the growth originally became established was never so great as that with which the secondary growth developed after operation. The inference was not that one should refrain from operating, but rather to complete operation as rapidly as possible. He doubted if there existed any case of supraglottic or infraglottic papilloma that was not amenable to cure by operative treatment. He had altogether given up the use of caustics or astringents. The only treatment was operative and solely endolaryngeal, and he doubted whether it was ever justifiable to do a thyrotomy as long as there were endolaryngeal forceps and the skill to handle them. There was a definite risk to the voice after thyrotomy, much more so than after a prolonged series of endolaryngeal operations. Even after frequent operations of considerable extent the voice was finally exceedingly good. He had been in his earlier experience too much afraid of damaging endolaryngeal structures. Mackenzie cured many by operations which, in his day, were of a rather rough nature compared with present-day methods, the forceps then being practically pushed down by force, and anything that could be got hold of was pulled away. Of course, at the present time they should never pull anything out of the larynx without seeing it. Want of success, he believed, was due to not being sufficiently bold in operating. With regard to instruments, his experience was almost entirely limited to Mackenzie's forceps, which he found excellent. He had occasionally used Schrötter's and Krause's forceps, but always abandoning them in favour of Mackenzie's. The difficulties in the use of forceps were largely, perhaps, those of getting thoroughly used to one instrument. Certain modifications of Mackenzie were necessary for special purposes. He did not think he had ever had a case of laryngeal papilloma which he had not cured. Such a statement might sound somewhat beyond the bounds of good taste, but it was said to impress the fact that he believed in Mackenzie's instrument beyond all others. They were even good in cases of growth in the anterior commissure, as they held up the epiglottis and kept it out of the way. He had often operated with the patient deeply under chloroform. In one case thyrotomy had been previously performed three times in a child 4 years old. He had the child under an anaesthetic twenty or thirty times, had used Mackenzie's forceps, and now, six years since, there was a perfect cure. The forceps could be used even without seeing the growths, for by their aid one could feel whether the growth had been included in their grip. He considered there was a risk, in the use of the snare, of the growth dropping into the trachea, which had happened to him once in an old man of 60, who had an oedematous polypus. Inversion of the patient was, however, successful.

V.—Patrick Watson Williams, M.R.C.S., M.D.,

Physician, Throat Department, Bristol Royal Infirmary.

Dr. Watson Williams said: I consider that we are largely handicapped by ignorance of the pathology of these benign growths. I think it certain that some of the conditions described as benign growths are really inflammatory and the result of irritation. Amongst such I would include small fibromas, teachers' nodules, and singers' nodes. There is also considerable evidence that many so-called benign growths included under the term "papillomata" are really due to some form of infective micro-organism. With reference to treatment, rest is of the utmost value in the former kind. Potassium iodide has been used, but my conviction is that rest *per se* is the most potent therapeutic agent at our disposal. It is also possible that rest is also beneficial in the latter class, that is, those due to micro-organisms, and those who have tried the effect of prolonged voice rest in laryngeal tuberculosis must be convinced that it is one of the most valuable agents at our disposal. Rest combined with open-air treatment will often arrest and cure tuberculous disease in the larynx. It is perfectly true that in the vast majority of cases the spontaneous disappearance of papillomata is waited for in vain. How far operative treatment is a factor in transforming benign growths into malignant is doubtful. The evidence is very slender and it very rarely occurs, but we do not know the length of the prodromal stage of malignant growths. When a growth becomes visible to the naked eye we consider it commences, but they have their origin long prior to this in many cases. We also know that benign growths in some cases have a malignant character at their base, and I think that most benign growths which become malignant were really malignant growths having a benign appearance at first. With regard to operative interference and choice of instruments I am naturally attached to my own forceps, and was led to devise them to avoid the otherwise necessary use of two or three kinds of forceps to meet the various kinds of endolaryngeal operative procedures. The various combinations act in all directions. They also act as a snare, as cutting forceps, and are applicable to foreign bodies or growths occupying any position in the larynx.

VI.—StClair Thomson, M.D., F.R.C.S.,

Assistant Physician, Diseases of Throat, King's College Hospital.

Dr. Thomson said that he would confine himself to treatment. He confirmed Dr. Macdonald's statement regarding the danger of the snare. He had for years only used Mackenzie's instrument, which was the best. Tactile sensation came a great deal into the operative manipulation, and a trigger movement in the forceps robbed one of this tactile sense, which was well illustrated by the sensation obtained at the end of the line when fishermen got a bite. He thought that some simple growths of the larynx might be left alone—for example, cysts of the epiglottis, which caused no trouble. Another growth which might be quite simple, and which one would be chary in removing, was an angioma of the larynx. The same applied to fibromas of the glosso-epiglottic folds; and he could mention two singers who had these tumours, which did not trouble them in any way, and of whose existence they were unaware.

VII.—Dr. Price Brown,

Toronto.

Dr. Brown said that the climate of Canada was different, perhaps, in its effects upon patients to that of England with reference to the spontaneous disappearance of papillomata. There were also adenoids present in such cases in children. He found also that stenosis of the nasal passages in children arose from an adenoid condition, and that removal of the adenoids had a good effect on the voice of the child. He left the papillomata alone, but removed the adenoids and sent the children to a drier climate than Ontario—that is, Manitoba—and their difficulties of respiration disappeared; but upon the return some symptoms reappeared, but not to the same extent as before. With regard to the change from a simple to a malignant growth, he recalled 2 cases in which such change should have taken place had it been at all common. The first was a case 60 years of age, a voice user, who had a papilloma of the left vocal cord, and another on the right. Astringents were applied for a long time with no result. Both Bosworth and Lennox Browne were consulted and both advised a continuation of the treatment, and the patient finally, after some years, got well. The second was a fibroma occurring in a patient the subject of aneurysm of the aorta. The electro-cautery was used, and the patient died finally of his aneurysm, having breathed freely the remainder of his life.

VIII.—Scanes Spicer, M.D.Lond., B.Sc.,

Surgeon, Throat Department, St. Mary's Hospital.

Dr. Scanes Spicer desired to refer particularly to the great facility with which all manipulations for the removal of innocent growths from the larynx could be carried out by the combined cocaine and general anaesthesia method which he

first formulated several years ago. It was applicable both to children and adults, and he had not found any case in which with a very little patience any desired manipulation could not be carried out. But to get the best results the points he had laid stress on must be carefully observed. First, as the anaesthetic was to be taken in the sitting posture, a very reliable and able anaesthetist was necessary. Secondly, if the patient was a child it must be nursed, or, if an adult, propped up so as to maintain the proper position for laryngological examination. Thirdly, the tongue must be efficiently, gently, and steadily held out to one side with tongue forceps by an assistant. Fourthly, the cocaine must be freely applied by a spray (not by mops)—a 10 per cent. solution—for it was the greatest assistance to have the palate, pharynx, tongue, and epiglottis so well numbed that reflex contractions and swallowings did not take place. Fifthly, to prevent swallowing the cocaine it must be at once mopped out by small throat sponges on holders. If these points were carefully attended to, it was quite easy to continue operation on the larynx in cases of multiple papillomata for an hour at a time. Of late years he had used adrenalin chloride on laryngeal mops to more quickly arrest the bleeding and the flow of mucus. He preferred the use of cocaine with the spray because he wanted a diffuse effect. In the same way he preferred using the adrenalin locally, because its action was most wanted in the larynx where the bleeding was. He considered it better than applying the mixed cocaine and adrenalin with mops, for in that case it was not unlikely that more than necessary of one or other of the remedies might be used. In irritable tuberculosis cases he had succeeded in carrying out intralaryngeal manipulations, which would otherwise have been quite impracticable by this combined anaesthesia. The President had referred to the "infective" nature of laryngeal papillomata. He recollected having published a case of multiple papillomata in a child, which arose with hoarseness immediately after an attack of measles. When he saw the child he found a papilloma of the face and multiple warts on the hands, which the mother assured him were not there before the measles and hoarseness. All the warts were removed, including those in the larynx, as above mentioned, and the patient was ascertained to be free ten years afterwards. Another point on which the President had requested remarks was that of the spontaneous disappearance of laryngeal growths. He particularly recalled one case in which, after several sittings at which papillomata had been removed, he thought it time to give the patient a rest for a month, although leaving much diffuse thickening and some distinct warts. At the end of the time so much spontaneous subsidence and voice improvement had occurred that he left the larynx alone locally. It got quite well, and remained so for some years, when the growth recurred, and was still under treatment. Whether it was the bruising inseparable from laryngeal manipulations or the improved drainage, or diminished strain from partial removal that led to spontaneous subsidence, he could not venture to say.

IX.—Herbert Tilley, M.D., F.R.C.S.,
Surgeon, Throat Hospital, Golden Square.

Dr. Herbert Tilley showed an instrument peculiarly fitted for the removal of singers' nodules. Laryngologists of experience knew how difficult it was to get hold of a very small nodule, and the speaker had obtained more uniform success by first rubbing the nodule with a rough laryngeal probe until it bled, and then applying a solid nitrate of silver point (fused on a laryngeal probe) to the bleeding nodule. In about ten days the growth had completely disappeared. Astringents applied to the nodule were generally inefficient, because the medicament did not penetrate sufficiently deeply. With regard to laryngeal papillomata in children, he differed from Professor Rosenberg upon the question of light general anaesthesia. The speaker was strongly of opinion that the whole success of the intralaryngeal operation depended on deep anaesthesia. If the laryngeal reflex was not abolished, the patient constantly swallowed or coughed when the laryngeal regions were touched by the introduced forceps, and consequently the movements of the latter were completely hidden from view. A skilled anaesthetist could keep on giving periods of very deep anaesthesia, lasting from fifteen to twenty seconds. In such an operation the sitting posture was preferable, but the great essential for thorough and complete removal was deep anaesthesia. He always used Mackenzie's forceps.

X.—E. Waggett, M.B., M.R.C.S.,
Surgeon, London Throat Hospital.

Mr. Waggett wanted to know what vocal effects followed a thyrotomy, as he considered it would be used more frequently in the future in large benign growths. He believed in using a method which acted more rapidly than the continuous endolaryngeal operations, and if the operation were performed with cutting forceps, it was certain that the cords would not be damaged, as was, of course, possible with other cutting instruments. He had never seen a case that was not able to leave the hospital in ten days, and the average was generally five.

XI.—Henry Betham Robinson, M.S., F.R.C.S.,
Assistant Surgeon, Diseases of Throat, St. Thomas's Hospital.

Mr. Robinson said that in very young children removal must be by tactile sensation and not by inspection. Such cases were operated upon for two reasons—loss of voice, or laryngeal obstruction. In the latter they might have to effect a rapid removal, and he had a rather rough-and-ready method for such cases, but one he considered very successful. He had had O'Dwyer's tubes fenestrated and used them as curettes, the fenestrations being both lateral and antero-posterior.

Reply.

Dr. Dundas Grant, in reply, said he would not endeavour to answer everybody, because of want of time. He remembered a case of subglottic growth which the patient coughed through the cannula. Here a thyrotomy had been performed, although the difficulty in breathing was attributed to a purely laryngeal growth. In reply to Dr. Macdonald, he would not feel justified in making a statement that every case had been cured. He thought such cases should be published with their after-history. He remembered that Lennox Browne held the same views as Dr. Price Brown upon the influence of adenoids and climate. Dr. Waggett had asked about vocal injury in thyrotomy. In the two cases he had seen done there certainly was none, but very great care had been taken to prevent it, and he was disposed to think that it was scarcely possible to expect such results in all cases.

ON THE LOCAL TREATMENT OF SOME FORMS OF NON-SUPPURATIVE CATARRH OF THE MIDDLE EAR BY COMPRESSED AIR AND NEBULIZER.

By Adolph Bronner, M.D.,
Senior Surgeon, Bradford Eye and Ear Hospital; Laryngologist, Bradford Royal Infirmary.

Most cases of disease of the middle ear are due to a primary affection of the mucous membrane. This is directly continuous with that of the Eustachian tube and naso-pharynx. It is therefore of great importance that we should in all cases of middle-ear disease treat locally not only the mucous membrane of the middle ear, but also that of the tube and naso-pharynx.

Most authors follow the teaching of Politzer, and state that the use of the bag is as efficacious as that of the catheter, and not at all dangerous. In my experience this is not so; in fact, I have seen numerous cases in which the use of the bag caused severe pain, vertigo, and increase of deafness, sometimes rupture of the drum. And this is only natural. If the Eustachian tube is open there is a sudden and violent rush of air against the diseased drum which may easily damage the same, and which must cause severe vibration of the ossicles and distension of the ligaments and muscles. The bag when attached to the catheter, as is frequently done, can be equally harmful. The pressure is too sudden and too violent. For many years I have used Lucae's double bag, fixed on the catheter. With this a weak and continuous current of air is blown through the catheter, the strength of which can easily be regulated. Better still is the large compressed-air apparatus as used in America. This consists of a large receiver of seamless steel, about 4 ft. high and 2 ft. in diameter. Air can be pumped into the receiver by an ordinary hand-pump, or, more conveniently, by an automatic pump attached to the water main, which gives a pressure equal to three-quarters of that of the water. A gauge records the pressure of the air in the receiver and also of the escaping air. You can fix a so-called multiple comminutor or nebulizer on to the receiver.

This consists of numerous bottles into which the air passes. The compressed air blows the liquid contained in the bottles against the walls of the same and breaks it up into exceedingly fine particles. In this form it escapes from the bottle and is blown through the catheter into the middle ear. Practically any drug—iodine, menthol, camphor, formalin, tincture of benzoin, paroleine, etc.—can thus be sprayed on to the mucous membrane of the Eustachian tube and middle ear, and for any length of time, and under any pressure. Any solution can be used; if watery, then glycerine should be added. The most useful solvent is a hydrocarbon oil, such as chrismaline or paroleine.

When the drum is perforated, the liquid, looking very much like vapour, can be seen escaping by the external meatus. It also, of course, enters into the cavities and recesses adjoining the middle ear, and thus in cases of purulent otitis media it can be used to disinfect these regions which are so inaccessible to ordinary treatment. By an ingenious arrangement the flow of compressed air can be interrupted so as to produce up to 1,000 vibrations per minute. This is very useful in breaking down slight adhesions of the drum, removing spasm of the tensor tympani muscle, dispersing any serum in the middle ear, etc. By this method the immediate result obtained is not only greater than after the use of Politzer's bag, but also more permanent, and the diseased mucous membrane can be treated at the same time. In some cases I use the catheter several times at intervals of a quarter to half an hour, and often the hearing improves slightly after each application.

Many cases of so-called dry catarrh of the middle ear are not due to any affection of the mucous membrane at all, but to a primary disease of the osseous labyrinth. Naturally in these cases the use of the catheter can do a great deal of harm. If sudden great pressure is applied, as with Politzer's bag or the bag attached to the catheter, the hearing and tinnitus may become worse. In dubious cases I use the catheter with an iodine spray under very low pressure.

The compressed air can also be used on an ordinary coarse spray for numerous purposes—to apply a cocaine solution to the nares before the use of the catheter, or an astringent to the mucous membrane of the nares and nasopharynx, or a disinfectant (perchloride of mercury, peroxide of hydrogen, etc.) to the nares before and after any intranasal operation, or for the local treatment of laryngitis, tracheitis, etc.

In conclusion, I wish to state that in all cases of middle-ear disease the condition of the patient's general health should be well gone into, and, if necessary, attended to. Nasal catarrh and stenosis must be most carefully treated and removed. The ear is only part of the body, and its diseases often depend on those of neighbouring parts, and should be treated accordingly.

Dr. DUNDAS GRANT said he would like to confirm Dr. Bronner's remarks upon the great utility of the compressed-air apparatus he had described in cases of adhesive—not sclerotic—catarrh of the middle ear. He had found repeated interruptions of the instrument—massage action—very useful. He also approved of the use of the catheter in cases of catarrh.

Dr. MILLIGAN had had the apparatus in use for many years, and concurred in its value and utility in certain cases—that is, in chronic adhesive cases which did not respond to the bag and catheter. He would also suggest the heating of the air. He did not consider the apparatus of any use in cases of sclerosis.

Dr. BARR believed that the efficient use of Politzer's bag was much more suitable, on the whole, than the catheter. He always inspected the membrane during inflation rather than trusted to the ear tube, which was not quite reliable, as he had known cases in which no sound could be heard, and yet membrane could be seen to move.

Dr. PEGLER thought that the value of the apparatus lay in its substitution for the bougie. He cocainized the mouth of the tube, and used the rhinoscopic mirror to see if the catheter was in position. He thought the air-current breaker or intra-tympanic massage described by Dr. Bronner a very valuable addition to the apparatus.

Dr. SCANES SPICER desired to know of any case of rupture of the drum, as he had heard of one case.

Dr. DONNELLAN (Philadelphia) had had a little experience in the use of this method. He was disposed to use politzerization first, and if one could not succeed in that he next used the catheter and bougie. He found that a previous post-nasal application of cocaine with adrenalin often allowed the successful use of the bag where previously it had no effect. The advantage of the catheter over politzerization was that with the former only the affected ear was inflated.

Dr. JACKSON thought that in 99 per cent. both ears were affected.

Dr. BRONNER, in reply, said he considered that the bougie should only be used with very tight strictures. He did not think rupture of the membrane would occur unless by very careless use of the apparatus. The pressure should not be turned on all at once. He had once or twice seen circumscribed emphysema, which had not done any harm. A preliminary spray of cocaine and adrenalin could be used with the apparatus. The catheter thus used with a continuous current was very much better than the ordinary method with a Politzer bag.

MENIÈRE'S DISEASE: A CLINICAL AND EXPERIMENTAL INQUIRY.

By WILLIAM MILLIGAN, M.D.,
Honorary Surgeon, Manchester Ear Hospital; Aural Surgeon, Manchester Royal Infirmary.

THE effects of internal medication and external applications in the treatment of severe cases of labyrinthine vertigo are so eminently unsatisfactory that any relief which might follow operative interference would be eagerly welcomed by many patients. Having had the opportunity during the past few years of operating upon several patients suffering from labyrinthine suppuration where vertiginous attacks accompanied by vomiting were prominent symptoms, and having noted the great relief, and in some cases complete cure, of such symptoms after operation, it struck me that an operation designed to remove the semicircular canals in non-suppurative conditions might have similarly beneficial effects. In such cases, where the morbid process has lasted for months and sometimes for years, the terminal filaments of the auditory nerve are so disorganized and the hearing power so deranged that for practical purposes the organ as an organ of hearing may be disregarded. The object of treatment should therefore be to destroy the static segments so that peripheral impulses may cease to call forth vertiginous phenomena.

In the three cases in which I have attempted to accomplish this, the patients had suffered for years from repeated attacks of vertigo, incessant tinnitus, and progressive loss of hearing power. In all three patients the usual drugs reputed to be of value in such cases had been tried, with in addition almost continuous counter-irritation over the mastoid process, periods of rest in bed, and special dieting. In all three cases the results had been practically *nil*. The risks of operation and its possible failure having been placed before the patients and having been accepted by them, the following method of treatment was adopted:

Under chloroform anaesthesia a complete radical mastoid operation was performed, the bony wound being enlarged anteriorly and posteriorly as far as was practicable. The external semicircular canal was then exposed by carefully burring away all cancellous bone around it, and its anterior limb followed until the origin of the superior canal was apparent. This canal was then followed upwards towards the upper surface of the pars petrosa, and burred away as completely as possible. The posterior canal was then exposed by following the posterior limb in a similar manner, and, finally, the external canal was removed. The cavity thus formed in the bone was carefully scraped with a small sharp spoon and all soft tissue removed, after which a larger sized burr was introduced, and a general toilet performed. Bleeding was kept in check fairly efficiently by swabbing with pledgets of gauze soaked in sterilized adrenalin solution. No syringing was employed, the parts being simply mopped dry. The cavity was finally packed with sterilized dry gauze, the necessary meatal flaps cut, and the external wound sewn up. In all three cases the degree of operation shock was considerable. In two of the cases healing took place, but in the third suppuration set in, and up to the present has not been controlled. In the two cases, which may, I think, be regarded as successful, vertigo has disappeared and the patients have been able to return to work. The hearing power has been destroyed, whilst the tinnitus has been only slightly relieved.

It is possible that a new field of activity may be opened up by the performance of such operations, but up to the present I have only felt justified in attempting the operation in three

cases. The risks to be encountered are considerable. In the first place, the fact that a low middle fossa may be encountered at once renders the operation technically difficult. In the second place, the risks of injuring the facial nerve are unquestionable; and, in the third place, the risks of the wound becoming septic and the sepsis spreading directly to the base of the brain, along the sheaths of the facial and auditory nerves, add, perhaps, the gravest risk of all. At the meeting of the Otological Society of the United Kingdom held in Glasgow in June of this year, Mr. R Lake narrated a case in which he had secured a brilliant result, and a result upon which he is to be heartily congratulated. The history of my cases is as follows:

Case I.—R. B., male, aged 44, had suffered for two years from constantly recurring attacks of dizziness, accompanied by sickness and distressing tinnitus. On no occasion had he lost consciousness, but on several occasions the vertigo had been so severe as to cause him to fall. During the whole of the period prior to his application for treatment at the hospital he had taken various drugs, mainly, however, the bromide and iodide of potassium. He had also been blistered on many occasions. On admission to hospital his hearing power upon the right side for a 60 in. watch was found to measure 3 in. Loud conversation was heard at a distance of 1 ft.; whispered conversation was not heard at all. Examination with a tuning fork showed loss of the upper tone limit, and the C^2 tuning fork showed —20 seconds. The membrana tympani was slightly retracted, but otherwise normal; the Eustachian tube pervious, and the nasal and naso-pharyngeal spaces healthy. No definite cause could be assigned for the attacks. The patient was otherwise in good health, and had never had any cardiac or renal disease. The operation for the removal of his semicircular canals was carried out as previously indicated. After operation there was considerable collapse, accompanied by sickness and profuse cold sweats. The general condition, however, soon improved, and ten days after the operation the patient was allowed out of bed The operation was performed in June, 1903, just over a year ago, and the patient is now following his usual occupation—that of a brick setter. Since the operation there have been no vertiginous attacks accompanied by sickness, but he occasionally complains of swimming in the head. His hearing power has been completely destroyed as the result of the operation.

Case II.—M. M., female, aged 40, had for four years sufferred from recurring attacks of vertigo, sickness, tinnitus, and increasing deafness. Her previous health had, as a rule, been good. She had had three children, all healthy; no miscarriages. Before applying for treatment at the Manchester Ear Hospital she had been under treatment at various other hospitals, and had had the usual methods of treatment for such cases faithfully tried, but without effect. Upon examination the left ear was found to be seriously affected. The hearing power for ordinary conversation was quite gone, and tests with the ordinary series of tuning-forks showed complete loss of the upper tone limit, but unfortunately no exact record of the tuning-fork results was kept. The membrana tympani was thickened and opaque, the Eustachian tube pervious and the throat and nose healthy. The patient was admitted to hospital, kept in bed, and fed upon a milk diet. The left mastoid process was blistered, and she was given large doses of bromide of potassium in hydro-bromic acid. The effect was, however, practically *nil*. Operation was subsequently advised, and was carried out as described above. Great prostration followed the operation, and lasted for three days. A very slow recovery ensued. Five weeks after the operation the patient was able to return home. The result was freedom from giddiness and sickness, but practically no relief so far as the tinnitus was concerned. The operation was performed four years ago, and the patient when last seen, now six months ago, was well and going about her household duties as usual, but still complaining of constant tinnitus. Since then she has been lost sight of.

In the third case, in which a similar operation was performed, suppuration resulted. The patient is at the present time under treatment, so that no definite statement can be made as to the final result.

In the two cases in which a satisfactory result has been obtained there has been unquestionable relief so far as the symptoms of vertigo and of sickness are concerned. The marked persistence of tinnitus in the second case is suggestive either that the terminal filaments of the vestibular nerve were imperfectly destroyed, or that some lesion of the root of the auditory nerve co-existed. It must also be borne in mind that lesions of the auditory nerve roots are at times responsible for disturbances of co-ordination, and that therefore the greatest care has to be taken in arriving at a diagnosis of Menière's disease.

The triad of symptoms giddiness, sickness, and tinnitus, combined with progressive loss of hearing, in the absence of any definite lesion of the middle ear and of the central nervous system, may, I think, be regarded as pointing to a peripheral lesion affecting the constituent elements of the internal ear. Whether in such cases extensive operations are justifiable, or whether a line of expectant treatment should be followed out, is a matter for discussion.

Cases have certainly to be judged upon their individual merits. In the case of a working man unable to follow his occupation on account of repeated vertiginous attacks and the dangers therefrom, whilst in other respects in good general health, there is much to be said for operative interference, always provided that no undue risk is run and that the results obtained justify the means adopted to endeavour to secure relief.

Dr. Colin Campbell said that the operation did not sound a very attractive one, and he would plead for a more effectual and extended trial of the seton. He recalled a case when the vomiting suggested cancer of the stomach when a seton was kept in for four months. The treatment terminated in December, 1901, and there had been no attacks of vertigo since. The hearing had returned, and perfect health had been established. There was a similar case reported in the *Lancet* about three months ago.

Mr. Fagge asked whether it was advisable to operate upon bilateral Menière's disease, as he thought both ears were commonly affected, though the trouble in one was more extensive than in the other. He could not agree with the last speaker, because the hearing did not come back, though the vertigo disappeared. They required to know exactly what was meant by the term "Menière's disease," as many of the cases possessing the symptom complex were not really Menière's disease at all, which was a haemorrhage into the labyrinth.

Dr. Bronner thought Menière's disease extremely rare, but cases of so-called Menière's disease very common. He thought the latter were due to vaso-motor disturbances, and could be improved by attention to the digestive apparatus.

Dr. Barr said his experience was opposed to Dr. Fagge, and that Menière's disease was usually confined to one ear. With regard to Dr. Milligan's operation, there was a difficulty in determining where the seat of the vertigo was—whether in the labyrinth or in the cranial cavity. He had had a marked instance lately in which division of the auditory nerve was practised for the relief of tinnitus without any effect, because the lesion was in the cerebellum, and not in the labyrinth at all. Vertigo usually disappeared under large doses of hydrobromic acid, but the tinnitus and deafness did not go.

Dr. Dundas Grant said that an important question was raised by Mr. Fagge as to the many varieties of Menière's disease. In many of his cases he had been able to exclude true Menière's disease, and some of them were due to extreme neurasthenia, some due to anaemia, others to congestion, and it was not always easy to distinguish between them. He was surprised at the statement by Mr. Fagge regarding bilateral Menière's disease, and thought his experience must have been peculiar and that it would be corrected by further cases. The diminution of bone-conduction was, he thought, an important sign. They must not expect total deafness, because if the other ear was not affected one could not completely eliminate it in testing the diseased ear. The remedies that he thought should have a good trial before resorting to the above operation were small doses of quinine with hydrobromic acid. The former had a sedative action upon the vestibular nerve. Where they had evidently a congested condition pilocarpin should be tried. There was, however, a future before the operation.

Dr. Milligan, in reply, stated that he expected to find considerable opposition. Every care was taken to diagnose the cases correctly as true Menière's disease. They were also seen by two skilled neurologists and by other otologists. The expectant line of treatment was very well for the wealthier class of people, but for the poor who could not work something further should be done. Dr. C. Campbell had not given points to prove that his cases were true Menière's disease. [Here Dr. C. Campbell interposed, stating that full proof was published at the time the cases were brought before the notice of the profession.] The seton might be of value in some cases. He had rarely seen the bilateral cases mentioned by Mr. Fagge. The question of the *pros* and *cons* of Menière's disease was too lengthy to enter into. He agreed with Dr. Grant that quinine was of use, but had never seen drugs cure a case. They might minimize symptoms, but the attacks recurred, and he thought they should endeavour to do something radical, so that the vertiginous attacks might be cured.

A CASE OF CONGENITAL WORD-DEAFNESS.

By W. S. Syme, M.D.,
Assistant Surgeon, Glasgow Ear Hospital.

The patient the subject of these remarks is a boy 8 years of age—one of four children of Gaelic parents. Born in Tiree, he came with his parents, when 2 years of age, to live in a

small town on the Clyde, where his father has employment as a railway porter.

For the past year or two the boy has spent most of his time with his aunts in Glasgow, and it was one of these who brought him to the Glasgow Ear Hospital, where I first saw him in October of last year. Her reason for bringing him was that he had never spoken and did not seem to understand when he was spoken to, though otherwise he appeared to hear well.

This aunt is a particularly intelligent woman, and from her I have been able to obtain a detailed account of her nephew's family and personal histories and of his present condition:

Family History.—As has been stated, there are four in the family, the patient being the third. The others are quite healthy, and hear and speak normally. The parents were not related, nor is there anything in the family history indicating a special tendency to imbecility, deaf-mutism, or to nervous or other disease; nor is there anything to suggest a syphilitic taint. The mother is markedly left-handed, and is (I am quoting the aunt) a silent woman, speaking very little. This appears to me interesting, though I should not like to press it as having any direct bearing on the case under review. The parents, as a rule, speak Gaelic, but the boy's grandmother, who lives with them, speaks only English.

Personal History.—The mother had no fall nor other accident while she was pregnant with this boy, nor was there any special difficulty in connexion with his birth. As an infant he cried and crowed and so on, as healthy children do, and anxiety was only aroused when he did not begin to talk, to make use of the usual expressions of this age, "Mamma," "Dadda," "Baba," etc., as the other children had when 18 months old. At the same time, it was observed that he did not take notice when called or otherwise spoken to, though he seemed to hear noises quite well. Though it is by no means unusual to have speech delayed to a much later age than this, I have inquired more closely in regard to this case, as the boy, when 2½ years old, had a fall off a table. This resulted in unconsciousness for about a quarter of an hour, when he vomited, but otherwise appeared to suffer no ill effect. Than this he has had no other accident, nor has he had any serious illness. When the other children contracted whooping-cough he escaped.

Condition at the Time of his First Visit to the Glasgow Ear Hospital.—The patient is a bright, cheerful-looking lad of full size. There is no depression to be found in the skull. His aunt states that he is active, particularly cleanly in his habits, dresses and feeds himself, plays with and as other children, and sleeps well. She is of opinion that, except for the defect for which she has brought him, he is of more than average intelligence. Considering his age, he draws well, and copies the names of shops he visits with his aunt.

Hearing and Speech.—It has been noticed that he is fond of music, and hears at once when there is a street organ or other such instrument being played in the neighbourhood, and he frequently hums parts of tunes. On the other hand, when spoken to he does not seem to hear. He has never spoken in an intelligible manner, though he occasionally makes use of unintelligible sounds—"Ow, bow," etc.—especially when he is angry. He imitates the sounds made by animals, and calls them, as younger children do, by the sounds they make.

Special Examination.—The patient has enlarged tonsils and adenoids (subsequently these were removed), otherwise there is no abnormality to be detected in the upper respiratory tract, mouth, or ears. It is impossible to obtain exact reliable results on examining his hearing power for the watch or tuning-forks, though it is evident from his facial expression that that there is both air and bone conduction on both sides. A piano played in another room he evidently hears distinctly. When he is spoken to he takes no notice. If, however, he is made to watch the lips of the speaker he attempts to repeat the sound of the words. If, now, his eyes are covered he still attempts to repeat what is said, getting usually the number of the syllables right, but not the words themselves. He has no idea of the meaning of words. A book is touched, and the word "book" is spoken to him and repeated in a manner by him several times. If, now, the book is pointed to and he is asked by speech and signs what it is, he never attempts to say "book." There appears to be differences in the ease with which he repeats certain letter sounds—for instance, the vowels seem easier than the consonants, and of the vowels "oo" and "ee" easier than "ah." His condition a month after removal of the enlarged tonsils and adenoids did not show any appreciable alteration.

A month ago, and about eight months from his first visit to the Ear Hospital I saw him again. He has been at school, an ordinary Board school, for three months. Except in so far as he is handicapped he has made good progress. He draws well, writes the alphabet, and is good at drilling. He is right-handed. There is also improvement in his speech and hearing. He makes use of a few expressions, giving them their proper application—for example, "go home," "go to bed"; a watch he calls "tick-tick." When asked to open his mouth he does so, but when told to open the door he again opens his mouth. He calls his aunt "mudder."

This, then, is an account of this boy's condition in detail, and though my chief intention in reading this paper is to put the case on record, I may, perhaps, be allowed shortly to make a few remarks thereon. It may be objected that the description "congenital" is not accurate, and that the defect arose from the fall he had at 2½ years old. Naturally, I have paid particular attention to that point, and from the information given as to his previous condition, and also from the fact that he quickly recovered from this accident, I cannot look upon it as the cause. It seems to me that a laceration sufficient to bring about word-deafness must have produced other marked phenomena. If I inquire as to the actual lesion in this case, I am met by the difficulty that, as far as I have been able to find, no similar case has been described, and consequently no *post-mortem* examination.

There are many cases of acquired word-deafness recorded, due to injury or disease, by, among others, Wernicke, Kussmaul, Freund, Bastian, Macewen, Wyllie, and Bramwell, and I think we may locate the centre for the perception of speech in the posterior two-thirds of the left superior temporo-sphenoidal convolution. As Bastian remarks, here words are recalled, and this centre is in commissural connexion with the motor centres for spoken and written speech, and also with the visual centre for words. Accepting this, I think we may postulate that in this case we have either a faulty development of the auditory word centre or an interference with the afferent pathway to this centre. My own opinion is that the former is the condition in view of the improvement that is taking place, while the boy remains right-handed. Voelcker has reported a case, and I have to thank him for a reprint of the paper he read before the London Medico-Chirurgical Society, in which, however, the defect, a congenital one, was evidently either in the motor speech centre or in the commissural tract joining this centre with the auditory. The patient understood speech, though she could not talk.

I should imagine the actual history of the condition in the present case is something of the following nature: The boy has been congenitally what we might call a weak auditive. His surroundings, as described in his family history, were such as to accentuate this state; and, furthermore, the pathway to his auditory word centre was obstructed by the defect of hearing that accompanies adenoids.

A case of acquired word-deafness, recorded by Bramwell in the *Lancet* for 1897, resembles in detail the present case so much that I should like briefly to refer to it. The patient was a woman aged 26, who had an attack of cerebral haemorrhage. Motor aphasia, word-blindness, and word-deafness followed. The two first more or less disappeared, but the last persisted. When asked a question she echoed the last part of it, but did not understand. However, if she frequently repeated the question to herself she at last understood, probably, Bramwell says, arriving at the meaning through the glosso-kinaesthetic sense. Naturally, being a congenital condition, this sense would be of no help to the subject of this paper.

Analogous to the present case are those cases of congenital word-blindness which have been reported, and they supply *a priori* ground for admitting the possibility of congenital word-deafness. The fact that the auditory word centre becomes active earlier than the visual makes such cases more difficult of recognition, and the effect in producing imbecility is more probable.

One is inclined to think that a careful examination of backward children would in many cases disclose a condition similar to this case, though not of such a marked degree, a point still further emphasizing the advisability of having all such children examined as to their special senses with a view to directing their education.

Dr. Barr asked if the hearing of ordinary sounds had been tested—as bell-ringing, watch-ticking, etc.—as it is known that ordinary deaf-mutes often hear music and loud sounds, but they cannot acquire the more delicate and slighter sounds involved in speech.

Dr. Syme said that the child heard the watch, the tuning fork, and the whistle.

NOTES OF A CASE OF MASTOID ABSCESS FIVE WEEKS AFTER MEASLES: OPERATION: RECOVERY.

By Laurie Asher Lawrence, F.R.C.S.,
Surgeon, Ear and Throat Department, Western General Dispensary.

On June 3rd, 1904, L. R., a little girl, aged 5 years, was brought to see me on account of a swelling behind her left ear. She was a well-nourished, healthy-looking child, and walked into the room. Examination showed some discharge from the left ear, and a fluctuating swelling about the size of a hazel nut just behind the pinna and on a level with its upper border. The child did not complain of any pain, and her temperature was but slightly raised—99.6°. The ear, on being

syringed out and cleansed, showed no trace of a granulation, though the membrana tympani was not fully accessible to view on account of a natural projecting anterior wall to the meatus. There was no swelling or bulging of the posterior wall. As the swelling was clearly a mastoid abscess, it was decided to open it at once; and as the child would have to be treated at home until a bed could be found for it, if necessary, anything like a formal operation was deferred. The abscess was opened under the usual antiseptic precautions by incision over it, quite down to the bone. Some two drachms of healthy-looking pus followed the incision, and the abscess cavity was well washed out with some biniodide of mercury lotion. Examination with a probe showed an extensive cavity in the mastoid, and a passage leading towards the middle ear. No granulations, though looked for, were seen or felt. Both ear and mastoid cavity were packed with iodoform gauze, and an outside dressing placed over the incision and ear, and kept in place with a bandage. The wound and the ear were washed out daily and repacked. At the end of three days the discharge from the wound, which had been fairly profuse, had commenced to diminish. That from the ear was much less, and had changed into stringy mucus. A few days later the ear stopped discharging altogether, and the wound was rapidly healing, in spite of the endeavour to keep it open with gauze plugging.

An examination of the ear revealed a tiny, almost pin-point, perforation in the upper part of the drum; this was quite dry. The hearing, as far as it could be made out, was very good. In under a fortnight the mastoid wound was quite healed, the ear having been dry some days before. The temperature became normal the day after the operation, and has remained so ever since.

The history given was that on May 1st the child developed measles, having previously been a healthy child, both as regards her general condition and her ears. No discharge had ever been noticed from either ear, and she was not deaf, and had had no pain. During the attack the swelling at the back of the ear appeared: still there was no complaint of pain on the child's part, and the discharge escaped notice. I have brought the case forward (I think some of these cases ought to be recorded) because, to my mind, there are some interesting points about it.

1. The case developed in little more than a fortnight.

2. As far as it was possible to ascertain, no previous disease of the ear had existed. The child was only 5 years old, and the story is likely to be correct, as the child's people seemed fairly intelligent. There was never any complaint of pain notwithstanding that this was the first time the child had had suppurative otitis media.

3. There was no pain complained of on palpation over the mastoid when the patient was examined on June 3rd.

4. There was only very slight raising of the temperature.

5. No granulations were present in the ear, and careful examination in the cavity of the mastoid did not reveal any.

6. The treatment adopted—Wildes's old method—was not proposed with any other idea than that of letting out pus, certainly not with any feeling that anything like cure would have resulted from such a simple proceeding; within a fortnight the case was well.

7. Lastly, what healing process can have produced this result? What can be going on inside the child's mastoid, where there is or was a large pus cavity fourteen days before complete return to health, as judged by cessation of aural and mastoid discharge, normal temperature, and good hearing?

Dr. Tilley asked if the membrane were now intact.

Dr. Lawrence said that there was a pinhole aperture but no suppuration.

DISCUSSION ON THE RELATION OF ASTHMA TO NOSE DISEASE.

I.—Greville Macdonald, M.D., M.R.C.S.,
Physician for Diseases of Throat, King's College, Hospital.

Asthma.

The subject of asthma in relation to nose disease is curious in a day when almost every advance is based on scientific deductions from fact. For we cannot pretend that our knowledge—if such it can be called, when even specialists busy themselves as much in contradicting as in substantiating one another's observations—is yet unequivocal. While we believe that asthma of long or short duration, whether called spasmodic or catarrhal, is often cured by treatment of the nose, we can neither ourselves offer explanation of the fact nor can the physiologist help us. Even if the latter can artificially excite symptoms of asthma by stimulation of the nasal mucous membrane, he brings us no nearer to a working theory and adds little or nothing to the value of our clinical observations.

I have nothing new to offer as theory, because of the conflict of my facts. Yet these latter so definitely proclaim the frequent cure of asthma by intranasal treatment that they are worth classifying in the hope that I may induce the profession to examine the question.

Time will not permit the relation of more than a few cases, nor will my statistics carry conviction. If we use one or other means of giving weight to our facts, our hearers are still dependent on the accuracy of our statements. And I must content myself with asking you (A) to accept certain brief statements of fact as literal, whatever explanations you may prefer to put upon them. Having asked this much, I shall suggest, from the evidence of allied nasal symptoms and conditions, (B) how far it is possible to classify our facts and adduce some sort of generalization, which, if not final, shall at least give us courage to go on with our work and persuade those who think us visionaries that there is reason in our claims.

(A) My own cases may be classified in three series: (1) Those pointing to the relief or cure of asthma by removing obstruction to easy breathing or causing pressure. (2) Those where the treatment of any other sort of abnormality in the nose is similarly successful. (3) Those where the mere cauterization of mucous membrane in a comparatively healthy nose results in cure.

1. That the removal of any obstruction whatever in the nose or naso-pharynx may result in the cure of asthma, whether spasmodic or catarrhal, is well substantiated. The most favourable form of obstruction, in my experience, is hypertrophy of the erectile tissue; and the region I like best to be able to accuse in an asthmatic is the anterior extremities of the inferior turbinals. In illustration of my contention that the cure of nasal obstruction may cure habitual bronchial asthma, I can quote a case sent to me by Dr. Brodie. On September 29th, 1903, I removed an enormous mass of hypertrophied erectile tissue and thickened anterior ends of the middle turbinals in a girl aged 17, who had had chronic bronchitis and nightly attacks of asthma, steadily increasing in severity almost since infancy. Her asthma and cough both disappeared the second night after the operation, and have till now never once returned.

Next in importance is any irregularity of the septum causing pressure or obstruction to easy breathing: some of my most remarkable cures have immediately followed the removal of such obstruction. Less favourable than these is, curiously enough, the affection called adenoids. I am not sure that I can refer to one case of the cure of asthma from operation on post-nasal growths, unless there is some coexisting obstruction in the anterior nares, although great improvement almost invariably results. Against this statement I must put the fact that my brother, Dr. McKay Macdonald, has related two cases of immediate cure of asthma in children with adenoids, following a digital exploration of the post-nasal space, and without operation!

Less unfavourable than adenoids is polypus. Although asthmatics with this disease are always greatly relieved by operation, and their general condition improved, the prognosis as regards their asthma is singularly uncertain. Yet I can recall many real cures, but especially, I think, when polypoid degeneration has not involved the ethmoidal region to a general extent.

Such a summary of facts is sufficient in itself, one would think, to substantiate the fact of the relation of nose disease and asthma as cause and effect, notwithstanding the impossibility of classing them together in a working theory, and of venturing a prognosis in any individual case.

2. But we now come to our second series of facts in which there is no obstruction, but where the treatment of an unhealthy mucous membrane helps or cures the asthma. These afford us even more definite reasons for assuming an intimacy between the nose and bronchial tubes. A large proportion of asthmatics are also sneezers, and an attack of sneezing often precedes, and more seldom terminates, a bout of asthma. Often, too, a patient will declare that the first warning he has of an attack of asthma is blocking of the nose

passages, which open up again as the dyspnoea ceases. Here, however, the patient may mistake the sequence of events, seeing that the general venous engorgement accompanying deficient aëration of the blood will necessarily produce overfilling of the erectile tissue of the nose. Objectively, and apart from whether they have or have not some obstructive source of irritation, we commonly find in the habitual asthmatic a general oedema and anaemia of the Schneiderian —a condition identical with what we find so often in those who suffer from intractable morning sneezing. In these cases, whether the oedema is associated with sneezing or asthma as the chief complaint, or whether the two are associated, I have used the electric cautery with the happiest results, but especially when the oedema is so pronounced over the upper part of the triangular cartilage that the mucous membrane of it and the outer wall are brought into contact. Moreover, in hay fever and hay asthma, even when there is no oedema, I have had remarkable results from cauterizing this region in anticipation of symptoms.

To the necessity of attacking this area I drew attention in a lecture, subsequently published, on Hay Fever and Asthma, in 1892; and increasing experience has confirmed me in the importance of reducing thickened mucous membrane wherever situated on the septum. Thus in April, 1902, Mr. Henry Huxley sent me a case, a girl of 20, who was constantly taking cold in the head, the colds invariably passing down to the chest, and always accompanied by severe attacks of asthma. The only fault I could find with the nose was a thickening high up over the left side of the septum and some slight posterior hypertrophy of the inferior turbinals. I cauterized the septum six times. She has not had a suggestion of asthma since. Indeed, in my experience the treatment of any hypertrophy of the mucous membrane in the anterior region of the anterior nares with the electric cautery is attended with beneficial results; and I think that the anterior extremity of the inferior turbinals is quite as important as the septum. So strongly do I feel this that I am prepared to give a good prognosis to any asthmatic, whatever his symptoms, if he presents any degree of persistent engorgement or true hypertrophy of his anterior inferior turbinals. This point in practical experience I have asserted for many years past, and still adhere to. Among other forms of abnormality of the lining membrane of the nose I can mention the cure of habitual asthma in a girl of 17 by the cure of an incipient atrophic rhinitis. This was fourteen years ago, and I know she has had no return of the asthma. But this is the only case of asthma I have ever seen associated with atrophic rhinitis.

3. And now we come to our third series of cases, which are perhaps the most curious and paradoxical. They comprise the class to which Dr. Alexander Francis—then of Brisbane, now fortunately settled among us in London—drew our attention in a communication to the Clinical Society, in October, 1902. His very remarkable statistics bear this interpretation: that whatever the state of the nose, free or obstructed, with a healthy or unhealthy mucous membrane, the great majority of asthmatics, be their asthma catarrhal or spasmodic, or cardiac, whatever that may mean, are to be cured by cauterizing the upper part of the triangular cartilage. Since hearing this paper I have put his teaching into practice, and am prepared to vouch for the accuracy of his observations, though again and again I have failed to benefit my patient by this treatment until I had removed some one or other form of obstruction. By this treatment I can point, among many others, to the cure of two cases sent me by Dr. J. H. Philpot, and another sent me by Mr. Beedon Turner. So that, though I greatly doubt whether Dr. Francis will get as good results in this climate as he had in Brisbane, I feel convinced that we owe him much for his laborious work.

So far we have sufficient clinical reason for associating pathological conditions of the nose with symptoms of asthma, though we are never able to induce, even in an asthmatic subject, an attack of asthma by irritation of the Schneiderian or olfactory mucous membrane. Yet there is another fact which very strongly points this association. It occasionally happens that after the removal of polypus the patient for the first time in his or her life immediately becomes and sometimes remains asthmatical. This has happened three times in my own experience. The first patient was a hospital outpatient of whom I lost sight, so that I do not know his subsequent history. The second was a frail woman who suffered badly from paroxysmal sneezing and membranous colitis. Two years before she came to me she had her polypus removed. The operation was followed by asthma nearly every night for six months, though she had never had it before. It gradually disappeared as her nose became blocked again; and when she came to me she had been free of asthma for eighteen months. I found the nose packed tight with growths, and I removed them piecemeal. After the first operation the asthma returned and remained with her; but it gradually improved as the nose became normal until now, nearly two years after she first came to me, I can almost speak of the cure of both nose and asthma. But I have not been content with treating the polypus: I have also used the galvano-cautery freely to the septum and inferior turbinals. The third case was brought to me a year ago by Mr. Henry Huxley. He had removed the patient's polypi with cocaine a fortnight previously, and since the operation the patient had suffered from almost continuous asthma, though he had never had it in his life before. I found the whole ethmoidal region in a state of polypoid degeneration. We gave him a general anaesthetic, and cleared away everything involved in the degenerative process. As he recovered, and after a few applications of the electric cautery to the inferior turbinals and septum where the mucous membrane was thickened, his asthma disappeared, and for the last nine months he has been quite free, and, of course, greatly improved in health.

(B) And now I come to the generalization which we may deduce from our facts, and which is the nearest approach, as seems to me, to a working hypothesis. To enunciate this generalization I must draw attention to certain facts which will be admitted by any practitioner, even if his experience in nose disease is but small. These also I will summarize under three headings:

1. Whenever a patient complains of frequent and severe cold-taking and we find any abnormal condition in his nose, whether of obstruction or thickened mucous membrane or oedema, we are nearly quite sure of curing his cold-taking by operating or by the use of the electric cautery. But, of all conditions, the removal of polypus, though often most satisfactory, is perhaps the least certain in results. This cold-taking, moreover, may show itself in rhinitis, pharyngitis, laryngitis, or bronchitis, though the prognosis is better whenever the first symptoms show themselves in sneezing and rhinorrhoea.

2. Whenever a patient complains of paroxysmal sneezing, which often, in course of attack, can be distinguished from ordinary cold only by the brief duration and frequency of recurrence, we can be tolerably sure of effecting a cure by the rectification of the nasal abnormality, especially if it is obstructive.

3. A patient with polypus, less often with other forms of obstruction, not infrequently takes cold, often severely, sometimes in the form of laryngitis, sometimes of bronchitis, immediately after removal of the obstruction. It would appear that the nasal mucosa, so long protected by the obstruction, is unable to face the first exposure after removal, just as a man going to a ball in a low-necked dress might get a pneumonia, though his wife, being habituated to such exposure, would do nothing of the kind.

Now, when we class together the facts of asthma, spasmodic and catarrhal, in connexion with nose disease and the facts of sneezing, spasmodic or inflammatory, and consider also the part played by an abnormal condition of the nasal mucosa in inducing susceptibility to cold-taking, we are brought to a standstill in our inquiry as to the relation between nose disease and asthma: for we realize that, in the first place, we must know more about the whole question of inflammation arising in a distant mucous surface following on the exposure or chilling of any surface, whether cutaneous or mucous. If the sudden exposure of a long protected mucous surface in the nose may result in a rhinitis, or a laryngitis, or a bronchitis, it is not to be wondered at that symptoms of asthma may also supervene at times. If a simple inflammatory process originating in the nose may gradually extend downwards, sometimes slowly, sometimes rapidly, till larynx, trachea, and bronchial tubes are involved and asthma is induced, it looks less paradoxical that treatment of the nose, by rendering it less susceptible to the initial attack, should arrest also the tendency to asthma. When, moreover, we see so often an oedema of the nasal mucosa associated with paroxysmal sneezing, and occasionally see it rapidly extend to the larynx, and more rarely still as a mere symptom of angio-neurotic oedema, or alternating with urticaria, we are justified in supposing that a similar oedema of the bronchial tubes may determine the attacks of spasmodic asthma.

To summarize the results of treatment, we may affirm in

form of the promised generalization that any treatment which allays the irritability of the Schneiderian, whether by operation and the ventilating of abnormally-protected areas of mucous membrane, or by hardening the hyperaesthetic areas with the electric cautery—any such treatment of the nose may modify or arrest the onset of the catarrhal attacks, whether they manifest themselves in symptoms of sneezing, laryngitis, bronchitis, or asthma.

But the whole subject of asthma is extremely difficult to reduce to a scientific position, and chiefly because it is one of the class of obscure neuroses which are often susceptible of modification and cure by modes of treatment which, because of their seeming success, take from us our assumed right to vilify quack remedies, Christian Science and suggestion, until we can understand and master disease better. But when we find patients of all ages cured by intranasal treatment (I think at this moment of an old man of 70, unable to work for fifteen years, yet cured and steadily working again after three or four applications of the electric cautery to his septum, and several children under 14 cured by similar measures), I find it impossible to explain the facts on a supposition of the wonders of suggestion.

The following table gives approximately the results of treatment of 95 cases of asthma that have passed through my hands during the last two years:

Statistics of Cases Treated during the last Two Years.

Polypus, 13. Cured, 5; relieved, 6: worse, 2.

Hypertrophy of erectile tissue, 13. Cured, 8; relieved, 1: under treatment, 1; no record, 3.

Septal spurs obstructing, 10. Cured, 4; relieved, 3; unrelieved, 2; no record, 1.

Cases of hypertrophy of septal mucous membrane treated with galvano-cautery, also of cases where the septum was galvano-cauterized with no hypertrophy, 43. Cured, 16; relieved, 9; under treatment, 11; unrelieved, 4; no record, 3.

Sixteen cases too unsatisfactory in history, etc., to bear quoting.

Cured over 40 per cent. of all cases.

II.—Samuel West, M.D., F.R.C.P.,
Physician, St. Bartholomew's Hospital.

The affections of the nose which are associated with respiratory difficulties fall into three groups:

1. Obstructive, where there is mechanical interference with the free passage of air through the nose.
2. Infective, where inflammatory or infective processes are set up in the respiratory organs by infection from the nose.
3. Irritative, where the respiratory condition is of reflex origin excited by irritation within the nose.

1. *The Obstructive.*—Mechanical obstruction in the nasal passages does not of itself cause any respiratory affection, unless it be associated, as occasionally happens in children, with adenoids and enlarged tonsils. Then deformities may be produced in the thorax, such as pigeon-breast or Harrison's furrow.

What nasal obstruction must of necessity cause is mouth breathing. The air is then not warmed and filtered as it would be in the nasal passages, so that the mouth and pharynx become dry and irritable, and chronic pharyngitis is the almost inevitable result. Besides this the parts are prepared for infection.

2. *The Infective.*—When the mouth and pharynx are moist, and when the mouth and tongue are continually washed with saliva, the germs which gain access with the air inspired are got rid of, or, at any rate, are not likely to grow. But when the breathing is through the mouth the coating which forms upon the tongue, though chiefly made up of dried secretion and cells, teems with germs of all kinds. If among these, then, are pathogenic organisms—for example, the pneumococcus—very serious infection of the air-passages and lungs might follow. This mouth breathing greatly increases the risk of infection of the air passages. If this danger were more often thought of in the specific fevers, especially of childhood, the frequency of pneumonia and bronchitis would, I believe, be greatly reduced.

When there is actually any infective condition in the nose, infection is very likely to spread directly to the neighbouring parts. Nasal diphtheria presents the most obvious and striking example; but so gross an infection as diphtheria is not required to illustrate this fact. Nothing is more common than for simple catarrh to commence in the nose and extend to the pharynx, and even to the respiratory organs. Such is the history commonly given by patients of their chest colds. They describe the sequence of events graphically, and say that their colds always begin the same way, starting in the nose, extending to the throat, and thence spreading to the chest. What is more, these catarrhs may be stopped by antiseptic washes to the mouth and pharynx, so that the line of extension is cut; or, better still, of course, by the removal of the source of infection from the nasal cavities.

3. *The Irritative or Reflex.*—This group is by far the most interesting in relation to the respiratory neuroses. Cough, often paroxysmal in character, is common with affections of the nose, as it is with those of the throat. Another affection which naturally suggests itself is paroxysmal sneezing.

Besides these, there are various subjective sensations to which nasal affections give rise—for example, sensations of tightness in the chest, or shortness of breath, or even dyspnoea. All these conditions may stand in some relation to asthma, but they are not of themselves asthma, or even necessarily asthmatic phenomena, as they have been called. Of the relation in which asthma stands to intranasal disease much has been written of late years. Opinions vary widely, as well as figures. It is a matter of surprise, to those who know that true asthma is not a common disease, that authors should speak of having seen 300, 400, or 500 cases of asthma in a few years. One wonders where they get them from. There are over 5,000,000 of people in London, and yet I doubt if there could be gathered together at the present time, from all sides, 500 separate cases of spasmodic or true asthma. The term "asthma" must be used, then, by these writers in a very wide and comprehensive sense, and the number can only be made up by including not only all the asthmatic phenomena above referred to, but many other phenomena of still more doubtful nature.

Accepting, however, for the purpose of discussion the figures given, we may consider how far they prove the frequency of the association. This problem may be attacked in two ways:

1. A number of cases of asthma may be taken, and the frequency of nasal disease among them determined. Thus, Lublinski found, in 500 cases, 143 with some pathological condition in the nose—that is, in 28 per cent.; of these 143, 27 were cured—that is, 20 per cent.—and 13 relieved—that is, 10 per cent., or 30 per cent. in all. Francis in 402 cases found nasal disease in 56 cases—that is, in 13.9 per cent.—and very few of them were relieved by treatment. To make such statistics of real value it is necessary to know the frequency with which these nasal conditions occur among healthy persons, for it is obvious that the association might be accidental.

2. A number of cases of nasal disease may be taken and the frequency of asthma among them be determined. Thus, asthma was associated with nasal polypi in 9 out of 360 cases (Bäcker), in 7 out of 200 cases (Hering)—that is, in 3.2 per cent. Schmiegelow's percentages were higher: 31 out of 139 cases of nasal polypi (that is, 22 per cent.), and 40 out of 502 of chronic rhinitis (that is, 8 per cent.)—together, in 30 per cent.

Francis, in a recent paper, maintains that when asthma is associated with nasal lesions the prospects of relief by treatment are less promising than where there is no gross disease.

All these statistics are unsatisfactory because of the indefinite meaning attached to the term "asthma," yet they are sufficient to establish a connexion. At any rate difficult cases are recorded, and some few I have seen in my own experience, in which true asthma associated with nasal disease has been cured or greatly relieved by removal or treatment of that disease.

A few cases are also recorded in which asthma has actually been produced in persons not previously known to be asthmatic by intranasal treatment.

We may conclude, therefore, that there is a relation between asthma and intranasal disease, but that its frequency is by no means so large as the published statistics seem to show. I may add that I do not believe any person who was not already asthmatic could be made asthmatic in this way any more than he could be made epileptic by similar means.

As regards the results of treatment, I may express my general agreement with the experience of Sir Felix Semon, that though relief may be given in a few cases the prospects of cure are small.

Asthma is a respiratory neurosis and closely resembles epilepsy. Given the asthmatic or epileptic predisposition in

either case, the attack may be excited by stimuli from various parts of the body. It is therefore the rule to search for a source of irritation and when found to remove or treat it. So in asthma, when nasal disease exists, it is fair to try the effect of treatment. Relief may be given though cure is unlikely. The relief of asthma by remedies applied to a healthy nose may be compared with the checking of an epileptic fit by tying a garter tightly round the leg below the knee. But asthma being a neurosis and the patient often highly neurotic, the effect of mental impression in estimating the result of treatment must be allowed for.

Let me say, in conclusion, that knowing only too well how difficult the treatment of asthma often is, I should be only too glad to treat any possible source of irritation I might discover in the nose or elsewhere, in the hope that I might be fortunate and give relief.

III.—ANDREW JOHN BRADY, L.R.C.P.I., L.R.C.S.I.,
Honorary Surgeon, Ear, Nose, and Throat Department, Sydney Hospital, Australia.

DR. BRADY said he had had a few cases that had been well for years after removing obstructions in the nose. He took a middle course between the two openers of the discussion.

IV.—COLIN CAMPBELL, M.R.C.S., L.R.C.P.I.,
Southport.

MR. COLIN CAMPBELL said he had not had so many cases as Dr. Macdonald, but he had had ten cases up to within one year ago, since when he had had a great many more, and he had called attention to the influence of nasal treatment of asthma in the *Liverpool Medical Journal*, and his experience agreed with that of Dr. Macdonald. The most frequent and the most difficult cases to remedy in nasal asthma were those in which nothing was to be seen in the nose, but upon inquiry one discovered that when the patient had an attack of asthma in the morning, one or other nostril was blocked. In such cases it was essential to treat the nose to cure the asthma. Twelve months ago he began the application of a radium tube to the sensitive areas of the nose. He applied it for twenty minutes, then allowed an interval of one day, then applied it for twenty-five minutes, allowed another interval, and then applied for thirty minutes, and thus produced a radium soreness instead of the previously-existing soreness, and then painted the part with a saturated solution of argyrol. In all cases of long existing asthma, where there was a condition of bronchitis with spirals, it was not sufficient even in an obviously nasal case to treat the nose only. One must also treat lower down, and he had followed out the treatment of intratracheal injections. He had published cases that had been cured for ten years and had remained for that time absolutely free, and one case had had asthma for twenty years. These were shown at Manchester last year.

V.—JAMES WALKER DOWNIE, M.B., C.M., F.F.P.S.Glas.,
Surgeon, Nose and Throat Department, Western Infirmary, Glasgow.

DR. DOWNIE said that all were agreed that many of the cases of asthma were associated with some nasal lesion, although there were many not so associated, and also many cases of hypertrophy of erectile nasal tissue not accompanied by asthma. He did not agree with Dr. Macdonald, but thought that many of the cases were the result of mucous polypi, and if after their removal the asthma did not disappear it was because the removal had not been thorough. In some published cases of his, where many weeks had been spent in bed with typical asthma, polypi were removed, and for two years the patient had immunity from asthma. Slight attacks again came on at the end of that time, and more polypi were found and removed, with disappearance of the symptoms. He considered Dr. West's paper a most excellent one.

VI.—STCLAIR THOMSON, M.D., F.R.C.P., F.R.C.S.,
Assistant Physician, Diseases of Throat, King's College Hospital.

DR. THOMSON said he was glad to hear Dr. West's opinion that cases of asthma were not so common as one would be inclined to think. The statements of patients on the subject must be taken with reserve, for half those who stated they had asthma were really suffering from dyspnoea due to mouth breathing and nasal obstruction. He had known cases termed asthma which were really due to the dyspnoea of Graves's disease. Suggestion, as Dr. Macdonald said, plays a large part in the treatment. He had read in American publications of surgeons who had had wonderful effects by dilating the sphincter ani (!). Such procedures he hardly agreed with.

VII.—ALEXANDER FRANCIS, B.A., M.B., B.C.Camb., M.R.C.S., L.R.C.P.

DR. ALEXANDER FRANCIS said the great stumbling-block in the way of progress being made in the treatment of asthma was that they did not know how far, or in what manner, a nasal lesion was responsible for the asthmatic condition. It was extremely interesting to hear the happy result obtained by Dr. Macdonald in cases of asthma by removing obstruction to easy breathing or obstruction causing pressure. They wanted further explanation that the results were due to mere restoration of normal breathing, or to removal of a sensory irritation, for the following reasons:

1. Because asthma is comparatively rare in cases of marked nasal obstruction, when it should be most common.

2. The majority of patients suffering from asthma have their noses in a fairly normal condition.

3. Asthma is sometimes aggravated by a return to free nasal breathing, and much the same may be said of polypus cases.

He did not think the association so common as was generally supposed.

Thus, Schmiegelow found only 31 cases of asthma among 139 cases of nasal polypi, and if asthma depended upon obstruction or the irritation of polypi, surely the association should be more frequent. On the other hand, among 492 cases of asthma that he had personally treated, he had met with only 39 cases of nasal polypi. In some cases asthma first appeared after polypi had been removed.

Amongst the minor evidence against the association of the two was the fact that the best results, as far as permanency was concerned, in cases of asthma associated with polypi had been obtained by treating the nose without touching the polypi. That there was some connexion between asthma and polypus was chiefly to be inferred from the difficulty in treating asthma when polypi existed. Ever since Voltolini, in 1871, recorded that he had relieved asthma by removing polypi the tradition had been handed down from one textbook to another that cases of asthma associated with polypi offered the best hope of affording relief by intranasal treatment. He believed that no more erroneous statement could be made in connexion with asthma.

The only class of case that approached in difficulty were those who had got into the habit of using Tucker's cure. He was confident that the chief reason why operators so frequently failed to relieve asthma—why Sir Felix Semon's statement that an exceedingly small proportion of cases obtained relief from nasal treatment was so commonly accepted—was that the one idea of treatment was to remove an irritation causing the asthmatic condition. His idea was that all asthma depended upon a condition corresponding to inhibition of exchange, which was dependent upon the respiratory centre, and that the stability of the centre could be affected by nasal treatment. Otherwise, it was hard to understand how gastric, cardiac, hereditary, and other apparently characteristic forms of dyspnoea could be relieved by nasal treatment, although they could not remove the evident sensory irritation, or why those results were most easily obtained when the nose was apparently normal.

In order to show that those results were not merely accidental coincidence, he had over 600 cases, of which he had notes, and of which 60 per cent. had obtained absolute and complete relief, 27 per cent. marked relief, and under 5 per cent. who got no improvement.

VIII.—PATRICK WATSON WILLIAMS, M.D.Lond.,
Physician, Throat Department, Royal Infirmary, Bristol; Lecturer on Practical Medicine, University College, Bristol.

DR. WATSON WILLIAMS said: We must not forget that true spasmodic asthma is a neurosis, and we are all on common ground in regarding the attack as the result of peripheral excitation of afferent nerves acting on an unduly unstable medullary centre. This may be regarded as a double centre, an expiratory and an inspiratory portion; and I have elsewhere summed up and published the physiological and clinical evidence, which shows that the bronchial muscle contracts during expiration, and, like the alae nasi and glottis, dilates during inspiration, and that spasmodic asthma is essentially an intensification of this normal rhythmical contraction, rather than a persistent spasm. Further, there is a close relationship between the nose and the respiratory centre in health; for Spencer, corroborating and extending Munk's

observations,[1] has demonstrated experimentally the influence of the nasal area, and in less degree of excitation of other sensory organs, on normal respiration—for example, snuffing from excitation "of the mucous membrane of the nose in its upper part from the olfactory nerves," etc., the chest assuming a position of over-inspiration. I would especially direct attention to observations such as those of Cajal, showing that collateral fibres from the gelatinous substance of Rolando, which is the receptive nucleus of the trigeminus in the medulla, communicate with the motor nuclei of the vagus, especially the nucleus ambiguus of the same and the opposite sides. Hence we have anatomical evidence supporting clinical observation that normal respiration is influenced by afferent impulses from the nasal passages. Further evidence is afforded by the inhibitory respiratory influence of the nasal catarrh induced by adenoids, resulting in deficient respiratory excursions and infraclavicular flattening of the chest, and of the sometimes dangerous respiratory inhibition observed during the removal of adenoids.

The removal of nasal polypi and of any underlying disease of the mucosa and ethmoidal labyrinth, of nasal spurs, or turbinal hypertrophies, not only provide a normal air tract which relieves the bronchi of the pernicious effects of buccal respiration, but also restore the normal influence of the nose on the respiratory centre. This latter, I submit, is a point of considerable importance, and, I believe, is one of the main causes of cures by removing adenoids in asthmatic children, and will explain Dr. McKay MacDonald's cases referred to by the opener.

Nor can we fail to be impressed with the fact that many of the nasal abnormalities are like the bronchial affections—the result rather than the cause of pre-existing asthma. But another influence is not to be disregarded: the traumatic effect of operative measures on the nose tends to relieve the asthma, and after each intranasal operation, or such cauterization, the attacks of asthma are usually relieved or temporarily in abeyance. A good many years ago I was led to cauterize—with considerable relief to nearly every patient—even normal nasal passages to obtain this good influence on the course of asthma.

Latterly I have had most encouraging results from applying strong faradic currents to the nasal mucosa, a terminal being inserted, covered with wet wool, into each nostril; beginning with a mild current it is rapidly increased in strength without much discomfort to the patient, and the relief is so marked that patients soon desire the applications. I have never heard of this method having been tried by others, but would strongly commend it for trial; yet, unless there is some definite lesion, the removal of which is followed by cessation of the asthmatic attacks—and this is rare indeed—I never rely on any intranasal treatment alone to cure the patient. Such nasal methods seem to influence the respiratory centres in such a way that the spasmodic attacks are temporarily prevented, while the general tone of the patient is being raised by nerve tonics, cold bathing, exercise, regulation of diet, etc., and he is thus enabled largely to avoid resorting to sedative remedies, such as stramonium, lobelia, etc., which, while relieving the attack for the time, render him more susceptible to subsequent attacks. We are discussing to-day, not the general treatment of asthma, but the influence of the nose on asthma, etc., otherwise I should refer in greater detail to these general therapeutic measures, the importance of which I can only emphasize. Thus, while an ardent advocate of certain nasal treatment of asthma, even when no lesion is present, it is only as an adjunct to more general treatment, without which I am convinced by my own experience that permanent success is scarcely possible; and the particular method I have alluded to has the great advantage of causing no lesion, however often repeated.

IX.—L. Hemington Pegler, M.D., M.R.C.S.,
Surgeon, Metropolitan Ear, Nose, and Throat Department.

Dr. Pegler said that he would like Dr. Macdonald to add to the great value of his statistical tables by giving further particulars as to the extent to which the asthma in his cases was affected by food, by leaving home—that is, effect of climate—winter months, fogs, tobacco smoke, and similar variations of daily life.

X.—Scanes Spicer, M.D., B.Sc.Lond., M.R.C.S.,
Surgeon, Throat Department, St. Mary's Hospital.

Dr. Scanes Spicer said that the speakers in the discussion had almost entirely confined themselves to referring to "nasal disease," on the one hand, and "asthma" on the other. He thought that the proposers of the debate had in view—and wisely too—not only "asthma" in the restricted sense, but the wide group of "laryngeal and pulmonary affections" in which there was paroxysmal difficulty of breathing. The value of the debate on the present as on many previous occasions had been materially lessened—for the medical profession—by the different meanings attributed to the terms used. Take "asthma" for instance. Dr. West apparently used the word "asthma" in a highly restricted sense, for pure, spasmodic, or nerve asthma—"original sin" or "depravity" of the respiratory centre—without any initial peripheral irritation in existence or an unrecognized one. Dr. Macdonald, on the other hand, appeared to regard any paroxysmal attack of dyspnoea of which patients complained, and for which they sought relief, as "asthma." If the latter interpretation was not justifiable, neither the rhinologists nor the public were to blame; for the systematic works on medicine compiled by the general physicians had spread broadcast the notion that "asthma" included bronchitic, laryngeal, gastric, renal, haemic, and other varieties whose clinical history was essentially different from the pure spasmodic form. If the physicians would formulate the exact limits of the term "asthma," which was to be accepted by all in any future debates, we should know where we were, the rhinologists could reclassify their observations, and we should be in a position to advance. At present the term "asthma" was, rightly or wrongly, extended to all paroxysmal difficulties of breathing. At the same time the speaker had been led to conclude that a true spasmodic type due to perverted respiratory centre action was frequently grafted on—even when not originally present—to dyspnoeas of bronchitic, emphysematous, cardiac and other origins, and that a secondary neurosis of the respiratory centre, not differentiable later, except by the history, from a primary "spasmodic" asthma, was produced.

Then, again, the term "cure" was an ambiguous one. It had a very distinct relation to the view taken as to the real nature of asthma. He would be a brave man who spoke of the "cure" of such neuroses as blushing, tachycardia, tic, and other perverted centre habits. The word "cure" was not to be lightly used to patients in connexion with the treatment of disease. He had himself experienced the gratification of being told by patients that the intranasal treatment he had carried out had "cured" their "asthma"—the relief had been so great and so lasting (in comparison with the result of other measures) from troubles which had tormented them for years. His experience entirely coincided with Dr. Macdonald's as to the wonderful relief experienced in properly diagnosed cases, but he deprecated the use of the word "cure" by the rhinologist himself. It was not unlikely to give a handle to the omnipresent enemy if any attack ever took place in the future. When a physician treated a patient for an attack of gout, and his remedies expedited recovery, he and his colleagues were well satisfied, but they knew perfectly well the disease was not cured. Now, the rhinologist should not be expected to "cure" everything for ever and ever; but, alas, in rhinology a truly impracticable standard was set for them, and their methods and results were condemned because they could not perform impossibilities. What their patients wanted was speedy relief from their symptoms, and if they called it "cure" we must not.

With reference to bronchitic asthma, he was of opinion that one of the most powerful exciting causes was the excessive abnormal variations of air tension brought about by breathing through partially obstructed or insufficiently patent nasal channels. This led to rarefaction of air in the respiratory tract and a dry-cupping of the mucosa. The membrane became congested, oedematous, waterlogged, and ultimately hyperplastic. Its vitality was relatively low, and it became more prone to infection and catarrhal inflammation, hence pharyngitis, laryngitis, bronchitis, pneumonia, and a condition of tissue which predisposed to tuberculosis. On chronic catarrhal pulmonary conditions asthmatic symptoms often supervened. This excessive variation of air tension (in the absence of mouth breathing) resulted from nasal stenosis and faulty habits of breathing. The evidence thereof he believed to be seen in:

1. The abeyance of the natural physiological expansion of the alae nasi, seen in all infants at birth, and in all quadrupeds

[1] Watson Williams, *Diseases of the Nose, Pharynx, and Larynx*, 4th ed., p. [illegible]

2. The collapse of the alae nasi against the septum from the fall in air pressure in the nose.

3. A noisy "sniffing" sound on inspiration, instead of a noiseless in breathing. These excessive variations of air tension were easily demonstrated by appropriate manometers, and both the apparatus and numerous tracings of the pressure curves had been exhibited by the speaker on different occasions.[1] These had proved that small increases of obstruction of the nasal passages increased the normal falls and rises of pressure three or four fold in ordinary quiet breathing through the nose, and a hundredfold in forced breathing. In nearly all cases of bronchitic asthma associated with stenosis, correction of the stenosis, followed by attention to correct methods of breathing, gave the greatest relief.

Dr. Colin Campbell referred to a class of case of asthma in which he described the nose as normal, and which yet got blocked up every night. That was exactly the nose which the speaker as a rhinologist would call not normal, and which he would work at until he had succeeded in preventing the recurrence of the nocturnal obstruction. These cases had been referred to as "latent" obstruction. The speaker believed these cases depended on unrecognized nasal stenosis combined with the action of gravity, which in the recumbent position especially favoured the collection of fluid in the undermost parts of the nasal mucosa, as the patient was lying down. In many such cases he had restored nocturnal comfort, and removed insomnia and asthmatic symptoms, by ensuring proper nasal breathing.

He had seen no reason to modify the working hypothesis he had previously expressed: that in some cases spasmodic asthma originated peripherally in intranasal irritation. The usual predisposing cause was intranasal deformity from injury, arrest of development, or hereditary deficiency causing undue approximation of parts which should be well apart. The exciting cause was a variable and intermittent pressure (caused by turgescence of the soft parts) on intranasal nerves which were afferent to the respiratory centre. These pressures were rhythmically increased and diminished by the intranasal changes of air tension on inspiration and expiration, which gradually whipped up the respiratory centre chiefly on its expiratory side into a state of excitation and overaction; and all the more readily if previous attacks had predisposed the centre to such perverted action, or if the habit had been acquired, or in gouty subjects.

He had had some good results with the galvano-cautery applied to the area indicated by Dr. Francis, but also elsewhere. When there was marked intranasal deformity and stenosis, he had found it necessary to correct these to get the maximum and most durable results—in fact, to insure as far as possible that no excessive intermittent or pulsatile pressure impulses could originate in the nose and be transmitted to the respiratory centre.

XI.—NATHAN CHARLES HARING, M.B., M.R.C.S.,
Senior Assistant Physician, Hospital for Consumption and Diseases of the Throat, Manchester.

DR. HARING said he did not consider sufficient stress had been laid upon the instability of the nervous system, and thought that a peripheral cause started the attack, which cause might be in the bladder, rectum, stomach, or anywhere in the body. Lately he had examined every patient's nose, and it was remarkable what a large number of people who had no symptoms were found with deflection of septum and enlarged turbinals, and yet any one of which might, in case of instability of the nervous system, become causes of asthma. He narrated a case of cure simply by his examination by Killian's method, which was done without cocaine. This showed that treatment powerful enough to greatly affect the mental or moral condition of the patient might be efficient.

XII.—PRICE BROWN, M.D.,
Toronto.

DR. PRICE BROWN spoke of the after-treatment in cases where asthma was suspected to be the result of a nasal abnormality. In removal of the obstruction all the nasal trouble was not removed, and it should be remembered that the force of gravitation was acting on the patient during sleep, which resulted in the one side of the nose becoming congested with resulting oral respiration. What was required was to produce nasal respiration during the night, and for many years he had been in the habit of using rubber mouthpieces, which were made out of pure rubber sheeting cut by the surgeon at the time for each individual case. They were oval-shaped, and formed to fit the mouth between the lips and the teeth, and slipped in over the gums upon retiring at night. Being thin and flexible—that is, about $\frac{1}{16}$ to $\frac{1}{32}$ in.—they fit well, and the patient must consequently breathe through the nose. There was practically no danger of the rubber slipping into the mouth, but, if desired, a tape could be stitched to the centre of one side and tied round the neck. He had found this unnecessary. These mouthpieces produced little distress, and the enforced nasal breathing was productive of much comfort to the patients, who were glad to wear them until the catarrhal symptoms necessitating their use were relieved.

XIII.—HERBERT TILLEY, F.R.C.S., M.D.,
Surgeon, Throat Hospital, Golden Square.

DR. HERBERT TILLEY had treated several cases of asthma according to Dr. Francis's method and was astonished at the result of cauterization of the septal mucous membrane opposite the anterior end of the middle turbinal bone. In one case of what had hitherto proved to be intractable asthma, the cauterization produced immediate relief, but the symptoms all returned within three months when a reapplication of the cautery again afforded respite from the spasms. He had recently heard that the spasms had again returned. In some cases he had obtained no relief whatever in spite of frequent and thorough cauterization. With regard to this mode of treatment his mind was at present open on the matter. Some cases appeared to be remarkably relieved for varying periods of time, but in others no relief was produced and he knew of no means of previously predicting what result would accrue from the use of the galvano-cautery in the individual case. Speaking generally, he thought that asthma was more amenable to treatment than it was before this method was introduced.

XIV.—HENRY SMURTHWAITE, M.D., B.S.Durh.,
Newcastle-on-Tyne.

DR. SMURTHWAITE had found by personal experience the effect of gravity upon the air space in the nose, as mentioned by Dr. Price Brown. He had found that the nose in asthmatic cases often seemed perfectly normal at the time of examination, but he had noticed the slight depression on the anterior part of the septum mentioned by Collier. He was confident that most cases of asthma were not pure asthma at all, and he preferred the use of the term pseudo-asthma.

XV.—DR. NEWCOMB,
New York.

DR. NEWCOMB thought there were so many factors in the neurotic state that one should be cautious in deciding results from any form of treatment, as many results had been obtained from different methods of treatment. Simple alteration of conditions, as a change of sleeping room from one built of wood to one built of brick, and change of pillows, had both removed symptoms of asthma. It was important to get a more complete definition of what was meant by the term "asthma."

XVI.—JOBSON HORNE, M.A., M.B., M.R.C.P.,
Surgeon, Metropolitan Ear, Nose, and Throat Hospital.

DR. JOBSON HORNE said he had followed the discussion with interest, and had listened attentively to learn whether the use of the galvano-cautery by others in the manner suggested by Dr. Greville Macdonald and Dr. Alexander Francis had been attended with equally gratifying results. He gathered that the only speaker who had followed out a series of cases under this form of treatment was Dr. Herbert Tilley, but he was not clear as to the results which Dr. Tilley had obtained. [Dr. Tilley, in reply, stated that he had treated 7 cases of genuine asthma with the galvano-cautery, and of these 2 had been cured, 3 relieved, and 2 had received no benefit.]

XVII.—CHARTERS J. SYMONDS, M.D.,
President of the Section.

THE PRESIDENT considered that the discussion had justified the subject selected. One felt that the term "asthma" was a doubtful one to use, and therefore the particular name mentioned on the paper was deliberately chosen, and he

[1] British Medical Association Meeting, Manchester, 1902; *Proceedings of*

Dr. West had been obliged to leave the meeting, and therefore Dr. Macdonald alone would reply.

Reply.

Dr. Macdonald, in reply, said that the chief criticism to which his claims had been subjected was that one was not careful to diagnose asthma, and that the term was too loosely used. He was amazed at Dr. West's statement that the latter did not think there were 500 cases in London. He thought that any general practitioner would say this was not correct. The whole question was, What was asthma? He simply referred to it as a symptom, and he did not examine the chest, but only required to question the patient as to whether he had to sit up in bed, breathed noisily, and had to use Himrod or other such remedy. If he answered in the affirmative, one was justified in calling it asthma, whatever the cause might be. Dr. Francis, he thought, did not consider that the nose was the cause of asthma, but that any of various peripheral sources of irritation might determine an attack, given an asthmatic condition. He thought that the treatment was simply a method of counter-irritation, and if so it would fully account for the extraordinary variety of cases benefited. Some of our success, however, might be in the nature of suggestion. Dr. Macdonald also instanced a case of a child who was not materially benefited by the removal of some adenoids present, and who, six years afterwards, was again brought to him for asthma, which alternated with eczema of the face. Whenever the eczema was better the asthma was worse, and vice versa. Since the septum had been cauterized there had not been a single attack of asthma, and the eczema was also cured. There was nothing abnormal to be seen in the nose. He now, since Dr. Francis's communication, treated the nose of every case of asthma that consulted him. Dr. W. Downie spoke of the imperfect removal of polypi; but in the cases to which the speaker had referred he had had an opportunity of thoroughly eradicating these. He believed that in a few years every general practitioner would use the cautery for the treatment of asthma.

TWO AND A HALF YEARS' EXPERIENCE OF THE SUBCUTANEOUS INJECTION OF HARD PARAFFIN FOR THE REMOVAL OF DEFORMITIES OF THE NOSE.

By Walker Downie, M.B., F.F.P.S.G.,
Lecturer on Diseases of the Throat and Nose, Glasgow University.

At a meeting of the Laryngological Society of London, held January 15th, 1904, a case in which the subcutaneous injection of paraffin had been employed was shown.

In the subsequent discussion, as reported in the published *Proceedings* of that Society, Mr. Butlin is recorded to have said "that he had not yet been rash enough to inject paraffin; so far, his experience in this subject consisted in the taking out of paraffin which had been injected." "A little more experience," he said, "was required in these cases before this operation could be regarded as a useful one."

The discussion so begun was continued by others who had a similar tale to tell, and whose remarks indicated an entire absence of personal experience in the use of paraffin for this purpose, or an experience limited to one case in which the result had not apparently been over-satisfactory. The opinions expressed and the warnings against the operation given by the various members who spoke were evidently influenced by reports of some disastrous results published in America and elsewhere.

In February, 1902, I showed, before the Medico-Chirurgical Society of Glasgow, two cases of disfiguring deformity of the nose, which had been very completely removed by the subcutaneous injection of hard paraffin; and in July of the same year—that is, two years ago—I presented a report to the Surgical Section of the British Medical Association at the Manchester meeting on my first six cases, showing photographs and lantern-slides of each case taken immediately before and one week after injection.

Following on that meeting, the cases were examined by several physicians and surgeons, and amongst the many patients on whom I have subsequently operated have been several medical men from our own country, two from India, and one from South Africa.

As it is now two and a half years since my first cases were done, and as in the interval I have operated on over 100 cases without any complication, either at the time of operation or subsequently, with one exception—to which I shall refer later—I thought it would not be uninteresting were I to speak of the methods which I have adopted and followed in the performance of the operation. In doing so I must repeat in great part what I said on this point at the Manchester meeting two years ago, for the directions then given I still strictly follow.

Preparation.—The first point of importance is the preparation of the part prior to operation. It is most essential that every antiseptic precaution should be observed. The skin of the nose, forehead, and cheeks should be prepared at least twelve hours before operation by cleansing with spirits of turpentine, followed by rectified spirits of wine, and that again by carbolic acid lotion (1 in 40), and a carbolic dressing should be worn overnight. Immediately before operation the skin should again be well cleansed and washed over with carbolic lotion (1 in 20). Then, a few minutes before making the injection, I paint a band of celloidin across the nose at the level of the eyes, and continue it down on each side of the nose, following the line of junction between the nose and the cheek. As this dries it contracts, and, acting like a tourniquet, it helps to prevent the paraffin, while yet in a fluid state, from passing into the cellular tissue in the infraorbital region or upwards towards the forehead.

Paraffin.—The paraffin which I have consistently used during the past two years is a mixture of hard and soft paraffins in such proportions as to give a paraffin with a melting point of 106° F., and it is sterilized by heat. I know that Gersuny holds that the ultimate results of the injection appear to be identical whether vaseline or a harder paraffin be used, and that he continues to use the former. Others I know select a paraffin with a melting point much above that which I employ. 136° F. being the melting point of the paraffin used by Eckstein. My objection to the use of vaseline for this purpose is that it melts at or near the normal temperature of the body, and that, being more easily affected by external pressure, it cannot give the same solid support to a depressed area that a harder substance will. The harder paraffins preferred by some operators, on the other hand, are not only difficult to work with, but on account of the higher temperature required to melt them they become positively dangerous. The hot paraffin may cause destruction of the tissues with which it comes into contact, causing scalds or even sloughs, or, as has been reported, thrombosis may follow. Pfannenstiel of Breslau used paraffin with a melting point of 113° F. in a case of incontinence of urine following a complete vaginal hysterectomy. The injection of the hot paraffin was followed by pulmonary embolism, the high temperature of the fluid being supposed to have produced thrombosis in the veins close to the point of injection, with subsequent pulmonary embolism.

The Syringe.—The most suitable syringe is the 10 c.cm. serum syringe, with a screw attachment for the needle. The syringe is sterilized by boiling.

The Injection.—The paraffin is melted by immersion in a water-bath at a temperature of from 150° F. to 160° F., and the syringe, previously warmed in the flame of a spirit lamp, is charged with the paraffin, the quantity taken up being from 6 to 8 c.cm., and it should be taken into the syringe direct from the bottle. The needle is then adjusted and the air expelled. As the paraffin passes from the syringe into and through the needle it rapidly cools, and if it solidifies it will block the needle. This I effectively prevent by an electric heating device which I have elsewhere described. It consists of a coil of fine platinum wire wound round the needle, previously insulated with cotton thread, carrying an electric current, the strength of which can, through a rheostat, be easily and accurately regulated. When in use the platinum wire is in turn surrounded by a layer of moistened gauze to further ensure the more equable distribution of the heat. In making the injection the skin is punctured by the needle to one or other side of the middle line without any preliminary incision, and the point of the needle is then pushed subcutaneously to the centre of the most depressed area. The fluid paraffin is then slowly injected, care being taken during the injection of the fluid to have the root and sides of the nose firmly compressed by the fingers of an assistant to further prevent the escape of the molten paraffin beyond the confines of the nose. As soon as the paraffin enters the tissues it should be moulded by the surgeon's fingers, and when a quantity sufficient to remove the deformity has been introduced the injection is stopped. Before the needle is withdrawn, however, a fine stream of cold sterilized water is poured over the surface to hasten the

setting of the paraffin and to lessen the chance of any of it escaping through the puncture opening. How much paraffin do you inject? is a question frequently put to me. In reply, I might say that the quantity which may be required varies. Personally, I now pay little attention to the measurement of the paraffin injected, but I take the greatest care to inject no more paraffin than is necessary to remove the deformity. If more than that be injected the surgeon will fail in his object, and by the over-stretching of the skin and by the amount of pressure used while injecting it he will risk the production of those complications of which so much has been said when this subject has been under discussion. When the needle has been withdrawn the puncture opening is closed with celloidin.



Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.



Fig. 5.



Fig. 6.

Anaesthetics.—In a recent article on this subject I was quoted as employing an anaesthetic in every case. In my paper published in the BRITISH MEDICAL JOURNAL of November 8th, 1902, I said, "The patient may or may not be anaesthetized; in many cases there is a distinct advantage in having the patient under an anaesthetic." In the performance of the operation I have used a general anaesthetic in two cases only—in my first case, which was in a manner an experimental case, and in the case of a little girl who was in much fear of the operation. I have never used local anaesthetics, and would advise against their use as introducing a possible source of local trouble after the operation. The prick caused by the entrance of the needle of the syringe carrying the paraffin is felt little, if any, more than the prick of the ordinary hypodermic needle, and the introduction of the cocaine solution may, by temporarily raising the sunken area, interfere with the ultimate result obtained from the paraffin injection. Of my first fifty cases completed twelve months ago, I know of one case only where an unsatisfactory result followed the injection. This was a case sent to me from Wigan by Dr. Blair, who, when arranging to send the



Fig. 7.



Fig. 8.



Fig. 9.



Fig. 10.



Fig. 11.



Fig. 12.

patient, wrote: "She has an extremely badly-deformed nose . . . She is 34 years of age, and her trouble began after scarlet fever when she was only 6. The destruction has been remarkably extensive. The nasal bones are gone completely, the septum is almost wholly absent, the turbinals are atrophied. There is post-nasal catarrh, a perforation in the left side of the velum, epiphora, and middle-ear disease." The subject was not a favourable one, but the patient had come a long way, and the injection was given. Three days after operation, as the erythema consequent on the injection was subsiding, a small abscess formed on the side of the nose.

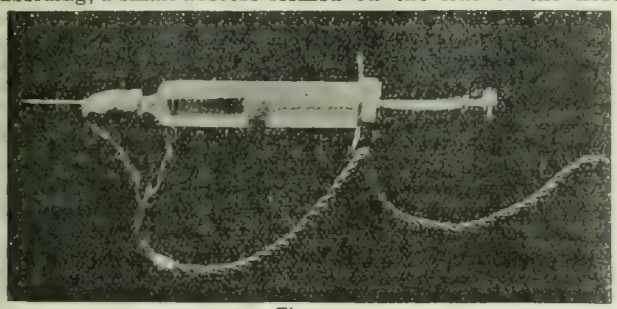


Fig. 13.

This was opened, when, along with the pus, some of the paraffin was removed and the wound healed slowly. There was no further trouble, and the deformity of the nose was not increased, but, on the other hand, its shape was slightly improved. In reply to a note from me requesting information as to the present condition of this patient, Dr. Blair wrote on July 5th, 1904, thus: "The improvement in the shape of her nose was, as you know, but slight, but it has been maintained. The depression caused by the absence of the nasal bones still exists, but it is not nearly so bad as it was before she went to Glasgow. There is no interference with the function of the nostrils; and the skin of the nose, forehead, and cheeks is perfectly healthy."

The Results.

In every case on which I have operated the shape of the nose has been improved—in most cases conspicuously so—and the appearance of the nose continues to improve as time goes on. The discoloration and glazing of the skin, which are present for a few weeks after operation, disappear, and the skin becomes soft and healthy, so that some months after injection there is nothing to indicate that the keystone to the bridge of the well-shapen nose consists of a foreign body. The improvement in the shape of the nose in every case has been maintained, and there has been no evidence of absorption of the paraffin in any during the time those cases have been under observation. Suppuration should rarely if ever occur, and when it does take place it is, I think, from some preventable cause.

I have had no case in which migration of any portion of the paraffin has occurred, but in every case the paraffin introduced has been confined to the nose, and it has remained within the area into which it was injected. I have had no case in which the passage of air through the nares has in any way been interfered with by the injected paraffin. As far as my experience goes, a high body temperature does not affect the paraffin imbedded in the tissues of the nose, and I know of no case where exposure to great heat or residence in a hot climate has in any way influenced the shape or the position of the material injected.

From an experience extending over two and a half years, and of over 100 cases, I hold that the operation of the subcutaneous injection of paraffin to raise a sunken nose, if properly performed, is practically devoid of danger. Further, where the deformity is of the nature of a sinking-in, and where the skin covering the sunken area is healthy, the shape of the nose can in all cases be improved, and in most the deformity can be by this means wholly removed. This operation, by modifying or removing a disfiguring and prominent deformity, is the means of conveying much comfort to the individual operated upon.

[A large number of photographs were shown at the meeting, and the illustrations are a few reproductions in miniature of some of the early cases.]

Dr. StClair Thomson considered that the results obtained were excellent, and would like to know more about Dr. Downie's method of keeping the paraffin fluid.

Dr. Scanes Spicer congratulated Dr. Downie upon his results, and said that he had had several cases most of which were the results of syphilis, and, of course, here the treatment of the disease complicated that of the deformity. He did not find any necessity for the galvanic current to keep the needle warm. In young children he generally gave an anaesthetic, but not in the case of adults. The suggestion of a band of celloidin was a good one. The paraffin, however, did not wander at the time of injection in his cases, but did so once or twice some weeks after.

Dr. Syme thought the electrical method of heating the needle very useful and important, as when the paraffin had a chance of becoming solidified one was apt to inject more than one intended owing to haste, and it was advisable to under-inject rather than to over-inject, as the nose seemed to improve and was better a week after than at the time of operation. He also found he had put rather more paraffin upon one side of the needle than on the opposite side, and the same seemed to have occurred in Dr. Downie's photographs. Pressure applied with the thumb of the other hand, at the time of injection, at the point of entrance of the syringe would lever this paraffin over to the other side.

The President inquired as to the technique when cicatrices were present.

Dr. Brady mentioned a case in which the paraffin remained as a foreign body after travelling in the tissues and thus gave rise to possible deformity. Upon operation he found considerable fibroid cicatrix but no paraffin.

Dr. Donnellan (Philadelphia) mentioned a case in which there were cicatricial adhesions, and the paraffin distributed itself on each side of the cicatrix, and the second condition was worse than the first, as it was impossible to afterwards remove the paraffin. He would also like to emphasize the danger of embolism of the central artery of the retina, to prevent which pressure upon the root of the nose should be applied.

Dr. Smurthwaite gave the results of some experiments in the injection of paraffin into dogs, in which in two months' time there was nothing but fibrous tissue resulting, all the paraffin having gone.

Dr. Thorne asked if one should only operate once, and whether one should use only one puncture.

Dr. Downie, in reply, said that the injection of paraffin was not devoid of danger, and that injection into the breasts, for example, to improve their appearance was an outrageous proceeding, which he strongly condemned. The use of hot water in the needle to warm it gave a false idea of the amount of paraffin injected. Migration was the result of too much paraffin introduced under too great pressure. Repetition of the injection was necessary occasionally, because he preferred to underdo it rather than overdo it. Unequal building up of the nose was due to delayed pressure of the thumb, and could be overcome by immediate pressure over the point of injection. Cicatrices should be first raised by a tenotomy knife, and injection performed two days afterwards. He had operated upon a case for the removal of paraffin that had been injected twelve months prior in the Midlands, and he had found the paraffin in small particles embedded in a large amount of fibrous tissue.

SOME OBSERVATIONS ON THE MODE OF ORIGIN OF NASAL POLYPUS.

By Eugene S. Yonge, M.D.Edin.,

Honorary Assistant Physician, Manchester Hospital for Consumption and Diseases of the Throat.

Our knowledge of the processes which precede and are the actual and immediate causes of the formation of mucous polypus of the nose is extremely limited. The want of definite information, in this particular instance, is partly due, according to the opinion of an eminent Continental authority, to the fact that no observer has, up to the present, been able to demonstrate, in a satisfactory manner, a nasal mucous membrane in which the special changes and appearances could be traced from normal tissues up to polypus formation. The same authority (Heyman [1]) believes, further, that this manœuvre will perhaps never be effected.

The observations on the subject of the etiology of polypus, which the writer has carried out during the last two years, have had for their object the solution of the problem suggested by Heyman's remarks, and also, incidentally, the search for some of the processes which immediately precede the formation of those oedomatous "growths" concerning the pathogenesis of which such innumerable theories have been advanced. The results which have been obtained are submitted for examination and criticism.

Plan of Investigation.

The plan adopted in making the investigation was, briefly stated, as follows:

Macroscopic and microscopic examinations were made of tissues removed from the undermentioned cases, in some of which the whole of the structures of the outer nasal wall were examined in successive antero-posterior planes, and in others, only such parts as the regions of the middle turbinal and middle meatus. Probably the most interesting and useful case which was met with in the investigation was the instance of early bilateral nasal polypus, in which all the intranasal tissues were examined *post mortem*.

A.—*Specimens Obtained Post Mortem.*

Normal (Non-polypoid).—(1) Fetus of seven months (whole nasal cavity); (2) infant aged 12 months (outer wall of left nasal cavity), also tissues from middle turbinal and meatal regions of children of various ages; (3) outer wall of nasal cavity of adults at various ages; (4) normal mucous membrane from maxillary antrum, frontal sinus, anterior ethmoidal cells, and lower lip of hiatus semilunaris.

Pathological.—(1) Outer walls of both nasal cavities, etc.; man aged 52; condition, early nasal polypus on both sides; no accessory sinus suppuration; no history of intranasal operations. (2) Outer wall of left nasal cavity; man aged 54; condition, chronic atrophic rhinitis. (3) Outer wall of left nasal cavity of child, aged 10; marked post-nasal adenoids and hypertrophied tonsils were present in this case.



Fig. 1.—Normal middle turbinal, showing one of the low folds, the loose but not oedematous subepithelial tissue, and normal glands.

B.—*Clinical Cases.*

[Portions of tissue were obtained from middle turbinal, middle meatal, and other regions.]

(1) Case of early polypus; no accessory sinus suppuration detected. (2) Case of long-standing polypus; previous intranasal treatment. (3) Cases of polypus, at various stages, associated with accessory sinus suppuration. (4) A case showing polypoid degeneration of the left inferior turbinal, mucous polypi in the right middle meatus, and chronic empyema of the right maxillary antrum. (5) Cases of chronic inflammatory conditions of the nasal cavities, unattended by polypus; etc.

The Histology of the "Polypus Regions."

Without going into any detailed description of the normal anatomy of the intranasal structures, it is desirable to mention such points as may bear upon the subject of the mode of origin of nasal polypi. With reference to the usual position of these growths, it is probably agreed that the region of the middle meatus, especially in its anterior part—the concavity of the middle turbinal, the neighbourhood of the hiatus semilunaris, the processus uncinatus and the infundibulum—is by far the commonest area, as Zuckerkandl was the first to demonstrate, for their site of origin.

A part of the writer's observations was directed to a histological comparison of these regions of the outer wall with the various other regions of the nose. To sum up the results of the examination and comparison, it may be said that in the areas most generally selected by mucous polypus the mucous membrane is thin and usually possesses low folds. The subepithelial tissue is loose and abundant, and the erectile tissue comparatively scanty. The glands are numerous, except on the outer concave (meatal) surface of the middle turbinal, where they are few in number, and where also the mucous membrane is smooth. (On the outer nasal wall they are of the simple tubular variety in the superior turbinal region, and of the racemose variety elsewhere.) These histological particulars, broadly speaking, distinguish the polypus regions, and the writer has not been able to find the same *ensemble* in any other part of the outer nasal wall; but it is the subepithelial tissue which is of special interest, as its structure, in the middle turbinal and meatal regions, appears to be the principal factor in determining the selection, by oedematous growths, of these districts for their site of origin. In the fetus and young child the subepithelial tissue does not appear to differ markedly in the middle turbinal district from that in the inferior turbinal. In the adolescent and in the middle-aged it is more abundant and looser in the former district than in the latter. If a vertical-transverse section of the three turbinals and meati be traced from above downwards, the subepithelial tissue will be seen to be firm, scanty, and fibrous in the upper turbinal and meatal regions. Just above the commencement of the lower free border of the middle turbinal the tissue becomes looser; as the middle meatus is reached this change appears more marked. The tissue gradually becomes closer in arrangement towards the lower end of the middle meatus, and on the inferior turbinal it is firm, and noticeably different from the same tissue in the middle meatal region.

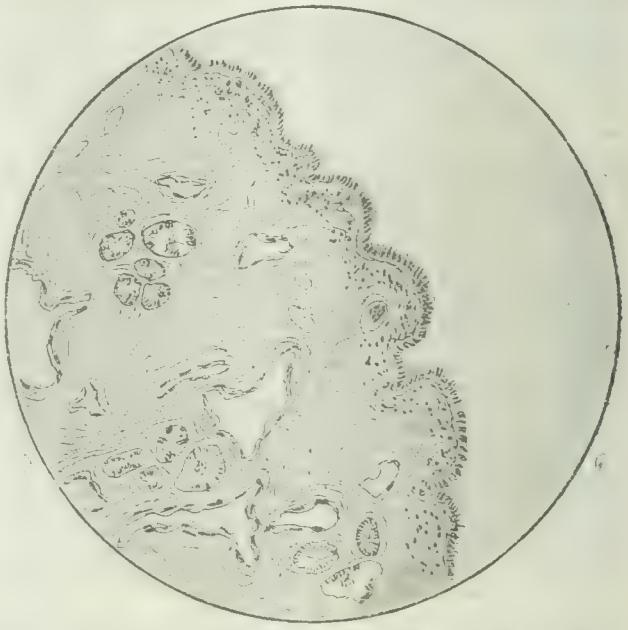


Fig. 2.—Case of polypus. Middle meatus (posterior part), showing folds less oedematous than anteriorly, signs of chronic inflammation, degeneration, and cystic dilatation of glands.

In old age the subepithelial tissue is closer and more fibrous-looking. The writer is at present making some observations on specimens of the nasal tissues of a negro (obtained through the kindness of Dr. Birkett of Montreal) with a view to discovering whether there are any histological differences to account for the comparative immunity of the negro races from nasal polypi.

The Apparent Process of Polypus Formation.

It is to be understood that the various steps in the process of polypus formation—which are traced later on—are only described as they appear to occur in those cases which were

examined, and on the assumption that the appearances noted were rightly interpreted.

It was possible in some instances of nasal polypus to follow the processes which seemingly preceded the formation of the growths, from normal mucous membrane up to the formation of oedematous excrescences, which corresponded individually to the usual conception of the structure known as a mucous polypus. This method of investigation was adopted, whenever possible, both in the instances of the disease which were associated with accessory sinus suppuration and in those which were not so associated.

In every case there was evidence that polypus formation was accompanied by inflammation of the nasal mucous membrane, sometimes of a very chronic character. There was also evidence that the inflammatory condition was primary; and although the signs of inflammation were generally most marked in the neighbourhood of the polypoid growths, yet they were often apparent in areas of the nasal wall remote from the growths (Fig. 5). In certain parts of the middle turbinal and middle meatal regions—which were usually the centres of observation—the specific appearances of inflammation differed in no respect, so far as could be judged, from those signs of the process which were seen in the same districts in cases of chronic rhinitis unattended by mucous polypi. But in polypus cases the mucous membrane underlying and in the vicinity of these growths, and sometimes throughout the middle meatal and a part of the middle turbinal region, gave evidence, as would be expected, of a superadded condition—namely, that of oedematous infiltration of the submucous tissue.

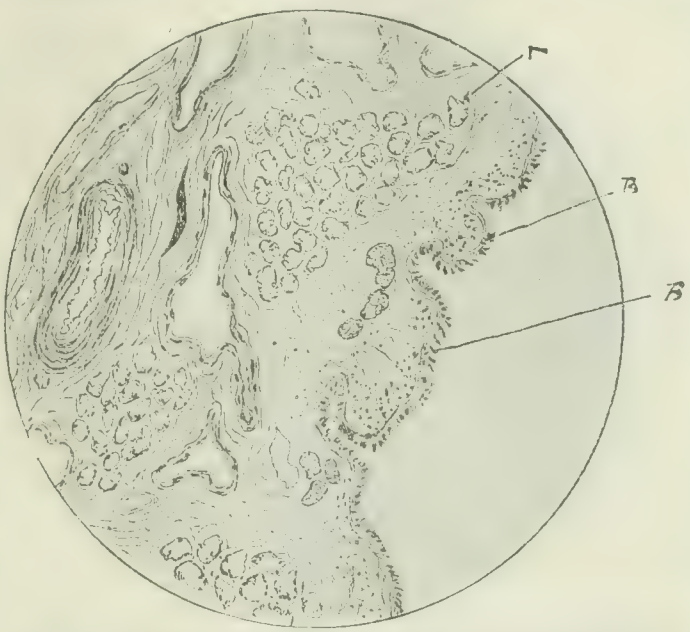


Fig. 3.—Case of polypus. Middle meatus (anterior part), showing degenerated and dilated glands (A), thickened vessels, new vessels, and oedematous folds (B).

The Production of Oedema.

This oedematous condition was confined to the middle turbinal and middle meatal regions, and did not seem to be present, to any noticeable extent, in any other districts of the outer nasal wall. In a vertical-transverse section through this wall, in a case in which polypi were present in small numbers, the oedema seemed most marked in the upper two-thirds of the middle meatus; it was least marked on the outer concave surface of the middle turbinal. The oedematous infiltration began to appear at about the inner edge of the lower free border of the middle turbinal, and ceased at the lower end of the middle meatus. The condition was much more apparent in the anterior regions of the nose than in the posterior. These appearances were not noted in any examples of nasal disease, other than polypus, which were examined.

The Development of Oedematous Folds.

In addition to the oedematous infiltration there were, in the regions specified above, a number of finger-like folds of the mucous membrane which partook in the general oedema (Figs. 2 and 3). They were found by microscopic examination in the "polypus regions" of all the cases in which polypi had developed. Sometimes the folds were found at considerable distances, comparatively speaking, from the actual growths, but they were also invariably numerous, and in places well developed, in the neighbourhood of the polypi. These oedematous structures were not observed in normal cases, in chronic inflammatory nasal conditions, in chronic atrophic rhinitis, nor in any cases which the writer had the opportunity of examining, other than nasal polypi, and in those only in the "polypus regions." They appeared in their early stage to be distinct folds of the mucous membrane, and not definite outgrowths, as when traced from normal, flat, mucous membrane the summits of the folds did not seem to rise above the level of that structure. Both Zuckerkandl[2] and Heyman[1] have described them as occurring in polypus cases, and have regarded them as papillary excrescences.

The oedematous folds differ from the folds found in normal cases on the lower free border of the middle turbinal, on the anterior regions of the middle meatus, and on the surface of the inferior turbinal, in being usually more abrupt in outline, in sometimes showing a tendency to become constricted at their bases, and in their oedema. Also they may occur in a region of the middle meatus which is normally devoid of folds. The size of these structures varied considerably, and in some instances they appeared to possess the essential characters of a mucous polypus (Figs. 3 and 4). There is indeed some evidence that they represent the initial mechanical stage of those growths. There seems to be little doubt that in a number of cases they are merely the normal folds which have become oedematous; but it appears to be very probable that fresh folds are also formed by a pleating of the swollen mucous membrane.

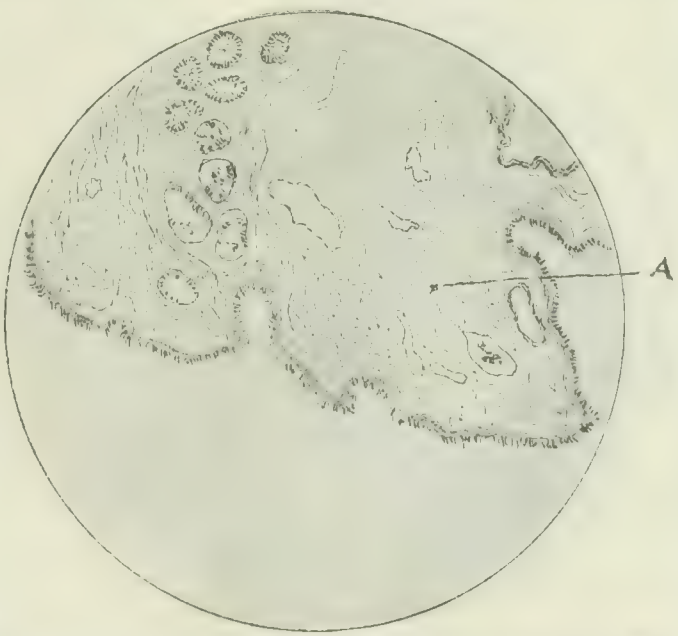


Fig. 4.—Case of polypus. Middle meatus, showing oedematous fold (A). Fold consists of loose serum-infiltrated tissue; it contains small round cells, glands in a state of cystic degeneration; it is covered by columnar-ciliated epithelium, and represents the early stage of a mucous polypus.

The Degeneration and Cystic Dilatation of the Mucous Glands.

The writer's observations have led him to believe that glandular changes are of great importance, because the

investigation of cases seemed to suggest strongly that they are the principal determining cause of the occurrence of the growths.

Assuming that an inflammation, often chronic, of the mucous membrane is the constant or usual antecedent condition of nasal polypus, it is difficult to explain why it should, of itself, cause marked oedema in a localized region of the nose—an oedema which is sometimes (as in the case of isolated polypi) in a topographic sense, very limited indeed.[3] In the examples of chronic rhinitis, uncomplicated by macroscopic polypoid changes, which the writer has examined, and in cases of inflammatory disease which have lasted long enough to undergo fibrosis and atrophy, he has not observed that oedema of the mucous membrane has occurred either locally or generally. It seems reasonable to conclude that there is some determining factor or factors which may be present, or, rather, which may be superadded, in some instances of nasal inflammation and not in others. At least one of these determining factors appears to exist in the interposition of certain glandular changes.

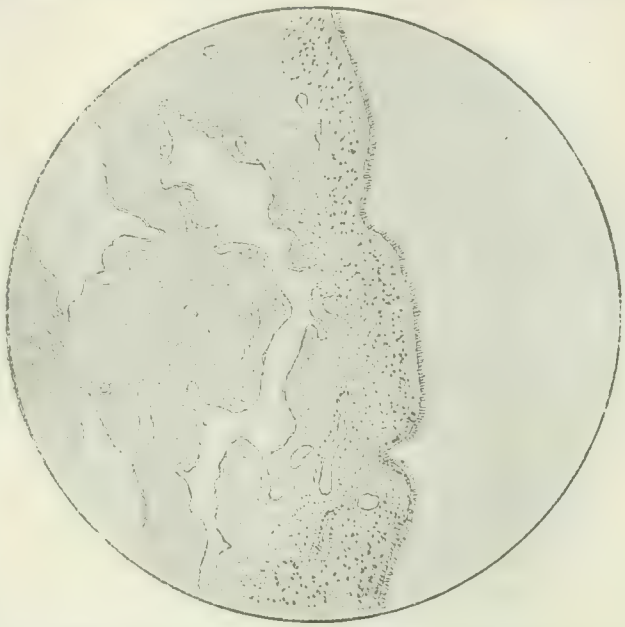


Fig. 5.—Case of polypus. Portion of inferior turbinal, showing inflamed mucous membrane, normal folds, absence of oedema.

As remarked above, the cases of chronic inflammatory disease of the nose, unattended by polypus, gave indications of long-standing inflammation, in the middle turbinal and meatal regions, which were similar to those observed in the mucous membrane in the neighbourhood of and subjacent to mucous polypi. But the morbid appearances were observed to differ in two respects. In the chronic inflammatory cases the glands were almost invariably active, or, to speak more precisely, they were not undergoing degenerative changes, and the mucous membrane was not oedematous. In the polypus cases, on the other hand, the portions of mucous membrane referred to showed that there was degeneration and cystic dilatation of the glands, often to a very marked degree, and the mucous membrane itself was notably oedematous (Figs. 3 and 4). In tracing the edge of a middle turbinal removed from a patient with early nasal polypus, it was often found that the amount of oedema and the number of oedematous "projections" varied considerably at different parts of a long microscopic section. The conditions of the glands varied also and in a striking manner. Where the mucous membrane was merely inflamed, the whole group of underlying glands would show no signs of degenerative change. In the moderately oedematous parts some of the glands would be healthy, some in a state of cloudy swelling, some undergoing degeneration, and, in the neighbourhood of definite polypi, all the underlying glands would be degenerate. When the amount of oedema was small it was frequently observed to be limited and localized about groups of partly degenerated glands, and the subepithelial tissue immediately superficial to the group of affected glands was the first to give evidence of the infiltration. Grünwald[4] explains the oedema in polypus cases by the constriction of the vessels by endoarteritic and periarteritic proliferations; but this vascular condition was observed in quite as marked a degree, so far as could be estimated, in cases of chronic rhinitis where there was no oedema present as in cases where such appearances were seen.

Judging by what can be gathered from the literature, the mucous glands do not play a very striking part in the history of the ordinary inflammatory conditions of the nasal mucosa. In the more acute cases they may enlarge and become much convoluted. In chronic cases they shrink and tend to disappear. Similarly in the pathogenesis of these inflammatory papillary hypertrophies of the inferior turbinal, which do not, in the writer's opinion, enter into the category of mucous polypi, the glands seem to take little part.

Further evidence of the special influence of glandular changes on polypus formation appears to be furnished by the following observations which were made: (1) The invariable presence of degeneration and dilatation of the glands of the mucous membrane in the areas subjacent to and in the neighbourhood of mucous polypi. (2) The absence of oedema where the glands were active. (3) The presence of small isolated areas of markedly oedematous mucous membrane, associated with corresponding isolated patches of degenerated and dilated glands (Fig. 6). The presence of glandular changes in the instances of polypus, associated with accessory sinus suppuration, and in those in which polypus was not so associated. In the sinus cases, however, cystic degeneration was more in evidence than simple degeneration.



Fig. 6.—Case of early polypus. Anterior end of middle turbinal, showing abrupt oedema (A), a result of cystic degeneration of the mucous glands (B). In contiguous portion of section, where glands were not degenerated, tissues were not oedematous. A small portion of this shown (C).

The question naturally arises whether the oedema may not be primary and the glandular degeneration secondary, instead of, as the writer believes, the reverse order being the probable sequence. Also it may be asked whether both morbid processes may not be due to a common cause, and be contemporary in point of origin. In favour of the glands being primarily affected are perhaps the following facts: (1) The

absence of any oedema where the glands were healthy, and of any definite noticeable oedema in the mucous membrane (of polypus cases) taken from regions where no glands were present; (2) the appearance of abrupt oedema associated with a patch of glands in a state of cystic degeneration. This was noticed in a large number of instances, of which Fig. 6 is an illustration of one example. In the portions of the section contiguous to the part shown, the glands were active, and the tissues superficial to them were not oedematous. There can be seen the abrupt interposition of a layer of glands, in a state of cystic degeneration, drawn like a broad boundary across the section. The tissues superficial to this layer of glands were oedematous; but there were no evidences of gradually increasing inflammatory change or of the gradual development of oedema.

It is possible that the peculiar and special method in which the blood is supplied to the glands in the turbinal regions—combined with the predisposition to oedema induced by the histological peculiarities of the middle turbinal regions—may help to explain why oedema only occurs in certain cases of inflammatory disease.

Zuckerkandl's account[2] of the arrangement of blood vessels in the turbinal regions is, briefly and as it appears to concern the present subject, as follows: The arterial supply of the mucous membrane ramifies in three networks. One network supplies the periosteal layer, a second is distributed to the glands, and a third to the superficial epithelial layer. The glands, which are surrounded by a special capsule, are closely enveloped by their network of capillaries. Around the excretory ducts there is a tube-shaped network which, as Zuckerkandl believes, helps to keep the duct closed when the gland is not actively secreting. When the mucous gland and the duct (which always participates) undergo cystic dilatation, pressure is exerted on the *réseau* of vessels which encircles the gland, and on the tubular network which is around the duct. The writer believes that this "unequal pressure" on the capillaries may be sufficient to cause oedema in the particular areas and tissues in which the phenomenon is noted. The suggestion, however, is at present purely conjectural.

The Influence of Structural Peculiarities of the "Polypus Regions."

The structural peculiarities in the polypus regions, which have been referred to, appear to be necessary auxiliary factors—other causes, for example, inflammation and gland degeneration, intervening—for the occurrence of polypus at certain ages; negatively for its usual absence at certain other ages, and, lastly, for its occurrence, in the special districts in question, when a specific irritant, such as pus from an accessory sinus, is present. Moreover, even assuming that degeneration and cystic dilatation of the mucous glands can be shown to determine the initial stages of polypus formation, they (glandular changes) cannot apparently have these effects unless the subepithelial tissues are sufficiently thin and loose. Thus, in some instances of polypus the mucous glands were degenerated, in places, throughout the nose, although polypi and oedema were only seen in the middle meatal and a part of the middle turbinal regions. Also in an instance of chronic atrophic rhinitis there were a few groups of degenerated mucous glands in the region of the middle turbinal, without any evident oedema in the atrophied and fibrous subepithelial tissues.

Provisional Conclusions.

The following provisional conclusions are brought forward for discussion and further investigation:

1. Mucous polypi of the nose, in the majority of instances, are probably consequent upon, and certainly coincident with, inflammation of the mucous membrane of the nasal cavity.

2. The primary mechanical process is a localized oedema of the inflamed mucous membrane, which oedema, on account of certain structural peculiarities of the lining membrane, does not, in the great majority of cases, develop in any intranasal area but that of a portion of the middle turbinal and of the middle meatal regions. Analogous structural peculiarities are present in the mucous membrane of some of the accessory sinuses.

3. The determining cause of the occurrence of the oedema, in the regions specified, is the degeneration and cystic dilatation of the mucous glands.

4. The particular shape which polypi usually assume, their number, probably the appearance, in some instances, of recurrence, and other special peculiarities of these growths, are due to the oedematous mucous membrane being thrown into folds, and to the normal folds becoming oedematous. Certain of the folds quickly increase in size by the absorption of serous fluid and favoured by gravity, and finally present the appearance of ordinary mucous polypi.

5. The "polypoid" outgrowths, which take origin on the inferior turbinal, and more rarely on the septum, generally differ markedly in microscopic structure from mucous polypi, and although they claim a common inflammatory origin, these conditions are distinct, principally on account of the dissimilar structure of the nasal regions from which they respectively take origin (Zuckerkandl[2]).

The writer is at present arranging to conduct some experiments, with the view of producing mucous polypi artificially in animals on the basis of the causative influence of glandular changes.

In connexion with this paper, the writer is greatly indebted for much kind and valuable assistance to Professor Symington, of Belfast, to Dr. Milligan, Professor Delépine, and Dr. Knowles Renshaw, of Manchester, to Dr. W. Glegg, of Birmingham, and, lastly, to Dr. Reginald Nichol, of Manchester, who has shown much accuracy and skill in connexion with the illustrations.

Note and References.

[1] Heyman, *Handbuch der Laryngologie und Rhinologie*, Band iii, Heft ii, Wien, 1900. [2] Zuckerkandl, *Anatomie des Fosse Nasales*. Trad. sur la 2e édition allemande par Lichtwitz et Garnault, Paris, 1895. [3] The writer has not touched, in the present paper, on the subject of the influence of *bone disease* in the production of nasal polypi, because his observations, especially of early cases, have led him to believe that there is sufficient evidence of the process occurring as a primary mucous membrane condition. [4] Grünwald, *Diseases of the Mouth, Pharynx, and Nose*, second edition, trans. by Newcomb. Philadelphia and London, 1903.

REPORT ON CERTAIN ENTERIC FEVER INOCULATION STATISTICS.

Provided by Lieutenant-Colonel R. J. S. Simpson, C.M.G., R.A.M.C.

By KARL PEARSON, F.R.S.,
Professor of Applied Mathematics, University College, London.

The statistics in question were of two classes: (A) Incidence (B) Mortality Statistics. Under each of these headings the data belonged to two groups: (i) Indian experience; (ii) South African War experience. These two experiences were of a somewhat different character. That for India covered apparently the European army, of whatever branch and wherever distributed; that for South Africa was given partly by locality, partly by column, and partly by special hospital. Thus the Indian and South African experiences seem hardly comparable. Many of the groups in the South African experience are far too small to allow of any definite opinion being formed at all, having regard to the size of the probable error involved. Accordingly, it was needful to group them into larger series. Even thus the material appears to be so heterogeneous, and the results so irregular, that it must be doubtful how much weight is to be attributed to the different results.

The following groups were made on the basis of Lieutenant-Colonel Simpson's table (see Appendix A).

A. *Incidence.*

South Africa:
- I. Hospital Staffs. See Appendix B, Table (1).
- II. Garrison of Ladysmith. See Appendix B, Table (2).
- III. Methuen's Column. See Appendix B, Table (3).
- IV. Group of three special Regiments: 7th Hussars, C.I.V.'s, and 5th Battalion Manchesters. See Appendix B, Table (4).

India:
- V. Army in India. Here I have taken only the data for years 1900 and 1901, as I am told that the statistics for 1899 are not fully comparable with those for the two later years. See Appendix B, Table (5).

B. *Mortality.*

South Africa:
- I. Hospital Staffs. See Appendix B, Table (6).
- II. Garrison of Ladysmith.* See Appendix B, Table (7).
- III. Special Regiments. See Appendix B, Table (8).
- IV. Group of special Hospitals, South Africa. See Appendix B, Table (9).
- V. Various military Hospitals. See Appendix B, Table (10).

India:
- VI. Army in India, 1900-1. See Appendix B, Table (11).

* No mortality experience was given for the group of Methuen's column.

After some consideration, it seemed best to reduce the above data by measuring (1) the association of inoculation and escape; (2) the association of inoculation and recovery by aid of the coefficient of correlation[1] extracted from the four-fold tables given in Appendix B, by the method treated in a memoir published in the *Philosophical Transactions*, vol. 195, A, pp. 1 to 47, 1900. The chief reason for using this method is that it enables us at once to compare the enteric fever inoculation returns with the results for vaccination and anti-toxin treatment in the case of diphtheria, which have already been dealt with in this manner.

For example, taking the relation between deaths and recoveries, and presence and absence of vaccination scar in cases of small-pox, we have:[2]

	Correlation.
Metropolitan Asylums Board Returns, Epidemic 1893	0.595 ± 0.027
Epidemics for six towns	0.656 ± 0.009
Sheffield, 1887-8	0.769 ± 0.012
Homerton and Fulham, 1873-85 ...	0.576 ± 0.009
London: Epidemic 1901	0.578 ± 0.031
Glasgow: Epidemic 1900-1	0.629 ± 0.030

We may safely say that the protective character of vaccination as against mortality after incurring small-pox is very substantial, and numerically it is represented by the value 0.6, which is fairly closely the actual result for the various epidemics which have at present been dealt with.

The correlation between recovery and the administration of antitoxin in laryngeal cases of diphtheria is 0.47, and between need for tracheotomy and the administration of antitoxin is 0.24.[3] We may therefore state that when the correlation is as high as 0.6 it is admitted that inoculation or vaccination is a distinct advantage; that, even when it is 0.24 to 0.47, it has been universally adopted, as in the case of the antitoxic serum treatment of diphtheria, by the medical profession. If, therefore, with enteric inoculation we find values as high as 0.5, we may rest satisfied with its very considerable effectiveness; if between 0.2 and 0.5, its justification stands on the same statistical footing as the antitoxin treatment of diphtheria; but, if we find the value below 0.2, or even 0.3, we ought to be rather doubtful of its efficiency.[4] Before working out the data the impression formed on my mind was that if the correlations turned out to be fairly constant and greater than 0.4, we might consider the case for inoculation against enteric proven; if irregular and less than 0.2, unproven—that is, it must be of very small value, possibly more than balanced by concomitant ills; while, if lying between 0.2 and 0.4, further cautious investigation by experimental inoculation seemed desirable.

The following table gives the results of calculating the correlation coefficients of the tables in Appendix B:

INOCULATION AGAINST ENTERIC FEVER:

Correlation between Immunity and Inoculation.			
I. Hospital Staffs	+ 0.373	±	0.021
II. Ladysmith Garrison	+ 0.445	±	0.017
III. Methuen's Column	+ 0.191	±	0.026
IV. Single Regiments	+ 0.021	±	0.093
V. Army in India	+ 0.100	±	0.013
Mean value	+ 0.226		
Correlation between Mortality and Inoculation.			
VI. Hospital Staffs	+ 0.307	±	0.128
VII. Ladysmith Garrison	− 0.010	±	0.081
VIII. Single Regiments	+ 0.300	±	0.093
IX. Special Hospitals	+ 0.119	±	0.022
X. Various military Hospitals ...	+ 0.194	±	0.022
XI. Army in India	+ 0.248	±	0.050
Mean value	+ 0.193		

If we except IV and VII, the values of the correlations are at least twice (in the very sparse data of VI) and generally four, five, or more times their probable errors. From this standpoint we might say that they are all significant, but we are at once struck with the extreme irregularity and the lowness of the values reached. They are absolutely incomparable with the fairly steady and large values of the vaccination correlations obtained for different epidemics and towns. The effect of enteric inoculation is evidently largely influenced by difference of environment or of treatment.

Considering the correlation between immunity inoculation, the order of decreasing intensity is:

Ladysmith Garrison.
Hospital Staffs.
Methuen's Column.
Army in India.
Single Regiments.

Indeed, while the correlation is sensibly zero in the latter case, it is actually negative for the C.I.V.'s.

Now, the one thing that appears in broad outlines to correspond with the above arrangement is the extent to which the environment was changeable in the groups referred to. The single regiments were very rapidly changing their environment—the C.I.V.'s, perhaps, more than any other group—the Ladysmith garrison least, and Methuen's column more mobile than the Ladysmith garrison, but far less than the single regiments. I am unaware how far the inoculated portions of the Indian army were seeing actual service of any kind during the years 1900 to 1901. But, so far as these statistics can guide us at all, they would seem to suggest that inoculation provided more immunity under constant than changing environment. It is difficult to explain this on the basis of any real theory of inoculation.[5] It would be easier to account for it if the apparent correlation between inoculation and immunity arose from the more cautious and careful men volunteering for inoculation. It is far more easy to be cautious under a constant environment than when the environment is nightly changing. The order of intensities is not inconsistent with a spurious correlation between immunity and inoculation arising from a real correlation between immunity and caution.

Putting on one side, however, the mysterious difference between the 0.445 of Ladysmith and the practically zero result for the single regiments, and assuming that the average correlation is real and 0.23 about, we may doubt whether this is sufficiently large to justify the treatment being adopted as routine. I think we may safely say that the 0.1 of the Indian army is not. Of course, if the Ladysmith garrison result could be practically reached for all units, whatever their environment, it would be worth doing, almost as effective as the diphtheria antitoxin treatment, although still far below vaccination efficiency. But can any differentiation be discovered, except the stationary nature of the troops between the treatment and environment at Ladysmith and those, say, of the C.I.V.'s? The matter is at least worth inquiring into.

If we turn from immunity to mortality we see that the results are even less conclusive. The order of *increasing* intensity is now:

Ladysmith Garrison.
Special Hospitals.
Military Hospitals.
Army in India.
Single Regiments.
Hospital Staffs.

The last item is of small value, as the mortality experience was very small. Generally this order is the same as that of decreasing immunity, or, roughly, the environment which causes inoculation to give the greatest immunity also causes, when immunity has broken down, inoculation to have relatively greater mortality. In fact, the inoculated in Ladysmith, once they had the disease, were more likely to die than the non-inoculated.[6]

Again, if any stress could be laid on the result, it is most mysterious that an inoculated man, if he caught enteric, profited less by his inoculation in Ladysmith than if he had been with one of the single mobile regiments; while he would be much less likely, relatively to the non-inoculated, to catch it in Ladysmith than in a mobile group.

NEED FOR FURTHER INVESTIGATION.

To sum up, it seems that, while most of the correlations both for immunity and recovery are distinctly sensible, having regard to their probable errors, yet they are so irregular that little reliance can be placed upon them as representing any definite uniform effect. They certainly appear to fall into that range of intensity which would justify suspension of the operation as a routine method. But the fact that the correlation, while sensible—and, in the case of the Ladysmith garrison, moderately substantial—is subject to remarkable variations, seems to urgently suggest the need for further investigation.

This might take a two-fold form:

1. An inquiry as to what happened at Ladysmith. Did the serum or the inoculation differ in any way from that usual in India or that administered to the C.I.V.'s. On the whole, were the inoculated and uninoculated at Ladysmith in different units, and, if so, was the exposure to risk the same in both cases?

2. An experimental inquiry. If further experimental inoculations were made, which seem fairly justified by the Ladysmith if not by the other returns, the greatest care ought to be taken to get homogeneous material, that is, men of like

caution, subjected to the same environment. Assuming that the inoculation is not more than a temporary inconvenience, it would seem to be possible to call for volunteers, but while keeping a register of all men who volunteered, only to inoculate every second volunteer. In this way any spurious effect really resulting from a correlation between immunity and caution would be got rid of.

But admitting that such an experiment might conclusively answer whether there is a correlation between immunity and inoculation, and, further, that inquiry might suggest a means of thrusting up the general mean result nearer the Ladysmith figure, it seems to me that the present statistics show that with the existing serum or the method of administration it is extremely unlikely that the effect of enteric inoculation will be as good as the antitoxin diphtheria treatment and will certainly fall far short of the mortality[1] result in the case of vaccination.

If it were not presumption for me with no special knowledge whatever on the subject to give an opinion, I should say that the data indicate that a more effective serum or effective method of administration must be found before inoculation ought to become a routine practice in the army. The statistics suggest the possibility of the discovery of a more perfect process, rather than indicate that the existing method, even if it be shown to give a slight correlation between immunity and inoculation, is really worth continuing as a universal rule of the service. Hence such an experiment as that indicated above should be made in the first place with a view to ascertaining whether any inoculation is likely to prove useful. If it showed a definite correlation in homogeneous material of only 0.2 or 0.3, I think the right conclusion to draw would be not that it was desirable to inoculate the whole army, but that improvement of the serum and method of dosing, with a view to a far higher correlation, should be attempted. In other words, the "experiment" might demonstrate that this *first* step to a reasonably effective preventive treatment was not a false one.

APPENDIX A.

Inoculation.

Group.	Inoculated.			Non-Inoculated.		
	Strength.	Cases.	Deaths.	Strength.	Cases.	Deaths
Staff Portland Hospital	28	7	—	13	3	1
,, I Y Deelfort	59	4	—	25	4	—
,, I. Y. Pa. (1)	12	2	—	38	3	—
,, I Y. Pa. (2)	20	1	—	34	4	—
,, No 8 General Hospital	21	5	—	110	44	8
,, No. 9 ,,	87	11	1	47	13	2
,, 2nd Sc. Red Cross	70	2	1	12	4	1
	297	32	2	279	75	12
Garrison, Ladysmith	1,705	35	?	10.529	1,489	329
Methuen's Column	2,535	26	?	10,981	257	?
	4,240	61		21,510	1,746	
5th Battalion Manchesters	200	3	—	547	23	7
C.I.V.'s	700	60	9	494	39	11
7th Hussars	307	9	—	244	20	3
	1,207	72	9	1,285	82	21
India, 1899	4,562	44	9	25,851	657	146
,, 1900	5,999	54	8	54,554	731	224
,, 1901	4,883	34	3	55 955	744	199
	15,384	128	20	136,360	2,132	569
Tintown Hospital	—	30	2	—	265	5
No. 7 General Hospital	—	137	3	—	1,017	58
Im Yeo. Hospital	—	47	4	—	301	26
No. 9 General Hospital	—	387	32	—	586	64
Irish Hospital	—	80	5	—	592	74
No. 6 General Hospital	—	50	5	—	477	58
No 1 ,,	—	32	6	—	194	22
Portland Hospital	—	54	4	—	178	25
Station Hospital, Harrismith	—	263	18	—	947	135
Scot. Nat. Red Cross	—	15	1	—	70	10
No. 5 Station Hospital	—	24	2	—	53	8
No 2 General Hospital	—	28	3	—	202	31
Orange River Hospital	—	27	1	—	109	22
	—	1,174	86	—	4,991	538
Various Military Hospitals	—	764	63	—	3,374	510

APPENDIX B.

A.—Incidence Experience.

	Inoculated.	Non-inoculated.	Totals.
1. Hospital Staffs in South Africa.			
Escaped	265	204	469
Cases	32	75	107
Totals	297	279	576
2. Garrison of Ladysmith in South Africa.			
Escaped	1,670	9,040	10.710
Cases	35	1.489	1 524
Totals	1,705	10,529	12,234
3. Methuen's Column in South Africa.			
Escaped	2,509	10,724	13,233
Cases	26	257	283
Totals	2,535	10,981	13,516
4. Single Regiments in South Africa.			
Escaped	1,135	1,203	2,338
Cases	72	82	154
Totals	1,207	1,285	2,492
5. Army in India.			
Escaped	10,798	109,034	119,832
Cases	84	1,475	1.559
Totals	10,882	110,509	121,391

B.—Mortality Experience.

6. Hospital Staffs in South Africa.			
Recovered	30	63	93
Died	2	12	14
Totals	32	75	107
7. Garrison of Ladysmith.			
Recovered	27	1,160	1,187
Died	8	329	337
Totals	35	1,489	1,524
8. Special Regiments in South Africa.			
Recovered	63	61	124
Died	9	21	30
Totals	72	82	154
9. Special Hospitals in South Africa.			
Recovered	1,088	4.453	5.541
Died	86	538	624
Totals	1,174	4.991	6,165
10. Various Military Hospitals of South Africa.			
Recovered	701	2,864	3.565
Died	63	510	573
Totals	764	3.374	4.138
11. Army in India, 1900-1.			
Recovered	73	1,052	1,125
Died	11	423	434
Totals	84	1.475	1,559

Notes and References.

[1] Those who have not had occasion to study the Theory of Correlation may possibly find some difficulty in attaching a definite meaning to the expression "coefficient of correlation," usually denoted by the letter "*r*." Without going into the theory of the subject, I offer a few explanatory remarks which may to some extent clear up the difficulty. When two characters have no correlation at all then $r = 0$; when they are completely correlated, or when the idea of correlation passes over in to that of cause and effect, $r = 1$. The extreme limits between no relationship and cause and effect being 0 and 1, *r* may take any value between the limits, the value depending on the intensity of the relationship between the two characters. We may calculate *r* for a pair of characters in one class—for example, for right and left femur in man, or for two classes with respect to a selected character—for example, for English middle-class fathers and sons with respect to stature. Many such calculations have been made, and from the mass of results already obtained I select the following:

High correlation 0.75 to 1.	Right and left femur in man	$r = 0.96$
	Stature and femur in man	$r = 0.80$
Considerable correlation 0.50 to 0.75.	Weight and length of new-born infants	$r = 0.63$
	Head breadth and face breadth in criminals	$r = 0.62$
	Vaccination and recovery in cases of small-pox	$r = 0.60$
	English fathers and sons (stature)	$r = 0.51$
Moderate correlation 0.25 to 0.50.	English fathers and daughters (eye colour)	$r = 0.44$
	Low barometer (Norway) and high barometer (Lisbon)	$r = 0.30$
Low correlation 0 to 0.25.	Strength of pull and stature in women	$r = 0.22$
	Size of family for mother and daughter (in man)	$r = 0.11$

[2] Macdonell, *Biometrika*, vol. i, p. 375, et seq., and vol. ii, et seq. [3] Pearson, *Phil. Trans.*, vol. cxcv, A. p. 45. [4] Writing in 1900 of the diphtheria antitoxin statistics, I said: The correlation "between administration of antitoxin and recovery in laryngeal cases is substantial. But the relationship is by no means so great as in the case of vaccination, and if its magnitude justifies the use of antitoxin, even when balanced against other ills which may follow in its train, it does not justify the sweeping statements of its effectiveness, which I have heard made by medical friends. It seems, until wider statistics are forthcoming, a case for cautiously feeling the

way forward rather than for hasty generalizations." Unfortunately further statistics of the proper kind are not forthcoming, owing to the nearly universal adoption of the treatment in severe cases. [5] Supposing, of course, the avenue to the disease is always the same. If inoculation closed one avenue but not another to the disease—say effect of contact with enteric patients, but not of contaminated water—it is clear that constant and changing environment might modify the relative prevalence of the two possibilities. [6] We must bear in mind the possibility of inoculation producing a weakening of the constitution, and that this is more effective when the soldier is stationary than when he is on the move. [7] Strangely enough, we have no reliable statistics on the immunity correlation in vaccination, as the number of unvaccinated who do not catch small-pox appears quite unknown.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

A PRACTICAL SUGGESTION FOR THE PREVENTION OF ANKYLOSTOMIASIS.

OF the many troubles with which the planter in tropical countries has to contend, not the least is coolie anaemia, and the disabling form of pustular dermatitis variously called coolie itch, ground itch, etc.

The dependence of coolie anaemia on ankylostoma infection has long been recognized, and the probability that the form of dermatitis called coolie itch is produced by the penetration of the skin of the feet and legs by the embryos of ankylostoma contained in contaminated soil is now, from the observations and experiments of Looss and Bentley, practically a certainty. We are therefore in a position to indicate with precision the direction of prophylactic measures against both phases of this infection. Unfortunately, although it is easy enough to indicate measures which theoretically would be efficient, to get them applied is a very different matter. At the suggestion of Bentley, boots and baths of carbolic lotion have been tried, but so far apparently without striking results, in great measure in consequence of the want of co-operation on the part of the coolies.

Some time ago, in the course of a conversation with a West Indian sugar planter, I learned of a method which in his hands had proved efficient; it appears to me to meet the circumstances, and deserves, I think, publicity and further trial. This gentleman, in ignorance of Looss's and Bentley's observations, had concluded that coolie itch was contracted from contact with faecally-fouled soil, and that somehow it led up to coolie anaemia—that is, ankylostoma anaemia; he reasoned that, could he prevent the injurious effects of the contaminated soil, he would not only prevent coolie itch, but the consequent anaemia. Knowing the antiseptic and adhesive properties of green Barbadoes tar (a mineral oil rich in paraffin, and cheap, costing 3d. a gallon), he got his overseers to see that the coolies, before going out to work in the contaminated fields, dipped their feet and legs in a bucket of this tar, and then walked across and through some fine sand; in this way an impervious sandal and stocking was donned every morning. In practice it proved efficient. My informant suggests that sawdust would probably be better than sand. He told me he got the idea from a practice existing among goose farmers in certain parts of Germany, who, by first dipping the feet of their geese in tar and then in fine sand, provided the birds with a plastic and protective sandal, thereby enabling them to be driven many miles to market without injury.

London, W. PATRICK MANSON.

OPHTHALMIA NEONATORUM: TREATMENT BY ARGYROL: RECOVERY.

ON July 8th I was asked to see a child, 16 days old, which the mother, a primipara, informed me had been suffering since birth with a discharge from its eyes. The history was that the midwife, during her attendance, told the mother that it was a common occurrence for children to get sore eyes like her infant, and that they would get all right.

As the condition began to grow much worse, causing both eyes to be firmly glued together, with a profuse discharge of a whitish nature, it was decided to seek medical advice, as her own remedies of boracic lotion had failed.

Examination revealed great chemosis, and difficulty was encountered on separating the lids, when a yellowish-white, purulent discharge was observed, which increased on deep pressure. The child did not appear to be in much pain. The right eye showed keratitis, with two ulcers on the cornea, the left showing one ulcer. Lotion of corrosive sublimate (1 in 5,000) was ordered every half-hour or hour, also the following unguentum: R Hydr. ox. flav. gr. ss; coc. hydroc. and atrop. sulph. āā gr. j; vasel. spt. ℥ij, which was to be applied at night, both pupils being very much contracted.

As the condition did not improve much in thirty-six hours, I decided to use argyrol 20 per cent., which I prescribed twice daily, with careful directions as to its application and cleanliness, etc. After the second application, improvement manifested itself, and became so marked after the fourth application that the chemosis practically disappeared, the discharge greatly diminishing and becoming less purulent. The corrosive sublimate lotion was increased in strength (1 in 3,000) and used as before, and the argyrol was discontinued for two days, as a slight trace of the chloride of silver began to form. The course after the sixth day was most satisfactory, and at the end of the eighteenth day all discharge had ceased and the eyes appeared quite healthy, only a slight manifestation of an ulcer remaining in the right eye. A history of gonorrhoea was elicited from the mother, the wife of a soldier, who had not undergone any treatment. The case is interesting from the point of view that considering the duration of the affection and the great chemosis, etc., such a speedy recovery should follow after the use of argyrol. The friends and parents of the child often remarked that the change was wonderful after the second application, as the child opened its eyes and the discharge considerably lessened.

Argyrol did not cause the patient any pain and no ill effects were produced; on the whole I think it is much preferable to either protargol or nitrate of silver.

T. GARNET S. LEARY, M.B.Edin., M.R.C.P.E.

Castlederg, co. Tyrone.

EPITHELIOMA OF PENIS ASSOCIATED WITH LEUCOPLAKIA.

I SAW the patient first in October, 1903, when he came complaining of a warty growth of the penis, which he first noticed as a small wart a few days before leaving Chili for this country, which was on August 24th. He also complained of some itching in the part, which had been going on for ten or fifteen years.

The patient left England twenty years ago quite well. He went to India, and stayed there fourteen and a half years, but came home for holidays two or three times. He first noticed the itching whilst in India, and for this he used to wash himself in warm water. When the itching first started he went to a doctor, who told him the condition was natural and he must just wash himself with soap and water. The patient thinks the itching was caused by wearing the foreskin over the glans in a hot country, the urine being acid and concentrated. As a boy the patient could not bear his foreskin back. The itching used to come and go.

The patient has only noticed the condition of marked whiteness since coming to England, but has had a slight whiteness for fully ten years. This would come and go away again. Keeping the foreskin back and washing it caused the whiteness to disappear and the itching as well, but he was not able to keep the foreskin back because the head of the penis would commence to swell, and on one occasion he had to have a doctor to bring it forward again with a handkerchief and vaseline—and this with much difficulty. Afterwards he was afraid to draw the foreskin back for fear of the same result.

On coming home on board ship the patient says the water was hard, and that salt water and hard water did not cure the white condition, but made it worse. Vaseline would cure it. The wart has been growing rapidly.

Present Condition.—The patient is a gentleman, aged 53 years. He looks the sort of man who has lived a hard life, much in the open air. He is a mining engineer, and has lived many years in the tropics. He is thick-set and obese; the neck is short and thick; the chest is well-shaped and massive; the abdomen is well covered with fat and is protuberant; neither liver nor spleen can be felt through its wall. The second sound at the aortic base is accentuated, but the sounds at the apex, though clear and distinct, are distant. The breath sounds are accompanied by occasional rhonchi, and the urine contains some albumen but no sugar. The penis has the foreskin over the glans, and looks natural enough, except that there is some slight swelling over the region of the corona. On the patient pulling the foreskin back from the glans a circumscribed warty growth appears on its inner or glandular portion; it is situated on that part of the prepuce which lay in contact with

the dorsum of the glans. The rest of the glandular portion of the prepuce is white in colour, and to the touch is stiff and thick; it has lost its suppleness. On rolling the foreskin over the glans and back again it does not move evenly, but irregularly, the irregularity being caused by these plaques. This condition extends all round the glandular portion of the prepuce, but is more intense over the dorsum round about the growth; in the region of the fraenum it is much thinner, but the skin here too is thicker than it should be. The growth measures ¾ in. by ½ in., is hard to the touch, and has ulcerated in the centre. The ulcer forms a deep pit, running sagittally almost from one end to the other. The portion of the glans covered by the growth was slightly eroded; or, rather, the imprint of the growth remains on it, and around this are fine plaques of leucoplakia. I detected no enlarged glands in either groin. The epithelioma and leucoplakous foreskin were removed by circumcision, and a portion of the growth sent to St. Bartholomew's Hospital to be microscoped, and I subsequently received a report confirming the diagnosis.

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London, W.C.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

...ATH AND BRISTOL BRANCH.

...stol, Wednesday, October 26th, 1904.

R. ... SCOTT, F.R.C.S.Edin., in the Chair.

A Form ... naemia.—Dr. J. Michell Clarke read a paper on a form ... haemia characterized by frequent haemorrhages and a co... tion of the blood more nearly approaching secondary ... aemia than pernicious anaemia, but accompanied by ... anges in the cord similar to those found in the per... cious form. Diagrams were shown giving the observations on the blood, extending over long periods.—In the discussion which followed Drs. Shingleton Smith and Parker, and Mr. Beaumont took part.

Deformities of the Chest in Children's Diseases.—Dr. Theodore Fisher showed a number of diagrams of deformities of the chest in children's diseases, including a few rare forms. These were discussed by Drs. Watson Williams, Elliott, and Newman Neild.

Torsion of the Spermatic Cord.—Mr. J. Lacy Firth read notes on a case of torsion of the spermatic cord of the fully-descended testis in an adult, with subsequent gangrene of the testis. The pathology, symptoms, diagnosis, and treatment of this condition were considered.—Mr. Monro Smith commented on the case.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH.

Morecambe, Wednesday, October 26th, 1904.

A. W. Collins, M.D., President, in the Chair.

The Diagnosis of Perforated Gastric Ulcer. Dr. B. W. Hogarth read a paper on the diagnosis of perforated gastric ulcer. He entered minutely into the various symptoms, illustrating his remarks by reference to several cases, more particularly to one in which he had been unable to close the opening and had been obliged to pack with gauze. The patient recovered. He laid special stress upon the value of spasm of the rectus.

Excision of the Knee. Dr. T. A. Baldwin gave an exhaustive account of the history of this operation and of the various methods adopted by different operators. He showed a patient on whom it had been performed, and also several specimens.

Specimens, etc. The following specimens were on the table:—Mr. C. W. Dean: Lining membrane of bladder attacked by acute necrosis. Mr. A. S. Barling: (1) Multilocular ovarian cyst removed by ovariotomy; (2) angioma excised from face of baby; (3) portion of large intra-abdominal hydatid removed from scrotum. Dr. W. H. Coupland demonstrated the following under the microscope: (1) Bilharzia haematobia; (2) section of favus. Dr. B. C. Stevens: Section of neurofibroma. A number of new books and radiographs were also shown.

REPORTS OF SOCIETIES.

CLINICAL SOCIETY OF LONDON.

Clinical Evening.

Frederick Taylor, M.D., F.R.C.P., President, in the Chair.

Friday, October 28th, 1904.

Acute Ataxia due to Encephalitis Cerebelli.

Dr. F. E. Batten showed a boy, aged 3½, who after measles remained unconscious for a week, and afterwards had convulsions and tremors, and inability to sit or speak. A month later he had inco-ordination of both legs and arms, but no paralysis. The knee-jerks were well marked, with a tendency to ankle clonus. He swallowed well, and spoke with hesitation. During the last four or five months some slight improvement had occurred.

The President alluded to a similar case which he had attended at least twenty-five years ago. The patient, a boy, was aged from 4 to 6 years, and had ataxia of arms and legs, without optic neuritis, and for months had no alteration of symptoms, except that he gradually became more ataxic and blundered about almost like a man with drunken ataxy. It was at first regarded as a case of disseminated sclerosis or cerebellar tumour; but a few years later complete recovery ensued. He suggested that it was probably a case of the kind exhibited by Dr. Batten.

Dr. Batten, in reply, was glad to learn that the President's case had recovered. Experiments had showed that the removal of one lobe of the cerebellum led to ataxic symptoms which, however, rapidly ceased; but if the cerebrum were injured on the opposite side as well, the ataxic symptoms did not subside. Probably the cerebral cortex was also damaged in his case.

Acute Ascending Paralysis.

Dr. E. D. Macnamara exhibited a waiter, aged 30, who six years ago had syphilis, and in July last had loss of power in the legs which in three days became absolutely palsied. Weakness of the arms ensued, also defect in articulation and ocular movements, together with almost complete inaction of both pupils to light. No reflexes were obtained in the lower limbs; other reflexes were normal, also the electrical reactions. Improvement commenced in August, since when all the paralytic symptoms had lessened. The tetracoccus was also shown.

Dr. Farquhar Buzzard suggested that in cases of Landry's paralysis several conditions were described which grouped themselves under three chief heads. First, there were the cases to which the name of Landry's paralysis should be confined, and to which the case exhibited probably belonged. There was quiet paralysis, and if recovery ensued there was no atrophy of the muscles. Secondly, there was the paralysis equally quiet and disabling, accompanying peripheral neuritis. Thirdly, there was the paralysis of acute ascending poliomyelitis.

Reduction of Congenital Femoral Dislocations by the Lorenz Method.

Mr. Jackson Clarke exhibited one case, a girl, aged 7, who was now, fourteen months after the operation, walking about without apparatus, with the head of the femur in position.

Mr. Noble Smith showed two cases, one girl, aged 6¾, had had unilateral dislocation; the other girl, aged 7½, had had bilateral dislocation. Both now had firm, movable joints, and the position of the head of the femur in skiagraphs which were exhibited appeared to be normal.

Mr. A. H. Tubby remarked that he could not satisfy himself that in either of the three cases the head of the bone was in position.

Mr. Clarke, in reply, said that before he assisted Professor Lorenz he was also sceptical as to whether the head was returned to the acetabulum.

Mr. Noble Smith said it was necessary to keep the limb, or limbs, after operation, sloping backwards, so as to keep the head in the acetabulum; and to retain the limbs in that position in plaster-of-paris, for six months at the least.

Spina Bifida Treated by Excision of Sac.

Mr. W. G. Spencer showed a boy in whom two years ago he had dissected out the cauda equina and nerves, and laid them in a groove closed by two rows of sutures; the boy, now 2½ years old, had a firm scar, and used his legs well.

Lymphangiectasis with Escape of Chyle.

Mr. A. E. Barker showed a man, aged 20, with a cystic swelling above Poupart's ligament, which began thirteen years ago. Chyle escaped from an opening in Scarpa's triangle. If the escape was prevented an enlargement in the iliac region occurred, and the chyle, when allowed to escape, spurted out, whilst the patient felt relief from tension. The obstruction was supposed to be in the thoracic duct. The urine was normal.

A Member suggested that the blood should be examined whilst the patient slept for the embryo of the filaria sanguinis.

Cases.

The following were also exhibited:—Mr. Charters Symonds: Bony union after fracture of patella without wiring; also, popliteal aneurysm after ligature of superficial femoral artery.—Dr. J. H. Bryant: Two cases, brother and sister, of the peroneal type of family amyotrophy.—Dr. Newton Pitt: A woman, aged 40, with Recklinghausen's disease.—Mr. A. H. Tubby: Ulceration of the tongue and soft palate in a young man. Antisyphilitic treatment had failed, and no tubercle bacilli could be found.—Mr. Charters Symonds: A case of aortic aneurysm in which he had tied simultaneously the common carotid and subclavian arteries.—Mr. Jackson Clarke: A woman, aged 24, from the vertebral border of whose scapula he had removed three years ago a hard white growth; it displaced the muscles without infiltrating them; it was now slowly recurring and very painful.—Mr. H. A. J. Fairbank: Two cases of "Sprengel's shoulder."

PATHOLOGICAL SOCIETY OF LONDON.

Rickman J. Godlee, M.S., Vice-President, in the Chair.

Tuesday, November 1st, 1904.

The Simultaneous Occurrence of Filariae and Malarial Parasites in the Blood.

Dr. C. F. Selous showed a lantern slide of the blood of a man who was admitted into St. Thomas's Hospital, suffering from a typical attack of malaria. His first attack occurred in India in 1899, and he had had numerous recurrences since. Whilst in St. Thomas's, he had a typical attack of ague, and his spleen was found to be slightly enlarged. He had never had any symptoms pointing to, nor was there any clinical evidence of, filariasis. The blood film was taken at 9 p.m., stained by Major Leishman's method, and showed throughout very numerous malarial parasites of a benign tertian type. At one spot was found under the same field of a 1/12 in. objective, a filaria and two malarial parasites. No other examples of the former were found in four films examined. There was no eosinophilia. No record of the coincidental occurrence of these parasites could be found in literature, though in monkeys the presence of trypanosomes and monkey malarial parasites had been recorded. The simultaneous presence of these organisms might be of some importance clinically, seeing that the attacks of so-called "elephantoid fever" in filariasis appear to simulate ague very closely, and either disease might be falsely diagnosed as the cause of the pyrexial attack, owing to the coincidental occurrence and discovery of its parasite.

The Nature of the so-called Dermoid Cyst of the Ovary and Testicle.

Mr. S. G. Shattock exhibited a remarkable specimen of the so-called dermoid cyst of the ovary. Projecting into a smooth-walled daughter cyst of a large ovarian cystoma was a teratoma of fat covered with skin; this was furnished with two ill-formed lower limbs, between which there was a vulva, and behind the latter a median perineal raphé; above the vulva there grew a tuft of long pubic hair, whilst the rest of the teratoma was covered with lanugo only. At the base of the mass was a smooth cavity in which there lay a blind coil of intestine. In each of the lower limbs there was an elongated compound skeletal element, and in the trunk of the teratoma was a rudimentary spinal column terminated by a pelvic girdle. On one side there was a rudimentary upper limb. The presence of medullated nerve tissue was demonstrated in connexion with the spine. The author, after describing the specimen, discussed the pathogenesis of the so-called dermoid cyst of the ovary. The ordinary dermoid cyst of the trunk was sufficiently explained as due to epiblastic sequestration occurring during the closure of embryonic clefts. The cysts of the ovary and testicle, containing as they did such highly differentiated structures as teeth and bone, were marked off from all others. Dentigerous cysts had been described in the neck, but for these a satisfactory explanation had been offered in viewing them as the results of an abortive anterior dichotomy. In a similar way, by an abortive posterior dichotomy were explained the presence of a third compound lower limb and certain of the sacral teratomata. As long as the dermoid cyst of the ovary was not differentiated from those of the trunk it was thought sufficient to point to the epiblastic origin of the Wolffian duct as the explanation of it. At the best such an explanation could hold only for a simple parovarian dermoid or a simple dermoid of the hilum of the ovary, and was quite inadequate to explain the common complex ovarian cyst with its teeth and bone and, as in the specimen shown, with its contained intestine. The great interest of the specimen shown lay in the circumstance that it proved the true nature of the less striking and more ambiguous forms of ovarian dermoids. The teratoma shown might be classed as an acephalous, acardiac parasite, and compared with the acephalous acardiac twin, in which the only external semblance of human form might appear in the presence of two lower limbs appended to the otherwise spheroidal mass of skin covered fat containing a rudimentary skeleton, and, perhaps, a coil of intestine. The eminences which had been named pseudo-mammae, projecting into ovarian dermoids, and which might be merely masses of fat covered with piliferous skin, were to be regarded, in the author's opinion, as the lowest grade of a teratoma, answering to the "amorphous" parasite of teratology. The first conclusion reached, therefore, was that the so-called dermoid cyst of the ovary was (with, perhaps, few exceptions) a teratomatous cyst, and by this name it should be known, for it was not a cyst of skin, but a smooth-walled cyst into which a skin-covered teratoma projected. One theory which had been held was that such formations result from an impregnation which has been relatively abortive in result. As a sufficient refutation it has been pointed out that such cysts may be met with in the unmarried and in children; nor had any attempt been made to apply the theory to the case of teratomatous cysts of the testicle. The view usually adopted was that of the impaction of a second individual which had started on its development synchronously with the first, but which had subsequently failed in its progress. The chief argument urged by the author against the theory of a twin infection was partly the sheer commonness of ovarian teratoma, and partly the difficulty of understanding why the infection should regularly take place into the substance of the ovary, and, though rarely, the testicle. The fairly frequent occurrence, again, of the lesion in both ovaries, and the presence of two or even three "dermoids" in the same ovary, would, on this theory, imply as many fetal impactions. The theory proposed by the author was one which he named "epigenesis"; and it was that the ovarian teratomatous cyst resulted from the fertilization of the primordial ova in the embryo, so that the embryo furnished a second imperfect individual, the origin of which was not, therefore, synchronous with, but later than, itself. It would be remembered that the primordial ova arise at the surface of the genital ridge—that is, actually on the free inner surface of the abdominal cavity. In the chick, the body cavity had appeared, and these ova were already formed on the fourth day. In man it was commonly held that all the ova of the adult were formed before the time of birth. With regard to the excess of spermatozoa, it was not necessary to suppose that a second penetration of the developing ovum took place. It was well known that more than a single spermatozoa might perforate the investing membrane of the ovum; and it became thus quite conceivable that a surplus might come to lie between the cells of the blastoderm ready to fertilize the primordial ova which are so soon formed after the cleavage which results in the production of the body cavity. The cyst wall would thus answer to the sac of an ovarian pregnancy. Amongst zoologists, besides the ordinary fertilization of the ovum (previously and independently matured by the extrusion of its polar globules) three methods of embryogenesis were recognized: (1) Shock fertilization. This involved the preliminary, independent, maturation of the ovum, but the incentive to the after-division and development of the embryo was mechanical; the ova of the star-fish could be "fertilized" by means of "soda water" added to the sea water of the aquarium, or by mere shaking. (2) Parthenogenesis, which took place in many insects, involved a maturation of the ovum, but no proper fertilization. the embryogenesis being started by the return of, or the want of, extrusion of the second polar globule, which acted in place of the male element. (3) Sporogeny: Here the embryo developed from the ovum without any preliminary maturation and apart from fertilization; this had

been observed in the jelly-fish. The author's theory of epigenesis involved the preliminary "maturation" of the ovum at an abnormally early date; he thought the phenomena of sporogeny (the only method not involving this maturation) too far removed from man to allow of its being considered applicable. As to the occurrence of teratomatous cysts of the testicle, the assumption had to be made that the organ had in the embryo contained primordial ova—that is, that the gland was an ovo-testis. Examples of this condition had been carefully described by different observers in man; in the dog-fish it was well known that true ova might be encountered in the substance of the testicle. The author viewed the primitive normal condition of the sexual glands in man to have been hermaphrodite; the presence of both male and female passages in each human embryo pointed to a hermaphrodite ancestry. The great rarity of teratoma of the testicle tallied with the rarity of a hermaphrodite gland. On the impaction theory it should be as common as in the ovary. In the male one was dealing with a testicular pregnancy. The occurrence of deciduoma malignum in the testicle, implying as it did the presence of fetal membranes, the author thought accorded with the theory of a fertilization of ova in the testicle during embryonic life. The growth of pubic hair in the teratoma was best explained by the access through the blood stream of an internal secretion elaborated by the maternal sexual glands. The specimen showed, successfully carried out, an experiment which Mr. C. G. Seligmann and the author (with Mr. C. S. Wallace's invaluable help) had several times tried, without result—namely, the grafting together of a young capon and a cockerel of the same age. The birds were grafted by the legs of opposite sides, the femora being wired together, but one of the pair had in every case died before the end of a week, without obvious cause. The object of the experiment had been to see if external male characters would have been put on by the capon in consequence of the access of the blood of the intact cock.

Acute Lymphaemia.

Mr. L. S. Dudgeon recounted a case of acute lymphaemia in an adult man, aged 37. The illness began with shortness of breath and anaemia about the beginning of July, 1904, and death occurred on August 29th, 1904. The leucocytes on admission numbered 43,900 per c.mm., and fourteen days later reached the total of 449,800 per c.mm. The ratio of white to red was 1 to 2 at this time. The small lymphocytes numbered 62·7 per cent. at the first examination, but at the last only totalled 9·0 per cent. The total mononuclear cells reached 447,000 per c.mm. No nucleated red blood corpuscles were seen at any time. The "agglutination" of the red blood capsules was present on September 14th. There was marked enlargement of the haemolymph glands, but the lymphatic glands had undergone fatty degeneration. All the viscera showed masses of mononuclear corpuscles in the capillaries. The liver contained a large amount of iron, which was =0·17 per cent. Staphylococcus albus was present in the blood during life. Whether this case was acute lymphatic leukaemia or acute myelemia, the author considered that, in the absence of mast cells and the various other types of myelocytes, beyond the neutrophiles, evidence was in favour of acute lymphaemia.

Various members spoke upon the paper, expressing much difference of opinion upon both the histological examinations of the blood and the nature of acute lymphatic leukaemia as a disease.

Two Methods for Comparing Normal with Abnormal Tissues Under the Microscope.

Mr. S. G. Shattock and Mr. C. F. Selous exhibited sections illustrating the above, which they named the method of superposition and that of the composite block. The methods were more particularly adapted for class purposes, and were more especially applicable in the study of bone marrow, the central nervous system, and the blood. The plan of superposition consisted in mounting a normal section directly underneath the disused, that is, without the intervention of a second cover-glass, so that by merely altering the focus the two could be studied in rapid succession. The sections should be cut from paraffin blocks, and should not be more than 2 μ in thickness. Although mounted in direct apposition there was quite a distinct microscopic interval between them, owing to the intervention of a thin layer of the mounting medium; and they were readily studied with $\frac{1}{12}$. One section was fixed to the slide, cover-glasses were mounted in apposition, and then mounted to the slide. By a composite block was meant a block compounded of two; a broad face of tissue was first exposed in each of the two blocks, and the latter were then cemented together in paraffin; the sections were afterwards cut at right angles to the plane of apposition, so that by placing the section with the line of junction across the field of the microscope, a view was obtained of both the normal and abnormal tissues at the same time.

West London Medico-Chirurgical Society.—At the opening meeting, on October 7th, the President (Mr. C. M. Tuke, M.R.C.S.) occupied the chair and delivered an address, in which he reviewed the treatment of insanity from very early times. The non-restraint system was now universal, and it was difficult to believe that its general adoption dated from only some sixty years ago. It was not possible to trace a gradual improvement in the treatment of insanity; there was the same story of deplorable ignorance, neglect, cruelty, and even imprisonment in chains and burning from the earliest times until the close of the eighteenth century. It was not until 1792 that Pinel brought in a noble change in the whole system, fifty-three patients being liberated from chains by him in that year at Bicêtre; the non-restraint system was thus inaugurated in France. In England, in the same year, William Tuke founded an institution in York called The Retreat, which was conducted on lines almost identical with the non-restraint system, and it was to William Tuke and his grandson, Samuel Tuke, that so much of the credit was due in obtaining the appointment of a Committee of the House of Commons in 1815 to inquire into the condition and management of asylums. From that time dated the disappearance of ignorance and cruelty, and the rise of a high standard of moral management, also the building of new asylums superintended by men of intelligence, sympathy, and humanity. Lincoln Asylum (under Mr. Gardner Hill and Dr. Charlesworth) and on a larger scale Hanwell Asylum (under Dr. Conolly), were very conspicuous examples of the new treatment. The modern increase in insanity was more apparent than real; it was almost wholly among the pauper patients, and could perhaps be accounted for by the fact that cases were now more readily recognized and certified than formerly, and also because with the improved sanitation and medical treatment aged cases were accumulating in asylums. The one fault of modern public asylums was their size. Could a medical superintendent, however skilful and able, keep in medical touch with and give individual attention to, 2,000 cases, or even 1,000?

Leeds and West Riding Medico-Chirurgical Society.—At the opening meeting, on October 21st, the President (Dr. A. Bronner, Bradford) read an address on diseases of the nose in their relationship to pathological conditions of other organs. Nasal obstruction, he said, was very common in the North of England. In infants rhinitis was the commonest cause of nasal obstruction. The inferior turbinates of infants were relatively larger than in adults, and the slightest swelling of the mucous membrane caused obstruction. Babies often slept in wet napkins, crawled about on dusty and dirty floors, and often suffered from rhinitis. In elder children post-nasal growths were the common cause of nasal obstruction. The results were very disastrous. There was arrested development of the chest and body, and consequent frequent affections of the ears, throat, and lungs. Children with nasal obstruction were most liable to local and general infection. Under normal conditions germs and impurities contained in the inspired air were arrested and destroyed by the mucous membrane of the nares. In mouth-breathers the impure air passed over the already diseased tonsils, and set up inflammation and infection there. There was often deformity of the upper jaw and palate. Most children with adenoids became permanently deaf if not treated in time. So-called nasal reflexes were very common. Many cases of asthma, hay fever, vasomotor rhinitis, spasm of the glottis, tracheitis, cardalgia, migraine, and dysmenorrhoea were of nasal origin. Most cases of deafness were due, in the first instance, to rhinitis. Many cases of conjunctivitis, marginal keratitis, and epiphora were of nasal origin. Abscess of the orbit was frequently due to disease of the frontal or ethmoidal cells. Rhinitis often spread into the nasal accessory cavities, and caused empyema of the same. This often spread into the

and disease of the cavernous sinus, and was frequently overlooked. Most cases of recurrent nasal polypi were due to discharge from the ethmoidal cells. Pus from the accessory cavities, especially the maxillary antrum, was often the cause of chronic septic poisoning, gastritis, recurrent tonsillitis, and peritonsillitis. One of the typical symptoms of cases of ozaena was the pale, ashy complexion of the patient. This was due to the absorption of the nasal discharge and to the gastritis caused by the same. Headaches were very often due to nasal obstruction, rhinitis, and disease of one or more of the accessory nasal cavities.—Dr. MAXWELL TELLING (Leeds) read a paper on Pigmentation and Diabetes, and related two cases of bronzed diabetes, which had come under his own observation. He thought that the diabetes must be regarded as merely a terminal, and not even essential condition of such cases.—Mr. W. H. BROWN read a paper on the Causation of Malignant Disease, in which he suggested that in an "alteration of local vascularity," occurring as a result of chronic irritation, the explanation of many, if not all, forms of malignant disease would be ultimately found.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—At a meeting on October 21st, Dr. FLETCHER BEACH in the chair, Dr. C. O. HAWTHORNE showed a boy with hypertrophy and ulceration of the right lower limb, with a view to eliciting the opinion of members on the advisability of amputation.—Dr. O. GRÜNBAUM showed two children of the same family with congenital hereditary trophic oedema. A grandmother had been similarly affected. He also showed a microcephalic infant with trophic oedema in the feet.—Dr. L. GUTHRIE showed a boy, aged 6, with cerebral diplegic athetosis: and a girl with polio-encephalitis (cerebellar). In the boy the cortical and subcortical centres were chiefly involved: in the girl mainly the cerebellum. In both the onset occurred during attacks of measles last February.—Dr. R. HUTCHISON showed a case of habit spasm in a boy aged 10, chiefly affecting the muscles of the right side of the neck. He also showed a bromide rash in a child aged 2, the spots being of the fleshy sort usually met with in young children.—Mr. A. EDMUNDS showed a child with ballooning of the abdominal muscles, due to an attack of acute anterior poliomyelitis.—Mr. N. BISHOP HARMAN showed a boy with congenital bilateral and symmetrical dislocation of the lenses.—Mr. S. STEPHENSON exhibited a boy aged 7 with cerebral degeneration and changes in the fundus oculi.—Mr. P. LOCKHART MUMMERY showed a boy with a dermoid cyst of the auricle, in a situation so high that he thought it could not be due to a persistent portion of the intermaxillary cleft.—Dr. EDMUND CAUTLEY showed a child with congenital heart disease, paralysis of the left superior rectus, and an abnormal artery on the back of the left forearm. He ascribed the murmur to a direct communication between the aorta and the pulmonary artery or to a patent ductus arteriosus. He also showed a child aged 21 months with a microcephalic head, irregular movements of the limbs and trunk, a moderate degree of general spasticity, and a mental condition of imbecility.—A photograph of trichotillomania was exhibited by Mr. G. PERNET, and one of herpes zoster of the left arm was shown by Dr. G. CARPENTER.—Mr. R. C. CLEMENT LUCAS read a paper on an ill-developed upper lateral incisor tooth as a forerunner of harelip or cleft palate.—Mr. S. GILFORD read a paper on two cases of congenital diaphragmatic hernia. In each case the child was 4 months old, and after death the third part of the duodenum, the whole of the small intestine, and the ascending colon were found to have passed through an opening in the posterior part of the right half of the diaphragm.

REVIEWS.

EPILEPSY AND ITS TREATMENT.

DR. SPRATLING'S *Epilepsy and its Treatment*[1] is the largest and perhaps the most complete work on epilepsy which has appeared of late years in the English language. Including, as it does, chapters on the definition, classification, etiology, diagnosis, prognosis, pathology, psychologic and medico-legal aspects of the affection, it is specially full in its account of treatment, which is divided into general, medical and surgical, and contains much valuable information as to education and training in colonies. The author's experience as Medical Superintendent of the Craig Colony for Epileptics at Sonyea, New York, during nearly ten years, entitles him to speak with special authority on the latter subject; but in the other chapters we find numerous citations of the observations and views of neurological writers throughout the world. Thus in the chapter on the definition of epilepsy we find quoted the essays in this direction of Gowers, Gould, Clifford Allbutt, Russell Reynolds, and Echeverria, the author finishing up with one of his own, in which he lays stress upon: "(1) Impaired or lost consciousness, usually sudden and transitory; (2) impaired or lost motor co-ordination, usually sudden and transitory; (3) either condition in any case being attended with or without convulsions."

Classification is treated under two heads—symptomatology and etiology. After reviewing various attempts under the latter head, the author gives his own grouping under three periods, such as (1) infantile inherited, accidental, traumatic, and idiopathic epilepsy; (2) accidental, traumatic, developmental, and idiopathic epilepsy occurring between 4 and 20 years of age; (3) accidental, toxic, traumatic, idiopathic, and senile occurring at a later period of life. A somewhat elaborate schedule of sixty-five questions as to the family, personal, and epileptic history of a patient, and practical directions for observing the mental and physical conditions, with illustration of a "seizure-record card," designed by Dr. Spratling, close this portion of the book.

In discussing the frequency of epilepsy the author advances the opinion, based upon personal experience, that in the United States the ratio of epileptics to the population is not less than 1 to 500. As regards the age of first manifestation, he states, from a study of 1,302 cases, that the greatest number occurred during the 1st year; that they then regularly declined until the 6th year, when the number rose again during the second dentition, to drop off very slightly during the 9th year, after which a third increase began, reaching a maximum at 14, followed by the final decline to the 70th year; 21 per cent. of all cases began during the first 3 years of life and 83 per cent. under the 20th year—as compared with 76 per cent. given by Gowers. Inherited causes would appear to play their most important part in early life. Contrary to the general opinion that epilepsy is more frequent in the female than in the male sex, Spratling believes that it occurs in the proportion of 20 men to 16 women—Gowers's figures being 13 women to 12 men. In discussing the causes of epilepsy, Spratling admits the far-reaching effects of heredity—which he divides into "similar" and "dissimilar"—but points out that epilepsy, etiologically considered, depends in the majority of cases upon two variables: "either a maximum of inherited influence combined with a minimum of exciting cause or a minimum of inherited influence combined with a maximum of exciting cause." In a series of 1,070 cases he found in 16 per cent. evidence of "similar heredity"—that is, epilepsy in parentage—and in 56 per cent. evidence of "dissimilar heredity"—that is, diseases of nervous system other than epilepsy in parentage. Amongst the latter he includes alcoholism, insanity, tuberculosis—present in 14 per cent.—and syphilis. In considering immediate causes, great stress is laid upon cerebral haemorrhages, 11 per cent. of the 1,070 cases being attributed to this cause, one-third of these being probably congenital in origin. "Dentition, when severe and acting on an organism that bears the impress of transmitted weaknesses of a necessary (*sic*) kind" plays, in the author's opinion, an important part in the production of epilepsy in early life, so that reflex convulsions may under such conditions degenerate into true epilepsy. In nearly 2 per cent. of 1,323 cases studied, scarlatina and its sequelae seemed to be immediate causes, and only about 0.33 per cent. are attributed to whooping-cough. Spratling appears to differ from Gowers in the preponderance assigned by the latter to psychical over physical proximate causes.

The section on traumatic causes is of special interest in connexion with surgical measures proposed for the relief of epilepsy, or as the author prefers to say "epileptic phenomena" traumatically produced. The frequency of such cases he sets down as about 3.5 per cent. in women, and about 8.5 per cent. in men. Gastro-intestinal disorders are justly assigned considerable importance in the production of epilepsies, as tending to disturb the balance of the process of nutrition in the nerve structures. Spratling refers to 6 cases of boys under 16 years of age, in whom cigarette-smoking was believed to be the exciting cause of the disease, but points out that puberty and bad heredity may have been

[1] *Epilepsy and its Treatment.* By William B. Spratling, M.D., Medical Superintendent of the Craig Colony for Epileptics, etc. London: W. B.

contributory factors. Irregularities of the menstrual function, the menopause, pregnancy, and maternity are considered in turn in their relation to epilepsy. Contrary to the opinions of Stevens, Gould, and others, Spratling states that out of 1,800 cases studied, he is unable to recall a case in which he felt the whole cause to lie in any anomalous condition of the visual apparatus. The chapter devoted to "seizure types" gives cases illustrative of the various modes of attack, such as *grand mal*, *petit mal*, psychic and Jacksonian epilepsy. More than 60 per cent. of Spratling's cases suffered from the first named, only about 5 per cent. from *petit mal* while only 4 cases of purely psychic, and 9 of Jacksonian epilepsy were met with.

Under diagnosis, the distinguishing features between epilepsy and hysteria, alcoholism, general paresis, syncope, etc., are passed under review; and in the chapter on prognosis prominence is given to the view of Aldren Turner that 10.2 per cent. of epileptics are curable, if treated early. At the Craig Colony, where the proportion of old chronic cases is large, the percentage of cases is given as about 5 per cent. "of the total number of possibly curable cases." The chapter on the pathology of epilepsy is written by Drs. Thomas P. Prout and L. Pierce Clark. Of brain lesions those connected with infantile cerebral hemiplegias are most frequently found. Sclerosis of the cornu ammonis is one of the most common gross conditions found in epilepsy. As to microscopic pathology, the conclusions arrived at are that profound and diffuse cortical degeneration is found in epilepsy, and that the morbid changes concern chiefly the destruction of the nuclei of the cells of the sensory type. Its terminal pathology is a progressive gliosis more or less marked and diffused. From this the following conclusions are drawn: (1) That epilepsy is essentially a sensory phenomenon with a motor manifestation; (2) that its etiopathology rests with a variety of toxic or autotoxic agents not as yet definitely isolated or determined; and (3) that the disease is engrafted upon a cortical organic cellular anomaly, which is induced largely by a faulty heredity.

Under the head of general treatment the necessity of absolute medical control is strongly insisted on, and the advantages of colony life are pointed out. The medico-pedagogic treatment of young epileptics is dealt with in some detail, the value of manual training being specially insisted on both for economic and therapeutic reasons. Systematic outdoor life is, moreover, considered of the first importance. The question of diet is discussed at length, and a table is given of what to eat, drink, and avoid. The author rightly counsels individual discrimination as to the exclusion of meat or not from the dietary. As regards medical treatment, the long list of drugs which have from time to time been recommended is passed under review. Spratling does not appear an enthusiast in the bromide treatment of epilepsy, which he thinks often abused, but he speaks favourably of a preparation called bromipin, containing sesame oil as well as bromin. Surgical treatment is considered under the heads of cranial trephining and of abdominal section. A list of 34 cases subjected to the former operation at or previous to admission to the Colony is given, 20 supposed to be of traumatic origin; in 1 case apparent recovery is noted; in 9, attacks were favourably modified; in 21 no improvement occurred; and in 3 the attacks became worse. In 2 cases only of oöphorectomy (9 patients) were attacks reduced in frequency. The difficult subjects of psychic epilepsy and epileptic automatism are dealt with at considerable length, and paroxysmal epileptic insanity is considered in its medico-legal relations, American procedure being cited in several cases.

We have said enough to indicate the comprehensive character of this work, which we heartily commend to all readers interested in the practical treatment of epilepsy.

MEN, WOMEN, AND MARRIAGE.

In a small volume of the Contemporary Science Series, entitled, *Man and Woman*,[2] Mr. Havelock Ellis has accumulated and discussed the major and more important part of what is known regarding the secondary sexual characters of men and women. We cannot but admire the care and skill with which the evidence is gathered, grouped, and massed in support of the author's contentions. Step by step the knowledge which has been accumulated with regard to the growth and proportions of the body, the pelvis, the head, the senses, the capabilities of movement, the intellectual impulses, metabolism, the viscera, hypnotic phenomena, the artistic impulse, natality and mortality, and morbid psychic phenomena in men and women are considered. Chapters are devoted also to the variational tendency of men, and to the functional periodicity and affectability of women. The general conclusions arrived at are that "the human infant presents in an exaggerated form the chief distinctive features of humanity"; that woman "bears the special characteristics of humanity in a higher degree than man"; and that man has a greater variational tendency than woman. Evidence is also put forward in support of the opinion that women are more precocious than men; that their development is arrested at an earlier period; and that, as a consequence, the proportions of women tend to approach those of small men and children. An extremely interesting appendix constitutes a reply to Professor Karl Pearson's attack upon the author's opinions. It contains a fair and strong statement of the questions at issue, and, whilst it in no way derides Professor Pearson's "biometrical" methods of research, it points out that they merely constitute an instrument which may be used or misused.

Health and Disease in relation to Marriage and the Married State[3] is the title of a large manual by various German authors, edited by Professor Senator and Dr. S. Kaminer, of which the first volume of the English authorized translation is already published. If we believe in free will—and we do believe there is real as well as merely apparent free will—we are forced to conclude that the character of the human race of future times depends largely on the free will of the present time; in fact, that every action and every thought of every human being has a bearing on the physical and mental condition of the human portion of the world of a hundred and hundreds of years hence. The present book, which includes important considerations underlying the actual production of children must really be acknowledged as supplying a medical want. Not only does it deal with questions of fitness for marriages, on which medical practitioners are being consulted with increasing frequency, but it likewise considers every disorder and disease in any way connected with or affecting the married state. After a short introduction by Professor Senator, chapters are devoted to the following subjects in their connexion with marriage: Hygienic considerations on the subject (Professor M. Gruber); inherited and congenital diseases and predispositions (Professor J. Orth); consanguinity (Professor F. Kraus); climate, race, and nationality (Dr. W. Havelburg); sexual hygiene (Professor P. Fürbringer); menstruation, the puerperal state, etc. (Professor R. Kossmann); constitutional diseases (Professor Senator); diseases of the blood (Professor H. Rosin); vascular diseases (Professor von Leyden and Dr. W. Wolf); pulmonary diseases, etc. (Dr. S. Kaminer); diseases of the digestive organs (Professor C. A. Ewald); renal diseases (Dr. P. F. Richter). The field covered by the first volume is, therefore, most extensive. Many important questions associated with the main subject are dealt with. Thus, Gruber discusses the question of continence, and is of opinion "that the majority of normal men can, no less than women, permanently renounce sexual intercourse, or the gratification of the sexual desire altogether, without suffering any injury." Fürbringer (p. 230) has "never dared to recommend sexual intercourse to young men," and Rohleder has characterized such advice as unscrupulous. Moral considerations apart, one wonders if those practitioners who still undertake the responsibility of recommending sexual intercourse to unmarried men on account of the *supposed* evils of continence have had occasion, as the reviewer has had, to observe the results of such advice in the form of venereal disease. On the other hand, Havelburg (p. 194), after pointing out the characteristics of "old maids," says: "A regulated sexual intercourse, such as our social institutions make possible for women only in the form of marriage, would act like a perfect source of youth." In a large work by various contributors there must naturally be a certain amount of overlapping. Thus, inheritance of diseases and the effects of parental bad habits (alcohol) on the off-spring must necessarily be touched on, more or less fully, in different chapters. At present the world is far from following the advice on page 31: "Only such persons should beget children who are perfectly healthy, strong, and well nourished." Orth very

[2] *Man and Woman.* By Havelock Ellis. Fourth edition. London: The Walter Scott Publishing Co. 1904. (Crown 8vo, pp. 488; ten Figs. 6s.)

[3] *Health and Disease in relation to Marriage and the Married State.* Edited by Geh. Medizinalrat Professor Dr. H. Senator and Dr. Med. S. Kaminer. Translated by J. Dulberg, M.D. In two volumes. Vol. I. London: Rebman Ltd. 1904. (Roy. 8vo, pp. 492. 30s. complete.)

concisely sums up such questions as those of maternal impressions and inheritance of acquired characteristics. The effects of consanguinity in marriage are fully dealt with by Kraus. Most important are the sections on the various diseases in relation to marriage, childbirth, and heredity, especially those on heart diseases (Leyden and Wolf) and pulmonary tuberculosis (Kaminer). Ewald discusses even ptyalism, hernia, appendicitis, and haemorrhoids in their relation to marriage; and, under diseases of the liver, alludes to the cases of jaundice recurring with each pregnancy, but does not mention that this tendency may be a family peculiarity, and occur in two sisters (H. Benedict, 1902, Lourich, 1904). In speaking of the "albuminuria of puberty," Richter (p. 448) says that the optimistic view of the situation is often confirmed by the further course of the individual's married life. Washbourn found that, of 39 persons (whose lives were insured) with supposed physiological albuminuria, only about half reached the average duration of life: but Posner (*Zeit. f. klin. Med.*, vol. liii, p. 42) has recently, and we think successfully, maintained that the regular occurrence of small quantities of albumen in the urine of apparently healthy persons is by no means necessarily of serious import, and he agrees with Leube that the presence of a few hyaline casts and even a few granular casts does not necessarily signify an inflammatory disease of the kidneys. Certainly, no one nowadays would regard the ordinary cyclic albuminuria of young persons as any obstacle to marriage. Of the great scope and importance of the work under consideration there can be no doubt, and, to general practitioners especially, it will constitute a most useful reference book.

OPHTHALMOLOGY.

MR. SIMEON SNELL'S *Eye-strain as a Cause of Headache*[4] is a reprint of papers delivered before the York Medical Society. It emphasizes the importance of a class of cases well known to ophthalmic surgeons—that in which an error of refraction or of muscle-balance is the cause, often unsuspected, of headache, neuralgia, migraine, giddiness, sleeplessness, or vomiting. In many cases the patient is unaware that the sight is not normal, and may not be conscious of eye-strain. It cannot be too well recognized by those in general practice that even in the absence of eye-symptoms, where headache, etc., is complained of and persists, the refraction of the eyes should be determined, both with and without a cycloplegic agent, such as atropine or homatropine. Further, a latent deviation may be found to exist and to call for the use of prisms, to the complete relief of the symptoms above referred to. Mr. Snell gives illustrative cases, showing the great advantage of correcting even low degrees of refractive error.

Dr. HAAB'S guide and atlas to ophthalmic surgery,[5] forming vol. xxxi of Lehmann's *Hand Atlases*, is evidently the fruit of much operative experience, and can be unhesitatingly recommended to all interested in the subject, and to those who wish to become acquainted with the practical details of eye operations. The coloured plates are exceedingly realistic, and are a distinct aid to the understanding of the different operative procedures. Most of the instruments referred to in the text are figured as well. There is a specially good chapter on the removal of foreign bodies from within the eye by means of magnet operations, with which Professor Haab's name is notably associated. A good description, with illustrations, is given of Krönlein's operation also for the removal of orbital tumours.

NOTES ON BOOKS.

THE recently published volume of the *Proceedings of the Anatomical and Anthropological Society of the University of Aberdeen*[6] contains amongst much other interesting and valuable matter, numerous and careful accounts of anatomical variations and abnormalities met with in the dissecting room of the University; records of the examinations of the skulls of different races; papers dealing with the antiquity of man, the people of Ashanti, and the peculiarities of the vascular system in fused twins; plates representing the appearances of sagittal and coronal sections of the head in certain definite planes; a record of the contents of short cysts found in Aberdeenshire and the neighbouring counties; a description of a portion of the anatomy of a chimpanzee; and an interesting analysis of the results of an examination of the eyes of 400 medical students of the University. In fact it furnishes very complete evidence that, under the fostering care of Professor Reid, a large amount of valuable anatomical work is being done in our most northern University.

[4] *Eye-strain as a Cause of Headache and other Neuroses.* By Simeon Snell. F.R.C.S.Ed. London: John Bale, Sons, and Danielsson. 1904. (Crown 8vo, pp. 57. 2s. 6d.)

[5] *Atlas und Grundriss der Lehre von den Augenoperationen.* Von Prof. Dr. O. Haab in Zurich. Munich: J. F. Lehmann. 1904. (Crown 8vo, pp. 400, 30 coloured plates, 154 illustrations. 12s.)

[6] University of Aberdeen. *Proceedings of the Anatomical and Anthropological Society.* 1902-4. Aberdeen: University Press. (Demy 4to. pp. 155, 28 plates, and 19 illustrations.)

THE PHYSICAL CONDITION OF WORKING-CLASS CHILDREN.

SIR JOHN GORST, M.P., presided on October 27th at a meeting of the Childhood Society held at the Sanitary Institute, London, when a discussion took place on the physical condition of working-class children.

Mr. T. J. MACNAMARA, M.P., in opening the debate, said that 80 per cent. of the working-class children were never so well off as they were to-day, while the remaining 20 per cent. were probably no worse off than thirty years ago, but were in a most hopeless condition in regard to food, clothing, and housing. During its thirty-three years of existence, the problem of hungry children was constantly before the London School Board; and the third Special Committee of that Board in 1898 declared that the proper feeding of hungry and ill-fed school children ought no longer to be left to charitable agencies, but should become a public obligation. The School Board, however, did not endorse the finding of that Committee. The Royal Commission on Physical Training in Scotland recorded last year its unanimous opinion that the proper supervision of the feeding of those who came for instruction should be regarded as one of the duties of school authorities, and the teachers should be instructed to take note of all children apparently ill-fed. The Scottish Commission added the opinion that unless children received sufficient nourishment they could not be expected to profit by the mental or physical training provided for them. In August last the Physical Deterioration Committee unanimously decided that definite provision should be made by the various local authorities for dealing with underfed children. Mr. Macnamara then explained in detail his plan for adapting the "Cantine Scolaire" system, which worked well in Paris. The plan was wholly against relieving parental responsibility, and he denounced the system of charitable feeding as one that destroyed the sense of parental obligation. He proposed to schedule the poorer urban areas and group the elementary schools, attaching to each group a dining-hall. Parents would be invited to secure books of dinner coupons at the nearest municipal offices, and teachers would be supplied with books to meet the cases of children unsupplied from home. All coupons would be printed precisely in the same way. Parents able to buy the books would have to do so; parents shown to be unable to purchase the books would be supplied with them gratuitously. At mid-day each child, armed with its dinner coupon, would go to the central dining-hall, and get a good meal. As to ways and means, he relied on voluntary contributions, sale of coupons, special aid grants from the Exchequer, and money from the local rates to make up the deficiency. Mr. Macnamara then discussed the need for continuous medical supervision, and urged that a complete medical record should be taken of each child when admitted to the elementary school, and that thereafter the child should be under continuous medical supervision. A large development of the teaching in cookery, hygiene, and domestic economy given to girls in the elementary schools was necessary. He then referred to the supply of suitable milk for the feeding of infants carried out by the Battersea Borough Council. He insisted on the importance of systematic physical training for working-class children, and declared that every youth between the ages of 14 and 20 should be compelled to give at least two hours a week on two nights a week for two years to physical training under State auspices. With the development of cheap means of transit he hoped it might be increasingly possible to house the people and accommodate the school children outside congested manufacturing centres, and he pointed out that the municipalities could do much by giving the children free tram rides.

Mr. S. E. PEDLEY said that in the Poor-law schools dentists

had been appointed, so that the Poor-law children were better treated than the children in the Board school.

Dr. G. E. Shuttleworth described how the Jewish aliens of the poorest class fully appreciated their responsibility in regard to the feeding and care of their children, and gave instances of the solicitude for their offspring shown not only by the mothers but also by the fathers.

Dr. J. Kerr, Mr. Hunt, and Mrs. Burgwin also spoke; and Sir John Gorst, in concluding the debate, observed that provided the responsibility of parents was not lessened, there was no better system for feeding the children than the plan suggested by Mr. Macnamara.

MEDICAL INSPECTION OF SCHOOLS IN THE UNITED STATES.

Boston.

The medical inspection of schools in Boston was first put into force in 1894 by the Board of Health.

The Board selects and employs one medical inspector for each of fifty school districts, and he has from four to six school buildings under his charge in which are some 1,500 to 2,000 pupils. The medical inspector visits each school as soon as convenient after nine o'clock in the morning on each day of the week, and examines those pupils who appear to the teacher to be ill and in need of observation.

He receives from the teacher the following form on which is filled in the name of the pupil who brings it, and marks upon it his diagnosis and states whether the child is to remain at school or to be sent home for the observation and care of its family physician and parents:

.....190.....

Keep on File.

TEACHER'S STATEMENT.

(Name)..... Room No.....

.....School.

Complaint .....

Certificate .....

PHYSICIAN'S STATEMENT.

Diagnosis.....

Advice .....

The medical inspector exercises no authority whatever unless the illness of the child is of an infectious character, in which case he reports the fact to the Board of Health. He is never allowed to prescribe, or in any way to interfere, with the prerogatives of the child's parents or family physician.

The medical inspector also receives a daily bulletin of cases of infectious diseases reported to the Board of Health, from which he selects those in his district, visits them to see if the isolation is satisfactory to the Board of Health, and reports the facts to the Board. The following notice is sent to the family physician:

Office of Board of Health,
Boston, ...190...

Doctor.....

I have just now made an official visit at the house of your patient .....at.....for the Board of Health. It will be my duty to co-operate with you in maintaining the necessary isolation of the patient, and, on notice from you or the family, of the termination of the disease, to see the patient and certify the facts required by the Board of Health for its action.

Respectfully,

.....

Medical Inspector of Schools.

As a means of preventing infection a wooden tongue depressor is used in the examination of school children. This is supplied by the Board, and destroyed after being once used. When infection has ceased, and the child is in a fit state to return to school, notice is sent to the Board of Health in the following terms:

Boston,.....190...

To the Board of Health.

Gentlemen:

I have this day examined.....recently ill with....., at No .....Street, Ward....., and recommend the disinfection of rooms, removal of card warning, and release of patient from isolation, on*.....

Respectfully,

.....

* Date. Medical Inspector of Schools.

Each medical inspector receives a salary of 200 dollars a year.

It is difficult to estimate from statistics the effect produced by the system in preventing disease. It is believed to be very useful, and although the accompanying table does not prove anything, it undoubtedly shows a decline in the number of cases of infectious disease since the medical inspection of schools was instituted; it is impossible to say how much of the decline is due to that system.

New York.

At a recent meeting of the Medical Society of the County of New York, Dr. Thomas Darlington, Commissioner of Health, New York City, stated that the medical supervision of schools was undertaken in 1897. At that time it was found that children attended schools when the subject of mild attacks of measles, of scarlet fever, and sometimes even when they were desquamating, and not under medical care. In many cases the Klebs-Loeffler bacillus was found in the throat. In consequence of this money was appropriated and 150 inspectors were appointed for Manhattan and the Bronx in March, 1897. When a child was found to be suffering from measles or scarlet fever, it was at once sent home and a notification was sent to the district inspector, who thereupon excluded all children from the school until the termination of the case and the disinfection of the property. The

Years.	Population.	Small-pox. Deaths From.	Small-pox. Rate per 10,000 Living.		Diphtheria. Deaths From.	Diphtheria. Rate per 10,000 Living.		Scarlet Fever. Deaths From.	Scarlet Fever. Rate per 10,000 Living.		Measles. Deaths From.	Measles. Rate per 10,000 Living.		Typhoid Fever. Deaths From.	Typhoid Fever. Rate per 10,000 Living.		Consumption. Deaths From.	Consumption. Rate per 10,000 Living.	
1886... ...	401,374				423	10.51		81	2.02		36	0.90		135	3.36		1,607	40.08	
1887... ..	412,663				410	9.94		195	4.73		119	2.88		183	4.43		1,526	36.98	
1888... ..	424,274	2	0.05	0.02	589	13.88	12.09	65	1.53	1.91	27	0.64	1.17	170	4.01	3.91	1,464	34.51	35.44
1889... ..	436,208	2	0.05		683	15.65		23	0.53		48	1.10		186	4.26		1,431	32.80	
1890... ..	448,477				462	10.30		42	0.94		19	0.42		155	3.46		1,495	33.34	
1891... ..	457,772				285	6.23		64	1.40		21	0.46		154	3.36		1,352	29.53	
1892... ..	467,260				481	10.29		262	5.61		19	0.41		137	2.93		1,414	30.26	
1893... ..	476,045	4	0.08	0.14	546	11.45	11.62	243	5.20	3.63	27	0.57	0.39	148	3.10	3.11	1,364	28.60	28.88
1894... ..	486,830	22	0.45		878	18.03		192	3.94		8	0.16		141	2.90		1,425	29.27	
1895... ..	501,692				588	11.73		114	2.27		19	0.37		163	3.25		1,349	26.91	
1896... ..	516,305				516	9.80		121	2.34		27	0.52		162	3.14		1,328	25.72	
1897... ..	528,912				411	7.77		136	2.57		21	0.40		173	3.27		1,289	24.37	
1898... ..	541,827				170	3.15	7.07	33	0.60	2.02	27	0.50	0.72	185	3.40	3.06	1,241	22.90	24.15
1899... ..	555,057	5	0.09		267	4.99		74	1.33		33	0.59		165	2.97		1,236	22.27	
1900... ..	560,892				537*	9.57		181	3.23		88	1.57		143	2.55		1,407	25.08	
1901... ..	573,579	74	1.29	1.58	353*	6.15	4.51	210	3.66	2.07	103	1.79	1.25	142	2.47	2.27	1,346†	23.46	21.71
1902... ..	586,553	190	3.24		225*	3.84		87	1.48		66	1.12		139	2.37		1,247†	21.26	
1903... ..	600,929	13	0.22		214*	3.56		65	1.08		50	0.83		119	1.93		1,227†	20.42	

* Including croup.

† The increase of deaths from consumption, beginning with 1900, is caused by adding laryngeal and general tuberculosis. The deaths from pulmonary tuberculosis, and all other forms of tuberculosis, for 1900, 1,570. The deaths from the same group in 1901, 1,513; in 1902, 1,395; and in 1903, 1,370.

detection of these diseases, he said, depended largely upon the school teachers; each child was examined once a week. During the school year 1901-2 260,182 children attended, and there were 9 703 exclusions. In September, 1902, the routine inspection of schools was begun by classes. The inspector's reports were duplicated, one being sent to the Health Department, and the other kept on file at the school. The inspectors found that many contagious diseases were not reported; during six months they found 561 cases of measles, 107 cases of German measles, and 70 cases of scarlet fever that were not reported. A very large number of cases of pediculosis capitis were excluded from school. Strict attention was paid to the hygienic cleanliness of writing and drawing utensils. Lists of houses in which contagious diseases existed were sent daily to the public libraries. Recently eight trained nurses had been appointed to take care of children suffering from skin and contagious eye diseases. Tables for 1903 showed that the cases cared for included 156,186 of pediculosis, 106,257 of eye diseases, 3,307 of eczema, 3,498 of ringworm, and 335 of scabies. The number of treatments was 235,793, and over 24,282 pupils had been visited. When five ophthalmic surgeons were appointed it was found that 17 per cent. of the children were suffering from trachoma. Later, the inspectors were sent for instruction in eye diseases at the New York Eye and Ear Infirmary, and they assumed the care of these sufferers. The number of trachoma cases was very large; 4,337 cases were operated upon, while those not operated upon numbered 11,599.

REMARKS.

It will be seen that the object of medical inspection of schools in America is to check the spread of infectious diseases among school children. It is of the greatest importance to check such diseases as measles, diphtheria, scarlet fever, whooping-cough, and so on, which frequently occur in elementary schools, both from the generally-recognized point of view of their injurious influence on school attendance and from the still more important one of the after-effects of these diseases on their victims. An attack of measles, for example, may produce a great depression of mental and physical power, lasting many months, even when no complication such as chronic inflammation of the eye or ear occurs. Class teachers should be encouraged to take a keen interest in the health and physical development of their children; already they are being taught to look after the cleanliness of the class, and it would only be a small step further to teach them to look out for indications of illness.

Now, while it would not be reasonable to expect school teachers to diagnose the disease from which a child is suffering, it would be quite reasonable to expect them to see that the child seemed ill. The necessity for a medical officer is therefore obvious, and it is certain that it would not be possible for the medical officer of the education authority to do this work; the essence of success would be promptness, and he could not visit every school in the course of a morning, nor would a special staff of assistants meet the case. The educational authorities must look to the ordinary members of the medical profession engaged in general practice. One of them practising in the neighbourhood should be engaged to attend every morning at the opening of the school, and he would follow out very much the American plan above described.

But the system, if carefully carried out, would go far beyond the mere discovery of zymotic diseases. It would lead to the detection of tuberculosis in its earliest stages, when it is most curable, and would greatly diminish the risk of spreading its infection broadcast. Further, children who were dull from underfeeding, from over-pressure, from want of sleep, or from mere debility, would be recognized by the medical referee, and their names sent to the education authority, who would make inquiries in each case through its medical officer or his assistants. Compulsory education brings every child on to the school benches, and it is the duty of the State to do everything possible to protect the health of the children, and in particular to prevent schools acting as centres of infection.

THE new nurses' home of the Cancer Hospital, London, will be opened by Lady Ludlow on November 14th. The building, which has been erected in the hospital grounds, will provide a separate bedroom for each nurse, and separate sitting rooms for sisters and nurses. The cost of erecting and equipping the home has been about £5,500.

LUNACY IN LONDON.

THE Report of the Asylums Committee to the London County Council for the year ending March 31st, 1904, has just been issued.

Increase of Patients.

The total number of lunatics of all classes chargeable to the County of London, exclusive of private patients and those chargeable to the Prison Commissioners, and including patients accommodated in the imbecile asylums of the Metropolitan Asylums Boards, was 23,948 on January 1st, 1904, being an increase of 996 on the previous year. This is the largest annual increase the Asylums Committee have had to record, and, as is shown by a graphic chart, comparing the rates of the lunacy increase and other movements in the population of London—excluding the City—for the fifteen years 1889-1903, this increase has been steadily maintained during this period, and has been much greater than the rates of increase in the general population or in ordinary pauperism. Only in one year, 1901, was there a small decrease of 24. This large increase in the total number of lunatics is attributed by the Committee to the opening early in 1903 of the Metropolitan Asylums Board's new asylum at Tooting Bec, experience having shown, they say, that the opening of an asylum frequently results in a number of cases of lunacy, hitherto unregistered, being brought under official recognition. The ratio of pauper lunatics to general population varies in the different unions and parishes of the County of London from 2.1 per 1,000 (Hampstead) to 13.7 per 1,000 (Strand), and gives a mean ratio of 5.25 per 1,000 for the whole county. The Committee regard the prospect of any diminution in the increase in lunacy as most problematical, and again point out in this report that the responsibility of the London County Council and the Asylums Committee has been much increased by the growing tendency to certify quiet, harmless, and senile cases for treatment in an asylum. Thus, on January 1st, 1890, of the total number of lunatics in the county 61.74 per cent. were certified for detention in asylums, the remainder being in the Metropolitan Board's asylums, in workhouses, and with relatives or friends; whilst on January 1st, 1904, the number certified for asylum treatment was 71.53 per cent.

Accommodation.

The total number of lunatics, including private patients, for whom the London County Council was responsible to find accommodation on January 1st, 1904, was 17,465, as compared with the 16,957 of January 1st, 1903. Of these 17,465 patients, 16,618 were accommodated in London County asylums and 847 in out-county asylums and licensed houses, 95.15 per cent. being thus in the County Council's asylums. Fresh accommodation to the extent of 384 beds has been provided for use during the year, 324 by the epileptic colony formally opened on July 1st by His Grace the Duke of Fife, and 60 by the opening of a villa for male patients at the Manor Asylum. It is proposed further to construct a hospital villa at the Heath Asylum, Bexley, for 50 male patients and staff. This villa will be conducted on strictly hospital lines, patients being retained there for diagnosis and classification according to chances of recovery. Non-recoverable cases will then be sent to the main building, and recoverable cases detained till convalescence has been established, when they will be sent to the convalescent villa pending their eventual discharge.

Cost.

The average cost per head per week for the year ending March 31st, 1904, was 11s. 6¼d., as compared with 11s. 5d. of the preceding year.

Admissions.

There were 4,502 admissions during 1903, a decrease of 476 on the previous year, when the admissions numbered 4,978. Of the admissions for 1903, 2,085 were males, 2,417 were females, and 4,066 were first admissions. The mean age of the total admissions was 43.15 years, 205 being under 20 years of age, 726 of 60 years and over, and the large remainder of 3,571 were of ages intermediate between 20 and 60. The figures for the London County asylums for 1903 show a smaller proportion of aged inmates than those for the whole of England and Wales, the last report of the Commissioners in Lunacy giving a percentage of 13.8 of the admissions for the five years 1898-1902 as being of 65 years of age and upwards, whilst of the admissions to the London County asylums in 1903 only 9.06 per cent. were of these ages.

Forms of Mental Disorder in the Admissions.

Owing to a lack of uniformity in the tables under this heading, no complete summary can be given, but, excluding 83 cases of "insanity with delusions" admitted to the Heath Asylum, Bexley, the following figures may be accepted as approximately correct: Mania of all forms 1,316, melancholia of all forms 1,567, dementia of all forms 571, general paralysis of the insane 326, congenital or infantile defect 253, and acquired epilepsy 390. The relative frequency of these forms differs, therefore, markedly in the case of melancholia and mania from the averages of England and Wales and also slightly in the other forms. Mania existed in England and Wales in 41.7 per cent. of the admissions for the four years ending 1902, whilst the County Council figures work out at 29.2; and melancholia for the whole of England and Wales was 29.5 per cent., but for the County Council asylums 34.7. The proportions of cases of congenital or infantile mental defect are almost equal—namely, 5.5 per cent. for England and Wales and 5.6 for London County: and general paralysis was slightly higher for the latter, being 7.24 per cent., as compared with 6.4 for England and Wales.

Probable Causes of Insanity.

Owing to the different methods of classification under this heading adopted by the several medical superintendents, no complete summary of causes is possible, but, excluding the epileptic colony, the relative frequency amongst the probable causes works out as follows: Moral causes 19.6 per cent., alcoholic intemperance 18.0 per cent., previous attacks 19.5 per cent., syphilis 5.7 per cent., and ascertained hereditary influences, leaving out of count neurotic and alcoholic heredity, in 18.7 per cent. The Medical Superintendent of Heath Asylum (Bexley), Dr. T. E. K. Stansfield, in his interesting report, says that the most frequently-associated factor in the causation of mental disease amongst his admissions was general arterio-sclerosis, being found present in 34 per cent. of the whole number. This is in harmony with the findings of Ford Robertson and many other writers. Dr. Stansfield further diagnosed syphilis in 103 cases, or 17.6 per cent. of the admissions, and out of 40 general paralytics found evidences of syphilitic infection in 31, or 77.5 per cent.

Discharges and Deaths.

The number of patients discharged as recovered during the year was 1,352, giving a recovery-rate on admissions of 30.05 per cent.: 1,185 were discharged as relieved, 353 as unimproved, and there were 1,485 deaths, giving a percentage death-rate on the average daily residents of 9.0 per cent.: 287 deaths were due to general paralysis—that is, 19.3 per cent. of the total deaths: 263 died from other forms of cerebro-spinal disease: 182 died from phthisis pulmonalis; and 24 more from other forms of tuberculous disease. The percentage tuberculous death-rate on the total deaths of each individual asylum are as follows: Hanwell 15.5, Colney Hatch (excluding the 51 victims of the fire) 19.8, Banstead 16.4, Cane Hill 10.2, Claybury 13.1, Heath 11.9, Manor 15.1, and Horton 11.8. The total tuberculous death-rate, excluding the 51 mentioned above, was 14.3 per cent. of the total deaths. No death occurred at Ewell Epileptic Colony during 1903. There were five other accidental deaths, 3 of them by suicide; and the remaining deaths do not call for particular mention.

Epileptic Colony.

This was formally opened on July 1st, 1903, but the first male colonist was received on August 19th; the female villas were occupied in September, and by the end of the year all were in use with the exception of one villa for private cases. Up to the time of publishing this report, 315 cases have been admitted, all, with the exception of one case, having been transferred from the sister London asylums; 28 per cent. were cases of congenital disease, there being in 85 pronounced congenital mental defect. Insane heredity was ascertained in 56, epileptic heredity in 49, and alcoholic heredity in 27. Alcohol was considered a contributing factor in the causation in 53, and as the primary factor in 11 more. Trauma appears as contributing factor in 41, mental stress in 23, physiological defects and errors in 14, and critical periods in 60, of which 50 belong to the period of adolescence. In only 5 cases was no cause assigned. The large proportion of the colonists are employed on the farm, and much excellent work has been done; 62.5 per cent. are under regular medical treatment, bromide of strontium being the most extensively-used drug. The general health has been good.

Pathology.

The report of Dr. Mott, Director of the Pathological Laboratory, summarizes the most valuable results of investigations which he and his assistants, with the co-operation of Dr. Eyre, Bacteriologist to Guy's Hospital, and Dr. Flashman, Pathologist to the New South Wales asylums, have carried out in various fields, including asylum dysentery, typhoid fever at Colney Hatch, tuberculosis in asylums, the relationship of the Klebs-Loeffler bacillus to general paralysis, and general pathological work. Dr. Eyre was appointed, upon Dr. Mott's recommendation, for six months to prosecute a research upon atypical cases of typhoid fever, and, whilst the main results were negative owing to the almost complete absence of enteric cases in that period, most valuable facts were elicited as to the bacteriology of the intestines, and particularly as to the relation of B. dysenteriae to asylum dysentery, amongst others that a bacillus identical with B. dysenteriae can be isolated from the stools of many cases of asylum dysentery, and that the blood serum of some of these cases possesses a specific agglutinative action against this bacillus. Dr. Mott reports that the number of cases of dysentery from the whole of the London County asylums for the year ending February 29th, 1904, is far below that of preceding years, the numbers having dropped to 232 from the 389 of the preceding year. Interesting tables are given by Dr. Mott showing that 1.47 per cent. of the patients of the London County asylums are the subjects of active tubercle, and that out of 273 tuberculous cases only 71 were diagnosed as such on admission, and a further 44 within one year after admission. This seems, at first sight, to furnish strong evidence that the majority of the patients who have ultimately died of tuberculous disease in asylums have acquired the disease in the asylum; but Dr. Mott, as the result of his finding *post-mortem* apical scars, calcareous deposits, and other evidence of old tuberculous deposit, and considering further that a large number of people die who have been resident in the asylum without any sign of old or recent tuberculosis, that a certain number of cases are diagnosed as tuberculous during life which show no evidence of tuberculosis *post mortem* and vice versa, that many cases show unsuspected tuberculous deposit, gives it as his opinion that in the majority of cases of tuberculous deaths the disease has not been acquired in the asylum. Doubtless, many cases of early active tuberculosis escape observation on admission—the difficulty of diagnosis of early chest diseases in the insane is well known—but, inasmuch as the presence of old scars or deposits in no way negatives the possibility of fresh infections, and since to be of authoritative value, the relative frequency with which these deposits are found *post mortem* in asylums must be compared with the results of autopsies outside asylums, Dr. Mott's statement must as yet be regarded as only an *obiter dictum*. A point of much interest in the report is that Drs. Eyre and Flashman, after an extensive examination, were unable to obtain any evidence in support of Dr. Ford Robertson's hypothesis that the Klebs-Loeffler bacillus plays an important part in the production of general paralysis.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held on October 27th at 6, Suffolk Street, Pall Mall, with Dr. F. H. CHAMPNEYS in the chair.

Cases to be Considered in Camera.

The Board received a letter from the Secretary of the London Obstetrical Society, containing a copy of the evidence on which that Society had acted in declaring the L.O.S. certificate of a certain certified midwife to be forfeited. After some discussion, the Board decided that this matter should be discussed *in camera*.

A letter from the Town Clerk of Brighton, forwarding extracts from notes taken by the Coroner of Brighton at an inquest held by him on April 15th, 1904, at which evidence was given by a certified midwife, was also held over for consideration *in camera*.

A letter, enclosing a cutting from the *Fulham Chronicle* of October 7th, 1904, containing a report of an inquest held by the West London Coroner on October 6th, 1904, at which evidence was given by a certified midwife, was directed to be considered by the Board *in camera*.

The decision of the Board in regard to these three letters would, it was announced, be declared at the next meeting of the Board.

Midwives not Practising Independently.

A letter from Dr. Handford, the Medical Officer of the County of Nottingham, asking the opinion of the Board as to whether midwives who attend cases only with a medical man were bound to notify the local supervising authority of their intention to practise in that manner was considered. The Chairman pointed out that these women were not holding themselves out as practising midwives, and explained that Miss R. Paget, who is a member of the Central Midwives Board, was on the roll of midwives but had not notified the local supervising authority in her district because she did not hold herself out as a practising midwife, nor had she any intention of commencing to practise as a midwife in any area. The Chairman further pointed out that the whole question turned on the qualifying words "practising midwife" and "commencing to practise as a midwife." After some debate the question was settled by the Chairman declaring that it would be advantageous if midwives on the roll were registered by the local supervising authorities, but it did not appear that the Central Midwives Board could compel them to register under the circumstances mentioned in the letter received from Dr. Handford.

The Number of Women on the Roll.

After consideration of applications for certificates, the names of 1,238 women were passed under Section 11 of the Act, and ordered for entry on the roll. The separate numbers of the various qualifications at present appearing on the roll were:

Royal College of Physicians of Ireland	3
Obstetrical Society of London	2,953
Rotunda Hospital	120
Coombe Hospital	44
Queen Charlotte's Hospital	194
Liverpool Lying-in Hospital	138
British Lying-in Hospital	5
Glasgow Maternity Hospital	115
St. Mary's Hospital, Manchester	120
Manchester Maternity Hospital	24
City of London Lying-in Hospital	46
Royal Maternity Hospital, Edinburgh	25
Salvation Army Maternity Hospital	13
National Maternity Hospital, Dublin	9
Limerick Lying-in Hospital	4
Cork Lying-in Hospital	3
Eden Hospital, Calcutta	2
Women in bona fide practice, July, 1901	5,652
Total	9,470

First Examination by Central Midwives Board.

In the course of the consideration of the scheme of examinations to be conducted under the Central Midwives Board Miss Paget pointed out that the date originally settled on for the first examination in May, 1905, was inconvenient to all concerned, and she showed how it was improbable that there would be many candidates for examination at that date. The Board decided that the first examination shall be held in July, 1905.

Death of Mr. J. Heywood Johnstone, M.P.

A resolution of sympathy with the relatives of the late Mr. J. Heywood Johnstone was passed, and the Chairman undertook the duty of communicating this resolution to Mrs. Heywood Johnstone.

The Board adjourned to November 3rd.

LONDON HOSPITALS AND MEDICAL SCHOOLS.

The attention of King Edward's Hospital Fund for London having for some time past been called to the financial relations of certain of the London hospitals to their medical schools, the question has been referred to a Committee which will consist of Lord Welby, Sir Edward Fry, and the Bishop of Stepney.

The terms of the reference are as follows:

To consider and report:

1. Whether any, and if any how much, money given or subscribed for the relief of the sick poor to the twelve London hospitals having medical schools, is contributed, directly or indirectly, by those hospitals, or any of them, for the maintenance of medical education.

2. Whether any direct or indirect return for such contributions (if any) is received by the hospitals from their medical schools, and, if so, whether such return is equivalent to the amount of the contributions.

3. Whether, in the event of the committee finding that any hospital contributes to its medical school a sum in excess of the return it receives from the medical school, there are any special considerations advanced in justification of such expenditure, or any general considerations which would apply to all hospitals having medical schools.

It is an instruction to the committee to deal with the subject on the basis of the existing arrangements, and to accept from the hospitals as existing arrangements any such as they may advise the Committee will be in operation on January 1st, 1905.

Communications intended for the Committee should be addressed to King Edward's Hospital Fund, 81, Cheapside, E.C., marked "Medical Schools Committee."

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ending October 1st and 8th the deaths from plague in India numbered 13,633 and 16,491 respectively. The principal figures are: Bombay city, 85 and 69; Bombay Districts, 8,177 and 10,332; Bengal, 275 and 180; North-West Provinces and Oudh, 751 and 984; Punjab, 270 and 400; Rajputana, 446 and 473; Central India, 1,138 and 661; Hyderabad State, 440 and 404; Mysore State, 798 and 770; Madras Districts, 597 and 540. During the week ending October 8th the deaths from plague in Kashmir numbered 27, and in Karachi 13.

South Africa.

Port Elizabeth.—During the weeks ending October 1st and 8th the plague reports were as follows: Fresh cases, 1 and 1; deaths from the disease, 1 and 0. Two cases remained under treatment on October 8th.

Plague-infected rats continue to be found at Port Elizabeth and East London.

Mauritius.

During the weeks ending October 20th and 27th the fresh cases of plague in Mauritius number 26 and 24, and the deaths from the diseases 14 and 18 respectively.

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 83.

LITERARY NOTES.

Dr. John Wortabet contributes an interesting article on Sanitary Laws and Customs in the East, especially among Jews and Mohammedans, to the October number of the *Edinburgh Medical Journal*. He says there are now five medical schools in Turkey and Egypt, which have been founded on modern lines. The course of study in these schools, after a preliminary examination, extends over four years. All foreign diplomas are recognized by the Imperial Medical School in Constantinople after a short "colloquium" with the candidate, which is intended to satisfy the Board of Examiners as to the identity of the person who presents his academic certificate. No medical man or dentist is allowed to practise in Turkey without having a deed of registration. The two schools of midwifery in Constantinople and Cairo are of a later date, and the instruction given in them is very elementary, being limited to the management of ordinary cases of labour and some knowledge of the use of antiseptics. The whole course for a simple certificated midwife takes about six months. The number of such trained women is still very small, and the work is almost wholly in the hands of midwives who follow the traditional methods of olden times. All women in the East are delivered on the birth-stool, which is first noticed in history about fourteen centuries before the Christian era (Ex. i, 16). It is in the form of an armchair, and is made of solid wood, with a circular opening in the seat, from which a wide slit extends to the front. The arms of the chair are used for support during pains, and the sitting posture is believed to assist the expulsive efforts. The midwife sits on a cushion in front of the stool. No attempt is made to support the perineum. After delivery a clean pad is placed on the vulva; no bandage is applied to the abdomen, the parts are not bathed till some hours afterwards, and a general bath is not given before a week after delivery. Cases of dangerous flooding or mortality are very rare, and the rapid recovery which follows is mostly due to the good formation of the pelvis in Eastern women and their sound constitution. In breech presentations the case is left to Nature; in other abnormal conditions a physician is generally called in. The period of lactation is generally about two years. Dr. Wortabet also gives much interesting information as to marriage, food, drink, water,

sleep, dress, personal cleanliness, dwellings, and sewerage, and the disposal of the dead among Eastern peoples.

There is a French saying, *Mentir comme un arracheur de dents*, which sounds like a libel on the highly respectable profession of dentistry. Professor Lannelongue, however, who has taken the trouble to inquire into the origin of the phrase, shows cause for believing that it was applied in the first instance to Garengeot, a surgeon of considerable note in the eighteenth century. He was the author of several contributions to surgical literature which still keep his name alive among compilers of textbooks. But he is, perhaps, best known as the inventor of the dental "key," an instrument of torture now relegated to the chamber of horrors in surgical museums. To Garengeot one day came a young man, carrying in his hand his nose, which had just been bitten off in a fight. The surgeon fixed the severed part in position, and the nose was soon restored to the *status quo ante*. People refused, however, to believe that such a "miracle of cure" had been wrought, and their incredulity was enshrined in the saying quoted above. It has been pointed out by M. Georges Petit, that the credit of the case really belongs to Galin, a surgeon-barber, to whom it is in fact attributed by Garengeot in his *Traité des Opérations de Chirurgie*. The phrase in its first form, *mentir comme Garengeot*, looks like the invention of a professional rival; later it was softened into *mentir comme un arracheur de dents*, Garengeot having recommended his "key" as a convenient implement *pour arracher les dents*. To students of medical history it will scarcely seem surprising that he owed the disrepute which became attached to his name to a formal condemnation by the Académie de Chirurgie. That learned body, after sitting in judgement on the case, delivered itself of the sapient opinion that it was impossible that a piece of the nose completely severed from the parent stem could form new adhesions. This opinion, as we learn from Percy, the Surgeon-in-Chief of Napoleon's Grande Armée, made surgeons chary of reporting similar cases. Thus does the superior person act as a drag on the wheels of scientific progress.

To all students of anatomy the name of Poupart becomes familiar at a very early stage of their medical evolution. But how many surgeons know anything of the man to whom we owe the description of the ligament which bears his name? To some it may be of interest to learn that François Poupart was born at Le Mans in 1661, and was educated by the Oratorians. After finishing his studies, he was for some years undecided as to the choice of a profession. Finally he made up his mind to study medicine, and went to Paris with that object. There at first he maintained himself by teaching the classics. His taste for natural history led him to the study of entomology, and he made many discoveries which he recorded in the *Journal des Savants*. He was for three years resident surgeon at the Hôtel-Dieu, and in due course took his doctor's degree, not, however, at Paris, where the fees were high, but at Rheims. He wrote, as a "pot-boiler," a treatise on surgery which was published in 1695, but to which he disdained to put his name. In 1699 he communicated to the Académie des Sciences a vivid description from personal observation of a terrible outbreak of scurvy in Paris. In 1705 he described the ligament by which his name lives in the textbooks. The following is the summary of the communication given in the *Histoire de l'Académie Royale des Sciences*, 1705:

M. Poupart spoke of two thick round ligaments, which are very visible, inasmuch as in tall persons they are more than half a foot long, and which, nevertheless, have been left unnoticed by anatomists, apparently because the use of them was not known. They are attached by one end to the crest of the ilium, by the other to the crest of the os pubis, the middle being out of the perpendicular. They play the part of a bone in that region, for they support the three great muscles of the abdomen—namely, the external oblique, the internal oblique, and the transversalis. They are situated immediately under the rings. M. Poupart's view is that they support and partly break the impulse on the intestines caused by violent coughing, jumping, etc., and thereby prevent their insinuating themselves through the rings and giving rise to hernia. Moreover, these ligaments take the place of bones, for whatever bone Nature had put in their place, the belly would have had less freedom to expand, especially in pregnancy. For these reasons M. Poupart calls the two ligaments suspenders of the abdomen.

Poupart died in 1709 worn out by work and probably exhausted by privation. He loved knowledge for its own sake and reaped the usual reward of such unprofitable devotion.

The medical practitioners of Abbazia are taking steps to commemorate the services rendered to that health resort by Theodor Billroth by the erection of a monument to the famous surgeon.

THE WOUNDED NORTH SEA FISHERMEN.

Two of the fishermen landed from the hospital ship of the North Sea fishing fleet on October 28th are under treatment at the Hull Royal Infirmary. These are John Nixon and John Ryder.

John Nixon has a clean transverse cut about 3 in. in length in the right suboccipital region, on a line with the point of the mastoid process. There is another wound on the left side of the neck, similar to the first wound as regards nature and extent but somewhat lower. They appear to have been caused by different projectiles. There is no communication between the two wounds through the structures of the neck, though there is still a considerable amount of thickening of the intervening tissues. Both wounds were sutured on the ship, and are now practically healed.

John Ryder has a lacerated wound over the right great trochanter, 1 in. in diameter, and passing obliquely downwards and inwards for a couple of inches to the front of the femur. As pus was freely discharged, the wound was examined under *x* rays, and a piece of shell was seen at the inner end of the sinus. This was removed on November 1st, and found to be an irregular, jagged mass (1 in. by ½ in.), with, on one surface, seven screw threads (not the marks of rifling) considerably distorted and twisted. Apparently it is a portion of the base of a shell, to which the metal casing of the cartridge had been attached. At the same time, a flake of bone (a superficial sequestrum) was removed, measuring 1 in. by ½ in. There was also found on the front of the lower end of the great trochanter, a patch of bare bone, measuring 2 in. by 1 in. The wounds are suppurating and there is fever, but the patient is going on as well as can be expected.

Of the three men landed on October 25th, and now under treatment at the Hull Royal Infirmary, two have made fairly satisfactory progress, but in the case of the third a somewhat serious complication has occurred, as will be seen from the following notes:

Arthur Rea: Shot in the chest wall. He is progressing favourably, the wound cleaning up fairly quickly.

Albert Almond: Shot through forearm. His wounds are healing, though there is a considerable amount of slough discharging.

William Smith: Shot in the back. His wound looks healthy; but after the rise of temperature, reported last week, he developed symptoms of pleural effusion. On November 1st the right pleural cavity was explored in the neighbourhood of the wound, and sero-purulent fluid was found and removed. There is therefore a probability of his having to undergo an operation for empyema, in addition to suffering the pain arising directly from his shot injuries.

The third fisherman landed at Hull on October 28th was taken up to London by train, and admitted into the London Hospital under the care of Mr. Hurry Fenwick. We learn that he has a severe compound comminuted fracture of the right humerus in the upper third; the wound was lacerated, and had become septic before admission. It was necessary to remove some fragments of bone, but it is hoped to save the arm; he has also suffered a fracture of the acromion. There was also a wound at the back of the neck and a piece of shrapnel was found by the *x* rays to be embedded in the tissues; this was removed on Monday last, and the wound is doing well. The injuries are severe, but the patient is a robust man, and it is confidently hoped that he will make a good recovery. Sir Frederick Treves, who is Consulting Surgeon to the Royal National Mission to Deep Sea Fishermen as well as to the London Hospital, has seen the patient and was present at the operation on Monday; the King has expressed much interest in the case.

The November dinner of the Aberdeen University Club in London will be held at the Trocadero Restaurant, Shaftesbury Avenue, W., on Wednesday, November 16th, at 7 p.m., Sir William Niven, K.C.B., LL.D., being in the chair. Members desiring to be present should communicate with the Honorary Secretaries, Dr. R. J. Collie, 25, Porchester Terrace, W., and Mr. J. M. Bulloch.

Royal Dental Hospital of London.—The annual dinner of the staff and past and present students will be held on Saturday, November 26th, at the Hôtel Métropole (Whitehall Rooms), under the presidency of Mr. Morton Smale. Gentlemen either now or formerly connected with the hospital or medical school who may, through inadvertence, not have received special notice, and who desire to be present, are requested to communicate with the Dean at the Royal Dental Hospital, 32, Leicester Square, London.

MEDICAL NEWS.

THE jubilee of Medicinalrath Dr. Baumgartner was celebrated on October 27th at Baden Baden; the Grand Duke of Baden presented him with the Berthold Order on the occasion.

A PROVINCIAL sessional meeting of the Royal Sanitary Institute will be held at the Guildhall, Nottingham, on November 26th, at 11 a.m., when a discussion on the present-day aspect of conservancy systems will be opened by Dr. Philip Boobbyer. In the afternoon visits will be made to municipal undertakings illustrative of sanitary administration and practice.

MR. CECIL FRANK WIGHTMAN, F.R.C.S.Eng., Examiner in Ambulance to the London County Council, was on October 20th appointed honorary life member of the St. John Ambulance Association, "in recognition of his able and valuable services as gratuitous lecturer to classes at Bolton and Leicester."

INDUSTRIAL SCHOOL FOR THE FEEBLE-MINDED.—The annual meeting of the Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded was recently held at the Manchester Town Hall, the Lord Mayor presiding. The Committee reported that the Sandlebridge schools were full, 24 boys and 20 girls being in residence there. If funds permitted, they hoped that in another twelve months two new homes, with fifty additional beds, would be available. The number of subscribers had increased by 200, but needed to be be trebled; the bank balance had been overdrawn by £293. The Lord Mayor expressed his warm sympathy with the good work being done at Sandlebridge, and drew special attention to the fact that it was the object of the committee to provide a *permanent* industrial home for the inmates beyond school age, thus guarding them, and also the community, from many serious perils.

THE Society of Women Journalists held its annual meeting on October 29th at the Institute of Journalists. The President for the coming year, Mrs. T. P. O'Connor, gave a sympathetic address. A resolution to reduce the subscription of country members from one guinea to half a guinea, proposed by Miss Tait and seconded by Mrs. Watt Smyth, was unanimously carried. It was wisely argued that a woman who travelled over fifty miles to attend one of the Society's meetings or to ask its help, and who spent a considerable sum of money on railway and incidental expenses, must be very much in earnest. Earnest workers are the backbone of any society, and the more dabbling in journalism for excitement or amusement is discouraged, the sooner will men journalists cease to "look with condescension" on women who enter the field, and who, if they worked for high ideals, would have as good a chance of success as men. The Society of Women Journalists has rapidly increased its membership; it should now begin to look to the quality of the work done by its members.

ENTRIES AT THE MEDICAL SCHOOLS.—About this time of the year it has been our annual custom to publish a return in respect of the entries which have been made at the medical schools during the preceding twelve months; this year we have deferred any allusion to the matter for the purpose of making more extended inquiries than are possible immediately after the commencement of the winter session. Such statistics are of interest if they throw any real light on the extent to which a medical career continues to attract; but, as pointed out during the past four or five years, numerous sources of fallacy exist, especially in connexion with students who, after joining one school, leave it and make a fresh start at another, and also of students who, having commenced the study of medicine in a university, complete it in a metropolitan school of medicine. This year we determined to conduct our inquiry with the co-operation of the Deans and others concerned upon fresh lines. The investigation has been exhaustive, and the result is that we have decided not to publish any numerical return at all. There was reason before to suspect, and the inquiry this year has made the fact quite clear, that the registers of the various medical schools and faculties are at present kept in such different ways, and some of them in such rough and ready form, that the returns of entries derived from them are not truly comparable one with another, and, if taken as a whole, cannot throw any but a false light upon the question which lends the principal, if not only, interest to a statistical inquiry of this character. The only conclusion which, in addition to what has been said, our inquiry seems to justify is that there seems a tendency on the part of students only to enter for a section of the tuition offered by any one school, instead of for the whole.

THE DOOM OF SPECTACLES.—It would appear that the claims lately put forward by Mr. Stephen Smith, as the discoverer of a new and rapid cure for errors of refraction, are not to be submitted even to the slight test proposed by Mr. Aitchison. The latter, it will be remembered, offered to pay £100 to any hospital selected, if Mr. Stephen Smith substantiated the claims made even to the extent of removing one-third of the visual defect existing in certain patients, who were to be sent to him and who were the subjects of common refraction errors. This challenge was at first accepted, but later difficulties were raised, and Mr. Aitchison last week wrote to the papers to say that although he had given way in nearly every particular except in such details as were necessary to ensure the reliability of the test, Mr. Stephen Smith had failed to come to terms. Mr. Aitchison added that the ophthalmic surgeon who had attempted to arrange the precise conditions of the trial with Mr. Stephen Smith informed him that "Mr. Smith will only submit to a test on his own terms, and as these are of such a character as to make the thing an absolute farce, it is out of the question to give way any further." Finally, added Mr. Aitchison, "I sincerely regret that the matter has fallen through, and can only conclude that Mr. Smith has very little faith in his own cures."

SOCIETY OF ANAESTHETISTS.—The annual dinner of the Society took place at the Imperial Restaurant, Regent Street, on October 21st. Mr. Carter Braine, the President of the Society, occupied the chair. Mr. John Langton, President of the Medical Society, proposed the toast of "The Society of Anaesthetists." Mr. Carter Braine, in reply, said that, although the Society had now passed through the exuberance of its youth, the outlook for the coming session was good. The dangers to be overcome by the anaesthetist were yearly increasing. The number of administrations in the hospitals was always growing; and full notes of all these cases should be kept. Dr. Silk proposed "Our Guests," and Dr. T. G. Brodie replied. Mr. Freyer, who proposed the toast of "The Chairman," said that a good anaesthetist had been defined by the Chairman as one who kept his eyes and ears open, and his mouth closed; whilst he himself would divide anaesthetists into three classes. The first told funny stories during the operation, which were quite out of place; the second included those anaesthetists who in the course of the operation suggested "wrinkles" to the surgeon, which naturally irritated him. In the third class was the man who kept his mouth closed, and who was, in his view, an ideal anaesthetist. The toast was received with musical honours. The Chairman, in responding, said that great thanks were due to Mr. Crouch, who had organized the dinner. A portrait of Mr. T. G. Morton, who introduced anaesthesia into America, was on the menu cards, and it being Trafalgar Day the "Death of Nelson" was sung by Mr. A. Walenn in the course of the evening. Dr. Byrd-Page also exhibited some clever card tricks.

BOOKS AS VEHICLES OF TUBERCULOUS INFECTION.—Twenty of the clerks employed in a large office in Berlin having died of tuberculosis within a comparatively short time, Mitelesen and Knopf, finding such evidence of infection with dust charged with bacilli from dried sputa, as in Brouardel's classic case of a like mortality in a Parisian establishment, bethought them of the books as possible vehicles of infection. They therefore undertook an examination of those in the free public library, taking 37 volumes of the most popular works that had been in use for from three to six years, and showed signs of much use and wear. Steeping the corners of the leaves and the most soiled parts of the paper for twenty-four hours in a physiological solution of salt, and rubbing the bindings with the same, they centrifuged the washings, but failed to detect the characteristic bacilli. Fifty guinea-pigs were then injected with the water under proper precautions, and when, at the end of three and a-half to four months, the 43 that, having survived the operation and other accidents were still living, were killed, 15, or 35 per cent., were found to have tubercle in various organs. Similar experiments with 60 other volumes that had been for from six months to two years only in use, and, being of a different class of literature, were in less request and much cleaner condition, gave, when similarly treated, wholly negative results. The writers recommend formic aldehyde for the disinfection of books, and give directions for its use. The paper is published in the *Zeitschrift für Hygiene*, Bd. xliv. p. 397.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1904.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, NOVEMBER 5TH, 1904.

ANTITYPHOID INOCULATION.

The question of protective inoculation against typhoid fever has been before the medical profession for several years. Conspicuous among the workers who have devoted themselves to the solution of the problem has been Dr. A. E. Wright, late Professor of Pathology at Netley. After patient experimental research he succeeded in preparing a vaccine which seemed to him to have a definite immunizing power. This he first tested on himself, on some young officers at Netley, and on others who offered themselves for the purpose. A trial of the vaccine on a larger scale was made at Barming Heath Asylum in 1897, at a time when Maidstone was suffering from a severe visitation of typhoid fever. When Dr. Wright was in India in 1898-9 as a member of the Plague Commission he inoculated 4,000 soldiers, with results which at the time produced a favourable impression on the advisers of the Government. During the South African war he supplied some 400,000 doses of antityphoid vaccine, and about 100,000 men were inoculated. Dr. Wright has embodied the results of his investigations and experiments in a book which has recently been published.[1] We do not propose here to analyse the mass of statistics therein set out, or to consider the details of the procedure or the experimental facts on which it is based; we hope to deal with the whole subject later. For the present it is sufficient to say that Dr. Wright contends that his statistics show in a general way that the incidence of typhoid fever was diminished by at least one-half in the inoculated; that the aggregate proportion of deaths to cures among the inoculated has been rather less than half that among the uninoculated; and that the combined effect of the diminished incidence and diminished case-mortality manifests itself in a diminished death-rate among the inoculated. With regard to the duration of the protection conferred by antityphoid inoculation, he states that the statistical evidence, as far as it goes, "points to the persistence of the protective effect during the second year after inoculation;" the figures relating to the British garrison in India, however, "make it probable that the effect of the inoculation persists during the third year."

Dr. Wright's work was begun and to a large extent carried out in the Army Medical School at Netley, and therefore necessarily came under the official notice of the Advisory Board when that body was established by Mr. Brodrick. The relations of the Professor of Pathology with the Board almost from the first had the proverbial mark of true love, that they did not run smooth. Friction arose, into the causes of which we need not enter further than to say that they had, we believe, nothing to do with antityphoid inoculation. In 1902 the Advisory Board, acting on the report of a Subcommittee appointed to inquire into the matter, recommended that the use of the prophylactic fluid should be discontinued in the army. Against this decision Dr. Wright appealed to the Secretary of State for War, who referred the question in the first instance to the Royal Society, and afterwards, on that body refusing to undertake the inquiry, to the Royal College of Physicians of London.

The College appointed a Committee consisting of Dr. Rose Bradford, Dr. Gee, Dr. Howard Tooth, Professor Simpson, and Dr. Foord Caiger, who, after investigation, reported that "after careful scrutiny of the statistics from both official and private sources which have been made available," they were of opinion that a lessened susceptibility to the disease was brought about as a result of the inoculations and the case-mortality was largely reduced. They further expressed the opinion that "with due care the process of inoculation is devoid of danger, but that under special circumstances there may possibly be some temporary increase of susceptibility to infection immediately following inoculation, and it is therefore desirable that the preparation of the vaccine and the inoculations should be carried out under specially skilled supervision."

This strongly-expressed opinion was carefully considered by the Advisory Board, and on its recommendation Mr. Arnold-Forster appointed another Committee, consisting of Colonel David Bruce and Dr. James Galloway, members of the Advisory Board; Dr. C. J. Martin and Dr. Allen Macfadyen, of the Lister Institute; Dr. Bruce Low, of the Local Government Board; Dr. Foord Caiger; Dr. William Bulloch, Bacteriologist to the London Hospital, with Dr. Wright himself and Major Leishman, Professor of Pathology at the Royal Army Medical College. This Committee reported in July last that, having carefully considered the whole of the statistical material, they were satisfied that "the records which are available up to date furnish proof that the practice of antityphoid inoculation in the army has resulted in a substantial reduction in the incidence and death-rate from enteric fever among the inoculated." The Committee therefore recommended that "the practice of voluntary inoculation against enteric fever be resumed." They further strongly urged upon the Army Council the necessity of providing facilities for investigations with the vaccine on troops leaving for foreign service, for investigations on animals with a view to the possibility of improving the vaccine, and for the investigation of the development of protective substances in the blood of patients suffering and convalescent from enteric fever. The report was signed by all the members of the Committee with the exception of Colonel Bruce, who had to go abroad to take part in the work of the Special Committee on Mediterranean Fever, of which he is a member, and Dr. Wright and Dr. Bulloch, who presented a minority report to the effect that while agreeing with their colleagues in their conclusions and general recommendations, the temporary calling in of expert assistance suggested in the report of the Committee would fail to meet the requirements of the case. In the opinion of the dissentients, a quasi-permanent organization is required, in order that the vaccine and the details of the inoculations may be continuously modified in the light of information gained by research, and by the study of the statistical results of each series of inoculations.

[1] *A Short Treatise on Antityphoid Inoculation.* Westminster: Archibald Constable and Co., Limited, 1904.

In accordance with the recommendation of the Committee, inoculations are being carried out upon volunteers from the 2nd Battalion of Royal Fusiliers now under orders for India, under the supervision of Major Leishman, who will also conduct the investigations, with the assistance of Captain Harrison, Lieutenant Smallman, and Lieutenant Tulloch, all of whom have been specially trained for the work.

The victory would therefore seem to rest with Dr. Wright in his conflict with the Advisory Board. Nevertheless, he has withdrawn, like Achilles, to his tent, for reasons which we cannot but regard as inadequate. Fate or metaphysical aid has sent him a powerful but injudicious champion in the *Times*. In its issue of October 27th that newspaper contained an article founded on the report of the Committee which has not yet been made public. The article was simply an attack on the Advisory Board and an attempt to prejudice public opinion by an *ex parte* statement in a case which is still under trial. The whole tone and spirit of the article are such as may be appropriate in the law courts, but are utterly out of place in the discussion of a scientific issue. The writer exhibits all the art of the advocate. Doubt is insinuated as to the scientific competence of the members of the Advisory Board; members of the War Office Committee are unjustifiably treated as cross-examiners deal with hostile witnesses; and it is hinted, without a particle of evidence, that the immunity of the Japanese troops from typhoid fever is attributable to the inoculations. The withdrawal of Dr. Wright and Dr. Bulloch is said to be due to the fact that no provision is made for the continued research which they consider necessary, the system not being "by any means perfect or even sufficiently advanced for unconditional adoption," they therefore do not desire to be responsible for any falling short of what may be hoped from it. The report of the Committee, however, shows that those who signed it are fully alive to the necessity of the most thoroughgoing investigation, and we take it that the real point of difference between them and the dissentients is as to the choice of agents for carrying this out. It seems to us that for the conduct of such an inquiry the War Office could not have selected a more competent man than Major Leishman, who formerly had the advantage of working under Dr. Wright's own direction.

But even if, for the sake of argument, it be admitted that the War Office Committee has placed the investigation in the wrong hands, that would afford no justification for the attack on the Advisory Board. The Committee had a purely scientific reference to deal with; the Advisory Board, on the other hand, had to decide on the practical application of a method based on investigations which it is admitted on all hands are as yet incomplete. Dr. Wright himself admits that there is a certain risk in some cases of the inoculations for a time increasing susceptibility to the disease. It was this consideration which induced the Board to recommend that the preparation and distribution of the enteric prophylactic fluid should be provisionally discontinued. The Board invited Dr. Wright to present a detailed scheme showing exactly on what lines and with what precautions the system should be carried out. For reasons with which we are not acquainted he did not do so. The Board was therefore right in declining to sanction the exposure of soldiers to a risk which might conceivably have been attended with serious consequences to the health of the army, and which thus might have had the effect of stopping the progress of science in this direction for an indefinite period. They were dealing with the practical applicability of the results of a research which even now is incomplete, and with the expediency of using a preparation which, on the admission of its inventor, is still very far from perfect.

We learn from the *Times* that Dr. Wright attaches little weight to the opinion of a Board composed of men engaged in the active practice of medicine and surgery on a question which is "mainly one of bacteriology." To us on the other hand the question seems to be mainly one of facts that can be verified and clinical evidence that can be more accurately appreciated by such men than by bacteriologists. We venture to think further that antityphoid inoculation is, in regard to its applicability to the army, a question for the consideration of which knowledge of men is as important as experience in laboratory work. Men of science are apt to exhibit a holy simplicity in regard to practical affairs which occasionally leads them into unexpected and undesirable positions.

We wish it to be clearly understood that we offer no opinion as to the value of the antityphoid vaccine further than to say that cause has been shown for further investigation. In this we are pleased to find ourselves in agreement with the Committees of the Royal College of Physicians and the War Office. A like opinion is expressed by so competent an authority as Professor Karl Pearson, whose study of the statistical evidence will be found elsewhere. It will be noted, however, that he says that the data indicate that a more effective vaccine or a more effective method of administration must be found before inoculation becomes a routine practice in the British army. The irregularity of the effects seem to him to justify suspension of the operation as a routine method. We commend this conclusion to the attention of those who have hastily condemned the Advisory Board for its action in the matter.

The whole question, indeed, requires the most careful and extended investigation. When convincing proof is forthcoming, we shall be ready to do honour to Dr. Wright, as one of the greatest benefactors of mankind. But till the research is complete, judgement must be suspended. In these circumstances, it is in every way regrettable that a newspaper of such high standing as the *Times* should have allowed itself to be led into the position of advocating prematurely a doubtful method of prophylaxis. In medical matters our contemporary's sources of inspiration are not infrequently questionable. So little familiar in this instance is it with the questions which it discusses with such an assumption of authority, that the names of Dr. Bulloch and Dr. Macfadyen are mis-spelt throughout, while Dr. Galloway appears as "Calloway." To those who know the elaborate precautions taken by the *Times* to ensure minute accuracy so many blunders occurring within a few lines are, in Carlyle's phrase "significant of much."

Our contemporary says that the whole story is a "curious example of the ignorance of science against which the public services of the country are condemned to strive." To us the really curious thing is that the *Times* should have allowed itself to be used as a resonant mask for the publication of a private grievance. What is worse than "curious" is that a newspaper of such influence should attempt to force on the War Office and on the army a method which, on the testimony of its author, requires the labour of years to perfect, and the use of which involves possibilities of serious mischief.

Dr. Wright may be pardoned for believing that none but himself can bend the bow of Odysseus, and he may be congratulated on having found a faithful Penelope in Printing House Square. Disinterested persons, however, will probably believe that a research of the most far-reaching importance, which is in the nature of a control experiment, is likely to be more impartially conducted by men who cannot be suspected of bias or of any motive which could act as a disturbing influence.

THE FUNCTIONS OF THE INTERSTITIAL CELLS OF THE TESTIS.

Ever since the days of Wharton and Steno the presence of a duct in relation to a gland has directed attention to the parenchyma of the gland as the great metabolic factory, some or all of the products of the gland being assumed to leave the gland by the obvious highway and open channel —the duct. The doctrine of "internal secretions" has now an established place both in physiology and pathology. The want of a duct in many glands should, perhaps, long ago have suggested the importance of these "ductless glands" in the economy. It was not so, however. Isolated observations showed that, apart from actual glandular structure, many glands contain interstitial cells which originally were regarded as of little physiological importance. It is not so long since the islands of Langerhans in the pancreas were regarded as associated with carbohydrate metabolism. Every histologist knows how varied is the structure of the mammalian testis, more especially as regards the motley crowd of cells that lies between its tubules in some animals; they have been called "plasma cells," but are better called "interstitial cells." In the boar's testis, for example, they are so abundant that they give a brownish colour to the organ on section. In many animals they contain granules of fat, peculiar crystals—the crystals of Reinke—and evidence of a secretion whose chemical composition has not been investigated.

The effect of the removal of the testis in youth on the development of the larynx, and therefore on the voice—and, indeed, on the general metabolism and development of the body—is well known. When we come to look at the testis from a wider point of view, we find that the old idea of "one organ, one function" is an anachronism. A little study of the testis shows that it has specific and also general functions, one related primarily to the perpetuation of the race, its function of producing sperm cells; the other a more general function related to the metabolism of the individual, to the development of certain parts of the organism, or to the organism as a whole. Most probably it is the interstitial part of the organ which subserves this latter function.

Brown-Séquard was of opinion that this general action of the gland might be accounted for by partial absorption of the seminal fluid. This fluid contains spermatozoa, the products of degeneration of the spermatids, and the material elaborated by the Sertol an or sustentacular syncytium of the seminal tubules. Bouin and Ancel have recently endeavoured to show that the spermatozoa are without any general action on the economy, and that the other products of the cells lining the seminiferous tubes are not concerned in this general action, which is due to the interstitial cells. One testis of a rabbit was removed, and the duct of the opposite one was ligatured. Six months afterwards the seminal cells were in full degeneration in all tubules and absent in many; the Sertolian syncytium was apparently normal; while the interstitial part of the gland was at least double its normal volume. The animals operated on preserved all their sexual characters and their "generative activity."

Are the secondary sexual characters under the influence of the interstitial glandular tissue of the testis? An experiment was made on a pig, whereby it was possible to dissociate the evolution of the interstitial and truly glandular part of the testis. The vas deferens was ligatured on one side, and at the same time the other testis was removed at the age of 6 weeks. At 6 months the boar presented all the external characters of an adult male so far as regards its genital apparatus and their annexes. The remaining testis, situated in the lumbar region, was found greatly enlarged; the increase was due to the interstitial cells; the cells of the seminiferous tubules retained their embryonic condition. Here, then, there was complete arrest of the seminal activity of the gland, which retained its embryonic condition, while there was compensatory hypertrophy of the interstitial gland and normal development of the genital tract (penis, cavernous and spongy bodies, glands of Cowper, prostate, and vesiculae seminales), and the whole aspect of the animal was like an "entire male."

When the vas deferens is cut between two ligatures in young guinea-pigs, rabbits, and dogs the result is not the same in all cases. In young guinea-pigs the testes develop normally and acquire all the attributes of those of entire animals. In some young rabbits, however, the result is different, and they acquire the characters of rabbits castrated when they are young—for example, seven or eight weeks after birth. After eight months they are small, their genital tract is undeveloped, and they do not manifest any sexual instinct. The seminiferous tubules retain their embryonic condition, while the interstitial cells show all the signs of arrest of cytological development and of their glandular function; they look like cells that have undergone senile decay. There is an arrest of the development of the testes after section of the vas deferens. Probably this is due to section of the plexus which lies in the outer connective tunic of the vas deferens and its surrounding sheath. At least Marassini obtained involution of the testis on destroying the connective tissue sheath of the vas deferens after ligature of the vas, though all the blood vessels were preserved. Probably the infantile condition in these cases is due to the pigmentary involution of the interstitial part of the testis—a degeneration resulting i the arrest of development of the sexual characters and the production of testicular infantilism.

THE IRISH DISPENSARY SERVICE.

The resolutions passed at the meeting of the Irish Medica Association last year at Enniskillen as the basis upon which the reform movement in favour of the Irish dispensary medical officers was for the future to be carried forward seem likely to be considerably modified. It will be remembered that they were brought before the succeeding meeting of the British Medical Association, and were accepted as the declaration of rights of our Irish brethren.

There were evidences, however, at the annual meeting of the Irish Medical Association in June last that there were many who did not approve of the £200 minimum, and were prepared to accept a much lower standard. A recent

meeting of the Council shows that this view has meanwhile spread widely, and has now many adherents. A motion was proposed asking the President to call a special general meeting to consider a proposal to reduce the standard to £150 with quinquennial increments of £10. Dr. Birmingham declared the larger sum be impracticable; and he made the startling statement that his district was 36,000 acres in area, that it contained 10,000 inhabitants, that it comprised 26 inhabited islands, and that he considered himself "fairly well paid at £150 a year with £10 increments." The secretary reported that nearly all his correspondents suggested the necessity of amending the minimum scale of £200, and that unless this was done many would leave the Irish Medical Association. It was agreed to have a general meeting soon after a report has been received from Surgeon-General Evatt.

The position is serious, and the dispensary doctors ought to consider it very fully before another decision is arrived at. It is an admission that their combination to secure a £200 minimum has failed. It may be that that is too high a standard, but the pity is that the decision was not come to after such a general agreement as to make retreat impossible. Some counties have fought sturdily, and have maintained their positions, but in most cases men have been found to accept the smaller salaries, and those who were loyal to the rules of the Irish Medical Association have been left out in the cold. It is very well known how this has been effected, and it is difficult to see how it can be prevented in the future.

We are not quite satisfied that the dispensary medical officers, as a body, are doing their best to help on their own cause. Of course in such a movement there must be a few only who are prominent and active. But the others ought to aid by pecuniary means. A fight like this cannot be carried on without money. Dr. Leonard Kidd, the late President, points out that for the guarantee fund there are only 262 guarantors; that of a call of 20 per cent. there is still an arrear of £13, due by 60 defaulters; and £351—nearly half the income of the Irish Medical Association—is unpaid. Dr. Kidd pertinently asks, "How could any association prosper where such slackness is allowed?" We commend all this to the consideration of Irish dispensary medical officers. If they desire success they must themselves work, and endeavour to arrive at a wise and just mode of action.

A HOME OF RECOVERY.

The establishment of a Home of Recovery is an object which a number of ladies with the Duchess of Argyll at their head have set themselves to effect. The appeal is made upon the ground that, "in spite of ever-increasing accommodation, the number of applicants for admission to the London hospitals is still greater than can be provided for, with the result that patients are necessarily sent away as soon as they can be removed with safety. Many of these are still too ill to be received into the ordinary convalescent homes, where little medical attendance is provided, and to reach which the patients must be well enough to undertake the necessary train journey. They return, therefore, to their own homes, where the chances of recovery are small indeed." To build and equip the home it is stated that about £5,000 is required, of which some £2,000 has been received, and that some £30,000 in addition is required as an endowment. The Honorary Secretary of the home, which is to be built in Surrey, is the Rev. F. Whyley, M.A., 4, Evelyn Gardens, S.W., and the Secretary of the Special Appeal Fund, Mr. F. R. Panter, Furley Hill, Luton, Bedfordshire. We draw attention to the project as requested, but are bound to add that we are not convinced that the grounds upon which it is advocated are sound or that the project is one which really deserves support. We do not believe that it is at all common for patients to be hurried out of hospital in the condition depicted in the paragraph which we have quoted. Moreover, even if this were the case matters would scarcely be improved by the establishment of this Home of Recovery, for obviously the prospective patients could not reach a home in Surrey without a train journey. The sums mentioned as required for building equipment and endowment also suggest that the promoters have either not studied the matter very deeply or else that they have in view nothing more than an institution of some ten or fifteen beds. The maintenance and administrative charges of such places are relatively enormous, and on this ground alone we should be inclined to doubt whether instead of trying to add one more to the already very numerous medical charities of London, the promoters would not be better advised if they devoted their energies towards an improvement in the staff and administration of existing convalescent homes. These institutions, admirable as they are, in affording change of air, and a place of rest during convalescence from acute illness, have not moved with the times. Mr. Henry Morris in a letter to the *Times* has stated "that the pressure upon the surgical wards is so great that, whilst on the one hand many patients are waiting to come in for treatment, on the other hand those that have been operated upon are discharged as soon as they safely can be, and in many cases long before they are fit to return to work." He seems to consider that the difficulty might be met either by an indefinite increase in hospital or convalescent accommodation—a proposal which he rejects as impracticable—or by a redistribution of existing hospital accommodation, by which we understand him to mean the allotment to the surgeons of a larger proportion of beds than is at present the case. We express no opinion upon the latter point, as we know of no really trustworthy statistical data; we believe, however, that the time has come when the governing bodies of convalescent homes should seriously consider whether they ought not to alter materially their present regulations with regard to the admission of surgical patients, especially those convalescent after operation. The proposal, it would seem, would meet with Mr. Morris's approval, for he writes that if every London hospital having its own convalescent home, or a share in a convalescent home, "were to provide these institutions with resident medical officers, an adequate number of nurses, and the other equipments requisite for the treatment of patients not yet actually convalescent though well enough to be transferred to the country, recoveries would be quicker, the duration of treatment in many cases would be shorter, and the changes in the wards of the London hospitals would thereby be quickened; and as a further result the number on the 'waiting lists' would be diminished, because the length of time of waiting would be shortened." The suggestion is by no means a novelty to us; it has been put forward with, what we considered to be, conclusive evidence in its favour with regard to tuberculous disease of bones and joints in childhood. The subject should be thoroughly discussed, and we venture to hope that the benevolent ladies who have started the scheme for a home of recovery may eventually become the warmest advocates of the alternative proposal made in our pages.

THE LONDON COUNTY COUNCIL AND THE TREATMENT OF INSANITY.

The recently-issued annual report of the Asylums Committee of the London County Council, an abstract of which appears at p. 1254, contains a statement that it is proposed to construct a hospital villa at the Heath Asylum, Bexley, to accommodate fifty male patients with the necessary staff. This villa, it is said, will be conducted on strictly hospital lines, the patients being kept there until a

diagnosis has been made in each case. Cases in which there is no hope of recovery will then be sent to suitable wards in the main building, while those in which there is a prospect of cure will be retained until they are in a fair way towards recovery, when they will be transferred to the convalescent villa and eventually discharged. It is pointed out that the use of a similar villa on the female side of the asylum has proved most advantageous, the bulk of the new cases not entering the main building at all. This statement may be taken as an indication that a serious effort is about to be made towards a reform in the mode of dealing with lunatics which has often been urged on the attention of authorities without visible result. In a letter which appeared in the *Times* of October 31st, Mr. Brudenell Carter recalls the fact that on April 11th, 1889, being then a member of the Council, he moved and carried a resolution that a Committee should be appointed "to inquire into and to report to the Council upon the advantages which might be expected from the establishment, as a complement to the existing asylum system, of a hospital with a visiting medical staff, for the study and curative treatment of insanity." On January 30th, 1890, the Committee presented a report, in which the opinion was expressed that the establishment, on the ordinary lines, of a hospital for the study and treatment of insanity, with a visiting medical and surgical staff, could scarcely fail to be productive of increased knowledge of the subject, and consequently of increased means of prevention and cure; and on this ground it was recommended that an adequately equipped hospital, containing one hundred beds, for the study and curative treatment of insanity in lunatics of both sexes, should be established in the metropolis. The scheme was wrecked by the political cross-currents in which so many useful proposals set afloat in the Council are submerged. Now after long years the Council appears to be taking action on the recommendation, but in so shy and unobtrusive a way that one might almost think it was anxious that its good deed should escape public notice. Yet it is scarcely a characteristic of the London County Council to do good by stealth and blush to find it fame. Probably the Asylums Committee has been moving towards a larger design with wary strides so as not to awaken slumbering opposition. In this belief we applaud its action and wish it success in its efforts to accomplish a reform which would be the dawn of a new era in the treatment of insanity in this country. Villas conducted on strictly hospital lines are all very well, but what is wanted is the establishment of real hospitals for the insane in which the sufferers shall be under the care of a specially skilled visiting staff with all the necessary equipment for the clinical and pathological study of mental disease and facilities for the fullest therapeutic research. Such hospitals would make it possible to separate curable from incurable cases; this in itself would be an immense gain, as it would prevent the herding together of patients in all stages of disease, with the result that cases in which recovery might confidently be looked for become incurable. The Council is entitled to the credit of having done much for the advancement of pathological research in regard to insanity. The valuable work done by Dr. Mott at Claybury is a triumphant justification of its action. He has thrown light on the causation of an important class of mental diseases, and has indicated the direction in which means of prevention may be found. But his researches are hampered by the lack of adequate clinical data, and little or no practical use has been made of his results. There can be no doubt that the out-of-the-way situation of the laboratory is mainly responsible for this waste of energy. The distinguished French physicians who recently visited Claybury expressed surprise that such an institute of scientific research should be in so inaccessible a place. If the Asylums Committee is in earnest in its endeavour after a better condition of things, its next step should be to recommend the removal of the laboratory to London. Instead of the one or two earnest students who now go out into the wilderness in search of knowledge, there would doubtless be scores who would be glad to avail themselves of the unrivalled opportunities for research that would be offered by a central laboratory. Other drastic reforms in lunacy administration are required, but the consideration of these must for the present be deferred.

THE ISLINGTON POOR-LAW SCHOOLS.

The newspapers which devote special attention to the affairs of Islington have contained many reports of meetings of the guardians during the last few months which are not altogether pleasant reading. Overcrowding in the workhouse, meat scandals, and epidemics of scarlet fever and diphtherial sore throat at the schools in charge of the Poor-law authorities have all come in for notice, and a general state of things has been revealed the future evolution of which seems to demand close watching upon the part of ratepayers in this union. Naturally it is the state of the schools in which we are most interested, and it is this part, too, of the general question which has attracted some attention from the Local Government Board, and appears likely to demand still more. Epidemics of scarlet fever and sore throat are never due to any but preventable causes, and their continuance in a rate-supported school is not only lamentable in itself, but most discreditable to the authorities of one of the largest Poor-law unions in London. It appears to have been fully, if somewhat slowly, admitted that there has been great neglect in the past, and that the existence of the epidemics has been, at any rate in part, due to the extremely dirty condition into which the schools had been allowed to fall. This matter, however, having been put right, there seems a decided disposition on the part of a section of the guardians to rest upon their oars and to retard, if not actively oppose, the introduction of the further remedies which the medical officer of the schools has suggested, and the necessity for which is scarcely denied. It would, indeed, be somewhat bold to do anything of the kind, since the proposition that a Poor-law school requires adequate accommodation for the isolation of cases of infectious disease, and a receiving house, by which the entry of new cases may be prevented, is not one which needs demonstration. Even if this were not the case, the proof has already been supplied; for, subsequently to the thorough cleansing of the schools, and to a declaration by the medical officer that they were free from infection, a new outbreak appears to have occurred. In short, the only point which seems open to discussion is whether the guardians would not be well advised to give up the use of the present schools altogether and establish their children in "scattered homes" or rear them by methods which secure for each child treatment, not as a mere unit, but as an individual, such as boarding-out in cottagers' families. This method has been adopted with exceedingly good results—social, economic, and hygienic—both abroad and in the colonies. The elaboration of such a scheme, however, would doubtless take some time, and meanwhile the elementary precautions to which reference has been made ought to be taken without demur.

SCHOOL DESKS AND POSTURE.

In a paper read before the Sanitary Institute Congress, Mr. Graham drew attention to the fact that though great variation exists in the height of scholars of the same age—sometimes a difference of from 6 in. to 11 in.—they have usually to accommodate themselves to fixed seats and benches, the desks being dual more often than not. To be seated hour after hour in a bad position must be harmful to the large number of school children who have a tendency towards eye and spinal troubles and consumption. Hygienic desks are intended to lead each child almost unconsciously into assuming a natural attitude. Mr. Graham described some of the desks in use in Continental schools. One elementary school desk is so adjustable that the children can work at it sitting, with the desk quite flat, or standing, with the desk also quite flat at its greatest vertical height when

necessary, and it can be fixed quite flat at any intermediate height; in addition, the slope of the top of the desk can readily be given an angle within the extreme limits of height. The secondary school single desk has the same simple mechanism for obtaining a variety of adjustment. At the kindergarten desk the child can work standing or sitting; it is adjusted to the natural angle for the eye for reading, when the head can be held up and the back kept straight. The top turns on its hinges, the inside acting as a board on which the children can practise writing and drawing; it is coloured brown, which is a restful colour to the eyes. In these adjustable desks there is neither key, screw, crank, nor pinion movement. The advantages claimed for these hygienic desks are that (1) they relieve the strain on the eyes; (2) they minimize the strain on the spine; (3) they enable the lungs to have freer play; (4) they provide facilities for change of position for successive lessons, inasmuch as the scholars may work sitting or standing; and (5) where adult evening work is carried on in elementary and secondary schools, men and women of from 20 to 30 and upwards have not to be squeezed into a low-fixed desk built for children, but may get a desk of suitable height. To facilitate the sweeping and cleaning of the class-rooms, the desks are mounted on parallel iron rails, and can be easily moved. We heartily concur with Mr. Graham in his opinion that schools should possess only single desks and seats, for it is almost impossible to find identical pairs of children. Great harm is done by keeping them too long in one position, as has been proved by experience. Recently in a set of German schools, probably among those which do not adopt the admirable system of allowing a few minutes' recreation after every hour of lessons, it was found that while there was not one case of lateral curvature of the spine among children of the first year's attendance, 52 per cent. were found to be suffering from that complaint during the fifth or sixth year of school life. Doubtless what happens in Germany happens in England, and the danger is increased when the position is wrong. This fact should be impressed on the members of education authorities. It has been found in Switzerland, where much attention is given to school hygiene, that dark-brown blackboards and dark-brown tops to the desks reduce reflection, and are restful to the eyes; the walls are painted a water-green, and can be washed. The blinds are water-green, and are pushed up from the bottom, while on the sunny side a white blind is added, which pulls down from the top, and excludes the direct rays of the sun. To deaden the sound and facilitate washing, linoleum is being put down on many school floors, and Mr. Graham mentions that in Swiss gymnasiums cork floors are laid down to reduce jar and minimize dust and noise.

ETHER DAY.

On the occasion of the celebration of the fiftieth anniversary of the first administration of ether as a surgical anaesthetic on October 16th, 1896, members of the staff of the Massachusetts General Hospital, Boston, decided that a commemoration of that fateful event should be held each year. This year the anniversary was fittingly observed on Monday, October 17th. The old amphitheatre in the dome of the hospital was arranged as nearly as possible to correspond with its appearance on October 16th, 1846. The place was packed with a large audience, which listened with the keenest interest to an address delivered by Dr. J. Collins Warren, Moseley Professor of Surgery at Harvard, grandson of Dr. John C. Warren, who performed the first operation under ether. He gave an account of the various methods that had been employed to produce anaesthesia from the first experiments of Humphry Davy to the final success of Morton. The whole story was told in the British Medical Journal of October 17th, 1896. That it is still very imperfectly known in this country is shown by the fact that on October 17th of the present year the *Westminster Gazette*, in a special article, informed its readers that "acting on a suggestion made to him by Mr. Morton, a dentist of Boston, who had employed the vapour of ether to produce insensibility in a patient, Mr. Jackson, a surgeon of that city, used this agent during a surgical operation." The truth, of course, is that Charles Jackson was a scientific chemist who suggested ether to Morton as a possible means of producing anaesthesia. It was Morton who administered ether in the Massachusetts General Hospital to a patient on whom Dr. Warren operated. Dr. Warren was at first very sceptical, but after the operation he made the memorable declaration, "Gentlemen, this is no humbug." It is a curious circumstance, which we learn from the *Boston Medical and Surgical Journal*, that it has been found impossible to obtain an accurate list of the men who were present on that historic occasion. Paintings and illustrations of the first public demonstration of surgical anaesthesia are numerous, but not one of them can be vouched for as an accurate representa ion of the scene and the spectators. If accuracy cannot be secured as to an event so remarkable and so recent as this, how are we to trust the records of a more distant past? Yet the late Professor Freeman contended with characteristic violence of language that history was as much a science as biology!

CONFERENCE ON SCHOOL HYGIENE.

An International Congress on School Hygiene is to be held in London in 1907, and the Royal Sanitary Institute, when urging the advisability of London for this meeting, offered to co-operate in the organization of the Congress and Exhibition, and informed the International Committee at Nuremberg that, in order to maintain the interest, they proposed to hold a Conference on the subject in London early next year to pave the way for the larger Congress two years later. The proposal was approved by the International Committee, and the Conference will be held at the University of London on February 6th, 7th, 8th, and 9th, 1905. The opening address will be given at 8 p.m. on February 6th by the President, Sir A. W. Rücker, D.Sc., F.R.S., Principal of the University. Meetings will be held from 11 to 1 and 2 to 4 p.m. on each of the three succeeding days. On the first day the physical and mental development and the physical inspection of scholars will be discussed, and the chair will be taken by Sir Lauder Brunton. On the second day the subjects discussed will be the building and equipment and the sanitary inspection and control of schools, and the chair will be taken by Sir William Anson, M.P., Vice-President of the Board of Education. The third day will be devoted to the consideration of the training of teachers and scholars in hygiene. An exhibition of appliances used in the building and furnishing of schools will be opened in the Great Hall during the Conference. The Fellows, Members, and Associates of the Royal Sanitary Institute will be entitled to attend the Conference, but to other persons the price of the Conference ticket will be half a guinea, and this fee will entitle the holder to receive copies of the quarterly journal of the Institute containing the proceedings of the Conference.

THE STANDARDIZATION OF DISINFECTANTS.

The question of the introduction of a legal standard for disinfectants appears not unlikely to come up as a definite proposal during next Parliamentary session. The Council of the Sanitary Institute, as our readers will recall, gave effect last autumn to a resolution passed at the Bradford Congress, and appointed a Committee to inquire into the desirability of establishing a standard bacteriological method for determining the efficiency of disinfectants, and to take such steps as might be necessary to ensure the legal control of disinfectants. The Committee consisted, in addition to members of the Institute itself, of a number of experts who were invited to join it as unofficial representatives of bodies, which, it was presumed, might be interested in the matter, such as the Lister Institute, the Local Government Board, and the Pharmaceutical Society of Great Britain and Ireland. In this way there came to form part of the Committee, Professor Sims Woodhead, Professor Sheridan Delépine, Professor Hunter Stewart, Dr. Klein, Dr. J. Ritchie, of Oxford, and Mr. Walter Hills, of the Pharmaceutical Society. The main Committee in its turn

selected as a working Subcommittee for bacteriological investigation, Professor Sims Woodhead, Professor Hunter Stewart, Dr. Andrewes, Pathologist of St. Bartholomew's Hospital; and Colonel Firth, R.A.M.C. This investigating Subcommittee has, we understand, made good progress in its work, and its labours seem likely to terminate in the formulation of a method which will constitute a fair test of the claims of any disinfectant which may be put upon the market. If this proves to be the case, it may safely be concluded that the general committee will favour the opinion that it is desirable in the public interest that the trade in disinfectants should be brought under control in the sense that they should not be legally saleable unless officially proved to be possessed of certain definite powers. Whether it be more desirable that such control should be exercised under the Sale of Food and Drugs Act, or be brought about by an addition to the Public Health Acts is a question which it is not necessary to consider at present. In the meantime, the fact that opposition to the proposed control is already afoot may be taken as an indication of the benefit to the public which its introduction would confer. It appears that with an intelligent anticipation alike of the decision of the committee, and of the effect which the introduction of a standard would be likely to have upon the sale of his own product, a manufacturer of a popular disinfectant has already sent out circulars to members of Parliament praying for their opposition to any such measure whenever introduced. We should scarcely imagine, however, that many members of the House are likely to be influenced by objections raised in interested quarters to the recommendations of a body of experts of standing and authority. It may be noted, indeed, that opposition to the measure on the part of manufacturers is not likely to be general. Many of them have no reason whatever to dread the introduction of a standard.

TYPHOID FEVER AND MILK.

The action against the Aylesbury Dairy Company, decided in the King's Bench on November 2nd, is, we believe, the first of its kind. The action was brought by a resident at Ealing to recover damages from the defendants for breach of warranty in respect of milk supplied to him in July, 1903. The plaintiff's case was that the milk supplied to him by the defendants contained the infection of typhoid fever, the result being that his wife caught typhoid fever and died; he sought to recover the expenses which he had incurred in connexion with his wife's illness and death. The case lasted three days and many witnesses were called. The Medical Officer of Health for Ealing stated that he received notification of the cases of typhoid in July, 1903, and came to the conclusion that they were due to the milk supply. The Medical Officer of Health for Acton stated that there were 21 cases of typhoid during June, July, and August, and that 13 of these were at houses supplied by the Aylesbury Dairy Company; in his opinion, the typhoid fever was due to infection by milk supplied by that Company. Medical evidence was also given to the effect that 2 cases of typhoid fever occurred at the farm from which the milk was derived in July, 1903, with one death. For the defence it was contended that the outbreak was due to other causes. It was stated that over 2,000 persons in Ealing drank milk supplied by the Company, and that only 23 caught typhoid fever. Mr. Justice Grantham, in summing up, stated that the law was that if a purveyor of food sold food which caused injury he was liable; the water at the farm was notoriously bad, though he did not say that it caused the outbreak. He added that it was incredible that cows were allowed to be milked in such surroundings and their milk sent to London. The jury found a verdict for the plaintiff for £106, and judgement was given accordingly. The case is likely to make a considerable impression upon public opinion, and already we see the demand repeated that urban sanitary authorities should have power to inspect country farms from which milk is brought into a city, and to exercise supervision at such farms. Such powers have been obtained in certain cases, and rural authorities must, we think, realize that unless they will themselves use the powers conferred upon them by the Legislature and under the orders of the Local Government Board, the demand for inspection and control by the towns will become irresistible. An inquiry which we made about a year ago showed that the Dairies, Cowsheds, and Milkshops Orders were in the greater part of the country either not adopted or not enforced. It is only fair to say that the Aylesbury Dairy Company does take precautions to safeguard from infection the milk it retails, and that when an inquiry was made for us into the milk supply of towns about two years ago every facility was placed in the way of our commissioner to study the methods of the Company. Nevertheless, we find the judge in this case stating that he found it incredible that cows were allowed to be milked in such surroundings as existed in the farm from which the milk in this case was obtained. If such conditions exist in the case of a company which takes special precautions, we may well ask the public to consider what conditions may be expected in the case of farmers supplying milk to dealers who do not take such precautions. An answer will be found in some of the facts published in the report on the milk supply of large towns published in the British Medical Journal in March, 1903, and subsequently republished in a pamphlet.[1]

THE FRENCH SURGICAL CONGRESS.

The following is the programme of discussions arranged for the meeting of the French Surgical Congress in 1905:—(1) The Surgery of the Pancreas, to be opened by Dr. Villar, of Bordeaux; (2) The Plastic Surgery of the Face, to be opened by Dr. Depage, of Brussels; (3) Conservative Surgery in Injuries of the Limbs, to be opened by Dr. Nimier. It has been decided that in future the Congress shall open on the first Monday in October in order that foreign surgeons may be able to attend. Dr. A. Monprofit, Professor of Clinical Surgery in the Medical School of Angers, was elected Vice-President of the Congress, which means that he will be President in 1906. This is, we believe, the first time that this dignity, which is an object of legitimate ambition to the leading surgeons of France, has been conferred on a provincial surgeon. The honour is all the greater in view of the fact that Professor Monprofit is one of the youngest representatives of surgery in the West of France. Though young in years, however, he has already made a great reputation by his publications on the surgery of the abdomen, the stomach, and the intestine. Professor Monprofit is well known to surgeons throughout the world by his works, and his brethren in London had recently an opportunity of making his personal acquaintance. The election has been hailed with special satisfaction by the advocates of decentralization in French surgery.

CHOLERA IN PERSIA.

The epidemic of cholera in Persia, to which we have on several previous occasions referred, appears to be spreading steadily. Since it was first recognized at Kermanshah it has spread north, east, and south, and at the present time there is a severe epidemic at Tabriz in the north, as many as 500 or 600 cases occurring daily. A Sanitary Council for the Persian Empire has recently been formed, which, it is hoped, may do something to improve sanitation and public health.

The Board of Advanced Medical Studies of the University of London has had before it recently a proposition to include laryngology as one of the compulsory subjects of the curriculum and examinations. The Board has, we understand, arrived at the significant conclusion that, though a knowledge of diseases of the throat and of certain other special subjects would be a most desirable part of the training of the medical student, the amount of time now required to be given to the preliminary subjects was so great that it was impossible to make any new compulsory regulation with regard to practical medicine and surgery.

[1] *The Milk Supply of Large Towns: its Dangers and their Remedy.* London: British Medical Association, 1903. (6d.)

Scotland.

Royal Medical Society of Edinburgh.

The inaugural address at the opening of the winter session of the Royal Medical Society of Edinburgh was given in the Society's rooms on October 28th by Sir James Crichton-Browne. The chair was occupied by Dr. C. J. Shaw, the senior President of the Society. Sir James said it was just forty years since he, while yet a fourth-year student, took possession of that chair with a feeling of exaltation that had known no parallel since. He referred to the important educational advantages of the Society. It might keep alive some vestige of idealism among its members. The present tendency of medical education was towards materialism. By the very nature of his work, the medical student was accustomed to submit everything to outward and palpable tests. He was nurtured on facts—hard facts—which tended, as Oliver Wendell Holmes averred, to breed a despotic frame of mind in those who were wrapped up in them. He was in constant danger, unless strongly fortified by natural piety, of having his perceptions materialized and of losing in breadth what he might gain in concentration. Science, or rather any one branch of it, when too assiduously and exclusively pursued, while it expanded the mind in some directions contracted it in others. A large and varied culture was necessary for the full enjoyment and utilization of life—a truth was apt to be lost sight of in these days of rampant specialism. It was the medical student's physiological and pathological study of the brain and nervous system that perhaps more than anything else tended to materialize his conceptions. From the medical point of view, it was convenient to speak of all mental modifications in terms of brain function, and the serviceable style of expression adopted fostered a habit of thought, and so more and more the medical student was disposed to accept the teachings of the leaders of revolt, who contemptuously dismissed all their most cherished beliefs and highest hopes and aspirations, and taught that there was no creative mind, no future state, no freedom of the will, and that life and consciousness were of inorganic origin. Reference was next made to Haeckel's "Riddle of the Universe," and to his substitution of an inane fetish of his own in place of a wise and Divine Creator. To them, as medical men, a belief in the higher reality should be a sustaining thought amidst all the suffering, sorrow, and death through which their path must lead them. This was a world of small cognition, but of mighty inference. Materialism was a sorry creed, negatived by those universal and inextinguishable human affections that would not be buried in the grave, and that to the theologian, at any rate, must have a motive and an objective. Doubt was needful as a stage in the mind's progress, but it was no abiding place, and in scepticism there was no rest, for most sceptics were harassed by doubts of their own scepticism. The brain was a psycho-active body (not a mere collection of atoms), from which as long as life lasted a stream of emanation issued infinitely more mysterious than radium. They must regard man as "a reasonable soul and human flesh subsisting." A vote of thanks was awarded to Sir James Crichton-Browne.

Students' Residence in Connexion with the Edinburgh Maternity Hospital.

The formal inauguration of the residence for students in connexion with the Edinburgh Maternity Hospital took place on October 28th. The Town and Gown Association, who have provided the Milne-Murray Lodge, were associated with the directors of the hospital at the "opening" function. The actual opening took place on August 1st. There was a large attendance of the medical profession and the public, including Sir John Sibbald, Sir John Batty Tuke, M.P., Sir Halliday Croom, Professor John Chiene, C.B., Professor Crum Brown, Professor A. R. Simpson, Drs. Berry Hart, Barbour, Haultain, etc. Professor Simpson declared the Lodge open. Tea was thereafter served.

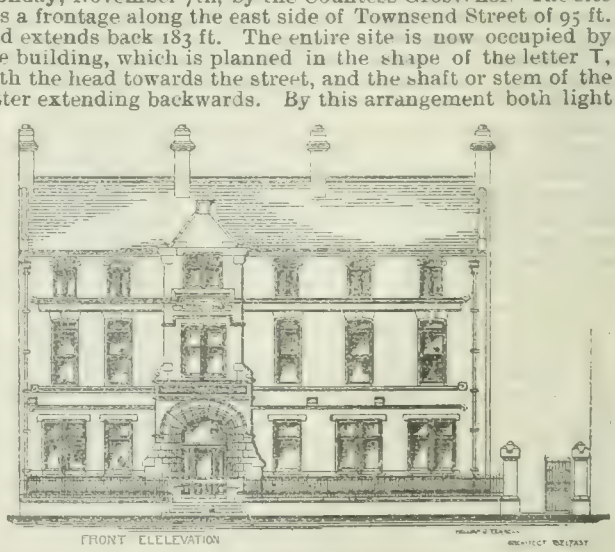
The Health of Aberdeen.

The report by the Medical Officer of Health for Aberdeen for the month of September states that the total number of deaths in that period was 206, equal to an annual rate of 15.31 per 1,000. Of the total mentioned, 47 were under 1 year, 63 under 5 years, 11 between 5 and 15 years, 12 between 15 and 25 years, 47 between 25 and 60 years, and 73 above 60. The mortality-rates at the "infant," "adolescent," and "mature" age-periods were each considerably under the average, while the rate at "school" and "post-mature" periods were above the average. Compared with the corresponding month in the preceding ten years, the past month exhibited a death-rate from all causes which was under the average by 7 per cent., while the birth-rate during the third quarter of the year was below the average for the corresponding quarter in the preceding five years by nearly 6 per cent. During the third quarter of the year, 460 cases of the seven more important zymotic diseases were reported or discovered, and 25 deaths were registered. These cases consisted chiefly of measles and scarlet fever, of which there were 185 and 158 cases respectively. Whooping-cough was considerably under the average in prevalence as judged by the cases reported, but the extraordinarily high case-mortality (15.6 per cent.) almost certainly points to many cases remaining unknown to the Public Health Department. It is gratifying to find that typhoid fever continued to have a very low prevalence, only 8 cases having been reported during the whole quarter, and two of the cases were really imported cases. None of the typhoid cases died. There were no cases of small-pox or typhus fever. Compared with seven other principal towns in Scotland, Aberdeen occupied during the past quarter the fourth highest place in respect of birth-rate (Glasgow, Leith, and Greenock being higher); the second highest place in respect of marriage-rate (Edinburgh being higher); the second lowest place in regard to death-rate (Leith being lower); the fourth lowest place in respect of death-rate of persons under 5 years of age (Perth, Leith, and Edinburgh being lower), the lowest place in regard to the death-rate from miasmatic disease, and the fourth lowest place in regard to the death-rate from all causes exclusive of miasmatics (Leith, Greenock, and Edinburgh being lower).

Ireland.

New Belfast Maternity Hospital.

The new Belfast Maternity Hospital is to be opened on Monday, November 7th, by the Countess Grosvenor. The site has a frontage along the east side of Townsend Street of 95 ft. and extends back 183 ft. The entire site is now occupied by the building, which is planned in the shape of the letter T, with the head towards the street, and the shaft or stem of the letter extending backwards. By this arrangement both light



FRONT ELELEVATION

and air round every side of the building are ensured. The hospital has three floors. The ground floor, used for the executive, contains the kitchen wing, the matron's sitting room, committee and nurses' rooms, the quarters for the resident medical officer, a room for students, and at the extreme end of the building the extern department. The principal entrance is in the front facing Townsend Street. The kitchen entrance, the students' and patients' entrances are from a wide passage along the southern side of the building.

The extern department contains a waiting room, and a consulting room, a bath room and lavatory, and it is by this portion that all patients will enter the hospital. The principal staircase faces the front entrance, and provision has been made in the stair well for a passenger hoist to each of the floors.

The first or middle floor is solely devoted to the accommo-

dation of patients, and contains the couch room, and near it the observation ward and a room for the use of the nurse on duty for this ward. There are also four wards, each containing four beds, the greatest number allowed in one ward, and also some smaller, one and two bed, wards for separate cases or paying patients.

Provision has been made for an extension in the future over the extern department, but in the meantime this portion terminates with a garden roof level with the first floor, reached from the lateral corridor that communicates with the wards. The lavatories, bath rooms, etc., are contained in a sanitary tower, separated from the main building by a disconnecting passage.

The third or top floor is, with the exception of one ward for four beds, entirely occupied by the sleeping apartments of the staff, the larger rooms being subdivided by cubicles.

The laundry has been placed at the end of the yard, and is in no way connected with the main building. Provision has been made in it for a washing room, drying closet, and ironing room, and it is being fitted up with modern laundry appliances. The yard also contains a disinfector as well as other hospital requirements.

The floor level is well above the surface of the ground, and a basement passage has been formed under the corridors, in which all the water, gas, and electric mains are carried and are easily accessible. The coal store is also in the basement, and the hoist is arranged to descend to this level for the purpose of supplying the house with coal, as it is intended to rely on ordinary fireplaces for heating, although provision has been made to admit of introducing an artificial system if found necessary

In construction the building has been kept severely plain in every particular, owing to funds not being very plentiful; but it is at the same time substantial and serviceable; with the exception of some stonework sparingly used on the entrance door and the date tablet, no ornamental work of any kind has been introduced. Altogether, the house has a look of an institution devoted to hospital work, albeit of a plain, solid, useful character. The interior is constructed on the same economical lines, but the trained eye will soon discover many details that are now invariably associated with hospital construction.

The question of wood *versus* terrazzo flooring was earnestly considered, and as a result a new form of flooring has been adopted in most of the rooms and corridors, known as "eubœolith," which is a concrete composed of sawdust wrought to a smooth surface and waxed; all joints are banished, as well as the cold feeling of the marble concrete, while the surface can be cleaned by ordinary methods without injury to the material. This mixture can be brought to any colour, and a shade resembling ordinary pine stain has been adopted here.

Mr. William J. Fennell, Belfast, is the architect. Mr. Fennell was also the architect for the Mater Infirmorum Hospital, Belfast, and of the Medical Institute, Belfast, so generously given to the Ulster Medical Society by Sir William Whitla; and the same excellence of work, and, as far as the nature of the building permitted, the same artistic spirit is here visible.

Royal Victoria Hospital, Belfast: Opening of the Winter Session.

On October 24th, in the new out-patient room of the hospital, Mr. Fullerton, F.R.C.S.I., Assistant Surgeon, delivered the address as an introduction to the winter session. He emphasized the great benefit of a groundwork of physics, chemistry, and biology, and urged all junior students to remember the practical importance of these subjects, which were apt to be overshadowed by anatomy and physiology. The working of the new hospital was all that could be desired, and the comfort was striking. The Plenum system of ventilation and the heating were most satisfactory; in the out-patient department, where he could speak from personal experience, things went extremely well. During the hours of attendance, when about 200 patients were seated together, the system was subjected to a severe test, and the result was even more than was expected; in the operating theatres and wards no flies were observed; and in summer and autumn this was more than a luxury; it was a matter of surgical cleanliness. The whole hospital design was most convenient. The new electric department, although already cramped for room, was very complete and efficient. The danger of hospital abuse was becoming very real and pressing; and constant care must be t ken not to permit persons able to pay for private medical attendance to crowd out those for whom the hospital was justly intended. Continuing his address, Mr. Fullerton gave some excellent practical advice to the more senior students, and emphasized the importance of complete examination of patients by the relation of several startling examples of the results of incomplete case-taking; nothing could take the place of careful and conscientious work at the bedside; grinds and tutorial classes might supplement, but could never replace, the clinical work done by the student himself.

In the field of post-graduate work there were many opportunities. Latterly a large number of Belfast men had obtained places in the infirmaries and smaller hospitals of England, and had been nearly uniformly successful. He had never known one of their students thus occupied who had disgraced himself or the school. There were also post-graduate classes at the College in anatomy, physiology, and pathology, and he hoped soon they would have similar classes at the hospital. Particulars of the army, navy, and Indian medical services were given, and both the advantages and disadvantages set forth; many a young man with a bent in the direction of such a life might do much worse than seek for admission to one of them. Mr. Fullerton warned recent graduates most strongly against the pernicious evils of club and contract practice. Many a doctor got himself entangled in the meshes of this system at an early age, and found when married and with expenses increasing, that he could not shake off the octopus-like creature that was slowly wearing him out. He also uttered a most emphatic warning against the Poor-law dispensary system of Ireland, and read several extracts from the Report of the Special Commissioner appointed by the British Medical Journal to show the absurdity, unfairness, and positive cruelty of the system; some of the districts comprised thirty square miles, mostly hill and bog; there was no hope of private practice at all remunerative, no age limit, no increase of pay with increase of years, and a pension, like his election, depended on the vote of a body of men who were often nearly illiterate and who knew little and cared less about medical qualifications; who, too, surrounded by poverty themselves, imagined the doctor should be content to abide in a poverty-stricken village and district without hope of promotion or reward.

Throughout the country, said Mr. Fullerton, there should be no single applicant for a vacancy in the Irish Poor-law Dispensary Service till the terms recommended by the Irish Medical Association be granted:

1. A minimum salary of £200 a year.
2. A month's holiday annually with pay for a *locum tenens* at four guineas per week.
3. That superannuation be granted as a right and not as a favour.

Turning to the question of private practice, the speaker's advice was that every young man should join one of the medical defence societies. The cost was nominal, and with a good cause the protection was great. In conclusion, Mr. Fullerton made warm reference to Professor Lorrain Smith, who had come to them ten years ago, had raised the teaching of pathology in Belfast from insignificance to a high standard, and was now leaving for Manchester. They all wished him success and happiness in his new sphere of labour.

Professor Sinclair proposed, and Professor Byers seconded, a vote of thanks to Mr. Fullerton for his address. This was supported by Dr. H. O'Neill and passed with acclamation.

Belfast Board of Guardians.

Equipment of New Poor-law Consumption Sanatorium.

At the meeting of this Board on October 25th the Sanatorium and Finance Committee made its report on the equipment of the new auxiliary workhouse at Whiteabbey. The offices, salaries, rations, and apartments were agreed to. The Committee recommended that there should be a resident medical officer at £120 a year, changing every six months, and chosen from their own resident medical officers, and a visiting medical officer at £120 a year. Dr. Hall was requested to act as visiting medical officer temporarily, and Dr. Morgan as temporary resident medical officer.

Congestion in the Workhouse.

At the same meeting an exhaustive report based on reports of the Local Government Board inspectors, Dr. E. Coey Biggar and Mr. Agnew, and upon the investigations of a special committee, was discussed. The Committee pressed the Guardians to urge upon the Local Government Board to use its influence with the Belfast Corporation to hasten the completion of the

fever hospital at Purdysburn, when all infectious cases could be received there; and also the asylums authorities to have all the lunacy cases removed from the workhouse. It was decided to take immediate steps with regard to the children's infirmary as being the most urgent matter, and the report was passed.

SMALL-POX IN BELFAST.

Unfortunately, several fresh cases of small-pox have been discovered; in all, 17 have been admitted to Purdysburn during the last three weeks; 8 of these were unvaccinated.

IRISH DISPENSARY MEDICAL OFFICERS.

Surgeon-General Evatt is at present engaged in visiting, for the Irish Medical Association, various parts of Ireland for the purpose of organizing the Irish dispensary medical officers in the movement for reform. The Irish Medical Association has opened a fund in support of this action, and Surgeon-General Evatt is to receive remuneration at the rate of three guineas a day while engaged in this work. Already public meetings have been held in towns in the South of Ireland, and addresses have been delivered with the object of showing the justice of the claims put forward for higher salaries, retiring allowance, and holidays.

ASSOCIATION NOTICES.

COUNCIL.

NOTICE OF ADJOURNED MEETING.

THE adjourned Meeting of the Council will be held in the Council Room of the Association, at 429, Strand (corner of Agar Street), London, on Wednesday, the 16th of November, at **2 o'clock** in the afternoon.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1905.

MEETINGS of the Council will be held on Wednesdays, January 18th, April 19th, July 5th and October 18th, in the Council Room of the British Medical Association, 429, Strand, London, W.C.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.—A dinner will be held in the King's Arms Hotel, Melrose, on the evening of Tuesday, November 22nd, at 6 o'clock, Dr. Carlyle Johnstone, Chairman of Division, presiding, in the event of a sufficient number of members notifying the Secretary of their intention to be present. Dinner ticket, 5s.—W. HALL CALVERT, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WANDSWORTH DIVISION.—An ordinary meeting of this Division will be held at Crichton Restaurant, Clapham Junction, on Thursday, November 24th, at 8.45 p.m. Agenda: (1) Minutes. (2) Correspondence. (3) Questions. (4) Resolutions for Representative Meeting at Leicester, referring to co-opted and elected members of the Central Council, and the duration of their holding office. (5) Paper by G. F. McCleary, M.O.H., on the Milk Supply of Copenhagen: A Study in Clean Milk Production. (6) Address on Vaccination and Revaccination, by Mrs. E. Garrett Anderson, M.D. The President of the Branch Dr. Radcliffe Crocker), the Editor of the BRITISH MEDICAL JOURNAL (Dr. Dawson Williams), and possibly Mr. Andrew Clark (Chairman of the Central Council) will be present. Members of the Branch and their medical friends are invited to attend.—E. ROWLAND FOTHERGILL, Torquay House, Southfields, S.W., Honorary Secretary.

PERTHSHIRE BRANCH.—The annual meeting of this Branch will be held in the Station Hotel, Perth, on Friday, November 11th, at 4 p.m. Business: (1) Read Minutes. (2) Election of office-bearers. (3) Report of Council. (4) Report of Treasurer. (5) Report of Representative Member. (6) President's Address. (7) Arrange next meeting. (8) Any other business. Council meeting at 3.45 p.m. Dinner (3s. 6d.), as usual, after the meeting, in the Hotel, to permit of country members returning home by the evening trains.—WILLIAM A. TAYLOR and ALEXANDER TROTTER, 10, Marshall Place, Perth, Joint Honorary Secretaries.

SOUTH-EASTERN BRANCH.—A conjoint meeting of the three Divisions of Eastbourne, Hastings, and Tunbridge Wells will take place on Thursday, November 17th, at the Sackville Hotel, Bexhill, at 4.45 p.m. Dinner at 7 p.m.; charge 6s., exclusive of wine. All members of the South-Eastern Branch are entitled to attend, and to introduce professional friends. Members intending to be present at the meeting and dinner would much facilitate arrangements if they would inform Dr. Merry of their intention by post-card. Agenda: (1) Mr. Beck will show three cases of Colles's fracture treated by massage from the third day, illustrated by Roentgen-ray photographs. (2) Discussion on Dr. Larking's proposal to divide the South-Eastern Branch. (3) Contract practice. (4) Reports of Representative Meeting at Oxford by the Divisional Representatives, and any other business that may arise.—G. V. HEWLAND, St. Leonards, W. J. C. MERRY, Eastbourne, and E. A. STARLING, Tunbridge Wells, Honorary Secretaries.

SOUTH-EASTERN BRANCH: NORWOOD DIVISION.—**The next meeting** of this Division will take place at the Streatham Hall (close to Streatham Station), on November 10th, at 4 p.m., W. F. R. Burgess, M.D., of Streatham, in the chair. Agenda: (1) Minutes of last meeting. (2) To decide where the next meeting shall be held, and to nominate a member of the Division to take the chair thereat. (3) Report of Representative at Oxford meeting. (4) Division of South-Eastern Branch. Papers: Dr. Mitchell Bruce: The Value of Negative Observations. Dr. Horrocks: Some Cases of Uterine Haemorrhage, in which curetting failed to relieve the complaint. Dr. Savage: Morbid Mental Growths. Dinner at 6 p.m., charge 7s., exclusive of wine. All members of the South-Eastern Branch are invited to attend and to introduce professional friends, but will be unable to vote on Divisional questions.—HENRY J. PRANGLEY, Tudor House, Anerley, Honorary Secretary.

STAFFORDSHIRE BRANCH.—A meeting of this Branch will be held at the North Stafford Hotel, Stoke-on-Trent, on Thursday, November 24th, when the chair will be taken by Dr. E. Deanesly, the President. Papers will be read by Mr. W. D. Spanton, Dr. Menzies, and Mr. H. H. Folker.—G. PETGRAVE JOHNSON, Honorary General Secretary.

SPECIAL CORRESPONDENCE.

PARIS.

French Congress of Medicine: Professor Cornil's Opening Address.—Professor Chantemesse on the Serum Treatment of Typhoid Fever.—The Funeral of Professor Tillaux.

THE Seventh French Medical Congress, following immediately on the Surgical Congress, was opened on October 24th by M. Landrin, the President of the Conseil-Général of the Seine, in the large amphitheatre of the Medical School. M. Landrin was supported by Professor Cornil, the President of the Congress, and the Vice-Presidents, Dr. Henrot of Reims, and Dr. Brissaud of Paris. Professor Cornil, in his opening address, spoke of the part played by morbid anatomy in contemporary medicine, passing in review the discoveries made during the last fifty years, and the wide change caused by the introduction of the microscope and the ideas of Pasteur. The Faculty of Medicine had constantly refused as useless the foundation of a chair of histology, and it required a small revolution in 1862 to install Charles Robin against the wish of the professorial staff. Three years later, in 1865, Cornil and Ranvier were teaching histology extramurally in their private laboratory, and started the publication of their manual. The general work of the Congress included the following reports: (1) Arterial Hypertension in Disease, by Drs. Bosc and Vedel and Dr. Vaquez; (2) Mercurial Injections, by Dr. Launois and Dr. Balzer; (3) Obesity, by Dr. Maurel and Dr. Le Noir; besides numerous communications.

Professor Chantemesse made an important communication on the serum-therapy of typhoid fever. The antityphoid serum he employs is obtained from a horse rendered immune by injections of soluble typhoid toxin, as he explained in 1898. Professor Chantemesse has used this treatment in his wards at Bastion 29 for the last three and a half years, and there all typhoid patients—545 cases—have been treated with it. During the same period in the other Paris hospitals the patients received the old treatment, with cold baths and the ordinary pharmaceutic preparations; these thus serve as control cases, as they occurred during the same period and were affected by epidemics of the same intensity. In the hospitals in Paris from April 1st, 1901, to October 1st, 1904, 2,618 cases of typhoid fever recovered, while 581 cases terminated fatally, giving a mortality of 18 per cent. During the same period, among the 545 cases treated at Bastion 29, only 22 deaths occurred, giving a mortality of 4 per cent. If the 3,200 patients treated in the Paris hospitals had given the same mortality per-

centage, there would only have been 120 or 130 fatal cases instead of 580. Professor Chantemesse stated at the Cairo Congress in 1902 the causes of death in the first 7 cases of his hospital statistics. During 1903-4, 15 patients died; in 5 of these death was due to intestinal perforation; in 4 the treatment was begun late (fourteenth, sixteenth, seventeenth and twenty-first day of the disease) and they presented ataxo-adynamic symptoms; 2 died from pneumonia; 1 patient had a localized peritonitis developed round a suppurating retro-caecal gland; the thirteenth case occurred in a young girl who was brought into Paris from the suburbs in an unconscious state and died in three days; the fourteenth case, a female convalescent developed gangrene of the jaw, cheek and throat, starting from a decayed tooth; the fifteenth case was a man who, simultaneously with typhoid fever, had erysipelas of the face with suppuration of the scalp and purulent pleurisy. Professor Chantemesse went on to discuss the question whether serum treatment protected from intestinal perforation. By collecting the statistics of Murchison, Griesinger, Curschmann of Leipzig, Harte (Montreal General Hospital, Episcopal Hospital, and Pennsylvania Hospital), and Flint, he found that in 8,160 cases, perforation occurred 213 times, giving its frequency as 2.6 per 100 cases of typhoid fever. Among the 545 cases treated by Professor Chantemesse there were 10 cases of intestinal perforation (two of which were operated on successfully), giving a frequency of 1.6 per 100 cases. In the mortality of 18 per cent. mentioned above, intestinal perforation caused 2.6 per cent., and only represented an eighth of the causes of the total mortality, while in Professor Chantemesse's case-mortality of 4 per cent. intestinal perforation caused a good third of the fatal cases. Thus this complication is not diminished by serum treatment to such an extent as the other causes of fatal termination. The intestinal alterations are the initial lesions in typhoid fever, and had occurred before the serum was given; therefore, it is important to inject the serum early. Professor Chantemesse has never seen perforation in patients treated by serum during the first seven days of their disease. The antityphoid serum exercises a specific action, rapid and energetic, on the diseases of the organism—spleen, adenoid tissue, bone marrow. The stimulation is more manifest and salutary the earlier the serum is given in the attack. No drug possesses a similar action, but the organism must be able to make the effort of reaction; if the nervous system is already deeply poisoned, the benefit is much smaller and failures occur. Professor Chantemesse then spoke of the method of using the typhoid antitoxin, which is a very different thing to the diphtheria antitoxin, for in typhoid fever the more the patient is affected the smaller must the doses of serum be. Thus, in ordinary cases taken early, the ordinary dose is given, but in other cases very small doses. It has been objected that the good results of Professor Chantemesse are due not to the serum but to the cold baths, yet the cases show a mean mortality of 18 per cent. Professor Chantemesse uses baths when there is high fever, and finds this treatment still more useful with the serum than with the usual pharmaceutic treatment. It is useful in calming the small reaction caused by the serum. In the German army, where baths alone are used systematically from the very first symptoms, the patients coming sooner into hospital than the hospital patient in Paris, the mortality is still 9.5 per cent. Professor Chantemesse by treating a large number of cases of typhoid fever, during several years, shows a mortality of 4 per cent., a result which has never yet been obtained either in France or out of it, and this by the combined uses of serum and hydrotherapeutics.

The funeral of the late Professor Tillaux, who was a Honorary Fellow of the Royal College of Surgeons of England, was very largely attended, taking place between the French Congresses of Surgery and Medicine, on Monday, October 24th. As the deceased was Commander in the Legion of Honour, the army was represented by artillery, cavalry, and infantry, with the band and colours.

BRISTOL.

Opening of the Medical School.

The annual distribution of prizes to the students of the Faculty of Medicine of Bristol University College took place on October 28th, the Right Honourable Lewis Fry, President of the Council, being in the chair. Dr. Markham Skerritt, Dean of the Faculty, in his report referred to the Long Fox memorial lecture which was to be delivered by Dr. John Beddoe, F.R.S., on November 4th, and to the success obtained by Mr. A. R. Phillips and by Mr. Short, both of whom had obtained gold medals in the London University examinations. Sir William S. Church, having distributed the prizes, addressed himself particularly to the students, pointing out that the aim of the medical profession was not to amass wealth but to be of service to mankind in general and to advance science, and particularly the science and practice of medicine. The real reward of medicine was not in its prizes but in the study which led to them, and though some of those present were just qualifying to practise they must remember that a medical man, however deep his knowledge and wide his experience, must always remain a student. The student who acquired his knowledge by rule of thumb was fortunately becoming a rarity, for he was not far removed from a quack. Sir William Church gave also many valuable suggestions on the line of conduct a young practitioner should adopt when in private practice and at a time when many of the accessories to be found in hospital work would not be available. In conclusion, he referred to the many distinguished physicians and surgeons connected in former years with the Bristol Medical School, whose example should inspire the student of the present day with the highest and loftiest ideals. A vote a thanks was proposed by Mr. Nelson Dobson and seconded by Mr. Phillip J. Worsley. In the evening the annual dinner was held, Sir William Church being the guest of the evening, and Dr. Lionel Weatherly, Chairman.

MANCHESTER.

Building Contracts for New Infirmary.—Epileptic Colony at Langho.—Society for the Care of the Feeble-Minded.—Defective Eyesight and Hearing in School Children.—The Water Supply.—Edinburgh University Club Dinner.—Salford Hospital.

The Infirmary Lay Board at its meeting on October 31st considered the position of affairs with regard to the building of the New Infirmary. It had been suggested that a portion of the hospital might be proceeded with so that a part at least of the building might be ready for occupation at an early date. The architects reported that no time would be saved by undertaking the work piecemeal, seeing that the new building would consist of some forty separate buildings, the erection of which could be carried on simultaneously. Instructions were given to the architects to prepare contracts for building the whole of the hospital. The architects stated that the work could be completed in three and a-half to four years from the commencement of the foundations.

An event of more than local importance was the laying of the foundation stone of the buildings of the colony for sane pauper epileptics which are being erected at Langho, near Blackburn. The colony is the first of its kind established in this country. Dr. J. M. Rhodes, who is the Chairman of the Committee, laid the stone, and expressed the hope that the system will extend throughout the United Kingdom, and that thereby adequate provision may be made for this most unfortunate class of sufferers. The authorized expenditure, apart from the cost of the land, is about £60 000.

The annual meeting of the Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded was held in the Town Hall on October 26th, when excellent progress was reported. At the Society's schools at Sandlebridge there are now 44 children. It is hoped that by this time next year new schools with beds for fifty more children will be ready for occupation. Some of the boys and girls cannot be detained after the age of 16, legal powers of detention ceasing except in the case of those placed there by Boards of Guardians. This is a critical period for these young people, and they can only be kept by making them happy. The Education Committee of the Town Council is so convinced of the value of the work carried on at Sandlebridge that they have decided to contribute £2,000 to the cost of the new boarding house.

The Medical Officer of the Education Committee reports that the eyesight of children attending the schools in Standard II and above have been examined in 27,329 cases. Of these in 1,960 defects so serious were found that the parents of the children were communicated with and requested to see that the child should be taken to a hospital or private practitioner. That 14 per cent. of the pupils should be so seriously affected is a striking evidence of the value of medical inspection of the pupils with a view to the discovery and remedy of physical defects of this kind. Hearing was less defective, 289 cases being found, and in 118 of these cases

the parents were communicated with and advised as to the proper procedure for treatment.

The protracted spell of dry weather has reduced the stock of water in the local reservoirs to a twenty days' supply. It is all the more fortunate that relief is at hand, else the daily supply would have to be further curtailed in home and factory. The second Thirlmere pipe was used on Thursday to convey a considerable volume of water to the local service reservoirs, sufficient to justify the Committee in continuing the daily supply from 6 a.m. to 8 p.m. The gathering ground of Longendale, however, has become so depleted that. even with the new supply, the greatest care must be exercised until rain comes.

The thirteenth annual dinner of the Manchester Edinburgh University Club, on October 27th, was attended by a very large number of members and guests. The guests of the evening were the four original members—Professor Core, Dr. J. Corns, of Oldham, Dr. C. E. Glascott, and Mr. J. Hardie, F.R.C.S., of Manchester. Mr. Hardie was unavoidably absent.

At the annual meeting of the Salford Royal Hospital it was stated that the income was £6,866, while the deficit, amounting to £815 this year, is smaller than for many years past.

CORRESPONDENCE.

HOSPITAL REFORM.

SIR,—Since the appearance in the public press of the report of the quarterly meeting of the Governors of the London Hospital many comments have been made on it, and allusion has been frequently made to the East London Medical Society; so much so that the Society feels that it is necessary to clearly define its position, in order that there may be no misunderstanding in the mind of the public as to the object it is striving for.

Last May a deputation of the East London Medical Society waited on the Board of Management of the London Hospital to ask for a reform of various abuses in the management of the hospital. The abuses complained of fell under two main heads:

1. The part-payment system, under which patients are expected to pay a proportion of the cost of the medicines and dressings supplied to them; and

2. Insufficient scrutiny, whereby patients, who are well able to pay for treatment privately, are enabled to take advantage of a public charitable institution.

The existence of abuses was admitted by the hospital authorities, and it was shown that in one important branch, the Casualty Department or Receiving Room, the scrutiny was not merely imperfect, but practically non-existent, for the addresses of patients were not asked, all comers being treated without question as to their means.

The steps proposed by the hospital for the abatement of the evil have now appeared in the press, and it is principally on them that the East London Medical Society wishes to express its views.

1. "*Large notices have been placed in the out-patients' department stating that a small charge is made for medicines and dressings, but no charge for advice.*"

The part-payment system, which is thus affirmed, is objected to by medical practitioners, because they find that it induces patients who are too well off to deserve hospital relief, to go to hospitals for treatment in the belief that they are paying for all they receive, and so are not receiving charity; and it also acts as a salve to the consciences of others who go to hospitals, knowing that they have really no right to hospital relief. The Society holds that notices should be placed in all departments of the hospital, and on the cards issued to patients, that the institution is for charitable relief only.

2. "*The addresses of all patients will be taken, and the books open to the inspection of any local practitioner who cares to inspect them.*"

The registration of addresses is so obviously necessary in any inquiry as to the means of the patients, that it is amazing that it should ever have been neglected; but the inspection of the books by local practitioners is a part of that system of espionage to which the Society strongly objects.

3. "*Local practitioners are invited to visit the out-patients' department, and on recognizing any patient known as being unsuitable for hospital treatment, to communicate with the secretary.*"

This suggestion, which invites medical men to act as detectives, was made to the deputation of the Society at the hospital, and was rejected as quite impossible. The hospital would have shown better taste had it let the suggestion drop, instead of repeating it, and allowing it to go to the press.

4. "*The Jewish Board of Guardians have been approached, and consented to help the hospital in making inquiries with regard to Jewish patients.*"

The intimate acquaintance of the Jewish Board of Guardians with the Jewish poor should be a great help in eliminating unsuitable cases.

5. "*The Metropolitan Provident Dispensary, which has a branch opposite the hospital, has agreed to take over any patients sent from the hospital at a reduced charge.*"

The Society has been informed that the Dispensary intends to institute a further inquiry to ascertain whether the patients are poor enough to deserve dispensary treatment. Without this the hospital plan would be most futile, for large numbers of patients now treated at the hospital are well able to pay the fees of a private practitioner, and consequently have no right to go to either the dispensary or the hospital. It is not easy to see why most of the unfit cases should not be referred direct to private practitioners, for the difference between payment for medicine and dressings at the hospital and reduced payments at the dispensary cannot be very great.

6. "*The Committee is in communication with the Charity Organization Society, and it is hoped that this Society will be able to advise the hospital as to the best means for inquiring about patients, while the hospital is willing to pay £100 per annum to the Society for an almoner to be stationed in the receiving rooms.*"

This should lead to an improvement in the inquiry system, and so to more efficient detection of offenders.

7. "*The Secretary has made arrangements to visit every patient admitted on the day after arrival, and if found the patient should not receive hospital treatment, he or she is to be discharged and asked to give a donation for the time he or she remains in the hospital.*"

This is not an entirely practicable suggestion. In a hospital where the admissions are so numerous (sometimes, it is said, as many as sixty in a day), it is not possible for a busy man like the Secretary to inquire into the circumstances of them all. By all means let any urgent case be admitted at once without inquiry: but, whenever there is no urgency, the admission order ought not to be given until an inquiry has shown that the case is one suitable for hospital relief.

The Society greatly regrets that no rule has been made that all patients whose means are sufficient to enable them to pay the fees of a private practitioner shall be refused any attendance beyond first aid. In this way a considerable economy of the hospital funds might be effected.

In conclusion, the Society, while recognizing the extreme difficulty of preventing abuse, wishes to point out:

1. That at present advantage is taken of the lax inquiry system by a very large number of persons who ought not to receive charitable relief, and who in many instances are really wealthy;

2. That the funds supplied by the charitable are thus misappropriated, the persons for whom they are intended being often deprived of relief in consequence;

3. That the medical profession is subjected to a most unfair competition with subsidized institutions:

4. That the indiscriminate administration of relief tends to pauperize many of the recipients and to lessen habits of thrift;

5. That, with more efficient means of preventing abuse, the poverty of hospitals would be diminished, perhaps even abolished; and

6. That the hospital authorities must not forget in delegating their duties of scrutiny that they are primarily responsible to the charitable public for the proper expenditure of the moneys subscribed.—I am, etc.,

F. HARRIS WHITE,
Honorary Secretary,
East London Medical Society.

October 27th.

PROFESSOR SCHAFER'S METHOD OF PERFORMING ARTIFICIAL RESPIRATION.

SIR,—With reference to the excellent leading article which you published in last week's BRITISH MEDICAL JOURNAL on Professor Schäfer's method of performing artificial respiration, I should like to accentuate one great practical advantage which it has over other recognized methods—namely, its extreme simplicity.

This is a matter of great importance when we remember that, with the exception of cases of stoppage of respiration during the administration of anaesthetics, and possibly of poisoning, the majority of instances in which artificial respiration is required occur when there is no doctor on the spot, and the treatment has, therefore, to be carried out by lay persons. This circumstance is recognized by the Humane Society in the instructions issued by them for resuscitation of the apparently drowned, and also in the instructions provided in electrical works for the treatment of persons suffering from electric shock. The teaching of artificial respiration also forms an important part of every "First Aid" or ambulance class. Under these circumstances, it is desirable that the method of artificial respiration recommended and taught should be the simplest possible consistent with efficiency.

The Sylvester method is that which has been most universally taught and employed in this country, and I was a firm believer in its pre-eminence for all practical purposes until I had a personal experience of Professor Schäfer's method. For general use the Sylvester method, apart from its physiological deficiencies pointed out by Professor Schäfer, has, in my opinion, two great disadvantages—that it entails very considerable exertion on the part of the operator, while the movements are not easily performed correctly by the ordinary layman. I have frequently seen it used, even by medical men, in a manner which must have materially interfered with its efficiency. There is, moreover, an undoubted risk connected with its employment by unskilled persons by reason of a tendency to use too much force in compressing the chest.

In a case which came under my notice some time ago, when a husband was arrested for causing the death of his wife, there were very strong grounds for suspecting that the fractures of three ribs and a rupture of the liver were produced *post mortem* by the energetic efforts of a burly policeman to restore animation by Sylvester's method of artificial respiration.

In another case of supposed drowning in a bath the attendants caused injuries through their efforts to restore animation by this method.

Such accidents are practically impossible by Schäfer's method, for reasons which he has indicated, while, on the other hand, there can be, in my opinion, no question as to his method being the simplest one to teach for employment by the public. Any person can not only learn it but also perform it with the greatest ease. Even a woman could carry out Schäfer's method for a considerable time efficiently on a heavy man, whereas there are few women who could perform any of the other methods single-handed with any degree of effectiveness.

I am convinced that the public should be taught the method which, while most effective, requires least technical skill and causes least exhaustion to the patient and the operator.—I am, etc.,

HARVEY LITTLEJOHN, M.B., F.R.C.S.Edin.

Edinburgh, Nov. 1st.

PRIMARY BRONCHOPNEUMONIA IN CHILDREN.

SIR,—I was very much interested in Dr. Samuel West's communications on Primary Bronchopneumonia which appeared in the BRITISH MEDICAL JOURNAL of October 8th, and in Dr. J. A. Coutts's letter on the same subject in the JOURNAL of October 29th. May I add my views on this subject, gathered from a more limited experience? Primary bronchopneumonia, pure and simple, is a somewhat rare disease in children as compared with secondary bronchopneumonia and croupous variety. It is far more likely to occur in very young children, especially under the age of 1 year. Most of the cases that I am acquainted with occurred in babies under that age. The illness starts suddenly, like an attack of croupous pneumonia, runs a very acute course, and terminates frequently in death within a day or two, or from a week to ten days, after the onset of the illness. Now, in these cases of primary bronchopneumonia alone, when the patient lives for a week or so, the *post-mortem* examination shows that one whole lobe (usually a lower lobe) of the lung may be in a state of massive consolidation of a catarrhal type, with a certain amount of patchy consolidation in one or more of the other lobes. Should the patient die at the commencement of the illness, there is practically certain to be a variable amount of pulmonary collapse, associated with early consolidation. The massiveness of the consolidation is so marked in a great many of these cases of primary bronchopneumonia that, if one lobe alone were affected, I do not know how it would be possible to distinguish it from croupous pneumonia with certainty, for to me the physical signs in both are the same.

In croupous pneumonia—which I believe to be more frequently met with in children than bronchopneumonia after the age of 1 year—the massive consolidation has always been a marked feature in those few cases that have died and come under my observation in the *post-mortem* room subsequently, and, as Dr. Coutts points out, at the periphery of the fibrinous mass there are often seen secondary nodules of bronchopneumonia. This is almost certain to be the case if the patient die after the lapse of a week or ten days, and to my mind it is the development of this secondary bronchopneumonia that accounts for a great many of those cases of croupous pneumonia in which there has been no crisis and a somewhat protracted convalescence.—I am, etc.,

Ealing, W., Oct. 31st. P. STANLEY BLAKER.

AUTORRHAPHY.

SIR,—I had used McArthur's method of utilizing strips partially detached from the external oblique muscle as suture material in Bassini's herniotomy, after reading the excellent epitome of the work in Gould's *Year Book of Medicine and Surgery*, published early in 1903. The abstract is well illustrated; a silk suture serves as a pilot to conduct the strips of tendon; there being no need for special instruments. I found it had its limitations, which the author specially mentions.

Dr. Blair Bell hardly does justice to McArthur when he states in the end of his article, p. 1148: "It had been more or less casually mentioned before." McArthur had evidently conducted many experiments on the subject, and alludes to 20 cases where he had employed this method, with perfect primary union in all.—I am, etc.,

W. THELWALL THOMAS,
Assistant Surgeon, Royal Infirmary, Liverpool, and Lecturer in Surgery, University of Liverpool.

Liverpool, Oct. 31st.

THE METRIC SYSTEM.

SIR,—Would you care to add to your correspondence on this subject a plea from the side of public health work? There the variety of ways in which time is wasted by the British system of measures is endless. Here are two calculations for example (purposely simplified), which I happen to require:

A chemist (who works with metric measures and translates into British) reports $\frac{1}{100}$ grain of arsenic in 1 lb. of malt. A brewer has used 24 quarters 6 bushels of this malt to produce 110 barrels of beer. Supposing all the arsenic in the malt reached the beer, what fraction of a grain of arsenic per gallon would the beer contain?

One hundred thousand gallons of water pass every hour through a sand filter, which has an area of one acre, and works uniformly. What is the rate of downward percolation of the water through the filter, in inches per hour?—I am, etc.,

London, Oct. 30th. G. S. B.

THE PARLIAMENTARY REPRESENTATION OF GLASGOW AND ABERDEEN UNIVERSITIES.

SIR,—It is really difficult, and perhaps unnecessary, to answer the strangely illogical letter of Dr. William Bruce in the BRITISH MEDICAL JOURNAL of October 22nd, p. 1113; but a few words are perhaps called for, as the letter contains suggestions of inaccuracy of such a serious nature that one would have thought Dr. Bruce would have hesitated to have made them, especially as he was actually in possession, at the time of writing his letter, of official information on the subject.

In reference to the general question as to the advisability of increasing the influence of the medical profession in Parliament, until I read Dr. Bruce's letter I was not aware there were two opinions on the subject. Dr. Bruce seeks to show that the profession is already adequately represented by the gentlemen whose names he proceeds to enumerate; but his want of knowledge on the subject is at once manifest when it is noted that of these gentlemen two have no seat in the House of Commons, and of the remainder they are all to be found on the Opposition benches.

The fact remains that "the Government, with but one real exception (Sir J. Batty Tuke), is entirely without medical advice and support in Parliament," for it would be ridiculous to speak of the Attorney-General or Mr. Rutherford Harris as "real" representatives of the medical profession.

The closing paragraphs of Dr. Bruce's letter contain the suggestions of inaccuracy; let me state the facts.

When Professor Smith was invited to become a candidate for the Universities, he replied that he could not consent unless it were shown to him that at least 1,000 graduates of both universities were willing to join a committee to promote his candidature. That assurance has been given to him by considerably more than the number stipulated, and the list is daily being added to.—I am, etc.,

C. D. F. PHILLIPS, M.D., LL.D.,
Chairman of the Universities of Glasgow and Aberdeen Conservative and Liberal Unionist Association.

London, W.C., Oct. 25th.

THE REGISTRATION OF MEDICAL AND DENTAL STUDENTS.

SIR,—Dr. St. Lawrance-Burke is to be congratulated alike upon the views which he holds upon the above subject as upon the moral courage he shows in giving them expression in the BRITISH MEDICAL JOURNAL of October 29th. One signed letter such as his is worth a gross of anonymous ones.

In recent correspondence on medical economics, such as that under the title of "Principals and Assistants in Medical Practice," it is impossible to ignore the fact that in dealing with the errors of our system of medical education, the bulk of your correspondents show either defective grasp of the problems to be solved or indifferent courage in laying the blame upon those responsible for the shortcomings they complain of.

The writers who deplore overcrowding, defective medical education, or the ethical morality of assistants or *locum tenentes* with such heartiness, would show more judgement to my thinking in directing their criticisms to the *fons et origo mali*—the General Medical Council. It cannot be too often pointed out that that body as at present constituted is unfitted to deal with the complex intricacies of medical administration as applied to the medical education and professional discipline of to-day. It is cardinally wrong to expect outside bodies to take up duties which clearly pertain to a State-constituted body of medical education and registration. Since, therefore, we cannot have a brand-new and ideal form of government, we are compelled to fall back upon the reform and reconstruction of such a body if any progress is to be made in shaping medical government on the lines of homogeneous respectability.

At present the voice of the General Council is the voice of the representatives of competing licensing corporations. The corporations whom they represent require the fees of students for their support. In turn, collectively, these representatives depend upon the qualifying practitioners for the means of supporting their heterogeneous and expensive Council. Do such conditions not make for overcrowding and its unhealthy sequelae? Why, therefore, should blame always attach to the ill-educated or irresponsible practitioner, the outcome of the pernicious system prescribed by a teaching oligarchy asleep to the exigencies of twentieth-century practice?

A few words upon the disciplinary powers of the Council. Can any one doubt that a preponderating body composed of level-headed general practitioners, if on the Council, would not long since have applied for and obtained such modifications of disciplinary penalties as would meet the lesser peccadilloes of human frailty? The extreme punishment, and the only one, of removal from the *Register* defeats the object in view. As an illustration of this, I may mention that while travelling this year in Yorkshire I came across a registered practitioner who kept an unqualified assistant in the culpable sense as understood by the General Council—that is, the assistant ran a branch practice. Had I known that a fine would have been imposed I should undoubtedly have reported the practitioner to the General Council, but recollecting that loss of diplomas would have resulted to this head of a family if I did so, I left the duty to some one else. This gentleman I heard swear in court that his assistant administered ether to a debtor while he extracted teeth! Curiously enough, he recovered the fee for the anaesthetic. Such was the stipendiary's knowledge of or regard for the edicts of the General Medical Council.

In the second paragraph of Dr. Burke's letter he questions if I be right "in hinting that the General Medical Council contemplates realizing its Oxford Street premises." If that gentleman will be good enough to look up p. 1281 of your JOURNAL for May 28th he will read as part of the address of the President, under "Building and Finance":

> In consequence of this, of the completion of the lofty pile of premises on our immediate west and of an offer respecting the Oxford Street portion of our freehold property, I propose that the Council should consider this afternoon *in camera* the offer in question. In order that the Council may have before them such information as I possess I have circulated, as highly confidential documents, the minutes *in camera* on this subject.

So much for the possibility of "the disappearance of the visible sign of medical authority" to which Dr. Burke very properly takes exception. Why, though, should there be so much *in camera* about the Council's proceedings? Surely the question of turning the Oxford Street premises into money does not merit the conspiracy of silence of a Rye House Plot. The Council's exigencies are matters of common knowledge, as are the causes of them; secrecy only intensifies curiosity; the Council's premises were originally acquired with practitioners' money.

To conclude: Dr. Burke says, "It cannot be right that only five gentlemen should represent 30,000 practitioners." From a careful study of the minutes and proceedings of the General Medical Council, I have come to the conclusion that for many years the medical men of the United Kingdom have been represented by but three direct representatives—the English contingent!—I am, etc.,

S. WESLEY WILSON,
London, Oct. 31st. Late Registrar, Medical Council for Ireland.

DISPENSING BY MEDICAL MEN.

SIR,—In reply to my critic, Mr. Morison, I may state that the actual incidents I mentioned in my letter of October 22nd occurred from twenty to forty years ago; I fear, however, that human nature is not much altered since that time, whatever Mr. Morison may say. Indeed, during the fifteen years or so that I was in a non-dispensing practice I occasionally found little trips (in certain quarters) that went to confirm my views, and one of which actually cost me a patient.

I have sometimes wondered how many other trips occurred of which I was ignorant. I admit that some dispensing chemists were all that could be wished.—I am, etc.,

London, Oct. 29th. WALTER G. WALFORD.

PRINCIPALS AND ASSISTANTS IN MEDICAL PRACTICE.

SIR,—There are always two sides to every question. What can be said in defence of a medical man who employs three or even, as I know, five assistants; and has them planted out in surrounding villages, and never comes near them except to draw his money at the end of the month, and pay the assistant his meagre salary? Is this to the benefit of our profession? I call it sweating, and is, in my opinion, the cause of all the trouble and discontent in contract practice. In my opinion, assistants learn more bad habits than they do good ones.

To remedy this matter is simple. Make it compulsory for the assistant's name to be displayed; no medical man to keep an assistant longer than three months, and not more than one assistant at a time, who must also reside in the house with the principal.

It has been said by a very learned authority, "Go out as an assistant, and make your mistakes in another man's practice."

The practical training in our hospitals is now so thorough for those who care to learn, that any one after he receives his degree should be in a position to start practice on his own account, and, with the high standard of his hospital to guide him, will make fewer mistakes than if let loose as an assistant in some village with a "Don't care how you do it" as a principal.—I am, etc.,

October 31st. JUNIOR.

THE PELLATT FUND.

SIR,—As the time for closing this Fund is rapidly approaching, will you permit me, on behalf of the Committee, to cordially thank you for the help you have given in allowing the appeal to appear in the columns of the BRITISH MEDICAL JOURNAL, and the lists of contributions to be duly reported; and also, at the same time, to warmly thank those who have so generously contributed. The result has been that a sum of about £525 has been received, the annual income accruing from which will greatly assist towards the attainment of that "modest competence" for Miss Pellatt which was the object the promotors had in view when they originated the appeal.

May I add, further, that suggestions have been made to form an "annual subscription list" of one guinea or less, and four individuals have already expressed their wish to contribute to it. The Committee have concurred in this suggestion, and, should any one else also be disposed to join in it, the Treasurer, Surgeon-Colonel F. Welch, 8, Brandram Road, Lee, S.E., will be glad to receive their names.—I am, etc.,

London, W., Oct. 31st. E. F. DRAKE-BROCKMAN, F.R.C.S.

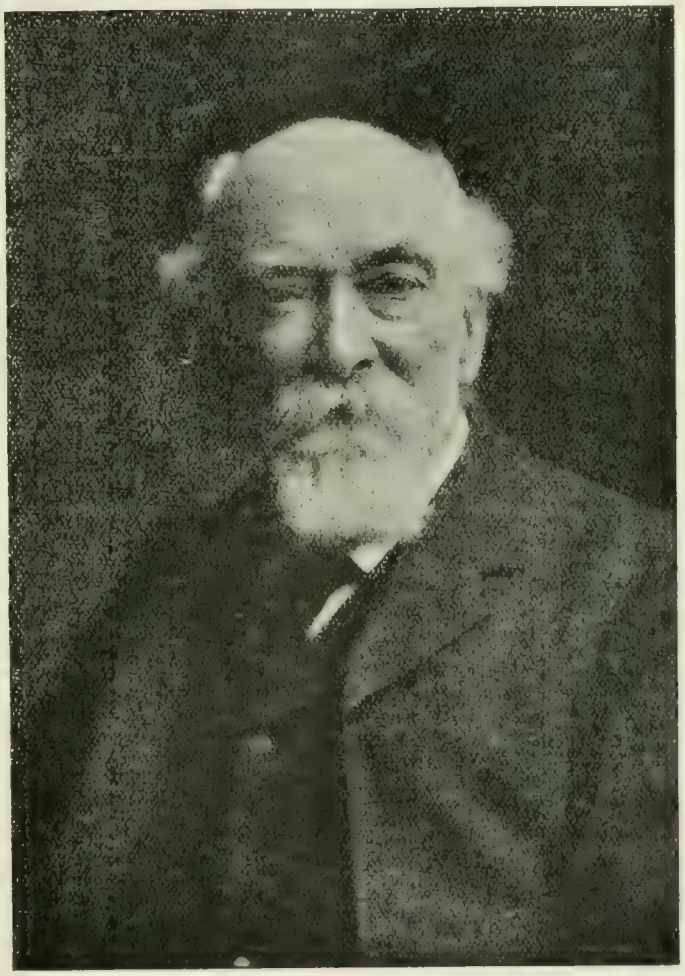
OBITUARY.

JAMES BURN RUSSELL, B.A., M.D., LL.D.,

Medical Member, Local Government Board for Scotland.

THE feeling of personal bereavement which the intimation of Dr. Russell's death created among a wide circle of those who had personal or official relationship with him in Scotland will be shared by the wider circle who knew of him only by his work. To some, indeed, the fatal issue came with startling suddenness, for, although it had long been recognized that he was suffering from an affection where palliation of the more acute symptoms was the best that could be hoped for, his work was rarely interrupted save during those periods of physical suffering when its continuance became impossible.

Dr. Russell died at Edinburgh on October 22nd, and was buried in the Necropolis of Glasgow on October 26th.



He was born in Ruther-glen, in the neighbourhood of Glasgow, in 1837, and received his early educational training in the High School of Glasgow, thereafter graduating B.A. in the university of that city in 1858. In that year he acted as Assistant to one of his former teachers, Lord Kelvin (then Professor William Thomson) in the first successful endeavour to lay the Atlantic cable, and for a time had charge of the electric plant at Valencia. To the influence of this association with the great physicist Dr. Russell himself ascribed much of the scientific spirit which characterized his work in later years.

On returning to Glasgow he began the study of medicine, and in 1862 graduated M.D., C.M. Thereafter he acted as Resident Assistant in the fever wards of the Glasgow Royal Infirmary, and subsequently in those of the Town's Hospital, or City Poorhouse, of Glasgow, for in those days municipalities scarcely regarded the treatment of infectious diseases as coming definitely within the field of their responsibilities. Under pressure, however, of the epidemic of typhus fever in 1864-5 a policy of municipal hospital provision began to assume definite form, and in the latter year, on the recommendation of the Medical Officer of Health of the time, Sir (then Dr.) William T. Gairdner, Dr. Russell was appointed by the Town Council of Glasgow Physician-superintendent of its first fever hospital. With this it may be said that he entered on the work of his life, because, although his appointment as Medical Officer of Health dates from 1872, the intervening years were replete with opportunities of minute study, not only of the technical details of hospital construction and administration, but of many of the conditions under which epidemic disease prevails; experience thus gained was in after years turned to excellent account in guiding the development of a hospital policy of which Glasgow has just reason to be proud. Indeed, in the hospitals, as in that wider field of sanitary administration which followed, there was from the very beginning the manifestation of intellectual activity of a very high order, and it was combined, as is not always the case, with an intense human interest and sympathy, which became at once the stimulus and objective of many of his writings. We cannot do better than quote here the opening passages of his first hospital report (1865-6) as illustrating the working of an intellect keenly alive to the teaching of external facts and quick to apply the principles which they embodied:

> In thinking over the plan of the following report, I had not gone far before it became apparent that I could not take for a model the ordinary form of such documents. Hospital reports in general merely narrate what has been accomplished by an institution which has been long in existence, the internal economy of which is thoroughly known and well-established, where the management is, so to speak, public, and the responsibility for its good conduct distributed over many. The subject of the present report is not such an institution. It was erected to meet an emergency—entrusted, without constitution, or staff, or rules of conduct, to the care of one person—and opened with no certain prospect of duration. Excepting to a few, the principles adopted in the working of the hospital, and the various incidents of its management, are unknown. I feel, therefore, that I occupy the position of one who ought to narrate, with all the aid of diaries, copies of correspondence and despatches, the results of a distant administration rather than that of one who has been working under the immediate observation of those to whom he is responsible.

And so we find in this and the reports which follow almost the initial stage in the consideration of several things which have now become parts of an established social polity. At that time, nursing as an organized auxiliary to treatment was unknown—even the Crimean experience had failed to drive its lesson home in civil life; the absence of a proper system of training hospital nurses gains point when applied with equal truth to the lack of suitably-trained nurses for private practice, and the discussion ends in a plea for the establishment of a nurses' home and training school in Glasgow. Besides this, there is naturally much of purely clinical interest in these reports, much, also, concerning the dietary of patients, and the type of building most suitable for the treatment of fevers: indeed, even after all the advances in hospital administration which the interval of wellnigh forty years has witnessed, they may still be regarded as types of what hospital reports should be.

But it was as medical officer of health that his best work was done—the work which gained for him a wider than European reputation, and a recognized place among the leaders of sanitary advance.

A writer in the *Glasgow Herald* remarks that

> To review in any detail Dr. Russell's life would require a history of the work to which that life was devoted, and would imply a review not only of the history of sanitary development in Glasgow, with which his name is so closely associated, but of the whole system of public health administration as a factor in national progress, of which he was in truth one of the pioneers. For while he found the population of Glasgow rich in the problems which the massing of mankind anywhere always creates, his observations came to have a wider significance than the immediate object he had in view. To him, indeed, "mankind in the mass" was always a stimulus to mental activity, and when this found expression, as it so frequently did in the many contributions which he made to the literature of the Public Health Service, these rapidly obtained recognition and an established place. While Glasgow may claim him as one of her worthiest sons, his name and work belong

to the universal service which has the improvements of public health and the lessening incidence of disease as its object.

Much of the value, however, which these contributions to the literature of sanitation possess is impaired by the almost necessarily temporary form in which they first appeared; and we may here reiterate the hope expressed by Sir William T. Gairdner, in an appreciative article in the *Scotsman* of October 24th, that the permanently valuable portion of them may ere long find their place in a memorial volume.

To appreciate fully the field which they cover, it is necessary to remember the contrast between sanitary methods of to-day and of a generation ago. It is easy, indeed, in these days to forget that so recently as the beginning of the last quarter of the nineteenth century, the pioneer in sanitation must needs manufacture the very weapons by which he hoped to further his advance. And when a life has thus been spent, the results are better told by contrasts than by recital of the stages of the conflict.

We can, indeed, recognize the starting-point of his own work by a quotation from his own pen. In the volume on *The Evolution of Public Health Administration*, as illustrated by the sanitary history of Glasgow during last century, Dr. Russell says:

> In 1818 Dr. Graham wrote: "I believe it would greatly add to the healthiness of the place (Glasgow) if some improvements, which I have heard talked of, were effected. Yet it was not until 1866, or wellnigh fifty years later, that the community, through its representatives, confessed its sin in the preamble to the City Improvement Act. Various portions of the city of Glasgow are so built, and the buildings so densely inhabited, as to be highly injurious to the moral and physical welfare of the inhabitants."

And so one of the first of the many contributions which he made to the study of the economics of sanitation contained the results, on the displaced tenants, of the work of reformation which had been begun in earnest by the City Improvement Trust.

In a more extended review of his writings than is here intended, the additions which he made to the literature of epidemiology, trade diseases, demography, social economics, all would require separate notice.

He did much to add to our knowledge of the part played by milk in the spread of enteric and scarlet fever. At a comparatively early period a report which he had prepared on the occurrence of certain cases of anthrax among hair-workers was adopted by the Local Government Board in England, and published among their official reports, while in later years his report on Tuberculosis, which, it is scarcely too much to say, is still among the most complete issued on the subject, was adopted and published as a State document by the Board of Health for the State of Massachusetts. He was a voluminous writer, and his contributions were invariably distinguished by excellent literary style. One of his earliest clinical memoranda, A Study of the Modifying Influences of Vaccination, is memorable not only as a valuable contribution to the statistical evidence of the value of vaccination, but for the introduction of a diagram to illustrate the drift theory, which has since been frequently repeated.

Among papers on subjects of interest to social economists, it is probable that that which dealt with "Life in One Room" obtained widest circulation, but it is equalled in interest, if not in pathos, by an address which he delivered some years subsequently on "Public Health and Social Problems" to the Glasgow University Meteorological Society. Of his statistical work proper no special reference need here be made, because most of our readers are already acquainted with its scope and excellence.

It may be said that continued literary activity was a feature of his life. In 1868 he accomplished the revival of the then almost extinct *Glasgow Medical Journal*, acting as its editor for four years, in the last two of which he had associated with him Mr. Henry E. Clark, now President of the Faculty of Physicians in Glasgow.

It is pretty generally known that Dr. Russell received an invitation to join the Local Government Board for Scotland as medical member on its formation in 1894, but only acceded to the request when repeated in 1898, and although his work there is less known, there is reason to believe that it resulted in distinct public advantage.

In 1885 the University of Glasgow conferred upon him the honorary degree of LL.D. In 1895 the British Medical Association awarded him the Stewart Prize of £50 for his researches and writings on the Origin, Spread, and Prevention of Epidemic Disease, and in 1899 he was the first recipient of the Bisset Hawkings Memorial Medal, which is awarded by the Royal College of Physicians of London for zeal in the promotion of public health.

He was an ex-President of the Royal Philosophical Society of Glasgow, and at the time of his death represented Scotland on the Royal Commission on Sewage Disposal.

In private life Dr. Russell was among the most lovable of men. He was associated from his early youth with the Congregational Church in Glasgow, and although in every action of life he shrank from a simple parade of religious convictions, it may truly be said of him that his life-work was devoted to the service of humanity.

He is survived by a son and two daughters, Mrs. Russell having predeceased him several years ago.

Sir William Gairdner concludes the appreciative notice in the *Scotsman*, to which reference is made above, as follows:

> No sooner was Dr. Russell placed in charge of a large staff, and led to labour in the great field of general sanitation, than he at once took his place, according to all opinion and testimony, among the very first and ablest of the sanitarians in Europe. This, indeed, was not his own estimate, for none could be more modest than he as respects his own personal doings and merits; but in respect of the directness and force which is derived from intimate knowledge of principles, there are, the writer thinks, few to compare with him, and hence the desire that some more abiding memorial should exist of thirty years' consecutive work than is to be found in the scattered reports above referred to. It is only necessary to add that as a man, domestically and otherwise, Dr. Russell bore a character of a very high order, and though little addicted to obtruding himself on the public in any other way than that of official duty, there are very few of the citizens of Glasgow who will not readily acknowledge that his residence among them for so many years was fraught with immense advantages to the community, among which a greatly exalted standard of the ideals of public life is perhaps most to be reckoned. His death from a

painful and irresistible disease, against which he fought bravely to the last, must be regarded as a loss to a circle very much beyond that of those who knew him personally.

We are indebted to Dr. J. C. McVail for the following tribute to Dr. Russell's memory:

It is not a mere truism to say that Dr. Russell's death will be most felt where he was best known. Even during these last few years, when, in spite of ill-health and bodily suffering, he struggled on in the task which he had undertaken, he continued to exercise a wonderful influence on the public health service of Scotland. The splendid work which he himself had accomplished was an inspiration to others; and it was not merely his work, but the spirit in which the work was done. No man ever believed more thoroughly in sanitation than did Dr. Russell, and the strength of his faith in what it could accomplish increased with his years. By nature he was reticent and retiring, but when deeply stirred—say, by the conditions and results of slum life, of which in Glasgow he saw so much—his indignation against those whom he regarded as in any degree responsible burst through his reticence into the terse and vigorous language which one was in the habit of looking for rather in his writings than in his speech. In all social questions, and especially in municipal socialism, he took a deep interest. He was well read in socialistic literature, but all through its study his conviction remained unshaken that sanitation, thoroughly administered, can in the end achieve practically all that socialists aim at by other means. During the earlier period of his working career he was practically the only whole-time medical officer of health in Scotland, and, except for the invaluable advice of Professor Gairdner, he had to find his own solution for problems which have now been thought out by many workers. But his success was wonderful, and much of the work which younger men have done in recent years owed its initiative to him. He was a great sanitarian, and his name will remain so as long as the science of public health continues to be studied in these realms.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

Faculty of Medicine.

A meeting of the Faculty of Medicine was held in the Jelangor Hall of the University Buildings, South Kensington on Tuesday, November 1st, 1904.

Valedictory Address by Mr. Butlin.

Mr. Butlin, the Dean of the Faculty, presided, and seventy-six members of the Faculty attended.

The Dean announced the termination of his period of office, pointing out that in accordance with what he believed to be a desirable regulation, he was, after four years' service, ineligible for reappointment. In reviewing the work of the Faculty during the first four years of its existence, Mr. Butlin drew attention to the variety and importance of the questions which had been dealt with, and expressed satisfaction that the various recommendations of the Faculty had been favourably received by the Senate. On behalf of the Appeal Committee of the Senate appointed to secure funds for the Institute of Medical Sciences, he expressed regret that the depressed financial condition of the country had hitherto hampered their efforts, but stated that the Committee was confident of ultimate success. For his own part he believed that it was only by the success of this movement for establishing a central institute that the very unsatisfactory financial position of medical education in London could be effectively dealt with. He rejoiced that one of the results of the establishment of a Faculty of Medicine had been to lessen the jealousies and enmities between the great schools of medicine in London and bring home to the several teachers of these institutions the importance of each working for the good of all. The future of London as a centre of medical education was inseparably bound up with success of the University, and the Faculty might look back upon its first four years' work with satisfaction as indicating that the medical department of the University was determined to take full advantage of the reorganization of its constitution.

Dr. Rose Bradford proposed that a vote of thanks be given to Mr. Butlin for his services as Dean of the Faculty during the past four years. He spoke in the highest terms of the manner in which Mr. Butlin had presided over the meetings of the Faculty. But this work as chairman was a very small part of Mr. Butlin's services. He had thrown himself with great energy into all matters which he conceived would be of advantage to medical education in London, especially into the movement for the foundation of the Institute of Medical Sciences. Mr. Butlin had freely placed his time and his house at the disposal of numerous committees of the Faculty, and his generous hospitality had cemented many friendships amongst men of various institutions working together for the good of the University. His entertainment of the French physicians during their visit to London had promoted the *entente cordiale* between the nations, and added to the honour of the University and the dignity of the office of Dean of the Faculty.

Dr. Hale White, in seconding the resolution, which was carried with acclamation, stated that Mr. Butlin had as the first Dean of the Faculty created a tradition for the office which could not fail to be of value to the Medical Faculty whatever years and honours might be in store for their University.

Election of Dean and Vice-Dean.

Subsequently Dr. James Kingston Fowler was elected Dean, and Mr. A. Pearce Gould, Vice-Dean of the Faculty; Dr. Lauriston Shaw was reappointed Honorary Secretary.

Boards of Studies.

Recommendations were made to the Senate with regard to the constitution for 1905 of the various Boards of Studies. In order to secure better co-operation amongst the various Boards, it was recommended that the Chairmen of the Boards of Preliminary, Intermediate, and Advanced Medical Studies should each be *ex-officio* members of the other two Boards.

Meeting of the Senate.

A meeting of the Senate of the University of London was held on October 26th.

Fellowship in National Eugenics.

The Senate, on the recommendation of the Academic Council, accepted an offer from Mr. Francis Galton, F.R.S., to endow a fellowship in the University for the promotion of the study of national eugenics, defined as "the study of the agencies under social control that may improve or impair the racial qualities of future generations, either physically or mentally." The person appointed to the fellowship will be required to devote the whole of his time to the study of the subject, and in particular to carry out investigations into the history of classes and families, and to deliver lectures and publish memoirs on the subject of his investigations. The endowment is sufficient to provide not only for the fellowship but also for the salary of an assistant and for the general expenses of the contemplated work, which it is intended to place in one of the colleges or other institutions connected with the University. Full particulars of the post will be advertised shortly.

Appointments.

Dr. P. H. Pye-Smith has been reappointed the representative of the University on the General Medical Council, and Drs. T. D. Griffiths and T. M. Thomas have been elected representative governors of the University College of Wales, Aberystwith.

St. George's Hospital Medical School.

Lord Kelvin presided on October 28th at the annual distribution of prizes of St. George's Hospital School, which took place in the Board room of the hospital. The Brackenbury Prize in Medicine, the Brackenbury Prize in Surgery, and the Thomson Medal were gained by Mr. William Byam, and the Entrance Scholarship in Arts of the value of £100 was awarded to Mr. Paul Walde.

After presenting the prizes Lord Kelvin gave a short address. He pointed out that the modern medical man must not only be a scientific man, but he must also be a philosopher. The fundamental studies of medicine were of a strictly materialistic kind, but they belonged to different worlds from the world which would constitute their main study, the world of life, so that medical men had to study human nature, and that carried them far beyond dead matter. He warned them not to imagine that any hocus-pocus of electricity or viscid fluids could make a living cell. It was interesting to remember that materials belonging to the general class of food-stuffs, such as sugar and alcohol, which might also be called a food-stuff, could be made out of the chemical elements, but they must not let their youthful minds be dazzled by the imaginings of the daily papers that because chemists had thus made food-stuffs they could also make living things, or that there was any prospect of a process being found for making a living thing in any laboratory, whether the minutest germ in bacteriology or anything smaller or greater. There was an absolute difference between crystals and cells—anything that crystallized could be made by the chemist, but nothing approaching to the cell of a living creature had ever yet been made. The result of an enormous amount of exceedingly careful investigation was that no artificial process could make living matter out of dead. The extent of the study of medicine reached far beyond physics and electricity, both in depth of scientific significance and in human interest. The phenomena of life and death were the subjects they would study every day, whether in hospital or in ordinary practice: and they must ever remember that their patients were neither mere physical machines nor laboratory specimens, but human beings. They must not forget that they had to administer spiritual consolation to their patients—he used the word "spiritual" advisedly, because, when a medical man kept up the spirits of his patients, he was administering spiritual help. Let their natural feelings prompt them in their dealings with their patients, and they would be helping the sick spiritually as well as medically. As man could not live on bread alone, so a patient could not get well on drugs alone.

Mr. Timothy Holmes moved, and Dr. W. Ewart seconded, a vote of thanks to Lord Kelvin, who replied.

UNIVERSITY OF OXFORD.

Degrees.—At a Congregation held on Thursday, October 20th, the following degrees were conferred: *Master in Surgery (M.Ch.):* P. N. B. Odgers, Lincoln College. *Bachelor of Medicine and Surgery (B.M., B.Ch.):* A. R. Wilson, Wadham College.

Examinations.—The Examinations for the Degree of Bachelor of Medicine (First B.M. and Second B.M. Examinations), will commence on Thursday, December 8th, at 9.30 a.m. Names of Candidates, entered on the forms issued for the purpose, and accompanied in each case by the required certificates and fees, must reach the Secretary to the Boards of Faculties (Clarendon Buildings, Broad Street, Oxford), not later than 10.30 a.m. on Wednesday, November 23rd.

UNIVERSITY OF CAMBRIDGE.

THE following degrees were conferred on October 27th: *M.B.:* G. R. Rickett, King's; R. E. Whitting, King's; R. H. Robbins, Trinity; R. G. Nothwanger, St. John's; W. B. Swete-Evans, Clare. *B.C.:* R. G. Nothwanger, St. John's.

The State Medicine Syndicate have arranged to hold, in 1905, two examinations in Tropical Medicine and Hygiene for the University diploma. The first will begin on January 10th, the second on August 8th. Applications for admission have to be sent to Dr. Nuttall, Pathological Laboratories, Cambridge.

Mr. R. H. Lock has been elected to a Drosier Fellowship in Natural Science at Caius College.

Dr. A. C. Haddon, F.R.S., University Lecturer in Ethnology, has been elected a Senior Fellow of Christ's College.

UNIVERSITY OF EDINBURGH.

GENERAL COUNCIL.

THE statutory half-yearly meeting of the General Council of the University of Edinburgh was held on October 28th, Principal Sir William Turner presiding. The minute of the meeting of May 4th was read and approved. The report of the Business Committee, which referred to the Education Bill (Scotland), the B.L. degree, modern languages, and the Report of the Modern Languages Subcommittee, led to some discussion. The Business and Finance Committees were elected.

UNIVERSITY OF ABERDEEN.

THE LIBRARY.

AT the monthly meeting of the University Library Committee, held October 20th, Professor Frail, F.R.S., Curator, in the chair, the annual reports to the Senate and Court under Ordinance 64 were adjusted. The Librarian reported that the new regulation permitting students to borrow books without the immemorial £1 deposit was now in force, and that a large number of students were taking advantage of the privilege. An intimation was made that the executors of the late Mr. W. Galbraith Miller, Lecturer on International Law in the University of Glasgow, had presented to the library the part of Mr. Miller's library relating to jurisprudence and international law; and that the Rev. Alexander Warrack (M.A. Marischal College 1855), late Episcopalian Church minister, Leswalt, had presented a collection of minor Scottish poetry formed in connexion with his work for Professor Wright's dialect dictionary. Among the donors during the past quarter were many former graduates and the Universities of Chicago, Columbia, Colorado, Harvard, Rennes, Tokio, Turin, and Upsala.

The University Library Committee are desirous of making the University collection as representative as possible of (1) books or pamphlets written or edited by graduates or alumni of Aberdeen (2) books or pamphlets relating to or printed in the northern counties of Scotland. The sum that can be set aside from general library funds for these purposes is very small, and the Committee appeal to former students and to all friends of the University to present to the library copies of any publications they may write or edit. All such, however small, will be gratefully received and acknowledged.

The Committee approved the inclusion in the series of *Aberdeen University Studies* of Mr. Andrew N. Meldrum's, D.Sc., Thesis, "Avogadro and Dalton: the Starting in Chemistry of their Hypotheses"; and authorized the printing on large paper of 75 copies, to be used in exchange with other academic institutions.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary quarterly comitia was held at the College on Thursday, October 27th, the President, Sir William S. Church, being in the chair.

MEMBERSHIP.

The following gentlemen were admitted members of the College: Guido Yule Giglioli, M.D., Florence; Eric Danvers Macnamara, M.A., M.B.Cantab., L.R.C.P.; Harold Theodore Thompson, M.A., M.B.Cantab, L.R.C.P.

LICENTIATESHIP.

In conjunction with the Royal College of Surgeons, licences were granted to 103 gentlemen.

EXAMINATIONS IN TROPICAL MEDICINE.

On the nomination of the President, Dr. F. Taylor was appointed a visitor of the examinations in Tropical Medicine in accordance with the report of the committee of the Conjoint Colleges of July 18th.

COMMUNICATIONS.

Communications were received from:

1. The Secretary of the Royal College of Surgeons reporting certain proceedings of their Council on July 28th and October 13th.

2. The Secretary of the Sanitary Institute, inviting the College to send delegates to the Conference of the Institute on School Hygiene to be held in London in February next. The invitation was accepted, and it was left to the President to name delegates at the next comitia.

The audited accounts for the year ending September last were laid before the College.

FELLOWSHIP.

Dr. Edward Johnstone Jenkins, elected a Fellow on April 28th last, being resident in Australia, was admitted *in absentia*.

COMMITTEES.

Dr. Frederick Taylor, who retired by rotation, was re-elected a member of the Committee of Management. Dr. Pye-Smith, who retired by rotation, was re-elected a member of the Laboratories Committee.

REPORTS.

The following reports were received:

1. The quarterly report of the Finance Committee.

2. From the Committee of Management, recommending that the course of laboratory instruction in Public Health to be given at the Municipal Laboratories, Portsmouth, should be recognized as fulfilling the requirements of the regulations for the Diploma in Public Health, subject to the following conditions:

(*a*) That the recognition be a period of three years, at the termination of which an application for the renewal of the recognition may be made.

(*b*) That so far as bacteriology is concerned, the number of candidates instructed shall not exceed three in any one course.

3. From the Laboratories Committee, dated October 7th, reporting:

(*a*) That during the three months ending September 1st 5,730 doses of diphtheria antitoxin, each containing 3,000 units, have been supplied to the hospitals of the Metropolitan Asylums Board, making a total of 17,190,000 units.

(*b*) That during the quarter further batches of antitoxin supplied by Messrs. Parke Davis and Co. have been tested in the laboratory, and a certificate granted showing its strength, sterility, and freedom from excess of antiseptic.

4. The quarterly report of the Examiners for the Licence on the July examinations.

LIBRARY.

Books and other publications presented to the Library during the past quarter were received, and thanks returned to the donors. Amongst these was an interesting manuscript copy of the Lectures of Boerhave, presented by Dr. Payne.

THE following candidates for the College licence, having conformed to the by-laws and regulations, and passed the required examinations, were granted licences to practise physic at a meeting held October 27th:

L. A. Arnould, J. Avery, W. G. Aviss, J. H. Bankes, H. E. Barrett, T. Bates, J. F. Beale, A. R. Beaumont, J. A. Bell, A. M. Benett, C. H. Berry, A. Blanc, J. H. D. Bolton, G. H. Boyden, A. C. Brown, A. H. Burnett, J. H. Burridge, G. Carlisle, H. Chitty, S. H. Clarke, *A. P. Coker, J. Cook, D. K. Coutts, A. W. D. Coventon, G. F. Dalton, T. S. Davies, H. R. Dean, G. De la Cour, C. H. Denyer, F. L. de Verteuil, C. M. Dickinson, *G. R. Ernest, G. J. Evans, C. R. B. Eyre, R. Felton, L. C. Ferguson, A. R. Finn, W. J. Fordham, F. Forrest, C. J. Galbraith, H. Hardwick-Smith, A. E. U. Hawkes, E. C. Hayes, S. C. Hayman, T. B. Henderson, W. R. Higgins, L. Hill, J. C. L. Hingston, R. F. V. Hodge, A. H. Hudson, C. L. Isaac, B. J. F. Jackson-Taylor, F. A. G. Jeans, E. C. Johnson, G. F. Jones, O. W. Jones, A. E. Kerr, *F. C. R. M. Knight, A. E. F. Kynaston, E. B. Lathbury, G. Laurence, A. Leeming, E. Leverton-Spry, W. Lister, A. S. Littlejohns, J. Macarthur, J. McCrae, J. A. McIlroy, W. T. P. Meade-King, R. H. Miller, W. M. Mollison, W. P. Morgan, J. F. Murphy, L. E. C. Norbury, C. W. O'Brien, C. E. Palmer, N. J. Papa, C. Parker, E. W. Parry, R. N. Poignand, L. E. Price, G. H. Rees, F. Rogerson, R. M. Rowe, A. Ruete, H. G. Sievwright, J. D. Sinclair, W. H. Smailes, *G. K. Southwick, W. C. Spooner, M. Spotswood, C. M. Stevenson, H. V. Swindale, A. G. Sword, W. A. Tatchell, R. J. C. Thompson, J. Turtle, A. W. Wakefield, T. R. Waltenberg, A. C. Warren, R. G. Williams, J. K. Willis, R. A. Worthington.

* Under Regulations dated October 1st, 1884.

CONJOINT BOARD IN ENGLAND.

THE following gentlemen passed the First Examination of the Board in the subjects indicated at the quarterly meeting of the Examiners:

Chemistry.—R. B. Abraham, S. D. Adam, R. B. Adams, B. C. Brewster, S. T. Davies, C. W. Gee, W. P. Harrison, C. W. Jenner, G. B. Lucas, R. H. S. Marshall, P. D. Oakley, J. Ridge-Jones, A. L. Robinson, H. E. Scargill, L. B. Shirtliffe, D. M. Stone, and D. P. Williams.

Practical Pharmacy.—C. J. E. Bennett, H. V. Bettley-Cooke, H. A. Biden, A. C. B. Biggs, G. N. Braham, R. A. Bryden, G. F. Carr, J. Cook, D. Davies, G. D. G. Fergusson, S. C. Foster, P. J. Franklin, A. G. V. French, H. W. Goodden, W. H. S. Hodge, H. W. M. May, W. S. Mitchell, W. S. Nealor, F. M. Newton, R. G. Newton, W. T. Quinlan, A. Rhodes, F. S. Tamplin, D. Wainwright, S. M. Wells, and A. J. O. Wigmore.

Elementary Biology.—R. C. Clarke, E. P. Edwards, J. R. K. Fenning, G. R. Gallagher, A. K. Glen, F. M. Harvey, A. E. Hempleman, F. W. Hollingsworth, D. Y. Hylton, S. H. Kingston, M. J. Marks, J. J. Mullane, W. T. Quinlan, B. R. Shillitoe, S. W. Turtle, F. J. Wheeler, G. A. Williams, H. M. Williams, and R. J. Wooster.

The following gentlemen passed the Second Examination of the Board in Anatomy and Physiology at the quarterly meeting of the Examiners:

C. J. Armstrong-Dash, J. Browne, P. J. Chissell, F. Clayton, B.A.Camb.; E. A. Collins, R. B. Dawson, T. H. Edey, J. W. Featherstone, H. Gall, E. W. Gandy, B.A. Camb.; A. S. S. Goonewardene, L.M. and S. Ceylon; M. Greer, S. H. Griffiths, T. S. Harrison, J. K. A. Holm, A. E. W. Hird, F. N. S. Hitchcock, R. A. Hobbs, F. G. Hodder-Williams, T. R. L. Jones, A. V. Ledger, R. Lloyd, H. McLean, B.A.Camb.; F. Morres, H. North, E. Nuttall, J. Owen, M. D. Price, S. R. Shirgaskar, B.A.Bombay; J. A. Renshaw, E. L. Taylor, P. S. Tomlinson, H. T. Treves, B. Varvill, A. G. Wells, J. H. Wiekert, H. O. Williams, and H. F. Woods.

Passed in Anatomy only: Mr. F. H. L. Marson.

CONJOINT BOARD IN IRELAND.

THE following candidates have passed the examinations undernoted:

First Professional.—‡J. J. Barry, *A. H. T. Warnock, †S. J. Barry, †J. Brereton-Barry, †T. G. Brown, †N. M. Herbert, †L. C. Johnston, †H. G. M. Miles, †K. A. P. R. Murray, †J. McDonagh, †D. S. MacDowell, †P. Noonan, †M. C. O'Hara, †R. P. Power, †F. B. Smyth, †B. Wallace.

Second Professional.—‡J. Molyneux, ‡J. F. Walsh, ‡J. McNamara, ‡P. J. McKevett, ‡C. J. B. Dunlop, *H. C. Burbidge, *M. B. Dooley, *R. de S. B. Herrick, *A. A. Murphy, *P. J. Murray, †W. Carroll, †A. L. Clarke, †J. J. Clarke, †J. Corr, †G. A. Francis, †S. A. Furlong, †J. Holmes and J. P. O Kane, †W. R. O'Farrell, †W. A. Ryan, †J. V. Sage and G. B. Spencer, †L. D. Woods.

* Passed in all subjects. † Completed examination. ‡ With honours.

MEDICO-LEGAL AND MEDICO-ETHICAL.

PROSECUTION UNDER THE INFECTIOUS DISEASES NOTIFICATION ACT IN IRELAND.

On October 13th, about a year ago, scarlatina was rife in the district of Newtonards, co. Down, and the Urban Council adopted the Infectious Diseases Notification Act, 1889. In September, 1904, a child sickened in a public-house in Newtonards. On September 10th Dr. Robert C. Parke saw the child and suspected the onset of scarlatina; on the following day (Sunday) the diagnosis was clear and the child was promptly removed to hospital; on the morning of September 12th (Monday) Dr. Parke made out the necessary notification certificate, but by some oversight it was not delivered to the medical officer of the district till the evening. The Newtonards Urban Council summoned the mother of the child and Dr. Parke for not notifying the disease. It was alleged that he had not complied with the Act, which said that the certificate must be sent "forthwith." Dr. Parke said he considered Sunday a *dies non* with regard to the Act. The solicitor for the prosecution said that in the Act neither Sunday, nor any other day, was a *dies non*. There was no suggestion that Dr. Parke wanted to evade the law, but it was his duty to report "forthwith." The Bench said they considered Dr. Parke was in fault in not reporting the matter earlier on Monday, and he would be fined 10s. and costs.

A QUACK IMPRISONED.

On October 19th James Stewart, alias M'Kinnon, of Elgin, was charged with fraud before the Lerwick Sheriff Court. It appeared that the accused had on different occasions in different country districts of Shetland pretended that he was a medical man from Edinburgh, etc., and as such was disposing of alleged medicine and medical accessories to the work-people at cost price or half-price. Twenty-four persons had been thus imposed upon. Sheriff Moffatt commented on the serious nature of the charge. He thought the fraud was a cruel one. The prisoner was sentenced to three months' imprisonment.

LIABILITY OF SCHOOLMASTER FOR ATTENDANCE ON PUPIL.

Edina writes: A schoolboy (A.), while in the Board school playground, was hit by a stone thrown by a boy (B.). The boy was, by order of the head master, brought to me by a junior master. I tendered my account to the parents of A., who repudiated their liability, and sent it on to the parents of B. Who is the party liable?

*** It would appear that our correspondent's only claim is against the head master, if the junior master pledged the former's credit at the time. If the head master denies that he gave such instructions to the junior, and our correspondent is unable to prove that he did so, he may be unable to recover.

GRATUITOUS VACCINATION.

Delta complains that the gratuitous vaccination offered by the public vaccinator affords the latter an introduction to many households of which he takes advantage to the benefit of his private practice and to the injury of other practitioners in the neighbourhood. "Delta" wishes to know whether it would be a breach of professional etiquette to offer free vaccination to his own patients.

*** Although there would be nothing improper in a practitioner offering to vaccinate his patients without charge, we hesitate to advise "Delta" to do anything which would look like underselling, and we should therefore recommend him to bring the matter before the local Division of the British Medical Association, and to consult with his colleagues as to the best course to adopt. We appreciate the difficulty, and have already expressed the opinion that a public vaccinator should not take unfair advantage of the opportunities afforded him by his appointment.

Southend.—We cannot say that "C." is not at liberty to vaccinate his own patients free of charge if he chooses to do so.

PURCHASE OF A PRACTICE.

D.M.M. writes that some years ago he purchased a practice, but that he has never been able to obtain his predecessor's books from the latter's executors. He has just paid the last instalment of the purchase money. Can he compel the delivery of these books?

*** Unless it was otherwise agreed in the deed of sale, the purchaser has no claim to the vendor's books, unless at the time he purchased the practice he also bought the book debts. Then he can only claim to take such extracts as may be necessary to recover the book debts.

A correspondent asks: (1) What is the usual basis of the valuation of a practice? (2) In admitting a junior partner to a fourth share, is it customary to start with clean books, or should—presuming that two years' purchase be paid—the proportion of all outstanding book debts and contents of surgery be included?

*** (1) The gross annual receipts of the practice. (2) An incoming partner has nothing to do with the book debts of the practice at the time of his joining, unless he has specially paid for a share in them. It is usual for him to pay an extra sum for a share of the contents of the surgery.

MEDICAL ETIQUETTE.

Verax.—(1) "A." is bound to accept the statement made to him or to ask Mr. R. what occurred, and be guided by his reply. Assuming the statement to be correct, he should treat the case as one in which he acted as a substitute, but he may retain half the fee. (2) "Verax" should have explained all the circumstances to "A." and obtained his consent before he took over the case. The existence of friendly relations rendered this course the more necessary, as "A." would naturally expect his friend to be unwilling to supersede him, and feel a little sore at what happened.

ORGANIZED QUACKERY.

Mr. Haydn Brown writes to complain of the success of various establishments for electric and other treatment run by quacks, while, he says, sanatoriums under regular medical practitioners struggle hard to pay their expenses. He suggests no remedy for this state of things, but asks whether it is not time that the profession made a plain examination of itself?

*** We believe that a society for the suppression of quackery, to include laymen as well as medical practitioners, such as exists in Germany, would be a powerful means of educating public opinion in the direction needed to render possible those changes in the law by which the growth of quackery may be checked.

THE ADVERTISING OF HYDROPATHIC ESTABLISHMENTS.

F. H. Worswick.—The advertisement to which our attention has been drawn has already been before the Ethical Committee (Supplement to the British Medical Journal, November 5th, 1904, p. 165). We will refer the case to that Committee.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Staff Surgeon T. E. Honey, M.D., is placed on the retired list, October 26th. He was appointed Surgeon, May 11th, 1892, and made Staff Surgeon May 11th, 1900.

The appointment of Staff Surgeon T. D. Halahan to the *Scylla* has been cancelled.

The following appointments have been made at the Admiralty: Alastair F. Mackay, M.B., Surgeon, to the *Royal Oak*, undated; Frederick C. Robinson, Surgeon, to the *Hogue*, on commissioning, October 27th, and to the *Widgeon*, on commissioning, undated; Frank Bradshaw, Staff Surgeon, and Charles J. E. Cock, Surgeon, to the *Sutlej*, October 29th; Alfred Woollcombe, Surgeon, to the *Fire Queen*, to be lent to the *Terrible* till she pays off; James C. Bringan, M.B., Surgeon, to the *Leander*, October 29th.

Deputy Inspector-General William Ross, M.D., died at Balham on October 31st, aged 81. He entered the service as Surgeon, July 3rd, 1845; become Staff Surgeon, January 26th, 1855; Fleet Surgeon, April 26th, 1868; and Deputy Inspector-General on retirement, April 1st, 1881. From the *Royal Navy List* we learn that as Assistant Surgeon of the *Calliope* in New Zealand he was present at the attack and capture of Ruapekapeka (Kawiti's) Pah, in the Bay of Islands; action in the Horokiwi Valley, and the various other engagements in the New Zealand war of 1846, 1847, and 1848 (New Zealand medal); Assistant Surgeon of the *Virago* in Pacific, at the capture of Chilian pirates in the Straits of Magellan in 1851; and in 1853 in medical charge of exploring expeditions across the Isthmus of Darien, from the Pacific to the Atlantic; and subsequently in the search for, and relieving from impending peril, the lost United States Exploring Expedition, from the Atlantic to Darien Habour, under the command of Lieutenant Strain, of United States navy, for which received, through the British Minister at Washington, the thanks of the United States Navy Department. During Russian war, in 1854, he was present at the bombardment of the batteries of Petropaulovski in Kamschatka, by combined English and French squadron, and afterwards landed there in the attack on that settlement. Served as Surgeon in the *Vesuvius* in the Black Sea and Sea of Azof, in 1855; and in 1857 and in 1858 in the *Assurance*; in India and Burmah during the Indian Mutiny. He was in receipt of a Greenwich Hospital Pension, granted him in 1895.

ROYAL NAVAL VOLUNTEER RESERVE.

Mr. A. D. Cowburn, M.R.C.S., L.R.C.P., D.P.H., has been appointed Surgeon in the Royal Naval Volunteer Reserve, and attached to the London Division, October 28th.

THE OPERATIONS IN NIGERIA.

The *London Gazette* of October 28th publishes dispatches from Sir F. J. D. Lugard, High Commissioner Northern Nigeria, from Mr. L. Probyn, Acting High Commissioner Southern Nigeria, and others, relating to military operations in Nigeria in 1902-3. The task undertaken by the troops is detailed, and the names of some officers are specially brought to notice, but no medical officer is mentioned. Mr. Probyn, however, in his dispatch from Old Calabar, dated August 21st, 1903, says: "Credit is due to the medical officers engaged in the above operations [in Southern Nigeria between July 7th, 1902, and June, 1903], and the efficiency of the medical aid rendered reflects very favourably on the administration of the medical department."

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,651 births and 4,383 deaths were registered during the week ending Saturday last, October 29th. The annual rate of mortality in these towns, which had been 15.1, 15.2, and 15.9 per 1,000 in the three preceding weeks, declined again last week to 15.0 per 1,000. The rates in the several towns ranged from 6.4 in Hornsey, 7.0 in Barrow-in-Furness, 7.3 in Newport (Mon.), 8.0 in Burton-on-Trent, 8.5 in West Bromwich, 8.6 in King's Norton, 8.9 in Leyton, 9.1 in Derby, and 9.3 in Southampton, to 19.0 in Great Yarmouth, 19.6 in Hanley, 20.1 in Rochdale, 20.2 in Grimsby, 20.3 in Liverpool, 20.7 in Sunderland, and 21.5 in Merthyr Tydfil. In London the rate of mortality was 14.7 per 1,000, while it averaged 15.1 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.3 per 1,000 in the seventy-six towns; in London this death-rate was equal to 0.9 per 1,000, while in the seventy-five other large towns the rates ranged upwards to 3.2 in Preston and in York, 3.4 in Salford, 3.5 in Liverpool, 3.8 in Middlesbrough, 4.0 in Walsall, 4.1 in Plymouth, and 7.0 in Grimsby.

Measles caused a death-rate of 1.4 in Devonport, 1.5 in Ipswich, 1.6 in Salford, 1.7 in Bootle, 1.8 in Plymouth and in Liverpool, 2.0 in Tynemouth, 3.4 in Walsall, and 5.5 in Grimsby; scarlet fever of 1.4 in Plymouth: diphtheria of 1.1 in Northampton and 2.2 in Swansea; "fever" of 1.1 in Stockport, and 1.2 in Blackburn; and diarrhoea of 1.1 in Sheffield, 1.4 in Hull, 1.5 in Oldham, 2.2 in Middlesbrough, and 2.3 in West Hartlepool. The mortality from whooping-cough showed no marked excess in any of the large towns. Two fatal cases of small-pox were registered in Oldham and 1 in Preston, but none in any other of the large towns. The Metropolitan Asylums Hospitals contained only 1 case of small-pox at the end of last week, and no new case had been admitted during the week. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,341, 2,516, and 2,687 on the three preceding Saturdays, had further risen to 2,725 on Saturday last, October 29th; 365 new cases were admitted during the week, against 409, 377, and 389 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, October 29th, 951 births and 554 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 15.1, 15.8, and 16.5 per 1,000 in the three preceding weeks, further rose to 16.7 per 1,000 last week, and was 1.7 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 12.3 in Perth and 15.6 in Dundee, to 19.4 in Leith and 23.0 in Paisley. The death-rate from the principal infectious diseases in these towns averaged 1.9 per 1,000, the highest rates being recorded in Aberdeen and Greenock. The 247 deaths registered in Glasgow included 8 which were referred to whooping-cough, 2 to "fever," and 17 to diarrhoea. Three fatal cases of whooping-cough and 4 of diarrhoea were recorded in Edinburgh. Three deaths from diarrhoea occurred in Dundee; 3 from measles and 2 from diarrhoea in Aberdeen; 2 from diarrhoea in Leith; and 2 from whooping-cough and 2 from "fever" in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, October 29th, 502 births and 352 deaths were registered in six of the principal Irish towns, against 565 births and 362 deaths in the preceding period. The mean annual death-rate of these towns, which had been 15.6, 16.8, and 17.6 per 1,000 in the three preceding weeks, rose to 21.8 per 1,000 in the week under notice, this figure being 6.8 per 1,000 higher than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 18.2 in Belfast and 18.5 in Cork, to 25.2 in Londonderry and 26.0 in Limerick. The zymotic death-rate during the same period and in the same six Irish towns averaged 1.6 per 1,000, or 0.9 higher than during the preceding period, the highest figure, 3.2, being recorded in Belfast, while Londonderry registered no deaths under this heading at all. The principal causes of death in diseases of this class were diarrhoeal disease and enteric fever, no deaths anywhere being ascribed to small-pox or simple continued fever; from measles there were 8 deaths altogether, and 3 from scarlet fever, 4 from whooping-cough, and 1 from diphtheria.

SANITARY INSPECTORS' EXAMINATION BOARD.

THE next examination of the Sanitary Inspectors' Examination Board will be held on Tuesday, January 17th, 1905, and the four following days. Particulars can be obtained from the Honorary Secretary, The Sanitary Inspectors' Examination Board, 1, Adelaide Buildings, London Bridge, E.C.

THE RELATIONS OF MEDICAL OFFICERS OF HEALTH WITH THEIR PROFESSIONAL COLLEAGUES.

DR. M. ARDEN MESSITER, President, Medical Defence Union (Cappoly, Dudley), writes: In view of the opinions expressed by the medical press generally of late on the questions submitted to them in connexion with visits of certain medical officers of health to the patients of other practitioners without first obtaining their consent, or in any way communicating with them, it is, I am sure you will agree with me, advisable to publish the enclosed, which clearly lays down the wish of the Local Government Board that the ordinary professional usages shall be adopted by their officials. Some few years ago the BRITISH MEDICAL JOURNAL adopted this view, and published it in connexion with a case in this district at Upper Gornal, and I cannot quite see why any doubt has existed as to its correctness.

October 20th, 1904.

[Copy.]

Sir,—I am directed by the Local Government Board to advert to your letter of the 22nd ult. relative to the complaint made by Dr. W. A. Davidson as to the proceedings of Mr. W. C. Collier, the M.O.H. for the Borough of Hammersmith.

The Board direct me to state that they have not by any order explicitly or otherwise made it the duty of the M.O.H. to make a personal examination of cases of infectious diseases notified to him under the provisions of the Infectious Diseases Notification Act in order to test the accuracy of the certificate; nor have they laid down any regulations as to the procedure to be adopted by the M.O.H. when making such examination; indeed, in the great majority of notified cases of infectious disease it appears to the Board to be both unnecessary and undesirable that a medical officer of health should make such examinations.

Special cases may, however, arise from time to time—as when the disease is suspected to be one which would threaten serious danger to the community or where the attendant circumstances might call for exceptional action—in which it is desirable that the M.O.H., in order to be better able to advise his Council, should make a personal examination of the patient. A notified case of chicken-pox in an adult or adolescent, or occurring under circumstances favouring the spread of infection, is an instance in point, many outbreaks of small-pox having originated in cases at first mistaken for chicken-pox.

Indeed, it is for the purpose of facilitating the detection of such unrecognized cases of small-pox that chicken-pox has in many districts been made compulsorily notifiable during the recent prevalence of small-pox. In this connexion I am to remind the Borough Council of the Board's circular of December 27th, 1901.

It must, however, be remembered that a personal examination can only be made with the consent of the patient, or of those having charge of the patient, and it is desirable that the medical practitioner in charge of the patient should always be communicated with, and that his co-operation should be secured where it is possible to do so without causing undue delay.

The Board would point out the importance of exercising tact and discretion where a reconsideration of the diagnosis upon which the notification of the case has been based may be advised.

The Board request that the Borough Council will be good enough to communicate these views to the M.O.H.

I am, Sir,
Your obedient Servant,
(Signed) NOEL T. KERSHAW,
Assistant Secretary.

[Copy.]

Local Government Board,
Whitehall, S.W.,
October 17th, 1904.

Sir,—I am desired by the Local Government Board to advert to your letters of the 4th inst., forwarding a copy of a letter addressed to the Rural District Council of Headington by Dr. C. Coles in reference to his action as M.O.H. in the cases complained of by Mr. F. G. C. Houghton.

The Board direct me to state that without expressing an opinion on the dispute in question between Dr. Coles and Mr. Houghton, it appears to them to be both unnecessary and undesirable that a M.O.H. should in general make a personal examination of cases of infectious disease notified to him under the provisions of the Infectious Diseases Notification Act, 1889, in order to test the accuracy of the certificates. In any special case, as where the disease which has been notified is one which would threaten unusual danger to the community, or where the attendant circumstances might call for exceptional action, the M.O.H., in order to be better able to advise his Council, deems it desirable that he should make a personal examination of the patient. It must be remembered that this can only be done with the consent of the patient or those in charge of him. In any circumstances the medical practitioner in charge of the case *should always be communicated with* and his co-operation secured if possible.

The Board request that the District Council will inform Dr. Coles of the view expressed above.

Your obedient servant,
(Signed) JNO. LITHBY,
Assistant Secretary.

J. W. Snellam, Esq., Clerk to the Rural District Council, Headington.

DUTIES OF SANITARY INSPECTOR IN INFECTIOUS CASES.

A M.O.H. is often compelled to delegate most of his inquiries into cases of infectious disease to his sanitary inspector, whose duty it is to inquire into the sanitary conditions of the house, etc., and also generally, into possible channels of infection. The inspector has no "right" to see the patient, and certainly it is not his duty to examine the patient or prescribe treatment. Nor is it his duty to require the medical attendant to fill up any disinfection forms, though it is his business to consult the convenience and wishes of the medical attendant respecting disinfection. The only "certificate" the local sanitary authority can require is the notification certificate.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM CITY ASYLUM, Ruberry Hill.—Junior Assistant Medical Officer. Salary, £150 per annum.

BIRMINGHAM EAR AND THROAT HOSPITAL.—Honorary Anaesthetist.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—House-Physician, resident. Salary, £60 per annum.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road.—Registrar

CIRENCESTER UNION.—Medical Officer for the North District.

DERBY COUNTY ASYLUM, Mickleover.—Junior Assistant Medical Officer. Salary £125 per annum, rising to £140.

LEAMINGTON: WARNEFORD HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

LEICESTER INFIRMARY.—House-Surgeon, resident. Salary, £100 per annum.

LINCOLN: BRACEBRIDGE ASYLUM.—Junior Assistant Medical Officer, resident. Salary, £125 per annum.

LIVERPOOL: STANLEY HOSPITAL.—Honorary Anaesthetist.

MANCHESTER: ST. MARY'S HOSPITAL.—House-Surgeon and Resident Obstetric Assistant Surgeon. Salary, £100 per annum.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—Surgeon

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—House-Physician, resident. Salary, £50 per annum.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, E.—(1) House-Surgeon; (2) House-Physician. Appointments for six months. Salary at the rate of £60 per annum each.

NOTTINGHAM CHILDREN'S HOSPITAL.—House-Surgeon, resident. Salary at the rate of £100 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer. Salary, £100 per annum.

PORTSMOUTH: ROYAL PORTSMOUTH HOSPITAL.—Senior House-Surgeon, resident. Salary, £100 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Assistant Physician.

SALISBURY: FISHERTON HOUSE ASYLUM.—Medical Superintendent. Salary, £400 per annum, rising to £500.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House-Surgeon, resident. Salary, £70 per annum.

APPOINTMENTS.

BABER, H. A., M.R.C.S. Eng., L.S.A., District Medical Officer of the Tavistock Union.

BROCKBANK, E. M., M.D., M.R.C.P., Junior Physician to the Manchester Children's Hospital.

BUCHANAN, P. S., M.B., etc., in charge of the Midwifery Outdoor Department of the Glasgow Public Dispensary.

BURNEY, C. D. Francis, M.R.C.S., L.R.C.P., Divisional Surgeon to the "R" Division, Metropolitan Police (Deptford), and Divisional Surgeon to the Deptford Victualling Yard Section of the Woolwich Division.

DAVISON, W. H., M.B., B.S., Resident Assistant Medical Officer, Aston Union Workhouse.

GIBBS SMITH, E. G., L.R.C.P., L.S.A., D.P.H., Aural Assistant, Throat, Nose, and Ear Department, London Hospital.

LAYCOCK, J. A., L.R.C.P.I., L.M., District Medical Officer of the Burnley Union.

MATHEWS, F. E., L.R.C.P., M.R.C.S., District and Workhouse Medical Officer of the Nantwich Union.

MELLAND, Charles H., M.D. Lond., M.R.C.P., Assistant Physician for Children to the Northern Hospital, Manchester.

NAIRN, A. Balfour, L.R.C.P.S. Edin., L.S.P.F. Glasg., Pathologist and Assistant Medical Officer to the West Riding Asylum, Wakefield.

ROBERTS, T., M.B., C.M.Edin., Medical Officer of the Workhouse of the Carnarvon Union.

ROTHWELL, W. E., M.B., B.S.Vict., Junior Resident Medical Officer, Crumpsall Workhouse, Manchester.

TAYLOR, E. Graham, M.B., etc., to the Gynaecological Department of the Glasgow Public Dispensary.

TELFORD, E. D., M.A., F.R.C.S., L.R.C.P., Junior Surgeon to the Manchester Children's Hospital and Dispensary.

TOVEY, Arthur H., L.R.C.P., M.R.C.S., House-Physician to the General Lying-in Hospital, Lambeth, S.E.

VINTER, C. H. S., M.R.C.S., L.R.C.P., District Medical Officer and Public Vaccinator for the Blackpool South District.

WHITEHOUSE, A. Landon, M.R.C.S., L.R.C.P., L.D.S.Eng., Junior Demonstrator, Royal Dental Hospital of London.

GLASGOW ROYAL INFIRMARY.—The following appointments have been made for six months:

Resident Physicians.—Patterson, James B., L.R.C.P. and S.Glasg., to Dr. McVail; Blyth, R. C., L.R.C.P. and S.Edin., to Dr. Middleton; Wildish, George H., M.B., Ch.B.Glasg., to Dr. Steven; Connol, Andrew, M.B., Ch.B.Glasg., to Dr. Munro; Coutts, E. N., M.B.Toronto, L.R.C.P. and S.Edin., to Dr. Allan.

Resident Surgeons.—Stewart, John R., M.B., Ch.B.Glasg. (Senior), to Dr. Barlow; MacPhail, D. H., M.B., Ch.B.Glasg., to Dr. Clark; McVail, J. Roy, M.B., Ch.B.Glasg., to Dr. Knox; Neilson, George C., M.B., Ch.B.Glasg., to Dr. Adams; Patrick, Howard H., M.B.Ch.B.Glasg., to Dr. Newman; Lochrane, Charles D., M.B., Ch.B.Edin., to Mr. Pringle; McCallum, John D., M.A., M.B., Ch.B.Glasg., to Dr. McLennan; Fulton, Hugh H., M.B., Ch.B.Glasg., Resident Casualty Surgeon; Martin, Anna P., M.B., Ch.B.Glasg., to Dr. Kelly; Hutton, Malcolm, M.A., B.Sc., Ch.B.Glasg., to Dr. Ramsay.

DIARY FOR NEXT WEEK.

TUESDAY.

Royal Medical and Chirurgical Society, 20, Hanover Square, W., 8.30 p.m.—William Thorburn, M.D.: The Seventh Cervical Rib, and its effects upon the Brachial Plexus. G. Newton Pitt, M.D.: Two Cases of Fungating Endocarditis, followed by convalescence.

WEDNESDAY.

Dermatological Society of London, 11, Chandos Street, Cavendish Square, W., 5.15 p.m.—Demonstration of cases of interest.

Hunterian Society, London Institution, Finsbury Circus, E.C., at 9 p.m.—Dr. Rose Bradford: The Treatment of Bright's Disease.

South-West London Medical Society, Bolingbroke Hospital, Wandsworth Common, 9 p.m. Dr. W. W. H. Tate: The Diagnosis and Treatment of Tubal Gestation in the Early Weeks.

THURSDAY.

British Gynaecological Society, 20, Hanover Square, W., 8 p.m.—Dr. Macnaughton-Jones: Embedded Adnexa, Carcinoma of the Fallopian Tube, Haemorrhagic Endometritis. Dr. Bedford Fenwick: Uterine Fibroids associated with Ovarian Disease. Mr. Christopher Martin: The Treatment of Severe Prolapse by Extirpation of the Uterus and Vagina (adjourned discussion).

Ophthalmological Society of the United Kingdom, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Mr. Simeon Snell: On an Intraocular Tumour covering the Optic Disc. Hard specimens will be shown at 8 p.m.

The Childhood Society, Sanitary Institute, 72, Margaret Street, at 8 p.m.—Dr. T. B. Hyslop: Mental Hygiene in Childhood. Sir J. Crichton Browne in the chair.

FRIDAY.

Clinical Society of London, 20, Hanover Square, W., 8.30 p.m.—Papers: Mr. Ch. R. Keyser: A Case of Congenital Elevation of the Scapula. Dr. Ph. D. Turner and Mr. Raymond Johnson: Traumatic Axillary Aneurysm successfully treated after Extravasation had occurred by Proximal Ligature. Mr. Betham Robinson and Mr. Edred M. Corner: Aneurysm of the Intracranial Part of the Left Internal Carotid caused by a Bullet Wound through the Right Eye. Mr. Stephen Paget: A Case of Appendix Abscess followed by Abscess in the Left Iliac Region.

POST-GRADUATE COURSES AND LECTURES.

Central London Throat and Ear Hospital.—Wednesday, 5 p.m.: Practical Demonstration on the Nasc-Pharynx.

Charing Cross Hospital, Thursday, 4 p.m.—Surgical Cases.

Hospital for Consumption and Diseases of the Chest, Brompton, Wednesday, 4 p.m.—Venesection in Disorders of the Circulation.

Hospital for Sick Children, Great Ormond Street, W.C.—Thursday, 4 p.m.: Diseases of the Testis of the Child.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C. — The following clinical demonstrations have been arranged for next week at 4 p.m.: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Throat. Lectures will be delivered at 5.15 p.m. as follows: Monday, Plastic Surgery; Tuesday, Illustrations of Disease Affecting the Nasal Sinuses; Wednesday, Injuries to and Diseases of Joints; Thursday, The General Management and Special Methods of Treatment of Heart Cases.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Central Out-patient Department, 7, Fitzroy Square, W.—Thursday, 5 p.m., Aortic Aneurysm (illustrated by cases).

National Hospital for Paralysed and Epileptic, Queen Square, Bloomsbury.—Tuesday, 3.30 p.m., Cerebral Surgery; Friday, 3.30 p.m., Cases in the Wards.

North-East London Post-Graduate College, Tottenham Hospital, N.—Wednesday, 2.30 p.m. (North-Eastern Fever Hospital, St. Ann's Road). Demonstration on Fevers. Thursday, 4.30 p.m., Middle Ear Catarrh.

Post-Graduate College, West London Hospital, Hammersmith Road, W., at 5 p.m. each day.—Monday, Investigation of Severe Cases of Gastric Disorder. Tuesday, Is Glaucoma a Neurosis? Wednesday, Practical Medicine. Thursday, Nephritis. Friday, Disposal of Refuse.

Samaritan Free Hospital for Women, Marylebone Road, N.W.—Thursday, 3 p.m., Gonorrhoea in Women.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

HOWIE.—On October 19th, at 6, Hope Park Crescent, Edinburgh, the wife of John M. Bowie, M.D., F.R.C.S.E., M.R.C.P.E., of a daughter.

MILLIGAN.—At 104, Bethune Road, N., on October 27th, the wife of W. Anstruther Milligan, M.A., F.R.C.S.Edin., of a son.

DEATH.

POWER.—On 29th ult., at Hucknall Torkard, George Edward Power, M.R.C.S., aged 55.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):— EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

T. J. C. would like to know if any member has ever treated an acute dermatitis spread over the whole surface of the body and caused by the use of metol as a developer in photography.

D. asks for suggestion as to the treatment and pathology of a case of obstinate tingling of the skin in a woman aged 62. The arms and face are chiefly affected. It varies in severity, and after a bad attack the fingers become swollen and somewhat discoloured.

EYESIGHT OF SCHOOL CHILDREN.

IGNORANT writes: The Education Committee in a certain town has control of 36 schools. The average total daily attendance of all grades (infants, girls, and boys) at these schools is 20,043. The Committee has asked me, as an ophthalmic surgeon, at what rate per child I would at my own house examine as to the presence or not of eye disease or refractive error in those cases in which the teachers may have noticed the children appear to have difficulty in seeing well. The examination is merely to report as to whether they really have eye trouble or not, not in any way to undertake ordering of glasses or treatment of any kind. What would be a reasonable fee?

*** Many difficulties may crop up if our correspondent undertakes to see children at his house under the conditions he mentions. The school authorities have no power to ensure attendance, very many cases will refuse to visit him, and he will lay himself open to numerous imagined grievances on the part of others who do attend. The proper way for the Education Authority to act is to appoint medical men to visit the schools and superintend the work. The oversight of vision is a comparatively small part of such work. If this cannot be done, our correspondent would be well advised to suggest that he would undertake the general supervision of the schools as regards eyesight and visual conditions. It involves more than saying whether eyes are diseased or not; he should see the children selected by the teachers, and know what the school conditions are. For such work in 36 schools with an attendance of 20,000 a remuneration of £100 per annum would not be excessive.

ANSWERS.

COTSWOLD.—We know nothing of the substance mentioned; it is impossible to make any preparation in the form of a powder which will possess the properties described.

A. T.—The following recent books may be recommended: Swanzy's *Handbook of Diseases of the Eye*, eighth edition (London: H. K. Lewis, 1903. 12s. 6d.), would meet our correspondent's requirements. Fuchs's *Textbook of Ophthalmology*, second edition (London: H. K. Lewis, 1899. 21s.), is excellent but very advanced. Lawson's *Injuries and Diseases of the Eye*, sixth edition (London: Smith, Elder and Co., 1903. 15s.), is a most attractive volume and quite up to date.

MANAGEMENT OF SCARLET FEVER CONVALESCENTS.

IT is the practice in all the fever hospitals in London not only to allow children in the peeling stage of scarlet fever to be out of bed but also to let them go out in the open air in fine weather. They are, in fact, frequently transferred from the acute to the convalescent hospitals in that stage. The time when a patient should be allowed to get up and, later, to go out-of doors, depends on the severity of the attack and the presence or absence of complications, and not on the peeling.

LETTERS, NOTES, Etc.

THE PRESENT POSITION OF ASEPTIC SURGERY.

AN ERRATUM.—Mr. John D. Malcolm (London, W.) writes: May I point out that in the last issue of the BRITISH MEDICAL JOURNAL, p. 1193, 2nd column, line 33, the words, "This asepsis, if it can," etc., should have been "This, if asepsis, can be effectually secured by other means, is merely a modification of Lister's treatment." "This" refers to the disuse of chemical solutions as lotions for raw surfaces.

CHLOROFORM BOTTLES.

DR. S. W. SUTTON (Dharmsala, Punjab) writes: In the BRITISH MEDICAL JOURNAL of September 24th I see that Mr. McCardie at the recent meeting at Oxford said, "It would be of great advantage also could an

unbreakable chloroform bottle be devised." Could the bottle not be made of toughened glass, as many tumblers are? I remember how in a certain shop I once expressed some doubt as to whether such tumblers really were unbreakable, whereupon the salesman deliberately let one fall from a height of about 4 ft. on to a brick floor, and it did not break. Toughened glass is excellent for use in camp.

MEDICAL CHARITIES.

VINDEX writes: Sir William Broadbent's letter on behalf of the British Medical Benevolent Fund appeared just at the time of the recent French medical invasion, and may therefore have been overlooked by many of your readers. Allow me to call attention to the recently published lists of subscriptions for the entertainment of our French *confrères*, which yield the following results on analysis: Two hundred and forty practitioners subscribed 2 guineas each, and the majority made themselves liable for another 2 guineas should they be needed. Of these 240 London practitioners only 68 are subscribers to the British Medical Benevolent Fund and 98 are subscribers to Epsom College. Comment is not necessary, but it may be fairly suggested that the guaranteed guineas, which I understand will not be wanted, should be divided between the two medical charities.

DISPENSING BY MEDICAL MEN.

M.D. writes: Dr. B. G. Morison suggests that incorrect dispensing by chemists is of rare occurence in these days. It may interest him to know that quite recently I had occasion to prescribe for my wife a mixture containing nux vomica, infusion of gentian, and glycerine, which was made up by a neighbouring chemist. The first bottle appeared to contain the drugs I had ordered, but the second smelt and tasted strongly of tincture of orange, and had quite a different appearance from the first bottle. Whether the orange was substituted for the nux vomica or for the gentian I cannot say, but the mixture was certainly not in accordance with my prescription, and accordingly the next bottle was obtained from a more reliable source. The temptation to a chemist whose stock of one drug is exhausted to substitute another is doubtless very strong, and the percentage of cases in which such substitution would be detected is infinitesimal; but that such substitution does occur there can, I think, be no doubt, and general practitioners would be wiser to do their own dispensing, even in the large towns, unless they can send their patients to a chemist who eschews counter-prescribing and the pushing of patent medicines, and relies for his livelihood on the more legitimate functions of a pharmaceutist. I may add that I am not engaged in private practice, so that my opportunities of observing such instances of substitution are limited to their occurrence in my own family.

THINGS ONE WOULD RATHER HAVE SAID OTHERWISE.

As an example of "things one would rather have said otherwise," we have seen nothing better than a statement attributed to Dr. W. W. Keen, of Philadelphia, to the effect that what Japan is doing in war she is doing in medicine. This remarkable utterance is said to be contained in a letter about the Japanese exhibit at St. Louis. Apparently it is intended to be laudatory. Fortunately, Japanese medicine is not so murderous as Dr. Keen's ambiguous compliment might be taken to imply. Another amusing instance of curious infelicity of expression also comes from America. A medical practitioner of San Francisco recently certified to the Board of Fire Commissioners that one of the firemen "will be unable to perform any physical duty while he is taking my treatment." The Commissioners not unnaturally suggested that it would be well to discontinue the treatment at once.

CAUGHT IN HIS OWN TRAP.

A GERMAN physician not long ago received through the post a box containing 150 cigars with a bill for 15 marks. The enterprising tradesman who forwarded the goods sent an explanatory letter to the following effect: "Although you have not ordered these cigars, I take the liberty of sending them, feeling sure that you will find them excellent." The doctor tried the cigars, and, finding them to his taste smoked them with a contented conscience. When he had finished the box he sent the tobacconist five prescriptions at 3 marks each, with the following letter: "Although you have not asked for my professional advice, I take the liberty of sending you these prescriptions, feeling sure that you will find them excellent." What the worthy tradesman said is not stated, but probably the recording angel had some heavy entries to make on the debit side of his account.

LETTERS, COMMUNICATIONS, ETC., have been received from:

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THE

Fitz Patrick Lectures for 1904.

DELIVERED IN THE ROYAL COLLEGE OF PHYSICIANS, NOVEMBER 8TH AND 10TH.

By JOSEPH FRANK PAYNE, M.D.,
Fellow and Harveian Librarian.

Lecture I.

ENGLISH MEDICINE IN THE ANGLO-NORMAN PERIOD.

[Abstract.]

In my lectures last year I endeavoured to put together the scanty notices we possess respecting the state of medicine and the medical profession under the rule of the Anglo-Saxon kings, and especially the characteristics of that English vernacular medical literature which forms so striking an episode in the barren and degenerate medicine of the Dark Ages.

We have now to consider what changes English medicine underwent after the rule of the Normans was substituted for Anglo-Saxons.

As I have already shown, the old English medicine disappeared, not immediately, but in the end completely. We have now to inquire what came in its place. First I must emphasize the statement that the Norman Conquest, even if it modified the practice of medicine and the social relations of the medical profession, added nothing to medical science in England. There was no question of a higher culture taking the place of a lower, or deep scientific knowledge superseding what was superficial.

How far the same conclusions can be drawn with respect to general learning and literature as I have drawn with respect to medicine I am quite incompetent to judge; but I will quote a high authority, and one not swayed by national prejudice, the eminent German historian of England—Lappenberg.[1] Speaking of the decay of old English learning and literature after the Conquest, he says:

> The collective fruits of the intellectual exertions and experience of the Anglo-Saxon race, contained in a literature richer than that of any of their Germanic brethren, either in expressive prose, or in artistically constructed alliterative rhythmical poetry, the wisdom of hoar antiquity, all the learning, every animating warning, and exhilarating example in national tradition, became lost to the people. Such a loss we should deplore, even if it had been supplanted by something nobler and better. But that which the Normans brought with them was certainly far from being an equivalent, even in point of mere learning.

This judgement gives a wider extension to the conclusions at which I arrived with respect to medicine. The Norman Conquest did nothing to assist, though it did not arrest, the progress of medicine. The old English medical literature continued to be productive, as I have said, for nearly a century after the Conquest, and during this period we find no trace of any Anglo-Norman medical literature. It is not till the second century after the Conquest that we have a true representative of Anglo-Norman medicine — Gilbertus Anglicus—of whom I shall have to speak, the first English physician to acquire Continental reputation. In what respects he differed from the Anglo-Saxon physicians, and what was the cause of these differences, will be considered later.

Although the Norman Conquest did not assist the progress of medical science in England it introduced considerable changes in the social position of the medical profession. It is clear that the Norman aristocracy, not speaking or understanding English, could make no use of the old Saxon leeches, even had they not despised them too much. They must have required physicians speaking their own language, and thus we find the names of several Normans occupying the post of physician to the king or the great nobles. These physicians were exclusively clerical, and were often promoted to high offices in the Church. Among the Anglo-Saxons we do not find mention of high ecclesiastics as themselves leeches, or of leeches reaching high ecclesiastical rank, though they must have been, at least in later times, mostly clerical persons.

But a change began, as I said before, with Edward the Confessor, who took for his physician a Norman monk, Baldwin, afterwards Abbot of Bury St. Edmunds, and Physician also to William the Conqueror. Under the Norman kings there are several instances of Norman or French physicians who became the trusted advisers of kings or nobles, and were promoted to be bishops and deans. The practice of the English leeches must at this time have been confined to the lower and middle classes who spoke English.

There was another difference between the old English and the Norman physicians which gradually gave the latter a great superiority—namely, that the Normans were educated abroad, as there was no real school of medicine in England; though there is some evidence that medicine was studied in the University of Oxford before 1200, and some medical teaching has been, without good grounds, attributed to Jewish physicians.

All physicians of whom we know anything went to Salerno or, later, to Montpellier for their medical training. The Normans had several bonds of connexion, direct and indirect, with Salerno, which was one of the chief seats of Norman rule in Italy. The most celebrated production of the school of Salerno, the *Regimen Sanitatis*, was written for a king of England, generally supposed to mean Robert, eldest son of the Conqueror, who claimed to be, though he never was, king of England, and who spent some time under the care of the doctors of Salerno on his return from Palestine in 1099. The travels of a Norman noble, Rodolphus Mala Corona, led him in 1049 to Salerno, where he disputed on medicine with a learned matron, supposed to have been Trotula, writer of a treatise which still survives.

Again, as I showed in my former lectures, the one book which connects Anglo-Saxon medicine with the school of Salerno, the treatise *Peri Didaxeon*, founded on a work of Petrocellus, was not written till more than half a century after the Norman Conquest.

It was natural, therefore, for Norman doctors to study at Salerno. But the studies at Salerno itself had materially changed since the days of Petrocellus, that master of the eleventh century who was the only Salernitan author known to the Anglo-Saxons. The old traditional medicine, derived by obscure channels from the Greeks, was metamorphosed, if we ought not to say superseded, by the medicine of the Arabians, brought nearer to Europe after the Mohammedan conquest of Spain.

By the industry of scholars who knew something of Arabic—first of all by the monk Constantine—many of the medical books of the Saracens were translated from Arabic into Latin. These medical books were partly the work of Arabian writers, partly—and herein lay their great significance—Arabic versions of the classical Greek medical writers—Hippocrates, Galen, and others—who were lost or forgotten in Western Europe. Moreover, the works of the Arabians themselves were almost entirely based on those of the Greek authors, so that in effect the translation of the Arabic books meant the introduction, or rather the reintroduction, into Europe of the old Greek medicine, in a corrupt form and in barbarous language, but incomparably more copious than the scanty relics of Greek and Roman medicine with which the Anglo-Saxons and their contemporaries had to content themselves. The revolution thus effected in European medicine was rapid and decisive. The Arabian version of Greek medicine dominated European thought for some four centuries or more, till at the epoch of the Renaissance, by a purer version of Greek medicine and a revival of the best Latin authors, the Arabian school was in its turn dethroned.

Though it is impossible to speak at length about the Arabian-Greek medicine which was now invading Europe, some of its strong and its weak points may be indicated.

The Arabian books and versions of the old Greek books which accompanied them comprised a body of knowledge and experience far beyond what was furnished by the late Latin and Greek authors on whom the Anglo-Saxons and others in the Dark Ages depended. Next, it was a great merit of the Arabian physicians that they banished the supernatural from medicine; they were not dealers in charms, and there is nothing in their medical books like the exorcism of diseases or gathering medical herbs with masses and processions. As the Arabian doctrines prevailed, these superstitions disappeared from the practice of medicine.

Also, the Arabians introduced a knowledge of certain diseases unknown to the ancients, as small-pox and measles, and gave a much better account of some old diseases, as leprosy. They also greatly extended the European pharmacopœia by the introduction of new drugs and new methods of pharmacy, in addition to distillation and other chemical processes.

On the other hand, the Arabian medicine had in some respects an unfavourable influence. It strengthened, though it did not introduce, the habit of slavish submission to authority and dogma in matters of science. The Moham-

medans differed from the Greeks in basing their most fundamental beliefs on an infallible written dogma. This reverence for the written word profoundly influenced their scientific as well as their theological creed. The authority of great names like Aristotle and Galen was almost unbounded, and the method of science with the Arabs was like the method of theology, that of reasoning downwards by deduction from the dogmata of the philosophers. If this dialectic method was a bad one in philosophy and other subjects, it was above all harmful in medicine. Moreover, as a set-off to their disbelief in charms, they were ardent partisans of astrology, and this pseudo-science was, with most injurious results, brought into the field of medicine.

The popularity of the Arabian books in their Latin version was very great, and it is curious to trace that as time went on these works were much more read than the Latin versions of the Greek masters. The latter were difficult to understand, and supplied no convenient textbooks for daily use, while the Arabian authors seemed to come nearer to the mediaeval mind, and were thought to be more practical. Even in the seventeenth century Harvey, deriding the Neoterics or moderns, told students to go to the fountain head—to read Aristotle and Avicenna.

For better or for worse, it was this Arabian modification of Greek medicine which ruled in Europe for centuries, and of this Gilbert was no mean exponent.

LIFE OF GILBERT.

It is not easy for any one who has not made the attempt to understand the difficulty of identifying and distinguishing men known by their Christian names only, in an age when surnames were hardly known in the middle and lower classes. Gilberts were numerous in the twelfth and thirteenth centuries and later, as may be seen in the *Dictionary of National Biography*. The Gilbert we are in search of was a physician and known by the cognomen of Anglicus, which implies not only that he was an Englishman, but that he lived or was known in other countries, since a man does not get the name of Englishman in his own country. The oldest collections of English biography, the works of Bale, Pits, and Leland, tell us something about him; but the statements of these writers have to be received with caution, because they give, generally speaking, no documentary or other authority for what they state. Bale says that Gilbertus Anglicus was an eminent physician who had travelled a good deal, and studied in foreign universities; and says that he is highly praised by Symphorien Champier, a physician of Lyons in the early part of the sixteenth century, in his work on illustrious medical writers. Champier speaks of him as "Doctor Desideratissimus."

Pits, who wrote more than half a century later, but says he had gathered his material from old records and documents, gives Gilbert the surname of Legleus (which turns out to be a mistake), and again refers to Symphorien Champier. After speaking of Gilbert's long travels abroad, Pits adds the important statement that he was physician to Hubert Walter, Archbishop of Canterbury, an eminent prelate, soldier, and statesman of the reigns of Richard I and John, who died in 1205. Pits concludes that he "flourished" about 1210, which would mean that he was born in the latter half of the twelfth century.

The biographical writers are, as I have said, not authorities in the modern sense of the word, since they do not give their authorities. But the broad facts alleged by Pits, that Gilbert was physician to Hubert Walter, and lived before and after 1200, must be taken as representing some tradition. Pits could not have dreamed of Gilbert's connexion with the Archbishop, nor had he any object in making up the story.

This tradition may be tested by comparing it with the few biographical details which can be gleaned from Gilbert's own book, the *Compendium Medicinae*. The first definite fact which is established by a multitude of allusions is that Gilbert studied at Salerno: he speaks of many of the "Masters" by name, and of the Masters generally in such a way as clearly to show personal experience. The time when he studied there is also clearly established by Gilbert's mention of a certain Magister Ricardus, whom he speaks of with the warmth of a personal knowledge, and with such admiration as seems to imply the relation of a student to a teacher. Now Richard's date is well known, because he is spoken of by a physician eminent in his day, Gilles de Corbeil, or Aegidius Corboliensis, physician to the French King Philip Augustus. Now, Aegidius studied at Salerno towards the end of the twelfth century; hence Richard must have been living at the same time, and that becomes the most probable date for Gilbert's Salernitan studies. This is confirmed by the argument that the Masters spoken of by Aegidius are nearly all also spoken of by Gilbert, and neither of these writers quotes any master who lived later than about 1200.

Another curious point which comes out from Gilbert's book is that he travelled in Syria and must have been there, speaking broadly, about the period of the Crusades, for he says that in the city of Tripoli, in Syria, he met with a certain canonicus who suffered from rheumatism. Now, for a Christian canon to be met with in Tripoli implies that the place must at that time have been under Christian rule, as Tripoli was for many years.

From these references we conclude that, speaking broadly, Gilbert was at Salerno and in the East about the end of the twelfth century, in the time of Richard Coeur de Lion and the third Crusade.

We will next inquire what were the proceedings of Hubert Walter during the same period. This prelate, as Bishop of Salisbury, accompanied King Richard Coeur de Lion on the Crusade. The King met his fleet at Marseilles, sailed August 17th, 1190, and coasted along the shores of Italy to Messina in Sicily. This little voyage occupied six weeks, and it is expressly stated that the English fleet touched at all the principal ports, under which phrase Salerno must have been included, though I do not find it actually mentioned. Richard, with the bulk of his force, remained at Messina through the winter, but Hubert Walter, with Baldwin, Archbishop of Canterbury, and Glanville, the Grand Justiciary, went on in advance and had some sharp fighting before the King arrived the next summer. Hubert became the King's principal adviser, as well as one of his chief army leaders. Having obtained permission to make a pilgrimage to Jerusalem, Hubert had long interviews with Saladin as the King's representative. In October, 1192, Hubert Walter returned with the English fleet to Sicily, though the King himself, as is well known, had a very different adventure. Soon after, Hubert was made Archbishop of Canterbury, and died in 1205.

Now, it is clear that the travels of the Bishop, who was afterwards Archbishop of Canterbury, coincided very nearly both in place and time with those of Gilbert. The two were at, or passed through, Salerno at about the same time, and were also in Palestine within about the same period. They may, for all we know, have met at Salerno, and the English Bishop may have taken away the young English doctor to be his physician, or they may have met in the East; or again, as Pits reports, Gilbert may have been made physician to the Archbishop after his return to England. The facts we have related make the old story quite plausible, and no undue credulity is required to accept it, since both the persons concerned were travellers and crusaders at the same time, and had many possible points of contact.

There is still a part of Gilbert's life involved in great obscurity—namely, that after the death of his patron in 1205. It appears to me most probable that he then went to France, and spent some years, if not all the rest of his life, there. From his quotations of French vernacular words and allusions to French patients, it is certain that he lived and practised in France for a certain time. Also his knowledge of Aristotle and of his commentator, Averroes, is unusual for the period, and could hardly have been acquired elsewhere than at Paris. The introduction of Aristotelian learning into Oxford took place too late to apply to Gilbert.

There is one curious tradition confirmatory of Gilbert's having been a teacher at Paris, that according to M. Littré, there was in the fourteenth century a street in the neighbourhood of the schools called Rue Gilbert l'Anglois. Also I have found him spoken of in a later English MS. as Gilbertus Parisiensis.

There was also a vague tradition that Gilbert not only studied or taught at Montpellier, but was actually Chancellor of the University there. But the French scholars seem now to be agreed that Gilbert or Gilibert the Chancellor was not the same person as Gilbert the Englishman. It is quite possible that Gilbert was at Montpellier; there is nothing improbable in the supposition; but there is no evidence for it. It was probably at this period of his life that he wrote his principal work, the *Compendium Medicinae*, since it gives evidence of large and mature experience.

The date of Gilbert's death is uncertain. If we suppose that he was between 20 and 30 when he studied at Salerno (1180 or 1190), he must have been born about 1160-70, and might have lived to 1230 or thereabouts; but this is only conjectural.

A definite limit is placed for the date of Gilbert's work by considering what later writers quote him. We find that he is quoted by name in the *Thesaurus Pauperum*—or "Treasury of Poor Men"—a celebrated mediaeval book of popular medicine, attributed to Petrus Hispanus, afterwards Pope John XXI (or by some to his father). It is thought to have been written about 1270. A writer of nearly the same time—Theodoric, Bishop of Cervia—who wrote a book on surgery (finished in 1266, according to Haeser), borrows largely from Gilbert, but without acknowledging the debt. Allowing some years for the diffusion of Gilbert's books, this would put him into the first half of the thirteenth century.

It is true that most of the historians of medicine place him later, and their arguments are duly considered in the proper place. I will only mention that Freind, our historian of medicine, asserts that Gilbert quotes a book by Roger Bacon, and therefore must have lived after him, but really the book referred to has nothing to do with Roger Bacon. Freind also argues that Gilbert quotes from Theodoric, whereas the converse is the case; and his other arguments are not much better.

One other eminent man who has written on Gilbert ought to be mentioned—the great scholar and lexicographer, Emile Littré; he contributed a notice of the English physician to the *Histoire Littéraire de la France*, that great encyclopaedia of French literary biography begun and mostly written by the Benedictines. Littré admits that Gilbert was an Englishman, but puts him among the French writers, because he brings French forms of speech into his Latin, and speaks of French patients, implying that he lived in France. The latter fact is, I think, very probable; and, if Gilbert was more familiar with French than with English, this would also have been true of his patron the Archbishop, of all the important English prelates and statesmen of that time, and of the king himself, whose ignorance of English was notorious. Gilbert must have been a French-speaking Englishman, that is, an Anglo-Norman. Littré justly criticizes the accounts given by the old English biographers as having no authority, and sets himself to determine Gilbert's date on the strength of one anecdote contained in the *Compendium Medicinae*. This is an interesting story relating how the writer treated a wound of the eye in a young man belonging to a French knightly family settled in Palestine. The criticisms of eminent Saracen and Syrian Christian physicians are also given, and the prescriptions which they brought out of their books. The story is exactly what one would have expected to hear of Gilbert, and one gives it up with great regret. But, unfortunately, it is only an interpolation in Gilbert's book, and refers to an entirely different person, one Zacharias, who wrote a treatise on diseases of the eye, and is said to have been a Master of Salerno. The passage is indeed marked in the printed edition of Gilbert as "Additio," and cannot have been part of the original work. Since M. Littré's conclusion as to the date when Gilbert lived is founded exclusively on this story, we need not further consider it.

It must be remarked in passing that the histories of medicine generally give very unsatisfactory and indeed inaccurate accounts of Gilbert. Haeser falls into a twofold confusion as to Gilbert, due partly to the mistakes of the old English biographers, and his conclusions are therefore inadmissible.

The best evidence as to Gilbert is to be derived from his own works, and especially from the *Compendium Medicinae*. Other works attributed to him are a Commentary on the Aphorisms of Hippocrates, which exists in MS. in the Bodleian Library, and an *Antidotarium*, which I have not been able to trace, but they are not important.

The *Compendium Medicinae* is a large book, making a thick quarto of 724 pages, with double columns of very contracted Latin in the edition of Lyons, 1510; if it were printed in a more extended form it would make a fair-sized folio. This book was printed again at Geneva in 1608 with the title, *Laurea Anglicana*, but, like the works of other English medical writers of the Middle Ages, has never been printed in this country. There are a few MSS. of it in the English libraries.

This book is avowedly a compilation. The prologue says: "Incipit liber morborum tam universalium quem particularium a magistro Gilberto Anglico editus," etc.

Here beginneth a book of all diseases, both general and special, put forth by the Master Gilbert the Englishman, extracted and taken from all authors and from the Practices of the Masters, which is entitled, the Compendium of Medicine.

The word "authors" seems to refer to ancient writers; and the word "practica," or practice, was the customary technical word for the short practical treatises issued by "masters" of the school of Salerno, as, for instance, the *Practica Petrocelli*, *Practica Bartholomei*, and others. The whole work is a fusion of ancient classical writers, the newly-translated works of the Arabian school, and those of the modern Salernitan teachers.

Beside these literary sources there are frequent references to the "Magistri," "Magistri Salernitani," "Magistri moderni," etc., as if to contemporaries; and disputations in the school are also alluded to. The Mulieres Salernitanae, or female physicians, are once spoken of.

The Greek classical medical writers are often quoted, but evidently from Latin translations; Hippocrates is mentioned 107 times, Galen 59, Aristotle 78, Alexander 14 times, the others less frequently. Among the Arabian writers the most important is Avicenna, whose name occurs 88 times, besides Isaac the Jew, who was an Arabic writer; Johannitius, or Honein, a Syrian Christian, who wrote in Arabic; Rasis, Averroes, and others. All the works quoted had been translated into Latin.

The most frequently-quoted Latin writer is Constantine, whose name comes in 50 times; the other Latins mentioned are nearly all well-known teachers of Salerno, such as Nicolaus (Praepositus), author of the celebrated *Antidotarium*, Ricardus (already referred to) Maurus, Platearius, and others. It is important to observe that all these writers belong to the twelfth century or earlier. No one is quoted who wrote (broadly speaking) after 1200. Some of the names mentioned are quite unknown, and not found elsewhere.

It is very difficult in a short compass to give an account of Gilbert's work. It is divided into seven books: the first on fevers; the second on affections of the head, including diseases of the brain, mania, and so forth; the third on affection of the eyes, ears, and face, including some skin diseases; and the fourth on diseases of the "spiritual" or respiratory organs: the fifth on diseases of the stomach and intestines; the sixth those of the liver, spleen, and kidneys. The seventh book, headed "On Diseases of the Generative Organs," includes some of the most important chapters, such as those on leprosy and on small-pox and measles.

The classification of fevers is very elaborate. We have the usual intermittents—quotidian, tertian, and quartan—each doubled with a "bastard" of the same species, and with other variations—the semitertian, or hemitriteus—which might be major or minor; synochus and synocha, the distinction of which puzzled mankind for centuries; causon, and others. These were explained—as were diseases in general—by some fault in one of the four humours—namely, blood, yellow bile or choler, black bile or melancholy, and phlegm. Any of these might be excessive in amount or altered in quality, or in the wrong place; it might, again, undergo putrefaction, either within or without the vessels, and the difference was momentous. Gilbert's account of this subject is chiefly taken from the Arabians, and does not differ essentially from that of some other writers, but is made more tedious by his extreme prolixity, subtlety, and fondness for abstract discussions. He has some marvellous calculations as to the day on which relapse in intermittent fevers was to be expected.

The treatment was based chiefly on this speculative humoral pathology, but Gilbert sometimes shows glimpses of better things. He quotes more than once the saying of Hippocrates that the physician must be *minister Naturae*—the servant of Nature—and follow her indications by endeavouring to expel the matter of disease. This he contrasts with the teaching of "Maurus and the Salernitans," and implies that by not considering this point those authors fell into error.

In the treatment of all diseases Gilbert attached great importance to diet. For drugs he employed, beside simples, a number of the old compound medicines, called "antidotes," which were popular for centuries, and have left their traces in our modern pharmacopoeias. Gilbert mentions altogether more than 200 of these, giving their composition. This is a larger number than is included in the *Antidotarium* of Nicolaus, where there are only about 150. The type of these medicines was the *Theriaca* of Andromachus, the most celebrated remedy of antiquity, and valued up to modern times. Philonium and Mithridate were of the same class, but the antidotes were not exclusively remedies against poisons; they were good for nearly all diseases.

Though little used in the early period of the School of Salerno, antidotes became very popular in the tenth and

eleventh centuries. Besides formulae derived from Galen, the later Greek physicians, and the Arabians, the doctors of Salerno invented many of their own. The origin of some of the antidotes, which bore marvellous and legendary names, is almost past conjecture.

There is a draught, Potio Sancti Pauli, so called because the formula was composed by St. Paul; a plaster of St. Peter and St. Paul, the authorship of which is, however, not explicitly assigned to those Apostles, and a Potion of King David. The Ointment of Alabaster, which the Romans brought from Jerusalem at the time of our Lord's crucifixion, was one which Mary and Martha, the sisters of Lazarus, used every day of their lives. Sal Sacerdotale was used by the priests at the time of Elias the prophet. Esdra magna was composed by the prophet Ezra when he was in exile at Babylon. It contained more than one hundred ingredients, and was good for "all bodily ailments." Agrippa was an ointment used by King Agrippa. Justinum was a medicine for the stone, composed and used by the Emperor Justinus. Usina was a medicine approved for the same disease by many wise men at Babylon or Constantinople. Some were named after the eminent persons—pope, king, or duke—for whom they were first prescribed.

It should be observed that Gilbert mentions a few *empirica*—that is, superstitious remedies and charms. He says he had not a high opinion of them himself, but he inserted some recommended by old writers to make his book complete. He is very sparing of these prescriptions as compared with the Anglo-Saxons or with the later Latin and Greek physicians. In one instance he recommends a medicine prepared by distillation.

Gilbert's general method of treatment, he says, was that of the modern masters. In one case he speaks of an excellent method of cure recommended by Hippocrates, which, however, he does not give, but follows the modern practice lest he should be thought singular.

Gilbert's observations on leprosy are very important, and formed the basis of much of what was written on this subject by mediaeval authors. Theodoric Bishop of Cervia, Bernard of Gordon, and our own John of Gaddesden borrow largely from Gilbert. His description of the external signs of leprosy is evidently from first-hand observation. He describes very accurately the anaesthesia and other symptoms accompanying what we now call leprous neuritis, and acutely distinguishes this affection from paralysis. The commonest causes of leprosy were inheritance, corruption of food, or some kind of contagion.

Several methods of contagion were recognized; among others by breath or by "aspectus"—that is, seeing a leper (or perhaps being seen by him). This terrible superstition, not peculiar to Gilbert, explains much of the cruelty of the mediaeval regulations for segregation of lepers. A large part of this account was taken from Arabian writers, but among the mediaeval physicians we cannot find any one who gives so much solid information about leprosy, though we might easily find a more concise and lucid expositor.

Gilbert's account of small-pox and measles must be regarded as on the whole the most important mediaeval contribution to that subject. A collection of the writings of the Arabist writers on these diseases was made in the eighteenth century by Gruner, but he unfortunately omitted the observations of Gilbert, from whom many later writers borrowed.

Gilbert's account is partly drawn from Constantine and from the Arabian authors, who first described those diseases unknown to the ancients; but he gives, in addition, some original observations of his own. He shows that the mediaevals made a clear distinction between variolae and morbilli, which it is sometimes thought they confounded; the chief difference being that the morbillus does not rise above the skin while the variola projects. Gilbert also makes the first definite assertion about the contagion of small-pox, which he says may be caught by sitting near a patient, through the fumes dispersed from him, if the disease be of the infectious kind. I have found no mention of this in Avicenna or Rasis, so far as their works are accessible to us, nor in any mediaeval writer except one of the sixteenth century, who states as his own personal opinion, not as the accepted view, that small-pox is sometimes caught from others. Speaking subject to correction, I must then conclude that Gilbert was the first author to draw attention to contagion in small-pox. We know that even in the seventeenth century the contagiosity of this disease was not generally accepted, and was denied by such a man as Sydenham. Gilbert lays great weight upon the preliminary symptoms preceding the eruption in both small-pox and measles. Gilbert was also the first writer to suggest a method of treatment in small-pox which has lately achieved great celebrity, namely, that by red wrappings and red objects—or, what is the same thing, by red light. His brief mention of this practice, partly based upon popular tradition, was quoted or repeated by most mediaeval writers on small-pox; till, finally, John of Gaddesden affirms that he actually carried it out in the case of a royal prince whom he brought successfully through an attack of small-pox, without any scars, by wrapping him in scarlet cloth and surrounding him with red hangings.

No anecdote about mediaeval medicine has been more often quoted than this, and Gaddesden has been held up to the ridicule of centuries for his folly, if not denounced as a charlatan. But now it appears that he must be reckoned as a precursor of Finsen, and Gilbert, from whom he got the idea, must also have his share of the credit.

The last two chapters of Gilbert's book are devoted to the hygiene of travellers by land and sea. In his rules of health for sea voyages there are two very remarkable points: one is, he recommends that if drinking water cannot be otherwise purified it should be distilled through the alembic. In this way, he says, nobles can get sea water turned into fresh. Also he recommends passengers to take on board with them dried grapes, leeks, cucumbers, apples, and pears, showing some recognition of the principles of antiscorbutic diet.

If we try to sum up the strong and weak points of Gilbert's work, we must admit that he was a man of very great learning, who had read, perhaps, almost too much; but also of wide experience and some practical skill. He shows considerable originality in his observations, which are by no means commonplace; but he seems to have lacked sufficient courage to strike out an independent line of treatment, following in this the beaten track. In his aims Gilbert was an eclectic: he sought to unite the old teaching of the school of Salerno with the newer doctrines of the Arabian and the revived Greek medicine. His *Compendium* is indeed the earliest attempt at a synthesis of these systems, and must have played an important part at a critical time.

The book had apparently a wide diffusion through Europe, and was sufficiently valued after the invention of printing to pass through two editions. It does not appear to have been more especially valued or more generally read in this country than on the Continent, which perhaps may be explained by the circumstances of the author's life.

REFERENCE.

[1] Lappenberg, *History of England under the Anglo-Norman Kings*, English edition, pp. 142, 143.

BEQUESTS TO HOSPITALS.—Under the will of the late Mr. Richard Calvert, of Preston, £5,000 are bequeathed to the building fund of the Preston and Lancashire Queen Victoria Royal Infirmary, and under the will of the late Mr. Thomas Russell, of Eton Square, formerly of Auckland, New Zealand. £10,000 are bequeathed to the Great Ormond Street Hospital for Sick Children.

THE TITLES QUESTION IN UNITED STATES NAVY.—In his annual report Surgeon-General Rixey, chief of the Medical Corps of the United States Navy, again calls attention to the absurdity of his title, which should be, he suggests, Surgeon-Admiral, since an army title has no place in the naval service. The Surgeon-General's recommendation also embraces a change in the titles of subordinates. He asks that the Medical Director be called "Surgeon-Captain" and the Medical Inspector "Surgeon-Commander," and the Assistant Surgeon "Surgeon-Lieutenant."

INTERNATIONAL CONGRESS OF MILITARY SURGEONS.—At the meeting of the International Congress of Military Surgeons, recently held at St. Louis, Surgeon-General Walter Wyman, of Washington, D.C., formerly first Vice-President of the Association, was chosen President. The winners of the Enno Sanders prize essay contest were announced. The first prize was awarded to Lieutenant-Colonel William Hill-Climo, A.M.S. (retired), for the best paper on military surgery. The prize consisted of a piece of gold, worth £20, bearing on one side the effigy of Enno Sanders, of St. Louis, the giver, and on the other the inscription, "For the best paper on military surgery." The second prize was awarded to Lieutenant-Colonel Hathaway, R.A.M.C. The prize was a life membership in the Association, estimated at £10. The Congress will meet next year at Detroit, Michigan.

SEVENTY-SECOND ANNUAL MEETING
OF THE
British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF OPHTHALMOLOGY.

R. W. Doyne, F.R.C.S., President.

THE PRESIDENT'S ADDRESS.

As it is only by the accident of circumstances that I happen to fill this chair, I do not propose to occupy the valuable time of this Section by any presidential address. I should wish, however, to say a few words of welcome to the members of the distinguished gathering over which I have the honour to preside. It is a great pleasure to see so many of our own ophthalmic surgeons from all parts of the empire collected in Oxford, and I trust they will take away with them remembrance of good scientific work, as well as pleasant and interesting experiences of their visit to Oxford.

Our American *confrères*, I trust, know that their presence is always heartily welcomed in this country, and the mutual exchange of scientific thought and of scientific work which is continually going on between us makes actual contact with them a greater pleasure.

L'entente cordiale entre les médecins ophtalmiques de l'Angleterre et de la Belle France n'est pas chose nouvelle, et nous sommes bien heureux de trouver que dans les cercles diplomatiques on a été prêt à suivre le bon exemple qui leur a été donné par les médecins ophtalmiques depuis si longtemps.

Und unsre deutschen Freunde werden ein ebenso herzliches wie aufrichtiges Willkommen empfangen so wohl wegen unsrer persönlichen Hochachtung wie für den Werth ihrer wissenschaftlichen Arbeit.

I may point out that there is an immense amount of work to be got through and only nine hours in all for the purpose. It will be necessary, therefore, to adhere very closely to the time limit for speaking, and to avoid digression. I know I shall not look forward in vain to the support of the meeting in directing its affairs, and I trust that any one whom I may have to check will not think that I am acting in an overbearing way in enforcing very strictly the regulations that must guide us, for it is only by such means that we shall get through the work of the meeting.

DISCUSSION ON RETRO-OCULAR NEURITIS.

I.—R. Marcus Gunn, M.A., F.R.C.S.,

Surgeon, Royal London Ophthalmic Hospital, Moorfields; Ophthalmic Surgeon, National Hospital for the Paralysed and Epileptic.

[Abstract.]

In opening this discussion Mr. Marcus Gunn stated that the terms retro-ocular and retrobulbar neuritis were used to indicate cases that showed evidence of one or both optic nerves being impaired by an inflammatory affection which exerted its chief influence behind the papilla, and the evidence was as a rule entirely clinical. Sooner or later, however, ophthalmoscopic changes came to their aid, either by the neuritis invading the papilla, or by the disc becoming pale later on. Its chief characteristics were rapid failure of vision, impaired pupil reaction, absence of early ophthalmoscopic signs, with a tendency to recovery. Anomalous cases might occur without all these symptoms. Similar visual symptoms occurred in affections of the macula, but in these latter cases the distinguishing feature was the absence of associated pain, and the disc usually remained unchanged. Functional cases simulated these closely, but attention to the pupillary reaction generally enabled them to distinguish the one from the other. All degrees of failure of vision were met with up to absolute blindness, and the visual acuity was less in a very bright light, and the light sense as tested with Bjerrum's types was decidedly defective. The power of distinguishing colours was profoundly affected. The field of vision was lost in varying degrees, but the central portion was always involved, due to interference with the macular fibres. One distinguishing feature of retro-ocular neuritis was the rapidity of visual failure, which was in contrast to the length of time a papillitis might exist without the nerve function being affected. The failure was never sudden as in embolism or thrombosis, for it usually took from one to three days, and after remaining stationary for a time recovery took place, the final result being commonly reached in six weeks; occasionally, however, recovery failed to take place. In a large percentage of cases pain referred to the back of the eye was present, and when this was deep-seated the prognosis was usually less favourable, as it probably indicated a gross periostitis at the optic canal; there was often also pain in pressing the globe backwards. Comparatively early ophthalmoscopic changes occurred in a large number of the cases, and subsequent pallor of the disc was practically universal; in severe forms the disc might become atrophic, while in insular sclerosis it had a dirty white or waxy appearance. Inflammation might be communicated from neighbouring structures, such as from orbital cellulitis and periostitis, and a certain number were due to exposure to cold; while there were some which followed gouty or rheumatic scleritis, the nerve becoming affected where it joined the sclera. Another group was due to rapid changes occurring initially in the optic nerve, such as syphilitic or tuberculous deposits in it; and in the same group might be placed those cases which one might term "primary"; this included the cases of insular sclerosis and those ascribed to influenza and gout. In the former, recurrences were very likely to take place, and women were more affected in the primary cases than men. These results were arrived at from the study of 350 cases which exhibited the disease.

II.—G. A. Berry, M.B., F.R.C.S.Edin.,

Ophthalmic Surgeon, Edinburgh Royal Infirmary.

Mr. Berry considered that Mr. Gunn's description of the general clinical features was so complete that it left but little to be said. As regards points in the diagnosis, he considered by far the most important to be the condition of the light-difference sense. This was not only of differential diagnostic importance, but proof of the correctness of Mr. Gunn's view that the symptoms were due to loss of conductivity. Moreover, sudden onset and homogeneity of scotoma indicated pressure as the cause. In influenza the olfactory nerve was often affected at the same time, but prognosis as to recovery of smell was not so favourable as that of recovery of sight.

III.—Dr. Uhthoff,

Breslau.

Dr. Uhthoff said: It has been a great pleasure to me to accept the kind invitation of your President to take part in this year's meeting of the Ophthalmological Section of the British Medical Association.

A subject in which I have rather an extensive experience is that of the pathological anatomy of retrobulbar neuritis. I have brought a number of preparations pertaining to the subject, and should like first to explain the pathological changes. We have to do here mostly with cases of so-called toxic (alcohol) amblyopia, but the evidence, I think, goes to show that the disturbances of vision are generally due to retrobulbar neuritic changes—it was so, at least, in my cases where an autopsy was performed. You see here, gentlemen, a number of cross-sections of the optic nerve in various cases where there can be no doubt of the interstitial inflammatory character of the changes. This is shown by the process of proliferation in the nerve-septa (increase in density, cellular infiltration, proliferation of the blood vessels and changes in their walls, proliferation of the glia, etc.), processes certainly not pertaining to a mere atrophy of the optic nerve. I am inclined to look upon the degeneration of the optic nerve fibres, in some of the cases at least, as secondary, and as the result of the interstitial process. I will pass round the plates of one of my cases which I think bears out this view particularly—a case that showed only a paleness of the temporal half of the papilla with no considerable disturbance of sight during the lifetime of the patient, and where the autopsy disclosed typically-arranged interstitial inflammatory changes in the septa, with at the same time practically intact optic nerve fibres. I think that there can here be no question of a primary degeneration of the optic nerve fibres. Such an observation of comparatively recent changes is moreover of radical importance. It is self-evident that the question as to whether the nerve fibres have fallen prey to a primary or to a secondary degeneration can-

not be decided on the basis of their anatomical condition alone, if a considerable time has intervened between the onset of the visual disturbance and the autopsy.

Furthermore, in my opinion, the authorities have not taken sufficient account of the fact that an interstitial inflammatory process can attack the optic nerve trunk in a circumscript portion of its course, and can bring about a degeneration, ascending or descending, from this point. It seems to me that it has never been proved in cases presenting the phenomena of so-called retrobulbar neuritis that the ganglion cells of the central portion of the retina are the seats of the primary disease, and that the changes in the nerve trunk take their origin secondarily from the retina. That the ganglion cells of the retina are the first to be destroyed by direct toxic agency may be taken as proved for certain forms of intoxication (quinine, etc.): but, on the other hand, cases with this pathology do not present the clinical aspect of so-called retrobulbar neuritis.

I think, too, that the form of the clinical disorders of vision in retrobulbar neuritis, their commencement and course, capacity for recovery, painfulness of movements of the eyeball in fresh cases, the tardy appearance of ophthalmoscopic phenomena after the vision has become affected, lack of characteristic central changes in the retina, absence of positive defects in the field of vision, etc., are symptoms which speak for a primary seat of the disturbance in the trunk of the optic nerve. It seems to me as though building on the neuron theory, and drawing the consequent conclusions, have not always helped towards comprehension of the process of the disease. Neither is there any reason for supposing that a neuron may be injured anywhere along its course, and that the injury may not then ascend or descend from this point.

In spite of the fact that the central scotoma is by far the most frequent anomaly of the field of vision, we must beware of looking upon the disease of the papillo-macular bundles as a systemic affection. The size of the scotoma is particularly variable in the case of true retrobulbar neuritis not due to toxic causes; it sometimes covers the field of vision up to the utmost periphery.

Cases of retrobulbar neuritis, with the exception of toxic amblyopia, where the anomaly of the field of vision shows itself as a peripheral reduction, are much rarer than those that begin with a central scotoma; according to my material they amount to but about 8 per cent. It has been presupposed throughout that the pathological process first attacked the periphery of the optic nerve and left the papillo-macular bundle intact at first. I shall now take the liberty of showing you two figures with accompanying preparations of gummatous syphilitic neuritis optica. One understands at first glance, especially in one of the preparations, how the peripheral parts of the visual field must be the first to be impaired. These forms of retrobulbar neuritis are for the greater part the complicated ones, in which the process takes its way downward from the cavity of the skull into the orbit and towards the eye.

Finally, I think that my investigations on retrobulbar neuritis show that the anatomical retrobulbar process can first set in in various portions of the trunk of the optic nerve, sometimes close behind the eyeball, sometimes farther back in the orbit in the region of the bony canal. I think that intense painfulness in movements of the diseased eye points to a seat of the affection nearer the anterior portion of the optic nerve.

The limited time I have at my disposal forbids my discussing the clinical side of the disorder, but you will, perhaps, allow me to add a few etiological data taken from my own experience. I have set 120 of my observations of strict retrobulbar neuritis together, not considering toxic amblyopia, and also, I may remark, excluding cases of intoxication with substances other than alcohol and tobacco—such as lead, carbon disulphide, iodoform, filix mas, mercury, thyreoidin, arsenic, etc.—that sometimes cause an affection of the trunk of the optic nerve.

In more than half of the 120 cases I was unable to find the etiological cause; where I did succeed in finding one, I diagnosed syphilis 14 times, hereditary tendency 11 times, multiple sclerosis 6 times, anomalies of menstruation 5 times, pregnancy 6 times, decided effects of cold 5 times, acute loss of blood 3 times, disorders of the neighbouring cavities 3 times, periostitis orbitae 3 times, trauma twice, influenza twice, typhoid once, malaria once, polyneuritis once.

You will not wonder that some of the etiological causes that are set down in the literature as now and then occasioning a retrobulbar neuritis, such as rheumatism, measles, diptheria, variola, beri-beri, erysipelas, scarlet fever, tuberculosis, gonorrhoea, typhus exanthematicus, typhus recurrens, etc., are wanting among the cases of a single observer.

As regards the occurrence of retrobulbar neuritis in multiple sclerosis, I should like to remark that, according to my experience, the total of 6 cases in 120 seems too low, and that a point to which several observers, including myself, have already called attention must not be forgotten—namely, that observations of cases where the process of disseminate circumscribed sclerosis of the brain and of the spinal cord began with, or was accompanied by, the phenomena of retrobulbar neuritis, have steadily increased in recent years. Years even can elapse between the beginning of the optic nerve affection and the disease of the central nervous system. I could detect signs of neuritis in the papilla in 5 per cent. of my observations of multiple sclerosis, but a transitory inflammation of the papilla and of the nerve trunk is probably really much more frequent—a fact to which the anamnestic statements often point, that is to say, the sudden onset of the visual disturbance and its capacity for recovery, the frequent presence of central scotomata, the rarity of complete blindness (quite as much as in cases of retrobulbar neuritis). It would lead me too far should I go into the subject here in detail. I should like to refer you to my recent elaboration of Disorders of the Eye in Diseases of the Nervous System[1] for particulars. The anatomical aspect of the changes in the optic nerve in my cases of multiple sclerosis also speaks for this interpretation of the subject. Finally, I shall take the liberty of showing you a number of drawings, in parts of which you may see the presence of inflammatory changes of the optic nerve in cases of disseminate circumscribed sclerosis, changes bearing an aspect entirely different to that produced by a simple degeneration of that nerve.

It is not to be understood that the anatomical change occurring in a case of multiple sclerosis is always a neurotic atrophy of the optic nerve; in a certain proportion of the cases such a change does take place. In very many cases there is simply the appearance of an ordinary atrophy.

IV.—C. HIGGENS, F.R.C.S.,

Ophthalmic Surgeon, Guy's Hospital.

MR. HIGGENS related the case of a young lady whom he attended in the summer of 1897; there there was optic neuritis of one eye, followed later by scotoma in the outer part of field, which by degrees developed into complete blindness, without noticeable ophthalmoscopic change. The patient died, and the *post-mortem* examination revealed general meningitis, with complete destruction of the optic nerves.

V.—F. RICHARDSON CROSS, M.B., F.R.C.S.,

Consulting Ophthalmic Surgeon, Bristol Royal Infirmary.

MR. RICHARDSON CROSS said that the term "retrobulbar neuritis" seemed to include a very large number of differently caused cases in which certain recognized symptoms were present. There were cases of a chronic and an acute type. The symptom that he mainly relied on was central scotoma for red and green, often in addition to positive scotoma for white, with more or less rapid loss of vision. The ophthalmoscopic changes might be quite negative, though usually careful examination detected a little pallor or blushing of the nerve. The presence of central scotoma made it necessary to exclude any possibility of the macula lutea being the part really affected. A definite papillitis should be given its usual name, and excluded from the group under consideration. The nerve might be affected at the optic foramen, behind the foramen, leading to headache and discomfort, or in front of it, causing difficulty of moving one or more of the ocular muscles. When the globe itself was affected just at the nerve entrance, there would often be pain on pressure, and a history of cold or blood poisoning as a cause. The examination of a very large number of cases of neuritis and of atrophy showed that in practically all of them the fields of vision were impaired at the periphery, while no central scotoma could be detected (exceptions were occasionally found in locomotor ataxy). It was difficult to observe the lesion, except in acute cases, which were the most typical. It was probable that occasionally fine haemorrhages affecting the papillo-macular bundle, or even an oedema resulting from anaemia, or such abnormal conditions in fine blood

[1] Second edition of the *Handbuch der Augenheilkunde*, von Graefe und Salmisch.

vessels as occurred in migraine, might cause defects of function, which might give the symptoms of retro-ocular neuritis. The very highly-organized macular bundle would be affected by changes in and abnormal conditions of the coarser portions of the optic nerve, which then caused symptoms which suggested a primary lesion of the central nerve fibres.

VI.—Charles A. Oliver, M.D.,
Philadelphia, U.S.A.

Dr. Oliver congratulated the essayist upon the logical manner in which he had presented the subject. He agreed with Mr. Berry as to the great value of obtaining the degree of the light sense in such cases. He gave a brief account of his method for the determination of the position and the degree of visual acuteness and alertness in the negatively scotomatous areas. He made mention of two well-known, though previously imperfectly studied, family trees of so-called hereditary retrobulbar neuritis, extending over a period of more than 250 years, the last five generations of which, including more than 150 subjects, he had personally studied. As one of the important clinical results, he had found the condition to appear invariably as a low-grade optic neuritis, with all of the concomitant signs and symptoms, at varying ages—as early, in some of the cases, as 7 years. Following these there was a slow but steady progression of degenerative changes, resulting in more grossly perceptible signs, which voluntarily brought the patient into notice at or about the period of adolescence. He had secured specimens of the visual apparatus from affected members of the sixth, seventh, and eighth generations, which he was studying. He intended to present the subject in a monograph as soon as the studies were completed. He had brought the subject before the Association in the hope that some one of his colleagues might be sufficiently interested to help to search for the collateral branches of a female, born and living in England in 1640, from whom the affection had been directly traced.

VI.—A. Hill Griffith, M.D., F.R.C.S.Edin.,
Surgeon, Manchester Royal Eye Hospital.

Dr. Hill Griffith said: My conception of a typical case of retro-ocular neuritis is rapid loss of or impairment of sight in one or occasionally both eyes, with transient periorbital pain, the presence of a central absolute scotoma, and complete, or nearly complete, restoration of sight. As an explanation of such acute cases, I ventured in 1897 to give as one explanation that they were caused by inflammation of the sclerotic around the entrance of the optic nerve, just as we often get in the anterior part of the sclerotic in rheumatic people. This theory was in reality suggested to me by my friend Mr. William Thorburn. I cannot at all see how such cases could be mistaken for functional amblyopia. I recently had under my care a perfectly healthy young man of 20, whose vision had very rapidly failed without known cause more than a year before with the presence of a central scotoma. In this case the fundi were absolutely, indeed brilliantly, healthy, which is very peculiar considering the long duration of the affection. Four generations each furnished several examples apparently of similar defect of sight.

VII.—E. Nettleship, F.R.C.S.,
Consulting Ophthalmic Surgeon, St. Thomas's Hospital.

Mr. Nettleship agreed with Mr. Berry in the diagnostic value of diminution of the light-sense, especially in very slight cases; he thought Bjerrum's grey types often more useful in very slight cases than small spots of colour, and that slight ophthalmoscopical changes were much more common than Mr. Berry appeared to think. It seemed to him that the direct effect of prolonged exposure of the patient, or his head, to low temperature was perhaps greater than he understood Mr. Gunn to have stated.

VIII.—G. Victor Miller, M.D.,
Ophthalmic Surgeon, North Riding Infirmary.

Dr. Miller said: I am greatly struck with the difference of opinion among ophthalmologists as to rheumatism and cold being causes of retrobulbar neuritis. My opinion and experience rather coincides with that of Dr. Griffith. At the discussion on this subject by the Ophthalmological Society three or four years ago, whilst some like Mr. Berry thought rheumatism and cold a frequent cause, Mr. Silcock went so far as to say he could not understand how cold and rheumatism could be a cause. In my opinion, with the exception of the toxic cases, rheumatism and cold is the frequent cause of retrobulbar neuritis. I have notes of three cases here: Case I. Mr. C., aged 28, got a wetting on a cycle ride; few days after developed subacute rheumatism; was in bed a week: two or three days later had rapid loss of vision in left eye: pain (dragging) on moving the eye; circumorbital pain, haziness and filling in of the optic disc. Under the administration of sodii salicylatis and covering the eye with cotton wool and flannel bandage this man got quite well. Case II was a signalman, who, after working in warm, stuffy atmosphere for several hours, came out into cold, frosty atmosphere and developed symptoms like Case I and got practically quite well. Case III was a boiler cleaner, who was in the habit of going into the boiler before it became cool and coming out of it perspiring freely. One very cold night, after coming out perspiring freely, he was exposed to bitter east wind. Two days after he developed acute retrobulbar neuritis, similar to Cases I and II. In my experience, cold is a frequent cause of these cases.

Reply.

Mr. Gunn, in reply, said that with regard to cold, the number actually under this heading in his paper was 27—that is, considerably more than what Mr. Berry understood from his (Mr. Gunn's) reading of it. Again, this causation of cold was subdivided in his account of the etiology, inasmuch as it seemed to him that those cases with this history really belonged to very different types. Thus, certain rare cases associated with severe throat and nose inflammations were instances some of orbital cellulitis and some of affections of the sphenoidal sinus. Again, the slighter proximal forms of neuritis after exposure to cold occurring in rheumatic and gouty subjects were considered by themselves. Finally, one or two instances, where the attack had followed sudden change from heat to cold, seemed to him to fall most properly under the heading of "shock."

THE VISION OF BIRDS.

By Professor Poulton, F.R.S.

Professor Poulton gave his conclusions as to the vision of birds, based upon a consideration of mimetic colour and pattern in insects. He showed some lovely specimens of butterflies and moths who so exactly simulate the appearances of dead leaves in their minutest paticulars, that he concluded that their enemies the birds were able to detect these small points of similarity, and hence that their vision must be extremely acute.

ON THE ARTIFICIAL MATURATION OF IMMATURE SENILE CATARACT BY TRITURATION,

AFTER THE METHOD OF FÖRSTER, AS PRACTISED DURING TWENTY YEARS.

By Malcolm M. McHardy, F.R.C.S.Edin.,
Professor of Ophthalmology, King's College; Ophthalmic Surgeon, King's College Hospital; Senior Surgeon, Royal Eye Hospital, London.

In 1889 I communicated my views of the proceedings as they had then developed with some five years' practice. In vol. i of King's College Hospital Reports, 1893-4, I analyzed and reported my almost 10 years' experience of the method, which I was practising with increasing frequency and steadily-growing confidence. Now, in 1904, with close on 20 years' intimate continuous experience of the method, I feel it not out of place to record and to invite your attention to a very epitomized account of my present views thereon.

My extensive experience with the artificial ripening of immature senile cataracts, which operation I practise with increasing frequency and confidence, has convinced me of the truth of the following proposition, for which I claim attention, as I believe its recognition by skilled ophthalmic operators would enable them to far more usefully serve their patients, and to promptly rescue many from those dreary months or years of semi-darkness and incapacitating blindness, the dread and anxiety incidental to which have heretofore too often heavily overcast and wasted what might otherwise have been the bright and useful evening of life.

Complete ripening of immature senile cataracts may be safely and almost certainly secured in from 3 days to 8 weeks by preliminary iridectomy, with trituration of the lens, through the cornea and pupil, done with judgement, experience, and care; and the ultimate results, surgical and visual,

of extraction operations in such cases are quite equal to the results of similar operations for senile cataracts which have been allowed to fully mature spontaneously.

Further, the removal of such artificially-matured cataracts is entirely free from those risks, drawbacks, and often impaired ultimate results which follow from the removal of immature senile cataract. A large debt is due to Förster for the initiation of this procedure. A corresponding responsibility attaches to such skilled operators as may, by longer omitting to familiarize and perfect themselves in its practice, assist to rob certain fellow-creatures of an important amount of useful vision and peace of mind.

The incidental delay which has occurred in the publication of my experience with the matter I feel to be no unmixed evil. That, after some twenty years' experience with the method, I should advocate it as warmly as I did ten and fifteen years ago, is important additional testimony in its favour, for all of us are disposed to be enthusiastic for or against any new method which we try carefully.

Memoranda of my first 25 selected cases—in 1884 and 1885—and of a subsequent 100 consecutive cases in 1888 90, emphasize how the safety and success of the method grew with my experience in its application.

My experience during close upon twenty years has shown the most satisfactory results from artificial maturation of immature cataracts, done with judgement, experience, and care, by trituration with preliminary iridectomy, and the ultimate results in such cases are quite equal to the results of operation on senile cataracts which have fully matured in their ordinary course, and are entirely free from the risks, drawbacks, and often impaired ultimate results which follow from the removal of but imperfectly matured senile cataracts.

I feel it a duty now again, and with emphasis, to advocate the method which experience teaches me saves so many useful men and women from becoming temporarily useless, hipped, and ultimately recovering their vision, only to find their places in large measure occupied. Latterly, with increasing experience of the manipulation, etc., I have had no unhappy experience. With all I have done in the last sixteen or seventeen years I have lost no eye; I have lost the vision of no eye; and I have had scarcely anything but the most gratifying successes as a result from the treatment of immature senile cataracts by preliminary iridectomy and trituration, followed by modified linear extraction.

My extensive, continuing, successful application of the method seem still to leave it pretty much my own in this island, and to the very many of my *confrères* who have but little experience with it I extend a hearty invitation, after the vacation season is past, to notify me, and to arrange to see a few groups of senile cataracts treated by me as I recommend.

This may sound presumptuous, but I have learnt that scarcely any, if any, ophthalmic operation requires so much personal experience and judgement for its safe, satisfactory, and successful carrying through as does this artificial maturation of immature senile cataracts by trituration.

My first experience of the method was not without its unpleasant side, which it is important should not be overlooked. When I first began triturating immature cataracts, if my first and second cases had behaved like my fifth and sixth, I probably should not have gone much further with the operation. My first 25 were rather picked cases. I wanted to give the operation a fair trial and not a severe test. I wanted good cases that were not hampered by either diabetes, albuminuria, extreme age, asthma or bronchitis, insanity, or any of those concomitants which sometimes hinder the success of ocular surgery. I excluded all such cases at first. In one of these first 25 cases I found occasion to extract the lens immediately at the same sitting, and excellent vision resulted. At first it was my practice to have the instruments ready to clear out the lens if the necessity arose. As just now stated, such a necessity did arise on the fifth or seventh time I tried this artificial maturation by trituration. I believe I ruptured the capsule of the lens. I am not sure what I did do, but this I know—whereas the eye was all right before, during my operation a bead of vitreous humour became apparent in the lips of the wound. I did not feel happy about the case, so immediately increased my initial section, and, guiding back the presenting vitreous, inserted my very wide, thin (dark Pagenstecher's) spoon. It is widened, and it takes the whole lens in without rubbing the edges off. I took the lens out, and the case did exceedingly well. That is the only instance in my practice of this operation, which I am doing more and more frequently, when I have had to remove the cataract at a time when I intended only to mature its opacity—I mean at the same sitting. Once subsequently I have had to remove a lens on the next day after the trituration.

In 7 out of the first 25 cases was I unsuccessful in completely ripening the cataract. That is to say, in 28 per cent. of my earliest cases I failed to accomplish the object I had in view. Out of these first 25 cases, 3, or 8 per cent., had iritis, and some had nasty synechiae; 7, or 28 per cent., had subsequent loss of vitreous at the extraction operation—28 per cent. of my cataract-extraction operations do not lose vitreous. I do not think that I see vitreous in 2 per cent. of my extractions of cataract. Mr. Carless, who used to assist me at that time, once said: "Oh, you will have loss of vitreous here; it is one of those cases you have been rubbing, and you often get loss of vitreous when you have been rubbing." Then he was right, for at first I frequently experienced a small loss of vitreous humour when extracting a cataract which I had artificially ripened by trituration before having acquired proper experience of the procedure. My assistant said he was not in the habit of seeing vitreous under other circumstances, and he was about right.

In May, 1890, I wrote, the last 100 consecutive cases have not been picked at all. In these 100 cases I have had no immediate extraction rendered neccessary. In 17 per cent. some iritis followed the trituration, and 5 per cent. had troublesome synechiae. In two of these the synechiae persisted, but did no harm. You will observe I get more iritis than I used to, but I am more successful with the synechiae, and we come to these points—practical ones, I opine. I now triturate much more freely and earlier that I did formerly. The amount of trituration, the amount of ripening that it is necessary to do, and that it is safe to do, has to be gauged very largely by the resistance which the cornea offers. A resisting cornea needs very considerable rubbing in order to affect the cataract sufficiently. Another cornea, which wrinkles and looks miserable, needs very little rubbing. I get more iritis now, because increased experience has emboldened me to triturate much more efficiently than formerly. Less difficulty now arises from synechiae, because in these years I have learned the value and superiority of a combination of cocaine with atropine in the breaking down of recent posterior synechiae, as contrasted with atropine alone, which used to be our sheet-anchor in these cases. I have had cases in which one has used atropine again and again, indeed, three times a day, three times over, and failed to break away a synechia; but when one has used atropine and cocaine in the same fashion the synechia has given way, and everything has gone smoothly. As early as 1890, in only 3 per cent. have I seen any vitreous humour when extracting senile cataracts which I have ripened by trituration. I now do the trituration much more generally, and with less provocation, than I did originally.

When a man who is any use to himself, or to others, comes to me with uncomplicated senile cataract, the vision of one eye reduced below $\frac{6}{60}$, and the other in any way impaired, I tell him at once:

There is some cataract. I cannot tell you how the mischief will progress; it may be months or it may be years before it will have ripened. Any man who pretends to know, from a single inspection, how long it will be before that cataract will ripen spontaneously is a fraud, so far as I can comprehend. I am certainly ignorant of any trustworthy means of gauging, by a single examination, the time which will elapse before a given immature senile cataract will have matured spontaneously. Before you find the vision of your good eye getting troublesome, at your convenience and my convenience, we will arrange to artificially ripen the cataract without danger to that eye, which has now ceased to be useful for the purpose of your business. Having that cataract ripened will only remove you from your habitual avocations for a fortnight. Then, having ripened it, we can choose our own time, the best season of the year, the time most convenient to yourself, and to me, and then we will remove your cataract. You need not have any apprehension of being blind at all during any part of the treatment. You will have your good eye good, long after your present useless eye is cured and almost ready for glasses. Then, when the useless eye has had its cataract removed, and can have glasses—then it will have a long time to "season," and to get ready for use, before it is called upon for the everyday necessities of life; and, again, you will also have the best opportunities of learning to accustom yourself to the undoubted inconvenience associated with the use of powerful glasses. You will have to learn to focus and to dodge about with your elbows, and your arms, and your print, and your light, and can get experience in the use of glasses before you are called upon to earn your bread, or to do your business, with this repaired eye.

I think much of this point. The man has no period of idleness, and he is able to look forward with complaisance to

having the eye cured when it is convenient. He is saved a great deal of anxiety for himself and his friends, and he is saved from running around from one to another to know what he had better do with this eye which is going wrong. I like six or eight weeks to elapse between the trituration and the subsequent extraction of the cataract.

In 100 consecutive unselected cases quoted in 1890 I twice had to remove the cataract earlier than I had intended. One was a remarkably instructive case. It was a woman I shall not easily forget. She had already had a preliminary iridectomy done, eighteen months before, on her worse eye. She could find her way about with difficulty, though both cataracts, nuclear ones, were far from ripe, and, as I judged, not likely to mature spontaneously for several years. I used atropine to dilate the pupil of the worse eye, that which had been iridectomised, and upon which I was going to operate. It is an important detail to have the eye well under atropine before trituration is practised. She complained of some inconvenience from the atropine which had been applied overnight. I cannot say for certain whether I examined the vision and tension of the eye on the morning when I triturated; possibly I was too concerned in combating the filth in a miser's haunt. I operated in my usual way, utilizing the already-made iridectomy. In the evening she complained of considerable inconvenience. The next morning she said her night had been one of torment, and I found that she had acute glaucoma. Her glaucoma had not resulted from the operation *per se*. I had not ruptured her lens capsule. I believe her glaucoma was awakened by the atropine. It was very acute glaucoma: it raged successfully, in spite of the small preliminary iridectomy which existed, and, in spite of the small section for my trituration, she had, indeed, an acute glaucoma. I took out a knife, and I took out her cataract, and her eye then went on perfectly smoothly, and she now has capital vision.

A second instance in which I had to remove the lens sooner than I contemplated after trituration of the cataract happened as follows: I intended to do preliminary iridectomy on the right and preliminary iridectomy with trituration on the left. Atropine was to have been used to one eye, and not to the other; somehow there was a blunder about its use, and to correct this a further blunder was made by using eserine injudiciously. The old lady was in a terrible fright. I did a preliminary iridectomy in one eye, and I did a preliminary iridectomy with trituration in the other. She had acute iritis, and she had some synechiae. I used atropine, and I used atropine and cocaine freely, and her synechiae gave way, and with that there happened what I never witnessed before and only once since—namely, the synechiae tore away the capsule of the lens, and some of the soft matter of her cataract was visible through the tear. Six or seven days after the trituration operation I decided to extract the cataract. I took it out immediately, under ether, and she has done very nicely; V = ⅔.

Certain of my (1890) one hundred unselected consecutive cases did go wrong, but not in consequence of the artificial ripening, I believe, for I judge they would have gone wrong, at least, just as much without it. Thus, in the one hundred cases referred to one man had panophthalmitis. He was the victim of a most horrible ozaena, and no precautions that I could adopt succeeded in preventing infection of his eye-wound. Then there was a woman who did not lose her eye, did not get panophthalmitis, but an eye that is no use: it has no vision. She had a low form of iritis. She got her pupil drawn up. Repeated artificial pupils have all closed up again and again, so she has mere perception of light; she has plastic lymph—capsule and pupillary membrane all mixed up together, where one would like to secure a patent pupil. These, out of the one hundred under consideration, were the only two absolutely bona fide cases that I had of trituration of the lens, followed by extraction, without sight being restored. I had another case, and this woman lost the sight of both eyes after removal of cataract. She was an awkward patient. I have, so far, failed to ascertain with absolute certainty whether or not I triturated either of her lenses. I did not triturate both; that I do know. I am uncertain whether I did or did not triturate one. I record it here in order that the cases shall not be made to appear more favourable than they really are. "Good wine needs no bush."

This, then, showed 3 per cent. of eyes without vision after, not necessarily in consequence of, artificial trituration of the cataract and subsequent extraction. This record might be otherwise expressed as 97 successes out of 100 such cases, the treatment of which has been pushed forward solely with a view of assisting the patients to avoid a period of incapacitating insufficiency of sight. I endeavour to restore sight as quickly as I can, but before all else to avoid blindness, for every one whose eyes come under my care.

The efficacy of a single trituration, like all my other results from this method, improves with my own experience. Thus in only 9 per cent. of the 100 cases (quoted in 1890), as against 28 per cent. of my first 25 cases, did a single trituration fail to ripen a cataract sufficiently within from one to eight weeks. In 6 of such 9 cases I completed the ripening by a second trituration, and the subsequent extractions went smoothly. In the seventh case of retrituration the first retrituration, like the first retrituration of this particular cataract, failed to induce ripeness. A second commenced retrituration of this same cataract made me suspect the existence of a fluid vitreous humour giving insufficient support to the lens, and thus cancelling the effect of such trituration as it would be prudent to do amidst the circumstances.

The best description is a poor substitute for that actual demonstration of the procedure to which all are welcome in the ophthalmic operating room at King's College Hospital or at the Royal Eye Hospital, Southwark.

I must, however, endeavour to describe the procedure as practised by me. I have the pupil widely dilated with a four grains to the ounce solution of sulphate of atropine, applied twice in the preceding twelve hours. I generally use cocaine. My practice is to do a preliminary iridectomy on both eyes and to triturate one. I invariably do my preliminary iridectomy first on the eye I intend to triturate. Having done that iridectomy, having proceeded with my trituration, and that procedure having gone through satisfactorily, I do not hesitate to do the iridectomy on the second eye. The reason for this course is pretty obvious. It has happened (it may happen again, I am always prepared for it to happen, although I have only seen it happen once) that it was necessary, owing to unintended excessive interference with the lens capsule or its attachments, to remove the cataract at the time of the trituration, there and then at the same sitting. I do not like to have, at one and the same time, a recent extraction in one eye and an equally recent iridectomy in the other. I do not like to expose my patients to all that. I do not like to have too many eggs in one basket.

Now, about the trituration. Having done a preliminary iridectomy in a position which will accord with the direction of my section, when I have to extract subsequently, I let the aqueous humour escape from the wound by depressing its posterior lip with the edge of the spoon, and then, wetting the back of the shell or silver spoon with the patient's tears, apply its convex surface to the centre of the cornea, and stroke the cornea in a radiating direction, at first very carefully, observing that the iris always slips away in front of each stroke of the spoon. That is to say, as the cornea goes down against the lens, the iris recedes from the centre, towards the periphery, before the pressure of the spoon.

This slipping away of the iris I regard as being very important. When it does not occur nicely, and a nipping of the iris between the lens and the cornea results, then I expect iritis to ensue. From time to time during a trituration, when I have once ascertained that the iris is slipping away nicely, I make similar radiating strokes with increasing firmness and rapidity, always keeping alert to see that the iris slips away before the stroke of my spoon. If I find it is not doing so, and that the cornea is not falling in beneath the pressure of the spoon, I let more aqueous humour escape. Remember, you may do an enormous amount of rubbing on the front of the cornea, but you will not ripen the cataract by this rubbing if there be a fair quantity of aqueous humour in the chamber. I cannot help thinking that the aqueous humour is secreted rather more rapidly the more you triturate. The amount of trituration to be done depends upon two things. Perhaps upon the amount of cortex that requires to be rendered opaque, but, much more than this, upon the character of the cornea. If you have one of those awkward-looking, wrinkled, fall-in corneae, which look so dangerous, but usually do so uninterruptedly well after cataract extraction, then exceedingly little trituration is requisite. If, on the other hand, you have one of those nice-looking, stand-up corneae, then a good deal of trituration will be wanted. After the trituration I use atropine, not within twenty-four hours, but certainly within thirty-six, and keep the pupil widely dilated.

In a few cases there has been a certain amount of iritis, but no bad consequences have followed.

I look for a very visible change in the appearance of the

cataract from the second to the eighth day after trituration. I am not anxious to see the whole pupil white on the day after the trituration. I have seen it thus suddenly ripened from time to time, and no bad result has followed. Sometimes a very rapidly formed, very general, very dense opacity wanes somewhat after a week or two. I have noticed a few times that a cataract which has ripened exceedingly quickly and very thoroughly within the first forty-eight hours after the trituration, has appeared much less opaque within two or three weeks afterwards.

These artificially-ripened cataracts extract very nicely indeed. The cortex, instead of being a mass of troublesome, sticky, hang-about little bits, comes out very much like overdone bread and milk; generally, a lot of it in front of the nucleus, some of it with the nucleus, some following the nucleus, and in less than 10 per cent. of the cases does any cortex remain behind.

I habitually teach that it is a great knack in removing these lenses to immediately follow up with your spoon after the escape of the nucleus. I have seen many take their spoon off as soon as the lens protrudes in, and is obviously ready to escape through the wound. This bad practice is, I know, seductive, but it is reprehensible, the outcome of inexperience or timidity; it too often leads an operator to muddle about with the spoon, to get out the residue of cortex, which is usually behind the iris and aggravatingly inaccessible, without such dangerously persevering manipulation as may provoke a protrusion of vitreous humour, and undoubtedly favours the introduction of germs.

I am convinced that this method of treatment for immature cataract by trituration renders it important that the patient should be very accessible. Immediate proximity of the patient, facility for frequent inspection, and the best of nursing, must be insisted upon if the best results are to be obtained in the greatest number of instances. I mean that with a new nurse I should not be content to triturate as freely as I habitually do, though it is an operation I frequently do on five to ten cases in a week.

I have, happily, no great experience of eyes going wrong, but I have very great experience in watching the variations of temperature in ophthalmic patients after operation, and I have come to feel that one of the earliest indications that an eye is not doing quite as nicely as it should is furnished by the thermometer.

I must refer to one important point: the peculiar liability to atropine-excited glaucoma of eyes at the age to have senile cataract. It has been abundantly proved by clinical experience, as it was suggested by Priestley Smith's invaluable research. It must make us ever on the alert, therefore, when using mydriatics for aged persons; but, happily for this particular procedure, the liability to glaucoma is diminished by the presence of cataract; a fact which did not escape the recognition of Priestley Smith.

For comparison with my first 25 selected cases, it may be interesting to note that in the later (1890) 100 unselected consecutive cases, none called for immediate extraction of the cataract; two subsequently demanded an unduly early extraction of cataract, namely, within eight days. Both these recovered excellent vision. Of the 25, 28 per cent. were not sufficiently ripened by a single trituration; of the 100, 9 per cent. were not sufficiently ripened by a single trituration; of the 25, 2 per cent. had iritis, some with nasty synechiae; of the 100, 7 per cent. had some secondary iritis after trituration; but only 2 per cent. had any persisting awkward synechiae.

As referred to earlier, 28 per cent. of my first 25 suffered some slight loss of vitreous humour during the subsequent cataract extraction. In the later cases, there has been no such noticeably increased liability to extrusion of vitreous humour. In 1894 it occurred in less than 4 per cent. of the cases. Out of the 25 the sight of no eye was lost. With regard to the 100, 97 per cent. recovered with good useful vision; a few with $\frac{2}{3}$, the majority with $\frac{6}{9}$, and some very few (two) having even better than $\frac{6}{6}$. Of the unselected cases 3 per cent. lost all sight in the eye operated upon. To facilitate comparison I tabulated the experiences just referred to, in the King's College Hospital Reports, to which I would refer critical students.

I have grown to be much impressed with the exceptionally satisfactory character of the cortex one has to deal with in cataract extraction after trituration as compared with cases done without trituration. Indeed, so marked and so advantageous is the non-sticky, overdone-bread-and-milk-resembling condition of the cortex, and its readiness to escape, before, with, and immediately after the nucleus, that, with the experience I now have of the trituration method, I should be disposed to advocate and practise it largely, if only for the advantages it ensures in this important matter of the behaviour of cortical matter at the extraction of the cataract.

Please note, at first, twenty years ago, I very carefully selected the subjects for this treatment, and I got encouraging results, but by no means invariably.

Later, in 1890, I applied the method more generally, but usually to the exclusion of unpromising cases; nevertheless, the results were more generally favourable, and disappointment rarer.

In 1894 I was applying the method to almost every sort of case, and the results had again improved.

Now, in 1904, I have such deeply-rooted, well-grounded confidence in the method, in my own hands, that there is no case of immature senile cataract, with greatly hampered vision, in which I should anticipate any ill effect, and could not count upon improved prospects from practising the method.

As evidence of the above, I recall the fact that when called upon to treat the highly myopic, only useful eye, which had early cataract, and extensive posterior staphylomata, in the person of a severely-handicapped old Indian officer, with sugar and albumen in the urine, with arterial, cardiac, and pulmonary degenerative complications, and whose fellow eye had failed through spontaneous retinal detachment (about the most conceivably unpromising concatenation for a successful cataract operation), I decided in favour of the following course of operative treatment, which fortunately resulted happily, as the eye now enjoys better than $\frac{6}{12}$ of vision; thus fortune favours the bold.

First a downward iridectomy to prolong the period of usable vision while the cataract was early, nuclear, and small; later, an upward, widish, preliminary iridectomy, and free trituration, as soon as the continuing vision was seriously embarrassingly impaired; thus, with the iris entirely severed vertically, I should have less apprehension regarding gouty iritis, which was a further possible contingency to be foreseen; then, after some ten weeks, the extraction of the cataract, which proved to be a bulky one, with abundant easily-escaping bread-and-milk like cortex.

In 1894 I wrote, and I desire to emphatically repeat now, ten years later: "Impressed—increasingly impressed—as I am as to the usefulness of this procedure in my own hands, I feel I should no longer delay giving publicity to my experience, courting a critical appraisal of the practice according to its merits or demerits, and encouraging its thorough trial by conscientious and capable ophthalmic operators." I append a tabulated statement showing the evolution of its successful practice in my hands.

The Evolution of Successful and Safe Maturation of Immature Senile Cataracts by Preliminary Iridectomy with Trituration. Illustrated by the experience of Professor M. McHardy during nearly Twenty Years.

The First 25 Selected Cases yielded:	A subsequent 100 Consecutive Cases (reported May, 1890) yielded:	Forty-nine Unselected Consecutive Cases (independently reported, August, 1894) yielded:	A Review in 1904 of some 800 recent Cases shows:
4 per cent.	2 per cent.	2 per cent.	None.*
28 per cent.	9 per cent.	4 per cent.	1.5 per cent.†
13 per cent.	17 per cent.	2 per cent.	1.25 per cent.‡
28 per cent.	Not noted.	4 per cent.	1.5 per cent.§
None	3 per cent.	None	0.375 per cent.‖

* Required unduly early subsequent extraction of cataract.
† Insufficiently ripened by a single trituration.
‡ Iritis, troublesome but controllable, after trituration.
§ Slight loss of vitreous humour during subsequent extraction.
‖ Total failure to restore sight at subsequent operation.

Mr. HIGGENS said he had given up maturation years ago. He did not see where it came in from the patient's point of view. He extracted all cases where possible without iridectomy.

Dr. HILL GRIFFITH said he had performed this operation ever since Mr. McHardy brought it before the profession, and had seen no bad results assignable to the procedure. It was, of course, quite possible that in many cases it was unneces-

sary, but personally he felt much more confidence in proceeding with extraction when the whole lens had been matured by trituration, than when the lens, being only very slightly opaque, one trusted to its coming away by good fortune.

Mr. J. Tatham Thompson wished to recall to the Section a note he had communicated to the Moorfields Hospital Reports some ten or twelve years ago. In that note he had described the operation of iridectomy and trituration of the lens through the cornea on three cases of immature cataract. The patients were all about the same age, and both eyes were affected. The amount of trituration was approximately the same in all three cases, and in the case of the two males a mature cataract was extracted within six to eight weeks, but in that of the female the lens cleared up, and up to the present date the patient is using that eye, whilst the other lens which was not treated had gradually become increasingly opaque. He still employed the method in certain cases and had no fear of ill results, but he was of opinion that the need for artificial maturation had largely disappeared with the increased facility for removing soft lens substances by the washing-out process of the late Dr. McKeown.

Dr. Karl Grossmann remarked that about fifteen or more years ago he was so struck by Mr. McHardy's praise of Förster's trituration for the ripening of cataract that he was glad to avail himself of Mr. McHardy's offer to see him perform the operation. Dr. Grossmann then performed the operation in a not inconsiderable number of cases; but though there were never any serious or disagreeable consequences, the result was always practically *nil* as far as the desired effect was concerned. He had dropped the operation altogether, and did not see any inducement to take it up again, especially as for the last ten years he had been washing out the cortical remnants, and was infinitely more satisfied with the results obtained thereby.

Mr. Frank G. Thomas said he practised trituration in selected cases. He related a typical case in which it was very valuable. The patient was a man with one eye only, who for thirteen years had been unable to work on account of defective vision. The cataract showed no sign of ripening. Trituration with preliminary iridectomy was performed, and the cataract was extracted six weeks later. The result was vision of $\frac{6}{9}$, and the patient returned to his work as a ship's carpenter in three months.

ASTIGMATISM WITH VARYING AXES.

Dr. Karl Grossmann (Liverpool) read a paper on this subject, the principal points in which were embodied in a paper entitled, Further Investigations on Accommodation, published in the report of the proceedings of the Section of Physiology, which appeared in the British Medical Journal of September 24th.

DISCUSSION ON INTRAOCULAR HAEMORRHAGE AND SYSTEMIC DISEASE.

I.—A. Hill Griffith, M.D.,

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I put aside haemorrhages from accident, optic neuritis, nephritic retinitis, disseminated choroiditis, etc., and confine my attention to intraocular haemorrhages in eyes otherwise free from disease. Such primary or independent haemorrhages may, like haemorrhage elsewhere, occur from the following general conditions:

1. Blood changes.

Infective endocarditis, pyaemia, septicaemia, purpura, scorbutus, and pernicious anaemia. Other toxic conditions, as phosphorus poisoning and parasitic blood affections.

2. Diseased state of finer vessels.
3. Back pressure of cardiac disease.
4. Embolic processes and thrombosis.

Intraocular haemorrhage may occur in the retina, the choroid, the vitreous, or the anterior chamber; but, as far as any personal experience goes, I have no record or recollection of spontaneous haemorrhage into the anterior chamber, nor have I seen choroidal haemorrhage, with the single exception to be mentioned, save in staphyloma posticum, choroiditis, choroidal growths, etc. I should be glad to hear of any such cases.

No. 61 in the tables appears to be the only case in which it is noted that the haemorrhage is choroidal. Allowing for errors or omissions on my part, we must all admit that haemorrhages recognizable by the ophthalmoscope are incomparably less frequently to be referred to the choroidal than to the retinal vessels.

In some cases of choroiditis disseminata the true nature of the affection is for a time concealed by the presence of numerous haemorrhages, which are here properly to be regarded as an effect or accompaniment, not as the cause of the choroidal disturbance.

In most of the retinal haemorrhages the retina was apparently otherwise unchanged, but in some there were slight changes recognizable, such as localized swelling and exudations, probably secondary to the blood effusions.

The former class may be spoken of as "retinal haemorrhages," the latter as "haemorrhagic retinitis," although they might be more correctly designated retinal haemorrhage with resulting exudations.

Intraocular hamorrhages cannot be very common, for, among 6,500 consecutive cases of all kinds in my private practice, there were only 33 cases of spontaneous haemorrhages, a proportion of 0.5 per cent. Besides these I have records of 50 cases in my hospital practice, but this latter must, I imagine, be quite a small proportion of what I have seen, but have no notes of. These 83 cases may be classed as follows:

Retinal haemorrhages	41
Haemorrhagic retinitis ...	20
So-called subhyaloid haemorrhage ...	14
Haemorrhage into vitreous	8
	83

Some of these patients were examples of more than one of the groups. Details of all these cases in tabular form are in your possession, and it will only be necessary to briefly sum up the characters of each group.

The subhyaloid haemorrhages attacked 10 females as against 4 males, a preponderance of the female sex also, but to a less marked extent, noticeable in all the 83 cases—namely, 47 females against 36 males.

The haemorrhage in all the subhyaloid class except one occurred at the macula, but the exception was a very marked case of a large circular haemorrhage at the nasal side of and slightly overlapping the disc. The left eye was affected in 7, exactly the same number of times as the right.

In one case the haemorrhage burst into the vitreous, filling it with blood and destroying the sight—this occurred in one or two other cases but to a much less marked extent. In two cases there were retinal haemorrhages of the ordinary type in the other eye. In four cases "red vision" was noticed by the patient. In nearly all complete restoration of sight took place.

The prognosis both as to sight and life is much better than in any other form of intraocular haemorrhage; for, with the exception of one patient who died of tuberculous disease and one case of nephritis, none showed signs of systemic disease. In one case the patient was four months pregnant, in two the dimness of sight was synchronous with a menstrual period. Our assistant surgeon, Dr. Horsman McNabb, kindly furnished me with notes of a typical case which came on suddenly during a severe labour pain. Case 83 seen by me an hour and a half after the onset, occurred in a woman who had been dismissed unexpectedly (for her) from her situation as housekeeper the previous day, and had doubtless spent in consequence a restless night.

In No. 38 there was increase of tension, with total loss of perception of light in the upper half of the field, and the presence of a large dark mass (edge red) in the lower part of the vitreous. The eye was excised, as the presence of a growth seemed likely. No growth was present, but a large dark blood clot, quite 6 mm. in thickness, was found attached to the lower half of the fundus. It extended by a narrow extremity from a very large pale yellow circular area, with raised edge, situated immediately to the nasal side of the disc. I have little doubt that this has been an example of a large subhyaloid haemorrhage making its escape below. Microscopic sections which I present to you clearly show the hyaloid membrane bridging over the circular area, in this way enclosing a cavity in which some blood corpuscles can still be seen. This case substantiates, as far as one case can, the usual view held as to the position of such haemorrhages.

Under the heading of "Haemorrhages into the Vitreous" I have included only such as presented the ordinary appearance of red blood clot, although I daresay some cases of dark floating opacities were of this nature. Of the 8 undoubted

TABLE OF CASES.—*Intraocular Haemorrhage and Systemic Disease.*

No.	Name.	Sex.	Age.	Condition of Eye.	General Condition.	Progress.
	Hospital Cases.					
1	M. R.	F.	23	R. Took bad 2 days ago; "Fog" came before eye when rising from prayer. Fingers. Large triangular retinal haemorrhage, apex at disc margin	—	In 4 months complete restoration of vision.
2	J. E.	F.	43	L. ⅔. Took bad 1 month ago. Haemorrhages all along vessels on disc	Is rheumatic, finger-joints stiff, bent, and swollen	
3	C. B.	M	—	V. ·16 J. each eye. V. bad 3 months—very small haemorrhage in left fundus, right fundus normal	Urine 1015. No albumen. Staggers when he walks, tendon reflex normal. Moderate smoker and drinker	
4	E. H.	F.	—	L. 16 J. V. bad 8 weeks, few retinal haemorrhages and some white exudations	Urine normal	
5	S. R.	F.	56	R. Fingers. Took bad 1 week ago. Immense haemorrhage at macula several times size of disc, several small ones around disc. L. ⅔. Below disc is an irregular little mass of white exudations and haemorrhage	Heart beat heaving. No albumen in urine; slight ptosis	
6	E. B.	F.	—	R. —. L. 12 J. ⅔. Vision failing 3 weeks. Great number of retinal haemorrhages each eye with few white exudations, discs normal	Very hard-working woman, constipated badly, frequent nocturnal urination. No albumen in urine	
7	W. A.	M	35	Large single haemorrhage near disc of one eye	R. Homonymous haemianopsia L. Homonymous haemianopsia	
8	R. R.	F.	52	R. Retinal haemorrhages	Heavy smoker, diagnosed as tobacco amblyopia	
9	J. A.	M.	44	Fingers, each eye. Hyperaemia of discs, retinal haemorrhages, "beaded" vessels	Heavy smoker and drinker. Tobacco amblyopia (?). Good visual fields. No colour scotoma	
10	J. R.	M.	40	V. ⅔ each eye. R. Retinal haemorrhage down and out near disc. L. Fundus normal	Good visual fields. No colour scotoma	
11	E. McD.	F.	35	R. ⅔. L. ⅔. Partly. Sight took bad this morning. R. Slight optic neuritis, small haemorrhages at macula, and striated haemorrhages near disc	—	Haemorrhage burst into vitreous, filling eye with clot. No perception of light.
12	E. D.	F.	54	L. Large subhyaloid haemorrhage at macula. R. Later showed bad haemorrhagic retinitis	No symptoms of Bright's disease. No cardiac hypertrophy	9 months later condition little changed.
13	J. C.	—	56	R. ⅔. L. ⅔. V. going a fortnight. R. Clump of exudations and haemorrhages above disc. Well-marked neuritis and cluster of shining white dots at central region	Urine 1025. No albumen	
14	D. L.	M.	56	R. 6. L. 19. Jaeger. L. Haemorrhages all over fundus, vessels tortuous, veins large. R. One haemorrhage near disc and several smaller ones at central region	Heavy smoker and drinker. Central colour scotoma each eye	
15	M. L.	—	54	R. 20. L. 18. Both discs markedly hyperaemic. Recent retinal haemorrhage in R. eye only		
16	G. L.	M	14	L. Divergent. Perception of light. Took bad suddenly one morning 3 months ago; vitreous full of blood clots; numerous retinal haemorrhages	Case of tobacco amblyopia	
17	W. K.	M.	32	R. ⅔. L. ⅔. One or two very small dotted haemorrhages in one eye	Not a heavy drinker. Urine 1020. No albumen. Slight quantity of sugar	
18	W. A.	M.	36	R. ⅔. L. ⅔. L. took bad 8 days ago. Clump of haemorrhages and white exudations about central region. Radiating lines around macula, and one linear haemorrhage at nasal side of disc	Heavy drinker; no tenderness of muscles, but pain from feet to thighs	
19	F. M.	M.	42	R. ⅔. L. ⅔. Left eye bad 3 months. Retinal haemorrhage just above disc	Has had premonitory symptoms of glaucoma for 12 months. Frequent urination, no dropsy, no albumen in urine	
20	E. O.	F.	54	L. Single large retinal haemorrhage. Vision bad 4 days, acuteness not noted, atropine used to facilitate examination, produced glaucoma, cured by eserine. V. I. ⅔.	Rheumatic fever 7 years ago	
21	E. B.	M.	42	L. ⅔. Sight bad 6 weeks. Clump of haemorrhages and white exudations. Blurring of disc edge	Urine 1010. No albumen	5 years later other eye showed retinal haemorrhages. Bluish lace-like membranes in both eyes, probably attached to ciliary region and extending into eye. V. ⅔ each eye.
22	A. H.	F.	46	R. Fingers. Retinal haemorrhages and vitreous opacities; later the vitreous became full of blood	—	7 years later fundus normal; vision I. ⅔.
23	E. M.	F.	28	R. "Fog" one week, vision not noted. Large subhyaloid haemorrhage at macula		
24	J. P.	M.	48	L. 20. Eye became dim this morning after fit of coughing; extensive retinal haemorrhages especially at central region, also on disc reaching the physiological cup		
25	S. R.	F.	27	L. Bad 10 days, large semicircular subhyaloid haemorrhage at central region	Pregnant months; has two children, had three miscarriages	
26	N. R.	M.	45	R. ⅔. Eye failing 1 month. V. was much worse at start, well-marked flame-shaped haemorrhages all over central region, and smaller rounded haemorrhages towards equator	Been off duty with bronchitis. Pulse normal; no cardiac murmur, but increased area of dullness	In 3 months saw "fingers" only.
27	S. S.	M.	61	R. Failing a fortnight, everything looks red. Central subhyaloid haemorrhage	No albumen in urine	
28	A. R.	F.	64	R. 16. Failing 1 week. Cluster of haemorrhages and exudations below centre of fundus rather like a nephritic case	No albumen in urine	

29	T. T.	M.	[illegible]	L. Yesterday at 9 a.m., sight went for 10-15 minutes, so that he could not see the windows. When sight commenced to return everything looked green. In half-an-hour had a second attack, and a third in a similar period; sight kept poor till 6 a.m. next day, when I saw him at 12.14 p.m., and found the vision normal in each eye. Numerous splotches of haemorrhage over disc surface, also in retina around; disc blurred, veins engorged and tortuous, arteries normal or fine—evidence of old choroiditis disseminata	Health good for last 3 months, had to rise to urinate frequently—pulse 90 full, heart normal. Is not a nose-bleeder	Haemorrhages gone in a month.
30	W. H. W.	M.	51	R. 20 Jaeger. Bad 3 days. Gas flame looks red. Sheet of white paper appears to have dark spot in centre with the edge red. Very large central subhyaloid haemorrhage	Water hammer pulse	
31	S. B.	F.	49	R. 16. Eye went blind 10 days ago. Everything looked red; defect in field above. Large haemorrhage below at same distance from disc; one smaller haemorrhage above disc. Some patches of choroidal atrophy with pigmentation	Heart sounds normal	
32	T. F.	M.	45	L. $\frac{5}{6}$. Going 3 weeks. Small round macular haemorrhage, sharply defined	Health good, no albumen or sugar in urine	
33	M. H.	F.	27	L. 16. Sight bad for 6 days; everything looks red, central blank in field large subhyaloid haemorrhage at central region, semicircular in shape, the upper straight edge does not quite reach the fovea	Rheumatic fever 6 years ago, since then pain in feet. Typhoid 6 years ago, since then marked improvement in health. No albumen or sugar in urine	
34	W. H.	M.	26	L. Retinal haemorrhage, and blood in vitreous	Splenic leucocythaemia	
35	M. S.	F.	48	R. Finger at 8 feet. Went suddenly day before. Very large subhyaloid haemorrhage. L. $\frac{6}{9}$. Minute white glistening dots at macula, and few linear haemorrhages near disc	Nephritic case	
36	P. McD.	M.	61	L. Fingers at centre only. Peripheral contraction of field. V. bad 11 weeks. Few small retinal haemorrhages near centre, disc rather pale, one or two fine white lines towards macula recognized as blocked vessels	The loss of vision was immediately preceded by a transient left-sided hemiplegia. Aortic systolic murmur. No albumen or sugar in urine	
37	E. H.	F.	63	V. Going 2 years. R. large semicircular subhyaloid central haemorrhage, red vision. L. one small haemorrhage up and out from disc, few other finer ones	Swelling of ankles, frequent urination, pulse not hard, heart normal, no albumen in urine. Had attacks of gastritis	
38	T. Y.	M.	34	L. Hand. No perception of light from above. Red mass of blood seen by oblique illumination. Iris greenish, reacts only through other eye, easily dilated with atropine. No adhesions. Got some dirt in the eye 4 days ago, dates the defect of vision from this	—	Eye removed on account of possibility of its containing a growth.
39	M. B.	F.	71	R. 20. Went suddenly bad fortnight ago. Field defective at nasal side, one small round haemorrhage just at outer edge of disc concealing a small artery going to macula	No albumen in urine	
40	M. T.	F.	24	L. 20. Sight went 2 days ago. Very large central subhyaloid haemorrhage	Urine free from albumen	
41	T. K.	M.	38	R. Staphylomatous, lost when a child. L. took bad a fortnight ago when he was in bed with haemoptysis. Perception of light, disc pale, edge blurred, few small haemorrhages in retina	Had purpura, just recovered. Fingers clubbed. Lips pale, tongue enlarged and marked with teeth. No albumen in urine. Heart sound normal	
42	E. J.	F.	34	L. $\frac{6}{9}$. Sight went 2 months ago when washing steps, got nearly well, but became much worse yesterday. Has had two similar attacks same eye 6 and 8 years ago, several small retinal haemorrhages and numerous opacities (? blood) in vitreous	Appearance pale yellow and pasty, menstruation regular, not constipated, often bilious	
43	J. G.	M.	62	R. Shadows. L. Hand. Haemorrhages in vitreous each eye. Flame-shaped retinal haemorrhages seen in better eye only		
44	B. S.	F.	24	L. Fingers. Eye took bad same day as menstrual period started, large central subhyaloid haemorrhage, also same opacities in vitreous	Pulse regular, not hard. No cardiac enlargement. No albumen or sugar in urine. Health poor, since chicken-pox 6 months ago	
45	M. F.	M.	—	each eye. Few fine retinal haemorrhages below disc in each eye and few exudations. Moderate peripheral contraction of fields	Heart normal	Haemorrhages cleared away in few months.
46	A. H.	F.	60	L. Fingers. Sight went suddenly during night, 3 days ago. Large pear-shaped haemorrhage at central region, and smaller one above disc. R. $\frac{6}{9}$. One small haemorrhage up and in from disc	Urine 1010. No albumen	
47	L. C.	F.	60	R. 20. L. Fingers. Vision bad in left eye 3 years, in right eye 4 months. R. haemorrhages all over fundus, also some whitish grey dirty-looking exudations. L. disc pale. Many of the vessels simply fine white threads.	Hard pulse	
48	N. W.	M.	70	L. $\frac{6}{9}$. Sight defective few months. Numerous small scrappy and splotchy haemorrhages around but at some distance from disc	Frequent nocturnal urination. Urine normal	
49	H. W.	F.	56	L. $\frac{6}{9}$. Exudations and haemorrhages up and out from disc, arteries wire-like	Urine normal	
50	M. S.	F.	48	L. 20. Vision bad 12 months. Marked arterial sclerosis with haemorrhagic retinitis	Albumen in urine. Dr. R. T. Williamson diagnoses case as one of "chronic Bright's disease"	
	Private Cases.					
51	Mrs. H.	F.	—	R. 19. Found out defect 5 days ago, haemorrhages and exudations about disc	Dr. Fiddes of Urmston writes me that there is much albumen in urine. A distinct mitral systolic murmur. Oedema of eyelids at times. Married 5 years, never pregnant	7 months later V.—20 disc bluish white field gone below. No haemorrhages. Some white lines, obliterated blood vessels. Died 7 years later from nephritis, had uraemic convulsion and symptoms of cerebral haemorrhage. Chronic alcoholism.
52	Mrs. C.	F.	35	V. Failing 1 month. L. haemorrhagic retinitis. Veins enormously engorged. Disc quite concealed by haemorrhage and grey exudation	Syphilis from husband 8 years ago. Iritic adhesions in R. eye. Fine and strong woman	
53	Mr. D.	M.	60	R. Myopia about —5 D. Perception of light, projection gone. L.—9 D. $\frac{6}{9}$. Large staphyloma each eye. R. pupil reacts feebly, macula very distinct, haemorrhage upon disc; vessels do not look like case of embolism, but it may be	R. eye bad 4 days. Business troubles left hemiplegic stroke last year	Died of cerebral apoplexy few years later.

o.	Name.	Sex.	Age.	Condition of Eye.	General Condition.	Progress.
	Private Cases.					
54	Mr. H.	M.	47	L. 10. Central absolute scotoma, gas flame did *not* appear red. V. Took bad 14 days ago when rising from stooping position. Very large circular central subhyaloid haemorrhage and one small radiating linear haemorrhage at nasal side of disc	Dr. Lewis Brown, of Bolton, writes, "No sugar or albumen in urine, last winter had extensive left-sided pleurisy with effusion. Got well without operation. Dulness still at left base, tuberculosis possibly present"	Died some years later with tuberculous disease of wrist-joint and lungs.
55	Mr. P.	M.	50	R. $\frac{6}{9}$. Two small retinal haemorrhages near macula and two minute spangles of cholesterin	Gouty subject	Patient alive and well 8 years later.
56	Mr. T.	M.	44	R. $\frac{6}{12}$. L. $\frac{6}{9}$ V. failing a few months. Small absolute scotoma in R. eye corresponding to blocked vessel near disc. Numerous white glistening radiating lines at macula, retinal haemorrhages and clump of white exudation, worst in R. eye	No albumen or sugar in urine	
57	Mrs. W. B.	F.	—	L. $\frac{6}{9}$. White exudations and haemorrhages	Influenza 2 months ago. Her medical attendant, Mr. A. Shipton, of Buxton, tells me she is not herself gouty, but her family is. Hard pulse. No albumen in urine	Patient well 7 years later.
58	Mr. H.	M.	—	R. Blood clots in vitreous, cannot see fundus. Eye bad 16 months	——	Died of angina pectoris.
59	Mrs. ?.	F.	—	R. 6. L. 1. Haemorrhages in both retinae	Diabetes	Dr. Morley Preston writes me that patient died a year later of bronchitis and diabetes.
60	Mrs. L.	F.	—	One Jaeger each eye. Diplopia 3 weeks. Fine haemorrhages at central region left eye	——	In a month haemorrhages gone, diplopia persists.
61	Mrs. R.	F.	41	R. Perception of light. Tn. L. $\frac{6}{9}$. R. V. gone for 2 months. Posterior half of vitreous filled with greenish cotton-wool-like mass, blood at lower part. L. hyperaemia of disc, one or two very small roso-red spots of haemorrhage *in choroid*. There is no staphyloma	Rheumatic fever when 21 and also 7 years later	
62	Mrs. T. T.	F.	48	L. $\frac{6}{9}$. Well-marked haemorrhagic retinitis, complete obscuration of disc. Numerous haemorrhages around and on disc	——	Complete recovery in 2 months. Kept well 5 years later.
63	Mr. F.	M.	50	L. V. bad 2 months. Haemorrhages and pearly patches in retina. Might be syphilitic or nephritic from appearances	His medical attendant says he has had syphilis	
64	Mrs. W.	F.	—	L. $\frac{6}{9}$, dim 2 months, central haemorrhages and white exudations to outer side of and below disc	Has gout	Patient alive and well 5 years later. Did not see the eye
65	Mrs. B.	F.	—	L. Haemorrhagic retinitis. V. 16 Jaeger	——	R. eye became affected later on.
66	Mrs. F.	F.	—	$\frac{6}{12}$ each eye. Retinal haemorrhages each eye	Cardiac murmur, atheroma of vessels. No albumen in urine. Rheumatic fever 10 years ago	Died suddenly about 12 months later; found sitting on a chair.
67	Mrs. H.	F.	—	$\frac{6}{9}$ each eye. Retinal haemorrhages each eye	Diabetes	
68	Mrs. T.	F.	60	$\frac{6}{9}$ each eye. Retinal haemorrhages each eye. The eyes show slight episcleritis	Her medical attendant, Dr. Hilton Thompson, tells me she has high arterial tension, and is gouty, but no albumen in urine	Died about 1 year later from attack of bronchitis, with dilated heart, but no kidney trouble.
69	Mrs. W.	F.	—	R. Retinal haemorrhages and white exudations at central region, some fine glistening dots in retina	Sugar in urine	Alive and well 5 years later.
70	Mrs. B.	F.	—	Haemorrhages in both retinae		
71	Mrs. H.	F.	—	Retinal haemorrhage both eyes, followed by glaucoma, did well after iridectomy on each eye		
72	Mr. S.	M.	—	R. $\frac{6}{18}$. L. $\frac{6}{24}$. V. bad a fortnight. Large number of big dark retinal haemorrhages each eye		
73	Mr. T.	M.	60	R. $\frac{6}{24}$. L. $\frac{6}{12}$. Retinal haemorrhages both eyes	——	Died 4 years later of gangrene and diabetic coma.
74	Mr. A.	M.	60	L. 10. Haemorrhage and white exudations towards macula	No albumen or sugar in urine. High tension pulse, frequent urination at night. Had inflammation of the kidneys 30 years ago. Has a deal of heavy lifting and strain on eyesight at his work at calico printing	
75	Mr. ■.	M.	39	R. 16. L. 20. Vision bad a fortnight. R. one retinal haemorrhage to outer side of disc. L. one haemorrhage to outer side and below disc, wirelike arteries in each eye. Central colour scotoma each eye	Heavy smoker and drinker	In a month haemorrhages gone; vision as before.
76	Mrs. P.	F.	49	R. 10. Vision dull lately. Enormous number of haemorrhages, especially towards equator, seem to be in connexion with veins	Urine 1020. No albumen; no sugar. No cardiac disease, very short of breath. Dysentery 18 months ago. Frequent nocturnal urination. Menstruation still regular	
77	Miss R.	F.	—	R. Fingers. L. 20. Numerous haemorrhages and exudations each eye with opacities in vitreous	Pulse hard, atheromatous	
78	Miss H.	F.	40	L. 16. $\frac{6}{9}$ bad 2 days. Came on at menstrual period. Large central subhyaloid haemorrhage	Palpitation. Operation for piles some time ago	Sight got well. Haemorrhage disappeared.
79	Miss H.	F.	35	L. $\frac{6}{9}$. Eye dim 8 weeks, large number of retinal haemorrhages near centre, just above is (?) raised greyish area covered with minute haemorrhages	No particular illness	Eye got all right.
80	Mrs. H.	F.	70	R. 20. Haemorrhagic retinitis, sight bad 4 months	When sight became affected was in bed with bronchitis.	Alive and well 12 months later. Vision no worse.
81	Mr. R. T.	M.	56	R. Severe haemorrhagic retinitis	Congestion of lungs after influenza 3 years ago. Oedema of left leg remains	Patient alive and well 3 years later.
82	Mrs. W.	F.	—	R. $\frac{6}{9}$. Vision bad lately. Haemorrhagic retinitis, veins slightly tortuous. One spot of pigment	Health excellent	
83	Miss F.	F.	58	R. $\frac{6}{12}$. Vision took bad 1½ hour ago. Enormous round subhyaloid haemorrhage *not* at macula, but to nasal side of disc and slightly overlapping the latter	Alcoholic and constipated. Had just got notice to leave her place as housekeeper day before eye took bad. No albumen or sugar in urine	

cases, all showed haemorrhages in the fundus save 2, and in these the background of the eye could not be properly seen. I should like to hear of cases in which it is thought that the vessels of the ciliary body furnished the blood effused into the vitreous. One of these cases had splenic leucocythaemia, and 1 died of angina pectoris.

Let us now look at the 61 cases of retinal haemorrhages and haemorrhagic retinitis as to causation and results and some other points. In a little over half the cases a definite cause was made out: Constipation, 2; bronchitis, 3; severe fit of coughing, 1; gout, 4; syphilis, 5; purpura, 1; Bright's disease, 2; diabetes, 2; organic heart disease, 4; hemiplegia, 2; hemianopsia, 2; alcoholism, 3; high arterial tension, several; rheumatism, 3.

No. 24—the case of severe cough—I saw a few hours after its occurrence, and think it is very strange that this does not occur more frequently, for severe cough, especially whooping-cough, in children is frequently followed by very extensive ecchymosis, both in the conjunctiva and even in the eyelids, but in a large number of such cases I have never found intraocular haemorrhage, although always on the outlook for it.

Five cases occurred with tobacco amblyopia, and I have for some time been satisfied that this affection is not infrequently the cause of retinal haemorrhage, and when we consider how common in the early stage of this form of amblyopia is congestion of the disc, this view seems reasonable. Glaucoma occurred in 2 cases, one cured by eserine (atropine had been used to dilate the pupil) and the other by iridectomy. Of course, these two cases do not at all adequately represent the proportion of cases of glaucoma following retinal haemorrhage, for in many, if not most, the media would be too opaque for ophthalmoscopic examination.

In 7 cases marked sclerosis of the retinal arteries was noted, and I daresay if I had been earlier and better acquainted with the work of Hirschberg, Steadman Bull, Marcus Gunn, and others on this subject, I should have had more to say under this heading. I believe the time is not far distant when the vascular changes in the eye in relation to changes in the general and intracranial circulation will be as well worked out as the connexion between brain and optic nerve.

I should here like to mention a very strange case lately under my observation, which I fancy must be an arterio-venous aneurysm on each retina, but I am open to correction. R. B., aged 39, a perfectly strong, healthy blacksmith, had (?) sudden loss of vision of the right eye five years ago; the left had been failing only one week, and he could read the papers, he says, one week before I saw him. The right eye, which is slightly divergent, had only perception of light, there was total detachment of the retina, and in the centre, well forward from the back of the eye and best seen with a glass of + 8 D, was a solid-looking, dirty-white rounded flask-like body which trembled slightly during movement of the eye. Numerous red lines and spots were distributed over its surface, a distended and tortuous vein loses itself on the lower end, and a large artery on the opposite end. The left eye had vision of 16 Jaeger and similar changes, but in a less advanced stage were clearly made out. A precisely similar body to that in the right eye was seen about the central region, with an enormously-distended and tortuous vein from the lower part of the optic disc, losing itself on the lower part of the aneurysm (if we may call it so), and a much-distended artery from the upper part of the disc joining the upper part. There was a small localized shallow detachment of the retina near the central region, and a bright pearly patch in the lower part of the retina between the disc and flask-like body.

Six out of my 33 private cases died within twelve months or some years of apoplexy or other disease. I recollect many years ago seeing for Dr. Little an elderly gentleman with retinal haemorrhage who was a very abstemious man in the way of alcohol, but was a great diner-out, and habitually overate himself. He suffered greatly from constipation, and died of apoplexy shortly after I saw him.

I have looked up all my cases of homonymous hemianopsia, thinking it likely that we should find haemorrhages, but in the total of 52 patients there were only 2 cases, the haemorrhage being found in one eye only, and that on the opposite side from the defect in the fields—namely, on the side of the brain lesion. The same thing has been noted by Dr. R. T. Williamson[1] in hemiplegia.

In 25 cases of embolism of the arteria centralis retinae or its branches there were only 5 cases presenting retinal haemorrhage, and in 1 of these only was the effusion of blood at all extensive; the left eye was affected in 14, the right in 11. Haemorrhage occurring as the result of embolism must be very much less frequent in the retina than in other organs; probably the pressure of the vitreous prevents the return of blood from the veins and the formation of an infarct.

By the kindness of my colleagues, the physicians at the Royal Infirmary, I was enabled to undertake an ophthalmoscopic examination of cases in their wards. By the permission of Dr. E. S. Reynolds, the Visiting Physician of the Crumpsall Union Workhouse Infirmary, I also examined some 38 cases of heart disease. I am glad also to tender my thanks to the house-physicians, who were of great assistance to me. The examination was in all cases done with the pupils fully dilated with homatropin both by the direct and indirect methods.

The total number of patients examined was 500, and at the Royal Infirmary no sort of selection was made, but many were, of course, bad cases of heart disease. Besides haemorrhage, I paid special attention in every case to the occurrence or absence of spontaneous pulsation in the retinal arteries. Pulsation in the retinal veins is, I am satisfied, of no pathological import, and I should think it was present in about 1 in every 3 or 4 cases of all kinds. Arterial pulsation was only made out in 10 cases; 8 of these were in aortic regurgitation, of which I examined 23 cases; the remaining 2 cases of arterial pulsation occurred respectively in a case of general cardiac dropsy and in a patient with cardiac muscle failure.

Retinal haemorrhages were found in 14 of these 500 patients, a proportion of 2.8 per cent. At first sight this does not seem very large, but if we compare it with the 0.5 per cent. among my private eye cases of all kinds we shall see it is more than five times as frequent. We must further bear in mind that one examination only was made, and it is quite possible that many of the cardiac and other cases might have later on developed haemorrhages. None of the patients were aware of any defect of sight and all could read the papers; a few only were not in condition to give information on this point. The following are brief notes of each case:

1. Kidney case. Right eye. Flame-shaped haemorrhages around disc, apparently in connexion with veins.

2. Right apical pneumonia. Right eye. Small retinal haemorrhage close to outer and upper part of disc.

3. Dilated heart. Right eye. Small retinal haemorrhage just above disc.

4. Nephritic ascites. Right eye. Few small rose-red spots of haemorrhage at central region.

5. Rheumatism. Right eye. Minute capillary haemorrhage close to temporal border of disc.

6. F. E., age 25. Dr. Harris. Tuberculous enteritis, no cardiac signs, patient very ill, high temperature. Vidal's blood reaction negative. Vessels of retinae, especially veins, enormously engorged and tortuous. Left eye: Numerous splotchy haemorrhages near disc, especially at temporal side. Right eye: Haemorrhages fewer and smaller. A fortnight later the haemorrhages were gone in the right eye and less in the left eye.

7. Left hemiplegia. Left eye. Clump of retinal haemorrhages.

8. W. T., age 45. Dr. Bury. Extreme anaemia, trace of albumen in urine. Blood examination by Dr. C. Melland was against its being pernicious anaemia. Red corpuscles, 1,805,000 per c.mm. (5,000,000 normal); white corpuscles, 11,000 per c.mm. (7,000 normal). Haemoglobin, 26 per cent. Discs pale and yellow, numerous flame-shaped haemorrhages near discs, also fewer scattered spots towards equator.

9. H. B., age 37. Dr. Dreschfeld. Pernicious anaemia. Examination of blood by Dr. C. Melland was against this. Red corpuscles, 1,232,000 per c.mm.; white corpuscles, 3,687 per c.mm. Haemoglobin, 15 per cent. The autopsy confirms the diagnosis. Discs pale and yellow, blurred at edges, veins much engorged, arteries "silver wire" like. Splotches of haemorrhage and exudation, but no radiating opacities at macula.

10. J. W., elderly. Dr. Bury. Pernicious anaemia, ill some five months. No red colour under finger-nails. Blood was examined by Dr. C. Melland. Red corpuscles, 1,570,000; white corpuscles, 4,000. Haemoglobin, 42 per cent. Red corpuscles very irregular in shape and size, changes in blood typical. Right eye: Small haemorrhage below disc. Left eye: Small haemorrhage above disc. Arteries rather fine, discs rather pale and yellow—"tiger-skin" fungus.

11. M. C., age 37. Mitral stenosis, ill two years, dropsy of feet and face, urine 80 oz. contained albumen. Right eye: Haemorrhage below disc apparently in connexion with vein, one tiny haemorrhage on macula, some few white patches of exudation, no radiating opacities at macula. Left eye: Lower half of disc covered with haemorrhages, numerous white exudations around disc interspersed with haemorrhages.

12. Cardiac muscle failure, dropsy. Left veins full, arteries wire-like, small haemorrhage at and out from disc.

[1] British Medical Journal, June 11th, 1898.

13. Aortic and mitral case. Left eye: Very small recent haemorrhage on nasal border of disc.

14. E. T., age 35. Dr. Steell. Splenic leucocythaemia. Both fundi show the characteristic orange colour, arteries are as large as the veins and flattened. A little cluster of haemorrhages occupy lower and inner quadrant of left disc. No haemorrhages in right eye.

Nature appears to be very well able to safeguard the eye even in grave disorders of the general circulation, but against changes in the blood she is not so efficient.

II.—Lucien Howe, M.D.,
Buffalo.

Dr. Howe presented the eye of a man 28 years old, apparently in good health. The first haemorrhage into the left eye occurred in 1902; the second attack occurred early in 1904. A glaucomatous condition ensued and enucleation was performed in June, 1904. Section of the globe showed an extensive haemorrhage from the ciliary region. The retina was pushed backward, but the haemorrhage did not invade the vitreous, apparently, to any extent.

III.—Dr. Uhthoff,
Breslau.

Dr. Uhthoff said: It may not be without interest, as bearing upon the excellent remarks of Dr. Hill Griffith, if I demonstrate to you the anatomical status in a case of so-called extensive preretinal haemorrhage in a patient 24 years of age. I was able to observe the phenomenon ophthalmoscopically intra vitam, and the case has been described at length by Jschreyt of the Breslau University Clinic. (Beitrag zur pathologischen Anatomie der Hämorrhagischen Netzhauterkrankungen, *Archiv für Augenheilkunde*, Band xli, Heft i). The preparation and drawing of the same show how the large, flat, coherent haemorrhage, measuring some 9 mm. in diameter, lies not before and upon the retina, but close under the membrane—limitans interna—and consequently really pertains to the retina itself. One perceives plainly how the limitans interna is loosened from the nerve-fibre layer of the retina, covering a small portion of the clot, and separating the latter sharply from the vitreous. The innermost retinal layers are partly suffused with blood and are pathologically changed. The haemorrhage itself shows scattered accumulations of serous, coagulated, and fibrinous exudations, thereby taking on a spotty appearance. I think that the intraretinal position of extensive haemorrhages of this kind, with loosening of the limitans interna, explains very well how these extravasations remain sharply defined and why they show no tendency to spread into the vitreous. Another rare preparation may also be of some interest; it shows an extensive haemorrhage, producing detachment of the retina through large subretinal blood-clot. A patient with unilateral retinitis haemorrhagica developed this affection before our eyes in a very short space of time, so that the aspect of an exceedingly prominent detached retina was complete in a single day. Such non-traumatic haemorrhagic detachments of the retina are certainly very rare.

IV.—S. D. Risley, M.D.,
Philadelphia.

Dr. Risley related briefly the case of a lady, aged 45 years, with haemorrhage into the nerve fibre layer of the retina near the macula of the right eye. There was no evidence of disease either in the general vascular system or in the blood vessels of the eye. The haemorrhage slowly absorbed, but recurred twice at intervals of twenty-eight days. Examination of the blood showed corpuscles of Laveran. Three months were then spent at a German spa. Soon after her return to her home, which was situated in a well-known malarial district on the Delaware River, she died in her seat at church from cerebral haemorrhage.

V.—Charles A. Oliver, M.D.,
Philadelphia.

Professor Oliver exhibited drawings of the ophthalmoscopic appearances, and gave detailed accounts of the blood changes in two cases of pernicious anaemia occurring in the negro. Sections of the retinal tissues showed the presence of varicose nerve fibres with small haemorrhages; no trace of ganglion cells were visible. He also gave a brief account of a remarkable case of splenic leucocythaemia in an Italian which presented characteristic fundus oculi changes. Examinations of the blood, both quantitative and qualitative, offered an unequivocal proof of the condition. The leucocytic aggregations and haemorrhagic degeneration changes in the eye ground—particularly in the temporo-macular region, with the abundant sacculations and fresh extravasation masses—gave an ophthalmoscopic picture which was quite complete.

VI.—George Carpenter, M.D.,
Physician, North-Eastern Hospital for Children.

Dr. Carpenter said that Dr. Hill Griffith had in his paper given a solitary illustration of retinal haemorrhage occurring in a case of whooping-cough. He would like to add to Dr. Griffith's observations his own on retinal haemorrhages specially as occurring in children and from the physician's standpoint. He cordially agreed with Dr. Griffith's observation as to the necessity of dilating the pupil for the purpose of making a reliable examination, and this more especially applied to the case of children. He (Dr. Carpenter) always used mydriatics for such a purpose. He had for several years made observations of the fundus oculi in the whooping-cough wards of the Evelina Hospital for Children. Subconjunctival haemorrhages and blood effusions into the lids were, as had been observed, not uncommon, and he (Dr. Carpenter) would like to add that his own observations had led him to the conclusion that intraocular haemorrhages also occasionally happened in the condition. He looked upon these haemorrhages as accidental and traumatic and not systemic. In regard to this condition, he had seen a most extensive case of purpura in sequence to an operation for adenoids without an anaesthetic—here also purely of traumatic origin, and in this case there were haemorrhages into the retina as well. He had made many examinations of the fundus oculi of children suffering from anaemic conditions in association with enlargements of the spleen—a very frequent occurrence in childhood—with purpura, infantile scorbutus, pseudo-leukaemia infantum, leukaemia and pernicious anaemia, and his observations had been largely of a negative nature. He had also once noticed the condition in a case of malignant endocarditis in a boy, but that was associated with optic papillitis. In regard to adults two cases of extensive retinal haemorrhage had come under his notice in practice. One was the case of an old lady who had albuminuria and arterial sclerosis. The other was in the case of a gentleman who had reached the anecdotal and "table d'hôtal" age. His urine was free from albumen, but he had deposits of urate of sodium in the ear.

SOME PRACTICAL REMARKS ON MAGNET OPERATIONS.

By Professor Dr. Hirschberg,
Berlin.

[Abstract.]

Professor Hirschberg said that having worked with this instrument for twenty-five years he had now done 307 operations. He condemned the practice of placing the patient before the giant magnet in order to ascertain if a foreign body were present by the presence or absence of pain. The result would often be to draw it from a more or less innocent position into the ciliary body, or perhaps it might withdraw it suddenly with the iris, and thus do much damage. He strongly urged the necessity of finding out for certain whether there were a foreign body present or not by means of the sideroscope or *x* rays. When present it should—if at all practicable—be removed, and he preferred to use the hand magnet to the giant one of Haab.

As a rule, he thought it better to cut down exactly over the foreign body and then to introduce the point of the magnet, rather than of necessity to remove it from the front of the eye or through the point of entrance. Should the foreign body remain within the eye, it was almost certain to cause destruction of it sooner or later.

He thought that all varieties of magnets were useful, but for the majority of cases he preferred the hand magnet, although Haab's magnet had increased the number of curable cases we were now able to deal with in which pieces of metal had been embedded for a very long time.

Among 3,018 cases in his own clinic, he found 64 of iron splinters in the retina or vitreous in the cases on which he operated. Of these, 36, or 56 per cent., got good vision, and about one-third were operated with the hand magnet only; in 9 per cent. the form of the globe, without sight, was retained. This was due to the extensive nature of the injury.

Dr. A. Barkan (San Francisco) said he sided entirely with Professor Hirschberg in the use of the improved sideroscope as a methodical means of examination. He believed the *x*-ray examination to be useful, particularly in cases of double perforation, to ascertain whether the foreign body was not lodged in the orbit.

Dr. George Mackay (Edinburgh) desired to emphasize what Professor Hirschberg had said about the gravity of the ultimate prognosis of cases in which a fragment of steel was left within an apparently quiet eye, and in illustration mentioned the following case. The eye of a young blacksmith was penetrated by a fragment of steel. After removal of a traumatic cataract, the vitreous was found clear and the vision was good. The patient was exhibited at the Edinburgh meeting of the British Medical Association in 1898, with the metallic fragment embedded in the fundus, and plainly visible with the ophthalmoscope. The advice tendered by some colleagues, to leave the fragment alone, was acted upon. The patient resumed work, and remained well for about a year. He then had a sudden attack of irido-cyclitis, with complete loss of vision, and the eye had to be removed.

Professor Hirschberg, in reply, said he had nothing to add to the able remarks of his colleagues, only to answer the question of his old friend, Professor Barkan of San Francisco. Double perforation of the globe occurred in iron working, but not very frequently. He described it anatomically in the year 1890, in *Graefe's Archiv*, and clinically about a year ago in the *Centralblatt*. The surgeon should take great care to ascertain before searching whether a fragment was present within the eyeball or not. A vertical projection of the Roentgen rays upon the palate bone furnished the greatest help.

INVESTIGATIONS ON THE COMPARATIVE VISUAL ACUITY OF SAVAGES AND OF CIVILIZED PEOPLE.

By W. H. Rivers, M.A., M.D.

[Abstract.]

Dr. Rivers gave the results of his investigations on the comparative visual acuity of savages and civilized people. He came to the conclusion, after examining a large number of people of all tribes and nationalities, that apart from errors of refraction, man, all the world over, had practically the same amount of vision, and in instances in which savages appear to possess greater visual acuity than white men, it is entirely due to practice and education, and to their being thoroughly familiar with their surroundings.

REMARKS ON THE DIAGNOSIS AND TREATMENT OF GLAUCOMA.

By G. A. Berry, M.B., F.R.C.S.Edin.,
Ophthalmic Surgeon, Royal Infirmary, Edinburgh.

The real nature of glaucoma is still obscure, notwithstanding the opportunity for observation which is provided by a great amount of clinical material, notwithstanding the experimental research which, beginning with Donders's investigation of the influence of the nerves on intraocular tension, has been continued ever since in many laboratories, and notwithstanding most careful and widespread microscopical examinations of affected eyes.

We have come to realize, it is true, that the increased intraocular tension, which v. Graefe was the first to prove conclusively to be the essential characteristic of glaucoma, is due to a disturbed balance between the transudation into, and elimination from, the eye of nutrient liquid. We have got to know, also, that this disturbed balance is often to be attributed more to defective elimination than to increased transudation. Further, it is known that the defective elimination is liable, in the course of the disease, to become more and more persistent by the introduction of permanent changes at the angle of the anterior chamber. Yet we are still ignorant as to the exact relation of cause and effect, in so far as we do not know what it is that primarily leads to the disturbance of balance. I speak, of course, of idiopathic glaucoma. We are also unable, as yet, to explain the curative action of iridectomy. From the point of view of pathology, then, glaucoma is still sufficiently obscure.

I do not propose to occupy your time with any theory as to the cause of glaucoma. I refer to the pathology because the views entertained on this point have necessarily had an influence, and I believe, since the discovery of the blocked filtration angle, not an altogether favourable influence, on the treatment of the disease.

The object of this paper is to call your attention to, and invite discussion upon, two points only—namely, the diagnosis in what may be called the more obscure cases, and the operation of iridectomy for glaucoma.

I consider myself justified in bringing forward this subject in a purely clinical aspect, for several reasons. In the first place, I have had what may be called a large experience of glaucoma. It is one of the subjects which has always interested me most. I think I may claim to have studied every important work on it that has appeared since v. Graefe's first paper in 1857. I have also had the opportunity of following many of my cases for years, some of them for as long as twenty years, and I have been well satisfied with the results of iridectomy. I mention this because not a few ophthalmic surgeons have expressed dissatisfaction in this respect. One has only to read v. Wecker's work on the subject to realize this. Personally, I have gathered the same from conversation with many other operators. This it is that has led me to consider what might possibly be the explanation of this difference. Is it due to any discrepancies in connexion with diagnosis? Or is it connected in any way with the method of operating or with the selection of cases operated on or the stage of the disease at which interference is begun?

As regards operation, one cannot, of course, arrogate to oneself any particular manipulative superiority. Possibly, though, there might be a systematic difference in the method of operating. In some respects I find there is a difference in this connexion, and to this I shall refer presently.

As to diagnosis, the only cases, of course, which can present any difficulty are those which appear never to be complicated by congestive attacks. They are the cases which v. Graefe first called amaurosis with excavation of the optic nerve, which he hesitated at first to include in the category of glaucoma, though he did recognize that they were allied to glaucoma, and which he subsequently grouped together, on the initiative of Donders, as glaucoma simplex. I cannot help thinking that the difficulty of diagnosis in these cases has been considerably exaggerated in some quarters. A perusal of v. Wecker's exhaustive report, to which I have already referred, leaves the impression that he must be the only man who ever could diagnose glaucoma simplex with anything like certainty. Yet personally I find it difficult to recognize glaucoma at all in some of the cases quoted in the not a little confused statements which he makes on the point. But, even stranger still, he makes no reference, except in a short footnote indicating that he has not put it in practice, to the one symptom which appears to me to be of absolutely certain diagnostic value—namely, the character of the field of vision as taken with Bjerrum's screen.

It is true that there may often be a difficulty of satisfying oneself as to there being any increased tension. It is less true, though certainly possible, that the appearance of the disc may leave one in some doubt as to whether an observed excavation is of the definitely glaucomatous type or not. But a screen test will invariably give a definite and unmistakable result when the case is one of glaucoma. Of this I am satisfied, and I have practised this method of examination ever since it was first advocated by Bjerrum. Within the last three years, too, Dr. Arthur Sinclair, of Edinburgh, has made a very complete study of glaucoma and other diseases with the screen test, the result of which is absolutely confirmatory of the view I have expressed.

Not only does the screen test afford the most delicate and practically useful means of differential diagnosis, but it shows that changes leading to slight diminution in peripheral visual acuteness may precede any other evidences of increased pressure. This is of interest in showing that pressure symptoms may exist which indicate the presence of confirmed glaucoma even where other subjective examinations might lead one to suppose that the disease had not passed beyond the premonitory stage. The change shown by Bjerrum's method points also to the advisability of early operation.

There is another point in connexion with diagnosis to which allusion may be made here. It cannot be denied that there is a true glaucoma simplex, characterized by more or less increased tension, glaucomatous excavation of the disc, with, it may be, spontaneous or readily-induced arterial pulsation and failure of central and peripheral vision, without presenting at any time the congestion, corneal haze, corneal anæsthesia, or pain which are met with in the more common variety of the disease. But such cases are not sharply

defined. They merge insensibly into the more and more distinctively congestive types. Some confusion necessarily arises, therefore, by different observers making use of the term "glaucoma simplex" to include cases which are not always strictly comparable *inter se*. The term, though useful from the point of view of the classification of types, is less convenient when applied in connexion with statistics of operative results. The absolutely typical glaucoma simplex is in my experience of such comparatively speaking infrequent occurrence, that I prefer to make the clinical distinction of cases of chronic glaucoma into the markedly congestive cases, and the cases which only occasionally manifest symptoms of slight congestion.

Between these two groups also there is not a sufficiently sharp distinction to make it possible that the line of demarcation would always be drawn alike. Yet I believe the second group corresponds in reality to what many, at the present time at least, refer to as cases of simple glaucoma. Others, no doubt, stick to the original type synonymous with v. Graefe's amaurosis with excavation, and some of these are apt to miss the line which separates glaucoma at the one end of the scale from cases of essential atrophy of the optic nerve. This mistake may with certainty be avoided by using the screen test. The field taken in this way always shows in glaucoma, and never in essential atrophy, a defect in relative peripheral acuteness which stretches right up to the blind spot. Although necessarily taking some time to make, it is an easily applied test for peripheral visual acuteness. It thus differs from the ordinary perimeter test, which is merely concerned with the determination of the absolute limits of the field, and the result of which does not invariably admit of a distinction being made between restrictions due to glaucoma and those caused by atrophy.

As regards iridectomy for glaucoma, v. Graefe, in his first important paper on the subject, which was written in 1857—a year after his discovery of its curative action—gave the following rules:

1. The incision must be made as peripheral as possible.
2. The portion of iris removed must be as large as possible.
3. The aqueous humour must be allowed to escape slowly.

Even at the time these rules were formulated v. Graefe had already had a very considerable experience of the effect of his operation, although he had yet to learn something from the test of time with reference to the permanency of the cure. Nevertheless his subsequent experience, as stated in the masterful clinical treatises which appeared in his *Archives* in 1862 and 1869, seemed to him only to confirm and establish them. By 1869 v. Graefe had had, it must be remembered, an individual experience of iridectomy for all forms of glaucoma which was truly enormous. It is worth while recalling some of the further details in his way of operating and the real aim which he had in view, so that the operation should provide for the reduction of tension, which he from the first recognized must be its object.

I wish to refer to these points because in my opinion theories which came into existence subsequently have led to what one might call over-reaching in the operative attempts to comply with the indications which they were supposed to give. With regard to the first of v. Graefe's rules, "Die Wunden müssen so excentrisch wie möglich angelegt werden," the manner in which he himself complied with this is given in the immediate context, "so dass die äussere Wunden ugefähr ½" weit in die sclera und die innere Wunde gerade an die gränze der cornea und Sclera fällt." The objectaimed at is also at once made clear. "Auf diese weise ist es möglich die Iris genau bis zur ihrer ciliarinsertion herauszunehmen, und es schent dass dies zum Erfolge nöthig ist, jedenfalls denselben versichert." From this it is evident that v. Graefe attached, to begin with at all events, importance to the removal of the periphery of the iris.

With regard to the second rule, "Dass excidirte Stück muss möglichst gross sein," he remarks further on, "Je intensiver der process, je ausgeprägter die Druckzunahme ist, desto umfangreicher rathe ich die excision auszuführen."

It is only with regard to these two rules that there could be any possibility of difference of opinion. Every operator knows from experience that the advice to allow the aqueous to escape slowly does not admit of any question, though, of course, the serious consequences of inattention to it are only met with in cases in which the tension is high at the time of operation.

The incision recommended by v. Graefe would not necessarily, judging from his own description of it, appear to have been extremely peripheral. There can be no doubt, however—and this I know from the testimony of those who saw many of his operations—that he habitually did make it, or tried to make it, as peripheral as it could safely be made. Indeed, I believe that not a few of his pupils eventually came to open into the anterior chamber less peripherally than he did, owing to the bleeding and other difficulties which the very peripheral incision often introduced.

Von Graefe used the keratome, but did not condemn the use of the narrow knife in glaucoma iridectomies. At all events, he refers to this practice as one of the unimportant modifications made in connexion with his operation. The portion of iris which he removed was always large, and as peripheral as possible, though we know now that it cannot have amounted, as he believed it did, to an excision up to the ciliary attachment of the iris, as this is impossible by any real iridectomy, whatever may be the case when attempts are actually made at tearing away the iris. In his later papers v. Graefe several times alludes to the question as to how far operation in strict accordance with his original rules appeared to him to be necessary in order to insure the maximum of success.

Speaking of the effect of operation in primary congestive—or, as he called it, "inflammatory"—glaucoma, he says, in 1869:

Obwohl es gewiss rathsam ist, auch hier die Irisexcision breit und so peripherisch als möglich zu machen, so knüpft sich doch, wie ich bereits anderen Ortes hervorjehoben habe, an die Nichterfüllung dieser Bedingung keineswegs immer oder auch nur meistens eine Erfolglosigkeit der Iridectomie. Ich habe eine sehr grosse Anzahl von Augen gesehen, an denen bei exquisit entzündlichem Glaucom die Iridectomie die Vorgeschriebenen Qualitäten schlecht erfüllte und bei denen doch eine dauernde Heilung erreicht ward. Je mehr die Krankheit mit einer plötzlichen Trübung der Medien einhergeht um desto mehr scheint auch der eigentliche Kernpunkt der Operation in der Excision des sphincter pupillae zu liegen, während die eigentlich Kunstgerechte Glaucomoperation um so unerlässlicher wird je freier die Formen von Trübung der Medien sind und sich lediglich durch Spannungsvermehrlung kennzeichen. Ich möchte durch diese Bemerkungen ja nicht den Fehlgriff veranlassen, beim primär entzündlichen Glaucom die Iris nachlässig zu excidiren; ich halte vielmehr unter allen Verhältnissen und auch hier diejenigen Augen für am Meisten sichergestellt, an welchen die Glaucomoperation nach der bekannten Regeln vollführt wird.

I have not been able to find in any of v. Graefe's writings whether he ever made any extended experiment of operating in any different way in non-congestive glaucoma. There is one passage in the paper of 1862 which shows that he had occasion to observe some cases in which the operation was not in every sense peripheral. After referring to cases operated on with permanently good effect in the first period of acute glaucoma by means of an iris excision which had not been performed in the prescribed manner, he adds:

Da jedoch in anderen Fällen, namentlich älteren Glaucoms der Effect unter gleichen Umständen ungenügend war und die Nothwendigkeit einer zweiten Iridectomie auftrat, so ist hierdurch gewiss die Regel als solche befestigt und auf dieselbe, namentlich für chronisches Glaucom und für die spateren stadien des akuten ein grosses Gewicht zu legen.

As, however, in non-congestive glaucoma it is always much easier to operate with precision, and as the effect of operation in such cases is in any case less certain, it seems not unreasonable to suppose that v. Graefe's reasons for adhering to the necessity for conforming to the rules laid down were mainly that he was satisfied with the results thus obtained, and consequently saw no reason to modify them.

In connexion with the advice to excise not only a peripheral but also a large portion of the iris there were two points which seemed to weigh with v. Graefe. One was the fact that in cases in which a first iridectomy had failed to produce the desired effect a cure was often obtained by a second iridectomy. The other was the belief, now known to be erroneous, that the iris was a secreting surface, so that the more that was removed the greater was the diminution obtained in the extent of the secreting area.

The two discoveries of any importance in connexion with glaucoma which have been made since v. Graefe's time have been the action of miotics and the rôle played by defective excretion at the filtration angle in the anterior chamber. With regard to miotics, their use has introduced a question of great importance which presented itself differently to v. Graefe—namely, the course of the disease according as iridectomy is done for it or not. The previously known medical treatment had certainly very little influence for good on the course of a glaucoma. *Now* it is often with many a question of treatment by miotics *versus* treatment by iridectomy.

Comparatively little is known as to the average course of a

non-congestive glaucoma which is left to itself or treated with miotics. Statistics on this point are not available, and would probably be of little use unless they could be collected by a single observer, which would insure that the cases thus compared were really similar. My own experience is so far in favour of iridectomy that I could point to several, possibly a dozen, cases in which the patient has refused operation or has not returned for operation in the second eye, and in which the disease in the iridectomized eye has either been absolutely checked or has progressed less rapidly than in the other. The opposite I have never seen, though I am bound to say I have heard of instances in the practice of others. In some of my cases the second eye has been treated throughout with miotics, and yet has failed more rapidly than the one that was iridectomized. Of this there is no doubt, as it has always been my practice to operate on the worse eye first, except where its vision has been reduced to the loss of all useful sight. Yet I have seen the previously worse eye end, in the course of years it may be, in becoming the better one. Altogether I believe miotics to be practically useless in simple glaucoma.

The discovery of the blocking of the filtration angle, whatever be the explanation of that condition, whether it be looked upon as a primary, or only as a secondary, change in glaucoma, has apparently led many to put still greater faith in the importance of a very peripheral section in iridectomy for the cure of that disease. The most desperate efforts seem to be made by some operators to make the section in a manner which is supposed to open out this angle. I have objections to this on practical grounds as well; but on theoretical grounds alone this practice has always appeared to me to be a mistaken one. If it should be possible by any means to free the filtration angle so as to restore or increase its efficacy, surely an incision made in the angle—that is, a wound which must necessarily lead to cicatrization there—is the most unlikely way of effecting this. Attempts to do this either fail altogether because it is not easy to plan a section so very peripherally—and this is fortunately the most common result of such attempts—or they succeed more or less completely, and then often lead to the formation of a cystoid cicatrix. The latter result is probably, under the circumstances, the most favourable thing that could happen.

Although I do not consider a cystoid cicatrix so desirable that, as some have recommended, it should actually be courted, still I have little doubt that it is the least undesirable result of what I may call the exaggeratedly peripheral section. To my mind a cystoid cicatrix, which probably every one will admit cannot be avoided in a certain proportion of iridectomies for non-congestive glaucoma, is an evidence of the failure of the iridectomy. There are no doubt other ways in which the iridectomy may fail which are even more disastrous. At least the cystoid cicatrix, especially if the eye is firmly pressed or rubbed, occasionally may provide a safety-valve which will help to keep down tension.

Another result of the blocked filtration-angle discovery was the substitution of sclerotomy for iridectomy. When opening out the filtration angle became, as it were, the object to be aimed at, it was perhaps not unnatural to infer that the virtue of an iridectomy for glaucoma lay in the incision alone and that any excision of iris was superfluous. In the light of my own experience I can only think that many glaucomas have suffered from this substitution. I have never seen a non-congestive glaucoma permanently cured by sclerotomy.

As regards the instrument for making the incision into the eye in iridectomy for glaucoma, I believe it is preferable to use the keratome. With it a peripheral opening can be made with less disturbance than with the Graefe knife. No doubt in some exceptional cases of very deeply-sunken eyes with small palpebral apertures recourse must be had to the latter. When the Graefe knife is used, however, attempts at getting the section to lie as peripherally as possible should, in my opinion, be avoided. They not only lead to difficulties at the time, but the dragging of the iris periphery in front of the knife in cutting from within outwards results then in anything but a clean-cut wound. In short, I believe that the only object of the incision should be to enable one to get away a piece of iris as nearly up to its periphery as can be done without involving the danger zone of the filtration angle.

Another point for consideration is whether the large, wide iridectomies recommended by v. Graefe are necessary to secure the best results. I have been satisfied with much smaller excisions. I know, from long experience of them, that they are capable of permanently arresting the progress of a non-congestive glaucoma, while they invariably suffice to cure cases of the congestive type. I did begin by making large iridectomies, but did not find them any more efficacious than the 4 to 5 mm. wide excisions I have constantly made during the last fifteen years, always using the Tyrrel hook instead of the forceps to draw out the iris.

My experience of iridectomy for glaucoma has convinced me that when the tension is thereby permanently reduced to the normal the progress of the disease is definitely stopped at whatever stage and for whatever type the operation has been done. There is no reason, therefore, for supposing, as v. Graefe did, that a stage in the destruction of the nerve may be reached which renders it liable to progressive atrophy independent altogether of any recurrence of glaucomatous symptoms. No doubt there are great differences in different cases. In some of the non-congestive cases the nerve seems to yield to much slighter degrees of increased tension than in others.

I consider it not unlikely that the very slowly progressive forms are not in reality as they seem to be constantly progressive, but only progress when for some as yet unknown reason the tension rises and remains for some time appreciably above the normal standard. It is, at all events, a not infrequent experience in the course of a glaucoma simplex to find long periods in which no definite increase can be made out, and yet to find that now and then the tension is unmistakably raised. Young people can certainly, as a rule, tolerate prolonged tension better than old.

In the constantly, or practically constantly, non-congestive forms of glaucoma my experience is that iridectomy, though it checks the disease in a very considerable proportion of cases, is never followed by any improvement, even after years, in either central or peripheral vision. In the congestive forms the operation is not only practically always successful, but is followed, even in the chronic cases, by different degrees of improvement in sight. In such cases, where the central vision has been lost before operation, it is not regained, and it is difficult to feel sure that any improvement has taken place in peripheral vision. I have, however, seen not a few such cases in which the excentric vision has not appreciably varied in the course of as many as eighteen and twenty years.

To recapitulate shortly the suggestions I have ventured to make here on the treatment of glaucoma: The only permanent results are to be got by iridectomy, and the earlier in the course of the disease that this operation is resorted to the more certain is its effect. The best way to perform iridectomy is by an incision made with a keratome, which, although it should be peripheral, must not be so peripheral as to involve the filtration angle. Probably, too, it is unnecessary to excise as large a piece of iris as v. Graefe recommended.

Dr. Uithoff said that perhaps it might be of interest to add his experience in operations for simple glaucoma. He had obtained a perceptible improvement in the vision in about 5 per cent. The condition remained stationary in about 45 per cent. The disease advanced slowly in spite of the operation in about 40 per cent., and it was made decidedly worse in about 10 per cent.

Mr. Richardson Cross said that in cases of glaucoma where there was definite congestion or inflammation, however slight, the only proper procedure was operation. The difficult cases to treat with confidence were those of glaucoma simplex without hyperaemia, in which the diagnosis as against atrophy was sometimes very hard to make. There might be no recognizable tension, no cupping of the disc, no pulsation of artery, but the perimeter might indicate almost with certainty (by showing a narrowing of the nasal field) that the atrophy was secondary to an indefinite tension. Instillation of a few drops of cocaine might set up a pulsation in the central artery; this would settle the diagnosis in favour of a glaucoma element which required energetic treatment against it. In some simple glaucomas with atrophy operation should be done; in others it had better be left alone. They must try to determine which is the more important factor; if high tension, however slight, is proved, iridectomy should, as a rule, be done. He used a keratome, and made the puncture 1½ mm. behind the corneo-scleral margin, carrying the knife-point far back, so as, if possible, to get through or near to the corneo-iritic angle. The width of the cut was less important than the removal of however small a part of the iris base up to its periphery, with the intention of opening up, if possible, the filtration angle. In cases where tension depended not so much upon mechanical narrowing of the filtration angle as on abnormality of the

intraocular fluid, as, for instance, where glaucoma symptoms complicated a myopia, sclerotomy might prove to be satisfactory, and might in a few other cases replace iridectomy, which, however, should be usually preferred. He had some patients who had been under pilocarpin drops for eight or ten years without disadvantage, and in some of them the glaucoma had been kept in abeyance.

THE OPERATIVE TREATMENT OF HIGH MYOPIA.

By W. ADAMS FROST, F.R.C.S.,
Ophthalmic Surgeon, St. George's Hospital.

I SUPPOSE we may take it that getting rid of the crystalline lens in high myopia is now an established surgical proceeding.

There is no doubt that in suitable cases it gives excellent results, not only enabling a patient, who before was entirely dependent upon the aid of glasses, to go about without them, but even giving him better vision than he previously had with them. My aim is to enable the patient to go about without glasses.

But to obtain this result the cases must be carefully selected. In this country the cases which, according to my view, are suitable are not frequent, and the individual experience of surgeons is therefore limited. Although, therefore, my first operation for high myopia was performed in January, 1896, rather early, my conclusions are not based upon a very large number of cases—39 eyes in 35 patients.

CASES SUITABLE FOR OPERATION.

The chief factors, I think, in deciding the fitness of a given case are:

1. The degree of the myopia.
2. The visual acuity.
3. The age, occupation, and general condition of the patient.

1. *The Degree of the Myopia.*

I have placed this first, because it is obviously the factor which is first considered. Opinions may differ as to the exact degree of myopia which is suitable for operation, but every one will agree that there is a degree below which the operation need not be considered. My own view is that the operation is of little benfit if the resulting ametropia exceeds 4 D. To some even this may seem a poor result, but it should be remembered that these patients have been accustomed to interpret imperfect retinal images, and, practically, it will be found that patients with this error have useful vision without glasses, and are well satisfied with the result. This condition is, I believe, only fulfilled if the myopia is not less than is corrected by a lens of − 15 D placed 10 mm. in front of the eye.

This somewhat cumbersome method of expressing the degree of myopia is rendered necessary because we usually express the degree of myopia in terms of the correcting lens, while we calculate the length of the eye from the real myopia, or the lens that would be required if it were placed in contact with the cornea. The myopia that is corrected by "− 15 D" 10 mm. from the cornea represents a *real* myopia of only 13 D. The importance of this will appear presently.

The optical effect of removal of the lens is therefore an important consideration. I use the term "optical effect" in the sense of its effect on the correcting lens required before and after operation. The more obvious phrase "effect on refraction" is open to the objection that if the crystalline lens have the same refraction, and if it occupy the same position in relation to the cornea, the effect of its removal on the course of rays entering the eye must be the same in all cases, but what we are really concerned with in this, as in nearly all cases of refraction apart from astigmatism, is the position of the retina, or the length of the eye.

The optical effect of removing the lens will be found to increase with the degree of myopia, so that while after operation on an emmetropic eye a lens of about + 10.5 is required, after operation on an eye with myopia of 25 D no lens is required, so that the optical effect in the one case may be said to be 10.5 D and in the other 25 D.

To understand this one must consider the length of the eye as the essential factor—a factor which has a totally different value in the complete eye and in the eye deprived of its lens. The emmetropic length of the complete eye is 22.8 mm., the emmetropic length of the aphakic eye is the posterior focal distance of the cornea, or 31.1; therefore departures from emmetropia are measured in the two cases from different standpoints.

But this is not all—departures from the emmetropic length have a different value in the two cases. In the complete eye, as is well known, every millimetre by which it departs from the emmetropic length causes an ametropia of 3 D, but in the aphakic eye every millimetre of difference in length only produces a variation in refraction of 1.38 D.

The reason of this at once becomes evident if we consider that the aphakic eye is a much weaker optical instrument than the complete eye. (With a high power of the microscope a turn of the focussing screw will have a much greater effect than with a low power.)

If, therefore, we know the actual length of any eye we can easily calculate the optical effect of removal of its lens. For example, suppose an eye has a real myopia of 15 D (the correcting lens would, of course, be higher—about 17.7 D) the length of the eye is $\frac{1}{3}^{5}$, or 5 mm., more than the emmetropic length, or 22.8 + 5=27.8. This is shorter than the emmetropical length of the aphakic eye by (31.1−27.8) 3.3 mm. Therefore the correcting lens required would be $\frac{3.3}{1.38}$ or a convex lens of a little over 1 D.

If the actual myopia were 25 D the length would be 22.8 + 8.3 or 31.1, therefore after removal of the lens the eye would be practically emmetropic.

While in dealing with strong lenses the distance from the eye must be taken into consideration, this may be disregarded in the case of the weak lenses required after operation.

2. *Visual Acuity.*

The corrected vision in high myopia is, as is well known, frequently very bad, and the glasses which fully correct the myopia often cannot be worn. When fundus changes are present, it is always a question whether the defective vision is due to these, and is therefore irremediable, or to the diminution in the size of the retinal image produced by the concave lens.

The changes actually visible with the ophthalmoscope afford a very unsafe guide in forming an opinion as to the amount of vision that may be obtained after operation. I have frequently seen very good vision result when the extent of the choroidal change seemed to preclude its possibility. I am in the habit of taking the ability to read 1 Jaeger at the patient's far-point as the test of the soundness of the retinal elements at the macula. It is only a rough test, and it does not indicate a high visual acuity; in fact, this type read at a distance of 3 in. only indicates a visual acuity of $\frac{5}{24}$, but I have found it to be a standard which is practically useful.

The improvement in the visual acuity after operation is often considerable; in many instances in which corrected vision was only $\frac{6}{24}$ or even $\frac{6}{36}$ before operation, it has been improved to $\frac{6}{12}$ or $\frac{6}{9}$. This fact may be held by some to justify operation on cases with a lower grade of myopia than I have indicated as the limit. I suppose that the improvement can only be due to increased size of the retinal image.

3. *Age of Patient.*

The operation is usually called for only in young adults or at age of puberty; high myopia in young children is very rare, and eyes affected thus early would probably be unsound and bad subjects for operation.

It is perhaps only a coincidence, but in the only two cases under 12 years of age on which I operated, the eye was lost by suppuration. Older people, also, do not very frequently require the operation, because they have chosen their path in life, and have become accustomed to the inconvenience of wearing glasses. I have only operated on five persons over 35—all with fair result.

In one (Case 12), aged 40, the first needling was followed by vomiting and increased tension, the symptoms were relieved by a paracentesis; in two cases (Cases 14 and 21) I performed a preliminary iridectomy. I have never extracted the clear lens. I attempted to do so in one case, but as it would not present, I abandoned the attempt. In the fourth (Case 24), aged 35, result was + 1.5 $\frac{6}{24}$. In the fifth (Case 38), aged 46, the myopia was corrected by 23 D, vision after operation was $\frac{6}{12}$ without glasses.

The cases that most frequently submit to operation, and seem to be most suitable for it are patients who have just left school, and embarking on a career. By wearing conspicuous glasses they are much handicapped in obtaining employment, and are debarred from many occupations by that fact alone.

Permanence of Result, Especially in Relation to Subsequent Occurrence of Detachment of the Retina.

Does the operation predispose to detachment of the retina? On the reply to this will hinge the ultimate establishment or abandonment of the operation, and yet the answer seems at present impossible to give, because (1) detachment occurs in a large number of cases in which no cause can be discovered; (2) eyes with high myopia are especially liable to detachment, but there seem to be no reliable statistics to show in what proportion of cases it occurs, or what relation the degree of the myopia has to it; (3) the eyes selected for operation are just those in which detachment is most likely to occur.

There is a further question equally difficult of solution: after what interval of time are we justified in saying that if detachment occur it is independent of the operation?

In one case of mine detachment occurred six years after the operation. The myopia was 18 D, and the patient's age at the time of operation 48. In another case the interval was four years; in 2, two years: in the other 2 it was eight months and two months respectively, and in 1, ten weeks.

It is, perhaps, a significant fact that these patients get detachment only in the eye operated upon, and not in the other. This is, however, to some extent discounted by the fact that the worse eye is usually selected for operation. (In one case in which both eyes were operated on detachment occurred only in the second eye, which had the less myopia.)

On the whole, I have a suspicion, not yet amounting to proof, that the operation increases the liability to detachment. The benefit to the patient in many cases is, however, so great that this risk may be justifiable.

In two other cases detachment occurred, but one was definitely caused by an injury, and in the other the detachment was caused immediately by the operation, which was followed by opacity and subsequent shrinking of the vitreous. Another case in which the operation was directly responsible for the loss of the eye was one in which in a man, aged 21, chronic glaucoma supervened after a temporary success; and there were two eyes lost by suppuration.

In a considerable number of cases a sufficient time has elapsed to render it probable that the result is permanent. I have not been able to see all my cases recently, but I think that any that were successful and had subsequent failure of vision would have returned or have written.

My first successful case was eight and a half years ago; this case has been seen recently; in twelve others over five years have elapsed; in four over three years.

Evidently, therefore, detachment does not occur in the majority of cases; unfortunately it seems impossible at present to distinguish beforehand the cases in which it is likely to occur.

I find that the average degree of myopia in the cases in which detachment did not occur was 15 5 and that in the cases of detachment it was 17.5, but the difference is not great, and the number of cases probably too small to base conclusions upon.

Should the Second Eye be Operated on?

Patients are often anxious to have the second eye operated on, but owing, I think, to a misconception of the conditions. The distant vision of one eye having been much improved by the operation, they conclude that they will see still better in the distance with two eyes; but this can very seldom be the case, for there is usually a difference of several dioptres in the myopia of the two eyes. That with the higher myopia is operated on first; if good distant vision without glasses is obtained in this eye, it is evident that the vision of the other will be so inferior that the eye will not be used. Moreover, operation on the second eye deprives the patient of one advantage—namely, the ability to see near objects without glasses.

As the subjects of high myopia never have binocular vision this factor does not enter into the question.

I have operated on both eyes in four patients.

18 and 19.—This is a case in which I should not now operate at all, because of the low grade of myopia, vision with glasses being sufficiently good, and the existence of astigmatism.

9 and 10.—The operation was justified by existence of lamellar cataract.

28 and 28A.—Detachment came on in the second eye, which was the less myopic, two years after operation.

36 and 37.—In the fourth case the second eye has only recently been operated on.

No.	Initials.	Sex	Age	Myopia and Vision	Result.	Remarks. Lapse of Time Since Operation.
1	E. R.	F.	18	−15 $\frac{6}{15}$	+3.0 $\frac{6}{5}$ letters	8½ years.
2	Miss O'K.	F.	27	−26 D	—	Result bad from choroidal changes.
3	A. H.	F.	11	−13 $\frac{6}{36}$	—	Suppurated.
4	J. W.	M.	24	−12 $\frac{6}{15}$	+4 0 $\frac{6}{6}$	Detachment 4 months.
5	G. T.	F.	24	−13	+3 0 $\frac{6}{6}$	Eye probably amblyopic.
6	E. F.	M.	26	−16 $\frac{6}{18}$	−$\frac{6}{12}$ without glasses	Later det. traumatic.
7	H. C.	F.	18	−14 $\frac{6}{36}$	$\frac{6}{6}$ without	7 years.
8	M. B.	F.	32	−14 $\frac{6}{12}$ 2 letters	3 0 $\frac{6}{18}$	5 years.
9	W. W.	M.	27	−20 $\frac{6}{36}$	$\frac{6}{6}$ without	Det. ret. 2 years later.
10				−18 $\frac{6}{60}$	Iris retracted	Later det. ret.; lamellar cataracts.
11	E. H.	M.	15	−16 $\frac{6}{15}$	+3 0 $\frac{6}{18}$	Det. 3½ years later.
12	S. C.	F.	40	Post polar cataract	$\frac{6}{24}$ without	Relieved by paracentesis.
13	E. B.	F.	19	−18 $\frac{6}{24}$	+2 5 $\frac{6}{6}$	7 years.
14	S.	F.	39	−14 $\frac{6}{12}$	+2.0 $\frac{6}{18}$	6½ years.
15	M. W.	F.	12	−13 $\frac{6}{24}$	$\frac{6}{18}$ without	7½ years.
16	M. H.	F.	25	−18 $\frac{6}{24}$	$\frac{6}{12}$ without	7 years.
17	F. W.	F.	15	−13 $\frac{6}{12}$	+ 5 $\frac{6}{6}$	6½ years.
18	W. S.	M.	21	RE—12 4cy.	$\frac{6}{18}$ + 5 + 2.5 cy.	$\frac{6}{18}$ 7 years.
19				LE—10 4cy	$\frac{6}{12}$ + 3.5 + 4 cy.	$\frac{6}{12}$, 1897 6½ years.
20	M. M.	F.	25	18 D	$\frac{6}{9}$ without	Detachment ten weeks.
21	E. H.	M.	48	−18 $\frac{6}{9}$ letters	+1.5 $\frac{6}{36}$	Prelim. iridect.; saw well for 6 years, now old ret.
22	C. A.	M.	21	−11 $\frac{6}{36}$	+ 3=$\frac{6}{18}$	Later chronic glaucoma.
23	N. R.	F.	20	−20 $\frac{6}{36}$	$\frac{6}{60}$ without	Extensive choroiditis.
24	E. P.	F.	35	−21 $\frac{6}{36}$	$\frac{6}{18}$ without	5 years.
25	C. O'B.	F.	17	−14 $\frac{6}{36}$	+4 $\frac{6}{6}$	5 years.
26	W. F.	M.	17	−23 $\frac{6}{18}$	+4 $\frac{6}{18}$	Det. ret. 8 months later. Chors. YS, no det. ret.
27	R. R.	F.	21	−16 $\frac{6}{36}$ changes	YS+3.5 $\frac{6}{12}$	4 years.
28	D. S.	F.	19	−18 $\frac{6}{36}$	$\frac{6}{18}$ without	5½ years.
28A				−15 $\frac{6}{24}$		Det. 2 years.
29	A. D.	F.	20	—	—	Lost from chronic cyclitis.
30	W. D.	F.	6	—	—	Suppurated.
31	M. P.	F.	22	−18 $\frac{6}{24}$	+1.5=$\frac{6}{12}$	Later, keratitis punctata.
32	L. L.	F.	14	−18 $\frac{6}{24}$	+2=$\frac{6}{18}$	4½ years. [both eyes, =$\frac{6}{36}$.
33	J. J.	M.	10	−20 $\frac{6}{36}$	—	3½ years.
34	E. S.	F.	16	25 D	$\frac{6}{6}$ 1 letter without	1 year.
35	V. O.	F.	24	−24 $\frac{6}{24}$	$\frac{6}{12}$ without	1 year.
36	E. W.	F.	15	R—18=$\frac{6}{18}$	+1.5 $\frac{6}{12}$	6 months.
37				L—15=$\frac{6}{9}$	Recent	
38	J. K.	F.	46	−21 $\frac{6}{24}$	$\frac{6}{12}$ without	6 months.

Dr. E. Landolt said eyes so highly myopic that the removal of the lens would be an advantage to the patient were almost always diseased eyes, affected with chronic choroiditis and its multiple consequences. The sight was usually very much impaired. If one operated upon the weaker of the two eyes, one could not expect a great advantage for the patient. If one operated upon the better one, one might expose him to entire loss of useful sight. It seemed to him that the extraction of the healthy lens was admissible only on one of two relatively good eyes of about 20 D myopia.

THE IMPORTANCE OF THE CORNEAL TEMPERATURE AND NICTITATION IN CORNEAL THERAPEUTICS.

By Angus M'Gillivray, M.D.,
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[Abstract.]

In his introductory remarks the author discussed the temperature topography of the eye, and stated that the temperature of the cornea, as ascertained by the thermo-electric couple, was about 18° F. below body temperature. This low temperature, he showed, had an inhibiting effect on the growth and functional activity of pyogenic micro-organisms, seeing that their optimum temperature was, as a rule, body temperature. The continuous closure of the eyelids due to photophobia raised the temperature of the cornea to that of the body generally—that is, to a point not conducive to repair but conducive to the growth of the invading micro-organism.

In the treatment of corneal abrasions or ulceration every attempt, therefore, should be made to combat the photophobia so as to restore the cornea to a more physiological condition as regards temperature. For this reason he deprecated the use of bandages in the treatment of these corneal lesions, the open treatment being preferable. To combat the photophobia he employed cocaine ointment, either separately or in conjunction with other remedies, the

ointment being preferable to an aqueous solution, as it never produced desiccation of the corneal epithelium. The exposed nerve endings being thus kept anaesthetized, the photophobia disappeared, with the result that the patient could open the eyelids freely.

The removal of the photophobia, besides restoring the cornea to a normal temperature, restored another very important physiological condition—namely, nictitation. The normal act of winking cleansed the wound of surface germs and their poisonous products, thus diminishing both the number and the effect of the attacking force.

In cases of wounds where closure of the eyelids was necessary for securing more complete apposition of the lips of the wound, the corneal temperature could be lowered artificially by the continuous use of iced compresses.

SUMMARY OF TWENTY YEARS' TREATMENT OF MYOPIA.

By Ernest Clarke, M.D., B.S., F.R.C.S.,
Surgeon, Central London Ophthalmic Hospital.

[Abstract.]

In this paper the author advocated the full correction of all cases of myopia and compound myopic astigmatism. His method was to estimate the ametropia under a mydriatic, and to order the full correction for all cases. In high degrees the patients sometimes refused to accept the full correction, but with this exception he never reduced the spherical glass for near work. Out of 532 cases which had been under observation for more than two years the majority showed no increase in the myopia, and in only three instances had the myopia increased as much as 4 D, and in only 16 had there been any increase worth mentioning. In some it was necessary to stop all near work, but for these full correction was always given. If this principle were carried out generally, he felt sure that progressive myopia and high degrees would become almost unknown.

KERATITIS PROFUNDA: RESULTS FROM ANALYSIS OF 54 CASES.

By W. T. Holmes Spicer, M.B., F.R.C.S.,
Ophthalmic Surgeon, St. Bartholomew's Hospital.

[Abstract.]

Many cases of interstitial keratitis are met with in which no trace or history of syphilis, congenital or acquired, can be obtained in which the local changes resemble each other, but in which the causes vary or are obscure. They occur with slightly greater frequency in males, partly on account of their greater liability to injury, partly to difference in habits. The average age of the patients is 40. Of the personal habits of the patients a considerable number were given to alcohol in excess, and especially to beer; many were large eaters. True gout, rheumatism, and liability to rheumatic pains were common. Disturbances of the intestinal tract, chronic constipation, and indigestion, with carious teeth or pyorrhoea alveolaris, were also frequent; a few cases were connected with the end of pregnancy and lactation. Many patients were broken in health, ill-nourished, or prematurely old, with defective circulation and tendency to blueness, or were liable to chronic bronchitis. A small number were in good health, were abstemious, and regular in their habits, but inherited a strong family history of gout. The onset of the attack was sometimes determined by an injury. To sum up: disorders of nutrition—such as overeating or drinking, gout and its allies, with defective intestinal hygiene—were responsible for three-fourths of the cases. The disease lasted three months on an average. The local appearances are moderate congestion, dimness of sight, and changes of the cornea of two kinds—the central disc and the peripheral cone of opacity, with the formation of vessels after a few days. Striated keratitis is nearly always present in the early stage of both forms, but soon gives way to the uniform opacity. This central disc, or peripheral opacity, often begins as isolated maculae, which can be distinguished from deposit on the back of the cornea by their grey colour as opposed to yellow, and by their having a less sharply-defined edge. Oedema of the corneal surface is always present, and shows itself by an unevenness of the epithelium with the formation of small clear vesicles on it.

If fluorescin be introduced into the conjunctival sac it is absorbed into the eye, the deepest layer of the cornea becomes stained with it in many cases; the various layers of the cornea in which changes are present can then be made out. The surface epithelium can be seen by its rough bullous appearance, the disc, or cone of opacity, situated in the deep layers of the cornea, the striated lines, due to folds in Descemet's membrane, and behind all the staining layer, the corneal endothelium. This result is not always obtained, probably because there is a certain time only during which the endothelium stains. Sometimes the staining is punctate or patchy only.

Iritis is present in about one-fourth of the cases, and cyclitis shown by keratitis punctata in nearly one-half. The primary cause is a disease of the blood vessels which supply the cornea, either the small tufts of vessels around it or the main trunks. Experiments show that parenchymatous keratitis of the typical kind can be produced either by section of the long ciliary arteries or by ligature of the vorticose veins: when this occurs the endothelium can be made to stain with fluorescin during life, and after removal of the eye it stains brightly with methylene blue. On microscopic examination the endothelium can be seen to be absent. This interference with the circulation produces an oedema of the whole cornea, shown by the swollen epithelium at the anterior surface, and by the striated keratitis on the posterior surface. When exfoliation of the endothelium occurs the posterior part of the cornea is no longer protected, the aqueous soaks into it; this sets up irritation and cellular exudation into the posterior layers of the true cornea: this cellular exudation is the grey opacity characteristic of the disease.

The local treatment is by hot fomentations and atropine; where the tension is raised paracentesis of the cornea may be needed, but as a rule any operative interference like iridectomy or peritomy is harmful. Subconjunctival injections in the acute stage are very irritating, and in the later ones useless. It is most important to determine the underlying constitutional cause and to treat it.

Mr. Henry Power pointed out that cases of deep-seated keratitis presented considerable variation in their course and termination. Thus, in some instances the disease was associated with the strumous diathesis, and might pass into suppuration. He gave the details of such a case which, commencing with slight haziness of the corneae, proceeded by slow degrees to suppuration between the layers, ultimately bursting into the anterior chamber. The corneae became completely opaque, and remained so for many weeks, the child being only able to perceive strong light. The operation of iridectomy was performed on one eye, but the material was too tenacious to escape, and further treatment was given up, the child (who had been shamefully treated by its parents) being regarded as permanently blind. Nevertheless, in the course of many months, clearing took place, and the child can now see to read. No remedies had any immediate action upon it. He instanced other cases in which keratitis profunda seemed to be associated with great debility of the system, requiring general tonic measures. He had had no experience of fluorescin, nor of the effects of the subcutaneous injection of solutions of mercury.

Mr. Cyril Walker (Bristol) commented on the frequency of the occurrence of interstitial keratitis in Bristol, especially of erratic forms of keratitis, which did not follow the course of ordinary interstitial keratitis. He had experience of two cases associated with pregnancy. In the first case the right eye had been severely inflamed during and after a pregnancy some five years previously, leaving a dense pyramidal leucoma. Inflammation in the second eye began during pregnancy, and left a leucoma exactly like that in the right eye. In the second case deep-seated keratitis occurred in both eyes during pregnancy, ran a severe course, and was followed by partial recovery. During a subsequent pregnancy, some two years later, one eye was infected in a similar manner, followed again by fairly good recovery. He asked if exposure to cold was a frequent cause of deep keratitis, and what was the average age of such cases.

Mr. Granger (Chester) said that most of the cases he had observed occurred in patients between the ages of 33 and 38. They were much more frequent in women than in men, and from the history, and the result of treatment with mercury, he had come to look upon this form of deep keratitis as quite distinct from interstitial keratitis. The most common form he had observed was where the keratitis had taken the form of deeply-placed and defined discs. The progress of the disease was always slow, and combined with punctate opacities in about one case in four. The treatment he had adopted during

the last two years had been the regular and systematic use of dionin, which had given very satisfactory results.

Dr. Carl Koller said they all knew that very little could be done to check the progress of the disease after it had made its appearance. In the acute stage his treatment did not differ from the usual treatment (atropine, hot fomentations, and the like). After the acute stage had passed, a great deal could be done to assist its clearing up, although it must be admitted that in the majority of cases the result was very good, although slower without any treatment at all. A good many years ago he got hold by accident of an efficient method for clearing off the opacity. As a student he had especially impressed upon him by his late teacher (Arlt) the incompatibility of the internal use of iodide of potassium and local application of mercurial preparations, because iodide of mercury was formed within the tissue, which was an irritant. It so happened that in a case of interstitial keratitis many years ago he used both remedies, forgetting the old warning. Great reaction followed about half an hour after the yellow precipitate ointment had been rubbed into the conjunctival sac, but the next morning he was very much surprised by a quite unexpected clearing of the cornea, and he had made a method of what was originally a mistake. He used the yellow precipitate of mercury in a 4 per cent. salve, rubbing it into the conjunctival sac in the usual manner in the evening. He instructed the patients not to leave any lumps of the salve in the conjunctival sac, to avoid irritation of the cornea. The reaction was very strong the first day; gradually tolerance in regard to the HgI_2 was established, and the reaction was less and less pronounced. Lately he had made use also of dionin, to the efficiency of which in clearing up corneal deep or superficial opacities he could testify, as Mr. Granger had done. He used it in 5 per cent. or 10 per cent. solutions, and frequently alternated it with the proceeding given above.

After some remarks by Dr. Hill Griffith and Dr. Mackay, Mr. Spicer briefly replied.

A MODIFICATION IN THE USUAL METHOD OF USING COCAINE IN OPERATIONS UPON THE EYEBALL.

By Carl Koller, M.D.,
New York.

[Abstract.]

It is the experience of all operators, when operating upon the iris in a patient whose eye is under the influence of cocaine, that the anaesthesia of this part is by no means complete. To get over this the author uses it as follows: A few drops of cocaine are put into the conjunctival sac, and then at the point where the fixation forceps will be placed, and opposite to where the incision is to be made, a few drops of a 5 per cent. solution of cocaine are injected beneath the conjunctiva, but not into the episcleral tissues. After five or six minutes the operation can be performed, and the iris will be found to be quite anaesthetic.

Dr. Hill Griffith asked whether Dr. Koller had used it for enucleation of the eyeball. He had done it on one or two occasions, and had even done it without any anaesthetic at all before the days of cocaine, and the patients did not appear to suffer much from either pain or shock.

The President said that he frequently excised eyes under cocaine without any difficulty.

Dr. Koller, in reply, said that he always used a general anaesthetic for this operation.

ON THE MEASUREMENT OF THE RAPIDITY OF THE LATERAL MOTION OF THE EYE.

By Lucien Howe, M.D.,
Buffalo.

The author gave a demonstration of the salient points by means of apparatus which was improvised, by blackboard illustrations, and by numerous photographs, which showed the measurements made in a considerable number of normal eyes.

The method is as follows: A ray of light from an arc lamp falling on the cornea is reflected thence into the camera. The latter contains a film, moving vertically on rollers. In the slide which is in front of this film there is a narrow horizontal slit. When the eye and the film are both at rest the ray of light reflected from the cornea and through this slit is focussed on the film as a bright spot. When the film is stationary and the eye rotates from side to side, the bright spot moving along the horizontal slit describes a horizontal line on the film. When the eye is stationary and the film is made to move vertically on the roller, then the point of light describes a vertical line. When, however, the eye with the reflection from it moves horizontally, and at the same time the film moves vertically, then the spot of light describes an oblique line. The length of this oblique line is, therefore, the measure of the time required for the eye to swing from one side to the other. This is measured by causing a tuning fork with known rate of vibration to reflect a second ray of light through the same horizontal slit into the moving film.

Dr. McGillivray, after congratulating the author on the graphic method he had demonstrated, asked if Dr. Howe had made observations on the mobility of the eyeball after tenotomy and advancement in strabismus operations. In tenotomy, where the insertion of the tendon is set back, the checking action of the check ligament is said to come into action and vice versa.

Dr. Hill Griffith asked Dr. Howe if he had tried the method in persons suffering from alcoholism, and, if so, whether he thought it might be of use in determining the sobriety or otherwise of a person.

In reply, Dr. Howe said he had tried it after operations in the eye muscles, but never in alcoholics. He thought that on the latter it would be impossible to apply it.

A MODIFIED BOWMAN'S SYRINGE.

By W. Watson Griffin, M.B., F.R.C.S.,
Ophthalmic Surgeon, Sussex County Hospital, Brighton.

Mr. Watson Griffin demonstrated a modified Bowman's suction syringe for the evacuation of broken-up lens matter from the anterior chamber. The piston was, by means of a spring, kept out, and when it is to be used it is pushed down and compressed with the thumb. It is thus inserted into the eyeball, and when the spring is gently released the sucker draws the material into the barrel. The points about this instrument are its automatic action and the fact that it costs infinitely less and is much less complicated than the original pattern.

A CASE OF CONGENITAL WORD-BLINDNESS.

By James Hinshelwood, M.A., M.D.,
Surgeon, Glasgow Eye Infirmary.

The following case is the last which has come under my notice, and affords an excellent example of the congenital cerebral defect which I have described by the term "word-blindness":

A boy, 12 years of age, was brought to me in March, 1902, at the Eye Infirmary by his mother to see if there was anything wrong with his eyesight. The boy had been seven years at school, and there had been from the outset the greatest difficulty in teaching him to read. The boy should have been in Standard V, but was now, after seven years, only in Standard II, and he could not get out of it because of his reading. The boy had made no complaint whatever about his vision, but his mother had brought him to the Eye Infirmary in order to discover if defective eyesight had anything to do with his difficulty.

On examination it was at once evident that his vision had nothing to do with his difficulty in learning to read. His refraction was normal, his visual acuity normal, and his fundus normal.

From the account of the boy given by his mother it was evident to me that he belonged to the category of cases which I have described by the term "congenital word-blindness." His mother stated that he was in every other respect a quick and intelligent boy. He had no difficulty with arithmetic, and could keep up with the other scholars easily in this department. He was now working at compound addition. His mother said that the other boys laughed at him in the class, and when he became excited his reading was worse than ever. He concealed his defect for a time by learning his lesson by heart, so that when it came to his turn and he got the few words at the beginning he could repeat the lesson by heart. His auditory memory, therefore, was evidently very good.

On examining him I found that his reading was very defective for a boy who had been seven years at school. He could rarely read by sight more than two or three consecutive words, but came to a standstill every second or third word, and was unable to proceed unless you allowed him to spell out the word aloud, thus appealing to his auditory memory, or to spell it silently with his lips, thus appealing to his memory of speech movements, glosso-kinaesthetic memory of Bastian. The words he stuck at were chiefly polysyllables, but this was not always the case, as he often failed to recognize by sight even simple monosyllabic words. He spelt very well, and when asked to spell the words which he had failed to recognize by sight he nearly always did so

without any difficulty. He wrote a long passage to my dictation, and with only two mistakes in spelling. He read all combinations of figures with the greatest fluency up to millions. I made him do several sums up to compound addition, and all of these he did smartly and correctly. His mother informed me that he had a splendid memory, and could learn things by heart very easily.

I wrote to his schoolmaster for information about the boy. He replied that the lad had experienced through his whole career in the school the greatest difficulty in learning to read, which had kept him behind very much in his progress through the school. He was strong in arithmetic, good at spelling, and average in other subjects, including geography and history. "I have never," said his teacher, "seen a case similar to this one in my twenty-five years' experience as a teacher. There is another boy in his class who is quite as poor a reader, but this boy is all-round poor, showing no sign of smartness in anything."

I gave verbal instructions to his mother, and also wrote to his schoolmaster, as to the method which I would recommend for his further instruction in reading. I advised them to make no further attempt to make him read in class with other boys. His mistakes and difficulties aroused the ridicule of the others, and this excited him and made him worse. I advised frequent short lessons by himself, both at the school and on his return home. The lessons were not to last too long, and were to be frequently repeated every day. Under this line of treatment he has made splendid progress, and I have just heard that he has now, after two years' persistent training, been raised to Standard IV. whereas he took seven years under the old methods to get into Standard II.

He has made good progress in all the other branches of his education. His progress in arithmetic has been very good, and he is now working at vulgar and decimal fractions.

These cases are always brought to the ophthalmic surgeon, and hence the great importance of his being thoroughly familiar with their true nature. Out of the five cases which I have placed on record, four have come to me at the Glasgow Eye Infirmary. It is quite a natural inference that, when parents see the extreme difficulty of a child in learning to read, they infer that this difficulty may be due to some defect of vision.

The diagnosis must rather rest on the fact that the difficulty is really that of storing up and retaining the visual memories of words. In examining the patients, therefore, it is essential to understand that they must not be allowed either to spell out the word letter by letter, or to move the lips silently, or to trace the form of the letters with the hand. All of these methods they occasionally adopt in order to assist their defective visual memory—that is, they appeal to other forms of memory stored in other areas of the brain, which may be perfectly normal.

In the case under consideration, the patient could always tell me the word if I allowed him to spell it out aloud, thus appealing to his auditory memory, situated in the temporo-sphenoidal convolutions. He could not recognize, for example, by sight alone the word "man," but he could recognize the individual letters by sight, and he knew how to spell it. Hence if he repeated aloud the individual letters, his auditory memory gave him the word; or if I allowed him to spell it silently by moving his lips, he could often give me the word correctly by thus appealing to his memory of speech movements. In some cases I have seen the children copying the letters with their hand on the table, and thus appealing to their writing centre. In the examination of the child no appeal must be allowed to the other forms of memory than the visual.

In these cases of congenital word-blindness it is highly probable that the visual memory of words and letters may be stored up in the right angular gyrus, the left being congenitally defective, and hence the greater difficulty in teaching them to read by sight, as they require for that purpose to use a part of the brain which does not usually discharge that function.

The early recognition of the true character of these cases is of the utmost importance, because otherwise the valuable years are lost when the brain is most plastic and most receptive of impressions. Such children cannot be taught in class. The great difficulty they experience excites the ridicule of other children, and is a great source of discouragement to the affected child. The child should be taught alone. I always advocate a number of short reading lessons every day rather than one long one. The visual impressions must be very frequently repeated before they remain permanent in the brains of these patients, hence the proper method is short and frequent lessons during the day without anything leading to exhaustion. I have found great assistance from the use of block letters in teaching these patients to read, thus deepening the visual impressions by associating them with the tactile ones.

In these days of scholastic reform it is evident that there ought to be a systematic examination of all backward and defective children by a medical expert, who would be able to differentiate the various defects and report as to the best means of dealing with the different groups.

In our educational scheme this is a subject which has met with but scant attention, and in my opinion special provision for dealing with the education of "backward and defective" children on a scientific basis is one of the most clamant wants in our present educational methods.

A CASE OF WORD-BLINDNESS, WITH RIGHT HOMONYMOUS HEMIANOPSIA.

BY

JAMES HINSHELWOOD, M.A., M.D., Surgeon, Glasgow Eye Infirmary,

ALEXANDER MACPHAIL, M.B., .M., Professor of Anatomy, St. Mungo's College,

AND

ALEXANDER R. FERGUSON, M.D., Senior Assistant to Professor of Pathology, University of Glasgow.

THE following case is one of very considerable interest and importance. The purity of the symptoms, the length of time it was under observation, and the subsequent pathological examination combine to form such a complete record as is very rarely obtainable.

It is to be noted that the symptoms presented by the patient were entirely visual, and that the case afforded an exceptional opportunity of studying the cerebral disorders of vision which not infrequently bring patients first to the ophthalmic surgeon, under the belief that they are suffering from some affection of the eyes. When word-blindness is accompanied by other symptoms of a cerebral character, such as word-deafness, motor aphasia, or hemiplegia, the true nature of the visual defect is at once suspected; but when the visual symptoms occur alone, as in the present case, a competent knowledge of the cerebral disorders of vision is necessary before the correct diagnosis can be made with certainty and precision, and hence the importance of familiarity with these conditions.

The patient, a man aged 58 years, a teacher of French and German, first consulted me in the Glasgow Eye Infirmary on August 29th, 1894, and gave the following history: About one month previously he was greatly startled to find that one morning in his own house he could not read the French exercise which a pupil gave him to correct. On the previous day he had read and corrected the exercises just as usual. Greatly puzzled, he went into an adjoining room and, having summoned his wife, he asked her if she could read the exercise. She read it without the slightest difficulty. He then took up a printed book to see if he could read it, and found that he could not read a single word. He remained in that condition until I saw him.

On examining his visual acuity with the test types, I found that he was unable to read even the largest letters of the test types. He informed me that he could see plainly and distinctly all the words and letters, but could not say what they were. What attracted my special attention was the fact that he read at once the number standing at the top of each paragraph of the test types. I found on examining him further with figures that he did not experience the slightest difficulty in reading any number of figures quite fluently and without making any mistakes whatever. He could read without hesitation figures printed on the same scale as Jaeger No. 1, and from other tests it was evident that there was no lowering of his visual acuity. His inability to read was thus manifestly not due to any loss of acuteness of vision, but to a loss of the visual memory of words and letters. The page of a printed book appeared to him exactly as it appears to a person who has never learned to read. He saw each word and letter distinctly enough, but these were no longer visual symbols, as he no longer remembered the special significance attached to them. He experienced the same difficulty with Latin and Gothic characters, and it was equally great with written characters. He was ignorant of music, and I therefore could not test his power of reading musical notes. Apart from written and printed characters, he could at once recognize and name all objects and pictures of objects which were presented to him. To put it briefly, he had lost the visual memory of all the printed and written characters except figures with which he was previously familiar. He could, however, write with perfect fluency and correctness to dictation, although afterwards he could not read what he himself had written. No other mental defect could be ascertained on the most careful examination. He spoke as fluently as ever; nor had he since the beginning of his attack ever experienced the slightest difficulty as regards speech. His mental powers were as good as ever; nor was there any defect of memory apart from the loss of memory for the visual symbols of language.

I was struck with the fact that, in trying to read, he always carried the book well to the left hand, and could not see it all when carried to the right. On examining his visual fields with the perimeter there was found loss of the right half of each visual field—that is, he had right lateral homonymous hemianopsia. No other defect could be found, and the fundus of each eye was perfectly normal on ophthalmoscopic exami-

nation. His general health was good, and, with the exception of atheromatous vessels, there was no evidence of disease present on the most careful examination of all his organs. He had always enjoyed good health with the exception of occasional attacks of bronchitis in winter. Of recent years he had had a large amount of mental work, and before his visual difficulties appeared he had been subjected to considerable mental worry.

Such was the condition of the patient when I first saw him in 1894, and I had him under continuous observation till his death in August, 1903.

After I first saw him I started the process of re-education. He got a child's primer and began again to learn the letters of the alphabet. After six months' daily practice he learned again to recognize the letters of the alphabet, but he never learned to read words by sight. He was never able to reacquire the visual memories of words, or at the most only of a very few of the short, familiar ones. He could only read by spelling out each word letter by letter and thus appealing to his auditory memory. He thus made little progress beyond reacquiring the visual memory of letters. After labouring at this for a year he came to me one day and said that he had given the task up. It took so much out of him, as he expressed it, and required such intense mental effort, and he was making so little progress that he felt constrained to abandon any further efforts towards learning to read. Not being able to read he had to give up all his appointments and withdraw entirely from teaching. During the interval of nine years which elapsed between his attack of word-blindness and his death I saw him from time to time and frequently examined him. The last time I examined him carefully was about six months before his death, and more than eight years after the onset of his trouble. I found that he had lost the visual memory of letters which he had reacquired with so much effort. He was again letter-blind as well as word-blind. The visual memory of letters, which he had acquired with so much difficulty, had been completely lost in six years from want of practice. This was in striking contrast to the visual memory of figures, which had never been affected, and which remained quite intact, although never exercised during the last eight years. He read figures up to millions with correctness and fluency. He could still write as before to dictation, although he could not read a single word of what he had written. His right lateral homonymous hemianopsia remained the same. Up to his death, then, his symptoms practically remained the same—inability to read by sight letters or words; ability to read figures; ability to write to dictation, and right lateral homonymous hemianopsia.

No new symptoms arose during the nine years which I had him under observation. He became much more irritable, and there was perhaps a gradual falling-off in his general mental powers. He was not mentally so quick and alert as before his attack. There was also a gradual falling-off in general strength. He became weaker on his legs, was more easily tired out and could not walk so far, but there was no paralysis or paresis of any kind.

His death occurred suddenly in August, 1903. He felt quite well in the morning, but towards evening began to complain of headache and giddiness. In spite of that he went out in the evening to visit a friend, but had great difficulty in getting downstairs, owing to his unsteadiness and a constant tendency to fall backwards. When in the friend's house he felt very unwell, and asked to be allowed to lie down. He was carried home in a comatose condition, and died there a few hours afterwards. Permission having been given for the examination of the brain, this was done by Professor Macphail and Dr. Ferguson, who report as follows:

Post-mortem Appearances.—The examination of the head only was permitted. The head was large, and the calvarium irregular in thickness, areas of thinning being most marked on either side of the superior longitudinal sinus: the dura mater was of normal appearance, but bled very freely; the superior longitudinal sinus contained a large quantity of dark fluid blood; the pia mater was very closely applied, but not adherent to the convolutions, the outer surface of the membrane having a dry and rather glazed appearance. On dividing the tentorium the right cerebellar lobe was obscured by fresh blood, and the substance of the lobe was lacerated on its postero-lateral aspect. The medulla oblongata was surrounded by fluid and partially-clotted blood of quite recent appearance. The cerebellar arteries were carefully examined for aneurysm or other gross lesion with negative result. The impression conveyed, however, was that of a meningeal haemorrhage which had mainly found its way into and largely destroyed the substance of the right lobe of the cerebellum, and had partly escaped into the subarachnoid space. Although a small quantity of blood was found in the fourth ventricle, the remaining portion of the ventricular cavities was free. There were no haemorrhages into crura, pons, or medulla. The arteries of the base of the brain were very rigid from advanced atheromatous degeneration, and scattered patches of atheroma were also present in many of the smaller branches. The immediate cause of death was obviously the extensive haemorrhage from some of the superficial branches of the cerebellar arteries by which the greater part of the right cerebellar lobe had been destroyed. The lesion round which the chief interest of the case centres was revealed on the inferior aspect of the left occipital lobe (see Fig. 1) as a triangular area of sunken and atrophied

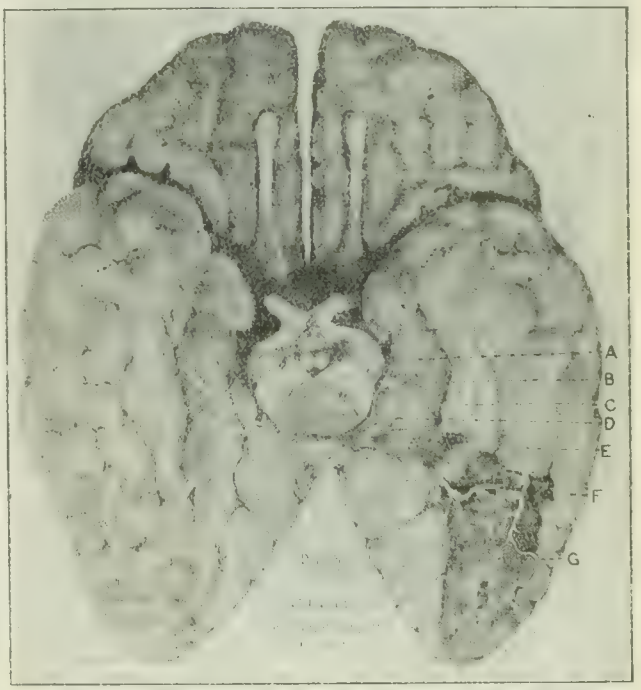


Fig. 1.—Showing anatomical relations of lesion (drawn after preservation). A, hippocampal gyr.; B, collateral fiss.; C, fourth temporal gyr.; D, anterior calcar. fiss.; E, third temporal gyr.; F, occipito-temp. gyr.; G, posterior cerebral artery.

appearance, over which the pia mater appeared to form the external wall of a cyst which completely masked the outline of the subjacent convolutions, and from which on puncture some 3 drachms of clear fluid escaped. There was no thickening or other morbid appearance of the pia over the area affected, and elsewhere this membrane presented a normal appearance.

Method of Preservation.—As the further detailed examination with measurements was carried out on the hardened brain, we consider it important to state here the method of preservation employed. After removal of the cerebellum, a quantity of warm gelatine was injected through the cystic membrane, the whole brain being afterwards immersed in a formalin and salt solution and thoroughly injected with the same solution through the carotid arteries; after three weeks' treatment in this fluid the specimen was transferred to methylated spirit; this after prolonged immersion was thoroughly removed and replaced by Müller's fluid.

Anatomical Relations of Lesion.—The area affected is limited superiorly by the calcarine fissure, extending forward to a depression over the posterior part of the hippocampal gyrus, over which a strand of shrunken membranes stretches in the direction of the crura: shrinkage of the lower margin of the cuneus, not extending, however, to its mesial aspect, is also suggested. The posterior limit of the lesion just falls short of the occipital pole, being cut off from it by a somewhat deep crescentic fissure, corresponding to the posterior limit of the posterior calcarine. Externally and inferiorly, the margin of the lesion coincides with the posterior part of the third temporal sulcus, this forming with the posterior part of the calcarine fissure a continuous depressed margin. Anteriorly and inferiorly, the margin runs obliquely across from the above

point (posterior part of third temporal sulcus) towards the hippocampal gyrus, which is concealed, along with the upper part of the collateral sulcus, by the shrunken membranes. Over the area thus demarcated the cortex is notably shrunken and the pia is closely adherent to the altered surface, while a main branch of the posterior cerebral artery, as it runs across the affected area, stands out prominently on the surface of the membrane. Both Broca's convolution and the angular gyrus are intact, but comparison of the left angular gyrus with the right shows that its conformation is notably simpler on the left side, the right being more prominent and more highly convoluted than the left. On making a horizontal section of the left occipital lobe (Fig. 2) the cavity of the

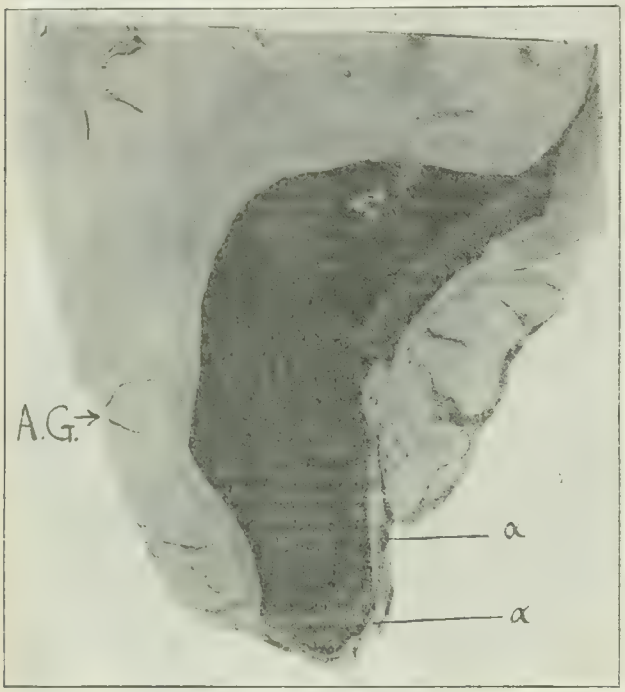


Fig. 2.—Horizontal section of left occipital lobe showing dilated ventricle and atrophied cortex; also relation of lesion to angular gyrus (A.G.).

left lateral ventricle is seen to be widely dilated, measuring at the junction of posterior and descending horns 1½ in., while the posterior horn itself has assumed the appearance of a large cyst extending right back to the occipital pole, where, as well as on the inferior and mesial aspects, the surrounding cortex is reduced to a thin limiting wall. To this wall the pia is for the most part closely adherent, leaving here and there small oval or spherical spaces between the thinned cortex and the membrane. At the occipital pole the apex of the dilated posterior horn measures a little more than ½ in. On making a vertical section, carried forwards through this area from the occipital pole, it is seen that practically the lower half of the occipital lobe is replaced by the dilated ventricle, which measures at its anterior part, from floor to roof, almost 1 in., and over the posterior two-thirds of its extent varying from ½ in. to ⅝ in. At the lower margin of this section the thin rind of cortex which forms the floor of the dilated ventricle is at some points apparently absent, the floor being thus formed in these situations by pia mater alone; while the roof of the dilated ventricle encroaches to a large extent on the white matter of the occipital lobe lying above. Further sections of the left hemisphere show that the central part and descending horn of the lateral ventricle are normal, and examination of all the corresponding parts on the right side reveal no abnormal condition beyond a slight degree of dilatation at the junction of descending and posterior horns of the lateral ventricle.

Etiology.—The lesion itself presents considerable difficulty as regards its pathogenesis; the loss of such a large tract of brain substance involves the hypothesis primarily of an acute softening consequent upon either embolism or thrombosis. Apart altogether from the comparative rarity of embolism of such a branch of the posterior cerebral artery as would cause acute necrosis with softening of the area described, there is no clinical evidence to furnish a source of embolus. On the other hand, the condition of marked arterial degeneration from atheroma indicates thrombosis as the more likely cause of the condition. It is highly probable that communication was established between the posterior horn of the lateral ventricle and the area of brain involved during the stage of acute softening; and that, in the long interval which elapsed between the incidence of the lesion and death of the patient proliferative changes in the surrounding glia had caused the area in question to assume the form of a smooth-walled cyst, continuous with the posterior horn of the ventricle.

Conclusion.—The cortex thus destroyed may be summed up as a large triangular area limited by the calcarine fissure internally and by the third temporal gyrus externally, with its apex at the occipital pole; the cortex of the cuneus (above the posterior calcarine fissure and between it and the parieto-occipital fissure) appears altogether normal, though the fibres—in the roof of the posterior horn of the lateral ventricle—passing to and from the cuneus must necessarily have been encroached upon by the great dilatation of that cavity, while this same cause must have interfered, to a large extent, with all the fibres connected to what remained of the occipital cortex (including the tract usually described as the optic radiation) and also with the fibres ascending to the left angular gyrus from the left and right primary visual centres at the calcarine fissures. When the clinical symptoms are taken in conjunction with the existence of a lesion completely destroying both the cortex and the fibres of the infra-calcarine area (while the cuneus remained apparently normal), we must conclude that the greater part at least of the visual centre lay, in this case, distinctly below the level of the calcarine fissure.

Remarks.—It will be observed that, so far as the cortex is concerned, the cuneus was quite intact except at the calcarine fissure. The lesion involved the calcarine fissure, although the greater part of it was infra-calcarine. This confirms to a certain extent the opinion which Henschen expressed in his report[1] on the cortical centres of vision to the International Medical Congress at Paris, that the visual centre is localized in the cortex of the calcarine fissure and its immediate neighbourhood. The results of the pathological examination also strongly confirm the views which Déjerine and Sérieux have expounded[2] with regard to the two different classes of cases of word-blindness which are met with. The first class comprises the cases where the patient is word-blind and agraphic—that is, quite unable to write. In the second class, to which belongs the case under discussion, the patient is word-blind and can still write to dictation, although he cannot read a single word he has written. The angular gyrus on the left side of the brain is now pretty generally accepted as the area in which is deposited the visual memory of words and letters. When the angular gyrus itself is destroyed, the patient—according to Déjerine and Sérieux—is both word-blind and agraphic. They contend that before an individual can write he must be able to revive the visual memories of the words and letters. Hence, destruction of the cortex of the angular gyrus will render it impossible to revive these images, and hence writing is impossible. In the second class of cases, to which ours belongs, where the patient is completely word-blind but is still able to write, Déjerine and Sérieux have maintained that the angular gyrus will be found to be intact, but that a lesion will be found beneath the cortex in such a position as to divide the fibres which pass to the left angular gyrus from the calcarine fissure in both occipital lobes, that such a subcortical lesion almost necessarily involves the radiation of Gratiolet on the left side, and hence the patient has at the same time right lateral homonymous hemianopsia. They have supported their views by a number of cases of a most convincing character. The present case is a very beautiful demonstration of the correctness of their views, and Professor Wyllie,[3] in his book on disorders of speech, gives another case strikingly similar to the present one. This clear distinction between these two classes of cases of word-blindness may be regarded as now positively established. The position of the lesion explains also the very frequent associationship of word-blindness and right lateral homonymous hemianopsia. In my book on word-blindness[4] I quote from other authors 9 cases of word-blindness associated with right lateral homonymous hemianopsia, and since publishing that book I have met with other 4 cases, making 5 cases in my own experience of word-blindness associated with right lateral homonymous hemianopsia. Hence, in every case of word-blindness the presence of hemianopsia

should be carefully looked for, as its presence will render the localization of the lesion more exact. The exact relationship of the word-blindness and right hemianopsia will be rendered more apparent by a study of Déjerine's diagram of the paths of the fibres to the angular gyrus. A point of considerable interest is that whilst our patient was completely blind to words and letters, he could read figures with perfect ease and fluency. The line of demarcation was absolute, the words and letters being completely lost and the figures unimpaired. This state of matters remained during the long period of ten years up till his death. When I examined him a few months before his death he could still read figures fluently. I have discussed elsewhere[1] my views in detail on the visual memory of figures, but I think the evidence supplied by the present case is quite convincing that the visual memories of figures and of words and letters must be deposited in different cerebral areas, although probably these are close together.

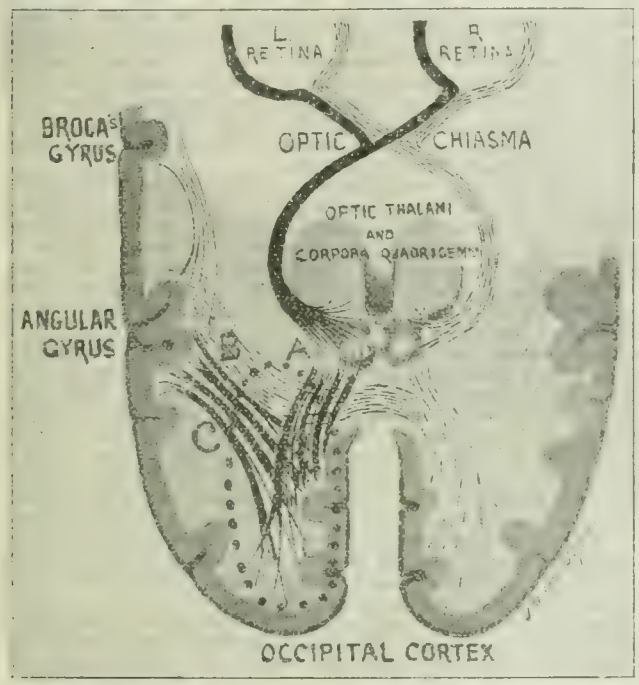


Fig. 3.—To illustrate the connexions between the optic tracts, the primary visual centres, and the left angular gyrus; the left optic tract and its connexions are represented in continuous dark lines; the right tract and its connexions by broken lines. The dotted oval represents the area affected by the lesion, and includes: (A) Fibres passing from left thalamic region to left calcarine fissure: (B) fibres passing from right calcarine fissure to left angular gyrus; (C) fibres passing from left calcarine fissure to left angular gyrus.

The case is also interesting as throwing some light on the problem of re-education. I have already mentioned that, after labouring for a year, he reacquired the visual memory of the letters of the alphabet, but never got beyond this stage. He, however, abandoned the task of re-education, which he felt too much for him. When I examined him a few months before his death, I found he had lost again the visual memory of letters, having again become completely letter-blind as well as word-blind. The visual memory of letters, which he had reacquired with so much difficulty, had been lost completely in a few years from want of practice. This was in striking contrast to the visual memory of figures, which had never been affected and which remained quite intact, although never exercised for the last nine years. Up to the last, whenever tested, he read figures with correctness and fluency. These facts, I think, clearly show that the visual memory is less receptive late in life, and that the impressions made are not so permanent. His case, however, was so far encouraging, as it showed the possibility of reacquiring by practice the visual memory of symbols which had been obliterated by disease. In the case of a younger patient, the progress is decidedly more hopeful. An opportunity of putting this to the test was afforded me by a case which I first saw three years ago. The patient was a woman, aged 34 years, who had been completely word-blind and letter-blind with right lateral homonymous hemianopsia for a period of fourteen months before I saw her. So complete was the letter-blindness that she could not recognize a single letter of the alphabet. I recommended that she should learn to read again, beginning with the letters of the alphabet and then the short words and sentences in a child's primer. She went through a regular course of children's graduated readers, and after three years' constant practice has acquired the power of reading again. She has reacquired the visual memories of words and letters, and I believe by utilizing the corresponding area on the right side of the brain. From this point of view the remark of Drs. Ferguson and Macphail is highly interesting—namely, that the conformation of the angular gyrus is notably simpler on the left side, that on the right side being more prominent and more highly convoluted. The angular gyrus on the left side having been thrown out of use by the destruction of the connecting fibres with the visual centres at the right and left calcarine fissures, a greater amount of work must have been thrown upon the corresponding centre on the right side of the brain, and that for the prolonged period of the last nine years. This suggests the interesting question, Was this increased functional activity of the right angular gyrus the cause of its greater development?

References.

[1] Professor Henschen, Le Centre Cortical de la Vision, *Comptes Rendus du XIII Congrès International de Médecine*. Paris, 1900. [2] Déjerine and Sérieux, *Comptes Rendus des Séances de la Société de Biologie*. Paris, 1891 and 1892. [3] Professor Wyllie, *The Disorders of Speech*. Edinburgh: Oliver and Boyd. 1894. [4] Hinshelwood, *Letter, Word, and Mind Blindness*. London: H. K. Lewis. 1900.

Mr. George Wherry asked whether in the case of "acquired" word-blindness in the schoolmaster this patient could not only read figures, but count the figures so read.

Dr. Wilfred Harris said the case of subcortical lesion beneath the angular gyrus, cutting off the afferent fibres from both cunei, with no diminution of acuity of vision or contraction of the remaining half-field, was a strong confirmation of the growing belief that the angular gyrus was not a higher visual centre as compared with the visual centre in the cuneus, and that a lesion of it produced crossed amblyopia. It seemed to show that the function of the angular gyrus was really concerned with the visual memory of words alone, and that only the left angular gyrus was thus important in right-handed people.

Mr. N. Bishop Harman (London) was surprised at the author's belief that the condition was rarely recognized by surgeons. In the London educational work it had long been known, and the affected children provided with instruction fitted for them in the admirable "special schools" of the London Board (now County Council) schools. In the recent report of the work of the medical department of the London Education Committee by Dr. James Kerr, details were given of the condition and progress of several such cases, with reproductions of their performances in writing and figuring. They had so far appreciated the essential inability of the children to learn word-symbols that they no longer sought to teach them the unattainable, but aimed at developing such faculties as they possessed, with a result that some of the defective subjects were able to earn decent wages in after-life. He was pleased to find that at least in one department the much-maligned English educational system was ahead of the Scottish.

Dr. Hinshelwood, in reply, said he brought his case of congenital word blindness before the meeting in order to impress upon the profession the great importance of attention to the congenital cerebral visual defects. He did not suppose that these facts regarding congenital word-blindness were unknown to ophthalmic surgeons, as he had years ago published his first paper on the subject in the *Lancet*, and subsequently a second paper in the *Ophthalmic Review*, and he was happy to hear that the condition was now so well known, and that his labours were not in vain. The patient could not only read figures, but count also—a very important point in the case, as he thought it afforded very valuable evidence that the visual memories of figures and of letters were deposited in distinct areas of the cerebral cortex. The patient could write fluently, although unable to read a single word he had written. This was one of the interesting points in the case. According to Déjerine and Serieux, in such cases the angular gyrus would be found to be intact, and the lesion subcortical, cutting off the communications with the perceptive centres at the calcarine fissures. This was exactly what was found in the present case, and thus the views of Déjerine and Serieux had received a most important pathological confirmation.

ALBUMINURIC RETINITIS.

By GEORGE CARPENTER, M.D.,
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[ABSTRACT.]

DR. CARPENTER read a paper on albuminuric retinitis in a child suffering from parenchymatous nephritis. Chronic interstitial nephritis in a child was, he said, a rare condition, but nothing like so rare as was generally supposed.

The child whose case he now brought forward was a girl, aged 10, who was first seen in November, 1885. Her illness commenced in June, 1884, with headache, sickness, and abdominal pain. She had several of these attacks.

Blood appeared in her urine on November 7th, 1885, and since then it had been noticed in varying quantities. She passed only about 1 pint in twenty-four hours, and this contained about one-eighth of albumen. Neuro-retinitis was present in both eyes. During the following December and January she passed about 2 pints daily, which contained about one-half of albumen when it did not obviously contain blood.

Abdominal pains recurred frequently, and on April 6th the urine became almost solid on boiling, and oedema was noticed about the ankles. She died soon afterwards, and it was found that the child had "large white kidneys," and the pelves and ureters were enlarged and thickened.

THE LYMPH FOLLICLES IN (APPARENTLY) HEALTHY CONJUNCTIVAE.

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THE presence of lymph follicles in the palpebral conjunctiva, of such a size as to be visible to the naked eye, is not infrequently a source of perplexity. In the diagnosis of cases of conjunctivitis it is frequently asked, What relation do the follicles bear to the existing inflammation in the case under examination? Are they antecedent, and therefore only coincident? Do they indicate some grave tendency, say to trachoma? Or, it may be, a casual visitor to a school chances to light on a scholar whose conjunctiva shows many visible follicles, and there crowd in upon his memory the similitudes of "sago grains," "frog's spawn," and the like, to dire conditions of ophthalmia which he had heard of at some congress, and a storm is raised in the school. The condition of the lymph follicles of the conjunctiva is therefore one of importance.

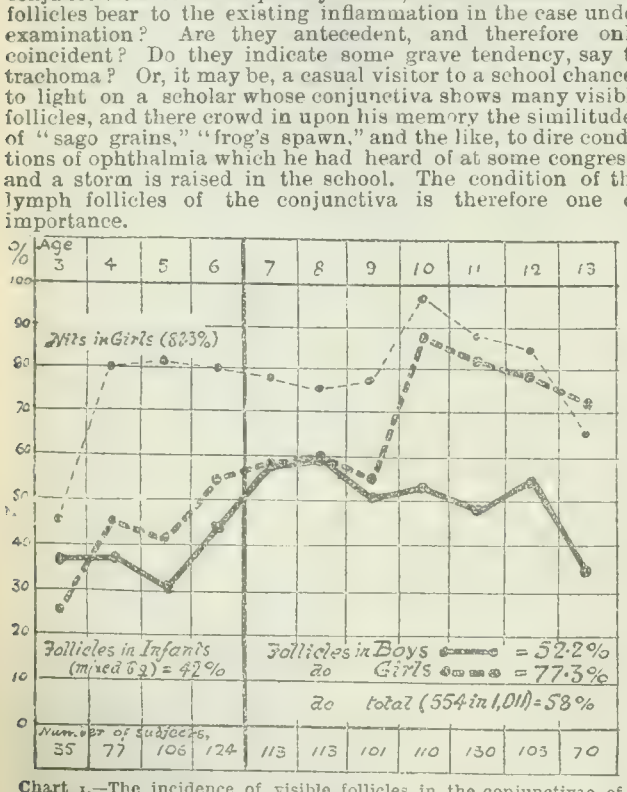


Chart 1.—The incidence of visible follicles in the conjunctivae of healthy children.

Anatomically considered, follicles are minute collections of lymph cells scattered over the conjunctiva, immediately beneath the epithelium. Their distribution varies; they are fairly plentiful in the lower lid, in large numbers in the retro-tarsal folds, very sparsely scattered in the conjunctiva, which is so firmly attached to the tarsal plate of the upper lid, but fairly numerous at the angles of this lid; they are absent over the ocular conjunctiva.

In structure they do not differ from the many other solitary follicles scattered throughout the mucous membranes of the body; in fact, the discoverer of them likened them to the Peyer's patches about which he was writing ("identical structures existing in the under eyelid of the ox"[1]). There is a supporting network of endothelial tissue made up of cells with fairly large oval nuclei and many branching protoplasmic processes, by which cell holds to cell; along the processes there are occasional strands of connective tissue—the secretion of the cell. Packed within this sponge of tissue are innumerable lymph cells; these cells are developed within and form the follicles, and the arrangement of the cells within the follicle is the direct result of this generation. In the centre of the follicle the cells are rather loosely arranged; the nuclei of some show mitotic figures indicating rapid cell multiplication; towards the periphery of the follicle the cells are closer together, there is no sign of mitosis, the cells probably mature in this zone; at the periphery the cells are arranged in fairly regular rows some half-dozen or more deep; they are closely-packed, stain well, and mark out a most distinct zone of nuclei; the cells appear to wait in this outermost zone until they are wafted off in the sluggish lymph stream of the connective-tissue spaces, or are drawn to some spot of inflammation by irresistible chemiotaxis.

In quite a large proportion of subjects these follicles are distinguishable to the naked eye as small pinkish, or pinkish-white, elevations of the conjunctiva. Von Graefe found they were visible in 70 per cent. of school children, Delbès in 49 per cent. of males and in 52 per cent. of females. In June of last year I made a systematic examination of over 1,000 children in a London Board School situated in a "town" of the north-east district. ——Town is a model of what an urban dwelling-place should be. There are gardens both in the front and the rear of the houses; the greater number of these houses are one-storied (ground and first floor), and semi-detached in plan. The man who laid out this estate must have acted with a thought and motive uncommon to estate holders in those regions, for the "town" is a great and pleasing contrast to the neighbouring Haggerston and Hoxton. The parents of the children are working folk; there is evidence that they know something of virtues of thrift, for the children's savings bank at the school flourishes, the children in the majority are well and cleanly clothed, and often bedecked with ribbons. The children are all natives; there is no alien admixture.

The children were examined in good daylight. The vision of each eye ascertained, then the lids were everted and the conjunctiva examined with the naked eye. (In the case of the girls I noted incidentally the condition of the hair of the head, the presence or absence of the nits of pediculi capitis.)

Amongst these children almost every condition of follicle could be found—from the most minute varieties where the elevations just reflected the gleam of the window light up to forms which could only be considered as a state of hypertrophy; yet all these children had apparently healthy conjunctivae—that is to say, there was no trace of any inflammatory reaction. Of 1,011 children, 554, or 58 per cent., had visible follicles. In 342 infants, of ages from 3 to 6 years, 144, or 42 per cent., showed follicles. In 341 boys (7 to 13 years), 178, or 52.2 per cent; and in 328 girls, of the same age, 232, or 77.3 per cent., the follicles were visible. The girls, then, though from the same general class, parentage, and manner of life, exhibit follicles in much greater proportion than the boys. I thought at first this might be easy of explanation, for a similar contrast betwixt the boys and girls was found in the matter of visual acuity. Of the boys 82 per cent. had good vision (§), but of the girls only 74 per cent. I thought that this might in part be accounted for by the fact that the boys played about in the clean wide streets, sharpening their wits and their physical senses, whilst the girls were kept at home to help in domestic duties; and it was conceivable that the same conditions might account for the variation in the enlargement of the lymphatic structures.

When, however, the results of the examination of the conditions in boys and girls were plotted down on a chart for each year of life (see Chart 1), it was evident that this explanation could not fully meet the case; for it will be noted that between the years 3 and 9 the curves of incidence for boys and girls are almost the same, the difference comes in suddenly and markedly in the tenth year, and persists for the remaining years of school life, the separation of the two curves during these four years averaging about 30 per cent.

At the time of this examination I had noted, for another

purpose, the condition of the hair of the head of the girls; these figures were collected and plotted out on the same chart, then it was seen that the curve of incidence of nits was similar to that of the follicles in the girls; there is a fair average level between the ages of 4 and 9 years, then a sudden rise of 20 per cent. in the tenth year, followed by a slow decline in the subsequent years.

Inquiries amongst the teachers elicited the information that it was about the age of 10 years that the girls were expected by their mothers, many of whom were working women, to take up their share of the home duties. With this responsibility came the liberty to look after themselves as to their personal cleanliness and the like: hence the increase of the nits, an indication of neglect of the person, and with this an increase of the lymphatic structures as indicative of diminished good health. When personal pride comes in as a factor, the person becomes cleaner, the curve of nits falls, and with better cleanliness and health the curve of the follicles also declines.

The possibility of the onset of puberty affecting the condition of the lymphatic structures was considered. It seemed, taking into consideration the general appearance of the girls, and our knowledge of English children, that the age was too early: it would not explain the similar increase in the nits. The simple explanation I have given is more in accordance with the known facts, and therefore more agreeable to the case.

Follicular Hypertrophy.

So far I have avoided using the word "folliculitis," or any term that should indicate the existence of an obvious inflammation: indeed, I stated that the children in whom the examination for the incidence of visible lymph follicles was made had no signs of inflammation of the conjunctiva of any sort. There were some few cases (1 infant, 4 boys, 4 girls) in which the follicles were gross in their size, yet there were no signs of inflammation.

Recently three extreme cases of this kind have been seen at hospital. Two were Jewish emigrants desirous of proceeding to America, but who had been inhibited by the shipping agent; the third was an English lad.

In all these cases the follicles were as large and prominent as they well could be; they had a normal distribution. The lower folds were filled with row on row of large pale oval bodies, each about 1.5 × 3 mm.; the upper fold of transition and the angles were similarly crowded, and a few were dotted here and there over the upper tarsus. In the Jewish boy there were some small semi-gelatinous swellings on the upper ocular conjunctiva away from the fold. In the English lad were many similar gelatinous swellings, and the semilunar folds were enlarged by the same cause (it was the appearance of these enlarged folds that led the mother to bring the boy to hospital). The epithelium of the conjunctiva covering the follicles was quite normal in appearance; the delicate conjunctival vessels could be seen passing over them in their normal course.

All the subjects of the condition stood up straight, held their eyes well open, and looked as bright eyed as any of us: the one uniformly noticeable feature of their condition was their marked anaemia. Of symptoms associated with the eye condition there were none—no heat, no redness, no swelling, no pain, no discharge, no increase in tears, no excess of blinking, no ptosis, no pannus; there was no feature that could be pointed out as abnormal, except the size of the follicle. The cases were shown round. The opinions varied—some said trachoma, others could not tell, some said it was not trachoma; the last, I must confess, were in a minority.

The subsequent history of these three cases may be briefly told. The Jewish boy was taken into hospital, the upper fornices excised, the follicles completely removed by vigorous expression, the conjunctiva brushed with a tooth-brush soaked in 1 in 1000 perchloride of mercury, reaction was checked by ice-compresses; in a fortnight the boy appeared open-eyed in the out-patient department, his conjunctiva was free from follicles, but it was covered with numerous bands running from the lids to the ocular conjunctiva.

The other two cases I treated in the out-patient department; without anaesthetic other than cocaine the follicles were expressed on two occasions with Grady's forceps in the gentlest fashion possible, and the lids lightly rubbed with bluestone; subsequently zinc chloride drops were used to whiten the conjunctiva. In a month from the time of the expression the conjunctivae were normal in appearance, there was no scarring, save for the fine line which marked the site of a portion excised for histological examination. The man left for America, and, since he has never reappeared, I judge he passed the imigration officers. But the boy, who was treated by *brossage*, can never get to America—his scarred conjunctiva tells a tale which will bar him at every port.

Sections of the mucosa from the two Jewish cases show an absolutely normal conjunctiva, save for the monstrous size of follicles: the epithelium is of normal thickness, with plenty of goblet cells: the submucosa is as delicate and free from signs of inflammation as can be; the follicles, although monstrous in size, conform exactly to the anatomy of a solitary follicle, as seen, say, in the gut; the lymph cells are soft and round, packed in proper zones, and there is no excess in the endothelial stroma. In looking at the sections the remark of Brush, the discoverer of the follicles of the conjunctiva, that they and the follicles in Peyer's patches were similar, is irresistibly brought to mind. In the sections from the Jewish boy many of the lymph paths were dilated and filled with a clear, feebly-staining substance, which accounts for the semi-gelatinous dilatations of the ocular conjunctiva; these disappeared after the *brossage*, although they were not directly affected by it; there can be no doubt they were dilated lymph paths. The features of these conjunctivae are an immense increase of the lymph cells of local origin; there is no leucocytosis of external origin. There is an abnormal development, or, rather, accumulation of cells, in the local follicles which have failed to pass in due course into the lymph stream; there is a lymph follicle stasis, if I may use the term. Indeed, in both boys there was direct evidence of a sluggish lymph circulation, in the deposits in the ocular conjunctiva and semilunar folds, and in the dilated lymph paths of the sections.

None of these features conform in any way to trachoma, which is characterized by a marked hyperplasia of the endothelial stroma of the follicles, and of the general adenoid tissue of the lids; rather I see in them that hypertrophy which produces adenoids, enlarged tonsils, and the like, in children of feeble habit and ill-condition, induced by unnatural conditions in food, housing, air; all of which were of the worst type in the three cases detailed.

Among the many figures of "trachoma follicles" which appear in various works are seen some follicles which are not trachomatous at all. In Greeff's recent work is a pretty plate showing a "trachoma follicle" which must have come from just such a case as I have described: the follicle figured does not show any sign of an inflammatory condition, only enlarged follicles of apparently normal histology. Such sections could doubtless have been obtained from all the 563 children in the school of 1,011 whom I examined individually, for in all of them were found follicles visible to the naked eye in all sizes even to hypertrophy. If the condition figured by Greeff be trachoma, then all these children are condemned to the diagnosis—a conclusion which is absurd.

Such conditions of the lymph follicles are not contagious; there is no danger of these cases setting up a viscous condition of the same or any other order in their neighbours. There is, however, a serious danger to the subject of the disorder; he is much more liable, in the unhealthy and stagnant state of the local lymph circulation and in his general ill-health, to fall a victim to any virus that may be about, with the result that the contraction of a simple catarrh, that would pass almost unnoticed in another, will in such a case look serious and receive the formidable name of "follicular conjunctivitis," and the child be excluded from school as dangerous pending the result of treatment.

I examined bacteriologically twelve consecutive cases of this order. In seven the brief history of acute symptoms indicated a catarrh on a condition of follicular hypertrophy. The determining causes of the inflammation were found to be: Koch-Weeks' bacillus twice, Morax bacillus once, streptococcus once, staphylococci thrice. All the cases made a rapid recovery.

Of the group of five in which the diagnosis was complicated by a somewhat lengthy history and some tendency to papillary exaggeration, three were finally diagnosed simple conjunctivitis, one proved to be trachoma, and one remained in doubt.

The conclusion from this evidence is that a diagnosis of "follicular conjunctivitis" is defective; it does not take into consideration the frequency with which enlarged follicles are seen in healthy subjects; it gives no indication whether the case is to be taken to be a simple catarrh occurring in such a subject, or whether the examiner conceived it to be something of a more serious nature.

REFERENCE.

1 Brush, quoted in *Gray's Anatomy*.

NOTES ON A CASE OF THROMBOSIS OF THE CAVERNOUS SINUS DUE TO EMPYEMA OF THE SPHENOIDAL SINUS.

By ADOLPH BRONNER, M.D.,
Senior Surgeon, Bradford Eye and Ear Hospital; Laryngologist, Bradford Royal Infirmary.

CASES of thrombosis of the cavernous sinus are not very common. The case which came under my care some weeks ago was remarkable in many ways, especially as regards causation. There were absolutely no subjective or objective symptoms to account for the origin of the thrombosis, except anosmia, which had, however, existed for several years. There had never been much discharge from the nares, and on careful examination these appeared to be absolutely normal.

C. L., weaver, a stout but slightly anaemic girl, saw me some weeks ago. She had been quite well up to February 24th, when she had severe headache. On February 25th the pain was so severe that she had to leave work and go to bed. There was no sickness. On March 1st a slight swelling of the right eyelids was noticed, and the eyeball began to protrude. When I saw her on March 5th there was marked swelling of both right eyelids, chemosis of the conjunctiva bulbi, and well-marked proptosis. Movements of the eye were limited; no marked strabismus. Fundus was normal; no papillitis or congestion of the retinal veins. Temperature 101° F. Calomel was given and leeches applied. Next day the proptosis was more marked, and the left eye became slightly affected. Severe throbbing pain over the left temple. Temperature 103.6° F. in the evening; pulse 100 to 120. The symptoms gradually grew worse. Temperature varied between 99° and 103° F. On March 8th the patient had a rigor; the temperature rose to 104.6° F., with profuse perspiration. On March 9th there was extensive proptosis of both eyes, with intense swelling of the lids. Cerebration was slightly impaired, but questions were answered correctly, though slowly. On March 12th there was less proptosis, and the movements of the eyes were freer. She could open the left eye slightly. The pain in the head was less marked, but still severe. There was no papillitis, but the retinal veins of the right eye were distinctly swollen. On March 13th there was a slight rigor. The temperature rose to 106°. Antistreptococcus serum, 5 c.cm., was injected several times, then 10 c.cm. six times. No reaction. Temperature rose to 105° and 106° almost daily, and there were several slight rigors. The proptosis of the left eye grew less up to March 25th, when it again increased; the right eye remained about the same. The left jugular vein was hard and painful on pressure. Vision of both eyes was fairly good, but owing to the mental condition the answers were often very vague. As far as could be seen there was no papillitis, but the retinal veins were congested. Offensive diarrhoea set in on March 15th, and continued up to the time of death. Pulse was rapid and soft. Respirations quick. Ulcer of right cornea. On March 26th there was more proptosis of the left eye, and the left cornea was opaque. She could not close either eye. Intense pain in the head. Patient was very drowsy. Temperature rose to 106° every evening. The patient died on March 31st.

Necropsy.—Both cavernous sinuses are thrombosed and filled with pus. The left lateral sinus is gangrenous, and the left petrosal sinus full of pus; the longitudinal sinus is thickened and filled with a large red clot. There is some pus (sweet) at the apex of both orbits. Both sphenoidal sinuses are full of pus and granulation tissue; the septum is practically destroyed. The ethmoidal and frontal cells are apparently not affected.

This case is interesting from many points of view. It was evidently the empyema of the sphenoidal sinus which caused the thrombosis of the cavernous sinus. This is an exceedingly rare occurrence. During life there were absolutely no subjective or objective symptoms of disease of the sphenoidal sinus. The optic disc and retinal veins were not affected for several days, and before death there was no marked papillitis and only slight congestion of the veins; no retinal haemorrhages were visible. The injection of antistreptococcus serum did not seem to do any good; if anything, it seemed to make matters worse. Certainly, after its use, the temperature rose every evening up to 105° or 106°. The offensive diarrhoea did not set in until after the injections. There was no cerebral irritation and no vomiting. Operative interference was discussed, and even proposed to the parents, but, as we could not hold out much hope, they did not give their consent.

Germain[1] has collected 182 cases of thrombosis of the cavernous sinus, with 16 recoveries; 134 autopsies were recorded. In 31 cases one sinus only was affected, in all the others both were affected.

Very few cases of papillitis and atrophy of the optic nerve due to disease of the sphenoidal sinus and neighbouring ethmoidal cells have been recorded. There can be no doubt, however, that they are fairly common, but are not diagnosed. I hope that this case may draw attention to this very important connexion, and may induce surgeons to carefully examine the nares in all obscure cases of optic atrophy and papillitis.

REFERENCE

[1] *Boston Medical Journal*, May 1st, 1902.

THE COMBINED TREATMENT IN DISEASES OF THE EYE, ESPECIALLY IN THAT OF THE UVEAL TRACT.

By G. HERBERT BURNHAM, M.D., F.R.C.S.E.

[ABSTRACT.]

THE object of this paper was to direct attention to the treatment of various diseases of the eye by the author's combined treatment, which consists of the internal administration of mercury and iodide of potassium with the hypodermic injection of pilocarpin. The thing is that it stimulates the nerve centres to a remarkable degree, and through them the ordinary physiological processes of the affected parts, and thus the disease is acted upon and removed. The effect can be maintained for years if necessary by the manner in which the treatment is administered.

He then related some cases in which this treatment had been successful.

The first was that of a boy, aged 12, who suffered from acute sympathetic ophthalmia, which came on three months after a penetrating wound of the ciliary region in the other eye, for which it was excised.

Under atropine the pupil became fully dilated, and mercury and iodide were given. The pupil three weeks later was only ¾ dilated, and much exudation was present, binding down the pupil. T. + 1 severe pain and keratitis punctata; vision P. L. only. The eye did well for several weeks, and then had an acute exacerbation of the symptoms. A week later the eye was better, and for seven months the treatment was continued, when the vision had improved to $\frac{1}{2}\frac{0}{8}$. Most of the synechiae had disappeared, the pupil dilated slowly, and the tension was normal. The boy had been taking 5 gr. of iodide three times a day and $\frac{1}{24}$ gr. of perchloride of mercury; $\frac{1}{10}$ gr. of pilocarpin was injected every second day after the first two weeks, and this was continued for five months continuously; during the remainder of the time it was used less frequently. The fundus could be seen to be healthy, but with a very peculiar-looking disc. In 1901 the disc was seen much better, and then a layer of exudation covered it and obscured the vessels. After three years the greater part of this became removed. Atropine was used for four years, and now the vision is sph. — 1 cyl. — 0.5 $\frac{6}{6}$ and J. 1 easily. The treatment is still being continued. Two months is the greatest interval that can be allowed between a series of injections. For four years there has been steady improvement without the least sign of relapse.

Case II was a man, aged 49, whose left eye was shrunken from an injury the previous year (1897). Six months afterwards the other eye became affected and there was great pain. When the author first saw him, in February, 1898, there was bare P.L., and the pupil was blocked. The combined treatment was energetically given from February, 1898, to the following October. The eye became quieter. An iridectomy was tried and failed. In February, 1899, the lens was removed and an iridotomy gave him a good pupil. Fifteen months later the vision was sph. +11, cyl. +2.5 $\frac{6}{9}$, with +3 added; J. 1 easily. This still remains.

He then gave details of other cases, one being a man aged 45, who was a cripple from chronic articular rheumatism with a calcareous band across each cornea. Under the combined treatment the rheumatism completely disappeared, and vision of $\frac{6}{5}$ was gained. Another man with acquired syphilitic cyclo-iritis of a year's duration had vision of figures only. Eighteen months after the combined treatment was commenced the vision of one eye was $\frac{6}{12}$, and of the other $\frac{6}{9}$.

A case of dense hypopyon keratitis recovered so well that only a slight nebula remained. Cases of eczema and sclerodermia were treated with it and cured, and great improvement took place in a case of albuminuric neuro-retinitis. The more he used this method the firmer his belief in it became, and it is the grouping together of the old remedies that brings about results so satisfactory and far-reaching.

To the exhibit of the Health Department of New York at St. Louis has been awarded the grand prize which is the highest honour in that class of exhibits.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

FRANCIS HENRY CHAMPNEYS, M.D., F.R.C.P., President.

CASE IN WHICH OVARIAN TUMOUR WAS SIMULATED BY LYMPHANGEIOMA OF OMENTUM AND PERITONEUM.

By JOHN BENJAMIN HELLIER, M.D.Lond.,
Obstetric Physician, Leeds Infirmary; and Lecturer on Gynecology, University of Leeds.

THIS is a record of an extremely rare form of abdominal tumour. The patient has now been under observation for five years.

A. L., married, aged 34 five children and two miscarriages. Last confinement was a full-time instrumental labour in January, 1898. She applied for treatment on September, 1899, on account of swelling and pain in the abdomen and pain on walking. She had weaned her child in September, 1898, and had been regular since, but had had some vomiting in the morning recently, and having also milk in the mammae, had some suspicion of pregnancy.

She gave an indefinite history of pain and swelling in the body for some years previously. Five years ago she hurt her abdomen by a bruise against a tub. In 1896 she was in the Leeds Infirmary for some abdominal swelling, which, she says, cleared up No operation was undertaken. One year previously she had, she states, "enlarged glands in her body," and though not confined to bed, she had pain on coughing and sneezing. Similar symptoms, with constipation, had troubled her more or less during the last twelve months. No menstrual excess.

On September 14th, 1899, she was admitted into the Hospital for Women and Children, with which I was at that time connected. She was a fairly well-nourished woman, not unhealthy in appearance. The heart, lungs, and other organs were healthy. The abdomen contained in the hypogastric and umbilical regions a rounded, central, nodular tumour, about the size and position of the pregnant uterus at twenty weeks. The tumour was not hard, but elastic on palpation, and did not yield very distinct fluctuation.

On vaginal examination the uterus was found to be somewhat enlarged (sound = 4 in.), but empty. Behind the uterus a tender swelling could be felt, which was apparently continuous with the abdominal tumour. The condition present seemed most likely to be an ovarian cystic tumour.

Exploratory abdominal section was performed on September 20th, 1899. On opening the abdomen a remarkable mass of cystic growth was exposed, which at first suggested that one was dealing with the contents of a ruptured ovarian cyst; but pelvic exploration showed that the uterus and ovaries were not involved. The main mass of growth was then drawn out of the abdomen, and it proved to be the great omentum altered by cystic changes into what looked like a huge vesicular mole. This was removed by ligature, and will be seen in the appended figure. Similar growth was found on the parietal peritoneum, deep in the pelvis and adherent to the bowel. A great deal of it was removed, and it easily came away, but certainly the abdomen was not cleared of the growth. It would, in fact, have been impracticable to do this. The abdomen, which contained a certain amount of blood from the separated adhesion, was flushed out with boiled water, and drained for forty-eight hours. The patient made an excellent recovery.

I must confess that I felt at the time some anxiety as to the nature of the growth, lest it should be of malignant nature.

Dr. Powell White, at that time our Demonstrator of Pathology, examined the growth, and pointed out that it resembled in structure the cystic hygroma often found in the neck, and that it was a lymphangeioma.

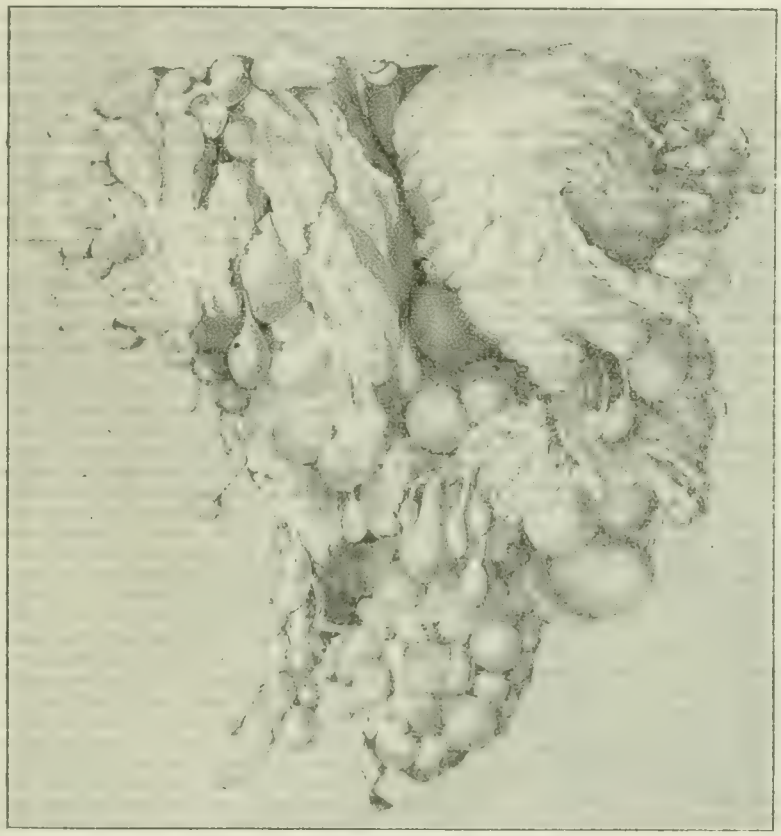


Fig. 1.—Lymphangeioma of the omentum.

Dr. J. G. Scott, our present Demonstrator, describes the section as follows:

On microscopic examination the growth appears to consist of delicate connective tissue resembling mucoid tissue, and containing large spaces. Whether these had an endothelial lining it is hard to say. The spaces seem to contain a homogeneous jelly-like mass. No sign of inflammation in section examined. The section does not in any way resemble a malignant tumour.

Four years later the patient seemed to be in perfect health, and there were no signs of abdominal growth.

About a week ago (July, 1904), I examined her, and found her in an unsatisfactory condition. The abdomen was somewhat enlarged, and there was a mass in the pouch of Douglas; also a femoral hernia is developing, and constipation is troublesome.

This seems, however, to be a case of continued growth in an innocent neoplasm which was imperfectly extirpated, and I still think that the case is non-malignant.

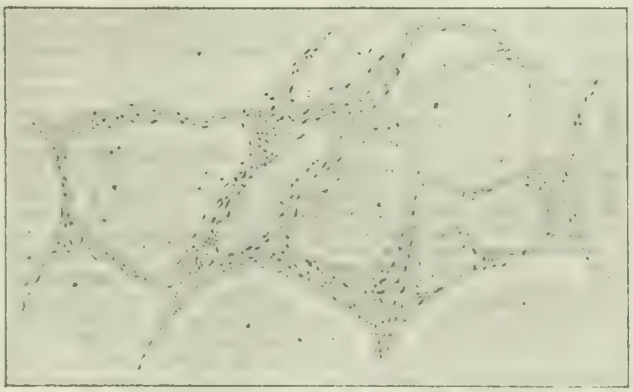


Fig. 2.—Drawing from microscopic section of lymphangeioma of omentum.

BEQUESTS TO HOSPITALS.—The late Mr. John Cohen, of Heathwaite, Windermere, bequeathed £500 to the Hospital Sunday Fund, and, among other charitable bequests, £100 each to the London Hospital, the Hospital for Sick Children, Great Ormond Street; the Royal Free Hospital, the Cancer Hospital, the Royal Hospital for Incurables at West Hill, and the Hospital Saturday Fund.—Mr. George Edward MacDonald, of Farnham, left by his will £1,000 each to the Berkshire General Hospital at Reading, the Surrey County Hospital at Guildford, the Aldershot Hospital, the Basingstoke Cottage Hospital, and the Alton Cottage Hospital.

CARCINOMA OF THE CERVIX COMPLICATING PREGNANCY AND LABOUR.

By JOHN M. MUNRO KERR,

Obstetric Physician, Glasgow Maternity Hospital; Assistant to the Regius Professor of Midwifery, Glasgow University, etc.

IN my remarks in this paper I intend to confine myself entirely to malignant disease of the uterus complicating pregnancy and labour, and I shall begin by briefly recording two cases which have been under my care. Besides these we have had four inoperable cases during the last ten years in the Maternity Hospital.

CASE I.*—Mrs. O., aged 36, was admitted to the Maternity Hospital on June 16th, 1902, for advanced carcinoma of the cervix uteri and pregnancy. The following is the history of her condition.

Patient has been ten years married and has had four children, the last having been born two and a half years ago. There was no difficulty at the birth of any of the children. Her health has always been excellent until the onset of this illness. In August, 1901, without warning and without any apparent cause, she was seized with a severe "flooding" while walking in the street. The bleeding at that time was so severe that she had to be plugged, and it continued on and off for about three weeks. Since then every few days she has been bleeding, sometimes slight, but at other times in considerable quantity. In January, 1901, she began to have severe pain in the small of the back. This pain has been almost continuously present since January, and has sometimes been so severe as to demand the exhibition of morphine. In addition to this, she has sometimes had severe pain in either side of the abdomen just above the groin.

In January also a foul-smelling whitish discharge appeared and has persisted ever since. For the last month or two she has had difficulty with her bladder, sometimes suffering from retention of urine and at other times from incontinence. In the second week of February she first felt fetal movements, but before that she was unaware that she was pregnant. In the month of February she was seen by me in consultation with Dr. Jones, Govan, and later was resident in the Western Infirmary. It was thought inadvisable, however, to resort to any operative measures until the time of her confinement drew near, as the disease was so far advanced.

The patient's condition on admission to the Maternity Hospital was as follows: She had a cachectic appearance, and was extremely anaemic. She had wasted considerably during her illness. No enlargement of any lymphatic glands could be made out. The heart and lungs were normal. As far as one could judge, pregnancy had almost reached term. The fetal heart could be heard plainly. On vaginal examination one could feel a large mass involving the entire cervix and upper part of vaginal wall, and extending for a short distance up the right side of the uterus. There was no tenderness on making the vaginal examination. The surface of the growth was very ragged, and there had been frequent haemorrhages since I saw her in March.

Three days after admission I performed Caesarean section, and extracted a living, healthy male child. Fritsch's fundal incision was employed, as I had previously determined to remove the body of the uterus. The extraction of the child was very easy, and the uterus down almost to the cervix was removed. The stump was carefully stitched and covered over with peritoneum in two layers.

The progress of the patient was absolutely satisfactory, and she left the hospital thirty-three days after the operation. She was then wonderfully well. I have been informed that she died six weeks after returning home. The child when last heard of was well.

CASE II.—Mrs. I., aged 30, 4-para, was admitted to the Maternity Hospital on February 2nd of this year. The patient has had three full-time children, all born alive, the last four years ago. During the past few months she has suffered from a white discharge from the vagina; she is now about the thirty-eighth week of pregnancy. There was no vaginal haemorrhage until the morning of admission, when her doctor examined her and, recognizing the condition, advised her to come into hospital at once. During the last few days she has had slight "pains."

On admission the patient appeared badly nourished, being very thin and pale. The pulse was 110, small in volume and low in tension. On vaginal examination a mass, about the size of a hen's egg, nodulated and firm, was felt growing from the anterior lip of the os. There was also a small nodule, about the size of a pea, on the posterior lip. The os admitted two fingers and the head presented. During the day of her admission uterine contractions occurred from time to time, and so I decided to operate. I had intended waiting for a day or two, in order to get the vaginal canal thoroughly cleansed, for the discharge that was coming from it was extremely offensive; however, that was impossible. In operating I proceeded as follows: I first amputated the cervix per vaginam and tied both uterine arteries. I then thoroughly douched out the vagina and, having disinfected my hands, performed abdominal Caesarean section. The child, which was easily extracted, was slightly asphyxiated. I then removed the rest of the uterus through the abdomen and closed up the vaginal vault from the abdomen.

After the operation the patient was very low, the pulse being just perceptible and running at 150 per minute. She rallied, however, in a few hours, and progress was satisfactory until the fourth day, when vomiting of dark fluid occurred occasionally and then became constant. The pulse again became very rapid and of very low tension, while the vaginal discharge became very offensive. On this day also the patient complained of shooting pain in the hypogastrium. She died on the fifth day after the operation. At the *post-mortem* examination there were all the evidences of septic peritonitis.

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In these cases briefly described we have examples from the two classes into which operators commonly group cases of carcinoma. The two groups are (*a*) cases in which the disease is too far advanced for removal; (*b*) cases where the disease can be removed. The division is a useful one in practice, and, were there exact features which if present rendered the separation of cases easy, there is no classification which would be more satisfactory. Unfortunately, however, there is no agreement amongst operators regarding those features which render a case operable and those which make it inoperable. Thus the relative proportion of cases placed in each group is entirely a personal matter. Look for a moment at some recent figures given by different operators regarding this point. The figures apply to cases of carcinoma of the uterus apart from pregnancy; but what holds good with regard to them holds good also for cases complicated by pregnancy. Sinclair gives the operable cases in the Southern Hospital, Manchester, at 22 per cent. In the Western Infirmary, Glasgow, I found they numbered 18 per cent. Schauta placed his operable cases at 14 per cent. These are at the one extreme, but you have at the other Mackenrodt giving his at 92 per cent., while Olshausen, in his latest contribution to the subject, informs us that his operable cases for 1901-2 worked out at 61 per cent. Orthmann, in a recent paper, places his at 43 per cent.

But the reason why I have raised this question of the relative proportion of operable and inoperable cases is because it seems to me just possible that the proportion of operable and inoperable cases may be greater amongst the pregnant. I can find few very exact figures regarding this point, for, after all, few operators meet with a sufficient number of cases of uterine carcinoma complicated by pregnancy from which to generalize. Taking Orthmann's cases, the proportion which were operable in the non-gravid was 40 per cent., while in the gravid it was 83 per cent. Again, Glockner, for Zweifel's clinic in Leipzig from the years 1887-1901, found the operable cases over all numbered 26.7 per cent., but in the gravid they numbered 82 per cent. The total number of cases investigated was 974. I do not wish to attach too much importance to this point, but if it is the case that one meets with a larger proportion of operable cases in the gravid, it is cause for great satisfaction. If one thinks of it, it is not surprising that it should be so; for advanced carcinoma must be a hindrance to conception, and should a woman the subject of carcinoma become pregnant, haemorrhage, one would expect, would be more profuse and cause her early to seek advice. Then there is the occurrence of labour, often premature, which forces her to submit to a vaginal examination. In this connexion, at a discussion of the subject fully two years ago, it is very striking that Spencer should have been able to say that "in three cases of cancer complicating labour he had amputated the cervix and part of the lower segment after delivery (in a case premature labour being induced), and the patients were now well after eight and half, six, and five years."

Cases of Carcinoma complicating Pregnancy or Labour in which the Disease is too far Advanced for Removal.

My first case belonged to this group; the patient was sent to me by her doctor, when she was five months pregnant, with a carcinoma of the cervix involving the right vaginal vault and lower part of broad ligament. The treatment adopted was the best in the circumstances. The child was saved, and I do not think the mother's life was shortened. In such cases the only alternative would be to scrape away the malignant mass as far as possible, apply a cautery or some such substance as chloride of zinc, and empty the uterus. But the great objection to such a proceeding is the danger of infection. If, however, the disease is far advanced, and the pregnancy only in the second or third month, the alternative mentioned is certainly worthy of consideration. It is generally stated that a pregnancy accelerates the progress of a carcinoma of the uterus, and, although a few such as Pinard have questioned this, it is hardly conceivable that a process associated with such an increased vascularity of the organ affected can do other than hasten its development. My feeling, therefore, would be, in cases of far-advanced carcinoma in the second or third month, to adopt the alternative treatment, but in the later months to watch very carefully the patient, douche the vagina with some bland antiseptic, keep up her general health as far as possible, but only bring on abortion if the pregnancy

appeared too much of a burden for the patient to bear. There is another matter, but one which with our present knowledge we cannot answer, and that is the effect upon a child of being retained in the uterus of a mother the subject of far-advanced carcinoma of the uterus.

When the pregnancy is allowed to continue in the case of advanced carcinoma, it is of the greatest importance that the operation of Caesarean section should be performed before labour has started. Also the uterus, in order to prevent infection, should be removed and the stump treated retroperitoneally, although Fehling favours the extraperitoneal treatment of the stump. Sarwey, in Veit's handbook, puts the mortality from conservative Caesarean section performed during labour upon inoperable cases of carcinoma at 60 per cent., and from supravaginal hysterectomy at 54 per cent. I do not for a moment believe that supravaginal hysterectomy during pregnancy would give anything like so high a death-rate, and all figures confirm this view. In cases of inoperable carcinoma of the uterus, recognized for the first time when the patient is in labour and prior to performing hysterectomy as described, it would be well to remove as much as possible of the malignant mass, provided that by such a procedure the bladder and rectum were not greatly endangered. Should, however, there be the danger of establishing a fistula with either of these viscera, it is better far to leave well alone, and do nothing further than the hysterectomy.

Cases of Carcinoma of the Uterus complicating Pregnancy and Labour in which the Disease can be Removed.

But it is cases of this group which are the most interesting to the operator, and that apart altogether from the fact that they are the most satisfactory for treatment.

It is accepted by every one, I take it, that whenever a carcinoma of the uterus is recognized the uterus should be removed; no time should be lost. I cannot understand how any one can advocate any other procedure, such as supravaginal amputation of the cervix, for that treatment has been entirely abandoned by all surgeons in operating upon carcinoma in the non-gravid. The whole uterus must be removed, and it must be removed at the same time as the child, for removal of the child and leaving the uterus for later treatment has been entirely abandoned owing to the danger of infection of the uterus.

To judge by current literature, the vaginal route is the one almost universally favoured by operators for carcinoma complicating early pregnancy, and this is all the more striking when one considers how many favour abdominal hysterectomy for carcinoma in the non-gravid. The difficulties attending vaginal hysterectomy during pregnancy or labour are the presence of the child and the size of the uterus. In the very early months—the first four—these difficulties hardly exist, for the uterus and ovum *in situ* can be and have been removed often without any trouble. Whenever, however, the pregnancy has advanced beyond the fourth month, difficulties arise in removing the uterus, tumour, and ovum entire, nor do I think it should be attempted, for the only object in its performance is the preservation of an interesting specimen; rather the operator should rupture the membrane, if possible remove the child, and then do hysterectomy. From the fourth month onwards the following are the alternative procedures:

1. Abdominal panhysterectomy and extraction of the child after removal of the uterus.
2. Classical Caesarean section followed by abdominal panhysterectomy.
3. Classical Caesarean section, suture of the uterus and abdomen, then vaginal hysterectomy.
4. Classical Caesarean section, supravaginal amputation of the uterus, closure of the abdomen, then removal of the cervix per vaginam.
5. Vaginal Caesarean section followed by vaginal hysterectomy.

The first two methods—"panhysterectomy and extraction of the child after removal of the uterus" and the "classical Caesarean section followed by panhysterectomy"—are practically the same. Any operator would naturally fix on the former if the child were dead or non-viable, and on the latter if it were viable.

The great advantage of the method is that you can make a more thorough clearance of the pelvis. There is, however, one very strong objection to it—the danger of septic infection. Do what you will and protect the peritoneum and the cellular tissue as you will, infection is liable to follow. Still, many successful cases by this method have been recorded, and it is probably the method most generally favoured in this country, to judge by the recorded cases. Noble puts the maternal mortality with this method at 62 per cent., but the later figures of Sarwey (eight with one death), and several successful cases recorded by Buist, Gemmell, Sanderson, and others, lead us to believe that the mortality is very much lower.

Conservative Caesarean Section followed by Vaginal Hysterectomy.

This method is specially associated with Olshausen's name. It has for its object the removal of the uterus without allowing the peritoneum to become soiled by dragging the ulcerated mass through the abdomen and infecting it. Olshausen is a very strong advocate of the vaginal route in uterine carcinoma generally. Here are his latest figures for 1901-2: 341 cases in all were observed, of these 210 were considered operable, that is, 61 per cent. Of the 210 operations, 206 were vaginal with 15 deaths, 27.8 per cent.; and 4 abdominal with 1 death, 25 per cent. I can find no figures bearing upon cases complicated by pregnancy operated upon by Olshausen's method; but I think on the whole, although it has certain advantages over the purely abdominal route, it is not so desirable as the one to be next referred to.

Classical Caesarean Section: Supravaginal Amputation followed by Removal of the Cervix per vaginam.

This method was recommended by Zweifel, and to my mind of all the abdominal methods it is the most satisfactory and offers the best chances of success. It possesses all the advantages of the abdominal route, and at the same time removes any risk of septic infection, for there is no dragging of the tumour through the abdomen. In Case II you observe the cervix was first removed, and then Caesarean section was performed and the rest of the uterus extirpated. A similar plan has been adopted by others; it, however, is not nearly such a good procedure as that recommended by Zweifel, by whose method there is less risk of infection. My reason for operating as I did was that I thought I might complete the delivery by vaginal Caesarean section; but after amputating the cervix I could not pull down the uterus, and so thought it best to remove the rest of the uterus through the abdomen.

Vaginal Caesarean Section and Subsequent Removal of the Uterus per vaginam.

This is the most up-to-date method, and it has, as you know, its strongest advocate in Dubrssen. Many in Germany are strongly in favour of the method. Bumm and Orthmann amongst many others have recently written in its support. Orthmann has collected 29 cases with a mortality of 17 per cent., which is really very satisfactory. Many other cases have been recorded since, but I have not attempted to collect them. I have had some little personal experience of vaginal Caesarean section, but only in cases of eclampsia or pernicious vomiting. In a multipara with a wide vagina the operation is not difficult, and carcinoma occurs, with few exceptions, in multipara. It must be remembered, however, that it is often not easy in a primipara, and that there is a distinct danger of injuring the bladder, as the recorded cases show, and as I found to my cost in one case. I do not think the method is suitable when the disease is at all extensive, as the chances of implanting the malignant growth on the surrounding tissue, and the difficulty in pulling down the uterus owing to the friability of the cervix, is very great; also the child is placed in distinctly greater danger by this method, and that is a very strong argument against it. In certain cases where the disease is not far advanced, where the child is not viable or is dead, it has certainly much to be said in its favour. When, however, the child is viable and the disease more advanced, Zweifel's method appears to me the best.

As regards the removal per vaginam of a full-time uterus, those who have had personal experience in the matter agree that it is not difficult, and that there is not much bleeding if one drags upon the cervix.

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Dr. THOMAS WILSON expressed a preference for operating by the vaginal route in these cases wherever practicable. He briefly related a recent case in which he had performed vaginal Caesarean section at the eighth month of pregnancy in a patient with cancer of the cervix. The operation was completely successful as regards both mother and child.

SUGGESTIONS FOR THE PREVENTION OF PUERPERAL INFECTION IN PRIVATE PRACTICE.

By JOHN W. BYERS, M.A., M.D., M.A.O. (Hon. Causâ),
Professor of Midwifery, Queen's College, Belfast.

[ABSTRACT.]

PROFESSOR BYERS pointed out that one of the results of the introduction of aseptic and antiseptic methods had been a decided improvement of the rate of mortality and also of the morbidity in midwifery. This had been most noticeable in lying-in institutions in which the death-rate from childbed fever had decreased almost to the vanishing point. The total maternal mortality among 8 796 women delivered in the Rotunda Hospital and Belfast Maternity during the years 1902-3 was less than 0.32 per cent., and that due to septic infection less than 0.1 per cent. But an examination of the statistics of the Registrar-General's Department showed that there is still an enormous preventable loss of life from puerperal fever in private practice, amounting, in England and Wales alone, to some 2,000 deaths annually, and to this must be added the further but incalculable loss from secondary gynaecological disease and sterility entailed by the slighter and not immediately fatal cases of infection. In at least 75 per cent. of all cases childbirth is a physiological process, demanding expectant watchfulness but no active interference. It is but rarely that women delivered spontaneously without any vaginal examination become infected (according to Leopold only 5 in 248 cases, and those but slightly). Women admitted into lying-in institutions after their delivery are very seldom infected; indeed, in normal pregnant women who have not been examined internally, the vagina does not contain any pathogenic germs, though such germs are present in the external genitals of at least 60 per cent. It is, therefore, natural to find that the results of midwifery practice have become better as vaginal examination has become less frequent and abdominal palpation more relied on. Vaginal examination is always dangerous, and never to be employed except to elicit information necessary in the interest of the patient, and not to be obtained in any other way, for example, by abdominal palpation. In an ordinary case, prolapse of the cord just when the membranes are ruptured is the only point on which there need be doubt; and if any vaginal examination is to be made it should be done just after the rupture of the membranes. Puerperal infection is always due to micro-organisms introduced from without: from the patient's external genitals, or from her clothes or bed, or from the hands, instruments, or clothes of her attendants: and it must be remembered that a clean hand may be fouled by contact with the patient's clothes, bed, or external genitals. Nurses and students should be more thoroughly instructed in the pathogenesis of puerperal infection, in the risks of vaginal examination, and the great value of abdominal palpation, in their personal responsibility, and the necessity and means of keeping themselves aseptic. Meddlesome midwifery is to be avoided. In the Rotunda, under Dr. Purefoy, most cases are delivered without any vaginal examination. Of late years Professor Byers himself has, in many instances, made no vaginal examination. Even among students he finds that the more abdominal palpation is practised the more accurate does the diagnosis become, and the less has vaginal examination to be resorted to. Furthermore, as proceedings to be avoided, Professor Byers specified the unnecessary use of forceps, early rupture of the membranes, douching, except under very exceptional circumstances, and any interference during the third stage not directly indicated. The greatest care is to be taken in the disinfection of the patient, especially in that of her external genitals, her bed, and her clothes, and in that of the hands and instruments of the attendants, who, if not specially dressed in sterile overalls, should have their clothes covered by freshly-laundered towels. As of further importance in improving midwifery results, Professor Byers laid stress on the examination of pregnant women, soon after conception, as regards their heart, lungs, kidneys, and condition generally, and, some weeks before term, to ascertain the presentation and position of the fetus, the amount of liquor amnii, and the possible existence of some abdominal tumour or pelvic deformity. He also advocated the immediate repair of any laceration of the pelvic floor.

Dr. THOMAS WILSON agreed generally with the statements and recommendations made by Professor Byers. He pointed out, however, that at the present day labour is, in a large proportion of cases, not a physiological process, and certainly, in most cases, does not take place under natural or physiological conditions. Dr. Wilson further emphasized the fact that 30 to 40 per cent. of the cases of fever following delivery are due to infection by the gonococcus some time before labour or abortion. The fever in this group of cases may fairly be termed autogenetic, and cannot be prevented by the precautions recommended in the paper.

Dr. R. MOWBRAY (Castlederg) said that to have success in midwifery in private practice it was not necessary to give up vaginal examination. In fifteen years he had not had a death from puerperal fever, and for eleven years not a single death from any puerperal condition whatever. He always used the bichloride solution for the hands, and he sponged the external genitals with the same solution.

Mr. W. G. NOBLE said puerperal infection in private practice was rather due to causes beyond the control of the attendant practitioner than to the work of the practitioner himself. Untrained attendants, indifferent and careless nursing, scarlatina, insanitary conditions, dirt, and autogenetic infection were directly or indirectly the chief causes. In Walthamstow, with a population of 110 000, while Chairman of the Sanitary Committee, he inquired into every case of puerperal sepsis notified to the authority occurring during three years, and in no case could the responsibility be laid at the door of the practitioner. The two principal causes were ignorant attendants and scarlatinal infection.

Dr. E. T. DAVIES (Liverpool) said it was still a deplorable fact that puerperal sepsis was far more prevalent in private practice than in maternity hospitals, and this fact no doubt was explained by more thorough aseptic precautions being followed in the former than in the latter. He thought that puerperal infection was in most cases due to neglect of aseptic precautions. To these ends he would advocate infrequent vaginal examinations; the vulva should be sterilized, and particularly the examining finger. Nurses and students should be far more fully taught than they are in our schools as to practical midwifery, routine douches were condemned, and abdominal examination should be more thoroughly taught and practised.

Dr. WARD COUSINS asked Professor Byers if the important statistics he had produced upon the mortality of maternity hospitals in comparison with the mortality of private practice included the maternity hospitals and institutions of England and Wales? His remarks would have a far-reaching influence, and he thought it might be a good thing—if the statistics were confined to the great maternity hospitals of Ireland—if not only midwife pupils, but also the medical students of England and Wales took a course of instruction in these institutions. As regards the comparison with the mortality in private practice, he believed that if the precautions of the maternity hospitals were carried out, they would be followed by very satisfactory results. The lying-in room should be prepared with the same antiseptic precautions as the operating room. He did not believe that what is properly called "meddlesome midwifery" was now practised by the general practitioners of the country, and thought that the dangers of vaginal manipulation in normal labours were now generally recognized; he hoped that the principles advocated by Professor Byers would soon be universally practised by the new order of certified midwives, and also by all attendants in the lying-in room.

Professor HENRY CORBY (Cork) had listened with very great attention to Professor Byers's paper. Three of the principal causes of puerperal fever were vaginal examinations, contaminated clothes, and dissemination through the air. With regard to vaginal examinations, they knew that puerperal fever was rare amongst the negro races, as the attendant of the parturient woman never made a vaginal examination. Then there was the historic case of Semmelweis of Vienna, who, finding the mortality from puerperal sepsis in the department attended by students was over 11 per cent., whilst in the department attended by nurses the mortality was only about 2 per cent., and believing the fact of the students being

engaged in dissecting was the cause of the high mortality of the patients looked after by students, caused the latter to wash their hands in chlorine water. After that precaution had been adopted, the mortality amongst the cases attended by the students fell even below that of the women attended by the nurses. Some years ago, when it was the fashion to have recourse to methodical syringing in every case, he (Professor Corby) never felt happy, as an increase of temperature was so likely to occur. Now, almost the only cases of puerperal sepsis he had to deal with in his own practice were cases of phlegmasia dolens, and he had always found defective house drains in conjunction with those cases. With regard to contamination by clothes, he might mention a remarkable case. He saw a farmer's wife in consultation some years ago; she was suffering from very severe sepsis, and the case ended fatally. Her husband married again, and his second wife also developed sepsis. Finding the ordinary treatment unsuccessful and suspecting that some of the bedding had been used by the first wife during her illness, he caused the whole thing to be removed. The patient at once commenced to improve and got quite well. With regard to Professor Byers's reference to the experiment, showing that even a sterilized glass tube could convey pathogenic organisms from the vulva into the vagina, it occurred to him that in many instances the leucocytes in the vagina must be capable of dealing with those organisms, as otherwise coitus ought to be a potent cause of infection of the vagina. He never used carbolized vaseline on the examining finger, as one could not have vaseline thoroughly aseptic.

The President wished to make two remarks: (1) As to syringing. It was undoubtedly better not to syringe as a routine; but thirty years ago, when he began to hold active office at the York Road Lying-in Hospital in London, and helped to introduce antiseptic midwifery—for this was the first London lying-in hospital to adopt it in earnest—it was thought best to clean a parturient woman inside as well as outside. Since disinfection of the hands and genitals had been advanced it had been shown that it was best not to use routine syringing. (2) As to healthy surroundings. They were, of course, highly desirable; but for all that, unhygienic surroundings were not the cause of puerperal fever. In the preface to Tarnier's *Midwifery* the history of the great Paris Maternity Hospital was recounted. The attempts to eliminate puerperal fever included drainage, ventilation—on both of which vast sums were spent—and the treatment of wounds. But they did not cause any great improvement. Then came antiseptics, and the mortality dropped at once. Although hygienic surroundings were highly desirable, it had been under the most filthy surroundings that antiseptics had won their most conspicuous triumphs.

Professor Byers, in reply, thanked those present for the very appreciative manner in which they had received his paper. He was glad to hear from the President that the Central Midwives Board were instructing midwives in reference to abdominal palpation. In reply to Dr. Wilson, of Birmingham, he still adhered to the belief that, as he had stated in his paper, "in at least 75 per cent. of midwifery cases labour is a natural physiological process" (and the practice of German and Irish maternities showed this), and he could not agree that the gonococcus was responsible for such a large proportion of cases of puerperal sepsis as Dr. Wilson seemed to think: if this was so, he (Professor Byers) asked how could the statistics he had given of the two hospitals in Dublin and Belfast be explained, that is, a mortality from sepsis of 0·09 out of 8 796 cases. He admitted the gonococcus might cause puerperal sepsis, but all bacteriologists agreed that its occurrence as a cause of puerperal infection was not a very common one. Dr. Mowbray's results were most excellent, and he claimed him as a supporter of his (Professor Byers's) views. He was quite sure untrained nurses were responsible for many cases of sepsis, and it was only by their more thorough training that such results could be obviated. He could not accept the view that drainage or air had anything to do with puerperal sepsis. It was a contact disease generally conveyed by the finger or an instrument. A simple experiment showed this. A woman with sepsis might be in the same ward with another woman recently confined, and provided the nurse who attended the septic case did not touch the other case, nothing in the nature of sepsis would arise. Further, as an indication that unhealthy surroundings had little effect, provided aseptic and antiseptic precautions were used, he might emphasize again the fact that both at the Rotunda Hospital and at the Belfast Maternity Hospital the cases treated in the extern maternity were among the poorest, and yet admirable results had been obtained among them. He agreed with Dr. Davies that routine douching was bad; it should only be used when there were the clearest indications present. The question of the prevention of puerperal sepsis was, indeed, a most important and serious one, demanding their most anxious attention, and he believed that if in private practice the results were to be as good as those now obtained in maternities, they must, first, have better and more thorough teaching of their students and midwives; secondly, they must carry out the details of aseptic and antiseptic midwifery as rigidly in their private work as was done in maternities; and finally, there must be less tendency on the part of some to "meddlesome interference." He again thanked them for the very kind way they had received his paper.

NOTES ON SOME CASES OF ECTOPIC GESTATION.

By Ewen J. Maclean, M.D., M.R.C.P.Lond., F.R.S.Edin.,
Lecturer on Midwifery, University College of South Wales and Monmouthshire; Senior Gynaecologist, Cardiff Infirmary; Consulting Gynaecologist, Porth and Mountain Ash Cottage Hospitals, etc.

The apologies of the writer of this short paper are due to the President and officers of the Section in that so comparatively commonplace a subject as ectopic gestation forms its basis. My excuse must be that I was unable to complete the paper of which I had first given notice owing to the fact that many of the case papers on which certain clinical and other observations were recorded went a-missing.

And yet it is more than doubtful if the last word has been said on ectopic gestation. The number of its alleged predisposing cases is constantly being added to, a sure sign of "unsettled convictions" on the point, and the diagnosis is far from being easy in many instances. Within my own experience—a limited one as compared with that of many here—I have in operating repeatedly found evidences of an unsuspected extrauterine gestation, and in other cases where I had expected to find it I have been in that sense disappointed. Then, again, in that class of cases where the history, symptoms, and physical signs point clearly to the condition of ruptured ectopic pregnancy, the indications for non-interference as distinguished from those demanding immediate operation are still in an unsettled state. In this relation it has to be noted that the President of the Section, in a valuable paper in vol. I of the *Obstetric and Gynaecological Journal*, went far to show that there is a field for the expectant treatment of certain varieties of ruptured tubal gestation. The difficulty lies in defining the field so as to afford clinical guidance in a given case.

Further, the vast number of operations now effected for this condition are ever extending our knowledge of its purely surgical problems and its pathology.

I venture to bring a few cases to the notice of the Section, referring to their special features and summarizing the general points:

Case I.

E. C., aged 38 years, was sent to the Cardiff Infirmary by Dr. O'Donnell, of Barry, on December 31st, 1901. She had "seen nothing" for six months—that is, since June 6th, 1901. About two and three-quarter months, however, after the establishment of the amenorrhea she had had marked left lower abdominal pain, but this had not been accompanied by any special pallor or faintness, nor was there at that time vaginal loss of any kind. The pain was persistent and severe and she was laid up with "peritonitis" for five weeks. A short time before admission she had passed per vaginam a "yellow jelly-like substance" with some blood.

On admission she was found to be in a very weakly condition with a sallow complexion, a temperature of 104.2° F., pulse 136 and respirations 28. The uterus, which was bulky, with patulous cervix, and measured about 4 in., lay retroverted into the right posterior quarter of the pelvis. It had evidently been dislocated into this position by a somewhat hard elastic tumour, of oval shape and child's-head size, which was felt in the lower abdomen and pelvis, and rested on the displaced uterus. The tumour extended upwards almost to the umbilicus. There was no vaginal coloration and no expressible mammary secretion.

These details were made out mainly on the third day after admission under an anaesthetic, the pulse and temperature having considerably improved under the administration of quinine and intrauterine douches of perchloride of mercury solution. At the same time the uterine cavity was blunt curetted and some unimportant débris removed.

From this time forward the pulse, temperature, and general condition improved markedly, and a month after admission I performed a laparotomy, with a view of investigating the nature of the tumour and its relations. The tumour was found lightly adherent to the parietal peritoneum

and densely adherent to the underlying uterus, the sigmoid flexure, rectum, some coils of ileum, and to the left pelvic wall, and was with considerable difficulty isolated, delivered, and amputated. The pedicle was composed mainly of the thickened remnants of the left broad ligament and tube; at some points where the adhesions to the bowel were very obstinate it was found necessary to leave portions of the outer layer of the tumour wall unseparated. The oozing was inconsiderable, and, the uterus being replaced and the right appendages found healthy, the pelvic cavity was washed out with saline solution, and the wound closed in three layers.

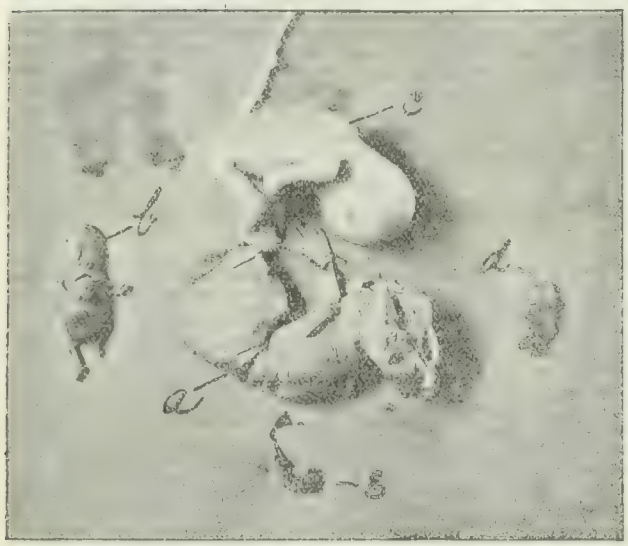


Fig. 1.—Group of the fetuses.

The patient made a practically uninterrupted recovery, leaving the infirmary on the twenty-eighth day after operation, and has since continued in good health. The local and general conditions continue up to the present to be very satisfactory.

The nature of the tumour (Specimen 1) was revealed on dissection. It was an ectopic gestation sac, in which development had advanced to some two and a-half to three months, and had then ceased. The placenta, fetus, and sac wall showed degenerative changes.

In general contour the sac is of ovoid form, and measured 5 in. in the long and 4 in. in the short diameter. Ragged adhesion sites and the distal portion of the pedicle are seen on its surface. The irregular protuberance which lay underneath and to the right in the pelvis are the extending lower limbs of the fetus.

On bisection of the specimen in its long axis the fetus (Fig. 1, *a*) is seen lying in its amniotic cavity, from which the fluid has been absorbed. The placental tissue, which formed the bulk of the tumour, lay uppermost and to the left. No trace of the left ovary was found during the operation, and there was no ovarian tissue recognized macroscopically or microscopically in the sac walls. The latter were composed of fibrous tissue, readily separable into thin layers, and at some points large vascular channels were present.

The sequence of events here is probably as follows: Left tubal gestation rupturing into corresponding broad ligament caused the death of the fetus—the placenta being uppermost—at about the third month; subsequently degenerative changes took place in the sac and contents.

The specimen is uncommon in that it is presentable as a complete ovoid tumour. This is referable to the degenerative changes of the sac wall which permitted the enucleation of the tumour along circumferential lines of cleavage.

CASE II.

H. D., aged 20, married several years, sterile, was admitted into the Porth Cottage Hospital in October, 1902, with a history which admitted of little doubt as to the condition from which she was suffering. The case had been diagnosed as one of ruptured ectopic gestation by Drs. W. David and Gabe-Jones.

After an amenorrhoea of about ten weeks, there had been a sudden onset of severe lower abdominal pain with faintness and collapse, followed by slow partial recovery lasting over some weeks. The anaemia and debility persisted, however, and the lower abdominal and pelvic pain and discomfort were for the most part unrelieved. On examination, the somewhat enlarged uterus was felt displaced toward the left, and a sensitive swelling of orange size and shape occupied the right pelvis.

Operation.—On opening the abdomen and separating omental adhesions a small fetus immediately presented at the abdominal wound followed by black semi-fluid blood and blood clot. The sac was dissected up and removed after the placing of an interlocking ligature near to the uterus. Adhesions involving the left appendages were separated, the pelvic cavity carefully mopped out, then flushed with saline fluid and the abdomen closed without a drain. Recovery was uneventful.

Specimen.—The fetus (Fig. 1, *b*) weighed about ½ oz., was 3 in. in length, and had attained to ten or eleven weeks' development. Though its tissues were not much softened, degenerative processes had clearly commenced. The sac, which contained for the most part altered blood clot and apoplectic placental tissue, was mainly composed of thickened expanded tube and broad ligament. Many of the tubal plicae were recognizable, and there were several convolutions of the proximal portion of the tube to be seen on section in the sac wall.

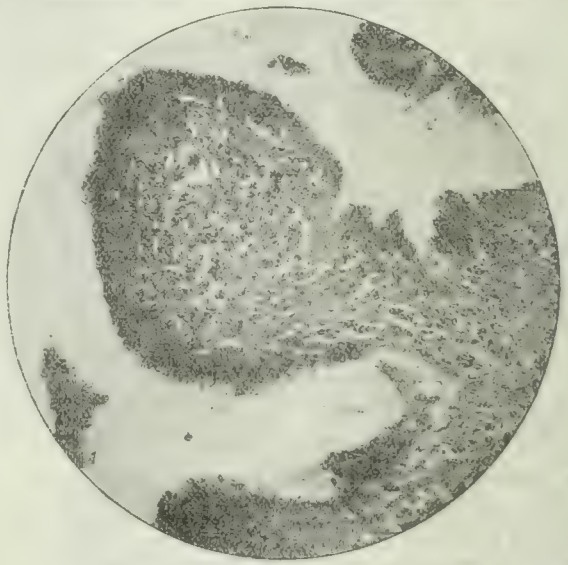


Fig. 2.—Section of mucosal fold close to gestation sac in Case IV. (× 170.)

A photomicrograph (Fig. 2), of a cross section of a proximal portion of the tube shows a club-shaped fold of the mucosa with inflammatory thickening and cell proliferation, but no evidences of decidual formation.

It is difficult to conceive of this case convalescing apart from the operation, except through the ordeal of a prolonged and disabling invalidism. An evening rise of temperature to about 100° F., and an increasing degree of local pain, render it more probable than eventually suppuration, with all its attendant risks, would have supervened.

CASE III.

E. T., aged 25, married, sterile, was admitted to the Cardiff Infirmary after a three-and-a-half months' amenorrhoea. Six weeks after the establishment of the amenorrhoea there had been violent right lower



Fig. 3.—Section of mucosa in distal portion of tube in Case IV. (× 55.)

abdominal pain, with faintness and pallor: the pain lasted about two hours. She was laid up, and in three weeks' time had another attack of pain, lasting the whole of one night, and yet a third attack four weeks after the second. The pallor and general weakness were progressive. There had been no vaginal loss of any kind.

On admission the rather large uterus was felt pushed toward the left side, and a sensitive irregular semi-cystic tumour occupied the right half of the pelvic cavity, and extended upwards to within 2 in. of the umbilicus.

Ectopic gestation was diagnosed, and at the operation intestines and omentum were found matted together and shutting off the gestation sac from the general peritoneal cavity. Very free bleeding followed the detachment of the omentum and intestines and clamping the broad ligament near to the uterus, also close to the pelvis wall. I rapidly cleared away the detached portions of placenta and the three to three-and-a-half months' fetus. Oozing in considerable quantity still continuing, the cavity of the sac wall was packed tightly with sterile gauze, and one end brought out at the lower end of the parietal wound.

The patient was somewhat collapsed after the operation, and urgent retching and vomiting continued with short intervals until the packing was removed thirty hours after. Then the vomiting ceased as if by magic, and flatus was passed freely per rectum. I am inclined to think the packing had been tight enough to cause actual obstruction, though possibly the vomiting was partly reflex from the presence of the gauze. After this, convalescence, though slow, was uninterrupted. The fetus (Fig. 1, *c*) is a very perfect one, measuring 5½ in. in length. The cord is 6½ in., with a partially velamentous insertion. Portions of placenta, amnion and chorion are attached.

I have never had to deal with more urgent haemorrhage in the pelvis than in this case. The omental and intestinal attachments being separated there was no turning back, and I believe the right line of treatment was adopted—namely, proximal and distal clamps on the broad ligament, clearing away the detached portions of placenta, and then direct pressure on the bleeding surfaces by pack or otherwise. I had no reason to regret the closure of the parietal wound after the packing was removed. The remaining portions of placenta gave rise to no trouble, and the patient is now in very good health.

CASE IV.

M. T., aged 37, mother of ten children, was admitted to the Cardiff Infirmary on May 21st, 1904. She had last been pregnant five years ago and stated that she had often had "inflammation of the bowels." Six days before admission, and when she thought herself to be two months pregnant, she was seized with violent pain in the lower abdomen whilst kneeling before the fireplace. The pain was accompanied by faintness and vomiting, and she had to be put to bed. She got up a few hours after, and then felt the seat of the pain to be mainly in the left lower abdomen. A similar attack occurred two days later, and the

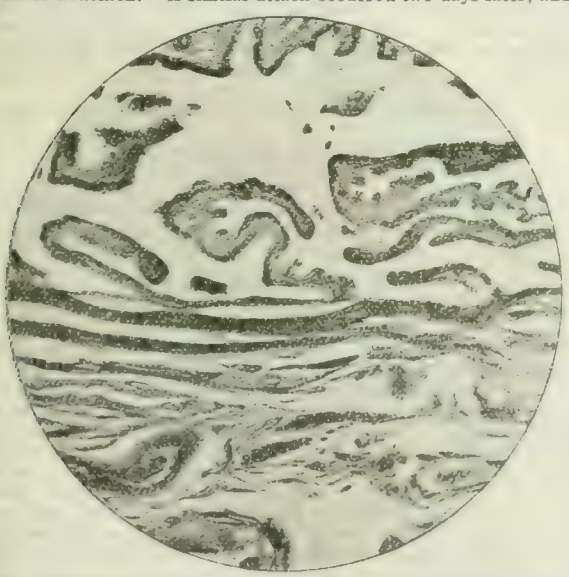


Fig. 4.—Section of mucosa in distal portion of tube in Case v. (× 55.)

medical attendant telephoned to say that he feared the patient would not rally sufficiently to be removed to the infirmary. When she arrived, however, she had a steady pulse of about 85, a normal temperature, and practically no pain. A marked degree of anaemia was present with general weakness. On examination, the uterus was found displaced to the right, and an irregular thickening of the left appendages and broad ligament was present.

Left-sided pain continued more or less constantly, though not in a severe degree, and I decided to anticipate further possible developments by operation. The omentum and some coils of small intestine were matted about the left tube, and on separating the adhesions a rent was found in its ampullary portion, and a small fetus with cord and portion of placenta attached to it in the immediate vicinity. Some dark fluid blood and clot were mopped away and the tube removed. The right appendages were healthy. The patient was discharged well on the twenty-first day after operation.

The fetus (Fig. 1, *d*) is about 1½ in. in length and well formed. The tube is 2½ in. in length, with the gestation site in the ampullary portion. Here the ruptured sac shows placental tissue and blood clot, with some amniotic membrane. The unimpregnated portion of the tube is thickened, as also is the fimbriated end.

A photomicrograph (Fig. 3) of a cross section of distal portion of tube shows some hypertrophy of mucosa, with inflammatory changes. No decidual cells seen: clearly no formation of a decidual membrane.

There was a history in this case of more than one attack of "inflammation." It is a question whether the participation of the tube in these attacks was a factor in the ectopic detention of the ovum. The appendages of the opposite side appeared to be healthy.

CASE V.

M. W., aged 34, one child, one miscarriage five months ago, was, after missing one period, seized at 8.30 a.m. on July 1st, 1904, with severe lower abdominal pain and vomiting. She fainted, and was put to bed. As she did not recover satisfactorily, the friends sent for Dr. Anstey Chave, who diagnosed ruptured ectopic gestation. I saw the case a few hours later with him, and agreed with the diagnosis without hesitation. The patient was profoundly anaemic, lying on the right side, almost pulseless and mentally perfectly clear. The pain was especially referred to the left lower abdomen. I found the uterus in the mid-line, but in the left fornix there was some thickening and a sense of resistance. A conveyance being secured, she was admitted to the infirmary, where arrangements were promptly made for operation.

At the time of the administration of the anaesthetic, some eight hours after the onset of the symptoms, the patient had rallied somewhat, the pulse, though rapid, being now readily felt at the wrist. On opening the abdomen, the left tube was immediately pulled up and found to be still bleeding from a rent in its thickened ampullary portion. Temporary clamps were placed on the ligament external and internal to the sac, and the ligament was at a later stage of the operation transfixed, tied, and the tube and ovary removed. The right appendages appeared healthy.

There were over 2 pints of fluid blood in the peritoneal cavity and probably a wash-basin full of clot. The largest clot was found high up near the liver. The clot and blood being as far as possible removed, the peritoneal cavity was flushed with normal saline solution and some 3 pints allowed to remain.

The operation was well borne, and beside the exhibition of strychnine and the usual stimulant enema, a pint of saline was injected into the rectum every eight hours for the first forty-eight hours. The pulse the following morning was 100 and the temperature 99.2°, but there was considerable distension of the abdomen. This, however, disappeared after turpentine enemata and magnes. sulph. had induced a motion and passage of flatus. The patient has made a very satisfactory recovery.

The fetus (Fig. 1, *e*), which measured ¾ in. in length, is well formed and has ½ in. of cord attached to it. It was found among the blood clots, almost escaping recognition, and was in a complete amniotic sac, with a fragment of placenta related to it. The tube is 2½ in. in length, and the site of the ruptured sac in the ampullary portion shows placental tissue and clot.

The ovary shows a well-marked corpus luteum. A photomicrograph (Fig. 4) of the cross section of distal portion of tube shows practically normal structure of mucosa and tube wall; the lumen contains blood clot.

The results of operation and the application of the surgical principle of tying the bleeding point in this class of case are eminently satisfactory, and few things are more striking than the easy recovery so often made from an apparently desperate condition.

Remarks.

With the exception of Case 1, where a confident diagnosis of the nature of the tumour was extremely difficult, it is satisfactory to note that the condition was diagnosed, or the diagnosis was strongly suggested, by the practitioners in attendance. The early recognition of ectopic gestation is now much more frequently recorded than formerly, and the extended and extending knowledge of its symptoms and signs give ground for the belief that the morbidity and mortality resulting from this much-dreaded complication will be yet further diminished.

With the exception of fetus *a* (Fig. 1) the photograph and specimens show that the fetuses were well formed.

The functions of the great omentum are as yet imperfectly understood, but the fact that that structure is almost invariably found adherent either to or in the immediate vicinity of the ruptured tube, and is associated with the intestines and other viscera in the formation of the adventitious sac, apparently in many instances being the main factor in welding them together, shows that it is concerned in limiting the haemorrhage where the amount and force of the bleeding are amenable, and in shutting off the sac from the general peritoneal cavity.

Dr. W. TIPLADY has been elected a Councillor of the City of Newcastle-on-Tyne.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

SOUTH-EASTERN BRANCH: ISLE OF THANET DIVISION.

Clinical Meeting, Margate, October 28th, 1904.

W. G. SUTCLIFFE, F.R.C.S., in the Chair.

Tuberculous Disease of the Knee-joint.—Mr. SUTCLIFFE showed 11 cases of tuberculous disease of the knee-joint, 1 case of multiple exostoses, and 1 of talipes valgus following infantile paralysis. In discussing the treatment of tuberculous disease of the knee-joint, Mr. Sutcliffe advocated absolute rest in a splint until the age of 14, and then, if the position of the limb were bad, excision of the joint, the limb being kept for the next two years in an apparatus. He was in favour of conservative measures, and was opposed to early amputation unless urgently indicated.—Messrs. TREVES, HARNETT, BERTRAM THORNTON, RASEN, and WOODS joined in the discussion.

Cretinism.—Mr. BERTRAM THORNTON showed two cases of cretinism, one of an adult, and one of an infant; both had shown distinct improvement after four months' treatment with thyroid tabloids, the improvement being most marked in the case of the child.

Bullet in the Brain.—Mr. W. B. RICHARDS showed two skiagraphs of a case at present in the Margate Cottage Hospital. The photographs showed a bullet in the right frontal lobe of the brain, and there was also a larger dark shadow in the region of the temporo-sphenoidal lobe on the left side. The diagnosis arrived at was that, after the bullet had penetrated the skull, it had probably split, and a portion had followed the bone round to the opposite side. The patient was progressing favourably.

Congenital Syphilis.—The HOUSE-SURGEON of the Royal Sea bathing Hospital, where the meeting was held, showed a case of congenital specific disease in which the nose, palate, and large portion of the face had gone; there was also marked choroidal retinitis to be seen. He showed, too, a case of severe pemphigus which had improved much under arsenical treatment, and exhibited much pigmentation from the prolonged use of the drug.

Tuberculous Disease of Testis.—Mr. TREVES showed a specimen of tuberculous disease of testis, which had lately been removed, and Mr. SUTCLIFFE one of hydronephrosis.

Treatment of Lupus.—The newly-installed Roentgen-ray apparatus of the hospital was demonstrated, and several cases which were under treatment for lupus were shown. Dr. Heaton being unavoidably absent, Dr. PRINGLE, the senior house-surgeon at the hospital, read a few notes for him in reference to the cases of lupus under treatment. Roentgen rays from a Walsham-Miller Bartholomew's spark lamp were solely used at present, and the results, although slow, were on the whole satisfactory. The *x* rays were used until a mild dermatitis was produced, and then the ultra-violet rays were continued until the progress seemed slow; after this the *x* rays were again employed. There was marked idiosyncrasy to reaction, some skins burning much more easily than others, and thus time was always lost at the beginning in order to find out the patients' reaction peculiarities. The cases that were ulcerated did best and healed with great rapidity; the fibrous infiltrated and scarred cases resulting from previous repeated scrapings were most resistant. In all cases where cosmetic results were not important a combination of excision or ulcerative cauterization would help the action of the rays.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

PATHOLOGICAL AND CLINICAL SECTION.

Birmingham, Friday, October 28th, 1904.

Dr. MALINS in the Chair.

Specimens.—Dr. THOMAS WILSON showed: (1) An adenomyomatous uterus, removed, together with a small sarcoma of the right ovary, from a multipara aged 57. The menopause occurred at the age of 53, and one year and a half later discharge, bleeding, and pain began and continued. (2) A cervical fibroid, weighing 9¾ lb., removed under local anaesthesia from a 9-para, aged 38. The patient was suffering from polyuria, myocardial degeneration, and chronic alcoholism, and the tumour had been growing for about two and a half years.

Sarcoma of Kidney.—Dr. WALTER JORDAN showed a sarcoma of the right kidney removed *post mortem* from an infant aged 4 months. When admitted into the Children's Hospital the child was found to have a tumour causing great enlargement of the abdomen, the right half of which it entirely occupied, while an indistinct rounded edge was felt to the left of the median line. The child had vomited daily since birth, and the bowels had been moved six to nine times a day, but it was well nourished, and seemed strikingly comfortable and happy in view of the abdominal condition. The day after admission the temperature ran up to 104°, and the child died twenty-four hours later. No history of pain or of haematuria could be obtained. The growth was very large, and weighed 2 lb. 10 oz. (the child, with the tumour together, weighing only 11 lb. 6 oz.). The ureter and the renal vessels were healthy. The greater part of the abdomen was occupied by the growth, the intestines being crushed into a small space occupying the left flank. When the tumour was cut into, it was found to be occupied partly by a number of large ragged cysts, containing a brownish fluid, and partly by large white nodules of new growth, and other nodules into which haemorrhage had taken place. Only a very small portion of normal kidney tissue was found, at the lower end of the growth. The suprarenal capsule was stretched over the upper end of the tumour, but not involved in it.—Dr. EMANUEL, who had prepared sections, reported that microscopically the growth was composed of tubular acini, lined by a single layer of cubical cells, with solid cylinders of similar cells separating the tubules, and running in between the acini and the cylinders delicate strands of fine fibrous tissue. The tubules, or acini, were of new formation, and were not merely normal urinary tubules entangled in a new growth. Dr. Emanuel was of opinion that the growth could not be classed among the sarcomata, but was of the nature of a carcinoma arising in embryonic renal tubules (the metanephros).

Ulcerative Colitis.—Dr. DOUGLAS STANLEY showed the large intestine from a female patient, aged 26, admitted under his care for ulcerative colitis. The patient had suffered from colitis a year previously, but recovered. When admitted the second time there were abdominal tenderness, contraction of the colon, frequent offensive motions containing blood and yellow-stained mucus. There was difficulty in retaining food of any description. The patient died with symptoms of perforating peritonitis. The colon showed diffuse ulceration, with necrosis of all the coats in many places. There were ulcers in the lower 9 inches of the ileum.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Sir R. DOUGLAS POWELL, Bart., M.D., F.R.C.P., K.C.V.O., President, in the Chair.

Tuesday, November 8th, 1904.

THE SEVENTH CERVICAL RIB AND ITS EFFECTS ON THE BRACHIAL PLEXUS.

MR. WILLIAM THORBURN communicated a paper on this subject. The symptoms which might result from the presence of a seventh cervical rib had been insufficiently considered by neurologists. Such ribs were not very rare, and were usually bilateral. They might produce symptoms either by constituting deformity or by pressure on the subclavian artery or brachial plexus. Such symptoms were most common in young adults and in women. Two cases were brought forward to illustrate the local conditions, and two other cases to illustrate the nervous symptoms which might result. The symptoms involved mainly the muscles of the hand and the sensation of the inner side of the forearm. Of the muscles affected those on the radial side of the hand tended to be more paralysed, those on the ulnar side to be more often spastic. The long flexors of the fingers might also be affected. A distinct group of symptoms was thus produced. To it probably belonged some of the cases recorded as lesions of the first dorsal root of the brachial plexus. The actual lesion was in the lower trunk. The condition could be readily diagnosed by radiography or by mere palpation of the neck, and treated by removal of the bone. The prognosis after operation was good.

Mr. C. B. KEETLEY showed a patient with a cervical rib. Occasional pain was chiefly referred to the outer side of the upper arm and the neck, and when it was felt her voice became altered. There was no muscular wasting, and in none of the cases he had seen had there been motor paralysis. There was great pulsation of the subclavian artery, and

genuine aneurysm had complicated these cases. Thrombosis and gangrene had also been recorded.

Mr. A. Carless thought the difficulty was in thinking of the condition. Pushing forward of the subclavian artery had often been mistaken for aneurysm. The preponderance of the condition among females did not appear to be universal.

Dr. Farquhar Buzzard said that the cases of uniradicular paralysis he had described were not all of the first dorsal root; two were fifth cervical, and in one both roots were affected. In three cases the onset was quite acute. In one there was herpes, pointing to implication of the posterior root ganglion. The sensory changes in lesion of the first dorsal root were different from that of the brachial plexus; the area in the former was smaller, and there was no loss to touch, but much to pain and temperature.

Dr. Purves Stewart had seen two cases of cervical ribs without symptoms; even if the ribs were bilateral the pain might be unilateral. If exertion were an exciting cause of the pain it should be more common in men.

The President asked if in the operation the sheath was damaged so as to lead to dilatation of the artery.

Mr. Thorburn replied.

Ulcerative Endocarditis.

Dr. Newton Pitt described two cases of ulcerative endocarditis in which recovery followed the injection of anti-streptococcus serum. In one there was acute fungating endocarditis of the mitral valve, with right hemiplegia and aphasia. In the other fungating endocarditis of the tricuspid valve followed pneumonia.

The President, Dr. Poynton, Dr. W. Ewart, Dr. John Broadbent, and Dr. O. K. Williamson discussed the paper.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Professor John Chiene, C.B., President, in the Chair.

Wednesday, November 2nd, 1904.

Sterilization of Dressings.

Mr. Scot Skirving read a paper on the sterilization of dressings, in which he showed that the best results were obtained by steam saturated and under pressure, but not superheated, and proved the importance of preliminary expulsion of all air. He also exhibited a sterilizing drum of his own contrivance, so made that when the sterilization is complete the lid can be driven home and the contained dressings kept sterile indefinitely.

Syphilitic Synovitis in Children.

Dr. Melville Dunlop read a paper on this subject. Though a by no means rare condition, cases were frequently overlooked or misunderstood. Von Hippel, Hutchinson, and Clutton had between them recorded 74 cases, and the author had collected 16 others in the Sick Children's Hospital, Edinburgh. Many cases were probably treated as being either tuberculous or rheumatic in origin. Recognition of the true condition was of great importance, as the lesion generally disappeared readily under specific treatment, whereas, if the joint were put up in splints, adhesions, followed by fibrous ankylosis of the joint, might result. It might arise from congenital or acquired disease, and either in an acute or chronic form. In cases in which the synovitis was a sequel of epiphysitis the distal articulations were more frequently implicated than the proximal, and those of the arms more frequently than those of the legs. As a rule, the affection was symmetrical. The ends of the bones were swollen and tender, and the infant did not use the affected limb. In the primary synovitis form the most striking features were its insidious development; its chronic course; symmetrical distribution; absence of pain, and the mobility of the joint on passive movement; its association with other syphilitic stigmata; and tendency to relapse. It occurred between the ages of 8 and 15, though cases had been recorded as early as 3½, and as late as the nineteenth year. The knees were the joints attacked in the majority of cases, and in 75 per cent. keratitis was present. The pathology of this form of syphilitic synovitis was not well known. In some cases in which the joints had been opened during life on the assumption that they were tuberculous, the most careful examination revealed only hydrops and slight hyperaemia of the synovial membrane. Probably in some there was a microscopic gummatous infiltration of the joint, while in others the effusion was due to the action of the syphilitic poison. In some cases, however, well-marked gummata and other microscopic conditions were present. The condition usually yielded readily to anti-syphilitic treatment.

The Etiology of Gout.

A paper showing the present position of existing knowledge of the etiology of gout was read by Dr. Chalmers Watson.

Cases and Specimens.

Mr. Cathcart: (1) A case of faecal fistula treated by joining the bowel above the fistula to the caecum; (2) one of scirrhus erythema after removal of both mammae for scirrhus. Mr. Alexis Thomson: (1) A boy, aged 15 years, after nephropexy for floating right kidney; symptoms appeared at the unusually early age of 13 years; (2) woman, aged 27, after conservative operation for hydronephrosis; the ureter arose from the pelvis of the kidney at such a high level that proper drainage of the urine was not obtained; (3) a specimen of popliteal aneurysm; treated at first by ligature of the femoral artery in Hunter's canal; as the clot did not become hard the sac was removed by Joubert's method.—Dr. Gibson: A left lung, the root of which was the site of sarcomatous disease involving the pericardium.

OBSTETRICAL SOCIETY OF LONDON.

Edward Malins, M.D., F.R.C.P., President, in the Chair.

Wednesday, November 2nd, 1904.

Cancer of the Cervix Complicating Labour.

Dr. Herbert R. Spencer gave an account of three cases of cancer of the cervix complicating labour in advanced pregnancy which were delivered through the natural passages, and treated by high amputation of the cervix during the puerperium, or (in one case) five months after delivery. The patients, respectively eleven, eight and a-half, and eight years after the high amputation, remained free from recurrence, and in good health. The children were born alive; one of the patients had since been delivered by Caesarean section of a child which also survives. The writer had only been able to find two other cases in which the patients operated on for cancer complicating labour in advanced pregnancy had remained well for five years. The five cases were all delivered through the natural passages, and were operated on within a short period after delivery. Short notes of three cases were also given, in which the disease was too extensive for radical treatment. Two were delivered through the natural passages and one by Porro's operation (with the *serre-noeud*). All three cases recovered, and the children were born alive. He did not agree with Pinard and others that these cases were hopeless, that the end of pregnancy should be awaited, and the interests of the child alone considered. Labour, he thought, should be induced by Champetier de Ribes's bag if the pregnancy were some weeks short of term, and treatment should have in view the cure as well as the safe delivery of the patient. How to attain these objects would best be judged when more gynaecologists published all their cases, and larger statistics became available. Meanwhile the author was of opinion that in operable cases delivery should be effected *per vias naturales*, where practicable, followed, during the puerperium, by the high amputation of the cervix with the galvano-cautery, and, in certain cases, by the removal of the body immediately afterwards. When natural delivery was impossible the cervix should be removed with the galvano-cautery and followed by the delivery of the child and the removal of body either by the vagina or by the abdomen. In cases in which the cancer had extended outside the cervix, cauterization of the growth should be followed by abdominal hysterectomy. For cases too far advanced for radical operation Porro's operation, with the use of the *serre-noeud*, should be adopted.

Dr. Thomas Wilson thought that the best method of operation for cases of this sort had not yet been determined. When the best method, whether abdominal or vaginal, in cases of uncomplicated cervical cancer had been determined, then it would be possible to apply a similar operation to cases occurring in connexion with pregnancy. As for the recommendation that in the last months of pregnancy labour should be induced, and a radical operation only undertaken later, the usual influence of pregnancy was to hasten the growth of cancer; and he thought that in all operable cases, at whatever month of pregnancy they might be recognized, immediate radical operation should be undertaken.

Dr. G. E. Herman thought the general rule of treatment in all forms of cancer applied to cancer of the cervix in the later months of pregnancy. Vaginal hysterectomy immediately after delivery should be easy, because the vagina was then so relaxed that the uterus could easily be pulled down to the vulva. He did not agree with Dr. Spencer in advising Porro's operation with the *serre-noeud*, where delivery through the natural passage was impossible. He had only once performed Caesarean section for cancer; he sewed up the uterus in the usual way, and the patient recovered.

Dr. Amand Routh thought that conservative Caesarean section was the correct treatment in inoperable cases.

Dr. Handfield-Jones, Dr. Briggs, and Dr. W. S. A. Griffith expressed the opinion that in Dr. Spencer's three successful cases, the cancers being all of the squamous-celled variety, were of the less virulent type of disease, and that the fact of non-recurrence after a lapse of years depended more on the type of disease than on any detail of treatment.

Dr. Spencer, in reply, said that his objection to vaginal Caesarean section was the risk of local inflammation. The growth of cancer in pregnancy was sometimes, but not always, rapid; in his own case it was very slow. He believed that the old Porro operation with the *serre-noeud* was safer than the conservative operation.

Glasgow Medico-Chirurgical Society.—At a meeting on November 4th, Dr. Newman, the President, being in the chair, the President, amongst other cases, described one of acute hydronephrosis, from torsion of the ureter by displacement of a left movable kidney, accompanied by reflex inhibition of function of right kidney for nine days. The symptoms of movable kidney were those usually met with till October 10th, when severe pain started in the renal region associated with swelling and complete suppression of urine, but not accompanied by any uraemic symptoms. Under observation no urine was passed, and when the catheter was introduced the bladder was found to be empty. On October 19th excretion of urine was re-established, pain in lumbar region was increased, and the swelling more pronounced. The hydronephrosis was incised. Recovery was now complete, urine being excreted by both kidneys. Another case shown by him was one of movable kidney, with symptoms characterized by marked respiratory disturbance resembling angina in some respects, but only present when the kidney was displaced.—Professor McCall Anderson showed a boy, aged 8, who had been treated with tuberculin for tuberculous peritonitis. He was admitted to the Western Infirmary, Glasgow, on July 4th, and presented the usual symptoms of tuberculous peritonitis. The first injection of tuberculin, 0.25 c.cm. of 1 in 1,000, was administered on July 9th, and on the following day there was a marked reaction. By October 8th he had had twenty-two injections, the last being 1.5 c.cm. of 1 in 10. The boy was now exceedingly well and had gained 6 lb. in weight during the treatment. He described, too, a disease similarly treated in a woman, 31 years of age, admitted to the Western Infirmary on May 25th with characteristic appearances of Addison's disease. She had eight injections, the first on May 25th and the last on July 4th. On July 12th her colour was good and she looked well and strong, and insisted on going home.—Dr. J. Lindsay Steven read notes of a fatal case of acute pneumococcal pleurisy in which the symptoms had closely resembled those of acute lobar pneumonia.

Sheffield Medico-Chirurgical Society.—At a meeting on October 27th, Dr. Arthur Hall, President, in the chair, Mr. R. J. Pye-Smith showed, amongst other specimens and cases: (1) Large gall stone removed on September 6th from the common duct of a woman, aged 50, where it had become impacted, subsequent to the removal two and a half years before of thirty-six stones from the suppurating gall bladder. The duct was sewed, a gauze drain being left in contact with it. No bile escaped and the case did well. (2) Eight facetted gall stones removed on September 7th from the common and hepatic ducts of a man, aged 46, who had had severe jaundice for nine months. Six of the calculi were at the lower end of the common duct and two in the hepatic duct. They were all extracted by an opening at the level of the top of the duodenum. The duct could not be easily sutured and was drained through a stab wound which closed in a month. The patient did well but was not yet quite free from jaundice.—Dr. Sinclair White showed (1) a man, aged 25 years, whose right upper extremity had been removed for a round-celled sarcoma of the upper arm by Berger's inter-scapulo-thoracic amputation. The patient had made a rapid recovery. (2) A man, aged 46 years, whose right scapula had been removed in March, 1900, for sarcoma. There had been no recurrence of the growth. He had a very useful arm, but was unable to elevate the upper arm beyond an angle of 45 degrees. In a more recent case still, better movements had been obtained by uniting the trapezius and levator anguli scapulae to the deltoid and the serratus magnus to the rhomboid muscles.—Mr. R. Favell showed a specimen of unruptured tubal gestation together with an adherent vermiform appendix. The patient was a married woman, aged 32, married five years, never pregnant, menses regular, lasting four days, the last period being in the first week of April. In the second week in May a coloured discharge began, accompanied with frequent attacks of pain. Per vaginam a tense cystic swelling was felt in the right lateral fornix, the uterus being pushed to the left. Abdominal section was performed on July 1st, three months after the last period. The right tube was greatly distended with organized blood clot, the embryo being found in the upper part. The tube was intimately adherent to the parietal and pelvic peritoneum. The appendix was inflamed and thickened, and adherent in its whole length to the tube. This was removed with the tube.—Dr. D. Gray Newton read notes of a case of a gall stone producing acute intestinal obstruction and successfully removed by abdominal section; he showed the specimen, which weighed 2 drachms 6 gr., and measured in the long circumference 3½ in. and in the short circumference 3 in.—Cases and specimens, etc., were also shown by the President and Dr. D. Burgess.

British Balneological and Climatological Society.—At a general meeting on Thursday, October 27th, the President, Dr. Alfred S. Street (Westgate-on-Sea), in the chair, Dr. Bowen Davies (Llandrindod Wells), the President-elect, having been introduced, gave an address on The Spa Treatment of Arthritis Deformans. Dr. Bowen Davies, in the course of his remarks, said he had chosen the term "arthritis deformans" as preferable to "rheumatoid arthritis" or "rheumatic gout," and gave the result of his experience from the observation of more than 1,000 cases. He had seen few cases that had not at one time or another taken the drugs and used the diet which would be suitable in rheumatism or gout, such as colchicum and the salicylates, or who had not taken a low diet free from meat and alcohol; all of such treatment he considered decidedly detrimental to any one suffering from "arthritis deformans," and it could not be otherwise than harmful. He had never been able quite to satisfy himself as to why this disease was practically confined to the female sex, but there was no doubt that it was very common about the age of the menopause, and that it was influenced greatly by uterine and ovarian disturbance. Again, mental shock was a very common cause of the onset of this disease. Any acute disease—not necessarily rheumatic fever—might sometimes be followed by it, and influenza seemed specially to cause it. A nourishing diet and unlimited milk, at least a quarter of a pound of fresh butter daily, lightly-cooked eggs, would always do good. Cod-liver oil, with extract of malt, was always useful. Outdoor exercise, in a dry, bracing air, was most necessary.

Liverpool Medical Institution.—At a meeting on November 3rd, Dr. James Barr, President, in the chair, Dr. Grossmann showed a case of double congenital anophthalmos in an otherwise well developed child, aged 8 months. The lids were well formed, though only ⅓ in. in length, and the conjunctival sac was a narrow funnel barely ⅓ in. deep. No trace of a rudimentary eyeball was to be felt or seen. This was the third case of the same nature shown by Dr. Grossmann before the Institution within the last four years.—Mr. K. W. Monsarrat read notes of a case of fracture of the femur in a boy aged 8 years. At the seat of fracture there was an enormous local effusion which progressively increased up to the fourteenth day, and was accompanied by a steady rise of temperature. His personal history indicated haemophilia, and he showed signs of the disease elsewhere during his stay in hospital. Union of the fracture took place early, and by the end of the fourth week it was already firm. The local effusion simulated an inflammatory condition, and before the personal history was learnt it was regarded as of this nature. Mr. Douglas-Crawford referred to a case of haemophilia with effusion into the knee-joint simulating acute arthritis. He opened the joint, and a satisfactory recovery followed.—Dr. Hugh R. Jones read a paper on the distribution of phthisis and cancer in England and Wales. Having pointed out the difference in the age and sex incidence of the two diseases, he drew attention to certain similarities in their history and distribution. Cancerous persons had a family history of phthisis in greater proportion than the general population, a high percentage of phthisical persons had a cancerous family history. The two diseases were more prevalent near the sea line. Cancer areas either overlapped, or were contiguous to, phthisical areas.

In central England, both cancer and phthisis were below the average. The death-rate from phthisis reached its zenith at the 35 to 45 age-period, the period at which the cancer death-rate began to increase. Obsolete tubercle was frequently found in cancerous persons. The recorded increase in cancer was in part real, and could not be explained away by improved diagnosis, nor by the increased population living at higher age-periods; it was probably due, he thought, to the fall in the phthisis death-rate resulting in members of phthisical families surviving to the cancer age, such persons being more prone to cancer than the general population. Dr. William Carter thought that side by side with statistics, certain great changes in the national habits should be considered. Ever since the Registrar-General's office had been founded, some seventy years ago, a steady advance in the mortality from cancer had been recorded. Within that period, bleeding, which at first was universal, had been totally discarded: the use of mercurial compounds, the greatest of antiseptics, once universal, had been largely abandoned. The consumption of meat per head of the population, had probably increased many times over; and the people who had lived simple natural outdoor lives, had become aggregated in dense masses in towns. It was quite open to consideration whether all these great facts might not be related to each other. Dr. R. J. M. Buchanan did not consider that the increased death-rate from cancer proved a true increase of incidence. The prophylaxis exercised against tuberculous infection, by lowering both the incidence and death-rate from phthisis, had resulted in more persons now living until they reached that period of life in which cancer was recognized as most likely to occur. Mr. K. W. Monsarrat did not consider that any particular relationship had been established as existing between cancer and phthisis. Dr. J. Hill Abram thought the chart of Dr. Jones, illustrating the marked difference between the apparent and the corrected death-rate from cancer, demonstrated the great care necessary in dealing with figures.—Dr. Stenhouse Williams exhibited an inhaler adapted for the continuous administration of ethyl chloride, and Mr. G. P. Newbolt showed a man, aged 38, from whom he had removed a colloid of the caecum by a transverse abdominal incision, with good results.

REVIEWS.

TUBERCULOSIS.

A work on tuberculosis by Professor Cornet cannot fail to be valuable, and the present volume, *Tuberculosis and Acute General Miliary Tuberculosis*,[1] is a notable addition to the books of reference on this subject in English. It contains in some detail an account of the state of knowledge at the present time, and is rendered additionally useful by the inclusion of a classified bibliography filling 90 pages at the end of the volume. In regard to this bibliography, it is natural that it should consist largely of references to the medical literature of the author's own country; but we should be sorry to think that four references to English writers in ten pages of the list represented the relative position of our country in the importance of its contributions to the literature of tuberculosis. The work is divided into two sections—Tuberculosis and Acute General Miliary Tuberculosis, the first being further subdivided into two parts, Etiology and Pulmonary Tuberculosis. The first chapter gives an historical survey, and is followed by an exhaustive consideration of the tubercle bacillus, its morphology, biology, and chemistry. Seeing that it is to Professor Cornet that we owe so much of our knowledge of the possibilities of infection from dried tuberculous sputum and from infected dust, it is encouraging to find the author stating that the belief in the ubiquity of the tubercle bacillus may be considered absolutely discredited, and that the danger of infection in the open, including the streets of large towns, plays no very alarming part. "The tubercle bacillus is found, as a rule, only in places in which an uncleanly consumptive maintains himself; otherwise it occurs but rarely." Chapter III, on the Histology of the Tubercle, though short, is good, but the main interest in the first part (Etiology) is in the chapters on The Modes of Invasion of the Tubercle Bacillus and on Infection. The whole question of infection is very thoroughly reasoned out. In discussing Heredity, Professor Cornet criticizes severely the statistics of various writers; of one author he remarks that he "has decorated 112 pages with about 100 gross errors of fact and contradictions." Professor Cornet says that in no statistics hitherto compiled has any attempt being made to demonstrate numerically that in the families of non-tuberculous persons tuberculosis did not occur with approximately the same frequency as in the families of consumptives. Such statistics are, however, to be found, we believe, in both English and American publications: they serve to endorse Professor Cornet's opinion as to the small influence of heredity in the causation of tuberculosis, and to enhance the regret that he has not made a wider examination of the literature of his subject. Part II. on Pulmonary Tuberculosis, is subdivided into pathological anatomy, symptoms, course, termination and types, diagnosis, complications, prognosis, prophylaxis and treatment, a somewhat similar arrangement being employed also in the subsequent consideration of acute general miliary tuberculosis. Speaking of percussion as an aid to diagnosis in pulmonary tuberculosis, Professor Cornet says that the size of a consolidated area on the surface needed to produce an alteration in percussion resonance must be 4 to 6 cm. and 2 cm. deep, and that as weeks or possibly months are required to attain this size, percussion is of little value for diagnostic purposes in the early stages of the disease. Very minute differences in note in comparing the two sides are also not available in diagnosis. In the author's student days, he tells us, "two very renowned and experienced physicians exhibited the same patient on the same day—the one in the morning for dullness in the right apex, the other in the afternoon for dullness over the left apex!" The comments on the information to be derived from physical examination of the chest are well worth noting, and in the chapter on Symptoms the causation and explanation of the various symptoms are discussed. The translation from the German has been carried out under the editorial supervision of Dr. Alfred Stengel, Professor of Cinical Medicine in the University of Pennsylvania, which may be taken as evidence that it has been carefully done, but the American spelling is somewhat irritating to English readers. Some misprints occur—for example, "pyogene saureus" for pyogenes aureus; Wilson Fox is referred to as though he were two separate individuals, "Wilson and Fox." So also in the bibliography we find a reference to "a case of carcough"; this does not at once suggest the case of *ear*-cough, which is intended.

Dr. Salomon has written an excellent essay on tuberculosis as a disease of the people and its control by preventive measures.[2] He calls it a warning cry to the German people, and it is admirably calculated to stir the interest of those who read it. Written for the public, it is kept as free as possible from technical terms, and those which are used are generally explained, but the author has not made the mistake of seeking the sympathy and help of the public without giving the necessary facts, duly authenticated, on which each individual may form his own judgement. There is no mere statement of opinion, but a carefully-selected series of well-ascertained facts, so arranged as to lead the reader step by step to the inevitable conclusion. In clear and emphatic language the prevalence and mortality of the disease, its nature and causation, and the means required for its prevention, are set forth. In his introductory sentences Dr. Salomon points out that all historical and legendary lore sets forth the struggle of man for his existence. The conflict chiefly concerns three things—political existence, daily bread, and health; and these three are in many ways closely connected—now one and now another becomes the more prominent, but the fight is interminable, and allows of no lasting peace. In the struggle for health the campaign is chiefly directed against the most fatal diseases. The large mortality from tuberculosis amongst all races of mankind and in all parts of the world is shown by the figures given in the text. Two facts of interest may be noted here—first, that England has the advantage of the smallest proportionate death-rate from consumption of the various European countries; secondly, that whilst the death-rate from this disease is diminishing in most European States, it is increasing in Austria-Hungary, as it appears to be also in Ireland. The serious damage caused by tuber-

[1] *Nothnagel's Encyclopaedia of Practical Medicine: Tuberculosis and Acute General Miliary Tuberculosis.* By Professor D. G. Cornet, of Berlin. Edited, with additions, by Walter B. James, M.D. Authorized translation from the German, under the editorial supervision of Alfred Stengel, M.D. London: W. B. Saunders and Co. 1904. (Demy 8vo, pp. 806. 21s.)

[2] *Die Tuberculose als Volkskrankheit und ihre Bekämpfung durch Verhütungsmassnahmen.* Von Dr. Max Salomon, Sanitätsrat in Berlin. Berlin: S. Karger. London: Williams and Norgate. 1904. (Demy 8vo, pp. 59. 1s.)

culosis is further emphasized by figures showing the economic loss caused by the disease. The causes which influence the mortality are then discussed, and then the means by which this mortality may be controlled. This part of the subject is divided into State regulations and individual precautions. The first includes precautions to prevent the inhalation of infected dust; sanitary precautions in hospitals, prisons, factories, schools and dwellings; and precautions with regard to those attending the sick or engaged in connexion with the food supply. Amongst personal precautions the author discusses marriage, the care of children and domestic hygiene, the special precautions for the tuberculous individual and those for his family. The prophylactic measures advisable for those predisposed to tuberculosis constitute the concluding and by no means least important section of the essay. It will thus be seen that the subject is fully considered and each section is well discussed. It is impossible to criticize in detail the many points dealt with in this essay, which deserves to be widely read. There is nothing new in it, but the facts have been well selected and well arranged. Though disagreeing with the theory of v. Behring that the drinking of infected milk in infancy rather than the inhalation of infected air in later life lays the foundation of tuberculosis of the adult, he insists on the importance of precautions. The establishment of pure milk dépôts is advocated, though boiled (or "sterilized") milk is objected to as being spoiled milk. The various "foods" and meat extracts are condemned as substitutes for milk in the feeding of young children. Speaking of the necessity of inspection of pupils (and teachers) in schools, so that the tuberculous may be removed as sources of danger to the other children, the author mentions the growing impression that "school doctors" should be appointed to all schools. There is an interesting account of the institutions for scrofulous children in Germany, and Dr. Salomon concludes that the multiplication of such health resorts for children must form one of the most important features of a well-organized campaign against tuberculosis.

THE BORDERLAND OF DISEASE.

THE object of Dr. HÉRICOURT'S book on the borderland of disease,[3] to one chapter of which we have already referred at some length, seems to be to insist upon the obvious fact that the physician is, as a rule, called in only when disease is present in its grosser forms, and often when the mischief done is irreparable, and to urge the equally obvious argument that it would be much better if medical assistance were obtained at an earlier stage. In fact, the thought underlying the entire volume may be summed up in the old proverb that "prevention is better than cure;" and although the author has shown some literary ability in spreading this over nearly 300 octavo pages, he has not added materially to our stock of ideas. In the introduction, Dr. Héricourt points out that rational therapeutics are based on sound knowledge of the causes and nature of diseases, and that this hardly existed before Pasteur: that it is by completing the work commenced by the great French scientist that the medicine of the future may become something different from that of the past. He discusses in succeeding chapters the minor ailments which precede grave disorders, and attempts to sketch the elementary stages of such conditions as appendicitis, gout, diabetes, Bright's disease, and insanity. In this we do not think he has been very successful. His descriptions remind us of the advertisements of quack remedies in which common and trifling symptoms are represented as threatening the onset of terrible diseases; for example, he describes a pre-appendicular dyspepsia which differs in no respect from common atonic dyspepsia, which has no relation to appendicitis, while the "bilious attacks" attended by a rise of temperature which unquestionably precede cases of appendicitis are not noted. Again he quotes Dieulafoy's list of minor symptoms of Bright's disease, such as dead fingers, cramps in the calves of the legs, jerkings of the limbs and other small troubles, which Dieulafoy rightly regards as of no value when isolated, but which when grouped together may justify the suspicion that an individual has a tendency to Bright's disease, even although the urine is free from albumen. This conclusion the author finds much too timid. Dr. Héricourt appears to exaggerate the progress of recent years, and to claim a knowledge of the initial stages of grave diseases which we do not yet possess. That the future of medicine will be in the direction indicated by him we all hope and believe, but before this can be realized there is much work to be done.

[3] *Les Frontières de la Maladie.* Par Dr. J. Héricourt. Paris: Ernest Flammarion. (Crown 8vo, pp. 285. Fr. 3 50.)

MINERAL WATER DOGMAS.

IN his work on *Saline Therapy*[4] Professor VON NOORDEN has endeavoured to answer certain questions respecting the use of saline mineral waters, by direct observation of their effects upon patients, either under his own care or under that of his collaborator, Dr. DAPPER. The first series of observations relate to the effect of such saline waters, as the Kissingen, Rakoczy, or Homburg Elizabeth waters, upon the secretion of gastric juice, especially the amount of hydrochloric acid. He gives seven cases of alcoholic gastritis with anacidity, in all of which slight improvement took place under the use of these waters; that is to say, a small amount of free acid was present, after the use of the waters for some weeks, but it was also true that the patients were subjected to other treatment, and especially to abstinence from alcohol. On the other hand, only negative results were, as a rule, obtained in cases of anacidity and subacidity of nervous origin or complicating phthisis. The last case given under this head is one of nervous dyspepsia in a man with anacidity, where under the use of Homburg Elizabeth water the hydrochloric acid rapidly increased and became excessive! In the next series of cases the effect of the same waters was tested in hyperacidity, and here, strange to relate, in nervous individuals the results were almost invariably favourable, whereas they were absolutely unfavourable in young girls suffering from anaemia and chlorosis, but in those cases of hyperacidity in which good results were obtained the treatment was combined with dietetic measures, especially the use of large quantities of fat. It is difficult for the impartial reader to draw any conclusion from these apparently contradictory results, except that the use of the waters usually does no harm. The next chapter is devoted to determining whether there is any foundation for the belief which apparently obtains at many watering places in Germany that the use of fat is incompatible with that of the waters. As might be supposed, the result of the experiments is to show that the "old dogma" rests upon no solid foundation, although, of course, many of the patients who go to these watering places may be suffering from diseases in which the use of fat is contraindicated. In the third chapter, after pointing out the contradictory statements current as to the action of mineral waters on proteid metabolism, he gives a series of cases to show that practically no change is produced by the use of the waters either in the direction of increasing or decreasing the excretion of urea. We think such a passage as the following is a blot upon the writings of an author of some eminence (p. 74): "In the eyes of those clinicians who babble the metabolic jargon of past ages without understanding what they are talking about, this conclusion may possibly be interpreted to signify that the therapeutic value of these waters is depreciated; as a matter of fact this is not at all the case." The fourth chapter deals with the excretion of uric acid, and shows that under the use of the same waters there was a constant but very slight increase of uric acid. He admits that these results are not in accordance with those of W. Bain and W. Edgecombe, and he allows that it is therefore impossible positively to predict an increase in the uric-acid excretion from the use of these waters. The last chapter deals briefly with another watering-place "dogma" which prohibits the use of raw fruit, salads, and vinegar to patients who are taking the waters. Professor von Noorden found that even patients who are taking bitter water are able to eat these articles without discomfort or any apparent deleterious effect. Professor von Noorden has published some solid works on medicine, and has acquired a reputation which may perhaps suffice to give value to the present volume which it does not possess in itself. The book is well translated by Dr. Alfred C. Croftan of Chicago, and is free from those blemishes to which we drew attention in another translation of the same series.

PHYSICAL THERAPEUTICS.

DR. W. MUELLER, in his book on physical therapeutics in the light of natural science,[5] has concisely detailed the main facts and explained the general principles on which treatment by the non-pharmaceutical means—that is, by light (including

[4] *Saline Therapy.* By Professor Carl von Noorden and Dr. C. Dapper. Bristol: John Wright and Co. 1904. (Crown 8vo, pp. 89. 3s.)

[5] *Die physikalische Therapie im Lichte der Naturwissenschaft* [Physical Therapeutics in the Light of Natural Science]. By Von Dr. Willy Mueller. Jena: Gustav Fischer. 1904. (Demy 8vo, pp. 122. M.2 40.)

invisible rays), by water (including all kinds of hydrotherapy), by massage and gymnastics, by diet, and by electricity—should be founded. To adjust rest and exercise to the different organs and different groups of cells, according to the demands of the individual case, is probably the most important part of rational therapeutics. Diet has to be arranged to spare as far as possible those organs whose functional powers have been temporarily or permanently lowered by disease. In defects of the great excretory viscera, the excretory functions of the skin can be compensatorily stimulated by warmth, etc., whilst in cardiac cases there are means for aiding the peripheral circulation. The nutrition of paralysed muscles may be maintained by massage and electricity, and by appropriate gymnastic movements muscles which under ordinary circumstances are insufficiently used can be healthily exercised. Obviously there is danger from physical therapeutics in the hands of empirics who have undergone no medical training, for they are likely often to make grave mistakes in diagnosis. Yet, owing to the empirical knowledge they get from practice, they have often succeeded when medical men, skilled in diagnosis, but ignorant and incredulous in regard to the effects of physical therapeutics, have failed. Clearly, the main methods of physical therapeutics should be more thoroughly studied by medical practitioners and students, and studied not only through theoretical treatises and medical textbooks, but also by actual observation of application in hospitals, in sanatoria, and in private practice. Dr. Mueller is to be congratulated on his little book, which is clearly written, and forms a useful and suggestive introduction to the subject of physical therapeutics.

NOTES ON BOOKS.

We have received a translation by Dr. C. Bolduan of Wassermann's little book on *Immune Sera*.[1] The volume is a condensation of clinical lectures, and is intended to supply an outlined sketch of the subject for those who have not the opportunity or time to study immunity directly, and not a technical work for the pathologist. The translation is American, as may be recognized by some of the terms and sentences, and is in a style which is somewhat too chatty for a scientific subject. The matter, although elementary, is fairly complete, and certainly gives a clear account to the uninitiated reader. It is, perhaps, a little difficult to decide by whom the book is likely to be read. The student will learn the subject in the laboratory or lecture theatre; the busy practitioner will be disposed to leave the subject to the research worker, and the research worker will study the actual writings of those investigators from whose work Wassermann compiles his lectures. Wassermann, however, adds to the utility of the book by emphasizing the practical application of his subject, and it would serve a good purpose if this simple account were widely read, so that, as the use of immune serums becomes more general, the rudiments of this branch of science, and, above all, the terminology, would be generally known. The chapter on cytotoxins appears to be rather too brief as compared with those on haemolysis and precipitins, especially as it is becoming generally recognized that these bodies will claim our attention in the future. The translator has added an index.

The *Croonian Lectures*[2] delivered by Dr. C. E. Beevor before the Royal College of Physicians of London, in June, 1903, on muscular movements and their representation in the central nervous system, have already appeared in the British Medical Journal, the two former in full and the last in abstract, and they are now published in the more convenient book form. These lectures belong to that class of medical literature which, much more than most, requires to be read and re-read with great deliberation. All those who even scanned the pages of the Journal in which Dr. Beevor's lectures appeared would at once recognize them as a very mine of well-elaborated information on an intricate, and, for the ordinary medical practitioner without such valuable helps, well-nigh inaccessible subject. These *Croonian Lectures* will remain for years, it is safe to prophesy, one of the best available treatises on muscular movement from the physiological and neurological side, a much better point of view, having regard not only to clinical medicine, but to Nature herself, than the strictly anatomical side. Dr. Beevor's work is a remarkable instance of painstaking and accurate observation; it is sound, illuminating, and in many points original.

Whether a man who discovers that he is suffering from a disease which must kill him after months of suffering is justified in terminating his life at once is the first problem which Sir William Dalby has set himself to discuss in his story with the title, *The Morality of a Crime*.[3] It is not a new problem, and if religious influences are set aside, the answer will be very much a matter of temperament. The author simplifies the problem by making his hero an agnostic who does not believe in a future state. To such a man the decision must be comparatively simple. The second problem concerns this man's son, who marries in haste to repent at leisure; he resolves to disappear, and to leave his wife to a well-provided grass widowhood; but as she dies opportunely he has no opportunity of committing the "crime" of technical desertion which he had contemplated. The second part of the book is inconclusive, but the first has some strong points, especially the letter the suicide leaves behind for his children.

The volume issued by Messrs. E. and S. Livingstone (Edinburgh) entitled *Examination Questions*[4] will probably be found useful by medical students in Scotland. It contains a collection of papers set by the University of Edinburgh for the Medical Preliminary, M.B., Ch.B., and B.Sc. in public health examinations; the Educational Institute of Scotland for the special Medical Students' Preliminary Examination accepted by the General Medical Council; the Conjoint Board of the Royal College of Surgeons, Edinburgh: Royal College of Physicians, Edinburgh; and Faculty of Physicians and Surgeons, Glasgow; for the Triple Qualification Examinations and Diploma in Public Health; the Royal College of Physicians for the single qualification and membership examinations; and the Royal College of Surgeons for the fellowship and dental examinations.

NOTES ON NEW REMEDIES.

Digalen.[1]

Hitherto the difficulty in the way of using digitoxin has been its insolubility in water, and if, therefore, a soluble modification has been prepared it would appear to be worthy of trial. The investigation of digitalis leaves has always proved a most difficult task, and the number of names given to active principles by different workers has involved the whole subject in considerable confusion. There appears to be no doubt, however, that the crystalline principle—digitoxin—represents the main action of the drug, and since an aqueous preparation of the leaves (*infusum digitalis*) is active, it is probable that digitoxin is in some form dissolved therein. According to Cloetta, the soluble modification named digalen or soluble digitoxin is obtained from the leaves by a very complicated process, which is not fully disclosed. It separates in minute quantities as a white amorphous body, and it is said that its chemical composition is identical with that of crystallized digitoxin. Its physiological action, also, so far as experiments on the lower animals have been tried, is said to be identical with that of digitoxin, but much more rapid on account of its greater solubility and diffusibility. Digalen is supplied as an aqueous solution, with 25 per cent. of glycerine added, in small bottles. Each cubic centimetre (17 minims) of the solution contains exactly 0.3 mg. (1/200 gr.) of amorphous digitoxin. Each bottle is supplied with a graduated pipette to ensure accurate dosage. The usual dose mentioned for adults is 0.3 mg.—that is, 1 c.cm. of the solution. Cloetta considers 1.2 mg. (= 4 c.cm. of solution) the maximum dose. Hoffmann, La Roche, and Co. (Basle) are the manufacturers.

Eucaine Lactate.

Eucaine lactate[2] is a white powder which is not hygroscopic. Its melting point is 155°; 1 part is soluble in about 4 parts of water or 8 parts of alcohol, the aqueous solution

[1] *Immune Sera: Haemolysins, Cytotoxins, and Precipitins.* By Professor A. Wassermann, M.D. Authorized translation by Charles Bolduan, M.D. London: Chapman and Hall. 1904. (Crown 8vo, pp. 85. 4s. 6d.)

[2] *The Croonian Lectures on Muscular Movements and their Representation in the Central Nervous System*, delivered before the Royal College of Physicians of London, June, 1903. By Charles E. Beevor, M.D., F.R.C.P. London: Adlard and Son. 1904. (Demy 8vo, pp. 112. 2s.)

[3] London: Harrison and Sons. 1904. 1s. net.

[4] Cr. 8vo. pp. 252. Price 2s.

[1] *Schweizerische Wochenschrift für Chemie und Pharmazie*, XLII, 531.

[2] Ibid.

being weakly alkaline in reaction. The eucaine content of the lactate is slightly less than that of the hydrochloride, 119 parts of the former containing as much base as 100 parts of the latter. Eucaine lactate is said to produce neither hyperaemia nor anaemia, and to act perfectly as a local anaesthetic. Langgaard recommends the use of 2 to 3 per cent. solutions in ocular and dental practice.

ENESOL.

Enesol[3] is the fancy name given to mercury salicylarsenate. It is a white amorphous salt, and can be dissolved to form a 4 per cent. solution which can be sterilized without decomposition. It contains 38.46 per cent. of mercury and 14.4 per cent. of arsenium, but does not give the reactions of its constituents. The arsenic is in a similar state of combination as that in sodium cacodylate, and the mercury is also evidently in complex association, for enesol does not give the ordinary reactions of either of these components. Enesol injections, it is stated, are painless and well borne.

ISOFORM.

Isoform[4] (para-iodoanisol) is the name given to the latest iodoform substitute. Dr. Heile has tried it in the clinic of Professor von Mikulicz in Breslau, and found it to be a reliable antiseptic and deodorant. It occurs in crystals soluble with difficulty in cold water, but readily in hot water and in dilute acetic acid; it is insoluble in alcohol and in ether. Heated to 225° C., it decomposes with explosive violence. Its physical properties render it unsuitable for distribution in the pure state, and it is therefore put on the market as follows:

Isoform powder, a mixture of isoform and calcium phosphate in equal proportions.

Isoform paste, a mixture of isoform and glycerine in equal proportions.

Also as gelatine capsules (for internal use), and as a medicated gauze containing from 1 to 10 per cent. of the pure substance. The name "isoform" is registered, and the process of manufacture patented.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held on November 3rd at 6, Suffolk Street, Pall Mall, with Dr. F. H. Champneys in the chair.

CASES CONSIDERED IN CAMERA.

A letter was read from the Town Clerk of Brighton, forwarding extracts from notes taken by the Coroner of Brighton at an inquest held by him on the death of a woman who had been attended in childbirth by Charlotte Bradford, a certified midwife. After consideration of the evidence, the Secretary was directed to write to Bradford, cautioning her as to her future conduct, and warning her that if she wished to continue to practise as a midwife it would be necessary for her to obtain adequate instructions in the discharge of her duties.

A letter was read from Dr. Cater, of 260, North End Road, Fulham, forwarding a cutting from the *Fulham Chronicle* of October 7th, 1904, containing a report of an inquest held by the West London Coroner on an infant whose mother had been attended in childbirth by Eliza Merrels, a non-certified midwife from St. Clement's Maternity Home, Fulham. After consideration of the evidence, which showed that after the birth the case had been left in charge of a pupil midwife, the Secretary was directed to write to the Matron of the Home, calling attention to Rules E 11 and 2 (17 *c*), requiring the strict observance of these rules in future, and requesting that better supervision be exercised over midwives sent out from the home.

A letter was read from Dr. Williams, County Medical Officer, Glamorgan, as to a complaint brought by Mr. D. Evans, of Maesycwmmer, against Elizabeth Bareham, a certified midwife, of the same place. The Board resolved to take no further action in the matter.

THE SCHEME OF EXAMINATIONS.

The scheme of examinations has now been considered as a whole by the Board and duly passed; it is as follows:

EXAMINATIONS.

(1) Every examination shall be partly oral and practical, and partly written, and shall be conducted by not fewer than two Examiners. (2) The first examination shall be held in July, 1905. (3) Thereafter the examination shall be held four times a year, or oftener if necessary, in London and the provinces, simultaneously, on the same papers. The Board reserves to itself the right to appoint one or more qualified medical practitioners as Visitors of the examinations, both London and provincial. (4) The first provincial centres shall be: (*a*) Bristol, (*b*) Manchester, (*c*) Newcastle-on-Tyne.

EXAMINERS.

(1) A list of Examiners, both for London and the provinces, shall be prepared by the Central Midwives Board from those who are willing to serve and act, when required, by the Board. This list shall be subject to annual revision by the Board. Before such a list is formed applications for the post of Examiner shall be invited by advertisement. (2) No Examiner shall examine his own pupils. (3) A paper of Directions to Examiners shall be drawn up and issued to each Examiner on his appointment. (4) The remuneration of an Examiner shall be at the rate of 7s. for each candidate examined. (5) The Examiners, both London and provincial, shall be invited to meet at the offices of the Central Midwives Board as often as may be necessary.

LONDON EXAMINERS.

(1) The arrangements for the London examinations shall be made by the Secretary of the Central Midwives Board, with such extra assistance as may be necessary. (2) The duties of the London Examiners shall be: (*a*) To consider examination questions suggested by Provincial Examiners: (*b*) to set all the papers of examination questions both for London and the provinces. Two of the Examiners, with the assistance of one of the medical members of the Central Midwives Board, to be appointed for the purpose, shall undertake this duty in rotation. The remuneration of the Examiners in respect of this duly shall be two guineas each. (*c*) To conduct the examination, written and oral, of all candidates presenting themselves for examination in London. (*d*) To report to the Central Midwives Board the result of each examination held in London as soon after the examination as possible.

PROVINCIAL EXAMINERS.

(1) The Examiners appointed by the Central Midwives Board to conduct the Board's examinations in a provincial centre shall assist the Secretary of the Board in making the necessary arrangements for the examinations. (2) The duties of the Examiners in each provincial centre shall be: (*a*) To conduct the examination, written and oral, of all candidates presenting themselves for examination at that centre. (*b*) To report to the Central Midwives Board the result of each examination held at that centre as soon after the examination as possible.

DIRECTIONS TO EXAMINERS.

(1) The paper shall consist of not fewer than six questions, and the time allowed for answering shall be three hours. (2) Notes should be taken, either by the Examiner himself or by a colleague, of the subjects upon which the candidate is questioned in the oral examination. (3) Fifteen minutes should be considered an average period for the oral examination of each candidate. (4) Examiners should avoid questioning candidates as to where and by whom they were trained, so as to avoid any suspicion of bias.

The Board adjourned to November 24th.

THE SUPPLY OF MIDWIVES.

A MEETING, at which Princess Henry of Battenberg was present, was held by the Association for Promoting the Training and Supply of Midwives on November 4th, at the Westminster Palace Hotel, London, to place before the public the urgent need of training an adequate supply of midwives for the poor in order to meet the requirements of the Midwives Act of 1902.

The ARCHBISHOP OF CANTERBURY, who presided, welcomed the delegates from fifteen county councils, twelve borough and town councils, and twelve district councils. He mentioned that there was a curious historic appropriateness in his taking the chair at such a meeting, because, some sixty years ago, it was technically required that any woman acting as a midwife should be duly licensed by a bishop. Restrictions had been laid down by which untrained persons were prevented from undertaking the duties of midwives, and a sufficient supply of women adequately trained for the work must be provided. About 60 per cent. of the 450,000 births every year in England and Wales were attended by women only, and as, in consequence of the restrictions laid down, many of these women would abandon the work, others must be found to take their place. Under the guidance of the Association that had called that meeting the work would be carried out under competent management.

Dr. C. J. CULLINGWORTH, in the absence of Lord Brassey, moved the following resolution:

That in view of the urgent need that exists in this country for a supply of properly trained midwives who, in working in conformity with the provisions of the Midwives Act of 1902, will help to reduce the present high mortality of lying-in mothers and their children amongst the poor, this meeting cordially supports the Association for Promoting the Training and Supply of Midwives,

[3] Ibid.

[4] *Pharmaceutische Zeitung*, xlix, 843.

and earnestly commends its work to the generous sympathy of all who are interested in the welfare of the country.

He said that accurate statistics were difficult to procure, but it had been estimated that 60 per cent. of births in England and Wales were attended by women, and in poor districts the percentage was larger. It had been calculated that in twenty counties, including the North and West Riding of Yorkshire, Lancashire, Staffordshire, and Glamorganshire, there were 10,333 women practising as midwives, and of these 2,682, or a little more than a quarter, had signified their intention of continuing to practise as midwives. He referred to the opinion of Mr. C. E. Paget, M.O.H. Northamptonshire, to the effect that these figures were to some extent significant of the probable value of the Act in restraining casual women from assisting at an operation which placed a woman's life in great peril. It was noteworthy that such a large number of women should prefer to retire from practising midwifery rather than place themselves under the simple supervision that would ensure that they possessed washable dresses, clean bags, and proper appliances, and kept a written record of their work. It was a matter of urgency, therefore, that suitable women should be trained for the work. Dr. Cullingworth concluded by urging the further point that a very large demand will henceforth be made upon the training resources for the supply of midwives, and he pointed out how many suitable women there were who, being unable to pay the expenses of their own training, would need financial help. None but trained and tested women would be allowed to practise, and a careful selection of women fit for the duty must be secured.

The resolution was seconded by the Rev. C. Singer, who, in the absence of Dr. Adler, the Chief Rabbi, made an earnest appeal for the Association.

Dr. F. H. Champneys, Chairman of the Central Midwives Board, in supporting the resolution, said that the Midwives Act had enabled them to grapple to a certain extent with an extraordinarily difficult subject. Before the passing of that Act it was not generally known what a terrible loss of life occurred in childbirth. The loss continued unchecked, for the statistics of puerperal mortality had not improved in spite of the introduction of antiseptic methods. The plague of puerperal fever still raged over the country, and claimed for its victims the most valuable lives in the community—those of the mothers of families. By the year 1910 the old type of midwife should have ceased to exist, but the community was bound to take care that proper substitutes were ready. The law said that a woman must not have a dirty midwife, so a clean one must be provided. It was not merely a question for doctors, the subject was a national matter. With regard to State aid, he did not think it would be advisable for the whole control to be handed over to the Government, though the latter might give a little more financial help with advantage.

Mr. Wynne E. Baxter, Coroner for the Eastern District of London, said that last year he held 464 inquests on children who had not attained the age of 12 months. Of that number 120 died before they were 24 hours' old, and in many of the cases the deaths were caused through the ignorance of midwives, who did not recognize till it was too late that medical assistance was necessary. Other deaths were caused through want of cleanliness or through septic scissors, or from the use of improper powders, which caused tetanus in the newly-born. He had had as many as four cases of tetanus in the newly-born within six weeks in his district. All that might be stopped by means of proper skill and cleanliness. If a sufficient supply of adequately trained midwives was not forthcoming much suffering would ensue.

Miss L. Robinson read a paper dealing with those cases of childbirth that were unattended by doctor or trained nurse, and appealed for support on behalf of the movement.

Dr. W. Williams, Medical Officer of Health of the Glamorgan County Council, read a paper in which he quoted from the figures given in the Milroy Lectures delivered by him this year before the Royal College of Physicians on "Deaths in Childbed a Preventable Mortality." The object of the Midwives Act was to secure the better training of midwives and to regulate their practice, and the object of that Association was to strengthen the weak clauses of that Act. The Act made no provision whatsoever for the training and supply of midwives, and it was hoped that that would be taken up by county councils, and supplemented where necessary by public endeavour and private philanthropy. Improvement under the new Act would be very gradual even in areas where every attempt would be made to administer the provisions of the Act, and any success must in a great measure depend on the assistance of the medical profession. The Glamorgan County Council, after the case had been clearly put before them by a deputation of medical men, introduced by Dr. Williams, had decided to contribute annually the sum of £100 to the Medical Department of the University College, Cardiff, towards the establishment of a training centre for persons desirous of becoming midwives. A sum of £50 was also contributed annually by the corporation of Cardiff for the same purpose. A course for the training of midwives had been commenced at the University College, Cardiff, and the county council of Glamorgan had decided to award twenty-one free studentships annually to deserving young women. Dr. Williams concluded by pointing out that centres for the training of midwives were specially required in those places where the mortality in childbirth was highest.

Mrs. Humphry Ward made an eloquent appeal to the wealthier classes for assistance to the Association.

The Honorary Treasurer of the Association (Mr. A. T. Leon) explained how greatly the Association required support, and emphasized the importance of its claims on the public.

After the resolution had been formally put from the chair and carried unanimously cordial votes of thanks were passed to Princess Henry of Battenberg for attending, and to the Archbishop of Canterbury for presiding.

THE PREVENTION OF CONSUMPTION.

The Need of Sanatoriums for Consumptives.

A special meeting of the Council of the Charity Organization Society was held at the Royal United Service Institution on October 31st to hear and discuss a paper on the Need of Sanatoria for Persons Suffering from Consumption, and how it may be Supplied, by Dr. T. Orme Dudfield, Medical Officer of Health to the Borough of Kensington.

Dr. Dudfield, as is well known, has for several years advocated the utilization, for the purpose of a sanatorium for consumptives, of the unoccupied small-pox hospital at Gore Farm, belonging to the Metropolitan Asylums Board. After giving statistical evidence of the great need of further sanatorium accommodation, especially for the poorer consumptives, Dr. Dudfield sketched the history of the endeavours which have been made to induce the Metropolitan Asylums Board to move in this important matter, so far with little or no success. Whilst admitting that the provision of sanatoriums for consumptives is a matter of "vital and far-reaching importance to the community at large," the managers hesitate to undertake the task for the reason (among others) that it would entail a "large increase in their expenditure." "Has it been considered," Dr. Dudfield asks, "what consumption costs London?"

At the conclusion of the paper, Sir William Broadbent, Chairman of the National Association for the Prevention of Consumption, moved that it be referred to the Administrative Committee of the Charity Organization Society to consider Dr. Dudfield's paper and report to the Council. He pointed out that general sanitation had produced a marked diminution in the prevalence of consumption, that the teaching of hygiene amongst the people would probably assist in this direction, but that to still further diminish the evil—the magnitude of which was immense—we must intercept the germ of the disease at its source, which was chiefly to be found in the dwellings of the poorer classes. To cope with the disease amongst the poor, sanatoriums were necessary, but the establishment of these was beyond the means of individuals, and public bodies must therefore step in. The Metropolitan Asylums Board would probably act if a little further pressure were brought to bear, for this body, as well as the President of the Local Government Board, was well disposed. If cattle were being destroyed in thousands, as by cattle plague, the question of expenditure would not prevent measures being promptly taken to check the loss. How much more was expenditure justified when it was the lives of human beings which were at stake?

Mr. Helby and other members of the Metropolitan Asylums Board criticized Dr. Dudfield's proposals on the score of expense, and of the absence of any consensus of opinion on the part of medical men as to the value of the open-air treatment of consumption, as well as on the part of the various metropolitan authorities as to the expediency of utilizing any of the Board's hospitals as sanatoriums. They must

know whether it was proposed to admit only the very poor, or open the institution to those who could afford to pay something towards the cost of their maintenance; and, finally, they must receive a mandate from the Local Government Board before they could act.

Dr. Sykes and other medical speakers pointed out that the want of isolation facilities was blocking the way of the municipal borough councils of London, for little could be accomplished by notification in the way of disinfection, etc., unless some asylum for the sufferers were available. There was at present practically no accommodation for the very numerous class of poor consumptives who would not go into the workhouse or Poor-law infirmaries. Even a month's stay in a sanatorium would teach these persons how to live to the best advantage to themselves, and how to avoid being a danger to others.

Sir Edmund Currie emphasized the need for more sanatorium accommodation for the poorer consumptives from the experience of the Hospital Sunday Fund: and Mr. Bunn discussed the question from the point of view of the Hospital Saturday Fund.

Dr. Dudfield, replying upon the whole discussion, said the people for whom he desired provision to be made were those who were unable to pay for sanatorium treatment—those in the early stages of the disease, likely to be cured or so far relieved as to have some years of useful life added to their days. A manager of the Asylums Board had suggested inquiry before action was taken in regard to Gore Farm, but when a proposal for inquiry was before the Board he voted against it. The desired general consensus of opinion of the metropolitan authorities in favour of the managers being the sanatorium authority for London having been obtained, the same manager now demanded a "mandate" from the Local Government Board before the Asylums Board did anything. They were not likely to obtain such a mandate. He thought the mandate of those who sent them to the Board should suffice. The Chairman of the Works Committee said truly that Gore Farm might be needed again for small-pox cases or for convalescents, but if more accommodation were wanted it might be had at Joyce Green, a small-pox hospital like Gore Farm had been, but with double the accommodation, or on the fine site at Carshalton. The Chairman thought that Gore Farm would not provide for all wants, and seemed to indicate that, as the managers could not do all that might be required of them, it was of no use to do what they could. The incurable poor could be provided for in London, if it was desired to retain them near their friends, for the Local Government Board had power under the Metropolitan Poor Act, 1867, to allocate special institutions or infirmaries for their use. Gore Farm was at present occupied by some 160 imbeciles, but that was only a temporary arrangement pending the completion of another building. Two mutually destructive criticisms had been advanced: one, that the people would not go to the sanatorium; another, that there would not be room enough. He felt that the people would have to be educated to use the institution, but when there they would receive valuable education in self-management. The use of the sanatorium would set free many beds in the parochial infirmaries. There was not a little apathy on the part of the guardians to be overcome. The Local Government Board and the Asylums Board justly complained that the guardians did not make use of the beds provided, entirely at the cost of the Metropolitan Common Poor Fund, at the Rustington Seaside Home for Children in the Early Stage of Pulmonary Tuberculosis. There was no intention to remove adults to the sanatorium compulsorily, but it would be difficult to get them to stay long enough to receive permanent benefit unless means could be devised for the support of their families. People must not be pauperized by such relief or by admittance to the sanatorium. He sympathized with the work being done by Post Office officials and the National Workers in connexion with the Hospital Saturday Fund, and thought it right that those who could should contribute to their support in sanatoriums. But the great mass of consumptives could do nothing, and their needs must be provided for in the public interest and at the public cost.

United States.

Illinois.—Various representative medical societies in the State of Illinois are organizing a scheme of propaganda with the object of arousing the public to the fact that a large proportion of the thousands of lives annually destroyed in the State by tuberculosis can be saved if the sufferers are sent in time to isolation camps. In a circular issued by them it is stated that seven thousand persons died of pulmonary tuberculosis in Illinois in 1903, and about half that number in Chicago alone. This means an annual loss of 36,000,000 dollars, to say nothing of the attendant suffering and sorrow. Efforts are to be made to secure the establishment and maintenance by the State of isolation camps similar to that established near Ottawa, Illinois. That camp is run on as nearly a self-supporting basis as possible, all medical services being gratuitous. Some of the more leading members of the medical profession of Chicago and other cities and towns of the State of Illinois have been invited to form a "Committee of Promotion" consisting of lay persons for the collection and administration of the funds required to carry out an educational campaign.

THE BOWMAN LECTURE.

The Evolution of the Visual Cortex.

Dr. F. W. Mott, F.R.S., delivered the Bowman Lecture before the Ophthalmological Society on November 3rd, in the presence of a large audience. The subject was the Progressive Evolution of the Visual Cortex in Mammalia. The visual cortex was examined in the following species of mammals: (1) Insectivora, (2) rodents, (3) marsupials, (4) ungulates, (5) carnivora, (6) primates. Dr. Mott said there was a correlation of structure and function as exhibited by a progressive complexity of cell lamination of the visual cortex in mammalia from the insectivora to primates. The more the animal depended on vision as a directive faculty in its preservation the more complex was the structure. The transition of uniocular panoramic to perfect binocular stereoscopic vision showed successive stages in the number of direct fibres, until in the primates there was semidecussation, and, as far as his observations went, this might be correlated with a progressive development in the layer of higher associational pyramidal cells lying above the layer of granules.

The progressive evolution of vision as a directive faculty was simultaneous with a motor adaptation, especially related to the mode of feeding and defence, rather than to a particular species. Carnivorous animals, especially cats, therefore, had their eyes set forward, abundant direct fibres, and good binocular vision to enable them to seize their rapidly-moving prey with their teeth or paw. Better motor adaptation, as Sherrington had independently suggested from his flicker observations, was probably the essential cause of the direct path of the optic fibres and binocular vision.

It was, however, in the primates that we had semidecussation of the optic fibres, a macula lutea, eye movements in all directions independent of head movements, associated head, eye, and hand movements, and perfect binocular stereoscopic vision associated with the hand, which in the apes became the principal executive agent in the procuring of food, in defence, and in flight. Visual images were now always associated with impressions of the exploring hand and the ideas of form, substance, extension, and qualities of objects were the complex of the visual and tactile kinaesthetic images, and capable of endless variations. This might be connected with an occipital lobe, a line of Gennari visible to the naked eye, a deep layer of pyramids with a double layer of granules in the visuo-sensory striate area. But even more important than this was the appearance of a definite associational zone in which there was a much greater depth of pyramidal cells, the third layer of which was characterized by very large pyramids serving as higher complex association neurons between the visual cortex and the auditory and tactile motor areas. As we rose in the scale of primates this associational zone increased in area with the more perfect specialization of the fore-limbs for manipulation and the erect posture, and this we might correlate with the increase in area of the parietal lobe, of the associational or visuo-psychic zone and the pushing back and infolding of the striate visuo-sensory cortex, so that in man it came to occupy the infolded calcarine region of the mesial surface, although some types still preserved the anthropoid character. It was possible that the same causes may give rise to the shifting forward of the anterior motor eye centres.

Dr. Mott wished to emphasize again the valuable practical aid he had received from Dr. Bolton and Dr. Campbell on the structure of the visual cortex, and especially from his assistant, Dr. Watson, whose extensive observations on the mammalian cortex, as yet unpublished, showed the pyramidal layer to be concerned with higher associative memory and educability. Concerning this view the speaker had

endeavoured to show that a most important factor in educability was a storage capacity in associative memory of the combinations of stereoscopic visual images with varied complex and refined tactile motor experiences, which arriving at its fullest perfection in the primates, progressively developed in successive stages from the ape to man, coincidentally with the specialization of the hand and the erect posture, until by reciprocal interaction of the directive and executive faculties the hand became the instrument of the mind; he believed, too, that this progressive evolution might be correlated with anatomical changes in the convolutional pattern of the brain and increase in numbers and complexity of the pyramidal system of higher association neurons.

Dr. Mott exhibited microscopic specimens, and gave a lantern demonstration. An admirable series of drawings and diagrams by Miss Kelley, illustrative of the structure of the visual cortex in a large number of mammals, added to the interest of the lecture.

THE JAPANESE SOLDIER'S OUTFIT, WITH NOTES ON THE RATIONS.

(With Special Plate.)

Miss McCaul, who saw much of the British soldier on service in South Africa, and of the working of the medical department of the British army, was recently commissioned by Her Majesty the Queen to go to Japan to inquire into the working of the Japanese Red Cross Society. She has brought back with her the complete outfit of a soldier of the Japanese Imperial Guard, which was presented to her by General Téranchi, the Minister of War, together with samples of the food supplied to the soldier on active service. These various articles, which have been inspected by the King, who has expressed great interest in the many ingenious devices they present, will shortly be exhibited at the Royal United Service Institution, Whitehall. They are worthy of the most careful study by all military officers, and afford a striking example of the care and strong common sense with which the health and comfort of the soldier are considered by those responsible for his outfit, and the minute attention to detail which is characteristic of the Japanese Army.

By the courtesy of Miss McCaul, we have been allowed to inspect and take photographs of the various articles. The complete outfit comprises both winter and summer uniforms and underclothing, overcoats, putties and boots, gloves and hoods, knapsack, haversack, water bottle, mess tin and canteen, a grass-woven case to contain the ration of rice, blanket, portable tent, mosquito net for the head, housewife, bandage-wrapper, and identification label. There is even a tin box containing creosote pills, which each soldier must carry and is expected to take as a prophylactic against dysentery.

One notable feature of all the clothing is that it is apparently made of the best material. The material for the winter clothing appears to be all wool, and in colour and warmth reminds one of the brownish Jaeger clothing which is well-known in this country.

Summer Kit.

In the neat blue parade uniform, jacket or tunic, plain flat brass buttons are used, but in the working kit buttons are done away with as far as possible, fastenings being in nearly all instances carried out by means of flat hooks and eyes. The summer jacket and trousers are of khaki drill (illustrated in Figs. 4 and 5); the jacket is perfectly plain, and there are no buttons on any of the garments. A strip of white linen is issued to wind round the neck as a collar inside the tunic. The forage cap which goes with this uniform is a marvel of lightness. It has a detachable linen cover to be used in summer, from which hangs a linen screen to protect the neck (Fig. 4). This screen being made in three parts—a centre and two sides—allows the air to pass freely. For all uniforms the trousers are made like riding breeches, in that they end above the ankle where they are made to fit tight to the limb, being fastened by tapes instead of buttons. Putties or gaiters must of course be worn with these.

The ordinary great-coat (Fig. 6) is of thick woollen cloth with bone buttons. It has a hood which can be drawn over the head. A comparatively small detail in the cut of this, as also of the winter great-coat, shows how carefully health and comfort, and therefore individual efficiency, have been considered. The free edges of the front, instead of being cut straight, slope outwards below the waist, making the skirt of the coat lap over more completely below; it is thus prevented from gaping in walking, and the legs and knees are protected from rain. The front of the skirt can be buttoned back to allow free movement of the lower limbs for marching in dry weather, as is shown in the illustration.

A mosquito-net "helmet," or head covering, such as that illustrated in Fig. 5, in addition to its value as a preventive of malaria, is a great comfort in summer, when there are many flies. That issued to the Japanese soldier is made of green netting, stretched on two circles of cane so as to make a long drum with one end knocked out, into which the head is passed (Fig. 8). The two rings of cane are kept apart by a wire spring, which allows the drum to be flattened and buttoned down for carriage (Fig. 8).

"Cold-proof" Winter Kit.

The winter tunic and trousers are made plain, like the khaki suit, but are of good woollen cloth.

The "cold-proof" winter overcoat (Figs. 2 and 3) merits some description, for it seems to be devised to ensure warmth in the most severe climate. Made of thick woollen cloth it has a large collar covered with fur, which is of course inside when the collar is raised. From the middle of the edge of this collar a cotton cap or hood can be pulled out so as to cover the head, and over this can be worn the ample detached woollen "cold-proof" hood, which from its shape and long ends to wrap round the neck recalls the hoods of Chaucer's time. Hanging by cords from the neck are large gloves or mittens—one division for all the fingers and one for the thumb; they can thus be thrown off, when the hand is required for firing or any other purpose, without being lost. A sheepskin waistcoat (Fig. 1) with the wool outside is also issued for severe weather. It fastens at one side.

The underclothing is of similar good material to that of the outer garments, a cotton shirt and drawers for summer, and a thick knitted woollen jersey, or sweater, and pants for winter (Fig. 7). The ribbed woollen stockings are made without heels, and warm toe-caps are issued in the coldest weather to wear over the stockings to prevent frost bite. These toe-caps are made of a lambswool material like very thick lint, the soft surface being inside. A roll of fine striped flannel of very good quality and about a yard and a half long is issued to be wound round the abdomen and takes the place of a cholera belt.

It is interesting to note that the woollen cloth and blanket are made in the Japanese military woollen cloth factory, whilst hemp cloth, cotton cloth, and leather are made or prepared in private factories in Japan and cut out and sewn in the military clothing dépôt.

Boots.

The ordinary army boots (Fig. 9) give the impression of comfort and durability. In general appearance they resemble the boot issued to the British soldier, but on close inspection they are seen to be far superior. The leather of the uppers is good and reasonably soft; the sole is thinner than that of our army boot, and is thinned off at the waist, making the boot more flexible in marching. The flat of the sole is studded with iron hobnails, and the toe and heel have brass plates. The boots weigh 3lb., as against the 4 lb. of our soldiers' boots. For the temporary use of men with sore feet, the soft native shoe with grass sole, such as is used by the "rickshaw" men and the people generally in Japan, are served out. As will be seen in the illustration (Fig. 9), these shoes are made of cotton material fastening at the back of the heel, and the detachable sole is kept in position by a plaited grass cord. The cotton foot-piece will last about ten days, and with renewed grass soles can be worn for about that period by men with tender feet, thus enabling them to march when it would be impossible for them to walk in leather boots; at the same time, blisters have a chance of healing during the ten days.

Amongst the other articles of the outfit the woollen blanket, made of similar woollen cloth to that of the "cold-proof" winter overcoat, gives the impression of warmth with lightness. A "Crimean helmet," like those sent out to our troops in South Africa, will serve as a nightcap.

Knapsack, Haversack, and Valise.

The knapsack is of leather with the hair outside, its shape being maintained by a wooden frame, and this seems to us to be capable of improvement. The khaki-coloured hemp haversack (Fig. 8) is divided lengthwise to form two compartments, and resembles somewhat the haversack carried by our officers. A useful addition to the slings supporting it

from the opposite shoulder is a short strap fixed in the centre of the top of the sack with a hook to fix on the waist-belt, and thus take off some of the weight from the sling.

For carrying additional small articles of clothing, the soldier has a long sack (Fig. 7), about 9 in. in width and 6 ft. long, open at each end, and stitched across at its centre, so as to make two bags. It is worn over one shoulder like a bandolier, the ends being tucked under the waist-belt at the opposite side. It reminds one of the expedient resorted to occasionally in this and some other European countries by the labourer on the tramp, who stuffs his belongings into the legs of his spare pair of trousers, and then, closing the waist and tying the legs together at the end, slings his improvised kit bag over his shoulder *en banderole*.

The water bottle, canteen, and mess tin (Fig. 9) are of aluminium, the first two being blackened outside; the mess tin fits inside the canteen like a tray. The rice ration is carried in the small grass box shown in front of the mess tin. The copper Chinese camp kettle, also shown in Fig. 9, is a very practical contrivance. It has double sides; the water poured into the outer jacket is heated by burning charcoal in a small stove in the centre of the vessel, air being admitted by the lateral aperture near the bottom, through which also the ashes can be extracted. With this water can be boiled even in a gale, and the Japanese soldiers have realized its value in campaigning and use it very generally.

Food.

Of the various samples of food the rice-ration ready boiled, and the biscuits—consisting of wheat and rice flour, with a few grains of millet seed to prevent it from becoming too hard—are specially notable. Vegetables of various kinds—sliced potatoes, carrots, beans, sliced gourd, etc.—are thoroughly dried, thus ensuring preservation and diminished weight. Tea and salt are both in solid cakes or cubes, and various meats and fish are in hermetically-sealed tins. Even fodder for the horse is prepared, like the vegetables for the men, by drying.

Stretchers.

In addition to these articles of outfit and food Miss McCaul has brought over two military stretchers, which are worth close and detailed inspection. The poles are of bamboo, and the weight of the stretcher complete (12 lb.) compares favourably with the much heavier stretcher in use in the British army. The supports or runners are particularly ingenious and simple. When the stretcher is folded they double on to the poles, but when it is opened their weight causes them to fall perpendicularly under the framework of the stretcher, and a loose metal ring then slides down and locks them in position. A metal frame at each end of the body of the stretcher supports a cover at a comfortable height above the patient. Each transverse comes in two in the centre, and the cover-frames or supports are hinged in the centre for folding.

PRIVATE ASYLUMS AND THE LUNACY ACT.

WE have received from Mr. E. D. Farmar-Bringhurst, F.R.C.S., a statement with regard to the circumstances under which he has been deprived of a licence held by him for a private asylum in the county of Herts, which appears to show that he has suffered a substantial injustice. He informs us that he applied in the usual manner to the justices of St. Albans at quarter sessions on June 14th last for the annual renewal of the licence which he held, with a view to transferring the licence and effecting a sale. The solicitor who presented his application has reported as follows:

> After some discussion the Chairman suggested that the application be adjourned to the adjourned quarter sessions on July 18th, and that in the meantime a proper notice of transfer should be served and plans lodged.
>
> The Hon. A. Holland-Hibbert, however, strongly opposed the renewal of the licence, and he moved as an amendment that the renewal be refused. This motion was eventually carried by 9 votes to 6, and the licence is therefore cancelled.

The licence expired on July 25th, the termination of the thirteen months for which such licences are usually granted. The licence had been in force since 1845, but under the Lunacy Act of 1890, Section 207 (6) it would appear that it cannot now be renewed. Mr. Farmar-Bringhurst informs us that no fault has ever been found with his management of the asylum either by the local visiting justices, the Commissioners in Lunacy, or the Lord Chancellor's visitors; but, on the contrary, all observations have been of a favourable character. The refusal to renew the licence has involved Mr. Farmar-Bringhurst in a serious loss. He states that he paid £2,560 to the former owner of the house, and that he has spent some £3,000 in alterations and improvements.

In reference to the above statement, we consider it desirable to deal briefly with the case disclosed therein. Assuming the facts to be sufficiently and accurately stated and subject to any modification of view which would arise from our knowledge of countervailing facts, we certainly think that our correspondent's case is a very hard one, calling for inquiry, and if possible, for rectification. We especially refer to the statement of our correspondent that no fault has been found at any time with the management of his asylum.

Although his communication does not expressly so state, it seems pretty clear that in this case the Justices in Quarter Sessions did not recommend to the Lord Chancellor revocation of the licence, and that the Commissioners in Lunacy had no part in the proceeding; but that the Justices simply declined to renew our correspondent's licence. From this decision we fear that he has no ground for appeal. This, however, is more a legal question, and from it we pass. If the licence was not renewed, in spite of the fact that there were no reasonable grounds for inflicting the great loss which the refusal has caused to our correspondent, then the action of the majority of the justices seems to bear most hardly upon him. But there is a broader and a public ground for desiring a full inquiry into this case. It consists in the fact that cases of such kind would inevitably tend to lower the status of private asylums, to drive out of that line of professional work all the best of those engaged in it, leaving the positions to be occupied by others who, having less means and less reputation to lose, might be willing to run greater risks for small and doubtful advantages.

No reasons appear to have been assigned by the justices for their decision not to renew the licence. Simple justice would seem to require some definite reason to be assigned, although the statute apparently does not specifically require it.

Section 207, paragraphs (1) and (6) of the Lunacy Act, 1890, which relate to the renewal of licences of private lunatic asylums, are as follows:

> (1) If the Commissioners, in the case of a house within their immediate jurisdiction, or in the case of a house licensed by justices, the justices, are of opinion that a house licensed for the reception of lunatics has been in all respects well-conducted by the licensees, the Commissioners or justices may, upon the expiration of the licence, renew the licence for that house to the former licensees, or any one or more of them, or to their successors in business.
>
> (6) Save as in this section provided, no new licence shall be granted to any person for a house for the reception of lunatics, and no house in respect of which there is at the passing of this Act an existing licence shall be licensed for a greater number of lunatics than the number authorized by the existing licence.

In what we have written above we wish it to be clearly understood that we have no knowledge of the case beyond that which is disclosed in the communication received from Mr. Farmar-Bringhurst. The subject is one which seriously affects the interests of all persons engaged in private institutions for the insane, and of all patients under their care in such institutions. On the last-named ground alone we would insist that an endeavour should be made to have more light shed on this particular case. We also think that some measure of protection should be afforded to persons engaged in this important branch of professional activity.

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 87.

Cures for Snakebite in Ceylon.—A correspondent sends us some cuttings from Ceylon newspapers which record cases of apparent cure from the bite of venomous snakes by the administration of limejuice. The limejuice is administered internally, and is also thoroughly rubbed into the skin of every part of the body, the treatment being repeated at frequent intervals until the patient rallies. Cases are also recorded in which the local application of vinegar to the wound seems to have counteracted the effects of the poison.

THE CONTROL OF THE MILK SUPPLY.

Frost v. *The Aylesbury Dairy Company.*

[From a Correspondent.]

The recent case of Frost *v.* The Aylesbury Dairy Company, tried before Mr. Justice Grantham and a Special Jury, in which the plaintiff succeeded, is one of great public importance and interest. For not only does it raise an interesting point of law, as to which leave has been given to appeal; but it presents a scientific problem as to the exact causation of milkborne typhoid fever, as well as considerations of the utmost moment in the domain of public-health administration. The novel legal point appears, briefly, to be the application of the doctrine of "implied warranty," under the Sale of Goods Act, to a guarantee that milk is free from the germs of disease. As this point will be shortly argued, we do not propose to deal with it further. But, at the same time, comment upon the facts elicited during the trial, would seem desirable and appropriate.

The plaintiff in the case, a resident of Ealing, sued the Aylesbury Dairy Company for out-of-pocket expenses incurred during the fatal illness from typhoid fever of his wife in July, 1903, and recovered the full amount claimed, namely, £106. It appeared that the plaintiff's wife was one of twenty-three Ealing people, living in different parts of that borough, and under varying conditions of domestic environment, who, in the latter part of July, 1903, suffered from typhoid fever. It is a notable fact that every one of these 23 persons partook, at one time or another antecedent to their illness, of the Company's milk. Also they were attacked within a few days of each other, so that, allowing a fortnight for the period of incubation of the fever, they had all been infected with the poison of the disease in question in the first week or so of July. Further, they were nearly all females, and there was an unusual proportion of domestic servants amongst them. Moreover, the fatality of the outbreak was very low. Prima facie, these facts suggested milk infection, and the hypothesis was largely strengthened by the facts observed in other parts of the area of the Company's supply—namely, that in Acton two-thirds, in Chiswick one-half, and in Hanwell one-third of those attacked about this same period of the year with typhoid fever were found to have drunk the Company's milk (though the total numbers in the two last places were very small).

The milk, which was thus under suspicion, came from a Berkshire farm direct to the Ealing dépôt, and it was found that a lad on the farm (son of the dairyman) was laid up with typhoid fever in July and died early in August. The date of his attack was fixed at July 23rd, so that presumably he was infected about July 9th. It was thus seen that this boy and the Ealing and other sufferers received the poison of typhoid fever at about the same time, and this was made much of by the defence, who properly urged that the boy could not have infected the Ealing, Acton, Chiswick, and Hanwell people. But this did not exclude the possibility of a cause common to him and to them. This was, it was alleged, very probably the polluted water of certain wells at the Berkshire farm. For it was acknowledged by witnesses for the defence that such wells existed at this farm, though they had been repeatedly condemned. In particular, it was admitted that a shallow well in a shed where the milk churns were washed every day had come under reprobation. But it was contended that the farmer had undertaken by his contract not to use the water of this well for washing the churns, and that, as a matter of fact, such water was used only for swilling the floor of the shed.

It was averred that the only water used for washing the churns was from a spring more than two miles away, the water of which was fetched daily in a tank cart, and, by repeated bacteriological tests, had been found of remarkable purity. The judge expressed the opinion that it would be inconsistent with human nature to suppose that farm labourers engaged in rinsing milk churns would, in case of shortage, go four miles to fetch water when they had another source at hand.

It was, in addition, elicited that the tank used for this spring water held only about 180 gallons, and that nearly 400 gallons a day were used at the farm for purposes of refrigeration and cleansing. So that the cart would have to go to the spring twice every day, whereas it was given in evidence that it was only occasionally that the cart went a second time to the spring, certainly not every day. It therefore seemed not improbable that other water was at times used for cleansing the churns, and that this was derived from the well in the shed.

An additional fact supported the thesis of infective milk, namely, the illness from typhoid fever in August, 1903, of a milker who had undoubtedly consumed the milk when the plaintiff's case presumed it to be infective. The suggestion of a general power for mischief of the well water at this farm was strengthened by the occurrence of two cases of typhoid fever amongst the farm hands during the summer of 1904. It was admitted by both parties that these cases were in all likelihood due to the earlier ones in July and August, 1903, owing to the infection of the water of the farm wells by the contents of earth closets applied to the ground in their vicinity.

Though the Court was not asked to try the question of the causation of the Ealing epidemic, which, indeed, was not at issue between the parties, it may be observed that there was not complete demonstration of the infective part played by the farm water, since the actual specific infection of this water by the germ of typhoid fever was not shown. But this is a common and usual result in such inquiries, and the hypothesis of an unrecognized, so-called "ambulant," case, put forward by the plaintiff as preceding the simultaneous attack of the farm lad and the Ealing people in July, 1903, would not be inconsistent with the occurrences that were observed. In this connexion it is to be noted that headache and sickness were commonly attributed at the farm to the use of the local water.

It further appeared in evidence that the medical officer of health had not only repeatedly condemned the wells at this farm, but that he had reported to the local sanitary authority against the water supply of the village in which the farm is situated. But nothing had been done to remedy matters in this regard, chiefly on the ground of expense. The verdict of the jury was no surprise.

Professor Sims Woodhead, Dr. Thresh, and Professor MacFadyen were called for the defence, but their evidence as experts amounted to very little, and seemed based too much upon theoretical and negative considerations to be of any definite value in eliciting the truth. Thus, Professor Sims Woodhead doubted whether this was a milk epidemic at all on account of the paucity of cases at Ealing and Acton, etc., stating that he would have expected an incidence of 500 or more cases if milk had been at fault. Dr. Thresh referred especially to the fact that the proportion of children to total attacks amongst the consumers of the Company's milk was only 1 in 3, whilst the proportion amongst the consumers of other milks was 1 in 2. Professor MacFadyen's evidence was purely negative, dealing with the absence of disease amongst the farm cows, and with the routine bacterioscopic examination of the Company's milk.

It is quite open to argue that the undoubted paucity of cases might have been referable to a greater dilution of the typhoid poison at a given time, or to lessened potency to distribute itself then. At any rate, milk epidemics of typhoid embracing only forty odd cases are not unknown. Again, Dr. Thresh's differences amounted to little, and were based upon very small numbers. The sudden outbreak at one time over a wide area of the Company's supply undoubtedly pointed to milk, and this is the view that the jury took.

The opinion of the defendants' experts that the farm lad's illness did not cause the epidemic at Ealing, etc., was fully accepted by the plaintiff, who ascribed it to a cause common to both—polluted well water. It is, perhaps, significant that the plaintiff called no experts, only actual sufferers or their parents, and the medical men who attended them.

Apart from the legal points involved, as to which we offer no opinion, the case illustrates the importance of securing the absolute purity and wholesomeness of water supplies at farms from which milk is derived. We are aware that this is not always an easy matter, owing to the absence of co-operation of the local sanitary authorities. And in this particular case, the Aylesbury Company appear to have done a good deal. For instance, they secured the services of the medical officer of health who made a monthly routine inspection of the Berkshire farm, a practice which, we understand, the Company carries out generally throughout the area of its farm supplies, and this officer appears to have been frequently there. But the obviously weak spot in its armour was allowing the well in the churn shed to be used at all. It ought to have been closed long before. We are not without sympathy for this Company, for their precautions are in many respects in advance of those of many other similar concerns, and it was not disputed that their Ealing dépôt was above reproach.

Further, they at once stopped the milk coming into Ealing and the other parts affected, and took every step in their power to prevent a recurrence of the disease.

But many large questions are involved in the subject of this case. First, the whole subject of the control of milk supplies needs overhauling, with a view to reconstruction on a new basis. Further powers are needed by sanitary authorities, both at the point of departure and the point of entrance of milk from country districts. It would be better to place the control at both points in the hands of a larger body, such as the county council, rather than the smaller district councils. For local councils, whether rural or urban, are nearly always supine and apathetic and often actually recalcitrant in putting in force the considerable powers that the Legislature gives them at present. Even borough councils and larger municipalities differ in their eagerness to appreciate the magnitude of the risks and issues involved.

Secondly, another most important matter is the ever-recurring question of rural water supplies. Here, again, it would seem advisable to grant increased executive power in regard of this matter to county councils, though, in that case, it would seem necessary to make the appointment of a county medical officer compulsory and not voluntary as it is now. In this connexion it is interesting to notice that in a recent Parliamentary return Berkshire was mentioned as one of the English counties which had not appointed a medical officer.

Lastly, the Local Government Board possess under the various Public Health Acts ample powers to deal with defiant local authorities who refuse to remedy the notorious sanitary deficiencies of their districts. But the Board, for some reason or other, whether political or not, rarely put forth these powers. It seems high time that, pending greater devolution upon county councils, they should more frequently put these powers in force.

LITERARY NOTES.

Herr Henry Graack has collected the laws and ordinances of all countries relative to quackery and the abusive practice of the healing art. The book is published by G. Fischer of Jena.

Messrs. Kegan Paul, Trench, Trübner, and Co. will shortly publish a *Manual of Fever Nursing*, by Professor Reynold Webb Wilcox.

Dr. J. Johnston, of Bolton, has reprinted some notes of a trip to the South of the Peninsula under the title, *In Moorish Spain*. He recounts with an appreciative delight, which communicates itself to the reader, the wonders which he saw at Granada, Seville, and Cordova. A notable feature in his record of his travels is the absence of the tone of ignorant contempt characteristic of the British Philistine who makes himself and his country ridiculous abroad. Dr. Johnston was pleased with everything he saw in Spain, except the beggars. The notes are illustrated with original photographs of the Alhambra, the Giralda, and the great Mosque of Cordova.

The *Dental Surgeon* is the title of a new "weekly review of dental science, devoted to the interests of the profession." The "foreword" states that the object of the new journal is "to supply news—reliable news of the scientific, the practical and the social aspects of the dental profession at home and in other lands." The *Dental Surgeon* is not, it is declared, "the organ or mouthpiece of any society or clique;" neither is it "to be circulated merely as an advertisement pamphlet." The contents of the first number, now before us, are varied and interesting. The editor is Mr. Robert Manning, L.D.S.Eng.; the publishers Messrs. Baillière, Tindall, and Cox.

Colonel Frank Howard's *Handbook of Medical Organizations of Foreign Armies* has been translated into Spanish and amplified by Dr. José Gamero Gomez, Medico-Mayor of the Spanish Army, who contributes an introduction. A review of the original was published in the British Medical Journal of August 9th, 1902, p. 404. Dr. Gomez has been awarded the Cross of Military Merit with pension for the translation.

We have received copies of *Good Words* and the *Sunday Magazine* for November. With these issues those old-established and deservedly popular monthly magazines enter upon a new phase of existence. They are the first brought out by the new proprietors of Isbister and Company—Sir Isaac Pitman and Sons, Limited. The new programmes for both magazines are of an attractive character.

Arrangements have been made with the Syndics of the Cambridge University Press to begin the issue of a *Journal of Agricultural Science*, under the editorship of Messrs. T. H. Middleton, T. B. Wood, R. H. Biffen, and A. D. Hall, in consultation with other gentlemen. The *Journal* will publish only definitely scientific work in agricultural science, and will not include the results of the ordinary trial of manures and varieties for demonstration or commercial purpose. It is proposed to issue the *Journal* as material accumulates, aiming at quarterly parts of about 100 royal 8vo pages, four parts to constitute a volume. Among those who have promised to support the *Journal* are: Professor H. E. Armstrong, F.R.S., Professor M. J. R. Dunstan, Dr. Bernard Dyer, Professor Liveing, Mr. A. E. Shipley, Dr. J. Augustus Voelcker, and Professor Marshall Ward. The first number will be published in January, 1905.

The first number (October, 1904) of the *American Journal of Urology*, edited by Dr. Henry G. Spooner, of New York, and published by the Grafton Press, Fifth Avenue, New York, has appeared. It contains papers by Dr. Howard Kelly of Baltimore, Dr. Winfield Ayres of New York, and Dr. Ferdinand Cathelin of Paris, together with a large number of abstracts. The American Urological Association and several other genito-urinary organizations have appointed the new journal as their official organ. The editorial Board includes among many others the names of Drs. Howard A. Kelly, Robert T. Morris of New York, and William H. Porter of New York.

For centuries master-apothecaries in France, before they were allowed to open a pharmacy, had to take an oath. The following is the text of the oath as used from the middle of the thirteenth century:

I swear and promise before God, Author and Creator of all things, one in essence and distinguished in three persons everlastingly blessed, that I will observe on every point all the following articles. And first I swear and promise to live and die in the Christian faith; to love and honour my parents to the best of my ability: to honour, respect, and serve, as far as in me lies, not only the doctors of medicine who have instructed me in the knowledge of the precepts of pharmacy, but also my teachers and the master pharmacists under whom I have learnt my business; not to speak ill of my former doctors, master-apothecaries, or any one else: to do all I can for the honour, glory, adornment, and majesty of medicine: not to teach its secrets and curiosities to idiots and ungrateful persons: to do nothing rashly without the advice of physicians and only in the hope of gain; to give no medicament, or purge, to those labouring under any disease without first taking counsel of some learned doctor: not in any way to touch the shameful and forbidden parts of women, unless in case of urgent necessity, that is to say when some remedy has to be applied to them; to disclose to no one any secret entrusted to me; never to give any one any kind of poison to drink, nor to advise any one to give such a potion even to his greatest enemies; never to give any abortive potion; never in any way to attempt to induce the expulsion of the fetus from the belly of the mother unless acting on the advice of the doctor; to dispense exactly without adding or leaving out anything the prescriptions of the doctor as far as they are in accordance with the rules of the art; to use no succedaneum or substitute without taking counsel of some one of greater knowledge than myself; to repudiate and avoid like the plague the scandalous and utterly pernicious methods of practice now employed by empirical charlatans and alchemists to the great shame of the magistrates who tolerate them; to give help and succour alike to all who shall employ me, and lastly to keep no bad or old drug in my shop. May the Lord bless me always, as I shall observe these things:

How long this oath continued to be taken there is no evidence to show. It may be inferred, however, that it had fallen into desuetude before the Revolution, for no allusion to it is contained in the law of 21 Germinal, year xi, of the first French Republic, relating to schools of pharmacy. That enactment simply provided that pharmacists must present their diplomas to the prefect, before whom he should take an oath that he would practise his art with "probity and fidelity." But it is not at all clear how long even this formality was insisted on; and it is certain that by the beginning of the twentieth century the apothecaries' oath had become a matter of history. Yet in an action recently brought by the Chambre Syndicale et Société de Prévoyance des Pharmaciens de la Seine against two persons for the illegal practice of pharmacy, one of the grounds of the prosecution was that the defendants had not taken the thirteenth-century oath quoted above. The Court, however, decided that the oath itself as commencing with a definite profession of faith was contrary to the principles of public right, and that the obligation to take it had been "implicitly abrogated" by later legislation. We venture to think that this decision is, from some points of view, to be regretted, for, if the form of the oath is obsolete, its substance is excellent.

In the first volume of *Studies from the Department of Neurology*

(publications of Cornell University Medical College) recently issued, Latin abstracts of nearly all the articles are also given. These abstracts have been made by Dr. A. Avellanus, formerly editor of *Praeco Latinus*, a Latin monthly magazine published at Philadelphia. They are, on the whole, very well done; but why is the Christian name of Dr. Charles L. Dana translated into the out-of-the-way form of "Charulus" when the civilized world has for centuries been content with "Carolus"? We note with satisfaction that the practice of prefixing Latin summaries to scientific papers is extending, and we hope that before long it will become general.

MEDICAL NEWS.

The will of the late Sir William Mitchell Banks has been proved at the value of £23 527.

Mr. Arthur H. Trevor has been appointed secretary to the Commissioners in Lunacy in the place of Mr. L. L. Shadwell, appointed a Commissioner.

Fraulein Elisabeth Foellinger, M.D., who has recently settled at Karlsruhe, is said to be the first female practitioner who has adopted the speciality of bath physician.

Medical Magistrates.—Dr. W. Watson Glenny, of Omeath, has been appointed to the magistracy of County Louth. Dr. John McFadyen was on November 4th elected a magistrate for Govan, and on the same day Dr. J. T. K. Thomson was reappointed to the magistracy for Kinning Park.

The first ordinary meeting of the Royal Statistical Society for the present session will be held at the Society of Arts on Tuesday next at 5.30 p.m., when Sir Francis Sharp Powell, Bart., M.P., will deliver an inaugural address.

Dr. Francisco de los Cobos, a well-known hospital physician of Buenos Aires, is now (we learn from the *Heraldo de Madrid*) in Spain as representative of the scientific societies of Argentina, seeking the support of the Spanish Government for the creation of a Hispano-American University.

The annual dinner of the Harveian Society of London, will be held at the Monico Restaurant on Thursday, November 24th, at 7 for 7.30 p.m. The chair will be occupied by the President, Dr. C. Theodore Williams.

The "Harben Lectures" of the Royal Institute of Public Health will be given in King's College, London, on Friday, November 25th, December 2nd, and December 9th, at 5 p.m., by Professor John McFadyean, M.B., B.Sc., Principal of the Royal Veterinary College, London, on Glanders. All persons interested are invited to be present.

Medical Mayors.—Among the list of mayors who took up office on November 9th we notice the following members of the medical profession: Dr. H. Grey-Edwards (Bangor), Dr. H. M. Leathes (Godalming), Dr. David Lloyd (Denbigh), re-elected; Dr. Allan Glaisyer Minns (Thetford), and Dr. R. B. Searle (Dartmouth), re-elected.

Practical Hygiene for School Teachers.—Principal E. H. Griffiths, F.R.S., delivered on November 5th, before an audience of about 100 teachers from the county of Glamorgan, the first of a course of lectures on practical hygiene. The course promises to be popular, and teachers will be afforded every opportunity of learning what, in the near future, they will be expected to teach.

A conference to consider the possibility of establishing for England a national or central school for physical education on the lines of the Royal Central Institute of Sweden will be held in the London Education Offices, Victoria Embankment, on Wednesday next, at 5.30 p.m. The Bishop of Bristol will preside, and Miss Theodora Johnson, Principal of the Swedish Institute, Clifton, will describe the proposed scheme. A discussion will follow.

At the general monthly meeting of the Royal Institution, held on November 7th, under the chairmanship of Sir James Crichton-Browne, Treasurer, it was announced that the entrances and exits to the lecture-room had been improved by the erection of two iron staircases and the widening of the doorway, and that the ceiling had been considerably raised. A Christmas course of lectures, illustrated by experiments and adapted to a juvenile audience, will be delivered by Mr. Henry Cunynghame, C.B., on ancient and modern methods of measuring time. The first lecture will be given on December 27th.

French Medical Congress.—The French Medical Congress will meet next year in Belgium, at Liége. Professor Lépine, of Lyons, has been elected President, and Professors Masius and Francotte, of Liége, Vice-Presidents. The following are the questions proposed for discussion:—(1) General Pathology: the part played by pancreatic secretions on pathology. (2) Special Pathology: clinical forms of chronic rheumatism. Therapeutics: no-salt diet. Owing to the meeting of the International Medical Congress at Lisbon in 1906, the French Medical Congress will not be held in that year. The meeting in 1907 will take place in Paris.

Association of Public Vaccinators.—The annual dinner of the Association of Public Vaccinators of England and Wales took place on October 28th at the Hotel Cecil, London, with Dr. E. C. Greenwood, President, in the chair. After the usual loyal toasts had been duly honoured, the Chairman proposed the toast of "The Association." He said that the chief object of the Association, which now numbered over 1,000 members, was to obtain fixity of tenure for the public vaccinators of England and Wales. They had consistently urged that claim, but so far their efforts had been unsuccessful. The Association had thoroughly justified its existence by having been officially recognized by the Local Government Board, who had invited it to give evidence before the Departmental Committee appointed to inquire into the question of fees for vaccination. The Association was also working hard to obtain a consensus of opinion among vaccinators for the purpose of demanding a high standard of excellence in regard to vaccination work. Public vaccinators should be allowed to carry on their work unhampered by Boards of Guardians, who in many cases were antagonistic to the duties of the vaccinators. Dr. A. E. Cope, in acknowledging the toast, said that members of the Association might regard themselves as the first line of defence against small-pox. What was required was the centralization of the vaccination machinery. Dr. Arthur Drury proposed the toast of "The Visitors." Sir Constantine Holman, in responding, said that some Boards of Guardians were extremely pig-headed. Still, if doctors were treated like reasonable beings they would behave like English gentlemen; so his advice was that they should not fall too foul of Boards of Guardians, because they were powerful bodies and had great influence. Dr. John Galton, who also responded for the toast, explained the aims and objects of the Imperial Vaccination League, and explained how the Association of Public Vaccinators of England and Wales could aid in the work. Dr. E. J. Stevens, who also replied, urged the necessity of the medical officers of health co-operating with the public vaccinators. Dr. R. Macartney, in proposing "The Officers of the Association," argued that better results were obtained when working with Boards of Guardians if they were treated with less subservience and a little more austerity. If the medical profession were sufficiently represented in Parliament their Association would be better supported. Mr. C. Greenwood, the Organizing Secretary, having responded, Dr. V. A. Jaynes proposed the health of the President, and that gentleman, having suitably replied, the proceedings terminated.

Medical Sickness and Accident Society.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on October 28th. Dr. de Havilland Hall was in the chair. The records for the preceding month showed a marked improvement in the claim accounts. During the early part of the year an unusually large disbursement in respect of sickness claims was made, and until the end of June the amount paid out was appreciably in excess of the expectation. Since June the claim account has been sensibly diminished. Some of the recently-received claims seem likely to be chronic—that is, the members will have to continue to draw their sick pay of 100 guineas per annum; on the other hand, since January last several of those who were then on this list have passed away. The very satisfactory rate of increase in the number of new members shown in the records of the last two years has not been maintained. The Committee recognize that this is to some extent to be attributed to the general falling-off in the profits of nearly all businesses. But the Committee feel that if the existing members would assist them in bringing under the notice of their professional friends the solid advantages which membership in the Society secures, and in particular point out to them the large amount of invested funds, and the fact that the management is exclusively composed of medical men ensures sympathetic treatment to every member who is compelled to claim benefit, a large addition would be made to the numbers joining the Society. Prospectuses and all particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, W.C.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1904.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, NOVEMBER 12TH, 1904.

HYGIENE IN THE JAPANESE ARMY.

Through the courtesy of Miss McCaul, who recently returned from Japan, whither she had gone at the request of Queen Alexandra to study the methods of the Japanese Red Cross Society, we are enabled this week to publish an illustrated description of the summer and winter outfit of the Japanese infantry soldier. It is difficult to know whether to admire most the thoroughness or the ingenuity with which the health and comfort of the men serving in a country which is in summer very hot and in winter very cold have been considered. We know that the excellence of the material and of the design of the tunics, breeches-trousers, caps, and greatcoats has excited the admiration of all the military men who have seen them; and the simplicity of the haversack, the valise, and the cooking utensils is evident at a glance.

But the excellence in the clothing served out and its perfect adaptation to the climatic conditions to be encountered is only one instance of the wise forethought displayed by those who are responsible for the health of the Japanese soldier in war and for his care when wounded. At the International Congress of Military Surgeons held a few weeks ago at St. Louis, Major Louis L. Seaman, who served as a surgeon in the United States Volunteers in the war with Spain, and who had recently returned from the seat of war in Manchuria, declared that the Japanese are the first people to recognize the true value of the army medical corps.

Major Seaman found that the care of the sick and wounded occupied but a small share of the time of the medical officers. The solution of the greater problem of preventing disease by the careful supervision of the smallest details of subsistence, clothing and shelter was their first and most important duty. Nothing was too small to escape their vigilance, nor too tedious to weary their patience, and everywhere, in the field with the scouts or in the base hospitals at home, the one prevailing idea was the prevention of disease. The medical officer was to be found both in the front and in the rear. He was with the first screen of scouts, with his microscopes and chemicals, testing and labelling wells, so that the army which followed should drink no contaminated water. When scouts reached a town, he immediately made a thorough examination of the sanitary conditions, and if cases of contagious or infectious disease were found, he put a cordon around the quarter where they were. A medical officer accompanied foraging parties, and, with the commissariat officers, sampled the various food, fruit, and vegetables sold by the natives before the arrival of the army. If the food were tainted or the fruit over-ripe, or if the water required boiling, notices to that effect were posted in suitable places. So strict was the discipline from commanding officer to rank and file that obedience to the orders of the medical officer was absolute.

The medical officer also supervised the personal hygiene of the camp. He taught the men how to cook, how to bathe, how to cleanse the finger nails so as to free them from bacteria, as well as how to live in general a healthy, vigorous life, and it was a part of the soldier's routine to carry out these instructions in every particular. As a result of this system the medical officer was not obliged to treat cases of dysentery and fevers that follow the use of improper food and the neglect of sanitation. During six months of terrible fighting and exposure in a foreign country there was only a fraction of 1 per cent. of loss from preventable disease. Major Seaman stated that up to August 1st, 9,802 patients had been received at the hospital at Hiroshima, of whom 6,636 were wounded, and that of the entire number only 34 had died.

On visiting the Russian lines he found a striking contrast, and he said it was impossible to escape the conclusion that the difference between the health conditions of the Japanese and the Russian armies was mainly due to the subordinate position assigned to the medical officer in the latter. His testimony is confirmed by that of Dr. Dvoretzky of Moscow, who has described the shortcomings of the medical service of the Russian army. The authority of the medical officers, he says, is restricted within the narrowest limits even in their own domain. The stores of medicines and appliances furnished by the State for the use of the Army Medical Corps is utterly inadequate. The arrangements for the transport of wounded from the field of battle are of the most meagre kind. The number of stretchers is hopelessly insufficient, the consequence being that many of the wounded have to crawl for miles over rough country, in order to reach the railway or the nearest hospital. Others of the wounded are carried from the field of battle on the shoulders of their comrades or of Chinese coolies. The following may be cited as an illustration of the working of the Russian system.

The *Echo de Paris* recently published a note from St. Petersburg, in which it was stated on the authority of the correspondent of the *Rousskaia Viedomosti* at Kharbin, that on a train carrying 700 wounded from Liao-Yang there were twenty-five men in each wagon. They lay without rug or even straw on the floor, which was covered with dust and the filth of men and beasts, for the wagons had just before been used for the transport of cavalry horses, and there had been no time to clean them. Twenty-three men died on the journey. There were no medicines or ambulance appliances, nor even buckets, jugs, or spoons. The wounded men were left for whole days without any sustenance except tea, bread, and eggs.

From the economic standpoint it has been estimated that whereas Russia will probably lose four men by disease for every one killed in battle, Japan will probably be able, by the better health of her army, to neutralize the advantage of her enemy's superior numbers. There could not be a more striking illustration of the inevitable consequences of the fatuous and fatal system of treating the medical officers of the army as "camp followers." We commend the contrast between the Japanese and Russian armies to the earnest attention of Mr. Arnold-Forster and the Army Council.

VISCERAL ABSCESSES AFTER APPENDICITIS.

The question as to the superiority of expectant or operative treatment in appendicitis has not yet been settled. Sir Frederick Treves, in his Cavendish lecture delivered before the West London Medico-Chirurgical Society in June, 1902,[1] stated that profuse as were records of a certain kind we still lacked ample and reliable statistics of the general mortality of the disease, of the results of operation during an attack, and especially of the work of those surgeons who urge that the abdomen should be opened in all non-chronic cases as soon as the diagnosis has been made. The last-named operators would justly, in their turn, demand a full return of all cases in which the practice they observed had been ignored; this again, concluded the lecturer, was not forthcoming. Dr. J. T. Kelley, jun., of Washington, is an advocate of operation in every case, after informing the patient and family what may occur and thus "shifting the responsibility to them."[2] To support his extreme opinions he has prepared a useful article showing that no case of appendicitis, however mild, is to be looked upon lightly, and even if all symptoms are gone, after several years multiple abscess of the liver may occur and usually causes the death of the patient.

While every experienced practitioner will agree with Dr. Kelley as to the gravity of any case of appendicitis whatsoever, acute or chronic, he seems by implication rather to overstate the risks of visceral abscess nevertheless, his paper deserves careful study. He shows that out of 17 cases of abscess of the liver in the Boston City Hospital, in 10 or 58.8 per cent. the primary cause was inflammation of the appendix. In two of these cases the connexion between the two morbid conditions was fairly clear, but in one, at least, it was admittedly not quite certain. Dr. Kelley refers to an interesting report of 5 cases of abscess of the liver following appendicitis, and one in which the hepatic abscess was operated upon at the same time that the appendix was removed. All six patients died, all had suffered from recurrent attacks of appendicitis, and in all the abscesses were multiple. Dr. J. C. Munro has reported some equally grave cases. One patient underwent operation for cholecystitis, with a history of appendicitis eight months before. Death occurred and inflamed appendix, portal phlebitis, and hepatic abscesses were discovered. Another writer, Stuart, reports a case of appendicitis complicated with left-sided abdominal abscess and left pyothorax. Edebohls records 8 cases of appendicitis with lung complications; in four there was empyema, in three perforations of the lung, and in one pneumonia. Trowbridge reports a case in which a shawl pin was found in the appendix; liver abscesses developed causing the death of the patient.

Lastly, Köbler's statistical evidence as to the relation between the intestinal and hepatic lesions in question differs from that of the Boston City Hospital. Out of 79 cases of liver abscess detected in the *post-mortem* room, 3 only followed appendicitis. Dr. Kelley quotes a case of suppurative appendicitis, reported by Mr. W. Gifford Nash, of Bedford, in which secondary liver abscesses developed. Lastly, Dr. Kelley gives full reports of two cases under his own care. The first occurred in a girl aged 18, and was very chronic, a large abscess, apparently hepatic, developed in the right side of the abdomen, and was incised; later on another formed in the right lung, and was opened after resection of a rib. A pint of foul pus escaped. Much discharge and hectic followed, but within six months the patient's health began to improve and she untimately recovered. The pus was free from tubercle. The second case was followed up by Dr. Kelley from beginning to end. The patient was a woman twenty-eight years old, who was seized with a characteristic attack of acute appendicitis. The temperature was 104° F., and a tender mass could be felt in the region of the appendix. She refused operation. Two days later the mass had disappeared, and there was no local tenderness, yet a rigor occurred and the temperature rose to 105° F. Sweating was observed on the next day. At the end of a fortnight, during which space of time several rigors had occurred, a tender mass was detected in the region of the gall bladder. This mass was exposed and opened; it contained old blood and pus. The patient died thirteen days after the operation. Dr. Kelley felt no doubt that if she had been operated upon for appendicitis within the first forty-eight hours her life would have been saved.

While visceral abscess must always be borne in mind when we have to deal with any case of appendicitis, yet considering the great frequency of that disease the complication must be decidedly rare even according to the collective evidence of an advocate of immediate operation. Most British surgeons agree with Sir F. Treves that our knowledge of the pathology of appendicitis and of its general mortality will not sanction the practice of opening the abdomen in every case of appendicitis as soon as the diagnosis has been established. But that high authority insists that immediate operation is demanded in every example in which there is a reasonable suspicion that suppuration has taken place—a principle which Dr. Kelley rightly applied to his second case. His advice was not followed, and the dangers of suppurative appendicitis were very plainly demonstrated at the cost of the patient's life.

[1] On Some Phases of Inflammation of the Appendix, British Medical Journal, vol. i, 1902. The passage above quoted will be found in p. 1592, second column.

[2] Abscess of the Liver and of the Lung after Appendicitis, *Amer. Journ. of Obstet.*, August, 1904, p. 209.

SCIENCE AND IMMORTALITY.

"Immortality is a complex problem, difficult to talk about, still more difficult to write upon with any measure of intelligence or consistency." This is Professor Osler's admission in the final paragraph of his Ingersoll Lecture on *Science and Immortality*, delivered some time ago before the University of Harvard, and now printed in a small volume. The lectureship was founded in 1893 under the will of Miss Ingersoll, who wished to commemorate her father. The lecture must be on the Immortality of Man, and Professor Osler, as we gather, accepted nomination with some reluctance. This is easy to understand, for in truth the subject is one about which science has little to say. "Science," he said, "is organized knowledge, and knowledge is of things we see. Now the things that are seen are temporal; of things that are unseen science knows nothing, and has at present no means of knowing anything." This is an unkind knock at Sir Oliver Lodge and other eminent physicists, who are hinting that science may find, if it has not already found, means of investigating things of the spirit. We say "hinting," because, letters to the *Times* notwithstanding, what proposition it is they actually wish to maintain is not very clear. In these matters "the man of science is," again to quote Professor Osler, "in a sad quandary to-day. He cannot but feel that the emotional side to which faith leans makes for all that is bright and joyous in life. Fed on the dry husks of facts, the human

heart has a hidden want which science cannot supply; as a steady diet it is too strong and meaty, and hinders rather than promotes harmonious mental metabolism." Professor Osler divides mankind in its attitude towards the doctrine of immortality into three categories: the Laodiceans, neither hot nor cold, but luke-warm, who while accepting the prevailing religion and therefore the belief in immortality, "live practically uninfluenced by it, except in so far as it ministers to a wholesale dissonance between the inner and the outer life, and diffuses an atmosphere of general insincerity"; the Gallionians who "put the supernatural altogether out of man's life, and regard the hereafter as only one of the many inventions he has sought out for himself"; and the Teresians who "lay hold with the anchor of faith upon eternal life as the controlling influence in this one." Professor Osler believes that this group has always been small and select, that the majority of mankind is included in the first group, and that most men of science will be found in the second. May it not be, however, that he is underestimating the numbers of convinced believers in immortality? We should have supposed that a belief in future rewards and penalties was part of the mental make-up of the vast majority of Europeans, who for countless generations have been influenced from cradle to grave by the teachings of the Christian Churches. There are multitudes of men, and still greater multitudes of women, to whom the doctrines of the Roman Catholic Church—to take only the Church whose adherents are most numerous in Europe—are the controlling influence in conduct. The control is not always effective, but it exists.

With regard to men whose training has been in science Professor Osler is probably right in saying that the majority belong to the class which he calls Gallionians. The epithet is not perhaps very happy. It is not that the scientific man cares for none of these things, but that he regards them as outside his sphere, not to be ascertained by his methods. He accepts the old saying, *Credo quia impossibile*. The belief in immortality is an act of faith. If it could be demonstrated by experiment faith would disappear. Perhaps, too, the general attitude of men of science is influenced by the natural impatience with which they regard the methods of those who have sought for demonstration. "The search of science," writes Professor Osler, "for the spirits has been neither long nor earnest; nor is it a matter of surprise that it has not been undertaken earlier by men whose training had fitted them for the work. It is no clear, vasty deep, but a muddy Acheronian pool in which our modern spirits dwell, with Circe as the presiding deity and the Witch of Endor as her high priestess. Commingling with the solemn incantations of the devotees who throng the banks, one can hear the mocking laughter of Puck and of Ariel, as they play among the sedges and sing the monotonous refrain, 'What fools these mortals be.' Sadly besmirched and more fitted for a sojourn in Ancyra than in Athens has been the condition of those who have returned from the quest, and we cannot wonder that scientific men have hesitated to stir the pool and risk a touch from Circe's wand."

These are strong expressions, but we cannot say they are too strong. To any one who wishes to understand the present position of the matter we would strongly commend the perusal of Mr. Frank Podmore's book on *Modern Spiritualism: A History and a Criticism*.[1] The history is a long series of incidents in which sometimes fraud and sometimes self-deception preponderated, while the criticism may be summed up in his own words: "Unless we are prepared to admit that these dubious phenomena do indeed testify to the working of physical energies unknown to science, we are forced to recognize that, however trivial and innocent may seem the first steps in 'physical mediumship,' where the good sense of the medium or his friends does not intervene to stop the further development of the manifestations, they must end either in a dishonesty which carries less disgrace than the dishonesty of the market-place only because the victim may be supposed not wholly responsible, or in a permanent defect of rational control, less dangerous, no doubt, than recognized forms of mental infirmity, as being partly feigned."

[1] London: Methuen and Co., 1902. Two volumes.

BIRTHDAY HONOURS.

The list of honours given in connexion with the King's birthday contains the names of four medical men on whom the honour of knighthood has been conferred. Dr. Charles H. Marriott, who graduated M.D. in the University of London in 1863, is Consulting Surgeon to the Leicester Infirmary, and founder of the nursing institution which has been of so much benefit to Leicester. Mr. Shirley F. Murphy, who entered the profession in 1870, has been Medical Officer of Health to the administrative county of London since the London County Council came into existence; he has rendered in this and other capacities important services to public health, and his annual reports on the health of London are models of what such documents should be. Dr. William Japp Sinclair, who graduated as Doctor of Medicine in Aberdeen in 1875, is Professor of Obstetrics and Gynaecology in Owens College, Victoria University, Honorary Physician to the Manchester Southern Hospital for Women, and a member of the Central Midwives Board. Dr. Allan Perry is Principal Civil Medical Officer and Inspector-General of Hospitals, Ceylon, and in that capacity had to make arrangements for the reception of the Boer prisoners. He was formerly an officer of the Royal Army Medical Corps and retired with the rank of major.

DENTISTRY AND THE ARMY.

A circular, signed by the Secretary of the Army Council, has been issued, stating that in future recruits otherwise suitable need not be rejected on account of deficient teeth, provided that they are prepared either to put down a sum not exceeding £3 towards the expense of fitting themselves with suitable artificial teeth, or to agree to stoppages to that amount being made from their pay. Similarly, men who would otherwise be discharged from the army as unfit for further service, owing to the state of their teeth, may be retained on equivalent conditions. In either case, the men must keep their dentures in good order, and must procure them from a source approved by the authorities. This constitutes a step forward, on which the authorities are to be congratulated. The Napoleonic dictum, that an army marches on its stomach, has so long been admitted as a military axiom, that it may seem strange that it is only now that effect has been given to the corollary which naturally follows. The fighting importance of the stomach being recognized, the efficiency of those organs, by which alone under ordinary circumstances it can be supplied with fuel in a useful form, might have been expected to receive immediate attention. It is, however, after all, not so very long since anything like adequate recognition, even in civil life, was first given to the prime importance of either good natural teeth or of efficient substitutes, and a still shorter time has elapsed since artificial teeth became common among any but the wealthier classes; indeed the question of teeth still receives less attention than it deserves, and in particular the superior value of prevention of caries by personal attention and habitual resort to dental advice is not yet fully understood. It is the South African war which has largely contributed to make the reform acceptable

A glaring light was then thrown upon the losses which the army suffers through defective mastication, for in addition to the rejection of recruits, an enormous number of trained and otherwise first-class soldiers had either to be kept at the base or sent home, because the state of their teeth made it impossible for them to digest the rough food necessarily served out to men at the front or on column. Not a few, moreover, of these were reservists already in possession of artificial teeth which had become defective. If the existence of such things could then have been officially recognized, these might easily have been put in order and the men returned to the front as efficients. There may be some cavilling at the terms of the order, but it must be admitted that there is some difference in practice if not in principle between the supply of artificial teeth and of other provisions considered necessary for the well-being of an army. The effect of the order will depend upon the facilities offered to the men to take advantage of the general permission accorded. There is no reason why, in probably the majority of cases, the expense to the individual should reach the limit of three pounds mentioned in the order.

MORTALITY AMONG MEDICAL OFFICERS IN WAR.

According to a Russian medical journal quoted in the *Journal of the Association of Military Surgeons of the United States* the rate of mortality during the Turco-Russian war was much larger among military surgeons than in the combatant branches of the army. The following statistics embody the results of a comparative study of the official records of former wars: During the campaign of 1813-15 there were 2,170 surgeons in the Prussian army, of whom about 10 per cent. were either killed or wounded, this proportion being about equal to that of casualties among combatants. In the French campaign against Constantine in 1837, while every thirteenth combatant officer was killed, every sixth surgeon died. This, in proportion to the numbers, shows that the mortality among surgeons (16⅔ per cent.) was more than double that of the combatant officers (7⅕ per cent.). During the Crimean war, according to French official statistics, the mortality among the surgeons was 18.2, while that among the combatant officers was 7.3 per cent. In the last Russian campaign 355 surgeons out of a total of 2,839 died, being 12½ per cent. In the French-Mexican expedition the rate of mortality among the surgeons was about 20 per cent., while that of the combatant officers was only about 4 per cent. The only instance on record in which the proportion of deaths among combatant officers was larger than that of the medical officers, is said to have been in the Prussian army during the Franco-Prussian war, 1870-1.

THE BACTERIOLOGICAL LABORATORY OF THE WEST RIDING COUNTY COUNCIL.

The third annual report, by Dr. Cammidge, on the work done in this laboratory, deals with the investigations made during 1903. The total number of samples examined amounted to 2,803, the number for the previous year being 2,236. The serum reaction test for enteric fever was performed 309 times; 460 specimens of sputum were examined for tubercle bacilli, and 1,890 bacteriological examinations were made in cases of suspected diphtheria. These figures indicate that medical practitioners in the West Riding are making considerable use of the laboratory as an aid to clinical diagnosis; but Dr. Cammidge thinks that they are not utilizing the laboratory as much as they might for the purpose of throwing light on doubtful cases, where the possibilities of ambulatory typhoid, early phthisis, or mild diphtheria ought to be excluded. The number of serum tests for typhoid, which gave a negative result was 116, and in 317 specimens of sputum no tubercle bacilli were found; Dr. Cammidge would like to see the number of these negative examinations largely increased, and would regard such an increase as a welcome indication that the value of bacteriological aid for clearing up early or obscure cases, was better appreciated. He also appeals for a more thorough and systematic bacteriological examination of all convalescent diphtheria cases. There is no particular time at which it may be taken for granted that the patient is free from infection, and in occasional instances he has found that the bacilli may linger in the throat or nose for more than three months after the onset of the disease. He therefore expresses regret at finding that the importance of obtaining a negative bacteriological test before a convalescent can be pronounced free from infection is not yet fully appreciated.

MEDICINE IN THE NEWSPAPERS.

To the medical reader there is often more excellent fooling in the daily newspapers than in the professedly comic journals. The fun is unintentional, of course, but that makes it all the better, for, as Mr. Barrie's humourist says, two persons are required for the prosperity of a jest—one to make it and the other to see it. On the death of Professor Finsen, a Reuter's message from Copenhagen, informed the world that the initiator of the light treatment had died of "calcination of the pericardium." Not long ago the *St. James's Gazette* gave Lord Lister the credit of having devised the method of "healing by first intention," a soft impeachment which, we are sure, the great surgeon would be unwilling to own. But a little time before the same paper had solved to its own satisfaction the riddle of insanity by the terse pronouncement that it is tuberculosis of the brain. Another evening paper is responsible for the statement that "haemophilia, or lust of blood, is a well-known sign of degeneration." In the matter of comic medicine the British press must, however, yield the palm to American journalism. Taking a few specimens at random we find in one transatlantic periodical an account of "an unusual operation . . . known as decapulation of the kidneys." The surgeon is said to have removed both kidneys, but the child underwent the operation successfully; it is cautiously added, however, that there is not much hope of her ultimate recovery. "Antivacks" will no doubt take note of the opinion attributed to a doctor appointed to investigate two cases of death attributed to vaccination. According to a newspaper report, he said that "the deaths did not result from vaccination or the virus. . . . but from spontaneous bioplasm in the wounds on the arms of the little ones." We have no idea what "spontaneous bioplasm" may be, but General Phelps may perhaps add it to his catalogue of the pathological effects of vaccination; it is as authentic as most of them. An American millionaire is said to be suffering from "an attack of diabetes in the right foot." An operation accurately described as "having no parallel in the surgical world" has, we are told, been performed in Sioux City, Iowa. "A part of the third cervical vertebra was removed, the false growth of tissue removed was cleaned out, and the bone replaced." The patient, one is glad to know, is doing well. But the removal of a vertebra for cleaning and repair is nothing to the removal of a heart almost cut in two in order that it might be stitched; this is said to have been done recently in Chicago. Perhaps the most wonderful case of all is reported from Boston. "J. J., who became paralysed and insane from the effects of a blood clot on his brain, attempted to commit suicide by shooting. The ball fired by him penetrated the affected part, dissipated the blood clot, restored his sanity, and it is believed he will entirely recover from his paralysis." We are inclined to share that belief, for a man who cures himself of madness by shooting himself through the head is surely reserved for a great destiny. Boston is, we know, "the hub of the universe," and we look to it for light and leading. But we venture to hope that this new method will not be adopted as a routine treatment of insanity, at least until provision has been made for carrying it out under specially-skilled supervision, and for the continuous modification of the details of the procedure in the light of information gained by research.

CHLOROFORM IN DENTAL OPERATIONS.

We have abundance of evidence of the dangers of chloroform when that anaesthetic is administered "in the usual way," which commonly signifies unlimited quantities poured upon a cloth while respiration is watched. It may be conceded to those who uphold this archaic method that watching the respiration usually saves the situation when done efficiently. Here, however, comes the difficulty: the inexperienced man has not learned to discriminate between respiration peculiar to chloroform narcosis and failing respiration the result of a too concentrated chloroform vapour. When breathing ceases, he perceives the peril in which his patient is placed; but then, unfortunately, the enlightenment comes too late. In the case of dental operations this danger is accentuated. And it is matter for regret that even yet chloroform appears to be in common use for dental operations in spite of the obvious and proved risks. The patient is often placed in a chair or in a semi-recumbent position; the posture of the head is commonly faulty, so that the respiration is hampered, and the act of extracting the teeth may involve pushing back the tongue to get it out of the operator's way. Again, deep anaesthesia is asked for, as a restless patient cannot be managed, and the operator's difficulties become increased. The records of the deaths due to chloroform in these cases reveal the fact that resort was frequently had to a second administration. After the extraction of some teeth, signs which are taken as evidence of returning consciousness appear, and the anaesthetist is anxious to reinduce complete unconsciousness as rapidly as possible. The temptation to "push" the anaesthetic is great, and the double risk of the presence of blood in the pharynx, and the faintness associated in most cases with the resumption of consciousness is ignored. Most medical men are familiar with the use of nitrous oxide and ethyl chloride anaesthetics, which may be regarded as practically free from danger in short operations. Without entering upon the debated point whether chloroform actually paralyses the circulation before the respiration, it is quite evident that to say a weak heart is not a serious handicap in chloroform narcosis is to make a pronouncement which cannot be accepted without many limitations. All authorities agree that chloroform deaths are, as a rule, the result of an overdose of the anaesthetic, and that death arises from a failure on the part of the nervous control over the process of respiration. So long, however, as the blood pressure has not sunk below a certain point, and the heart muscle is capable of contracting, the patient may be restored by artificial respiration if efficiently performed. When, however, the heart muscle has lost its resiliency recovery is impossible. It is, then, all-important that the heart muscle should be of normal vitality if it has to combat the dangers of overdosage with chloroform. The "weak heart" is the crippled heart, and its chances of survival in toxaemia by anaesthetics are fewer and less hopeful than are those of the vigorous heart. Hence we must regard the statement that the individual who has a weak heart is as safe as he who has a strong one when he takes chloroform as not in accord with physiology or experience.

AN ANTIALCOHOL LEAGUE IN ITALY.

Two years ago an active propaganda against alcoholism was set on foot in Italy. Some scattered efforts in that direction were made by Chierici at Turin in 1863, and by Bisocchi at Milan in 1882, but without success. The public was indifferent and the medical profession was somewhat sceptical. Since then the physical, moral, and social evils of alcoholism have been set forth by Colajanni, Zerboglio, and Pieraccini in works which have had a powerful influence in initiating a movement for the repression of alcoholism. Owing mainly to the persistent efforts of Giovanni Rochat, editor of the *Bene Sociale*, published at Florence, who has given himself wholeheartedly to the work, the Italian Antialcohol League was founded. Already it has centres at Florence, Brescia, Venice, Bergamo, Udine, and Trieste. In July last the first Italian Congress against alcoholism was held at Venice, and in its proceedings several of the foremost Italian alienists, such as Drs. Morselli, Seppilli, Amaldi, and Luzzatto, took part. A paper by Dr. Rochat entitled Abstinence or Temperance gave rise to an animated discussion, which resulted in a pronouncement by the Congress in favour of temperance as the practical policy to be adopted for the present.

THE CAMPAIGN AGAINST QUACKERY.

In days past it was the custom of quacks to pretend that they were regular medical practitioners. This is now rather out of date, and your charlatan defiantly proclaims himself an opponent of and disbeliever in the medical profession and its teachings. So long as the law does not effectively prevent any men however ignorant undertaking the treatment of disease for gain, quacks will become bolder. This evil will then, perhaps, work its own cure, for the evil effects of their practices must become more evident, and a revolution may take place in public opinion, which at the present time is, we fear, not unfavourable to them. We have already referred to the Exhibition of Charlatanism opened at Breslau on the occasion of the seventy-sixth meeting of the Association of German Naturalists and Physicians. Professor Lejars of Paris has recently published an interesting account of the Society for the Suppression of Quackery, by which it was organized. It appears that since the right of freedom of occupation was conceded by the law of 1869 there has been a great and progressive increase in the number of quacks in Germany. In 1879 there were in Berlin only 0.2 per 10,000 inhabitants; in 1888, 1.5; in 1897, 2.7, and in 1902, 4.34. In the whole of Prussia, according to the official figures, there are 15,400 regular practitioners and 4,104 quacks. As we have already announced, the exhibition contained collections of quack advertisements, pamphlets, and publications; of secret remedies and apparatus, most of the latter being patented; of publications and documents illustrating the enormous ramifications of the organization which advocates natural medicine (Naturheilkunde), and which has a newspaper with 125,000 subscribers! To combat this surprising development of quackery, the Society which has organized this exhibition was founded in 1902. Although it receives a great measure of support from the medical profession, it endeavours to secure a large membership among the more educated classes of the general public, and by this means to influence public opinion and the future course of legislation. It is to be feared that by itself the medical profession is incapable of effecting the needful alteration in the law, for any proposals made by it are always liable to be denounced by the enemies of reform as the outcome of professional jealousy and the desire to obtain a monopoly. We therefore believe the establishment of a similar society in this country would give the most efficient support to the British Medical Association in its endeavours to bring about an improvement.

THE GROW-TALL APPARATUS.

America has lately come to the rescue of all those who are dissatisfied with the inches which Nature has allotted to them. It appears that there is a philanthropist over there who, for the modest sum of three guineas, will supply an apparatus "in the form of a harness," which, if worn for twenty minutes daily during six months, is guaranteed to increase the height by from 2 to 5 in. If this result is not attained the money (of course) will be returned. It is scarcely necessary to add that testimonials from grateful "patrons" are not lacking. One gentleman, aged 25 years, has grown in five months from 5 ft. 8 in. to "the magnificent height of 6 feet." Another, who has used the apparatus for about six weeks, informs the inventor that he has not only grown 1½ in., but that this has really been done in one week. The vendor of this beneficent apparatus seems to be as modest as he is generous, but, although he does "not wish to make any exorbitant

claims," candour compels him to write "my appliance and instructions are of more value to short men and women than the dearest treasure they have on earth." Doubtless he has reflected on the enormous moral responsibility of withholding such a treasure from the pigmies of the old world, and has exclaimed with Sir Toby Belch, "Wherefore are these things hid?" and thereon he has advertised in the English periodicals. It is to an inquirer who answered one of these advertisements that we are indebted for the above details. No doubt there will be a steady stream of guineas flowing westward from private and even, perhaps, public sources, for if by six months' treatment (say, sixty hours' actual application) the height can be so increased, one of Mr. Arnold-Forster's chief difficulties will vanish, and we need hear no more of rejection of recruits for insufficient height if only our War Office will awake to the merits of the "Grow-Tall Apparatus," which, by the way, "is worth ten times its cost if used for nothing more than an exerciser." An "open mind" is well enough, but in all seriousness, it is a saddening reflexion that among people whose intellects at least enable them to read there should be enough whose minds are so wide open as to allow these advertisements to pay their cost.

THE VOYAGE OF THE *DISCOVERY*.

Captain Scott, R.N., Commander of the *Discovery*, delivered his address to the Royal Geographical Society on Monday evening, November 7th, before a very large audience which filled the Albert Hall. The address consisted for the most part of a running description of a long series of excellent photographs thrown upon an immense screen. After a brief account of the explorations of Sir James Ross, Captain Scott said that the expedition of the *Discovery* was especially designed to make investigations into the geographical and magnetic problems of the Antarctic. He described the winter life and work of the party, and more at length the sledge journey which he made in company with Dr. Wilson and another officer of the expedition. The hardships endured were very serious, and the expedition was unfortunate in losing a number of dogs, who broke down apparently from over-exhaustion. Captain Scott also described the sledge journey made by Lieutenant Armitage's party, which passed through some magnificent mountain scenery. The health of all the members of the expedition appears to have been excellent throughout; they were able to vary the diet of preserved provisions by fresh-killed seal and penguin. One death only, due to an accident which befell one of the sledge parties, occurred among the members of the expedition; that there were no deaths from disease and apparently no outbreaks of scurvy, speaks well for the care with which all the details of the expedition were thought out, and for the skill of the medical officers, Dr. Koettlitz and Dr. Wilson. After the address Sir Clements Markham, President of the Royal Geographical Society, presented the special Antarctic medals struck for Captain Scott and the officers and men of the *Discovery*, and the United States Ambassador handed to Captain Scott the Philadelphia Geographical Society's Gold Medal for 1904.

THE EPIDEMIC OF SMALL-POX.

Upon the last occasion, now several months ago, on which the general prevalence of small-pox was reviewed, the position was that the disease had fallen to insignificant proportions in the majority of the great towns in the northern midlands; on the other hand, scattered cases were occurring in many parts of England, while Leicestershire, Derbyshire, and Nottinghamshire were continuing to suffer somewhat severely. In the North, Newcastle and its neighbourhood seemed to be having a good deal of trouble as compared with earlier months, and some parts of Yorkshire, hitherto comparatively free, appeared thoroughly infected. Very much the same account of things might be given to-day. During the last four weeks, to go no further back, a considerable number of cases have been reported in Leicestershire, Nottinghamshire, Cheshire, some parts of Lancashire and Northumberland, and Durham, though there has been nothing in the form of a pronounced outbreak. In the West Riding of Yorkshire, however, the disease has been very prevalent: there the number of localities invaded, and the number of persons infected, have been large. The heavy woollen district in particular has suffered severely, and the authorities of Dewsbury have earned for themselves an unenviable reputation by their total failure to rise to the occasion. A great deal of time was spent in quarrelling, and matters were further complicated by the refusal of the guardians to take any active steps in facilitating vaccination. Things, indeed, reached such a pitch that the Local Government Board was induced—on the appeal, it is understood, of a committee of local tradesmen—to send down an inspector. The final result is that the Corporation has been charged with the duties ordinarily appertaining to the Board of Guardians in respect of vaccination, and two special small-pox officers have been appointed, one to take charge of the small-pox hospital, and the other to deal with contacts and other matters. A further outcome of the epidemic is that the medical officer of health has thrown up his appointment, of the value of only £80 a year. It is not surprising, for it must have been a thankless office in the circumstances, and must have entailed duties difficult to perform efficiently in so large a town in conjunction with the cares of a private practice under the best of circumstances. The number of cases in the South of England has been few, and London during the past few weeks has been practically free. This week, however, a small outbreak ascribed to the importation of a case from Yorkshire, has been reported at Willesden. Wales, and especially South Wales and Cardiff, suffered considerably last year, but during this summer there has been but little to report. About a month ago, however, an outbreak began in the Rhymney Valley at Senghenydd, which at first appeared rather serious, some 13 cases occurring in rapid succession. It was treated, however with the same activity as that with which earlier outbreaks in Wales have been met, and now appears to be practically extinct. In Scotland the epidemic at one time spread over a wide extent of country, and gave rise to a large number of cases; it was never, however, allowed to obtain a strong hold upon any large town, and during the past few weeks the number of cases reported throughout all Scotland has been small, the report for the fortnight ending October 31st showing a total of 31 distributed over five burghs. Of Ireland very much the same may be said, but in this country there is even less general opposition to vaccination than in Scotland, and though a number of separate foci of disease appeared at one time to be established, matters have never looked very threatening. The final outcome, however, still remains to be seen; for, during the past ten days, a somewhat marked recrudescence has been observed in the neighbourhood of Belfast. In all the reports received the influence of the tramp and vagrant population in initiating and reproducing outbreaks is as clearly marked as heretofore. The importance of this factor in the general problem of small-pox prevention appears to be thoroughly recognized by the authorities, but the difficulty is to determine in what way it should be met. Some light on this appears likely to be thrown by the Conference on the subject, to be held in London this week. The majority of the larger sanitary authorities have appointed representatives to attend it. Some account of the proceedings will be given at a later date.

A MIDWIVES ACT IN NEW ZEALAND.

We called attention last July to a memorandum issued by the Premier of New Zealand on the question of child-life preservation. After referring to the fact that there was a falling-off in the natural increase of the population, he expressed the opinion that it was the duty of the State to take measures to save valuable lives. First among the remedial measures which he suggested was legislation to provide that those who practised midwifery should be required to hold a certificate, that in

each centre there should be qualified midwives for the poor, the State paying the fee, and that maternity homes should be established under State control. Other remedies included the establishment of foundling hospitals, the institution of a system of nursing the sick poor in their own homes, the training of girls to be nurses at the Government expense, and an Act to prevent neglect or cruel treatment of children. The Agent-General for New Zealand has communicated to Reuter's agency a telegram from Wellington, dated November 8th, stating that among the principal Acts adopted during the past session of the New Zealand Parliament was the Midwives Act providing for the registrating and better training and examination of midwives, and for the establishment of State maternity homes; a large vote has been taken for carrying the provisions of the Bill into effect.

THE DOOM OF SPECTACLES.

WE publish in another column a letter from Dr. Ettles, who was asked by Mr. Aitchison, an optician, to settle the conditions of his challenge to pay £100 to a charity if Mr. Stephen Smith could successfully ameliorate the condition of six selected cases of uncomplicated myopia of medium degree. From the letter it will be seen that Mr. Smith's stipulations are such that the matter will probably go no further. As Dr. Ettles's action in consenting to act for Mr. Aitchison has been the subject of adverse comment, we think it only fair to him to say that we see no impropriety in his accepting the reference. It would have been truly unfortunate if Mr. Aitchison had experienced any difficulty in finding a competent representative of the medical profession to make the necessary examinations of the cases to be submitted to Mr. Smith's treatment.

PAYMENT OF MEDICAL BILLS BY BULLETS.

THE free-born Briton is sometimes not particularly grateful to his doctor, and he does not always show all the alacrity that might be desired in paying his medical bills. But when he does pay—though he may, in classic Pickwickian phrase, sigh like bricks as he lugs out the money—he pays in the recognized currency of the country. The most extreme bimetallist has not proposed lead as a circulating medium. That metal, however, seems to be looked upon as especially appropriate for the discharge of medical bills in some parts of Spain. Of this financial eccentricity Dr. Antolin Blanco, of Romanes, Guadalajara, recently had unpleasant experience. He was called in to attend a woman, and, after treating her successfully, he ventured to present his account. A few days afterwards he was invited to call on a relative of his patient, who greeted him with two pistol shots and the explanatory exclamation, "That is how I pay doctors!" One of the shots wounded the doctor in the chest, but the representative of the grateful patient, doubtless thinking the payment insufficient, struck him on the head with the pistol. If the gratitude of patients often takes this form in Spain, medical practice in that romantic country must be as exciting as editing a newspaper in the Far West.

THE INVESTIGATION ON PNEUMONIA IN NEW YORK.

THE Pneumonia Commission of the New York Board of Health, mention of which was made in the BRITISH MEDICAL JOURNAL of August 20th, met for the first time on October 18th. Dr. Edward G. Janeway, of New York, was elected President, and Dr. T. Mitchell Prudden, of New York, Secretary. The Commission decided to make a systematic study of pneumonia in New York, taking into consideration the frequency and variation of occurrence, evidence of communicability, mouth infection, seasonal relations, collection of statistics, and geographical relations. The Commission was subdivided into a Clinical Committee and a Bacteriological Committee. The former is composed of Drs. Janeway, Osler, Musser, Billings, and Holt; the latter of Drs. Welch, Prudden, and Smith. Dr. Hermann Biggs will serve on both Committees.

SYMPTOMLESS HERNIAE.

THE recently-published record of the Anatomical and Anthropological Society of the University of Aberdeen for 1902-4 contains accounts of two important herniae which were only discovered on the dissecting-room tables, and which, therefore, probably produced no very alarming symptoms, inasmuch as there is no note of the herniated viscera being themselves in an abnormal condition. The first case was a hernia of the stomach, which extended for 1½ in. into the thorax, attaining relations with the pericardium and the left pleural sac. The second case was one of a large duodeno-jejunal hernia. In this case the whole of the small gut, with the exception of the lowest 6 in., had passed into the enlarged duodeno-jejunal fossa of Treves. It is noted in connexion with the last case, in which the body had been hardened with formalin, that there were two spaces in the abdomen—one beneath the diaphragm into which the closed fist could be passed, and another in the posterior part of the pelvis. It would be interesting to know what occupied those spaces during life, but, unfortunately, to this there is no clue.

THE PASTEUR INSTITUTE AT TURIN.

IN the *Annales de l'Institut Pasteur* of October 25th, Dr. C. Nicolle, Director of the Pasteur Institute at Tunis, gives statistics of the cases treated there during 1903. From January 1st to December 31st of that year the number of persons treated was 284. From that number should be deducted 5 who for one reason or another discontinued the treatment after a few days, and 5 who belonged to the staff of the institute and underwent preventive inoculations without having been bitten. Among the remaining 274 cases there was no death. In 22 cases the bites were on the head, in 137 on the hands, in 115 on the trunk or limbs. The presence of rabies in the animal which inflicted the bite was proved experimentally in 38 and by veterinary examination in 110 cases; in 126 cases there was reason to suspect its existence. In 242 cases the bites were inflicted by dogs, in 11 by cats, in 8 by bovines, in 5 by asses, in 3 by mules, in 3 by jackals, and in 2 by ichneumons. This is believed to be the first appearance of the ichneumon in such a list. The total number of patients treated at the Tunis institute since its foundation is 1,440, of whom 5 have died of hydrophobia, a mortality of 0.34 per cent.

THE next session of the General Medical Council will begin on Tuesday, November 22nd, when the chair will be taken by Sir William Turner, K.C.B., at 2 p.m.

THE next dinner of the Glasgow University Club, London, will take place on Wednesday, November 23rd, at 7 p.m., in the Trocadero Restaurant, W., when the chair will be taken by Dr. James Brisbane. Members intending to be present are requested to send their names to the Honorary Secretaries, 63, Harley Street, W.

MR. JAMES PATTEN MACDOUGALL, legal member of the Local Government Board for Scotland, has been appointed Vice-President of the Board in the room of Mr. Malcolm McNeill, C.B., who retires on November 15th. The vacancy caused by the death of Dr. Russell, medical member, has not yet been filled up.

THE Council of the Royal Society has awarded a royal medal to Colonel David Bruce, R.A.M.C., F.R.S., for his researches in the pathology of Malta fever, nagana, and sleeping sickness, and especially for his discoveries as regards the exact causes of these diseases. The Rumford medal has been awarded to Professor Ernest Rutherford, F.R.S., for his researches on radio-activity, particularly for his discovery of the existence and properties of the gaseous emanations from radio-active bodies. The Copley medal will be presented to Sir William Crookes, F.R.S., in recognition of his long-continued scientific work, including the study of radio-active phenomena. The Darwin medal is awarded to Mr. William Bateson, F.R.S., for his contributions to the theory of organic evolution by his researches on variation and heredity.

Scotland.

The Parliamentary Representation of the Universities of Glasgow and Aberdeen.

A circular letter was issued on November 8th with reference to the candidature of Sir Henry Craik for the Parliamentary representation of the Universities of Glasgow and Aberdeen. It is signed by Sir James King, Bart., Chairman, and Mr. T. A. Harvie Anderson, Secretary, of the Glasgow University Conservative and Liberal Unionist Association, and by Dr. J. Dove Wilson, Chairman, and Mr. D. M. A. Chalmers, Secretary, of the Aberdeen Unionist Association. The circular is in reply to that recently issued by the Universities of Glasgow and Aberdeen Conservative and Liberal Unionist Association on behalf of the candidature of Professor W. R. Smith. The new circular states that the Glasgow and Aberdeen Committees, after careful joint consideration and with the full concurrence of the London Committee, which acted with them, and on which the medical profession is largely represented, determined to nominate Sir Henry Craik. The circular contains the following statement as to the claims of Sir Henry Craik:

With respect to his qualifications, we may point out that Sir Henry Craik went through a distinguished course of four years as an arts student in the University of Glasgow and gained the Snell Exhibition to Balliol College, Oxford. He subsequently obtained the highest honours at Oxford University, and in 1882 received the degree of LL.D. from the University of Glasgow. Since he left the University he has been engaged in the work of education. After passing through the various grades of the English Education Office he was appointed to the Secretaryship of the Scotch education Department, when it was established in 1885—an office which he has held with signal distinction and great advantage to the country up to the present time. Sir Henry Craik's recognized position as a man of letters and his unique experience of the working of the educational systems both of Scotland and England, peculiarly qualify him to represent a university constituency.

Appended to the circular is a list of a provisional committee which contains the names of a number of medical men, including Sir William Gairdner, K.C.B., Sir James Reid, Bart., Sir Hector Cameron, Sir William Macewen, Professor McCall Anderson, Dr. Mitchell Bruce, Dr. William Bruce, Dr. R. W. Burnett, Professor Cossar Ewart, Dr. Freeland Fergus, Professor David W. Finlay, Dr. James Galloway, Professor Samson Gemmell, Professor Glaister, Professor Wardrop Griffith, Professor Matthew Hay, Dr. G. A. Heron, Principal John Yule Mackay, M.D., Professor J. G. M'Kendrick, Professor J. A. MacWilliam, and others. The Prime Minister, the Chief Secretary for Ireland, and the Lord Advocate, who are all constituents, have also joined the Committee.

Scottish Volunteer Medical Officers' Association.

The annual general meeting of this Association was held on November 2nd in the Medical Club, Glasgow, Brigade-Surgeon-Lieutenant-Colonel G. Chalmers, the retiring President, presiding. There was a good attendance of members from Glasgow, Edinburgh, Dundee, Perth, Kilmarnock, Hamilton, etc. The report for the year was submitted by the Secretary, Captain Halliday, while the financial statement prepared by the Treasurer, Surgeon-Major A. K. Chalmers, was read in his absence by Captain H. Wright Thomson.

It was unanimously agreed that the competition for the Scottish Volunteer Ambulance Trophy, which is open to all Scottish regiments, be held in 1905 in Dundee. The details of the competition will be arranged by the Local Secretary there, Surgeon-Captain Halley.

A proposal to make the Council of the Association more representative of the various districts was discussed at length, and a Committee was appointed to meet with district representatives and confer with them as to the best methods of securing the end in view. The following office-bearers for the ensuing year were elected:

Honorary President: Surgeon-General Sir William Taylor, K.C.B. *Honorary Vice-Presidents:* Surgeon-General Keogh, C.B.; Colonel Hughes, D.S.O., R.A.M.C.; Lieutenant-Colonel W. Babtie, V.C., C.M.G.; Brigade-Surgeon-Lieutenant-Colonel J. Dunlop (retired). *President:* Brigade-Surgeon-Lieutenant-Colonel Johnston-Macfie (retired). *Vice-Presidents:* Surgeon-Major Cowan Lees, 1st L.R.V.; Surgeon-Lieutenant-Colonel Lennox, 1st V.B. Royal Highlanders. *Secretary:* Captain R. T. Halliday, R.A.M.C. Volunteers. *Treasurer:* Surgeon-Major A. K. Chalmers, 1st L.R.G.A. Volunteers. *Members of Council* (in addition to the District Secretaries and the above): Surgeon-Lieutenant-Colonel Frew, 1st V.B.R.S. Fusiliers; Brigade-Surgeon-Lieutenant-Colonel Chalmers, H.L.I. Brigade; Lieutenant-Colonel G. T. Beatson, C.B., R.A.M.C. Volunteers; Brigade-Surgeon-Lieutenant-Colonel Napier, Scottish Rifles Brigade; Surgeon-Lieutenant-Colonel Robertson, 2nd V.B.S.R.; Surgeon-Major Sewell, Renfrew and Dumbarton, R.G.A.V.; Surgeon Major Bell Todd, 5th V.B.H.L.I.; Surgeon-Major Kinnear, 3rd V.B. Royal Highlanders; Surgeon-Major Pollok, 3rd V.B.H.L.I.; Captain Shaw, H.L.I. Bearer Co.; Surgeon-Captain Wilson Gunn, 4th V.B.S.R.; Surgeon-Captain Forrest, 3rd L.R.V.; Surgeon-Captain J. A. Wilson, 3rd V.B.H.L.I.; Surgeon W. D. Anderson, R.N.V.R.; Surgeon-Major F. V. Adams, 1st L.R.V.; Surgeon-Lieutenant T. D. Laird, 2nd L.R.E. Volunteers; Surgeon-Captain Rowan, Clyde Division Submarine Miners; Captain Edington, R.A.M.C. Volunteers; Captain H. Wright Thomson, R.A.M.C. Volunteers; Captain Claude Ker, 1st Lothian Brigade Bearer Company.

Aberdeen Medico-Chirurgical Society.

The opening meeting for the session 1904-5 was held in the Society's Rooms, King Street, Aberdeen, on November 3rd, at 8.30 p.m. There was a large attendance of members, and Professor Cash, F.R.S., President of the Society, delivered the opening address. He paid a graceful and touching tribute to the late Dr. William Findlay, who for several years had been an office-bearer of the Society, and through whose early demise the Society and the city generally had suffered severe loss. He referred also to the valuable work done by the Society during the past year.

Address on Dosage.

Professor Cash then gave a most interesting and practical address on the subject of dosage. Prefacing his remarks with a historical account of the variations in dosage of certain drugs in ancient and modern times, he accounted for these by the methods of preparation, time of collection, and various other changing factors. The doses put down in the *British Pharmacopoeia* as guides were considered in their various bearings and compared with the French and German Pharmacopoeias. He advocated strongly the insertion in the *British Pharmacopoeia* of the maximum allowable daily dose in the case of the more powerful remedies. The question of summation of dose and of the time interval between doses of certain drugs was discussed and very clearly illustrated by diagrams showing the action of repeated doses at fixed intervals of powerful remedies like spicaconitine and indaconitine in their action on temperature. These showed how necessary it was for efficient action that the time of absorption and time of elimination of drugs should be carefully considered and estimated if efficient and reliable action was to be got, and demonstrated that the second and succeeding doses, to act to the best advantage, should be administered before the first effect had completely passed off. It was also shown that, in regard to a great many remedies, small and frequent dosage was much more powerful in effect than large and infrequent doses, though the total daily amount was the same. Professor Cash also discussed the metric system of weights and measures, and strongly advocated its immediate adoption.

Vote of Thanks.

At the close of the address Dr. Angus Fraser, Senior Physician, Aberdeen Royal Infirmary, proposed a vote of thanks to the Chairman for his valuable and practical contribution, and this was awarded most heartily, many members commenting on the timely and useful nature of the address.

Aberdeen University Medical Society.

This Society held its opening meeting in Marischal College on November 4th, at 5.15, when Mr. J. Scott Riddell, Senior Surgeon Aberdeen Royal Infirmary, delivered an address on the Medical Student and his Profession. Over two hundred students were present and Professor Cash, Honorary President, occupied the chair. In introducing the lecturer Dr. Cash referred to the excellent work being done in the Infirmary at the present time, both on the teaching and operative sides, and to how much Mr. Riddell had done and was doing to uphold the traditions of the hospital as a teaching institution.

Mr. Riddell gave a most instructive and racy address, enthusiastically received by the large audience, and advocated greater attention in the hospital wards and out-patient departments. Valuable and necessary as the theoretical training in the University was, it was clinical study that made the successful medical man. His remarks on the University devoting itself to the production of good general practitioners, since the repute of Aberdeen in this respect stands high at the present day, were perhaps open to criticism. There seems no necessity for any special devotion to this side of the work, as the training of well-equipped general practitioners and the offering of facilities for original research for the training of specialists can readily go hand in hand. The reputation of a university

must depend largely on the research and original work done within its walls and the opportunities it can offer for the advanced student continuing his work beyond the M.B. stage.

Mr. Riddell was very cordially thanked for his excellent address. The winter session bids fair to be a most properous one, and the excellent programme of work drawn up by the Society shows that a practical interest in their life-work is being taken by the majority of the students apart from the mere necessities of qualifying examinations.

It was hoped that Dr. Mitchell Bruce, of London, would deliver the opening address, but he found himself unable to come north at this season. The students, however, are looking forward with keen interest to hearing Dr. Bruce in the near future, so that the University of the North may benefit from the advice and experience of one who has won laurels in the arenas of the south.

Small-pox in Scotland.

During the period from October 16th to 31st inclusive, 31 cases of small-pox were intimated to the Local Government Board. These were distributed over five counties: Ayr, Lanark, Renfrew, Stirling, and Shetland. The largest number of cases was in Coatbridge Burgh with 14; Airdrie Burgh and Carronhall Row in the Eastern District of Stirling had each 4 cases, while Falkirk Burgh had 2 cases. Prior to the period of this report no cases had been intimated to the Board during this year from Glenmavis in the middle ward of Lanark, from Carronhall Row in the Eastern District of Stirling, and from Lerwick in Shetland, where 1 case has occurred. One case remains under treatment in Edinburgh.

The Royal Society of Edinburgh.

The following office-bearers have been elected for the ensuing session:

President.—The Right Honourable Lord Kelvin, G.C.V.O., F.R.S.

Vice-Presidents.—Professor James Geikie, LL.D., F.R.S.; Lord McLaren, LL.D.; the Rev. Professor Flint, D.D.; Robert Munro, M.A., M.D., LL.D.; Sir John Murray, K.C.B., LL.D., F.R.S.; Ramsay H. Traquair, M.D., LL.D., F.R.S.

General Secretary.—Professor Geo. Crystal, LL.D.

Secretaries to Ordinary Meetings.—Professor Crum Brown, M.D., LL.D., F.R.S.; Professor D. J. Cunningham, M.D., LL.D., F.R.S.

Treasurer.—Philip R. D. Maclagan, F.F.A.

Curator of Library and Museum.—Alexander Buchan, M.A., LL.D., F.R.S.

Transfer of the New Veterinary College to Liverpool.

Mr. W. Owen Williams has been appointed Professor of Veterinary Medicine and Surgery in the University of Liverpool. The rights and privileges of the New Veterinary College of Edinburgh have been transferred to the University of Liverpool, and the veterinary school there will shortly be affiliated to the Royal College of Veterinary Surgeons. The Crown authorities have granted to the University of Liverpool the further great privilege of the Royal Sign Manual, as was granted to the late Professor Williams some thirty years ago, and continued to his son, the new occupant of the Liverpool chair.

Ireland.

Complimentary Dinner to Professor Lorrain Smith.

A complimentary dinner to Professor Lorrain Smith was given in the Grand Central Hotel on the evening of November 3rd, on the occasion of his leaving Belfast for Manchester.

The Rev. Dr. Hamilton, President of Queen's College, Belfast, occupied the chair; to his right sat Professor Smith, the President of the Ulster Branch of the British Medical Association (Professor Lindsay), and Mr. Crawford, Chairman of the Board of Management of the Royal Victoria Hospital; to the Chairman's left sat Sir Otto Jaffé, the Lord Mayor, the President of the Ulster Medical Society (Dr. Calwell), and Sir James Henderson, D.L. Over seventy sat down, including many representative men, professional and lay, of the district, and many old pupils of Dr. Smith.

After the usual loyal toasts the Chairman proposed "Our Guest." He drew a contrast between the condition of affairs in Belfast with regard to the great science of pathology now and ten years ago, when Dr. Smith first came among them. They had no buildings, no laboratories, and only an unendowed lectureship; the lecturer came in the spring, stayed three months, and left for the other nine. Now they had special buildings, an endowed professorship, and Dr. Smith had lived amongst them. Lately an endowed demonstratorship had been added. Dr. Smith had seized the opportunities of development, and the present much more satisfactory condition of affairs were largely due to his care and exertions. During his tenure of office the laboratory had been made of great service to the profession by its pathological reports on specimens of all kinds. These reports were of the greatest value to the practitioner in enabling him to arrive at a conclusion as to the nature of the disease by which he was confronted. Dr. Smith was also pathologist to the Royal Victoria Hospital, and there was but one feeling throughout the whole hospital as to the services which their guest had rendered. The Board of Management and the Medical Staff had both passed resolutions expressing their appreciation of his work, and their regret at his departure. The City Council had availed themselves of Dr. Smith's skill. Special reports of exceptional value had been drawn up by him for the Corporation on the bacterial treatment of sewage in conjunction with Professor Letts, and also on the periodical outbreaks of typhoid fever. They all wished him every prosperity and happiness, and assured him that his friends would never forget him.

Professor Lorrain Smith, in replying, referred to the ungrudging and liberal spirit with which the College authorities had entered from time to time upon the development of new departments; it was not generally understood that their grant was fixed, and that the admission of a new department meant the cutting down of the allowances of the old; yet no complaint from the latter had been heard. The training given by pathology was of enormous value to the student; and one of the facts of which he was proudest was the large number—over 100—who had passed through the post-graduate course in the last few years since it was opened. He was grateful to all for their kindness during the last ten years, both in public work in connexion with the Corporation, in the College, in the hospital, and—nearest his heart—in the daily work in the laboratory. Finally, he thanked all present for their exceeding great kindness shown him by the gathering that night.

At a later stage, Dr. R. J. Johnstone made a presentation of a solid silver tray with gadroon border and masked handles; it was engraved with the inscription:

> To Professor Lorrain Smith, from his old friends and pupils at the Pathological Laboratory, Queen's College, Belfast, 1895-1904.

He referred to the great value of Dr. Smith's work from a student's point of view, and said that he was one of the first post-graduate pupils. He paid a warm personal tribute to the happy relationship which had existed between Dr. Smith and the students. They desired to express their best wishes and their friendship and kindly feelings to both Dr. and Mrs. Smith.

Dr. Smith replied, and thanked Dr. Johnstone and the donors for their very kind present.

The "Health of the Chairman" was proposed by Sir James Henderson.

Professor Dixon, Dr. Leslie, and Dr. McIlwaine contributed to the enjoyment of the evening by songs.

The Board of Management of the Royal Victoria Hospital passed the following resolution at a meeting on November 2nd:

> The Board of Management have received the resignation of Dr. J. Lorrain Smith with much regret, and desire to place on record their high appreciation of the able manner in which he has discharged his duties as Pathologist to the Hospital during the past ten years. They wish him every success in his new sphere of duty as Professor of Pathology in the Victoria University, Manchester.

The medical staff also unanimously passed a warm resolution of congratulation and of great regret at his departure, and conveying their keen sense of the value of his work in the hospital.

Small-pox and Vaccination.

At the monthly meeting of the Belfast City Council on November 1st the Medical Superintendent Officer of Health reported the notification of 332 cases of zymotic disease, including 93 of typhoid, 82 of simple continued fever, and 78 of scarlet fever. The total number of births registered was 1,089, and of deaths 607, with an annual death-rate from all causes of 17.6. The minutes of the Public Health Committee also contained a resolution thanking Councillor Dr. Henry O'Neill for the assistance he rendered in the recent ginger-wine prosecution. The Chairman of the Public Health Committee, Dr. King Kerr, in moving the adoption of the minutes of this Committee, said that just as they were closing their small-pox hospital and intercepting station, fresh cases of the disease had been introduced from Clones. Of a family of six attacked by the disease, in two boys, aged 15 and 11, who

had been vaccinated in infancy the disease was very slight; when he visited the hospital they were out playing with other convalescent boys; the remaining four had never been vaccinated, and of these one was already dead and the other three were in a very serious condition. Out of 130 cases of small-pox which had been in the Purdysburn Hospital not a single case of a revaccinated person had been admitted. There was only one safeguard, and that was revaccination.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The lectures of the winter session commenced on November 1st, the prizes for the previous session being distributed on the same day by the President, Mr. Arthur Chance. The Barker Anatomical Prize of £31 10s. went to Mr. C. Cooper; the Mayne Scholarship of £15 to Mr. A. N. Crawford; the Carmichael Scholarship of £15 to Mr. J. Prendiville. To the latter gentleman went also the Stoney Memorial Gold Medal in Anatomy. The Gold Medal in Operative Surgery was awarded to Mr. J. S. Dunne, and the Silver Medals in the same subject to Messrs. P. D. Sullivan and J. C. Murphy (equal). Some thirteen or fourteen other medals were also distributed, together with a large number of certificates for special proficiency in various subjects.

MYSTICAL QUACKERY.

An action tried at great length on November 3rd, before the County Court Judge at Coleraine, brings into relief the strong belief of some of the people in mystical forms of treatment, and at the same time the remarkable ignorance of some of those who hold themselves out as capable of curing patients in such ways. The plaintiff, a retired weaver, held himself to be libelled by the *Coleraine Constitution*, which, in an article headed "Kilrea Notes," made strong comment upon the knavery of those who pretended to cure disease by charms. This cap the plaintiff fitted upon his own head, and brought an action for damages which was dismissed with costs. The case, as reported very fully in the *Coleraine Chronicle*, is in a certain sense amusing reading, much of the plaintiff's evidence being very curious. He had, he said, been receiving patients from all parts of the United Kingdom for thirty years; some paid him with a £1, and some with a blessing. He effected his cures by a prayer which he had learnt from his father when a wee lad. When he prayed over a case of erysipelas—a disease in the treatment of which he was particularly expert—the bones dried up, and the limb got strong or the bad bones dropped out. He had treated a case of mortification by spitting on the limb; but the doctors cut the leg off, and the man died. Although he licked, spat on, and rubbed his patients, that was only because it gave them temporary relief; the real cure was effected by the prayer which he had mentioned. He also cured cases of heart disease; he did not know much about the disease, but he could cure it, and used a green silk band. There was a great deal of the same kind of thing, and, reading over the evidence, it is difficult to decide whether the man was an ordinary impostor, or deceived himself as well as his patients.

REPRESENTATIVE OF ROYAL COLLEGE OF SURGEONS, IRELAND, ON THE GENERAL MEDICAL COUNCIL.

Sir Charles Ball has intimated to the Council of the Royal College of Surgeons in Ireland that he does not intend to seek re-election in February next as the representative of the College on the General Medical Council. Mr. H. R. Swanzy (Vice-President), and Sir Thomas Myles have notified their intention to present themselves for election.

MATER MISERICORDIAE HOSPITAL.

The address on the occasion of the opening of the winter session at the Mater Misericordiae Hospital, Dublin, was delivered on Wednesday last by Sir Christopher Nixon, Senior Physician. The Most Rev. Dr. Healy, Catholic Archbishop of Tuam, presided. Sir Christopher Nixon gave an interesting account of the work done in the hospital, and expressed the special satisfaction he felt in recording the opening of the new pathological department. He complained that the expectations aroused in connexion with the subject of Catholic University Education in Ireland had not been fulfilled. Other speakers were Rev. Dr. Delany, Mr. Serjeant Dodd, K.C., Mr. Charles O'Connor, K.C., Dr. D. Coffey, and the Chairman.

PROFESSOR BENNETT.

Dr. E. H. H. Bennett, who has occupied the Chair of Surgery in the School of Physic, Trinity College, for so many years, has at his own request been relieved from the active duties of the office, and Dr. E. H. Taylor has been appointed his assistant. Professor Bennett will, however, devote some of his time to the curatorship of the pathological museum, and to the cataloguing of the specimens, so many of which he has collected. He will also continue to act as surgeon to the Patrick Dun's Hospital. It is gratifying to know that Dr. Bennett will still be associated with a school which he has done so much to develop and improve. His contributions on injuries to bones have been most valuable, and he has carried on, with great industry and success, especially in this department, the work which was begun by Robert W. Smith, and which has made both of them famous.

QUEEN'S COLLEGE, BELFAST.

The appointment of Dr. Cecil Shaw to the Lectureship in Ophthalmology in Queen's College, Belfast, rendered vacant by the death of Dr. Alexander McKeown, has been received with much satisfaction in Belfast.

ASSOCIATION NOTICES.

ADJOURNED MEETING OF COUNCIL.

The Chairman of Council has arranged, by kind permission of the Metropolitan Asylums Board, that the Adjourned Meeting of the Council shall be held in the Board Room of the Metropolitan Asylums Board, on Wednesday, the 16th day of November, at 2 o'clock in the afternoon. The Metropolitan Asylums Board is situate on the Victoria Embankment at the corner of Carmelite Street, close to Blackfriars Bridge.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1905.

MEETINGS of the Council will be held on Wednesdays, January 18th, April 19th, July 5th and October 18th, in the Council Room of the British Medical Association, 429, Strand, London, W.C.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.—A dinner will be held in the King's Arms Hotel, Melrose, on the evening of Tuesday, November 22nd, at 6 o'clock, Dr. Carlyle Johnstone, Chairman of Division, presiding, in the event of a sufficient number of members notifying the Secretary of their intention to be present. Dinner ticket, 5s.—W. HALL CALVERT, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—A general meeting will be held on Thursday, November 17th, at 4 p.m., at Manor House, Upper Clapton Road, N.E. (by the kind invitation of H. E. Powell, Esq.). Agenda: (1) Minutes. (2) Letters. (3) Report of Subcommittee on Alteration of Rules of the Branch. (4) Report of the Representative on the meeting at Oxford. (5) Report on Parliamentary matters affecting the profession (referred from the last business meeting, see SUPPLEMENT to BRITISH MEDICAL JOURNAL, May 28th, p. 125). (6) Report of Medico-Political Committee on the desirability of consultation between medical

witnesses (see SUPPLEMENT to BRITISH MEDICAL JOURNAL, July 23rd, p. 77). (7) Any other business.—E. W. GOODALL, M.D., Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WANDSWORTH DIVISION.—An ordinary meeting of this Division will be held at Crichton Restaurant, Clapham Junction, on Thursday, November 24th, at 8.45 p.m. Agenda: (1) Minutes. (2) Correspondence. (3) Questions. (4) Resolutions for Representative Meeting at Leicester, referring to co-opted and elected members of the Central Council, and the duration of their holding office. (5) Paper by G. F. McCleary, M.O.H., on the Milk Supply of Copenhagen: A Study in Clean Milk Production. (6) Address on Vaccination and Revaccination, by Mrs. E. Garrett Anderson, M.D. The President of the Branch (Dr. Radcliffe Crocker), the Editor of the BRITISH MEDICAL JOURNAL (Dr. Dawson Williams), and possibly Mr. Andrew Clark (Chairman of the Central Council) will be present. Members of the Branch and their medical friends are invited to attend.—E. ROWLAND FOTHERGILL, Torquay House, Southfields, S.W., Honorary Secretary.

NORTH WALES BRANCH: NORTH CARNARVONSHIRE AND ANGLESEY DIVISION.—A meeting of this Division will be held at the British Hotel, Bangor, on Wednesday, November 16th, at 2 p.m. Agenda: (1) To read the minutes of the last meeting of the Division. (2) To read letters of apology. (3) To introduce the Chairman-elect. (4) To receive the Report of the Annual Representative Meeting held at Oxford. (5) Dr. E. J. Lloyd (Bangor) will read notes of a case of Mastoiditis and the Value of ½ in. Trephine in Opening up the Mastoid Antrum. (6) Dr. Emyr O. Price (Bangor) will open a discussion on Diphtheria.—H. JONES ROBERTS, Penygroes, Honorary Secretary.

SOUTH-EASTERN BRANCH.—A conjoint meeting of the three Divisions of Eastbourne, Hastings, and Tunbridge Wells will take place on Thursday, November 17th, at the Sackville Hotel, Bexhill, at 4.45 p.m. Dinner at 7 p.m.; charge 6s., exclusive of wine. All members of the South-Eastern Branch are entitled to attend, and to introduce professional friends. Members intending to be present at the meeting and dinner would much facilitate arrangements if they would inform Dr. Merry of their intention by post-card. Agenda: (1) Mr. Beck will show three cases of Colles's fracture treated by massage from the third day, illustrated by Roentgen-ray photographs. (2) Discussion on Dr. Larking's proposal to divide the South-Eastern Branch. (3) Contract practice. (4) Reports of Representative Meeting at Oxford by the Divisional Representatives, and any other business that may arise.—G. V. HEWLAND, St. Leonards, W. J. C. MERRY, Eastbourne, and E. A. STARLING, Tunbridge Wells, Honorary Secretaries.

SOUTH-EASTERN BRANCH: BRIGHTON DIVISION.—A meeting of this Division will be held at the Brighton Dispensary, 113, Queen's Road, Brighton, on Wednesday, November 23rd, at 4.30 p.m. Agenda: To consider the advisability of dividing the South-Eastern Branch. To consider a memorandum from the Exeter Division. To discuss a report from the Medico-Political and Ethical Committees. To amend the Rules of the Division. Other business.—RYDING MARSH, 49, Sackville Road, Hove, Brighton, Honorary Secretary.

SOUTH-EASTERN BRANCH: MAIDSTONE DIVISION.—The next meeting of this Division will be held at the West Kent Hospital, Maidstone, on Friday, November 18th, at 4 p.m. Agenda: Minutes of last meeting. To receive from Representative (Dr. Douglas) report of Annual Representative Meeting. To consider reports by the Medico-Political Committee on (*a*) Contract Practice, (*b*) Fees for Life Insurance Examination, (*c*) Parliamentary Matters affecting the Profession, (*d*) National Deposit Friendly Society. To consider the proposed division of the South-Eastern Branch. To transact any other business. J. A. Gibb, M.B., will read a paper on Nasal Obstruction. All members of the South-Eastern Branch are invited to attend and to introduce professional friends. Dinner at the Royal Star Hotel at 5.30 p.m., tickets 6s. Members wishing to dine will kindly notify the Honorary Secretary not later than Tuesday, November 15th.—A. T. FALWASSER, Sussex Place, Maidstone, Honorary Secretary.

STAFFORDSHIRE BRANCH.—A meeting of this Branch will be held at the North Stafford Hotel, Stoke-on-Trent, on Thursday, November 24th, when the chair will be taken by Dr. E. Deanesly, the President. Papers will be read by Mr. W. D. Spanton, Dr. Menzies, and Mr. H. H. Folker.—G. PETGRAVE JOHNSON, Honorary General Secretary.

SPECIAL CORRESPONDENCE.

VIENNA.

Contract Medical Practice in Austria.—Opening of the Winter Semester.—A Wholesome Milk Supply for Infants.—A New Lunatic Asylum.

THERE has for some years been a difference of opinion between the Government and the "Vienna Central Board of Medical Practitioners," relative to contract practice. By law all factory hands, shop assistants, generally all employés and persons who are in receipt of regular payment from business concerns, are obliged to become members of a "Krankencassa," which is nearly equivalent to a "friendly society." The "Krankencassa" provides in case of illness, free medical attendance, free medicines, and a daily allowance in proportion to the wages received during health. The expenses of these institutions are met partly by the regular monthly contributions by the employés, deducted from the wages and salaries, partly by contributions made by the employers. Professional help is obtained from the "Cassenarzt," a practitioner appointed and paid by the "Krankencassa." The payment is very low, especially in large industrial centres, where as many as 2,000 or 3 000 members are allotted to one practitioner at a salary rarely exceeding £100 a year. Whilst giving to certain practitioners an increase of income, this system throws on them an excessive amount of work: it also makes it very difficult for young practitioners to gain a footing, as a large part of the paying population is in employment, and is therefore bound to seek help from the "Cassenarzt." This grievance has often been the subject of resolutions and petitions of professional bodies, but without any appreciable result. Now several other classes of the population, such as bankers' assistants, agents, grocers, general dealers, shopkeepers, and the like, have formed societies with a view to appoint medical men under similar conditions. Such a measure obviously engenders the existence of the large majority of practitioners. The Board of Practitioners therefore passed resolutions to the effect "that it is contrary to medical ethics to accept a post as 'Cassenarzt' to any of these friendly societies of well-to-do people, because it is harmful to the profession, and that any practitioner doing so should be summoned before the Council of the Board to explain his dishonourable action." The Government prohibited the promulgation of this resolution, but the Board is determined to have it enforced, and has threatened to resign unless its wish be respected. As the last Board also resigned owing to a conflict with the Government, the latter naturally desires a peaceful solution of the present dispute. It is probable that both sides will take the opportunity of settling at the same time the hospital question, which constitutes another medical grievance. Large numbers of patients, well-to-do people, have found medical aid in public institutions intended only for the poor.

The winter semester began on October 27th. Among the courses and lectures to be delivered during the winter the following are worth mentioning: Haematology, by Docent Dr. Türk and Docent Weiss; Otology and Surgery of the Ear, by Politzer and Urbantschitch; Surgery of the Uropoietic System, by Docent Zuckerkandl. Special courses on typical and atypical surgery and gynaecological operations will be held from time to time, each course lasting five to six weeks. The fee varies between £2 2s. and £4 4. Radiology, including demonstrations and practical work with *x* rays, *n* rays, and radium-salts, is a new feature in the list of lectures. Of course, the regular clinical lectures on surgery, internal disease, gynaecology, ophthalmology, and dermatology will be continued by the professors of the various clinics. It may be noted that Professor Finger will give a special course on blenorrhoea and syphilis in English, as there are some ninety English-speaking doctors now in Vienna.

The committee of the Society for the Diminution of the Death-rate of Infants some time ago recommended the supply of pure and wholesome milk to mothers. By the munificence of the Archduchess Frederic, a near relation to the Emperor, the necessary quantity of milk has been placed at the disposal of the committee, and the society recently opened within the precincts of the Children's Hospital—the largest hospital of its kind in Vienna—a dépôt for the distribution of modified and sterilized milk to mothers who could produce a ticket from the hospital authorities. No charge is made, the institution being supported partly by the hospital and partly by voluntary contributions. On the day the dépôt was opened there were 216 applicants. A few simple directions printed on a leaflet are handed at the same time to the mother to enable her the better to feed and nurse the infant. Arrangements have been made for the weekly weighing of the infants. The milk, which comes from the Archducal farms not far from the capital, is derived from selected cows, and every precaution is taken to ensure the best quality, so that the results, which will be published monthly, may be expected to be very good.

In presence of an illustrious gathering, the Emperor recently laid the foundation-stone of an enormous new lunatic asylum. The grounds cover not less than 1,800,000 square yards. More than 700,000 square yards will be used for building purposes, 400,000 for a public garden, whilst an equal area will consist of gardens, with gates and fences, for the use of patients who must be under constant supervision. The hospital is planned on the pavilion system, and sixty pavilions, buildings, and offices are to be erected. In the centre of the whole there will be a church, with accommodation for 500 persons. The institution will consist of three separate groups of buildings: (1) a hospital for persons mentally diseased, with or without hope of recovery; (2) a nursing home, chiefly for patients who require constant nursing on account of bodily or mental disablement;

one pavilion will be reserved for criminal lunatics. The third group of houses is meant to be a "pension" for 300 paying patients of the wealthy classes. Such an establishment is badly wanted in Austria, where the number of such houses is very limited. A novel feature will be two pavilions for consumptive lunatics, who will thus be isolated from all other patients. Of course, all accommodation for medical officers, nurses, attendants, servants, and other people employed in the hospital is included in the plans. The total cost is estimated at £800,000, which will be derived partly from the sale of the old lunatic asylum, partly from a loan, which it is hoped, will be covered by the profit from the paying patients.

CORRESPONDENCE.

THE IRISH DISPENSARY SERVICE.

SIR,—As the reason of the adoption of the £200 per annum minimum by the Irish Medical Association has been misunderstood, I ask permission to explain it, and in so doing to submit the following considerations:

First, eventually some sound business principle of graduating the medical officers' salaries, according to the area and population of the districts, must be adopted.

Secondly, the grading of the salaries is the duty of the "authorities," not of the Irish Medical Association.

Thirdly, for many years the "authorities" turned a deaf ear to the representations of the profession, and recently declined, in spite of every pressure, Parliamentary and other, that could be used, to include the dispensaries within the scope of the Poor Law Reform Commission now sitting.

Fourthly, wearied of fruitless deputations and petitions, the Irish Medical Association were driven to endeavouring to force the "authorities" to consider the complaints of the medical officers, for this purpose certain demands were formulated.

Fifthly, the £200 per annum cannot be and is not defended as applicable to every dispensary district regardless of its area and population.

Thus, pending a final settlement, £200 was adopted as a reasonably moderate demand as a basis on which to carry on the work of the Association.

The proposal had its origin in Mayo. After much discussion at several Council meetings it was approved, with the object and understanding I have already explained. It was adopted in general meeting in 1903 and again affirmed, in spite of organized opposition, by an overwhelming majority in 1904.

The £200 standard is condemned because no salary has yet been raised to the figure demanded.

I answer, the Irish Medical Association never expected all salaries would be raised to £200, but did expect men to be loyal and refuse all appointments at a lower salary until the "authorities" were forced to look into the matter. Had there been more loyalty in the profession, the whole medical Poor-law administration of Ireland would now be well advanced towards a final settlement.

Nevertheless, one district is already advertised at £195, and another has been kept vacant for over two years; the action of the Association has resulted in many being raised from £100 or less to £110, £120, £130, £140, and so on.

I therefore hold the policy of the Irish Medical Association has been fully vindicated, in proof of which I may mention the Local Government Board have just issued a circular to the guardians of every union requesting them to grade the salaries of their medical officers and fix periodical increments. Thus in this particular—the principle of increased and graded salaries having been admitted by the authorities—the policy of the Irish Medical Association has been completely successful.

It is also complained that the action of the Association in preventing its members taking a dispensary at less than £200 is a hardship, and that as a result many posts, the salaries of which may have been increased by the action of the Irish Medical Association, but are still under the £200, have been taken by non-members. In answer to this, I regret to say that taking posts at even the old salary of £100, has not been confined to non-members; had the standard been fixed at £150, those men who are disloyal and wanting in *esprit de corps* would likewise condemn it as impracticable and impossible, and continue to accept the old salaries in short, sir, our worst enemies are to be found within our own ranks.

The problem now before the Irish Medical Association is how to deal with these disloyal members, and to "get at" the non-members who sell the pass. Unfortunately, there is a widely-spread feeling that there are other agencies in opposition to the £200 standard than the alleged failure of the policy of the Association; side-issues with which the Irish Medical Association have no concern, such as the interests of this medical school or that, a dash of politics and religion, seem to complicate matters, but surely the solution lies in increased and better organization rather than in lowering the standard.

At last, the Irish Medical Association are realizing that they will secure more popular support by insisting that the agitation is not altogether or chiefly in the interests of the profession, but in the interests of the sick poor, to secure them better and more efficient medical attendance, better hospital accommodation, more efficient sanitation, etc.

One who has read the able report of your Special Commissioner can understand the humour of the Local Government Board instructions for the aseptic practice of vaccination in the dispensary dépôts—establishments more like an old bottle shop or a department in a marine stores than a place for the practice of medicine and surgery.

An interesting dispensary election took place in Galway last week. The advertisement stated that medical men who could speak Irish would have a preference. There were two applicants, one of whom sent in his application in Irish. The Clerk regretted he could not read it, nor could any guardian present, so the Union schoolmaster was sent for to translate it. The Irish applicant was elected.—I am, etc.,

Enniskillen, Nov. 7th. L. KIDD.

ANTITYPHOID INOCULATION.

SIR,—The questions of fundamental importance in connexion with antityphoid inoculation are, I would submit, not the fact that I have found myself in personal conflict with the Medical Advisory Board with respect to these inoculations, nor yet that the victory, as you put it, rests with me; nor yet, again, the fact that the *Times* has reported the history and the issue of that conflict.

Of essential importance in connexion with this question are:

1. The fact that it has been decided by the unanimous verdict of three Committees, successively convoked to examine into this matter, that the statistical evidence which is to hand is sufficient to show that the incidence and case-mortality from typhoid fever are reduced by inoculation.

2. The fact that each Committee has insisted that adequate provision ought to be made for research directed to the improvement of antityphoid inoculation.

3. The fact that the present Medical Advisory Board of the army has not discharged competently and with impartiality, and with a due sense of responsibility, the duties which devolved upon it in connexion with this matter.

The question of the scientific competence of the Medical Advisory Board may be left on one side. While I differ from you in the respect that I think that a competent knowledge of bacteriology ought to be possessed by those to whom responsibility for the sanitation of the army is committed, and while I am of opinion that only a bacteriologist can arrive at a proper judgement with respect to the prospects of a bacteriological method, I am none the less in agreement with you in thinking that the present Medical Advisory Board was perfectly able to arrive at a competent opinion upon the results which had been actually achieved by antityphoid inoculation.

I contend that the Board did not adjudicate impartially, and with a proper sense of responsibility upon this question. They took action upon a report of Colonel Bruce, which was vitiated by palpable bias, and without informing me that my work had been under review, and without affording me opportunity of replying to Colonel Bruce, proceeded to advise the Secretary of State to issue an order abolishing antityphoid inoculation in the army.

You recite in your article that I appealed from the verdict of the Medical Advisory Board. I based my appeal to the Secretary of State solely upon the ground that the question had not been impartially judged; and I particularized in my official letter eleven passages from Colonel Bruce's report which I contended were inaccurate in fact and vitiated by palpable bias. Perhaps you will be content to see in the circumstance that the question was referred in accordance with my wishes to external adjudication evidence that my contentions were not entirely without justification. If not, the documents are available.

The subsequent history of the action taken by the Medical

Advisory Board affords, I think, further confirmation of the correctness of my contention.

On being confronted by the unanimous report of the Royal College of Physicians the Medical Advisory Board proceeded, instead of resuming the practice of typhoid inoculation in the army, to refer the question to another Committee, consisting of the Professors and Assistant Professors of the Royal Army Medical College. I will not comment upon the wording of the reference which was made. You will form your own opinion upon it if you have access to the same sources of official information which were at your disposal in inditing your article. You will further find that the report which was rendered to the Medical Advisory Board by the second Committee was in conformity with that arrived at by the Royal College of Physicians; and you will no doubt also note that the Professors of the Royal Army Medical College recommended a small working committee should be formed of R.A.M.C. officers, and that I should be invited to serve on that Committee. In fact, the agency which was recommended by the professors of the school was essentially the same as the agency afterwards advocated by Dr. Bulloch and myself in our minority report.

The resumption of antityphoid inoculation in the army was yet once more deferred by the Advisory Board. Yet a third Committee was appointed. And it is characteristic of the frame of mind of the Advisory Board that they recommended to the Secretary of State that Colonel Bruce, who has from the outset been a declared opponent of the inoculations, was nominated as chairman of this Committee. I was invited to serve on the Committee upon these terms. I accepted the invitation only after the Secretary of State had decided that the Committee should elect its own chairman.

As has been set forth in your article, this Committee arrived, in the absence of Colonel Bruce, at a unanimous verdict. It drew from the statistical materials the self-same conclusion which had before been drawn from them by myself, by the Antityphoid Committee of the Royal College of Physicians, by the Professorial Staff of the Royal Army Medical College, by the Medical Department of the German Army, and, so far as I have seen, by all Continental bacteriologists.

With regard to your personal standpoint on the matter. I note that you "wish it to be clearly understood that you offer no opinion on the value of the antityphoid vaccine further than to say that cause has been shown for further investigation." Your attitude, in short, is an attitude of reserve. But when you say "that *in this* (the italics are mine) you are pleased to find yourself in agreement with the Committees of the Royal College of Physicians and the War Office" you fall, I submit, either into error or ambiguity. I submit that neither of the Committees you have in view held the view that the question as to whether typhoid inoculation had reduced the incidence and the case-mortality from typhoid fever in the past needs any further investigation. If you hold that it does, I submit that you differ from these Committees. If, on the other hand, you hold only that further research work is urgently called for in connexion with the improvement of antityphoid inoculation you are not only in sympathy with these Committees, but—unwittingly, no doubt—also in sympathy with the motives which prompted Dr. Bulloch and myself to withdraw from the Antityphoid Committee.

The facts with regard to that retirement are as follows: When the Antityphoid Committee arrived in last July at its verdict upon the question of the utility of antityphoid inoculation, and when it had framed its recommendation that antityphoid inoculation should be resumed in the army, I put it to my colleagues that the task which the Committee could usefully carry out had in my opinion been completed. I urged that the proper course was to dissolve, and to throw upon the War Office the responsibility of appointing a working Committee to carry out our recommendations.

I think it will be clear to reflexion that, while it is both necessary and salutary to have any hostile element which may exist represented upon a deliberative and judicial Committee, such an element is out of place as soon as it comes to be a question of carrying into effect a constructive policy.

Again, I think it will be clear that the constitution of the present Antityphoid Committee is radically defective in the respect that the recommendations which it makes are afterwards referred for opinion to the Advisory Board, which contains among its members Colonel Bruce and Dr. Galloway, both of whom retain their seats upon the Antityphoid Committee, although they were, each in his degree, responsible for the abandonment of antityphoid inoculation in the army.

The anticipation that a Committee thus constituted would be unable to carry through a policy of construction in an effectual manner received immediate illustration, in the fact that the very first recommendation of the Committee, to wit, the recommendation that Dr. Bulloch and I should be associated with Major Leishman in research work in connexion with antityphoid inoculation, was rejected. This recommendation was rejected in spite of the fact that we had consented to give our services upon terms which would not have covered the financial loss which the work would have entailed.

I conceive that I can be of no service upon a Committee whose action is liable at any moment to be thwarted by the Medical Advisory Board.

Far from feeling, as your article suggests, aggrieved at the appointment of Major Leishman to preside over the research work in connexion with antityphoid inoculation, I myself proposed him for that task. I proposed him with the confidence which is derived from the respect for his character and abilities which has increased through the many years of our friendship and collaboration.

But Major Leishman, no more than I, even if we had our whole time at disposal, could unaided bend—as your classical metaphor has it—the bow of Odysseus. And Major Leishman has, as Professor of Pathology in the R.A.M.College, to sustain the burden of daily classes of instruction.

Furthermore, I cannot but think it in the highest degree inexpedient that work in connexion with antityphoid inoculation should be exclusively in the hands of one who is officially subordinate to the present Medical Advisory Board. A scientific investigation of this nature ought, in common with other bacteriological investigations which concern the health of the army, to be conducted by an entirely independent Committee.

In conclusion, I would say a word on Professor Karl Pearson's report which has just appeared in the BRITISH MEDICAL JOURNAL. I have long figured to myself Professor Karl Pearson as a statistical Rhadamanthus, before whom all the deeds of inoculators done in the body are destined to come up for judgement. I have no doubt that the mathematical principles, in accordance with which he judges them are as unerring as they are completely beyond my intellectual ken. But I would respectfully put it to him that the standard of perfection which he exacts is immeasurably above the standard to which we can hope to attain in connexion with immunization against typhoid fever. When Professor Karl Pearson says that his "coefficient of correlation" for the Army in India works out as 0.1, and when he further says that "we may safely say that 0.1 is not sufficiently large to justify the routine inoculation of the Army in India," I, in my ignorance, failing to understand the meaning of his "coefficient correlation," turn to the official records in the Army Medical Reports. Finding there that in India the death-rate of the inoculated soldiers was as compared with the death-rate of the uninoculated soldiers nearly three times smaller in 1899; more than four times smaller in 1900; and six times smaller in 1901; and finding that these figures apply to an inoculated strength of 4,000 to 6,000, I ask myself whether Professor Karl Pearson's 0.1 coefficient of correlation can have any practical import if it forbids us, in the face of a 4- to 6-fold reduction of mortality obtained in three consecutive years, to embark upon the routine inoculation of the army in India.

Again, when I read through Professor Karl Pearson's report and note, first, in its title that it deals only with *certain* enteric-fever statistics, and afterwards in the body of the report that the data with regard to the trustworthiness of the individual statistics which I have made available have not been consulted, I ask myself whether Professor Pearson can, before publishing his report, have considered the weight which attaches to any statistical criticism which appears over his distinguished name.

Professor Karl Pearson dwells on the inconsistency of the various statistical reports. I do not know whether I can adduce a parallel instance from his own personal experience, but I remember to have heard that it has happened to Professor Pearson to be perplexed with inconsistent and contradictory results in connexion with a comparison of the data of his mathematical calculations with data which purported to set forth the results of experiments made to ascertain the order in which a particular card would appear in a shuffled pack. I have heard that the explanation of the trouble was found in the fact that one of Professor Pearson's correspondents had

set forth data furnished by his imagination as results of actual experiment.

Even if my informant is in error as to this, may I not engage Professor Pearson's sympathy for troubles of this kind occurring in connexion with statistical reports furnished from the most various quarters? I will take, for instance, the case of the higher case-mortality which is credited in the official statistics to the inoculated in Ladysmith. The figures in question are felt by Professor Karl Pearson to be "mysterious," and he has suggested that an inquiry might with advantage be made as to what actually happened in Ladysmith. The results of the inquiry which is suggested by the Professor are, as a matter of fact, already available; I have published them in the critical table appended to my synoptical table of inoculation statistics. It was ascertained by a laborious inquiry conducted for me by Captain W. A. Ward, R.A.M.C., (1) with regard to the uninoculated officers, that the deaths from typhoid of at least ten uninoculated officers have been inadvertently omitted from the statistical reports; and (2) with regard to the inoculated officers, that of the two officers stated to have succumbed to typhoid, one was not inoculated with antityphoid vaccine, and the other died on the field of battle. I need not go again here into the labyrinth of facts which relate to the other statistical records which supply the basis for Professor Karl Pearson's criticisms. I have elsewhere set forth the more important of those facts.

I have only one word more to say with regard to Professor Karl Pearson's report. You "commend his conclusions to the attention of those who have hastily condemned the Advisory Board for its action in connexion with antityphoid inoculation." If before taking precipitate action in the direction of the abandonment of antityphoid inoculation the Advisory Board had furnished Professor Pearson with the full statistical materials, if it had conveyed to him a caution with regard to those statistical items which are known to be untrustworthy, and if, under such circumstances, it had taken his opinion on the question of the cogency of the statistical material, that opinion might justifiably have been pleaded in defence of the action taken by the Medical Advisory Board.

But the circumstance that his opinion was taken only when the necessity of reintroducing antityphoid inoculation was becoming apparent, and the circumstance that he was not supplied with the full statistical materials and that he was not cautioned with respect to those which had been shown to be untrustworthy, deprives his *ex post facto* opinion "that the results are such as would justify the suspension of antityphoid inoculation as a routine method" of all value from the point of view of the justification of the action of the Advisory Board. They cannot now hide behind Professor Pearson's petticoats.

I am content to leave it to the thoughtful to consider whether the future of antityphoid inoculation is safe in the hands of the present Medical Advisory Board.—I am, etc.,

London, W., Nov. 7th. A. E. WRIGHT.

THE DOOM OF SPECTACLES.

SIR,—Mr. Stephen Smith's claim to cure defects of vision by manipulation of the eye, and so to render unnecessary the use of spectacles, together with the sensational manner in which this claim was brought to the notice of the public is still, doubtless, within your recollection. It is not my purpose to discuss the ethics of his procedure, but to shed some light on the limitations of his methods.

Mr. Aitchison, the optician, challenged Mr. Smith to ameliorate the condition of six cases of uncomplicated myopia of medium degree, and in event of his successfully accomplishing this, promised to hand over the sum of £100 to any deserving charity. This challenge was accepted by the Secretary of the "Antivivisection Hospital," who stipulated that the test should include not only myopes but cases of hypermetropia and astigmatism. On the face of it, that is a reasonable request, but, on the other hand, it gives some clue to the scope of the procedure. The greater includes the less, and why, it may be pertinently asked, should there be any demur made to the request to ameliorate a portion, in view of Mr. Smith's claim to cure the whole. The answer lies in the calculation of averages. Myopia is a static condition in which no lessening of diffusion circles can take place other than by the patient "screwing up his eyes"—a manœuvre which would be readily detected. On the other hand, in hypermetropia and astigmatism much of the error may be rendered latent by improving the tone of the periscleral and endoscleral musculature. Now, as only a diminution of one-third of the error was asked for the inability to obtain that in myopia would be "drowned" by the improvement gained in the other classes.

Such a calculation, however, could be readily upset by restricting the improvement to each class, and on this basis the extension was agreed to.

The next step was the selection of suitable cases, and in this Mr. Aitchison naturally turned to me, his medical adviser; as it was purely a matter of business, I readily agreed to examine as many cases as was desired. I must make it clear, however, that I was not consulted regarding, nor did I acquiesce in, the publication of my name as referee, and the first intimation I had of it was from the papers. Personally I strongly deprecate the discussion of medical methods in the lay press, but the matter had gone too far, and the only way out of the difficulty that I could see was to formulate precise conditions at once and secure the transference of the whole matter to the proper arena of the medical press.

I then received from Mr. Smith a series of "unalterable stipulations" which clearly indicates the value of his process. They are too numerous and lengthy to reproduce "in extenso," but the following will suffice:

2. The myopes before treatment must be capable of being tested with the usual type, at the usual distance of six metres. In other words, their vision must be at least one-tenth.

5. In the hyperopic cases, the patients themselves shall be the sole judges of the results. That is, a statement that they are as comfortable when reading without glasses, as formerly with them, to be evidence of complete cure.

7. No patient to be eligible who is known to the parties of either side, and special pains to be taken that the respectability of the hypermetropes and astigmatic cases is such that their word may be accepted.

8. The astigmatic cases must not be specially selected cases. That is, not selected because the result of glasses is unusually satisfactory.

If only myopes with vision of one-tenth be taken, it will be found that the error is quite small (about $2\frac{1}{2}$ dioptres), as any one can readily ascertain for himself by rendering himself artificially myopic by holding convex lenses before his eye until $\frac{6}{60}$ becomes obscured. If such a degree is the highest "capable of being tested with the usual type," it would be interesting to know how Mr. Smith ascertains the visual acuity of the higher degrees?

The suggestion that patients shall be the "sole judges" is grotesque enough, but what are we to think of a mind which can accept "comfort when reading" as "evidence of complete cure"? On similar grounds a dose of opium cures malignant disease.

To balance the absence of medical examination, however, the greatest care is to be taken that the patients are "respectable," a process which is not facilitated by the stipulation that they are to be unknown to the parties on either side. The moral character of the myopes need not, however, be above suspicion. The suggestion that the astigmatic cases should not wear "unusually satisfactory" glasses, is distinctly naïve. If they are not correct they must be wrong; and, if so, it becomes an easier matter to demonstrate that they are better without them.

With this letter the matter, so far as I am concerned, is at an end.—I am, etc.,

London, E.C., Nov. 2nd. WM. ETTLES.

HOSPITAL REFORM.

SIR,—Every one will admit that the East London Medical Society well merits our congratulations on the spirited attack they have made against the abuses connected with the London Hospital. As past experience has proved, their success is, however, more than doubtful. No hospital has yet succeeded in excluding the undeserving, and at best it is only approximately possible. In the crowded out-patient departments there will always be found some who ought not to be there, and we cannot shut our eyes to the fact that for this overcrowding medical men holding club and contract appointments are to a considerable extent responsible.

The problem of providing medical attendance for the sick poor is extremely difficult, and the laity ought not to be too much blamed for their mistakes when medical men, beyond stating their own grievances, offer no adequate solution. In London and other large centres, there are millions living in households where the income is less than 25s. a week, and when high rents are paid, a fee to a private practitioner is practically impossible. Has any alternative been suggested by medical men, which is not more or less objectionable? In most districts a medical order is readily got from a relieving officer, but as every Poor-law guardian knows, this is the thin end of the wedge for procuring out-door relief

and the respectable poor will suffer much before they apply to the guardians. Nor can any one say that it is a satisfactory solution of the difficulty that the sick should be compelled to wait for hours in a crowded out-patient room, often badly ventilated and laden with the germs of disease, only to be seen perhaps by a nurse or a student. It is true they can have medicine and advice for sixpence or less, but the medicine and advice are necessarily no better than the sum paid for them. To clubs and dispensaries as at present constituted, there are also obvious objections.

In the rural districts the problem of medical attendance on the sick poor is quite as hard to solve as in crowded centres. When a family lives ten miles or more from a doctor and the earnings are less than £1 a week, an adequate fee is impossible. Hence the large number of uncertified deaths in the north of Scotland.

The longer I consider the question the more am I convinced that the only remedy is in the State giving free medical attendance, just as it has given free education. No argument was ever adduced for free education that could not be urged with still greater force for free medical attendance, and the cost would be far less than is generally supposed. When the Bill for free education was brought before Parliament, it was astonishing with what unanimity the principle was adopted. As regards medical attendance the trend is now in the same direction. Rate-supported hospitals are probably in the near future. The lot of the general practitioner is at present bad enough, but, unless we put our house in order, it will be vastly worse when hospitals are supported by the rates, and there will be the further disadvantage that with the increasing rush to hospitals there will be a still further loosening of those family ties that are the basis of all true prosperity in the State.—I am, etc.,

Greenwich, Nov. 6th. J. H. Keay.

THE PARLIAMENTARY REPRESENTATION OF GLASGOW AND ABERDEEN UNIVERSITIES.

Sir,—Entertaining as I do feelings of sincere respect for the good opinion of Dr. Phillips, I wish through you to inform him that, for some reason best known to the Association over which he presides, I had received, at the time I wrote to you a fortnight ago, no "official" information whatever such as I now understand was sent to other graduates of the twin Universities.

As regards the general question of the profession being more fully represented in Parliament, I am entirely at one with Dr. Phillips. But I hold that University representatives should be chosen not because they are medical men or even because they belong to a particular party, but on the broader and higher grounds of academical distinction or general position in the world of affairs.

Indeed, looking at the question from the selfish point of view I have indicated, I consider it bad tactics to insist on bringing forward a medical candidate mainly (I wish to be quite fair, and do not say simply) because he happens to be a doctor, so setting the whole body of electors belonging to the great professions of divinity and law at once against his return.—I am, etc.,

Dingwall, Nov. 11th. W. Bruce.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Fleet Surgeon S. F. Hamilton has been placed on the retired list with the rank of Deputy-Inspector-General, November 1st. He was appointed Surgeon, April 1st, 1873; Staff Surgeon, April 1st, 1885; and Fleet Surgeon, July 29th, 1889. He was Staff Surgeon of the *Dolphin* during the operations in the Eastern Soudan in 1884-5, receiving a medal with clasp and the Khedive's bronze star.

The following appointments have been made at the Admiralty: George R. MacMahon, M.B., B.A., and Arthur W. B. Livesay, Staff Surgeons, to the *Leander*, and for duty with torpedo-boat destroyers, November 1st; William N. L. Cherry, Surgeon, to the *Leander*, for the *Tyne*, and for duty with torpedo-boat destroyers, November 1st; Samuel H. Woods, M.D., B.A., Surgeon, to Malta Hospital, November 2nd; Palmer D. Ramsay, Surgeon, to the *Jason*, November 2nd; Thomas D. Halahan, M.D., F.R.C.S., B.A., Staff Surgeon, to the *Vivid*, November 1st; Wm. R. M. Young, Fleet Surgeon, to the *Bacchante*, November 11th; Hugh Clift, Staff Surgeon, to the *Venus*, November 7th; Samuel Conner, M.B., Surgeon, to the *Venerable*, undated; William J. Codrington, M.B., Surgeon, to the *Britannia*, additional, for the *Isis*, undated; Robert H. Atkins, Surgeon, to the *Fire Queen*, additional, for disposal, November 7th.

ROYAL ARMY MEDICAL CORPS.

The promotion of Major A. F. Tyrrell bears date October 25th, instead of as notified in the *Gazette* of August 5th (vide British Medical Journal of August 13th).

Captains F. R. Buswell and P. A. Symons, M.B., are promoted to be Majors, October 30th. Their previous commissions are dated: Surgeon-Lieutenant, January 30th, 1893; Surgeon-Captain, January 30th, 1896. They have no war record in the Army Lists.

Captain H. H. Norman, from temporary half pay, to be Captain, with precedence next below M. H. Babington, October 19th. Captain Norman was placed on half pay on account of ill health, July 25th.

Captain F. S. Walker, F.R.C.S.I., from temporary half pay, to be Captain, October 19th. He was placed on half pay on account of ill health, February 19th.

Exchange.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

Captain R.A.M.C., under orders to proceed to India in February next, is anxious to exchange to remain at home.—Address, with particulars, Z. Y. X., c.o. Holt and Co., 3, Whitehall Place.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE SCIENCE AND ART OF ADVERTISEMENT.

On the same page with the news from the East two whole columns of our esteemed contemporary the *Daily Graphic* were lately devoted to a dissertation upon bacteria of a very popular character; and though our suspicions were soon aroused, it was not until we had read to the end that we espied the abbreviation (advt.), with which it concludes. Odol, a dentifrice sold in a bottle of such form as to catch the eye, is the subject of the advertisement; and while we have no objection to the proprietors thereof exercising their ingenuity as best they may, we think it improper that the writer of the article, a gentleman holding a dental qualification from the Royal College of Surgeons, should put his name at the head of an article which is a mere trade advertisement more or less in disguise.

"INTOLERABLE INGRATITUDE."

Under this heading Mr. Malcolm McHardy has addressed us a letter which has already appeared in the *Times*. It gives details of a grievance under which he has recently suffered in being obliged to attend, at much personal inconvenience, at the Royal Courts of Justice, in order to give evidence in the case of a cabman named Buckley, who had been a patient of his at the Royal Eye Hospital. His complaint, briefly, is that he was compelled to attend as a common witness by subpoena served, with conduct money, on him on the front steps of the hospital, and that all his professional work for the week had been deranged by his enforced attendance at court from day to day. This he describes in somewhat strong language as "a gross prostitution of philanthropy, an altogether indecent assault, an intolerable, if not indefensible, ingratitude," etc. The judge before whom the case was being tried having listened to Mr. McHardy's protest, assured him of his sympathy, but pointed out that the cabman probably believed that the desired evidence would be very material to his case, and that the witness had now only to be sworn and answer the questions put to him; and this having been done, we think the incident might well have been considered closed. Mr. McHardy, however, wrote to the *Times* on the subject, and this drew forth a letter from Mr. George Brown, written, we think, with less than his usual taste, in which he contrasted the conduct of general practitioners in similar circumstances with that of the consulting West End surgeon, much to the latter's disadvantage. Consultants and general practitioners alike suffer inconvenience from enforced attendance in courts of law, and no advantage to our common profession is gained by unseemly disputes between them *coram publico*. Gratitude, it has been cynically said, consists largely of a lively expectation of benefits to come, and if this were so in the present instance, we fear it was destined to be disappointed at the hands of an unwilling witness.

EMPLOYERS' LIABILITY: CERTIFICATES FOR ACCIDENT INSURANCE COMPANY.

L. writes: A large property owner and employer of labour in my neighbourhood has all his men insured in an accident company, and, as a rule, I have to attend them in case of any accident, and though I may not be actually sent for by the agent of the landlord, I am called upon by him to fill up the medical certificate for the claim on the accident company. Is the agent legally liable for my fees for attendance on the injured workman? If not, is it not customary for such fees to be paid by the employer? If I cannot claim for attendance what would be a fair fee to charge for the certificate supplied to the employer through his agent?

*** The employer is not liable for any medical attendance upon injured workmen, and since the passing of the Act it is not, we believe, customary for such fees to be paid by the employer. The injured person is required to submit himself to medical examination at the request of, and at the expense of, the employer, but the injured person is not called upon to put in a medical certificate. If these certificates are demanded by the insurance company, they should be refused unless the company agrees to pay for them. The amount paid would be a matter for arrangement, as "L." could not recover from the employer in the event of a dispute, unless he could prove that the agent had authorized a charge to be made for these medical certificates at the expense of the employers. An arrangement should be made with the latter, or the certificate should be refused.

FEES FOR ATTENDANCE ON POLICE.

M. C. M.—There is no recognized scale of fees for attendance on members of the police force, most of the authorities arranging to pay the police surgeon by a fixed salary or by capitation fees on the contract system. Where fees for single visits are paid they are generally at the rate of 2s. 6d. for day visits, and this, we think, would be a suitable fee for our correspondent to charge for his attendance.

OBITUARY.

HERBERT WILLIAM ALLINGHAM, F.R.C.S.,

Senior Assistant Surgeon, St. George's Hospital.

The sudden death at Marseilles, on November 4th, of Mr. Herbert William Allingham, at the early age of 42, removes from the ranks of English surgery one of its most brilliant exponents and from many friends a man whose generosity and thoughtfulness for others they will never forget.

At the time of his death Mr. Allingham was Surgeon to His Majesty's Household, Surgeon in Ordinary to H.R.H. the Prince of Wales, Senior Assistant Surgeon and Lecturer on Operative Surgery to St. George's Hospital, Honorary Surgeon to King Edward VII Hospital for Officers, and to the Osborne Home for Officers. Amongst other appointments which he had held may be mentioned that of Surgeon to the Great Northern Hospital, Assistant Surgeon to St. Mark's Hospital, and Surgeon to the Surgical Aid Society.

He was the eldest son of Mr. William Allingham, F.R.C.S., and was born in 1862. His schooldays were spent at Chatham House, Ramsgate, and at University College School, London. At the latter institution he left no particular name for scholarship, but a high reputation for athletic prowess. This he increased at St. George's Hospital, where he was one of the most valued of an exceptionally powerful football team. At the Medical School, however, studies of a more serious nature appealed to Allingham in a way which the more purely academic pursuits of preliminary education never had. Anatomy in the dissecting room occupied his keenest attention, and partly, no doubt, owing to the wise promptings of his father, partly owing to the essentially practical bent of his own mind, he studied anatomy always with a view to the surgical application of the facts with which he was confronted. In the same way he seized with avidity upon all that his teachers could tell him or show him in physiology or anatomy, in medicine or in surgery, which appealed to him by having a practical bearing upon what he had already recognized as the aim and object of his life—the practice of surgery. The result was that Allingham, as a house-surgeon, made an impression upon all with whom he came into contact, that is still fresh in the minds of his contemporaries. He seemed already an expert, and a friend of those days was wont to speak of him as having been born "with a scalpel in his hand." It is not surprising that, when a little later the posts of Assistant-Surgeon to the Great Northern, and to St. Mark's Hospitals gave ample scope for practice, Allingham developed a skill and confidence in operating which is very rarely to be found in a man so young as he then was. He had, in an exceptional degree, the qualities most important for a successful operator. He was always perfectly cool, quick to decide, and extraordinarily quick to carry out. He was absolutely without fear in operating, but at the same time never lacked restraint or allowed his judgement to be warped by enthusiasm for a daring undertaking. The practical bearing of his mind prevented anything of this sort. His thought was always of what would actually be for the patient's actual advantage, and just as in life he detested ceremony and useless tattle, so in the operating theatre he had no sympathy with merely pretty operations or any steps but those that were of real benefit. In the same way he disliked a large number of instruments or many assistants, and believed in always achieving his ends by the simplest possible means. This simplicity, and his own natural facility, made Allingham an extremely rapid operator. He never appeared to hurry, yet his operations occupied an extraordinarily short space of time; time within which, however, nothing had been overlooked or improperly performed. His rapidity and simplicity of method gave an appearance of ease to any operation which he did. This was so much the case that any one not himself a surgeon would have believed the performance to be as easy as it looked, and such a man has been heard to remark at the close of a colotomy in a very fat subject which had taken Allingham less than ten minutes, "Well, I do not think much of that." If the operator had been half an hour manipulating the gut to make up his mind whether it was large or small, and had given vent to one or two platitudes in the meanwhile, no doubt the spectator would have been more impressed.

His contributions to medical literature were numerous. Perhaps the best known are the work on *Diseases of the Rectum*, originally written by his father, and the more recent work on *Operative Surgery*. In all his writings, as in his work, Allingham was essentially practical, simple, and modest.

As a man, Allingham had qualities resembling those which characterized his surgery. He had simple tastes and a warm disposition. He hated sham; and though he was invariably courteous to all, yet he was a man who liked and disliked strongly. To those whom he liked he let it be known by a helpfulness and a generosity which, however much he may desire it, it is rarely in the power of so young a man to show. He took the greatest interest in all with whom he worked, and had very great powers of judging a younger man's ability. Moreover, he used to form an exact idea of what such a man should do, and would think no trouble too great to secure his success along the line mapped out. Having given one man a helping hand in this way Allingham would turn his attention to another, and not a few of those who got their medical education at St. George's Hospital realize that with Allingham they have lost their earliest and best professional friend. He was unselfish, not only in the trouble he took for others, but also in the way in which he sought to make the least of troubles of his own. Thus it was only to a few intimates that it was known that last year he wounded his finger while operating upon a puzzling rectal condition in a patient who later showed unequivocal signs of an obstinate malady. The disease thus acquired, though made light of with characteristic courage, added to the terrible strain which domestic worry had imposed upon Allingham's crowded life. The tragic result of his complicated trials has removed one whose fine natural gifts and generous sympathetic nature leave in the hearts of his friends a tender memory that will never be effaced.

J. B.

BRANFORD EDWARDS, L.R.C.P.Lond., M.R.C.S.Eng.,

Consulting Surgeon, East Suffolk and Ipswich Hospital.

Mr. Branford Edwards, one of the oldest and most respected of the medical practitioners of Ipswich, has recently died, after a few days' illness from peritonitis, in his 60th year. He was the son of the late Mr. George Cordy Edwards, who also practised in Ipswich.

Mr. Branford Edwards commenced life as an engineer, but his mind turned to medical pursuits, and a little later he entered Guy's Hospital as a medical student, and eventually became House-Surgeon and Resident Accoucheur. He returned to his native town on resigning these posts and commenced practice with his father, having acquired in 1868 the diplomas of L.R.C.P.Lond. and M.R.C.S.Eng. He soon gained and held for over thirty-five years the high esteem of his professional brethren and the great regard of his patients.

For upwards of twenty-five years he was Honorary Surgeon to the East Suffolk and Ipswich Hospital, and at the time of his death was Consulting Surgeon to that institution. Outside his strictly professional duties he occupied an important place in the life of the town; for many years he was one of the most active members of its Scientific Society, and for quite twenty-five years he was associated with every important musical movement in the place. He was attracted by astronomy in particular and by art generally and antiquities. His modesty, geniality, and sterling character made him a highly-valued colleague and townsman. He was a member of the South Suffolk Division of the East Anglian Branch of the British Medical Association. His death is deeply mourned by a large circle of friends and fellow townsmen.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

The Vice-Chancellor has appointed Edwin Ray Lankester, M.A., Honorary Fellow of Exeter College, Director of the Natural History Museum, South Kensington, to be Romanes Lecturer for 1905.

Sir John Burdon Sanderson, Bart., D.M., F.R.S., Honorary Fellow of Magdalen College, late Regius Professor of Medicine, has been constituted a perpetual Delegate of the University Museum.

Thanks to the Oxford Division of the British Medical Association.

Convocation on November 8th passed a cordial vote of thanks to the Oxford Division of the British Medical Association for their gift of an installation of the electric light at the Pitt Rivers Museum in acknowledgement of the generous hospitality of the University during the meeting of the Association in July last. It was agreed to place a suitable record of the occasion in the museum.

UNIVERSITY OF CAMBRIDGE.

Mr. W. H. R. Rivers, M.A., M.D., St. John's, has been appointed a Manager of the Arnold Gerslenberg Studentship in Natural Science and Moral Philosophy.

Mr. J. C. Willis, Caius, Director of the Peradeniya Botanic Gardens, has been approved for the degree of Doctor of Science.

The following have been appointed Examiners in State Medicine: Mr. J. E. Purvis, Dr. Nuttall, F.R.S., Dr. Tatham, Dr. Lane Notter, and Dr. Sweeting.

The following have been appointed Examiners in Tropical Medicine and Hygiene: Dr. Nuttall, F.R.S., Sir Patrick Manson, F.R.S., and Major Ronald Ross, F.R.S.

The Master of Gonville and Caius (Dr. Keynes) and Mr. A. E. Shipley, F.R.S., have been elected members of the Council of the Senate.

UNIVERSITY OF GLASGOW.

AUTUMN GRADUATION CEREMONY.

THE usual autumn graduation ceremony at Glasgow University was held on the afternoon of November 3rd in the Bute Hall. Principal Story presided, and there was a large attendance of the public and of the students. The latter, unfortunately, behaved in a more than usually boisterous manner. The following medical degrees were conferred:

M.D.—*H. E. Brown, *E. P. Cathcart, **L. Findlay, **J. D. Lickley, **A. Love, **M. Macdonald, **W. L. Thomson, Daisy A. Bennett (Mrs. M'Gregor), A. Binning, J. Crawford, J. Divine, A. Donald, W. W. Fyfe, E. W. R. Jones, F. J. Lochrane, D. S. MacColl, J. Paton, A. T. Ross, R. Taylor, C. P. Thomson, W. B. Thomson, J. Wilson, J. J. T. Young.

M.B., Ch.B.—**D. J. M'Leish, Annie M. Black, D. L. Graham, D. J. G. Grant, Margaret Hardy, R. T. Leiper, R. C. M'Guire, Jane H. M'Ilroy, M.A., B.Sc., C. G. Mackay, R. Macleod, D. S. Richmond, J. W. Richmond, R. T. C. Robertson, J. Stewart, J. Unsworth, Janet G. Waddell, G. Wilson.

* With honours. ** With commendation.

UNIVERSITY OF LONDON.

UNIVERSITIES' MISSION TO CENTRAL AFRICA.

THE Universities' Mission to Central Africa, which owes its existence to Dr. Livingstone, has not hitherto possessed an organization in the University of London, although that University has given to the mission two bishops, one of whom—Bishop J. E. Hine, M.D.—is now Bishop of Zanzibar. A London University Committee has now been formed, with Sir Thomas Stevenson, M.D., F.R.C.P., as chairman, and among other medical members are Dr. J. H. E. Brock, Dr. Vawdrey Lush, Dr. E. Symes-Thompson, and Mrs. Scharlieb, M.D. Further information can be obtained from Mr. E. C. Hudson, B.A., 140, Friern Road, Dulwich, S.E., or Mr. F. H. C. Brock, B.A., 24, Dartmouth Park Hill, N.W.

ROYAL UNIVERSITY OF IRELAND.

THE Dublin *Gazette* announces that the King on the recommendation of the Lord Lieutenant has issued his Royal Warrant appointing Sir William Thomson, C.B., F.R.C.S.I.; Lord Killanin, and Dr. B. C. Windle, F.R.S., the new President of Queen's College, Co. Cork, to be members of the Senate of the Royal University of Ireland.

CONJOINT BOARD IN SCOTLAND.

THE examinations concluded on November 2nd have resulted in the success of the following candidates:

Second Examination.—Ethel A. Orchard, A. G. Jenner, O. D Gunasékara, C. Nyhan, K. J. L. Bannerman, M. A. Vijayakar, W. R. Ellis, N. McLeod, L. Murphy, H. Millar, E. T. Evans, Ada C. Boylette, T. A. Gregg, Mary D. Hancock, J. B. Engineer, C. I. McFarlane.

Third Examination.—Nena B. Ievers, H. R. Morehead, D. Kennedy, G. H. Powell, L. Patchett, C. C. Fitzgerald, A. H. Bloxsome, P. R. Eskell, J. Clarke, R. N. Coorlawala (with distinction), W. C. Mann, T. M. R. Waddell, J. L. Power, K. W. Dani, N. McLeod, G. W. Meade, D. T. H. Croly, T. E. Flitcroft, E. P. Dawes, J. P. Bamboat, L. H. Gill, J. S. Macdonald, R. R. Chambal.

Final Examination.—J. van S. Taylor, H. L. Ludovici, J. R. Byers, S. Evans, W. Murray, J. B. C. Mulligan, J. F. O'Mahony, E. T. Curran, T. Cassels, J. P. Barry, G. G. Bartholomew, C. T. Möller, J. M. Moriarty, S. M. Lyon, J. R. Lawther, D. B. Mandhle, M. P. Kerrawalla, C. Garner, Lillian Mary Grandlin, J. Harvie, J. P. Tolmie, H. McKay, A. C. Videl, R. N. Coorlawala, R. W. Simpson, J. J. Egan, M. E. Su6, R. H. Harris, H. Bentley, W. Dick, J. D. Staley, T. A. W. Walker, E. H. Freeze, T. Archdeacon, J. W. McEwan, W. Longley, K. V. Amin, J. B. Moffatt.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE following gentlemen passed the Preliminary Science Examination in Chemistry of the Royal College of Surgeons of England at the quarterly meeting of the Examiners for the licence in Dental Surgery:

E. L. Brown, G. L. Davies, D. G. Gibb, S. F. Glassington, R. A. Glindon, G. F. C. Harvey, J. P. Leeming, A. Pusey, H. V. Sharp, and H. M. Shefford.

HOSPITAL AND DISPENSARY MANAGEMENT.

HOSPITAL REFORM.

A. W. writes that at a provincial hospital the Committee has suggested that the following rule should be adopted:

All in-patient recommendations should be countersigned by the medical man in attendance as a safeguard against the admission of unsuitable cases.

The rules of the hospital prohibit the admission of chronic heart cases, phthisis, syphilis, etc. It was thought that, should the case requiring an in-patient recommendation not be sufficiently ill to be actually under medical supervision, such a case should receive an out-patient letter and its merits be decided by the house-surgeon. We are asked whether such a rule is in force at any other institution, and whether it is likely that its adoption would be at all detrimental to the interests of the hospital owing to subscribers objecting to not having an entirely free hand in their recommendations.

We have consulted Dr. Michael Beverley, the Chairman of the Hospitals Committee of the British Medical Association, and he informs us that at the Norfolk and Norwich Hospital the forms of recommendation were altered some years since in such a manner as to require the signature of a medical man. He adds that this has been found of great use and to be the means of preventing unsuitable cases being sent to the hospital. It was instituted after a sad tragedy in the hospital—the murder of some children by a man who came in for a slight surgical complaint, but was insane. The governors and subscribers have never objected to the present form of letter; on the contrary, they are glad to have the endorsement of the medical man. So long as the system of recommendation by subscriber's letter remains in force at a hospital such a medical endorsement presents many advantages, and is a safeguard against abuse.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

ENGLISH URBAN MORTALITY IN THE THIRD QUARTER OF 1904.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

THE vital statistics of the seventy-six large towns dealt with in the Registrar-General's weekly returns are summarized in the accompanying table. During the three months ending September last, 110,541 births were registered in these towns, equal to an annual rate of 29.0 per 1,000 of their aggregate population, estimated at 15,271,287 persons in the middle of the year; in the corresponding quarter of the preceding year the birth-rate had been 29.8 per 1,000. In London the rate last quarter was 27.6 per 1,000, while it averaged 29.6 in the seventy-five other large towns, and ranged from 16.8 in Bournemouth, 18.8 in Hastings, 19.3 in Halifax, 21.6 in Hornsey, 21.8 in Bradford, 22.2 in Northampton, 22.9 in Rochdale, and 23.5 in Bury, to 34.1 in Sunderland, 34.5 in Middlesbrough, 34.6 in South Shields and in Tynemouth, 35.7 in St. Helens, 36.6 in Wigan, 36.7 in Merthyr Tydfil, and 40.0 in Rhondda.

During the quarter under notice 66,504 deaths were registered in these towns, corresponding to an annual rate of 17.5 per 1,000 living, against a rate of 15.1 in the third quarter of last year. In London the rate of mortality was 16.4 per 1,000; in the seventy-five other large towns it averaged 17.9 per 1,000, and ranged from 7.7 in Hornsey, 9.2 in King's Norton, 10.6 in Handsworth (Staffs), 10.9 in Smethwick, 12.0 in Willesden, 12.4 in Bournemouth and in Halifax, and 12.7 in Hastings, to 21.9 in Stockport, 22.0 in Rhondda, 22.8 in Hanley, 23.6 in St. Helens, 24.0 in Wigan, and in Salford, 24.2 in Bootle, and 26.0 in Liverpool.

The 66,504 deaths from all causes in the seventy-six towns last quarter included 19,119 which were referred to the principal infectious diseases; of these, 48 resulted from small-pox, 1,449 from measles, 377 from scarlet fever, 614 from diphtheria, 1,003 from whooping-cough, 378 from "fever" (principally enteric), and 15,259 from diarrhœa. The death-rate from these diseases, which had been 2.66 per 1,000 in the third quarter of the preceding year, increased to 5.02 per 1,000 last quarter. In London this death-rate was equal to 4.24 per 1,000, while it averaged 5.37 per 1,000 in the seventy-five large provincial towns, among which the rates ranged from 1.02 in Kings Norton, 1.15 in Hastings, 1.17 in Bournemouth, 1.44 in Hornsey, 1.74 in West Hartlepool, 1.94 in Handsworth (Staffs.), and 1.97 in Devonport, to 7.94 in Salford, 8.17 in West Ham, 8.22 in Hanley, 8.23 in Birkenhead, 8.94 in Hull, 10.06 in Bootle, and 11.04 in Liverpool. The 48 fatal cases of small-pox registered last quarter included 9 belonging to Stockport, 7 to Gateshead, 6 to Newcastle-on-Tyne, 5 to London, 4 to Oldham, and 3 each to Warrington, Manchester, and Salford. The 1,449 deaths from measles were equal to an annual rate of 0.38 per 1,000; in London the death-rate from this disease was 0.32 per 1,000; while it averaged 0.40 per 1,000 in the seventy-five other large towns, among which measles was proportionally most fatal in Hanley, Grimsby, Birkenhead, Liverpool, Bootle, St. Helens, Salford, and Huddersfield. The 377 fatal cases of scarlet fever corresponded to an annual rate of 0.10 per 1,000; in London the scarlet fever death-rate was only 0.08 per 1,000, while in the seventy-five large provincial towns it averaged 0.11 per 1,000, being highest in Northampton, Hanley, Aston Manor, Warrington, Salford, Rochdale, Barrow-in-Furness and York. The 614 deaths from diphtheria were equal to an annual rate of 0.16 per 1,000: in London the death-rate from this disease was 0.13 per 1,000, while it averaged 0.18 in the seventy-five other large towns, among which diphtheria was proportionally most fatal in Tottenham, Portsmouth, Hanley, Salford, Oldham, Bradford, and West Hartlepool. The 1,003 fatal cases of whooping-cough showed an annual rate of 0.26 per 1,000; in London the rate of mortality from whooping-cough was 0.21 per 1,000, while it averaged 0.29 in the seventy-five other large provincial towns, among which the highest death-rates from this disease were recorded in Great Yarmouth, Norwich, Burton-on-Trent, Grimsby, Birkenhead, Warrington, and Blackburn. The 378 deaths referred to different forms of "fever" were equal to an annual rate of 0.10 per 1,000: in London the "fever" death-rate was 0.08 per 1,000, while in the seventy-five other large towns the rate averaged 0.11 per 1,000, the highest rates being recorded in Norwich, Nottingham, St. Helens, Salford, Rotherham, Hull, Middlesbrough, and Rhondda. The 15,259 deaths from diarrhœa corresponded to an annual rate of 4.01 per 1,000: in London the rate of mortality from this disease was 3.42 per 1,000; while it averaged 4.26 in the seventy-five large provincial towns, among which diarrhœa was proportionally most fatal in West Ham, East Ham, Leyton, Hanley, Aston Manor, Stockport, Liverpool, Bootle, Burnley, York, and Hull.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 229 per 1,000 last quarter, against 159 in the corresponding period of the preceding year. In London the rate of infant mortality was 211 per 1,000, while it averaged 236 per 1,000 in the seventy-five other large towns, and ranged from 101 in King's Norton, 110 in Hornsey, 112 in Halifax, 122 in Hastings, 125 in Bournemouth, 128 in West Hartlepool, 129 in South Shields, and 130 in Burton-on-Trent, to 298 in Rhondda, 305 in Burnley, 306 in Bootle, 316 in York, 320 in Liverpool, 321 in Aston Manor, 323 in Hanley, and 339 in Stockport.

The causes of 579, or 0.9 per cent., of the deaths registered in the

Analysis of the Vital Statistics of Seventy-Six of the Largest English Towns during the Third Quarter of 1904.

Towns.	Estimated Population middle of 1904.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Infectious Diseases.	Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Fever.	Diarrhoea.	Deaths of Children under one year of age to 1,000 Births.	Rate per cent. of Uncertified Deaths.
76 Towns	15,271,287	110,541	66,504	29.0	17.5	5.02	19,119	48	1,440	377	614	1,003	378	15,259	229	0.9
75 Provincial Towns	10,622,337	78,507	47,518	29.6	17.9	5.37	14,209	43	1,070	290	464	763	288	11,291	236	1.1
London	4,648,950	32,034	18,986	27.6	16.4	4.24	4,910	5	370	87	150	240	90	3,968	211	0.2
Croydon	144,419	892	491	24.8	13.6	2.82	101	—	21	1	6	2	2	79	211	—
Willesden	132,566	1,052	396	31.8	12.0	4.02	133	—	1	—	2	2	2	126	184	—
Hornsey	81,221	437	155	21.6	7.7	1.44	29	—	—	—	1	3	1	24	110	—
Tottenham	112,981	920	443	32.7	15.7	5.73	161	1	3	2	13	3	3	136	233	—
West Ham	288,424	2,378	1,402	52.4	19.5	8.17	588	—	23	5	6	18	8	528	282	0.1
East Ham	116,902	901	475	30.9	16.3	7.58	221	—	17	2	6	3	3	190	277	0.2
Leyton	110,844	810	449	29.3	16.2	7.21	199	—	9	1	5	8	2	174	286	0.7
Walthamstow	111,282	882	439	31.8	15.8	6.99	194	—	11	3	5	7	2	166	264	—
Hastings	66,503	311	211	18.8	12.7	1.15	19	—	1	—	1	1	1	15	122	0.5
Brighton	126,286	747	463	23.7	14.7	2.07	65	—	16	1	3	2	—	43	166	0.4
Portsmouth	198,038	1,455	818	29.5	16.6	4.47	221	—	1	3	23	8	10	176	193	0.4
Bournemouth	64,645	271	200	16.8	12.4	1.17	19	—	1	—	2	—	—	16	125	0.5
Southampton	112,500	745	387	26.6	13.8	3.11	87	—	—	1	1	7	—	78	148	—
Reading	76,373	515	261	27.0	14.8	5.24	100	—	1	—	4	1	1	93	225	1.1
Northampton	91,146	504	321	22.2	14.1	4.05	92	—	—	12	1	—	2	77	200	1.9
Ipswich	69,805	459	294	26.4	16.9	3.73	65	—	2	—	1	3	3	56	218	1.7
Great Yarmouth	52,099	366	245	28.2	18.9	4.54	59	—	—	1	—	13	—	45	287	0.4
Norwich	115,538	830	493	28.8	17.1	5.09	147	—	3	1	2	18	7	116	234	0.9
Plymouth	114,003	704	538	24.8	18.9	4.66	132	—	22	5	3	3	3	96	261	0.4
Devonport	75,334	522	251	27.8	13.4	1.97	37	—	—	1	2	1	2	31	159	0.4
Bristol	343,204	2,260	1,140	26.4	13.3	2.30	197	—	4	4	12	32	7	138	167	0.5
Hanley	63,932	536	364	33.6	22.8	8.22	131	—	14	7	10	—	—	100	323	0.8
Burton-on-Trent	51,934	347	191	26.8	14.8	3.33	43	—	—	—	1	26	—	16	130	1.0
Wolverhampton	98,194	673	406	27.5	16.6	5.03	143	—	—	1	3	4	3	132	253	0.5
Walsall	91,432	737	429	32.3	18.8	6.32	144	—	12	3	5	5	3	116	248	0.5
Handsworth	59,634	363	157	24.4	10.6	1.94	29	—	—	2	2	1	—	24	152	0.6
West Bromwich	67,186	548	240	32.7	14.3	3.82	64	—	3	1	4	5	—	51	181	0.8
Birmingham	537,965	4,162	2,588	31.0	19.3	6.77	908	—	25	12	18	62	4	787	274	1.7
Kings Norton	66,667	503	153	30.3	9.2	1.02	17	—	—	—	2	3	—	12	101	1.3
Smethwick	60,691	481	165	31.8	10.9	3.18	48	—	—	1	1	5	—	41	175	3.0
Aston Manor	80,363	585	232	29.2	17.6	7.24	145	—	—	3	—	4	2	134	321	2.0
Coventry	73,904	544	250	29.5	13.6	3.20	59	1	—	2	6	7	—	43	164	0.8
Leicester	224,186	1,539	830	27.5	14.8	4.86	272	—	5	—	4	53	5	245	243	0.8
Grimsby	66,958	528	293	31.6	17.6	6.89	115	—	16	—	4	12	3	80	263	1.4
Nottingham	248,811	1,736	1,116	28.0	18.0	5.97	371	—	6	4	17	20	16	308	268	0.9
Derby	120,449	824	406	27.4	13.5	2.93	68	—	5	2	9	4	1	67	159	—
Stockport	97,008	623	530	25.8	21.9	7.60	184	9	15	2	2	3	4	149	359	3.2
Birkenhead	114,814	960	618	33.5	21.6	8.23	236	—	53	5	4	23	1	150	295	0.3
Wallasey	60,354	400	218	26.6	14.5	4.25	64	—	4	2	1	5	2	50	233	0.5
Liverpool	723,430	6,089	4,856	33.8	26.9	11.04	1,569	1	221	34	48	54	22	1,669	320	2.2
Bootle	61,755	507	373	32.9	24.2	10.96	169	—	36	1	3	7	—	122	306	4.0
St. Helens	88,545	789	521	35.7	23.6	7.44	164	—	22	3	—	9	5	125	256	2.9
Wigan	62,800	573	375	36.6	24.0	6.31	99	—	1	1	—	6	1	90	284	0.8
Warrington	67,331	550	326	32.8	19.4	7.33	123	3	1	12	—	9	—	98	224	4.0
Bolton	175,744	1,166	701	26.6	16.0	3.35	147	—	—	1	8	7	6	125	212	0.9
Bury	58,450	342	221	23.5	15.2	2.96	43	1	—	1	1	2	1	37	164	1.4
Manchester	557,938	4,467	2,905	32.1	20.9	5.81	809	3	83	21	13	49	17	623	247	1.5
Salford	228,983	1,846	1,371	32.3	24.0	7.94	453	3	70	14	28	25	12	361	297	0.1
Oldham	139,497	859	579	24.7	16.6	3.19	111	4	22	2	14	7	5	57	170	0.3
Rochdale	85,601	488	337	22.9	15.8	2.76	59	1	1	5	5	3	2	42	182	1.5
Burnley	100,569	694	507	27.7	20.2	7.18	180	—	10	2	1	8	4	155	305	0.6
Blackburn	132,134	811	449	24.6	13.6	2.73	90	—	11	1	2	21	—	55	184	2.2
Preston	115,055	753	474	26.2	16.5	4.21	121	2	1	2	4	6	3	103	268	3.0
Barrow-in-Furness	59,654	483	217	32.5	14.6	2.82	42	—	—	6	2	7	1	26	147	3.7
Huddersfield	94,925	582	403	24.6	17.0	4.05	96	—	39	2	3	10	2	40	179	—
Halifax	107,580	517	333	19.3	12.4	2.08	56	—	19	5	4	2	2	24	112	2.7
Bradford	285,089	1,550	1,251	21.8	17.6	4.54	322	—	53	7	44	16	8	194	240	0.6
Leeds	450,142	3,144	1,989	28.0	17.7	4.69	526	—	68	17	6	26	19	390	236	0.4
Sheffield	432,940	3,431	1,956	31.8	18.1	5.29	570	—	3	17	10	34	15	491	234	1.4
Rotherham	58,498	479	236	32.8	16.2	5.13	75	—	4	1	1	4	4	61	228	2.1
York	81,268	608	389	30.0	19.2	7.16	145	—	2	8	2	3	3	127	316	—
Hull	253,865	2,079	1,359	32.8	21.5	8.94	565	—	51	1	17	15	14	467	289	0.7
Middlesbrough	96,684	831	472	34.5	19.6	4.68	120	—	6	3	3	4	5	99	201	1.3
Stockton-on-Tees	52,192	427	203	32.8	15.6	2.99	39	1	—	1	5	2	2	28	157	1.0
West Hartlepool	69,251	564	222	32.7	12.9	1.74	30	—	1	—	6	—	2	19	128	0.5
Sunderland	151,157	1,285	763	34.1	18.7	4.37	165	—	8	1	5	16	3	132	209	1.7
South Shields	107,334	927	405	34.6	15.1	2.19	59	—	6	2	2	12	3	34	129	5.7
Gateshead	118,067	966	526	32.8	17.9	4.58	135	7	11	4	1	3	3	111	211	4.6
Newcastle-on-Tyne	225,362	1,697	1,042	30.2	18.5	2.73	153	6	11	7	10	18	2	99	176	0.4
Tynemouth	53,060	458	262	34.6	19.8	3.41	45	—	2	—	2	3	1	37	207	1.9
Newport (Mon.)	71,543	593	280	33.2	10.2	3.64	65	—	—	2	—	3	2	58	204	—
Cardiff	176,313	1,320	626	30.0	14.2	3.09	136	—	5	4	4	13	5	105	170	0.8
Rhondda	122,310	1,221	671	40.0	22.0	7.43	227	—	23	5	4	12	8	175	298	0.4
Merthyr Tydfil	72,745	665	347	36.7	19.1	4.43	80	—	—	1	5	3	2	69	251	1.2
Swansea	95,931	746	424	31.2	17.7	3.09	74	—	—	4	7	7	1	55	202	1.9

seventy-six towns last quarter were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Croydon, Willesden, Hornsey, Tottenham, Walthamstow, Southampton, Derby, Rudderfield, York, and Newport (Mon.); the largest proportions of uncertified deaths were registered in Smethwick, Bootle, Warrington, Preston, Barrow-in-Furness, South Shields, and Gateshead.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

THE Registrar-General has just issued his return relating to the births and deaths in the third quarter of this year, and to the marriages during the three months ending June last. The marriage-rate during that period was equal to 17.0 per 1,000 of the population, being slightly in excess of the decennial average rate.

The births registered in England and Wales during the quarter ending September last numbered 237,282 and were equal to an annual rate of 27.9 per 1,000 of the population, estimated by the Registrar-General at 33,763,434 persons in the middle of the year. In the third quarters of the ten preceding years the rate had averaged 29.1 per 1,000. The birth-rates last quarter in the several counties ranged from 21.3 in Herefordshire, 21.9 in Sussex, 22.3 in Cornwall, 22.9 in Devonshire, 23.2 in Carnarvonshire, and 23.3 in Northamptonshire, to 31.9 in Northumberland, 32.2 in Staffordshire, 32.3 in Nottinghamshire, 34.3 in Durham and in Glamorganshire, and 35.5 in Monmouthshire. In seventy-six of the largest English towns, including London, the birth-rate averaged 29.0 per 1,000, being 1.1 per 1,000 in excess of the general English birth-rate. In London the rate was 27.6 per 1,000, while it averaged 29.6 per 1,000 in the seventy-five large provincial towns, and ranged from 16.8 in Bournemouth, 18.8 in Hastings, 19.3 in Halifax, and 21.6 in Hornsey, to 34.6 in South Shields and in Tynemouth, 35.7 in St. Helens, 36.6 in Wigan, 36.7 in Merthyr Tydfil, and 40.0 in Rhondda.

The births registered during the quarter under notice were 103,771 in excess of the deaths; this represents the natural increase of the popuation during that period. From returns issued by the Board of Trade it appears that 158,477 emigrants embarked during the three months for places outside Europe from the various ports of the United Kingdom at which emigration officers are stationed. Of these 158,477 emigrants, 62,910 were English, 12,779 were Scottish, and 24,174 Irish, while 58,614 others were of foreign nationality. Compared with the averages in the corresponding quarters of the three preceding years the proportion of emigrants in the population of the several parts of the United Kingdom showed an increase of 22.6 per cent. among English, and 17.6 per cent. among Scottish, while the Irish emigrants showed the exceptionally large increase of 81.1 per cent.

During the third quarter of the year the deaths of 133,511 persons were registered, equal to an annual rate of 15.7 per 1,000 persons living; this rate was 0.7 per 1.000 below the mean rate in the corresponding periods of the ten preceding years. The lowest county death-rates last quarter were 11.3 in Somersetshire, 11.4 in Oxfordshire, 11.6 in Wiltshire and in Dorsetshire, and 12.0 in Worcestershire; the highest rates were 16.8 in Essex and in the West Riding of Yorkshire, 17.2 in Warwickshire and in Durham, 18.1 in Northumberland, 18.7 in Lancashire, and 19.0 in the East Riding of Yorkshire. In seventy-six of the largest towns, with an aggregate population of more than fifteen millions, the mean rate of mortality was 17.5 per 1,000; in 142 smaller towns, containing in the aggregate upwards of four and a-half millions of persons, the death-rate was 15.4 per 1,000; while in the remaining, and chiefly rural, parts of England and Wales, the rate was 13.9 per 1,000. In London the death-rate was 16.4 per 1,000, while it averaged 17.9 in the seventy-five other large towns, among which the rates ranged from 7.7 in Hornsey, 9.2 in King's Norton, 10.6 in Handsworth (Staffs), 10.9 in Smethwick, and 12.0 in Willesden, to 22.8 in Hanley, 23.6 in St. Helens, 24.0 in Wigan and in Salford, 24.2 in Bootle and 26.9 in Liverpool.

The 133,511 deaths from all causes in England and Wales last quarter included 30,717 which were referred to the principal infectious diseases; of these 23,235 were attributed to diarrhoea, 2,373 to measles, 2,140 to whooping-cough, 1,217 to diphtheria, 851 to "fever" (principally enteric), 767 to scarlet fever, and 134 to small-pox. The rate of mortality from diarrhoea was in excess of the decennial average, that from measles showed no variation from the average, while from each of the other diseases specified the rate was lower than the average for the ten preceding third quarters. Of the 134 fatal cases of small-pox 91 occurred among persons resident in one or other of the 218 towns, including 27 belonging to Dewsbury, 9 to Stockport, 7 to Gateshead, 6 to Newcastle-on-Tyne, and 5 to London; of the deaths from this disease occurring outside the large towns, 11 belonged to Thornhill Urban District, and 11 to Ravensthorpe Urban District.

The rate of infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 190 per 1,000, or 4 per 1,000 more than the average. In the several counties the rates of infant mortality ranged from 78 in Wiltshire, 80 in Somersetshire, 82 in Dorsetshire, 84 in Herefordshire, 80 in Cornwall, and 98 in Shropshire, to 212 in Nottinghamshire, 229 in Middlesex, 233 in Warwickshire and in Lancashire, 246 in Essex, and 258 in the East Riding of Yorkshire. In the seventy-six large towns the mean rate was 229 per 1,000; in London the proportion was equal to 211 per 1,000, while it averaged 236 in the seventy-five other large towns, and ranged from 101 in King's Norton, 110 in Hornsey, 112 in Halifax, 122 in Hastings, and 125 in Bournemouth, to 306 in Bootle, 316 in York, 320 in Liverpool, 321 in Aston Manor, 323 in Hanley, and 339 in Stockport.

The mortality in England and Wales during the three months under notice among persons aged between 1 and 60 years was equal to an annual rate of 7.2 per 1,000 of the population estimated to be living at this group of ages, and was 0.6 per 1,000 below the mean rate in the ten preceding third quarters. In the seventy-six large towns the death-rate at this group of ages averaged 8.1 per 1,000; in London this death-rate was 7.8 per 1,000, while among the seventy-five other large towns the rates ranged upwards to 10.7 in Newcastle-on-Tyne, 10.9 in Wigan, 11.5 in Bootle, 11.7 in Salford, 12.3 in St. Helens, and 13.8 in Liverpool.

Among persons aged 60 years and upwards the death-rate last quarter was equal to 53.1 per 1,000 of the estimated population at this age-period. In the seventy-six towns the death-rate at this age-group averaged 55.5 per 1,000; in London the rate was 51.9 per 1,000, and in the seventy-five large provincial towns the rates ranged upwards to 70.5 in Bootle, 70.6 in Rochdale, 70.9 in Burton-on-Trent, 71.5 in Salford, 72.3 in Warrington, and 73.7 in Wigan.

The mean temperature of the air during last quarter was slightly above the average in most districts; the highest shade reading of the thermometer was 91° in London, and the lowest reading 32.2° at Wakefield. The amount of rainfall measured in London during the quarter was nearly 5.0 in., or about 72 per cent. of the average amount. The duration of bright sunshine in London during the quarter was 633 hours, which was slightly less than half the possible amount, but 165 hours in excess of the average.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,774 births and 4,372 deaths were registered during the week ending Saturday last, November 5th. The annual rate of mortality in these towns, which had been 15.2, 15.9, and 15.0 per 1,000 in the three preceding weeks, further declined last week to 14.9 per 1,000. The rates in the several towns ranged from 5.8 in Croydon, 6.4 in Hornsey, 7.0 in Walthamstow and in Barrow-in-Furness, 7.9 in Merthyr Tydfil, 9.5 in Smethwick, and 9.6 in Reading, to 20.0 in Liverpool, 20.2 in West Bromwich, 20.5 in Rotherham, 21.6 in Middlesbrough and in Tynemouth, 21.8 in St. Helens, 22.0 in Stockton-on-Tees, and 23.8 in South Shields. In London the rate of mortality was 14.9 per 1,000, which was also the average rate in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.5 per 1,000 in the seventy-six towns; in London this death-rate was equal to 0.8 per 1,000, while among the seventy five large provincial towns the death-rates from the principal infectious diseases ranged upwards to 3.2 in Wolverhampton, 3.3 in Liverpool, 3.4 in Oldham, 3.9 in Salford, 4.1 in Burnley, 5.4 in Middlesbrough, 6.2 in Grimsby, and 8.0 in Stockton-on-Tees. Measles caused a death-rate of 1.3 in East Ham, 1.6 in Burnley, 1.7 in Bootle, 2.1 in Liverpool, 2.2 in Middlesbrough, 2.9 in Tynemouth, 4.0 in Stockton-on-Tees, and 5.5 in Grimsby; scarlet fever of 1.1 in Northampton, Wolverhampton, and Huddersfield, 1.3 in York, and 1.6 in West Bromwich; diphtheria of 1.1 in Portsmouth, 1.5 in Bradford and in West Hartlepool, 1.7 in Derby, 1.9 in Hornsey, and 2.0 in Stockton-on-Tees; whooping-cough of 1.1 in Oldham, 1.4 in Sunderland, and 1.5 in South Shields; "fever" of 1.2 in Rochdale; and diarrhoea of 1.4 in Merthyr Tydfil, 1.6 in Hanley and in Middlesbrough, 1.7 in Walsall, 1.8 in Preston, 1.9 in Oldham, and 2.1 in Burnley. One fatal case of small-pox was registered last week in Halifax and 1 in Leeds, but none in any other of the seventy-six large towns, and only 1 small-pox patient remained under treatment at the end of last week in the Metropolitan Asylums Hospitals. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 2,516, 2,687, and 2,725 at the end of the three preceding weeks, had further risen to 2,782 at the end of last week; 296 new cases were admitted during the week, against 377, 389, and 305 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, November 5th, 881 births and 588 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 15.8, 16.5, and 16.7 per 1,000 in the three preceding weeks, further rose last week to 17.8 per 1,000, and was 2.9 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 13.6 in Leith and 14.4 in Dundee, to 21.1 in Paisley and 21.7 in Greenock. The death-rate from the principal infectious diseases averaged 1.8 per 1,000 in these towns, the highest rates being recorded in Edinburgh and Aberdeen. The 284 deaths registered in Glasgow included 3 which were referred to diphtheria, 12 to whooping-cough, and 10 to diarrhoea. Two fatal cases of diphtheria, 4 of whooping-cough, and 5 of diarrhoea were recorded in Edinburgh. Two deaths from measles and 2 from diarrhoea occurred in Dundee; and 7 from measles and 4 from diarrhoea in Aberdeen.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, November 5th 551 births and 342 deaths were registered in six of the principal Irish towns, against 502 births and 352 deaths in the preceding period. The mean annual death-rate of these towns, which had been 16.8, 17.6, and 21.8 per 1,000 in the three preceding weeks, fell to 18.3 per 1,000 in the week under notice, this figure being 3.4 per 1,000 higher than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 10.1 in Londonderry and 15.6 in Waterford to 22.3 in Dublin and 25.3 in Cork. The zymotic death-rate during the same period and in the same six Irish towns averaged 0.9 per 1,000, or 0.7 lower than during the preceding period, the highest figure—2.0—being registered in Belfast; while Londonderry, Limerick, and Waterford recorded no deaths under this heading at all. No deaths were registered in any part of Ireland from small-pox, diphtheria, typhus, or simple continued fever. The number of cases of diphtheria was small, but those from measles rose to 12, being equally distributed between Dublin and Belfast. Diarrhoeal diseases caused 12 deaths in all.

VACCINATION OFFICERS' LISTS.

VIATOR asks whether a vaccination officer is bound to send the public vaccinator a monthly form "H," or only when there are names of children to be vaccinated?

*** The vaccination officer "shall keep the birth lists examined from week to week;" if he has no certificate accounting for any child, when the child is 4 months and 7 days old, "he shall proceed to make personal inquiries." If he can find no evidence of vaccination, but the child is still in the district, he "shall include the name and home of the child in a list which he shall send to the public vaccinator in the Form H." "The lists shall be sent once in each week." Notice the word "shall" in the above extracts from the "Instructions to Vaccination Officers," schedule 4, Vaccination Order, 1898.

FEES FOR LUNACY CERTIFICATES IN IRELAND.

I.—We are not aware of any form for the admission of lunatics to Irish district asylums called an "urgency order." If lunatics are not committed by two justices, which is the usual practice when dangerous, they are occasionally admitted upon Form D, which is an application for admission, and for the signing of which we are of opinion "I." cannot recover a fee from any person except the patient or his relatives.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—House-Physician, resident. Salary, £70 per annum.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham Road, S.W.—Senior and Junior Resident Medical Officers. Honorarium at the rate of £20 and £10 per annum respectively.

BERMONDSEY PARISH INFIRMARY.—First Assistant Medical Officer; resident. Salary, £170 per annum.

BIRMINGHAM: QUEEN'S HOSPITAL.—House-Physician; resident. Salary, £50 per annum.

BIRMINGHAM: GENERAL HOSPITAL.—House-Surgeon; resident. Salary at the rate of £50 per annum.

BIRMINGHAM UNIVERSITY.—Professor of Anatomy. Stipend, £800 per annum.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Assistant House-Surgeon; resident. Salary at the rate of £50 per annum.

BURTON-ON-TRENT INFIRMARY.—House-Surgeon; resident. Salary, £120 for first twelve months, £140 afterwards.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell.—House-Physician; resident. Honorarium, £25 for six months.

GLOUCESTER GENERAL INFIRMARY AND EYE INSTITUTION.—House-Surgeon; resident. Salary, £100 per annum.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House-Surgeon. Salary, £80 per annum.

LEICESTER INFIRMARY.—House-Surgeon, resident. Salary, £100 per annum.

LINCOLN: BRACEBRIDGE ASYLUM.—Junior Assistant Medical Officer resident. Salary, £125 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Senior House-Surgeon; resident. Salary for first year, £100.

MANCHESTER CORPORATION.—Medical Officer under the Midwives Act. Salary, £250 per annum.

MANCHESTER ROYAL INFIRMARY.—Resident Surgical Officer. Salary, £150 per annum.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, E.—(1) House-Surgeon; (2) House-Physician. Appointments for six months. Salary at the rate of £60 per annum each.

NORTH WEST LONDON HOSPITAL, Kentish Town Road, N.W.—(1) Resident Medical Officer; (2) Assistant Resident Medical Officer. Salary at the rate of £50 annum each.

READING: ROYAL BERKSHIRE HOSPITAL.—House-Physician. Appointment for four months. Salary at the rate of £80 per annum.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, W.C.—Clinical Assistants. Appointments for six months.

WEST LONDON HOSPITAL, Hammersmith Road.—House-Physician; resident. Appointment for six months.

VIRGINIA WATER: HOLLOWAY SANATORIUM.—Junior Assistant Medical Officer Lady; resident. Salary, £150, rising to £200 per annum.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House-Surgeon, resident. Salary, £70 per annum.

APPOINTMENTS.

AARONS, S. Jervois, M.D.Edin., M.R.C.P.Lond., Pathologist and Curator of the Museum Hospital for Women, Soho Square, W.

BARNES, Frank, M.B., B.S.Lond., F.R.C.S.Eng., Honorary Surgeon to the Royal Orthopaedic and Spinal Hospital, Birmingham, vice Augustus Clay, resigned.

BRADSHAW, Thomas R., R.A., M.D.Dubl., F.R.C.P.Lond., Physician to the Liverpool Royal Infirmary, appointed Examiner in Medicine in the University of London, vice Sir Isambard Owen, M.A., M.D., F.R.C.P., resigned.

COOGAN, T., M.B., Ch.B.Vict., Junior Resident Assistant Medical Officer, Chorlton Union Workhouse.

DAVIS, William Henry, M.B., B.Ch.R.U.I., House-Surgeon to the Royal Victoria Hospital, Belfast.

DAVIES, D. L., M.D., Medical Officer of Health, Wisbech Rural District.

FLEMMING, Arthur L., L.R.C.P., M.R.C.S., Anaesthetist, Royal Infirmary, Bristol, vice E. Mountjoy Pearse, M.R.C.S., L.R.C.P., resigned.

GIFFORD, George T., M.D.Durh., M.R.C.S.Eng., Honorary Assistant-Surgeon to the Blackburn and East Lancashire Infirmary.

IRWIN, S. T., B.A., M.B., Ch.B., Surgical Registrar to the Royal Victoria Hospital, Belfast.

LEET, Hugh, M.B., Ch.B.Vict., F.R.C.S., Assistant-Surgeon to the Belgrave Hospital for Children.

LOGAN, Frederic T., B., M.R.C.S., L.R.C.P., Medical Officer to Post Office (Bishopsworth Division), and Medical Officer under Elementary School Teachers (Superannuation) Act, 1898.

LYONS, M. M., M.B., Health Officer for the Shire of Tungemah, Victoria.

MARGARRY, F. W. A., M.D.Syd., Honorary Assistant-Surgeon to the Adelaide Hospital.

MOIR, William, M.B., Health Officer for the Shire of Mirboo, Victoria.

MOSS, M. K., M.B., B.S.Melb., Junior Resident Medical Officer, Perth Public Hospital, West Australia.

NAYLOR, Arthur G. E., L.R.C.P., Health Officer for the Shire of South Gippsland, Victoria.

OGILVY-RAMSAY, M., M.D., F.R.C.S., Surgeon to the Cumberland Infirmary, vice R. Maclaren, M.D.Edin., resigned.

SHAW, Cecil E., M.D., M.Ch.R.U.I., Lecturer in Ophthalmology in Queen's College, Belfast, vice Wm. Alexander McKeown, M.D.R.U.I., deceased.

TAYLOR, Gerard C., M.D.Cantab., D.P.H., County Medical Officer of Health for Berkshire.

THOMSON, J., M.B., Ch.B.Aberd., Medical Officer, Earlswood Asylum, Redhill.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BLUMER.—On November 4th, at St. Mary's Grove, Stafford, the wife of F. Milnes Blumer, M.B., of a son.

MARSHALL.—On October 19th, at Candilli, Constantinople, the wife of William E. Marshall, Staff Surgeon, H.M.S. "Bedford," of a son.

STRATON.—At Talavour, India, on October 16th, 1904, the wife of Captain C. H. Straton, Royal Army Medical Corps, of a son.

DEATH.

CHALDECOTT.—At Parkside, Dorking, on the 5th inst. Charles William Chaldecott, M.R.C.S., L.S.A., aged 76.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Clinical Evening.

TUESDAY.

Pathological Society of London, 5 p.m.—Laboratory Demonstration at the Medical College, London Hospital.

THURSDAY.

Royal College of Surgeons, Lincoln's Inn Fields, 3 p.m.—Annual General Meeting of Fellows and Members.

FRIDAY.

Society for the Study of Disease in Children, 11, Chandos Street, Cavendish Square, W., 5.30 p.m.—Clinical Cases and Pathological Specimens.

POST-GRADUATE COURSES AND LECTURES.

Samaritan Free Hospital for Women, Marylebone Road, N.W.—Thursday, 3 p.m., The Management of Cases of Abdominal Surgery.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Central Out-patient Department, 7, Fitzroy Square, W.—Thursday, 5 p.m., Climates and Health Resorts in the Treatment of Pulmonary Tuberculosis.

North-East London Post-Graduate College, Tottenham Hospital, N.—Wednesday, 2.30 p.m. (North-Eastern Fever Hospital, St. Ann's Road). Demonstration on Fevers. Thursday, 4.30 p.m., Clinical Medicine.

Hospital for Sick Children, Great Ormond Street, W.C.—Thursday, 4 p.m., The Treatment of some Common Nervous Affections in Children.

Charing Cross Hospital.—Thursday, 4 p.m., Medical Cases.

Post-Graduate College, West London Hospital, Hammersmith Road, W., at 5 p.m. each day.—Monday, Rheumatism in Children; Tuesday, Anaesthetics; Wednesday, Practical Medicine; Thursday, Injuries of Upper Extremity; Friday, Surgical Cases.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Eyes. Lectures at 5.15 p.m. each day will be given as follows: Monday, The Diagnosis of Tumours of the Breast; Wednesday, Injuries to and Diseases of Joints; Thursday, The Principles of Treatment of Pulmonary Tuberculosis.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Allelogy, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):— EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

Dr. E. MOZOURELLIS (Mandamados, Mytilin) asks for advice in the treatment of a case of tabes spasmodica in which electricity, baths, hyocyamus, ergotine, silver salts, and other remedies usually recommended have failed.

GLYCOSURIA AND LIFE INSURANCE.

J.H. asks for information as to what would be the present attitude taken by important life insurance offices, on the question of accepting at ordinary rates a person who appears in normal health, but occasionally passes small quantities of sugar (maximum whilst under observation for a year being 1.82 gr. per oz.). For the last six months he has been on ordinary diet, and this has not aggravated the condition; the case appears to be one of glycosuria and not diabetes.

*** Speaking generally, a first-class life insurance office would decline such a case. Insurance at enhanced rates might be allowed, if all the circumstances were taken into consideration, such as the family history, age, and general condition. Moreover, it might be possible to determine the cause of the transient attacks of glycosuria; for example, they may depend upon a temporary over-dose of sugar, starchy food or alcohol, by the avoidance of which they might be prevented.

PROTRACTED PREGNANCY.

D. R. D. (M.D., F.R.C.S.) and M. J. (M.B., C.M.) write: A case which we have at present under observation is very interesting to the medical profession. We state absolute facts. The last menstrual period started on December 24th, 1903, and ended on December 31st. A single coitus took place on January 12th, 1904. The menstrual period next due was in abeyance, and symptoms of morning sickness appeared towards the end of the month. We are assured that no further connexion took place during February, and the lady was convinced that she was pregnant. According to her, movement was first felt on April 20th, which increased as time went on. In the usual course the probable date of birth was given as October 10th, and arrangements were accordingly made. Up to the present date (November 8th) there are no signs of labour. We should be pleased if any of your readers who have had similar instances of apparent protracted pregnancy will throw some light on the causes and reasons of this delay. We are under the impression that it was the ovum due to be shed in the ordinary course in the latter part of the month of January which was impregnated, and that the ovum of December was inert.

THE REPORT OF THE VACCINATION COMMISSION.

DR. JOHN FRYER (Dewsbury) writes: I have just been reading the "summary" of the final report of the Royal Commission appointed to inquire into the Subject of Vaccination, given in the reprint of the BRITISH MEDICAL JOURNAL (Vaccination Facts and Problems). I have a *précis* or digest of evidence taken before a Committee of the House of Commons, on the Vaccination Act, 1867. Can you tell me of a similar *précis* or digest of the evidence given before the Royal Commission appointed in 1889, whose report was issued in August, 1896? The *précis* or digest that I have gives a condensed report of each of the witnesses' evidence given before the Commission.

*** There is unfortunately no such summary or digest. The evidence is contained verbatim in a series of large Blue Books, which with one exception have a very good index. The exception—the Sixth Report—is the largest and, in some respects, the most important of all, but the want of an index makes it almost useless for purposes of reference, excepting to the most laborious student. As indicated at the end of the article referred to by our correspondent, the statement of dissent from the Commissioners' final report has been fully reviewed in the *Transactions* of the Epidemiological Society for 1896-7.

ANSWERS.

THERAPEUTICS.—We regret that we have not been able to obtain information as to the composition of the secret remedy in question.

J. H.—Information on the subject of phenazone and coal-tar compounds is contained in Dr. H. C. Wood's *Therapeutics: Its Principles and Practice*. London: Smith, Elder, and Co. 1902. 18s.

G. M. S.—The following is the information required by our correspondent:—*A Study of 972 Cases of Small-Pox with Reference to the Modifying Influence of Vaccination*, by J. B. Russell, M.D. Reprint from the *Glasgow Medical Journal*, 1872-3. Glasgow: Dunn and Wright, 1873; 8vo, pp. 20.

REGULATIONS FOR THE F.R.C.S.ENG.

MR. N. D. DARÛ.—The Royal College of Surgeons of England accepts as an equivalent for the first and second examinations of the English Conjoint Board a certain number of university examinations, and therefore admits those who have passed them to its first Fellowship examination, but those passed by an L.M. and S. of an Indian university are not among them. The College also admits to its second Fellowship examination those who, though not Members of the College, nevertheless hold the registrable medical and surgical degrees of certain universities; among these are the Universities of Calcutta, Bombay, Madras, and the Punjab, but no anomaly such as that to which our correspondent desires to draw attention exists, because the College regards the L.M. and S. which some or all of these universities grant, as a diploma and not as a degree.

HOUSE SANITATION.

SECRETARY.—There are a large number of books dealing with house sanitation in a greater or less degree, but we know of no one volume covering the whole subject. G. A. T. Middleton has written several books on the subject (Batsford). S. S. Hellyer's *Plumber and Sanitary Houses* (Batsford, 12s. 6d.), or the same author's *Theory and Practice of Plumbing* (Bell, 5s.), or Dr Reid's *Practical Sanitation* (Griffin, 3s.), or Coleman's *Sanitary House Drainage* (Spon, 6s.), or Latham's *Sanitation of Domestic Buildings* (Sanitary Publishing Company, 2s. 6d.), might meet our correspondent's requirements. There is also much useful matter on house sanitation in the ordinary public-health textbooks (Whitelegge, Notter and Firth, Parkes and Kenwood, etc.).

LETTERS, NOTES, Etc.

ERRATUM.—In the heading of a paper on gastro-jejunostomy and jejuno-jejunostomy in cases of chronic ulcer, published on October 29th, the fact was not stated that the author, Dr. T. Gelston Atkins, is Surgeon to Cork South Infirmary and County Hospital.

A CORRECTION.

THE £2,000 contributed to the schools of the Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded, referred to by our special correspondent in Manchester last week, p. 1269, was received from the Cheshire Education Committee, and not the Manchester Education Committee.

BORN WITH THE MORPHINE HABIT.

HAMLET, in condemning the hard-drinking habits of the Danes, by which Shakespeare doubtless meant the English, admitted that he was to the manner born. We learn from Lützhöft ("Et Tilfaelde af medfödt Morfinisme," *Hospitalstidende*, No. xlix, 1903) of another, but not Royal, Dane born to another, but less ancient and picturesque, bad habit. A well-developed child, with no sign of malformation or prenatal disease, showed extreme restlessness from the first moment of extrauterine life. It could not be got to sleep, it cried incessantly, and its features bore an expression of pain. For over two days it could not be induced to take any kind of nourishment, and its life was despaired of. Half a minim of tinctura thebaica was administered three times daily, that compound, which holds a place on the Danish Pharmacopoeia, being made up, as we learn from Squire's *Companion*, of opium, 6 parts; benzoic acid, 6; camphor 4; oil of anise, 3; and diluted alcohol, 1,200. For the first time in its life—that is, on the third day—it became tranquil, all the restlessness subsiding, and ultimately it throve. The opiate was lessened gradually, which, as the child's countryman already mentioned would say, lent a kind of easiness to the next abstinence. It is now getting on without the narcotic, but its after-history, when delivered from the womb of time, will be, in any event, of interest.

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Dr. T. G. Atkins, Cork; Mr. F. Addiscott, London; A. B. C.; Dr. S. J. Aarons, London; A. D.; Ajax; Ariel Cycle Company, Secretary of, Birmingham; Alpha; Mr. T. A. H. Anderson, Glasgow; Anti-Sixpence; Messrs. Allen and Hanburys, London.

B Dr. C. W. Branch, St. Vincent; Mr. W. H. Brown, Leeds; Dr. W. Bulloch, London; Beta; Rev. J. L. Brooks, Lingfield; Dr. C. Buttar, London; Dr. W. Bruce, Dingwall Dr. C. L. Birmingham, Dublin; Mr. W. M. Bristow, Liscard; Mr. A. J. Briant, Helsby.

C Dr. G. W. Crowe, Worcester; Dr. L. Cobbett, Stansted; Dr. W. M. Campbell, Liverpool; Dr. A. V. Clarke, Leicester; Mrs. Cornwall, London; W. J. Cale, M.B., Ury St. Edmunds; Dr. G. A. Casalis, London; Dr. J. R. Collins, Cheltenham; Dr. G. Crichton, London; H. S. Clogg, M.B., London; Dr. E. Cullinan, London.

D Dr. D. Drew, London; Miss M. Dendy, Manchester; R. Dunsmuir, M.B., Renfrew; D. R. D., M.D., F.R.C.S.

E Dr. G. Elliott, Toronto; Messrs. Ereckson and Co., London.

F Mr. J. Fryer, Dewsbury; Far East; Mr. A. T. Falwasser, Maidstone; Fair Play; F. A. Foy, M.B., Rangoon.

G Grafton Press, Manager of, New York; G. B. Gill, M.B., Belper; Dr. W. Gosse, Sittingbourne; G. S. Graham-Smith, M.B., Cambridge; Goldthorn; Geographical Society, Secretary of, London; Mr. K. W. Goadby, London; P. G. Griffith, M.B., London; Mr. W. H. J. Galbraith, London; Dr. G. T. Gifford, Blackburn; Mr. H. B. Gardner, London; Mr. W. C. W. Glenny, Omeath; Mr. G. L. Gommo, London; Sir W. R. Gowers, London; Dr. E. W. Goodall, London.

H H. B.; Harrogate; Dr. P. S. Hichens, Northampton; Dr. R. G. Hebb, London; Dr. A. H. Hart, London; Dr. R. T. Halliday, M.B., Glasgow; Dr. C. O. Hawthorne, London; Dr. J. R. Hamilton, Hawick; Dr. E. Harrison, Hull.

J Dr. W. M. Jones, Torquay; Dr. J. Johnston, Bolton; Mr. T. Johnson, Clifton; Mr. H. Jones, Hereford; Mr. N. H. Joy, Bradfield.

K Mr. F. W. Kendle, South Molton; Mr. W. G. King, London; C. Killick, M.B., Maidstone; Dr. J. H. Keay, London; Mr. T. G. Kerr, London.

L J. J. Langston, London; H. Lett, M.B., London; G. R. Livingston, M.B., Dumfries; Mr. J. Lawrence, London; Liverpool Medical Institution, Secretary of, Liverpool; Mr. F. T. B. Logan, Bristol; Mr. W. Lloyd, London.

M Dr. J. Mackenzie, Burnley; Mr. M. M. McHardy, London; Mr. W. H. Martindale, London; Mr. E. Merck, Darmstadt; Dr. C. F. Marshall, Birmingham; Mr. M. C. Moxham, Boston, Lincs.; Mr. E. R. Morgan, Morriston; Dr. E. Magennis, Dublin; Mr. G. Mann, Oxford; Mr. W. J. Morton, London; Mr. C. Meares, London; Dr. R. Marsh, Hove; Dr. J. Metcalfe, Bradford; H. McLaren, M.B., Glasgow; Mr. R. J. Montgomery, Dublin; M. J., M.B., C.M.

N Mr. E. Nicholson, Liverpool.

O Dr. H. O'Neill, Belfast; Obstetrical Society, Secretary of, London.

P Messrs. Kegan Paul, Trench, Trubner, and Co, London; Pulsometer Engineering Company, Manager of, Reading; "Practical Medicine," Editor of, Delhi; Prescription; Paddy Mr. F. D. Power, London.

R Mr. J. Robertson, Edinburgh; Mr. H. M. Raven, Broadstairs; J. D. Russell, M.B., London; Dr. J. W. Robertson, Peterborough; Mr. G. E. Russell, London; R. V. B.; Dr. J. C. Renton, Glasgow.

S Dr. L. E. Shaw, London; Mr. R. Stewart, London; Sheffield Medico-Chirurgical Society, Secretary of, Sheffield; Messrs. Sherratt and Hughes, Manchester; Mr. T. E. Saxby, Baltasound; Dr. S. Sunderland, London; Mr. G. M. Sharpe, Leeds; Dr. A. Salmon, Florence; Sarawera; Sigma; Dr. E. H. Snell, Coventry; Mr. A. L. M. Strong, Glasgow; Dr. G. A. Sutherland, London.

T Therapeutics; Dr. G. C. Taylor, London; Mr. C. Tuckfield, London; Dr. R. Turner, Liverpool; Mr. W. Tiplady, Newcastle-on-Tyne; Mr. J. Tibbetts, Stoke-on-Trent; A. D. Thomson, M.B., Macclesfield; Dr. F. J. Tresilian, Enfield A. H. Thomas, M.B., Yewsley; Dr. W. H. M. Telling, Leeds.

V Viator; Verbum Sap.

W Dr. C. Watson, M.B., Edinburgh; Mr. J. T. Williams, Barrow-in-Furness; R. S. Williams, M.B., Liverpool; Dr. J. S. F. Weir, London; Mr. E. H. Willock, Croydon; Dr. E. Willcocks, London; Mr. W. B. Winckworth, Taunton.

X X. X. D. D. S.

BOOKS, ETC., RECEIVED.

A Guide to Anaesthetics. By Thomas D. Luke, M.B., F.R.C.S.Edin. Second Edition. Edinburgh and London: W. Green and Sons. 1905. 5s.

Ex Cathedrâ Essays on Insanity. By T. Claye Shaw, M.D., F.R.C.P. London: Adlard and Son. 1904. 5s.

Lehrbuch der Nervenkrankheiten. Von Prof. Dr. H. Oppenheim. Vierte Auflage. Erster Band und zweiter Band. Berlin: S. Karger; and London: Williams and Norgate. 1905. £1 10s., two vols.

Die klinische Bedeutung der Eosinophilie. Von Dr. Med. Karl Meyer. Berlin: S. Karger; and London: Williams and Norgate. 1905. 3s.

Anatomie und physikalische Untersuchungsmethoden. Von Dr. P. Oestreich und Dr. O. de la Camp. Berlin: S. Karger; and London: Williams and Norgate. 1905. 7s. 6d.

Vital Statistics of the City of Chicago for the years 1899-1903 inclusive. Arthur R. Reynolds, M.D., Commissioner. Chicago: Department of Health. 1904.

The British Guiana Medical Annual. Edited by A. P. Ozzard, M.R.C.S.Eng., L.S.A., and C. P. Kenhard, M.D.Edin., M.R.C.S.Eng. Demerara: Baldwin and Co. 1904. 5s.

The Art of Choosing a Husband. By Paolo Mantegazza. Translated from the Italian by Gabriel Claude Charton. London: Gay and Bird. 1904.

An Introduction to Dermatology. By Norman Walker, M.D. Third edition. Bristol: John Wright and Co. 1904. 9s. 6d.

The Addison Temperance Reader. By William Finnemore. London: The Addison Publishing Company. 1s. 6d.

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Compiled for the New Sydenham Society. Fasciculus XX, or XII of New Series. Miscellaneous, Plates A to K. Radiographs illustrating Fractures and Dislocations, Plates L to Z. London: New Sydenham Society. 1904. 1 guinea.

The Story of a Red-deer. By the Hon. J. W. Fortescue. London and New York: Macmillan and Co., Limited. 1904. 5s.

Jahresbericht über die Leistungen und Fortschritte auf dem gebiete der Neurologie und Psychiatrie. Redigiert von Prof. Dr. E. Mendel, Privatdozent Dr. L. Jacobsohn. VIII Jahrgang: Bericht über das Jahr 1903. Zweite hälfte. Berlin: S. Karger; and London: Williams and Norgate. 1904. 19s.

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THE

Fitz Patrick Lectures for 1904.

DELIVERED IN THE ROYAL COLLEGE OF PHYSICIANS, NOVEMBER 8TH AND 10TH.

By JOSEPH FRANK PAYNE, M.D.,
Fellow and Harveian Librarian.

Lecture II.

RICARDUS ANGLICUS AND THE TEACHING OF ANATOMY IN THE MIDDLE AGES.

[Abstract.]

We find occurring in the medical history of the thirteenth century, and attached to a good many old manuscripts in our libraries, the name of one Ricardus Anglicus, Richard the Englishman, and are naturally desirous of finding out all that can be known about our countryman, and of displaying his work and personality as clearly as we can.

But here we encounter the same difficulty as in the case of Gilbert, that is, the ambiguity of a Christian name. We read of Magister Ricardus, Ricardus Salernitanus, Ricardus Anglicus and Ricardus Parisiensis, so that evidently some discrimination is necessary. On investigation it appears that the four Richards are reducible to two persons, an earlier and a later. The earlier, called sometimes Salernitanus, was in some way connected with the school of Salerno, the *Ricardus Senior* of Gilles de Corbeil, the honoured magister and probably actual teacher of Gilbert, the writer of numerous medical works (one of them a treatise on Anatomy), some of which have been wrongly attributed to Ricardus Anglicus. He was a Frenchman apparently by nationality, and a teacher at Montpellier, but having had some earlier connexion with Salerno. He must have lived and flourished at the end of the twelfth century though he probably lived on into the thirteenth, but the dates of his birth and death are not known.

The later Richard was our Ricardus Anglicus called also Parisiensis because he at one time lived at Paris. As in the case of Gilbert, the name Anglicus implies not only that he was an Englishman, but that he lived or was well known abroad. The main outlines of his life are clearly marked out on unquestionable evidence. He was born at Wendover, and was known as Richard of Wendover. One would like to adopt and use this name exclusively, were it not there was another contemporary Richard of Wendover, Bishop of Rochester. It has been suggested that Richard studied at Oxford, but of this there is no evidence. He was a Canon of St. Paul's, and the official records still show the names of the different prebends that he held successively. His contemporary, Matthew Paris, the Monk of St. Albans, and well known chronicler, who died only seven years after Richard, gives us further particulars about him. He states that Richard was physician to Pope Gregory IX (though when appointed he does not say), and retained his post till the death of the Pontiff in 1241. The Pope was much attached to his physician, and on his deathbed gave him a much valued possession—an ivory crucifix containing precious relics. This crucifix Richard bequeathed to the Church of St. Alban, so that Matthew Paris must have been well acquainted with the circumstances. Next, Du Boulay or Bulæus, the historian of the University of Paris, tells us that Richard of Wendover, Canon of St. Paul's, London, the physician, made himself a great reputation among several of his countrymen who were Professors at that time. Now "Professor" had not then precisely the formal meaning it has now, but at all events it meant teacher. Richard died in 1252, as is confirmed by official records. There is nothing doubtful or uncertain about all this; the only point not quite clear is when Richard taught at Paris.

There ought not to be any confusion between the two Richards, and there is not, except as to their writings. Both wrote books, and each of them, as it happens, wrote a book on anatomy and some kind of book called *Practica*, besides others, which are assigned generally to Ricardus, with or without the suffix Anglicus. But his name is often applied very loosely and inaccurately, scribes and cataloguers having been accustomed to suppose that any medical work by Ricardus must have had the Englishman for its author.

The MSS. of Ricardus at Paris were carefully examined and read by M. Littré more than fifty years ago. He found that some of these works must have been written in the twelfth century, and therefore could not have for their author Richard of Wendover, who died in 1252. About others he was uncertain or gave no opinion. But with our present knowledge of the medical literature of those times there can, I think, be little doubt that most of these books had nothing to do with our Richard of Wendover; certainly seven or eight out of ten would be excluded.

I have examined, by reading as far as possible and by having some copies made, several MSS. in the British Museum and the Oxford libraries, and have not as yet come upon any MS. which can be certainly referred to Richard of Wendover; all that I have seen are clearly the works of the earlier Richard.

In this difficulty of finding the genuine works of our Richard we receive unexpected aid from Vienna. An able and learned investigator of the history of mediæval anatomy, the Ritter von Töply, lately appointed Professor of the History of Medicine in the University of Vienna, has published in a beautiful form, from a manuscript in the



Fig. 1.—Title-page of the *Anatomy* of Mondino as corrected by Melerstat. (Printed before 1500.)

Palatine Library, a Latin treatise on anatomy which bears the name of Ricardus Anglicus, and which he regards as the work of our Richard of Wendover.

Now, the mere fact that the name Anglicus is inserted upon the MS. is, of course, not enough to establish the authorship beyond question, since we have seen how loosely names are applied, and that this particular name is often given quite erroneously. But Professor von Töply gives corroborative evidence, derived from the style and contents of the work, which correspond to the time of Richard of Wendover. They will be discussed later, but in anticipation I must say that it appears to be just such anatomical teaching as we should expect to have been given at Paris in the middle of the thirteenth century.

It contrasts strongly with the anatomy of the earlier Richard formerly spoken of. There are several MSS. of this in the British Museum and at Oxford, and one of those in London bears the name of *Magister Ricardus Vetulus*, evidently the same as the Ricardus Senior mentioned in my last lecture as spoken of by Gilles de Corbeil, and probably the teacher of Gilbert. The contrast of these two works, of different schools and different dates, is very instructive, and will be considered in the course of some remarks on the history of anatomical teaching. We now pass on to some notes on the History of Anatomical Teaching in the Middle Ages. *Teaching* only is regarded, and not the history of anatomy, which would be far too large a subject. It is proposed to illustrate this by quoting several documents relating to anatomical teaching, and then to show the changes which it underwent. In this enumeration reference will be made to the anatomy of the earlier Richard, and to the anatomy of Ricardus Anglicus, as published by Ritter von Töply, and thus the true character of these treatises will be shown by comparison.

Anatomical Teaching among the Greeks.

In early times anatomy was taught in Greece to the children of "Asclepiad" families, the real or supposed descendants of Asclepios, with whom medicine was a hereditary craft. Afterwards strangers, as well as members of the family, were taught the craft; and it was then, according to Galen, that books of anatomy were first composed. At a later time anatomy was very systematically studied in the school of Alexandria, being taught by Herophilus, Erasistratus, and others whose works have perished. At one time living persons (criminals under sentence of death) were subjected to dissection, but this barbarous practice was given up, and dead bodies were dissected. This latter practice also was afterwards forbidden, and in the time of Galen dissection was carried out in Alexandria only on the bodies of brute animals, such as apes and pigs. Galen himself had been taught anatomy when he was young, and kept up the study with enthusiasm in mature life. He dissected chiefly apes, and recorded his results in several books.

These anatomical books were very imperfectly known in the Middle Ages; the only one which was translated into Latin was the treatise *On the Use of Parts*, which was intended to show the wisdom of the Creator in adapting all parts of the body to their respective uses. It was rather a treatise on natural theology than anatomy, and not intended to teach the science to students. The descriptions of parts are often very vague, or even allusive, taking for granted some knowledge. This was the only direct source of Galenic anatomy in the Middle Ages, though anatomists knew something more of the doctrines of Galen and Aristotle through the Arabian books translated into Latin.

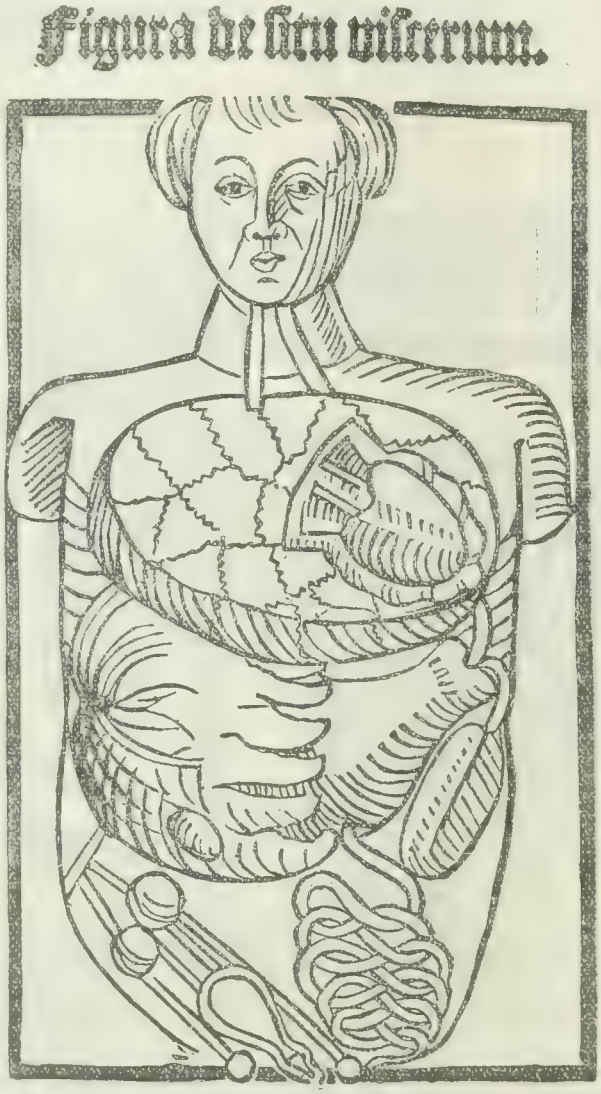


Fig. 2.—View of the internal organs in man showing the lungs, heart, stomach, liver, spleen, intestines, kidneys and bladder. Magnus Hundt, *Antropologium*, 1501 (from Stockton Hough, *Incunabula Medica*).

Three periods may be recognized in the anatomical teaching of the Middle Ages:

1. *The Salernitan Period*, when anatomy was taught in the school of Salerno by the dissection of pigs. This period goes up to 1200. 2. *The Arabist Period*, when what was called "human anatomy" was taught solely by books and lectures without dissection. The basis of teaching was the Arabian anatomical books representing the doctrines of Galen and partly of Aristotle. This period includes, broadly, the thirteenth century. 3. *The Period of Human Dissection* introduced by Mondino in 1315, and extending up to the time of Vesalius. Each of these periods may be illustrated by selected documents showing the kind of teaching.

First Period.

The first work on anatomy produced in the school of Salerno was the *Anatomy of the Pig*, by Copho, junior, written probably at the end of the eleventh century, after the introduction of some knowledge of Arabian anatomy by Constantine, in a work called *Pantegni*, a translation of a book by Haly Abbas, an Arabian Physician. This tract is a short description of the dissection of a pig, with directions how to find and display the most important parts. It contains only two Arabic anatomical terms, *Zirbus*, the omentum, and *Siphac*, the peritoneum. It begins thus:

Copho on the Anatomy of the Pig.

Since the composition of the internal members of the human body was entirely unknown, the ancient physicians, and especially Galen, thought that the parts might be made evident by the anatomy of the internal members of brute animals. And while certain brute animals, as the ape, are found to be like us in the external parts, none of the internal parts are found to be so like as those of the pig, and therefore we have decided that anatomy should be studied in them. Now, anatomy is correct division, and is done thus: You must place the pig on its back, and cut it through the middle of the throat, and then the first thing that comes into view is the tongue, which is attached on the right and on the left to certain nerves which are called those of motion. And these nerves, as they come from the brain to the lung, are turned aside to the tongue, and by them the tongue is moved so as to make sounds, etc.

Another anatomical work of the School of Salerno is the *Demonstratio Anatomica*, contained in a Salernitan manuscript preserved at Breslau: and printed in the Collectio Salernitana of de Renzi. After a general introduction the directions for dissection begin as follows:

Let a pig be killed not as some do by piercing the heart with a steel

instrument, by which much blood is drawn to the organs of breathing, and they cannot be so well seen; but having cut its throat, let it be hung up by its hind feet, with the head hanging down, so that nearly all the blood may flow out. When this is done, it must not be taken down (? left) lest, the body becoming cold, the channels of the nerves, veins, and arteries should contract, and they could not be easily distinguished. Now the opinions of the ancients respecting anatomy, were conflicting and diverse. For some say that anatomy was practised on dead animals: but they used to assert that on more mature consideration living animals were preferred for dissection, and according to Galen, this opinion prevailed, because the movements of particular parts are more clearly seen. But this being done and the pig being placed upon its back, let the lower knee be drawn aside a little from the upper: and then comes into view the tongue, which is the organ of taste and speech, composed of soft flesh and something like a sponge. . . . The tongue in these animals is too long and flabby, and cannot be moved in the upper part for the utterance of *vowels*, though it can be used below for the utterance of *mutes* (consonants), and this is one reason why it (the pig) cannot talk, etc. . . .

Then let a small incision be made above the throat, and certain muscles are seen which are the means of voluntary motion; and by a similar incision at the side between the skin and flesh certain other muscles are seen by which voluntary movements are effected.



Fig. 3.—The external anatomy of the muscles, from Berengarius Carpus' commentary on the *Anatomy* of Mondino, 1521.

It is impossible to discuss the rest of the "Demonstration," which gives rough, but generally intelligible directions, for the dissections necessary to exhibit the stomach, intestines, and other abdominal organs, as well as the organs of generation in both sexes, with some account of their structure and remarks upon the uses of each part. The head and the anatomy of the eye are briefly described; it is much more detailed than that of Copho, and was evidently written later. The next document brought forward is a short tract on anatomy called the *Anatomia Magistri Ricardi*. This has already been printed at Berlin, indeed twice. For the reason already given there can be no doubt that, as suggested by Ritter von Töply, it was written by the Magister Ricardus, who was known to Gilbert at Salerno, and whom we place at the end of the twelfth century. Several MSS. of this anatomy contained in the British Museum and the Oxford libraries agree in the main, but differ rather considerably in the first part or introduction, which is the most interesting portion. This introduction is here given from the MS. which has the fullest text:

Anatomia Magistri Ricardi.

As Galen affirms (in the Tegni) whoever wishes to know the arrangement of the internal and external parts of the human body must be well trained in anatomy, wherefore we must consider what anatomy is, and why it is so-called, and in which animals it was the custom to practise it among the ancients, and in which among the moderns, and of their (its) kinds and divisions. The word anatomy, as we know from Galen, means right or correct division of the parts, and comes from *ana*, meaning correct, and *thomos*, meaning division, hence correct division of the parts, that is done in an orderly way.

Now it was the custom among the ancients to practise anatomy both on the bodies of the living and on the bodies of the dead. They (the anatomists) went to the Prince and begged for those who were condemned to death. First tying their hands and feet, they made their incisions in the organs of the soul (nervous system), as being the most important parts of the body, especially the head, in order to get a complete knowledge of the arrangement of the skull, of the pia mater and the dura mater, and the character of the nerve (nerves?) arising from them. Next they made their incisions into the organs of breathing, in order to get a complete knowledge of the position of the heart, and the entrance of nerves, veins, and arteries. In the same way they went to the organs of nutrition; after this, finally, they went on to the generative organs, as being less important. This was the way in which it was usual to practise dissection on the bodies of the living.

The account goes on to say that the dead bodies were prepared for dissection by maceration in running water; but at the time of the writer dissection was practised quite adequately on the bodies of pigs.

The Second Period: Teaching of Human Anatomy without Dissection.

For some reason the dissection of pigs seems to have gone out of fashion, and for about a hundred years anatomy was taught by lectures and books, on the basis of the Arabian anatomical literature derived from the Greek. The anatomy was much more elaborate than that of the earlier period. The best example of this period is found in the work of Ricardus Anglicus, as brought to light and published by Ritter von Töply. Though the name alone would not establish the authenticity of the work, the style and doctrines are just what might be expected from a teacher at Paris in the middle of the thirteenth century. It refers to several Arabian writers—Avicenna, Haly, Averroes—and contains many more Arabic anatomical terms than the older book; also, the style is that of the scholastic or dialectical period. The *Anatomia* begins as follows:

The Anatomy of Richard the Englishman.

It is necessary for those physicians who are anatomists to know for certain that the human body is constructed to be the support of movements and of diverse operations, and hence is composed of many and diverse instruments (organs). To it is joined a "noble part" pertaining to the soul, by which noble powers and many kinds of faculties exercise influence over it, and by the activities of these it is governed and maintained in being, and is preserved from corruption and from a rapid fall (or decay). But since the activity of no faculty can be fulfilled except by organs fully adapted for the purpose, there is required adaptation and preparation of organs of many shapes to regulate the fabric of the human body, by which the faculties are brought into action, and produce the effects which they intend. Wherefore, any

operation which has not manifold uses is not long preserved, nor, indeed, does it come into being.

This is only a sample, but gives a fair idea of the book.

After Ricardus Anglicus came Henry de Mondeville, another teacher of the same school in anatomy, though he was also a practical surgeon. He lectured on anatomy at Montpellier about 1304. He did not dissect, but was the first to use pictures or diagrams as an aid in teaching anatomy, and also the model of a skull. Part of his book was translated into English in 1392.

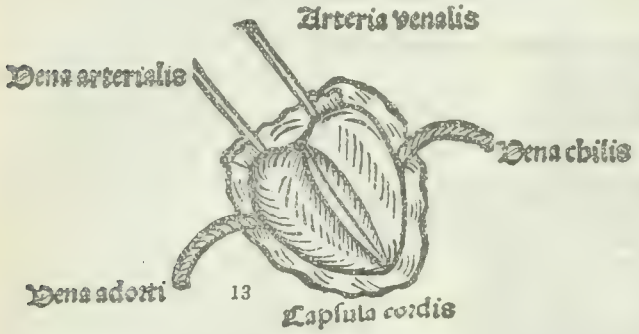


Fig. 4.—Diagram of the heart and great vessels, showing pulmonary artery and vein, aorta (adorti), and vena cava (chilis); also the third or middle ventricle, which was thought to have been described by Aristotle.

THE THIRD PERIOD OF ANATOMICAL TEACHING (1215 TO 1543): REVIVAL OF HUMAN DISSECTIONS.

A few years after de Mondeville's lecture and the composition of his book on surgery the most important advance in the teaching of anatomy was made by the introduction of demonstration from the dissected subject. The credit of this innovation belongs without doubt to the University of Bologna, and the first teacher by actual dissection was Mondino de Luzzi—usually known as Mundinus de Lentilis—who made his first recorded public demonstration of anatomy in the year 1315, and died in 1326.

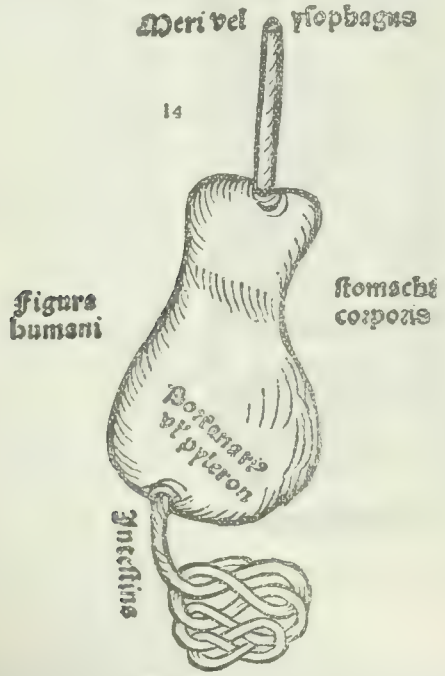


Fig. 5.—Diagram of the aesophagus, stomach, pylorus, and intestines. This and the last figure are from Peyligk, *Compendium Philosophiae Naturalis*. Lipsiae, 1499. (Copied from Stockton Hough, *Incunabula Medica*.)

There is evidence of the human body having been dissected, or at least opened after death—for the distinction between a *post mortem* examination and an anatomical dissection was not clearly recognized—at Bologna before 1315, but these dissections had nothing to do with the actual teaching of anatomy to students.

Mondino professed to demonstrate from Nature the actual structure of the parts, but seems to have been able to see little or nothing more than what was laid down by the Arabian authors as the anatomy of Galen, and therefore recognizes some features which belong to the anatomy of brutes and are not strictly human. He left no figures, but, when the art of woodcutting was introduced in the fifteenth century, some rude woodcuts appeared which represent Mondino and his teaching. One shows the professor sitting in a chair, while a prosector makes the dissection in which students took no part (Fig. 1). Others represent the ideas entertained at the time respecting the anatomy of internal organs, but are not actual copies from Nature (Figs. 2 and 5).

The most important of the successors of Mondino at Bologna was Jacobus Berengarius Carpus, who brought out a new edition of the *Anatomy of Mondino* with a commentary in 1521, and also a short introduction to anatomy of his own. These works are chiefly remarkable for their illustrations which were the best anatomical figures published up to that time. His representations of the external anatomy of the muscles are accurate and show artistic feeling (see Fig. 3). But when he gives a figure of the heart and the aorta, it departs widely from the human standard and shows how much, even after two hundred years of human dissection, men were influenced by preconceived ideas (see Fig. 4).

SOCIAL EVOLUTION AND PUBLIC HEALTH.—This was the subject selected by Dr. Arthur Newsholme, the Medical Officer of Health of Brighton, for his address at the first meeting of the York Medical Society in October. After pointing out that the public health policy of the last half century had not only neutralized the increase of the death-rate following the "urbanization" of the people, but had actually effected a further reduction of 28 per cent. of the total death-rate, Dr. Newsholme discussed the general physique of the working classes, urging that the food of the people, their education, and the medical attendance available were three of the chief means for their improvement. Though there existed no real evidence of degeneracy, there did exist ample sign that a portion of the community habitually went short of sufficient food, and a still more numerous class lived near the "poverty line," and on slight accident fell below it. Such a condition of things was a source of weakness to the State, and the lecturer emphasized the fact that after all the maintenance and improvement of the public health was a natural and essential part of the evolution of society, and necessary to its preservation and progress. Dr. Newsholme discussed also the question of the relation of the State to its poor. Poverty, he said, was usually not a disease but a symptom of disease, whether physical, intellectual, or moral; and it was unscientific and economically unsound to treat the symptom instead of the disease. Yet that appeared to be not infrequently the line of action adopted. He advocated the reduction of the drink bill as a means of self-help, the better selection of food, and a more systematic effort to prevent the occurrence of extreme poverty and misery, rather than to increase the agencies for treating its symptoms.

TEACHING OF HYGIENE.—At the last meeting of the Society of Medical Officers of Health, a discussion on the expediency of making instruction in the laws of health or hygiene compulsory was opened by Dr. G. A. Heron, who was, as he explained, a member of a Committee appointed by the International Congress on Tuberculosis to press on the Governments and educational authorities of the respective countries the great importance of a popular or elementary knowledge of the laws of health as a means of preventing the loss of life from communicable diseases, including tuberculosis, and of checking the progressive deterioration of the race, which, though not universal, could not be denied in the case of town populations. No subject required more judgement in the teacher or sympathy with his pupils. The difficulty would be to find teachers. None would be so competent as those already trained, certificated, and engaged in educational work; but they would have to be taught by experts, medical men chosen because they had an aptitude for teaching—which was by no means a characteristic of even all lecturers at medical schools. Interesting details were given of the progress already made in America, Germany, and some minor States; there was a striking diversity of opinion as to whether the teaching of young children should be dogmatic or rational, though all agreed that dogma unsupported by example had no influence on character, and that Nature teaching was the best introduction to hygiene.

SEVENTY-SECOND ANNUAL MEETING

OF THE

British Medical Association.

Held at Oxford, July 26th, 27th, 28th, and 29th, 1904.

PROCEEDINGS OF SECTIONS.

SECTION OF DENTAL SURGERY.

E. A. Bevers, M.R.C.S., Mayor of Oxford, President.

PRESIDENT'S ADDRESS.

It is remarkable that, during the last century, three great minds should have almost simultaneously, and yet independently of each other, devoted their energies to establishing a theory of evolution and development—Darwin in natural history, Spencer in sociology, Newman in religion—and that all of them should agree that, although evolution has been consistent and persistent and continuous, there have been periods where progress has been made *per saltum*, the hidden workings having caused an eruptive effort, whereby some great advance step has resulted. The truth of this must be obvious to all who have, even in a small degree, devoted their energies to the investigation of the progress made in either nature, sociology, or religion.

What is true in relation to these immense subjects is, in a lesser degree, true of the development of such a calling as our own; for whilst there has been slow and continuous development in dental surgery from the earliest times, resulting in the gradual establishment of the scientific principles and the knowledge and skill of the practitioner of to-day, there have been, as well, distinct epochs where important "jumps forward" have occurred, leading to the present position our vocation has acquired.

Yet another of these important movements of progress is signalized by this meeting to-day, when the Council of the British Medical Association has, for the first time, established a Section in our particular subject, has placed dental surgery in what we believe is its right place in relation to the sciences of medicine and surgery—a step forward which should do much, not only to raise the prestige of our profession, but also to confer great benefits upon it, as well as upon the other members of the medical profession, and, more important still, through both upon the general public. It is hoped that this important step will encourage dental students to obtain those medical diplomas that we consider so broaden their view of the profession and so largely develop their mental abilities, while enabling them to appreciate all of those subjects that are discussed in the various Sections of this great Association.

It is appropriate that those in sympathy with our close allegiance and loyalty to the healing art, and who have no sympathy with those who desire to establish as a profession, separate and apart, a sort of dental surgery, should hold their first meeting at one of the ancient seats of learning and as part of the British Medical Association.

Our thanks are due to the Council of the Association for having established this Section, and it is for us to see to it that, by the assiduity of our attendance as well as by the high standard of our papers and discussions, the Council is justified in its action. It is further felt that the benefits that shall accrue from the establishment of this Section are that, whilst dental surgeons shall learn to take a larger interest in general medicine, surgery, and pathology, both in their practical and in their scientific aspects, the medical practitioners themselves shall also learn to take more interest in some of the special points relating to dental surgery and pathology. Dr. William Hunter, Mr. Godlee, and Mr. Owen have already led the way in this direction, and have demonstrated the close relationship of oral pathology to questions at first sight as startling as unexpected. It is in the field of pathology that those who treat the body and those who treat but one of its cavities meet on the common ground of scientific interest, and it is as important for those who treat the part to be cognisant of the whole as for those who treat the whole to possess a knowledge of the pathology of each part. The mouth, with its soft and hard tissues, is but a portion of the general organism that may upon occasion give rise to serious constitutional disturbance and grave disease, and to point out that its physiological and pathological importance should not be overlooked when making a diagnosis or in prescribing treatment is to be guilty of citing a truism.

There are two opinions amongst dental surgeons with regard to the education of their students. The one school of thought attaches more importance to the mechanical; the other considers the surgical and scientific side the most important.

The first method is that which obtains so largely in America; in most dental schools there the whole of the dental education is given in one building. The second is that in vogue in Great Britain, where the medical and dental students work side by side at a general hospital, the special dental work only being taught in purely dental schools. If this were the right place to prophesy, I would say that the British system will be the one to survive, and that even America and the Colonies will follow our example; and, further, that with this Section in active co-operation with the other Sections of the Association, the number of students taking a complete medical education in addition to their dental education will increase from year to year. This must be so when our students realize that the strenuous life is the only one worth living, and the only one that repays the liver for living; that in the competition of nations, either white or yellow, the one the units of which are most earnest, each in his own vocation, is the nation that will take the lead amongst nations.

There is a bubble, in some respects as great a bubble as that of the notorious South Sea Bubble of a past century, and it but requires to be pricked to collapse as did its predecessor. I refer to the ridiculous claim that there is such a thing as American dentistry. Dental surgery is as catholic as either medicine or surgery; and whether the education be given in one country or in another, the science, principles, and methods are in the main the same, and therefore the statement, so often repeated, that certain systems are taught on the other side of the Atlantic that are not taught here is as misleading as fallacious.

It is hardly necessary at this gathering to justify the formation of this Section, yet it may not be undesirable to place on record the reasons leading to its formation. There was an obvious and manifest attempt to separate dental surgery from medicine, and to establish it upon what is called "its own foundations," or, as it is said, "to cut it adrift from the skirts of the medical profession," to separate it so entirely that there would barely remain the finest connecting twig between the main trunk and its branches. It is as a protest against this view that we meet here to-day, as we understand the question. We exist as a profession for the study, investigation, and treatment of the diseases of the teeth, not only as regards their local lesions, but in their general relation to the whole category of disease. We are convinced of the necessity of specialization, but specialists of all men are those who, lest their horizon become obliterated, consider the special region of their investigation as an integral part of the whole organism, in the general derangement of which their own particular branch may share. Dentists cannot and should not engage in the general practice of medicine and surgery, but we should all strive to keep up with the general progress of pathological and kindred sciences. The teeth are living portions of the body, composed of highly-differentiated and elaborated tissues, in intimate relationship with the vascular, the cerebro-spinal, the lymphatic systems, nourished moreover, like all other tissues, sharing, moreover, in a special manner with the well-being of the whole, as well as in its diseases and pathological manifestations. Those, therefore, who can best deal with the teeth are those who have not only a knowledge of their structure and disease, but also of their various relationships to the whole mass of the organism.

If this be ideal, then it is good to be ideal, and we can but hope that these high standards shall not be lowered, and that as this Section increases in numbers and importance, and contributes to the scientific development of our special subject, so shall dental surgery attain an honourable position, both in professional and public esteem, and its future position be as much in advance of to-day as dentistry is to-day higher than it was fifty years ago.

DISCUSSION ON ORAL SEPSIS AS A CAUSE OF DISEASE IN RELATION TO GENERAL MEDICINE.

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PART I.

1. *Importance of the Subject.*

THE subject of oral sepsis selected by the officers of this Section for their first discussion is of all others that with which a Section of Dental Surgery in our annual meeting may most fitly concern itself. The condition so termed forms the chief connecting link between dental pathology on the one side and medicine and surgery on the other; and hence, for purposes of discussion, the subject may well be divided into three parts, to be dealt with by a physician, surgeon, and dental surgeon respectively.

But while this is so, I desire to point out and emphasize at the very outset that "oral sepsis," as I designated and defined it*—namely, the various effects of streptococcal and staphylococcal infection found in the mouth—belongs to no one department of medicine or surgery. It is common ground on which the general physician or surgeon, the throat and ear specialist, the dental surgeon, all meet on terms of equal responsibility. In its earliest manifestations no special knowledge is required to deal with it—a sound grasp of the principles underlying antisepsis alone is required. Unfortunately for the patient, it is precisely this grasp which I grieve to say is wanting.

One would think poorly of a surgeon or physician who declined to take the responsibility of treating a follicular (that is, septic-pyogenic) tonsillitis, but insisted on handing over the case to a throat specialist. I think no less poorly of any physician or surgeon who declines to make himself responsible for the treatment of much of the oral sepsis presented by many of his cases. Wherein consists the pathological difference between follicular tonsillitis and a foul, inflamed condition of gums, with deposition of tartar covering and hiding foul granulations, loaded, as microscopic examination shows, with staphylococci or streptococci, or a pyorrhoea alveolaris? None whatever, except that the latter is exceedingly common and the tonsillitis is comparatively rare. The pathological condition in both is the same—namely, sepsis. Moreover, it is a sepsis as easily removable by simple antiseptic measures in the case of the one as in that of the other, and the more urgently requiring to be removed since it is more important as a potential disease factor than any other source of sepsis in the body.

But, it is urged, the condition is so common that it is impossible to deal with it successfully; further, the ill-effects are few and rare compared with the wide prevalence of the condition.

As I have elsewhere (1900) shown, and my further experience presently to be given fully confirms, the ill-effects are both common and grave; that they are not more common is due solely to the great resisting power possessed by the mucosa of the mouth and gums.

As regards the alternative plea of powerlessness to deal with a condition so common, that, I submit, is a poor one to be put forward by physicians or surgeons, and least of all by hospital physicians and surgeons, at whose instigation the most extended and expensive measures are adopted in all hospitals for the prevention, cure, or alleviation of disease.

2. *In Relation to Local and Haematogenous Infections.*

This matter of oral sepsis is of urgent importance, not on any aesthetic grounds, but in relation to the whole multifarious and widespread group of affections caused by the pyogenic organisms (staphylococci and streptococci).

1. *Local Affections*, such as stomatitis and gingivitis of every degree of severity, periostitis, alveolar abscesses, inflammations and suppurations in antrum and nasal sinuses, in tonsils, pharynx, and middle-ear diseases.

2. *Glandular Affections of Neck*, very common result.

3. *Gastric and Intestinal Affections*, caused or complicated by pyogenic organisms such as certain forms of gastritis (termed by me "septic gastritis"), enteritis ("septic enteritis"), colitis and proctitis, appendicitis, cholecystitis, septic inflammation complicating typhoid ulceration (the commonest cause in my experience of 50 autopsies of perforation and haemorrhage in this disease).

4. *Haematogenous Infections*, such as streptococcal and staphylococcal pleurisies, empyemata, nephritis, pyelitis, and perinephric abscesses, cholecystitis (and among surgical affections most notably osteomyelitis), and ulcerative endocarditis.

The above constitute a very severe and widespread group of conditions which we are constantly called on to deal with in medicine, having one common feature—namely, pyogenic infection—as their cause or complication. The chief problem with regard to them all at the present time, I venture to submit, is not their nature, but (1) the channels by which the infection gains entrance to their respective sites; (2) the conditions under which they attain the virulence necessary for them to take root (for example, ulcerative endocarditis). Pyogenic organisms are not necessarily by their mere presence disease producing—that is, on the skin, in the mouth, or in the stomach and intestinal contents.

But given the suitable conditions they are disease-producing; and these conditions are three in number: (1) an open wound by which they can gain entrance; (2) diminished resistance on the part of the tissues from any causes—whether lowering of general health or other infections (diphtheria, typhoid, tuberculous, etc.); and (3), what is most important, continuous exposure to increasing doses of the infection.

Now, these are precisely the conditions created in superlative degree by long-standing oral sepsis, namely, (1) inflamed granulations denuded of all epithelial covering found around necrosed teeth, and especially beneath thick deposits of tartar (creating the open wound); (2) long-standing stomatitis, best found under tooth-plates, lowering the resistance of the local tissues; (3) continuous production of pus, extending over many years, all of which is swallowed, lowering the general health and keeping up a constant supply of infection ready to avail itself of any weak spot in the body to which it may gain access.

It is, of course, impossible to keep staphylococci and streptococci out of the mouth, just as it is impossible to prevent occasional access of diphtheria, typhoid, pneumococcus, tubercle, and other infections. But that fact does not deter us from taking the most extensive sanitary and hygienic precautions to keep typhoid or tubercle infection out of the water or milk we drink or the air we breathe.

I submit, then, once more—as I did in the first communication (1900) bearing the title of "Oral Sepsis"—that in the interests of the many sufferers from the great group of pyogenic affections above mentioned this condition of oral sepsis—the chief channel of access of all pyogenic infections—is urgently deserving of increased notice and attention. Knowing as we do their pathogenic qualities, there is not the slightest reason why the mouth, so easily accessible to local measures, should be allowed to remain the chief hotbed for their development and propagation; on the contrary, it is a severe reflection on our profession if we allow it.

3. *Relative Importance of the Chief Channels of Pyogenic Infection.*

But it may be urged—granted the existence of all these various affections produced by pyogenic organisms—there are surely other channels, no less important than the mouth, by which these infections gain entrance into the blood. Why attach such supreme importance to this limited area of the mouth when we have such other extended areas of possible infection as the skin and the various cavities opening on to it—for example, the nose, the genito-urinary tract, and, most important of all, the whole intestinal tract?

As regards the first mentioned, I duly admit their importance as possible channels, but in relation to medicine—and this great department of it which I would term medical sepsis—this importance is of the smallest. If the amount of sepsis met with in medicine depended upon infection from the skin or genito-urinary tract, then the subject would have little interest for the physician. As regards the gastro-intestinal tract, the matter possibly stands otherwise. Why charge the mouth with being the chief channel of septic infection when possibly the intestinal tract may be an extended channel of this infection? This matter I submit as one for discussion in this relation.

It has been one of great interest and special study to me

* It was with the object of emphasizing the importance of these two infections that I sought for a suitable name and gave the name of "oral sepsis" (BRITISH MEDICAL JOURNAL, July, 1900), since then universally adopted. The subject of the infection through the mouth (for example, tuberculous, pneumococcal, diptherial, etc.) may best be termed "oral infection"; oral sepsis forms, then, the most important division of the whole subject of oral infection.

during many years of pathological observations in the *post-mortem* room, and the result of my experience is the following:

The intestinal wall, with its single layer of epithelium, its thinness, and the richness of its lymphatic supply, seems in every way an easy channel of organismal infection, including staphylococci and streptococci.

Nevertheless, it is in my experience one of the rarest. In over 1,000 *post-mortem* examinations personally made by myself I recall only one of acute peritonitis apparently due to direct extension at one point of an ordinary septic enteritis through the wall of the intestine to the peritoneal cavity.

In no other case did I ever meet with a septic peritonitis apart from extension (inflammation or perforation) from the usual sites—namely, appendix, salpinx, perforated gastric or duodenal ulcer, perforated typhoid lesion, gangrenous cholecystitis.

A form of enteritis connected with sepsis is, in my experience, a very common result of prolonged oral sepsis (as the specimens now shown from some of my recent cases demonstrate), so common that I term the condition "septic enteritis." But the fact just stated—namely, the rarity with which in the absence of other lesion such as typhoid ulceration, a septic enteritis however severe causes a septic peritonitis—denotes either that the resistance offered by the intestinal mucosa is much greater than that offered by the mucosa of the mouth (whence extensions of infections to adjacent periosteum, bone, or cavities are notoriously common), or that open wounds are much less common in the intestine than in the mouth.

The latter I conceive to be the natural explanation. It is the open wounds (for example, granulations) around necrosed teeth, or lying under tartar, or formed between the gums and the neck of the teeth, that form the chief channels of pyogenic infection in the mouth. Compared with this, the whole intestinal mucosa forms a protective surface of great strength. It is only when very severe and localized—for example, appendicitis and gastric ulcer—or when superadded to some other acute ulceration—for example, typhoid ulceration—that septic infection extends through and involves the peritoneum—septic peritonitis.

This latter conclusion with regard to the relation of sepsis to typhoid perforation I conceive to be of great clinical importance. It is based on an experience of fifty cases of typhoid fever examined *post mortem*. In every case which perforated I found evidence of inflammatory lesions in and around the adjacent typhoid ulcers, quite foreign to typhoid ulcers pursuing their normal course. One of the most interesting features of normal typhoid ulcers, as revealed in these cases, appeared to me to be the absence of inflammatory reaction in the floor of the ulcer and the very limited reaction in the surrounding edges.

The point I am here concerned to bring out is this—that if oral sepsis could be successfully excluded, the other channels by which "medical sepsis" gains entrance into the body might almost be ignored. Sepsis as an important and prevalent cause of disease in medicine would almost cease to exist, instead of being, as in my judgement it is at the present time, a more important and prevalent cause of disease in the domain of medicine than it is in that of surgery. Time was when the positions were reversed—when sepsis was so prevalent in the surgical wards that it overflowed in the form of some of its effects—for example, amyloid disease of kidney and liver and intestine—into the medical wards.

Now the relations are otherwise. In the form of the various affections above mentioned the greatest variety and most severe manifestations of sepsis and its effects are, in my experience, to be found in medical wards, whence they overflow (in the form of appendicular, gall-bladder, pleuritic, pyelitic inflammations and suppurations) into the surgical wards.

4. *Various Toxic Effects on the Blood, Nervous System, and Kidneys connected with Sepsis.*

In the foregoing remarks I have dealt with the subject on what may be described as its lowest, and none the less all too-neglected, plane—namely, that of various conditions obviously caused by pyogenic infection. I have now to draw attention to another no less important class of affections, one in which the effects are obviously those of toxic products, acting, as all such poisons do, sometimes more on one tissue—for example, nervous (producing severe mental and degenerative effects); sometimes more on the blood—for example, septicaemia, pyaemia, purpuric conditions, anaemia; sometimes more on the organs of excretion—for example, the kidney (producing nephritis); sometimes on the skin (producing rashes); sometimes on joints (producing so-called rheumatic swellings).

The problem here is of another and more difficult kind from that presented by the various infective conditions above described. These latter—in teeth, jaws, air sinuses; in stomach, intestine, colon, appendix, rectum; in kidney and heart—can be demonstrated to you before the naked eye, as I now do in the various specimens from cases coming under my notice during the past four years. The matter is otherwise with the various toxic conditions just mentioned. I cannot demonstrate before you, but can only describe my clinical and pathological experience of the last four years.

1. Severe rashes observed in septic cases under my care in the London Fever Hospital.

2. Obscure cases of fever, septico-pyaemia, general purpuric haemorrhages; for example, in a fatal case in a young woman who died within twenty-four hours of admission, traced back to an old chronic abscess of the antrum; similar non-fatal cases of obscure fever, haemorrhages, and anaemia, rapidly mending on removal of the foul oral sepsis they presented.

3. The dirty sallow (anaemic) look presented by the class of patients suffering from sepsis—perhaps most marked in the class of cases I have termed "septic gastritis" and "septic enteritis"—(observed in a total of 78 cases out of 1,000 out-patients which came under my notice during the past twelve months).

4. The severe nervous effects observable in so many of this class of case—headaches, mental depression, amounting in some cases to melancholia—disappearing in a striking way on removal of the oral sepsis in the ordinary class of case; very common in septic gastritis; but most prominent and permanent in the two classes of anaemia which I have described as attended by severe sepsis, and have termed "septic anaemia" and "infective haemolytic anaemia" (Addison's idiopathic anaemia) respectively.

5. Septicaemic conditions of obscure origin characterized by irregular fever of both intermittent and remittent type, sometimes terminating fatally with ulcerative endocarditis and secondary emboli haematuria, as in a typical case under my own care which died two days before this meeting; and in another case, aged 24, who died of extensive malignant endocarditis with emboli in spleen and kidney, and whose symptoms and course on admission were the following very characteristic group—namely, marked anaemia, sweating, and remittent fever; later on diarrhœa, petechiae on chest and arms, subconjunctival haemorrhages, haematuria. Both cases presented marked oral sepsis.

6. Varying degrees of severe anaemia presenting generally the features termed "pernicious," and included by most writers under the title "progressive pernicious anaemia," which are distinguishable, according to my observations, into two great forms, whose features I have described (1903)[1]—one unattended by haemolysis, or bone marrow changes, but generally accompanied by chronic nephritis ("septic anaemia"); the other corresponding to Addison's idiopathic anaemia, and characterized by intense haemolysis and bone-marrow changes, with an infective glossitis, a septic gastritis, or a septic enteritis—single or combined—"infective haemolytic anaemia," or "pernicious infective anaemia," and having according to my observations (1900)—confirmed by later clinical observations on over 40 cases, by pathological observations on 10 cases, and bacteriological observations on 5 cases—a relation of the closest kind with septic (streptococcal) infection of the tongue (glossitis, followed by atrophy), the stomach (septic gastritis, followed by gastric atrophy), of intestine (septic enteritis, followed by atrophy), and of the spleen and blood (5 cases).

In view of the special interest and difficulty attaching to this class of case (their study forms the basis of all my interest in the subject of sepsis), I append the summary of their distinctive features I have elsewhere given,[2] with notes of three cases of the form of anaemia I term "septic anaemia," to distinguish it from the form of anaemia first described by Combe (1822), and Addison (1855), and generally known as Addison's idiopathic anaemia.

In view, further, of the various criticisms to which my conclusions have been naturally subjected, among others by Professor Grawitz (1901), Dr. Macrae (1902), and Professor MacPhedran (1902), I append a brief summary of the various

cases recorded by other observers confirmatory of my conclusions. These observers include Sir Thomas Barlow, Sir Dyce Duckworth, Dr. Elder, Dr. Horace Colman, and Dr. Warthin.

7. The last group of affections which my recent observations bring into relation with sepsis and its toxic effects are certain forms of nephritis. As just stated, a notable feature of the class of severe anaemia I have termed "septic anaemia" is the co-existence in most cases of chronic nephritis. Further, in all dying of severe sepsis I have always found marked changes in the kidney—namely, swelling and congestion, with marked degenerative changes in the epithelium of the tubules (cloudy swelling, fatty degeneration, desquamation), and hardly less marked interstitial changes (oedema and small-cell infiltration, the latter in some cases very marked). These two sets of changes comprise all those characteristic of nephritis in its early stages, and they naturally have suggested the thought that if such changes are produced as the toxic effects of severe sepsis, similar changes, less severe in character, are likely to be produced by a septic toxaemia extending over many years. Here, again, it is a mere question of dose and resistance, and the evidence already adduced shows clearly enough how continuous must be the toxic absorption connected with the existence of such severe conditions of oral sepsis.

I think the evidence sufficiently strong to warrant attention being given in the future to this subject.

PART II.

AUTHOR'S FURTHER OBSERVATIONS REGARDING THE RÔLE OF SEPSIS IN GASTRITIS, FEVERS, ANAEMIA.

1. SEPTIC GASTRITIS.

What, then, is the particular departure involved in recognizing a form of gastritis entitled to be called "septic gastritis," as appears to me to be necessary in my first paper on this subject (January, 1899)? It is not merely the recognition of the fact that indigestion may be associated with foul mouths. The credit of having recognized that fact belongs to Professor Miller, and yet how little impression was made by the charge he brought against the physicians that "their custom to disregard dental diseases altogether as a factor in pathology is as unjust to their patients as it is discreditable to their profession," may be gathered from the following extracts from representative works on diseases of the stomach.

As the following extracts show, most writers on the subject consider that the only way in which organisms may cause gastric disorders is by setting up fermentation in the food.

1. Thus, according to Professor Ewald (1892):

Every acute gastritis is really a toxic gastritis in the sense of a local irritation such as is produced by toxic—that is, locally irritant and corroding—substances. The irritant arises from excessive quantity or defective quality of the food.

Spoiled articles of food and drink may even cause inflammation of the mucous membrane of the stomach, probably on account of the inflammatory and fermentative action of the microbes which have been introduced into them. Thus we might speak of a bacillary infection if by this we understand quite generally that the disturbances are to be referred to the action of the micro-organisms, not of course to a direct invasion of them.

Furthermore, it has frequently struck me, in the various cases in which I have examined pieces of human mucous membrane while still warm from the body, that I have never found so much as a trace of bacteria in the tissues, although they are so common in the contents of the stomach. Yet I must confess I have studied this point superficially, rather than with great attention to details.

And he quotes in support of the foregoing the observations of Smirnow,[3] who in six cases of gastritis membranacea diphtheritica found large numbers of micrococci and bacilli in the membranes lying upon the gastric mucosa, yet could not detect them in the lumen of the glands or in the tissues.

2. Professor Sidney Martin, in his well-known work (1895) on *Diseases of the Stomach*, in the chapter describing the pathology of indigestion of food, distinguishes two groups of causes:

A. *Local Causes.*—For example (1) due to the character of the food itself—its degree of subdivision, its bulk, composition, and chemical reaction; the amount of food accessories taken, the drugs and salt taken with it; (2) due to fermentative changes in the food, associated with delay of food in the stomach: (3) due to changes in the functions of the stomach—(*a*) in the absence of organic disease; (*b*) in its presence.

B. *General Causes.*—(1) General and local non-infective disease affecting the functions of the stomach—for example, chlorosis, heart disease, Bright's disease, liver disease, gout, and functional and organic diseases of the nervous system; (2) infective disorders affecting the functions of the stomach—for example, tuberculosis, malaria, typhoid fever, scarlet fever, measles, cholera, rheumatic fever, influenza.

Bacteria are taken into the stomach chiefly with uncooked food and unboiled liquids; if fresh food properly cooked is eaten hot, very few micro-organisms are swallowed. On the other hand, with food—especially meat and green vegetables (either tinned or otherwise)—bacteria are in some cases present, and some of the most virulent cases of bacterial gastro-intestinal infection occur in this way. . . .

The presence of bacteria in the recently-evacuated stomach contents discoverable by a microscopical examination is a sign of fermentation in the stomach—which is also demonstrated by a chemical examination of the fluid.

Pus is in some cases present in the vomited matters. It is usually the muco-pus from the pharynx or bronchial tubes brought up by vomiting excited by cough. Pus may be present in the vomit, and come from the rupture of an abscess into the œsophagus or into the stomach. Abscesses of the stomach are rare: and in the diffuse form of suppuration pus may be constantly present in the stomach contents.

There is no mention here, it is to be noted, of a far commoner and more potent source of stomach infection than eating uncooked meat or vegetables—namely, continuous swallowing of pus organisms from foul gingivitis and stomatitis, and naso-pharyngeal discharges.

With regard to the rare condition variously designated "phlegmonous gastritis," "mycotic gastritis," purulent inflammation of walls of stomach, "submucous abscess," "gastritis purulenta," "suppurative gastritis," "gastritis bacillaris," "gastritis mycotica," in which pus organisms are admittedly found, the fullest account is that given in the Edinburgh Hospital Reports for 1896 by Professor R. F. C. Leith. In 6 out of the 52 cases of phlegmonous gastritis collected and tabulated by Dr. Leith, micro-organisms were actually found.

If the methods for detection of bacteria had been as well known as they now are, I have no doubt they would have been found in them all (Leith).

In the case described by himself and in 3 of the above 6 the streptococcus was the chief organism present. He draws attention to the parallelism betwixt phlegmonous gastritis and erysipelas, and notes that while we often cannot tell how or why an erysipelas arises, we never speak of it as being an obscure disease, whereas every author who has yet written upon phlegmonous gastritis has done so. Leith thinks it may be looked upon as a severe form of erysipelas of the stomach.

Curiously enough, however—and this is the interesting point in relation to our present subject—in discussing the probable source of the infection in such cases, the various possibilities are considered to be two—namely, the disease may arise from the side of the stomach or from the blood.

As to the conditions which favour the determination of the streptococcus to the stomach, the relative importance of alcoholic excess, dietetic errors, and overloading of stomach, is considered. It is not even suggested that the source of infection might possibly be the mouth.

And yet one of the cases (No. 45), in which the symptoms came on six days after a tooth extraction and death ensued on the tenth day, the following were the extraordinarily septic conditions found:—In stomach: submucous, muscular, and subserous coats infiltrated with pus; mucosa slightly hyperaemic. In mouth: "The gums swollen, and showed purulent ulcers; alveoli of jaw slightly splintered; submaxillary glands swollen."

The relation of events in this case I should conceive to be: a diseased tooth with purulent ulcers around as focus of infection; extraction; further inflammation and necrosis; constant flow of pus organisms into stomach for six days (probably also for a long period before the tooth was extracted); acute infection of its walls; suppurative inflammation and death.

Lastly, to complete this brief review, Professor Hemmeter, in his work on *Diseases of the Stomach* (1901), thus describes the causes of phlegmonous gastritis:

The direct cause of the rarer idiopathic phlegmonous gastritis is unknown. Judging from anatomical specimens, the direct causes are undoubtedly bacterial invasions of the submucosa, principally by pyogenic cocci, that find portals of entry into the superficial lesions in the superficial epithelium of the stomach such as occur in most gastric diseases, especially in carcinomata and old ulcers, or after trauma caused by fish bones, seeds, foreign bodies, etc.

Most authors who have had experience of the disease distinguish, first, an idiopathic primary purulent gastritis, the etiology of which is obscure; and, secondly, a secondary, metastatic, phlegmonous, or purulent gastritis, which is an accompaniment or sequence of other infections, such as pyaemia, puerperal fever, anthrax, typhus, or variola. This form owes its origin to localization in the stomach of the specific organisms producing the fundamental disease. Whatever they may be, it is self-evident that only an enfeebled organ is liable to such an inflammation, since pyogenic cocci cannot resist the action of the free HCl of the gastric juice.

[3] *Virch. Archiv*, Bd. 113, p. 333.

There is no mention here, it will be noted, of long-lasting and oftentimes virulent sepsis from swallowing of pus from the mouth, naso-pharynx (ozaena, rhinorrhoea), or chronic empyema of the antrum.

Under the head of "Infectious Gastritis," he states that "those that establish a separate category for this affection class under this head all gastric invasions by infectious germs, so that all forms, as remarked before, are to a certain extent infectious. The symptoms are said to be very similar to acute simple gastritis. The course is more protracted, lasting three to ten days. There seems to be no necessity as yet for a separate classification of this kind; the subject is still too hypothetical to be ranked as equal in importance with other well-characterized forms of gastritis."

Under the title of "Mycotic Gastritis," he refers to isolated cases caused by anthrax, favus fungus, thrush fungus, yeast fungus, diphtheria bacillus.

Again, no mention is made of pyogenic infection as a possible cause.

On the other side I have been led to a different conclusion regarding the frequency and importance of gastric sepsis—as a factor in creating (*a*) gastric catarrh, (*b*) gastric erosions, (*c*) gastritis, (*d*) gastric atrophy, (*e*) gastric ulcers.

Since my first case was recorded (1899)—supported a year later (1900) by my observations regarding the presence of gastric and oral sepsis in pernicious anaemia (January, 1900)—the condition then termed "septic gastritis" has received a large measure of clinical recognition—many writers speaking of it as something so obvious as to present no difficulty about its acceptance—one of the first cases described identical with the above being a case under the care of Dr. Sidney Martin, recorded by Mr. Godlee (June, 1900) before the Royal Medical and Chirurgical Society.

And I venture to express the hope that, like the condition termed "oral sepsis," the one termed "septic gastritis" may, if only in view of its clinical importance, be deemed worthy of separate recognition in the chapters of all future textbooks of medicine dealing with the subjects of the mouth and stomach respectively.

But the degree to which it will obtain firm recognition in medicine must, as in other cases, depend most of all on the strength of its pathological foundations. The extracts already given will show how unwilling pathologists are to recognize the existence of any sufficient pathological basis for the view that the stomach itself or its mucosa may, under conditions, become the seat of a permanent infection.

Author's Later Observations.

In view of the importance of the subject I have, during the past four years, made an extended series of anatomical and histological observations of the condition of the gastric mucosa in widely different conditions, but more especially in various conditions of profound sepsis. The number of sections cut, and stained, and examined from these cases number several thousands.

The results are the following. Considering the number and variety of the mouth organisms swallowed with the saliva, it might appear at first sight an extremely difficult, if not impossible, task to distinguish *post-mortem* infection of the mucosa from infection existing during life. The task is difficult at first, but by multiplying the number of observations it becomes quite easy to distinguish (by the character and situation of the organisms, and the character of the nuclear changes in the tissues) the two conditions. As a matter of observation, it is remarkable how few organisms are present on the mucosa of the healthy stomach in contact with the epithelium. Any organisms present are found in the mucus lying on the surface. The columnar epithelium lining the ducts of the glands and the surface of the mucosa is often detached by maceration, and no importance is to be attached to its absence. The secreting cells of the glands proper are, when suitably hardened, remarkably well preserved.

As regards the naked-eye appearances of congestion and catarrh presented by the stomach in the various conditions studied, I have made it a point to preserve the natural appearances, so far as possible, by using the formalin method, and the result is seen in the specimens now before you, showing every degree of change, from the slightest localized congestion and catarrh up to the most intense and general degree of gastritis.

As regards the histological appearances, they include every degree of acute inflammatory change in and around the tubules, with invasion of the mucosa and of the tubules by streptococcal organisms, superficial erosions, the whole leading, in chronic cases, to obliteration of the tubules by proliferating fibrous tissue cells, or to their fatty degeneration with atrophy of the tubules.

Cases of Septic Gastritis and Enteritis.

The specimens now before you demonstrate the character—and in severe cases remarkable degree—of the gastritis, enteritis, and colitis which may be produced by foul sepsis of the mouth.

Case I.—A child, aged 12, admitted under my care at the London Fever Hospital. On the eighth day of disease (scarlet fever)—severe tonsillitis, and rhinorrhoea; temperature 103°, pulse 145; severe adenitis (glands as large as Tangerine oranges); tongue coated; breath foul; slight tympanites; bowels loose, but only one or two motions daily. The tympanites increased, accompanied by diarrhoea (five, seven, nine and more brown fluid motions daily); vomiting set in, and there was severe abdominal pain suggestive of peritonitis; the temperature continued high, ranging between 102° and 103°. On the sixteenth day, a maculo-papular (septic) rash appeared on arms, legs, neck, and chest, and the right ear began to discharge, and the patient passed into a semi-comatose condition, and died two days later—ten days after admission. *Post-mortem Examination:* There was found the most intense gastritis, enteritis, and colitis; no peritonitis; kidneys swollen, showing microscopically intense oedema, with cloudy swelling and fatty degeneration of the cells of the tubules. From the spleen I obtained a streptococcus longus.

In this case the infection was a very severe one and had fallen in the first instance on the tonsils, nose, ears and glands.

The continuous discharge from the nose being swallowed set up a no less severe and generalized gastritis, enteritis and colitis; the general effects included high fever and a general septicaemia with septic rash; remoter effects of the poison were shown in the kidney—congestion, oedema, parenchymatous degeneration.

Case II.—M., a woman admitted for severe abdominal pain and distension suggestive of acute peritonitis; death, three hours later. *Post-mortem Examination*: The most intense gastritis and enteritis, the latter shown in specimens before you, accompanied by acute parenchymatous changes in the kidney.

In this case there was extreme oral sepsis.

Case III.—C. P., aged 37. Foul oral sepsis; most intense gastritis, enteritis, and colitis, chronic renal disease, pericarditis, uraemia. Microscopic examination of stomach: Intense gastritis, with invasion of mucosa by masses of streptococci.

Case IV.—I. McG., aged 36. Oral sepsis, marked gastritis, and patchy enteritis, chronic granular nephritis, cardiac hypertrophy.

Case V.—G. T., aged 24. Oral sepsis; malignant endocarditis of the most marked kind; anaemia, sweating, remittent temperature, diarrhoea, petechiae on arms and legs, subconjunctival haemorrhage, haematuria, catarrh of stomach.

2. ORAL SEPSIS IN RELATION TO FEVERS.

I have already touched on this in relation to typhoid fever. It is equally important in my experience in relation to the septic complications of scarlet fever, measles, and diphtheria. I have studied it most in relation to scarlet fever.

There is no fever so closely associated with and complicated by sepsis as scarlet fever. During the past year and a half I have made a series of observations on 200 cases under my care at the London Fever Hospital as to the prevalence of oral sepsis and its relation to the severity of the various septic complications met with—notably (1) the initial angina, (2) the secondary angina, (3) adenitis.

1. *Oral Sepsis in Relation to Severity of Initial Angina.*

The number of cases in which this was noted was 88, and the results were the following:

1. No oral sepsis (51 cases); 34 (67 per cent.) had a mild angina, 14 (28 per cent.) had a moderate, and only 3 (6 per cent.) had a severe angina.

2. Slight or moderate oral sepsis (27); 18 (66 per cent.) had a mild angina, and the other third (33 per cent.) had a moderate angina. No case had severe angina.

3. Severe oral sepsis (10 cases). Only 2 (20 per cent.) had a mild angina; 8 had moderate or severe angina (80 per cent.).

There is thus a close relation between the degree of oral sepsis and the severity of the initial angina.

2. *The Relation of the Severity of the Initial Angina to the Subsequent Occurrence of Adenitis as a Complication.*

For purposes of comparison a throat scarcely injected is called (½); a throat injected but without exudate is called (1); a throat with purulent exudate (2); and a throat of unusual severity (3).

In 94 cases no secondary adenitis occurred.

In 23 cases secondary adenitis occurred later on in the illness.

An analysis showed that in cases with only mildest angina (½), only 3 out of 27—that is, 11 per cent.—had adenitis. On the other hand, those with severe angina (3), 4 out of 13 had adenitis, or 30 per cent. And those with angina (1) and

angina (2) occupy an intermediate position—namely, angina (1) 9 out of 34, or 16 per cent., had adenitis; and angina (2) 7 out of 32—21 per cent.—had adenitis.

There is thus a close connexion between the severity of the initial angina and the risk of adenitis occurring later on.

3. *The Relation of Oral Sepsis to the Occurrence of Secondary Tonsillitis.*

In 39 cases in which oral sepsis was noted, secondary tonsillitis occurred five times. In no fewer than 3 out of this number the oral sepsis is noted as severe, in 1 it was moderate, and in 1 its degree is not mentioned. That is to say, in at least four-fifths of the cases secondary tonsillitis occurred in patients having a moderate or severe degree of sepsis.

Thirty-three cases of scarlet fever were examined bacteriologically by my resident officer, Dr. Dawe, 39 examinations in all being made:

Streptococcus conglomeratus	...	11 times
,, of other kinds	...	23 ,,
Staphylococci	...	27 ,,
Diplococci	...	3 ,,
Sarcina	...	4 ,,
Bacteria	...	4 ,,

In relation to oral sepsis it is to be noted—that of 14 cases without any oral sepsis no staphylococci were found in 8 cases; whereas in 19 cases with oral sepsis staphylococci were isolated in 17 cases.

The presence of staphylococci is an important factor in determining the severity of the initial throat lesion. They were never found in mild cases (2 cases); they were present in three-quarters (21 out of 27) of the cases in which the angina was slight or moderate, and in 2 cases in which the angina was severe they were found in both.

There was thus a certain relation between the degree of oral sepsis previously existing and the severity of the two chief classes of infective lesions met with in scarlet fever—namely, tonsillitis (both primary and occurring later on in the disease as a complication) and adenitis occurring as a complication.

The relation is probably even closer than the one suggested by the above figures, for this reason—namely, that the oral sepsis observed was always treated at once, and, so far as possible, removed or sedulously treated throughout. I am unable to compare these results with others obtained without any such treatment. For no observations have ever been made hitherto with regard to this subject—another illustration of the great neglect of this subject.

3. ORAL SEPSIS IN RELATION TO SEVEREST ANAEMIAS.

1. "*Septic Anaemia.*"

It is, as already stated, this septic infection which gives to the heterogeneous group of anaemias comprised within Biermer's definition "progressive pernicious anaemia" the resemblances which have led them to be mistaken for Addison's anaemia. In them the "septic factor" is so predominant that I have for some time past distinguished them in my own mind by the title of "septic anaemia." The features of severe forms of this anaemia are: (1) An oligocythaemia comparable to that found in Addison's anaemia, including the existence of poikilocytes, normoblasts [and in some cases even megaloblasts, to which so much distinctive importance has (erroneously, in my experience) been attached by Ehrlich and most observers]; (2) haemorrhages; (3) dirty yellow, anaemic complexion; (4) very frequently the existence of oral, gastric, and intestinal sepsis and symptoms; (5) fever; (6) severe and often fatal course the disease takes; (7) nervous effects and symptoms in many cases; (8) favourable prognosis if the cause be removed in time; (9) chronic nephritis; and (10) absence of the haemolytic and bone-marrow changes found in Addison's anaemia.

Cases of "Septic Anaemia."

CASE 1.—A lady aged 42. November, 1900. Rheumatism fifteen or sixteen years. Anaemia since summer of 1899, with sickness first thing in the morning. Got better in autumn, 1899, then worse in summer, 1900. Breathless, palpitation. Most filthy taste in mouth, just as if she were full of ammonia, last six weeks. Got so weak she could hardly stand. Quantity of phlegm and matter back of throat. Numbness and tingling all over, as if she had been thrown into a bed of nettles. Feverish attacks while at Buxton. Not lost weight. Tongue foul and coated. Urine pale, 1012; slight trace of albumen. Alveolar and maxillary suppuration last one and a half years, with periodic escape of pus into back of throat.

November 3rd. Red blood corpuscles, 1,590,000 = 31 per cent.; haemoglobin = 40 per cent. Chronic empyema of antrum. Three teeth extracted and antrum drained.

December 14th. 2,420,000 = 48 per cent.

December 27th. A gain of weight from 6 st. 6 lb. to 7st. 1 lb.

December 29th. 2,500,000 = 50.

January 1st. Sudden onset of uraemic symptoms.

Death two weeks later. No *post-mortem* examination obtained.

In two other similar cases complete examination was made *post mortem*, with analysis of organs for iron. No increase of iron in either case. No bone-marrow changes.

2. "*Infective Haemolytic Anaemia.*" "*Pernicious Infective Anaemia.*"

In Addison's anaemia, on the other hand, the septic factor is, according to my observations, a most important antecedent and concomitant, but not the only factor. It precedes the disease, creating conditions of mucosa in mouth, stomach, and intestines which permit the contraction of the specific (haemolytic) infection underlying the real characteristic features of the disease. Its features include the blood changes above mentioned in connexion with "septic anaemia," generally more marked and of greater severity than in septic anaemia. They include, however, certain features which mark it off from simple septic anaemia. (1) Most important pathologically: an intense haemolysis, accompanied by pigment changes in the liver, kidney, and spleen—these changes being, according to my observations and analyses recorded January, 1903, no less characteristically absent in "septic anaemia," even the severest forms. (2) The occurrence of a glossitis possessing peculiar clinical features, as I before described (1900), and even more striking pathological characters, as I have since found, and associated with a deep-seated infection of the tongue itself, as I now have ascertained bacteriologically (in 5 cases). (3) The contraction of this infective glossitis coincides approximately with the onset of the severe anaemia and its accompanying haemolysis, so that in many cases with a clear history the patient can date the onset of his disease from a particular month when this glossitis was first noted. (4) The source of this haemolytic and glossitic affection which thus, comparatively speaking, suddenly comes on is connected—when the history can be clearly obtained—in all cases with an exposure to drain poisons (5 cases). (5) The haemolytic infection once taken root in the mucosa and substance of the tongue, in the mucosa of the stomach, and in some cases in the mucosa of the intestinal tract, is extraordinarily persistent, healing up in one part for a time, then spreading to another—these variations in activity as they can be seen during life in the tongue being attended by an aggravation of all the features of the disease—namely, increased anaemia, increased haemolytic changes (in the urine), increase of glossitic, gastric, or intestinal symptoms, and increase of toxic (febrile and nervous) disturbances.

To mark off this "remarkable disease," as Addison truly called it, from the mixed group of "symptomatic conditions due to many causes" described and spoken of as "progressive pernicious anaemia," and by many as "pernicious anaemia," has thus in my judgement become an even greater necessity than it was when Addison first described it. "Addison's anaemia" would fitly describe it if Addison's name were not already associated with another disease; and, as I have already had occasion to note, confusion might arise by using the term "Addison's anaemia" only. The term "idiopathic" has been given a generic significance, and cannot now be restricted to one form of anaemia, even if it were any more satisfactory than such terms as "primary," "essential," "protopathic," "cryptogenetic," which it is not. I have myself always employed the title "pernicious anaemia" as referring to the rare form of anaemia had in view by Addison, occurring "without discoverable cause"; and it has become quite a task each time one writes to explain that it is to this form, and not to the "progressive pernicious anaemia" of Biermer, "due to many causes," that one refers. But many writers—I fear the majority—use the title "pernicious anaemia" in a generic sense, as including all forms of severe anaemia—"pernicious anaemias," as Grawitz calls them—and the result, so far as I am concerned, is endless confusion, as I have recently had occasion to note.

Views and conclusions are ascribed to me absolutely opposed to the whole tenour and character of my work from first to last, which notoriously have been to emphasize in every direction from which I have approached the subject the special nature of this anaemia. If my work proves anything at all, it is that none of the ordinary causes of anaemia—whether they be the older ones, gastritis, gastric atrophy, worms, haemorrhages, altered digestion, altered absorption, and auto-intoxication—or the new set of conditions which

I have recently brought into prominence—bad teeth, pyorrhoea alveolaris, "septic gastritis," or the whole group of septic mouth conditions which I have comprehensively designated "oral sepsis"—can of themselves produce Addison's anaemia with its characteristic haemolytic changes. I thought to make this quite clear by such statements as that "none of these conditions (for example, mouth conditions), however severe, can be held to be the direct cause of so rare a disease. Even in the cases in which they are most intense, they cannot be regarded as the causes of the disease," and I then felt quite free to discuss the important rôle which (always subordinate to the above conclusion) they one and all might "nevertheless" play. All views and statements such as that I ascribe Addison's anaemia to "bad teeth," "pyorrhoea alveolaris," or "foul mouths"—or that I "should like to ascribe pernicious anaemia to such causes"—are not only quite wrong; more than any other conclusion they would stultify my whole work on this disease, which has been to point to its specific infective and haemolytic nature.

Criticisms of Foregoing Conclusions.

As was naturally to be expected, the foregoing conclusions (1900) have received the criticism which was their due. But they have already—in the short period that has since elapsed—received a degree of confirmation at the hands of others, and especially by the author in over 40 cases he has since observed, which is as encouraging as it was unexpected. The criticisms have been applied especially to the conclusions regarding the rôle of sepsis in this anaemia—the point I was most concerned in working out in the first instance (1900).

The other, and in my judgement more important, conclusions regarding the peculiar character and the frequency of the glossitis, has been almost completely overlooked. "Hard to realize," "difficult to understand," "rendering etiology very involved," "of no use in the treatment,"—such represent some of the appraisements given to my results. The criticism regarding etiology is a curious one in connexion with an anaemia whose chief feature has always been "its undiscoverable cause"; and the other regarding treatment no less so in view of the fact that most observers have since 1900 carried out oral and gastric antiseptic treatment of the disease as a part of routine practice, and the results have been thus described by so eminent a clinician as Sir Thomas Barlow: "There is no doubt of the great improvement which results in many cases of pernicious anaemia" by attention to the mouth. My own experience in 30 cases fully bears this out.

Other criticisms relate to the facts rather than to their value—such as: "The conditions do not exist," "not found in all cases," "they may exist, but if so they are the effects of the disease, and have no connexion with its etiology; they are secondary, not primary . . . cases in which they are present are not more severe than in those cases in which they are absent."

As Professor Grawitz puts it: "My own experience is that no general significance can be attached to these mouth inflammations in this relation ['oral sepsis,' special glossitis], since in the relatively large number of cases which have come under my notice, I have not met with a single case in which there has been any noteworthy primary stomatitis [glossitis]. On the other hand, secondary stomatitis, with severe haemorrhages into the gums, can arise in pernicious anaemia, as the result of the general cachaemia prevailing."

The whole point of my observations regarding "oral sepsis" in relation to this disease is quite missed in the foregoing criticism. (1) I have nowhere referred to "inflammations" as a feature of the conditions found in this anaemia in its later stages; on the contrary, I have specially drawn attention to their absence, "even when pyogenic infection is most marked." There is no inflammation in the later stages, for the simple reason that there is not sufficient blood when the disease is severe to cause any "redness, swelling, heat, and pain." (2) The chief feature of the sepsis is that it precedes the anaemia often for many years; and by the time the anaemia declares itself, it may be and often is less than it was, or may even, from the most intense pallor and absence of reaction, appear absent.

Confirmation.

[Date of author's papers was January and February, 1900 (*Lancet*)]. Observations on over 40 cases I have since observed confirm in fullest manner all the conclusions formerly reached. The following are confirmatory cases recorded by others. Dr. Norman Dalton has in the *Clinical Transactions* (1903) also recorded two well-marked cases of "septic anaemia."

Dr. Elder (April, 1900).

"History of onset: subject to bilious attacks." About 17 years of age he was troubled very much with bad teeth, had many gumboils, and had to get several teeth extracted. Since then his teeth had been bad and had troubled him much, but gumboils had not been so frequent. About six months before admission he had a severe attack of sickness and diarrhoea, and since then he had gradually got weaker and had occasional attacks of sickness.

Comments.

The case is one which, apart altogether from the results of treatment (antistreptococcic), might be used by Hunter to further support his views. As regards the primary cause [the existence of a septic factor], this case supports Hunter's views. The mouth and teeth could be described as in a state of neglect. The history of discharge of pus into the mouth extended back for many years. He had a history of occasional bilious attacks pointing to gastric disturbance for some time before the onset of his anaemia, and he gave a history of having suffered from an attack of diarrhoea at the onset of the gastric symptoms. These gastric and intestinal disturbances are therefore also in accordance with Hunter's theory of the cause of the disease.

This is the typical history of the mode of onset as regards the character of "antecedent oral sepsis" accompanied by gastric and intestinal symptoms (septic "gastritis" and septic "enteritis") described by the present writer.

Dr. Horace Colman (1901).

Case I (1901).—No note was made of the state of the teeth.

Case II.—August, 1898; died January 14th, 1900. No note of mout a doubtful case.

Case III.—(July, 1900). "History: Till three years before onset of illness general health excellent, but for many years he has had middle-ear disease and a pharyngitis directly connected therewith. Three years ago he had a series of boils and a facial cellulitis, apparently directly produced by a spreading from the ear. His health suffered to some extent from this. [Cf. History of antecedent oral sepsis without anaemia, followed more or less suddenly by an anaemia out of all proportion to the degree of severity of any local or general symptoms. This sudden onset denotes the supervention of the haemolytic infection underlying the disease. Such is the typical mode of development of this anaemia.] In May, 1899, his strength declined, but he continued to work. In September he had several fainting fits and vomited once or twice [gastric symptoms], and people remarked on his yellow colour [haemolytic symptoms]. A month later his blood showed 23 per cent. of corpuscles and 23.5 of haemoglobin, and in a few days he collapsed altogether. Death in July, 1900. In view of Hunter's recent paper I made a careful examination of the mouth and throat. The tongue was very red, and the epithelium very thin, there was no fur at all, and there were a few extremely red raw-looking spots [a typical condition]. Four incisors in the lower jaw perfectly sound, clean, and with healthy gums, two bicuspid stumps, each situated in a little moat of pus. These were all the natural teeth—the false teeth were scrupulously clean. There was a chronic pharyngitis, with a sticky mucopurulent secretion difficult to remove. The whole state of the nose and throat seemed to be the direct result of the ear disease. The drum of the left ear was absent—discharge by the meatus ceased two years before."

Remarks.

This case has several interesting points, to which I have referred, but it is as well to note here that the state of the mouth and action of salicylic acid are much in favour of Hunter's latest contention. I would particularly call attention to the colour of the urine and the variation in it with salicylic acid, and the correspondence of this variation with an improvement in his general condition.[4]

In Cases I, II, III, and IV (observed prior to 1900) there is no mention of mouth or teeth.

Case V (January 20th, 1901).—"During attacks he has sore mouth, fever, frontal headache, and feeling of numbness over the whole body. He has had frequent attacks of nausea and pain in the stomach in which he vomits; two or three watery stools a day."

[This is precisely the character and relation to each other of the glossitic, gastric, and intestinal symptoms described by the author as typical of this disease the so-called "toxaemic attacks."]

Case VI (April, 1901).—Complains of night sweats and a sore mouth.

Case VII (December 5th, 1901).—"History of onset; had a sour vomit which bit his mouth. This condition lasted till a year ago, when he began to lose his appetite and strength . . . Condition of the mouth: Tongue small, smooth, without coat, papillae very short, teeth rotten; only few snags in the mouth; slight soreness of the gums; gums ulcerated."

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A PRELIMINARY NOTE ON THE PATHOLOGY OF ORAL SEPSIS.*

Inflammatory processes involving the soft tissues of the

[4] Dr. Warthin (1902), *On the Pathology of Pernicious Anaemia*, reporting 8 cases with the most extended study of the lymph glands yet made in that disease.

* A grant towards the expenses of this research was made by the Odontological Society.

mouth, either of the mucous membrane as a whole, or perhaps confined to the margins of the teeth alone, together with the especial diseases of the teeth themselves, may all be properly considered as phases of oral sepsis.

Osler, in his *Principles and Practice of Medicine*, describes twelve varieties of stomatitis, and suggests others; Goodhart and Still mention six as occurring in children. Both observers agree that many other varieties may exist, but they do not discuss these, or those especially related to the gum margin. Smale and Colyer, in *Diseases and Injuries of the Teeth*, give an extended and comprehensive survey of the question. The various diseases are divided into three main groups:

(*a*) Gingivitis—those associated primarily, and, as a rule, localized to the margins of the gums; they may, however, commonly develop into general stomatitis.

(*b*) Stomatitis—those inflammatory conditions related to the whole buccal cavity.

(*c*) Periodontitis—a term in which affections of the peridental membrane or alveolar-dental periosteum are included, together with other affections of allied pathology.

In all, a total of fourteen distinct forms are described under the above headings, but of them only one group—that of parasitic stomatitis—has a definite bacteriology, the disease being due to either the saccharomyces albicans or aspergillus nigricans. Of the others, very little is known of their pathology, practically nothing of their bacteriology. In the case of ulcerative stomatitis some work has been done, but no definite bacteriological conclusions can be cited, although Goodhart says (p. 145):

> From the correspondence of the lysis with the commencement of the healing of the ulcers and the disappearance of the fur from the tongue, I have sometimes thought that possibly some cases, at any rate, might be due to a specific germ.

I am also inclined to this view from the decidedly infectious nature of the disease, both in the mouth of the affected child and as distinctly communicable from child to child. I have also observed on several occasions that the mothers who bring these children up for treatment are, in a very large number of cases, the subjects of oral sepsis. A considerable number of diseases, among which may be cited such infectious diseases as enteric fever, influenza, etc., are liable to a very definite stomatitis; whilst certain other affections, among which gout, diabetes mellitus, the uraemic stage of Bright's disease, are also liable to mouth inflammation. It is obviously impossible to attempt to discuss each or all of these affections of the mouth, and it will be readily granted that, for our present purpose, those which are chronic, insidious, and not associated with acute general manifestation in a definite manner are those that are of greatest importance in this discussion, constituting as they do the forms of oral sepsis most easily overlooked. It is, however, important to bear in mind that certain of the acute forms of oral inflammation may supervene upon a chronic condition, and that chronic localized diseases may often follow an acute stomatitis; thus, it frequently happens that an acute fever such as enteric, or a disease such as influenza, are complicated by stomatitis, which perhaps persists, after recovery from the general infection, as a localized and chronic disease of the alveolar process; whilst the converse is also true, and it is possible that in certain diseases, such as uraemia and diabetes, the stomatitis is of such origin.

There are three varieties of this particular section of oral pathology which possess certain clinical manifestations as well as a difference in their bacteriology sufficient to allow preliminary classification:

1. Gingivitis, general or local.
2. Progressive periodontitis.
3. Chronic acute alveolar osteitis.

Gingivitis.

The gum margins along the whole line of the teeth are marked by a red line of inflammation 2 or 3 mm. wide, or localized inflammation around one or more teeth, especially around the remains of carious teeth. There may or may not be complaint of pain, there is often irritation, combined with a sensation of tenseness, the affected gums bleed readily on the slightest provocation. The interdental portions of gum are hypertrophied, detached from the teeth, while the whole margin is thicker than normal. There is generally a sour smell of the breath, there is rarely any appreciable amount of dental calculus. The condition is common in unhealthy children and young adults, less common in adults, extremely rare in old persons. The teeth are rarely loose, and are frequently covered with a white fur near the gum margin from the discharge of the so-called "gingival organ."

Progressive Periodontitis.

The whole of the gum and the mucous membrane covering the alveolus is the subject of chronic inflammation; the venous radicles are generally well marked in the alveolar and buccal sulcus, but there is frequently no inflammation whatever to be seen, the gums being paler than normal and of a shining atrophic appearance; neuralgic symptoms, with referred pain at the various neuralgic foci, are not infrequently present; there may be considerable reaction to hot and cold fluids. Individual teeth may appear longer than normal, and at times alteration in position slowly takes place, with resulting deformity, especially in the six upper front teeth. On passing a fine probe along the gum margin, the normal attachment of the gum tissues to the alveolar dental periosteum will be found to be missing, and a soft, thin flap of gum loosely covers the necks of the teeth, which are totally denuded of periosteum for a variable distance down the root, looking (in an extracted tooth) very much as if the soft tissue had been pared off in a lathe; there is deposit of calculus of an extremely adherent form, generally entirely under the gum margin, greenish in colour, and containing much more organic matter than that found above the gum margin. If the case be a long-standing one, the molars may be so much involved that the whole of the roots may be exposed, more particularly in the upper jaw, and a probe may be passed entirely under the tooth; small sinuses leading down into minute areas of necrosis may be found associated with such teeth. There is frequently no dental caries at all. Upon examining the rest of the buccal mucous membrane, small, hard, indurated areas are to be found, comprised apparently of mucous glands that have undergone quiet suppuration. These are either arranged in a line corresponding to the most affected alveolar margin or massed in situations corresponding to the molar teeth. On incising these shotty masses thick pultaceous material is obtained, in which one finds an almost pure culture of bacilli.

The breath is not always offensive, but a peculiar sweetish smell is noticeable; an unpleasant metallic taste is commonly complained of. On gently pressing upon the anterior portion of the alveolus, pus may as a rule be obtained; it differs in character, and may be thin and filled with a granular débris, or may be thick and pultaceous, or creamy in consistency. The amount varies considerably.

The above general conditions are those found in individuals who exercise a certain amount of care in mouth hygiene; the conditions may, however, be aggravated by generally-neglected cleanliness, often still more increased by badly-fitting or particularly ill-cleansed false teeth. In these cases the local inflammatory conditions are much more marked: redness of the gums, as well as the buccal mucous membrane, is seen, whilst fetor of the breath is a striking feature. The disease progresses slowly, taking many years to produce absolute loss of teeth, during the whole of which time putrefactive and bacterial products are constantly produced and swallowed, infecting the whole alimentary tract. Many of the symptoms of this form are to be regarded as primarily toxic.

Chronic Acute Alveolar Osteitis.

In this variety well-marked bone infection occurs; as in the previous type, erosion of the alveolar margin takes place, but the general bone infection is much more severe. Definite rarefying osteitis is present, and not infrequently spreads to the maxillary antrum, which I have on several occasions found filled with a thick magma of granulation tissue, continuous with the granulation tissue in the alveolar process. The teeth when extracted but rarely show the same clean-cut surface at the gum margin as do those of the second group, but are commonly covered with thick masses of granulation tissue attached to them in tufts, besides smaller areas of deposit of a cartilaginous nature; the roots are generally green in colour. Neuralgias are common, and exacerbations of the disease around individual teeth, with acute pain followed by swelling and dento-alveolar abscess. The alveolar process gradually disappears, and even when the teeth are removed rarefaction of the bone continues for a considerable time; small sinuses leading into the compact bone are common in the lower jaw. After the removal of the teeth, particularly the molars, a bare surface of necrosed bone may often persist for some time. Chronic granular pharyngitis is commonly associated.

These two latter general divisions may be simply varieties of one process, but I am at present inclined to regard them as two somewhat different stages of simple gingivitis. It may be just as well to point out here that none of these conditions

are necessarily associated with dental caries. The latter of the two, or chronic acute alveolar osteitis, occurs in many quarters of the globe; in Western Africa it is endemic amongst certain of the native races: it is frequent in the gaols of India; it occurs often in an epidemic form, as it did amongst the American forces in Cuba and the Philippines; nor is it confined to the present age, as I have found most unmistakable evidence of its presence in certain of the skulls in the anatomical museum at Cambridge, some of them dating from the third Egyptian dynasty.

These two divisions correspond to those of Znanensky of Moscow, who describes (*a*) simply atrophy of alveolar sockets, (*b*) osteo-porosis affecting the whole of the alveolar process. According to Znanensky, either of these two processes commences at the free margin of the gum, at the point where the collection of round and polygonal gland-like epithelium exists, a mass that closely resembles an aborted gland: the structure becomes infected with bacteria, setting up a quiet, progressive, local necrosis.

This infection of the gum, and latterly of the alveolus, is preceded by an infiltration with round cells of the gingival organ, together with bacterial invasion, which is either confined to the alveolar-dental periosteum alone, when simply atrophy or progressive periodontitis results, or the bone of the alveolus itself also becomes infected, the process having the characters of a slow, rarefying osteitis.

Bacteriology.

The examination of coverslip preparations from the various species of cases shows a tendency to a general grouping as sketched above, in that the bacteria found apparently follow to some extent the grouping suggested.

Gingivitis.—An extremely large number of both individual organisms and of morphological forms are to be seen; cocci are invariably present, generally staphylococci and sarcinae, as well as two or three other varieties of cocci. Large numbers of spirilla and comma-shaped bacilli, long curved rods, short, thick bacteria, long pointed bacilli which take the stain somewhat irregularly, fine threads, some curved, staining irregularly—occasionally branched forms of mycelium, together with the strange ear-of-wheat-like form described by Vicentini as leptothrix racemosa: in fact, every known morphological form of bacteria may be seen on carefully examining a film made from gingival inflammation.

It is only by comparison of the abnormal with the normal that a proper conception of any morbid process can be obtained, and nowhere is this more necessary than in the bacterial flora of the human mouth. Contrary to supposition, the number of species of bacteria in the mouths of normal individuals with perfectly healthy buccal mucous membranes and sound teeth is by no means large. The mouth streptococcus, or streptococcus brevis of Van Lingelsheim, is present in all healthy and unhealthy mouths without exception, existing in the form of diplococci attached, and often in the interior of squamous epithelial cells. It corresponds closely to the coccus found in other situations in mucous membranes in the ear, nose, vagina, urethra, rectum, and is able to ferment urea to ammonium carbonate in the presence of peptone. In a series of experiments conducted with the late Dr. Washbourn we were unable to produce any pathogenic result by the inoculation of pure cultures of this coccus into animals. In the course of that work we also noticed the constant presence of sarcinae in certain mouths, and bacilli of the mesentericus group. I have since confirmed these experiments, and have also constantly observed members of the mesentericus group in healthy mouths. Washbourn and Eyre, in an examination of the saliva of healthy individuals, found that the diplococcus pneumoniae was often present, and that they were able to raise its virulence to a very considerable degree, although it retained that virulence for but a short time. Many other pathogenic bacteria have been met with from time to time in the mouth, but the majority of them are to be regarded as adventitious in normal individuals. The fact of their occasional presence opens up, however, a very large question of relative immunity to infectious disease. Various local factors increase the numbers of organisms, especially such as deposits of calculus, ill-fitting or ill-cleansed artificial teeth, etc.

Progressive Periodontitis.—Cocci are generally found on microscopical examination, together with several varieties of bacilli and threads. Spirilla are, as a rule, few in number, the diminution having occurred mainly in the spirilla and comma forms, the spirochaeta being generally well represented. Bacillary forms are most numerous, and may constitute the largest number of morphological forms present. Three special forms are to be noted:

1. Rods 4 to 6 long, 0.75 wide, associated in masses, taking the aniline dyes with some difficulty.

2. Threads some 10 to 20 long, many of them showing a curious beaded appearance, large, darkly-stained round dots being visible, not unlike the staining of the diphtheria bacillus by Neisser's method: the threads are, however, much longer, while the staining occurs with ordinary aniline gentian-violet. No capsule is stainable.

3. Irregularly-twisted filaments with occasional branching.

4. Very thick and jointed rods, sometimes giving granulose reaction.

A good deal of irregularity occurs in the morphology of the coccal forms, which vary in size within wide limits.

Chronic Acute Alveolar Osteitis.—It is common to find what appears to be a large amount of mycelium that has undergone fragmentation: spirilla are frequently absent, unless there be some large amount of superficial calculus; streptothrix filaments may be found. The bacillary forms, although staining by Gram's method, take the ordinary aniline dyes with some difficulty, perhaps from the nature of the material in which they are present. Thick bacilli with pointed ends, the bases of the two being in apposition, not unlike a gigantic sheath-form of the diphtheria bacillus, are also to be found. In the depths of the pockets under the bone short jointed bacilli of diphtheria-like form, associated with cocci, are found.

The comma and spirilla forms of the mouth have attracted not a little interest, especially as they are frequently greatly increased in numbers in some forms of stomatitis, but by no means in any one variety. They may often be found in the fauces and pharynx during an attack of diphtheria, as well as in enteric fever, ulcerative stomatitis, etc. So far we cannot consider them of much pathogenic importance, as when material containing them is injected into animals they disappear entirely with but few exceptions.

The recent suggestion of Wright that these spirilla are a variety of trypanosome, because of their staining properties, is, I think, inadmissible: many other bacteria behave in a similar way with Romanowski, while Dr. Daniels and myself, after examining a large number, were unable to satisfy ourselves that the spirilla resembled trypanosome.

With such a mass of bacteria to deal with, considerable difficulty is experienced in determining which species are those especially related to any particular condition; the problem is also complicated by the extreme difficulty of growing the majority of the foregoing species on artificial media, whilst the question also arises how and which species are related to one another symbiotically. It was thought that in connexion with the problem of oral sepsis it would be worth while to attempt to determine which, if any, of the organisms present possessed pathogenic properties, and it was hoped that by inoculating the pus containing the mixed bacteria directly into animals some idea of their pathogenicity might be obtained. A series of animals were therefore inoculated—guinea-pigs and rabbits: (1) subcutaneously, (2) intraperitoneally, (3) intravenously—with material obtained from: (1) Progressive periodontitis, (2) chronic acute alveolar osteitis.

In submitting the results of these experiments for your consideration, I do so with very considerable diffidence, as I am aware they are far from complete in many respects, yet their general trend appears so suggestive in the question of oral sepsis, that I have ventured to present them to you in the form of a preliminary note.

In the above list it will be seen that a localized reaction was met with in the subcutaneously-inoculated animals fairly frequently. The reaction was of two kinds:

1. A localized swelling was found at the site of inoculation on the second to fourth day: the swelling was tense, and exhibited fluctuation. There was no involvement of the lymphatic glands observable. The swelling generally cleared up within ten days' time if untouched: the contents were pus of a thick greasy nature, containing either cocci and bacilli, or occasionally bacilli alone.

2. Localized necrosis of the skin and deep tissues, consisting of a deep ulcer with a wash-leather-like slough at the base, undermined irregular edges, under which some amount of stringy, viscous pus was found. The effect corresponded closely to what is generally known as tissue necrosis. The tissue around the ulcer was hard and indurated.

In four of these animals (8, 9, 10, 12) a considerable degree of wasting occurred, added to which the animals' hair became loose and tended to come out in tufts during handling. In

TABLE OF EXPERIMENTS.—I. *Inoculation of Material Direct.*

No.	Case.	Animal	Weight.	Site of Inoculation.	Material Inoculated.	Quantity.	Result.
			Grams.			C.cm.	
1	Case of gum hypertrophy	G.P. 1	500	Intraperitoneal	Crushed tissue.	0.8	Dead five days; bacillus recovered from heart blood.
2	,, ,,	G.P. 2	600	Subcutaneous	Mixed culture (agar)	0.8	Dead five days; organisms as before.
3	,, ,,	G.P. 3	530	Intraperitoneal	,, ,,	1.0	Dead nine days; ,, ,,
4	Sprue I	G.P. 5	530	Buccal mucous membrane	Scrapings of ulcer; incubated twenty-four hour broth	1.0	Recovered; no local lesion.
5	Sprue II	G.P. 6	535	,, ,,	,, ,,	0.5	,, ,, ,,
6	Sprue III	G.P. 7	495	Subcutaneous, abdomen	Scrapings of mucous membrane	0.5	,, local lesion which resolved.
7	Alveolar osteitis I	G.P. 8	629	Intraperitoneal	Ten-day gluc. broth culture	4.0	Six weeks later, alive; weight 460 grams; local lesion.
8	,, ,, II	G.P. 9	603	Subcutaneous	Excised tissue in broth	2.0	Four weeks dead; weight 400 grams; hair falling out, and some paralysis of hind limbs; local lesion necrosis.
9	,, ,, III	G.P. 12	453	,,	Emulsion of tissue from periosteum of tooth	1.5	Five weeks dead, with wasting and loss of hair.
10	,, ,, III	G.P. 13	431	Intraperitoneal	,, ,,	2.0	Local necrosis; killed, and pus examined; hair affected.
11	,, ,, IV (Gruvier)	G.P. 14	327	,,	Blood and scraping from gums	0.5	Dead twenty-six days; staphylococci in heart blood.
12	Alveolar osteitis V (abscess)	G.P. 15	240	,,	Pus from abscess associated with alveolar necrosis	1.0	Recovered; killed twentieth day; staphylococci found in local lesion; hair fell out.
				II. *Inoculation of Cultivations.*			
13	Gingivitis	G.P. 1	818	Intraperitoneal	Pure culture. Staphylococcus viscosus	5.0	Recovered; no local effect; killed four weeks; no cultures obtained.
14	Alveolar osteitis. Sprue II	G.P. 17	680	Subcutaneous in thigh	Pure culture. Bacillus I. Sprue I	5.0	Dead thirteen days; organism recovered heart blood.
15	Periodontitis	G.P. 4	410	Subcutaneous abdomen	Pure culture. Coccus I	1.0	Recovered; no local effect.
16	,,	G.P. 18	431	Intraperitoneal	Pure culture. Bacillus II. Sprue III	3.0	Recovered; local lesion.
17	Pemphigus	G.P. 19	325	Subcutaneous	Pure culture. Pemphigus I. Blood	1.5	Dead ten days.
18	,,	G.P. 20	320	,,	Pure culture. Pemphigus II mouth	2.0	Dead six weeks; bacilli recovered from blood; local lesion; necrosis (287 grams).
19	Alveolar osteitis VI	R. 1	Kilog. 2.75	Intravenous	Pure culture agar. Forty-eight hours	3.0	Dead eighteen hours; bacilli in heart blood, spleen, pericardium.
20	,, ,,	R. 2	2.2	,,	Pure culture	3.5 (broth)	Do.
21	,, ,,	R. 3	3.5	,,	Culture. H.B.R. 1	2.0 (broth)	Do.
22	,, ,,	R. 4	3.2	,,	Culture. H.B.R. 3	2.0 (broth)	Do.
23	,, ,,	R. 5	3.2	,,	Sub-culture from old culture from heart blood	2.0	Recovered.
24	,, ,,	R. 5	3.0	Intraperitoneal	Pure culture. Streptothrix buccalis	5.0	——

These experiments were carried out in the Laboratory of Pathological Chemistry at University College; and I would here express my thanks to Dr. Vaughan Harley for permission to work in the laboratory, and to Dr. Goodbody for much advice and assistance.

one case (8) well-marked paralysis of the hind limbs was present shortly before death.

One of the above cases (17, 18, 19, 20, 21, 22) deserves special notice. The case commenced with ulceration of the mouth, associated with well-marked alveolar osteitis. The ulceration was severe, involving the tongue, fauces, buccal cavity generally, together with the lips. There were well-marked bullae situated between the fingers, the toes, in the axilla, on the chest, etc. There was considerable fever, lasting for several weeks, together with profound anaemia. Cultivations were made:

1. From the sockets of the teeth after extraction.
2. From the blood drawn with a syringe from the median basilic vein of the right arm.
3. From several bullae.

From the blood pure cultivation of an organism was obtained which at first was mistaken for a streptococcus, but on sub-culture was found to be a bacillus, short chains staining irregularly. From the mouth several bacteria were isolated, one of them a bacillus conforming to the cultural characters of that isolated from the blood.

The curious local necrosis produced in certain of the above animals is of interest when we consider the slow and chronic local process from which the material was obtained; the wasting and loss of hair is also interesting, though it is impossible to draw any definite conclusion from so small a series of experiments.

Botteher and Letulle demonstrated the presence of bacteria in the floor and surrounding tissue of gastric ulcer. Hemmeter remarks in his *Diseases of the Stomach* that "in gastric ulcer there is another kind of infection which is not accompanied by the signs of acute inflammation, and is termed bacterial necrosis by some authors." He also gives statistics of the occurrence of gastric ulcers in autopsies from all causes made at Prague, Berlin, Dresden, Erlangen, and Kiel, numbering nearly 14,000. In 3.1 per cent. of these healed gastric ulcer was present, and in 1.4 per cent. active ulceration was present. It is not improbable that bacterial infection from the mouth is concerned in the etiology of gastric ulcer.

We have seen in the foregoing that the bacteria present in some of those conditions summed up under the general term "oral sepsis" may possess, at any rate, a slight degree of virulence. It is also possible from the experiments of Washbourn and Eyre with the pneumococcus that a small degree of virulence may become a greater one under appropriate conditions. It is, however, important to note that in many cases of oral sepsis a change in the general condition of the individual is associated with a concomitant improvement in the alveolar inflammation; such invariably takes place in the alveolar osteitis of sprue in the oral sepsis associated with secondary anaemia; but such an improvement by no means eliminates the potentiality for disease of the bacteria present in the local inflammation. It is difficult to explain the frequent presence of chronic alveolar disease with no apparent remote symptoms, but perhaps not more difficult than to explain the relapse occurring in a specific fever by the light of modern conceptions of acquired immunity. It has been demonstrated by Breiger and Ehrlich that the injection of a given toxin into the body during the stages of artificial immunization of an animal produces a temporary diminution in the quantity of antitoxin present in the animal's blood. Salmonson and Madsen found the same true in horses on injecting diphtheria toxin. It is also well known that an animal may die during active immunization, even though its blood is markedly antitoxic, even to protecting another animal against a large multiple of the minimal fatal dose of a toxin. It is known also that exaltation of virulence may be produced by injecting other non-virulent cultures together with the organism whose virulence is sought to be raised; and that, finally, the virulence of a given organism is undoubtedly increased by residence in the tissues of the animal. It is probable that some such hypothesis as this will give us a clue to an

explanation of the appearance of general symptoms of infection after a period of apparent immunity.

From a general survey of the facts and experiments, the main points of which are set forth above, we may, I think, conclude:

1. That a certain degree of virulence may be possessed by an organism living an apparently saprophytic existence in the mouth.

2. That inflammatory conditions have the effect of increasing the number of species as well as the total numbers of bacteria present.

3. That some sort of selection apparently takes place, but whether due to symbiosis or not is at present impossible to say.

4. That mouth bacteria do at times gain access to the general blood stream.

5. And that, finally, the potentiality for disease of oral sepsis receives considerable support from even a preliminary survey of its bacteriology, perhaps pointing to its operation in even a wider rôle than is at present credited or admitted.

III.—Rickman J. Godlee, M.S., F.R.C.S.,
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THE SURGICAL ASPECT OF ORAL HYGIENE AND ORAL SEPSIS.

Not infrequently whilst speaking I have noticed a minute drop, or rather a small bubble, of saliva escape from my own mouth and fall haphazard on whatever may have been in front of me. The observation has not been confined to myself, but has often been made in the case of other people, both medical and lay, and there is, in my opinion, no stronger reason—though a dozen strong ones might be offered—for preserving a decorous silence during the performance of operations and of insisting upon the over-eager assistant keeping his head well away from the wound.

It is, unfortunately, a common thing for him who is able to recognize the offensive smell produced by pyorrhoea alveolaris to be as certain that the person he is conversing with is suffering from this malady as if the mouth and gums were open for inspection. It is still more regrettable that the sufferer is as often as not a surgeon, and I am myself ashamed of the false delicacy that prevents me from telling him (he is very likely complaining of chronic dyspepsia) that he is unfit to practise his profession until he has put himself into the hands of his dentist. But no friend of mine should, with my consent, be operated upon by such an individual.

Γνῶθι σεαυτόν—"Know thyself," is a good old maxim. Examine your mouths for the sake of your poor patients, if not for your own. This is the first, and perhaps the most important, surgical aspect of the question we are met to-day to consider; and while you are examining your own mouths do not omit to examine those of your family, including your dogs, for the disease is said to be catching. I was lately spending a Sunday with a M.F.H., who had a beautiful lurcher, which was a family pet, but they said it was getting unbearably smelly, and that the smell came from its breath. I examined its mouth, and found a most shocking condition of the gums and teeth: pus was pouring from the former, and the latter were loose and covered with tartar. The result is that its skull is now in our museum; for even in the best-regulated families women, and sometimes men, will insist upon kissing their dogs—a custom that has always seemed to me unnecessary and repulsive.

I would appeal to our dental colleagues to exercise, if possible, more than usual care in dealing with their surgical brethren. You are, it may be said, the guardians of the portcullis; we may man the battlements and arm ourselves with the most approved arquebuses and crossbows, but if the micrococci attack us in the rear our defences will be of no avail. The castle will fall, and great will be the fall thereof.

"Not that which entereth into the man defileth the man." Well, as Sir James Paget used to say, all proverbs and sayings are equally true if stated in exactly the opposite way, and even this old and revered saying may possibly be called in question. But one thing is quite certain, that the physical poison that comes out of the mouth is, in its way, quite as pernicious as empty words which no one need listen to. It falls indiscriminately upon the just and upon the unjust, and I have heard of an excellent surgeon whose cases always did badly until he had his mouth set in order. Of course, masks may be worn, and, although I do not wear one myself, because it seems to suffocate me, I have a great respect for those who do, and my conscience pricks me for not following their example, and if it pricks much more I shall again make the attempt. In the meantime recourse must be had to carefully cleansing the mouth before an operation, and to speaking as little as possible during its performance, and then with the face turned well away from the patient.

So much for the surgeon's mouth. Let us now consider in how many ways a septic state of the patient's mouth interferes with the surgeon's work.

First, in connexion with operations on the mouth itself. There has been a great improvement in the results of excision of the tongue, removal of the jaws, and operations on the naso-pharynx since attention has been directed to this subject; not only because secondary haemorrhage and blood poisoning are far less common than they used to be, but because the risk of septic pneumonia is much diminished. It cannot be said that the improvement depends solely upon the attention now paid to oral surgery, because we have advanced in other ways—for example, by getting the patients out of bed very soon after the operation—but the principal change since my student days has been in the endeavour to avoid oral sepsis. Formerly nothing was done except to turn up the nose in disgust at the filthy state of things and proudly sneer at the dirty habits of our fellow-creatures. An appalling number of these cases used to die of septic disorders, while secondary haemorrhage after tongue operations at my hospital occurred more frequently than not.

The first step in advance was the introduction of chloride of zinc by Campbell de Morgan as an application to the raw surface at the conclusion of an operation. Then iodoform came in and had its day, and this was followed by Whitehead's varnish and other applications of a similar nature. But the most important steps have been:

(*a*) The establishment of the routine custom of scaling away tartar, purifying suppurating pockets, extracting or stopping carious teeth, and putting off the big operation until the mouth is rendered as pure as possible.

(*b*) The insistence upon the necessity of cleansing the mouth with an approved oral bactericidal wash very frequently, perhaps once an hour, night and day, for several days after the operation.

We have not yet reached perfection—at least, I do not succeed in keeping all my jaw and tongue cases free from smell; and I have lost patients from septicaemia and septic pneumonia within the last year or two. We want you to help us in devising better means—really practical means—that can be carried out on a large scale in hospital wards, which will ensure more constant results. I cannot get my dressers to scale the teeth properly, though it would be thankless not to own that they do a great deal. A dentist in a large hospital would have his hands quite full if he were to tackle all the cases in the surgical wards; and if the physicians wake up as we have done (perhaps I am maligning them, and they have already done so), he would have to retire from private practice altogether. Is the solution to be found in increasing the dental staff of a general hospital, or in the discovery of simpler methods of cure or prevention? The matter is of urgent and general importance, and should be taken up by those who are inquiring into the alleged deterioration of the British race.

Septic conditions of the mouth are a frequent cause of tuberculous glands in the neck, a fact which wants drumming into the heads of the general public—shall I be thought unfair if I were to add into the heads of some of both your and our branches of the profession? I am afraid the doctor often hardly looks at the gums and teeth. I am sure some dentists, in their anxiety to preserve the shape of the jaw, leave carious teeth, which produce irritation of the cervical glands and consequent tuberculous changes.

What is the good of having a beautiful jaw surmounting a scarred neck and a body infiltrated with tubercle? If a child has a tendency to enlarged glands, I insist upon carious teeth coming out, especially if there be an abscess at the root, unless the dentist can guarantee that he will put an end to all septic processes; and, if one dentist refuses to accede to my request, I have sometimes been obliged, with much reluctance, to select another.

We must also remember what extensive mischief may follow the simple extraction of a tooth in an unhealthy mouth, or—what is almost the same thing—may spread from an alveolar abscess. I have seen the latter result in septic thrombosis of the facial vein, which has spread upwards and caused fatal thrombosis of the cavernous sinus; and embolic pyaemia has been known to arise in a similar way. Necrosis of the upper jaw in children is by no means an uncommon

sequence of alveolar abscess, and the possibility of infection of the antrum and other air sinuses is well known.

I show you here a specimen kindly sent me by Dr. Goften of North Shields, taken from a man aged 25, whose right lower molar was extracted for toothache in July, 1901. This was followed by extensive swelling of the face, necessitating free incisions. The temporo-maxillary joint became involved, and septic pneumonia set in, and the patient died on August 8th. You will see that the whole jaw is necrosed with the exception of the left condyle and its neck, and that spontaneous fracture has occurred at the symphysis.

Is it not thinkable that such accidents as this might be avoided by careful attention to the socket after extraction of a tooth? and should this not be a routine practice if the mouth is in an unhealthy condition?

It may be said that millions of teeth are extracted without any precautions against sepsis being taken, and without evil consequences; but this is not the right way to look at it. The important cases are those that go wrong. Surgeons are apt to say the same thing about operations on tonsils, adenoids, and piles. Yet we have all heard of actually fatal results from sepsis following such operations. For my own part, I always apply a mixture of chloride of zinc (40 gr. to the ounce of water) and iodoform to the raw surfaces in such cases. It is very simple and occupies a very short time, and I cannot see why the same thing should not be done after every tooth extraction.

Let us now go a step further and see how the question of surgical operations on diseases of the gastro-intestinal tract is affected.

In doing a gastro-enterostomy we are not always operating upon a certainly fatal disease, but are often doing it for the relief of a troublesome condition no doubt, but perhaps one that, while not actually endangering life, very much interferes with its enjoyment. Some surgeons are in the habit of saying that this operation is devoid of danger, but, believe me, this is not really the case. It entails a serious risk to life, and it behoves us not to undertake it without much searching of heart. The patients are often weak and exhausted by their illness, and their tissues are not in a good condition to withstand the attacks of micro-organisms. It is, therefore, of the utmost importance not only to render as nearly aseptic as possible the parts to be operated upon, but to prevent the continued reinfection of them from above. For both these purposes the prevention of septic processes in the mouth is highly important, and I suppose that no surgeon would undertake such an operation now, except under conditions of urgent necessity, without submitting the mouth to a rigid preliminary treatment, and, if necessary, continuing this treatment during the period immediately succeeding the operation.

The question of parotid bubo is not one upon which we are in a position to speak positively. The notion that it follows abdominal operations not because they are abdominal but because the patient is starved, and, the functions of the salivary glands being thus kept in abeyance, septic organisms are enabled to creep up the largest salivary duct, which would not be the case were it performing its functions in a normal manner, is of recent date, and has been strongly controverted by some modern observers. I can therefore only refer to it without expressing an opinion as to its truth. It came as a welcome explanation of the fact that this painful and dangerous complication sometimes occurred when the operation it followed was apparently pursuing a typically aseptic course. Still, if it be not true, we must not accept it but seek for another. While, however, we are in doubt, it may be held to be another argument in favour of keeping the mouth clean.

A word should perhaps be said upon the mistaken diagnoses that have often been made when an extensive blood-stained discharge from the gums has not been traced to its source. I have myself seen several cases where it has been supposed that such a discharge came from the lungs. Some slight previous pulmonary complaint has given colour to the suggestion, and some indefinite physical signs have appeared to clench the diagnosis, and I have actually been more than once asked to operate upon the chests of patients who have been subsequently completely cured of their complaints by careful attention to their mouths.

Time will not allow of the discussion of the manner in which unhealthy gums predispose to phosphorus poisoning, actinomycosis, cancer, mercurial salivation, etc., and indeed these subjects are all matters of common knowledge.

I am, moreover, afraid to go on lest I should trench on the subject of medicine if I were to enter upon the question of a possible connexion between gastric and intestinal catarrh, and perhaps appendicitis with oral sepsis. These matters are, however, very well worth your careful consideration. And, besides, this paper is not intended to be a long one, and if it were it would undoubtedly bore you, keep out more valuable communications, and probably fail in its object of catching your attention. So I will conclude by suggesting that amongst the difficult problems of physiology and domestic economy which I observe the big-wigs of our profession suggest should be taught to the innocent children in our primary schools, oral hygiene should occupy the very foremost position. Teach them to wash their teeth twice a day, and you will do them more good than by drawing their attention to the arrangements of their little insides, and suggesting how they are to deport themselves when they are contemplating matrimony or have actually become fathers and mothers.

IV.—Norman Dalton, M.D., F.R.C.P.,

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During the past session I read before the Clinical Society the notes of two cases of malignant anaemia, both of which presented the symptoms which Dr. William Hunter has associated with oral sepsis. The profound asthenia and the haemorrhages of pernicious anaemia were present, and the blood had the four chief characteristics mentioned by him—namely (1) extreme oligocythaemia, the red discs numbering 412,400 per c.mm. in one case, and 816,000 in the other; (2) diminution of haemoglobin, but not in one case to the same extent as the red discs, so that the colour index was raised in one case and normal in the other; (3) leucopenia with a marked excess of lymphocytes over polynuclears; (4) practical absence of normoblasts or megaloblasts or other abnormal corpuscles, showing that there was no activity in the bone marrow. The colour of the urine was normal in both cases, and there were no signs of haemocytolysis. Both cases were rapidly fatal—one in eight months and the other in four weeks. In both there was oral sepsis—namely, in one an alveolar abscess and a sinus in the hard palate which discharged pus; and in the other necrosis of the upper jaw, directly continuous with a decayed tooth. The pus round the dead bone in the last case was extraordinarily foul. In only one case (the second one) was a *post-mortem* examination obtained, and in this the observations made during life were confirmed—that is, there was no free iron in the liver (showing an absence of haemocytolysis), and the bone marrow was atrophied.

I need hardly say that these two cases deeply impressed me with the value of Dr. Hunter's observations. The question, of course, is whether the oral sepsis is the cause of the anaemia. This it is most difficult to prove, but I would like to draw attention to three points.

First, as to the respective priority of the oral sepsis and the anaemia. It has been maintained that the mouth condition is secondary, the argument being that a person exhausted by pernicious anaemia is likely to become affected with a septic lesion. Now, in one of my cases the necrosis of the jaw undoubtedly preceded the symptoms of pernicious anaemia, and I believe, for reasons that I stated at the Clinical Society, that the oral sepsis was also the primary disease in the other case. Again, the extent of the oral lesion is not sufficiently great to warrant us in concluding that it has determined the fatal issue in a case of long-standing anaemia; whereas the rapidity with which the blood deteriorates from the moment when the signs of malignancy appear and the short duration of the case from that time would lead us to believe that the anaemia is the final stage of the affection. On the whole, therefore, I think that the oral sepsis precedes the malignant anaemia.

Secondly, it would be important to discover cases in which the anaemia has passed off when the oral sepsis has been removed. It is difficult to do this, for two reasons. First, it is impossible to operate once the haemorrhagic stage of the anaemia has set in; and, secondly, in the slighter cases it is not justifiable to withhold the ordinary treatment by arsenic or iron in order to see whether the removal of the septic lesion will alone effect a cure. I believe, however, that Dr. Hunter has met with cases of great oligocythaemia with other grave symptoms which have recovered when the oral sepsis which accompanied them was cured. I have only been on the look-out for such cases during the last year, and I have

met with one case which, although not conclusive, was remarkable. The patient, a woman, had had anaemia and bad teeth for four years. For two years she had had stomach symptoms, and three months before admission she had a gastric ulcer with haematemesis which aggravated the anaemia. When examined the teeth were found to be extremely bad, and there were ulcers in the mouth which secreted pus. The red discs numbered 2,440,000, and the haemoglobin was 26 per cent. of the normal, the colour index being about 0.5. The leucocytes were normal in number, and the polynuclears and lymphocytes were in normal proportion. A few normoblasts were found. So that, although there was oligocythaemia and chlorosis, the case was not a typical one, and we shall never know whether it would have become so if the condition of the mouth had been neglected. Two days after admission ten teeth or stumps were extracted, and seven days later other stumps were removed. Thirteen days after admission, and eleven days after the first extraction of the teeth, the red discs numbered 3,220,000 and the haemoglobin was 40 per cent. So that there was an increase of 800,000 red discs in nine days. This is certainly remarkable, but, as I have said, not conclusive, for I did not feel justified in postponing the ordinary treatment, and the patient took 15 gr. of reduced iron per day during the time I have mentioned. Still the case tends to favour the view that the oral sepsis was the cause of the anaemia, for the bad teeth had existed for years and the anaemia for four years, and it is to be presumed that she had taken iron at some time or other during this period.

My third point is theoretical. It is naturally asked why a septic process in the mouth should produce a pernicious anaemia while the same process in the pleura or vertebrae does not. It seems to me that the difference may be this: The septic organisms in the pleura or vertebrae produce toxins which are absorbed into the blood of the general circulation and produce there certain evil effects, but not a pernicious anaemia. But the mouth is a part of the alimentary canal, and the toxins produced there will not only be absorbed into the blood of the general circulation, but they will also be swallowed with the food, and may profoundly alter the process of nutrition. It is certainly a fact that the anaemia is not due to the destruction of corpuscles but to their defective formation, and this suggests that the fault is one of nutrition. In the cases of gastric cancer associated with profound anaemia it is believed that the blood changes are due, not merely to the presence of the cancer, but to the toxins absorbed from the cancer. In the case of oral sepsis it is quite possible that the toxins alone, after entering the stomach, may so affect either the digestion or the absorption or the assimilation of food that blood cannot be made. The action must be somewhat specific, for it is clear that the assimilation of starchy foods and fats is not interfered with, for these patients are often plump. But it is the defective assimilation of proteid food which would be most likely to affect the blood formation, and it seems quite likely that that kind of assimilation is defective in these cases.

In this connexion I may mention that in one of my cases the stomach contents were examined and found to contain no free HCl. Without pursuing the subject further, I will venture to say that sepsis in any part of the alimentary canal may reasonably be expected to produce different effects from sepsis elsewhere, because it may affect the nutrition, and quite possibly it may prevent the assimilation of the particular food elements which go to form the blood. In conclusion, I would like to point out that in both my cases there were not merely bad teeth present but actual suppurating lesions, and I wish to state my conviction that the prima facie case of the connexion of oral sepsis with a malignant form of anaemia is so strong that the examination of the teeth has become essential in every case of anaemia, and that the remedying of dental defects is imperative in every case in which an operation can be performed without risk of haemorrhage or syncope.

V.—E. W. Goodall, M.D.,

Medical Superintendent, Eastern Fever Hospital.

Dr. Goodall said he was much interested in one point in particular mentioned by Dr. Hunter—namely, the relation of the severity of the angina to the condition of oral sepsis present. He had made no especial study of the point, but he could testify to the shocking state of the teeth of not only the children, but also of the adults who were treated in the Eastern Hospital. In examining statistics recently for another purpose, he found that the severer forms of scarlet fever angina were more common in the older than in the younger children; speaking from memory, in children over 10 years of age, rather than under 10. He had constantly seen suppuration around temporary teeth, and was quite prepared to accept what Dr. Hunter had said on this point. In his experience, it was rare to have extensive necrosis either accompanying or following scarlet fever. Ulcerative stomatitis of several forms was often present in diphtheria, typhoid fever, and measles; he had recently had a severe outbreak at Homerton, which was of a decidedly infectious nature, and affected the tongue and mucous membrane of the mouth.

VI.—StClair Thomson, M.D., F.R.C.P.,

Assistant Physician, Diseases of the Throat, King's College Hospital.

Dr. Thomson said that, next to dental surgeons, no one had more frequent reason to inspect the mouth than laryngologists, and it was from the point of view of the latter that he approached the subject. It was astonishing, as Dr. Hunter said, that oral sepsis received so little attention. If practitioners who did not keep abreast of progress had only read their English poets they might have had it impressed upon them, for one of our poets many years ago had said:

> See to thy mouth, diseases enter there.

The pharynx was, so to speak, the Carfax of the upper air passages; the thoroughfares to the stomach and lungs crossed here with those from the mouth and nose. Omitting for the moment reference to the others, he now only discussed oral sepsis as a cause of pharyngitis and all its sequelae. Before any extensive operation on the pharynx or larynx, he now insisted as a preliminary on having the mouth put in as healthy condition as possible, and he claimed that the increased satisfactory results were in a great measure due to this precaution. Lately he had removed a malignant growth from a vocal cord by splitting the larynx; owing to some accidental inspiration of blood the patient developed double pneumonia and a temperature of 103° F. Yet within ten days the patient was up, and this happy result he attributed to the satisfactory condition of the mouth; although two other important factors were keeping the patient sitting up in bed between two wide-open windows. He quoted a case of vomiting under chloroform where tablespoonfuls of pus were brought up; it had evidently come from the tonsils, the only source of suppuration in that particular case. He asked Dr. Hunter if he had a similar experience from vomiting or lavage in dental suppuration. Finally, in regard to the nose it was well known that suppuration was met with twice as frequently in the maxillary sinus as in the other accessory cavities. This could be only due to increased exposure to dental sepsis: indeed, he had so often to be suspicious of the first molar that he began to fear that it was becoming a mania of his, but lately he had been encouraged by finding some statistics, which were doubtless well known to dental surgeons, though not sufficiently well recognized by rhinologists, which showed that the first molar in the upper jaw was more frequently affected by caries than any other tooth in the mouth. It was of the highest importance to recognize this as a preliminary in any treatment of antral empyema. The rising generation must greatly benefit from the general recognition of the dangers of oral sepsis; they might have to be forbidden the custom of kissing, a habit enjoyed by their more septic predecessors.

VII.—Herbert Tilley, M.D., F.R.C.S.,

Surgeon, Throat Hospital, Golden Square.

Dr. Tilley confined his remarks to certain clinical manifestations which were observed in patients suffering from chronic suppurative lesions in the nasal accessory cavities. The maxillary antrum was the sinus most often affected, less commonly the ethmoid and frontal sinus, and rarest of all the sphenoidal sinuses. It frequently happened that more than one of these cavities were discharging pus simultaneously, and consequently in the course of twenty-four hours several drachms of pus would find their way into the patient's stomach, and a certain proportion of the septic material would be absorbed into the general circulation. Now, in spite of the fact that the empyema might be of long standing, even up to ten or fifteen years, that the pus might be indescribably fetid, and that a quantity of it was being constantly swallowed, there were some patients who seemed altogether unaffected by it—their general health was good, and they complained of nothing beyond the inconvenience of the discharge. How was this apparent immunity produced? Could it be that the hydrochloric acid of the gastric juice was

sufficient to destroy the baneful effects of the evil discharge which had been swallowed? It seemed reasonable that this might be one explanation, for one often found that these patients enjoyed excellent appetites, and had all the appearances of robust health. This fortunate class was, however, a small one. The majority of those who suffered from empyema of one or more of the accessory cavities, or indeed from a not uncommon suppurative lesion of the nasopharynx (for example, suppurating recesses of old adenoid growths), exhibited certain well-marked constitutional symptoms. The most casual observer must often be struck by the cachectic appearance which, after middle age, they were accustomed to associate with wasting diseases, and especially with the later stages of malignant disease. When to such appearances marked loss of appetite, a furred tongue, foul breath, and a general loss of vitality were added, the clinical picture was so suggestive of grave possibilities that it was not to be wondered at that a wrong diagnosis was frequently made.

The chances of this were enhanced by the fact that the patient would frequently make no mention of any abnormal nasal discharge, probably because he had been so long accustomed to it and did not in any way connect it with his general symptoms.

On this occasion, however, he would like to draw attention to certain symptoms which illustrated the subtle effects of chronic septic absorption on the higher nerve centres. He cited several instances—one a patient he operated upon for the relief of chronic suppuration of the left maxillary, frontal, and ethmoidal sinuses. She suffered from loss of memory, general restlessness, and morbid irritability. Although a good pianist she took a dislike to playing. She was obliged to give up reading and letter-writing entirely, and avoided the society of her friends as she felt bewildered in their presence. In another case of antral suppuration the patient was almost melancholic, had fits of sobbing, and could barely walk a mile without excessive fatigue. A third patient exhibited fits of depression alternating with furious passion, and the day previous to the operation had attacked her husband with a knife. In all these cases the symptoms rapidly disappeared after the suppurative lesion was removed.

Such cases could be multiplied a hundred-fold, and in some the symptoms were exaggerated, and were probably partly due to want of sleep resulting from the headache that so often accompanied many forms of nasal suppuration. The fact, however, remained that a normal mental and moral state returned within a few days of the removal of the suppurating area, and showed that the septic absorption was the real cause of the trouble, and that no gross anatomical changes had taken place in the higher centres of the nervous system.

VIII.—Professor J. Arkövy, M.D.,
Buda-Pesth.

Professor Arkövy said cases of infection in which the mouth disease played the leading part were by no means uncommon in his experience, both in private and in hospital practice in Buda-Pesth. He had also seen a form of oral sepsis, which so far had not been referred to in the discussion, that was an acute or fulminating variety, and he described a case which had recently come under his own observation, in which acute osteomyelitis, ultimately causing general pyaemia and death, occurred through infection of the lower jaw from the dead pulp of a lower bicuspid tooth. Regarding the suggested classification of Mr. Goadby for the varieties of so-called pyorrhoea, he was quite inclined to agree, and would have more to say on the subject at a later time. He had evidently been thinking along the same lines. He thought a statistical inquiry of the various more chronic conditions of oral sepsis and their associated symptoms would be most valuable in demonstrating without doubt the markedly dangerous disease oral sepsis undoubtedly was. He had read all Dr. Hunter's earlier papers, and it was a great pleasure to hear the present one. When he wasstudying at Guy's Hospital some years ago, under the late Mr. Moon, he had first become interested in the relation of the mouth to general disease.

IX.—J. G. Turner, F.R.C.S.,
Assistant Dental Surgeon, Royal Dental Hospital.

Mr. Turner said that the existence of some degree of oral sepsis was very common; even after the most thorough examination of the mouth some cases were undetected. It was generally impossible to trace the definite beginning of a case, the patient complaining of anaemia, chronic rheumatism, muscular rheumatism, neurasthenia, etc., all of which were symptoms of some undiscovered cause. The degree of anaemia was often so far marked that even the congested gums showed but little colour. Others had muddy skins, and often a scabby and acneiform eruption on the forehead. Some gave a history of repeated attacks of "rheumatism" of the small joints, and the majority complained of indigestion. These symptoms pointed to some chronic infection to which the organism was slowly succumbing, though capable of prolonged resistance. As a result of treatment of the septic mouth condition all these symptoms cleared up, pointing certainly to the mouth affection as the cause. The symptoms described had been actually observed to be associated and to clear up entirely on treating septic mouth conditions. Mr. Turner went on to discuss the sources of oral sepsis, of which he considered there were at least three—(1) carious teeth; (2) tartar and unclean dental interspaces; (3) pyorrhoea alveolaris. Carious teeth acted as reservoirs of bacteria, but alveolar suppuration or pyorrhoea, of whatever variety, he considered the most important, as all the worst forms of oral sepsis he had seen were associated with and due to pyorrhoea. It explained why oral sepsis was rare in children, for pyorrhoea took a considerable time to establish itself; and, although the affection did occur in children, yet it was rare for it to develop to an extreme degree. The apparent immunity to the swallowed material in these pyorrhoea cases was not so great as would appear; the patient was in the position of a man walking on the edge of a precipice, who might suddenly fall, and then find it very difficult to get up again. The immunity might be due in some degree to the interstitial granulation which surrounded the areas of disease. Mr. Turner had seen a few cases of sprue accompanied with pyorrhoea, but could define no causal relation. The associated mouth suppuration must certainly be treated if they wished to do the best for their patients. Local conditions of oral sepsis assumed serious importance when operations on the parts were contemplated; infection and death were far more frequent from such causes than were generally supposed. The best after-treatment in such cases was to pack the sockets of extracted teeth with double cyanide or sal-alembroth gauze twice a day, syringing out the cavity each time thoroughly.

X.—Norman G. Bennett, M.B., B.C.,
Dental Surgeon, St. George's Hospital: Assistant Dental Surgeon, Royal Dental Hospital.

Mr. Bennett spoke of 2 cases—one bearing upon the more remote effects of oral sepsis referred to by Dr. Tilley, the other illustrating the rare occurrence of pyorrhoea in children referred to by Mr. Turner. For the notes of the first case he was indebted to Dr. John Cahill. He saw the case, a girl of 21, at St. George's Hospital. She was the subject of fainting fits taking the form of unconsciousness lasting several minutes, accompanied with rigidity of the limbs and groaning followed by movement. The fits frequently occurred several times a day. She was first seen by Dr. Cahill on February 11th, she was then anaemic, and her mouth contained six or seven very foul roots. She received medicinal treatment and her mouth was properly treated. She had had no return of the attacks. The second case was one of a boy of 9 years of age, who exhibited an extreme degree of oral sepsis and pyorrhoea, one of the most remarkable cases Mr. Bennett had seen in a child. The upper front teeth were very loose and covered with tartar. The infiltration round the necks of the teeth was so great that the sulcus between the lips and gums had entirely disappeared; the case had much improved on treatment. Mr. Godlee had referred to the importance of the condition of surgeons' mouths; was not it also important that the mouth of the nurse be not forgotten?

XI.—E. Lloyd-Williams, M.R.C.S.,
Dental Surgeon, Royal Dental Hospital.

Mr. Lloyd-Williams said he only intervened in what had proved to be a very valuable discussion in order to emphasize the enormous increase of pyorrhoea alveolaris as a source of oral sepsis. He would like to affirm what he had believed for many years—namely, that this was a specific contagious disease, conveyed from mouth to mouth, and enormously upon the increase. He had never seen an isolated case in one family, and although the poisonous dose required to produce the disease was large and spread over some time, still eventually many members of one family living together were bound to succumb. He also called attention to the impor-

tance of dental surgeons using sterilized instruments, as there was considerable danger of the disease spreading from patient to patient.

XII.—William Hern, M.R.C.S.,
Dental Surgeon, Middlesex Hospital.

Mr. Hern regretted that he was unable to be present during the first two papers. He was generally in hearty agreement with Mr. Godlee; but Mr. Godlee alluded to the occasional unwillingness of dental surgeons to extract teeth, and, whilst he concurred with Mr. Godlee in the advisability of removing septic roots, he was inclined to enter a mild protest against the promiscuous extraction of teeth for caries alone. He held that carious teeth, even temporary ones, should if possible, be filled. He did not consider dental caries as a prime factor in the causation of oral sepsis, but it was nevertheless an important secondary cause. He agreed with Mr. Turner that oral sepsis was not common in the young subject although young persons were especially prone to caries. He could not agree with Mr. Lloyd-Williams that oral sepsis was on the increase, and he considered that it had decreased in prevalence. He ventured to think that oral sepsis could be more easily prevented than cured, and that the most important agent in its prevention was a systematic and thorough use of a good stiff tooth-brush; and he had held for some years that both hospital and private patients required instruction how, when, and where to brush their teeth. If the ordinary out-patient class could be taught the systematic cleansing of the mouth, aided, perhaps, with a little common salt, they would have a very much smaller number of cases of oral sepsis to deal with.

XIII.—Sidney Spokes, M.R.C.S.,
Dental Surgeon, University College Hospital, London.

Mr. Spokes said he had notes of some seven cases of definite oral sepsis which had been treated at the University College Hospital; the symptoms were of the most varied character, ranging from grave anaemia to simulation of carcinoma of the stomach; all the cases recovered on treating the oral conditions, in many instances without any general treatment. Mr. Spokes said that, as time did not permit him to read the notes of these cases, he would publish them in full elsewhere.

FULMINANT CARIES ALVEOLARIS SPECIFICA.

By Professor Dr. Joseph Arkövy,
Buda-Pesth.

The British Medical Association favoured me with an invitation to attend the first meeting of this Section, and I am happy to have been able to comply with that request. Shortly after the receipt of the invitation, your Honorary Secretary asked me to read a paper before you, but the limited time at my disposal has not been sufficient to prepare a regular paper, and therefore you will excuse me if I give you only an annotation instead. The subject of it is:

Clinical Observations on Fulminant Caries Alveolaris Specifica.

The term "pyorrhoea," as is well known, only refers to a symptom of the disease, and of some gingivites as well, and ought to be abandoned for the more appropriate technical term, "caries alveolaris specifica," proposed by me as far back as 1885,[1] which term would indicate the disease as being a variety of ostitis rareficans, which in reality it is. The adjective specifica, it is true, is used for another disease in surgery; but in this case it will mean only alveolar caries, not of periosteal origin. This adjective, if wanted, may be changed one day by a, perhaps, mycological substitute, if Mr. Goadby's researches, as we heard of them yesterday, prove conclusive.

The disease, as is well known, has a double course: an acute, which is exceedingly rare, and suddenly provoked by chill or traumatism; and a chronic one, which is a daily occurrence in practice, and of manifold origin.

What I want to-day to draw your attention to is neither one nor the other; in my observations it seems to me to possess a third variety, which may be called fulminant *(foudroyant)*.

About three years ago I came across a case, at my clinic, where all the alarming symptoms were present to justify such a division. The patient was a male, between 43 and 50 years of age, a stout man with healthy complexion. He had been feverish some days before; his mouth was inflamed all over to a dark red tint. The upper alveolar process, on both sides, as well as the palate, showed at least five to six abscesses, and two to three were seated on the lower jaw. Beside that the regular symptoms of caries alveolaris specifica universalis (general pyorrhoea) chronica were present. I gave orders to get an impression of the mouth taken: unhappily it was forgotten, and the patient never returned.

By that case my attention was roused: could there exist a form of caries alveolaris specifica entirely different from what we knew? This question was answered, in the course of time, in the affirmative, by some other cases bearing exactly the same features, and varying only in degree. The most remarkable features of that fulminant form are the following:

The patient is primarily a subject of chronic caries alveolaris specifica, and the fulminant form sets in only by chance, so to say, on the top of it. As far as I could make out, it seems to possess a double etiology: first, living under unhealthy conditions; secondly, some secondary bacterial infection—the former I consider less probable than the latter (vide Epicrisis).

The disease makes its appearance suddenly, by one or several abscesses, on the alveolar process and palate, in connexion with a diffuse gingivitis, spread over the whole mouth or limited to one side only. The abscesses do not differ from the regular abscessus alveolaris circumscriptus, the latter being usually closed, and only exceptionally opening spontaneously on the gum margin (like those observed in children). The difference between these and everyday abscessus alveolaris circumscriptus is their extra-alveolar origin. The alveolar process in the latter is suffering from osteomyelitis; in the former there is no affection whatever of the fundus alveolaris, the self-evident test of which condition is the living pulp of the concerned tooth or teeth where the abscess is situated.

The teeth on the affected side are loose, to such an extent that at the first sight they seem to be utterly lost. Sometimes a group of only 2, 3, or 5 is affected. An elongation is the consequence of the more or less coexisting periodontitis diffusa, and an inability to close the jaws without pain.

In some instances one may follow up the track of the abscess on the approximal side of a tooth so high up or low down that loss of the septum interalveolare or interradiculare may be considered evident (necrosis septi interalveolaris ex carie (?)).

The frequency of this condition without necrosis septi interalveolaris seems to be a predominant feature, if not the pathognomonic sign of the disease. This supposition is supported by the further development of the disease, especially the conditions observable after treatment, inasmuch as at the point of the interalveolar septum a fistula gingivalis, with puffed-up epithelial layer, not unlike a parulis (which is always of fundus alveolar origin), often becomes chronic and obstinately resists after treatment.

Subjective Symptoms.—While acute or chronic caries alveolaris specifica chronica is unconnected with pain, except formication alongside the jaw, the fulminant form exhibits both pain and fever. Partly during the development of the alveolar abscesses, and especially after their formation, considerable pain is suffered by the patient day and night. The latter is due to pulpitis chronica parenchymatosa or gangraenosa ascendens, which in this form of the disease seems to be the rule, while its presence in chronic cases is more exceptional. Besides the character of the pain, a proof of the correctness of diagnosis is that after trepanation and devitalization of the pulp the pain subsides at once.

The diagnosis of the disease is to be made by the multiple extra-alveolar abscesses, and if only one should be present by that alone, providing it belongs to an intact tooth or teeth in a mouth subject to universal or partial chronic caries alveolaris specifica. Of secondary importance are fever, stomatitis, and gingivitis diffusa—although they never are absent; but these may occur independently of the disease. More essential for the diagnosis seems to be the constant presence of pulpitis chronica parenchymatosa or gangaenosa ascendens and the situation and communication of the abscess with the septum interalveolare or radiculare.

The differential diagnosis has only one question to solve: whether the circumscript abscess is really not of interalveolar (fundus) origin. If there is no caries in a corresponding tooth, then this task is easy; the presence of gangraena pulpae totalis will also negative the disease.

Treatment.—This form of disease is to be treated very much like the regular chronic one. The differences are quickness and energy as far as removal of all concremental deposits on roots, cauterization of the same by strong agents—hydrochloric acid, oxychloride of zinc, or hydrogen peroxide and aromatic sulphuric acid—and trepanation of the pulp-

chamber of affected teeth. Very essential in the treatment is—after oncotomy—necrotomy of the septum and its regular wound-dressing as after-treatment.

The prognosis is not unfavourable for conservation of the teeth when the case is seen soon after its outburst; the loose teeth regain nearly their former firmness. If treatment is delayed necrosis of the whole side and apex of the root which is related to the necrosed septum sets in, and such a tooth may easily be lost. It is obvious that there is no spontaneous healing under the circumstances without loss of teeth and even parts of the alveolar process.

Summary.

Summing up the characteristic features of the fulminant form of caries alveolaris specifica, as far as I know it at present, the following may be stated:

1. A fulminant attack only occurs in cases of chronic character.

2. Its predominant pathological change is demonstrated by extra-alveolar circumscript abscesses, one or several, with concomitant fever, probably not exceeding 38° to 38.5° C.

3. Another peculiarity is frequently given by the communication of the abscess with the septum interalveolare or inter-radiculare, thus intimating the real seat of the affection —necrosis septi.

4. Very remarkable are the sufferings of the patient, much beyond the dull and throbbing pain of some hours' duration, while the abscess is being developed, due to pulpitis chronica (parenchymatosa or gangraenosa) ascendens in one or more teeth of the environment of the abscess. This seems to be more frequent than relatively in ordinary chronic cases.

5. Gingivitis diffusa—generally not without papillitis interdentalis or even stomatitis simplex—on the affected side of the jaw is always present.

6. A most interesting question arises as soon as we seek an explanation of the possibilities of the special etiology which may be supposed to be at work in the fulminant form of the disease. One is entitled to think of a special agency by the fact that only a few patients who have suffered from the regular chronic form for years get a fulminant attack, while many others never get it at all. Up to now no mycological inquiries having been made, it is only a supposition and less than a suggestion on my part when I consider streptococci as a probable agency, and the whole fulminant form of the disease as a special streptococcus infection, superimposed upon, "not independent of the existing chronic ailment." Since yesterday[2] we have been informed by Mr. Goadby about a new microbe, in connexion with pyorrhoeic pus, of a very pathogenetic description. Further details, for which we are anxiously waiting, might throw new light upon the question.

With abscesses playing an important part in the disease under consideration a minute description is advisable, not only from a pathological but also from a diagnostic point of view. It is impossible, in the limited time at command, to reconsider the subject of abscesses on the alveolar process *in extenso;* I shall do so at the next opportunity for the benefit of younger members of the profession. At present I have to restrict my remarks upon abscesses to those in connexion with our disease. Some of them have been observed as leading to the septum interalveolare, others, again, seemed to be usual circumscript abscesses, well limited and closed all round. Even the former are no novelty, as they do occur in cases of necrosis septi (we have only to quote cases of co-ordinate gold crowns with an overdue extension underneath the interdental papilla); what is rare is the formation of abscesses at all in caries alveolaris specifica. In the literature I did not find any record of similar cases. Some careful and reliable observers—as Drs. Zsigmondy, Weiser, and V. Wunscheim, of Vienna—personally informed me they had seen a few cases of the kind during the last two years, and V. Wunscheim, at a meeting, tried to call these unexplainable abscesses "paradentale abscesses." The description given by Dr. Zsigmondy and Dr. Weiser left no doubt in my mind as to the identity of their observation with mine, in addition to the interesting remark that these gentlemen also never saw similar cases further back than about two years; so that I have been induced to risk the jocular remark that if I knew anything about caries alveolaris specifica as an infectious disease, I should say the "genus epidermicus" has changed of late, or has commenced to do so, and is characteristic of the amount of oral sepsis displayed by this form of disease and of the impression exerted upon the medical attendant.

Another new kind of abscess has been brought to my knowledge by Professor Berten, of Munich, reminding me of one or two cases of my own observation. In connexion with chronic caries alveolaris specifica uratica (gout) blisters, deeply situated, may quite suddenly make their appearance on the gum of the alveolar process, resembling very small abscesses not much over the size of a pea. They are quite empty—to the eye at least, containing neither pus nor blood—and Professor Berten calls them "pseudo-abscesses," probably of uric acid crystal contents. As to the latter, no microscopical nor chemical examination has yet been made. He had 3 cases, all gouty men, under treatment; salicylic acid made the pseudo-abscesses disappear.

Now, in conclusion, I should like to suggest to colleagues further observation on the subject, such being wanted in order to confirm the foregoing statements. The cases are, up to the present, very rare, and a hasty diagnosis is to be carefully avoided.

REFERENCES.

[1] *Diagnostik der Zahnkrankheiten*, etc. F. Enke, Stuttgart, 1885. [2] K. W. Goadby, Paper read at the meeting of the British Medical Association, July 26th.

A CASE OF MELANOTIC SARCOMA IN A CHILD OF THREE MONTHS.

By Wm. H. Battle, F.R.C.S.,
Surgeon, St. Thomas's Hospital.

A boy aged 3 months was sent to my care by Dr. Francis E. Bisshopp, of Tunbridge Wells, on June 6th, 1902, for a swelling of the face.

The swelling had been noticed for five to six weeks, during which time it had increased in size rapidly, and without pain. There were two other children in the family, both of whom were healthy. There was no history of tumour or of tubercle.

The tumour began in the position of the left upper incisor, and a dentist had seen the patient for the swelling and is said to have incised it without benefit.

The child—a healthy one—is growing rapidly, sleeps well and takes his food well. On examination there is a projection of the upper lip, on the left side, underneath the left ala nasi. When the upper lip is everted there is a definite rounded projection of the bone above the margin of the gum, about the size of a small filbert nut (this is well shown in the plaster cast). This pushes the lip forward. The central part of the projection is semitranslucent and bluish in appearance, as if there was some cystic development in it, but the feel is that of a solid growth. There are no enlarged glands.

Mr. J. G. Turner saw the case with me. The tumour was removed with a bone gouge, from above the mucous membrane of the palate, and apparently was fairly circumscribed by means of a capsule. The sacs of several permanent teeth were removed with the growth; probably these were all of them incisors. There was a fair amount of bleeding which was easily arrested by a plug of gauze. The lip was not injured, being easily turned up after incision of the mucous membrane. The floor of the left nostril was opened at one point. Section of the tumour showed a firm melanotic growth, apparently a sarcoma—which is now in the Museum of the Royal College of Surgeons. I am indebted to Mr. Shattock for permission to show both the cast and the specimen. He has also informed me that the growth is an "alveolar sarcoma."

The child was in a surgical home for about a fortnight, during which time the cavity rapidly contracted and finally closed on return home. He has continued in good health and without return of growth up to the present time.

Mr. J. G. Turner, Mr. Sidney Spokes, and Dr. Chas. A. Hayman discussed the paper.

THE INFLUENCE OF THE GROWTH OF BONE ON THE POSITIONS OF THE TEETH.

By J. G. Turner, F.R.C.S.,
Assistant Dental Surgeon, Royal Dental Hospital.

The commonly-accepted view as to the relation between jaws and teeth appears to be that in some occult way the teeth are a factor of prime importance in determining the size and shape of the jaws. Sir John Tomes's dictum that the alveolar bone is entirely subservient to the needs of the teeth appears to have been extended to the body of the bone. And, indeed, this is an easy extension, for the teeth are developed in the body of the bone, and the roots of the fully-formed teeth extend far beyond the "alveolus" into the "body," sometimes in the maxilla right through the body till they project

into the antrum; and when a tooth is extracted, not only is there an absorbent osteitis to clear away the redundant "alveolus," but there is also a reproductive osteitis to fill up the deeper part of the socket.

While acknowledging the dependence of the superficial part of the bone on the presence of teeth, I think the facts of normal anatomy and of pathology show us that the teeth are dependent normally on the growth of bone for their positions, and an appreciation of this fact and a knowledge of its various steps will in many cases give us valuable indications as to the presence of pathological conditions. Such conditions are those which lead to arrest or retarded development of bone, and among them naso-pharyngeal obstruction.

The temporary teeth and the teeth of succession are developed in a crowded but very definite relation to each other, both in the maxilla and mandible. With the growth of bone they are gradually carried into such positions in a more spacious bone as give them their normal relationship in the dental arch. The permanent molar teeth are developed and erupted one by one in a way which shows a definite relation to the growth of the bone. This is specially well seen in the maxilla, and has been described by Mr. Arthur Keith, after study of both human and comparative specimens. Briefly, there is a relationship such that as each successive permanent molar develops and erupts, the maxillary antrum enlarges *pari passu*, and by the growth of the bone the tooth which was developed with its biting surface directed backwards is gradually rotated till it erupts with its biting surface directed downwards in the normal biting position.

In the mandible the permanent molars, which are developed with the biting surface of the crown directed forwards and upwards—in the arc of a circle which roughly is concentric with the similar arc of the maxillary molars—are carried somewhat backwards and rotated upwards till they erupt with their biting surfaces almost vertical.

In the normal process of growth teeth are seen to undergo such changes in position as can only be explained by reference to some motive power unconnected with the actual development of the teeth. This power is the normal growth of bone.

Adenoid cases furnish us with a ready means of testing the truth of this statement. In these cases when the obstruction is well marked there is arrest of growth of the bony parts of the naso-pharynx, partly owing to want of physiological stimulus to growth (nasal breathing) and partly owing to static congestion. Now, if we examine these cases, from childhood onwards, we shall constantly find the teeth occupying positions which are readily explained on the supposition that it is the want of bony growth which has left them in these situations.

The incisors and canines, both temporary and permanent, are developed in positions such that the lateral incisor lies behind and outside the central. Normally they are erupted into a regular arch; and later, as regards the temporary teeth, beginning about the age of 4½, they are carried forwards and into a larger arch, and consequently become spaced, perhaps to the extent of ⅛ in. Now, if it is the growth of the bone which carries the teeth forward, we should find in adenoid cases in children, where admittedly growth is deficient, that this spacing is wanting, or that the temporary front teeth are crowded and occupy positions analogous to those of their normal development. And this is exactly what we do find.

Dr. Lack, at the London Hospital, has greatly helped me by setting aside for my examination all his adenoid cases up to the age of 7. As a result I have found that spacing fails in every case where the obstruction has been marked for any length of time, while in many cases there is marked crowding of the temporary incisors. The lower as well as the upper teeth appear to partake in this abnormal arrangement. Here are models of a child of 6½, the subject of naso-pharyngeal obstruction due to adenoids—note the want of spacing and indications of crowding. Of course, the argument is—not want of spacing (or actual crowding), therefore adenoids; but want of spacing (or actual crowding), therefore want of growth; commonest cause, naso-pharyngeal obstruction; therefore most probably adenoids.

The permanent front teeth, from the same crowded arrangement of development, eventually assume a regular arch, but the commonest deformity, and one which almost spells "adenoids," is one in which the lateral incisors erupt more or less behind the centrals, in a position of arrested bone development.

Again, if it is growth of bone which determines the position of teeth, allowing for such factors as moulding by traction of the cheeks, we shall expect to find frequent cases of narrowness of the molar part of the dental arch, due to deficient lateral growth of the maxilla; and where the obstruction has been removed by operation, or, as it was formerly expressed, "by growing out of it," we should expect to find a resumption of normal growth, as shown by a lateral expansion of the arch at some particular point.

This is exactly what is found. We all know the saddle-shaped arch. Here is one from a case of adenoids, which is far too narrow in the region of the first permanent molar to be due to moulding alone of the soft bones—there is evident want of growth. The patient to a very large extent outgrew the obstruction, and growth was resumed in time to carry the third molars outwards into positions more nearly approaching the normal, but which make them extremely inconvenient to the patient. Similarly-situated third molars are frequently seen in adenoid cases, indicating a resumption of growth of the maxilla as the patient outgrew the obstruction—a resumption too late to do more than carry the third molar into an unfortunately useless position. If the obstruction is removed earlier a similar, though less obvious, process may be noted in the case of the second permanent molar. In both these cases the arch makes an almost sudden bend outwards, but note that the anterior portion is unaffected. The time for its development is past, and it is left unbenefited by the tardy removal of the cause of deficient growth.

Here is a case of open bite in an adenoid case of early date, due to want of vertical development of the anterior portion of the maxillae—that is, to deficient eruption of the permanent incisors. The boy is now 14 years of age, and it seems that the deformity will be permanent, as no improvement has taken place since the removal of the obstruction.

So far we have considered only pathological conditions in which the positions of the teeth have been due to want of growth, but we have noted that these positions can always be explained by reference to positions normally held by the teeth at some time or other during development.

There are, however, pathological conditions in which it is possible to note the effect of the unrestrained action of the normal growth of bone on abnormally-conditioned teeth. The cases I refer to are those in which early extraction of the first permanent molar has been practised. We all know how rapidly in the maxilla the second molar moves forward and occupies the space, but we are not all so conversant with the fact that in the mandible it is the second praemolar which moves backwards to occupy the space, or that this movement may take place in the body of the bone before the tooth is erupted, so that the tooth may be seen erupting just in front of the second permanent molar. Here are models to show this. In all cases I have carefully verified the early extraction of the first permanent molar, and in two I have watched the second bicuspid erupt in its present position.

Movement of the more anterior teeth seems more uncertain, though there is an inclination for both canine and first praemolar to travel backwards. These cases are by no means uncommon. On the other hand, movement forwards of the second or third mandibular molars is doubtful, and in any case is to be explained by some mechanical factors in the bite, and not by any normal process of growth. I can see but one way of explaining these movements of the teeth—namely, by supposing they are due to a current of growth (if such an expression can properly be used) taking place in the bone—in the case of the maxilla from behind forwards, in the case of the mandible from before backwards.

Indeed, I am of opinion that eruption of teeth and their eventual assumption of their normal positions in the dental arch are dependent on the regular and orderly progress of the bony growth of the maxilla and mandible. If this growth is interfered with, if the bone currents are arrested, the teeth mark time in the positions in which that arrest found them: and if the period of arrest be extended beyond the growing period of that part those positions become permanent, and both teeth and bone of that part are fixed in a more or less "fetal" condition. Generally the want of lateral expansion is the most striking feature; but a case of "open bite," such as I have shown you, shows that the vertical growth—what is commonly included in the word "eruption"—is equally liable to arrest.

As a practical result of all this, it is important to remember that the condition of the dental arch in childhood will indicate the rate of bony growth of the jaws; that hindrance of that rate of growth is most commonly due to "adenoids"; and

that operation should be insisted on early, since after the growing period has passed the bony deformity is permanent.

A further point is one chiefly of dental interest—that in cases of impacted lower-third molars it is far better to extract the third molar itself than to fall back on extraction of the second molar to relieve pressure and allow the third molar to move forward: the third molar is unlikely to come forward, and a useful biting tooth may be lost in the second molar.

Mr. A. W. Maggs (Dental Surgeon, Guy's Hospital, London) congratulated the author on his original observations respecting the absence of spacing of the temporary teeth following defective growth of bone due to naso-pharyngeal obstruction by adenoids. He also congratulated him upon his theory about the current of growth of bone being from behind forwards in the maxillae, and from before backwards in the mandible. Mr. Maggs recalled the fact that there was a specimen of a fish (*Lophius piscatorius*) in the museum of the College of Surgeons, London, in which the jaws and marginal teeth were said to have increased in growth and advanced from the outside to the inside. Mr. Turner's observations had some considerable bearing upon the question of superior protrusion.

Mr. E. Lloyd-Williams (Dental Surgeon, Royal Dental Hospital, London) thought the paper presented an ingenious theory which, if substantiated, would go far to explain some of the irregularities of the teeth which at present puzzled us a great deal. One of the models, however, handed round rather disproved the theory propounded, inasmuch as it showed distinct hypertrophy of bone from before backwards, although the arch was narrower in front.

Mr. H. Baldwin (London) thought Mr. Turner's explanation was an admirable one and cleared up a point of some difficulty—namely, a contracted state of the alveolar arch in front with a normal condition behind, the difficulties of nose breathing existing during the development of the anterior portion of the arch, and disappearing during the growth of the posterior parts, through either surgical or natural causes.

Dr. Sim Wallace was inclined to regard the presence of adenoids as constantly associated with hypertrophy, and superior protrusion with adenoids. He had recently seen a case of late adenoids in which there was a perfectly regular arch.

Mr. Turner, in replying, was much gratified with the lines the discussion had taken, and he was much interested in the biologic confirmation mentioned by Mr. Maggs. He considered that the "impress to grow normally" was a very present factor, and was to be observed in many other directions than the jaws. He did not consider the tongue to be so important a factor as had been claimed by some, and had often seen alteration in the position of teeth due to the pressure exerted by the cheeks against even a large tongue. The first and occasionally only impression left on the jaws by adenoids was that the lower front teeth rested upon the gum behind the upper front teeth when the mouth was closed, instead of on the cingula as in normal persons. In reply to Mr. E. Lloyd-Williams, Mr. Turner did not consider that any of the models showed hypertrophy, but considered it quite possible that it might occasionally occur.

THE CARE OF CHILDREN'S MOUTHS.

By Sidney Spokes, M.R.C.S., L.D.S.Eng.,
Dental Surgeon, University College Hospital.

The examination of 10,000 school children of an average age of 12 years showed only 15 per cent. had sound teeth, and it is safe to say that decay of the teeth occurs to a larger extent than other departures from the normal physiological standards.

What precise effect has this condition of the teeth upon the general health of the child? In a large school with hundreds of children running about in, apparently, good health, and with only a few in the infirmary, it would seem, at first sight, that dental decay is not of much importance, and that, except when pain occurs—which can at once be "cured" by extraction—not much anxiety need be felt as to the influence of a defective dentition upon the individual. On the other hand, it is difficult not to believe that the condition met with in a systematic examination of the mouths of such children, as yet untreated, must have some prejudicial effect, and that it results in a lower nutrition than might be otherwise attained if the teeth were sound and mastication thoroughly performed. A large proportion of such children are not able to deal with food efficiently, either from actual loss of masticating surfaces or because of tenderness or actual pain upon pressure. Again, when a child is attacked by some infective or constitutional disease, is it not reasonable to suppose that the resistance of the organism might be greater had nutrition, aided by thorough mastication and insalivation, been maintained at its highest possible level? Further, there appears reason to think that the mouth itself with broken-down teeth and septic pulp chambers may be the spot in which the infective material may be cultivated, and that whereas in a healthy mouth pathogenic organisms may meet with a peaceful end, in the diseased mouth propagation is provided for and a larger dose is prepared for entrance to the body by lungs, stomach, or lymphatics. At the least one may say that any departure from the normal is a matter of significance, and that septic teeth may be a predisposing cause of other diseases.

Apart, then, from the question of saving children from toothache, it is necessary to secure that mastication is properly performed. It is the fact that the large majority of people, both young and adult, do not efficiently prepare food for proper presentation to the stomach. Our ancient forefathers, who left the well-ground-down teeth we find in such skulls as come to light, were not in a hurry to get to school in time nor to catch trains. Moreover, the food was hard and tough, and the necessary mastication resulted in a large flow of saliva, not only beneficial for gastric digestion, but for the teeth, which were bathed in this alkaline fluid.

One of the things, then, that we should try to teach children is to use the teeth well, and, according to Van Someren, quoted by Dr. Henry Campbell, if the habit of masticating efficiently is once acquired, the food is not swallowed before it is converted into the liquid state, the swallowing of unmasticated lumps being effectually prevented by a pharyngeal reflex. We should probably hear less of hereditary tendency to decay if Nature had a demand to provide strong jaws and sound teeth.

Failing complete prophylaxis, a great deal may be done to prevent loss of teeth by a systematic inspection three or four times a year with dental mirror and probe throughout school-life. If commencing decay is found it should be promptly dealt with by "stopping," and at such a stage this can be done with a minimum amount of trouble to both patient and operator. The teeth of the temporary series should be preserved in this way until their successors are ready to take their place. But when, on examination, it is found that temporary teeth have been allowed to decay so far as to become necrosed and septic, they should be removed in order to secure a healthy mouth. There is still a diversity of opinion upon this point, but a strong appeal may be made by those who hold that the health of the patient and the remaining teeth should receive more consideration than the possible contraction of dental arches and subsequent irregularity. The only valid argument one can conceive must be based upon the assumption that by the child being allowed to absorb small quantities of pus over a prolonged period immunity may ultimately be obtained.

Between the ages of 8 and 12 the teeth which require stopping in the very large majority of mouths are the four first permanent molars. They present the largest masticating surfaces in the permanent dentition, and are placed in the jaws where the functional capacity is greatest. They "keep up the bite" at the back of the mouth during the transitional period from the temporary to the permanent dentition, and should be carefully watched from the seventh year upwards. It is rare to find caries of the other permanent teeth before the twelfth year. A periodical inspection also allows of the opportunity for observing any commencing irregularity in position which itself threatens to promote decay, and it also enables an opinion to be formed as to the extent to which the tooth-brush is properly used.

In many parochial schools this system of inspection and early treatment is now carried out with good results, and as it appears probable that Board School children will soon be medically inspected, it is to be hoped that they may also receive dental supervision and in this respect enjoy the same advantages as the children immediately beneath them in the social scale.

Boys in the great public schools should pay a visit to the dentist early in the holidays in order to allow sufficient time for any treatment which may be found necessary; but it is well that there should also be an officially-appointed dental surgeon on the staff of all such schools, to examine and report upon the teeth of new arrivals and to deal with any cases which may occur through neglect and urgency. This

prompt treatment of early caries prevents a vicious circle being established through the increased acidity of the mouth which accompanies untreated cavities of decay, and thus promotes decay in other teeth as yet unaffected. Here again it is most important that cavities, if existing, should be discovered and treated in the early stage. If a tooth has "ached" through irritation of its pulp, the best time for stopping the cavity has already passed, but by prompt treatment and systematic inspections until adult age is reached it will be found that the tendency to decay seems in many instances to become considerably less.

Dr. Chas. Hayman, F.R.C.S. (Assistant Dental Surgeon, Bristol Royal Infirmary), said the subject of the paper was a most important one, and he would like to point out the impossibility of treating properly all the children in any large institution under the present system of appointments. It was almost impossible for the dental surgeon of any large school to perform even the necessary extractions during his official hours. He was of opinion that at the Müller School at Bristol, at any rate, the children's mouths showed some general improvement during recent years, partly, he thought, due to judicious extraction, and partly owing to a diminution in the number of children in the school, whereby more attention was possible to each individual child.

Dr. Buck, as a general practitioner in a mining district, asked Mr. Spokes what he would recommend to be done as a general thing with the usual class of children with bad carious teeth: Would it be proper to extract all the temporary teeth in a bad case?

Dr. Sim Wallace suggested an increase of fibrous food and the cultivation of the masticatory reflex.

Mr. Sidney Spokes, in replying, said that he was glad Dr. Wallace could confirm the presence of a pharyngeal reflex which prevented the swallowing of unmasticated food. With regard to the Müller Orphanage he thought that such an appointment should not be honorary, but that the children should receive conservative treatment, and that this could only be obtained by a salaried officer to such a school. The answer to Dr. Buck's question depended somewhat upon the age of the children. If the teeth were ones of the temporary dentition it was certainly better to remove them, as the child would be better edentulous for a time than to have necrosed and septic teeth imperilling its general health. But at a later age everything possible should be done to prevent decay of the permanent teeth. Dental officers should be appointed to schools in at least the same extent as are medical officers.

PHYSICAL DEGENERATION IN RELATION TO THE TEETH.

By J. Sim Wallace, D.Sc., M.D., L.D.S.,
Assistant Dental Surgeon, National Dental Hospital.

The question of the deterioration of the physique is one of national importance, and we, as members of the medical profession, have a special charge laid upon us to do what we can to maintain the physical well-being at as high a standard as circumstances will allow.

It is unnecessary for us to inquire whether there is any increased deterioration in the national physique. For this inquiry it is sufficient that the subject has been raised, and that, as regards the teeth, there are hardly two opinions. Nor can there be, for the teeth of the present day are not at all equal to those of our ancestors, and the further we go back the more obvious is this truth.

We may direct attention to the relation between physical degeneration and the teeth from three points of view. First, let us ask whether the degenerate state of the teeth is a result of general physical degeneration. Have we any substantial evidence that the ill-developed classes have teeth more susceptible to decay than those whose physical development is distinctly good? I venture to believe that there is not any distinct evidence to support this view. It must, however, be admitted that some eminent authorities consider that vitiation of the oral secretions from general ill-health is the chief predisposing cause of dental caries. I do not wish to seem to contend that vitiation of the oral secretions may not predispose to caries; I would, indeed, maintain that certain disturbances may, and do, prejudicially alter the buccal secretions. Moreover, general and prolonged ill-health tends to diminish the amount and vigour of mastication, which in itself predisposes to caries. Nevertheless, I do not contend that these predisposing causes are of any great moment when brought about by a state of imperfect development alone.

It is not only by inducing caries, however, that the teeth may be injured. Their use and their beauty may be greatly impaired by irregularity. Physical degeneration and irregularities of the teeth are necessarily intimately correlated, because the conditions which give rise to imperfect development are almost invariably associated with prolonged malnutrition and emaciation, and general emaciation is practically always associated with emaciation of the tongue. I cannot here enter into how the development of the dental arches and jaws is dependent on the development of the tongue,[1] but I have no hesitation in saying that it is a fact, and when we see an adult with irregular teeth we can tell, with something approaching absolute certainty, that he was emaciated for a considerable time during youth.

Secondly, we may consider the question whether physical degeneration may or may not be due, as a general rule, to bad teeth. To this question there seems to be but one answer. We cannot expect physical development to go on satisfactorily so long as the teeth are decaying or are otherwise diseased. How this must necessarily be so is well known to all of us: dental caries is simply an outcome of oral indigestion. The carbohydrates are not digested as they ought to be; they are neither subjected to the churning motions of mastication nor the insalivation they require, for they are, as a rule, nowadays presented to children in a state which stimulates neither mastication nor flow of saliva. All parts of the function of digestion are necessarily intimately correlated, so that it does not surprise us that this disturbance of the first stage of digestion is very apt to upset the normal working of the stomach. Of course, if digestion does not go on satisfactorily, neither will physical development.

In addition to this we must consider the carious cavities, their contents and consequences. We can hardly imagine that the products of the numerous bacteria associated with caries can by any possibility be otherwise than detrimental. The harmful results of decaying teeth may also be brought about by the injury and inflammation inflicted on the gums. This might not be considered serious, were it not that the inflammation is apt to spread backwards to the throat, and thus render it susceptible to be attacked by pathogenic micro-organisms. It has at least been maintained that several diseases having a local manifestation in the throat are predisposed to by such conditions. Diseases, such as scarlet fever, diphtheria, whooping-cough, tonsillitis, etc., might be less frequently contracted if the mucous membrane of the throat had not its resistive power enfeebled by the chronic irritation and extension of inflammation engendered by decaying teeth.

Akin to these considerations is the belief that the normal bacterial flora of the mouth is inimical to pathogenic microbes, as contended by Dr. Miller and others. Whether these views are strictly accurate or not remains to be proved, but they are so much in accord with common sense and the analogy of other cavities having a communication with the outside, that the burden of proof would appear to rest with those who might venture to question its truth.

Much has of late been written with regard to the harmful effect of swallowing the septic products of dead and suppurating roots. No doubt it is injurious to digestion, no doubt the evidence is sufficiently conclusive to warrant us in maintaining that physical development is not likely to go on satisfactorily so long as dead roots are left in the mouth. But the swallowing of septic matter is probably not the most seriously detrimental effect. It is the direct absorption of septic matter into the blood. This condition is common and chronic. I am probably within the mark in saying that 50 per cent. of growing boys and girls of the working classes in towns have one or more septic roots in their mouths prejudicially affecting their health. However, I do not intend to go into this subject of oral sepsis; its importance is beginning to be a little more adequately recognized, and is the subject of another communication at this meeting. Here, however, the question arises, Does the class which is physically most degenerate really suffer more from septic roots? To this there can be but one answer. They do. It is generally supposed, and no doubt it is true, that the upper classes are more subject to dental caries than the lower classes, but they are much more careful to have their teeth attended to. On the other hand, it is remarkable how few are without several septic roots.

Lastly, let us direct attention to the question whether there is anything in our surroundings or general mode of

living which is prejudicial both to the teeth and to general physical well-being. I venture emphatically to submit that there is. Medical science has made such progress we hardly dream that something may have been overlooked. Yet an investigation into the subject will prove that it is so. "What is true of science generally is likewise true of every scientific problem. Everything does not mean advance; we often meet with a standstill, sometimes take a retrograde movement. A striking example of this is shown in the investigation of the salivary glands. After the appearance of the classical work of Mitscherlich, and a number of talented investigators, such as Claude Bernard, Schiff, and others,[2] there came a retrograde movement, and now what we read in our textbooks would lead "one to suppose that the work of the salivary glands is of no import, and that they respond in haphazard fashion to every form of stimulus."[2]

Then, again, there is the unfortunate, though perhaps convenient, division of the process of digestion into three stages—namely, buccal, gastric, and intestinal, for, as has been so ably shown by Professor Pawlow, all stages of the process are most intimately co-ordinated.

Working from quite another standpoint I came to recognize the importance of a similar conclusion. I had been struck by the marked superiority of the teeth of those who ate the least soft and refined food, and also saw what appeared to me good evidence that those who had been brought up on, and continued to eat, natural, unrefined food, had a much better digestion than those who ate the most refined and apparently physiologically digestible food. In other words, I came to the conclusion that food which demanded efficient mastication was not only best for the teeth, but for the stomach and intestines also.

It is interesting to see how certain experimental procedures have given rise to most disastrous conclusions. Some experiments were made outside the body showing, it was supposed, how gastric digestion went on. Here was apparently unquestionable evidence set before one's eyes showing digestion going on in a glass bottle. It was seen that finely-divided particles were rapidly digested, whereas the process was slower if the pieces were large. Now, nothing could have been more natural than to advocate that the food should be refined, pulverized, or ground, so that the digestive juices would be more able to deal with it. It was not anticipated that this refinement would tend to make children swallow their food with little or no mastication. Nor was it expected that by habituating the child to swallow without mastication it would contract the habit of swallowing even lumps when these at times got into its food. Nor was it imagined that the teeth thus deprived of their natural function would decay and give rise to all the troubles to which we shall refer. It was not expected that this interference with the first stage of digestion would disturb nutrition and consequent healthy development.

It was not anticipated that this disturbance of the health and nutrition of growing children would lead to a craze for more nutritious food. It was not seen that this craze for nutritious food would lead to a still further elimination of the innutritious fibre which demands mastication and is commonly associated with natural and unprepared foods. Nor that this would appear still further to necessitate refinement of the food, and make it seem a necessary accompaniment of civilization.

All these considerations are naturally intimately associated with the physical development of the body, but they do not end here. The lowered vitality associated with weak digestion leads to susceptibility to other diseases, one of the most interesting and common to which we may refer being adenoids. I do not here intend, however, to trace the causes of adenoids. The problem is in itself complex and would require a separate paper for its elucidation. Suffice it to say that constipation and malassimilation with consequent emaciation and disturbance of the perspiratory function, together with insufficient mastication and development of the tongue, predispose to irregularity of the teeth, narrow palate, narrow nasal passages, chronic colds, mouth-breathing, and adenoids.

It may be said that the pap feeding of children is the outcome of years of practical experience, and that it might be a fatal or dangerous experiment to venture upon a new method of feeding. All possible theories may be advanced against feeding children with food which demands much mastication, but the system has already been put to the test over and over again. In many cases it has been carried out more or less by chance or by force of circumstances, but recently it has been put into deliberate practice in several parts of the kingdom, and, from all I hear, with the most excellent results.

It is scarcely realized that the masticatory apparatus of a child of 2 to 2½ years of age is relatively very large. It is much larger than an adult's in proportion to the size of the child, and considerably larger in proportion to the amount of food consumed. Nor is the significance of these anatomical facts realized by those who advocate porridge and milk, milk pudding, and bread and milk as staple articles of a child's daily diet.

An interesting corroboration of these views is to be found in the well-known fact that children brought up in towns have generally a worse physique and worse teeth than country-bred children. This, no doubt, arises from the fact that the town-bred child has meals largely consisting of, or supplemented by, the products of pastrycooks and confectioners; while the country-bred child has meals largely consisting of, or supplemented by, the fresh and natural foodstuffs from the kitchen garden and the orchard. It should be noticed, however, that there is no necessary connexion between town life and dental caries. A class illustration of this is to be found in the fact that certain Jewish children who are brought up on food better adapted for the preservation of the teeth and body in general have much better teeth and ampler dental arches than the equally town-bred Gentile. So, too, the growth and general physique are correspondingly better.

Another convincing corroboration of these views is to be found in a consideration of the increased prevalence of certain diseases. In a general way it may be said that we are in less danger of disease than were our ancestors. The advances of sanitary science, the steady progress of medicine, and the control and conquest of one disease after another, together with the general increase in comfort in which we find ourselves, all tend to physical well-being and freedom from disease. But notwithstanding this general amelioration there has been an appalling increase of those very diseases which have their origin in the soft, refined, and highly nutritious foods which stimulate the muscular activity neither of the jaws nor stomach nor intestine. Dental caries was once an almost unknown disease; now in England, at least, it is the most prevalent of all diseases. Indigestion and constipation have become so common that they are almost looked upon as necessary concomitants of civilization. Increased mortality is caused by diarrhoea resulting from undue lodgement and consequent fermentation of food in the intestine. Appendicitis, from the lodgement of faecal or other matter which the weak or sluggish intestine is unable to pass on, is an alarmingly fashionable disease. Neurasthenia, arising from gastric and intestinal insufficiency, is now quite common, although a generation ago even the name of the disease did not exist. Adenoids have become so common that a new class of surgeons is kept busy removing them. Lastly, anaemia and rickets, presumably from malassimilation and oral sepsis, have increased. Yet, in spite of these terrible facts, the nutritious pap system of feeding children is gaily advocated by some intelligent and responsible physicians!

We may now say a few words with regard to the methods by which the conditions which lead up to the deterioration of the teeth and general physique may be combated.

The inspection of school children's teeth by a qualified dental surgeon would be of much use, but my belief in the complete success of such inspection as a means of preventing dental troubles is not very great. The teeth are most liable to be attacked by caries before the child goes to school, and by the age of 5 many children are amply supplied with carious teeth and septic roots which seriously jeopardize development, if indeed they have not already more or less ruined the constitution. Thus it is that the natural method of combating the troubles will always remain the most important. Mothers ought to know or learn how to rear, and more especially to feed, their children. I do not seriously propose this, but I believe it will soon be seriously proposed that before a woman shall be granted a certificate of marriage she will be required to pass an examination on hygiene and dietetics. Perhaps a political agitation on the subject might have a beneficial moral effect. Unfortunately there seems to be but little organized desire on the part of the public to know how to prevent disease, and no inducement is given to medical men to investigate the subject. Doctors and dentists are seldom consulted on how to prevent disease. They are consulted and paid for their skill in curing it, and naturally devote their best attention to that for which they are paid. Perhaps a society for the prevention of disease might do much good.

Another point of importance is the formation of healthy

ideals. At present the ideals are weak and unwholesome. A mother's intention or ideal nowadays is to avoid giving her child any food which it will be unable to digest; and so it is kept on what is essentially a milk diet for years after it should have been able to eat practically anything. Unfortunately, this ideal is often apparently encouraged by the medical practitioner. When he is consulted with regard to digestive troubles he almost invariably tells his patient to stop eating this or that food. He seldom tells the patient how to strengthen the digestion so as to be able to eat the foods which were found to disagree. Naturally the patient wants to eat what he likes, and sometime or other does so; but nothing having been done to increase his digestive capabilities, the eating of the forbidden food leaves him worse than ever. This process of forbidding articles of diet while nothing is really done to strengthen the digestion often gets carried further and further until the miserable patient is limited to little more than breadcrumbs, boiled fish, and milk.

It should surely be realized that the process of digestion has arisen to extract nutriment from more or less innutritious foodstuffs while the wholly innutritious part is passed along the intestine to be evacuated. The present-day belief would appear to be to take in nourishment by the mouth and by the aid of pills render the intestine capable of extracting excrement from it.

The continual increase of highly-prepared and nutritious foods is a matter to cause grave apprehension to any one who is convinced that it is a necessity to eat the natural foodstuffs to which the alimentary canal, from mouth to anus, has through countless generations become adapted. Almost every day we have thrust upon our attention some new extract of beef or some predigested or malted preparation, or some proprietary food imitating all the disadvantages of milk. It should be impressed on every one that all these highly assimilable preparations are most dangerous, in that they are sure to leave a small residue in the intestine which is bound, sooner or later, to ferment and give rise to ptomaines and other highly poisonous products. Unless such foods are taken with a large amount of chemically inert matter, such as certain forms of cellulose, which will cause a regular, at least daily, evacuation of the bowels, they should only be taken after having had the advice both of a consulting physician and a dental surgeon.

Physical training and gymnastic exercises have been advocated as a means of preventing physical degeneration, but until the body is properly nourished and the diseases which cause physical degeneration have been eradicated they will be of little avail. Moreover, as it is writ large in Fletcher's collection and epitome of some valuable contributions to the subject,[3] "Do right in the feeding of your body, and an irresistible desire for physical exercise will follow as a matter of course."

Above all, however, it is necessary that there should be something approaching unanimity of opinion among the members of the medical and dental professions. If doctors differ, how can we blame parents for ignorance? Many mothers are anxious to learn and take all reasonable trouble to do what is right, but on that very account they fall into error from following erroneous teaching. I believe I am correct in saying that there are the most fundamental differences of opinion in the dental profession as to the methods to be employed to prevent dental caries, nor is the medical profession unanimous as to the correct methods of feeding children. Some few advocate hard or fibrous food demanding mastication. Others, such as an American authority who has recently written on the subject, contend that children should be allowed nothing but soft food till the age of 6, lest the teeth should be injured!

It may be said that I, at least, have little justification in urging unanimity of opinion, as but for the views advanced in my investigation into the "Cause and Prevention of Decay in Teeth" and of those few who have followed on similar lines, there is as perfect unanimity as could well be expected. Perhaps so; but this very unanimity of opinion and consequent identity of the methods advocated and adopted, together with greater prevalence of the disease in the class which used the methods most, lead me to doubt the wisdom of the procedures, and it was only after mature consideration that I ventured to make known my views.

Recent changes of opinion both in the dental and medical professions amply justify the position we have taken up. If what we read is accurate, then, indeed, a revolution would appear to have come over the dental profession. Last year Mr. Hopewell Smith said: "Ask a hundred per cent. of the members of the British Dental Association to name the two great remedies against the initial commencement of caries of the teeth, and all with one voice will exclaim, 'The use of the tooth-brush and the use of antiseptic mouth-washes.'" This year we read in the *Dental Annual* that "interest has been aroused by iconoclastic opinions ventilated in medical periodicals as to the efficacy of tooth powders and the artificial operation of brushing the teeth and gums. There has been a remarkable consensus of opinion as to the superiority of early mastication, the use of hard and resisting food, and the general exercise of the jaw muscles . . . . as compared with soft feeding and artificial cleansing."

I doubt if converts to a new truth are so speedily got unless both the older beliefs are hopelessly insufficient and the new ones are obviously in accord with known facts.

Surely the time has come when we might advocate something which would really prevent caries of the teeth and those other diseases which are at present doing so much to ruin the national physique. We must not be misled or discouraged by those who in spite of the most convincing evidence still maintain that "the cause of the prevalence of dental caries has yet to be discovered." Dental caries is preventable, and we know enough to explain how this may easily be done. We know also quite enough of the physiology of digestion to warrant us in condemning the pap system of feeding children.[4]

In conclusion I would remind you that it is not only a dental question, it is not only a medical question, it is not only a national question, but it is probably the most important of all questions affecting the physical well-being of humanity throughout the length and breadth of the civilized world. It may be urged that the civilized world may not follow our principles and the success which otherwise might have been achieved will not be got. It may not be possible for us to make the deaf hear or the dull appreciate, yet a system which allows a more liberal, a more varied, and a more natural if less nutritious diet may at least be acceptable to the great majority.

Certainly I believe we can and will do much to prevent the increase of dental caries and those diseases of kindred origin to which we have referred; but if "'tis not in mortals to command success, we can do more, we can deserve it."

REFERENCES.

[1] This subject is fully dealt with in *The Irregularities of the Teeth with special reference to a Theory of Causation and the Principles of Prevention and Treatment*, by J. Sim Wallace, M.D., D.Sc., L.D.S. [2] Pawlow and Thompson, *The Work of the Digestive Glands*, p. 150. [3] *The A B Z. of our own Nutrition*. [4] Observations on Mastication, by Harry Campbell, *Lancet*, July 11th, 18th, 25th, and August 8th, 1903.

Mr. Howard Mummery (Lecturer on Bacteriology, Royal Dental Hospital) asked Dr. Wallace if he had any opportunity of examining the teeth of the recently-instituted cult of "chewers."

Mr. Kenneth Goadby regretted he was unable entirely to agree with the reader of the paper. It was impossible to make such radical changes in the food of a nation, while many other factors than food contributed to pathological conditions of the mucous membrane of the mouth, rendering it liable to the sojourn of various pathogenic bacteria, such, for example, as the pneumococcus. Various native races who did not clean their mouths, but who subsisted upon a perfectly natural diet such as Dr. Wallace suggested, suffered from various forms of oral sepsis, often acutely. He thought, therefore, attention to oral hygiene by the usual methods of civilized races most important.

Dr. Milligan (Barrow-in-Furness) agreed with Dr. Wallace as to the advantage of coarse ingredients in food, especially as a preventive of dental caries. Our ideal should be to slowly change the diet of the nation. The tooth-brush and dental toilet should not be neglected, but none the less should we strive towards Nature's ideal diet.

Dr. Ernest Carter (Cheltenham) regarded Dr. Wallace's remarks as generally convincing, but requested some positive views on the feeding of children. He suggested that the use of the tooth-brush should be looked upon as a cosmetic proceeding rather than a means of preventing oral sepsis.

Mr. H. Baldwin (London) said Dr. Sim Wallace's paper contained much that all could heartily agree with, while parts which showed Dr. Wallace to be convinced were not quite convincing to others. Dr. Wallace said that the teeth of country people were better than those of town persons. Was this an accepted fact? To judge from the state of the mouths of young country girls coming to London as servants, the speaker was inclined to doubt such a statement. Dr. Wallace also

said that a varied diet was likely to preserve the teeth, but it was generally thought that a simple diet and not a complex one tended to preserve the teeth, possibly by favouring the development of one series of micro-organisms to the exclusion of others of, say, acid-forming, and therefore caries-producing, quality. This reflection leads to the suggestion that it might be that salvation might yet be found in the use of a bacterial mouth-wash containing those particular organisms which were inimical to the acid-producing bacteria of dental caries. Was it to be understood that Dr. Wallace entirely condemned the use of the tooth-brush and antiseptic mouth-washes? Would Dr. Wallace define his position? Did he mean that we should tell our patients never to brush their mouths? It did not appear reasonable that dental caries would be eliminated by using the dietary suggested or in following the advice given, for so many experiments had already been tried, including the adoption of almost every conceivable kind of diet without preventing dental caries, that the total abolition of the affection would not prove the easy matter Dr. Wallace thought it should.

Mr. J. F. Colyer (Dean of the Royal Dental Hospital) referred to the importance of looking more into the character of the food-stuffs as a cause of the great prevalence of dental caries. He referred to such matters as the use of bread made from stone-milled rather than roller-milled flour, and also the advisability of inquiring into the introduction of food-stuffs containing rapidly fermentable sugars.

Mr. E. Lloyd-Williams said that however much we might disagree with the general trend of the paper, it was at least refreshing to listen to various views set forth in vigorous and graceful English. He was convinced that there was a large amount of truth in favour of the argument for a rational diet of a coarse kind, and many of the points insisted on appealed to the speaker with great force, but, on the other hand, it was impossible to fight against the existing conditions of oral sepsis by excluding the tooth-brush and antiseptic mouth-washes.

Dr. Sim Wallace, in answering the various points raised in the discussion, disclaimed any attempt to eliminate the tooth-brush. In endeavouring to outline a diet for children, he would suggest that they should cut their first tooth on crusts, and that at no subsequent period should they be allowed to have any meal in the constituents of which hard and fibrous matter did not figure largely. Meat should be given in long strips which the child could not swallow whole.

SECTION OF ANATOMY.

Professor Arthur Thomson, M.D., President.

A SUGGESTED METHOD OF MOUNTING ANATOMICAL SPECIMENS FOR MUSEUM PURPOSES.

By C. J. Patten, B.A., M.D.,
Professor of Anatomy, University College, Sheffield.

During the past two years a large share of the administrative work of the Department of Anatomy has been directed towards the equipping of the Anatomical Museum. I cannot lay first claim to the foundation of this museum, for my predecessor, Dr. C. Addison, had already formed a small yet valuable nucleus from dissections prepared by himself, or under his supervision, together with several purchased specimens. But as gradually new permanently mounted preparations were added, not only to the museum but to the Department of Anatomy generally, the question seemed to force itself more and more on my mind that the methods at present in vogue of mounting wet specimens are not wholly satisfactory. In many anatomical departments preparations are put up in one of two ways: by suspending them in glass jars, or partly embedding them in plaster-of-paris in earthenware pots. In both cases the vessel is filled with a colourless liquid, such as weak formalin, or distilled spirit, but the cover made of glass is usually hermetically sealed up. Thus it happens that if the specimen requires fresh liquid (for in time it is liable to discolour and become muddy) it is necessary to either remove the lid entirely by chiselling away, bit by bit, the sealing substance, or to siphon off the old fluid by means of an india-rubber tube, one end of which is inserted into a small hole in the glass cover. Both these are lengthy methods—that of removing the lid often taking some hours, while the chances of breaking the glass are not altogether to be neglected.

Then, again, during the process of refilling the vessel the labels may be displaced by the current of the inflowing spirit through the siphon tube. To remedy this defect, there is nothing for it but to remove the lid with hammer and chisel. As soon as the vessel is filled, a cork, by way of a plug, is generally inserted into the little hole in the glass. But this is apt to become loose, and may perhaps fly out as the spirit expands in warm weather; or a mischievous student may remove the cork and not replace it, the upshot of all this being that dirt gains access to the interior of the vessel. Lastly, it is not uncommon to find the spirit leaking through the lutering, which must then be made right by an ugly patch.

I have tried the plan of mounting specimens in glass jars with wide mouths and ground-glass stoppers, but have found that the stoppers may get jammed so tightly that it is almost impossible to withdraw them.

It would seem that what is really wanting in anatomical departments is a method of mounting specimens in such a way that they can be readily removed from and replaced in the fluid without the slightest detriment. For this end I suggest the following method: Tack four pieces of wood together so as to make a frame. The size of the frame will depend on the size of the specimen about to be mounted; one 9 in. by 7 in. will be found useful. The inner surface of the frame should be perfectly flat, smooth, and about ¾ in. deep. The four pieces of the frame are not to be permanently joined by screws or long nails, as they require to be capable of easy separation. Lay the frame down on a perfectly clean sheet of glass, then take a little oil and apply it, not only to the glass but to the entire inner surface of the frame. Mix some plaster-of-paris in water (the proportions being 27 oz. of plaster to 22 oz. of water), pour this on the glass, carefully avoiding air bubbles, until the area enclosed by the frame is completely filled. Then quickly, before the plaster sets, place another sheet of glass, well cleaned and oiled, on top of the frame. In a few minutes—that is, when the plaster has fairly set—slide off the top sheet of glass and then separate the parts of the frame by carefully insinuating the blade of a knife at the angles where they are joined. The plaster will now easily slide off the under sheet of glass, and when the surface which was in contact is turned over it will be found to be almost as smooth as polished marble. The specimen is then placed on this plaster slab, and two or more glass rods with pointed ends are pushed firmly but gently through it and into the plaster, thus securing it in position. It is important that the specimen should be fixed before the plaster becomes quite hard, otherwise the glass rods may have to be driven in with a hammer, in which case they are liable to break or the concussion of the hammering is liable to split the plaster mount. The specimen, when set on its clean white slab, is at once transferred to an oblong museum jar, with a flat face as seen in the photograph. A sheet of glass cut to the size and shape of the top of the jar forms the lid. This may simply rest on a flange, or, to prevent evaporation of the liquid and to keep the preparation perfectly dust-proof, it may be fixed by wax or by an india-rubber band.

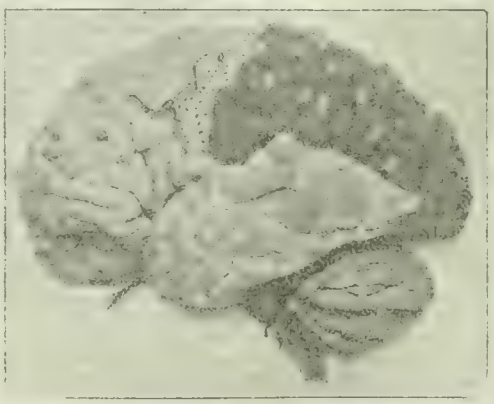


Fig. 1.—Brain hardened *in situ* with formalin. (Mounted on white plaster slab; photographed in glass museum jar filled with spirit.)

Such a method of mounting has many advantages. As already mentioned, the preparation can be readily removed, and as the plaster mount is also removable there is no need to handle the actual specimen. I consider it a great boon to

be able to remove a specimen, mount and all, from out of its liquid at any time. It can then be more easily photographed,[1] can be retinted as often as it may require; the lettering—that is, flag labels—can always be adjusted if out of place, and, besides, the entire vessel can be thoroughly rinsed out so that all sediment is removed; and when pure distilled spirit or other colourless fluid is added at fairly frequent intervals, the specimen always looks beautifully clean and bright. But the ornamental aspect must not be looked at alone. Specimens ought to be mounted so that they may prove of the greatest possible use to students when prosecuting their anatomical studies. Here I believe the want is amply supplied. With an amount of ordinary care the plaster slab can be handled with safety by a student, who has then a chance of examining the specimen closer and more thoroughly than if it were shut up in a hermetically-sealed pot or glass vessel. I would further add that, with a little practice, it is quite easy to make these slabs. My laboratory assistant, Mr. Jennings, can make one and mount a specimen on it in six minutes.

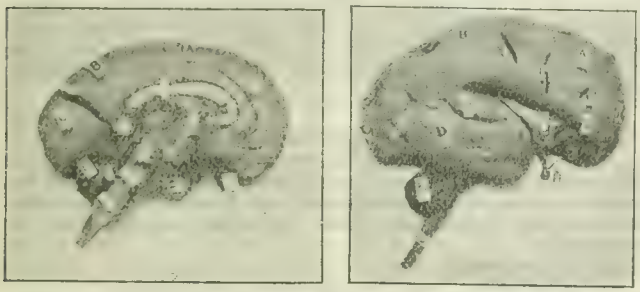


Fig. 2.—Brain hardened *in situ* with formalin. (Mounted on white plaster slab; photographed after removal from museum jar.)

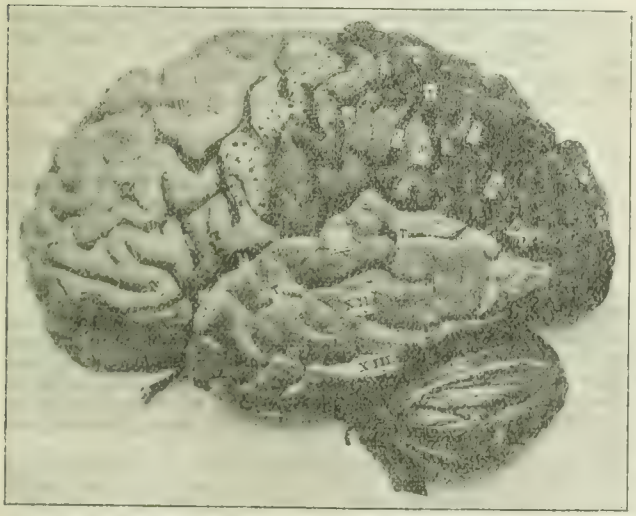


Fig. 3.—Brain hardened *in situ* with formalin. (Mounted on white plaster slab; photographed after removal from museum jar.)

In conclusion, it would seem to me that a modern dissecting room might with advantage be furnished with some good-sized wall cases with glazed fronts; these to be well stocked with specimens mounted in glass vessels. I take the opportunity of mentioning this just now, at a time when anatomy and anatomical teaching are advancing with such rapid strides, and the subject is being dealt with, in the large majority of British as well as the Continental and American universities, on a proper scientific basis, and is no longer regarded simply in its most restricted view as a technical study for medical students alone. A dissecting room, in my opinion, should rank as an anatomical laboratory, and should be fitted up accordingly. In addition to the ordinary requirements now in use, it should be equipped with specimens, cased and mounted in the most perfect and attractive manner possible, also a set of anthropological instruments (neatly arranged in glass cases when not in use), together with a few cheap microscopes and stereoscopes secured in position on tables for students' use. I would suggest doing away with, or at any rate greatly diminishing, the number of hermetically sealed pot specimens, which we have been accustomed to view through a circular hole cut in the top of the wooden encasement. I consider this system of mounting (in addition to the many disadvantages already mentioned) unsightly, and certainly it does not afford as good a general view of the specimens as can be obtained on looking at a large and well-stocked wall case, from which, as already shown, the specimens can be removed and examined minutely whenever required.

Note.

[1] I have even got very satisfactory results by photographing specimens mounted in this way, in the museum jar filled with spirit. (See Fig. 1.)

A CONTRIBUTION TO THE ORIGIN OF THE EMBRYONIC LEUCOCYTES.

By J. H. Bryce, M.D.,
Lecturer on Anatomy, Queen Margaret College, Glasgow.

In this paper I wish to communicate one of the results of my studies on the histogenesis of the blood of the *Lepidosiren*. Very early in the blood and tissues fine white elements are found of various kinds—mononuclear forms (large and small) and polymorphonuclear forms of varying size, hyaline or granular, and, lastly, an eosinophile form. These are all very large and distinctive cells, and as *Lepidosiren* is a lowly vertebrate, the conditions under which the problem of their origin has to be solved are comparatively simple. All the varieties arise *in situ* from five mesenchymatous elements, first in the splanchnic mesenchyme, and later in the mesenchymatous tissue round the pronephric duct and mesonephric tubules. In this animal the thymus has no share in the first origin of the leucocytes. At a stage before there are lymphoid elements in that gland, the spleen has assumed the function of forming leucocytes, and it again is preceded in that function by the specialized tracts of the mesenchyme referred to.

Professor Keibel (Freiburg) said his investigations and those of his pupils, Professor Tonkoff (St. Petersburg) and Dr. Piper (Berlin), had shown that in both lower and higher vertebrates the blood and the spleen arose from the mesenchymatous tissue, and he was glad that these conclusions, through the interesting investigations of Dr. Bryce on *Lepidosiren*, seemed to be confirmed. He was now working on the origin of the leucocytes in the thymus, and as far as he had gone he was not able to confirm Dr. Beard's results. Still, his investigations were not yet finished, and until they were he would not express any decided opinion.

In reply to Professor A. Robinson, who had asked for further information concerning the localization of leucocyte formation and also for the method of differentiating between mesenchyme and mesoderm, Dr. Bryce explained that the tracts in which the leucocytes were found developing were localized. The general mesenchymatous tissue did not show the same phenomena; and that in regard to his results, while they held good only for the form under study, they were to be considered as a contribution to the establishment of a general theory of the leucocytes.

DISCUSSION ON GIANTS AND DWARFS.

I.—D. J. Cunningham, M.D., F.R.S.,

Professor of Anatomy, University of Edinburgh.

Professor Cunningham said: Giants and dwarfs have always exercised a powerful fascination on the popular mind; in all periods of history there are records of men of gigantic stature and liliputian dimensions.

My personal interest in giants dates from the time when I became the custodian of the skeleton of the famous Irish giant, Cornelius Magrath. For close upon a century and a half this skeleton has been the prized possession of Trinity College, Dublin. In almost every anatomical or anthropological work in which the human stature is discussed the great height of Magrath receives prominent notice, and yet it must be admitted that his reputation in this respect rests upon an altogether fictitious basis; Magrath cannot lay claim to first rank as a giant. The most contradictory statements have been made in regard to his height. According to Humphry he was 8 ft. 6 in.; Sternberg, 8 ft. 5 in.; Wood, 7 ft. 9 in., and Topinard, 7 ft. 4 in. There is only one record of measurements taken during Magrath's lifetime by a competent and trustworthy observer. When Magrath, in the course of his travels, was in Florence he was carefully studied by Dr. Bianchi, and in a quaint and interesting letter,

which has fortunately been preserved, Dr. Bianchi gives his height as 7 ft. 5 in. The skeleton, it is true, only measures 7 ft. 2½ in., but notwithstanding this the measurement taken in Florence probably gives the correct height of Magrath at that time (1757).

With regard to the stature of giants in general, the statements made in earlier records are altogether unreliable. No height—no matter how great or how ridiculous—was considered impossible: and even at the present time the utmost caution requires to be exercised before accepting as accurate the measurements which are given of men who present an unusually great stature. Advertised heights of giants on exhibition are always exaggerated, and, according to Dana, it is a safe rule to deduct five or six inches from all of these. It is most difficult, and perhaps impossible, to say what is the limit to human stature. For my own part I am doubtful if there is any authentic record of a giant over 8 ft. 2 in. or 8 ft. 3 in. I do not say that such is impossible, only I do not consider that the records of giants said to have possessed a greater stature are reliable. A good example of the unreliability of statements regarding height of giants is the case of Winkelmeyer, whose height was advertised as 8 ft. 6½ in. Virchow, however, had the opportunity of measuring Winkelmeyer, and found that he was only 7 ft. 5⅝ in.

An examination of Magrath's skeleton shows that he suffered from acromegaly in its most pronounced form. And nowadays the leading interest attached to giantism is, to a large extent, centred in the relation which it presents to that disease. That giantism is in most cases a morbid process there can be little doubt, but the precise relation which exists between this condition and acromegaly is the subject of much discussion.

Magrath's skull, when viewed from the front, shows great depth of face, and this is due partly to maxillary and partly to mandibular overgrowth. In the profile view, the great size of the mandible and the forward projection of the lower teeth are particularly evident. Associated with the increase in size of the lower jaw there must consequently be an increase in the power of the muscles which operate upon it. The temporal muscle is the one which can most readily extend its attachments, and we accordingly find a great extension of the temporal fossa on the side of the cranium, and an increase in the height of the temporal ridge. There is also festooning of the ridge due to the fascia being tied down at the coronal suture. Professor Dixon has called attention to this as being likewise a striking feature in the ordinary acromegalic skull.

It is difficult to offer any satisfactory explanation of the great degree of mandibular growth which is present in acromegaly and giantism: but there are certain conditions connected with the growth of this bone which may possibly bear on the matter. For example, the growth of the jaw is intimately associated with the eruption of the teeth, and consequently its period of growth is prolonged beyond that of other bones to make room for the wisdom teeth—that is, to 27 years, and often later.

Another point of interest in Magrath's skeleton is the great size of the pillars which bear the articular processes of the vertebrae in the cervical region. This is likewise seen in the ordinary acromegalic skeleton (Dixon). Further, in both giantism and acromegaly there is usually a remarkable enlargement of the pituitary body.

In a memoir which I wrote in 1891, in which both the skeleton of Magrath and also that of Charles Byrne, the Irish giant preserved in the College of Surgeons of England, are described, I expressed the opinion that there must be some connexion between giantism and acromegaly, or, in other words, between general overgrowth and partial overgrowth. Within a very few years of the publication of this paper many other examples of acromegaly in giants were recorded.

The view held in most general favour at present is that both giantism and acromegaly are due to the same morbid process, the results differing merely according to the period of incidence of the disease. For example—if the morbid process occurs in a child or young person before the union of epiphyses has taken place, a giant is the result: whereas, if it occurs in an adult, after the period of general growth has stopped, the disease manifests itself as acromegaly. Meige points out that acromegaly never precedes giantism, and that in 50 per cent. of giants acromegaly follows. Sternberg is a strong opponent of the view that the two conditions are more or less identical, and no doubt there are some giants—Winkelmeyer and Murphy, for example—who have shown little or no trace of acromegaly. Still, it should be borne in mind that in the initial stages of acromegaly there is usually a period, of varying duration, of increased vigour and strength, which is afterwards followed by the physical breakdown characteristic of the disease. Both Winkelmeyer and Murphy, therefore, may simply have exhibited a prolonged initial stage of the disease. On the other hand, it should be noted that Winkelmeyer is said to have lived until he was over 40 years of age, and to have had children.

Of all the questions, however, in connexion with this matter, the enlarged pituitary in both giantism and acromegaly is the most interesting. Marie considered acromegaly to be due to an abolition of the function of the pituitary body; through this a toxic substance gathered in the blood which led to excessive osteogenetic activity. A more likely theory is that of Tamburini, who considers the pituitary secretion to be a growth stimulator. He recognizes two stages in the disease: (*a*) An initial stage of active growth due to excessive secretion on the part of the enlarging pituitary; (*b*) a later stage where degenerative changes in the pituitary occur, and which sooner or later ends in death. The acceptance of Tamburini's theory and a supposed prolongation of the initial stage of the disease might smooth over some of the difficulties undoubtedly present in recognizing all cases of giantism as being pathological and as being essentially acromegalic in their nature.

II.—B. C. A. Windle, M.D., F.R.S.,

Professor of Anatomy, University of Birmingham.

Professor Windle said: Dwarfishness may be produced by various causes, truly pathological and teratological, to make our present distinction. The following classification is suggested:

A. Pathological:
   1. Rachitic: Very rare, perhaps non-existent.
   2. Osteomalacic: Also very rare.
   3. Cretinoid: With thyroid deficient or absent.
   4. Chondrodystrophic or achondroplasic, to which class many dwarfs belong. The condition is also met with amongst animals.

B. Teratological:
   1. Phocomelic, where some of the intermediate parts of the limbs are absent.
   2. Micromelic: Limbs complete, but unduly small, merges into the class of
   3. Nanosomes, or true dwarfs, which may be primordial or sexual—that is, small men and women; or infantile or asexual—that is, permanent children.

III.—Hastings Gilford, F.R.C.S.,

Reading.

It is fitting that the subjects of giants and dwarfs should be discussed together, for, though they are opposite extremes, they are extremes which have a common meeting ground, and a cause which is known to result in the one extreme may be suspected of acting in the opposite way, so as to give rise to the opposite extreme. Both may have the same physiological basis.

The best method of classification, both of giants and of dwarfs, seems to be that which divides them into two main groups of anatomical or natural giants and dwarfs, and pathological or diseased giants and dwarfs. The natural may again be divided into racial and sporadic. If one may venture on a definition, one may say that a normal dwarf is a dwarf who is in no way deformed, who attains puberty at the usual period, is of good muscular development, shows no evidences of syphilis or other disease which can possibly affect growth, is capable of procreation, is of fair intelligence, and lives to an ordinary length of life. If we substitute excessive for defective height, the same will apply to giants. A good instance of natural sporadic giantism was the giant Bates, another was Robert Hales, both of whom appear to have been merely overgrown men.

But dwarfism or giantism of marked degree is almost necessarily a sign of disease or malformation. Such cases are in reality not in the domain of pure anatomy, but are pathological. Some of these appear to be due to excessive or defective growth of the skeleton or of parts of the skeleton. In this category are achondroplasia, rickets, and that extremely deformed shortness of stature which is produced by spinal caries. In all these cases the soft parts seem to adapt themselves to the needs of the stunted framework. Possibly giantism may be produced in a similar but contrary way. It is not unlikely that the skeletal, like the muscular and fatty systems, may

of itself undergo true hypertrophy. If so, we should expect that the result would be an individual of excessive stature, lean, and with comparatively small muscles, but without other indications of disorder. Of such a description was the Austrian Winkelmeyer, who was described by Virchow. He was not only of extraordinary height, but was thin and of poor muscular development, though he showed no evidences of acromegaly or other disease. The adaptation of the soft parts to the growth of the bones, which seems to have been very complete in Robert Hales, in Winkelmeyer left much to be desired. Similar adaptation seems to take place in undergrowth of other parts beside the skeleton. Thus, in microcephaly, in which the shortness of stature is usually attributed to some defect in the nervous control of nutrition, it seems by no means improbable that it is due quite as much to adaptation of the growth of the body in an attempt to bring it within the compass of the functions of the diminutive brain. At any rate, it is quite certain that some dwarfs—as, for example, General Mite (circumference of head 41.5 cm.) and Pauline Muster (circumference of head 39 cm.)—have a skull capacity which is within the limits of microcephalic idiocy, yet they are neither imbeciles nor idiots, though they are extremely restless and have the physiognomy of microcephalism. They are of fair intelligence, apparently because their bodies remained undeveloped. The proportionate growth of both body and brain keep pace with one another.

But what I should like to draw your attention to more particularly are three forms of dwarfism, all of which I believe to be due to disease, although one of them is so nearly on the borderland that it may be termed a malformation rather than a disease. In none of these can we trace the influence of syphilis, cretinism, congenital heart disease, nor any other disorder. Their cause is unknown. One of these is a defect not of growth only but of development as well. It is a species of infantilism of very marked type. I have a typical instance here now. He is 30 years of age. He is an instance of that infantilism for which there is no obvious cause. Development is not arrested, for he still continues to grow, though at a very slow rate, and a radiograph shows that he is capable of further growth, for ossification is still so backward that it is only equal to that which is usual at 10 years. The developmental delay appeared to begin spontaneously when he was 18 months old, so that it has taken him 28 years to accomplish the development which ordinarily takes place in 8½ years. You will notice that the proportions of his body are still childish. The head looks large, and the middle point is about 2 cm. above the symphysis pubis. His face is flat and broad, and nose somewhat undeveloped, while the hair encroaches upon the forehead. The contour of his body is also distinctly childish. The muscles correspond in development with those of a boy of his size, and there is a rotundity and smoothness of outline to correspond. The teeth are crowded, and dentition is like that of a boy of 12 years. But, while he is of such extremely delayed bodily development, no one would mistake him for a child, for it is impossible that he should have lived so long without becoming wrinkled and weathered. As it is with his body so it seems to be with his mind, for he has the intelligence, the directness, and simplicity of a child, and, in addition, the confidence and self-control which have come with experience. There is one other feature of great importance to which I have to direct your attention, and that is the state of his genital organs, which are far more undeveloped than any other part. The testes are not yet fully descended; they are in all respects like those of an infant. This form of infantilism has been termed "ateleiosis," for those who are so affected seem never to arrive at perfection.

Now let me turn to a case of dwarfism which I believe to be closely related to the disorder which produced the above, though it differs in the very important particular that the sexual organs are of normal development. I think you will see this resemblance if we put this case on one side for a minute and turn to a more typical instance of the same disorder. Here is a portrait of what I believe to be another dwarf of the same kind. It is that of Charles Stratton (the celebrated Tom Thumb) and his wife. You will see at once that his bodily configuration and his proportions and facial appearance are those of a child. Though this portrait was taken when he had reached maturity he looks like a stereotyped child. He is, in these respects, like the case of infantilism I have just shown you. What may be said of him is also true of his wife. Other portraits of Tom Thumb show that he possessed facial hair, and it is known on good authority that he and his wife were the parents of a child. Let us turn again to the case which I am now bringing before you, and you will notice that the bodily appearance is that of an adult, yet in reality he possesses the flat, undeveloped features which characterize early life. He is really of the same type as Tom Thumb, and, like Tom Thumb, he is capable of having children. His wife is a woman of ordinary stature, and there are three children, two of whom are of ordinary size, while the third is a dwarf. Now, this dwarf child is in all important particulars like the example of ateleiosis which I have just shown you, including the ill-developed sexual organs. Though he is now 12 years of age his size, the development of his bones, and his proportions are those of a child of half his age, so that he seems to be a connecting link between Tom Thumb dwarfism and the form of infantilism which I have termed ateleiosis. He is an excellent example of the asexual variety of ateleiosis.

Now let me turn to another and still more extraordinary form of dwarfism. Of this form I only know of three cases, of which one is somewhat doubtful. All are dead, so that I can only show you photographs. The characters of the dwarfism are partly those of infantilism, partly premature old age, or senilism, and partly normal development. He was of the size and proportions of a child of 10. His dentition was still more backward, and those bones which were laid down in membrane or were partly of membranous development—such as the vault of the skull, the clavicle, lower jaw, and shafts of the long bones—were of infantile type. The liver, the cartilage-formed bones, the brain and sexual organs, all showed some attempt at approaching normal development, but that which gave the most characteristic and pronounced appearance were the features of senilism. The attitude and manner of walking were those of an old man. The skin was dry and wasted, the face serious in expression and lined as if with age. He was lean to the last degree, and there was hardly a vestige of subcutaneous fat, so that the outlines of the joints, tendons, and veins stood out very conspicuously. The muscles were wasted and weak, and he was bald, with the exception of a slight growth of downy white hair. He died from angina pectoris at the age of 18 years, and after death extensive calcareous changes were found in the heart and aorta, while the kidneys were fibrous, and suprarenal capsules shrivelled, both organs being like those of an old man. To this disorder the name of progeria (prematurely old) has been given.

The cause of these three conditions can as yet only be conjectured. I myself thought there was reason to believe that the disorder was allied with acromegaly. Dr. Woods Hutchinson has since found destructive disease of the pituitary body in a case of dwarfism, though this case was apparently not of the same type as any of those which have been referred to here; and Professor Arnold Paltauf has also recorded a similar case.

IV.—George A. Gibson, M.D., D.Sc., F.R.C.P.Ed., F.R.S.Ed., Physician, Royal Infirmary, Edinburgh.

Dr. Gibson said that his remarks could be confined to the subject of gigantism viewed from the standpoint of acromegaly, for although undoubtedly giants were occasionally seen without any marked features of acromegaly, gigantism was usually associated with characteristic acromegalic features. He stated that amongst the skiagraphs and lantern slides of acromegaly which he had placed on view in the museum there was one most interesting series from a youth of 18—whom he had shown to Professor Cunningham—who manifested acromegalic symptoms, including bitemporal hemiopia, with persistent non-union of the digital epiphyses of the hands and feet. Cunningham and he considered the patient to be a giant in an early stage. Dr. Gibson pointed out that in acromegaly there were two well-marked types of disease—one tending in the direction of myxoedema, the other towards exophthalmic goitre. This opinion had been forced upon him by the observations of the last six or seven cases he had seen, and he had lately found the view also expressed by Lorand of Carlsbad. It seemed to him that not infrequently there was in acromegaly at first an exophthalmic goitre tendency, followed later by myxoedematous features. Treatment of cases emphasized this view, for in early stages pituitary extract was useful, while in later conditions thyroid extract was of greater utility. A parallel might be drawn between these views and the opinions of Murray of Newcastle, who had, in his Goulstonian Lectures, shown that exophthalmic goitre not

infrequently passed at a later period into myxoedema. As regards the cause of gigantism and acromegaly he believed that they were due to interference with the functions of the pituitary body which he regarded as a regulator of growth. Woods Hutchinson seemed to share this view, and the physiological investigations of Schäfer were in harmony with it. When its inhibitory influence upon the thyroid—and possibly other glands—was removed by disease, hypertrophy of certain parts, when growth was still possible, ensued.

V.—A. F. Dixon, M.D., D.Sc.,
Professor of Anatomy, Trinity College, Dublin.

Professor Dixon said that in acromegaly and in acromegalic giants there appeared to be a remarkable selection among the facial bones or their parts. This selection followed a definite rule—namely, the bones primarily affected or enlarged were those which arose as membrane or dermal ossifications in connexion with the wall of the primitive mouth cavity or stomodaeum. He ventured to suggest that this remarkable selection was to be associated with the fact that the anterior lobe of the pituitary body, which was always involved in the disease, had also its source from the wall of the stomodaeum. If they omitted the increase in stature and the changes due to pressure of the enlarging pituitary body, most, if not all, the changes in the skeleton, appeared to be secondary to those produced by excessive growth in the membrane bones surrounding the primitive mouth cavity. Attention was drawn to the remarkable interlocking of the cervical vertebrae and the development of pressure facets in connexion with them.

VI.—Peter Thompson, M.D.,
Lecturer on Anatomy, Middlesex Hospital.

Dr. Peter Thompson thought that, although most of the preceding speakers had given their support to the acromegalic view of gigantism, there were undoubtedly examples of great increase in stature, unaccompanied by any obvious manifestations of that disease. In certain forms of giants the abnormal stature seemed to be the result of great increase in length of the lower extremities without any marked increase in size of the trunk and head, and he thought that this might be explained on the ground of delayed union of epiphyses and diaphyses. What the causes of the delayed union might be it was difficult to say, since they did not know what determined normal arrest of growth in the adult. But there appeared to be some relationship between the arrest and the period of puberty; and in one case of increase in stature (to the extent of one foot) occurring between 20 and 30 years of age there was incomplete development of the sexual organs.

VII.—Gustav Mann, M.D., B.Sc.,
Oxford.

Dr. Gustav Mann suggested that the condition of the sympathetic system ought to be studied, inasmuch as removal of superior cervical sympathetic ganglia in newly-born animals produced overgrowth of head and ears on the same side as that in which the ganglion had been removed. He further suggested that the hypertrophy in acromegaly might in part be explained by pressure exerted by the pituitary body on trophic nerves coming from higher centres and passing to the cord.

VIII.—R. J. Gladstone, M.D., F.R.C.S.,
Senior Demonstrator of Anatomy, Middlesex Hospital.

Dr. Gladstone agreed with Dr. Gustav Mann in considering that the enlargement of the soft parts, and of the pituitary gland in acromegaly, and in giants showing signs of acromegaly, was possibly secondary to a primary affection of the sympathetic nervous system; and he thought it comparable to the enlargement of the thyroid gland in exophthalmic goître, in which disease dilatation of the vessels and enlargement of the gland was perhaps more certainly associated with a disturbance of the sympathetic nervous system. He also drew attention to certain differences in character between the form of acromegaly which supervened in adult life and that which occurred in giants. In the former the enlargement of the soft parts, and especially of the nose, ears, lips, and tongue, was much more pronounced than in the latter. The bones also in acromegaly occurring in adult life he thought were, as a rule, more porous, and more obviously diseased, than in the skeletons of acromegalic giants. He was of opinion that a certain number of giants' skeletons might very readily be described as acromegalic, which in reality were not so. In normal individuals there was a tendency towards disproportionate increase in the vertical diameters of the body (including those of the face) as compared with the transverse. The disproportionate length of the face in giants was also increased by the relatively small size of the cranium. If the average size of the cranium in a large number of normal individuals, grouped according to their height, were taken in each group, it would be found that there was a progressive diminution in the proportional size of the cranium accompanying every additional inch of stature, and conversely a progressive enlargement of the proportional size of the cranium with diminution in stature. The proportion that the size of the cranium bore to the stature Dr. Gladstone estimated by a formula based on the cranial index of size, which was the product of the three principal diameters of the cranium—namely, length, breadth, and height. The formula, which he expressed thus:

$$\frac{\sqrt[3]{\text{Cranial index of size}} + 100.}{\text{Stature.}}$$

he termed the "capitulo-statural index."

IX.—Richard J. Anderson, M.D.,
Professor of Anatomy, Queen's College, Galway.

Professor Anderson said the question of giants turned upon the inquiry whether men could grow very tall and retain their normal proportions, structure, and functions. The evidence went to show that many of the so-called giants and dwarfs were pathological, and the condition was associated with a transfer of ossific matter from one place to some other.

X.—C. J. Patten, M.D.,
Professor of Anatomy, University College, Sheffield.

Professor Patten asked if Professor Dixon considered the greater development of the coronoid process of the lower jaw and the more extensive temporal fossa with more marked ridges as purely secondary modification, or were there any relationships to such in primitive forms, such as anthropoid apes? Professor Patten, in support of Dr. Peter Thompson's views, mentioned a skeleton which he described of an adult 5 ft. 10 in., with very long and heavy limb bones but no signs of acromegaly.

XI.—Johnson Symington, M.D., F.R.S.,
Professor of Anatomy, Queen's College, Belfast.

Professor Symington thought that both giantism and dwarfism were pathological. He said there were extremely few well-verified examples of excessively small or excessively large people who were really healthy. He also referred in some detail to congenital cretinism, an example of which he had described some time ago, in which the lesion was limited to the ossification in the cartilage, and this had led to the production of a dwarf condition.

CRANIO-CEREBRAL TOPOGRAPHY.

BY

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and

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The great clinical and surgical import of cranio-cerebral topography, the improved methods of observation now at the disposal of the anatomist since the introduction of formalin, and the numerous and conflicting statements universally made as to the best methods of determining upon the surface the positions of the great fissures of the human cerebrum, have, one and all, seemed to the authors to urgently demand a reinvestigation of this important subject. We have, therefore, during the past year made a careful examination of all the crania of the subjects which have come up for dissection in the anatomical department under the charge of one of us. The methods which we have investigated are those which, in the Edinburgh School at all events, are associated with the names of:

1. Hare and Thane.
2. Chiene.
3. Reid.

In each instance the method of procedure was the same. The brain was thoroughly hardened by means of formalin injections on the undissected subject; the guiding lines employed by the particular method under investigation were then

drawn on the skull, and all intermediate portions of bone removed by a Hey saw. The meninges of the brain were carefully dissected off, and the result was that the positions of the various fissures of the brain, and their relations to the osseous bars indicating the guiding lines of the method employed, could then be noted. It need hardly be said that, though this method was excessively laborious, it gave the utmost precision obtainable, and constituted a severe proof of the accuracy or otherwise of the particular method investigated.

1.—Hare and Thane's Method.

This method, as employed by Edinburgh surgeons, is a combination of Hare's angle for the fissure of Rolando, and of the method described in *Quain's Anatomy* for the Sylvian fissure, Sylvian point, parallel fissure, and external limb of the parieto-occipital fissure. The method is as follows:

(*a*) *The Superior Rolandic Point.*—To find the superior Rolandic point, draw a line "from the nasion (centre of the naso-frontal suture) to the inion (external occipital protuberance)"; a point 1 cm. (or half an inch) behind the centre of this line will indicate with sufficient accuracy the spot where the fissure of Rolando meets the upper border of the hemisphere, and may be termed the superior Rolandic point.

(*b*) *The Fissure of Rolando.*—Hare's method of finding the fissure of Rolando for clinical purposes consists in taking a sheet of paper, one of the corners of which contains a right angle, dividing this by successive foldings until the right angle is subdivided into four lesser angles of $22\frac{1}{2}^{\circ}$, three of which constitute an angle of $67\frac{1}{2}^{\circ}$. By applying the folded paper to the superior Rolandic point the position of the fissure is easily obtained. It must be borne in mind that Hare's angle does not pretend to locate the fissure precisely, as according to Cunningham the precise angle of the fissure is 71.7°, but it is near enough for all practical purposes, whilst its simplicity is also strongly in its favour.

(*c*) *The Sylvian Point.*—To find the Sylvian point draw a line horizontally backwards from the fronto-malar suture for a distance of 35 mm. and from the end of this a vertical line upwards for 12 mm.; the upper end of the latter line marks the spot where the anterior branches are given off from the Sylvian fissure, and may be termed the Sylvian point.

(*d*) *The Fissure of Sylvius.*—A line drawn from the fronto-malar suture through the Sylvian point to the lower part of the parietal eminence will about lie over the posterior limb of the Sylvian fissure, and may be called the Sylvian line.

(*e*) *The Parallel Fissure.*—The seat of the parallel fissure may be determined by a line drawn from the marginal tubercle of the malar bone to the lambda.

(*f*) *The Parieto-occipital Fissure.*—A line drawn transversely outwards for a distance of 2 cm. from the lambda will mark the parieto-occipital fissure.

Working with the above method we examined 10 cases—8 males and 2 females—the average age being 53. The general results of the method were as follows:

(*a*) *The Superior Rolandic Point.*—The superior Rolandic point was precisely indicated in 60 per cent., and erroneously so in the remaining 40 per cent. The error was always slight, and was always the same—namely, placing the point too far forwards. In only one case was the error at all serious, and in this case the superior Rolandic point was fully an inch too far forwards.

(*b*) *The Fissure of Rolando.*—The Rolandic line, obtained by Hare's angle, crossed some portion of the fissure in every instance—that is, in 100 per cent. of cases. As a general rule the upper third of the fissure lies behind the Rolandic line, the middle third under cover of the line, and the lower third in front of it. As Hare's angle makes no attempt to give the precise angle which the fissure of Rolando forms with the mesial plane, neither can the Rolandic line indicate the precise direction of the fissure. The error is, however, so slight that it may be disregarded, and one of the most remarkable features of the present investigation has been the absolute certainty which Hare's angle gives the surgeon of striking the Rolandic motor area.

(*c*) *The Sylvian Point.*—We found the Sylvian point even more accurate than the superior Rolandic point, as it was correct in 70 per cent. of cases. In the remaining cases the Sylvian point was too high in one instance, and too low in two instances. On the whole, this method of obtaining the Sylvian point may be relied upon as being accurate.

(*d*) *The Fissure of Sylvius.*—The fissure of Sylvius was seldom found to coincide with the Sylvian line. As a general rule the line rises much more obliquely than the fissure, so that in the majority of cases the discrepancy between the two increases as the line and fissure are traced backwards from the Sylvian point. Hare and Thane's method is not, therefore, reliable as regards the fissure of Sylvius.

(*e*) *The Parallel Fissure and the Parieto-occipital Fissure.*—As regards these two comparatively unimportant fissures, we found the method recommended of drawing a line from the malar tubercle to the lambda sufficiently accurate for all practical purposes. As a general rule it may be stated that the line coincides so closely with the parallel fissure as to ensure surgical accuracy if the line be trephined down upon in, say, the treatment of a temporal abscess. The lambda as a guide to the parieto-occipital fissure is not quite so accurate, as though the two do coincide in the majority of cases, there are, on the other hand, many cases where there is a wide discrepancy between the lambda and the position of the parieto-occipital fissure. The point is not in any case of any great practical importance.

With the exception of the Sylvian line, Hare and Thane's method may be regarded as of sufficient accuracy to justify its employment by surgeons.

2.—Chiene's Method.

This method, devised by Professor Chiene, is as follows:

Find in the mesial line of the skull between the glabella and the external occipital protuberance the following points:

First, the mid-point; second, the three-quarter point; third, the seventh-eighth point.

Find also the external angular process and the root of the zygoma (preauricular point), immediately above and in front of the external auditory meatus. Having found these five points, join the external angular process to the preauricular point, and to the three-quarter point, and also join the preauricular point to the seventh-eighth point.

Bisect the line joining the external angular process to the preauricular point, and from the point of bisection draw a line upwards to the mid-point of the mesial line. This line corresponds to the superior and inferior precentral sulci, and may therefore be termed the precentral line.

Bisect the line joining the preauricular point to the seventh-eighth point, and from the point of bisection draw a line upwards to the mid-point of the mesial line.

The line drawn from the external angular process to the three-quarter point of the mesial line is termed the oblique or Sylvian line. It overlies the posterior horizontal limb of the fissure of Sylvius, and the point where it intersects the precentral line corresponds to the Sylvian point and to the anterior division of the middle meningeal artery.

That portion of the Sylvian line which lies between the two verticals drawn upwards to the mid-point of the mesial line is to be bisected, and from the point of bisection a line is to be drawn upwards parallel to the precentral line. This line corresponds to the superior post-central sulcus, and lies a little behind the inferior post-central sulcus.

The parallelogram bounded above by the mesial line, below by the Sylvian line, in front by the precentral line, and behind by the post-central line, overlies the Rolandic motor area—that is, the ascending frontal and the ascending parietal convolutions, separated by the fissure of Rolando.

Such is Chiene's method of mapping out the chief fissures. The above description is copied almost verbatim from the textbook in which it appears. The advantages claimed for this complex procedure are that "no figures or angles have to be remembered, and the primary surface lines are drawn from bony points which are not variable, whilst the secondary lines are drawn for the most part between mid-points of the primary lines." It must be further particularly noted that Chiene's method differs from all other methods inasmuch as it does not attempt to map out the fissure of Rolando but the Rolandic motor area.

Working with Chiene's method, we examined 7 cases—6 males and 1 female—the average age being 42. The general results of the method were as follows:

The Rolandic motor area as defined by the above method comprises the ascending frontal and ascending parietal convolutions; but according to the more recent researches of Sherrington, quoted in Halliburton's *Textbook of Physiology*, the Rolandic motor area is confined to the ascending frontal convolution. If Sherrington's conclusions are accepted Chiene's method falls to the ground, and, whether Sherrington's work is or is not accepted, we only found the Rolandic motor area correctly mapped out by Chiene's method in 3 out of the 7 cases—that is, in 43 per cent. In 3 other cases it was absolutely incorrect, as the Rolandic motor area lay altogether in front of the area indicated by Chiene, and in the remaining case it was partially correct—that is to say, it contained the "leg" centre, but did not contain the whole of the "arm" and "head" centres. The results achieved by us with this method of indicating the Rolandic motor area gave, therefore, the following percentages: Correctly indicated in 43 per cent., altogether incorrect in 43 per cent., and partially correct in 14 per cent. It must be further borne in mind that

Chiene utilizes the glabella as the basis of his mid-line measurements. This is an indefinite and vague point. We did not employ it, but utilized the much more accurate naso-frontal suture. Had we employed the glabella, the percentage of error would have been greater than it was.

The Sylvian point was correctly indicated in 71 per cent. of the cases and the Sylvian fissure in 57 per cent. As regards the Sylvian fissure, we found Chiene's method, on the whole, more accurate than Hare and Thane's method, though it tends to show the same fault—that of indicating the fissure too obliquely.

In view of the error as regards the utilization of the glabella, the undoubted complexity of the method, and the large amount of error as regards the Rolandic motor area, and Sherrington's recent researches on this area, we do not feel that our results would justify us in recommending this method for practical purposes, notwithstanding that it is good for the Sylvian point and more accurate than Hare and Thane's method as regards the fissure of Sylvius.

3.—Reid's Method.

Reid, one of the pioneers in the field of cranio-cerebral topography, devised the following method (described in Treves's *Surgical Applied Anatomy*) long prior to the introduction of formalin.

A base line, from which all perpendicular lines are drawn, is to be described through the lowest part of the infraorbital margin and the middle of the external auditory meatus.

A line drawn from a point 1¼ in. behind the external angular process to a point ¾ in. below the most prominent part of the parietal eminence will indicate the fissure of Sylvius. The first ¾ in. of the line will represent the main fissure, and the rest of the line will indicate the horizontal limb. The ascending limb will start from the posterior end of the line indicating the main fissure, and run vertically upwards for about 1 in.

From the base line draw two vertical lines upwards—one from the depression in front of the meatus, and another from the posterior border of the mastoid process at its root. There is thus formed a four-sided figure, bounded above and below by the lines of the longitudinal fissure and the horizontal limb of the Sylvian fissure, and in front and behind by the two vertical lines. A diagonal line drawn from the posterior superior angle to the anterior inferior angle of the space will be over the fissure of Rolando.

Working with Reid's method, we examined 3 cases—2 males and 1 female—the average age being 68. The general results of the method were as follows:

The superior Rolandic point was altogether wrong in 66 per cent. of cases, and the fissure of Rolando in a like number. The fissure of Sylvius was altogether inaccurate in every instance, as not only was the fissure incorrectly determined, but the direction was bad, the error of too great obliquity being even more marked with this method than with either of the others.

Comparison of the Three Methods Investigated.

Of the three methods which we have investigated we find Hare and Thane's method to be, on the whole, the most reliable, though this method, in common with the others, has its errors. In Hare and Thane's method the chief error is as regards the Sylvian line, which is always drawn too obliquely. Chiene's method is faulty in the respects previously pointed out; and Reid's method, like Hare and Thane's, is chiefly wrong as regards the fissure of Sylvius.

In view of the results achieved by this investigation, we are therefore of opinion that no one method is in itself sufficiently accurate as to justify its employment to the exclusion of the others. The most accurate results will be obtained by a combination of certain features special or common to each method; thus, the superior Rolandic point, as defined by Thane, is sufficiently accurate for all practical purposes, as is also Hare's angle for determining the position of the fissure of Rolando. Both these methods should therefore be preserved in any method of cranio-cerebral topography.

Thane's method for determining the position of the Sylvian point is sufficiently accurate as to justify its retention, as is also Chiene's method of determining the same point.

As regards the fissure of Sylvius, all the methods were at fault, inasmuch as the guiding line was always too obliquely drawn. We therefore think that a line drawn from the fronto-nasal suture through the Sylvian point should be employed, as, in our opinion, it would give the direction of the fissure of Sylvius more accurately than any other method.

Thane's method of determining the position of the parallel fissure is accurate and should be retained, as should also the lambda as a general (though not absolutely accurate) guide to the parieto-occipital fissure.

In suggesting, therefore, a method for the determination of the chief fissures of the brain upon the surface we have been guided by the following data:

Hare and Thane's method has given us the most uniformly accurate results, and therefore constitutes the basis of our proposed method.

Chiene's method is complicated, and his method of mapping out the Rolandic motor area is not compatible with the most recent physiological research, and, even though it were, it has not given us such uniformly good and accurate results as has the method associated with the names of Hare and Thane. For these reasons we have not made much use of this method in our undernoted proposals.

Reid's method, though simple, does not seem to be uniformly accurate. We found this method excellent for the fissure of Rolando in dolichocephalic skulls, but altogether inaccurate for brachycephalic skulls; and the mastoid process, according to the observations of one of us, seems to be too variable in its position to be employed as a guiding landmark. For these reasons, and the further fact that the fissure of Sylvius as mapped out by this method has not been found to be accurate, we have made no use of the method in our proposals.

Method Recommended by the Authors.

The method, therefore, which we have decided to tentatively recommend is based very largely on that of Hare and Thane, and is as follows:

The Superior Rolandic Point.—The superior Rolandic point lies, in the majority of instances, 1 cm. behind the mid-point of a line drawn from the fronto-nasal suture to the external occipital protuberance.

The Fissure of Rolando.—The line of the fissure of Rolando may be determined with sufficient accuracy for surgical purposes by drawing a line downwards and forwards from the superior Rolandic point at an angle of 67½° with the mesial plane; this angle to be determined by Hare's method of folding a sheet of paper. In view of Sherrington's physiological researches, the surgeon wishing to trephine on the Rolandic motor area should do so *in front* of the line.

The Sylvian Point.—The Sylvian point may be determined by drawing a line horizontally backwards from the fronto-malar suture for a distance of 35 mm., and from the end of this a vertical line upwards for 12 mm. The upper end of this last line corresponds to the Sylvian point. Or, secondly, the Sylvian point may be determined in the manner recommended by Chiene. Both methods seem to be equally accurate.

The Fissure of Sylvius.—It is probable that the fissure of Sylvius may be determined by drawing a line from the fronto-nasal suture backwards through the Sylvian point to the parietal eminence.

The Parallel Fissure.—The parallel fissure may be determined by drawing a line from the tubercle on the malar bone to the lambda; perhaps even more accurately by taking the middle third of a line drawn from the fronto-nasal suture to the lambda.

The Parieto-occipital Fissure.—The external limb of the parieto-occipital fissure corresponds sufficiently accurately to the lambda.

OBSERVATIONS ON THE DEVELOPMENT AND MORPHOLOGY OF THE TAIL.

BY

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So far as its functions are concerned the tail of vertebrated animals is admittedly an appendix, but, on the other hand, so far as its development and general structure are concerned, it has been regarded as morphologically identical with the body itself. Apparently this view is the one taken by the majority of the investigators who have considered the anatomy and development of the tail, and F. Kopsch,[1] who claims the support of H. Virchow, states the opinion categorically in the following words: "Der Schwanz ein dem übrigen Körper morphologisch gleichwertiger Körper-abschnitt ist, in welchem dieselben dorsalen und ventralen Teile vorhanden sind wie im vorderen Körperabschnitt."

If the structural elements of the body and tail are morphologically identical, the tail, like the body, must be segmented, and, moreover, the segments of the two regions must be of

similar value and their constituent portions should, *caeteris paribus*, play relatively similar parts in the general economy. So far as constitution is concerned each segment should consist of:

1. A segment of the notochord or its remnants.
2. A protovertebra and a lateral plate of mesoderm, or the parts developed from the above-mentioned rudiments, and the muscles derived from the protovertebrae should be supplied by the nerves of the corresponding neuromere and its ganglia.
3. A neuromere and its associated ganglia and nerves.
4. A visceral tube.
5. Cutaneous areas connected with the neuromeres and ganglia of the corresponding segment.
6. The associated blood vessels.

The tail of any adult tailed mammal has many of the factors that one is inclined to regard as those of a typical segment, but not the whole of them, for some essential parts are absent. Thus the skin, muscles, nerves, and blood vessels are present. Vertebrae derived from the protovertebral somites, and traces of notochordal structure, are to be found, but there is no visceral tube, and the spinal cord has a limited extent. It is well known, however, that some of the parts absent in the adult are present in the embryo—for example, the visceral tube—but the evidence regarding the other elements has not been properly completed, and it is necessary, therefore, to examine the ontogenetic history before arriving at a definite conclusion regarding the exact morphological value of the constituent segments of the organ. Such an examination reveals several points which are not only of interest, but which also appear to be contradictory to what are generally looked upon as well-established facts.

In mammals the tail does not appear until the neural tube has closed and the head and tail folds are formed; subsequent to this it commences and grows from the apex of the caudal fold. The free extremity of the tail is covered by the superficial ectoderm; it consists of a mass of cells, which is continuous anteriorly and mesially with the spinal cord, the notochord, and the post-anal gut, and on each side of the mesial structures, with a lamina of mesodermal cells. Along the dorso-lateral margins of the post-anal gut, and between it and the mesoderm, run the two caudal arteries, and on the ventral aspect of the gut is a mesial ventral vein.

For purposes of comparison it is advisable to consider each of the constituent parts separately.

The Superficial Ectoderm.

This layer is merely a backward extension of the superficial ectoderm of the body walls, and it is apparently produced by proliferation of the surface ectoderm, which takes place simultaneously with the proliferation of the internal substance of the tail; at all events, it does not appear to be produced from the cellular constituents of the cell mass at the tail tip, and in this respect it differs from the other caudal structures. Hair follicles and glands are developed from its deeper strata, in the later stages of growth, in the usual manner.

The Mesoderm.

The mesoderm is continuous with the undifferentiated cell mass at the tail tip, and is obviously produced and extended by the proliferation of the cells of the mass. It forms, for a short distance in front of the tail tip, two sheets of cells, which are separated from each other by the spinal cord, the notochord, and the post-anal gut, except along the ventral border of the tail, where the two layers unite together beneath the gut (Fig. 1).

A little further forward, and in all the anterior part of the tail, in the earlier periods of development, each lateral sheet of mesoderm is divided into a dorsal or protovertebral, and a ventral mass; but there is no indication of any division of the ventral segments into intermediate masses and lateral plates (Fig. 2). In association with the absence of such indications of separation there are no traces of the formation of primitive urinary structures, either ducts or tubes, nor of the formation of a coelom or body cavity.

As development proceeds the protovertebral masses are differentiated into scleratogenous segments and muscle plates. The former blend together, both with their fellows in front and behind and on the opposite side, and also with the ventral mesoderm, to form a continuous mesodermal sheath, which envelops the spinal cord, the notochord, and the post-anal gut (Fig. 3). In this manner a continuous blastema is established, in which the blood vessels are also embedded; it is, however, entirely devoid of any trace of Wolffian ducts or tubes, and of all indications of coelomic spaces.

The muscle plates are gradually resolved into a dorsal and a ventral mass on each side, and these masses respectively occupy the regions above and below the transverse processes of the vertebral segments, which have been developed as the differentiation of the muscle plates proceeded (Fig. 4). In the later stages both the dorsal and the ventral segments of the muscle plates are specialized into the muscles of the tail, which gain their individual attachments to the bodies and processes of the caudal vertebrae.

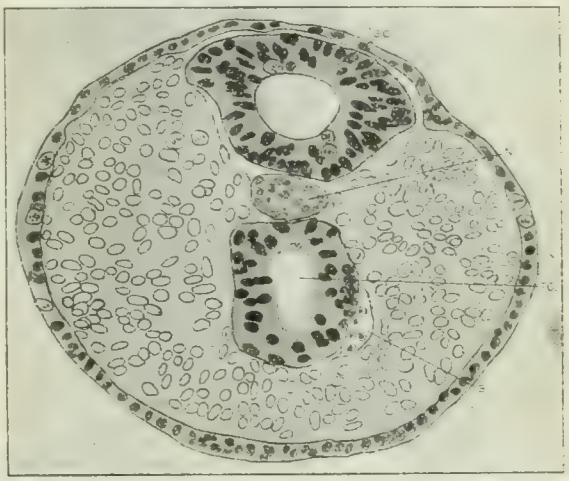


Fig. 1.—Transverse section of the tail of a ferret embryo a short distance in front of the growing point. The mesoderm is not yet separated into protovertebral and lateral portions. B., blood vessel; N., notochord; S.C., spinal cord; T.G., tail gut.

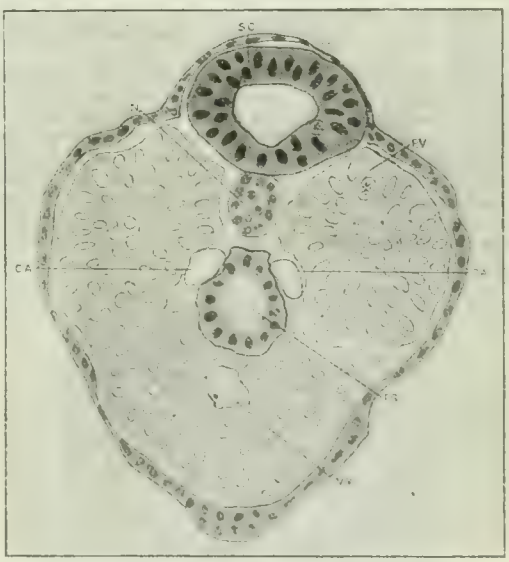


Fig. 2.—Transverse section of the tail in ferret embryo showing the differentiation of the mesoderm and the caudal blood vessels in the early stages. C.A., caudal arteries; N., notochord; S.C., spinal cord; T.G., tail gut; V.V., ventral vein.

In the mesodermal blastema, formed by the fusion of the scleratomes, chondrification occurs around the notochord, and from the chondrified mesoderm the caudal vertebrae and the intervertebral discs are differentiated. In the anterior part of the tail vertebral laminae appear as backward extensions from the bodies of the vertebrae, but in the posterior part the laminae are entirely deficient. Transverse processes appear as lateral outgrowths from the bodies, and the rudiments of chevron bones appear in the anterior tail segments.

After chondrification is completed ossification commences in the perichondrium around the middles of the vertebral bodies or in the bodies themselves, and gradually extends towards their extremities.

The Post-anal Gut.

In the earlier stages the post-anal gut is prolonged backwards from the cloacal chamber, extending immediately beneath the notochord to the undifferentiated cell mass at the tail tip. Its existence is very transient, and its anterior and posterior parts remain for a time after its intermediate portion has entirely disappeared; indeed, a solid



Fig. 3.—Transverse section of the tail of a pig embryo, showing the muscle plates separated from the remaining mesoderm. C.A., caudal artery; M.P., muscle plate; N., notochord; P.N.R., posterior nerve root; S.C., spinal cord; T.G., tail gut; V.N., veins.

cord of cells, which represents the terminal portion of the post-anal portion of the gut, continues to be formed by the undifferentiated blastema of the tail tip, after the disappearance of the more anterior part of the tube has commenced.

We have entirely failed to discover, at any period of the development of the tail, a neurenteric canal connecting the cavities of the tail gut and the neural tube together. Whilst the tail gut persists its nutriment must be derived from the adjacent caudal arteries, but no visible visceral branches are distributed to it; nevertheless, the amount of blood in its immediate neighbourhood is so great that want of nutriment can scarcely be considered as a cause of its atrophy, and in this association it should be noted that parts much further away from the main blood channels persist and grow, whilst



Fig. 4.—Transverse section of the tail of a ferret embryo, showing the differentiation of the muscle germs into two dorsal and two ventral segments and the relation of the caudal nerves to the vertebrae and muscle rudiments. C.A., caudal artery; C.V., caudal vertebra; D.C.N., dorsal caudal nerve; D.M., dorsal muscle; S.C., spinal cord; S.G., spinal ganglion; T.P., transverse process; V.C.N., ventral caudal nerve; V.N., vein; V.V., ventral vein.

the gut degenerates and disappears. This fact naturally suggests the idea that the tail gut is produced, like the other tail structures, from a common centre of growth, but that, having no function, it undergoes atrophy, whilst other structures which subserve a definite purpose persist.

The Nervous System.

The Spinal Cord.—In the earlier stages the cord extends throughout the whole length of the tail and terminates posteriorly, like the notochord and the tail gut, in the undifferentiated mass of cells at the tail tip. At this period it is hollow throughout its whole length, and its walls are formed by closely-set columnar cells, whose outlines are difficult to distinguish. In the later stages the anterior part of the tail portion of the spinal cord is differentiated into a central, grey or cellular, portion and a peripheral or fibrillar portion (Fig. 5), but the posterior part is formed by a solid mass of cells, which terminates some distance from the tail tip.

In the anterior part of the tail, for three or four segments behind its root, neuroblasts are distinguishable, after a time, in the grey matter of the spinal cord. We are not able to define precisely the exact posterior limits of neuroblastic formation, but we have not been able, hitherto, to distinguish neuroblasts behind the fourth tail segment, counting from the tail root. The absence of neuroblasts in the posterior part is all the more interesting, inasmuch as, in the earlier stages, the so-called germinal cells can be traced throughout the whole length of the neural tube, a fact which increases the

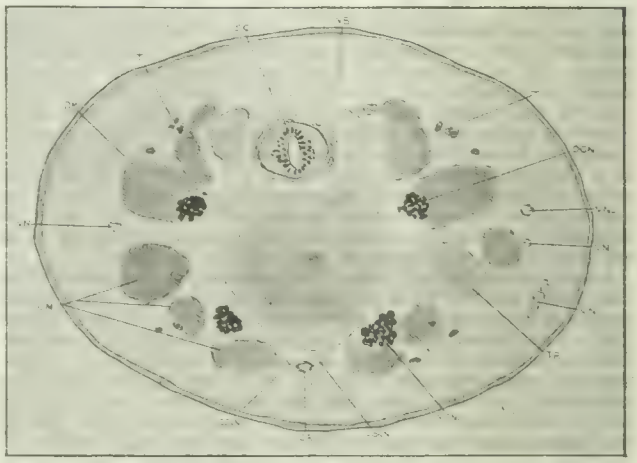


Fig. 5.—Transverse section of a pig embryo, 54 mm. long, showing further differentiation of the muscle rudiments of the tail and the relation of the nerves and vessels to the vertebral segments. C.A., caudal artery; C.SY.N., caudal sympathetic nerve; D.C.N., dorsal caudal nerve; D.M., dorsal muscle; N.B., nerve bundle; S.C., spinal cord; T., tendons; V.C.N., ventral caudal nerve; V.M., ventral muscle; V.N., vein.

doubt which has already been thrown upon the germinal cells as ancestors of neuroblasts, for whatever their descendents in the posterior part of the caudal portion of the neural tube may be, they certainly are not neuroblasts. The white or fibrillar substance of the caudal portion of the spinal cord gradually becomes smaller in amount towards the tail tip, and the reduction is accounted for not only by the non-appearance of new fibres, but also by the separation of those already present into bundles, which are gradually split off from the cord and run for some distance by its side as separate nerve bundles (Fig. 6). Some of the more anterior of these nerve bundles pass into the caudal nerves, but we have not been able to follow with certainty the fate of the most posterior bundles.

The Spinal Ganglia.

Not more than four, and generally not more than three spinal nerve ganglia can be found in the tail. They are all situated in its anterior part, immediately behind the posterior end of the body. Of these ganglia, the anterior is the largest and the posterior the smallest—indeed, the latter is a very small nodule of cells. The last two ganglia, and in some cases the last three, are connected together, in the early stages, by cords of cells, which are, presumably, the remains of the neural crest, and in the later stages their roots, which diminish in number from the first to the last caudal ganglion, are attached to the dorso-lateral part of the white matter of the cord.

The Nerve Roots.

So far as the tail itself is concerned, there are only three or four dorsal roots which spring from the ventral ends of the corresponding spinal ganglia, but the dorsal roots of two or three of the posterior body ganglia send branches into the tail to take part in the formation of the caudal nerves.

Ventral roots corresponding with the dorsal roots are present (Fig. 7), but, in addition, bundles of nerve fibres, which are segmented off from the white matter of the caudal portion

of the spinal cord, pass into the caudal nerves for a distance of at least two or three segments behind the last spinal ganglion. There are therefore five or six dorsal nerve roots distributed wholly or in part to the tail, and a similar number of ventral roots which spring from the cord in the usual manner; but, in addition, there are also several bundles of



Fig. 6.—Transverse section of the tail of a pig embryo. 54 mm. long. This section is more posterior than the section shown in Fig. 5, and it shows not only similar conditions of muscles and nerves, but also the gradual diminution of the spinal cord and the separation of its white matter into nerve bundles. C.A., caudal artery; C.SY.N., caudal sympathetic nerve; D.C.N., dorsal caudal nerve; D.M., dorsal muscle; N.B., nerve bundles; S.C., spinal cord; T., tendon; V.C.N., ventral caudal nerve; V.N., vein.

nerve fibres split off from the cord which pass into the caudal nerves, across the intervertebral discs posterior to the last caudal spinal ganglion and the last complete spinal nerve. It appears, therefore, that in an animal with a long tail, such as the sheep, the pig, the ferret, or the rat, the number of spinal nerve roots is less than the number of vertebral segments, or than the number of protovertebrae and myotomes which were originally present.

The Nerves.

The nerve roots unite into trunks in the ordinary way, and each nerve trunk divides into a dorsal and a ventral primary division. The dorsal and the ventral divisions, respectively, on each side, unite together to form a dorsal and a ventral longitudinal trunk. The former of these lies behind, and the latter in front of, the transverse processes of the vertebrae in association with the dorsal and ventral masses of muscles to which their fibres are distributed (Fig. 8).

The Sympathetic System.

The sympathetic nerve cords, when they become distinguishable, accompany the caudal artery beneath the vertebral column. The cords, for the most part, consist of fibres only, but ganglia are developed on them as far back as the situation of the last caudal spinal ganglion—that is, as far back as the third tail segment (Fig. 8). The sympathetic ganglia of the tail correspond, therefore, in general situation with the spinal ganglia, with which they correspond also in size, the anterior sympathetic ganglion in the tail being the largest, and the posterior the smallest. In some specimens a few scattered ganglionic cells are met with, on or in the substance of the sympathetic cords, behind the situation of the last caudal spinal ganglion; but these cells, when they are present, are very few in number, and they are not grouped into ganglia.

The Blood Vessels.

The Arteries.

Primitively there are two arteries in the tail which are prolonged backwards into the growing appendage from the dorsal portions of the primitive aortae. The two primitive vessels soon fuse into a single median caudal artery, which lies immediately ventral to the vertebral column and enclosed between it and the chevron bones, when the latter are present. After the fusion of the primitive vessels has occurred the resulting trunk may spring from the dorsal aspect of the aorta a little in front of its bifurcation, from a trunk or axis common to it and the last pair of lumbar arteries, or from the

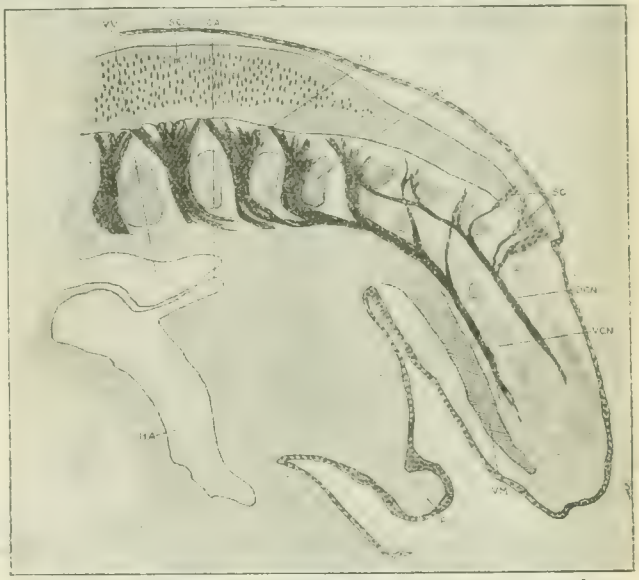


Fig. 7.—Longitudinal section of the tail of a ferret embryo, 10 mm. long, showing the relations of the nerve roots to the caudal nerves, and the relations of the latter to the vertebral segments. C.A., caudal artery; D.C.N., dorsal caudal nerve; H.A., hypogastric artery; N.R., nerve root; P., penis; S.C., spinal cord; S.G., spinal ganglia; V., vertebra; V.C.N., ventral caudal nerve; V.V., ventral vein.

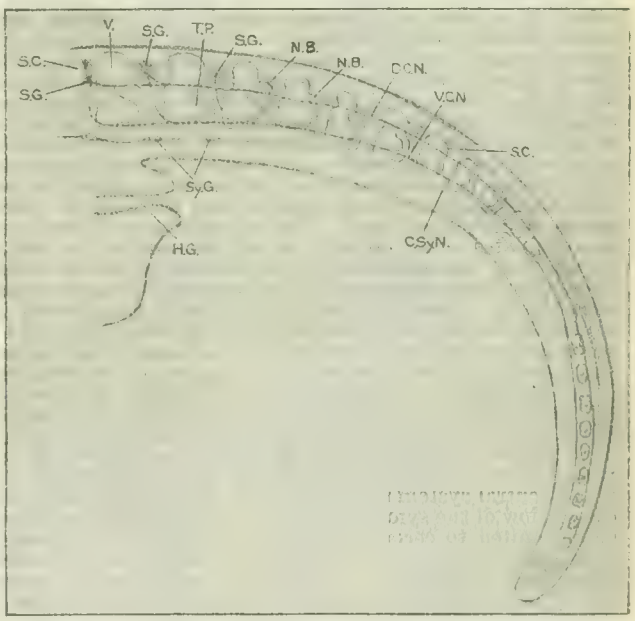


Fig. 8.—Diagram of the tail of a mammal showing the relations of the spinal and sympathetic caudal nerves to the vertebral column. C.SY.N., caudal sympathetic nerve; D.C.N., dorsal caudal nerve; H.G., hind gut; N.B., nerve bundle; S.C., spinal cord; S.G., spinal ganglion; SY.G., sympathetic ganglion; T.P., transverse process; V., vertebra; V.C.N., ventral caudal nerve.

lumbar artery of one or the other side, and all the intermediate stages between the two extreme conditions are frequently met with (Figs. 9-12).

The Veins.

In the early stages the blood conveyed to the tail by the primitive caudal arteries is returned by a caudal subintestinal vein which passes, at the root of the tail, to one or the other side of the cloaca, and usually terminates in the posterior part of a cardinal vein, but in some cases it also communicates with an allantoic vein. At a later period it loses its

connexion with the allantoic vein and terminates entirely in a cardinal vein. After a time it disappears and is replaced by venae comites, which accompany the caudal artery and fuse anteriorly into a single trunk which ends in a cardinal vein, and by two superficial caudal veins, one on each side, which also terminate anteriorly in the cardinal veins.



Fig. 9.



Fig. 10.



Fig. 11.

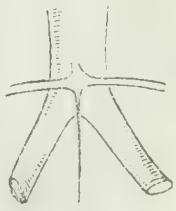


Fig. 12.

Portions of the lower ends of human aortae showing different modes of origin of the middle sacral artery.

Summary of the Ontogeny.

The ontogeny of the tail helps to confirm and emphasize the adult anatomy, for it demonstrates clearly that the tail possesses some and is devoid of other important constituent parts of somatic structure. At all periods it is devoid of excretory system and coelomic space. It possesses blood vessels to which more particular reference will be made in a future section; here it is sufficient to state that so far as the artery is concerned it simulates but is not simply a continuation of the dorsal aorta of the body somites. Its spinal and sympathetic ganglia are few, and it is doubtful if they belong in reality to the tail somites proper, or are merely displaced somatic ganglia. Its nerves are derived not only from what for convenience have been called the caudal ganglia, but also from the posterior somatic ganglia and the somatic neuromeres of the spinal cord. Its muscles are derived from muscle plates which greatly exceed in number the caudal ganglia and the ventral roots which spring from the caudal segments of the spinal cord. The fact that the muscle plates considerably exceed in number the caudal ganglia and the ventral roots from the caudal segments of the spinal cord is perhaps the most striking feature in the anatomy of the tail. Few anatomists doubt the segmental nature of the vertebrate body, and it is usual to accept without question the idea that each segment is complete in itself, possessing its own particular portions of the nervous, vascular, and other systems.

So far as the sympathetic system is concerned, it is a matter of common knowledge that its segmental relationship to the central system is very masked—even if it exists at all—the outflow of the sympathetic fibres from the central system being limited to certain definite areas, whilst the organs to which those fibres carry impulses are situated, in many cases, in far-distant segments. It has never been shown, however, so far as we are aware, that a similar condition existed in connexion with the somatic parts of the nervous system. It is generally believed, on the contrary, that each neuromere is connected with the muscular and sensory areas of the corresponding body segment, though it may, so far as the cutaneous distribution of the nerves connected with it is concerned, overlap immediately adjacent segments. In the tail, however, the myotomes exceed the functional neuromeres, and the muscles of the posterior caudal segments are supplied by the nerves of the neuromeres of more anteriorly placed segments. This being the case, it follows not only that the myomeres of one segment may be supplied by the neuromeres of another segment, which in itself is a sufficiently striking fact, but also that—unlike the body segments—the tail segments are not complete in themselves, but are appendages of the neuromeres of more anteriorly situated segments, at least so far as their myomeres are concerned, and probably also as regards their cutaneous areas. In other words, the segments of the tail are not equivalent in a most essential respect to the segments of the body.

It follows from what has preceded that neither the anatomy of the tail nor its ontogeny suffice to explain the obvious differences which exist between body and tail somites. Under these circumstances it becomes necessary to consider the early development both of the body and the tail to see if a comparison of the two will still further elucidate the subject, if it will explain the absence in the tail of many of the elements of typical body segments, and if it will throw any additional light upon the actual value of the parts of the tail which more nearly simulate important parts of body segments.

If we are guided by ontogeny and phylogeny, we are bound to admit that the ancestors of the vertebrata were evolved from invertebrate animals, and that the original ancestor had a more or less spherical form. The original spherical form was probably unilaminar, and from the unilaminar condition a bilaminar was produced by some form of invagination. Simultaneously an archenteric cavity and a blastopore or primitive mouth were established. Around the margins of the blastopore a nervous system was formed, and this gained association with the various parts of the body by outgrowing nerve filaments. At a later period a third layer was established, either by delamination from one or the other of the pre-existing layers, or by a second invagination from the blastoporic margin at the junction of the two original layers. The third layer was itself separated into an inner and an outer lamella, either at the moment of its appearance or at some subsequent period, by the appearance of a second cavity, the coelom, in its substance.

All these stages of phylogeny are repeated in the ontogeny of amphioxus, and in that animal are clearly and distinctly marked, but in the higher forms they are more or less masked by various phenomena which have, for the most part, been associated with the accumulation and disappearance of yolk material in the ovum. In spite of this masking it has been demonstrated, by the observations of the last ten or fifteen years, that the primitive streak of the spherical or ovoid ovum of the higher vertebrates represents the blastopore of the more primitive forms, and that the axial portion of the embryo of a higher vertebrate is developed in the margins of the blastopore or primitive mouth. This being the case, it is important to fix, as exactly as possible, the limits of the blastopore in the higher forms; to recognize, as precisely as possible, the parts of the embryo which are developed from its lips and those which originate from other portions of the ovum, and, for the present purpose, to appreciate the relationship of the blastoporic margin to the tail.

In some of the invertebrata the primitive mouth becomes elongated antero-posteriorly, and its anterior and posterior parts remain open as the permanent mouth and the anal orifice, whilst the intermediate section closes and enters into the formation of the body wall of the animal.

In the vertebrata the anterior portion of the blastopore, which remains open in the invertebrata as the permanent mouth, is possibly represented by the hypophysis, which no longer functions as a mouth, and a tertiary or vertebrate permanent mouth has been formed which is not a part of the primitive blastoporic opening. The cloacal orifice of the vertebrate is still formed in the region of the primitive streak, and must be looked upon, therefore, as a reopened portion of the primitive mouth, closely comparable with the anal orifice of some of the invertebrata. Keeping these points in view, it appears very probable that the anterior and the posterior limits of the primitive mouth in the higher vertebrata are to be fixed at the tuber cinereum in the floor of the diencephalon, and at a point on the ventral wall of the body anterior to the genito-urinary orifice. The margin of the mouth, therefore, will extend along the whole of the dorsal portion of the body, and round the posterior extremity to the ventral surface.

The margin of the mouth of the higher vertebrate is therefore considerably elongated as contrasted with the margin of the mouth of a relatively simple invertebrate form, and the elongation might be due either to interstitial growth or to the development of a growing point at some definite situation in the lips of the mouth.

Observations on the ordinary phenomena of the growth of the embryo in its early stages, and experimental observations, have both demonstrated that the elongation is not due to interstitial growth, but to the formation of a growing point. The growing point is situated, at the time of its formation, immediately behind the anterior end of the

blastopore—that is, in the anterior part of the primitive streak (Figs. 13 and 13A). Thus it is that, as the growing point proliferates and the cells it produces are converted into the tissues and organs of the embryo, the still unchanged part of the primitive streak appears to pass backwards over the embryonic area, and to retain, approximately, its original length, or at all events to increase only to a slight extent (Figs. 14 and 14A).

As growth proceeds, under the influence of the energy of the growing point, the embryo is prolonged backwards over the posterior part of the embryonic area in the cases in which the ovum becomes differentiated into embryonic and non-embryonic portions, and over the surface of the ovum in other groups. At the same time that this elongation is proceeding posteriorly the cells produced by the growing point are becoming differentiated into the neural plate, the notochord, and a part if not the whole of the gut entoderm (Figs. 15 and 15A). The mesoderm, which appears between the neural plate and the entoderm at the sides of the notochord, is also probably produced from the cells of the growing point. The line along which the growing point has passed backwards must therefore be indicated, in any embryo or adult animal, by the notochord or its remnants, and this line extends in mammals from the posterior wall of the pituitary fossa to the tip of the tail (Fig. 16A).

Whilst the elongation of the embryonic rudiments is proceeding the margins of the neural plate are elevated and the neural folds are formed (Fig. 15). The posterior ends of the neural folds terminate, for a time, immediately behind the anterior end of the visible part of the primitive streak (Fig. 15), and at this time in many mammals an aperture appears in the growing point. This aperture is the so-called neurenteric canal, by which a communication is established between the cavity in the interior of the ovum and the hollow of the neural groove which lies between the neural folds (Figs. 15 and 15A). It disappears before the tail is formed.

The subsequent phenomena, in mammalia, are simple and instructive, and in fishes and amphibia they are practically the same. The posterior ends of the neural folds converge and fuse along the posterior margin of the growing point, and very soon afterwards the upper margins of the folds are first approximated and afterwards fused together, converting the groove into a tube, in the posterior end of which the growing point is embedded (Figs. 16 and 16A).

In the meantime, on account of the relatively rapid expansion of the embryonic area as contrasted with the growth of its marginal environment, the area itself has folded, and, when the neural tube is formed, the growing point at its extremity is embedded in the apex of the tail fold. Under these circumstances, if the growing point continues to proliferate, the apex of the tail fold must be projected backwards, and a tail will be produced and will continue to grow until the energy of the growing point is exhausted. Moreover, unless the capabilities of the growing point are rapidly changed, the constituent parts of the tail which are produced by its proliferation will correspond with those portions of the body which are developed from the tissues produced from the same growing point. Now, it has been demonstrated very clearly by the experiments of Hertwig,[2] Morgan,[3] Assheton,[4] Kopsch,[5] and others that the ectoderm of the neural plate, the notochord, and part, at least, of the gut entoderm are produced by the growing point, and in all probability a portion of the mesoderm has a similar source of origin. It has not been proved, however, that the nerve ganglia are products of the growing point, and, indeed, the observations of Kupffer and Beard seem to show that they are formed outside the limits of the neural plate, and therefore they are possibly derived from a portion of the ectoderm which does not owe its origin to the energy of the growing point. Additional evidence in support of this supposition is provided by the non-appearance of spinal ganglia further back than the anterior part of the tail—that is, they do not appear further back than what may be presumed to be the posterior limit of the neural plate, whilst had they been formed from the growing point they would naturally have appeared along the whole of the dorsal margin of the caudal portion of the spinal cord.

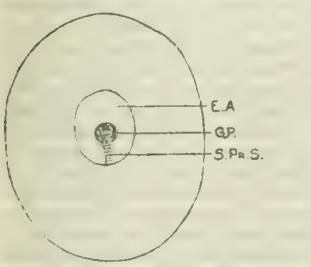


Fig. 13.—Diagram of the surface of a mammalian ovum showing growing point at anterior end of primitive streak.

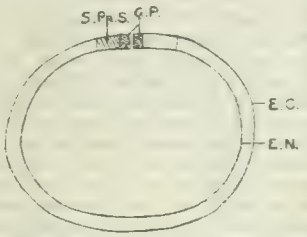


Fig. 13A.—Diagram of a mesial longitudinal section of ovum represented in Fig. 13. E.A., embryonic area; E.C., ectoderm; E.N., entoderm; G.P., growing point; S.Pr.S., superficial part of primitive streak.

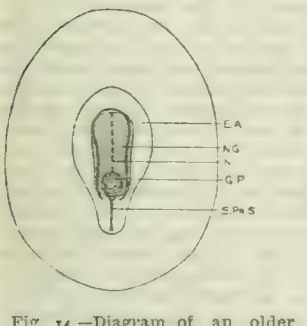


Fig. 14.—Diagram of an older germinal area than that represented in Fig. 13. The growing point is situated in the posterior part of the neural groove. E.A., Embryonic area; G.P., growing point; N., notochord; N.G., neural groove; S.Pr.S., superficial part of primitive streak.

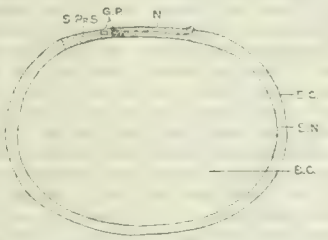


Fig. 14A.—Diagram of a longitudinal section of the ovum represented in Fig. 14. E.C., blastodermic cavity; E.C., ectoderm; E.N., entoderm; N., notochord; S.Pr.S., superficial part of primitive streak.

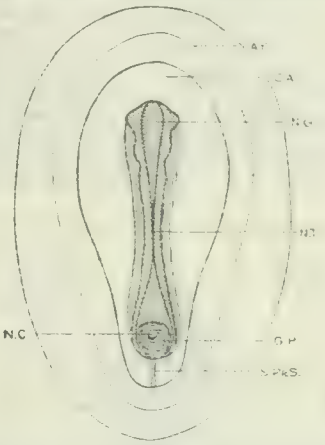


Fig. 15.—Diagram of surface of an ovum at commencement of closure of neural groove; the growing point is still in the posterior part of the neural area. A.F., amnion fold; E.A., embryonic area; G.P., growing point; N.C., neurenteric canal; N.G., neural groove; N.T., neural tube; S.Pr.S., superficial part of primitive streak.

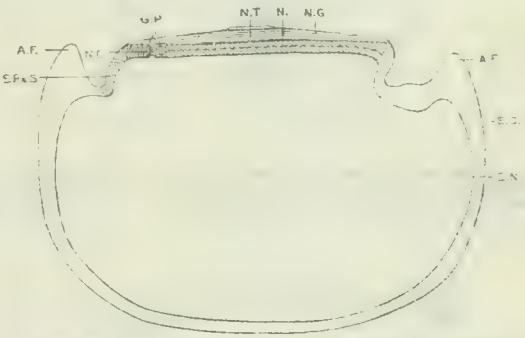


Fig. 15A.—Diagram of a longitudinal section of ovum represented in Fig. 15. A.F., amnion fold; E.C., ectoderm; E.N., entoderm; G.P., growing point; N., notochord; N.C., neurenteric canal; N.G., neural groove; N.T., neural tube; S.Pr.S. superficial part of primitive streak.

If we grant, however, that the neural tube, the notochord, and a part of the gut entoderm, and, in all probability, a portion of the mesoderm of the tail—at all events, its axial or protovertebral part—are derived from the same growing point as the corresponding parts of the body, still we are not bound to admit that the constituent parts of the tail correspond morphologically with those of the body. It is true that they may claim community of origin, but they certainly cannot claim equivalence of value, for the majority of the neuromeres have no nerves, and the majority of the segments are unprovided with nerve ganglia. Thus, though the tail contains parts similar in some respects to those of the body, which must necessarily be the case as they are produced from the same growing point, nevertheless the tail is in reality nothing more than an appendage being dependent for its nerve supply and excretory system on the neuromeres

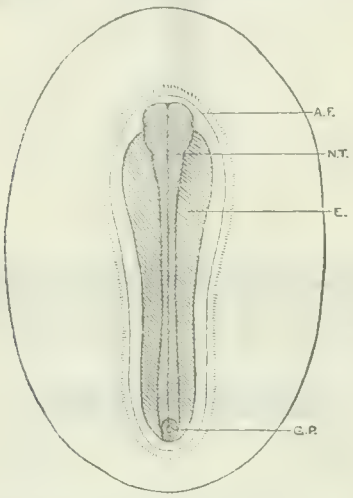


Fig. 16.—Diagram of a surface view of an ovum after closure of the neural tube. The amnion is supposed to be still relatively rudimentary. A.F., amnion fold; E., embryo; G.P., growing point; N.T., neural tube.

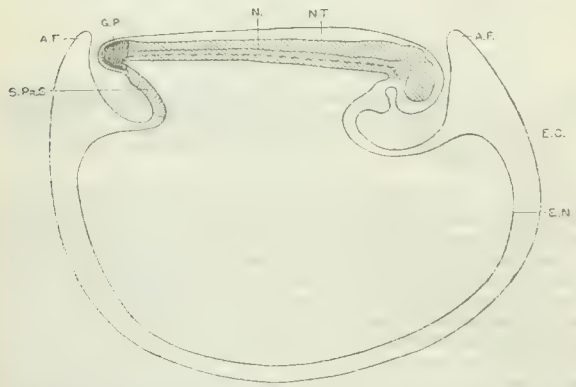


Fig. 16A.—Diagram of a longitudinal section of the ovum represented in Fig. 16. The growing point is now entirely enclosed in the interior of the posterior part of the embryo, and is separated from the surface. By its continued growth after its enclosure it is forming the rudiment of the tail. A.F., amnion fold; E.C., ectoderm; E.N., entoderm; G.P., growing point; N., notochord; N.T., neural tube; S.Pr.S., superficial part of primitive streak.

and nerves of the body segments. The tail, therefore, in some respects resembles the limbs, which are also appendicular in nature and relatively late in formation, and which derive their nerve supply from the body nerves by means of a process of modification of the typical distribution of the nerve trunks. The tail, however, differs in a very important manner from the limbs, for the rudiments of the muscles of the latter are budded off from the body myotomes and carry the corresponding nerves with them, or at least are supplied by the corresponding nerves. The tail muscles, on the other hand, are not derived from the body myotomes, though they blend anteriorly with muscles derived from body myotomes, but from the myotomes of the caudal segments, nevertheless, they receive their nerves, not from the corresponding neural segments and ganglia, but from the neuromeres and ganglia of more anteriorly placed segments, their corresponding nervous segments being rudimentary or absent.

Thus, though similarity exists between the constituent parts of the tail and body segments it is incomplete, and is merely due to community of origin. It is particularly incomplete as regards the neuromeres, nerves, and nerve ganglia, and still more so as regards the main blood vessels, which have hitherto been insufficiently considered.

At the outset of a comparison of the blood vessels of the body with those of the tail, it must be noted that we possess no very positive knowledge with regard to the primary origin of the main blood vessels, that is, it is not yet absolutely decided whether they originate from the entoderm or from the mesoderm. Perhaps this is not a matter of great importance, for it is perfectly certain that mesoderm cells, which are produced in lower forms from the margin of union of the entoderm and ectoderm, may be incorporated for a time, in the ontogeny of the higher forms, with either of the two primary layers, from which they are afterwards delaminated or budded off. However this may be, the main blood vessels in mammals appear to arise, so far as our specimens afford proof, from the mesoderm, and, what is more important in association with the present question, the main secondary vessels are outgrowths from the primary stems and are not developed *in situ*.

Another point which must not be lost sight of, in the comparison of the somatic with the caudal vessels, is that the body consists of two essentially different sections: a dorsal portion, produced by the energy of a growing point which is established in the anterior part of the margin of the blastopore, and a remainder, including the anterior and the posterior ends and the ventral portion of the body, which is derived from the blastoderm beyond the margins of the blastopore lips, or from the posterior part of the blastoporic margin, which lies behind the growing point. There can be no dispute about the verity of this statement, for both ontogeny and phylogeny show that the ancestral form was more or less spherical, and in many animals the whole of the sphere is still utilized in the formation of the embryo, but in still others, including mammals, a portion of the ventral part of the sphere is enormously expanded and is transformed into membranes and appendages which have become necessary for the protection and nutrition of the embryo in the earlier stages of its growth. In spite, however, of this modification of the ventral part of the sphere, a considerable portion of its wall, independently of the margins of the blastopore, is transformed into parts of the embryonic body. It has already been shown that the antero-posterior extent of the area developed from the growing point is indicated by the notochord, and extends from the posterior wall of the pituitary fossa to the tip of the tail. The lateral expansion of this area cannot at present be exactly defined, but it possibly does not include any great extent beyond the margins of the neural plate. It is certain, however, that the posterior end and the ventral part of the body wall, from the root of the tail to a point a little behind the umbilicus, are formed from the region of the posterior part of the primitive streak, which is at all periods behind the territory of the growing point; and the anterior part of the ventral portion of the body, and its anterior end, from the umbilicus to the pituitary fossa, are developed from that portion of the blastoderm which lies anteriorly and ventrally to the blastopore. All these parts, as well as those derived from the growing point, are supplied by the primitive blood vessels. The primitive blood vessels, therefore, are formed not only for the supply of the dorsal area of germ derived from the growing point, but also for the supply of all parts of the more or less spherical ovum, and they appear whilst the embryo is still outspread on the surface of the blastoderm.

In those forms in which the ventral part of the blastoderm is expanded into membranes and appendages, the blood vessels are carried out into the extended parts, and thus it is that in mammalia they pass beyond the limits of the embryonic into the extra-embryonic region. This arrangement, however, is merely due to an extension of the area of distribution, and does not alter the essential primary condition, which is that of a vascular network modified along the margins of the blastopore, as the latter becomes elongated, into two longitudinal trunks, the primitive aortae.

In mammalia the embryonic region forms only a part of the whole surface of the blastoderm, and the longitudinal vessels pass beyond the lips of the blastopore to the anterior and the

posterior margins of the area, where they pass into the vascular network in the extra-embryonic region. Thus they are not limited to the region produced from the growing point, but extend beyond it, both anteriorly and posteriorly.

As the embryonic area increases and folds upon itself, the two main vascular trunks also become folded, and a cephalic and a caudal arch is formed upon each trunk, the former in the head fold, and the latter in the tail fold. Each of the longitudinal trunk vessels gives off a series of visceral and somatic segmental branches, and some of the visceral branches are extended to diverticula from the gut, or are distributed directly to the diverticula themselves. To the latter class belong the allantoic vessels, and in the majority of mammals, after the allantoic arteries have appeared, the extension of the main trunks on to the yolk sac portion of the extra-embryonic area is interrupted, but this interruption is compensated for by the prolongation of segmental visceral branches from the gut wall on to the wall of the yolk sac.

It may seem at first sight that all this consideration of the primitive blood vessels has little to do with the question at issue—that is, the question of the nature of the blood vessels of the tail. It has, on the contrary, a most direct bearing, for it must be noted that the bending of the primitive stem vessels has taken place before the tail has formed, consequently the caudal arteries cannot be backward continuations of the primitive stem vessels which have been bent round into the tail fold. In other words, the caudal arteries are not the equivalents of the dorsal aortae, but they may be the equivalents of some of its branches.

On these grounds we hold that it is incorrect to speak of the fused caudal arteries as the caudal aorta. The history of the caudal artery is extremely simple and closely conforms with the formation of other central stems. As the energy of the growing point gives rise to the tail, and the latter projects backwards from the apex of the tail fold, the blastema in its substance must necessarily obtain a blood supply. It acquires the supply from the nearest available sources, which are the dorsal portions of the two primitive stem vessels immediately in front of the point where the latter bend ventrally into the caudal fold.

The vessels which spring from the dorsal aspects of the primitive vessels in front of the caudal arteries are, without exception, somatic segmental vessels or vessels distributed more particularly to the muscle plates and their immediate surroundings and to their extensions into the body walls. The caudal arteries spring from positions which correspond exactly with the positions of origin of the somatic segmental arteries, they supply tissues derived from a similar origin to the tissues supplied by the somatic segmental arteries, and, not uncommonly, they arise together with (Fig. 9) or actually from (Fig. 10) a somatic segmental vessel. Under these circumstances, and as they are obviously not continuations of the primitive stem vessels, there seems to be no escape from the conclusion that the caudal arteries are merely modified somatic segmental arteries distributed to an appendage which, on account of its source of origin, naturally contains structures which correspond, to a certain extent, with the constituent parts of the body segments, but which are not entirely equivalent to those segments.

The blending of the two caudal arteries into a single stem, after the manner of the primitive dorsal aortae, is a matter of no morphological importance, for many segmental arteries blend in a similar manner—at least, for a portion of their extents—and the preneural branches of the spinal offsets of segmental arteries afford an example of such a simple fusion. Indeed, fusion of longitudinal vessels which run parallel with each other is apt to occur when the expansion of the vessels is so rapid, in proportion to the growth of the parts around them, that their walls ultimately attain contact with each other.

Conclusions.

1. The tail is not merely a backward prolongation of the body, consisting of the same dorsal and ventral parts.

2. The tail is produced by the energy of a growing point which takes part in the formation of the body, and after that is completed it expends its remaining energy in the formation of the tail.

3. The segments of the tail are not equivalent to the segments of the body, for their nervous portions are rudimentary or absent, and they are devoid at all periods of a coelomic space.

4. The posterior segments of the tail develop neither spinal nor sympathetic ganglia nor nerves, and their neuromeres never attain complete development.

5. Many of the muscles of the tail are not supplied by the neuromeres and ganglia of their segments, but by the nerves of more anteriorly placed segments.

6. The blood vessels of the tail are not prolongations of the primitive blood vessels of the embryo, but of its segmental somatic branches.

7. The tail is, in the widest sense, an appendage to the body, and its nervous and vascular supply are dependent on the nerves and vessels of the body which have been prolonged into it.

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THE ARRANGEMENT OF THE MATERNAL AND FETAL GLYCOGENIC CELLS IN THE PLACENTA OF THE MOUSE.

By J. W. Jenkinson,
Oxford.

Glycogen is first found in the placentation of the mouse in maternal cells which overlie the allantoidean portion of the trophoblast. These maternal glycogen cells are at the height of their development at the time (about twelve days) when the allantoic villi are just beginning to penetrate the trophoblast. The maternal glycogen cells are separated from one another, rounded, and contain each a rounded nucleus with one nucleolus. At this time mitoses are no longer found in the cells. Interspersed between these glycogenic cells are elongate fusiform or stellate supporting cells.

In the next stage the uterus has, by the growth of the embryo, increased considerably in volume, but the cells of the maternal glycogenic tissue, having ceased to multiply, are incapable of keeping pace with this increase of volume and are necessarily separated from one another. They then begin to disintegrate; ultimately they will degenerate and disappear. Meanwhile another glycogenic tissue—of trophoblastic, that is, of fetal origin—has begun to make its appearance. The trophoblast of the placenta is divisible into two portions; (1) an allantoic portion on the fetal side penetrated by the capillaries of the allantois, and (2) a glycogenic portion on the maternal side traversed by maternal blood, but not penetrated by the fetal vessels. The cells of this secrete glycogen. They are closely packed, oblong, and their nuclei are oval, with more than one nucleolus.

In the subsequent stages of placentation the glycogenic trophoblast encroaches on and occupies the space previously filled by the maternal glycogenic cells, ultimately reaching the muscularis. The maternal glycogen cells completely disappear.

At the end of gestation the glycogen disappears from the trophoblast cells, and the cells collapse. This may possibly play some part in determining the moment of parturition, as it is across the zone of trophoblastic glycogen cells that the placenta breaks away from the uterus.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

Francis Henry Champneys, M.D., F.R.C.P., President.

THREE CASES OF CHORION-EPITHELIOMA,

An Introduction to the Papers of Drs. Smallwood Savage, Thos. Wilson, and Christopher Martin.

By R. F. C. Leith, F.R.C.P.Edin., etc.,
Professor of Pathology and Bacteriology in the University of Birmingham.

The attention recently given by the Obstetrical Society of London to this subject has aroused a general interest. The admirable monograph of Dr. Teacher and the discussion which followed have summarized all the facts so far available and have given us most valuable material towards the solution of a most difficult problem. A very great advance was made, and the views therein put forward and supported of the nature of the chorion-epithelioma rest upon a considerable foundation of proof. It remains to be seen how far subsequent investigations will corroborate or modify these views,

and all evidence in either of these directions should be carefully brought forward and sifted. I therefore think that the three cases which form the subject of the present communications should be published. Two of them—namely, Savage's and Wilson's—are typical in both their clinical and histological character, but the other, however typical clinically, is somewhat aberrant histologically. Savage's is, perhaps, the most interesting of the three, as it is the earliest case on record and the histological characters are most favourable for interpretation. The tumour itself is small in size. Its greatest age is not likely to be more than eleven weeks, for that was the period intervening between the removal of the hydatid mole and that of the uterus itself. The haemorrhagic discharges so characteristic of these chorion-epitheliomata began four weeks after the removal of the mole. The uterus apparently shows two foci of growth, but these are contiguous at a deeper level. Histologically the general aspects of the tumour are characteristic. It is mostly composed of blood clot, with comparatively small processes composed of epithelial cells towards its outer part, where it borders upon the inner wall of the uterus. Some of these processes form irregular masses, but most of them have a more or less distinct tubular formation. The interior of many of the tubes shows an irregular space, which in a few is occupied by a fibrous tissue with blood vessels. The most favourable of these tubes are easily recognized as villi with a hypertrophied epithelial covering. The epithelial cells are arranged in the two layers typical of a villus, the outer syncytial and the inner polyhedral or Langhans's layer. The proportionate amount of these varies greatly in the different processes, the syncytial cells being usually fewest in the most typical villi. The fibrous tissue core of the villus tends to degenerate and disappear, and the empty, irregular, tubular spaces may be villi in which this change has taken place. It is possible, also, for the epithelial cells to aid in the absorption and disappearance of their own fibrous cores in the same way as they cause the absorption of the tissues of the uterine wall, though I have seen no positive evidence of this. On the other hand, the evidence of the absorption of the uterine wall by the epithelial cells is very obvious. These cells are, however, mostly separated from the muscle fibres of the uterus by a protective fibrous tissue layer of new formation, and, when the invading cells form an obvious villus-like process, representatives of both layers are seen in varying proportions, but where the invasion of the uterine wall is earliest, as in the thin thread-like processes of cells or in isolated individual cells, they are all apparently of a syncytial type.

The walls of the uterine blood vessels are directly invaded in the same way as other uterine tissues; hence the epithelial cells gain entrance into the circulation, and may be seen in greater or less numbers in many of the vessels with intact walls which lie at some distance from the tumour. Many of these cells may die, but others may survive and form the nuclei of new growths elsewhere in the uterine wall or in distant organs. A particularly suggestive illustration of this is shown in the photograph No. 13 taken by my assistant, Dr. Miller, from a section stained by him by the elastic tissue method. It shows a large syncytial cell making its way from the lumen through the wall of a comparatively large vessel. That the cell is passing outwards and not inwards is shown by the comparative thinness and by the bending outwards of the elastic (the darkly stained) tissue where it lies, as well as by the identity of the cell, demonstrated by serial section in its actual passage outwards. On its again becoming stationary outside the vessel, such a cell may multiply and form the centre of a new focus of growth. Evidence of multiplication of the cells of the syncytial layer is very hard to find, while it is fairly obvious in the cells of Langhans's layer. This point will be touched upon again presently, when Dr. Wilson's specimen is considered. In both cases where invasion is apparently most active the invading cells have the characters of syncytium. The interpretation thus presented affords very strong support of the views advocated by Teacher and others, as to the nature of the origin of a chorion-epithelioma.

Dr. Thomas Wilson's case is equally typical, and its evidence bears strongly in the same direction. It is a much more advanced case, and the destruction of the uterine wall is much greater. Moreover, secondary growths had appeared in other organs before the fatal issue, while Dr. Savage's case was fortunately so early that removal of the primary growth seems to have saved the patient, for up to the present time she is in good health. These are, however, not differences in principle. It is true that in Dr. Wilson's case no distinct villus is recognizable, but it will be noted that the majority of the epithelial-celled processes have a more or less distinct tubular formation, thus suggesting villi. No core is anywhere recognizable in these processes, but it is alone wanting to make the resemblance complete. The two layers of cells, the inner Langhans' layer and the outer syncytial, are everywhere seen, and the more irregular masses may well arise from the confluence of individual tubercular or villus-like processes after absorption of the intervening uterine tissue.

The outlying processes of the invading cells seem here, as in Dr. Savage's case, to be always of syncytial character. They lie directly in contact with the muscular fibres or the interstitial tissue of the uterus. Many of the cells show mitotic figures; some, but probably not all, of these cells belong clearly to the Langhans's layer; none are recognizable with certainty as syncytial. Evidence of direct division are in places seen, but must be cautiously accepted. At any rate, the signs of multiplication by either method are too slight to explain the numbers of syncytial cells, and it seems equally impossible to believe that all the syncytial cells present were formed in the tumour at the time of its birth. The suggestion remains that they are formed by a conversion of the Langhans' layer cells. Appearances suggestive of this are present, but it is impossible to say under what conditions it occurs. The fact that in these two cases such cells are only found where the epithelial cells lie in contact with tissue about to be absorbed suggests that the conversion is due to some interaction between the invading cells and the tissue invaded. In Dr. Martin's case, on the other hand, direct and active invasion and absorption is chiefly carried on by the polyhedral cells of Langhans's layer, and it may be that this occurs where the protective powers of the invaded tissues are low. Cases in which this occur appear to run a more rapidly fatal course.

The invasion of the blood vessels in Dr. Wilson's case is interesting. Direct and embolic invasion are both distinct, but it is the former which calls for remark. The epithelial cells seem to seek out the blood vessels. They may destroy the vessel wall in part and fill the lumen, or they may penetrate as far as the endothelium, and then insinuate themselves between it and the muscular coat for a variable distance even all round the vessel. They may also destroy the vascular wall and merge with the endothelium, which becomes altered, so that it is almost if not quite impossible to distinguish it from the epithelial cells of the tumour. Indeed, appearances suggestive of the conversion of endothelial cells into epithelial cells of the tumour are to be seen in places, but a general survey of the vascular invasion throughout the tumour shows that such conversion does not really occur. The tumour cells, on the other hand, may become flattened out so as to closely resemble endothelial cells. This is especially the case when they line, as they frequently do, a blood space. It is characteristic of the manner of growth of a chorion-epithelioma that the epithelial processes, of which chorionic villi are the physiological prototypes, seek out the blood vessels and destroy their walls, until they become bathed directly by the blood. This is fairly well seen in Dr. Wilson's case, but much more markedly in that of Dr. Martin, which is in some respects the most interesting of the three cases. In it the relation to pregnancy is much less distinct than in the other two. There was no preceding mole, and the last pregnancy was six years before. The histological proof of its nature must therefore be strong. In my opinion it is, though the tumour is by no means so typical as the other two. Stress must first be laid upon the proportionate amount of blood clot to epithelial tissue in the tumour. It forms at least three-fourths of the whole, and I have never seen a cancer of the uterus in which this is the case. Again, the relationship of clot, epithelial tissue, and uterine wall are substantially the same as in all chorion-epitheliomata, and, although the great bulk of the epithelial tissue seems to belong to the Langhans's layer type, traces of syncytial cells are to be seen here and there; other chorion-epitheliomata have been met with in which the syncytium was scanty or absent. Many of the cells show an alveolar arrangement, but this has also been noticed in indubitable chorion-epitheliomata. This alveolar arrangement is more apparent than real in Dr. Martin's case. Under the microscope, though not to the naked eye, the uterine wall shows obvious signs of erosion—such as the presence within the clot of fibrous strands resembling the walls of cancerous alveoli. In Dr. Wilson's case—clearly a chorion-epithelioma—there are similar strands, though they are

less distinct. Hypertrophy of the uterine wall, which always occurs at the site of any polypoid growth, is a secondary result which tends to obscure the erosion caused by the tumour. Vascular invasion is seen here, as in Dr. Wilson's case, but the different steps in the process are not so easily seen. There are a far greater number of blood channels within the epithelial tissue than in Dr. Wilson's case, but this may be explained by the greater rapidity of the erosion. The epithelial tissue has grown more rapidly, and in its growth has sought out the blood vessels, destroying everything in its way—uterine muscle, fibrous tissue, and vascular walls—until it comes to have nothing between it and the blood. It is true that no villi are recognizable anywhere in the tumour, but this is the case also in the vast majority of chorion-epitheliomata. It is possible, however, to look upon the solid epithelial processes as representative of villi, and, looked at in this way, the development of the tumour is much more easy to follow. It is part of the routine duty of my department to examine specimens for medical men, and this tumour was sent in by Dr. Martin for examination under this scheme. Its peculiar histological characters caused me to consult Drs. Martin and Wilson about it, and later also Dr. Savage, and it is our joint opinion that, though less typical than the other two, it must also be regarded as a chorion-epithelioma.

AN EARLY CASE OF CHORION-EPITHELIOMA FOLLOWING HYDATIDIFORM MOLE: VAGINAL HYSTERECTOMY: RECOVERY.

By Smallwood Savage, M.A., M.B.Oxon., F.R.C.S.,
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I have deemed the following case of chorion-epithelioma worthy of record, on account of the pathological examination of the tumour, and the restoration to health of the patient since the operation, now five months.

On December 12th, 1903, I was asked by Dr. Lansdown (Cheltenham) to see with him a patient who had had some irregular haemorrhages, and who gave the following history:

Mrs. P., aged 50, had had eight children, the last seven years ago. The first four children were born within three years. Three children had died. The first and second of phthisis, and the third at one year and nine months of cancer at the back of the eyes, both having been taken out. The patient's father and brother had both died of haemoptysis at 36. For the last few years, menstruation had occurred irregularly at intervals of two to eight weeks, it had been scanty; three weeks ago she had lost profusely, and prior to this there had been losing on and off for six weeks. For two months she had complained of dyspnoea and progressive wasting, with pains, tenderness, and swelling of the abdomen: the pains were described as "niggling," and the tenderness was felt especially on the right side. She had been in bed five weeks. The breasts had been getting larger, there had been no vomiting, but the patient could eat nothing. She did not regard herself as being pregnant.



Fig. 2.—Chorion-epithelioma. Sagittal section of uterus showing growths in posterior wall.

On examination I found there was marked dyspnoea even while lying in bed, that the pulse and temperature were raised, and that the general condition was bad from weakness and anaemia. The breasts were somewhat enlarged, veins were seen to be prominent, but no fluid could be expressed from them. The abdomen was enlarged by a tumour rising up out of the pelvis and reaching to one finger's-breadth of the umbilicus; it was higher on the right side; a fluid thrill was felt in parts and it was somewhat tense. A *souffle* was heard all over it but no fetal heart sound. By the vagina: Blood clot lay in the passage, the vaginal walls and cervix were swollen and oedematous, the veins of the vulva were seen enlarged; the tip of the finger could be inserted into the uterus

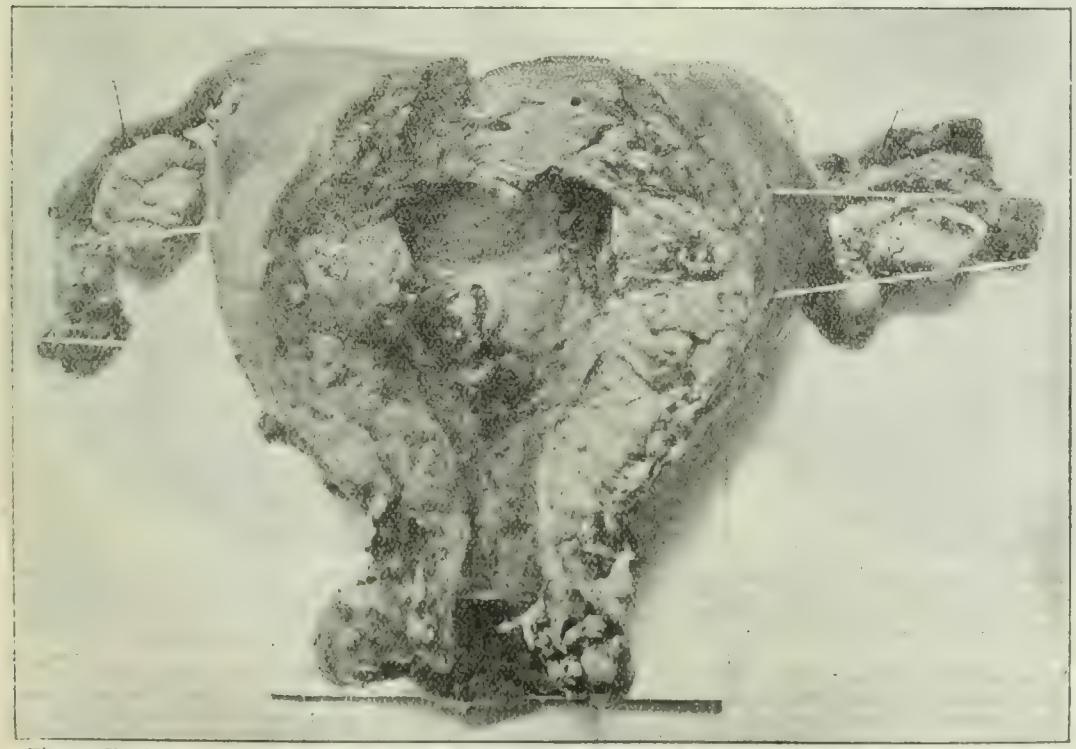


Fig. 1.—Chorion-epithelioma. Uterus laid open from in front. Tumours shown on posterior wall. Photograph of uterus after vaginal hysterectomy.

through the internal os, but only a soft, doughy mass could be felt; *ballottement* could not be obtained. The tumour was made out to be uterine, but the nature of the

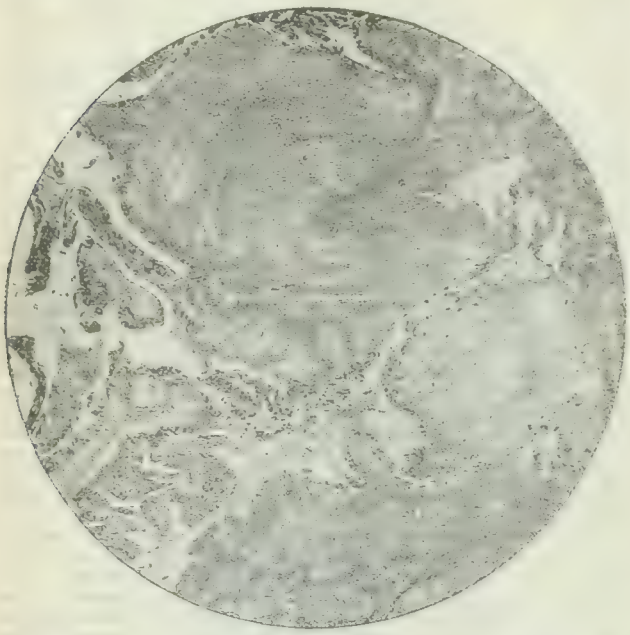


Fig. 3.—Near interior of uterus included villi are seen lying in wide channel. Villi are surrounded by new growths of cells, and much fibrin. Low power.

enlargement was not quite clear. As the general condition was bad, and as the examination brought on haemorrhage, some gauze was inserted into the cervix and ergot given in the hope that the uterus might empty itself. The next day,

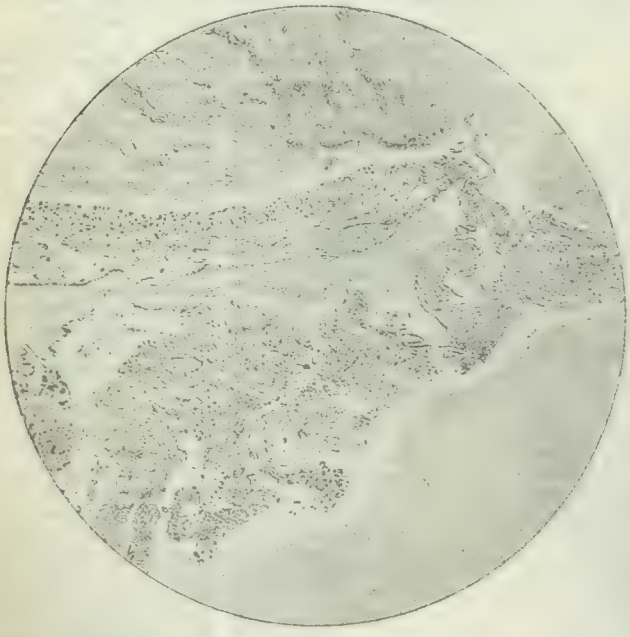


Fig. 4.—Elongated core of villus surrounded by proliferated cell elements (chiefly individual polyhedral cells) extending into uterine wall and contained in a wide channel for the most part bounded by an inflammatory zone of connective tissue. Low power.

on 13th December, as the condition of the patient was the same, and as it was thought that the diagnosis should be cleared up without delay, an anaesthetic was given by Dr. Allen Duke. After dilatation of the cervix I removed by means of a finger and a blunt curette about four and a half pints of cysts of a hydatid mole mixed with blood and clot; the cysts were of varying sizes up to that of a small walnut. The uterus contracted down to about four inches in its cavity length. The nature of the tumour was fully explained to the patient,

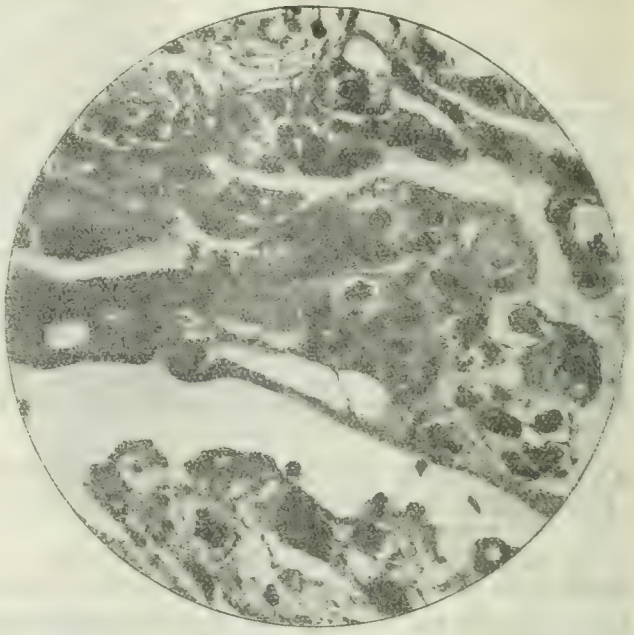


Fig. 5.—Tip of villus shown, with syncytium masses greatly hypertrophied, and a few Langhans's cells. High power.

with the possibility of a growth occurring in the uterus at a later date, which might necessitate its removal.

After the operation haemorrhage of slight amount lasted for five days, and a temperature varying from 99.4° to 100.8° for four days; convalescence soon took place, with the gaining



Fig. 6.—Large invading cell, which, after entrance into the blood stream at some distant spot and circulating for a time therein, is now seen in the act of passing out of the vessel (note that the elastic tissue is bulged outwards), and so may be the potential nucleus of another centre of growth. High power.

of strength and weight. One month afterwards, in the middle of January, 1904, a continuous slight blood discharge commenced, and lasted a fortnight; and on February 23rd, in the early morning, a profuse haemorrhage occurred, which rendered the patient anaemic and faint: the amount lost was said to have been sufficient to fill the bed-pan and also to soak

the bed; the vagina was promptly plugged with iodoform gauze. On February 25th the patient came into Birmingham to see me, and my note states that she was sallow in complexion, feeble, and exhibiting signs of dyspnoea on the least exertion. On examination nothing was felt by the abdomen; by the vagina, the uterus was found to be somewhat enlarged and thickened and felt heavy, the sound passed 3¾ in.; the cervix was open at the external os, so as to admit the tip of the index finger; both lips were oedematous. There was no blood discharge, no pain, and the ovaries could not be palpated. The urine was normal.

Three days later, or eleven weeks after the removal of the hydatidiform mole, I performed vaginal hysterectomy. The uterus was very turgid with blood. Both ovaries and tubes were removed. The patient made a good recovery. I saw the patient on July 25th, or five months afterwards, she was then quite strong, having gained 12 lb. in weight, and there was no sign of any recurrence.

Pathological Condition of the Parts Removed.

The uterus with both Fallopian tubes and ovaries: The uterus while fresh was pale pink in colour, large, and contained much blood in its vessels; its consistence varied, for while the anterior wall was firm, the posterior was somewhat soft and felt flabby. The measurement from fundus to external os was 11 cm., and from cornu to cornu 7 cm.; the uterine wall was 2 cm. thick. On making a longitudinal section along the front aspect so as to expose the interior of the organ, the incision cut through a small circular elevation of the mucous membrane above a small mass of mucoid material: it measured about 3 mm. in diameter, and was situated about midway between the fundus and internal os; on the posterior wall, as seen in the photograph, there is a larger circular elevation in size such as might be covered by a sixpence, or about 1½ cm. in diameter; while fresh the colour was maroon, but to one side of the centre there was a purple stain; to touch this elevation was soft. Higher up on the posterior surface and near the left cornu there is seen a small, rough, granular patch raised above the surface. (Fig. 1.) On completing the sagittal section by incising the posterior wall there are seen to be growths in two situations, one corresponding to the circular elevation of the mucous membrane, and the other higher up and smaller, both of which are seen in the side view (Fig. 2). The former is a wedge-shaped growth with its pointed end looking backwards and reaching to about one-half of the thickness of the muscular wall; it is soft, the half nearest the cavity of the uterus is blue-brown in colour and the deeper part maroon. It is not unlike a thrombotic necrotic area. The latter, or smaller growth, is shown by a pink coloration about 2 to 3 mm. in diameter, and is situated about ¼ in. below the mucous membrane near the top of the posterior wall. The ovaries and tubes are small and atrophic.

Microscopical Examination.

The tumour is made up of a few chorionic villi, tumour cells, and much extravasated blood and fibrin in wide spaces.

1. Most of the chorionic villi are met with near to the internal surface of the growth. The place of entry is clearly shown in some of the sections by a breach in the internal lining of the uterus, immediately below which is seen the extension downwards of the villi. Most of them are contracted in size, and show signs of degeneration, but they are not such as could be described as hydatidiform; in some the core stains well, being made up of a fine areolar tissue; in some there is a small round-cell infiltration, and in others there is an invasion by large cells derived from the surrounding epithelium. The villi are in close association, and are covered by many layers of cells resembling those of Langhans's layer and the syncytium, both elements being similar to those seen in connexion with the hydatid mole, only with the difference that here they are more proliferated, and also that the arrangement round the villus is in irregular formation and in varying proportion one to the other. Although most of the villi are situated near the internal surface of the uterus a few can be made out further in, and these have little or no covering, and appear to be in a state of degeneration.

2. The new growths of cells in appearance are similar to those surrounding the villi, and in many places can be traced to have originated from them. These cells are seen to have grown and proliferated apart from the cores of the villi. The new growth is seen extending in loose and irregular formation into the thickness of the uterine wall along clefts or channels which branch in various directions; it lies in the centre of these channels for the most part, except where a local excavation is seen, and there in close proximity are isolated portions of growth. These channels in many places are bounded by a zone of fine areolar tissue of varying thickness and of new formation, which by the nuclear stain shows many small round cells and is apparently the result of a reactive change in the maternal tissues. In many places, and especially where the growth appears more irregular, somewhat broken up and more advanced, the surrounding tissue is composed of more or less ragged and degenerated connective tissue, blood clot, and fibrin. There are no blood vessels or intercellular substance amongst the cells of the growth. The new cells are composed of the individual polyhedral cells, the multinucleated protoplasmic masses or syncytium, and the invading cells. (*a*) The individual polyhedral cells present much the same characters as Langhans's cells, the cytoplasm stains lightly and is highly vacuolated, while the nucleus appears round or oval in shape, stains well, and shows marked intranuclear granules. These cells are grouped in varying proportion with the syncytium to form large, irregular masses of growth. In places, where they are more advanced in age, the cells show many forms of degeneration. (*b*) The syncytium shows a variety of appearances in different parts of the section. The masses (Fig. 4) are much proliferated both in connexion with the included villi and also apart from them. Where they are associated with the individual cells in the covering of the villi they either form long, narrow sprawling bands of a coarsely spongy and opaque protoplasm, with many small and well-defined round or oval nuclei, whose fine chromatin granules stain deeply, or they present for the most part large, compact masses, highly vacuolated and containing many nuclei grouped close together; in other parts, and especially where the syncytium is proliferating apart from the villi, they tend to break up into separate or invading cells. (*c*) The invading cells, as just mentioned, can be traced in many parts to take their origin from the syncytium; in the first instance they appear irregularly shaped, and are of large size, containing a relatively large nucleus, but on passing into the adjacent tissues they become more elliptical and regular in form. In some instances they contain two or more nuclei. The nucleus stains deeply, and the protoplasm presents the same coarse, spongy appearance as that seen in the syncytium. As they lie within the tissues a space or lacuna is generally containing them, which suggests either that in the process of perforation the cells had shrunk more than the bed in which they lay, or else that they had exercised some eroding or digestive action. The invading cells infiltrate muscle and areolar tissue, and in places they can be seen attacking and breaking through the perivascular sheath and walls of blood vessels and coming to lie within their lumen; where blood vessels are being attacked there is an infiltration of the perivascular sheath with small round cells. In one instance, and by a series of sections stained by Weigert's elastic tissue stain, a large invading cell is seen in the process of passing outwards from the lumen, which having entered the blood stream at some distant spot and circulating for a time therein may be the potential nucleus of another centre of growth. (In the photograph—Fig. 5—the elastic tissue is bulged outwards.) The cells, which have invaded the tissues more deeply, and which presumably are more advanced, become larger, their protoplasm appears swollen, and stains yellow with Van Giessen's stain, while the nucleus, though swollen, stains less deeply; as these cells become more degenerated both protoplasm and nucleus take the stain less, and finally their characters become indistinct and blurred; this is especially the case when in contact with fibrin or extravasated blood.

3. A large amount of fibrin with blood extravasation in all stages of degeneration is seen. This is especially the case in the sections of the more advanced tumour. The invading cells are seen amongst the fibrin and blood, and it would seem that blood coagulation exerts some retrograde influence on these cells so as to bring about their necrosis.

There is a small celled infiltration with a certain degree of organization throughout the uterus.

Remarks.

As regards etiology, that pregnancy did precede the formation of this tumour is evident from the fact that hydatidiform mole, which is admittedly the product of gestation, occurred; but the more difficult problem is—Was the abnormal growth of pregnancy the result of a recent conception or are we to

believe that it dates back and is a remnant from the last full-term pregnancy seven years ago? The patient's age is 50, and although it is unusual for pregnancy to occur at the time the menopause is expected, still occasionally it does take place; in this case menstruation occurred at irregular intervals of two to eight weeks; it was scanty in amount, but there had been no continued cessation of the function so as to constitute the change of life. The last period, which was profuse, was three weeks before the removal of the hydatidiform mole, and prior to this there had been losing on and off for six weeks, making altogether nine weeks when the menstrual function had been unusual. On the supposition that impregnation may have taken place during the interval before this loss or at the time of the previous period then a recent pregnancy of at least nine weeks (but which might have been some weeks longer, as the patient could not be exact as to previous dates) would correspond in point of time with such general symptoms as she complained of, as dyspnoea, weakness, loss of flesh and colour and when pregnancy was taking on an abnormal course. The fact of the uterine tumour being about the size of a six-months pregnancy may be compatible with a history of at least nine weeks, when we consider the rapidity of growth of a vesicular mole and the amount of blood and clot which were removed from the uterus at the time of the first operation. This explanation seems to be the more probable one rather than that the mole should have resulted from the remains of the previous confinement seven years ago, which had been dormant so long, and then had taken on active growth. After the removal of the hydatid mole a profuse haemorrhage set in, which produced an anaemia so marked as to lead to the diagnosis of chorion-epithelioma. Pathologically, the most notable feature, perhaps, about the two small tumours is the relatively large amount of extravasated blood which is contained in the wide blood spaces. This alone would almost distinguish them from any other known tumour of the uterus. Chorionic villi are present in all sections of the tumours, and the cells which surround them, and which are growing in intimate association one with the other, are clearly and demonstrably the structural prototypes of the tumour cells. These latter, by continued proliferation, have the power of growth into cells of their own type, and of extending beyond and apart from the villi in masses of greatly hypertrophied individual cells and syncytium, while at a later date the syncytium splits up into separate cells to form invading cells, with the same characteristics of cytoplasm.

These invading cells, like their physiological prototypes in the placenta, wander into and break up uterine tissue and open up blood vessels, but in the tumour has caused extravasation of blood with extensive pressure necrosis of surrounding parts. In this case it is seen that the invading cells are entirely derived from the syncytium, and that the whole origin of the growth of the tumour is directly traced to the included chorionic villi.

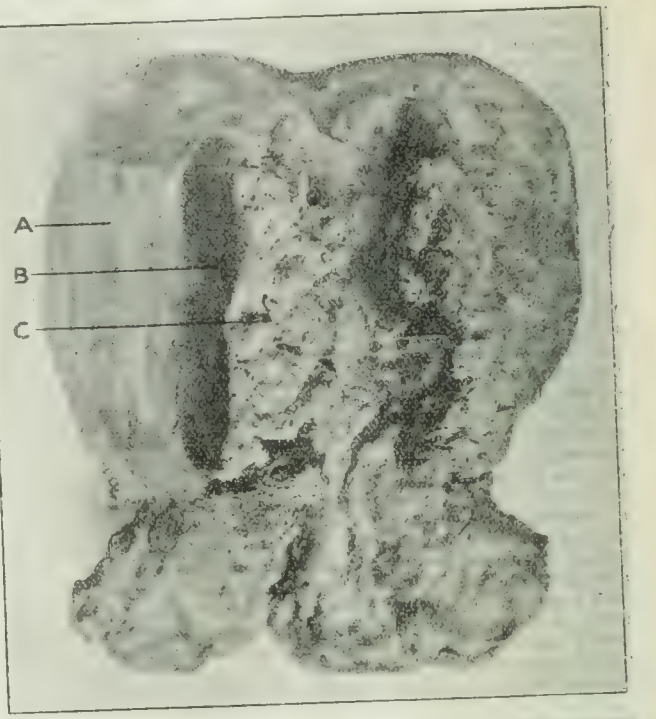
Clinically and histologically, then, this case is one of chorion-epithelioma. This diagnosis was made eleven weeks after the emptying of the uterus of the hydatidiform mole on the occurrence of a severe haemorrhage, with the result that vaginal hysterectomy was performed. It is now five months since this operation, and if a permanently good result ensues, as at present obtains, then the recovery may rank among the few British cases that have had a favourable termination.

I have to thank Professor Leith for having kindly placed the Pathological Department of the Birmingham University at my disposal for the working out of this case and for his kind advice on many occasions, and also I have to thank Mr. Dencer Whittles and Dr. James Miller for the preparations of the microphotographs.

A CASE OF CHORION-EPITHELIOMA.

By Christopher Martin, F.R.C.S.Eng.,
Birmingham.

Mrs. G., aged 50, consulted me first on March 18th, 1904. She gave the following history: She had had eleven children, the last six years ago, and three miscarriages, the last twelve years ago. For the last twelve weeks she had had constant haemorrhage from the uterus. Before this for about twelve months she had been irregular in her periods, sometimes being unwell every three or four weeks and sometimes going six or eight weeks. Before the onset of the twelve weeks' haemorrhage she missed for six weeks, but she had no reason to suspect pregnancy. She had no other signs of pregnancy—no morning sickness, no swelling of the mammae. When the loss came on there was no pain, and she never passed any fleshy substance which might have been an early miscarriage.





Figs. 1 and 2.—Uterus split open, showing malignant growth in interior; on section dark and vascular; surface of growth necrosing and covered with clot and fibrin.

She thought the irregular periods due to the onset of the menopause. During the last twelve weeks the haemorrhage had been constant, and consisted of pure blood-liquid and clots. There was no other discharge, and the blood was never offensive. She had lost flesh somewhat lately. She had very

little pain; what she had was in the back. Her digestion was good and her bowels regular. She had some shortness of breath on exertion. On examination (March 18th) she had a mitral systolic murmur, but no signs of disease of the lungs, and nothing abnormal to be felt on examination of the abdomen.

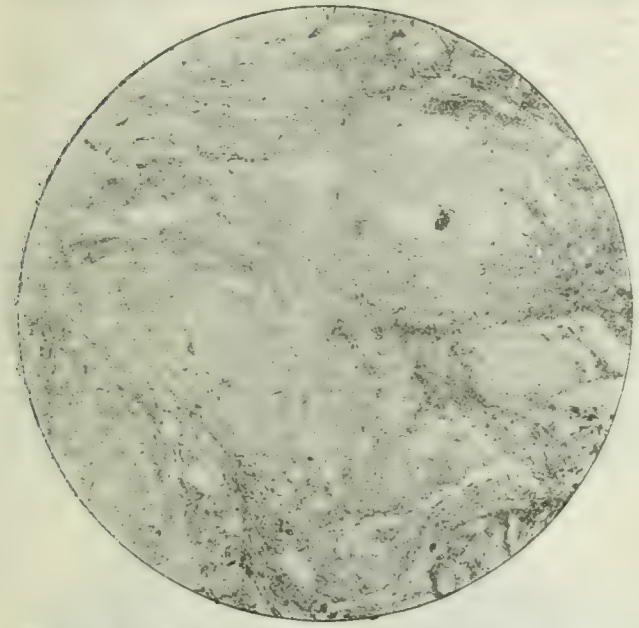


Fig. 3.—At upper left corner muscular fibres invaded by malignant cells; at upper right corner, fibrin and necrosing tissue; in centre, interlacing columns of malignant cells; below centre, blood sinuses surrounded by malignant cells.

Per vaginam: the uterus was enlarged; the cervix soft and spongy and granular, but without any growth or ulceration. It was patulous, but did not admit the finger. The body of the uterus was forwards and uniformly enlarged and

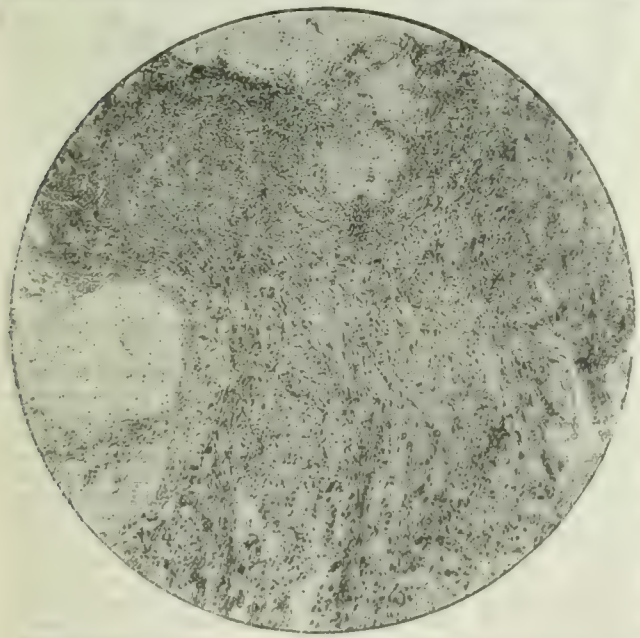


Fig. 4.—At top of field, necrosing tissue, fibrin, and blood clot: to left of field, a large blood sinus lined with endothelium and surrounded by malignant cells. At bottom of field, strands of muscular fibres separated by columns of malignant cells; most of these cells are polyhedral and small, with clear protoplasm. To the right of the field are a few larger cells with more deeply-stained protoplasm, probably syncytial.

vascular. It felt as big as the body of a uterus two months pregnant. The uterus was quite mobile, and there were no signs of disease of the uterine appendages or infiltration of the broad ligaments.

A diagnosis was made of cancer of the body of the uterus chiefly from the following considerations: (*a*) Age of the patient, (*b*) constant loss of blood, (*c*) loss of flesh, (*d*) enlargement of the uterus, (*e*) absence of any myomatous nodules in the uterus. In a younger woman, with the same signs and



Fig. 5.—To right of field, muscular fibres separated by masses of tumour cells. In the centre are three blood sinuses, which are surrounded by deeply-stained cells, probably syncytial. Below are masses of small polyhedral cells.

symptoms, a diagnosis of "early miscarriage with retained portion of placental tissue" would have been made. She was advised to have the uterus removed without delay.

Operation, March 24th, 1904.—Vaginal hysterectomy per-



Fig. 6.—Blood sinus in centre of field, surrounded by tumour cells, lined in part with endothelium. Below are masses of polyhedral cells, many of which are vacuolated. At bottom of field is free extravasated blood.

formed in usual way. Ovaries and tubes apparently healthy and not removed. Fundus was soft and enlarged. On laying open the uterus, it was found to contain a soft, friable, fungating growth, about the size of a small hen's egg, growing from the endometrium.

After-history.—The patient made a good recovery. The

highest temperature recorded was 37.6° C., and the highest pulse 85. She got up on April 6th, and went home April 15th. She did not, however, regain her strength satisfactorily. About the second week in May she began to get very short of breath, and to cough up blood. I was called to see her on May 30th. She was propped up in bed, and breathing badly. She had lost flesh markedly. She was coughing up large quantities of bloody fluid like strawberry juice. On examination there was patchy dullness over both lungs, especially marked near the base and root of the right lung. Over some of these dull areas loud moist sounds could be heard, with tubular breathing; over others entire absence of breath sounds and vocal resonance and fremitus. Per vaginam, there were no signs of recurrence in the pelvis. Secondary malignant deposit in the lungs was diagnosed, and a bad prognosis given. She died on June 6th, ten and a-half weeks after the operation, and less than six months from the onset of the first haemorrhage.

The uterus was sent to the Pathological Department of the University, and Professor Leith has supplied me with the following description of the tumour:

Microscopic Appearances.—The uterus had been opened along its posterior surface from the external os to the fundus. A tumour having a dark purplish red colour and soft friable consistence, occupied nearly the whole of the cavity of the uterine body. It had many of the appearances of blood clot, but it looked still more like a piece of adherent placenta.

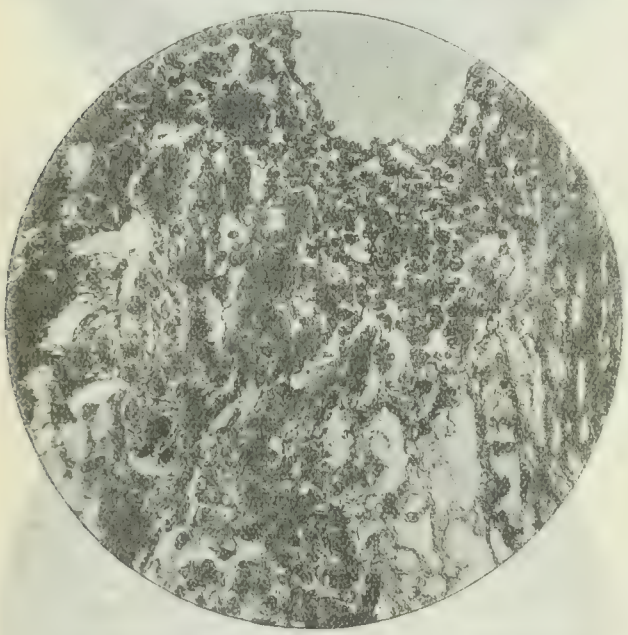


Fig. 7.—At top of field a blood sinus lined by endothelium, and surrounded by a small-celled infiltration; in centre of field, large deeply-stained cells (? syncytial); at bottom of field, small polyhedral cells.

Its consistence supported this suggestion, as it gave the impression of being some tissue infiltrated with blood, rather than pure blood clot. These characters have now been somewhat lost through the action of the fixing and hardening agents, and the exact relationships somewhat disturbed, owing to the uterus having been opened before fixation. They can, however, be easily made out. The tumour measures about 2½ in. long, 1⅝ in. broad, and over 1 in. deep. It is attached to left side of the posterior wall of the uterus about its middle, by a distinct pedicle of a somewhat elliptical shape, with a long character (about 1¼ in. long) corresponding with the long diameter of the tumour. This forms altogether a small part of the circumference of the tumour, the great part of which rests upon the endometrium. The uterine wall at the place of attachment of the tumour is considerably hypertrophied, being over 1 in. thick, and there are no signs of erosion of the uterine wall by the tumour. Indeed, a distinct white band, similar in appearance to the uterine wall, passes for a short distance into the tumour, through the middle of the pedicle. The tumour is thus in its shape and relationships somewhat polypoid. The hypertrophy of the uterine wall remains marked throughout the lower part of the body and cervix, but lessens towards the fundus, where the wall is of normal thickness.

Microscopic Appearances.—A thin piece was selected by longitudinal section through the whole length and breadth of the tumour, passing through its pedicle and the whole breadth of the uterine wall; and this section under the microscope shows that the tumour is mostly composed of blood clot, that the uterine wall is normal, and that there is a mass of epithelial cells sending processes inwards into the blood clot and outwards into the uterine wall, at the junction line between the two at and around the pedicle. The invasion of the uterine wall is very slight, and practically confined to the innermost layers of its muscle, not more than $\frac{1}{10}$ to $\frac{1}{12}$ part of its thickness, while the invasion of the clot is considerably greater, and masses of variously altered epithelial cells are seen scattered throughout it almost to its inner border. The great mass, fully three-quarters of the polypoid tumour, however, is blood clot. It is at the pedicle or junction line of the polypoid tumour with the uterus that the character of the epithelial cells is best seen. They here form a distinct layer, though a very irregular one, between the uterine muscle and the clot, a layer composed entirely of epithelial cells in which no stroma nor blood vessels can be seen. The cells are mostly of an irregular polygonal or polyhedral shape, with a finely granular faintly-staining protoplasm, and an oval or round vesicular nucleus, recalling distinctly the cells of

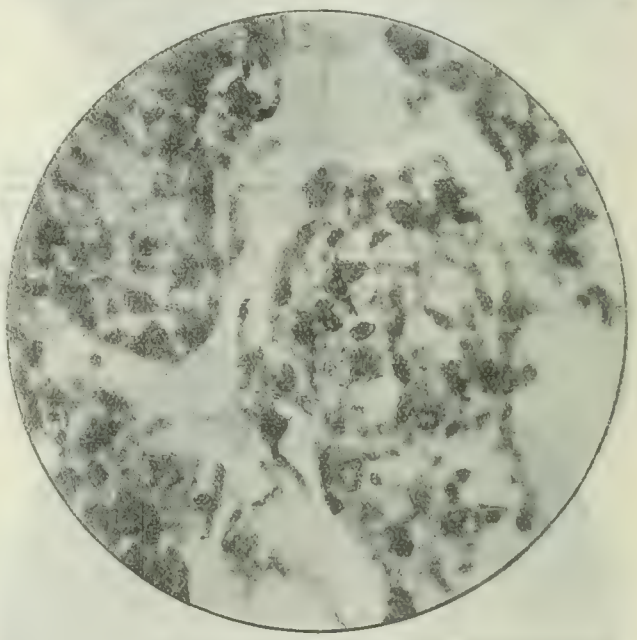


Fig. 8.—Columns of small polyhedral cells, with clear protoplasm and well-defined oval nuclei.

Langhans's layer cells. The other characteristic layer—namely, the syncytial—is scarcely if at all to be detected in this part of the figure. Where, however, the outlying processes which invade the clot on the one hand and the uterine wall on the other are examined, cells are here and there seen strongly suggestive, if not indeed conclusive, of a syncytial layer. They have the large size, great irregularity of shape, the deeply-stained protoplasm, and the small nuclei of these cells. The epithelial cells seem to lie in distinct alveoli, more so than in a typical chorion-epithelioma; but on the uterine side of the growth, at any rate, this is largely if not entirely due to the invasion by the growth of large vascular sinuses in the uterine wall. Other similar but as yet uninvaded and empty sinuses are seen immediately outside. The masses which project into and those which are embedded in the clot also show in places the appearance of an alveolar arrangement; and here and there, where the structure is difficult to make out owing to necrotic change, remains of fibrous tissue strands can be recognized. It is to be remembered that these lie within the body of the polypus and thus well away from the inner border of the uterine wall. It is therefore difficult to see how they can belong to the invaded and destroyed tissue of the uterine wall, except in the supposition that they have been carried from their attach-

ment and displaced inwards by the frequent haemorrhages which occur in these tumours. This could be now readily accepted if the uterine wall showed thinning instead of thickening at the tumour site, and the suggestion that these strands are really a new formation within the substance of the tumour is thus more difficult to set aside. Three points appear to be sufficient to throw some doubt upon the nature of the tumour—namely, these fibrous strands, the alveolar arrangement of the cells, and the thickness of the uterine wall. They are suggestive of an ordinary encephaloid cancer, and the polymorphous shape of many of the epithelial cells (though the great majority are polyhedral), the manner in which they are packed together, and something in the general histological appearances also suggest cancer. There is another histological feature of great interest which may be considered to give support to this view—namely, that there are many large and small blood spaces in the midst of the epithelial cells, especially where they are most abundant. They look like capillaries and true vessels, inasmuch as they seem—in places, at any rate—to have a definite endothelial lining. But these points can each, on further consideration, be set aside. The fibrous strands are not of new formation—at least, there is no evidence of it; the alveolar arrangement is largely accidental: the thickness of the uterine wall does not preclude the erosion, as there is always some hypertrophy at the site of a polypoid growth; irregularity in shape is seen in chorion-epitheliomata as well as cancers; the manner of packing of the epithelial cells is characteristic of the Langhans's layer cells, as well as of epithelial growths in general; and the blood spaces within the epithelial cells masses, which look like vessels of new formation, are merely the remnants of vascular channels of the uterine wall, the surrounding uterine tissue having been all destroyed by the invading epithelial cells. Careful examination shows in places that the apparent endothelial lining is merely the outer flattened cells of the tumour, and that, even where a true vascular endothelium is present, it may represent only a stage of slightly less complete destruction than the others. While the tumour undoubtedly presents points difficult to interpret, its general histological characters strongly support the contention that it ought to be considered as a true chorion-epithelioma, according to the presently-accepted views.

A CASE OF MALIGNANT CHORION-EPITHELIOMA.

By Thomas Wilson, M.D., F.R.C.S.,
Obstetric Officer, General Hospital, Birmingham.

B.H., single, aged 22, was seen by me in consultation with Drs. Hollinshead and Hora on March 12th, 1903. For the history of the case I am indebted to Dr. Hora, who informed me that the girl was delivered of a hydatid mole in April, 1902; a month afterwards she became acutely suicidal and was sent to Powick Asylum from which she returned in September. During her stay in the asylum there were some haemorrhages and after her return in November there were severe losses of blood. She was then supposed to be pregnant, but the uterus in the course of a fortnight increased very rapidly in size. A few days before my visit the cavity of the uterus was explored after dilatation of the cervix with sponge tents. Some pieces of solid fleshy material were removed from the inside of the cavity of the uterus and were said to have resembled sarcomatous tissue. The temperature, which had varied from 101° to 103° for some weeks, has been a little lower since this exploration.

When I saw the patient there was a tumour in the middle lower abdomen extending rather higher on the left side where it reached the level of the umbilicus. The tumour was rounded with a uniform surface, well-defined, firm in consistence, and could not be moved. It was tender and protected by contraction of the abdominal muscles. On the right lower part of the tumour, just above the pubes, a large pulsating vessel was felt. Double sounds of the same frequency as the maternal pulse were heard all over the tumour, in some places sharp and clear, though not loud, in others the first replaced by a systolic murmur. The vulva and vagina were normal; the cervix of natural size, firm, and not patulous, joined the lower part of the abdominal tumour, which appeared to represent the greatly enlarged uterine body. The patient was greatly emaciated and anaemic; her skin dirty yellow in colour, and somewhat dry and harsh; the pulse 100, rather small and compressible. The cardiac impulse was much diffused, and there was a loud, soft, systolic murmur over the pulmonary cartilage. No abnormal physical signs were detected over the lungs; the urine was normal.

The diagnosis of malignant chorion-epithelioma was made, and it was obvious that nothing could be done by surgery. The patient gradually became worse and died three weeks later on April 4th.

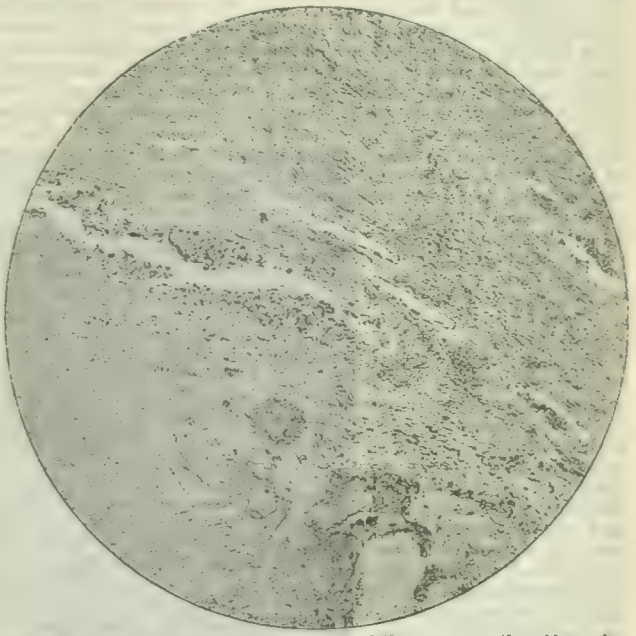


Fig. 1.—Section I: From the lower end of the new growth. Above is seen uterine wall, below a large mass of blood clot, and between the two an elongated collection of tumour cells. In the adjacent uterine muscle are seen sections of vessels, in some of which are clots containing tumour cells.

A *post-mortem* examination was made by Dr. Hora, who kindly sent me specimens, including the uterine tumour, the right lung, and a portion of liver with a secondary growth. The uterine tumour was removed in a mass, together with the

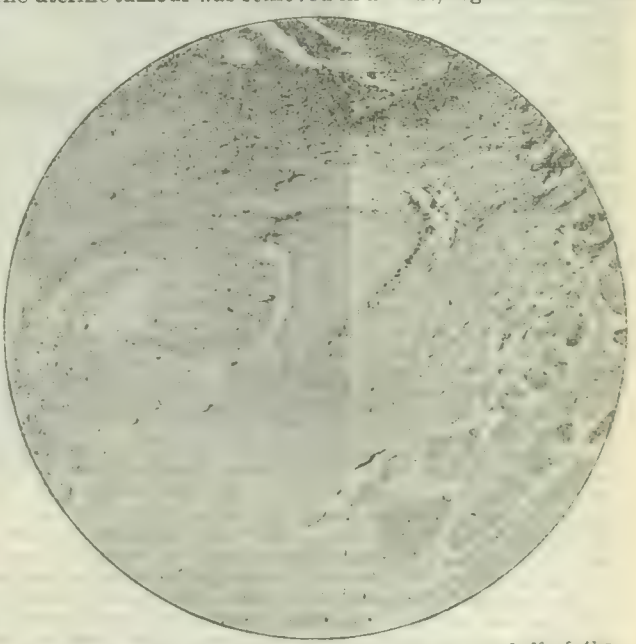


Fig. 2.—Section II: Above is bladder wall. The lower half of the specimen shows the nature of the growth; the large part is blood clot, between which and the bladder wall a large collection of the tumour tissue proper is seen.

upper inch of the vagina, the bladder, rectum, and adherent intestines, the whole measuring 17 by 13 by 9 cm. The portion of the vagina shows rugae unusually well developed, their summits discoloured in places. The external os is open, of the size of about a No. 12 catheter: the vaginal cervix

normal. The upper part of the specimen has been torn in removal, making a large opening into the interior of the body of the uterus. The body of the uterus is greatly distended with a new growth, and its muscular coat is thinned in places to a mere shell. At the fundus the tumour extends through the wall, and close dense adhesions have been formed to the sigmoid and transverse colon, the growth penetrating apparently into the wall of the intestine; here also adhesions have formed to a coil of small intestine. The bladder is laid open, and its interior has a normal appearance; the portion opposite the supravaginal cervix is greatly elongated vertically, measuring 10 cm. instead of about 3 cm. The orifices of the ureters are normal. At about 3 cm. from its orifice the left ureter enters a mass of growth and becomes compressed, so that a small bristle cannot be passed from the vesical orifice to a greater distance than this; the upper portion of this ureter is considerably dilated. The posterior surface of the tumour is in close contact with the wall of the rectum, and has flattened and narrowed its lumen. The right ovary and tube are present, pressed against the lower posterior and right angle of the tumour. The tube is flattened between the tumour and the ovary, and its fimbriated extremity is applied to the right side of the rectum; it has been turned downwards over and internal to the ovary, so that the broad ligament has made half a turn. In the left part of Douglas's pouch there are dense adhesions, and on separating these the wall of the uterus is seen over a considerable part of its extent to be reduced to the thickness of tissue paper or even to be completely destroyed. The left ovary and tube cannot be recognized in the specimen; they have probably been cut away. A vertical antero-posterior section, nearly in the middle line, but so placed as to avoid cutting the rectum which is adherent posteriorly, shows that the wall of the uterine body has been entirely destroyed by a growth which extends downwards to a point about 1 cm. above the internal os. The tumour extends in front into the wall of the bladder, above to the peritoneum, and posteriorly to the peritoneum and to a portion of the wall of the rectum which is adherent. The adherent portion of rectum is 6½ cm. above the lowest part of Douglas's pouch, and below this level the peritoneum is free from adhesions.

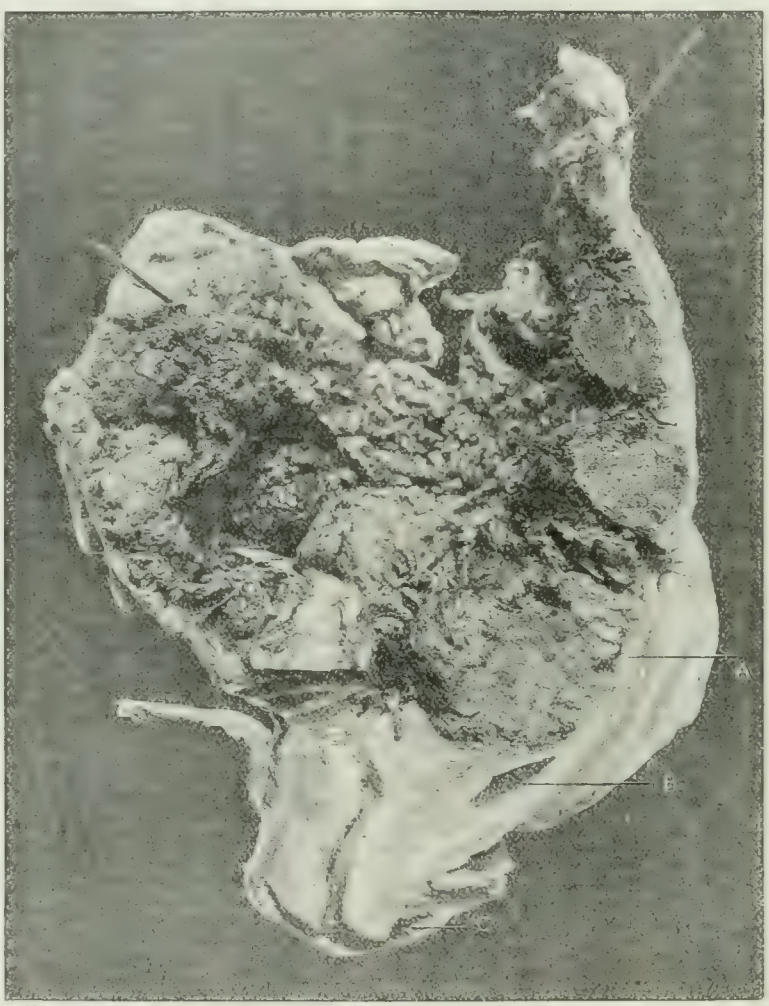


Fig. 3.—The body of the uterus greatly enlarged and its walls destroyed by an infiltrating growth, which shows a granular breaking down surface internally. The bladder wall is invaded. The cervix is free from growth.

The growth forms a mottled mass, resembling old blood-clot, and varying in thickness at different parts of the wall up to about 3.5 cm. The inner surface of the mass is much broken down, and has adherent to it large quantities of soft fibrinous material; after removal of this the surface is, for the most part, coarsely nodular, the nodules up to the size of a chestnut; over the fundus, where the wall is very thin, the surface is roughly granular. The consistence is firm and inelastic, like that of old blood-clot. On the posterior surface, at the lowest part, just above the internal os, a portion of the tumour resembles brain on section. On the anterior wall, 3 cm. above the tip of the cervix, is a small, smooth-lined cavity, between the uterus and the wall of the bladder, which appears to represent the utero-vesical pouch; above this, for 5½ cm. the bladder wall has become adherent, and its outer layers are invaded by the growth. The cervical canal measures 3 cm.; its walls and a small portion of the posterior and lateral walls of the uterus above it are unaffected. The margin in this region is irregular, raised, and overhanging.

For microscopic description three pieces of the tumour were selected from the positions shown in Fig. 4 by the Nos. I, II, and III. The following description of the appearances is by Professor Leith:

Sections of piece No. I show the inner border line of the tumour growing in the uterine wall. This border line is composed of masses of epithelial cells, while of the great mass of the tumour fully five-sixths of it is composed of blood clot. This clot is oldest towards the inner surface, being composed mostly of fibrin and white blood cells. Clumps of red blood cells, indicating recent haemorrhage, are seen mostly towards the outer side next the uterine wall, but old altered red blood cells are seen elsewhere in places throughout the clot. There are no signs of organization within the clot, which is mostly of comparatively recent date, though some parts of it are necrotic (probably the oldest). The epithelial cells form irregular tubes and masses lying mainly between the clot and the uterine wall, being most numerous on the inner side. Towards the outer side they are reduced to mere lines of cells, or even apparently to individual cells, always with the same relationship to the uterine wall—that is, either bordering its innermost layer or shaving off bits of this or invading it for a short distance. The rest of the uterine wall is unaffected, except that in its inner layers there is a certain amount of chronic inflammatory reaction, and a few of the blood vessels show tumour cells mixed with the blood in the lumen, the blood being unclotted and the vessel wall unaffected. There is also a slight inflammatory reaction on the peritoneal surface.

Sections of piece No. II show the same three tissues in the same relationship, namely, blood clot internal, a fibro-muscular wall external, and epithelial tissue between. The clot has much the same characters but shows more red cells, and its proportionate amount to the epithelial tissue is hardly so great. The latter forms masses rather than tubes, lining and in places invading the outer fibro-muscular wall, which appears to belong entirely to the bladder. If so, and the appearance in places of strands of fatty tissue immediately outside the epithelial cells supports this view, the whole thickness of the uterine wall in this region must have been destroyed by the growth. Direct invasion of vessel walls may be seen at the advancing margins of the epithelial

tissue. The cells apparently eat their way through the vessel wall where they come in contact with it, and cause its absorption in the same way as in the case of the fibrous and muscular tissues of the uterine wall itself. Other vessels further out show intact walls and ordinary cellular contents mixed with tumour cells showing the embolic spread of the disease.

Sections of piece No. III closely resemble the others showing the same three zones. Here, again, clot forms the great mass of the tumour and the epithelial cells show both the massed and the tubular arrangement. The uterine wall is mostly converted into fibrous tissue, strands of fatty tissue beneath its peritoneal surface being fairly obvious.

In all the sections, therefore, we have tumour cells in tubular formation and in irregular masses, sometimes of considerable thickness, sometimes reduced to fine threads, lying between blood clot on the inside and altered uterine wall on the outside. The blood clot forms by far the greater bulk of the tumour. In none of the sections does it show any organization, but it often penetrates the epithelial tissue, and irregular clumps of epithelial cells are here and there seen within the substance of the clot, at some distance from the epithelial zone. These clumps are sometimes hardly recognizable, owing to degeneration and necrotic changes within the cells. In the typical epithelial cell masses the cells are joined to one another by thin cement substance only, forming a solid epithelial tissue without the slightest trace of stroma or of blood vessels. The cells themselves seem to be of all shapes and sizes, but two types prevail—(1) cells of very irregular shape and size; (2) cells of somewhat polyhedral shape. The cells of the first type have a deeply-staining, sponge-like protoplasm, and one or many nuclei. They are often very large, and possess many nuclei, which, mostly small in size, stain deeply. Other cells are smaller, being spindle-shaped or irregular, and have a single nucleus. A few of the nuclei stain differently, having a deeply stained nucleolus, and a pale reticulated nuclear body. The cells of the second type do not vary so much in size and are more densely packed together, like ordinary epithelial cells. This cytoplasm stains much more feebly, and the nuclei are relatively larger. In short, the two types of cells have all the features of the syncytium and of the Langhans's layer cells characteristic of a typical chorion-epithelioma. In the larger masses these two layers seem irregularly mixed up together, but in the smaller finger-like or tubular processes the giant and other cells of the syncytial layer lie outside the Langhans's layer cells, thus forming two layers of very varying thickness. Their irregular distribution in the larger masses is probably due to many smaller processes having become confluent. The larger cell masses are apt to be broken up by haemorrhages and to have their relationships disturbed. The smaller ones are more likely to preserve them, and if these be examined, particularly in the actively growing parts, the syncytial cells are always seen next to the tissue which is being eroded. They line the inner wall of the uterus and abut directly against its muscle, or more often against fibrous tissue. This latter belongs in part to the pre-existing interstitial uterine tissue, and is in part of new formation, due to reactive inflammation within it. The syncytial cells appear to digest all tissues, fibrous or muscular, against which they lie, and the finer invading prolongations of the epithelial cells appear to consist entirely of cells of this same syncytial character, no distinct Langhans's layer cells being recognizable. While most of the outlying epithelial cells are in little groups, single cells are seen in places. These are sometimes multinucleated giant cells and sometimes mononucleated cells, but in all cases their appearances closely resemble those of the syncytium. It has already been stated that no stroma is seen within the collections of epithelial cells. But blood vessels, both capillary and larger-sized ones, are seen within them, not only near the uterine wall but even at some distance therefrom, and entirely surrounded by the epithelial cells. Some of these vessels certainly look like blood spaces or capillaries of new formation within the epithelial tissue, but that this is not their origin can be easily demonstrated. All stages may be seen between the vessel whose wall is encroached upon at some part by the invading epithelial cells and the capillary or sinus within their substance. They are all vessels of the uterine wall, and the epithelial cells invading the tissue thereof appear to seek out the vessels and gradually cause destruction of the vascular walls, until they come themselves to be bathed by the blood. In this way capillary-like vessels or blood sinuses may be found within the epithelium, and, on the further extension of the growth, come to lie within the tumour at some distance from the uterus. These in time may rupture, and the subsequent haemorrhage may destroy and carry off portions of the tumour into the cavity of the uterus. The nature of the growth is therefore obvious. It conforms in all respects to what is at present regarded as a typical chorion-epithelioma.



Fig. 4.—Vertical antero-posterior section. Above adherent intestines, behind rectum, and in front bladder. I, II, III refer to microscopic sections.

The secondary nodules in the liver show much the same characters—namely, masses of cells showing both syncytial and Langhans's layer cells infiltrating the liver tissue directly, surrounded on their outer side with much blood clot, which has,

however, invaded the tumour cells much more extensively than in the primary uterine growth, so that tumour cells in varying stages of degeneration are everywhere to be seen within the blood clot. The invading cells here, where they are seen singly or few in number, seem to be syncytial in character, but whenever several are together representatives of both kinds are detected.

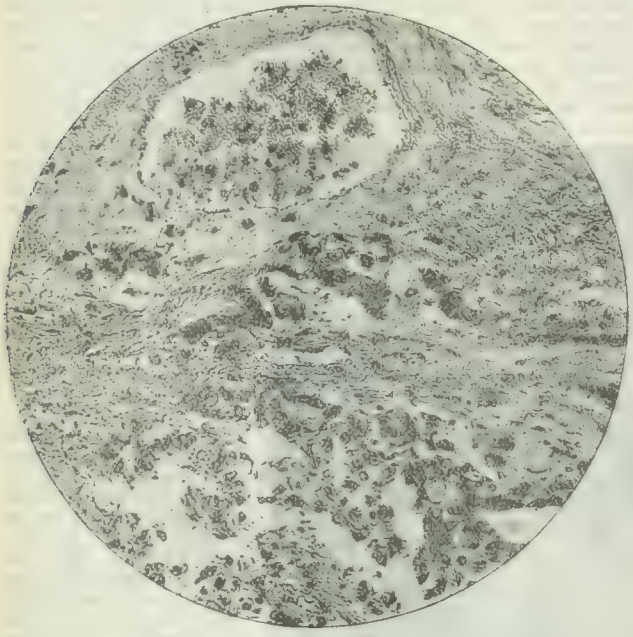


Fig. 5.—Section III: Above is seen uterine muscle, in which is a large vessel containing blood clot, in which there are tumour cells. The greater part of the section shows a large collection of tumour cells; especially at the upper part of this collection, well-marked syncytial masses are seen.

The secondary nodules in the lung show tumour cells irregularly grouped around largish vessels. Around this area of tumour invasion the air vesicles are filled with red blood cells over a space about the size of a pea. Mixed with the blood in the vesicles are many catarrhal cells which become

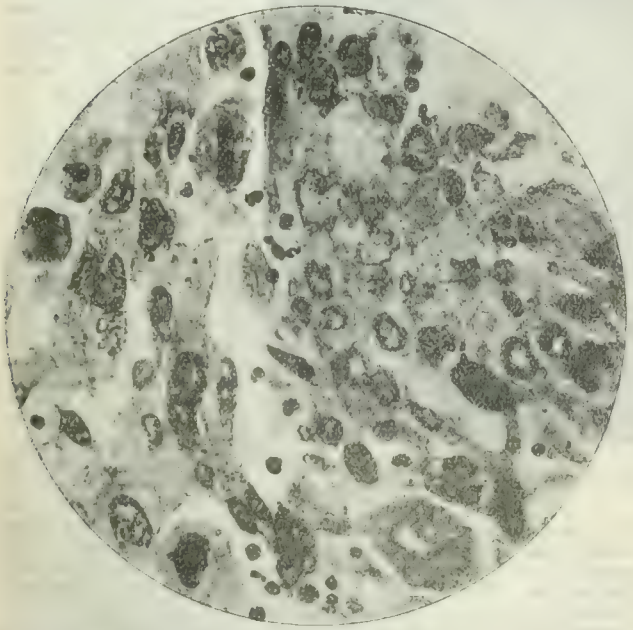


Fig. 6.—Section III: Collection of tumour cells. Most are syncytial in character. A smaller number appear to represent Langhans's layer cells.

more numerous as the margin of the infarcted area is reached, beyond which the air vesicles show a considerable amount of catarrhal inflammation. The epithelial tumour cells in the centre of the patch have a very irregular arrangement. In places they seem to lie in the outer wall of a large vessel, the lumen of which is free from them, except at one corner, where they may be seen eating their way through the wall. Around this they can be seen to lie in small vessels, especially the interalveolar capillaries. A certain amount of fibrous-tissue thickening has occurred here and there, and the cells them-

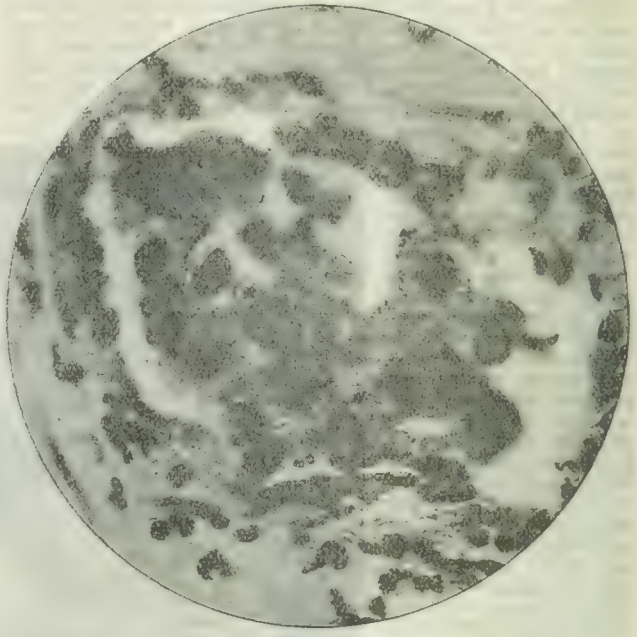


Fig. 7.—Section II: Vessel occupied by a collection of tumour cells. High power.

selves seem to be representative, mostly, if not entirely, of the syncytial layer cells, though this is not always easy to decide.

Dr. Ewen Maclean thought the demonstration the Section had just listened to was of the highest importance, as tending to establish what might be regarded as a sufficient degree of departure from the symptoms and physical signs of ordinary

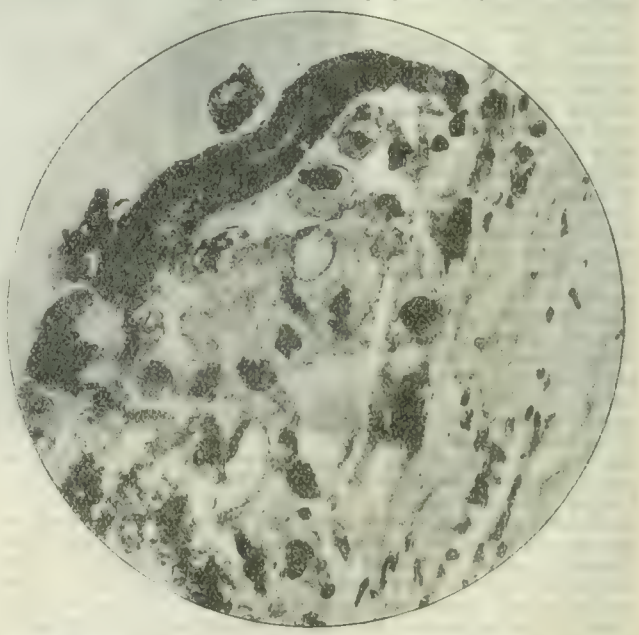


Fig. 8.—Section I: Part of an elongated collection of cells occupying a vessel; the endothelium has disappeared. High power.

hydatid mole to warrant the diagnosis of chorion-epithelioma. The removal of the uterus was clearly the indication where the diagnosis of the condition under discussion was established, whereas simpler means were

adequate for the simpler condition. Microscopic specimens from intrauterine scrapings were often misleading.

Dr. F. J. McCann said the cases narrated at the meeting emphasized what might be now regarded as a clinical fact, namely, the variation in malignancy of the different types of chorion-epithelioma. Dr. Martin's case closely resembled in microscopic appearances and clinical history one already recorded by Dr. McCann in the *Journal of Obstetrics and Gynaecology of the British Empire*. No syncytial masses were seen in the sections from the uterus or from the secondary deposits in the lungs. It was probable that cases where syncytial masses were absent were really more malignant. In his own case and in that of Dr. Martin the growth of the disease was very rapid. Dr. Savage's case resembled another published by Dr. McCann in the same journal, where vaginal hysterectomy was performed more than two years ago and the patient remained well. For this reason he would regard the prognosis as good in Dr. Savage's case.

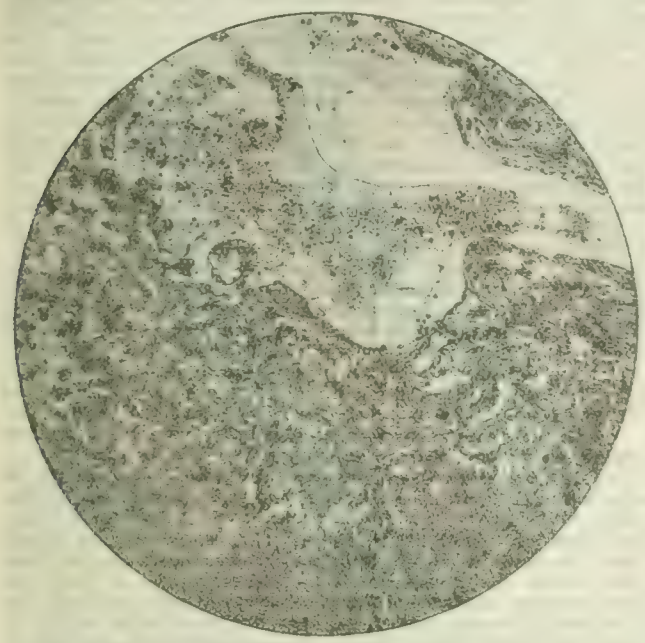


Fig. 9.—Section IV: Secondary deposit in the lung.

Dr. J. B. Hellier (Leeds) said that he had published two cases of chorion-epithelioma in the *Obstetrical Transactions*. He was struck with the tendency which this disease showed to extend through the uterine wall and contract adhesions with the intestines and omentum. This seemed to show the advantage of the abdominal route in removing the uterus. He would remove the ovaries, whether they seemed to be diseased or not, since only microscopic investigation could decide their condition.

A CASE OF DECIDUOMA MALIGNUM (CHORION-EPITHELIOMA).

BY

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and

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A considerable number of cases of deciduoma malignum, or chorion-epithelioma, as it has been more correctly designated by Marchand, have now been put on record; 188 were epitomized by Teacher in his paper published last year. These have been almost entirely collected from hospital patients, very few as yet having been recorded from private practice. The case here described occurred in the work of a country practice, where the difficulties in arriving at an accurate diagnosis were considerable, so that the experience obtained may make these notes appeal more forcibly to the general practitioner than if the patient had been within reach of the resources of a large general hospital. It is, then, rather because of the circumstances under which this case was investigated and treated that we venture to record it; they may cause it to attract the attention of many, who have hitherto taken but a vague and academic interest in chorion-epithelioma, and scarcely looked on it as a disease likely to cross their path. But, in all likelihood, when its clinical manifestations are more widely known, and when cases are more carefully investigated, it will prove less of a rarity than was at first surmised, just as has happened with so many other diseases before their exact nature and signs were recognized.

The patient was 24 years of age. There was no family history of cancer and nothing of moment in her previous history. The catamenia had always been regular. She was married in March, 1902, and the first confinement took place on April 30th, 1903. The labour was protracted as the child was a large one, weighing 12½ lb., and delivery was effected by forceps under chloroform. There was further difficulty in the third stage, the hand being used to dilate the contracted cervix and extract the placenta. There was little haemorrhage, but an intrauterine douche of 1 in 4,000 perchloride of mercury was given. For a few days the patient's condition caused considerable anxiety; on the second day there was a slight rigor and the temperature rose to 103° F., but matters quickly mended, and by the end of a fortnight she was able to sit up in a chair, though still pale and feeble. For the next few months there was daily a slight non-offensive reddish-coloured discharge, with some pain in the back and loins, and a feeling of weakness, but not enough to make the patient lie up or interfere with her performing her ordinary household duties. She remained distinctly anaemic, but continued to nurse her child. Some six months after her confinement she sought advice as she felt weaker and was hardly able to do her housework. She suffered from occasional fainting attacks, and was very short of breath; there was some pain in the lower abdomen and a feeling as if there was a lump there. The discharge continued. On examination the uterus was found enlarged, the sound passing 3½ in., but was freely movable. No thickening was felt in the pelvis. A daily hot vaginal douche was ordered and a tonic, and nothing more was heard of her till January, 1904, when she again sought advice as the haemorrhagic discharge had become constant and offensive during the later months of 1903, and the other symptoms had become aggravated.

Clinical History.—On January 16th, under ether, the uterus was scraped with a blunt flushing curette after dilatation with Hegar's dilators, and a large quantity of tough fibrinous material removed, together with masses of greyish white colour, like altered blood clot. During this operation there was considerable bleeding, and it was followed by more shock and collapse than is usual after so trifling a procedure. Afterwards there was irregular fever running to 102° or so, with a fairly copious blood-stained discharge of very offensive odour, suggesting decomposing blood. There was pronounced anaemia, with loss of appetite and considerable pain and tenderness over the region of the uterus. A week after the curetting a large mass of clot and fibrinous material was found lying in the cervix and vagina and removed; a portion of this was sent to the Clinical Research Association, but the report was not received till subsequent to the vaginal hysterectomy, which was performed a few days later. The diagnosis returned was "deciduoma," and the authorities of the Association asked for more material and further particulars of the case. As the woman was steadily going down-hill, she was removed on February 2nd to the Royston Cottage Hospital for better nursing and attention. When admitted her condition was most grave; there was extreme pallor and breathlessness and some abdominal pain; temperature, 103°; discharge, haemorrhagic and very offensive. On February 3rd the uterus was again cleared out with the blunt curette, the same material as before being removed and again with very free haemorrhage. The patient was in a very critical state, and required frequent injections of strychnine, as well as saline and brandy infusions by the rectum. By this time it was evident that the case was not one of retained products of gestation, and that removal of the uterus was the only thing to be done. At a consultation on February 5th the patient's condition had improved slightly. The temperature, which had reached 104° on the preceding evening, had dropped to 98°; the pulse was 120 and small. There was some sickness with slight distension of the abdomen and tenderness over the lower part. Under ether anaesthesia the discharge was noticed to be extremely offensive, and the uterus, which was about the size of a three months' pregnancy, was movable and no thickening or infiltration was discovered outside it. The os was patulous and easily admitted a finger, which discovered a large irregular mass invading deeply the posterior wall of the uterus, so as to give rise to the question as to whether the wall had been perforated or not. It was decided to proceed straight away to do vaginal hysterectomy and this was accomplished without any great difficulty. Both ovaries were examined and were found to be small, and no marked development of corpora lutea was noticed on external examination. The patient stood the operation remarkably well and made distinct improvement for some days afterwards. The pain diminished and the temperature which had risen again dropped to a lower level, but there was extreme prostration and anaemia. On February 7th she had an attack of severe diarrhoea, which was controlled by opium and starch enemata, and afterwards began to mend rapidly. On February 15th the temperature, which for some time had not exceeded 100°, rose to 102°, and the patient complained of pain in the chest, below the left clavicle. There was a frequent troublesome cough, but no definite physical signs in the lungs and no expectoration; soon after a swelling appeared below the outer part of the left clavicle, which was very tender to the touch; it was thought to be a secondary growth, and nothing was done except to cover it with wool and protect it from injury. With the appearance of this swelling the

temperature began to fluctuate between 99° and 102°, and with profuse sweats and anorexia, and a general going back in the patient's condition. The swelling increased to the size of a small Tangerine orange, the skin over it became red, and when it was almost pointing through the skin an incision was made into it and about 2 oz. of thick yellow pus evacuated. As a result, the temperature dropped to normal, and the patient's general condition rapidly improved. She was able to return to her home on February 23rd. At the end of a week the abscess had closed, and the patient made slow but steady improvement, and was able to sit up to dinner and to go out in a Bath chair. On March 15th she had an attack of sudden and severe pain in the head and abdomen, with symptoms of collapse, frequent vomiting of yellow fluid and marked pallor. There were no definite physical signs, except great abdominal tenderness. She rapidly became worse with severe paroxysmal headache, abdominal pain, vomiting, and symptoms of general collapse, and died on March 18th, six weeks after the operation.

Pathological Report.—The uterus on removal showed no signs of disease externally. It was opened by an incision through its anterior surface. The greater part of its posterior wall was occupied by a rough haemorrhagic mass, with an extremely offensive odour. After hardening in formalin, a further section was made through the posterior wall; this showed that the wall was very extensively involved, the growth at one place extending right up to the peritoneal surface, though not actually coming through. The uterus measured 5 in. by 4½ in. Microscopically, the uterine muscle was found to be extensively invaded by multinucleated syncytial cells, and numbers of large rounded nucleated cells with clear protoplasm. Extensive necrosis of the tissues was present, and large masses of blood fibrin. A partial *post-mortem* examination was allowed. A large quantity of fluid blood was found in the peritoneal cavity, especially in the pelvis and lumbar regions, with a mass of recent clot between the liver and diaphragm. The intestines and omentum were stained with blood clot. There was no peritonitis. Numerous secondary growths of about the size of peas or cherry stones were scattered all through the liver, forming dark, slate-coloured nodules. Nothing abnormal was noticed in the pelvis; the incision in the pelvic floor was completely healed, the ovaries were normal, and no secondary deposits were found. The kidneys and spleen were also free from growth, as were the lungs, which only showed slight emphysematous change. One of the ovaries and portions of growth from the liver were reserved for microscopical examination. Microscopical examination of the ovary proved negative. The portion of the liver cut contained one of the small dark nodules. It was found to consist largely of blood clot; at the edges of this clot and invading the liver substance were cells exactly like those seen in the uterine growth—namely, multinucleated syncytial cells and large oval nucleated cells with clear protoplasm. There was extensive round-celled infiltration of the liver substance in the neighbourhood of this haemorrhagic growth as well as other smaller haemorrhages in the liver substance.

Remarks.

This case exhibits many points of clinical interest and forms a very excellent object lesson in the diagnosis of the disease. It followed, not a molar pregnancy, but a full-term delivery, as was the case in 26 per cent. of the 188 cases collected by Teacher. Well-marked symptoms did not follow immediately on the termination of the pregnancy, but recovery from the confinement was not complete, the patient remaining anaemic and feeble, and throughout the illness there was some sanguineous discharge, though not enough to cause her to seek advice at once. When she did so, about six months after her confinement on account of pelvic discomfort and bearing-down pain, the uterus was found enlarged, the sound passing 3½ in., and this was still the case when she returned on account of the increase and offensiveness of the discharge.

This haemorrhagic discharge is the most characteristic symptom of uterine chorion-epithelioma, and as it is generally accompanied by some enlargement of the uterus, the diagnosis of retained products of gestation is the one usually made. When there is cachexia, fever, and perhaps rigors, putrefaction of the retained mass is the natural conclusion. Hence, in such cases dilatation of the uterine canal and an attempt to remove the mass is the first step, but unless a finger is actually inserted into the cavity and the state of affairs carefully investigated, the real condition may not be suspected, especially as the removal of considerable masses of tissue may be taken to confirm the diagnosis made, and lead to a hope that it may end the trouble. It will be observed that in this case the amount of haemorrhage and the shock and pain consequent on the curettings on both occasions gave rise to some anxiety, and this, in itself, is suggestive of something more than simple retained products. Haultain has recorded a case where the violent haemorrhage which accompanied the clearing-out of the uterus led him to have a microscopical examination made of the fragments removed, by which he was able to recognize the case as one of chorion-epithelioma.

The next point is the persistence of the symptoms after the supposed evacuation of the uterus, thus leading to the impression of the first operation having been incomplete. This also has been noted before, and was the cause of a full examination of the uterus in a case of this disease, operated on in St. Thomas's Hospital a few years ago.[1] There was also another sign common to it and the present case, namely, the absence of any diminution in size of the uterus; though the haemorrhage ceased for over a fortnight after the evacuation of the uterus, the fundus was still palpable 2¾ in. above the pubes. The fever, rigors, and the offensiveness of the discharge are easily explained by the presence of the putrefying mass of blood clot, which forms on the surface of this haemorrhagic growth. The abscess which formed under the clavicle in our case was evidently the result of infection from this source.

The rapidly-fatal result is only in accordance with the general experience of this disease, though several cases of freedom from recurrence have been recorded after radical operations.

The necropsy was not a complete one, but it may be worth while to draw attention to some points of interest in it. First of all, the diffusion of growth was, as is usual in chorion-epithelioma, by the blood stream and not by the lymphatics, but the general diffusion, which is common, was not found. The liver was the only organ in which secondary growths were found, though the intense headache noticed a few days before death may have indicated cerebral metastases. It is remarkable that there were no nodules in the lungs. The cause of death was evidently the haemorrhage into the peritoneal cavity from the liver growths. This is no doubt due to the haemorrhagic nature of the tumour, and has been observed several times before. In Teacher's table we notice four such, No. 55 (Jacubasch), where death was due to intraperitoneal haemorrhage from a small nodule on the back of the uterus; No. 62 (Kaltenbach), from the growth perforating the uterus and causing haemorrhage; No. 84 (Leopold), where pain in the abdomen and collapse led to operation, when the intraperitoneal haemorrhage was found to come from a subperitoneal uterine nodule; in this case the haemorrhage was not fatal; No. 156 (Schmorl), where death was due to the rupture of a large tumour in the omentum, attached to the underside of the liver.

Finally, we may briefly summarize the practical lessons which may be learnt from our experience in this case.

In view of the resemblance of the early symptoms of chorion-epithelioma to those of retained products of gestation, the interior of the uterus ought always to be carefully explored. When there is much bleeding and shock after the removal of fibrinous and placenta-like tissue from the uterus a finger ought to be inserted, if this has not already been done, and the curettings reserved for microscopic examination. Here it may be worth while to call attention to what Teacher has said about the care which ought to be taken to collect all the material possible for this purpose. If no trouble is taken, only the superficial clots may be obtained, and the result of the histological examination rendered valueless. The whole of the curettings should be submitted to the pathologist and in proper condition, and an endeavour should be made to get portions of the growth itself. If, after a curetting, there is persistence of symptoms—haemorrhage, offensive discharge, fever, etc., with no sign of diminution in the size of the uterus—the question of hysterectomy ought to be seriously considered. This, of course, would apply more especially to those cases where the condition followed the evacuation of a hydatidiform mole. That the chances of a favourable result are considerable is shown by the slight diffusion of growth in this case. There was no local recurrence in the pelvis, and the liver was the only organ involved. Also, the nodules there were all of small size, so that with an earlier radical operation the prognosis would have been good. The difficulty in obtaining sufficient evidence as to the nature of the case before metastases have occurred is doubtless in part the cause of the grave outlook. Also, where the discharge is very offensive and there is putrefaction of the adherent clot the possibility of secondary infection and the formation of abscess must be kept in mind. If the swelling below the clavicle had been present before operation it might have been thought to indicate general diffusion and contraindicate hysterectomy. It was only when it fluctuated very distinctly and showed signs of coming through the skin that it was opened and found to contain pus only.

It is highly probable that numbers of similar cases after abortion and labour are passed over as sapraemia from retained products of conception, so we trust that the account of this case may help others in like circumstances.

We acknowledge our indebtedness to Teacher's most valu-

able summary of this disease in the *Journal of Obstetrics and Gynaecology of the British Empire* for July and August, 1903. The references in this report are all taken from that paper, excepting that from the *St. Thomas's Hospital Reports*.

REFERENCE.

1 *St. Thomas's Hospital Reports for 1900*, vol. xxix, p. 270.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

REMOVAL OF A STICK, USED TO PROCURE ABORTION, THROUGH THE ABDOMINAL WALL.

IN April, 1902, I was consulted by a Hindu woman about a painful swelling in the lower part of the abdomen. The patient gave a false history of a fall several weeks before coming to me. When seen she was in evident pain and very weak, with a temperature of 103.2° F. On examination, a pelvic abscess, pointing about 2½ in. above the pubes in the middle line, was found, and in this some hard structure could be felt. Without any anaesthetic the abscess was opened, and a piece of stick, 6 in. long, was removed, together with a large quantity of foul pus. The true history was then revealed. The stick had been introduced four months previously to procure abortion, that end being obtained. The patient made an uninterrupted recovery.

This is by no means an uncommon mode of trying to procure abortion in India, but, even after inquiry, I have never heard of a patient recovering after the uterus had been pierced, and an abscess formed by a stick introduced per vaginam, and eventually removed through the abdominal wall.

Jammalamadugu, South India. ERNEST W. LEWIS.

A NEW METHOD OF DEALING WITH THE STUMP OF THE APPENDIX.

IT has always appeared to me that a certain amount of danger to the patient exists after removal of the appendix if the stump is ligatured and then partially invaginated and overstitched, or merely left free in the abdominal cavity after disinfection; consequently I have recently adopted the following method of dealing with the stump:

The mesentery of the appendix is first tied off and then divided with scissors, leaving the appendix free up to its junction with the caecum; a purse-string suture of catgut is then inserted near its base through the peritoneal, and part of the muscular, wall of the caecum; a ligature is next tied round the appendix close to its base. While an assistant holds the caecum just beyond the purse-string suture the base of the appendix is cut through with a single cut of the scissors, leaving a stump resembling a nipple; there is no pouting of the mucous membrane in the stump, but rather an invagination at its very apex: the stump is gently invaginated into the cavity of the caecum as the assistant tightens the catgut suture; the peritoneal surfaces come well together, and the operation is finished as far as the removing of the appendix is concerned.

I have now done 6 cases in this way, and have found that at the end of the first week, when the skin stitches are removed, there is an entire absence of pain on deep pressure over the seat of operation; and, further, that no feeling of soreness is complained of when first the patient walks about.

The chief advantage of this method, to my mind, is that the stump of the appendix is not left in a sealed cavity, as in Howard Kelly's method, nor in the abdominal cavity with a raw surface to which bowel, omentum, or the fimbriated end of the right Fallopian tube may adhere and so cause trouble in the future, probably in a few months or even weeks.

The method may at first seem a very risky one, but when one remembers that the muscular fibres in the appendix near its base are chiefly circular, and consequently when the appendix is divided those in the stump at once contract and shut off the mucous surface and practically close the lumen, there is no risk at all, and the advantage is twofold—(*a*) no pocket with possibly an infectious stump in it, (*b*) no raw surface in the abdominal cavity.

When the appendix is about to be divided the patient must be well under the influence of whatever anaesthetic is being administered.

J. M. Y. STEWART, M.B., C.M.Glasg.,
Guildford, Western Australia. Swan District Medical Officer.

THE TREATMENT OF SEA-SICKNESS.

HAVING completed many voyages as surgeon on a large emigrant steamer, carrying many hundreds of passengers of all classes each trip, I feel that some account of methods I have found valuable in the treatment of sea-sickness may not be entirely devoid of interest. I am tempted to publish these remarks by the idea, which seems to be so prevalent, that little or nothing can be done to relieve this distressing malady. Now in the majority of cases very great relief can be given, and many cases can be cured. I came to sea with the idea that drugs were useless, but I myself was my first patient, and I completely staved off all illness in exceptionally severe weather and never missed an ordinary meal. Whenever I felt any nausea I simply took a couple of teaspoonfuls of the chloral and bromide mixture described below.

1. *Position of Patient.*—At the first onset of uncomfortable sensations, a broad, tight flannel belt should be worn, and every effort should be made to remain on deck in the breeze. However, a time often comes when the patient prefers to go below and lie down. The essential point about the position is that as low a pillow as possible should be used. There seem to be very few exceptions to this rule. Usually, lying on the back is preferable to the side.

2. *Diet.*—The food which I have found to be most readily retained is either devilled biscuit—that is, dry biscuit, buttered, and lightly sprinkled with cayenne pepper, and then roasted for about ten minutes, until a crisp, dry biscuit results—or egg flip. The latter must be taken with closed eyes, and without knowledge of its nature, as the colour is exceedingly repulsive to these patients. Alcohol always appears to be inadvisable until the worst is over, but then champagne is frequently of great service. Except in very severe cases, the less fluid taken the better; but in very obstinate cases, if the above diet fails, beef-tea or some other form of meat extract is often very gratifying.

3. *Drugs.*—Lastly, we come to the most important item in the treatment. There are two prescriptions which I have found absolutely invaluable. The better one consists of 2 drachms of syrup of chloral and ½ drachm of ammonium bromide made up to 1½ oz. with water. The taste is not objected to as much as one would imagine, as sea-sickness very commonly produces a craving for something with a taste of salt. The mixture should be taken at the rate of a teaspoonful every five minutes until either relief or sleep results. It is rarely necessary to take more than four or five doses. The effect is often marvellous, and, if taken at the beginning of the attack, all nausea usually passes off at once. During the prevalence of bad weather a teaspoonful or so is usually required at intervals during the day. In those few cases where this prescription fails great success frequently attends the administration of 1-minim doses of tincture of iodine in water every half-hour.

When the patient is not seen until he has been ill for a day or two, it is well to commence treatment with 2 gr. of calomel; this seems to be preferable to any other aperient.

CHARLES W. T. WOODS, L.R.C.P., M.R.C.S.Eng.,
Surgeon, Union-Castle Mail Steamship Company.

HYPERPYREXIA FOLLOWING PARTURITION.

THE patient was a 6-para, aged 42, whose last child was born six years ago. The waters broke early on the morning of July 9th, and during the whole of that day and the following night she suffered from slight pains. On the next morning they became more severe and the cervix slowly dilated, delivery occurring naturally at 4 30. The child was a very large one, estimated at from 13 to 14 lb, but was not weighed; it was stillborn. She was very exhausted after delivery, the pains having been very severe. The placenta made no sign of separating, and after an interval a slight effort was made at expression, but there was too much tenderness to allow of this being done. About three-quarters of an hour after delivery the patient became restless and threw herself about on the bed, not seeming to understand when spoken to. Shortly after she became unconscious, with noisy breathing, but hardly bad enough to be called stertorous. There was no convulsion. Noticing that the surface of the body was very hot, the temperature was taken and found to be 107° per axillam; in the rectum a few minutes after it was 108°, rising to 109.2°. I cold-packed her, and the temperature slowly came down—about three degrees an hour to begin with, but more slowly later. It fell to 101.4°; but the heart failed and she died soon after 11 p.m., not having recovered consciousness. The placenta was expressed as soon as she became unconscious, when also, thinking that the uncon-

sciousness denoted eclampsia, I gave a hypodermic injection of morphine (½ gr.); afterwards I gave injections of strychnine and 20 gr. of quinine per rectum.

Exeter. MARK FARRANT, L.R.C.P., M.R.C.S., D.P.H.

ACUTE LOBAR PNEUMONIA FOLLOWING SEPTIC TONSILLITIS.

A WOMAN, aged 34, complained of sore throat on August 3rd; temperature 105°. On examination both tonsils were found inflamed, with a large slough on the left side. On further examination no other symptoms were found to account for the high temperature. She was treated with sodii sal. mixture, but with no reduction of temperature, and a throat-wash of boric acid and glycerine. The next day the temperature still remained 105°. Antipyrin was given in 10 gr. doses every four hours, but still no reduction of temperature occurred. The throat was, however, cleaner and less angry-looking. On August 8th, on again examining the lungs, distinct dullness and harsh breathing sounds over the lungs. No pain, but breathing was short and slightly quicker than normal, with no distress. She was placed on quinine and aconite mixture with a jacket poultice, but died during the night.

I think we might call this a case of acute specific infectious fever. No doubt the state of the general health had been lowered previous to the throat affection, and the constitution was less capable of resisting the invasion of the infective germs. The winds prevailing at the time were carriers of dust, as well as abstractors of heat, and while, on the one hand, they carry away heat from the surface of the body, on the other hand, they gather up dust of all kind, and blow all manner of micro-organisms into the air passages. Any depressing agency may predispose to pneumonia, as exhaustion from physical fatigue and depressing emotions and cold winds. In this case the fever did not run parallel with the physical signs of pulmonary inflammation; the fever existed before any local signs were manifested. Moreover, it resembles the specific fever in its typical course—the rapid onset.

Sir John W. Moore, in his book on meteorology, describes pneumonic fever, and I think this case will come under that heading. No doubt, if the patient had been removed to another house, the chances of recovery would have been greatly enhanced. I am unable to state what the sanitary conditions of the house were. Unfortunately, no bacteriological examination of the throat was made.

EDWARD CARNALL, D.Ph., M.R.C.S.Eng., L.R.C.P.

Conway, North Wales.

NEURALGIA OF THE FIFTH NERVE.

THE following cases illustrate points of interest in connexion with the subject of neuralgia affecting the fifth nerve:

A. B., aged 32, was placed under my care by Dr. David Watson for severe supraorbital neuralgia which had existed for five years. The pain was entirely confined to the branches of the supraorbital nerve, and did not involve the other divisions, nor did the pain affecting the supraorbital at any time produce a typical epileptiform neuralgia. On this account, I advised removal of a portion of the supraorbital nerve. This, however, only relieved the pain for three weeks, and I therefore removed another portion of the nerve right back to the fissure. The pain was not relieved by this second operation, and therefore the Gasserian ganglion was removed, the patient consenting, as the pain she suffered was so intense.

Assisted by Drs. Bryce, Buchanan, and Adamson, Dr. Watson being present, I performed the high operation recommended by Hartley and Krause, as also by Sir Victor Horsley, to which I referred in my notes of two cases of excision of the Gasserian ganglion in a paper published in the BRITISH MEDICAL JOURNAL in November, 1900. In the present case I opened the skull with a burr, enlarging the aperture by clipping forceps. This method is much safer than using the trephine, as the dura is completely protected from injury. After the dura was separated, the ganglion was removed along with a portion of the ophthalmic division of the fifth, which was divided close to the ganglion to avoid injuring the cavernous sinus; a portion of the superior maxillary division was then drawn out of the foramen rotundum, and divided; the inferior maxillary division was also divided. The bleeding was troublesome, but not excessive, and the operation took, as it generally does, two hours to perform. A small catgut drain was left at the angle of the wound, and the soft parts stitched without replacing any bone. The dressings were carefully arranged so as to protect the eye, and allow of its being bathed without disturbing the main dressing. The eye did not suffer as it sometimes does after cutting the ophthalmic division. The wound was healed in ten days; the patient recovered, and is quite free from pain.

This case I have recorded earlier than I would otherwise have done, the reason being that as the pain was entirely confined to one division of the nerve, I was hopeful that the less serious operations would be successful in getting rid of the pain. Generally, when one division is affected all the other divisions sympathize, and an epileptiform neuralgia is the result. It is therefore well to keep in mind that where the pain is excessive, even although only one division is involved, it may be necessary to remove the Gasserian ganglion.

The following cases illustrate recovery after Thiersch's operation:

A. K., aged 69, had severe neuralgia in the left side of her face. Three years ago the infraorbital nerve was exposed and partially removed, and the pain has not recurred.

J. D., aged 70, had suffered from severe infraorbital neuralgia for five years. The nerve was exposed, and drawn out both upwards and downwards, and there has been no return of the pain for a year.

The next case shows the value of division of the nerve at the foramen ovale externally.

R. C., aged 47, sent to me by Dr. Fraser of Kilsyth, had suffered from severe neuralgia in the inferior division of the fifth. The zygoma was divided, and the nerve cut as it comes out from the foramen ovale; the zygoma was replaced and stitched with silver wire. This entirely removed the pain, and Dr. Fraser reports that he is quite well, it being a year since the operation.

J. CRAWFORD RENTON, M.D.,
Surgeon and Lecturer on Clinical Surgery,
Western Infirmary, Glasgow.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

CENTRAL LONDON SICK ASYLUM, HENDON, N.W.

A CASE OF PHLEGMONOUS OR ACUTE SUPPURATIVE GASTRITIS.

(By JOHN HOPKINS, F.R.C.S., Medical Superintendent, and JOHN S. F. WEIR, M.B., B.Ch., R.U.I., Senior Assistant Medical Officer).

W.C., aged 38, labourer, was admitted to the Central London Sick Asylum, Hendon, on December 28th, 1903, suffering from mild cystitis. The following are notes of the case:

Previous History.—The patient was crushed between the buffers of a railway engine four years ago. Gives a history of syphilis twenty years ago. No history of stomach trouble.

Present Illness.—About eight or nine weeks ago he noticed that his water was thick and had "matter" in it, and that he could not retain it at night. He also suffered from abdominal pain after eating meat. He had an attack of giddiness in the street about three weeks ago.

On Admission.—The patient is a well-nourished man, somewhat dull and deaf. Temperature 97.6° F. Abdomen: Dullness on percussion in the left lumbar region and above the pubes, and he complains of pain in the same parts. Heart and lungs: Normal. On the dorsum of the penis there is a small fistula leading down to the urethra. Urine: Specific gravity, 1020—alkaline, trace of abumen, deposit of oxalates.

Progress.—The patient was given urotropine 10 gr. t.d.s., and rapidly improved, and on February 8th the urine was reported normal.

February 13th. This evening he had a slight rigor and the temperature rose to 104.2° F.; the skin is very pungent and he complains of headache and abdominal pain and some soreness of the throat. There is some epigastric tenderness and a few rhonchi are audible in the chest. Throat: Slight congestion of fauces and pharynx.

February 17th. The temperature is still up; it was 103.4° yesterday evening, pulse 84. To-day he complains of pain and tenderness in the epigastric region. He vomited 12 oz.

of bilious material yesterday. The area of gastric resonance is considerably increased downwards.

February 19th. Vomited yesterday, but has not done so to-day; temperature 102° F. yesterday evening and 100.2° F. this morning; he still complains of severe epigastric pain and there is extreme tenderness on palpation. Tongue: Thick white fur. Bowels constipated.

February 21st. Was somewhat better yesterday, but to-day vomited 8 oz. Temperature, 99.2° F. The urine contains a trace of albumen.

February 23rd. Feels better to-day, but still complains of abdominal pain, which is most severe to the right of the epigastrium and is increased by pressure. He vomited a small quantity this morning.

February 24th. This morning at 5 a.m. he was seized with violent abdominal pain, most severe in the umbilical region. Temperature, 104° F., pulse 120, feeble and thready; he lies curled up in bed with face drawn. The abdominal muscles are held rigid and do not move much on inspiration. There is extreme general tenderness all over the abdomen. Liver dullness normal. Tongue dry, no jaundice. The diagnosis of acute general peritonitis was made and the patient was given opium and hot stupes applied to the abdomen.

February 25th. He grew rapidly worse during the day, and vomited frequently bile-stained fluid. He died the same night at 11.55 p.m., vomiting a large quantity just before death.

Necropsy.—This was performed about fifteen hours after death. The body was that of a well-nourished man. On opening the abdomen the coils of small intestine were seen to be much distended, acutely congested, and glued together by grey flakes of lymph. The large bowel was also congested, and there were about 12 oz. of purulent fluid present in the pelvis and lumbar regions; no trace of perforation in the larger or small bowel could be seen. Stomach: The wall felt considerably thickened at the pyloric end, and on the lesser curvature, about 4 in. from the pylorus, two abscesses about the size of a pea, were seen, pointing beneath the peritoneum. The organ was then removed and opened along the lesser curvature, when there was seen to be an extensive formation of pus beneath the mucous membrane at the pyloric end. In several areas there were bulgings, and when these were incised pus exuded freely. The pus was yellowish-white in colour. The two small abscesses on the lesser curvature were seen to have tracked from the submucous to the subserous coat; they appeared to have been the cause of the acute general peritonitis. Large areas of the mucous membrane could be raised up from the submucous coat; the stomach wall in parts was eight or nine times the normal thickness. The mucous membrane of the cardiac half was intensely congested, and presented numerous small haemorrhages. Kidneys: Cortex pale, medulla slightly congested; the capsule was adherent in parts. Spleen: Soft and diffluent. Pancreas: Much congested. The mucous membrane of the intestines was normal. Bladder: Wall somewhat hypertrophied. Chest: Left lung firmly adherent throughout; right lung showed some emphysema. Heart: normal.

PATHOLOGICAL REPORT.

The following report was kindly made for us by Professor J. Lorrain Smith, Queen's College, Belfast: The mucous membrane of the stomach was congested. At the pyloric end of the organ the wall was much swollen from the presence of a localized inflammation. This area of inflammation extended over about one-third of the stomach wall, and stretched beyond the pyloric valve for a short distance in the wall of the duodenum. There were no areas of sloughing or ulceration in the mucous membrane over the site of the inflammation. The peritoneal surface of the stomach was not inflamed. The exudation was most marked between the mucous and muscular coats, and on incising the wall it was found that a large amount of fibrin had been deposited at this point in the form of a more or less continuous layer. This had led to detachment of the mucous coat. The mucous membrane of the duodenum had not been detached.

Microscopical Examination.—There was extensive necrosis of the surface epithelium of the mucous membrane. The deeper parts of the glands had survived, but their structure was obscured by the presence of a large number of the round cells of inflammation. The submucosa and the muscular coat showed evidence of extensive inflammation. The exuded cells formed focal groups here and there, and from these centres there passed out round the vessels strands of tissue of the same type. In some of the spaces in this tissue there was a copious deposit of fibrin in the form of a meshwork, enclosing in it a few leucocytes. The vessels were congested, and in the lumen of some of the larger branches a clot was found. The clot consisted of a loose meshwork of fibrin enclosing leucocytes. The inflammatory exudate could also be observed amongst the fat cells under the peritoneum. The bacteria found in the foci of inflammation were chiefly diplococci; there are scattered about a few bacilli, but these are probably due to *post-mortem* infection.

REMARKS.—The case appears to be a fairly typical example of the diffuse variety of phlegmonous gastritis. The sudden onset, with the rigor, epigastric pain, and later the bilious vomiting, have been the leading features in the cases recorded. Recovery is rarely possible. It is a very rare disease, and only some 16 or 17 cases have been met with in this country, the larger number having been published in Continental literature. The pyloric region is the favourite seat, and it is much commoner in males than females; in all cases the submucous coat is the one mainly affected. The diffuse variety is much commoner than the circumscribed and the diagnosis is rarely possible. The best account of the disease is given by Professor Leith in the *Edinburgh Hospital Reports*, vol. iv. In many cases the disease is associated with a septic focus somewhere, for example, puerperal fever, in other cases with alcoholic excess, dietetic errors, or carcinoma of the stomach. Our case illustrates (1) the extreme obscurity in the etiology, (2) the great difficulty in the diagnosis from other forms of acute gastritis. The cause is very obscure, as there was no focus of suppuration and no dietetic error, and the history of trauma four years previously would hardly have been a factor. Moynihan recently collected 81 cases and compared the two forms to cellulitis and subcutaneous abscess. If rupture of the abscess took place into the stomach the vomited material would probably settle the diagnosis. The condition has no marked age incidence.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BIRMINGHAM BRANCH: COVENTRY DIVISION.

Coventry, Tuesday, November 1st, 1904.

CHARLES DAVIDSON, M.D., Vice-Chairman, in the Chair.

Specimens.—Dr. DAY showed a cirrhosed liver from a boy aged 19, with microscopic sections: the liver presented every appearance of alcoholic cirrhosis, though there was no history of alcohol.—Dr. HARMAN BROWN showed a cancerous cervix uteri which he had removed by abdominal hysterectomy from a woman aged 43, whose breast he had at the same time amputated for cancer.—Mr. W. E. BENNETT showed radiographs of cases of congenital hip-disease taken before, during, and after treatment.

Albuminuria in Pregnancy.—Dr. HARMAN BROWN read some notes of four cases: (1) Mrs. T., aged 36, primipara, consulted him a week before her expected confinement. Hands, feet, and face were oedematous; urine on boiling gave a heavy cloud of albumen. Labour induced at once: position occipito-posterior: except for a few twitchings of hands, no bad symptoms supervened. Recovered. (2) Mrs. D., aged 27, primipara; slight albumen was found a month before expected confinement; no interference. Labour commenced at the expected time; occipito-posterior; had not voided urine for ten hours; catheter passed, and only ℥ij in bladder; this was loaded with albumen. Slight twitching of arms. No urine excreted for thirty-six hours after labour; during this time the patient was semicomatose; hot pack used. Recovered. (3) Mrs. F., aged 31, primipara. Oedema noticed at eight and a half months; urine loaded with albumen. Labour induced at once. Position, occipito-posterior. Six hours after child was born she had a fit, and two more within an hour. Chloral and potassium bromide were given: hot pack. No more fits, but was semicomatose for forty-eight hours. Recovered. (4) Mrs. W., aged 24, primipara. Labour was nearly finished when Dr. Harman Brown was sent for. Position, occipito-posterior. Slight oedema of hands and legs noticed. A catheter specimen of urine two days later gave a heavy cloud of albumen. First fit ten hours after labour, then in the next twenty-four hours had over twenty-five fits. During the last two hours she was in a continual state of spasm. Chloral and bromide of potassium, hot packs, saline injections per rectum, calomel and

magnes. sulph., chloroform, were all used. Finally, Dr. Harman Brown transfused into both axillae. After transfusion the skin perspired freely and urine soon began to fill the bladder. No more fits; recovered. Remarks: All four cases were primiparae; all had occipito-posterior presentations, possibly causing more pressure on the ureters. The effect of transfusion in the last and worst case was interesting.—In the discussion which followed Drs. DAVIDSON, HAWLEY, PICKUP, BANKES-PRICE, and J. ORTON joined.

BORDER COUNTIES BRANCH: SCOTTISH DIVISION.

Castle Douglas, October 6th, 1904.

J. MAXWELL ROSS, M.B., F.R.C.S.Edin., in the Chair.

A Sanatorium for the South of Scotland.—The CHAIRMAN introduced a discussion on the question of a sanatorium for the South of Scotland. The questions of combination, size, site, etc., were fully discussed. The possibilities of supervision and care of patients after leaving the sanatorium was also considered. All the members present took part in the discussion.

Closure of Urethral Fistula by Transplantation of Sheep's Urethra.—Dr. MURRAY-AYNSLEY read a case of chronic urethral fistula in a man treated by cystotomy and transplantation of a sheep's urethra.—The patient, aged 40, was admitted at Christchurch Hospital on September 9th, 1895, suffering from stricture with about thirteen or fourteen fistulous openings. Cock's operation was performed on October 9th. On October 25th the patient was handed over to the author. There was an open granulating perineal wound 1½ in. long. Dr. Murray-Aynsley dissected out the urethra of a wether (under chloroform), the groove in the perineum being scraped by his assistant, Dr. Fenwick. The urethra was slipped over a catheter, passed down the patient's urethra, and united by fine catgut stitches; the catheter was then passed on into the bladder and the perineal groove closed with horsehair and salmon-gut sutures. The urethra healed except a small opening at the posterior part, but urine could be prevented from passing by pressure of a pledget of wool. Dr. Murray-Aynsley said that if he did another operation he would do a suprapubic cystotomy, so as to be able more surely to wash out the bladder.

Hermaphroditus Pseudo Masculinus.—Dr. MURRAY-AYNSLEY communicated a case which he said afforded another warning of how careful one ought to be in determining, in doubtful cases of sex, how to advise the parents as to bringing up the unfortunate being, as male or female. There was an old whist maxim "When in doubt, play trumps"; but more assuredly ought their maxim to be "When in doubt as to sex, be certain first of all that the infant is *not* male." The patient, T. J. M., aged 13½ years, was brought on account of change of voice and growth of hair on face. The mother stated she had been attended in her confinement by a medical man whom the author knew to have had a very extensive midwifery practice. The nurse noticed "that there was something strange about the child's privates"; but the mother was assured by the doctor "that it was all right: it was only an undeveloped female, and should be brought up as a girl." This was done; but remarks by neighbours, and doubts in the parents' minds, caused them to consult Dr. Murray-Aynsley. The patient was well developed, and thick set, with downy hair on the lips and chin (family hirsute), pomum Adami prominent, voice deep masculine, face masculine contour, breasts less developed than those of a female (Colonial) of the same age; but more prominent than those of an adult male; hair on pubes of female character—that is, sharp superior outline, but having a few hairs extending to navel; hips feminine in contour. The inclinations were towards boyish sports and occupations. On examination there was a cleft in the perineum, bordered by either folds of cleft scrotum or labia majora. On separating these folds Dr. Murray-Aynsley found anteriorly an enlarged clitoris or imperforate penis, about 1½ in. in length; from this two thin membranous folds diverged posteriorly (simulating or representing the labia minora). Parting these folds he found a membrane which might have represented a hymen. In this membrane there were two openings, one in front and slightly to the right; the other to the left of the middle line. They both admitted the passage of a No. 8 catheter. The anterior opening led to the bladder; the one behind was a sulcus about 3½ in. long, and, so far as he could judge, was a "blind" passage; it inclined towards the rectum. He examined this case three times—in the mother's house, in his own surgery, and in the Masterton Hospital, and could not find any evidence of a uterus. In the right (labian or scrotal fold) there was a thickened mass, but he could not decide on its character; nor could Drs. Butement, Dawson, and Palmer, who saw the case in consultation, determine its nature. He advised the mother to bring up the child as a boy, and his colleagues agreed, for most of the outward characteristics were male, the voice and growth of hair on the face being decidedly unfeminine. This was done, but caused so much talk amongst the neighbours that the father, who was a very sensitive man, moved from the locality, having to take an inferior position, to a distance, where there was no opportunity of observing the case. Dr. Murray-Aynsley asked the mother to let him know if there should be any appearance of menses. T. J. M. should be about 17 years old now. He had not heard anything of the family for the last two years, but might possibly hear through some of his medical friends.

REPORTS OF SOCIETIES.

CLINICAL SOCIETY OF LONDON.

FREDERICK TAYLOR, M.D., F.R.C.P., President, in the Chair.

Friday, November 11th, 1904.

CONGENITAL ELEVATION OF SCAPULA.

MR. CHARLES R. KEYSER read a paper on the case of a girl, aged 19, who was shown on January 22nd, 1904. The left shoulder-blade was raised 2½ in. above its fellow, but was of the same size. No cause for the deformity could be discovered. X rays showed nothing abnormal, and all movements of the arm, both active and passive, were normal. No osseous bridge could be felt between the vertebral border of the scapula and the spinal column. As the child suffered absolutely no pain nor inconvenience from her condition no active treatment had been adopted. Cases of congenital elevation of the scapula might be classified into four groups: (1) Where there was a bridge of bone between the vertebral border of the scapula and the spine; (2) where there was absolute absence of one or more muscles forming the shoulder girdle; (3) where there was a long and everted supraspinous portion of the scapula; (4) where there was no osseous bridge and the scapula was normal or smaller than usual, with short or otherwise defective muscles. The great majority of recorded cases fell into the last group. Group 2 was very rare, only five instances having been met with. The most interesting cases were those where there was an osseous bridge present, as it was still undecided how this piece of bone was formed, and the most gratifying results could be obtained by surgical interference. Sprengel, who drew attention to the condition, thought that it was caused by fixation of the arm, *in utero*, behind the back.

Mr. RUPERT BUCKNALL thought the condition was not due to malposition *in utero*, because the corresponding arm and hand themselves were rarely found to be affected. The special position of the scapula was due to the particular muscles affected, the trapezius and rhomboids with the levator anguli scapulae. The affection occurred in the scapular mesoblast before the differentiation of its several muscles. In some cases the ribs and spine were also abnormal.

Mr. KEYSER, in reply, thought the cases with the fibrous bridge and ossification differed from those of simple paralysis of muscles.

TRAUMATIC AXILLARY ANEURYSM.

Mr. RAYMOND JOHNSON read notes of this case, which was contributed by Dr. Ph. D. Turner and himself.

The patient, a woman, aged 70, fell downstairs on to the left shoulder, the injury being followed by much bruising of the part and paralysis of the hand and forearm. Three weeks later a pulsating tumour as large as a Tangerine orange was present in the anterior part of the axilla; the pulse at the wrist was not perceptible. After several months the muscular power had much improved, and the radial pulse was again perceptible. During the third year the aneurysm gradually increased, without symptoms of pressure, until a small bruise appeared over the posterior axillary fold; and a few days later a considerable extravasation occurred, with intense pain and extensive discolouration of the skin. The axillary artery was tied in the first part of its course. On the morning of the operation blood began to leak through a small opening in the discoloured skin. All pulsation in the axilla was arrested by the ligature, but the circulation in the limb remained good. The opening in the skin of the axilla discharged slightly until about three weeks after the operation, when a free escape of the extravasated blood occurred, and after slightly enlarging the opening a quantity of coagulum was removed. From this time the discharge lessened, the swelling completely subsided, and the final result was very satisfactory.

The chief practical interest of the case consisted in the fact that a traumatic axillary aneurysm, after extensive extravasation, was successfully dealt with by the proximal ligature. According to the usual teaching such a favourable result was hardly to be expected in such circumstances and at such an age. Probably the long duration of the aneurysm had caused the collateral supply to be well established. The treatment adopted was far less severe than that of freely opening up the axilla and dealing with the artery at the aneurysm. Reference was made to certain cases recorded by Major Birt, of traumatic aneurysm from bullet-wounds successfully treated by proximal ligature. In two cases of diffused extravasation into the axilla a successful result followed ligature of the subclavian artery in the third part of its course.

Aneurysm of Intracranial Part of Left Internal Carotid caused by Bullet Wound.

Mr. Betham Robinson and Mr. E. M. Corner contributed this case.

The bullet entered about the right outer canthus, completely destroying the right eye. There was no wound of exit. Immediately after the accident the patient was unconscious, and showed signs of cerebral irritation. The right eye was at once excised. On the seventh day the left eye was suffused, and the cornea dull: on the eleventh day there was severe epistaxis, controlled by plugging the nares; and on the thirteenth another, more severe. The cornea ulcerated, and on the twenty-fourth day sensation was absent over nearly all the distribution of the upper two divisions of the fifth nerve; ptosis and paralysis of the sixth nerve occurred; complete ophthalmoplegia externa occurred on the thirty-third day. After several attacks of haemorrhage, which always came from the right nostril, the same side as the destroyed eye, Mr. Corner ligatured the right internal and external carotids. On the sixth day after this she woke up completely blind, this being thought to be due to some lesion of the optic nerve behind the entrance of the central vessels. There was a transient hemiplegia on the left side. From now onwards there was no haemorrhage, her general condition improved, the partial paralysis passed off, and consciousness returned. On the 195th day she was sent to a convalescent home, being quite well, no bleeding having occurred since the 118th day. This period of improvement lasted for another twenty days. She was then readmitted for another severe haemorrhage from the right nostril which was stopped by plugging. Three days later a very violent haemorrhage occurred, and she died in three minutes. At the autopsy the bullet was found to have pierced the inner wall of the right orbit, traversed the body of the sphenoid, entered the interior of the skull close to the left anterior clinoid process, and lodged beneath the brain close to the calcarine fissure. A splinter of bullet had branched to the left and lodged in the under surface of the hinder part of the temporo-sphenoidal lobe. Close to the anterior clinoid process was a small aneurysm of the left internal carotid artery, and lodged in its wall was a splinter of bone. The sac communicated with the track of the bullet, and so with the right side of the nose, along which the fatal bleeding had taken place.

Appendix Abscess followed by Abscess in the Left Iliac Region.

Mr. Stephen Paget read notes of this case. He said that the occurrence of a secondary abscess after the operation for appendix abscess was not necessarily due to any breaking down of adhesions at the time of the operation. The wonder was that these secondary abscesses were so rare. The free shifting of intestine or of omentum in and out of the primary abscess cavity, and the changes of tension and of pressure due to the operation, let infection be carried or sucked from one part of the abdominal cavity to another. He mentioned a case of this kind, and then described the case of a girl, aged 13, epileptic, with appendix abscess, whose appendix was removed in April, 1903. Nine days later she had an abscess in the opposite iliac region, which also was opened and drained. Sixteen months later she was again admitted to hospital with acute obstruction. On median incision the intestines were found distended, and hidden under them was a collapsed coil, deep in the abdominal cavity, tightly nipped under a narrow transverse band. Division of this band was followed by rapid recovery. Mr. Paget commented on the fact that the epileptic fits were suspended while the wounds were discharging, and returned when they were healed. He also stated that the patient, during the sixteen months, had been subject to attacks of abdominal pain and tenderness, which occurred all, or nearly all, at night, when she had been in bed and asleep for some hours. They had been attributed in a vague way to adhesions, but the existence of a strangulating transverse band might almost have been inferred from the very nature of the case. In any case of double suppuration in the abdominal cavity, if obstruction followed, its cause must be sought not at either centre of suppuration, but between them; and would be reached through an incision midway between the two scars.

Dr. H. S. French inquired as to the relationship of the cessation of the epileptic fits during the suppuration and their return when the suppuration ended.

Dr. W. Pasteur thought the formation of adhesions after such an abdominal operation, necessitating a second laparotomy, was not infrequent.

Mr. L. H. McGavin considered that the case recorded in the paper was not wonderful, seeing that the original operation was done for acute inflammation. He related a somewhat similar case following laparotomy for tuberculous peritonitis.

Mr. R. P. Rowlands mentioned another case following some years after an operation for ovarian tumour, in which the stump was treated extraperitoneally.

Dr. Zum Busch thought most surgeons had seen cases of the kind; he described one in which there was the formation of a ventral hernia. On the other hand, searching for the appendix at second operations, he had usually been surprised to find it healthy, lying free in the abdomen, and not adherent to the caecum or any other part of the intestine. At second laparotomies, also, he had noticed how very free the abdomen was of adhesions and bands.

Mr. Paget, in reply, said that no bromide whatever was given during the three or four weeks which elapsed after the first operation. There was no rule as to the formation of adhesions in different patients.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

John Tweedy, F.R.C.S., President, in the Chair.

Thursday, November 10th, 1904.

Tumour Enveloping the Optic Disc.

Mr. Simeon Snell (Sheffield) related a case of intraocular tumour occurring in a farmer aged 37. He was first seen last February, and a month previously he had discovered loss of sight in his right eye. He could see fingers indistinctly. An opaque mass covering the optic disc was discovered. When first seen it was more cyst-like and less solid than later on. The family history was good. After a few weeks the patient disappeared, and was not seen again till the beginning of August, by which time the mass had become considerably larger. It was large and nodular, and about 2½ disc diameters in size, somewhat circular in form, and completely hid the optic disc from view. The most prominent part could just be seen with +11 D., but there was an area close to this which could be best seen with +6 D. and the macular region with +2 D. The diagnosis made was that of a tumour growing from the disc or in its immediate neighbourhood. The eye was enucleated at the end of August, and the nerve was removed as far back as possible. Close to the outer side of the nerve sheath was a small black nodule the size of a pin's head. Mr. Treacher Collins examined the eyeball and reported that at the posterior pole was a melanotic growth. Its base was 7 mm. in length, and extended from the choroid about the optic disc to a point a little lower than the centre of the disc.

Sarcomata of the Choroid.

Mr. Herbert Parsons read a paper on Anomalous Sarcomata of the Choroid. Six cases were demonstrated by means of lantern slides. Case I was an ordinary melanotic sarcoma of the choroid in the third stage, the extraocular extension being unpigmented. The patient died a year after removal of the eye, and was found to have secondary, bile-stained, spindle-celled sarcoma of the liver, and squamous-celled carcinoma of the ribs, lung, and mediastinal glands. Cases II and III were almost identical in appearance and general character. They contained very necrotic, round, angio-sarcoma of the choroid. There was extensive necrosis of most other structures of the eye. Case IV had an extraordinary family and personal history: the mother and younger sister had each had an eye removed at Moorfields for sarcoma of the choroid, and the patient had had her breast removed for a tumour. There were two small melanotic sarcomata of the ciliary body and anterior part of the choroid, and a large, bilobed necrotic angio-sarcomatous mass springing from the choroid posteriorly. The other structures of the eye were necrotic and there were many haemorrhages. Cases V and VI were necrotic angio-sarcomata, springing from the choroid at the posterior pole of the eye. The other structures of the eye were also necrotic. The points specially insisted upon

were as follow: The similarity of the growths macroscopically to organized blood clots and their apparent origin in the retina—an appearance which was demonstrated to be erroneous; the varying occurrence of haemorrhage, the importance of not overlooking sarcoma of the choroid in cases of severe intraocular haemorrhage (cf. Verhoeff), and the relation of the haemorrhage to the necrosis, whether as cause or result, both probably occurring; the necrosis, its dissimilarity from the patches of necrosis in ordinary sarcomata, its universality, not only throughout the tumours but also in other parts of the eye. The deductions made were that the necrosis was not due to a preliminary irido-cyclitis (cf. Leber and Krahnstöver), was not due to thrombosis and only partially to haemorrhage; it was probably due to endogenous microbic infection, essentially by means of toxins universally distributed throughout the eye by the intraocular fluids. The theory was comparable with the most probable theory of sympathetic ophthalmia—namely, generalized endogenous infection by invisible organisms (cf. Römer). It explained the marked inflammatory reaction sometimes seen outside the eye. The growths were probably of low malignancy, on account of their genesis, their necrotic condition, and the thrombosis of the vessels. If, therefore, they were not excised, they would shrink and become examples of shrunken globes containing choroidal sarcomata. Further, they were an early stage of this small group, a stage which had not before been described. That the eyes would inevitably shrink was shown by the albuminous constitution of the intraocular fluids, which would lead to diminished filtration and stasis; moreover, the universal necrosis must lead to shrinkage. The growths were also identical in type with those previously found in shrunken globes (cf. Leber and Krahnstöver). Such tumours probably were frequently overlooked, owing to their great resemblance to intraocular blood clots. They were of great practical importance from the point of view of prognosis, and especially in point of theory, since they marked a stage which had previously escaped observation in the life-history of a group of sarcomata.

PATHOLOGICAL SOCIETY OF LONDON.

Sir JOHN BURDON-SANDERSON, Bart. (President), in the Chair.

Tuesday, November 15th, 1904.

LABORATORY MEETING AT THE LONDON HOSPITAL MEDICAL SCHOOL.

SOME experiments on the effects of high atmospheric pressure were shown by Professor LEONARD HILL.

TWO CASES OF EMPHYSEMATOUS GANGRENE DUE TO B. AËROGENES CAPSULATUS.

Mr. L. S. DUDGEON and Mr. P. W. G. SARGENT recounted the following: Case I.—A boy, 12 years of age, whose right leg had been run over by a tramcar, was admitted to St. Thomas's Hospital with a compound comminuted fracture of the tibia. Thirty-six hours after the accident the leg was tensely oedematous and discoloured around the wound. Gas-crepitation could be felt, and an enormous quantity of offensive yellow fluid issued from the wound. The constitutional symptoms were those of intense toxaemia. Amputation was performed through the upper third of the thigh, the flaps left open, and treated with large amounts of peroxide of hydrogen. Recovery was rapid. Cover-slip preparations from the tissues showed large Gram-staining bacilli and cocci arranged in groups. The coccus was found to be the staphylococcus aureus. By anaërobic methods a pure culture of the bacillus aërogenes capsulatus was obtained, which unfortunately died out before Welch's crucial test could be applied. Case II.—An alcoholic woman, aged 37, was admitted to St. Thomas's Hospital, having had the forearm crushed by a horse's hoof. Severe toxaemic symptoms set in, and forty hours after the injury gas-crepitation was detected, reaching as high as the elbow. A red blush extended on the inner side as high as the axilla. Severe constitutional symptoms were present. Amputation was performed through the upper third of the arm, and the unsutured flaps treated with peroxide of hydrogen. The patient recovered. Cover-slip preparations made from the emphysematous tissues showed large, thick, Gram-staining bacilli, non-Gram-staining bacilli, and Gram-staining cocci. Aërobic and anërobic cultures were made from the emphysematous tissues. Anaërobically, a pure culture of the bacillus aërogenes capsulatus was obtained. Aërobically, the B. coli and the staphylococcus albus were obtained. The B. coli culture inoculated into a guinea-pig's leg produced only an inflammatory swelling, which subsided without evidence of suppuration or emphysema. The B. aërogenes capsulatus produced an enormous bloody emphysematous oedema within twelve hours; 2 c.cm. were injected intravenously into a rabbit, the animal killed under chloroform, and the body incubated for twenty-four hours at 22° C. A general emphysema was produced, and all the viscera were "foaming." The bacillus was present in enormous numbers in the foaming liver.

THE PARASITES OF SMALL-POX AND VACCINIA.

Mr. W. E. DE KORTÉ showed specimens illustrating the above subject. For descriptive purposes, he proposed the provisional name of "Amoeba variolae vel vacciniae." The organism is an amoeboid protozoon measuring about $\frac{1}{2500}$ of an inch in diameter, having the form of an oblate spheroid, containing intracellular spores, and in the case of the parasite found in human vaccine lymph, actively amoeboid. The extracellular spores of the amoebae of variola and human vaccinia are motile at the temperature of the body, shortly after their removal from the pock. In glycerinated calf lymph, the organism and its spores are immobile, their movement being probably inhibited by the glycerine. Glycerinated calf lymph and variolous matter display, on keeping for a month or longer in capillary tubes, large parasites with pronounced cell wall, a large nucleus, and a distinct nucleolus; these bodies I have called encysted parasites. The amoebae of human vaccine lymph are to be found on or about the ninth day of vaccination, after which date they disappear spontaneously. The amoeba variolae slowly alters its contour on a warm stage, but has not been observed to extrude definite pseudopodia. Method of detecting the organism: To be satisfactorily seen, a hanging-drop preparation of variolous or vaccine lymphs must be made. Avoid all manipulations of whatsoever kind. All ordinary methods of staining, fixing, or drying, the pressure of the cover-slip and desiccation invariably lead to rupture of the ectosarc, and to disintegration of the parasites; for these reasons, in smear preparations only the detritus of the parasites is to be found. To obtain sterile variolous and vaccine lymphs, wash the pock with an antiseptic without rupturing its walls, remove any excess of disinfectant, and force a sterile capillary tube into the interior of the vesicle; by depressing the free end of the tube the vesicular contents will gravitate into the tube. For storing purposes the ends must be carefully sealed in a flame. The lymph being thus collected, in the case of human vaccinia on the ninth day of eruption, centrifugalize the tube to concentrate the parasites, as there are comparatively few amoebae present. From the centrifugal end of such a tube allow a small drop to exude on to a cover-slip, and put up as a hanging-drop on a warm stage. At 98° F. the amoeba puts out pseudopodia and is actively motile. The spores, being excessively minute and not very refractile, can be seen, but only with difficulty, at the edge of the specimen. Small-pox matter should be collected about the fifth day of eruption or earlier, and similarly treated, but it is unnecessary to centrifugalize, as the parasites are present in enormous numbers. In glycerinated calf lymph the parasites and spores are best seen suspended in a drop of normal saline solution, the method of procedure being identical in other respects with that indicated for variolous matter. All these parasites can be stained *in vivo* by suspending them in a normal saline solution tinted with aqueous safranin, Loeffler's blue, or Bismarck brown. The following method of making permanent preparations, unsatisfactory though it is, may be partially successful when absolutely fresh material is procurable; after keeping *in vitro* the parasites will not admit of this procedure. Spread on a cover-slip a small drop of variolous or human vaccine lymph (that from a monkey is more satisfactory) with the edge of a second cover-slip, avoiding pressure as far as possible; immerse immediately in equal parts of spt. rect. and ether for ten minutes, and then stain with Loeffler's blue for five minutes. The parasite of variola stains irregularly, the nucleus probably not at all. Mount in Canada balsam. Glycerinated calf lymph spread in a thin film in the above manner can be fixed with the fumes of 2 per cent. osmic acid for five minutes, stained with dilute aqueous safranin for ten minutes; it can then be mounted permanently in equal parts of glycerine and water in a shallow cell, thus avoiding the pressure of the cover-slip, which would destroy the organism. Permanent preparations are, however, distinctly unsatisfactory, but any one taking the trouble to follow the directions laid down will not have the least difficulty in seeing the amoeba variolae vel vacciniae in a hanging-drop preparation.

A New Species of Bilharzia.

Dr. J. Catto exhibited specimens of a new species of bilharzia, which were obtained from a case occurring in China. The lesions were intestinal, and the ova were at first thought to be psorosperms, owing to the fact that they possessed no spine.

Other Specimens.

Mr. F. W. Twort: Tumours simulating carcinoma due to injection of blastomyces.—Dr. W. Bulloch and Mr. F. W. Twort: Glanders in men, with a note on the virulence of B. mallei from human sources.

Medical Society of London.—At a clinical meeting of this Society held on Monday, November 14th, Mr. John Langton, F.R.C.S., President, in the chair, Mr. E. Muirhead Little showed a case of traumatic displacement of the lower epiphysis of the femur backwards in a youth.—Mr. F. C. Wallis showed two cases of chronic osteitis in girls affecting the tibia, two of five that he had had under his care. Cultivations from the depths of the nodes had showed the staphylococcus albus. There was no evidence of tubercle or history of traumatism.—Dr. F. Parkes Weber showed a case presenting tremor of the left lower extremity of ten years' duration, apparently functional in character, yet associated with some of the signs of Graves's disease—slight Graefe's sign, tachycardia, flushing, sweating, etc.; also a case of possibly early acromegaly with headache, vertigo, fits, polyuria, and a large skeleton.—Dr. F. J. Poynton and Mr. J. H. Parsons showed a case of amaurotic family idiocy, with optic atrophy and macular changes.—Dr. H. Morley Fletcher showed a case of multiple syphilitic disease of joints in a child, the subject of congenital disease, with effusion into all the joints, but without implication of the bones. There was interstitial keratitis and enlargement of the liver and spleen.—Dr. Alfred Eddowes showed a case of lichen with fibrous thickening of the ear and evidence of gout; also microscopic sections of the skin from a case of acute gout showing a deposit of crystals in the sebaceous glands.—Mr. Warren Low showed a case of multiple and symmetrical lipomata in a man aged 46.

Royal Academy of Medicine in Ireland: Section of Pathology.—At a meeting held on Friday October 28th, H. C. Earl, M.D., in the Chair, Professor E. J. McWeeney, M.D., read a paper on two cases of lymphatic leukaemia. One was a chronic case in a man aged 55, and suggested a traumatic origin. He died finally after a very brief attack of lobar pneumonia. The other was an acute case in a boy of 8 years. In the latter a blood count taken on the day of death showed red corpuscles 820,000 to white corpuscles 723,000. Of the latter 99.5 per cent. were lymphocytes. The child died from the uncomplicated disease about nine weeks after its apparent commencement.—Professor White said that he had seen a case of the so-called spleno-medullary leukaemia, in which there was apparently a direct connexion between an injury and the disease. He had also seen a case which, like the first narrated by Professor McWeeney, showed what small resistance against infectious disease these patients possessed.—Dr. Craig said that he had been accustomed to teach that the increase of leucocytes was not so great in lymphatic as in spleno-medullary leukaemia: it was remarkable that in the acute case narrated by Professor McWeeney the red and white corpuscles were almost equal in number.—Dr. Earl agreed with Professor McWeeney as to the presence of giant cells in Hodgkin's disease.—Dr. McWeeney, in reply, thought that the case mentioned by Professor White might have been one of acute myelaemia. His statement about the presence of giant cells in Hodgkin's disease was based on a report of the pathologist of the Ayer Pathological Laboratory, who had examined 15 cases of the disease, and had met giant cells which it was easily seen were not tuberculous.—Dr. Matson showed a specimen of aortic aneurysm perforating the oesophagus, from a woman, aged 50. There was a history of alcoholism, but none of syphilis. She had been subject to attacks of rheumatic fever. Two years ago she had an attack of bronchitis, in which she expectorated a good deal of blood. During her last illness she vomited blood frequently.—Dr. Craig narrated two cases of a corresponding character. One of them occurred in a man whom six years before he had reported as cured of an innominate aneurysm. The patient had afterwards lived a healthy outdoor life, and at what date the aortic aneurysm developed was unknown.—Dr. Gillman Moorhead exhibited a specimen of aneurysm of the aortic arch which had ruptured into the pleura. The only symptom complained of was cough. The wall was so thin that it was curious that rupture had not occurred while the patient was at work, as he had been up to within a week of his death.

Dermatological Society of London.—At a meeting on November 9th Mr. Malcolm Morris in the chair, the following were some of the cases shown: Mr. G. Pernet brought forward a medical man suffering from a macular eruption all over the body and limbs. The history showed that the rash had commenced four years ago in Assouan. The first thing noticed was the appearance of small reddish patches varying in size from that of the thumbnail to that of a florin. The patches appeared to be merely congestive and oedematous, with a very slight tendency to a secondary scaling. They did not enlarge after once making their appearance, and they gave rise to absolutely no symptoms; on the other hand, no patch ever disappeared. They came out in successive crops, so that when shown there was hardly room for the appearance of any more without the eruptions becoming continuous. The diagnosis offered was that of the disease recently named by Dr. Radcliffe Crocker—xantho-erythrodermia perstans.—Mr. Malcolm Morris showed a man who for the last two years had suffered from asphyxia of the edges of the ears when the weather became in the slightest degree cold. This progressed so far that actual gangrene of the skin followed, and he had already lost some large pieces of the pinnae. There was a generally poor circulation, but no actual lesion elsewhere. The majority of the members recommended daily galvanism to the affected parts.—Dr. J. J. Pringle brought forward a young woman who exhibited two forms of tuberculide of the skin. On the trunk and upper parts of the limbs there were groups of small, infiltrated follicular papules showing all the classical characteristics of lichen scrofulosorum, a form of disease rare at this age. On the hands were the typical nodules, beginning deep down in the skin and rising to the surface and forming indolent pustules, which have been called by the French observers acnitis. There were large glands in both axillae but no other signs of tuberculosis, nor was there any history of tuberculosis in the family.—Dr. J. A. Ormerod showed a remarkable case of skin eruption in a boy, aged 12 years. The face was covered with large nodes and patches of thickened skin, so that the possibility of leprosy was at once suggested. Against this was the fact that the boy had never been out of England and there were no other symptoms of the disease, nor had microscopical examination revealed bacilli. The body was pigmented all over, and was covered with small pitted scars, the result of the necrosis, and suppuration of small nodules, a few of which were still present. These came up in a somewhat urticarial manner and were then capped with pustules, and, according to the history, sometimes formed vesicles and bullae. There was enlargement of the lymphatic glands in the groin and axilla. The case was brought for diagnosis, and it was stated that the disease had begun three and a half years ago with itching. Diagnoses which had been offered were prurigo, dermatitis herpetiformis, leprosy, and tuberculide. No member would give a positive diagnosis.

Association of Registered Medical Women.—At a meeting on November 1st, Miss Webb, President, in the chair, a discussion on infant feeding was opened by Mrs. Keith with a paper on the management of breast feeding. Successful lactation, she said, depended on many things besides those commonly mentioned in books. Not only the mother and child, but their environment, physical and moral, must be studied. A mother desirous of nursing her baby, and deeply anxious to succeed, was a pathetic creature for whom much could be done. Firmness from the start was necessary, or the chances of successful lactation might be spoiled from the beginning. The fact that for two to four days there was no milk in the breasts was a sign a baby did not require it. This was forgotten, and the child fed when it cried, no precautions being taken about the food given; hence much flatulence arose, and it was dosed with brandy, sal volatile, gripe water, etc. When at length the mother's milk commenced, the child was already upset by the substances in its intestine, with the result that there was more flatulence and more dosing. All this was quite wrong. The child required nothing more than the colostrum. Regularity in feeding must be observed, but a sensible mother should be allowed some latitude and discretion. The child should be given time to recover from bathing and dressing before being fed; in default of this, a disturbed morning, both as regards feeding and sleeping, often resulted. Breast feeding to be success-

ful must be a time-absorbing process; the richest milk came last, so the baby should empty the breast; and this took from thirty to forty minutes between the ages of 2 and 8 months. Hurrying a feed was as harmful to a baby as to an adult. In some cases the milk was plentiful, but watery and poor in quality; in others there was good and rich milk, but not enough of it. How to remedy these conditions was a problem. Plenty of milk and gruel served to increase the quantity, as also did extract of malt and maltine. Beer and stout were of doubtful value. However little milk there might be, if it agreed with the baby, the mother should be encouraged to go on, the feeding being supplemented by other forms of milk suitable to the age and weight of the child. Green motions were not uncommon in breast-fed children, and in this case small doses of fluid magnesia, three times a day, given to the mother, and not the child, were useful. Reappearance of menstruation formed no contraindication to continued nursing, provided the mother kept well and the infant throve. Nursing mothers should be kept as free as possible from worry, and in a general way it might be said that women, in whom the higher faculties were strongly developed, and who continued to use them during lactation, did not make good nursing mothers, it being impossible to turn out good milk and good ideas simultaneously.—Miss Garrett Anderson advocated percentage feeding as the ideal method of artificially feeding babies. Cow's milk differed from human milk in certain important points, and samples of human milk at different stages of lactation differed almost as widely from each other. Simple dilution of cow's milk with water could not be successful, as there was a qualitative as well as a quantitative difference in the proteids of cow's milk and human milk.—Miss Long had in some cases noted excellent results by feeding quite young infants on undiluted cow's milk. Professor Budin employed unmodified sterilized cow's milk in the Clinique Tarnier in Paris. When mothers were unable to suckle their offspring, human milk was supplemented or entirely substituted by undiluted cow's milk. The results had been very encouraging. She was sure that cow's milk, whether modified or otherwise, formed the only proper routine substitute for breast milk, and the results should be tested by repeated examination of the body weight and stools of the infants.

REVIEWS.

SURGICAL TREATMENT OF BRIGHT'S DISEASE.

The volume on *The Surgical Treatment of Bright's Disease*,[1] by Dr. Edebohls, contains practically all that he has written on this subject. It is compiled by printing the histories of all the 72 cases hitherto operated upon with analyses and tables of them, while his various contributions to the medical press on this subject are reprinted in full. Consequently there is a good deal of repetition, but it is not without advantage to have all the statements relating to a procedure which is still in a debateable stage in an easily accessible form. As is well known, Dr. Edebohls claims to have cured a certain proportion of cases of Bright's disease by stripping off the fibrous capsule from the kidney. Of the 72 cases operated upon, 7 died directly after the operation; in 22 other cases, death occurred soon afterwards, so that the operation did not arrest the fatal progress of the disease; 3 others are classed as unimproved; 20 are stated to have been improved in general health, but not cured; finally, 17 are claimed as cures.

These 17 are worthy of careful analysis; and Dr. Edebohls supplies a table. Only one is a male, and it is well known that the kidneys in women are often found *post mortem* to show changes in their structure which have not caused any symptom of Bright's disease before death. They may have suffered from transitory attacks of nephritis in pregnancy, or have been more or less movable, in which condition some thickening of the capsule is very common. Indeed, most of the cases in Table 4, which are classed as chronic interstitial nephritis, did not present any of the clinical evidences of this condition, and are probably examples of movable kidney; this is the more probable, as the condition was unilateral in 6. Case xviii, or the tenth on this list, is classed as "chronic parynchymatous," but is really one of ascending nephritis, or surgical kidney. Case xxiii is called "chronic interstitial," but is really one of nephritis of pregnancy. Case liii is called "chronic parenchymatous," but is a similar case. There are only 2 cases to which such criticism does not apply. Case xxi is that of a female child, aged 4½, who, at the age of 2, fell into a tub of scalding water and received very severe burns on the back and legs; after that there was swelling of the feet and puffiness of the face, followed a little later by ascites. She was said to have had an attack of acute nephritis, from which she recovered after four weeks, but several subacute attacks followed at intervals until she was admitted in April, 1901, with oedema, ascites, albuminuria, and casts. She was discharged improved, but, nine months later, was again an in-patient, and, as medical means failed, Dr. Edebohls was asked to operate. At that time she was said to be generally oedematous, and the apex beat of the heart was in the sixth interspace. Both kidneys were decapsulated, and we are told that both these organs were typical "large white kidneys." The patient made an uninterrupted recovery, and for a year past had been going to school, while her urine was entirely free from albumen and casts. The other case is that of a man aged 36 (No. 42), whose father died of consumption. He had been in ill-health for several years, and "in the spring of 1901 a faint trace of albumen and a single hyaline cast were found in the urine." For the past year and a half, at repeated examinations of the urine, albumen, now and then, and casts in small numbers were found; there was moderate oedema of the feet, and once or twice a little puffiness under the eyes; "there was considerable concentric hypertrophy of the heart, with marked accentuation of the second aortic sound; decided arterio-sclerosis." These statements are obviously wanting in precision. The following is a description of the kidneys at the operation:

> Right kidney about two-thirds normal size; after removal of capsule a red granular surface everywhere. Left kidney normal in size, mottled deep and light red over entire surface after removal of capsule. Diagnosis: Right, chronic interstitial nephritis; left, chronic diffuse nephritis.

The operation was followed by a gradual return of strength, but the urine continued to show occasional traces of albumen with hyaline casts. The patient, writing in March of the present year, says:

> While the improvement has been slow, when I look back and remember how I was a year ago, or two years ago, I can see a big change for the better. The past year have not missed a day from business on account of sickness, although there have been times when I felt far from being real well. Many of my old symptoms have entirely disappeared. Have not had difficulty in breathing since a month or so after operation.

We think that in this case the facts are not presented in such a way as to make the reader quite sure that the diagnosis is correct, and certainly leave him in doubt whether the cure so confidently claimed is really complete.

The style of the book is not such as to convey a high opinion of the author's accuracy. On page 9 we are told that a patient had "extreme hypertrophy of the heart with a mitral systolic and a mitral regurgitant murmur"! On page 11, arguing in favour of the operation in unilateral cases, the author repeats the generally discarded opinion that albuminuria *per se* "undermines the general health and leads, though in many cases only after the lapse of years, to a fatal issue"; this is a doctrine to which we think few will subscribe. On page 13 he excuses himself for not having removed more often small portions of kidney tissue for microscopical examination, by saying that "it is unjustifiable to deprive a patient of even the minutest part of such an important excretory organ as the kidney, knowing that the defect can be made good only by compensatory hypertrophy, never by new formation of kidney tissue." We are certainly at a loss to understand what he means. On page 15 he speaks of "decortication," or stripping the cortex from the kidney, as synonymous with decapsulation. On page 16 he says: "There has thus far been no mortality in my operations upon the kidneys of patients affected with chronic Bright's disease." No doubt this is a reprint of a paper published in 1901, but it seems extraordinary that this statement should not have been modified in view of subsequent events. On page 18 he speaks of a case of nephritis after pregnancy as running "its usual downward course," but a "downward course" is not usual in such cases, which generally get well. On page 19 he talks of 50 per cent. and 70 per cent. of albumen in the urine—a manifest absurdity. On page 29 he speaks of cirrhosis of the liver as being one of the most "frequent complications of chronic Bright's disease;" Dickinson says "the proportion is not large," and gives the figures as about 1 in 7.

The grounds for operation are, in the author's opinion,

[1] *The Surgical Treatment of Bright's Disease.* By George M. Edebohls, A.M., M.D., LL.D. New York: Frank F. Lisiecki. 1904. (Demy 8vo, pp. 334. 2 dollars.)

(1) the clear and unequivocal establishment of the diagnosis of Bright's disease; (2) the absence in the given case of absolute contraindication to any operation; (3) the possibility of securing the services of a surgeon reasonably familiar from practical experience with the surgery of the kidney."

The conclusion of the book is: "The evidence submitted in the author's opinion, not alone justifies the surgical treatment of chronic Bright's disease, but establishes surgery as at present the main, if not the only hope of sufferers from a hitherto incurable malady."

As above indicated, the impression left on our mind is that in nearly all the cases in which Dr. Edebohls has been successful, he has not been dealing with Bright's disease in the ordinary sense.

THE IDENTIFICATION OF BACTERIA.

The high opinion we have previously expressed of the *Atlas and Principles of Bacteriology*,[2] by Professor Lehmann and Dr. Neumann, is obviously endorsed by a wide circle of readers, since the publishers have found it necessary to issue a third edition within eight years of its first appearance. In the present edition the work has undergone little change in general plan and arrangement; indeed in the *Atlas* itself. Plates 1 to 67 inclusive are identical with the corresponding plates of the 1899 edition, comprising, as before, some hundreds of coloured drawings of individual colonies, tube cultivations, and cover-glass film preparations of numerous pathogenic and non-pathogenic bacteria. Plates 68 and 69 of the earlier edition have been replaced by new ones, and five other new plates have been added depicting micrococcus melitensis, B. influenzae, B. dysenteriae, amoeba dysenteriae, some microscopical sections of infected tissues, the structure of the mosquito, and a series of blood preparations stained by the Romanowsky method, showing various stages of malarial and other parasites. These illustrations are nearly all of a high order of excellence, though some might with advantage be replaced by more typical specimens — such, for instance, as Figures V and VI of Plate 60, which we cannot regard as in any sense typical of Hofmann's bacillus; or, as the authors prefer to term it, "corynebacterium pseudodiphtheriticum." Two additional plates "A" and "B" have been prefixed to this volume to illustrate the formation and growth of various "types" of surface colonies of bacteria, and are distinctly useful. The alterations in the text are chiefly in the direction of the interpolation of new matter, the division into two parts—general bacteriology and special bacteriology—being retained. The former is a concisely-written account of the morphology and biology of bacteria in general extending, to 115 pages, for which Professor Lehmann is alone responsible. The information here set out is reliable, accurate, and up-to-date, and is rendered the more valuable by reason of the numerous references to original papers. We are particularly pleased with Section D, which gives a brief summary of the effects of chemical and physical agents upon bacterial life and growth, for the critical study of environmental influence upon the cell is far too often neglected by the working bacteriologist: and also with Section F, dealing with the "biochemistry" of bacteria, the various chemical bodies produced as the result of bacterial metabolism, and the routine tests most suitable for their demonstration, including such enzymes as lipase and oxydase, being dealt with one by one. Haemolysins are briefly referred to, and a rough-and-ready method of demonstrating tetanolysin and staphylolysin given, whilst Greig Smith's recent work on bacterial gums is also mentioned. The section on the animal resistance to specific poisons, and that relating to immunity, have undergone careful revision, and have been considerably enlarged, so that these subjects are now presented in a manner befitting their importance. Special Bacteriology, the joint work of Professor Lehmann and Dr. Neumann, is prefaced by a discussion of the principles of botanical classification as applied to the nomenclature of bacteria, which will amply repay the most careful perusal. The authors then explain and defend the classification they have adopted, but although it possesses many good points we accept it with some reserve, for we are by no means convinced that the evidence at present available is sufficient to warrant the inclusion of B. mallei or even B. diphtheriae among the actinomycetes. The terms used in describing the plate and tube cultures are then enumerated, but suffer by comparison with those collected for the same purpose by Chester in his *Determinative Bacteriology*. Finally, the authors have arranged in groups some 90 species of bacteria, describing each organism with such a wealth of detail as to simplify considerably the identification of newly-isolated organisms. This method of treatment renders the work as indispensable to the clinical as to the technicological bacteriologist, and makes us regret that the authors have not extended their work so as to include the yeasts also. The warning as to the variations of bacteria from recognized "types" is amply justified, and its appreciation should go far towards reducing the introduction of insufficiently-studied micro-organisms into lists of new species. A few changes in nomenclature are noted, diplococcus intracellularis being removed from the streptococcus group and classed as a micrococcus; micrococcus tetragenus becoming sarcina tetragenus, bacillus enteritidis of Gaertner is now regarded as synonymous with B. cholerae suum: while B. dysenteriae (Shiga) makes its first appearance in these pages. Much new matter will be found under the headings of Vibrio Cholerae (including Professor Kolle's recent work); Mycobacterium Tuberculosis, and other Acid-fast Micro-organisms. Finally, an appendix on bacteria as the cause of disease in plants, and another on pathogenic protozoa, are introduced. Whatever difference of opinion may exist regarding the utility of illustrations, plain or coloured, in the work of identification, there can be none as to the value of these admirably arranged groups, each with its explanatory "key," and the work as it now stands is without a rival in bacteriological literature.

[2] Lehmann's *Medizinische Handatlanten*, Band 10, *Atlas und Grundriss der Bakteriologie*, and *Lehrbuch der speziellen bakteriologischen Diagnostik* Von Professor Dr K. B. Lehmann and Dr. Med. und Phil. R. O. Neumann. Dritte Auflage. Munich: J. F. Lehmann. 1904. (Cr. 8vo. Tiel 1. Atlas, 76 coloured plates. Tiel 2. Text pp. 623, 38 illustrations. M.18.)

THE ATROPHY OF PARALYZED MUSCLES.

Dr. Friedrich Jamin, Assistant in Professor Strümpell's Medical Clinic at Erlangen, has prosecuted experimental investigations on the atrophic changes in paralysed muscles.[1] The subject is highly complex, and inasmuch as the intimate structure of normal muscle is still *sub judice* and the essential functional relation of nerve and muscle cannot yet be formulated, it is not too much to say that in the present state of medical knowledge the subject is hardly capable of explicit treatment. Dr. Jamin has produced paralysis in animals by interfering with the nerve supply, and has made elaborate microscopical observations on the muscles in this way caused to atrophy. He has investigated among other things the fibrillation and striation of the muscle parenchyma, its hyaline degeneration, its vacuolation and fat infiltration, its granular and pigmentary degeneration, the alterations in the muscle nuclei, in the interstitial fibrous and fatty tissues, in the blood vessels, and in the intramuscular nerve endings, including the muscle spindles. From these observations he distinguishes two main kinds of atrophy—a simple form characterized by a simple decrease in the volume of the muscle fibres with increase of the interstitial tissues; and a degenerative form, a true necrobiosis of the muscle parenchyma. The latter he ascribes to traumatic and toxic causes and to these alone. The former—a simple diminution without degenerative microscopic changes—he attributes to ordinary causes of disuse, including, strange to say, lesions of the peripheral motor nerve mechanisms, the motor nuclei, and the nerve fibres. In other words, the atrophy of neuritis and anterior poliomyelitis, so far as his experimental lesions can reproduce their conditions, is an atrophy of disuse; from his microscopical researches no evidence is forthcoming of any direct influence of spinal motor centres on muscular nutrition. If this represent the fact, if there is no difference to be detected microscopically between atrophied muscles that show the reaction of degeneration and those that do not, we are disposed to say so much the worse for microscopical methods. If, as we believe, the reaction of degeneration connotes a functional change in the muscle substance proper, we look for methods supplementary to those of Dr. Jamin, which will permit of its objective demonstration.

[1] *Experimentelle Untersuchungen zur Lehre von der Atrophie gelähmter Muskeln.* Von Dr. Friedrich Jamin. Jena: Gustav Fischer. 1904. (Demy 8vo, pp. 181. M.5.)

A German Investigator in the Dutch Indies.—Dr. Hermann Druck, Extraordinary Professor of Pathology in the University of Munich, has been awarded a gold medal by the jury of the International Congress of Arts and Sciences recently held at St. Louis for his preparations illustrating the pathology of plague. Professor Druck is now on a voyage of scientific investigation in the Dutch Indies, where he is studying tropical diseases, particularly beri-beri.

NOTES ON BOOKS.

Markets, Fairs, and Slaughterhouses[1] contains a number of useful precedents extracted from Local Improvement Acts. Mr. KEEN'S object has been to include, under suitable headings, all the sections relating exclusively to markets, fairs, and slaughterhouses contained in private Acts and Provisional Orders obtained by English local authorities (outside the metropolis) within the years above mentioned. Amongst the precedents are to be found some which give market-keepers power to exclude animals suspected of tuberculosis or old and diseased animals. To the Parliamentary draughtsman, for whom it appears to be primarily designed, this book ought to prove exceedingly useful.

In *A Gloucestershire Wild Garden*[2] the author has, in a series of chapters dealing with the various kinds of wild gardens, with plants and shrubs, tender and otherwise, with the making and management of the wild garden, the water garden, and so on, endeavoured to interest and instruct those who possess ground suitable to a bolder system of gardening than the ordinary parterre. Much of the matter is instructive, but the chapters dealing with gardening resolve themselves into an incomplete dictionary of wild gardening, or a catalogue of plants suitable to the purpose rather than into an artistic picture of the possibilities in wild gardening. The book is somewhat prosy, and lacks the suggestions and artistic touches which would have made it attractive. The author has, as he tells us in his preface, introduced chapters dealing with "lighter and evanescent matter, or with drier semi-scientific discourses," conversations between the author himself, the padre, and a philosopher on such subjects as the tricks of memory, various forms of belief, pain, and vivisection, beauty, and what it is. These, again, are interrupted by a slight but pretty love story. The digressions from the main subject of the book seem to suggest padding. The illustrations, some twenty-six in number, are admirable, and suggest many things which the author leaves unsaid.

NOTES ON NEW REMEDIES.

MARETIN.

MARETIN,[1] or carbamic acid meta-tolyl hydrazide, is a white crystalline powder; it melts at 183° to 184° F., is soluble 1 in 50 in hot water, almost insoluble in cold water, and very slightly in organic solvents. According to published clinical records, maretin is a trustworthy antipyretic, specially valuable in treating the fever of phthisis; it lowers the temperature very gradually, and the appetite of the patient, it is said, is not affected. The doses given did not produce any toxic effects. It is said to be valuable also in the treatment of headache, neuralgia, etc. The usual dose is 0.25 to 0.5 gram (4 to 7½ gr.) twice daily.

NEURONAL.

Neuronal,[2] or bromo-diethylacetamide, has been introduced as a hypnotic. It is a crystalline substance, melting at 66° to 67°, and only slightly soluble in water. On this account it is best prescribed in powders, tablets, or cachets. It is said to be superior in action to most of the hypnotics in use, particularly as regards the soundness and duration of the sleep produced; it is also claimed that it produces no objectionable secondary effects. But the profession is growing weary of such claims. The large amount of bromine contained in the compound (41 per cent.) suggests its employment as a sedative and hypnotic in the treatment of epilepsy. The dose is 0.5 to 2 grams (7½ to 30 gr.), 1 gram (15 gr.) being a usual dose.

VASENOL.

Vasenol[3] is a preparation of yellow vaseline which contains one-fourth its weight of water. As is well known, such a mixture cannot be prepared without the addition of some other substance, and in this case some of the higher fatty alcohols—such as cetyl alcohol from spermaceti—are employed. It has been found that the addition of such bodies to vaseline and liquid paraffin enables the latter bodies to emulsify large quantities of water, and it is claimed that such mixtures are not only readily absorbed, but also do not become rancid or cause irritation. The idea of mixing substances with the paraffins to render them emulsifiable with water is not new, but hitherto this has usually been effected by means of ammonia soaps together with alcohol, and it is said that such mixtures are not without irritating action. Vasenol can be used alone as an emollient ointment, or as a basis for any medicament in ointment form. It mixes with all fats, and can take up large quantities of water.

Liquid vasenol is a neutral white emulsion of white liquid paraffin containing one-third its weight of water. Its use is indicated where a creamy application is desired, and it is specially useful as a vehicle for lime water, zinc oxide, and alkalies generally, which exert such a saponifying action on oils and fats as to render such mixtures unstable. It is sufficiently viscous to retard the separation of insoluble substances with which it may be mixed, and this has suggested its employment as a vehicle for injections in the treatment of gonorrhoea. A liquid vasenol, containing 10 per cent. of mercury salicylate, has also been used for intramuscular injection.

Vasenol powder contains 10 per cent. vasenol with a powder basis and is a mild astringent said to be useful in the treatment of intertrigo, weeping eczema, etc.

Mercury vasenol is a soft homogeneous ointment containing 33⅓ per cent. of mercury.

MENTAL HYGIENE IN CHILDHOOD.

DR. T. B. HYSLOP, of Bethlem Royal Hospital, delivered an address on Mental Hygiene in Childhood before the Childhood Society for the Study of the Physical and Mental Condition of Children, on November 10th, at the Sanitary Institute. The chair was occupied by Sir James Crichton-Browne.

Dr. HYSLOP commenced by saying that he addressed the meeting solely as a medical specialist. Max Nordau had stated in most emphatic terms that medical specialists in insanity had failed to understand their duty and that it was time for them to make themselves heard. Professor Bianchi had also urged that it was prejudicial to all true progress to believe that psychiatry must be enclosed within a sanctuary like that of Mecca. Dr. Hyslop agreed with Max Nordau that in all other branches of medical science it was discerned that hygiene was of more importance than therapeutics and that the public health had much more to expect from prophylaxis than from treatment, and he would gladly welcome popularized expositions from the pens of experts whose prominent official status would recommend them to the consideration of all concerned. Alienists had before them the problem of the mental health of the community. The number of notified lunatics on January 1st last in England and Wales gave a ratio of 1 insane person to 288 sane persons; that ratio had steadily increased from the year 1859, at which date the ratio stood at 1 to 536. It would be interesting to determine how long it would be before the ratio was as 1 to 1—certainly not long, considering the drop in the ratio of 248 in forty-five years. According to the published statistics, Chicago contained 1 insane person to every 150, and the figures referred to certified lunatics under official cognizance. The rapidity of increase in lunacy as affecting the civilized races necessitated a serious inquiry as to how far our systems of physical and mental education were productive of good or ill to the individual and to the race. The use or abuse of physical or mental powers during the developmental periods was insufficiently understood, and there was little or no discrimination made between growth and development. In regard to the relationship of fatigue to mental reaction, there were certain common-sense facts which had of late years been rendered capable of exact measurement by psycho-physical methods of research, and those facts were that excessive physical exercise retarded mental activities, and vice versa. Those statements applied not only in relationship to immediate cause and effect, but their applicability was exemplified over a considerable period, and even over the lifetime of an individual. The mental activities of attention, cognition, memory, and reasoning were attended by processes of waste and repair in the cerebral tissues proportionate to the amount of mental exercise involved, and when that amount was excessive it was apt to be followed by lassitude or mental

[1] *Markets, Fairs, and Slaughterhouses: Being a Collection of Special Provisions relating to Markets, Fairs, and Slaughterhouses contained in the Private Acts of Parliament and Provisional Orders obtained by English Provincial Corporations and Urban District Councils in the Years 1901, 1902, and 1903.* By Frank Noel Keen, of the Middle Temple, Barrister-at-Law. London: P. S. King and Son. 1904. (Demy 8vo, pp. 90. 3s. 6d.)

[2] *A Gloucestershire Wild Garden*, with Some Extraneous Matter. By "Curator." London: Elliot Stock. (Price .)

[1] *Schweizerische Wochenschrift für Chemie und Pharmazie*, xlii, 521.

[2] *Pharmaceutische Zeitung*, xlix, 813.

[3] *Apotheker Zeitung*, xix, 786.

"stiffness." This was an age of too early, too rapid, and too severe taxation upon the mental faculty, as evidenced by the mental decay of the people. The artificial strain which aimed at the universal realization of one standard of knowledge was carried on without regard to the intellectual vigour and mental health of the rising generation. It was an age of increased capacity for remembering, but of diminished capacity for thought. The mental state of the majority of the civilized race was one of diffuse consciousness and ill-assortment of barren facts and ideas, and there was a want of seriality of thought closely allied to, and readily passing into, states of insanity. The enormous increase in insanity, weakmindedness, functional neuroses, neurasthenia, and cerebral degeneration was in many cases to be traced back to an intemperate exercise of the brain functions in both psychical and motor regions during the earlier periods of development, when the greatest care and moderation was necessary. The mental training of youth and early puberty was a question of paramount importance. All agreed that the young must be educated for the daily-increasing requirements and competitions of modern life, but as to the extent to which that should be carried in early childhood there was a great discrepancy between the doctrinaires of the Education Department and the views of those who had any knowledge of the laws of Nature. Red tape officialism of the educationalist was often supreme over medical experience, and physicians must still protest against children before the age of puberty being overworked into disease or death. With an apparent advance in civilization there was in reality a diminution in intellectual vigour, mainly owing to faulty management in the economy of brain power. All denominational questions sank into insignificance in view of the public danger of mental decay, and "passive resistance" should give way to an "active resistance" to all that tended to narrow or circumscribe or endanger the mental life of the individual and therefore the race.

A vote of thanks to Dr. Hyslop was proposed by Sir James Crichton-Browne, seconded by Dr. A. Withers Green, supported by Dr. Fletcher Beach and duly carried.

A vote of thanks to Sir James Crichton-Browne for presiding was proposed by Dr. G. E. Shuttleworth, duly seconded, and carried with acclamation.

NOVA ET VETERA.

DEATH-BED OBSERVANCES, WITCHCRAFT, AND ASTROLOGY IN INDIA.

He who would treat the native of India with success—unless, indeed, the invalid has enjoyed an English education, though even of him it is possible that the old man may still overcome the new one—must take into account the early environment and superstitious prejudices of his patient. It occurs, therefore, to me that a few of my experiences in these matters may be of interest to the readers of the British Medical Journal. More than thirty years ago I attended a prominent Indian prince in his last illness. Maharaja Takht Singh had filled the position of Ruler of Marwar or Jodhpore, the desert kingdom on the West of India, for more than thirty years, and was said to have had about a hundred sons and daughters, although, when on the point of death, he was only 52 years of age. He had been a loyal chief, and was a most pleasant and courteous gentleman. As his numerous family of wives and children naturally felt anxious to do everything that was possible for him in his last moments, they tried the value of prayer and ceremonial to the utmost. Indians who are followers of the Brahmanical faith consider that disease is largely due to the sins of a man in a former birth, or it may be to those of his parents, or to the direct wrath of the gods, so that it is not surprising that the first thought, in the treatment of the sick, is to propitiate in every possible way the deities, and especially those forms of them which the patient has most revered. This is done by private devotions, by worship in the temples, by offerings to the gods, by feeding Brahmans, and by giving largely to various charities. All this was done in the present instance, but something more was thought necessary.

As the disorder might be a possession, it ought to be possible to secure its transference to something or to somebody else. This could be effected in several ways, of which the following are illustrations:—The four legs of the low bed of the chief were placed in piles of grain, and left there for a time in order that the disease might pass into the corn and there be dispersed. A few hours later he was raised up in his couch in such a way that his shadow fell upon a white sheet, and in this manner it was expected also that a transfer of the disorder would take place. The crowning effort, though it was a common practice, was nevertheless a most important one. It is known as Vrishotsargar, and consists in letting loose a bull, which is allowed to wander at large in the jungle or forest, unmolested and unappropriated. It is called by Europeans a Brahmani bull. It is, in reality, a scape-bull, or if a goat is used, as it often is, a scape-goat. The disease is supposed to enter into the animal and to be thus carried away, and if, as is to be hoped, the beast does not suffer, it will do no harm to any one. A calf was therefore brought into the room and waved with some difficulty over the head of the dying prince, and, after its ears had been split in order to mark it, it was set free at a distance from the town.

Thinking that I was somewhat incredulous, the Maharaja said that he did not himself believe in these things, but permitted them for the sake of the women, who had firm faith in their efficacy and knew no better; but he added, "it was quite a different thing on a previous occasion when I was sick unto death." He went on to say, with an air of perfect conviction, that a stranger had appeared at the palace gates and had demanded that he should be taken inside and waved over the Maharaja's head. This was accordingly done and the man was taken outside; no one ever saw him again. "Who was he?" said I. "Men said it was the god Shiva," was the answer. When asked by one of those who sat near him whether it was possible that such an interposition might occur again, he shook his head and sadly answered that such favours were not granted twice in a lifetime. The ideas which form the motive of the above ceremony find expression in a worse form. A child suffers from small-pox. Its friends put a garland of flowers round its neck, which is allowed to remain for some time, and when it is removed it is thrown into a place at which two or more roads meet, in order that some person may pass over it, or, perhaps, put it round his own neck, in which case the disease is believed to be transferred into the new owner. This idea, however harmless it may ordinarily be, is highly reprehensible.

When, at last, it is evident that, in spite of all efforts, death is at hand, the sick man and his friends are anxious that he should do his best to make his peace with his Maker, and, in addition to his own prayers and those of the priests, it is essential that he should give liberally to the poor, and particularly to Brahmans, and any such offerings that he may make are accompanied by a vow, in token of acceptance of which water is poured out over his hands. At the death of another great chief at which I was present several lakhs of rupees were given in this manner. In both cases the dying man was removed from his couch to the floor at the moment of dissolution, as all good Hindus should be.

It is not my object now to describe the innumerable ceremonies which follow on such an occasion. They differ in detail in different parts of India and are very trying to the living, though, in the eyes of all Hindus, they are very important to the dead. By their performance many families are impoverished, it may be, for a whole lifetime, and even their descendants after them feel the strain. In the case of a poor carpenter who became prosperous by skill and hard work, he not only performed the funeral ceremonies of his own father with unusual pomp, but celebrated those of his ancestors for several generations, as he considered those formerly done to have been incomplete, thus dissipating all his savings and almost ruining himself.

It is not only in his last illness that the Hindu, and the somewhat Hinduized Indian Mussulman also, have to yield to the influences of their early environment, and of their caste or religion, but they must do so throughout their lives, in sickness as well as in health. The Hindu must, in health, at least outwardly conform, but if he does this, he may act as though he had little or no belief. When, however, he is weakened by ill health he is rarely strong enough to resist the wishes of the less enlightened members of his family, of whom the females are generally the most subservient to custom, if not to religion and the priests. Amongst the lower orders belief in the most superstitious practices is of course most noticed. A few examples may now be given. An artist had a sick grandchild, who breathed with difficulty, whereupon he spent the whole of a day in running about the city in order to subject it to the treatment of wise men and women who uttered charms, and who either blew upon it or brushed it with grass, or with brooms or the twigs of trees, and next day he circumambulated the

town to worship at all the shrines of the gods which were on the road. The result was said to be good, but a compounder, who gave a purge and a cough mixture, might perhaps fairly be admitted to a share of the credit. The circumambulation of towns or shrines, or even a walk round an individual when he sets out on a journey or undertakes some important work, is a most common practice, and the latter is even practised by Mohammedans. An old man used to sit outside the Jeypore Gaol, and perform the operation of Jharphunk, or brushing away disease, on all applicants with much success, until he eloped with someone else's wife.

Fakirs or Mohammedans, and Bairagis or Hindu ascetics earn large sums by preparing and selling charms, which are usually written on paper, and when they are enclosed in a metal case are worn on a child's arm, with tiger's claws and other objects, in order to ward off disease and the attacks of demons, and particularly small pox. Sometimes the ink inscription is washed off into water, which is given to the child to drink.

I was told by a boy, who had lost an eye, that it had been destroyed by a witch, who had cursed him as well as his mother, because someone had praised his beauty when he was an infant, and the witch was jealous. Belief in witchcraft prevails all over India, but especially amongst the aboriginal tribes, who also believe in the ability of the Bhopa or witch-finder to detect witches. On his decision many a poor old woman who has offended him has been tortured and swung upside down, and not very many years ago, in the Bheel country, such an unfortunate wretch was so swung from a tree, after red pepper had been put into her eyes and other sensitive parts of her body, in the presence of British officers, who were powerless to help her because a river in flood lay between them and her persecutors. Happily, those days are passed, and the witch-finder is also discredited. I saw a grey-haired and melancholy old man of this class fishing outside a village in the hilly tracts of Meywar. He had been turned out of the place as he was no longer feared, and was indeed now thought to be unlucky.

The astrologer is responsible for many errors and for many false beliefs. Even to this day Hindus of all classes regulate their actions, to a considerable extent, by their horoscopes, and rich men have most elaborate ones prepared for their children; they are brought up to date from time to time, so that every day may have its special guide, help, or portent. As an illustration, I may mention that a grateful patient of my own, as a proof of his appreciation of my services, was good enough to draw up my horoscope, in which it was made out that the stars showed that I should be master in my own house, have a fine pair of sons, live a hundred and thirty-seven and a half years (after which date he could not see very clearly), and that I should have alternations of good and bad fortune, the particular years being specified. All this would be implicitly believed in by many Hindus. The Thugs used to give up expeditions if the omens were unfavourable, or if any of the party had an unfavourable indication in his horoscope; but it is, perhaps, not so generally known that many respectable Hindus act on such ideas in everyday life. A man will not begin a course of treatment on an unlucky day; he will not take a purge, which many are still accustomed to do once or twice a year, if the horoscope is not propitious; he will have lucky and unlucky days; he will turn out of the path if he sees any unlucky object; and he will take neither food nor medicine from the hand of an unlucky man—for example, from one who has only one eye. A sepoy came to show me one of his eyes which had been penetrated, during a great-game drive, by a small shot, so that the sight was lost. I urged that it should be removed, in order that the sound eye might be saved. He consulted his seven wives, who said that a one-eyed man was so unlucky that they would not live with him if he had the injured organ removed, but they promised that they would work for and keep him if he became totally blind. The operation was declined, and in due course the poor fellow became completely blind. Nevertheless, his wives all left him.

A powerful noble, who was a patient of mine, was very ill, and as I could not discover any diseased condition sufficient to account for his state, I asked him if he had anything on his mind. He said that an astrologer, who was reputed to be a very learned Brahman, had foretold that he would die during the year, and that he was afraid it was true because, as the Brahman had reminded him, his father had died at the same age. Finding that the learned man was a pensioner on my client's own property, I suggested that he should either expel the man or say that arrangements had been made to do so as soon as he himself became ill or died. The latter was done, and the fine young noble lived for many years, though he ultimately came to a very sad end.

The daughter of one of my clerks was brought to me with a projecting tooth in her lower jaw, which was considered to be a very serious misfortune by all her friends, and to demand immediate removal. The learned men decided that unless this was done at once the child and her friends would suffer some grievous malady, and it was certain that no one would marry her. The last objection decided the matter, and my clerk and his father and brother, who conjointly had just anticipated the united income of the family for nearly two years, in order to marry two other girls in their home with becoming state, became quite cheerful once more.

The following incident shows how religious beliefs may influence a man in most unexpected directions. A devotee suffered from irritation of the urethra, and, fearing that if it grew worse his soul might escape from his body, at the point of death, through this impure channel, he took measures to prevent it by cleansing the part with pieces of the amarbel—a cord-like fibre of a vegetable parasite which grows on trees. This procedure had led, he believed, to the trouble which had induced him to apply to me for relief. He was found to be suffering from calculus, and when the stone—a very large one—was removed it was seen that the nucleus was formed by such a twig as he described. According to the Yoga philosophy, which is practised by these men, it is inculcated that if the soul escapes from the body by an impure channel—such, for example, as the bowel or the urethra—the unfortunate person will, in the next birth, have to pass into the body of some impure creature, there to remain for a long term of years. The sentence is that the soul shall remain in the body of, say, a snake or a worm for so many years—perhaps a thousand—so that it only leads to additional suffering if the animal dies, because it involves a further migration into another animal of the same class. The soul should find its exit through any opening above the neck, for which reason judicial hanging is particularly disliked by the Hindu. The best of all ways is for it to leave through the fontanelles at the top of the head, which open out for the purpose. Drona, one of the great heroes of the Mahabharata, or great war of ancient Indian legend, dismissed his soul in this manner in order to prevent his antagonist from being punished by spending 60,000 years in ordure in hell as a worm for having committed the grievous crime of having slain a Brahman. I possess, too, a picture which shows the soul of Karna, another great hero of the same war, emerging in a glittering stream from a similar opening to enter the sun in the heavens above.

A Rajput noble told me that Hindus took opium and similar drugs before going into battle, not in order to inflame their passions or to screw up their courage, as even their own bards so often represented, but to prevent the exit of their souls through impure passages with the excretions from the body which might escape at the point of death. In another paper I propose to consider the effects of fear upon the causation of disease in the races of India.

T. H. Hendley, C.I.E., Colonel I.M.S. (Ret.)

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ending October 15th and 22nd the deaths from plague in India numbered 16,111 and 13,871 respectively. The drop of over 2,000 which took place during the latter week was owing to the lessened mortality death-rate in Central India, Mysore, and the Bombay Presidency. The principal figures were as follows: Bombay City, 67 and 75; Bombay Districts, 9,801 and 8,172; Calcutta, 2 and 3; Bengal Districts, 193 and 187; North-West Provinces and Oudh, 1,248 and 1,276; Punjab, 345 and 572; Rajputana, 424 and 279; Kashmir, 26 and 25; Central Provinces, 552 and 485; Central India, 1,616 and 1,170; Hyderabad State, 547 and 570; Mysore, 652 and 694; Coorg, 1 and 2. In Poona, both in the city and cantonments, plague is spreading not only amongst natives but also amongst Europeans, the first European case being that of the wife of a captain in the R.A.M.C. stationed at Poona. It has been arranged that a portion of the Sassoon Hospital shall be set aside for the treatment of European plague cases.

South Africa.

Port Elizabeth.—During the weeks ending October 15th and 22nd the plague reports were as follows: Fresh cases, 0 and 1; deaths from the disease, 0 and 0; on October 22nd 3 cases of plague remained under treatment. Plague-infected rats and mice continue to be found at Port Elizabeth and East London, but at no other town in Cape Colony.

Mauritius.

During the weeks ending November 3rd and 10th the fresh cases of plague numbered 16 and 21 and the deaths from the disease 9 and 13 respectively.

CONTRACT MEDICAL PRACTICE.

NOTICE AS TO DISTRICTS IN WHICH DISPUTES EXIST.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 91.

MEDICAL NEWS.

MEDICAL MAYOR.—Mr. Maitland Thompson has been appointed Mayor of Hemel Hempstead.

THE will of the late Sir Frederic Bateman, M.D., LL.D., J.P., of Norwich, has been proved at £31,646 17s. 6d.

THE Danish Parliament has on the proposition of the Cultus Minister unanimously voted a pension of 3,600 kroner a year to the widow of the late Professor Finsen.

MEDICAL MAGISTRATE.—Dr. T. J. Jefferson of Market Weighton has been elected a magistrate for the East Riding of Yorkshire.

A MEETING of the Metropolitan Hospital Sunday Fund will be held at the Mansion House on Tuesday next at 3 p.m., when the report of the Council will be considered, and the date for the next Hospital Sunday recommended.

A SPECIAL meeting of the Hunterian Society will be held on Wednesday next, at 8.30 p.m., to consider a resolution passed by the Council to the effect that it is advisable to dispose of the library with certain reservations.

MEDICAL AUTOMOBILISTS.—The medical practitioners of New Jersey are endeavouring to form a national organization of automobilists in the United States. A meeting is to be held at Camden in January, when the Physicians' Automobile Club of New Jersey will hold its annual meeting.

A PASTEUR INSTITUTE IN TEXAS.—A Pasteur Institute, for the establishment of which a grant of £1,000 was made by the Texas State Legislature, was opened for the reception of patients on October 1st. Dr. Benjamin M. Worsham is the director.

PROFESSOR NAUNYN, of Strassburg, resigned the Chair of Medicine in the University of Strassburg at the end of the last semester. His pupils intend to present to him an address, and we are asked to state that names will be received by Herr Zschocke, Lessingstrasse 31, III, Strassburg i. E.

THE first meeting of the new session of the Epidemiological Society will be held at 11, Chandos Street, W., on November 18th, at 8.30 p.m , when the President, Dr. Whitelegge, C.B., will deliver his inaugural address, the subject chosen being the epidemiological aspects of industrial diseases.

MEDICAL MAGISTRATE.—Dr. W. F. Dearden, Honorary Secretary of the Association of Certifying Factory Surgeons, and a member of the Council of the Lancashire and Cheshire Branch of the British Medical Association, has been placed upon the Commission of the Peace for the city of Manchester. Dr. Dearden has recently been returned for the fourth time and without opposition a member of the City Council.

THE annual dinner of the Royal Free Hospital and School of Medicine for Women will be held at the Hotel Cecil on Wednesday, December 14th, at 7.15 p.m., Dr. Harrington Sainsbury being in the chair. Past and present members of the hospital staff and school desiring to be present should communicate with one of the Honorary Secretaries, Dr. A. G. Phear, 47, Weymouth Street, W., and Mr. T. P. Legg, 141, Harley Street, W.

AT the meeting of the Royal Meteorological Society, on November 16th, Lieutenant Charles Royd, R.N., gave an address on Meteorological Observing in the Antarctic, and showed a number of lantern slides of the recent expedition of the *Discovery*. Mr. Brodie read a paper in which he showed that the mean number of fog days reported at Brixton, the London station of the Meteorological Office, for the thirty-three years 1871-1903 was 55, but that taking the three periods of eleven years each the mean for 1871-81 was 55, for 1882 92, 69; and for 1893-1903, 41. He drew the conclusion that there had been a marked decrease in fogs during the last eleven years. Judging from recent experience, the present winter will go far to restore the average.

HOME DENTISTRY FOR THE SICK POOR.—The Dean of the Dental School of Harvard University, Dr. Eugene H. Smith, has organized a free dental service at the homes of the sick poor. The school is prepared to send a dentist, who is a graduate of the school and registered by the State Board, to the homes of the sick poor, or to hospitals, for the purpose of relieving pain originating from the teeth. The object of the service is simply the relief of pain, filling or making plates for artificial teeth being postponed till the patient has recovered sufficiently to attend the infirmary of the Dental School.

SANITARY EXHIBITION IN BOMBAY.—In connexion with the Twentieth Indian National Congress to be held in Bombay next December there will be an industrial and agricultural exhibition which will include a section devoted to sanitary appliances and apparatus and personal and domestic hygiene and science in relation to hygiene. The notification which we have received is signed by Dr. J. A. Turner, Executive Officer Health Department, Bombay, and Honorary Secretary and Treasurer of the Bombay Sanitary Association, to whom all communications and exhibits should be forwarded. During the exhibition demonstrations and lectures will be given on appliances and apparatus and the application of science to hygiene, including tropical sanitation. It is hoped by means of the exhibition and demonstrations to familiarize the people of India with modern appliances relating to sanitation and also to give an incentive to trade in sanitary apparatus.

ITALIAN SOCIETY OF INTERNAL MEDICINE.—The fourteenth Congress of the Italian Society of Internal Medicine which was held this year at Rome came to a close on October 29th. It was decided that the Congress should be held next year at Genoa. The subjects chosen for discussion on that occasion are: (1) The etiology of malaria, to be introduced by Professor Guido Baccelli; (2) surgical intervention in gastro-intestinal affections, to be introduced by Professors Maragliano and Queirolo; (3) anaemias of parasitic origin, to be introduced by Professor De Renzi. Reports on the progress of diagnosis and therapeutics will be presented by Professors Silvestrini of Camerino and Baccarani of Modena. Professor Baccelli was unanimously re-elected President.

A NEW SPECIALITY.—Ambitious young practitioners will doubtless hail the suggestion of a new speciality in medicine as eagerly as Alexander would have welcomed the discovery of a new world to conquer. Already the human body has been "pegged out" into so many "claims" that it might have been deemed impossible to find the smallest piece of unappropriated territory. Nevertheless, a novel field of enterprise has recently been indicated by no less an authority than the official organ of the French Republic. The *Journal Officiel* of November 2nd announced that Dr. Augagneur, Professor of External Pathology in the mixed faculty of medicine and pharmacy at Lyons, had been, at his own request, transferred to the chair of "subcutaneous diseases" in the same school. The subcutaneous region seems to offer possibilities to pioneers in specialism. To avoid complications, however, a strict definition of the term "subcutaneous diseases" will be necessary, as it might be held to include affections of all parts under the skin.

BEQUESTS TO HOSPITALS.—Mrs Selina Laura Clark of Trebovir Road, Earl's Court, bequeathed £1,000 each to the Brompton Consumption Hospital and the London Hospital; £500 each to the Cancer Hospital, Chelsea; St. Mary's Hospital, Middlesex Hospital, University College Hospital, the Royal Free Hospital, King's College Hospital, Charing Cross Hospital, St. George's Hospital, Westminster Hospital, and the Earlswood Asylum for Idiots; £200 each to the London Fever Hospital, the British Home for Incurables, Clapham Rise, and the Royal Hospital for Incurables, Putney; £50 to the Kensington Dispensary, and, subject to a few small legacies, she left the residue of her property between the Chelsea Hospital for Women, the Victoria Hospital for Children, Chelsea, and two non-medical charities.—Sir Henry Stephenson, of Sheffield, bequeathed £200 each to the Hospital, Dispensary, and Infirmary at Sheffield and to the Sheffield Hospital for Women.—Mr. Charles Bowman-Vaughan of Streatham bequeathed £100 each to Charing Cross Hospital, the Cancer Hospital, Chelsea; the Royston Cottage Hospital, and the British Home for Incurables.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1904.

SUBSCRIPTIONS to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, NOVEMBER 19TH, 1904.

EARLY ENGLISH MEDICINE.

WHEN candid friends like Matthew Arnold reproach us as a nation with our obtuseness and indifference in regard to ideas, we reply that we are a practical people and leave dreams to others, caring only for things of immediate usefulness. It is largely owing to our want of appreciation of anything not obviously "practical" that our commercial kingdom is being taken away from us and given to peoples more open to ideas. When Pitt was asked to give a pension to a poet, he is said to have replied that literature could take care of itself. This accurately expresses the attitude of all our Governments towards science also. How, indeed, can anything else be expected from Ministers the vital principle of whose official being is that the fear of the man in the street is the beginning of political wisdom? We are afraid it must be admitted that British medicine bears the stamp of our national love of the practical. To this cause more than to all the obstructive efforts of the enemies of science is to be ascribed the fact that in the movement of new ideas we are falling behind countries where the pursuit of knowledge for its own sake is recognized as the highest and most fruitful form of human enterprise.

To the same cause is to be attributed the indifference of the medical profession of this country to the history of their art. For the standard treatises on the subject we have to look to Germany, France, and Italy; much good work in the same field is being done in Switzerland and Holland. An especially grievous reproach to us in this matter is the contrast presented by the United States, where the keenest interest is now displayed in the study of the antiquities of medicine. Our American cousins, at any rate, cannot be taxed with any imperfect appreciation of the value of the practical.

It would be unfair to say that this department of historical research has been entirely neglected in this country. Something has been done, but it has for the most part been the work of hewers of wood and drawers of water. Materials for a history of British medicine have been gathered, but little progress has been made with the building, for want of an architect. This difficulty has, it may be hoped, been removed by the foundation of the FitzPatrick Lectures at the Royal College of Physicians of London. In Dr. Payne, who in medical scholarship stands pre-eminent amongst English-speaking physicians, the College chose the man of all others best fitted to fulfil the object which the late Dr. FitzPatrick had at heart—namely, the advancement of the study of medical history. His first course of lectures, which we had the privilege of publishing when they were delivered and which have recently been issued in an expanded form in an illustrated volume,[1] show how the dry bones of ancient records may be made to live when breathed upon by one who to accurate learning adds the rarer endowment of sympathetic interest in human effort, and who sees in obsolete doctrines and formulas not grotesque fancies, but phases in the evolution of knowledge.

Dr. Payne sets himself the task of trying to form some idea of what our Anglo-Saxon forefathers understood by medicine. The way in which he deals with this historical problem may be commended as an example to all workers in like fields of research. In investigating the state of medicine in any bygone time, we have, he says, to inquire what general history and literature tell us about the medical profession. "We ask whether any laws are still extant showing the relations of the profession to society. Besides written documents, we search for monuments of inscriptions, often more trustworthy than books, bearing upon the subject. We examine contemporary works of art for representations of medical scenes or personages. We look over the material antiquities preserved in museums, such as weapons, instruments, household gear to discover surgical instruments as evidences of the state of medical and surgical art in those periods. Finally, more important and more copious in the supply of information than all these put together, we examine the literature of medicine itself; for, where this is wanting, we can form but a very inadequate notion of the state of medicine at any particular time."

Applying those principles to early English medicine, he found, in the first place, that there is no mention of medical practice in Anglo-Saxon laws; nor can anything be learnt from monuments, inscriptions, or illuminated manuscripts. Our museums contain no surgical instruments belonging to the Anglo-Saxon period. The only sources of information, therefore, are general history and literature. From these evidence can be obtained of the existence of "leeches" or practitioners of medicine. Many of these were clerics, but many, too, were laymen; nothing is heard of women practising the art of healing as they did in the Middle Ages.

Anglo-Saxon civilization began with the introduction of Christianity by St. Augustine at the end of the sixth century and it is possible that the missionaries may have brought with them medical practitioners from Rome. The missionaries may themselves have had some medical knowledge, for we read that Theodore, a learned Greek monk, who came to England and became Archbishop of Canterbury in the following century, taught something of the healing art to his pupils. Among the works attributed to the Venerable Bede, who wrote *de omnibus rebus et quibusdam aliis*, is a treatise on bloodletting; its scope, however, is limited to the discussion of right and wrong, or unlucky, days for the venesection. Bede's *Ecclesiastical History* contains many references to "leeches." These practitioners seem mostly to have been subordinate to the clergy, to whom they probably stood in much the same relation as the chirurgeons of a later day stood to physicians.

There is evidence that there were medical books in England in the eighth century, but they were probably all destroyed when the great abbeys were burnt by the Danes in the ninth century. Hence in the time of Alfred there was a great dearth of literature of any kind. There

[1] *The FitzPatrick Lectures for 1903: English Medicine in the Anglo-Saxon Times.* Two Lectures delivered before the Royal College of Physicians of London, June 23rd and 25th, 1903. By Joseph Frank Payne, M.D. Oxon. Oxford: At the Clarendon Press. 1904. (Pp. viii and 162, Demy 8vo. Price, 8s. 6d. net.)

were, however, some medical books, copies of which have come down to us. They are unique in this: that they are written not in Latin but in the vernacular tongue. It is known that Alfred had a number of books translated into English because the clergy of his day had little Latin. Even when they became more learned the king's love of native literature kept alive the use of English in books. There are no English medical writings which date from before his time. All the Anglo-Saxon medical books still extant were collected by the Rev. Oswald Cockayne, and published under the title, *Leechdoms, Wort-Cunning, and Star-Craft of Early England*, in the *Chronicles and Memorials of Great Britain*, issued under the direction of the Master of the Rolls.

The most important work in that collection is the *Leech Book of Bald*. Bald was a practitioner of medicine, and the book, which appears to have been written soon after the death of Alfred, was evidently intended for his own use. From it we may gather that the writer knew that itch was caused by the acarus scabiei, and could be cured by sulphur among other things. As remedies the Anglo-Saxons used scarcely anything but simples; their knowledge of herbs was very considerable. Mr. Cockayne compiled a list of between 700 and 800 names of plants used in the Anglo-Saxon period. Deducting from these all of later date than 1150, and all purely Latin names, there remain some 500 English names of plants used for therapeutic purposes. Herbs were employed in the form of watery infusions and decoctions, or were made up into draughts with ale, vinegar, and milk, or as confections with honey, or mixed with butter as ointments. They were also used as plasters or poultices, and occasionally in vapour baths.

The remedies used by the Anglo-Saxon leeches were mostly of home growth, but their symptomatology and pathology were borrowed directly or indirectly from late Greek and Latin writers, especially Alexander of Tralles, who flourished in the sixth century. They had some knowledge of surgery, and it would appear that they had among them military surgeons, as it is recorded that in A.D. 685 Hrothere, King of the Cantuarii, was wounded in battle, and died under medical treatment. In the *Leech Book of Bald* there are prescriptions for broken bones, for "cancer," and for wounds, in the treatment of which the actual cautery was sometimes used. There is an account of an operation for opening an abscess of the liver; elsewhere the leech is told what to do "if a man's bowel be out," and reference is made to amputation of limbs. On the whole, however, there is little to be learnt about surgery in Anglo-Saxon literature.

The largest of the Anglo-Saxon medical books is a translation of the Latin *Herbarium* of Apuleius Platonicus. The figures of plants, several of which are reproduced by Dr. Payne, were, he points out, copied from older figures, and these from others still older, so that it would probably be necessary to seek back through several centuries before the original figure drawn from the actual herb can be reached. Most of the figures in the Anglo-Saxon books have departed from the prototype so far as to be scarcely recognizable. The Anglo-Saxon artists were clearly quite capable of drawing from Nature; their object, however, was not to copy the plants, but to illustrate the descriptions given by the old writers in such a way that the plants referred to by them could be identified.

Charms and other superstitious rites and usages played a considerable part in Anglo-Saxon leechcraft, but these were in no way peculiar to it, as superstition has generally been an element in every system of medicine. The Church tried to Christianize the magical rites and invocations of heathen deities inherited from paganism, but for the most part succeeded only in substituting a new form of superstition for the old.

The old English medicine was not at once crushed out of existence by the Norman Conquest. The Anglo-Saxon medical school continued to be productive till the middle of the twelfth century; after that date, the old English ceased to be a literary language, and was replaced by Latin. Dr. Payne holds that the Norman physicians had little or nothing to teach the English. But the English monks were turned out of the monasteries, where medical traditions were kept alive and medical books were written, and their places were taken by Normans, who introduced the doctrines of the Continental schools.

In his second course of lectures—abstracts of which will be found in the BRITISH MEDICAL JOURNAL of November 12th and the present issue—Dr. Payne brings his historical survey of British medicine down to Anglo-Norman times. In discussing the personality of the two most conspicuous figures in the English medicine of the twelfth and thirteenth centuries he displays the conscientious regard for historical truth, the critical acumen, and the extensive learning that mark the earlier course of lectures. The work of Gilbert and Richard, the Englishmen, as they were called by their Continental contemporaries, is perhaps of less interest to us than those of our Anglo-Saxon ancestors, as it is less racy of our native soil. These men, however, were famous in their day, and their fame doubtless helped to make the name of Englishmen respected abroad. For this it is natural that we should wish to praise them, and Dr. Payne has made it possible for us to praise them with an intelligent appreciation of their merits.

The medical profession has the greatest reason to be grateful to Dr. Payne for his painstaking labours in a region where, more almost than in any sphere of research, virtue is its own reward. It is earnestly to be hoped that he may be able to continue them till he has completed the work he has so well begun. A word of acknowledgment is also due to Mrs. FitzPatrick, whose desire to honour the memory of her accomplished husband, led her to found the lectureship which has already gone far to redeem our country from a deserved reproach.

ORAL SEPSIS AS A CAUSE OF DISEASE IN RELATION TO GENERAL MEDICINE.

A DISCUSSION which took place in the Section of Dental Surgery upon this subject offers much material for thought and for further observation. As it was put by Dr. Hunter, who appropriately opened the discussion, sepsis has of late been banished from the surgical and relegated to the medical ward, where much of the physician's time is spent in combating the results of sepsis of obscure origin. Dr. Hunter was, we believe, the first to ascribe many digestive disorders and diseases of the intestinal tract to infection from the mouth, and he subsequently extended his views of the results of infection from this source to many other diseases, notably to some of those forms of anaemia loosely grouped as pernicious anaemias, to infective endocarditis, and even to some forms of kidney mischief. He strongly urged the necessity of attention to the hygiene of the mouth, pharynx, and nasal passages both as a curative and as a preventive

measure. It had long ago been shown by Miller that by painstaking methods it was possible so to reduce the organisms ordinarily abounding in the mouth as to get an approach to sterility, and that if this was done, and only food recently cooked was taken, the number of organisms found in the faeces became enormously reduced. Thus experiment I proof was afforded that the mouth, even in the absence of notable pathological conditions, is a source of supply of the organisms found in the intestinal tract, whilst the frequency of septic pneumonia after operations on the tongue and the jaws renders it probable that a direct infection of the lungs from the mouth may take place.

As a general rule the lining of the intestinal tract offers an effective barrier to a wider dissemination of organisms, and this may account for the comparative rarity of general infections in face of the frequency of suppurative conditions in the mouth. It is suggested that it is only under repeated and copious dosage, coupled with diminished power of resistance, that it happens; or else in the presence of a lesion, such as an ulcer. Dr. Hunter maintains that even in the case of a typhoid ulcer disastrous results are seldom produced unless the ulcer shows evidence of prior infection with other than the specific bacilli, and some evidence exists to indicate that gastric ulcers are frequently also infected deeply. Moreover, he quoted cases in which the severity of scarlatinal anginae bore close relation to the state of the mouth. Mr. Kenneth Goadby, while dealing mainly with bacteriological points into which we have not space to enter, cited a remarkable case in which severe ulceration of the mouth was followed by fever and the occurrence of bullae widely distributed. The fluid of the bullae was sterile, but in blood drawn from the median basilic vein a bacillus was found which in cultural and other characters exactly corresponded with a bacillus found in the mouth of the patient, so that a mouth bacillus had somehow found its way into the general blood stream.

Mr. Godlee, who has before drawn attention to the harm done by the continued suppurative condition termed alveolar pyorrhoea, extends his warning to the state of the surgeon's mouth whilst operating. He quotes the instance of an excellent surgeon whose cases did badly till he had his mouth attended to, and advises that the surgeon speak as little as may be during an operation, and then with the face turned well away from the patient. If we are to accept the conclusion founded on the recent researches of Dr. Mervyn Gordon, that a vigorous orator may fill the atmosphere of a large room with his oral bacteria, this warning is not uncalled-for. Mr. Godlee, as a matter of routine practice, prior to the performance of any operation in the mouth, now purifies it as far as possible by the removal of tartar, the washing out of any suppurating pockets, and the filling of carious teeth, and is able to report marked improvement in his results. He further points out that in cases of gastro-enterostomy, we should not merely cleanse and render aseptic the area of operation but should guard it from subsequent infection from above by way of the mouth. Mr. Mayo Robson also has lately urged the importance of sterilization of the mouth in the after-treatment of such cases, and has hinted that it is not improbable that the occasional subsequent occurrence of ulceration in the jejunum may be due to neglect in this respect.

Many other speakers contributed matter of interest and importance to the discussion, and it may be held that a strong prima facie case has been made out for the mouth being a hitherto little-suspected source of infection in many diseases the causation of which has been obscure.

At all events, the accumulated evidence is now sufficiently strong to forbid its being ignored any longer, and further careful observations should be made with this in mind. It is unfortunate that Dr. Miller found that the most efficacious sterilizing agent for the mouth is corrosive sublimate, a drug singularly unpleasant to the taste, and not without its risks if frequently and carelessly employed.

THE QUATERCENTENARY OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE Royal College of Surgeons of Edinburgh was founded on July 1st, 1505, by Seal of Cause from the Town Council of Edinburgh, followed by a Charter of Confirmation by King James IV on October 13th, 1506. For some time back, the College Council has been engaged in making the necessary preliminary arrangements for the celebration of its fourth centenary. Various Committees have been appointed, including an Executive Committee and it has been arranged that the celebration shall take place on Thursday, July 20th, and Friday, July 21st, 1905. So far as arrangements have yet been considered, the ceremonies on July 20th will be, first, a welcome to the guests by the President, followed by divine service at St. Giles's Cathedral; after this there will be a luncheon, followed by an address by the President and the bestowal of honorary fellowships; in the evening there will be a reception. On July 21st visits will be paid to the College museum, to hospitals, and to other institutions in Edinburgh. After luncheon a garden party will be given by the College, and in the evening there will be a dinner and reception. The College has every reason to believe that the celebration of so interesting an event in its history will bring within its hall a large attendance of its Fellows and of distinguished medical and other guests.

THE TEACHING OF PATHOLOGY AT OXFORD.

AT a dinner of the Oxford Colonial Club held on November 14th Lord Rosebery announced that the Rhodes Trustees, hearing that the University was in some danger, from want of the necessary means, of losing their present teacher of pathology, were prepared to contribute £200 a year for five years certain. It may be in the recollection of our readers that when Sir John Burdon Sanderson resigned the Regius Chair of Medicine at Oxford he and the other resident teachers of medical subjects in the University were so strongly convinced of the necessity of providing a suitable endowment for the Department of Pathology that they promoted a plan by which the not very considerable emoluments of the Regius Professorship should be made available for the remuneration of the Reader in Pathology, whose present stipend is miserably inadequate. It was, perhaps, fortunate that this scheme was not carried into effect, seeing that the Crown appointed a Regius Professor, whose advent will be cordially welcomed by the University and the profession in England; but the difficulty still remains. The available resources of the University are wholly exhausted, add strenuous efforts are now being made, with some hopes of success, to obtain funds for the maintenance of the department of pathology, and to enable its head to devote his whole time to teaching and research. The proposed addition of £200 to the stipend to be made by the Rhodes Trustees will, it may be hoped, facilitate the efforts of those who are interested in the progress of the Oxford School of Medical Science.

THE HARVARD CANCER COMMISSION.

THE third annual report of the Harvard Cancer Commission was presented recently to the Boston Society of Medical Sciences. As in last year's report, the work recorded is largely destructive; its general trend is

towards a demolition of the parasitic hypotheses. Dr. Greenough has continued his study of the cell inclusions of cancer. These bodies, supposed by some to be protozoan in nature, are found to be in all probability only vacuoles formed within gland cells. From reports of nearly 500 examinations made by four observers on various kinds of cancerous growths, on sarcomata, and on different sorts of tissue, it was found that these rounded objects, the so-called Plimmer's bodies, are much more common in gland cells than elsewhere, never occurring, for example, in epitheliomata, and never, with a single exception, in sarcomata. These cell inclusions are held to be secretory in nature, formed by the aggregation of secreted granules which collect in masses, degenerate, and lead to the formation of vacuoles in the cytoplasm. These vacuoles almost always appear in the body of the cell between the nucleus and the duct lumen, the situation in which secretory products are most apt to be found. Of fifty-four implantations of tissues made in guinea-pigs and in rabbits by Dr. Nichols, none led to the production of cancer, unless the tissue transplanted was cancerous, in which case the form of cancer reproduced was always identical with that of the carcinoma from which the implanted piece of tissue was taken. All sorts of animals, save the very simplest, are now known to be liable to cancer, but the transference from one animal species to another has never been accomplished, and only in rats and mice has the infection of one individual by another by transplantation been proved to be possible. The statistics do not tend to prove a relative increase of cancer, nor its occurrence in localities or certain houses beyond what chance will quite account for. This result corroborates that of the English Cancer Commission reported last spring, and in general the trend of the work is the same—that is to say, toward establishing the non-infectious and metabolic nature of the disease. With regard to treatment, Dr. W. C. Howe and Robert Vose presented a careful summary of observations made in the Massachusetts General Hospital on the effects of Roentgen rays on cancers, especially those superficial in seat. The outcome of these observations is distinctly discouraging as concerns the curative effects of the rays on malignant growths of a cancerous nature. In a fair proportion of cases epitheliomata have been apparently cured, but in most of them the effect has been produced by a slow burning away *in toto* of the diseased area; and for this purpose the knife is both more prompt and certain. In the cases treated up to the limit of commencing tissue destruction, the therapeutic effect was usually found to be only palliative, recurrence taking place as it would have done after incomplete removal by the scalpel. Deeply-seated cancers appeared to be wholly beyond the influence of the rays.

THE LIFE TABLE FOR SCOTLAND.

THE last number of the *Journal of the Royal Statistical Society* contains a life table for Scotland calculated by Dr. T. Adam, M.A., of the Public Health Laboratory, Glasgow. It is based on the census enumerations of 1891 and 1901, and on the recorded deaths in Scotland during the decennium 1891-1900. The graphic method of making the life table has been adopted. With the details of construction we are not specially concerned, as the differences of results obtained by the use of graphic or analytical methods are too small to be of great importance except at the highest ages. We may, therefore, at once proceed to note some of the more important points which arise from Dr. Adam's life table. The probability at birth of living one year evidently depends on infantile mortality, and the relatively low infantile mortality in Scotland ensures a higher probability at this age than in any of the English life tables. The decennium 1891-1900 was not exceptional in this respect, as a life table constructed for Scotland in 1871 by Dr. W. Robertson showed a similar condition. With the exception of "at birth," Brighton, Dr. Adam says, "justifies its character as a health resort, the probabilities being higher than in Scotland at all the ages quoted." Scotland loses its good character when compared with England soon after birth. Thus, the probability of surviving a year is lower in Scotland than in England at 5, 10, 15, 20, 25, 35, and 55 years for males, and for females the probability is lower than in England at ages 10, 15, 20, 25, 35, 45, 55, and 65 years. The excessive death-rate in Scotland from phthisis and from other tuberculous diseases is the probable cause of the diminished prospects of life in Scotland. The mean after-life time or expectation of life is a measure of the conditions, whether favourable or unfavourable, under which the people have been living during the years following any age. The expectation of life of males at birth in Scotland exceeds that of England by half a year. Taking quinquennial intervals of age, we then find that England has a greater expectation of life at ages 5, 10, 15, 20, 25, and 85. In London the expectation of life of males is lower than in Scotland at all ages except at the age of 85. In Brighton, on the other hand, it is higher at all the ages except at 85. The expectation of life of females in England is higher on to age 35, and again at 85. From 45 to 75 Scotland has the higher values. Brighton has higher values than Scotland for the expectation of life of females at all ages except at 75 and 85. Comparing the Scottish experience of the last decennium with that of 1871, we find that the expectation of life for males is higher at every age by the more recent table. At 44 the expectations exactly coincide, and from 45 onwards in males the old table presents slightly higher values for expectation of life. The life table deserves study in fuller detail, though the most important conclusions are quoted above. The final paragraph of Dr. Adam's contribution is so encouraging that we quote it in its entirety: "The comparison of the present with the old table bears eloquent testimony to the greatly increased vitality of the people at the present time. Such figures seem wonderful when it is remembered to what an extent the urbanization of the population of Scotland has gone on since 1871, and they also render it hard to believe that there is any real foundation for the cry about physical degeneration of the race."

OPEN METHODS OF WOUND TREATMENT IN THE ALPS.

OUR attention has been drawn by a correspondent to the excellent results obtained by Dr. Oscar Bernhard, of the Upper Engadine Hospital at Samaden, by the exposure of open wounds to the dry air and sunlight of these high altitudes. Dr. Bernhard appears to have been led to the employment of his methods by the very favourable course which wounds in general usually run in these districts. In 1899 he was able to record a consecutive series of 264 operations for the previous two years and a-half which all healed primarily without suppuration: the course of granulating wounds was of an equally satisfactory character, healing taking place with exceptional rapidity. Surgery seems, in truth, to be carried on under ideal conditions in these localities, and the two chief influences which combine to produce the exceptional results are the dryness of the atmosphere and the amount of sunshine. For the last three years Dr. Bernhard has treated almost all granulating wounds under his charge by open exposure to sun and air for periods of an hour at a time, without any apparatus, on verandahs and through open windows. He has extended the method to disease processes near the surfaces, such as cases of tuberculous arthritis. The chemical rays of sunlight are largely absorbed by the atmosphere, and mountainous districts, where the air is pure and dry and rarified, are much more favourable for this sun-treatment than low-lying parts, where it is loaded with water, vapour, and various impurities. The largest granulating wounds appear to improve with rapidity under the combined influence of the dry air and sun, the discharge is arrested, and the surfaces become covered with scab. The resulting scars are said to be unusually supple and elastic. Dr. Bernhard has treated many different kinds of wounds in this manner, wounds caused by explosions and crushing, chronic ulcers of the leg, burns, frostbites, acute and chronic infections, and scrofuloderma. In a recent

article[1] he gave some interesting pictures illustrating the results obtained. These methods would no doubt be equally successful in other parts of the world where similar climatic conditions obtain.

VISION TESTING OF SCHOOL CHILDREN.

WE have on several occasions called attention to the well-grounded complaints of ophthalmic hospitals, especially in London, as to the inconsiderate manner in which school children who have been found by Board School officers to have defects of refraction are dispatched in throngs to the hospitals for correction. The sudden augmentation, without notice, of an out-patient clinic by some forty or fifty refraction cases is apt both to cause the most virtuous of clinical and refraction assistants to blaspheme, and seriously to dislocate the work of a hospital. We are, therefore, glad to learn that the London County Council, as successor to the late School Board, has given this grievance consideration, and has issued to its teachers an order setting out a new mode of procedure which is calculated to relieve the "intolerable strain" of which ophthalmic surgeons have justly complained. We understand that under the new scheme the ophthalmologists will attend the departments of the schools in rotation as heretofore, but that the usual red-and-green cards will not forthwith be issued to all the children found to have defective eyesight; one-seventh of the total ametropes are to receive cards in each week, and so on until the whole number has been worked off. This will, we trust, relieve the strain on the hospitals, and serve to distribute evenly throughout the year the suppliants for spectacles from the public elementary schools. We understand that this reform has been brought about by the intervention of the Chairman of the London Education Committee in conference with Dr. Kerr, the Medical Officer.

THE TREATMENT OF EXTERNAL OR SURGICAL TUBERCULOSIS IN THE COUNTRY.

DURING the past two years we have strenuously advocated the necessity of grappling earnestly with the problems presented to us in the treatment of children afflicted with that form of tuberculosis which comes under the notice of the surgeon. We have shown how incomplete are the results obtained in the children's hospitals of cities and large towns, how the disease recurs, and the energies of both the administrative and surgical staffs of the hospitals are taxed to cope with the disease, and that disappointment too frequently attends all efforts. The disease is essentially of a chronic nature, and requires time and patience, and, above all, a prolonged period of residence in fresh air. There should be no restrictions as to age and duration of stay, nor should the necessity of obtaining fresh letters from subscribers be allowed to interfere with the course of treatment. We are glad to receive a report from the Children's Home at Aberfoyle, where these desiderata are fully and effectually obtained. The Home was started at the desire of some medical men in Glasgow to meet the needs especially of cases of tuberculous disease of the bones, of which there are so many in the invalid schools. "Many of these children," the report states, "suffer from tuberculous disease of the bones and joints, and have been under hospital treatment; but their ailments are of such a nature that permanent cure cannot be expected under the conditions of a confined city life. Members of the medical profession are, however, of the opinion that in many cases these ailments might have a reasonable chance of disappearing, and the children live to become useful and happy members of the community, if only they could be sent to the country for a prolonged period of treatment. In diseases of the above-named description the chief and essential elements of cure are time, good food, and fresh air. With this object in view the Aberfoyle Home was started. Neither in the case of the cripple children nor of the adult is there any fixed limit of stay. It depends entirely on the progress made towards recovery, and in the case of the children is decided by the doctor, subject to the wishes of the parents." These are practical applications of the points in treatment which we have so frequently insisted upon, and we trust that the usefulness of the Aberfoyle Home will be increased by a wide recognition of the good work which it is carrying on in a neglected field of mercy. In the part of the report which deals with the character of the cases under treatment we come upon a comment in reference to two cases which "were too bad for permanent cure. They should have been in a country home of this kind years ago." Such we know is the verdict of most surgeons who have had many of the little victims of this disfiguring and infective, yet curable, disease under their care.

[1] Separatabd. a. d. *Münch. med. Woch.*, 1, 1904.

THE TRAGI-COMEDY OF PHYSICAL DEGENERATION.

WHAT is a conference? Without referring to the dictionary, we would venture to define it as a meeting at which people holding more or less divergent views endeavour by discussion to arrive at a conclusion satisfactory to all. The Bishop of Bristol has thrown some new light on the interpretation of the term. He will preach only to the converted, and carries to the chair the methods of the pulpit. At the conference held at the London Education offices on November 16th, a report of which is published at p. 1428, he insistently separated the sheep who were prepared to swallow Miss Theodora Johnson's simple mixture from the goats who might have been inclined for more active remedies. The President of Magdalen told the meeting that he was deeply moved by Miss Johnson's touching revelations as to the physical shortcomings of the British nation who refused to dance to the Swedish tune. But we must confess that we were more deeply moved by the revelation at the end of the meeting that out of forty or fifty persons present only four had the episcopal permission to vote. The uncommon character of the meeting did not end here. The support given by the selected speakers may have been moral, but it was not expressed in words. Lord Londonderry devoted the greater part of his speech to disclaiming any opinion or responsibility, personal or official; Sir William Church warmly resented the suggestion that poverty was to be cured by teaching the children physical exercises; while Sir Lauder Brunton's heroism in seconding a resolution promoting a scheme which would overlap the work of the proposed Physical Degeneration League must have been appreciated by all. It is true that before this happened the resolution had been whittled down by the Chair until it ceased to pledge anybody but the four invited guests to anything. Seriously, we do not think that the cause of physical education is advanced by meetings at which the free expression of opinion is not permitted. The Chairman appeared disposed to assume that the medical profession, which was the butt of Miss Johnson's sneers, had, by the so-called conference, expressed approval of a scheme which its promoters did not venture to submit in its entirety even to a packed meeting. The Bishop of Bristol, if he entertains that idea, is mistaken. Any well-thought-out scheme submitted to the profession through its representative bodies is assured of the most careful consideration. This scheme has not been so submitted, and the Bishop must clearly understand that it has not yet received, and, so far as we can judge, is little likely ever to receive, the approval of the medical profession.

CLEARING FOR ACTION.

IN these days of wars and rumours of wars most of us probably feel a momentary glow of patriotic fervour when we read on a newspaper placard the announcement "Warships Clearing for Action." The words somehow recall St. Vincent's famous instruction to Nelson to send the enemy to the devil in his own way, and we rejoice that Britannia still rules the waves. But how many of the dwellers in our tight little island have any clear notion what "clearing for action" means? A landsman who was

privileged to see the process described it as follows: On the order being sounded every one on board rushed about like mad, grabbing everything in sight and immediately slamming it down again. Yet in a moment, as it seems, perfect order is evolved out of this seeming confusion. Dr. J. A. Guthrie, of the U.S. ship *Franklin*, in a recent number of the *New York Medical Journal*, gives a graphic description of the process as carried out on an American battleship. The first thing, he says, to be done on deck is to clear away any obstruction that may interfere with the range of the guns, especially objects which, if accidentally hit, might cause splinters to fly about. The awning stanchions are turned flat on deck, or lashed to the ship's side; boat davits are similarly dealt with. The ridge ropes and life lines which are stretched all the way around the spar deck are unrove and sent below. The polished brass hatch canopies, and the skylights covering smaller hatches, are unshipped, and sent below; in actual battle they would be thrown overboard. In their place steel plates, known as battle hatches, cover all such openings on deck. Every accommodation ladder is unshipped and sent below, or thrown overboard. A number of chests containing tanks filled with alcohol, turpentine, and other inflammable liquids, which are kept in place on the spar deck, as a precaution against fires, are thrown overboard before going into action. The lower booms are lashed alongside. The sails of the ship's boats are soaked in water, and then passed underneath the boats, as a precaution against fire. A splinter net is also passed underneath each boat, to prevent the wood from flying about. Next, it must be seen that all signal men are ready to send and receive signals; the covers of signal books are weighted with slabs of lead, so that they may be thrown overboard should the ship be obliged to surrender. The ensign is taken down in order to reduce to a minimum the chances of a flag being shot away. Below, all ladders not absolutely necessary for use are unshipped. All mess chests and ditty boxes are either stowed below the water line or thrown overboard. All watertight doors, except such as are absolutely necessary for communication, are closed. The chief surgeon establishes two or three stations, each in charge of an assistant The regular complement of a first-class battleship includes three medical officers, but it is so difficult to obtain medical officers for the American navy that, as a rule, a battleship may be considered lucky if two are detailed. Three stations are established in charge of the medical officers, and if there are not enough medical officers the hospital steward may have charge of one. The selection of the stations by the chief surgeon is left to his judgement. In most instances the wardroom table is used as an operating table, and the other station is situated in the sick bay of the ship. The third station may be situated below the protective deck, well out of harm's way. At these stations an operating table is rigged up, and instruments, solutions, surgical appliances, and dressings are made ready for immediate use. The hospital apprentices distribute to the different guns' crews a supply of tourniquets and first-aid packages. Every man in the American navy is required to know the use and application of these. As a regular drill, the surgeon, at stated times, instructs every man in the ship how to carry a wounded man, how to resuscitate the drowned, how to apply tourniquets, etc. Sometimes either end of the armoured citadel is used as an emergency surgical station. The hospital apprentices (navy trained nurses) stand by to conduct the wounded to the surgeons, and otherwise assist them in every manner possible. If a surgeon has his station within the casemate or citadel he is pretty safe; usually he is in the sick bay, situated in the bow, and very much exposed to shot and shell.

SYPHILIS AT THE CAPE.

The Report of the Medical Officer of Health (Dr. A. John Gregory) for the Colony of the Cape of Good Hope for the year 1903 (published 1904), just received, contains a section dealing with contagious diseases, and supplies important references concerning syphilis. Owing to the coming into force of the Betting-houses, Gaming-houses, and Brothel Suppression Act, No. 36, of 1902, Part I of the Contagious Diseases Prevention Act, No. 39, of 1885, which provides for the periodical medical examination, and, when necessary, the detention in hospital of common prostitutes, is gradually becoming of no effect. As was pointed out at the time by the medical officer of health, the effect of the former has practically been to repeal the latter, the two enactments being based upon entirely different lines of policy and mutually destructive. It is stated that up to 1902 the Act of 1885 was, on the whole, satisfactory, and a great amount of good from the point of view of public health was effected at a comparatively small cost. In reviewing the objections to the Act of 1885, Dr. Gregory expresses the opinion that the argument that the enforcement of Part I demoralizes the woman and confirmed her in her prostitution is unsound. Nor does he think that by removing the danger of acquiring disease there is any increased temptation to immorality among men. Attached to the report are a number of tabulated returns. The most important fact brought out by them is the recent alarming increase of syphilis in the Colony generally, and more especially in the various districts of Bechuanaland and in the Kimberley, Namaqualand, and Barkly West districts. The disease has become increasingly rife among the natives, and in some districts much more so than is indicated by the figures. Syphilis has become very common among the natives working in the Kimberley mines, with the result that it is rapidly becoming disseminated throughout the native territories and districts which have a large native population. The returns give no adequate indication of the extent to which Europeans are affected, but, with a native and coloured population extensively diseased, the infection, to a greater or less extent, of the European population is considered to be inevitable. There is reason to believe that in some native areas the infection is in many cases conveyed by non-sexual channels. In the case of Europeans a frequent source of extra-genital infection is by native and coloured nurse-girls. Dr. Gregory concludes by stating that the gravity of this question of the spread of syphilis is not fully appreciated, either by Government or by the general public. He regards it as one of the most serious health problems which the colony has to face. A correspondent—Mr. Pernet—has pointed out that since the South African war syphilis is on the increase in London, an opinion which receives support from Dr. Gregory's valuable report.

DRAIN TESTING.

As the scale of sanitary administrative development is mounted, functions multiply and the organs necessary to fulfil them, when supplied at all, usually differentiate naturally and without friction. But this is not always the case and unless a ruling upon the point has been distinctly laid down by law, it is occasionally not found easy to settle what official should be charged with the responsibility of a duty the fulfilment of which by some one is recognized to be necessary. The first testing of drains is a case in point; upon whose shoulders should the onus fall? Upon those of the surveyor, or upon those of the medical officer of health through his sanitary inspector? The question is answered in different ways in different places, but if the differences in practice be examined in detail they will be found usually to conform in underlying principle. As a rule, in small rural or allied districts, in which questions of sanitation are not prominent, the question can be answered only in one way, since the inspector and surveyor are commonly two persons rolled into one; functions, in short, are either few or neglected, and development has scarcely commenced. At the other end of the scale, sometimes the M.O.H. through his inspector, sometimes the surveyor, is burdened with the work. This, however, indicates no difference in principle, for in the cases in which the work is assigned to the borough surveyor, it will usually be found that the latter is a trained sanitary engineer. His education, in short, in this matter has been the same as

that of the M.O.H. and of his subordinate, and no difference of opinion as to what constitutes a perfect drain is likely to arise between them; and as the two officials commonly have offices close together, they do their work hand-in-hand. Provided these conditions are fulfilled, the arrangement works well enough, and is a relief to the M.O.H., but the opposite plan is more in favour, and better meets the circumstances of the majority of towns. It is the medical officer who through his inspector is responsible for seeing that house drains are kept fit for use by the occupant or landlord; upon him, therefore, is thrown the duty of seeing that they are fit for use in the first instance. This arrangement is the more logical, and leaves no room for difference of opinion between the officials of the authority as to whether the drain was perfect in the first instance or not; undesirable friction is, therefore, unlikely to arise. Upon this account alone the arrangement is the one to be recommended in most towns, while in those which do not possess a specially-trained surveyor it may be regarded as essential, since otherwise the principle of keeping the house drainage under expert sanitary supervision from the beginning would not be observed.

ALGIERS AS A HEALTH RESORT.

Judging from sundry questions addressed to us by correspondents at home and abroad in regard to the possible danger of the disturbance in Morocco extending to and involving Algiers, the geography of Northern Africa is still a matter of conjecture with many. It may, therefore, be well to point out that a twelve hours' train journey separates Algiers from Oran, which is the western terminus of the railway at present. Beyond Oran the only means of land transport is the camel, which would take several days to reach the nearest point of the Morocco frontier. It may consequently be inferred that no troubles are to be apprehended in Algeria, especially as the frontier tribes are always at war with each other, and behind the Algerian Arabs is the line of forts garrisoned by French soldiers. Our correspondents may therefore be assured that, should considerations of health or comfort suggest a season in Algiers, there is no political reason why the voyage should not be undertaken. Certainly it is hard to picture a more delightful change at this inclement season than that of London to Algiers. There, according to the meteorological reports, the sun is shining brightly in an azure sky, while the ripening orange adds its colour-note to the flower-bedizened gardens. So far as visitors are concerned, the Arabs exist only for decorative and photographic purposes, and those who propose to convey themselves thither may safely be advised to leave their revolvers at home, but on no account to forget their smoked glasses.

ANTIRABIC INOCULATIONS.

A report by MM. J. Nicolas and Ch. Lesieur, of the Antirabic Section of the Lyons Institute of Bacteriology, states that the number of persons who underwent a course of antirabic inoculations there during the year 1903 was 673. There was no death. In 1900 there were 614 patients, with 2 deaths, a percentage of 0.325; in 1901, 689, with 1 death; a percentage of 0.145; and in 1902, 537, with 1 death, a percentage of 0.186. The number of persons treated at the Pasteur Institute in 1903 was 628, with 2 deaths, a percentage of 0.32. The new number of the *Archives des Sciences Biologiques*, published by the St. Petersburg Imperial Institute of Experimental Medicine (T. x., No. 4), which has just been issued, contains a report by Dr. V. Kraiouchkine, of the department of antirabic inoculations for 1902. The total number of persons treated during that year was 1,165. Of these, 163 were not treated for the following reasons: In 44 cases the animal which inflicted the bite was proved to be free from disease; in 23, there was only a very slight wound or none at all in the part bitten; in 51, the clothes were intact at the place of the bite; in 43, treatment was declined by the patient; in 2, hydrophobia had already manifested itself. In 99 of the cases treated no bite had been inflicted, but the hands were smeared with the saliva of the rabid animal. In 62 cases the treatment was abandoned, either at the wish of the patient or on account of the development of some intercurrent disease; in 19 cases in which the inoculations were undergone, the animals were found to be quite healthy; in 3 cases the persons were anxious to be treated, although their clothes were intact at the spot where the bite was inflicted. Deducting these 346 cases, there remains a total of 819, of whom 8 died. The total mortality rate was thus 0.9 per cent. Deducting from the number of fatal cases the three in which death occurred during the treatment, the mortality rate was 0.6 per cent.

THE TITLE-BACILLUS.

The question of professional titles is in this country, as our columns bear witness, a hardy annual. But it is not only here that the question crops up from time to time. In Germany the "title-bacillus" every now and then acquires increased virulence, and gives rise to epidemics of *Titelsucht*. Quite lately the Hamburg Senate has had to deal with a petition, presented by certain post-graduate teachers, who asked that they might be allowed to decorate themselves with the title "Professor." Hamburg does not, however, seem to be a favourable soil for the growth of the "title-bacillus." In America the microbe has attacked nurses. At a recent meeting of the Pennsylvania State Medical Society, the State Nurses' Association presented a communication asking for the co-operation of the Society in an effort to induce the Legislature to pass a Bill providing that graduated nurses should be licensed and permitted to append to their names the letters "R.N.," signifying "registered nurse." It is clear that if the registration of nurses finds a place in our Statute book the letters "R.N." could scarcely be used to describe their professional chararter. Perhaps nothing short of "D.N." (Doctor of Nursing) will satisfy the vaulting ambition of the new nurse.

NURSES AND DRUGS.

It is generally recognized that events move with surprising rapidity in America. To those who are conservative enough to believe that progress is most substantial when achieved under the influence of the old motto, *festina lente*, some of these rapid advances are premature if not undesirable, and tend to delay rather than to hasten the growth of knowledge and the advance of science. Such a thought is suggested by a book on *Practical Materia Medica for Nurses*,[1] written by Emily A. M. Stoney, late Head Nurse of Mercy Hospital, Chicago, which has reached a second edition. We were not favoured with a copy of the first issue, but the authoress says that the numerous alterations and additions which have been made are intended "to bring the book thoroughly abreast of the times, and to make it a more complete guide to those engaged in nursing." We take no exception to the work, which is a useful enough though unequal compendium of the *Pharmacopoeia*, similar to many already published for the need of medical practitioners. What concerns us is that such a book should be deemed necessary for nurses. Surely it is beyond their province to be acquainted with the dosage, properties, and methods of preparation of every drug which it is their duty to give but not to order. That a nurse should be encouraged to assume responsibility for which she is fitted neither by her education nor by her training may be looked upon with some degree of apprehension. And yet at page 118 we find the following directions given: "Ether should be given slowly, the patient being instructed how to inbale it and allowed plenty of time in which to take it. . . The lower jaw should be kept forward by placing the thumb (*sic*) behind the angles of the jaw and making gentle pressure. . . . Holding the tongue forward by passing a suture through the tongue should not be done"; and at page 117, "When giving opium or morphia, the nurse must not

[1] *Practical Materia Medica for Nurses*, with an appendix. By Emily A. M. Stoney. Second edition. London: W. B. Saunders and Co. 1904. (Demy 8vo, pp. 300. 8s.)

repeat the dose unless there is a distinct indication for it, as a habit of taking the drug is easily acquired." Does the author of this volume contend that a nurse is to be depended upon for the administration of ether, or for the reliable regulation of opium and morphine administration? Is it within the scope of her legitimate vocation that such duties should ever be committed to her care? We are of those who do not think so, and who cannot therefore look upon a work of this kind, whatever its intrinsic value may be, as fulfilling any useful purpose among those to whom it is addressed.

A MONUMENT TO OLLIER.

On November 13th the monument erected to the memory of Professor Ollier, the distinguished French surgeon, by international subscription, was unveiled at Lyons in the presence of M. Chaumié, Minister of Public Instruction; General de Lacroix, Military Governor of the city; M. Compayre, Rector of the University; Dr. Augagneur, Mayor of Lyons; Dr. Lortet, Dean of the Faculty of Medicine, and many other notabilities. M. Chaumié paid a glowing tribute to the value of the work done by Ollier, which was more fully dealt with by Professors Chauveau and Guyon of the Académie de Médecine, who represented the Institute of France. Professor Lassar of Berlin, representing the German Surgical Society, expressed the admiration felt by his countrymen for the French surgeon at the foot of whose statue he placed a magnificent crown of laurels. Several other eulogistic speeches were made, and a sympathetic telegram from Professor Baccelli was read.

DEATH OF DR. A. VINTRAS.

We regret to announce the death of Dr. Achille Vintras, Physician to the French Embassy and Senior Physician to the French Hospital in London, which took place last week. He was the founder of the hospital to which he rendered most valuable service for many years. The King and the French Ambassador have sent sympathetic messages to the hospital authorities, expressing their sense of the grievous loss the institution has suffered by the death of so devoted an officer. The funeral obsequies took place on November 15th in the Church of Notre Dame de France; among those present was His Excellency M. Cambon, the French Ambassador. Dr. Vintras, who was 75 years of age, studied medicine at St. Mary's Hospital and in Paris; he became a Member of the Royal College of Surgeons of England in 1858, and took the degree of Doctor of Medicine at the University of St. Andrews in the following year. He was a member of the Royal Medical and Chirurgical Society and other medical and literary societies, British and foreign. He was an officer of the Legion of Honour and an Officier d'Académie. He was the author of a *Medical Guide to the Mineral Waters of France and its Wintering Stations*, of which a second edition appeared in 1892, and of monographs on vaccination and diabetes, besides contributions to medical periodicals. Dr. Vintras was held in highest esteem by his professional brethren and was popular among the members of the French colony and among his adopted fellow-countrymen.

A NEW SPECIES OF BILHARZIA.

The Craggs Prize of £50 for the most important contribution made during the current year to tropical medicine by a former or present student of the London School of Tropical Medicine has this year been awarded to Dr. John Catto, for an important discovery in helminthology. We hope in an early issue to publish an account of Dr. Catto's observations. They deal with a new species of bilharzia affecting principally the intestinal mucosa and not, as in the case of the African species, the bladder. The lesions to which it gives rise are apparently quite as grave as those produced by the more familiar species. It will be remembered that last year the Craggs prize was awarded to Dr. Aldo Castellani for his discovery of the occurrence of trypanosoma gambiense in sleeping sickness. Sir John Craggs is to be congratulated on the results of his enlightened liberality, and on the importance of the facts which his prizemen have added to science and to tropical medicine.

Dr. Mitchell Bruce, who has been closely connected with Charing Cross Hospital and Medical School for thirty years, has been elected consulting physician to the hospital on his retirement from the active staff. This step is due to increased demands of other professional duties.

Dr. J. S. Collier, Assistant Physician to the National Hospital, Queen Square, and Dr. E. I. Spriggs, Assistant Physician to the Chest Hospital, Victoria Park, and the Victoria Hospital for Children, have been appointed Assistant Physicians to St. George's Hospital.

The President of the Royal College of Surgeons of England, Mr. John Tweedy, will unveil the memorial window to the late Mr. Cadge, in Norwich Cathedral on Tuesday, December 6th, at 3 p.m. The Dean of Norwich will conduct a short service on the occasion.

A meeting of the Faculty of Medicine of the University of London will be held on Tuesday, December 6th, at 5 p.m. We are requested to state that any member desiring to bring forward business is requested to communicate with the Honorary Secretary of the Faculty of Medicine, London University, S.W., on or before Saturday, November 24th.

It is seldom that a memorial is erected to a living man. The fact that it is proposed to pay such an honour to Professor Osler is a striking proof of the respect with which he is regarded by his professional brethren in America. It is probable that the memorial will take the form of a great medical and library building to be erected in Baltimore. We understand that Dr. Osler will take up the duties of Regius Professor of Physic in Oxford next April.

An organized discussion on Sudden and Unexpected Death in Children is to be held by the Society for the Study of Disease in Children on December 16th. The sections into which the subject will be divided are: Medical Causes, Surgical Causes, and Anaesthesia. The Medical Causes will be again subdivided into organic causes, functional causes, and the thymus gland and status lymphaticus. An introducer of each section and subsection has been selected.

At the meeting of the Royal Medical and Chirurgical Society, to be held on Tuesday next at 8.30 p.m., there will be a discussion on chloroform anaesthesia and practical demonstrations of apparatus. A short paper will be read by Dr. Levy; the discussion will be opened by Dr. Hewitt, and it will probably be necessary to adjourn the meeting, so that the subject may receive full consideration from all points of view. Gentlemen wishing to take part in the discussion are requested to communicate at once with the Honorary Secretaries, 20, Hanover Square, W.

The adjourned meeting of the Council of the British Medical Association was held on November 16th, at 2 p.m., in the Council Chamber of the Metropolitan Asylums Board. The Council sat until 5.40 for the discharge of business left over from the meeting on October 19th. The meeting was held at the Metropolitan Asylums Board because members of the Council had represented to the Chairman that the acoustic properties of the Library of the Association are defective, and the room difficult to ventilate adequately. The Council Chamber was in many respects a great improvement; it was in particular much better ventilated, but some speakers seemed to find a difficulty in making themselves heard.

Scotland.

Edinburgh Royal Infirmary and an Age Limit.

The report of the managers of the Royal Infirmary of Edinburgh to October 1st, 1903, submitted to the Court of Contributors at the statutory annual meeting, held on Monday, January 4th, 1904, stated that the managers, after most careful consideration, had introduced a new rule to the effect that the ordinary physicians and surgeons should in future retire at the age of 65. This having been considered by the Contributors, they in their turn adopted a resolution to the effect: "That in the public interest the age limit enacted by the managers for the ordinary physicians and surgeons be made to apply as well to the physicians and surgeons of the institution nominated by the University." The motion was not meant to be retrospective. It was thought, however, that the whole question was of such serious importance that further time should be allowed for consideration and discussion. Accordingly a small Committee of five managers and five members of the Court of Contributors was appointed to review the whole matter and prepare a report. This report essentially consists of the following recommendations:

1. That the rule fixing an age limit for the members of the ordinary medical and surgical staff be not adopted.
2. That accordingly the resolution passed on January 4th last requiring professors to retire from the positions which they occupy on the staff on attaining the age of 65 years be rescinded; and
3. That in future each professor and physician and surgeon in charge of wards in the infirmary may, at the expiry of the time for which he has been appointed, apply for reappointment, when the managers shall give careful consideration to his case, and when, if deemed expedient by the managers, he may be reappointed for such term as they may fix—the first consideration of the question of reappointing professors now in charge of wards to take place within one year from the adoption of this rule.

The adoption of these recommendations, if approved of by the Contributors, will, in the view of the Committee, render it superfluous to fix an age limit in the meantime. In the case of the ordinary medical and surgical staff a rule prescribing an age limit of 65 would, looking to past experience, never come into operation. Under the rules now proposed the managers will have the matter in their own control, as the question of the continuance in office of the principal medical and surgical officers, including the professors, will in every case regularly come under the special consideration of the managers, when they will have it in their power either to renew the appointment for five years or for such shorter time as they see fit, or to resolve that there shall be no reappointment. The Committee have no reason to doubt that the managers will in each case exercise a wise discretion in the interest both of the patients and of the medical school. The recommendations were supported by, and signed by, eight of the ten members of Committee, the remaining two dissented on the ground that they thought that the age limit ought to apply to all officers of the Royal Infirmary, and that the professors ought not to be exempt from the rule.

The report in question was received at an adjourned meeting of the Court of Contributors held on November 14th. The Lord Provost of Edinburgh presided, and moved the adoption of the report. Mr. James Haldane, C.A., seconded. Mr. Charles Ritchie, S.S.C., one of the two dissentients from the report of the Committee, moved an amendment to the effect that an age limit be adopted for all physicians and surgeons, including professors, and that such age limit be 65. He referred to the age limit in London, provincial English, and Scottish hospitals. Dr. P. H. Maclaren, the other dissentient, seconded. On a vote, thirty-three voted for the amendment, and twelve for the motion. The Lord Provost said he earnestly hoped that the decision would make for the benefit of the institution. The managers would loyally carry it out.

Royal Medical Society, Edinburgh.

The following gentlemen have been elected office-bearers of the Royal Medical Society for the current session: Dr. H. N. Fletcher, Senior President; Drs. A. C. Geddes, H. J. Dunbar, and R. W. Johnston, Presidents; Messrs. D. M. Barcroft and J. Douglas Wells, Secretaries; Mr. T. Graham Brown, Editor of *Transactions*.

Edinburgh Association for the University Education of Women.

The following bursaries have been awarded by the Edinburgh Association for the University Education of Women for the current session: The Victoria Jubilee Bursary of £30 for one year (founded by the late Dr. Gunning), M. Drever; the Houldsworth Bursary of £20 for two years, Mary Hogg; the Earl of Zetland's Bursary of £20 for one year, Isabella Leonard.

Edinburgh Medical Women's Society.

The inaugural address of the Medical Women's Society, Edinburgh, was given on Friday, November 11th, in the hall of the University Union, by Dr. George A. Gibson, on The Uses of a Debating Society.

Local Government Board for Scotland.

The King has been pleased, on the recommendation of the Secretary for Scotland, to appoint Dr. W. Leslie Mackenzie to be medical member of the Local Government Board for Scotland, in room of Dr. Russell, deceased.

Victoria Infirmary, Glasgow.

The second biennial dinner of the past and present resident assistants of this infirmary was held in Glasgow on November 11th. Dr. William Dove Macfarlane, jun., of Busby, who presided, in proposing the toast of "The Victoria Infirmary," remarked that many changes had taken place in the infirmary since he was a resident assistant thirteen years ago; three wards, a pathological department, a nurses' home, and the Bellahouston Dispensary had been added, and now an additional pavilion was in course of construction. The time spent in the infirmary he considered the happiest period of his life. The infirmary had been fortunate in its staff. Its first superintendent, Dr. Mackintosh, now superintendent of the Western Infirmary, Glasgow, had made a name for himself as an authority in hospital construction, and he was particularly pleased to couple this toast with the name of the present superintendent, Dr. D. O. MacGregor, a friend of his for twenty years. Dr. MacGregor replied in a humorous and very happy speech. Dr. Alexander Napier proposed "The Resident Assistants, Past and Present," and Dr. Alex. Prentice, Kilmarnock, a past resident, and Dr. Graham, a present resident, suitably replied. Mr. Grant Andrew proposed "The Health of the Chairman," and remarked that if Dr. MacGregor had claimed a friendship with the Chairman of over twenty years, he could claim an even longer friendship; for Dr. MacFarlane and himself were born in the same year, in the same parish; the one the son of the doctor, and the other the son of the minister. They were at college together, residents in the same infirmary, members of the same lodge. He said that the name of MacFarlane for two generations had been and was still much respected in Busby and its neighbourhood, beloved by all, rich and poor alike.

Ireland.

Recent Appointments to the Senate of the Royal University of Ireland.

A very strongly-worded protest has been made by the Royal University Graduates' Association bearing upon the recent appointment to the Senate. The late Dr. W. A. McKeown, although appointed by the Crown, came from the north, and was an able and willing upholder of the Belfast Medical School. The three last senators had no connexion with the North, and one, a medical gentleman from Dublin, was lately defeated by a large majority by a northern candidate in a full election by the graduates. The Belfast Medical School, as it contributes more than half the candidates to the Faculty of Medicine, consequently expresses its deep sense of indignation at what it considers a grave injustice to the North of Ireland, and a studied slight to the graduates of the University.

Opening of the New Maternity Hospital, Belfast.

At the formal opening of the New Maternity Hospital, Townsend Street, Belfast, by the Countess of Grosvenor, Mr. Herbert Ewart, Chairman of the Board of Governors, who presided, said that the charity was 111 years old. At first the work was carried out at a house in Donegall Street; in 1825 the hospital in Clifton was built; it was extended in 1850, and about ten years ago the idea of rebuilding was first entertained; the Committee had succeeded in acquiring the site on which they stood, and had raised the cost of building short of some £300. The hospital was now chartered as an incorporated society.

The Rev. Dr. Hamilton, President of Queen's College, con

gratulated the Governors, and emphasized the value of the Maternity Hospital as a teaching institution in connexion with the Medical Faculty of the Queen's College.

Dr. Brice Smyth, as Senior Consulting Medical Officer, expressed his very high approval of the new building.

The Countess Grosvenor then formally opened the hospital, referring in feeling terms to the donors, the physicians, and the nurses, who all combined to carry on such a beneficent work.

After a vote of thanks to the Countess Grosvenor, the Lord Mayor (Sir Otto Jaffé) took the second chair. A vote of thanks was proposed by Mr. J. C. Payne, J.P., to Mr. and Mrs. Ewart for their untiring exertions. This was seconded by Professor Byers, M.D., who said that they desired to return the thanks of all those intimately associated with the working of the hospital to Mr. Ewart, without whose constant care, thoughtful attention, and personal supervision the beautiful building in which they were assembled would never have existed. If the hospital was to be of real advantage to the public of Belfast and Ulster, by supplying a training school for nurses and a place where the medical practitioners of the future could obtain their necessary practical experience, it must be thoroughly abreast with the most modern institution of the same kind. It had long been the boast of Irish medicine that it was specially pre-eminent in the obstetric art, and an institution such as this was calculated to maintain the tradition. He believed there was no maternity hospital, for its size, better furnished in every detail. On behalf of the medical staff he wished to thank Mr. Ewart for the complete way in which he had met all their suggestions. The vote was passed by acclamation. An illustrated description of the new hospital was published in our issue of November 5th, 1904, p. 1266.

Irish Dispensary Doctors.

On Monday evening Surgeon-General Evatt, C.B., addressed the students of the School of the Royal College of Surgeons on the subject of the Irish dispensary medical service. He was received with much enthusiasm when introduced to the meeting by the chairman, Sir Lambert Ormsby. Surgeon-General Evatt related the events of his journey through Ireland and repeated the tale of the grievances of the dispensary doctors. He pointed out that reform was needed not so much for the improvement of the doctor's position as for the succour of the "ultimate peasant," for whom the medical service existed. Good doctors could not be had if they were not properly remunerated. Ireland was bleeding from two wounds. The peasants were going in thousands to America through Queenstown, and the best educated of their young men were going out into the big world through Kingstown. This was a national question which all who loved their country ought to consider.

A vote of thanks to the lecturer was moved by Sir William Thomson, C.B., seconded by Mr. R. F. Tobin, President Irish Medical Association, and adopted. Mr. H. R. Swanzy, Vice-President of the College, was moved to the second chair, and the proceedings terminated with a vote of thanks to the Chairman.

Surgeon-General Evatt has since addressed the students at the Trinity College and the Catholic University Medical Schools.

The Dispensary Medical Service.

The Galway guardians have introduced a new qualification for medical men. In a recent appointment of a medical officer to Oranmore Dispensary, it was stated that a candidate having a knowledge of Irish would be preferred. There were 59 electors in attendance, and a scene of riot—such as, the clerk said, he had never seen in twenty-four years—prevailed for some time. One candidate sent his application in Irish, but no guardian could read it, and it was ultimately translated by the schoolmaster. Dr. Walsh was elected at a salary of £120 a year.

The Clogheen guardians have increased the salaries of their medical officers to £150, with an increase of £5 every five years, the maximum being £200.

The Banbridge guardians have increased the salaries of the medical officers of the following dispensary districts: Dromore, £120; Tandragee, £120; Ballyward, £140, with a five-yearly increase of £10, up to £150. In Banbridge the minimum is £150 and the maximum £225.

Cork Medical and Surgical Society.

On Saturday evening, November 5th, the annual dinner of the Cork Medical and Surgical Society took place, when a goodly number of members sat down together as well as some prominent city dignitaries. Dr. W. Henry Hobart President of the Society, occupied the head of the table, and the usual toasts were proposed.

The first ordinary meeting of the session was held on Wednesday, November 9th, when several important surgical cases were brought before the members.

The New President of Queen's College, Cork.

Dr. Windle, the newly-appointed President of Queen's College, Cork, arrived in the city on the morning of November 8th; he received a most enthusiastic welcome from the students who, assembled to the number of some 300 in the quadrangle of the College, had formed into procession and marched through the city to meet the train. They looked an imposing body, headed by one of their number carrying a bannerette in the red and black colours of the College; and further on, amongst the ranks, came a huge banner with the same colours, which bore the letters "Q.C.C." and cross-bones with a skull of large dimensions, these being the emblems of the football club. On alighting from the train, Mrs. Windle was presented with a bouquet by one of the students, while Dr. Windle was the recipient of an illuminated address, which ran as follows:

Address from the Students of Queen's College, Cork, to Bertram C. Windle, F.R.S., D.Sc., F.S.A.

Dear Sir,—We, the Students of Queen's College, Cork, tender to you a thousand welcomes to our city. Your appointment to the high and honourable position of President of our College has given pleasure not only to us whose lives are spent within the walls, but also to great numbers of thinking Irish people, who are glad to recognize in you a worthy representative of the better system of government which is happily beginning to prevail in many spheres of national life. We recognize that you are a fellow-countryman by every claim that a man can urge to be called such. You have shown a deep interest in the language and glories of the ancient Gael, and we would suggest that here in the heart of the great Province of Munster you will find scope for renewed efforts in the cause of intellectual and national regeneration. We are well aware of your brilliant literary attainments, and, in these days when too many people abandon themselves to the pursuit of a solitary subject, and lose in the fastnesses of the museums and of the dissecting chambers those qualities necessary for the civilized intercourse of life, we rejoice to meet with one who, as you, leaps the barriers of anatomy and wanders away to the sunnier regions of archaeological and Shakespearian research. We trust, then, that under your presidency the Queen's College, Cork, may continue with ever increasing vigour the great work of professional education which it has so long carried out, and we again wish you welcome and prosperous days in the "Faire Citie" of the South.

The address was signed on behalf of the students by representatives of the Faculties of Medicine, Engineering, and Arts.

Dr. and Mrs. Windle were then escorted to a carriage specially provided by the students, who now divided into two bodies, one preceding the carriage and the other following, and marched back to the College, where on reaching the Quadrangle they were joined by the lady students, one of whom presented Mrs. Windle with a choice bouquet. After quiet had been restored, Dr. Windle replied in a brief speech from his carriage, in which he thanked them for the magnificent reception they had given him. He said he was glad to be back in the old country, and looked forward with great expectation to his career amongst the Cork students. He hoped also to identify himself not alone with the College, but with the city as far as possible. He had expected to be in Cork a week earlier, but was not able to travel, owing to a cold which he had not yet got rid of. Perfect order prevailed from beginning to end.

THE PELLATT FUND.

The Treasurer, Surgeon-Colonel F. H. Welch, 8, Brandram Road, Lee, S.E., begs to acknowledge the receipt of the following sums, completing the list of donations:

	£	s.	d.
Miss Ormiston...	2	0	0
Miss Lilian M. Chesney, M.B.	0	10	6
Dr. S. W. Sutton	2	2	0
Mr. H. A. Hinton	2	2	0
Rev. E. L. C. Clapton ...	0	10	6
Miss Grundy	0	10	0
Mrs. Sparrow	0	10	0
Miss Pellatt	2	0	0
Dr. Elizabeth Beatty ...	0	10	6
Wood Green and District Medical Society	3	0	0
Mr. A. J. Elkington	1	0	0
Rev. H. Whittaker	0	10	6
Mr. A. C. Hackforth... ...	0	5	0
Miss Agnes Catchpool ...	0	5	0
Miss E. P. Pratt	0	5	0
Miss Greenwood	0	10	6
Collected by Mr. Robert Turner...	1	10	6
Dr. Champneys	2	2	0
H. C. V.	1	1	0
Rev. F. Parnell	1	0	0
Dr. Annette M. Benson ...	2	2	0
Mrs. Bryant and Old Pupils, North London College School, per Miss Grace Toplis	33	4	0
Old Pupils' Missionary Union, per Miss Buchanan	17	8	0
Dr. Harriet E. Knight ...	0	10	6

PROPOSED NATIONAL COLLEGE FOR PHYSICAL EDUCATION.

A CONFERENCE to consider the possibility of establishing in England a national central school for physical education on the lines of the Royal Swedish Institute of Sweden was held at the offices of the London Education Committee, Victoria Embankment, on Wednesday afternoon. The BISHOP OF BRISTOL presided.

The CHAIRMAN said that certain persons had been invited to attend the Conference, and that certain others had applied for permission to be present. Only those who had been invited would be permitted to vote. He dwelt on the moral effect of physical culture, and expressed the opinion that an evil heredity might be remedied by culture of the body. Such training would strengthen the nation in its physical, moral, mental, and spiritual aspects.

The Marquis of LONDONDERRY said that he spoke only in his private capacity, and did not wish to give any pledge on behalf of the Board of Education or his colleagues in the Government. Personally, he had long been deeply interested in the subject of physical education, and believed that the establishment of a centre for physical education must commend itself to all. The Board of Education had shown its deep interest in the subject, by appointing an inter-departmental committee which had formulated a system of physical instruction. This system the Board believed to be the best and most practical yet produced, combining the advantages of the Swedish and other foreign methods. He wished emphatically to say that he could express no opinion on matters of detail and as to the curriculum, which were nevertheless points of enormous importance. It must be remembered that the Board of Education had not a free hand, but must work in unison with the Admiralty, the War Office, and innumerable other bodies.

Miss THEODORA JOHNSON, Principal of the Swedish Institute, Clifton, Bristol, delivered an address, in which she referred several times to what she called the conservatism of the medical profession. She advocated the organization of physical education in this country on the lines of the Royal Central Institute of Sweden. The system followed there was due to the wide knowledge and to the patient and scientific spirit in which the founder, Professor Ling, worked. The Swedish Institute, which had been controlled by the Government since 1815, expended about £2,750 a year provided by Government. It was free, as was all education in Sweden; the pupils numbered about 126 at the present time, and both men and women were received and were trained by the same teachers, though in separate classes. The course of education given was in four sections—educational, medical, military, and aesthetic; women took only the first two sections; the aesthetic branch was chiefly taken by dramatic artists, and consisted of training in movements to express by pose and gesture every variation of emotion. She urged that a national college should be established with a charter to receive both men and women. The demand for such pupils as would be trained in this college was growing in England, and was chiefly met by Swedes and Germans, many of whom were making large incomes. Massage and medical exercise formed a branch of medical work if performed by thoroughly-trained experts, but hosts of unqualified persons throughout England had brought massage into disrepute; therefore in the interests of the medical man, of the patient, and of the masseur, she urged the need for the registration of practitioners and massage. Under the Swedish law it was illegal to practise massage without a certificate of registration. The teaching of hygiene and physiology to the poor might be undertaken by the staff and senior students of the College, and eventually similar branch institutions might be established in Edinburgh, Dublin, and other great cities. The funds might be obtained from one of three sources: (1) By Government grant; but any attempt to obtain such a grant would, she believed, be tedious and undesirable, and possibly unsuccessful; (2) by subscription, appealing to all persons concerned in the welfare of the country; and (3) by establishing a limited company. The latter plan, which had worked successfully in the case of the Clifton College, was that which she recommended; once started, however, the institution would pay itself, for the fees to be paid by students should equal or exceed those of existing colleges of the kind.

Sir WILLIAM CHURCH said that it must be distinctly understood that he expressed no opinion with regard to the proposals as to massage and the curative side of the proposed scheme. In his view poverty was at the root of deterioration, and physical exercises in school would not cure the deterioration due to poverty. It was not the case that the Government had been neglectful, but it had not been backed up by the public. Compulsory education had been a great blessing to the people, but sufficient attention had hitherto not been given to the physical aspect. He concluded by moving a resolution expressing the opinion that steps should be taken to establish a national system of physical education, and pledging those who had been invited to the meeting to form themselves into an association for pressing the proposal on the Government, the public, and public bodies.

Sir LAUDER BRUNTON, who seconded the resolution, said that the proposal was very complicated. It really involved two quite separate subjects—the education of teachers and the teaching of massage. It would not be fair to withhold from the pupils of institutions already in existence the right to obtain certificates. A central institute would therefore have to grant certificates to all comers.

The CHAIRMAN called upon any invited supporters to address the meeting. There was no response, and he then called upon the invited persons only to vote. Four persons held up their hands. The total number of persons present was between forty and fifty.

After the PRESIDENT OF MAGDALEN had said that what was wanted was a scientific system combining games and gymnastics, Sir WILLIAM BROADBENT said a few words as to the need for co-ordination between the numerous agencies in existence.

LITERARY NOTES.

THE issue of the *Progrès Médical* of November 5th is the Students' Number. It gives full information as to the courses of study in the medical faculties and schools of France as to hospitals, asiyums, laboratories, etc., and as to examinations and graduation in the various universities. Foreigners who wish to study and medical practitioners who desire to obtain a medical degree from a French university will find all they require to know in this number. The *Progrès Médical* is published at 14, Rue des Carmes, Paris.

The *Figaro* is responsible for the announcement that a dramatic author has just finished a "topical" Molièresque comedy entitled *Argan ou le Micrococcus Imaginaire*.

The *Textbook of Medical Practice*, edited by Dr. William Bain, will be published by Messrs. Longmans and Co., early in December. It will contain seventy-five illustrations. Apart from the practical character of the book, its special feature is said to be that the anatomy, histology, and physiology of each organ and system precede the description of their diseases. The following is a list of the contributors and the subjects with which they severally deal: Professor A. Robinson, anatomy; Professor T. G. Brodie, physiology; Professor Sidney Martin, diseases of the alimentary system; Dr. H. C. Hawthorne, internal parasites; Dr. T. W. Griffith, diseases of the circulatory system; Dr. A. E. Russell, diseases of the blood and spleen; Dr. William Bain, diseases of the thyroid, suprarenal, and thymus glands, and gout; Dr. Percy Kidd, diseases of the respiratory system; Dr. W. P. Herringham, diseases of the kidneys; Dr. A. Whitfield, diseases of the skin; Dr. Risien Russell, diseases of the nervous system; Professor J. Dixon Mann, metabolic diseases, intoxications, and poisons; Dr. I. Biernacki, infective diseases of temperate climates; Dr. C. Powell White, pathology of tuberculosis; Dr. C. W. Daniels, tropical diseases; Professor Rose Bradford, the inter-relation of organs in diseases.

The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about 180 dollars (£36), will be made on July 14th, 1905. Essays intended for competition may be upon any subject in Medicine, but must not have been published. They must be in the hands of the Secretary of the College on or before May 1st, 1905. Each essay must be sent without signature, but must be plainly marked with a motto, and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. The successful essay or copy of it will remain in the possession of the College; other essays will be returned upon application within three months after the award. The Alvarenga Prize for 1904 was not awarded, no essay of sufficient merit, in the judgement of the Committee, having been submitted in competition.

ASSOCIATION NOTICES.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1905.

MEETINGS of the Council will be held on Wednesdays, January 18th, April 19th, July 5th and October 18th.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.—A dinner will be held in the King's Arms Hotel, Melrose, on the evening of Tuesday, November 22nd, at 6 o'clock, Dr. Carlyle Johnstone, Chairman of Division, presiding, in the event of a sufficient number of members notifying the Secretary of their intention to be present. Dinner ticket, 5s.—W. HALL CALVERT, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: TOTTENHAM DIVISION.—The next meeting of the Division will be held on Friday, November 25th, at 9.15 p.m., at the Hornsey Conservative Association Rooms (just opposite Finsbury Park Station). Agenda: Memo. *re* Coroners' Bill; discussion to be opened by Dr. J. R. Fuller. A paper will be read on Pitfalls of Diagnosis in Diseases of Children, by G. F. Still, M.A., M.D., F.R.C.P. Visitors are cordially invited.—FRED TRESILIAN, Honorary Secretary, White Lodge, Enfield.

METROPOLITAN COUNTIES BRANCH: WANDSWORTH DIVISION.—An ordinary meeting of this Division will be held at Crichton Restaurant, Clapham Junction, on Thursday, November 24th, at 8.45 p.m. Agenda: (1) Minutes. (2) Correspondence. (3) Questions. (4) Resolutions for Representative Meeting at Leicester, referring to co-opted and elected members of the Central Council, and the duration of their holding office. (5) Paper by G. F. McCleary, M.O.H., on the Milk Supply of Copenhagen: A Study in Clean Milk Production. (6) Address on Vaccination and Revaccination, by Mrs. E. Garrett Anderson, M.D. (7) Resolution *re* ethical position of the present holders of post of Pathologists to Coroners in London County Council area, proposed by Dr. McManus. (8) Dr. Biggs will draw attention to Dr. Carter's address in SUPPLEMENT of November 5th, and move a resolution. (9) Other business. The President of the Branch (Dr. Radcliffe Crocker), the Editor of the BRITISH MEDICAL JOURNAL (Dr. Dawson Williams), and possibly Mr. Andrew Clark (Chairman of the Central Council) will be present. Members of the Branch and their medical friends are invited to attend.—E. ROWLAND FOTHERGILL, Torquay House, Southfields, S.W., Honorary Secretary.

SOUTH-EASTERN BRANCH: BRIGHTON DIVISION.—A meeting of this Division will be held at the Brighton Dispensary, 113, Queen's Road, Brighton, on Wednesday, November 23rd, at 4.30 p.m. Agenda: To consider the advisability of dividing the South-Eastern Branch. To consider a memorandum from the Exeter Division. To discuss a report from the Medico-Political and Ethical Committees. To amend the Rules of the Division. Other business.—RYDING MARSH, 49, Sackville Road, Hove, Brighton, Honorary Secretary.

SOUTH-EASTERN BRANCH: CANTERBURY AND FAVERSHAM DIVISIONS.—A combined meeting of the above Divisions will be held, by kind permission of Dr. G. C. Fitzgerald, President of the Canterbury Division, at the Chartham Asylum, on Thursday, December 1st. Agenda:—3.0 p.m. Each Division will meet separately to confirm the minutes of last meeting. 3.10 p.m. Combined meeting, Dr. Fitzgerald presiding. (1) Time and place of next meeting. (2) The Chairman, Borderland Cases. (3) Other business. Light refreshments will be kindly provided by the Chairman. A billiard match between the two Divisions—or as may be arranged. Dr. Fitzgerald will be pleased to show members and their friends round the wards, etc., between 2 p.m. and 3 p.m. If a sufficient number of members send their names to the Honorary Secretary, Canterbury Division, by November 28th, arrangements will be made for a brake to leave Canterbury East Station for Chartham Asylum at 2.30 p.m. Fare, 2s. return. Trains leave Sittingbourne, 1.55; Faversham, 2.6. Returning from Canterbury East, 6.35—for Faversham and Sittingbourne.—WM. GOSSE, A. R. HENCHLEY, Honorary Divisional Secretaries.

SOUTHERN BRANCH.—A general meeting is appointed to be held at the South-Western Hotel, Southampton, on Friday, December 2nd, at 3 p.m. Any member who may wish to introduce a matter of professional interest, or to read a paper, or to submit cases or specimens, is requested to furnish the undersigned with the nature and title of the communication as soon as possible. Dinner will be provided at the Hotel at 6 o'clock, the charge for which, not including wine, will be 7s. 6d. a head.—H. J. MANNING, Honorary Secretary, Laverstock House, Salisbury.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.—The next meeting of this Division will be held at 139, Commercial Road, Portsmouth, on Tuesday, December 6th, at 3.45 p.m. Any member wishing to introduce any matter of professional interest or to exhibit cases or specimens is requested to forward the titles of the communication not later than November 22nd to J. G. BLACKMAN, Honorary Secretary, Poplar House, Kingston Crescent, Portsmouth.

STAFFORDSHIRE BRANCH.—A meeting of this Branch will be held at the North Stafford Hotel, Stoke-on-Trent, on Thursday, November 24th, when the chair will be taken by Dr. E. Deansely, the President. Papers will be read by Mr. W. D. Spanton, Dr. Menzies, and Mr. H. H. Folker.—G. PETGRAVE JOHNSON, Honorary General Secretary.

SPECIAL CORRESPONDENCE.

PARIS.

Académie de Médecine: Dr. Laufer on the Utilization of Fats in Tuberculous Patients: M. Kelsch's Report on Vaccine Institutions in other Countries and the Transformation of the Existing Vaccine Service of the Académie into the Chief Vaccine Institute for France.—Société Médicale des Hôpitaux: Dr. Jeanselme on Successful Treatment of a Case of Acute Tetanus by Massive Doses of Antitoxin and Chloral.—The Chair of Clinical Surgery at the Charité Hospital.

AT a recent meeting of the Académie de Médecine, Dr. Laufer read a paper on the value of fats to tuberculous patients. The most constant and distinct influence of fats on them, as on normal persons, consisted in retaining and in economizing nitrogenous matters. Dr. Laufer had found that, when tuberculous patients were given fats in various forms and in increasing quantities, the curve of the total elimination of nitrogen (in urine and faeces) at first fell and then remained horizontal. Thus, beyond a certain amount the fat was not utilized, and so was useless, at least as far as concerned its action in sparing albuminoids. Fat might still in a certain measure be deposited as such in the tissues. Taking this fact into account, the author had given, to certain tuberculous patients, fats in large quantities (150 to 200 grams), including the fat contained in the food itself and the additional fat in the form of cod-liver oil, butter, olive oil; to other tuberculous patients he gave fat in moderate quantities only (100 to 150 grams), and he had studied the curve of the weights in those two series of patients during a period of six or eight months. In the first series with large quantities of fat, the curve of the weight rose rapidly, then remained stationary, and then fell sometimes lower than the initial weight, and this either from digestive disturbance or because the patients lost their appetites, or else from complete default in fat utilization, the fats passing out in the faeces unchanged. In the second series of cases with moderate amounts of fat, the curve of weight rose slowly, but with a constant and progressive rise, so that the gain in weight was sure. The amount of 100 to 150 grams seemed to the maximum really useful, and this should be kept in mind when drawing up diet tables for tuberculous patients.

M. Kelsch, in the name of the Permanent Vaccine Commission of the Academy, presented a most important report on his mission to the vaccine institutions in other countries and on the transformation of the vaccine service of the Académie into the chief vaccine institute in France, a change involved by the application of the decree of July 27th, 1903, which was quoted in detail in the BRITISH MEDICAL JOURNAL at the time. In this report M. Kelsch gives in detail what he saw in Brussels, Lausanne, Turin, Vienna, Dresden, Berlin, Hamburg, Munich, Copenhagen, Christiania, London, Tours, Lille, and the Chambon-Ménard Institute in Paris. In describing the vaccine department in the Lister Institute at Chelsea, M. Kelsch says that he considers it the best installation he saw, and that it can without exaggeration be qualified as perfect. Every vaccine institute includes four essential parts, the room for inoculating and collecting the vaccine, a laboratory for manipulating the pulp, a bacteriological laboratory, and the stables. The actual service in Paris possesses all of them, but the bacteriological laboratory is deserted, and looks abandoned, the instruments bought two years ago having all been shut up in safety. M. Kelsch considers it indispensable and urgent to appoint a director of the laboratory to act under the director of the Institute. There should also be a veterinary surgeon appointed, as well as a laboratory assistant, and a laboratory boy. As the Académie Institute has the heavy responsibility of being the chief vaccine institute, it will have in case of necessity to furnish the best of lymphs, and in order to be able to control the others, it is essential that it should continue its free vaccinations, so as to have an exact notion of the value of its own lymph.

Before the Société Médicale des Hôpitaux, Dr. Jeanselme, Physician to the Tenon Hospital, and his interne, M. Léon Tixier, reported a serious case of acute tetanus successfully treated by massive doses of antitetanus serum and chloral.

During the thirteen days of the acute period of the disease the patient received 1,060 c.cm. of antitoxin, and during seventeen days he took in all, either by the mouth or per rectum, 224 gram of chloral. The

patient, a man of 47 years of age, came into hospital on the sixth day of an acute and characteristic attack of tetanus. What especially attracted attention was the extraordinary frequency of the paroxysmal spasms occurring every ten minutes and lasting for no less than three minutes. These spasms were generalized, but were especially marked in the lower limbs. The teeth were clenched, and the risus sardonicus marked. During the first two days of treatment he received 20 c.cm. of antitoxin and 6 gram of chloral. As no amelioration followed it was decided to give massive doses of antitoxin; so, on the third day he received 60 c.cm. of serum and 8 gram of chloral; he had a better night and slept for one hour. On the fourth day he received 80 c.cm. of antitoxin and 10 gram of chloral (5 by the mouth and 5 per rectum). He had a very bad night, opisthotonos being almost permanent. On the fifth day he received 100 c.cm. of antitoxin and 30 gram of chloral (20 grams by mouth, 10 grams per rectum). The patient had a better night, with only seven or eight paroxysms; the trismus diminished, and the opisthotonos seemed less marked. On the sixth day, same treatment; he had a better night, with only four paroxysms. On the seventh day, 80 c.cm. of antitoxin and 16 grams of chloral (8 by mouth and 8 per rectum). On the eighth day, 83 c.cm. antitoxin and 8 grams of chloral by mouth; the night was not so good, with numerous paroxysms and reappearance of opisthotonos. On the ninth day, 100 c.cm. antitoxin and 20 grams of chloral (10 grams by mouth, 10 per rectum): fairly calm night. On the tenth, eleventh, and twelfth days, same treatment; general condition became more satisfactory, with only two or three paroxysms in the twenty-four hours. Thirteenth day, 60 c.cm. serum and 12 grams of chloral (6 by mouth and 6 grams per rectum); the condition was so much improved that the antitoxin injections were stopped, chloral alone being continued in 6-gram doses till seventeenth day, when all medicine was stopped, and the patient stayed for two hours in an armchair. On the eighteenth day he could get up without help, and the temperature came down to normal and stayed there.

During the course of the disease three striking symptoms were noticed: (1) A considerable dilatation of the pupil, especially in the acute stage. The two hypotheses suggested in explanation of this symptom were that either the impregnation of the nerve elements by the antitoxin determined this phenomenon, or else the painful impressions irritated all the nerves of sensation, and were the starting point of the classic reflex of Schiff, which showed itself by a more or less marked dilatation of the pupil. (2) During the course of the disease, the patient complained particularly of extremely intense cramp-like pains in the epigastrium, occurring during and between the painful paroxysms, and which were in no way influenced by the absorption of a certain quantity of liquid. The authors suggest that muscular spasms occurred in the muscles of the stomach, just as in the muscles of movement. (3) Twice during the treatment there appeared a serous and intensely pruriginous erythema, scarlatiniform in appearance. The first appeared seven days after treatment began, the second seven days later. Both diminished greatly three days after their appearance, although the massive injections of antitoxin were not interrupted.

Dr. Paul Reclus has been appointed Professor of Clinical Surgery at the Charité Hospital, as successor to the late Professor Tillaux.

LIVERPOOL.

Opening of the New Medical School Buildings.—New Infirmary for Children.—Lawrence Memorial.—Water Supply.—The City Council.

The chief event of recent days in Liverpool was the opening of the Medical School buildings which have been in course of erection for some years past, and of the Holt Physics Laboratory. The new medical buildings, which are described elsewhere in this issue, complete the scheme for housing the medical faculty, and are in every way worthy of the new university.

One of the last public acts performed by the ex-Lady Mayoress (Lady Hampson) was the laying of the foundation stone of the new Liverpool Infirmary for Children. At the preliminary gathering in the new out-patient department, the Lord Bishop and Mr. Edgar Browne, F.R.C.S.Edin., delivered interesting addresses, and a procession to the adjacent site was then formed, where the foundation stone was laid with the usual ceremonies. The new building will consist of two ward pavilions, accommodating 100 beds in five wards, and radiating to a centre in which is the main entrance. The administration department is behind, so that the block plan is similar to an inverted letter Y. Over the main entrance, which faces due south, and in the angle formed by the pavilions, will be two extensive sun balconies, on to which the cots can be wheeled. An observation block (infectious cases on diagnosis being transferred to the municipal hospitals) is provided in the north-east corner of the rectangular side, and mortuary and *post-mortem* room at the north-west. The nurses' home and laundry will be built on a site adjacent to the out-patient department, and approached by a subway beneath the dividing street. At present, owing to want of funds, only the contract for the south-eastern pavilion and administration block has been placed, and these are expected to be ready for use in two years.

The sad death of Alderman John Lawrence, who died and was buried at sea in the early part of the year, entailed a serious loss to the Liverpool hospitals, to which he had rendered invaluable services, both on the City Council, in his professional capacity as solicitor, and by personal efforts on the committee of the Royal Infirmary. As a memorial of his useful life his professional and hospital friends have raised a sum of £1,000, with which a bed at the Royal Infirmary has been endowed, and the Lord Mayor (Sir R. A. Hampson) recently unveiled the commemorative tablet which has been affixed over a bed in Ward XII.

The award of the arbitrator in the recent proceedings between the Corporation of Liverpool and Mr. W. H. Lever is a serious matter to those having care of the water supplies of large towns. Two years ago Mr. Lever purchased for £60,000 a large moorland estate comprising part of the Rivington watershed and abutting on the lake. The Corporation would have paid that sum, but owing to circumstances too complicated to enter into they failed to secure the land. Mr. Lever then presented 400 acres as a park to Bolton, and built himself a country residence on another portion. Liverpool secured Parliamentary powers for its compulsory purchase, but at the same time was compelled to undertake to keep up the park. The arbitrator has fixed the purchase price at £138,000.

The medical element in the City Council was strengthened at the November elections by the return of Mr. William Permewan, M.D., F.R.C.S., for the Abercromby Ward. The other medical members are Drs. Caton and Utting.

MANCHESTER.

Botanical Studies and Cancer.—Surgical Aid Society.—Water Supply.—Amalgamation of Hospitals.—Ancoats Hospital.—Bad School Buildings.

An interesting address was given by Sir W. Thiselton-Dyer on the occasion of the presentation to the University of a general herbarium of the world, consisting of over half a million specimens. Out of the 7,500 genera admitted by Bentham and Hooker nearly 5,000 are represented. Sir W. Thiselton-Dyer urged the necessity in science of being careful not to think that one thing was less useful than another. The only key to the discovery of the real nature of cancer was a research made with regard to the growth of tissue in ferns. Thus a piece of research which seemed to have no utilitarian value at all had given the first foothold in a knowledge of that terrible disease.

The Surgical Aid Society is doing most useful work. The number of applicants dealt with during the past year was 223, and of these 205—54 men, 115 women, and 36 children—were assisted with various surgical appliances.

The second Thirlmere pipe, at a cost of £650,000, has begun to discharge at the rate of 7,000,000 gallons of water a day. With a stock for only about twenty days this new source of supply puts the question of shortage of water out of the sphere of civic anxiety. In spite of the immense outlay on the whole Thirlmere scheme—three and a half millions—so excellent has been the financial administration that the outlay has brought with it no burden on the rates, nor any increase in the charge for water. On the contrary, the charge has been reduced, and revenue has sufficed to meet the charge for interest and sinking fund.

A proposal to amalgamate the St. Mary's Hospital and the Southern Hospital for Diseases of Women and Children is to be considered on November 24th, at the close of the meeting of the subscribers to the former institution. If the proposal be carried—and it has the support of the medical staffs of both hospitals—St. Mary's will be devoted to maternity cases, and the new Southern Hospital in Oxford Street to gynaecology and children's cases. Both hospitals will be known as "The St. Mary's Hospital," and will be managed by a Board composed of the members of the present Boards of the respective hospitals.

At the annual meeting of the Ancoats Hospital it was reported that over 1,000 more patients were treated last year than in the previous year. The Warford Convalescent Home is now open, and costs £800 per annum. The Committee pro-

pose to appeal to the public for an endowment fund of £10,000 and for annual subscriptions. The expenditure exceeded the income by £192.

The Medical Officer of Health for Gorton made recently some strong statements about the injury done to children in that district by bad school buildings. Many of the old school buildings do not satisfy the lowest standard of efficiency. The playground, instead of being paved, was full of pools and puddles in wet weather; the sanitary conveniences were often deplorable, half-rotten flooring in the schoolroom, dust as thick as the dust storm after a motor car. In sweeping no disinfectants were used and no preparations to prevent the dust rising. Cloakrooms too small and without proper fittings; seats without backs and of the same height for children of different heights, are some of the other defects enumerated. Indeed, the allegation of the working-class mother, "that her child never had any sickness till he went to school," may, as a rule, be correct. It is likely to be so when children are packed for hours in ill-lighted and badly-ventilated rooms.

NEWCASTLE-UPON-TYNE.

The College of Medicine and its New Laboratories.—New Infirmary: Progress of the Building.—Pathological Department, Royal Infirmary, and Children's Hospital: Vacancies.—Certifying Factory Surgeons for Tyneside.—Armstrong College of Science.—Rowton House for Newcastle-on-Tyne.

The entries at the College of Medicine for the winter session have quite come up to the expectation of the teaching staff, and work is now in full swing. The plans for the new laboratories of physiology and bacteriology and the students' recreation rooms have been passed by the Council of the College. Within the next few weeks the contracts will have been let, and if we have an open winter the building operations will be at once proceeded with. The new wing will not only complete the present College structurally and be as ornate, but will enable the authorities to offer extended facilities for physiological and pathological research. Messrs. Dunn, Hanson, and Fenwicke are the architects.

The new infirmary on the Leazes is now externally far advanced, but unfortunately progress in the interior is for the present delayed owing to a strike between the joiners and cabinet-makers. The original estimate for the building was just under £200,000, but it is apparent that this will fall short of the required amount by several thousands. It is satisfactory to know that private beneficence is doing something to reduce the burden of cost. Dr. Hume, the Chairman of the Medical Board, at a recent meeting of the Committee of the Royal Infirmary, had the pleasure of announcing that a few families of old friends of the institution had undertaken to furnish the interior of the chapel.

The vacancy in the Pathological Department of the Royal Infirmary created by the resignation of Dr. Thomas Beattie will be filled within the next few days. For several months past the duties of the post have been filled, with great satisfaction to the Honorary Staff and Committee, by Dr. R. A. Bolam.

Through the retirement of Dr. Beatley, who has for the allotted number of years held the post of Physician to the Children's Hospital, there is a vacancy on the staff. Among the candidates for the post are some who have already occupied the position of assistant to one or other of the members of the full staff. Canvassing is not allowed.

By the death of Dr. Whamond of Jarrow, two or three much-sought-after medical appointments became vacant. Of these that of Certifying Factory Surgeon was the most important. As the district has become more populous and increased considerably in the variety of its industries since the date on which Dr. Whamond was inducted, the Home Office decided to divide the factory appointment and to appoint two surgeons—one for each side of the river Tyne. To the district of Jarrow, which includes the municipal borough of Jarrow, Hebburn urban district, and the civil parishes of Monkton and Boldon Colliery, Dr. D. W. Inglis, of Hebburn-on-Tyne, has been appointed, and on the northern side of the river Dr. C. T. M. Babst, of Willington-on-Tyne, has been made Certifying Factory Surgeon in succession to Dr. Whamond. In this area are included Wallsend, Willington Quay urban district, and the civil parish of Willington. As both of these gentlemen have had considerable medical experience of the diseases incidental to the industries on Tyneside the appointments ought to give satisfaction.

The front of the Armstrong College of Science which overlooks the Leazes and the new infirmary is rapidly approaching completion. It is hoped that it may be finished by September, 1905. The central tower is far advanced, and already conveys some impression of what its stately character will be when completed. To the new buildings the public of Newcastle and the neighbourhood have most generously contributed. It is felt that the appointment of Sir Isambard Owen to the Principalship of the College has been opportune, and that it will add considerably to the influence of the College in the north. As illustrating the reputation which the College has made for itself beyond the immediate neighbourhood, it may be stated that within the last few days a large firm of engineers and Admiralty contractors in Leeds, in recognition of the importance of combining practical and theoretical training, has offered to take a few of the B.Sc. graduates of the University of Durham into its drawing office for a two or three years' course and to provide remuneration for their services.

In Newcastle, as in other large towns, the housing of the working classes has been receiving attention. It is proposed to establish a Rowton House which will afford accommodation to 250 single working men. The building will be erected at the foot of Pilgrim Street, close to the quayside, and therefore not far from the sphere of their labour. Private enterprise is thus seeking to assist the City Council in dealing with one important social question. Houses for married working men are being erected by the municipality at Walker, to and from which there is an excellent electric tram and railway service.

SOUTH WALES.

Small-pox.—The Midwives Act.—Ankylostomiasis.—Epidemic of Typhoid Fever.—Health in Schools.

No further cases of small-pox have been notified from the Caerphilly district since October 30th, so that in all probability the epidemic is now at an end. With the exception of that district, the County of Glamorgan is free from this disease.

The thirty-three applications received for the post of Inspector of Midwives to the Glamorgan County Council were considered by the Executive Subcommittee on November 10th, and reduced to four persons, who have been instructed to appear before the Subcommittee on November 17th.

The County Medical Officer for Glamorgan on November 9th delivered a lecture on ankylostomiasis before a large audience of coalminers at Tylorstown. The lecture was illustrated with limelight views, and will, it is understood, be repeated during the winter at various centres in Glamorgan.

An alarming epidemic of typhoid fever has occurred in the Rhondda Valley; it is supposed to have been caused by the water from a certain source. Five cases were notified on November 8th, 25 on November 9th, and the number had reached 150 at least by November 14th. Immediately the Medical Officer of Health suspected the water the supply from that source was stopped. As this was done on the second day of epidemic, no time was lost in adopting precautionary measures. The isolation hospital is full, and contains some sixty typhoid patients, so that the remainder have to be isolated at their own homes, often overcrowded, and absolutely unfit for such a purpose.

At the annual meeting of the Mid-Glamorgan Teachers' Association, held at Neath on November 12th, Dr. T. H. Morris, Chairman of the County Education Committee, presided at a lecture, given by Dr. W. Williams, County Medical Officer, on Health in Schools.

Medical Practitioners in New York.—According to the *Medical Directory of New York, New Jersey, and Connecticut*, the sixth edition of which has recently been issued, the total number of medical practitioners in the State of New York is 11,746; in the City of New York there are 5,907. In the State of New Jersey there are 2,176, and in Connecticut 1 282.

Impure Drugs in New York.—The New York State Medical Association has entered on a crusade against vendors of impure drugs and those who traffic unlawfully in poisons. An agent of the Association's attorney recently made a raid among druggists, and the samples obtained have been sent to the Health Board for analysis. If evidence of adulteration is forthcoming, the Association is prepared to take vigorous action. The State Board of Pharmacy employs a number of inspectors, who are constantly on the watch for impure drugs.

CORRESPONDENCE.

ANTITYPHOID INOCULATION.

SIR,—I do not think the Medical Advisory Board in the least needs sheltering behind my "petticoats," to cite Dr. Wright's *modiste's* phrase. It has a national responsibility, and as every other citizen. I can only hope it will carry it out one way or the other, without paying much attention to the fervour of Dr. Wright's language. As far as the matter concerns myself, I have absolutely no *a priori* opinions as to the value of Dr. Wright's vaccine. I should, however, be inclined to distrust his science, if his letter in your issue of the BRITISH MEDICAL JOURNAL of last week is at all a specimen of his customary logic. Any inoculation process must ultimately come before the calm tribunal of a statistical inquiry. If Dr. Wright chooses to call in question all the statistics that tell against him, then the proper inference must be that, as at present no satisfactory data are forthcoming, the moment has not arrived to adopt the antityphoid inoculation as a routine of the service. It is a problem for cautious further inquiry and experiment. As a matter of fact, however, Dr. Wright gives us both in his letter and his recently-published volume a good insight into his real capacity for treating statistical questions. He tells us, in the first place, with regard to the "mysterious" Ladysmith statistics:

> Of two deaths recorded to have occurred among inoculated officers, one was due to a casualty in the field. The other officer had been inoculated with a serum, not with antityphoid vaccine. Among the uninoculated officers a minimum of 10 deaths occurred instead of 5 as recorded. When due allowance is made for these errors, the case-mortality of the inoculated works out *distinctly lower* than that of the uninoculated (*Antityphoid Inoculation*, p. 58).

Now, I have made due allowance for these errors, and the result is that the case-mortality among the uninoculated was 22 with a very small probable error, and that among the inoculated was 18 with a *probable error of about 5*. In other words, Dr. Wright's corrections leave the matter precisely where my report put it—namely, so far from one being *distinctly lower* (the italics above are mine) than the other, there was within the limits of the probable error no gain at all from inoculation at Ladysmith as far as case-mortality was concerned. The "mystery" about the Ladysmith data was not, however, associated in my mind with the case-mortality, but with the question of immunity. The immunity conferred by the vaccine was at Ladysmith of such a high order that had it been general the adoption of the process would have been assured. Yet in a case like the C.I.V.'s it was *zero!* Until the mystery of this difference can be explained, and the Ladysmith result be ensured in all cases, we are clearly dealing with a process of which, in its present stage, we can predict no certain effect. It is recognized again as a matter not for service routine, but for further experimental inquiry. But it would seem to me that for army purposes it is immunity and not case-mortality which has to be considered in the first place, and therefore I am somewhat surprised to find Dr. Wright citing only data which concern case-mortality. His other instance is that of the Indian army. He writes of the Army Medical Reports:

> Finding, then, that in India the death-rate of the inoculated soldiers was, as compared with the death-rate of the uninoculated soldiers, nearly three times smaller in 1899; more than four times smaller in 1900, and six times smaller than in 1901: and finding that these figures apply to an inoculated strength of 4,000 to 6,000, I ask myself whether Professor Karl Pearson's 0.1 coefficient of correlation can have any practical import if it forbids us in the face of a fourfold to sixfold reduction of mortality obtained in three consecutive years to embark upon the routine inoculation of the army in India.

Now this paragraph shows one of two things: either Dr. Wright is purposely misleading the readers of the BRITISH MEDICAL JOURNAL, or he is so unaccustomed to deal with figures that he cannot be trusted to argue from statistics. We cannot accept the first alternative, and are compelled to fall back upon the latter. In the first place, his numbers are totally different from those provided for me by Lieutenant-Colonel Simpson. According to these, the case-mortality, which is what my figures are calculated for, was:

1899	0 in 44	.....	146 in 657
1900	8 in 52	.....	224 in 731
1901	3 in 32	.....	199 in 744
	Inoculated.		Uninoculated.

Or case-mortalities of

	Per Cent.		Per Cent.
1899	20.4	.....	22.2
1900	15.4	.....	30.6
1901	9.4	.....	26.8
	Inoculated.		Uninoculated.

The increase here so far from being sixfold, is something under threefold. If we put, as I did, the two years 1900 and 1901 together, the case mortalities are 13.1 and 28.1, slightly over twofold. Even this is not what I represented by 0.1! For Dr. Wright has without any warning to the reader, placed my result 0.1 for immunity against his own threefold exaggeration for general mortality! My result for case-mortality was 0.25, sensibly identical with the value I had cited a few lines above for the relationship between need for tracheotomy and the administration of antitoxin in diphtheria cases—a result which I stated was one that was to be considered quite sensible. My value 0.1 for immunity in the case of the Indian army was based upon case-rates of 7.7 and 13.3, for inoculated and uninoculated. This gives a ratio of 1.7. The ratio of similar rates in the case of vaccination varies with different circumstances from about 7 to 12. In other words, vaccination is four to seven times as effective as antityphoid inoculation in India. This is expressed simply in the relative correlation coefficients 0.6 and 0.1, which Dr. Wright, because he does not understand, tells us can have no practical import. Frankly, I know absolutely nothing about Dr. Wright's capacity as a bacteriologist; I do realize his capacity as a statistician, and also a certain readiness on his part to accept mythical reports; both of these things seem to me to disqualify him for being plaintiff and judge alike in a matter which has great national importance.

I would, to prevent this discussion (as far at least as I personally am concerned) becoming interminable, like to ask Dr. Wright to reply on two perfectly definite points:

1. Why, in his letter, did he quote my correlation value for immunity in the Indian army against an absolutely different matter—his own mortality statistics?

2. In my report I compare the high immunity effect at Ladysmith (0.445) with the zero immunity effect of the inoculation on the C.I.V.'s, and state that if the former could be reached independently of environment the case would be proved for inoculation. This matter, I said, was worth inquiring into. Dr. Wright says that the results of such an inquiry are already available, and proceeds to quote what he terms a laborious inquiry made for him by Captain W. A. Ward, R.A.M.C., which has nothing whatever to do with the immunity rates as between Ladysmith and the C.I.V.'s, but has to do with the case-mortality returns at Ladysmith, and, as I have shown, has no sensible influence even on these. Now, will Dr. Wright state why he has slurred over the important point involved by again playing this interchange between immunity and case-mortality statistics?

Finally, for the benefit of the general reader I may answer the question: Why, if 0.1 for immunity corresponds to a change in case incidence in India from 7.7 to 13.3 between inoculated and uninoculated, should this gain, even if small, not be sought after? The answer, to my mind, is this: The irregularity of the immunity results reached shows that we are dealing with a process whose effects are at present not fully under control; the influences of environment and administration method are clearly not yet scientifically measurable. Further, the statistician knows from experience that small irregular correlations are precisely those wherein spurious correlation is most likely to be at work. There have been at present no proper control experiments to detect whether such spurious association of immunity and inoculation possibly exists. Until these points are cleared up I must repeat that from the statistical side the whole matter can only be considered as in an experimental stage.—I am, etc.,

University College, Nov. 12th. KARL PEARSON.

SIR,—As I was responsible for the selection of the statistics submitted to Professor Pearson, and indeed for the fact of their submission, perhaps you will allow me to make a few remarks on that section of Professor Wright's letter which deals with Professor Pearson's report.

I took as a basis the synoptical table given by Professor Wright in the *Practitioner* for March, 1904. I omitted the following seven items for the reason stated against each:

> No. 1, Barming Asylum, and No. 21, Richmond Asylum.—These are civil institutions, to my mind in no way comparable with the results in "service" inoculations.
>
> No. 17. No. 10, General Hospital.—Here there were none inoculated.
>
> No. 22 and 23. Officers invalided from South Africa (two series).—Professor Wright's critical commentary on these two series is to this effect: "The statistics are vitiated in favour of the uninoculated, for the typhoid case-mortality of the inoculated is, as is brought out by the sum total of the available statistics, 50 per cent. lower in the inoculated." These two series were therefore omitted, but one should note here (1) that Professor Wright gives a numerical expression to his opinion of the results of the series of statistics, and (2) uses this numerical expression as a criterion to gauge the reliability of any

individual item of that series. The value of this method seems more than doubtful.

No. 5. Garrison of Egypt and Cyprus.—Professor Wright's comment on this is that "the statistical results are rendered unduly favourable to the uninoculated." They were therefore omitted.

No. 3, 15th Hussars.—Like the returns in bulk from India, 1899, the method of calculation was unsatisfactory, as pointed out by Professor Wright. These two groups were therefore left out of consideration. There was this further difficulty about this regiment: that the strengths as given by Professor Wright included officers, women, and children, as well as N.C.O.s and men, while the cases only occurred among N.C O s and men. As the normal incidence of enteric fever is less among the officers, and very much less among women and children, than among the N.C.O.s and men, this group was not homogeneous.

I added the following six items, and under each have shown the result of a rough comparison of the incidence in inoculated and non-inoculated. I may add that these items are included in the totals of Professor Wright's No. 13 and Professor Pearson's "Various Military Hospitals."

No. 9 General Hospital.—Slightly in favour of inoculation.
Orange River Hospital.—Markedly in favour of inoculation.
No. 2 General Hospital —In favour of inoculation.
No. 1 General Hospital —Unfavourable to inoculation.
No. 5 Stationary Hospital.—Considerably in favour of inoculation.
No. 6 General Hospital.—Slightly in favour of inoculation.

Shortly, I omitted two civil institutions and those items to which Professor Wright took most exception, while I added six items, five of which appeared to be favourable to inoculation.

The figures submitted to Professor Pearson were then on the whole more favourable to inoculation than the original table as given by Professor Wright.

As regards Ladysmith, I must confess to a mistake which I regret: I was aware of Professor Wright's correction of the deaths among the officers, but I was led to believe (by a document which I now know to be erroneous) that the figures quoted in Professor Wright's table referred to N.C.O.'s and men only. Applying Professor Wright's correction, the deaths are 6 and 334 respectively instead of 8 and 329.

I am not quite clear what Professor Wright means by his reference to data furnished by imagination, and put forward as results of experiment. The obvious suggestion is that the statistics have been in plain language "cooked." What knowledge Professor Wright may have of this I do not know, but as far as I am aware, the only results that have been amended as compared with the original returns are those relating to Ladysmith, which Professor Wright by careful investigation showed to be wrong in the case of the officers.

But Professor Wright has formed conclusions on these very figures, conclusions which as shown above, he believes to be capable of exact numerical expression. The only difference is that Professor Wright, by some peculiar mental process, is able to extract from a synoptical table containing twenty-seven items (each of which includes, at least, two entries), plus a critical commentary extending to five pages, a numerical result which he believes to be a closer approximation to the whole truth than a mathematical process can obtain.

The various fallacies underlying these statistical results were discussed with Professor Pearson, who was good enough to point out other and less obvious sources of error, and I certainly find in the first paragraph of Professor Pearson's article, a definite expression as to the cogency of the statistical evidence.—I am, etc.,

R. J. S. Simpson,
Lieut.-Col. R.A.M.C.

London, Nov. 14th.

THE PROPHYLAXIS OF MALARIA.

Sir,—In the editorial[1] in which you sum up the recent discussion on this subject at the Oxford meeting of the British Medical Association, you remark, while admitting the value of the object-lesson in reducing malaria given at Ismailia, "few places are so favourably situated for the purpose of mosquito destruction. The area is limited, and once dealt with there is but slight chance of infection from without." This will, of course, be pleasant reading for those municipalities which ought long ago to have done as Ismailia has done, but have neglected their opportunity. May I point out, however, that Ismailia is by no means so isolated and so favourable for antimosquito operations as is pretended? Its vicinity, though apparently an arid desert, is really full of hollows in which small marshes accumulate in consequence of percolation from the fresh-water canal, or of the annual rising of the subsoil water due to the rising of the Nile; and its *Culex* mosquitos used to breed in innumerable sewage-cisterns under or near the houses. You say that "irrigation is the great stumbling-block to mosquito destruction;" yet it proved no stumbling block at Ismailia, which is watered entirely by irrigation. I fear that the delinquent municipalities will find no safe refuge in such arguments—there are certainly hundreds of important settlements which can be dealt with as easily as Ismailia. And what about Havana? Is that also exceptionally favourable for mosquito destruction? I think not: and yet if we are to credit the Americans the destruction was fairly large and effective.

I do not know what ground your editorial has for saying that it would appear that only harmless mosquitos breed in stagnant water, and that the work of mosquito brigades has therefore been useless. Does any one really take this impossible position? Some malaria-bearing *Anopheles* certainly breed in slowly-running water, but only in the more stagnant parts of it—just where the services of mosquito brigades are most required.

You say that "much of the work hitherto attempted by mosquito brigades is being looked at with critical eyes; and there may be some justification for this attitude." One would like to know which are the particular mosquito brigades, and whose are the particular "critical eyes" referred to. Perhaps "closed eyes" would have been a more accurate expression than "critical eyes." I have just returned from Panama, where I have had the advantage of seeing the mosquito brigades in full swing under the men who did that magnificent piece of work at Havana. They, at least, like the French at Ismailia, have no doubts on the subject.

You complain of the cost of mosquito reduction, and suggest quinine, segregation, and house-screening in its place. But does not the malaria in a settlement cost it anything? and are we sure that the other measures are more economical, per cent. of malaria reduction, than the antimosquito campaign? I doubt it. The fact is that these measures, while being useful at times, especially for the white man, are more or less academical. In practical, large-scale work we are almost always driven to mosquito reduction, which, under the name of surface drainage, appears to have been the policy adopted against malaria for centuries. Shilling for shilling, it will probably pay best in the end. It costs money, of course—let us say a fraction of what a water supply or a sewerage system costs; but my argument is that a malarious town must either bear this expense, or pay a much larger toll, in money and in life, to King Malaria.

"A word to the wise" in conclusion. There is no bottom in this antimosquito-reduction propagandism; it is merely an excuse for doing nothing. The possibility and utility of mosquito reduction have been not only perfectly self-evident from the first, but have been absolutely and easily demonstrated at Havana and Ismailia. There is no reason why measures similar to those adopted in these towns should not be adopted in all towns suffering from mosquito-borne disease. Why have they not been generally adopted in British possessions? Not, as is pretended, because the measures are impossible, or because special difficulties exist in British Colonies, but because the Governments and people of many of the latter do not possess the common sense and energy either of the Americans at Havana or of the French at Ismailia. A clear recognition of this fact may save much misleading discussion on what is really an axiomatic principle of sanitary science.—I am, etc.,

Ronald Ross, D.P.H.

Liverpool, Nov. 8th.

*** While feeling the greatest respect for Professor Ronald Ross's opinion, founded as it is on unequalled practical experience, we still venture to think that he is disposed rather to underestimate the risk of reinfection in such a place as Mian Mir, and the difficulty created in populous districts by irrigation.

[1] British Medical Journal, September 17th, 1904.

MEDICAL INSPECTION OF SCHOOLS.

Sir,—With reference to the article in the British Medical Journal of November 5th on the above subject, let me, as an example of its importance, and showing how much behind American methods we are in this, as in other matters pertaining to school children, instance the case of Goole, of which I am medical officer of health.

In a paper published in *Public Health* for September, 1904, I gave particulars of an epidemic of diphtheria occurring amongst school children, and endeavoured to show that the principal cause of the spread of the disease was school attendance.

We are in the unfortunate position of having another

epidemic raging in the town, which has already caused considerably more deaths than all the scheduled infectious diseases for the whole year. As measles is not a notifiable disease, and, with the abandonment of Article 101* of the Code, the first intimation we receive of the presence of measles is from the death returns. This, of course, is too late for the adoption of preventive measures.

When I received the weekly return of deaths for October 1st, I noticed one death from measles and immediately instituted inquiries, and found that the disease was practically epidemic all over the town, having begun in the children attending one particular school, but by the time it had come to our knowledge the disease had extended to all the other schools of the town, as the following particulars show. Under the present Education Act the difficulty is to get any particulars at all.

Old Goole School, 10 boys, 19 girls and 76 infants absent on account of measles, out of an average attendance of 538.

Boothferry Road School, 2 boys and 4 infants absent out of an average attendance of 923.

Alex Street, 26 boys, 25 girls and 45 infants, out of an average attendance of 1,043.

The percentage attendances at the different schools for the past week have been: Old Goole, 75; Boothferry Road, 64; Alex Street, 76; National, 67.

These figures explain themselves, the principal cause of absence being measles. What is the remedy? First, notification. Very few sanitary authorities will adopt this procedure on account of the cost. Secondly, appointment of medical inspector of schools. "Compulsory education brings every child to the school benches, and it is the duty of the State to do everything possible to protect the health of the children, and in particular to prevent schools acting as centres of infection." I reported to my Council on the matter, and it may be interesting to know that they passed a resolution, as the sanitary authority of the district, asking the education authority to appoint a medical inspector of schools in the area.—I am, etc.,

Goole, Nov. 14th. A. M. ERSKINE.

THE NEW SYDENHAM SOCIETY'S *CLINICAL ATLAS*.

SIR,—The first volume of the New Sydenham's Society's *Clinical Atlas* is now completed, and an Index to its contents has been prepared. May I venture to ask the courtesy of your pages for a few statements as to what has been accomplished and what is in prospect? This first volume comprises the work of three years, and was issued in the form of twelve fasciculi in nine separate covers (three of them being double numbers). The years concerned are 1901-2-3. No issue for 1904 has as yet been made, but the first will appear very shortly. The subjects illustrated have been so numerous that I must not attempt any recapitulation of them. Our publisher, Mr. Lewis (of 129, Gower Street), will be pleased to send copies of our last report and of the index to vol. i to all who may apply for them. They give full details.

In the commencement of the work the Council promised the issue of four fasciculi a year, each to contain eight plates, and this number has been largely exceeded. The engagement was that the work should be continued for six years, and it will be seen that three of these are now passed. At the last annual meeting, however, at the suggestion of the Council a very important resolution was adopted, to the effect that no special termination of the work should be contemplated. Its issue will therefore continue as long as the profession may deem it desirable. This extension of plan is believed to be not only justified by the success of the work, but likely to conduce to its much wider usefulness and popularity. It will allow of the much more liberal illustration of the various forms of disease with which it deals, and will constitute the work as it advances an invaluable repertory of clinical observations.

The work has hitherto been edited under the supervision of the Council, but it is now proposed to organize a special committee for the purpose, which shall be as far as practicable representative of the larger hospitals, provincial as well as metropolitan. It is designed to include all subjects susceptible of useful illustration by pictorial aids, and although, as far as may be found practicable the subjects will be classified, it will not be considered that any one has been completed in the sense of being concluded. Each plate, or group of plates, will as far as possible, be made to constitute independent illustrations of the malady concerned, and will be accompanied by a full narrative of the case or cases concerned. On this plan supplementary plates may from time to time be introduced and more recent observations may be made available. To keep the work well up to date and to ensure its usefulness for purposes of diagnosis will be the constant aim of those concerned in its editing.

A moment's thought will convince any one that it is respecting the more rare class of maladies that pictorial illustrations are of especial value. The practitioner who has not learnt to recognize lupus vulgaris in its common forms, which he must have seen repeatedly, is not likely to be helped by a plate. The same remark applies to a host of other conditions with which even the youngest practitioners cannot have failed to become familiar. After all, a picture cannot compete with the living patient in adequacy of illustration, and it is little better than wasteful expenditure to depict conditions which are matters of everyday experience. It is respecting those which do not come frequently under notice that help is especially needed.

It is obvious that it would conduce vastly to the progress of clinical knowledge if all examples of rare maladies were correctly recognized. Diseases which are now but too often allowed to pass as being little more than curiosities would be found to be sufficiently common to admit of intelligent classification and to be made to supply their quota to the stock of well-investigated observations. Nor is the addition of a new malady to our nosological list—although it may be a very rare one—of less than the very highest value for the advancement of medicine. The results which have accrued from the diagnosis of myxoedema may be allowed to afford a good instance of what is meant. The next fasciculus of our *Atlas* will contain a portrait taken from a patient recently under the care of Dr. Gee in St. Bartholomew's Hospital which exhibits the very peculiar conditions which Hebra described as Sarcoma Melanodes. Although it is thirty-five years since Hebra observed his first case, this malady has received but little recognition from subsequent observers. It is not, so far as I know, illustrated in any of our more recent atlases—those of Hebra and Kaposi, and that of Jacobi, excepted. Yet it is a well-characterized malady, and, standing as it does as a connecting link between innocent and malignant processes and between those of childhood and those of senility, it is doubtless destined to throw very valuable light on some of the most pressing questions of the day. Who can doubt that during the last quarter of a century many examples of it have occurred and have escaped recognition, and thus been lost to medical science?

Whilst, however, it is claimed for our *Atlas*, as one of its most important functions, that it will help to the prompt recognition of exceptional forms of disease, it must at the same time be clearly understood that after all its principal vocation is in dealing with what is common. A glance at the index to the fasciculi already published will prove this. We have dealt not only with leprosy, Sprengel's shoulder, albinism, the exceptional forms of syphilis, morphoea, xanthoma, and arsenical cancer, but with the ordinary results of arsenical poisoning, with Colles's fracture (in detail), and other forms of fracture and dislocation as illustrated by the *x* rays, with the eruptions caused by insect bites, cretinism, scabies, pemphigus of pregnancy, urticaria, and many other diseases of common occurrence.

The next fasciculus—which will, as I have said, contain Dr. Gee's portraits of a very rare malady—will contain others illustrating flea-bites and ringworm, and those in immediate preparation will be concerned with drug eruptions, vaccination, varicella, and small-pox. In this connexion it may be mentioned that it is under consideration to publish from time to time a page or two of retrospective letterpress consisting of emendations, etc., in which references to facts or cases already published will find their place. By this means case-narratives may be made more nearly complete, questions answered, and statements explained or supplemented.

It will, I trust, be obvious to all that my object in asking your insertion of this letter is the hope of inducing a large number of your readers to join our ranks, and thus share in the production of a work which will, it is hoped, take, in the future, a foremost share in the development of clinical knowledge. The Council (at whose request I write) is determined to spare no pains in the endeavour to make the *Atlas* useful to all branches of the profession, and especially to those engaged in the absorbing routine of general practice, and residing, it may be, in more or less remote districts. Its value for teachers and for hospital libraries will be obvious, and it is possible that there may be some amongst those no longer actively engaged in practice who may feel that it has claims on their sympathetic support.

The *Atlas* is supplied to members of the Society at a cost

which has probably had no precedent in medical literature. That cost might, however, be yet further diminished if we could add a few thousands more to our members' list. Such an addition would enable us not only to give more frequent fasciculi, but also to publish each year a printed volume. When this shall become practicable, the Council has in contemplation to publish volumes of short monographs, and to select chiefly such as deal with topics which have been referred to in the *Atlas*.

As regards the details of subscription, I may state that the Council has decided to allow the regulation which permitted the payment in advance of five years' subscriptions to secure six years' publications to remain in force a little longer. We have in stock a certain quantity of the fasciculi already published, and those who make the five guinea payment can obtain the *Atlas* from its commencement and for the ensuing three years. It is not probable, however, that this privilege can continue long in force; nor, unless the demand should be very large, can the work ever be reprinted. The stones for the coloured plates have already been destroyed, and it is not improbable that those parts of the work already issued may rise considerably above their present cost as soon as the stock in hand is exhausted.—I am, etc.,

JONATHAN HUTCHINSON,
London, W., Nov. 5th. Honorary Secretary, New Sydenham Society.

AID FOR MIDWIVES IN PRACTICE BEFORE THE PASSING OF THE MIDWIVES ACT OF 1902.

SIR,—There must be a well-marked period of transition between the extinction of the ignorant and untrained women who call themselves midwives and the introduction of skilled women throughout England and Wales.

Up to the present time, midwives have been carrying on their work without any restrictions, and the greater part of these women have never received any instruction or training. After April 1st, 1905, no uncertified woman will be permitted to use the title of midwife; and after April 1st, 1910, no woman will be able to practise midwifery for gain unless she has obtained a certificate by examination, and has her name duly registered on the Midwives Roll. Now the operation of these provisions will surely produce a slow transformation, but the complete introduction of educated midwives for the safety of the poor parturient women of the country will take some years to accomplish.

On the 9th of the present month no less than 9,470 women had been granted certificates by the Central Midwives Board under the second Section of the Midwives Act of 1902. This large number, moreover, will be greatly increased before the expiration of the period of grace, which occurs on April 1st, 1905; and this, surely, is a very serious matter, when we consider that the greater part of these women are in every sense incompetent, and quite ignorant of their responsibilities. They do not appreciate that they are under strict supervision and control, and that in every difficulty and in every deviation from the normal they are bound to send for professional assistance.

Now, there must be urgent need, if these statements are true, for the development of a scheme to assist the existing midwives to learn their new duties and to work in conformity with the provisions of the Midwives Act. Without help it is quite impossible for them to reach a higher standard of knowledge; but how is the assistance to be acquired? This is a question, I feel sure, which must receive the serious consideration of all local supervising authorities, and there can be no doubt that in every large centre it will be easy for the local authorities to secure means for the enlightenment of the women placed under their control. Without such help it will be impossible to clear the lying-in room of the ignorance, superstition, and sanitary impurity which have been the cause of the terrible mortality among the poor women of our land.

Instruction in elementary topics would prove a great boon to practising midwives, and it could be given by lectures, by oral examination, and by exhibiting the method of reporting the details of practice, and of carrying on the work in accordance with the rules framed by the Central Midwives Board. I believe that in every area medical practitioners will be found willing to assist the local supervising authorities in this important object.

A very influential Association has been recently established to promote the training and supply of midwives to meet the requirements of the Midwives Act, and the Executive Committee propose to form provincial centres so as to extend their benevolent work to every poor district in the kingdom.

Now, I feel sure that this new Association could give very valuable help in the direction I have indicated by arranging for suitable instruction and assistance to the practising midwives, who are dangerously ignorant and quite incapable of understanding their new duties and responsibilities.—I am, etc.,

J. WARD COUSINS,
Representative of the Royal College of Surgeons of England on the Central Midwives Board.
Southsea, Nov. 15th.

DIPHTHERIA IN BRISTOL.

SIR,—May I again trespass on your space in order to answer the questions put to me by Mr. Bousfield?

To his first question asking me whether I should be prepared, on a diagnosis of Hofmann's bacillus in a culture from a suspicious throat, to turn the patient loose as perfectly safe, I reply in the affirmative. The presence of Hofmann's bacillus would not influence me in any way; but I should probably require a second examination if the clinical evidence of diphtheria was strong, knowing that the diphtheria bacillus when present in the throat may sometimes fail to appear in a culture.

Secondly, Mr. Bousfield asks me with what frequency, in my experience, Hofmann's bacillus appears in cultures made from cases of suspected diphtheria. I regret that I am unable to give a precise answer to this question, as my records are not immediately accessible, but I hope to be able to see them shortly, and will communicate the result to him. At the present moment I can only, speaking from memory, say that I believe Hofmann's bacillus was found by me in suspected cases about as frequently as in others which were not suspected.

I think Mr. Bousfield touches the heart of this controversy when he says that the frequency of Hofmann's bacillus is the essential point. Perhaps we do not agree as to what is to be called Hofmann's bacillus. To me Hofmann's bacillus appears, in the great majority of cases, as a rod, rather wider in its middle than at its rounded ends, and with one narrow, unstained septum in the middle. It stains darkly with methylene blue, and is very clear and regular in its outline. The resemblance of this micro-organism as described to the diphtheria bacillus is anything but close, and when first I became acquainted with it I doubted whether this could be the pseudo-diphtheria bacillus until, through the kindness of the late Professor Kanthack, I was able to compare my cultures with one isolated by Loeffler. In the course of my experience I learnt that this bacillus might sometimes, though rarely, appear in cultures made directly from the throat as a longer rod with several narrow unstained bands, thus presenting a very close resemblance to the diphtheria bacillus, and, moreover, that giant and club-ended forms might appear. The segmentation of these bacilli and their outline appears to me more regular than in the diphtheria bacilli when mounted in watery solutions, and they show no polar bodies. Such cultures I have been in the habit of calling the pseudo-diphtheria type of Hofmann's bacillus.

If such alone are admitted by Mr. Bousfield to be Hofmann's bacilli, then the cause of our disagreement is at once revealed; but—and herein, I think, lies the point—such forms cannot, in my experience, be perpetuated in culture. I have often desired to have such a culture for class demonstration, but all those which I have separated have reverted at once to what I regard as the typical form of Hofmann's bacilli, and which I have described above.

Why Hofmann's bacillus should occasionally appear in this pseudo-diphtheria shape in cultures direct from the human throat I have been unable to discover, but I may say that I have taken great pains to investigate them when they have appeared. For a long time I was unwilling to admit that these microbes with many segments were varieties of Hofmann's bacillus, and preferred to believe that I had repeatedly failed to isolate the right bacillus, and had got Hofmann in its stead; but the experience continued to be repeated, and I was at last forced to admit that they were the same.

Since Mr. Bousfield refers to American experience, it may be interesting to quote from a letter by Dr. W. Hallock Park, of New York, who for long has worked at the bacteriology of diphtheria. Writing to me in July, 1901, he says: "The typical form of pseudo-diphtheria bacilli, such as you describe, I do not believe to have any connexion at all with diphtheria bacilli. I may be wrong, but I think that those who have thought otherwise have worked with other than

what we call pseudo-diphtheria bacilli. In our routine diagnostic cultures we never think of considering the typical pseudo-bacilli as of any importance."

Mr. Bousfield finally raises the question whether a safe differential diagnosis between Hofmann and diphtheria bacilli can be made within twelve to eighteen hours. To this I would reply that I think this may be done with reasonable certainty in the great majority of cases, particularly if some form of Neisser's test for the presence or absence of polar bodies be used. But accuracy is of more importance than rapidity, and in some cases one must give a provisional opinion only, in order that practical measures should not be delayed, and proceed to test that opinion by isolating the suspicious micro-organism.

Mr. Bousfield fears that the discussion may upset the faith of numerous practitioners in bacteriological diagnosis, but the truth seems to me to be that bacteriological diagnosis has already got into some discredit, because too much has been claimed for a mere superficial examination of cultures made from suspected throats, often by those who have taken too little trouble to qualify themselves for the task.

I feel sure that Mr. Bousfield, who has worked so long at the subject, will agree with me when I say that the bacteriological diagnosis of diphtheria needs an expert, and only those who will devote both time and labour to repeatedly isolating and testing cultures from the throat can gain the necessary experience.—I am, etc.,

Stansted, Nov. 1st. LOUIS COBBETT.

SIR,—Mr. Bousfield asks Dr. Cobbett two questions: First, whether he would be prepared, on a diagnosis of the presence of Hofmann's bacillus in a culture from a suspicious throat made after twelve to eighteen hours' growth, to turn a patient loose as perfectly safe.

I think this may be safely done if Hofmann's bacillus and no other diphtheria-like bacilli are found, and, in fact, I have frequently done so. Although in nearly all these cases I have examined further cultures—and have in a considerable number of cases carefully investigated the organisms, including their effect upon animals—and in almost all have been kept informed on the future history of the patient, so far as I know none of them has subsequently suffered from the sequelae of diphtheria or infected other persons with the disease.

Though I think that diphtheria bacilli can be readily recognized and distinguished from all others, including Hofmann's bacillus, the eye cannot be sufficiently trained for this purpose unless the observer frequently tests the opinions he forms on morphological grounds by isolating his cultures and testing them in various ways, including the injection of animals. Unless many of the doubtful forms are so tested, the opinion of the observer can be of little value, however large his experience in the examination of cultures from suspicious cases, since he has no real evidence on which to base his judgement.

Secondly, he asks with what frequency in his (Dr. Cobbett's) experience the organism in dispute occurs, not in throats generally, but in those sent in for examination in suspected diphtheria.

In a recent outbreak in Cambridge 40 per cent. of 1,409 persons examined showed Hofmann's bacilli in their mouths, 46 per cent. of the 1,022 healthy school children harboured them, 48 per cent. of the 52 notified persons, who also had diptheria bacilli in their throats, and 51 per cent. of the 52 "contacts" infected with diphtheria bacilli, and 15 per cent. of the suspicious cases in whom no diphtheria bacilli were found.

The results which I have tabulated of the bacteriological examinations by various observers in this country and America of 9,686 persons—some suffering from diphtheria, and some healthy—show that 2,581, or nearly 38 per cent., were infected with Hofmann's bacillus.

In consideration of these facts the proper recognition of Hofmann's bacillus, especially in the treatment by bacteriological means of outbreaks in schools and institutions, is not merely a matter of academical interest, but one of real importance.

So far as my own observations go—which are supported by thorough examination of the organisms by biological and animal tests, and by the clinical results—I consider Hofmann's bacillus to be a common inhabitant of the mouths of the poorer classes, especially school children, and perfectly innocuous to man.

The data on which these remarks are based has been fully given, including the results of biological and animal tests of a large number of diphtheria and diphtheria-like bacilli, in the *Journal of Hygiene* for April, 1904, vol. iv.—I am, etc.,

Cambridge, Nov. 3rd. G. S. GRAHAM-SMITH, M.B., D.P.H.

CANCER OF THE CERVIX COMPLICATING LABOUR.

SIR,—May I correct a slight error in your report in the BRITISH MEDICAL JOURNAL of November 12th of my reply to remarks on my paper with the above title? What I said was that my objection to vaginal Caesarean section was due to the risk of local implantation (of cancer cells). By a coincidence there appears in the same JOURNAL a paper by Dr. Munro Kerr on the above subject, in which he describes two cases, and states "we have had four inoperable cases during the last ten years in the Maternity Hospital." May I appeal to Dr. Munro Kerr to publish all the cases he has had, both operable and inoperable, with the after-histories? Such series are much needed: I have only been able to find two of them.

So far as I know not a single patient suffering from cancer in advanced pregnancy has been "cured" (that is, remained free from recurrence for five years) by any of the operations recommended by Dr. Munro Kerr in his paper, while three (all the operable cases the operator has had) have been "cured" by supravaginal amputation of the cervix, which Dr. Munro Kerr "cannot understand how any one can advocate."—I am, etc.,

London, W., Nov. 12th. HERBERT R. SPENCER.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LIVERPOOL.

OPENING OF THE NEW MEDICAL BUILDINGS AND THE PHYSICS LABORATORY.

THE new medical buildings and the George Holt Physics Laboratory were formally opened on November 12th, the former by the Chancellor of the University (the Earl of Derby), and the latter by Lord Kelvin.

The initial proceedings took place in St. George's Hall, where gathered a distinguished assembly of citizens, representative of science and the arts, and many noted guests from a distance, including Viscount Cross, G.C.B.; the Right Hon. R. B. Haldane, M.P.; Sir William Macewen, Professor Howard Marsh, Sir Oliver Lodge, Professor Cleland, Mr. Clement Lucas, and Sir Dyce Duckworth. The orchestra was occupied by the professors and members of the various faculties, who assembled in the west corridor, and, wearing their academic robes, entered the hall in procession.

Lord Derby presided, and referred to the numerous benefactions of the family of Holt to the University.

Lord Kelvin also addressed the assembly, and said that the George Holt Physics Laboratory was a magnificent addition to the resources for good work belonging to the University of Liverpool.

Vice-Chancellor Dale then presented Mr. Haldane, M.P., for the honorary degree of Doctor of Laws, as one who had helped to establish the University.

Subsequently, the guests repaired to the University, and Lord Derby formally opened the new medical buildings and Lord Kelvin the physics laboratory.

The New Medical Buildings.

The new medical school, which completes the range of buildings on the science side of the quadrangle, is one of the best equipped institutions of its kind. The preparation of the plans and designs was entrusted to Mr. Waterhouse, R.A., who has utilized the possibilities of the site to every advantage. The main entrance is to the right, under an archway leading from the main quadrangle to a smaller one, on the south and east sides of which are the new buildings, and on the west side the old Medical School, now used for materia medica and preparatory work. A moderate-sized entrance hall, opening from which is a porter's lodge, photographic dark-room, and lavatories, gives access to the main staircase. On the ground floor, also with access from the hall, are the rooms of the Dean of the Medical Faculty, the professors' common room, and the surgical theatre. The latter is quadrant-shaped, occupying the south-east angle of the building, and lighted by six lofty windows. It is planned to accommodate some hundreds of students, and with every convenience in the matter of apparatus and lighting. There are two entrances, one from the hall, as already stated, and

the other from the gallery of the anatomical museum. The last is one of the features of the building, being 59 ft. by 40 ft. in length, two stories in height, and lighted on two sides. Another entrance to the museum is provided from the smaller quadrangle. On a mezzanine floor are several rooms for research and the museum of embryology. The first floor is devoted to the department of anatomy. The laboratory and study of the professor of anatomy, a preparation room, and ample lavatory and locker accommodation for students occupy one wing of the building. The anatomical theatre, similar in size and plan to the surgical theatre below, is situated between these apartments and the dissecting room, equal in size to the museum, and forming the upper story of the museum wing. The dissecting room is lighted from the roof, and is overlooked by the professor's private gallery for special research. An operating room for advanced students in surgery, a bone room, and a classroom for women students are arranged on the second and top floors. In the basement—which, owing to the fall of the land, is light and lofty—are the departments of toxicology, ophthalmology, practical surgery, and advanced medicine. The special feature all through the school is the provision made for the individual research, now looked upon as a vital point in university education. Externally, like the rest of the university buildings, the school is of brick, with terra-cotta decorations and stone dressings. The style is Gothic.

The Physics Laboratory.

The George Holt Physics Laboratory covers an area of 9,600 sq. ft., and has an average height of 55 ft. The architects were Messrs. Willink and Thicknesse, of Liverpool, with whom was associated Professor F. M. Simpson, of University College, London, formerly Professor of Architecture at University College, Liverpool. The external walls are built in brick, with broad courses of red brick and dressings of Storeton stone. The basement floors are asphalt on a bed of concrete, resting on the continuous rock, which is the foundation of the whole building. All the upper floors are fireproof; they consist of a bed of concrete, which encases a lattice work of steel girders and supports, a layer of coke breeze, upon which tongued and grooved pitch-pine boards are stuck down with bitumen, and nailed. The resulting surface is both noiseless and steady, and the whole building is made very rigid by the girders employed. In the basement there is a large workshop, fully fitted with machine tools, storerooms, a room containing a liquid air plant, a furnace-room an accumulator-room, a room for the custody and comparison of standards, and a number of research-rooms in which extra steadiness, or complete darkness, or constancy of temperature, can be respectively secured. On the ground-floor, close to the entrance hall and cloak-rooms, are the doors of the large lecture theatre, a smaller class-room, and a large laboratory for elementary students. This floor also contains the preparation room, the apparatus-room, and a sitting-room, office, and private laboratory for the use of the Professor. The first floor is set apart for the teaching of senior students. It contains two large students' laboratories, four smaller rooms suitable for optical and acoustic experiments, a students' workshop, a library, and two sitting-rooms for demonstrators. The second floor consists almost entirely of research-rooms of various sizes. Of these, some are designed for special purposes, such as spectroscopy, but the majority are planned so as to be adaptable to as great a variety of needs as possible. A photographic dark-room is provided on each floor; that in connexion with the preparation-room is adapted for the making of lantern slides and enlargements. There is also a small observatory on the roof containing a 4-in. equatorial telescope. An electrically driven lift, working in the centre of a tower, is available for the conveyance of heavy apparatus from floor to floor. It can also be used to give access for experimental purposes to all points of two vertical walls, which extend to the full height of the tower, about 75 ft. In another part of the laboratory access over a horizontal distance, about 90 ft., nearly equal to the whole length of the building, is secured. The rooms are heated by low-pressure hot water, and ventilated by an exhaust-fan in the roof. They are adequately supplied with gas, with sinks to which hot and cold water are led, with electric power from the corporation mains, and with wires from a switchboard in the basement to which accumulators are connected. The wiring is run in wood casing on the surface of the walls; all pipes are fully exposed, and, wherever a floor or wall is pierced, an opening is left through which further permanent or temporary connexions can be made as required.

The erection of the George Holt Laboratory is due to the munificence of Mrs. and Miss Holt, other contributors being Sir John Brunner, the late Sir Henry Tate, and other friends. The cost of the building, with furniture and fittings, was £21,600. A sum of £1,200 has been expended, in addition, upon machinery and new apparatus, and £3,000 are still available for the completion and maintenance of equipment.

UNIVERSITY OF OXFORD.

Examiners.

The following have been appointed Examiners in Medicine and in the Preliminary Natural Science Examinations: Nevil V. Sidgwick, M.A., Fellow of Lincoln College, in Organic Chemistry: Arthur Thomson, M.A., Professor of Human Anatomy, Exeter College, in Human Anatomy; Ralph Stockman, M.D.Edin., in Materia Medica: John S. Fairbairn, B.M., Magdalen College, in Midwifery: German Sims Woodhead, M.D.Edin., in Pathology; John Dixon Mann, M.D., St. Andrews, in Forensic Medicine and Public Health; Leonard E. Hill, M.B.Lond., in Human Physiology; Arthur L. Ormerod, D.M., New College, in Forensic Medicine and Public Health; Edwin S. Craig, M.A., University College, in Elementary Mechanics and Physics; James E. Marsh, M.A., Balliol College, in Elementary Chemistry; Walter Ramsden, D.M., Fellow of Pembroke College, in Elementary Physiology; Edwin S. Goodrich, M.A., Fellow of Merton College, in Elementary Zoology.

Radcliffe Travelling Fellowship.

An examination for a Radcliffe Travelling Fellowship, of the annual value of £200 and tenable for three years, will be held in Hilary Term, 1905, commencing on Tuesday, February 28th. The examination will occupy four days. Papers will be set in Physiology, Pathology, and Preventive Medicine, and a subject will be proposed for an essay; there will also be a practical examination in Pathology. Intending candidates should send their names, addresses, and qualifications to Professor Gotch, University Museum, on or before Saturday, February 11th. Further particulars will be found in the *University Gazette* of November 8th, 1904.

UNIVERSITY OF CAMBRIDGE.

Proposed Modification of the Previous Examination.—The Studies and Examinations Syndicate have issued a report proposing that in the Previous Examination French or German may be offered instead of either Latin or Greek, provided that one of the latter is taken: also that Elementary Physics and Elementary Chemistry may be offered as alternatives for Scripture Knowledge and History. Set books and Paley's *Evidences* are no longer to be included, and a higher standard than heretofore is to be expected. Much discussion and no small opposition is sure to be raised by the suggestion that Greek should be made a voluntary subject, but the proposal is strongly supported both without and within the University. The report is signed by the great majority of the syndics, including Professor J. J. Thomson and Dr. D. MacAlister.

Experimental Psychology.—Dr. C. S. Myers has been appointed Demonstrator of Experimental Psychology.

Lectureship in Special Pathology.—The Vice-Chancellor reports that since February 8th, 1904, donations amounting to about £3,500 have been paid or promised to the University Benefaction Fund. About half the amount is earmarked for the endowment of a "Huddersfield" Lectureship in Special Pathology.

Research in Biology.—Walsingham medals for original research in biology have been awarded to Mr. R. P. Gregory, Fellow of St. John's, and Mr. K. Lucas, Fellow of Trinity.

Degrees.—At the Congregation on November 10th the following degrees were conferred:

M.B.—A. Wylie, Pembroke; G. E. Davidson, Caius; A. R. Moore, Caius; W. W. Holtzmann, Christ's.

B.C.—A. R. Moore, Caius.

UNIVERSITY OF LONDON.

MATRICULATION EXAMINATION.

The final list of successful candidates at the Matriculation Examination held in September shows that 81 were placed in the first division, and 328 in the second division.

M.D. EXAMINATION.

The Senate has resolved that candidates for the degree of M.D. (other than those entitled to enter for the examination on payment of a fee of £2 10s.) who, having presented themselves for examination in or prior to 1904, have failed to satisfy the examiners, be permitted to enter for any subsequent examination on payment at each such examination of a fee of £10, provided that they otherwise comply with the then existing regulations.

PATHOLOGY.

Dr. David Nabarro has been appointed Scientific Assistant in Pathology.

UNIVERSITY COLLEGE.

Heredity.—A course of eight lectures on Current Theories of the Hereditary Process will be given by Professor W. F. R. Weldon, F.R.S., on Tuesdays during the winter session. The course will commence on November 22nd, at 5 p.m. The lectures are free to members of the University, and to students of the London colleges. Further particulars can be obtained on application to Professor Karl Pearson, University College.

Newmarch Lectures.—A course of six Newmarch lectures on the Vital Statistics of England and Wales will be begun by Mr. G. U. Yule, on Friday, December 2nd, at 5.30. The lectures, which will be illustrated by lantern slides of tables and diagrams, will be open to the public without payment.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on November 10th, Mr. John Tweedy, President, in the chair.

Diplomas of Membership.

Diplomas were issued to 102 candidates found qualified at the recent examination.

Report of the Finance Committee.

The following report was adopted by the Council: The Committee have examined the accounts for the quarter ending Michaelmas Day, 1904, the first quarter of the collegiate year, and find that the income for that period

exceeded the "expenditure in respect of revenue" by £665 16s. 1d. The gross income for the quarter amounts to £6,510 17s. 3d., and the "expenditure in respect of revenue" to £5,845 1s. 2d., a decrease of income amounting to £324 10s. 5d., and a reduction of £221 3s. 2d. in expenditure compared with the corresponding quarter of the previous year. The extraordinary expenditure for the quarter is exceptionally heavy, consisting of a grant of £600 towards the purchase of an annuity for the widow of the late Secretary and of a disbursement of £338 17s. for the redecoration of Rooms I and IV of the Museum.

School Certificates.

A report from the Committee of Management was referred to a Special Committee of the Council to consider a form of answer to be returned to the Board of Education concerning a proposal for organizing a system of school certificates.

University of London.

Mr. H. T. Butlin was appointed a representative of the College in the Senate of the University of London in the vacancy occasioned by the resignation of Sir Henry G. Howse.

General Medical Council.

A letter, dated November 1st, was read from the Clerk of the Privy Council, transmitting, by direction of the Lord President of the Council, a copy of a letter addressed to the General Medical Council, stating that the Lord President has had under consideration the proposal of the General Medical Council for the establishment of a register of medical students and the imposition of a registration fee not exceeding £1, and that his Lordship has also received communications on the subject from the Presidents of the Royal Colleges of Physicians and Surgeons, and suggesting that, "in the circumstances, it might be expedient for the Medical Council to confer with the Colleges with a view to the preparation of a scheme providing for their co-operation towards the desired end on a basis that would, in some form or other, recognize existing rights."

The late Mr. Cadge.

The President reported that he had accepted an invitation to unveil the Cadge Memorial Window at Norwich Cathedral on December 6th.

Court of Examiners.

The President stated that the vacancy in the Court of Examiners, occasioned by the expiration of Mr. Bernard Pitts's period of office would be filled up at the next ordinary meeting of the Council on December 8th, and that Mr. Bernard Pitts would be a candidate for re-election.

UNIVERSITY OF MANCHESTER.

UNIVERSITY COURT.

THE University Court met on November 10th.

Number of Students.

It was reported that during last year there were in the Faculty of Medicine 367 students, including 13 women, the total number of students in all Faculties being 1,208.

The Transfer of the Royal Infirmary.

The arrangements for the transfer of the College Hospital Estate to the Manchester Royal Infirmary have been completed during the year. The estate has been conveyed to the Infirmary, and in the deed of transfer provisions have been inserted securing requisite facilities for clinical instruction for the Medical School of the University in the new infirmary which is to be erected in Stanley Grove. The portion of the hospital estate which had been conveyed to the Southern Hospital has also been conveyed to the Royal Infirmary with the concurrence of the College, and the authorities of the Southern Hospital have entered into covenants for securing facilities for instruction in gynaecology, obstetrics, and diseases of children for medical students in the new Southern Hospital, which is now in course of erection. The proposed amalgamation of the Southern and St. Mary's Hospitals will enable a complete co-ordination of hospital work and instruction in regard to diseases of women and to obstetrics to be effected. It may thus be confidently expected that there will soon be in the immediate neighbourhood of the University buildings ample provision for the students of the Medical School to receive clinical instruction in medicine, surgery, and midwifery, under most favourable circumstances.

The transfer of the hospital estate to the Infirmary has involved the demolition of the public health laboratories in Stanley Grove. In accordance with the desire expressed by the representatives of the Royal Infirmary a site has been purchased in York Place, and plans for the erection of the new buildings on a larger scale to meet the growing requirements of this department were prepared by Professor Delépine. The new laboratories, which are now in use, will be formally opened in January.

Appointments.

On the Board of Faculty of Medicine were appointed Dr. A. H. Griffith, lecturer on clinical ophthalmology: Dr. Siegmund Moritz, lecturer on diseases of the throat and nose; and Dr. A. T. Wilkinson, lecturer on diseases of the kidneys; Dr. Donald was appointed a member of the Board of Faculty of Medicine.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on Tuesday, November 1st, Dr. Clouston (President) in the chair.

Fellowship.

William Wood, M.B., C.M., F.R.C.P.E., was introduced and took his seat as a Fellow of the College.

Alexander Goodall, M.D., M.R.C.P.E., Edinburgh, was admitted by ballot to the Fellowship of the College.

Membership.

On a ballot the following candidates were admitted to the Membership of the College after examination: John Cecil Carr, M.B., Ch.B. Edinburgh; Roderick Mackenzie Grant, M.B., Ch.B., Inverness; William Elliot Carnegie Dickson, M.B., Ch.B., Edinburgh; Herbert Henry Bullmore, M.B., Ch.B., London; Robert Cranston Low, M.B., Ch.B., Edinburgh; and Benjamin Peter Donald, L.R.C.P.E., L.R.C.S.E., Edinburgh.

Licence.

The Secretary reported that since the last quarterly meeting forty-six persons had obtained the licence of the College by examination.

Wood Bursary Award.

The Wood Bursary, of the value of £60 per annum and tenable for three years, which is in the gift of the College, was awarded after examination in Latin, Greek, Mathematics and English, to Mr. George Sutherland.

School of Medicine of the Royal Colleges.

The Secretary laid on the table the annual statement by the Governing Board of the School of Medicine of the Royal Colleges in terms of the constitution. The report indicated that the number of classes during the winter session, 1903-4, was 42, and during the summer session, 1904, 43; and that the number of students during the winter session was 1,152, and during the summer session, 1,177, both so far as could be ascertained, as certain lecturers had not made returns.

Dr. A. R. Simpson and Dr. P. A. Young were re-elected representatives on the Governing Board of the School of Medicine of the Royal Colleges.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE Carmichael Prize of £120 for the best essay, On the State of the Medical Profession in its Different Departments, has been awarded by the College to Dr. Michael Foster Reaney, of Manchester.

SOCIETY OF APOTHECARIES.

THE Lord Mayor's Day dinner of the Society of Apothecaries was given at the Hall of the Society on November 11th, by Mr. A. B. Day, the Master, and Messrs. J. H. Jeffcoat and E. Parker Young, the Wardens of the Society. To the right of the Master were seated Sir Joseph Dimsdale, M.P., the Archdeacon of London, and Dr. Griffith; to the left of the Chairman were seated Mr. Grant Buris, Mr. Bryant, Sir Hugh Beevor, Sir T. Dyer, Mr. Reginald Harrison, and Dr. Cullingworth. Amongst the other guests present were Mr Andrew Clark, Mr. W. Arbuthnot Lane, Dr. de Havilland Hall, Dr. Dickinson, Dr. C. E. Beevor, Sir Shirley Murphy, Dr. G. H. Savage, Mr. Alderman Robinson (President of the Pharmaceutical Society), Mr. David Howard (President of the Institute of Chemistry), and Mr. T. Fairley (President of the Society of Public Analysts).

The usual loyal toasts having been duly honoured, Mr. Jeffcoat proposed the toast of "The Imperial Forces," and Major Freeman, R.A.M.C., who responded, referred with satisfaction to the condition of the Medical Services.

Mr. A. B. Day then submitted the toast of "The Royal Colleges of Physicians and Surgeons," which was acknowledged by Dr. de Havilland Hall and Mr. Bryant; the latter, speaking as a member of the Conjoint Board of the Royal Colleges, confessed that he was sorry that the Society of Apothecaries had not joined the Conjoint Board. If that junction ever took place it would be a good thing for the public.

Sir Joseph Dimsdale, in proposing the toast of "The Society of Apothecaries of London," reviewed the history of the Society in some detail, and observed that the Society rendered great benefit to mankind in putting at the disposal of those so inclined the use of the finest drugs that could be obtained. This toast having been duly acknowledged by the Clerk to the Society, Mr. A. M. Upton,

Mr. E. Parker Young submitted the toast of "The Visitors," and in the course of enumerating the guests present observed that if there was any man in the medical profession who deserved knighthood more than another it was their friend Sir Shirley Murphy, whom they welcomed there that night. The toast was acknowledged by the Archdeacon of London.

A pleasant feature in the evening's entertainment was a well-rendered programme of music.

OBITUARY.

JOHN HARKER, M.D. HEIDELBERG, M.R.C.S. ENG.,

Honorary Consulting Medical Officer, Royal Lancaster Infirmary.

ON November 12th there died at Hazel Grove, Carnforth, one of the oldest medical practitioners for many miles around the town of Lancaster. Many of the young practitioners in the town and neighbourhood may not remember the days when he held a foremost position in the social and medical life of Lancaster, but all are familiar with his well-known presence and kindly greeting, and not a few of the older men will look back to the days when they were entering upon the practice of their profession and sigh to think that the man who extended to them such a kindly welcome is now no more.

As a practitioner of the healing art, John Harker was in the first rank. His treatment of disease was scientific, and as an operator he was careful, cleanly, and full of judgement, and his manner with his patients was courteous and sympathetic. He was well read in many subjects beyond his profession—natural history, botany, archaeology, and heraldry were all favourite studies. He was born at Kendal in 1834, and educated at the Grammar School of that town. He was apprenticed, as was the custom in those days, to Mr. Gough, a surgeon of more than local repute, to whose influence could doubtless he traced that love of Nature which was such an integral part of John Harker's being. His medical studies were continued at the old Royal School of Medicine, Manchester—afterwards Owens College—where he greatly distinguished himself, gaining numerous prizes. He obtained the diplomas of M.R.C.S.Eng., L.S.A. in 1856, of L.R.C.P.Edin. in 1860, and the degree of M.D. Heidelberg in 1865.

In 1857 he was appointed house surgeon to the Lancaster

Infirmary and Dispensary, which office he held for a year, when, upon entering private practice in the town, he was elected honorary medical officer to the institution and afterwards one of the trustees of its funds. This position he held with dignity, skill, and wisdom for forty-one years, and when he finally retired from the active staff to the great regret of his colleagues, he was elected by the committee honorary consulting medical officer to the new Royal Lancaster Infirmary as a mark of their esteem and an appreciation of his long and valued services. While a student he was elected the first scholar of the Manchester Royal School of Medicine, obtaining four medals.

He was a member of the British Medical Association, and was President of the Lancashire and Cheshire Branch in 1886. He was also an associate of Owens College, a fellow of the Sanitary Institute and of the Archeological Association.

He was Medical Officer of Health for the Borough of Lancaster and for the Rural District for many years. In October, 1886, upon his retirement from practice, he was placed upon the Commission of the Peace for the County of Lancashire. He took the keenest interest in the building of the new Royal Lancaster Infirmary, and was a most generous contributor to the building fund, its present completeness being in more ways than one being due to him. He married in 1866 Lucy, daughter of the late Mr. Dawson of Aldcliffe Hall, Lancaster.

GEORGE EDWARD POWER, M.R.C.S., L.S.A.

It is with regret we record the death of Mr. George E. Power, which took place at his residence, Brampton House, Hucknall Torkard, on October 29th, after an illness of twelve days. The youngest son of the late Dr. W. H. Power—a name well known to medical students of some forty years ago—he was born at Highgate Rise, London, on May 16th, 1849. He was educated at the Great Ealing and North London Collegiate Schools. He entered at Guy's Hospital for his medical training, and there, amongst other offices, held the post of Resident Obstetric Assistant. After obtaining the diploma of M.R.C.S. in 1873 and that of L.S.A. in 1874, he was appointed one of the House-Surgeons at the Nottingham General Hospital. He held this office for nearly three years, and then settled down in general practice in Hucknall, where his kind and generous nature and undoubted skill quickly gained for him the esteem and confidence of a large circle of friends and patients.

He came of a family which has produced several gifted men, one of his brothers—Mr. W. H. Power, C.B.—being Principal Medical Officer of the Local Government Board. A fine athlete, Mr. G. E. Power excelled in most outdoor sports, which he liberally supported, and his love of horticulture and natural history pursuits were well known. Of a retiring disposition, he did not seek public honours, but in a quiet way he took great interest in the Church schools, of which for many years he was a manager. He was a member of the British Medical Association.

He was laid to rest on November 2nd in the historic churchyard of his adopted town amidst the manifest grief of many thousands of his fellow townspeople and friends, who came from far and near to pay a last tribute of respect to one they loved. He leaves a widow to mourn his loss.

Deputy Inspector-General of Hospitals and Fleets William Ross, M.D., R.N., died on October 31st at his residence at Balham at the age of 81. Dr. Ross was educated at Marischal College, Aberdeen, where he took his degree in Arts in 1842, and his medical degree in 1844, in which year he also became a Member of the Royal College of Surgeons of England. Entering the navy in 1845, he served as Assistant Surgeon in the *Calliope* in the New Zealand war of 1846-7-8, and was present at the attack and capture of Ruapekapeka (Kawiti's) Pah in the Bay of Islands, in the action in the Horokiwi Valley, and in the various other engagements of the war. In 1855, as Assistant-Surgeon of the *Virago*, in the Pacific, he was at the capture of the Chilian pirates in the Straits of Magellan, and in 1853 he was in medical charge of the exploring expedition across the Isthmus of Darien from the Pacific to the Atlantic. He afterwards took part in the search for and relief of the lost United States exploring expedition from the Atlantic to Darien Harbour, under Lieutenant Spain, U.S.N., and received the thanks of the United States Navy Department. During the war with Russia in 1854 he was at the bombardment of the batteries of Petropavlovski in Kamschatka by the combined British and French squadrons, and afterwards landed there in the attack on that settlement. In 1855 he served as surgeon in the *Vesuvius* in the Black Sea and Sea of Azoff; and in 1857-8 in the *Assurance* in India and Burmah during the Indian mutiny. Dr. Ross was promoted to the rank of Fleet Surgeon in 1868, and retired in 1881 with the rank of Deputy Inspector-General. He received a Greenwich Hospital pension in 1895.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Karl Hugo Huppert, Emeritus Professor of Physiological Chemistry in the University of Prague, aged 72; Dr. Giuseppe Boccardi, Professor of Normal Histology in the University of Naples, aged 47; Dr. Emil Maier, of Karlsrühe, a well-known ophthalmologist, aged 69; Dr. R. de Greyft, President of the Antwerp Medical Society and one of the leading laryngologists of Belgium, aged 40; Dr. Samuel W. Abbott, Secretary of the Massachusetts State Board of Health, author of several monographs on medical subjects and of a book entitled *The Past and Present Condition of Public Hygiene and State Medicine in the United States;* Professor Max Bartels, of Berlin, author of well-known works on the medicine of uncivilized peoples, and on anthropology, aged 61; Dr. Leo Redtenbacher, Physician to the Vienna General Hospital, aged 58; Dr. Albert Reder, Baron von Schellman, President of the Medical Doctoren-Collegium of Vienna; Dr. Mordecai Price of Philadelphia, one of the most eminent abdominal surgeons and gynaecologists in the United States, aged 60; and Dr. W. W. Seymour, sometime Professor of Midwifery and Gynaecology in the University of Vermont, and at the time of his death Chief Surgeon to the Samaritan Hospital, Troy, New York. He was one of the first in the United States to operate successfully for gall stones.

MEDICO-LEGAL AND MEDICO-ETHICAL.

MEDICAL ETIQUETTE.

J. T. writes: W. is T.'s patient; B., a friend of W.'s, called on W., and said Dr. Y. wanted to see W.'s shoulder, as he had had much experience in such cases. As a result, W. goes with B. to Y.'s surgery. Y. asked who was treating the case, and was informed that T. was doing so. Y. examined the shoulder. Should Y. have (as was alleged) sent for W., and examined the shoulder without first consulting T.?

*** For Y. to send for W. in order to examine his shoulder would be undoubtedly a breach of professional propriety; but we hesitate to believe it possible. It is, at least, much more probable that B. used Y.'s name without his authority.

THE PUBLIC VACCINATOR AGAIN.

Sigma complains that the public vaccinator in his district has issued a poster urging the importance of revaccination, and offering the gratuitous performance of the operation at patients' own homes or at his surgery, the poster being signed with his name as public vaccinator.

*** Such a poster, if necessary, should be issued by the local authority, and should be signed, if at all, by the Clerk to the Board. The conduct of public vaccinators is giving rise to a great many complaints, and we should advise that such cases as this should be brought under the notice of the local Division of the British Medical Association. The obligation not to advertise is as binding upon a public vaccinator as upon any one else, and although there may be exceptional circumstances in the performance of his public duties, he should not be allowed to take advantage of his position to promote his personal advantage, to injure his professional neighbours, or to defy the ethical rules of his profession.

OPERATION IN HOSPITAL BY A SURGEON NOT ON THE STAFF.

J. T. W.—We are asked to express an opinion upon the following case: A stonemason, presumably in comfortable circumstances, met with an accident which resulted in paralysis of the lower limbs, for which the operation of laminectomy was advised by a leading provincial surgeon. The patient's usual medical attendant was one of the surgeons to the local hospital, and he arranged that the patient should be admitted to the hospital under his care, but that the operation should be performed by a consulting surgeon resident in another town, who was to come down accompanied by an assistant. These arrangements appear to have been made before any steps were taken to ascertain whether under these conditions the patient could be admitted and the operation performed. It seems, however, to have been necessary to obtain permission from the senior surgeon, to whom application was made by telephone. The reply was a refusal, and this refusal was persisted in at a subsequent interview, on the ground that there was no precedent for allowing a surgeon unconnected with the hospital to operate within its walls and upon a patient of the institution, especially when there were members of the staff ready and willing to undertake the case. A point that should not be omitted is that the patient is stated to have offered to pay all the "expenses in connexion with the case," but we do not know whether this included any payment of surgical fees. We are informed that the incident has given rise to a good deal of local feeling.

*** (1) It is unprecedented in charitable hospitals for a surgeon unconnected with a hospital to be allowed to operate upon a case in the institution except with the knowledge and consent of the whole

surgical staff. (2) In pay hospitals and in the paying departments of charitable hospitals it is quite usual for the patient to be attended by the surgeon of his choice although he has no regular connexion with the institution. (3) If under the regulations of the hospital in question the patient could be admitted as a paying patient who would pay not only for the board, nursing, dressings and medicines, but for surgical attendance as well, the case might be considered analogous to that last described. But from the statement of the senior surgeon, that he had never heard of such a proposal during the thirty years of his connexion with the hospital, it is evident that no rules exist providing for such a case as this, and therefore the responsibility for the difficulty which arose must lie with those who neglected to obtain at the outset the sanction of the committee and the staff to the proposed arrangements.

ADVERTISING THANKS.

ALPHA sends a page from the *Blackheath Local Guide and District Advertiser* for November 5th, which contains an advertisement in which Mr. George Barnes, who recently met with a severe accident returns thanks to his medical attendant. The paragraph is plainly marked "advt."

*** Not long ago the widow of a deceased dignitary of the Church took the same means of expressing her feelings of gratitude; and, as we pointed out at the time, such paragraphs are not in accordance with professional ideas of propriety. We cannot, however, assume that the medical practitioner concerned is responsible, or in any way to blame. The Ethical Committee is trying to do what it can to stop such announcements by writing to the editors of the newspapers in which they appear, and we will refer this case to the Committee.

OBLIGATIONS OF A PARTNER.

JUNIOR PARTNER writes that his partner sold his private club practice to a former assistant, and bound himself not to form another. Our correspondent asks whether he also is prevented from starting such a practice by this contract.

*** The strictly legal position may depend upon the terms of the contract, but it seems to us that for "Junior Partner" to start such a practice would be to evade the conditions of the sale and dishonourable.

"INTOLERABLE INGRATITUDE."

MR. GEORGE BROWN (Callington, Cornwall) writes: Under the above heading in your issue of November 12th, p. 1346, you comment upon a letter written by me which was published in the *Times* of the 4th inst. I am disappointed to find that you think it was written with less than my "usual taste," and I much regret that you did not print the letter *in extenso*, as also the one that drew it forth, so that your readers could have judged for themselves as to the relevancy and good taste of my remarks. If you publish the letters, I am prepared to abide by the verdict of my professional brethren; meantime I stand by every word I have written, and maintain that my letter to the *Times* was in perfect order.

MEDICAL TESTIMONIALS IN TRADE ADVERTISEMENTS.

W. A. P. draws our attention to an advertisement of Reynold's Gout Specific in the *Sunday Times*, which states that the remedy is "highly recommended" by two practitioners whose names do not appear on the *Medical Register* and by a third at an address in Welbeck Street.

*** We will refer the matter to be dealt with under the standing orders of the Ethical Committee.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: WALTER J. BEARBLOCK, Staff Surgeon, and PERCY H. BANNISTER, M.B., Surgeon, to the *Hawke*, on commissioning, undated; JAMES C. JOHNSTON, M.B., B.A., Surgeon, to the *Kent*, November 9th; HERBERT B. SIMPSON, Surgeon, to *Sealark*, November 9th; SYDNEY CRONEEN, Surgeon, to the *Cambridge*, November 9th; CYRIL SHEPHERD, Surgeon, to the *Excellent*, additional, for the *Colossus*, November 9th; HENRY J. HADDEN, M.B., B.A., Fleet Surgeon, to the *President*, additional for three months' hospital course, November 16th; HORACE ELLIOTT, M.B., Fleet Surgeon, to the *Empress of India*, November 14th; JAMES M. ROGERS, F.R.C.S., Fleet Surgeon, to the *Lion*, November 14th; ERNEST A. PENFOLD, M.B., Staff Surgeon, and REGINALD THOMPSON, Surgeon to the *Britannia*, additional, for the *Highflyer*, on commissioning, November 18th; HENRY C. WHITESIDE and MALCOLM CAMERON, Surgeon, to the *President*, additional for three months' hospital course, November 14th; JOHN H. LIGHTFOOT, Surgeon, to the *Albacore*, November 14th; WILLIAM R. HARRISON, Surgeon, to the *Widgeon*, undated; FREDERICK C. ROBINSON, Surgeon, to the *Vivid*, additional, undated (this appointment has since been cancelled); HENRY W. W. TOWNSEND, Surgeon, to the *Fire Queen*, additional, for Portsmouth Dockyard, November 12th; ROBERT H. ATKINS, M.B., Surgeon, to the *Wye*, November 12th; HUGH P. TURNBULL, Surgeon, to the *Wildfire*, November 12th: EDGAR R. DIMSEY, D.S.O., Fleet Surgeon, to the *Vernon*, December 1st; EDWARD J. BIDEN, Fleet Surgeon, and GEORGE E. MACLEOD, Surgeon, to the *Irresistible*, on recommissioning, December 1st; WALLACE G. M. ANDERSON, M.B., B.A., Surgeon, to the *Leander*, and for duty with torpedo-boat destroyers, November 14th.

Staff Surgeon R. H. J. BROWNE has been promoted to be Fleet Surgeon from November 9th. He was appointed Surgeon, February 21st, 1890, and Staff Surgeon, November 9th, 1896. He was Surgeon of the *Alacrity* during the operations in North China in 1900, being present at the capture of the Taku Forts, and at the relief of the Tientsin Settlement, and subsequently of Sir E. Seymour's column at Ilsiku (medal with two clasps, and promoted to be Staff Surgeon).

Staff Surgeon E. B. PICKTHORN is also promoted to be Fleet Surgeon from November 9th. He joined as Surgeon, May 11th, 1892, and was made Staff Surgeon, November 9th, 1896. He was Surgeon of the *Centurion* during the China war of 1900, and accompanied the Naval Brigade in the advance to Pekin.

Staff Surgeon J. F. HALL is likewise promoted to be Fleet Surgeon from November 9th. He was appointed Surgeon, May 15th, 1895, and Staff Surgeon, November 9th, 1896. He was Surgeon of the *Barfleur* during the war with China in 1900, and was specially mentioned for his services.

Surgeon O. K. NIX, M.B., B.A., and W. JACKSON, M.B., are promoted to be Staff Surgeons from November 10th. Their first commissions are dated November 10th, 1896.

ROYAL NAVAL VOLUNTEER RESERVE.

WILLIAM G. BARRAS, M.D., M.B., D.P.H., L.S.A., is appointed a Surgeon, November 10th.

ROYAL ARMY MEDICAL CORPS.

MAJOR A. E. C. SPENCE, M.B., is placed on retired pay, November 16th. He was appointed Surgeon, August 2nd, 1884, and Surgeon-Major, August 2nd, 1896. He was in the Soudan Campaign in 1885 (medal with clasp and Khedive's bronze star); in the operations on the Nile in 1889; in the campaign on the North-West Frontier of India in 1897-8, including the operations on the Samana Range, and with the Tirah Expeditionary Force (mentioned in dispatches, medal with three clasps); and in the South African War in 1901-2, in the Orange River and Cape Colonies.

Major C. J. HOLMES is also placed on retired pay, November 16th. His commissions as Surgeon and Surgeon-Major are contemporaneous with those of Major Spence. Major Holmes served in the Soudan campaign in 1885 (medal with clasp and Khedive's bronze star); with the Dongola expedition in 1896 (British medal and Egyptian medal with clasp); and in the South African war in 1902.

Major JAMES MCMULLEN BOLSTER, retired pay, died on September 19th last. He was appointed Surgeon Captain, March 6th, 1882, and became Major, March 6th, 1897. He retired from the service, December 21st, 1901.

The undermentioned Majors to be Lieutenant-Colonels, dated August 2nd, 1904: W. C. BEEVOR, M.B., C.M.G., J. MAHER, G. D. HUNTER, D.S.O., J. R. MALLINS, M.B., H. N. THOMPSON, M.B., D.S.O., N. MANDERS, S. F. FREYER, M.D., C.M.G. (provisional). Brevet Lieutenant-Colonel C. BIRT, R. S. F. HENDERSON, M.B. Lieutenant-Colonel Beevor entered as Surgeon, August 2nd 1884, becoming Surgeon-Major, March 25th, 1896; Lieutenant-Colonel Maher dated as Surgeon from January 31st, 1885, and as Surgeon-Major from March 25th, 1896. The previous commissions of all the other officers cited are dated: Surgeon, August 2nd, 1884; Surgeon-Major, August 2nd, 1896. Their war records in the Army Lists are as follow: Lieutenant-Colonel Beevor—Soudan campaign in 1885 (medal with clasp and Khedive's star); expedition to Ashanti in 1895-6 (mentioned in dispatches, promoted Surgeon-Major, star); campaign on the North-West Frontier of India in 1897-8 as Staff Surgeon to the Tirah Expeditionary Force (mentioned in dispatches, medal with two clasps); South African war in 1899-1902; advance on Kimberley; actions at Belmont, Enslin, Modder River, and Magersfontein; also operations in the Orange Free State February to May, 1900, including actions at Poplar Grove, Driefontein, Vet River, and Zand River; in the Transvaal in May and June, 1900, including actions near Johannesburg, Pretoria, and Diamond Hill; in the Transvaal, east of Pretoria, July to November 29th, 1900, including actions at Belfast; and in the Transvaal, Orange River Colony, and Cape Colony, November 30th, 1900, to March, 1902 (mentioned in dispatches, C.M.G., medal with six clasps, King's medal with two clasps). Lieutenant-Colonel Maher—Soudan campaign in 1885 (medal with clasp and Khedive's star); expedition to Ashanti in 1895 (promoted Surgeon-Major, star). Lieutenant-Colonel Hunter—Nile expedition in 1884-5 (medal with clasp and Khedive's star); Soudan Frontier Field Force in 1885-6, and in the Soudan in 1888-9, including engagement at Gemaizah (clasp); Dongola Expeditionary Force in 1896 as Senior Medical Officer to the force, including engagement at Firket and operations at Hafir (mentioned in dispatches, D.S.O., British medal, and Khedives medal with two clasps), and in 1898 including battle of Khartoum (mentioned in dispatches, clasp to Khedive's medal); nominated to the 4th Class of the Order of the Osmanieh for services with the Egyptian army. Lieutenant-Colonel Mallins—Soudan Frontier Field Force in 1885-6, including engagement at Giniss (medal, and Khedive's star; South African war in 1902 (mentioned in dispatches). Lieutenant-Colonel Thompson—Nile expedition in 1898 (British and Egyptian medals); South African war in 1901 (mentioned in dispatches, D.S.O.). Lieutenant-Colonel Manders—Soudan campaign in 1885 (medal with clasp and Khedive's star); Burmese expedition in 1887-8, and with the Karen expedition in 1888-9, severely wounded (medal with two clasps). Lieutenant-Colonel Freyer—soudan campaign in 1885 (medal with clasp, and Khedive's star); South African war in 1899-1901, including relief of Ladysmith (mentioned in dispatches, C.M.G.). Lieutenant-Colonel Birt—Soudan campaign in 1885 (medal with clasp, and Khedive's star); Chitral Relief Force in 1895 (medal with clasp); South African war, 1902 (mentioned in dispatches, Brevet of Lieutenant-Colonel). Lieutenant-Colonel Henderson—Soudan campaign in 1885, including engagement at Tofrek and destruction of Temai (medal with clasp and Khedive's star); Burmese war in 1886 (medal with clasp); and in the expedition against the Tounhon Kakyens in 1889 (clasp); also with the Chin-Lushai expedition on the staff of Sir Charles Arbuthnot (clasp); and with the Wuntho expedition in 1891 as Senior Medical Officer with Sir George Wolseley (mentioned in dispatches, clasp); campaign on the North-West Frontier of India in 1897-8 (medal with clasp).

Lieutenant-Colonel W. J. MACNAMARA, M.D., Senior Medical Officer, Jersey, has been appointed Principal Medical Officer, Orange River Colony District.

Colonel J. F. WILLIAMSON, M.B., C.B., C.M.G., nominated as Administrative Medical Officer on the Indian Establishment, is appointed Principal Medical Officer, Bombay and Nagpore Districts.

Colonel F. W. TREVOR, M.B., Principal Medical Officer, Bombay and Nagpore Districts, is transferred in the same capacity to Poona District.

Lieutenant-Colonel (temporary Colonel) J. G. HARWOOD, Officiating Principal Medical Officer, Poona District, will revert to his substantive appointment.

The undermentioned officers are appointed specialists in the subjects specified from April 28th: Captain K. M. CAMERON, Punjab, in advanced operative surgery; Captain E. W. PROFEIT, Punjab, in laryngology; Captain J. GRECH, Bengal, in skiagraphy; Captain W. J. TAYLOR, Bombay.

in skiagraphy: Captain A. E. Milner, Madras, in skiagraphy, up to the time he took over duty as Officiating Staff Officer Army Bearer Corps, Madras Division.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

London Companies.

The London Companies, R.A.M.C. (Volunteers), on Sunday, October 30th, held their annual church parade at the Church of St. Bartholomew the Great, Smithfield: the Rector, the Rev. Sir Borradaile Savory, is Hon. Chaplain of the Corps. The Corps paraded at its head quarters under command of Lieutenant-Colonel V. Matthews, and, headed by its band, marched to the church, at the door of which it was met by the chaplain. There was a large congregation, which overtaxed the seating accommodation of the beautiful church. Among those present were: The Honorary Colonel of the Corps, Colonel James Cantlie, V.D., and Major H. C. Thurston, C.M.G., R.A.M.C., Assistant Deputy Director-General, Army Medical Service. The choral portion of the service was rendered more impressive by the aid of trumpet and kettledrum, the drums of the Corps also joining in the verse of the National Anthem with which the service commenced. The Rector and Chaplain, in commencing his sermon, said that it had been suggested that the annual church parade of the R.A.M.C. Volunteers in that church should also be a memorial service for those members of the Corps who had lost their lives in South Africa, a memorial tablet to whom has been placed in the Lady Chapel. The sermon and the selected hymns were in keeping with this very commendable idea. After the service the Corps returned to head quarters to be dismissed.

Captain R. W. Clements, M.B., Royal Army Medical Corps, to be Adjutant, Manchester Companies, *vice* Major H. D. Mason, whose period of appointment has expired, October 15th.

Lieutenant A. M. Porteous, the Woolwich Companies, is retired under paragraph 37, Volunteer Regulations, November 5th.

Lieutenant J. F. Dwyer, the South Wales Border Bearer Company resigns his commission, November 5th.

ARMY MEDICAL DEPARTMENT.

Deputy Inspector-General Henry March Webb, M.B., retired, Army Medical Department, died in London on October 5th. He entered the service as Assistant Surgeon, September 23rd, 1845: became Surgeon, December 8th, 1854; Surgeon-Major, September 3rd, 1865; and Honorary Deputy Inspector-General on retirement, November 12th, 1870.

INDIAN MEDICAL SERVICE.

The services of Surgeon-General W. R. Browne, M.D., Madras Establishment, are placed permanently at the disposal of the Government of Madras.

Lieutenant-Colonel J. McCloghry, Bombay Establishment, is appointed, on return to duty, to take up his appointment as Civil Surgeon, Kurrachee and to have charge of the civil medical duties of the Principal Medical Officer, Sind.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,260 births and 4,506 deaths were registered during the week ending Saturday last, November 12th. The annual rate of mortality in these towns, which had been 15.9, 15.0, and 14.9 per 1,000 in the three preceding weeks, rose again last week to 15.7 per 1,000. The rates in the several towns ranged from 5.0 in Burton-on-Trent, 6.1 in Barrow-in-Furness, 8.3 in Hornsey, 8.4 in Aston Manor, 9.5 in Wallasey, 9.9 in Leyton, and 10.2 in King's Norton, to 21.0 in Grimsby, 21.8 in St. Helens, 22.4 in Wigan, 22.7 in Middlesbrough, 23.2 in Hull, 24.2 in Halifax, and 25.7 in South Shields. In London the rate of mortality was 15.2 per 1,000, while it averaged 16.0 per 1,000 in the seventy five other large towns. The death-rate from the principal infectious diseases in these seventy-six towns averaged 1.3 per 1,000; in London this death-rate was equal to 0.9 per 1,000, while among the seventy-five large provincial towns the rates ranged upwards to 3.3 in Liverpool, 3.5 in Hull, 3.7 in Ipswich, 4.1 in Burnley, 4.3 in Middlesbrough, 4.6 in Plymouth, 6.2 in Grimsby, and 8.0 in Stockton-on-Tees. Measles caused a death rate of 1.6 in Middlesbrough, 1.8 in Liverpool, 2.0 in Tynemouth, 3.1 in Burnley, 3.2 in Plymouth, 3.7 in Ipswich, 3.0 in Grimsby, and 6.0 in Stockton-on-Tees; scarlet fever of 1.3 in York; diphtheria of 1.1 in Tottenham and 1.6 in Hanley; "fever" of 1.3 in York, 1.5 in Halifax, and 1.6 in Grimsby; and diarrhœa of 1.6 in Blackburn and in Middlesbrough. The mortality from whooping cough showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Leeds, but none in any other of the seventy-six towns, and only one case of small-pox remained under treatment in the Metropolitan Asylums Hospitals on Saturday last, the 15th inst. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,687, 2,725, and 2,782 at the end of the three preceding weeks, had further risen to 2,843 at the end of last week; 294 new cases were admitted during the week, against 389, 305, and 294 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 16.5, 16.7, and 17.8 per 1,000 in the three preceding weeks, declined again last week to 17.5 per 1,000, but was 1.8 per 1,000 above the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 10.8 in Perth and 12.0 in Greenock to 17.3 in Edinburgh and 19.7 in Glasgow. The death-rate from the principal infectious diseases averaged 1.8 per 1,000, the highest rates being recorded in Glasgow and Edinburgh. The 302 deaths registered in Glasgow included 6 which were referred to measles, 14 to whooping-cough, and 13 to diarrhœa. Four fatal cases of whooping-cough and 4 of diarrhœa were recorded in Edinburgh. Three deaths from diarrhœa occurred in Dundee, 2 from measles in Aberdeen, and 2 from diarrhœa in Paisley.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, November 12th, 505 births and 342 deaths were registered in six of the principal Irish towns, against 551 births and 341 deaths in the preceding period. The mean annual death-rate of these towns, which had been 17.6, 21.8, and 18.3 per 1,000 in the three preceding weeks, rose to 19.0 per 1,000 in the week under notice, this figure being 3.3 per 1,000 higher than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 17.5 in Waterford and 17.6 in Londonderry to 21.2 in Cork and 21.5 in Dublin. The zymotic death-rate during the same period and in the same six Irish towns averaged 1.0 per 1,000 or 0.1 higher than during the preceding period, the highest figure, 3.1, being recorded in Belfast, while, Cork, Londonderry, and Waterford registered no deaths under this heading at all. No deaths were registered in any part of Ireland from small-pox, typhus, whooping-cough, diphtheria, or simple continued fever. Only 1 death from scarlet fever occurred in Belfast and 1 in Dublin, but measles caused 12 deaths in the former town and 7 in the latter.

HEALTH OF LANCASHIRE.

From the report of the Medical Officer of Health for the County of Lancaster, we learn that for the quarter ending in September small-pox appeared in 29 districts against 23 districts in the June quarter and 17 in the March quarter. The number of cases during the past quarter was 98 with 3 deaths. In the corresponding quarter last year the cases numbered 159 with 8 deaths. The small-pox infection is still spreading in Oldham. At the close of last week 7 small-pox patients were removed by the Oldham health authorities to the Strivesdale Hospital. This brings the total number of patients removed to hospital during the past fortnight up to 51. The county death-rate for the last year was the lowest recorded, being equal to 15.22 per 1,000 of the population as against 15.24 in 1902, and 17.3, the mean for the ten years 1893-1902. There is a further decline in the deaths from tuberculosis, probably due to the increased sanitary improvements. It is hoped that the county will take action to provide a sanatorium to help the authorities in their crusade against tuberculosis.

RESTAURANT KITCHENS.

The Medical Officer of Health for the City of London, in his last monthly report, states that kitchens of sixty-two restaurants have recently been inspected; in forty-one instances the necessary works were in hand to place them in a sanitary condition; twenty-one kitchens were revisited to ascertain their condition; and various defects were found to exist at fifteen premises, including want of hoods to carry off fumes from gas stoves, and absence of cleanliness. In one instance the lobbies of two w.c.'s provided for the use of males and females respectively, and abutting on the kitchen, were used for the storage of food.

EPIDEMIC MORTALITY IN LONDON.

[Specially Reported for the British Medical Journal.]

The accompanying diagram shows the prevalence of the principal epidemic diseases during the third, or summer, quarter of the year. The fluctuations of each disease, and its relative fatality as compared with the corresponding periods of recent years, can thus be readily seen.

Small-pox.—Five fatal cases of small-pox were registered last quarter, against 3, 8, and 12 in the three preceding quarters. Two cases belonged Finsbury, 2 to Shoreditch, and 1 to Bethnal Green. The number of small-pox patients admitted into the Metropolitan Asylums Hospitals during the quarter was 39, against 94, 108, and 252 in the three preceding quarters; only 1 case remained under treatment at the end of the quarter, against 26, 126, and 74 at the end of the three preceding quarters.

Measles.—The deaths from measles, which had been 671, 670, and 932 in the three preceding quarters, declined again to 370 last quarter, and were 59 below the average number in the corresponding periods of the ten preceding years. Among the various metropolitan boroughs this disease was proportionately most fatal in Islington, Holborn, Shoreditch, Bethnal Green, Deptford, and Greenwich.

Scarlet Fever.—The fatal cases of this disease, which had been 81 in each of the two preceding quarters, increased last quarter to 87, but were 77 below the corrected average number. Scarlet fever showed the highest proportional mortality last quarter in St. Pancras, Finsbury, the City of London, Shoreditch, and Poplar. The number of scarlet fever cases in the Metropolitan Asylums Hospitals, which had been 1,606, 1,546, and 1,599 at the end of the three preceding quarters, further rose to 2,127 at the end of last quarter; 3,278 new cases were admitted during the quarter, against 2,416, 2,142, and 2,598 in the three preceding quarters.

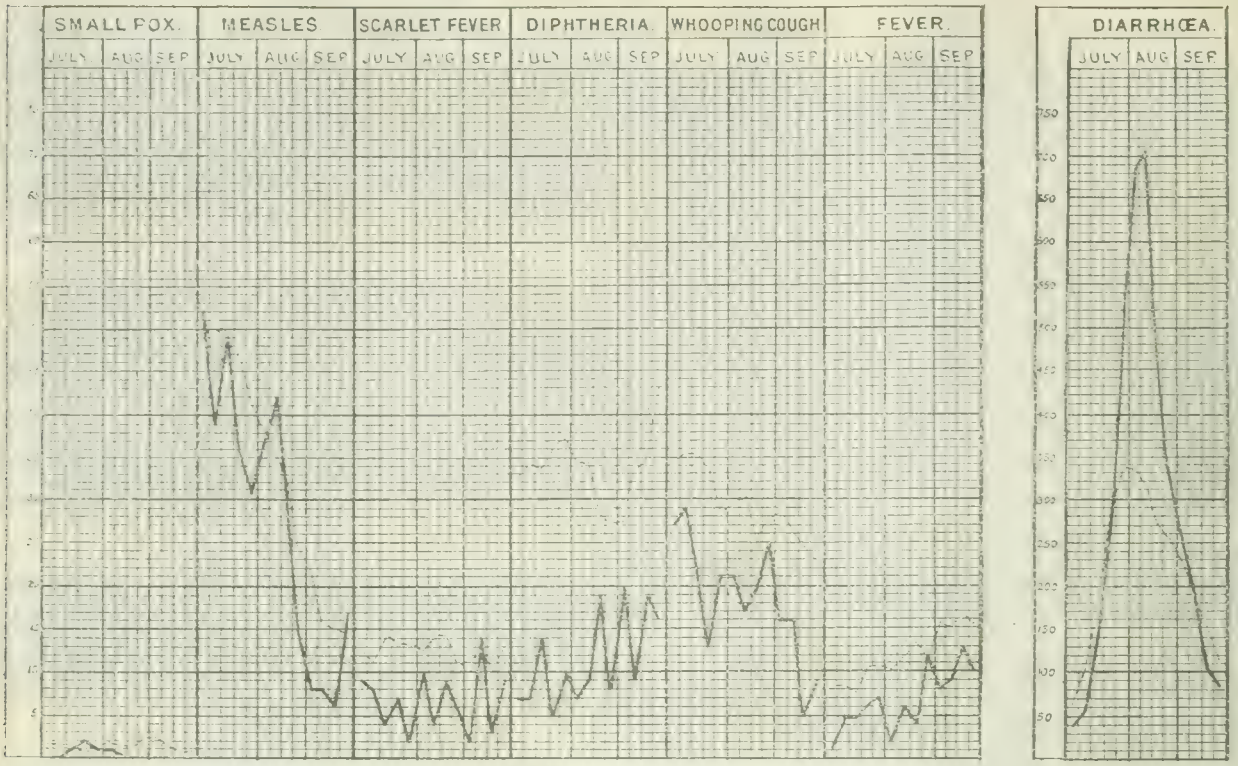
Diphtheria.—The deaths referred to diphtheria in London, which had been 189, 207, and 164 in the three preceding quarters, further declined last quarter to 150, the corrected average number in the corresponding quarters of the ten preceding years being 437. Among the various metropolitan boroughs this disease was proportionally most fatal in Hackney, Bethnal Green, Stepney, Poplar, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last quarter was 871, against 734, 786, and 681 at the end of the three preceding quarters; 1,614 new cases were admitted during the quarter, against 1,438, 1,287, and 1,316 in the three preceding quarters.

Whooping-cough.—The fatal cases of this disease, which had been 200, 603, and 508 in the three preceding quarters, further declined last quarter to 240, and were 142 below the average in the corresponding periods of the ten preceding years. Among the various metropolitan boroughs, whooping-cough was proportionally most fatal in Hammersmith, Chelsea, Holborn, Shoreditch, Poplar, Southwark, and Camberwell.

"*Fever.*"—Under this heading are included deaths from typhus, from enteric fever, and from ill-defined pyrexia. The deaths referred to these different forms of "fever," which had been 169, 56, and 47 in the three preceding quarters, rose again last quarter to 95, but were 65 below the corrected average number. Two deaths from ill-defined pyrexia were recorded during the quarter under notice, but not any from typhus. Enteric fever mortality was highest in Hampstead, Hackney, Shoreditch, Stepney, and Bermondsey. The Metropolitan Asylums Hospitals contained 237 enteric fever patients at the end of last quarter, against 246, 86, and 62 at the end of the three preceding quarters; 383 new cases were admitted during the quarter, against 506, 173, and 137 in the three preceding quarters.

Diarrhœa.—The 3,968 deaths from diarrhœa in London last quarter were

DEATHS FROM EPIDEMIC DISEASES IN LONDON DURING THE THIRD QUARTER OF 1904.



NOTE.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted lines show the *average* number of deaths in the corresponding weeks of the ten preceding years 1894-1903.

2,141 in excess of the average number in the corresponding periods of the ten preceding years. Among the various metropolitan boroughs this disease was proportionally most fatal in Fulham, Shoreditch, Bethnal Green, Poplar, Southwark, and Bermondsey.

In conclusion, it may be stated that the 4,910 deaths in London attributed to these principal epidemic diseases during the quarter ending September last were more than 11 per cent. above the corrected average number in the corresponding quarters of the ten preceding years. The lowest death-rates from these diseases last quarter were recorded in Chelsea, the City of Westminster, Hampstead, Stoke Newington, City of London, and Lewisham; and the highest rates in Fulham, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, and Bermondsey.

CUBIC SPACE AND AREA.

DR. JOSEPH THORNLEY (246, Halliwell Road, Bolton) desires to learn the opinions of qualified sanitarians on the following point: "What is the minimum cubical space and the minimum superficial area that should be allowed in bedrooms in new houses before a medical officer of health or a surveyor can reasonably say that the room is fit for human habitation?"

For some time, he writes, I have been endeavouring to induce the authorities of Bolton to fix a minimum limit of 600 cubic feet, but so far I have not met with success, owing to the existence of the following building by-law:

"15. Every room used or intended to be used for habitation hereafter built, of less area than 100 superficial feet, and without a fireplace, shall be provided with special means of ventilation by air shaft or otherwise, as the Council may approve."

The interpretation of this by-law so far has been that, no matter how small a bedroom may be, so long as a fireplace is provided, the Town Council has no power to say that such a room is unfit for human habitation although it is well known to the authorities that the people of this district do not limit the number of occupants in such rooms to one person.

I have carefully searched the model by-laws of the Local Government Board and also the Public Health Act of 1875, but in neither do I find any reference whatever to the amount of breathing space which public authorities should require for rooms intended to be used for human habitation.

There are numerous references in both to the subject of ventilation, but I have long contended that this is impossible in rooms of ordinary construction with a less cubical area than 600 feet, and have therefore urged that this should be a fixed minimum.

I shall be glad to know from any member interested in this subject what is done in their respective districts, and what are the best steps to take to secure the end in view.

*** Standards of cubical capacity in rooms depend upon (*a*) the number of persons occupying the room, and (*b*) the use to which the occupation is put, whether living and sleeping or sleeping only. If the words "without a fireplace" in the by-law were deleted it would apply to all rooms. The Local Government Board has laid down a standard of free-air space per person as 300 for living and sleeping and 300 for sleeping only, and half these quantities for children under 10 years.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BANGOR: CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House-Surgeon, resident. Salary, £80 per annum, increasing to £100.

BERMONDSEY PARISH INFIRMARY.—First Assistant Medical Officer; resident. Salary, £170 per annum.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—(1) Resident Medical Officer; (2) Resident Surgical Officer. Salary, £100 per annum, rising to £80 each.

BIRMINGHAM: QUEEN'S HOSPITAL.—House-Physician; resident. Salary, £50 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—(1) House-Physician; (2) Second House-Surgeon. Salary for (1) £70 per annum; (2) £60 per annum.

CHORLEY: RAWCLIFFE HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell.—House-Physician; resident. Honorarium, £25 for six months.

GLOUCESTER GENERAL INFIRMARY AND EYE INSTITUTION.—House-Surgeon resident. Salary, £100 per annum.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House-Surgeon. Salary, £80 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Resident House-Surgeon. Salary, £100 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Resident Medical Superintendent. Salary, 100 guineas per annum.

JERSEY GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer. Salary, £120 per annum.

LINCOLN: BRACEBRIDGE ASYLUM.—Junior Assistant Medical Officer; resident. Salary, £125 per annum.

LONDON LOCK HOSPITAL.—House-Surgeon, resident. Salary, £80 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Senior House-Surgeon; resident. Salary for first year, £100.

MANCHESTER ROYAL INFIRMARY.—Resident Surgical Officer. Salary, £150 per annum.

NORTHAMPTON: ST. ANDREW'S HOSPITAL FOR MENTAL DISEASES.—Junior Assistant Medical Officer, resident. Salary, £200 per annum.

NORTH-WEST LONDON HOSPITAL, Kentish Town Road.—(1) Resident Medical Officer; (2) Assistant Resident Medical Officer. Salary at the rate of £50 per annum each.

ROYAL LONDON OPHTHALMIC HOSPITAL, Moorfields.—Clinical Assistants.

ST. PETER'S HOSPITAL FOR STONE, Henrietta Street, W.C.—Six Out-patient Clinical Assistants.

STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House-Surgeon, resident. Salary at the rate of £82 per annum.

TIVERTON INFIRMARY AND DISPENSARY.—House-Surgeon and Dispenser. Salary, £80 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Chelsea.—House-Physician. Appointment for six months. Honorarium, £5.

VIRGINIA WATER: HOLLOWAY SANATORIUM.—Junior Assistant Medical Officer (Lady); resident. Salary, £150, rising to £200 per annum.

WEST LONDON HOSPITAL, Hammersmith Road.—House-Physician; resident. Appointment for six months.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon, resident. Salary, £70 per annum.

APPOINTMENTS.

ABBOTT, C. E., L.R.C.P.I., M.R.C.S.Eng., District Medical Officer of the St. Austell Union.

ARMOUR, Donald, M.B., M.R.C.P.Lond., F.R.C.S.Eng., Surgeon to the Belgrave Hospital for Children.

BARST, C. T. U., F.R.C.P.&S., Certifying Factory Surgeon for the Wallsend District, Northumberland.

BLOOMER, F. W., M.R.C.S., L.S.A., Public Vaccinator to the Stapleford District of the Shardlow Union, vice J. Dickson, L.R.C.P.&S.Edin. (resigned).

BRIERLEY, W. E., M.R.C.S., L.R.C.P., House-Surgeon to the Women's and Children's Hospital, Leeds.

DAVISON, H., L.R.C.P.I., L.F.P.S.Glas., District Health Officer of the Spalding Union.

INGLIS, D. W., M.D.Glas., Certifying Factory Surgeon for the Jarrow District, Durham.

KILLEN, J. W., M.B., B.S., R.U.I., First Assistant Medical Officer and Dispenser, Cleveland Street Asylum of the Central London Sick Asylum District.

LATHAM, W., L.R.C.P.&S.Edin., L.F.P.S.Glas., Certifying Factory Surgeon for the London and North-Western Railway Company's Works at Earlestown in the Newton-le-Willows District, Lancashire.

ORTON, L. E., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Bedworth District, Warwick.

POOLEY, J. M., M.R.C.S., L.R.C.P., First Assistant Medical Officer, Kensington Parish Infirmary.

ROPER, R., M.R.C.S., L.R.C.P., First Assistant Medical Officer at the St. Marylebone Infirmary, vice Mr. Ward (resigned).

SEAGER, Frank R., L.R.C.P.&S.Edin., Civil Surgeon to Busreh, Turkish Arabia.

ST. JOHN, Winslan St. A., M.R.C.S., L.R.C.P., Honorary Surgeon to the Derbyshire Hospital for Sick Children.

TURNER, H. Stanley, M.R.C.S.Eng., L.R.C.P.Lond., Registrar to the Central London Ear and Throat Hospital.

VEALE, Miss, M.B.Lond., Clinical Assistant to the Women's and Children's Hospital, Leeds.

WORTS, L., L.R.C.P.&S.Edin., District Medical Officer of the Leighton Buzzard Union.

DIARY FOR NEXT WEEK.

TUESDAY.

Therapeutical Society, Apothecaries' Hall, Blackfriars, E.C., 4 p.m.—General Meeting for the Election of Fellows. Papers:—Dr. Gordon Sharp: On Strychnos Toxifera (Benth) and other Paralyses of Motor Nerve-endings.—Mr. G. Moore: Notes on Brandy.

Royal College of Physicians, 5 p.m.—The Horace Dobell Lecture: The Life-history of Saprophytic and Parasitic Bacteria and Their Mutual Relation (Dr. E. Klein, F.R.S.).

Royal Medical and Chirurgical Society, 20, Hanover Square, 8.30 p.m.—Discussion on Chloroform Anaesthesia, to be opened by Dr. Hewitt.

FRIDAY.

Clinical Society of London, 20, Hanover Square, W., 8.30 p.m.—Papers.

Society for the Study of Disease in Children, 11, Chandos Street, Cavendish Square, W., 5.30 p.m.—Cases and Specimens.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital.—Thursday, 4 p.m., Surgical Cases.

Hospital for Sick Children, Great Ormond Street, W.C.—Thursday, 4 p.m., Peritoneal Infection in Childhood.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Ear. Lectures at 5.15 p.m. each day will be given as follows: Monday, Plastic Surgery; Tuesday, Modern Intragastric Methods in the Diagnosis of Diseases of the Stomach; Wednesday, Injuries to, and Diseases of, Joints; Thursday, Modern Intragastric Methods in the Treatment of Diseases of the Stomach.

Mount Vernon Hospital for Consumption, Central Out-patient Department, 7, Fitzroy Square, W.—Thursday, 5 p.m., Practical Points in the Hygienic Treatment of Respiratory Affections (illustrated by preparations).

North-East London Post-Graduate College, Tottenham Hospital, N.—Monday, 4.30 p.m., Liver Abscess and its Treatment. Friday, 4.30 p.m., Amblyopia, Congenital and Acquired.

Post-Graduate College, West London Hospital, Hammersmith Road, W., at 5 p.m. each day.—Monday and Tuesday, Diseases of the Nails (lantern demonstrations). Wednesday, Gastric Ulceration. Thursday, Cancer of the Rectum. Friday, Injuries to the Spine and Spinal Cord.

Samaritan Free Hospital for Women, Marylebone Road, N.W.—Thursday, 3 p.m., Cases from the Wards.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BOWES.—At Rishton, Lancs., on October 30th, 1904, the wife of Jos. E. Bowes, M.B., of a son.

HAMILTON.—At Newport, Mon., on the 9th November, the wife of S. Hamilton, B.A., M.B., (R.U.I.), of a son.

JONES.—On November 9th at, 11, Elliot Street, The Hoe, Plymouth, the wife of Lieutenant-Colonel J. M. Jones, R.A.M.C., of a daughter.

MALCOLM.—On the 11th November, at 13, Portman Street, W., the wife of John D. Malcolm, F.R.C.S.Edin., of a son.

MULLER.—On October 1st, at Montagu, Cape Colony, South Africa, Isabel N. Muller, nee McKenzie, M.B., Ch.B.Edin., wife of Charles H. Muller, M.B., B.Ch.Edin., of a daughter.

MARRIAGE.

BLACKER-BOWEN.—November 8th, at St. Mary's Church, Tormarton, Glos., by the Rev. S. G. Gillum, assisted by Canon Awdry, Canon Trotman, Rev. J. Owen Evans and Rev. W. Z. Jones, George Francis Blacker, M.D., F.R.C.P., third son of Commissioner-General Captain Blacker, to Shirley Elvina Bowen, second daughter of Rev. T. J. Bowen, Rector of Tormarton.

DEATHS.

BARROW.—In loving memory of Arthur Sibert Barrow, M.R.C.S., L.R.C.P., who died at Indwe, Cape Colony, November 19th, 1903.

ERSON.—At Coolgardie, on the 20th September, William Robert Close Erson, L.F.P.S.Glas., L.S.A., L.M.Lond., J.P., youngest son of the late William Lester Erson, J.P., L.R.C.S., of Dublin, and beloved brother of Dr. Lester Erson, Kalgoorlie. For seven years Mayor of Onehunga, and late Chairman, Honorary Medical Staff, Auckland Hospital, N.Z., also Surgeon-Major, N.Z. Defence Forces.

MILLAR.—At Welton, Brough, East Yorkshire, on October 31st, 1904, Jessie Bows, daughter of the late W. H. Mackay, Edinburgh, and wife of William Millar, M.B., etc.

PHILLIPS.—On November 13th, after a short illness, at 1, Hyde Park Square, W., C. D. F. Phillips, M.D., LL.D.Aberd.&Edin., F.R.S.Edin., aged 71.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, and non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are considered to have been offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of letters or communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Alimentary, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
EDITOR, 2631, Gerrard.
GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

M. E. writes: Would any ophthalmic surgeon be good enough to inform me what aid monocles give to vision? Why are they worn?

RHEUM wishes to hear of a suitable place of residence in England for a patient who has repeated attacks of muscular rheumatism; sea air rather aggravates the attacks.

HOW TO ADMINISTER CHLOROFORM.

OPSIMATHES writes: You describe as "archaic" the ordinary method of administering chloroform—that is, by dropping it upon lint while carefully observing the respiration. Would you kindly explain what is the more excellent way?

*** The safer way is the use of some form of inhaler which supplies a definite percentage of chloroform. Junker's inhaler, Vernon Harcourt's inhaler, and Dubois's inhaler each fulfils more or less accurately the desideratum.

AFTER-TREATMENT OF DIPHTHERIA.

SUSSEX asks for what period is it considered necessary to keep a mild case of uncomplicated diphtheria in bed that has been treated by anti-toxin. This subject was not touched upon in the recent discussion on serum therapeutics.

*** We are advised such a case ought to be kept in bed for at least a fortnight. In any case of diphtheria, however treated, a most careful observation should be kept on the state of the heart. Any irregularity present at the end of the fortnight should be taken as an indication for further rest in bed.

TREATMENT OF CHRONIC DIARRHOEA.

WEST COUNTRY asks for suggestions for treatment in a case of chronic diarrhoea in a girl aged 14. For two months there have been three to four motions daily, resembling typhoid in smell and appearance. There is always a little clear blood with mucus which does not mix with the rest of the motion. There is no Widal's reaction. The temperature keeps about 99°; on some days it rises to 100° at night, but is normal in the morning. There is no tenesmus or pain of any kind. She has never been abroad. All the usual remedies have been tried, except a purely meat diet, which is objected to. The patient is well otherwise and bright, but very emaciated, but rather less so than when first seen. Kept strictly in bed; food peptonized, etc.

A CASE OF HYPERPYREXIA.

DR. T. GERALD GARRY (Florence) writes: On April 16th last an urgent message was sent to me to visit Miss A——— immediately, whose temperature was reported to be over 111° F. I arrived about an hour afterwards, and was told the following story by three ladies, all armed with thermometers: The patient, a young lady, on complaining of headache some time previously, had the temperature taken, when the mercury ascended to the extreme end—in other words, the temperature was over 111° F. Two other ladies staying in the same hotel were immediately summoned, and on using their thermometers exactly similar results were obtained. Half an hour afterwards all three took the temperature again, when it was found to be 108.5° F. On my arrival the temperature was found to be 104.4° in the mouth and normal in the axilla, and very soon afterwards normal both in the mouth and axilla. All four thermometers used were tested afterwards, and found to be absolutely correct. The patient was a young lady, aged 16, hale and hearty, and never suffered from any serious affection, except obstinate constipation, for which I prescribed some time previously galvano-massage. I can only find three other cases reported with a higher temperature, and one is rather curious to know if the high temperature in this case cannot be ascribed to anything else except hysteria.

ANSWERS.

P.—We think that the prescription should be supplied if asked for, and that a fee of 1 guinea might be charged. There [illegible] in the licence if the patient so desires.

AJAX will find an account of a discussion on [illegible] recent insanity by Dr. Yellowlees and others in the BRITISH MEDICAL JOURNAL for October 31st, 1903. The following might also be consulted: *Isolement et Psychothérapie*, Déjerine, 1904: Alcan, Paris. *Névroses et Idées Fixes*, Janet and Raymond: Alcan, Paris; 2 vols.; Fr. 26. *Les Psychonévroses et leur Traitement Moral*, Dubois: Masson et Cie, Paris, 1904: Fr. 7.

UREA.—Probably the two best ureometers for clinical purposes are: (1) Gerrard's, to be obtained from Messrs. Gibbs, Cuxson, and Co., Wednesbury; (2) The ureometer of Doremus and Thursfield, or that of Southall, to be obtained from Southall, of Birmingham. Hind's modification of the latter is in many ways a great improvement.

PROTRACTED PREGNANCY.

MR. THOMAS WILSON, M.R.C.S Eng. (Wallsend-on-Tyne), writes: Is the following statement of any service to "D. R. D."? I was engaged to attend a lady expecting to be confined in December. She was not confined until the end of the first week in February. Her sister-in-law ceased to be unwell at the same time, so naturally they both expected to be confined together. The latter was confined in December of a full-grown healthy child.

CONSTITUTIONAL EFFECTS OF UROTROPINE.

SENEX.—Urotropine is credited with the power of increasing the dissolving power of the blood for biurates. In medicinal doses, up to 30 gr. a day, it is believed to be harmless. As it is broken up in the body—in acid urine for example—into formic aldehyde and ammonia, any untoward effects must be attributed to the formic aldehyde. In the lower animals it has been known to produce haematuria and albuminuria when given in large quantities; in man they have produced frequent micturition, burning sensations referred to the bladder, and haematuria (see BRITISH MEDICAL JOURNAL, 1901, vol. i, pp. 1472 and 1617). Cases have been recorded in which it has appeared to produce palpitation and weakness of the heart's action in persons not the subject of cardiac disease. When given in large quantities after operations on the genito urinary tract it has seemed to retard healing.

THE SKIM-MILK TREATMENT OF DIABETES.

SUFFOLK.—The skim-milk treatment of diabetes and Bright's disease was suggested by the late Dr. Arthur Scott Donkin in a book under this title published by Longmans, Green and Co. in 1871. He considered it suitable for all but the very worst cases. He administered it in the following manner: On the first day of treatment half a teacupful of skim-milk every two or three hours; on the second day double the quantity at the same intervals; on the third day half a pint at intervals of three or four hours; on the fourth day four pints may be given; on the fifth or sixth five pints, and if borne well the quantity may be raised to six, seven, or even, in patients of large frame and keen appetites, to nine pints. In some cases he gave curds in addition. The milk may be given cold or warm; every other article of food must be strictly prohibited, although occasionally tea or coffee was allowed. The general experience of other authorities has not been favourable to this plan of treatment. The late Sir William Roberts said: "Three chronic cases I know of in which the treatment was obstinately persevered in died from exhaustion." Dr. W. H. Dickinson writes: "Of two diabetic women thus treated in St. George's, one died on the second day, possibly partly from the effects of the journey to the hospital; the other slowly sank under the process, and owed her death in all probability to it; with these experiences I have myself forborne the practice." The late Professor Frerichs condemned it, and Dr. Ralfe spoke of it as only suited to the gouty type. Professor Saundby in the first edition of his *Lectures on Diabetes* printed a table to show that this diet is one on which patients may lose weight while the amount of sugar is not reduced. Finally, it is not in accordance with the modern principles upon which the treatment of diabetes is based; these recognize that each diabetic patient has an individual capacity for the assimilation of carbohydrate food, and that the problem which the physician has to solve is to determine this quantity for him and to construct a diet containing only as much carbohydrate as he can utilize.

LETTERS, NOTES, Etc.

PROFESSOR SCHÄFER'S METHOD OF PERFORMING ARTIFICIAL RESPIRATION.

DR. J. FOSTER PALMER (Chelsea) writes: The method now advocated by Professor Schäfer is, in all its essential features, the same as that brought forward some fifty years ago by Dr. Marshall Hall, Dr. E. Long Fox, Dr. Bowles and Mr. Charles Hunter, by whom an exhaustive series of experiments was made. Of these experimenters Dr. Bowles has long been the only survivor, and he has, by a later series of experiments on actual cases of drowning in the human subject, further elaborated the method originally suggested. This modified method he has, on numerous occasions, brought before the Royal Medical and Chirurgical Society and elsewhere, and has, in the most convincing manner, demonstrated its advantages. It is impossible to take exception to the method proposed by Professor Schäfer, except to suggest that it is, perhaps, hardly applicable in certain cases. In an abdominal operation, for instance, who would venture to attempt pressure when life is hanging in the balance? The method now advocated by Dr. Bowles undoubtedly seems to meet some of these difficulties. As Dr. Littlejohn observes, the ease with which these methods (for the remark applies equally to both) can be carried out by a layman is a great point in its favour, but of still more importance is the benefit of the prone position. The supine position has been shown, and is now recognized to be one of extreme danger in all cases of suspended animation and impeded respiration, whether from drowning, artificial anaesthesia, or paralysis, from the gravitation of the tongue into the pharynx. Dr. Bowles is bringing the subject forward again in a paper to be read before the Chelsea Clinical Society (with demonstrations) on December 28th, and I hope that all who are interested in this important subject will come to the meeting and judge for themselves, as we shall be glad of all the experience that can be brought to bear upon it.

*** Professor Schäfer refers to the experiments of Dr. Bowles and his modification of the older method, but comes to a totally different conclusion from that of Dr. Foster Palmer. In his reply to the remarks of Dr. Bowles at the meeting of the Royal Medical and Chirurgical Society, Professor Schäfer said: "I have myself again and again made the attempt by both methods (Silvester and Bowles) to maintain artificial respiration in the living subject, and have entirely failed." It is obvious that no "prone method" of performing artificial respiration can be practised in the case of coeliotomies. Professor Schäfer did not refer to the use of his method in such cases.

LETTERS, COMMUNICATIONS, ETC., have been received from:

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BOOKS, ETC., RECEIVED.

Ward, Lock, and Co.'s Wonder Book. A Picture Annual for Boys and Girls. Edited by Harry Golding. London: Ward, Lock, and Co. 3s. 6d.

In Regions of Perpetual Snow. By W. Gordon-Stables, M.D., C.M., R.N. London: Ward, Lock, and Co., Ltd. 1904. 5s.

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X Rays: Their Employment in Cancer and Other Diseases. By Richard J. Cowen, L.R.C.S.I., L.R.C.P.I., etc. London: Henry J. Glaisher. 1904. 2s. 6d.

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Remarks
ON
TRYPANOSOME DISEASES.

By Professor ROBERT KOCH, M.D.,
Berlin.

[Translation.]

A new department for the investigation of infectious diseases has of late been opened up by bacteriology, that, namely, relating to pathological protozoa. At first small and insignificant, it became in a short time of great importance, and appears to be still increasing.

History.

The first discovery in this new sphere was that of the malaria parasites, which we owe to Laveran. This was completed and extended by the discoveries of R. Ross, who pursued the intricate course of development of malaria parasites in the body of mosquitos, and proved that malarial infection did not originate in decomposed organic matter nor in marshes, but is transmitted by infected mosquitos to healthy human beings.

The etiology of Texas fever was then discovered by Th. Smith. This also was shown to be due to a protozoon, which, like the malaria parasite, entered the red blood corpuscles, and was transmitted by a blood-sucking insect, the wood-tick.

The third important discovery was by Bruce, who found the trypanosome of tsetse-fly disease in the blood, and showed that a stinging fly, belonging to the genus *Glossina* was the agent in transmitting this disease. In addition to these discoveries there have been numerous others of protozoal diseases in animals, but especially in man. Among these latter may be mentioned: trypanosomiasis and sleeping sickness in Africa; the spotted fever in North America; tropical splenomegaly, in which protozoa have been proved to exist by Leishman, Donovan, and Marchand, and the Oriental boil (called also Delhi, Aleppo, or Biskra boil), the parasites of which were discovered by Wright.

Scientifically and economically the protozoal diseases have nowadays acquired such importance that the practising physician must take notice of them. I have been asked by the directors of the Berlin Medical Society to tell you of my observations and experiences in Africa, to interest you in them, and to choose a subject from the region of pathological protozoa, and so I will give you some information about one of the most interesting groups—the trypanosomes.

General Morphology and Symptoms.

Before passing, however, to the principal subject of my discourse, it seems to me important for your enlightenment to give you a short description of the trypanosoma and trypanosome diseases which will come under your notice.

Trypanosomes belong to the flagellata, the ciliated protozoa. If blood containing trypanosomes be examined microscopically in a fresh state it is easy, under a moderate power, to recognize the relatively large and actively moving parasites. Their form, however, can only be distinguished when they are at rest. They then resemble a fish, are twice or three times as long as a red blood corpuscle, have a long flagella, and on one side an undulating membrane.

The finer structure can be made most distinctly visible by Romanowsky's stain (Giemsa's modification). There is then seen a rather large red-stained nucleus, a granule stained very deeply red close to the hinder end, which looks like a centrosome, and, issuing from the latter, a red line extending to the edge of the undulating membrane which passes into the flagella, which is likewise stained red. The body of the trypanosome is shown by the blue staining of the plasma. Trypanosomes do not form pigments as do malaria parasites, from which we may conclude that they do not derive nutriment from the haemoglobin, but from the constituents of the blood plasma. They increase by longitudinal fission. All trypanosome diseases have this in common that, like malarial diseases, they may run a rather acute course, but as a rule drag on for a long time, often for years. In their symptoms, too, they often resemble malaria. They give rise to irregular fever, often interrupted by longer or shorter intermissions, to anaemia, emaciation, weakness, localized oedema, and swelling of the lymphatic glands and spleen.

Tsetse-fly Disease.

The best known and at the same time most important of the trypanosome diseases is the tsetse-fly disease. It was first observed in South Africa, in the valleys of the Limpopo and the Zambesi, where Livingstone became acquainted with it and gave a good description of it. Later it was discovered to be widely spread over the African continent. It was identified on the east coast from Natal to Somaliland, on the west coast as far up as Senegambia, in the German territories of Togo and Kamerun, in the Congo basin, on Lake Chad, and as far as Southern Algeria. The slight variations from the general type of the disease which have been described here and there are to be attributed to differences in the methods of observation of the several observers.

The trypanosomes of the tsetse-fly disease—discovered by Bruce in 1895 and called trypanosoma brucei—are distinguished morphologically by the fact that their hinder end—the trypanosoma swims with the flagella end first, which therefore appears to be the front—is blunt, and the centrosoma is situated quite near the end. They are more or less pathogenic for all domestic animals, especially for horses, mules, and dogs, less for cattle, and still less for donkeys*; sheep and goats are most capable of resistance. Animals, such as mice, rats, and rabbits, experimented on in laboratories, are very susceptible. Men are very insusceptible to tsetse-fly disease.

The tsetse trypanosomes may be carried, as Bruce has shown, by *Glossina morsitans:* this is a stinging fly, not much larger than our house-fly. Bruce thinks that the infection passes immediately through the proboscis of the fly, which is something like a vaccinating needle, and this presents no difficulty if the blood be rich in trypanosome. Bruce himself found—and later on we will see other examples of the same—that in South Africa the big game (big antelopes and buffaloes), the usual source of tsetse infection, have only a very small proportion of tsetse parasites in the blood. Under these circumstances, I may assume that, to make infection possible, the trypanosomes increase in the *Glossina* or undergo some

* In dogs and donkeys race seems to make a difference. In South Africa there is an indigenous breed of dogs, I am told on reliable authority which is immune from tsetse. In the case of donkeys I have found that Massai donkeys get over inoculation with virulent trypanosomes without becoming ill. Some have doubted this; I therefore give here some instances from the accounts of African travellers who have had similar experiences. The accounts are from the work of Austen, *A Monograph of the Tsetse Flies.*

David Livingstone: "The bite of this insect does not affect the donkey as it does cattle." "The mule, ass, and goat enjoy the same immunity from the tsetse as man and the game."

David and Charles Livingstone: "This fly invariably kills all domestic animals except goats and donkeys; man and the wild animals escape. We ourselves were severely bitten on this pass, and so were our donkeys, but neither suffered from any after effects."

James Chapman: "The bite of this insect is fatal to cattle, horses, sheep, and dogs; but there is a peculiar breed of the latter, known as Makoba dogs, which are exempt from the effects of its poison, the breed having from time immemorial been reared in the 'fly' country."

Dr. B. F. Bradshaw: "All domestic animals perish if bitten, sooner or later, with the exception of the goat; the donkey seems to resist it longest."

F. J. Jackson: "This fly is perfectly harmless to human beings, but its effect on domestic animals is of the most disastrous nature; in fact, as far as my knowledge goes, all domestic animals, with the exception of goats, and perhaps of the grey donkey, when struck by this fly, are bound, sooner or later, to die."

F. C. Selous: "The donkey resists the poison (of the tsetse fly) far better than any other domestic animal, and will pass through belts of 'fly' country without taking much harm, his constitution being so strong that he will recover from the effects of the poison if not kept too long in the infected district, whereas an ox or a horse, if once impregnated, will almost to a certainty pine away and die."

Commissioner Johnston: "The southern shore of Lake Tanganyika is infested with the fly, which kills even dogs, goats, and donkeys, the two latter beasts generally escaping."

W. Cotton Oswell: "Wild animals are not affected, but all domestic ones are, save the ass and the goat."

Sir H. H. Johnston: "Donkeys are far less subject to the poisonous character of its bite than horses and mules; indeed, it is said that the domestic donkey of East Africa, which is only one degree removed from the Abyssinian wild ass, is impervious to its attacks, and certainly none of those animals have died from tsetse bite in British Central Africa. Major Lugard, I believe, has found on his expedition to Lake Ngami his donkeys were the only animals that survived the attacks of the tsetse."

Aurel Schulz, M.D., and August Hammer: "Donkeys show more resistance to fly-bite than any other domestic animals. It has often been asserted, not without mild proof, that the donkey of all domestic animals is the only one that will survive the tsetse-fly bite. I myself have seen them traverse safely the distance from Delagoa Bay to Lydenburg when that country was thickly infested with flies that killed cattle, horses, and even the few camels that were imported as an experiment."

Captain A. St. H. Gibbons: "Of all domestic animals the lowly donkey alone makes a good fight of it"—that is, the poison of the tsetse fly.

Other travellers have occasionally made contrary observations. It is probably a case of imported donkeys, and not of the indigenous race. To this belongs the later-given cases of donkeys stung by tsetse flies on the Zambesi which were unaffected, while a horse stung at the same time got ill.

process of development, similar to the malaria parasite in the mosquito.*

Surra.

A trypanosome disease, the surra—analogous to tsetse-fly disease in Africa—is found in Asia. Its special district is Upper India. It extends, however, west to Persia and east to Further India. Of late years it has spread to the Philippines, Java, Mauritius, and Abyssinia. It attacks chiefly horses and camels; elephants, too, succumb to it. Cattle in India resist it pretty well, but in Mauritius, where it was brought from India by a cattle transport, it proved very virulent.

The surra trypanosome was discovered by Evans in 1881. Morphologically, there is no distinction between it and the tsetse trypanosome, nor in its pathogenic properties, for it may be carried to all species of animals obnoxious to the tsetse trypanosome. Infection takes place apparently by means of stinging flies of the genera *Stomoxys* and *Tabanus*. At present, however, there is not complete certainty on this point.

Mal de Caderas.

America also has its trypanosome disease, mal de Caderas, found in South America from the Argentine to the Amazon. It is chiefly dangerous to horses, but behaves otherwise like tsetse and surra. The trypanosoma, discovered in 1901 by Elmassian, should be distinguished from the parasites of tsetse and surra in that its centrosoma is small and stains slightly. I have not yet been able fully to convince myself as to the cause of this peculiarity, which is probably dependent on variations in preparation and colouring. Mal de Caderas is carried by a species of *Stomoxys*.

Sleeping Sickness.

Until recently it was hoped that man was immune to trypanosomes. This, unfortunately, has proved to be a fallacy, for in Gambia in 1901 Dutton discovered by microscopic investigation trypanosomes in a man who was looked upon as suffering from malaria and treated ineffectively with quinine. This discovery was soon confirmed on several occasions, but its significance was first understood when in 1903 trypanosomes were found in sleeping sickness. They were first seen by Castellani in the centrifugalized cerebro-spinal fluid of a patient. He, however, looked upon it as an accidental discovery; and it was reserved for Bruce, the discoverer of the etiology of tsetse, to show the importance of trypanosomes in sleeping sickness, and to prove that here again a stinging fly, the *Glossina palpalis*, was the medium of infection. At first one was inclined to look on both trypanosome discoveries in men as things apart, but soon one had to convince oneself that they belonged together and were connected with only one disease—the trypanosomiasis of man. As knowledge developed one was obliged to add to this the conviction that in sleeping sickness not only are there trypanosomes in the cerebro-spinal fluid but also in the blood, and, vice versa that persons who have trypanosomes only in the blood may later on develop sleeping sickness. Sleeping sickness is therefore only a symptom of the trypanosomiasis of men, which sets in when the trypanosomes have found their way into the cerebro-spinal fluid. Only when this has happened do the cerebral symptoms peculiar to sleeping sickness develop themselves, and, according to experience, always end in death. Whether in every case of trypanosomiasis sleeping sickness develops seems questionable, but there are cases in which the disease ends in death without cerebral symptoms and through exhaustion. Spontaneous cure of trypanosomiasis has not been established up to the present in any single case. These are questions which can only find their answer in further exhaustive experiments.

As to the proportion in which trypanosomiasis affects the population of an endemic region, such as Uganda, we know that in 80 apparently healthy natives Bruce found that 23, or 28.7 per cent., had trypanosome in the blood.

As regards the usual symptoms of the trypanosome disease in man, it has been observed that, as in animals after infection, there may be good health for a long time, till symptoms of irregular fever set in, accompanied by anaemia, loss of strength, emaciation, local oedema, and erythema. Swelling of the lymphatic glands, especially of the neck, and of the spleen, usually ensues. The symptoms of so-called sleeping sickness are so well known that I need not describe them again.

This disease was known in the beginning of last century. It was especially seen among negro slaves on the West Coast of Africa, often too among slaves transported to the West Indies, and it was deduced that they were attacked by sleeping sickness from five to eight years after they had left the African coast. For this period they must have been suffering from simple trypanosomiasis. The disease never got a footing in the West Indies, evidently because there are no stinging flies there capable of transmitting the parasites. At that time the infected district extended from Senegambia to the borders of Angola. It is only lately that, owing to the development of trade, it spread to the Congo basin, and from thence in 1896 it was conveyed to Uganda by the survivors of the Emin Pasha expedition, who, coming from the Congo, settled in Busoga on the Victoria Nyanza. It seems to have found here favourable conditions for development, for in a few years 200,000 persons were carried off. That Europeans may also be attacked is seen from not a few examples. Owing to the swift course which the epidemic took from West Africa to Uganda, we may certainly expect a further spread.

The trypanosomes of men cannot be distinguished from those of tsetse and surra, either morphologically or in their pathogenic properties in relation to domestic and experimental animals.

Theiler's Trypanosome.

There is one other trypanosome disease to be mentioned, that discovered by Theiler in 1902 in cattle in South Africa. The trypanosoma theileri, as the parasite which causes this disease is called, is easily recognized from its size, being twice or three times as long as any of the trypanosomes already mentioned. Further, it has this peculiarity, that it is pathogenic to cattle only. The animals become very anaemic, but generally recover. The mortality averages only about 5 per cent.

The disease seems, on the other hand, to be more general than at first supposed; for Schilling found the trypanosoma theileri in Togo; Panse found it in cattle on the island of Mafia, belonging to the German East African territory, and I myself have met with it in cattle from Mafia Island, and among cattle at the experimental station in Rhodesia.

The Rat Trypanosome.

Lastly, I have to instance trypanosomiasis in rats. This is widespread; in fact, it may be found everywhere if rats be examined. Usually it has been shown that 10 to 30 per cent. of the rats examined are attacked, sometimes as many as 90 per cent. The rat trypanosome is scarcely at all pathogenic for its host; at least animals which have trypanosome in the blood do not appear ill. These trypanosomes cannot be transmitted to other species, and are therefore restricted to this single host.

Morphologically their characteristic is that the hinder end is long and pointed, making it appear like a beak. It is also worth noticing that the centrosoma does not lie near the end, but at the junction of the last and middle third. By these morphological peculiarities they may easily be distinguished from other trypanosomes. Even when they are present in the blood of a rat which has rat trypanosomiasis, and in addition has been infected with tsetse, it can easily be determined whether a parasite is a rat or a tsetse trypanosome. The different action of the rat and tsetse parasites may be shown by inoculating a dog with the blood of a rat which contains both. The tsetse trypanosome alone should develop in the dog, because it alone is pathogenic to the dog. In an experiment which I made of this kind, the dog only developed the kind of trypanosome which was pathogenic for it. If, on the other hand, the blood of the same rat had been inoculated into a rat, then both kinds would have developed. The dog forms somehow a filter through which only one kind can pass, and in this way the two kinds may be separated the one from the other.

Classification of Trypanosome Diseases.

If we look at these characteristic trypanosome diseases, we see at once that they fall into two different groups. One group is composed of the last-mentioned diseases, trypanosomiasis of rats and the trypanosome disease discovered by Theiler in cattle. They are to be distinguished by the fact that their trypanosomes are constant in their more important characters and sharply separated from other trypanosomes. Among these most important properties I reckon their morphological characters, their virulence, and their relations to the domestic animals.

As regards morphological characters, we have seen that rat trypanosome and Theiler's trypanosome are distinctly charac-

* These remarks apply naturally to trypanosomiasis in men also, and, as a rule, trypanosomes are found very sparingly in the human blood.

terized and can easily be distinguished from other trypanosomes. In their virulence also they show no variations. It has never been noticed that they increase or diminish in virulence by further inoculation. Rat trypanosomes, when they multiply in rats, and similarly Theiler's trypanosome have always shown the same characteristics when again inoculated into cattle. Their relationship to the host is quite distinct; rat trypanosome can be passed on again exclusively to rats, and Theiler's trypanosome to no other species of animal but cattle.

From the very characteristic behaviour of these two kinds of trypanosome I think I may draw the conclusion that for a long time they have been exclusively restricted to their own particular host, and consequently are most particularly suitable to this host, thereby acquiring special properties and becoming a distinct species. In this respect they resemble malaria parasites and piroplasma.

Quite different are the relations of the trypanosome of the second group of diseases to which tsetse, surra, mal de Caderas, and trypanosomiasis in man belong. They are, in the three leading characters mentioned, fluctuating and variable; they are not sharply separated morphologically from each other, their virulence fluctuates over a wide range, and they are not exclusively found in one host.

From this I would draw the conclusion that the parasites of this second group have lived a proportionally short time in their host, that they are not completely adapted to it, and have not yet developed into a distinct species. This gives the impression that we have here to deal with conditions similar to those which de Vries found in his classical discoveries on the mutation of the Œnothera. It would therefore appear that the trypanosomes of the second group are in a stage of mutability.

I will endeavour to give some reasons in support of this conception of the peculiar character of the second group of trypanosomes. It would lead me too far were I to go into all the representatives of this group, and I will therefore limit myself to the tsetse trypanosome, as this is to some extent typical and is the best known.

I have already directed attention, in my description of trypanosome disease, to the fact that tsetse parasites cannot easily be distinguished morphologically from the other trypanosomes. Moreover, in size and form they vary greatly when passed on to other animals. They are comparatively small, and in the blood of rats, cattle, and dogs the posterior end is blunt. On the other hand, in the blood of horses they are large, and have a pointed, elongated end, making them similar to the rat trypanosome. In the blood of rabbits and dogs the flagellae are usually long, in that of pigs very short, as Martini has shown.

So much for the morphological characters. Much more important for us are the variations in virulence. Already under natural conditions extremes of virulence is known to exist, as shown by the two following examples:

First Example.—Two horses coming from the interior of Togo, a stallion and a mare, were to go to the Zoological Gardens in Berlin, and on the way had to pass the border of a tsetse-infected region. They must have caught the infection here, as the stallion about six weeks after its arrival in the Zoological Gardens appeared ill. Surgeon-Major Martini who examined the animal found tsetse trypanosomes in the blood. We have to thank the director of the Zoological Gardens, Dr. Heck, for his kindness in letting us take both animals to the Institute for Infectious Diseases, where we could continue to observe them. The stallion became very ill indeed; was feverish, anaemic, and emaciated. Gradually it grew worse, oedema followed, and about four months after catching the infection the animal died. While it lived frequent microscopic examinations of the blood showed trypanosomes. Horses, donkeys, monkeys, rats, and mice, infected with its blood, developed tsetse disease and died in a relatively short time. The trypanosome in the blood of the stallion must therefore have been very virulent.

The other animal, the mare, showed on the other hand not the least sign of tsetse-fly disease. All the same it was examined to see if trypanosomes were not, even in very small quantity, present in the blood, as at that time similar cases were known. Many careful microscopic examinations were made but not a single trypanosome was found. Some of the blood was injected into rats, but with no result. It was only after injecting the blood into the abdomen of a large number of young dogs that there was any sign of trypanosome. To show, however, how small was the number of trypanosomes in this animal, 20 c.cm. of blood were injected into two dogs after they had already been injected with 5 c.cm. without making them ill. Nine dogs in all were infected with the Togo mare's blood. While those dogs that were inoculated with the stallion's blood always succumbed in a short time to severe tsetse-fly disease, those inoculated with the mare's blood were only temporarily and slightly ill. One only died after 102 days' illness. The others soon got perfectly well, and later on, as far as microscopic examination showed, there was no sign of trypanosome in the blood. Horses, rats and mice inoculated with the Togo mare's blood were rendered only slightly ill and in some cases not at all.

The trypanosomes of the mare were very slightly pathogenic or not all virulent, and yet both these animals, in which the virulence of the trypanosome showed such extreme difference, were most probably infected at the same time and in the same place. How is this to be accounted for? The possibility of a varying predisposition in the two animals suggested itself. But this idea was quickly rejected, seeing that the mare, after remaining in continuous good health for a year, proved just as little able to resist the trypanosome of the stallion as the stallion itself. The mare was ultimately infected with the trypanosome of the stallion, became very ill, and succumbed to the disease in a short time. The only conclusion is that the original trypanosomes differed very much in virulence.

Second Example.—In Rhodesia a mining expedition was undertaken to the Zambesi—that is, into the classical tsetse area. The expedition, which included one horse and six donkeys for riding and transport, went astray and found itself in a "fly-belt"—that is, in a neighbourhood where tsetse flies abound. Before the party recognized their mistake and were able to extricate themselves from the danger many of the animals had been stung by tsetse flies. Eventually the donkeys remained perfectly well, but the horse developed pronounced symptoms of tsetse, and the incident was mentioned to me on this account. Surgeon Major Kleine examined the horse and proved the existence of tsetse parasites in the blood, whereupon a cow and a dog were inoculated with the blood. The horse soon recovered so much that it could be ridden. Six months after the infection I had the animal brought to our experimental station at Bulawayo, to keep it under observation for a week. During this time it showed no visible symptoms of disease; on the contrary, it appeared perfectly well, and on microscopic examination no trypanosomes were to be seen in the blood.

The trypanosomes which were taken from the blood of this horse and injected into dogs, rats, and mice acted just in the same way as those of the Togo mare: they were almost non-virulent. From experience we know that in the very region in which this horse was infected there is a very virulent form of tsetse fly disease, so that in this case again we have side by side very virulent and almost non-virulent trypanosomes.

The virulence of the trypanosome can be very easily influenced artificially, it can be considerably increased and abated at pleasure. The almost non-virulent trypanosome coming from the Togo mare was inoculated first into a horse and then into a dog by Surgeon-Major Martini, and by this means attained to a considerable degree of virulence. As already mentioned, a dog inoculated direct from the mare died in 102 days, another of the second generation inoculated from a horse died in 113 days. Eventually death after inoculation followed more and more rapidly in from ten to fifteen days, the same period as we get after inoculation of our most virulent tsetse germs.

On this occasion another very interesting observation was made. Three dogs which had recovered from the first infection with the trypanosome direct from the Togo mare were eventually infected successfully after it had been made highly virulent by passing through dogs. They developed tsetse disease, recovered, and behaved just as if nothing had happened to them. It may also be remarked that the increase in virulence by transmission through dogs had the same result in another experiment. Artificial diminution of virulence is proved by the following experiment which I made in Dar-es-Salam. I passed trypanosomes which were very virulent for cattle through a rat, and then through a dog. They were then inoculated into two cows, which were made only slightly ill, and quickly recovered. From these observations and experiments the variability of the virulence of tsetse trypanosome is easily seen.

It appears, therefore, that they are not completely adapted to their host. Nearly all mammals that have been experimented on have reacted to inoculation. But here, too, there are variations; sometimes they are more virulent for cattle, sometimes for horses, sometimes for camels, etc., and from this it must be concluded by observers who relied on these characters alone that we have to do with a separate disease. In reality it evidently has to do with the natural evolution of the tsetse parasite, which possibly, if the trypanosome in time becomes limited to a single host, would lead to the development of constant characters. Meanwhile the diseases of the second group present characters which vary so much that it is at present difficult, sometimes impossible, to make a sharp distinction between them.

For this reason in 1897, after comparing surra and tsetse disease, and failing to find any certain distinguishing marks, I expressed the opinion that these two diseases might be identical. I encountered much lively opposition, but I again

occupied myself with this question later on, and always obtained the same result. I must abide by my conclusions the more because the marks of distinction alleged to exist between the two diseases on the score of recent researches have been proved to be unsound. It has been asserted, for instance, that surra in India is little virulent and tsetse in Africa very virulent for cattle. But we have seen that in Africa there are forms of tsetse which are very little virulent, and, on the other hand, that the slightly virulent surra of India, if carried to other countries, may become very virulent, as has been observed in an especially striking way in Mauritius.

In recent times, most authorities have accepted my conclusions. Musgrave, who made some very thorough investigations of trypanosome diseases in Manila goes even further, and would identify mal de Caderas with tsetse and surra. Laveran and Mesnil, on the other hand, to whom we owe an excellent monograph on trypanosome diseases, defend the contrary opinion. They would not only distinguish sharply between the various diseases of the second group, but would also divide tsetse disease into several forms. They appeal to their experiments in immunity, in which they found it possible to infect animals with surra, after they had been rendered immune to tsetse. If these experiments, however, are closely examined, it is seen that they are not conclusive. The experiments were made on goats, animals almost insusceptible to both diseases, and therefore unsuitable for experiment on surra and tsetse; the experiment had the only result which could be expected. The goats infected with surra did not become ill, trypanosomes were not once found in the blood on microscopical examination, and it was only by experiments on animals that it was shown that trypanosomes were sparingly present for a short time. Further, it was not ascertained whether these trypanosomes were acquired from the first or second inoculation. It may happen that, as we shall see later, trypanosomes may persist in the blood of immune animals for a long time.

But even if the experiments of Laveran and Mesnil were free from objection their method would not suffice to distinguish between the several trypanosomes. We should be obliged to regard our stocks of trypanosome in the Togo mare—the non virulent and the very virulent—as two separate diseases, for dogs which had resisted inoculation with the first stock, that is, were immune to it, succumbed to inoculation with the second. In our cases we did not meet with trypanosome infection uncertain and hardly to be noticed, as in Laveran's experiment; but, on the contrary, the animals became very ill after infection, and eventually died.

If we accepted these principles we should have to recognize an interminable number of trypanosome diseases, and the confusion which already reigns would only grow worse. We have had a similar experience with regard to malarial diseases. There was a time when it was thought necessary, on account of specious and trifling differences continually, to invent new kinds of malarial diseases, but thorough investigation showed that there were only three kinds—the quartan, tertian, and tropical—each presenting very constant characters by which they might with certainty be distinguished the one from the other. So should it be with trypanosome diseases, and those only accounted distinct which possess fixed and unalterable characters. Thus, for example, I would consider mal de Caderas as distinct from tsetse and surra if the varying relations of the centrosome in the Caderas trypanosome was quite constant; but this, as I have said, is not yet certainly established.

The question of the difference or identity of these trypanosome diseases, which, of course, must be settled some day, has, however, only a theoretical importance. On this point I agree with Musgrave, who rightly remarks that in practice it is not a question of what the trypanosomes are, but of what they do.

Experiments in Immunization.

This observation leads me to another point which is of more practical importance. It is this. You will remember the experiment in which virulent trypanosomes, after being inoculated into a rat and a dog, were so reduced in virulence that they caused only a slight infection in two cattle. It stood to reason that these two animals having recovered, and no trypanosomes being discoverable in their blood on microscopical examination, ought to be experimented upon to ascertain how they would now behave towards trypanosomes the virulence of which had not been reduced. Together with some control animals, they were at once inoculated with very virulent tsetse blood; the control animals sickened in the usual way, but the two previously inoculated showed for a few days only a few trypanosomes in the blood, and on the whole remained quite well. This showed that they were immune to the tsetse stock employed. It remained to inquire whether this immunity would persist for any length of time. I could not test the animals further, as I was obliged to leave Africa. But I asked Veterinary-Surgeon Schmidt, who went to Africa shortly afterwards, to look out for the animals and investigate their immunity afresh. He was only able to find one of them; he repeated the experiment, inoculating control animals at the same time. The animal was immune to this inoculation also. During my last visit to Dar-es-Salam this animal again came under my observation, and I was able to assure myself that it remained perfectly healthy. Its immunity had thus lasted for six years. Nocard, Schilling, and Martini subsequently rendered cattle immune by the same method. It seemed indeed that these observations would place in our possession a method of protecting cattle against tsetse disease—a matter of great importance in those extensive areas where nowadays, on account of tsetse, no cattle breeding can be carried on. At first I gave myself up to this hope, but from further study of the pathological protozoa I have arrived at quite a different conclusion.

At that time it was believed that in an immune animal the parasites could not exist, and that such an animal must on that account be quite free from parasites. But even in the case of bacterial diseases in connexion with which this idea originated, we were obliged to admit in the course of time that even in immune individuals—in cholera, diphtheria, typhus, for instance—parasites could continue to exist, sometimes for a considerable time, and it became necessary to modify materially our prophylactic measures.

In the case of pathological protozoa, this condition seems to be the rule. This was shown first and most clearly in Texas fever. Cattle which remained immune to Texas fever, either because they survived the disease, or because they grew up in a district where Texas fever is enzootic, could yet carry Texas fever to susceptible cattle, although they themselves appeared perfectly healthy. This is possible only if these animals are affected with the blood parasite peculiar to Texas fever, the piroplasma. Much pains was taken to discover the piroplasma in the blood of such immune cattle, but with success in isolated cases only. We were able, however, in Rhodesia, where we had to get our cattle for experiments from a similar Texas-fever infected neighbourhood, either on account of a better system of investigation or of larger opportunities, to prove the presence of the piroplasma in 15 to 20 per cent. of the cattle. This percentage would undoubtedly have been increased considerably, if the animals had been examined more frequently, or if the examination, which had proved so essentially useful in the discovery of isolated trypanosomes, could have been applied on a larger scale.*

In the coast fever with which I occupied myself in Rhodesia, I was able to prove the same thing. In this disease the parasites can as a rule be found in the blood of immune animals on microscopical examination. In regard to other diseases allied to Texas fever (piroplasma of dogs and horses, the cattle disease of Transcaucasus first described by Dschunkowski), sufficient evidence exists to enable us to assert that in them, too, the same conditions obtain.

Under these circumstances, the question arises whether in the blood of animals immune to the trypanosome parasites do not exist, even though in small numbers. The question undoubtedly finds an answer in some of the facts already mentioned. I may remind you of the case of the rats apparently quite sound but yet having trypanosomes in the blood; further, I may remind you of the Togo mare which appeared sound while under observation during nearly a whole year, but all the time had isolated trypanosomes. The discovery of Bruce, too, that healthy antelopes and buffaloes are infested by trypanosomes in a tsetse-infected district must be noted here. We can, however, come nearer the answer to this question from our own investigations. We have at our disposal the oft-mentioned case of the cow at Dar-es-Salam which remained immune for six years; this experiment was specially important in so far that it might possibly afford a method of immunizing other animals artificially. This animal was thoroughly examined by

* In one case we succeeded with the blood of an animal immune to Texas fever in which no piroplasma could be found microscopically in producing Texas fever in a calf kept constantly in a stall, and thus protected from any other source of infection.

Surgeon-Major Kleine, and in spite of repeated microscopical examinations no trace of trypanosome could ever be discovered. But the dog experiment in this case, as well as in that of the Togo mare, proved the existence of trypanosomes. This artificially-immunized animal, in spite of apparent good health, retained the trypanosome for years. It was in the same condition as the large antelopes and buffaloes which are, according to those most experienced in the tsetse regions, the principal source of tsetse infection. If we were to attempt to make whole herds of cattle immune in this way we would produce more permanent sources of infection, and tsetse disease, which we hoped to exterminate by artificial immunization, would in this way be permanently retained. Under these circumstances it will be clearly understood that I do not think it advisable to combat tsetse disease by artificial immunization.

Prophylactic Measures.

We must look for other means of attacking this epidemic, and these are, fortunately, not wanting. Action might be taken either against the intermediary, the stinging fly, or the parasites themselves. Whether anything can be done against the *Stomoxys* and *Tabanus* species, which it is alleged carry the infection in India, the Philippines, Java, Mauritius, and South America, cannot at present be said, for too little is known of their habits, mode of life, and conditions of existence to render it possible to frame measures for their extermination. But it seems possible to do something against the African stinging flies, the *Glossinae*. It has often been observed that with the disappearance of large game tsetse flies and tsetse disease disappear too. Whether the disappearance is due to the drying up of the fountain of infection, the big game, must remain doubtful. But in every instance the cessation of tsetse disease in all places where wild game has been shot out or removed is an indisputable fact of which use should be made in the districts where tsetse disease and big game exist together. We must be clear on this point—which is the more profitable, a good stock of game or a good stock of cattle. Both cannot live together on African soil.

The measures taken against trypanosomes seem to work very successfully. With this object all animals which harbour trypanosomes must be sought out, and the danger removed by their extermination or slaughter, or, if kept to be slaughtered, they should be so isolated that they may no longer infect other animals. To ensure that all animals infected with trypanosome are included, not only must those actually ill be examined, but all those still apparently well but suspected.

The example of Java and Mauritius shows how useful is the diligent carrying out of such important measures, and how by neglecting them much harm may arise. In Mauritius, surra, which had been introduced from India by a cattle transport, was not known until recently, and, when recognized, no rational measures were at first taken. The result was that in two years all the horses and mules and most of the cattle died. In Java, on the other hand, the epidemic was quickly diagnosed and immediately taken in hand. The stalls were examined, diseased animals slaughtered, and those suspected efficiently isolated by sending them either to places where there were no stinging flies or to a neighbourhood where no cattle were. Thus the epidemic, which was quickly taken in hand, was checked, and the mortality kept within narrow bounds. By these means and by the precautionary measures taken against every infectious disease, we must in the future fight against trypanosome diseases.

Unfortunately these measures cannot be applied to trypanosome disease in men. It would not, of course, be difficult to isolate adequately in hospitals those pronounced to be suffering from sleeping sickness. Little, however, would be gained by this, for it is not these sick persons but the thousands of apparently healthy people who are already afflicted with trypanosome who are the cause of the infection in this sickness, and how would it be possible to isolate thousands of healthy people? If we had a drug which would destroy the trypanosome in the blood, as malaria parasites are destroyed by quinine, then we might arrange a battle against trypanosomiasis on the pattern of the attack on malaria which has led to such good results. At present no such drug is at our disposal, but there are certain indications that it will yet be found.

For some time the use of preparations of arsenic has been attended by a not wholly unsuccessful result. Then Ehrlich discovered a remedy in a drug he called trypanroth, which gave decidedly better results than arsenic. Laveran and the members of the Liverpool School of Tropical Medicine succeeded still better with a combination of trypanroth and arsenic. Further, Wendelstadt has found that malachite green has a destructive effect on the trypanosome in the blood of experimental animals. All these investigations, however, are still in the stage of trial by laboratory experiments, and it is not yet known how they will work out in practice. They show, however, that a keen effort is being made to find a remedy against trypanosomiasis, and we can only hope that one may soon be discovered.

At all events, it is important that the inquiries into trypanosomiasis in man, begun so successfully by the English expeditions under Bruce, Dutton, and others, should be furthered by every means, and that all nations interested in combating this epidemic should lend assistance. The German nation is one of these. In Kamerun and Togo the existence of the disease has already been proved, and sleeping sickness quickly spreading from Uganda has already reached the borders of German East African territory, has perhaps already got beyond them. It is high time, then, that something should be done, and we would express the earnest hope that Germany may soon follow England's example.

The Bradshaw Lecture

ON THE

TREATMENT OF ENTERIC FEVER.

Delivered before the Royal College of Physicians of London on November 15th, 1904.

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[Abstract.]

[After some introductory remarks, in the course of which reference was made to the fact that the case mortality of enteric fever remained to-day at a height of more than 15 per cent., and that in this country alone some 5,000 or 6,000 people annually died from the disease, Dr. Foord Caiger proceeded as follows:]

From a therapeutic point of view it may be stated broadly that the treatment of a case of enteric fever will probably be conducted on one of two lines: an active remedial method or a passive or so-called expectant method, each of which has its firm adherents.

Active or Remedial Methods of Treatment.

The methods of treating enteric fever by means of remedies which are assumed to be capable of exerting a direct controlling influence over the natural course of the disease may be appropriately referred to as either (1) specific, (2) antipyretic, or (3) antiseptic, according to their conception and to the nature of the agents employed, and they may conveniently be discussed under these headings.

Specific Treatment of Enteric Fever.

The remarkable success which has attended the treatment of diphtheria by the injection of antitoxic serum not unnaturally encouraged the hope that a curative serum might be prepared which would prove equally efficacious in the case of typhoid fever. In the case of typhoid fever, however, the serum of a horse after repeated inoculations with the virus, though possessed of antibacterial properties, as in the case of diphtheria and tetanus, is found to be practically devoid of any antitoxic value, and consequently useless as a curative serum.

It should be mentioned, however, that Chantemesse claims to have produced a serum the nature of which is unknown, with which remarkable success in the treatment of enteric fever is stated to have been obtained.

[Reference was made to the protective method initiated by Professor A. E. Wright, consisting of the inoculation of sterile cultures of the typhoid bacillus which had been attenuated by exposure to heat. The Lecturer then continued:]

An investigation as to the value of Professor Wright's method of antityphoid inoculation was undertaken by the College of Physicians last year at the request of the War Office, and a special Committee of the College was appointed to inquire into it. Careful examination of the whole of the

evidence available has tended to show that not only is a considerable degree of protection conferred by the inoculation, but that it is also capable of exercising a mitigating influence upon the severity of attack.

The Antipyretic Method of Treatment.

On the assumption that pyrexia is the most important factor in a case of enteric fever, the exhibition of remedies which have the power of reducing the body heat has been very extensively employed. An antipyretic effect may be brought about either by drugs, or the direct application of cold to the surface by means of cold baths, packs, sponging, etc., or by a combination of both. Of the various drugs which are recognized as possessing antipyretic power, the best for the purpose is undoubtedly quinine. Not only does quinine possess a marked antiseptic influence over living cultures of the typhoid bacillus, but its administration is not attended with the depressant influence on the heart. Moreover, it is believed not to exert any inhibitory influence on the elimination of toxins from the system, as is said to occur with drugs of the antipyrin class.

If quinine be given with the object of lowering the temperature, it must be administered in large doses—15 to 20 gr. or more, preferably, twice in the twenty-four hours; or better still, according to the method recommended by Bouchard, which is to give four doses of 7½ gr., repeated at intervals of a quarter of an hour, in the evening of every third day during the first fortnight of the fever.

For my own part, I do not favour the use of antipyretic drugs—at any rate, in antipyretic doses—in cases of moderate fever, as I firmly believe such pyrexia to be a natural element of defence against bacterial invasion. In cases, however, in which the pyrexia becomes excessive, and in itself represents an additional element of danger, by reason of its damaging effect on the cardiac muscle and the central nervous system, vigorous antipyretic measures are certainly indicated.

Of the various methods of treating enteric fever by means of cold applications to the surface, the most effective by far is the employment of the cold bath, advocated some forty years ago by Brand, of Stettin. General experience would show that the fatality from enteric fever can be brought down to somewhere about 7 per cent. by a thorough application of the cold bath treatment.

In this country, however, the use of the cold bath has been mainly restricted to the combating of hyperpyrexia in special cases. It is by no means improbable that it is to its salutary influence on the nutrition of the skin, and to its power of maintaining the excretory activity of both the skin and kidneys, that the cold bath mainly owes its marked superiority over all other therapeutic procedures, of which the primary aim is refrigeration.

The contraindications of the cold bath are well known. Its chief drawbacks are its cumbersomeness, and the increased tendency to relapse which is observed to follow its employment.

The "graduated bath," as it is termed, has been widely recommended. By this method the temperature of the bath, which at the moment of the patient's immersion is about 90°, is afterwards rapidly reduced by means of ice to 70°, or slightly lower. It is certainly more adapted to the condition of patients who are unable to bear the shock of sudden immersion at the lower temperature.

[Reference was made to the method advocated by Dr. James Barr, of Liverpool, for the treatment of typhoid fever by means of the continuous tepid bath, also to the methods of refrigeration by the ice-cradle, the ice-poultice, the wet pack, and cold sponging. Dr. Caiger then said:]

Of the various antipyretic drugs which have been used in combination with the cold bath sulphate of quinine is the only one which appears to merit any confidence.

The Antiseptic Method of Treatment.

Originally, no doubt, antiseptic drugs were administered on the supposition that they were competent to exert a direct bactericidal effect on the specific organism present in the intestine. It is now recognized that any attempt to achieve the destruction of bacilli in the lower region of the intestinal canal by the administration of antiseptic drugs by the mouth is nothing short of futile, unless given in such strength or in such quantity as to be extremely prejudicial to the patient. But it is not unreasonable to expect that, even when given in relatively small and harmless doses, they might be capable of exerting some restricting influence on the multiplication of bacteria in the mucous membrane and contents of the bowel, whether specific or otherwise. That such is actually effected in respect to the various putrefactive organisms is obvious from the marked diminution in the fetor of the stools, which is usually soon apparent as the result of their administration. Further, recognizing, as we do, the extent to which the vital activities of micro-organisms are influenced by very slight changes in their environment, it is surely not too much to assume that as a result of the presence of even very minute quantities of an antiseptic, typhoid bacilli present in the intestinal mucosa, and at a somewhat later stage in the blood and tissues, may be so influenced as to be rendered in some degree less capable of elaborating their particular toxin than would be the case were the fluids in which they were living free from any trace of such substances.

Of the various drugs which are known to possess antiseptic properties, calomel is undoubtedly the one which has received the earliest and widest recognition. Murchison gave one or two doses of from 3 to 5 gr. during the first week of the attack, before there was much diarrhoea. The administration of calomel in this way has been widely practised, and as the result of my own experience of it, I am convinced that in suitable cases its effect is exceedingly beneficial. In exceptional instances, however, a dose of 3 or 4 gr. of calomel, even when given not later than the end of the first week, may directly induce an intestinal irritation, as evidenced by diarrhoea and colic, which tends to persist and may seriously prejudice the ultimate course of the attack. I have been so impressed with this that I have given up the routine use of calomel in the early stage of typhoid, and now restrict its administration to cases in which there exists some special indication for its employment. In the presence of severe headache, coupled with constipation and a very furred tongue, and in that class of attack in which diarrhoea of an offensive character and a tendency to abdominal distension are present at an early stage of the disease, especially when accompanied by high fever and undue restlessness, the marked improvement in the general condition of the patient which is brought about by the administration of calomel is frequently very striking. The value of the perchloride of mercury likewise, when given in frequent doses, has been much commended as an intestinal antiseptic. It is during the early stage of the attack up till about the middle of the second week that the salts of mercury have usually been employed; and in respect to calomel, its use, except in very small doses, should be practically restricted to this period.

As the net result of my experience with the various antiseptic agents, I believe that some of them, when given in frequently-repeated doses, are capable of exercising a distinctly favourable influence on the course of the attack, even when their administration is not commenced until after the end of the first week. I do not, however, believe they are competent either to cut short the attack or to lessen to any appreciable degree the risk of either haemorrhage, perforation, or relapse, as has been contended by the most ardent advocates of the antiseptic method.

Drugs of the antiseptic class vary very much in their value, some of them, apparently, being next to useless, and the same drug is not necessarily the most suitable in every case. I am of opinion, after a considerable experience of its use, that the administration of sulphurous acid, in 20 to 30 minim doses every two or three hours, is capable of checking fermentative changes in the bowel. A good plan is to give the sulphurous acid in an ounce of chloroform water, with the addition of 15 minims of syrup of lemon.

I am inclined to regard the oil of turpentine as a remedy of somewhat greater value. It should be given in frequent doses from as early a date as possible. It may be conveniently given in 10-minim cachets every two or three hours, or in the form of an emulsion with the addition of an equal quantity of spirits of chloroform and spirits of nitrous ether, as recommended by Sir J. W. Moore. The presence of marked albuminuria or of vesical catarrh, however, should preclude its employment. In the latter case 10 gr. of urotropine may with advantage be given three times daily, even though the urine be free from typhoid bacilli, but its influence in cystitis associated with the bacillus coli is very slight.

To one of these agents, in my opinion, a somewhat high value must be ascribed, and that is the combination of quinine and nascent chlorine.

In its administration I have followed the formula advocated by Dr. Burney Yeo—that is, 40 minims of strong hydrochloric acid is poured on to 30 gr. of powdered chlorate of potash in a 12-oz. bottle, which is filled up gradually with water, the mixture being frequently shaken as the water is being added, so as to absorb the gas as it is evolved. To the solution, when made, 24 gr. of sulphate of quinine are added, and of this an ounce is given every two or three hours until convalescence is reached. Under this treatment the tendency to intestinal fermentation certainly appears to be lessened, and the strength of the circulation is usually well sustained, with corresponding benefit to the general aspect of the case.

During the last two years I have treated a series of cases with the

essential oil of cinnamon. This agent was suggested to me by Mr. Carne Ross of Withington. The results, as far as they go, have been favourable, but the number of cases in which I have tried the drug is not yet sufficiently large to warrant a conclusion of very general application. Among 147 cases in which it was given, there was a mortality of 9.5 per cent.

The favourable effects which were noted as attending the administration of the drug were: the temperature in the majority of cases ran at a lower level than is customary in enteric fever; the patients remained for the most part drowsy throughout their illness, as a result of which mental rest was secured, and delirium was less frequent; intestinal decomposition, as evidenced by abdominal pain, distension, and fetor of the stools, was controlled to an extent which was really very striking, no single instance of meteorism occurring amongst the 147 cases which were treated with it.

It is well to give the drug in small doses to begin with, so as to accustom the patient to its pungent taste. By commencing with a dose of 2½ minims, and increasing it to 4 or 5 minims in the course of a few days, the likelihood of vomiting being induced is materially diminished. Care should be taken that the quality of the drug is above reproach.

Being desirous of estimating the antiseptic influence which cinnamon oil is capable of exerting on the growth of the typhoid bacillus, one of my colleagues, Dr. A. F. Cameron, kindly undertook an investigation into the question. Working with a 1 per cent. emulsion of cinnamon oil in distilled water containing the minimum necessary amount of mucilage, and a twenty-four hours' broth culture of the bacillus, which agglutinated readily with a 1 in 200 dilution of typhoid serum, he found that an appreciable, though slight, inhibitory influence on the growth of the typhoid bacillus begins to be exerted by cinnamon oil in a dilution of about 1 in 2,600, and that when its strength approaches 1 in 1,000 its antiseptic effect is complete. Except in respect to the remarkable freedom from meteorism, the incidence under cinnamon of the more serious complications of typhoid fever presented nothing very striking, and in view of the fact that in three instances progressive cardiac enfeeblement developed where there was no special reason to anticipate its occurrence, I have recently adopted the practice of giving a grain of sulphate of quinine with each dose in all cases where a careful daily physical examination reveals a suspicion of circulatory failure; and the result has so far been reassuring.

Expectant or Symptomatic Treatment.

The treatment of enteric fever on "expectant" lines implies the recognition of our inability to exercise a direct control over the course of the disease. Having seen that the patient is properly nursed and suitably fed, we are content to adopt a waiting attitude, and while carefully watching for the appearance of any unfavourable symptoms, our efforts are confined to attempts at mitigating their severity, should any of them threaten to assume a dangerous proportion. But for my part I hold strongly to the belief that the adoption of an entirely expectant treatment is not only fallacious in its conception, but very mischievous in practice. When I am asked on what general lines I would recommend the treatment of a case of enteric fever, my answer is that, in the absence of a specific, I would treat the case on symptomatic lines, but that I would employ in addition, from the earliest date possible, such remedies of either an antipyretic or an antiseptic character, or both, as appeared to be specially suited to the character of the attack and the idiosyncrasy of the individual. I cannot help feeling, in view of the remarkable success which has been achieved with the cold-bath treatment abroad, that those who have charge of the treatment of enteric fever in hospitals are incurring some responsibility in withholding its use, save in the occasional instances where the cold bath is clearly inadmissible.

Treatment of Toxaemia.

We not infrequently encounter attacks in which toxaemia is very apparent—cases characterized by the occurrence of dark, foul-smelling evacuations, and fullness of the abdomen at quite an early stage of the attack, coupled with much nervous depression and a high temperature. In such cases antiseptics are especially indicated, and it is of first importance that their administration should be commenced as early as possible. It is always well, as a preliminary measure, to rid the lower bowel of its putrid and offensive contents, and thus assist in bringing the intestinal tract into as sanitary a condition as possible. To achieve this much to-be-desired result there is nothing so effective as calomel, and in this class of attack I would recommend the administration at the outset of 3 or 4 gr. of calomel in the case of an adult, followed in a couple of days by another dose of 3 gr. more.

It is, of course, desirable to get this part of the treatment over by the time when it is assumed that ulceration has become established—that is to say, by the middle of the second week—but I would never hesitate in a case like this to give calomel at a somewhat later stage of the disease, if necessary. Should a free evacuation be not obtained, especially if the abdomen still remains tumid, an enema of soap and water, with the addition of 1 oz. of turpentine, should be administered without delay. The antiseptic influence initiated by the calomel should be maintained by the regular administration every few hours of one or other of the antiseptic agents. In some cases, particularly where distension of the colon tends to persist, the continuous administration of turpentine in 10-minim doses will prove especially useful. Taking all things into consideration, I am disposed to regard the oil of cinnamon as the most suitable antiseptic to employ in the large majority of such cases.

Cases of Nervous Manifestation.

There is another class of case in which the cinnamon treatment is especially serviceable, namely, that in which the patient evinces a constant tendency to anxiety and mental perturbation. Such patients, when fully under its influence, will often cease from worrying altogether, and pass the major portion of their time in quiet, restful sleep. So important is the securing of mental rest to the victim of enteric fever, that in a good many cases it is no exaggeration to say that treatment of the mind is the most cogent indication throughout. It is under these circumstances, too, that opium is so valuable, and I would never hesitate to give opium until the cloud had passed.

Other cases of enteric fever in which the brunt of the attack appears to fall upon the nervous system are often spoken of as ataxic: the most prominent features comprising general prostration, muscular tremor, and early mental involvement, without, perhaps, there being any obvious symptoms of abdominal disturbance. For the treatment of these cases I know of nothing better, or so good, as the administration of quinine and chlorine every two or three hours. I have frequently been impressed with the steadying effect of this combination, even without the assistance of alcohol, of which, however, a small amount is usually called for under the circumstances.

Treatment of Pyrexia.

In enteric fever, in this country, at any rate, it is exceptional to meet with a temperature much exceeding 105°, though its occurrence is not by any means uncommon in the tropics. When, however, a patient's temperature approaches this level, the symptom pyrexia demands attention. It is especially in the later stage of the fever, when there is likely to be some degree of cardiac dilatation, that the continuance of a high degree of pyrexia is fraught with danger.

During the late period of the attack it is seldom wise to put a person into a cold bath unless he have been acclimatized to it by previous experience, but in the early stage there would not be the same objection. As a means of reducing hyperpyrexia in enteric fever I much prefer the cold pack to the cold bath.

When given with this object the whole surface of the body from the neck downwards, with the exception of the arms and feet, should be enveloped in a couple of draw-sheets wrung out of cold, or even ice-cold, water. A mackintosh should previously be spread upon the bed, but there is no necessity to use a bed-cradle or further covering of any description. A blanket, however, may be thrown across the legs below the knees, and a hot-water bottle encased in flannel applied to the soles of the feet, a provision which will materially lessen the patient's discomfort. The pack should be maintained for from fifteen to thirty minutes, its duration and the temperature of the water being regulated by the strength of the pulse and the amount of shivering or cyanosis which it induces. Some degree of shivering, however, must always be expected. On removal of the pack the patient should immediately be wrapped in a warm, dry blanket, and as soon as the skin has obtained a comfortable degree of warmth he should be placed between the sheets, and covered, preferably, with a single blanket. It is always desirable to give an ounce or so of brandy before the application of the pack, since, apart from its primary effect in lessening shock and steadying the pulse, the antipyretic property of alcohol may be expected to supplement in some degree the action of the pack.

In occasional instances the reduction of temperature brought about by the bath or pack proves to be of a very temporary character, the pyrexia in the course of an hour or two attaining its former level. Under these circumstances the bath or pack should be repeated, and a dose of from 15 to 20 gr. of sulphate of quinine, combined with from 15 to 20 minims of laudanum, administered half an hour or so after the operation is completed. By the administration of quinine it is usually possible to prolong the effect of mechanical refrigeration—a fact well known to Brand and his followers.

The employment of large doses of the synthetic antipyretics is not to be recommended. Cold sponging of the surface, though capable of reducing pyrexia when properly carried out,

is chiefly valuable on account of its sedative influence on the nervous system. On account of its cooling and hypnotic effect, it is well to have the patient sponged down every morning with cold or tepid water, to which a few drops of eau-de-Cologne or spirits of lavender have been added, as a routine procedure and to continue the practice until the establishment of defervescence. To be of any use, the sponge should be charged as full as it will hold, and the water effectively sopped or "soused" on to the skin.

Treatment of Insomnia.

In cases where the restlessness and sleeplessness fail to give way to cold sponging, a trial may be made of one of the numerous hypnotic drugs. In ordinary circumstances I prefer to give 30 to 40 gr. of chloralamide, or half that weight of trional, to be repeated in lesser amount at the expiration of a couple of hours, if necessary. In cases where insomnia exists in association with diarrhoea and abdominal pain, the preparations of opium are especially useful, and the administration of 15 to 20 drops of laudanum, or 10 gr. of Dover's powder, are either of them likely to prove a successful hypnotic. Retention of urine and a condition of rectal discomfort, the result of an inefficient action of the bowels, are sometimes directly responsible for a sleepless night.

Treatment of Abdominal Symptoms.

If diarrhoea be moderate, and unattended with abdominal pain, it may well be left alone, provided always that the dietary be suitable and its quantity not excessive. It has been well and truly said that careful daily inspection of the stools supplies the key, alike for regulating the diet and for the treatment of diarrhoea, in a case of typhoid fever. If in any case the number of the stools exceed four or five in the course of the twenty-four hours, and the amount evacuated be considerable, I have no hesitation in saying that the diarrhoea should be controlled without delay, since the continued drain of fluid, and consequent deprivation of nutriment which it involves, may speedily prove a greater tax on the patient's strength than is consistent with ultimate recovery. If the feeding is not at fault, the means of checking diarrhoea which I would recommend be first employed is the administration of a starch and opium enema. A couple of ounces of thin starch gruel, slightly warmed, and with the addition of half a drachm of laudanum, should be given immediately after each loose stool. One or two injections will usually suffice. Should, however, the diarrhoea persist, an opiate may next be tried by the mouth, as chlorodyne or Dover's powder. Astringent mixtures containing bismuth, catechu, tannic acid, chalk and opium, are often beneficial. The mineral astringents, such as sulphuric acid, acetate of lead and sulphate of copper, I confess, I do not like, and have long since ceased to use them. The application of an icebag to the abdomen is a remedy of undoubted value, especially when the diarrhoea is associated with distinct abdominal tenderness, but personally I much prefer the use of a large wet compress.

In the treatment of enteric fever there are few more valuable measures than the continued application of a cold compress to the abdomen, in cases where definite tenderness can be elicited on slight pressure over some part of the surface, whether diarrhoea be actually present or not. Such tenderness, in the absence of marked distension, would appear to denote the presence of local peritoneal irritation at the site of one or more of the affected Peyer's patches. For the relief of intermittent abdominal pain, which is usually of a more or less colicky nature, the preparations of opium are probably unsurpassed.

The condition which we are far more frequently called upon to treat than diarrhoea is its converse, constipation. My practice is to give a simple enema of soap and water, not exceeding a pint, in the morning of every third day, in cases where the bowels fail to act spontaneously. If the quantity of milk allowed in the dietary be not in excess of the patient's digestive powers, this interval is not too long; but the enema may with advantage be given every second day, in the event of the stools produced being large, or their character not entirely satisfactory. Meteorism, if present in any marked degree, must always be regarded as a serious condition and its relief in every case should be attempted.

It is always well to ascertain, if possible, which part of the bowel is distended, since not only may we be able to form some estimate of its immediate danger to life, but an indication may sometimes be obtained which may not be without some value in its treatment.

If the diet be carefully regulated in relation to the patient's digestive power, meteorism is not likely to be a frequent symptom. This is particularly true if an efficient antiseptic treatment have been instituted from an early stage of the illness, and the value of the oil of cinnamon in this respect I have already referred to. But should distension arise in spite of every care, and there be reason to believe that the small intestine is mainly concerned in its production, the administration of opium in moderate doses and the application of an icebag to the abdominal wall are the means most likely to prove successful. In severe cases, where tympanites develops rapidly at an early stage of the attack a full dose of opium should be at once administered. In my experience the value of drugs of the antiseptic class for the relief of tympanites, when once it has arisen, is almost *nil*. Where there is reason to believe the meteorism to be mainly due to flatulent distension of the colon, enemata of soap and water containing 1 oz. of turpentine are usually of the greatest value. Under these circumstances the icebag had better be withheld, and, opium, too, unless the pain continue. It is in these cases that the passage of a long tube through the sigmoid flexure may be expected to afford some relief, though the procedure is by no means always successful.

Treatment of Cardiac Failure.

That the pulse should shew some loss of strength as the fever progresses is only natural, and in the event of such loss being moderate, no special treatment is required; but should the weakness become more pronounced, as evidenced by undue rapidity in relation to the temperature, dicrotism, or especially if a tendency to irregularity be noted, either in force or rhythm, the cautious administration of stimulant is usually advisable.

The form of alcohol best suited for the purpose as a rule is either brandy or whisky, of which, however, the quality, as also the quantity, should be regulated with discretion. In some cases the feebleness of pulse is associated with marked ventricular dilatation, in which case pulmonary congestion is very prone to arise and seriously prejudice the issue. The good effect of digitalis under these circumstances is usually apparent, and it may with advantage be combined with strychnine. A certain amount of benefit, no doubt, would be derived from the administration of alcohol alone, but its influence often appears to be but temporary, and for producing a lasting effect it cannot compare in value with either strychnine, quinine, or digitalis.

I rank myself with those who hold that in most cases of enteric fever, not only is alcohol not required, but that its employment is occasionally distinctly harmful, even when given in quantities which would not be considered excessive. The administration of a few ounces of alcohol, for instance, will sometimes markedly increase the restlessness in the case of a delirious person whose pulse is good and circulation well sustained, especially when the patient is young and unaccustomed to stimulants.

The special indications which, I think, legitimately demand the use of alcohol in typhoid fever may be enumerated as follows: Constant delirium and sleeplessness associated with muscular tremor, feeble circulation, and a dry brown tongue; undue weakness of the pulse without other sign, as already described; cardiac dilatation, cyanosis, pulmonary congestion, and pneumonia; hyperpyrexia, excessive diarrhoea, and intestinal perforation. Alcohol, moreover, may be given with advantage in the case of elderly persons, and to patients who are taking badly, as also to those who are the victims of a persistent feeling of depression. In this latter instance the best form in which to administer the alcohol is a good champagne.

Treatment of Intestinal Haemorrhage.

The dictum generally credited to a late very distinguished physician that "haemorrhage from the bowels in typhoid fever must be allowed to cure itself" is as true to-day as when the words were spoken.

The importance of absolute repose, alike of body, bowel, and mind, is universally acknowledged. For the attainment of physical and mental rest we must largely rely on the care and common sense of a competent nurse, and obedience on the part of the patient; whereas rest for the ulcered and bleeding bowel can be secured by the prompt administration of a full dose of opium. Everything calculated to stimulate the circulation should for the time, of course, be studiously avoided, and the amount of nourishment should be reduced to the lowest possible point consistent with maintenance of the physical powers.

The influence which is exerted by the complete deprivation of fluids in keeping down the blood pressure is almost equally important. Giving astringents by the mouth is obviously futile, and the use of physiological haemostatics, as ergot and hamamelis, is almost, if not entirely, worthless. Adrenalin chloride in frequent doses, however, I still

employ in cases where the pulse tension is particularly low. Calcium chloride in 10 gr. doses every three hours is deserving of a trial, particularly in cases where the haemorrhage, though slight, appears to be continuous. The application of an icebag to the right iliac region is apparently of real benefit in persons whose abdominal wall is not unduly thick. Having seen that the patient receives a full dose of opium, and that an icebag is carefully applied to the abdomen, our treatment of intestinal haemorrhage may be summed up in the single word "precaution," and of the various measures we adopt with this in view, I believe the complete deprivation of fluids, excepting an occasional fragment of ice, to be the most important.

Treatment of Perforation.

Personally, I am in complete agreement with those who hold that a moribund condition of the patient should be the only contraindication to operation. I believe that under very exceptional circumstances a more or less localized peritonitis of perforative origin may be recovered from, but the occurrence is so exceedingly rare as to justify one in entirely ignoring its likelihood when called on to decide upon the treatment.

In regard to the time most favourable for operation, "there is no time like the present." The accumulated experience of the last few years has clearly shown that if surgical treatment be postponed until reaction has set in not only may the chance of a favourable issue have been allowed to slip, but the only opportunity for operation also. From this the value of early diagnosis in the attainment of the best results will be apparent.

Of the various symptoms which are recognized as indicative of the onset of perforation, the occurrence of sudden pain at some particular spot in the abdomen is properly regarded as the most suggestive, and if this is quickly followed by local tenderness and some degree of constitutional disturbance, the suggestion is greatly strengthened. Unfortunately, in something like 20 per cent. of cases, the access of definite pain is wanting, in which case perforation in its initial stage is far more likely to escape observation. In the absence of local pain, however, the presence of even slight muscular rigidity, which, from previous examination, is known to have newly arisen, must be regarded as an indication of the highest value; and its import is greatly strengthened in the event of any increase in the pulse rate being detectable at the same time.

To those who have seen much of enteric fever, the fact is well recognized that we may encounter cases of perforation in which every local symptom usually associated with the condition is conspicuous by its absence, the general aspect of the case in other respects being quite characteristic. Apart from the evidence which may usually be derived from a careful examination of the abdomen, I have come to regard the facies as, perhaps, the most valuable indication. To one who is familiar with the patient's usual appearance, a slight but distinct change in the facies may be apparent. When, in addition, there is present, or has recently been noted, some degree of shivering, the inference that perforation has occurred is very strong indeed.

As confirmatory evidence of perforation, obliteration of the liver dullness, and the presence of fluid in the peritoneum are, of course, unrivalled; but in neither case are they likely to be apparent until a fairly confident diagnosis has been attained from other signs.

It is a golden rule in the treatment of typhoid fever to make a careful examination of the abdomen daily, for in proportion as our previous examination has been recent, so are we in a better position to appreciate the moment when any change in its condition may have occurred. Accuracy of diagnosis should always be aimed at, but in view of the greatly improved results which have been attained of late, it is better to recommend an unnecessary laparotomy than to allow a patient who has perforated to die without receiving the chance which operation affords.

"TICK FEVER."

BY

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and

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The part played by ticks in the transmission of varieties of piroplasma has been known for some time, and recently Marchaux and Salimbeni have shown that a tick conveys the spirillary disease of fowls. A second generation of ticks is not necessary, but a tick fed on an infected fowl has shown itself capable of transmitting the disease for five months.

The paper by Marchaux and Salimbeni reached me here while working with Dr. Hodges at the spirillum fever. It occurred to us then that possibly the so-called "tick fever" might be due to a spirillum. On the whole, we thought it improbable, not on clinical grounds but because it seemed unlikely that the spirillum should have escaped notice till now; but by the time we had examined about a dozen cases of spirillum fever we found, as we have already pointed out, that the spirilla might be exceedingly rare in blood taken even at the height of the fever from cases with well-marked clinical symptoms. If fortunate, we might find a spirillum after only a few minutes' search, or we might have to spend several hours before finding a single organism; in some of the cases in which search was made through the whole of a large blood film only two or three spirilla were found. With these results it seemed possible that the spirillum might have been overlooked in cases of tick fever.

When Dr. Hodges went on leave, Dr. Milne came from Hoima, in the Unyoro district, to take his place. Dr. Milne brought with him slides of blood he had taken from several cases of fever in natives, who attributed their illness to the bite of ticks in the huts of two of the native camps. On hearing of the possibility of spirilla being the cause of the disease, he very kindly handed on his slides to me to be stained and examined. In all 8 cases I found spirilla present, in 1 case fairly numerous (about one in thirty fields); in the other cases very few and far between.

All the cases were of men who attributed their illness to tick bites. They were taken by Dr. Milne as cases of tick fever, and would appear in statistics as cases of that disease. It seems, therefore, allowable to say that certain cases diagnosed as tick fever are due to a spirillum, and, in the light of Marchaux and Salimbeni's work, it seems probable that the disease is inoculated by the bite of infected ticks. It is possible that there may be other parasites conveyed to man by ticks, and so it is possible that there may be more than one form of tick fever.

The only description of tick fever available here is that in Manson's *Tropical Diseases*. Daniels examined the blood of a case in the second week, with negative results, as would be expected were the disease due to spirilla. All the accounts given describe vomiting as a prominent symptom; in the European and Indian patients with spirillum fever this was the most prominent symptom. In some of the native cases there was vomiting, in others there was not. So also some of the native spirillum patients had a relapse, others had not. In one case of a native there was no relapse so far as temperature was concerned, but at the time when a relapse was expected he complained of severe headache and a few spirilla were found in his blood, although that day and the next there was no rise of temperature. In both the European patients headache seemed to be the last manifestation of the disease, one of them also having dysenteric stools.

In the case of a European at present suffering from an initial attack of spirillum fever, the first symptoms were vomiting and dysenteric stools as described by Daniels. But in the absence of any full description of tick fever it is impossible to do more than refer to features common to spirillum fever as seen here, and tick fever as described in Manson's work.

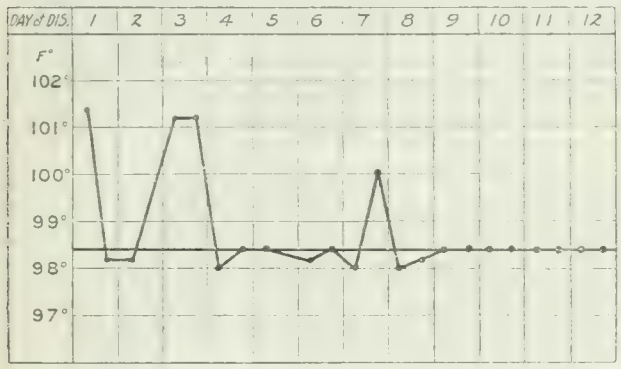
Dr. Milne, as he states below, had ticks collected from the camps where the patients said that they had been bitten, and sent them to the British Museum for identification. A further batch of ticks has now been collected from one of the camps, and experiments will be made to see if they will give any disease to monkeys on whom they are to be fed.

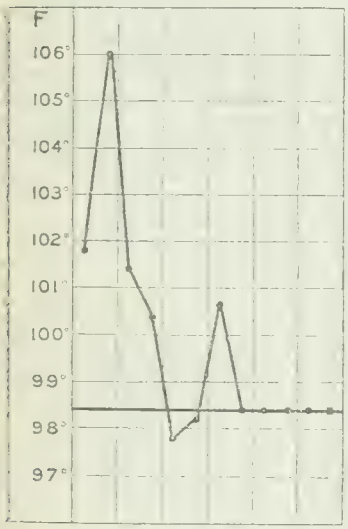
NOTE BY A. D. MILNE.

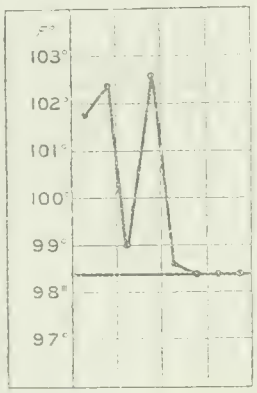
The following notes on tick fever are the results of observation on some 8 cases which presented themselves as such at the Hoima Dispensary. Owing to there being no hospital in which to place the patients and the length of time necessary to arrive at facts by interpretation of three different languages, the clinical notes are meagre in the extreme, even the temperature charts representing a two-mile walk every evening to reach patients in different camps; but such as they are, from the result of Mr. Ross's examination of the blood films, it seems worth while placing them on record.

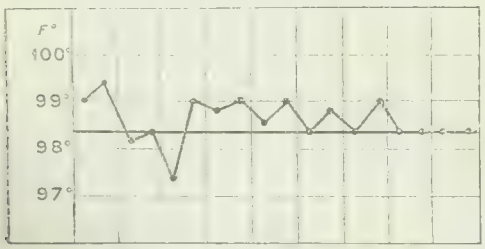
Through the kindness of Mr. Grant, Collector of Masindi, a neighbouring station, specimens of the tick were obtained, and were sent to the British Museum to be identified. These ticks, apparently, have a wide distribution in Africa, as the German Vice-Consul at Entebbe informs me that one of the chief caravan roads in German East Africa, south of Victoria Nyanza, has just been closed owing to constant sickness

caused by tick fever; and a Congo Free State official knew the disease well, stating that certain camps on the other side of Lake Albert were always avoided by his soldiers for that reason. In the Upper Congo the ticks are known as *kumputu*, on the Swahili coast as *kupe*, by the Bunyoro as *kibo*, by the Nubian soldier as the *Unyoro dudu* (Kiswahili insect). From inquiries amongst the Unyoro natives, it seemed that fever from the bites of ticks was very generally known, certain camps and localities being looked upon as hotbeds of the disease. In particular, the Nubian soldiers were unanimous in condemning Butiaba, the port on Lake Albert. This place contains two stations, one on the lake level, the other and main one on top of the escarpment—important, because the former is a veritable mosquito camp, the other almost entirely free. Each camp has the usual collection of grass and mud "bandas" or huts, most of them extremely dirty.









The ticks are of a greyish-yellow colour, the most noticeable feature about them being a loathsome greasy appearance. They vary in size up to the dimensions of a little finger nail. Through the courtesy of Mr. F. V. Theobald, of the British Museum, they have been identified as *Ornithodorus savignyi* (Audouin), var. *Caeca Neumann*, supposed by some to be the same as (?) *Argas moubata* (Murray). Their habitat is in the old and dirty thatch of native huts, and in the cracks of the mud walls and mud floors, where they secrete themselves during the day, coming out at night to feed.

As regards the course of the fever, the incubation period seems to vary—natives themselves say one to five days after being bitten, but probably this period could be extended. From the individual cases the following histories were obtained:

No. 4. Nubian private, K. A. R., stayed fourteen days at Escarpment Camp, Butiaba. On his return, two days later, fell ill.

No. 60. Munyoro hut tax labourer, stayed eighteen days at Lake Camp, Butiaba. The day after his return fell ill.

No. 44. Mganda boy, belonging to Nubian soldier, stayed several days at Escarpment Camp, where he had actually picked the ticks off his body each night. On the third day after his return fell ill.

No. 23, wife of Nubian sergeant, returned from Escarpment Camp, Butiaba, six days previously, and had fallen ill two days after her return.

The ticks seem to leave no marks on black skins; in one case in a European known to have been bitten, there were left big excoriated lumps the size of a bean.

Symptoms complained of by all patients were noticeably severe pains in the head, mostly in the occipital region and back of the head; sometimes cough, pains in the back and limbs, sometimes splenic tenderness; another marked symptom was vomiting; pulse varied from 90 to 120; half of the cases had diarrhoea. On examination skin was hot and dry, there was congestion of the conjunctivae, alae of the nose working, tongue mottled with slight yellow fur; no enlargement of liver or spleen.

The cases all made a good recovery, though treatment was practically *nil*, a placebo being given in all cases.

Annexed are such charts as were possible to obtain; from these it will be seen that the attacks did not last long; the natives give the duration of the disease from one to four weeks. I am unable to say whether relapses occurred, as none of the patients presented themselves again for treatment.

NOTE ON THE RÔLE OF THE HORSE FLY IN THE TRANSMISSION OF TRYPANOSOMA INFECTION,

WITH A REPLY TO COLONEL BRUCE'S CRITICISMS.

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THE discovery by Colonel Bruce in 1895 that the infection of nagana is conveyed from one animal to another by the bites of tsetse flies opened up the question as to whether surra of India might not be conveyed in a similar manner by some other fly; for up to the present no tsetse fly has been found in India or Burmah, although trypanosoma infection is very prevalent in certain tracts of these countries. Lingard found trypanosoma in the body fluids of certain horse flies which had fed on surra animals, but never in flies which had not so fed, but he had not published any experiments as to their powers of transmitting the disease at the time I took over charge of the Muktesar laboratory in 1898. During the summer of 1899 I carried out a series of experiments on the powers of horse flies to carry the disease, and succeeded in transmitting it through a series of dogs by making flies first bite an infected animal and subsequently transferring them to a healthy one, which was then bitten by one or more of them. No infection was, however, carried if the flies were kept for a day or more after biting the infected animal before being put on the healthy one, so that in this respect my results differed slightly from those of Colonel Bruce with the tsetse fly, for he states that they can carry the infection up to forty-eight hours after biting the infected animal. Still, my experiments demonstrated that the disease might easily be carried by the bites of horse flies from one animal to another in a stable, or under the conditions of traffic such as occur on the tonga lines in India, where surra so frequently occurs; yet it was open to question how far this method of transmission would account for the distribution of the disease in general.

Since the publication of my paper[1] early in 1901 ample confirmation of my results in various parts of the world has been made, which I desire briefly to allude to in this note, for most of the references in which I am indebted to the very complete epitome of the literature of the subject in the admirable report of Drs. W. E. Musgrave and M. T. Clegg on trypanosoma and trypanosomiasis, with special reference to surra in the Philippine Islands.[2] Thus, in 1902 Shilling,[3] in

Togo, proved that at least two species of flies can transmit the infection in dogs, while Curry,[4] in Manila, found *Stomoxys calcitrans* to be the principal agent in the transmission of the disease among horses, etc., active trypanosoma being found in the proboscis and stomach twenty-four hours after feeding them on infected blood. In the same year Sivori and Lecler,[5] in South America, proved that the *Musca brava*, the *Stomoxys calcitrans*, and the *Taon* can transmit the disease from horse to horse. Musgrave and Clegg have carried on a large series of experiments on the same lines, with stringent precautions against every other possible mode of infection, and have succeeded in transmitting the disease by biting flies to the horse, monkey, cat, and guinea-pig. Further, they transmitted it by means of the common house fly from an infected dog having a wound to a healthy one in a similar condition, as well as from one dog to another by means of fleas, just as had been done previously by Plimmer and others in the case of T. lewisii of rats from one rat to another. They sum up their conclusions in the following words: "Trypanosomiasis is essentially a wound disease, and infection takes place when the materies morbi are brought into contact with an injured surface, and in no other way. The most common agents in bringing about this condition are biting and stinging insects, and of these certain flies, and to a less extent fleas, are the most important."

It is clear, then, that other flies besides the tsetse fly can carry the trypanosoma infection, of which horse flies are the most important in the case of surra, as, I believe, I was the first to prove. As the tsetse fly is absent from the extensive surra regions of Asia, where the rabidae largely take their place in carrying the infection, the confirmation of my work is of importance, while it suggests the possibility of the occurrence of human trypanosomiasis in other countries besides Africa, in spite of the absence of tsetse flies from them, for other biting insects may equally well convey the infection from man to man as from animals to animals.

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[1] *Proc. Roy. Soc.*, vol. lxviii. [2] Reports of the Biological Laboratory, Manila, No. 5, 1903. [3] *Deutsches Colonialblatt*, No. 14. and *Centralbl. f. Bakt.*, 16, 1902. [4] *Vet. Journ.*, vol. liv, p. 292. [5] *Centralbl. f. allg. Path.*, 1902, p. 963.

ADDENDUM.

The above note was sent to the Tropical Section of the Oxford meeting, but for some reason or other it was not read. This was unfortunate, for it would have supplied information as to the ample confirmation of my work on this subject, which the opener of the debate appears to have overlooked, if he has been correctly reported as having stated (in discussing his sixth proposition that only species of the genus *Glossina* can convey the trypanosome of sleeping sickness) that

It has been said by Rogers that *Tabanus* can carry the trypanosome of surra; this may be true, but I must say that I have not been quite convinced that this experiment was carried out under the best conditions. It seems evident that if you place two animals beside each other, one infected with surra and the other healthy, if you proceed to shave the skin of both these animals, thereby causing a great deal of excoriation of the epidermis and the infliction of small wounds, if you then take a cage containing *Tabanidae*, and allow them to bite the infected animal, and while so biting to suddenly have the cage transferred to the healthy one, is to my mind not a fair experiment, etc.

If this was a correct description of my experiments, it would be a serious criticism; but, unfortunately, Colonel Bruce appears to have trusted entirely to his memory for the details he gives, and has thus conveyed an extremely inaccurate picture of my methods, which I am sure he will be the first to regret.

In the paper to which he refers, I expressly stated that "infection was always readily produced in both rabbits and dogs, the fur of the latter having been carefully cut, without abrading the skin, at the site over which the flies were applied." As a matter of fact, in the case of the dogs a blunt-pointed scissors was used, and no attempt was made to cut the hair very close to the skin, but only to remove the greater part of its length. In the case of the rabbits the hair was not even cut at all, so Colonel Bruce's criticism has not even a shadow of a basis in their case; nor is there any warrant in my paper for the details he gives as to the method by which the flies were applied, for each was placed in a test tube separately and the mouth carefully inverted over the skin, no possibility of infection through abrasions being incurred. As, however, I have shown above that my experiments have received full confirmation in various parts of the world, it does not appear necessary to pursue the subject further.

TRYPANOSOMIASIS IN THE ANGLO-EGYPTIAN SOUDAN.

[PRELIMINARY NOTE.]

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On staining some films of the blood of a donkey which had been brought from the Bahr-el-Ghazal province in the summer of 1903 by Colonel Griffith, D.S.O., Principal Veterinary Officer in the Soudan, I found trypanosomes present. El Bimbashi Head, of the Veterinary Department, assisted by Dr. J. B. Christopherson, likewise found these parasites in the blood of mules from the same region. These finds were to be expected, as the tsetse fly has been known to exist in those districts since first reported by the Petherick at Runbek in 1869. *Glossina morsitans* was found by Colonel Griffith last year on the Pongo River at the place where the road from Wau to Dem Zobeir crosses it, the most northerly point of occurrence yet recorded for the Soudan. Several specimens, all of the same species, have been sent me by Captain Brakenridge, E.M.C., at present stationed in the Bahr-el-Ghazal. The above mentioned trypanosomes appear to be trypanosoma brucei, but the whole subject has taken an additional interest by the discovery of trypanosomes in the blood of cattle from Kodok (late Fashoda).

The cattle in question were members of a herd purchased by a Greek trader in the Shilluk country and brought by him to a place some fifteen miles from Khartoum. There the animals were inspected by Bimbashi Head, Army Veterinary Department, who, suspecting that the disease amongst them might have been induced by tsetse bites, secured blood films. On submitting these to examination in the laboratory, trypanosomes were found. One of the diseased cattle, in whose blood many parasites were present, was slaughtered, and the trypanosomes were found in smears made from the liver and spleen, while in the cerebro-spinal fluid amœboid forms were discovered closely resembling those mentioned by Castellani[1] as occurring in the cerebro spinal fluid in sleeping sickness, and by Plimmer and Bradford[2] in the bone marrow in cases of nagana. Further, long chains of streptococci were present in smears made from the spinal fluid. These were possibly the results of contamination, but are interesting in the light of Castellani's preliminary work in Uganda.

In an ox which died of the disease and in whose blood trypanosomes had been demonstrated, a most curious condition of pigmented ulceration was disclosed in the mucous membrane of the stomach. At present I am not inclined to regard this as having any association with the trypanosomiasis. Another ox suffering from bovine nagana is now under observation, and it is hoped that the condition may be fully investigated. On this ox I found large numbers of a tick, the male possessing a brilliantly-ornamented scutum and striped legs. I think it belongs to the genus *amblyomnia*, or possibly is the species *variegatum*—an African variety of which I have no detailed description.

The question of human trypanosomiasis in the Soudan is important, owing to the geographical position of the country and, in the light of Rogers's work,[1] the fact that the Leishman-Donovan bodies were found last year by Dr. Sheffield Neave[2] in the spleen of a boy from Meshra-el-Rek, in the Bahr-el-Ghazal. So far trypanosomes have not been discovered in human blood, nor has *Glossina palpalis* been reported to exist. Dr. Neave, who, thanks to His Excellency the Governor-General and to Mr. Wellcome, has recently been appointed Travelling Pathologist and Naturalist to the Research Laboratories, is now on his way out from England, and will endeavour to investigate the whole subject on the upper reaches of the White Nile and in the Bahr-el-Ghazal province during the present winter. It is hoped that he may be able to localize the existing fly belts and determine what species of *Glossina* exist and how they are distributed. The question of the occurrence of trypanosomiasis in big game will also be considered.

In the Northern Soudan trypanosomiasis has not been proved to exist. I have examined the blood of bats, mud-fishes, and small birds and mammals, with negative results. This may be due to the paucity of observations or to the rarity of the larger biting diptera in the neighbourhood of Khartoum. At the same time the recent work of Schaudinn[3] on the halteridium stage in birds, and Chatterjee's discovery

in 1902, of a living trypanosome in the stomach of an *Anopheles* mosquito have to be borne in mind. Much of the wealth of native tribes in the Southern Soudan is represented be cattle, and it will be a very serious matter if bovine trypanosomiasis is found to exist to any extent, and in a severe form, amongst the Nuer, Dinka, and Shilluk herds. Portions of the spleen and liver referred to, and a few slides of blood smears have been forwarded to the London and Liverpool Schools of Tropical Medicine. The form of trypanosome present can thus be compared with the varieties already known from Uganda, East and South Africa, Nigeria, Senegambia, the Congo Free State, and other parts of Africa.

Had it not been for Bimbashi Head's knowledge of the subject, and his enthusiasm for the work, the disease would have been missed. As illustrating his interest in the subject, and the difficulties of research in such a country as the Soudan, I may mention that he had to ride thirty miles on several occasions, for the most part in blazing heat, and had to carry the portions of diseased organs, etc., fifteen miles on horseback for purposes of examination.

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SLEEPING SICKNESS (TRYPANOSOMIASIS):

THE PREVENTION OF ITS SPREAD, AND THE PROPHYLAXIS.

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An opportunity was recently afforded me of perusing a copy of some rules for the prevention of the spread of sleeping sickness, issued by His Majesty's Commissioner for East Africa. In brief, the rules direct that no native of Uganda or of Kavirondo shall be allowed to travel in an easterly direction from the infected area, which for the operation of the rules is declared to be all land within 25 miles of the shore of Lake Victoria; that no native of Africa other than personal servants of Europeans shall travel out of the infected area in an easterly direction unless furnished with a medical certificate. This is valid for two days only from date of issue, and must state that the traveller has no obvious signs of sleeping sickness; further, that an authorized medical officer at an advertised time and place shall examine intending travellers, and detain in hospital or observation camp any whom he suspects to be suffering from sleeping sickness.

These regulations would be all very well if the disease were plague; but it is not, and it is extremely doubtful if any rules based on the Bombay plague "measures" could possibly be successfully carried out in tropical Africa, either for plague or any other disease. In India the traveller goes by road, rail, or boat, and there are ample facilities for each method. During the "measures" régime observation stations were established at places on the roads and at certain stations on each system of railways, as well as at the Bombay landing stages. All other avenues were stopped. Now, bubonic plague has a very short incubation period, after which there may be high fever for a day or two, or perhaps only a few hours, before physical signs develop. The doctor at an observation station is able with practice to detect, by palpation of the body, any traveller with a temperature above normal. Such persons would be detained in an isolation camp for subsequent examination and observation. If the case were plague, within a few hours buboes or other obvious symptoms appeared, rendering the diagnosis clear. By the adoption of such means only an occasional case in the early incubation period, before the temperature had risen, was likely to pass the cordon.

With regard to restrictions against spreading African sleeping sickness the conditions widely differ. For example, the single railway in British East Africa is scarcely used as yet by the natives, while there are practically no roads. An observation station on the railway could of course be arranged, but the guarding of the numerous native pathways which branch out from the affected area would be next to impossible. Africa is a network of pathways. Apart from this there are technical difficulties with regard to diagnosis which make it quite hopeless to expect more than a minimum of benefit from any segregation measures based on the above lines.

Sleeping sickness has a very long incubation period—from a few months to several years probably—during which trypanosomata are to be found in the peripheral blood in the majority of cases either daily, occasionally, or periodically before the temperature becomes affected.[1] Consequently the individual all this time is a source of danger to his neighbours as long as he remains within the infective area, that is, where *Glossina palpalis*, the species of tsetse fly known to be the transmitter of the disease, is prevalent. Outside the fly area he is practically harmless so far as we know at present, unless his blood is used for inoculation. When the incubation period has ceased there is still a period of weeks or even months during which the temperature, normal during the morning, rises several degrees every afternoon, and this occurs before any other symptoms can be detected by others than the immediate associates of the patient.

During the long period of incubation before this fever stage commences there is at present no means of arriving at a diagnosis without microscopically examining the blood or cerebro-spinal or other fluids for trypanosomata, except indeed by the discovery of enlarged cervical glands, the presence of which may ultimately prove to be an early and sure sign, for in 1903, in Uganda, I showed that their area of distribution agreed very closely with that of sleeping sickness.[2]

After the fever stage has set in the detection of the case is less difficult, for if the examination is carried out during the afternoon a rise of temperature and quick pulse will draw attention to it. Even then the medical officer has no light task before him to establish a diagnosis, since the examination of each fresh bloodslide for trypanosomes by the ordinary coverslip method takes twenty minutes or more to complete, and the parasites are generally so scanty that daily examinations for a month or more may fail to reveal them.

If ordinary coverslip examinations yield negative results, then half a cubic centimetre of blood has to be drawn, centrifugalized and examined, daily or oftener, till the parasites are discovered. When blood examinations are repeatedly negative the cerebro-spinal fluid should be examined, particularly if any excitement or other head symptoms are present, for, as I have pointed out elsewhere,[3] trypanosomes may frequently be found in the cerebro-spinal fluid of these cases, and not in the blood. So also in the case of hydrocele, trypanosomes may be found in the fluid, and not in the blood or the cerebro-spinal fluid. Even if the parasites are never observed at all, the case may still be one of sleeping sickness.

Useful information pointing to the nature of the case may be gained by practice from the very first glance at the fresh blood preparation, even without using the microscope, by noting the condition of the red cells. Normally, these are evenly distributed if the slide is clean, or in rouleau, but in trypanosomiasis there is generally some agglutination: irregular clumps of cells are seen with large spaces between them, and in these trypanosomes, if present, may be detected. More or less agglutination is fairly constant, but how early in the case is doubtful.

Apart from the question of enlarged cervical glands, the early diagnosis of sleeping sickness is difficult; it requires considerable technical skill, and it entails much labour. Hence the difficulty of initiating measures for preventing its spread which are based on the examination and segregation of travellers.

What other preventive measures are there? It would, of course, be impossible to completely evacuate the whole of the affected area—namely, those districts in which sleeping sickness cases are to be met with, stretching may be for twenty-five miles from the lake shores. Judging from observations on the banks of the Congo and the Niger, I have good reason to believe that the distribution of *G. palpalis* along the shores of the Victoria Nyanza is much less extensive than that originally mapped out by me as the infective area of sleeping sickness in 1902-3, at a time when both the cause and mode of transmission of the disease were unknown.[4] Probably the fly, and therefore the infective area, does not extend beyond a distance of one mile or so from the water, and in places possibly not more than a few hundred yards from it.

It would under these circumstances be quite unnecessary to evacuate the whole of the sleeping sickness affected regions, for where the tsetse is not found the transmission of the disease is not probable. On the other hand, the compulsory evacuation of the presumably narrow fly area on the mainland, as well as the complete evacuation of the islands in the lake, might not only prevent the spread of the

disease, but might eradicate it altogether if the persons evicted were sent sufficiently far inland to be out of reach of the tsetse, and prevented from returning for a period of seven years at least, by which time all those with sleeping sickness would probably have died off.

This measure, however, could not be carried out until all the areas of distribution of the different species of tsetse flies in the two Protectorates had been precisely mapped. The mapping of these areas I believe to be the first step in combating the spread of sleeping sickness. With such a map before one, it would be easy to determine the direction of spread most likely to occur from any given infective area, and what measures of prevention, such as the closing of certain routes, or the evacuation of certain districts, promised the best hope of success.

If two or three competent inspectors were appointed by the Governments of the Protectorates to investigate and report upon the exact distribution of the 'fly,"—a work which could be completed in a few months—a great step in advance would be made, and if evacuation were not insisted upon prophylactic measures within the dangerous zones might then be elaborated with a prospect of success. Habitations, rest houses, or even stations might be moved to more healthy sites; watering and washing places might be screened, or cleared of all forest and bush; horses and cattle, supposing these to be a possible source of danger to human beings, might be protected when obliged to pass through the areas; crews and passengers of steamers on rivers and lakes might be safeguarded in some way when stopping at dangerous wood posts; white men obliged to live at those posts might be provided with wire net verandahs; and any case of sleeping sickness that was detected would, of course, be carefully segregated or deported inland. Inspectors could study the habits of the "flies," of which at present we know comparatively little. They would investigate the question of whether the fly areas were permanent, or tended to vary in position, and whether the flies were dangerous all the year round, or bit only during two or three months in the year, which is probable. They would soon be in a position to suggest means for the protection of the natives from bites by the use of some ammoniacal or other strong smelling substance smeared on their bodies, or to devise methods which would enable the flies themselves or their pupae to be effectually destroyed. Prevention is better than cure, and it seems to me that the former is not receiving the attention that it deserves in view of the gravity of the disease and the great probability of its breaking out in other "fly" infested regions.

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REPORT LXXXVIII.

THE BACTERIOLOGY OF CERTAIN PARTS OF THE HUMAN ALIMENTARY CANAL AND OF THE INFLAMMATORY PROCESSES ARISING THEREFROM.

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THE following abstract represents the basis of my results up to date. As it is my intention to continue the research for another two years, I have drawn only such conclusions as this early stage of the investigation will warrant. The literature of the subject has been purposely avoided, owing to the fact that it will be more convenient to deal with it at the end of my research.

In view of the great importance attached to anaërobic growths by many French bacteriologists—notably, Rist, Veillon, Faber, Cortret, Halle, Tresser, and others—I determined from the outset to make both aërobic and anaërobic cultivations from each specimen of pus or other substance examined. The anaërobic inoculations were made in deep glucose agar, deep glucose gelatine, and similar stabs kept in Buchner's tubes in atmospheres of nitrogen. The pathogenicity of organisms has been ascertained only since the beginning of the present year, owing to the fact that the University of Birmingham has possessed licensed premises only during that time.

APPENDIX AND APPENDICITIS.

In cases of non-suppurative appendicitis aërobic and anaërobic cultivations were made from the proximal end of the excised appendix, and also from the cavity of the appendix near the tip. The appendix was then carefully investigated to determine whether its lumen was at any point interrupted or completely stenosed. In cases of suppurative appendicitis the pus was collected into sterile pipettes, from which films and aërobic and anaërobic cultivations were made.

Appendix in Non-suppurative Appendicitis.—In 44 cases the appendix was completely stenosed in 25, and was open throughout its entire length in 19. Of the 25 cases of stenosis, the contents of the distal chamber were sterile in 11 and gave a growth in 14. In the 14 giving a growth the following organisms were found:

Bacillus coli alone in 11.
Bacillus coli and a torula in 1.
Staphylococcus pyogenes aureus in 1.
A streptobacillus in 1.

The proximal side of the stenosis was examined in 4 cases. Of these, bacillus coli was found in 3 and 1 was sterile. Of the 19 cases showing no stenosis, 18 gave a growth and one was sterile. In the 18 showing a growth the following organisms were found:

Bacillus coli alone in 16.
Bacillus coli and staphylococcus albus in 1.
Streptococcus pyogenes in 1.

On eight occasions a pure growth of bacillus coli found in the appendix was injected into the peritoneal cavity of rats, and was very pathogenic in 6 cases, and produced little or no effect in 2. In the 44 appendices 4 concretions were found.

Appendix in Suppurative Appendicitis.—It is quite impossible to form any idea of the nature of the organisms present by means of films of the pus alone. Streptococci, micrococci, and even staphylococci are very prone to appear in pus films as almost pure diplococci, and may even appear to be encapsuled. The value of films, though considerably limited, generally tells you whether you are dealing with a pure or a mixed infection. You can, as a rule, readily distinguish between cocci and bacilli. One of the objects of my research has been to see how far the appearances, as shown by films, are borne out by the revelation of the cultivation methods. This leads me to speak of the importance attached to anaërobic cultures by the French bacteriologists. Rist, in a paper published in the BRITISH MEDICAL JOURNAL of October 12th, 1901, claims that many organisms in suppurative appendicitis are overlooked if aërobic cultivations alone are made. He draws attention to the fact that many varieties of organisms are seen in the films of pus which cannot be grown on aërobic cultures, and he concludes that these can only be obtained by anaërobic methods. My investigations lead me to a very different conclusion. In all my 44 cases of suppurative appendicitis I only once found the anaërobic cultures to reveal organisms that the aërobic cultures did not; that was in Case VI, where a diplococcus was found in the glucose agar stab along with bacillus coli, whereas the aërobic culture showed bacillus coli only. This one instance might easily be explained by supposing that the bacillus coli had overgrown the diplococcus in the aërobic cultivations. There can be little doubt that bacillus coli grows much more vigorously aërobically than anaërobically; for this reason, if a film is made from an anaërobic stab, or if subcultures are made on agar slopes from such a stab, there is much less likelihood of missing the mixed growth than if the aërobic cultures only are used.

During the whole of my investigation upon suppuration I have been profoundly disappointed that the results of Rist, Veillon, and others have not been confirmed in my hands. I had hoped for great results from the anaërobic cultures, but, after a careful trial, I have come to the conclusion that the great majority of organisms found in suppuration or in the human body are facultative anaërobes, and that if a sufficient number of strokes are made there will be little difficulty in

isolating the organisms and in preventing—in appendicitis, at least—the overgrowth of other organisms by the almost ever-present bacillus coli. This matter of anaërobic cultures requires further investigation on my part, but I already feel justified in dissenting from the view expressed by the Paris school.

In reviewing the films of pus that were made in suppurative appendicitis, I find that, out of 42 cases, the films in 29 showed bacilli and cocci. In these 29 cases, I find that the cultivations of 22 showed a mixed growth of bacilli and cocci. In the remaining 7 cases, one organism alone appeared in cultivation. In 5 of them it was coccal, whilst in the remaining two it was a bacillary growth. Seeing that I made careful aërobic and anaërobic growths of each specimen of pus, I feel that I am justified in assuming that in these 7 cases one of the organisms had died out before the abscess cavity was opened. This death of the organism in its own pus is further borne out by following up cases of suppurative appendicitis for some time after operation, as I have done in several of my cases. I found in those cases where the pus at the operation gave a mixed growth of bacilli and cocci, when the discharge from the wound was examined some days after operation, that it gave a pure coccal growth, even when aërobic and anaërobic cultivations were made. Furthermore, in two of my cases of appendicitis, it was found that the pus around the appendix was perfectly sterile; neither of these two cases could be regarded clinically as tuberculous. These facts present strong evidence in favour of the view that organisms not infrequently die in an abscess cavity previous to its evacuation.

The following summary shows the relative frequency of each organism found by cultivation in my 44 cases of suppurative appendicitis:

Bacillus coli was present in	34
Micrococci in pairs, chains and groups ...	18
Streptococcus pyogenes	7
Diplococci	5
Bacillus pyocyaneus	5
Pneumococci (Fraenkel)	2
Diplobacillus	1
Actinomycosis	1

It will be seen that bacillus coli is by far the most common organism found. It grows very readily anaërobically, though its morphological characters are somewhat different from those found in aërobic growths. Anaërobically, the bacilli are much larger and more irregular in size; they tend to form chains; are much more sluggishly motile and retain aniline gentian violet stain much more tenaciously in Gram's method than in aërobic growths. When aërobic subcultures are made from anaërobic growths, of bacillus coli, it quickly assumes its usual morphological characters. I have only been able to test the pathogenicity of bacillus coli found in suppurative appendicitis on five occasions. It was in all the five cases so violently pathogenic when injected intraperitoneally that it caused the death of rats in an average of ten hours.

The micrococcus which occurred in 18 cases, generally associated with bacillus coli, and only once alone, needs a short description. It scarcely forms a haze in broth, but appears as a flocculent scaly precipitate which tends to settle to the bottom. On agar, in twenty-four hours, it appears as minute pin-point colonies raised above the surface with well-defined sinuous margins. In the course of three or four days the colonies enlarge somewhat and become less defined in outline. In deep gelatine and agar stabs it grows as a fine granular pillar with minute colonies appearing at the side. It does not form gas nor acid. It neither liquefies gelatine nor coagulates milk. It grows very readily anaërobically; it dies out on ordinary media in five or six days. I have injected this organism from three cases of appendical pus into rats, both intraperitoneally and subcutaneously, on many occasions without the slightest result. Under the microscope it appears as a small coccus slightly elongated, arranged in pairs, in chains, and in groups. The coccus is much smaller than a staphylococcus pyogenes or streptococcus pyogenes, and retains aniline gentian violet stain in Gram's method much less tenaciously than either of them.

Bacillus pyocyaneus was found in five cases—in one as the only organism present, in the other four it was associated with other organisms. It was found to be very pathogenic to rats when injected peritoneally. Fraenkel's pneumococcus was found in three cases and was verified by experimental inoculation.

Actinomycosis was found in one of my cases, not only in the pus around the appendix, but also in the liver *post mortem*.

Abdominal Suppuration of Doubtful Origin.

The following organisms were found in 6 cases:

Bacillus coli in	2
Streptococcus pyogenes in	2
Fraenkel's pneumococcus in	1
Staphylococcus pyogenes aureus in ...	1
Actinomycosis in	1
Micrococci in	1
An unknown coccus in pairs and chains in	1

Biliary Passages.

Cultivations were invariably made in the operating theatre. A quantity of bile was taken by means of sterilized blunt spoons from the gall bladder, cystic duct or common bile duct, and smeared over agar, made into glucose agar stabs and mixed with peptone broth. In collecting human bile, in order to test its antiseptic properties, one end of a sterile rubber catheter was inserted down the cystic duct, whilst the other passed through a cotton wool plug into a sterilized beaker.

In practically all the 19 cases in which the biliary passages were opened, the operation was performed during a quiescent period. Out of the 19, 3 alone were sterile. One of the 3 was a case of malignant disease of the liver, and the other 2 showed nothing of an inflammatory nature. In the remaining 16 cases the following organisms were found:

	Times.
Bacillus coli	8
Micrococci	5
Streptococcus pyogenes	4
Cocci of unknown type	3
Bacillus subtilis	2
Bacillus typhosus	1
Staphylococcus aureus	1
Torula	1
Minute bacillus	1

In all the 16 cases a large number of gall stones were present. It is quite certain that the biliary passages, after attacks of biliary colic, in which gall stones exist, are rarely sterile. The following organisms were inoculated into test tubes containing a quantity of pure sterile human bile—namely, staphylococcus pyogenes aureus, streptococcus pyogenes, pneumo bacillus, diphtheria bacillus, bacillus pyocyaneus, bacillus coli, bacillus typhosus, bacillus anthracis, and bacillus subtilis. Control inoculations were made of the same organisms in peptone broth. It was found that each of the above organisms grew as profusely in human bile as they did in peptone broth. In my case of malignant disease, the bile of which was sterile at the time of the operation, it was found, seven days after the operation, that the bile, discharging through the fistula, gave a rich growth of bacillus pyocyaneus. All these facts convince me that the supposed antiseptic properties of human bile have been greatly exaggerated, and that it possesses no bactericidal property whatever.

Stomach and Jejunum.

Contents of these viscera have been examined during operations upon the stomach in cases of (1) cancer of the oesophagus (6 cases); (2) the stomach and jejunum, with or without ulceration, during gastro-jejunostomy (36 cases); (3) the stomach in newly-slaughtered animals (22 cases).

The cultivations in the above cases were made direct from the open viscus during operation by means of large sterile blunt spoons. By this means a considerable quantity of the contents could be obtained. The contents were immediately used for making agar strokes, glucose agar stabs, and inoculations into peptone broth. Films were generally made on glass slides at the same time.

In cancer of the oesophagus:
The stomach was sterile in 50 per cent. of cases.
In gastric dilatation without ulceration:
The stomach was sterile in 83 per cent. of cases.
The jejunum ,, 82 ,, ,,
In gastric dilatation with ulceration:
The stomach was sterile in 28 per cent. of cases.
The jejunum ,, 40 ,, ,,
In cultivations from the stomachs of newly-slaughtered ruminants:
The first stomach was sterile in 12 per cent.
The fourth stomach ,, 44 ,,
Lorrain-Smith and Tennant[1] found in healthy rabbits that:
The stomach showed 22 per cent. of sterile plates.
The jejunum ,, 62 ,, ,, ,,
In healthy dogs:
The jejunum showed 50 per cent. of sterile plates.
In dogs with worms:
The jejunum showed 30 per cent. of sterile plates.

In reviewing the above-stated facts, it must be remembered that all the cultivations upon the human subject were made when the stomach was in a state of prolonged fast (from five

to eighteen hours), and practically empty. In the case of the cultivations made from newly-slaughtered animals, although they have fasted eighteen and twenty-four hours, the stomach contained in all cases a large quantity of undigested food, and the animals were ruminants. Hitherto cultivations from the stomach have been made by means of stomach tubes, which must of necessity pass over the septic mouth, throat, and oesophagus, and thus a very fruitful source of infection has been introduced into the test.

My own cultivations in the human subject, and in animals, as well as those by Lorrain-Smith and Tennant in animals, have been made direct from the various viscera under the strictest aseptic precautions. The results obtained are thus much more free from error than those obtained through the stomach tube by such workers as Gillespie, Macfadyen, and others.

It will be seen that the percentage of sterile stomachs bears a very striking relation to the question of ulceration. Where no ulceration is present, even in a dilated stomach, the great majority of stomachs are sterile after fasting, whereas, when ulceration is present, the degree of sterility is comparatively low, even after a long fast. It is of interest to observe that Lorrain-Smith and Tennant found that where worms existed in the dog's intestine the degree of sterility of the jejunum was considerably less than it was in health.

This would suggest that ulceration allows the organisms to gain a firm hold in one part of the stomach, so that it is difficult to rid that organ of germs, even by long fasting, or else it means that the ulcerated area is accompanied by a quality of gastric juice which is not sufficiently bactericidal to destroy the organisms present, or as they fall from the oesophagus during deglutition of the mouth secretions. It must be quite certain that we are swallowing, from moment to moment, large quantities of active bacteria, which live quite easily in the mouth, throat, and oesophagus. These organisms falling into the stomach are readily extinguished by healthy gastric juice, less readily if there be any degree of ulceration present, or if the gastric juice is impaired from any cause whatever.

In taking all my cases of operation upon the human stomach, without regard to any special divisions, I find that I took cultivations from 36 cases, and of these exactly 18 were sterile.

Of the remaining 18 which showed a growth of organisms the following germs were found:

Stomach.	Times.
Torula	7
Streptobacilli	3
Bacillus coli	3
Micrococci	3
Streptococcus pyogenes	2
Bacillus subtilis	2
Staphylococcus albus	2
Sarcinae	2
Bacillus proteus	1
A minute bacillus	1

I was able to take cultivations from the human jejunum on 29 occasions, and of these 16 were sterile. Of the remaining 13 which gave a growth, the following organisms were found:

Jejunum.	Times.
Staphylococci	5
Bacillus coli	3
Torula	2
Streptococcus pyogenes	1
Sarcinae...	1
Streptobacilli	1
Bacillus subtilis	1
Bacillus proteus	1

I injected cultures of 12 separate organisms found in the stomach and jejunum into the peritoneal cavity of rodents, in each case three or four times, without producing the slightest effect. The pathogenicity, therefore, of these organisms which I have found in the human stomach and jejunum has been, as far as I have investigated the matter, *nil*.

The experiments which I conducted upon myself and afterwards upon gastrostomy patients were performed with the view of testing the rapidity of the bactericidal action of healthy gastric juice. In testing my own gastric juice large quantities of peptone broth containing a rich growth of known organisms were introduced into my empty stomach through a stomach tube. The stomach tube was passed every fifteen minutes for two hours, and a small quantity of the stomach contents was removed. From each quantity films were made and culture media inoculated. In the case of gastrostomy patients rich broth cultures were introduced into the empty stomach through the healthy gastrostomy wound, and films were made and culture media inoculated every five minutes for two hours. No discomfort was ever experienced either by myself or by any of the gastrostomy patients after taking rich growths of such organisms as staphylococcus pyogenes aureus, staphylococcus pyogenes citreus, and bacillus pyocyaneus I used on myself virulent cultures from cases of acute osteomyelitis and pyaemia. Although the organisms could be found in the films of the stomach contents up to the end of two hours, it was ascertained that the ordinary pyogenic cocci were killed in from thirty to forty-five minutes, whilst bacilli were killed in from sixty to ninety minutes. These figures represent the average of a large number of tests performed upon myself and upon gastrostomy patients.

Of course it might be said that the organisms, after passing into the duodenum, revive and become active again. The results of my cultivations from the human jejunum would suggest that such a revival is very unlikely. What is certain, however, is that the organisms become so altered by the gastric juice that they will not grow upon artificial media, such as peptone broth, and if this is the case there is little to fear from their pathogenicity. It is, of course, obvious that sporulating organisms stand a much better chance of successfully running the gauntlet of the gastric juice than those organisms that do not form spores. Nevertheless, I am of the opinion that our gastric juice is our great sheet anchor of defence against those organisms which are swallowed constantly in sputum and during meals. Such a degree of sterility of the stomach and jejunum considerably diminishes the danger of sepsis during operations upon this portion of the alimentary canal. If general peritonitis follows operation upon the stomach and jejunum, it will almost always be due to infection from without and not from those viscera themselves. It is, therefore, important for surgeons to realize that the success of the operation of gastric jejunostomy or similar operations on this part of the alimentary canal depends more upon such factors as constitutional strength of the patient, the mechanics of their mode of union, and upon the prevention of sepsis from without than upon the liability of general peritoneal infection from the opened viscera.

The results of cultivations from the stomach would also suggest that those elaborate methods of stomach lavage adopted by some surgeons prior to operation are quite unnecessary in the great majority of cases. The procedure is not without great discomfort to the patient, and if there is ulceration present it is not without its dangers, and will be of little avail in removing organisms from the ulcerated gastric mucosa. This degree of sterility of the stomach and jejunum further enables us to explain why so many of those cases of gunshot wounds or stabs in the region of the upper abdomen get perfectly well without the aid of surgical measures.

Perforations of the Stomach and Duodenum.

The fluid in the general peritoneal cavity was collected at the operation and used for the purpose of cultivations upon various culture media as well as for the making of films and glass slides. In the case of localized abscesses arising from these organs the pus was treated in a similar manner. Of the acute perforations of the stomach and duodenum there were 10 cases. Of these 10, in no less than 4 cases the peritoneal contents were sterile, no organisms being seen either by film or by cultivation methods. These 4 cases had perforated respectively twenty-four, twenty-eight, two, and seven and a half hours previous to operation. If we follow up these 4 cases, we find that two of them got quite well, the third lived for two weeks, then died of a double pneumonia with a peritoneal cavity that was perfectly healthy; whilst the fourth sterile case died in twenty-four hours, and it was found that, although the gastric perforation had been securely stitched, a traumatic perforation had been made into the lower part of the jejunum, through which intestinal contents were pouring into the peritoneal cavity. It is therefore probable that, had no complication followed in 2 of these 4 cases, they would all have recovered.

Of the remaining 6 cases in which organisms were found in the peritoneal cavity, 4 died and 2 recovered. The 2 that recovered had both been perforated exactly five hours. In one of the cases which recovered, my cultivation was taken, not at the operation, but on the following day, from the bottom of the drainage tube leading into the peritoneal cavity. I found on this occasion a growth of a minute micrococcus and of a bacillus arranged in Chinese figures like diphtheria.

In the second successful case I found at the operation that the peritoneal contents showed no organisms by film, and only two colonies of a large sarcina. The following organisms have been found in the 6 cases which gave a growth from the peritoneal contents:

	Times.
Large cocci	3
Micrococci	2
Torula	1
Bacillus coli	1
Sarcina	1
Other bacilli	2

I have not as yet been able to test the pathogenicity of the various organisms found in the peritoneal cavity in cases of perforated gastric ulcer. It seems to me that the initial pain and collapse of perforation of the stomach is, in all probability, due to the outpouring of a quantity of highly-irritating gastric juice, which has a chemical action on the sensitive peritoneal surface. Subsequently, as organisms are swallowed from the mouth, either in sputum or in food, these pass through the stomach wall at once before they can be acted upon by the gastric juice. It is more than likely that directly after perforation of a gastric ulcer occurs the stomach ceases to secrete gastric juice, as was seen in one of my cases in which, forty-eight hours after perforation, the stomach still contained undigested pork and potatoes that had been swallowed before perforation. The question of cure after operation depends largely upon the extent to which the peritoneal cavity has been invaded by organisms, rather than upon the length of time that has elapsed since perforation. Of course this question of time is important, in that it corresponds roughly to the extent of peritoneal infection. It will be seen, however, that in one of the cases which gave sterile growths from the peritoneal contents, the stomach had been perforated twenty-eight hours. Such a length of time might be considered to indicate almost certain death, yet the case recovered and the absence of organisms serves to explain the result.

As a matter of experience, we know that if a meal has just been taken prior to perforation, the prognosis is less favourable, owing, as we suppose, to the fact that peritoneal infection is more likely to follow. The comparative degree of sterility of the human stomach, and the non-pathogenicity of organisms found in that viscus serve to convince me that a general infection of the peritoneal cavity does not take place for some time after perforation occurs, unless a meal has just been taken. If the patient could be prevented from swallowing sputum or food, whenever the symptoms of perforated gastric ulcer occur, the risk of peritoneal infection would be delayed and perhaps obviated. This question of bacterial invasion of the peritoneum will receive more careful investigation on my part, especially in respect to the pathogenicity of the organisms found. The four cases of perigastric and periduodenal suppuration reveal the following organisms:

	Occasions.
Bacillus coli	2
Micrococci	2
Streptococcus pyogenes	1
A large coccus	1
Bacillus subtilis	1
Actinomycosis	1

In conclusion, I wish to thank Professor Leith for placing his laboratory so willingly at my disposal, Professor Barling for the large quantity of clinical material from his private and hospital practice, and all my senior colleagues at the General Hospital for their courtesy in furthering my research.

REFERENCE.
[1] BRITISH MEDICAL JOURNAL, December, 1902.

BEQUESTS TO HOSPITALS.—Under the will of the late Mrs. Esther Sarah Barnes, of Ladbroke Square, Notting Hill, £5,000 is bequeathed to the Samaritan Hospital for Women, £3,000 to the British Home and Hospital for Incurables, Streatham, and £2,000 to the Hospital for Incurables, Putney. The late Miss Mary Ann Young, of South Shields, left £11,000 to the Ingham Infirmary, a part for the endowment of a ward and the remainder for general purposes. The late Mrs. Elizabeth Peacock, of Pendleton, Salford, bequeathed £1,000 each to the Hospital for Sick Children, Pendlebury, to endow a cot in memory of her daughter, and to the Cancer Pavilion and Home, Manchester; £500 each to St. Mary's Hospital, Manchester, and the Northern Counties Hospital, and, subject to a life interest, £1,000 to the Salford and Pendleton Hospital.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

A CASE OF TETANUS TREATED BY CHLORAL HYDRATE: RECOVERY.

ON July 9th a man, aged 52, was admitted to the Union Infirmary suffering from inability to open his mouth. He was in a filthy state, and after being sponged was examined for bruises or wounds, tetanus having been suspected. Several old bruises were found on the legs, and were dressed with a lotion of biniodide of mercury (1 in 1,000), although none showed any signs of active inflammatory mischief. The next morning, however, he was groaning with pain, and had well-marked symptoms of tetanus. His jaws were tightly closed and he had great difficulty in swallowing fluids, which were given through a space left by a decayed tooth. His head could not be moved on his body, there was marked arching of the back, the legs were rigid and widely separated, and he was seized with painful spasms every two or three minutes, affecting chiefly the lower part of the trunk and legs. His heart was normal and his pulse full and regular. I ordered him chloral hydrate ℥j in water as a draught. This lessened the number and severity of the spasms and made little change in the pulse. The drug was then given in gr. xx doses every four hours, with an occasional dose at the end of two hours when the spasms were severe (he had four such extra doses in all). This treatment reduced the number of spasms to about eighteen in the day, and by the fifth night the patient slept for several hours, while by the ninth day the spasms had ceased. Up to this time distinct relief from pain followed every dose of the drug, the patient often appealing for an extra dose. At the end of ten days the lower limbs were relaxed, but the abdominal wall was still rigid and the back arched, although not nearly so painful. About this time a scarlatiniform rash appeared on the back and front of the trunk, due to the administration of the chloral, and as the symptoms were much relieved the chloral was ordered to be given every six hours, but when this was done several spasms took place, and the drug was again given every four hours until the twelfth day. On that day the abdominal rigidity and arching of the back having disappeared, the drug was stopped; but a dose had to be administered every morning for the next five days as without it the patient was unable to open his mouth for food. He had no such trouble in the latter part of the day. The treatment with chloral caused no bad symptoms, except the rash, which disappeared in four days. All through the illness the patient took nourishment well, although he was not able to get out of bed before the end of a month. His convalescence was aided by massage of all the muscles.

Hatfield. ALEXANDER BINNING, M.B.

THE PROTECTIVE POWER OF VACCINATION.

RECORDS of single cases are not worth much, and fortunately the value of vaccination is based on very extensive evidence, but to instance how effectual efficient vaccination is in protecting from small-pox I cite the following. A patient admitted to hospital under my care in 1902 was a visitor, a young woman who had come to Southend with the incipient symptoms of small-pox. She had a baby aged 6 months with her. As no proper provision could be made for the baby outside, and an examination of its arm revealed three typical full-sized vaccination scars of a satisfactory nature, I took the baby into hospital with its mother. In spite of its tender age, and the concentrated poison of small-pox in which it lived at the hospital, it remained perfectly well—a striking testimony to the efficacy of vaccination in affording protection against small-pox during a most susceptible time of life.

J. T. C. NASH, M.D.,
Medical Officer of Health, Southend-on-Sea.

COLCHICUM CORM IN ACUTE GOUT.

SHOULD any one be dissatisfied with the action of colchicum wine or tincture, let him try the corm itself powdered, and far better results will be obtained. Larger equivalent doses can be given without the undesirable effects, whilst with an equal amount the improvement in the condition will be much accelerated.

London, S.W. D. DUNCAN.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ANCOATS HOSPITAL, MANCHESTER.

A CASE OF FRACTURE OF THE MIDDLE FOSSA ON THE LEFT SIDE: SUBDURAL HAEMORRHAGE ON THE RIGHT SIDE: TREPHINING: RECOVERY.

(Under the care of Mr. A. J. RODOCANACHI.)

[From Notes by F. G. HACK, M.B., B.Ch., House-Surgeon.]

J. C., aged 40, was admitted May 4th in a comatose condition with haemorrhage from the left ear, the result of a fall downstairs. The haemorrhage entirely ceased within forty-eight hours, but the comatose condition persisted for nearly three weeks. During this time the pulse was never abnormally slow, nor did the temperature become subnormal. The symptoms pointed to cerebral irritation rather than compression. The only alteration in his condition was the onset of general epileptiform convulsions at the end of a fortnight, followed a week later by Jacksonian attacks limited to the left side of the face and irregularly alternating with the general epileptiform convulsions.

On May 24th a trephine opening was made on the right side, with its centre at a point 2 in. above the zygoma and 2 in. behind the external angular process of the frontal. This exposed the middle meningeal artery and was near to the face centre at the lower end of the fissure of Rolando. The dura, which was blue and pulseless, bulged into the wound. It was incised after tying the meningeal artery and about ½ oz. of blood clot removed from under it. Pulsation immediately returned in the dura mater, which was then closed, a drain of iodoform gauze inserted, and the skin incision sutured. The wound healed by first intention. Consciousness very slowly returned; during the twenty-four hours following operation partial paralysis of the left arm and left leg was observed, but the Jacksonian attacks had diminished in frequency. Three days later the patient spoke for the first time, the convulsions had now ceased, and the temporary paresis of the left arm and leg had disappeared.

From this time he made an uninterrupted recovery, memory was very deficient for some weeks, but was almost normal on discharge some six weeks after operation.

The interest of the case is in the long time which passed before the appearance of localizing symptoms justified operation; and in the successful result.

British Medical Association.
CLINICAL AND SCIENTIFIC PROCEEDINGS.

NORTH OF ENGLAND BRANCH.

Darlington, October 27th, 1904.

JAMES DRUMMOND, M.D., President, in the Chair.

Operating Theatre of Darlington Hospital.—Previous to the meeting, an inspection was made of the new operating theatre of the Darlington Hospital, which has been splendidly equipped.

The Serum Treatment of Diphtheria.—Dr. LAWRENCE (Darlington) read a paper entitled Some Remarks on the Serum Treatment of Diphtheria, based on his experience as medical officer of health and Medical Officer of the Fever Hospital. He gave a very brief summary of the discovery of the serum and of the theory on which the treatment was based, touched on the great increase of diphtheria in the country, and gave statistics as to Darlington which showed an alarming increase. From 1890 till the end of 1901 there were in all 139 cases, while in the period from the beginning of 1901 to September 30th, 1904, there had been 368 cases. Over 90 per cent. occurred in children of school age. He spoke warmly of his experience of the serum, specially pleading for its use early and in big enough doses. He had at first the impression that the treatment caused him to see more cases of albuminuria than under his old treatment with iron and strychnine, but a wider experience had compelled him to give up that opinion. He mentioned that he had found the serum of benefit in cases of septic tonsillitis where there was no reason to suspect the presence of the diphtheria bacillus, and could also recommend its use in scarlatinal anginosa.—Dr. HUNTON said he had had very good results with the serum given by the mouth both as a curative and a prophylactic measure. He believed it was only necessary to give rather larger doses to get just the same effect as if it were given subcutaneously. He was inclined to think he now got more post diphtheritic paralysis. He found, also, from his experience that the type in some country districts was of a much more malignant type than that found in the towns. He thought the disease was malarial in origin—that is, that it favoured the marshy and low-lying districts, and gave some local facts in favour of this view.—Mr. J. HARTLEY, Drs. EASTWOOD, PEARSON, COX, and the PRESIDENT took part in the discussion. Some doubt was thrown on the likelihood of the serum doing any good when given by the mouth, and Dr. HUNTER said he had had undoubtedly good results from antistreptococcus serum given by the mouth in a severe case of erysipelas.—The PRESIDENT said he used the serum frequently as a prophylactic, and he did not believe that sequela were now more common than under the old methods of treatment.—Dr. LAWRENCE, in reply, said he had not given the serum by the mouth, and failed to see how it could act unless it were by its actual contact with the fauces as swallowed. He thought the disease was most prevalent not in the slums but in new property where the foundations had not been properly dug out and the floors of the rooms were immediately over soil where fungi were growing.

Radiography of Fractures.—Dr. HERN (Darlington) showed x-ray pictures of 3 cases where the skiagraphs had been of distinct use in diagnosis. They were all fractures, one of the internal condyle of the humerus, one of the anatomical neck of the humerus, and the third of the clavicle. One photograph was shown as an example of how misleading the picture might be if the tube were held so as to throw the light obliquely.

Ophthalmic Cases.—Dr. THOMSON (Darlington, for Dr. Victor Miller of Stockton) showed 2 eye cases. The first was a woman of 23, who had had both lenses removed for high myopia. She had had 25 dioptres. For a considerable time she wore lenses of 16 or 18D, then the eye became painful and irritable, and the myopia rapidly increased. The lenses were removed, being first needled. The right eye was done first. With this eye her vision was now ⅔ without lenses, whereas formerly she could hardly see beyond her nose. With +4 5 she could read Jaylor 2 (J. 2). Left eye not quite so good, owing to capsular opacity, which will probably clear up. Case II, girl whose left eye was removed at age of 6 for staphyloma. Began to wear artificial eye four months after. Wore it until four years ago, and then had to give it up owing to contraction of socket. Dr. Miller split the mucous membrane across on September 12th, and dissected it back above and below. He then laid in a large piece of skin taken from inside of arm. The case was looking very promising so far, and he was waiting for the skin to take on the character of mucous membrane before having artificial eye fitted.—The PRESIDENT and Dr. HERN commented on these cases.

Overcrowding.—Mr. J. HARTLEY read a paper entitled, Why is Overcrowding Dangerous? in which he entered minutely into the physiology of the subject in the light of the latest researches and theories, giving, as the President afterwards said, a thoroughly careful and scientific summary of a common but most important subject. The afternoon was too far advanced for any discussion.

BIRMINGHAM BRANCH.

Thursday, November 10th, 1904.

T. E. UNDERHILL, M.D., President, in the Chair.

Prognosis in Heart Disease.—Dr. DOUGLAS STANLEY read a paper entitled The Prognosis in Some Forms of Cardiac Disease, of which the following is an abstract: Factors in the prognosis of heart disease; Associated morbid conditions; Information furnished by the examination of the circulatory system; Age. The paper was discussed by Drs. SHORT, WILSON, OAKES, MELSON, and the PRESIDENT; and Dr. STANLEY replied.

Examination of the Rectum.—Mr. MILWARD read a paper on The Examination of the Rectum in Disease, of which the following is an abstract: Necessity of examination in all cases of disease; Preliminaries to examination; Position of the patient; The patient may assist the surgeon. Instrumental more effective and less painful than digital examination; The various specula in use; Lesions to be discovered

by these means; The investigation of other organs and of the general constitution must, at the same time, not be neglected; Cases to illustrate the paper. The paper was discussed by Mr. LLOYD, Drs. MELSON, STACEY WILSON, and the PRESIDENT. Mr. MILWARD replied.

Feeble minded Children.—Dr. W. A. POTTS read a paper on The Diagnosis of Feeble-minded Children, under the following heads: Physical and mental characteristics of the feeble-minded in general; Various special types such as Mongolian, microcephalic, etc.; and showed living examples of some of the types. Dr. W. R. JORDAN spoke, and Dr. POTTS replied.

SOUTH MIDLAND BRANCH.—At a meeting held on October 27th, Dr. KENNISH in the chair, Dr. MILLIGAN read notes of two cases of appendicitis which he had operated upon, in one of which abdominal section had to be performed a second time. Both patients recovered.—Dr. MAJOR read a short paper entitled The Short History of a Rash, in which he recounted a severe instance of erythema following paraldehyde.—Mr. C. J. EVANS read a paper on the diagnosis and treatment of gastric ulcer, in which he spoke of haematemesis as an almost certain sign of ulcer, and silver nitrate as the best remedy for pain in these cases.—Dr. HICHENS read a paper on a case of actinomycosis of lung, with specimens of sputum, and gave an exhaustive account of the disease in all its varieties and situations, with its medical and surgical treatment. The papers were freely discussed by the members, and the meeting terminated with a vote of thanks to the readers of papers.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Sir R. DOUGLAS POWELL, Bart., M.D., F.R.C.P., K.C.V.O., President, in the Chair.

Tuesday, November 22nd, 1904.

AN APPARATUS FOR ADMINISTERING CHLOROFORM VAPOUR MIXED WITH AIR IN ASCERTAINABLE PROPORTIONS.

DR. A. G. LEVY described the instrument he had constructed which indicated approximately the percentage of chloroform vapour inhaled. He had not encountered conditions requiring more than 3.5 per cent., and he had therefore made this the maximum. The main principle involved was the suction of air over a surface of chloroform by the respiration, and the dilution of the mixture of air and chloroform vapour thus obtained by such a further proportion of air as might be desired before it reached the respiratory passages.

The evaporating chamber was annular in form. At one point it was intersected by a vertical radial diaphragm, and in the top, to one side of this, a short air inlet tube was attached, and on the other side a similar outlet tube. The chamber was made of thin copper, and it formed part of the cover of a larger vessel of about a litre capacity. This latter was filled with water at 20° C., and served as a water jacket to regulate the temperature of the chloroform. The chloroform chamber was connected with the regulating valves and facepiece by means of a length of aluminium pressure tubing. The tube was connected at its further end directly to a brass mounting which contained a circumferential air-slot, which might be covered up to any desired extent by a revolving collar. This device he had termed the compensator. The mounting was screwed on to the tubular valves which constituted the regulator. This consisted of two concentric cylinders fitted one within the other, the inner of which could be made to revolve within the outer by moving a lever. The cylinders contained reciprocally acting apertures, one leading from the chloroform chamber, the other communicating direct with the air. When either was partly open the other was shut in the same proportion. Thus the chloroform might be diluted to any desired extent. The lever carried an index hand which travelled over a scale indicating percentages of vapour. This scale was plotted out by means of a series of experimental estimations. The air passed from this regulating apparatus through a glass valve chamber in which he registered the strength of the inspirations by measuring the swing of a hinged inlet valve constructed of mica. The hinge was made of oiled silk, and the necessary elastic resistance supplied by a length of thin, spirally-coiled, manganin wire. The swing of the valve was measured off on a curved index engraved with marks denoting various degrees of force of inspiration. A curved metal tube connected this chamber to the facepiece, into one side of which was inserted a spring valve, which opened during expiration. The percentage of chloroform vapour inhaled through this apparatus was estimated according to the method of Waller and Geets.[1]

For aspirating air through the apparatus he resorted to natural respiration through the facepiece, voluntarily controlling the inspirations to the various grades of strength marked on the valve scale, and thus the experiments were performed under conditions such as occurred in actual practice. The important differences in the percentage of vapour corresponding to the various velocities of the air-current had been combated and brought to a common reading by means of the adjustable slit which he had styled the compensator. But it was only necessary to employ this in the series of higher percentage, 2.5 per cent. and over. At lower percentages the compensation was carried out automatically by reason of the viscosity effects upon the air-currents in the long connecting tube being more powerful with the low-pressure currents. A certain amount of over-compensation was unavoidable in the case of very faint aspirations of about 200 c.cm. Such a weakness in strength of breathing should as far as possible be avoided. In use anaesthesia might be completely induced by this instrument in five or six minutes, proceeding gradually from a 0.5 per cent. mixture to a 3 per cent. or 3.5 per cent. When narcosis was complete the regulator was at once put back to the 2 per cent. mark, and was subsequently manipulated according to clinical indications. One—the most important of these evidences—was the respiration; and a complete account of this function was rendered by the action of the valves.

Dr. A. WALLER held that for safe anaesthesia chloroform should be limited to not less than 1 per cent. and not more than 2 per cent., also that it was a certain agent in the sense that the effects produced in the organism were proportionate to the amount inhaled. He described an apparatus for obtaining definite percentages of chloroform vapour. The instrument described by Dr. Levy introduced the vicious principle of obtaining the amount of chloroform vapour by the respiration of the patient. He showed a wick vaporizer he had devised by which a definite mixture of chloroform vapour and air could be supplied direct to the patient.

Dr. E. WILLETT showed the Vernon-Harcourt chloroform regulator, and Dr. F. W. COLLINGWOOD also showed an apparatus for delivering a constant proportion of chloroform vapour.

Dr. F. W. HEWITT was sure that by attention to certain principles chloroform anaesthesia might be robbed of the terrors with which its name had been associated. The anaesthesia might be simple or complex, the former being in the absence of a surgical operation, the latter being chloroform anaesthesia plus conditions introduced by operative procedures. The most important principle of administration was, he believed, that every inspiration should pass freely to the lungs and every expiration escape. The intercurrent asphyxial condition was at the root of most of the difficulties and accidents of anaesthesia. The second important point was the administration of a dilute chloroform vapour. Complicated apparatus was not, he thought, necessary: with a flannel mask and a drop bottle it was quite difficult to administer a too concentrated vapour, by careful watching of the individual patient and keeping the air-way patent. The disadvantage of complicated apparatus was that they were applicable in only a small proportion of cases; they occupied the attention of the anaesthetist, which should be directed to the effects in the individual patient; they were apt to become foul in the course of operations, and could not be easily sterilized; they depended for their action on a suction action of the patient. The adjustment of the level of anaesthesia for safety had to be ascertained for each patient; if anaesthesia were light, the disturbances were reflex; if deep, toxic or vasomotor from the operation itself. With a light anaesthesia the vasomotor disturbance was less likely to occur than if it were deep; the peril was from reflex respiratory spasm. If the patient were kept moderately under the anaesthetic it was not necessary to feel the pulse, but after the corneal reflex had been abolished it was. Chloroform was not, he thought, the best means for inducing chloroform anaesthesia, for it was in the early stages that the risk of death from reflex spasm occurred. To obviate this risk the previous use of another anaesthetic was required, as nitrous oxide and ether.

Sir LAUDER BRUNTON thought a distinction should be drawn between deaths from chloroform and deaths during chloroform. He had seen two deaths on the operating table, one from shock in a case where chloroform could not be given, the other in which the patient was beginning to recover from its effects. Chloroform was one of the most universal poisons known. In the lungs of a rabbit it would quickly stop the heart, but ether left the heart unaffected. Notwithstanding this

[1] BRITISH MEDICAL JOURNAL, June 30th, 1903.

effect on the heart, he believed that when given by inhalation and not by insufflation, chloroform paralysed the respiration before the heart. Reflex syncope, he believed, followed more easily incomplete anaesthesia. In many cases he believed ether was safer in preventing death from shock, but the after-effects of ether were more serious. In hot climates ether could not be kept from waste. Suitable apparatus might be of much use, but it was of limited application. In many cases no doubt death had occurred not through the chloroform or operation, but through obstruction to the respiratory passages, either reflex or from regurgitation of food or other cause.

Dr. D. W. Buxton held it to be a matter of extreme importance that an apparatus should be available for indicating the precise percentage of chloroform vapour. Some of the difficulties of the anaesthesia might be removed by such an apparatus as the Vernon Harcourt. In the majority of cases the reflex troubles were probably due to the chloroform as from a too strong vapour in the induction stage. An inhaler, moreover, was especially necessary for inexperienced anaesthetists. The patient commencing to inhale should have a very dilute vapour, and later a more concentrated vapour. The extreme value of employing known percentages under different conditions was emphasized. An inhaler seemed to abrogate the difficulties of induction. It was important, too, to be able to regulate the degree of narcosis for different operations. In most cases, a 2 per cent. vapour was sufficient for even the most severe operations. It must always be recognized that profound narcosis implied danger. If reflexes were started during deep narcosis, reflex inhibition of the heart occurred and death. In operations with very severe shock, chloroform also causing fall in blood pressure, an excessive fall might be counteracted by the use of an inhaler.

The discussion was adjourned.

Royal Academy of Medicine in Ireland.—At a meeting of the Section of Surgery on November 4th, Mr. Arthur Chance, the President, in the chair, Mr. A. B. Mitchell (Belfast) read a paper entitled Inefficient Operations for Gastric Ulcer, based on the results of four different operations which gave relief for a time, but in all of which the symptoms subsequently recurred. He placed the case on record because a true account of unsuccessful operations was essential to a scientific estimate of the best line of surgical treatment. He was of opinion that permanent relief could not be secured except by an operation that did away with the action of the pyloric sphincter and secured prolonged drainage of the stomach. He now always performed posterior gastro-jejunostomy. He related two cases of regurgitant vomiting. In the first an anastomosis between the ascending and descending loops of jejunum was made, but the result was very disappointing. The patient recovered well from the operation, but got no relief from the vomiting, and died of exhaustion. In the second the bowel was divided, and a Y operation performed. The result was entirely satisfactory. Sir Thomas Myles stated that his experience of gastro-jejunostomy for gastric ulcer was small, but he had performed the operation for other conditions, such as pyloric obstruction and malignant disease. He thought that it would be a matter of considerable interest in cases where gastro-jejunostomy had been performed, for the relief of gastric ulceration with hyperchlorhydria, to ascertain the condition of digestion afterwards. For regurgitant vomiting he found relief was usually afforded by propping the patient up in bed. He had never found it necessary to perform a second operation after gastro-jejunostomy, and had operated in 61 cases without a death. In order to prevent a spur forming at the site of the gastro-intestinal junction, he usually sutured the jejunum along nearly the entire length of the posterior wall of the stomach. Mr. Mitchell, in reply, stated that experience had led him to prefer gastro-jejunostomy to other operations in cases of gastric ulcer. With regard to regurgitant vomiting, he had observed that, when gastro-jejunostomy was done for pyloric obstruction, there was never any trouble in this respect; and latterly, when performing gastro-jejunostomy, he had been in the habit of puckering in the pylorus with three or four sutures, thus doing away with the action of the pyloric sphincter, and these cases were amongst the most satisfactory which he had had.—Mr. W. S. Haughton read a paper on aseptic and antiseptic methods. There was no antagonism between antiseptic and aseptic methods when properly used, that is, to reinforce each other when special circumstances required. He advocated rubber gloves in all operations—aseptic and septic—as ligatures were freely infected by drawing them tight across the skin of the operator's fingers; and emphasized their value between operations in dressing or examining septic or mucous surfaces. In his own practice aseptic technique gave more ideal healing of wounds, as in addition to the primary union and freedom from fever which he obtained in his antiseptic days there was an almost complete absence of pain, even in the most extensive procedures, and more rapid healing, which was also firmer, and developed less fibrous tissue. Furthermore, in accidental wounds, such as compound fractures and lacerated contused wounds, he attained a higher percentage of aseptic healing when these were only treated by scrupulous and prolonged cleansing, using normal saline solution instead of germicides. Mr. Lentaigne considered it a matter of impossibility in general surgical practice to avoid occasional contact with sepsis, and accordingly he did not consider one could rely solely on aseptic measures. After further discussion Mr. Haughton, in reply, said he thought that abstinence from sepsis should be the constant aim of the aseptic surgeon, and the best way to do this was by wearing rubber gloves when dealing with septic cases of all kinds. In the treatment of actually septic wounds weak antiseptics were better than those of greater strength, as the latter acted injuriously upon the tissues.

Aberdeen Medico-Chirurgical Society.—At a meeting on November 3rd, Dr. J. Theodore Cash, in his presidential address, dealt with certain points affecting dosage as an element in the effective administration of remedies. The liberal posology of the ancients, which was illustrated by the doses ordered by Dioscorides, Marcellus and Hippocrates, might be accounted for on the supposition offered by Arbuthnot, that a uniform multiple of the amount which the patient was actually intended to receive was ordered, in order that the method of cure might be screened from the cognizance of the patients. Another explanation might possibly be found in the impurity of the remedies employed. The powerful medication of the middle ages had now relaxed, and the pervading sentiment to-day was to limit the dose to a simple effective proportion. In this relationship he dwelt upon the need for purity in the remedies used and for a wider employment of standardization in vegetable preparations. The introduction of a dosage intended for "frequent administration" was a new feature in the *British Pharmacopoeia* and constituted a step in the right direction, but the term was an indefinite one and afforded too little guidance to the prescriber. It would be more useful if a total or summated dosage, permissible for a given time (say twelve or twenty-four hours), were stated, and the physician were then left the discretion of dividing his doses into larger or smaller fractions, given at longer or shorter intervals of time, according to the exigencies of his case. In order to illustrate the different effects which might be produced by a powerful medicinal agent, according to the extent of dose (as stated in fractions of the toxic proportion) and variations of time for administration, diagrams were shown projected from the changes of temperature so produced, and evidence was brought forward to show that what might be a suitable interval of time for readministration of one remedy in order to maintain its action, might be insufficient for another which was eliminated more slowly, the effects of the second dose of the latter resulting in an action summated upon the first dose. Dr. Cash made a strong appeal for the early adoption by the medical profession of the decimal system, emphasizing the difficulties of weights and measures at present employed and the anomaly of our position in this respect, since all great European Powers—Great Britain and Russia accepted—had the advantage of the uniform and excellent decimal method. The lack of mutual understanding which this isolation occasioned constituted a serious barrier between physicians here and abroad, just as it did in every department of international commerce. Dr. Cash advocated the use of a measure (a specimen of which was exhibited) for the patient's use, upon which four marks, numbered 1, 2, 4, 8, should indicate a capacity of 2·5, 5, 10, and 20 c.cm. respectively. The measure would be purchaseable for a few pence, and would thus be easily acquired even by poorer patients. The direction to the patient would not be to take so many cubic centimetres, as this might occasion confusion, but to take two parts eight parts, etc., as directed. The spoons which have been so largely used as domestic measures varied enormously in capacity and should be entirely abandoned. Accuracy in prescribing by the physician and in dispensing by the pharmacist was vitiated by want of

exactitude in measurement of the dose, and, consequently, therapeutical observation became inexact and the treatment of the patient was rendered uncertain. Dr. ANGUS FRASER, in moving a vote of thanks to Dr. Cash, said that he regarded this change in our system favourably, and he dwelt upon the great irregularity in the present system of measurement, as well as upon the reduction in dosage of active preparations which had taken place within his recollection.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—At a meeting on November 14th, Professor MUIR delivered a presidential address on the Defences of the Body in Disease. These were grouped under two heads: (1) Microscopic, namely, phagocytosis—the activities of certain cells, especially the polymorphonuclear leucocytes and the large hyaline and giant cells of the tissues—which destroyed microbes by ingesting and then digesting them: (2) the ultra-microscopic, present in the fluids of the body and exercised by substances the composition of which was unknown, and the presence of which was recognized neither by microscopic nor by chemical tests, but by their effects on bacteria or their toxins—antibacterial and antitoxic substances. The defences were treated as normal functions of the organism, which were capable of great exaltation in response to the stimulus of invasion. He discussed the conditions under which phagocytosis occurs, the classes of cells which possess this power, and the source from which and the mechanism by which the greatly increased numbers necessary for combating disease are supplied. The prognostic significance of the reaction was also considered. Having illustrated this part of his address by lantern demonstration of phagocytosis, leucocytosis, and emigration of the leucocytes and the proliferative changes in the bone marrow, Professor Muir dealt with the second division of the defences—the actions of agglutinins, precipitins, and lysins being demonstrated by test tube experiments. Professor Muir concluded by considering the relations between the two classes of defensive forces, and referring specially to Wright's discovery of opsonins, bodies in the serum which, he said, affected bacteria in such a manner that they became capable of being taken up and destroyed by the cells. The problem of determining where and by what cells the antibodies are formed was also discussed.

LIVERPOOL MEDICAL INSTITUTION.—At a pathological meeting on November 10th Dr. MURRAY CAIRNS exhibited, with a radiograph, a fetus showing congenital malformation of the limbs. Dr. HUBERT ARMSTRONG considered the specimen to be one of achondroplasia, as shown by the slightly enlarged cranium, the pug nose with depression at the root, normal trunk but stunted limbs, and want of differentiation in the length of fingers. If a child with this disease lived, it became one of the types of dwarf exemplified in the statuettes of one of the ancient Egyptian gods and in many of the pictures by old masters of court pageants and the like.—Dr. GROSSMANN showed microscopical sections of subconjunctival tumours. In the pharynx, tonsils, neck, and trunk were similar tumours; the structure in all was of the same nature, a small round-celled growth: the growths were probably not sarcomatous but of a lymphadenomatous nature.—Dr. CARTER showed the lungs and heart of a patient in whom the middle and lower branches of the right pulmonary artery were the seat of an organized blood clot; the patient lived fourteen days after the condition was diagnosed.—Dr. WARRINGTON showed a microscopic preparation of a tumour removed during life from within the dura mater around the cauda equina. Mr. STOCKDALE considered the tumour to be a haemangio-sarcoma, an opinion shared by Dr. Warrington. The symptoms of the patient had improved considerably after the first operation, but had now returned; from the nature of the tumour a second operation did not seem advisable.—Mr. GEORGE G. HAMILTON showed a carcinoma of the rectum removed from a girl aged 20; and Dr. E. E. GLYNN mentioned that in the last five years five cases of cancer in persons under 28 years of age had occurred at the Royal Infirmary.—Dr. W. GORDON LITTLE read a note of an original investigation undertaken by himself and Dr. Charles Harris in the Biochemical Department of the Johnston Laboratories on the influence of certain inorganic salts on the solubility of uric acid and biurate of sodium. The salts used in these experiments were the chloride, bromide, iodide, fluoride, sulphate, salicylate, lactate, phosphate, and carbonate of sodium, potassium and ammonium. The sodium and ammonium salts were found, even in small percentages, largely to diminish the solvent power of water; potassium salts, on the contrary, did not have this effect, and might even increase the solvent power of water. The effect of the presence of sodium chloride in counteracting the known solvent action on uric acid, of lithium, piperazine, and urotropin was demonstrated. The presence of sodium salts in the body fluids constituted the great difficulty which had to be overcome in the search for an agent to prevent the precipitation of the biurate of sodium.—Professor BOYCE gave an exhibition and demonstration of bones and skulls of ancient Egyptians. The valuable specimens shown dated back to 2300 B.C., and were in a splendid state of preservation. Osteo-arthritis was seen to be a not uncommon disease, fracture of the ulna was frequently met with, and several examples of ulceration of bone, possibly syphilitic, were shown.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—At a meeting on November 4th Dr. CHURTON read a paper on disease of the prefrontal lobe, and referred to Dr. Campbell's definition of the prefrontal area (*Journal of Mental Science*, October) as the tip or anterior fourth of the frontal lobe. As Gowers had designated prefrontal all the area lying anterior to the ascending frontal gyrus, and Dr. Campbell denied that the prefrontal lobe, as defined by him, though it "had a future before it," had any present importance, confusion might possibly arise. It was not unlikely that the extreme tip of the lobe might be imperfectly developed, and that when this part was the seat of a tumour or abscess the symptoms produced might be due to paralysing compression of the more developed neurons lying immediately behind it. The rapid improvement which sometimes occurred after operations, which simply mitigated the pressure without restoring the tip of the lobe, perhaps favoured this view. But some scepticism still existed as to the use or importance of the entire lobe; it was held by some to be a "silent area," especially on the right side. There had been, however, many observations to the contrary. Cases were described, and the possibility discussed of holding that the frontal and parietal areas on the one side have functions quite distinct from those enjoyed by the same combined areas on the other.—Dr. S. M. HEBBLETHWAITE read a paper on some points in the diagnosis and treatment of angina pectoris. It was pointed out how difficult it was to make a prognosis of any value in angina pectoris, and that many of the symptoms of toxic angina were those of true angina. Notes of cases were read in support of these views, one point of distinction being mentioned, namely, herpes in the distribution of a cutaneous nerve; this occurred in a few instances, and was a useful aid in diagnosis between toxic and true angina, and consequently helpful in prognosis, since it proved the angina to be toxic.

BRITISH GYNAECOLOGICAL SOCIETY.—At a meeting held on November 10th, Dr. MACNAUGHTON-JONES read notes of two cases of adnexal tumours completely concealed by perimetritic effusion, and showed, with the epidiascope, sections illustrative of desquamative salpingitis; he questioned the necessity of hysterectomy if the uterus were not materially affected.—Dr. BEDFORD FENWICK showed a specimen of ovarian disease associated with uterine fibroids. There was gross disease in both ovaries, and, in his opinion, fibroids in the fundus always indicated removal of the ovaries with the uterus. The PRESIDENT stated that in fibrous disease of the uterus he had met with enormous blood cysts of the ovary, very obscure in their pathology.—Dr. HEYWOOD SMITH showed a uterus containing numerous fibroids, one already sloughing; the right ovary was converted into a large blood cyst. The patient's temperature had been persistently subnormal, with no symptom suggesting suppuration.—The discussion on Mr. Christopher Martin's paper on the treatment of severe prolapse by extirpation of the uterus and vagina being resumed, Dr. J. A. MANSELL MOULLIN expressed the opinion that the efficiency of accurately uniting the fasciae in preventing or curing an abdominal hernia was an argument in favour of Mr. Martin's new method for very severe cases if the pelvic fascia could be recognized, and united as he described. Dr. R. H. HODGSON suggested that, as the fever and suppuration in three of these cases reported did not occur until ten days after the operation, but in the fourth began on the second day, they were probably in that case due to infection at the time of operation. Dr. BEDFORD FENWICK said that Mr. Martin's method had the advantage of leaving a large raw surface which was necessarily closed by granulation; he

would prefer to leave the anterior wall of the vagina, and do an extensive colporrhaphy of the posterior and lateral walls. Dr. MACNAUGHTON-JONES said that though, as Mr. Martin had himself pointed out, the method was not indicated save in exceptional cases, Professor Auguste Martin of Griefswald had successfully extirpated both uterus and vagina in 19 out of 2,000 cases of prolapse. Dr. JERVOIS AARONS thought that for a procidentia recurring after hysteropexy, anterior and posterior colpotomy, and perineorrhaphy, it would be well to try Mr. Martin's very ingenious method. The PRESIDENT thought that the essential part of the operation—the rebuilding up of the stretched pelvic fascia—could be obtained in another way without the loss of the entire vagina. In severe prolapse he first treated the cystocele by anterior colpotomy and gathering up the redundant wall of the bladder by a triple continuous and buried suture from the cervix to the urethra. The vagina was afterwards narrowed throughout its length by removing its posterior and more or less of its anterior wall; so far he had not had any real failure from this method. Mr. CHRISTOPHER MARTIN, in reply, said that he had never had any difficulty in recognizing the fascia and sewing the edges together. Infection might come from the rectum or from the ulcerated cervix or vagina. Sewing up the fascia after removing the posterior wall only would not cure the cystocele. He appreciated the suggestion that the uterine arteries should be ligatured before the dissection of the vaginal mucosa; it would diminish the arterial haemorrhage, yet it was from the venous vaginal plexus that the bleeding was most troublesome.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—At a meeting of the Society held at 11, Chandos Street, W., on November 18th, Mr. ROBERT JONES in the chair, twenty-one new members were elected.—The Glas-Sedlbauer lamp for the treatment of lupus was demonstrated.—Drs. J. M. FORTESCUE-BRICKDALE and BERTRAM ROGERS showed a specimen of congenital atresia of the tricuspid valve, with patency of the foramen ovale and foramen ventriculorum. There was much cyanosis but no murmur during life.—Dr. GEORGE CARPENTER showed a specimen of pulmonary stenosis, with patency of the septum ventriculorum and foramen ovale. A loud murmur and cyanosis were present in life.—Dr. S. W. CURL showed a specimen of complete closure of the pulmonary artery and other defects. He also showed a specimen of tuberculosis of the Fallopian tubes and ulcers in the intestines.—Dr. JAMES TAYLOR showed a case of general paralysis in a boy of 11, with optic atrophy, Argyll-Robertson pupils, mental changes, and some ataxy. There was no evidence of syphilis.—Mr. J. HOWELL EVANS demonstrated the cause and effects of cephalhaematoma neonatorum in the region of the occipital bone.—Mr. DOUGLAS DREW showed a boy with old-standing dislocation of the radius forwards, which relapsed after operation and reduction. He also exhibited three cases of congenital dislocation of the hip of different degrees of gravity. He thought that the functional results after operative treatment were usually by no means good, though some improvement might certainly be obtained.—Dr. J. PORTER PARKINSON showed a girl with cerebellar ataxy, partial ophthalmoplegia, choroido-retinitis, exaggerated reflexes, and Babinski's sign. He ascribed the condition to a syphilitic degeneration. He also showed a child with Bell's palsy and initial hemiplegia. The hemiplegia was on the right side, and cleared up in a week. The face was still paralysed on the right side, three months after the onset. He ascribed it to a limited form of polio-encephalitis in the pons.—Mr. SYDNEY STEPHENSON showed a boy of 12 with Graves's disease, and two children with injury to the cornea by forceps in difficult labour.—The various cases were discussed by Mr. ROBERT JONES, Drs. EDMUND CAUTLEY, F. PARKES WEBER, GEORGE A. SUTHERLAND, C. W. CHAPMAN, and Mr. LEWIS MCGAVIN.

LARYNGOLOGICAL SOCIETY OF LONDON.—At a meeting on November 4th an interesting specimen of actinomycosis in the tonsil of a female child, together with bacteriological sections, was shown by Mr. ARTHUR CHEATLE and Mr. EMMERY. It was agreed that this was probably the second case only which had ever been recorded of actinomycosis in that region.—Several specimens of malignant disease in the upper air passages of the dog and cat were exhibited by Professor HOBDAY and Mr. DE SANTI, and a case of what was considered to be probably one of extrinsic malignant disease of the larynx, in a man aged 64, was shown by Dr. FURNISS POTTER. The case was unusual in that the growth had lasted some eighteen months without glandular infection. It was regarded as a particularly suitable case for laryngectomy.—A specimen of a foreign body—a collar stud—was exhibited by Dr. PATERSON, who had removed it by direct laryngoscopy—Killian's method—from a child aged 12 months.

PATHOLOGICAL SOCIETY OF MANCHESTER.—At a meeting on November 9th, Dr. REYNOLDS, and afterwards Professor LORRAIN SMITH, in the chair, Dr. W. E. FOTHERGILL exhibited microscopic sections of two small solid ovarian tumours composed of minute tubular alveoli lined by columnar epithelium. These resembled in structure adenomata which have been found on the posterior body wall in a retroperitoneal position in the broad ligament, and also at the sides of the cervix uteri. They were probably derived from pronephric or mesonephric tubules distinct from those which formed the Wolfian body.—Dr. BYTHELL exhibited two microscopic slides of streptococci and pneumococci from cases of empyema in children, the specimens being accompanied by microphotographs taken in natural colours by the Sänger-Shepherd process to illustrate the staining reactions due to degeneration of the cocci.

REVIEWS.

TROPICAL MEDICINE.

A SECOND report of the antimalarial operations at Mian Mir, 1901-1903, by Lieutenant CHRISTOPHERS, I.M.S.,[1] has just been published. The first report, it will be remembered, was written by Captain James, I.M.S., and the results obtained were not encouraging. Some have criticized the way the work was carried out and the smallness of the sum expended, but, be this as it may, it is evident that the destruction of mosquitos as a means of stamping out malaria is not so easy as was once supposed. The conclusions arrived at by Lieutenant Christophers, whose ability in this work is well known, are similar to those originally expressed by Captain James. It is evident, he says, that the destruction of *Anopheles* within the area by attacking their breeding places is extremely difficult, and the mere obliteration of local breeding places is useless because adults continue to come in from without. This point, which does not seem to have been sufficiently appreciated before, is one of the greatest importance in further antimalarial work. In the opinion of the author the operations yielded useful information and revealed many difficulties that had to be taken into account, but he was forced to the conclusion that they were not the best adapted to the eventual reduction of malaria. Better results seemed to be obtained by liberal dosage with quinine under supervision than by attempts to kill mosquitos. Ordinary sanitary reforms, as indicated by careful investigation into the conditions present in cantonments, are, according to the author, what is required, and those can only be carried out gradually. The report is important to the world at large because it means so much. That the experiment has failed no one can deny, but in view of the success obtained at Ismailia, the Government of India, before condemning antimosquito work entirely might see its way to another experiment on a larger scale, with more expenditure of funds, and in a locality more favourably situated.

Lately a considerable amount of work has been done on the subject of beri-beri, and the most recent treatise, *Beri-beri: its Symptoms and Symptomatic Treatment*, by Dr. P. N. GERRARD,[2] adds some useful information. The author has also published a synopsis of his essay in the form of a small handbook.[3] His observations, based on a personal study of 5,000 cases, studied in the Malay Peninsula, are well-arranged and full. A point of interest is as to the existence of an initial pyrexia, and it is unfortunate that no carefully-prepared temperature charts

[1] *Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India.* New series, No 9. Second Report of the Anti-malarial Operations at Mian Mir, 1901-1903. By Lieutenant S. R. Christophers, M.B., I.M.S. (on special duty) Calcutta: Office of Superintendent of Government Printing. 1904. (Demy 4to, pp. 37. 1s.)

[2] *Beri-beri: its Symptoms and Symptomatic Treatment.* An Essay. By Percy Netterville Gerrard, B.A., B.Ch., B.A.O., M.D.Dub.Univ., District Surgeon, Federated Malay States Civil Service. London: J. and A. Churchill. (Demy 8vo, pp. 95. 2s. 6d.)

[3] *Beri-beri: its Symptoms and Symptomatic Treatment.* Being extracts from the above essay on Beri-beri. By Percy Netterville Gerrard. London: J. and A. Churchill. 1904. (Demy 8vo, pp. 60. 1s. 6d.)

are recorded by Dr. Gerrard to support his contention that it occurs. The classification adopted is that of Scheube, and we agree with Dr. Gerrard that such a classification should be universally adopted. An extra type—the spasmodic, in which spasms of a choreiform nature are present—is described; it occurred in 5 only out of every 1,000 cases. The treatment is discussed in detail. The cremation of the bodies of persons who have died of beri-beri is strongly urged. A very useful table showing the differential diagnosis is given at the end of the book. A close study of the treatise will repay those who may be brought into contact with this mysterious disease.

The Gold Coast: Its Wealth and Health[4] is the title of a useful book, by Mr. F. HART, on the mining industry of this part of the West Coast of Africa. The major part of the text deals with the various mines, labour supply, transport, roads, etc., but a portion is devoted to the social life and health. Stress is laid on the very deadly nature of the Gold Coast some years ago, and also on the fact that the European death-rate is now diminishing, though room for improvement still exists. The local government is stated to have been most niggardly with regard to ordinary sanitary rules and drainage, no proper system of removal, burial, or destruction of garbage existing. It is certainly true that the conditions commonly found in many tropical towns and villages would not be tolerated for one moment even in the most remote villages in this country, and there is no reason why sanitary reforms should not be introduced and gradually carried out in such places. The question of destruction of mosquitos by drainage should now really leave the province of the medical man, and should pass into the hands of the ordinary sanitary inspector. The colony should apply a certain amount of its money yearly to ordinary hygienic reforms, and, though the results might not be apparent at once, in years to come they would certainly show. The West Coast is not a health resort, but, as Mr. Hart points out, a certain proportion of the ill-health is certainly due to the individual's own carelessness. The book, which is illustrated by some very good photographs, should be useful to those about to go out to the Gold Coast.

TRYPANOSOMIASIS.

THE most recent addition to the literature of trypanosomiasis is a voluminous book, entitled *Trypanosomes et Trypanosomiasis*,[5] by LAVERAN and MESNIL. The book is valuable and should form a textbook and work of reference for all engaged in studying this subject. The arrangement is systematic. After a historical summary we have a section on technique; this is followed by a comparative study, morphological and biological, of the trypanosomes, and then the different species so far known are described in detail. Twelve chapters are required to deal thoroughly with the latter, and all points concerning morphology, inoculation experiments, treatment, etc., are most minutely discussed. Specially interesting are some of the diseases due to trypanosomes which are so far unclassed—namely, the trypanosomiasis common to East Africa, that common to Togo Land, and that found in the Soudan and Algiers. In their very able report on trypanosomes and trypanosomiasis in the Philippine Islands, Musgrave and Clegg, it will be remembered, laid considerable stress on the probable identity of many, if not of all, of the trypanosomes, and if their views are substantiated it will certainly simplify the subject. Laveran and Mesnil belong to the opposite school, and, though only placing those unclassed trypanosomes above-mentioned as near nagana, they uphold as new the trypanosome of horses in the Gambia—the T. dimorphon of Dutton and Todd. Koch considered that the trypanosomes he met with in East Africa were really the same as those of surra, and as morphology goes for little in distinguishing the different species, only a long series of carefully-planned-out experiments can decide this question. The authors in the chapter on trypanosomes and their connexion with sleeping sickness give a very good account of the recent work done on this subject. Space will not permit us to discuss the interesting chapters on the parasites of reptiles, fish, and birds, but they will repay careful study. An appendix on tsetse flies finishes the book. Many good diagrams are placed in the text. The only coloured one is not so good as it might have been, and a larger number would have been useful.

A thirteenth memoir, entitled *The Reports of the Trypanosomiasis Expedition to the Congo*,[6] has recently been published by the authority of the Liverpool School of Tropical Medicine and Medical Parasitology. It deals chiefly with trypanosomiasis and its relation to sleeping sickness, but, in addition, there are chapters on the Congo Floor Maggot,[7] on Animal Reactions of Trypanosomes from Uganda and the Congo, and on Tsetse Flies, by Mr. Austen of the British Museum. The first portion of the memoir details the objects of the mission, and gives a series of cases of trypanosomiasis in human subjects. It is interesting to note that the fourth case out of a series of individuals who were admitted into hospital at Boma for sleeping sickness showed no trypanosomes in the blood or cerebro-spinal fluid, even though those fluids were carefully and repeatedly examined. The cases eventually died, and, according to the authors, the *post-mortem* appearances were very similar to those described as occurring in sleeping sickness. No microscopic examination of the tissues, however, is mentioned in the report, and if it has not been made it is peculiarly unfortunate. The conclusions of this part of the report—namely, that there are no differences between trypanosomes from the Gambia and those from the Congo—support the views of the later members of the Royal Societies' Commission to Uganda, and is in turn supported by the work done in Liverpool by Thomas and Lindon, a study which forms part of the general report. The second report on progress deals with the subject of human trypanosomiasis and its relation to Congo sleeping sickness. The division of the various types is different to that adopted by some of those with large experience of this disease, but perhaps it is a useful enough classification. Special emphasis is laid upon one point already recorded in the clinical descriptions of the malady in Uganda by the Royal Societies' Commission. It is that too much prominence as a diagnostic feature has been given to sleep as a symptom. The general conclusion of the Liverpool Commissioners is that the trypanosome plays a primary part in the causation of sleeping sickness, but that there is not sufficient evidence to state that death is produced by the trypanosome alone. This would seem to be the correct attitude to assume. It is to be hoped that the authors will solve this point, and not devote their time too exclusively to clinical details which are now so well known. Some other interesting facts are recorded in this section: as examples may be mentioned the case of a patient who had hundreds of trypansomes in his blood one day, while on the next they had all disappeared; the occurrence of the parasites in serous fluids, and their absence from the lymphatic glands in some of the cases, in which it is definitely stated that these were examined. The weak points in this part of the report are that neither the bacteriology nor the microscopical pathology appear to have been studied. The solution of the problem, however, is probably to be reached by this route. The observations on the Congo floor maggot have recently been recorded in our pages, and until more information comes to hand little can be said on the matter.

THE LEISHMAN BODY.

AFTER the discovery by Leishman of peculiar bodies in the spleen of a case that had contracted a chronic fever in India, and the subsequent work of Donovan on this same parasite, Lieutenant CHRISTOPHERS, I.M.S.,[8] was sent to Madras to investigate and report on the nature of this disease. He has now published a preliminary report on his work. After a brief statement as to the clinical features of his cases, the *post-mortem* appearances, and the importance of the disease, the author gives a description of the parasites, which is very similar to that given already by several observers. The

[4] *The Gold Coast: Its Wealth and Health.* By Francis Hart, F.A.S., M.A.I.M.E. Annual, 1904. London: Ereckson's. 1904. (Demy 8vo, pp. 280, 110 illustrations. 5s.)

[5] *Trypanosomes et Trypanosomiasis.* By A. Laveran, Membre de L'Institut et de l'Académie de Médecine, et F. Mesnil, Chef de laboratoire a l'Institut Pasteur. Paris: Masson et Cie. 1904. (Demy 8vo, pp. 418; 65 illustrations. Frs. 10.)

[6] Liverpool School of Tropical Medicine. Memoir xiii. Reports of the Trypanosomiasis Expedition to the Congo, 1903-4, of the Liverpool School of Tropical Medicine and Medical Parasitology. By J. Everett Dutton, M.B.Vict., John L. Todd, M.D.M'Gill, and Cuthbert Christy, M.B.Edinburgh. With a Comparison of the Trypanosomes of Uganda and the Congo Free State, by H. Wolferstan Thomas, M.D.M'Gill, and Stanley F. Lindon, B.Sc., M.B., Liverpool. London: Williams and Norgate, 1904. (Demy 4to, pp. 118–158.)

[7] BRITISH MEDICAL JOURNAL, 1904, vol. ii.

[8] *Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India.* New series, Nos. 8 and 11. *A Preliminary Report on a Parasite found in Persons Suffering from Enlargement of the Spleen in India.* By Lieutenant S. R. Christophers, M.B., I.M.S. (on special duty). Calcutta: Office of the Superintendent of Government Printing. 1904. (Demy 4to, pp. 16. Rs.1.8 and Rs.3 respectively.)

important part of the report is the section on the distribution of the parasites in the body. Like other observers, he never detected the parasites in the peripheral blood; they were seen, however, in large mononuclear cells in the portal vein and in polymorphonuclear leucocytes from blood taken from petechiae in the arachnoid. This observation is important, as it indicates how the parasites may spread throughout the body. For the study of sections a modification of Romanowsky's stain is advised, but no mention is made of ordinary hematoxylin or Van Gieson's stain, which are both useful. In addition to the liver, spleen, bone marrow, and lymphatic glands, where the organisms have been described, the author found in his series of cases constant intestinal lesions—namely, congested patches, small red granulations, and ulcers. Smears from these situations showed similar bodies to those described by Wright in cases of tropical ulcer. These observations make it probable that the parasite invades many of the tissues of the bodies. After a comparison of the organisms with piroplasmata of calves, Christophers concludes that it is doubtful if they are ever really found in the red corpuscles, as Laveran believes. He is probably correct in suggesting a resemblance to a microsporidian. The report will aid those who are engaged in the study of the minute pathology of this disease. The exact nature of the cells in the liver in which the bodies occur, whether the liver cells themselves are really free, and many other important points, still require to be definitely settled. In a second report on the same subject, Christophers has made some further interesting observations. He finds that the parasites may be present in unulcerated papules in the skin, also in leucocytes in the peripheral blood, and in other organs such as the testes and kidneys. His descriptions of the cells in which the parasites occur and his ideas of the process of infection are rather vague and uncertain. Macrophage, a term usually applied to the large white cells of the spleen, is used for what he calls cells of an endothelial nature, and for swollen endothelial cells of capillaries, and the disease is designated an infection of the vascular endothelium. A glance at his diagrams, which are poor, does not convince one that he is dealing with cells in capillaries at all. More research is thus urgently required as to the true nature of the large cells in which the parasites are so frequently met with.

OPHTHALMOLOGY.

A most complete book on the *Pathology of the Eye*[9] is being prepared by Dr. J. Herbert Parsons, who has utilized his opportunities as curator at Moorfields in a most practical manner. Vol. i, Part I, which has appeared recently, describes the histological characters of the various diseases met with in the eye and the eyelids, and also gives an account of the normal structures of these parts. It is divided into six chapters. Chapter I describes the lids. In Chapter II, on the conjunctiva, we find an account of the bacteriology of this membrane, as well as an accurate description of its inflammatory and other morbid conditions. Chapter III deals with the cornea, and a good account is given of the rarer forms of ulceration. Chapter IV is devoted to the sclerotic, Chapter V to the iris and anterior chamber, and Chapter VI to the ciliary body. The illustrations, of which there are 267, are a great feature of the book. It can hardly be opened anywhere without finding blocks to illustrate the various morbid processes under discussion. Practically all these blocks are reproductions of photomicrographs taken by the author, and show in an admirable manner the points they are intended to represent. At the end of every section is a bibliography which will prove invaluable to workers, as it will save them hours of searching through literature. It is most refreshing to find a book on the eye that is off the beaten track of textbooks, of which we have such a plethora. Few can ever be in the position to have such abundance of pathological material to enable them to study the processes of disease, and it is not always possible to find one who is able, among all the routine duties of his post, to give himself up to the arduous work necessary for the production of so learned and scientific a book. We heartily congratulate Dr. Parsons on having put before the profession the fruits of his experience in a manner so accessible; and we look forward with pleasure to seeing the remaining parts of the work, which, if they come up to the high standard of the first, will long be read as *the* textbook on ocular pathology.

[9] *The Pathology of the Eye.* By J. Herbert Parsons, B.S., D.Sc Lond., F.R.C.S. Vol. i, Histology. Part I. London: Hodder and Stoughton. 1904. (Demy 8vo, pp. 402, 267 illustrations. 15s.)

A very attractive book is *A Manual of Practical Ophthalmology*,[10] by Dr. G. A. Berry of Edinburgh; a larger book on *Diseases of the Eye*, by the same author, is very well known, but the present is more within the range of students. The general remarks on eye operations contained in the first chapter are very useful, and at once give an insight into the chief principles of ophthalmic surgery. Then details as to the examination of the eye are dealt with, and several ophthalmoscopic drawings of the normal fundus are given, but these being only in black and white are not altogether satisfactory. The diseases of the conjunctiva are carefully dealt with, and the illustrations are excellent; specially useful is one showing a section through the head and face, exposing the whole of the nasal duct and lachrymal sac. The author is apparently rather in favour of slitting the canaliculus whenever there is any trouble here, though he utters a warning against over-probing, and the use of large instruments. He does not consider syringing, as a rule, any better than probing, except when the sac is much dilated. Two photographs, which are not very clear, illustrate the Koch-Weeks bacilli and the Morax bacilli. Iodoform is largely recommended for corneal ulceration, and there is a very good drawing of an ulcerated eye with hypopyon. The chapter on cataract is explicit, and extraction with iridectomy is advised. For most iridectomies the blunt hook is preferred to forceps, as less pain is produced. This is even so with regard to iridectomy for glaucoma, and here we think the author will stand rather alone, for he uses a keratome for the incision, and withdraws the iris with a hook; then the operator or the assistant snips it off. In this way the whole iris cannot possibly be removed, and a stump must remain behind, which is the very thing that most operators take every care to avoid. A detached retina is always a difficult thing to depict, but when colours are not used one needs to be very familiar with the appearance before it is possible to get a good idea of what it is like. The same remarks apply to most of the fundus drawings. The pathology of tumours is not gone into very deeply, and no mention is made of endotheliomata. The book is one that should prove useful to students, for it is well written and well got up.

A small book has been written by Dr. R. R. Rentoul, on *Trachoma*,[11] a disease which has lately come into rather more prominence than usual by the action of the authorities in refusing to allow immigrants to enter American ports who show any sign of the disease. The author considers that too little attention is paid to the disease by practitioners and also that only meagre descriptions of it are, as a rule, given in textbooks. There is nothing really new in this small work and no special work on the pathology of the disease appears to have been done by the author. While discussing treatment no mention is made of the *x* rays which have lately been rather extensively used and recommended. The book will be most useful to those practising in poor districts and especially to those who live in such districts as the East-end of London, where numerous immigrants are to be found, and where there are such a large number of Jews and aliens among whom it is almost rare to find healthy eyelids.

NOTES ON BOOKS.

We have received the fourth edition of *Philip's Handy Volume Atlas of London*.[12] We have praised earlier editions of this *Atlas*, which is a small octavo volume, and the new edition is revised, enlarged, and improved. The fact that in some previous editions the new references were given in an appendix sometimes impeded the rapid use of the *Atlas*, and this edition is provided with a single index. The volume now contains maps of the metropolitan boroughs and of the parliamentary districts in the County of London; there is also a geological map, a railway map, maps of Richmond Park, Epping Forest, Windsor Park, and of the Thames from Kew to Oxford. An experience of the use of the volume for a good many years past enables us to say with confidence that it is not only convenient but accurate. It will be useful to the stranger visiting London, and perhaps still more to the resident in London who may have to find his way in an unfamiliar district.

[10] *Manual of Practical Ophthalmology.* By G. A. Berry, M.B., F.R.C.S. Edin. Edinburgh and London: Young J. Pentland. 1904. (Cr. 8vo, pp. 590. 10s. 6d.)

[11] *Trachoma (Granular Conjunctivitis).* By Robert Reid Rentoul, M.D., Assistant Medical Officer to the Board of Trade. Liverpool: Cornish and Sons, 1904. (Demy 8vo, pp. 32. 2s.)

[12] London: G. Philip Son, Limited. 1904. 5s.

NOTES ON NEW REMEDIES.

ALMATEIN.[1]

ALMATEIN is a compound of haematoxylin and formaldehyde. It is an odourless powder, soluble in glycerine and alcohol. According to the *Deutsche med. Zeit.* (1904, 872), it has been used as a substitute for iodoform.

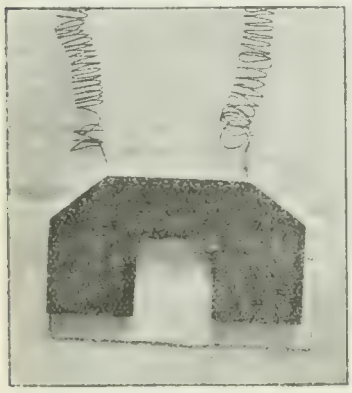
HETRALIN.[2]

Dioxybenzolhexamethylenetetramin is the name by which this substance is known to chemists, and most readers will agree that abbreviated titles are necessary for this and allied synthetic remedies. Hexamethylenetetramin is the chemical name for urotropin, so it will be seen that hetralin is a compound of the latter. It is a colourless crystalline substance which is stable and dissolves readily in water and alcohol; the solution has a very sweet and not unpleasant taste. It has been used as a urinary antiseptic in the same way as urotropin, but is said to have succeeded in some cases where the latter has failed.

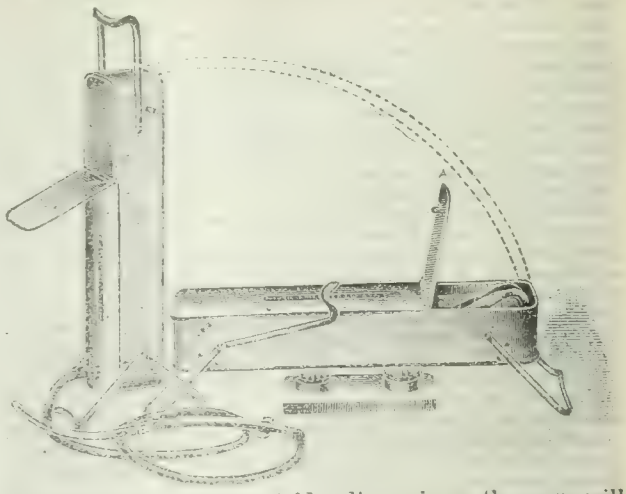
MEDICAL AND SURGICAL APPLIANCES AND DIETETIC PREPARATIONS.

Rusks for Diabetics.—We have received a box of diabetic bread manufactured by Walter Hubbard, Rusk Manufacturer, of Partick, Glasgow. The contents consist of well-made and palatable slices of a sort of rusk which is free from starch and sugar, and therefore fulfils the principal indication in those cases where it is desired to give a bread substitute free from carbohydrate. The principal constituent appears to be cocoa-nut, and the rusks possess its well-known flavour.

An Electric "Warm Stage." (Communicated by the Director-General, Medical Department, Admiralty.)—Surgeon HUGH C. ROSS, M.R.C.S., L.R.C.P. (H.M.S. *Immortalité*), writes: The warm stages for the microscope commonly in use are clumsy and generally unsatisfactory to those engaged in practical biological work, but I have succeeded, with the help of Engineer Sublieutenant Fielder, R.N., in inventing an electric "warm stage," which fits on the top of the slide. It consists of a small coil enclosed in ebonite, porcelain, or other suitable non-conducting material; there is a square gap in the centre for the cover-slip and objective of the microscope: two wires lead from the warm stage to the source of the electric-light current, there being a resistance coil on one of them, adjusted according to the voltage. Among the advantages of this electric warm stage are the following: It is simple and inexpensive; the temperature is constant and may be maintained indefinitely without change; it fits accurately to the slide, so may be used with the mechanical stage and does not interfere with its free movement; it may be used with the higher achromatic or apochromatic homogeneous immersion objectives, and of course with Abbé's condenser; when switched on it requires no attention; and the whole apparatus is completely insulated. It can be obtained from Messrs. Drake and Gorham, 66, Victoria Street, Westminster, S.W.



A Midwifery Sterilizer.—Dr. Wm. SALISBURY SHARPE (Clevelan l Terrace, W.), writes: Finding the thorough sterilization of midwifery instruments difficult to accomplish under the ordinary conditions of practice, and being unable to obtain a sterilizer sufficiently portable to add to the ordinary contents of a midwifery bag, without greatly increasing its bulk, I have devised the instrument shown herewith which answers the double purpose of a sterilizer and irrigator, while occupying exceedingly little space; its dimensions are 16 by 3½ by 2½ in., and the forceps, etc., can be packed inside it, so saving a great part of the space. It has also the advantage of supplying a sterilized irrigator and sterilized water for irrigation, and, of course, the Bozemann's tube is boiled with the other instruments in the first place. Notwithstanding its small outside dimensions, the can will admit and contain any of the instruments used in midwifery, and the irrigator will hold half a gallon of water. The instrument has been made for me in copper, tinned inside, by Messrs. Mayer and Meltzer, of 71, Great Portland Street, W.



An Asthma-powder Inhaler, "Patented."—Dr. JOHN W. INGLES, M.B., B.Ch. (Willaston, Nantwich), writes: I have long observed the inconvenience experienced by patients whilst inhaling various asthma powders, and to overcome this inconvenience I have invented a perfect asthma-powder inhaler. In cases of bronchitic asthma, as a rule, after the first inhalation of powder fumes, the patient coughs and phlegm is expectorated; by the time the patient sufficiently recovers to be able to go on inhaling, the fumes are scattered, and, as a patient once said to me, "To catch the smoke it would be necessary to run round the house with one's mouth open." This is the result if one inhales those fumes from saucers, kettle lids, shovels, etc. Again, there is the case of the multitude of martyrs to hay asthma and spasmodic asthma coming on in the open air. This pocket inhaler can be used inside the house and outside, and is therefore not only a benefit to asthmatics and bronchitic asthmatics, but likewise in cases of spasmodic asthma brought on by emanations of animals, pollen, and various smells encountered in the open. The inhaler consists of a cup-shaped receptacle placed on a perforated saucer-shaped base, and an inverted oval funnel attached to this base by hinge and catch. In the tube is a tubular roll of gauze capable of being withdrawn, cleansed, and replaced. A mouthpiece fixed to the tubular end completes the inhaler. To use it, the powder is poured into the receptacle and lit, the funnel closed on the base, and the fumes inhaled. I have had the instrument made for me by Messrs. Arnold and Sons, London, to whom my best thanks are due for carrying out my instructions so satisfactorily.



[1] *Pharmaceutische Centralhalle* 45, 794.
[2] *Chemi Zeitung*, 28, 30.

BEQUEST TO HOSPITAL.—The late Mr. Henry Evans of Derby bequeathed £10,000 to the Derbyshire Royal Infirmary for the building of a permanent ophthalmic department.

JAMAICA AS A HEALTH RESORT.

II.

Kingston and its Neighbourhood.

We landed at Kingston on September 23rd, about 7 a.m., and drove to the Myrtle Bank Hotel, one of the two hotels managed by the Elder Dempster Company. Situated close to the harbour, the hotel garden looks out on the sea, and contains a variety of crotons of beautiful foliage, and also several tall cocoa-nut palms. Pretty little lizards were creeping about on the foliage; there were some small turtles in a pond, and also a small alligator. An evil-looking bird with a head like a vulture—a John Crow—of which I shall have more to say presently, was hopping about. The first impression produced by the streets of Kingston on the newcomer is unfavourable. Little, mean-looking shops, in poor, ill-paved streets, with few handsome buildings, and not much display of goods in the shop windows. The constabulary, a fine body of men, with white helmets and uniforms, attract attention at the corners of the principal streets.



Entrance to the Grove Hotel, Mandeville, Jamaica.

The town of Kingston being too hot and close to stay in at this time of year, we went, as all newcomers are advised to do, to the Constant Spring Hotel, six miles in the country, also belonging to Elder, Dempster, and Co. An electric tramcar carried us the six miles for fourpence, while a boggy the local equivalent of our hansom cab, charges 12s. for the same drive.



View in Castleton, Public Gardens, Jamaica.

The tramcar road passes through a district which to the newcomer displays an unwonted amount of colour and tropical foliage, but is horribly dusty, and when the inevitable motor car comes along, the clouds of dust that rise must be seen and felt to be appreciated. If you ask why the roads are not kept watered, you are told it is due to the composition of the municipal council, which is elected on a 10s. franchise; but that is another story, on which we can hardly enter here.

The hotel is a fine building beautifully situated, with a background of hills, rising to 2,000 or 3,000 ft., and clothed with luxuriant tropical vegetation. In the early morning these hills are covered with a purple mist, making the view from the bedroom windows of the hotel about 5 or 6 a.m. very charming. Numbers of John Crows fly about the extensive grounds of the hotel. They are called by the natives "the doctor" on account of their use as scavengers, and a Jamaican law imposes a penalty of £5, or six months' imprisonment, on any person who shoots one. A story, which we give with all reserve, as the papers say, is current that these John Crows have a king and queen, and that when any specially tasty morsel is found, the king and queen are summoned by special signs to have their tit-bits before the others commence to feed.

In Kingston itself the chief places of interest are the parish church, a handsome building with stained glass windows, one of which contains a number of masonic emblems, a very unusual thing in an ecclesiastical building.

which has given rise to a good deal of comment in the island: and the Jamaica Institute, Museum and Public Library, which are well worth visiting. The Museum collections aim at representing as completely as possible the fauna and flora of the island, along with its geology and anthropology.

The mammals are represented by various species of bats, the Jamaica coney (*Capromys brachyurus*), the manatee, mongoose, etc. The snakes, lizards, chelonians, the crocodile, and the amphibians of the island are all represented. Of the invertebrates, many insects, decapod crustaceans, scorpions, arachnida, and myriapods are shown. The echinodermata—star fishes, sea urchins, sea cucumbers—are fully illustrated; and the celenterates—sea anemones, corals, sea fans—are also shown. A considerable collection has been made of objects connected with the Arawaks, the extinct aboriginal inhabitants of the island. They include a large series of stone implements, mostly petaloid in shape, all carefully finished, and some highly polished. Others are wedge shaped or chisel-shaped, while a few are made of shell. From the numerous kitchen middens or refuse heaps are shown collections of perforated shells, broken pottery, fish, coney and crab bones, and ashes. The relics from caves consist of human skulls and bones, and the more perfect examples of Indian pottery. Photographs of various rock carvings are on view, and several examples of aboriginal images. Slavery relics include an iron cage-gibbet, in which criminals were hung to die of starvation.

In the rooms of the Institute are held the examinations of the Jamaica Medical Council, the quarterly meetings of the Jamaica Branch of the British Medical Association, and those of other local societies.

The fruit and vegetable market at Kingston is only a few minutes' walk from the parish church, and should certainly not be missed, as it affords an excellent opportunity for studying the ways of the natives. It is a scene of bustle and excitement, heightened every now and then by lively altercations between sellers and buyers, mostly of the female sex, with gesticulations, which to one unused to such scenes appear likely to end in tearing out one another's hair or at least scratching of an adversary's face. Nothing comes of it, however, but words, words, words, and the same thing is going on all over the market. Over a shop door near the market the following cheerful notice is exhibited in large letters:

"The best black and gold coffin-ware supplied. If required on Sundays apply at —— ——."

Within easy reach of Kingston, by buggy or electric tram, are two public gardens, Castleton and Hope Gardens, both maintained by the Government, and both well worth a visit, as well for their display of tropical foliage at its best, as may be seen by the accompanying illustration taken from a part of Castleton Gardens, as for the many plants and trees of medical interest. At Hope Gardens one of the trees which first attracts the visitor is the magnificent *Poingiana regia* (*Flamboyante*) from Madagascar, a gorgeous acacia with dark green leaves and abundant bracts of scarlet flowers; the *Smilax utilis*, or Jamaica sarsaparilla, is also there, and the *Cupania edulis* or *Blighia sapida*, with its crimson fruit the size of apples. There also may be found the bael-fruit tree (*Ægle marmados*), the allamanda cathartica, with its large yellow flowers; the passion flower, with its fruit the size of a small melon, and a plantation of sugar canes. The khuskhus grass (*Andropogon*), which is very fragrant and is used for punkahs in India, is cultivated here. The balsam of Peru (*Myroxylum toluifera*) and the *Norantea guinensis*, with its large crimson spikes, are also found here.

Even in the extensive grounds of the Constant Spring Hotel there are crotons of various bright hues, the hibiscus red and yellow; the travellers' tree, of which you tap the base of the leaf and a watery fluid fit for drinking comes out; the cannon-ball tree (*Courapile guinensis*), also a tree whose long pods rattle on all day in the wind, which the ungallant natives have christened woman's tongue. In these grounds, too, are the *Erythroxylon coca*, from which cocaine is procured; the *Paypa*, from which papaine comes, and which has a fruit the size of a large apple, good to eat; stephanotis, the mango tree, the bamboo, pineapples, pimento, and the anona or sweet shop, one of whose varieties (*Chrimoya*) has been called by Clements Markham the masterpiece of creation. Roses do not seem to succeed well in this garden, but both at Bellevue and Mandeville I was shown some very fine blooms, chiefly, if I remember rightly, of Gloire de Dijon.

Looking over the extensive hotel grounds from my bedroom window in the early morning, and watching the purple haze steal over the mountains not far off, near the tops of which several residences have been built, it struck me that somewhere among these hills there might be found a spot where the traveller in search of rest and relaxation, and possibly of health, might pitch his tent, temporarily at all events, and live free from business worries, telegrams, and letters—"the world forgetting, by the world forgot"; and I determined to investigate this matter before going further afield. I may note that at this hotel I for the first time slept under a mosquito net, a fine gauze tissue which envelops the whole bed, being suspended by a hook from the ceiling.

NOVA ET VETERA.

THE INFLUENCE OF FEAR ON MEDICAL RELIEF.

The fear of the unknown has a great deal to do with the delay in attending at hospitals in India, and particularly in surgical affections. In England it is not now very common to see patients with huge tumours in conspicuous situations, because they would certainly long ago have attracted the attention of persons who would have pointed out the ease with which they could be removed, and the comparatively small amount of pain and inconvenience with which the operation could be done. Many such cases, however, do occur in India. In 1893 I removed a growth weighing nearly 31b. from the neck of a woman who had resided quite close to a dispensary for many years, but who, until it had actually begun to slough, had been deterred by fear and misrepresentation from going for relief. In a still more remarkable case, a woman had a large tumour which hung from her neck by a long pedicle, even as far as her waist. She had suffered for more than seven years, but, although she lived only three miles from the hospital, she was too terrified to seek relief. In three weeks, so simple was the case, she was discharged quite well. In another very extraordinary case, a man of about 25 years of age met me on the road as I was going one morning to my hospital and asked whether I could remove a huge tumour which had been growing between his shoulders since his birth, and which had prevented him from lying on his back. He had always feared to have it removed, but his two wives had now got tired of seeing him with such a disfigurement and such an inconvenient addition to his bulk. The growth, which was like a large pillow, was about 18 in. long and weighed more than 10 lb., was removed with very little difficulty. Every medical man in India must have seen similar cases, and have almost daily met with patients who, having worked themselves up to undergo proper treatment, have fled at the last moment, or when they have heard from others exaggerated accounts of what they have gone through in the hospital. So great is the deterrent effect of the stories which patients and attendants tell the newcomer that unless the surgeon operates on the spot, as it were, he will often lose his patient. I have frequently returned to the operating room, when on the point of leaving for the day, on being told, for example, that a stone case had arrived, in order to remove it at once, as if I had not done so the man who had, after much misgiving, decided to undergo anything that might be necessary, would surely have been missing next day. This is really something like battlefield surgery, and ought to ensure that the Indian surgeon is fully qualified for such work. It is by no means certain, however, that full advantage is taken of this quite exceptional experience.

There are very many serious difficulties in our hospitals for the superstitious Hindu of the lower classes. It is not an infrequent thing in Rajputana to find several, if not a whole wardful of, women anxious to leave the day after a death, because they say they have felt the *Bhut*, or spirit, of the departed strike against them as they lay in their beds at night. The popular, if not the classical or educated, idea is that when a man dies his body, or rather his spirit which retains the form of his body, remains suspended in the air upside down a short distance from the ground, and naturally flaps against any one, perhaps mischievously, who is about his level, which happens to be about the height of a bed-cot. When the funeral rites and the following ceremonies, which spread over some days, have been properly performed the spirit is laid.

The fear of being haunted by ghosts is another cause of disease. An assistant-surgeon gradually became unfitted for his duties by ill-health. He lost weight, became exceedingly

melancholy, and soon ceased to have any confidence in himself, and at last, when a prey to insomnia and dyspepsia, resigned his appointment. It was then ascertained that he thought that he was haunted by the ghost of his predecessor, who had lived in the same official house as himself. A great Hindu lady had to be taken away from her home because each time she returned to it she felt the all-pervading presence of one of her predecessors.

Superstition attacks its apostles as much as their followers. Some years ago a priest of one sect succeeded in supplanting the head of another one and in establishing his own party as the principal religious body in the State. His rival cursed him, and said that, although he had apparently been successful in obtaining his wishes, it would not profit him, because, while surrounded with good things, he would die of hunger and thirst. This curse so preyed on the mind of the supplanter that he dared not take either food or drink, because he thought he would become so full that he would burst. In a very short time he died of starvation.

Great is the dread of the gods, especially of the god Shiva and his Shakti, or female manifestation—Pârvati, Bhawâni, Kâli, or Durga—and their myrmidons, or allied minor deities. Everywhere men and women endeavour, by propitiating these deities and their priests, to ward off disease and death, which are believed to be due to their anger. The aboriginal religion of India is based on fear, and in that respect differs much from the Vedic faith of the Aryans.

Such, too, is the religion of most Bengalese, who sacrifice enormous numbers of goats at the shrine of the High Priest of Kâli, near Calcutta, who, in a pamphlet which he published on "the plague and how to stamp it out," has shown himself to be an enlightened man. Sitala, the Goddess of Small-pox, lives on young children, and must be propitiated; so that even after vaccination offerings should be made to her at her shrines to assuage her wrath, and all the tanks within some miles of the child's home should be visited, in order that he may be bathed in them. The late Prime Minister of Jeypore told me that he had been inoculated as a lad for small-pox because his parents thought that operation was less offensive to the goddess than vaccination, but even then he was dragged round all the tanks and temples in the neighbourhood until he was quite worn out with fatigue, lest the deity should still be angry. In like manner cholera is due to the wrath of an offended deity, and pilgrimage, flight, and offerings must be resorted to in order to appease it. Of these, flight is the best and most certain, and is most ready to hand; and, as the villagers usually encamp in the jungle because they are welcome nowhere else, it is most likely to be successful; and, in fact, the epidemic then often ceases. Fear has proved an equally potent factor in dealing with plague, and it was to dispel such fears that Pundit Haridas Shastri, the priest whom I have mentioned, prepared his pamphlet. He advocates inoculation as well as many other most advanced measures, and shows, by quotation from many ancient Indian authorities, how these proposals are quite in accord with them. Thus, for example, he translates as follows a passage from Charaka, one of the founders of Indian medicine:

> When Mahamari (plague) invades a city or town, the inhabitants thereof should adopt the following means in order to save themselves from destruction: They should be truthful in what they say, should be charitably disposed towards their fellow creatures; they should always remain in a worshipful spirit, and preserve equanimity of mind; and *they should make themselves scarce* and go elsewhere.

Outside every village in many provinces will be found an image, most often but a rude stone streaked with red paint, which represents the local god, who will revenge himself upon the residents unless he receives due respect, and a light is kept up at his little shrine or some other suitable recognition is made. He is generally known as the Bhumia, or Lord of the Soil, and not infrequently is the spirit of some landowner who was unjustly slain when defending his rights on or near the spot. Sometimes he haunts the neighbourhood as a ghost, and may be seen by people who are out late at night, or he may take the form of a huge snake—generally of a black cobra.

When plague first began, its management was much hindered by the fears of the people, who believed every foolish rumour. Our hospitals were tabooed because it was said the doctors required victims to compound drugs; the gods were offended, and showed their wrath by sending the disease; and, in one instance, a goddess had driven her chariot over the country, leaving storm, plague, and famine wherever the wheels of her vehicle passed.

In short, nothing was too foolish to be believed. Vaccination has been hindered in many places by the report that the operation was done in order to discover a child who was the Imam Mehdi of the Mohammedans, or the Kalki Avatâra of the Hindus, both of whom are expected about this time. It is said that these infants will have milk instead of blood in their veins. Every one has heard of the Imam Mehdi, and the last-named is the tenth incarnation of Vishnu, the second member of the Hindu Trinity, who it is hoped will shortly come and inaugurate a new age on the earth.

The fear which arises from superstition is not always confined to the ignorant, but may influence the well educated man, and even the specialist, so difficult is it for an individual to emancipate himself from his early environment: thus, for example, there was an Indian medical graduate within my knowledge who had not allowed his child to be washed for more than a year after its birth lest it should become a victim to epidemic disease. In this and many similar cases it is probable that the women of the house were too strong for its master. It is for this reason that I would like to see the establishment of courses of lectures in Indian medical schools on the effect of indigenous beliefs and habits and customs on the practice of medicine, as well as the teaching of hygiene, and the introduction of such matters more freely into the general education of the country. These ideas are opposed because the Indian often affects to disbelieve in the importance of the subject, and in the influence of early training, of even a diametrically opposite system, on a man's future opinions, or else he thinks the subject too trivial for consideration in the universities. The professors in our medical schools also sometimes raise the objection that their students have too many things to study, and add that these things are dealt with by them in their regular lectures. Yet, is it not most important that the future teachers in our medical schools for the hospital assistant class, and the general practitioners of the country, should be especially well grounded in these subjects so that they may feel their great importance, which they are not likely to do if they are kept in the background? In urging my friend, Major Bedford, I.M.S., to write the excellent *Manual of Hygiene for Indian Schools* which he has recently published, I laid particular stress on the importance of showing how the practice of true sanitary and hygienic measures was not opposed to any Indian religion or caste regulation, and I asked him to illustrate his subject by copious references to Indian habits and customs, all of which he has done.

In order to divert the attention of a god or demon who has an evil eye upon, or an evil design against, a child, its parents will sometimes dress it, if it is a boy, in the garments of a girl, and even arrange its hair like that of a female. A little boy, who was thus dressed, in order to avoid the fate of an elder brother who had died, was brought to me and operated upon for stone. In a similar case, the boy had lost three brothers, because it was said that the family had incurred the anger of a spirit, who was once the Chief of the State, and who in consequence of his sudden and unhappy death had become a Bhumia. The effects of fear may, however, be got over, if there is some stronger emotion. Hindu women rely absolutely, in most cases, on their husbands or sons. An elderly woman was once brought to me with a large scirrhus tumour of the breast, and was taken into the operation room at her own request, in order to undergo the operation, but on arriving there she became so alarmed that we could not proceed, and she was removed. In less than five minutes, however, she returned, having had a short conversation with her son, who successfully overcame all her scruples, and she underwent the operation without any further difficulty.

T. H. Hendley, C.I.E., Colonel I.M.S. (Ret.)

Medical Mayor.—Dr. Alfred Charles Mayo, an ex-President of the East Anglian Branch of the British Medical Association, has been elected Mayor of Great Yarmouth.

Four new Hebrew wards at the London Hospital, erected through the generosity of the late Mr. E. L. Raphael, were consecrated and opened on November 14th by Mr. Leopold Rothschild.

Dr. Edmund Cautley will read a paper on the management of the milk supply in towns, at a special meeting of the council of the Charity Organization Society to be held on Monday next, at the Royal United Service Institution, Whitehall, S.W., at 4.30 p.m.; the chair will be taken by Mr. E. W. Brabrook, C.B.

LITERARY NOTES.

A NEW journal, *La Revue Historique et Médicale*, the scope of which is indicated by its title, has just appeared in France. The editor is Dr. Paul Triaire, well known to all who are interested in the history of medicine by his commentary on the letters of Gui Patin, and his books on Larrey and Récamier.

The November number of the *Journal of Pathology and Bacteriology* contains, among other communications, papers by Sir Lauder Brunton and Mr. T. J. Bokenham on the power of the liver to destroy diphtheria toxin; by Dr. Alec R. Ferguson on the histology of the skin in variola; and Mr. J. W. Thomson Walker on osteomata of the brain. The *Journal* is, as usual, excellently printed and beautifully illustrated.

Messrs. Longmans, Green and Co. have in the press a book entitled *A Common Humoral Factor of Disease*, by Dr. Francis Everard Hare, late Consulting Physician to the Brisbane General Hospital, and Inspector-General of Hospitals for Queensland. The work is described as "a deductive investigation into the primary causation, meaning, mechanism and rational treatment, preventive and curative, of the paroxysmal neuroses (migraine, asthma, epilepsy, etc.), gout, high blood pressure, circulatory, renal and other degenerations." Dr. Hare is the author of *The Cold Bath Treatment of Typhoid Fever* and *The Mechanism of the Paroxysmal Neuroses*.

A recent number of the *Tribune Médicale* contains an article by the late Dr. A. Dureau, Librarian of the Paris Academy of Medicine, on the last year of the existence of the French Academy of Surgery. It is generally stated that the Academy was suppressed by a decree of the Convention dated August 18th, 1792. By the terms of that decree, however, only universities, schools and colleges were suppressed, and the Academy continued to hold its weekly sittings till August 22nd, 1793, when as the result of a further decree of the Convention, whereby "all academies or literary societies patented or endowed by the nation" were suppressed, it ceased to exist. During the twelve months which it survived its rival the Faculty of Medicine, the Academy continued its scientific work undisturbed by the political storm raging outside. Among the subjects discussed were aneurysm, Caesarean section, extrauterine pregnancy, and amputation through joints. One sign of the times is to be found in a new duty imposed on the Academy, that of examining candidates for appointment as *chirurgien-major* and *sous-aide* in the gendarmerie, and the navy. The Academy was also asked to appoint commissioners to examine the vehicles intended for the transport of the sick and wounded of the armies of the Republic; to draw up reports on the organization of hospitals, etc. On July 18th, 1793, in consequence of the smashing by certain individuals of a marble statue of Louis XIV. which stood in the great hall, the Academy appointed a Committee with full power to destroy "all effects, furniture, and other objects, which may present any traces of the *ancien régime*," and to replace them by Republican emblems. Evidently political feeling was beginning to run high within the precincts of the Academy, for after the sacred words "Liberté et Egalité," had been inscribed on the walls of the Amphitheatre, they were effaced by some reactionary hands. The Academy thereupon ordered that the doors of the amphitheatre were to be kept locked, except during the hours of lecture. All this, however, failed to avert its doom.

In the *Chemist and Druggist* of October 22nd the following history of Fowler's solution is given: Thomas Fowler was an apothecary who kept a drug shop in York from 1760 to 1774. In the latter year he relinquished trade and went to Edinburgh to study medicine. He graduated M.D. in 1778 and settled in practice at Stafford, where he was appointed Physician to the infirmary. Later he returned to York, where he acquired a large practice. He died in 1801. In his time appeared a patent medicine under the title of "Tasteless Ague and Fever Drops," or they may have been two medicines. "Tasteless Ague-drops" and "Tasteless Fever-drops" are separately scheduled in the Medicine-Stamp Act of 1812. In a treatise, entitled *Medical Reports of the Effects of Arsenic in the Cure of Agues, Remitting Fevers, and Periodic Headaches*, published by Fowler in 1786, he writes: "When the Patent Ague-drops began to acquire some reputation in this country they were occasionally adopted in the hospital practice of this place [the Stafford Infirmary], and were found efficacious." Then he tells how "Mr. Hughes, the apothecary to the infirmary (whose industry, attention, and abilities in his professional line justly merit applause)," had set to work to imitate this secret remedy, and had come to the conclusion that it was a preparation of arsenic. Fowler's formula, as ultimately arrived at, was given as follows:

> Recipe Arsenici Albi in Pulverem subtilissimum triti
> Salis alkalini fixi vegetabilis purificati singulorum grana Sexaginta quatuor
> Aquæ fontanæ destillatæ Libram dimidiam
> Immitantur in Ampullam florentinam quâ in Balneo Arenæ positâ. Aqua lente ebulliat donec Arsenicum perfecti Solutum fierit. Deinde Solutioni frigidæ adde
> Spiritus Lavandulæ compositum unciam dimidiam
> Aquæ fontanæ destillatæ Libram dimidiam, plus vel minus adeo ut Solutionis Mensura Libra una accurata fit, vel potius Pondere unciæ quindecim cum dimidia.

Dr. Fowler reminds his readers that of course troy weights are intended. He adds the spirit of lavender, he explains, merely for the sake of giving the mixture a medicinal appearance, lest patients entrusted to drop it for themselves might be tempted to use it with too much freedom. Also, because of the disagreeable association of ideas with arsenic he proposes to call the medicine "Mineral Solution." He appends details of some of his cases, and states that he had used the remedy in 247 cases of ague, that in 171 of these cures had resulted, of which 27 had been after relapses. Of the others 45 were cured between arsenic and bark, 24 had failed principally through the irregular attendance of the patients, and 7 were still under treatment. Fowler, says our contemporary, was unquestionably the pioneer of the modern medicinal employment of arsenic, but it is clear that he was himself pioneered by a patent medicine.

The Smithsonian Institution has recently issued *Researches in Helminthology and Parasitology*, by the late Dr. Joseph Leidy. The various papers of Professor Leidy on this subject make a book of 248 pages. To the collection is added a bibliography of his contributions to science consisting of 559 titles. The series has been edited by Joseph Leidy, jun., M.D.

In Messrs. Sotheby's large sale room there may now be seen an exceptionally fine collection of old book-bindings. They belonged to the late Professor W. H. Corfield, who was a noted lover of old books and a thorough connoisseur in binding. The other portion of his library, some 500 lots, was sold in June last for something under £700. It is considered doubtful whether in any other private collection so remarkable a series of English bindings can be found. There are represented early craftsmen like John Reynes, the rare "M D." Cambridge binders like the famous Garret, Godfrey, Royal binders such as Samuel and Charles Mearne, later men like Roger Payne. The total amount realized by the sale was £5 010 16s. 6d.

Major Arthur Griffiths, in his interesting *Fifty Years of Public Service*, recently published, says that when he entered the army the medical examination was by no means so severe as it is now. In illustration of this statement, he tells the following story:—

> A contemporary got through with flying colours, and, although some doubts of his eyesight were hazarded, he was passed. At the door he turned and said, "I think I ought to tell you that I've got a glass eye," but they did not go back upon their decision. A candidate with rather inferior powers of vision implored the man who went in just before to tell him exactly what happened. The latter reported that he was taken to the window and desired to say what he saw in the street. It was a 'bus passing, drawn by grey horses. When our friend's turn came he was asked exactly the same question and gave exactly the same reply. "What!" cried the doctor, "you can see that omnibus?" (which was turning the corner). "You must have an uncommon long sight. You're all right."

When Major Griffiths was stationed at Montreal, there was in the garrison an officer who may be regarded as one of the pioneers of the invasion of the sanctuary of medicine by women, although, so far as we are aware, her name is never mentioned in the history of that movement:—

> The P.M.O., or Principal Medical Officer in the command, was Inspector-General Barry, who was fully proved to have been of the female sex. It was an established fact that when stationed at the Cape she had fought a duel, and there was a belief that she had at one time passed through the married state. Suspicions of her true sex were constantly rife, and her appearance was always suggestive of femininity. A certain extravagance of dress was always noticeable in her, she wore a great silk bow on the breast of the uniform frock coat, dandified patent leather boots, and long-fingered white kid gloves, and always appeared in a long curly chesnut wig.

Major Griffiths also tells of a prison doctor who recommended the release of a "lifer" on the plea that the man's health was so precarious that he could not possibly live to complete his sentence!

REPORT OF THE LOCAL GOVERNMENT BOARD, 1903-4.*

The volume before us, consisting of some 950 pages, is the annual Domesday Book of the English people. Of all official reports presented to Parliament few, if any, are concerned so intimately with the life and conditions of the people as this annual report of the Local Government Board. It covers a wide ground both in administration and in the range of subjects. The first 218 pages form the actual report of the President of the Board (the Right Hon. W. H. Long, M.P.), and the remainder of the bulky volume is constituted of appendices and returns. The President's Summary is divided into sections, as follow: (1) The Local Government Act, 1888, and County Councils; (2) the Local Government Act, 1894; (3) Relief of the Poor; (4) the Public Health and Local Administration; and (5) Local Taxation and Valuation. We can only refer here to some of the most prominent facts, and to matters concerning public health and State medicine. The Medical Supplement has already been referred to in the British Medical Journal.

Extent of Pauperism.

Many of the fundamental facts of the report deal with pauperism. As judged by the number of paupers relieved on the last day of the last week in each month of the year (excluding vagrants and lunatics), there appears to have been an increase in the aggregate of the years 1901-3. The rise was, however, less general than that reported last year. The increase took place mainly in Leicester and other counties of the North-Midland Division and in Lancashire. There was again a decrease in the South-Western Division, comprising the counties of Wilts, Dorset, Devon, Cornwall, and Somerset. It is well known that the classification of paupers is, broadly, into (*a*) indoor, (*b*) outdoor, and (*c*) insane. Of the indoor paupers the mean number for 1904 is 240 947 for England and Wales (including London), which gives a ratio of 7.2 per 1,000 of the estimated population. Then there were 597,123 outdoor paupers (including lunatics in asylums), making a total mean number of 838,070, or 25 per 1,000 of the population. If the vagrants and insane be excluded, the total becomes 722,270 and the ratio per 1,000, 21.6. These are the highest returns since 1900, and the total of 838 070 is considerably higher than the highest average reached in any of the preceding twenty-four years in the tables given. A noticeable feature in the pauperism of the last twenty-five years is the increase in the numbers of the paupers receiving indoor relief. The numbers of the outdoor poor in the same period have shown no material change. Considered, however, in relation to the population, the average number of paupers, excluding vagrants and lunatics, is, with three exceptions, the lowest in the quarter-century. There has been, on the other hand, a consistent yearly increase of insane paupers, amounting in the period 1884-1894 to 18.9 per cent., and in the following decade (1894-1904) to 23,236, or 28.7 per cent. The mean number of vagrants who received relief is still high, being over 12,000. The total expenditure exclusively relating to the relief of the poor during the year ended at Lady Day, 1903 amounted to £12,848,323, which represents an average charge of 7s. 9½d. per head on the estimated population. The particulars of expenditure are set out at length in the report.

An interesting light is thrown upon the question of the increase of indoor paupers by the lucid report in the appendix from the pen of Mr. H. Jenner Fust, the Inspector for the district of Lancashire and Westmorland. He attributes this increase in part to three broad conditions. First, there has been a scarcity of work in most industries. Secondly, the Workmen's Compensation Act, 1897, is spoken of as preventing from obtaining employment large numbers of men between 50 and 60 years of age, who though able to work and earn their own living, are thought to be not quite so active as younger men and slightly more liable to meet with accidents. Then, thirdly, there is the greater comfort of our workhouses and the want of strict separation of the really able bodied from the old and infirm. It may be right, as Mr. Jenner Fust says, that the latter class should be made comfortable, but if, as is sometimes the case, this comfort is accompanied by too much freedom to come and go as they like, to receive constant visits from friends, and to do no work at all, the deterrent influence of the workhouse is seriously interfered with. The fundamental principle in respect of the legal relief of the poor is that the condition of the pauper ought to be, on the whole, less eligible than that of the independent labourer. But a public institution, if properly arranged, secures to an inmate a larger amount of bodily comfort than is enjoyed by an ordinary independent labourer in his own home, in respect of ventilation, warming, light, meals, etc. Hence the only mode consistent with humanity of rendering the condition of the pauper inmate of a public establishment less eligible than that of the independent labourer is to subject him to such a system of labour, discipline, and restraint as shall be sufficient to outweigh in his estimation the advantages which he derives from the bodily comforts which he enjoys.

Small-pox and other Infectious Diseases.

The Board reports that in 1903 there was a marked reduction in small-pox in the metropolis, and, indeed, in all other notifiable diseases. The total number of cases of all notifiable diseases in 1903 was 22,890, the lowest return of the last decade, following 39,997 for 1902, which is the highest in the decade. Small pox fell from 7 796 cases in 1902 to 416 in 1903, and, with the exception of typhus fever, all the chief infectious diseases showed a similar decline. Of typhus fever there were 22 cases as against 4 in 1902. It is interesting to observe the steady rise in the percentage of admissions to hospital to notifications. In 1894 of scarlet-fever cases 63 9 per cent. were sent to hospital, whereas in 1903, 84.2 per cent. were admitted. In 1894 of diphtheria 38 8 per cent. were admitted, whilst in 1903 78.2 per cent. were admitted; and in 1894 20 2 per cent. of the cases of enteric fever were admitted, as against 52.4 per cent. in 1903. Reference is also made to the efficacy of diphtheria antitoxin, owing to the use of which the diphtheria mortality has fallen from 40.7 per cent. in 1889 to 11 0 per cent. in 1902. From the vaccination returns completed for 1901 it appears that in England and Wales of 929,852 children whose births were registered 71 per cent. were successfully vaccinated, 11 per cent. died unvaccinated, 0 3 per cent. were certified as "insusceptible," and 4.3 per cent. of the whole furnished certificates of conscientious objection. Of the entire number of children whose births were registered in 1901, 13 0 per cent. were not finally accounted for as regards vaccination at the time the returns were made, which is less than that for any year since 1890.

Closely allied to the subject of the prevention of infectious diseases is the provision of hospital accommodation, upon which Mr. Baldwyn Fleming (the Inspector for the Union Counties of Dorset and Southampton, and parts of Wilts and Surrey) makes some interesting observations. He states that in his districts the provision of isolation hospitals progresses in spite of "the unfortunate agitation which has occurred in some parts against the utility of isolating infectious fevers." Without entering into medical questions, which Mr. Fleming recognizes as beyond his sphere, he deplores any relaxation of effort to provide hospital accommodation. He takes up his position on three or four broad principles: that personal contact is at least one method of the conveyance of infection; that the resources of the ordinary working-class home are not adequate for the proper treatment of infectious diseases; that the nursing of cases at home inflicts hardship and risk upon the other inmates of the home and upon their neighbours; and that the nursing resources necessary for home treatment of cases are inadequate; and, therefore, he concludes that the whole question is not covered simply by statistical results as regards case-mortality and the incidence of the disease in certain areas.

Vagrancy.

The annual report again contains a large body of facts concerning the great unsolved problem of vagrancy. The number of these persons does not apparently decrease, if we are to judge by the numbers receiving relief, which now is always between 6,000 and 10,000, and, of course, they are a continually shifting body of men: here to day, gone to-morrow; so that in actual practice it means that in some districts more than 200 000 vagrants are admitted to Poor-law institutions in the year. Further than that, it must not be forgotten that this class of the community give trouble to the State in at least two ways—they are frequently the origin of criminal trouble and annoyance, and they convey infectious disease from one locality to another. Under the Poor Law they may be divided into three main classes: (1) those who cannot work; (2) those who can work but will not; and (3) those who can work and will. The last, it is to be feared, is a small proportion of the total. They are mostly of a class of casual labourers who are not, as a rule, thrifty or fond of work, and are only employed when workmen are

* Thirty-third Annual Report of the Local Government Board, 1903-4, 218 pages, with appendices 1-836, and charts.

scarce. The marked increase in the number of vagrants has been held to be due to (1) depression in trade, (2) close of the war, (3) exit of able-bodied inmates from workhouses, and (4) the treatment meted out to these people by the guardians in certain unions. It is fairly well proved that the guardians are sometimes themselves to blame for much of the vagrancy which exists, inasmuch as they have never systematically and generally exhausted the powers which they at present possess. The same difficulty is met with elsewhere. "The want of the uniform treatment which is so desirable," says Mr. Fleming, "is to be observed on the Bench as well as the Board of Guardians, and casuals soon learn to turn the leniency of the justices to the best advantage." Mr. Fleming also raises, in his report to the President of the Board, the interesting question as to why labour is scarce in rural districts alongside the increase of vagrants and casual labourers. He attributes this well-known condition, in part, to the fact that we are dealing with the first generation of a "well-educated" lower class, which finds the rural district too dull for its tastes, of too little earning value for its ambitions, and affording in its kinds of employment too little comfort for their standard of comfort. For example, we hear much of the requirements necessary in a milker, cleanliness and so forth. But one of the great difficulties in dairy farming is to obtain milkers of any kind; a milker has to be up before four o'clock in the morning seven days in the week all the year round. That is a hardship which the exacting milk consumer is liable to forget, and though the wages are not exceptionally low, the conditions are such that men who can obtain other employment do so.

Food Adulteration.

Probably the only other matter in the report of general interest to the medical profession is concerned with the question of food adulteration. The total number of samples of food analysed in 1903 was 78,097, showing an increase of more than 5,000 samples over 1902. There is still much to be desired in the way of uniformity of sampling in different districts, for whilst in some districts one sample is taken to every 233 persons, in other districts one is taken to every 900 or 1,000 persons. Penalties also vary, as do prosecutions. As a rule the penalties are far too low to exercise any deterrent effect on processes of adulteration, which is usually a remunerative practice. Milk, as in previous years, is by far the most common article sampled, and there is evidence in the report to show that, on the whole, milk sent to London is above standard, and that therefore the presumption is that adulteration of milk sold in the metropolis is due to the London vendors or contractors. On this account it is probable that the refusal of metropolitan magistrates to convict, unless there is a sufficient adulteration to reduce the quality of milk much below standard, may be responsible for the escape of many offenders. We should like to see heavier penalties for repeated offences, for by such means the vendor of "accidentally" poor milk would escape, and the regular and systematic defrauder would be heavily penalized. The report contains a full record of the examinations of the metropolitan water supply, and several interesting reports on the social question of the education and boarding-out of children under the Poor Law.

THE CAUSATION OF INSANITY.

We have already on more than one occasion[1] referred to the Fifty-eighth Report of the Commissioners in Lunacy dealing with the distribution, amount, and causation of lunacy in England and Wales in the year 1903; but the information it contains gives so much food for reflection that no excuse is needed for dealing with certain points not hitherto fully considered.

The Assigned Causes.

It is not proposed to discuss whether the steady increase of insane persons "reported to be under care, from 18.67 per 10,000 of population on January 1st, 1859, to 34.71 per 10 000 of population on January 1st, 1904, implies a real increase of insanity or a greater proportional use of asylums, or in part the operation of both of these factors. We content ourselves for the present with discussing the assigned causes of insanity given in Table XXII, Appendix A, of the report. This table shows the yearly average of assigned causes of insanity during the five years 1898-1902. The Commissioners are careful to point out that this return

is only approximately true; nor must it be forgotten that more than one antecedent may be present in a single case, rendering it often a matter of difficulty to distinguish between the predisposing conditions and the exciting cause of any given attack of mental derangement.

With this statement in view, we may next give the classification adopted by the Commissioners, except that we have lumped together such causes as sunstroke, puberty, fevers, etc., which were apparently responsible for only a small share of the total cases.

Proportion per Cent. of Assigned Causes of Insanity, based on the Average Annual Figures for the Five Years 1898-1902.

Causes of Insanity.	Male.	Female.
Moral		
Domestic trouble (including loss of relatives and friends)	3.8	8.6
Adverse circumstances (including business anxieties and pecuniary difficulties)	5.7	3.5
Mental anxiety and "worry" (not included under the above two heads) and overwork	5.7	5.9
Religious excitement	1.2	1.6
Love affairs (including seduction)	0.5	1.9
Fright and nervous shock	0.7	1.7
Physical.		
Intemperance in drink	22.8	9.5
,, sexual	0.9	0.5
Venereal disease	3.6	0.8
Self-abuse (sexual)	2.1	0.2
Sunstroke	1.5	0.1
Accident or injury	4.2	0.7
Parturition and the puerperal state	—	5.6
Change of life	—	5.4
Old age	7.1	8.2
Other bodily diseases or disorders	13.9	12.7
Previous attacks	16.1	22.6
Hereditary influence ascertained	18.6	24.4
Congenital defect ascertained	6.0	4.0
Unknown	17.2	15.4

In the preceding extract from Table XXII of the Commissioners' Report, the relative frequency of the different assigned causes is indicated. The caveat which the Commissioners themselves issue is obviously necessary. There has been no attempt in the final classification to place each case under a single heading. The totals "represent the entire number of instances in which the several causes (either alone or in combination with other causes) were stated to have produced the mental disorder," and one case may therefore appear under several heads. Under these circumstances it is difficult, and indeed impossible, to appraise the value of the percentages given in the preceding table. One thing is quite certain, that their value is relatively small, and must remain so until more accurate information is obtainable or a more scientific classification is adopted. It must be admitted that whatever system be adopted, the difficulties of obtaining accurate information in mental diseases are extremely great. A critical attitude is easy to maintain—constructive suggestions offer much greater difficulty.

Criticisms and Suggestions.

We venture, however, to make the following criticisms and suggestions.

First, truth is disguised, and what value the figures would otherwise possess is almost lost by the fact that general paralysis of the insane is classed with other forms of insanity. We are told that in 3.8 per cent. of the total male cases of insanity, venereal disease was an assigned cause. What would have been the proportion had the statistics for general paralysis been separately stated? To give the percentage of assigned causes for all forms of insanity together appears to be just as wise a procedure as it would be to give the proportion of total cases of cancer, enteric fever, typhus fever, and tuberculosis all lumped together, which are supposed to be due to injury, to infected milk or water, to personal infection, or to overcrowding.

Secondly, some of the items in the above table should clearly appear in separate tables. For instance, the information that 16.1 per cent. of the male and 22.6 per cent. of the female patients had suffered from previous attacks throws no light on the causation of the present attack, apart from the information which is lacking as to the form of insanity and the cause of the first attack. Similarly the information that in 18.6 per cent. of the male patients and 24.4 per cent. of the female patients hereditary influence was ascertained would have an appreciable value if the percentage were given for each form of insanity separately.

In the final issue it must be admitted that the statements of ascribed causes are in the main merely statements of ante-

[1] September 17th, p. 783; October 22nd, p. 1101.

cedents ascertained with more or less accuracy and completeness, and the ascribed causes, although antecedents, cannot be shown to have been invariable unconditional antecedents. There is no such thing as a simple cause followed by a simple effect. If we accept the definition of Mill, Herschell, and other logicians, that the cause of any phenomenon is the sum total of all its antecedents, and if we agree that it is the object of an etiological investigation to discriminate by careful analysis between the relevant and the irrelevant, we have a problem which in the case of insanity is one of the most complex that can be attacked.

This being so, it is supremely desirable that each form of insanity should be separately treated in a statistical statement; that cases in which one assigned cause only is discovered, should be carefully separated from those in which the assigned causes are multiple; and that in each form of insanity careful classification of cases according to age and sex should be given.

Alcohol and the Causation of Insanity.

In the last annual report of the Commissioners in Lunacy, "intemperance in drink" is stated to have been the assigned predisposing cause of 220 male and 88 female, the assigned exciting cause of 1,812 male and 795 female, and as either exciting or predisposing cause (where these could not be distinguished) of 217 male and 92 female cases of insanity occurring during the five years 1898-1902 in county and borough asylums, etc. Otherwise stated, this means that, in 22.8 per cent. of the men and in 9.5 per cent. of women admitted to these institutions, alcoholism was the assigned cause of insanity. Bearing in mind the precautions which are properly given by the Commissioners as to drawing inferences from assigned causes, it cannot be considered satisfactory that there is so little trustworthy information as to the alcoholic history of insane patients. Nor can a system of classification be considered satisfactory which enables Dr. Clouston, on the strength of the statistics of the Edinburgh Asylum for 1903 to conclude that in 42.3 per cent. of the cases of insanity excess in alcohol was assigned as the cause of their disease, while in the London County Council Asylums 21 per cent. of the male cases of insanity, and in the Montrose Asylum, 8 per cent. are said to be due to alcoholism. Such divergences as are here represented cannot reasonably be ascribed to corresponding differences in the amount of intemperance in Montrose, London, and Edinburgh. It is evident that there has been some difference of system in ascertaining the antecedents of cases of insanity, and that in the minds of some medical superintendents alcoholism looms more largely as a possible cause of insanity than in that of others.

The subject is one of too great importance to be left in its present uncertainty. There is a growing feeling of uneasiness among the public that the facts as to alcoholism are understated in many of the official tables of insanity, and that Dr. Clouston's figures not improbably represent a somewhat close approximation to the facts. When we remember that alcohol notoriously causes nervous degeneration; that chronic indulgence stopping short of intoxication is more apt to produce deleterious effects on the nerve centres than occasional drunkenness; that, furthermore, although drunkenness is generally admitted to have declined, the amount of alcohol consumed per head of population has not declined, there is strong *a priori* ground for suspecting that this steady excessive consumption of alcohol must be responsible for serious mischief to the brains as well as to the other organs of the population. The official statistics are extremely unsatisfactory, and they might at once be made more satisfactory than they now are in two directions: First, by classifying cases of insanity—each form of insanity being separately tabulated—according to the previous occupation of the patient; this would soon reveal whether any form of insanity was excessive—in the same way as are gout, cirrhosis of the liver, phthisis, etc., among publicans, draymen, and the like. Secondly, the cases of insanity among life teetotallers and among those who had been teetotallers for, say, three to five years before becoming insane should be tabulated separately. The remarkable differences which a similar system has shown in the experience of the United Kingdom Temperance Institution as to longevity makes it not improbable that similar differences might be shown by a similar classification of cases of insanity.

It may be urged that this involves heavy additional work for the already overburdened medical officers of asylums. With properly-arranged schedules and systematic methods of inquiry the work need not be much more than at present. Even if the increase were large, however, information thus obtainable would possess so much value, as throwing light on one of the most serious social problems of the day, that the authorities responsible for the administration of lunatic asylums ought to have no hesitation in incurring the necessary expenditure.

GENERAL MEDICAL COUNCIL.

NOTES.

The eightieth session of the General Medical Council began on Tuesday, November 22nd, when the President delivered the customary address, and the Council, after sitting for two hours, adjourned in order to allow time for certain committees to meet to complete their reports.

The President's Address as usual foreshadowed the work of the Council, and it would seem that it ought to be possible to conclude the session at an early date; in fact the most important announcement made by the President was that it was his intention to resign the position at the close of this session, though retaining for the present his seat upon the Council as representative of the University of Edinburgh, of which he is Principal. Sir William Turner has been a courteous and most efficient Chairman, and his retirement will be a matter of regret to all the members of the Council. It is, we believe, the first time that the President of the Council has reverted to the status of an ordinary member.

A Mace.—Sir William Turner, in announcing his resignation of the chair, took occasion to present to the Council a handsome silver gilt mace. A vote of thanks to him for this gift was proposed and seconded in graceful terms by the two treasurers, Dr. Pye-Smith and Mr. Tomes, and carried by acclamation. The Council will, we understand, entertain the retiring President at dinner on November 26th.

Returns of Examinations.—A motion by Mr. George Brown to refer the tabulated returns of the examinations admitting to the Royal Naval and Army Medical Examinations to the Examination Committee for report was the cause of some cryptic utterances. Mr. Brown held in his hand a paper the contents of which he wished to refer also to the Committee, and the purport of which he was about to disclose to the Council, when he was stopped on a point of order. From Scottish and Irish members came protests against the disclosure of the contents of this mysterious document; they asserted that if Mr. Brown disclosed the nature of the propositions which it contained they must discuss them there and then at length; while an English member plaintively protested that he had not the smallest idea what it was all about, and could not vote intelligently upon Mr. Brown's motion unless he knew. The document was not read, but it was, we are told, that part of the recent annual report of the Royal College of Surgeons of England in which evidence was advanced in support of the proposition that the holders of the diplomas of the English Conjoint Board were successful in the examination for admission to the services in far larger proportion than those holding Scottish and Irish diplomas.

"Bona-fide" Medical Students.—An important question was raised as to the meaning to be attached to the phrase, "the proper training and instruction of bona-fide medical students as pupils," occurring in the notice regarding the employment of unqualified persons as assistants or otherwise issued by the Council on November 24th, 1897. Mr. Jackson said that he was aware of cases in which unqualified assistants had been employed for a long period of years on the allegation that they were medical pupils. A resolution of the Council passed in 1893 relating to the fifth year of medical study directed that it should be devoted to clinical work, and recognized that six months of the period might be passed as a pupil to a registered practitioner possessing opportunities of imparting practical knowledge satisfactorily to the medical authorities. Having rehearsed this resolution, the President laid it down that should the question of the interpretation of the phrase "bona-fide medical students as pupils" arise in a case of alleged covering, it would rest with the person accused to prove that the assistant employed was in fact a bona-fide medical student undergoing training and instruction.

Teaching of Anatomy and Operative Surgery.—On the motion of Sir Victor Horsley, a Committee to inquire into the effect of the provisions of the Anatomy Act and other statutes upon the teaching of anatomy and of practical or operative surgery in England and Scotland was appointed. It is, perhaps, unfortunate that a communication on this subject, which was alluded to by the President in his address as having been received from the War Office, was marked "Confidential," so that the discussion which preceded the appointment of this Committee had of necessity to be conducted *in camerâ*.

Penal Cases.—The Council was called upon to exercise its discretionary powers under Section XXIX of the Act of 1858 as to whether the names of two practitioners who had been convicted of felony or misdemeanour should be removed from the *Medical Register*. In the first case the convicted person had pleaded guilty. Although it appeared that the judge had advised the grand jury to throw the bill out they did not do so, and he was sentenced to a period of confinement in the second division. It was abundantly clear that he had not been responsible for his actions at the time, and had even requested his wife, when he felt himself to be losing self-control, to get an attendant. This, however, was not done, and he wounded his own child. The Council, after some deliberation, decided not to remove his name. In the other case a practitioner had in numerous instances obtained money for vaccinations which had never been performed, and had been convicted on this charge. The Council directed the Registrar to expunge his name from the *Register*.

The Site.—The Council then considered *in camera* a report from the Office Site Committee. Some disapprobation of the discussion of this subject being taken *in camera* has been expressed in our correspondence columns, but we may remind our correspondents that whilst incomplete negotiations respecting property are being discussed the giving of full publicity to all the *pros* and *cons* is not the way to conduct the business to a satisfactory conclusion.

Arbitration.—The representative position of the Council was recognized by an order issued by a Master of the High Court of Justice requesting that it would appoint an arbitrator in a case turning upon disputed medical fees, and Dr. Glover, a former direct representative upon the Council, was nominated for the office.

Records of Registration.—A report was presented by the Registrar, in which a more convenient method of keeping the entire record relating to the registration of each person in a readily accessible form was advocated. This has been carried out in the case of the *Dentists' Register*, but the more extensive nature of the work would render additional clerical assistance indispensable in applying it to the *Medical Register*, and the question of expense, therefore, became important. The *Dentists' Register* had been dealt with by the ordinary office staff, but this would be impossible in the case of the *Medical Register*, and additional storage room would have to be provided for the docketed material.

Hospital Abuse by patients able to pay a moderate fee was the subject of a complaint laid before the Executive Committee; and although it was not considered to lie within the functions of the Council to make a representation on the matter, the issue raised is too important to be passed over. In this instance the London Hospital was especially complained of, and the measures which that institution was prepared to take did not altogether meet with the approval of the East London Medical Society. The hospital admitted the evil, and offered to co-operate with the Jewish Board of Guardians, and to devote £100 a year to pay an almoner, in co-operation with the Charity Organization Society. No exception could be taken to the first of these measures, and as to the second it is well known that the almoners appointed by the Charity Organization Society have done and are doing most useful work in this direction at several other London hospitals. An inquiry to be made by the Hospital Secretary on the day after admission of all in-patients was, it was thought, on account of the large numbers, hardly likely to be efficient in practice, whilst strong objection was taken to the proposal that local practitioners should attend the out-patients' rooms and see the patients for themselves, and should also inspect the book of addresses of out-patients. This would be imposing upon them detective duties which they had neither the time nor the inclination to undertake. That the evil is not confined to the metropolis is indicated by a similar complaint emanating from Birmingham. Exception was also taken to the practice in vogue at the London and some other hospitals, of making a small charge for medicines and for dressings, which, it was alleged, led the patients to think that they were not the recipients of any form of charity.

Crown Consultants.—Another communication of general interest, which the Executive did not deem to fall within their province of action, had relation to the position of the medical practitioner where he suspected, but was not sure of, foul play in cases which he was attending. It was suggested that he might be relieved of the onus and risk of giving voice to his suspicions by the institution in numerous districts of "Crown consultants," appointed and paid by the Home Office, who could be called in and would presumably enjoy the protection of privilege in consequence of their official status. This matter is also to be laid before the British Medical Association, but it may be doubted whether the proposal in its present form is quite practicable, even supposing that the Home Office viewed it with favour.

CONTRACT MEDICAL PRACTICE.

NOTICE AS TO DISTRICTS IN WHICH DISPUTES EXIST.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page S7.

DEDUCTIONS BY EMPLOYERS: A REQUEST FOR INFORMATION.

PRACTITIONER writes: My attention has recently been directed to the retention by employers of part of the wages of their workmen to meet medical fees. At present this is done by arrangement between the employers and workmen. It is no doubt in the interests of employers to see their employés receive proper medical skill and attendance, so that their recovery and return to work may be effected as speedily as possible. It is equally in the interest of the workmen to have the assurance of medical assistance, with the knowledge that no bills will be subsequently rendered. The small weekly deductions (3d. per week) by the employers are not much felt all over the country. The employers in many instances decline to make deductions for medical fees for any other than their own medical attendant, or it may be some special medical friend or friend of their own. The result is that these favoured few have a complete monopoly of the medical practice in the district. This is particularly the case in connexion with practice in colliery districts. Where the miners desire another medical attendant, and that a deduction should be made for his fees, the coalowners refuse to give effect to the miners' wishes, and in effect no choice is left to them outside the nominee of their employer.

It is long since monopolies of this kind were rendered illegal by Act of Parliament in regard to the legal profession, and I think something of the same kind should be done in the medical profession. Is it too much to ask the General Medical Council to take up the matter? A short amendment of the Truck Act would put the matter right. If it is desired to continue the legality of deductions from wages for medical attendance, then it should be compulsory where this is done that it should be applied to all the medical men in the district whose services are desired by the workmen.

I would be glad to hear of the experience of other members of the profession who have found a monopoly of this kind interfering with their practice.

PHYSICALLY DEFECTIVE CHILDREN.—On November 18th Mr. J. Williams Benn, M.P., Chairman of the London County Council, formally opened the Forster School for Physically Defective Children in Hornsey Road, Islington. The school is called after Mr. W. E. Forster, who, thirty-four years ago, brought the Education Bill into the House of Commons, and Mrs. Humphry Ward, in seconding the vote of thanks, proposed by Mr. Cohen, M.P., to the London County Council for providing this school at a cost of £4,433 (exclusive of the cost of the site, which was £4,200), said that Mr. Forster, her uncle, would have rejoiced had he lived to see the developments which had taken place under the late School Board, and were continuing under the present County Council. The Hon. Maud Lawrence, in seconding a vote of thanks to Mr. Benn, expressed the opinion that the success of the movement was due to the hard work and loyalty of the teachers of these special schools, and stated that during the past year 70,000 dinners had been provided by the committee which Mrs. Humphry Ward had founded. The parents were charged 2d. for each meal, and no difficulty was found in collecting this money.

MEDICAL NEWS.

Medical Magistrate.—Dr. E. Boys Russell, of Lismore, has been appointed to the Commission of the Peace for the county of Waterford.

The Royal Hospital for Diseases of the Chest, City Road, has been promised a donation of £2,000 towards the fund for a nurse's home and sanitary tower, provided that the balance required of £3,000 is subscribed by the end of next June.

The first annual dinner of the United Hospitals Clinical School, University of Liverpool, will take place at the Adelphi Hotel, Liverpool, on Saturday, December 3rd, at 7.15 p.m.

The sixth annual dinner of the Medical Graduates' College and Polyclinic will be held at the Trocadero Restaurant, London, W., on Wednesday, December 7th, when the chair will be taken by Dr. C. Theodore Williams, at 7 p.m. Ladies are admissible as guests. Further particulars can be obtained from Mr. Hayward Pinch, F.R.C.S., at the College, 22, Chenies Street, W.C.

A Monument of Human Folly.—It is proposed to erect a monument to Father Kneipp in Vienna, and a site in the City Park has been selected for the purpose. It is said that the Municipality has promised a grant in furtherance of the scheme. It only remains for the enlightened administrators of the Imperial-Royal City to vote funds for statues to Hahnemann, Mesmer, Mother Eddy, and "Profit" Dowie.

The first scientific meeting of the Zoological Society of London for the present session was held on November 15th, when a number of specimens were shown and described. The next meeting will be held on Tuesday next, at 8.30 p.m., at 3, Hanover Square, when, among other papers, a note will be read by Captain Richard Crawshay on the Field Natural History of the Lion.

A Roving Medical Commission.—A Japanese imperial commission which has been studying the Health Departments of the principal cities of Europe is now in the United States. The members of the Commission are Professors Tanba, of the Department of Pharmacy; Takamine, of the Department of Chemistry; and Mortora, of the Department of Psychology, of the Imperial University of Tokio; and Dr. Sato, Chief Surgeon of the Hospital.

Defective and Epileptic Children.—The Board of Education has issued a circular directing the attention of the local education authorities for Part III (Elementary Education) of the Education Act, 1902, to their powers as school authorities and to the provisions of the revised regulations dated July 11th, 1904. The powers of such authorities to provide for defective and epileptic children are set out, and particulars are given as to the arrangements which may be made between school authorities, and as to the charges to parents.

At a meeting of the Council of the Metropolitan Hospital Sunday Fund on November 22nd, a report was put in showing that the total collection for the year amounted to £63,054 19s. 10d., this sum including Mr. Herring's percentage contribution of nearly £12 000. Regret was expressed that the appeal made to the clergy in the home counties to support the fund more energetically had not been met, although these areas furnish about one-quarter of all the patients treated by the metropolitan hospitals.

On November 19th Major Hautdeville Richardson gave a demonstration of the working of his ambulance dogs on Wimbledon Common. The dogs are intended to accompany the stretcher-bearer parties, and work at a distance of about forty yards. They carry triangular bandages, four in each side of a waterproof canvas saddle bag; as could be seen on Saturday, they are trained to seek out the wounded and to attract the attention of the stretcher bearers. The system has proved so successful in many Continental armies that we propose to publish a fuller account in an early issue.

On November 15th a meeting organized by the Infants' Health Association was held at the Midland Hotel to promote the establishment of an infant milk dépôt in St. Pancras. The Earl of Mansfield was in the chair, and among those who addressed the meeting were Mr. E. R. P. Moon, M.P. for St. Pancras (North), Mrs. Garrett Anderson, Mr. W. H. Dickinson, Sir Lauder Brunton and Dr. Sandwith. A resolution recommending the establishment of an infants' milk dépôt was adopted, and Dr. Vincent, who spoke subsequently, indicated that the milk used would probably be modified on the plan recommended by Dr. Rotch, of Harvard University (British Medical Journal in 1902, vol. ii, p. 653).

The new specimens which have been added to the museum of University College, London, during the past year, upwards of 120 in number, are now on view. They comprise a considerable number of preparations illustrating diseases of the kidney and of the breast. The series includes also the following specimens of interest:—Hypertrophic stenosis of the pylorus in an infant, primary sarcoma of the liver of a child, haemorrhagic pancreatitis, intestinal obstruction caused by an adherent appendix epiploïca, fibroma of the round ligament of the uterus, deciduoma malignum, unruptured early tubal gestation removed by operation, and a specimen showing the left superior pulmonary vein terminating in the left innominate vein.

The King's Hospital Fund.—The Council of King Edward's Hospital Fund is anxious to raise the permanent income of the fund to £50,000 a year, of which sum it at present falls short by some £14,000. Last spring His Royal Highness the Prince of Wales announced that an anonymous donor had offered to place at the disposal of the fund an amount which would produce £4,600 per annum, on condition that by December 31st this year a further amount, which would produce the balance of £9,400, were collected. The Chairman of the Executive Committee has written to draw attention to this offer, in hope that the public will come forward and meet its terms, so that this great opportunity of placing the fund in a favourable position may not be lost. The hospitals, it is estimated, require an aggregate subvention from the fund of £150 000 annually. Last year £100,000 were distributed, but only by drawing nearly £19,000 from capital. This year, however, only £80,000 can be distributed, and, according to a statement last week by Sir Trevor Lawrence, one of the Committee of Distribution, at the Tallow Chandlers' dinner, 108 hospitals, large and small, have applied for assistance.

National Dental Hospital.—The Students' Annual Dinner of the National Dental Hospital was held at the Trocadero Restaurant, London, on November 19th. The chair was taken by Mr. Andrew Clark who, in proposing the loyal toasts, remarked that the President of the hospital was the Prince of Wales. In proposing the toast of "The National Dental Hospital and College," the Chairman explained how the hospital could lay claim to the title of "National," and proceeded to show that the dentist of the present time cannot be a mere mechanic, but must receive instruction in general medicine and surgery before receiving a necessary qualification to practise. He pointed out how the Government had at last realized the importance of good teeth, and referred to the recent order of the Army Council in regard to the supply of artificial teeth to recruits and soldiers. The army authorities were about to appoint dentists for the soldiers, and the Chairman concluded by referring to that part of the report of the Physical Deterioration Committee concerning the connexion the teeth had with general physical deterioration. The toast was replied to by Mr. Spokes, the Dean, who stated that there were so many students at the hospital from all parts of the world that it would claim to be the National Dental Hospital in fact as well as name. The principal prize-winner, as they would hear later, was a New Zealander. After the speech delivered by Mr. Spokes the prizes were distributed, Mr. G. H. Parkinson of New Zealand receiving the medals for dental anatomy, for theoretical and practical dental mechanics, for operative dental surgery, and for dental histology, and the Rymer medal. Professor A. S. Underwood, of King's College, proposed the toast of "The Past and Present Students," which was responded to by Mr. Rose and Mr. Cooke. Mr. Harry Rose submitted the toast of "The Visitors," which was acknowledged by Professor Spencer, who commented with indignation on the report he had read in the daily press of a judge who was credited with having declared that "it was not unknown by many people that they came away from a dentist's rooms with a great number of unnecessary holes made in their teeth and gums." He considered that such a charge against an honourable profession was a calumny. Mr. Goadby proposed "The Health of the Chairman," and thanked him for the assistance he had given in establishing the dental section at the last meeting of the British Medical Association at Oxford. After the Chairman had suitably replied the proceedings terminated.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1904.

SUBSCRIPTIONS to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, NOVEMBER 26TH, 1904.

TRYPANOSOMIASIS.

THE subject of trypanosomiasis is daily becoming more important and interesting on account, not only of its purely medical aspects, but also of the economic problems which its ravages have raised and are raising in so many different parts of the world. It is only necessary to go to the recent history of Mauritius and of the Philippine Islands to find examples of what those problems really mean. The chance introduction of some surra-infected animals from India into the former area started the malady; the disease was very virulent and spread with extraordinary rapidity, so that had not Sir Charles Bruce, the Governor, at an enormous cost supplied mechanical traction to take the place of that lost by the death of all draft animals, the island would have been completely ruined. The development of many parts of Africa must depend largely on the presence or absence of trypanosomes in the horses and cattle of those areas. The great practical importance and scientific interest of the subject is fully appreciated by Professor Koch, who, in the address published elsewhere in this issue, has advanced many interesting observations which should help to clear up some doubtful points regarding trypanosomes and the diseases which they produce.

The questions of classification and immunity raised are of considerable importance and require careful study. Laveran and Mesnil, in their recently-published work on trypanosomes, contend that the individual trypanosomes found in the different diseases are specifically distinct, and lay considerable stress on this fact. Koch, on the other hand, does not believe that their conclusions are sound. In the present state of knowledge he would divide the trypanosomes into two groups: first, a group containing the trypanosome of Lewis found in rats and the trypanosome of Theiler found in cattle; and secondly a group containing tsetse disease, surra, mal de Caderas, and trypanosomiasis of man. The members of the first group can be distinguished by their morphological characters, and their want of virulence, and by the fact that other domestic animals are insusceptible to them. Those of the second group have characteristics in common: they cannot be distinguished morphologically from each other, and are pathogenic to the same experimental animals; they vary in size and form according to the animal into which they are inoculated, and their virulence varies greatly. Musgrave and Clegg in the Philippines go further even than Koch in his theory that surra and tsetse disease are the same and include mal de Caderas as well. The uncertainty as regards the identity of these protozoal organisms is not likely to be solved in a satisfactory manner until the life-history of each of them has been thoroughly worked out. The physiological test of virulence, or want of virulence, is not a sufficiently reliable basis on which to found important conclusions in this respect. The type of work so successfully initiated by Schaudinn should be continued and carried on in the thorough and scientific manner in which it was initiated; when this is done, then we may expect to be able to diagnose definitely the various trypanosomes and similar protozoal organisms, and to say that such-and-such an organism produces one disease, another another disease, while a third is non-pathogenic. Meanwhile, the simple classification suggested by Koch in his address will be useful, for it simplifies matters very considerably; the forms recently found in Somaliland, in Algiers, and by Balfour in the Soudan (see p. 1455) in mules and cattle must be looked upon as varieties of ordinary tsetse-fly disease.

The immunization of animals by inoculation of mild strains of trypanosomes Koch shows clearly will not do in practice. Though the animals may apparently become insusceptible to the disease, they may still contain parasites in small numbers in the blood and thus be capable of acting as permanent sources of infection.

Both the prophylaxis and the treatment of these diseases are still in their infancy; it is possible, as Koch hopes, that some drug may eventually be found that will act on the trypanosome as quinine acts on the malarial parasite, and if this aspiration should be fulfilled many lives now lost in Africa will be preserved, and millions of money lost to cattle farmers and breeders will be saved.

BIOLOGICAL TREATMENT OF SEWAGE.

IN the case of a branch of applied science which is developing so rapidly as that which has to do with biological purification of sewage, it is well from time to time to take stock of the progress made, to consider the lines upon which development has taken place, and t make some attempt to understand the course of future developments.

The whole subject of the biological purification of sewage is comparatively new. Based upon the bacteriological work of Pasteur, Warington, and Winogradsky, it may be said to have reached the practical stage with the construction of experimental works by the Massachusetts Board of Health, by Dibdin at Barking, by Scott Moncrieff at Caterham, by Cameron at Exeter, and by Ducat at Hendon, and all subsequent developments have been only modifications of the processes they devised. The relative merit of these processes is still undecided.

It was at first contended that the purification in the contact beds of Dibdin was accompanied by total destruction of sludge, that bugbear of sewage purification. It is now generally conceded that even with the provision of considerable detritus tanks there is a danger of the first contact beds becoming silted up by the accumulation of undigested solids, and that some preliminary treatment of the sewage is necessary.[1] The experiments with contact beds have been chiefly directed to ascertaining the best kind and most suitable size of material to use in their construction, the best method of applying the sewage to them, and the most effective means of preventing the accumulation of solid matters within their interstices. All sorts of material have been used for filling the beds, and the general

[1] Evidence to support this view will be found in the reports of the experiments carried on at Leeds, Manchester, Sutton, and Sheffield.

view seems now to be that the results are little influenced by the kind of material, but depend upon the amount of surface afforded for the growth of the purifying organisms. Hard clinkers, slag from blast furnaces, broken stone and brick, and coal have all been found to give good results. Mr. Dibdin has recently advocated[2] the use of tiles and slates as a filling material, and beds thus constructed have been in operation for some time at Devizes. Coke, which at first was chiefly used, has been found to be liable to disintegration. Opinions still differ widely as to the size and grading of the material used, but the general practice appears now to be to use large material for the first contact beds and small material for the second.

Very many methods of applying the sewage to the contact beds have been tried, but it seems immaterial whether the bed is filled from one point or over the whole surface so long as provision is made for preventing the suspended matters from penetrating into the body of the bed. The method adopted at Manchester, where the sewage enters the bed over a semicircular weir, and is conveyed over the surface in channels formed of finely-divided clinkers, which serve to retain the suspended matters, seems the best yet devised. Great ingenuity has been shown in the invention of apparatus for automatically filling and discharging contact beds, and there is great difficulty in making choice amongst the patent arrangements. In larger works, where men are constantly employed, it has been found best to do away with all automatic apparatus, and to fill and empty the beds by hand.

Though there are not wanting those who consider contact beds a failure, this opinion cannot be accepted in view of the excellent results now being obtained at so many places, and of the huge works on these lines now being carried out at Manchester, Halifax, Sheffield, and other large towns. Contact beds have been found to afford a very effective method of sewage purification, and there has not been much change in their construction or method of use since Dibdin's results were first published. There is still wanting—and this the future will supply—definite information as to the length of life of contact beds, suitably guarded against the admission of suspended matter; but sufficient information has been accumulated to show that the beds need to be renewed only at intervals of a considerable number of years.

The methods adopted by Scott Moncrieff have not been very generally followed, probably because similar results can be obtained in a simpler manner by the use of the septic tank of Cameron, in place of Scott Moncrieff's cultivation tank, in which the sewage is passed upwards through a medium, and by the percolating filters of Ducat, Whittaker, and others, in place of nitrifying trays. His work, however, has had a great influence in advancing our knowledge of the subject.

The septic tank, first advocated by Cameron of Exeter, in which the sewage is purposely allowed to putrefy under the action of anaërobic organisms, has undergone little change since it was introduced. It is now, however, generally held that an open tank gives as good results as one sealed from the air, while it is free from the risk of explosion of gases which has been proved to be a very real danger. A great many septic tanks have now been constructed, and complaints of the nuisance arising from them are becoming somewhat frequent. This nuisance is caused by offensive smells, not so much from the tanks themselves as from the tank effluents discharged into the open air.

It is now fairly well recognized that the claim made for the septic tank, that it completely digested the sewage sludge, must be modified, and that although some proportion of the sludge becomes digested and dissolved there remains a larger proportion to be dealt with as sludge in the tanks or passed on for further treatment. The belief seems indeed to be gaining ground that the use of septic tanks is a mistake, better effluents resulting from simple sedimentation of the sewage without allowing putrefaction to occur, and that the sludge thus produced is very little greater in amount, while the offensive smells from the tanks and effluents are prevented. Experiments at Sheffield and Leeds bear this out. One experiment at Leeds showed very clearly that the action of anaërobic germs is by no means a necessary part of the biological purification of sewerage; the sewage was carefully strained to free it of the coarser suspended solids, passed immediately, without sedimentation, through a percolating filter, and finally strained through sand. Excellent effluents were produced, although the whole operation, from the arrival of the sewage at the works to its discharge in a purified condition, only took some twenty minutes.

The septic tank effluent requires very thorough aëration in its after-treatment, and there is a large amount of evidence that it is not suitable for direct treatment upon land. Such was the experience for instance at Leicester.

Of late great attention has been paid to the development of the sprinkling, trickling, or percolating filter, as it is variously called; the first was that constructed by Colonel Ducat at Hendon, and the results he obtained have never been surpassed. The manner in which he employed this method of treatment, however, has not been followed closely by any of the later experimenters; for instance, he applied the sewage to the filter in its crude state, but others have found it necessary to use some preliminary means for the removal of suspended solids—as he himself, in fact, found necessary in the case of other sewage. Few have adopted his method of distribution of the sewage by means of tipplers, some form of rotating sprinkler or spraying apparatus being now almost invariably used. Nor has any one followed his plan of covering over the filter and supplying it with warmed air; for, rather contrary to expectation, it has been found by experience that even severe cold does not materially interfere with the processes of purification by this method.[3] Experiments with different materials for the construction of these filters have gone through the same stages, and have yielded practically the same results as in the case of contact beds. As the efficiency of a percolating filter depends to a very great extent upon the perfect distribution of the sewage upon it, great attention has been paid to different methods of accomplishing this object. The apparatus generally adopted has been the revolving sprinkler, driven by a head of the sewage, but this has not been found always to work satisfactorily, partly because the flow of sewage sometimes becomes too small to drive the sprinkler, or in the case of sprinklers of large size too great a flow of sewage is required, and partly because of interference by wind. Attempts have been made to overcome these difficulties by the use

[2] Paper read before the Yorkshire Section of the Society of Chemical Industry.

[3] It must be remembered, however, that never since the general adoption of the biological methods have they been subjected to the test of a severe winter.

of intermittently discharging tanks, but the method has the disadvantage of giving at intervals a too rapid flow through the filters, while between the periods of discharge the filters are unnecessarily idle. For these reasons attention has lately been drawn to methods of applying extraneous motive power to the sprinklers, but they have scarcely yet got beyond the experimental stage. Much of the apparatus of this kind devised up to the present seems too cumbrous and costly for general adoption. Perhaps the best idea as yet put forward is the proposal at Huddersfield to support the outer end of the sprinkler on a live rail and to drive it by electrical power, produced in a refuse destructor in which the sewage sludge is to be consumed. In some cases the distribution has been affected by fixed pipes, with nozzles or openings from which the sewage is discharged in sprays; this method, though very effective, can only be applied in the few places where a considerable head of sewage can be obtained. Occasionally special means have been advocated for increasing the amount of air supplied to these filters, as was probably first suggested by Lowcock, but it has been found that adequate aëration is obtained by raising the bottom of the filter and providing sufficient openings in the walls, or as is now the more general practice, constructing the filters without retaining walls. Here, again, little advance has been made upon the drain-pipe walls of Colonel Ducat.

One difficulty to be faced in the working of percolating filters, as, indeed, also of contact beds, is the presence of considerable amounts of refractory solids which must either accumulate in the body of the filter or be washed out in the effluent. In some cases the filters have been constructed with a superficial layer of finely-divided material, with the view of retaining all suspended solids on the surface, to prevent the choking of the body of the filter. The method, however, more generally adopted is to use a coarser material and allow the suspended matters to be washed through by the effluent, and afterwards to remove them by means of small settling tanks or rapid straining filters. One great advantage in this method is that these solids in passing through the body of the filter become much less offensive and less liable to putrefaction.

While much experience has been gained in the biological purification of sewage there is still much to learn. To the ingenuity of the engineer we may look for many further developments in the construction of filter beds and their subsidiary apparatus, while we have scarcely yet begun to understand the chemical and physical reactions that take place in the sewage during the process.

COLLIERY CONTRACTS IN THE NORTH OF ENGLAND.

In the SUPPLEMENT this week (page 192) will be found a circular letter issued by the North of England Branch of the British Medical Association inviting all medical men resident in the area of that Branch, whether members of the Association or not, to attend a meeting of the profession at the Library, Newcastle Infirmary, on Wednesday next, at 3.30 p.m. The business of the meeting will be to consider the present attitude of the Miners' Union towards the medical profession and its demand for a reduction in the contract rate of payment to colliery surgeons. The grounds upon which the demand is made and resisted are fully set out in the documents published in the SUPPLEMENT, and we would invite all our readers to study them. They have a special interest for those who practise in the colliery districts of the North of England, but they have an importance for every member of the profession, for what affects one sooner or later affects all, directly or indirectly. The flimsiness of some of the arguments put forward on behalf of the miners shows plainly the essential weakness of their case. We hope that the unanimity of the profession in the districts affected will convince the miners of the injustice of their proposals, and that they will see the impolicy of precipitating a conflict which the profession has taken every honourable means to avoid.

HOSPITAL REFORM.

A CORRESPONDENT in the South of England sends us particulars of two cases of hospital abuse which have recently come under his notice. In the one case a well-to-do man consulted him with regard to a large glandular abscess. Our correspondent recommended an operation, and arranged to visit the patient's house the next day accompanied by an anaesthetist: early that morning, however, he received an intimation that the patient had gone to a hospital in a town at a little distance. In the second case a woman suffering from eczema, the wife of another well-to-do man, consulted our correspondent, who prescribed for her, and made an appointment to see her again in three days' time; before this, however, he received a message to the effect that the patient was going to London to a skin hospital. Our correspondent states that he is a position to assert that both these patients could easily have afforded to pay not only his fees, but those of a specialist, should a second opinion have been considered necessary. The one has been operated on and kept in hospital without payment, the other will receive treatment either free or for a nominal fee. Our correspondent says that he can see no remedy for such incidents, but we hope that this pessimistic view is mistaken. No charitable hospital would admit that it was part of its duty to accept well-to-do patients for gratuitous treatment, and many, probably the majority, have rules which, if they were properly enforced, would prevent such abuses. We quite realize that it is an invidious duty for an individual to communicate formally with the officials of a hospital when a case of abuse comes to his knowledge, but a Division of the British Medical Association might, we are persuaded, properly take action. A record might be kept for a short time of cases coming to the knowledge of members of the Division in which a hospital had been abused. The Division would be in a position to make a collective representation to the Board of Management, and we are persuaded that such a representation would receive careful consideration. We do not believe that the individual members of the managing committees of hospitals desire such abuses to continue, but very often they have a fear of offending their subscribers. We do not believe, however, that the subscribers desire the hospital to which they contribute to be abused; the individual subscriber may resent the refusal of a case recommended by him, but collectively they would take the opposite view. It must be the policy of the medical profession, therefore, to develop a healthy opinion among the supporters of hospitals upon this subject, and we believe that action taken by the Divisions of the Association on the lines we have ventured to suggest would help to cultivate this opinion.

THE LONDON COUNTY PUBLIC HEALTH DEPARTMENT.

CERTAIN changes have just been made in the constitution of the Public Health Department of the London County Council. Hitherto it has consisted of Sir Shirley Murphy, County Medical Officer; of Dr. Hamer and Dr. C. W. F. Young, assistants to the Medical Officer, together with various clerks and inspectors, about thirty in all. At the last meeting of the Council before the recess the whole of the staff connected with the medical work of the late School Board was transferred to the Public Health Department. Dr. Kerr, hitherto medical officer of the Board, will in future hold the position of Medical Officer (Education) and Dr. Hamer that of Medical Officer (General Purposes). The Public Health Department of

the London County Council will thus in future consist of Sir Shirley Murphy (Principal Medical Officer), with two sub-departments officered respectively by Dr. Hamer, Medical Officer (General Purposes) and an assistant, and by Dr. Kerr, Medical Officer (Education), and Dr. Thomas as an assistant, together with the various clerks and inspectors. Dr. Young was recently appointed Medical Officer to the Middlesex County Council.

VAGRANCY AND DISEASE.

THE conference on vagrancy in relation to infectious disease, to which reference was made a fortnight ago in an article on the small-pox epidemic, was attended by delegates from fifty-six county boroughs, twenty-six metropolitan boroughs, and twenty-nine county councils, or from one hundred and eleven in all of the great local parliaments of the country. The opinions expressed, therefore, in the form of resolutions may be taken as equally representative and authoritative. The first of them was to the effect that the conference recognized the increase in habitual vagrancy as a cause of widespread and disastrous consequences to the public health, and that the more stringent measures necessary to deal with vagrancy in this relation could be made possible only by conferring on local authorities, including sanitary authorities, Boards of Guardians, and magistrates, more power than they at present possess. The second and third resolutions indicated the nature of the powers sought. These are power to detain and isolate any vagrant found wandering in a public place if it can reasonably be suspected that he is liable to convey infectious disease. In the case, moreover, of vagrants who have been exposed to the infection of small-pox, either in a casual ward or in a common lodging-house, it was resolved that the local authority should have power to enforce vaccination or revaccination, and to pay compensation in respect of any consequent loss of time. A further resolution of the same general nature favoured the extension of such powers as port authorities already possess in the way of preventing the uncontrolled landing from ships of persons who are either suffering from small pox or who have been recently exposed to its infection. It was resolved also that the making of false statements, or the withholding of information about small-pox, should be made an offence. The final resolution, with regard to fresh powers, advocated legal authority for the precautions which many authorities already contrive, in one way or another, to carry out with regard to the medical examination of the inmates of casual wards and of common lodging houses and the cleansing and disinfecting of their clothes and persons. The opinions thus expressed by the representatives of authorities, which are continually brought face to face with the practical difficulties which the present state of the law creates, ought to have great weight with the Local Government Board and with Parliament. Unfortunately, however, we cannot be too sanguine that this will be the case, for we believe we are correct in saying that it is nearly ten years since a similar conference was held and passed resolutions to a large extent identical with those now adopted. The failure of the Local Government Board to respond to the strongly-expressed opinion of experienced administrators and experts is further evidence of the need which exists for a thorough reform of its constitution in order to bring it into line with modern requirements. It may be pointed out that, without any fresh legislation, the Local Government Board might respond at once to the resolution asking it to obtain weekly returns of infectious diseases, and to circulate them to county councils and other authorities. Another resolution expressed the opinion that it is desirable that in districts comprising groups of counties and county boroughs intelligence bureaux should be established to which information should be sent from sanitary authorities and workhouses in the district of vagrants who have been exposed to the infection of small-pox, and that a printed copy of such information should be distributed to every sanitary authority and Board of Guardians in the district. This resolution, which was moved by Dr. Spottiswoode Cameron, M.O.H. Leeds, was adopted, and might, so far as we can see, be put into force without delay by the local authorities themselves. It should be added that the term "vagrants" was used by the conference in a sense which excludes all persons travelling about the country who are believed to be in genuine search of work.

THE LIVERPOOL EXPEDITION TO THE CONGO.

A REPORT, dated from Stanley Falls, September 20th, sent to the Committee of the Liverpool School of Tropical Medicine by the expedition dispatched by that institution to investigate sleeping sickness in the Congo, states that one of the State's steamers was placed at the disposal of the expedition by the Government, and it was thus enabled to make fairly complete observations on the spread and distribution of sleeping sickness along the Congo River from the "Pool" to the "Falls," a distance of nearly 1,000 miles. A disease, whose nature has been previously unrecognized, occurs among the State's cattle at Coquilhatville, Nouvelle Anvers, and Romee. Its pathogenic agent was shown to be a trypanosome whose species is as yet undetermined. It was considered advisable to communicate the results of this work directly to the Governor-General at Boma, in order that immediate measures might be taken against the disease. Sleeping sickness is said to be a terrible scourge, especially among the riverine tribes, who are generally totally distinct from the tribes living frequently only ten to thirty minutes' walk from the river banks. From Leopoldville to Bumba cases of sleeping sickness were present in practically every town visited, and the percentage of trypanosome-infected individuals among the general population was high. After Basoko and up the Falls only imported cases of sleeping sickness (with two exceptions) were seen in a few of the towns, and no trypanosomes were found in the general population. The inland towns which were examined, at M'Swata, Tschumbiri, Lisala, and Bumba, showed a much smaller percentage of trypanosome infections than did the corresponding riverine towns, and it was exceedingly rare to see a case of sleeping sickness. From the expedition's own observations and from information collected by it, it is obvious that sleeping sickness has spread in the Congo in recent years along the lines of communication, that is, along the rivers. The spread of the disease has been much assisted by the practice of taking large bodies of natives, soldiers and labourers, from one part of the Free State to another. For instance, four natives were chosen for gland puncture, because of large lymphatics, from 77 persons examined at Yalemba. Two of these were found to be infected with trypanosomes. Both seemed in robust health. Three years previously one had returned from a year's work as a labourer of Bolobo, where there is much sleeping sickness. The other had spent three years as a labourer on board a steamer plying to infected districts. A third man, suspected of sleeping sickness, was examined, and trypanosomes found. He had been ill for two months, and had returned one and a quarter years before from a year's work at Bolobo. It is only a few months since the transportation of cases of sleeping sickness on State steamers has been forbidden. Individuals previously affected had been allowed to return to die in their, perhaps, uninfected villages. Declared cases of sleeping sickness are said to be easily recognized, but trypanosoma gambiense may be present in the blood for months, even years, while the patient remains apparently in perfect health. It is believed that "cervical gland palpation" is an excellent clinical method of detecting an infected person. When many of the cervical glands have been enlarged to above 1.5 by 1 cm., other causes being absent, trypanosomes have generally been found in the drop of fluid obtained by aspirating a gland with a hypodermic syringe. As a rule, simultaneous examination of the blood has given a negative result. Cervical glands have been chosen because, in the native, the femoral and inguinal, and, to a less extent, the axillary glands are usually enlarged. In uninfected areas the cervical glands

very rarely reach the size indicated, and in none of the glands punctured in non-infected areas have trypanosomes been found. The work of the expedition in this direction is far from complete, but they believe that it tends to indicate that no intending labourer or recruit, coming from an area in which sleeping sickness exists, should be accepted if he is found on examination, other causes being absent, to have fairly numerous, moderately enlarged cervical glands The tsetse fly was incessantly present from Stanley Pool to Basoko. After Basoko was passed there were very few flies, and just after the expedition left the mouth of the Lomami river the last one was seen on the steamer. Although the natives of the towns at which they stopped above Basoko recognized the fly, none were found in the neighbouring bush. It is noted that where there were many tsetses there was much sleeping sickness, but that where these flies were scanty cases were rarely seen. The common species of tsetse on the Middle Congo is *Glossina palpalis*. At Mensembe and Nouvelle Anvers this fly frequented the houses of Europeans.

THE CENTRAL BRITISH RED CROSS COUNCIL.

WE publish elsewhere a letter from Viscount Knutsford, G.C.M.G., the Chairman of the Central British Red Cross Council, giving an account of the foundation and functions of the Council and making an appeal for funds. Every one must agree with the opinion expressed that it is essential to provide a system for co-ordinating the official and voluntary provision for dealing with sick and wounded in war, and for making complete arrangements in time of peace. The proposal, which has received the approval of the Queen, for the organization of Red Cross Committees for each county, with branches in the large towns, and local committees on the same lines in India and the Colonies, will, no doubt, commend itself to the public. But there are two points upon which we should like to have further information: the first is with regard to the apparent omission from the Council of any representative of the volunteers, and the absence of any reference to them in the paragraphs referring to the formation of local committees. The second point is with regard to funds. We were under the impression that the National Society for the Aid of Sick and Wounded in War possessed considerable accumulated funds, and in the interests of the appeal now made we venture to think that some explanation should be offered of the reasons why the National Association is unable to provide the funds for starting the local organizations.

THE EXPANSION OF THE ROYAL ARMY MEDICAL CORPS IN TIME OF WAR.

THE necessity of expanding the medical service of the army for war has long been recognized and provided for by most foreign nations. In this country, although the necessity has been recognized and insisted upon by many individuals, little provision for such expansion had been made when the nation found itself involved in a war in South Africa. With the lessons of that struggle still fresh in our minds, hope rather than faith suggests that the War Office may have now provided for future eventualities. Dr. William Coates, Lieutenant-Colonel Commanding Royal Army Medical Corps (Volunteers), Manchester, in an article which he contributed recently to the *Journal of the Royal Army Medical Corps*, points out one way in which the necessary expansion might be provided for—namely, by utilizing the volunteer companies of the corps. He pays a well-deserved tribute to the "superhuman efforts of the Director-General and his staff during the progress of the war," by which a breakdown in the medical service of the army was prevented. He points out, however, that, though the Royal Army Medical Corps did expand, the expansion was effected through organizations quite outside the R.A.M.C. This expansion, he says, appears to have consisted, to some extent, in the employment of any material that came to hand with the remotest claim to ambulance knowledge, and without any training in military ways. Men who had never been inside a hospital ward were rushed off to nurse the sick. To provide an adequate and reliable *personnel*—one in absolute sympathy with, and favourably recognized by, the R.A.M.C.—is one of the important requirements, and one which requires more organization beforehand than the provision of stores and materials. Colonel Coates contends that the most natural and economical means of expanding the R.A.M.C. in the emergency of war would be through the medium of the various divisions of the R.A.M.C. (Volunteers), and he gives a sketch of the training of these Volunteer units to show how well they may be fitted for this purpose. It is true that these Volunteers were employed in the late war, but their assistance was not given or accepted as part of a prearranged system, nor were the Volunteer units utilized to the best advantage. Colonel Coates's suggestion is that, in the event of a war of any magnitude, these Volunteer units should be mobilized and posted to the various military hospitals at home, thus setting free the regular R.A.M.C. The head quarters of these Volunteer companies would serve as recruiting centres and as dépôts for training, and as further drafts were required for the field army the R.A.M.C. (Volunteers) would supply them. Certain additions to the present establishment of the R.A.M.C. (Volunteers) would be necessary, and increased facilities for the training of the units would be required. Colonel Coates suggests that each "division" of the R.A.M.C. (Volunteers) should enrol as supernumerary to the strength 350 qualified surgeons, 35 qualified chemists, and 100 qualified sisters and nurses. The scheme, as it would be put in operation on the mobilization of the Volunteer units, is given in some detail. Like many other suggestions which have from time to time been brought forward, it does not pretend to embrace all the requirements of a complete organization for the expansion of the R.A.M.C. in war time; but it is none the less worthy of the consideration of those who are responsible for the efficiency and adequacy of the means of responding to the calls which may be made on the medical service of the army.

THE RED CROSS HOSPITAL AT TOKIO.

SOME interesting particulars as to the Red Cross Hospital at Tokio are given by a correspondent of the *Times*. The hospital, he says, is in time of peace a training school for nurses. They are admitted between the age of 18 and 30, and have to remain three years. When their training is finished they may return to their homes if they wish to do so, and take private cases; but in time of war they can be called upon for service in the hospitals, at a salary of 10 yen (£1) a month. There are from 2,000 to 3,000 nurses in the whole of Japan. The ordinary staff of the Red Cross Hospital consists of 30 doctors and about 200 nurses and students. Two classes of patients are received—paying ones from 1 to 4.50 yen weekly, and the poor, who are admitted free to one portion of the building reserved for that purpose. Baron Hashimoto, head surgeon, attends three times a week, and is always present at the operations on Wednesdays. Since the beginning of the war the wards formerly occupied by paying patients have been reserved for officers, and wooden buildings are being erected, each to hold 50 to 100 privates. It was hoped that by October there would be sufficient accommodation for 2,500 soldiers. Every morning the patients walk or are carried into the operating theatre to have their wounds attended to. The surgeons do the important dressings, and the nurses wait upon them and attend to the bandaging. There is a great deal of trouble with stiff joints, caused by bullet wounds, which are chiefly treated by massage and extension. Wounds heal wonderfully quickly. The wooden buildings which form the privates' quarters are spotlessly clean. Each man has a wooden bed, with a shelf at the head, to hold his little possessions, which always include a fan, a tooth-brush, and chopsticks. But sometimes they lie on mattresses on the floor till a supply of beds can be obtained. There is a bath-house at the end of each building which is always in use. Two doctors and ten nurses are allowed for 100 patients. The authorities

have not accepted the services of any professional nurses from England, but one lady, who received a medal for hospital work in South Africa, has been cordially welcomed as a helper by the staff. She is entirely responsible for her own expenses. It is calculated that one foreign nurse would cost as much as six Japanese on account of the difference in food, accommodation, etc. The Japanese nurses live in the simplest way and sleep on two cushions and have one miniature locker. They are on duty for twelve hours in the twenty-four, are always smiling and good tempered, and give the closest attention to the patients in their charge.

PHYSICAL TRAINING AND SWEDISH METHODS.

We publish elsewhere a letter of explanation from Sir Lauder Brunton with regard to the part which he took in the "conference" convened by the Bishop of Bristol and Miss Theodora Johnson, as reported in our columns last week, p. 1428. Sir Lauder Brunton professes to complete the report which we published, but we are unable to see that he adds any important fact. We have carefully compared our report with those published in the *Times* and other leading daily papers, and they agree with ours in all essential respects. The fact is that, as indicated in our editorial reference, it was a very curious sort of conference, and the impression which Sir Lauder Brunton apparently carried away makes it more remarkable still. Sir Lauder Brunton tells us that the proposal before the conference was a project to establish (1) a school for teaching physical exercises in London; (2) a central institute to co-ordinate the teaching in all such schools throughout the country, and to grant certificates. As a matter of fact, the resolution proposed by Sir William Church, and actually seconded by Sir Lauder Brunton, contained no reference to schools or to a central institute, but merely affirmed the advisability of establishing in the United Kingdom a system of physical education, and constituted the invited guests an association to press proposals to that effect on the Government, the public, and public bodies. We desire to repeat our protest against the assumption that the presence of certain medical men at this conference, and the fact that a colourless resolution was moved and seconded by two of them, in any way commits the medical profession as a body to a scheme the details of which were deliberately withheld from the meeting. This protest seems to be the more necessary, because some of our contemporaries in the daily press appeared rather disposed to accept Miss Theodora Johnson at her own valuation, and to fail to appreciate the modification introduced before it was proposed into the resolution drafted by the promoters of the meeting.

THE IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

The autumn dinner of the Irish Medical Schools' and Graduates' Association took place on Tuesday evening in the Grand Hall of the Cecil Hotel, following after the second general meeting of the year. At the latter, the question of reform in the Irish Poor-Law Medical Service came under consideration, and it was resolved to send to the Chairman of every board of guardians in Ireland, a statement that the Association, "having had before it the recently-issued report of the Local Government Board for Ireland on the Irish Poor-Law Medical Service, desires to express its opinion that the attitude of the Board as stated in that report does not adequately deal with the reasonable demands of the Poor-law medical officers, and offers no permanent settlement of the difficulties which disturb the relations between the public and the Poor-Law Medical Service." In the evening the weather did everything it could to spoil the excellent arrangements for the dinner, but nevertheless the event brought together some hundred and forty or more members and guests, and proved a very pleasant and successful function. It was graced as usual by the presence of a large number of ladies, and had the advantage of the genial chairmanship of Surgeon-General C. Sibthorpe, C.B., I.M.S., whose term of presidency comes to an end this year. The toast of "Our Guests" was proposed by Surgeon-General C. B. Mosse, C.B., C.M.G., and was coupled with the names of Professor J. B. Bury, Regius Professor of Modern History at Cambridge, and Dr. William Hill. Dr. E. Hallaran Bennett, speaking for Sir John Moore, proposed "Our Defenders," a toast which was acknowledged by the Reverend Samuel Kenah on behalf of the Royal Navy, in which he is a chaplain; by Surgeon-General H. M. Branfoot, C.I.E., I.M.S., on the part of the army; and by Mr. F. Swinford Edwards as representing the auxiliary forces in his capacity of Surgeon-Lieutenant in the East London Royal Engineers. "Ourselves"—meaning thereby the Association—was proposed by Dr. Pye-Smith, Vice-Chancellor of the University of London, who carefully explained that it was not his fault that he did not belong by birth to a nation of whose attainments in medicine he proceeded to give a striking list. He was answered by the President, who perhaps made the hit of the evening when he admitted that, fond as Irishmen were of Ireland, London was good enough for some of them, London being, he thought, one of the most comfortable places to live in to be found. In view of the climatic conditions at that moment prevailing, and coming from a man whose duties have led him all over the world, this was strong testimony.

MEDICINE AS A DEPARTMENT OF THE CIVIL SERVICE.

A few months ago, Dr. Ensch put forward in the *Revue d'Hygiène* a proposal that medicine should be nationalized, practitioners being transformed into State officials paid out of the public funds, and subject to the control of a special department. The idea is by no means new. In 1886 a similar suggestion was made by the late Sir Morell Mackenzie in the *Fortnightly Review*, and in 1889 Dr. Rentoul of Liverpool, in our own columns, gave an outline of a plan for a "public medical service of England." In 1893 the Socialist party in Switzerland adopted as part of its programme a proposal that all medical practitioners should be public officials; the scale of payment suggested was from £160 to £320 a year, and the money was to be raised by a special tax on tobacco. In July last the town of Zurich took a step towards bringing the socialization of medicine within the sphere of practical politics. It imposed a medical tax of 3s. 7½d. a head on the whole population above the age of 16 for the purpose of creating a revenue of £20,000. This it is proposed to divide among forty medical practitioners, each of whom will receive an annual sum of £500. In return for this salary they will be compelled to give medical attendance to all citizens of Zurich who may claim their services. The scheme is, in fact, compulsory assurance against sickness applied to all classes. As no extra charges seem to be provided for, it would be interesting to know whether surgery and midwifery are included in the term "medical attendance." To many doctors a salary of £500 a year will seem almost opulence, and we have the authority of Mr. John Burns for the doctrine that no man is worth more. But what is to become of the others? And is it not within the bounds of possibility that even the favourites of fortune who are chosen to physic the members of the happy community of Zurich may find the work for which they are paid a trifle burdensome? Only those who have had experience of contract medical practice can have any notion of the craving for medical attendance which fills the breast of every member of a Friendly Society. The doctors will not be able to protect themselves against a public hungering and thirsting for physic by charging prohibitive fees. The only safeguard will be the cultivation of a bearish demeanour; a good bedside manner will be a positive disadvantage. Then there are the municipal authorities, who are the paymasters, to be reckoned with. The doctors will simply be the servants of the municipality and the slaves of the public—a state of things that cannot fail to have the most deplorable results. All the personal respect, gratitude, and affection felt by patients who look upon the doctor as the friend in

need will vanish, leaving only the relation of public functionary and private citizen, which is almost one of natural enemies. Under such a system the public will not in the long run benefit, and not only the medical profession, but the art of medicine itself must deteriorate in quality, for there would be no longer any spur to ambition, and mediocrity would be as richly rewarded as the highest skill and the largest knowledge.

THE BACTERIOLOGIST AT LARGE.

DR. VIDAL of Nisson, who appears to be a fine old country doctor all of the olden time, gives the following account of a recent encounter with a wild bacteriologist. The incident so admirably illustrates the contrast between the old style and the new in medical practice that we venture to tell the story here as it may tend to the edification of some of our readers. A child, aged ten, had a bilious attack, which the over-anxious parents took it into their heads to be a manifestation of tuberculous meningitis. Behind the back of Dr. Vidal, who was their ordinary attendant, they sought counsel of a young physician in a neighbouring town. The opinion of this pundit was conveyed to Dr. Vidal on a card enclosed in an unsealed envelope. It was in the following terms: "Kernig positive; slight embryocardia, especially in Azoulay's position; cryoscopy and Kochi-bacilloscopy of Quincke's fluid would supply basis for judgement. If negative, Eberth or Talamon-Fraenkel might be thought of. In the former of these two hypotheses, I could bring, on receiving intimation from you, some Chantemesse serum; in the second, I could bring specialist to do Quincke's puncture." To this cryptic message Dr. Vidal sent the following reply: "Veni, vidi, vici. *Veni:* neither on bike nor auto, nor moto, nor in a boat, but in a phaeton. *Vidi:* neither myosis nor mydriasis, nor vasomotor red line nor Wunderlich—simple synocha. *Vici?* Naturam sequere. Expectant treatment. The patient goes on under his blankets ἐξ ἀκινήτου ποδός (without stirring a step) in the words of Sophocles, whom in spite of his antiquity I love, towards *restitutio in integrum.* Archfraternal thanks to the Quincke specialist." We need not dwell on the piquant contrast here presented, between the old and the new generation of practitioners. The country doctor's wit may be a trifle laboured, but there can, we think, be no doubt that he had the best of the encounter, and that his sound clinical sense shows well against the laboratory jargon of the younger man who saw bacteriological torpedoes where there was only a patient with a stomach-ache.

THE OSLER MEMORIAL.

MENTION was made in the BRITISH MEDICAL JOURNAL of November 19th of a project for the erection of a Memorial Building in Baltimore, as a tribute from the medical profession to Professor Osler. The scheme which has already received large promise of support, has not yet taken definite shape. One of the earliest suggestions was that Professor Osler's house, 1, West Franklin Street, should be purchased, and converted into a medical library building, an annexe in the rear being added to the present structure. Another plan was to erect a new building, as an addition to the Johns Hopkins Medical School group; this, however, was deemed to be too local for an enterprise of national scope. One of the latest proposals relates to the library of the Medical and Chirurgical Faculty, Baltimore. That collection contains many rare and valuable volumes, of which, in some cases, only one or two copies are extant. For some time, the present quarters have been found to be inadequate for the needs of the society and the library, and efforts have been made to obtain grants for a new library building from the State legislature. The suggestion has been put forward that the library should be housed in a new building to be called the Osler Memorial Building. Letters have been addressed to prominent physicians in various parts of the States, asking them to give their views of the character the proposed building should assume, and the methods that in their opinion should be adopted to bring about its erection. To these letters the replies have been very numerous, and the multitude of suggestions is somewhat embarrassing to the Committee. There can be no doubt, however, of the enthusiasm with which the proposal of a memorial to the new Regius Professor of Medicine at Oxford has been received in the country which cordially feels that in him it is losing one of the foremost of living physicians.

A SUSSEX MEDICAL BENEVOLENT SOCIETY.

A SUSSEX medical benevolent society, to which all regular practitioners in the county of Sussex are eligible for election, has recently been formed. Its objects are to aid the widows and children of its members dying in indigent circumstances, to help those of its subscribers who are incapacitated from following their profession for long periods of time, and to assist in the education of the children of members who may be thus disabled. The society, which is limited to the county of Sussex, is provident in its aim, and is intended to give assistance only to its members. An appeal is made to all practitioners in the county to join the society, whether as a help to their less fortunate brethren, or as an insurance against possible misfortune to themselves in the future. We are informed that about 125 medical men in the county have already expressed their approval of its aim. Full particulars can be obtained on application to the Secretary, Dr. L. A. Parry, 61, Church Road, Hove, Sussex; but it may be here stated that it is proposed that the executive of the society shall consist of a president, fourteen vice-presidents, a treasurer, and a secretary, to be elected at the annual meeting, and that the county shall be subdivided into seven districts—five for the Eastern division and two for the Western; two stewards will be appointed to each district.

QUACKS IN NEW YORK.

ACCORDING to a statement made recently by Mr. Andrews, counsel for the Medical Society of the County of New York, there are 20,000 quacks in New York City. There are two great classes of irregular practitioners of the healing art—First, those have attended a medical school for a time and have failed in examinations; secondly, those who practise by the light of Nature. The Medical Society, during the last few years, has secured convictions for illegal practice in more than 500 cases, with fines amounting to some £18,000.

THE KING has appointed Mr. Anthony Alfred Bowlby, C.M.G., F.R.C.S., to be Surgeon to His Majesty's Household in the room of the late Mr. Herbert Allingham.

Mr. A. W. MAYO ROBSON, Vice-President of the Royal College of Surgeons of England, will deliver the Bradshaw Lecture on Thursday next, December 1st, at 5 o'clock p.m., in the Theatre of the College in Lincoln's Inn Fields. The subject will be Cancer and its Treatment, and the lecture will deal specially with early surgical treatment of the disease. Students of medicine and medical men, not members of the College, will be admitted on presentation of their visiting card.

WITH deep regret we announce the death of Dr. George Vivian Poore, which occurred at Andover on November 23rd. He had been in failing health for some time. Dr. Poore was for many years Physician to University College Hospital and Professor of Medicine in the College. He was the author of many valuable contributions to medical literature. Dr. Poore was physician to the late Duke of Albany, and was decorated for professional services to Princess Thyra, Duchess of Cumberland, in 1872. We hope to publish a full obituary notice in a future issue.

Ireland.

The Teaching of Hygiene and Temperance in National Schools.

Dr. Starkie, Resident Commissioner of National Education in Dublin, received on November 11th a deputation of representatives of the medical profession in Ireland supporting the petition addressed to all the educational authorities of the United Kingdom in favour of the teaching of hygiene and temperance in primary and secondary schools. There were present Dr. Smyly, President of the Royal College of Physicians of Ireland; Mr. Arthur Chance, President of the Royal College of Surgeons in Ireland; Sir Thornley Stoker, President, Royal Academy of Medicine; Dr. O'Carroll, President, Leinster Branch of the British Medical Association; Sir Christopher Nixon, M.D., President, Royal Veterinary College; with Sir John Moore and Sir William Thomson, C.B., members of the General Medical Council.

After the deputation had been introduced by Dr. Smyly, Sir William Thomson said that they had been asked by the General Committee to approach the Central Educational Authorities in reference to the teaching of hygiene and temperance in schools. The movement had begun in England, being mainly promoted by the British Medical Association. Medical men had formed strong opinions as to the means to be taken to obviate the effects of these influences in causing the physical deterioration of the race. The object of the deputation was to submit to the Commissioners whether it would not be possible to include in the public course of instruction in elementary schools lessons on the advantages of cleanliness, pure air, pure food, and temperance. The petitioners wished to see implanted in the minds of the pupils, at the very earliest age, certain easy principles and truths which would affect their after lives. In Canada, Australia, Natal, and the United States these things were taught as a matter of course. He thought it was essential that this teaching should be compulsory. In regard to the elementary schools, they did not wish to imply that these should be subjects of examination for the younger pupils.

Sir Christopher Nixon thought there was a necessity for providing a catechism of public health for the children of elementary schools; the study of what was necessary for the body should be dealt with in the same way as that which concerned the child's spiritual well being.

Dr. Starkie assured the deputation that in his opinion acquaintance with the elementary principles of hygiene was at least as important as a knowledge of any of the other subjects provided for in primary schools. In regard to the points raised by the deputation, experience told him that unless a subject was compulsory it was largely ineffective. In the preparation of a new edition of the programme he would point out to his colleagues on the Board the need for hygiene being made a compulsory subject. He was glad to say that it had recently been made compulsory on all candidates for admission to the training colleges. He agreed with Sir William Thomson that examination on such a subject was unnecessary. If the subject were made compulsory in ordinary schools it would assume a different importance in the training colleges, and the objection on the score of want of time for lectures would then be withdrawn. A circular had been prepared for issue to teachers on the spread of tuberculosis, but he feared circulars produced very little effect; it was necessary to make hygiene a compulsory subject and to insist that the rules of health which the children were taught should be practically observed.

Ulster Medical Society.

The first meeting of the session was held in the Medical Institute on November 10th. Dr. John Campbell, the retiring President, took the chair, and introduced Dr. William Calwell, the President for the ensuing two years, who then read his opening address on Some Aspects of Metabolism, chiefly Clinical. After thanking the Fellows for the honour of electing him, Dr. Calwell referred to the duty the Fellows and members owed to the institute, to the regret with which all heard of the transference of Dr. Lorrain Smith to Manchester, and to the loss the Society had sustained in the deaths of Dr. James Stuart of Ballymena and Dr. W. A. McKeown of Belfast. Dr. Calwell then briefly reviewed some of the most important aspects of metabolism, which had to be considered in everyday practice. He made an appeal for more practical scientific work; experience at the bedside was often fallacious, but scientific work suffered if it took no account of it.

The Workman's Compensation Act.

A curious action was tried recently before the Recorder of Belfast. The applicant was a baker, and on the 17th November, 1903, was wheeling a truck in the bakery of his employer; the wheel came in contact with his left foot, and crushed the second toe; afterwards tetanus set in, but the patient recovered. It had been agreed to pay the applicant 18s. 1½d. a week during his total incapacity; and it was to settle this question that the present trial took place. Two firms of solicitors, three counsel (one a medical man), three general medical practioners, the professor of surgery, the senior surgeon to the hospital, another surgeon to the hospital, the professor of materia medica, and senior physician to the hospital, and a house surgeon were employed. His Honour decided that the weekly payments of 18s. 1½d. should be continued for the present. Surely some cheaper administration of justice could be devised.

A Public Lecture on the Health of Belfast.

A lecture was given by Dr. Henry O'Neill, B.L., on the Health of Belfast, in the Ulster Hall, on November 15th. The chair was taken by the Mayor, Sir Otto Jaffé, and there was a large attendance. The lecturer dealt with a large variety of subjects, including the monetary value of life and the reduction of the general mortality during latter years. He then took up the question of consumption and preventable disease, including fevers, more particularly typhoid and small-pox. A history of these three diseases and of vaccination was given and illustrated by tables of statistics. The lecturer next related some particulars regarding the public abattoirs and the question of food, modern dairying diseases transmitted by milk and sterilized milk.

British Medical Temperance Association.

The annual meeting of the North of Ireland Branch of the British Medical Temperance Association was recently held at the Medical Institute, Belfast, Dr. Simpson presiding. The annual report, submitted by Dr. Norman Barnett, showed an increase of eight members. The financial report was submitted by Dr. James Morrison, and showed a balance in hand. Dr. Charles Kevin was elected President, Dr. Norman Barnett Honorary Secretary, and Dr. James Morrison Honorary Treasurer.

A Generous Donation.

The North Charitable Infirmary, Cork, has received a donation of £1,000 from Lieutenant-Colonel O'Mahony McDonnell, M.D., F.R.C.S., for the endowment of a bed to be solely reserved for respectable people in reduced circumstances; "the selection of the patients to be at the discretion of the trustees only, and the bed to be known as the McDonnell Bed, through the medium of a bed-head ticket frame." The Committee of Management have sent the following resolution to Lieutenant-Colonel McDonnell, which was carried unanimously:

> That the warmest thanks of the Committee and of the citizens of Cork be accorded to Lieutenant-Colonel McDonnell, M.D., for his spontaneous act of generosity.

Outbreak of Typhoid Fever in the Cork District Lunatic Asylum.

An epidemic of typhoid fever of rather an alarming character has broken out in the Cork District Asylum. Last week 68 patients and 15 attendants were down with it, and in the early part of the week the cases were increasing at the rate of 4 or 5 per day. Though some of the cases are of a severe type, yet, so far, only 2 deaths have taken place, and these in very debilitated patients. Dr. Woods, R.M.S., has been doing his best to cope with the outbreak; all the attendants have been sent to the North Fever Hospital, while the hospital of the asylum has been cleared out for the insane fever inmates. Thus 100 beds are set aside for the typhoid patients. The services of an extra assistant medical officer and seven trained nurses have been engaged, as well as of several attendants, the latter to replace those ill and to assist in caring for the sick. As to the cause of the outbreak, Dr. Woods is unable to arrive at a conclusion. He has sent samples of both the water and milk to the city analyst and Dr. Moore, Pathologist, Queen's College, Cork, but no definite evidence of the presence of the bacillus typhosus can be obtained. Dr. Woods has visited the cowsheds from which the milk is obtained under contracts and given

instructions regarding the cleanliness of the supply. The drainage of the asylum, it appears, is very perfect, in good order, and well ventilated. It is little wonder that the Resident Medical Superintendent looks upon the epidemic as very serious, knowing in what an overcrowded condition the asylum at present is. All the milk and water used by the patients is to be boiled, and Dr. Woods hopes thus to stop further cases.

Scotland.

ABERDEEN ANATOMICAL AND ANTHROPOLOGICAL SOCIETY.

A MEETING of this Society was held in Marischal College on November 5th, Professor Reid, the President, being in the chair. There was a large attendance of members. A paper was read by Miss A. V. Baxter, M.A., medical student, entitled Observations on and Classification of 1,500 Finger-prints taken in the Anthropometrical Laboratory. During the past eight or nine years a careful anthropometric record has been taken of students at various stages in the curriculum, and much interesting information has been accumulated. The results are being from time to time summed up. Last year the Society had a paper by Dr. Stoddart on the results of examination of the eyes of several hundred students, and now Miss Baxter gave her results from a careful examination of this large number of finger-prints. She first gave a detailed description of what finger-prints are, mentioning some of the agencies which tend to modify them, and also described the best methods of taking finger-prints. Galton's primary classification into arches, loops and whorls was described and illustrated by means of lantern slides, and it was noted that it was important to take into the finger-print the "deltas" at the sides of the fingers. The difficulties encountered in classification from the fading of arch into loop and loop into whorl were discussed, and then the lecturer went on to give in a series of very interesting statistical tables the results of her analysis. The data used in compiling these tables were the prints of 1,500 digits—namely, thumb, forefinger, and middle finger of the right and left hands—of 250 students.

TABLE I.—*The Relative Frequency of the Arch, Loop and Whorl.*

	Galton's Results, using 5 000 Digits of 500 Persons, including, however, Ring and Little Fingers.
	Per Cent.
162 arches—that is, 10.8 per cent.	6.5
911 loops—that is, 60.73 per cent....	67 0
427 whorls—that is, 28.46 per cent.	26.0

TABLE II.

	Right Hand.			Left Hand.		
	Arches.	Loops.	Whorls.	Arches.	Loops.	Whorls.
Thumb	3.2	52 4	44 4	4.8	65 6	29.6
Forefinger ..	18.4	52.4	29.2	18.0	52.0	30.0
Middle finger ..	9.6	72 0	18 4	10.8	70.0	19.2

That is:

	Galton's Figures for same Fingers.
The percentage of arches varied between 3.2 and 18.4	3.0 and 17.0
,, loops ,, ,, 52.0 and 72.0	53.0 and 78 0
,, whorls ,, ,, 18 4 and 44 4	15 0 and 44 0

A rather striking similarity of results is thus obtained.

Another question the lecturer set herself to answer was whether the arch, loop, and whorl patterns are distr buted in the same way upon the corresponding digits of the two hands. A rearrangement of Table II answers this.

TABLE III.—*Comparison of Two Hands.*

	Arches.		Loops.		Whorls.	
	Right.	Left.	Right.	Left.	Right.	Left.
Thumb... ...	3 2	4.8	52.4	65.6	44 4	29.6
Forefinger ...	18.4	18 0	52.4	52.0	29.2	30 0
Middle finger..	9 6	10.0	72.0	70 0	18.4	19.2

Note the greater frequency of arches in the forefingers. Galton's percentage was 17.

TABLE IV.—*Percentage of Cases in which the Same Class of Pattern Occurs on the Same Digits of the Two Hands.*

Couplets.	Arches.	Loops.	Whorls.	Total.
Two thumbs	2 8	43.6	22.4	68.8
Two forefingers	10 8	35.6	18 8	65.2
Two middle fingers	5 2	59 6	12.8	77.6

Mean total, 70.2; Galton's, 72.

TABLE V.—*Dealing with the Tendency of Couplets of Different Hands to Resemble Each Other.*

Couplets of Digits.	Of Same Hand.				Of Opposite Hands.			
	Arches.	Loops.	Whorls.	Total.	Arches.	Loops.	Whorls.	Total.
Thumb and forefinger ...	2.8	34.6	16.4	53 8	2.8	35.2	16.8	54 8
Thumb and middle finger	2.4	46.4	12.0	60 8	2.2	45 4	11 6	59.2
Fore and middle finger..	6.2	44.2	13.8	64.2	6 4	44.6	13.6	64.6

The mean totals on same hand 59 6
The mean totals on opposite hands... ... 59 5

There was thus a striking agreement of results, which shows that the relationship of any one particular digit to any other particular digit is the same, whether the digits in question are of the same or opposite hands. Miss Baxter then went on to consider Galton's secondary classification, and its value as a means of identification was indicated. Thereafter Professor Reid exhibited a large drum and image from Erromanga, New Hebrides, which has just been presented to the Anthropological Museum by the trustees of the late Sir William Henderson, and Mr. D. Horn, B.A., Queensland, gave a very interesting account of the life of the natives of that group of islands. After each paper a discussion followed, in which several Colonial students took part, and the meeting closed with thanks to the lecturers for their papers.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.

The annual business meeting of the above Society was held in the Society's Hall in King Street on November 17th, at 8.30 p.m. Professor Cash, F.R.S., retiring President, occupied the chair. The following office-bearers and members of Council were elected for session 1904-5:

President: Dr. George Rose.
Vice-President: Professor Alex. Ogston, M.D.
Secretary: Dr. John Marnoch.
Recording Secretary: Dr. David Rennet.
Treasurer: Dr. Arthur H. Lister.
Librarian: Dr. Peter Howie.
Council: Drs. Cash, Edmond, Angus Fraser, Gordon, H. M. Gray Riddell.

As the Vice-President is looked on as President-Elect, this will lead to Professor Ogston being President at the time of the University Quatercentenary celebration in 1906, and much satisfaction has been expressed at his acceptance of office. The Society, both at its institution in 1789 and all through its history, has maintained a close connexion with the University, and no more fitting person to occupy the chair at the time of these important celebrations could have been chosen than the Professor of Surgery.

King's College Chapel, Aberdeen.

The ancient chapel of King's College has once more been enriched by a stained glass window, a gift of the Baroness de Garbs in memory of her husband, who, as Stephen Garbs, graduated at King's College in 1824. The window is in the north wall of the chapel, and is one of those which retain the original mullions and tracery. The presentation of the window took place at the close of the ordinary Sunday service on November 20th, the Baroness de Garbs in person handing it over, and Principal Lang accepting it on behalf of the University.

The Population of Aberdeen.

The returns of the Registrar General for Scotland for the quarter ending September 30th again demonstrate that Aberdeen is creeping slowly ahead of Dundee in the matter of population, and that now it takes place as third city in Scotland. For the above quarter there were 411 marriages in Aberdeen as compared with Dundee's 356; the number of births in Aberdeen was 1,190, in Dundee 1,163; the number of deaths in Aberdeen was 595, in Dundee 695. The death-rate in Aberdeen was, with the exception of Leith, the lowest among the eight principal towns in Scotland, being 14·4 while that of Dundee was 16·9, Glasgow 16·6, Edinburgh 14·6. The population of Aberdeen at the middle of 1904 was estimated at 164,124, and that of Dundee at 163,535, but it is evident from the figures above quoted that the last quarter has still further sent Aberdeen ahead.

The Parliamentary Representation of the Universities of Glasgow and Aberdeen.

We are requested to state that Professor Sir William J. Sinclair, M.A., M.D. Aberd., of Manchester, has been elected Chairman of the Universities of Glasgow and Aberdeen Conservative and Liberal Unionist Association, and of the Committee of Graduates for promoting the candidature of Professor William R. Smith, M.D.

University of Glasgow.

Mr. Wyndham, Secretary for Ireland, was installed as Lord Rector of Glasgow University on November 22nd, and delivered an address on the development of the State, in which he inveighed against the cosmopolitan ideal, and after investigating the teachings of history came to the conclusion that pride of race, provided the facts of race were studied and understood, was a better and sounder incentive than pride of nationality.

Lord Kelvin will be installed as Chancellor of the University on Tuesday next in the Bute Hall.

Small-pox in Scotland.

The outbreak of small pox in Scotland, which has lasted so long and which has been so widespread, shows a still further decline. In the period from 1st to 15th November inclusive the number of cases intimated to the Local Government Board was 8, distributed over the four counties of Forfar, Lanark, Renfrew, and Stirling, and occurring in the six different towns or burghs in these counties. There were two cases in Coatbridge, two in Stirling, and one in each of the following: Dundee, Airdrie, Govan, and Barrhead. For the first time for long no new locality was infected with the disease.

ASSOCIATION NOTICES.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1905.

Meetings of the Council will be held on Wednesdays, January 18th, April 19th, July 5th and October 18th.

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

Guy Elliston, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

BRANCH MEETINGS TO BE HELD.

Bath and Bristol Branch.—The second ordinary meeting of the session will be held at the Museum, Bath (North Parade entrance), on Wednesday evening, November 30th, at 8 p.m., Mr. R. J. H. Scott, President, in the chair. The following communications are expected:—Newman Neild, M.D.: Anaemic infarct of the liver. C. J. Whitby, M.D.: Notes on the sanatorium treatment of phthisis and its present limitations. C. R. Wood, M.D.: Automobiles in medical practice. W. McD. Ellis, M.D.: A case of bilharzia. J. B. Dunlop M.B., and W. M. Beaumont: Specimen of cerebellar tumour.—W. M. Beaumont, Newman Neild, Honorary Secretaries.

Bath and Bristol Branch: Trowbridge Division.—A meeting of this Division will be held at the George Hotel, Frome, on Friday, December 2nd, at 3.20 p.m., when the ordinary business of such meeting will be transacted, and at 3.30 p.m. an address will be delivered by A. W. Sikes, M.D., B.Sc., M.R.C.P., F.R.C.S., etc., Pathologist, Queen Charlotte's Hospital, London entitled, Electricity in the Treatment of Disease—(1) white, red, and blue electric light; (2) ultra violet light; (3) constant currents, sinusoidal currents; (4) induced currents, high tension, and high-frequency currents; (5) *x* rays. There will be an exhibition of apparatus by Mr. Dean, illustrating the chief ways of applying high frequency, *x* rays, ultra violet and sinusoidal currents. The Division will be pleased to welcome any practitioner from the counties of Wilts or Somerset, whether members of the Association or not.—John Tubb Thomas, Secretary, Trowbridge.

Metropolitan Counties Branch: Wandsworth Division.—An ordinary meeting of this Division will be held at Crichton's (opposite Clapham Junction Station) on Thursday, December 8th, at 9 p.m. Agenda: (1) Minutes; (2) correspondence; (3) questions; (4) consideration of various matters referred from Medico-Political Committee; (5) adoption of model Ethical Rule Z; (6) paper by A. P. Beddard, M.R.C.P.: Remarks on some methods of treatment by drugs; (7) other business. Members are invited to bring their medical friends.—E. Rowland Fothergill, Honorary Secretary, Torquay House, Southfields, S.W.

Midland Branch: Lincoln Division.—A meeting will be held on Thursday, December 1st, in the Guildhall, Lincoln, at 3.30 p.m.—J. S. Chater, Honorary Secretary.

South-Eastern Branch: Canterbury and Faversham Divisions.—A combined meeting of the above Divisions will be held, by kind permission of Dr. G. C. Fitzgerald, President of the Canterbury Division, at the Chartham Asylum, on Thursday, December 1st. Agenda:—3.0 p.m. Each Division will meet separately to confirm the minutes of last meeting. 3.10 p.m. Combined meeting, Dr. Fitzgerald presiding. (1) Time and place of next meeting. (2) The Chairman, Borderland Cases. (3) Other business. Light refreshments will be kindly provided by the Chairman. A billiard match between the two Divisions—or as may be arranged. Dr. Fitzgerald will be pleased to show members and their friends round the wards, etc., between 2 p.m. and 3 p.m. If a sufficient number of members send their names to the Honorary Secretary, Canterbury Division, by November 28th, arrangements will be made for a brake to leave Canterbury East Station for Chartham Asylum at 2.30 p.m. Fare, 2s. return. Trains leave Sittingbourne, 1.55; Faversham, 2.6. Returning from Canterbury East, 6.35—for Faversham and Sittingbourne.—Wm. Gosse, A. R. Henchley, Honorary Divisional Secretaries.

South-Eastern Branch: Isle of Thanet Division.—The next meeting of this Division will be held at the Granville Hotel, Ramsgate, on Thursday, December 1st, at 4.15 p.m., Mr. C. H. Tamplin in the chair. Agenda: Dr. Wm. Ewart, M.D., F.R.C.P. (Senior Physician to St. George's Hospital and to Belgrave Hospital for Children): The Principles of Treatment of Pneumonia. Mr. A. M. Watts will move a resolution with regard to the payment of medical men for school certificates. Tea will be served at 4 p.m. Dinner will be served at 7 p.m. in a private room of the hotel; 5s. each, exclusive of wine). Members wishing to dine are requested to inform the Secretary at the commencement of the meeting. All members of the South-Eastern Branch are invited to attend these meetings and to introduce professional friends, but will not be entitled to vote on Divisional questions.—Hugh M. Raven, Honorary Divisional Secretary, Barfield House, Broadstairs.

South Midland Branch: Bedford and Hertfordshire Division.—A meeting of this Division will be held at the Bedford County Hospital on Tuesday, December 6th, at 3 p.m. Agenda: The minutes of the last meeting. Letters and communications. Dr. Lovell Drage (Hatfield) will read a paper on the treatment of tuberculosis by subcutaneous injections of 10 per cent. solution of cinnamite of soda in glycerine. Dr. R. H. Coombs, Bedford (Representative of this Division at the Annual Representative Meeting), will give notes on the recent Representative Meeting at Oxford. Mr. R. H. Kinsey, Bedford (member of the Council of the British Medical Association), will read a paper on some medico-political points recently brought before the Association. Dr. Conning Hartley (Bedford) will read notes on an unusual form of appendicitis. Mr. Gifford Nash (Bedford) will read notes on a case of ruptured interstitial pregnancy. Dr. H. Skelding (Bedford) will make a few remarks on the milk supply in villages, with a view to a further communication. Dr. H. Savory (Bedford) will relate an episode in drug taking. Any other business.—H. Savory, Honorary Secretary, 2, Harpur Place, Bedford.

Southern Branch.—A general meeting is appointed to be held at the South-Western Hotel, Southampton, on Friday, December 2nd, at 3 p.m. Agenda:—Mr MacKeith will move: That this meeting of the Southern Branch considers that the British Medical Association should afford all possible facilities to towns and districts for starting and carrying on local provident medical services embracing all forms of club practice; that an official from the head office should be sent, whenever desired, to co-operate with local medical men in the inauguration of such services, and that model rules and regulations for their working should be drafted by the Medical Secretary, and supplied from the head office on request. Papers will be read as follows:—Mr. Briscoe: That fractures in the insane are not common and do well. Dr. Kempe: A series of cases of thyroidectomy. Dr. Childe: A case of excision of the spleen. Other

communications (titles not yet received) are expected. Any member who may wish to introduce a matter of professional interest, or to read a paper, or to submit cases or specimens, is requested to furnish the undersigned with the nature and title of the communication as soon as possible. Dinner will be provided at the Hotel at 6 o'clock, the charge for which, not including wine, will be 7s. 6d. a head.—H. J. MANNING, Honorary Secretary, Laverstock House, Salisbury.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.—The next meeting of this Division will be held at 130, Commercial Road, Portsmouth, on Tuesday, December 6th, at 3.45 p.m.—J. G. BLACKMAN, Honorary Secretary, Poplar House, Kingston Crescent, Portsmouth.

SPECIAL CORRESPONDENCE.

BERLIN.

Statistics of Berlin Medical Institutes.—A Floating Sanatorium.—The Finsen Light Treatment.—Enteric Fever and its Prevention.

SOME interesting statistics, bearing on the wide field of action covered by the medical institutes of the Berlin University, have lately been published. During the year 1903/4 Von Bergmann's surgical clinic admitted 1,858 new patients, 166 patients having been taken over from the previous year. The total number of nursing days was 56,490. During the year 179 patients died, and 1,693 were dismissed, so that on April 1st, 1,904, the remaining number of in-patients was 152. In the surgical policlinic 21,320 cases (12,455 male and 8,865 female) were treated. Von Michels's clinical eye hospital received 1,041 in-patients (449 male and 592 women and children); 15,405 cases (7,273 of them male) were treated in his policlinic. Lucae's clinic for diseases of the ear had 227 in-patients and 9,469 out-patients. In Olshausen's lying-in hospital 1,065 births were registered, and in his obstetrical policlinic help was given in 3,288 cases; 913 gynaecological cases were treated as in-patients, the number of operations performed being 533; 7,329 new out-patients and more than 6,000 old cases received gynaecological treatment; 96 necropsies were performed. In Senator's medical policlinic 8,120 new cases were treated; of these, 3,593 were men, 3,203 women, and 1,324 children. C. Fraenkel's policlinic for throat and nose diseases treated 5,861 new patients (3,075 male and 2,786 female); Hoffa's policlinic of orthopaedic surgery 2,956; M. Wolff's policlinic for consumptives 9,432, 4,768 of whom were men, 4,664 women and children. Brieger's hydropathic policlinic treated 2,552 new out-patients and 318 in-patients (229 men and 89 women). In G. Schütz's institute, 2,755 persons were treated by mechano-therapeutic appliances (Swedish gymnastics); and in Zabludowski's massage policlinic, 1,466 new cases (857 male and 609 female) were treated, as well as 120 cases taken over from the previous year. The dental policlinic was visited by 7,667 patients.

For the use of convalescents and debilitated persons not rich enough to afford a private yacht, but willing to pay a good price for comfortable accommodation and special attendance at sea, the Hamburg-American Steamship Company is at present fitting up one of its large Atlantic liners—the *Fürst Bismarck*, as a floating sanatorium. Professor Schwaimger is to be medical director, and will "personally conduct" the first cruise in Mediterranean waters next May. All infectious diseases are to be rigidly excluded. There seems no reason to doubt that this new departure in convalescent hospitals, financed and managed by one of the greatest maritime companies, with all modern hygienic appliances at its disposal, will prove a success.

A lady, who wishes to remain anonymous, has presented to the University of Berlin a complete set of Finsen apparatus, and funds for the gratuitous treatment of a certain number of needy lupus patients. This makes the second apparatus in the university's possession, but more are urgently needed, and it is to be hoped that the generous donor may find imitators before long.

A high Government official, Geheimrath Schneider, has been appointed "Imperial Commissioner for the combat with enteric fever" in the south-west district of the German Empire, and has entered on residence in Saarbrücken. His first work will be to enter into communication with the provincial and local authorities with a view to concerted action. Germany has been visited by severe epidemic outbreaks of typhoid and enteric this year, and in the face of the scandalous state of things disclosed by the lawsuit against the Gelsenkirchen Waterworks, it is high time that power should be given to the Imperial Board of Health (the "Reichsgesundheitamt") to examine and if necessary to order alterations where such are found necessary.

MANCHESTER.

Opening of a Jewish Hospital.—Mr. Whitehead on Teeth.—Medical School Dinner.

THE Manchester Victoria Memorial Jewish Hospital in Cheetham was formally opened on November 17th. It is the first of its kind in the city, and has been established to meet the difficulty caused by the isolation of Jews when in an ordinary hospital.

Mr. Walter Whitehead distributed the prizes to the successful students of the Victoria Dental Hospital on November 21st. In his address Mr. Whitehead had something to say about the degeneracy of the Anglo Saxon race in respect to the teeth. The teeth of the present generation in this country are not, he said, as perfect as those of previous generations. The teeth of natives of this country, especially of the county of Lancashire, are not as sound as those of aliens domiciled, or even the children of aliens born in this land. Defective teeth, Mr. Whitehead stated, must be an important factor in producing a deterioration in physique. Caries of the teeth meant that the individual carried about everywhere an incubator for bacteria. To drain, trap, and ventilate a house for such a man was waste of money. He polluted the air, contaminated the food he ate, and was in fact living in a sewer, and his mouth was "like unto a cage of unclean birds." Mr. Whitehead was not sure that the increase in the number of cases of cancer of the stomach might not in a measure be due to irritation of that organ as a consequence of imperfectly-masticated food.

To mark an important epoch in the history of the Medical School of Manchester it has been decided to hold a dinner in the Whitworth Hall of the University on Thursday, December 8th, when the Earl of Derby will preside. The year 1904 marks the evolution of the University of Manchester as a separate and independent University, the adoption of the great scheme for rebuilding the Royal Infirmary, the amalgamation of St. Mary's Hospital and the Southern Hospital for Diseases of Women and Children, and the opening of the new public health laboratories in connexion with the University. The Committee, therefore, hopes that many old students and graduates will be able to attend.

CORRESPONDENCE.

THE CENTRAL BRITISH RED CROSS COUNCIL.

SIR,—The Central British Red Cross Council desires to bring the very important question of the organization of the voluntary aid resources of this country prominently before the public, and to make an appeal for funds with the object of extending and developing Red Cross organization on a scale commensurate with the requirements of the country. Her Majesty Queen Alexandra is President, and the Council is constituted as follows:—

Representatives of the National Society for Aid to the Sick and Wounded in War.		
,,	,,	of the St. John Ambulance Association.
,,	,,	of the St. Andrew's Ambulance Association.
,,	,,	of the Army Nursing Service Reserve.
,,	,,	of the Admiralty, and
,,	,,	of the War Office.
Chairman	...	Viscount Knutsford, G.C.M.G.
Hon. Treasurer	...	Sir John Furley, C.B.
Hon. Secretary	...	Major T. McCulloch, M.B., Deputy Assistant Director-General, A.M.S.

The Central British Red Cross Council was started in January 1899, with the full approval of the War Office, and is now officially recognized by all Foreign Chancelleries as the central body authorized to deal with Red Cross matters throughout the Empire. The functions of the Council may be stated shortly as follows:—

1. To act as the recognized medium of communication with the Red Cross organizations of other countries.
2. To be the medium of official communicaton between the Naval and Military authorities and voluntary aid societies and their branches.
3. To promote the extension and organization of voluntary aid resources throughout the Empire.

The lessons of the past have shown that arrangements not preconcerted or systematized beforehand in time of peace must necessarily be imperfect under the sudden emergencies of war. We have learned from previous experience not only that, in presence of a state of war, money subscriptions, donations in kind, and offers of personal services have always been freely given, and that an appeal to the public has invariably

met with most generous response, but also that it is absolutely necessary to prepare in advance an organization capable of dealing with those voluntary offers, if we desire to avoid in the future the misdirection of energy, failure of purpose, and waste of money and material that has occurred, and must inevitably occur, through want of such organization.

Moreover the suddenness with which war conditions often arise should be borne in mind, and of this we could have no more striking instance than the tension of the last few weeks. The possibilities of our being suddenly involved in war are, therefore, such as to make it imperative on Red Cross organizations to have their preparations thoroughly thought out and settled in peace time.

Shortly after the Central British Red Cross Council was established the question was brought under consideration how, in view of wars in which Great Britain is engaged as a belligerent, the organization of the voluntary aid resources of the country could best be secured in time of peace, whether by district or local Committees or otherwise. The outbreak of war in South Africa prevented any progress being made in this direction, but the work has again been taken up, and the Council has now a scheme in hand, of which the broad outlines are:—

1. That there should be a Red Cross Committee for each County, or, in the case of the larger Counties, for a division of the County.

2. That, if found desirable, there might be separate branch Committees in large towns (say in towns having a population of over 100,000).

3. That branches should also be formed on similar lines in India and the Colonies.

4. That the local Committees should select for themselves the direction in which they are prepared to offer aid. All schemes authorised and prepared by them with a definite object, such as grants in aid, either in money or material, towards providing auxiliary hospitals, convalescent homes, hospital ships, hospital trains, or other means of transport, are to be submitted to the Council.

5. In Scotland the establishment of local Committees has been undertaken by the Red Cross branch of the St. Andrew's Ambulance Association.

The scheme as outlined above has received the gracious approval of Her Majesty Queen Alexandra, the President of the Council.

In order, however, to provide means for carrying these proposals into effect, it is necessary that the Council, which has no source of income of its own, should be in possession of funds sufficient to finance the work for the first few years, at the end of which time it is hoped that the work of organization will have developed sufficiently to be self-supporting; and it is for the purpose of obtaining these funds that the present appeal to the public is made.

The importance of perfecting Red Cross work in time of peace is fully admitted by other nations, and all the great Powers have placed the peace organization of their voluntary aid resources on a solid basis. Organization of this kind does not exist in our own country, and the danger of its absence was pointed out in the report submitted to the Secretary of State for War by the British official delegate to the Sixth International Congress of Red Cross Societies which was held at Vienna in 1897. It is confidently hoped that the question will be fully recognized as one of national importance, and that a generous response will be made by the public to this appeal.

Donations, and annual subscriptions of 5s. and upwards, should be sent to the Honorary Treasurer, Sir John Furley, C.B., 14, Evelyn Gardens, South Kensington. Cheques should be made payable to the Central British Red Cross Council, and should be crossed London and County Bank, South Kensington Branch.—I have the honour to be, Sir, your obedient servant,

KNUTSFORD, Chairman.

68, Victoria Street, Westminster, S.W., November, 1904.

ANTITYPHOID INOCULATION.

SIR,—Before replying to the letters of Professor Pearson and Colonel Simpson in the BRITISH MEDICAL JOURNAL of November 19th, you will, perhaps, allow me to recall to your readers what has passed in connexion with this matter.

In an article published in your columns on November 5th you reviewed, in connexion with a leader which had appeared in the *Times*, the history of the conflict which I have carried on with the Medical Advisory Board on the subject of antityphoid inoculation. You undertook the defence of the Medical Advisory Board against a charge of bias brought against them in the article in the *Times*. You sought to attach blame to me for the fact that I had, in conjunction with Dr. Bulloch, withdrawn from the Antityphoid Committee which had been appointed by the Secretary of State; and, finally, you suggested that the conclusions arrived at by Professor Pearson, in the statistical study of the results of antityphoid inoculation, furnished a justification of the action taken by the Medical Advisory Board in connexion with antityphoid inoculation.

In my rejoinder, which you were good enough to publish in your issue of November 12th, I set forth facts to show that the charge which had been brought against the Medical Advisory Board and Colonel Bruce was well founded. Further, I showed that I had very good grounds for withdrawal from the Antityphoid Committee. Finally, I showed that the conclusions arrived at by Professor Pearson in his statistical report could not be pleaded in alleviation of the action taken by the Medical Advisory Board.

I pointed out in connexion with this last question that Professor Pearson's opinion was an *ex post facto* opinion, which had been sought only when it had become manifest that it would be difficult to postpone any longer the reintroduction of antityphoid inoculation into the army. I further suggested in my letter that the full statistical materials had not been supplied to Professor Pearson, and that he had not been notified of the existence of important errors in certain of the statistical records which were furnished to him. Lastly, I permitted myself certain criticisms upon the practical import of the conclusions which have been arrived at by Professor Pearson.

My contentions on the fundamental issues which were discussed in the *Times*, and rediscussed in your article, have not, so far as I am aware, been assailed. I have, however, been called to account with respect to certain minor matters, both by Professor Pearson and Colonel Simpson.

The gravamen of Colonel Simpson's letter I take to be this—that I implied that he had withheld material facts from Professor Pearson. He contends in his letter that he did not withhold any material facts, and he gives in connexion with each of the statistical reports which he withheld his reason for withholding it. I, on the contrary, submit that at least five out of the six statistical items which were withheld ought to have gone forward.

I will briefly go through Colonel Simpson's list of statistics, noting and criticising the reason he assigns for withholding each statistical record.

1. *Statistics of the Barming Asylum, Maidstone.*—These statistics show that the incidence of typhoid fever among the uninoculated, who were here less exposed to infection, was 3·4 per cent., while the incidence among the inoculated was *nil*. Colonel Simpson tells us that this record was withheld on the ground that it applied to a civil institution. I regard that reason as frivolous, for I conceive that if it can be shown that antityphoid inoculation protects the civilian it may be taken for granted that it will protect the soldier also.

2. *Statistics of the Richmond Asylum, Dublin.*—This statistical record shows that the incidence of typhoid fever was in the uninoculated and inoculated respectively 10 per cent. and 1·8 per cent., and that the death-rates were respectively 1·3 per cent. and 0·3 per cent. These figures were again withheld by Colonel Simpson on the ground that they apply to a civilian community.

3. *Dr. Crombie's Second Series of Statistics dealing with the Incidence of Typhoid Fever in the Case of Officers Invalided from South Africa.*—These statistics show that in the case of inoculated officers only half as many were invalided home on account of typhoid as was the case in the uninoculated officers of equal age. The statistics were withheld by Colonel Simpson for a reason which will be best discussed in connexion with the next statistical record.

4. *Statistics Applying to the Garrisons of Egypt and Cyprus.*—These show that there was achieved in the case of the inoculated an 18-fold reduction in the incidence of typhoid and a 2½-fold reduction in the death-rate. In common with the statistics last mentioned these statistics were withheld by Colonel Simpson on the ground that it had been pointed out by me (in the critical commentary on p. 58 of my book on antityphoid inoculation) that the conditions were in each case "unduly favourable to the uninoculated." I submit that this is a very unconsidered reason for withholding a statistical record. Reflection will show that if in the case of a statistical experiment the conditions are for any reason unduly favourable to the control group of uninoculated, and if none the less, as in the statistics which are here in question, the inoculated have a smaller incidence-rate and a smaller death-rate, this constitutes an *a fortiori* argument in favour of inoculation. The circumstance that a statistical record furnishes an *a fortiori* argument in favour of inoculation is not a sound reason for rejecting it.

5. *Statistics applying to the 15th Hussars.*—These statistics furnish evidence of an 11-fold diminished incidence and a 12-fold diminished death-rate from typhoid fever in the inoculated. The figures are withheld by Colonel Simpson for a two fold reason. I would be afraid to characterize the one or the other of these reasons as the more absurd. The first of the reasons assigned is that the corrections in the figures which are called for in connexion with a regiment in India in the case where men leave the country time-expired, and in the case where new drafts join the regiment from home, have not in this case been applied.

If Colonel Simpson had reflected he would have recognized that corrections of this kind are not called for when, as is the case here, the statistics apply to the first year of a regiment's sojourn in India. The second reason which is assigned for withholding the statistics is perhaps more overtly absurd. It is to the effect that the officers and women of the regiment are included in the figures which I give. If Colonel Simpson had consulted the official figures which are before me as I write he would have found in the first place that the percentage of inoculated in the case of the women and officers was practically the same as in the case of the men (64 per cent. in the case of the officers and women, and 66 per cent. in the case of the men). Again, if Colonel Simpson had deducted the officers and the women he would have found that this makes no difference to the result. The respective incidence of typhoid fever in the uninoculated and inoculated would have worked out at 10.6 : 1, instead of as in the figures I supplied 10 7 : 1 ; while the respective death-rates of the uninoculated and inoculated would have worked out at 11.6 : 1 instead of as in the figures I have used as 12 4 : 1.

I think I am entitled to characterize the reasons which induced Colonel Simpson to withhold these statistical records as either unconsidered or frivolous, as the case may be.

In my letter of November 12th I further suggested that objection can be taken to the statistics which were furnished by Colonel Simpson on the ground that disclosed errors in two of the statistical records were not pointed out to Professor Pearson. It is conceded in Colonel Simpson's letter that the errors in the statistics which apply to the garrison at Ladysmith ought to have been communicated. I would point out that Professor Pearson ought to have been cautioned also in respect to the statistics which applied to the Tin-Town Hospital. A reference to the critical commentary in my book on antityphoid inoculation will show with respect to the Tin-Town Hospital statistics that there is good reason to believe the case-mortality of the inoculated was three times less instead of being, as is set down in the tables, three times greater than that of the uninoculated.

I have now done with Colonel Simpson. I would, however, respectfully submit that it is very pertinent to remember in connexion with Professor Pearson's conclusions that Colonel Simpson did not place him in possession of all the material facts.

I will now deal with Professor Pearson's letter. The first point which Professor Pearson makes against me is in connexion with a passage which he quotes from p. 58 of my book on antityphoid inoculation. In that passage I state that when the errors which have been disclosed in the Ladysmith statistics have been duly rectified the case-mortality of the inoculated works out *distinctly lower* (the italics are Professor Pearson's) than that of the uninoculated. The error committed in denoting a case-mortality of 18 per cent. (in the inoculated) as distinctly lower than a case-mortality of 22 per cent (in the uninoculated) seems to me a venial one. But since it has been insisted upon, I may, perhaps, state exactly what occurred. By a slip of my pen, made in transcribing my manuscript, the word "officers" was here omitted from my text. The justification of the employment of the italicized words in connexion with the case-mortality of the officers was furnished by Captain Ward's enquiry. That enquiry had established (1) that the correct number for the inoculated officers in Ladysmith was 41, not 44 as in the official returns; (2) that the cases diagnosed as enteric in connexion with the inoculated officers were 7 instead of 9; (3) that the deaths among these had been *none* instead of 2; (4) that the case-mortality for the inoculated officers was in reality 0 in 7, and not 1 in 4.5 as in the official figures; and finally (5) that the corresponding case-mortality in the 45 uninoculated officers attacked was not 1 in 8.6, as in the official figures, but 1 in 4 5.

What is important in connexion with this correction of the figures is, I submit, not the fact that it is now established that the case-mortality was here reduced by antityphoid inoculation, but rather the fact that it is now established that one of the "mysteries" of the typhoid statistics which Professor Pearson has discerned—the mystery, to wit, "that an inoculated man profited less from his inoculation if attacked in Ladysmith than if attacked elsewhere"—entirely disappears when the proper corrections are made in the register. If Professor Karl Pearson had any practical acquaintance with medical matters he would not attach faith to any case-mortality based on a series of only 35 cases, and he would not see something "most mysterious" in the false registration of a couple of deaths in a beleaguered city.

Professor Pearson passes on to deal with yet another statistical mystery. This time it is the mystery of the zero "coefficient of correlation for immunity" in the case of the C.I.V.'s. I refer to this question only to state that I am quite without a clue to this mystery. I probed into the matter when the figures were communicated to me, and I was not able to elicit anything more than the circumstance that certain records had been lost, and that the detailed facts were probably irrecoverable. I have tried in my critical commentary (p. 61 of my book on antityphoid inoculation) to indicate the position of affairs to the thoughtful reader by telling him that no data beyond those included in the tables were available.

From the point in Professor Pearson's letter at which we have now arrived the vials of wrath begin to descend upon my head. They begin, first gently, in this wise: "I am somewhat surprised to find Dr. Wright citing only data which concern *case-mortality*" (the italics are mine). Then the downpour begins: "Either Dr. Wright is purposely misleading the readers of the JOURNAL or he is so unaccustomed to figures that he cannot be trusted to argue from statistics." After some evident hesitation on the question as to whether I am knave or fool it is decided that I am both. Finally, I am peremptorily called upon to answer certain angry categorical questions:

Why in his letter did Dr. Wright state my correlation value for immunity against an absolutely different matter, his own mortality suggested?

Dr. Wright has without any warning to the reader placed my result 0 1 for immunity against his three-fold exaggeration for general mortality.

Will Dr. Wright say why he has slurred over the important point involved by playing with interchange between immunity and case-mortality statistics?

So far as it lies in me I will endeavour to answer these questions, and I will answer them with such courtesy as may be consistent with directness of speech.

I would first, however, point out to Professor Pearson that a Nemesis watches over human affairs, and that in this particular instance that Power has interfered to vindicate upon him a departure from the amenities of scientific discussion. Nemesis has condemned Professor Pearson—distinguished statistician though he be—to misread the very paragraph of my letter which he quotes. Neither elsewhere in my letter, nor in the particular paragraph which he quotes, have I cited, as he asserts, any data whatever which have reference to case-mortality. He will, when the mists which cloud and fill his perspective have passed, perceive that I have cited no other figures than those which were, as his report shows, furnished to him from the same official sources which are open also to me. And unpalatable as the savour of the fact may be for Professor Pearson, there is in my statements neither a three-fold exaggeration nor any exaggeration at all; neither is there, let me tell him, any question of any inconsistency between the four to six-fold diminution of death-rate of which I write in the paragraph which he quotes, and his two to three-fold reduction of case-mortality, coming as it does upon the top of a conceded twofold reduced incidence.

I will now endeavour to answer his categorical questions, and I will, with apologies to your readers, tell him facts which are familiar knowledge to them. Further, I must try to put my points very simply, as I would try to put them to an intelligent student who was aspiring to learn the elements of medicine and something of the medical arrangements which obtain in the army.

1. Typhoid fever is a disease which is very liable to be confused with many other specific fevers and febrile conditions.

2. Apart from the employment of bacteriological methods, certainty of diagnosis can be arrived at during life only in a small percentage of cases. Even in these it can be arrived at only after long watching of the temperature and a careful appreciation of symptoms.

3. The difficulties of the differential diagnosis of typhoid fever are enormously increased in tropical climates where malaria and other fevers of uncertain origin are prevalent.

4. Under ordinary circumstances the only practically certain criterion of typhoid fever is to be found in the intestinal lesions which are disclosed by *post-mortem* examination.

5. In the case of the army a continuous fever may, according to the view taken of the proper classification of doubtful fevers by the medical officer in attendance, the medical officer in command of the hospital, or, as the case may be, the administrative medical officer in charge of the district, be registered as typhoid fever or as "simple continued fever."

6. A *post-mortem* examination is a routine measure in the case of every soldier who dies in the army.

7. When the characteristic lesions of typhoid fever are

found, the particular death in question comes upon the register as a death from typhoid fever.

8. It follows from what has been said above that incidence statistics with respect to typhoid fever, and, in particular, incidence statistics obtained from the army, have only a subordinate value as criteria of the efficacy of antityphoid inoculation.

9. It follows also that the death-rate from typhoid fever is everywhere a comparatively trustworthy criterion, and that it is in the army—at any rate, in times of peace, where *post-mortem* examinations are carried out as a routine measure—an almost absolutely trustworthy criterion of the efficiency of antityphoid inoculations.

If I have succeeded in putting my instruction simply I shall have conveyed to Professor Pearson my justification for "slurring over" a point insisted upon by him—the layman and the mathematician—as a point of cardinal importance. I hope that it will have become plain to him that, in brushing aside his coefficient of correlation for immunity in favour of a consideration of the reduction in the death-rate of the inoculated, I have been substituting for the comparatively untrustworthy criterion upon which he relies an almost absolutely trustworthy criterion. Let me assure him again, in conclusion, that in the face of the three to six-fold reduction of mortality obtained in India in three consecutive years upon an inoculated strength of 4,000 to 6,000, few in the Guild of Medicine are likely to attach weight to the fact that Professor Karl Pearson "thinks that he may safely say that his 0.1 coefficient of correlation forbids us to embark upon the routine inoculation of the army in India."—I am, etc.,

London, W., Nov. 22nd. A. E. Wright.

PHYSICAL TEACHING.

Sir,—In the British Medical Journal of November 19th, p. 1428, there appears a notice of a meeting to consider the advisability of founding a central institute for physical education in London, and at page 1422 some editorial remarks of a somewhat caustic nature upon this meeting. The notice is rather too brief to convey to the readers of the Journal a complete idea of what the object of the meeting was, and I therefore should like to explain it as briefly as possible. The motion was to found a central institute in London on the same lines as that in Stockholm, but with very considerable limitations. As I pointed out in seconding the proposal, the Central Institute in Stockholm has two distinct functions: (1) that of teaching physical education; and (2) that of granting certificates of fitness. These two functions are combined in the Stockholm Institute, just as they are in the case of medicine in the University of Edinburgh, but they may be perfectly distinct, as they are in the case of the University of London and its affiliated schools. In the event of the establishment of a school for physical training in London it would be better that it should remain separate from an institute which would grant certificates, and that London and provincial schools should equally be affiliated to such an institute, which should hold examinations and grant certificates to scholars from any school recognized by it on the same plan as that followed by the University of London. As there are a number of excellent schools for physical education already in the neighbourhood of London and in large provincial towns, it would obviously be unfair to them that any new school founded in London should arrogate to itself any pre-eminence over them in the matter of giving certificates.

But it may be asked, If there are already so many schools for physical education why should another be started? The answer simply is that a great movement in the direction of physical education in schools is going on in the country, and there does not seem to be at present adequate provision for the training of school teachers in this subject.

The Board of Education is doing a great deal in this direction, and the presence of Lord Londonderry (President of this Board) at the meeting, shows the interest he takes in the subject, although he was careful to disclaim any official responsibility in the matter. The Central Institute in Stockholm does not only grant certificates; it also teaches physical training, and of this, as mentioned in the British Medical Journal, p. 1428, there are four sections: (1) Educational, (2) medical, (3) military, and (4) aesthetic. The two latter sections are not intended to be taught in the proposed school in London, and as there is likely to be a difference of opinion regarding the teaching of medical massage and movements, this section was also omitted in the resolution. The essence of the proposal, therefore, is that it is advisable:

(1) To establish a school for teaching educational physical exercises in London, so as to supplement the schools at present at work, and give a supply equal to the increased and increasing demand.

(2) To establish a central institute which shall co-ordinate all the schools for this subject throughout the country, by holding proper examinations, and if required making inspections so as to maintain a properly high standard of efficiency in all.

I think that these objects are likely to commend themselves to all who have the welfare of the country at heart.

In regard to the teaching of medical massage and movements and issuing certificates and licences to masseurs, and masseuses opinion is likely to be more divided. For my own part, I regard massage as a useful therapeutic instrument, which like opium is capable of doing great good, and is also capable of great abuse. And just as the law prevents opium from being sold by ignorant persons, and punishes those who sell it carelessly, and thereby facilitate its criminal use, so massage should be regulated in like manner, and the public safeguarded against mischief, either from its ignorant use or wilful abuse. Frequently English masseurs and masseuses come to me with the complaint that the Swedes come to this country and take the bread from their mouths. But the reason is simple. The Swedes know their work because they have spent either two or three years in learning it, whilst many of the English applicants who come to me asking for cases, tell me they are thoroughly trained in massage, medical electricity and the Nauheim treatment because they have attended a full course lasting three months. This seems to me to show the desirability of some school where English masseurs and masseuses might obtain as thorough a training in London as the Swedes do in Stockholm. But this question is still an open one, and so are all the details of the proposed School and Institute for Physical Education. The scheme is still in embryo, but it is to be hoped that the medical profession generally will take it into consideration, and that each medical man will help as far as he can to promote physical education throughout the country by carefully considering the lines on which it should be carried out, giving advice when he can, supporting the proposals which are right, opposing those which are wrong, and perhaps also assisting by investing money in schools which, if properly conducted, should require no charity, but should, on the contrary, bring in a fair dividend to their supporters.—I am, etc.,

London, W., Nov. 21. Lauder Brunton.

*** We have received from Miss Theodora Johnson a long letter containing a good deal of irrelevant matter. Miss Johnson complains of the brevity of our report, and encloses "a fuller press report from a newspaper." We observe that this is in reality a printed "abstract" issued to the press before the meeting "of Miss Theodora Johnson's scheme for national physical education, to be read before the conference she has convened to meet on Wednesday, November 16th." We desire to be perfectly fair to her, and therefore, in response to her request, reproduce the following paragraphs:

The next point is the spread of hygiene and physiology by means of public lectures for the poor delivered by the staff and senior students of the college.

Further, the college might affiliate already existing institutions of acknowledged worth and suitable standing—like the National Health Society.

Finally, the parent institute would form similar institutions in Edinburgh, Dublin, and many of our great cities.

We had omitted these paragraphs out of kindness to Miss Johnson, as her reference to the National Health Society shows that she has a very imperfect acquaintance with the object of that body, while the first paragraph quoted can but confirm the opinion that the scheme presented to the conference deserved, by reason of its indefinite character alone, the fate which it met with at the hands of Sir William Church.

AID FOR MIDWIVES IN PRACTICE BEFORE THE PASSING OF THE MIDWIVES ACT OF 1902.

Sir,—I have read with much interest the letter from Mr. Ward Cousins in the British Medical Journal of November 19th, in which he refers to the need for instruction by means of lectures or demonstrations for the large number of untrained but practising midwives all over the country, who have enrolled themselves under Clause 2 of the Act, thereby coming under supervision, but of course gaining nothing in knowledge. As much time will necessarily elapse before there is a sufficient number of trained women to take the place of those who disappear under the new dispensation,

the continuance under regulation and supervision of the more competent among the untrained ones is not altogether to be deplored; but such instruction as Mr. Ward Cousins suggests, in some of the elements of their work, and in a clear understanding of the requirements of the Act, would be of very great practical value.

The Committee of the Association for Promoting the Training and Supply of Midwives have for some time had this matter under consideration, and are warmly in favour of such instruction: and so, I have reason to believe, are many medical officers of health and other authorities who have the responsibility of carrying out the Act.

We have recently drawn up and printed an outline syllabus for a course of such lectures, and will most gladly send a copy to any one applying to the Secretary, Miss Gill, at the office of the Association, Dacre House, New Tothill Street, Westminster.

Any medical man giving such lectures would, of course, follow his own method with regard to the technical instruction, but this syllabus might even then afford some help in suggesting the points and difficulties most likely to trouble the average midwife in his audience.

It appears to me, Sir, that as the administration of the Act is in the hands of the county councils, the initiation of such instruction locally would most fitly be undertaken by them as a branch of technical education, and the necessary funds be forthcoming from this source; but the Association would welcome any suggestions on the subject, and will gladly co-operate in any practical movement in this direction.—I am, etc.,

AGNES MABEL BRUCE,
Chairman of Executive Committee.

London, W., Nov. 22nd.

ORAL SEPSIS AND ANTISEPSIS.

SIR,—The very full discussion upon the subject of oral sepsis, with the leading article referring to it, in the BRITISH MEDICAL JOURNAL for November 19th will, it is profoundly to be hoped, call general attention to the necessity of an adequate toilet of the mouth in all patients and especially perhaps in those upon the upper part of whose digestive tract operations have to be performed. My object in writing this letter is to ask that credit should be given for most admirable work upon this subject to Dr. Harvey Cushing of Baltimore. It was he who first showed surgeons the importance, in operations, for example, upon the stomach and intestines, of a preliminary sterilizing of the mouth, and of all foods administered by the mouth. He brought forward abundant bacteriological evidence to establish the fact that by preventing the access of bacteria to the stomach, for a few days before operation, the stomach and the jejunum when opened at operation were found to be sterile. He writes:

> The procedure which we have employed is simple, and mainly consists in an attempt to render amicrobic all ingesta. The mouth is rinsed with an antiseptic solution, and the teeth are carefully brushed at intervals of a few hours, and with especial care before and after feeding. The stomach, if any chronic catarrh exists, and micro-organisms in number are found present after a test meal, is washed out carefully morning and evening. Food is taken in small amounts and at comparatively frequent intervals, from clean or, preferably, sterile vessels, and consists of boiled water, sterilized milk, beef tea, albumen water, and similar liquids. Patients with chronic gastritis have been seen to gain in weight under this régime. Preliminary to the operation for from six to ten hours nothing is given by the mouth, rectal feeding being instituted if necessary.

Dr. Harvey Cushing's paper is entitled Experimental and Surgical Notes upon the Bacteriology of the Upper Portion of the Alimentary Canal, with Observations on the Establishment there of an Amicrobic State, as a Preliminary to Operative Procedures on the Stomach and Small Intestine, and is published in Vol. ix of the *Johns Hopkins Hospital Reports*.

In more than one paper during the last three or four years I have emphasized the importance of the procedures instituted by Dr. Harvey Cushing, but his work does not seem to have elicited the recognition it undoubtedly deserves.—I am, etc.,

B. G. A. MOYNIHAN.

Leeds, Nov. 21st.

DIPHTHERIA IN BRISTOL.

SIR,—We agree with Dr. Cobbett that the important point is "the part played by Hofmann's bacillus," and "until it is settled public health officers will be unable to attack diphtheria with single aim, and deal effectually with contacts. The subject is, therefore, of considerable practical importance."

We are fully acquainted with Dr. Cobbett's papers in the *Journal of Hygiene* to which he has referred, and we do not dispute the laboratory results obtained by him and Dr. Graham Smith, but the whole matter seems to us to depend upon the answer to the question, how far are we to be bound by laboratory experiments alone? Failure to prove the virulence, or toxin-forming power, of Hofmann in the laboratory does not prohibit the possibility of the harmfulness of the bacillus outside the laboratory, for the following reasons:—

The conditions inside and outside the laboratory are not really comparable. It is impossible to produce a culture medium corresponding to the ever-varying pabulum of a human mucous membrane, and especially to that of a series of different mucous membranes. Until the conditions of nature can be exactly reproduced in the laboratory it seems illogical to definitely assert that, because under one set of conditions a bacillus is apparently harmless, therefore it must remain equally harmless under very different conditions. It is understandable that a highly virulent strain of diphtheria can be cultivated in the laboratory and still retain virulence, but that other strains with little virulence may, owing to the lack of conditions met with in nature, fail to show any virulence when grown on the ordinary culture medium. Dr. Cobbett's failure to perpetuate in subculture the barred, giant, and club-ended forms of Hofmann sometimes found in throat cultures is, to our minds, a proof of this; for his medium does not correspond to nature, and these transition forms, which in nature might reascend the scale to full virulence, have, under his care, descended to practical non-virulence and show only the well-known morphological form of Hofmann. Subcultures in the laboratory, too, are purposely made pure, and thus the possible effect of associated organisms in producing virulence is put out of court; in nature any such action would have free play.

We have also record of eleven instances occurring in Bristol in 1903 (probably by no means all if the whole records were hunted over) in which patients showing only Hofmann at first, later on, at periods varying from one to three months, yielded cultures containing morphological diphtheria. Six similar cases arose in 1904. Four like cases occurred in an outbreak near Bristol in 1901-2. Cases occurring during diphtheria prevalence have been reported by us, and by others, where the only discoverable source of infection has been the Hofmann bacillus *† Cases are also on record where severe symptoms ending in death from heart failure,*† or including paralysis,† have occurred, when only Hofmann has been found in several cultures. Further, where the affected persons are apparently well, mild manifestations of usual diphtheritic symptoms (such as feebleness and irregularity of heart action or tendency to faintness, specially occurring at night, when, under ordinary home conditions, they would pass unnoticed) have been detected under careful observation in hospital.*

We may point out that the Cambridge School is almost alone in its expressed opinion on this matter. Dr. Cobbett's views as to Hofmann were fully placed before the Congress of the Royal Institute of Public Health, at Liverpool, in 1903, in a paper opening a discussion† on "The Nature of the So-called Pseudo-diphtheria (Hofmann) Bacillus and its Significance (if any) in the Bacteriological Examination for Diphtheria," and he alone among those who took part in the discussion, including bacteriologists of Camberwell Bournemouth, Bristol, and Glasgow, held the view that Hofmann's bacillus was not diphtheria, and could not cause that disease. The discussion was summed up by Professor Hewlett, of King's College, distinctly in favour of the view that the bacillus is a form of diphtheria bacillus, though far removed from virulence.

We are therefore not prepared to accept as conclusive laboratory results proving the innocuous character of Hofmann bacillus obtained under unnatural conditions, in face of the teaching of combined clinical and bacteriological observation of cases occurring in large diphtheria epidemics, and it seems to us that at present it is neither justifiable nor safe to dogmatically assert that under no conditions can Hofmann bacilli be either harmful or reconvertible, or that they may in all instances be safely disregarded.—We are, etc.,

D. S. DAVIES, M.D.,
Medical Officer of Health, City of Bristol.

JOHN C. HEAVEN,
Deputy Medical Officer of Health, City of Bristol.

Bristol, Nov. 22nd.

* "Diphtheria as a Disease of Person, not of Place," *Public Health*, June, 1903.

† *Journal of State Medicine*, October, 1903.

CHARITY THAT BEGINS AT HOME.

SIR,—In the BRITISH MEDICAL JOURNAL of November 5th you published a letter from an ingenious correspondent, "Vindex," on medical charities, in which he called attention to the fact that of 240 London practitioners who subscribed for the entertainment of our French *confrères* only 68 are subscribers to the British Medical Benevolent Fund and 98 subscribers to Epsom College. Being the President of the Society for Relief of Widows and Orphans of Medical Men, I also have been induced to compare the French subscribers with our list of members, and find that 25 only have joined the society.

The Society for the Relief of Widows and Orphans of Medical Men was founded in 1788, and has £100,000 invested. Members must, at the date of their election, live within twenty miles of Charing Cross, and they pay an annual subscription of two guineas for twenty-five years only.

The widow or orphan of any person who was at his decease a member of the society, and had been so for three years immediately preceding his decease, is eligible to receive relief from the funds.

The widow of a member who has no certain income or provision, exceeding altogether the yearly value of eighty pounds, is eligible to receive, half-yearly in advance, such relief from the society as the Court of Directors shall determine.

The widow of a member who is left with a child or children under 16 years of age entirely or in part dependent on her, and whose certain income and provision does not exceed altogether the yearly value of fifteen pounds for each child, in addition to the eighty pounds, is eligible to receive such additional assistance, half yearly, in respect of each child under 16 years of age as the Court of Directors shall determine.

From November, 1793, to December 31st, 1903, the sum of £175,443 19s. 6d. had been distributed in ordinary relief amongst 270 widows and 347 children, comprised in 284 families relieved, besides other kinds of relief.

The Court of Directors meets for the election of new members on the second Wednesday in the months of January, April, July, and October.

The Secretary attends at the office of the society, 11, Chandos Street, Cavendish Square, W., every Wednesday and Friday afternoon, from four to five o'clock.

May I venture to call the attention of London and suburban practitioners, and especially the younger members, to the advantages offered them by this society, and thank you by anticipation for inserting this letter?—I am, etc.,

London, W., Nov. 23rd. CHRISTOPHER HEATH.

THE INSURANCE OF MOTOR CARS.

SIR,—In the issue of the BRITISH MEDICAL JOURNAL of October 22nd, you have an annotation on the Insurance of Motor Cars, and you therein very wisely warn your readers to have a care in their dealings with fire insurance companies. From a recent attempt on my part to insure my car against fire with a well-known company, I think your warning is justified. It seemed to me that the bargain which the company were willing to complete, would be largely a one-sided affair.

There is another way out of the difficulty, of which perhaps some of your readers may not be aware. That is to insure in Lloyds a sufficient sum of money to cover the value of the car against its destruction by fire. I have just done that with my car, and the policy is so worded that if my car is burnt completely up during the next twelve months, the cause of fire being either intrinsic or extrinsic, that is, on the car or from without, in any place in England, I shall receive a certain sum of money: that sum of money will be sufficient to buy me a new car like my present one, with all its accessories. In the case of partial damage, the underwriters will make good the loss. The depreciation of the car during the twelve months, does not enter into the bargain at all. I shall be pleased to put any of your readers into communication with my insurance broker, who put the business through for me, if they care to write me privately.—I am, etc.,

17, Belsize Park, Hampstead, N.W. LEWIS G. GLOVER.

THE ALLEGED INCREASE OF SYPHILIS.

SIR,—In an article on syphilis at the Cape, which appears in the BRITISH MEDICAL JOURNAL of November 19th, it is stated that "a correspondent—Mr. Pernet—has pointed out that since the South African war syphilis is on the increase in London." It would probably interest many of your readers to hear something about the evidence on which your correspondent's statement is based.—I am, etc.,

London, W., Nov. 21st. ARTHUR COOPER.

OBITUARY.

ACHILLE VINTRAS, M.D. (ST. AND.) M.R.C.S.,

Senior Physician to the French Hospital, London.

THE funeral of Dr. Vintras, Médecin-en Chef de l'Hôpital Français London, took place on November 15th at the Brompton Cemetery, being preceded by a service at Notre Dame de France, Leicester Square. There was a very large attendance, and Monsieur Paul Cambon, the French Ambassador, came over from Paris expressly to be present. At the cemetery he spoke some words of touching affection and remembrance. There were also present the only son of the deceased, Dr. Louis Vintras, the medical and surgical staff of the hospital, the General Committee, and many others.

Dr. Vintras was the founder of the French Hospital, and its welfare was his one thought. He died at Brighton on November 9th at the Convalescent Home connected with the hospital, which his energies and influence also founded. His health failed perceptibly after a bad attack of influenza last year, and he did not feel himself equal to taking part last month in entertaining the French doctors and surgeons on their visit to London, although he managed to receive them on their visit to the French Hospital. His last wish was to be taken to the French Hospital after his death, and this wish was carried out, his body lying in state during November 14th, surrounded by the numerous wreaths and crosses sent by friends and colleagues.

Dr. Vintras was born in 1830, near Caen, in Normandy. He studied in Paris and afterwards in London—at St. Mary's Hospital—and on obtaining the diploma of M.R.C.S. in 1858 became one of its first house-surgeons. He had a large practice amongst his own countrymen, and only retired a few years ago. He held many honours, being Officier de la Légion d'Honneur, and Commander of the Lion and Sun of Persia.

Dr. Vintras contributed to the medical journals both at home and abroad, and was an authority on the mineral waters and watering stations of France. He was greatly beloved by all those connected with him, both in his work and in his private life, and his decease leaves a blank which will not be easily filled.

WE have to announce the death of Dr. WILLIAM COX NEVILLE of Dublin, who died at his residence there on November 18th of pneumonia. He graduated at the University of Dublin in 1878, and soon after devoted himself to the study and practice of gynaecology. His work in this department was of a very high order, and twenty years ago he was looked upon as the most promising man of his time. The hope of his friends was not fulfilled. He early fell into ill health, and soon disappeared from the practical work of the profession. A few years ago he felt sufficiently recovered to make a fresh start, this time taking up pathology. His mental qualities seemed to be as bright as ever, but he had lost touch with his old associations, and never recovered the position which he had been obliged to abandon. His death is very sincerely mourned both by those who knew him in earlier days and admired his many unusual gifts, and by those who, in his later effort, were able to value those qualities which would have received a great success had the fates been kinder.

UNIVERSITIES AND COLLEGES.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ANNUAL MEETING OF FELLOWS AND MEMBERS.

THE Annual Meeting of Fellows and Members of the Royal College of Surgeons of England was held at the College in Lincoln's Inn Fields on November 17th, with the President of the College, Mr. J. Tweedy, in the chair.

Report of Council.

Some difficulty was experienced in commencing the business of the meeting in consequence of there not being a quorum present, but eventually a quorum was declared to be present, and the meeting was commenced by Mr. Tweedy making a short statement in regard to the report of the Council for the period from August 4th, 1903, to August 1st, 1904. An abstract of this report was published in the BRITISH MEDICAL JOURNAL on October 29th (p. 1197.)

Mr. Tweedy explained that the report of the Council was merely placed before the meeting, and that he would be glad to make any explanation in regard to the meaning of the report if any one wished, but that he could not discuss the

policy of the Council of the College in connexion with the report before them.

Dr. G. Danford Thomas asked in regard to the report to the Council on the relations of the medical profession to the coroner's court under what circumstances the matter had come before the Council.

Mr. Tweedy explained that the Council had received a letter from the London County Council asking the College to nominate certain pathologists to conduct *post-mortem* examinations in certain cases at a coroner's court. The Council did not feel themselves at liberty to send the list of names as suggested and nominated a Committee to consider the relations of the medical profession to the coroner's court.

In reply to Mr. D. Vinrace, Mr. Tweedy stated that the annual meetings were held on the initiative of the Council and could, he believed, be at any time intermitted. The Members of the College, whatever might be their aspirations, were not the governing body. The Council was the properly constituted governing body, and no one outside the Council could have a voice in any legal sense in determining the policy of the College. The Council were extremely pleased to see the Members and Fellows, and to have their advice and recommendations, which were carefully considered by the Committee of the Council and then considered again by the Council as a whole. The Fellows had no more voice in the affairs of the College than the Members in such a meeting as the present, but the Fellows could influence the policy of the College by electing those whom they desired to be on the Council.

Mr. George Brown then made some remarks on the registration of medical and dental students and commented on the possibility of the provincial examining bodies refusing to register their students, but Mr. Tweedy reminded him that the Council of the College had not yet come to any decision on the point.

The Title of "Doctor."

Mr. T. G. Horder then moved the following resolution:—

That the Council be asked to take the necessary steps in conjunction with the Royal College of Physicians to ensure that all persons who pass the conjoint examination shall be legally entitled to call themselves "Doctors."

He observed that Members of the College laboured under a disability in not being able to call themselves "Doctors." He suggested that the Council should remedy this grievance by making a change in their charter, or by helping the British Medical Association in their laborious efforts to pass the Medical Acts Amendment Bill.

This was seconded by Mr. F. W. Collingwood, who asked why the holder of the degree of M.B. should have the courtesy title of "Doctor" whilst it was denied to the Members of the College.

Mr. Tweedy explained how the Council had taken many steps and had endeavoured for a long time to bring about some change in the matter. He detailed what had been done by the Council since 1857, and doubted whether the Council would be any more successful now than it was then.

Mr. Brown stated that no legal powers existed to prevent any registered medical practitioner from calling himself "Doctor." He suggested that the College of Physicians should withdraw their by-law forbidding their Licentiates to call themselves "Doctors."

The resolution was then put and carried unanimously.

The Council and Members.

The following resolution was carried with one dissentient. It was proposed by Mr Joseph Smith, seconded by Mr. Brown, and supported by Mr. Laurence (Northampton):—

That this meeting considers the reply of the Council to the resolutions passed at the last annual meeting of Fellows and Members to be most unsatisfactory. In view of the repeated refusal of the Council to accede to wishes of the Members, expressed in meetings to which they have been annually summoned for twenty years, this Meeting emphatically repudiates the claim of the Council to represent the Members, and regards its attitude in this question as not convincing to the great majority of the Body Corporate.

Coroners and the Medical Profession.

Dr. G. Danford Thomas then moved the following:—

That the report of the Committee of the Council on "The Relations of the Medical Profession to the Coroners' Courts" is unsatisfactory, and that this meeting regrets that the Council did not see their way to make an independent enquiry into the matter, with the assistance of some Fellows and Members having intimate knowledge of the subject.

The report did not show that any inquiry had been made in regard to the relations of the medical profession and the coroners' court. The London County Council had endeavoured to enforce the alterations it desired in the law on candidates for the office of coroner by making them sign a paper agreeing to these suggestions; many of those were contrary to law, and some were so ridiculous that the London County Council had found it necessary to modify them. Dr. Danford Thomas said that the suggestion of the London County Council "that every case of death, after surgical operation, should be reported to the coroner, with the view to preliminary enquiry, and, if necessary, the holding of an inquest," was due to the influence of the notorious Society that so greatly objected to operations on animals, and held such strong ideas that hospitals were used for experimental purposes on human beings. The inspiration for that clause came from that well-known Society, and it was a monstrous suggestion from the London County Council that the best and ablest of our surgeons should be haled before a coroner and cross-questioned for using skill and experience in trying to save some poor patient's life. Dr. Danford Thomas concluded by stating that the Council of the College had not really touched on the question, and said that much could be done if the matter was properly inquired into and a clear opinion expressed on the subject.

After Mr. Cornish had seconded the motion and Mr. Haslip had given a clear statement of the unsatisfactory way in which the London County Council had attempted to deal with the matter, Mr. Tweedy explained that the report in question had only been received by the Council and stood merely as a record.

Mr. Tweedy then submitted the resolution of Dr. Danford Thomas, which was carried, and the proceedings terminated with a vote of thanks to Mr. Tweedy for presiding.

UNIVERSITY OF OXFORD.

Professor Osler.

WILLIAM OSLER, M.D., F.R.S., Regius Professor of Medicine, has been elected to a Studentship at Christ Church.

Exemption from Greek.

The statute whereby it is proposed to release candidates who offer themselves for the Final Honour School of Mathematics, or of Natural Science, from examination in the Greek language in Responsions, and to substitute an examination in either the French or the German language, and in a subject in mathematics or in natural science, will be promulgated in a congregation of the University on Tuesday, November 29th.

College Grants to University.

The President and Fellows of Magdalen College have offered the following grants to the University:

1. A grant of £250 per annum for each of the years 1904 and 1905 for the purpose of payment of scientific assistants at the University Museum.
2. A similar grant of £250 per annum for each of the years 1904 and 1905 to the Bodleian Library for the purpose of increase of staff. And the College proposes, if possible, to make provision for the continuance of these grants in the future.

Chair of Colonial History.

One of the Rhodes trustees (Mr Alfred Beit) has announced his intention of endowing a professorship, lectureship, and an annual prize essay to encourage and provide for the study and teaching of British Colonial History in the University.

UNIVERSITY OF LONDON.

FACULTY OF MEDICINE.

AT the meeting of the Faculty of Medicine to be held at the University at 5 p.m. on Tuesday, December 6 h, Mr H. W. Page has given notice that he will move the following resolution:

That a Committee be appointed to consider and report to the Faculty as to the best means by which teaching and research in the advanced subjects of the medical curriculum can be promoted in the schools of the University by the action of the University.

UNIVERSITY COLLEGE, LONDON.

Notice has been given of an application to Parliament in the ensuing session for an Act to transfer University College, exclusive of University College Hospital, the medical school, and the boys' school to the University of London, and to dissolve or provide for the dissolution of the College. The Bill provides that the Senate of the University shall make statutes and regulations for the management of the College and for carrying on the work of the hospital, the medical school, and the boys' school.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.

Distribution of Prizes.—Sir Squire Bancroft on November 23rd presented the prizes, medals, scholarships and certificates to the successful students of the Charing Cross Hospital Medical School. M. H. F. Waterhouse, the Dean of the School, read his annual report, which stated that the new biological laboratory, the Curator's room and the physical laboratory had proved of great benefit to the school. The new surgical block or hospital would, it was hoped, be opened next year, but the operating theatres awaited furnishings and fittings. Dr. Mitchell Bruce has been elected consulting physician to the hospital, and Dr. F. W. Mott has taken his place as physician. The number of new students who had joined was 75, and Mr. Waterhouse said he believed he was correct in stating that only one other medical school in London could this year congratulate itself upon any material increase in the number of new medical students, whilst in some there had been a marked diminution. The distribution of the prizes then followed, the Epsom Scholarship being awarded to Mr. N. G. Salmon, the

Livingstone Scholarship to Mr. R. H. H. Jolly, and the University Scholarship to Mr. W. D Keyworth. The Governor's Clinical Gold Medal was awarded to Mr. J. W. Evans, and Mr. W. S. Fenwick took the Huxley Medal.

Sir Squire Bancroft then gave an address to the students in which he offered them a few words of sympathy and encouragement. Whenever he was asked the smallest favour by a member of the great profession of medicine he considered it a privilege to be allowed, by granting the request, to repay in some slight degree a fragment of the debt which those who belonged to the precarious calling which he himself had followed, owed to the physicians and surgeons throughout the land. All actors were grateful to the Prince of Wales for the generous words he had uttered at the meeting of the King Edward Hospital Fund in acknowleging what he termed the frequent substantial and unassuming help derived by the London hospitals from the generous efforts of the theatrical profession. One of the compensations of the flight of time was the privilege enjoyed by those who were in advancing years of giving advice and warning to young people, so that they should avoid the dangers in the path they had to tread. They started with the priceless gift of youth, and they were also endowed with hope that sprang eternal in the human breast. There was the further advantage of "opportunity," which he believed knocked at every one's door, and he hoped when it reached them that they would be ready to utilize their chance. Sir Squire Bancroft concluded his witty and eloquent address by narrating a story adorned with the moral that if a medical man did not take care to be cheerful his patients might mistake him for an undertaker.

UNIVERSITY OF ABERDEEN.

The closing of the Register and the publication of the *Students' Handbook* permit of the compilation of an interesting table showing the number of male and female students attending the University during 1904-5, as compared with Session 1903-4:

Faculties.	Years.	Male.	Female.	Total.
Arts	1903-4	245	129	374
,,	1904-5	237	137	374
Medicine	1903-4	305	17	322
,,	1904-5	324	10	334
Science	1903-4	62	3	65
,,	1904-5	60	3	63
Law	1903-4	36	—	36
,,	1904-5	30	—	30
Divinity	1903-4	14	—	14
,,	1904-5	14	—	14
Total	1903-4	662	140	811
	1904-5	665	150	815

From these figures it appears that there is an increase of 4 made up of 3 men and 1 woman. In Arts the totals are the same, but the number of men has decreased by 8, while the number of women has increased by the same number. In Medicine there are 19 more men this year, but 7 fewer women—a total increase, therefore, of 12. The most interesting facts brought out by these statistics have regard to the number of women students. In Medicine we have seen that the numbers have dropped considerably.

In Arts the figures are even more interesting and instructive. At one time it appeared that in a few years the women students would predominate at King's, but with the class now entering the relative proportions have been considerably altered:

	1903-4.			1904-5.		
	Men.	Women.	Total.	Men.	Women.	Total.
First Year ..	59	56	115	80	50	130
Second Year ..	71	30	101	52	41	93
Third Year ..	72	26	98	59	26	85
Fourth Year ..	34	13	47	36	18	54
Fifth Year ..	9	4	13	10	2	12

From this table it will be seen that in this year's Bajan class the men predominate by 30, while last year they were only 3 ahead. Of 56 women who entered last year 15 have not returned, and of 59 men 7 are wanting this year. This would tend to show that women more than men are in the habit of coming to college for one year only. Another point of interest, especially in regard to the combination of the Arts and Medical curricula, is that of 98 third-year men (Tertians) of last year only 54 came up this year as Magistrands, demonstrating the large proportion that now finish the Arts curriculum and graduate M.A. in three years.

CONJOINT BOARD IN IRELAND.

The examinations indicated below have resulted in the success of the following candidates:

Third Professional: Passed in All Subjects.—A. P. Barrett, M. D. Healy, C. W. O'Keeffe, J. Prendiville, C. H. Waddell, and R. Welply.

Completed Examination.—L. A. Andrews, C. J. Bergin, T. S. Blackwell, J. Brooke, W. J. Connolly, R. F. O'T. Dickinson, T. A. Fisher, C. Gordon, J. J. Hogan, J. McQuillan, W. Roche, W. Sheahan, E. Smith, J. R. Talbot, N. R. Ussher, J. J. Vasquez, and G. F. Wright.

Final Examination: Passed in All Subjects.—J. R. P. Allin.

Completed Examination.—M. Ambrose, E. C. Byrne, H. A. Cecil, S. Clare, F. X. Costello, H. B. Evans, P. E. Harrison, M. C. O. Hurly, E. C. Jennings, R. W. D. Leslie, M. J. Lochrin, V. H. MacSwiney, F. C. Mulligan, J. C. Murphy, T. J. O'Donnell, B. H. Peters, J. Pratt, S. H. Robinson, A. J. Swanton, and E. Walsh.

D.P.H.—J. A. Jones (with honours), S. A. Kirby, F. Willmot, J. Wood, T. J. Wright.

TRINITY COLLEGE, DUBLIN.

MICHAELMAS TERM, 1904.

The Michaelmas examinations have resulted in the success of the following:

Anatomy and Institutes of Medicine.—H. J. Keane, H. D. Woodroffe, A. J. T. M'Creery, J. C. Baker, F. O'B. Kennedy, L. V. Hunt, J. G. G. Moloney, H. P. Hart, H. Allport.

Physics and Chemistry.—A. H. Laird, J. Gray, J. B. Jones, W. E. A. Moore, W. R. Allen, R. D. FitzGerald, J. H. Morton, C. J. Grene, H. R. Kenney, J. D. K. Roche.

Botany and Zoology.—H. de C. Dillon, H. S. Sugars.

Final Examination in Medicine—Section A.

The following candidates have satisfied the Examiners:

R. S. Oldham, J. du P. Langrishe, J. C. P. Beatty, F. R. Coppinger, J. W. Tomb, R. B. Jackson, T. O. Graham, T. H. Peyton, F. O'B. Ellison, T. J. Cobbe, H. D. Drennan, E. Gibbon, M. P. Leahy, T. L. de Courcey, J. H. Elliott, D. F. Torrens, B. G. Brooke, D. M. Corbett, R. Holmes, J. Murdoch, J. E. M'Farlane, E. D. Caddell, F. Casement, J. P. R. Poch, G. E. G. Vickery, J. C. A. Ridgway.

SOCIETY OF APOTHECARIES OF LONDON.

The following is a list of the successful candidates at the November examinations:

Surgery.—H. Archer (Sections I and II), H. H. R. Bayley (Section I), H. R. Grellet (Section I), E. R. Neukirch, E. H. Price (Sections I and II), J. H. Wolfe (Sections I and II).

Medicine.—H. Archer (Sections I and II), H. H. R. Bayley (Sections I and II), E. F. Hoare (Sections I and II), H. M. Jones (Section I), A. R. Paterson, H. M. Waller, J. H. Wolfe (Sections I and II).

Forensic Medicine.—A. Archer, H. H. R. Bayley, A. Bernfeld, A. R. Paterson, T. R. Roberts, C. A. Sampson, J. H. Wolfe.

Midwifery.—J. A. Davies, G. P. K. Grey, E. F. Hoare, M. C. Vivian, J. J. Winn.

The diploma of the Society was granted to Messrs. H. Archer, E. F. Hoare, E. R. Neukirch, and E. H. Price.

MEDICO-LEGAL AND MEDICO-ETHICAL.

POLICIES OF LIFE ASSURANCE.

In two cases of recent date certain questions have arisen in connexion with the interpretation of policies of life assurance which are of interest to the medical profession. As a general rule, insurance companies are slow to avail themselves of a technical defence in order to avoid payment on a policy. They, however, insert clauses to prevent imposition; and the following cases serve to show that such clauses will be strictly enforced by the courts.

In a case which was heard by the Lord Chief Justice, an action had been brought to recover a sum of money alleged to be due on a policy. The policy contained the usual clause to the effect that the statements made to the company in the usual form and in the declarations to the medical officer formed part of the contract. The answers given by the deceased were as follows: (*a*) Have you ever met with an accident? No. (*b*) Have you consulted or been attended by any physician or medical practitioner regarding your health in the past five years? No. (*c*) Have you ever had any local or other disease, personal injury, illness, or infirmity? No. The declaration was: "I hereby declare that the above answers and each of them are and is true, and also that these answers and each of them, together with the statements and answers in the accompanying application for assurance, shall be the basis of the contract between me and the defendants." The policy was taken out on September 30th, 1903, and the assured died on November 21st, 1903. The claim was disputed at the Birmingham Assizes (July, 1904) before a special jury, and the defendant company called evidence to show that in 1901 the deceased had sustained a severe injury to his thumb, for which he was medically attended for five or six weeks. Again, in July, 1903, the deceased was attended for "water on the knee," caused by an injury sustained owing to a fall on the pavement. Dr. Reynolds, the medical officer of the defendants, stated, according to the report of the case which appeared in the *Times*, that "the class of injury described would be regarded by medical men for insurance purposes as resulting from accident, as they indicated a serious condition of the brain." We confess we do not quite understand this evidence ourselves. Whatever its meaning, the special jury who tried the case found that the questions had been answered correctly. In giving his considered judgement, however, the Chief Justice ignored the jury's finding, and gave judgement for the defendant. He said: "Looking at the authorities cited, I think it is established that the question of materiality is not to be considered in connexion with the issue whether the questions have been correctly answered. I have been pressed with the consideration that these contracts of life insurance are, like other insurance contracts, *uberrimæ fidei*, and people who answer the questions are not to be judges as to what is of importance." His Lordship also referred to the following passage in a judgement pronounced some years ago in a similar case: "I mean, however, to express my opinion distinctly to this effect, that an insurance office challenging the policy after the death of the assured on the ground of untrue answers to queries and untrue declaration made by him regarding his health and habits of life, undertakes a heavy onus, to the discharge of which it must be strictly held. I do not go the length of saying that gross and wilful falsehood must be proved. But, first, the falsehood must be clear, and on a subject which is, or reasonably may be, material to the risk; and, secondly, if not wilful, it must be inexcusable in this sense, that it consists in a blameably reckless or careless assertion or omission of which an honest man, giving ordinary attention to the matter in hand, would not have been guilty, and which, in fairness to the office which was deceived, cannot be treated or passed over as immaterial or trifling."

Having regard to the decision under notice, it is clear that a person who desires to take out a policy, should make a clean breast of everything. The maxim: "When in doubt, tell the truth," is one which it is the height of policy to act upon. It is quite possible that if the assured in this case had made mention of both the accidents which he had sustained his life would have been accepted at the same premium.

In another recent case (Ellinger *v.* Mutual Life Insurance Company), which came before the Court of Appeal, a claim was made by creditors of

the deceased who had taken out a policy in May, 1902, for £4 000. The policy stated that the persons to whom the insurance would be payable were creditors of the assured, and that the policy was to cover a debt. It also contained the following clause: "I also warrant and agree that I will not commit suicide, whether sane or insane, during the period of one year from the date of the fair contract." In February, 1903, while the policy was still in force the assured committed suicide during temporary insanity. The company disputed the claim.

Mr. Justice Bigham found in favour of the company and the Court of Appeal refused to disturb his decision, saying it was clear that it was an integral part of the agreement between the company and the assured that if he committed suicide they should not be liable. This decision appears to accord with justice.

ATTENDANCE ON INJURED WORKMEN.

FAIR PLAY writes: (1) A. is in attendance on B., a workman, who has sustained an injury which he has reported to his employers with a view to compensation. C., a medical man representing the employers, calls to see B., and removes his dressings without communicating with A. Is C. guilty of a breach of professional etiquette? (2) A. is attending to B., who comes to A.'s surgery to have an injury dressed. C., a medical man representing the employers, calls to see B., but finds him from home. He leaves a message for him to the effect that he (C.) will call next morning for B. and accompany him to A.'s surgery to see the injury dressed. Is A. warranted in refusing to admit C. to his surgery for such a purpose, not having received any communication from C.? (3) A workman injured in a coal mine sends for his own doctor, while the employers send for their colliery surgeon. Both medical men arrive at the pit at the same time. To whom does the case belong?

*** (1) C. should have sent notice of his visit to B. requesting B. to ask A. to be present. (2) A. is not justified in refusing to admit C. to see the injury dressed. If C. comes with B. to A.'s surgery it is sufficient communication. (3) The case would "belong" to whichever doctor the injured man wished to attend him. Although he might have sent for his own doctor, if he found that the employer would be willing to pay for the medical attendance he should certainly have the option of being saved the expense of the medical attendance by putting himself under the care of the medical man sent by the employer. There would be no difficulty in arranging any of the above incidences if at the time there existed a friendly and reasonable feeling between the medical men in question.

THE LICENSING ACT (SCOTLAND), 1903, SECTION LV.

D. F. writes: Being in private practice, I have, in common with other medical practitioners, to prescribe exciseable stimulants after hours and on Sundays. It would appear from Section LV of the Licensing Act, 1903, that the certificate of an ordinary practitioner does not warrant a license holder to supply stimulants after hours, the words used being "medical official." Is the certificate of a medical officer of health valid in terms of this section?

*** The section above referred to provides that, "notwithstanding the provisions of this Act, it shall be lawful for any holder of any certificate to give out and supply exciseable liquor from his licensed premises, at any time when such giving out and supply would be otherwise illegal, on an order stating why such liquor is required, signed by an officer of police, or procurator-fiscal, or medical official, which signed order shall be sufficient defence in any prosecution, provided it be transmitted by post, with a note of the description and quantity of liquor supplied and the name and address of the person so supplied, to the procurator fiscal within forty-eight hours after the supply is made. It seems to us that the provisions of this section are amply sufficient to entitle the medical officer of health to allow intoxicating liquor to be obtained at a licensed house out of hours. It is interesting to note that no provision of this kind appears in the English Licensing Acts.

THE MIDWIVES ACT IN COUNTRY DISTRICTS.

ACCOUCHEUR writes: In this country district the great majority of labours are attended by women (not midwives) who are entirely ignorant of the principles of obstetrics and antisepsis and asepsis, a medical man being called only when they cannot bring the case through. What difference will the Midwives Act make in such a case, and what will be the duty of a medical man as to attending a case after an unqualified woman, or reporting her for attending cases, if he is expected to do so?

*** The Midwives Act of 1902 provides for the gradual extinction of all untrained and uncertified women. After the first day of April, 1905, no woman will be permitted to use the title of midwife, or any name of description implying that she is specially qualified to practise midwifery, unless she is a certified midwife and is duly registered on the midwives roll; and after the first day of April, 1910, no woman will be permitted to attend cases of labour for gain, unless she has received a certificate from the Central Midwives Board. A certified midwife is only entitled to attend cases of normal labour, and, whenever any emergency or a deviation from the normal occurs she must obtain medical help. The arrangements regulating the attendance of medical men when summoned by certified midwives are entirely in the hands of the local supervising authorities appointed by the county councils throughout England and Wales. With reference to rendering assistance to poor women who are, unfortunately, in the hands of ignorant and unqualified midwives, it is a fact generally recognized that medical men can everywhere be found willing to give their professional services in cases of difficulty and danger. In all cases, however, of malpractice or negligence resulting in death, it is the undoubted duty of the medical man to refuse a certificate of death without a consultation with the coroner of the district.

THE RESPONSIBILITY FOR FRAUDULENT ADVERTISEMENTS.

ONE of the leading newspapers of Breslau recently inserted several times the advertisement of a quack who promised—for a consideration—sure and speedy cure of all diseases of the abdomen and genital organs without interruption of work or the necessity of a personal interview for diagnostic purposes. The provincial court of Breslau imposed a fine of 3,000 marks (£250) on the ground that he should have known that promises such as those held out in the advertisement were unfounded. The judgement was sustained by the Court of Appeal. We should like to see a case of the same kind tried here. We suppose the difficulty would be to find any victim to come forward as prosecutor. But why should not cases of such gross fraud be taken up by the Public Prosecutor?

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: RICHARD C MUNDAY, Staff Surgeon, and FREDERICK G ROBINSON, Surgeon, to the *Sutlej*, on recommissioning, November 19th; CHARLES J. S. COCK, Surgeon, to the *Pembroke*, additional, November 19th; HENRY B HALL, M.B., Staff Surgeon, and GODFREY TAYLOR, M.B., B.A., Surgeon, to the *Cumberland*, on commissioning, December 1st; JOHN A. KEOGH, M.B., B.A., Staff Surgeon, and HENRY HUNT, Surgeon, to the *Cornwall*, on commissioning, December 1st; GEORGE E DUNCAN Surgeon, to the *Alacrity*, additional, and on recommissioning, November 19th.

Surgeon Cecil E. C. CHILD, H M S. *Ocean*, died at Wei-hai-Wei on November 18th, aged 29. He joined the Royal Navy as Surgeon, May 16th, 1903.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL H. C KIRKPATRICK, M.D., has been appointed Principal Medical Officer at Barbadoes.

Major H J. M. BUIST, M.B., D.S.O. has been appointed Staff Officer to the Principal Medical Officer, South Africa.

EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 8s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

LIEUTENANT, R A M C., under orders for Madras about the middle of January, wishes to exchange with an officer sailing about the end of February for South Africa. Apply X, care of Holt and Co., 3, Whitehall Place, London.

A CAPTAIN, R.A.M.C., expecting orders for abroad at the end of December for India, wishes to exchange for home service. His Indian tour expires in June next. Answers—A. B. C., Holt and Co., 3, Whitehall Place, London.

ARMY MEDICAL RESERVE.

SURGEON-MAJOR C. GODSON, M.D., to be Surgeon-Lieutenant-Colonel, November 8th.

ARMY MEDICAL SERVICE.

SURGEON-MAJOR-GENERAL T. WALSH has been awarded a good service pension. He was appointed Assistant Surgeon, May 25th, 1858; became Surgeon, March 1st, 1873; Surgeon-Major, April 1st, 1873; Brigade-Surgeon, July 16th, 1884; Surgeon-Colonel, October 28th, 1889; and Surgeon-Major-General, July 18th, 1894; retiring from the service May 29th, 1898. He was in the Jowaki Afridi expedition in 1877-8 (medal with clasp); in the Afghan war in 1879-80, when he was Senior Medical Officer with the force under General Charles Gough during the advance on Cabul in December, 1879 (mentioned in dispatches, medal with clasp); and in the Egyptian war of 1882 as Sanitary Officer, 1st Division, including the actions at Tel-el-Mahuta, Kassassin on September 9th, and Tel-el-Kebir (medal with clasp, and Khedive's bronze star).

Colonel F HOWARD, M.D., retired pay, has been appointed President of a Medical Board to examine Militia and Imperial Yeomanry candidates for commissions in the regular army.

INDIAN MEDICAL SERVICE.

MAJORS J. T. W LESLIE, M.S., D. PRAIN, M.B., A. T BOWN, and W. L. PRICE, M.B., Bengal Establishment, are promoted to be Lieutenant-Colonels from October 1st. They were appointed surgeons, October 1st, 1884, and made surgeons-Major, October 1st, 1896. Their war records are as follow: Lieutenant-Colonel Leslie—Burmese expedition, 1885-6 (medal with clasp). Lieutenant Colonel Bown—Hazara expedition, 1888 and 1891 (medal with two clasps); Chitral Relief Force, 1895 including the capture of the Malakand Pass and the action near Khar (medal with clasp); and the campaign on the North West Frontier of India in 1897-8 (clasp). Lieutenant-Colonel Price—Burmese campaign in 1886-8, including the Wuntho expedition (medal with clasp).

Lieutenant Colonel W. G. H. HENDERSON, Bombay Establishment, is appointed to officiate as Principal Medical Officer, Aden District.

Lieutenant-Colonel D. FERRENCH MULLEN, M.D., Bengal Establishment, is posted as Residency Surgeon and Chief Medical Officer in Rajpootana.

Lieutenant-Colonel H. N. V. HARINGTON, Madras Establishment, is appointed to officiate as Residency Surgeon at Indore and Administrative Medical Officer in Central India.

Major J. R ROBERTS, M.B., Bengal Establishment, Administrative Medical Officer in Central India, has privilege leave for three months, from October 13th.

Surgeon-General W. R. BROWNE, M.D., Madras Establishment, officiating as Surgeon General with the Government of Madras, is confirmed in that appointment from October 11th.

The transference to the temporary half-pay list of Major D. G MARSHALL, M.S., of the Bengal establishment which has already been announced in the BRITISH MEDICAL JOURNAL, has received the approval of the King.

The undermentioned Captains, whose first commissions bear date July 27th, 1894, are promoted to be Majors from July 27th: *Bengal*—P. B. HAIG, M.B., T. W. A. FULLERTON, M.B., R. H. MADDOX, M.B., E. V. HUGO, M.D.,

H. G. Melvile, M.B., H. A. Smith, M.B., D. R. Green, M.D., G. McI. C. Smith, M.B., H. M. Earle, J. G. Hulbert, M.B. *Madras*—P. C. Gabbett, J. L. Machae, M.B. *Bombay*—F. E. Swinton, S. H. Burnett, M.B., T. Jackson, M.B.

The undermentioned Lieutenants to be Captains, from June 27th: G. E. Charles, M.B., A. G. McKendrick, M.B., O. St. J. Moses, M.D., J. W. Little, M.B., F. W. Sumner, M.B., H. R. Nutt, M.B., J. A. Barnes, W. D. Ritchie, M.B., N. E. H. Scott, M.B., J. K. S. Fleming, E. C. Hepper, C. E. Southon, M.B., G. Fowler, J. Husband, M.B., H. B. Foster, G. C. L. Kerans, C. B. McConaghy, M.B., H. W. Illins, E. W. Browne, J. B. Christian, A. Murphy, M.B., F. T. Thompson, M.B., L. P. Brassey, M.B., C. F. Mark, M.B., S. Bose, M.B., P. L. O'Neill. They entered as Lieutenants, June 27th, 1901.

VOLUNTEER OFFICERS' DECORATION.

The Volunteer Officers' Decoration has been conferred upon the following officers: Surgeon-Captain (Honorary Captain in the army) Atwood Thorne, M.B. 2nd Middlesex Royal Garrison Artillery (Volunteers); Brigade-Surgeon-Lieutenant-Colonel E. J. Hunter, 3rd (Duke of Connaught's Own) Volunteer Battalion the Hampshire Regiment: Surgeon-Lieutenant-Colonel J. R. Essex, 3rd Volunteer Battalion the South Wales Borderers; Surgeon-Lieutenant Colonel J. P. Atkinson, M.D., 3rd (Cambridge-shire) Volunteer Battalion the Suffolk Regiment; Surgeon-Lieutenant-Colonel W. M. Rockcroft, 1st Volunteer Battalion the Manchester Regiment; Surgeon-Major A. D. Fraser, M.D., 4th (Stirlingshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders).

SPECIAL WAR GRATUITY FOR SOMALILAND, 1902-4.

The Army Council have decided that a special war gratuity upon a scale similar to that authorized for the operations in China, 1900-1901, shall be issued to all the troops and attested native followers who took part in the recent operations in Somaliland (including those who accompanied Colonel A. N. Rochfort, C.B., C.M.G., with the Abyssinian force), except the Somali irregular troops, whose services were rewarded from the captured stock. As to the officers concerned the number of shares awarded is as follows: Surgeon-Colonel, 40; Colonel and Lieutenant-Colonel, 32; Major, 16; Captain, 12; Lieutenant, 7½.

ROYAL ENGINEERS (VOLUNTEERS).

Mr. James H. Dixon to be Surgeon-Lieutenant in the 1st Cheshire, November 5th.

HONOURABLE ARTILLERY COMPANY OF LONDON.

Surgeon-Major W. C. James, M.D., is granted the honorary rank of Surgeon-Lieutenant-Colonel, November 5th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

Surgeon-Captain D. Durran, M.B., 1st Caithness, is promoted to be Surgeon-Major, October 29th.

Surgeon-Lieutenant C. R. Skyrme, 2nd Cinque Ports, to be Surgeon-Captain, October 29th.

Surgeon-Major D. S. Davies, M.D., 1st Gloucestershire, to be Surgeon-Lieutenant-Colonel, November 5th.

Surgeon Lieutenant A. Thomas, M.B., 1st Cardigan, to be Surgeon Captain, November 12th.

Surgeon-Major J. H. Dickson, M.B., and Surgeon-Captain R. L. Clark, M.B., 1st Cumberland, resign their commissions, November 19th.

VOLUNTEER RIFLES.

Mr. Peter G. Moran to be Surgeon-Lieutenant in the 2nd (Prince of Wales's) Volunteer Battalion the Devonshire Regiment, October 29th.

Surgeon-Lieutenant-Colonels R. de la P. Beresford, M.D., and C. H. Gwynn, M.D., 2nd Volunteer Battalion the King's (Shropshire Light Infantry), are granted the honorary rank of Surgeon-Colonel, October 29th.

Surgeon-Major (Honorary Captain in the Army) R. R. Sleman, 20th Middlesex Artists'), is granted the honorary rank of Surgeon-Lieutenant-Colonel, November 5th

Surgeon-Major W. H. Miller, M.D., the Queen's Rifle Volunteer Brigade, the Royal Scots (Lothian Regiment), resigns his commission, November 12th.

Surgeon-Lieutenant J. Griffiths, 1st (Brecknockshire) Volunteer Battalion the South Wales Borderers, to be Surgeon-Captain, November 12th

Lieutenant J. B. Jamieson, the Queen's Rifle Volunteer Brigade, the Royal Scots (Lothian Regiment), resigns his commission, and is appointed Surgeon-Lieutenant, November 19th.

Surgeon Captain H. M. Brownfield, 1st Volunteer Battalion the Hampshire Regiment, is borne as supernumerary whilst commanding the Hamoshire Volunteer Infantry Brigade Bearer Company, November 19th.

Surgeon-Captain J. W. Logie, M.B., 3rd (Blythswood) Volunteer Battalion the Highland Light Infantry, resigns his commission, November 19th.

Surgeon-Major A. D. Fraser, M.D., 4th (Stirlingshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland) Highlanders, to be Surgeon-Lieutenant-Colonel, November 19th.

HOSPITAL AND DISPENSARY MANAGEMENT.

THE TOTTENHAM HOSPITAL.

At the first festival dinner of the Tottenham Hospital, at the Savoy Hotel, under the presidency of Lord Burnham, a sum of £4,002 was raised in aid of the hospital extension fund. Lord Burnham said that this hospital and it alone provided in the north of London for half a million souls. During the last year 1,000 indoor and 19,000 outdoor patients had been treated, in a spirit of wondrous economy, at a cost of £6,000. There was urgently and immediately needed an extension of the hospital buildings, especially to provide for fifty more beds, and the rebuilding of the operating theatre and anaesthetizing room. Mr. John Langton, Consulting Surgeon to St. Bartholomew's Hospital, and Chairman of the Medical Committee and Consulting Surgeon of the Tottenham Hospital, in returning thanks for the medical and surgical staff, said that though it was one of the youngest hospitals it had done admirable work. Sir F. Cory-Wright, Chairman of the hospital, also replied, and said that King Edward's Fund had given £4,000, the Drapers' Company £5,500, and a grant from the Ecclesiastical Commissioners brought the sum now in hand to £10,000 of the £20,000 required. They were going on with the work of extension at once, and it was fairly certain that the hospital must in the near future become one of the largest of the London hospitals. Lord George Hamilton, in proposing the toast of "The Visitors," said that the hospital was situated in a district which received the constant outflowing of London. The people were poured into Tottenham in countless thousands, but there was no equivalent influx of money. That of itself necessitated an appeal to the people of London which sent its workers into that great northern suburb. Sir E. Hay Currie, in responding, said that for the sick poor of the half-million inhabitants of the Tottenham district there were at present only 70 beds, and if it were not said it would be ridiculous for such a state of things to prevail in 1904.

THE BEACONSFIELD MEMORIAL HOSPITAL.

An operating theatre has by the liberality of an anonymous donor been built and equipped in connexion with the Earl of Beaconsfield Memorial Hospital at High Wycombe. To meet the cost of alterations and additions, amounting to £800 a bazaar was held last week, and opened by the Countess Carrington and Mrs. W. H. Grenfell, in the presence of many supporters and friends; the effort realising £1,060. By the kindness of the trustees of the Earl of Beaconsfield National Memorial Fund, the institution was endowed, and it is gratifying that the endowment will be further increased as the result of the bazaar. Other projects for augmenting the fund are to be organized forthwith, including a ball and a concert in the new town-hall at Wycombe. The whole of the medical practitioners of the town give their services gratuitously to the hospital.

DORSET COUNTY HOSPITAL.

Paying Patients.

We are informed by Dr. W. Vawdrey Lush, physician to the Dorset County Hospital, that the question has recently been raised whether the reception of paying patients is not contrary to the trust deed of the charity. The class of persons intended to be benefited have always been admitted to the hospital without payment, and the Committee of Management has decided that for the present they shall continue to be so admitted.

EAST COWES COTTAGE HOSPITAL.

The first annual report of the Frank James Memorial Home, the cottage hospital at East Cowes of which H.R.H. Princess Henry of Battenberg is president, shows that during the past year 128 patients were admitted, suffering from various medical and surgical affections, some of which were serious, and of these 99 were cured, 14 relieved, and 5 still remained in hospital on the date of issue of the report. Besides this, some 1,000 visits have been paid to patients in their own homes by the nursing staff of the hospital. The financial position of the hospital is now established, largely through the undertaking of the employés of local firms to contribute the wages of so much specified overtime a week.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

CARE AND CONTROL OF IDIOTS AND EPILEPTICS.

The first meeting for the taking of evidence of the Royal Commission on the Care and Control of Idiots and Epileptics was held on November 14th, at the Westminster Palace Hotel, under the presidency of Lord Bath, the chairman. The following members were present: Mr. H. D. Greene, K.C., M.P., Mr. C. E. H. Hobhouse, M.P., Mr. W. H. Dickinson, Dr. H. B. Donkin, Mr. W. P. Byrne, C.B., Dr. F. Needham, Mr. C. E. H. Chadwyck-Healey, K.C., Mr. C. S. Loch, the Rev. H. N. Burden, and Mrs. Pinsent. Mr. T. Trevor White is the secretary. The only witness examined was Mr. A. D. Adrian, C.B., K.C., the legal adviser of the Local Government Board. He said that the statutes affecting the matter were for the most part applicable to paupers who had to be considered according as they were the subjects of indoor or outdoor relief. The Poor-law Amendment Act, 1834, had given a very comprehensive meaning to the term "workhouse," so that it included any establishment suitable for persons of the classes mentioned in the reference. The guardians also had wide powers for dealing with paupers of the specified class by way of out-door relief. The Local Government Board had no power to initiate combinations of unions, but it had sanctioned the Chorlton and Manchester combination; and was in favour of similar arrangements.

The Commission met again on November 21st. The whole sitting was occupied in the examination of Mr. H. F. Pooley, Assistant Secretary to the Board of Education, who gave evidence with regard to the Blind and Deaf Children Act, 1893, and the Elementary Education (Defective and Epileptic) Children Act of 1899, together with the amending Act of 1903. The returns for the year ending August 31st, 1903, showed that there were forty schools and institutions for blind children, with accommodation for 1,739 and 1,453 on the registers, and sixty schools and institutions for deaf children with accommodation for 3,579 and 2,803 on the registers, at the same date there were 106 certified day schools for defective children with an aggregate average attendance of 3,521. There were four certified boarding-schools for defective children, a certified boarding school (Roman Catholic) for 50 epileptic children, and another institution was applying for recognition.

The London County Council were carrying out a scheme for "custodial homes" for mentally defective children, to be certified jointly by the Board of Education and by the Secretary of State for the Home Department under the Industrial Schools Acts. The intention was to provide for those children who, but for their defect, would be committed to industrial or truant schools, those living in very bad houses, those whose regular attendance it was not possible to secure at day schools, moral defectives, and elder children. Four homes were proposed, two for boys with 45 in each in three houses, and two for girls with 24 in each. In the homes for the

worst cases the children would attend school on the premises, and in the other homes they would attend a neighbouring certified school. In reply to Dr. Needham the witness said that every local authority has to appoint a medical officer, and every child before it can be admitted into a certified school has to be examined in the presence of the medical officer, and, if possible, in the presence of the inspector and the teacher of the school that the child is attending. In reply to Mr. W. P. Byrne he said that in some parts of England there was an insufficient number of institutions within reach, but that, generally speaking, the Board had been satisfied.

RURAL COTTAGES.

A deputation, consisting of about 100 gentlemen residing in rural district council areas in various parts of England, was introduced by Sir William Grantham to the President of the Local Government Board in order to offer him the benefit of their practical experience of the hardship, difficulties, and (or) impossibilities of complying with the rural district by-laws in relation to the building of cottages. A printed document was handed to Mr. Long, the general purport of which is summarized as follows:

1. That the by-laws governing the building of cottages in the country are enforced by those who either have—(*a*) no knowledge of the *locus in quo*; (*b*) no knowledge of the wants and requirements of the district; (*c*) no ability to administer them: (*d*) an interest against the landlord or person desirous of building; (*e*) a desire to administer by-laws suitable for towns, but most unsuitable for country districts; or (*f*) a desire on the part of the councils, or officials of the councils, to strain the language of the by-laws against the building owner, and, instead of assisting him, throwing every obstacle in the way of his carrying out the desired work; and (2) that hundreds more cottages would have been built all over the country, which would have prevented, to some extent, the people from crowding into the towns, if there had been—(*a*) more suitable by-laws; (*b*) an elasticity allowed to those who administered them; or (*c*) if there were no by-laws in those places or districts where there is no necessity to enforce them.

Sir William Grantham said that until he was suddenly brought to a standstill in the matter of building cottages on his property he could not have believed that such an amount of incompetence and narrow-minded pride of office could have existed in this country. The mischief was to be traced to Section CCLXXVI of the Public Health Act, 1875, which gave power to rural district councils to apply by-laws suitable for urban districts to rural districts. There was practically and substantially no appeal from the decision of the rural district council. He thought that the whole of the by-laws ought to be withdrawn, and a fresh start made; or, if that could not be done, an appeal from the rural district council should be allowed to the Local Government Board, or to the County Council, or to the magistrates.

The Duke of Sutherland said that the more elasticity and reasonable terms was required if a remedy was to be found for the present evil cottage buildings in rural districts.

Other speakers followed in the same sense.

Mr. Long said that when application was made to the Local Government Board to approve a set of by-laws or for the extension of urban by-laws to rural districts it was the invariable practice to investigate local circumstances; there was need in the rural locality for urban powers. A new code of by-laws for rural districts had been drawn up, and was, he believed, free from the objections which had been urged. Any rural local authority could obtain leave to substitute the new code for existing by-laws. He regretted to say that local authorities too frequently appointed men who were not qualified, and had no technical training or experience of the work they were to perform; at the same time he agreed that it was absurd and ridiculous that in districts consisting mostly of fields, where there was no probability of a large number of houses being built, rules should be applied which were intended only for towns or places where there was an aggregation of houses.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,373 births and 4,866 deaths were registered during the week ending Saturday last, November 19th. The annual rate of mortality in these towns, which had been 15.0, 14.9 and 15.7 per 1,000 in the three preceding weeks, further rose to 16.6 per 1,000 last week. The rates in the several towns ranged from 5.1 in Hornsey, 7.0 in Great Yarmouth and in West Bromwich, 7.9 in Barrow-in-Furness, 8.1 in Bournemouth, 9.7 in Rochdale, and 9.8 in Wallasey and in Rotherham to 21.2 in St. Helens, 21.5 in Stockport, 21.6 in Wigan, 22.0 in Newcastle-upon-Tyne, 22.1 in Blackburn, 22.3 in South Shields, 24.5 in Hanley, and 25.4 in Coventry. In London the rate of mortality was 16.9 per 1,000, while it averaged 16.5 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.5 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1.0 per 1,000, while among the seventy-five other large towns the rates ranged upwards to 3.8 in York, 3.9 in Grimsby, 4.0 in Liverpool, 4.1 in St. Helens, 4.2 in Wigan, 4.6 in Plymouth, 4.9 in South Shields, 6.0 in Stockton-on-Tees, and 6.5 in Hanley. Measles caused a death-rate of 2.3 in Liverpool, 2.4 in Hanley, 2.5 in Wigan, 2.7 in Middlesbrough, 2.9 in St. Helens, 3.1 in Grimsby, 4.0 in Stockton-on-Tees, and 4.1 in Plymouth; scarlet fever of 1.7 in Bootle; diphtheria of 1.6 in Hanley and in Swansea, and 2.0 in Stockton-on-Tees; and whooping-cough of 1.3 in Derby, 1.4 in Coventry, and 2.9 in South Shields. The mortality from "fever" and from diarrhoea showed no marked excess in any of the large towns. Two fatal cases of small-pox were recorded in Halifax, and 1 each in Hanley, Huddersfield and Newcastle-upon-Tyne, but none in any other of the large towns; and only one small-pox patient remained under treatment at the end of last week in the Metropolitan Asylums Hospitals. The number of scarlet-fever patients in these hospitals and in the London Fever Hospital, which had been 2,725, 2,782, and 2,843 at the end of the three preceding weeks, had declined again to 2,773 at the end of last week. 2,9 new cases were admitted during the week, against 305, 294, and 294 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, November 19th, 890 births and 571 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 16.7, 17.8, and 17.5 per 1,000 in the three preceding weeks, further declined last week to 17.3 per 1,000 but was 0.7 per 1,000 above the mean rate during the same period in the seventy six large English towns. Among these Scotch towns the death-rates ranged from 11.0 in Leith and 12.0 in Greenock to 18.4 in Glasgow and in Edinburgh. The death-rate from the principal infectious diseases averaged 1.4 per 1,000, the highest rates being recorded in Dundee and Paisley. The 282 deaths registered in Glasgow 3 which were referred to measles, 14 to whooping-cough, and 0 to diarrhoea. Four fatal cases of diarrhoea were recorded in Edinburgh; and 2 of whooping-cough and 4 of diarrhoea in Dundee.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, November 19th, 503 births and 378 deaths were registered in six of the principal Irish towns, against 555 births and 342 deaths in the preceding period. The mean annual death-rate of these towns, which had been 21.8, 18.3, and 19.0 per 1,000 during the three preceding weeks, rose to 19.6 per 1,000 in the week under notice, this figure being 3.0 per 1,000 higher than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 14.0 in Waterford and 16.4 in Londonderry to 21.9 in Limerick and 25.2 in Dublin. The zymotic death-rate during the same period and in the same six Irish towns averaged 0.9 per 1,000, or 0.1 lower than during the preceding period, the highest figure (2.8) being recorded in Dublin, while Londonderry, Limerick, and Waterford registered no deaths under this heading at all. No deaths were recorded in any part of Ireland from small-pox, but measles accounted for 17, scarlet fever for 2, whooping-cough for 6, diphtheria for 2, enteric for 3, and diarrhoeal diseases for 11.

THE PURITY OF VACCINE LYMPH.

Dr. Arthur R. Reynolds, the Commissioner of Health for Chicago, announces that the increased demand for vaccine in that city has caused some producers to put unripe lymph on the market. During the week ending November 5th samples from two producers brought to the laboratory of the department for examination were found to contain bacteria which had not been destroyed by the action of the glycerine. Dr. Reynolds has therefore tendered to all producers of vaccine the services and facilities of the laboratory of the Health Department, and of its expert clinicians, in the bacterial and clinical examinations of their respective vaccine products offered for sale and use in the city of Chicago. All vaccine submitted for such examinations, and found to be pure—that is, free from disease-producing organisms, and potent—that is, producing not less than 90 per cent. of successful primary vaccinations—will be so certified by the Department. Defects in either respect will be duly notified. No charge will be made for these examinations.

VITAL STATISTICS OF CHICAGO.

The volume of vital statistics of the City of Chicago for the years 1899 to 1903 inclusive consists solely of the crude statistics for these years, no death-rates being given except the annual death-rates from all causes for each year. Thus it may be compared to a heap of bricks rather than a dwelling, valuable for use by those who have the industry thus to utilize it, but not fulfilling the full measure of utility of which it is capable. The number of monthly deaths from each of the main causes of death is given, and the distribution of these deaths according to wards in successive years. It would have been helpful had we had some statement of the degree to which the certification of deaths is complete.

MEDICAL ATTENDANCE AT ISOLATION HOSPITALS.

Zymotic writes: Two rural district councils and one urban sanitary authority have united to build a joint isolation hospital. (1) What is the usual method of arranging for the medical attendance on the patients? (2) Are the patients to be attended by their own medical advisers? (3) If a medical superintendent be appointed, could the appointment be held by an already salaried official—for example, medical officer of health—of one of the above authorities, or by a medical man who is an ordinary member of one of the above authorities?

*** (1) One medical superintendent is usually appointed who is responsible for the general conduct of the hospital and for the medical attendance upon the patients. (2) It is always desirable to permit patients to be attended by their own medical adviser if they choose. This is the rule in a large number of isolation hospitals. We believe, however, that in actual practice patients only rarely avail themselves of the privilege. (3) A medical superintendent could also be an already salaried official, such as a medical officer of health, but it would not be desirable that he should be a member of one of the councils owning the hospital, even though he was not a member of the joint committee which would presumably appoint the superintendent; a portion of the salary would be paid by the Council of which he was a member.

POOR-LAW MEDICAL OFFICER'S CLAIM FOR SUPERANNUATION ALLOWANCE

Beta writes asking for an answer to the following question: Will Clause 6 of the Superannuation Act allow a Poor-law medical officer to retire, and receive a pension, and at the same time continue to act as medical officer of health at his accustomed salary?

*** We are of opinion that Clause 6 of the Superannuation Act does not prevent the payment of a pension to a retired Poor-law medical officer, even if he continue to hold an appointment as officer of health. It should, however, be remembered that the sanitary appointment mentioned is not a permanent one, but is made every year, and the holder of such appointment consequently might not be re-elected at the expiration of his current year of office.

ALLEGED NUISANCE FROM MANURE.

A. T.—A heap of manure situated 47 ft. from a dwelling house is very likely to be a nuisance and a complaint to the medical officer of health ought to ensure its removal. Section XLIX of the Public Health Act, 1875, empowers the medical officer of health, or the inspector of nuisances in an urban district, to require the removal within twenty-four hours of any accumulation of manure, and if this requirement is not complied with the manure may be removed and sold by the district council. Section L of the same Act enables an urban district council to require the periodical removal of manure from stables or other premises.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior House-Surgeon. Salary, £75 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—(1) House-Physician; (2) Second House-Surgeon. Salary for 1, £70 per annum; (2) £60 per annum.

CARDIFF INFIRMARY.—Resident Medical Officer. Salary, £120 per annum. (2) Two Assistant House-Surgeons. Salary at the rate of £60 per annum.

CHORLEY: RAWCLIFFE HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Resident House-Surgeon. Salary, £100 per annum.

DUBLIN: DR. STEVENS'S HOSPITAL.—(1) House Surgeon; resident. Salary, £100 per annum. (2) Pathologist.

DUBLIN: ROYAL HOSPITAL FOR INCURABLES, Donnybrook.—Resident Medical Officer. Salary, £120 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Resident Medical Superintendent. Salary, 100 guineas per annum.

JERSEY GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer. Salary, £120 per annum.

LIVERPOOL DISPENSARIES.—Assistant Surgeon; resident. Salary, £100 per annum.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrar. Salary, £100 per annum.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—Assistant Surgeon.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £50 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—Ophthalmic Surgeon.

ST. PETER'S HOSPITAL FOR STONE, Henrietta Street, W.C.—Six Out-patient Clinical Assistants.

STIRLING DISTRICT ASYLUM, Larbert, N.B.—Assistant Medical Officer; resident. Salary, £150 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Chelsea.—House-Physician. Appointment for six months. Honorarium, £25.

VIRGINIA WATER: HOLLOWAY SANATORIUM.—Junior Assistant Medical Officer (Lady); resident. Salary, £150, rising to £200 per annum.

APPOINTMENTS.

BOYCOTT, Arthur Edwin, M.B., B.Ch.Oxon, Assistant Bacteriologist at the Lister Institute of Preventive Medicine.

BROWN, R. G., M.B., B.S.Aberd., Resident Assistant Medical Officer, Lambeth Parish Infirmary.

MUIR, J. C., M.D.Cantab., B.C., Medical Superintendent of the St. George's Infirmary, Fulham Road.

REY, Jules F., M.R.C.S., L.R.C.P.Lond., L.D.S.Eng., House-Surgeon to the Royal Boscombe and West Hants Hospital.

SUGDEN, F. W. B., District Medical Officer of the Hemsworth Union.

SYMES-THOMPSON, H. E., M.A., M.D.Cantab., M.R.C.P.Lond., Assistant Physician of the Royal Hospital for Diseases of the Chest, City Road, E.C.

TYSON, Wilson, M.B., B.C.Camb., Surgeon to the Lowestoft Hospital.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Papers:—Mr. D'Arcy Power: Duodenal Ulcer and its Treatment. Dr. Charles Bolton: Primary Heart Failure as the Immediate Cause of Death in Acute Diphtheritic Toxæmia.

Odontological Society of Great Britain, 20, Hanover Square W., 8 p.m.—Mr. T. H. Kellock: Demonstration on Actinomycosis. Mr. R. Denison Pedley: Paper on the Relationship between Dental and other Diseases.—Papers and Specimens.

THURSDAY.

Royal College of Surgeons of England, Lincoln's Inn Fields, 5 p.m.—The Bradshaw Lecture.—Mr. Mayo Robson: Cancer and its Treatment.

FRIDAY.

Laryngological Society of London, 20, Hanover Square, W., 5 p.m.—Cases and Specimens.

Society of Anæsthetists, 20, Hanover Square, W., 8.30 p.m.—Resumed discussion on the Vernon-Harcourt Inhaler. Dr. Dudley Buxton, Sir Victor Horsley, and Messrs. Silk, Low, MacCardie, Harvey Hillard, Bakewell, and Crouch will take part.

West London Medico-Chirurgical Society, West London Hospital, Hammersmith, W., 8.30 p.m.—Papers.—Dr. A. E. Russell: The Diagnosis of Acute Abdominal Disease.—Dr. C. H. Fennell: Juvenile General Paralysis.

POST-GRADUATE COURSES AND LECTURES.

Brompton Hospital for Consumption and Diseases of the Chest.—Wednesday at 4 p.m., The Treatment of Pneumothorax and Pyopneumothorax.

Central London Throat and Ear Hospital.—Wednesday, 5 p.m., Practical Demonstration on the Larynx.

Hospital for Sick Children, Great Ormond Street, 4 p.m.—Thursday, Infantile Scurvy.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day; Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Eye. Lectures at 5.15 p.m. each day will be given as follows: Monday, Injuries to the Spine and Spinal Cord; Tuesday, Emergencies in Nose, Throat and Ear Practice; Wednesday, Whitlow and Suppurations in the Hand; Thursday, Earache, its Causes, Diagnosis and Treatment.

Mount Vernon Hospital for Consumption, Central Out-patient Department, 7, Fitzroy Square, W.—Thursday, 5 p.m., Congestion of the Lungs.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Tuesday, 3.30 p.m., Myasthenia Gravis; Friday, 3.30 p.m., Optic Neuritis.

North-East London Post-Graduate College, Tottenham Hospital, N.—Tuesday, 4.30 p.m., Mania and Melancholia.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—The following demonstrations have been arranged for next week at 5 p.m. each day: Monday, Practical Surgery; Tuesday, Injuries to Spine and Spinal Cord; Wednesday, Practical Medicine; Thursday, Intestinal Ulceration; Friday, Skin Cases.

Samaritan Free Hospital for Women, Marylebone Road, N.W.—Thursday, 3 p.m., The Treatment of Dysmenorrhœa.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

ALLFREY.—On November 16th, at 11, The Green, Marlborough, the wife of Frederic Henry Allfrey, M.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P., of a daughter.

MCGINN.—On November 17th, at 27, Chepstow Road, Newport, the wife of Patrick J. McGinn, L.R.C.P. and S.I., L.M., of a son.

WATSON.—On November 14th, at 47, Mount Pleasant, Tunbridge Wells, the wife of G. Trustram Watson, M.A., M.B., B.C., F.R.C.S., of a daughter.

WOOLLEY.—On November 17th, at Anstey, near Leicester, the wife of Thomas F. Woolley, M.R.C.S., L.R.C.P., of a daughter.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):— EDITOR, 2651. Gerrard. GENERAL SECRETARY AND MANAGER, 2630. Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

M. would be glad to know where a medical man can learn massage.

G. A. P. wishes to hear of a good school for a boy, aged 15, who has emphysema following asthma.

J. B. would like to know where vibrating chairs (useful in cases of paralysis agitans) can be procured, and in what medical papers they have been referred to.

ABER (who writes from Lancashire) asks where a girl (four years) suffering from extroversion of the bladder could be sent to be looked after. She has been operated on several times, but the constant dribbling produces sores. Only a small sum could be paid.

LANCS. asks for advice as to treatment for a "chap" in the centre of the lower lip of a young lady. It is painful, but she is more worried by the disfigurement. All sorts of applications have been tried, but it will not permanently heal.

TREATMENT OF ACUTE ANTERIOR POLIOMYELITIS.

M.B. writes: An adult had an attack of acute anterior poliomyelitis six weeks ago. Some improvement has taken place but there is still a good deal of muscular pain. Does this contraindicate the use of massage and electricity?

ETHYL CHLORIDE AND ETHYLOFORM.

C. asks as to the safety of the pure "ethyl chloride" as compared with the combination "ethyloform" (ethyl chloride and bromide with methyl chloride).

*** There are no reliable statistics upon this point. The degree of safety of ethyl chloride probably lies between nitrous oxide gas and ether. The other body, according to physiological research, is distinctly less safe.

HIGH-FREQUENCY CURRENTS.

W. H. would like information on the following points: (1) The approximate cost of installing the above where a continuous current from the main exists; (2) what is the best and most recent work on the subject; (3) is there any periodical dealing with medical electricity? (4) what may be considered a fair average fee to charge for the application of the above currents by a medical man in his rooms?

*** (1) About £70, the major part being the cost of the large induction coil and its accessories. If "W. H." has an *x*-ray outfit the additional cost should come to about £25. (2) Freund's *Elements of General Radiotherapy* (London: Rebman, Limited, 1904. 21s.); Denoyés's *Les Courants de Haute Fréquence;* (3) *Archives of the Roentgen Ray* (Monthly. London: Rebman, Limited. 16s. per annum); *Medical Electrology and Radiology* (Monthly. London: A. Siegle. 12s. per annum); *Archives d'Electricité Médicale* (Fortnightly. Paris: Octave Doin. Fr. 22 per annum); (4) Same fees as for ordinary advice and treatment.

CONCURRENT DIPHTHERIA AND SCARLET FEVER.

G. writes that on November 4th he saw a boy, aged 11, with inflamed tonsils, whose sister was suffering in the same house from diphtheria. On November 6th patches appeared in the boy on both tonsils, and his temperature was 102°; an injection of antidiphtherial serum (2 000 units) was given; on November 8th a typical scarlet fever rash appeared, and was attributed to the serum; on November 12th the boy's hands showed commencing desquamation, and since then the hands and feet have peeled rapidly in thick flakes. Our correspondent asks whether it is possible to have scarlet fever and diphtheria at one and the same time, and whether having already notified the case as one of diphtheria, it ought again to be notified as one of scarlet fever.

*** From the account given of the boy's case, it seems probable that it was one of co-existing scarlet fever and diphtheria, the signs of diphtheria being the first to show themselves. Cases such as this are not at all uncommonly met with in London, and might be expected in any large city where both scarlet fever and diphtheria were prevalent at the same time. The typical scarlet fever rash which came out on November 8th should not be attributed to the antitoxin given on November 6th, for the following reasons: (1) A typical scarlet fever rash is very rarely produced by antitoxin. (2) The rash came out much too soon (only two days) after the injection of antitoxin. The antitoxin rashes seldom appear before a week has elapsed. (3) The

desquamation appears to have been too profuse and free. Desquamation does occur after antitoxin rashes, but is not usually free. The case should be notified as one of scarlet fever. It would be well to add the words "as well as diphtheria," after "scarlet fever," so that the medical officer of health may know that the same patient is the subject of two diseases, and that the second certificate is not merely a correction of the first. On the subject of co-existing infectious diseases, our correspondent might consult Dr. Caiger's article in Allbutt's *System of Medicine*.

ANSWERS.

AN OLD HOSPITAL SURGEON appears to have overlooked the concluding part of the report, giving the results of experiments on animals; these will no doubt be more fully detailed in the *Transactions* of the Society.

M.D., B.S.—The administration of potassium iodide would appear to be the most likely means of giving relief in the case of priapism mentioned. The drug has been given successfully both with and without arsenic. Doses of from 5 to 10 gr. might be tried to begin with. The organ should be carefully protected against injury of any kind.

TREATMENT OF CHRONIC DIARRHOEA.

DR. F. C. WOOD (Tottenham Lane, N.) writes: "West Country's" patient is suffering from ulcerative colitis. I should advise him to keep the patient in bed, and apply a broad flannel bandage around abdomen, to be worn also after she gets up. Breakfast should consist of stale bread or toast, with a little fresh fish and a teacupful of cocoa; dinner of meat, fish or poultry, with milk pudding, but no vegetables; tea the same as breakfast; and supper a breakfastcupful of Horlick's malted milk, Frame food, or Moseley's food. As to medicinal treatment, clear out the bowels with ol. ricini 3ss, or sodii sulph. 5ij; then give the following mixture: Pulv. tragacanth. co. gr. x; bismuth carb. gr. xx; salol gr. x; glycerine 3ss, aq. ad 3j, three times a day half an hour before meals. The patient should be quite well at the end of six weeks, and a change of air will be necessary to complete convalescence.

LETTERS, NOTES, ETC.

PROFESSOR SCHÄFER'S METHOD OF PERFORMING ARTIFICIAL RESPIRATION.

DR. J. FOSTER PALMER (Chelsea) writes: Professor Schäfer, it is true, does not expressly refer to the use of his method in cases of chloroform asphyxia after abdominal operations. At the same time I would suggest that its title, given by himself, as "a simple and efficient method of performing artificial respiration in the human subject, especially in cases of drowning," seems to imply that it is intended for all cases in which artificial respiration may be necessary. Might I point out, too, that the quotation from Professor Schäfer's reply is hardly complete without the context? In this he states why he failed to maintain artificial respiration. He is experimenting on a physiological subject, and "he is compelled to breathe." Surely a desirable consummation! But, as a matter of fact, in a drowning case he would *not* be compelled to breathe, for he would be unable on account of the blocking up of the lungs, and the artificial respiration could be continued. If he began to breathe, further treatment would be unnecessary. That the quotation, as stated, gives an incomplete impression, is also shown by a reference to page 610, in the body of the paper, where Professor Schäfer, speaking of the three methods, says: "It has been shown that *all* these methods can be made to effect a sufficient intake of air in the human subject." A glance at the illustrations in the two papers is sufficient to show that Schäfer's method is practically identical with the first movement of Bowles's method. In both the patient is in the prone position; in both pressure and relaxation of pressure are employed, but in Schäfer's method the cessation of pressure is gradual, in Bowles's it is sudden.

DR. F. P. WIGHTWICK (London, W.) writes: Any one who has taken an interest in the question of artificial respiration, especially as applied to cases of drowning, must be very much struck by the endeavour which is being made to label a method which has been employed for many years by several practitioners with a fresh name. For years Dr. Bowles has taught that the essential difference between the method advocated by him and that which hitherto has held a foremost place in all works of medicine in this country dealing with this subject, is one of position. Dr. Bowles has insisted on the prone position as opposed to the supine, and the second point he has insisted on is the alternate compression and relaxation of the chest walls while in this prone position. This he has shown by a diagram, which in his work he calls No. 1. Using almost identical words to those employed by Dr. Bowles, Professor Schäfer describes this method in his paper read December 8th, 1903, before the Royal Medical and Chirurgical Society, and gives a diagram for all intents and purposes the same as Diagram No. 1 in Dr. Bowles's monograph. It is therefore somewhat difficult to understand the quotation in your editorial note of this week after Dr. Foster Palmer's letter: "Professor Schäfer said, 'I have myself again and again made the attempt by both methods (Sylvester and Bowles) to maintain artificial respiration in the living subject, and have entirely failed,'" as a few lines further on in the appendix report in the *Medico-Chirurgical Transactions*, from which this quotation is taken, Professor Schäfer goes on to say, "with the pressure methods, and especially with the prone-pressure method here described, it is far otherwise." Apparently Professor Schäfer has, by mistake, bracketed the names of Sylvester and Bowles, as their methods are absolutely opposed. Dr. Bowles's method is one essentially of "prone pressure," and this is what Professor Schäfer advocates. In fact, he has confirmed by physiological experiment what Dr. Bowles has taught for years as a result of experiments by dissection and otherwise, and, above all, by practical experience in the treatment of the apparently drowned.

NURSES' REGISTRATION.

WE are informed that at a meeting of the Council of the Incorporated Medical Practitioners' Association, held on November 16th, the following resolution was unanimously passed: "That in the opinion of this Council the proposed measure for the State registration of nurses is calculated to be of injury to the public without compensating advantages, as its tendency would be to encourage the practice of medicine and surgery by unqualified persons, and the Council pledges itself to use its best endeavours to prevent the passage of the measure through Parliament."

LETTERS, COMMUNICATIONS, ETC., have been received from:
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BOOKS, ETC., RECEIVED.

Reading Pathological Society: with which is incorporated the Reading Medical and Chirurgical Society. Report of the 63rd Session, 1903-4. Reading: Published by the Society.

The Story of Sylvie and Bruno. By Lewis Carroll. London: Macmillan and Co. 1904. 3s. 6d.

Diseases of the Ear. By James Kerr Love, M.D. Bristol: John Wright and Co. 1904. 25s.

Biblioteca para las madres, Arte de criar a los niños (Nociones de Higiene infantil). Por D. Rafael Ulecia y Cardona. Madrid: Administración de la Revista de Medicina y Cirugia practicas. 1904.

Aequanimitas: With other Addresses to Medical Students, Nurses and Practitioners of Medicine. By William Osler, M.D., F.R.S. London: H. K. Lewis. 1904. 7s. 6d.

Erste aerztliche Hülfe bei plotzlichen Erkrankungen und Unfällen. Bearbeitet und herausgegeben von Professor Dr. George Meyer. Zweite Auflage. Berlin: August Hirschwald. 1905. M.8.

Lehrbuch der klinischen untersuchungsmethoden und ihrer Anwendung auf die specielle aerztliche Diagnostik. Herausgegeben von Professor Dr. A. Eulenburg, Professor Dr. W. Kolle und Professor Dr. W. Weintraud. Zweiter Band. Berlin und Wien: Urban und Schwarzenberg. 1905. M.24.

Taschenbuch der mikroskopischen Technik. Von Dr. Alexander Böhm und Dr. Albert Oppel. Mit einem Beitrag (Rekonstruktionsmethoden) von Professor Dr. G. Born. Fünfte Auflage von Alexander Böhm. München und Berlin: R. Oldenbourg. 1904.

A Treatise on Materia Medica and Therapeutics. By Rakhaldas Ghosh, L.M.S. Cal. Univ. Edited by C. P. Lukis, M.B., F.R.C.S., I.M.S. Calcutta: Hilton and Co. 1904. Rs. 4 8 or 7s.

Light Energy: its Physics, Physiological Action and Therapeutic Applications. By Margaret A. Cleaves, M.D. New York and London: Rebman Limited. 1904. 21s.

Walsham's Handbook of Surgical Pathology. Third edition. Revised and largely rewritten by Herbert J. Paterson, M.A., M.B., B.C.Cantab., F.R.C.S.Eng. London: Baillière, Tindall and Cox. 1904. 10s. 6d.

The Present Conditions of Infant Life, and their Effect on the Nation. Published for the Infants' Health Society. London: Baillière, Tindall and Cox. 1905. 6d.

Diseases of the Heart. By Edmund Henry Coulsch, B.A., M.D. Second edition. London: Henry Kimpton. 1904. 7s. 6d.

The Hygiene of Bird Keeping. By W. Geo. Creswell, M.D., L.R.C.P., F.Z.S., etc. Kingston-on-Thames: E. G. Clement. 1904. 1s.

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The Bradshaw Lecture

ON

THE TREATMENT OF CANCER.

Delivered before the Royal College of Surgeons of England on December 1st, 1904.

By A. W. MAYO ROBSON, F.R.C.S., Hon. D.Sc.,
Vice-President of the College.

[Mr. Mayo Robson began by considering the etiology of cancer, and expressed the opinion that while cancer is not infectious in the ordinary sense of the term, there is a large accumulation of facts to prove that it is locally infectious and capable of distribution by contact and inoculation. It was also undoubtedly auto-infective, so that an imperfect operation was dangerous, since by distributing the cancer cells it might implant numerous foci of disease. If possible cancerous tumours should be removed without preliminary incision, leaving a wide area of healthy tissue around the growth, and wherever practicable the nearest lymphatic glands, and the vessels going to them, should be removed, whether enlarged or not. If the glands were already infected it was of the utmost importance to take them away cleanly without rupture, and, wherever possible, in the same piece with the tumour. If the tumour was incised for diagnostic purposes the exploratory incision should be closed by sutures, the skin purified, the knife and needles boiled, and the surgeon's hands sterilized before proceeding with the operation. If, unfortunately, the wound has become soiled, it should be irrigated with a large quantity of saline solution, or of some antiseptic lotion, so as to wash away any loose masses of cancer cells or infected material which, if left, would probably become engrafted, and grow. Facts were quoted in support of the view that cancer is both contagious and inoculable among human beings, as it undoubtedly is among the lower animals. Though it might not be necessary to advise segregation of cancer patients, it would seem most desirable that all dressings taken from cancer patients should be burnt, that linen soiled by cancerous sores should be destroyed or disinfected by boiling, that contact with cancerous ulcers, whether of the lip, tongue, breast, uterus, or other parts should be avoided, and that common use of beds and utensils with cancerous patients should not occur. The lecturer then said:]

Preventive Treatment.

Until the true and ultimate causative factor in the life-history of the cancer cell is discovered, a preventive treatment generally applicable is unlikely to be arrived at; but it seems likely that, whether the cellular theory or the parasitic theory be the correct one, the biological problem of altering the life-cycle of the cells in the former case, or of forming an antiserum in the latter, will be surmounted.

Hitherto, however, no serum has been found that in any way limits or benefits the disease, and my experience coincides with that of other observers as to the worthlessness of the serum treatment now being employed and advocated by certain so-called cancer specialists.

Preventive Operations.

Pre-cancerous Conditions.

The so-called pre-cancerous stage of malignant disease may be due to disturbances of nutrition, to previous injury, to congenital defect, or to other departures from the normal conditions.

Senility and decadence of tissues which have passed the period of their usefulness and are about to undergo physiological rest are predisposing factors. Predisposing conditions also exist in certain parts of the body where embryological vestiges or rests are found, and in certain regions, as the pylorus and the caecum, and at the lines of junction of skin and mucous membrane.

In certain situations pre-cancerous conditions can be readily recognized, especially in the tongue, lips, larynx, uterus, and the skin, suggesting strongly that cancer is a new implantation on a prepared ground. Probably, if we could only find it, every cancer, whether external or internal, follows on a pre-cancerous condition. The liability of benign tumours, especially on epithelial surfaces, to undergo malignant changes is well recognized, hence the removal of such is generally advisable.

A general acceptance of the view that cancer has usually a pre-cancerous stage, and that this stage is one in which operation ought to be performed, would be the means of saving many useful lives, for it would lead to the removal of all suspicious epithelial conditions before the onset of cancer. I hold that the arrest or removal of known causes as well as the abolition of discoverable pre-cancerous conditions, whenever or however occurring, constitute true preventive treatment.

Cancer of the mouth, and especially of the tongue and lips, occurs very much more frequently in man than in woman, the increased frequency in the male sex being probably due in a great measure to the abuse of tobacco—a well-known source of irritation if used in excess, and which should be stopped as soon as it begins to irritate.

In any chronic ulcers—syphilitic, tuberculous, or dental—of the mouth or tongue, if not yielding to treatment, a free removal of the ulcer in the pre-cancerous condition is decidedly a wise precaution, as it is by a prompt removal of suspicious ulcers or papillomatous masses of the lips, tongue, or cheek that cancer will be prevented.

Scrotal epithelioma, or chimney-sweeper's cancer, is becoming a disease of the past, as the cause—irritation of the scrotum by soot—has been removed since the use of the long brush for sweeping and the need no longer for the sweep to ascend the chimney. Here legislation has determined the prevention of the disease.

Penile Cancer.—While the prevention of chimney-sweeper's cancer has been the result of a legislative act, the prevention of penile cancer among Jews is the result of a religious rite, for phimosis is the chief predisposing cause of cancer of the penis, and if circumcision were carried out among the Gentile population it would doubtless have the same beneficial effect.

Pre-cancerous Skin Condition.

Nearly all cases of skin cancer occur on exposed parts of the body, face, hands, genitals, or nipples, and on surfaces where there has been some lesion, such as warts, eczema, sebaceous tumours, ulcers, scars, etc.

Where such tumours or spots are in a position that renders them liable to irritation they should be excised, but whatever their situation, if they begin to enlarge, it is certainly wise to remove them before the onset of malignant disease to which they are so prone.

Pre-cancerous Conditions in the Gall Bladder and Liver.

[The lecturer said that facts recorded by himself, and by Zenker, Courvoisier, Schroeder, Beadles, and Rolleston established an undoubted relationship between cholelithiasis and cancer of the gall bladder and ducts.]

As gall stones produce characteristic symptoms and are therefore as a rule diagnosed early, and as they can be removed before serious complications have supervened with extremely little risk (in my experience extending over some hundreds of operations, less than 1 per cent.), the preventive treatment for cancer of the gall bladder is obviously removal of the source of irritation.

So impressed am I with the importance of this view, that although I know the symptoms of gall stones, which frequently depend on the associated catarrh, can often be relieved for a time by general treatment (though the gall stones producing the catarrh cannot be removed by medicine), yet I consider it wise to recommend their early removal, not only because it can safely be done, but also because the symptoms are likely to recur and lead to other complications, and not least important because in a considerable percentage of such cases malignant disease will supervene if the irritation be not removed.

Pre-cancerous Conditions in the Mammary Glands.

In the breast there are certain well known pre-cancerous conditions, such as eczema of the nipple (first described by Sir James Paget as a precursor of duct cancer), chronic inflammatory enlargements (the chronic cirrhosing mastitis of Billroth, the interstitial mastitis of English pathologists), cysts and adenomata, and last, but not least, induration following on injury. Many of these conditions will, if properly and seriously attended to, yield to treatment. Patients have usually themselves to blame for ignoring what they seem to think are trifling ailments, though sometimes the medical attendant may, to avoid frightening his client, make light of the condition. I would say far better to alarm and cure than to lull into a false sense of security, and have to counsel operation later when the conditions are less favourable for radical treatment.

If eczema of the nipple does not speedily yield to treatment, the nipple should be freely excised, and with it the first portion of the primary ducts. If a chronic inflammatory swelling does not disappear under adequate treatment, the lobule or lobules involved ought to be removed, or, if general, the breast should be ablated. Cysts or tumours, even if simple, should be taken away, and if, on examination after removal, there is any suspicion that the simple stage is passed, the whole breast should be removed, and with it the nearest lymph glands.

It ought to be recognized that the watching of a doubtful tumour of the mammary gland, until it becomes definitely malignant, is an unjustifiable and a blameworthy procedure. Removal in this stage can be done without risk, and while the anxiety of the patient is relieved the fear of the development of malignancy is removed.

Pre-cancerous Conditions of the Stomach.

Pre-cancerous conditions of the stomach are, in certain cases, distinctly recognizable, and, if diagnosed and treated, might save many patients from carcinoma. As the stomach is one of the commonest sites of cancer, if even a percentage of cases can be saved from malignant disease by timely treatment a great advantage will have been gained.

[After referring to the writings of Cruveilhier (1839), Rokitansky (1840), Dittrich (1848), Brinton (1856), Lebert (1878), Zenker and Hauser (1882), Rosenheim (1889), Hayem (1901), and Fuetterer (1902), the lecturer continued:]

In 1903 Audistere recorded examples, and made very careful examination of four personal cases. His conclusions are summed up in the following manner:

1. Simple ulcer of the stomach may be the starting point of a cancerous growth, a condition of things which appears to be not infrequent.

2. This malignant degeneration affects, as a rule, the chronic ulcers, especially in the pre-pyloric region. The change begins in the mucous membrane at the margin of the ulcer.

3. The transformed ulcer presents for a long time almost the same symptoms as a simple ulcer; the differential diagnosis is, therefore, very difficult.

4. Nevertheless, the diagnosis can be made by noting the persistence of the symptom, the resistence to treatment, the wasting, and the progressive anaemia. The pain, as a rule, is more severe than in cases of simple ulcer.

5. In cases of cancer apparently primary, the origin in an ulcer may be suspected if the pain is unusually severe and paroxysmal, if hyperchlorhydria is pronounced, or if haematemesis or perforation occur. The prognosis is decidedly more grave, for the progress of cancer grafted upon an ulcer is more rapid, and bleeding or perforation is liable to occur.

If these conclusions are correct—and my experience tells me they are—then it is quite clear that we must in all cases in which an ulcer of the stomach resists treatment or its scar narrows the pylorus, recommend an early gastro-enterostomy or excision of the ulcer in order to prevent the development of carcinoma. If a gastro-enterostomy be performed, the mechanical irritation of the ulcer in the pyloric region by food is reduced and the friction necessary to produce a carcinoma will probably not occur.

The estimates of the frequency of this malignant implantation upon chronic ulcer vary greatly. The number of carcinomata beginning in chronic ulcer is reckoned at 3 per cent. by Haberlin, Fenwick, Plange, and Berthold, 4 per cent. by Wollman, 6 per cent. by Rosenheim and Hauser, 9 per cent. by Lebert, and 14 per cent. by Sonicksen. Zenker believes that all, or almost all, carcinomata are secondary to ulcer. In no less than 38 out of 64 cases (59.3 per cent.) of cancer of the stomach on which I have performed gastro-enterostomy for the relief of symptoms, the disease having advanced too far for gastrectomy, the long history of painful dyspepsia suggested the possibility of ulcer preceding the onset of malignant disease.

Carcinoma occurs most frequently in those areas in which the ulcers chiefly lie. Whatever the frequency of the malignant change in chronic ulcer may prove to be, the fact of its occurrence should be an additional incentive to the earlier surgical treatment of ulcers which prove rebellious.

I firmly believe that greater regard for oral asepsis, and more careful attention to the teeth would save much stomach disease, and I think one of the chief causes of the frequency of gastric ulcers among the mill operatives of Yorkshire and Lancashire is carious teeth with its accompaniment, oral sepsis. I am also firmly convinced that the early and thorough medical treatment of gastric ulcers and the surgical treatment either by gastro-enterostomy or excision of those that prove rebellious, would do much to lessen the amount of cancer of the stomach.

Pre-cancerous Conditions in the Pelvic Organs of Women.

Cancer is perhaps more commonly noticed to supervene on a recognizable pre-cancerous condition in the uterus than is observable in any other organ, and the frequency with which cancer develops in multiparae, and especially in those who have had lacerated cervix, points distinctly to cause and effect.

The frequent advent of cancer on old scars is well known in various parts of the body, especially in those placed where their nutrition is liable to disturbance, as in the scars of burns. Now in the cervix uteri we see the scars of old ulcers, the result of laceration in childbed, often remaining untreated for years and leading to constant distress, with backache, leucorrhoea, and other well-known symptoms. Only a few months ago, I saw a case of this kind pass from the simple to the malignant stage; an operation having been declined on both occasions when I saw the patient, and only consented to six months later, after epithelioma had developed. Cancer of the cervix uteri is infrequent in sterile women whose cervical canal has not been subjected to the lacerations which often occur in parturition, whereas cancer of the body of the uterus is of equal frequency in those who have and have not borne children. Most careful attention to post-puerperal conditions and the performance of the simple operation described by Emmett would remove this source of danger in a great number of cases.

Uterine adenomata doubtless predispose to cancer of the uterus, and the co-existence of mucous polypi and epithelioma is not without its significance, as early operation in such cases would probably prevent the onset of malignant disease. The malignant degeneration of uterine myomata is probably commoner than is generally supposed, and on several occasions I have removed what was supposed to be a simple myoma of the uterus, and found a sarcomatous change going on. As myoma of the uterus can be removed by hysterectomy with very small risk, I make it a rule, whenever a myoma begins to enlarge at or near or after the menopause, to advise its removal; while I hold with those writers who recommend the removal of "fibroids" whenever the symptoms of haemorrhage, pressure, or pain seriously interfere with health or comfort. Surely it is better to accept a risk of 2 to 3 per cent., with a view to the removal of a disease that in itself promises to endanger life, and which in a certain percentage of cases undergoes a malignant change, than to have to operate when cancer or sarcoma have already developed, and when the risk of operation will be seriously increased and the chances of permanent cure very much lessened.

The fact that malignant disease of the ovary begins in the first place as a small tumour (often cystic), and that cystic disease is apt to undergo malignant degeneration, affords good ground for recommending operation at an early stage in the case of any ovarian tumour, when perchance the disease may be caught in a pre-cancerous condition; or should malignant disease have already commenced it will be limited and removable.

Dermoids may undoubtedly undergo malignant transformation, and, knowing their structure, it is a wonder that this does not occur more frequently.

Papilloma of the ovary naturally tends to malignancy, though at first it is simple, and when removed thoroughly does not recur. Even if in these cases the peritoneal surface has already become warty (owing to rupture of the cysts) and ascites has developed, the removal of the growth has in my experience in a number of cases led to recovery; for with the removal of the original tumour the peritoneal warts have shrivelled and the ascites has disappeared.

Seeing that ovarian tumours have frequently long pedicles, and that early removal means a very complete and perfect operation, almost devoid of risk, it is surely better to remove them as soon as the diagnosis is made, thus saving the patient the sufferings incident to a growing abdominal tumour and at the same time removing the dangers of the supervention of more serious malignant disease.

Pre-cancerous Conditions in the Intestines.

Though, on account of its inaccessibility to direct examination, a pre-cancerous condition is difficult to diagnose in the upper intestines generally, it will be found in many cases that there have been premonitory symptoms pointing to ulcer or colitis. Irregular pains, the passage of

mucus or blood, and constipation possibly alternating with diarrhoea, should rouse a suspicion of organic disease, and lead to a careful physical investigation that may reveal irregular peristalsis or possibly a tumour, which even if not caught in the pre-cancerous stage will be recognized, and treated in the incipient and curable stage of cancer.

Any disease high up in the rectum or in the lower loop of the sigmoid flexure is quite out of reach of the finger, and cannot be palpated through the abdominal wall unless of considerable size; here, as a rule, disease has had to be diagnosed by symptoms alone, and symptoms sufficiently definite to warrant exploration only come on when the disease has passed the most favourable time for radical treatment. Fortunately by means of the electric sigmoidscope invented by Professor Strauss of Berlin, to which attention was drawn by Mr. P. L. Mummery, a clear view of every portion of the inside of the bowel may be obtained, even as high as the top of the sigmoid flexure, without inconvenience or danger to the patient. It will do away with the need for exploratory operations in this region for mere diagnostic purposes, and will enable disease to be more frequently removed in the pre-cancerous condition.

In the rectum the earlier treatment of hæmorrhoids and ulcers and of all chronic sources of irritation is obviously rational and advisable, and may sometimes be the means of preventing the onset of malignant disease.

Radical Treatment of Cancer.

By the radical treatment of cancer I mean the entire removal of the disease at an early period, together with a wide margin of healthy tissue, and, if practicable, the nearest lymphatic glands.

In estimating what may be done for cancer by radical treatment I do not think it sufficient simply to consider the mortality of any special operation, as has so often been done, when operative success was used as a cloak to mask therapeutic failure, but I want to know the ultimate results, after the lapse of years, of operations undertaken at an early stage of the disease, where the cancer had been freely and widely excised. Nor do I think it fair to surgery to average the statistics of all surgeons, or even of all hospitals, but rather to select the statistics of operators interested in special lines of work who can show what can be done in their own particular region. The levelling process should, from my point of view, be a levelling-up to the best and not an averaging down to the worst.

Cancer of the Breast.

In my experience in hospital and in private practice I can point to a very large number of radical mammary operations, and I have been astonished to find how many, especially of the private cases, where, through the kindness of the family physicians, I have been able to trace the after-histories, have survived beyond the three years' limit, and how many are still living and well many years after operation. The following is a brief account of all the operations for cancer of the breast—62 in number—that I have done in private:

1 alive and well 12 years after operation.
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2 ,, ,, 4 ,, ,,
1 ,, ,, 3 ,, ,,
3 ,, ,, 2½ ,, ,,
1 ,, ,, 2 ,, ,,
2 ,, ,, 1½ ,, ,,
1 lived 20 years, and died of chronic bronchitis.
1 ,, 2 ,, ,, meningitis } Without recurrence.
1 ,, 2 ,, ,, phthisis }
1 ,, 1 year ,, enteric fever }
1 ,, 6 months ,, apoplexy }
8 cannot be traced.

Cases that Recurred.

1 lived 6 years, and had recurrence of the disease.
2 ,, 5 ,, ,, ,, ,, ,,
2 ,, 4 ,, ,, ,, ,, ,,
1 ,, 3½ ,, ,, ,, ,, ,,
2 ,, 3 ,, ,, ,, ,, ,,
2 ,, 3½ ,, ,, ,, ,, ,,
5 ,, 2 ,, ,, ,, ,, ,,
9 ,, 1 ,, ,, ,, ,, ,,
4 ,, 6 months ,, ,, ,, ,,
1 ,, 4 ,, ,, ,, ,, ,,

There was no operative mortality.

Thus, 23 survived the three years' limit.

Twenty are now alive and well at periods up to twelve years after operation. Others operated on within the year are not included in the statistics.

Five died from other diseases without recurrence of cancer, 1 twenty years after the major operation.

Twenty-eight had recurrence, though in 8 it was over three years subsequent to operation.

Eight could not be traced.

My early operations were not so thorough as those done in later years, otherwise I feel sure that the recurrences would have been fewer.

Following on Mr. Moore's work at the Middlesex Hospital came an important paper by my old friend and colleague, Sir William Banks, whose recent death we all sincerely lament. This paper, advocating early and free removal and the clearing out of the axilla in all cases, gave a great impetus to the radical treatment of mammary cancer. In 1880 Samuel W. Gross wrote: "The wiser course is to explore the axilla even if its glands cannot be detected from without"—a view which is now universal among surgeons.

In the Lettsomian Lectures for 1900 Mitchell Banks gave the results in 175 patients operated on for cancer of the breast: 108 had remained free from local recurrence; of the 108, 73 lived over three years as follows:

Cases that lived between 3 and 6 years after operation, 40; cases that lived between 7 and 14 years after operation, 28; cases that lived between 16 and 21 years after operation, 5.

To Dr. Halsted of Baltimore belongs the distinction of carrying operations for cancer of the breast to their widest limits, and when I had the opportunity of observing that eminent surgeon operating in the Johns Hopkins Hospital some years ago I felt that his thorough work ought to show positively whether extensive removal was to be the operation of the future. Dr. Halsted has been so kind as to furnish me with his completed statistics (prepared by Dr. Bloodgood), from 1889 to 1902, which will, I think, convince the greatest sceptic as to what may be done by thorough and complete work. The following is a brief account of the ultimate result of 161 patients admitted to the Clinic with operable primary tumours of the breast, on whom complete operations were performed between June, 1889, and August, 1899:

In August, 1902, 66 patients were living and cured, 7 had lived over 3 years and died from other causes, and 2 had died from other causes within the 3-year limit, autopsy showing no signs of recurrence. This gives 69 cases, or 42.8 per cent., positively cured. An analysis of the 161 patients shows that 83, or 51.5 per cent., survived the 3-year limit.

The operations performed consisted of complete excision of the breast, both pectoral muscles, and axillary contents in one piece, and complete excision of the contents of the supra-clavicular fossa. During thirteen years 305 patients with primary and 38 with secondary tumours were admitted to the clinic, and of these it is worth noting that 83, or 27.2 per cent., were inoperable, owing to delay in seeking surgical assistance. It is also of interest to note that in no case was local recurrence or internal metastasis observed after three years.

Mr. Bryant has recorded from his own experience 46 cases of amputation of the breast for cancer, in which the patients survived the primary operation from five to thirty-two years. My friend, Mr. Pridgin Teale, has told me of 17 instances in which his patients have survived from eight to twenty-six years. Mr. Sheild, in a paper read before the Royal Medical and Chirurgical Society in 1897, collected 44 cases from various sources where no recurrence took place after the primary operation, for periods varying from six to twenty years; some of Mr. Teale's cases, already referred to, were included in these. A case of my own had been operated on by Mr. Morrant Baker, and afterwards by Mr. Durham, and I performed several subsequent operations, the patient living for about twenty years after the first operation.

My colleague, Mr. Watson Cheyne, adopting a most thorough and radical operation on lines similar to those of Professor Halsted, shows very satisfactory results. He says that, taking the average of all cases operated on, favourable or otherwise, something like 50 per cent. will remain well for a number of years, and in these cases, in which the tumour is small and well limited, and the glandular infection is slight, the proportion of successes will be considerably greater. In these views I most thoroughly agree. Professor Rodman has said that, of 629 cases of cancer of the breast operated on by American surgeons, 44.16 per cent. survived the 3-year limit.

Cancer of the breast, if operated on early and with thoroughness, is by no means the incurable disease that many still think; in a very large percentage, 50 or more, the

patients may look for over three years' respite; and in 40 per cent. to a much longer period of freedom, and many to a genuine cure.

RADICAL TREATMENT OF CANCER OF THE STOMACH.

It was only in 1879 that Péan performed his first pylorectomy for cancer of the stomach, and in 1881 that Billroth did the first successful operation; before that time, and long after by many, the disease was held to be incurable. At first sight it would appear to be hopeless to expect that eradication of the disease could be possible in an organ situated as the stomach is and so freely supplied with blood vessels and lymphatics; yet a careful study of its anatomy shows it to be fixed only at the cardiac extremity, and with the exception of that part the remainder is as freely accessible for operative purposes as the intestines; moreover, the disease if caught early can be completely removed. I can point to a number of patients in good health on whom I performed partial removal of the stomach years ago, and to one especially.

A man, aged 42, from whom I removed the whole stomach, except a small portion of the dome and the cardiac orifice, four years ago. He was reported last month to be robust and well, to be able to take quite ordinary diet, and to have followed his business without any disability from within two months of his operation up to the present time.

In another case, a woman, aged 54, a partial gastrectomy was performed at the same time as removal of the gall bladder, both organs being involved in cancer. She remains well now in the fifth year after operation. In another case, a woman of 50 remains well nearly four years after the removal of the centre of a cancerous hourglass stomach, the proximal and distal healthy portions having been joined over a decalcified bone bobbin.

A number of other cases might be referred to in which the patients are apparently in perfect health after radical operations performed one to three years ago; but for a radical operation to be successfully performed it is necessary that there should be early diagnosis and immediate operation. It is useless to wait until a tumour develops or until coffee-ground vomit shows that ulceration has occurred. In that way valuable time is lost, glandular infection occurs, and the extension of the disease makes an operation more difficult to perform, and the patient is less able to bear it on account of anaemia and exhaustion. As the early symptoms are often equivocal and uncertain, we must be prepared to confirm the diagnosis by exploration, and then be prepared to go on and perform a radical operation. Medical treatment cannot cure, and can do very little even to prolong life; surgery offers the only chance of cure.

Whenever a patient at or after middle age complains somewhat suddenly of indefinite gastric uneasiness, pain, and vomiting, followed by progressive loss of weight and energy, and associated with anaemia, the possibility of cancer of the stomach should be recognized, and if no improvement takes place in a few weeks at most, an exploratory operation is more than justified. Our diagnosis can only be rendered certain by a digital examination, which may be effected through a small incision that can, if needful, be made under cocaine anaesthesia with little, if any, risk.

It may be discovered that the disease is manifestly non-malignant, and that some curative operation can be done, or that the disease resembles malignancy, both in its history and naked-eye appearance, and is yet, if we may judge from results, apparently not malignant, as in a number of patients treated by gastro-enterostomy that I have reported, who were at the time of operation extremely ill and supposed to be suffering from cancer of the stomach, but who, as the result of surgical treatment, are now in good health. Or it may be found that the disease is cancer in an early stage, and that a radical removal is possible.

Removal at an early stage offers good prospects of immediate recovery and a fair probability of cure, and excision of even a considerable portion of the stomach may be something more than a palliative operation. Although it is better to have cancer diagnosed and operated on early, yet we need not take the pessimistic view that if a tumour be manifest it is too late to perform a radical operation. Professor Kocher, of Berne, has been so kind as to give me the results of his gastrectomies for cancer up to the present. The following is the report as sent to me in a letter dated October 14th, 1904:

I have performed 97 resections of the stomach for cancer and sarcoma (one only for sarcoma). Of these, 52 cases (operated on between 1881 and 1898), 65.4 per cent., recovered, 34.6 per cent. died. From 1898 to August, 1904, 45 cases have been operated on, with 82.2 per cent. recoveries, and 17.7 per cent. deaths. Of these last 8 cases which died (that is, 17.7 per cent.), one died from perforation at the point of union, one from perforation of the transverse colon in consequence of local gangrene, and six cases from pneumonia, whilst locally everything went on in a normal way. Without these cases, dying from complications existing for the most part before operation (bronchitis, etc.), we should have had only 5.1 per cent. of deaths directly from operation.

With regard to definite results, 51 of the whole series died later, living up to six years (in the mean 18.7 months), much longer than after gastro-enterostomy, and in much better condition.

Twenty cases are still living, 2 for several months only, 1 for ten months, 6 for one year, 1 for two years and two months, 1 for two years and eight months, 1 for three years and eight months, 3 for five to five and a half years, 1 for six years, 1 for seven years, 1 for eleven years, and 1 for sixteen and a quarter years.

All the patients, except one, of the 20 living are in very good health. Dr. Matti and I have seen most of these cases ourselves, and Dr. Matti has examined them carefully as to the functions of the stomach. The others have been examined by their local doctors. We may be sure that a good many of our cases have given a radical cure.

All of the cases living, except one, have been operated on by our method of resection with gastro-duodenostomy. This method, applied in 71 of the cases, has also given the best result as to immediate mortality—that is to say, 16.9 per cent. of deaths, and 83.1 per cent. of recoveries.

Drs. W. H. and C. Mayo[1] have performed 43 radical operations for malignant disease of the stomach with 7 deaths—that is 16.2 per cent.; all but 2 of those who recovered lived over a year, 1 lived three years and seven months, and several are well more than two years after operation. McDonald, quoted by Mayo, was able to collect 43 cases definitely cured by operation. Murphy collected 189 cases with 28 deaths, of which 17 survived over three years. Of the partial gastrectomies performed by myself and Mr. Moynihan before 1897 the mortality was 75 per cent., whereas since 1896 it has only been 12 5 per cent.

Removal of Cancer of the Tongue.

I remember as a student seeing a number of removals of the tongue by the écraseur, there being no question of removal of the glands or of the floor of the mouth. In nearly every case recurrence took place within a few months, and the operation was falling into disfavour, when Whitehead invented his operation of removing the tongue widely with scissors, and Kocher's operation of clearing out the tongue, floor of the mouth, and the submaxillary and lymphatic glands also came to be practised.

These operations brought a marked change, and it was soon found that a good percentage of patients operated on remained free from disease for some time, and others were really cured. I can point to a case well seven years after operation, to another five years, and to others over three years, and it is of interest to note that in these cases very good power of speech is retained by the patients.

My colleague, Mr. Butlin, putting together his own cases and those of Krönlein, Kocher, and Whitehead, found that 40 out of 199 remained free from disease or had died of some other cause than cancer more than three years after the last operation. Mr. Whitehead has excised the tongue independently of other complications on 50 occasions without a death, and in 116 operations the mortality was only 2.5 per cent. He refers to cases living thirteen, twelve, and eleven years after operation, and makes the statement that "provided the tongue and adjacent affected parts are removed thoroughly and early there exists a fair prospect of life being extended beyond the three-year limit." Mr. Stanley Boyd, out of 26 cases, reported 1 alive eleven years after operation, 1 eight and a quarter, 1 five, 1 four and three-quarters, 1 four and a quarter, 1 four years, and others in which life was prolonged for shorter periods; in over one-fourth of his cases life was prolonged beyond the three-year limit.

If only diseases of the tongue were attacked in the pre-cancerous stage; if only this were done more frequently, and if, even when cancer had developed, time were not lost in dosing patients with iodides week after week until the disease has extended too widely, there would be a much brighter tale to tell.

Cancer of the Larynx.

What could at first sight appear more hopeless for radical treatment than cancer of the larynx, which formerly used only to be treated palliatively by tracheotomy, later was removed by the formidable operation of complete laryngectomy with a very high mortality, and, lastly, has been most successfully dealt with, when seen early, by the much more simple operation of thyrotomy and removal of the diseased part, as advocated by Mr. H. T. Butlin in 1889. My friend, Sir Felix Semon, has been kind enough to give me the statistics of his thyrotomy operations, the results of which are remarkable, and which prove up to the hilt the special

point which I want to insist on in this lecture, that if we get cancer cases sent to us sufficiently early, operation is not merely palliative, but curative. Sir Felix Semon says:

I can now summarize my results to the effect that out of 18 cases of undoubted malignant disease of the larynx which I have operated upon by thyrotomy between June 2nd, 1891, and July 29th, 1902, 15, that is, 85 per cent. were permanently cured. Three of these patients died several years after the operation from affections altogether unconnected with the original disease; one, six years after the operation, from an acute abdominal affection; the second, three years and a quarter after the operation from embolism of the heart or lungs; the third, four years after the operation from pneumonia. The remaining 12 are now alive and well; whilst the vocal results, with the exception of a few cases in which it was necessary to remove both vocal cords, are surprisingly good.

My personal experience of the disease in this situation is necessarily small, but I venture to relate the case of a gentleman, aged 50, from whom I removed a cancer of the tongue five years ago, and a cancer of the vocal cord by thyrotomy, three years ago. He came to see me from Brazil this summer, and although he had only half a tongue, half an epiglottis, and one vocal cord, he could speak perfectly well. He said that his health was very good, and that he was able to carry on his professional work without any disability.

Mr. Marmaduke Sheild tells me that he has under observation four cases in which epithelioma of the vocal cord was freely removed in an early stage by thyrotomy, all in men over 40 years of age; of these one is well six years, one four years, one nearly four years, and one two years later. Professor Kocher has been kind enough to furnish me with the statistics of his cases that were evidently more extensive, and had to be treated by the more formidable operation of partial and complete laryngectomy; of these 8 are radically cured. He says:

The number of my excisions of the larynx for malignant growths is 30, of which 29 were for cancer, and 1 for sarcoma. The results are that 8 cases offer a radical cure, that is to say, 26.6 per cent. These include the 1 case of sarcoma. Of 6 cases of total excision, only 1 survived 2 years and died of pneumonia. Of 9 unilateral excisions (one half of the larynx), 2 died without return of the disease after 1½ years; 2 are living in perfect health, after 6 and 8 years respectively. Of 10 circumscribed excisions, 2 are still in good health after 6 and 6½ years respectively. Of 4 cases operated on by pharyngotomie subhyoidea, 2 are quite well after 14 months and 10 years. Out of the cases where the carcinoma was still circumscribed and no lymphatic glands affected, one half of all cases have been definitely cured. All depends upon early diagnosis and early surgical aid.

Radical Operations for Cancer of the Intestine.

Intestinal cancer is nearly always columnar-celled carcinoma, and, as shown by Haussman,[2] even when it has advanced to a fatal issue, the disease is limited to the gut in over 40 per cent. of cases. I believe that all the cases in which the disease is limited ought to be capable of cure by enterectomy if operated on early. It should also be borne in mind that even if enlarged glands be present it does not necessarily mean that they are cancerous, for clinical and pathological experience has shown the contrary. In some of my own cases, enterectomy, despite the presence of enlarged glands, has resulted in cure. I have performed enterectomy on over forty occasions; of these 31 have been for growth, of which 6 died. As to the ultimate issue, it is almost impossible to trace the hospital cases, though two were heard of as being well four and a half and two years later. Among 21 operations for tumour done in private there were 17 recoveries; of these, 1 is alive and well ten years after excision of the sigmoid flexure, and has had two children since her operation. One is alive and well four and a half, 3 are well three and a-half, 2 three, and 1 one year after operation without sign of recurrence. Others lived—1 for three years, 3 for two years, and 5 for lesser periods, and died of recurrence.

In all chronic ailments associated with dyspepsia or constipation or abdominal pain, a careful examination of the abdomen should be made in order to discover disease at the earliest possible moment, for to wait until obstruction occurs is to lose the favourable moment, and to add very seriously to the danger of any operation.

In operating I make a very wide sweep of the disease, going several inches beyond the growth above and below, and removing the lymphatics and glands belonging to the affected parts of the bowel as far as possible. Personally, I prefer to use my decalcified bone bobbin, but I have employed with success the simple suture and the Murphy button, though I still feel that by means of the bobbin used as a temporary splint around which to apply sutures, I can perform a safer operation than by any other method.

The operations performed before the perfection of the technique of intestinal surgery, massed together, and said to furnish an average mortality of from 30 to 40 per cent., ought not to be taken as an example of what can be done to-day; for instance, Mr. Bilton Pollard published in the British Medical Journal for January, 1904, reports of 7 colectomies without a death, and of these

1 has lived 5 years after operation.
1 is living and well three and a half years after.
2 are well one year after.
1 recurred one year and nine months after.
1 recurred one and a half years after.
1 recurred one year after.

Professor C. E. Morton, employing the decalcified bone bobbin, has performed 7 consecutive cases of colectomy without a death; and my friend Mr. H. Littlewood has reported[3] 14 colectomies with 10 recoveries, several of the patients being well three or more years later. Von Mikulicz has written:

In my experience the present results after operations for malignant tumours of the large intestine are very favourable, more so than generally supposed. I think we should point out this fact to physicians who are still very sceptical about this operation.

The conjoint statistics of Mikulicz and Korte show that of 24 cases, 9 were under observation for four years after operation and some much longer, one seventeen years without recurrence.

Cancer of the Rectum.

This is an affection that of all others lends itself to a radical cure, for it can be recognized early. It is safe to say now that there is no part of the alimentary canal that cannot be reached for a radical operation, for even in the rectum that part which cannot be reached from the perineum can be got at from above by opening the abdomen with the patient in the Trendelenburg position, as was so ably demonstrated by my friend, Sir Charles Ball, from this chair last year; and, fortunately, there need be no doubt about the nature and extent of the disease in this region, for the electric proctoscope enables the lower bowel to be examined by the eye without difficulty to a height of 30 centimetres.

Among other notable examples of radical cure, I can point to one patient living in perfect health and with good control of the bowel, from whom I removed a cancer of the rectum by proctectomy twelve years ago; to another, eight years; and to others who are well and enjoying life several years after operation. My colleague, Mr. Clinton Dent, has recently recorded the case of a patient who died from recurrence in the liver twenty-one years after removal of a cancer of the rectum.

Mr. Harrison Cripps has recorded 38 perineal proctectomies, with 3 deaths—a mortality of 7.8 per cent. Of these 2 were well one to three years, and 7 more than three years after operation. In no case did recurrence take place after three years. Mr. Percy Furnivall has tabulated Duplay's and Reclus's collected cases as follows:

Lived	13, 14, 16, and 16½	years after operation,	4.
,,	11	,, ,,	3.
,,	8	,, ,,	3.
,,	7	,, ,,	4.
,,	6	,, ,,	5.
,,	5	,, ,,	13.
,,	4	,, ,,	10.
,,	3	,, ,,	15.

My colleague, Mr. Watson Cheyne, says:[4]

I should reckon the mortality of excision of the rectum at from 5 to 10 per cent, as the result of recent improvements in the operation. It is a very valuable procedure in suitable cases, and the risk run by the patient is not at all excessive, seeing the advantages that may be gained.

Cancer of the Gall Bladder and Liver.

If the favourable pre-cancerous period has passed, and malignant disease has actually supervened, can anything be done for the sufferers?

At first sight it would appear that cancer of the gall bladder is an utterly hopeless disease, especially when it has extended to the liver. I have, however, operated on 12 cases of cancer of the gall bladder, and in 11 the disease extended to the liver, forming a tumour of some size. Of these 12 cases 10 recovered from the operation and lived for varying periods. Five of these patients are at the present time alive and in good health at periods of 5½, 5, 4½, 4, and 1¼ years respectively subsequent to operation. These were cases of primary cancer of the gall bladder due to the irritation of gall stones, and the liver growth was due to extension by continuity, not to

secondary deposits in that organ. In one case I was able to remove as much as half a pound of the liver with success.

Cancer of the Lip.

Even if the pre-cancerous stage has passed, a free removal of the disease at an early stage and while it is still local enables a very good prognosis to be given.

Mr. Butlin's analysis of 114 cases of epithelioma of the lip from the Gottingen clinic showed that 53 per cent. of cases were alive and well or had died of other diseases more than three years after removal, and of these twelve had lived for at least twelve years and one for eighteen years after operation.

Dr. Loos analyzed the returns of the Tübingen Hospital for 1843 to 1885 and found that the cures averaged 51 per cent., but in the years from 1885 to 1808 they had increased to 66 per cent.

Mr. Marmaduke Sheild has told me of one patient from whom he removed an epithelioma of the lip with submental glands twenty years ago. The patient died last year at the age of 81, without recurrence.

Cancer of the Penis.

In epithelioma of the penis amputation yields a cure in one-third of the cases operated on.

Mr. Butlin gives cases under his own observation living and well from six to ten years later, and of some collected cases well for nearly twenty years.

Mr. Sheild has told me of 4 cases of his well after nine, seven, six and a half, and three years respectively, and I can point to one case well after fifteen years and to others at lesser periods.

Cancer of the Uterus.

Much may be done to prevent this dread disease by careful surgical treatment, and that without risk. Even when the pre-cancerous stage is passed, if women could be educated to the fact that were they to seek advice earlier, and, in fact, whenever an abnormal sanguineous discharge appears, apart from a menstrual period, in a very large percentage of cases the cancer would be recognized in its incipient condition when the disease is local, and removal could be carried out and cure effected.

In order to prove these statements I wrote to the medical attendants of all the private patients on whom I had operated, and was very much gratified to find many not only living but in robust health, from whom I had removed cancer of the uterus by complete or partial hysterectomy years ago. I made an attempt to get the statistics of my hospital patients, but found it absolutely impracticable, as nearly all the letters were returned on account of change of address, so that the statistics are limited to private patients; and as these cases were nearly all seen at an early stage of the disease, and the growth was examined microscopically after removal, I think they form a valuable addition to the statistics of uterine cancer, for every case can be verified.

They are 27 in number—12 total hysterectomies without a death, of which
1 is alive and well 8½ years after operation.
1 " " 7 " " "
1 " " 6 " " "
2 are " " 5 " " "
2 are " " 3 " " "
1 is " " 1½ " " "
From 4 no answers were received.
14 very free supravaginal amputations of the cervix without a death, of which
1 is alive and well 11½ years after operation.
1 " " 10½ " " "
1 " " 10 " " "
1 " " 9 " " "
1 " " 6 " " "
1 lived for 5 years and died of heart disease without recurrence of cancer.
From 2 no answer was received.
1 lived 4 years, and recurrence took place.
5 lived 1 year or less, and recurrence took place.

Mr. Jessett has been so good as to furnish me with his statistics.

He has performed hysterectomy 180 times with 10 deaths, but of the last 73 cases only 1 died. Of the first series of 107 cases, very many being hospital cases were lost sight of, but 5 are living and well, 11, 10, 9, 9, and 8 years respectively. Of the last series of 73 cases, 12 are known to be well from 2 to 5 years after operation.

Professor Olshausen's experience in vaginal hysterectomy extends to 803 cases; up to 1903 he had performed 671 operations, with a mortality of 6 per cent.; since 1903 he had done 137 operations, with a mortality of 4.4 per cent. As to the ultimate issue, 70 per cent. lived for 2 years without recurrence and 38 per cent. had had no recurrence after 5 years. The extensive operation involving the removal of the pelvic glands results in a high mortality, and it has not yet been shown that a greater number of cases have been radically cured than by the vaginal operation. When once the glands have become infected a radical operation, Olshausen thinks, is impracticable.

Professor Wertheimer, who performs an extensive operation, only operates on a small proportion of the patients he sees, and his ultimate results are consequently very good—9 out of 14 patients free from disease at the end of 4 years.

Professor Zweifel, of Leipzig, of 153 operations for uterine cancer since January 1st, 1897, had 35.6 per cent. of the cases well and free from recurrence after 5 years.

These facts prove beyond a doubt that cancer of the uterus is a curable disase if diagnosed and removed in its earlier stages. It seems to be most desirable that some crusade against the neglect of the well-known early symptoms of uterine cancer should be undertaken, and that women should be warned how important it is for them to consult their medical attendants at an early stage, when, in case of doubt, a small piece of tissue can easily be removed and examined microscopically.

PALLIATIVE OPERATIONS.

[Mr. Mayo Robson then spoke of the value of palliative operations, especially in cancer of the stomach and intestines, not only to prolong life, but to prolong it in greater comfort, and in concluding his lecture he said:]

My purpose will have been served if I have been able, in however small a degree, to convince those who have the chance of seeing patients in the early stages of their illness, that in many cases cancer can be prevented by treatment in the pre-cancerous stage; that even when cancer has developed, if it be seen early and thoroughly removed it is frequently a curable disease; and lastly, that even in the later stages much may be done by surgical treatment to give real relief.

Is it too much to hope that some of the views I have enunciated may filter through the profession to the public, and serve to convince them that until a true prophylactic for cancer is discovered, they will be consulting their own interests best by seeking medical advice earlier, since to trifle with their ailments in the early stages is to lose the favourable moment and ultimately to hear the verdict—alas, too often pronounced—too late!

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1 *Medical News*, April 16th, 1904. 2 *Thèse de Paris*, 1882. 3 *Lancet*, May 20th, 1903. 4 BRITISH MEDICAL JOURNAL, June 13th, 1903, p. 1362.

The Horace Dobell Lecture

ON THE

LIFE-HISTORY OF SAPROPHYTIC AND PARASITIC BACTERIA AND THEIR MUTUAL RELATION.

Delivered before the Royal College of Physicians of London on November 22nd, 1904.

BY E. KLEIN, M.D., F.R.S.,

Lecturer on Advanced Bacteriology at St. Bartholomew's Hospital.

[ABSTRACT.]

[AFTER acknowledging the honour conferred on him by his selection to deliver the first Horace Dobell Lecture, Dr. KLEIN said:]

The subject I have to deal with will best be considered under the following three heads: (1) Morphological; (2) Chemical; (3) Physiological.

MORPHOLOGICAL.

What are bacteria? Since v. Naegeli's—and particularly F. Cohn's—fundamental researches into the morphology and development of bacteria, these micro-organisms are considered as a special order amongst fungi, being spherical, oval, or cylindrical cells without a nucleus, enclosed in a sheath, devoid of chlorophyll, and multiplying by first enlarging and then dividing by simple fission, hence their name "schizomycetes." Amongst the bacterial species some have been shown in which the individual cells are capable of concluding their life cycle by forming in their interior spores of a permanent character, which spores, after the total disappearance of the remainder of the cell, become free, and are capable of preserving for long periods their germinating power, and consequently of starting new generations, notwithstanding various inimical influences of locality, temperature, etc., surrounding them.

A considerable number of observations have, however, been

recorded since Cohn's time. In the first place, the question has to be asked whether and to what extent bacteria are comparable to vegetable cells? That some bacteria, like the constituent elements of the higher fungi and of higher plants, are possessed of a cellulose membrane, is a fact which admits of no doubt; a simple micro-chemical (iodine) test proves this. Another point of similarity to the cells of the higher fungi is this—namely, that, as in the constituent elements (both young and old) of the higher fungi, vacuoles or drops of fluid appear in the protoplasm also of some species of bacteria in certain phases of their growth, and particularly when growing in media much diluted by water—that is, in which the nutritious elements are scanty and reduced in amount. In these respects a resemblance is noticeable between the cells forming the threads of mycelium of the higher fungi (saccharomyces or oidium, aspergillus, penicillium, mucor) and the bacterial cells. A further analogy is offered by the cells constituting the threads of streptothricheae, including actinomyces, which as to their morphology and mode of growth may justly be considered as intermediary links between the mycelial threads of the hyphomycetes and those bacteria which are capable of forming threads.

The next point deserving attention is the question of the nucleus. When living bacteria are rapidly dried in very thin films and stained, their protoplasm shows differentiation of at least two substances, one of which, generally situated centrally or nearly so, stains deeper or in a different tint than the peripheral portion. All that can be maintained, however, is that under certain conditions of staining different parts of the cell protoplasm possess different chemical affinities to the dye—affinities which in some instances seem to indicate the presence of "granules" differing from ordinary protoplasm (metachromatism).

We must conclude, however, that at present no data are at hand which would justify our ascribing to bacteria a nucleus, that is, that definitely shaped and definitely placed well-defined central substance which in the cells of higher plants and of animals plays the part of division centre. If further proof were needed it is found in studying bacteria during division. Here no appearances can be observed which would denote a division of the alleged nucleus. In this respect, then, the bacterial cell compares with and belongs to the same group as the cell constituting the hyphomycetes and streptothricheae, and is not comparable with the cells of higher plants.

The formation in certain species of bacilli of spores, conspicuous by their shape, chemical reaction, and position within the cell protoplasm, and by their high resistance to inimical influences, is a subject which, since Cohn's researches, has received a great deal of attention. Of several points in relation to spores which as yet have not received sufficient attention two stand out prominently: (1) What is the exact and intimate mode of their formation? and (2) what are the conditions necessary for their formation?

When studying carefully the formation of spores in some species, the following observations can readily be verified: while certain individual bacilli of a given species enlarge, becoming thicker and more transparent, in which the spore formation is completed in the recognized manner, there are other bacilli of the same species and sometimes even in the same preparation in which the initial glistening globule, which in others continues to grow till it reaches the size of the adult spore, remains small and does not grow up into the oval spore. These globules do not stain in the exact manner of spores, and in some bacilli are double, nor can they be confounded with vacuoles, because they are solid bodies reacting in the manner of fat globules or of some substance similar to fat, and behaving more or less like acid-fast substance, such as furnish the tubercle bacilli with their power to withstand nitric acid. B. anthracis, which has been carried through many generations in the laboratory in artificial culture and in which formation of adult full-sized spores has become sparse, shows the above appearances very strikingly. By continued transference in artificial media the formation in many sporogenous species, particularly of the pathogenic kind, of adult spores becomes more and more inhibited, so that after many generations the spore formation altogether ceases and the microbe may become asporogenous.

In other species the enlargement and greater transparency of the cell protoplasm is observed; but instead of a spore being formed in the enlargement a central condensation of the substance takes place in it, which stains somewhat differently and more deeply than the rest of the latter. It may even assume the fatty, glistening aspect; but here the process ceases—no further growth and enlargement of this body occurs; it does not stain after the exact manner of spores, being less liable to retain the first stain and being less acid-fast; moreover, it is devoid of the power to germinate and to give origin to a new bacillus.

These observations justify us in concluding that we are dealing here with an "abortive spore formation"—that is, an arrest of the process. It falls short of the development of the essential part of the spore in so far as of the constituents of a real spore only the fatty matter has been formed, but not the true living substance capable of subsequent germination, which process is, after all, the essence of the nature of a spore. It is this power of germination in the true sense used by botanists which must be considered as the determining factor in what is and what is not a true spore; and we shall see that an organism merely capable of preserving its vitality under adverse circumstances does not justify us in considering it as a spore.

It had been at first assumed that spore formation in the sporogenous bacilli depends in a given culture on the consumption of the nutritive substances below a certain point—that is to say, when, owing to the continued growth and multiplication of the bacilli in a given amount of nutritive material, this latter is becoming exhausted, the bacilli close their life-cycle and form their permanent seeds or spores. But this explanation is not borne out by observation, for spore formation not only happens in the central part of the colony, which one might perhaps suspect of being the part where exhaustion of nutritive material is making itself first felt, but it can be observed quite unmistakably at the margin of a colony. At present we are driven to the conclusion that bacilli, having reached maturity, conclude their cycle by spore formation, and in this respect differ essentially from non-sporogenous bacteria in which the whole life is of a more uniform nature, consisting in growth and simple division, lasting as long as the conditions of growth are favourable for it.

I would claim for those species of bacilli which are capable of forming spores a separate position amongst the bacteria, as separate as, amongst the mycelial fungi, the sporogenous species, like mucor, aspergillus, or penicillium, are from the tribe of oidium.

Whether in the sporogenous bacilli something of an interaction of sexual elements, as sometimes occurs amongst the mucorinæ, or of elements of a different nature is required for the establishing and creating the spore, is a subject well worthy of further attention. The fact already quoted of deficient progress, or rather want of further progress, observed in the "abortive spore formation" is not incompatible with such a view.

Amongst the species of bacteria in which spore formation has not been observed, there is one group which seems to stand out prominently, because, owing to its high resistance to inimical influences—drying and heat—it is credited with the possession of spores—namely, the group of acid-fast bacilli, notably the bacillus tuberculosis. The most careful microscopic examination of the tubercle bacilli of sputum or of other tuberculous deposits or of artificial cultures fails to show spores such as occur in the real sporogenous bacilli. The unstained spaces between the stained granules—at first thought to be unstained spores—have long been recognized as spaces free of chromatic substance.

But the high resistance of tubercle bacilli being a fact, it is feasible to explain it by ascribing it to the waxy substance, that is, the part of the bacilli which furnishes it with the acid-fast character. As a matter of fact the fatty (waxy) envelope of the real spore (of sporogenous microbes) is, according to many accounts, the cause of the high resistance of the spores, and further, spores of some bacillary species treated in the same way for acid-fast condition as the tubercle bacilli, show the same or similar staining characters as the latter, but it will hardly be said that all acid-fast parts of the tubercle bacillus—and as a matter of fact the whole of it is acid-fast—is spore.

During the last ten years or so, a good deal of attention has been directed by morphologists to the appearance of branched forms amongst some species of bacilli, and to the clubbed ends of the branches. It requires no stretch of imagination to conclude that these species of bacilli, which under ordinary conditions of growth are made up of non-branched, rod-shaped or cylindrical bacilli, under other conditions are capable of reverting to and of assuming forms of an atavistic type, a reversion not unknown among plants and animals. If this be the correct interpretation, it would lead

us to suppose that these bacillary species have at one time of their evolution been, not what we now consider them to be, namely, typical species of bacilli, but something akin to the saccharomyces form of blastomycetes—that is to say, they were originally derived from a parent stem of the nature of an oidium or saccharomyces.

There are, in support of this view, two further points. Taking, for instance, certain species of micrococci, it is not at all difficult to meet in perfectly active and recent cultures individuals which are four and more times as big as the typical cells of the species; they look like single giant cocci. Then we find such giant cocci in which a division into two or four big cocci is more or less indicated, and lastly giants in which the division into two or four is complete. We have, then, in these giants the growth of a coccus to great size without division, in which division has been greatly delayed while enlargement continues, whereby the coccus reaches the size of a torula or blastomyces. In cultures of some strains of streptococcus one meets in older cultures on solid media with appearances which markedly resemble not fission forms such as are generally typical for cocci, but forms which suggest gemmation—namely, a typical coccus of the normal size from which projects a very small coccus. Another point leading to a similar interpretation is observed on some strains of B. anthracis, in which forms resemble strikingly the forms seen in saccharomyces or oidium albicans, with torula forms, spindle forms, and threads or mycelial forms.

From the facts I think we are justified in drawing the conclusion that the same phylogenetic relation exists between cocci and bacilli as between the true torulae and saccharomyces or oidium; and, further, that the bacilli themselves are the counterpart of those blastomyces which belong to the group of saccharomyces or oidium; this would lead us to the fortner conclusion that, just as saccharomyces or oidium is phylogenetically considered an offshoot of the primary and true torula, so, also, the bacteria—both cocci and bacilli—are, as shown by their conditional relapse into atavistic forms, phylogenetic offshoots of blastomyces. If this view be the correct interpretation of the phenomena enumerated, we should have to start with the true torula as being situated at the parent trunk, bacteria commencing with cocci, as representing one kind of branch, oidium another, and sporogenous hyphomycetes as the farther phylogenetic diversion of the latter. Amongst the bacteria, the typical cocci, like staphylococci, would be the primary forms, next would come streptococci and cocco-bacilli, and last the true bacilli. And amongst the bacilli, those species which are capable of forming true spores would represent a phylogenetic advance on other bacterial species, just as hyphomycetes, which are capable of forming spores like penicillium, mucor, or aspergillus, are phylogenetically a higher branch than saccharomyces or oidium and streptothrichae.

CHEMICAL.

I mentioned at the commencement that bacteria in morphological respects are comparable to plants. But many years ago it was pointed out by the late Sir Edward Frankland that bacteria, unlike plants, and more like animal cells, break down higher and complex organic bodies into simpler compounds, and there can be no question that this universally holds good for bacteria—namely, that either by oxidation or reduction they are engaged during their life in dissociating more complex into less complex matter. But it has nevertheless to be remembered that some, at any rate, are capable of building up higher compounds (their own protoplasm) from simpler combinations.

It is outside the scope of the subject of this lecture to discuss the manifold chemical processes with which many species of bacteria are connected, and I must confine myself to a few points bearing directly on the evolution and differentiation of bacteria.

Intracellular Phlogogenic Poison.

Certain species of bacteria—apart from the question of capability or non-capability to set up specific disease in the human and animal system—possess in their cell bodies a phlogogenic poison, which, judged by the result of peritoneal injection into the guinea-pig, causes acute inflammation (peritonitis) with fatal result; this result being uniform for all active species must be due to a poison common to them all; it is a poison lodged in the cell substance itself, and in most instances is readily obtained by simple emulsion. This result is produced equally with the living as with the previously killed emulsion. In this action there is nothing of the nature of a specific disease, and as a matter of fact it is observed in some species of bacteria which have no action of an infectious nature on the animal body. Taking, for instance, two microbic species like B. typhosus and the common B. coli, the former being the cause of a specific disease, the latter not, it will be found that both possess the same kind of intracellular phlogogenic poison, causing the same kind of acute fatal peritonitis.

Moreover, there are some species which, though capable of causing highly virulent infectious disease, are not possessed of the phlogogenic poison. To this category belong B. anthracis, B. diphtheriae, and the bacillus of swine erysipelas.

It has been found in recent years that while certain pathogenic bacteria readily elaborate specific toxins in certain culture media, others do not do so. Thus, whilst the presence of the specific toxin of anthrax when grown in certain media (blood serum, fibrin), of tetanus in formate and glucose broth, of diphtheria in ordinary broth, is demonstrable in the medium, it is not present in the broth cultures of B. typhosus or vibrio cholerae. This holds good in a conspicuous degree with the tubercle bacillus, which, as Koch has shown by his different forms of tuberculinum, have stored in their substance several kinds of specific toxins. It is suggested that in the first class of cases the toxin is ectotoxin, that is, outside the bacterial cell—for example, tetanus, diphtheria—whereas in the second the specific toxin is inside, that is, stored up within the bacterial cell: endotoxin—for example, B. typhosus, vibrio cholerae, bacillus tuberculosis. If this view be the correct one, we should have three different groups of bacteria as regards their behaviour in artificial culture media, namely: (1) such as neither within nor without the bacterial cell produce any specific toxin, that is to say, toxin for the animal body—such are the non-pathogenic, non-specific bacteria; and (2) bacteria which possess the power to produce (secrete?) a specific toxin in the culture media (ectotoxin) or to include (store up) in their substance the specific toxin (endotoxin)—such are the true or specifically pathogenic bacteria, that is, those connected with specific diseases; (3) bacteria, some connected with infectious disease, others not, which possess an intracellular poison of a general phlogogenic character, that is, a poison which is not specific, but which is capable of causing on intraperitoneal injection in all instances the same acute peritonitis.

Putrid Decomposition.

There is one group of bacteria which, from a certain point of view, requires separate treatment; these are the species which cause putrefaction in the narrower sense—namely, decomposition of albumen with evolution of ammonia and sulphuretted hydrogen, and with the simultaneous production of those poisonous alkaloidal bodies known as ptomaines. They are capable of producing poisonous alkaloids, which, injected into animals—rodent as also carnivorous—in sufficient doses directly into the vascular system or subcutaneously cause acute severe gastro-enteritis, rise of temperature, vomiting, diarrhoea, with haemorrhage into the duodenum and rectum, suppression of urine, collapse, and death. These are the poisonous actions which were known already to Bergmann, Panum, and Billroth as "putrid intoxications.' Some of these "putrefactive bacteria" do not multiply in the normal tissues and are harmless when injected by themselves, although others, like some varieties of proteus vulgaris, are capable of growing and multiplying in the subcutaneous tissue of rodents—and probably also in wounds of human beings—of causing the production of ptomaines *in situ* and by absorption of these a fatal intoxication (fatal sapraemia).

PHYSIOLOGICAL.

Saprophytes.

It is agreed on all sides that certain species of bacteria do not under any circumstances cause any pathological effect when introduced into the animal body; when planted into the living tissues they rapidly degenerate and disappear. Bacteria of this kind thrive and grow well in dead tissues, and under the most varied conditions in outside nature are readily capable of keeping up their existence. Such species are distinctly pure saprophytes. But it must be understood that they are not necessarily connected, as their name would indicate, with any definite process of decomposition, such as putrefaction, as above explained. And it is in this sense, namely, being capable of growing and multiplying in outside (dead) nature, in natural or artificial media, that the terms "saprophyte" and "saprophytic" are generally understood, although their exact chemical and physiological rôle is not sufficiently known. The group of pure saprophytes, such,

namely, which cannot grow and multiply in the living body, comprise a very large number of species found in water, soil, air, in dead organic matter of the most varied kind, and they include various species of cocci, streptococci, bacilli—motile and non-motile—vibrios and spirilla.

Parasites.

Then there are species of bacteria which possess this essential character, that they are eminently capable of thriving and growing in the living body and setting up by their substance, or by their chemical products (namely, by their specific toxins), each after its kind, a particular specific infectious disease; this is the case with B. anthracis, B. of symptomatic charbon, tubercle, haemorrhagic septicaemias of various kinds, tetanus, diphtheria, vibrio cholerae, bacillus typhosus, bacillus pestis, and a host of bacterial species causing other infectious diseases.

Such bacterial species are true parasites, inasmuch as they are capable of thriving in and on the living tissues, each in its particular kind and with its own particular effect. Many of the parasitic bacteria are, however, also capable of thriving in outside nature in dead organic matter, although it is noticed that some do so with little difficulty—anthrax, diphtheria, cholera, B. pestis—whereas others are more restricted both as regards the nature of the media in which they are capable of growing (gonococcus, B. influenzae), as also the temperature at which they can grow (pneumococcus, B. tuberculosis). With Naegeli we may distinguish the parasites which can and generally do grow also in outside nature as ectogenic, from those parasites which, capable only of growing in the animal body and in order to maintain their parasitism have to be always transferred directly from animal to animal, may be designated as endogenic. While we know of a large number of species of ectogenic parasitic bacteria, bacteriology has so far, perhaps with the exception of the bacillus leprae, not demonstrated bacterial species which can be considered as purely endogenic, that is, purely parasitic in the above restricted sense. There are several infectious diseases, clinically and pathologically well defined, in which of an ectogenic existence of the causal parasite nothing is known, such, for instance, as variola, vaccinia and syphilis, horse-sickness, cattle plague and some others; in these diseases the causal parasite, as far as at present known, is a pure parasite, that is, it does not appear capable of growing and multiplying outside the animal body, but of what nature, whether bacterial or otherwise, is not known. Leaving out the B. leprae as doubtful, we are therefore not in a position to say whether there exist any bacterial species of the nature of pure parasites. As regards some of those undetermined microbes we have to admit that our present microscope is not capable of revealing them to the eye (being so infinitesimal as to be capable of passing through a Pasteur filter—for example, the virus of foot and mouth disease, of horse-sickness and others); and we have further to admit that there is no evidence at present forthcoming which would show that they are capable of leading an existence apart from the animal body.

So far, therefore, as our present actual knowledge goes, all the known parasitic bacterial species (with the exception of the leprosy bacilli) can, under one condition or another, lead an existence separate from the animal body—that is, are all ectogenic; in other words, can thrive also saprophytically. Whether under these conditions of saprophytic existence they retain or lose their parasitic—that is, disease-producing—power after a smaller or greater number of transferences, as many do, and as some do in a very short time (B. influenzae, pneumococcus, and others), does not alter their fundamental nature.

Beyond the fact just stated, that certain species of parasitic bacteria lose their virulence, and ultimately altogether their pathogenicity, when leading for prolonged periods the life of saprophytes, there is in most instances nothing definitely known as to this being constantly associated with alteration of their morphological and cultural characters. For some species, at any rate, such a change is disproved.

But while during this decrease in virulence the parasitic bacteria become more or less like true saprophytes, it does not follow that a true saprophyte may become changed into a parasite. There is at present no proof of such a change—nay, the reverse has been demonstrated. All that has been proved is that a parasite which, owing to continued life in artificial media, has become harmless, like a pure saprophyte can in some instances—as, for instance, by repeated passages through the animal body—resume the life of a parasite, though there are instances when this seems difficult or altogether impossible, the microbe having permanently lost its capability to live in the animal body (some types of bacillus of plague—the pneumococcus, streptococcus of erysipelas), but it has yet to be proved that a true saprophyte can change into the parasite of a specific disease.

This phenomenon of increase of virulence is well established in the case of many species. Thus the pneumococcus passed from rabbit to rabbit decidedly increases in virulence. This fact might furnish an explanation of a phenomenon known to epidemiologists, of an epidemic starting with a few mild cases which sometimes rapidly, sometimes slowly, give rise to widespread and virulent outbreaks.

Conditional Parasites.

Besides true saprophytes and the true parasites there exists a group of bacterial species which require special consideration. While the saprophytes we have been dealing with hitherto are endowed with the power of causing specific infectious disease, growing and multiplying within the infected body, and by their specific toxins causing the particular infectious disorder, there are a number of species of bacteria which under ordinary conditions are not endowed with such a power, and generally lead a true saprophytic life. Take the common B. coli of Escherich, which is found in enormous numbers in the contents of the large intestine. The contents of the large intestine are practically dead matter, and these microbes present in very large numbers do not cause any diseased state while the conditions remain normal, but under abnormal conditions of one sort or another in one or other organ of the body may become endowed with the power of invading those organs, and of causing localized pathological changes, which, speaking generally, are of the nature of inflammatory processes, sometimes with severe results of necrosis.

One of the first experiments in this respect was performed by Wyssokowitch, who showed that while certain species of staphylococcus injected into the circulating blood of an animal (rabbit) are perfectly harmless, they become endowed with distinct pathogenicity if introduced into the vascular system of the same animal species, in which in one or the other organ lesions have been previously produced.

This kind of parasitism differs in an essential respect from that of the true or specific parasites—namely, in this that, unlike the latter, they are not known to produce specific toxins, and do not cause what are commonly considered specific infectious diseases. While ordinarily they behave like true saprophytes, and are not endowed with the power of multiplying in the living tissues and of causing pathogenic action, under abnormal conditions they may assume the life of parasites, and for this reason it may be appropriate to designate this group as "conditional parasites."

Also from another point of view this group is interesting, for it indicates that species exist which might form a link between true saprophytes and true parasites or specifically pathogenic bacteria. In fact, some bacteriologists assume that with some species this is actually the case; for example, some assume that between the harmless saprophytic pseudo-diphtheria or Hofmann's bacilli and the true diphtheria bacilli there exist all gradations. Similarly some observers claim a genetic relation to exist between some B. coli and the B. typhosus, while others have no difficulty in recognizing a relationship between certain pseudo-varieties and the true parasitic species of other microbes. The experimental proof for these assertions is as yet wanting.

The streptococcus pyogenes is causally connected with some forms of acute as also chronic phlegmons and of abscesses. Of recent years Fraenkel and others, amongst them Koch, have pointed out that what was formerly considered as the specific streptococcus of erysipelas (of Fehleisen), capable of producing the clinically and pathologically well-defined acute febrile exanthem, erysipelas, is no other than the streptococcus pyogenes, that is to say, one and the same species, which under one condition is the cause of simple phlegmon or simple abscess, is capable, under another condition, of causing a different and specific disease, that is, erysipelas.

We may conclude (*a*) that the demarcation between true saprophytes and true parasites is, owing to the existence of the group of intermediary or conditional parasites, not defined; (*b*) moreover, that there is evidence to show that an ordinary saprophyte under altered conditions can produce pathogenic effect, thriving in the tissues of an animal; and (*c*) that a

microbe under one condition an ordinary saprophyte, can raise itself not only to parasitic life, causing pathogenic action, but further to a parasitic action which is as specific as that of B. anthracis or B. influenzae, as, for instance, is the case with the streptococcus pyogenes, the pneumococcus, and possibly certain species of diphtheroid bacilli. If this be the correct interpretation of the above observations, we could not oppose the view that at a very early history in the evolution of bacteria the first branches were of the nature of "pure saprophytes," that gradually another branch became evolved out of the former, leading to the evolution of what we designated as "conditional parasites," and that to these latter the final and highest branch, the "specific parasites," owe their origin. We may further in this hypothesis find the explanation why many of the specific parasites so readily revert to the stage of conditional parasitism—loss of virulence and loss of specific pathogenicity—ultimately altogether losing the power of maintaining a parasitic life and of causing disease; and, finally, that conditional parasites may return to the state of pure saprophytes, as is the case with some varieties of staphylococcus aureus and albus, B. coli and streptococci.

There appears nothing improbable in the view that if the bacteria causing specific infectious disease, that is, the distinctly parasitic bacteria, were prevented from transmitting their species through, and maintaining their existence in, the animal body, that is to say, if they were reduced to a saprophytic mode of existence only, they would ultimately lose their power of parasitism altogether, and in consequence their power for further mischief, and specific diseases caused by them at present would spontaneously disappear in the future. We see an indication, at any rate, for this consummation in what actually occurs in those specific diseases which are imported into a country which is not endemic for the particular disease, for example, plague, cholera.

Symbiosis.

From a number of direct experiments made during the last ten or twelve years, it appears that a definite interaction between certain bacteria can be demonstrated. I am not referring to the fact that pathogenic bacteria distributed in water gradually diminish, and after many days and weeks (in proportion to their initial numbers), ultimately disappear, which is due, not to a destructive action on them by the saprophytic water bacteria themselves, but to entirely other causes, chief amongst them inanition, the pathogenic bacteria requiring for their maintenance highly specialized organic nutritive materials absent in the water or present only in insufficient amount.

Wherever saprophytic bacteria endowed with the power of rapid multiplication find the conditions suitable for their growth and multiplication, they naturally crowd out, as it were, the more specialized and more slowly-growing pathogenic bacteria, though the medium offers to the latter otherwise suitable conditions. It is a question of a "survival of the fittest in the struggle for existence." To the same cause are to be ascribed the well-known adverse effects which putrefaction and decomposition exert on pathogenic bacteria. The comparatively rapid disappearance of non-sporing pathogenic bacteria from the dead body, due to the rapid growth of putrefactive bacteria and their chemical products, has been established experimentally.

When I referred to a definite interaction between certain bacteria, I was not referring either to the indirect action which the products, generated in culture media by the growth of one species, are capable of exerting in some instances adversely, in others favourably on the simultaneous or subsequent growth and action of another species, either *in vitro* or *in corpore*, but to a direct influence which one species is capable of effecting on another species simultaneously present—that is, growing symbiotically either in artificial culture or in the animal body. The enhanced influence of streptococcus pyogenes on the virulence of B. diphtheriae, as also that of streptococci, proteus vulgaris and other putrefactive microbes on bacillus tuberculosis, may be inferred from the increase in virulence of the two diseases respectively in the noxious presence of the above species. This influence of symbiosis within the animal body of one microbe not necessarily other than saprophyte on a specific parasite, though in some instances shown to be *nil*, is in other instances distinct, in some it is antagonistic, in others enhancing.

From the experimental evidence already gained, it must be obvious that this branch of bacteriology—namely, the study of the effect of symbiosis—offers a fruitful and important field of research, important both in theory and practice. To mention one consideration only: the greater or lesser susceptibility to infection with a particular specific disease of one person over another is justly considered a complex subject, for it must depend on the mode of contagion, on the virulence of the contagion itself, on the condition of the individual, on the presence or absence of protective substances in—that is, in the vulnerability of the individual—and probably on other at present unknown factors.

Taking a specific instance—for example, the now notorious typhoid oyster banquets at Winchester and at Southampton in November, 1902, investigated by Dr. Bulstrode. A considerable percentage of the consumers of the oysters were taken ill the next day with gastro-enteritis, which obviously was not typhoid, nor could it have been due to the ingested typhoid bacilli. In epidemics of typhoid by infected water such acute illness—namely, transitory gastro-enteritis—is not recorded. The initial acute transitory gastro-enteritis must have been, therefore, due to some cause other than that of B. typhosus, which latter, and in a percentage only of these cases, manifested itself in due course—that is, after the usual incubation period of ten to fourteen days. This other cause, producing the acute transitory gastro-enteritis, more abundantly present in the oysters than the B. typhosus, is probably to be sought in the simultaneous presence in those oysters of some pathogenic microbes belonging to the group of the B. enteritidis of Gaertner. As a matter of fact, in oysters which were taken at a subsequent date but from the same pit from which the above typhoid oysters were derived, I found in a percentage of them distinct evidence of the presence of bacteria belonging to the group of B. enteritidis of Gaertner. The ingestion of this microbe, producing the initial transitory gastro-enteritis, may have had an important influence not only in raising the susceptibility *per se* of the affected person towards the typhoid bacillus, but it may have directly been instrumental in enhancing the virulence of this latter. In the animal experiments such an enhancing of the virulence of the typhoid bacillus by the B. Gaertner was directly demonstrated. May not such symbiosis be at least one of the factors contributing to the consummation of infection?

Experimentally it has been proved that the symbiosis of B. pseudo-tuberculosis has an enhancing influence on the B. tuberculosis, and from a paper by Professor Hueppe, who collected the statistics from various observers, it appears that of persons considered to be free from either general or pulmonary tuberculosis there were, nevertheless, discovered, on the *post-mortem* table, in nearly 40 per cent. tubercle bacilli in the bronchial glands, or in one or the other organ, in slight lesions only discoverable on the *post-mortem* table. Is it not conceivable that the absence in these individuals of the other enhancing microbe is the real cause of this immunity to general tuberculosis? Is it not conceivable that the terms "predisposition to consumption" and "greater vulnerability of the tissues to tuberculosis" may include symbiosis of another microbe, which prepares the ground for, and enhances the activity of, the tubercle bacillus? These are questions which experimental pathology will be able to solve, and which, in the interest of practical medicine and of hygiene, are well worthy to be undertaken.

THE "MICROCOCCUS RHEUMATICUS": ITS CULTURAL AND OTHER CHARACTERS.

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IN their communication to the BRITISH MEDICAL JOURNAL, January, 1903, Beaton and Ainley Walker described with considerable detail the microscopical and cultural characters of the organism which they called the "micrococcus rheumaticus." Recently I have had the opportunity of repeating their work. My results, as will be seen, are in the main confirmatory, though there are a few points and conclusions in which we differ.

The organisms with which I worked were of two different strains. One obtained from the synovial membrane of a girl with acute rheumatism and recovered from the vegetations of an endocarditis in a rabbit. The second was from a culture very kindly sent to me by Dr. Paine.

The microscopical and cultural characters of the two were practically identical, the only difference noted being that the

coagulation of milk was more rapid and more complete with the organism obtained from Dr. Paine than with the other.

Microscopical and Staining Characters.

The organism is a small micrococcus which occurs in the tissues and in cultures in pairs or in short chains. Grown in milk bouillon the chains are more definite, but I have never seen chains containing more than a dozen organisms. In size it is smaller than the ordinary streptococcus, and I have never been able to produce in any media the long chains which one so constantly finds in cultures of the streptococcus pyogenes. Many of the organisms, especially those seen in pairs, are rather oval in shape, and more resemble the pneumococcus than the streptococcus. No capsule could be demonstrated. Degeneration forms are fairly common, the coccus becoming swollen and elongated, but even in cultures of several days' growth the infrequency of degeneration forms as compared with those in a growth of streptococcus pyogenes of a similar period is a very striking feature.

It stains readily with all the ordinary aniline dyes. It retains the stain by Gram and in Weigert's modification of this method.

Cultural Characters.

The media used were all standardized according to Eyre's method to +10.

Bouillon.—In twenty-four hours at 37° C. there was a very slight turbidity in the fluid, with a slight flocculent deposit at the bottom of the tube. In forty-eight hours and still more markedly in three days, the fluid had again become clear, and at the bottom of the tube there was a very distinct deposit. The media became very distinctly acid. There was no formation of indol.

Glycerine Bouillon.—The growth was very slight, and in five days there was a slight flocculent deposit at the bottom of the tube. The fluid remained perfectly clear. The alkalinity was slightly diminished, but no acid reaction was present even after three weeks.

Peptone Solution.—The appearances were very much the same as in bouillon, but the acidity was more marked.

Gelatine (stab).—In two days minute colonies were made out along the needle track—there was no extension of growth on the surface. In five days the growth was slightly more apparent, but at later periods there appeared to be very little increased growth. There was no liquefaction of the media and no gas production.

Gelatine (streak).—In twenty-four hours there were minute whitish colonies. At later periods there was fusion of the colonies at places, but in the main the colonies remained small and discrete, even after three weeks. There was no liquefaction.

Gelatine Plates.—The colonies were small, rounded, and distinctly granular. The edges were quite regular. They attained their maximum size—that of a small pin's head—in five days. There was no liquefaction.

Agar (streak).—Small semitransparent colonies, slightly raised above the surface. There was very slight spread. The appearance in five days was not much altered from the appearance got in twenty-four hours. The growth in agar was rather more abundant at 20° C. than at 37° C.

Deep Agar.—There was no growth.

Blood Agar.—This is one of the most satisfactory media. In twenty-four hours there are minute whitish colonies, slightly raised above the surface. In forty-eight hours the colonies are slightly larger, and at places there may be fusion, giving rise to a uniform mass of growth. However, even after several weeks, at the edges, the colonies are still quite discrete. On this medium the growth gradually produces an alteration in the red blood pigment, producing a rusty-brown or chocolate colour. Not only does the organism grow well on this medium, but it has a very long existence. The culture Dr. Paine sent me was subcultured from a tube after eight and a half months, and I have subcultured from a blood agar tube after six months.

Blood Serum.—On human serum after twenty-four hours there are minute, small, slightly raised colonies. These, however, spread very considerably, and in three days there is a uniform whitish streak on the surface of the medium.

Milk.—In twenty-four hours—no acidity, no coagulation. In forty-eight hours acid reaction, no coagulation. In three days—acid reaction, coagulation.

Milk rendered distinctly alkaline to litmus paper gave similar results, the acidity being quite marked in forty-eight hours.

Litmus Milk distinctly Blue.—Began to assume a lighter blue in twenty-four hours; in forty eight hours it was a distinct pinkish tint, and in three days it was a rose pink and was coagulated.

Milk with Bouillon slightly Acidified with Lactic Acid.—With the organism got from Dr. Paine there was distinct coagulation in twenty-four hours. With the organism isolated by me the coagulation was only slight in twenty-four hours but was quite marked in forty-eight hours.

Potato.—No visible growth.

Anaerobic Cultures.

Deep Glucose Agar.—There was a slight growth along the needle track; no surface spread. The medium seemed to be unfavourable.

Formate Bouillon.—No growth was obtained.

Results of Inoculation.

My results have been absolutely confirmatory of those published by Paine and Poynton and others. These have already been published elsewhere,[1] and I need only say that intravenous injections in animals produces endocarditis, polyarthritis, and chorea. The polyarthritis usually develops in about three days after the inoculation. With subcutaneous injections, even in large doses, I have not seen any suppuration, but Beaton and Walker have twice seen the formation of a subcutaneous abscess, and have produced a suppurative peritonitis. They do not, however, state whether or not from the pus they recovered the micrococcus in pure culture.

It will be seen from the above that, except in some minor points, my results correspond with those got by Beaton and Walker.

As to whether this organism is to be classed as a streptococcus or not is a matter of very little practical importance. If we use the term in its generic sense, then no fault can be found with it, but, fortunately or unfortunately, the term streptococcus has to most people a specific meaning, and the organism which we find in acute rheumatism produces by inoculation results which are entirely different from those produced by an inoculation of the "streptococcus" in its ordinarily accepted sense. Therefore it seems to me it is essential to designate this organism by a special term, such as the "micrococcus rheumaticus," as proposed by Beaton and Walker. This seems all the more important since it has been maintained that this micrococcus which we have isolated is not causal of acute rheumatism, but is probably a streptococcus causal of the terminal infection.

Besides, there are points in the cultural characters and vitality of the organism which seem to distinguish it as absolutely from the streptococci as the pneumococci are distinguished from them. The growth on gelatine appears earlier, and is more abundant in the micrococcus rheumaticus. Its more abundant and earlier growth on ordinary agar at 20° C. than at 37° C. is quite unlike what is seen with the streptococci. The very marked acid production in bouillon and in milk, the early coagulation of the milk, and the length of time the organism lives in suitable culture media are features which distinguish it absolutely from the streptococcus.

The results of inoculation in animals are, as I have already indicated, entirely different. Even if we admit that the organism can produce suppuration, though I feel considerable doubt on this point, yet ordinarily it does not give rise to pus, but causes in rabbits non-suppurative polyarthritis, endocarditis, etc. These conditions have not been produced by inoculation of what we ordinarily call streptococci. We do not claim that because this organism produces endocarditis therefore it is the causal organism of morbus cordis. What, however, we do claim, is that it can be isolated from cases of typical acute rheumatism; that it can be grown outside the body, there showing characters which are in some respects specific; that in inoculation in animals it produces a combination of lesions which are similar to those of acute rheumatism in the human subject sometimes specially affecting the joints, sometimes specially the heart, sometimes producing chorea, sometimes producing a combination of these conditions, and that from these lesions the organism can be recovered in pure culture.

On these grounds there seems but one conclusion, that this "micrococcus rheumaticus" is a special organism, and is causal in acute rheumatism.

Reference.

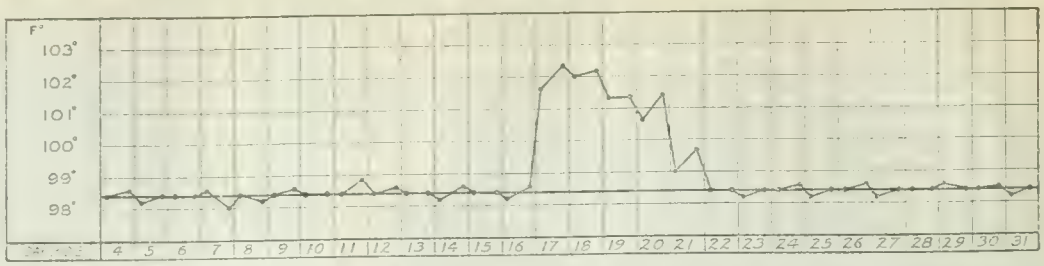
[1] *Journal of Pathology and Bacteriology*, March, 1904.

AFEBRILE ENTERIC FEVER.

By GEORGE JUBB, M.D.,
Physician, Glasgow Central Dispensary.

The following notes of a case of this variety of enteric fever which was complicated by thrombosis of the left femoral vein may be of interest. The patient was a young woman, aged 20, who was nursing her married sister during a sharp attack of enteric fever. I saw her on the fourth day of illness, when she complained of headache and pains in her limbs, loss of appetite, and lassitude. There was also slight abdominal pain. On examination her tongue was moist and coated, pulse 90, and temperature 98.4° F. Her abdomen was slightly distended and tender. The spleen was not markedly enlarged, and there were no rose spots. The mucous membranes of the lips and eyelids were well coloured. The bowels were constipated. The heart and lungs were normal. A provisional diagnosis was made that the patient was probably suffering

from enteric fever, and she was sent to bed and kept on milk diet. On the seventh day of illness the typhoid serum reaction gave a positive result. The spleen was now distinctly enlarged, though the morning and evening temperatures still remained normal. The patient was ordered to stay in bed and remain on strict diet, though she stated that she felt quite well, and thought it a hardship to be kept in bed.



On the morning of the seventeenth day the temperature, which so far had been normal, rose to 101.6° F., and she complained of pain in the left leg, which appeared slightly swollen and tender. In the evening the temperature was 102.4 F., and the oedema of the left leg was more pronounced. The temperature was febrile for the next four days, but settled to normal on the twenty-second day of illness, and thereafter the patient made an uninterrupted recovery. No rose spots were seen at any time during the course of her illness.

The case is of interest as showing:

1. The value of the typhoid serum reaction, as without it, and on the clinical symptoms alone, there would have been some hesitation in confining the patient to bed and milk diet for a prolonged period.

2. The fact that there was no disturbance of the temperature till a complication took place—in this case thrombosis of the left femoral vein.

CASE OF CONGENITAL ABSENCE OF CONTINUITY BETWEEN THE LARGE AND SMALL INTESTINES.

By C. H. SOUTER, M.B., C.M.Aberd.,

Balaklava, South Australia.

History.—J. W. M., a male infant, stated to be 48 hours old, was brought to me on May 2nd, 1903, from a distance of twelve miles. It was said to have vomited some foul-smelling dark stuff as soon as the head was born. The parents were healthy; the mother's next youngest child was 6 years old, and she had had no miscarriages. There was no history of congenital abnormalities in the family. The patient was reported to have passed a small dark-coloured motion shortly after birth, and to have vomited everything he swallowed.

State on Examination.—When seen by me it was yellow in colour and much swollen in the abdomen. The tongue was bright yellow and the superficial veins engorged. It vomited large quantities of faecal-smelling fluid of a greenish colour. The little finger could be passed freely into the rectum for two inches, but the gut was felt to be small and empty. A rectal injection of water was returned, and brought with it some clear colourless casts of mucoid matter. A lump could be felt per rectum and through the parietes in the right iliac region. There was no blood or "slime" in the passage. The stomach was washed out. Vomiting, still faecal, continued. The pulse was feeble, the temperature subnormal, and the whole condition indicated immediate operation.

Operation.—I opened the abdomen over the site of the iliac swelling, and some much-distended bowel presented. I did not, in view of the general condition, think it justifiable to explore, but stitched the bowel to the edge of the wound and opened it. Over half a pint of foul-smelling greenish fluid escaped. The gut was then washed out with saline solution, and the artificial anus dressed with iodoform gauze every two hours. Artificial feeding was commenced, and the child did well for a week, the wound healing at the edges. Some local erythema occurred about the third day, probably owing to the constant moisture with bilious stools. After a week dystrypsia set in, and all efforts to control digestion failed. There was no rise of temperature, and no swelling of the abdomen. The patient died ten days after the operation.

The parents permitted a partial *post-mortem* examination.

Necropsy.—The edge of the incision in the gut had healed firmly to the edge of the parietal opening. A few fine adhesions surrounded the wound, but there was no appearance of general peritonitis. The small intestine was traced from the wound to the stomach. It was normal but of greater calibre than usual, and contained green bile-stained grumous matter. Downwards it extended 1½ in., where it ended in a *cul-de-sac* (seen in the photograph). There was no Meckel's diverticulum, nor any trace of an opening other than that made at the operation. The large intestine was traced from the sigmoid flexure round the usual course and down the right side of the belly cavity, where it ended in a small caecum and vermiform appendix, and a diverticulum of about ½ in. in length, having no opening. These two blind ends were situated in about the normal position with respect to each other but not in contact. Some loose mesenteric tissue



existed between them. The colon was empty except for a little mucoid matter similar to that passed with the enema. Its lumen was about of sufficient calibre to admit a slate pencil. I was able also to note that the edge of the liver occupied a line parallel to and about 1½ in. from the costal margin. The gall bladder was distended with bile, and projected ½ in. beyond the edge of the liver. The rest of the abdominal contents were normal.

The photograph shows the specimens reduced about one-third of their actual size, and, seen from the front, as nearly in their proper relations as possible. No dissection was made. The artificial opening may be seen near the middle of the sac of ileum.

Bequests to Medical Charities.—The executors of the late Mr. Arthur Ocran Crooke have made a grant of a sum of £3,000 to the East London Hospital for Children and Dispensary for Women, Shadwell, for the naming of a ward in the new building now in course of erection; and a sum of £1,000 for the endowment of a bed in the Charing Cross Hospital Convalescent Home. The Earlswood Asylum for Idiots receives £200 under the will of the late Dr. Francis Bossey of Redhill; and the Huntingdon County Hospital £100 under the will of the late Mr. Charles Percival Rowley of St. Neot's. The Royal Dental Hospital, Leicester Square, has received £500, which were bequeathed to it by the late Mr. George Willis Penson, who was for many years a trustee of the charity.

INFANTILE MORTALITY: ITS CAUSES AND PREVENTION.

Presidential Address, read at Eston Hospital on September 28th, 1904.

By GEORGE C. H. FULTON, M.B. and C.M., J.P.,

President of the Cleveland Division of the British Medical Association.

The failure of sanitary efforts to reduce infantile mortality is the most unfavourable fact in the history of our sanitary efforts in Great Britain in the last twenty years.

It is not altogether unreasonable to expect that public health administration would have a very great influence in reducing infantile mortality to what may, under present conditions, be regarded as a normal standard—namely, 1 death under 1 year of age out of every 10 born.

Reference to the returns of the Registrar-General shows that the mortality of infants—that is, of children under 1 year of age—is absolutely appalling, and that it does not decrease with the progress of civilization in the same way as the mortality from other preventable diseases. During the ten years 1891-1900 a yearly average of 160 out of every 1,000 children born in London died under the age of 1 year.

In 1902 Glasgow had	... ...	128 per 1,000.
,, Edinburgh had	... ...	123 ,, ,,
,, Dundee had	... ...	143 ,, ,,
,, Aberdeen had	... ...	137 ,, ,,
,, London had	... ...	141 ,, ,,
,, Liverpool had	... ...	163 ,, ,,
,, Manchester had	...	152 ,, ,,
,, Birmingham had	...	157 ,, ,,
,, Middlesbrough had	...	182 ,, ,,
,, Eston had	... ...	171 ,, ,,

These figures show that throughout the country, and markedly in Middlesbrough and Eston, we are having a mighty slaughter of the innocents and sacrifice of human life. Dr. Hope of Liverpool, in the course of an inquiry into infantile mortality, took 1,082 families in which the death of an infant had occurred; these were taken consecutively and certain particulars were ascertained. The total number of children born in these families had been 4,574, but out of that number 2,229 had died, practically all in infancy, representing 487 deaths out of every 1,000 born—a waste of life nearly five times as great as the standard alluded to: but the most excessive fatality occurred in twelve families, in which the large total of 117 infants had been born and no fewer than 98 had perished in infancy.

These excessive examples, it must be remembered, are occurring in families in which, so far as municipal sanitation is concerned, there is very little to choose between them and many of the families that rear all or nearly all their children; nor can it be shown or inferred that there was any inherent weakness in the offspring, since those who have survived are of fair physique, not as a class suffering under any inherited condition likely to terminate their lives; but it is in the personal and domestic circumstances that the contrasts are most marked. Some of the causes of infantile mortality are common to every locality, such as:

1. Prematurity of birth and congenital defects.
2. Hereditary tendencies.
3. Inexperience and neglect of mother.
4. Industrial conditions.
5. Social position.
6. Improper food and method of feeding.
7. Death from accidental and homicidal violence.
8. Age of parents.
9. Illegitimacy.
10. Insurance.
11. Relation between birth-rate and infantile mortality.
12. Density of population.

1. Premature Birth and Congenital Defects.

The two factors requiring persistent attention are the inherent weakness of vitality and the comparative inability to maintain animal heat. The infant should not be bathed, but should be anointed over the whole body with oil, and then swathed in cotton-wool that has been previously warmed. Both as regards fat and proteids the digestion is extremely weak, and consequently the milk mixture needs to be extremely dilute. The feeding requires to be frequent, and the amount at each feed should not exceed one drachm.

2. Hereditary Tendencies.

such as the inheritance of syphilis, occasionally tuberculosis and other infectious diseases, have been conveyed directly from the mother to the child. In cases where no distinct disease is transmitted, children may inherit from parents constitutional tendencies or a diathesis which may manifest itself in infancy, or in some cases not till later childhood. Under this head we may place the influence of rheumatism, gout, the various neuroses, and possibly alcoholism and insanity. In consequence of these conditions in parents, the child may inherit no definite disease, but simply a vitiated constitution. Some check on the marriage of unsuitable people has been suggested, securing the greatest good of the greatest number, and in Dr. Farr's words, rendering growth more perfect, decay less rapid, life more vigorous, and death more remote.

3. The Inexperience and Neglect of Mothers.

This, especially among the industrial classes, is a most important factor in infantile mortality; as regards inexperience, it has been suggested that the deaths of first-born children should be separated from the general infantile mortality; such returns would undoubtedly show that first-born children die at a higher rate than children of a later birth, but some of the excess would be attributable to greater difficulty in parturition as well as to parental inexperience.

4. Industrial Conditions.

Dr. G. Reid has drawn attention to the influence thus exerted in connexion with employment of married women in factories in Staffordshire; he found that the infantile mortality in three groups of towns followed the order in which the groups were arranged. From the point of view of number of women engaged in work away from home, it has been suggested that the observed coincidence is really due to the operation of other factors, inasmuch as populations can be selected from other parts of the country in which high infantile mortality exists in association with comparative little employment of women in factories—for example, here in Middlesbrough and district. The question raised in connexion with the Staffordshire figures is, however, one to which importance must be attached.

5. Social Position.

This is closely related to industrial conditions, in its influence on infantile mortality; this is abundantly apparent in looking at the mortality amongst the professional and the lower classes, lower and middle classes of society.

6. Improper Food and Method of Feeding.

Newsholme comments upon the striking statement that during the sufferings and starvation connected with the siege of Paris in 1870-71, while the general mortality was double, that of infants was said to have been reduced by about 40 per cent., owing to mothers being obliged to suckle their infants. The same increase of adult and diminution of infantile mortality was seen during the Lancashire cotton famine, when, Newsholme notes, mothers were not at the mills. The question whether a child will be strong and robust or a weakling is often decided by its food during the first three months of life; the largest part of the immense mortality of the first year is traceable directly to disorders of nutrition. The child must be fed so as to avoid not only the immediate dangers of acute indigestion, but rickets, scurvy, and general malnutrition, with all its various manifestations, since these conditions are the most important predisposing causes of acute disease in infants.

One of the difficulties has always been that temporary success may mean ultimate failure. If the injurious effects of improper feeding were immediately manifested there would be much less of it than exists at the present time.

It is because many things are valuable as temporary foods, which, when used permanently, are injurious. No better illustration is seen than in the too exclusive use of carbohydrates, like most of the proprietary foods; infants so fed grow very fat, and for the time appear to be properly nourished. The absence from the food of some of those elements which are of vital importance, may not be evident for months, hence the mistake is often made by the laity, and even by the profession, that those children are thriving. There are certain rules regarding the requirements of the growing organism which cannot be ignored without serious consequences, which will sooner or later be evident. Another common mistake is in the prolonged use of predigested foods; these are sometimes continued until, as in a case recorded, a healthy child at 2½ years was totally unable to digest the casein of cow's milk. A great stumbling-block to many is the fact that there are some infants of robust

constitution who, in good surroundings, have thriven exceptionally well in spite of very bad method of feeding. But it should not be forgotten that there are a very much larger number of perfectly healthy infants whose lives are sacrificed every year, both directly and indirectly, as a result of improper feeding; a method of feeding is to be judged not by the few exceptional cases which may do well, but by the results obtained in the majority of cases. Let no one think that he can secure the best results in infant feeding without devoting time and study to the problem. Close attention to details is necessary and indispensable to success in this as in all branches of medicine, but in none can more satisfactory results be obtained.

A woman's milk is the ideal infant's food. A thorough knowledge of its character, exact composition and variations is indispensable, for upon this knowledge are based all our rules for the preparation of foods used as substitutes for mother's milk when this cannot be obtained.

Breast Feeding.—Although it is admitted universally that the best method of rearing infants is to bring them up at the breast, it is often found that infants so reared do not thrive well, and by comparison with others brought up on the bottle appear small and ill-nourished. Such infants are more irritable, restless, and sleepless, and require more care than ordinary babies. It might at first sight be thought that the cause of this difference is in the method of feeding adopted and that artificial feeding is better than breast feeding. In truth, the fault lies not in the method but in the subject. It must clearly be understood that not every mother is fitted to suckle her child. Unfitness for the performance of this function may depend upon one or more of several causes, such as various conditions of ill-health or malnutrition, affections of the breast or nipples, insufficient supply of milk, mode of life, mental and moral characteristics; some of these conditions can be remedied if the mother is anxious to nurse her child, and is willing to devote her life for the time being to this duty, but if the mother is more anxious to devote her life to her own pleasures and amusements and regard the infant as a secondary consideration the case is a hopeless one, and partial weaning will have to be adopted as a lesser evil.

Cow's Milk.—The only one of the lower animals whose milk is practically available for infant feeding is the cow. Cow's milk being our main reliance in artificial feeding of infants and the staple food of nearly all young children, it follows that everything relating to its production and handling is important: it should be fresh, not over twenty-four hours old, and should contain no preservative. It should be from healthy animals, free from tuberculosis or other taint. It should be clean; it should not be skimmed or otherwise falsified; it should contain no pathological organisms; the number of other organisms should not be excessive; the percentage of fat should be known, and the milk should be as nearly uniform as possible from day to day and at different seasons of the year. It should be mixed milk (not one cow's milk), since it is subject to fewer variations, and from healthy, hardy cows—for example, shorthorns. Can we not do something by educating the public to appreciate, and dealers to produce, a better and cleaner milk, by giving the health authorities of municipal and urban districts greater power than heretofore in the matter of milk inspection, and by urging co-operation in the way of establishing big dairy farms, where the animals are subjected to a regular inspection by a competent veterinary surgeon, a chemist and bacteriologist to be employed to see that the milk is kept up to a certain standard, both as regards composition and purity, and the authorities could certify this milk? This milk could be sold at a slightly higher price, and I am certain it would prove eminently successful from a medical and commercial standpoint.

Milk Sterilization.—The term "sterilization" is widely and rather loosely used to signify the heating of milk for the destruction of germs. It, however, should be borne in mind that none of the methods commonly employed render milk sterile in the bacteriological sense of the word, although this can be done by heating on two or three successive days as in preparing culture media—what is accomplished by the means commonly employed is the destruction of such pathological germs as may be present, and a large number of the other bacteria, so as to retard for several days the ordinary fermentative changes. The practice of heating milk used for infant feeding is generally adopted all over the world, but heating changes the taste of the milk, makes it constipating, the colour is changed, the casein is rendered less coagulable by rennet, and other chemical changes occur which are still imperfectly understood, and it may cause scurvy or scurvy rickets.

Pasteurizing Milk.—To obviate the disadvantages above referred to, the practice has come largely into use in America of employing much lower temperatures for milk sterilization; 150° to 155° F. (65° to 68° C.) are the temperatures which have now the sanction of the highest authorities, although by some 140° F. (60° C.) is deemed adequate. These temperatures are maintained from twenty to thirty minutes: spores are not destroyed by this method, and such milk requires special handling; after sterilizing, it should always be rapidly cooled. Amongst the poor of our large towns, in summer heating to 212° F. for an hour is to be advised as the most satisfactory—and indeed the only efficient—method of sterilization. It should be remembered that the use of such milk as a sole diet for a long time is attended with a certain amount of risk, and we should always be on the watch for soreness of the legs and the spongy gums that indicate the beginning of scurvy, as well as for the more general symptoms of malnutrition.

Clean Milk.—It is quite possible to produce milk for cities which does not need sterilization. There are special dairies supplying such milk, and their number may be greatly increased if the medical profession will use its influence in that direction. It is towards this end we should work, to secure for every town a milk sufficiently clean, pure, and fresh to render heating unnecessary. My personal preference is strongly for such milk, believing, as I do, that the heating of milk, sufficient to kill bacteria, does impair to some extent its nutritive properties, and to a degree directly proportionate to the height of the temperature employed and the length of time it is continued. In the country, where milk is obtained fresh and used before it is twenty-four hours old, sterilization is unnecessary, provided the cows are healthy and the milk is handled with reasonable care, the most important feature of which is that it be quickly and properly cooled as soon as it is drawn.

Peptonized Milk is a valuable resource in chronic cases where there is feeble casein digestion, and during an attack of acute indigestion in infancy, and then we should use completely peptonized milk. It is not advisable to continue its use indefinitely, for in this case the stomach gradually becomes less and less able to do its work. It should not be used longer than a month or two at most.

Condensed Milk.—The reasons both for the success and failure of condensed milk as an infant food are apparent from a study of its composition; as it is ordinarily used as a temporary food it is often useful, first because it has been sterilized, but chiefly because the casein of the cow's milk has been reduced by the usual dilution to such a point (0.6 per cent.), and that an infant with a very weak digestion can manage it, whilst it furnishes an abundance of sugar, the easiest thing for an infant to digest. During the first few months of life it is often apparently very successful for these reasons, but it cannot be continued indefinitely without hazard. I have seen many infants reared exclusively upon it, but rarely one who did not show on careful examination more or less evidence of rickets. Condensed milk fails as a permanent food, partly because it consists too largely of carbohydrates, but chiefly because it is lacking in fat.

Whey is especially valuable for infants in cases of acute indigestion, or in chronic cases where there is much difficulty in the digestion of casein, it may be made the basis of a milk modification.

Beef Preparations (extracts) are not to be considered in any sense as foods. Kemmericks has shown that animals receiving nothing else died of starvation, and sooner even than when everything was withheld; they are stimulants, and as such are often useful.

Barley, Rice, and Oatmeal Waters.—These are useful as additions to milk for healthy infants who have reached the age of seven or eight months.

Milk Food.—Nestlé's and other milk foods, malted milk, cereal milk, and Carnick's food, and even some of the farinaceous foods, like imperial granna, are advertised as substitutes for breast feeding, and recommended for use alone; others such as Mellin's, Liebig's, and Eskay's foods are intended to be prepared with milk. The use of any of the commercial foods alone is admissible only for short periods during derangement of digestion, when we wish to withhold for the time all fat and milk proteids. Their prolonged use almost invariably produces some grave disorder of nutrition, most frequently scurvy.

The modification of cow's milk for infant feeding, or the

laboratory method—Rotch's American method—is certainly the most scientific, and may be the method of the future; but at present it is expensive, the process now followed of separating and recombining the milk elements impairs its nutritive properties, the mother or nurse cannot use it without the advice and direction of the physician. I cannot go into the details of this process, but may say that the milk laboratory is only an instrument or agency in the physician's hands for carrying out his own idea in infant feeding, and the results will be good or bad according to the use he makes of it. I am convinced of its scientific value and its practical utility; it is placed by Holt next to maternal nursing. Success in infant feeding is largely a question of close observation and careful attention to details; without these, the proportion of failures by any method will be very large.

7. Accidental or Homicidal Violence.

Infants may succumb during the first few days of life from malformations of heart, lungs, kidneys, stomach or intestines, and sometimes from diaphragmatic or umbilical hernia or internal haemorrhage, but the most fertile source is asphyxia from overlying: 1,000 infants die every year from this cause in the city of London, and usually due to intoxication on the part of the mother.

8. Influence of Age of Parents on Vitality of their Children.

Dr. Matthews Duncan showed that the vitality of infants in a maternity hospital was greatest when the age of the mother was about 24 years, and with the youngest mother the number of weakly children is greatest. On the father's side, the youngest parents also appear to disadvantage—girls should not marry before the age of 20 years, and old men should not marry young women.

9. Effect of Illegitimacy on Infantile Mortality.

An illegitimate child has less than one half the prospect of reaching the end of the first year of life which is enjoyed by a child born in wedlock. Who can doubt that their life is much harder and more difficult? Illegitimacy is in itself an evil to a man, and the State should seek to diminish the number of these births, and carefully inquire to what circumstances any increase is to be ascribed. The necessity for regulations respecting illegitimate infants is indicated by the significant fact that, according to Dr. Lancaster's evidence in 1871, the inquests requiring to be held on illegitimate children under 1 year of age amounted to 31 per cent. of all the inquests held on infants, although such children formed less than 5 per cent. of the total number of births—such facts led to the passing of the Infant Life Protection Act of 1892.

10. Insurance of Infants in Relation to Infantile Mortality.

It appears fairly evident that, after free allowance for selection of insured lives and for the fallacies connected with the extremely high mortality soon after birth, there is no trustworthy statistical evidence of the ill-effect on the life prospects of children from life insurance. There is no proof that neglect and crime have been greater in their incidence upon insured children, and it can scarcely be held that the prospective receipt of insurance money has been the incentive to child neglect and child murder in more than a small number of cases (Newsholme).

11. Relations between Birth-rate and Infantile Mortality.

Alterations in the birth-rate, by affecting the age constitution of a population, affects the death-rate: thus, a high birth-rate, other things being equal in a particular year, by causing immediate increase in the number of young children whose rate of mortality is high, might be expected to increase the death-rate for a year or two. On the other hand, however, if the birth-rate continues high, after a few years the population comes to possess an unusual proportion of persons who have weathered the storms of infancy and whose rate of mortality is now low. Thus, a high birth-rate continued for a number of years, might be expected to produce a low death-rate. As a matter of fact, in many instances in which high birth-rates occur, other conditions which affect death-rates, more than the birth-rate itself, does also obtain, and hence the influence of birth-rate *per se* is often obscured. Thus, in crowded urban districts occupied by poor people high birth-rates and high death-rates often co-exist. The high death-rate in such cases obtains, notwithstanding the favourable age-distribution of the population produced by the high birth-rate, and is probably due to insanitary conditions. It has been pointed out that low birth-rates continued for a number of years have been observed to be associated with low death-rates. In France, however, a low birth-rate co-exists with a somewhat high death-rate. In that country the low birth-rate has been very long continued, and the proportion of persons at advanced ages (attended by high mortality) is in such marked excess of the normal proportion as to adversely influence the death-rate.

12. Density of Population and Infantile Mortality.

The number of rooms occupied by each family is of much greater importance in relation to health than the number of persons living on a given area, as this fact throws important light on the state of each tenement as regards overcrowding. In the Peabody Buildings the average number of persons to each room is 1.8. Given houses properly constructed and drained, and given cleanly habits on the part of the tenant, increased aggregation of population on a given area has no influence in raising the death-rate, except in so far as it is accompanied by overcrowding in individual rooms—an event which is by no means necessary under the circumstances named. In other words, there is no causal relationship between density of population *per se* and a high mortality. The true index of density is the number of persons to each occupied room (Newsholme).

Conclusion.

Fully aware of the many imperfections in this paper, I hope I have not attempted too much, but have aroused some interest in this most important subject, full of interest, but sadly neglected, and that each one of us may strive so far as he can to stir up public opinion in this matter—that district and municipal authorities will carry out fully the power they possess relating to cows, cowsheds and milkshops, so that we may at least have clean milk; that printed instructions be handed to parents when the birth of the child is registered, containing advice on simple methods of rearing infants, great stress being placed on breast-feeding; and by appointing lady inspectors or visitors in every town.

And, lastly, by teaching hygiene in our schools. Educate the future mothers of England to a keener sense of their duty to their own children and the State than exists at the present time. Mothers should be mothers, and not gay society puppets, who want a life of change and excitement, with the rest of their time spent in how they can get rigged up to attract and make a display.

Infantile feeding is undoubtedly the most fertile source of our deteriorated national physique.

To dream of making strong men and women out of damaged children is impossible.

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MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

SUPERIOR STRABISMUS.

T. W., a retired farmer, aged 70, had an accident while getting into his dogcart, resulting in his head and face being dragged through the branches of an old tree. His lower eyelid was torn away at both canthi, and hung over the cheek by a narrow tag of skin in the centre, a quantity of the loose cellular tissue also being dragged out and hanging by a slight attachment; a point of a branch also penetrated deeply under the eyeball, impinged on the position of the inferior rectus, and left a piece of rotten wood at the bottom of the wound. The sight was unaffected, and the pupil reacted normally to the light. The wounds, naturally, did not heal readily, and the eye had to be dressed twice daily for a month. At the end of that period, when trying the sight of the eye, he was alarmed to find that he saw double, one image being on the top of the other, and, the eyes being inspected at some little distance, the pupil of the injured one was seen to be elevated about an eighth of an inch above the plane of the other. This state of matters continued for about a month, when the inferior rectus began to reassert its power,

the pupils gradually coming to occupy the same plane, and the images coinciding.

Internal and external strabismus are common enough, but superior or inferior strabismus is so rare that, beyond its bare mention in Bryant's *Surgery*, it is dismissed as undeserving of further notice.

Sunderland. B. STRACHAN, M.B.

CASE OF LARGE VESICAL CALCULUS PRESENTING SOME DIFFICULTIES IN TREATMENT.

THE following case appears to me of interest, partly on account of the large size of the stone, partly on account of the comparatively mild nature of the symptoms until such time as the stone must have attained considerable dimensions, and partly on account of the difficulties I experienced in its removal.

A man, aged 42, suffered from "gravel" for several years, during which period his symptoms were somewhat frequent micturition and very occasional slight pain in the "neck of the bladder" after micturition was completed. There was no passage of blood during this period.

Some three or four months previous to his coming under my care he was one night seized with very severe pain in the bladder and penis after passing water, and from that time onwards his previous symptoms were very much aggravated, and in addition he had occasional haematuria. When he came into hospital he was suffering from chronic cystitis, his urine was extremely offensive and contained a large quantity of pus. Altogether the man was in a very weak, emaciated, and unsatisfactory state of health. On passing a sound into the bladder there was no difficulty in detecting the presence of a stone; in fact, the stone compelled the beak of the sound to deviate immediately it entered the bladder. Neither was there any difficulty in concluding the stone must be of large size; there was difficulty, however, in estimating its exact size, as I could not grasp it between the blades of my lithotrite. From subsequent examination during operation I should think in some diameters it would measure quite 2½ in., and was in shape a somewhat flattened sphere. Next as to the question of its removal. After getting the bladder washed out thoroughly for some days I tried to crush but failed, owing to my inability to grip the stone.

Then I tried suprapubic cystotomy, but found the peritoneum reflected so low down—behind the pubes—that I decided to abandon that method and had the man returned to bed, as yet unrelieved. When the abdominal wound was healed I decided to do a lateral lithotomy and crush the stone through the perineal opening. This I succeeded in doing, but not without difficulty, as any one will readily understand who has had a similar case to deal with. On exploring the interior of the bladder with my finger I was able for the first time to realize the size and position of the calculus. It was gripped fairly tightly, the lower part lying in the post-prostatic pouch. After about two hours' hard work I managed to get it away in fragments, which, after being washed and dried, weighed just under half a pound. No drainage tube was used, the bladder being washed out twice daily with iodine water until the urine was sweet. The man did extremely well, passing urine naturally for the first time on the fifth day. The perineal wound closed in sixteen days. He has now been at work over twelve months, and is quite well, having no urinary trouble whatever.

In conclusion, I might say that the abnormal relation of the peritoneum might perhaps be explained by the fact of the bladder being unable to fill owing to the large size of the calculus—which, I may mention, was a uric acid one—and becoming thickened and contracted.

Keighley, Yorks. J. GAY MOFFAT, M.D.

MULTIPLE MALFORMATIONS IN AN INFANT.

A NEWLY-BORN infant was brought to me recently with a malformation, which at the first glance seemed to be an ordinary case of ectopia vesicae; but, on closer inspection, several peculiarities were observable. Immediately below the insertion of the umbilical cord was the usual bladder surface, showing the orifices of the ureters; but this was bounded below by a semicircular, slit-like aperture, concaved upwards. Through this aperture a probe could be passed nearly an inch upwards and backwards; and from it meconium was passed three times during the forty-eight hours that the child lived.

Below this again was a structure which in size and shape resembled a penis, and was the only representative of that organ; but it was imperforate, had neither glans nor prepuce, and was situated above the pubes. The latter appeared normally united, and were covered by healthy skin. The scrotum was in two halves separated by an interval of ¼ in. in the middle line, and each containing an apparently normal testicle.

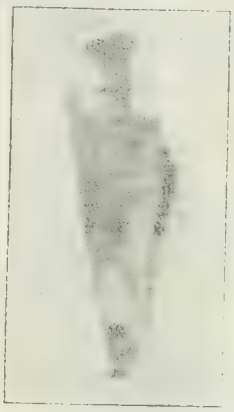
There was no anus, and no indication of its position. The child also had double talipes calcaneus. It seemed to be a full-term infant, and lived forty-eight hours. Unfortunately, I could not obtain permission to make a *post-mortem* examination.

Birmingham. H. ROBT. EMMS, M.R.C.S., L.R.C.P.

FOREIGN BODY IN A TOOTH.

THE following case of a long-retained foreign body in a tooth seems worthy of record:

The patient was a boy of 6½ years, suffering from scarlet fever, and hence an inmate at the Corporation Infectious Hospital at Morley. He frequently complained of toothache, but, when asked to have the tooth pulled, always said he "wanted the tack out." No particular attention was paid to this remark until an older brother—also in the hospital for scarlatina—told the nurse that just before last Christmas, whilst the child was at school, he complained one day of toothache, and another small boy, saying that he would cure it, proceeded to push a nail into the decayed tooth. When the child reached home the parents tried to extract the nail, but failed. It had therefore remained in the tooth ever since, a period of about seven months. The tooth, an upper canine, was of course a deciduous one. It was easily extracted without dislodging the nail, the point of which was found to have perforated the fang close to its extremity. There was a small abscess about the root but no necrosis of the tooth socket. The nail is absolutely fixed in the tooth. I am indebted to Dr. L. F. West of Morley for the photograph (×3), which very clearly shows the point of the nail, and to Dr. Steele—whose work I was doing at the time—for permission to publish the case.



Holmfirth, Yorkshire. EDWARD TROTTER, M.B., F.R.C.S.

BONY UNION OF THE OLECRANON PROCESS IN A PATIENT AGED 73.

ON April 11th, 1904, I was called in to see Mrs. B. J., and found her suffering from a simple transverse fracture through the middle of the left olecranon process caused by falling downstairs on her elbow three days before. The arm, elbow, and hand were very black, swollen, and painful, and the fracture separated about ½ in. As the muscles were flabby the fracture was easily brought into direct apposition and kept there by strapping, and the arm was put up in an extended position. By May 13th the fracture was healed by bony union, with no deformity and full use of the arm. A bony union of this fracture without wiring is so uncommon, especially at an advanced age, that I venture to think the case worth recording.

Harleston, Norfolk. ERNEST W. WADE, M.D.

LOCALIZED CERVICAL INJURY.

A FEW days ago I was called to see a man who had met with an accident while thatching a rick. I found him lying where he had fallen from his ladder, unable to move. I had him carefully moved to a house near. There I found him paralysed from the chest down, with loss of sensation and all reflexes. He could not use his arms well, the left being more powerless than the right. He could speak, and described how he had fallen. From his statement he fell about 10 ft., and the back of his neck struck a piece of wood which was on the ground. That night I visited him, and experienced great difficulty in passing the catheter owing to priapism. He was then passing under him. Next day he was delirious, and breathing with extreme difficulty, being unable to clear his bronchi of sputum. His breathing was evidently purely diaphragmatic. Later his pulse rate rose to an uncountable figure, though tumultuous, and just before death his temperature rose to 108.2°. A *post-mortem* examination was not ordered, unfortunately, but on examination I could obtain movement and crepitus on grasping the spinous process of the sixth cervical

vertebra. I presume the laminae of this vertebra were crushed in such a manner that the spinous portion was so driven in as completely to destroy the portion of the cord immediately beneath. I was, unfortunately, unable to find out which groups of muscles were paralysed in the arms, as the patient was a very stupid man. I should be glad to know why the right arm was less affected than the left. The injury I have described above was the only lesion.

Westmore, Hants. ROBERT B. CARSON, L.M &C.Dub.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

FRENCH HOSPITAL.

A CHILD WITH A TWISTED OVARIAN PEDICLE: OPERATION: SUBSEQUENTLY A TWISTED ILEUM: OPERATION: RECOVERY.

(Under the care of Mr. EDMUND OWEN, Chirurgien-en-Chef; and Mr. CLAYTON-GREENE, Assistant-Surgeon.)

[For the Notes of this Case we are indebted to Mr. JEHAN BARLET, late Resident Medical Officer.]

A GIRL, aged 10 years, was admitted on August 8th last with a painless tumour, of the size of a cocoa-nut, which, springing from the left iliac fossa, reached almost to the umbilicus. Its presence did not seem to interfere with her happiness, and it did not disturb micturition or defaecation; but when it had first appeared—about three weeks previously—the child had been doubled up with pain, and had intense vomiting. Examination under chloroform did not reveal fluctuation in the tumour, but it showed that the uterus was pushed far over to the right side, and that the tumour was slightly movable.

On August 18th Mr. Owen removed the tumour by a median incision, tying the pedicle—which was twisted three half-turns from left to right—with a silk ligature. The tumour, which was plum coloured, contained blood, sebaceous matter, and fine hair. The child did well for five days, the temperature keeping just below the normal line; but then she had a series of violent clonic spasms, with deviation of the eyes and of the head to the right. She became unconscious, and her pulse was extremely weak and rapid after the fits had somewhat abated.

As she had never previously been subject to any similar attacks, it was thought that they were probably due to peripheral irritation, and when on August 23rd she began to vomit, the question of intestinal obstruction was raised. As Mr. Owen had left London, Mr. Clayton-Greene was asked to see her. He found the abdomen distended and the vomited matter extremely offensive. He diagnosed an obstruction of the small intestine, probably incomplete, flatus having passed. As consent had to be obtained before further operation could be undertaken, a large enema was given, and the distension seemed to diminish slightly. But the child got worse, and it was clear that the obstruction had then become complete as the distension was excessive and the vomiting was occurring every few minutes. The general appearances of the case suggested a volvulus.

When taken to the theatre she was exceedingly collapsed. Under light anaesthesia the abdominal wound was opened up, and the first thing that presented was a coil of small intestine enormously distended and apparently adherent in the pelvis. It was brought out as far as possible, and, the peritoneal cavity being packed off, it was incised, about half a pannikinful of foul fluid making its escape, together with much gas. The incision in the bowel was closed with a continuous suture, and the abdominal cavity was washed out with hot saline solution. It was now possible to trace the coil of gut, and it was found to be adherent in the area from which the cyst had been removed; there was a complete twist in it, the descending loop being firmly packed against the ascending portion, at which point the bowel was quite compressed and anaemic. The twist of the emptied gut was undone without difficulty, and the loop was washed with the hot lotion and replaced in the abdomen. As the lumen of the intestine was quite patent after the coil had been untwisted, and as the patient was suffering profoundly from shock (she had twice stopped breathing, and had only come round after the employment of saline injections and of strychnine), the abdominal wound was rapidly sewn up. The child was pulseless when she was replaced in bed, but she rallied after being given a hot stimulating enema.

The subsequent course of the case was uneventful, the patient finally recovering perfectly; she was sent to the French Convalescent Home at Brighton on October 10th. She had no more fits.

KENT COUNTY OPHTHALMIC HOSPITAL.

ACUTE GLAUCOMA, OCCURRING SIMULTANEOUSLY IN BOTH EYES: OPERATION: RECOVERY.

(By CHARLES KILLICK, M.A., M.B., M.R.C.S., Etc., Honorary Surgeon to the Hospital.)

ON January 4th, 1904, I was called in to see Mrs. L., aged 73, whom I found to be suffering from an attack of acute glaucoma in both eyes. The disease had already lasted for eight days; the onset was sudden and in the night, and had been ushered in by the most violent pain and vomiting. The severe ocular injection and the diminution of sight to mere perception of light was noticed by the second or third day, and it was not due to any fault of the medical man in attendance that I was not called in sooner. The treatment up to this period had been directed to the relief of the vomiting, and lamellae of eserine had been used for the eyes from the second day of the disease.

On inquiry I found that for some months previously there had been premonitory symptoms of fogginess and dimness of vision lasting for short periods and then passing away; there was no history of rainbows.

Condition on Examination.

In each eye there was merely perception of light; the pupils were widely dilated and fixed; the tension was equal to T + 2 in each eye; the corneae were steamy; the anterior chambers extremely shallow, the media hazy, and the injection (circumcorneal and conjunctival) intense. I had, therefore, no hesitation in advising an operation, and the patient was removed to hospital forthwith.

Operation.

On the following day the patient was anaesthetized (choloroform being given), and I then performed a large iridectomy on both eyes, first the right and then the left, taking away in each case nearly a quarter of the circumference of the iris, and using a glaucoma knife in each instance for making the corneal section. The operation, in spite of obvious difficulties—for example, the shallow anterior chambers and the intense injection—was safely and rapidly performed without any complication, and the patient was conveyed back to bed. The anaesthetic was well taken, and most fortunately there was not the slightest vomiting or retching afterwards.

Progress and Result.

The healing process was uneventful; the eyes were opened on the third day, as is my usual rule in such cases; the patient was allowed to get up on the fifth day; on the eighth day the bandages were removed and dark glasses substituted. The circumcorneal and conjunctival injection cleared away steadily from the first, and the patient was discharged on January 24th, the vision being $\frac{6}{9}$ in the right eye and $\frac{6}{6}$ in the left.

I next saw the patient on March 27th, and ordered her spectacles, which brought the vision of each eye up to $\frac{6}{6}$ (two letters), while she read J.1 type quite easily with the appropriate lenses.

On September 20th last I found that her vision had still further improved to $\frac{6}{6}$ (all) and $\frac{6}{9}$ (four letters) in the right and left eyes respectively. On fundus examination the margins of the discs were somewhat blurred and the vessels were much contracted; some vitreous opacities were present in the right eye. The tension of both globes was normal.

REMARKS.—The features of interest which this case presents are as follows: (1) The length of time which elapsed between the onset of the attack and the performance of the operation, namely, eight clear days. (2) The fact that the operation was performed on both eyes at the same sitting, the risk run thereby was undoubtedly great, and I consider that I was only justified in taking it because both eyes were equally affected. (3) The age of the patient is not the least remarkable feature in the case. (4) The extraordinary amount of vision restored, from perception of light only (which had lasted for days) to practically normal sight (with appropriate glasses). Apart from some dazzling, due most probably to the large colobomata, the patient has had absolutely no trouble with her eyes subsequently. My thanks are due to Dr. Pope (West Malling) for allowing me to publish the case.

LADY CHEYLESMORE, Mayoress of Westminster, has kindly consented to open the new building of the Royal Ear Hospital, recently erected at 42 and 43, Dean Street, Soho, on Monday, December 12th, at 3 p.m.

REPORTS OF SOCIETIES.

CLINICAL SOCIETY OF LONDON.

FREDERICK TAYLOR, M.D., F.R.C.P., President, in the Chair.

Friday, November 25th, 1904.

POSTERIOR BASIC MENINGITIS.

DR. C. R. BOX described certain paroxysmal exacerbations of symptoms occurring during the progress of posterior basic meningitis in patients whose cranial fontanelles had closed. These exacerbations he proposed to call "the crises of posterior basic meningitis." In the complete form this complex of symptoms was as follows:—The temperature suddenly rose from subnormal or near normal to a considerable height—it might be as much as 7°. The patient experienced chilliness or had a rigor. Headache, frontal or vertical, set in and often vomiting. The neck became stiff or retracted and the mental condition dull. The pulse-rate usually increased. The temperature remained high for a short time and then might fall abruptly, the urgent symptoms also subsiding. The whole crisis might end in a few hours or last twelve hours or more. In one case the lateral column symptoms, exaggerated knee-jerks, clonus, etc., were exaggerated during the paroxysms. Five cases were reported; three showed the crises in a typical form, whilst in two the crises were not so prominent. The coexistence of secondary deafness or secondary otitis media in posterior basic meningitis might cause difficulty in distinguishing cases in which the crises occurred from cases of ear disease with secondary intracranial complications. Temporary increase in the intraventricular pressure was suggested as the cause of the exacerbations, and the advisability of lumbar puncture or some other operation for the relief of the pressure was indicated.

Dr. F. E. BATTEN had frequently observed this sequence of symptoms in young children in intracranial disease. He asked what evidence there was that the cases were instances of posterior basic meningitis—that is due to Weichselbaum's diplococcus. The term "crisis" seemed scarcely appropriate, as it suggested a turning point, or critical period. The fall of temperature was only 5° F. or 6° F., but he had seen a fall of 8° F. or 10° F. in twelve hours in other diseases, notably middle-ear disease.

Dr. W. PASTEUR also objected to the use of the term "crisis." Moreover, drowsiness was present between, and not at, the attacks, which was opposed to the theory of their causation by increase of intraventricular pressure.

The PRESIDENT thought the application of the word was not justified, as a daily rise and fall of temperature through many degrees occurred in several diseases, particularly those of septic origin; the term was also used in the attacks of locomotor ataxy.

Dr. BOX, in reply, said he used the term for the whole syndrome of symptoms, and not for the temperature only. In one case a streptococcus was found; in another a growth that could not be properly identified.

UNILATERAL TUBERCULOUS MENINGITIS TREATED BY LUMBAR PUNCTURE.

DRS. H. D. ROLLESTON and TEBBS contributed this case:

A boy, aged 5, who had been perfectly well until, after a day's malaise, he was seized with general convulsions more marked on the right side, with conjugate deviation of the head and eyes to the right. Lumbar puncture was performed between the spines of the third and fourth lumbar vertebrae, and subsequently a cannula was introduced in this position and cerebro-spinal fluid, which at first was blood-stained, allowed to run away. On the following day, on the afternoon of which death occurred, two bullae appeared on the right little toe. The illness occupied five days. At the necropsy there was tuberculous meningitis of the left Sylvian fissure, thought to be due to an embolus derived from a caseous gland invading the apex of the left lung. There was a blood clot 3 in. long under the arachnoid and in contact with the right posterior nerve roots of the cauda equina. This clot, probably due to the lumbar puncture, was regarded as having irritated the posterior nerve roots and ganglia and produced a bullous eruption resembling herpes.

Dr. C. R. BOX thought that lumbar puncture was not altogether a harmless procedure. He had twice seen extensive haemorrhage follow the operation.

Dr. F. E. BATTEN said that the posterior root ganglion was some distance away from the site of puncture. The evidence that haemorrhage, or other injury of the posterior nerve roots apart from the ganglion, produced a herpetic eruption was slight.

Dr. A. E. RUSSELL remarked that Bayliss had shown that stimulation of the peripheral end of a cut posterior nerve root caused great vasomotor changes in the limb supplied.

Dr. H. D. ROLLESTON, in reply, said that the sacral ganglion had not been examined.

POST-OPERATIVE ACUTE LOCAL TUBERCULOSIS.

Mr. E. M. CORNER and Dr. L. S. DUDGEON described a case in which, after an operation for tuberculous glands of the neck, a local tuberculous infection of all the surrounding tissues occurred. The chief sign of this infection was local swelling after the wound had healed. The case therefore shed light on the nature of "swellings" seen after operations for tuberculous lesions. Several cases were narrated to illustrate this in connexion with glands of neck, tuberculous disease of the knee-joint and kidney. In these instances, and in many more, not specifically quoted, the healing of the wound had been by first intention. Local infection did not seem to occur, or occurred only in lesser intensity, if the wound was left open or drained. The question of the advisability of the employment of drainage after such operation was raised; and the opinion expressed that when there had been obvious chance of infection occurring, as when glands burst whilst being excised, and the situation allowed of it, the sounder surgery was to employ drainage.

Mr. F. C. WALLIS thought it better to drain the wound for the first twenty-four hours, that the serum with the micro-organisms which it contained might escape.

Mr. W. G. SPENCER had not seen evidence of the infection of a fresh wound by tubercle bacilli. He urged the thorough removal of all diseased tissue in tuberculous cases. The bacilli evidently infected tissues far beyond the area supposed to be diseased, as was shown by the reaction of old foci when Koch's tuberculin was injected. He deprecated the employment of the drainage tube, as tuberculous sinuses were difficult to heal.

Mr. R. P. ROWLANDS remarked that after the removal of a tuberculous kidney, a sinus had remained which was due to incomplete removal of the ureter which was taken away a year afterwards. In a case of tuberculous elbow the disease recurred after an extensive operation, and amputation of the arm had to be done; whilst in a case of disease of the thyroid, tubercle not before present, appeared at the site of an operation on the gland.

MEDICAL SOCIETY OF LONDON.

JOHN LANGTON, F.R.C.S., President, in the Chair.

Monday, November 28th, 1904.

DUODENAL ULCER.

MR. D'ARCY POWER described 7 cases of this condition, 4 perforating and treated by suture, and 3 non-perforating, and treated by gastro-jejunostomy. The condition was not uncommon, and occurred more frequently in men. A clinical composite picture of the two groups of cases respectively was given. The symptoms of perforated duodenal ulcer were much less characteristic than those of perforated gastric ulcer. Intense sudden abdominal pain with much previous history of dyspepsia and an increasing pulse-rate, observed at half-hourly intervals, called for an exploratory laparotomy. A perforated ulcer might be mistaken for pneumonia, appendicitis, or acute suppurative peritonitis. Early operation was of great importance. As to the non-perforating ulcers there might be no characteristic symptoms—there was no pathognomic sign—and yet the sequelae might be of the gravest importance. Many of the cases with cicatrization of the ulcer were diagnosed as cancer of the pylorus or of the pancreas. The gastric dilatation might be greater than in the malignant cases, and there might be visible peristalsis. When gastro-jejunostomy was done for duodenal ulcer there was no tendency for the opening to contract as for gastric ulcer; the relief was permanent. The operation by direct suture and the post-colic route was to be preferred.

Dr. DE HAVILLAND HALL had found the greater part of hospital cases among the *post mortem* records. The occurrence of jaundice was sometimes of help in diagnosis; as also melaena without previous haematemesis. Attacks of faintness sometimes occurred from duodenal haemorrhage. Pain was, as a rule, considerably postponed after food.

Mr. MAYO ROBSON had operated on nearly thirty cases. In four or five perforating cases the symptoms were much the same as those of gastric ulcer, but the pain was mostly on the right side, and in two there were suggestions of appendicitis. If operated on within the first twelve hours practical asepsis might be assured. Pain came on about an hour before the

next meal, and was relieved by taking food. It often came on in the small hours of the morning. Melaena and haematemesis might be absent. Often there was tenderness in the gall-bladder region and a rigid right rectus, pain passing up to the right scapula, and slight jaundice. Gastro-enterostomy was extremely beneficial.

Dr. John Broadbent alluded to 6 cases he had collected from the records of St. Mary's Hospital. In the perforating cases there had been no definite signs of peritonitis because the initial perforation from an empty bowel was small and adhesions readily formed. Two cases of subphrenic abscess occurred with simple pleural effusion; and there were 2 traumatic cases.

Mr. Bruce Clarke thought the difficult matter was the diagnosis. It was difficult to distinguish between ruptured gastric and duodenal ulcer. There was usually rigidity of the right rectus muscle in the latter. Oral sepsis was probably a factor in causation. What were the chances of an absolute cure from medical measures?

Dr. Bruce Porter pointed out that the diagnosis was in many cases almost impossible, and described a case in point.

Mr. W. McAdam Eccles thought that if an anaemic young man had had one attack of melaena it was almost certain that there was duodenal ulcer, and gastro-jejunostomy was indicated. In gastric ulcer solid food caused immediate pain, hot fluid relieved it; both caused late pain in duodenal ulcer.

Mr. Walter Spencer thought the main indication for operation in chronic cases was the occurrence of relapses.

Mr. A. E. Barker believed the only definite symptoms were the pain occurring an hour or two after food and persisting for an hour or two, and melaena with faintness. If the stomach were dilated with air the dilatation could be traced further than in the cases of pyloric stenosis. Gastro-jejunostomy gave good results alike in duodenal and gastric ulcer, a large opening being made.

Mr. W. Douglas Harmer related details of five necropsies on perforated ulcers on the duodenal side of the pylorus, in which the ulceration was very close to the valve. Cultivations from the abdomen after perforation showed pure streptococci.

Mr. D'Arcy Power replied.

Glasgow Medico-Chirurgical Society.—At a meeting on November 18th, Dr. Newman, President, in the chair, the following were among the cases exhibited: Dr. A. Maitland Ramsay showed a case of cephalic tetanus following a contusion wound of the outer canthus. The patient, a woman aged 23 years, was admitted to the Ophthalmic Institute four days after she had been struck on the right eye with a walking-stick. On admission to the hospital she was found to have a suppurating wound extending for about three-eighths of an inch outwards from the external canthus of the injured eye. There was no corneal injury, but the ocular conjunctiva was injected and the lids swollen. Intraocular tension was normal, the anterior chamber of natural depth, the pupil dilated and irresponsive to light; the fundus oculi could not be illuminated, and all perception of light was lost. About three days after admission the patient began to complain of stiffness of the lower jaw, especially on the right. The stiffness gradually increased, and a week after admission was strongly suggestive of trismus. The patient could open her mouth only on the left side, and the right corner drooped towards the chin. All the muscles on the right side of the face were paralysed, but it was difficult to determine the degree of the palsy of the orbicularis palpebrarum, and the labio-nasal fold was never completely obliterated. The occipito-frontalis was also involved, and the wrinkles on the left side of the face were much more marked than those on the right. On both sides the knee-jerks were exaggerated, and ankle clonus was present. On the following day there was complaint of stiffness of the right trapezius. Dr. Campbell McClure made cultures from the discharge, and demonstrated the presence of the tetanus bacillus. The injection of antitetanic serum was at once commenced, and for two days the condition remained unchanged. On the evening of October 1st, while the eye was being douched, the patient had an attack of laryngeal spasm so severe that it was feared she would die of suffocation. In a few minutes the muscles relaxed, but shortly afterwards, while taking a drink, she was suddenly seized with a slight spasm of the pharynx. The serum injections were continued, and chloral was prescribed in large doses; on the following day the tonic contraction of the muscles of mastication was distinctly less, although there was again a tendency to spasmodic dyspnoea when the wound was being dressed. The patient improved steadily, and after October 3rd the injection was intermitted for six days. During sleep the muscles were relaxed, but on waking there was occasional spasmodic contraction of the muscles of mastication. As the discharge was not escaping freely from the sinus at the right outer canthus Dr. Knox made an opening through the skin and inserted a drainage tube. When shown there was little difference between the two sides of the face, although the right occipito-frontalis did not act so well as the left. The electrical reaction of the facial muscles on the right side was normal, the response to galvanic and faradic stimulation was more sluggish. With the right eye the patient could determine hand movements at 6 ft. and count fingers at 2 ft.; but as she was unable to detect the discs on test squares used with the perimeter the field of vision could not be satisfactorily mapped out. Antitetanic serum was administered seven times to a total amount of 150 c.cm.—Dr. Rowam showed a series of cases illustrating interstitial keratitis in its various stages, and emphasized the fact that though cases were apparently entirely cured, yet by careful examination it was always possible to tell a patient who had suffered from this disease.—Dr. Wright Thomson showed a case of optic atrophy involving only the central part of the field of vision in a lad 16 years of age, of a family of seventeen. He had a brother and sister older than himself with the same disease.

Liverpool Medical Institution.—At a meeting on November 17th, Dr. James Barr, President, in the chair, Mr. Thomas H. Bickerton exhibited a female patient, 76 years of age, upon whom he had operated for double cataract. Cocaine was first tried, but the patient was so restless that the operation could not be undertaken. A few days later chloroform was administered, and double cataract extraction performed. An uneventful recovery followed, and an excellent result as regards vision had been obtained. Mr. Bickerton said this was the first occasion on which he had performed double cataract extraction at one sitting, and remarked upon the rarity with which it was necessary to administer a general anaesthetic for operations of this nature. Dr. K. A. Grossmann congratulated Mr. Bickerton upon the result obtained, but considered double extraction at one sitting a very risky procedure, and mentioned a case in which he had seen most disastrous results follow.—Mr. W. Thelwall Thomas read a note on the treatment of so-called concussion of the brain. He referred to recent physiological research, which had demonstrated the absence of vasomotor nerves in the cerebral arteries, the impossibility of producing any effect on the circulation of the brain by applications to the exterior of the cranium, the importance of the cerebral venous pressure, and the control the splanchnic vasomotor mechanism exercised, by acting indirectly through the general circulation. He divided concussion into three varieties: (1) Simple concussion, merely a temporary disturbance of pressure equilibrium within the cranium, from which recovery was rapid; (2) severe concussion, which he considered to be simply shock; in this he deprecated the use of icebags, and mentioned cases in which the continued application of ice had prolonged the symptoms, while recovery had quickly followed on changing the treatment; (3) continued concussion, in which he considered contusion of the brain and meninges existed. In this condition unconsciousness quickly gave place to irritability, restlessness, mild delirium, etc. A sedative line of treatment was strongly advocated, and preference of morphine and chloral to bromides expressed. The importance of absolute quietness, tactful nursing, and the administration of free nourishment was emphasized. Free purgation was not recommended, as it interfered with rest. On returning consciousness the administration of iodides was of marked value, many of the so-called after effects of concussion—clouded intellect, loss of memory, and headache—being thus cleared up. So long as the temperature, pulse, and respiration remained normal, if the patient could be made to take adequate nourishment the prognosis was good. Long-continued unconsciousness, with paresis, paralysis, or coma, indicated cerebral laceration, and a rise of temperature without a corresponding quickening of the pulse and respiration, together with a loss of control of the bladder and rectum, generally indicated severe laceration, and the prognosis was consequently much more unfavourable.—Mr. Robert Jones read a note upon spinal cocainization, and related several cases in which he had employed it with great

advantage. He thought English surgeons were unnecessarily timid in regard to its use; under a strict aseptic technique the risk was very slight. He considered it of particular advantage in operating upon persons suffering from advanced phthisis, bronchitis, or asthma; in persons who had a strong aversion to a general anaesthetic and upon whom an operation was urgently required, and also in those suffering from great shock due to severe injuries of the lower limbs.—Dr. William Carter read a paper on some old and new remedies. The main proposition was that medicinal and other agents can often, in an unknown way, so modify cells and tissues as to make a diseased person sound, and that they do not merely relieve symptoms, while Nature effects a cure. He illustrated this by mentioning cases in which prolonged and most serious illnesses were arrested and the patient cured by using such old remedies as the liquor sarsae co. concentratus, mercurial inunction, and vinum antimoniale. An examination of 25,500 recent prescriptions adopted in the *Extra Pharmacopoeia* showed that not one of these substances was so much as mentioned. He contrasted the opinion expressed on the one hand by Boecker, and on the other by the late Mr. Allanson of Leeds, concerning the first of these drugs, Boecker simply dismissing it as useless, while Allanson thought highly of it, though unable to explain its mode of action. Among other remedies, succinate of iron in biliary colic, and large draughts of pure water in renal colic were mentioned, and their utility illustrated by cases. Reference was made to the useful effects on leucocytosis and chronic splenic enlargements by *x* rays, and a photograph was shown of a very large and remarkable tumour of the face which was considered to be malignant by all the medical men who saw the patient; an operation for its removal had been recommended, but under *x*-ray treatment the tumour had, in a comparatively short time, entirely disappeared. Lastly, allusion was made to the contradictory opinions of Schmiedeberg and Ringer, on the utility of aconite, the first asserting that "saving its value in neuralgias it can be relegated to the obsolete means of treatment," while the second stated that "perhaps no drug is more valuable than aconite," and cases were mentioned showing the extraordinary benefit which the drug was capable of affording in certain conditions of the heart.

Clinical Society of Manchester.—At a meeting on November 15th, Dr. E. S. Reynolds, President, in the chair, Mr. J. E. Platt read a paper on the pathology and treatment of injuries to the semilunar cartilages of the knee joint. After referring to some points in the manner of causation of these injuries, he described the various ways in which the cartilages might suffer, and showed a number of specimens in illustration. In the treatment of both recent and old-standing cases he insisted upon the importance of restoring the tension of the capsule of the knee-joint. The importance of getting rid of all effusion into the joint previous to operation was emphasized. Mr. Milner agreed that drainage after such operations on the knee-joint was inadvisable, but whilst admitting the advisability of occasionally removing some badly fractured or torn cartilages, he considered excision of the semilunar cartilage in cases of recurring displacement as unnecessary and unjustifiable, preferring some method of fixation by sutures. Some of those on whom he had thus operated had subsequently continued their work as colliers and professional football players.—Dr. G. H. Lancashire read a paper on ringworm. The pathology of the affection in the light of modern research was briefly described and its differential diagnosis discussed. The various methods of treatment (direct, indirect, and *x* rays) were compared, and mention was made of a large workhouse hospital where one variety of the croton oil method had been for many years employed with conspicuous success and with no untoward after-effect, such as baldness.—Mr. Knyvett Gordon, speaking from his experience in dealing with ringworm in hospitals for infectious disease, emphasized the difficulty of eliminating a diagnosis of tinea where the scalp was covered, as was so frequently the case, with scabs and crusts. It was almost a truism, in the treatment of the affection, that what mattered was not so much what was used as how it was applied. It was futile merely to *paint* a patch of ringworm with anything. In his own experience he had obtained the best results with pure izal, well rubbed in every alternate day, and it was sometimes possible to obtain a cure in six weeks by this method; it did not give rise to kerion. Croton oil and chrysarobin were, he considered, somewhat dangerous, especially when the ringworm occurred in a patient suffering from scarlet fever, as the resulting inflammation was somewhat difficult to control. An interesting discussion followed.

Manchester Medical Society.—At a meeting on November 2nd, the President, Dr. J. S. Bury, in the chair, Professor R. B. Wild read a paper upon six cases in which malignant disease had supervened upon lupus vulgaris. Three of the cases had been treated by *x* rays with temporary relief, but finally succumbed to recurrence of the malignant growths. Attention was drawn to the importance of early treatment of all warty conditions of the scar tissue in lupus cases, and some statistics were adduced to show that this serious condition was more frequent than is usually believed.—Mr. A. H. Burgess described briefly, and showed a photograph of, an apparatus for the continuous supply of sterilized water at any desired temperature. Hot water was obtained by turning steam into cold water, the amount of steam, and consequently the temperature of the mixture being capable of accurate regulation. Sterilization was effected by subsequently passing the water through a specially constructed three-candle Berkfeld filter.—Dr. Moritz read a paper on the causes, symptoms, and complications of the diseases of the nasal accessory sinuses in their relation to general diseases, and to neurology and ophthalmology.—Mr. F. H. Westmacott showed a series of specimens, drawings, and photographs illustrating the anatomy and pathology of the accessory sinuses of the nose.

Midland Medical Society.—At a meeting on November 23rd, Mr. Wood White, the President, in the chair, Dr. Douglas Heath showed a girl, eleven years of age, suffering from favus of the scalp. The disease had been present for many years, but had never attacked any other region. The central portion of the scalp was covered with a thick white scurf and the hair was very thin and feeble. Numerous cups could be seen on the margins of the hairy scalp in the temporal regions, and scrapings from them showed the characteristic mycelium and spores.—Dr. Russell showed a woman, aged thirty-two, the subject of acromegaly. She had been ailing for seven years, and complained of fatigue on exertion and headache. There had been no vomiting. The hands and feet were greatly enlarged, and radiographs showed elongation and thickening of the phalanges, thickening of the soft parts, and some enlargement of the ends of the radius and ulna on each side. The face was also greatly enlarged, especially the lower jaw. The skin of the face was coarse and the lips considerably thickened. There was no hemianopsia and no optic neuritis. Amenorrhoea had lasted two years, but menstruation had reappeared whilst the patient was under observation.—Dr. Thomas Wilson read a paper on some cases of rupture of the uterus.

Hunterian Society.—At a pathological meeting on November 23rd, Dr. F. J. Smith in the chair, Dr. Michels exhibited specimens from a case of sarcoma of the small intestine. No obstruction had been produced; indeed, the gut was greatly enlarged in lumen opposite the tumour, and resembled an aneurysm. The entire symptoms lasted but a little over a week.—Dr. F. J. Smith showed, by permission of Dr. Schorstein, a specimen of complete thrombosis of the last three inches of the aorta, which extended down both iliac and femoral arteries. The inferior vena cava was also thrombosed. The case was at first regarded as one of paraplegia, but subsequently gangrene appeared in both feet, and before death had extended to above the knee on the left side and half way up the calf on the right. He also showed a specimen of a rupture of the liver, which had not caused the death of the patient. The rupture, which was for the most part subperitoneal, passed transversely across the liver, and was almost complete from side to side, and from before back, so as nearly to divide the liver in two. The fissure, which was about $\frac{3}{8}$ in. wide in the greater part of its extent, was filled with black clotted blood, and this had commenced to decolourize and heal at either end. A pint of blood clot was found in the peritoneal cavity. The patient had survived five days. He had died of lung and pleural injuries simultaneously inflicted and a number of fractured ribs. Dr. Smith regarded rupture of the liver as invariably fatal unless operated on. This view was disputed by Dr. Manning, who had found the scar of an extensive rupture of the liver in a patient twenty years after the accident. Mr. H. L. Barnard also disputed it on the evidence of several clinical cases.—Dr. Russell Andrews showed two specimens of ruptured pregnant tubes, in both

of which the ovum was intact. In one of them, in which the embryo was apparently living at the time of operation, there had been no uterine haemorrhage.—Mr. H. L. Barnard exhibited the left cerebral hemisphere of a patient, the subject of a glioma of the posterior Rolandic area. The arm and, to a less degree, the leg centres were invaded. Death occurred suddenly from coma and respiratory failure the day before a proposed exploratory operation. The specimen showed that death was due to a large haemorrhage into the middle of the gelatinous mass, but this haemorrhage had not burst into the lateral ventricle. The symptoms, which were headache, vomiting, optic neuritis more marked on the left, Jacksonian epilepsy starting in the right hand, paralysis of the right arm and foot, torpor and constipation, were only of eight weeks' duration. Dr. Purves Stewart thought that the growth was of much longer duration, and that it had started in the posterior part of the upper parietal lobe, where its only symptom would have been astereognosis.—Dr. Manning showed an apparatus formed of canvas and tapes for retaining a fractured clavicle in a good position. The advantages claimed over Sayer's method with plaster straps were greater comfort, ready adjustment, and the ease with which the straps could be tightened as the apparatus stretched. He had found it most successful in several cases. Messrs. Down Bros. were now making it. Dr. Best stated that he had used it in one case, and found it very satisfactory.

Therapeutical Society.—At the third annual meeting on October 25th, Sir W. Thiselton Dyer occupying the chair for the last time as President, Dr. Arthur Harries read a paper on some applications of the continuous current. He stated that its action might be either mechanico-physical, termed cataphoresis, electro-chemical, called electrolysis, or electro physical, termed catalysis; and described several cases illustrating the benefits derived from each of these actions in rachialgia, arthritic, syphilitic and other affections, also in stricture and disease of the prostate and in lupus.—Dr. G. Crichton read a paper on the metric system in dispensing, showing the inconveniences of the existing system in which there were, he said, three different kinds of measures—the pound, the drachm, and the fluid drachm—whence resulted much waste of time and energy in correlating them. In prescribing it should be remembered that a gram was very nearly one-quarter of a drachm and one-fifth of a cubic centimetre was nearly 3 minims. Mistakes owing to the wrong position of the decimal point ought not to occur if proper care were taken in writing prescriptions.

Chelsea Clinical Society.—At a meeting on November 15th, Dr. Vincent Dickinson, President, in the chair, Mr. Noble Smith read a paper on the use of mechanical apparatus in surgical treatment, and exhibited patients. Cases requiring mechanical apparatus were of two classes, the inflammatory and the non-inflammatory; tuberculous disease of joints was typical of the former class, and deformity arising from various paralyses and weakness were instances of the latter. In inflammatory conditions, absolute rest of the affected parts was imperative; in the other class the surgeon's object should be to correct the deformity without interfering with the natural movements. This was a completely different system from that pursued by mechanicians who were not surgeons, and it required knowledge of physiology as well as of mechanics to cope with the peculiarities to be dealt with. Taking the treatment of caries of the spine and of lateral curvature as examples, the principles of the apparatus in both cases involved expansion of the thorax without any pressure upon its anterior or lateral parts, continuation downwards of the instrument to the seat in sitting and possibility of modification of the machine by the surgeon. The principles of application, however, differed widely. In the inflammatory case—caries—the body of the patient was kept close to the apparatus previously adjusted to the proper position, whereas in the non-inflammatory—scoliosis—the apparatus was so arranged that it favoured movement, and only came into action when the patient for any reason inclined towards a bad position.—Dr. Dauber read a paper on incomplete abortion. Apart from fatal cases, which when medically attended from the beginning were a reproach to the profession, a large number of cases of salpingitis, pyosalpinx, ovarian abscess, pelvic peritonitis, and other conditions found in the hospital out-patient department could, he said, be traced to miscarriage at some period of gestation. Miscarriage, especially among the lower classes, was so common as to be constantly disregarded, and patients took the small risk rather than submit to the inconvenience of treatment. Cases were narrated to show the value of treatment by the curette of patients who came under medical operation, one being a case of uncontrollable haemorrhage in which the removal of a portion of membrane not larger than a third of a grain of wheat was followed by immediate recovery.—The President showed a kidney which had been removed, and attached to which was a cyst about the size of a large orange. The principal symptoms were tachycardia and a slight bronzing of the skin. On removal of the kidney the pulse, which had been 120 or 130, dropped at once to 90, and finally to 60, after recovery from the operation.

REVIEWS.

SURGERY.

The treatise on the *Surgery of the Diseases of the Appendix Vermiformis*[1] by Mr. W. H. Battle and Mr. E. M. Corner is a useful practical work. The authors state their views and their practice in a definite and dogmatic manner, using the latter term in its primary sense, and the result is an excellent handbook well worthy of the attention of surgeons. Generally speaking, the authors present what is sometimes characterized as the English view on the operative treatment of acute appendicitis—that is to say, the view of those who do not hold it good practice to operate early in all cases or to attempt the removal of the appendix in every patient operated on. There are some points in the operative technique which they recommend which call for notice. The incision they employ in the great majority of cases is one to the inner side of the outer border of the right rectus, parallel to this muscle and displacing it inwards. This is not a normal abdominal incision, but the authors state that they do not attach importance to the section of the nerves of supply to the rectus. In removing the appendix they employ a clamp after the histotribe method of Kocher; they state that the simple ligature of the appendix followed by the application of cautery or antiseptic was attended by a high mortality and a number of cases of perforation during after-treatment. It would be interesting to know on what clinical records this statement is based; while it may be admitted that the method is not ideal, it is still the fact that it is employed by many without the mortality or the cases of perforation referred to. The distinction between acute localized spreading appendicitis and acute general peritonitis which is drawn by the authors is one of importance; the grouping of the two conditions under the one heading has led to considerable statistical confusion; they are only two stages in the same process, but the prognosis and treatment of the one is very different from that of the other. There are two excellent chapters—the best in the book—on the rarer complications of appendicitis. Intussusception of the appendix, the recorded cases of which are still few in number, receives adequate consideration, the authors holding the view that it depends on some morbid condition in the appendix itself, protrusion into the caecum taking place from the muscular contraction of the appendix. The first two chapters in the book deal respectively with anatomy and pathology. The first is excellent—the description given is clear and well arranged; the second leaves something to be desired in the way of clearness, the reader could gather only a confused idea of the pathology from its perusal; there is a sentence on p. 47 which is unintelligible, probably from some accidental omission.

The urine separator of Dr. Georges Luys is well known in this country, and surgeons will read with much interest the description published by the inventor[2] of the stages of evolution of the instrument and its application in the diagnosis of renal disease. Although in some points the mechanism of the instrument resembles that of an apparatus devised and used on the cadaver by Lambotte, yet the resemblances are of the slightest and to Dr. Luys belongs the credit of having first invented a urine separator which is of real use to surgeons. Dr. Luys's first instrument was produced in 1901,

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[1] *The Surgery of the Diseases of the Appendix Vermiformis and their Complications.* By W. H. Battle, F.R.C.S., and Edred M. Corner, M.B., B.C., F.R.C.S. London: A. Constable and Co. 1904. (Demy 8vo, pp. 268. 10 illustrations. 7s. 6d.)

[2] *La Séparation de l'Urine des deux Reins.* Par Georges Luys. Paris: Masson et Cie. 1904. (Demy 8vo, pp. 305, 55 illustrations.)

but it was not until a year later that the inventor was sufficiently satisfied with its accuracy to bring his invention before the surgical profession. Since this time it has attained very considerable popularity in all countries, and the great majority of those who have employed it are convinced of its value and usefulness. It will probably, to a great extent, displace all other instruments and manœuvres which have been designed for obtaining samples of urine from the two kidneys; catheterization of the ureters will remain its chief rival, and for the diagnosis of ureteral conditions the latter is no doubt superior. Being, however, free from the difficulties and the risks of ureteral catheterization, the use of this separator is an advance on the latter for cases where a comparison of the condition and work of the two kidneys is desired. In a series of 210 clinical records, Dr. Luys demonstrates in the clearest possible manner the variety of conditions in which separation of the two urines is of value; without the evidence afforded by such separation the symptoms in many a renal case are insufficiently clear to relieve the surgeon of doubt as to the exact nature of the condition with which he has to deal. Two criticisms have been passed on the instrument: the first that it is not well tolerated in the male bladder, the second that it necessitates an inconvenient exposure in the female. Possibly the first has arisen from an occasional fault in manipulation; we note that in the case of a few unusually nervous women Dr. Luys had chloroform administered. Certainly the instrument compares favourably as to convenience with ureteral catheterization in the genu-pectoral position.

Mr. C. LEEDHAM GREEN's treatise on *The Sterilization of the Hands*[3] is the outcome of researches on this important subject which have extended over several years. It is not only an account of these researches but a comprehensive critical review of the investigations of other surgeons on the same question. It is to be welcomed as a valuable contribution to the discussion of skin sterilization. A uniform method was employed throughout these researches, the tests applied being of an exacting character and the bacteriological technique carefully planned. Considerable variation exists in the degree of readiness with which the hands of different individuals are cleansed, good results being much more easily obtained in the case of some than of others. No absolutely certain method has yet been discovered, so that the surgeon who desires that his hands should be above suspicion on every occasion must wear impermeable sterilized gloves. Fürbringer's method, or Mr. Leedham-Green's modification of it, appears to be the most efficient of those at present suggested; the modification recommended being that of substituting a spirituous for a watery solution of sublimate. In choosing a method individual peculiarities have to be considered; what one pair of hands will tolerate another will not, and Mr. Leedham-Green well says that any method which causes the hands of a surgeon to become rough and cracked stands at once condemned for habitual use by him. Probably one or other modification of the alcohol-sublimate method may be found to suit almost all cases, and it is almost universally conceded that the use of dilute alcohol as an essential part of the process ensures results greatly superior to those given by any method hitherto suggested from which it is excluded. Mr. Leedham-Green has attacked his subject in the only way scientific surgery can properly attack it. The empiric argument from "results" would be worthy of the attention which it is accorded in some quarters if the direct method of investigation were impossible, but seeing that the latter is not only possible but has been extensively carried out, opinions based upon, and arguments derived from, that very elastic term "satisfactory results" are comparatively worthless.

Surgical Anatomy of the Head and Neck[4] is a volume made up by collecting together, from Dr. JOHN B. DEAVER'S complete work on *Surgical Anatomy*, all the sections which treat of the neck, mouth, pharynx, larynx, nose, orbit, eyeball, organs of hearing, brain, back of the neck, cranium, scalp, and face. It is intended for the convenience of those specialist and other surgeons who confine themselves to these regions, and by them it should be found of great value. No extended consideration of its merits is necessary, since the original three volumes, the publication of which was commenced four years ago, each received as it appeared long, and, in the main, highly favourable notice. The present volume of excerpts is in large type, well indexed and illustrated by over 170 full-page and very beautiful plates.

[3] *The Sterilization of the Hands:* A Bacteriological Inquiry into the Relative Value of Various Agents used in the Disinfection of the Hands. By Charles Leedham-Green, M.B., F.R.C.S. London: Simpkin, Marshall, Hamilton, Kent and Co. 1904. (Demy 8vo, pp. 122. 2s. 6d.)

[4] *Surgical Anatomy of the Head and Neck.* By John B. Deaver, M.D. London: Rebman Limited. 1904. (Demy 8vo, pp. 782; 177 illustrations. 52s. 6d.)

DISEASES OF THE EAR AND NOSE.

THAT a second edition of Mr. RICHARD LAKE'S *Handbook of Diseases of the Ear*[5] should be called for within a year is evidence that it has met a want in the profession. The book, which, as the author tells us, is intended for the use of students and practitioners, opens with a chapter giving a brief description of the more important anatomical points. The subsequent chapters treat of (2) the general and special examination of the patient; (3) special symptoms and their import, estimation of the acuteness of hearing, and general therapeutics; (4) the external ear: malformations, injuries, diseases, and foreign bodies; (5) diseases of the middle ear: acute; (6) ditto: chronic non-suppurative; (7) chronic suppurative diseases of the middle ear; (8) intracranial complications; (9) operations; (10) malignant diseases of the ear; (11) diseases of the internal ear: deaf-mutism; (12) life assurance. Under all these heads the author writes as a rule clearly and concisely and gives a large amount of information. There are three well-executed coloured plates representing appearances of thirty-six different tympanic membranes and numerous illustrations in the text; of the latter the anatomical are the best and deserve commendation. In passing, we may say that the figure of the posterior rhinoscopic view, although described as semi-diagramatic, might have been more lifelike. We notice that the author, in describing adenoid vegetations, discountenances the routine use of palpation as a means of diagnosis of this complaint in children, although the data for diagnosis which he gives on page 36 seem insufficient. In otosclerosis, as distinct from chronic catarrhal otitis media ("otitis media chronica adhesiva"), the author takes what seems rather an unusually favourable view when he says, "careful treatment will no doubt enable the surgeon in a large number of instances to obtain a certain amount of relief, or at least to retard the march of symptoms." Internal remedies give the most help, and foremost among them he reckons phosphorus. The surgical part of the work is the best, and well up to date. The description of Schwartze's operation strikes us, however, as wanting in detail as regards the instruments which should be employed. An appendix of forty-two prescriptions for use in various ear diseases completes the work and adds to its value. There is also an index of diseases. The second edition is slightly altered and improved in several respects. It contains ten pages more letterpress. There is still, however, evidence of a lack of careful revision in the misspelling of names, such as "Grüber" for "Gruber," "Siegel" for "Siegle." The book is one which may be read with profit by the specialist as well as the student and practitioner, and one which is likely to assist in increasing the popularity of the subject of otology in the profession.

In this little book on *Asthma in Relation to the Nose*,[6] which appears to be an expansion of a paper read by the author at the Clinical Society last year, Dr. ALEXANDER FRANCIS says his object is to dispel some of the thick haze which envelops the whole subject of asthma, and to throw light upon the relationship of asthma and the nose, which will tend to place the nasal treatment of asthma upon a more rational and satisfactory basis. As regards pathology, the author inclines to the opinion that asthma is due to spasm of the bronchial muscles, which spasm is probably always induced by reflex action, and gives his reasons for this belief. In a summary of previous work on this subject he hardly gives Hack his deserts. His name is only once mentioned, and then misspelt "Hach." The author furnishes details of his treatment by cauterization of the mucous membrane of the nasal septum, which he considers acts by improving the stability of the respiratory centre, and gives a long series of cases successfully treated. Whether we agree with his theories or not, they are interesting and suggestive. His observations need confirmation at the hands of others, as they are not in accord with general experience, as hitherto expressed.

[5] *Handbook of Diseases of the Ear.* By Richard Lake, F.R.C.S. Second edition. London: Baillière, Tindall and Cox. 1904. (Cr. 8vo, pp. 252, 54 illustrations. 6s.)

[6] *Asthma in Relation to the Nose.* By Alexander Francis, M.B., B.C.Cantab. London: Adlard and Son. 1903. (Demy 8vo, pp. 136. 5s.)

SERUMS, VACCINES AND TOXINES.

Messrs. Cassell and Co., are introducing a new series of medical text-books on "modern methods of treatment" which will include volumes devoted to treatment by serum of various kinds, by animal extracts, by light and *x* rays, by hot air, and the open-air treatment of consumption. This is an excellent scheme, and the first volume to make its appearance, Dr. Bosanquet's *Serums, Vaccines and Toxines*[7] ought to achieve success. Dr. Bosanquet's exposition of modern theories of immunity is the clearest we have read, and is exactly what is wanted by the general reader who desires to grasp the main points at issue but is unable to thread his way through the chaos of technicalities in which most records of experimental research on this subject are involved. Another excellent feature of the book is the emphasis which is laid upon practical considerations. The general practitioner is naturally desirous of knowing how any particular serum which he is likely to use is prepared and standardized, and, in particular, what statistical evidence there is that the serum in question is likely to be useful. Especially is it desirable in the case of serums and vaccines the utility of which is not yet fully established, that the experimental and other evidence in their favour should be stated in simple language and impartially criticized. By providing a critical survey of this sort, Dr. Bosanquet has done much to enable the clinician to appreciate the latest results of bacteriological research, and to recognize how far they are available for therapeutic use. The chapters on diphtheria and tetanus are very useful, but call for no special comment. In dealing with small-pox and vaccinia, Dr. Bosanquet's descriptions of alleged discoveries of the causal agent are somewhat scanty and refer almost exclusively to the protozoan view; the theory that the origin is bacterial is certainly deserving of a little more space. After admitting that statistics seem definitely to prove that four vaccination insertions protect better than a smaller number, he makes the comment that "it is at least conceivable that it is not so much the number of insertions of the lymph that protects as the careful performance of the act of vaccination, of which the number of scars is some criterion." Surely this is an unnecessary divergence into a by-path of merely speculative criticism. We cordially agree with him that provision ought to be made "for the inspection of private vaccine establishments and for the testing by State officials of all lymph put upon the market." The vexed and unsettled questions concerning the value of various serums and vaccines for the cure and prevention of typhoid fever are dealt with in a cautious, temperate and impartial manner. The chapter on tuberculosis is particularly full of useful information. Whether practitioners agree with Dr. Bosanquet or not in his opinion that the new tuberculin (TR) is worthy of trial as a remedy in pulmonary phthisis, they cannot fail to be interested in his very lucid exposition of the mode of preparation and the diagnostic or other value of the various tuberculins which have been put on the market, the agglutination phenomena of tubercle bacilli, and the attempts which are being made to immunize against tuberculosis by means of vaccination with dead or attenuated bacilli.

CLEFT PALATE.

The purpose of Mr. Edmund Owen's *Cleft Palate and Hare-Lip*[8] is clearly stated in the author's "apology" as being to give "the personal experience of a general surgeon in a delicate and important little piece of operative work;" and a "chief excuse for this essay is his desire to bring into more general notice the original and excellent work which has been accomplished in the treatment of cleft palate by Dr. Truman Brophy of Chicago." Mr. Owen is widely known as a most able teacher and lecturer in surgery, and this work fully bears out his reputation. Commencing with a brief but sufficient and lucid account of the development of the palate and lip in the first chapter, Mr. Owen then describes, under the title of "material," the instruments, sponges, and gags, indicating his preference in each instance. He then makes some cogent remarks on the assistant, anaesthetist, and choice of anaesthetic, and the all-essential preparation of the patient. He expresses the opinion that the most favourable time for operating on a cleft palate is between the age of 2 weeks and 3 months. We are glad to find so eminent an authority expressing himself thus decidedly on this point, and we trust that surgeons in general will follow him in the course which he fearlessly advocates. In Chapter VI we find a full account of Dr. Brophy's method, which is a great advance on all operations previously practised. It is essentially early and radical, and consists fundamentally in approximating the superior maxillae so as to lessen the width of the gap. Due consideration is given by Mr. Owen to the closure of the cleft palate after infancy, and he urges that—

> However wide a cleft of the hard and soft palate may be, it is advisable to operate upon the entire cleft at once rather than to divide the operation into two parts, one for the hard palate and one for the soft palate.

The after-treatment, as described in Chapter VIII, is thoroughly sound, and the education-factor in the improvement of the voice is insisted upon. As to the causes of failure and of incomplete successes the writer wisely insists that the chief is that the area of operation has become septic. In such a case Mr. Owen takes advantage of the temporary immunity produced by the septic infection to operate so soon as the effects have subsided; and he further suggests the possibility or probability of rendering the child immune before any operation on the palate by injecting antistaphylococcic serum. The final chapter on Hare-Lip is interesting, and some useful hints can be obtained from it.

We have reviewed this little volume at some length, because we feel that it is a most valuable contribution to the literature of this subject. As we should expect from Mr. Edmund Owen, it is written in a clear and instructive manner. The matter is excellent, and the work is full of practical advice and directions so distinctly detailed that all may fully understand. It is only when a writer is fully master of his subject, as the author is, that he can convey conviction so thoroughly.

ORTHOPAEDICS OF THE SPINAL COLUMN.

In his manual of the orthopaedics of the spinal column[9] Dr. Chipault gives an interesting account of the many affections peculiar to this part. The volume is not a compendium of other people's views and illustrations, but is evidently founded on personal knowledge and observation, and is a digest of the author's wide experience of the subject. As such we welcome it heartily. It may be thought that the absence of illustrations detracts from the value of the book, but, unless a writer has some very original and unusual points to elucidate, it is better not to fill up pages with stale illustrations, but, as Dr. Chipault has done, to give accounts of cases and make pregnant suggestions for treatment. The work is divided into three parts—the anatomy and physiology of the spinal column, the examination of the spine, and a study of vertebral lesions from a therapeutic point of view. The author rightly insists upon the necessity of careful palpation of the spine for local and general rigidity, and says that it should be practised in the erect, sitting, and horizontal position in all cases. He points out that there are certain normally hyperaesthetic vertebrae, and quotes cases showing how mistakes have been made by disregarding this item of common knowledge. The remarks on hysterical spine are very apposite and the cases quoted striking. Naturally, Dr. Chipault recommends his own operation, and with much cogency, too, when he deals with *redressement* or forcible correction of the deformity of Pott's disease. He is evidently convinced that the gap does not fill up with bone, and therefore wires the spinous processes together. There are many other points we could allude to, but we have said enough to show that this little work is original and worthy of its author's reputation.

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[7] *Serums, Vaccines and Toxines in Treatment and Diagnosis.* By W. Cecil Bosanquet, M.A., M.D (Oxon.), F.R.C.P. London: Cassell and Co. 1904. (Crown 8vo, pp. 344. 7s. 6d.)

[8] *Cleft Palate and Hare-Lip: The Earlier Operation on the Palate.* (Medical Monograph Series No. 10.) By Edmund Owen, M.B., F.R.C.S., Surgeon-in-Chief to the French Hospital, Consulting Surgeon to St. Mary's Hospital and to the Hospital for Sick Children, Great Ormond Street. London: Baillière, Tindall, and Cox. 1904. (Cr. 8vo, pp. 103, 39 illustrations. 2s. 6d.)

[9] *Manuel d'Orthopédie Vertébrale* (Manual of the Orthopaedy of the Spinal Column). Par le Dr. A. Chipault (de Paris). Paris: A. Maloine. 1904. (Crown 8vo, pp. 243.)

A Public Lunacy Service in Italy.—At the last Italian Congress on Mental Diseases held at Genoa there was much discussion on the question whether lunatic asylums should be made State institutions. The Congress finally passed a resolution which was strongly supported by Professors Felici, Tamburini, and Tanzi, that the speciality of psychological medicine should be constituted a public service. The whole question is to be further debated at the forthcoming meeting of the Congress in Vienna.

NOTES ON BOOKS.

THE nineteenth volume of the *Transactions of the American Climatological Association*[1] contains several papers which will well repay perusal by those engaged in the campaign against tuberculosis. This society devotes itself to the ascertainment of facts concerning health resorts *in esse* and *in posse*, and to the study of those diseases of the thoracic organs into the treatment of which considerations of climatic environment commonly enter. The address of the president contains some useful observations on the care which should be exercised to avoid *post hoc, propter hoc* conclusions as to the beneficial effects of one climate or another.

The second and third volumes of the fourteenth series of *International Clinics*[2] for 1904 are both remarkable for groups of papers on matters of practical interest. In the second volume there is a group of nine papers on diseases of warm climates, and in the third a group of twelve on syphilis. Among the more important of the first group are a paper on the spread of disease by insects, with suggestions regarding prophylaxis, by Major C. F. Mason, and papers on sleeping sickness, haemoglobinuric fever, uncinariasis, and liver abscess, one of the latter being by Mr. James Cantlie. A practical paper that should be generally welcome is on the treatment and mode of life to be pursued on return to a cold climate by those suffering from the commoner affections incidental to a sojourn in tropical countries, by Dr. Andrew Duncan. Among the papers on syphilis are the following: One on uncertainty as to syphilitic inoculation, by Mr. Campbell Williams; on syphilis of the nervous system, by Dr. W. G. Spiller; fetal syphilis, by Dr. J. W. Ballantyne; and a remarkable paper on syphilis and suicide, by Dr. Alfred Fournier. In each volume there are, in addition, groups of papers on treatment, medicine, and surgery; and in the second volume papers on pediatrics and rhinology, and in the third on gynaecology and neurology. In each volume there are valuable plates, coloured and uncoloured, and numerous figures.

Aspects of Social Evolution,[3] by Mr. J. LIONEL TAYLER, M.R.C.S., is the first and introductory volume of what is intended apparently to be a series of studies of the relations of sociology to other sciences. The author deals at considerable length with the scientific questions underlying heredity and natural selection as forming the basis of the whole subject, and then gives a full description of natural temperaments illustrated by some clever diagrammatic representations of the facial appearances resulting from one or the other. By temperaments the author means the various primitive advanced and degenerate types of mankind which he endeavours to show always have and always must exist in all ranks of society: they cannot be created by environment, but they can be affected by it, and their perpetuation favoured or the reverse. The author is evidently strongly impressed with the importance of an adequate recognition of the bearing of temperament upon all questions of sociology, especially by medical men, who, he thinks, are destined to exercise much more influence upon social evolution in the future than heretofore. The book is in many ways interesting, but not always as easy to read as it might be.

In *Plant Disease and its Relation to Animal Life*,[4] Mr. E. F. WRIGHT contends that the condition of the higher plants known to botanists as chlorosis, is due to an absence of iron from their chlorophyll, and that the consumption of such unhealthy plants and their products by animals induces in them a corresponding deficiency of haemoglobin. The resulting anaemia is the cause rather than the effect of such diseases as tuberculosis, cancer, leprosy, etc., and further that the deficiency of iron in animals is the great predisposing cause in them of zymotic disease.

Preaching and Healing[5] is the title of the report of the C.M.S. Medical Mission Auxiliary for 1903-4. It contains, in addition to general accounts of the work done during the year, extracts from the reports of those in charge of the various stations, many of which are very interesting. It does not, however, contain any clear account of the medical staff and its distribution, and the one page devoted to an account of expenditure seems curiously brief when compared with the 80 or 90 pages given up to the details of receipts.

[1] *Transactions of the American Climatological Association.* Vol. xix. Philadelphia: Published by the Association. 1903. (Demy 8vo, pp. 296.)

[2] *International Clinics.* A quarterly edited by A. O. J. Kelly, A.M., M.D. Vols. ii and iii. Fourteenth series. 1904. London: J. B. Lippincott Company. 1904. (Demy 8vo, vol. ii, pp. 322, vol. iii, pp. 308. 10s. 6d. each volume.)

[3] *Aspects of Social Evolution.* First Series. Temperaments. By J. Lionel Tayler, M.R.C.S. London: Smith, Elder and Co. 1904 (Demy 8vo, pp. 316. 7s. 6d.)

[4] *Plant Disease and its Relation to Animal Life.* By E. F. Wright. London: Swan Sonnenschein and Co. 1903. (Demy 8vo, pp. 168. 3s. 6d.)

[5] London: Church Missionary House. 1904. (Demy 8vo, pp. 174.)

NOVA ET VETERA.

DRUGS AND DRUGGISTS IN INDIA.

SOME years ago I began to collect what I termed illustrations of parallel medicine, but so vast was the subject that I had not leisure to go on with it. It is no doubt the case that in all countries men may, accidentally perhaps, be led to use very similar remedies for much the same purposes, but their discoveries will depend very much upon the differences of the religion, custom, and habits which prevail in them. In my remarks on this large subject, I will include observations on miscellaneous matters, on diet, as well as on remedies which are used both externally and internally.

Caste and religion in India very much affect the diet of the sick. To start with, there is the broad distinction between the eater of animal food and the vegetarian, but even amongst vegetarians there are many things to which objection is taken, as for example, the strict Jain of Western India will not eat the roots of some vegetables, because they are, he says, like the testicle. I quote from my medico-topographical account of Jeypore in further illustration of this subject.

> The question of diet is one of extreme difficulty in Indian hospitals. Eggs, for example, are refused by many who take other animal food, by others because they hold that they contain the principle of life; by others because they are generally laid by the domestic fowl, which lives on garbage. Curiously enough, many persons do not object to eating the eggs of the duck. High-caste Hindus will not eat turnips, because Mussulmans eat them. Many Mussulmans refuse the latter but eat onions, which nearly all Hindu castes, except Brahmans, also take. Brahmans and Baneahs use asafœtida, cumin, and garlic, instead of onions. Jains of the strictest kind will not even drink water from the spring, because it contains life, but use that which has been drawn by other people from the wells, as the sin of destroying life then falls on the latter instead of on themselves. Chaube Brahmans do not take potatoes or cabbages, because they were introduced into India by foreigners.

Dr. Wilson says of the Sindh Brahmans, who are Sarswats and Yajur Vedas, that

> In using animal food they abstain from that of the cow and tame fowls, but eat sheep, goat, deer, wild fowl, birds of most species and fish killed for them by others. They also eat onions and other vegetables forbidden in the Smritis (codes of law).

Buddhist Phongyas (priests) in Burmah will even eat flesh if the animal be killed by others. Jain Jatis, or Jain priests, will drink boiled water if it has been boiled by a householder. The priest does not seem to think that he is responsible for any soul but his own, nor to care what will become of it. I once had a long conversation with a Jain ascetic of the strictest kind, one who covered his mouth in order to keep out all forms of insect life lest he should kill anything, and who swept the ground carefully before he sat down, and who never washed himself for the same reason, but he would not admit that he was doing wrong when he made a housewife a sinner because she boiled water for him. It was entirely her own fault, and in any case she could not have gone directly to heaven, because in their branch of the Jain faith, the Digambara, or sky-clad sect—that is, worshippers of naked images—she could not go directly to heaven without going through another birth in the form of a woman.

There is a strong prejudice against the use of milk in fever. Many women will not look at food until they have gazed on the face of a certain image in its own temple, or they have seen a revered personage, who is usually their spiritual guide, the first thing in the morning. The orthodox have many other restrictions, even in health, and these are very seriously increased in the case of their widows, who should eat one full meal only in the day, and should fast for the whole day at stated intervals every month. The above are but a few of the restrictions which apply to some of the natives of India, and there are many others, which differ in different provinces, and even in different districts, as well as in different castes, families, and tribes. It would take almost an *Encyclopaedia Britannica* to contain all the facts.

Vast as is the subject of diet, even still more vast is the question of custom. Twenty years ago I had some difficulty in treating some Brahman Sepoys from the native State of Rewah, who had come to Jeypore with selections of the Crown jewels, which, at my request, were being lent for display at the exhibition then being held in that capital. One or two of them fell sick, and nothing could be done with them, because they refused to take either food or drink from any but their own wives or relations, who had not come with them, and they were too ill to help themselves. Free movement by rail and the Pax Britannica have done much to modify ancient ideas and customs, and many a man will do on a journey what he dare not do at home, and the gods will excuse him when he is in a difficulty, if he is not too public in his breach of rule and is sufficiently orthodox to pay his offerings and to keep to his faith in his own abode. On one occasion a friend of mine had a very strict Brahman, of the same subdivision as his own, staying with him, but he was soon at the point of death from a sudden attack of some kind, and, as was no doubt correctly thought, because he would not take proper nourishment. However that may be, he did remarkably well on some jugged chicken, which, with a small quantity of brandy, his friend, entirely on his own authority and belief in its merits, thought proper surreptitiously to give him. He said that the sin, if any, would fall on his own shoulders and, in any case, would be easily wiped out by a few prayers and ceremonies.

Custom is a very terrible thing in the case of women in childbirth, and in all matters concerning the female sex which require ceremonial treatment such as was enforced under the laws of Moses. Hindu women must be removed to a special chamber when a birth is expected, and this room is generally the worst in the house, though, happily, opinions are changing in this matter. It is kept at a high temperature and is allowed to become very dirty and uncomfortable, and the woman is given hot spices and heating food, so that it is not wonderful that many of them and still more children die on these occasions from lockjaw and other disorders.

There are, of course, many remedies which have been proved, empirically, to be of much value, and it is thankfully acknowledged that Indian opinion, amongst the educated classes, has much changed for the better, but there is still immense work to be done before a vast amount of preventable suffering can be relieved. I am now, however, writing chiefly of the beliefs and practices of the more ignorant, and particularly of the peasants, the artizans, and the shop-keeping classes. When a villager has a bad ulcer of the leg he will appear at a dispensary with a peacock's feather tied round about the part, in the firm belief that it will assist in the cure. In cases of chronic dysentery or bowel disease a man wears a silver ring round his great toe, to ward off a recrudescence of his trouble, or another may apply rags, covered with his own urine, to a wound or to an ulcer, while he regards water as a deadly poison in such a case. A countryman, who is knowing in the treatment of animals, will perhaps bleed a camel in the hind off-foot for an affection of the nose, because that is the nearest point to the ground and the surest direction for the disease to escape.

The favourite remedy, however, for both regular and irregular practitioners is the Gul or actual cautery, and this is applied all over the body, and particularly in cases of enlarged spleen. In some places it is to be feared that many young children are severely tortured, and even die from the effects of this practice, which is universal in the East, and especially in countries in which the Yunani (Greek), or humoral system of pathology, prevails. It is practised in India by Hakims, or Mohammedan physicians, who are professedly followers of Hippocrates, Galen, and Avicenna, but are sadly ignorant in these days of the works of those venerable authorities. Not long ago one of the most renowned of the practitioners of this school in Delhi died, and his son reigned in his place, his principal claim to the succession being that he possessed his father's walking cane, and so had some hope of following in his father's footsteps. There is abundant proof that the indigenous practitioner now relies mainly upon well-known European drugs, which he gives quite empirically in serious cases, as, for example, quinine in malarial fevers or ipecacuanha in dysentery. Even the Baids, or Koberajas as they are called in Bengal, who are Hindu physicians, do this, as do quacks of all kinds, and not a few of the latter are the failures of our own profession, who have not succeeded in getting qualifications from the medical schools and colleges to practise even as compounders. Many such persons make fortunes out of English drugs, which they give under long-sounding names when disguised, or when flavoured with some other substance which is calculated to suit the Indian palate. Bengal is so overrun with chemists' shops and medical halls, which are too often run by irregular and wholly unqualified practitioners, that a friend of mine, a rajah from the West of India, told me that he dare not stay in the capital any longer because every second house seemed to be a doctor's shop, which implied that there was either a phenomenal amount of sickness or the people lived on physic. It is said that in one of the suburbs of Calcutta not very long ago one of the most successful men was at one time the cook of an old civil surgeon, and that this was his only claim to practice.

Most of the chemists in Bengal have a homoeopathic as well as what they call an allopathic side, and perhaps even an electro-biological section, in any of which the sick may get the kind of aid which is most to their taste. It is indeed the misfortune of most Indians that, instead of relying implicitly on a physician, they have themselves to choose their own form of treatment at the last moment, because each of their friends will advise something which has been efficacious when he was himself sick, and perhaps half a dozen of them will dispute about the case in the sick man's presence. Even when a prominent European is ill, letters will arrive from all quarters advising certain forms of treatment which are likely to prove valuable. The Bengali, being members of a timid and non-fighting race, as a military surgeon of that community once wrote to the authorities when he asked to be excused from going on active service, have a strong inclination towards homoeopathy, and to avoid operations which they say are hurtful to their constitutions. On the signboards of Calcutta chemists' shops one may often read peculiar advertisements, such as the following: "Piles cured without operation," and on one was this comprehensive statement, "Physician and Surgeon ....'s Medical Hall, for all diseases, especially those regarded hopeless and lingering." Many of these institutions are situated not far from the Medical College, so that the nearer the lamp the less brilliant is the light. If the above are some of the results of our education, what must be the state of things under the indigenous systems?

It seems hardly necessary to dwell at any length, after the above observations, on the actual medicines which are administered; suffice it to say that out of 3,000 drugs in the shops of Ajmere more than half a century ago, Dr. Irvine found that the proprietors themselves only believed in about 300, and that many of these were given for the promotion of salacity, or had long been abandoned in European practice because they were inert, or had been replaced by something better, or more pure if of the same nature. Most of these things are still sold, showing that there is a demand for them. Some years ago I published a series of translations from the *Amrit Sagar*, or the Ocean of Nectar, a popular work in Hindu on Indian medicine, which one of the old chiefs of Jeypore, being moved, as it is said in the introduction, by his infinite pity for the sufferings of the poor, had caused to be compiled out of the ancient classical books for the public good. In this I gave the formulae of many popular recipes, of which a large number, like the Venice Treacle or Theriacum of old, are composed of many drugs, apparently on the principle that one at least will hit the mark. This is still their great secret I imagine, and it is not likely that it will permit of much progress, especially as it is accompanied by an absolute ignorance of anatomy, though indeed I perhaps ought to qualify this statement by the remark that I have seen an advertisement or two to the effect that the person who has inserted it in the paper was qualified to practise both the Vedic or the Hindu system, and the European one, in the latter case, because he had studied in a Government medical school, or had obtained a bogus American diploma. Even an enlightened man may do a great deal in order to secure a great end, thus it is said that one who filled a very prominent position, in the hope of obtaining an heir to his honours and dignities, not very long ago regularly partook of cock-sparrow soup, and on one occasion, that he cut off the heads of a hundred male goats for the same purpose.

It is quite true that there is gradually growing up a change of opinion in these matters; moreover, it is a time of transition, and it behoves us to be careful, and to treat many prejudices, such as I have mentioned, with some sympathy, and to be particularly lenient when it is a question of religion. We should therefore be prepared to give a Brahman, a Baneah, or a Jain, when asked to do so, medicines in the dry instead of in the moist state, or to leave out spirituous preparations when we are treating a Mohammedan who, if of the straightest sort, should so detest alcohol that if a drop of it were to fall on a garment he would have the piece cut out.

It might well be asked if anything is being done to remedy some of these evils, and whether any of them are remediable. It would no doubt be unwise to interfere with the indigenous practitioner in a very active manner; but even he, many thoughtful natives think, might be compelled to produce some proof that he had a claim to treat the sick; and I myself, when Superintendent of Dispensaries in a great native State, was requested by Indian gentlemen in authority to do something of this kind, but with some regret had to abandon the idea, chiefly because there were many priests who mixed up a little medical relief with their ministrations. If there are difficulties in dealing with persons of this class, there ought to be none in regard to the failures of our own colleges and schools, but the Secretary of State has always found it difficult to approve anything in the nature of a medical Act or registration for India. This being the case, I asked for and obtained permission to prepare a register of qualified practitioners in Bengal, and for two years past it has been published. As no special establishment was allowed for the undertaking, and formal inquiries were not allowed to be made, the first year's register was naturally imperfect, but the second is more correct, and, if the scheme is continued, should in time enable the public to see who are really qualified, and so, ere long, insure that the failures of irregular practitioners and quacks are not attributed to those who have lawful diplomas.

T. H. HENDLEY, C.I.E., Colonel I.M.S. (Ret.)

THE PLAGUE.

INDIA.

DURING the week ending October 29th the deaths from plague in India numbered 15,994, against 13,871 and 17,583 in the corresponding week of last year. The principal returns were: Bombay city 54, Bombay districts 9,636, Calcutta 4, Bengal districts 1,807, North-West Provinces and Oudh 1,445; Punjab 748, Rajputana 302, Kashmir 33, Karachi 5, Central Provinces and Berar 429, Central India 798, Hyderabad 714, Madras districts 495, Mysore 663.

SOUTH AFRICA.

Port Elizabeth.—During the weeks ending October 29th and November 5th, no fresh cases and no deaths occurred during the weeks in question. One case of plague only remained under treatment. Plague-infected rats continue to be found at Port Elizabeth and East London.

MAURITIUS.

During the weeks ending November 17th and 24th, the fresh cases of plague numbered 27 and 17, and the deaths from the disease 13 and 13 respectively.

HONG KONG.

During the weeks ending November 12th and 19th, the fresh cases of plague numbered 1 and 4, and the deaths from the disease 1 and 4 respectively.

HAMBURG.

Suspected Case of Plague.—A telegram dated Hamburg, November 20th, states that the British steamer *Blagdon*, which reached Hamburg from San Nicholas on November 14th, has been kept in quarantine pending inquiry with a suspected case of plague on board the vessel. After being detained fourteen days, the ship was allowed to proceed, as the suspicion proved to be groundless.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held on November 24th at 6, Suffolk Street, Pall Mall, with Dr. F. H. CHAMPNEYS in the chair.

Death of Mr. Heywood Johnstone.

A letter was received from Mrs. Heywood Johnstone thanking the Board for their resolution of sympathy passed at the meeting of October 27th last.

Resignation of Miss Oldham.

A letter from Miss Oldham, resigning her position as a member of the Board representing the Royal British Nurses' Association, was received and accepted with regret.

Payment of Medical Men Called by Midwives in Emergencies.

A letter was received from the Honorary Secretary of the Metropolitan Counties Branch of the British Medical Association enclosing copy of a letter addressed by the Branch to the London County Council and asking for the co-operation of the Board with the London County Council in obtaining powers from Parliament to pay registered medical practitioners when called in by midwives in emergencies. Upon the motion of Mr. E. PARKER YOUNG, seconded by Dr. J. WARD COUSINS, it was resolved:

That the Honorary Secretary of the Metropolitan Counties Branch of the British Medical Association be informed (1) that this Board agrees that statutory provision should be made for the payment of the services of a registered medical practitioner when called in by a midwife in accordance with the rules of the Board; (2) that the Board has already forwarded a resolution to this effect to the Privy Council.

The Number of Women on the Roll.

After consideration of applications for certificates, the names of 1,068 women were passed under Section 11 of the Act, and ordered for entry on the Roll. The following table shows the numbers of the various qualifications at present appearing on the Roll:

Royal College of Physicians of Ireland ...	4
Obstetrical Society of London	3,411
Rotunda Hospital	140
Coombe Hospital	49
Queen Charlotte's Hospital	215
Liverpool Lying-in Hospital	146
British Lying-in Hospital	5
Glasgow Maternity Hospital	123
St. Mary's Hospital, Manchester	134
Manchester Maternity Hospital	25
City of London Lying-in Hospital ...	53
Royal Maternity Hospital, Edinburgh ...	31
Salvation Army Maternity Hospital ...	14
National Maternity Hospital, Dublin ...	11
Limerick Lying-in Hospital	4
Cork Lying-in Hospital	5
Eden Hospital, Calcutta	2
Women in bona-fide practice, July, 1901 ...	6,166
Total enrolled...	...10,538

Interpretation of the Midwives Act.

In Section 1 Subsection (2) the Midwives Act states that no woman shall, after April 1st, 1910, habitually and for gain attend women in childbirth otherwise than under the direction of a qualified medical practitioner unless she be certified under the Midwives Act. In regard to this the Board received a letter from the Clerk of the Monmouthshire County Council asking the Board's construction of the words "otherwise than under the direction of a qualified medical practitioner."

After some discussion, in the course of which Mr. PARKER YOUNG pointed out that it would not be a wise thing for the Board to give a general opinion on the matter, and Dr. WARD COUSINS observed that the question was one which could only be settled in a court of law, it was decided that the Secretary should reply to the letter stating that the Central Midwives Board was unable to give a general answer to the inquiry because it was largely a legal question on which no authoritative decision had been given.

Midwives on the Roll who cannot Read or Write.

Dr. WARD COUSINS said that at Portsmouth the County Council had received applications from several women to be put on the list of midwives who had received certificates from the Central Midwives Board, but were unable to read or write. Dr. Ward Cousins said he was only asking for an opinion of the Board on the matter, and it was decided that though the Board was bound to put on the roll any woman who, at the time of the passing of the Midwives Act, had been for at least one year in bona fide practice as a midwife, and bore a good character, nevertheless the local supervising authorities were not bound to have them on their lists.

The Reporting of the Proceedings of the Board.

Dr. CULLINGWORTH moved:

That during the consideration of matters having reference to the judicial or penal powers of the Board, or of applications for recognition or approval on the part of institutions as training schools or of medical practitioners as teachers, the representatives of the press shall be requested to withdraw.

Sir WILLIAM SINCLAIR said he was sorry to hear Dr. Cullingworth move such a resolution. He might have waited till the representatives of the press had given evidence of any want of judgement. The resolution proposed by Dr. Cullingworth required two or three words to make it complete, and those were to exclude the press on all other occasions; and, further, Dr. Cullingworth made so many exceptions, that Sir William Sinclair said he really could not see on what occasions Dr. Cullingworth would trust the press at all.

Mr. PARKER YOUNG said it was a protection to the public to have the proceedings of the Board in carrying out the duties of an Act of Parliament reported. He considered that the greater the publicity the better for all concerned.

The consideration of this subject was postponed for reference to be made to the procedure of the General Medical Council.

The Board adjourned to December 1st, 1904.

THE TEACHING OF HYGIENE AND TEMPERANCE.

It will be remembered that last July a representative deputation presented to Lord Londonderry, the President of the Board of Education, a petition signed by upwards of 15,000 of the medical profession asking that hygiene and temperance should be placed amongst the compulsory subjects in elementary education. The reasons for making this request were briefly set forth in the petition which was published in our columns on July 16th, 1904, p. 129.

A circular letter signed on behalf of the Committee of the medical profession by Sir William Broadbent has now been issued to the chairmen of the principal Education Committees in the United Kingdom; the letter asks that the petition should be brought before the local Education Committee and explains the nature of the proposals therein made. The code for public elementary schools in force at present prescribes that the education given in every public elementary school shall be based on a graduated course of instruction in the following subjects:

1. *The English Language.*
2. *Arithmetic.*
3. *Knowledge of the Common Phenomena of the External World*, with special reference to the formation of a habit of intelligent and accurate observation, and to the application of that habit—in conjunction with simple forms of experiment—in the daily life and surroundings of the scholars.
4. *Geography.*
5. *History.*
6. *Drawing.*
7. *Singing.*
8. *Physical Exercises.*
9. *Plain Needlework* (for girls).

The code adds that the subjects (1) to (6) should be taught in relation to each other, and with reference to the surroundings of the children.

The proposal made by the Medical Committee is that subject (3) in the list should changed to read "hygiene and temperance." The circular letter states that the Committee has "fully considered the undesirability of introducing, as it were, a new subject into the code," but suggests that by reconstructing the time table less time might be given to the subjects of geography and history, "in order to provide the necessary allotment of time for instruction in the far more essential laws of health and temperate living." This opinion is fortified by a quotation from the report of the Committee on Physical Degeneration, which advocated "the systematic practical training of teachers to enable them to give rational instruction in schools on the laws of health, including the demonstration of the physical evils caused by drinking." Attention is called to the fact that the Board of Education is formulating provisions for the training of teachers in hygiene, and the hope is expressed that the local education committees will make provision to secure that the teachers themselves shall be thoroughly trained in giving instruction, not only in hygiene but also in temperance, since "the disastrous effect produced by alcohol on the nation requires that the subject of temperance should be given a prominent position in any syllabus of teaching in hygiene and elementary physiology."

Appended to the report are some particulars of the provisions which exist in the British colonies, in the United States of America, in Sweden, Denmark, Holland, and Italy with regard to the teaching of hygiene and temperance. Accompanying the letter is a scheme for courses in hygiene and temperance for boys and girls of different ages in the public elementary schools in the United Kingdom.

THE SANITARY REGULATION OF HAIRDRESSERS' SHOPS.

The report on the sanitary regulation of hairdressers' and barbers' establishments, presented by Dr. Collingridge, Medical Officer of Health, to the Sanitary Committee of the Corporation of London and approved by it on November 24th, contains many points of interest. In October, 1903, Dr. Collingridge issued a circular letter asking for information as to the regulations in force in foreign countries and British Colonies.

Regulations in Foreign Counties.

Sixty replies were received, 46 from foreign countries and 14 from colonies. Sanitary regulations to control the businesses of barbers and hairdressers exist in few of the civilized States of the world. There are none in force in any of the British Colonies. Regulations of one kind or another are in operation in the following places: Anhalt, Waldeck, Hamburg and Danzic in Germany; Sweden; Servia; Lausanne, Vevey and Rolle in Switzerland; Turkey; Bolivia, Salvador and Uruguay; and far Japan. Only one English-speaking State—New York—is in the list. In the last-named place, every practising barber must register and receive a licence; and also conform to rules and regulations. The law there has met with little opposition, and upwards of 15,000 barbers are said to have registered. In Germany, although the matter has has not yet been made the subject of legislation for the German Empire as a whole, regulations have been promulgated and are in force in Bavaria and some other places; cleanliness, antisepsis, and asepsis are the key-note. In the Duchy of Anhalt and in the principality of Waldeck, disregard of the regulations is punishable by a fine of up to 30 marks, or failing payment thereof, by a corresponding term of imprisonment; in Danzic the fine may go as high as 60 marks. In Sweden, the instructions are directed to the prevention of infectious skin diseases transmitted by shaving; they were issued in 1899.

The Swiss towns of Lausanne, Rolle, and Vevey have also issued regulations. In Lausanne and Vevey a barber suffering from a hair or skin disease is not allowed to carry on his calling. In 1901 the municipality of Constantinople issued regulations with regard to cleanliness and disinfection. Razors with metal handles are to be used, and, pending the procuring of such, those with bone, ivory, or tortoiseshell handles are to be well rubbed with a cloth moistened with spirit. No one suffering from contagious disease is allowed to practise barbery. Disregard of regulations are said to lead to severe punishment. In Bolivia and Salvador rules are also in force. The report contains those of Uruguay *in extenso*, the sixteen clauses going into very minute details. In a number of other countries, such as Austria, Canada, Denmark, Norway, France, Hungary, Mexico, and Peru, the trade is under some sort of supervision, and there is no doubt that regulations will be ultimately formulated and enforced. In Portugal and Liberia nothing is done. A few years ago regulations were drawn up in Guatemala, but they have become a dead letter.

The City of London.

There are 180 hairdressers' saloons and toilet clubs in the City of London, and from the health point of view there is much room for improvement in the way the business is conducted in many of them. Dr. Collingridge considers the present state of things discreditable to a civilized nation. He has been in communication with the Incorporated Guild of Hairdressers. There is evidence that the trade generally is in favour of a high standard. The Guild is prepared to issue regulations which will apply to the whole of the country. In addition to the premises being in good sanitary condition, regulations provisionally agreed to and recommended by Dr. Collingridge are as follows:

That it is advisable that a register be kept at the Guildhall of such hairdressers, etc., as are willing to be bound by these regulations and to exhibit a copy of the same in their establishments.

That the certificate of sanitary conditions required before registration be granted by the Medical Officer of Health for the City of London to the guild in respect of all such establishments within the City limits.

That the same be renewed annually.

That the necessary inspection and reinspection, so far as the City is concerned, remain in the hands of the officers of the City of London.

THE AUSTRALASIAN MEDICAL CONGRESS, 1905.

The seventh session of the Australasian Medical Congress will be held in Adelaide, South Australia, during the week, September 4th to 9th, 1905, under the Presidency of Professor E. C. Stirling, C.M.G., M.D., F.R.C.S., F.R.S.

The Patrons are Lord Northcote, Governor-General of the Australian Commonwealth; Lord Tennyson, late Governor-General; Vice-Admiral Sir Harry Rawson, R.N., Governor of New South Wales; Major-General Sir Reginald Talbot, Governor of Victoria; Major-General Sir Herbert Chermside, R.E., Governor of Queensland; Sir George R. Le Hunte, Governor of South Australia; Admiral Sir Frederick G. D. Bedford, R.N., Governor of Western Australia; Lord Plunkett, Governor of New Zealand; Captain Barton, Administrator of British New Guinea; Sir S. J. Way, Bart., Chief Justice and Lieutenant-Governor of South Australia.

The officers of the Congress are as follows:

Treasurer, W. T. Hayward, M.R.C.S.

General Secretary, B. Poulton, M.D.Melb., M.R.C.S.

Associate Secretary, J. B. Gunson, M.B.Adel., M.R.C.S.

Vice-Presidents: J. C. Verco, M.D.Lond., F.R.C.S., President Adelaide Congress, 1887; Sir T. N. Fitzgerald, C.B., F.R.C.S.I., President Melbourne Congress, 1889; P. Sydney Jones, M.D.Lond., F.R.C.S., President Sydney Congress, 1892; F. C. Bachelor, M.D Durh., President Dunedin Congress, 1896; John Thomson, M.B., Ch.B.Edin., President Brisbane Congress, 1899: Hon. G. H. Butler, M.R.C.S., L.R.C.P., President Hobart Congress, 1902; Surgeon-General W. D. C. Williams, C.B., M.R.C.S., L.R.C.P., Director-General of the Army Medical Services of the Commonwealth, Melbourne; Fleet Surgeon James O'B. Williams, M.D., Ch.M. (Royal Univ. I.), L.R.C.S.I., Senior Naval Medical Officer on the Australian Station, Sydney.

The work of the Congress will be divided into seven Sections, as follows:

1. MEDICINE.—*President*: Daniel Colquhoun, M.D.Lond., M.R.C.P., M.R.C.S., Dunedin.

2. SURGERY.—*President*: F. D. Bird, M.B., M.S.Melb., M.R.C.S., Melbourne.

3. GYNÆCOLOGY AND OBSTETRICS.—*President*: W. S. Byrne, M.D., Ch.M.Dub., M.R.C.P., Brisbane.

4. EYE, EAR, AND THROAT.—*Presidents*: A. J. Brady, L.R.C.S.I., L.K.Q.C.P.I., Sydney; W. Odillo Maher, M.D., Ch.M.Dub., M.D.Syd., M.R.C.S., Sydney.

5. PATHOLOGY, PHYSIOLOGY, AND PHARMACOLOGY.—*President*: Professor D. A. Welsh, M.A., M.D., B.Sc.Edin., Sydney.

6. PUBLIC HEALTH, ETC.—*President*: W. G. Armstrong, B.A., M.B., Ch.M.Syd., D.P.H.Cantab., Sydney.

7. STATE MEDICINE AND MEDICAL ETHICS.—*President*: G. A. Syme, M.B., M.S.Melb., F.R.C.S., Melbourne.

The State Secretaries of the Congress are:

New South Wales.—A. A. Palmer, M.B., M.S., F.R.C.S.Edin., Sydney.

Victoria.—G. A. Syme, M.B., M.S.Melb., F.R.C.S., Melbourne.

Queensland.—W. W. Love, M.B., M.S.Edin., Brisbane.

West Australia.—A. J. H. Saw, M.A., M.D., B.C.Cantab., Perth.

Tasmania.—Gregory Sprott, M.D., Ch.M., D.P.H.Glas., Hobart.

New Zealand.—J. O. Closs, M.D., Ch.M.Edin., Dunedin.

GENERAL MEDICAL COUNCIL.

NOTES.

Election of President.—If we may judge by the length of time spent *in camera* there must have been some division of opinion in the Council upon the choice of a President to succeed Sir William Turner. But if this were so—and we can only hazard a guess—it was not allowed to become public, as when the public were readmitted only one name was proposed—that of Dr. MacAlister, and he was unanimously elected. In the capacity of Chairman of the Business Committee, Dr. MacAlister has displayed a readiness of resource and a business aptitude which augur well for the future conduct of the affairs of the Council, and in the short remaining time of the sitting, during which he took the chair, he gave a foretaste of his quality in the speedy and orderly dispatch of business.

Penal Procedure.—At the May session of the Council it appeared that a practitioner had been to the last unaware who was the complainant in his case, and in fact supposed that it was the Medical Defence Union, whereas it was the London and Counties Medical Protection Association. On the motion of Sir William Thomson, the Executive Committee had been requested to draft an instruction to the Penal Cases Committee that complainants should be required to have communicated their disapproval to the defendant prior to the case being laid before the Council. It was pointed out by Mr. Muir Mackenzie that any general rule of the kind would be productive of inconvenience and might easily lead to miscarriages of justice, if it did not indeed open the door to blackmailing by threats of complaint to the Council. Under the present procedure there was not the least obstacle in the way of the defendant knowing at a certain stage the name of the complaintant, and the unfortunate occurrence in the particular instance was merely due to the defendant having jumped to a conclusion without making due inquiry, the Medical Defence Union having at one time investigated the case, but not having taken it before the Council.

"Bona-fide" Medical Students.—The question of the definition of the term "bona fide medical students as pupils," to which reference was made in these notes last week, arose again during the session in connexion with a case of alleged covering, in which a person registered as a medical student had prescribed. The complaint was laid by a coroner, and the defence was that the person had been employed solely as a dispenser, had transgressed his instructions, and had been at once dismissed. It appeared in the course of the inquiry that the dispenser had passed his preliminary examination so long ago as 1892, had passed no professional examinations, and had only entered at the London Hospital and registered as a student last May, having in the interim spent most of his time in Wales as a dispenser. The Council found the charge in this case not proved, but it may be well to draw attention to the exact terms of the President's ruling, which will be found at p. 213 of the SUPPLEMENT this week.

Companies Bill Committee.—The report on this subject noted a distinct gain in the direction of preventing the evasions of the Medical and Dentists Acts, which have been so extensively practised by means of company incorporation. A decision in an Irish court, endorsed by the legal advisers of the Board of Trade, lays down, as a part of the duty of registrars of companies, that they shall not register companies under titles which obviously imply evasion of these Acts. Hence—for the future, at all events—such companies will be unable to assume medical or dental titles, as they have hitherto been permitted to do unchallenged; but the remedy is only partial, for, as the letter from the Privy Council points out, they can still, if they assume a title which will pass, put anything they please into their memorandum of association, and the report points out other respects in which legislation is called for. The Council therefore reiterated its request to the Privy Council to move the Government to deal with the question. Sir Charles Ball mentioned that a test case is before the Irish courts, in which the right of a company which has already obtained registration to continue to use its objectionable title is challenged.

Invalid "Medical" Certificates.—In respect to the case in which a self-styled chemist and druggist had signed a certificate for submission to the Bootle School Board, that a child was ill, Sir Victor Horsley complained that the Executive Committee had treated the Medico-Political Committee of the British Medical Association with scant courtesy, by merely referring them to a clause in the Medical Act, with which they were perfectly familiar. He desired that the opinion of Mr. Muir Mackenzie should be taken on the question of medical certification. This opinion which is of much importance and will be found on p. 212, was delivered on a succeeding day, and was to the general effect that even when a body was directed by an Act of Parliament to require the certificate of a duly qualified medical man, there was, if no penalty for its doing otherwise were attached, no ready legal remedy except an appeal to the Attorney-General, who would be unlikely to take action unless habitual disregard of the requirement were shown. As there is no such proviso in the Education Acts, he thought that School Boards were at liberty to accept any form of evidence which they considered sufficient. No offence had been committed by the so-called chemist in writing a certificate (unless, indeed, he had transgressed the provisions of the Medical Acts or of the Pharmacy Acts in respect of the use of title), and it appeared in the course of discussion that the practice of various School Boards—and, indeed, of individuals acting on behalf of the same School Board—differed much in respect of the evidence which they required in excuse of non-attendance.

Elementary Biology.—The answers received from a number of bodies show a remarkable consensus of opinion that elementary biology is a subject of real value to the medical student. The report of the Special Committee, which was brought up and explained by Sir Victor Horsley, advised, as the outcome of a study of these answers, the lightening of the course by the omission of classificatory botany and of botanical anatomy and histology, the retention of zoological morphology, the teaching of which may be combined with some amount of elementary physiology, and of elementary embryology, which is, to an extent not always recognized, in close relation with both anatomy and zoological morphology. They consider that a general syllabus should be drawn up, as has been done for chemistry and physics, and that the careful study of a small number of types would suffice. In this way the curriculum may be somewhat lightened by including only those branches which seem to be of special value and to bear directly on the medical student's subsequent work.

MEDICAL NEWS.

The Kendal Memorial Hospital, which was built in 1870, and contains 25 beds, was made residuary legatee under the will of the late Mrs. Holme Simpson, of Kendal and Penrith, and will eventually benefit, it is stated, to the extent of £10 000.

The annual dinner of the Otological Society of the United Kingdom will be held in the Trocadero Restaurant on Monday, December 5th, when Dr. Thomas Barr (President) will take the chair at 7.30 p.m. The secretary of the dinner is Dr. Herbert Tilley, 89, Harley Street, W.

A discussion on the treatment of pulmonary tuberculosis is to take place at a meeting of the Harveian Society on Thursday next at 8.30 p.m. It is to be opened by Dr. Hector Mackenzie, while Sir William Broadbent and Drs. Kingston Fowler, Ewart, Symes Thompson, and J. E. Squire and others are expected to take part in it.

Bequests to Medical Charities.—Under the will of the late Miss Scarrow, of Sunderland, the Royal Infirmary in that town benefits to the extent of £500. Mrs. Emma Catherine Short, of Fakenham, Norfolk, who died on November 2nd, left to the Victoria Hospital for Children £500 for a "McKellar cot" and £300 to the Kelling Open-Air Sanatorium.

Presentation.—The president, officers, and members of the Sheriff Hutton Free Gift Society on November 25th presented Dr. Gramshaw, of York, on his resignation of the office of surgeon, with a silver salver bearing the following inscription: "Presented to F. Sidney Gramshaw, M.D., F.R.C.S.Edin., as a token of respect and esteem for nearly thirty years' faithful service."

Entrance Scholarships.—The following scholarships have been awarded at the London (Royal Free Hospital) School of Medicine for Women: St. Dunstan's Medical Exhibition of £60 for five years to M. Muncey; the School Scholarship of £30 to E. M. Morris; two Mackey prizes of £20 each to E. Griffiths and E. H. Lepper; the Fanny Butler Scholarship of £14 10s. to G. M. Stagg.

International Congress of Medical Electrology.—The Third Congress of Medical Electrology and Radiology, which was to have been held at Amsterdam next year, has been postponed till 1908. The reason is the decision of the Berlin Radiological Society to celebrate the tenth anniversary of the discovery of the *x* rays by an International Congress presided over by Professor Roentgen.

Consumptives and the Civil Service in America.—The United States Civil Service Commission has decided that hereafter persons suffering from consumption will not be employed in the post-office or in any other Government position from which they are likely to spread the disease. According to an order recently sent out, all applicants must in future submit to a physical examination.

Dr. Bastian has contributed to *Nature* a long illustrated letter on heterogenesis. He records a number of experiments made with vegetable infusions in which he has observed the appearance in the zoogloea masses which form as a scum on the surface of such infusions, the appearance of bacteria, monads, and other low organisms. He states that the nature of the organisms which appear varies with the conditions as to access of light and air to the infusions. He criticizes the attitude of bacteriologists who attach more weight to their own experiments than to those performed in Nature's laboratory, but it will seem to many that the force of his own conclusions suffer from his failure to observe those rigid precautions against accidental contamination which are part of the routine observed in bacteriological laboratories.

British Gynaecological Society.—The annual dinner of the Society took place on November 24th at the Café Monico, Piccadilly Circus, when the President, Professor John W. Taylor, occupied the chair. A party of about eighty assembled, many of whom were ladies. The loyal toasts having been received with much enthusiasm, Dr. Macnaughton Jones proposed the toast of "Our Guests," referring in graceful terms to the ladies who were present. Sir John W. Moore and Sir Charles Ball responded. The toast of "The Society" was proposed by Professor E. H. Bennett, in the absence of Dr. W. Collier, President of the British Medical Association. Professor Bennett said that gynaecology was in the forefront of surgery; and that the Society, now in its twentieth year, had witnessed a notable advance in surgery since its origin. The President of the Society, who replied, said that never before had physicians and surgeons brought such relief to suffering woman as in the last twenty or twenty-five years; and that the future of the Society would probably be as distinguished as its past. Mr. G. Elder proposed "The Naval and Military Medical Services." D. H. M. Ellis, Medical Director-General, and Sir Thomas J. Gallwey, C.B., P.M.O., India, replied for the two services. An excellent programme of music was performed during the evening.

The Milk Supply of Towns.—On November 28th Dr. Cautley read before the Charity Organization Society a paper on the Management of the Milk Supply in Towns, in the course of which, after laying it down that the public should be able to procure uncontaminated whole milk from healthy cows, he expressed the opinion that this ideal could be realized in two ways only, either by the amalgamation of existing milk companies or by the municipalization of the milk supply. In the discussion which followed Dr. McCleary, M.O.H. (Battersea), spoke in favour of municipalization, but Dr. Louis Parkes was equally opposed to the formation of a milk trust and to municipalization. He thought that attention should be given to safeguarding the source of the milk at the country farm, and urged that the Local Government Board should obtain power to enforce the provisions of the Dairy, Milkshops, and Cowsheds Orders. Mrs. Watt Smyth, while accepting the view that what was wanted was the enforcement of the Orders in rural districts, contended that this might be better done through the county councils, and showed how this end might be attained by a single-clause Bill empowering a county council to act in place of a defaulting local authority, and to recover from it any moneys expended in repairing its neglect.

Royal Dental Hospital, London.—The annual dinner of the staff and past and present students of the Royal Dental Hospital, London, was held on November 26th, 1904, at the Hotel Métropole, London, with Mr. Morton Smale in the chair. After the usual loyal toasts had been honoured, Mr. Morton Smale, in proposing the toast of the evening, "The Past and Present Students," said the recent investigations had proved that many gastric, intestinal, and constitutional disorders were due to insanitary mouths. Quacks were always wrong in regard to this matter, because they persuaded people to retain in their mouths unhealthy and decayed teeth that ought to be removed. The penal clauses in the Medical and Dental Acts were circumvented by persons who got their relatives and servants to join them in forming companies promoted for the sole purpose of avoiding these Acts. The British Medical Association should secure the passage through Parliament of a short Act for the suppression of irregular practice, and would deserve the gratitude of the public in so doing. Sometimes even qualified persons were guilty of quack methods, and the worst was the so-called American dentistry craze. Dentists educated in America who were professional men and not tradesmen regretted that there were some persons who claimed to practise some special dentistry unknown to qualified British dentists. Mr. J. A. Fothergill responded on behalf of the past students, and Mr. A. G. Lacey on behalf of the present students. The toast of "The Hospital and School" was proposed by Mr. A. Pearce Gould, who said that there were people who liked to separate a hospital from its school and asked what the hospital owed to the school and what the school owed to the hospital. Some had attempted to answer this question by striking a balance in columns of figures. It was not possible to settle this subject by pecuniary considerations. A hospital was bound up with its school in the same manner as those who were united in the closest tie of family life. People were asked to refuse money to hospitals which benefited by the practice of legalized vivisection; but the Royal Dental Hospital might state that that institution was not included in that category, and the names of their teachers were not published marked with a red asterisk; so Mr. Stephen Coleridge might be requested with justice to clear off the debt on the hospital and provide anything else that could be reasonably required for their work. Mr. Richard Winch and Mr. J. F. Colyer acknowledged this toast, and were followed by Dr. Dudley Buxton, who submitted the toast of "The Visitors," which was replied to by Dr. Eddowes. The duty of proposing "The Health of the Chairman" was entrusted to Mr. L. Mathieson, and after brief acknowledgement the proceedings terminated.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1904.

SUBSCRIPTIONS to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, DECEMBER 3RD, 1904.

PRE-CANCEROUS CONDITIONS.

IN his Bradshaw lecture (p. 1501) Mr. Mayo Robson points out that in the treatment of cancer we are still entirely dependent upon surgical aid. Whatever therapeutical discoveries the future may bring it must be admitted that up to the present time no form of drug treatment, inoculation, or serum therapy has been proved to possess any substantial value. The only treatment which gives the patient a possibility of recovery is free excision, and the sooner the surgeon operates the better; delay leads to dissemination, and unless the whole of the growth can be removed the chances of cure dwindle to the vanishing point. With the extensive operations recently introduced into the surgery of cancer, Mr. Robson holds that the chances of eradicating every trace of the disease, and consequently of effecting a permanent cure, are very considerably increased.

But Mr. Robson wishes to advance a step further. He recommends excision not merely for growths which are definitely cancerous, but also for a large variety of pathological conditions known to be followed, more or less frequently, by malignant growths. These morbid conditions he terms "pre-cancerous," and he goes so far as to say that "probably, if we could only find it, every cancer, whether external or internal, follows on a pre-cancerous condition." It must then be the primary duty of the surgeon to recognize these "pre cancerous" lesions and promptly excise them. Chronic syphilitic, tuberculous, or dental ulcers of the mouth or tongue which do not yield to treatment are examples of these dangerous conditions, and for skin lesions which are liable to irritation, such as warts, eczema, sebaceous tumours, ulcers, and scars, excision is also recommended. Persistent mastitis, cystic or apparently benign solid tumours of the breast, chronic gastric ulcers, and lacerations of the cervix uteri are further examples of conditions which Mr. Robson describes as "pre-cancerous" and therefore calling for operative measures.

As to the worthlessness of so-called cancer "remedies" other than surgical removal, Mr. Robson is in agreement with practically the whole of the medical profession; nor can there be any doubt with regard to [the importance of operating at the earliest possible opportunity and taking every available precaution to eliminate the whole of the malignant tissue; but whether, even in a favourable case operated upon by the most "radical" method of modern surgery, a permanent cure will be effected, is a question to which it is impossible to give a categorical answer. There are no fixed mathematical laws which control the rate of dissemination of malignant tissue. All that we can say is that the sooner the operation is performed the greater hope there is that no dissemination has occurred beyond the reach of the surgeon's knife. It is impossible for any surgeon to guarantee, in any particular case of indubitably malignant growth, that there will be no recurrence after removal; but the very valuable statistics which Mr. Robson brings forward go far to show that a recurrence may be delayed for many years (there is no special virtue in the surgeon's three-year time limit), and that, in a comparatively small number of instances, so many years may elapse without any recrudescence that the disease may, for all practical purposes, be regarded as cured.

With regard to Mr. Robson's theory of the "pre-cancerous condition," there is, of course, room for differences of opinion. Regarded as the opinion of a surgeon of very large experience, all that Mr. Robson says about conditions predisposing to cancer necessarily carries very great weight. The extreme view that every cancer follows a "pre-cancerous condition" cannot at present be substantiated, nor do we understand Mr. Robson to maintain that opinion. Like every other attempted explanation of the causation of cancer, it suffers from the difficulty which no one has hitherto been able to overcome upon the etiology of cancer we are still completely in the dark, and until some of the obscurity has been removed no explanation or theory can possibly be accepted as wholly satisfactory. Malignant growths exhibit very important and distinctive histological features. They are absolutely different from tuberculous or syphilitic lesions, from scar tissue, skin eruptions, and most of the other diseases mentioned by Mr. Robson as "pre-cancerous." The histologist has not been able to produce any evidence for terming any of these various types of lesions "precancerous." With regard to new growths, there is, in the great majority of cases, a generally-recognized histological distinction between the innocent and the malignant. Carcinoma mammae, for example, is very different from the ordinary fibro adenoma; the typical ovarian cystoma can be readily distinguished histologically from malignant disease of the ovary; and a good van Gieson specimen of the ordinary uterine "fibroid" is not at all likely to be mistaken for the very much rarer uterine sarcoma. Undoubtedly there are tissues of the so-called "adenomatous" type which are very decidedly malignant; for example, the aberrant suprarenal tissue which sometimes gives rise to malignant tumour of the kidney, the "adenomatous" type of carcinoma of the uterine body, and certain forms of cancer of the intestinal mucosa. It is, moreover, occasionally possible to find in one and the same tumour two types of tissue, the one histologically innocent, and the other definitely malignant. But, after allowing full weight to all these considerations, the broad fact remains that in nearly all the types of lesions which Mr. Robson terms "pre-cancerous" there is nothing histologically, either in the arrangement of the cells, their general appearance, the characters of their protoplasm or of their nuclei, to support the view that the tissue in question is in a preliminary stage of cancerous degeneration.

We do not, however, understand that the Bradshaw lecturer would go so far as to say that the conditions which he describes as pre-cancerous are always necessarily followed by cancer. His argument, very briefly put, appears to be that long-continued irritation frequently precedes cancer (smokers' lip and chimney-sweeps' cancer are illustrations of this sequence, the more striking because changes in popular habits have been followed by a marked diminution in the gross number of cases) that the conditions he enumerates are instances of long-continued irritation often observed to

precede cancer, and that it is therefore prudent to remove these sources of irritation, if this can be done without serious risk to life. If this be true, then the question arises whether the practical surgeon is under any obligation to wait until the histologist has traced the connexion between the tissue changes produced by long-continued irritation and cancer. The histologist is not yet able to say whether the sequence is accidental or related as cause and effect. It is, however, true that though the surgical view may ultimately be completely substantiated, it cannot be said, in respect to many of its details, to have travelled as yet far beyond the region of personal conviction. But it is a conviction which is shared by other surgeons, though Mr. Robson has perhaps expressed it more confidently, and would make it a more constant guide in practice than has hitherto been customary.

One effect of Mr. Mayo Robson's lectures will probably be to cause every practitioner who has not already done so to consider very carefully his duty towards the patient when he is consulted with regard to conditions which are known after a time to be followed in a considerable proportion of cases by malignant growths. Whether operation in such cases should be urged is an open question, but we are inclined to believe that it may often be the duty of the practitioner consulted to place the facts fully and clearly before the patient.

THE PROPOSED GENERAL REGISTER OF MEDICAL STUDENTS.

At its meeting on May 30th last the General Medical Council resolved by a very large majority to ask the Lord President of the Privy Council to introduce into Parliament a Bill to confer upon the General Medical Council statutory powers to establish and carry on registers of medical and dental students, and to impose a fee not exceeding £1 for such registration. The proposal was opposed by the representatives of the Royal College of Physicians of London and the Royal College of Surgeons of England mainly on the ground that it threatened to take away powers granted to the licensing bodies under their charters, and would place the control of medical education too completely in the hands of the General Medical Council. The proposal was, however, adopted by a large majority—22 to 6—and accordingly went up to the Lord President of the Council. At its meeting on November 23rd the Council had before it a communication from the Clerk to the Privy Council transmitting letters sent to the Privy Council by the two Royal Colleges in England and the University of Oxford.

These communications differed somewhat in tone, inasmuch as the University of Oxford only asked to be made acquainted with the provisions of any Bill and to be given the opportunity of being heard upon it, whilst the English Colleges, while making a similar request, added arguments against the assumed provisions of a Bill which has not yet been drafted, thereby seeming to foreshadow an uncompromising opposition. The letter from the Privy Council suggested that it might be expedient for the General Medical Council to confer with the two Royal Colleges in England with a view to the preparation of a scheme providing for their co-operation towards the desired end on a basis that would in some form or other recognize existing rights. The communications led to a prolonged debate. The President intimated that it ought to be directed solely to the nature of the answer to be sent to the Privy Council, but it was obviously difficult to prevent speakers from raising the whole issue, inasmuch as the answer might cover the whole or any part of the ground. It was pointed out by Sir Victor Horsley and others that it would be of little use to have a conference with only two of the licensing bodies, and that, if all were included, the General Medical Council itself did, in fact, constitute such a conference. There was evidently a general consensus of opinion that the Privy Council would not be likely to take the step asked for unless the licensing bodies showed considerable unanimity, and to meet the difficulty several motions and amendments were proposed. This had the unfortunate, but in the circumstances unavoidable, effect of enabling some members of the Council to speak twice or oftener upon an issue which was broadly speaking one, and it became difficult to follow the debate through all its meanderings.

The curious spectacle was afforded of some members with voice and vote opposing a resolution for which they had voted so lately as the May session. Of these, Sir John Moore was the first to explain his position, stating that he had been in a minority of one at a meeting of the Royal College of Physicians in Ireland (which he represents), and that that College, which he hinted was not too well acquainted with the proposition, was nevertheless strongly opposed thereto. Dr. Mackay accordingly proposed that a detailed statement should be prepared by the Council, and the opinions of the licensing bodies sought upon it. Though he obtained leave to modify the terms of his motion on the succeeding day, this remained its general purport. It took the form of an amendment to a motion brought forward by Sir John Moore and was carried by a large majority, but immediately afterwards when it was put as a substantive motion it was defeated by an amendment proposed by Sir Christopher Nixon, which in effect not only reversed it but also rescinded the original resolution passed in May which initiated the whole matter. Thereupon Sir Victor Horsley, who earlier in the debate had advocated adherence to the original position, protested that the Council was stultifying itself—a way of putting it which appeared not very acceptable to some of his colleagues.

On the first day Dr. Norman Moore had condemned the mixing up of the provision of additional income with the question of students' registration, and later in the debate in a speech more declamatory in character, he arraigned the whole work of the Council and intimated that its difficulty in increasing its funds arose largely from its having failed to inspire public confidence. This drew a dignified protest from Sir John Batty Tuke, who was followed by other speakers who deplored the use of arguments of this kind. Sir Christopher Nixon, in speaking to the amendment which he ultimately carried, expressed himself, though he had voted in the contrary sense in May, as opposed to the compulsory registration of students by any central body, and, indeed, as not attaching much importance to students' registration at all. If money was to be raised, he would prefer that it be by raising the fee for registration of qualifications.

The upshot of it all is that the Council, instead of returning an answer to the letter from the Privy Council as to a conference, is to inform the Privy Council that in view of the difficulties which it now sees, owing to opposition by certain licensing bodies, it will "at the proper time" offer an alternative proposition which it hopes may be approved by the Lord President. But when the proper time is to be,

or what the nature of the alternative proposition is to be, are left absolutely undefined. All that seems certain is that the original proposal of establishing compulsory registration of students has been dropped.

CLINICAL INSTRUCTION AND EXAMINATION.

THE presentation to the General Medical Council of the reports of its Examination Committee on the reports of the Visitor and Inspector on the final examination in medicine, surgery, and midwifery of the four universities of Scotland led to a very complicated situation, which was not altogether cleared up by the animated debate that occupied so much of the Council's time. The Visitor, Sir G. H. Philipson, and the Inspector, Mr. Thomas Bryant, had incorporated in their report upon the University of Edinburgh certain criticisms upon the examination in clinical surgery for the Ch.B. as part of the M.B. degree. These criticisms were directed in part to certain defects in the arrangements and methods of the examination itself which, it was alleged, "not only spoilt the work that might otherwise have been good of the Professor of Clinical Surgery and his colleagues, but turned it into what must be described as a failure." The more important criticism, however, was to the effect that the examination disclosed in the opinion of the Visitor and Inspector the desirability "of the Edinburgh University, with all other teaching bodies, so adjusting its curriculum as to give medical students greater facilities than they now seem to possess of gaining a better knowledge of disease and its treatment by clinical work." The significance of this opinion was explained in another passage to the effect that "all medical students should see more of disease of every kind" in the out-patient department and the ward, "should undertake more ward work as clinical clerks and dressers," and "should follow their clinical cases when fatal to the dead house, and so keep close together bedside work and pathology, for it is all-important that the connexion between clinical practice and the facts of pathological anatomy should be closely maintained." When the Chairman of the Education Committee moved that its report on the final examination of the University of Edinburgh should be placed upon the minutes whereby it would become public, Sir John Batty Tuke proposed an amendment to omit the general remarks of the Visitor and Inspector. He contended that in making them they had exceeded their commission, and a lively debate ensued, in the course of which it appeared that the matter was much complicated by the fact that the general remarks had been reproduced in the course of the reports upon the visitation and inspection of the other Scottish universities—Glasgow, Aberdeen, and St. Andrews—though without the paragraph quoted above, in which "all other teaching bodies" are referred to. The Visitor in the case of Glasgow was Sir Hugh Beevor, and in that of St. Andrews Sir John Moore, while Aberdeen had been visited by the Inspector alone. As an alternative, it was suggested that the Visitor should undertake to withdraw or modify the remarks, but Dr. McVail, the Crown Representative for Scotland, protested that there was no power to modify a report once presented by an Inspector to the Council, which was bound to forward it intact to the Privy Council; subsequently Sir George Philipson in a measured and temperate speech refused to withdraw or modify the remarks which he said were the result of much careful consideration. It was pointed out by other members that if the remarks were struck out then the reply of the body inspected, which was mainly directed to answering them, must be omitted also. It was also suggested that it would be unworthy of a great university to lend itself to the suppression of adverse comment made by the Visitor and Inspector in their official capacities, and that it would be far more dignified to consent to their being made public and to answer them. Sir John Tuke's amendment was eventually lost by a large majority, and we must confess that we share the opinion that its adoption would have rendered the whole system of inspection of examinations futile.

When the debate was resumed Sir William Turner, as the representative of the University of Edinburgh upon the Council, felt himself called upon to speak from the chair, and to make a severe indictment against the report of the Visitor. It had too much the semblance of a rebuke, and that this was felt by the Council was strongly hinted by Dr. Pye-Smith's question, whether Sir William Turner was speaking as President or as representative, and by the subsequent expression of the difficulty felt in dissociating the two positions, and in answering the points raised with the freedom desirable. Far too much stress was laid upon the challenge to the Visitor to produce his original "diary." Under one reading of the standing orders, it would seem that an Inspector and a Visitor should hand in their "diary," and this had not been done. But it is not clear that the diary need be produced until it is called for, and it is certain that in the case of previous inspections it has rarely if ever been called for, and very rarely tendered. In his reply Sir George Philipson held his own, offering to produce the original diary, the necessity for the production of which he had not realized, and firmly defending the justice of his criticisms and those of his colleague. Little if anything was gained by the somewhat strenuous opposition to the wording of the report, and finally the recommendation of the Examination Committee that the surgical portion of the examination should be inspected again was carried after the qualification it contained as to the difficulty of reconciling the Inspector's report with the answer of the body had been expunged.

Nor was Dr. Mackay more happy in repudiating the criticisms offered upon the examination at St. Andrews, which is as yet numerically unimportant, since only four persons had previously taken the degree, and only six candidates came forward on the occasion of the inspection. The criticisms mainly objected to were that the professorial examiner had been too lenient, and had been content to talk much with and question little his own pupils, and that candidates might have been previously acquainted with the nature of the cases on which they were examined. The protest merely elicited from Sir John Moore, the Visitor, further detail, which drove home and strengthened the remarks made in the report. As in many respects the examination had been praised highly, it would perhaps have been better, as in the case of Edinburgh, had less susceptibility been displayed, for to muzzle the inspectors would be to render all inspection absolutely useless. The Council must be trusted to discount any remarks which do not seem to be fully borne out by the statements made in their support. This, in fact, would seem to be one of the chief duties of the Examination Committee in dealing with the reports of the visitors and inspectors.

A subject very nearly related to that which, when unessentials are put aside, was the real matter of this debate was raised by a resolution moved by Dr. Lindsay

Steven, the representative of the Faculty of Physicians and Surgeons of Glasgow, to instruct the Education Committee to report upon the question whether it would not be desirable to require a student to pass the examination in preliminary scientific subjects before entering upon the study of anatomy and physiology, and to produce evidence, before proceeding to the final examination, that he had devoted the whole of his time during the fifth year of the curriculum to practical and clinical study. The resolution was carried after a short debate, during which it was urged that the regulation proposed would virtually result in lengthening the curriculum, probably to not less than six years; it was also contended that the recommendation as to the fifth year would be difficult to enforce even were the licensing bodies willingly to accept it. The subject is one of very great importance, and will no doubt lead to an interesting debate when the report of the Education Committee comes up next session. We could have wished that the resolution moved by Mr. George Brown immediately afterwards to permit a student who had passed through a year's pupilage with a medical practitioner to spend in his fifth year only six months in clinical instruction at a hospital had also been referred to this Committee. It was admitted that the resolution was in effect a proposal to revive the old form of apprenticeship prior to entry to a hospital. Dr. MacAlister, who was subsequently elected President of the Council, declared that the system of apprenticeship is dead as a door-nail. We are disposed to believe that he is right; but many practitioners, if we may judge by the letters we receive from time to time, are of a contrary opinion, while still more regret that some substitute for it cannot be found.

THE SEPTIC BARBER.

Dr. Collingridge, who has already done much in the way of prevention of disease from within by his campaigns against the insanitary eating house and ice cream shop, is now intent on protecting the diurnal inhabitants of the City of London from microbic assaults from without. In a word, he is striving to convince the wielder of the septic shaving-brush and comb of the danger of his ways. Elsewhere in this issue will be found an abstract of his report, and it will be seen that he has collected details as to what is being done abroad. It is interesting to find that in this respect some of the South American republics are in the van of progress. Another surprise at first sight is to find Turkey, or rather, the Municipality of Constantinople, issuing regulations as to cleanliness and disinfection of appliances and instruments in the barber's shop. But when it is considered how important a procedure is shaving in Mohammedan countries, even unto the shaving of Shagpat, the surprise is rather that regulations should not long ago have been in force. English-speaking countries, so Dr. Collingridge emphasizes, are not to the fore as they should be. That a number of skin complaints can be traced to the hairdresser is undoubted: hyphogen i (ringworm) and coccogenic sycosis, impetigo contagiosa and so forth are there to show it. The razor is, however, often unjustly accused when the real criminal is the dirty shaving brush going to-and-fro from face to pot in a way highly congenial to the pathogenic flora. Again, the clippers—which are never taken to pieces, or rarely so, for the trouble of it may be great—are another source of infection, and apparently responsible for alopecia areata in some instances. The styptic block applied from wound to wound has been the means of inoculating syphilis. The revolving brush is another offender. Our readers will add to the list of the dangerous appliances; it is, therefore, unnecessary to dilate on them here. But Dr. Collingridge's report is not without the saving sense of the humorous. The Worshipful Company of Barbers was asked to confer with the medical officer of health and the Guild of Hairdressers on the matter. The clerk of the Barbers' Company replied they would have been happy to do so had there been any one among them qualified to give the practical and technical assistance required! It is sincerely to be hoped that Dr. Collingridge will be successful in his endeavours and be enabled to ensure a really clean shave for a penny or more in the City of London. The barbers of Greater London will have to look to their antiseptics and imitate what is already being done in one West End establishment. But another point is, what is to become of the dermatologist? Is he to have no consideration shown him in the way of compensation for the taking away of one of his visible means of subsistence?

A SIDELIGHT ON MEDICAL EDUCATION.

In the formal account of the proceedings of the General Medical Council given in the Supplement to this issue will be found an analysis of the latest returns presented to the Council in respect of the examinations for admission to the services. They have been prepared upon the same lines as those which we published on December 5th, 1903, and upon June 4th this year. Since the latter, only two examinations have been held, so the present analysis relates only to one examination for admission to the Royal Navy and to one examination for the Royal Army Medical Corps. This being the case, it would not be safe to suggest any specific deductions from them, either as regards the extent of the present competition for admission, or as regards the success of different classes of candidates. When we published our first analysis, we pointed out that the examinations for admission to the various branches of His Majesty's Service formed the only sort of post-graduate competitive examination which existed, and drew attention to the valuable light which an analysis of a sufficient number of them might be made to throw upon the efficiency of the different methods of tuition in vogue in different parts of the United Kingdom, as gauged by the success of candidates who held respectively either English, Scotch, or Irish diplomas or degrees. The truth of this statement appears now to have been recognized both at the Royal College of Surgeons and by the General Medical Council, where it will be observed the matter gave rise to considerable discussion. We have now in hand complete analyses of the ten latest examinations; the earliest of them dates back to over two years ago, and the aggregate figures as regards the number of competitors are large. It is possible, therefore, now to draw conclusions from them with a considerable degree of assurance; and, this being the case, we propose to publish shortly a summary of these figures.

CONSUMPTIVES IN ARIZONA.

Under the title of the Health-Drifters of the Great Southwest, Mr. Frank D. Witherbee describes in an American periodical the great migration of tuberculous patients to the Salt River Valley of Arizona, and the life they lead in tents and huts in and about Phoenix. Out of a winter population of some 15,000, fully 5,000 are health seekers, drawn to Arizona by the dry climate and the constant succession of sunny days. Fully 90 per cent. of the days in Phoenix are bright and clear, and the relative humidity of the atmosphere is far below that of the average. On the one hand, says Mr. Witherbee, these conditions lead to a remarkable percentage of recoveries; but on the other there is an amount of social and spiritual suffering which is not generally understood. He points out that as a matter of fact a great majority of patients go too late to be helped by any power on earth. A Phoenix physician has given it as his experience that fully four-fifths of the visitors are incurable. The streets, we are told, are filled with them—thin and wretched, homesick and suffering. Careless physicians and relatives sent patients to Phoenix, alone and with scant means of support, on the supposition that all the invalid needs is to get to that country, where his condition will permit of his doing the light work which it is fondly

believed he can easily find. But the facts, according to Mr. Witherbee, are that the disabled one is going to a country swarming with people looking for like chances; that is, it is essentially a ranching community, where the bulk of the workers to be of any service must be able to plough and sow and reap and herd cattle, often standing in water all night long to irrigate the land. Such few forms of light work as are available are unsuitable because they entail too great confinement. In Arizona, as wherever consumptives have taken up work in desirable climates, they have by underbidding and numbers steadily forced wages down to a point at which scarcely enough can be earned for a bare livelihood. Many of the necessaries of life by reason of high freight rates are much more costly than in other communities. Out in the desert, at the outskirts of the irrigated parts of the valley, and extending to the foothills, there are tents of all sizes and descriptions. Some are in groups and others stand alone, some are roomy and attractive, some cramped and desolate-looking. Some of the ranchers near Phoenix have made a speciality of providing accommodation for health seekers, and offer furnished tents or rooms in specially-constructed houses, with board at the ranch house. The local fraternal lodges, the churches, the county alm-house, and the one free sanatorium, are crowded to their utmost capacity year in and year out. Many a patient reaches Phoenix with his small capital exhausted by travelling expenses, and finds himself dependent upon the resources of a community which has no interest in him, and where he finds, on many sides, an almost hardened indifference to his pitiable need. This is not because residents of Phoenix are lacking in the finer feelings which prompt to charitable service, but because the people of the East and Middle West are, by their lack of forethought, putting upon them a burden which in no sense belongs to them. The supervisors say that the poor in the almshouse cost the county £5,000 a year, and three-quarters of that amount is spent in the care of ailing consumptives. A like condition of things was created in Australia and in South Africa, till action was taken by the Colonial authorities to prevent the "dumping" of indigent consumptives.

MENTAL FOSSILIZATION IN MEN OF SCIENCE.

THE poet's plaint that "crabbed age and youth cannot live together" is as true in medicine as in love. In love of course youth is an easy conqueror, but in medicine age, being generally the examiner, has an unfair advantage of youth. Goethe said that no man ever got a new idea after 40. We think he fixed the boundary of receptivity a trifle under the natural limit. The ossification of the intellect like that of the larynx occurs earlier in some persons than in others. In either case the process is a natural one which while impairing flexibility need not seriously damage efficiency. But the mind is liable to a much more disastrous change; like the man of whom it was said that he had been dead for some years but people did not like to tell him so, it may while still seemingly alive undergo a process analogous to fossilization. Examples are to be seen in all departments of human activity, but in none are they so conspicuous as in science which is nothing if not progressive. It is pathetic to see a man who was once a pioneer in the discovery and exploration of new regions of scientific thought become, as his way of life falls into the sere and yellow leaf, obstructive and even reactionary. It is pitiful to hear the voice once like a trumpet call in the battle of truth against ignorance and error maundering in Nestor-like reminiscences of a bygone day and decrying the efforts and achievements of a younger generation. At the recent meeting of the French Medical Congress in Paris, Professor Cornil delivered an address on the part played by morbid anatomy in contemporary medicine, in which he told of the opposition which the newer science met with from the powers and principalities of medicine in his own early days. The story is so interesting that we venture to repeat it almost in the words of the distinguished narrator. Professor Cornil as a student first worked in the hospitals from 1857 to 1860. At that time Virchow's great work on cellular pathology had lately been published, and Trousseau's career as a clinical teacher had begun. The Faculty of Paris, justly proud of the fame of Corvisart, Laënnec, Bouillaud, Grisolle, and so many others, was strongly inclined *stare super antiquas vias*. Official medicine had indeed, like Bottom, "an exposition of sleep" come upon it, and it was content to dream of the glory of the great men who had shed lustre on it. Instead of going forward, many of the teachers of that day recommended to their pupils old writers like Baglivi, Borsieri, Lorry, Franck, and Boerhaave with the commentary of Van Swieten. At the Academy of Medicine, Velpeau vehemently denounced the histological examinations of tumours made by Lebert, Follin, and Verneuil. When Professor Cornil presented his thesis for the doctor's degree in 1864, which dealt with the histology of nephritis, one of his examiners said to him, "Your work is extremely meritorious, but what the devil is the good of it all? Have you found under your microscope a way to cure albuminuria?" Another said: "You speak in your paper of the multiplication and proliferation of cells; have you ever seen such a thing? I have often tried, but have never succeeded." The examiner was good enough to describe his method of search, which struck the young candidate as so futile that he thought it prudent to say nothing; his silence gave his judge an easy triumph. Such being the attitude of the Faculty, it can readily be understood that it was by no means disposed to sanction the establishment of a chair of histology. Duruy, one of the most enlightened Ministers of Public Instruction France has ever possessed, had for years striven to overcome the resistance of the Faculty, and a small *coup d'état* was required to make it yield. It is an interesting piece of medical history. We, however, have no reason to congratulate ourselves that we are not even as those foreigners. Fossilization is as common here as elsewhere. Have we not known one of the greatest teachers of physiology who to the last denied the migration of blood corpuscles? Have we not known a physician of the highest eminence who said, in reference to the same thing, that he would as soon believe that a brick could pass through the wall of a house as that a corpuscle could escape from a blood vessel? Did not a leading surgeon, only twenty-five years ago, warn his pupils against speaking of the "lumen" of an artery to the examiners at the College of Surgeons, because "they would pluck you for it, you know"? Lister's teaching encountered no more bigoted opposition anywhere than in his own country, and bacteriology was a laughing-stock to most men over middle age up to a comparatively recent time.

GLYCOSURIA AND DIABETES IN SURGERY.

SINCE Llewellyn Phillips's thesis on the Surgical Aspects of Glycosuria and Diabetes was published[1] over two years since, some additional research on the same subject has come to light. Professor Kausch of Breslau[2] has printed some interesting notes, in which he dwells on the anaesthetization of diabetic subjects. He prefers local to general narcosis, and rejects chloroform in any case, whilst repeated administrations of an anaesthetic are specially to be avoided. Ether is, he thinks, the right anaesthetic for the diabetic patient when the severity of an operation demands general narcosis. For physiological reasons it should always be given early in the morning. Before operation sodium bicarbonate should be taken until the urine is distinctly alkaline. This salt is always to be administered whenever coma is threatening or has set in. It may be given in enemata or injected under the skin or into the veins when the patient is not in a condition to swallow it. Kausch dwells also on cases of surgical or traumatic "ephemeral" glycosuria, on which Bedard and Llewellyn Phillips have written. In the Breslau University Clinic Kausch has collected 11 recent cases, including 3 fractures of the tibia, 1 of the patella, 1 compound fracture of the bones of the toes, and 2 fractures of the pelvic bones.

[1] *Lancet*, vol. i, 1902, p. 1308.

[2] Beiträge zum Diabetes in der Chirurgie, Langenbeck's *Archiv f. klin. Chirurgie*, vol. lxxiv (1904), p. 853.

In one case there was severe contusion of the tibia, in another contusion of the neck of the femur without fracture. In none did the proportion of sugar exceed 1 per cent. Not only were acetonuria and diaceturia absent in all cases, but also polyuria and the characteristic thirst of diabetes. Some French authorities have observed a high degree of polyuria in traumatic diabetes. In Kausch's cases the duration of the glycosuria was short, ranging from one to eight days. In one instance, it recurred ten days after its disappearance, when the patient was narcotized for a short time with ether, but the sugar disappeared from the urine a day later. The question of operation on a diabetic patient is a much graver matter. Llewellyn Phillips's tables are of high value, and since they were issued, Noble of Philadelphia has tabulated no fewer than seven cases in his own practice.[3] Six made good recoveries and one died after the supervention of diabetic coma. The patient was a woman aged 50, with procidentia uteri. She had been subject to diabetes for many years, and the proportion of glucose was large. The diet was regulated, and codein administered for many weeks before the operation, which was a vaginal hysterectomy, and continued afterwards, with injections of salt solution and doses of strychnine. Death, however, occurred on the sixth day. The other operations on diabetic patients were: Radical cure of ventral hernia, 2; removal of vermiform appendix, 1; amputation of breast, 1; excision of cervix uteri with anterior colporrhaphy and perineorrhaphy, 1; and repair of a rectovaginal fistula, 1. The last case was operated upon without anaesthesia. Noble's first case is of interest. It was performed in a large hospital, where routine examination of the urine is enforced, but the sample from his patient was mistaken in the laboratory for that of another, and the latter patient, owing to the error, was refused operative treatment. The diabetic patient underwent removal of the breast, and a day later the error was recognized. Suppuration occurred, but it was mainly owing to a piece of sponge having been left high up in the axilla. The ultimately favourable course of the case was a factor in inducing Noble to operate on the remaining six diabetic patients. He enforced strict diet and administered codein and strychnine for some time before operation, and found hypodermic and rectal administration of saline solution highly beneficial after operation; but he admits that, according to Llewellyn Phillips's long series, diabetic coma does not appear less frequently in subjects submitted to preliminary treatment before operation than in those not so treated. Noble refused to perform plastic operations on several diabetics. The chief contraindications to operation in his opinion are poor nutrition, wasting, severe thirst, and morbid appetite. When, on the other hand, the patient's condition was relatively favourable he postponed operation as long as more than 2 per cent. of sugar was present in a total excretion of 3 pints in twenty-four hours, and placed the patient under appropriate treatment

[3] Personal Experience in Operations upon Diabetic Patients, *American Medicine*, vol. vi, 1903, p. 511.

SYPHILIS OF THE THIRD GENERATION.

THE question whether syphilis can be transmitted to the third generation is one upon which much has been written but little proved. A recent paper read by C. Boeck at the Berlin Congress of Dermatology, and published in the *Berliner klinische Wochenschrift* of September 12th, is of much interest in connexion with this subject. Boeck reports three cases which he regards as true hereditary syphilis of the second generation—that is, transmission to the third generation. In the first case the grandmother, mother, and child were treated at the clinic at Christiania: the grandmother in 1854 for secondary syphilis, the mother in 1860 for hereditary syphilis at the age of 2 years, the child in 1889, 4 months old, for typical hereditary syphilis, with coryza, a maculo-papular eruption, and palmar and plantar syphilis, etc. The mother at this time showed scars about the mouth and Hutchinson's teeth, but had no sign of acquired syphilis. The father was examined, but showed no sign of syphilis. There was no evidence of reinfection and no miscarriages. The child in question was the second, the first child being healthy up to 2 years of age, when it died of scarlet fever. Another child by another father had been born a year before marriage, which died when a month old. There were no signs of syphilis in this child. In the second case the grandmother was treated in 1873 for primary and secondary syphilis. After this she had one stillbirth and three living children. The eldest of these came in 1897 to the clinic with her own child suffering from characteristic hereditary syphilis. The mother had scars about the mouth, but no other sign of hereditary syphilis. The father was not examined. In the third case, the grandmother, daughter, and grandchild came to the clinic; the grandmother with tertiary syphilis, the mother with scars about the mouth and Hutchinson's teeth; the child, aged 5 months, with hereditary syphilis. In this case a second child was born with the hereditary disease. The only objection in this case was, in Boeck's opinion, the possibility of reinfection. With regard to the possibility of paternal infection in these cases, Boeck remarks that in thirty years' experience he has never been convinced that this has been proved. In this he is not in accord with other authorities, such as Fournier and Neumann. The question of paternal transmission was ably discussed lately by Neumann in an article in the *Berliner klinische Wochenschrift* for May 19th, 1904 an abstract of which was given in the BRITISH MEDICAL JOURNAL for August 27th. In this article, Neumann concludes that clinical, bacteriological and physiological evidence supports the view of parental transmission, and that the theory of exclusive placental transmissions from the mother will not hold. There are two other objections to the cases reported by Boeck. The first is the possibility of reinfection, which he himself admits in one case. The second (assuming parental transmission) is the possibility of another father. This would seem to receive support from the fact that in the first case there were two healthy children born before the one with hereditary syphilis. The latter might have been begotten by another father.

THE STUDY OF CRIMINOLOGY IN AMERICA.

THE difference between medico-legal procedure in England and the United States of America, and the obvious advantages, in many respects, of the system adopted in the United States, are forcibly brought out by an account in the *Washington Evening Star* of a recent meeting of the American Bar Association held at St. Louis. At the time of the assassination of President McKinley, we commented favourably upon the American plan of deciding the purely medical question of the sanity or insanity of the accused man by a medical tribunal, who furnished the jury with a unanimous expert opinion, and thus made impossible any such prejudicial conflict between medical witnesses as occurs only too frequently in English courts of law. In another and entirely different field the American Bar Association has demonstrated its usefulness. Two years ago there was submitted to a special committee of this Association a resolution proposing to establish a laboratory in the Department of Justice at Washington for the study of the criminal, pauper, and defective classes. This Committee reported favourably on this resolution, which was thereupon approved, and the following resolution adopted: "That we are in favour of establishing in the Department of Justice at Washington a laboratory for the study of the criminal, pauper, and defective classes, it being understood that such investigation is a development of work already begun under the Federal government; that such study shall include a collection of jurisprudential, sociological, and pathological data in institutions for the delinquent, dependent, and defective, and in hospitals, schools, and other institutions; that especially the causes of social evils shall be sought out with a view to ameliorating or preventing them." Mr. Edson of Washington paid a handsome tribute to Mr. A. MacDonald, who by his untiring energy and devotion to this work has been the main instrument of its adoption, and pointed out its humanitarian aim, the light which it is to be expected

these studies will throw on the causation of crime and pauperism, and the probable pedagogic importance of the resulting data. He advanced as cogent reasons for Government support the facts that the abnormal classes cost the nation five times as much as the total expenses of the Federal government, and that the institutions dealing with these abnormal and defective classes are already under Government control. Organized research of this kind cannot but advance our knowledge on questions whose solution is of the utmost importance to the community, and the excellent reasons of Mr. Edson for the State support of central laboratories might be urged with equal cogency on this side of the water.

UNVEILING OF THE WILLIAM CADGE MEMORIAL WINDOW.

THE William Cadge memorial window, the cost of which has been defrayed by subscriptions from members of the profession both in England and abroad, will be unveiled in the Cathedral at Norwich at 3 p.m., on Tuesday next, December 6th, by the President of the Royal College of Surgeons. A great many of the subscribers have intimated their intention to be present, and an unusually large gathering of the profession from all parts of the kingdom will take place, including many representatives from London, Cambridge, Newcastle, and Leeds, and the counties of Norfolk and Suffolk, as well as from the City of Norwich. The subscribers will assemble at 2.45 p.m. in the Choristers School-room at the west end of the Cathedral. A procession will be formed, and after the unveiling Mr. Tweedy will give an address. After the ceremony at the Cathedral all those who attend are invited by Dr. David Thomson, of the Norfolk County Asylum, President of the Norwich Medico-Chirurgical Society, to proceed to the Norfolk and Norwich Hospital, where a clinical meeting of the Society will take place at 4 p.m., and afternoon tea will be provided.

THE ROYAL SOCIETY.

THE anniversary meeting of the Royal Society was held on St. Andrew's Day, November 30th. The council elected for the coming year included Colonel David Bruce, R.A.M.C., Professor Francis Gotch, and Professor J. N. Langley. The report of the Council referred to the work of the Sleeping Sickness Commission in Uganda, and stated that attention was now being directed to an attempt to discover a means of eliminating the trypanosomes from the blood and tissues in an early stage. The society had advised the Government to take such means as were found practicable for protecting a non-infected area where the carrier fly was found from the infection of emigrants from the infected areas. The subject of Mediterranean fever had been referred to the Tropical Diseases Committee of the Society, and at the request of the Colonial Office an Advisory Board was constituted as a Subcommittee with Colonel Bruce as Chairman. The President, in the course of his anniversary address, referred to the death of Sir John Simon, whom he described as the pioneer of modern sanitary science, adding that what Lister did for surgery and Pasteur for bacteriology, Simon might be said to have accomplished for sanitation. At the conclusion of his address the President presented the Society's medals, among the recipients being Colonel David Bruce (Royal Medal) in recognition of his researches into the causation of a number of important diseases affecting man and animals, and Mr. William Bateson (Darwin Medal) for his researches on heredity and variation. In the evening the anniversary dinner took place at the Whitehall Rooms. The toast of "The Royal Society" was given by Mr. Arnold-Forster, M.P., who, in the course of his speech, said that every day he was more and more impressed with the need for a greater knowledge in our public life of what scientific men were thinking, doing, and hoping to accomplish; there was infinite opportunity for the work of trained minds in the public services. The toast was acknowledged by the President, who concluded by proposing the health of the medallists.

AN AMERICAN SOCIETY FOR PSYCHIC RESEARCH.

A SOCIETY for Psychic Research has been founded in New York. Professor James H. Hyslop states that the society, which has been incorporated as the American Institute for Scientific Research, is intended to be of a national character; its purpose is to organize certain scientific investigations, while it conducts in one of its fields a system of philanthropic work. It is not, he says, to be associated with any form of teaching or propagandism, whether philosophical, scientific, or religious, but is modelled after the Carnegie Institution, except that it will be permanently limited to a definite field of work, comprising two more or less distinct classes of phenomena. The institute will not engage directly in investigations, but will supervise endowments and subsidies for such men and bodies of men as are qualified to conduct philanthropy and investigation in the fields which the work is to occupy. These fields comprehend abnormal and alleged supernormal psychology, or psychic research. As soon as possible the institute will provide a proper clinic for study and therapeutic treatment of certain types of functional mental disease, insanity, hallucination, secondary personality, and such disturbances as may be made to yield to hypnotic suggestion. The type of institution which the founders have in their mind is the Salpêtrière, under Pierre Janet, or M. Bérillon's Clinic in Paris.

THE SERUM TREATMENT OF SUMMER DIARRHOEA.

IMMEDIATELY after the death of a grandchild in 1900 Mr. John Rockefeller put the machinery of science into motion to discover the cause of summer diarrhoea. He set apart an initial sum of £40,000 to be devoted to the furtherance of research on the subject, and invited Dr. William H. Welch to conduct the inquiry. In 1902 it was announced that an antidysenteric serum had been discovered. Since that time twelve bacteriologists have been in charge of investigations in New York, Boston, Philadelphia, and Baltimore. The second annual report of the board, just completed, states that the serum is not a success. Nearly half the children treated died, and in only a few cases did any noteworthy improvement follow its administration.

THE Earl of Rosebery, Chancellor of the University of London, has made a donation of £1,000 to the Institute of Medical Sciences Fund of the University.

THE trustees of the Astley Cooper prize have awarded the triennial prize of £300 for 1904 to Mr. W. S. Handley, M.S., for the best essay on the pathology of carcinoma and the distribution and frequency of occurrence of the secondary deposits corresponding to various primary growths.

A MEETING of medical men was held in Paris on November 25th, when it was resolved to invite British physicians and surgeons to pay a return visit to Paris. Professor Bouchard, member of the Institut, was elected President of the Paris Committee, and the opinion was expressed that some date early in May—probably between May 7th and 14th—would be most convenient.

THE report of Dr. R. Welsh Branthwaite, Home Office Inspector under the Inebriate Acts, for the year 1903 has appeared this week. It deals at length with certified inebriate reformatories, State inebriate reformatories, and with the working of retreats. A number of appendices are added in amplification and support of the statements made in the body of the report. We are compelled to defer a fuller notice of this valuable report.

AN appeal, signed by the Hon. Sydney Holland, Sir Francis Laking, Sir Frederick Treves, and Mr. Malcolm Morris, has been issued for subscriptions to the fund for the erection of a monument to the late Professor Finsen. The British Committee formed to co-operate with the Danish Committee has received a donation of £50 from the King and of £100 from the Queen. Subscriptions may be paid to the Finsen memorial fund at the National Provincial Bank, 112, Bishopsgate Street, London, E.C.

Scotland.

The Chalmers Hospital, Edinburgh.

This hospital, which has been closed for some months for alterations and additions, was reopened on December 1st. The institution owes its existence to George Chalmers, an Edinburgh plumber, who died in 1836, leaving £27,000, free of legacy duty, for the erection and endowment of a "new infirmary or sick and hurt hospital," to be managed by the Dean and Faculty of Advocates. The money was, as directed, invested in consols, and allowed to lie until it had accumulated to £40,000. In 1854 the old mansion-house of Lauriston, with grounds of 7¾ acres, on a southern slope, was bought from Lord Wemyss. The old house was pulled down, and a simple building in the Italian style was erected at a cost, with furnishings, of about £10,000. It was opened in February, 1864, and has since played a most useful part among the medical charities of Edinburgh. There are two upper wards for paying patients—one for 8 males and one for 8 females—and two lower wards, male and female, each with 13 beds. For 7s. 6d. a day, with a minimum charge of a guinea, patients are received, boarded, and treated medically and surgically. During 1903, 113 paying patients were treated. The hospital is not a teaching one, which makes its wards more attractive to many. The endowment of the hospital amounts to about £50 000. The Faculty of Advocates think that, considering the good the hospital does in a quiet and unostentatious way, it might be more frequently remembered than it is by the wealthy citizens. A little more revenue, if it existed, could be expended with great advantage to patients.

The chief alteration recently made has been the complete separation of the indoor and outdoor departments. The out-patient department has been removed to the foot of the garden, and has a large waiting room for sixty patients, consulting-room with smaller adjoining rooms for special cases, a dark ophthalmic room, a small operating theatre, a nurses' room, and a room for stores. The whole building is heated by hot-water pipes, lighted by electricity, and is in communication with the main building by telephone. The south wing, the former out-patient department, has been altered to form an operating theatre, with adjoining rooms for the sterilizing of dressings, instruments, etc., and administration of anaesthetics. Each room communicates with the operating theatre by swing doors. The floor of the theatre is of marble terazzo, the walls are lined with white tiles to a height of 8 feet. The light is from the roof and south side. The heating is low-pressure hot water system. Electric lighting has been introduced throughout the whole of the hospital. The autoclave for sterilizing the dressings by superheated steam has been supplied by the Kay Scherer Surgical Company of New York. There is a large copper tank for sterilizing basins and trays. The old operating theatre on the upper floor has been converted into rooms for the staff. Dr. Claud Muirhead is the acting physician, Mr. Harold J. Stiles, F.R.C.S.E., the acting surgeon, Mr. C. Balfour Paul, M.B., Ch.B., the assistant surgeon, Mr. D. C. A. M'Allum, M.B., the anaesthetist, and Mr. H. J. Dunbar, M.B., the resident medical officer. Miss Maude Thomson is the matron, and there is a staff of five sisters and eleven nurses.

The Aberdeen Royal Infirmary has received a legacy of £1,000 under the will of the late Sir William Henderson, a former director of the institution.

Ireland.

Congratulations to Dispensary Medical Officers.

At a recent meeting of the Lisburn Board of Guardians, a member of the Board (Mr. Wilkins) drew attention to the fact that two of the Board's medical officers had lately completed forty years' service; that during all these long years, not one complaint had been made against either gentleman; he thought they should not pass over the matter without at least expressing their admiration for the loyal and devoted services which Drs. Gawin Orr and Mussen had given. Not only did they perform in splendid manner the duties required of them as dispensary medical officers, but they performed other work among the poor that they were not bound to perform; they were an honour to the profession and a credit to that Board. He begged to move:

> That this Board desire to express their admiration of the splendid services rendered by two of their medical officers—Dr. Orr of Ballylesson and Dr. Mussen of Glenavy—who for forty years have discharged their duties without a single complaint having been made against them, and further desire to express their thanks to these gentlemen for their kindness and attention to the poor amongst whom they are placed.

The resolution was seconded by Mr. Henry, and supported in warm and sincere terms of eulogy by several members of the Board, and passed with acclammation. The profession cordially join in these congratulations. The names of Dr. Orr and Dr. Mussen are household words not only in their districts but far beyond; they stand for professional skill, unselfishness, unceasing labour, the highest honour, and the strictest integrity. The profession will heartily echo the wish of many more years of usefulness and happiness to both gentlemen.

Purity of Cork Water Supply.

The Medical Officer of Health for Cork, Dr. D. D. Donovan, is not quite satisfied that the propinquity of the waterworks to the District Asylum is very desirable, especially at the present time. A stream known as the Mile End runs through the asylum grounds and flows into the River Lee above the waterworks, and is known to discolour the river for several yards at certain times. To this stream Dr. Donovan directed the attention of the Corporation as far back as 1893, but no action was taken then. In view of the fact that it has been thought possible that the outbreak of typhoid fever at the asylum may be caused by this stream, he asks that its course be diverted without further delay. Fortunately the Waterworks Committee have determined to do so at once, and thus relieve any anxiety that may be caused in the city by the possibility of a contaminated water supply. Dr. Donovan further suggests that a map of the drainage of the asylum should be submitted to the City Engineer, and in the meantime he recommends that all the water used by the public should be boiled before use. On the other hand, a more reassuring account of the water comes from Professor Frankland of Birmingham, to whom samples of water taken from the river Lee and also from the "pure water basin" were sent for analyses. The sample from the river contained large numbers of bacteria while that from the "pure water basin" only a small number even for filtered water, thus bearing testimony to the great improvement in the bacterial quality of the water effected by passage through the gravel beds.

Medical Officers of the Cork Union.

The Local Government Board has sanctioned the increase of salary to the medical officers of the Cork Union, proposed by the Board of Guardians a short time ago. The minimum salary for the dispensary officers of both city and county is to be £125 a year, which includes salary as medical officer of health, and also the £20 paid by the Corporation to the City Medical Officers and the £16 paid by the Rural District Council to the County Officers. An increase of £10 is to be given for every five years in the service of the Board and in future a triennial increase of £10 until a maximum of £196 is reached.

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 92.

Skelmersdale.

Our attention has been drawn to an advertisement which appeared some time ago in the *Manchester Guardian* for a medical officer to the White Moss Sick and Accident Society, Skelmersdale. With the kind assistance of Dr. Walker, chairman of the Bootle Division of the Lancashire and Cheshire Branch of the British Medical Association, we have obtained some information with regard to this society, and we would strongly advise any medical man who may think of applying for or accepting the appointment to make inquiries as to the somewhat curious history of recent medical appointments in connexion with it. We are authorized to say that Dr. Joseph Walker, 23, Merton Road, Bootle, Liverpool, is willing to reply to inquiries from members of the profession.

LITERARY NOTES.

THE Scientific Press will shortly publish an *Elementary Treatise on the Light Treatment for Nurses*, by Dr. James H. Sequeira.

Miss McCaul, who was recently commissioned by Her Majesty the Queen to go to Japan to inquire into the working of the Japanese Red Cross Society, has written a volume, which has been published this week by Messrs. Cassell and Co., with the title *Under the Care of the Japanese War Office*. The volume, which is dedicated to the Queen, takes the form of an illustrated journal, and gives an account of the Japanese military hospitals at the front, of the work of the Red Cross in Japan, and generally of all the arrangements for the treatment of the sick and wounded of the Japanese forces.

The January issue of *Longman's Magazine* will contain the opening chapters of a new serial story written in collaboration by Walter Harries Pollock and his son, Guy C. Pollock, and entitled, *Hay Fever*. It is concerned with the adventures of a much and justly respected stockbroker, and is founded on the known action of a drug sometimes prescribed for hay fever: but, naturally, the authors have aimed more at amusement than at scientific accuracy.

A wrathful correspondent has taken us to task for a statement made in a paragraph headed "A Famous Inoculator," which appeared in the BRITISH MEDICAL JOURNAL of October 22nd, page 1105. It is there said that Baron Dimsdale accompanied "Butcher" Cumberland as far as Carlisle in 1745, "returning home when the English army surrendered." "If you please, Sir," writes our correspondent, "when was it that the English army surrendered? What Scot wrote this?" We have remonstrated with the rampant Caledonian who was guilty of this atrocious libel on the English army, and he at first, like the eminent ecclesiastic whose little joke has been taken so seriously by the "Wee" Kirkers, showed a disposition to stick a dirk into someone. He was, however, given time to cool down sufficiently to refer to historical authorities, and he is now convinced that it was only the town of Carlisle, and not the "Butcher" army that surrendered. We regret to say that he treats his confusion of Cumberland with Carlisle as of little moment, as, "in any case, it was Southrons who surrendered," and that to his mind is the essential matter. But perhaps our correspondent will be satisfied with the fact that we have succeeded in convincing a Scot that he has erred.

ASSOCIATION NOTICES.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1905.

MEETINGS of the Council will be held on Wednesdays, January 18th, April 19th, July 5th and October 18th.

The January meeting of the Council, by kind permission of the Metropolitan Asylums Board, will be held in their Board Room at 2 o'clock in the afternoon of Wednesday, January 18th. The offices of the Metropolitan Asylums Board are situated on the Victoria Embankment, at the corner of Carmelite Street and near to Blackfriars Bridge.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

EAST ANGLIAN BRANCH: SOUTH ESSEX DIVISION.—The first winter meeting will be held at the Victoria Hospital, Southend-on-Sea, on Thursday, December 15th, at 4 p.m. Agenda: Consideration of matters referred to Divisions contained in BRITISH MEDICAL JOURNAL SUPPLEMENT, November 26th. Cases will be shown by Dr. Waters, Dr. Forsyth, Lieutenant-Colonel Westcott, C.M.G., and Dr. Bluck.—W. CARDY BLUCK, Honorary Secretary, Southend-on-Sea.

LANCASHIRE AND CHESHIRE BRANCH: ALTRINCHAM DIVISION.—The quarterly meeting will be held at Northwich on Wednesday, December 14th, at 5 p.m. Further particulars next week.—THOS. W. H. GARSTANG, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WANDSWORTH DIVISION.—An ordinary meeting of this Division will be held at Crichton's (opposite Clapham Junction Station) on Thursday, December 8th, at 9 p.m. Agenda: (1) Minutes; (2) correspondence; (3) questions; (4) consideration of various matters referred from Medico-Political Committee; (5) adoption of model Ethical Rule Z; (6) paper by A. P. Beddard, M.R.C.P.: Remarks on some methods of treatment by drugs: (7) other business. Members are invited to bring their medical friends.—E. ROWLAND FOTHERGILL, Honorary Secretary, Torquay House, Southfields, S.W.

NORTH WALES AND SHROPSHIRE BRANCH.—The next meeting of the Clinical and Pathological Section of this Branch will be held at 5 p.m. on Tuesday, December 13th, at the Salop Infirmary. Members who wish to read communications or show cases or specimens are requested to communicate with the Honorary Secretaries before Tuesday, December 6th.—HAROLD H. B. MACLEOD and LEONARD J. GODSON, Honorary Secretaries, Shrewsbury.

SOUTH MIDLAND BRANCH: BEDFORD AND HERTFORDSHIRE DIVISION.—A meeting of this Division will be held at the Bedford County Hospital on Tuesday, December 6th, at 3 p.m. Agenda: The minutes of the last meeting. Letters and communications. Dr. Lovell Drage (Hatfield) will read a paper on the treatment of tuberculosis by subcutaneous injections of 10 per cent. solution of cinnamite of soda in glycerine. Dr. R. H. Coombs, Bedford (Representative of this Division at the Annual Representative Meeting), will give notes on the recent Representative Meeting at Oxford. Mr. R. H. Kinsey, Bedford (member of the Council of the British Medical Association), will read a paper on some medico-political points recently brought before the Association. Dr. Conning Hartley (Bedford) will read notes on an unusual form of appendicitis. Mr. Gifford Nash (Bedford) will read notes on a case of ruptured interstitial pregnancy. Dr. H. Skelding (Bedford) will make a few remarks on the milk supply in villages, with a view to a further communication. Dr. H. Savory (Bedford) will relate an episode in drug taking. Any other business.—H. SAVORY, Honorary Secretary, 2, Harpur Place, Bedford.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.—The next meeting of this Division will be held at 130, Commercial Road, Portsmouth, on Tuesday, December 6th, at 3.45 p.m.—J. G. BLACKMAN, Honorary Secretary, Poplar House, Kingston Crescent, Portsmouth.

SOUTH WALES AND MONMOUTHSHIRE BRANCH.—The autumn meeting will take place on Wednesday, December 7th, at the Infirmary, Carmarthen, at 3.30 p.m. Mr. O. E. B. Marsh, President. The following motion will be moved by the North Glamorgan and Brecknock Division: "That having regard to the circumstances in which a medical appointment has been created at Aberaman and the conditions which are attached thereto, we consider the acceptance of such an appointment to be detrimental to the honour and interests of the profession." The following papers will be read: (1) J. Arnallt Jones, M.D. (Aberavon): Notes and specimens: (*a*) Salivary calculus removed from Wharton's duct; (*b*) calculus removed from tonsil; (*c*) bone impacted in throat and removed by coin-catcher: (*d*) portion of wood pencil retained six months in submaxillary region. (2) W. F. Brook, F.R.C.S. (Swansea): Notes on cases of (*a*) acute pyloric obstruction (malignant) treated by gastro-enterostomy and subsequent excision of the pyloric quarter of the stomach: (*b*) persistent gastralgia successfully treated by excision of an old gastric ulcer, with remarks on the present position of surgical treatment of stomach lesions. (3) J. Lynn Thomas, C.B. (Cardiff): Complete prostatectomy (founded upon 15 cases). (4) W. Mitchell Stevens, M.D. (Cardiff): The importance of a blood examination in the diagnosis of many cases. (5) Frank G. Thomas, M.B. (Swansea): Notes on a case of blindness occurring during the puerperium. (6) William Sheen, F.R.C.S. (Cardiff): Modified form of telephone bullet detector (apparatus shown). (7) Thomas Evans, M.B., New Quay: Reports on two recent cases of suppuration of goitre. (8) T. Garrett Horder (Cardiff): "How to ensure that every child shall be protected against an outbreak of small-pox."—FRANK G. THOMAS, M.B., B.C. (Swansea); W. MITCHELL STEVENS, M.D. (Cardiff), Honorary Secretaries.

SOUTH WALES AND MONMOUTHSHIRE BRANCH: SOUTH-WEST WALES DIVISION.—A special meeting will be held at Ivy Bush Hotel, Carmarthen, on December 8th. Agenda: (1) To appoint a member on Branch Council; (2) to receive report from Medical Secretary of Association on matters referred to him by Llandilo meeting.—J. EDGAR P. DAVIES, Honorary Secretary.

SPECIAL CORRESPONDENCE.

PARIS.

Dr. Rosenthal on Prophylaxis of Post-pleuritic Tubercle of the Lung by means of Respiratory Re-education.—Isolation of Tuberculous Patients in the Paris Hospitals.—Vital Statistics of France for the Year 1903.

AT a recent meeting of the Société Médicale des Hôpitaux, Dr. Georges Rosenthal read an interesting paper on the result of Respiratory Re-education as practised in the wards of Professor Hayem, as a prophylactic measure against post-pleuritic tubercle in the lungs.

The patient, a tinsmith, aged 25 years, was admitted in April, 1904, suffering from left pleuritic effusion, the dullness reaching to the scapular spine. Fluid drawn off with a hypodermic syringe showed lymphocytosis, and its inoculation in guinea-pig proved it to be tuberculous in origin. During the period of full effusion on May 2nd, respiratory gymnastics were started. On May 5th one litre of liquid was drawn off. On May 12th, the fluid having increased a second thoracocentesis was performed, and 800 c.cm. withdrawn. On May 18th all signs of effusion had disappeared. On October 15th the patient was in excellent condition; he had increased over 19 lb. in weight, and at the left base vesicular murmur and vocal fremitus were normal.

Dr. Rosenthal emphasized the point that the patient, instead of becoming tuberculous, increased in weight, and even exceeded his previous best weight by 10½ lb.

Respiratory gymnastics did not interfere with the other therapeutic measures; the patient was tapped twice, but diuretics were not given, as respiratory gymnastics acted as a powerful diuretic.

Thus, from April 27th to May 2nd the patient was taught to breathe by the nose, the breathing to be done without effort or forcing in any way, and twenty beats being counted with the hand. On May 3rd he was made to breathe twenty times, lying on the back, and then to give twenty diaphragmatic respirations, lifting the doctor's hand laid on the abdomen, and beating time as before. From May 5th to these two exercises Dr. Rosenthal added twenty respirations, the patient lying on his back, but with his right arm holding the head of the bed. From May 7th to the above three exercises he added twenty inspirations, the patient still lying on his back, the right arm being held out from the body. From May 13th he added twenty respirations, with both arms raised, holding the head of the bed. These five exercises were continued till the patient left hospital, returning thereafter only once a week to go through his exercises. On May 22nd a new exercise was added. The patient lay on the bed as before, with his arms close to the body, the forearm being flexed, and the hands on a level with the shoulders; traction was then made during inspiration, so as to extend the right arm completely and the left arm slightly, while during expiration the arms were brought back to the first position. In the month of October these movements were equalized in both arms.

Dr. Rosenthal rejects exercises which require effort, such as forcing water from one Wolff bottle into another, also the use of the chair used in Naunyn's clinic which was recommended by Professor Osler at the meeting of the British Medical Association at Oxford. During the exercises the quantity of urine rose from 1 litre to 1½ litres, reaching 2 litres on May 2nd, and the large amount of 4 litres by May 11th, the eve of the second thoracocentesis. The urine was rich in chlorides, and non-albuminous. The daily emission remained at 3 litres till the patient left hospital. At the same time the respirations did not increase in number, the pulse remained quiet, and there was no reaction local or general. The weight of the patient increased proportionally with the expansion of the chest. Before his attack of tuberculous pleurisy the patient lost 8½ lb. in weight, which Dr. Rosenthal described as the "fore-tubercular phase" or phase of "tuberculisable nutrition." It was a very common phase which he thought important to diagnose, since it was due largely to a fault in the physiology of respiration, and the application of respiratory re-education at this period would almost certainly protect the patient from phthisis.

The following project has been presented in the name of the Société Médicale des Hôpitaux to the mixed Commission on the isolation of tuberculous patients, the proposal of this Commission that the tuberculous should be absolutely isolated in special hospitals being in practice almost impossible to carry out. The population of Paris will not consent to a poor patient who, out of hospital has entire liberty, being treated as a suspect, and excluded from the hospital of his quarter and put away into a closed establishment. Moreover the endemic character of the disease, the multiplicity of its forms, the frequency and variety of the acute and chronic affections which are associated with it, do not allow of an absolute separation between tuberculous and non-tuberculous patients, and constantly bring the physician face to face with complicated and doubtful cases which cannot be excluded from general wards. The number of tuberculous patients in the Paris hospitals is so large that if they all were collected into special establishments the entire hospital service would be disorganized, or building expenses would be involved beyond the means of the Assistance Publique and the city. The following are the practical suggestions of the Society:

1. In each of the hospitals which exist to meet the needs of every area of Paris, there shall be set aside and organized for the isolation of cases of decided tuberculosis, special wards in proportion to the average number of tuberculous cases treated in that hospital.

2. The consulting physicians in each hospital shall confer and present a project to the administration as to the organization of such special wards.

3. The special wards for tuberculous cases shall be either concentrated in one special pavilion or disseminated, but shall then have special entrances. They shall be provided with impermeable floors easy to wash down, ward furniture of a modern type, numbered utensils for the use of each patient, and disinfecting apparatus for the spittoons and linen.

4. Patients affected with decided tubercle shall be admitted straight into these special quarters, and not have access to other wards.

5. No medical or surgical general ward shall contain one or more beds separated by partitions for the temporary isolation of doubtful cases.

6. A supplementary hospital shall be established to receive the overflow from the special wards in district hospitals, which shall never be encumbered with supplementary beds. The physician in charge shall give a certificate stating that the patient is removed on account of overcrowding in his service.

This supplementary hospital to act as a "regulator" should be erected if not within the city at least in the immediate neighbourhood; for instance, near the fortifications. This hospital should be large enough to receive the floating population of 500 or 600 phthisical patients who overcrowd the existing hospitals during the bad season of the year.

The *Journal Officiel* has published statistics of the population in France during the year 1903. The relation of births to deaths shows an excess of 73,106 births, a figure below the total for 1902 (83,944), and only just above that of 1901, when the total was 72,388. The fall in the excess of births over deaths compared with 1902 is due to a further fall in the number of births, 18,666 fewer births being registered in 1903 than in 1902. The mortality also shows a decrease, the number of deaths being 7,828 less in 1903 than in 1902. From the tables in the report during 1903 no less than 36 departments showed an excess of deaths over births as compared with 30 in 1902 and 31 in 1901. Compared with 1902 the diminution in the number of births is general, occurring in 73 departments, the largest drop being in the Nord, 1,414 less births; the Seine, 1,311; the Bouches-du-Rhône, 1,018; the Gard, 482; Dordogne, 749. In only 14 departments were there more births in 1903 than in 1902; Morbihan having the highest increase, with 710 more births; then Ille-et-Vilaine, 494; Manche, 407; Corsica, 330; and the Vosges, 235. The fall in the number of deaths compared with 1902 occurs in about half the departments. Among the 47 departments with a fall in the number of deaths, the largest diminution occurred in the Seine, with 3,094 less deaths than 1902; the Nord, 2,015; the Manche, 773; Morbihan, 760; the Orme, 701. Forty departments showed more deaths in 1903 than in 1902; the Bouches-du-Rhône with 1,502 more deaths; Dordogne, 811; Vaucluse, 532; Puy-de-Dôme, 500. Thus the number of births in 1903 was less than in 1902 in five-sixths of the departments in France, and the number of deaths diminished in about one-half of the departments, therefore the decrease in the mortality is not so general as the decrease in the number of births.

VIENNA.

The Rothschild Hospital.—A New Food for Infants.—The Hygiene of Schools.—Death of Dr. Reitenbacher and Dr. Reder.

The Rothschild Hospital has received from Baron N. Rothschild, the son of the founder, the sum of £100,000 for the erection of a new wing, with accommodation for fifty surgical beds. The hospital, which is already equipped with the most elaborate modern apparatus, has been a boon to the densely populated north-western districts of Vienna. It now contains 500 beds, devoted to gynaecological, internal, and surgical cases. Docent Zuckerkandl, its senior surgeon, has made the surgical diseases of the uropoietic system a speciality; and the extirpation of the prostate gland, as practised in England by Freyer, Walker, Herring, attracts many elderly patients from Russia, Poland, Hungary, and Eastern Germany to the hospital. A number of English-speaking practitioners from the old and new continent are taking courses in this hospital.

A Society of Paediatrics, with Professor Monti as its President, has recently been formed. At one of its first meetings a discussion took place on artificial milk for infants. The name is not very appropriate, as the milk is made from cow's milk, modified so as to be equal in quality and specific contents to human milk. Dr. Szekely, of Buda-Pesth, the inventor of the new milk, said that it was often impossible to feed infants at the breast on account of the weakness of the mother, whilst the numerous foods in use for such cases are not equivalent to human milk, the deficiency in carbohydrates, the amount of casein, and the high percentage of fat being the chief drawbacks. He said he had succeeded in eliminating the casein from cow's milk by a chemico-dynamical process. By adding sterilized sweetened cream in certain proportions to milk treated by his method, there is produced a liquid which he says is absolutely equal to human milk in point of soluble albumen, casein, sugar and fat. A number of children fed on this milk were shown, amongst them being triplets. The experiments had been going on for one year, and there were two children who had received during that time nothing else but the new food. The results were satisfactory, and trials on a larger scale will be continued.

The Austrian Society of Hygiene has promulgated its resolutions as to the hygiene of schools. The pavilion system is said to be the best for all purposes. Fifty pupils are to be the maximum number allotted to one teacher. The floor

should be lined with linoleum, as producing the least amount of dust in the schoolroom. Ventilation has, it is pointed out, hitherto been generally neglected. At the end of every hour the windows should be opened and the air renewed. Indirect diffused light should be adopted, all light coming from the left. The best means for this end is to have high windows with milk-glass panes. Each school should have a bath and a room where the children can deposit their overcoats, cloaks, and umbrellas before entering the classroom. Special stress is laid on the necessity of appointing a medical officer whose duty it should be to stop the overworking of the children, and to instruct them in the simplest principles of hygiene. Special examinations of the teeth, eyes, ears, and throats of the children should be made from time to time. Care should be taken to have the seats and desks constructed on anatomical principles, with the view of counteracting any beginning scoliosis, rachitic deformities, and myopia. Physical training, gymnastics, and open-air walks should be promoted. The care of weak-minded, imperfectly developed, or imbecile children should be entrusted to special institutions where the necessary individualization could be practised.

A few days ago Dr. Leo Redtenbacher, the Vice-Director of the Vienna General Hospital, died after a short illness. The deceased was well known amongst his profession by his assiduous work to simplify the difficult administration of the enormous hospital. His works on sanitation, and on the relations of atmospheric pressure to diseases of the chest, made him well known outside his own country. Being always rather delicate, he never took part in discussions or meetings, but his quiet, benevolent ways secured him the love and esteem of all with whom he came in contact.

On the same day Professor Reder, the President of the College of Doctors in Vienna, passed away after a short illness. His scientific works on the surgery of the battlefield won for him a prize, and gave him the authority requisite to make him the leader in a campaign against the unsatisfactory conditions which interfered with the efficiency of the Austrian army in the war of 1877 in Bosnia. He had the happiness of seeing all the reforms for which he had striven carried out.

LIVERPOOL.

Medical Students' Annual Dinner.—Epidemic of Measles.—The United Hospitals.

The annual dinner of the students of the Medical Faculty of the University took place on November 26th in the Exchange Station Hotel. Covers were laid for about 120. The chair was occupied by Dr. T. B. Grimsdale, the vice-chair by Mr. D. Douglas-Crawford, and there were present also the Dean of Faculty (Professor Moore), Professors Parker, Paterson, Briggs, and others. The usual loyal toasts having been duly honoured, the toast of "The Medical School," was proposed by Mr. T. L. Kenion, and replied to by Dr. T. R. Bradshaw on behalf of the Royal Infirmary, by Professor Paterson on behalf of the University, and by Mr. Damer Harrisson on behalf of the United Hospitals. Dr. Bradshaw alluded to the fact that the infirmary was by far the oldest of the constituent bodies which now constituted the school, and pointed out that long before the formation of the Infirmary School of Medicine in 1834 the Infirmary had been actively concerned with medical education. The earliest records of this association were of a very interesting and remarkable nature. In the year 1789 an Act of Parliament was passed requiring all vessels engaged in what was known as the West African trade (the slave trade), to carry a surgeon who had passed an examination at Surgeons' Hall, at one of the Royal Colleges in Edinburgh, or at some public or county hospital. These examinations were not very exacting, and those who entered for them were generally the captains of the vessels; during the eighteen years that elapsed between the passing of the Act and the abolition of the slave trade in 1807, about 900 persons passed as surgeons at the Liverpool Infirmary. That the standard of the examination was fairly high was shown by a letter, of which a copy is in existence, complaining that persons who had been rejected by the examiners in Liverpool had been granted certificates elsewhere. The health of the Chairman and Vice-Chairman was proposed by Dr. F. A. G. Jeans and duly acknowledged. "Our Guests" was proposed by Mr. G. F. R. Smith, and responded to by the representatives from Manchester and Leeds. An artistic menu card was supplied, illustrated by Dr. John Hay, and an excellent musical programme was rendered by Dr. Pantland Hick, Dr. John Hay, Dr. Karl Grossmann, Dr. Cleaton Roberts, Dr. Pethick, and Mr. W. B. Marshall. Many of the speakers, both students and others, alluded in sympathetic terms to the great loss sustained by the death of Sir William Banks, who occupied the chair at the dinner last year.

At a recent meeting of the Health Committee Dr. Hope reported that 33 deaths from measles had been registered during the previous week, while the cases reported numbered 323. He apprehended that with the onset of cold weather the loss of life from measles would be very much greater than it had been unless parents were particularly careful to pay attention to the very earliest symptoms of the disease. Unfortunately, it was commonly regarded as a trifling ailment; but, as a matter of fact, as the Committee saw from week to week, it was really one of the most formidable diseases to be dealt with. The point to be borne in mind by parents was to guard the child from the very commencement of the illness, and not to regard it as a trifling ailment, nor allow the child to run about and play as usual.

Judging from the reports which have appeared in the London *Times* and elsewhere it appears that a good deal of misapprehension prevails as to the position of the "United Hospitals." Students were always at liberty to take out their hospital practice at any Liverpool hospital which conformed to the regulations of the licensing bodies. The only change which has taken place is that certain of the hospitals have arranged to issue a common ticket entitling a student to take out a part or the whole of his practice at whichever of the amalgamated institutions he may prefer.

MANCHESTER.

Amalgamation of Hospitals.—Cancer Hospital Statistics.—The Last Surviving Teacher of the Royal School of Medicine—Assize Case: Electric Shock and Rupture of a Ligament—Hospital Saturday and Sunday Funds.—The Royal Infirmary and a Central Receiving House.

The amalgamation of St. Mary's Hospital with the Southern, which was arranged by the respective Boards of these hospitals on November 24th, will take effect at the new year, the joint hospitals being known as the "St. Mary's Hospitals." Apart, these hospitals have done much both for medical education and for the women and children of Manchester; together, it may be expected that they will do still more.

At the annual meeting of the subscribers to the Christie (Cancer) Hospital on November 23rd, a deficit of £1567 was shown in the maintenance account, and of £774 in the building extension account. About 130 in-patients and out-patients had been treated during the year; 92 being new cases. The hospital afforded a permanent home to 45 patients, the youngest patient being aged 20, and the eldest 79. Professor Wild stated that statistical observations were being collected steadily by the medical staff, and all plans of treatment which held out any hope of alleviation were being tried; the *x*-rays results agreed with those obtained elsewhere. They were only useful in a limited class of cases, one which commonly did not come into hospitals. The great difficulty was to get patients to apply for treatment sufficiently early in the disease. Professor Wild added that he regarded cancer as a perfectly natural cause of death; though often originating in tissues subject to chronic irritation, a senile change was necessary to its development. If these views were correct, it might be expected to increase with the strain of modern life, and its prevalence could only be diminished by the lessening that strain.

Manchester has just lost by the death of Mr. Leo Grindon at the age of 86 the last survivor of those who taught in the old Pine Street School of Medicine, or Royal School of Medicine, until it was merged in the Medical School of Owens College. He lectured on botany in that school for the long period of twenty-five years. He was a man of much literary ability, and as a teacher was both eloquent and interesting. He founded the Field Naturalists' Society in 1860, and published a number of books and pamphlets on botanical and allied subjects.

A case of considerable importance to medical jurisprudence and to corporations which use electric traction was tried at the recent assizes. The plaintiff sued the Salford Corporation for damages, alleging that whilst getting into a tramcar he touched a bar, with the result that he received an electric shock which broke one of the ligaments of his knee-joint. Both the occurrence of any shock and the possibility of a shock thus causing rupture of a ligament were denied, and the jury returned a verdict for the defendants, apparently

accepting the view put forward that the cause of the rupture was a stumble on the part of the plaintiff.

This year there is a considerable decrease in the contributions to the Hospital Sunday and Saturday Funds. They have suffered from the general depression of trade. On the Sunday Fund there is a decrease of £303 and on the Saturday Fund one of £190, the total amount distributed from the two funds being £7,500. Only once before has there been a worse year for Hospital Sunday.

The question of a central receiving house and outpatient department is still agitating the lay Board of the Infirmary as has been the case for some time past. At various meetings resolutions and counter resolutions have been passed, the question turning mainly upon whether or not beds should be provided at the receiving house. Their installation is opposed upon the ground that with an efficient ambulance service they are unnecessary. The Committee being unable to agree, the point is to be settled at a meeting of the trustees on December 15th. They will have to say exactly what sort of receiving house or emergency hospital they desire the Board to establish in the City.

CORRESPONDENCE.

THE CENTRAL BRITISH RED CROSS COUNCIL.

Sir,—In your editorial comment on the appeal for funds which the Central British Red Cross Council has made to the public, in order that the much-needed work of thoroughly organizing the voluntary aid resources of the country may be successfully accomplished, you ask two questions, one concerning the omission of representatives of the volunteers on the Council, and the other regarding funds.

With reference to the first question, I beg to point out that there are two volunteer officers on the Council—Lieutenant-Colonel G. A. Beatson, M.D., C.B., V.D., the officer commanding the Glasgow Companies, Royal Army Medical Corps (Volunteers), and Lord Blythswood, the honorary Colonel of the 3rd Volunteer Battalion the Highland Light Infantry.

In reply to the second point, the explanation is that the National Society for Aid to the Sick and Wounded in War have considerable accumulated funds, but the Society state that they have been advised that, inasmuch as their funds are subscribed for aiding the sick and wounded in time of war, such funds cannot be expended in peace time for the purpose of furthering the organization of voluntary aid resources.

In view of the immense importance of peace organization, the Central British Red Cross Council, which has no source of income of its own, had no alternative but to appeal to the generosity of all sections of the public, and they trust to receive the same full measure of support which the public have always so freely given to Red Cross work in the past.

As it has a special interest in connexion with our appeal I would also remind your readers that an important discussion on the organization during peace of civil medical and ambulance aid to ensure an immediate reserve of trained assistance on the outbreak of war took place this year in the Army, Navy, and Ambulance Section of the British Medical Association meeting at Oxford. A full account of this discussion is given in the British Medical Journal of August 20th, 1904.—I am, etc.,

T. McCulloch, Major, R.A.M.C.
Honorary Secretary, Central British Red Cross Council.

London, S.W., Nov. 30th.

THE DECISIONS OF THE REPRESENTATIVE MEETING.

Sir,—I should be glad to have the opinion of yourself and of members of the Association on the following question: A matter of importance having reference to proposed legislation is brought before the Divisions, and finally before the Annual Representative Meeting, where it is discussed. A vote is taken, with the result that a resolution in favour of a certain principle is carried by a large majority, and ordered to be forwarded to a certain Committee (not of the Association) which happens at the time to be engaged in an investigation of the subject. Subsequently a certain Division passes a strong resolution against this principle, which resolution the Division sends not only to the Council of the Association, but also to certain influential persons (not necessarily members of the Association or even of the profession) who are interested in the question.

What I wish to know is whether such action is to be considered loyal to the Association, and likely to promote its interests? It appears to me that if the Divisions are not prepared to abide by resolutions passed by Representative Meetings, but, on the contrary, are to try and thwart, by appeal to outside persons or bodies, any action such resolutions may lead to on the part of the Association, then there is an end to that unanimity and authority in the pronouncements of the Association which some of us believe to be amongst the advantages of the recent reconstitution.—I am, etc.,

November 27th. A Secretary of a Division.

ON PRIMARY BRONCHOPNEUMONIA AND SUFFOCATIVE CATARRH.

Sir,—My paper on primary bronchopneumonia has evoked some correspondence, but some of the comments are hardly to the point. The relative frequency of acute lobar or massive pneumonia in the child and in the adult is really not material. Statistics differ and opinions vary widely on this question. My own experience leads me to adopt the generally-accepted view that massive or lobar pneumonia is considerably less common in the young child than in the adult.

The object of my paper was to draw attention to the fact that there are two forms of patchy disseminated pneumonia, or, to adopt the common term, of bronchopneumonia. In the one the patches of inflammation develop in the course of a bronchitis, and the bronchopneumonia may therefore be well called secondary. In the other there has been no antecedent bronchitis, the bronchopneumonia has developed independently, and may therefore be called primary. These two forms differ in respect of etiology, onset, course, duration, termination, prognosis, and probably, also, of bacteriology.

The primary form begins suddenly without antecedent bronchitis, runs an acute and short course, terminates abruptly by crisis, has no tendency to relapse, and is rarely fatal—in fact, presents all the clinical features of acute lobar pneumonia, except that the lesions are not consolidated, but disseminated. The secondary form is preceded by bronchitis, develops less acutely, runs a longer and more irregular course, is especially liable to relapse, terminates gradually by lysis, and is not infrequently fatal.

These two forms of bronchopneumonia, which stand in such marked clinical contrast, ought to be recognized and kept distinct from one another. The primary form, I maintain, is ordinary acute pneumonia of pneumococcal origin, and, so far as it goes, bacteriological investigation supports this view, but more work on this part of the question is required.

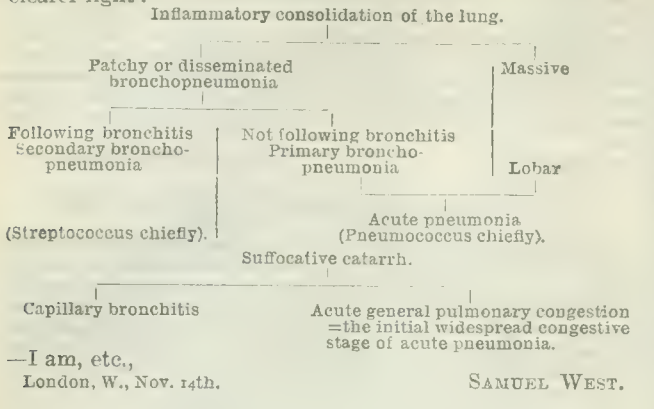
The facts may be stated in another way. Acute pneumococcal inflammation of the lung presents itself in two forms—the lobar or massive, and the patchy or disseminated. Each form may occur in either child or adult, but in the adult the lobar is the rule and the disseminated the exception; while in the child the opposite holds, that is, the disseminated is common and the massive less frequent. In other words, acute pneumococcal inflammation of the lungs tends in the child to take the patchy or disseminated form, and thus to be confused with ordinary bronchopneumonia.

The subject of bronchopneumonia is made the more puzzling by the introduction of the terms "acute congestive bronchopneumonia" and "suffocative catarrh." Here, again, two different conditions are confused. In one, a bronchitis spreads to the small tubes, obstructs them, and leads rapidly to suffocation. This is the true suffocative catarrh, that is, bronchiolitis, or capillary bronchitis.

In the other, without any antecedent bronchitis, acute pulmonary congestion sets in, which may be fatal in a few hours. *Post mortem*, it is often said, nothing is seen except extreme congestion, but if the lungs be examined microscopically, widespread inflammatory exudation is found in the alveoli. It is not uncommon in the adult for acute pneumonia to commence with widespread pulmonary congestion, which subsides elsewhere as the consolidation localizes itself. This may be attended with very severe symptoms in the adult, and in the small child is not unlikely to be fatal, and that even in a few hours. I have recorded some remarkable cases of this kind in my book on *Diseases of the Respiratory Organs*, where a full account of these subjects will be found.

Thus acute congestive bronchopneumonia becomes the initial congestion stage of acute pneumonia, and suffocative catarrh should be restricted to capillary bronchitis. The description of bronchopneumonia and suffocative catarrh given in the textbooks is very confusing. Nor can this be surprising if such different conditions are described under the same terms.

The facts as they present themselves to me are set forth in the following table, which may serve to place the subject in a clearer light:



—I am, etc.,

London, W., Nov. 14th. SAMUEL WEST.

ANTITYPHOID INOCULATION.

SIR,—In my last letter I asked Dr. Wright to reply to two very simple questions. The first was as follows: Why did he quote my correlation value for immunity in the Indian army against an absolutely different constant based on his own mortality statistics?

I have searched through Dr. Wright's reply in vain for any answer to this question. The purport of my question was obvious. Dr. Wright apparently aimed at discrediting my method of dealing with the statistics by placing a low coefficient of correlation against what he considered a high rates' ratio. To achieve this end he set the Indian immunity and inoculation correlation against an entirely different matter—the relative death-rates of inoculated and uninoculated. In other words, he compared, as I said in my last letter, a measure of the ratio of one kind of rates with a ratio of another kind of rates which were a three-fold exaggeration of the first set. Dr. Wright now tells us that the incidence statistics obtained from the army have only a subordinate value as criteria of the efficacy of antityphoid inoculation. It is the more remarkable, therefore, that he should have used my immunity correlation to set against a ratio of death-rates, which he knew was far higher. But if Dr. Wright relegates the immunity statistics to a subordinate place, then he loses what I personally hold to be the most important result in his favour—that is, the high immunity correlation in the case of the Ladysmith garrison.

Again, if the army incidence statistics are of the unreliable character suggested by Dr. Wright, then it follows that the case-mortality statistics must be equally unreliable and subordinate. Why, accordingly, does Dr. Wright spend a great deal of energy over the case-mortality of the inoculated and uninoculated in Ladysmith?

Dr. Wright, in his *Antityphoid Inoculation*, uses the term *distinctly lower*, when verbally he is comparing a case-mortality of 18±5 with one of 22. He now states that "by a slip of my pen, made in transcribing my manuscript, the word 'officers' was here omitted from my text." There were 41 inoculated officers instead of 44; this change is inappreciable in the group of 1,705 inoculated men dealt with in the Ladysmith returns. Dr. Wright gives me a warning that the case-mortality rate based on 35 inoculated cases is not worth laying any stress upon. What must we, then, say of Dr. Wright's own case-mortality rate based upon the cases of 7 inoculated officers? Yet it now appears that it was on these 7 cases that he based his statement that one rate was "distinctly lower" than another!

Those, however, who have actually read my report will know that I did not lay stress upon the *negative* correlation between inoculation and case-mortality in Ladysmith. My exact words were: "If any stress could be laid on the result it is most mysterious that an inoculated man, if he caught enteric, profited less by his inoculation in Ladysmith than if he had been in one of the single mobile regiments; while he would be much less likely, relatively to the non-inoculated, to catch it in Ladysmith than in a mobile group."

The correlation between inoculation and recovery still remains sensibly zero at Ladysmith after we have made Dr. Wright's corrections. The same correlation in the single regiments has the very sensible value 0.3. The correlation between immunity and inoculation was for Ladysmith 0.45, and for the single mobile regiments sensibly zero. This still remains mysterious to me and I believe must be so to every one who approaches the matter with no bias for or against inoculation. To my mind it strongly suggests a possibility of spurious correlation. In dealing with the paragraph of my report touching on this matter Dr. Wright deliberately put the "mystery" on one side, and began to suggest minor corrections of the case-mortality which, when introduced, in no way modify the main result. My second question was: "Why did Dr. Wright slur over the important point here involved?" When I allow for the corrections and show that the case-mortality of the inoculated was not "distinctly lower" than that of the uninoculated, Dr. Wright replies that the case-rate in the inoculated officers who got enteric distinctly was. There were 7 in all. Yet in the very next paragraph of his letter he chides me for using 35 cases in all,* even when I added the phrase, which he does not cite, "if any stress could be laid on the result." It is clear that Dr. Wright makes no reply whatever to my second question, and only elucidates the subject under discussion by stating that all immunity statistics are subordinate and by the words, "I am quite without a clue to the mystery." This is followed by the now familiar suggestion that the C.I.V. statistics have been in some way muddled or "cooked." This at least seems to me the only conclusion that Dr. Wright's "thoughtful reader" will be able to draw from his text.

In Dr. Wright's *Antityphoid Inoculation* we find that he sums up his conclusions in this *order*:

1. Effect which has been exerted by antityphoid inoculation on the incidence of the disease.
2. Effect which has been exerted by antityphoid inoculation on the case-mortality of the disease; and only lastly
3. Effect which has been exerted by antityphoid inoculation on the death-rate from the disease.

As I understand him now (1) and, therefore, of necessity (2) are to be relegated to a subordinate position as criteria of efficacy. With this it seems to me that much of the strength of Dr. Wright's position is entirely swept away. I contended, and still contend, that immunity must be the first consideration for the War Office authorities. If the incidence statistics in the army are really, as Dr. Wright states, unreliable in the bulk, then surely from the army standpoint the conclusion of my report was fully justified. We need further experimental inoculations made with the greatest care on homogeneous material, that is, on men of like caution, subjected to the same environment, and we want further extreme care in diagnosing the probable cases of enteric. If Dr. Wright has faith in his inoculation, and of this I have not the slightest doubt, what good can possibly be gained by rushing it through on statistical evidence of a very questionable character, so questionable that Dr. Wright feels at liberty to pick and reject his returns? He may be justified in his method of selection, but the process does not carry conviction to purely impartial persons like myself, and, above all, it opens the door to every anti-inoculator to describe the whole of Dr. Wright's proof of efficacy as a mere juggling with statistics. In no sense that I can see is the efficacy of antityphoid inoculation comparable with the efficacy of vaccination. It may, however, become so with further experiment and enquiry, or it may ultimately be demonstrated to have merely the very partial effectiveness which Dr. Wright now appears to claim for it. Even so, the discoverer will have performed a considerable national service. Why should he now endanger his whole case, first, by appealing to statistics which on his own showing are largely unreliable—and from my standpoint are undoubtedly inconclusive—and, secondly, by dealing with these statistics in a manner suggestive of the forensic advocate rather than of the man of science?—I am, etc.

University College, London, Nov. 28th. KARL PEARSON.

* Dr. Wright cites results for Barming and Richmond Asylums as results that ought to have been considered. He screens the real weight of these results, at Barming, for instance, under an incidence rate of 3.4 among the uninoculated and one of *nil* among the inoculated. But he does not say that if inoculation were in no way related to incidence, the expected rates would have been 2.5 ± 1.0 and 2.5 ± 1.2, and that no careful statistician would predict real significance for a result which is no more than *twice* its probable error. The same remarks apply to the Tintown statistics, which give a record of seven deaths only, and in no sensible way affect results based on 624 deaths, the total for the South African special hospitals. Dr. Wright disparages the unfavourable Ladysmith returns with only 35 inoculated cases. What is to be said of Richmond and Tintown with, perhaps, half-a-dozen inoculated cases? I gave my probable error in the case of Ladysmith. Dr. Wright in his treatment of statistics has never once given the probable error of one of his rates!

Sir,—Professor Wright's complaint is generally that I have taken his critical commentary too seriously.

In the first "absurd" objection to the 18th Hussars, I excluded them, like the returns from India, 1899, on account of the method of calculation. Professor Wright, in the *Practitioner* for March, points out this source of inaccuracy as affecting the bulk returns for 1899, and notes that the same remarks apply to the 15th Hussars. I have simply followed Professor Wright in this objection.—I am, etc.,

R. J. S. Simpson,
Lieutenant-Colonel, R.A.M.C.

London, Nov. 28th.

OPEN METHODS OF WOUND TREATMENT.

Sir,—I have read with interest your notice of the Open Methods of Wound Treatment in the Alps, and beg you will grant me a little space in order that justice may be done in reference to this matter. Neither the idea nor its applications are new.

It is now many years since I drew attention to this method, as the result of my observations of the wounded among the Zulus, during and after the war of 1879-80. I described the rapid and excellent results that were obtained by the exposure of undressed wounds to fresh air and sunshine. With a view of bringing about the same results in this country, I devised what is known as the oxygen treatment. It consists in the exposure of the wounded surfaces, in suitable apparatus, to a pure super-oxygenated atmosphere. This system I and others have practised for many years with complete success.

During the past eight years 580 cases of various kinds have undergone treatment in the Oxygen Hospital; of these, 419 have been cured, 113 have been greatly relieved, and we have failed in 48 cases. It must, however, be remembered that nearly all these cases had been treated in various ways without success, and had an average previous duration of seven years in each case.

Beyond the fresh air and sunshine in the natural state, and the artificially-prepared atmosphere we use, there are other important advantages in this system. In the first place, any form of dressing, no matter how light and how carefully applied, must irritate the tender and delicate surface of a granulating wound; and, secondly, it would seem bad practice to confine in contact with a wound the exhalations and discharges that proceed therefrom. These objections prevail wherever dressings are applied, but by the system I advocate these disadvantages are avoided.

Dr. Bernhard draws attention to the excellent cicatrices produced. In published papers I have given a picture of a microscopical section from an "oxygen cicatrix," showing that it is a true skin, except that it does not possess sweat glands or hairs.

There are very few finalities connected with surgery—healing by "first intention" is one of them, and we cannot hope or indeed wish to do better than this. Where it cannot be accomplished, and granulation takes place, the oxygen treatment presents obvious advantages, and I contend has and will produce better results than any system that has been devised.—I am, etc.,

George Stoker.

Mayfair, W., Nov. 21st.

THE NEW SYDENHAM SOCIETY'S *CLINICAL ATLAS*.

Sir,—The Committee in charge of our *Atlas* is at present engaged, amongst other things, with Drug Eruptions. We are in want of portraits illustrating the rashes due to quinine and copaiba, and some other of the less common drug erythemata. If any of your readers possess such, and will communicate with either Dr. Colcott Fox or myself, it will confer a favour. Of the eruptions caused by iodides, bromides, and arsenic we have already more than can be made use of. Any portraits showing the results of insect irritation, fleas, bugs, mosquitos, etc., will also be very acceptable.

The letter of mine which you were kind enough to print six months ago asking for portraits in illustration of variola, varicella, etc., was very successful. It brought us some excellent photographs, etc. We were in this matter especially indebted to Dr. Goodall, of the Eastern Hospital, London, and Dr. Hanna, of Liverpool.

May I venture to suggest that in the next Annual Museum (at Leicester) special attention should be given to the subjects which I have named? A collection of drug eruption portraits, and another of insect eruptions, might, I think, prove very instructive, and might also help the labours of our Committee. In making the suggestion I have, as you will see, my own axe to grind. I want to see the collections myself.—I am, etc.,

Jon. Hutchinson,
Honorary Secretary, New Sydenham Society.

London, W., Nov. 25th.

CHARITY THAT BEGINS AT HOME.

Sir,—The timely letter of Mr. Christopher Heath in the Journal of November 26th, p. 1493, leads me to add a few remarks which I hope may strengthen his appeal to the members of our profession, especially old subscribers to the Society for the Relief of Widows and Orphans of Medical Men.

Some fifty years have elapsed since I paid my first subscription to this excellent charity. Last year I had the satisfaction of helping to obtain aid for the widow and eight or nine children of a medical man who died after a long illness and left them without any provision, save the small sum which the sale of his practice in a poor neighbourhood and the little addition of a life insurance office. The whole proceeds were absorbed in paying his debts and funeral expenses. The help of the above-mentioned Society was a great boon to the wife and children of a steady, abstemious, but penniless man.

A member of the Society is not compelled to pay his annual subscription after the twenty-fifth year, when he may continue his payments as a donor. I reiterate this statement because I know that many—who perhaps have not read the rules—cease to contribute after twenty-five years—even though Fortune may bestow her smiles upon them.

That my few remarks may prove in their case more than a mere hint, and also lead to the addition of many new subscribers, is the earnest hope of, yours, etc.,

M.D.Lond.

November 28th.

QUININE AND CHLOROFORM ADMINISTRATION.

Sir,—Much has been written and said as to the exact and proper administration of chloroform and other anaesthetics, yet accidents are repeatedly taking place, and we do not seem nearer obtaining a really safe anaesthetic. General practitioners want something more that is really practical and giving greater safety. I think we require a closer study of the patient in the preparation for receiving the anaesthetic. According to the rule of the day, the patient is placed on starvation diet for at least twelve hours prior to the hour of the operation. Added to this there is the depression and dread in the mind of the patient, which is not apparent to the surgeon, who sees before him a good case and wishes to verify his diagnosis. This condition of the patient can only tend to interfere with the heart's action. As you say in the paragraph on page 1336 of the British Medical Journal, "When the heart muscle has lost its resiliency, recovery is impossible."

Whatever may be said to the contrary, it is my firm conviction that disaster comes from a paralysis of the heart. If we consider the plexuses of nerves about the heart, the minute ganglia of nerves permeating the very substance of the heart, the close sympathetic connexion between the brain and the heart, we only want the shock of an accident or the prolonged strain and dread to bring about a slowing and possibly a stopping of the heart's action, when the mask is placed over the patient's face.

The question arises, then: What can we do for the patient to make the administration of an anaesthetic more safe? I do not ask for a better diet, or more food, for the patient, but if a few grains of quinine can be administered within the twenty-four hours before an operation, it will be found that the heart's action is improved and maintained right through the time of the operation; regardless, perhaps, of the amount of the anaesthetic which is used.

I have adopted this plan in several cases, and with the happiest result. Whitla says that small doses of quinine have no effect on the pulse. On this point I do not agree with him; and from personal experience I can say that the heart works with greater energy whilst under the influence of a few grains of quinine.

By giving this simple drug in the form of the hydrochloride, with dilute hydrochloric acid, to a patient preparing for an operation, we can say to the patfent that it is for the purpose of helping him better to take the anaesthetic, and get safely through the operation.

I hope others may adopt this course with their patients, and give a record of the result. There seems more common sense in fortifying your patient for the trying ordeal than

trusting to the hypodermic administration of ether or strychnine when the heart is stopped or is just about to stop its action.—I am, etc.,

Durham, Nov. 16th. EDWARD JEPSON.

PUBLIC HEALTH LABORATORIES IN LONDON.

SIR,—I understand that the Council of the Royal Institute of Public Health proposes to open new public health laboratories in London in the near future. A first appeal for funds is already being issued, and in this it is given as a reason for the opening of such laboratories that the Council recognize "the great necessity which exists in London for the provision of adequate opportunities for the training of medical men in public health." I wish to point out that this necessity does not exist. At the present time London is more than adequately supplied with laboratories for teaching, for routine analytical and investigation work, and for research in public health. University College, King's College, the London Hospital, and St. Bartholomew's Hospital have fully-equipped departments for all branches of public health work, and supply every facility for the training of students. This does not exhaust the list of teaching institutions. Recently, however, some of the medical schools have given up post-graduate public health teaching for lack of students. To talk, therefore, of the "great necessity which exists in London" for new laboratories is absurd; especially when one remembers that, apart from teaching purposes, the Lister Institute may be added to the above list, to say nothing of clinical research associations. It is to be hoped that all those who may be asked for contributions will give the matter very careful consideration before helping to add yet another to the public health laboratories of London.—I am, etc.,

November 28th. F.R.I.P.H.

GRIEVANCE OF LONDON DIPLOMATES AND THE REMEDY.

SIR,—At the annual meeting of Fellows and Members of the Royal College of Surgeons, held on November 17th, a resolution was moved asking the Council to take steps, in conjunction with the Royal College of Physicians, to enable all persons passing the Conjoint examinations to be entitled to style themselves "doctors." This motion was adopted, the President stating that it had his full sympathy.

Now it appears that nearly all—if not quite all—the leading physicians and surgeons of London are in sympathy with the diplomates individually, but when approached collectively they give them little support.

Why not end the matter by placing the London diplomates on the same footing as the Scotch and Irish diplomates, and provincial M.B.'s, who are allowed to use the courtesy title of "doctor," by amending By-law CLXXVII, which prohibits the use of M.D. or the title of doctor, which some are compelled to adopt or starve, as those who style themselves "Mr." are regarded as failures by the public, who think they were unable to pass their examinations.

The diplomates have no desire to use letters they do not possess; but it is absolutely necessary in competition with others (who do not possess an M.D., yet style themselves doctors) that they should not be handicapped by the by-law in question.

As it is not enforced, why not omit it, or amend it, and thus end the ill-feeling which increases daily, between the London diplomates and their Alma Mater?—I am, etc.,

November 23rd. FAIR PLAY.

A HOMOEOPATHIC hospital has recently been established in a suburb of Berlin.

SEVERAL entertainments in aid of metropolitan hospitals are to take place next week. On Monday, a ball at the Grafton Galleries in aid of the Hospital for Women, Soho Square; on Wednesday, a ball at the Empress Rooms for the rebuilding and refurnishing of the Royal Ear Hospital, Dean Street, Soho; on Thursday, a matinée at the Alhambra for the Rebuilding Fund of St. Bartholomew's Hospital, and on Friday a smoking concert at the Queen's Hall, at which a large number of variety artistes will appear and which has been promoted by the Students' Club at the Middlesex Hospital in aid of its Cancer Charity. Ladies will be admitted.

THE new University College Hospital, erected through the munificence of the late Sir J. Blundell Maple, is approaching completion, and it is expected that eighty-six additional beds and cots will be ready for occupation on New Year's Day, making a total of 277 beds. The committee appeal for subscriptions to defray the cost of maintenance.

OBITUARY.

GEORGE VIVIAN POORE, M.D., F.R.C.P.,

Emeritus Professor of Medicine, University College, London.

IN Dr. Vivian Poore, whose death was announced in the BRITISH MEDICAL JOURNAL last week, the profession has lost one of its most justly popular members. He had been in failing health for about eighteen months, and he passed away quietly at Andover, Hants, on November 23rd, at the age of 61.

George Vivian Poore was the youngest son of Commander John Poore, R.N., and was born at Andover on September 23rd, 1843. He received his preliminary education at the Royal Naval School, New Cross, and his professional training at University College, London, where his career as a student was exceptionally brilliant. After obtaining the diploma of M.R.C.S.Eng. in 1866, he served as medical officer on board the *Great Eastern* during the laying of the Atlantic cable. Returning to University College he won the Atkinson-Morley Surgical Scholarship in 1867, and took the degrees of M.B. and B.S. at the University of London in 1868, being awarded the University Scholarship in Medicine. He graduated Doctor of Medicine in 1871, and was elected a Fellow of the Royal College of Physicians of London in 1877.

In 1872 Dr. Poore was selected by the Queen to attend our present gracious Sovereign, then Prince of Wales, when he went to the South of France to recover from the effects of the attack of typhoid fever that so nearly cost him his life. Whilst abroad with his royal patient Dr. Poore was called upon to attend the Duchess of Cumberland, then Princess Thyra of Denmark, during an attack of fever. For the services rendered to her, the King of Denmark conferred upon him the Order of the Dannebrog. The most striking proof, however, of the confidence felt by our late Queen in Dr. Poore's professional abilities and personal qualifications is the fact that from 1870 to 1877 he had charge of her youngest son, the late Duke of Albany, whose special delicacy of constitution required the most vigilant and judicious care.

Dr. Poore was appointed Assistant Physician to University College Hospital at the time when the medical staff of that institution—including as it did among its members Jenner, Russell Reynolds, Erichsen, Henry Thompson, John Marshall, Graily Hewitt, and Tilbury Fox, to mention only those who are no longer among us—made its name famous throughout the world. It is the highest praise that he showed himself not unworthy of a place in that bright host. In due course he became full physician, and he held successively the chair of medical jurisprudence and that of medicine in the College. As a lecturer, Dr. Poore had above everything the faculty, too rare among medical professors, of interesting an audience. He had the supreme gift of lucidity, and his teaching, delivered in a singularly crisp, incisive style and illuminated with frequent felicities of phrase, stamped itself on the memory even of idle apprentices to whom the ordinary lecture was a weariness and a vexation of spirit. Some idea of the vigour and brilliancy of his living speech may be got from his book on *Medical Jurisprudence*, which consists of his lectures on that subject taken down as they came from his lips by a shorthand reporter. The high clear voice and strident emphasis, almost rhythmical in its cadence, with which he spoke added greatly to the effect of the terse and often racy diction in which his lessons were conveyed. So positive were his statements and so compelling his determination to make students see and hear as he did, that he could, like Theodore Hook, have persuaded a crowd of spectators not only that he saw the lion over the gate of old Northumberland House wag its tail, but that they also witnessed the phenomenon. One of his pupils who had the privilege of looking over Poore's shoulder while he was making a laryngoscopic examination and who hinted that he could not see anything, will never forget the peremptory tone in which the timid confession was swept aside with the assurance, "Oh yes! You can see right bang down."

As a physician Dr. Poore had a considerable practice, but he never took the rank as a consultant to which his knowledge and skill entitled him to aspire. The explanation probably is that, being unmarried and caring little for money for its own sake, he never put forth the whole power that was in him. Poore's knowledge of his art had a character of "orbicularity"—the word has the authority of De Quincey—seldom met with in these days, when, whether they like it or not, even physicians who take all medical learning for

their province are driven to specialization. He was an excellent all-round physician, but he had also taken pains to become initiated into the mysteries of several special branches of medical practice. He was an adept with the laryngoscope; he had an expert knowledge of the therapeutic applications of electricity; he was a neurologist, a hygienist, and a medical jurist. He had, moreover, a large experience of the medical problems which present themselves for solution in connexion with life assurance. In addition to this unusually wide knowledge of medicine, Poore had a knowledge of men and of life which made him not only a judicious adviser, but a delightful companion. He was a man of most versatile mind, and, in accordance with the precept of Goethe, had developed his faculties in many directions. He was widely read in various branches of literature. A characteristic utterance may here be recalled. When speaking of Beck's omnivorous reading, which included poets even of the class disavowed by gods, men, and booksellers, Poore said: "In poetry, to *me* there is only Shakespeare and the ruck!" The finality of the judgement and the tone in which it was delivered made one think of Charles Lamb's account of Elliston the actor's declaration that in the matter of food he counted fish as nothing. Perhaps had Poore concentrated his energies he would have achieved more; but although he might thus have been a greater physician, he would not have been so charming a man.

Poore's many-sidedness and also his limitations display themselves in his writings. He wrote on many subjects, and on all of them he wrote well. But he has left no enduring monument of his knowledge and practical insight. The list of his works shows the extraordinary range of his scientific interests. Among them is a textbook on electricity in medicine and surgery, a monograph on the physical diagnosis of diseases of the throat, mouth, and nose; one on nervous affections of the hand (Bradshaw Lecture); another on climate in its relation to health (Cantor Lectures); *Essays on Rural Hygiene*, of which a third edition appeared in 1903; the *Treatise on Medical Jurisprudence* already mentioned, of which a second edition was published in 1902; and *The Earth in Relation to the Preservation of Destruction of Contagion* (Milroy Lectures), which appeared in the same year. He also translated and edited the works of Duchenne of Boulogne, for the New Sydenham Society, and contributed papers on writer's cramp, the trophic changes which follow lesions of the nervous apparatus, etc., to medical journals. Two addresses delivered at the Parkes Museum were expanded and published in a delightful little book, entitled, *London, Ancient and Modern, from the Sanitary and Medical Point of View* (1889).

All Poore's writings are marked by strong common sense and by a terseness and literary grace of style which make them eminently readable. His views on some points—notably the disinfecting power of the earth and cremation—were regarded by many sanitarians as heretical. Poore was not, however, a man to be overawed by authority, even when it seemed to speak in the name of science, and he defended his doctrines with great skill and vigour. In regard to the disinfecting properties of humus he carried his theories into practice in his gardens at Isleworth and at Andover, with results which, to himself at least, were completely satisfactory. It should be understood that Poore was far from being merely an amateur sanitarian. He took a leading part in the foundation of the Parkes Museum, was a member of the Executive Council of the International Health Exhibition held in London in 1884, and was Honorary Secretary or the International Congress of Hygiene and Demography held in London in 1891.

As a man, Vivian Poore had a large share of the personal magnetism which attracts the affection of those who come within the sphere of its influence. He could scarcely have had an enemy, for the most aggressive of colleagues, or the most exacting of patients would have found it difficult to quarrel with him. This was not due to any weak amiability of temper, but partly to the utter absence of self-seeking, which was a marked feature in his character, and partly to a genial cynicism which prevented his taking either himself or others too seriously.

For the achievement in fullest measure of what the world calls "success," it is almost a necessary condition that a man should have as an element in his nature, something of Nietzsche's *Uebermensch*, in whom there is nothing of the milk of human kindness, and who crushes everything and everybody that stands in the way of the attainment of his end. Poore had nothing in him of the "Beyond man," and it is no secret to those who knew him intimately that he sacrificed the chance of a conspicuous professional position to the claims of friendship. A capacity for devoted friendship is one of the qualities that redeem the human race from its natural vileness, and that quality Poore possessed in what theologians call a heroic degree. He gave his life to the care of Marcus Beck, and it was a comfort to him on his deathbed to know that it was recognized that what he accomplished in looking after his friend was a gain not only for themselves but for the science and art of surgery. The friendship of Beck and Poore resembled that of David and Jonathan: it was greater than the love of woman, and if in death they were divided, it may be said with truth that the one who went before carried with him *dimidium animae* of the other. They lived together for thirty years, and the union of hearts, begun on the benches of a lecture room in University College, lasted unbroken till Beck's death. In one of the last letters written by him, Poore said that he had always, from the time of their first meeting, considered Beck "a unique specimen in every relation of life." Indeed, he almost sank his own personality in that of his friend, and his loving care helped Beck in the struggle against ill health which, but for that, would probably have ruined his career. Both these remarkable men had endowments of mind that would, under different conditions, have enabled them to play much more conspicuous parts on the world's stage. But it was probably better for their own happiness that Fate ordered their lives otherwise, and it was assuredly good in these days, when hungry generations tread each other down, that the medical profession should have had within its own body so noble an example of a friendship that was stronger than ambition.

A very old friend of Dr. Poore writes: His professional career is known and so is his hobby—namely, gardening, and especially gardening as part of rural hygiene. To this he clung to the last, wheeled about his garden in bath-chair. Later on, unable even for this, he had his bed in the window of his room, from which he could look, at least, out on the garden.

It was a prime contention with Poore that in the country there was no need for dust carts or sewers, both of which he considered sources of danger, and he would not allow a dust cart to call at his house at Brentford End (Isleworth), or have any refuse taken from the premises. He would not "connect" with the sewer, and if I remember rightly, he long demurred to paying the sewer rate. Dustpan, housemaid's pail, and kitchen sink all alike contributed their share to the garden. Outside bedroom windows was an ornamental box, such as often holds a row of flower pots, but having a lid and lined with lead. Into this the morning bath water was poured, and a pipe from the bottom, ingeniously hidden, carried the water away perhaps across several paths by a rose or ivy trellis overhead to where desirable—might be a row of beans, might be even the boundary hedge. Lawn mowings and leaves were raked into wire cylinders to wither till wanted for top dressings. Even empty cans and tins went to the general garden exchequer, were rolled flat and laid beneath the gravel of the walks.

The like methods were followed at Andover. A cart went the round of his tenants' houses every morning and collected the contents of all the Moule bins and pails and any refuse or ashes there might be to remove. This was brought direct to his garden, a shallow trench being ready for it—a new one opened every day—perhaps 15 in. deep. As soon as the collected soil from the cart had been shovelled into it, the trench was lightly covered in with the top earth, and cabbages, onions, or other suitable vegetables set upon it within three days. In order to demonstrate entire absence of any ill-consequence to the surface-water a shallow well was sunk in the middle of the garden beside which were placed a dipping mug and glass. The present writer drank from the well at Dr. Poore's invitation without hesitation, and so did other guests, among them Professor Schäfer of Edinburgh. The garden—about one acre, or little more—yielded enormous crops both of vegetables and fruit. The year of the present writer's visit Dr. Poore, after supplying his friends' needs as well as his own, sold vegetables and coarse fruit, such as pumpkins, etc., to the amount of over £60, his gardener having a share of the profit.

Refuse, properly used, observed Dr. Poore, is a source of food and wages. He amply demonstrated the truth of this remark. It may be readily inferred that Dr. Poore was strongly opposed both to costly systems of drainage in country districts and costly methods of scavenging, as also to cremation of the dead. He advocated earth-to-earth burial in

garden cemeteries with great force of argument. His opinions upon these most important questions are set forth in a volume of essays as practical for application as they are charming in style, language, and illustration, entitled *Essays in Rural Hygiene*, published by Longmans in the early Nineties; a book to be strongly commended to local sanitary authorities, and one which every owner of a house in a country town or village should possess and study.

B. A. writes: The past few months have left many gaps among the leaders of our profession in London. None of the deaths which have caused them has evoked a wider sense of personal loss than that of George Vivian Poore; for in him our little medical world loses not alone a versatile physician and a brilliant teacher, but one whose wide and ever fresh intellect could not fail to stimulate all with whom he came in contact; and although to those who saw him lately signs of failing health were but too evident, the recollection of him that will endure is that of a piercing eye, a ringing voice, and a wiry frame brimming with vitality.

Dr. Poore was one of those who seem destined to distinction from their student days. One of the many brilliant pupils of the illustrious Jenner, his first leanings were towards surgery, but his scientific temperament quickly led him to abandon this, and his master's influence at once secured him a propitious start. Of the opportunities which were afforded him he soon took advantage, and speedily established a reputation as one of the ablest and most original physicians of his generation. He was one of the first in England to take up the systematic study of the medical uses of electricity. Not only did he translate Duchenne's great work, but he added important observations of his own to the science of neurology; his study of writer's cramp, for instance, may fairly be regarded as classical.

There can be no doubt that had Dr. Poore remained constant to his study he would have taken rank as one of our leading neurologists, but the restless spirit of inquiry drove him into other fields. There was in his temperament something of the virtuoso; a subject of which he had mastered the difficulties lost much of its attractiveness for him, and he must needs turn to the conquest of other problems. It was this that maintained the freshness of spirit to which reference has already been made; but, while adding to his personal charm, it must be admitted that such versatility prevented him from attaining the public recognition which falls to the lot of many a far less brilliant man.

Laryngology next claimed his attention, and in 1881 he published a book on this subject, which attracted much notice, and was in many respects a distinct advance upon previous work. Other interests, however, crowded this out, and in later years the laryngoscope was seldom or never seen in his wards. Dr. Poore was now living with his colleague and devoted friend, Marcus Beck. They shared a house in Wimpole Street and another at Isleworth, where Dr. Poore commenced, at first in quite a desultory manner, those practical studies in rural hygiene which he embodied in a series of works many years later. The habits of the two friends were amusingly dissimilar. Dr. Poore was a very early riser, and did a large proportion of his literary work before breakfast, while Mr. Beck got through most of his after ten o'clock at night with the aid of a pipe and a teapot. Sometimes they would meet on the stairs in the small hours, going opposite ways. Both were, however, agreed in their hospitality and in their love of a joke, and twenty years ago there was nothing that a student at University College enjoyed more than their very frequent informal dinner-parties. Marcus Beck died on Whit Sunday, 1893, "and hath not left his peer"; there are many who think that Dr. Poore was never again quite the same man after this.

But in the meantime another channel had been opened up to his boundless activity. In the course of his promotion on the staff at University College Hospital he was offered the Chair of Forensic Medicine. Into the study of this subject he threw himself with characteristic energy, and by his powers of exposition soon rendered the lectures upon it—usually attended in a most perfunctory manner—the most attractive in the curriculum. The pious labours of an attached pupil have recorded the words of his discourses in a volume, but no printed page can give an idea of the manner of their delivery.

Dr. Poore had the dramatic instinct to perfection; his voice was pliable and resonant, and his diction picturesque in the extreme. He held the complete attention of his audience, whether he enacted a murder scene, ending with the production of a bloodstained shirt; or with solemn features told the convulsed students some monstrous tale of human folly. Only three or four years ago he was appointed to the Chair of Medicine, but he soon found the strain of five 9 o'clock lectures a week throughout the winter too great for him.

Meanwhile he continued to take an increasing interest in the subject of public health, in connexion with which he became during the later years of his life an acknowledged authority. In 1891 he acted as organizing secretary of the International Congress of Hygiene and Demography, which was held that year in London. The work which he had to undertake in connexion with this was enormous, and his performance of it conduced essentially to the success of the congress. On himself the labour had one curious effect, converting him from a non-smoker to the use of cigarettes as stimulants or, as one should say, ergogogues. From this time onwards appeared a series of important works expounding his views as to the disposal of the dead, the construction of dwelling houses, and other hygienic subjects.

Nor was he idle in the department of clinical medicine. He never ceased in his efforts to discover new means of alleviating or combating disease. At one time all his tuberculous patients were eating garlic—the sulphide of allyl having been discovered to be noxious to the tubercle bacillus—at another he was investigating the advantages of a vegetarian regimen or demonstrating that many cases of heart disease can be successfully treated by rest in bed and diet without the use of drugs. These and many other researches will be found in detail in a volume of clinical essays, which he published two or three years ago.

And now he has been called away, at a comparatively early age, and in his intellectual prime. He leaves behind him a record of keen investigation and tireless search after truth. But even if the memory of his scientific achievements should pass away, all who knew him will for ever cherish the image of one who concealed generosity beneath a translucent mask of cynicism, who was a fascinating companion, and a true friend.

ALFRED JOHN FREEMAN, M.D.ABERD., M.R.C.S.ENG.,

San Remo.

FEW men had a wider circle of friends and patients than Dr. Freeman of San Remo, and to all of them—on the Continent, in this country, and in America—the news of his sudden death on Sunday last will cause most genuine sorrow.

Alfred John Freeman was born in London on April 4th, 1844. He was educated at a private school in Southsea, and entered at St. Thomas's Hospital in 1861. After obtaining the diploma of M.R.C.S. in 1865, he held several appointments at St. Thomas's Hospital and elsewhere. In 1866 he graduated M.B. in Aberdeen, and became M.D. of that University in 1870. Whilst he was residing in Aberdeen the state of his health became unsatisfactory, and accordingly, after taking his degree, he spent some time in Continental travel, acting as personal medical attendant first to Archbishop Tait, and afterwards to Lady Georgina Fullerton, the well-known writer. These travelling appointments helped to introduce him to a large circle of acquaintances, and turned his thoughts towards settling on the Continent. He settled at San Remo a little more than thirty years ago. He wrote an article on San Remo in Reynolds-Ball's well-known book *Mediterranean Winter Resorts*, and the great development of that popular health resort has undoubtedly been largely due to his influence.

For many years he had a very extensive winter practice, and, indeed, he seemed by nature to be specially suited to the kind of work that fell to his lot. His intense sympathy and untiring attention to his patients endeared him to them in a most remarkable manner. Many of those who fell into his hands were broken in spirit, with chronic or incurable ailments, and depressed by exile from home and friends. To all such his cheery sympathy and practical help were of the utmost value. In their interests he was habitually regardless of his own health, time, or convenience. His health commenced to fail a year or two ago, and he died suddenly at San Remo on Sunday last, November 27th.

Dr. Freeman in 1871 married Miss Emma Louisa Hopewell, of Abington Abbey, Northamptonshire. She and their only daughter (Mrs. R. Kay-Shuttleworth) survive him.

Dr. StClair Thomson writes us as follows:

My association with "Freeman of San Remo"—as he was

known to all his friends—commenced nearly twenty years ago, when I made his acquaintance while touring abroad in a similar position to that he had himself held with the late Archbishop Tait. For some years I was a colleague of his in Continental practice, and for many years past have looked forward to his annual visits to London with recurring pleasure. His cheery presence, his keen joy in life, his absence of guilefulness, made him beloved by his patients and the friend of all his colleagues. He was, indeed, one who not only loved his fellow men, but particularly loved his fellow medical men. His relations with his Continental colleagues along the Riviera and in Italy were always most cordial, and during his summer holiday no more welcome face was seen at the annual gathering of the Association or at the International Congresses. During the height of his career at San Remo he had one of the largest and best practices on the Continent. This brought him into intimate friendship with many celebrated and distinguished people. It is sufficient to refer to his association with the Crown Prince Frederick during the latter's visit to the Italian Riviera. Indeed, the late Empress Frederick maintained her regard and association with Freeman to her last day. Any one bringing an introduction to him was certain of a glad welcome at his hospitable Villa delle Palme. During the spring and autumn months he practised at Varese, where he entered with keen zest into the excursions and amusements of the visitors, most of whom, indeed, were attracted there by his presence. He had an extensive circle of friends in America, where he visited more than once. In London nearly every one knew him, and his professional acquaintance was further cemented and enlarged by his relationship with Dr. Cullingworth of St. Thomas's, his brother-in-law. In the summer of last year he consulted me for what he himself took to be Menière's disease. Unfortunately, I saw that his symptoms were undoubtedly due to a high-tension pulse and early disturbance of the cerebral circulation, the forerunner of the swift and painless end which was mercifully in store for him. He was a loyal friend, and his genial presence will long be missed.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. Mittenzweig of Berlin, a well-known authority on forensic medicine; Dr. Ustariz, a leading surgeon of Spain, Dean of the Hospital de la Princesa, Madrid, and President of the Academia Medico-Quirurgica; Dr. Boleslaw Polonski, a well-known obstetrician and gynaecologist of St. Petersburg, aged 57; Professor Robert Langerhans, Pathologist to the Moabit Municipal Hospital, Berlin, for many years Virchow's assistant, and author of numerous contributions to pathological literature, aged 45; Professor Stellwag von Carion, the distinguished ophthalmologist of Vienna, aged 81; Dr. Kinzelbach, Medical Inspector of the Schools of Paris, and Physician to the Bureaux de Bienfaisance, aged 71; Dr. Pétel, Surgeon to the hospitals of Rouen, and Professor in the Medical School of that city, aged 56; Dr. K. Klein, Extraordinary Professor of Surgery in the University of Moscow; Dr. C. A. Wurfbrain, sometime Professor of Surgery at Amsterdam; and Dr. Bérochaud, Professor of Therapeutics in the Medical School of Nantes.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE MIDWIVES ACT.

Gallio.—A midwife, certified under the Midwives Act of 1902, is only entitled by law to attend women in normal labour and for a period of ten days after labour. With regard to the use of drugs the rules of the Central Midwives Board, under the heading of regulations for the course of training and the conduct of examinations, directs that the examination shall be partly oral and practical and partly written, and that among the subjects embraced shall be:—

"(g) Obstetric emergencies and how the midwife should deal with them until the arrival of a doctor. This will include some knowledge of the drugs commonly needed in such cases and of the mode of their administration. (See E. 16.)"

(E. 16) is as follows:—

"A midwife must enter in a book, with other notes of the case, all occasions on which she is under the necessity of administering any drug, whether scheduled as a poison or not, the dose, and the time and cause of its administration."

The certificate of the Central Midwives Board does not confer any right to act in any way as a medical practitioner. In all cases of illness of the patient or the child, and in the event of any disorder occurring during pregnancy, labour, or lying-in, the midwife must decline to attend alone, and must recommend that a registered practitioner should at once be sent for.

Whenever a report has been received by a local supervising authority that a midwife has contravened the rules framed by the Central Midwives Board, or has been guilty of misconduct or negligence, it becomes the duty of the authority to investigate the charge, and if a prima facie case is established to suspend the midwife and communicate the fact without delay to the Central Board.

ACCIDENTAL POISONING AT A HOSPITAL.

A long inquiry was held in the Coroner's Court at Liverpool on November 26th into the circumstances attending the death of a patient at the Stanley Hospital. The deceased, a ship's fireman, aged 28, was admitted suffering from septic inflammation of the arm, complicated by alcoholism. On the same day he was given a dose of strong caustic soda, and died two days later. The evidence of the hospital officials more directly concerned was, according to the *Liverpool Post and Mercury*, to the following effect:

The ward sister said that all medicines were kept in a pantry known as the medicine pantry; it adjoined the ward, but only nurses had access to it. On a shelf in this were kept bottles of aperients and cough mixtures, also a bottle of caustic soda and a lotion for dressing wounds. All the bottles were similar in style and appearance, and labelled in the same way. The bottle of magnesia and the bottle of caustic soda were practically alike, and the smell of the solutions only slightly different. The magnesia was often used, but the caustic soda very seldom. Under the shelf was a table bearing an open tray, upon which were kept regularly a number of poisons, used for testing purposes only. There was no place for these poisons to be kept under lock and key. They were all labelled in red. She was not certain if caustic soda was a poison. It was possible for the magnesia bottle and the caustic soda bottle to get together on the shelf, or to be moved about from place to place, as there was no special place assigned to them. On coming on duty about 8 p.m. she heard of the admission of the deceased, and directed a nurse to give him a dose of magnesia as prescribed, and also one to another patient. The nurse went to the medicine pantry, brought a dose in a glass, and gave it to the deceased, who, after swallowing some of it, began shouting. The witness went to him; but as he had been delirious before, she thought he was still not accountable for his actions. The nurse then got a dose for the other patient, but immediately he tasted it he spat it out, saying he was sure the nurse had given him something wrong. Then she thought there might have been some mistake, and went with the nurse to the medicine pantry. The nurse picked up the caustic soda bottle as the one from which she had taken the doses. It was then on the table under the shelf where it was usually kept, while the magnesia was on the shelf.

The nurse having elected to give evidence, said she had been at Stanley Hospital for three years and two months. When told to give the aperient to the deceased and to another patient, she went to the pantry, which was poorly lighted by gas, and thinking she knew where the magnesia bottle was, she picked it up without looking at it particularly. She ought to have read the labels. Taking the bottle into the ward, she poured about an ounce into a medicine glass and gave it to the deceased. He took a little, but spat it out. Another nurse persuaded him to take a little more, but again he spat it out. Then throwing away the remainder, she gave a dose to the other man. He drank about half and then complained of a burning sensation. She then went to the pantry, where the light was brighter, and saw that she had taken the doses from the caustic soda bottle. She at once told the other nurse, and the resident surgeon, who happened to be passing the ward, being warned, came in and gave remedies. She had often used the magnesia, but never the caustic soda.

The dispenser, a lady, said she was a member of the Pharmaceutical Society. Caustic soda was not on the schedule of poisons, and she thought it was not necessary to affix a red label unless the stuff was to be used for external use. Questioned by the Coroner, the witness said she did not label this particular bottle, but would have done so if it had been required. If she had thought it possible that the caustic soda could have got among the other bottles, she would have probably put it in a green bottle with a red label, as was done with the poisons. She now thought that all poisons, whether used only as testing agents or not, should be distinctively labelled.

Medical evidence as to the cause of death was to the effect that this was probably directly attributable to the septic poisoning, and not to the caustic potash, though of course the latter might have tended to prevent recovery if the latter had been at all likely in itself to take place.

The pathologist described the conditions which he found after death. The deceased had suffered from severe septic inflammation, and was the subject of kidney and heart disease. He would have died in any case, but the caustic soda hastened his death: there was evidence of severe burning by a corrosive irritant.

The Coroner having summed up, the jury gave a verdict of death by misadventure, adding a note to the effect that nurses and all others in hospitals ought to be protected from the risks of such misadventure, all poisons being kept in a separate place and some one being specially detailed to deal with them.

THE ETHICS OF CONTRACT PRACTICE.

Z.—We understand the complaint to be that B. has induced shopkeepers to join his private club, and it may be that in order to do this he has canvassed or in some other way transgressed ethical rules, but the mere fact of allowing them to join his club is not in itself an ethical offence. Speaking generally, we believe that clubs and contract practice are only suited to the wage-earning classes, and any practitioner who allows well-to-do people to join a club injures himself and his profession, but can only be prevented by joint action on the part of the local medical men. The circumstances of each case should be considered, and can be best dealt with by the local Division of the Association.

THE LIMITS OF A CONTRACT NOT TO PRACTISE.

X. Y. Z. writes: A. was in practice in a health resort, living in his own house. He sells his practice to B., agrees not to practise again in the district, and goes away. Three years after, A. comes back into his own house, and turns it into a nursing home for invalids under his care. Has B. any just cause for complaint?

*** The contract not to practise would in all probability be held to cover every department of medical work if exercised for gain, unless express exceptions were made. A more definite opinion cannot be given without considering the actual terms of the contract, and our correspondent might, therefore, be well advised to consult his solicitor.

RIGHT OF A SURGEON IN CHARGE OF TROOPS TO INQUEST FEES.

R.A.M.C. (Retired List) writes to inquire whether he is not entitled to receive the usual fees for *post-mortem* examination and giving evidence in the coroner's court under the following circumstances: The baby of a soldier living in barracks died suddenly, and our correspondent being unable to give the usual certificate of the cause of death, an inquest was held. The coroner issued his order to our correspondent to make a *post-mortem* examination, and, after evidence had been given, he remarked: "I am sorry I cannot give you your fee, as the auditor for the county tells me that you are not entitled to a fee, as you are employed by Government, being in charge of the troops here."

*** The coroner has been incorrectly informed by the county auditor. Our correspondent is entitled to receive the usual fees under Section XXII of the Coroners Act, 1887. The only exceptions to payment is to the medical officer of a public hospital whose duty it was to attend the deceased person who died in the said hospital. Our correspondent, in the first instance, should write to the coroner, and make a formal application for his fees, and refer him to the Act of Parliament; and, if the coroner still declines to pay them, action might be taken in the county court; but we cannot help thinking that, after consideration, the coroner will see that our correspondent is justly entitled to the fee.

GRATUITOUS PRACTICE.

X. Z. says that he was called in to a confinement which was supposed to be under the care of a local hospital, the officer of which had failed to attend when summoned. On arrival he found that a student had turned up and that his services were consequently not required. He asked for his fee (2s.), which the people were willing to pay, but the student said it was his fault, and that he would pay it, which he did. The people would otherwise have willingly paid the fee, and said that they were much obliged to our correspondent for going round. A few days afterwards he received a letter from the "Assistant House Accoucheur" complaining of the fee having been accepted from his clerk, who, he said, had offered it because the people were poor. "X. Z." wishes to know (1) whether a medical man may demand a fee when, on arriving at the house, he finds the case in the hands of another practitioner; (2) whether a practitioner should not accept a fee if he finds that he has been summoned to a case which is being attended from a hospital.

*** On the facts as stated we think our correspondent was quite entitled to be paid, and if, as seems to have been admitted, the need for summoning him arose out of the negligence of the officer who should have attended from the hospital, the arrangement by which the latter paid the very moderate fee asked seems to have been quite fair. With respect to the specific questions asked: (1) A medical man summoned in an emergency to a case which he finds to be in the care of another practitioner has, of course, a right to be paid for his attendance; (2) a hospital patient, as such, has no right to expect attendance without payment from practitioners not connected with the hospital.

BONE-SETTING.

AN indignant correspondent sends us a cutting from the *Manchester Evening Chronicle* which contains an article upon a "miracle-working" bone-setter named Barker, adorned with a cheap process reproduction of a rather forbidding-looking countenance. Our correspondent says that many ignorant people believe all they read in the newspapers, and he complains that it should be possible for unqualified men to carry on practice and trade upon the credulity of the public without interference from the law; he asks that steps should be taken to promote a Bill in Parliament to render it illegal to practise any department of medicine or surgery without legal qualifications.

*** We would draw our correspondent's attention to the draft Medical Act Amendment Bill published in the SUPPLEMENT of the BRITISH MEDICAL JOURNAL for November 26th, which in Section XXIII prohibits the practise of medicine and surgery by unregistered persons. In the present state of the law, and we would add of public opinion, it is impossible to prevent newspapers publishing articles of this kind. We would again suggest that the foundation of a society for the suppression of quackery which should include influential members of the non-medical public appears to us to be a hopeful way in which an improvement might be effected in the present state of public opinion which is too favourable to all systems of quackery.

BOOK DEBTS.

JUNIUS asks whether an incoming partner is entitled to any share of moneys paid by a collector into the receipts of a firm after his joining the same, or whether such moneys belong to "book debts," which are not shared by an incoming partner, unless specially paid for.

*** If the moneys referred to are payments for professional services rendered before the admission of partner to the firm, he has no claim to any portion, unless he specially bought a share of the "book debts."

NAME PLATES.

R. M. H.—We agree with our correspondent in preferring the simple "Mr." or "Dr." upon a name plate without any letters or words indicating qualifications or departments of practice. There is, of course, no reason why a practitioner should not put his qualifications upon his plate if he thinks it necessary to do so.

RUSSIAN FEMALE STUDENTS AT ZURICH.—The number of Russian women studying medicine at Zurich has fallen from 90 to 30. The diminution is stated to be due to increased stringency of the entrance examinations.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF GLASGOW.

INSTALLATION OF LORD KELVIN AS CHANCELLOR.

THE installation of Lord Kelvin as Chancellor of Glasgow University took place in the Bute Hall of the University on November 29th. Two decades have passed since a similar event has taken place at Glasgow, the late Earl of Stair having been Lord Kelvin's predecessor as head of the University.

Special interest was added to the present ceremony by the fact that a very distinguished company, including Her Royal Highness Princess Louise Duchess of Argyll, was to be honoured with the degree of Doctor of Laws. The accommodation of the Bute Hall was taxed to the utmost by the large gathering of those assembled to do honour to their Alma Mater and her venerable Chancellor.

The proceedings were opened by Principal Story reading the usual Latin prayer, after which the election of Lord Kelvin as Chancellor was formally reported and the installation proceeded with. Principal Story administered the oath, and after the Chancellor had signed the book he was invested with his official robes. Then amidst the hearty cheers of the audience, which had risen, the new-elected Chancellor took his place at the rostrum and proceeded to confer the honorary degrees.

The first of the distinguished graduants was Her Royal Highness Princess Louise (Duchess of Argyll), who was enthusiastically received. In presenting her for the degree of Doctor of Laws (LL.D.) Professor Glaister, the Dean of the Faculty of Law, referred especially to her connexion with the Association for the Promotion of the Higher Education of Women, out of which had grown the women's department of the University, Queen Margaret's College. The other recipients of the degree of Doctor of Laws (LL.D.) were:

The Marquis of Ailsa; James Thomson Bottomley, M.A., D.Sc., F.R.S., for twenty-four years Arnott Demonstrator in Physics in the University and closely associated with Lord Kelvin in the work of the Natural Philosophy class; Principal Donaldson, of St. Andrews University; the Rt. Hon. Sir John Dalrymple Hay, a distinguished Admiral; Principal Marshall Lang, of Aberdeen University; Guitelmo Marconi, well known in connexion with the development of wireless telegraphy; the Rt. Hon. Andrew Graham Murray, M.P., Secretary for Scotland; the Hon. Charles A. Parsons, M.A., D.Sc., F.R.S., who has developed the steam turbine and applied it to the generation of electricity and the propulsion of ships; and the Hon. the Lord Provost of Glasgow (Sir John Ure Primrose, Bart.).

At the conclusion of the capping ceremony Lord Kelvin delivered an inaugural address. He began by expressing thanks for the great honour conferred upon him by his appointment as Chancellor of the University. He then became reminiscent of his early days at the University, recalling many interesting points of college life in Glasgow in the days when his father was a professor, and in his own student days. He indicated the prominent position Glasgow University had always taken in the development of scientific teaching, and commended the latest developments at present maturing in the University.

At the conclusion of Lord Kelvin's address the benediction was pronounced by the Principal.

The Chancellor afterwards entertained a distinguished company to luncheon in the Randolph Hall.

UNIVERSITY OF OXFORD.

Diploma in Public Health.—The following have passed the examinations for the Diploma in Public Health: Robert Donald, David Thomas Rocyn Jones.

UNIVERSITY OF LONDON.

THE October examinations resulted in the success of the following candidates:

M.B., B.S. (with Honours).—(*b*) J. B. Adams, St. Thomas's Hospital; (*a, b, c, d*) S. A. Boyd, Charing Cross Hospital, and (*a, b, d, e*) H. B. Day, King's College (bracketed equal for the University Medal); (*a, b*) G. J. Langley, St. Thomas's Hospital; (*e*) A. Leeming, Guy's Hospital; (*a, b, d*) H. T. Mant, University College; (*a*) G. E. Peachell, St. Mary's Hospital; (*a*) H. Pritchard, St. Bartholomew's Hospital; (*d*) F. Rogerson, Guy's Hospital; (*c*) W. S. Sweet, University College; (*b, d, e*) F. E. Taylor, King's College and University of Leeds; (*a, b*) J. H. Wells, St. Mary's Hospital; (*c*) C. S. White, University College.

(*a*) Distinguished in Medicine. (*b*) Distinguished in Pathology. (*c*) Distinguished in Forensic Medicine and Hygiene. (*d*) Distinguished in Surgery. (*e*) Distinguished in Midwifery and Diseases of Women.

M.B., B.S. (Pass).—E. L. Ash, W. Bain, S. G. Barling, L. Bathurst, J. H. Bletsoe, Elizabeth Bolton, L. H. H. Boys, J. F. E. Bridger, W. Briggs, H. Chitty, H. Finzel, C. M. Heanley, S. Hunt, H. Irving, Eleanor Gladys Kensington, H. C. Lees, J. H. Legge, B.Sc., L. P. Maitland, W. N. May, D. J. Mulholland, Helen N. Payne, E. G. Perodeau, J. McF. W. Pollard, J. M. B. Rahilly, G. W. Rogers, R. K.

Shepherd, C. D. Soutter, Ethel M. Stacy, J. B. Stephens, G. S. Ward, L. Warren, C. M. Wenyon, B.Sc., T. J. Williams, K. S. Wise, B.Sc.

*B.S. (*with Honours*).—T. C. English, St. George's Hospital; A. M. H. Gray, University College; E. W. H. Groves, M.B., B.Sc., St. Bartholomew's Hospital; N. E. Waterfield (University Medal), St. Bartholomew's Hospital.

* For students who graduated in medicine in or before May, 1904.

B.S. (Pass).—O. L. Addison, W. Appleyard, O. F. H. Atkey, G. E. Aubrey, W. B. Bell, M.D., Alice Marian Benham, Victoria Evelyn May Bennett, E. W. C. Bradfield, Helen Chambers, J. A. Coupland, J. A. Ferrière, Mabel Emily Gates, H. M. Goldstein, F. R. Greenwood, M.D., Helen Beatrice Hanson, M.D., P. G. Harvey, A. F. Hayden, C. D. Holdsworth, Margaret Hudson, B.A., F. W. Jones, B.Sc., Kate Knowles, E. C. Mackay, D. L. Morgan, E. C. Myott, W. S. Page, F. B. Pinniger, Kate Anne Platt, A. R. G. Pocock, M.D., G. E. Waugh, M.D., Ada Miles Whitlock, J. T. Williams, M.D., E. A. Wilson, Ivy Evelyn Woodward.

M.B., B.S.—Passed in one of the two groups of subjects.—*Group I*: G. C. Adeney, W. B. Clark, A. Coleridge, R. J. H. Cox, J. W. Evans, A. W. Hooker, T. H. Jones, C. H. Latham, E. E. Mossop, J. N. Sergeant, D. L. Sewell, Ethel M. Townend, E. R. Wheeler. *Group II*: W. H. Barnett, D. Brodie, J. H. Drew, M. D. Eder, B.Sc., W. H. A. Elliott, E. Evans, H. Farncombe, R. Felton, Ruby Ellen Glanville, A. A. R. Green, H. B. Hill, C. E. Iles, A. H. John, B. W. Jones, H. A. Kisch, H. Love, W. O. Meek, C. L. Morgan, J. H. Nixon, T. P. Puddicombe, Ida Russell Shields, W. H. Smailes, G. A. Soltau, Alice Maude Sorabji, Edith Waine Turner Watts, D. Wilson, H. W. Wilson.

ABERDEEN UNIVERSITY.

The Knox Bequest.—Under the will of the late Mr. William Knox, grain importer, the University receives the very handsome bequest of £6,000. It is understood that the sum is intended to be set aside to found scholarships in Arts, Medicine, and Divinity. During his lifetime Mr. Knox contributed generously to the Royal Infirmary and to Morningfield Hospital (for Incurables), and both these institutions will receive handsome legacies by the terms of his will.

UNIVERSITY OF LIVERPOOL.

ANNUAL MEETING OF COUNCIL.

THE first annual meeting of the Council of the University took place on November 26th. The treasurer reported that the finances were in a satisfactory condition, the adverse balance of £19,000 with which the year opened having been reduced to £5,500, and the loss on the year's working not exceeding £1,000. It was also announced that the Finance Committee had appointed a subcommittee to report on the question of pensions and superannuation of professors and lecturers.

UNIVERSITY OF LEEDS.

WHEN the charter of Leeds University was granted, it was stipulated that steps should be taken to raise a sum of £100,000 by way of permanent income capital. Some £55,000 of this sum has already been raised, and, by way of drawing the attention of the whole county of Yorkshire to the needs of the University which has been created for its benefit, a meeting of residents in the three Ridings was summoned to be held at York on Wednesday last. It resulted, it is understood, in promises being made of donations which will at once increase the amount already in hand by upwards of £6,000.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE following gentlemen, having passed the necessary Examination, and having conformed to the by-laws, have been admitted members of the College, namely:

Messrs. L. A. Arnould, J. Avery, W. G. Aviss, J. H. Bankes, H. E. Barrett, T. Bates, J. F. Beale, B.A.Camb.; A. R. Beaumont, J. A. Bell, A. M. Benett, C. H. Berry, A. Blanc, J. H. D. Bolton, G. H. Boyden, A. C. Brown, A. H. Burnett, J. H. Burridge, G. Carlisle, H. Chitty, S. H. Clarke, B.A.Camb.; A. P. Coker, L.S.A.Lond.; J. Cook, D. K. Coutts, A. W. D. Coventon, M.A. and M.B.Camb.; G. F. Dalton, T. S. Davies, H. R. Dean, G. De la Cour, C. H. Denyer, F. L. de Verteuil, C. M. Dickinson, G. R. Ernst, G. J. Evans, C. B. Eyre R. Felton, L. C. Ferguson, A. R. Finn, W. J. Fordham, F. Forrest, C. J. Galbraith, H. Hardwick-Smith, M.A.Camb.; A. E. M. Hawkes, E. C. Hayes, S. C. Hayman, T. B. Henderson, W. R. Higgins, L. Hill, J. C. L. Hingston, R. F. V. Hodge, B.A.Camb.; A. H. Hudson, C. L. Isaac, B. J. F. Jackson-Taylor, F. A. G. Jeans, M.A.Camb.; E. C. Johnson, G. F. Jones, O. W. Jones, A. E. Kerr, F. C. R. M. Knight, A. E. F. Kynaston, E. B. Lathbury, G. Laurence, A. Leeming, E. Leverton-Spry, W. Lister, A. S. Littlejohns, J. Macarthur, J. McCrae, B.A., M.B.Toronto; J. A. McIlroy, W. T. P. Meade-King, R. H. Miller, W. M. Mollison, M.A., B.C.Camb.; W. P. Morgan, M.A.Camb., B.Sc.Lond.; J. F. Murphy, A. Nell, L. E. C. Norbury, C. W. O'Brien, C. E. Palmer, B.A.Cam.b; J. Papa Nicolas, C. Parker, E. W. Parry, B. N. Poiguand, L. E. Price, G. H. Rees, F. Rogerson, A. Reute, H. G. Stevewright, J. D. Sinclair, W. H. Smailes, G. R. Southwick, M.D.Harvard; M. Spotswood, C. M. Stevenson, H. V. Swanzy, A. G. Sworn, W. A. Tatchell, R. J. C. Thompson, J. Turtle, W. Wallace, T. B. Walsingham, M.A.Oxon., B.A.Durh., L.S.A.Lond.; A. C. Warren, R. G. Williams, B.A.Camb.; J. K. Willis, B.A.Camb.; and R. A. Worthington.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

Fellowship Examination.—The following candidates, having passed the necessary examination, have been admitted Fellows of the College:

K. B. Barnett, B.Ch., etc., Royal University, Ireland, Captain R.A.M. Corps; Miss S. H. Commissariat, L.M. and S. Bombay University, (Bombay); E. Glenny, L.R.C.S.I., etc. (Dublin).

The following passed the primary part of the examination:

J. Armstrong, B.Ch., etc., Royal University, Ireland (Ballymena); M. R. J. Hayes, student, R.C.P.and S.I. (Tipperary); V. J. M'Allister, student, Royal University, Ireland (Dublin); P. T. M'Ardle, student, Royal University, Ireland (Dublin); R. V. Slattery, student, Royal University, Ireland (Tralee).

TRINITY COLLEGE, DUBLIN.

THE following candidates were successful at the Final Examination in Medicine (Section B) held at Michaelmas: R. A. Askins, H. A. Emerson, G. E. Nesbitt, J. W. Burns, F. J. Usher, C. E. C. Williams, W. G. Harnett, H. H. White, J. M. Harold, J. Murdoch, H. J. Knox.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: ARTHUR S. G. BELL, Staff Surgeon, to the *Tamar*, November 21st; HENRY W. FINLAYSON, M.B., Staff Surgeon, to the *Topaze*, on commissioning, December 6th; CHARLES M. WOODS, Surgeon, lent to the *Erebus*, November 24th; WILLIAM C. B. SMITH, Surgeon, to the *Fire Queen*, additional, for course of instruction at Haslar, December 6th; CHARLES S. WOODWRIGHT, Fleet Surgeon, to the *Irresistible*, on recommissioning, December 1st; VIDAL G. THORPE, Fleet Surgeon, to the *Hercules*, temporary, and for tenders and for instruction of sick berth staff probationers awaiting hospital course, December 1st.

The appointment of Fleet Surgeon E. J. BIDEN, to the *Irresistible*, has been cancelled.

ROYAL NAVAL VOLUNTEER RESERVE.

THOMAS C. L. JONES, F.R.C.S., has been appointed Surgeon in the Royal Naval Volunteer Reserve, and has been attached to the Mersey Division, November 25th.

ARMY MEDICAL RESERVE.

SURGEON-LIEUTENANT A. Y. GREENWOOD, M.B., 3rd Lancashire Royal Garrison Artillery (Volunteers), to be Surgeon-Lieutenant, November 26th.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL G. H. BULL, M.D., Bombay Establishment, officiates as Principal Medical Officer, Poona, *vice* Lieutenant-Colonel J. G. Harwood, R.A.M.C., who reverts to the Home Establishment.

IMPERIAL YEOMANRY.

MR. RICHARD G. WILLIAMS to be Surgeon-Lieutenant, November 26th.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

CARE AND CONTROL OF IDIOTS AND EPILEPTICS.

THE Royal Commission on the Care of the Feeble-minded held a further sitting on November 28th, when evidence was given by Dr. R. W. Branthwaite, Home Office Inspector under the Inebriates Act. He did not think that the arrangements under the Habitual Drunkards Act for the establishment and control of retreats were satisfactory. The power of licence and control should be in the hands of one authority. Such retreats were only for persons who applied for admission. There were many homes which were not licensed; not all of them were satisfactory. In the legal form of application for admission and detention for the statutory period of two years there was no provision for medical evidence. The patient paid for himself, or was paid for by his friends, and, if destitute, he could not obtain admission to any of these retreats. There were about twenty retreats in regular order, and the total number of persons who annually submitted themselves to detention was only about 500. The number was so ridiculously small because, although many inebriates were as incapable of appreciating the gravity of their position as any legally insane person, the consent of each of them had to be obtained before treatment by detention could be enforced; besides this, poverty and alcoholism were closely allied, but there was no provision for the treatment of destitute persons. Section XI of the Prevention of Cruelty to Children Act, which made detention in a retreat substitutable for imprisonment had been in force for ten years, but had only been applied in one case because the consent of the prisoner was necessary.

The Licensing Act of 1902 should be more used and be made workable. The Act which had the greatest importance as far as the present inquiry was concerned was the Inebriates Act of 1898, because the persons amenable to it were either inebriates because feeble-minded, or feeble-minded because inebriates. They were a constant burden to the State either as paupers, criminals, or lunatics; they were often the product of similar parents, and produced themselves similar offspring. Under neither section of that Act could either a criminal inebriate or a police-court inebriate *habitué* be detained under treatment for more than three years however irreformable he might be. As regards provision for destitute inebriates, local authorities could contribute towards the establishment and upkeep of retreats, but only one had yet done so. Only about 2 per cent. of the inmates of retreats went in really of their own accord. In nineteen or twenty countries there was provision for the compulsory admission and detention in a retreat of inebriates, upon an order of a Court given upon the application of the inebriate's friends, even if he opposed the order. He believed that some irreformable and weak-minded inebriates were so dangerous to society as to justify their detention continuously. If this were thought desirable the machinery existed. There was no power to visit unlicensed homes, nor any remedy, however badly conducted they might be. The licensing regulations were good, and under them patients could be sent out on trial; in fact, nearly all patients in certified institutions did go out upon trial before their period of legal control expired. About half the cases admitted were irreformable; perhaps 15 to 20 per cent. were cured. If they had been brought under control early in life perhaps they would not have become inebriates. Many of the male irreformable inebriates joined the criminal classes, and the females the immoral classes, which was a further reason for their detention.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 7,596 births and 5,075 deaths were registered during the week ending Saturday last,

November 26th. The annual rate of mortality in these towns, which had been 14.9, 15.7, and 16.6 per 1,000 in the three preceding weeks, further rose last week to 17.3 per 1,000. The rates in the several towns ranged from 9.3 in West Bromwich, 10.2 in Kings Norton, 11.0 in Hastings and in Huddersfield, 11.3 in Bournemouth, 11.8 in Willesden and in Devonport, 12.2 in Blackburn and in York, and 12.6 in Northampton, to 21.0 in Grimsby, 21.6 in Liverpool, 22.2 in Wigan, 22.8 in Birmingham, 23.0 in St. Helens, 24.7 in Stockport, and 24.8 in South Shields. In London the rate of mortality was 16.8 per 1,000, while it averaged 17.6 in the seventy-five large provincial towns. The death-rate from the principal infectious diseases averaged 2.4 per 1,000; in London this death-rate was equal to 0.8 per 1,000, while it averaged 1.6 in the seventy-five other large towns, and ranged upwards to 3.6 in East Ham and in Salford, 3.8 in West Hartlepool, 4.1 in Hanley, 4.3 in Rochdale, 4.4 in South Shields, 4.7 in St. Helens, 5.5 in Grimsby, and 6.0 in Rhondda. Measles caused a death-rate of 1.9 in Liverpool, 2.4 in St. Helens, 2.7 in Salford, 2.9 in Tynemouth, and 3.1 in Grimsby; scarlet fever of 1.8 in Rochdale; diphtheria of 1.5 in Ipswich, 1.6 in Grimsby, and 2.3 in West Hartlepool; whooping-cough of 1.1 in Huddersfield, 1.2 in Coventry, and 2.4 in South Shields; "fever" of 3.8 in Rhondda; and diarrhœa of 2.4 in Hanley and 2.6 in Barrow-in-Furness. One fatal case of small-pox was registered last week in Oldham and 1 in South Shields, but none in any other of the seventy-six large towns; and only one small-pox patient remained under treatment in the Metropolitan Asylums Hospitals on Saturday last, November 26th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,782, 2,843, and 2,773 at the end of the three preceding weeks, had declined again to 2,741 at the end of last week; 262 new cases were admitted during the week, against 294, 294, and 259 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, November 26th, 822 births and 594 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.8, 17.5, and 17.3 per 1,000 in the three preceding weeks, rose again last week to 18.0 per 1,000, and was 0.7 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 11.0 in Leith and 13.7 in Aberdeen, to 20.7 in Dundee and 20.9 in Greenock. The death-rate from the principal infectious diseases averaged 1.8 per 1,000 in these towns, the highest rates being recorded in Glasgow and Aberdeen. The 308 deaths registered in Glasgow included 5 which were referred to diphtheria, 18 to whooping-cough, 2 to "fever," and 11 to diarrhœa. Three fatal cases of diphtheria were recorded in Edinburgh: 4 of diarrhœa in Dundee; and 5 of measles and 2 of whooping-cough in Aberdeen.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, November 26th, 368 births and 352 deaths were registered in six of the principal Irish towns, against 503 births and 378 deaths in the preceding period. The mean annual death-rate of these towns, which had been 18.3, 19.0, and 19.6 per 1,000 in the three preceding weeks, fell slightly, to 19.5 per 1,000, this figure being 2.2 per 1,000 higher than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 15.0 in Limerick and 15.6 in Waterford to 23.4 in Dublin and 27.3 in Londonderry. The zymotic death-rate during the same period and in the same six Irish towns averaged 1.2 per 1,000, or 0.3 per 1,000 higher than during the preceding period, the highest figure—2.9—being recorded in Dublin, while Londonderry and Waterford registered no deaths under this heading at all. No deaths in any part of Ireland were ascribed to small-pox, typhus, diphtheria, simple continued fever, or enteric. The principal zymotic cause of death was measles, of which 7 deaths occurred in Belfast and 12 in Dublin.

GUARDIANS AND THE VACANT POOR-LAW APPOINTMENTS.

ENQUIRER asks whether it is customary, or fair, when vacancies occur in parochial appointments for a guardian to pledge his vote to the first candidate who happens to ask him for support, saying to another candidate "had he applied first he (the guardian) would have given it to him"?

*** We cannot think that any such action as our correspondent describes is common in reference to vacant Poor-law medical appointappointments; but, if so, it is certainly unfair, and it may properly be described as being very unbusiness-like.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior House-Surgeon. Salary, £50 per annum.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—Assistant Surgeon.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Second House-Surgeon. Salary, £60 per annum.

BURNLEY: VICTORIA HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

CROYDON GENERAL HOSPITAL.—Honorary Medical Officer for Out-patients.

DUBLIN: DR. STEEVENS'S HOSPITAL.—(1) House-Surgeon; resident. Salary, £100 per annum. (2) Pathologist.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Male Assistant House-Surgeon resident. Salary, £60 per annum.

GLOUCESTER: GENERAL INFIRMARY AND EYE INSTITUTION.—Assistant House-Surgeon, resident. Salary at the rate of £30 per annum.

HOSPITAL FOR WOMEN, Soho Square, W.—Clinical Assistants.

LEEDS: HOSPITAL FOR WOMEN AND CHILDREN.—Resident House-Surgeon. Salary, at the rate of £80 per annum.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrar. Salary, £100 per annum.

MANCHESTER: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Medical Officer. Salary, £60 per annum.

MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House-Surgeon. Salary, £60 per annum.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—Assistant Surgeon.

MIDDLESEX COUNTY ASYLUM, Upper Tooting. Assistant Medical Officer.

OTAGO UNIVERSITY.—Professor of Physiology. Salary, £600 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £50 per annum.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—(1) Assistant Anæsthetist; (2) Clinical Assistants.

STIRLING DISTRICT ASYLUM, Larbert, N.B.—Assistant Medical Officer; resident. Salary, £150 per annum.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon, resident. Salary, £40 per annum.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House-Surgeon. Salary, £120 per annum.

APPOINTMENTS.

BLACKBURNE, G. H. S., M.B., B.S.Melb., D.P.H.Camb., Pathologist and Bacteriologist to the Perth Public Hospital, West Australia.

BLAXLAND, Walter, F.R.C.S.Eng., Ophthalmic Surgeon to the Perth Public Hospital, West Australia.

CARLE, Frederick C., M.B.Lond., M.R.C.S., Senior Clinical Assistant, the Throat Hospital, Golden Square, W.

COOKSON, Reginald G., L.R.C.P.Lond., Government Medical Officer and Vaccinator at Temora, New South Wales, *vice* Dr. H. G. Bennetts, resigned.

GRIEVES, Thomas Arthur, L.R.C.P., M.R.C.S., Government Medical Officer and Vaccinator at Burraga, New South Wales.

GROVES, Ernest W. Hey, M.D., B.S., B.Sc.Lond., Demonstrator of Anatomy at University College, Bristol.

IRVING, H. A. C., M.B., Health Officer for the Shire of Lawloit and Public Vaccinator, North-Western District, Victoria, *vice* R. Maclean, M.B., resigned.

MURSELL, Henry Temple, M.B., M.C., F.R.C.S.E., Honorary Assistant Surgeon to the Johannesburg Hospital.

OGDEN, Ogden Watson, M.D., B.S.Durh., M.R.C.S.Eng., L.R.C.P.Lond., Honorary Physician to the Hospital for Sick Children, Newcastle-upon-Tyne.

O'MEARA, P. M., M.B., B.Ch., Health Officer at Coolgardie, West Australia, *vice* H. A. Ellis, M.B.

POLLARD, F. W. L., Med. L.Ch.Dub., Medical Officer for the Mellor District of the Blackburn Union.

POLLOCK, John, M.B., Health Officer for the Shire of Avon, Victoria, *vice* G. J. Ley, M.B.

PRICE, H. P. J., M.R.C.S.Eng., L.S.A., District Medical Officer of the Narberth Union.

SAUNDERS, G. J., M.B., Ch.B.Aberd., Certifying Factory Surgeon for the Burghead District, co. Elgin.

DIARY FOR NEXT WEEK.

MONDAY.

Otological Society of the United Kingdom, 11, Chandos Street, W.—Annual meeting at 4 p.m. To be followed by ordinary meeting, at which cases and specimens will be shown by Messrs. Cumberbatch, Gray, Lake, Whitehead, Heath, Bronner, Milligan, Cheatle, Tilley, Lawrence, Kelson, Potter.

TUESDAY.

Pathological Society of London, 20, Hanover Square, W., 8.30 p.m.—Papers: Mr. Hopewell-Smith: Paget's Disease of the Gums. Dr. W. P. S. Branson: Obliterating Arteritis. Dr. R. S. Trevor: Intraintestinal Cystic Swelling. Dr. J. Pawcett: Dilated and Hypertrophied Oesophagus with Ulceration. Also card specimens.

WEDNESDAY.

Obstetrical Society of London, 20, Hanover Square, W., 8 p.m.—Specimens and demonstration.

THURSDAY.

Ophthalmological Society of the United Kingdom, 11, Chandos Street, Cavendish Square, W.—Clinical evening. Cases and specimens will be shown at 8 p.m. The chair will be taken at 9 p.m.

British Balneological and Climatological Society 20, Hanover Square, W., 8 p.m.—Paper—Dr. N. Hay Forbes: Observations on the Climate and Health Resorts of Scotland.

British Gynæcological Society, 20, Hanover Square, W., 8 p.m.—Papers—Dr. Bedford Fenwick: An Unusual case of Degenerating Fibroid. Mr. William Alexander: Adenoma of the Endometrium (illustrated by lantern slides, etc.). Specimens will be shown by various members.

FRIDAY.

Epidemiological Society, 11, Chandos Street, Cavendish Square, W., 8.30 p.m. Dr. Nuttall, F.R.S.: Ticks and Tick-transmitted Diseases.

Clinical Society of London, 20, Hanover Square, W., 8.30 p.m.—Mr. Cuthbert Wallace: A series of Intussusceptions in Children. Dr. Hale White: A case of Acute Rheumatoid Arthritis. Dr. Bertram Abrahams: On Arthritis Deformans and its Allies.

POST-GRADUATE COURSES AND LECTURES.

North-East London Post-Graduate College, Tottenham Hospital, N.—Monday, 4.30 p.m., Modern Methods in the Diagnosis of Stomach Disorders; Thursday, 4.30 p.m., Skin Disease in Children.

Hospital for Sick Children, Great Ormond Street, W.C., 4 p.m.—Thursday, Adenoids.

Charing Cross Hospital.—Thursday, 4 p.m., Surgical Cases.

Samaritan Free Hospital for Women, Marylebone Road, N.W.—Thursday, 3 p.m., The Operative Treatment of Breast Cancer.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 5 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Eye. Lectures at 5.15 p.m. each day will be given as follows: Monday, Rickets; Tuesday, The Surgical Treatment of Neuralgia; Wednesday, The Surgery of the Uterus; Thursday, Paralysis of the Cervical Sympathetic.

Mount Vernon Hospital for Consumption, Central Out-patient Department, 7 Fitzroy Square, W.—Thursday, 5 p.m., Mitral Stenosis.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 2s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

ANTHONY.—On November 24th, at Ramsbury, Hungerford, the wife of F. Anthony, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

HUNTER—GROUNDWATER.—On October 27th, at St. Cyprian's Church, Durban, by the Rev. A. J. W. Crosse, Rector, John Hunter, M.B., C.M., etc., District Surgeon, Bethlehem, Orange River Colony, to Isabella Helen (Ella), daughter of the late J. R. Groundwater, Urmston, Manchester.

ONSLOW-FRANKLIN.—On November 9th, at Christ's Church, Simla, Captain Cranley Charlton Onslow, Bedfordshire Regiment, to Sydney Alice Hastings, younger daughter of Surgeon-General Sir Benjamin Franklin, K.C.I.E., K.H.P., Director-General, Indian Medical Service.

DEATH.

POORE.—On November 23rd, at Portland House, Andover, George Vivian Poore, M.D. F.R.C.P., youngest son of the late Commander John Poore, R.N., aged 61 years.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

ANSWERS.

AFRICANUS.—Among recent contributions to the subject of parasites affecting the skin of men and animals, the following may be mentioned: Dubreuilh, in *La Pratique Dermatologique* (vol. ii, art. Gale, and vol. iii, art. Phtiriases); Pernet, in *Encyclopaedia Medica* (vol. ix, art. Pediculosis, and vol. x, art. Scabies). In the latter the various acari, including those met with abroad, are dealt with. The following should also be consulted: Mégnin's *Les Parasites et les Maladies Parasitaires chez l'Homme, chez les Animaux*, etc., 1880; Mégnin, *Les Acariens Parasites* and Dubreuilh et Beille, *Les Parasites Animaux* (both vols. of Encyclopédie Scientifique des Aide-Mémoire); Bourgnignon, *Traité Entomologique et Pathologique de la Gale de l'Homme*. Various references will be found in foregoing. See also the works of Manson and Scheube *On Tropical Diseases.*

CHAPPED LIPS.

E. O. writes: Let "Lancs." treat the deeply chapped lip as if it were a congenital defect, vivifying the sides of the notch, and bringing the edges into even apposition by a horsehair suture deeply passed by a fine curved needle.

DR. ARTHUR J. MATHISON (Wood Green) writes: "Lancs." should order the following mixture to be frequently applied to the obstinate "chap" under his care: Bism. carb. 5j, ol. ricini 5j.

DR. GEORGE ASHTON (Fallowfield) would advise "Lancs." to apply collodion flexile to the "chap" in the young lady's lip. He has cured several by keeping a thin layer of collodion over the "chap" and extending for ¼ in. on either side for a few days. The collodion acts both as a protective and a support.

TREATMENT OF CHRONIC DIARRHOEA.

R. F. recommends "West Country" to try the following: Beta naphthol, bismuth salicylat., āā gr. v, in cachets, to be taken three times a day.

GENERAL VIBRATION IN PARALYSIS AGITANS.

A CORRESPONDENT writes in reply to "J. B.": The late Professor Charcot had a *fauteuil roulant* for the treatment of paralysis agitans at the Salpêtrière. He was supposed to have invented it in consequence of the report of a patient who said that he found himself benefited by driving in a cab over the roughly-paved roads in the outskirts of Paris. The arrangement was an ordinary easy chair raised by turning a cog wheel with gaps in it which allowed the chair to fall down again after it had been raised a few inches. It was worked by a porter, who had to turn the handle, and the apparatus was screwed upon a raised platform. A motor bicycle might be suggested as likely to be equally effective.

RISKS OF INFECTION IN TUBERCULOSIS.

SANITAS.—We do not think that there need be any objection to the public attending the services in the chapel of the Mount Vernon Consumption Hospital at Northwood as invited by the chaplain. At this hospital, as at all similar institutions for the treatment of consumptives, the patients are taught how to prevent the possible infection of others. The infection of the disease is spread by the expectoration of consumptive persons becoming dry and pulverized. Particles of this dried powder containing the germs may then be blown about in the air and infect those who inhale them. In all consumption hospitals patients are required to expectorate only into special flasks or other receptacles containing disinfectants, or to use paper handkerchiefs, which are burned after use. These precautions are rigidly carried out at Northwood, and the very free ventilation of the chapel, as of the wards, renders the risk of infection practically *nil*. There is probably less risk of catching consumption in this hospital chapel than in the ordinary church where there may be one or two consumptives amongst the congregation and in which the ventilation is insufficient and dust is allowed to accumulate. These remarks apply equally to entertainments in the hall of the hospital or to visits of inspection to the wards.

MAKING OF PLASTER CASTS OF LIMBS.

DR. FINNY.—If our correspondent has no practical knowledge of making plaster casts we would not recommend his using wire laid on the limb wherewith to cut through the mould as it sets, but would suggest his making the mould in two parts. The foot must be coated with olive oil, and, if hairy, should be shaved, as the hairs tend to become engaged in the mould. The lower segment of the mould should be made by pouring the plaster into a shallow cardboard box, with a notch cut away from one side to allow of the foot sinking half way down into plaster-of-paris as the latter begins to set. After it has quite set the surface of the plaster lying beyond the embedded half of the foot is coated with olive oil; a second basin of plaster is then mixed, and when it begins to set is by means of a large spoon poured over the rest of the foot. When quite set this upper segment is lifted off, and the foot is afterwards lifted out of the lower segment of the mould. The mould is then coated with oil and filled with plaster to make the final cast.

LETTERS, NOTES, Etc.

INFANT MILK DÉPÔTS.

DR. CONSTANCE E. LONG, writes: At the meeting held on November 17th to discuss the formation of a milk dépôt for the supply of modified milk in St. Pancras, Dr. Vincent stated that the cost of feeding on laboratory milk would be about 5s. a head a week. A Committee was formed apparently to work on the lines suggested in his speech, but if all the infants are to be reared on laboratory milk the cost may safely be expected to exceed his estimate. It is to be hoped the Committee will not be induced to think percentage feeding is necessary for the majority of infants: probably 95 per cent. could be reared either on pure cow's milk or its simple home-made modifications. Excellent results are obtained in the milk dispensaries in France at less than half this cost. What we need is not so much laboratory milk as pure milk. We want, too, a better knowledge of infant feeding, and more unanimous practice in the profession with regard to it. Doctors often sanction the use of a patent food without any definite knowledge of its composition, nor is this surprising since the majority qualify without practical teaching on the subject. This dépôt then might be used as a training-ground for medical students in infant feeding. The scheme should also include a consultation for nursing mothers, who should receive encouragement and assistance in the performance of their natural duties. For infants whose mothers cannot suckle, the day's milk might be supplied pure and unmodified in sealed bottles, with simple directions for home modification when necessary. Lastly, only those infants who do not thrive on this method should be passed into the department for percentage feeding.

SYMPTOMLESS HERNIAE.

MR. R. W. A. SALMOND, Secretary of the Anatomical and Anthropological Society of the University of Aberdeen, writes: In the BRITISH MEDICAL JOURNAL of November 12th, p. 1338, notice is taken of a case of retro-peritoneal hernia described in the recently-published record of the Anatomical and Anthropological Society of the University of Aberdeen for 1902-4, under the heading of a Case of Hernia into the Fossa Duodeno-jejunalis. Upon further examination of the specimen the hernia was found to lie in an enlarged para-duodenal, and not in a duodeno-jejunal fossa. This fact is mentioned in a footnote to the paper on p. 36 of the *Proceedings* of the Society.

NASAL CONJUNCTIVITIS (AND CONJUNCTIVAL CONGESTION DUE TO NASAL CONDITIONS).

DR. ALBERT CORNER (Forest Gate) writes: Again I write to you as to this disease. Surely, as it is comparatively frequent, it is reasonable to urge either that some rhinologist, or, better still, an ophthalmic surgeon who knows his nasal work, should be appointed to work at ophthalmic hospitals (our seats of knowledge). I have lately seen a patient with conjunctival congestion secondary to nasal polypi (and nasal congestion) who had been treated at one of our oldest and biggest ophthalmic hospitals. At this hospital he had had lachrymal probes passed, putting him to pain, which may not have been necessary, and it does not seem to have been known there that he had nasal polypi, for his nose was not looked at; in fact, they may not possess the means needed for examination of the posterior part of the nasal fossae at this ophthalmic hospital.

INDUCTION OF CHLOROFORM ANAESTHESIA.

DR. DUDLEY BUXTON writes: Your reporter has, I doubt not, inadvertently misrepresented most of my remarks made before the Medical and Chirurgical Society at the meeting last Tuesday. I said that the reflex dangers during the induction period (not stage) were due to too high a percentage vapour of chloroform. The use of a regulating inhaler, such as that of Mr. Vernon Harcourt, prevented these reflexes becoming dangers. I said, a regulating inhaler abrogated the difficulties of the period of induction. The importance of the word "regulating" omitted in your report is obvious. Unless the chloroformist can regulate accurately the percentage of chloroform vapour given, he cannot abrogate the dangers of the period of induction. I said further: In severe operations associated with great shock, fall of blood pressure occurred both from the chloroform and the operation. If the former were given by a regulating inhaler, the percentage strength of the chloroform vapour could be accurately lessened as soon as shock began to appear, and in this way one cause of the fall of blood pressure could be avoided, and the danger of the patient materially diminished. I concluded by the statement that a prolonged use of the Vernon Harcourt inhaler had convinced me of its value and of its capacities to aid in the ways indicated.

DR. FREDERIC W. HEWITT (London, W.) writes: May I be allowed to correct an error in your report of the proceedings of the Royal Medical and Chirurgical Society of November 22nd? I am reported to have said, when discussing chloroform anaesthesia, that "it was in the early stages that the risk of death from reflex spasm occurred." The reflex spasmodic phenomena to which I alluded in my remarks are not met with *early* in chloroformization, but arise *after* the induction stage when the operation is in progress. They are, in fact, the reflex effects of surgical stimuli. The spasmodic phenomena of the early or induction stage are of a different order. They arise for the most part independently of any external stimuli.

THE PROFESSION AND HER RULERS.

DR. THOMAS LAFFAN, President of the South-Eastern of Ireland Branch (Cashel), writes: Dr. Wesley Wilson will, with Surgeon-General Evatt, be raised, I hope, on the shoulders of the thinking part of our profession into Parliament in the near future. Section vi, for instance, would never have found its way to the statute book if either of these men had been in Parliament. What a contrast do not the lawyers present to us in the matter of parliamentary power. How obvious the lesson is and how slow we are to take it up. Dr. Wesley Wilson can never be too much thanked for keeping the injustice of oligarchical rule before the profession. Until the General Medical Council is reformed root and branch, and self-government obtained for the medical profession, it will be

useless to look for better pay for our members, or for a share in the education of our neophytes, or for £200 a year for our mere dispensary drudges, or for an end to hospital abuses, or for any one of those other reforms which are indispensable for our material well-being and general advancement. One writer talks of those who are the working bees having five representatives on the General Medical Council, but Dr. Bruce and Sir William Thomson are not representatives of the working bees. One is a Dublin teacher; the other has been made a London examiner. The herd that elected patrician tribunes when they might have elected men of their own calling did not die out with the Roman Republic. They are still in our midst, as crawling and as thoughtless as ever. Formerly every medical man had such a property in his profession that through the share which he could take in the education of the medical pupil he could in part, if not in great part, provide for the future of his own sons. Now look at the position to which we have been reduced by the classes represented by the Thomsons! In vain did Sir James Paget, Mr. Wheelhouse (Leeds), and others raise their voices in favour of modified apprenticeship and local training. Their voices were drowned by the interested advocates of medical school and metropolitan hospital monopoly. Is it a wonder that we find principals writing letters complaining of the shocking ignorance of the young idea who can hardly walk the ground with the exuberance of his self-importance, and the haughty disdain with which he views the rank and file who are nevertheless constrained to teach him the business which he will only acquire—if he ever does acquire it—after many a humbling pitfall which he might have been spared under a different system of training? There is something specially disgraceful in the Irish Poor-Law men who could do no better than return the Kidds and the Thomsons now being obliged to go on their marrow-bones to an accomplished Englishman to do with conspicuous ability that which a capable representative of their own ought long since have attempted. Your JOURNAL, sir, is the journal of the medical masses and its columns ought to be largely devoted to advocating the claims of those masses, and I hope that the Wesley Wilsons will no longer be left to cry alone in the wilderness, but will awaken in Ireland and in Scotland a like spirit to that which has so long and so largely permeated the English medical masses. I very nearly forgot to call attention to the fact that the Scotch corporations offer many facilities to provincial medical men for the education of their sons and other pupils. Indeed, the contrast which they present in this respect to that of the wretched Irish bodies is so great that it should send the whole body of Irish students who want diplomas as distinct from degrees to their portals. Further concessions to the despised provincials would be the inevitable result. Let the new Scotch Medical Association take the matter in hand.

AN OBJECTION TO LEAD ACETATE.

PUZZLED writes: A young grocer's assistant came to me ten days ago, suffering from eczema affecting the skin round about the eyes, nose, and mouth. I gave him Fowler's solution internally, and a lotion composed of liq. plumbi subacet. 3j, liq. carbonis detergens 3iv, aq. rosae ad 3vj, to bathe the parts. From this treatment he received considerable relief, but two days ago he came to me in great concern, and presenting an extraordinary appearance. The whole of the inflamed parts had assumed a dark brown, and in some places a black, appearance. I questioned him closely as to what he had been handling, but could find nothing to account for his appearance, until, just as he was leaving, he asked if sulphur could have produced it. He stated that an old woman had advised him to put sulphur into his stockings as a remedy for cold feet. No doubt sufficient sulphur had been absorbed to set up a chemical action with the lead in the inflamed skin, and thus produced a coating of black lead sulphide.

A NEW ROUTE TO THE UTERUS.

SENTIMENTAL TOMMY'S boyish follower, even when both were grown up, never lost his early confidence in his friend's ability to "find a wy" out of every difficulty. This quality is invaluable to surgeons, and we therefore think it unnecessary to apologize for calling their attention to the discovery of an ingenious lady who certainly seems to have a highly-developed faculty of "finding a wy." For a knowledge of the discovery we are indebted to Dr. Frederic Griffith, of New York, who gives the following account of the matter in the *Medical News*: A widow, living in New York, lately underwent an operation for removal of a fibroid tumour of the uterus. Removal of the growth took place through an anterior abdominal incision, which left the usual scar. In discussing the matter, one of her female friends declared that it was all wrong for her to have submitted to such an operation. The "exquisite reason," as Sir Toby Belch would say, was that "the best surgeons nowadays never remove a tumour that way, but reach it by cutting through the pyjama when, of course, there is no scar."

POT AND KETTLE.

WE quote the following apologue from an American newspaper:

"By the way," said the gentlemanly-looking person in the black broadcloth suit, "if you mention my name in connexion with the accident, you may say that Dr. Swankem was called, and the fractured arm was suitably bandaged,' or something to that effect. Please spell the name correctly. Here's my card." "Thanks," said the reporter, looking at the card. "You are next door to Dr. Rybold, I believe. Are you acquainted with him?" "No, sir," replied Dr. Swankem, stiffly. "We do not recognize Dr. Rybold as a member of the profession. He advertises."

This fable shows, as Aesop says—but no! we prefer to leave the reader to draw the moral for himself.

ERRATUM.—In the last paragraph but one of the article on "Cranio Cerebral Topography" (BRITISH MEDICAL JOURNAL, November 19th, p. 1384, col. 2), the words "perhaps even more accurately, by taking the middle third of a line drawn from the fronto-nasal suture to the lambda" refer to the fissure of Sylvius, and *not* to the parallel fissure as printed.

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A Clinical Lecture

ON A

CONDITION OF THE LOWER LIMBS OFTEN MISTAKEN FOR PHLEBITIS.

Delivered at St. George's Hospital.

By Sir WILLIAM BENNETT, K.C.V.O., F.R.C.S.,
Senior Surgeon to the Hospital.

The symptoms of what is commonly known as "phlebitis" are so precise in typical instances that the diagnosis can hardly be difficult or doubtful. In the early stages of the disease, however, and in certain subacute cases these symptoms are sufficiently indefinite to lead to conditions being diagnosed as phlebitis which are certainly not of that nature, with the necessary result that treatments are adopted which, if not always actually harmful, are useless, and often lead to the persistent employment of complete rest when it is not required, involving a waste of time the value of which in some circumstances may be incalculable. Although the condition I have in mind without doubt occurs in all the limbs, it is so much more frequently met with in practice affecting the lower extremities that I propose to limit my remarks to the affection as seen in them, especially because it is in such cases that, judging by my experience, mistakes in diagnosis and treatment most frequently arise.

Phlebitis.

I must crave indulgence for mentioning the following elementary facts on the ground that they help to make what follows clear. Speaking generally, there are for clinical purposes two main varieties of phlebitis: one in which the blockings of the vessels are made manifest by the existence of tender cords or lumps in the situation of certain well-defined superficial veins without any general swelling of the limb; in the other there is a general swelling of the limb either in whole or in part, for example, the foot and ankle, the limb below the knee, or the whole of the extremity; there are at the same time pain and tenderness along the line of the great veins (deep), but these need not be perceptible to the touch. In such circumstances, the deep veins having become blocked, oedema follows rapidly as a matter of course; hence in all recent swelling following phlebitis, that is, blocked vein, pitting of the parts upon pressure can be elicited. The subsequent changes which take place in the limb and its vessels need not be referred to, as they are not concerned in the present question. As the condition under discussion simulates deep phlebitis only, blockings of the superficial veins alone have no practical relation to it, and for present purposes may be ignored.

The symptoms, then, as a rule, of phlebitis of the main deep venous channels are: Acute onset of pain or intense stiffness increased by movement; tenderness along certain definite areas increased by pressure; rapidly supervening general swelling below the seat of lesion which "pits" on pressure, and which is increased when the erect position is assumed or if the limb is materially dependent, subsiding, on the other hand (if the phlebitis has ceased to extend), when the recumbent position is assumed and the affected part elevated; the essential part of the treatment being rest.

The Condition under Discussion.

For comparison with this a condition of the lower limbs is met with, commencing with rapidly-oncoming pain somewhat diffusely inclined, but irregularly limited to certain areas, increased only upon slight (superficial) pressure and completely relieved by deep or heavy pressure. There is some swelling of the limb, wholly or in parts only, the swelling being of the nature of a general engorgement; there is no oedema, and hence no "pitting"; it is not increased by assuming the erect position, nor is it appreciably diminished in the recumbent or flat position. The swelling is in truth for practical purposes independent of posture. The same may be said of the pain, which, however, is much influenced by heat or cold, sometimes by the one, sometimes by the other; indeed, the effect of heat or cold in increasing or diminishing pain may vary not only in different patients, but even in the same patient from day to day, or perhaps from hour to hour. The patients, as a rule, are not of the neurotic type, but rather the reverse. The swelling, when not involving the whole limb, is fairly limited to the areas of distribution of certain cutaneous nerves—notably the internal and middle cutaneous, the saphenal plexus, the external cutaneous in the thigh, and the musculo-cutaneous at the outer side of the leg, and the dorsal aspect of the foot.

When the whole limb is involved in the swelling the general contour of the normal part is preserved—a striking contrast to the bolster-like limb which is caused by oedema resulting from thrombosis of the femoral or iliac vein. In the majority of cases bruising follows deep pressure on any part of the swollen area, but this sign is not constant; dusky lines, resembling urticaria, sometimes follow continuous slight pressure, such as that produced by folds of underwear, garters, etc. The reflexes are unaltered.

It is manifest that the condition has nothing in common with acute or early phlebitis, although it is undoubtedly at times mistaken for that disease.

Clinical Examples.

Case I.—A lady, about 45 years of age, had been seized, six weeks or thereabouts before I saw her, with pain in the upper part of the thigh, along its inner side; some swelling of the thigh over the same area followed, and increased rather rapidly for two or three days. There was tenderness on gentle pressure; the pain was continuous, and not appreciably affected by position. The patient had a reputation for being "gouty." Phlebitis was diagnosed, and the usual treatment of rest in bed, with an "anti"-gout treatment, was advised. In spite of rest, and a variety of medicinal treatments, no material alteration in the condition followed, although the symptoms varied in severity from time to time. Excepting two occasions, there had been no fever, and on neither of these did the temperature exceed 100° F.

When I saw the patient she was stout (having put on flesh, it was said, whilst lying in bed) and appeared in excellent general health. The inner side of the thigh was swollen, the swelling being limited by the middle line in front and behind, and ceasing somewhat abruptly about the level of the patella at its upper part: there was no heat or discoloration. Gentle pressure was painful; deep pressure gave comfort and was painless; a bandage lightly applied was intolerable, drawn tight it gave relief. The outer side of the thigh was absolutely normal, as were also the leg and foot, not a trace of swelling being evident. Feeling sure that the case was one of those with which we are now concerned, the patient was ordered to get up and move about. After some hours it was seen that there was no difference whatever in the amount of swelling or in the pain, excepting, perhaps, that this was rather less than before. It was then also noticed that at each spot where deep pressure had been made by the fingers there was a well-marked bruise with a red margin, the shape of the macula corresponding exactly with that of the finger or fingers which had made the pressure. A check experiment of heavy pressure made subsequently on the normal parts of the limb showed no bruising. Under the treatment to be subsequently mentioned, all pain and discomfort disappeared in about three weeks, although the swelling persisted for some time longer.

Case II.—A man, aged 30, contracted enteric fever in South Africa. His case seemed to have pursued a favourable course, taking a slight relapse, which, however, proved to be insignificant. During the voyage home, three months after the onset of his original illness, he was attacked by sudden pain on the outer side of the thigh. Considerable swelling followed, which was limited to the thigh, and the pain became persistent and worse. As he had been suffering from enteric, it was concluded, upon apparently insufficient ground, that the case was one of post-enteric phlebitis, and he was treated accordingly by rest, etc., without deriving any benefit whatever. I saw him about four weeks after the thigh had first become affected. The general state of things was much the same as described in Case I, excepting that the outer aspect of the thigh was involved in the place of the inner side. The limitation of the swelling was distinct. There was the same tenderness on superficial pressure, but no actual bruising followed deep pressure. The parts below the knee were absolutely normal, and long-continued hanging down of the limb had no effect either upon the swelling or the pain. The limb was held a little stiffly in walking. The application of heat over the swollen part increased the pain greatly. Under treatment the pain passed off in a month, but the swelling, although less, was still apparent three months afterwards.

Case III.—I was asked to see a girl, 17 years old, who had for several weeks been suffering from what was said to be phlebitis. The history of the onset and course of the symptoms were much the same as in the two foregoing cases, but in this case the whole of the left lower limb was involved. When I saw the patient, who had been carefully kept to her bed since the commencement of her illness, the whole lower limb was considerably swollen, but the natural conformation was not lost, and there was no pitting. The line of the femoral vein was free from tenderness on deep pressure, and it was stated that it had been so from the commencement—a fact which was naturally regarded as anomalous. There had been throughout a little rise of temperature, but the patient declared herself as feeling perfectly well. The tongue was clean, the appetite good. There was no suspicion of menstrual or other irregularity. To the outer side of the situation of the femoral artery at the level of Poupart's ligament was a spot which on deep pressure was tender, manipulation causing a general increase in the pain throughout the whole limb for an hour or so, after which it subsided to its usual degree. This spot was clearly over the trunk of the anterior crural nerve. Deep pressure in this case was followed by bruising, similar to

that met with in the first example. The effect of the erect position, so far as the swelling and pain were concerned, was, as usual, negative. The whole limb was very slightly, but appreciably, warmer than that on the opposite side. The pain and discomfort here again disappeared after three weeks or a month of treatment, but the swelling persisted for a much longer time.

Case iv.—This was noteworthy on account of the extremely defined area of the swelling which occupied the outer and anterior aspect of the leg of a schoolboy, who had met with a slight accident some time before I saw him. The general symptoms were like those in the other cases described. The swelling was oval, extending downwards for about 4 in. from a point just below the head of the fibula. There was the same superficial tenderness, absence of oedema, etc., as the other cases showed. The injury had been a strain, and the symptoms were so persistent and localized that it was thought right—rest, etc., having done no good—to make an exploration on the possibility in this particular case of there being a deep extravasation or thrombus. An incision was made, therefore, through the swelling, the muscular planes separated, and the interosseous membrane exposed. The anterior tibial nerve was clearly seen, and also the artery. Everything was normal—there was neither oedema, thrombus, nor blood extravasation. The parts oozed more freely in a general way, and continued bleeding longer than is usual, otherwise nothing abnormal could be detected. Recovery followed, but whether the operation aided in this or not I should hesitate to say. In one respect the case was very instructive, as it formed a striking contrast to a case in which, at about the same time, I cut down upon the musculo-cutaneous nerve with a view to relief of the pain of neuritis by nerve stretching. In this case the nerve was surrounded by an oedematous sheath, which made it appear as large as a No. 9 (English) bougie. The operation gave no relief whatever.

The Cause of the Trouble.

Upon this I can throw little light. It may, for aught I know, be perfectly familiar to pathologists and other observers, but I do not recollect in the course of my reading, which I fear is somewhat cursory in these days, to have met with any description which would quite fit in with the condition I am now discussing. For some years I have met with cases of the kind from time to time, but it was only during the South African war that I saw enough of them to attract my attention particularly. At that time a large number of cases of so-called phlebitis after enteric fever and malaria came under my observation, in some of which I could not reconcile the symptoms at the time of seeing the patients, or the history they gave of themselves, with cases of true phlebitis, and on investigation these cases were clearly of the kind I now refer to, as they presented all the symptoms and signs which have been enumerated. The disease or affection is obviously not an ordinary neuritis; it is not "neurotic," nor is it of gouty origin—at least it does not occur especially in gouty subjects—and it is quite unaffected by remedies which are held to influence gout, although it is true that the douches, massage, and exercises applied at Aix-les-Bains are beneficial. The condition, however, may have some relation to osteo-arthritis, for I have seen it come on very acutely in subjects who have later on developed osteo-arthritis, after which the original condition, previously inveterate, has rapidly disappeared. The cause of the swelling is obscure. In the case I have mentioned, and in one other, the parts on exploration were quite normal, excepting the free tendency to oozing, and the unnatural persistence of the bleeding. Possibly, therefore, some vaso-motor disturbance is at the bottom of it—a view which is rather corroborated by the bruising which so readily appears after pressure. The apparent tenderness of the trunk of the anterior crural nerve in some of the cases is, at first sight, suggestive of neuritis; but it must be remembered that tenderness over the anterior crural trunk is easily elicited in many people whose bony conformation is rugged, especially if they are thin—a fact well known to bone-setters, who frequently utilize it for the purposes of their trade.

Treatment.

In this respect two definite statements can be made. First, that rest has no beneficial effect in these cases; secondly, that if no treatment be adopted recovery invariably occurs spontaneously soon or late. It is, however, impossible to foretell in any case how long a period will elapse before the occurrence of spontaneous recovery—the time may be weeks or months. The main object, therefore, in the treatment is to find the best means to shorten the course of the complaint. It is obviously well, however, to be chary of attaching too much importance to any treatment as a means of cure in a condition which tends to spontaneous resolution, as the cure under such circumstances, although occurring during treatment, may in truth be independent of it—a fact which in relation to treatments generally is, I venture to think, too often ignored. Apart from such as are necessary to secure a proper condition of the secretions, medicines are useless, and within reasonable limits food and alcohol may be taken without affecting the condition in any way. Morphine and other strong narcotics and anodynes will, of course, temporarily relieve pain or discomfort, but they effect no really useful purpose, and may be harmful in the end. The means at our disposal, therefore, are extremely limited, being mainly three: Massage, electricity, and passive movement, followed by resistance exercises. To these may be added moderate exercise up to the point of resistance; by which I mean the point at which pain or stiffness renders exercise impossible without great effort. The massage should be thorough and not too gentle; its effect being greatly increased if aided by the electric vibrator. The electricity is the much-abused, but frequently useful if discreetly employed, high-frequency current. The passive movement (after the massage and electricity) should be general, with special movements identical with those which, when voluntary, cause an increase of pain. As soon as these special movements can be made with comfort gentle resistance exercises should be employed. By a rational use of this treatment I believe considerable help can be afforded in cases of the kind described, and the period before the cure comes spontaneously be materially shortened. If these means can be applied at some watering-place such as Aix-les-Bains the general régime there in vogue may, perhaps, enhance the result, although the use of "the waters" has no specific effect upon the condition.

A Lecture
ON
THE CEREBRO-SPINAL FLUID IN RELATION TO DISEASE OF THE NERVOUS SYSTEM.

[With Special Plate.]

Delivered at the Victoria University, Manchester.

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The particular study of the cerebro-spinal fluid is of relatively recent date. After Cotugno, who discovered it in 1784, the names of Magendie (1825-42) and Quincke (1890) are especially associated with our knowledge of its composition and functions.

All physiologists are agreed that this fluid has chemical and physical properties different from those of any other fluid in the organism. The following table (a lantern slide of which I will throw on the screen) shows in what manner it resembles and in what manner it differs in its chemical composition from other fluids of the organism.

Chemical and Physical Properties.

The normal fluid is clear, like water. It has a specific gravity of 1.006, a slightly alkaline reaction, and is devoid of all corpuscular elements; it contains only traces of albumen; it becomes slightly cloudy on heating and contains no ferments. The principal constituent is sodium chloride, but it also contains traces of carbonates and phosphates, also a reducing substance which has recently been proved to consist of dextrose, and traces of urea; both these latter constituents may be increased in disease—the former in diabetes, the latter in uraemia. The average amount of cerebro-spinal fluid is 120 to 150 c.cm. It varies in amount in pathological states, being increased when the volume of the brain is diminished, and vice versa.

It will be observed on looking at the table that the cerebro-spinal fluid approximates somewhat in its chemical composition the amniotic fluid and the sweat. Cerebro-spinal fluid is a fluid *sui generis*. Although it resembles blood plasma and lymph in the nature and amount of its inorganic constituents, the only proteid matter which is present is a globulin; true albumin is absent. This and the absence of fibrinogen are marked differences between it and exudations from the blood. In other words, it is not a simple exudation, but a true secretion. Where is it secreted? In this there is a difference of opinion, although most authorities attribute the function to the choroid plexus. The cerebro-spinal fluid, formed in the ventricles of the brain, from which it normally con-

tinually escapes through the foramen of Magendie at the apex of the fourth ventricle into the subarachnoid space, and passes from the cranium to the spinal canal at each cardiac systole. This fact, discovered by Magendie, has been demonstrated by François Frank, by inserting a flag into the subarachnoid space through the occipital atloidal ligament, and noticing the downward movement.

Table of Comparative Composition of the Fluids of the Body (Dirksen).

Average for 1,000 according to different estimations by Hoppe Seyler, Hensen, Dahnhardt, and C. Schmidt.

	Cerebro-spinal Fluid.	Amniotic Fluid.	Sweat.	Canalized Lymph.	Interstitial Lymph.	Liquid of Oedema.	Blood Serum.
Water ...	998	986	988	926	986	975	900
Albumin ..	0.3	3 0	0	61.0	2.30	5.42	70 0
Fibrin ..	0	Traces	0	4.0	1.07	0	4.06
Reducing Substances	0.20 to 0.72	Traces	=	—	1.0	—	1.40
Urea	0.12	0.30	0 50 to 1.35	—	1.31	—	—
Carbonates and Phosphates	1.40	—	1.0	2.0	2 71	3.0 to 5.0	3 0
Chlorides ...	0.6	5 6	10.0	6.0	6.0	8.50	5.8 to 6 0
Ferments ..	0	Traces	0	Notable quantity.	Notable quantity	Traces	Notable quantity.

SOURCE, DESTINATION, AND FUNCTIONS.

Willis in 1664 called attention to the glandular nature of certain reddish granulations, and most people have accepted this view of the function of the choroid plexus. Recently, however, MM. Pettit and Girard have made a number of experiments and histological observations demonstrating the secretory functions of the epithelium which covers the choroidal plexus of the lateral ventricles.

If we can accept these observations as conclusive, we need no longer consider the ependyma of the ventricles, the vessels of the pia mater, and the choroidal vessels apart from their covering epithelium as the source of this fluid (see Fig. 1). If the choroid plexus is continually secreting this fluid, we can understand its unique chemical compositions and its freedom under normal conditions from all corpuscular elements. There is abundant evidence to show that this fluid is continually being secreted; for Mathieu has collected a number of cases in which large quantities of cerebro-spinal fluid have drained away daily in consequence of injuries of the subarachnoid space by which a communication was established with the exterior. Surgeons at all times have noticed and recorded observations when, after fractures of the base of the cranium or extirpation of sub basilar polypi, the patients have lost large quantities of fluid amounting in the twenty-four hours in some few cases to between one and two litres (Billroth, Verneuil, Routier, Tillaux). Some cases, also, have been recorded of daily dripping of large quantities of cerebro-spinal fluid from the nose—for example, the case noted by Halliburton, L. Hill, and StClair Thomson in the *Proceedings of the Royal Society*.

If there is a continual flow of the cerebro-spinal fluid, where is its ultimate destination, and what are its functions? We know perfectly well a large quantity of cerebro-spinal fluid can be drawn off by lumbar puncture, and that the pressure with which it flows out of the cannula is in proportion to the pressure in the closed cavity which contains it. It cannot be continually secreted and not flow away. According to one view, it escapes along the lymphatics of all the cranial and spinal nerves, arriving thus into the receptaculum chyli and thoracic duct, passing through the paravertebral lymphatic glands in its passage, and eventually returning, therefore, to the venous circulation.

Flatau's experiments by injection in the rabbit (via the olfactory nerve in particular) demonstrate that the fluid follows the course of the perineural sheath, then passes directly into the lymphatic networks of the nasal mucosa, thence it arrives at the glands of the neck and the naso-pharyngeal cavity; but the injection never runs to the surface of the mucosa, as Retzius asserted. Some of the cerebro-spinal fluid may, and probably does, escape along these perineural lymphatics, and it is possible that these are the avenues of infection in the production of tuberculous, epidemic and pneumococcic meningitis. However, the observations of Cushing support the view that the fluid contained in the cerebral subarachnoid space and perivascular canalicular systems, which I shall have occasion to speak of more fully presently, finds its exit from the cranium by opening into the longitudinal sinus.

Cushing, after producing intracranial pressure by injection of normal saline solution, states that the fluid does not escape readily from the subarachnoid cavity; even under pressure not more than 60 to 100 c.cm. escapes in half an hour perhaps. He agrees with Adamkiewicz that there exists a free communication between the subarachnoid space and the longitudinal sinus. He questions the correctness of Key and Retzius's hypothesis concerning the Pacchionian glands acting as a filter, for, as he justly remarks, they do not exist in young people or in the lower animals. The nature of these openings of the subarachnoid space is not known, but probably they run obliquely forwards, like the veins, into the sinus, and have, like them, a valvular action, so that fluid can flow into the sinus after lumbar puncture, but blood cannot flow back. He could inject the subarachnoid cavity and the longitudinal sinus, but very exceptionally in the converse direction. Mercury injected into the subarachnoid cavity found its way into the sinuses, jugular veins, and right heart. A non-absorbable gas introduced into the subarachnoid space produced death by cardiac air embolism, and if the jugulars were exposed, bubbles of it could be seen pouring down towards the heart. Exposure of the cervical lymphatics and of the thoracic duct, on the other hand, showed in all instances a complete freedom from gas.

There is every reason, then, to believe that a quantity of cerebro-spinal fluid is continually being secreted, and that it fills up all spaces, cracks, and crevices in the subarachnoid space and its annexes, a quantity proportional to the amount secreted continually escaping. The pressure on the whole cerebro spinal axis is thus uniformly maintained; but where the vessels of the pia arachnoid run in the sulci or dip into the substance of the brain, the layer of the arachnoid follows like a sleeve, forming thus a canalicular system in the nervous substance and containing cerebro-spinal fluid. This canalicular system is called the perivascular lymphatic system; it does not contain ordinary lymph, but the cerebro-spinal fluid, which apparently plays the part of the lymph of the central nervous system. The vessels of the brain have comparatively thin walls, and the arteries relatively few muscular fibres and vasomotor nerves. The uniform pressure of fluid sleeve which surrounds them supports the column of blood. The whole central nervous system being contained in a closed space, the cerebro-spinal fluid fills up all the space which is not occupied by tissues or blood, and serves to equalize the pressure throughout, and acts as a water cushion, especially at the base of the brain.

As the flow of lymph (if we adopt the view that lymph is not in the main a secretion of the lining endothelium of lymphatics) depends upon differences of pressure between the fluid contents of the capillaries and the surrounding cerebro-spinal fluid, there is little tendency to a flow from the capillaries into the canalicular system. The canalicular system is particularly well seen in specimens of animals' brains in which an experimental anaemia has been produced by ligation of the carotids and vertebrals. I throw on the screen a section of a monkey's brain in which Dr. Leonard Hill had produced cerebral anaemia by ligation of both carotid arteries and one vertebral. There is, you will observe, a connexion between the perineuronal space and the perivascular canalicular system (see Fig. 2.) I have examined a large number of animals' brains in which cerebral anaemia was produced in this manner, and I have always observed a condition like this. Although these brains have been hardened in absolute alcohol or corrosive sublimate solution, I have never seen any signs of coagulated proteid, which, if this system contained true lymph, would certainly be shown.

It may be asked, how is the brain nourished? It is a fact in starvation that, when all other organs waste, the brain does not appreciably do so, therefore we may suppose that the metabolism of the brain is very small but extremely complex, and the products of activity (probably of a similar nature to those of degeneration), for instance, nitrogenous katabolites, choline and acids, are formed and are continually being neutralized and removed by this slightly alkaline fluid. Cavazzani states the alkalinity of the cerebro-spinal fluid is just a trifle over half that of blood. He believes this is due to the fact that the products of

nervous activity are acid. He has proved the existence of a ferment which has an oxidizing action on glucose. The cerebro-spinal fluid is a secretion possessing other properties than that of lymph. He has studied this by means of the lymph excitants, injections of which have no effect on the secretion of cerebro-spinal fluid.

Of one thing we are certain: that oxygen is necessary for functional activity, and it would be an interesting research to know what are the oxygen and carbonic acid tensions of cerebro-spinal fluid? The large amount of oxygen which must be contained in the capillaries of the brain for it to efficiently do its work does not necessarily mean that all this oxygen is used, or if it be used it is probably not required for the nutrition of the nerve cells, but more probably in promoting biochemical changes in the substance connecting the synapses of the neurons—that hypothetical substance which MacDougall has unfortunately called neurine, which in a series of very interesting papers he associates with the process of attention. Indeed, we might be tempted to hypothecate a substance which under the influence of oxygen possesses almost radium-like properties. The experiments of Verworn are of interest in this relation.

This question of the cerebro-spinal fluid and the nutrition of the nervous system necessitates certain facts to be remembered in respect to the neurons as distinct from other cells of the body: (1) Their marvellous complexity; (2) that although histologically similar, yet physiologically studied in functional groups, they differ in individuals more than any other cells of the body; the corollary to this is that functional variations are more likely to arise in the neurons than any other cells of the body; (3) lastly, they are all present at birth, with all their potentialities awaiting the stimuli for the development of their functions and faculties; and if the functions and faculties are not inherited they are incapable of being developed. Moreover, the neurons are incapable of regeneration, or of lasting beyond their appointed time, even though the conditions of nutrition be favourable. Their progressive differentiation of function, and therefore of structure, has in the long procession of the ages of biological evolution destroyed the power of regeneration. If we accept the material neurological basis of mind, it would be impossible to explain memory (the power of storing away out of consciousness experiences derived from the senses perhaps for almost a lifetime to be recollected in consciousness by association) without supposing that the histological elements of mind undergo little or no biological change; in fact, are perpetual elements in our organization. But with such a complex organization as the cerebro-spinal axis, it is essential that it should be protected by a self-adjusting mechanism for uniform equalization of the blood pressure under the rhythmical variations of circulation and respiration, and from the chemical products of its own activity, by a fluid which can continually circulate most readily, and yet be the medium of gaseous exchange between the blood and tissues. Does the cerebro-spinal fluid perform this function, or is there, as Sicard maintains, a peri-vascular lymphatic sheath enclosed by the cerebro-spinal fluid?

I have often seen in cases of sleeping sickness what appears like a delicate sheath containing lymphocytes immediately surrounding the vessel, and outside this the canalicular space containing the cerebro-spinal fluid, across which delicate fibrils stretch from the lymphatic sheath to the brain substance, very probably fibrils of the neuroglial cells. Sicard maintains that the cerebro-spinal fluid only exists around the arteries and does not extend to the capillaries.

Effects of Increased Intracranial Pressure from Interference with Escape of the Fluid from its Source in the Lateral Ventricles.

I do not, for want of time, propose in this lecture to discuss fully the subject of hydrocephalus, but certain interesting cases which have occurred in my practice, or have come under my notice at *post-mortem* examinations, are instructive, and I will briefly refer to four of these. They are cases of internal hydrocephalus caused by non-malignant slow-growing tumours of the third ventricle, and one case of chronic basic meningitis caused by caries of the petrous bone. All four cases had well-marked signs of increased intracranial pressure, vomiting, headache, optic neuritis, tremors, fits, and drowsy stupor, with progressive mental enfeeblement, so that the diagnosis of general paresis was made in all cases except one, which was under my care in Charing Cross Hospital. The autopsy in this case revealed a small tumour loosely attached to the choroid, which from time to time must have taken up such a position as to block the iter and thus lead to distension of the third and lateral ventricles of the brain. (See Fig. 3.) Owing to the fact that the obstruction led to a condition of things by which the secretion exceeded the outflow from the cranial cavity, the result was a progressive rise of intracranial pressure, a flattening of the convolutions, and presumably a corresponding cortical capillary anaemia and venous stasis. The case which I am particularly referring to is of especial interest, because during the greater part of the patient's illness the complexus of symptoms pointing to increased intracranial pressure and cortical disturbance came and went, although certain signs and symptoms persisted. Thus he had persistent but not markedly increasing optic neuritis, with flame-shaped haemorrhages, unequal pupils, sluggish to light, reacting to accommodation, knee jerks diminished and a reeling gait, this symptom-complex being no doubt due to the local disturbing pressure effects of the tumour on the adjacent structures of the mesencephalon. The symptoms, which came and went for no other obvious reason than the change of position of the tumour in obstructing the iter and therefore the outflow of the cerebro-spinal fluid (thus causing internal hydrocephalus and cortical anaemia), were sudden or comparatively sudden attacks of drowsy lethargy deepening to stupor or even to complete coma towards the fatal termination, epileptiform spasms, local or general convulsions, followed by mental symptoms in the form of disturbances of consciousness, intelligence and memory, dullness of comprehension with slowness of ideation, thought and articulate expression, speech and handwriting—a clinical picture in some respects like general paralysis. The symptoms were therefore mainly due to disturbances of the circulation in the cortex cerebri; in some respects they resembled the symptoms of sleeping sickness. The patient died after one of the attacks in a comatose condition, and a

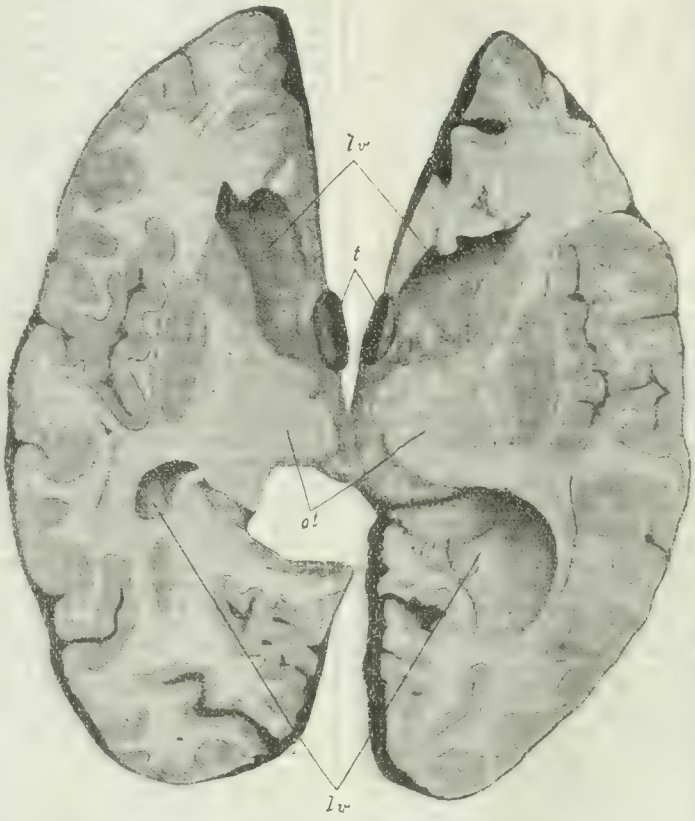


Fig. 3.—Horizontal section of brain through the lateral and third ventricles, which are considerably dilated. The lateral ventricles, *l v*, are seen in section in front and behind, and between them, optic thalami. *o t*, are cut through and appear in the horizontal section. The caudate nuclei are seen projecting into the lateral ventricles anteriorly, but are not nearly so prominent as is normal, owing to the dilatation of the ventricular cavities. Behind and outside the caudate nuclei are seen the lenticular nuclei, and still more externally the islands of Reil. In the situation of the third ventricle is seen a tumour, *t*, divided into two halves. Three-fifths natural size.

microscopical examination of the cortex in this case exhibited dilatation of the perivascular canalicular systems and capillary anaemia. Probably the increased intracranial pressure sets up also anaemia of the medulla oblongata.

By means of glass windows made in the skull of animals, Ravina (1811), Denders (1859), Cushing and others have studied the changes which occur in the vessels of the brain when intracranial pressure is induced and have observed the anaemia produced.

NOTE.—The full report of these cases of tumour of the third ventricle causing internal hydrocephalus is given in vol i, *Archives of Neurology* of the Claybury Laboratory, London County Asylums.

Seeing that the symptoms first came on with drowsiness and headache while the patient was out walking with his wife—this condition ushering in a fit—we may conclude that at this time the tumour had attained such a size that if by chance it came into an obtruding position, it set up the fluid accumulation. The upright posture, therefore gravity, seemed to favour the onset of an attack which would, of course, necessitate the prone position and possible alteration of position of the tumour, thereby the escape of the fluid, and, sooner or later—hours or days—return of the patient to his normal state of consciousness; at least, this was so in the earlier part of his illness. These symptoms of internal hydrocephalus support the view which I have taken, that the cerebro-spinal fluid is for the most part secreted by the choroid plexus in the lateral ventricles, and it escapes into the third ventricle, thence by the iter into the fourth ventricle, and by the foramina into the subarachnoid space, and thence by the perivascular and perineural lymphatics into the lymphatic system.

Abnormal Chemical Changes in the Fluid.

Is the pia-arachnoid an impermeable membrane? that is to say, do substances circulating in the blood pass into the subarachnoid space, and can they be detected in the cerebro-spinal fluid? According to Magendie, potassium iodide can be detected in the cerebro-spinal fluid after its administration, and he suggests that in this way it is that the iodide acts upon the nervous structures in disease. Sicard, however, maintains that the pia-arachnoid is impermeable. If, however, certain drugs—for example, morphine, potassium iodide, cocaine—be injected into the subarachnoid space, toxic effects are produced in accordance with the quantity introduced and the seat of introduction. The injection of cocaine by lumbar puncture has been resorted to in France by many surgeons, and a complete anaesthesia has been produced so that urethral, abdominal, and operations on the lower extremities have been performed with complete success, the patient never losing consciousness, but suffering no pain. Certain observations have been made showing that the composition of the cerebro-spinal fluid does become altered in disease—for example, in uraemia, urea is present in appreciable quantities, in diabetes the sugar is increased, and when the sugar in the blood and urine diminishes by dieting, correspondingly the sugar diminishes in the cerebro-spinal fluid; and it is stated that in pneumonia and those conditions in which the chlorides are retained in excess in the blood, they are increased in the cerebro-spinal fluid. As a rule, the fluid is not bile-stained in jaundice; but cases of urobilin jaundice have been recorded in which this substance has been found in the fluid. We may, however, say that the slight variations of the fluid which are met with in pathological chemical conditions of the blood all favour the idea that the fluid is a secretion of the special epithelium covering the choroid plexus, which would prevent these substances passing through. Moreover, the fact that the brain is very seldom stained by the bile in jaundice, unlike other tissues of the body, supports the view that I took with regard to the lymph supply of the brain. Yet, unless we admit the passage from the capillaries of substances circulating in the blood, whether crystallized or colloid, how can we explain the action of poisons on the nervous system? When they do appear, it is probably by osmosis from the blood into the canalicular systems. Halliburton and I have shown that choline, a product of myelin degeneration of the nervous system, may be detected chemically and physiologically in the cerebro-spinal fluid and the blood, in cases where there is active degeneration of the nervous system. Recently Donath, of Buda-Pesth, has shown that choline is present in the cerebro-spinal fluid in a large number of diseases of the nervous system. A tabular statement of his results I will now throw upon the screen. You will observe that in certain functional diseases he found no choline. An interesting point is that he shows choline is present in the cerebro-spinal fluid in 15 out of 18 cases of epilepsy; but his results have been doubted as regards genuine epilepsy, as in a more recent paper he confesses there is no rise in phosphates in the fluid. He remarks in his paper on the statement made by Halliburton and myself that we were unable to attribute the epileptiform seizures of general paralysis to the existence of choline, and he brings

Donath's Results for the Existence of Choline in the Cerebro-spinal Fluid of Sixty-five Patients.

18 cases of	genuine epilepsy ...	Choline found	15 times.
3 ,, ,,	Jacksonian epilepsy ...	,, ,,	3 ,,
1 ,, ,,	syphilitic ,, ...	,, ,,	1 ,,
3 ,, ,,	dementa paralytica ...	,, ,,	2 ,,
2 ,, ,,	tabo-paralysis	,, ,,	1 ,,
15 ,, ,,	tabes dorsalis	,, ,,	10 ,,
3 ,, ,,	cerebral syphilis ...	,, ,,	3 ,,
2 ,, ,,	tumour cerebri ...	,, ,,	2 ,,
2 ,, ,,	cerebral abscess ...	,, ,,	2 ,,
1 case ,,	encephalomalacia ...	,, ,,	1 ,,
1 ,, ,,	spina bifida	,, ,,	1 ,,
1 ,, ,,	coccygodynia	,,	not found.
2 cases ,,	hysteria	,,	,, ,,
3 ,, ,,	hystero-epilepsy ...	,,	found once.
1 case ,,	hydroceph. chron. ...	,,	,, ,,
1 ,, ,,	multiple cerebro-spinal sclerosis	,,	not found.
1 ,, ,,	alcoholic polyneuritis	,,	found.
3 cases ,,	neurasthenia	,,	,, once.

forward experimental evidence to show that pure choline (not hydrochloride of choline, which we used) can produce epileptiform spasms when injected into the subarachnoid space or brain substance, whereas an equal quantity of normal saline produces no effect. He affirms a fact, which I am coming to believe both from observation and experiment, that pure choline is a more powerful poison than is generally admitted. In my recent paper on Tabes in vol. ii of the *Archives of Neurology* I have recorded several cases of tabo-paralysis of the insane, in which all the organs except the brain appeared normal, and which, owing to rapid degeneration, led to the presence of a large quantity of choline in the blood, and the patients died after a few epileptiform seizures. Moreover, 10 c.cm. of a 1 per cent. solution of choline injected intravenously kills a rabbit in a few minutes from respiratory failure. Grünbaum's results, a summary of which is given by Halliburton in his lectures on the Biochemistry of Muscle and Nerve (pp. 132, 133), also French's results with the iodine test in the August number of the *Journal of Physiology* (vol. xxxi), confirm the results of Halliburton and myself.

Organized Elements in the Cerebro-spinal Fluid: (*a*) Leucocytes; (*b*) Micro-organisms.

I have already told you that the cerebro-spinal fluid is a clear liquid, which, if centrifuged, contains no organized elements. The simple operation of lumbar puncture has been practised, especially abroad, as a means of diagnosis. At first it was thought it would be valuable as a means of treatment, but in this respect I think it has completely failed, and is practically given up.

Widal, Sicard, Ravait, Abadie, Karnacki, and many others, have shown that leucocytosis of the cerebro-spinal fluid is one of the earliest signs of an organic disease of the nervous system. The acute diseases are associated with polynuclears, the chronic with lymphocytes. In diseases of the nervous system, in which also the membranes are affected, the mononuclears are in evidence—as in meningo-myelitis syphilitica, tabes, progressive paralysis, syphilis of the central nervous system, disseminated sclerosis and herpes zoster. In functional neuroses and psychoses and in neuritis of various forms there is no lymphocytosis.

Schäfer has performed lumbar puncture in 25 cases of general paralysis. He found the pressure increased; in two-thirds of the cases the pressure exceeded 204 mm. This result he attributes to the hydrocephalus *ex vacuo*. He found also, as I have found, an increase of proteid constituents, 0.75 to 3.5 per cent. This is no doubt due to the breaking up of the brain substance and inflammatory transudation from the vessels.

Now, it has been shown by Sicard that injections of oil or coloured particles—such as Indian ink—into the subarachnoid cavity causes a leucocytosis; we may therefore reasonably suppose that the leucocytosis may be in response to the escape of the products of degeneration into the cerebro-spinal fluid. We have no doubt about the capacity of the polynuclears to migrate and undertake phagocytic functions, but that a fluid which is normally entirely free from corpuscular elements should contain numbers of lymphocytes which

may be seen in Marchi preparations to contain particles of degenerated fat is contrary to the views of Ehrlich and Schultze, who maintained that they were incapable of exhibiting amoeboid movements. Ranvier, however, has observed amoeboid movements in the lymphocytes squeezed from lymphatic glands, and Jolly has recently observed amoeboid movements in lymphocytes taken from the thoracic duct. Moreover, in sleeping sickness, when all the perivascular canalicules are filled with mononuclears, one can see these elements in great numbers in the blood and on their way through the walls of the vessels. Strange to say, none of the workers at sleeping sickness have alluded to the excess of lymphocytes (which there must be) in the cerebro-spinal fluid of that disease.

Red blood corpuscles are not found in the cerebro-spinal fluid except in cases of haemorrhages; it is isotonic to the red-blood corpuscles, and therefore they would remain unchanged; but Sabrazés and Muratet have called attention to the phagocytic functions of the endothelial cells lining the subarachnoid space. These are large oval or round cells, 17 to 30 μ with an oval nucleus, the surrounding protoplasm containing blood corpuscles, or the crystalline or other products of their disintegration. The existence of these macrophages in centrifugalized fluid would lead to the diagnosis of haemorrhage.

Fortunately, it is only under exceptional conditions that the cerebro-spinal fluid contains micro-organisms. Although the blood may contain micro-organisms in abundance, yet the cerebro-spinal fluid may be, and usually is, quite free. There are, however, certain conditions in which micro-organisms are almost invariably present—for example, cerebro-spinal meningitis; and recent researches also seem to show the same for tuberculous meningitis. It is of interest to know how the infection occurs; it is certain that when once infective organisms do find their way into the subarachnoid space, they find a very suitable medium for their rapid development, no matter what be the seat of entrance; just as pigment particles become generalized in a short time throughout the subarachnoid space and its annexes, even finding their way into the lymphatic glands, so also do infective micro-organisms become disseminated, setting up thereby a generalized cerebro-spinal meningitis.

Epidemic cerebro-spinal meningitis, which a few years ago caused 184 deaths in Boston in one year, led to an important pathological investigation by Councilman, Mallory, and Wright, who investigated *post mortem* 35 cases. In all cases the diplococcus intracellularis of Weichselbaum was present, as determined by microscopical examination of the nervous tissues and by culture experiments. The organism was usually found in the protoplasm of the polynuclears, never in the nucleus. Culture experiments of the blood, liver, spleen, and kidneys gave no result. Occasionally there was a mixed infection with diplococcus of pneumonia, Friedländer bacillus, and a few times staphylococcus and streptococcus. Culture experiments made from fluid (which was usually turbid) by lumbar puncture during life gave the diplococcus. It may therefore be looked upon as the specific organism. It does not appear to be able to grow in the blood, but rapidly multiplies in the cerebro-spinal fluid. This may be accounted for by the fact that this fluid normally contains no leucocytes and only traces of proteid, therefore is unfavourable for the production of agglutinins or bacteriolysins.

The histological research in the 35 cases may be classified as follows:

1. The disease limited to the membranes.
2. Cases in which the disease affected not only the membranes, but in which there was also a perivascular infiltration of the canalicular systems of the cerebro-spinal axis.
3. Cases in which, besides the above affection, the cerebro-spinal nerves were affected.

When the affection spread along the pial sheaths to the nervous substance, there was set up a marked neuroglial proliferation. Dr. Williams, of the Boston City Hospital, performed lumbar puncture in 71 cases of cerebro-spinal meningitis; he concludes that diplococcus is the cause.

Netter, from his observations, stated that two conditions are necessary for the diagnosis of epidemic cerebro-spinal meningitis: (1) Kernig's sign; (2) lumbar puncture and the proof of the existence of organisms. He found a streptococcus, a typical pneumococcus, and the diplococcus intracellularis; he regards them all as possibly modifications of the same organism. Köffler has reported the result of lumbar puncture in a number of cases of epidemic cerebro-spinal meningitis, in which the only prominent symptoms were high fever, and slow pulse (48 per minute), the diplococcus of Weichselbaum being present in the great majority of cases.

Schiff, from his observations, comes to the conclusion that the nose is the seat from which infection proceeds, and that this diplococcus is much more commonly present in the human organism than is usually believed. The experimental injections of Flatau already related suggest that there are perineural and perivascular lymphatic connexions between the nasopharynx and the subarachnoid space, and very probably this is the mode of infection by pneumococcus, diplococcus intracellularis, also by tubercle and syphilis when the lymphatic glands in the neck are infected; otherwise we must suppose that the infection occurs by migrating leucocytes containing these micro-organisms, which is contrary to the experimental evidence I have already referred to, and to which I shall now give more particular attention. Netter has shown that a blood infection of the rabbit with pneumococcus may be the cause of pneumococcic meningitis, but these animals are susceptible to the organism, however introduced into the system. The dog is resistant to subcutaneous or intravenous injections of this organism; for if small doses of the same culture be introduced into the lumbar subarachnoid space, or the cerebral subarachnoid space or the brain substance, a generalized fatal meningitis is set up within a few days, and the heart blood swarms with the organisms. Similar results were obtained with anthrax. Sicard records some interesting results with regard to tetanus. If tetanus toxin be injected into the subarachnoid space the results are more rapid than subcutaneous or intravenous injection. He maintains that the cerebro-spinal fluid in tetanic intoxication of the blood stream does not acquire any

DESCRIPTION OF PLATES.

Fig. 1.—Drawing from a photomicrograph of cells of the choroid plexus (human) stained with methyl blue and erythrosin. The cytoplasm contains a number of round and oval clear areas, probably due to the contained secretion. The appearances closely resemble those met with in the cells of the lachrymal gland. Magnification 1,000 diameters.

Fig. 2.—Photomicrograph of the cortex cerebri of macacus rhesus, in which Dr. Leonard Hill had produced experimental anaemia by ligation of two carotid arteries and one vertebral. The canalicular perivascular system is well exhibited by a clear space around the empty vessels. The perivascular spaces are seen to be connected with the perineuronal space. Magnification 250 diameters.

Fig. 4.—Film preparation of blood of European case with trypanosome showing centrosome, nucleus, and undulatory membrane. Magnification 2,000 diameters.

Fig. 5.—Film preparation of trypanosomes in the blood of an inoculated animal. A mass of these organisms undergoing multiplication by division is seen. Magnification 2,000 diameters.

Fig. 6.—Section of the medulla oblongata of a rabbit which died three months after inoculation with trypanosoma evansi. (1) In the middle of the field is a transection of a small vessel; observe that there is no lymphocyte reaction in the perivascular space.

(2) In the vessel there is a whorl of trypanosomes like that seen in Fig 5. Just above and in the centre of the lumen is a dark stained plug (3), which under a high power is seen to consist of plasmoidal forms and fully-developed trypanosomes. Magnification 500 diameters. I am indebted to Dr. Plimmer for the material from which this section was prepared.

Fig. 7.—Photomicrograph of a small vessel of the cortex cerebri, surrounded by lymphocytes and plasma cells. The section was stained with Leishman's fluid, and shows a dark mass almost filling the lumen of the vessel and consisting of diplococci. The perivascular space is filled with the characteristic cell infiltration of lymphocytes and plasma cells of chronic sleeping sickness. No doubt the rapid termination of the case was due to a late generalized blood infection by diplococci, as so often happens in this disease. Magnification 450 diameters.

Fig. 8.—Photomicrograph of the perivascular cell infiltration of the central nervous system in chronic sleeping sickness, showing numbers of small but unequal round granules which stain imperfectly, and are probably the products of disintegrated granule cells. Magnification 800 diameters.

Fig. 9.—Photomicrograph of a section of the cortex cerebri from a case of chronic sleeping sickness, showing (1) small lymphocyte; (2) larger lymphocyte; (3) plasma cells; (4) granule cell; (5) granule cell disintegrated. Magnification 500 diameters.

Fig 10.—Photomicrograph of a small vessel from a case of taboparalysis, terminating with epileptiform seizures. The wall of the vessel is covered with plasma cells, many of which show endogenous nuclear proliferation. Magnification 800 diameters.

Fig. 11.—Drawing of cells from a section of a chronic inflamed gland removed during life from a patient suffering with trypanosoma fever. Trypanosomes were obtained from the juice of the gland. The various stages in the formation of the plasma cell from the lymphocyte are exhibited, also a number of large granule cells, many of which were undergoing disintegration as a result of coagulation necrosis. Very similar changes can easily be observed in the cells found in the perivascular spaces of the central nervous system in cases of chronic sleeping sickness. Magnification, 1,000 diameters.

tetanizing property, nor did it in three human cases of tetanus give anything but negative results. This is an argument against the cerebro-spinal fluid being the medium of exchange between the blood and the nervous tissues.

Tubercle differs from the previously described infective organisms in the slow evolution of symptoms and in its lymphocyte reaction. If tuberculous toxin be injected into the subarachnoid space, death is produced in animals in three to thirteen days, and after death the cerebro spinal fluid is found turbid with leucocytes; there is intense cerebro-spinal congestion, with no distinct exudation or granulations. Although it may be impossible microscopically to detect bacilli in the cerebro-spinal fluid in all cases of tuberculous meningitis, yet according to the inoculation experiments of Widal and Le Sourd, and the culture experiments on blood gelose of Besancon and Griffin, positive results were always obtained.

Sleeping Sickness and Infection of Cerebro-spinal Fluid by Trypanosomes.

A great interest has lately been attached to the examination of the cerebro-spinal fluid in sleeping sickness on account of the discovery of Castellani, confirmed and greatly extended by Bruce, of the existence of trypanosomes in the fluid extracted by lumbar puncture; and the hypothesis has been put forward that the onset of the symptoms of the disease is coincident with the invasion of the subarachnoid space by the parasites. The etiology of the disease, ably worked out by Colonel Bruce and his assistants, is the strongest argument in favour of the trypanosome being the cause of this remarkable disease, for its distribution along the borders of the great lakes conforms to the distribution of the biting fly, *Glossina palpalis*, in the stomach of which the trypanosoma has been found alive days after it has fed on an individual or animal having the parasite in its blood.

There is no evidence at present to show that the fly acts in any way as an alternate host to this parasite, but simply as a carrier, the same as "the flesh fly" when it blows the lip, after feeding on an animal which has died of anthrax. The coincidence of existence of the fly, the trypanosoma in the blood of men and animals, and the sleeping sickness, very strongly supports the view that the disease is caused by this parasite, and that its epidemiology depends upon the biting fly being able to carry the live parasite for days in its stomach. Whether this parasite is the trypanosoma gambiense or a new species is not yet determined. Recently Laveran has stated that it is the same species. I will throw on the screen a microphotograph of this parasite taken from the blood film of the European case of trypanosomiasis lately under the care of Sir Patrick Manson (see Fig 4). This patient, after suffering with paroxysms of fever for two years, developed the symptoms of sleeping sickness, and died a few months after their onset. Was this due to the parasite piercing the subarachnoid membrane and infecting the cerebro-spinal fluid? I have examined the tissues of this case and 15 cases (since extended to 26, including a Persian) of sleeping sickness in natives. All show the same histological change that I described five years ago in 3 cases of sleeping sickness that occurred in England—1 under the care of Sir Stephen Mackenzie and 2 under the care of myself and Sir Patrick Manson in Charing Cross Hospital—namely, a chronic meningo-encephalo-myelitis, the leading characteristic of which is the filling of the perivascular canalicular systems with large and small mononuclear leucocytes. There is also some glia cell proliferation, with a certain amount of neuronic degeneration by no means proportional to the vascular changes. What is the cause of this profound change denoting chronic irritation? According to Bruce it would be the invasion of the subarachnoid space by the trypanosoma, for in every case of sleeping sickness, trypanosomes are present in the centrifuged deposit of this fluid, often without any admixture of any red blood corpuscles. Whether the parasite is the cause *per se*, or whether it leads to secondary infection by acting as a carrier of micro-organisms, or by destroying the impermeability of the subarachnoid sac, thus allowing invasion by organisms which are normally present in the body, is still a matter of speculation. There are, however, certain facts of importance, besides the presence of these parasites in the blood and the cerebro-spinal fluid—namely, in every case there is a general enlargement of the lymphatic glands. Then, in the great majority of cases the Portuguese observers found a diplococcus in the cerebro-spinal fluid and in the nervous substance; also Castellani found a diplococcus in the blood and cerebro-spinal fluid of 80 per cent. of his cases. He put forward the view that the trypanosoma was the essential cause and the diplococcus a secondary infection of great importance in the disease. Observations which I have made rather tend to support this hypothesis, for I have found the diplococcus in a great many of the cases which I have examined, including the European case I have referred to. I show you a photomicrograph of a section of the brain from an acute case with a vessel containing a plug of diplococci (Fig. 7). In these cases the heart blood was affected also, in this respect differing from the epidemic cerebro spinal meningitis, where we have seen the cerebro-spinal fluid to contain the diplococcus of Weichselbaum, but not the blood. Again, diplococcal infection should give rise to polymorphonuclear leucocytes as in epidemic cerebro-spinal meningitis, and the existence of these organisms in the blood and cerebro-spinal fluid, also in the tissues, is rather the result of a late or terminal infection which hastens death but has no relationship to the characteristic perivascular lesion of the nervous system. Moreover, I have found the diplococcus in the brains of monkeys inoculated with the blood of sleeping sickness cases, and yet no signs of the perivascular cell infiltration.

It is remarkable that if the trypanosoma is the cause of the disease, that I have been only in a few instances able to find it definitely either in the blood or in the perivascular cell infiltrations of the central nervous system. It may be urged that they cannot be stained in sections, but this I have shown is not the case, as I will demonstrate, for in a rabbit that died three months after inoculation with trypanosoma evansii (surra) the vessels of the brain were crammed with parasites, yet there was no lymphocytic reaction around the vessels. (See photomicrographs, Figs. 5 and 6.) The very profound changes of the nerve cells are no doubt due to the anaemia produced by the capillary obstruction. Dr. Plimmer informs me that the serum of nagana blood taken from an animal that has died of the disease, and filtered through a Chamberland filter, does not upon injection into an animal produce any toxic effects, nor does it give any immunity to the inoculation by the parasite. It therefore does not kill by the action of a toxin the same as micro-organisms do. If, therefore, the parasite acts mechanically we ought to be able to see it in the blood vessels, as we see it in the brain of the rabbit with surra. I have only in a few instances after searching hundreds of sections, found amidst the blood corpuscles parts of trypanosomes or occasionally a trypanosome. The characteristic symptoms of the disease are undoubtedly due and proportional to the extent and degree of the meningo-encephalo-myelitis, and it is my opinion that the lethargy is due to the cerebral anaemia caused by compression of the small vessels, by the accumulation of lymphocytes in the perivascular spaces, and the mechanical interference thus produced in the circulation, and the obstruction to the biochemical changes incidental to the activity of the neurons. The tremors, paresis, fits, attacks of mania, and hyperpyrexia are probably the results of irritation phenomena associated with stasis in the vessels, degeneration changes of the neurons, and neuroglial proliferation.

The early affection of the cerebellum, the mesencephalon, and the medulla oblongata by the lymphocyte infiltration is very probably connected with the noxious agent in the large collection of the fluid in the subarachnoid space of the base of the brain. In cases which linger to the end of the third stage, marked bulbar symptoms may arise due to anaemia of the medulla and degenerative changes of the neurons.

In conclusion, I am bound to confess that the brains of *monkeys* inoculated with the blood of sleeping sickness cases which I have examined do not afford any conclusive evidence of the trypanosoma being the cause of sleeping sickness:

First, because only a few of the monkeys inoculated died.

Secondly, there is no proof that the animals that died really suffered from sleeping sickness, but rather that they behaved like animals that were profoundly ill.

Thirdly, I could find no blocking of vessels with trypanosomes, nor any lymphocytic reaction around the vessels. What was most striking was a profound cerebral anaemia and dilatation of the canalicular systems, slight glia proliferation, and some chromolytic and degenerative changes in the ganglion cells.

Fourthly, in two or three cases there was an obvious diplococcal infection. In respect to this diplococcal infection Dr. Plimmer has informed me that in nagana such a secondary infection is not uncommon, and it may be that the diplococcal

invasion causes the destruction of the trypanosomes, for the European case which I have examined showed no trypanosomes in the blood after death and for some days before—although at one time they were fairly numerous—but enormous numbers of diplococci.

The etiological evidence of the trypanosoma being the cause of the disease, and therefore of the symptoms and characteristic lymphocytic reaction of sleeping sickness, is so convincing that very possibly some plasmodial or transitional form may exist in great abundance in the cerebro-spinal axis—forms like Leishman bodies, which could easily enough be missed in sections, or forms which require a special stain in order to disclose their existence and differentiate their structure. I have seen crowds of round bodies measuring from 1 μ to 2 μ in diameter, lying among the cells of the perivascular spaces and the subarachnoid space, but I have been unable to differentiate any structure. I am of opinion that they are mostly disintegrating cell protoplasm, but some few might be a modified form of trypanosoma or altered nuclei or micro-nuclei of these parasites (Fig. 8).

Finally, it should be remembered that there is a general lymphatic gland enlargement, which can be correlated with the lymphocyte accumulation in the canalicular systems of the central nervous system. But as I pointed out in my original description of the morbid histology of the disease this lymphocyte accumulation is not limited to, although most marked in, the central nervous system. It affects the spinal roots, the nerves, the organic viscera, and the serous membranes (heart, liver, pericardium having been examined). Is the lymphatic gland enlargement secondary to the irritation caused by trypanosomes* or some modified and at present unrecognized forms of these blood parasites, or to a diplococcal infection, the toxin of which causes irritation and increase of lymphocytes discharged into the circulating blood? The latter alternative, however, does not explain why the lymphocytes should migrate from the blood into the perivascular spaces of the brain.

An interesting fact indicating prolonged chronic irritation in the majority of cases is the existence of large numbers of plasma cells of Marscholko in the enlarged lymphatic glands, and perivascular spaces of the central nervous system, also abundance of granules, the results of their disintegration. Besides, there are a number of granule cells which I have seldom seen in other diseases of the central nervous system. (See photomicrograph, Fig. 9.)

GENERAL PARALYSIS.

Another disease in which there is evidence of chronic meningo-encephalitis and lymphocytes in the cerebro-spinal fluid is general paralysis of the insane. The most constant and striking change which can be observed in this disease is afforded by the appearances presented by the vessels. Under a low power in an acute case there is a perivascular cell proliferation somewhat resembling that seen in sleeping sickness, except that it affects the cortex rather than the base of the brain; it is attended by much more neuron destruction and glia cell proliferation. Moreover, when the vessels are examined under a high power the cells which are collected in the perivascular spaces present a typical and almost pathognomonic appearance (Fig. 10). Ragner Vogt, who first called attention to their invariable existence in general paralysis, showed that they were identical with the plasma cells described by Marscholko as occurring in glanders, syphilitic granulomata, tubercle, lepra, and carcinoma.

I have examined a large number of brains to see if Vogt was justified in regarding these cells (which I will now describe) as pathognomonic of this disease. Plasma cells are of varying size (from 7 μ to 14 μ): they are polygonal, oblong, oval, or triangular in shape. Stained with Unna's polychrome, the nucleus, which is situated at one end of the cell, stains blue, while the remainder of the cell, the granoplasm, stains pink; around the nucleus there is often a clear halo. The nucleus closely resembles the nucleus of a lymphocyte, for it possesses a central nucleolus, with wheel-like strands of chromatin ending in 4 to 7 knobs beneath the nuclear membrane. Although I have found these cells in every case of general paralysis or tabo paralysis that I have examined, yet I cannot agree with Vogt that it is absolutely pathognomonic of this disease, for I have found the same cells in the lymphatic glands and brains of numbers of cases of chronic sleeping sickness, and a careful examination of them convinces me that my original statement that they are altered lymphocytes is correct; for in this particular case one could follow all the stages, from a cell consisting almost entirely of nucleus to the development of one with abundant granoplasm and a nucleus pushed up to one end of the cell; and development of the plasma cell from the lymphocyte, under the influence of chronic irritation of trypanosomal infection, is easily observed in the lymphatic glands of cases of sleeping sickness (Fig. 11).

In the neighbourhood of vessels which are surrounded by a large number of these cells there is usually in general paralysis a proportionally marked acute destruction of neurons.

It is a significant fact that I have very seldom found diplococci in the brains in this form of chronic meningo-encephalitis, although a large number of the patients die with pneumonia and broncho-pneumonia; whereas in sleeping sickness a very large proportion of the cases showed abundant evidence of diplococcal infection of the central nervous system.

A full account of this research upon plasma cells in general paralysis will be found in my article Tabes in Hospital and Asylum Practice, vol. ii, *Archives of Neurology*.

* See an important communication in the *Proc. Roy. Soc.*, vol. lxxiii, June, 1904, by Captain Greig, who at my suggestion examined the lymphatic glands, and obtained positive results of the existence of trypanosomes in 15 consecutive cases.

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IN accordance with a law passed by the Ottoman Government on April 4th of the present year, vaccination and revaccination with animal lymph on the German plan have been made compulsory throughout Turkey. The new law came into force on April 18th.

HOLIDAY COURSES IN BERLIN.—We are asked to state that the next "cycle" of medical holiday courses under the auspices of the Berlin Teachers' Association will begin on March 1st and end on March 28th. A programme of the courses will be sent post free to any one making application to Herr Melzer, Zirgelstrasse 10 and 11 (Langenbeckhaus), Berlin, who will also supply any further information that may be required.

SEVEN CASES OF THORACOPLASTY PERFORMED FOR THE RELIEF OF CHRONIC EMPYEMA.

By HAMILTON A. BALLANCE, M.S.Lond., F.R.C.S.Eng.,
Assistant Surgeon, Norfolk and Norwich Hospital.

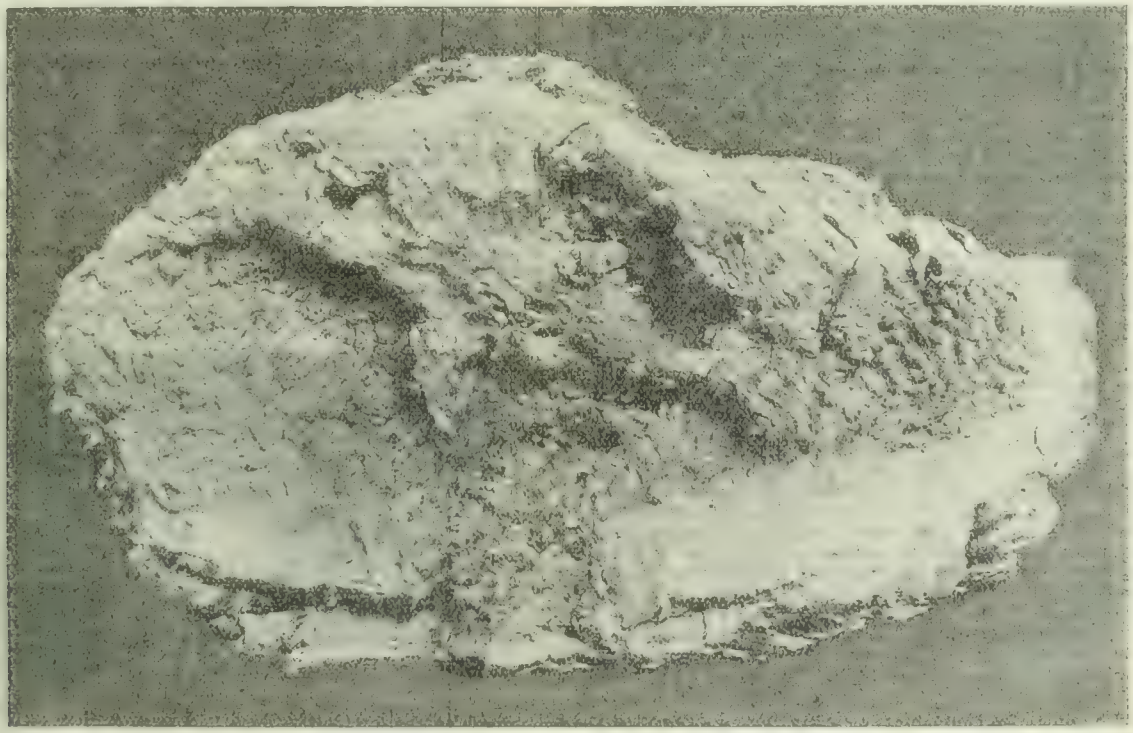
The problem to be faced by the surgeon in attempting to secure by operative means the obliteration of the cavity of a chronic empyema may be attacked from two different directions, according to his decision to deal either with the lung or with the chest wall.

On the inner side of the cavity is the lung, collapsed to a greater or lesser extent; and on the outer side is the chest wall in the condition assumed in expiration, the degree of retraction depending on the size of the cavity.

The tension in a large unopened empyema seriously compresses the lung, but if the thickening of the visceral pleura, as a result of the inflammation, be not very excessive, ordinary, and more especially forced, expiratory movements after the fluid has been evacuated will successfully re-expand the lung and bring it once more in contact with the chest wall.

It is impossible to estimate the loss of elasticity in a shrunken lung, depending on interstitial fibrosis in its substance, that may have occurred as the result of a chronic empyema. It is to be expected that these interstitial changes will be greater after a purulent than after a serous pleural effusion, and Dr. West has recently recorded 2 cases of serous effusion of eighteen months' and twelve months' duration respectively, in which re-expansion occurred with great readiness upon the fluid being let out. This does not often happen in cases of empyemata of long duration, but the same observer has placed on record a case of an unopened empyema which had been present for six months, and in which re-expansion occurred rapidly when the pus was evacuated.

In the case of a chronic empyema of ordinary type, the chest wall on the outer side of the cavity is depressed to a certain extent, but not sufficiently so to reach the lung and cause obliteration of the cavity. The thoracic wall on this side moves very little in respiration as compared with that of the opposite side. There is no useful purpose to be served in its expanding: it cannot draw the lung with it. Automatically and without the knowledge of the patient, the respiratory mechanism has accommodated itself to the altered circumstances, and only those respiratory muscles act which can do useful work.



Case II. Photograph I.—This photograph represents the soft parts removed after the ribs had been excised. These parts consist of the intercostal muscles, periosteum of ribs, and parietal pleura. The pleural surface is shown. Notice the nodosities and bands on the surface of the pleura, and at the lower right-hand corner of the figure, the great thickness of the membrane where it is seen cut across.

It is probable that the dressings on the side of the chest round an empyema wound act as a rough kind of valve. Owing to the sudden tension in the pleural cavity as the result of coughing, the dressings are lifted a little from the surface of the body, and air and pus are forcibly ejected into them. The moment the tension drops, the moist dressings fall over the wound once more and prevent the re-entrance of the ejected air. The lung is, therefore, held in a slightly more expanded condition than was the case before the fit of coughing, its elasticity will come into play, and there will be little negative tension in the empyema cavity. To put it shortly, a valve mechanism will allow air and pus to be forced out, will prevent air rushing in through the wound to take their place, and will encourage the lung to expand by reason of the negative intrapleural tension thus created.

In an empyema that has become chronic the lung has been rendered incapable of expansion by reason of the thickening of the visceral pleura. This would appear to depend upon the time the pus has been allowed to remain in the pleura before being evacuated, upon the systematic attempts made in the early days after evacuation to encourage expansion of the lung by expiratory exercises, and perhaps upon the nature of the micro-organism present in the case.

The chest wall is prevented from collapsing by the rigidity of the ribs and by the thickening of the parietal pleura. In the case of children depression of the ribs occurs with great readiness; their pliability is a measure of the retraction of the chest. I shall deal later with the influence exerted by the thickened costal pleura in preventing the sinking in of the chest wall.

If in any given case it has been decided to attack the lung in order to secure the obliteration of the cavity, the operation is commenced by raising its outer wall, consisting of skin, muscles, ribs, and parietal pleura in the form of a large flap. The visceral pleura is then seen forming the floor of the cavity exposed. This is systematically stripped from the lung. The procedure is known as "decortication of the lung," or more commonly Delorme's operation. George Ryerson Fowler also advocated this method about the same time as Delorme. If the lung has not lost its elasticity as the result of interstitial changes it will re-expand, under the influence of expiratory efforts, upon the liberation of its structure from the thickened and inelastic pulmonary pleura.

The extent to which these changes have progressed cannot

be foretold before the pulmonary pleura has been removed. This is a drawback to the operation. There is a danger in the freshly liberated lung substance coming into association with the septic contents of the cavity. This has resulted in death from septic pneumonia.

I have not performed Delorme's operation, and, although it may be ideally a better and sounder procedure to attempt to free the lung and allow it to resume once more its functions than to cause the collapse of the chest wall upon it for the purpose of closing the cavity, yet I have not been dissatisfied with the results of thoracoplasty up to the present, and my patients have been able to get on in life and to follow arduous occupations with one lung and a bit, apparently as well as individuals whose respiratory capacity had not been diminished.

The cure of a chronic empyema by the method of causing its outer wall to fall in upon a partially collapsed lung is illustrated by the cases recorded in this paper.

The procedure carried out has been that advocated by Schede, an extension of the operation brought prominently before the medical world by Estlander in 1879. The extensive cavities dealt with, and the great thickening of the parietal pleura found in all the cases, make it probable that Estlander's operation, which consists in shelling out the ribs bounding the external wall of a cavity from their periosteal sheaths, would have proved ineffectual. The rapid reformation of ribs from the periosteum, which is left behind in this procedure, soon produces rigidity of the chest wall once more, and the operation has to be repeated.

The resistance offered by the thickened parietal pleura, even after removal of the ribs, to an adequate sinking in of the chest wall is very real, and to obtain a reasonable prospect of success, it should be freely cut away, as pointed out by Schede.

In the cases recorded below a U-shaped flap was raised commensurate with the cavity to be closed, and reaching down to or below the discharging sinus. This flap included parts of the latissimus dorsi and serratus magnus, and in certain cases the pectoralis major. The ribs, with the intercostal muscles between them, were thereby exposed. The sinus was enlarged sufficiently to allow accurate determination of the size of the cavity, and the ribs forming its outer wall were then one by one shelled out of their periosteal coverings, divided at first posteriorly, then anteriorly, and removed. The remaining soft parts, consisting of intercostal muscles, periosteum of ribs, and parietal pleura were removed in a single piece by the insertion of one blade of a strong pair of scissors into the sinus and rapidly cutting through these structures following the lines of sections of the ribs. Haemorrhage was not excessive. The visceral pleura was by this means freely exposed. It was rubbed with a swab, or in some instances lightly curetted, to rid its surface of a considerable amount of unhealthy granulation tissue which was always found thereon. The flap of skin and superficial muscles was then allowed to fall down upon it, and the edges of the long wound stitched. A drainage tube was inserted at the lowest part of the wound.

Although Kocher recommends the excision of the first rib, should the cavity extend above its level, I have neither removed it nor the parietal pleura upon its inner surface. The cases recorded in this paper, in which the cavity extended into the neck, healed without the removal of the first rib and appear to show, therefore, that this is unnecessary.

The removal of the lower part of the scapula has not been required in any of my cases even in the most extensive ones, although the procedure has been suggested for those cases in which this bone is included in the outer wall of a residual empyemic cavity.

The following cases are recorded in the order in which I have operated upon them:

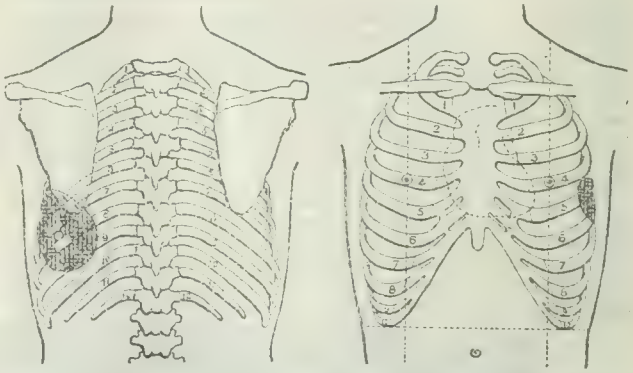
CASE I.

J. R., male, aged 32, was admitted into hospital on September 25th, 1896, under the care of my colleague Dr. Burton-Fanning. Six months previously he had had a left-sided empyema opened in the posterior axillary line and a tube inserted between the seventh and eight ribs and it had been discharging ever since.

There was a strong tuberculous history in this case, one sister and two brothers having died of phthisis, but no definite signs of tubercle could be found in the patient.

Upon admission the patient was in good condition, but the drainage proving inadequate, I removed on October 6th 2 in. of the seventh and eighth ribs which bounded the sinus. The parietal pleura was ½ in. thick.

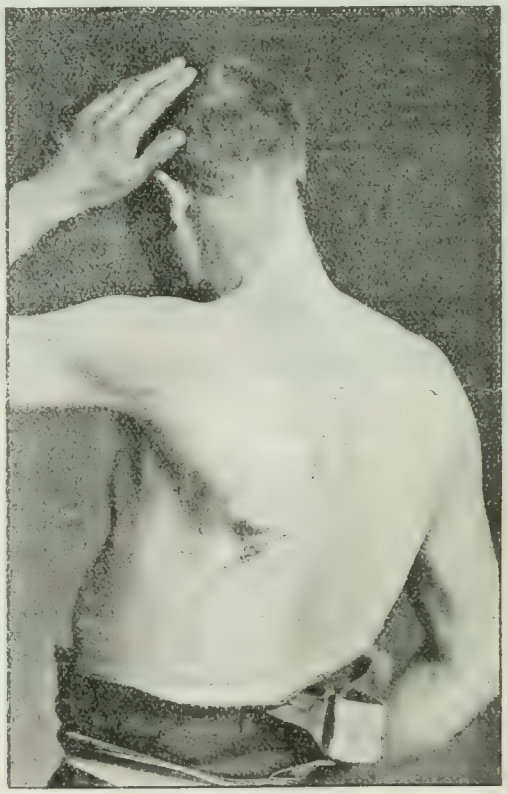
On January 8th, 1897, ten months from the first opening of the empyema, as the cavity showed no signs of closing, I raised a flap from the side of the chest and removed parts of five ribs (ninth, eighth, seventh, sixth, fifth). The longest piece removed measured 4 in., the shortest 1 in. The remaining soft parts of the outer wall of the cavity were then cut away, the parietal pleura being ½ in. to ¾ in. in thickness. The cavity was pear-shaped, tailing off in front towards the pericardium, and measured 7 in. in length. The flap was sutured in position and a drainage tube inserted below.



Case I. Clinical Chart.—The chart shows by means of the shaded area the extent of the cavity, also the sinus between the seventh and eighth ribs. The unshaded portions of these two ribs represent the parts removed soon after admission. The shaded portions of the ninth to the fifth ribs inclusive represent the parts which entered into the formation of the outer wall of the cavity, and which were removed at the thoracoplasty.

Seven weeks after this operation the patient was attacked with pleurisy of the right side, and 32 oz. of serous fluid were withdrawn by aspiration.

In November, 1898, nearly two years after the thoracoplasty, although the patient was in excellent health, a sinus still persisted. It was explored, and found to lead to a cavity measuring 4 in. by 1½ in. An inch of one rib which still overhung this cavity, and a fibrous membrane one sixth of an inch thick, which formed its outer wall, and which had



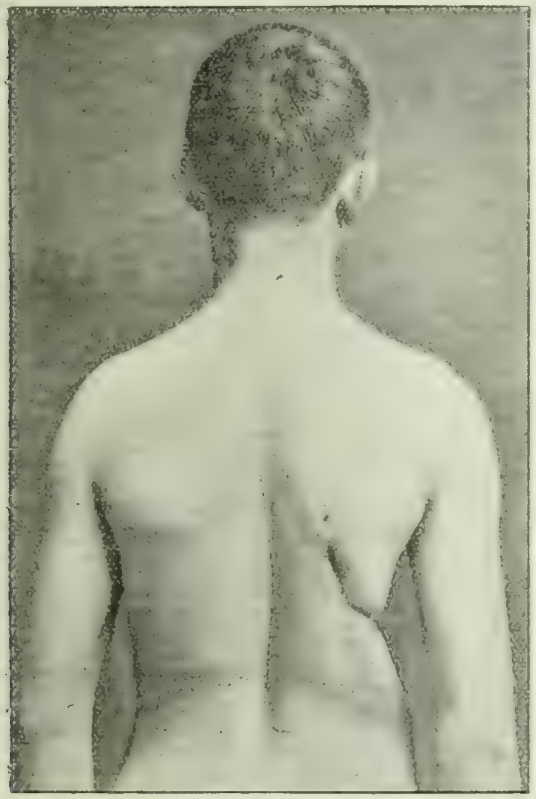
Photograph of Case I.—The photograph is a recent one, and shows the size of the flap raised, the incision extending between the two crosses.

taken the place of the parietal pleura removed previously, were excised. The wound was soundly healed in a few months, and the patient is now in robust health, following the occupation of a labourer, and having had no further trouble. There is no lateral curvature.

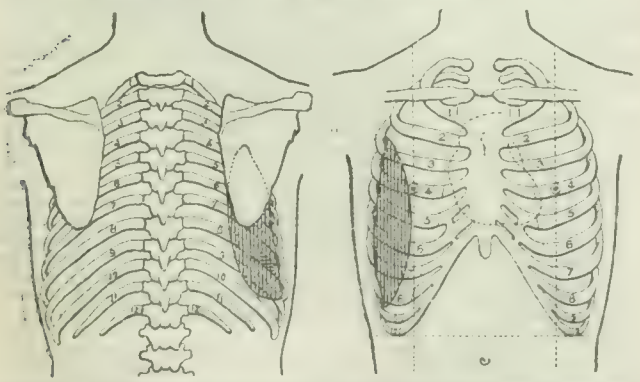
Case II.

"T. C., male, 21, was admitted into hospital on February 24th, 1898, under the care of my colleague, Dr. Burton-Fanning. In August, 1897, the patient had suffered from pleurisy, and clear fluid had been withdrawn from the right side of his chest. He returned to work for a few months, but became worse about Christmas, and a month before admission the chest had been aspirated again and pus withdrawn. Upon admission the patient was in considerable distress of breathing. A portion of the right eighth rib was resected, and four pints of thin pus were evacuated.

The cavity showed no signs of closing, so on June 30th, four months from the time of the opening of the empyema, the patient being in good general health, a large flap was raised from the right side of the chest, and the ribs from the third to the ninth inclusive, where they bounded the cavity, were removed. The remaining soft



Case II. Photograph II. back view.—Note that the spinal column is very nearly straight, and that the incision does not extend much above the level of the angle of the scapula.

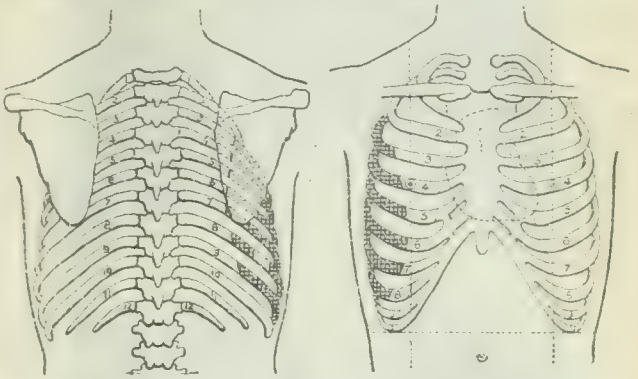


Case II. Clinical chart, showing cavity.—The shaded area shows the extent of the cavity, the darker portion of the eighth rib represents the piece excised at the first operation.

parts in the outer wall, including the parietal pleura, which was 1 in. in thickness, were next excised, the visceral pleura lightly scraped, and the flap replaced.

Severe shocked followed the operation, and the patient was in a critical condition for the first twenty-four hours, but by means of hypodermic injections of strychnine and two separate infusions of saline solution (saline 3 pints, brandy 3 drachms) into the median basilic vein, he rallied, and thereafter made a satisfactory recovery.

One year later he was readmitted into hospital on account of a sinus which still persisted. This was thoroughly scraped, and five months later he was soundly healed and in robust health. The photograph is a recent one. He is engaged in hard manual labour.



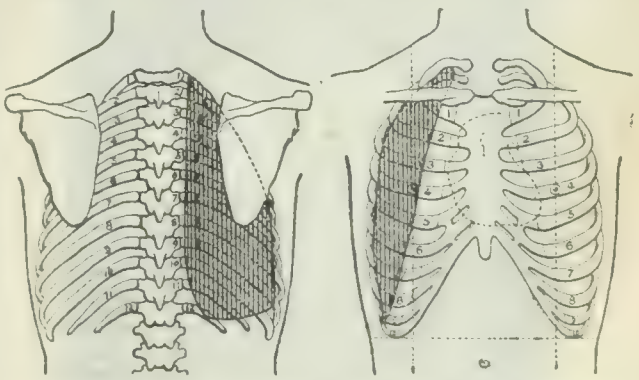
Case II. Clinical chart, showing ribs removed.—The shaded portions of ribs represent the lengths removed at the thoracoplasty. The light portion of the eighth rib represents the piece previously excised. Note that the extent of ribs removed corresponds accurately to the limits of the cavity.

Case III.

H. C., male, aged 18, was admitted into hospital on January 31st, 1899, under the care of my colleague, Dr. Barton. The patient had suffered from pneumonia in May, 1898, and ten weeks after the onset of the illness a portion of the sixth right rib in the mid-axillary line had been excised, two quarts of pus evacuated, and a tube inserted. He had worn a tube ever since.

Upon admission the patient was in good general health, but showed evidence of a large cavity in the right half of the chest. A probe passed upwards from the sinus could be made to project under the skin in the posterior triangle of the neck.

Upon February 9th, six months from the date of the opening of the empyema, a large U-shaped flap was raised from the right side of the chest, commencing near the nipple in front, and passing up behind midway between the vertebral column and the vertebral border of the scapula to a level with the spinous process of the latter. The ribs from the third to the ninth inclusive were then removed in the usual way from the costo-chondral junctions in front to the angles behind. As the patient began to get somewhat faint, further operation was postponed for that day and the flap replaced. A fortnight later the flap was again raised and the second rib removed from its cartilage to its angle. The soft parts, including the parietal pleura, which was ¾ in. thick, remaining in that part of the outer wall of the cavity from which the ribs had been removed, were then cut away, and the cavity displayed as shown in the chart. It extended up into the neck above the clavicle, back to the bodies of the vertebrae and down to the twelfth rib. The visceral pleura and the parietal pleura existing beneath the ribs which had not been removed were thoroughly curetted, and closure of the lower part of the incision assisted by sliding two curved skin flaps.

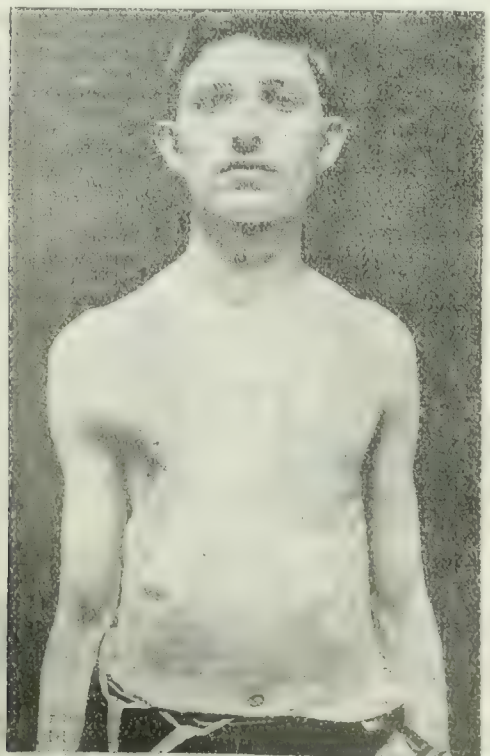


Case III. Clinical Chart.—The chart shows the extent of the cavity. The thick vertical lines on certain of the ribs towards their anterior and posterior extremities indicate the lines of section of these ribs, the intervening portions being taken away. Note that the only ribs not touched were the first, tenth, eleventh, and twelfth.

The patient made a very satisfactory recovery, and was completely healed in eleven months. He is now in excellent health, and engaged in heavy manual labour—farming in South Africa. He finds his right arm and shoulder almost as powerful as his left. The photographs were taken after the patient had been healed for some months.



Case III. Photograph I, back view.—This view shows the line of the incision behind. It is unnecessary to carry it so far up the vertebral border of the scapula; it is quite sufficient if it reach a little way above the level of the lower angle. In this case the incision passed through the rhomboids and the levator anguli scapulae, and much time was consumed in suturing them again towards the end of the operation. It is quite unnecessary to divide these muscles. The arm with the scapula may be allowed to fall back so that the posterior ends of the ribs are easily attacked in the interval between the scapula and the thoracic wall. Note that there is no lateral curvature.



Case III. Photograph II, front view.—The depression in the chest wall in this patient is more marked than in any of the other cases.

CASE IV.

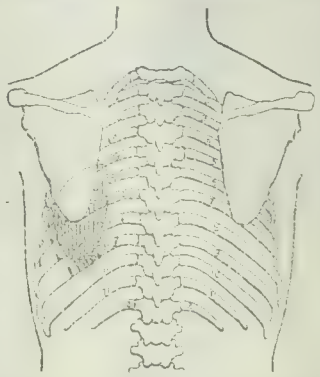
W. L., male, aged 23, was admitted into hospital on February 2nd, 1899, under the care of my colleague, Dr. Burton-Fanning.

Two years previously the patient had had an attack of pneumonia, and three weeks after the onset of the illness 5 pints of pus had been removed by aspiration from the left side of the chest. One week later a portion of the ninth rib, in the line of the angle of the scapula, had been resected and a tube inserted. The cavity had continued to discharge ever since.

Upon admission the patient was in very fair general condition, but there was a little temperature at night, and the discharge was offensive. The left side of the chest was greatly retracted.

Upon March 2nd an incision was made from close to the upper end of the vertebral border of the scapula downwards to below the sinus and upwards and forwards to the anterior axillary line. The flap being raised, portions of six ribs (fourth to ninth inclusive), varying in length from 3 to 6 in., were shelled out of their periosteal sheaths, and the remaining soft parts with the parietal pleura, which was ½ to ¾ in. thick, were cut away.

The cavity exposed measured 5 in. across, and was triangular in shape with the base upwards. The visceral pleura was well scraped before replacing the flap.



Case IV. Clinical Chart.—The shaded area indicates the size of the cavity. The shaded section of the ninth rib shows the length excised when the empyema was drained. The portions of ribs excised at the thoracoplasty are indicated by the lengths between the pairs of vertical lines on the fourth to the ninth ribs inclusive. It will be noted that the pieces of ribs removed projected beyond the limits of the cavity, both anteriorly and posteriorly. When dealing with a small cavity it appears to be advisable to remove lengths of ribs greater than the width of the cavity. By this means the flap can be replaced upon the visceral pleura with greater readiness, adhesions take place more quickly, and the healing process is shortened.

The patient left the hospital one month later, and was soundly healed and in excellent health five and a half months from the date of the operation. There was no lateral curvature.

I have not been able to obtain a photograph of the chest, as he has left the neighbourhood.

CASE V.

E. S., female, aged 18, was admitted into hospital on April 13th, 1901, under the care of my colleague, Dr. Barton.

Four and a half years before admission the patient had suffered from pleurisy on the left side, from which she had made a good recovery.

Eighteen months before admission she had been taken ill again, and three and a half pints of "thick offensive fluid" had been withdrawn by aspiration from the left side of the chest.

Three months before admission the fluid had reaccumulated, and had burst spontaneously in the left fifth interspace, where it had been discharging ever since. During the latter period she had been confined to bed, and there had been a considerable amount of offensive purulent expectoration.

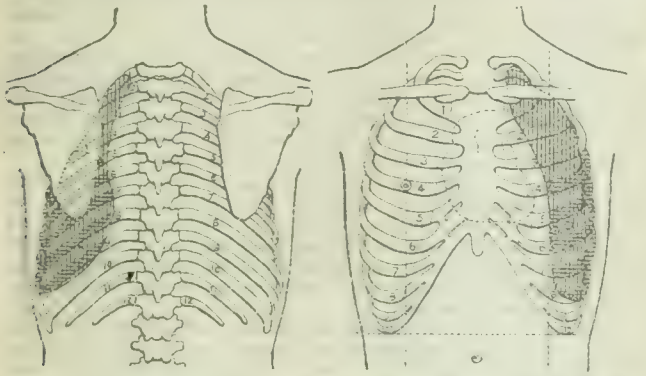
Upon admission the girl was much emaciated and pulled down in general health, but she took her food well. The temperature was normal. There were two sinuses in the left fifth interspace discharging offensive pus—one, two and a half inches vertically below the nipple, and another, one and a half inches further out in the same space. The left side was much retracted, and there was free offensive muco-purulent expectoration. This was examined twice for tubercle bacilli with negative results. There was a mitral systolic murmur. There was no albumen in the urine.

On April 25th I explored the cavity through an incision connecting the two fistulous openings, and found it to be a very large one. A flap was raised from the lower part of the chest, and portions of six ribs (fourth to ninth inclusive) were removed subperiosteally from the angles behind to the limit of the cavity forwards. The flap was then replaced, further manipulation being postponed, as the patient's condition rendered it unwise to subject her to further shock on that day.

The patient went on well till the fifth day from the operation, when she had a fit in the early morning lasting ten minutes. It began in the fingers of the right hand, spread to the right arm and side, and then she lost consciousness. Three more fits similar to the first followed in the course of the day. The next day she had six fits. In some the twitchings began in the left side of the face, spread rapidly to the left

side of the body and then became generalized. The fits continued each day, and the patient became more and more drowsy, and the pulse more rapid and weak. The temperature varied from normal to 102°. She died on May 5th, ten days from the date of the thoracoplasty.

At the necropsy the pericardium was found to be universally adherent, and the mitral valve thickened and incompetent. The right lung was healthy. The left lung was greatly shrunken and the size of the empyema cavity was as shown in the figure. The parietal pleura was ½ in. thick. There was no evidence of tubercle in either lung. There were six abscesses in the cerebral cortex, varying in size from ½ in. to 1½ in. in diameter, and all save one were in the frontal or parietal regions. There were two abscesses in the right and four in the left half of the brain. They possessed no defined walls and were obviously of recent formation. They were without doubt due to septic emboli as a result of the operation. There was no extensive meningitis. The ventricles were healthy. The cerebellum was healthy. There were no infarcts in the abdominal organs.



Case v. Clinical Chart.—The shaded area shows the extent of the cavity. The two circles in the fifth space indicate the sinuses where the empyema had spontaneously discharged. The shaded portions of the fourth to the ninth ribs indicate the lengths removed at the operation. It would have been necessary to resect the second, the third, and more of the fourth rib if the patient had survived.

CASE VI.

W. B., male, aged 31, was admitted into hospital on February 25th, 1901, under the care of my colleague, Dr. Long. The patient had suffered from typhoid fever in June, 1900, and since that date he had been short of breath on exertion. He remained away from work until October, when he resumed it until Christmas. He had then been obliged to give up work again owing to shortness of breath and some cough. Since Christmas he had been getting more and more dyspnoeic with continuous "aching pain round the heart." He had been confined to bed for three weeks prior to admission. He had been subject to bronchitis for four or five years, but there was no history of phthisis in the family.

A few days before admission the left side of the chest had been aspirated and 3 pints of pus removed. Upon admission, the patient was in fair condition and the dyspnoea was only slight. The temperature was normal, pulse 92, regular, respirations 28. The apex beat was in the right fourth space immediately below the nipple. There were the signs of a large left pyopneumothorax.

March 12th, 74 oz. of greenish inodorous pus were removed from the left side of the chest by aspiration through the eighth space.

April 11th, 41 oz. of pus possessing the same characters were removed to-day. By changing the position of the patient air or pus could be withdrawn at will from the pleural cavity.

April 26th, 23 oz. of pus were removed to-day. During all this period the temperature had not risen above the normal, the pus had remained sterile even to repeated examinations, and the apex beat had kept well to the right of the sternum.

June 12th, 34 oz. of greenish pus were withdrawn through a cannula in the left eighth space, and 4 pints of sterilized saline solution were then introduced through a cannula in the seventh space and subsequently withdrawn through the cannula below so as to wash out the pleural cavity.

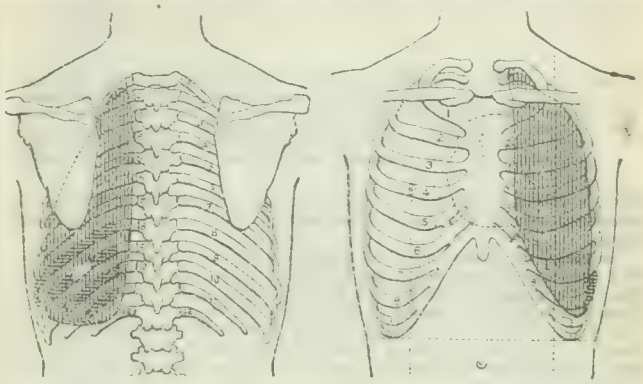
July 1st, 84 oz. of thick yellow pus were removed to-day from the left side. The temperature had been somewhat raised since the last aspiration.

August 10th. Since the last note the patient had spent some weeks at a convalescent home, where he had gained two pounds in weight. Upon readmission he was coughing up considerable quantities of offensive expectoration. This was examined for tubercle bacilli with a negative result. The temperature occasionally reached 100° at night. The apex beat was still in the right nipple line. As the repeated aspirations did not prevent reaccumulation, a portion of the left ninth rib in the posterior axillary line was excised to-day. Eighty-four ounces of pus were evacuated and a tube inserted. Once more no growth could be obtained from the pus. That withdrawn on July 1st had also been cultivated without success.

November 26th. The cavity had not been draining well of late, and the temperature had reached 101° to 102° at night. The discharge had been considerable. For the previous week the patient had complained of precordial pain, but there had been no physical signs to account for it. The apex beat had been situated under the xiphi-sternum since the rib resection on August 10th. As it was evident that there could be no chance of the cavity closing without a plastic operation, portions of the eighth to the eleventh ribs, with the parietal pleura, which was ½ in. thick, were removed to-day in the usual way, as a preliminary measure. A sinus was seen on the surface of the collapsed lung through which air was passing. The patient stood the operation well.

December 3rd. Three days after the thoracoplasty severe precordial pain commenced and the pulse became very rapid. The temperature rose to 103.8°, and from that time he gradually sank and died to-day, seven days from the last operation.

Necropsy.—Miliary tubercles were found scattered through every part of the right lung. The pleura was healthy. The left lung was very small, and shrunken against the pericardium and the spine. Vertically the viscus extended only from the level of the second to that of the seventh left costal cartilage. Caseous patches of tubercle were present



Case VI. Clinical Chart.—The shaded area shows the extent of the cavity. The shaded portions of the eighth to the eleventh ribs indicate the lengths removed at the thoracoplasty. The unshaded portion of the ninth rib indicates the piece removed when the empyema was first drained.

throughout the lung, and there were also numerous miliary deposits. There was a sinus on the surface of the lower lobe, which passed for 2 in. into the substance of the viscus. The parietal pleura at the back of the chest was reflected forwards to become the visceral on the surface of the lung from the junction of the anterior and lateral aspects of the bodies of the vertebrae, leaving the sides of the vertebral bodies and the heads of the ribs clearly visible. The pericardium contained about 10 oz. of pus. There was very little lymph in the sac, but on the under surface of the diaphragm and the upper surfaces of the liver and spleen were a few flakes, showing that the process was extending through into the peritoneum.

Even without the tuberculous infection, which was no doubt the cause of the pneumothorax, it is difficult to see how the chest wall could ever have collapsed sufficiently to have met the retracted lung. The patient probably had commencing pericarditis when the thoracoplasty was performed.

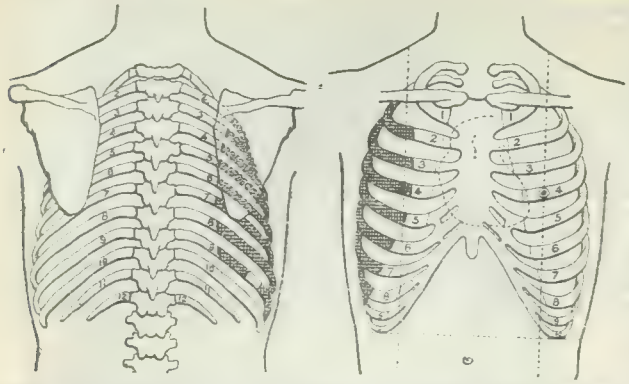
CASE VII.

W. T., male, aged 19, was admitted into hospital on February 13th, 1902, under the care of my colleague Dr. Burton-Fanning. The patient had been taken ill six weeks previously with severe pain in the right side of the chest and a cough. Distress in breathing became very



Case VII. Clinical chart showing cavity. The shaded area shows the extent of the cavity, the darker portion of the ninth rib represents the piece excised when the empyema was drained.

marked, and on admission he was evidently extremely ill, anaemic, and wasted; the breathing was painful and laboured, 44 to the minute. The right side of the chest gave the signs of fluid from apex to base, and the heart's apex beat was displaced into the sixth space, two inches



Case VII. Clinical chart, showing ribs removed.—The shaded portions of ribs represent the lengths removed at the thoracoplasty. The light portion of the ninth rib represents the piece previously excised. Note that the sections of the ribs correspond accurately to the anterior limit of the cavity, but that the ribs were not removed as far as its extreme posterior limit.

outside the left nipple line. Twelve ounces of thick yellow pus were at once withdrawn by aspiration from the right pleura to give temporary relief.

The next day a portion of the right ninth rib in the posterior axillary line was resected, and six and a half pints of thick pus were evacuated. The patient made a satisfactory recovery from the acute stage of his illness, but the sinus persisted and showed no signs of closing.

On July 25th, five and a-half months from the first operation, the general health being good, I raised a flap from the right side of the chest, and removed subperiosteally five ribs, the fifth to the ninth inclusive, from their angles behind to just outside their cartilages in front. The soft parts, including the parietal pleura, which were beneath



Case VII. Photograph I, side view.—The photograph shows the size of the flap.

these ribs, were then cut away in the usual manner. The parietal pleura was about half an inch in thickness. The flap was then replaced. A fortnight later the flap was reflected again, and portions of the fourth, third, and second ribs were removed in the same manner as before, together with the parietal pleura beneath them. The visceral pleura was curetted. The patient made a satisfactory recovery, and was soundly healed one year later. He is now in robust health.

Remarks.

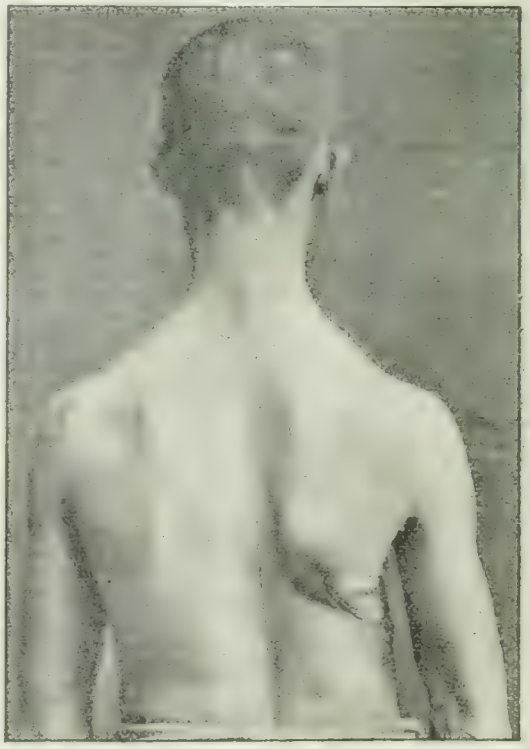
Two deaths out of 7 cases gives the high mortality of 28.6 per cent. The death from cerebral abscess (Case v) is an example of a complication of a chronic empyema which it is well known may supervene even if no operation be performed. In this case the thoracoplasty evidently dislodged septic material which furnished the infective emboli to the brain. Possibly it would have been a more prudent course to have made at first a counter-opening through the ninth or tenth rib, and thus to have induced a more satisfactory general condition before proceeding to an extensive operation. Even then it is quite possible that the excision of a portion of a single rib might have been sufficient to cause a cerebral embolism, and but for this unfortunate supervention I have no reason to doubt that the patient would have been in a fit condition in a week or two later to have undergone the removal of the remaining ribs situated in the outer wall of the cavity.

The case of pyopneumothorax (Case vi) was, I am afraid, hopeless from the first, and one which should not have been subjected even to a modified thoracoplasty.

With the exception of the procedure known as decortication of the lung, there is no operation other than Schede's which holds out a reasonable prospect of success in the case of a large cavity, in spite of the various modifications which have been suggested from time to time, with a view to a diminution in extent of the parts to be excised.

It does not appear to be necessary to remove the ribs further back than the angles, although the cavity may extend as far as the vertebral bodies. The spinal muscles are therefore not disturbed. It is certainly not necessary to remove a portion of the scapula, nor should the first rib be interfered with. Lateral curvature, as the result of an extensive thoracoplasty, need not be anticipated.

As a rule it is not advisable to perform the major operation until a period of six months has elapsed from the time that the empyema was drained. Retraction of the chest has then reached a point beyond which it is not likely to go.



Case VII. Photograph II, back view.—Note that the spinal column is very nearly straight. There is posterior displacement of the scapula and rotation of its lower angle from interference with the serratus magnus.

The cases must be chosen with care and judgement, and success will then be attained in a very large majority. They should be individuals otherwise in good health, not suffering at the time from hectic induced by an inefficiently drained cavity, or from lardaceous disease. There should not be any active tubercle present.

The operation in extensive cases should always be performed in stages.

HYDROCEPHALIC FETUS DELIVERED BY SPINAL TAPPING.

By J. W. BALLANTYNE, M.D., F.R.C.P.E.,
Lecturer on Midwifery, Medical College for Women, and Surgeons' Hall, Edinburgh; Examiner in Midwifery in the University of Edinburgh.

The delivery of the after-coming head is often a matter requiring skilful manipulation, and the employment of the forceps is sometimes necessary. If, however, the head happen to be hydrocephalic as well as after-coming, the most careful manipulation will often fail to deliver it, and the use of forceps becomes a danger. The value of the method suggested by Van Huevel and carried out by Tarnier will under these circumstances be easily appreciated. As that method does not appear to be widely known or often practised in this country, it has seemed to me that the report of the following case may serve a useful purpose in bringing it prominently before the profession.[1]

On the night of August 15th I was hurriedly summoned to the Royal Maternity Hospital, Dr. Hy. H. Robarts, one of the resident surgeons, informing me by telephone that a woman was being sent in with her baby born as far as the shoulders, but with the head still above the pelvic brim. On my arrival at the hospital I was put in possession of the following facts regarding the case: The patient was a married woman, 28 years of age, who had had three previous confinements and no miscarriages; her first child, a girl, was now 6 years old, healthy, born in a normal labour; her second, also a girl, was born dead four years ago, head presentation, no further details; her third child, a boy, was born two and a half years ago, normal labour, now alive and healthy. During the present pregnancy—the fourth—the patient had complained greatly of pain in the left side of the abdomen, which had prevented her sleeping at night; she had also noticed that the abdomen was bigger than in her previous pregnancies. She was under the care of a medical man in one of the suburbs of Edinburgh; he was called to her on August 15th, labour pains having commenced on the evening of the 14th. In the afternoon the os was fully dilated, and a transverse presentation was diagnosed, position left acromio-anterior. On account of the large size of the abdomen the presence of twins was suspected. At 7 p.m. the medical attendant ruptured the membranes, performed version, and brought down the feet without much difficulty: the body was also brought down and the arms with considerable exertion, but no efforts could extract the head. Another doctor was summoned, but even with his help the head remained firmly fixed above the pelvic brim. Attempts were twice made to apply the forceps, but with no success. The patient was then sent into the Maternity Hospital, where she arrived at 9.50 p.m.

On her arrival at the hospital the patient was in a very collapsed state; her pulse was 140 and thready; her lips and face were pale, the nose was pinched and the eyes hollow. She complained of no pains. On abdominal palpation I felt the uterus fairly well contracted, and as large as if it had a full-time fetus in it, but protruding from the vulva were the body and limbs of a male infant. In the upper part of the uterine tumour was a soft area, which I regarded as blood clot, above the head; in the lower part I thought I detected a crackling sensation such as one gets on palpating a hydrocephalic head. The body of the child was lying transversely in the pelvic cavity, the back being to the right; the cord was not pulsating. I passed my fingers up behind the fetal back and felt a well-ossified portion of the occipital bone; I thought I could feel a membranous part beyond it.

By this time I had diagnosed obstruction in labour due to large size of the head, and I naturally thought first of hydrocephalus. I could not, however, absolutely exclude some rarer conditions, such as meningocele, encephalocele, cranial or facial teratoma, or dicephalus, with single body. I said, therefore, to the house-surgeons and to the resident pupils from Milne Murray Lodge, that I intended to treat the case as if it were one of hydrocephalus, keeping in mind the comparative frequency of that state and the great rarity of the others.

The nature of the treatment then engaged my attention. It was obvious that further traction upon the trunk of the child was inadvisable; it had already been practised for two hours, the attachment of the head to the trunk had been weakened, so that there was fear of separating the former and leaving it in the uterus, and there was the rapidly-increasing risk of uterine rupture. To tap the head suggested itself as the best plan to pursue; but it seemed to me, at the same time, that the further intravaginal and intrauterine manipulation that it would involve, the probability that the occipital bone would require to be pierced with a perforator, and the collapsed state of the patient all combined to make a very grave prognosis. It was then that the illustration in Tarnier and Budin's *Traité de l'Art des Accouchements*,[2] representing tapping of the spine in a case of retained hydrocephalic head, came into my mind. That illustration, as some of my readers will remember, shows an infant born as far as the shoulders; the spine has been opened into in the dorsal region, and a stream of fluid is issuing through a cannula which has been pushed into the spinal canal. The figure is entitled, "Procédé de Van Huevel-Tarnier." It seemed to me at once that if I could by this method draw off the fluid from the cranial cavity by paracentesis of the spinal canal, I should be giving the patient a much better chance than by further interference through the vagina. The infant was already dead, so I had only the mother to consider.

By gentle manipulation I brought the infant's body round so that the occiput lay above the symphysis pubis and the back was in the middle line anteriorly. Urine had been drawn off by the catheter, and the patient was under chloroform, but not deeply. I took an ordinary scalpel and made a transverse incision over the interspace between the sixth and seventh dorsal vertebrae in the interscapular region. I then cut down into the spinal canal, but no fluid appeared. I next took a long silver catheter with one large and several small openings in its distal end and insinuated it into the spinal canal, bending the back of the infant at the time so as to make the spinal curves and those of the catheter to coincide. I calculated that the tip of the instrument was inside the cranium, but still no fluid issued. I then turned the catheter so as to make the point pass forwards in the cranial cavity; I felt some resistance, which was overcome, and then clear fluid with a slightly yellowish tinge began to run freely from the catheter. Dr. Robarts aided the emptying of the head by suprapubic pressure. When 36 oz. of fluid had thus been drawn off I seized the lower limbs and carried them forward over the symphysis pubis, and with very slight traction delivered the infant literally with one hand, aided by the suprapubic pressure which Dr. Robarts was exercising. A large quantity of blood clot came away with the head, and the placenta was born almost immediately. The uterus contracted fairly well. A large intrauterine lysol douche was given, the fluid returning freely. The child was born at 10.20 p.m., or half an hour after the mother's admission to the hospital. Four grains of ergotine were injected hypodermically, and repeated in about an hour. Strychnine, $\frac{1}{30}$ gr., was also given. The uterus softened several times, but the bleeding was not great. The pulse, however, was 150, and the facies not at all good, so I ordered a saline by the bowel, which was given. The patient was then put to bed and some brandy given, and afterwards some hot milk; with the help of bromide of potash and chloral she slept well.

The infant (Fig. 1), a male, was, save for the hydrocephalus, well formed; there was no spina bifida or other external deformity. The length was 22 in., and the weight, including 36 oz. of fluid drawn off, was 12 lb. The head was collapsed, but quite intact, owing to the nature of the operation which had been performed (Fig. 2). The two halves of the frontal bone were widely separated; the parietals, which measured 5 in. square, were separated from all the neighbouring bones by sutures $1\frac{1}{2}$ in. wide. The supraoccput was loose, being separated from the basiocciput. All the cranial bones were well ossified. Some of the measurements of the head may be mentioned: the circumference was $21\frac{1}{2}$ in.; from the root of the neck to the glabella measured over the vertex was $16\frac{1}{2}$ in.; the O.M. diameter was $6\frac{1}{2}$ in.; the biparietal diameter was $6\frac{1}{2}$ in. No eyeballs were visible in the orbits; the orbital fissures were short, measuring only $\frac{3}{4}$ in. The placenta weighed 2 lb. 4 oz., and the cord was 28 in. in length.

The mother's recovery may be briefly summarized: On August 16th, the first day of the puerperium, the temperature was 100°, and the pulse varied from 110 to 104; the patient suffered no pain; she was given brandy (half an ounce) every four hours. On the second day of the puerperium the temperature fell to 97°, rising in the evening to 100.6°; the pulse varied from 81 to 100; Henry's solution was given in the evening, and an enema next morning. On the third day (August 18th) the temperature varied from 98.4° to 99.8°; the bowels were moved, but not very freely, so a second dose of Henry's solution was given; the pulse varied from 86 to 92;

there had been no difficulty with micturition. On the fourth day there was slight fetor of the lochia, so vaginal douching twice daily (carbolic, 1 to 40) was begun and continued for twelve days; with the help of an enema, the bowels were well moved; the temperature showed an evening rise to 100°, and the pulse varied from 80 to 88. During the following three days (August 20th, 21st, 22nd) the morning temperature was normal, and the evening 100°; thereafter it was practically normal; the lochial discharge gradually lost its fetor, and ceased; there was never any uterine tenderness, and after the first few days the involution proceeded well. The patient left the hospital on the fifteenth day with a pulse of 72 and a normal temperature. It may be added that she had ergot and iron during most of the puerperium, and on one occasion —the seventh day—had to have the catheter.



Fig. 1.—Hydrocephalic fetus, weighing 12 lb., delivered by traction after spinal tapping.

According to Tarnier and Budin,[3] the procedure which was adopted with such complete success in this case, was proposed by J. Van Huevel in 1848,[4] and actually carried out by Tarnier in 1868. Hubert,[5] however, claims for Lacoux the honour of establishing it as a useful obstetric operation. At any rate, it would appear to have been adopted by Tarnier's pupils, and employed by them when occasion arose. N. Charles[6] used the method successfully in 1881; and in the same year J. Dougall,[7] in the account which he gives of a hydrocephalic fetus with spina bifida delivered as a breech, seems to have thought, after the labour was over, that he might have facilitated the extraction of the infant by draining off the cranial fluid through an opening in the sac of the spinal hernia. I may quote Dougall's words: "In this case, had the labour not finished when it did, I would have used the perforator. It occurred to me after, that I had neglected an opportunity of making one of the complications obviate the other. This could have been done after the child was dead, by opening the tumour at the bifid spine, and so tapping the cranium through the cerebro-spinal canal. This operation might probably be performed in lieu of craniotomy in fetal hydrocephalus, even where the spine is not bifid. An incision could be made into the cerebro spinal canal about the dorsal region, after turning, or in a breech presentation, and the cranium emptied of its superfluous fluid thereby."

A recent case in which spinal tapping was employed for the delivery of the hydrocephalic after-coming head, was that reported by Dr. Ira G. Stone in 1897[8]; Stone had only a soft rubber catheter with him, so he stiffened it by placing a uterine sound inside it, and was thus able to pass it up the spinal canal into the cranial interior. Another case seems to have been reported by B. Pozzoli.[9] In one instance, that recorded by Oui,[10] the manœuvre failed; the reason was found to be a fracture of the spine in the cervical region with separation of the two parts, which made it practically impossible for the sound to follow the canal, and so reach the cranium. This case affords a good argument for early use of this method, and for the avoidance of indiscriminate traction upon the fetal trunk.

The advantages of spinal tapping for the delivery of the after-coming head in hydrocephalus are so obvious that I need scarcely enumerate them. There is, first, the advantage



Fig. 2.—Hydrocephalic fetus, delivered by traction after spinal tapping. The transverse incision over the dorsal spine is shown.

of operating upon parts which are external and visible; there is, secondly, the accessibility of the armamentarium required —a knife and a catheter; there is, thirdly, the rapidity and completeness of the evacuation of the cranium thus obtained; and there is, fourthly, the avoidance of any further internal interference with hands or instruments when all such interference is of necessity fraught with danger. It is by no means an easy or a safe procedure to perforate a hydrocephalic head behind the ear or through the occiput when prolonged traction has already been made upon the trunk, when the forceps has perhaps been thrust once or twice into the uterus, and when the operator has the dread of uterine rupture prominent in his mind; tapping the spinal canal at once easily and safely removes the whole difficulty and greatly reduces the after-risks. What cleidotomy has done for the delivery of the shoulders after craniotomy or basilysis, spinal paracentesis promises to do for the extraction of the after-coming hydrocephalic head; both are scientific and elegant methods of overcoming difficulties which are often attacked by force, ill-regulated and misapplied and excessive.

REFERENCES.

[1] The operation is sometimes mentioned in textbooks—for example, in my *Essentials of Obstetrics* (p. 138), but the writer has seldom had personal acquaintance with it. [2] Vol. iv, p. 32, 1901. [3] Op. cit. [4] *Presse Méd. Belge*, i, 279, 343, 1848-9. [5] *Cours d'Accouchements*, ii, 254, 268, 1878. [6] *Jour. d'Accouch.*, Liége, ii, 41, 1881. [7] *Glasgow Medical Journal*, xvi, 25, 1881. [8] *Medical News*, New York, lxx, 302, 1897. [9] *Lucina*, Bologna, iv, 167, 1899. [10] *Arch. de Tocol*, xviii, 617, 1891.

An Address
ON
THE VOMITING OF PREGNANCY.

Delivered at the Annual Meeting of the Lancashire and Cheshire Branch of the British Medical Association.

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Gentlemen,—I take this opportunity of addressing you on a subject which has occupied my attention for several years, and which should be of common interest to the majority of the members of this Association—namely, the vomiting of pregnancy.

Symptoms and Classification of Cases.

This nausea, retching, or vomiting, when accompanied by a cessation of the menses—to which, indeed, only is it second in importance—is a recognized symptom, known to the laity as well as to the profession, and shows itself in the earlier months, in a very large proportion, on conception in the human subject.

Veterinary records, so far as I have been able to ascertain, mention no allied symptom in animals, veterinary surgeons and farmers relying on the increase in size, manipulation, and auscultation only as signs of pregnancy.

It is commonly known by the name of morning sickness—an unfortunate and unmeaning term, as retching and sickness are frequent enough in drunkards (vomitus matutinus), gastric catarrh, irritable conditions of the uterus and appendages, amenorrhoea, dysmenorrhoea, and the irregular period of menstruation premonitory of the climacteric. Some authors (and I agree) state that its persistency in carcinoma uteri causes rapid prostration, hastening the fatal issue. The following case illustrates this:

Case 1.

H. W. R., aged 62 years, first consulted me two years ago for troublesome abdominal pains, accompanied by a vaginal discharge, which was stated to be quite inoffensive. Examination per vagina disclosed a fixed condition of the uterus and thickened pelvic floor, also a small soft ulcer in the cervix. Palliative measures were resorted to, as an aged mother required all her attention. On the death of the mother, who was a most exacting patient, intractable vomiting set in, and she died from exhaustion on May 26th last (1904).

That the vomiting of pregnancy takes place in the early hours of the day—as a rule commencing even when the stomach is quite empty—is an undoubted fact, and it may occur as soon as rising out of bed and setting foot on the floor. This form of retching is distressing and weakening, but sickness in the morning taken as a single symptom may be misleading. Although most common in the morning, the sickness of pregnancy may come on at any hour of the day, and either before or after meals. From my own inquiries the nausea and sickness first occur at periods varying from a week to fourteen days after the first expected menstrual period has been missed, and generally lasts with different degrees of intensity during the first twelve or sixteen weeks of gestation. It may come on shortly after conception and last the whole term of pregnancy, or even be confined to the last three months; but the first and last months are usually free from either nausea or sickness (Spiegelberg).

The assumption that vomiting is oftener present and persistent in primipara than in those who have borne children does not accord with my observations. I can only suggest that more notice is taken of the fact, whilst in later pregnancies the sickness is taken as a matter of course. I have found, however, that women who suffer from large varicose veins are rarely or never troubled.

Various influences have been attributed to this symptom regarding the after-progress of gestation, as to how it may be deemed salutary to mother and child. Friends and relatives consider it a favourable condition, notwithstanding some increasing weakness and emaciation, and Scanzoni goes so far as to say a woman ought to have patience and not torment herself with trying to stop a malady which will have a natural termination. The absence of nausea in the child-bearing woman indicates something wrong, and experience proves that where morning or other nausea and vomiting has existed during a pregnancy and suddenly ceases, the death of the embryo may be predicted, followed sooner or later by its expulsion. There is a specimen of a four-months' fetus mummified and expelled at seven months (missed abortion), and presented by me to the Owens College Museum, where vomiting had been a prominent symptom and its cessation corresponded with the time of the death of the fetus.

Bedford had some strong views on the importance of sickness in pregnancy, and I cannot do better than quote his own words. He says:

That there is a striking connexion between the absence of all gastric irritation and miscarriage is a fact about which I do not entertain the slightest doubt, and on this assumption I have predicated a treatment which has invariably proved successful. Having been consulted in cases of pregnancy where nausea has been absent I have been enabled to carry my patients to the full term. The treatment is extremely simple, and the object is to relieve congestion of the uterus. A quarter to ½ gr. of ipecacuanha is ordered once, twice, or three times a day for the purpose of producing nausea, thus simulating as nearly as possible the course pursued by nature when not contravened by influences which we cannot control. This course of treatment is persevered with until the fourth month, at which period the nausea and vomiting attendant upon pregnancy usually ceases.

This savours much of Hahnemannism, and I can only think that Bedford's patients went to their full term in spite of his treatment.

There are also some peculiar forms of vomiting in pregnancy, such as that aggravated by the smell of certain foods—for example, hare soup, fish, etc.—and that by riding in a carriage or taking a railway journey.

Having considered that nausea and vomiting are not only a common but a usual symptom, for purposes of study I submit the undermentioned classification, not forgetting that there may be vomiting due to phthisis or gastric ulcer coincident with pregnancy.

1. Where the nausea or sickness is slight, with at the most retching occurring usually in the forenoon and passing away just before or when quickening takes place without producing any constitutional disturbance.
2. Where vomiting as well as nausea is of frequent occurrence, not confined to any period of the day and resulting in appreciable failure of the health and emaciation.
3. Where vomiting is so constant and persistent that all food is rejected, rapid emaciation follows, with febrile disturbance, circulatory troubles, jaundice, dry tongue, quick pulse, delirium, and threatened death.
4. Where organic disease is present and it is difficult or impossible to say what share pregnancy has in producing a dangerous or fatal result.

This classification agrees with F. La Torres, except that he mentions the tongue as rose-coloured. I have invariably found the tongue coated and the breath very foul.

Etiology.

In considering its etiology it must not be forgotten that profound changes take place in the pregnant woman. Her central nervous system is so modified that the intellectual functions may be quickened or the reverse; habits, both religious and moral, intensified or otherwise, and a complete change in disposition and character is not infrequent; morbid cravings and unnatural desires, as well as events of little importance, assume a disproportionate magnitude. The pneumogastric nerves reflexly are especially prone to disturbance. Altogether the pregnant woman is highly impressionable. The question arises, Is this due to a specific toxaemic condition? Balin gives it as his opinion that the vomiting is due to direct connexion with conception and disturbance of the nervous centres. This opinion he endeavours to support by describing various cases, but gives no explanation how the nervous system is irritated and the special symptom of vomiting caused.

One may dismiss as the factor a pseudo-hysterical condition favoured by so many obstetricians, and even though Kaltenbach came to the conclusion that predisposing nervous causes and hysteria are the cause, citing a case where he passed a bougie into the stomach of a patient with assurance of cure followed by the happiest results. Similar cases have been recorded, respectively, a hypodermic injection of water and vaginal douches of the same fluid. This is practically treatment by suggestion. It may be conceded that nausea or vomiting, having once been established, the condition of the pregnant woman is favourable for the continuance of the disorder, and the hysterically inclined may keep it up until dangerous exhaustion supervenes; but that hysteria is the initial cause I consider a fallacy. Hypertrophy of the heart is an accompaniment of pregnancy.

Analysis of the blood shows that there is deficiency of albumin and a diminution in the red corpuscles varying from 10 to 30 per cent., but the white corpuscles are increased as well as the plasma (Andral and Gavarret), the so-called

hydraemia and physiological leucocytosis of Virchow thus accounting for the high arterial tension. "The blood in pregnancy, although increased in quantity is impoverished in quality, a combination of general hyperaemia and hydraemia." (Kiwisch). In chlorosis, where diminution of the red corpuscles takes place and poverty in haemoglobin (Dowd), there is only occasional nausea with no reference to either horizontal or erect position. Braithwaite, in a short account of death from hyperemesis gravidarum, suggested the toxicity of the albumoses; and Jardine this year, in the relation of three cases of pernicious vomiting of pregnancy all requiring the induction of abortion, with one death from septic pneumonia. says he is convinced the cause is a toxic one. Hellier, in discussing the induction of abortion in chorea gravidarum, says the condition is one of toxaemia, and the toxaemic condition is developed because of the pregnant state.

Our knowledge of the anatomy of the female pelvic organs under normal conditions teaches us that the pelvic cavity is incapable of receiving any further addition to its contents, or any rapid increase of growth of contained viscera without seriously interfering with the normal circulation of the blood. Let me remind you that the large cords of the sacral plexus occupy the front of the sacrum in the pelvic cavity, and give off at least three branches (that is, spinal nerves, second, third, and fourth) to the pelvic plexuses of the sympathetics, which are derived from the medially-placed inferior hypogastric plexus before being distributed to the pelvic organs, more especially to the posterior surface and sides of the uterus and the anterior surface of the rectum; and it is not improbable, as suggested by Johnstone, that special nerve fibres supply the body and cervix of the uterus. Allingham has given a very full and correct account of the nerves and their connexions which arise from the hypogastric plexus and their association with other plexuses of the sympathetic. The forms and processes of the nerves and nerve cells of the uterus and cervix uteri, for those who wish to pursue this interesting study further, are best studied in sections stained according to the method of Golgi. Impregnated with a solution of mercuric chloride, and afterwards stained with a sulphide, the nerves and processes under the microscope appear black. Nissl's later method, or the toluoidin blue stain, gives excellent results in showing the internal structure of the nerve cells. In normal ovulation there is always great increase in the activity of the ovary. It is not a mere passive organ, therefore increase of blood supply is necessary. When conception takes place there follows the preparation of the endometrium for the reception of the ovum and also the increase in weight and size of the uterus, which can be ascertained by examination and palpation, its sensitiveness and tenderness to the touch, and the intense hyperaemia visible in the walls of the vagina. Graily Hewitt gives some interesting cases to prove that retroflexion of the gravid uterus gives rise to this, and concludes that flexion is the cause of the beginning of the vomiting. I cannot agree with him as to the cause, only admit it may aggravate the symptom.

It may be asked why nausea does not occur during the development of fibroids of the uterus. First, fibroids grow slowly; there is no great amount of blood relatively to the size of the growth; secondly, there is no increase in the size of the nerves; thirdly, frequent haemorrhages lessen tension and permit accommodation to increasing growth. There is a greater analogy in the acute affections of the pelvic regions, in pelvic peritonitis and cellulitis, vomiting in the latter being practically a measure of the severity of the attack. In acute pelvic haematocele the vomiting, as well as collapse, is a marked symptom. In dysmenorrhoea, due to stenosis of the cervical canal, indurations and inequalities of the cervix, it is a question whether the accompanying vomiting is not more distressing and debilitating than the pain.

The infantile uterus is a cause of vomiting when pregnancy takes place (Goffe), and is usually severe, frequently terminating in abortion. In cases of pregnancy occurring after ventrifixation of the uterus, nausea may be much prolonged, but there are no records of such cases. The movements of the fetus, when excessive, cause nausea, but of a totally different character, being reflex, and causing inhibition of the heart's action, cold perspiration, and fainting. The following is a summary of a life-history in illustration of the grave form:

CASE II.

A. B., belonging to the upper middle-class: First pregnancy, excessive vomiting, a fall, premature labour at eight months, death of child three days later; second pregnancy, vomiting more intractable, with malnutrition, thrown out of a conveyance, followed by abortion (three months); third pregnancy, vomiting severe, in bed six weeks; vomiting ceased and fetus expelled (five months); fourth pregnancy, vomiting of same type; sickness did not wholly cease, yet she carried the child to term; forceps delivery, but the child could not be resuscitated; fifth pregnancy, sickness same type, only accompanied by salivation and jaundice, disappearing when uterus rose out of pelvis; natural labour, child dying when 14 days old of diarrhoea; sixth pregnancy, vomiting same type ceasing on quickening; had two attacks of jaundice: good labour at term, healthy child, and now living. This patient, with the exception of her troubles above stated, always enjoyed excellent health, and has an exceptionally good family history; there was no evidence whatever of syphilis. In all her pregnancies the vomiting came on between the fifteenth and eighteenth day after the first missed period.

CASE III.

C. D., aged 44, wife of an overlooker. Eleventh pregnancy. Intractable vomiting and jaundice: abortion before fifth month, when all sickness ceased. Ten days afterwards became rapidly comatose, and died thirty-six hours after onset of symptoms. Embolism of basilar artery, and not pulmonary, was diagnosed.

The following cases requiring little comment, demonstrate that the vomiting of pregnancy and complications demands thorough care and investigation.

CASE IV.

E. F., aged 35, was admitted to the Blackburn and East Lancashire Infirmary in apparently a dying condition. There was no definite history except that she was four and a half months pregnant, and that she had suffered for some time from severe vomiting. A small femoral hernia was detected under ether. She revived, and whilst examining the tumour, without any attempt at taxis, the hernia completely returned, no relief of the vomiting followed, and she died in a few hours. *Post mortem* a gangrenous patch of intestine an inch long was discovered; it had ruptured, and there was fecal extravasation.

CASE V.

G. H., aged 29, was sent to me for operation, having had two previous attacks of appendicitis. At operation, appendix was thickened and peritoneum around was parchment-like. Fundus of uterus appeared larger than normal, and congested. Sickness was not relieved. A week after operation patient aborted (twelve weeks). Uninterrupted recovery followed.

Fothergill's very able researches on the action of the decidual and chorion cells has led him to the conclusion that in non-syphilitic cases the frequent occurrence of thrombosis within the intervillous spaces is sufficient to account for the death of the ovum and habitual abortion. May I suggest, as he does not give an explanation, that the vomiting of pregnancy is the most likely cause?

A point elucidated in these researches is the comparative absence of the grave forms in the lower classes and its more frequent occurrence as we ascend in the social scale; this may be due to slightly smaller, though not deformed, pelves and a more sensitive organization.

TREATMENT.

Mild cases require no treatment, with the exception of an occasional saline aperient. When signs of malnutrition begin and weakness develops the patient should go to bed and professional nursing be insisted upon. The uterus should be examined, and if any malposition exists it should be rectified. The bowels should be relieved by saline aperients or suitable enemata. Nutrient enemata and rectal medication may be necessary; ice by the mouth, and also in a bag, to the spine. Simple effervescing drinks and champagne diluted are very refreshing, and the regular use of a wash containing either sodium bicarbonate or borax prevents the mouth and tongue getting foul. Nepenthe by the mouth, and morphine per rectum, have been the most useful drugs in my experience. Hypodermic injections of morphine and hyoscine are miserable failures. Oxalate of cerium, ingluvin and potassium bromide are at times useful, but Cohnsteim quite properly says if the bromides do not act quickly it is no use persevering in their administration. Chloretone in doses of 5 to 10 gr. is the latest remedy that has been successful. Twenty per cent. ichthyol in glycerine as a tampon to the external os uteri has superseded the old-fashioned application of solid nitrate of silver. Copeman's digital dilatation of the cervical canal and internal os is well known, on account of its accidental discovery, and should be tried as a preliminary, even if abortion has to be induced later. One must recognize the fact that where it is successful it depends upon stretching the nerves supplying the lower segment of the uterus in the area of Bandl's ring, and gives relief, as stretching the sciatic nerve does in sciatica, or stretching in a surgical manner any irritable nerve. Mackinnon states that vomiting causes an abnormal descent of the uterus, and that the packing of the vagina with antiseptic gauze gives very satisfactory results.

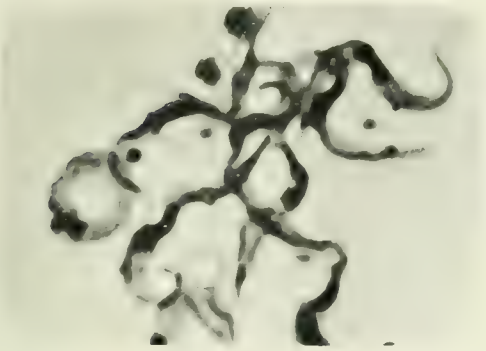


Fig. 5.

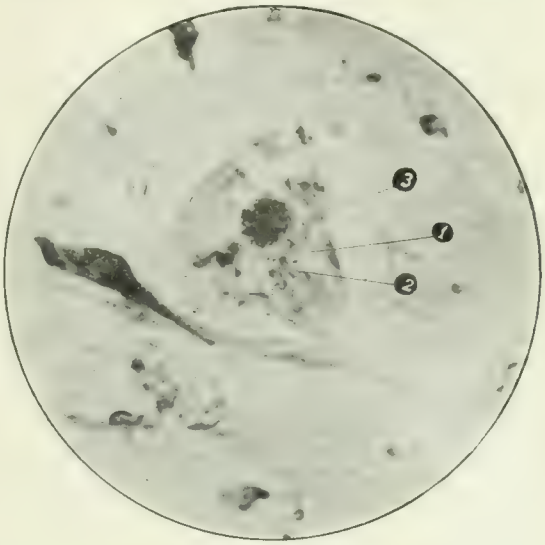


Fig. 6



Fig 1.

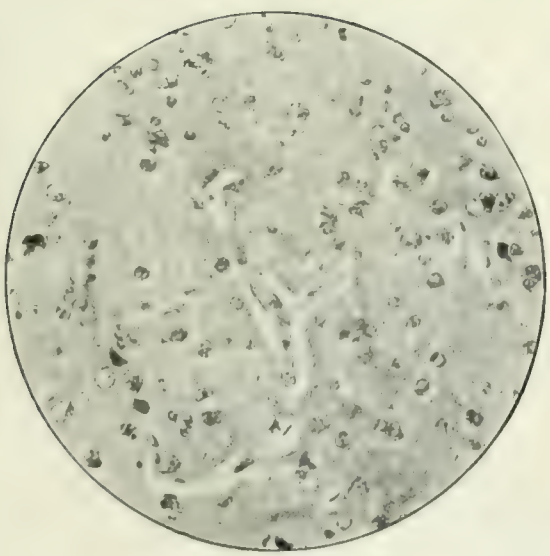


Fig. 2



Fig. 4.

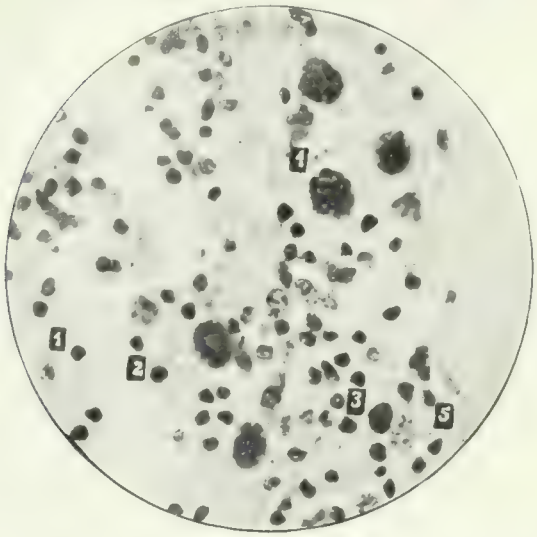


Fig. 9

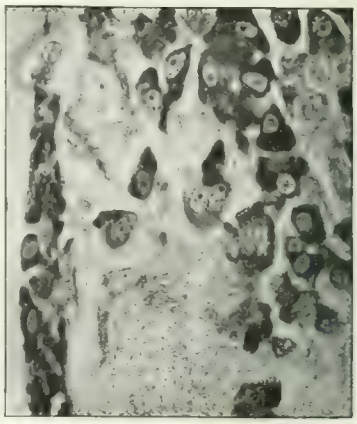


Fig. 10



Fig. 11.



Fig. 7.

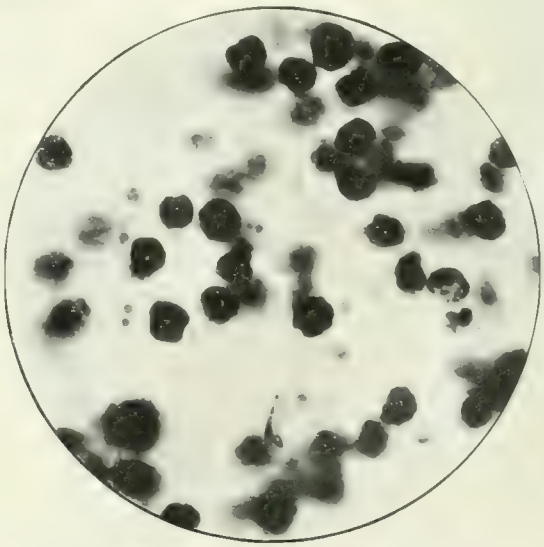


Fig. 8.

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The induction of abortion must be considered in those cases which come under the third and fourth divisions of my classification.

The responsibility of such an operation should be a divided one, and the patient should have the benefit of it before too late, not waiting too long under the hope that vomiting may suddenly subside, as it sometimes does. Strict antiseptic precautions and anaesthesia are absolutely necessary to ensure a favourable termination. Lloyd Roberts says "in hyperemesis gravidarum he had never regretted the performance of induction." The following is an illustrative case:

CASE VI.

I. J., aged 26, belonging to the upper classes, prepossessing in appearance, strong and athletic, and one who prided herself upon being free from women's ordinary ailments, became pregnant for the second time, had persistent vomiting accompanied by great emaciation, which came on in the tenth week; rectal alimentation was not tolerated, so abortion was induced. Recovery, though protracted, was satisfactory and complete.

This was a typical case for operative procedure. Patient could not have survived if the operation had been longer delayed.

The next case I have to record is one of unusual rapidity.

CASE VII.

M. R., aged 41, cotton operative, was admitted in August last to the Blackburn and East Lancashire Infirmary. Her medical attendant thought there might be intestinal obstruction, but stated she was eight to nine weeks advanced in pregnancy. The vomiting and collapse were very severe, and all the symptoms pointing to pernicious vomiting of pregnancy, abortion was induced. She died from exhaustion pure and simple, verified by *post-mortem* examination. This was a very rapidly fatal and unfortunate case.

CONCLUSIONS.

From the foregoing and many other cases which have come under my direct observation, I conclude:

First, that there is simple nausea with or without actual emesis of physiological and reflex origin, a symptom only due to hyperaemia, the developing uterus, vessels, and nerves in a confined cavity.

Secondly, that malposition of the uterus, if the cause of so many troubles in ordinary conditions of health, must be a graver trouble in the pregnant woman, and thus increases the vomiting of pregnancy and consequent malnutrition and emaciation.

Thirdly, that in the absence of uterine troubles and organic disease, hysteria plays an important rôle, and usually defies all therapeutical remedies. I emphasize here that if operation should be deemed necessary, it should be carried out under thoroughly antiseptic conditions and anaesthesia.

Fourthly, that it is probable in pregnancy, with its increased arterial tension, and where lung and cardiac complications exist, gastric irritation may be set up and continued in consequence of the special toxaemia which at present is only suspected, but which in further researches I feel convinced will be scientifically proved.

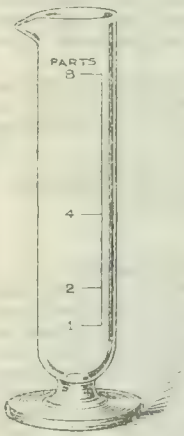
In conclusion, the better attention to health and the greater inclination to athletic exercises and hygienic surroundings of our present-day girls may naturally come to counteract the artificial existence which has for so many years existed in our child-bearing population.

ASSHETON-SMITH MARINE BIOLOGICAL STATION.—We have received from Professor Phillip J. White a note upon the interest taken by the late Mr. Assheton-Smith in the zoological department of the University College of North Wales, Bangor. Mr. Assheton-Smith liked nothing better, Professor White states, than to go the rounds of his park at Vaynol with a guest and to point out and discuss the characters and habits of the animals which he had gathered together from various quarters of the globe. Not only did he afford to men of science an opportunity of studying animals under favourable circumstances, but he was able to place material at the disposal of the laboratory and the museum when these animals had paid the last debt of Nature. Owing to his interest in the zoological department of the University College, the professor and students were able to carry out not a few researches in comparative anatomy. His zoological donations and his gift to the College of a site on the Menai Straits for a biological station for the study of marine life bear eloquent testimony to his desire to advance science, and Professor White expresses the hope that a fund may be raised to erect on this fine site a building which will be a suitable tribute to Mr. Assheton-Smith's memory.

SUGGESTION FOR A CUBIC CENTIMETRE MEASURE FOR PATIENT'S USE.

BY J. THEODORE CASH, M.D.EDIN., F.R.S.,
Regius Professor of Materia Medica, University of Aberdeen.

IN my address to the Aberdeen Medico-Chirurgical Society on November 3rd I dealt with certain points relating to the dosage of remedies, and in conclusion accentuated the great importance of a speedy change from the present chaotic system of weights and measures to the decimal standard.



When we seriously apply ourselves to this change, the question of measurement of the prescribed dose for the recipient must be carefully considered and satisfactorily provided for. The so-called domestic measures—spoons, wineglasses, etc.—are so unsatisfactory, owing to the great variations in capacity which they possess individually, that their use should be entirely abandoned.

I suggested the employment of a cylindrical-footed measure-glass of *éprouvette* shape, which should bear only four graduation marks. The cylinder is 20 cm. in height and 2 cm. in diameter; it is provided with a small lip. The numbers corresponding to these marks do not represent the capacity in cubic centimetres. This would inevitably cause confusion amongst those uninstructed in the system.

But taking 2.5 c.cm. as a convenient unit for the purpose, this might correspond with the lowermost mark "1." The second mark "2" would represent 5 c.cm. The third "4" (2.5 × 4) 10 c.cm.; the fourth (and uppermost) "8" (2.5 × 8) 20 c.cm.

Such figures would have the following rough correspondence with the domestic measures, provided that these were accurate:

Parts.	Minims.	C.cm.	Domestic Measure.
8	338	20	A large tablespoonful. 5½ teaspoonfuls.
4	169	10	A large dessertspoonful. Nearly 3 teaspoonfuls.
2	84.5	5	A large teaspoonful.
1	42.25	2.5	A small teaspoonful.

It would be a simple matter for the prescriber using the decimal system to find a convenient dose with the choice which such a scale affords, whilst the direction he might give, to take 2 parts, 8 parts, etc., of the remedy at the stated time intervals could scarcely admit of error. Such a system certainly involves the general employment of a measure, but as the cost of this would probably not exceed 3d. or 4d., I can see no reason why even the poorest patient should not possess it.

I venture to think that such a very simple method might help to bridge over a distinct difficulty in the adoption of the decimal system by British practitioners, and that it would favour a more exact medication, which would be in the interest of the patient under treatment, whilst it would increase the exactitude of therapeutical observation.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

ABSENCE OF UTERUS AND VAGINA.

A SINGLE woman, aged 21, came to the out-patient department at St. Thomas's Hospital on September 14th, 1904, stating that she had never menstruated, and wishing to know the reason of this, and whether the periods were likely to appear. She had suffered no pain and felt well, except for occasional faintness and lassitude, due no doubt to a slight degree of anaemia. On abdominal examination nothing abnormal could be made out. A bimanual examination was then made

with one finger in the rectum, and no trace of the uterus could be discovered. The vulva appeared normal to inspection, and when the labia were separated the unruptured hymen was seen, with a small aperture which would not admit the finger. A sound was passed through the aperture, but it entered less than a quarter of an inch. A bladder sound was then passed into the bladder, and the finger in the rectum was clearly only separated from this in its whole length by a very thin partition. It seemed obvious that there was complete absence of the vagina as well as of the uterus. On further bimanual examination the left ovary was clearly felt close to the pelvic wall in its normal anatomical position. The lower pole of the right ovary was also felt. The breasts and other secondary sexual characteristics were normal.

I endeavoured to persuade the girl to submit herself to further examination, in consultation with one or two others, but this she declined. I have felt, however, that the condition is sufficiently rare to merit a short record.

R. Hamilton Bell, M.B., M.R.C.P., F.R.C.S.,
Obstetric Tutor and Registrar, St. Thomas's Hospital; Physician to Out-patients, Samaritan Free Hospital.

RIGOR MORTIS IN STILLBORN CHILDREN.

Dr. Parkinson's paper upon this subject leads me to cite the following case, since it bears to some extent upon the question. I was called recently to a primipara, whom I delivered of a dead male child. Upon examination I found she had a flat pelvis, the funis was prolapsed (it had been down at least one hour), and there were no signs of life in the child. She stated that she had felt the child move before labour commenced. I examined the infant about half an hour after the birth, and noticed that the lower limbs were becoming flexed; they required some force to straighten them. Before leaving the house (probably an hour and a quarter after the confinement) the body showed a certain amount of rigidity, the arms becoming fixed in the flexed position, in which they were placed, the neck alone remaining quite flaccid. There was no *post-mortem* examination, since the child was obviously stillborn.

Alston. F. Inman Trimmer, M.R.C.S., L.R.C.P., etc.

SUPPURATIVE GOITRE.

I read Dr. Wilkins's case of suppurative goitre, in the British Medical Journal of October 15th, with much interest, as I have recently had a similar experience, but could find no mention in textbooks of this complication of goitre. My case occurred in a woman, aged 72, with a large pendulous goitre, who, for no obvious reason, developed symptoms similar to those of Dr. Wilkins's case; the goitre has continued to discharge very thick pus from four sinuses for over two months. Since reading Dr. Wilkins's note, however, I find that Mackenzie induced suppuration in goitres by injecting perchloride of iron, and so causing contraction of the cyst; from this I gather "suppurating goitre" must be well known to surgeons, and it is odd that the subject should not be discussed in textbooks.

G. Briteau Gill, M.B., B.S.Dun.,
Belper. M.R.C.S., L.R.C.P.Lond.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

HULL ROYAL INFIRMARY.

CASE OF HYDRONEPHROSIS DUE TO VALVE FORMATION IN THE URETER: OPERATION: RECOVERY.

(Under the care of Edward Harrison, M.A., M.D., F.R.C.S.)

History.

Mrs. G. had a movable kidney, which caused her considerable pain, for the relief of which Dr. C. operated. He fixed the kidney by three kangaroo tendon sutures to the lumbar muscles. Since the operation she complained of periodical attacks of pain, which were accompanied by the formation of a swelling in the loin, which left her when the pain had disappeared.

Dr. C. diagnosed a hydronephrosis, and sent her to me. She came to stay with some friends in Hull, and it was arranged that she should send for me when the next attack came on. This she did, and when I first saw her she was in great pain, and had a swelling as large as a cocoanut in the right loin, which was movable, and felt cystic. The colon could be mapped out over it, and I had no doubt that it was a hydronephrosis. This diagnosis was confirmed the following day, as when I saw her the pain had disappeared, and the swelling was reduced to the size of an orange. She had, too, in the interval passed a large quantity of urine. I diagnosed hydronephrosis due to a twist or kink in the ureter, and patient was admitted into the infirmary for operation.

Operation.

On the day following her admission to the infirmary (May 18th, 1904) I explored the kidney by Morris's incision, and found it enlarged, and the renal pelvis dilated to the size of a Tangerine orange. There was no obvious twist of the ureter, and pressure on the dilated pelvis failed to reduce the dilatation, even when the kidney was rotated in either direction, so it was evidently not due to a twist, and no kink could be found.

I opened the pelvis, and evacuated about an ounce of urine, and then through the wound attempted with a probe to find the orifice of the ureter. This I was unable to do until I traced it up from below, when I found that it opened close to my incision.

The opening of the ureter was now seen to be valve-like, a spur of mucous membrane having been formed which fell across the ureteral orifice, and completely blocked it. One could see that if the dilatation continued to increase the obstruction would be overcome by the dilatation of the opposite side of the renal pelvis, and so allow of relief.

I cut off the spur of mucous membrane with scissors, and sutured it with fine silk. After passing a probe down the ureter in order to ascertain that no other obstruction existed, I sutured the wound made in the pelvis with fine silk, being careful to exclude the mucous membrane, and keeping a probe in the ureter to ensure its patency. The kidney was then fixed to the last rib and the lumbar muscles by means of three kangaroo tendon sutures, in such a position that the ureter occupied the most dependent place. A gauze drain was inserted down to the ureter, and the muscles united by silk sutures, and, finally, the skin by silkworm gut. The patient bore the operation, which lasted an hour, well.

After history.

For the first week the progress of the case was good, the wound healed by first intention, and the skin sutures were removed on the eighth day. Although the temperature was at times 100° F. there was no discomfort. The amount of urine secreted was small. On the ninth day there was some discharge from the loin, and the kidney was decidedly increased in size. Later there was a urinous discharge from the wound, and I was afraid that the operation would prove a failure. However, this did not last many days, and the amount of urine passed by the urethra steadily increased, and the wound in the loin closed. I wished to employ Harris's segregator, but the patient would not submit to its use.

When she was discharged from the Infirmary on June 21st the wound was quite healed, though the kidney could still be felt to be larger than normal. On October 25th I heard from Dr. C., who writes: "She has made a wonderful recovery, has had no attacks of pain, and is in better health than formerly. Her increase in weight is most obvious."

Remarks.

So far as I am able to discover, only 9 cases of operation for the relief of this condition have been published.

In Morris's *Surgical Diseases of the Kidney and Ureter* 5 cases are tabulated—namely, one each by Trendelenburg, Fenger, Mynter, and two by Morris. Israel, in his *Chirurgische Klinik der Nierenkrankheiten*, refers to two, one of which is, however, included in Morris's table. A case of valve formation in the lower ureter is recorded by Morgan in the *Annals of Surgery*, October, 1902; and Moynihan reports a case in the British Medical Journal, April 30th, 1904. In addition to these, Bryant, in his *Operative Surgery*, mentions an unsuccessful case by Gerster.

Of these 9 cases, the first, Trendelenburg's, was done by the transperitoneal route, and the patient died of ileus. This should be excluded from statistical tables. Of the remaining 8 cases there were only two failures, so that for a new operation the record is very encouraging.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

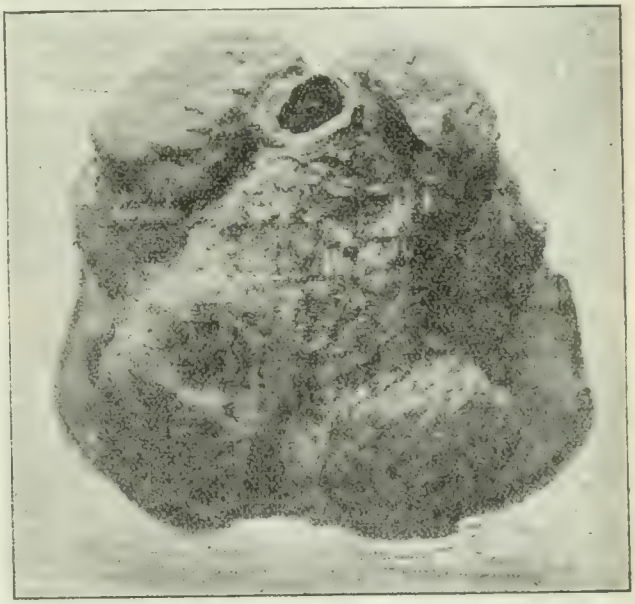
METROPOLITAN COUNTIES BRANCH: ST. PANCRAS DIVISION.

London, Monday, November 28th, 1904.

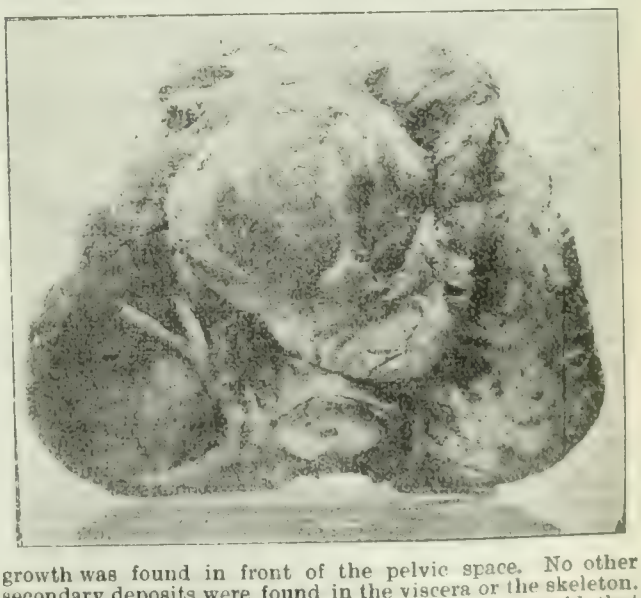
H. Radcliffe Crocker, M.D., Chairman, in the Chair.

Cases of Skin Disease.—The Chairman demonstrated two cases of lichen planus: A man with typical papules who at the same time exhibited ringed lesion and pigmented involution areas; and a woman with widespread eruption. In the latter the clinical picture was unusual. There was marked scaling about the legs and diffuse bright red patches on the chest, in addition to the usual papules. In her case the itching was a very marked feature. Two cases of lupus vulgaris were also demonstrated: A boy with a patch on the right cheek was undergoing light treatment, and a young male adult with multiple patches—buttock, axilla, ear, etc.—who was having the *x* rays. Dr. Crocker also showed a young woman who had a primary sore of the upper lip; another case was a boy suffering from pityriasis rosea, the rash being sparse but characteristic. A young man was brought forward to demonstrate symmetrical xanthoma tuberosum of the knees and elbows. He exhibited in addition similar scattered lesions about the buttocks; between the fingers there was a commencing linear xanthomatous involvement. A xanthoma lesion also had been present at inner canthus of right eye, but it had been removed by Mr. Pernet on account of pain. A deceased brother of the patient had also had a patch of xanthoma on one elbow.—Mr. Pernet demonstrated a microscopical preparation (in liq. potassae) of large-spored fungus from a case of linea circinata occurring about the umbilicus of a child.

Infiltrating Cancer of Bladder.—Dr. Pooley exhibited a specimen of extensive infiltration of carcinoma, which had its primary seat in the bladder. When first seen on February 1st the patient stated that he had noticed slight increase in frequency of micturition for about five months; this gradually increased until when seen urine was being passed hourly by day and once by night. Two months before he had passed a small blood-clot in the urine, and again a week later, and since then the urine had been occasionally blood-stained. For the last month he had noticed that during micturition the flow of urine had occasionally been suddenly stopped, and then on recommencing was tinged with blood. On examination he complained of slight aching over the sacral base, but the prostate, vesicle, and testes were normal. No infiltration of the bladder base was felt per rectum. On micturition clear urine was first passed, followed at the end of the act by bright blood. The bladder was washed out and a cystoscope introduced, when a large pedunculated growth covered with stunted processes was seen on the right side of bladder base; the ureteral orifices were free. On February 3rd a suprapubic cystotomy was performed. A large friable, villous-covered carcinoma was found growing by a pedicle ¾ in. in diameter from the right side of the bladder base, which was infiltrated around the attachment. The mass of growth was removed, but it was found impossible to resect the base owing to the position. The bladder was drained by means of a suprapubic tube. The patient made a good recovery, the wound being firmly closed on February 22nd, when all urine was passed per urethram with frequency- by day three-hourly; once in the night. March 9th: On rectal examination increased resistance of the bladder base was felt; some small lymphatic glands were felt in the lateral pelvic space. On cystoscopy the right side of the bladder base was seen infiltrated with carcinoma, showing heaped-up areas covered with mucus, with some stunted processes on the right margin of the malignant ulceration. June 24th. The patient was again seen for a small superficial abscess in the abdominal scar; the urine was offensive and contained much mucus. Per rectum. the infiltration of bladder was found to be extending. July 16th: A mass of growth could be felt above the pubes under the scar. Per rectum a large mass as big as a cricket ball was felt bimanually, and moved between the fingers. The pelvic glands were further enlarged. The patient complained of an aching pain down the posterior surface of the right thigh, over the right groin and over Scarpa's triangle. There was no pain in the course of the long saphenous nerve. This was thought to be probably due to secondary deposit of growth in the vertebrae, but none could be detected. Frequency of micturition: In the day six times; in the night twice. During August and September the patient became rapidly worse. He was greatly emaciated, and complained of severe pain in the lower extremities and frequent micturition. Two large masses, soft and semi-fluctuating, appeared over either posterior iliac spine, and he died exhausted on October 14th. A necropsy was made on October 16th. An extensive mass of growth was found



extending forwards from the bladder and infiltrating the lower portion of the recti muscles, but leaving the apical portion of the bladder free. The growth had directly infiltrated the pelvic bones on either side, which were very soft and mouldable. The growth had found its way out of the pelvic cavity by both obturator foramina, directly infiltrating the origin of the abductor muscles, and on the left side extending directly into the acetabulum. It had also passed through the left sacro-iliac joint, infiltrating the gluteal muscles covering them. On the left side a mass of



growth was found in front of the pelvic space. No other secondary deposits were found in the viscera or the skeleton. Mr. Jocelyn Swan, who conducted the necropsy, said that unfortunately he cut into the growth in the perineum and at the junction of the left pubic ramus with the ileum before he realized to what an extent the growth had proceeded.

REPORTS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF LONDON.

R. J. GODLEE, M.S., Vice-President, in the Chair.

Tuesday, December 6th, 1904.

PAGET'S DISEASE OF THE GUMS.

MR. HOPEWELL-SMITH recounted a case which he regarded as an example of this condition. The specimen was a solid fibrous swelling of the gum, removed as an epulis, of three years' growth, and painless. The microscopic sections showed patches of degeneration in the epithelial cells, distension of certain cells or "ballooning"; a few cell-nests were present and some ingrowth of epithelium.

Mr. S. G. SHATTOCK criticized the author's interpretation of the specimen; he observed that the histological changes found in the epithelium in Paget's disease did not seem clear in the present specimen; there was insufficient ground on which to make such a diagnosis. The author seemed to hold that the lesion in the present case was carcinomatous, but the speaker dissented; no true ingrowths were present, and the very few horny centres were only such as might be found quite apart from a carcinomatous process.

OBLITERATIVE ENDARTERITIS.

Dr. W. P. S. BRANSON recorded a case. He cited various authors to show how much doubt existed upon the nomenclature and pathogenesis of the disease. In the disease fatty and calcareous changes were absent; the disease was of the syphilitic type, and in the case recorded, though there was little evidence of syphilis, there was enough (in two miscarriages) to make the pathogenesis doubtful. The patient was a boy who had suffered from measles and whooping-cough. All the arteries that could be felt were thick and hard. After death patches of intimal thickening were found in the aorta. One kidney was shrunken, and its arteries showed the same changes of obliterative proliferation.

Dr. H. D. ROLLESTON regarded the cause of contracted kidney in the young as in all cases syphilis; if not a definite syphilitic, it was a parasyphilitic lesion, the change in the kidney resulting from disease of its vessels.

Dr. F. PARKES WEBER thought the entity of obliterative arteritis certain. It was particularly common amongst the poorer Jews in Germany. Its etiology was not known; the excessive use of tobacco had been suggested, but this was not borne out by investigation.

Dr. G. F. STILL remarked that the hypertrophy of the gums (which was present in the case described by Dr. Branson) was often associated with congenital anomalies, and at times with idiocy. In syphilitic endarteritis of the cerebral vessels there was nearly always a syphilitic lesion of the fundus.

INTRAINTESTINAL CYSTIC SWELLING.

Dr. R. S. TREVOR exhibited the above specimen, which was a cyst in relation with the ampulla of Vater. The cause of death was intraperitoneal perforation of a peptic ulcer of the duodenum. The cyst was lined with intestinal mucosa, which excluded its being a dilatation of the ampulla itself. The author viewed it as due to a congenital defect, whereby the two folds normally bounding the seat of the papilla had combined to produce a cavity, into which the bile and pancreatic ducts opened.

ROYAL ACADEMY OF MEDICINE IN IRELAND.—At a meeting of the Section of Medicine on November 11th, the PRESIDENT, Dr. W. J. Smyly, in the chair, Dr. KIRKPATRICK showed a case of anomalous cretinism in a child aged 4, which weighed 15 lb. Two years ago the child was under observation, and then weighed 13 lb. It was greatly emaciated, showed little sign of intelligence, and had never made any attempt to speak. The characteristic cretinoid aspect was completely absent. There was no history of congenital syphilis, nor any well-marked signs of acute rickets. No trace of the thyroid gland could be detected. The child had shown some signs of improvement under thyroid extract treatment, carried on for a fortnight. Dr. WALTER SMITH thought a diagnosis of hydrocephalus with rickets would meet the case. Dr. LANGFORD SYMES suggested rickets or congenital syphilis as the cause of the condition; there was some evidence of both. Colonel MCNEECE asked if there was any marked consanguinity in the child's family. He had seen a similar case in the children of the first cousins, themselves the offspring of first cousins. Dr. KIRKPATRICK, in reply, thought the stationary condition and the result of the thyroid treatment indicated the true etiology.—Dr. TRAVERS SMITH, amongst other cases, showed a middle-aged woman with complete loss of perception of tactile, thermal, and painful sensation in her entire skin. The mucous membranes were not affected. The conditions had existed for a week or more. The diagnosis of hysteria was made.—Dr. J. B. COLEMAN made a communication on caisson disease as experienced by workers engaged in boring a tunnel for five miles beneath the bed of Lake Erie from and after the year 1897. The symptoms came on after rapid decompression of one to three minutes. From ten minutes to six hours after reaching normal pressure the patient suffered excruciating pains, usually in his knees, sometimes in shoulders and elbows, rarely in his hips; maniacal attacks supervened occasionally; retention of urine was common, and in the severe attacks paralysis of the sphincter ani. Paraplegia occurred, and lasted for a few hours to months, and in severe cases persisted with the symptoms of spastic paraplegia; transient facial paralysis was seen; anaesthesia extending up to the ribs was common; an intense feeling of pruritus ("the itch") might occur without pains; bleeding from nose and ears; vertigo, dimness of vision, headache, vomiting, and muscular cramps were other symptoms noted. Urgent attacks of dyspnoea ("the chokes") were frequent, during which the patient felt his lungs over-distended; then a cough was set up, and large quantities of gas, seemingly from the stomach, issued from the mouth. Relief from the joint pains and from retention of urine was obtained by a very hot bath. After work the men felt "wearied and bruised," and on returning to the compressed air they became exhilarated and relieved. Except in the most severe attacks the symptoms always abated on undergoing recompression. The highest pressure was 46 lb. to the square inch. Dr. WALTER SMITH, discussing the pathology of the disease, did not think the symptoms could be explained by a theory of gas embolism only. The increased oxygen tension was of importance, and there might be direct irritant or toxic effect from it. Dr. TRAVERS SMITH doubted if a theory of gas emboli could be reconciled with the frequently-delayed onset of symptoms. Dr. COLEMAN, in reply, said he did not think any one theory would satisfactorily explain all the symptoms of the disease. The delay in the onset of symptoms might be explained, perhaps, by the view that though the absorbed gases escaped almost immediately, the nerve mischief had already been done.—Dr. G. PEACOCKE described two cases of Hodgkin's disease that occurred in twin boys, aged 4. One had died eighteen months after the glandular enlargement first appeared. His red cells numbered 1,300,000 per cm., haemoglobin 15 per cent., white cells 8,400 per cm. The other boy, whose illness dated from last February, was still alive, and his general condition satisfactory. A blood count showed red cells 4,000,000 per cm., haemoglobin 85 per cent., white cells 8,500 per cm.

GLASGOW OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.—At a meeting on November 23rd, Dr. J. K. KELLY, President, in the chair, Dr. RUSSELL read notes of a case of epileptiform attacks complicating double ovarian tumour. The growths were removed, and as shewn were seen to be large ovarian tumours, partly cystic and partly solid. On microscopic examination carcinomatous tissue was found; the operation for removal was that of abdominal section. The after-history of the case showed no return of the attacks nor of the pathological growth.—Dr. DUFF read a paper on a case of uterus didelphys with septate vagina. The patient complained of dysuria and profuse vaginal discharge, and thus came under notice. Menstruation had been normal. The examination showed vaginitis and urethritis, probably gonorrhoeal in origin. Later a slight thickening was found at the left side of the hymen; this contained an opening into a second vaginal canal. On careful palpation after the acute symptoms had subsided it was found that two distinct vaginae of equal length existed with two cervices, and a distinct intervaginal septum complete from the hymen to between the cervices. The fundus was not felt. The patient some months later had a miscarriage, the pregnancy taking place in the right uterus. Later on the passage of a sound showed two uteri completely separated. Dr. Duff traced the development of the generative canal, and, in conclusion, acknowledged his indebtedness for the case to Dr. Balfour Marshall.—Dr. BALFOUR MARSHALL read notes of a case of a

patient who had worn a vulcanite ring pessary for fifteen years. She was aged 60, and had passed the menopause twenty-six years ago. She was admitted to the Royal Infirmary complaining of dysuria and blood-stained vaginal discharge. The symptoms closely resembled those of malignant disease. On examination the pessary was found to have ulcerated into the vaginal wall and to have become embedded, the process being probably aided by the atrophy of the parts. It was removed by cutting through the tissue which surrounded it. A number of fresh specimens were also shown by sundry members.

Liverpool Medical Institution.—At a meeting on December 1st, Dr. James Barr, President, being in the chair, Dr. Grossmann showed a patient with conical cornea, and demonstrated the skiascopic appearances; these were particularly striking in this case owing to the high degree of the deformity, its centrally-situated apex, its complete transparency, and the easy comparison with the other unaffected eye.—Dr. W. B. Warrington read a note on the plantar reflexes. He described the plantar reflex of the normal flexor type and the pathological extensor response. He emphasized the importance of the method adopted for obtaining it, and considered that only to the slow deliberate extension could a definite pathological significance be attached, though other types of extension might be very significant. The reflex obtained in various diseases of the nervous system was described, and it was maintained that the character of the reflex was a valuable aid in distinguishing between functional and organic disease, and equally so in differentiating between the different kinds of organic nervous disease.—Dr. W. Alexander exhibited a dumb-bell calculus he had removed from a man 43 years of age. The calculus had existed for some years, and a rigorous administration of solvents had no influence upon it. Suprapubic lithotomy was performed, a stone removed, and the wound closed. It was then found that another stone remained behind the prostate; this was removed by median lithotomy. The two stones thus removed formed a dumb-bell calculus. The bladder was divided into two cavities with a constriction between. It was found impossible to distend the bladder with lotion preparatory to the suprapubic lithotomy, as when the small sac was filled contractions occurred, and the urine was expelled with force alongside the catheter. Dr. Alexander said the case was unique in his experience, but Mr. Poland, in *Guy's Hospital Reports* for 1857, described a nearly similar case, and discussed the mode of formation of such calculi.—Mr. Rushton Parker said that the first perineal section performed by him—now many years ago—on a boy about 11 years of age, gave a dumb-bell calculus, one portion of which lay in a sac by the prostate, and the other in the bladder.—Dr. C. J. Macalister read a paper on some thoughts and suggestions concerning gastric ulcer. He pointed out that they were peculiar as to shape, the course which they ran, and their surroundings, and commented upon the unsatisfactory explanations which had been given as to their cause. By a series of lantern slides he demonstrated the characters of the simple gastric ulcer in its uncomplicated condition, as distinguished from the same ulcer when secondary inflammation had taken place, and also illustrations of other types of ulceration, pointing out that these did not tend to be converted into the so-called simple perforating ulcer. In seeking for a cause of the condition, it was obvious that the disease mainly attacked women, and from a study of the sequence of events connected with the development of the thyroid, of the association of amenorrhoea and of concomitant indications of vasomotor spasm followed by the chlorosis and stomach disorder, he suggested that the disease was another instance of the vasomotor spasm followed by necrosis dependent upon a toxaemia. He thought this the more probable since the administration of thyroid extracts frequently relieved the amenorrhoea, and following this there was sometimes great general improvement in the health of the patients. Dr. Macalister was emphatic concerning the necessity for taking the cases in hand during the early stages, stating that whatever might be done in the way of thyroid treatment later in the disease, it was necessary to use all the usual precautions as regards rest, diet, and palliative treatment in addition.

West London Medico-Chirurgical Society.—At a clinical meeting on November 4th, C. M. Tuke, Esq., President, in the chair, the following were some of the cases of interest shown: Dr. P. S. Abraham exhibited a case of sclerodermia with bullae and ulceration in a woman aged 55 years; it commenced with pains in the knees about a year ago, the skin below the knees became smooth and glossy, and six months later large bullae formed; some of these broke and left extensive ulcerations. Bullae in sclerodermic integuments, it was pointed out, were very rare.—Dr. A. E. Russell demonstrated (for Dr. A. P. Beddard) a case of tremors in a man of 27 years of age who went through the siege of Ladysmith, where he contracted typhoid and dysentery. After this the tremors appeared at irregular intervals, involving chiefly the hands and to a less extent the head and lower limbs. Dr. Russell considered it a case of functional disorder. He also showed a case of myositis ossificans in a man aged 37 years which had developed slowly since the age of 7 years. There was no history of the disease in any other member of the family. Mr. A. Baldwin considered there was some relationship between this disease, pseudohypertrophic paralysis, and haemophilia, and that it was transmitted through the females to the males of the family. Dr. A. Gaster said he had had a family under observation in which the grandfather, father, and three sons had the disease, whereas the mother and two daughters had escaped.—Mr. G. A. Garry Simpson showed (1) a case of clonic spasm of the soft palate in an unmarried woman aged 40. It began about a year ago, when she received a severe shock owing to the sudden death of a brother. The contractions of the velum palati were at the rate of 60 per minute, and accompanied by a clicking sound audible to the patient and to those around her. There was no irritation of the nose or pharynx to be discovered, and the muscle principally involved was the levator palati. He also showed a woman, aged 27, with pharyngomycosis leptothricis. Here attention was first drawn to the disease by a constant disagreeable taste, and by a hard, white, chalky substance on the tonsils. The disease was associated with the leptothrix fungus, specimens of which were shown. Local applications of germicides in this disease appeared to do no good. It wore itself out in time, especially with the aid of iron tonics. Mr. Simpson intended to apply the electric cautery. Mr. Baldwin suggested Turkish baths; they retarded the growth of cultures of organisms. He mentioned a case which appeared to be quite cured by this means. Dr. Ball thought local treatment was of very little use, and doubted if any energetic treatment were called for. He considered the leptothrix as incidental to, and not as the cause of, the disease. Dr. Neville Wood recently had had a number of such cases under his observation; parasiticide applications and Turkish baths were useless. One case was speedily cured by the galvano-cautery.—Mr. Donald Armour showed a man with a parotid swelling dating from ten weeks. It was slowly increased and associated with periodic paroxysmal pain. He had had gonorrhoea four months before, but had quite recovered. Dr. Pardoe and Mr. Baldwin considered it a case of suppurative parotitis.—Dr. A. M. Ross Sinclair showed an interesting case of paralysis of the tenth, eleventh, and twelfth cranial nerves in a woman of 29 years of age. It was believed to be due to syphilis contracted seven years ago; the patient was improving under specific treatment.

Bradford Medico-Chirurgical Society.—At a meeting on November 16th, Mr. Althrop, President, in the chair, Dr. Bronner showed a case of brain abscess opened through the tegmen tympani. The remarkable feature of the case was that although at the time of operation there was no bulging of the dura, and although the opening made was very small, still there was a considerable hernia cerebri afterwards.—Dr. Rabagliati showed a case of tuberculous synovitis of the right knee joint in a boy 8 years of age, cured by monositeism continued for six months; and also read a paper on an entirely new suggestion as to the part played by food in the human economy.—Dr. Eurich read notes on two cases to illustrate some points in the diagnosis of hysteria: (1) the case of P. P., published as one of hysteria by Dr. Arthur Hall in the *Quarterly Medical Journal*, August, 1900. After an injury received in boyhood, which necessitated trephining, patient suffered from periodic attacks of right-sided weakness, with rigidity and occasional epileptiform seizures and clonic twitchings, combined with stupor and mental impairment; which attacks were accompanied—and probably caused—by increased intraventricular pressure. Four days after admission patient was trephined by Mr. Althrop, the ventricles being drained. Death from cerebritis nine days later. *Post mortem*—Chronic internal hydrocephalus with patches of disseminated cerebritis. Dr. Hall's diagnosis of hysteria was

criticized. (2) A case of Gauser's hysterical stupor. Girl, aged 23. Hysterical fits on receipt of telegram and letter informing her of death of a brother. Impaired memory, especially for dates and figures; memory for names good. Reaction time slowed. Periods of submaniacal excitement followed, with a few visual hallucinations and refusal of food. Hemianaesthesia of the trunk and right leg existed. It was discovered that telegram and letter were sent by herself. Becoming too noisy and troublesome in hospital she was sent to her home in the south, *en route* for an asylum. The treatment, especially the question of hospital treatment and the drawbacks of asylum life for such cases, was discussed. (Note.—Since the paper was read the writer has heard that the patient made a rapid recovery at her own home.)

REVIEWS.

READY, AYE, READY!

MISS MCCAUL'S diary of her visit to Japan is discursive, but interesting. It is interesting perhaps partly because discursive. She went to Japan with the sanction of the Queen, and with the approval of the Japanese Government; while in Japan and at the seat of war she was, as the title of her book states, *Under the Care of the Japanese War Office*.[1] She saw much, observed carefully, and has recorded her observations simply and clearly. She had exceptional privileges; she arrived in Japan on April 25th, and after spending a month in visiting military hospitals and Red Cross dépôts in Japan, she was on her way to the front on May 20th under the personal guidance of Madame Kuroda, a War Office official specially appointed to show her everything worth seeing. How different her fate from that of the official representative of the Medical Department of the British War Office! She found Colonel MacPherson, R.A.M.C., at Tokio when she arrived; he had been waiting for more than a month, and was still kicking his heels there when she returned at the end of June. It was not Colonel MacPherson's fault; he had made strenuous efforts to be allowed to go to the front, but he was not backed up by the British War Office. Miss McCaul writes:



Japanese Army Field Water Boiler in Use.
By permission of Cassell and Co., Limited.

> It is very grievous to think how little real trouble is taken at home by the officials to see that our army medical men do actually acquire the priceless knowledge and experience which are to be gained only at the commencement of a war like the present. If I had not made strenuous efforts to be sent out when I did, the practical knowledge would have been lost irretrievably, as no one else was allowed to see it.

The difficulty was due to the crass blundering of our War Office, for Miss McCaul adds:

> One reason, I think, why this medical officer—who, to do him justice, was exceedingly anxious to go up with the first Army Corps—was not allowed, was due to the fact that they did not wish to be encumbered with an extra *attaché*, as already fourteen had been sent. What has the army medical to do with the combatant officer on occasions like this? Why should he not be attached direct to the medical service of the country which is fighting? For then he would be no burden to the actual army; the medical corps would take charge of him, and know where he could obtain the most useful knowledge. But the authorities at home seem to content themselves with the fact that an army doctor has been sent out to Japan; but as to seeing whether he has the suitable means of carrying out his mission is a secondary consideration.

Mr. Arnold-Forster is, of course, primarily responsible: a little forethought on his part, or a word from him at a later stage through the Foreign Office, would have put the matter right, and the Director-General would then have had the advantage of a report on the medical aspects of the early, crucial stage of the war from a medical officer who has had experience of the military medical systems of all the principal countries which have signed the Geneva Convention. But the opportunity was lost, and we must make the most of what Miss McCaul has to tell us. Very interesting and instructive it is. Her first visit was paid to the Red Cross Society's Hospital in Tokio. She found it very clean, orderly, simple, but, to the European eye, uncomfortable. But she has nothing but praise for the nurses; their dress is of white cotton, with a mob cap, white socks, and straw sandals; they are very quiet and efficient, and over every ten nurses there is a senior:

> Implicit obedience plays as great a part in their training as the actual learning of nursing. I am not surprised to hear that Japanese women are splendid in the sick room. Their gentleness of manner and soft voices are not their only recommendation; their intelligence and quickness is unmistakeable. Added to these qualifications, they have the most perfect little hands and delicate touch. The impression left on my mind was one of the pleasantest, and I marvelled that nursing should be so far advanced in this country, for it is only during the last sixteen years that it has been thought necessary to give women a systematic training.

Summing up her impressions of this hospital, she says:

> Everything seemed in readiness for the greatest emergency, including their staff of 3,000 Red Cross Army nurses. Temporary buildings were being erected in case of extra room being needed for the wounded. All the surroundings were in perfect harmony, and arranged on the strictest lines of method and economy, and this institution was worthy of bearing the name of "The Red Cross Society's Hospital of Japan."

Another visit paid was to the Tokio Military Hospital, built on the hut system for 700 patients; she found the wards bright, clean, and well ventilated, and the operating rooms fitted with every modern appliance. All the military nurses are trained at the Red Cross Society's Hospital, and in time of peace the nursing in the military hospitals is done by orderlies, but in war the orderlies go to the front, and their place at the base hospitals is taken by the Red Cross nurses. In the hospital storehouse the field outfit was shown, and of this Miss McCaul says:

> The panniers were carefully thought out, the fittings most simple and light—almost fragile, owing to the fact that they are not intended to last more than a short time, therefore there is no unnecessary expenditure on elaborate appliances. The reason given for this economy was that improvements were always coming to the fore, and if the outfit was not too expensive it could readily be renewed, so by this method they could hope to keep up-to-date with other countries.
>
> Their field steriliser was an adaptation from a German pattern, but had been improved upon and added to by an ingenious heating stove, in which charcoal, wood, or any other fuel could be used, the doctors informing me they had found methylated spirit quite impracticable for camp work. A large disinfector for the "field" was likewise constructed on thoroughly useful lines, being large enough to disinfect twenty blankets at a time and perfectly portable; it divided into three parts, and was mounted on large wheels. Surely if such sterilisers had been more freely used in our last campaign the "army blanket scandal" might have been avoided.

[1] *Under the Care of the Japanese War Office.* By Ethel McCaul, R.R.C. With illustrations from photographs. London, Paris, New York, and Melbourne: Cassell and Co. 1904. (Pp. 256. 6s.)

Miss McCaul also visited the storehouse of the Red Cross Society, of which she writes:

It was a revelation, containing everything that thought and care could suggest for the sick and wounded. Panniers and surgical appliances were almost identical with those I had seen at the military hospital; the same practical method being observed, that of making everything as light and portable as possible. The society holds itself in readiness to provide doctors and nurses with all the equipment necessary to meet the greatest emergencies, but at the present moment they are doubly prepared for any demand the War Office may make, and could, if necessary, take the place of the Army Medical Corps throughout the country, thus leaving the service free to answer the most urgent call from the seat of war. The wisdom and forethought of placing the Red Cross Society under the complete control of the Government is shown by the above. By these means a vast body of men are "under-studies" to the Army medical service; so, when called upon to work in the ordinary military hospitals, they are fully acquainted with the rules and regulations of the service.

After no unreasonable delay, Miss McCaul found herself on the road to the front, and presently reached the Yalu River, and at Antong visited the temporary military hospital, concerning which she writes:

I now saw in use the practical working of the carefully planned outfit seen at Tokio, and most adequate the appliances were, faithfully fulfilling the purpose for which they had been designed. There were also many ingenious temporary contrivances made from wood and paper, which could only have occurred to the minds of these inventive people, and which greatly diminished the difficulties of the rough surroundings. The orderlies in their white overalls looked very clean and suitable for their work, and moved about with an alertness and gentleness which seemed to guarantee that they would make good nurses. But the wards in which we saw the patients were disappointing, the surroundings were gloomy, and the ventilation indifferent, though strenuous efforts had been made to render the place habitable. The patients, many of whom were very ill, in spite of the disadvantages looked comfortable on their clean bedding, and well cared for.

On her way up to the battlefield of the Yalu the authoress had opportunities of studying the rations of the Japanese soldier and the pains taken to preserve him from water-borne disease. She writes:

To-day we made our first acquaintance with the Japanese army biscuit, which I think extremely nice. It contains a certain amount of wheat and rice flour and a few grains of millet seed, which latter is most agreeable, and saves it from becoming unduly hard. Indeed, there is no hardship about eating these biscuits. They are served out to the men twice a day in packets. The reason of the mention of "packets" is to call attention to the fact that they are so sensibly protected in this way from dust and flies, as they are enclosed in very tough, but thin, paper bags, which are sealed, and contain four in each. Eight biscuits and a measured portion of rice, varied with pickled vegetable, salt fish, or tinned meat, form the soldier's daily ration. . . . The simple but adequate way in which the Japanese Sanitary Corps have devised a plan of supplying the troops in the field with boiled water. A Chinese portable iron boiler (or cauldron) is used, under it is hollowed out a place for the fire, where is burnt either charcoal, wood, or coal. To each regiment there are so many allotted, so at various points along the route boiled water is easily provided. The rapidity with which the water is boiled is extraordinary. I was unable to bring home one of these boilers, but procured a kettle from the Chinese, which is made on the same principle.

A photograph of this kettle was reproduced among the illustrations of the article on the Japanese soldier's kit published in the British Medical Journal of November 12th. As to the use of these boilers Miss McCaul writes:

There is a stringent discipline about troops being found drinking or filling a water-bottle at a river. If a man is caught disobeying the order a mark is put against him, and at a convenient time punishment is meted out; also it is noted as a serious crime at head quarters.

The volume is illustrated by numerous photographs, and in an appendix are given a history of the Red Cross Society of Japan, the rules of a Japanese Sanitary Board in Manchuria, and a list of the equipment, clothing, provisions, and forage of the Imperial Japanese Army.

It would be easy to quote more from this interesting and instructive volume, but enough has, we may hope, been said to send every one to its pages.

FLORENCE NIGHTINGALE.

This delightfully written *Life of Florence Nightingale*[2] by Miss Tooley has unique interest, inasmuch as its publication commemorates the jubilee of Miss Nightingale's departure for the Crimea, on that mission of love and sacrifice which sank deep into the nation's heart. The story of the beneficent career of the now venerable lady has often been told, but never more sympathically than in this handsome volume. From it we learn the less known, but singularly interesting story of her early years, and the origin of her beautiful Christian name through her birth in Italy; how the cultured simplicity of her parents, and loving companionship of her only sister, made her youthful home in the Derbyshire dales supremely happy; and how her environment tended to foster her inborn benevolence, so that, at womanhood, the squire's daughter was as celebrated in the district for goodness of heart as for personal comeliness. Her ministrations among the sick poor made her realize that woman's best qualities are evolved by a sick bed; but that knowledge and training are as necessary in nursing as in other callings—views strengthened by contact with the saintly personality of Elizabeth Fry.

Miss Nightingale visited our chief civil hospitals in the Forties, and was grieved to find that the female nurses then employed were usually ignorant, often coarse, and sometimes dissipated; while there were no means of systematically training them. She sought training in Germany in 1849, and was enrolled in the Deaconesses' Institution at Kaiserswerth, a nursing home founded by a remarkable philanthropist—the Lutheran Pastor Fliedner. Thus was she fitted for her great life-work of philanthropy, and thus during the national emergency in 1854 was found a thoroughly equipped nurse, of gentle birth, high accomplishment, personal beauty, charming manners, kindliest sympathy, combined with rare powers of organization, ready to succour the nation's sick soldiers, to become the pioneer of modern nursing, and ultimately the "Queen of Nurses." She went to the Crimea under the auspices of chivalrous Sydney Herbert (of whom Miss Tooley gives a portrait and life-sketch) and by heroic sacrifice, devotion, energy and skill, did much, with her fellow nurses, to bring order out of chaos in our military hospitals. The touching story of her tender nursing of sick and wounded officers and soldiers in the East has often been told, and is again recounted by Miss Tooley with much power and pathos; but it is impossible here to review adequately this portion of her life. Nor can we do more than allude to her important contributions to nursing and sanitary literature, and her many philanthropic enterprises during the past fifty years, fully recorded in Miss Tooley's volume. Miss Nightingale long enjoyed the special friendship and regard of Queen Victoria; and still receives the respectful homage of all classes of the community; and now, in the eventide of her life and the disablement which old age brings, has with her the sympathy and affection of the whole world.

[2] *The Life of Florence Nightingale.* By Sarah A. Tooley. London: S. H. Bousfield and Co., 1904. (Demy 8vo, pp. 344, 22 illustrations, 5s).

RAILWAY INJURIES.

In the preface to his very interesting book on *Railway and Other Accidents*,[3] founded evidently on large experience, Dr. McLane Hamilton avows that the "work is intended for doctors of medicine as well as for lawyers, and especially for use in court." He has aimed "to be always just," and has assuredly not failed. We think no higher praise can be given to him than this; but it is to our mind very questionable whether the book is likely to be of as much use as he has hoped and contemplated. The difficulty of the task was enormous, and from his own experience the author must have felt it so. To convey to the layman an adequate appreciation of the results, let us say, of some simple fracture of a long bone is sufficiently difficult by reason of his lack of surgical training, but the difficulty becomes well-nigh insuperable when teaching is directed towards problems of disease affecting both mind and body in the inextricable relationship which is commonly seen after railway collisions. Nevertheless, an intelligent layman could hardly read the book without gaining a good general idea of the special features which characterize railway injuries. He will learn how largely the elements of mental shock, of fright, of litigation and the long suspense incidental to it, of expected pecuniary profit, of the misplaced sympathy of friends and designing lawyers, are concerned in the development of the peculiar condition which is prone to arise, as time goes on, in the case of persons injured by railway accident. He will learn also how difficult it often is to separate the real from the imaginary and the false, and to impart to others the conviction that symptoms of the greatest gravity may own a psychical rather than a physical basis. His introductory chapter, and the succeeding chapters on Accident Aboulia serve to bring before the reader the importance of "litigation psychosis," litigation symptoms as they have

[3] *Railway and Other Accidents, with Relation to Injury and Diseases of the Nervous System: A Book for Court Use.* By Allan McLane Hamilton, M.D., F.R.S.E., late Clinical Professor of Mental Disease in Cornell Medical College, etc. London: Baillière, Tindall and Cox. 1904. (Demy 8vo, pp. 251. 15s.)

been termed in this country; but it is to be regretted, we think, that the author should have invented so barbarous a term as Aboulia, thus giving the lawyers another opportunity for raillery at the doctors, not altogether conducive to justice, and likely to deter the medical witness from a clear exposition of his views. The term "accident aboulia" has been chosen by the author—

Because it seems to be that most applicable to the condition manifested by a collection of symptoms of a hystero-neurasthenic nature, the chief of which is a loss of will-power. This is undoubtedly the result of auto-suggestion, and the creation of one or more fixed ideas in connexion with a deception of the sensory centres. To understand its origin and significance we must consider the relation to conscious and subconscious cerebration, the suspension of higher control, and the development often of a certain automatism following the repetition of an idea in the intellectual sphere until it fully dominates the conduct of the subject. In natural conjunction with such a disturbance are certain physical indices of ill-health, but the objective expressions are greatly out of proportion to the subjective.

This is admirable as far as it goes, but counsel, for whom in part the work is written, may make sad havoc of aboulia, a new uncouth disease, "for use in court," where plain terms are above all things necessary, and where skilful perversion is often resorted to in order to influence a jury. "Neuromimetic" is another word and case in point. The author tells of Paget, who more than thirty years ago described these psychoses as imitative diseases, or neuromimeses, as he called them. "Neuromimeses do you call them; what do you mean?" asks counsel; and the witness endeavours to explain that the palsies of functional disorder are very prone to simulate those due to organic disease, and the chances are that he is thought to reflect on the bona fides of the claimant. So also of the reflexes and of the use of electricity in diagnosis, of which the author gives, in our judgement, an account wholly out of proportion—too little for the doctor and too much, verging on inaccuracy, for the lawyer. How vast indeed is the difficulty of writing on such abstruse subjects in terms which the lay mind can comprehend, so that we hear of the lawyers making merry over Babinski; of the medical witnesses, forsooth, being divided into two parties—those for and those against Babinski, while the whole conflict is dissolved in laughter, to the detriment of justice, the discomfiture of the doctors, and the discredit of their profession.

Then the author gives us chapters on Injury of the Cranium and its Contents, on Traumatic Insanity, on Injury of the Vertebral Column and its Contents, on Peripheral Nerve Injuries—chapters which seem to us to be sketchy in the extreme and likely to be of little use to the practitioner of medicine. For the lawyer they tell either too much or too little, and that not always of the clearest, emphasizing the difficulty of writing on medical matters for laymen who have been trained by no course of medical study.

Speaking of the spinal cord, the author tells us that "concussion is not the common thing it is supposed to be, and if it does occur, it is as a rule evanescent and expressed by short-lived symptoms, such as fleeting disturbances of sensation and a certain degree of motor weakness." We should like to know more of the after-history of cases where such symptoms have been found. It is gratifying to find that the misleading term "concussion of the spine" nowhere finds a place in the book. He says:

The litigation cases are often fictitious, and might be at once dismissed from consideration were it not for the tendency which so often exists to thrash out medical symptoms in court by laymen who naturally know nothing about their significance.

The book, however, is written for lawyers, these very laymen, and for use in court; all the more essential, therefore, are simplicity and accuracy in description, and an entire freedom from ambiguity. This being so, it seems to us that sentences like the following are, to say the least, unfortunate: "The *supinator longus* which is supplied by the musculo-cutaneous nerve" (*sic*). "Paralysis of the median nerve is uncommon because of its deep and protected position, and unless it be wounded or punctured, or some fracture occurs, it usually escapes, and is far more likely to undergo a loss of function as the result of musculo-spiral injury higher up." What can this mean? "Musculo-spiral paralysis is one of the commonest of traumatic forms. . . . We are sometimes called upon to differentiate between traumatic paralysis and that form due to lead poisoning. . . . In the plumbic form the development of the paralysis is slow, peripheral at first, usually double, and accompanied by the colic and other symptoms of lead toxaemia, including often the lead line about the gums." But what as to electrical reaction and the supinator longus? "When the cerebral membranes are inflamed the pain is accompanied by a sense of pressure and constriction, and is at times paroxysmal." So also may be the headache of neurasthenia. It is sentences like these which lead us to believe that, after all, the book may not be of much use in the courts, and may even help to defeat the ends of justice; while teaching of this kind could hardly save the medical witness from making such an exhibition of hopeless ignorance as is to be found in the record of a case which went to trial. (Case XLVIII, p. 205.) Notwithstanding these apparent blemishes, due largely, we do not doubt, to the difficulty of the task, the book is well worthy of study, especially by those who already are well equipped—and what medical expert ought to be otherwise than well-equipped?—with medical knowledge, and who are prepared to read between the lines. The concluding chapters on Examination and the Possibility of Error, on Prognosis in Relation to the Verdict, and on Fraud, contain many valuable hints and suggestions.

The courts confine the medical witness to the expression of an opinion which shall imply "a reasonable certainty," and in the present state of our knowledge this sometimes is a matter of exceeding difficulty. A fair, broad survey of the particular case is absolutely necessary, and the judgement must be freely exercised, so that it is imperative that technical entanglements and theoretical conventions should be given a wide berth. To do this, the medical witness should not only have a sound idea of the pathogeny of organic disease, but a sufficiently broad experience to take into account all the curious variations of functional disorder which are so closely allied to mental departures. He should also be a student of human nature.

Were medical witnesses thus armed more often, how good would it not be for the profession at large!

The author has little to say about treatment. It does not come within the scope of his book. We should have been glad to see one chapter more, to know if in his opinion there is no better way than open court for the settlement of the disputes which arise so often, but in this country much less often than formerly, in connexion with personal injuries about which there may be legitimate and unbiassed differences of opinion, and whose real nature it may be most difficult to solve. When, however, there is fraud, and the defendants can bring the suspicion of it home, it is questionable whether there is any better tribunal than judge and jury *coram populo*, for the light of day to be shed upon the facts.

A BROAD VIEW OF MENTAL DISEASE.

No subject in the realm of pathological science exceeds in interest that of mental disease, but systematic treatises and textbooks for the use of students are of necessity rather dry reading. Dr. CLAYE SHAW'S *Essays*[4] are so distinguished by philosophic breadth of view, originality of thought, and outspokenness on many much-debated questions, that they will attract many readers outside the medical faculty. Of their value to medical men there can be no question; and though the quotation on the title page from *Omar Khayyám*—

> There was a Door to which I found no key,
> There was a Veil past which I could not see,

strikes a somewhat pessimistic note, we are sure that many readers of this little book will not willingly subscribe to the sequent stanza:

> Myself when young did eagerly frequent
> Doctor and Saint, and heard great argument
> About it and about: but evermore
> Came out by the same door as in I went.

The essays make no pretension to completeness or to a systematized classification; indeed, their author in more than one place attacks in forcible language the common attachment of a special morphological and etiological significance to the usual symptomatological forms, and says:

That one person, then, is melancholy and another elated does not of necessity show that different structures are involved in the cases; it may be that not only is the cause the same, but the part acted upon is the same too, and therefore the absurdity of worshipping symptoms is a misleading idolatry blinding us to the true essence of the process we are investigating.

For the medical man who wishes to know just enough of mental diseases to fill up correctly a certificate of insanity, the book will be of no use, but as an antidote to the error of imagining an exhaustive knowledge of classification is equivalent to a fundamental knowledge of the subject, and as an illuminating psychological study of insanity in its broader aspects, it may be warmly recommended. The broad way in which Dr. Claye Shaw regards mental disease is shown in the opening lines, and is maintained throughout. Take the fol-

[4] *Ex Cathedra Essays on Insanity.* By T. Claye Shaw, M.D., F.R.C.P., Lecturer on Psychological Medicine, St. Bartholomew's Hospital, etc. London: Adlard and Son. 1904. (Crown 8vo, pp. 256. 5s.)

lowing passage, in which he shows that insanity must depend for its interpretation upon what is meant by sanity or saneness:

Man is born to think and to act. These two processes are the essence of his being, and he must think and act in a certain manner, according to the rules of the social level in which he happens to live. The individual born among the lower orders may think and do what is impossible for the patrician, and his life is normal; but if the latter develops a display of thought and action befitting the lower level, he is rightly called insane or degenerate. So, then, insanity means want of conformity with an artificial scale, either from inability due to disease, or from incapacity to rise to such a level as may be the standard, to a primary ineptitude.

This is true, but it is still an insufficient description of insanity, for a harmonious reduction to a lower level would not necessarily imply insanity. Insanity means much more than want of conformity with a sliding and arbitrary scale. It is not merely relative but implies a want of harmony, or instability amongst the elements of mind. A harmonious dissolution from higher to lower levels is a physiological, not a pathological process, and occurs constantly in old age. This, it is true, is recognized by the author in later chapters.

The necessity for the student of a knowledge of normal psychology, in particular of empiric psychology, is insisted on throughout the work, which is itself an object lesson of the value of such a method. Free-will and responsibility, dualism, and psycho-physical parallelism are all ably and concisely treated, and in particular the chapter on impulsive insanity in relation to legal responsibility may be mentioned as containing a very lucid statement of this thorny question.

In the chapter on the symptoms of insanity Dr. Shaw discusses the origin of hallucinations and delusions and is unable to accept the usually formulated theory that they are the result of the uninhibited action of normal function, and maintains here and elsewhere that they are due to the continued action of the morbidly affected parts of the central nervous system. His position is thus directly opposed to the theory which, since it was formulated by Hughlings Jackson, has become almost an axiom in pathology. It is important to bear in mind the author's views on this matter in order to understand his advocacy of surgical interference in some forms of mental disease, for example, delusional insanity. He relates some cases in which trephining was performed with the intention of diminishing intracranial fluid pressure, but in which no permanent improvement was obtained. Notwithstanding this he says that—

What is done with success in Jacksonian epilepsy should be possible in ideational insanity; and it may be confidently said that many cases of chronic delusional insanity, with all the associated symptoms of violence and irregularity, are left uncured because we have not the courage to attack them surgically.

The localization of definite ideas in definite brain cells which is implied in this is still more clearly expressed in other places, and is at present an unjustifiable assumption; the support claimed from the results of trephining in cases of non-traumatic epilepsy rests on much-disputed grounds, and further arguments from the action of alcohol on the nerve cells are vitiated by the postulation of increased cellular energy as the result of alcoholic stimulation. Several other theses are advanced by the author about which contrary opinions might be maintained, but these in no way detract from, but rather enhance the value of, a work which evidences the most careful and unbiassed selection of data, and is clearly the result of mature thought.

NOTES ON BOOKS.

BOOKS OF THE SEASON.

Mr. H. G. Wells has written a good many ingenious romances, but none quite so ingenious as the *Food of the Gods*,[1] which has been published recently in one volume. The factors which determine the rate of growth and bring it to an end are sufficiently obscure to make the idea that a substance might be found which would greatly accelerate the rate not so wholly absurd as to destroy the versimilitude which he knows, almost as well as Swift, how to impart into his extravaganzas. He makes some rather good fun of the love of modern physiologists for tracings and curves, smoothed and other, but the allegory of the later part of the book which has puzzled his critics may be taken, we think, as more than excusing the flouts and sneers of the opening chapters. The idea is very skilfully worked out up to a certain point, and the story as a story is so well told that even the reader who is in doubt about the allegory will not be content to lay the volume down unfinished.

[1] *The Food of the Gods and How it came to Earth.* By H. G. Wells. London: Macmillan and Co. 1904. (6s.)

L. T. Meade's books can scarcely be described as stimulating intellectual fare, yet their undoubted popularity proves that they supply a demand. The heroine who plays the title rôle in *A Madcap*[1] is a half-Spanish girl, brought up in the West Indies, who turns up, unexpected and unwished for, as the heiress of a fine property in England, thereby dispossessing some English cousins. Inez certainly does all she can to justify the title of "Madcap," and at first makes herself greatly disliked by all who have anything to do with her. The transformation of her temper and character under the influence of her English surroundings is well described, and her adventures at a very superior English school for young ladies are pleasantly told. There is a somewhat feeble villain in the shape of a Spanish cousin, who blackmails her and locks her up all night in an old castle. All ends well, however, and we leave Inez sobered down into the semblance of what Byron calls a "bread-and-butter miss." The thread of plot is very slender, and the weight of edifying reflection hung upon it is too great for the story and for the patience of the indolent reviewer. Such attempt at character drawing as is made is rather ineffective. Inez herself is by far the most attractive figure, though this effect is not intended by the author, who nourishes the fine old crusted belief that foreigners are made of inferior clay. This is, of course, nothing more than the customary sacrifice to national pharisaism. The English cousins are somewhat offensively virtuous, the unnatural "goodness" of David and Dorothy being particularly trying; but even they do not rise to the heights of priggishness reached by Philippa, Inez's friend, and her schoolmistress, who is, in a moral sense, an aggravated and most aggravating example of the "prunes and prisms" type. But why should the young Briton be taught that all Spaniards are "crafty"? Would it not be just as true to say that all Englishmen are honest? And is not the assertion that deceitfulness is utterly unknown among English schoolgirls something worse than a conventional tribute to our smug self-complacency? All this is a thorn in the flesh to the average sensual man. But it must be remembered that it is not for him that the author writes. It must in fairness be stated that the book is readable and is likely to interest a certain class of girl.

"Ombra"[2] is indeed a mystery, and it must be added that the mystery of her being and her career is not dissipated by her creator. A young Edinburgh doctor rescues a girl about to do away with herself, and tends her through a dangerous illness which follows the attempt. She gives her name as "Ombra," and hints at dark secrets and cruel persecutions. Her rescuer has her trained as a nurse in the Royal Infirmary. She is loved by two men—one an impossible laird, who in the valley of the Tweed near Peebles wears the garb of old Gael and plays the bagpipes; the other a sentimental student of medicine in the throes of preparation for his "final." She rejects them both, and they seek relief for the pangs of despised love in the same way as that exemplar of unfortunate lovers, Werther. "Ombra," to do her justice, takes the situation more tragically than Charlotte. She again tries to drown herself, and again her rescuer comes on the scene in the nick of time. Her gratitude leads to disclosure of a love which, in a manner painfully obvious to the reader, though mysteriously hidden from the person most concerned, she secretly cherishes for the hero. He confesses that he is living apart from a once-beloved wife whom he believed to have been false to him. By a convenient intervention of the long arm of coincidence Ombra in the course of her hospital ministrations comes across the supposed seducer, from whose hateful attentions she herself had tried to find shelter in a watery grave. From him she learns that the hero's wife is innocent, having shielded her twin sister. Husband and wife are reunited, but poor Ombra drowns herself in despair. We understand that the author is a medical student of the University of Edinburgh; indeed, this fact could easily be gathered from the internal evidence supplied by the book. Here and there the writing is marked by a certain power and some sense of literary form, but the production as a whole is crude and amorphous. The story, though full of the material of tragedy, somehow fails

[1] *A Madcap.* By L. T. Meade. Illustrated by Harold Copping. Published by Cassell and Co., Limited: London, Paris, New York, and Melbourne. (Pp. 261.)

[2] *Ombra the Mystery.* By Frederic R. Graves. Edinburgh: George A. Morton; and London: Simpkin, Marshall and Co. (Cr. 8vo, pp 337 6s.)

to touch the sympathy of the reader or to purge his passions by terror. Yet the author has done his best to fulfil the Aristotelian precept. He gives us three suicides, glimpses of the slums, the hospital ward, and the charnel house, and, in addition to all this, a Banshee. But he does not make our flesh creep. Nor does he succeed in interesting us in his characters. They are unconvincing and stagey; their sentiment is false, their actions incongruous, and their talk often irritating in its silliness. Nevertheless, Mr. GRAVES shows a power of description which gives promise of better things.

Rudderless Ships,[3] the anonymous work of AIRAM, is a novel with a purpose which there is no attempt to disguise. The author holds strong, and we are by no means prepared to say incorrect, views as to the danger of intermarriage between persons of tuberculous and neurotic tendencies; there are many paths in life other than matrimony now open to women, and these should be sought by those not specially qualified to become healthy wives and mothers. These themes are developed in a story in which consumption, drink, and insanity play a leading part. The picture is strongly drawn, and it is conceivable that the writer's object may be in some degree fulfilled, but for the average reader the book is too depressing to be attractive.

In *The Ragged Messenger*,[4] by Mr. W. B. MAXWELL, doctors, nurses, religious fanatics, and reformed and unreformed women all figure. Among the latter is the heroine, who, in the mid stage of her stormy career, marries an eccentric but devout clergyman for money, leaves him for love, and —— but the rest of the plot must be left untold. It is a book not without a certain individuality and cleverness, and a plot which carries one on in spite of many points of inherent improbability. It may attract some readers, but can scarcely be regarded as healthy mental provender.

Mrs. MOLESWORTH has added another story to her long list in *The Ruby Ring*.[5] It is a mixture of reality and fantasy —a characteristic of many of her charming tales. The heroine is a little girl who, in spite of pleasant surroundings, is dissatisfied with everything; she even finds fault with a ring, a birthday present, because it has a ruby instead of a turquoise. Her mother tells her the ruby may bring her good luck, which is the case. Before long, a little old disguised fairy offers to change her life. Sybil chooses to be transformed into a gipsy child. The fairy gives her instructions to turn her ring in a certain manner, and she awakes in a caravan. Instead of the freedom she looked for, she is cramped and expected to beg. She summons the kind fairy again by means of her ring, and tries a robin's life, but soon tires of monotony and loneliness. Lastly she becomes a fairy, and dislikes it for the very reason she had hitherto wished for it—it is all play and no seriousness. She has difficulty in escaping from the fairies, even with the aid of her friend, but finally gladly reaches home, and her friends are astonished at the improvement in her character. Though a pleasant story, we do not consider it possesses as much interest and originality as most of Mrs. Molesworth's conceptions.

A few more stories as well worth reading as *The Ward of King Canute*[6] would not be amiss. The author can depict characters as well as describe scenes and scenery. The battles between Edmund of England and Canute of Denmark, and the glimpses into their camps, are instructive and suitable for boys, while the disguised page Randalin, a chief's daughter—Canute's ward—cannot fail to rouse the interest and sympathy of girls. She lived in the days before the development of civilization had made such heroic careers for girls impossible. History and romance are well mingled, and young Canute is a striking character. His disposition and appearance being well combined—vivid, spirited, with shining hair and lustrous eyes—he is a fit leader for his army; while Edmund Ironside is gaunt, majestic. The armies and several chiefs are coarse, in good contrast with the four or five imposing characters. The meaning of a few passages might be clearer, but the suspense of the plot is successfully kept up.

The Thrall of Lief the Lucky[7] is a companion to the foregoing in point of interest, style, and coloured illustrations. The conquest of England is here replaced by the conversion of Greenland to Christianity and the exploring of a fruitful land "where never man stood before." The highborn English thrall, Alwin, is to be pitied; for the most part one watches throughout his and his friends' efforts to recover his liberty. He finally gains, largely owing to his own merits, not only his freedom, but the hand of Lief's fair foster-daughter, Helga, who shows herself worthy of her name of "Shieldmaiden." Lief the Lucky, the leader of the mission, is courageous, keen-witted, imperious, and generous. Several other prominent characters are well drawn.

With Alice of Wonderland it must be a case of love at first sight or not at all. Appreciation of the very peculiar quality of Lewis Carroll's humour must be felt at once, for it cannot be cultivated. It is more than forty years since Alice first stepped on the world's stage, and the fathers who remember her as a joy of their youth will be grateful to the publishers for enabling them to experiment on the rising generation by issuing neatly bound and printed editions of *Alice in Wonderland*[8] and *Through the Looking Glass*,[8] with John Tenniel's illustrations. The publishers have also issued, but in a different form, an abbreviated version of *Sylvie and Bruno*,[9] containing only the portions about the two fairy children, with the original illustrations by Harry Furniss. Few will place this work of Lewis Carroll's in the same rank with the other two, but it shows the same charming fancy and intimate understanding of children.

The same publishers have issued an edition of *The Story of a Red Deer*,[8] by the Hon. J. W. FORTESCUE, uniform with the two Alice books. This story, first published seven years ago, seems to maintain its popularity well, for this is the ninth time of reprinting.

Mr. KEARTON, who has published several admirable volumes on bird life, has lately placed before Nature-loving youth a companion volume to *Strange Adventures in Dickybird Land*, entitled the *Adventures of Cock Robin*. He explains in his preface that, "like its predecessors, this little work, although coming into your hands in guise of fiction, contains . . . . sound natural history knowledge, and nearly every strange happening related . . . . I have witnessed myself." Though Nature teaching in the form of a robin's autobiograph will appeal less to older children than the mode adapted in, for instance, *Nature's Wild Ways*, it is a sensible method of interesting children, who always love stories in natural history. The illustrations are as lifelike as any of Mr. Kearton's former ones. It is safe to say that there was never a more successful bird photographer.

In *Cheepy the Chicken* Mr. HAMER gives a delightful account of the adventures of a chicken[10] under the guise of various animals. Many of the adventures are very amusing, and all are well told. Cheepy returns home at last, and, from being the butt of the farmyard, finds himself a famous and important person. Mr. Rountree's illustrations are excellent as usual, those of the rabbit village and its inhabitants being particularly good.

The *Little Folks Animal Book*[11] is a charming collection of animal stories for children. Perhaps the best is the Leaves from an Elephant's Diary, but the Passages in the Life of a Cat are delightfully humorous, and could have been written only by one who thoroughly knows and loves cats. The illustrations are really beautiful; and the book is certain to be a favourite amongst children, especially those with pets.

The Wonder Book[12] is a collection of short stories for children. Its exterior, which is that popular in gift books for the little folk, scarcely prepares one for the superiority of its contents in the way of lithographs and coloured plates. These are of peculiar excellence, and as there are more of them than are required to illustrate the stories there is plenty

[3] London: H. J. Drane. (6s.)
[4] London: Grant Richards. 1904.
[5] *The Ruby Ring*. By Mrs. Molesworth. London: Macmillan and Co. 1904.
[6] *The Ward of King Canute*. By Ottilie A. Liliencrantz. London: Ward, Lock, and Co. 1904. (5s.)
[7] *The Thrall of Lief the Lucky: A Story of Viking Days*. By Ottilie A. Liliencrantz. London: Ward, Lock, and Co. (5s.)
[8] Illustrated Pocket Classics for the Young. London: Macmillan and Co. 1904. (2s. each.)
[9] London: Macmillan and Co. 1904. (3s. 6d.)
[10] *Cheepy the Chicken*. By Harry Rountree and S. H. Hamer. London: Cassell and Co. 1904. (2s.)
[11] The *Little Folks Animal Book*. By S. H. Hamer. London: Cassell and Co. 1904. (3s. 6d.)
[12] *The Wonder Book*. A Picture Annual for Boys and Girls. Edited by H. Golding. London: Ward, Lock, and Co. 1904. (Demy 4to, pp. 256. 3s. 6d.)

of material for "making up" tales when the printed stories have been read.

The numerous readers of *Little Folks*[13] will not be disappointed in this year's volume. It contains something for all children, even the very little ones. Mrs. Edith E. Cuthell's exciting story, A Fearful Flight, will delight those who love adventures, and Little Miss Prue, by Bella Sydney Woolf, which is a pretty tale of a brave little girl, will be appreciated by girls. Archibald's Amazing Adventure, by S. H. Hamer, is an amusing account for younger children of a little boy's adventures amongst animals. The illustrations are very good, especially the delightful animals by Mr. Rountree.

The *Little Folks Picture Album*[14] consists of a collection of short stories with beautifully-coloured plates. The book is prettily bound and well printed, and will make a delightful Christmas present for a child.

Bo-Peep[15] is like good wine that needs no bush. The little ones for whom it is intended will be delighted with the numerous short stories and the very pretty illustrations.

Tiny Tots,[16] as its title imports, is intended for the delectation of very small children. It contains short stories and verses, and numerous pretty illustrations. It cannot fail to receive a warm welcome in all well-regulated nurseries.

The Christmas number of *Black and White*[17] contains four artistically-executed presentation plates and interesting stories by Mr. Jerome K. Jerome, Mr. Pett Ridge, "E. Nesbit," and Miss Arabella Kenealy. Altogether it is an excellent number.

Pears' Annual is largely devoted to memories of Dickens. Mr. Percy Fitzgerald contributes a very interesting article entitled Christmas Days with Charles Dickens, which is illustrated with eleven reproductions of original plates by "Phiz," John Leech, Charles Green, and Frank Dadd. Three additional coloured presentation plates make up a number of exceptional value.

YEAR BOOKS.

THE new edition of *Who's Who*[18] exceeds in bulk that for 1904 by some hundred pages, in spite of the fact that the introductory tables are again issued in a separate volume. It now consists solely of a biographical dictionary of living persons of more or less celebrity; as such it is a very useful work of reference. Celebrity is a relative term, but the editor of this volume has wisely determined to be inclusive rather than exclusive, and our experience shows that it will seldom be consulted in vain.

The twenty-first annual issue of the *Year Book of the Scientific and Learned Societies of Great Britain and Ireland*[19] has just been issued. It contains particulars as to the objects and officers of various societies and a record of the work done during the session 1903-4. The information is classified according to the nature of the societies, and the book is useful for reference, and may even be valuable to inquirers on account of the list of papers which it contains. The information given as to the British Medical Association includes the work of the annual meeting at Oxford, but we observe that in the case of the British Association the meeting mentioned is that for 1903, which seems to be rather unfortunate.

The Englishwoman's Year Book and Directory, 1905,[20] is again edited by Miss EMILY JANES, Organizing Secretary to the National Union of Women Workers of Great Britain and Ireland. It contains lists of colleges, schools, and other institutions in which women may be assumed to take special interest, and a number of articles on the careers open to the more ambitious. Much miscellaneous information which it is convenient to have in a writing-table book, but not of interest exclusively to women, is included. A short calendar for 1906, showing the dates of the movable holidays, would have been a useful addition.

The edition of *Whitaker's Almanack* for 1905,[21] presents no particularly new feature, and this in so familiar and justly popular a work is a distinct virtue. The whole of the information given has, however, been brought thoroughly up to date, and a certain number of more or less fossilized articles have been allowed to drop out, and their places have been taken by fresh articles upon the same or an allied subject. Amongst these will be found a kind of directory of British holiday and health resorts, which many medical men may find useful as a preliminary guide to what they seek for themselves or others.

Whitaker's Peerage, 1905,[22] commences with a list of honours conferred during the year 1904 up to November 15th, and an obituary list of persons whose names figured in last year's edition of the work, and who have since died; then follows an introduction in which is contained a vast amount of information as to titles and decorations of all characters. Finally comes the Peerage directory proper. This is given up to a list, in alphabetical order and without reference to precedence, of all persons who enjoy any sort of title or allied distinction, together with sufficient detail concerning them to establish their identity. Reference to it is thus made exceedingly easy, and we have been able to find in it instantly the names of a number of persons the identity of whom, in some other books of the kind, can only be ascertained with great labour, if at all.

DIARIES.

WE have received from Messrs. JOHN WALKER and Co., Limited, Farringdon House, Warwick Lane, E.C., samples of the very numerous diaries which they issue. Special features of the diaries are the clear printing, the ample room afforded in the larger forms, and the back loop for a pencil with which many of the pocket diaries are provided. The particular type of diary which may be found convenient is so much a matter of personal taste, that it is almost useless to give details of the samples submitted, but it is safe to say that on the publisher's list will be found types which will meet the requirements of everybody. A very convenient form for a man of few appointments is the so-called quarterly diary, which consists of four quarterly fasciculi, which slip into a small portfolio. It must be understood that none of these diaries are visiting lists.

MEDICAL AND SURGICAL APPLIANCES.

WE have received from Messrs. Wyley of Coventry a sample of a lithotomy contrivance which this firm has made for Dr. E. Phillips of Coventry, and also a Paget knife designed by the same medical man. The former consists of an arrangement of tape bands by which, we find, a patient can easily be fixed in the lithotomy position. It keeps the thighs well up and moderately well separated, and might under some circumstances prove a useful substitute for a Clover crutch. Rolled up it would not occupy more space in an instrument bag than a couple of bandages. The knife is made on the same principle as a flat pencil-case, and can be easily sterilized.

A Thermo-cautery.—We have had an opportunity of examining a form of thermo-cautery manufactured by Mr. W. H. Beach, of Bridgnorth, Shropshire. The underlying principle is that of a Paquelin, but it differs from the common forms of that instrument in important particulars. The benzoline reservoir and vaporizer are contained in the handle, and the connexion between the latter and the cutting point is so made that by a twist of a greater or less extent the following results can be obtained: The reservoir and vaporizer can be cut off altogether; the cutting point can be cooled down by blowing plain air through it; the admixture of air and vapour requisite to raise the point to the desired heat can be obtained; the reservoir can be blown free from vapour. It should be easy, therefore, with a minimum of care to keep the airways free either from soot or from access of undiluted vapour. These are the common sources of defect in the ordinary Paquelin, and are those which make it so difficult to obtain constancy in the temperature of the cutting point and to keep the instrument in working order. The removal of their cause is consequently a great advantage, especially when coupled, as in Mr. Beach's instrument, with freedom from the inconvenience of manipulating a separate glass benzoline container.

[13] *Little Folks*. London: Cassell and Co. 1904. (3s. 6d.)
[14] The *Little Folks Picture Album in Colours*. By S. H. Hamer. London: Cassell and Co. 1904. (5s.)
[15] *Bo-Peep*. London: Cassell and Co. 1904. (2s. 6d.)
[16] *Tiny Tots*. London: Cassell and Co. 1904. (1s. 6d.)
[17] Black and White Publishing Company, Limited.
[18] London: A. and C. Black. 7s. 6d.
[19] London: Charles Griffin and Co. 7s. 6d.
[20] London: A. and C. Black. 2s. 6d.
[21] London: J. Whitaker and Sons. 2s. 6d.
[22] London: J. Whitaker and Sons. 3s. 6d.

SEVENTY-THIRD ANNUAL MEETING

OF THE

British Medical Association.

LEICESTER, 1905.



The Castle Gateway, Leicester.

THE annual meeting of the British Medical Association for 1905 is to be held in Leicester in July. A short sketch of the town and of the probable local arrangements will therefore be interesting to many members. The position of Leicester—about the centre of England—its unusual facilities of railway communication, its ancient history, and last, but not least, the fact that it is a clean and healthy modern town, busy with many manufacturing industries, and very up-to-date in municipal enterprises, all augur well for the success of the meeting. Let us hope, indeed, that it may be said of every member of the Association, as it was said of a great statesman of old, "At last, with easy roads, he came to Leicester."

Roman Leicester.

The early history of this old-time city is involved in obscurity and fable, but the boast is that it was in existence 800 years before the birth of Christ. It must be confessed, however, that from this time until the invasion of the Romans there is a chasm in its history, but it is beyond doubt that the Romans had an important centre at Ratae, as Leicester was then known, and that the present Market Place has been used as such for the period of 2,000 years at least. The finding of coins, urns, domestic and military instruments, as well as remains of tessellated pavements, from time to time, give certain evidence of the great antiquity of the place. Further, the most ancient inscription of the Roman period existing in Great Britain to-day was discovered two miles north of the town in the shape of a milestone on the old Fosse Road, on which was described its position as "a Ratis II." This is now in the Leicester Museum.

But silent memorials of the old Roman days remain *in situ*: there is the Jewry Wall, a massive piece of masonry some 5 ft. thick and more than 20 ft. high, built, Roman fashion, of alternate courses of ragstone and brick, with the mortar between the rows nearly as thick as the bricks themselves, and the fine Roman tessellated pavement close by the Jewry Wall, now most carefully preserved. Reminders, too, of the eventful history of the town subsequent to the Roman period will meet the eye of the medical visitors at every point, for the focus of all the arrangements—the Sections' Meeting Rooms, the Reception Rooms, Pathological Museum, Food and Drug Exhibition, etc.—is situated in the very heart of the historic portion of the town, known as the Newarke.



The Town Hall, Leicester.

Leicester Castle.

Here, for instance, is situated the Castle, to give a full account of which would be to write a history of Leicester from the tenth century to the Commonwealth.

It was probably begun in 914 as a residence for the Earls of Leicester. At the Norman Conquest it was further fortified, but was burnt by William Rufus. Restored again in 1107, it was besieged in the reign of Henry II, when the town also was devastated.

With the Castle is bound up the memory of the great statesman Simon de Montfort, sixth Earl of Leicester, and its chief pride. The Earl had married the widowed sister of Henry II, but this fickle monarch quarrelled with Simon on personal grounds, and the result of the quarrel was of momentous import to the nation. Simon perfected and carried into effect the plan of Parliament which would act as an equipoise to the weight and power of the Crown, which was tremendous, since the nobility could seldom be brought to act in unison, owing to their conflicting private interests. He foresaw that the people, acting as umpires of these hostile parties, would grow in general estimation as well as in their own, and consequently would be raised from the state of vassals and slaves to that of free men. To Simon, therefore, all England owes a debt of gratitude, for the people emerged from the state of dependence to liberty and freedom of thought centuries before the rest of Europe.

During the Lancastrian period Leicester Castle was often honoured by Royal visitors, but later it gradually fell into decay, until when Richard III came to the town on his way to Bosworth Field it was so dilapidated that he slept by preference at the Blue Boar Inn.

The Newarke and St. Mary's Church.

In the year 1633 orders were issued to the Sheriff "to take down the old pieces of Our Castle at Leicester, to repair the Castle House wherein our records of the Honor of Leicester do remain," and so scarcely anything remains of this vast and venerable pile but the artificial mound with some old buildings called the Newarke or New Works, which were additions to the original works and buildings connected with the old Castle. Close to the Castle is St. Mary's Church which has always been intimately associated with it. For indeed in Saxon times the original church was demolished, and left but little trace. The present noble structure was built in 1107. Its interior presents examples of Saxon and Norman as well as mediaeval work. It is approached from the Newarke by the ruin of the old Castle Gateway. Quite close, too, stands Trinity Hospital, which, although largely rebuilt, still contains many reminders of long past times. It was founded in 1330 by the Earl of Lancaster for the maintenance of 50 old men and five old women—their nurses. It guards as a treasure an enormous nutmeg grater, "Queen Elizabeth's Pocket Piece," bearing the inscription:

Flee idleness and be wel occupied 1519
Think wel and say wel, but rather do wel.

In later years, the Newarke, already stained by Roman and English blood, was again the scene of carnage. In May, 1645, Charles I took the town by storm after a three days' siege, but in June of the same year it was retaken by the Parliamentary forces under Sir Thomas Fairfax. At these times the Newarke was the part of the town where the bloodiest portion of the battles raged, and in recent excavations for the new wing of the Infirmary the unearthing of many large human bones bore silent testimony to the fine physique of the men who fought and died in those stirring times. Since this period the warlike history of Leicester ceases, and the town has become famous for its manufactories; it has many industries—

hosiery, boots and shoes, elastic-web and many others—and the development of the town shows that the work of Leicester men and women has been attended with no mean success. The growth of the population has been phenomenal. In 1801 it consisted of 17,000 people, now its total is no less than 212,000 souls.

The Abbey and the Parks.

Archaeologists will find many further interesting objects, which can only be enumerated here. The Abbey—a ruin now—where Wolsey met his end and craved "a little earth for charity"; the old Town Hall, "a boat turned keel uppermost"; the old town library with its many treasures; the ancient churches—St. Martin's, formerly "St. Crosse Church" of Norman times, where the annual service for the Association will be held; St. Mary's, before mentioned; and St. Margaret's, in the "Scanta Via," now Sanvey Gate, part of which dates from 1200.

The town museum, further, well repays a visit, for its contents are set out in admirable style; and likewise the various "lungs"—the Abbey Park, the Victoria Park, the Spinney Hill Park, and the Western Park—all should be seen, and the run on the trams to these spots of both artificial and natural beauty adds to the pleasure of the visit. The electric tramway system—the latest municipal enterprise—deserves special mention, for by it all parts of the outlying districts are closely brought together, and the excellent service will be of the greatest value to those attending the meeting.



The Infirmary.

Medical Leicester.

The Infirmary, standing in its own grounds in Infirmary Square, is less than five minutes' walk from the Sections' meeting place, and includes a General and a Children's Hospital. Founded in 1770, it has been the head quarters of medical Leicester for 130 years. From small beginnings, the institution has gradually grown to accommodate now about 200 patients, and is one of the best of the British hospitals without a teaching school. During the last few years vast improvements have been carried out at a cost of over £40,000—two new operating theatres have been made, a new boiler-house added, new casualty departments built, old wards have been renovated, and a new out-patient block is in process of building, which will be in full work before next June, and with the advent of that very necessary commodity, money, still further improvements will immediately be taken in hand. Moreover, all the plans have been made with due regard to the possible enlargements which the growth of the town in the near future may necessitate. In fact, it may be safely stated that the institution is a model for those who wish to study how an ancient infirmary may be transformed to a thoroughly up-to-date hospital, and is a monument of what may be achieved when the relations of the Board and the medical staff are of the best, both striving together for the welfare of "Leicester's greatest charity."

The Children's Hospital was founded about twenty years ago as an adjunct to the Infirmary as regards administration, but with a separate financial basis; and accommodation is provided for about forty-two children, equally divided into medical and surgical cots. The building stands in the Infirmary grounds at the end of the nurses' wing.



Children's Hospital, Leicester Infirmary.

The Leicester Medical Society has been a further very valuable asset to medical Leicester. Its long connexion with the town is evidenced from the fact that it celebrated its centenary in 1900 in very fitting manner (the menu and speeches will be remembered by many). Starting originally as a Medical Book Society with occasional meetings in private houses, the society gradually evolved to its present position, its library and reading rooms in the Permanent Library, its monthly scientific meetings, its "social evenings," and its annual dinner. The list of stewards and presidents includes the names of all the greatest medical men of the town during the past century, and this society is fortunate in the possession of portraits, in an unbroken series, of those who have directed its affairs through stormy times and peace.

In Lighter Vein.

The lighter side of the meeting will not be without its attractions. Close to Leicester is Charnwood Forest, which will afford an exceedingly interesting outing for those geologically inclined, and in addition to this a visit to the Leicestershire coalfields, including a descent into the bowels of the earth, may be a pleasure to others.

Bradgate Park, with its glorious oaks and ruins, sacred as the birthplace of that gentle creature the Lady Jane Grey, who had the "birth of a princess, the learning of a clerk, and the death of a malefactor—all for her parents' offences"—is within six miles of the town and makes an enjoyable bicycle outing for a summer's day. Going further afield is the stately home of the Duke of Rutland at Belvoir Castle, and still further, but yet within the area of the Midland Branch, are the lovely "Dukeries" in Nottinghamshire, and the beauties of Matlock and Buxton in Derbyshire, all of which can be reached by visitors with the greatest ease. Arrangements are, of course, not yet complete as to which of these attractive excursions will be made, but given the most desirable accompaniment—sunshine—it is certain that most enjoyable outings will take place.

At home also during the week cricket will be an attraction, for the County Ground is close to the centre of the town, while the provisions for tennis and swimming in Leicester are

excellent. Golf, too, can be had to any extent, as there are two links (one of 18 holes), both very accessible and both in the pink of condition at that time of the year. It is proposed that an international contest shall be held.

The Housing Question.

For the bodily comfort of the visitors there is a fair supply of comfortable hotel accommodation as well as lodgings in the town, and private hospitality will be offered to a considerable extent. Moreover, any difficulty which might arise in regard to the housing question will be considerably diminished by the fact that Nottingham and Derby are a little more than half an hour away by a splendid train service. Birmingham is only an hour; and, still further, London itself has been brought within a journey of an hour and three-quarters. It is hoped that every busy member within a very large radius will make a special effort to avail himself of this very central position of the annual meeting, for it should be mentioned that the Midland, London and North-Western, Great Central, and Great Northern Railways all have stations in the town.

For the comfort of members the local executives have under consideration a scheme for a visitors' club in a building centrally situated and near the Sections' meeting-place, where rest may be enjoyed at any time of the day. Here, after work and play, in the evenings old friends may meet, new friends may be made, and the hours of slumber postponed: in fact the desire is to extend at Leicester the very enjoyable idea of the common rooms at Oxford this year.

One item of especial interest to many will be the new arrangements for the Representative Meeting. It is proposed that this important and hard-worked assembly shall meet on the Monday, and have a modest dinner together in the evening, where views may be ventilated and discussed informally, thus adding greatly to the utility of that body. After the dinner interval labours will begin again, and will be continued on other days until the mass of work is complete.

Further, a meeting of the Divisional Secretaries is to be organized during the week to discuss and harmonize as far as possible the work of the Association all over the Empire. Truly Leicester, with its historic Parliamentary associations, is the proper place for such gatherings to attain success.



A Bit of Old Leicester.

It is possible that the Council of the Association and the two other bodies mentioned will be housed in the comfortable hall and rooms of the Young Men's Christian Association, close to the Midland Station. It is too early to speak definitely as to the final arrangements, but it is hoped that there will be room for all the twelve sections to meet in the Technical Schools, while the Exhibition will be placed in the Drill Hall; for the Reception Room an historic and interesting old house—the residence of the late Mr. Edward Shipley Ellis—will be utilized. These three buildings stand close to one another in the Newarke.

The Pathological Museum.

The success of this year's museum at Oxford adds a stimulus to those who have undertaken the management and the arrangement of this most important adjunct of the next meeting. Interesting pathological specimens will be collected, and no trouble will be spared to make them valuable to the visitors of every Section, and, moreover, they will be housed in the midst of the Sections' meeting-place.

In order to omit no opportunity of making this Museum what it should be—a record of the year's work in medical investigation—as well as an exhibition of specimens, the following letter is reproduced, copies of which also will be sent to those who are in a position to send exhibits themselves or stimulate others to do the same.

Dear Sir,—The committee appointed to organize the Pathological Museum in connexion with the annual meeting in July, 1905, propose to arrange the material under the following heads:—

1. Exhibits bearing on discussions and papers in the various sections.
2. Specimens and illustrations relating to any recent research work.
3. Instruments relating to clinical diagnosis and pathological investigations.
4. Individual specimens of special interest, or a series illustrating some special subject.

It is proposed to make an effort to gather together a series of exhibits illustrating industrial pathology in connexion with the Section of Industrial Hygiene and Diseases of Occupation; exhibits relating to neurology; illustrations referring to heredity, mental and physical deterioration; series of *x*-ray and other photographs. The committee wish it to be understood that the above are only suggestions, and if there is any subject in which you are specially interested and can supply interesting specimens I shall be glad to hear from you.

The Museum will occupy a central position in the same building as that in which the Sections work is carried on, and will be easy of access.

The Committee desire to enlist your hearty co-operation, and I shall be glad to hear from you if you are able to make an exhibit. Every care will be taken of specimens, and the contents of the Museum will be insured. It is hoped that it will be possible for arrangements to be made whereby exhibitors may have an opportunity of demonstrating their specimens.

Yours faithfully,
Robert Sevestre
(Hon. Sec.).
119, London Road, Leicester,
November, 1904.

Many copies of the above circular have already been sent out, and Dr. Sevestre, as Honorary Secretary of the Pathological Museum Committee, will be glad to hear from any one who has interesting specimens or series of specimens to exhibit.

Dr. Sevestre further informs us that the Committee appointed to organize the pathological museum will be very glad to offer every facility for the exhibition of portraits of drug eruptions and of insect eruptions, as suggested in the letter of Mr. Jonathan Hutchinson in last week's number of the Journal.

PROGRAMME.

President: William Collier, M.D., F.R.C.P.Lond., Physician, Radcliffe Infirmary, Oxford, and Litchfield Lecturer in Medicine, University of Oxford.

President-elect: George C. Franklin, F.R.C.S., Honorary Surgeon, Leicester Infirmary.

Chairman of Representative Meetings: Sir Victor Horsley, F.R.S.

Chairman of Council: Andrew Clark, D.Sc., F.R.C.S.

Treasurer: Edward Markham Skerritt, M.D., F.R.C.P.

An Address in Medicine will be delivered by Henry Maudsley, LL.D., M.D., F.R.C.P.

An Address in Surgery will be delivered by Charles John Bond, F.R.C.S.

A popular lecture will be delivered by Professor William Stirling, D.Sc., M.D., F.R.S.E.

SECTIONS.

The annual meeting at Leicester will comprise 12 Sections as shown in the subjoined list. The Sections will meet on Wednesday, Thursday, and Friday, July 26th, 27th, and 28th, from 10 a.m. to 1 p.m.

The President, Vice-Presidents, and Secretaries of each Section constitute a Committee of Reference for that Section.

Papers read are the property of the British Medical Association, and cannot be published elsewhere than in the BRITISH MEDICAL JOURNAL *without special permission.*

No paper must exceed 15 minutes in reading, and no subsequent speech 10 minutes.

MEDICINE.

President: FRANK M. POPE, M.D., F.R.C.P., Leicester. *Vice-Presidents:* REGINALD PRATT, M.D., M.R.C.P. Leicester; ROBERT WILLIAM PHILIP, M.D., F.R.C.P. Edin., Edinburgh; WILLIAM BRAMWELL RANSOM, M.D., F.R.C.P., Nottingham. *Honorary Secretaries:* WILLIAM MITCHELL STEVENS, M.D., M.R.C.P., 21, St. Andrew's Crescent, Cardiff; FRANK HARWOOD JACOB, M.D., 28, Regent Street, Nottingham; BERTRAND DAWSON, M.D., 32, Wimpole Street, Cavendish Square, W.

SURGERY.

President: Sir CHARLES BENT BALL, M.D., F.R.C.S., Dublin. *Vice-Presidents:* CLAUDE DOUGLAS, F.R.C.S., Leicester; HENRY JOHN BLAKESLEY, F.R.C.S., Leicester; JAMES HENDERSON NICOLL, M.B., C.M., Glasgow. *Honorary Secretaries:* PERCY FURNIVALL, F.R.C.S., 28, Weymouth Street, W.; CECIL EDWARD MARRIOTT, M.S., 5, Welford Road, Leicester.

STATE MEDICINE.

President: PHILIP BOOBBYER, M.D., Nottingham. *Vice-Presidents:* NINIAN MCINTIRE FALKINER, M.D., Dublin; JOHN HERBERT HAWKINS MANLEY, M.D., D.P.H., West Bromwich; THOMAS ROBINSON, M.R.C.S., D.P.H., Leicester. *Honorary Secretaries:* WM. WILLIAMS, M.D., D.P.H., County Health Department, 9, The Parade, Cardiff; CHAS. KILLICK MILLARD, M.D., D.Sc., Town Hall, Leicester.

INDUSTRIAL HYGIENE AND DISEASES OF OCCUPATION.

President: HY. WM. LANGLEY BROWNE, M.D., West Bromwich. *Vice-Presidents:* ALEXANDER CAMPBELL, M.D., Dundee; JOHN COLLEY SMYTH BURKITT, M.D., D.P.H., Leicester; THOMAS MORISON LEGGE, M.D., London. *Honorary Secretaries:* CLEMENT FREDERICK BRYAN, M.R.C.S., 44, Humberstone Road, Leicester; THOMAS WATTS, M.D., 34, Church Street, Hyde.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY.

President: FREDERICK WILLIAM BENNETT, M.D., Leicester. *Vice-Presidents:* WILLIAM ARTHUR CARLINE, M.D., Lincoln; JOHN MIDDLEMASS HUNT, M.B., Liverpool. *Honorary Secretaries:* ALEX LEWIS MACLEOD, M.B., 89, Hinckley, Road, Leicester; CHAS HERBERT FAGGE, M.S., F.R.C.S., 22, St. Thomas's Street, London Bridge, S.E.

NAVY, ARMY AND AMBULANCE.

President: Surgeon-Lieutenant-Colonel HENRY WALTER KIALLMARK, M.R.C.S., London. *Vice-Presidents:* Surgeon-Lieutenant Colonel ROBERT BRADSHAW SMITH, V.D., L.R.C.P., Hinckley; Lieutenant Colonel EDMOND MONKHOUSE WILSON, C.B., C.M.G., D.S.O., S. Farnboro'; Fleet Surgeon ALEXANDER J. J. JOHNSTON, R.N., Haslar. *Honorary Secretaries:* Surgeon Captain WM. PEMBERTON PEAKE, M.R.C.S., 21 Oxford Street, Leicester; Captain EDWIN CHARLES MONTGOMERY-SMITH, R.A.M.C. Vol., 36, Abbey Road, St. John's Wood, N.W.

OBSTETRICS AND GYNAECOLOGY.

President: HERBERT RITCHIE SPENCER, M.D., F.R.C.P. London. *Vice-Presidents:* HENRY MEADOWS, M.B., Leicester; Professor HENRY CORBY, M.D., Cork; FRANCIS RICHARD CASSIDI, M.D., Derby. *Honorary Secretaries:* MONTAGUE WM. WILLIAMS, M.R.C.S., 45, London Road, Leicester; Miss LOUISA GARRETT ANDERSON, M.D., 4, Upper Berkeley Street, W.

OPHTHALMOLOGY.

President: GEORGE ANDREAS BERRY, F.R.C.S. Edin. *Vice-Presidents:* WM. MARDON BEAUMONT, M.R.C.S., Bath; EDWIN COLLIER GREEN, M.R.C.S., Derby. *Honorary Secretaries:* ROBT. WALLACE WESLEY HENRY, M.D., 6, Market Street, Leicester; JOHN HERBERT PARSONS, F.R.C.S., 18, Stratford Place, W.

PSYCHOLOGICAL MEDICINE.

President: ALEXANDER REID URQUHART, M.D., Perth. *Vice-Presidents:* ROTHSAY CHARLES STEWART, M.R.C.S., Leicester; THEOPHILUS BULKELEY HYSLOP, M.D., London. *Honorary Secretaries:* ARTHUR MOLYNEUX JACKSON, M.B., Nottingham County Asylum, Radcliffe-on-Trent; JOHN WIGMORE HIGGINSON, M.R.C.S., Hayes Park Asylum, Hayes.

PATHOLOGY.

President: FREDERICK WALKER MOTT, M.D., F.R.C.P., F.R.S., London. *Vice-Presidents:* THEODORE SHENNAN, M.D., Edinburgh; Professor ARTHUR HAMILTON WHITE, L.R.C.P.I., Dublin. *Honorary Secretaries:* JOHN WILLIAM H. EYRE, M.D., Guy's Hospital, S.E.; THOMAS VILLIERS CROSBY, M.D., 91, St. Peter's Road, Leicester.

DENTAL SURGERY.

President: MORTON ALFRED SMALE, M.R.C.S., L.D.S., London. *Vice-Presidents:* EDWARD LLOYD-WILLIAMS, M.R.C.S., L.R.C.P., L.D.S., London; FRANCIS JOHN LANKESTER, M.R.C.S., L.D.S., Leicester; *Honorary Secretaries:* WM. ARMSTON VICE, M.B., L.D.S., 19, Belvoir Street, Leicester; JOSEPH GEORGE TURNER, F.R.C.S., L.D.S., 12, George Street, Hanover Square, W.

TROPICAL DISEASES.

President: RUBERT WM. BOYCE, M.B., F.R.S., Liverpool. *Vice-Presidents:* ANDREW DUNCAN, M.D., London; FLEMING MANT SANDWITH, M.D., London. *Honorary Secretaries:* GEORGE AYLWIN CLARKSON, F.R.C.S., 11, Southgates, Leicester; JOHN M. HENDRIE MACLEOD, M.D., 11, Harley Street, W.

The Honorary Local Secretary is:
ASTLEY V. CLARKE, M.D.,
37, London Road, Leicester.

THE COMPOSITION OF CERTAIN SECRET REMEDIES.

I.—SOME REMEDIES FOR EPILEPSY.

THE Editor receives frequently from members of the Association inquiries as to the composition of secret remedies advertised for the cure of various diseases, or more often for the cure of almost all diseases to which flesh is heir. In many instances it has not been found possible to return satisfactory answers, inasmuch as analyses of the remedies have not been published. In December last an abstract of a lecture delivered by Dr. Robert Hutchison at the London Hospital on so-called patent medicines was published in the BRITISH MEDICAL JOURNAL (vol. ii, p. 1654); in an appendix to this lecture some particulars were given with regard to a number of secret remedies which are more or less freely bought by the public. Dr. Hutchison, however, merely gave the names of the principal ingredients, and did not indicate the quantities in which they were present in the preparations he had examined.

We propose to publish from time to time, as opportunity occurs, articles giving the composition of various secret remedies largely advertised at the present time, and in the first place, at any rate, we propose to deal with such remedies in classes. For example, on the present occasion we present a number of analyses of secret remedies advertised for the cure of epilepsy. The examination has been made by an expert chemist and pharmacist, and wherever possible a quantitative analysis has been made, a course which will be followed in future articles. Any points of interest arising during the examination will be noted. The records of the actual experiments being of a purely technical character, will not be published at present, but they will be preserved for publication should such a step become necessary. The quantity of the remedy sold in each packet examined will be given, and the composition having been ascertained it will, as a rule, be possible to make an approximate calculation of the actual cost price.

We believe that it will be useful from many points of view for the profession to know the composition of those remedies with which so many patients nowadays drug themselves. It must be advantageous when called to a patient in whom anomalous symptoms are present to know the principal or active ingredient of popular secret preparations; for instance, a number of correspondents called attention recently to a puzzling rash produced by a certain pill which is just now largely advertised. We believe, also, that the publication will be of public service by showing that the claims so often put forward by the proprietors of these secret remedies to be the possessors of some drug unknown to the medical profession and extraordinarily efficacious are unfounded, and even ludicrous when the facts are exposed.

The results of the analyses of certain remedies advertised or sold for the cure of epilepsy selected for analysis are given

below. It may be added that a mixture or powder dispensed according to the prescription obtained by the analysis produced in each case a preparation closely resembling in appearance and taste that sold by the secret medicine vendor: further, the mixtures possessed the same specific gravity as the originals.

Ozerine.

"Ozerine" is prepared by I. W. Nicholl, Pharmaceutical Chemist, 25, High Street, Belfast.

It is described as an unfailing remedy for epilepsy, fits, or falling sickness. The bottle examined had no medicine stamp affixed.

The formula ascertained by analysis is as follows:

Potassium bromide, 120 grains.
Ammonium carbonate, 16 grains.
Burnt sugar, q.s. to colour.
Chloroform water to 1 fluid ounce.

Note.—Potassium bromide (111 gr.) and potassium chloride (9¾ gr.) were found by analysis, but as some potassium bromide containing a large percentage of chloride is now in the market the latter was not regarded as an intentional addition.

Dose.—One teaspoonful before breakfast and dinner, and two at bedtime.

Price.—4s. 6d. per 8-oz. bottle; estimated cost of contents, under 4d.

W. and J. Taylor's Celebrated Anti-epileptic Medicine.

Sole export agents, W. Lambert and Co., 173, Seymour Place, W.

This is said to be "simple, efficacious, harmless, and cheap." The effrontery of the following paragraph, extracted from a circular which was wrapped round the bottle, is amusing in view of the analytical results:

The principal drug is to be found in nearly every surgery, and yet not one doctor in a hundred would think of using it in Epilepsy, simply because he has no precedent to act upon—he is not directed by any of the great medical writers to prescribe or administer it in this disease; he knows not of its being so used, and he has not tried it himself, and thus he remains unaware of the one grand means of curing Epilepsy, even with the very drugs necessary at his elbow.

The formula ascertained by analysis is:

Tincture of iodine, ¾ minim.
Potassium bromide, 13 grains.
Ammonium bromide, 4 grains.
Water to 1 fluid ounce.

Note.—This mixture contains the proportion of iodine indicated in the above formula; it also contains traces of iodide. It is therefore probable that tincture of iodine is used in its preparation. It may, however, be prepared from an aqueous solution of iodine and potassium iodide.

Dose.—One teaspoonful three times a day.

Price.—2s. 9d. per 12 oz. bottle; estimated cost of contents, about 1d.

Osborne's Mixture for Epilepsy.

This mixture is stated to be prepared only by James Osborne, Medical Pharmacy, Ashbourne.

The following is an extract from a circular accompanying the bottle:

It scarcely ever fails to prevent the fits, loss of consciousness, convulsions, nervous twitchings, etc., of epilepsy, while at the same time it acts as a most valuable tonic; it allays irritation of the nervous system, purifies the blood, strengthens the frame, improves the general health, and helps to check the progress of disease on the intellectual faculties, and may be taken by the most delicate.

The formula ascertained by analysis is:

Potassium bromide, 166 grains.
Sugar, 48 grains (= syrup 3j).
Burnt sugar, q.s. to colour.
Peppermint water to 1 fluid ounce.

Dose.—One large teaspoonful morning and night.

Note.—Traces of fixed ammonia are also present.

Price.—2s. 9d. per 5 oz. bottle; estimated cost of contents, about 3d.

"Professor" O. Phelps Brown's Vervain Restorative Assimilant.

This preparation is recommended by the vendor "for the positive and speedy cure of epilepsy or fits, dyspepsia, indigestion, all derangements of the stomach and bowels, and for every form of debility, no matter from what source it may arise. An unequalled tonic and nervine." General Office: 61, Chandos Street, Covent Garden, W.C.

The formula ascertained by analysis is:

Decoction of Vervain (2 oz. to a pint), 4 fluid drachms.
Port wine, 1 fluid drachm.
Rectified spirit, 2 fluid drachms.
Water to 1 fluid ounce.

Dose.—One dessertspoonful three times a day before eating.

Notes.—The mixture contains 25.75 per cent. of absolute alcohol by volume, and reacts exactly like a specimen prepared according to the above formula towards lead acetate and lead subacetate. It also contains the same amount of extractive, and has the same specific gravity.

Price.—2s. 9d. per 6-oz. bottle. Estimated cost of contents, about 2d.

Trench's Remedy for Epilepsy and Fits.

This is made by Trench's Remedies, Limited, 33, South Frederick Street, Dublin. The package examined had no medicine stamp affixed.

Liquid Preparation.

The following formula refers to the liquid preparation which is supplied for consumption in the United Kingdom; a "concentrated form" is sent to the Colonies, and its composition is given later.

The formula ascertained by analysis is:

Potassium bromide, 70 grains.
Ammonium bromide, 10 grains.
Sugar, 72 grains (= syrup 3jss).
Fuchsin q.s. to colour.
Water to 1 fluid ounce.

Dose.—One teaspoonful in the morning and two at night.

Price.—3s. per 3 oz. bottle; estimated cost of contents about 1d.

"Concentrated Form."

This is supplied as a moist coarse brown crystalline powder in hermetically-sealed tins, with directions enclosed for dissolving in water. A quarter package (the smallest supplied) contains 11¼ oz., and this is ordered to be dissolved in one pint of warm water. Our mixing experiment shows that the resulting mixture measures 25 fl. oz. From the formula given below it will be seen that the mixture thus prepared differs from the one issued for home consumption in two important particulars: (*a*) ammonium bromide is absent, (*b*) the dose of potassium bromide is considerably larger than that of the total bromides in the latter. Is this a form of colonial preference? or is it that our brothers beyond the sea are more robust and hence proof against the depressing influence of potassium salts? The formula of the powder ascertained by analysis is:

Potassium bromide, 61 parts.
Moist brown sugar, 39 parts.

The calculated composition of the finished mixture is:

Potassium bromide, 120 grains.
Moist brown sugar, 77 grains.
Water to 1 fluid ounce.

Dose of Mixture.—One teaspoonful in the morning and two at night.

Price.—15s. per quarter package; estimated cost of contents, about 8d.

International Surgical Society.—The first Congress of the International Surgical Society will be held at Brussels in September, 1905, under the presidency of Professor Th. Kocher of Berne. The programme of discussions is as follows: (1) The Value of the Examination of the Blood in Surgery (to be opened by Drs. W. W. Keen of Philadelphia, Sonnenburg of Berlin, Ortiz de la Torre of Madrid, and Depage of Brussels); (2) The Treatment of Prostatic Hypertrophy (to be opened by Mr. Reginald Harrison of London, Dr. Rovsing of Copenhagen, and Dr. von Rydygier of Lemberg); (3) Surgical Interference in Non-cancerous Affections of the Stomach (to be opened by Mr. Mayo Robson of London, Professor von Eiselsberg of Vienna, Dr. Mattoli of Ascoli Piceno, Dr. Monprofit of Angers, Dr. Rotgans of Amsterdam, and Dr. Jonnesco of Bucharest); (4) The Treatment of Articular Tuberculosis (to be opened by Drs. Bier of Bonn, Broca of Paris, Bradford of Boston, Codivilla of Bologna, and Willems of Ghent); (5) The Treatment of Peritonitis (to be opened by Drs. Lennander of Upsala, Friedrich of Leipzig, Lejars of Paris, McCosh of New York, Krogius of Helsingfors, and De Isla of Madrid); (6) Diagnosis of Surgical Diseases of the Kidney (to be opened by Drs. Albarran of Paris, Kummell of Hamburg, Giordano of Venice, and Lambotte of Brussels). The proceedings of the Congress, attendance at which is open only to members of the Society, will be confined to the discussion of the questions on the programme. For the present, all communications relative to the Congress should be addressed to Dr. Ch. Willems, Delegate for Belgium, 6, Place St. Michel, Ghent.

THE WILLIAM CADGE MEMORIAL WINDOW.

Soon after the death of Mr. William Cadge of Norwich, a meeting of those who knew him best, both as a man and a surgeon, was held in Norwich, and it was resolved to perpetuate his memory in some permanent manner in connexion with one of the public buildings in the city in which he had so long dwelt. An appeal was consequently made to the profession, and subscriptions, which were limited to one guinea, were invited; the response was most gratifying. Among those who contributed were some of the most distinguished members of the profession in England, as well as many eminent surgeons on the continent of Europe, in Canada, and in the United States.

It was eventually resolved that the memorial should take the form of a stained-glass window in Norwich Cathedral, and this was unveiled on December 6th by the President of the Royal College of Surgeons of England, Mr. John Tweedy.

Among those who accepted the invitation to be present were the following:

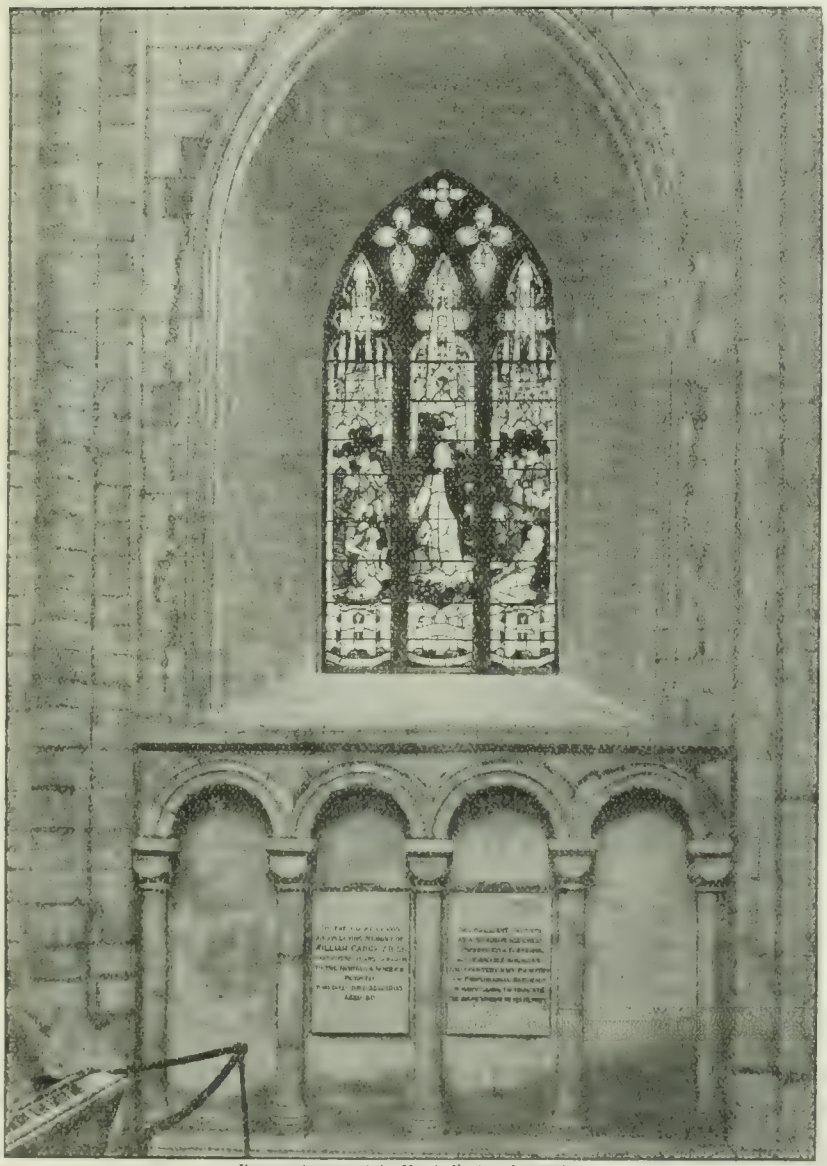
London.—Mr. Reginald Harrison, Mr. Pearce Gould, Dr. Robert Barnes, Mr. John Tweedy, President Royal College of Surgeons; Mr. Edgcombe Venning, Mr. C. A. Ballance, Mr. Richard Barwell, Mr. A. E. Barker, Mrs. Scharlieb, Mr. G. H. Makins, Mr. P. J. Freyer, Dr. S. Monckton Copeman, Mr. Douglas Harmer, Professor Ernest White, Dr. E. A White, Dr. F. J. Harvey Bateman, Mr. F. M. Evans, Dr. Charles Firth (Gravesend).

Norwich.—Sir Peter Eade, Dr. Beverley, Dr. Barton, Dr. Burton-Fanning, Dr. Long, Mr. Williams, Mr. Robinson, Mr. Burton, Mr. Donald D. Day, Mr. Ballance, Mr. W. H. Day, Mr. Charles E. Muriel, Mr. Joseph Allen, Mr. F. Long, Mr. Nance, Mr. Morse, Dr. Fielding, Dr. Watson, Mr. Preston, Dr. Cooper Pattin, Mr. H. F. White, Mr. E. W. Everett, Mr. H. Watson Turner, Dr. Andrews, Dr. Crook, Dr. Spowart, Dr. McWilliam, Captain Earnshaw, M.B., Dr. Thomson, President Norwich Medical and Chirurgical Society.

Norfolk.—Mr. Mayo, Mr. W. E. Wyllys, Dr. Ryley, Mr. Lettis, Dr. H. Collier, Dr. H. Blake (Yarmouth); Mr. Marriott (Swaffham), Mr. Perry (Reepham), Dr. McKelvie (Blofield), Mr. D. W. Hughes (Wymondham), Dr. Pembroke Minns (Thetford), Mr. Hugh Taylor (Wroxham), Mr. Fenn (Diss), Mr. Gillett (Brooke), Mr. W. Carr (Ditchingham), Mr. Harris (Thetford), Dr. Lowe (Wymondham), Dr. Mallins (Watton), Mr. Lack (Hingham), Mr. E. G. Ellis (Attleborough), Mr. Griffith Williams (Mattishall), Dr. Owens (Long Stratton), Mr. Prior (Loddon), Dr. Plowright (Lynn), Dr. John Bateley (Gorleston), Mr. H. Back (Acle), Dr. John Skrimshire (Holt).

Suffolk and Essex.—Mr. F. Worthington, Mr. H. B. Walker, Mr. Shann, Dr. Muir Evans, Mr. A. Marshall, Dr. Berry (Lowestoft); Mr. Crowfoot (Beccles), Mr. Morris (Halesworth), Dr. Edgar Barnes (Eye), Mr. G. S. Elliston, Mrs. Mildred Sims (Ipswich); Mr. R. H. Lucas (Bury St. Edmunds), Dr. J. A. Ball (Stradbrooke).

Other Parts of England.—Mr. F. Page (Newcastle), Mr. H. Littlewood (Leeds), Dr. F. A. Mills (Cookham), Professor Clifford Allbutt, Professor Howard Marsh, Mr. Joseph Griffiths (Cambridge).



From a photograph by Mr. A. E. Coe (Norwich).

The ceremony took place at 3 p.m., when a procession of Mr. Cadge's professional brethren, accompanied by the Cathedral body, took their places in the choir. A short religious service followed, a hymn was sung, and prayers said by the Dean of Norwich. The Dean and Chapter then preceded the President of the Royal College of Surgeons and the members of the medical profession to the north transept.

Mr. W. H. Day, representing the donors, said: Mr. Dean,—In the name of a large number of subscribers for a memorial to the late William Cadge, some of whom bear honoured names in countries other than our own, whilst all are members of that great profession to which he belonged, and to which he devoted all the energies of his long and useful life, I present unto you this window, which, with your sanction, they have erected to his memory, to the glory of God, and for the adornment of this His house.

The Dean then said: Mr. Day,—In the name of the Dean and Chapter of this Cathedral. I accept this offering, and give you the assurance that we will guard it with all care and fidelity.

Dr. Beverley then addressed the President of the Royal College of Surgeons of England in the following terms: Mr. President,—I pray you to unveil this window as a memorial of the late William Cadge. May it ever be regarded as indicating, though inadequately, the sympathetic strength of character, the affectionate esteem in which he was held by his professional brethren, and their appreciation of his eminence in surgical science.

The President of the Royal College of Surgeons then unveiled the window, and accompanied by the Dean and Chapter and others returned to the choir. The President then delivered the following address:

The occasion which brings us together is at once sad and consolatory. We mourn the loss of a distinguished professional brother, and we assemble to commemorate his worth. The memorial window—the unveiling of which we inaugurate with all the solemnity and circumstance of religious ceremonial—has, with the sympathetic sanction of the Dean and Chapter of this ancient Cathedral, been inserted and dedicated to the loving memory of William Cadge by his professional brethren in many lands. Here it will take its place among

other records and monuments commemorative of noble lives and noble deeds which this hallowed building contains, and will keep the good name of William Cadge ever fresh in the minds of the citizens of Norwich, and will be an abiding testimony to the esteem in which he was held by members of his profession throughout the world.

It is, indeed, an agreeable thought that contributors to this memorial are not the professional friends and associates of Mr. Cadge in East Anglia only, nor are they entirely medical men in the United Kingdom, but they include physicians and surgeons, some of them of highest eminence, practising in the Colonies and in many foreign countries: in Australia and in Canada, in India and in the West Indies, in the United States of America, in France and in Germany, in Italy and in Sweden, in Belgium and in Russia. Greater honour can no man have than this: That "his brilliant talents as a surgeon, his great sympathy with suffering, his invariable kindness and courtesy," gained for him the good opinion and confidence of his companions and his peers while he lived and their affectionate remembrance in death.

This is not the time, nor is this the place, to attempt an appreciation of the technical side of Mr. Cadge's standing as a surgeon, but it may be not inappropriate to notice its personal and ethical aspects. The great French surgeon, Guy of Chauliac, writing in the early part of the fourteenth century, and enumerating, after Arnaldus, of the thirteenth century, the requisites of a surgeon, says: "The surgeon should be kindly disposed; he should be bold when sure, cautious in danger; kind to the sick, friendly with colleagues and associates; chaste, sober, pitiful, and compassionate; not covetous, and not greedy of gain." How completely Mr. Cadge fulfilled all these moral and intellectual requirements you all know.

There is another phase of his professional activity to which I may be allowed briefly to refer. In the Council of the Royal College of Surgeons of England, where it was my privilege to know him best, Mr. Cadge was always zealous in everything that concerned the dignity and the advancement of surgery and the welfare of the surgical profession. He was wise in counsel, temperate in judgement, and, though himself the soul of honour, he ever leaned in matters of discipline and censure to mercy's side. His experience in affairs, his knowledge of men, his insight into character, his familiarity with the trials and temptations, the anxieties of professional life, taught him to make a large allowance for human frailty. In judging of the character and of the conduct of men he never forgot that

> What's done we partly may compute,
> But know not what's resisted.

But Mr. Cadge was not a surgeon only. He had a due sense of his civic responsibilities and shared the interests of the community in which he lived, though his public work may not have loomed large in the public eye. He had none of the "vanity of variety." Constitutionally of a reserved disposition, he shrank from everything that might suggest ostentation or obtrusion, or even prominence. Rather in secret did he delight to practise "the luxury of doing good." Simplicity, sincerity, and strength were his characteristics. There was no finesse, no reservation, no balancing of self-interests, no wavering in anything Mr. Cadge said or did. He thought clearly and he acted deliberately, fearlessly accepting the full responsibility of his acts and deeds.

"Large was his bounty and his soul sincere." Whatever his hand found to do he did it with his might. All the powers and faculties of his mind and body were devoted to the service of God and humanity. His knowledge, his experience, his skill, were freely at the disposal of all who stood in need of them and he spared neither himself nor his substance in promoting the health and happiness and melioration of his fellow men. Generous by nature, he acquired amid the struggles of a strenuous life the *habit* of benevolence Good will co-operated with good intent: and well-doing became almost an instinct. Unceasingly he cultivated all the charities of life, as citizen and friend, philanthropist and physician.

William Cadge has fulfilled his destiny on earth; he has finished "the work given him to do." He rests from his labours, and, leaving behind him an example of high purpose and worthy endeavour, has joined the glorious company of whom it is written: *Opera illorum sequuntur illos*.

The Dean dedicated the window by prayer, the choir sang an anthem, and the congregation then sang a hymn; after this the blessing was given and the congregation dispersed.

Later in the afternoon the medical men present were received at the Norfolk and Norwich Hospital by Dr. David Thomson, President of the Norwich Medico-Chirurgical Society, by whom they were entertained at tea; subsequently they attended a clinical meeting of the Society.

The window is situated on the west side of the north transept. It consists of three lights with tracery. The stonework belongs to the Decorated period, and was probably inserted in the deeply-recessed Norman bay about the middle of the fourteenth century. The subject of the painted glass is Christ healing the sick. The design is after the picture by Plockhorst, the German artist, and is entitled "Come unto Me." It is carried through the three lights with architectural canopies above and bosses below. In the base of the centre light there is placed, on a scroll, the text, "They that are whole need not a Physician, but they that are sick." The window is the work of Messrs. Burlison and Grylls. The memorial tablets in the Norman arcading beneath the window bear the following inscription:

To the Glory of God
and in Loving Memory of
William Cadge, F.R.C.S.,
Forty-nine years Surgeon
to the Norfolk and Norwich
Hospital,
Who died June 25th, 1903,
Aged 80.

His brilliant Talents
as a Surgeon, His great
Sympathy with Suffering
His invariable Kindness
and Courtesy have prompted
his Professional Brethren
in many lands to dedicate
the above Window to his Memory.

NOTES ON NEW REMEDIES.

Mesotan.

Mesotan, which is the methoxymethylester of salicylic acid, has been introduced as a local application in the treatment of acute rheumatism. It is a liquid preparation, with a slight but not unpleasant odour. It is decomposed by water but forms stable mixtures with oils, and should be used mixed with an equal volume of olive oil. It will be seen that mesotan is chemically related to oil of wintergreen—the methylester of salicylic acid—but fortunately it does not possess the penetrating odour of the latter.

Helmitol.

Helmitol is a compound produced by mixing hexamethylene-tetramine (urotropin) with methylene citric acid. The latter is a curious compound obtained by heating together paraformaldehyde and citric acid. The properties of urotropin are now well known, and it has been largely used as a urinary antiseptic on account of the formaldehyde which appears in the urine after its administration. The quantity of formaldehyde liberated from urotropin is often very small, hence the object of adding methylene citric acid which liberates formaldehyde much more rapidly both in alkaline and acid solutions. A dose of helmitol is also claimed to render the urine antiseptic for a much longer period than is the case with urotropin. The dose of helmitol is stated to be 15 gr. (1 gram) three times a day; it is very soluble in water, and may be given in solution well diluted. So far as dispensing is concerned it behaves like citric acid, and should not be prescribed with alkalies or carbonates.

Citarin.

Citarin is the sodium salt of methylene citric acid which has been mentioned above in speaking of helmitol. It is said to have been succes-fully used in the treatment of gout. Its employment is based on the fact that a compound of formaldehyde and uric acid is now known which is easily soluble in water and in dilute acids. Whether this compound is actually formed under the conditions which obtain when citarin is administered is open to question, but certainly the latter readily liberates formaldehyde. The usual dose is 30 gr. (2 grams) three times a day; it is best dispensed in powders or cachets, as the aqueous solution is apt to undergo decomposition with liberation of formaldehyde if kept for any length of time.

The Bayer Company, Limited, 19, St. Dunstan's Hill, E.C., have sent samples of the above (mesotan, helmitol, and citarin).

Vaccination in Abyssinia.—Dr. De Castro, Physician at the Court of the Emperor Menelik, has presented to the Italian Minister for Foreign Affairs a report, in which he states that the practice of vaccination has recently been extensively adopted in Abyssinia.

AMBULANCE DOGS.

Owing to the increased range of modern firearms the duties of the ambulance corps of an army have become much more onerous. In order to assist them to find the wounded, dogs have of late years been largely employed by Continental armies. The idea was inspired by the monks of the St. Bernard Hospice, who, eighty years ago, thought of using dogs to rescue travellers lost in the snow. Owing to the introduction of long-range weapons as a means of attack and defence the area of a modern battle field is greatly extended, and the wounded may fall in places necessarily most difficult of access—declivities, woods, and so on; the work of the stretcher bearer has consequently become more difficult.



Wounded using first-aid bandages from equipment borne by ambulance dog.

Wounded men who, through loss of blood and weakness, have not the strength to call for assistance, are more and more likely to be overlooked, or found only when too late, especially as in most modern battles fighting takes place at night. The stretcher bearer, however capable and devoted, is only human, and the strain of a long campaign is apt to blunt his feelings, and render him callous at times in his work. Then, also, the number of wounded is much larger, the dressing-stations farther apart than formerly, and the distances to be traversed correspondingly greater. The duty of the ambulance dog is to aid the whole ambulance work, but more especially the individual stretcher bearers whose duty it is to scour the field after an action. The dogs will be specially useful to discover the wounded in difficult or almost inaccessible ground, and by night, for they work in part by scent.



Ambulance dog barking to call attention of stretcher-bearer party.

With the object of rendering first aid to those men who are not mortally wounded the dog is equipped with a waterproof canvas saddle, with a pocket at each side. In these pockets are placed eight triangular bandages, while slung round the dog's neck is a small cask of brandy or rum, and a bell for use after dark. A biscuit for himself is a wise provision. If the wounded man is strong enough, he may take the bandages and temporarily bind his wounds, and he can also help himself to stimulants. Supposing him to be too weak to take advantage of this temporary assistance, the dog barks loudly until he attracts the notice of the search party.

Major Richardson, of Carnoustie (late 45th Regiment), has done a good deal towards popularizing the use of dogs for ambulance work. The dogs he uses seem to be chiefly collies, crossed with such breeds as retrievers, setters, etc. Pure-bred dogs are found to be unsuited for the work, and bloodhounds are also useless. It is a fact, however, that those men who have bleeding wounds are more easily discovered by the dogs employed than others, human blood being an incentive to the animals. Major Richardson has experimented for upwards of six years with some forty breeds and crosses, and has formed definite conclusions as regards the best cross, but his opinion on this point has not been made public. The Germans are still experimenting with a view to coming to a definite conclusion, and are carrying out their breeding operations on an extensive scale.

Major Richardson's method of training is also kept private, but it lasts about a year. He prefers to carry it on daily with troops, and works his dogs within an area of about forty yards. The dogs may be fed, as in the German army, from the refuse of regimental cookhouses. When on the march, dog biscuits may be used. The dogs are delicate, and many of them die before their training is ended. The price of a trained animal is, we believe, about £20.

As has been said, many foreign armies employ them. In Germany, in the regular army, they are attached to a number of regiments — the Jaeger battalions and others—in addition to the ordinary sentry dogs. They were used in the expedition to Pekin with very good results, and are now being employed with General von Trotha in the Herrero expedition. In Germany, also, most of the volunteer medical staff corps or Sanitäts Abtheilungen and Sanitäts Kolonnen are provided with ambulance dogs who attend the annual trainings. In Austria a large training establishment exists; in France some regiments have nearly thirty; Italy, Switzerland, Holland, and America also employ them. In the present war Russia made purchases everywhere to supplement her war dogs, and a large number are attached to General Kuropatkin's army.

The British War Office does not support the movement; but this year, after the Russians had gone to Major Richardson for dogs, the War Office requested him to attend the camp at Stobs for the autumn manœuvres, and he was attached to the 42nd Black Watch. General Sir Charles

Tucker, commanding in Scotland, put the dogs through very severe tests, and as a result recommended their adoption, but the War Office has made no move. Major Richardson has been trying to arouse the sympathy and interest of the War Office for the past seven years, but he need not be discouraged—seven years counts as but one day in a conservative country like ours; if once, however, Great Britain is brought to feel quite sure that ambulance dogs do good work on the battle-field, every other dog in the country will be trained and equipped for the fray. We are slow to move, but we never do things by halves.

MEMORIAL TO SIR WILLIAM BANKS.

PROPOSED LECTURESHIP IN LIVERPOOL UNIVERSITY.

ON the afternoon of November 29th a large gathering, representative of many interests, was held in the Town Hall, under the Presidency of the LORD MAYOR, for the purpose of taking steps for the establishment of a fitting memorial to the late Sir William M. Banks.

A letter was received from Sir Dyce Duckworth, who wrote: "I think it is due to the labours, professional, academic, and civic, no less than to the fine character of the late Sir William Banks, that Liverpool citizens should heartily agree to institute some permanent memorial of him. As a son of the 'good old town," and as one of the oldest friends of the man we lament and sadly miss, such a movement has my cordial sympathy. Hardly any one in our profession since the time of Dr. Currie, at the end of the eighteenth century, himself a vigorous and learned Scot, has done more to encourage the pursuit of higher culture and to project with success so many measures for its accomplishment in Liverpool. I am strongly of opinion that the city owes Sir William Bank's memory such a recognition which it well knows how to bestow."

The LORD MAYOR said he was pleased to give official recognition to the scheme. It was his good fortune to be on friendly terms with the late Sir W. Banks, one whose life was not spent simply in the interests of his noble profession, but was absolutely given up to the benefit of his fellow men. There was ever present the feeling with him, the feeling of doing something original, something better, not for personal aims, but in order to benefit the great masses of the people, and with the aid of scientific knowledge to do something for the benefit of posterity. He would be remembered not merely for his work at the Infirmary, but for his noble action for the University. He served the city also in other ways; he was a magistrate, and a dear friend to not a few present, and he had left his mark upon Liverpool, and Liverpool at large would like to mark its respect for the memory of so genial a friend, so wise a counsellor, and noble a worker in the cause of humanity. His example would be an incentive to many; the student of to-day would remember it as long as he lived, and the rich and poor of to-day would bear it in mind as long as life lasted. He moved:

> That a memorial of a permanent character be established to commemorate the name and the services of Sir William Mitchell Banks.

The resolution was seconded by Vice-Chancellor DALE, who said that, on coming into contact with Sir William Banks, the kindness and warmth of his heart was felt at once. Beyond that there was his wisdom, and the gift, not always given to the wise, of knowing and seeing what other people, less wise, would feel and think about any subject of practical importance. He was infinitely proud of his great profession. Some men had done good and lasting work, and yet felt as if they might have done as good work elsewhere; but Sir William Banks was essentially a surgeon—he could not have been anything else, and he would not have been anything else if he could. He was proud, and rightly proud, of his skill for its own sake; he enjoyed the sense of being able to do his work well, and the sense of power which came from the consciousness of work well done; but beyond that he valued his skill for its results—for what it could do in alleviating suffering, in restoring strength, and prolonging life, and the happiness of life. Then there was his work in the Royal Infirmary and the invaluable service he rendered to the College and University which grew out of the infirmary. He recognized that medical knowledge which did not advance must recede; that as theory, when divorced from practice, became futile, so practice, when divorced from study, became barren. With that conviction, he laboured incessantly, giving his thought and time to the work of building up the University. The city owed him a great debt, and if, in the memorial they were about to establish, they could link together these three great elements—the profession of medicine, the infirmary, and the University—they would create a memorial worthy of the man whom they had to commemorate.

The resolution was carried unanimously.

Sir EDWARD RUSSELL moved:

> That a committee be formed to consist of the persons present at this meeting, with power to add to their number, for the purpose of collecting subscriptions and determining the form that the memorial shall take; the Lord Mayor ex officio to be chairman; the Town Clerk and Professor Paterson to be honorary secretaries, with Mr. P. F. Corkhill, honorary assistant-secretary; Mr. James H. Simpson and Mr. A. G. Jeans to be honorary treasurers.

In the course of remarks, he said that Sir William Banks was a man remarkable for almost every quality which could endear him to his fellows, and his most beautiful quality was his winning manner, a pleasant ease and friendliness, and wit in conversation and intercourse which rendered him always a delightful companion, and induced every one to appreciate at the very highest all the services he rendered, and to co-operate with him. As to the nature of the memorial, he suggested that a lectureship should be established, permanently identified with Sir W. Banks's name, and associated with the objects of medical education which he had in view.

Dr. CARTER, in seconding, said that the medical profession wished to be identified with the movement. He spoke feelingly of his close personal association with Sir William Banks, whose friendship, geniality, and wit he greatly valued.

The subscription list already amounts to about £500 and includes a handsome donation from Sir Henry Irving.

THE PREVENTION OF CONSUMPTION.

DEVONSHIRE.

A MEETING, under the chairmanship of Sir John Shelley, was held at Exeter on November 28th to discuss the advisability of Devonshire being declared a hospital district with a view to the erection of sanatoriums for the treatment of phthisis. It was attended by special representatives of various public bodies and by the chairmen, medical officers, and clerks of local sanitary authorities, and resulted in a request being formulated asking the county council to establish a consumption hospital, in view both of the cures which such an institution might obtain in early cases and of the effect that it would have in educating people in the subject and in getting rid of the idea that consumption was necessarily a fatal disease.

CANADA.

Montreal and the Spitting Nuisance.—The City Council of Montreal has decided to adopt a by-law prohibiting spitting on sidewalks and in public places, with the object of preventing the spread of consumption. The council, unlike many of our legal luminaries here, has no difficulty in defining a place for the purposes of the enactment. It is provided that "no person shall spit upon the floor of any railway-car, street-car, or other public conveyance, or upon the floor of any public building, theatre, church, opera-house, music-hall, or hall used for public meetings, railway or steamboat stations or waiting-rooms or other public hall, building, room, or place, or upon any platform surrounding, in front of, or in the immediate vicinity of any such place, or upon any sidewalk or covered way within the limits of the City of Montreal."

Ontario.—A few years ago the Legislature of the Province of Ontario passed an Act providing that when counties or municipalities or groups of counties or municipalities desired to erect and maintain hospitals for their consumptive poor the Government should furnish aid toward the erection and maintenance of these institutions. The first step in this direction was taken recently when representatives of five leading counties in Ontario met in conference at Galt. Dr. Radford, of Waterloo County, who presided, stated that there are about 40,000 consumptives in the Dominion, and about 15,000 in the Province of Ontario. The deaths average about 6,000 throughout Canada annually; in Ontario last year they numbered 2,694; in his own county of Waterloo they numbered 19. It was agreed that it was necessary that a sanatorium should be erected for the five counties of Brant, Oxford, Waterloo, Wellington, and Perth. The representatives undertook to bring the matter before the county councils without delay.

THE WELLCOME RESEARCH LABORATORIES AT KHARTOUM.

The first report of the Wellcome Research Laboratories at Khartoum, issued recently, covers the work done from the beginning up to February 1st, 1904, and appears in the form of a handsome quarto volume of eighty-one pages, illustrated by many excellent plates, coloured and uncoloured, in addition to numbers of photographs and engravings.

These laboratories were established at the Gordon Memorial College, Khartoum, a photograph of which is reproduced upon this page (Fig. 1), by Mr. H. S. Wellcome, of London, as a free gift to the Government of the Sudan. The diverse but allied objects which it was intended they should fulfil are: (1) To promote technical education; (2) to promote the study, bacteriologically and physiologically, of the tropical disorders, especially the infective diseases of both man and beast, peculiar to the Sudan, and to render assistance to the officers of health and to the clinics of the civil and military hospitals; (3) to aid experimental investigations in poisoning cases by the detection and experimental determination of toxic agents, particularly the obscure potent substances employed by the natives; (4) to carry out such chemical and bacteriological tests in connexion with water, food-stuffs, and health and sanitary matters as may be found desirable; (5) to undertake the testing and assaying of agricultural, mineral, and other substances of practical interest in the industrial development of the Sudan.

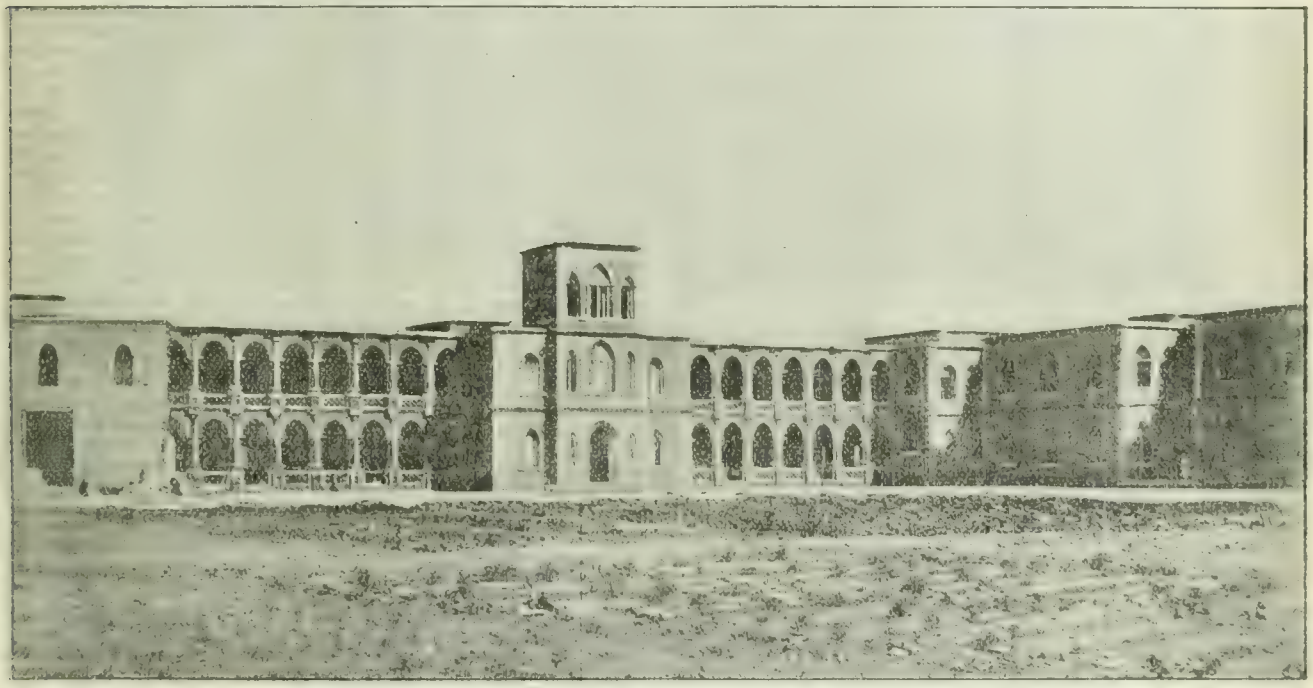


Fig. 1.—The Gordon Memorial College, Khartoum.

This is a broad and comprehensive scheme of work, and the laboratories seem to have been organized upon a corresponding footing, so far as premises and initial equipment are concerned.

They occupy the first floor of the east wing of the College, and a general idea of the arrangement of the rooms will be gathered from the accompanying plan (Fig. 2). It will be noted that the laboratories proper consist of a suite of five rooms, and that it is possible to pass from one to the other of the principal rooms without going into the corridor; an arrangement which must be convenient for the workers. All of them are of commodious size, the two larger being 26 ft. long by 21.6 ft. broad. They are well lighted, and the fact that the windows face the east would appear to be the only permanent structural disadvantage which the rooms possess. At one end of the suite is the "laboratory kitchen"—a room devoted to rough work and to the preparation of cultural media; adjoining it is the room for bacteriological research. A smaller room, used for photographic work and cold storage, divides the chemical laboratory from the bacteriological department, the two being connected by a short private passage at the back of the dark room. Finally comes the laboratory museum, which is somewhat larger than the preparation room at the opposite end. The sequence in which the rooms are arranged is both logical and convenient, the work beginning at one end, and the preservation and exhibition of the finished product being provided for at the other.

These rooms complete the research laboratories proper, but on the other side of the corridor are two more rooms, one being the office of the Director of the Laboratories, and the other the General and Economic Museum, which is in his charge. Besides this there is, elsewhere in the building, a library well stocked with scientific periodicals, to which the occasional publications of Government laboratories elsewhere are being added as they appear.

The laboratories have an enclosed garden of their own, intended to facilitate the study of the therapeutic and poisonous plants used by the natives. It contains a water-tight tank into which the laboratory waste water flows, so that the latter, if desirable, can be disinfected.

Of the fitting and equipment of the interior some idea may be gained from the photograph of one end of the bacteriological room reproduced in Fig. 3. Water is provided from a special well, blow-pipe gas and ordinary artificial light is supplied by an acetylene gas generator, and the woodwork is all either in English oak or in Indian teak, baked at a high temperature for several months in order to fit it for use in the hot, dry climate of Khartoum. All the scientific apparatus was selected with great care, and appears to have been provided on a very liberal scale.

The Director, Dr. Arthur Balfour, formerly of Edinburgh, has at present as staff only a laboratory assistant, Mr. John Newlove, who is responsible for most of the excellent photographs with which the report is illustrated, and two natives. Considering the scope of the work and the size of the country which the laboratories are designed to serve, it is not surprising that he feels that the laboratories are somewhat undermanned. The Government, however, has already promised to add to the staff a chemical assistant specially versed in agricultural, economic, and toxicological work, while Mr. Wellcome has undertaken to provide a trained observer to work outside the laboratories, collecting blood films, parasites, noxious insects, and anything else bearing on disease in the Sudan which may serve to keep the laboratory supplied with research material. Dr. Balfour, too, appears to have enlisted the sympathies of several medical, veterinary, and other officers employed by the Sudan

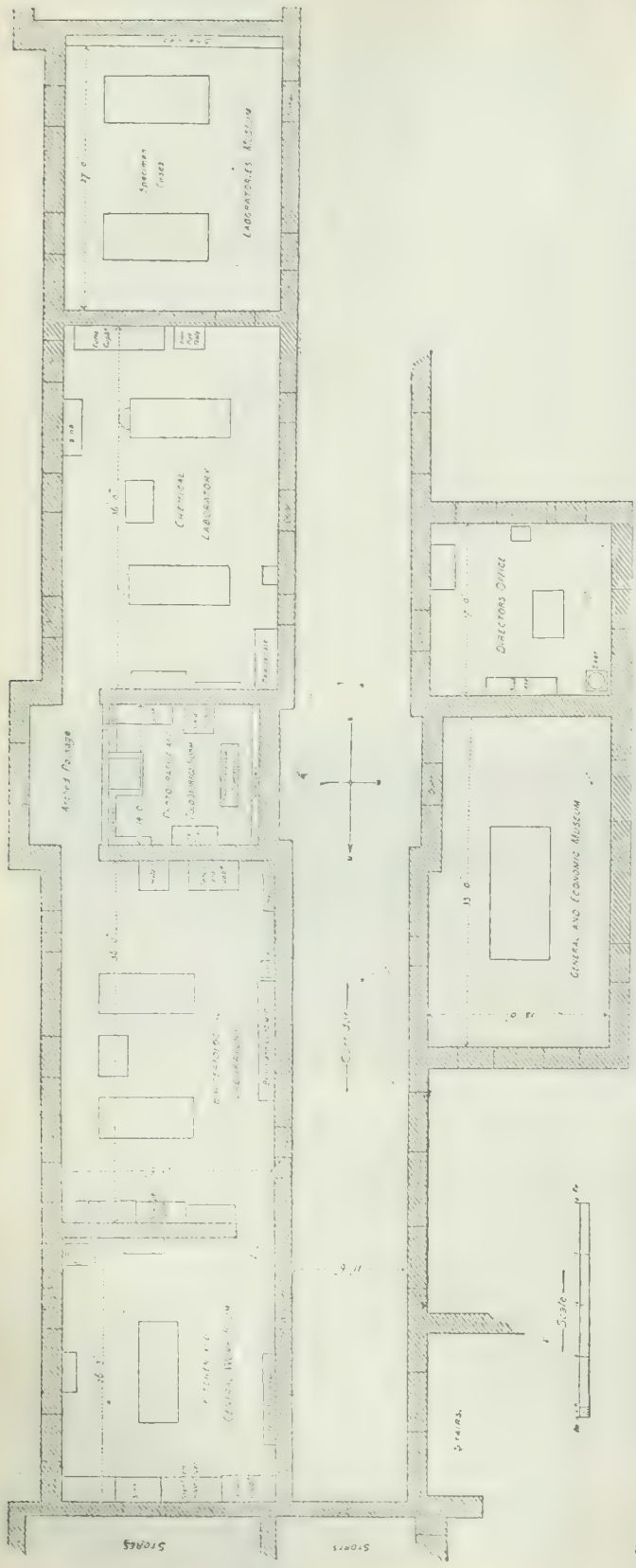


Fig. 2.—Ground plan of the Wellcome Research Laboratories.

Government, and to be getting a good deal of valuable assistance from them as collectors and inquirers. Moreover, some of the army medical officers stationed at Khartoum work at times in the laboratory at blood-film and allied work.

Mosquito Destruction.

Dr. Balfour arrived in Egypt late in 1902, but spent the first few weeks in preparations, so that the beginning of the work of the laboratories dates from February 1st, 1903. He had heard before arriving that mosquitos did not abound in Khartoum, and that malaria and *Anophelins* practically did not exist. He found this to be far from correct. Khartoum, though by no means a typically malarious place, is a garrison town and inhabited by troops and natives, most of whom have resided in infected regions. It is, moreover, a great centre, and persons infected with malaria are constantly arriving. Although, owing to the extreme dryness of the climate, marshes do not exist, and pools quickly dry up, yet there are hundreds of open wells and sakia pits all over the town, a certain number of more or less temporary pools which are left by the falling Nile (see Fig. 4), and a number of permanent pools in the gardens of the Palace; while the steamers which frequent the town also form breeding grounds and constantly bring supplies of foreign mosquitos of certain varieties from up and down the Nile. In any case there is a great deal of malarial fever to be dealt with among the inhabitants, civil and military, and though it may be open to question whether much of it is acquired locally, it is certain that there are at least three varieties of mosquito, recognized to be facultative disease-bearers, present in great number. These are the *Culex fatigans*, known to be capable of disseminating filariasis (cases of which, however, are not common), *Stegomyia fasciata*, and *Pyretophorus costalis*, a malaria-bearing Anophelin. The former were found in great numbers everywhere, and the latter only in certain places, such as the irrigation pools in the Palace gardens, in garden tanks along the river front, in some sakia pits, in the pools left by the falling Nile, and in a few wells. This Anophelin seemed to require plenty of light, to be fastidious in its habits, and never to go far from vegetation, and it was never found to breed in the steamers; to the presence of frogs in its pools, however, it seemed indifferent. The houses found infected by it were usually those in the immediate neighbourhood of the Palace gardens. The *Stegomyia*, more numerous than the Anophelins, but much fewer than the *Culex fatigans*, were chiefly found along the riverside. It seems questionable if it breeds much in the town itself, but it was found to breed with some frequency in the zeers, or native filters (see Fig. 5). It is, however, the steamers which are chiefly responsible for its presence in the town, as upon them it lives and breeds freely.

Having examined the ground and the existing conditions, Dr. Balfour came to the conclusion that it was worth while to undertake mosquito destruction, and after consultation with the civil and military authorities formed and set to work a small mosquito brigade upon the lines laid down by Major Ross. It was headed by Mr. Newlove, to whose zeal and energy Dr. Balfour gives praise, and did its work as follows: The party started out in the morning and worked steadily back from the riverside, examining every collection of water; in the afternoon those marked as infected were again visited and treated with oil. The average water surface to be covered in the wells was 12 to 13 sq. feet, and a pint of oil was found fully sufficient to form a thick film. Dr. Balfour estimates that about six hours is long enough to kill all larvae and pupae, but in practice the owners of the wells or other collections of water were not allowed to disturb the films or use the water for forty-eight hours. Ross recommends refined petroleum or eucalyptus oil, but at Khartoum crude oil was used; the well water is little used for drinking purposes, and wells are so numerous that the owners can always get the water they require for washing and other purposes elsewhere during the short time that their own water is under treatment. The work was begun in September, and carried on steadily for the remaining months of the year, only a small staff being necessary. Three maps are given in the report, which show the precise condition of the town as regards infected and uninfected collections of water at the beginning, in the middle, and at the conclusion, for the time being, of the work of the brigade. In addition, tables are given showing the temperatures prevailing and the amount of wind and its average velocity, factors which all influence the breeding of mosquitos. The campaign seems to have been very successful, and the percentage of infected water supplies to have been reduced from about 50 to 14 per cent.

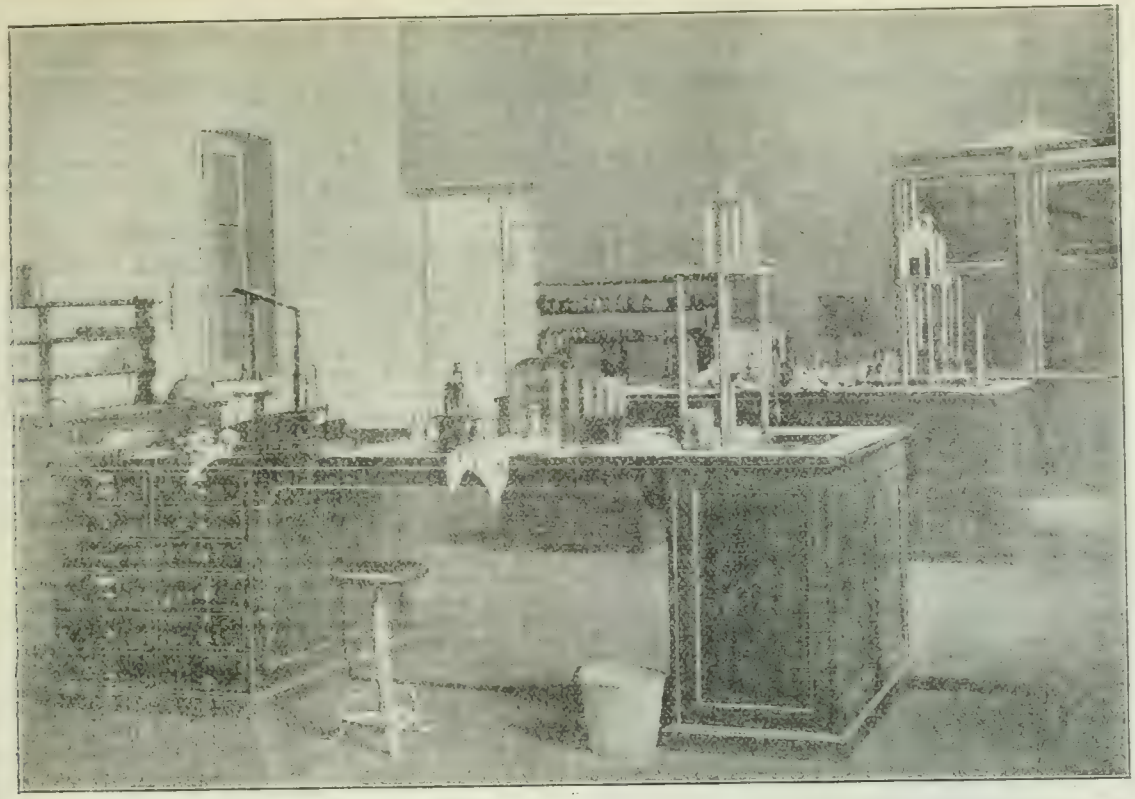


Fig. 3.—A corner of the Bacteriological Room.

Work, however, was not confined to the town; the importance of the river steamers as a source of infection was recognized to be great, and an endeavour was made to get those in charge of them to take the matter in hand. At first it was not easy to get attention paid to the matter, but later on the work seems to have been taken up with a good deal of energy. Besides this, mosquito destruction was started in outlying stations. The report also contains a map showing the general distribution of *Culicides* along the Blue and White Niles, and the Sobat, Baro and Pibor rivers, and tables are given of the specimens found during a river expedition which Dr. Balfour had an opportunity of making. Some specimens he found were infected by a small red parasitic tick, which, however, did not appear to affect their well-being. This part of the report also contains tabular results of investigations into the destructive power, as regards *Culices* and *Anophelins*, of di-amido-ozo benzine, a yellow powder which is very fatal to fish, even in dilute solution. Dr. Balfour does not seem inclined to recommend its use; he finds it unstable in solution, while the results he obtained varied.



Fig. 4.—Pools left by the falling Nile in which Pyretophorus costalis breeds.

General Work.

As for the routine work of the laboratories, it is sufficient to point out that though no very notable results have to be chronicled, almost all divisions of the programme given at the beginning of this notice have been attacked. Some account, too, is given of observations on noxious insects other than mosquitos, and also of the curious aphis which gives rise to the production of hydrocyanic acid in dura grass in an amount dangerous to cattle.

An interesting preliminary classification of the diseases met with in the neighbourhood of Khartoum is also furnished; the most striking point about it is that many tropical diseases which are very common at corresponding latitudes elsewhere seem to occur infrequently, or to be altogether absent. In this relation the warning given by Dr. Balfour, to the effect that the factors which go to make up a climate differ so materially in various parts of Northern Africa that generalizations respecting it are out of place, is of importance.

Tuberculosis appears to be common among the native Sudanese but principally attacks the women and children. The dry, hot climate with its limited range of temperature, would appear to be unfavourable to the B. tuberculosis, and the ravages of this organism seem to be referable to the fact that the native Sudanese dwell in mud huts especially constructed so as to exclude all light and to admit a minimum of air.

The most curious note, however, is with reference to syphilis. The prevalence of this disease in its very worst forms is remarkable. It is said that when the Dervishes ruled a man was not regarded as a man until he had developed the

disease; its acquirement, in short, was considered a kind of honour. No serious attempt, therefore, appears to be made by the natives to cure or avoid it, and the best hope lies, Dr. Balfour thinks, in the fact that the Sudanese are exceedingly fond of their children, and may regard matters differently when taught to understand that it is the children who are the eventual sufferers.

Little is said of surgical affections, but a note is made that cases have been observed which tend to show that natives who have never lived in contact with white men are not immune to carcinoma and cancer.



FIG. 5.—The zeer, or native filter, a common breeding-ground of stegomyia.

The report concludes with an able and well-illustrated paper by Mr. F. V. Theobald, in which the specimens of mosquitos and other insects received from the Wellcome Research Laboratories and other sources in Egypt, the Sudan, and Abyssinia are described and classified. They include several hitherto undescribed species; among others is a new anopheles to which Mr. Theobald has given the name *Anopheles Wellcomei*, which appears to be related to the *A. gigas* described by Giles in India. A new uranotaemia (*U. Balfouri*) is also mentioned, and also what appears to be some new variety of myzomyia: a new Culex (*C. Cumminsi*, Theobald) is also briefly described and figured. It is a large gnat, and is named after Captain Cummins, the S.M.O. of Khartoum, who sent the first specimen. Readers specially interested in dipterology should consult this part of the report for themselves.

The report is well worth reading, the facts being given in an interesting narrative form, precise descriptions and tables not being omitted where such are necessary. The possibilities before these laboraties are great, and Mr. Wellcome—to whose courtesy we are indebted for the illustrations here printed—is certainly to be congratulated upon the results of his scientific liberality. It is a great thing that a country so lately reclaimed to civilization should already be in possession of an institution of this comprehensive character, but, to develop possibilities to their fullest extent, further additions to the scientific staff seem likely to prove necessary as the work develops. If the work prospers, it must be of immense use to the country which it immediately serves, while it will act as a valuable outpost and feeder to the Schools of Tropical Medicine at home.

THE TEACHING OF HYGIENE IN SCHOOLS.

I. GIRLS.

ABOUT a year ago, in a series of articles on Physical Degeneration, the great necessity for making hygiene a compulsory subject in elementary schools was pointed out. Since then the Committee on Physical Deterioration has made the same recommendation, and social reformers seem to be waking up to the urgent need for such teaching. No one can say that the present system of education has not been given a fair trial. Thirty years have elapsed since compulsory education was introduced, but it must reluctantly be confessed that it has not been an unqualified success, and the new Education Committees are, it may be hoped, not too thin-skinned to take practical advice.

The Course of Instruction.

First of all, it will be well to get some idea of what is actually being done for girls in elementary schools.

In the Code for public elementary schools for 1904-5 it is laid down that a graduated course of instruction shall be given in the English language, arithmetic, knowledge of the common phenomena of the external world, geography, history, drawing, singing, physical exercises; and for girls, plain needlework.

Under the head of "knowledge of the common phenomena of the external world" alone the mistress has a good deal of licence for the exercise of her own judgement, but a large percentage of teachers have got into a sort of groove, and throughout the whole school Nature study is taken. Week after week children pull to pieces flowers, or are taught about the germination of seeds; no doubt this is useful and interesting by way of cultivating a child's artistic tendencies and of exercising its memory in remembering scientific names of the parts of a plant. But to the children of London and other great towns, who seldom have the happiness of seeing a flower, it can only be regarded as waste of time, since this teaching is given at the expense of such vitally important subjects as mental, moral, and physical hygiene.

The present generation of mothers have all passed through the school curriculum, and their school training should be reflected in the upbringing of their children. As a matter of fact the grossest ignorance of matters bearing on daily life is manifested. It is well recognized that the cause of most of the degradation among the people is rather ignorance than poverty. Many a family has enough money to spend, but the women do not know how to expend it wisely. They are ignorant of the properties of food, of economical housekeeping, and of the management of a family. They may leave school able to read and write, and recite Tennyson, and sing glees, and pick flowers to pieces; but they have not learnt the degradation of sending their children to school when their turn comes in ragged clothes, with dirty skins, heads swarming with vermin, and often, in consequence, a mass of sores, with which hands and faces become inoculated

Hygiene and Domestic Economy.

It is said that women are born mothers and born housekeepers, and apparently the school boards took that for granted when they drew up their curriculum. For a few years, under the London School Board, domestic economy classes were held, in which a good deal of useful information was imparted to the children; but this has lately been done away with, as the education authorities considered that sufficient teaching in domestic economy is given at the special centres, where, for the last two years of their school-life, girls attend one morning a week. It seems to be thought a matter of no importance that the younger children do not receive any instruction whatever in the subject. The children attending schools in some of the poorer districts of London were a short time ago practically all more or less infested with vermin. The drunken or filthy mothers did not feel the least shame at this state of affairs. The cleaner children, who sat near them

in school, necessarily became contaminated. Another great source of the spread of vermin is secondhand clothing and the habit of pawning clothes.

Happily, Dr. Kerr took the matter up very energetically, and instituted a plan which, under the name of "Cleansing Scheme," has inspired sensible teachers anxious for the welfare of their schools with gratitude, and the less public-spirited with indignation and rage. A number of nurses were appointed; they visit the schools one by one, examining every head in every class. Any child found in an unsatisfactory state receives a card, on which the parent is instructed how to treat its head. If the advice is disregarded, after eight days the parents are warned that the children will be excluded and that prosecution and a fine may follow. At first the schools were invaded by indignant mothers, who complained of being disgraced before the neighbours, and said that the scheme was causing domestic ruin, as the husbands blamed them for the disgrace brought upon the family. They went so far as to threaten personal violence, and actually in some instances smashed the furniture. Nevertheless, the scheme is doing good work, and the children are getting gradually cleansed. As an example, taken at random, a school at Bethnal Green may be mentioned, where a short time ago not one of the 300 children was free from lice. Now only 6 suspicious cases remain. If only the homes could be disinfected in the same way, a splendid work would be carried out. The misfortune is that the clean or the cleansed run the risk of becoming reinfected owing to the filthiness of the minority.

There are among the teachers a few, excellent and enlightened, who give practical teaching; who insist upon the children wearing collars and, if possible, pinafores; who supply those literally barefooted with strong boots at a nominal price; who insist, too, on tidy hair and clean faces. But unfortunately some are easily discouraged, for it is uphill work, and what they do is done during their well-earned leisure.

In an odd school here and there elementary hygiene and physiology is taught to the elder girls; but no teaching whatever is given in the other classes unless in the practical way above indicated. But although through slackness, discouragement or lack of judgement, teaching is not at present given in more than a few schools, it is certain that no teacher would oppose it if it were made a compulsory subject. In fact there are many circumstances which will tend to render it popular.

The Teaching of Teachers.

Every elementary school teacher is obliged to instruct her class in physical exercises. She must have a knowledge of the practical work, but before she can receive the extra remuneration allowed for this subject she is obliged to pass a stiff theoretical examination in physiology and hygiene. We cannot do better than quote the syllabus laid down by the London County Council:

I. *Physiology.*—General acquaintance with the build of the body and the bones of the skeleton; special study of the spinal column, the ribs, and shoulder girdle, the pelvic basin, and the bones of the limbs; the chief joints, their classification and limits of movement; muscle and movement; structure and function of bone and cartilage; general acquaintance with physiological functions, with a more careful study of respiration, circulation, the abdominal organs and digestion; the skin and its functions; the nervous system in outline.

II. *Rules of Hygiene, so far as they apply to the following:*

1. Effects of exercise (local and general).
2. Rules to be observed during and after muscular exercise.
3. Symptoms of over-exertion.
4. Advantages of frequent short exercises.
5. Effects of bad posture in sitting and standing; good postures—reading, writing, and needlework.
6. General rules for conducting a lesson in physical exercises.
7. Class-room exercises; ventilation of rooms.
8. Games as physical exercises.

As practically all teachers in elementary schools have passed, or are seeking to pass, the theoretical examination in physiology and hygiene, it is to be presumed that they are already well-grounded in these subjects, and that, with the assistance of a book containing a course of straightforward practical lessons in domestic and personal hygiene and applied physiology, with perhaps, in addition, a short course of lectures and demonstrations, they should be prepared in, say, three months to take up the teaching of elementary hygiene in their schools.

In the case of the teachers who are coming on and have not yet qualified in the course of physiology and hygiene demanded to enable them to earn the pay for the teaching of physical exercises it would be strongly to be recommended that this course should be incorporated in that which will have to be taken by teachers in school hygiene. While giving for teachers a wider view of the subject than that expected of the children, this should be restricted to what is really necessary without going into the more purely scientific aspects of physiology and hygiene.

The Time Table.

As to the question of time, it must be granted that the school time tables are already too full, but it would be quite possible to teach hygiene during the time—about forty minutes a week—set apart for the lesson in "knowledge of the common phenomena of the external world," and other readjustments are possible. In this way a sorely-needed reform would be inaugurated almost imperceptibly and at once, both important considerations.

Early Teaching.

It is necessary to lay particular stress on the fact that the teaching of personal hygiene cannot be begun too early. Some will contend—an argument that was put forward to us only a few days ago by a member of an education committee—that the time for this is after school life is over. A child who lives at home with a decent mother is taught personal hygiene from the earliest age. It is warned against such things as unwholesome food, close rooms, untidy habits, and so on; it is trained in that most precious of all possessions—self-control; and learns that there are such things as self-respect and duty to one's neighbour. Even supposing that elementary school children have the best mothers in the world, since compulsory education came into force they are withdrawn from parental care for the greater part of the day, and the teaching they should get at home naturally devolves on the strangers responsible for their education in school. It is not sufficient that they should sit still and observe discipline in school, then to run home, and behave like ignorant savages. The teaching of moral hygiene should play as great a part as that of material hygiene, for without self-respect and a knowledge of right from wrong a slum child—or, indeed, the average child—will be likely to develop into a hopeless slut. One fails to picture what one's own child would be at 14 had she been allowed to go without what we have called moral hygiene, and had the teaching of it to be commenced then. It is strange that this reasoning did not strike those educationalists who, thirty years ago—and subsequently—have handled this mass of raw material.

Much has been written about sick children and hungry children shut up in unventilated class-rooms for long hours. But there are other tragedies going on inside those four walls. Imagine class after class of infants under four or five years old forced to do fine needlework! Yet this is what happens in the infant schools. Elaborate hemming is done by these creatures with undeveloped eyes, as they recite with half-developed brains, what is called needlework drill—in itself a most difficult and incomprehensible lesson. The same with writing. The results obtained in both writing and needle work at the tenderest age are surprising, but any one understanding the abuse of sight to obtain this must be horrified at the ignorance which leads to such needless torture. All that need be required of children up to the age of 7 or 8 is good behaviour and discipline, and the years intervening should be spent in quiet play in the class-rooms and in romping in the school yard.

This is the time for sowing civilized seeds, for the earlier these moral lessons are begun the better.

The word *Gesundheitspflege* is applied to hygiene in Germany, but the popular idea that hygiene is a science dealing with that part of medicine which aims at the preservation of health is too narrow. It should rather mean the material and moral improvement of man as an individual and as a citizen—in a word, Progress.

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 130

COALMINERS AND CONTRACT PRACTICE.

Meeting at Newcastle-on-Tyne.

A meeting called by the Northumberland Committee of the North of England Branch of the British Medical Association was held at Newcastle-on-Tyne on Wednesday, November 30th, to consider the position of the Northumberland colliery surgeons who are threatened with the loss of their positions unless they consent to a reduction of the contract payment of 9d. a family a fortnight to the old rate of 6d.

Mr. Rutherford Morison, F.R.C.S., Chairman of the Committee, took the chair, and there were present over 100 practitioners from all parts of Northumberland, Durham, and Cleveland, many of those present having no connexion with colliery practice, but attending out of sympathy for their threatened colleagues. Amongst those present were the President of the Branch (Dr. J. Drummond), the President-elect (Dr. G. H. Fulton), Dr. Murphy, Dr. E. Jepson, the Secretaries and Chairmen of many Divisions, Mr. Garforth Drury (Secretary of the Northumberland Committee), Dr. Cox (Honorary Secretary of the Branch), and Mr. J. Smith Whitaker (Medical Secretary of the Association). Many letters of apology and sympathy were received from all parts of the Branch. Mr. Morison briefly opened the meeting, expressing his pleasure at the large attendance.

Dr. Cromie (Blyth) then explained the position of affairs. Up to now the various miners' lodges had dealt with this question individually, and medical men had had little difficulty in holding their own, but recently the miners had made a county question of this reduction, and had placed the matter in the hands of their Executive. The changed situation necessitated a change of tactics on their part, and if the whole strength of the Miners' Union was to be brought to bear on the colliery medical officers, then the whole profession must see the latter through. At present there was a lull, as the recent meeting of the Miners' Executive had once more postponed matters by referring the question to the individual lodges.

Dr. Cox related what had been done by him acting on behalf of the Branch Council. Knowing how important this matter was he had asked the Editor of the British Medical Journal to give that meeting special notice, and the current week's Journal would show how handsomely the Editor had done so. He (Dr. Cox) had also written to the Medical Secretary telling him all about the meeting and the cause of it, and had asked Mr. Whitaker to be ready if it came to a fight to come down and help. Mr. Whitaker had at once replied, saying that he was willing to do all he could, and suggesting the advisability of his being present at that meeting. Formal application was at once made to the Chairman of the Medico-Political Committee, and Dr. Buist had at once permitted Mr. Whitaker to come to the meeting, with instructions to inform it that the Branch had the hearty sympathy of the Association in this matter. He would like to ask Mr. Whitaker what prospect there was of getting pecuniary support from head quarters if it were needed.

Mr. Whitaker, who was very heartily received, assured the meeting that they could rely on the co-operation of the Association in the struggle if it came to that. He was merely an official of the Association, and could therefore only follow his instructions, which contained nothing about monetary support. That was a new thing, but he had no doubt the Council would deal with the request in a sympathetic manner if such request came before them. In the last resort, of course, all matters of this kind rested with the members of the Association, who could decide the matter in the Representative Meeting. He went on to give advice based on his experiences in other parts, speaking particularly of South Wales, where similar difficulties had occurred in the mining districts, and said this was not only a colliery doctors' struggle, but would touch directly or indirectly every man engaged in any kind of contract work, and was of importance to every man in the profession.

The Chairman then put several questions to the meeting as to the plan of campaign. There was the most enthusiastic unanimity as to resisting the reduction and almost equal agreement on the other points raised. Drs. Drummond, Bunting, Murphy, Speirs (Haltwhistle), Cromie, Robson (Alnwick), Philip (Morpeth), Mears (North Shields), Mackay (Pelaw), and Jepson spoke on the several points raised. There was considerable difference of opinion as to the feasibility of making the protection fund to be raised an insurance fund based on ordinary insurance principles, for which Dr. Bunting pleaded hard, but generally speaking the meeting was united on all main points.

The following resolutions were carried:

1. That no reduction of the colliery contract price be accepted.
2. That should the Miners' Union give notice to any colliery surgeon in the county the plan of action to be followed by the county be left to the Northumberland Committee.
3. That an indemnity, insurance, or emergency fund be formed to cover as far as possible the risks run by the colliery surgeons, that contributions be asked for from all parts of the Branch, and that the details of the fund be left to a subcommittee consisting of Drs. Cromie, Bunting, Wear, and the officers of the Northumberland Committee.

The Chairman, in closing the meeting, which lasted nearly two hours, thanked Mr. Whitaker very heartily for being present, and said that his presence, as well as the wise advice he had given the meeting, were a welcome earnest of the interest of the Association.

Afterwards the Medical Secretary conferred with the officers of the Branch and those members of the Northumberland Committee who could remain. Many points of interest were raised, and on parting the opinion was generally expressed that the action of the Editor of the British Medical Journal in reference to the meeting and Mr. Whitaker's visit and speech had been of great value.

HUMAN AND BOVINE TUBERCULOSIS CONTRASTED.

[*From our Special Correspondent in Berlin.*]

Meeting of the Central German Sanatoriums Committee.

The German Central Committee for the erection of lung sanatoriums every year calls a meeting of special workers in the great struggle against tuberculosis—medical men chiefly, of course, but with a sprinkling of laymen. This year the meeting was held on November 24th and 25th in the Hall of the Imperial Board of Health, and as about 200 members attended the proceedings assumed the character of a small congress.

Sanatorium Dispensaries and the Housing Question.

The President of the Board of Health (Gesundheitsamt), Dr. Koehler, made the opening speech. The movement, he said, in favour of the erection of sanatoriums is no longer as explosive as it was at first. Other methods besides sanatorium treatment are being tried. The idea of central stations for treating and helping tuberculous patients has been started, and homes for incurable tuberculous patients are agitated for. But the efforts of to-day are directed, above all, towards improving the dwellings of the poor. This is an immense problem, not only because of the vast numbers to be dealt with, but also because education of the masses and a total transformation of their notions as to the conditions of daily life must precede even an approach to a solution of it.

The Distinction between the Bacilli of Human and Bovine Tuberculosis.

Stabsarzt Weber spoke on the results of the inquiry concerning human and bovine tuberculosis. He is a member of the Government Commission, instituted for the express purpose of reinvestigating and carrying on Koch's famous inquiry. He said that the results obtained thus far corroborated Koch's view of the difference between the forms of human and of bovine tuberculosis. The differences are morphological; they are observable in cultures, and specially in animal infection. We must, he said, distinguish between two species of the tubercle bacillus, the human species and the bovine. This established, the essential question became: To which species does the tubercle bacillus of tuberculous human beings belong? Fifty-six cases of human tuberculosis were then investigated, and the tuberculous foci examined with a view to finding out whether they were the result of the human or of the bovine species of bacillus. In all but six cases the bacillus found was of the human species. The six instances in which bovine bacilli were found presented special characteristics. Three of them were young children, two with tuberculosis of the mesenteric glands, and the third with tuberculosis of the mesenteric glands and the intestine. It may be assumed that in these cases there was infection from the milk of tuberculous cows by way of the gastro-intestinal canal. A fourth case—miliary tuberculosis—was specially interesting, because bovine bacilli were found in the mesentery, whilst in all the other organs examined none but the human species were found. This was evidently a case of twofold infection, and it proved that both species of

bacilli can be present—separately and in different organs—in the human body. In another case human and bovine bacilli were found together in the same organs. Dr. Weber declared the theory which would make human and bovine tubercle bacilli transformable into one another, to be untenable. There were, on the contrary, distinct differentiating signs and biological differences. There could no longer be a doubt that the tubercle bacilli of cold-blooded animals were saprophytes, and bore no essential relation to human tubercle bacilli.

He summarized his conclusions as follows: As far as the dissemination of human tuberculosis is concerned, it is (practically speaking) the human species of the tubercle bacillus only that must be taken into consideration. How great may be the danger which bovine tubercle bacilli carry with them it is impossible to say at present, but it would be very unwise to do away with the precautions insisted on in the milk trade, as well as those urgently recommended to consumers.

This was the chief speech of the meeting, the other papers read being more on points of detail. The second day was devoted to a debate, in which von Leyden, B. Fraenkel, and many others took part.

MEDICAL NEWS.

Professor Debove has been unanimously re-elected Dean of the Medical Faculty of the University of Paris.

Professor Arnold Heller, Director of the Institute of Morbid Anatomy at Kiel, has been elected Rector Magnificus of that University.

Covent Garden Theatre has been selected as the site for the next Chemists' Exhibition, which is organized annually by *The British and Colonial Druggist*. The same building was used for the exhibition some seven years ago and proved convenient. The exhibition will be open from March 13th, 1905, to March 17th, both days inclusive.

The annual general meeting of the Metropolitan Hospital Sunday Fund will be held at the Mansion House on Friday next at 2.30. A meeting of London commercial travellers will be held at the same place at 4 p.m. on the following day, to consider the best means of increasing the collection to £100,000. Among the speakers at this meeting will be Sir Frederick Treves.

It should have been stated that the original German text of Professor Robert Koch's address on trypanosome disease, a translation of which appeared in the British Medical Journal of November 26th, p. 1445, was published in the *Deutsche medizinische Wochenschrift*, 1904, No. 47. We were indebted to the editor of that journal and Professor Koch for advanced proofs.

Bequests to Hospitals.—Under the will of the late Mr. James Thomas Smith, of Leeds, £1,000 each was bequeathed to the Miller Hospital, the British Home for Incurables at Clapham, and the Dreadnought Hospital for Seamen at Greenwich; £500 to the London Hospital; and £100 each was left to the National Hospital for the Paralysed and Epileptic and the Eltham and Mottingham Cottage Hospital.

Education and Open Air.—Mr. W. A. Rix, M.A., has opened at Sparsholt, near Winchester, a school for boys of the upper classes who are recognized to be delicate or to have a tendency towards tuberculous complaints. Their physical needs are to be met by a strict observance in their daily lives of the general principles of "open-air treatment," while their minds will not be allowed to lie fallow, the tuition being conducted for the most part in the open air.

Long Service.—A few months ago the retirement of Dr. Monro after thirty-seven years' work for the guardians of Nantwich was the occasion of many pleasant observations being made concerning him at a meeting of the Board, and more recently the resignation of Dr. William Thomson has been tendered after fifty-five years' service under the same Board. In moving its acceptance, the Chairman, in addition to other acknowledgments of Dr. Thomson's work, suggested that a record of his good service for such an amazing period of time should be preserved in the minutes.

The bacteriological examination conducted by Dr. Klein has confirmed the clinical diagnosis of plague made in the case of a seaman belonging to the ss. *Weybridge*, which arrived in the Thames from the River Plate on November 30th. The Port Medical Officer found the seaman in question ill, and at once recognized his case as probably one of plague. The ship was therefore detained at Denton for the adoption of the necessary measures of disinfection, and the patient removed to the port hospital near the mouth of the Thames, the crew being kept under observation. Several incidents of the same sort have occurred in British ports during the past few years, though the last case in the Port of London dates back several years. They show that the need for vigilance on the part of port sanitary authorities continues and is recognized.

Sudden Death in Children.—A special meeting of the Society for the Study of Disease in Children will be held at 5.30 p.m. on Friday, December 16th, at 11, Chandos Street, W., for the purpose of discussing Sudden and Unexpected Death in Children. The discussion will be introduced by Dr. C. J. Macalister (Liverpool), Dr. J. Porter Parkinson, Mr. J. W. Thomson Walker, Mr. A. H. Tubby, and Dr. J. Blumfield. The meeting will be open to all members of the medical profession.

Medical Sickness and Accident Society.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on November 25th, Dr. de Havilland Hall in the chair. The records of the previous month showed that the sickness experience of the Society had been about the same as is usual at this period of the year. When the Society was founded, the risk of incapacity from accidents was so little thought of that it was not considered necessary to refer to it specifically in the rules, although sickness pay has always been allowed; but the experience of the Society has shown that medical men are as much liable to accidents as the classes upon whose sickness experience the tables were based. Medical men do not suffer from so many fractures and sprains as artisans, but they are very liable to being compelled to stop work in consequence of septic wounds, and the amount of sickness pay disbursed by the Society for claims of this description is considerable. In the list of those who are permanently incapacitated from work, several cases have arisen from accidents in riding and driving, and in some of the others it would be difficult to determine whether or not the complete breakdown from which the member is now suffering was not originally caused by something in the nature of an accident. Prospectuses and all particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

The Otological Society.—Dr. Thomas Barr, the President of the Otological Society of the United Kingdom, took the chair at the annual dinner of the Society on December 5th at the Trocadero Restaurant, London. The toast of "The King" having been duly honoured, Sir R. Douglas Powell submitted the toast of "The Otological Society," and pointed out the great advantage of the members of the Otological Society also belonging to one or more of the general medical and surgical Societies, for the ear was second only to the throat in importance as the avenue and reservoir for infective diseases affecting so frequently the whole system. Dr. Barr, in replying, hoped that the Society would institute some organized research work, because no part of the human body presented problems so urgently demanding elucidation as the ear. He considered that there would be no difficulty in providing funds for that purpose if any member of the Society were willing to undertake research work. Mr. Ballance proposed the toast of "The Visitors," and described how backward the great hospitals of London were in recognizing the just demands of the otologists. In mentioning Sir Felix Semon as a guest, he said that he had no more worlds to conquer, for he had reached the foremost place in otology, was a splended physician, and a first-class shot. Referring to Sir Thomas Barlow, he gained the applause of the company by saying that that gentleman's fame lay in the esteem and affection of numberless men who belonged to the profession of medicine. He congratulated Mr. G. R. Sims on his unwearying efforts against wrongdoers, and described him as representing the eternal struggle between right and wrong. Dr. Tirard answered for the guests, and, in response to loud calls, this toast was also replied to by Mr. G. R. Sims. Dr. Barr, in acknowledging the toast of his health proposed by Dr. Urban Pritchard, concluded by submitting the toast of "The Honorary Secretaries," to which Dr. Tilley and Dr. Hugh Jones responded.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1904.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, DECEMBER 10TH, 1904.

THE BRITISH MEDICAL ASSOCIATION.

The British Medical Association will hold its seventy-third annual meeting at Leicester in the last week of next July. The amount of business which came before the last Annual Representative Meeting was very large, and it was only with difficulty that it was completed after two very long sittings. It has been arranged that next year the Representative Meeting shall hold its first session on Monday afternoon, July 24th. It is, we believe, the intention to rise for dinner and to sit again in the evening. The meeting will no doubt sit again on the Tuesday afternoon, and possibly, judging from previous experience, on Wednesday also; but this will depend upon the wish of the meeting and the course of business.

The President, Mr. George C. Franklin, surgeon to the Leicester Infirmary, will deliver his address on the evening of Tuesday, July 25th; Dr. Henry Maudsley will give the address in medicine on Wednesday afternoon, July 26th; and Mr. C. J. Bond, surgeon to the Leicester Infirmary, will give the address in surgery on Thursday afternoon, July 27th. The Sections will meet on the mornings of Wednesday, Thursday, and Friday, July 26th, 27th, and 28th, and the local committee, of which Dr. Astley V. Clarke, physician to the Leicester Infirmary, is secretary, will, we understand, arrange excursions to places of interest in the neighbourhood of Leicester on Saturday, July 29th.

We are enabled to publish in another column an illustrated account of Leicester, and a general outline of the arrangements made for the accommodation of the meeting and for the business of the Sections. Leicester is a good example of an old city which has not stood still. It has become an important manufacturing centre, and thus combines in a remarkable degree historic interest with abounding evidence of commercial enterprise. As will be seen by the programme published at page 1584, there will be twelve Sections; and since Leicester is itself a commercial town, and within easy reach of many manufacturing districts, the opportunity has been taken to organize again a Section of Industrial Hygiene and Diseases of Occupation. The Section of Dental Surgery, first instituted this year, is continued, and there will also be a Section of Tropical Diseases, a subject which appeals to a large number of members of the Association who follow their profession in the public services or in tropical colonies or dependencies.

The British Medical Association has grown to its present proportions from a very small beginning; it was founded at Worcester on July 19th, 1832, and at its first annual meeting a year later it numbered about 140 members. It was at first intended to be an Association of provincial practitioners, but this narrow conception was soon abandoned, and it has long sought to embrace all regular medical practitioners within the British Empire. Its success has been conspicuous, but, large as its membership is, it is confidently hoped that every year may see further accessions to its ranks, until it eventually embraces every registered medical practitioner. The Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession. Under its present organization, every member of the Association is a member of the Division within the area of which he resides; the Divisions are for certain purposes grouped into larger bodies called Branches; the aggregated Branches compose the Association. Each Division and Branch has its own local administration and rules subject to the general regulations embodied in the memorandum and articles of association and by-laws of the general body. Each Division, or, where the membership is small, each group of Divisions of at least fifty members elects annually one representative, who is entitled to speak and vote at the Representative Meeting; one session at least is held annually in the same week as the Annual General Meeting. The decisions of this meeting are binding upon the Council, which is the executive body of the Association for general purposes. Every member thus has the privilege of taking a share in the work of the Association and in influencing its decisions.

For many years past the British Medical Association has stimulated a very large amount of scientific work which has been of the greatest value in various ways to the profession. It has promoted the advance of medical science both by encouraging original research and by disseminating its results to the whole body of members. It has discharged the one function through the discussions and demonstrations in the Sections at the annual meeting, and at the meetings of Branches and Divisions, as well as through its Journal and by the establishment of a central library. It has stimulated original investigation, especially through the Scientific Grants Committee, which has disbursed this year in scholarships and grants the sum of £1,000, and it has on occasion appointed special committees to investigate scientific problems, of which the Chloroform Committee is the most recent and perhaps the most successful example.

During the last two or three years the organization of the Association has been altered in certain important respects, mainly with the view of making it a more effective instrument for doing the medico-political work of the profession. This reorganization has not been allowed in any way to interfere with the continuance of the scientific work, but it is now thought that further arrangements might be made to extend this scientific work, and to increase the facilities afforded to members who are engaged in inquiries whether in practical medicine or in pathology, using these terms in their widest sense.

At the adjourned meeting of the Council on November 16th a special Committee was appointed to report on the co-ordination and development of the scientific work of the Association and its Branches and Divisions. That Committee will, we believe, meet before long, and we would call the attention of the Honorary Secretaries of Branches and Divisions to the third clause of the resolution printed on page 178 of the Supplement of November 26th, in which the Council invites them to submit any suggestions they

may wish to make relative to the business which has been referred to this Committee. Such communications should be addressed at as early a date as possible to the General Secretary of the British Medical Association, 429, Strand, W.C.

The subjects which occur as those upon which advice might be particularly useful are with regard to improved arrangements for clinical and scientific demonstrations at meetings of Divisions and Branches, the development of local libraries and their relation to the central library of the Association, the development of the scientific investigations carried out by subsidies from the Association and their relation to the work of the Sections at the annual meetings, and the relation of the Association to other scientific societies. These points are merely mentioned as topics which occur at once as among those upon which advice and opinions are desirable, but there are no doubt many other points which will present themselves to individual honorary secretaries, a statement of which is likely to be of the greatest use to the Committee in preparing a report for the consideration of the Council and eventually of the Association at large.

SECRET REMEDIES.

One of the reasons for the popularity of secret remedies is their secrecy. It is a case in which the old saying *omne ignotum pro magnifico* applies. To begin with, there is for the average man or woman a certain fascination in secrecy. The therapeutic value of the unknown is known to the medical profession. The quack takes advantage of it to impress his customers. But secrecy has other uses in his trade; it enables him to make use of well-known drugs, and to pretend that his production possesses virtues beyond the ken of the mere doctor; his herbs have been culled in some remote prairie in America, or among the mountains of Central Africa, and the secret of their virtues has been confided to him by some venerable chief; or perchance his drugs have been discovered by chemical research of alchemical profundity.

It has seemed, therefore, that it would be useful if not instructive to obtain analyses of some of the secret remedies, the virtues of which are so boldly advertised, especially in popular monthly magazines and weekly newspapers, and in diaries and almanacs pushed under the front door or dropped over the area railings. In another column (p. 1585) is published the first of a series of articles in which we hope to give as complete information as possible both as to quantity and quality respecting the ingredients of those modern quack preparations which are foisted on popular ignorance by lavish advertisements in the public press, and too often supported by the credulous testimony of well-known persons, whose eminence in their own professions gives an illusory weight to opinions which, neither by education nor experience, are they especially qualified to express.

Our present publication deals with remedies for epilepsy and it is interesting to notice that with one exception all contain bromide salts in more or less efficient doses. The exception contains vervain (verbena officinalis), which held a place in the old pharmacopoeias and herbals, chiefly as an astringent application to wounds or as a lotion for sore mouth. Dodoens (1572) says it is good for headache applied as a plaster, while Gerarde (1633) mentions its use as a garland round the head for the same condition, but he disapproves of the many old-wives' tales told regarding it which tend to sorcery, and are such as honest ears abhor to hear; indeed, he hints that some assert that the "divell did reveal it as a secret and divine medicine." Nevertheless, Meyrick (1790) considers it to be a plant of considerable virtue, and, in undeserved disrepute, being good for nervous disorders, especially headaches, for which he recommends scruple doses of the powder. According to Pliny, vervain was gathered by the Druids of Gaul and Britain at the rising of the Dog Star, when neither sun nor moon shone, with the left hand only, and after libations of honey. When thus prepared it was said to vanquish fevers and other distempers, to be an antidote to the bite of serpents, and a charm to conciliate friendship! In his own time Paris speaks of it as the subject of a work on scrofula by a Mr. Morley, which was written for the sole purpose of restoring the much-injured character and use of vervain, so that it is evidently a herb which has suffered much from detraction. Mr. Morley directed the root of the plant to be tied around the patient's neck with a yard of white satin ribbon, where it was to remain until the patient was cured. The modern vendor does not indulge in these refinements.

Such, then, are these secret remedies. With one exception they are weak preparations of well-known drugs supplied at considerably more than the usual cost, and administered without that careful adjustment of dose to the needs of the particular patient, which is, after all, the most essential part in the treatment of epilepsy by bromide salts. The exception contains an old-fashioned herb once praised by the superstitious, but abandoned time and again even by them. It has never been shown to possess any definite therapeutic properties, and was long ago discarded by the profession because it was found useless.

It is often represented that the medical profession has ignored what may be called the folk-lore of herbs and simples, but no one who is acquainted with older medical works could fall into such a mistake. The authors of herbals like Culpepper and Gerarde were medical practitioners, while Paris, from whom we have quoted, was a physician who gathered up for the benefit of the nineteenth century the stores of forgotten wisdom of the past as well as the popular medicine of his day. In his *Pharmacologia* are to be found accounts of 178 nostrums in common use. The seventh edition of Paris's work was published in 1829, and since that time nothing of the kind seems to have been printed, unless we can regard as of this nature a collection of trade receipts and formulae of proprietary articles published in 1884, and the lists in the *Chemist and Druggist's Diary and Year Book*. The inquiry which has now been undertaken will, therefore, have historical value as showing the nature of a collection of nostrums in use at the beginning of the twentieth century, while in addition we hope it will be of practical utility in the campaign against quackery. The exposure may serve to demonstrate to the public the need there is for better control over the sale of quack medicines, and the scandal of allowing revenue to be raised from them by means of a Government stamp, which is generally regarded as a guarantee of the genuineness of the contents of the package. The tax is infinitely small in proportion to the enormous profits of the trade, and is as a rule merely added to the price of the package. No doubt stamps are a very convenient mode of raising revenue, and are on this account dear to the Treasury authorities, but a less

objectionable method might be found than one which has the appearance of giving Government sanction to articles which are too often impudent and fraudulent deceptions.

AN AMBULANCE SCHEME FOR LONDON.

At last Tuesday's meeting of the London County Council the question of the provision of adequate ambulance accommodation for street accidents and casualties in London again came under consideration. On the presentation of the report of the General Purposes Committee by its Chairman, Mr. Mackinnon Wood, Sir William Collins invited him to state, for the information of the Council and the public, what progress had been made by his Committee with the reference made to them some time ago relative to the provision of proper ambulance accommodation for the metropolis. Mr. Mackinnon Wood replied that the matter had received and was receiving very careful consideration. The Fire Brigade Committee had been invited to draw up a scheme whereby the ambulance arrangements proposed might be worked in connexion with the brigade. He had been assured that this report would be ready for consideration by the General Purposes Committee at their first meeting after the Christmas vacation, and in due time would be the subject of a report to the Council. We understand that the chief officer of the Fire Brigade Committee has drawn up a scheme whereby the ambulance work might be managed as a department of the brigade. This must necessitate enlargement of some of the stations, and more horses and men. An estimate both of the capital cost and of the charge for annual maintenance is being prepared. Meanwhile the Metropolitan Asylums Board is, we understand, holding its hand, lest in the augmented scheme of ambulance provision it has been considering there should be any overlapping or interference with the projected scheme of the London County Council. In the interest of both bodies, and still more in the interest of the public, we trust that substantial progress may be made in the early months of the new year in dealing with this long-delayed reform.

THE UNSOLICITED ADVERTISEMENT.

Almost every week we receive complaints from self-constituted censors of the medical profession as to reports of operations, or articles in which the skill of some practitioner is trumpeted to an admiring world. Occasionally, we are sorry to say, there is reason to believe that these effusions have been inspired by the person chiefly concerned. In the great majority of cases, however, they are the production either of a too zealous friend or of a journalist who looks upon the doings of medical men—as of mankind at large—as material for "copy," and, like Molière, takes what he regards as his rightful property wherever he finds it. One need not believe that medical men are, any more than other people, superior to the human weakness of liking to see their names in print. Sensible men, however, have no desire to be made ridiculous, and it cannot be denied that the newspaper scribe has a fatal talent for clothing a doctor whom he wishes to praise in the garb of folly. To some harmless person who has read notes on the treatment of influenza before a local society he attributes discoveries which throw those of Pasteur and Koch into the shade, while he belauds a surgeon who has successfully amputated a limb as if he had done something startling in its boldness and originality. We have often been asked by victims of this damaging enthusiasm to suggest a remedy. In especially flagrant cases a hint might perhaps be borrowed from the example of an American practitioner, Dr. E. Denegre Martin, who is said to have brought an action for libel against a New Orleans newspaper for praising him in a published article. The article described a successful application of the Lorenz method of bloodless surgery, and quoted terms of praise used by the patient's parent. Dr. Martin claims £2,000 damages, on the ground that such articles, being, as a rule, notoriously-paid advertisements employed by quacks, have the effect of discrediting a regular practitioner. We sympathize with his indignation, and we wish him success in his action. If a ruling could be got in this country that a professional man can be libelled by injudicious praise, doctors would be able to deal effectually with the nuisance of unsolicited advertisements.

COUNTY MEDICAL OFFICERS OF HEALTH.

We have been much impressed in perusing a number of the reports of the medical officers of health of counties by the evidence they afford of the value of these officers to the community. We have some ten or dozen such reports before us, any one of which would amply prove our case. The general result is towards unification and uniformity, and towards the raising of the standard throughout the country. Water supplies, sewage disposal, provision of hospitals for infectious diseases, the investigation of epidemics and their prevention, the co-ordination of the entire public health work of a county are among the chief matters receiving attention. Fifteen years have elapsed since the West Riding County Council established a health department and appointed a county medical officer. Since that appointment (the first of its kind) there has been a continuous expansion of county sanitary work, partly due to fresh legislation and wider knowledge of the realm of preventive medicine, and partly due to the growing influence exerted by the County Council Sanitary Committees. We are all aware of the extension which has taken place in respect to the former. But it may be of interest to cite one or two illustrations of the latter. Dr. Kaye, the County Medical Officer for the West Riding, which comprises 160 sanitary districts, furnishes in his report evidence pointing to an enormous increase in the services rendered by the county public health department. The same is true of Cheshire, Wiltshire, East Sussex, and other counties. In Staffordshire since 1894 there has been a steady growth in the number of occasions when the county medical officer has been consulted by the district medical officers and in the reports and inquiries completed by him. In Worcestershire, Warwickshire, Leicestershire, Bedfordshire, Northamptonshire, Cambridgeshire, Hertfordshire, Surrey, and other counties, much solid work has also been done. On all sides there has been increased vigilance and an increase of the scope and sphere of county medical officers. There are still counties which possess no medical officer, and in some of the counties we have named the office is merely of a consultative kind. Still that is better than nothing, and is a step towards the desired end—the appointment of whole-time officers at adequate salaries. At present the statutory powers of county councils in public health work are small, but their advisory powers are great, and it has now been proved how much can be done. In no instance has the proof been more complete than in the County of London, where the County Council has, through good and ill report, carried on administrative public health work of ever-increasing scope and efficiency.

HOSPITAL REFORM.

The intermittent controversy in the columns of the *Times* on the subject of Hospital abuse in the East-End of London was on Saturday last enlivened by a letter from Mr. Sydney Holland, in which he states that he had expressed to the deputation of the East London Medical Society the opinion that, "strictly speaking, any one who could not afford to pay 3d. for a bottle of medicine ought to go to the parish doctor or the infirmary," and added "that hospitals were rated to pay for such free medical assistance to the very poor." He goes on to rebuke another contributor for assuming that this doctrine was applied at the London Hospital on strict lines, and adds that "every day medicine and bandages are supplied free to patients too poor to pay for them." Mr. Holland's doctrine may be right or it may be wrong, but it strikes us as rather an original conception of the functions of a voluntary hospital, and it reads strangely from the pen of the chairman of a hospital which ceaselessly claims

support upon the ground that it serves the poorest neighbourhood in London. We doubt whether the public will approve of this development of the voluntary hospital system. In considering the question the in-patient and out-patient departments must be carefully distinguished. There are many reasons under present circumstances why persons who are far removed from what are commonly known as the poorer classes should occasionally, even with considerable frequency, be admitted to the benefits of in-patient treatment. Few, if any, of these reasons, however, apply to the out-patient department, and the establishment of a payment system cannot but aggravate the evils of out-patient department work as at present conducted at almost all hospitals. Again, the difference between an out-patient and a casualty patient must not be overlooked. A casualty patient is one suffering from some sudden illness or injury, trifling or serious, who requires, if he requires anything at all, immediate attention, followed if need be by admission to the wards or treatment elsewhere. An out-patient is one who suffers from some more or less chronic ailment, medical or surgical, which does not prevent him going about, or in the majority of cases even following his occupation, but which requires prolonged treatment. The proper function of an out-patient department is not to serve out medicines, whether with or without payment, to all comers provided they can pass muster as not being well-to-do, but to act principally as a kind of free consultation room, where medical men in general practice who have poor patients can procure for them gratis that second opinion for which their richer patients could pay. Another proper function is the application of treatment with instruments or apparatus of a kind which medical men engaged in ordinary general practice do not habitually require. Worked in this way, out-patient departments, whether at special or general hospitals, would be of immense benefit to the public and to all concerned both directly and indirectly; worked as they are, it is hardly an exaggeration to say that, while they are the cause of immense expense, they are a snare to the public and of no unqualified utility to any one. The managers of many voluntary hospitals—especially in London—appear to believe that the best way to attract the contributions of the sympathetic public is to publish impressive statistics of the number of patients relieved during the year. It seems to be assumed that the public will take for granted that the larger the number the greater the utility of the hospital. We hope that one result of the controversies which are now going on may be to lead the public to ask whether there is not a very great waste of money, to say nothing of energy, now going on in the out-patient departments of most of the London and of many provincial hospitals.

LUNACY IN EGYPT.

The British are proud of what has been done by their countrymen in Egypt, but the ninth annual report of the Egyptian Government Hospital for the Insane, 1903, must excite a feeling of the deepest sympathy with the Superintendent, and of something approaching anger with the authorities. Railways and general administrative work can be developed, but the lunatics are neglected, to the real danger of society. Dr. Warnock has laboured with great success to bring the treatment of the insane in Egypt up to a proper standard, and when the unsatisfactory buildings and their unsatisfactory surroundings, the difficulties in obtaining efficient nurses, and the want of direct interest in the governing circles are understood, the reader can only be astonished at what has been done. Practically there exists in Egypt no real lunacy law, there is no lunacy department nor anything resembling commissionerships in lunacy. The Government asylum was not built for the purpose, and is altogether too small for the accommodation of the patients. Thus it comes about that only very acute cases can be received, and a large proportion have to be discharged before they are cured. In fact as soon as a patient is quiet he or she has to be removed by the friends. These friends have little interest and no capacity for caring for such patients, and relapses are common. The frequency with which patients originally admitted as ordinary insane persons are readmitted as criminal lunatics amounts to a scandal. The police are the chief persons who bring patients to the asylum, and there is a fearful record of injuries before admission—one fractured skull, one ruptured liver from fractured ribs, one fractured femur, one fractured ulna, besides minor injuries, while one patient is quaintly described as having had several fingers and one leg missing on admission. The two English officers have very hard and trying work in the asylum itself, yet they are endeavouring to teach native doctors and train better nurses. As an example of the dilatoriness of the authorities, it may be mentioned that after much delay the appointment of a second English medical officer was sanctioned, and Dr. Dudgeon began work in 1902; no house has yet been built for him, and he has to live away from his work, thus leaving the superintendent on duty eighteen hours out of the twenty-four. As is pointed out by Dr. Warnock, another asylum in some more suitable place must be built, and the accommodation provided for lunatics increased. As a result of the agreement with France, the Government will now perhaps have more money to spend, and we trust the present state of things will be soon mended.

DANGEROUS EXHIBITIONS.

A recent deplorable accident at Sunderland whereby a public performer sustained a fatal fracture of her skull once again directs attention to the tragical possibilities of exhibitions which depend for their appeal to the public on skill or daring carried to or beyond the furthest limit of safety. It is true that in all such "shows" the training of the performer has been so perfectly carried out that the risk is reduced to its minimum, and that, so long as no hitch occurs, the performance is accomplished with brilliancy and comparative safety. But in all feats of skill where human endurance is strained to its utmost capacity, or where nicety of judgement or steadiness of nerve is the essential element upon which success depends, there must obviously be many loopholes for the occurrence of that unforeseen something which makes the whole difference between successful accomplishment and disastrous failure. As human nature is constituted in this country, the entertainer will always be popular who, by extraordinary dexterity or cool intrepedity, accomplishes a task which seems almost superhuman. And it is not a bad feature of the British character that such triumphs of physical education and achievement should appeal strongly to us. It is this deeply-seated national trait that has constituted our reputation for superiority in the games and sports that enter so largely into our daily life; to it we owe the enterprise which has secured for us the conquest of vast tracts of the uncivilized globe and their rescue from barbarism; and out of it have arisen indirectly many scientific achievements which would have been unattainable but for the spirit of courage and almost reckless disregard for danger with which many investigators have risked their lives for the fulfilment of the purpose to which they had devoted them. Public exhibitions, therefore, which involve personal danger in their performance are not *ipso facto* to be condemned, nor is it fair to say of them that they only appeal to a morbid sensationalism because they involve a possible tragedy. The admission of such a contention would imply the discountenancing of every well-contested game or form of sport into which the element of personal risk enters. What is to be found fault with in many of them is the inadequate way in which provision is made for minimizing the unknown quantity—chance—and of reducing the element of jeopardy to life to the narrowest of margin. It is not germane to British sentiment to find pleasure in witnessing exhibitions which are of necessity accompanied by suffering either to man or beast, and we doubt whether such entertainments as bull-fights, with all the horrors which attend them, would, in these enlightened days, prove a remunerative speculation in this country if they were legalized to-morrow. Public feeling would rebel not only against the cruelty which they

involve, but also against the unfairness of the odds with which such contests are waged. But the hazardous exhibitions with which we are familiar, and to which many people strenuously object, possess none of these savage characteristics, and are not likely to fail in the attractions they possess for a large proportion of our population so long as courage and dexterity appeal to the imagination. Every misadventure, such as that at Sunderland, is an appeal for tightening the precautionary restrictions under which such exhibitions are permitted, but under proper safeguards against accident, there can be no reason why such displays should not be provided for those to whom they appeal.

LUIGI GALVAGNI.

Anniversaries in the history of science should not pass without notice. We therefore remind readers of the fact that December 4th is a memorable date in the annals of medicine, not less than electricity. On that day in the year 1798 Luigi Galvagni, whose name will live for all time in his discovery, passed beyond the veil. He was born at Bologna on September 9th, 1737. For a long time he felt strongly drawn to a monastic life. Fortunately for mankind, he gave himself to the study of natural science, devoting special attention to anatomy and physiology. In 1762 a dissertation on the bones led to his appointment to the Chair of Anatomy in the university of his native city. As a teacher he was clear and precise, but he had not the gift of oratory. For many years he practised medicine, being particularly skilled in midwifery. In 1790 he became the object of unpleasant attentions at the hands of the Cisalpine Republic, and so cruel was the persecution which he endured that he died in the most squalid poverty in 1798. Among his works are valuable monographs on the anatomy of the kidneys and ureters and on the organs of hearing in birds. The work which will make his name immortal is entitled *De viribus electricitatis in motu musculari commentarius*, which appeared in 1791. Like most of the writings in which great discoveries have been made known to the world, it is very short, consisting only of fifty-five pages. How vast a literature has grown from that small germ!

MEDICAL SMALL TALK.

When the late Queen Victoria came to the Throne the great Duke of Wellington was doubtful of his suitability as an adviser because he had no "small talk." Small talk may be said to be part of the social equipment of a successful doctor; indeed, with a section of the public this accomplishment often counts for more than scientific knowledge. It is related of a fashionable physician of the early part of the last century that on paying the usual professional visit to a *grande dame de par le monde* he was told that her ladyship was too ill to see him that day. Naturally, however, it is in society rather than in the sick room that opportunities of displaying a talent for small talk present themselves. Among the additions to the medical student's cargo of knowledge that are lightheartedly proposed every other week or so by those who are safe in port, a course of instruction in that important part of medical training has not yet been suggested. A justly popular professor of physiology of a bygone day used to give hints on the subject to his class. They were told, for instance, that the colon of the elephant is enormous, not as a fact of any particular importance in itself, but as a matter of general interest that might serve to fill up an awkward pause at the dinner table. Recourse need not, however, be had to such curiosities of science except as a means of staving off conversational bankruptcy. Most people are like the Roman poet, who thought nothing human foreign to himself. Every town and every village will provide a school for scandal, where the young practitioner can gather materials for small talk, and he can learn the way to use them as easily as Gil Blas learned the whole art of medicine. Doctors, like men of other professions, are apt to "talk shop" among themselves; we have known an eminent surgeon discourse at a medical dinner party of the quality of the pus which he had withdrawn from an abscess at the precise moment when custard was being served. In mixed society descriptions of diseases and operations should be left to the writers of realistic novels. Nevertheless there is no doubt that people, besides their human interest in the misfortunes of their neighbours, like to feel their flesh creep, and for this reason they try to induce the doctor to play the part of the Fat Boy for their entertainment. The doctor in society must always watch lest he be led into temptation in this direction. It is a proof of the high ethical tone of the profession that its members are very seldom wanting in discretion in regard to their professional experience. This well-known fact makes it the more remarkable that in an appreciative reference to a distinguished surgeon who recently died the *Daily Mail* should mention, apparently as a proof of his exceptional sense of professional honour, that although charming in conversation "in one point he was adamant." This point, it is interesting to learn, was simply that he would not talk about his patients. "In ordinary society, though half a dozen persons present might be his patients, he was dumb about his work, and even his polished courtesy would give way before persistent questioning about professional matters." For unconscious humour we should find it difficult to find a parallel to this delightfully naïve passage. It must have been somewhat trying for patients to meet in society a surgeon whose special province of practice was the secluded region by the features of which, more than by those of the *os sublime* that is the appanage of man, another eminent surgeon is said to have recognized those who had been under his hands. If in these circumstances a man was made the victim of idle curiosity about his work, especially if half a dozen of his patients were present, it is surely no wonder that his courtesy, however polished it may have been, should have given way. But where are to be found the guileless persons who could have persistently questioned him about such matters? Certainly not in London society. Such a degree of innocence can exist only on the judicial bench—or in the office of the *Daily Mail*.

RED TAPE AND SCIENTIFIC RESEARCH.

It was stated not long ago in the British Medical Journal that a commission of experts had been appointed to investigate the prevalence of pneumonia which, during the past year or two, has caused considerable anxiety in New York. The commission consists of Professors Osler and Welsh, of Johns Hopkins University; Dr. Edward G. Janeway, of New York University; Dr. T. Mitchell Prudden and Dr. L. Emmett Holt, of the New York College of Physicians; Dr. Frank Billings, of Rush Medical College, Chicago; Dr. John M. Musser, of the University of Pennsylvania; and Dr. Theobald Smith, of Harvard. The Board of Estimate made an appropriation of £2,000 to defray the cost of the research. The members of the commission asked leave to appoint without competitive examinations physicians of Baltimore, Philadelphia, and Boston to collect data, statistics, and other material of value to them, from their centres of population. It was proposed to pay these physicians £20 a month. The Civil Service Commission has ruled that assistants cannot be employed in other cities unless they first go to New York and undergo a municipal service examination. This sapient decision seems to show that there is another disease—the red tapeworm—prevalent in New York which might with great advantage to the public be made the subject of scientific investigation.

MEDICAL CELIBACY.

At the present day the medical practitioner is often made to feel that as a matter of professional expediency it is not good for a man to be alone. At any rate if he chooses what is called family practice as his sphere of activity, he must almost of necessity take unto himself a wife in order to gain the full confidence of matrons and maids and their lawful protectors. So natural and inevitable does the marriage of a doctor seem to

us that it is strange to think that there once was a time, not so far distant as historical epochs go, when regular practitioners of the healing art were doomed to celibacy. In the early Middle Ages medicine was largely in the hands of churchmen, who were mostly monks. Monarchs and even Popes had indeed a preference for the ministration of Jewish physicians; but meaner folk were, as a rule, physicked either by monks or by quacks. In course of time the ecclesiastical authorities awoke to the fact that monks who undertook the care of the bodies of the sick were apt to imperil their own souls. First, they were forbidden to practise surgery on the ground that the shedding of blood was abhorrent to the Church, and later the interdict was extended to the whole field of medicine. The prohibition was repeated by council after council, but it was not till the twelfth or thirteenth century that these edicts were generally obeyed. A curious vestige of the priestly usurpation of the healing art persisted in France long after the monks had ceased to practise it in the shape of a vow of celibacy, which all graduates in medicine had to take. Not unnaturally, this deprivation of a natural right was fiercely resented. For two or three centuries the doctors protested, but all in vain. Appeals to the king and to the rector of the University of Paris having proved useless, the matter was finally laid before the Pope as supreme head of the University. He lent a more favourable ear to the humble petition of the doctors, and towards the end of the fifteenth century appointed Cardinal d'Estouteville legate, with power to reform and reorganize the University. One of the legate's reforms was the abolition of the vow of celibacy imposed on the doctors. Their liberation from the thraldom of a barbarous and mischievous law dates from the last years of the reign of Louis the Twelfth.

EXPEDITIONS OF THE LIVERPOOL TROPICAL SCHOOL.

We learn that the Liverpool School of Tropical Medicine is about to dispatch an expedition to study yellow fever at the Brazilian town of Manaos, the capital of the Amazonas province of the Republic. It is situated at the point where the Rio Negro enters the river Amazon. Manaos is a great centre for the rubber trade. The members of the expedition are Dr. Wolferton Thomas (Canada) and Dr. Anton Brienl (Prague). The same school is sending an expedition, consisting of Professor Boyce, F.R.S., Dr. Evans, and Dr. Clarke, to Sierra Leone and the Gambia, and another, consisting of Colonel Giles, I.M.S., and Dr. MacConnell (Canada), to the Gold Coast, Lagos, and Nigeria. The members of the several expeditions were introduced by Sir Alfred Jones, the President of the School, to the Colonial Secretary on December 7th. Mr. Lyttelton said that no service could be more acceptable and honourable than that directed to making more safe and useful tropical regions to which Englishmen went to do the work of the Empire; the fact that Canadians and Britishers were working side by side was an outward and visible sign of the cohesion and the sympathy of the Empire.

THE MEDICAL CHARITY QUESTION IN A NEW ASPECT.

An extraordinary extension of the abuse of medical charity is reported from the United States. The Regents of the University of Michigan have lately ruled that the medical faculty of the university must give gratuitous medical and surgical treatment to everybody, whether rich or poor, who applies for it. The Wayne County (Michigan) Medical Society has passed resolutions declaring that such a ruling deprives the medical citizens within the radius of the influence of the University of Michigan of part of their rights in an unwarranted manner, and is harmful to the State as well as to the medical profession. The society therefore calls on the Board of Regents of the University of Michigan to rescind its ruling. We can only suppose that the Regents, being confronted with the problem of hospital treatment, felt themselves unable to draw the line at what degree in the financial scale patients should cease to be eligible for hospital relief, and solved the question, like Alexander, by cutting the knot.

GONORRHOEA AND CHILDBED.

Until abdominal surgery revealed the frequency of disease of the upper part of the female genital tract, little stress was placed on gonorrhoea in women. When, however, exploratory operations demonstrated the frequency of salpingitis and pyosalpinx, and when bacteriologists showed how the gonococcus may ascend and do damage in regions high above the os internum, it became clear that chronic gonorrhoea was almost as grave in the female as in the male. Experts have discovered that the organism is easily destroyed, and tends to disappear speedily from the pus in the canal of an inflamed Fallopian tube. Still the pus remains, a grave evil, liable to infection from the intestine. Quite recently some excellent clinical reports have been published concerning a kindred topic—chronic gonorrhoea associated with the puerperium. The reporter is Professor Martin of Greifswald,[1] who has carefully observed 13 cases of chronic gonorrhoea in his wards at the Maternity of his University during the past three years. These records at least prove that impregnation and pregnancy are quite possible when chronic gonorrhoea exists, and in one case double gonorrhoeal salpingitis was shown to be not incompatible with conception. The whole series likewise proves that abortion is not inevitable when chronic gonorrhoea complicates pregnancy. Martin declares that fragments of tissue expelled from the uterus in hundreds of cases of abortion have been examined under his supervision, without any trustworthy evidence of the existence of the gonococcus being detected. This fact should be contrasted with the very active nature of the germ when the disease is acute, especially as regards the eyes of the fetus. In 4 at least out of the 13 cases there was no fever in the puerperium; in 8 there was distinct rise of temperature, noted just after delivery in 2, early in childbed in 1, and quite late in no less than 5. Thus the prevalence of high temperature was clearly more than a coincidence. In every instance the rise was of short duration. Professor Martin does not consider these rises in temperatures in childbed as pathognomonic of chronic gonorrhoea, as he has repeatedly observed them in other cases where the uterine secretions were sterile or contained germs which were not the gonococcus. Very important is the fact that in none of the 13 cases did symptoms of perimetritis or parametritis develop; no ill-defined deposit, no circumscribed tumour could in any instance be defined on palpation. Thus the prognosis of childbed complicated by chronic gonorrhoeal is much less unfavourable than might be expected. We must note, in conclusion, however, that the cases all occurred in a public institution under the observation of a competent authority, and, what is of equal importance to bear in mind, under systematic skilful nursing.

QUACKS AND CREDULITY.

Who drives fat oxen should himself be fat is doubtless an excellent proverb; nevertheless, and without condoning the misdeeds of the puffers of quack remedies, a charitable hope may be expressed that those who fail to obtain a *clientèle* do not all take themselves and their concoctions, pharmaceutical and verbal, quite so seriously as did the old lady who put in an appearance as a plaintiff before Mr. Justice Lawrance recently. The gist of her complaint seemed to be that the defendant, a medical man, who was awarded a verdict with costs, had failed to prove to the waiting world that, even if the millennium had not exactly arrived, at any rate the real true remedy for consumption was at length at its disposition. The plaintiff's prolonged researches—in the pages of Plato and elsewhere—had resulted in no common remedy, but in one free from those minerals which are the root of all evil, but the delight, it would appear, of the misguided medical profession; its secret lay, in short, in the skilful

[1] Gonorrhöe im Wochenbette, *Berlin. klin. Wochenschr.*, No. 13, 1904.

"blending of a herb" of which medical men were stated to know nothing. Conducting her case in person, the plaintiff nearly exhausted the patience of the court; on the other hand, amends were made by the amusement which she caused, and especially, perhaps, by the revelation that some of the cures effected by her remedy were so perfect that the patients were dead and buried: a ridiculous figure, perhaps, but at the same time a pathetic one, for her own faith in her remedy was so evident that it is almost possible to leave out of sight the fact that one admitted cause of grief was her failure to secure the millions of pounds offered from all parts of the world. Decidedly, however, the person most entitled to sympathy was Sir William Broadbent, who seemed to have been dragged into the case simply because he was the most prominent of those who refused either to buy or try this famous remedy. Doubtless it is *amor nummi* which spurs on irregular practitioners of medicine, but several circumstances lately have tended to show that some at least of those who endeavour to foist useless remedies upon the public have, strange as it may seem, a profound, belief in their value; in short, they deceive themselves even more readily than the public. Let us hope that this is the case always, for then the Recording Angel when he comes to balance accounts will have something to set off in their favour against the very great evils which such persons cause. It is a matter to which we have often referred, and the evil is one which affects the whole of society from the top to the bottom. It is with the result to the poorer classes that we have always been most painfully impressed. We drew attention only a few weeks ago to an especially pernicious form of publication circulating among the lower middle classes, and advocating the use of certain "backache kidney pills." These pills, it is declared, are made from the purest extracts of roots and herbs, and do not contain any injurious or harmful drugs whatever. They are sold at the price of 2s. 9d. a box. They are said to cure not only Bright's disease, but to prevent, if they do not cure, such "fatal kidney complaints as dropsy, stricture, and diabetes." The pamphlet informs us that one of the earliest warnings of kidney mischief is pain or a dull ache in the back; and by laying great stress upon this common symptom as a sign of kidney disease a great deal of unnecessary alarm may be caused to persons who are not suffering from kidney disease, but in consequence of this misstatement may imagine that they have this disorder. Backache is not only extremely common, apart from kidney disease, but the particular kind of backache which this pamphlet appears to describe—namely, lumbago—has nothing whatever to do with kidney disease; and although in certain local kidney diseases pain in one or other kidney is a very constant symptom, yet sufferers from Bright's disease rarely complain of lumbar pain, and when they do it is still less often severe. Another good illustration of the misleading statements made in this pamphlet is that in which readers are told to "fill a glass bottle with urine and let it stand for twenty-four hours; if there is then a brick-dust or a thick white sediment in the urine your kidneys are diseased, and you should at once begin with Doan's Back-ache Kidney Pills." Such a statement is, of course, grossly inaccurate, for neither a brick dust sediment (urates) nor a thick white sediment (phosphates) indicates diseased kidneys. The latter sediment is frequently associated with pain in the back and mental depression, a condition in which the patient is particularly liable to be impressed by misstatements like these and to worry himself unnecessarily into the belief that he is suffering from serious organic disease. On the other hand, a sediment of urates may depend upon concentration of the urine from an excessive escape of water by other channels and be consistent with perfect health; yet it is often a source of uneasiness to nervous people whose anxiety must be increased by reading the statement quoted. There is an immense number of persons who think too much about their health and notice with too keen observation every slight departure from the usual rule in any of their excretions. A large part of the duty of medical men is to reassure such over-anxious people for whose fears we can only have sympathetic pity. There seems something peculiarly odious in this large class of rather helpless persons being made the victims of the quack, and they are surely deserving of protection from the kind of misstatements to which we have drawn attention.

PLAGUE AND ITS PREVENTION BY INOCULATION.

IN a letter to the *Pioneer*, dated Allahabad, September 22nd, 1904, a correspondent signing himself "Prevention" advocates preventive inoculation as the specific methed of ridding India of plague. Immunization of the people of India to plague will, it is argued, no doubt come about in time, but it means many years of suffering and the death of some millions of people. "Prevention" pointedly asks, can this immunization not be effected in a quicker, milder, and safer way than by leaving the disease to run its unrestrained course? It would appear that plague has gained so serious a hold upon India that the ordinary means of dealing with epidemics of other diseases are useless. Quarantine, disinfection, destruction of houses and contents, segregation, medical inspection, extermination of rats, and all methods known to sanitation have been tried, yet plague continues and spreads, and for all practical purposes it is being allowed to work out its own immunization. Theoretically there can be no doubt that, assuming the methods of immunization for plague to be reliable, general inoculation against plague simultaneously performed would be effective. Haffkine's preventive serum appears to have gained so high a reputation in India that there seems to be a fairly general consensus of opinion that were it universally employed plague would be reduced to small limits or wholly eradicated. It is true that protection by Haffkine's serum is calculated to last for six months only, yet were all the inhabitants of a town inoculated at the initial outbreak, protection would be afforded during the threatened epidemic, for the disease would appear to last only for six or seven months, in a virulent form, in every district or city it has yet occurred in. The drawback to Haffkine's prophylactic is that it has to be employed again when the customary recrudescence makes its appearance; but the protection afforded is so marked and the illness it induces so slight that few persons who have experienced its benefit would hesitate to be inoculated again and again. Though the expenses of such a method of eradicating plague would be great, yet, even estimating the benefits on a commercial basis, the procedure would be a great saving in money, leaving the humanity of the step out of the question. Short of general prophylactic inoculations, there seems no hope of eradicating plague in India until all susceptible persons have contracted the disease. The fortunate few who recover would no doubt be immunised, but the process is not one to be contemplated with equanimity.

MILK DIET AND MORAL RESPONSIBILITY.

BYRON asked his brother poet, Moore, whether he did not find that beefsteaks made him ferocious, and our vegetarian friends attribute all kinds of moral evil to a carnivorous diet. Milk, however, has hitherto borne an umblemished character, and is praised by all schools of dietetic philosophy, except the sect which feeds on fruits and nuts. Of course, bacteriology—which may be said to be a version, in terms of modern science, of the work of a seventeenth-century divine entitled *Satan's Invisible World Displayed*—has revealed the horrors that may lurk under the guileless appearance of milk. Nevertheless, to most people milk has nothing but associations suggestive of what Falstaff calls the days of innocency, and those who live on it are easily credited with the possession of pastoral virtues. It is a shock, therefore, to learn that this idyllic beverage may, like alcohol, be a cause of crime and that it has even been held accountable for murder. The Assize Court of the Seine department had before it not long ago a case in which a young man was charged with having attempted to murder his master and the son of that

gentleman. It was stated in evidence that the accused suffered severely from indigestion, for which he had been restricted by his doctor to milk diet. This fact was put forward as an excuse for his homicidal frenzy. A medico-psychological expert gave it as his opinion that the man was of unbalanced mind. His dyspeptic trouble weighed heavily upon his mind. He felt it as a humiliation that his fellow workmen should know that his sole nourishment was milk. This, according to the expert, was sufficient to produce "an attenuation of responsibility." The inference would seem to be that, in France at least, if one wishes to attenuate his responsibility he should first attenuate his diet.

FRENCH DOCTORS AND RUSSIAN WOUNDED.

There is a French proverb that in matters of the heart there is always one who loves and one who is loved. This saying appears to be exemplified in the alliance between France and Russia. For some time past France has been having her eyes opened to the fact that Russia, like a selfish lover, claims all and gives little. As far as the medical profession in particular is concerned, the union of hearts has lately suffered a severe shock. A convalescent home for Russian officers wounded in the Far East was established not long ago at Cannes. The home was supplied with beds and furniture from French military hospitals, the nursing was undertaken by French orderlies, and French people have subscribed liberally towards its maintenance. The Russians, however, apparently not feeling sufficient confidence in French doctors, either military or civil, have entrusted the care of the patients to Russian physicians and surgeons. Now the offence has been crowned by the appointment of a foreigner as consulting physician. This act of the Grand Duke Michael, to whose initiative the home owes its existence, is naturally resented by our French brethren For ourselves we are bound to say that it argues a certain simplicity in them to have expected anything else. They should remember the saying of Napoleon about the Tartar element which underlies the superficial polish of the Russian character.

FOREIGN PROFESSORS AND PROTESTING STUDENTS.

At the opening of the course of lectures on anatomy in the University of Paris, two or three weeks ago, Professor Poirier was made the object of a hostile demonstration by a number of students who objected to the attitude which he had felt it his duty to take up in regard to M. Doyen's anticancer serum. The professor was hooted and, figuratively speaking, *conspué*, and was unable to proceed with his lecture. He bore himself with great dignity, standing his ground all through the time appointed for his discourse, and trying to go on whenever there was a momentary lull in the storm. More recently the Dean of the Medical Faculty of the University of Valladolid, Dr. Salvino Sierra, also incurred the wrath of the students. He made a public reference to the disappearance of a foot and a hand from an articulated skeleton in the museum, and intimated a suspicion that the thief was to be found among the second year's students. At the next meeting of the anatomy class a violent demonstration took place, in which the Professor, Dr. Pedro Urraca, is said to have joined. On leaving the lecture room the students encountered the Dean, whom they pursued with hisses and hoots through the precincts of the University. The indignation of the students is said to be all the greater because a similar charge was brought against them by the Dean last year. It is expected that the Rector of the University will have to intervene for the restoration of peace.

MEDICAL MEMBERS OF THE ITALIAN PARLIAMENT.

As the result of the recent elections the medical profession is well represented in the Italian Chamber of Deputies. The medical members of the new Chamber are: Professor Guido Baccelli (Rome), Professor Angelo Celli (Cagli), Professor Gaetano Rummo (Benevento), Professor Giuseppe Sanarelli (Bibbiena), Drs. Leonardo Bianchi (Montesarchio), Pietro Castellino (Foggia), Giulio Marsini (Empoli), Paolo Casciani (Pistoja), Nicola Badaloni (Badia Polesine), Felice Santini (Rome), Roberto Rampoldi (Pavia), Campi (Rocca S. Casciano), and Batteria (San Pier d'Arena). Professor Baccelli is known to all men not only as a physician but as a statesman who has been a member of several Cabinets. Professor Angelo Celli's researches on the etiology of malaria have made his name familiar to all workers in the same field of scientific investigation. Dr. Santini was a medical officer of the Italian Navy, and has made himself conspicuous by his persevering efforts to enforce on the Government acceptance of the doctrine "Italy for the Italians" in the matter of medical practice. Dr. Rummo is Professor of Clinical Medicine in the University of Palermo, and the Editor of the *Riforma Medica*. Dr. Sanarelli, whose researches on yellow fever brought his name prominently before the scientific world a few years ago, is Professor of Hygiene in the University of Bologna. Dr. Rampoldi is Lecturer on Diseases of the Eye in the University of Pavia.

A POPULAR VOTE AGAINST QUACKERY.

A determined effort has lately been made to get the form of quackery known in Germany as "Nature healing" legalized in Switzerland. A strong agitation in favour of the proposal was set on foot in the canton of Zurich, and an attempt was made to influence the public mind by the distribution of a flood of literature urging free trade in medicine. It speaks well for the enlightenment of the Swiss public that the proposal has been rejected by a majority of 28,438 in a total of 51,319 votes.

THE CHAIR OF ANATOMY AT BIRMINGHAM.

Professor Arthur Robinson, of King's College, London, has been appointed to the Chair of Anatomy at the University of Birmingham, in succession to Professor B. C. A. Windle, now President of Queen's College, Cork. Professor Robinson was a student of Edinburgh University, and received the gold medal at the examination for the M.D. degree. Later he served as demonstrator of anatomy at Owens College, Manchester, and was afterwards lecturer on the same subject at the Middlesex Hospital Medical School. Upon the death of Professor Hughes in 1900, he succeeded to the professorship of Anatomy at King's College. His departure from London will be a great loss to King's College, as also to the University of London, in the development of which he has played a useful part.

The heirs of Professor Virchow have given £2,500 to be applied towards the prevention of infant mortality in Berlin.

The Wilhelm Order, which is awarded in recognition of services rendered in the cause of the public welfare, has been conferred on Professor Robert Koch.

It is reported that Dr. William H. Welch, Professor of Pathology at Johns Hopkins University, Baltimore, will succeed Professor Osler in the Chair of Medicine.

Dr. K. A. Hasselbach, Privat-docent of Physiology in the University of Copenhagen, has been appointed head of the laboratory of the Finsen Institute in that city.

As already stated, an executive committee has been formed in Paris to invite a party of English medical men to visit Paris early in May next. Professor Bouchard is the president of the committee, M. Lucas-Championnière, vice-president, and Drs. Sillonville of Aix-les-Bains and Triboulet of Paris, secretaries.

Scotland.

Nurses and Nursing Homes in Edinburgh.

H.R.H. Princess Louise, Duchess of Argyll, accompanied by the Duke of Argyll, and attended by Captain Probert, visited the Nursing Home, Torphichen Street, Edinburgh, on December 5th. The Home was opened on October 7th last and is connected with the Royal Scottish Nursing Institution for the reception of gentlefolk of limited means. H.R.H. also visited the Scottish District Training Home of the Queen Victoria's Jubilee Institute for Nurses and presented badges and certificates to sixteen nurses who had qualified during the year.

Local Government Board.

The Local Government Board have appointed Dr. Fred. Dittmar to the office of Medical Inspector, vacant by the promotion of Dr. W. Leslie Mackenzie to be Medical Member of the Board. Dr. Dittmar, who is M.A. and M.D. of Glasgow University and a D.P.H. of Cambridge, is the Medical Officer of Health for Scarborough. Previously he was for some years resident medical officer to the City of Glasgow Fever Hospitals and afterwards assistant to the medical officer of health for that city. He also acted as medical officer for the Port of Glasgow for plague and small-pox, and has had wide experience in the management of these diseases.

The General Medical Council and Aberdeen University.

The report recently presented to the General Medical Council by their Inspector and Visitor on the Final Examinations in Aberdeen University has been received with much satisfaction, and not least by the students themselves, by whom the stringent and searching character of the examination has long been felt. Now, however, since the hall-mark of approval has been given by head quarters, the gratification is all the more keen, and will no doubt lead to an even better appreciation of the Aberdeen qualification in the future.

Roentgen Rays in Leucocythaemia.

A meeting of the Aberdeen Medico-Chirurgical Society was held in the Society's Hall, on the evening of December 1st. Dr. George Rose, President, was in the chair. Dr. McKerron, Senior Physician to the Sick Children's Hospital, read a paper on the effect of *x* rays in the treatment of leucocythaemia. He made reference to a case treated in the Aberdeen Royal Hospital for Sick Children by this method, in which the most striking features were the change for the better in the general condition of the patient, who from being bedridden became able to take an interest in life almost like an ordinary child, and the reduction in the proportion of leucocytes. On May 30th, before *x*-ray treatment was started, the proportion of leucocytes to red blood corpuscles was 1 to 13, while on August 3rd it was 1 to 226. There was hardly any appreciable reduction in the size of the spleen, which was very large. Arsenic had been tried previously, but was badly borne, and could not be pushed. Following Dr. McKerron, Dr. John Gordon read some interesting notes on a case of leucocythaemia, in which the enlargement of lymphatic glands was most marked. Under *x*-ray treatment the glandular enlargement rapidly disappeared, while there was practically no change in the proportion of leucocytes to red blood corpuscles. Dr. Levack also read notes of a case in which the treatment was followed by results similar to those observed in Dr. McKerron's case. The President then read a short note on a case of penetrating wound of the ear by a hat-pin, the case ending fatally. At the time of infliction of the injury there were symptoms of vertigo and pain, and thereafter about a teacupful of cerebro-spinal fluid escaped. The initial symptoms speedily subsided, and thereafter for forty-two hours the child was quite well. Symptoms of meningitis then set in and progressed so rapidly that in twelve hours the child was dead.

Aberdeen Students' Medical Society.

A special meeting of the Students' Medical Society was held in Marischal College on December 2nd at 5.15 p.m., when Dr. George W. Duncan, University Assistant in Pathology and Lecturer in Bacteriology in the Department of Public Health, delivered a lecture on trypanosoma and allied diseases. The meeting was largely attended. The lecturer treated his subject in a most able and interesting manner, and illustrated his remarks by an excellent collection of lantern slides which he had prepared for the occasion. At the close he was, on the motion of the President, Dr. James Clark, awarded most hearty thanks for the lucid and perspicuous address he had delivered.

The Maternity Hospital, Aberdeen.

Under the fostering care of Professor Stephenson this hospital continues to increase in usefulness and in scope. A new wing, which has been in course of construction for some time, is now getting on towards completion, and it is expected that the opening ceremony will take place about Christmas. The new portion of the hospital will be fitted up on the most modern system. It contains eight beds, bringing the total number in the institution up to twenty-two. Special wards for specific purposes are being fitted up, and excellent accommodation is provided. The prejudice against going into hospital for confinement is largely broken down now, and the excellent arrangements for teaching no doubt had its share in contributing to the pronouncement of the General Medical Council's Inspector that the examination in midwifery was "sound and satisfactory."

Small-pox in Scotland.

During the period from November 16th to 30th inclusive 20 cases of small-pox were intimated to the Local Government Board as having occurred in Scotland. These were distributed over six counties, and twelve localities in these counties.

Ireland.

Irish-Speaking Dispensary Officers.

At a meeting of the county Mayo Branch of the Irish Medical Association, held at Claremorris on December 2nd, when seven members were present, a resolution was adopted expressing the opinion that in an Irish-speaking district it is desirable that a knowledge of the Irish language should be taken into consideration in appointing a medical officer.

Public Health, Belfast.

At the monthly meeting of City Council on December 1st, the Superintendent Medical Officer of Health reported the notification of 70 cases of simple continued fever, of 63 cases of typhoid fever, and of 18 of small-pox, the births numbered 894 and the deaths 507. The annual death-rate from all causes was 18.4. Of the three persons who died from small-pox, none had been properly vaccinated.

Congestion in the Belfast Workhouse.

A special meeting of the Belfast Board of Guardians has been held to consider the question of congestion in the workhouse and of renting the old Belfast Royal Hospital in Frederick Street, with a view of allocating a number of old and infirm men to that building temporarily. The description of the wards showed most undesirable overcrowding, the beds being as close as they could be, and the atmosphere pestilential. Mr. Agnew, Local Government Board Inspector, said the place, as it was, was unfit for human habitation.

Belfast Charitable Society.

The report by Dr. R. J. Purdon, Visiting Physician, presented to the annual meeting of the Belfast Charitable Society, showed that the deaths during the whole year only numbered five. The committee noted with pleasure that for upwards of one hundred years the Purdon family had been connected with the charity. In the minutes of 1804 mention is made of the attendance of Surgeon Purdon, grandfather of the present Dr. R. J. Purdon. The financial statement showed a small credit balance. The charity had received a legacy of £1,000, but had to pay 1,000 guineas to the Maternity Hospital on giving up the old site.

Mr. A. R. J. Douglas, F.R.C.S., Demonstrator at the London School of Tropical Medicine, has been appointed medical officer to the Burmah Railways Company.

Distribution of Medical Practitioners in Italy.—Official statistics recently published show the distribution of medical practitioners in the various provinces of Italy. The proportion to 100,000 of population is as follows: Piedmont, 68; Liguria, 96; Lombardy, 56; Venetia, 49; the Emilian Duchies, 60; Romagna, 66; Tuscany, 65; Marche, 59; Umbria, 57; Latium, 101; Abruzzi and Molise, 59; Campagna, 97; Apulia, 71; Basilicata, 81; Calabria, 76; Sicily, 67; Sardinia, 64.

NOVA ET VETERA.

THE CULT OF ASKLEPIOS.

The intelligent appreciation of the art of healing shown by the most cultivated people of antiquity is reflected in the fact that they had a god of medicine with a special cult. First it was Apollo; afterwards the worship of the god of light, as far as it concerned the attribute of healing by divine power, was transferred to his son Asklepios. The traditional accounts of the genealogy of Asklepios are confused and conflicting, and the matter may well be left to the learned in mythology. It is sufficient for our purpose to know that about eight hundred years before the beginning of the Christian era we find distinct traces of the cult of Asklepios which spread from its original centres in Thessaly, on the island of Cos and at Epidauros over Greece. In the fifth century B.C. it was firmly established at Athens, Corinth, and other chief cities. In the year B.C. 270 the Romans, who were then suffering from a deadly pestilence, turned in their hour of need to despised Greece for a deity that might be able to help them. They accordingly sent to Epidauros for the sacred serpent, which was the symbol of the cult of Asklepios, and built a temple on an island in the Tiber to their new god, whom they called Aesculapius. At a later period, when Epidauros had fallen on evil days, the centre of the cult was transferred to Pergamon, in Asia Minor, where Galen was born A.D. 130.

The most ancient and renowned of the temples dedicated to the cult of Asklepios was at Epidauros, which is situated in Argos, in the south-eastern part of Greece, about three miles from the coast; it is separated from Athens by the bay of Aegina. The place is now a waste, only ruins marking the site of the famous temple. These lie in a valley where the air is relaxing and water is not very abundant; according to our notions, therefore, the site was not particularly well chosen for a health resort. Notwithstanding these natural disadvantages the cult of the god of healing flourished exceedingly there for six or seven centuries, during which its reputation for the healing of disease stood as high as that of the most celebrated of mediaeval shrines. In the early days of the Roman Empire its fame suffered eclipse as faith in the old gods died out and the introduction of new forms of faith-healing followed the triumph of Christianity.

Excavations have been carried out on the site of the ruins in recent years, and the discoveries made in this way have enabled archaeologists to reconstruct in the mind's eye the temple as it was in the time of its glory. The pioneer in this work has been M. Cavvadias, Ephor of Antiquities, and formerly Greek Minister of Education. The results of his labours are contained in a volume entitled το Ἱερον τοῦ Ασκληπιοῦ ἐν Επιδαυρῳ, and copiously illustrated with plans and drawings, which was published at Athens in 1900. A magnificent work on the same subject, entitled *Epidaure: Restauration et Description*, by a French architect, M. Alphonse Defrasse, and a Greek scholar, M. Henri Lechat, appeared in Paris in 1895. Dr. Richard Caton has made several visits to Greece and the Greek colonies during the past twenty years, and has thus had the opportunity of seeing a good deal of the work of exploration in its various stages. He has given much attention to the subject and has embodied his observations in a volume entitled *The Rites and Ritual of Asklepios*, a second edition of which appeared in 1900.

The temple at Epidauros was the Lourdes and at a later period the Salerno of ancient Greece; it may therefore be taken as the type of the shrines where the cult of Asklepios was conducted with unmaimed rites and exact obedience to the rubrics. The following brief account has been compiled from the sources just mentioned. Those interested in the archaeology of medicine, and in ancient art as applied to the cult of the god of healing, who wish for fuller information, may be referred to the original works.



ASKLEPIOS.

(From a Photograph by Dr. Richard Caton of a head found at the Piraeus).

The buildings comprised, in addition to the temple proper, a Tholos or sacred well of Asklepios, and an Abaton or hospital for the pilgrims who visited the shrine in search of health. The chief feature within the temple was a great statue of Asklepios, fashioned of ivory and gold, by the famous sculptor Thrasymedes of Paros. The god was represented seated on a throne with a golden serpent rising up towards his left hand and a dog lying on his right. These animals had a prominent place in the symbolism of the cult. The serpent has been interpreted as signifying the spirit of the earth from which comes the mysterious power of life; as for the dog, some explain his presence by the legend that the god was guarded by that animal when forsaken by his mother in infancy, while others hold that he was regarded as sacred because he was supposed to cure sores by licking them. Anti-vivisectionists might perhaps find a more sinister meaning in the special association of the dog with medicine. A harmless species of large yellow snake peculiar to the Epidaurian valley, which has been seen within the last century but is now believed to be extinct, was regarded as the incarnation of the god and kept in the precincts of the temple. These reptiles were held in the greatest veneration by devotees, who fed them with cakes. Both serpents and dogs seem to have been trained to lick sores.

The Tholos was a circular temple appropriately adorned with paintings of Methe (drunkenness) and Eros (love), two chief sources of the diseases which afflict mankind. Some believe that the Tholos was the building in which was situated the sacred spring—the pump-room, in fact, where sufferers drank the healing waters. M. J. Svoronos, Superintendent of the National Numismatic Museum at Athens, holds that the labyrinth underneath it, which has puzzled the

learned since the time of Strabo, was in fact the tomb of Asklepios, who, according to him, received apotheosis only after his death, when the temple of Epidauros was already a thriving institution.

The Abaton was a portico or gallery open on one side towards the south, the roof of which was supported by a double row of columns. It consisted of two chambers or wards—one for men, the other for women—which Dr. Caton estimates might have sufficed for the accommodation of 180 pilgrims. Besides these wards or dormitories there were a number of apartments in four buildings, each opening into a quadrangle, which he conjectures to have been hostels where patients suffering from comparatively slight ailments or convalescents found shelter.

There was also a theatre, the ruins of which are more impressive than those of any other in Greece. The Greeks evidently knew the hygienic effect of amusement, and full provision for the application of that therapeutic resource was made at Epidauros. The open porticos in which the patients lay may perhaps be taken to show that they also knew the value of open-air treatment.

The temple had a large staff of priests for the performance of the ritual. The chief priest or Hierophant was sometimes, but not always, a physician; in some of the subordinate officials the sacerdotal and medical characters were also united. M. Cavvadias maintains, however, that the combination of the function of the priest and the physician belongs to a late period in the history of the temple. Up to the dawn of the Christian era the miracle of cure was, he says, wrought at Epidauros and the other Asklepieia entirely by prayer.

In any case the treatment was largely of the nature of faith healing. An essential part of the ceremony was, as it should be in all well-regulated practice, the fee, which took the form of offerings of one kind or another to the god, represented by his ministers. The performance of religious rites and lustrations prepared the suppliant for the operation of the divine power. At night when the patients were gathered together in the long ward of the Abaton priests recited prayers and then put out the lights with an injunction to go to sleep and hope for dreams in which the god should appear and tell them how they might find relief. Whether hypnotism played a part in the ritual of cure can only be conjectured; it is clear, however, that nothing was left undone to create an atmosphere of suggestibility. Many inscriptions recording cures have been discovered, and several of these speak of dreams in which wholesome counsel was given by the god. In the case of the less imaginative patients it is not unlikely that the influence of the mystic surroundings was helped by the use of opium, or other drowsy syrups, causing vivid dreams. Readers of Théophile Gautier's *Paradis Artificiels* will remember how the effect of *haschisch* manifested itself by the intensification of actual impressions; thus a chord struck on a piano was magnified into the music of a heavenly choir, a question asked by a bystander in an ordinary tone became the voice of doom echoing through infinite space. Men and women, worn out by suffering and possessed by an eager faith in the healing power of Asklepios would, when under the influence of such a drug, need no elaborate *mise-en-scène* to make them see visions.

An accurate idea of the rites practised in the Asklepieia of ancient Greece may be got from observances of a kindred character which are still to be witnessed in some of the more remote islands of the Greek archipelago. Miss Jane Harrison, who is a recognized authority in Greek archaeology, was present at a religious function in the island of Tenos, which may be taken as fairly representative of the rites of healing at Epidauros and the other shrines of Asklepios, though shorn of the beauty of art and the pomp of a richly-endowed shrine. It is, she says, the eve of the feast, and pilgrims have been arriving all day, and continue to do so far into the night. The whole place is full of them. They present a weird spectacle; many are lame, not a few blind or paralytic, most of them exceedingly dirty. The houses are all full, and sleeping accommodation is nowhere to be had. Many make a night of it, and the cafés do a roaring trade. Dancing begins in the streets, and the whole night is one long unrest. Meanwhile the Church plays its part. Service has been held in the afternoon, and vast colonnades have been prepared for the reception of patients. The more fortunate have secured places in these, and amidst the lurid flame of quickly-prepared fires, the night is passed in cooking food and attending to the wants and cries of the children. Round the sacred well the crowd is thickest. The ceremony begins with a procession of priests, which threads its way among the worshippers, whose object is to be touched or actually walked over by the bearer of the Eikon, or sacred image. Next morning printed lists of cures accomplished during the night are published by the priests. In the church itself may be seen numbers of votive offerings, in the form of limbs or other parts of the body, which were the seat of the disease, placed there in testimony of cures wrought on former suppliants. Here, too, the parallel is exact, for vast numbers of such *ex-votos*, many of them made of gold, have been excavated from the ruins of the Asklepieia.

Asklepios is variously represented in ancient art, sometimes as a smooth-faced youth, but most frequently with a full beard and a head recalling that of Zeus, but less majestic and more full of human sympathy. The various types are shown in a series of illustrations of busts and statues published by Dr. Charles L. Dana, of New York, in the first volume of the *Proceedings of the Charaka Club*, printed in 1902. The one which serves as an illustration of this article is not among them. It is reproduced from a photograph taken some time ago by Dr. Caton, to whom we are indebted for a copy. Only one other copy of this photograph is, we believe, in existence; it was presented by Dr. Caton to the Liverpool Medical Institution. The head from which the photograph was taken, was found some years ago at the Piraeus, and is now in the National Museum at Athens. Dr. Caton considers it the most beautiful head of the god hitherto discovered; it is the work of an unknown Attic sculptor of the best period of Greek arts. The eyes, which were probably of enamel, are destroyed, and the head is otherwise damaged. The genius of the sculptor has given to the face a pathetic expression, as though the god witnessed the sufferings of mankind with sorrow and sympathy, and petitioned heaven for their relief.

THE EXTENSION OF HULL ROYAL INFIRMARY.

Owing to the progressive expansion of the work of this institution, it was suggested as far back as 1900 that further provision was desirable. In 1901 this need began to assume a more pressing form, and at a town's meeting called by the then Mayor (Sir Alfred Gelder) it was decided that the extension should take the form of a memorial to her late Majesty Queen Victoria. A special extension fund was inaugurated, by which it was hoped to raise £50,000. The estimated cost of the enlargement of the building was £30,000; but, if funds will permit, a still further extension will have to take place in a few years. Up to the present the principal donations to the fund are: Messrs. Reckitt and Sons, £5,000; Mr. Joseph Rank, £2,000; the Marriott Trust, £2,000; a former Sheriff of Hull (Councillor W. H. Cockerline, J.P.), £1,000; Dr. Lee, £1,000; Sir James Reckitt, Bart., £1,000; Mr. C. H. Wilson, M.P., and Mr. Arthur Wilson, £1,000; the late Mr. W. T. Owbridge, £1,000; Mr. T. S. Whitaker, £1,000; Mr. G. T. Wilson, £500; Corporation of the Trinity House, £500; Mr. C. Pickering, £500; Mr. Haldane, £500; Mr. T. R. Ferens, £500. To this has to be added, within the last few days, a further munificent donation from Sir James Reckitt of £6,000, making a total of £12,000 from the Reckitt family towards the extension fund.

As an outcome of this movement plans were asked for, from the principal hospital architects of the kingdom, for the remodelling of the old buildings of the infirmary, and for large additions in ward accommodation and in the out-patient and operating departments. Ultimately the plans of Messrs. Thomas Worthington and Son, Manchester, were selected, and they were instructed to carry out such portions as the funds would allow.

As the result, besides alterations to the existing buildings so as to bring the sanitary arrangements throughout up to date, two large wings have been added, and are now in use. To the north of the central administration building is a new wing, on the ground floor of which are the patients' entrance and the casualty department. The entrance hall is paved with marble terrazzo, and the walls and arcades are lined with Burmantoft's faience ware, and into it opens a porter's lodge and telephone room, male and female casualty rooms, the casualty waiting rooms, the Roentgen-ray room, lavatories, and a casualty ward for two beds, all of which, except the last, have walls lined with opalite, forming a perfectly smooth, impervious, and clean dado. A crutch and splint room and a staff cloak room complete the accommodation on this floor. Above on the first floor are a nurses' dining-room and house surgeon's rooms, and upon the top floor is the

operating department, containing the operating theatre, with annexes for administering anaesthetics, sterilizing, storage, etc., a room for electrical treatment, a room for washing mackintoshes, and a dark room.

Though this part of the infirmary is not planned upon the large scale required in hospitals for 500 to 700 beds, or a medical school, the operating theatre is nevertheless one of the most perfect rooms of its kind in the country. The walls in the theatre and annexes are lined with white marmorite throughout, a preparation of glass in large slabs, which was first suggested for this particular purpose in the Hull Infirmary, though since the preparation of the plans many of the large London hospitals have been using it in their theatres. Every angle is rounded, and there is nowhere a corner for dust or germs to lie, and, so far as the materials and construction of the theatre and adjoining rooms are concerned, they are thoroughly aseptic; the whole is ventilated by an electric fan, air being admitted after washing and purification at any desired temperature. The sanitary fittings are also of the most modern and perfect description, and were chosen after careful consideration from among proposals made by the leading firms in the country. The large south wing contains wards on three floors for thirty beds each, with the necessary rooms attached. They are floored with terrazzo, and the walls are Portland cement (painted). All the wards are warmed by hot-water pipes, and ventilated by an electric fan.

In architectural treatment the lines of the old building necessarily had to be followed, and perhaps the symmetry to which the citizens of Hull were accustomed has been partly disarranged by the addition of the entrance block. But this, it is to be hoped, is only temporary, as the erection of a ward block in a corresponding position upon the south side of the administration building, which was included in the original scheme, will not, it is hoped, be long delayed.

A further important addition is that of another nurses' home giving accommodation for twenty-four nurses.

With reference to the alterations in the old buildings, the sanitary annexes to the wards have been rearranged and fire-escapes fitted available for use from all floors. The laundry has been enlarged and furnished with the latest machinery, and a new and up-to-date mortuary has also been provided. Electric lifts to all floors are now in use. In connexion with the boiler-house, a large sterilizing chamber is utilized for providing sterilized water to all parts of the hospital, such water having first gone through the process of softening, and by means of machinery specially adapted for that purpose.

The net result of this memorial extension is that the beds now in use are increased from 175 to 230, and when the south wing is completed in another twelve months the total number available will be 266—in a building second to none in the kingdom, and equipped with all that science and experience can suggest as necessary for the relief and cure of sickness and disease.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held on December 1st at 6, Suffolk Street, Pall Mall, with Dr. F. H. CHAMPNEYS in the chair.

Charges against Midwives.

The Board postponed the consideration of a charge of signing false certificates in connexion with examinations of the Obstetrical Society of London in consequence of the illness of the accused person; it was understood that this charge would be heard in January next, and that at the same meeting a charge against another midwife of being drunk while in attendance on a woman in labour would be considered.

New Member.

The SECRETARY to the Board read a letter from the Royal British Nurses' Association formally notifying the election of Mrs. Josephine Latter as member of the Board in place of Miss Oldham, who had resigned.

Notification by Midwives of Stillbirths.

The Midwives Act, 1902, provides that the certificate under the Act shall not confer upon any woman any right or title to be registered under the Medical Acts, or to assume any name, title, or designation implying that she is by law recognized as a medical practitioner, or that she is authorized to grant any medical certificate or any certificate of death or of stillbirth. According to the rules framed by the Central Midwives Board under Section XXXI of the Midwives Act, 1902, under the heading of "Notification," midwives must in all cases where a registered medical practitioner is not in attendance as soon as possible after the occurrence of a stillbirth notify the same to the local supervising authority. It is further stated in connexion with this rule that a child is deemed to be stillborn when it has not breathed nor shown any sign of life after being completely born. Referring to the above, Dr. WARD COUSINS mentioned that he had received inquiries on the subject, and before he replied to them would like to have some information about the matter. The Board did not attempt to define the expressions "notification" nor "certification." Dr. CULLINGWORTH expressed the opinion that the Midwives Act, 1902, had not affected in any way the right of a midwife to certify a stillbirth. The CHAIRMAN informed Dr. Ward Cousins that the following form of notification of the birth of a stillborn child for the use of midwives had been submitted to the Privy Council:

Form of notification of the birth of a stillborn child under Section 2, Rule 18:

To the Local Supervising Authority of *the Administrative County of ..... *or* *the County Borough of ..... *or* *the urban or rural district of .....

I, the undersigned, being a midwife holding the Certificate No..... of the Central Midwives Board, hereby notify that, on the ..... day of ..... 19..., I delivered ..... living at ..... of a stillborn *male *or* *female child, no registered medical practitioner being in attendance.

Name of midwife .....

Address of midwife.....

* Strike out the words not applicable.

After transacting some formal business the Board adjourned to December 22nd.

LITERARY NOTES.

THE December number of the *Practitioner* contains an announcement that with that issue the connexion of Dr. Bosanquet with the journal as editor comes to an end.

Dr. G. M. Gould, of Philadelphia, whose illustrated *Dictionary of Medicine, Biology, and Allied Sciences*, was published ten years ago and has run into a fifth edition, has already found it necessary to issue a supplement. This has just been published by Messrs. P. Blakiston's Son and Co., under the title of *A Dictionary of New Medical Terms*. Dr. Gould estimates that in the decade which has elapsed since his dictionary first appeared over 30,000 new terms have been coined, a mintage surely unparalleled in any other branch of human knowledge. The changes and corrections made in the various editions of the *Dictionary* have been incorporated in the supplement.

The University of Marburg, on the occasion of the four-hundredth anniversary of the birth of Landgrave Philip the Magnanimous of Hesse conferred the honorary degree of Doctor of Medicine on Professor Adolf Harnack, of Berlin, the famous historian of theological dogma. The reason of this distinction is that Dr. Harnack contributed an essay on medical matters in the earliest period of Church history to the *Festschrift* produced in honour of his father-in-law, Professor Thiersch, the distinguished surgeon of Leipzig.

The tercentenary of the publication of *Don Quixote* falls in January next, and Professor Joaquin Almedilla y Puig, of the University of Madrid, has opportunely contributed to the *Revista de Medicina y Cirugia Practicas* (November 21st and 28th) an essay on the knowledge of medicine possessed by Cervantes. Like Shakespeare, Cervantes knew something of everything. A learned Spanish writer on medicine, Hermandez Morejon, found his works such a mine of medical philosophy that he devoted a long chapter to the subject in his *Historia Bibliografica de la Medicina Española*. Another well-known Spanish writer, Pi y Molist, wrote a book on Cervantes as a medical psychologist. *Don Quixote* may, in fact, be regarded as a study of madness from its predisposing causes to its complete development. The contagion of insanity is shown in the effect upon Sancho Panza of constant companionship with the Knight of the Sorrowful Countenance. The methods by which those about the Knight seek to divert his mind from the exalted ideas which had led him to go about in search of adventures show that his creator had a clear notion of the value of moral treatment. In several passages reference is made to the use of drugs of one kind or another, and it is evident that Cervantes was acquainted with the great work of Dioscorides on materia medica which had been translated into Spanish by Dr. Andres Laguna. More than a hundred plants are mentioned in *Don Quixote* in such a way as to show that the author knew their appearance and properties. In the *Colloquy of the Dogs*, which is represented

as taking place in the Hospital of the Resurrection at Valladolid, Berganza refers to a remark "of portentous import" which he had heard from a student of Alcalà to the effect that, of the 5 000 students of that University, 2,000 were students of medicine. From this he draws the inference that those 2,000 doctors must either find patients to treat—a thing terrible to contemplate—or die of hunger. It is an anticipation of Abernethy's "God help you, gentlemen! What is to become of you all?" In many places Cervantes dwells on the hygienic value of simple diet and moderation in eating. He says some unkind things about doctors, but it must be allowed that the medicine of his time was a fair mark for the satirist, and its professors had not the lofty conception of their calling which now prevails.

It is well known that all the MSS. of Leonardo da Vinci are in "mirror writing," that is to say, written backwards so that the characters can be read only by holding the writing before a mirror. Why did the great artist write in this way? The general explanation is that his object was to prevent his script being read by the curious. This is childish. Dr. Gilbert Ballet, of the Salpêtrière, however, holds that it was because he was left handed. Mirror writing is in fact the natural writing of left-handed persons. Further proofs of the truth of this explanation are found by Dr. Ballet in the fact that Leonardo's first sketches were made rapidly with the left hand. Vasari, the historian of Italian painters, speaks of his *caratteri scritti con la mancina a revescio*, and Luca Paccioli, a mathematician who was an intimate friend of the painter, states positively that Leonardo wrote backwards with the left hand. It has been said that the "mirror writing" followed an attack of hemiplegia at Amboise, but it is seen in all the "Fogli Vinciani." Dr. G. Antonini, who has examined the question, agrees with Ballet that Leonardo was left handed. Moreover, owing to the neglect in which his boyhood was passed, it is probable that in the matter of writing he was self-taught and therefore wrote habitually in the manner most natural to him.

Dr. Folet, of Lille, has made the interesting discovery that Ambroise Paré, mighty man of surgery as he was, succumbed to the human weakness of verse making. Jacques Guillemeau, whose length of days extended from 1544 to 1612, was a favourite pupil of Ambroise, and returned the kindness of his master by saving the life of his daughter nine years after the old surgeon's death. Guillemeau was Provost of the College of Saint Côme in 1595, and although he was surgeon to King Henry the Third, his main line of practice seems to have lain in midwifery. He was the author of an *Atlas of Anatomy*, the first edition of which appeared in 1586. Many of the plates are borrowed from the great work of Vesalius. The book is extremely rare. To many its chief interest will seem to be the fact that it contains a recommendatory epistle in Alexandrine verse by Paré. From the literary point of view the verses have little value, but they are interesting as showing Paré in an unfamiliar character. He praises Guillemeau for having chosen

La science entre tous honorable
Dont Aesculape fut le prince vénérable,

and for having taken the modest author of the epistle as his *guide et fidelle conduite* in that science. We gather that Paré advised his pupil to shut himself up in the Hôtel-Dieu, where he would gain

L'expérience vraie en maints corps tormentés
De diverses langueurs et mille infirmitez,

and learn

les traicts d'Anatomie
Sans laquelle on ne peut faire la chirurgie.

At the Hôtel-Dieu Guillemeau worked under Paré for eight years. Then, like his master, he went to the wars

Ou le furieux Mars exerce ses alarmes
Par le feu, par le fer, par la sang, par les armes.

In due course he became a master surgeon, and produced the *Atlas*, for which Paré foretells that he will always be praised by posterity. When Paré wrote these lines he was seventy-five years of age.

The two-hundredth anniversary of the death of John Locke, philosopher and physician, was celebrated at the Johns Hopkins University, Baltimore, on November 1st "with appropriate exercises." The chief of these "exercises" seems to have been a banquet given by Professor Osler, the menu being a reproduction of a quaint dinner order given by Locke shortly before his death. We are glad to see the memory of our great English philosopher honoured in any way. We confess, however, that the celebration of the anniversary of a great man's death seems to us an odd way of honouring his memory; nor does a banquet strike us as a particularly appropriate exercise for the occasion. We hope we shall not be accused of flippancy if we add that a bill of fare ordered by a dying man is more suggestive of funeral baked meats than of a banquet for men whose blood is warm within them.

The Hungarian Minister of the Interior offers a prize of ten thousand crowns for the best book or essay on trachoma based on original research, which shall be considered by the judges to possess sufficient value, especially in regard to etiology and treatment. Manuscript essays or printed books sent in competition must be in the hands of the Minister (Ministerium fur inn. Angelegenheiten, Budapest, I.), on or before December 31st. They may be written in the language of the nation to which the author belongs.

ASSOCIATION NOTICES.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1905.

MEETINGS of the Council will be held on Wednesdays, January 18th, April 19th, July 5th and October 18th.

The January meeting of the Council, by kind permission of the Metropolitan Asylums Board, will be held in their Board Room at 2 o'clock in the afternoon of Wednesday, January 18th. The offices of the Metropolitan Asylums Board are situated on the Victoria Embankment, at the corner of Carmelite Street and near to Blackfriars Bridge.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished on application to the General Secretary of the Association, 429, Strand.

GUY ELLISTON, *General Secretary.*

BRANCH MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: CENTRAL DIVISION.—A general meeting of this Division will be held at the Medical Institute on Friday, December 16th, at 4 p.m. Business:—(1) General. (2) Matters referred to the Division: (*a*) Interim report on contract practice; (*b*) consultation of medical witnesses; (*c*) the relations of medical men and coroners; (*d*) the reorganization of the Local Government Board; (*e*) Medical Acts Amendment Bill. Each member is requested to bring with him his copy of the SUPPLEMENT to the BRITISH MEDICAL JOURNAL for November 26th.—E. D. KIRBY, Honorary Secretary, Edgbaston.

EAST ANGLIAN BRANCH: SOUTH ESSEX DIVISION.—The first winter meeting will be held at the Victoria Hospital, Southend-on-Sea, on Thursday, December 15th, at 4 p.m. Agenda: Consideration of matters referred to Divisions contained in BRITISH MEDICAL JOURNAL SUPPLEMENT, November 26th. Cases will be shown by Dr. Waters, Dr. Forsyth, Lieutenant-Colonel Westcott, C.M.G., and Dr. Bluck.—W. CARDY BLUCK, Honorary Secretary, Southend-on-Sea.

FIFE BRANCH.—A general meeting of this Branch will be held in the Hotel, Thornton, on Wednesday, December 14th, at 3.15 p.m., to consider the various matters referred to the Divisions, as contained in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of November 26th. Professor Chiene, C.B., Edinburgh, has kindly agreed to give an address, and will dine with the members thereafter.—R. BALFOUR GRAHAM, Honorary Secretary, Leven.

LANCASHIRE AND CHESHIRE BRANCH: ALTRINCHAM DIVISION.—The next quarterly meeting will be held at 5 p.m. on Wednesday, December 14th, at the Angel Hotel, Northwich. Agenda: (1) Minutes of last meeting, September 29th. (2) Correspondence *re* Nurses' Registration Bill. (3) Report of Committee on financial position, and proposed sliding scale of payments to Divisions. (4) Communication to Branch Council. (5) Resolutions for Representative Meeting. (6) Letter from Kendal Division. (7) Dr. Luckman will mention a case of splenectomy, and will show a specimen. (8) Dr. Cooper will read a paper on the radical operation for empyema of the antrum of Highmore; results of five cases. (9) Any other business. A dinner will be arranged to follow the meeting for such members as notify me of their wish to participate, not later than December 10th.—T. W. H. GARSTANG, Honorary Secretary, Altrincham.

METROPOLITAN COUNTIES BRANCH, KENSINGTON DIVISION.—An ordinary meeting of this Division will be held at St. John's Hospital for Diseases of the Skin, In-patient Department, 238, Uxbridge Road, W., on Friday, December 16th. Tea and coffee at 4.30 p.m.; meeting at 5 p.m. Business:—(1) To confirm minutes of last meeting. (2) A short paper will be read by Dr. Morgan Dockrell on the principles of treatment in skin diseases. (3) Cases and microscopic specimens will be exhibited by various members of the staff, followed by discussion: Dr. Morgan Dockrell (acne and leprosy), Dr. T. D. Savill (lichen planus), Dr. Alfred Eddowes (lupus and skin gout), Dr. Manners-Smith (papular syphilide), Dr. V. H. Rutherford (urticaria pigmentosa), Mrs. Agnes Savill, M.D. (lipomata successfully treated by ethylate of sodium), and Mr. G. W. Dawson (acne necrotica). (4) Other business. St. John's Hospital is close to Shepherd's Bush Tube Station (Central Railway), Shepherd's Bush Station (Metropolitan Railway), and Uxbridge Road Station (G.W. and L. and N.W. Joint Railway Companies).—G. CRAWFORD THOMSON, M.D., Honorary Secretary, Sinclair Road, West Kensington, W.

METROPOLITAN COUNTIES BRANCH: ST. PANCRAS DIVISION.—An ordinary meeting of this Division will be held at the Royal Free Hospital, Gray's Inn Road, on Friday, December 16th, at 4.30 p.m. Agenda:—Minutes Correspondence. Mr J Smith Whitaker, Medical Secretary of the Association: What a London Division can do for the good of the profession. In his address Mr. Whitaker will deal particularly with the question of contract practice and the report of the Medico-Political Committee; also the Division Ethical Rules adopted by the Bradford Division and approved by the Central Council. The medical staff will show some interesting cases and specimens. The Executive Committee will be glad if all members will attend the meeting and bring some medical friends with them. To consider the question of a dinner.—R. M. POOLEY, Honorary Secretary.

NORTH WALES AND SHROPSHIRE BRANCH.—The next meeting of the Clinical and Pathological Section of this Branch will be held at 5 p.m. on Tuesday, December 13th, at the Salop Infirmary.—HAROLD H. B. MACLEOD and LEONARD J. GODSON, Honorary Secretaries, Shrewsbury.

SPECIAL CORRESPONDENCE.

MANCHESTER.

The King to Visit Manchester.—Northern Counties Hospital.—Beds or No Beds at the Central Receiving House.—Epidemic of Measles.—Board of Agriculture and the Quality of Milk.

IT is stated that the King will visit Manchester next spring in order to take part in the inaugural ceremonies associated with civic and philanthropic enterprise, including the great Sanatorium for Consumption in Delamere Forest, an institution with which the name of Mr. W. J. Crossley will ever be associated as the generous donor.

At the annual meeting of the subscribers to the Northern Counties Hospital for Incurables it was stated that 120 beds had been occupied during the year, and that the cost per bed was £51. The receipts amounted to £9,871, and the expenditure to £8,972. The actual cost of maintenance was £6,440.

Beds or no beds in the central receiving house which is to be erected when the infirmary is removed to Stanley Grove is the question shortly to be settled by the trustees of the Royal Infirmary. Meantime the majority, who are in favour of no beds, and the minority, who wish to have about a dozen beds, have issued reports, setting forth their views and the arguments *pro* and *con*. There is the usual crop of letters in the lay press. The lay members of the committee appointed to consider this matter are equally divided in their opinion, and the two medical members subscribe to the majority report. The lay board is numerically strongly in favour of no beds being provided. The majority report recommends the provision of a central receiving house "for the treatment of medical and surgical casualties and dispensary outpatients." The trustees will be asked to approve the recommendations of the majority report.

A serious state of affairs is reported by the medical officer of the Saddleworth District Council. The Church school had to be closed more than three weeks ago, as more than half the children were suffering from measles. Then another school had to be closed because 85 out of 106 scholars were affected with the disease. The people, it was stated, would not drink the water supplied through the mains and went to private wells.

The milk dealers of Cheshire have a grievance, and the Cheshire Chamber of Agriculture has issued a circular to local authorities as to carrying out the regulations laid down to define the genuineness of milk. The gist of the circular is contained in the following regulation of the Board of Agriculture of December 28th, 1901:

> Although the quality of genuine milk offered for sale will usually be well above the official limits of milk fat and non-fatty solids, there may occasionally—and especially in certain seasons of the year—be cases in which a sample of genuine milk may fall below those limits. To meet cases of this kind it is suggested that in the absence of any special circumstances indicating that the case is a fraudulent one the local authority might, in the first instance, call the vendor's attention to the analyst's report, and ask him whether he desires to offer any explanation; and if the explanation is one they are able to accept, they might, in the exercise of their discretion, refrain from the institution of proceedings, or withdraw any summons which, in order to prevent the failure of proceedings, by reason of the time-limit imposed by the Act, it may have been necessary to take out. But it may be desirable that further samples of milk should be taken in such cases, in order that a satisfactory conclusion as to the character of the milk supplied may be arrived at.

Many authorities have adopted the course recommended in dealing with samples of milk which are just below the standard. The time of milking and collecting, it is alleged, may make the difference, so that there may be some cases in which the purveyors are not responsible for the deterioration in quality.

LIVERPOOL.

The United Hospitals Schools.—Jubilee of Mr. E. R. Bickersteth.

THE United Hospitals Clinical School held its first annual dinner at the Adelphi Hotel on December 3rd, Dr. William Carter, J.P., Senior Physician to the Royal Southern Hospital, being in the chair. As a good deal of misconception seems to prevail as to the nature of this school, it will be well to explain its origin and position. For many years the practice of the Royal Infirmary, of the Royal Southern Hospital, and of the Northern Hospital has been recognized by the qualifying bodies, but for a long time nearly all the Liverpool students have attended the Royal Infirmary, which, besides being the largest of the general hospitals, has the great advantage of being adjacent to the medical school, whereas each of the other hospitals is about a mile and a half distant. Ever since the formation of University College, and for some years before, the physicians and surgeons of the Infirmary have been *ex-officio* members of the medical school, but when the Medical Faculty drew up regulations for its constitution under the new university it resolved to admit to its membership, in addition, a physician and a surgeon from the Southern and the Northern Hospitals and also from the Stanley Hospital so soon as the last-named was enlarged so as to be capable of fulfilling the requirements of the licensing bodies. After the granting of the University Charter a proposal was made that a hospital Board should be formed including all the hospitals recognized for clinical instruction in the city, and that students should enter, not for the practice of any one hospital, but for the practice of all the hospitals and should be at liberty to attend the practice partly at one hospital and partly at another as they thought fit. The medical staff of the Infirmary declined to take part in this scheme, but the other three general hospitals and several special hospitals have combined and have issued a prospectus. The fee charged for the curriculum at the United Hospitals is twenty-five guineas, the fee charged at the Royal Infirmary being forty guineas. To judge from the remarks in the *Times* and elsewhere it might be supposed that this was the first time that students were permitted to attend practice at any hospital except the Infirmary, whereas they were always at liberty to do so. There is no new departure; the only difference is that certain hospitals have agreed to do in combination what they always had the power to do independently. At the dinner covers were laid for nearly 200, the guests including the Lord Mayor, the Lord Bishop, Sir Edward Russell, the President of the Medical Institution, Professor Glynn, and over ninety others. Sir Edward Russell proposed the toast of "The City and University of Liverpool," which was responded to by the Lord Mayor and by Professor Benjamin Moore, Dean of the Medical Faculty. The latter remarked that the decline in the number of medical students was becoming a national problem, and it was necessary to have not only the money but also the help and sympathy of the city. He asked them to send their sons and nephews as students. There was about 800 medical men in the district, and 25 or 30 of them retired every year. It was clear that there were many openings for young medical men in Liverpool. Liverpool had facilities for teaching which were unsurpassed. Various other toasts were given, that of "The Visitors" being proposed by Mr. Damer Harrisson and replied to by Dr. Barr and the Rev. John Watson, D.D.

At a recent meeting of the Medical Institution, Mr. E. R. Bickersteth, F.R.C.S., formerly president of the institute, and this year President of the Royal Infirmary, was cordially congratulated on the completion of his fiftieth year of membership of the institution.

BIRMINGHAM.

Resignation of Mr. Priestley Smith.—Annual Dinner of the Students of the Medical School.—Health Lectures.

MR. PRIESTLEY SMITH has resigned the appointment of Honorary Ophthalmic Surgeon to the Queen's Hospital, to the great regret of the staff of the hospital and of everybody connected with the institution. He has served the hospital for more than thirty years, and during this time has always been held in the highest esteem, not only for his great skill in his profession, but also on account of his high personal character. His kindly disposition, his thoughtfulness for others, his loyalty to his colleagues, and the interest he has taken in the welfare of the medical students have made him a favourite with all who have been associated with him. Mr. Priestley Smith was the first to be appointed ophthalmic

surgeon to the Queen's Hospital, and during his work there he has gained for himself a world-wide reputation. As a mark of their esteem and in appreciation of his services, the members of the Committee will recommend to the Governors of the hospital that Mr. Prestley Smith be appointed consulting ophthalmic surgeon.

The annual dinner of the past and present medical students of the Queen's Faculty of Medicine in the University of Birmingham was held at the Grand Hotel on November 30th. There were over 300 present—a record number. This large attendance was no doubt due to the gathering being a farewell dinner to Professor Windle, who has been for twenty-two years connected with the school, and for fifteen years its Dean. The chair was taken by Dr. Purslow, and the guests included the Chancellor of the University (the Right Hon. J. Chamberlain), Sir Frederick Treves, Mr. Howard Marsh, the Vice-Chancellor (Alderman Beale), and many others. Sir Frederick Treves, in proposing "The Medical School," spoke of the prospects of the University, and said that if there were a place in which one would expect to find a great university it would be in a city like Birmingham. He complained that science was greatly neglected in this country, and pointed out that there was no kind of inducement offered for a man to follow science as a career. He thought that the men who devoted themselves to science deserved rewards infinitely beyond what they had received, for what sum could possibly express the value of many of the gifts which men of science had presented to the world in the last fifty years. The Chairman, in returning thanks, mentioned the honours which had been won during the past year by members of the Birmingham Medical School, and went on to speak of the new university club which was about to be built. Then followed the presentation to Professor Windle on the occasion of his departure for Cork of a handsomely-mounted silver epergne from the past and present students. Mr. Chamberlain proposed "The Students, Past and Present," and in the course of his speech pleaded for the highest education. He said, "We have done a great deal for elementary education . . . . we are spending something upon secondary education; we are spending very little in comparison upon what, after all—at any rate, from the point of view of the real material interests of the nation—is of the highest importance. We are spending very little upon the highest education; that is a deficiency which still has to be supplied." Mr. Arthur Oakes, one of the oldest living students of the old Queen's College, and Dr. A. J. Harrison of Clifton, a student of the old Sydenham College, and Mr. H. B. Jones, on behalf of the present students, responded to the toast.

A series of public lectures are being held in different parts of the city upon the preservation of health and the prevention of disease. These health lectures are under the auspices of the Birmingham Athletic Institute, and are being delivered by Dr. W. A. Potts, Dr. Stanley Barnes, Mr. A. W. Nuthall, and Dr. Sawyer. Each gentleman gives twelve lectures during the winter months. The lectures are greatly appreciated, and large audiences come to hear them. For many years now these lectures have been delivered, and they are doing a large amount of good.

CORRESPONDENCE.

EPSOM COLLEGE.

SIR,—In as few words as possible I would put before your readers the claims of the Epsom College Royal Medical Foundation to their support. It gives pensions of £30 per annum to fifty aged medical men or their widows, and boards, clothes, and educates fifty sons of necessitous medical men free of charge. The Council has to collect year by year contributions to a sum of about £6,000 to fulfil these duties which they have taken upon themselves. No one can doubt that the medical profession is exposed to more risks than other professions, and in the case of those living in the tropics and at many other stations abroad these risks are increased.

Do we reach all classes of the profession when in need? We claim that we do, for at present we have pensioners residing in Africa, Australia, and France. The sons of medical men, as foundationers, receive a first-class education free of cost, and it is worthy of note that many of these lads rise to the highest positions in college, and after leaving Epsom attain to high rank in political, medical, or commercial life. To maintain this great charity is a tremendous strain, and we need more support.

A simple way out of our present difficulty would be to reduce the numbers of pensioners and foundation scholars; but the Council are loth to adopt this course, in view of the large number of candidates awaiting election. With the loyal assistance of friends they have managed to maintain fifty of each class for many years past, and they are most anxious to continue to do this.

If we perform the duties I have referred to, I would venture to suggest we deserve to be assisted. The main details of our life for more than fifty years will be found in the prospectus, which the Secretary will gladly forward to applicants. I am arranging that almost every Governor abroad and in the Colonies shall receive his voting paper in time to return it for the annual election.

The scheme of education is on the lines of a first-class public school. We receive our boys from all classes, and prepare them for every department in life. The record of school successes will, I think, show that parents can send their sons to us with every confidence that they will receive a first-class education at a most reasonable charge, and that they will mix with a good gentlemanly lot of companions. Epsom College is peculiarly well fitted to receive the sons of medical officers in the naval, military, and civil services.

I would ask the pecuniary aid from readers for the charitable part of our work, and their confidence in our school. The great schools of England have their foundations in realized property; we are, at present, dependent on the support of friends and well wishers subscribing to keep us year by year. The public owe the medical profession much; might we not ask for subscriptions from those who recognize their indebtedness?

To many old supporters, in my difficult task of obtaining contributions, I wish to take this opportunity of tendering my warmest thanks.—I am, etc.,

C. HOLMAN,
Treasurer.

Office: 37, Soho Square, London, W.C., Dec. 5th.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, LONDON.

SIR,—The BRITISH MEDICAL JOURNAL already does so much in the way of assisting deserving charities to make known their pressing needs, and this hospital has been so frequently before the public in consequence of its insufficient income, that we feel great reluctance in trespassing upon your space.

The maximum income we can depend upon is £13,000 a year. The very lowest expenditure we can estimate is £19,000 a year. The Board of Management now find themselves without anything upon which they can rely, as all capital available for general purposes has been—or before December 31st, this year, will have been—either expended or pledged.

We therefore begin next year with the knowledge that we must cut our expenses down by £6,000 a year, and as the first step it has been decided to close the Convalescent Home at East Finchley, which does a most important part of our work, but which costs £2,000 a year. The closing of wards must inevitably follow unless the public come to our relief.

Should this letter be read by a rich man who desires to do a great work, he would find an opportunity in the taking over of our Convalescent Home and the avoidance of this reduction of the hospital's usefulness. Or should a sufficient number of people come forward to guarantee £2,000 a year for the purpose of keeping the Convalescent Home open, the same object would be equally well accomplished.

Failing this support, some provision might be made for the patients elsewhere. The unfortunate people who suffer from epilepsy and paralysis are in many cases even more in need of a convalescent home than any other classes of sufferers, and yet convalescent homes, as a rule, are not able to take them. Now that they are to be driven off the little anchorage they have at East Finchley, we should, indeed, be glad if a few beds could be reserved for them under some other management.—We are, etc.,

DUDLEY, *President.*
HARROWBY, *Treasurer.*
THOMAS BUZZARD, M.D.
W. R. GOWERS.
VICTOR HORSLEY.
J. DANVERS POWER, *Chairman.*

London, W.C., Dec. 5th.

THE DECISIONS OF THE REPRESENTATIVE MEETING.

SIR,—The letter from "A Secretary of a Division" on p. 1541 seems important, and I rather regret that you, Sir, did not accept his invitation to give an editorial opinion.

The writer is courteously impersonal, but he makes quite clear his own opinion as to the correct answer to the question he asks.

I think there is room for a different opinion under specific circumstances. If a resolution in favour of a certain "principle" is carried (at a Representative Meeting) after quite inadequate discussion, by what is little better than a "snatch" vote, the question having arisen indirectly, and there being a powerful minority absolutely opposed to the said "principle," I maintain that the opinion of the Representative Meeting may, under such conditions, be considered a "pious opinion" only, and need not be accepted as a binding law of the Association.

For example, the Association decided to form Divisions. This became binding on every member, whether he approved of it or not. But, as long as the question of Divisions was in the earlier stage of discussion as a "principle" only, it is common knowledge that some members fought against it to the end, in spite of resolutions passed at general meetings. So, also, on the question of altering the subscription.

I promise my loyal observance of all similar legitimate rules, independently of my personal views. But I think I must claim to retain my freedom to oppose, by any means in my power, "principles" which I believe to be mischievous and mistaken, even if they have been approved by a Representative Meeting, so long as they are "principles" only.

Let your correspondent propose at the next Representative Meeting:

> That all resolutions passed at this meeting shall be absolutely binding on all members of the Association;

and, if he can carry it, the minority will have the usual choice between submission and resignation of membership.—I am, etc.,

Altrincham, Dec. 5th. T. W. H. Garstang.

MEETING OF BRANCH AND DIVISIONAL SECRETARIES AT LEICESTER.

Sir,—The question of the desirability of such a meeting, mooted some two months ago, has been brought prominently to the front by the circular issued by the Organization Committee.

It would be an advantage, in order that all interested may be in a position to give their decision, to get the main principles of such a meeting clearly stated by those who advocate it, especially seeing this Committee is considering the subject, but suggests that it should take the form only of a conference between two bodies, which is not exactly what some of its advocates desire.

The main necessity would seem to be that the secretaries should have a "common room," admission to which will be only possible for them, and this on showing a special pass. If the Association will provide this room, well and good; if they do not see their way to do so, then by a small subscription from every Division participating, the whole cost, inclusive of any incidental printing, could be met.

This room will be used for friendly converse; at certain hours there could be meetings for Branch Secretaries; at others for Divisional Secretaries; and, again, if either of these meetings, by resolution, desired it, a conference with the officials who may be more nearly in touch with Divisional work.

The essentials desirable in such meetings seem to be these: A right to elect a chairman for the session from among themselves; an absence of all officials, except as a result of a special resolution and invitation; no unnecessary red-tape; an *esprit de corps* that will stand by the chairman's decisions, whether right or wrong, and will allow of subsequent whole-hearted support of any resolution passed by a majority; a decision to consider all discussion as being confidential and in camera.

Among the secretaries are those conversant with Branch Council, Central Council, as well as Standing Committee work, consequently they do not seem to need any others to be present except at a special conference. We do not require a second Representative or Annual General Meeting in miniature. If secretaries will be brief, get their points arranged, take notes, and be willing to be brought up sharp at the end of three or five minutes, or when out of order, then a lot of good will result.

With regard to an agenda; this could be arranged by signed suggestions being dropped in a box in the room overnight, posting them after arrangement next morning, and by a show of hands at the meeting later it could be at once decided if the subject was worthy of discussion.

As to the individual expenses of those attending, it should be pointed out that it is at present illegal to use Association funds, but it has been decided that Branch funds can be used to pay the return railway fare; third class is good enough.[1] Many in any case will be paid by the Association. A round-robin subscription (minimum 2s. 6d. or 3s. 6d., according to number of members) got up in every Branch, and worked through the Divisions, will allow of reimbursing not only the secretaries but possibly also all representatives of the Divisions of that Branch, as well as those on the Central Council. An allowance of a guinea a day, did the collection mount to it, should be considered satisfactory for hotel and *locum* expenses. Those Branches that have private funds could not do better than give a subscription to what should be a standing fund of each Branch under the new organization.

It would be exceedingly helpful to have the views of secretaries on the whole matter; and if they have not the inclination for a public letter they will no doubt send a note to the Medical Secretary saying what they would suggest. Let us meet on the Monday, but not to clash with the Representatives' Meeting.—I am, etc.,

E. Rowland Fothergill,
Honorary Secretary, Wandsworth Division.

Southfields, S.W., Dec. 6th.

THE TREATMENT OF CANCER.

Sir,—In the report of Mr. Mayo Robson's interesting Bradshaw Lecture in the British Medical Journal, December 3rd, p. 1505, the results obtained by me in the treatment of carcinoma of the colon by colectomy are referred to in detail. It is stated quite correctly that I reported[2] seven colectomies without a death, but the other details given by Mr. Robson are curiously inaccurate. Not only are the intervals of time between operation and report wrongly given, but recurrences of the disease unknown to myself are mentioned. By way of correction, I give you the following extract from my paper (p. 181 of the same issue): "With the exception of the first patient on the list, who lived in complete comfort for four years and then died suddenly from heart disease, all the patients are alive and in good health at the present time, and they have all put on flesh. All the patients have been examined recently, and no evidences of recurrence can be detected either from the presence of symptoms or by physical examination of the abdomen. In three cases sufficient time has elapsed to give good grounds for hoping that the cure in them will be permanent. One case was operated upon over four years ago, another two and a half years ago, and the third two years and two months ago; the remaining three cases were operated upon too recently—nine, six, and two months ago—to warrant any prediction regarding ultimate prognosis."

Twelve months have elapsed since the paragraph just quoted was written, and the six patients are still alive and well and free from any known recurrence. During these twelve months I have done two more colectomies for carcinoma of the colon. Both patients made normal recoveries, and are now alive and well, without recurrence.—I am, etc.,

London, W., Dec. 3rd. Bilton Pollard.

CANCER AND PRE-CANCEROUS CONDITIONS.

Sir,—Mr. Mayo Robson, in his Bradshaw lecture on "The Treatment of Cancer,"[3] rightly insists upon the importance of attending to pre-cancerous conditions.

The theory that every malignant growth (with the exception, perhaps, of certain congenital sarcomata) is preceded by a "stage of tissue irritation," of greater or less duration, can certainly be sustained on clinical grounds, and the more we inquire into the matter the more certain does this become. The fact referred to in your leader on the subject, that "the histologist has not been able to produce any evidence for terming any of these various types of lesions pre-cancerous" is of little account when it is borne in mind that the changes occurring in cancer are essentially intranuclear, and of these the histologist, as yet, knows very little.

In a paper in the *Medical Chronicle*[4] I advanced the view that cancer was due to the loss of the integrating function of the nuclei of the histogenic cells. I also suggested that further study of the dividing nuclei of the cancer cells might throw

[1] Supplement, November 5th, p. 165.
[2] British Medical Journal, January 23rd, 1904, p. 175.
[3] British Medical Journal, December 3rd, 1904.
[4] *Med. Chron.*, 1900, vol. iv (third series), p. 176.

considerable light on the nature of the cancer process. This latter prediction has already been in some measure fulfilled by the recent investigations of Farmer, Moore, and Walker. Whether future discoveries in the histogenesis of cancer will enable us to detect a true histological "pre cancerous stage" remains to be seen; personally, I think it extremely probable.

There is, however, no need to wait until this happens. The evidence that long continued local irritation of the tissues is a frequent if not an invariable precursor of a malignant growth is sufficiently convincing, and it is surely but rational to conclude that during this "stage of irritation" the proper plan of treatment is not to wait until undoubted malignancy has supervened, but to remove, as thoroughly and completely as possible, the sources of irritation, and secure adequate physiological rest until a normal, or at all events a quiescent, state of the tissues is restored. In many cases no doubt the "source of irritation" is a chronic infection of the tissues with micro-organisms (not necessarily any specific micro-organisms), and the only effectual way of dislodging them is thoroughly to excise the infected area, care being subsequently taken to prevent reinfection. Such a course is not infrequently urgently indicated for the patient's present comfort and peace of mind as well as for his future welfare. Personally, I have never hesitated to advise, and as far as possible act up to, this teaching; and although it has certainly lost me a few patients—by desertion—I am satisfied that I did the right thing. It is therefore all the more gratifying to find myself in agreement on this question with so experienced and able a surgeon as Mr. Mayo Robson, and I sincerely hope these views will soon become the accepted opinion of the whole profession.—I am, etc.,

P. R. COOPER, M.D., B.Sc.Lond., F.R.C.S.Eng.

Bowdon, Cheshire, Dec. 5th.

ANTITYPHOID INOCULATION.

SIR,—As Senior Medical Officer of the City Imperial Volunteers I should like to mention that the figures quoted in the BRITISH MEDICAL JOURNAL on the subject of inoculation in the corps refer to the infantry battalion only, of which I was in medical charge throughout the campaign. I have no doubt as to their accuracy. At one time I thought that the benefits from inoculation were considerable, but some months after the Corps had returned home I was able to make out a complete return and had reason to change my views. Many of the worst cases of enteric, with abnormally high temperatures, were amongst the inoculated.

I sent in no return dealing with the Mounted Infantry and the Field Battery of the Corps as I was not sure of the figures. The whole of the former had embarked without the services of a regimental doctor as the medical officers were appointed late in the history of the corps,—I am, etc.,

London, W., Dec. 3rd.

REGINALD SLEMAN.
Surgeon Lieutenant-Colonel,
Late Senior Medical Officer C.I.V.

SIR,—I am not disposed to prolong this controversy indefinitely, either by replying to the statistical minutiae of Professor Pearson, or by reopening the general question of the utility of antityphoid inoculation—a question already thrice carefully adjudicated upon.

Further, I do not believe that there is any urgent need for me to defend myself against the charge of dealing with the antityphoid statistics after the manner of a forensic advocate. I feel that Professor Pearson misunderstands the practice of the forensic advocate if he thinks that he sets forth in his pleadings, as I have set forth in my synoptical table, critical commentary, and elsewhere, every fact, so far as it is known to me, which tells against my case.

My concern here is, however, not with this. It is on a matter personal to himself that I desire to say a final word to Professor Pearson.

I desire to submit to him, that if he really had it at heart to make a serious contribution to the solution of the problem as to the exact measure of success achieved by antityphoid inoculation in the past, he was surely ill-advised to refuse, as he did, the unanimous invitation of the War Office Antityphoid Committee to come and thresh out with them every doubtful point in connexion with the antityphoid statistics.

I suggest to him that if he had accepted this invitation (an invitation in which I of course had heartily joined), he would not now appear in the light of a scientific worker who, having arrived at conclusions without due inquiry into his premisses, publishes those conclusions in such a way as to appear to condone an unjustifiable attempt to suppress a scientific method which may, if it is energetically improved by research, prove itself to be of far-reaching utility.—I am, etc.,

London, W., Dec. 5th.

A. E. WRIGHT.

PHYSICAL EDUCATION.

SIR,—I should like to point out two inaccuracies in Miss Theodora Johnson's speech on physical education, and to add a few remarks. The first inaccuracy refers to the course of training given at the Central Institute, Stockholm. She says the course is divided into four sections, educational, medical, military, and aesthetic. There is no aesthetic section, and no special training for dramatic artists. The aesthetic work is very little, and is part of the educational course.

The second inaccuracy refers to the practice of massage. Miss Johnson says that under Swedish law, it is illegal to practise massage without a certificate of registration. This is incorrect. The law, which was passed in 1887, applies only to medical gymnastics. It allows only those gymnasts who have obtained the Government diploma to practise medical gymnastics, and that only under the written authority of a doctor for each patient treated. At that time the Central Institute was the only one entitled to train students for the diploma. In 1896 the Scandinavian Association of Gymnastic Directors petitioned the King to make the law restraining the practice of medical gymnastics by uncertificated gymnasts more stringent, and to include massage in the law, but as it was found impossible to enforce the already existing law the petition was refused.

The number of students admitted each year to the Central Institute is limited, and it was shown that even for Sweden the supply of certificated gymnasts was insufficient, there being only 1 to 20,000 inhabitants.

In 1900 another institute, Dr. Arvedson's, which had until then given a one-year's training, was given permission to train students for the Government diploma on condition that the course was increased to two years, was made to include educational gymnastics to satisfy the State Medical Department, the institute being under Government inspection. The examinations were to be conducted by the teachers of the institute in the presence of an inspector and two censors appointed by the Government.

It is generally supposed in England that all Swedish gymnasts have had a two years' training. This is not so. There are many institutes which give a year's training in medical gymnastics with the necessary anatomy, physiology, and pathology. The students trained there practise in Sweden and abroad, and are encouraged so to do by the medical profession. The late Dr. Wide conducted such an institute, and at present Dr. Klein's is one of the best known.—I am, etc.,

MINA L. DOBBIE.

Handtoerkaregatan, 11A, Stockholm, Dec. 4th.

THE USE OF ALCOHOL IN THE TREATMENT OF ENTERIC FEVER.

SIR,—A great change has occurred in recent years in our estimate of the value of alcohol in the treatment of the acute zymotics. In scarlet fever and small-pox, I believe, alcohol is now comparatively little used. Even in diphtheria, where the tendency to cardiac failure was supposed to be an indication for its routine use, it is much less used than formerly, and high authorities have confessed that they have largely lost faith in it. In no zymotic disease, however, did the position of alcohol appear to be more firmly established than in the case of enteric fever, and in none, perhaps, was it more largely prescribed. But even in this disease expert opinion appears to be changing. Dr. Foord Caiger, Medical Superintendent of the South-Western Fever Hospital, in his very able Bradshaw Lecture on the Treatment of Enteric Fever,[1] says under the heading Treatment of Cardiac Failure:

> I rank myself with those who hold that in most cases of enteric fever not only is alcohol not required but that its employment is occasionally distinctly harmful, even when given in quantities which would not be considered excessive.

Dr. Caiger does not contend that in every case of enteric fever alcohol is useless, but I think it is evident he holds, as many of us do, that the value of alcohol in the treatment of this disease has been very much over-estimated, and that it certainly ought not to be regarded as a "sheet anchor," to be freely prescribed as a routine measure in almost all severe cases of the disease.

[1] BRITISH MEDICAL JOURNAL, November 26th, 1904.

In order to satisfy oneself of the special value of a new drug in the treatment of a disease, it is desirable to treat a continuous series of cases with the drug. Similarly, in order to properly appreciate the supposed but doubtful value of an old drug, it is desirable to treat a continuous series of cases entirely without it. I may, therefore, mention that in the isolation hospital of this town the practice of prescribing alcohol in enteric fever (or in any zymotic disease) has been entirely discontinued for the last three years, during which period over one hundred cases have been treated. The numbers are, of course, too small for any argument to be based upon the case-mortality (which, however, has been below the figure that Dr. Caiger gives as the average for this disease), but speaking from our own experience we have seen no reason to return to the old practice.

The history of medicine unfortunately abounds with instances in which individual drugs or therapeutic measures have acquired altogether false or at least greatly exaggerated reputations. In the true interests of the healing art it is obviously much to be desired that whenever this is the case we should learn to appreciate such drugs or measures at their true value. But in the case of alcohol there is an additional and all-important consideration which should make every medical man loth to prescribe it if he can possibly avoid doing so. I refer, of course, to the alcohol habit with all its attendant misery and degradation, and to the undoubted encouragement which the medical prescription of alcohol gives to the self-prescription of it.

There are not many therapeutic indications to meet which the Pharmacopoeia provides only a single remedy; and for any given purpose for which alcohol is usually prescribed—be it as stimulant, tonic, antipyretic, or hypnotic—a little thought will generally enable some other and less objectionable drug to be substituted with equal if not better results.—I am, etc.,

C. Killick Millard,
Leicester, Nov. 28th. Medical Officer of Health.

THE CENTRAL BRITISH RED CROSS COUNCIL.

Sir,—The constitution of the above council seems to me defective in not having any direct representative of the medical profession. Everybody is represented but the all-important civil medical element on whom the success of Red Cross volunteer work largely depends. I consider that the British Medical Association, as the representative body of the profession, should have a member on the council.

Further, the volunteer medical officers, who have given much time and money to instruction work and ambulance service generally, should be directly represented by allowing the Volunteer Medical Association to nominate a delegate. Colonel Beatson, C.B., is the representative of an ambulance association and not directly of volunteer medical officers.

I am unable to understand how the War Office can spare the head of the Sanitary Branch of the Medical Division of the War Office to be honorary secretary of this important council. The sanitary duties of the army are—or rather should be—very onerous in character, and demand all possible attention. For years past they have been quite in the background, and such an appointment will not tend to remedy this.—I am, etc.,

London, W., Dec. 6th. G. J. H. Evatt.

THE METRIC SYSTEM.

Sir,—That Mr. George Jackson was supported unanimously by the General Medical Council[1] in his resolution for making the metric system compulsory on our profession and in pharmacy is a testimony rather to his persuasive powers than to any special knowledge of the subject possessed by its members. It would have been more to the point if he could show that any members of the Council used the metric system in their own prescriptions, as they have been free to do for many years past. Town councils, chambers of commerce—Parliamentary committees even—have been persuaded to vote for the abolition of our system. We live in a scientific age, and few men have the courage to stand the reproach of being unscientific and of supporting a system which is denounced as antiquated, irrational, stupid, etc., by the propagandists of the metric system. And, unfortunately, if the propagandists are in the dark as to the passive but steady resistance of the French people (including the medical profession, who habitually use *gouttes* (drops) when prescribing fluid medicines in quantities not exceeding a drachm) to the metric system, their persuasive powers are largely aided by the very defective acquaintance of our people with the weights and measures not used in their own particular trade or profession.

An example occurs in the letter of "G. S. B." in the British Medical Journal of November 5th. He complains of the endless variety of ways in which time is wasted in public health work by the British system, and he puts forward as instances two problems. It happens that either of them can be worked out in three minutes by any one who knows his measures—and a little arithmetic.

I.

110 barrels of beer have been made with 24 quarters 6 bushels of malt containing $\frac{4}{100}$ gr. of arsenic in each pound. How much arsenic is there in each gallon?

I assume that the malt weighed 40 lb. to the bushel, and that the barrel is 36 gallons.

$110 \times 36 = 3.960$ gallons of beer were made from $24\frac{6}{8}$ quarters $\times 8 = 198$ bushels of malt.

$\frac{3.960}{198} = 20$ gallons of beer from one bushel containing $\frac{40}{100}$ or 0.4 gr. arsenic. Each gallon therefore contains $\frac{0.4}{20} = 0.02$, or $\frac{2}{100}$ gr. of arsenic.

II.

100,000 gallons of water pass in a certain time through a filter of 1 acre surface. What is the rate of percolation in inches?

The problem is simply the height of water in a basin of 1 acre. Now, every one engaged in public health work should know that 1 in. of rain or other water on an acre = 101 tons.

One ton of 2,240 lb., or 224 gallons $\times$ 101 = 22,624 gallons for 1 in.

$\frac{100,000}{22,624} = 4.42$ in.

I fail to see any difficulty in the calculation of either problem. And it is because of the waste of time in doing them that "G. S. B." desires the abolition of our system of weights and measures!—I am, etc.,

Liverpool, Dec. 3rd. Edward Nicholson.

A DISCLAIMER.

Sir,—My attention has been called to the appearance in several lay papers of some observations of mine on "temper powders," as if they had been written for the lay press. As a matter of fact, these are quotations from a paper, On the Use of Salicylate of Sodium and Bromide of Potassium in the Irritable Temper of Cardiac Disease and Gout. This paper appeared in the *Practitioner* of July, 1896, and parts of it having been quoted without acknowledgement of its source by one paper, they were reprinted by others. Hence my remarks, intended solely for medical readers, have been supposed to be written for the general public. I regret this very deeply, for I think that had I done this, as many believe that I have, I should have been guilty of conduct derogatory to the profession to which I belong, and naturally I am much grieved that I should be supposed to be guilty of this. I regret also that the quotations may do actual harm to health, because the drugs mentioned, though perfectly safe in the hands of the medical practitioners for whom the paper was written, may prove mischievous in the hands of persons ignorant of their properties.—I am, etc.,

London, W., Dec. 5th. Lauder Brunton.

OBITUARY.

KARL STELLWAG VON CARION, M.D.,

Professor of Ophthalmology, University of Vienna.

Professor Karl Stellwag von Carion, who died on November 21st in his 82nd year, was born at Langendorf, near Mährisch-Neustadt, in 1823. He studied medicine in the University of Prague and afterwards at Vienna, where he took his doctor's degree in 1847. After serving several years as First Assistant in the Ophthalmic Department of the General Hospital, he qualified in 1854 as *Privat-docent* on the strength of an essay on ophthalmology from the standpoint of natural science. In 1857 he was appointed Extraordinary Professor of Ophthalmology in the University of Vienna, and in 1873 he became Professor Ordinarius.

He contributed largely to the literature of his speciality. He was the author of a textbook of practical ophthalmology, published in 1862, which was translated into English, Italian, and Hungarian. A supplement to the textbook appeared in 1882. Among his other writings are a monograph on failure of accommodation and a number of memoirs on ophthalmological subjects. His mathematical investigation of anomalies of refraction, his researches on glaucoma, on the polarization of light in the human eye, and many other

[1] British Medical Journal, October 22nd, 1904, p. 1117.

points, entitle him to an honourable place in the history of ophthalmology.

Professor Stellwag von Carion was a representative of the best traditions of the Vienna school, and he had the highest reputation as a teacher. The bent of his mind was more towards original research than to practice, but he always showed the greatest kindness of heart in dealing with his patients.

THE LATE DR. POORE.—F. S. C. writes: In your sympathetic account of the late Dr. Poore it is not mentioned that, as Harveian Orator, he delivered in 1899, before the College of Physicians, one of his most finished and restrained literary productions. It should not escape reference, too, that for many years Dr. Poore filled—how ably and with what tact may not be generally known—the exacting post of Inspector under the Cruelty to Animals Act. His services in this and in other capacities were to the Home Office considerable. One who learnt in the wards and lecture-rooms much from Dr. Poore may, perhaps, be forgiven for hoping that the memory of his brilliant wit, pungent humour, and genial cynicism will not obscure the very great powers he possessed as a practical physician. Possibly during the time of his greatest activity these powers suffered some disparagement from those who mistook solemnity for profundity and the accumulation of sterile facts for wisdom. But Dr. Poore's great sagacity, wide humanity, and clarity of vision, together with his intimate knowledge of the methods he employed and the insight he possessed into the individuality of his patients, made him in the exercise of the healing art a far greater proficient than those nourished on crumbs from Teutonic laboratories. There must be, scattered up and down this and other countries, many who will be always profoundly grateful that they listened to Poore's teaching, and learnt from him to prove all things and hold fast that which is good, not to be blown about by every new gust of pathological doctrine, and above all, that the function of the physician is not to perform intellectual gymnastics in the hope that he may be called a "scientist," but to practise the art of curing or at least amelioration.

WE regret to announce the death of Dr. DUNCAN CAMPBELL MACCALLUM, who for over thirty years was an active teacher in the medical faculty of McGill University, which occurred recently at Montreal. Dr. MacCallum, who was 81 years of age, took his doctor's degree at McGill in 1850, and afterwards pursued his studies in London, Edinburgh, and Dublin. While in England he became a member of the Royal College of Surgeons. On his return to Montreal he was appointed a demonstrator of anatomy in McGill University, and in 1856 he was appointed to the chair of clinical surgery, which he held up to 1860, when he became professor of clinical medicine and professor of medical jurisprudence. Dr. MacCallum was appointed visiting physician to the Montreal General Hospital in 1856. In April, 1868, he was appointed professor of obstetrics and of diseases of women and children, a position he held up to 1883, when he gave up active teaching.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Joaquin X. Pereira da Cunha, Professor of Ophthalmology in the Medical Faculty of Rio de Janeiro; Dr. Thomas S. K. Drown, Professor of Analytical Chemistry in Lafayette College, and later President of Lehigh University, aged 62; Dr. Jean Van Aubel, Emeritus Professor in the University of Liege; Dr. O. Naumann, Lecturer on Medicine in the University of Leipzig, aged 71; Dr. Otto Bode, head of the Surgical Department of the Augusta Victoria Hospital at Berlin, and formerly assistant to the late Professor Eugen Hahn in the Friedrichshain Hospital, of blood poisoning contracted in the discharge of his professional duties, aged 42; Dr. Carlos Carneiro de Mendonca, head of the service of specific prophylaxis against yellow fever, aged 42; and Professor Friedrich Plehn, for many years medical officer of the German Government in the Cameroons, well known by his writings on tropical diseases. Dr. Plehn died of Malta fever at Schottek, near Bremen.

A MARTYR OF MEDICINE.—It is announced that Dr. Gaetano Cocchi, who was sent by the Italian Government to study malaria in South America, has died of yellow fever at Merida in Mexico.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

FERNAND L. J. M. DE VERTEUIL, LIDBROOKE F. COPE, HORACE B. HILL, KENELM D. BELL, JAMES R. A. CLARK-HALL, FRANCIS HERNAMAN-JOHNSON, M.B., PERCY M. RIVARY, M.B., HENRY M. BRAITHWAITE, M.B., DUNCAN G. ADDISON-SCOTT, M.B., ARTHUR S. BRADLEY, M.B., M.A., LAWRENCE C. HUNT, CHARLES R. WORTHINGTON, B.A., PATRICK D. MCI. CAMPBELL, ERNEST D. RUTHERFORD, M.B., FREDERICK G. WILSON, M.B., HENRY COOPER, B.A., JAMES MCA. HOLMES, M.B., RICHARD WILLAN, ALFRED O. HOOPER, M.B., HENRY S TURNER, MAURICE WILLOUGHBY HAYDON, SAMUEL H. VICKERY, M.B., B.A., ROBERT H. MCGIFFIN, M.B., EDWARD M. W. HEARN, and ALEXANDER J. MCDIARMID, M.B., are appointed Surgeons, from November 21st, and are all (Surgeon Bradley excepted) appointed to the *Fire Queen*, additional, for study at Haslar Hospital, November 21st.

Fleet-Surgeon E. J. BIDEN has been placed on the retired list, December 1st. He was appointed Surgeon, August 25th, 1881; Staff Surgeon, August 25th, 1893; and Fleet Surgeon, August 26th, 1897. He was Surgeon of the *Opal* during the Niger Expedition in 1883, and at the punishment of the Solomon Islanders in 1886; was Staff Surgeon of the *Scout* in the Red Sea during the Dongola Expedition in 1896 (Khedive's medal); and Staff Surgeon of the *Orlando* in 1900 (medal).

Deputy Inspector-General G. A. CAMPBELL has been awarded the Greenwich Hospital Pension of £50 a year, vacant by the death of Deputy-Inspector-General W. Ross. Deputy-Inspector-General Campbell entered as Surgeon, February 28th, 1860; became Staff Surgeon, January 20th, 1872; Fleet Surgeon, March 23rd, 1883; and Deputy-Inspector-General on retirement, November 30th, 1891. He was Staff Surgeon of the *Hecla* at the bombardment of the Alexandria forts in 1882 and during the Egyptian war (medal with clasp, and Khedive's bronze star), and during the operations near Suakin in 1884 (medal).

The following appointments have been made at the Admiralty: ROBERT R. FASSON, M.B., Surgeon, to the *Cormorant*, additional, to be lent to Gibraltar Hospital, December 2nd; JOHN O'HEA, Surgeon, to the *Excellent*, December 2nd; CHARLES F. BAXTER, Surgeon, to the *Britannia*, November 30th; JEROME BARRY, M.D., Fleet Surgeon, and WALTER G. EDWARDS, Surgeon, to the *Juno*, on recommissioning, undated; FREDERICK J. A. DALTON, Staff Surgeon, to the *Gibraltar*, on commissioning, December 14th: REGINALD WATERFIELD, Surgeon, to the *Gibraltar*, on the *Medusa* paying off; CORNELIUS BRADLEY, M.D., Fleet Surgeon, and FRANK BRADLEY, B.A., Staff Surgeon, to the *President*, additional, for three months' course of hospital study, December 6th.

G. D. M.—We find on inquiry that there is at present no reserve list of surgeons R.N.: when it is formed it will be published in the *Navy List*. There is, we understand, a list of medical men who have volunteered for service in emergency, but it is private and constantly changing.

ROYAL ARMY MEDICAL CORPS.

CAPTAIN M. H. G. FELL, M.D., from the Seconded List, to be Captain, October 21st. Captain Fell was seconded for service with the South African Constabulary, May 7th, 1902.

EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A LIEUTENANT, R.A.M.C., two years' service, wishes to hear of an officer in the I.M.S. willing to exchange, subject to regulations.—Address No. 6140, BRITISH MEDICAL JOURNAL.

IMPERIAL YEOMANRY.

MAJOR T. H. OPENSHAW, M.B., F.R.C.S., C.M.G., from the London Companies R.A.M.C. (Volunteers), to be Surgeon-Major in the Lincolnshire Regiment, December 3rd.

ARMY MEDICAL RESERVE.

SURGEON-LIEUTENANT A. ROBINSON, M.D., 2nd Volunteer Battalion the York and Lancaster Regiment, to be Surgeon-Lieutenant, December 7th.

THE THIBET MISSION.

AMONG the officers brought to notice by Brigadier-General J. R. L. Macdonald, C.B., as deserving of special approval for their services with the military forces attached to the Thibet mission are: Major A. R. Aldridge, R.A.M.C.; Lieutenant-Colonel L. A. Waddell, C.I.E., I.M.S.; Major C. N. C. Wimberly, I.M.S.; and Captain T. B. Kelly, I.M.S.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

MR. ALFRED A. BEEKS to be Surgeon-Lieutenant in the 2nd Durham (Seaham) Regiment, November 26th.

Surgeon-Captain D. M. GREIG, M.B., 1st Forfarshire, to be Surgeon-Major, December 3rd.

Surgeon-Lieutenant A. A. MACKEITH, M.B., 1st Hampshire, to be Surgeon-Captain, December 3rd.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

JAMES S. WARRACK, M.D., to be Lieutenant in the Woolwich Companies November 19th.

Captains C. H. GAGE BROWN, M.D., and H. FULHAM-TURNER, the London Companies, resign their commission, December 3rd.

BROWNLOW-KIDDELL, M.D., to be Lieutenant in the Argyll and Sutherland Bearer Company, December 3rd

MR. LOUIS A. FRENCH to be Lieutenant in the South Yorkshire Bearer Company, December 3rd.

ROYAL ARMY MEDICAL CORPS (MILITIA).

FREDERICK E. BISSELL, M.D., to be Lieutenant, December 3rd.

MEDICO-LEGAL AND MEDICO-ETHICAL.

THE PLEA OF INSANITY.

In a case which was heard at York on December 1st the plea of insanity was raised by way of defence to a charge of murder. The prisoner was a man aged about 45. The deceased—his father-in-law—was 78 years old. The murder was a particularly brutal one, the throat being cut practically from ear to ear, and there were numerous other cuts on the head, hands, and wrists. The case is only interesting by reason of the fact that the defence of insanity was raised. The prisoner's history was as follows:

In 1874 he enlisted; in 1879 he was invalided from India, suffering from melancholia. He was discharged in 1879, but re-enlisted in 1880, and served for another twelve years. His medical reports disclosed the fact that he had suffered from hepatitis and syphilis. After leaving the army he worked as an engineer. In 1900 he was injured in a lift. In 1901 he was found wandering about Poplar, suffering from complete loss of memory. In 1902 he was discharged from employment because he was insane. He was a good workman, and on good terms with his wife (who died in 1903) and with the deceased man. A hesitation in his speech was first noticed when he gave evidence at the inquest.

Dr. Clark, surgeon to the prison at Wakefield, spoke as to the prisoner's mental condition. His sense of pain was blunted and there was slight general muscular inco-ordination. He complained of frontal headache and vertigo, also of having felt depressed at the death of his wife. The pupils were contracted, and the knee-jerks absent. The prisoner's present condition was consistent with his having been insane on July 29th. The history of the case showed that a very slight cause might have driven the prisoner into active insanity. In cross-examination the witness said that syphilis was one of the predisposing causes of insanity. The fact that the prisoner had suffered from melancholia in 1879 was also significant. The witness could not recall any case in which an insane man had committed robbery as well as murder. The fact that the prisoner had shown deliberation before the fact was evidence that his mind was not unhinged, unless it could be shown that he suffered from delusions. Here he found no trace of delusions.

In the course of his summing-up, Mr. Justice Darling said that the serious question for the jury to consider was whether the prisoner was insane. The question did not mean—"Is he more or less weak in his mind?" nor did it mean, "Is he a man who may yet go mad?" The question for them was, "Are you satisfied that at the time of committing the act the accused was labouring under such a defect of reason from disease of the mind as not to know the nature and quality of the act he was doing, or, if he did know it, that he did not know he was doing what was wrong?" The doctor had said that although the prisoner was a man of weak intellect, he would not certify him to be insane at the present time. That might justify them in adding a rider to their verdict, but it would not justify their giving a verdict contrary to the evidence. All the symptoms were consistent with the prisoner having had syphilis and sustaining injury by an accident.

The jury found the prisoner guilty. He was sentenced to death.

PRESCRIPTIONS OF OPIUM AND MORPHINE.

At an inquest last week, held by Dr. Waldo, the City Coroner, a question arose as to whether the deceased died from natural causes or from the effect of an overdose of opium administered previous to his admission to St. Bartholomew's Hospital for an operation for appendicitis. The deceased had been ill for some time with rheumatism and tonsillitis, and symptoms of appendicitis developed a few days before his death. It was intended by his medical adviser that his pain should be treated freely with opium, but according to the evidence, as detailed in the *Morning Advertiser*, there would appear to be some doubt as to what instructions were given and to be clear that the patient was given more than it was intended he should receive. An operation was performed as soon as he was admitted, but he died shortly afterwards. The medical evidence went to show that a fatal issue was in any case inevitable, and Dr. Kearney, the Divisional Surgeon of the City Police, who was entrusted with the *post-mortem* examination, certified that it could not be in any way ascribed to opium poisoning; he found extensive disease of the liver, heart, and kidneys. The jury brought in a verdict in accordance with the medical evidence, adding a rider to the effect that when medical men had occasion to prescribe poisons the package should bear clear instructions as to their administration.

Another inquest, in which the question of the medical prescriptions arose, was also held last week. In this case, according to a report in the *Daily News*, the deceased had been taking morphine hypodermically for eighteen years on a prescription once given to her after an illness. A chemist who gave evidence admitted that he had been supplying her with morphine for three years, and that a week before her death he had given her a bottle of morphine containing over 2 oz. He said he was "unfortunately bound to supply the morphine when a prescription was produced." The coroner, in summing-up, remarked that medical men ought to limit the time for which a prescription might be used.

CLUB PATIENTS AND THE EMPLOYERS' LIABILITY ACT.

Devon Rural asks, if a person belonging to a Friendly Society is injured, has his club medical attendant a right under the Employers' Liability Act to make a charge for his services other than supplying certificates?

*** An employer is not responsible for the charges for medical attendance upon one of his workmen who may be injured. The medical man would not be entitled to charge the injured person for his attendance, unless he had made a special arrangement with the Friendly Society mentioned absolving him from medical attendance in cases of accident.

PROFESSIONAL SECRECY.

Legal.—Our correspondent is under no obligation, legal or moral, to inform the police of facts which have come under his notice in the course of his professional duties. If his patient lives he will do well to impress upon the friends the absolute necessity for having her placed under proper control; should death result, he must certify correctly the cause of death, but he is not under any legal compulsion to render assistance to the coroner unless summoned to give evidence as to the cause of death. On this point he might study with advantage the memorandum published by the Medico-Political Committee on p. 180 of the Supplement of November 26th, 1904.

ANAESTHETIST'S FEE.

X. Y. Z. writes that he was recently called to the assistance of a neighbouring practitioner in a midwifery case to give chloroform. The latter asked our correspondent what his fee was, and on being told that it would be a guinea, said he would try to get it for him. But he has since stated that he cannot pay it unless he receives it from the patient. "X. Y. Z." asks whether it is not usual for the practitioner calling for assistance to be personally liable for the fee.

*** Under such circumstances it is not usual for the practitioner to be personally liable for the fee, but it is his duty to do his best to get the patient to pay it.

RELATIONS WITH CHEMISTS.

C. H. B.—It is obviously not a desirable arrangement to have a consulting room over a chemist's shop, even though the patients are admitted by a side door; but there is no positive rule against it. If the patients are to be sent to the chemist to get their medicine, the least objectionable arrangement would be for "C H B" to charge the patients an inclusive fee and to pay the chemist. For repeating the medicine it would be best that the patients should pay the chemist according to a previously-arranged scale, but there should be no profit-sharing with the chemist.

AMATEUR PRESCRIBING IN THE HALFPENNY PRESS.

A correspondent writes to draw attention to prescriptions which are being published by the *Evening News* for bronchitis, dysentery in children, croup, rheumatism, and ringworm, and he suggests that these conditions are of sufficient gravity to make such amateur prescribing a public danger.

*** We agree with our correspondent, but it is certain that at the present time there are numbers of people not in this country alone who honestly believe that such folk-lore remedies, however nasty, are more efficacious than those ordered by the medical profession. One of the paragraphs recommends as a cure for bronchitis "two parts of best rum to one part of glycerine," to be taken at bedtime, or, as the decorous writer puts it "on retiring"; he says, "it ought to be good, as its simplicity cost £10 from the late Sir Andrew Clark." Poor Sir Andrew Clark! It may be noticed that the size of the "parts" is not given, but we hope, for the sake of Sir Andrew Clark's memory, that they are intended to stop short of an intoxicating dose.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE

Mr. F. F. Blackman, St. John's, has succeeded Mr. F. Darwin, F.R.S., as Reader of Botany.

Mr. E. Waymouth Reid, M.B., F.R.S., of Downing College, Professor of Physiology at University College, Dundee, has been approved for the degree of Doctor of Science.

Professor Sims Woodhead has obtained from friends resident in or connected with Huddersfield contributions amounting to over £1,600 towards the endowment of a University Lectureship in Special Pathology, to be known as the Huddersfield Lectureship. The Special Board for Medicine and the General Board of Studies recommend that this generous effort be gratefully recognized by the University, and they propose suitable regulations for the establishment of the Lectureship.

The accommodation provided for the Museum of Zoology and the Laboratories of Animal Morphology is already far short of their needs. The Museums Syndicate submits a proposal for the erection of entirely new buildings on the Downing site, adjoining the Sedgwick Museum of Geology. The provision of such a site will probably offer no great difficulty; but the funds for the building are not forthcoming, and "private munificence" is the only resource suggested.

The First, Second, and Third Examinations for the M.B. degree begin this term on December 12th, and will not be completed till December 22nd.

Professor Woodhead and Mr. J. Barcroft are appointed members of the Museums Syndicate; Dr. Anningson, Mr. C. T. Heycock, F.R.S., and Mr. J. E. Purvis members of the State Medicine Syndicate; Dr. D. MacAlister a member of the General Board of Studies, the Special Board for Medicine, and the Board of Geographical Studies; Dr. A. Hill, Master of Downing, a member of the Board of Agricultural Studies; Professor R. Stockman of Glasgow an examiner in Pharmacology for the Third M.B. Examination, in the place of Sir T. R. Fraser of Edinburgh, resigned.

Degrees.

At the Congregation on November 24th, the following medical and surgical degrees were conferred: *M.B.*—H. D. Hoffmann, Trinity. *M.B. and B.C.*—S. Child, Pembroke; S. Dodd, Gonville and Caius.

At the Congregation on December 3rd the following degrees were conferred: *M.B. and B.C.*—C. W. P. Moffatt, Clare. *M.B. only.*—E. Ward, Clare; D. H. Fraser, Caius; J. Lambert, Downing. *B.C. only.*—S. H. Nathan, Trinity.

UNIVERSITY OF LONDON.

FACULTY OF MEDICINE.

A meeting of the Faculty of Medicine was held at the University on Tuesday, December 6th, at 5 p.m., the Dean, Dr. J. K. Fowler, being in the chair.

Promotion of Teaching and Research in Advanced Subjects.

On the motion of Mr. H. W. Page, seconded by Dr. Hale White, it was unanimously resolved:

That a Committee be appointed to consider and report to the Faculty as to the best means by which teaching and research in the advanced subjects of the medical curriculum can be promoted in the schools of the University by the action of the University.

The Committee consisted of the thirty-four members of the Faculty named below, representing the various schools of medicine of the

University and the various subjects of study in the advanced period of the curriculum.

In the course of the discussion, which was carried on by Dr. Herringham, Sir Felix Semon, Dr. Percy Smith and Dr. Halliburton, it was pointed out that the conclusions arrived at by the Committee would have an important bearing on the future of clinical teaching in London. In view of the large issues involved the Dean requested any member of the Committee or of the Faculty who desired that any special point should be considered to communicate his wishes addressed to the Honorary Secretary of the Faculty of Medicine at the University.

Committee.

Dr. J. K. Fowler, Mr. Pearce Gould, Dr. Bradford, Dr. Sydney Martin, Mr. Watson Cheyne, Dr. Crawfurd, Dr. Norman Moore, Dr. Herringham, Dr. Sebor stein, Dr. Bulloch, Dr. Hale White, Dr Lauriston Shaw, Mr. H. H. Clutton, Dr. Turney, Dr. Rolleston, Dr. Latham, Mr. H. W. Page, Dr. Caley, Mr. Stanley Boyd, Mr. H. F. Waterhouse, Dr. De Havilland Hall, Dr. E. P. Paton, Dr Samuel West, Miss Cock, Sir Felix Semon, Sir Thomas Stevenson, Sir Cooper Perry, Dr Champneys, Mr. A. H. Cheatle, Dr. Percy Smith, Dr. Seaton, Dr. Mott, Mr. Marcus Gunn, Mr. Morton Smale.

Tropical Medicine.

The Faculty also considered the following report of the Board of Advanced Studies to the Senate:

At a meeting of the Board of Advanced Medical Studies, held on November 21st, 1904, the following report on "Tropical Medicine" was adopted:

(*a*) That Tropical Medicine should be introduced into the Syllabus of Subjects for the M.D. Degree.

(*b*) That "Tropical Medicine, Branch VI," be added to the list of subjects which may be taken for the M.D. degree.

(*c*) That, if (*a*) and (*b*) be adopted, a Report be presented on Syllabus and Course of Study.

And resolved, without dissent, that the Faculty approves of the Board of Advanced Studies' Report on Tropical Medicine.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,518 births and 6,326 deaths were registered during the week ending Saturday last, December 3rd. The annual rate of mortality in these towns, which had been 15 6, 16 6, and 17.3 per 1,000 in the three preceding weeks, further rose last week to 21.7 per 1,000. The rates in the several towns ranged from 5.8 in Hornsey, 11.3 in West Hartlepool, 11.7 in Kings Norton, 12.3 in Aston Manor, 12.7 in Walthamstow, 13 3 in Wolverhampton, 13 4 in Rotherham, and 13 7 in Huddersfield, to 29 1 in Birkenhead, 30 0 in Gateshead, 30.1 in Stockport, 30.3 in Manchester, 30 7 in Wigan and in Middlesbrough, 30 9 in Smethwick, and 32 4 in Tynemouth In London the rate of mortality was 21 7 per 1,000, while it averaged 21 6 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.6 per 1,000 in the seventy-six large towns; in London this death rate was equal to 1.1 per 1,000, while among the seventy-five large provincial towns the death-rates from the principal infectious diseases ranged upwards to 3 5 in Bristol and in St Helens, 4 0 in Liverpool, 4 9 in Gateshead, 5 0 in Stockton-on-Tees, 5 4 in Middlesbrough, 5 5 in Grimsby, and 5 7 in Hanley. Measles caused a death-rate of 2.1 in Bristol, 2 2 in Liverpool, 2.5 in Bootle and in Wigan, 2 6 in Gateshead, 3 0 in Stockton-on-Tees, 3.2 in Middlesbrough, and 5.5 in Grimsby; scarlet fever of 1 3 in York, 1 4 in Plymouth, and 2.3 in Warrington; diphtheria of 1 4 in Hull; whooping-cough of 1 6 in Hanley and 1.9 in South Shields; "fever" of 1 3 in Rhondda and 1.4 in Merthyr Tydfil; and diarrhoea of 2 4 in Hanley. One fatal case of small-pox was registered last week in Halifax, 1 in Gateshead, and 1 in Newcastle-on-Tyne, but none in any other of the seventy-six large towns. Three cases of small-pox remained under treatment in the Metropolitan Asylums Hospitals at the end of last week; 2 new cases were admitted during the week, against 1 and 2 in the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,843, 2,774, and 2,741 on the three preceding Saturdays, had further fallen to 2,625 on Saturday last December 3rd; 247 new cases were admitted during the week, against 294, 259 and 262 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, December 3rd, 874 births and 702 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17 5, 17 3, and 18.0 per 1,000 in the three preceding weeks, further rose to 21 2 per 1,000 last week, but was 0 4 per 1,000 below the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 15 6 in Edinburgh and 16.5 in Greenock to 23 9 in Glasgow and 24 8 in Paisley. The death-rate from the principal infectious diseases averaged 2 1 per 1,000 in these towns, the highest rates being recorded in Aberdeen and Leith. The 395 deaths registered in Glasgow included 2 which were referred to measles, 4 to diphtheria, 25 to whooping cough, 3 to "fever," and 3 to diarrhoea. Seven fatal cases of whooping cough were recorded in Edinburgh, 11 of measles and 2 of diarrhoea in Aberdeen, 3 of measles in Leith, and 2 of diarrhoea in Dundee.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, December 3rd, 549 births and 409 deaths were registered in six of the principal Irish towns, against 368 births and 352 deaths in the preceding period. The mean annual death-rate of these towns, which had been 19.0, 19.6, and 19.5 per 1,000 in the three preceding weeks, rose to 21.2 per 1,000 in the week under notice: this figure being 0.4 per 1,000 lower than the mean annual rate in the seventy-six English towns for the corresponding period. The figure ranged from 14 4 in Cork and 16.4 in Londonderry to 28 0 in Waterford and 28 1 in Dublin. The zymotic death-rate during the same period and in the same six Irish towns averaged 1 0 per 1,000, or 0.2 per 1,000 lower than during the preceding period, the highest figure—2 8—being registered in Dublin, while Londonderry, Limerick, and Waterford recorded no deaths under this heading at all The principle zymotic causes of death in Dublin and Belfast were measles and whooping-cough, the former predominating. From small-pox and scarlet fever no deaths were recorded in any part of Ireland, but diphtheria caused 1 death in Dublin, and typhus 1 death in Kilkenny.

DISEASED MEAT.

A SOMERSETSHIRE farmer was prosecuted on December 5th at the Guildhall for sending diseased meat to the Central Meat Market. The sanitary inspector attached to the market at once seized it as unsound, and Dr. Collingridge, the City Medical Officer of Health, gave evidence that the animal had been the subject of a very extensive growth of round-celled sarcoma. The farmer's defence was that he had not known that the animal was diseased; he thought it had been injured accidentally, as he found it lying down; he therefore gave it slaughtered by a local butcher, and as the latter only offered £10 for the carcass he sent it to London. The presiding alderman imposed a fine of £50 with £7 costs.

It has, of course, been recognized for a considerable period that domestic and other animals are the subject of malignant disease, but, so far as we are aware, this is the first time upon which evidence of the above precise character has been given in a meat prosecution. As the case has received considerable notice in some of the daily papers under the heading of cancerous meat, it may be as well to point out that though, of course, this meat was unfit for food, the investigations published not long ago by the Cancer Research Fund show that the limits within which malignant disease is capable of propagation from animal to animal are exceedingly narrow. A difference in the species of two animals seems to make it impossible to infect one animal from the other.

THE RELATIONS OF MEDICAL OFFICERS OF HEALTH TO THEIR PROFESSIONAL COLLEAGUES.

A CORRESPONDENT asks for an expression of opinion upon a case stated by him as follows: The medical officer of health of a small town is also medical superintendent of the fever hospital, and is engaged in private practice. Our correspondent notified and sent into hospital, as a case of scarlet fever, a boy who exhibited certain symptoms. The boy was sent home at the end of ten days, with an intimation that he was not suffering from scarlet fever, but with the request that he should be brought to the consulting rooms of the medical officer of health in a day or two. The medical officer saw him on three or four occasions, and prescribed baths, etc.

*** Assuming this statement to be correct, we have no hesitation in saying that the medical officer of health erred in his manner of treating a brother practitioner. He should have requested a consultation with the latter before sending the patient back. A *modus vivendi* could then have been arranged, which would have obviated any further difficulty. The medical officer of health erred again in seeing, examining, and prescribing for our correspondent's patient after he had left the hospital. The medical officer seems to have forgotten the golden rule, which is one of the fundamentals of medical ethics.

SMALL-POX AND DEATH CERTIFICATION.

FESTINA LENTE writes: In the preparation of death returns one is often in doubt as to which ought to be returned as the primary cause of death, and that, notwithstanding the precise instructions issued by the Registrar-General. The following are two cases in point:—

(*a*) A chronic alcoholic and chronic bronchitic, suffering also from heart disease, is admitted to the fever hospital suffering from small-pox and dies there. In the death returns relating to small-pox—monthly reports to urban district council—this counts as a death from small-pox; according to the death certificate the primary cause of death is alcoholism.

(*b*) A previously healthy child of 3 is admitted to hospital suffering from small-pox, modified in this case by vaccination performed seven days before the appearance of the small-pox eruption. The child recovers from small-pox, but on the morning of the day on which it is to be discharged from hospital develops an acute attack of laryngitis, to which it succumbs later. This also is returned in the hospital deaths during the epidemic as from small-pox.

Would you kindly state your opinion as to certification in these cases: (1) In regard to preparation of statistics for annual report to urban district council; (2) in regard to the possibility of the copy of an "irregular" death certificate getting to the Registrar-General and so affecting his statistics?

*** We can well imagine that the death of a person in a small-pox hospital would be returned to the sanitary authorities as a death from small-pox, although the patient was an alcoholic. Similarly we think that the second death would be returned as from small-pox, especially as the patient was practically unvaccinated, or most imperfectly vaccinated, and as he died from an affection which is by no means unknown as a concomitant of small-pox.

SALARY AND DUTIES OF MEDICAL OFFICER OF HEALTH.

SWEATED.—(1) It is no part of the duty of a medical officer of health to give his opinion at the request of other practitioners in doubtful cases of infectious disease. He could only see the patient in consultation, and would be entitled to a consultation fee. Most medical officers of health, however, recognize the desirability of assisting their colleagues in such circumstances, and do not press for a fee when payment would fall hardly upon the patient or his friends. (2) The medical officer of Health of an urban district with a population of 35,000 would not be overpaid at an annual salary of £200 exclusive of attendance at isolation hospitals. The amount of salary to be paid for the latter service depends upon the use which is made of the institutions, and their distance from the town concerned. The Local Government Board do not permit a moiety of the salary paid for attending an isolation hospital to be obtained from the County Council.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BETHLEM HOSPITAL.—Two Resident House-Physicians. Salary at the rate of £25 each per quarter.

BIRMINGHAM GENERAL HOSPITAL.—(1) House-Surgeon. (2) House-Physician. Both resident. Salary at the rate of £50 per annum each.

BIRMINGHAM: JAFFRAY BRANCH OF THE GENERAL HOSPITAL, Gravelly Hill. Resident Medical and Surgical Officer. Salary, £150 per annum.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—Assistant Surgeon.

CARLISLE: CUMBERLAND AND WESTMORLAND ASYLUM, Garlands.—Junior Assistant Medical Officer. Salary, £130, rising to £150 per annum.

CHICHESTER: WEST SUSSEX COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary, £150 per annum.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Male Assistant House-Surgeon, resident. Salary, £60 per annum.

GLOUCESTER: GENERAL INFIRMARY AND EYE INSTITUTION.—Assistant House-Surgeon, resident. Salary at the rate of £30 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Appointments for six months. Honorarium, £25.

HULME DISPENSARY, Dale Street, Manchester.—Honorary Surgeon.

LEEDS: HOSPITAL FOR WOMEN AND CHILDREN.—Resident House-Surgeon. Salary at the rate of £80 per annum.

LIVERPOOL: DAVID LEWIS NORTHERN HOSPITAL.—Two House-Surgeons, both resident. Salary at the rate of £60 per annum each.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant Resident Medical Officer. Honorarium at the rate of 50 guineas per annum.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, E.—Pathologist and Bacteriologist. Salary, £50 per annum.

NOTTINGHAM GENERAL HOSPITAL.—(1) Assistant House-Surgeon. (2) Assistant House-Physician. Both resident. Salary, £100 per annum each.

NOTTINGHAM WORKHOUSE INFIRMARY.—Junior Resident Medical Officer. Salary, £120 per annum.

OTAGO UNIVERSITY.—Professor of Physiology. Salary, £600 per annum.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—Milroy Lecturer.

ST. THOMAS'S HOSPITAL. Resident Assistant Physician.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon, resident. Salary, £40 per annum.

TOTTENHAM HOSPITAL, N.—(1) Honorary Assistant Physician in Out-patient Department. (2) Honorary Anæsthetist. (3) Honorary Radiographer.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House-Surgeon. Salary, £120 per annum.

APPOINTMENTS.

AMPBELL, Janet, M.B., B.S., Senior Resident Medical Officer to the Belgrave Hospital for Children, S.W.

CAMERON, A. G. R., M.B., B.S.Durh., D.P.H.Camb., Medical Officer of Health for the Combined Sanitary District of West Sussex, vice Charles Kelly, M.D.Lond., deceased.

COGGIN, T., M.B., Ch.B.Vict., Resident Assistant Medical Officer of the Cheriton Union Workhouse.

DITMAR, F., M.D.Glasg., D.P.H., Medical Inspector of the Local Government Board of Scotland, vice W. Leslie Mackenzie, M.D., dead.

EWART, R. W. T., M.B., C.M., Clinical Assistant to the Chelsea Hospital for Women.

HALL, Donald G., M.A., M.D.Cantab., M.R.C.P.Lond., Assistant Physician to the Sussex County Hospital, Brighton.

MACLAREN, Norman, B.C.Cantab., F.R.C.S.Eng., Assistant Surgeon to the Cumberland Infirmary.

MORTON, S. G., M.B., B.Ch.Oxon., D.P.H.Camb., Medical Officer of Health for the County Borough of South Shields.

MURRAY, Flora, M.B., B.S., Junior Resident Medical Officer to the Belgrave Hospital for Children, S.W.

PARSONS, L. D., M.B., Ch.B.Edin., Assistant Colonial Surgeon and Port Medical Officer at Gibraltar.

REIDY, Wm. A., L.R.C.P. and S.Edin., Medical Officer and Public Vaccinator for the Maesycwmmer District of the Newport Union.

SAVIGE, Mrs. Agnes F., M.A., M.D., M.R.C.P.I., Honorary Assistant Physician to St. John's Hospital for Diseases of the Skin, Leicester Square.

SHAW, W. F., M.B., Ch.B.Vict., House-Surgeon and Resident Obstetric Assistant Surgeon to the St. Mary's Hospital, Manchester.

STANWELL, R. De Sats, M.B., B.C.Cantab., Physician to the Salop Infirmary, vice E. Lycett Burd, M.D.Cantab., resigned.

STERN, R. H., M.D.Lond., Medical Superintendent of the City of London Asylum, Stone, vice E. W. White, M.B., M.R.C.P.Lond.

TOVEY, Arthur, M.R.C.S., L.R.C.P., Clinical Assistant at St. John's Hospital for Diseases of the Skin, Leicester Square.

TOWNLEY, A. E., M.B., Ch.B.Vict., Medical Officer of Health, Oswaldtwistle Urban District.

WOLVERSON, F., M.B., C.M.Glasg., District Medical Officer of the Walsall Union.

ST. THOMAS'S HOSPITAL.—The following gentlemen have been selected as house officers from Tuesday, December 6th, 1904:

Resident House-Physicians.—A. G. Gibson, B.A., M.B., B.Ch.Oxon., B.Sc.Lond.; K. Takaki, M.R.C.S., L.R.C.P.

House-Physicians to Out-Patients.—R. E. Whitting, M.A., M.B., B.C.Cantab.; F. A. Brearton, M.R.C.S., L.R.C.P.

Obstetric House-Physicians.—(Senior) H. I. Pinches, M.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.; (Junior) R. W. Parry, M.R.C.S., L.R.C.P.

Ophthalmic House-Surgeons.—(Senior) H. S. Stannus, M.B.Lond., M.R.C.S., L.R.C.P. (Junior) A. B. Bradford, M.B., B.S.Durh., M.R.C.S., L.R.C.P.

Special Departments.—Throat: C. N. Sears, M.B., B.S.Lond., M.R.C.S., L.R.C.P.; D. K. Coutts, M.R.C.S., L.R.C.P. Ear: L. E. C. Norbury, M.R.C.S., L.R.C.P.

Several other gentlemen received an extension of their appointment.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

HODGKIN.—On December 5th, at Hillside, Christchurch Road, Hampstead, N.W., the wife of Henry Theodore Hodgkin, M.A., M.B., B.C.Cantab., of a son.

SHENNAN.—On November 25th, at 95, Marchfield Road, Edinburgh, Minnie Shennan (née Greig), L.R.C.P. and S.Edin., etc., wife of Dr. Theodore Shennan, of a daughter.

DEATH.

EVANS.—On December 2nd, at Cheshunt, Herts, Nicholl Evans, M.D., M.R.C.S., J.P., Herts, Surgeon, Royal Small arms Factory, Enfield Lock, aged 67 years.

DIARY FOR NEXT WEEK.

MONDAY.

Medical Society of London, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Papers: Dr. E. R. Hunt: Subphrenic Abscess. Mr. Cuthbert S. Wallis: The Surgical Treatment of Subphrenic Abscess.

TUESDAY.

Medico-Legal Society, 22, Albemarle Street, W., at 8 p.m.—Agenda: Discussion on Degeneration: its Causes and Prevention with reference to the proposed Sterilization of certain Degenerates. To be opened by Dr. Robert Reinhold. Dr. Harvey Littlejohn: Four medico-legal specimens.

Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, London, W.C.—Paper: Professor R. T. Hewlett: On Antitoxins. Mr. E. M. Holmes, F.L.S.: Notes on some Recent Additions to the Museum.

Royal Medical and Chirurgical Society, 20, Hanover Square, 8.30 p.m.—Adjourned discussion on Chloroform Anæsthesia. Speakers: Sir Victor Horsley, F.R.S., Colonel Lawrie, I.M.S., Mr. A. W. Mayo Robson, Dr. Silk, Professor Sherrington, Mr. A. M. Sheild, Dr. Waller F.R.S. Dr. F. W. Hewitt, and others.

WEDNESDAY.

South-West London Medical Society, Bolingbroke Hospital, Wandsworth Common, 8.45 p.m.—Dr. Seymour Taylor: On Errors of Treatment.

Dermatological Society of London, 11, Chandos Street, Cavendish Square, W., 5.15 p.m.—Demonstration of Cases of Interest.

Hunterian Society, London Institution, Finsbury Circus, 8.30 p.m.—Paper: Dr. G. Ernest Herman: On Leucorrhœa.

THURSDAY.

Samaritan Free Hospital for Women, Marylebone Road, 3 p.m.—Some Common Complications of Pregnancy.

The Hospital for Sick Children, Great Ormond Street, London, W.C., 4 p.m.—Some Points in the Diagnosis of Scarlet Fever, Measles, and German Measles.

POST-GRADUATE COURSES AND LECTURES.

West London Post-Graduate College, West London Hospital, Hammersmith Road, W.—The following demonstrations have been arranged for next week at 5 p.m. each day: Monday, Cancer of the Rectum; Tuesday, High-frequency Currents, with Lantern Slides; Wednesday, Iritis, its Varieties and Treatment; Thursday, Practical Surgery; Friday, Medical Treatment of Insanity.

North-East London Post-Graduate College, Tottenham Hospital, N.—Tuesday, 4.30 p.m. Principles of Prognosis; Friday, 4.30 p.m., Lecture demonstration on Anæsthetics.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical. Lectures at 5.15 p.m. each day will be given as follows: Monday, Infantile Scurvy: Tuesday, Some Points in Abdominal Surgery; Wednesday, Mental Overstrain in Childhood; Thursday, Ditto; Friday, College closes for the Vacation.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):— EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

MANAGEMENT OF MOTORS.

LLANGAN will find the information he requires in *Motors and Motor Driving,* third edition Badminton Library. London: Longmans, Green, and Co. 1904. Price 9s.

TREATMENT OF PEATY WATER BY ALUM.

ALPHA asks if any reader can inform him of any instance in which a peaty water supply is treated on the large scale with alum with a view to precipitating the peaty matter.

ANSWERS.

INDIA.—"Forman," we are informed, is only another name for urotropine. Our correspondent would have no difficulty in obtaining the substance from Mr. Marindale, 10, New Cavendish Street, W., or any other first-rate London pharmacist.

DISCIPULUS.—The Life of Pasteur by his son-in-law, M. René Vallery-Radot (Paris: Librairie Hachette), would probably meet our correspondent's requirements: it contains a full account of Pasteur's work. An English translation by Mrs. R. L. Devonshire has been published by Archibald Constable and Co.

STAFF-SURGEON.—Laudanum is a poison included in Part II. of the Poisons' Schedule. It must therefore be labelled "Poison" and bear the name and address of the seller. A chemist carrying out these details complies with all legal requirements. Chemists usually satisfy themselves that the drug is to be properly used before selling, but the law does not impose this obligation upon them, nor need they know the name of the purchaser.

PADDY FIELDS.

MALARIA.—The reason why paddy fields or other cultivations requiring irrigation or standing water in hot climates are injurious to health has been so fully discussed in our columns that it is hardly necessary to go into details again; they form convenient breeding grounds for large swarms of mosquitos, many of those being *Anophilina*, and so malaria is spread. The presence of a few fish or other natural enemies makes little difference to the number of those insects turned out, and the proof of this statement lies in the large number of mosquitos found in those areas. Irrigation dangers are well illustrated in the Mian Mir experiments.

FISSURE OF LIP.

S. H. writes: "Lancs." might blacken the base of the fissure with solid nitrate of silver and secure its sides with a horsehair suture or a harelip needle, ensuring the fissure being at rest during healing and applying softened boracic ointment with a brush. Food should be fluid and speaking prohibited. Should this treatment fail and the fissure be slight, the labial fibres of the orbicularis oris on each side and below the fissure could be subcutaneously divided, to prevent movement; but if the fissure be deep the case should be treated as one of harelip.

LETTERS, NOTES, Etc.

THE SUPPLY OF MIDWIVES.

WE are requested to state that the Association for Promoting the Training and Supply of Midwives, a meeting of which was reported in the BRITISH MEDICAL JOURNAL of November 12th, p. 1324, has its office at Dacre House, New Tothill Street, Westminster. The Secretary will give further information to callers between 10.30 and 1 o'clock daily, Saturdays excepted.

INTRAUTERINE INFECTION BY SMALL-POX.

DR. W. HOLMES (M.O.H. Castle Ward, R.D.C., Northumberland) writes: In April last a neighbouring practitioner was called to a confinement, and found on arrival that the patient was suffering from a mild attack of small-pox. The baby was vaccinated the day after birth, and all the marks "took" well. Notwithstanding this, the baby developed small-pox on the eighth day after birth, which became confluent and haemorrhagic in parts. The infant eventually died.

This was evidently a case of infection in utero.

HORSE AMBULANCES.

DR. A. JAMES, Honorary Secretary of the Metropolitan Street Ambulance Association (69, Gloucester Terrace, Hyde Park, London, W.), writes to us with reference to certain cases that have occurred recently in the metropolitan area, showing the urgent need of an efficient ambulance service for street casualties in London. He states that his association is seeking the establishment in London of an up-to-date ambulance service, summonable by telephone and provided with rapid transport, so that skilled aid can be quickly brought to any case of accident or sudden illness occurring in the streets or public places, and the patient removed to home or hospital in a comfortable ambulance, with a watchful attendant at his side. In this it has the support of the St John Ambulance Association, of Mr. H. L. Bischoffsheim, and of practically every one interested in the welfare of the 15,000 severe casualties occurring in London each year. The vastness of London and the fact that accidents do not recognize municipal boundaries, necessitate the provision of such a service by a public body with the scope of the London County Council, which fortunately has ready at hand most of the machinery required in its Fire Brigade organization. The combination of these two emergency services would add to the efficiency of each, and could be worked conjointly far more economically than separately, as has been already proved in many towns where this arrangement exists.

THE MORPHOLOGY OF THE TAIL.

MR. N. BISHOP HARMAN (London, W.) writes: I have read with the greatest interest the paper by Professors A. H. Young and A. Robinson, entitled Observations on the Development and Morphology of the Tail, which appeared in the BRITISH MEDICAL JOURNAL of November 19th. There can be no doubt that the work done by these investigators is thorough and excellent, and with this I have no quarrel. But to the conclusions they arrive at I wish to put in a protest, lest the matter go by default. As I read the paper I was much struck with the findings of the first part, and supposed the authors must have discarded the conclusions enunciated in their earlier published work on the morphology of the caudal termination of the aorta, but later the smooth run of the paper seemed, as by a big jerk, to jump on to the old line of rail and steam into the station triumphantly assurant of the old conclusion. Their final or present conclusion comes to this: The tail is a median unpaired limb. They point out that in the mammalian embryos examined (pig and ferret are mentioned) the completely metameric character of the tail is wanting, particularly in the neuromeres, of which there may be one only to two, three or more myomeres and scleromeres; they show also that tail segments are enervated by neuromeres belonging now to the body or trunk segments. Granted these facts, they do not prove that the tail is as they hold. Their work has been done on mammals fairly high up in the scale of the phylum; the tail in these animals is no longer an absolutely necessary organ of the animal, it is fast becoming a mere appendage which a little higher in the scale is tucked away between the hind limbs as though in disgrace, and the proud possessor of the secreted tail, an upright and eyes-fronted man, asserts he has no tail! Nature everywhere conserves her material. In a part on the down-grade the most expensive items are saved, hence the fusion of the neuromeres; its useful parts are made to do duty elsewhere, as, for example, when undoubted tail muscles become the important group of the levator ani and coccygeus muscles, or the "pelvic diaphragm," as shown by Dr. Peter Thompson; hence the apparent alteration of the relation of tail and trunk innervation pointed out by the professors. Let Professors Young and Robinson do their work on creatures lower down in the scale of the phylum, on a primitive vertebrate—say the shark—where the tail is an absolute necessity. They will then find, so far as my observation goes, that the tail is part and parcel of the body; it is metameric as regards neuromeres, myomeres, and scleromeres, and that the fore and hind limb fins are the appendages and not the tail. General conclusions on any structure can only be safely arrived at when we examine its condition in an unmodified state of the structure.

LETTERS, COMMUNICATIONS, ETC., have been received from:

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Remarks
ON
THE INDICATIONS FOR OPERATIVE INTERFERENCE IN DISEASES OF THE STOMACH.

Read at a Meeting of the Birmingham Branch of the British Medical Association.

By ROBERT SAUNDBY, M.D., M.Sc., LL.D., F.R.C.P.,
Professor of Medicine, University of Birmingham; Senior Physician, General Hospital.

Since the introduction of anaesthetics has deprived operations of most of their terrors, and their mortality has been reduced by aseptic surgery to comparatively insignificant proportions, there is a strong temptation to skilful operators to attempt the relief of any case of chronic disease which depends, or appears to depend, upon local organic changes. There is little ground for complaint against the general attitude of British surgery towards such experiments, but the surgery of the stomach has made such remarkable progress of late years, and the claims put forward in its behalf are so large that a discussion, by physicians as well as surgeons, of the indications for these operations is most desirable. It is my hope that by ventilating our differences—if differences be found to exist—we may open the way to a general agreement upon the grounds which justify operative interference in stomach diseases, and thus afford encouragement to an important branch of surgery, and facilitate its progress.

Writing in 1895, Doyen took a very wide view of the indications for surgical intervention. Excepting cancer, which for the time he excluded completely from the sphere of useful surgery,[1] he regarded the following conditions as justifying a surgical operation: (1) The gravity of the case; (2) the inefficacy of medical treatment. He further said that "all chronic stomach diseases not amenable to medical treatment which cause serious interference with nutrition are within the field of surgery."

Robin is undoubtedly right when he says that "no physician of experience in diseases of the stomach would accept the opinion expressed by Maylard at the Paris Congress that every case of severe and persistent dyspepsia justifies an early exploratory incision."[2]

As I have to dwell upon the desirability of confining surgery within certain limits, I should like at the outset to express my warm appreciation of all that surgical skill has done for diseases of the stomach, and to acknowledge, without any reserve, the debt we owe to it. Surgeons can claim to have cured as completely as any cure can be effected a certain proportion of otherwise hopeless cases of cancer of the stomach, and all the evidence goes to show that if operations of this kind are encouraged and performed earlier the proportion of cures will be considerably greater. These lives would have unquestionably been sacrificed without surgical aid. Even where cures have not resulted life has been prolonged, and this prolongation of life has been happily associated with relief from suffering. Many lives, too, have been saved in recent years by operations for perforated gastric ulcer. Finally, a large number of persons have been rescued by surgical means from almost hopeless conditions of malnutrition depending upon other diseases, and have been restored to health. These good results are, in my opinion, not to be disputed, and if I desire to define clearly the boundaries between the spheres of medicine and surgery it is only for the purpose of promoting the best possible co-operation between the two branches in the interests of our patients.

With regard to the more perfect utilization of surgical assistance in the treatment of stomach diseases, I cannot do better than quote the words of the well-known German physician, Penzoldt, with which I entirely concur.[3] He says: "It is the duty of every practitioner who has not the fortune to possess the necessary experience for performing these operations to call into consultation a surgeon possessing the necessary skill so soon as the question of an operation arises. Above all, it behoves the physician who practises as a specialist in the domain of stomach and intestinal diseases, and to whom a great number of uncured patients are sent, to come to a definite agreement upon the grounds for operation with an experienced surgeon; the unavoidable disadvantages arising from the unnatural division of practice into surgery and medicine may by such a personal union be compensated." Moreover, he warns physicians that although there may be a good deal of difficulty in acquiring the necessary skill in the diagnosis of stomach diseases, this is far easier than that required to perform the necessary operations, and that if physicians do not co-operate with surgeons the latter will find the means of acquiring the diagnostic skill and do without them. He complains, too, of the "hesitation and faintheartedness" of many practitioners, which he thinks constitute an unjustifiable obstacle to the progress of surgical treatment.

There was a time when chronic dyspepsia seemed to me to be the most hopeless condition, but for some years I have freely admitted cases of this kind to my wards for study and treatment; I have ceased to regard them as uninteresting and I have found that as a rule they may be relieved by medical means. When improvement has not followed after three or four weeks' treatment I have been in the habit of asking my colleague, Mr. Barling, to see the case with me, and he has also been so good as to allow me to examine most of the stomach cases sent to him for treatment. In this way we have acquired a certain amount of experience and have shaped out some rough principles as our guide. I regret very much that he cannot be present to-day, owing to an unforeseen and unavoidable engagement, but the indications and limitations laid down in this paper have been submitted to him, and where any divergence of opinion exists between us I shall draw attention to it.

It will clear the ground if before going further I enumerate the conditions under which surgical interference is so clearly indicated that its discussion need not detain us, and we may direct our attention to those other parts of the subject in which the propriety of surgical treatment is more questionable, or requires at least to be defined and determined. I think we shall all agree that operative interference is imperative in: (*a*) Impermeable stricture of the oesophagus; (*b*) perforated gastric ulcer; (*c*) subphrenic abscess; (*d*) tumour in the region of the stomach with vomiting and other symptoms of pyloric obstruction.*

This leaves open for discussion the question of operation in haemorrhage, ulcer of the stomach, duodenal ulcer, dilatation, hour-glass stomach, hyperchlorhydria, chronic gastritis, atonic dyspepsia, gastralgia and cancer.

Haemorrhage.

I admit the reasonableness of surgical interference in gastric haemorrhage, and have on several occasions held consultations in these circumstances; but, so far, it has never been necessary to operate, all my cases having recovered in the end. I believe there are especial difficulties which make surgeons not very anxious to open the stomach to look for a bleeding point, as it is by no means easy to find it, and we know that in the *post-mortem* room, where death has resulted from sudden fatal haemorrhage, it may be impossible to find its source.

Robson and Moynihan,[4] while admitting that medical treatment is often successful in cases of apparently alarming haematemesis, think that this result is only obtained when the bleeding comes from small vessels, but when a large artery has given way surgical means only can deal successfully with it. They say where there have been distinct signs of gastric ulcer preceding the haemorrhage, and where a sudden attack of haematemesis has occurred with great loss of blood, accompanied by an attack of syncope, a large vessel will usually be found to be the source of the bleeding. In all such cases not speedily yielding to medical and general means, surgical treatment will probably be carefully considered in the future, and in some it will be followed out, for there can be no absolute rule that can be formulated that will apply to all cases, and each must be considered on its merits.

Terrier and Hartmann[5] say that in profuse haematemesis the only permissible proceeding is gastrotomy, so as to get at the bleeding point, and deal with it by cautery or ligature, but they are of opinion that the application of an ice-bag and rectal feeding are preferable; in small repeated bleedings leading to anaemia, and ultimately to death from asthenia, the results of gastro-enterostomy are good. Such small repeated bleedings are, in my opinion, most often seen in duodenal ulcer. I can recall some very unsatisfactory cases, and I am convinced that surgical intervention in these cases should be encouraged.

* I do not include foreign bodies, which are outside the subject of this paper.

GASTRIC AND DUODENAL ULCERS.

In an uncomplicated case of gastric ulcer there should be no question of surgical assistance. It is difficult to get accurate statistics of this disease by merely taking the figures supplied by hospital tables,[6] but I am sure all physicians will agree with me in the statement that it is extremely rare to see a case of gastric ulcer not improve under treatment. Hospital statistics are complicated by the fact that a certain proportion of cases are admitted moribund from perforation or profuse haemorrhage, in which no opportunity occurs for medical treatment, and even surgery may fail, owing to the exhausted condition of the patient, but I cannot remember a single instance of death from uncomplicated gastric ulcer. In one case[7] under my care, which is the only death I can recall, it was complicated by hour-glass contraction of the stomach, and the ulcer was of great size, and of long standing.

Although Robson and Moynihan speak very confidently of the good results of operative interference in ulcer, the facts and figures before us are not sufficient to enable us to draw any conclusive deductions. Terrier and Hartmann take a more restricted, and, in my opinion, a truer view of the indications for treatment, which they limit to (1) perforation, in which surgical interference is imperative, and admitted to be so on all hands; (2) small and repeated bleedings, leading to anaemia, and tending to cause death by asthenia; (3) intense pain; and (4) persistent vomiting not relieved by medical means, where they advise gastro-enterostomy.[8] With regard to (3) and (4) I have never met with a case in which these symptoms did not yield to medical treatment, although such cases seem to find their way to our surgical colleagues.

The indications for operation in duodenal ulcer are identical, but, as already stated, it is probably in this form that operative interference for repeated bleedings should be tried.

DILATATION.

Dilatation of the stomach is easily determined by inflating the stomach by CO_2, for which I am in the habit of giving 120 grains of sodium bicarbonate followed by 90 grains of tartaric acid. I have had sufficient experience of this method to be convinced of its safety and freedom from any serious inconvenience when used with ordinary care; it is, however, desirable not to employ it when the stomach is full of food, as in this condition vomiting often occurs.

It is of great practical importance to distinguish between primary or idiopathic and secondary or obstructive dilatation, as it is in the latter only that surgical aid is required. Where obstruction exists, whether from external pressure, adhesions, growth, hypertrophy, or spasm, a cure can only be effected by surgical means, and I hold that it is the duty of the physician not to persist in merely palliative medical treatment when the operation of gastro-enterostomy affords a prospect of a complete cure. So far I am entirely in accord with the opinions expressed in all modern works on stomach surgery.

The clinical indication for this operation is *stasis*, which is of more importance than the size of the stomach or the existence of dilatation, for although stasis rarely occurs without some dilatation, extreme dilatation is not at all uncommon without stasis, and, as we shall see, in the opinion of most physicians and of many surgeons, this condition does not require surgical treatment. Thus Terrier and Hartmann say:

> Dilatation of the stomach, too often confounded with vertical dislocation of this organ, has not the importance of stasis as an indication for operation, unless accompanied by local signs, such as peristaltic waves, which show that the stomach has to overcome an obstacle to the discharge of its contents. In such cases, however, it is almost invariably associated with stasis. Extensive dilatation may exist apart from any obstruction to the discharge of the stomach contents. . . . This idiopathic dilatation, which may be described as gastric atony, . . . however great, is not accompanied by stasis under the conditions in which we look for it, and consequently does not call for surgical intervention, as do those dilatations depending upon an obstruction to the discharge of the stomach contents.[9]

It is necessary to define what we mean by stasis. Some suppose that a dilated stomach always contains a considerable quantity of fluid, consisting of gastric juice, remains of food, saliva, and perhaps fluids that have been swallowed; this is quite exceptional. Even where the dilatation is accompanied by pyloric obstruction the amount of gastric contents is rarely considerable. A healthy stomach empties itself six hours after a meal so completely that a microscopical examination of the stomach washings fails to detect even traces of food, but we are usually content with a less severe test. We consider the stomach to have emptied itself normally if, twelve hours after food, it is found to be quite empty. For this purpose the patient is allowed some supper about 8 or 9 o'clock, to which we add a few raisins or currants, the skins of which do not easily undergo digestion, and at 8 or 9 the next morning the stomach contents are withdrawn or washed out, put in a conical glass, and examined with the naked eye and the microscope. It is held that, if this examination shows the stomach to be empty, there is no stasis, and consequently no pyloric obstruction. My friend Mr. Barling is inclined to doubt whether this twelve hours' interval may not be occasionally too long, as certain cases of partial stenosis allow the stomach to empty itself in twelve hours, but in eight or nine hours show a residue. If we admit this to be true, we may ask, Would such a minor degree of stasis warrant an operation? The answer I should give is that, if no stasis is found after twelve hours, medical treatment should be continued for two or three weeks, but, if the results are not satisfactory, the state of the stomach after nine hours should be determined, and, in view of the failure of medical treatment, an operation would be justified if definite remains of food are found. In both cases the patient should be kept in bed during the interval of fasting.

In idiopathic dilatation in which stasis does not occur, the balance of opinion is not in favour of any sort of operation. It is true that Doyen[10] and Robson and Moynihan[11] advocate operation, but Terrier and Hartmann[12] say "it is only indicated in the presence of serious cachectic conditions depending upon the dilatation," and then the operation to be performed is gastrorrhaphy.

Even Robson and Moynihan admit that the indication is "not so distinct" and that "recovery after operation is not so rapid and satisfactory." Professor Robin[13] says he has never met with a case of atonic dilatation in his practice "in which the question of surgical interference has even been raised." Dr. Maurice Soupault,[14] author of a well-known monograph on dilatation of the stomach, gives notes of thirteen cases in which operations were performed without benefit, while in two of these there was distinct aggravation of the subjective troubles. He attributes these bad results to the fact that the local condition is dependent upon general neurasthenia.

Dr. F. Craemer,[15] in a recent German monograph on stomach dilatation, speaks only with favour of gastro-enterostomy in non-malignant pyloric stenosis. His collaborator, Dr. Krecke,[16] who supplies a surgical appendix to the work, expresses himself with diffidence on the subject of operations in cases of primary atonic dilatation. He says a definite opinion cannot yet be pronounced, but he quotes Penzoldt, who is an enthusiast for stomach surgery, as advising that an operation should be considered when "inanition becomes dangerous." He mentions one case treated by him which was somewhat improved, but had to undergo further medical treatment. My own experience confirms the doubts expressed by the majority of those whose opinions I have quoted. A case of mine in which Mr. Barling did a gastro-enterostomy after prolonged medical treatment had failed, was made worse rather than better, while on the other hand I have treated a large number of these cases successfully by medical means, and, although progress is sometimes slow,* even the worst eventually improve to a surprising extent. Neurasthenic patients are bad subjects for surgical operations, for even where the local condition is cured their general condition is often aggravated. This objection applies equally to such operations as gastrorrhaphy and gastropexy, and I believe it will be to the advantage of stomach surgery if operations upon nurasthenic subjects are as far as possible avoided.*

HOUR-GLASS STOMACH.

The more or less complete separation of the stomach into two cavities is by some thought to be merely an exaggeration of the physiological division of the organ into fundus and antrum pylori, and calls for surgical treatment only when it gives rise to symptoms of obstruction and stasis. Under these conditions a surgical operation is indicated, and should not be too long postponed.

* Since this paper was written I have read in the Bulletin of the Seventeenth French Congress of Surgery the following note by M. Brin of Angers: Out of 19 gastro-enterostomies, 17 were cured by operation: in 15 cases the results were quite perfect, but 2 were failures. These last were cases in which no stomach lesion was found. One of these patients—an inveterate case of hysteria—was operated upon a second time by M. Monprofit with an equally bad result, for the stomach troubles had persisted. M. Brin adds: Gastro-enterostomy is, therefore, completely useless in neurotics without lesions, and the laparotomy should in these cases be confined to an exploratory incision. *La Semaine Médicale*, 1904, p. 342.

Hyperchlorhydria.

Hyperchlorhydria is frequently a symptom of organic disease of the stomach, and is not uncommonly associated with stasis and pyloric stenosis or spasm. Wherever stasis is present gastro-enterostomy is indicated, but it may be a pure neurosis unassociated with stasis, in which case surgical interference is uncalled-for, and not likely to do good.

Chronic Gastritis, Atonic Dyspepsia, and Gastralgia.

None of these conditions in themselves requires surgical treatment, nor is surgery likely to afford relief unless they are complicated by pyloric stenosis or spasm giving rise to stasis. All cases of chronic intractable stomach trouble should be submitted to systematic examination, and the presence or absence of stasis in particular must be determined. It is not a very difficult proceeding, while it is of chief importance as the cardinal indication for surgical interference.

Cancer.

The grounds for operating in most cases of stomach cancer fall under the heading already given of "a tumour in the region of the stomach with vomiting and other symptoms of pyloric obstruction." But the subject is not wholly included in this definition and is of sufficient importance to deserve separate consideration. As we have seen, Doyen in 1895 excluded cancer from the sphere of useful stomach surgery. "L'intervention chirurgicale pour les affections de l'estomac n'a d'avenir, jusqu'a nouvel ordre, que lorsqu'il ne s'agit pas de cancer,"[17] were his words written at that time. Nevertheless, successful operations for stomach cancer are among the most brilliant achievements of modern surgery.

Mayo Robson and Moynihan, in the last edition of their work on *Surgery of the Stomach*, give the following questions as determining the propriety and nature of the operations to be performed in cases of cancer of the stomach: (1) Will a palliative operation upon the stomach prolong life? (2) Will it make the remnant of life more tolerable? Will it make the patient feel that the ordeal of operation is justified in the greater comfort of his latter days? (3) Will resection give a reasonable prospect of cure? (4) Will resection if followed by recurrence give increased length of days and better health? They quote Kroenlein for the following conclusions: (1) That carcinoma of the stomach, without operation, has a fatal termination in about a year; (2) that gastro-enterostomy prolongs the life of the patient suffering from this disease for about three months on the average; (3) that gastrectomy so far as it is followed by recurrence prolongs life on an average about fourteen months.[18]

The presence of cancer of the stomach affords a clear indication for surgical interference. The real difficulty is that of early diagnosis, the nature of the case being too often recognized only when the patient's general condition has become very serious. A large proportion of the surgical mortality has not been due to those especial dangers against which surgeons must guard their patients, but to want of strength to support the operation.

Krecke gives the following as the results of the two operations for cancer. Of gastro-enterostomy he has collected from Chlumsky, Mikulicz, Kuemmell, and Kroenlein 563 cases with 216 deaths, being a mortality of 38.37 per cent.; while of pylorectomy from the same surgeons, with the addition of 24 from Kocher, he has collected 325 cases with 104 deaths, giving a mortality of 32 per cent.[19]

Mr. Barling pleads for the earlier performance of gastrostomy in malignant disease of the oesophagus before inanition has sapped the patient's strength—that is, before the obstruction has become so great as to seriously limit the quantity of nutriment entering the stomach. Many cases of cancer of the oesophagus, however, do not reach this degree of obstruction, and death is due to the wasting of the cancer cachexia and not to starvation. The operation may be forced on the surgeon in the last stage as a forlorn hope, without the indication of inability to swallow; but under these circumstances the results can only be disheartening.

Conclusion.

In conclusion, may I urge the importance of the assistance to be derived from surgery in the treatment of stomach diseases, the need for seeking surgical aid before our patient's strength is undermined by the duration of the disease, and the value of the simple means of diagnosis to which I have called attention. I hope that surgeons may reconsider the claim to operate in every chronic ailment of the stomach which has not been relieved by medical means, to select their cases by studying the indications which justify operative interference, and to avoid as far as possible operating upon patients who are the subjects of general neurasthenia. Finally, it is greatly to be desired that the questions now raised may be thoroughly discussed, and that the two branches of the profession may come to some definite agreement as to the grounds upon which these operations should be undertaken.

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An Address

ON

THE DIAGNOSIS AND SURGICAL TREATMENT OF CERTAIN CASES OF CHRONIC INDIGESTION.

Delivered to the Newport (Mon.) Medical Society.

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The treatment of digestive derangements in general has been, and will, in the main, still be, most properly left in the hands of the physician. There is, however, a certain group of cases in which medical treatment fails to relieve, or is speedily followed by relapse, if not by a worse calamity. The patients are the subject of ulcer in the stomach, or duodenum, which cannot be soundly healed, or healing is followed by contraction and mechanical changes which are as bad or worse than the ulcer which preceded them. Closely allied is the condition of hyperchlorhydria with associated pyloric spasm, eventuating in pyloric stenosis.

The patient who gets gastric catarrh from exposure or unsuitable food, the overstrained professional or business man whose poor gastric juice, the result of exhausted nervous force, fails to digest the food placed in the stomach, the poor drudge who has no masticating teeth and is always drinking stewed tea—these are not the people to be treated by surgical operations. If gastro-jejunostomy were a means by which the greedy could escape the penalties of overeating, or of the eating of food which is wisely prohibited by the physician, what a vista of surgical interference would be opened up! No, gentlemen, the surgeon's province here is a limited one, the boundaries of which are as yet not very well defined; and I purpose this afternoon to place before you the reasons which I think justify surgical treatment when the physician fails, and the methods by which relief is to be attained.

I will first briefly classify the conditions for which surgical treatment may be required, excluding perforation, with which I have not time to deal. They fall into four groups:

1. Chronic gastric ulcer, frequently relapsing despite proper dieting and rest.
2. Haemorrhage from gastric ulcer under certain conditions.
3. Mechanical obstruction to the emptying of the stomach from pyloric stenosis, hourglass contraction, or external adhesions.
4. Ulcer or stenosis of the duodenum.

I should abuse your patience if I entered upon a discussion of the causation and diagnosis of gastric ulcer, but I should like to offer some brief observations on one or two points.

Haemorrhage is sometimes regarded as the criterion of gastric ulcer, but any one who has at all closely followed the subject will readily agree that cases of gastric ulcer may be entirely free from bleeding—occasionally, indeed, may be practically latent, and perforation may be the first incident which calls attention to the presence of an ulcer. Conversely, apart from diseases such as hepatic cirrhosis, haemorrhage from the stomach may occur without the presence of a definite lesion such as a distinct ulcer, and from more than one point, the sources of the bleeding being only demonstrable by careful search. This uncertainty as to the meaning of haematemesis when it does occur, and its absence in some cases in which it might reasonably be expected, add to the

difficulties of diagnosis and treatment. Operations have been performed to control haematemesis, and instead of a definite ulcer being found perhaps nothing, or multiple bleeding points unsatisfactory to deal with.

The absence of haematemesis in patients assumed to be suffering from gastric ulcer may in part be explained by the existence of hyperchlorhydria and pyloric spasm instead of ulcer. This condition was, I believe, first emphasized by French observers, who laid stress upon it as an efficient cause of pyloric stenosis in the absence of ulcer. My own observations lead me to accept the view that pyloric stenosis, even of marked degree, may be produced without evidence of tissue destruction either in mucous membrane or in the peritoneum. One then finds a narrow ring with a sharply-defined edge encircling the orifice, quite unlike the denser unsymmetrical scar of a healed ulcer. Such a condition may, I believe, be the result of constant pyloric spasm due merely to the presence of excess of free hydrochloric acid. Gastric ulcer at a distance from the pylorus may be found associated with these conditions, but ulcer may be entirely absent. I turn now to my classification.

GROUP I.—CHRONIC RELAPSING GASTRIC ULCER.

Relapse after apparently successful treatment of gastric ulcer by medical means is extremely common, and may be repeated time after time. I do not know that a very high percentage of these patients die of their ulcers, but some do, and most of the others lead a life of chronic invalidism, constantly in discomfort, unable to discharge their duties in life, a burden on, and worry to, their friends. Many of these unfortunates are eventually the subjects of stenosis of the pylorus or hourglass stomach, and will be dealt with in Group III; a few fall into Group II. What have we to offer those who remain in Group I, and who are not suffering either from stricture or bleeding, but in whom the ulcer does not heal? In such the first step is to complete the diagnosis of ulcer by opening the abdomen. An ulcer being found, two courses are open to the surgeon, according to its position and extent. If the area of ulceration is fairly well limited, and is on one of the more accessible parts of the stomach, excision should be practised with the usual precautions against soiling the belly, and for closing the wound of the stomach. If, on the contrary, the area of ulceration is extensive, if it is on the less accessible parts of the organ, and especially if it is adherent to parts like the pancreas and the great vessels in its neighbourhood, excision is out of the question, and gastro-jejunostomy should be practised instead. Occasionally, as in ulcer about the pylorus, where excision may leave the stomach cavity much narrowed, the removal of the ulcer may with advantage be combined with gastro-anastomosis. More experience is needed as to the future of these patients after gastro-anastomosis. The purpose of the operation, when the ulcer cannot be excised, is to give an easy exit from the stomach, to prevent overdistension of the organ and vomiting, to prevent stretching of the ulcer. The existence of pyloric spasm in the presence of ulcer, even though the latter be not situate at the pylorus, is probably a factor in the sore not healing, and the substitution of a passive anastomotic opening of free extent, for the spasmodically contracted pylorus seems to me to be based on sound reasoning.

GROUP II.—HAEMORRHAGE FROM GASTRIC ULCER.

This is a frequent accident and often very alarming, yet few patients come directly to the surgeon's hands because of this complication. The few who do, fall mainly into two classes, those in whom the bleeding is profuse and quickly repeated, and those in whom there is never a great loss, but one which is often repeated. Only a few cases have been recorded of operative interference in the fulminating haemorrhages. The conditions are so very unfavourable for operative intervention, and so many patients eventually scrape through without it, that medical means are likely still to be the chief resources. If in any particular case operation seems the least of the grave risks, when the abdomen is opened a speedy examination of the interior of the stomach should be made to locate the ulcer, and, this failing, the organ should be opened and the ulcer sought. A vessel of some size may be found and ligatured or closed by undersuturing. If no ulcer is found, the blood may come from a single or multiple abrasions in the mucous membrane, which should be ligatured bodily, or a still further resource may be found in the actual cautery. Anastomosis of stomach to jejunum would be the next step if the patient's condition and surroundings permit, for the same reasons which justify it in Group I.

In the patients with repeated but smaller bleedings, an interval of quiet should be chosen and operation unhesitatingly resorted to. When the abdomen is opened, it will often be found that in addition to ulcer there is pyloric stenosis, or the ulcer itself may be located on that part of the stomach. For such patients gastro-jejunostomy is the remedy, though with it may be combined with advantage excision of the ulcer, if the local conditions and the patient's general state are favourable. Care must be taken, however, not to let those patients drift on into a hopelessly feeble condition before surgical aid is sought. Here is an example of this too late operation, the record of which is far more eloquent than anything I can urge.

A male, aged 58, was admitted to hospital under my care, March 26th, 1904, with a history of repeated haematemesis, occasional melaena, and of severe pain in the epigastrium.

History.

In October, 1901, the first attack of pain and vomiting occurred, with severe haematemesis, estimated at 3 quarts. During the next two months there was frequent return of these symptoms, and in January, 1902, the patient was treated in hospital for ten weeks, resuming his work the following June. In November, 1903, the epigastric pain returned, with great loss of appetite. In March, 1904, there was diarrhoea, with melaena, and between March 6th and the date of admission to hospital several attacks of haematemesis occurred, and melaena was also present; pain in the epigastrium was severe, and was partly relieved by vomiting. For some weeks the patient had been entirely on rectal feeding.

Condition on Admission.

The patient was very emaciated, anaemic, and feeble; his weight had fallen to 8 st. 8 lb., whereas in health his ordinary weight was about 13 st.; the voice was little more than a whisper. There was a certain amount of tenderness over the right epigastric region, and the lower margin of the dilated stomach could be traced half-way between the umbilicus and the pubes; slight waves of peristalsis could be seen travelling from left to right.

Operation.

March 28th. Posterior gastro-jejunostomy by two rows of sutures was performed, and the patient put back to bed in fair condition considering his prior feeble state. In the evening he quite held his ground, but at 10 p.m. vomited some ounces of blood and again the following morning. Despite careful rectal feeding and stimulation he became feebler, and died thirty-six hours after operation.

Necropsy.

The following is a report of the pathologist, Dr. Wynne:

"Stomach: Pylorus and the neighbouring 1 in. of the lesser curvature is adherent to the under surface of the liver, and the posterior wall of the pylorus is firmly adherent to the head of the pancreas. The pylorus is pulled upwards by these adhesions, some kinking being thus produced. A posterior gastro-jejunostomy had been performed, the opening being on the posterior surface of the stomach 3 in. from the pylorus and 1 in. above the greater curvature.

"Measurements of the stomach: Greatest length from cardiac to pyloric end 8 in.; distance between the pyloric and cardiac openings 5½ in.; greatest breadth 5½ in.

"The stomach contains 9 oz. of dark tarry liquid. The pyloric opening is much stenosed and only admits a No. 12 catheter. There is not much thickening of the pylorus anteriorly, but posteriorly it is bound down by fibrous tissue situated at the lesser curvature and extending on to the posterior surface; the right edge of the ulcer just involves the pylorus; its floor is composed of dense cicatricial fibrous tissue. The actual site of the pylorus is difficult to determine, a ridge produced by the fibrous contraction being about one-third of an inch internal to the true site and forming a false pylorus, separated by a cavity, in which the ulcer is situated, from the true pylorus.

"The general mucous membrane of the stomach is catarrhal, and shows superficial erosions and worm-eaten patches involving the mucous membrane only. The haemorrhage appears to have come from these eroded areas, some of which show small venules crossing their floor. No open vessel could be found, and apparently the bleeding was more of the character of a general oozing.

"The ulcer had perforated through the wall of the stomach, but the perforation had evidently been subacute only, and had become healed by fibrous adhesions posteriorly."

Death in this case was due to the further loss of blood following the operation, part of which was vomited and part remained in the stomach. This blood appears to have exuded from the numerous superficial abrasions in the mucous membrane rather than from the original ulcer. This fresh bleeding was very probably the direct result of the operative proceedings, and emphasizes the necessity of earlier operation so that too narrow a margin of vitality shall not be left to the patient before he is sent to the surgeon.

GROUP III.—MECHANICAL OBSTRUCTION.

Groups I and II comprise only an inconsiderable number of cases, but in Group III we have most of the patients with

gastric ulcer for whom surgical aid is needed, not so much for the ulcer itself as for pyloric stenosis or hourglass stomach, perhaps both, produced either by healing of the ulcer and contraction, or by pyloric spasm dependent on ulcer and hyperchlorhydria. Occasionally external adhesions over an ulcer may tie down and embarrass the stomach and call also for operative relief.

The frequency with which stenosis or stricture occurs requires that I should devote some time to discussing the diagnosis. To aid us, we have the patient's symptoms and the results of physical and chemical examinations. Dealing with the symptoms first, we find a history extending over months or years, complaint at first of heaviness and discomfort after food with flatulence, or of actual severe pain in the epigastrium or back, followed by vomiting, which gives relief, and there may be a history of haematemesis, and perhaps of melaena. Acid eructations may take the place of vomiting. With careful dieting the symptoms pass off, to recur at intervals, often with increased severity; as time goes on the intervals of well-being are shortened until there is almost constant misery; the vomiting takes place it may be only every two or three days, but the vomited matter becomes larger in amount, and food remnants, taken a day or even longer beforehand, may be recognised in the vomit. Rest in bed generally gives relief, and, indeed, if the patient stays in bed and diets carefully, there appears to be little the matter, but when active life is resumed the old troubles return. Loss of weight comes on sooner or later, it may be of only a stone or two, or the loss may approximate to half the body weight.

Examination of the patient in bed reveals splashing in the stomach some time after food taking, and the organ can often be felt or percussed, showing that it exceeds its normal limits. If the case is an advanced one, palpation of the abdomen will often elicit peristaltic waves, passing from left to right across the stomach—conclusive proof of a mechanical obstacle to its emptying.

The hand may detect a tumour either in the neighbourhood of the pylorus or elsewhere. Whilst this will always excite suspicion that a growth is present, it must be remembered that dense and extensive thickening may occur round a chronic ulcer. I have myself seen such a condition reaching to the size of one's fist, which proved to be innocent.

Examination of the vomited matters and of the motions should be made for blood; old food remnants should also be looked for to show whether gastric stasis exists or not. I have found portions of meat and the seeds of fruits taken several days before they were vomited back again.

The next step is to demonstrate with certainty the existence of dilatation of the stomach. The simplest method is, I think, to distend the organ with CO_2. This may be effected by dissolving in a half-tumbler of water 120 gr. of sodium bicarbonate, and in another 90 gr. of tartaric acid. The patient being recumbent, drinks the two solutions one quickly after the other; the stomach speedily becomes distended, and its outline may be palpated and percussed with exactitude. The dilatation may extend the organ to any point between the umbilicus and the pubes; but if the inferior margin does not reach below the umbilicus, I hesitate to speak of dilatation, as we have no precise knowledge as to what is the normal size of the individual's stomach. With dilatation there is always some dropping or proptosis of the stomach due to the stretching of its ligaments by the weight of contents, and it may be difficult to say whether dilatation or proptosis is the main factor in displacing the lower border of the stomach. Movable kidney is often found to coexist, and the three conditions own to a considerable extent a common cause in the lax abdominal walls and feeble muscular condition of the patient. I believe it is with the stomach as with other hollow viscera, muscular hypertrophy often compensates for a time the mechanical obstruction, but through some acute illness or from mental worry or from an acute overdistension by food, dilatation advances more rapidly than hypertrophy, and the patient, hitherto able to manage fairly well, now rapidly loses ground and is constantly in difficulty. Is dilatation always present with stenosis? The answer is in the negative; in one patient upon whom I operated for my colleague, Dr. Saundby, there was no dilatation, as demonstrated by distension with CO_2, and confirmed at the time of operation. In another case under my care at hospital the stomach was not only undilated, but was so small that I had to divide the left rectus to enable me to make an anastomosis between stomach and jejunum. Is dilatation always the result of mechanical obstruction to the emptying of the stomach? Again the answer is negative; dilatation may be due to atony of the organ, though this is much less common than obstructive dilatation.

The question may not unnaturally be asked, Is it not a grave thing to distend the stomach in the way suggested? I can only say I have done this, and seen it done scores of times without any bad results: discomfort may be complained of, but it passes off in a few minutes. I would certainly not employ the method in any case where there had been a recent haemorrhage or symptoms suggestive of perforation or other acute condition, and in a very nervous or sensitive person I might reduce the charge by a third, though I have regretted doing this on occasion as the lesser quantity has given insufficient distension; however, that is a matter which can be remedied at a future examination, if desirable. Precaution should be taken not to use distension soon after taking food.

The next point to be determined is the presence or absence of free HCl. A meal of three or four ounces of toast and half a pint or so of tea, without milk or sugar, is given at breakfast-time, and an hour later the stomach is emptied with a tube, and the material withdrawn is reserved for examination. Gunsberg's test is then applied as follows:

> One drop of fluid from the stomach is placed on a white porcelain dish, and to it is added a drop of phloroglucin and vanillan, and the dish is gently heated over a flame. The presence of free HCl is shown by the formation of a rose red colour where the stomach contents are in contact with the reagents used.

If free HCl is present, the stenosis is probably simple, that is cicatricial; if free HCl is absent, the obstruction is more likely to be due to a malignant growth; further than this the test does not carry us. The tendency at first was to regard this test as absolute, but this I am satisfied is pressing it too far; all the same, the indication obtained is often of value.

We have now to investigate a matter of greater importance—namely, whether there is "gastric stasis" or not. By "gastric stasis" is meant the presence of food remnants in the stomach at such time after a meal as the organ should be entirely free from food, all particles after gastric digestion having been passed on through the pylorus.

My friend and colleague, Dr. Saundby, has spent much time and thought in investigating this subject, and I am much indebted to him for information obtained from cases we have studied together. The method is based upon the fact that a few hours—certainly in six—after a meal has been taken all remnants of it should have passed from the stomach to the intestine. A meal of meat, bread, and milk, with a few currants or raisins, is given about 8 p.m., the patient being in bed; twelve hours later the stomach is emptied with a tube, and is washed out, all the material thus obtained is carefully collected. Any food remnants indicate "gastric stasis," or incomplete emptying of the stomach, due to an obstruction, innocent or malignant, which prevents the passage onwards of food from stomach to small intestine. The addition of currants or raisins makes the test a more complete one, as they are notoriously rather tough objects for the gastric juice to deal with, and they cannot easily get through a much-narrowed pylorus. If positive evidence is thus obtained, I regard the result as conclusive of stasis; if, however, the evidence is negative and other indications are in conflict with it, the meal should be repeated, and the stomach emptied nine hours after. Food remnants then being entirely absent, the patient should be relegated to medical treatment until time has given further guidance.

Summing up these points, I would lay stress on: (*a*) the use of CO_2 expansion to show the presence of dilatation, (*b*) the existence of "gastric stasis" as evidence of mechanical interference with the emptying of the stomach, (*c*) the presence of free HCl as giving great hope that the obstruction is an innocent one. If we wait for pronounced emaciation, for portions of long-retained food in the vomit, for marked peristaltic waves in the stomach, visible through the abdominal walls, we subject our patients to unnecessary distress and disability and do an injustice to the operation for their relief. I am perfectly satisfied that gastro-jejunostomy early performed is attended with little risk to life, and that the late cases are those which give almost the whole of the mortality following surgical intervention.

Group IV.—Ulcer or Stenosis of the Duodenum.

This is a small group; in it are comprised cases of duodenal ulcer or stenosis; its boundaries might be extended if we were able always to differentiate between diseases of the stomach and those of the duodenum, but this is hardly possible. They have in common the pain after food taking,

frequent vomiting which relieves the pain, perhaps old food residuum in the vomit; there may be dilatation of the stomach in either case; haematemesis or melaena may be present in either. As strongly suggestive of duodenal rather than gastric ulcer I would lay stress on the tenderness and pain being localized lower down and to the right of the vertebral column—in fact, in front and behind the curve of the duodenum—and the presence of repeated melaena when there is no haematemesis. The age and sex of the patient may afford some guidance. Duodenal ulcer chiefly affects males, and most often between 20 and 30 years of age. Here is a typical case in which I ventured to diagnose duodenal ulcer:

J. M., aged 32, was admitted to the General Hospital on January 20th, 1904, complaining of severe and persistent pain in his back, of vomiting, and loss of weight.

History.

The history extended over about six years, although four years earlier still vomiting of blood had given rise to a suspicion of gastric ulcer. In the earlier part of this time the symptoms were intermittent, and the patient was generally able to work, but for some months prior to admission he had been much worse, especially in regard to pain, and had been entirely disabled from work.

Condition when First Seen.

The pain was experienced chiefly to the right of the lumbar spine, passing occasionally round to the umbilicus; it was often worse when lying down. To the right of and some 2 in. above the umbilicus there was a persistently tender spot, but no tumour was palpable, nor was there any unusual pulsation. The urine was normal, as was the function of micturition: there was nothing in the history suggestive of biliary colic; the patient had never been jaundiced. Vomiting occurred at irregular intervals, and gave some relief to the pain, but the pain and vomiting appeared to be independent of food taking. The patient denied any haematemesis for some years, but the guaiacum test showed the presence of blood in the vomited matters, and examination of the stools showed that a considerable quantity of blood escaped by the bowel. The patient was very anaemic: he was neurasthenic, and presented the appearance of a man who was gravely ill; morphine was required at night to procure any rest.

Operation.

Duodenal ulcer was diagnosed, and at the operation a thickening over an area of about an inch in diameter was felt in the second portion of the duodenum, mainly in the posterior surface, but encroaching somewhat on the outer wall. Posterior gastro-jejunostomy was performed, and a very good recovery followed. Pain has ceased, digestion is easy, weight has been gained, and power of work (November, 1904).

Of this patient's future I do not like to promise too much, as I have notes of one very similar case in which the immediate result of gastro-jejunostomy was excellent, but the patient some two years later died of haemorrhage, the duodenal ulcer again becoming active. Whilst the future of such cases remains in doubt, the great immediate benefit cannot be disputed.

Stenosis in the duodenum is much more rarely found than in the stomach, and I have only met with one case, from which I show you the specimen. The first part of the duodenum is hugely dilated, and its walls are thinned until in places they are not thicker than tissue paper. The cause of the dilatation is seen in the presence of three valve-like flaps of mucous membrane at the junction of the first and second parts of the duodenum. Pressure of the incoming stomach contents appears to have almost closed these flaps, and the part of the duodenum behind them, as well as the stomach, had undergone extreme dilatation. The specimen is taken from a man, aged 31, who had suffered from indigestion since childhood, but during the last four years of his life his sufferings had been extreme. His great complaint was of pain, flatulence, and vomiting; the pain had required the frequent use of morphine for its relief, the eructations of gas had this peculiar feature, that on occasions they had ignited when the patient was lighting a cigarette; the vomited matters showed gastric stasis, for materials taken twenty-four hours or more previously were vomited back at times. An exploratory opening of the abdomen had been made by another surgeon before I saw the patient, but nothing else was done, and I determined therefore to endeavour to relieve him by gastro-jejunostomy, which, as the specimen shows, was an anterior anastomosis made by suture. All went well until the fifth day, when a quickly-advancing peritonitis killed the patient. This was due to giving way of the thinned duodenal walls above the obstruction before the anastomotic opening had become thoroughly established, and the case must be recorded as amongst the "too-late" operations.

Operation Appropriate in the Several Groups.

The operative measures required for the relief of the various conditions I have described may be:

1. *Excision of ulcer.*
2. *Pylorodiosis* or stretching of a narrowed pylorus.
3. *Pyloroplasty or gastroplasty*, division of the stricture and its widening by a special method of suturing.
4. *Gastroanastomosis*, or the formation of a junction between stomach and jejunum, stomach and duodenum, or between the distal part of the stomach and the proximal in certain cases of hourglass contraction of the organ.

1. *Excision of the Ulcer.*

This may be practised for frequently-relapsing ulcer which does not soundly and permanently heal, or for haemorrhage, but as I have already dealt with these conditions I do not propose here to say more about them.

2. *Pylorodiosis.*

Pylorodiosis, or stretching of a narrowed pylorus, involves incision of the stomach and the forcible stretching of the narrowing by the fingers or other suitable dilators. It is an operation which should, I think, fall into disuse for two reasons—the stretching is apt to be insufficient, on the one hand, and early relapse occurs, as in strictures of other parts; or the dilatation is carried too far, the peritoneal coat over the stricture may be split at a point where it is not recognized, with resulting fatal peritonitis.

3. *Pyloroplasty or Gastroplasty.*

These operations have a limited application, and should be reserved for cases of strictured pylorus or hourglass contraction of the stomach when the local conditions are favourable. There should be little thickening of the tissues where the division is to take place, the enlargement of the narrowed part by transverse suturing of a longitudinal wound should be easily effected, and there should be freedom from ulceration at the seat of operation. Given these conditions, the operations above mentioned may have their place, but I have not had such good results from pyloroplasty as from gastro-jejunostomy, and I now practise the latter almost to the exclusion of the former. Pyloroplasty fails to give complete relief for two reasons, I believe. One is that the enlarged pylorus is far from being at a dependent part of the stomach, and the enfeebled muscular walls of the organ are insufficient to cause early and complete emptying. The second reason is found in a ridge of thickening still left at the pylorus. The circular constriction is only divided in its anterior aspect; and, when the wound is sutured in its new axis, a sickle-shaped fold is apt to be left on the posterior wall of the narrowed orifice—a matter of some importance in an already disabled stomach.

4. *Gastro-jejunostomy.*

This is the operation of election in the large majority of cases. If the case is one of hourglass stomach, the junction may be made between the two cavities of the stomach instead of between the proximal cavity and the jejunum. Very occasionally the stomach may be united to the duodenum instead of to the jejunum; but, as I have already said, gastro-jejunostomy is the chief resource.

Of the methods by which a junction may be effected between stomach and jejunum there is no end. After considerable experience, I have no hesitation in recommending as a routine method the junction of the jejunum to the posterior surface of the stomach by two rows of suture. This operation is not always feasible owing to adhesions or to some anatomical condition, such as a short mesocolon to the transverse colon. Under these circumstances, the jejunum should be joined to the anterior wall of the stomach by suture or by Murphy's button if there is insufficient room for safe suturing, as occasionally happens.

Briefly, the operation I recommend is carried out as follows: Any aperient thought necessary should be given thirty-six hours antecedent to, and the colon should be emptied by an enema shortly before, operation. Nourishment by the mouth should be restricted to milk or some fluid diet for twenty-four hours prior to operation, and mouth feeding should be prohibited for twelve hours; the use of the stomach tube for lavage I regard as unnecessary.

The abdomen is opened in the middle line, and the condition of the stomach as to stenosis is determined. If gastro-jejunostomy is regarded as the remedy the transverse colon and great omentum are turned upwards, and the stomach is projected against the transverse mesocolon by an assistant's fingers. A point is selected in the mesocolon where it can be divided without injuring any considerable vessel, and an incision is made on to the posterior surface of the stomach, opening up of course the cavity of the lesser sac. The opening thus made is carefully enlarged by cutting and

stretching until a good-sized pouch of the posterior wall of the stomach can be brought through it. Search is now made for the junction of the duodenum and jejunum, close to the root of the transverse mesocolon and just to the left of the vertebral column. A portion of the stomach, as near as possible to the greater curvature and at the most dependent part of the organ, is now clamped in forceps, the blades of which are covered with rubber tubing, the portion thus seized should give plenty of room for the application of sutures over a length of approximately 3 in. A portion of the jejunum some 12 in. or so from its commencement is emptied of its contents and similarly clamped, and the two clamps are brought side by side and held by an assistant in convenient position for suturing the two viscera together; the clamps not only restrain haemorrhage and the visceral contents from escape, but are very useful means of manipulating the parts in the process of suturing. The loop of jejunum should be so arranged that its contents pass onwards from left to right, and not in the opposite direction. For the purpose of suturing I use a curved needle, about 1½ in. long, with a slight cutting edge—that is, not a rounded needle—and a continuous thread suture of No. 70 calibre, 32 in. long. In the first or exterior row of suturing the needle picks up only the peritoneal and muscular coats, and it is entered about five times in 2 in.; each stitch is drawn fairly tight, and held by an assistant, and avoids all visible blood vessels. The line of suturing is semilunar, and should extend for about 3 in., a knot being tied at the first point of suture, and an end of 2 or 3 in. in length left. The suture is knotted again when the semilunar line is complete, and the end is left threaded with its needle for future use. The two viscera are now opened for a length of nearly 2 in., and some of the redundant mucous membrane is removed from each, so as to leave the anastomotic opening quite patent. If the clamps have been efficiently applied, there is complete control of visceral contents and of bleeding. The second row of suturing is now made with a similar suture to that used in the first, but now the whole thickness of stomach and bowel wall is penetrated by the needle, the stitches are rather more frequently inserted and are drawn quite tight; there is no interruption in the continuity of this line, which runs right round the anastomotic opening. When this is finished the clamps are removed, and the first row of suturing is completed with the suture previously laid on one side. Each row of sutures has a definite purpose: the inner row unites the margin of the opening, and at the same time is haemostatic; the second row is put in to segregate the first.

Whilst I prefer this method of performing the operation to any other, I recognize that occasionally the use of the Murphy button is distinctly advantageous, chiefly where from presence of adhesions it is difficult to expose a sufficient area of the stomach wall to ensure a safe suturing. I have had two cases of this kind where gastro-jejunostomy was required for pyloric stenosis after the patients had recovered from perforation of the stomach. Surgeons who are only called upon to perform this anastomosis occasionally may well find that the safest method is to employ the Murphy button, being prepared, like myself, with increasing experience to discard it for suture.

Mortality.

What is the mortality of the operation? To answer this fairly the innocent cases must be separated from the malignant ones, and as I have not treated of malignant disease in my remarks hitherto, what I am now about to say applies only to innocent strictures, and in these I think the death-rate will prove to be, in the hands of those accustomed to the operation, about 5 per cent. There is no doubt whatever, though, that the extent of the mortality will be materially influenced by the time at which operation is performed. Given patients in moderately good condition, not worn out by years of malnutrition and extreme loss of weight, I think the mortality of the operation will be less than 5 per cent.; but if the cases are such as may be described as "late" ones, then the mortality will be distinctly higher than the figure at which I have placed it. Another important question is, To what extent are the patients who survive operation benefited? Happily, the answer is that they are enormously benefited; they gain weight, they regain the power of work, and have a power of digestion which they have been strangers to for years. They are able generally to take an ordinary mixed diet without pain or any other inconvenience. At one time the fear of contraction of the new opening loomed large, but time has proved this to be unfounded; at all events, contraction takes place very rarely, if at all, and I believe this to be true whether the operation is by suture or by some of the other methods in vogue.

After-treatment.

For twelve hours nothing is given by the mouth, then small sips of water are permitted, and at the end of thirty-six hours ℥ss of diluted or of peptonized milk is given hourly. The quantity of milk is increased every few hours, until at the end of the fourth day 1½ pints of milk are being disposed of. Benger's food, custard, and similar foods are now added, and about a week after the operation minced chicken or mutton is permitted. At the end of a fortnight a varied diet of toast, vegetables, milk, meat, etc., is being consumed. For the first few days after operation nutrient enemata are administered every four to six hours. Some vomiting occurs in a majority of cases, probably due as a rule to the anaesthetic, but speedily subsides. Some patients do not vomit at all, others a good deal, owing to regurgitation of the duodenal contents into the stomach. This regurgitation may occasionally give rise to real anxiety, but I think I may say that with increasing experience of the operation, regurgitant vomiting becomes less common and of less importance.

The patients should be kept in bed for at least three weeks after operation, and an extra week of recumbency is often advantageous. At least another month is required for the recovery of lost weight and condition before work is attempted, and if circumstances allow, this period of convalescence should be prolonged.

DUODENAL ULCER AND ITS TREATMENT.

By D'ARCY POWER, F.R.C.S.Eng.,
Surgeon, St. Bartholomew's Hospital.

The subject of duodenal ulcer has not yet received adequate attention, though its onset is severe and the sequelae may be dangerous. It is usually thought to be of rare occurrence, but during the last few years I have myself operated upon seven cases, and I have had the opportunity of seeing others which have been under the care of my colleagues at St. Bartholomew's Hospital. From these cases I have learnt so much that I propose to bring some of the facts before you this evening that you may the better recognize the condition and give it appropriate treatment.

I have thrown my seven cases into a tabular form, and you will see that they group themselves sharply into two classes, those in which the duodenal ulcer had perforated, and those where there was no perforation. The cases which perforated required immediate surgical treatment, and were sutured with more or less success. Those which did not perforate were either treated at once on account of haemorrhage, or came for treatment many years afterwards in consequence of duodenal narrowing due to cicatrization of the ulcer. The non-perforating cases were treated by retro-colic gastro-jejunostomy.

I do not want to weary you with lengthy and uninteresting details of the cases, so perhaps I may be permitted to draw composite pictures of the two classes of cases, premising that every case of duodenal ulcer which has come under my observation has occurred in a man, so that duodenal ulceration is probably more common in men than women.

The subject of a perforating duodenal ulcer is usually a man in the prime of life who has hitherto considered himself in perfect health, or who has suffered, if at all, from only the slightest symptoms of indigestion. Without warning he is suddenly seized with a stomachache of such severity that he becomes collapsed and sends at once for assistance. He may vomit, but from the onset of the pain he passes neither flatus nor faeces. Examination within an hour or two of the attack shows him lying on his back, afraid to move, his breathing shallow and very rapid; his pulse small, regular, and quick, but not nearly so much accelerated as his respiration. Temperature normal. He looks pinched and anxious. The patient cannot localize his pain, but complains that it is worse along the upper half and down the right side of the abdomen. The abdomen is not distended and is not motionless, though it moves less freely during respiration than it should do. It is held rigid, and the muscles on the right side are somewhat more tonically contracted than those on the left. It is everywhere tender and tympanitic. The area of liver dullness may or may not be altered, and sometimes

there is a point of maximum tenderness in the right hypochondrium.

If no operation be performed the pain becomes less acute, but even more generalized than it was at first. Later still it is localized in the right iliac region, which may become especially tender, full, and motionless, whilst the rest of the abdomen moves during respiration. More usually, however, the abdomen becomes uniformly distended, and the patient, who has rallied from the initial shock, again becomes collapsed, his pulse rapidly quickens, and he dies of acute peritonitis.

Now look at a case where there has been a duodenal ulcer which did not perforate. It is even more interesting than the last, for the diagnosis is more difficult and the sequelae are more remote. The patient is an older man, perhaps between 50 and 60. Thin and haggard, he tells you that he is a martyr to indigestion, and that for months past he has suffered atrocious pain in his stomach, which is relieved by vomiting. He has dieted himself in every possible manner, he has made all kinds of local applications to his abdomen, he has visited all sorts of watering places, and he has gone in vain from one physician to another seeking a cure. Examination shows him to be a mere bag of bones, badly constipated, with cold extremities, and a listless, dejected aspect. His abdomen is loose, the subcutaneous veins may be enlarged, and there is visible peristalsis from left to right in the epigastric region. Percussion tells you that the stomach is greatly dilated, and it is not very unusual to feel a tumour in the neighbourhood of the pylorus. For a moment you think of cancer of the pylorus or gall bladder, and you question the patient a little more closely. He is sure that he has been suffering for years, for so long, in fact, that he hardly recollects the beginning of his trouble. A few well-directed inquiries may elicit that twenty-five or thirty years ago, when he was a young man, he once or twice brought up a large quantity of blood without serious pain or discomfort, or that he had an illness which no one seemed to know much about. He was treated for gall stones, or appendicitis, or simply for "liver." The attack was painful, and kept him in bed, but the exact details have passed from his mind, and for some years he was as healthy a man as ever.

This is a case of duodenal obstruction resulting from cicatrization of an old ulcer, the irritation of which has caused inflammatory thickening in the surrounding parts. How many patients have been allowed to die of such a condition in the belief that they had malignant disease of the stomach no one can tell. But for such patients a gastro-jejunostomy holds out the prospect of a speedy and perfect cure.

The pictures I have painted for you are composite in the sense that no individual patient presents all the characteristics indicated, though all resemble each other sufficiently closely to enable a diagnosis to be made with comparative ease, as soon as one becomes alive to the occurrence of duodenal ulceration and its sequelae. I shall proceed to examine the signs, symptoms, and treatment, a little more in detail.

The diagnosis of a perforated duodenal ulcer should be easy, but in practice it is often found to be a matter of very great difficulty. The patient is obviously suffering from acute abdominal pain, and the attack began suddenly. The history of previous good health, the fact that the abdomen is moving during respiration, the absence of any great amount of rigidity in the abdominal muscles, or of any point of maximum tenderness, are all misleading, and make it difficult for the surgeon to believe that the patient is suffering from such a dangerous condition. One thinks, indeed, of a perforated or leaking gastric ulcer, but the symptoms are much less characteristic, and it is not until one or two similar cases have come under one's observation, that the occurrence of a perforated gastric ulcer is thought of. The diagnosis, therefore, is too often left in abeyance, in the hope that a few hours' delay will render the signs and symptoms more definite. Such advice is likely to prove fatal, for instead of making the diagnosis clearer time only renders it more obscure. The slight clues which could be picked up shortly after the onset, are soon masked by the peritonitis which follows. Delay not only allows the peritonitis time to develop, but it permits the extravasated contents of the alimentary canal to gain access to the innermost recesses of the peritoneum, so that a subphrenic, pelvic, or iliac abscess may still further complicate a condition which is well-nigh desperate. When I am called to a patient who has been suddenly seized with intense abdominal pain, without much history of previous indigestion, I ask that he shall not be given morphine, and that his pulse shall be carefully and accurately counted, and recorded every half-hour. If on my arrival the pulse-rate has increased, although the patient has been kept at rest and free from disturbing influences, I have no hesitation in advising an immediate exploratory operation, even though the objective signs be very slight.

The escape of gas and liquid as soon as the abdomen is opened prove that a perforation has occurred, and the surgeon's first thought will be that he is dealing with a ruptured gastric ulcer. The character of the fluid gives the first indication as to the seat of the perforation. It is limpid or bile-stained, free from smell, alkaline, and quite different from the extravasated contents of the stomach. It is the succus entericus, and is, I presume, the secretion of Brunner's glands. It is very abundant, and comes welling up from the perforated intestine in quite a characteristic manner. The perforation is usually very small, close to the pylorus, and rather at the back of the duodenum, so that it is very awkwardly placed for suture. It is possible, however, to close it; one of my patients recovered after suture, and is now doing his usual work more than two years after the operation; and there are doubtless many others on record if one chose to look through the literature of the operation.

If the patient be left without operation the diagnosis, as I have said, becomes still more obscure, and my own experience tells me that a perforated duodenal ulcer may be mistaken for pneumonia, for appendicitis, or for suppurative peritonitis due to causes other than intestinal perforation. The idea of appendicitis is so constantly present to the mind of a surgeon as the cause of acute abdominal trouble that the mistake is excusable, and the more so as the symptoms of perforated duodenal ulcer sometimes closely simulate those of an inflamed appendix. I made the mistake in the case of a man of 26, whose duodenal ulcer perforated one evening at 7 o'clock. I did not see him until 10 o'clock next morning, when he localized his pain over the right iliac region, which was tender and full. The abdominal muscles were tense and the abdomen was motionless on the right side, but the rest of the abdomen moved well during respiration. I thought the patient was suffering from an acute appendicitis which had ended in perforation, and I opened the abdomen in the right iliac region. Gas issued from the wound as soon as the peritoneum was divided, and there was a gush of inodorous, alkaline fluid, which was bile-stained. The appendix was normal, but the end of the ileum was inflamed in patches which seemed to correspond with Peyer's patches. I closed the wound, cut down upon the duodenum, found the ulcerated spot, sutured it, and the patient recovered.

In another case where the diagnosis of pneumonia was made the patient was a man of 41, whose ulcer had perforated at 11 a.m. When he was seen at 2 o'clock he was in obvious pain, breathing shallowly and 60 times a minute. His pulse was of fair volume and tension, regular, and 100 a minute. The percussion note of the chest was impaired at the right base, and the entry of air on the right side was weaker than on the left. There were no additional sounds. The abdominal pain was not localized, but the patient complained of it chiefly over the upper half and down the right side. The abdomen was not distended, but it moved very little during respiration. The movements, however, were equal all over, though the abdomen was held a little rigid. It was tender and tympanitic everywhere, except that the liver dullness was present. Nothing abnormal could be felt. I did not see this patient until two o'clock next morning, when his condition had become so serious, and the abdominal symptoms were so marked, that I had no hesitation in opening his abdomen. I found and partially sutured a perforation at the upper and posterior part of the duodenum close to the pylorus, but the patient was in no state to bear a prolonged operation, and he died two hours later.

The lesson I have learnt from these cases of perforation by a duodenal ulcer is to operate early. The perforation often takes place without warning, and it thus occurs in people who are otherwise in excellent health. Such people bear an abdominal exploration very well, and I would much rather open an abdomen needlessly than wait, as was done in the case just narrated, until symptoms of peritonitis made an operation imperative.

The second group of cases, where there is a duodenal ulcer without perforation, is even more interesting than the perforating variety which has been considered. The diagnosis is more difficult, and the sequelae demanding surgical treatment are no less urgent, though they may be more remote.

As may be gathered from what has been said of perforating ulcers, the symptoms of a duodenal ulcer may be absent or wholly inconspicuous, and in such cases no diagnosis can be made. In some cases the patient complains of a continued pain in the abdomen, which he can neither localize nor account for. He keeps his bed for a few days, and then, feeling better, goes about his business, saying that he has had a bad bilious attack. If he is nervous about himself, or should the pain be severe, he seeks medical advice, and is treated for gall stones, renal colic, or appendicitis. But the exact nature of his illness is not recognized until he brings up a considerable quantity of blood, or has a sharp attack of melaena. Even then the case is probably thought to be one of gastric ulcer, unless an abdominal section is performed, and the stomach is found to be healthy. I do not know how the error can be avoided in the present state of our knowledge, but it is of no consequence, for in the majority of cases the patient recovers from the attack, or, if the bleeding is sufficient to need an exploration, the surgeon performs a gastro-jejunostomy, whether the ulcer is in the stomach or the duodenum. I have tried to recognize the condition by the bleeding, by the time of the occurrence of pain after taking food, by the existence of localized tenderness, by the character of the material vomited, and in many other ways, but always without success; for what is true and seems a valuable sign in one patient is perfectly worthless in another. I believe, therefore, that at the present time there is no pathognomonic sign of a non-perforating ulcer of the duodenum.

But if a non-perforating duodenal ulcer offers very few signs by which its presence may be recognized, it may have sequelae of the gravest importance. The ulcer is usually single, small, conical in shape, and is most often situated in the first part of the duodenum close to the pyloric fold. It runs a chronic course, and may either heal and by subsequent cicatrization narrow the duodenum, or, as more frequently happens, adhesions may be formed to surrounding parts. The adhesions contract in course of time, and may so narrow the duodenum as to render it useless for the passage of the contents of the stomach. The adhesions at the same time may involve the liver, the gall bladder, the pancreas, or the great blood vessels, like the abdominal aorta, the hepatic artery, and the portal vein. The patient wastes, his stomach becomes dilated, the enlargement of the superficial abdominal veins shows that the deep venous circulation is impeded, and a swelling is readily detected in the region of the pylorus. Small wonder, therefore, that nearly all these cases are diagnosed as cancer of the pylorus or cancer of the gall bladder. Indeed, it is only of late years that it has been possible to distinguish between these forms of abdominal cancer and the symptoms produced by the cicatrization of a healed duodenal ulcer. The knowledge has been gained by opening the abdomen to perform a gastro-enterostomy for the relief of cancer, and finding, to the satisfaction of patient and surgeon alike, that there was nothing worse than a mass of adhesions, and that the operation of gastro-jejunostomy promised permanent instead of merely temporary relief. Care and attention to details, however, sometimes render it possible to distinguish between cancer and a cicatricial contraction of the duodenum, and in my last case I was able to make a correct diagnosis before I decided on an operation.

Dilatation of the stomach is a necessary consequence of chronic obstruction at or near the pylorus. The symptoms last longer in a non-malignant than in a cancerous constriction, and the dilatation consequently is greater in an innocent than in a malignant stricture of the duodenum. There is often visible peristalsis, which can also be felt, in the upper part of the abdomen. The whole stomach may become so displaced downwards that the lesser curvature lies 2 in., or even 3 in., below the costal margin. A distinct succussion splash can be heard over the dilated stomach, unless the organ has been recently emptied by vomiting. The gas evolved within the stomach by giving the two parts of a seidlitz powder separately may be insufficient to distend fully the flaccid stomach. The patient is thin, his skin is harsh and dry, he is constipated, and passes but little urine. He complains of attacks of vomiting which bear no relation to his meals. The attacks come on every day or two, and are worse at night. Very large quantities of fluid are vomited, and sometimes there are streaks of blood, sometimes there is bile. The stomach seems to be completely emptied, yet in a few hours he again vomits copiously, though he has taken nothing in the interval. The vomit is often very acid, owing to the presence of free hydrochloric acid, and the fluid is clearly the secretion of the gastric and duodenal glands. This secretion should be reabsorbed during the intestinal digestion in a state of health, but no such absorption is possible when the duodenum is constricted, and the patient is constantly draining his lymphatic system, and indirectly his blood, to supply the fluid he vomits. Although the ingestion of food does not produce vomiting, yet the patient curtails his diet as far as possible, because nearly everything he eats causes a sensation of weight and fullness in his stomach. Hiccough is sometimes a marked and very troublesome feature, and the patient becomes so restless and miserable that he cannot long keep still in one position or place.

Gastro-enterostomy yields a most brilliant result in these patients. As soon as the shock of the operation is over, they begin to put on flesh; vomiting and the hiccough which was previously so distressing cease absolutely, the bowels return to their wonted regularity of evacuation. These good results are not merely temporary, as is too often the case when a gastro-jejunostomy has been performed for gastric ulcer. When gastro-jejunostomy has been done for the relief of pain, in a case of gastric ulcer, the pylorus is patent and functional, and there is a marked tendency for the anastomotic opening to close or become so small as to be useless. It often happens, therefore, that the dyspeptic symptoms are relieved, and the patient improves markedly for a time, but within four months of the operation the improvement ceases, and the condition of the patient either remains stationary or actually recedes. When a gastro-jejunostomy has been done for duodenal constriction, the anastomotic opening shows no tendency to close, for the duodenal constriction remains, and the food must necessarily pass through the new opening from the stomach into the intestine. The good effects of the operation, therefore, are permanent. The patient's mind, too, is set at rest by the operation. He is sure to have been told or to assume that he is suffering from cancer of the stomach, and it is a great relief to know that he has only got a mechanical obstruction. He is bound to regulate his diet, and thus he acts in accordance with the precept laid down for us in the *Regimen Sanitatis Salerni*, our first popular textbook of medicine:

> Si tibi deficiant Medici, medici tibi fiant
> Haec tria: mens hilaris, requies, moderata diaeta.

which was Englished:

> Use three Physicians still: first Dr. Quiet,
> Next Merryman, then Doctor Diet.

I do not propose to enter upon the broad question of gastro-enterostomy and its results this evening. It is sufficient to say now that I prefer the operation of gastro-jejunostomy by direct suture and by the post-colic route. The most satisfactory results from it are obtained in cases of duodenal ulcer, and the least satisfactory when the operation is performed for cancer of the stomach.

I have dealt this evening entirely with duodenal ulcer and its consequences, but I do not wish to leave upon your minds the impression that all or even most of the cases of pyloric obstruction are a consequence of duodenal ulceration. There are many other causes, of which gall stones and cancer are the most common in adults, faulty development and congenital hypertrophy of the pylorus in infants. My thesis deals only with duodenal ulceration and its consequences.

I have tried to show that:

(*a*) Duodenal ulcers are not very uncommon.

(*b*) So far as I have seen them, duodenal ulcers are singl and are more frequent in men than in women.

(*c*) Duodenal ulcers may perforate and cause acute symptoms, or they may heal, and by cicatrization lead to symptoms of chronic duodenal obstruction.

(*d*) The sequelae of a healed ulcer may be so remote that the symptoms are mistaken for those due to cancer of the pylorus, and the patient is allowed to drift from bad to worse under the erroneous notion that he is bound to die.

(*e*) There is no means of recognizing the existence of a duodenal ulcer, in a great many cases, until it perforates or until the results of its cicatrization become manifest.

(*f*) The treatment of duodenal ulceration consists (1) in the direct suture of a perforated ulcer, the prognosis being less favourable than in similar cases of perforation; (2) the performance of gastro-jejunostomy in cases of dilated stomach due to duodenal constriction, the prognosis being the most favourable of all the conditions for which this operation is performed at the present time.

A.—Cases of Perforating Duodenal Ulcer Treated by Suture.

Case I.—May 23rd, 1901. Male, aged 41, temperate. No history of previous illness. Sudden pain in the epigastrium at 11 a.m. Applied for relief at 2 p.m. When he was first seen his pulse was 100; pain felt in right side; abdomen moving slightly and somewhat rigid. The symptoms were so ill-defined that he was thought to be suffering from pneumonia. At 12.30 midnight his pulse was 120 and his abdomen distended. I saw the patient for the first time at 2 a.m. and opened his abdomen. A punched-out ulcer was found just beyond the pylorus, from which clear fluid kept welling up.

Result.—Death five hours and a half after the operation. *Post-mortem* record: Imperfect closure of the perforation.

Case II.—July 13th, 1901. Male, aged 47, a drunkard. No history of previous illness. Sudden, very severe abdominal pain at 9 a.m., but did not apply for relief until 8.30 p.m. When first seen his pulse was 104; the abdomen was moving during respiration. There was general tenderness, most marked in the epigastric region. Abdomen opened at 10.45 p.m. I found a circular and well-defined perforation at the back of the pylorus. Clear fluid was welling up through it.

Result.—Death eight days later. The patient felt so well until twenty-four hours before his death that he was constantly asking when he might get up. *Post-mortem* record: Subdiaphragmatic abscess; incomplete closure of the perforation. The ulceration had continued after the sutures had been inserted (? cancerous).

Case III.—May 18th, 1902. Male, aged 37, temperate. Had complained for the last six months of stomach-ache half an hour after his meals. He had felt a sudden pain at twelve o'clock mid-day, on the right side beneath his ribs. The pain was so severe that he took a cab to the nearest hospital. On admission the pulse was 120, the abdomen was moving freely and equally. I operated at 6 p.m. There was no perforation in the stomach, but a small clean-cut ulcer in the duodenum, from which bile-stained fluid kept pouring out. The aperture was closed, and a counter-incision was made in the right lumbar region, through which a drainage tube was passed.

Result.—Death 35 hours after the rupture. *Post-mortem* record: The perforation was effectively closed, as it was water-tight.

Case IV.—July 26th, 1902. Male, aged 26, temperate. Had suffered previous attacks of a similar pain, but none so severe as that which occurred suddenly at 7 p.m. He was admitted to the hospital at 3.50 a.m. on July 27th, but I did not see him until 10 a.m. on this day. His pulse was 112. There was pain over the right iliac region, which was full and tender. The abdomen, except over the tender area, was moving during respiration. I thought he was suffering from an acute inflammation of the appendix, but on opening the abdomen in the iliac region, the appendix was found to be normal. The stomach was intact, but a perforation was discovered on the anterior surface of the duodenum near the pylorus.

Result.—The patient left the hospital cured on September 12th, 1902. I have seen him on more than one occasion in the last year. He is at work, and says (October 20th, 1904) he is able to do his work but has to be careful in his diet.

B.—Cases of Non-perforating Duodenal Ulcer treated by Gastro-jejunostomy.

Case V.—Male, aged 31, temperate. Was admitted to the hospital with pain in the lower part of his abdomen and vomiting, which had made him an invalid for two months. He retched after food, and vomited at one time "a quart of dark blood, all in lumps," and at another time "a pint of blood." There was no melaena. On admission he had a point of maximum tenderness in each iliac fossa, and a tender point 1 in. to the right of the umbilicus, which varied somewhat in position. I diagnosed the existence of a duodenal ulcer, and performed a post-colic gastro-jejunostomy on May 19th, 1904.

Result.—The patient made a perfectly uneventful recovery, and left the hospital on June 17th, 1904. In November, 1904, he is improved but not well.

Case VI.—Male, aged 69, temperate. Admitted to hospital, August 1st, 1902, for constant vomiting; a greatly dilated stomach, and a tumour as large as a Tangerine orange in the neighbourhood of the pylorus. The patient had lost much flesh. I performed a gastro-jejunostomy with McGraw's elastic ligature.

Result.—The patient recovered completely, with increase of weight and cure of dyspepsia. I saw him in July, 1904, a hale and hearty man of 71, just starting to Canada.

Case VII.—Male, aged 48, temperate. Admitted to hospital on July 21st, 1904, complaining of intense abdominal pain relieved by vomiting. He had lost much flesh during the last few months. On admission his stomach was found to be dilated, there was evidence of slight portal obstruction, but no tumour could be felt in the region of the duodenum. I diagnosed the case as one of duodenal constriction, and performed a retro-colic gastro-jejunostomy on August 1st, 1904. On opening the abdomen the duodenum was found to be constricted to the size of a lead pencil, about an inch beyond the pylorus.

Result.—The patient made an uneventful recovery, and left the hospital on August 19th, 1904. In November he reports himself quite well, returned to his normal weight of 12 st., and walking 10 miles a day in comfort.

The Spitting Nuisance in Buenos Aires.—At a recent meeting of the Municipal Council of Buenos Aires a proposal was submitted by Dr. Conti that owners or tenants of houses and buildings who refused to allow tablets to be put up on the outside forbidding expectoration on the pavements should be fined. The proposal was referred to a committee.

Scientific Grants Committee

of the

British Medical Association.

Report LXXXIX.

The Nature of the Malformations of the Rectum and Urogenital Passages.

By F. Wood-Jones, M.B., B.Sc.Lond., M.R.C.S.Eng.

[This paper is a brief summary of the clinical side of a paper on the Development and Musculature of the Visceral Openings of the Hind End, accepted by the London University for the Degree of B.Sc., by Research, October, 1903.]

When the details of human embryology have merely an academic interest they are of little utility in a medical education, and serve no useful purpose in the object of all medical training—practical medicine and surgery.

To be of any value at all to the medical man, embryology must help him to understand how, and why, the adult organs become developed, it must furnish him a ready explanation of the abnormalities and imperfections of development with which he meets, and it should afford some guide to him in the treatment he must undertake for their relief. Regarded in this light, much that is taught of the development of the human body must be admitted to be of little practical value in medicine.

In many cases the teachings of embryology furnish no real explanation of the abnormalities that are met with clinically, and in very few do they afford any guide for the artificial repair of these abnormalities.

The generally accepted view of the development of the human hind end offers no explanation of some of the abnormalities which are commonly found clinically in this situation. The growth of septa and partition walls, which is so often invoked—and often wrongly invoked—as an explanation of various abnormal conditions, is founded on a misinterpretation of developmental changes, and, it would be urged, does not here occur, at any rate in the manner and to the extent that is usually described. It is therefore necessary to inquire if the present account of the development of the human hind end is a correct interpretation of the various stages that have been seen in the human embryo, if some stages have been overlooked, or some stages seen in other animals have been wrongly read into the early chapters of human development. That some stages are wrongly interpreted, and some are wrongly described, and that some abnormal conditions are capable of more practical and more clinically useful explanation, will I believe, be found from a further study of the development of the hind end of the human embryo.

In order to test the shortcomings of the present theory, and to estimate any advantages that some modification of it may possess, it is necessary to see, in outline at any rate, what are the problems that require solution. Most of the malformations of the rectum and urogenital passages that are commonly met with fall into a few well-recognized groups, and it is an outstanding fact in regard to these abnormalities that they are wonderfully constant in their anatomical arrangement. Their very constancy demands that their explanation should be definitely furnished by reference to their development. The visceral openings of the hind end are subject to two classes of malformations. In the first class a terminal septum closes the orifice, and in the second class there may be an actual absence of a portion of the tube which should normally open to the outside at one of the visceral orifices. In the first class come such abnormalities as imperforate anus, imperforate hymen, and urethral septum. In the second class come the more grave conditions of imperforate rectum, atresia vaginae, and atresia urethrae.

The extent of the deformity may not be limited to the actual developmental error, but may be increased and altered by secondary changes that this condition produces, and one such example of this more complex deformity is ectopia vesicae.

The anatomical condition of most of these abnormalities is simple; all those which are included in Class I are alike in possessing a terminal septum, and no discussion of their anatomical features is required. Some of those conditions that have been included in Class II, however, require some

further notice, and the common anatomical features of imperforate rectum will be considered in some detail, for it is a condition usually not well described.

When this malformation exists a very definite anatomical abnormality is found; there is an actual loss—or as we shall see a non-development—of a definite portion of the gut. The child may or may not possess a proctodeal depression, and, even if this depression does exist, no pervious gut is found at its bottom, and it is not until some depth has been reached in a dissection from the perineum that the lumen of the rectum is found. Now, it is the rule that this ending of the pervious gut takes place at a definite point just below the peritoneal reflection, in the neighbourhood of Houston's main fold, and it is also commonly found to end in a communication with the urogenital passages in the prostatic urethra in the male and in the vagina in the female.

In Curling's statistics of imperforate rectum 26 per cent. of the cases end in the urethra, and it is likely, as he himself points out, that since the opening is small, were the dissection more carefully performed the percentage would be much higher.

In 9 cases at the London Hospital 7 showed a communication between the termination of the pervious gut and the urethra. This condition of imperforate rectum is not in any way explained by the generally-accepted septal division of the cloaca, and is obviously one which by its frequent occurrence and its constancy should admit of easy explanation.



Fig. 1.—Diagram of the condition of imperforate anus, the type of malformation in which a septum blocks the visceral orifice. The constriction at the peritoneal reflection from the gut is Houston's main fold.



Fig. 2.—Diagram of the condition of imperforate rectum, the type of malformation in which there is failure of development of a portion of the tube. The cloacal opening of the hind gut persists, the post-allantoic gut having failed to develop.

The anatomical conditions presented by atresia vaginae and atresia urethrae require no explanation, and the deformity presented by ectopia vesicae will be considered later.

We may now turn to a brief consideration of the development of the rectum and the urogenital canal.

It must throughout be borne in mind that in the early stages of development the hind end is the site of a very rapid and very peculiar growth. The hind end of the embryo in its early stages is the body stalk—the body stalk in the later stages becomes a part of the umbilical cord; in fact, the umbilicus of the adult is the hind end of the embryo. In picturing the development of these parts, therefore, this very remarkable change must be constantly remembered.

Another predominating feature in the picture of the development of the human hind end is the condition of the allantois. Much that is misleading in human embryology is brought about by the grafting of stages seen in the well-studied development of the chick, into the knowledge gained from the study of the little-known stages of the human embryo. To adopt the condition of a fetal organ, such as the allantois, found in a creature, that carries out its physiology inside an egg-shell, into the life-history of the human embryo, whose early stages are spent so differently, and whose physiological requirements are so different, is only to cause confusion.

The allantois of the human embryo differs widely from the allantois of birds. The allantois of birds is an outgrowth of the hind gut; the allantois of the human embryo (of 12 somites) is the continuation and termination of the hind gut. It is impossible to say at this stage which portion of the tube posterior to the yolk sac should be called allantois and which should be called hind gut; it is impossible to determine where one begins and the other ends. This, then, is an important stage to be noted, and it is one that is entirely overlooked when the idea of a well-developed, well-defined, ventrally-situated allantois is made the predominant one in the picture.

The hindermost end of the allantois is situated in the body stalk, and is the posterior termination of the hypoblastic canal. The body stalk, as the embryo grows, becomes ventral, the termination of the allantois becomes ventral with it, and so a U-shaped bend is formed in the posterior part of the tube, the dorsal limb, or hind gut, having the mesoblastic somites dorsal to it, the ventrally-bending limb, or allantois, having no mesoblastic somites accompanying it. The apex of the curve that is thus produced in the tube becomes now the site of a dilatation, so that there is produced a posterior chamber, into which opens (1) dorsally and anteriorly, the hind gut, and (2) ventrally and anteriorly, the allantois.

The stage now arrived at is, therefore, the well-known one in which there is a common chamber into which both gut and allantois open.

The terminal dilatation of the U-shaped bend becomes the cloaca, and in the transformations that bring about the change from the cloacal condition to the adult specialized condition some stages must certainly be reconsidered before an account of the development of the hind end will fit in with clinically-observed facts, or give a true picture of the various changes that take place in the embryo.

In reconsidering these transformations the rapid backward growth of the hind end must still be borne in mind. The previously-determined site of the umbilical termination of



Fig. 3.—Condition of hind gut, cloaca, and allantois in the human embryo of 12 somites. Shows the U-shaped bend of the posterior dilatation. The body stalk is still practically the hind end of the embryo.

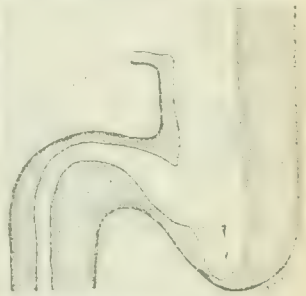


Fig. 4.—The hind end of the embryo has grown back past the body stalk, and the post-allantoic gut is growing back with the growing hind end. The communication with the anterior portion of the terminal dilatation is still large.

the allantois, formerly the extreme hind end of the embryo, must be kept as a fixed point, and, in addition, a new landmark may be taken. In the stage in which the U-shaped bend occurs, the concavity of the curve marks the posterior limit of the body cavity; in the fetus the posterior limit of the body cavity becomes the recto-vesical pouch; this posterior limit of the body cavity may, therefore, serve as a further guide.

In the commonly-accepted account of the development of the adult specialized condition of the visceral openings of the hind end, the cloacal cavity becomes subdivided by the growth of the septa, and the wide opening becomes thus split into the secondary channels that we find in the fully-developed condition.

The facts of embryology are only gathered by arresting the process of development at various stages, and putting forward the most probable explanation of the means by which the various conditions seen at these different stages were changed the one into the other.

In the process by which one cavity becomes subdivided into two or more secondary cavities, a change which appears to be due to the active growth of a septum or septa may, in reality, be due to an active growth of the cavities themselves, and a passive relative diminution of the openings that connect them. It is probable that in various organs this active growth of cavities and passive growth of septa is the more probable explanation of the process by which the fully developed condition is arrived at; in the formation of the rectum there is, I think, no doubt of it.

The cloaca has, in the stage to which it has been described, two openings in it: the cloacal opening of the hind gut dorsally, the cloacal opening of the allantois ventrally. The cloacal opening of the hind gut has normally, however, a temporary existence only, its connexion with the cloaca becomes lost by the relative diminution in the size of its cloacal opening, and also probably by the lateral infolding of

the cloacal wall that Kiebel has described, and which is seen in a slight degree in the embryo of 12 somites. Meanwhile, the hind end is continuing its backward growth, the growth of the dorsal surface being more rapid than that of the ventral surface. With this growth the hind gut keeps pace, and it buds backwards past its cloacal opening, past its old termination in the allantois, and forms the portion of the hind gut distal to the allantois, which portion I propose to call the post-allantoic gut. It will be seen that this portion of the gut is new. It is the new backgrowth of the hind gut in the rapidly growing hind end of the embryo; and in those animals in which the posterior part of the vertebral column becomes prolonged it of course reaches a very considerable length. The cloacal opening of the hind gut is now normally lost; originally a small opening in the embryo of 12 somites (which is about 2 mm. in total length), the rapid growth of the hind gut, the post-allantoic gut, and of the allantois itself, together with the lateral infolding of the wall described by Kiebel, serve to close the opening of the hind gut into the cloaca.

The hind gut and its continuation—the post-allantoic gut—are now without any communication with the exterior, and when this communication is made, it is at the site of the permanent anus, and is formed by the proctodeum meeting ventrally the post-allantoic gut. The permanent anus is therefore a new opening, forming a communication with the



Fig. 5.—The hind gut has still its cloacal opening. The post-allantoic gut has continued its backward growth. The opening of the Mullerian ducts on the concavity of the U-shaped bend is shown.



Fig. 6.—The hind gut has lost its cloacal opening. The post-allantoic gut has continued its growth, and is about to meet the proctodeal depression.

post-allantoic gut, and is wholly distinct from the cloacal opening of the hind gut. The portion of the post-allantoic gut distal to the ventrally invaginating proctodeum forms the post-anal gut. The posterior portion of the large intestine in the adult therefore contains three embryonic portions: (1) the hind gut, (2) the post-allantoic gut, and (3) the proctodeum. The limitations of these separate embryonic portions must now be determined.

The second landmark taken—that is, the posterior limit of the body cavity or recto-vesical pouch—serves to mark roughly the site of the junction of hind gut and allantois, and subsequently the junction of the hind gut and terminal dilatation or cloaca. The reflection of peritoneum from the anterior surface of the rectum will therefore serve to mark, within at any rate fairly narrow limits, the site of the former cloacal opening of the hind gut, and the site of the origin of the post-allantoic gut. The posterior limit of the post allantoic gut is the recess formed by the anal sinuses, the proctodeum invaginating the post-allantoic gut in such a manner that its anterior limit becomes the free edge of the anal valves, and, since the proctodeum invaginates the post-allantoic gut from a somewhat ventral position, the anal sinuses on the posterior wall of the gut are deeper than those on the anterior wall (see Fig. 8).

Having thus briefly reviewed the stages of the development of the adult rectum, and having determined the various parts which enter into its formation and fixed their limits, it is necessary to study the abnormal conditions that are found clinically and to make some attempt at their explanation. The conditions that require consideration are these: (1) Imperforate rectum and its varieties. (2) Imperforate anus and its varieties. Imperforation of the rectum is a condition the treatment of which is difficult and unsatisfactory, and part of the difficulty no doubt arises from the generally present idea that if the gut is not found ending at the proctodeal depression, then it may end anywhere. As a matter of fact the ending of the gut is, in the great majority of cases, situated at a definite point, and this for the reason that in imperforate rectum a definite embryological portion of the gut is missing—the missing portion being the post-allantoic gut.

From what has been said with regard to the limits of this portion of the gut, it will be seen that the termination of the pervious gut should be somewhere near the peritoneal reflection from its anterior surface—this is, in the region of Houston's main fold—and here it usually occurs. Again, from what has been said as to the cloacal opening of the hind gut, it will be seen that should this opening persist (and it frequently does persist in these cases) it should be situated at a definite point—that is, the peritoneal reflection to the allantois—and here in the region of the prostatic urethra it usually occurs in the male. The constancy of the opening between the imperforate rectum and the urinary passages in the neighbourhood of the prostatic urethra, is very striking in the male. In the female the opening is into the vagina, and the level of its opening is frequently just below the cervix; it may, however, be lower.

The alteration in the level of the opening in the female, admits of easy explanation, which will be considered when the development of the vagina is discussed. In some cases in which the rectum is imperforate—that is, in which the post-allantoic gut has not grown back in the growing hind



Fig. 7.—The urogenital sinus and post-allantoic gut have both opened to the outside. The urogenital sinus opening of the Mullerian ducts is still retained.



Fig. 8.—The Mullerian ducts have lost their urogenital sinus opening, and the new solid vagina has grown down. This solid vagina later becomes canalized. It is this stage that persists as atresia vaginae.

end—the cloacal opening does not persist. In these cases, however, the old connexion of the hind gut and allantois will be found on dissection as a fibrous cord binding the rectum to the prostatic urethra in the male, or the posterior vaginal wall in the female.

It will therefore be seen that in those cases in which the gut does not end at the proctodeal depression, its disposition within the child's pelvis is, as a rule, such a one as admits of deliberate and ordered search, via the perineum, with a good chance of success. And further, as the cloacal opening of the hind gut is distal to the posterior limit of the body coelom, the pervious gut will be found posterior to peritoneal cavity. Imperforate rectum admitted of no explanation by a reasonable interpretation of a septal subdivision of a wide open cloaca; nor did that theory in any way account for the communications that are so commonly found between the rectum and the urethra and vagina (Fig. 6).

On the other hand, the explanation of imperforate anus on the present lines differs in no way from the generally-accepted account, with the exception that the varying thicknesses of anal septum which are found in practice are perhaps easier to explain when it is known that both cavities—the post anal gut and the proctodeum—are actively growing.

This modification of the description of the development of the human rectum must of course necessitate some alteration in the account of the processes by which the other visceral openings are formed. It therefore becomes necessary to consider the development of the urinary and genital passages, and to see what explanation it will afford of the many abnormalities that are met with clinically. That the clinical observations fall in line with the changes to be described in the development of the other visceral orifices, which this modification of the formation and differentiation of the cloaca demands, is some argument for their utility. Since it is seen that there is in the adult rectum no real part of the

cloaca, it becomes necessary to inquire what becomes of the remains of this embryonic cavity in the adult. The hind gut, as has been seen, early loses its connexion with the cloaca, but the other cloacal orifice—that is, the allantoic opening—persists; and at this stage the allantois, now enlarged, opens by its original opening into the cloacal chamber. This chamber elongates with the growth of the hind gut end, and now represents that passage, the urogenital sinus, which is usually described as being the anterior part of the cloaca, split off from the posterior part by the down growth of the septum. Since, as we have seen, there is no growth of the septum—but a growth of a cavity (the post-allantoic gut)—it is obvious that the urogenital sinus is the true remnant of the cloaca—the cloaca of the embryo becomes the urethra (Fig. 7).

In the generally-accepted account of the development and fate of the urogenital sinus a further septal growth is called in, in the female, to split the single chamber into two chambers—the urethral and vaginal.

The common abnormalities of the vagina receive no explanation from embryology if this septal downgrowth be accepted as the means by which the urethra and vagina are formed. No true conception of the formation of the channels is gained from this theory, and no hint is given of the pathology of many conditions of urethra and vagina that are capable of rational and helpful explanation. Now there is not the slightest doubt that no septum grows down to separate the vagina from the urethra in the human embryo. The Mullerian ducts open on the concavity of the U shape bend of the terminal dilatation (cloaca), the opening being situated between the cloacal opening of the hind gut behind and the cloacal opening of the allantois in front (see Fig. 5).

The site of the opening explains their occasional malformation that is presented in such cases as those described by Evanson and Maunsell and others, in which the uterus opens into the rectum. Again, since this is the site of their opening in the embryo, and since in the male they retain this embryonic position, it is not surprising that when the post-allantoic gut fails to develop and the hind gut retains its cloacal—or, as we have now seen, its urethral—opening, this opening should be found in the immediate neighbourhood of the remnants of the Mullerian ducts—that is, in the prostatic urethra (see Fig. 1).

This embryological site of the opening of the Mullerian ducts is not, however, retained by the female for long, and it is necessary to follow the steps by which the adult female condition is arrived at.

The cloacal opening of the hind gut is lost, the post-allantoic gut has grown back, and now the cloaca is the urogenital sinus. Into this sinus open, in front, the bladder; behind, the Mullerian ducts; both openings being situated at the upper end of the sinus. The Mullerian ducts now migrate towards the posterior surface of the body, and this migration is the most striking embryological process in the whole of the transformation of the hind end.

It is customary to describe and picture the fetal vagina as an open tube having very much the characters of the vagina of the adult—that is to say, it is a canal separated by a septum in front from another canal. This idea of a wide open vagina, formed by the growth of a discrete septum, is the cause of the failure of embryology to explain the most common abnormalities, and is also the cause of ascribing to infantile fevers and septic conditions of childhood the production of abnormalities, which really admit of simple and clinically useful explanation by a study of the development of the part.

The vagina is for a great part of fetal life a solid rod, and not an open canal at all. The Mullerian opening into the urogenital sinus becomes early lost, and its communication with the exterior is only made again late in fetal life.

The whole subject of the development of the vagina is exceedingly complex, and it would be better to reserve for some future time any discussion as to the precise morphological elements that take part in its strange growth. The developmental process involved is, however, clear: Early in the history of the embryo the Mullerian ducts open into the urogenital sinus at its upper part; late in its history they open at the hind end by the vagina, and for a considerable interval they have no opening at all—the old one being lost and the new one not yet formed. No septal division is employed in this change, but as the hind gut, when its cloacal opening is lost, re-establishes communication with the exterior by a new downgrowth, so the Mullerian ducts, when their cloacal opening becomes obliterated, tunnel a new passage to the hind end.

The active agents in this strange growth are two epithelial masses that have been described by Berry Hart as the Wolffian bulbs, but to give this name to them is to give a definite idea as to their origin, and this seems to be by no means clear.

The active migration of the Mullerian opening is not an unparalleled fact in the animal kingdom, as Dr. Arthur Keith has pointed out to me; for James Hill has shown that in peramele the median vagina is formed at delivery by an active rupture of the Mullerian ducts into the urogenital sinus.

The actual significance of this extraordinary process does not, however, concern us here; but the fact that the vagina is formed as a solid structure, that becomes canalized only late in development, is of extreme practical importance. Without going further into the development of the vagina, it will be seen that such statements as "congenital atresia in the sense of a vitium primae formationis does not occur. The embryological development of the vagina furnishes no explanation to transverse vaginal septa" (Henrotin and Harris), are not correct when the development of the vagina is rightly understood.

The active downgrowth of the vagina will now serve to explain the varied levels at which, in imperforate rectum, the cloacal opening of the hind gut is found, and it will also serve to explain why—as is the usual case—it is a larger opening than is the persistent cloacal opening of the hind gut in the male.

One word may here be said as to the development of the hymen. The vagina is an active downgrowth like the post-allantoic gut, and the amount of tissue that is left solid between the downgrowth and the cavity, towards which it grows, is the hymen; it is not formed by Berry Hart's "Wolffian bulbs," but is the tissue these bulbs do not penetrate. Its varying thicknesses can, therefore, be easily undersfood (Fig. 8).

It will be seen from this account that the urethra of the adult is the real representative of the cloaca; but some additional points in its development must be noted, inasmuch as they have a clinical interest.

The female urethra is the cloacal remnant in its simplest form, but it does not arrive at its adult condition by any means in the way that it is usually supposed to do, by remaining throughout fetal life as a simple tube. The wonderful growth that brings about the migration of the Mullerian ducts has its effects also on the urethra. The human urethra in the female is, for a time at any rate, obliterated, more or less completely, by the proliferation of the vaginal bulbs.

In serial transverse sections and in longitudinal sections of the urethra and vagina at this stage a curious condition is seen. The urethra becomes occluded, and appears to be regenerated by active epithelium in very much the same way that the vagina is. The vaginal rods give off, in addition, lateral buds similar to, though smaller than, the vaginal bulbs; and so in serial sections many islands of epithelial cells are seen stranded in mesoblastic tissue, and entirely isolated from vagina or urethra. That these active epithelial inclusions may be the starting-point of vaginal and urethral cysts seems not at all unlikely.

The male urethra as far as the bulb is the analogue of the entire female urethra, for it, too, is the cloacal remnant. The penile urethra is formed by closure of the genital folds and by central desquamation of the invading plug of cells, as Dr. Berry Hart has demonstrated, and it is for some time during development also blocked.

A word may be here said with regard to ectopia vesicae. It has been seen that during embryonic and fetal life the urethra in both sexes has a stage in which it is imperforate, and this stage may persist as a malformation. The pathology of ectopia is, it is here maintained, simply the bursting of the bladder and urethra from the internal pressure. Not one of the various theories put forward to explain the formation of this condition is satisfactory. The theories of Bartels, Perls, Ahlfeld, Roglans, and Reichel may be put on one side, and there remain (1) the theory that it is due to rupture of the cloacal membrane, and (2) the theory that it is due to failure of the two sides of the primitive streak to meet in the middle line. Neither of these two last theories will fit in with the common features of the abnormality. If the cloacal membrane or the primitive streak be the site of the

defect, more abnormality than that constantly found should be present. There is often a scrotum. This could not occur if the primitive streak or the cloacal membrane were open. There is always a perineum, often a perfect anus, and usually a normal vagina; none of these should be present should these theories be true, for by the curious backgrowth of the hind end the primitive streak in the adult is represented by the line from a point just below the umbilicus to a point behind the anus, and all structures on this line should be cleft. The reasons why this condition is here considered to be a burst urinary canal are as follows: Urine is secreted by the fetus in utero, and when the urethra is imperforate (when the normal imperforation persists) all stages of distended bladder have been found. The stage of distended bladder, of which there are many cases on record, being to ectopia vesicae as hydrocephaly is to anencephaly, or as syringomyelocele is to spina bifida. In this connexion the case of a woman in the London Hospital Maternity Charity may be mentioned, who at three successive labours gave birth to fetuses, of which the first suffered from anencephaly, the second from spina bifida, and the third from ectopia vesicae, the cause here being probably an abnormality of fetal secretion.

Again, when there is absence of kidneys or ureters, or there is an umbilical fistula, fetuses have been found with persistent urethral occlusion, and in well-recorded cases of ectopia vesicae an actual occlusion of the cleft urethra is reported. Signs of the distension stage are seen in cases of ectopia vesicae in the condition of the pelvis, which is exactly that which would be produced by internal force driving the symphysis pubis asunder, and splaying out the entire pelvis. There is no loss of middle-line development, but the two sides of the pelvis have been pushed aside from within, and the recti abdominis forced aside with them.

The view here briefly put forward as to the development of the visceral openings of the human hind end differs in many ways from the view that is generally held; but it is maintained that when the idea that these canals are new downgrowths, and not smaller subdivisions of wide open cavities, is rightly considered, it gives a truer picture of what takes place, and a better explanation of the abnormalities that are found in practice.

A stage of imperforation normally occurs in the developmental history of all the posterior vesical orifices; in all of these orifices the imperforation stage may persist as an abnormality. It is not uncommon for this condition to affect more than one orifice in one of these cases.

When the imperforation persists in the different canals varying results are produced. The persistence of the block in the urethra is the rarest condition, as a fetal use is made of the canal, for it is recognized[1] that the kidneys are active during fetal life. When this block persists various abnormalities are met with—enormously distended bladder, umbilical fistula, epispadias, or ectopia vesicae—results caused by the different internal strains produced, and the different yielding points in the urinary canal; or, again, the kidneys may not develop and there may be no distension, but the block remains.

In the rectum the terminal block is more common, as the canal is not normally used till at, or shortly after, birth, and when it persists imperforate anus is produced.

In the vagina the persistence of the terminal block is normal, as the canal is of no functional use till later life, and here its persistence produces the hymen, or its abnormal persistence the imperforate hymen.

These conditions explain one set of clinically well-recognized abnormalities; the failure of the downgrowing portion to be developed at all explains another set. Atresia vaginae is the consequence of the failure of development of the vaginal downgrowth to occur, or to become canalized as has been described; imperforate rectum is the consequence of the failure of the development of the post-allantoic gut.

It is by no means uncommon to find these abnormalities combined—atresia vaginae, imperforate rectum, and ectopia vaginae—in different combinations; and it is claimed as an argument in favour of the account given of the pathology of ectopia vesicae that it should occur in cases where, far from the visceral orifices being too widely open, they are abnormally closed.

[Towards the expenses of this investigation a grant has been received from the British Medical Association.]

REFERENCE.

[1] Ballantyne, *Antenatal Pathology*

THE GERM CELL THEORY OF CANCER.*

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The explanation of the genesis of malignant growths has been brought nearer to us by two notable investigations. They are (1) the proof of the morphological continuity of the germ cells; and (2) the discovery of heterotype mitosis in malignant tumours. They corroborate and fortify each other in a remarkable way.

Until recently it was always taught that the sexual cells arose in the embryo from a layer of peritoneal epithelium, known, it is true, as the germinal layer, but not otherwise distinguished in origin from the remaining cells of the embryo. It is to the credit of Dr. James Beard to have definitely disproved this mode of formation, and to have clearly shown the morphological continuity of the germ cells. He has combined with this the suggestive hypothesis of an antithetic alternation of generations also in man.

Put very briefly this may be stated as follows: After the union of the sperm and the egg there is formed by the subdivision of the united cell what corresponds to a larva, or trophoblast; in man the chorion. From one of its cells there is formed, as it were, a number of spores. One of these spores ultimately becomes the embryo, which includes within itself the remaining spores to become its sexual cells, which are thus not formed from the embryo, but are handed down to it, and for which it merely forms a home.

In passing to their proper position in the embryo these germ cells may go astray, and may in some animals be demonstrated for a time in all sorts of abnormal positions. I believe that Dr. Beard was also the first to suggest that the aberrant germ cell might be the origin of a cancerous growth, although he now prefers to consider it an identical twin, namely, an embryo developed, or rather undeveloped, from the same germ cell. I prefer the former idea.

But what proof is there of any connexion between a germ cell and a malignant growth? This has been supplied by the discovery of Professor J. B. Farmer with Messrs. Moore and Walker. They found in malignant tumours a form of nuclear division which normally occurs only in the sexual cells, amongst the spermatozoa and ova. One of the distinguishing features of this heterotype mitosis is the formation by the dividing cells of only half the normal number of chromosomes. Both this and the other characteristics were observed in the cells of malignant growths; there must therefore be something in common between the germ cell and the tumour cell.

In innocent tumours they were unable to find this form of nuclear division, and considered its absence an essential distinction between the two kinds of growth. In my opinion it corroborates a view which I have long held, that the distinction between innocent and malignant tumours is not fundamental. We know that clinically one form may pass into the other.

The heterotype mitosis does not supervene at once in the evolution of the sexual cells. In the testis it is not before the third division, and in the ovary when the membrana granulosa begins to proliferate, and the discus proligerus is formed; definite proof of their non-somatic origin. In the same way, heterotype mitosis may not occur at first in tumours, and during this stage they are not malignant, but when it supervenes they become so. Why this change should happen is another matter; but it is no more mysterious in the case of a tumour than in that of the testis or ovary.

Given the cell or cells of the potential growth, it seems not improbable that the toxin of a parasite, the short stimulus of a trauma, the long-continued stimulus of chronic irritation, or the chemical conditions of disordered metabolism, might suffice to let loose their energies, and thus one or all the alleged causes in turn have their share.

The signpost of further investigation of the problem points along the road of embryological and cytological inquiry.

* Abstract of a Paper read before the Leeds and West Riding Medico-Chirurgical Society on November 18th, 1904.

Dr. E. P. Dickin was on December 5th elected Deputy Mayor of the Cinque Port Liberty of Brightlingsea for the ensuing year, *vice* Mr. J. Bateman, J.P., D.L.

In the estimates for 1905 recently submitted to the German Reichstag there is an item of £10,000 for the prevention of typhoid fever.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

DEATH UNDER NITROUS OXIDE.

The rarity of deaths under the administration of nitrous oxide gas makes it desirable to record every case, since no generalization as to possible dangers can be arrived at through any single individual's experience.

The patient was a female cretin, aged 18, of keen and well-educated intellect, but barely 3 ft. tall, and almost unable to move about. She had had gas before, and is said to have taken it well, and she had no fear or apprehension in taking it on this occasion also. She took it very well, and went under very quickly, but was noticed to be much more cyanosed than is usual. A single tooth was quickly extracted, and she appeared to be coming round, but had a slight convulsive movement of the hands and limbs and ceased to breathe. Artificial respiration—persisted in for an hour—brandy, injection of strychnine and the battery failed to restore her.

The *post-mortem* examination revealed an extremely thick skull cap and an apparently normal brain and membranes. The larynx and air passages were clear; there was no trace of thyroid gland to be seen, but a large persistent thymus; the heart weighed 7oz., which did not seem disproportionate to the size of the patient; the mitral valves were thickened and incompetent but there was no hypertrophy of the ventricles, so it is not surprising there should have been no murmur. No other lesions were found.

I should be interested to know whether any of your readers have found any special difficulties in the administration of gas to similar patients.

Kingston-on-Thames. John G. Owen, M.R.C.S.

DIABETES AFTER OPERATION.

On March 12th, 1902, I operated on a strong healthy labourer, of about 30, for strangulated hernia. The wound healed by first intention, and beyond troublesome retention of urine for ten days, his convalescence was uneventful. On May 28th he came to see me, as he had a crop of small boils on his arm due to a poisoned scratch on his finger. These soon cleared up. On August 8th he came complaining of frequency of micturition and intense thirst. These symptoms he had only noticed for three days. I found the urine loaded with sugar. Two days later he was admitted to St. Bartholomew's under Sir Lauder Brunton, and died in five days, just five months after the operation. Was the occurrence of diabetes *post hoc* or *propter hoc*?

Helston. Mark R. Taylor, M.R.C.S., L.R.C.P.Lond.

WARNING SIGN OF DANGER DURING LABOUR.

An interesting paper bearing this title appeared in March from the pen of Dr. F. C. Daniell. He recorded 4 cases in which he noticed a peculiar spasmodic movement of the forceps. All the children were born dead, and all had the cord twisted once or oftener round the neck. I have lately had the unfortunate opportunity of verifying his observations.

My case was a multipara, aged 36, whose former labours had been rapid and uneventful. Labour began about 5 p.m.; by 9 p.m. the os was soft and dilatable, but no progress was made. My patient reminded me that when I had given her chloroform before, the pains at once became strong and her delivery immediate. At 10 I gave the anaesthetic; the pains became at once stronger and more regular, but the head did not advance. The impression given was as though the head was drawn up after each pain and would not engage. At 11.30 I put on the axis traction forceps, and shortly after noticed a curious movement of the handles—they were retracted twice with a backward movement. I said to the nurse that I thought the child would be stillborn, and I now regret that I did not send her down to tell the husband so; but time was pressing, and I delivered as quickly as possible with regard to the mother's safety. This I accomplished by 12 o'clock, but the child was dead, perfectly pulseless, and made not the slightest response to very vigorous efforts at resuscitation. The cord was once round the neck, with the short end to the placenta, the folds crossing, so that the fetal end of the cord was quite bloodless.

I believe with Dr. Daniell that the cause of the forceps movement is that the infant, suddenly deprived of placental blood, makes a vain endeavour to breathe and dies suffocated.

What, then, can be done? Simply deliver as quickly as possible; but rapidity depends upon the state of the maternal passages, and its safety to the mother is the first consideration. The points of warning are: First the retraction of the presentation like a ball on a rubber cord; then, if the neck could be reached, freedom to the compression could be given; and, secondly, the movement of the forceps, but when this is felt the end is very near, and only forced delivery, with disregard of consequences to the mother, would give any chance of a living child.

Liverpool. W. Macfie Campbell, M.D.

OPHTHALMIA NEONATORUM: TREATMENT BY ARGYROL.

I was much interested in Mr. Leary's remarks under the above heading in the British Medical Journal of November 5th, 1904, p. 1246.

I have prescribed argyrol in a large number of eye cases, and have notes of 5 cases of ophthalmia neonatorum in which it was the only treatment used. My experience coincides entirely with that of Mr. Leary. In the case of purulent ophthalmia in an adult the improvement after a few applications of argyrol was most marked.

One of my colleagues at the Royal Victoria Eye and Ear Hospital has used argyrol with success in extensive ulceration of the cornea. I think argyrol is of no value in the treatment of granular ophthalmia. In acute conjunctival cases the best results are obtained by placing the patient lying down and applying several drops of a 25 per cent. solution, so that the entire conjunctiva may be bathed for several minutes. This should be repeated every four hours. I have not noticed staining of the conjunctiva from its prolonged use.

Dublin. Robert J. Montgomery, F.R.C.S.I.

HANGING-DROP PREPARATIONS.

The following simple contrivance for making a hanging-drop preparation may have a practical interest for those who are engaged in laboratory work: A small rubber elastic band or washer of appropriate diameter and thickness is smeared with vaseline upon one side. This side is then applied to the slide. The upper surface of the band is now smeared with vaseline, and the coverglass with hanging drop is applied to it. An air-tight cell is thus readily made. This avoids the necessity for keeping special hollow-ground slides, and is more convenient than the clumsy and troublesome method of making a similar cell out of damped blotting-paper.

By the use of rubber bands of different sizes the cells can be made of any width and depth desired. Personally, I find rings with a lumen of from 1 to 2 cm. in diameter and of 2 mm. in thickness very convenient. I have not found the above method described anywhere. If it has been, I offer my apologies.

Cheltenham. J. Rupert Collins, M.D.

TREATMENT OF HAEMOPTYSIS.

The treatment of sudden and severe haemoptysis resolves itself into an effort to promote conditions favourable to the rapid formation of a blood clot at the seat of haemorrhage, and with this end in view we should proceed as follows:

1. To diminish the frequency of the cardiac beat and lower the arterial tension.
2. To increase the coagulative power of the blood.
3. To lessen the blood supply to the diseased area.

The following method of treatment will meet these indications. Immediately on the onset of haemorrhage the head and shoulders should be raised, and a hypodermic injection of morphine given, the dose varying from one-sixth to one-third of a grain. Then 30 to 40 gr. of calcium chloride dissolved in a small quantity of water should be injected high into the rectum, and an icebag applied to that part of the chest immediately underlying which is the most active tuberculous focus. At the same time the determination of blood to the lower limbs should be encouraged by the application of heat.

The value of morphine in haemorrhage is due to the fact that by stimulating the inhibitory centre it slows the cardiac action. In connexion with the administration of calcium chloride two interesting physiological facts may be stated. The first is that active fibrin ferment is rich in calcium, and that wherever coagulation takes place calcium in some form or other is present; and secondly, that the conditions which favour coagulation in the lungs are feeble, for blood, after

circulating several times through the pulmonary vessels without being allowed to enter the systemic circulation, loses its power of clotting.

The foregoing method of treatment I have followed on several occasions, and with gratifying results. In addition, I have in some cases given a trial to adrenalin chloride in doses varying from 10 to 30 minims, but have not been able to ascribe to it any very striking value, and the increase in arterial tension which may follow its administration is certainly undesirable. Lastly, in the haemoptysis which immediately precedes or accompanies menstruation, the most useful treatment in my experience is an injection of ergotin, with the application of heat to the lower abdominal region.

H. Hyslop-Thomson, M.D.
Consumption Sanatorium, Bridge of Weir.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

THROAT HOSPITAL, GOLDEN SQUARE.

CASE OF TUMOUR GROWING IN THE LEFT VENTRICLE OF THE LARYNX.

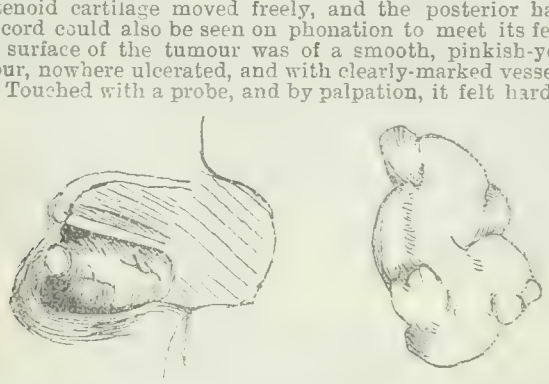
(Under the care of Dr. J. W. Bond.)

[From Notes by the Resident Medical Officer, Mr. F. A. Hadley, M.R.C.S., L.R.C.P.]

Owing to the rarity of this condition the following case seems to be worth recording:

The patient, a married woman, who was born—and had lived all her life—in the West Indies, came to the Throat Hospital, Golden Square, with complete aphonia and slight inspiratory stridor. The condition had been gradually developed during the last three years.

On examination a round, smooth swelling was found, filling the whole of the left ventricular space, and bulging the aryteno-epiglottic fold outwards and backwards. The left arytenoid cartilage moved freely, and the posterior half of the cord could also be seen on phonation to meet its fellow. The surface of the tumour was of a smooth, pinkish-yellow colour, nowhere ulcerated, and with clearly-marked vessels in it. Touched with a probe, and by palpation, it felt hard.



The patient was kept under observation on iodide for two months, but the swelling distinctly increased, and respiration became more embarrassed. On January 22nd, 1904, after a preliminary tracheotomy, Dr. Bond performed thyrotomy. An encapsuled growth was found filling the ventricle, with the false and true cords spread over the surface. On incising the former the tumour shelled out quite easily, except at its posterior end, where there seemed a firmer connexion, apparently with the upper surface of the cricoid cartilage. Unfortunately during removal the true cord tore across. The alae of the thyroid cartilage were brought together and the wound sewn up.

The patient made an uneventful recovery, but although it is now several months since the operation she has not recovered her voice; partly, perhaps, from functional reasons.

The growth is about the size and shape of a walnut, is lobulated, and microscopically appears to be a fibroma, except that in places there are blood vessels the endothelial linings of which are many cells thick, suggestive of a perithelioma. There has at present been no sign of recurrence.

Attached are two diagrams, one of the appearance before removal, the other of the growth itself.

WEST RIDING ASYLUM, WAKEFIELD.

RUPTURE OF THE HEART FROM FATTY DISEASE OF THE MUSCLE.

[Reported by Dr. W. T. Harris, Assistant Medical Officer to the Asylum.]

The following notes of a case of rupture of the heart from fatty degeneration of its muscle are of interest in view of the comparative rarity of such an occurrence:—

State on Admission.—A. B., a stout woman, aged 90, suffering from senile dementia, was admitted into the asylum on January 1st, 1903. Physical examination revealed nothing further than faint, and, at times, intermittent heart sounds; no murmur could be detected.

Progress and Result.—She was confined to bed during the greater part of her stay in the asylum as she suffered from occasional attacks of dyspnoea. On the morning of January 2nd, 1904, a year after admission, she was extremely restless, continually attempting to get out of bed, and calling out complaining of vague and indefinite pains. At 3.50 in the afternoon, she had a sudden attack of dyspnoea, accompanied by a slight cough, and died 5 minutes later.

Post-mortem Examination.—At the autopsy, the pericardium was found distended with blood, and a rent, 1 in. in length, was present in the left ventricle, close to the interventricular septum, 1½ in. above the apex. The heart was very fatty and enlarged, weighing 300 gr. The left ventricle was considerably dilated. There were no signs of the rupture having been due to an aneurysm, or to abscess, or cyst, in the muscle wall. All the valves were competent. The walls of the coronary arteries were somewhat thickened, but there was no obstruction. Patches of atheroma were present at the commencement of the aorta. The heart walls were generally soft and friable.

Remarks.—A section of the heart muscle, stained by Marchi's method, showed marked fatty degeneration. Another section, hardened in alcohol, and stained with haematoxylin and eosin, showed nothing further than some slight enlargement of the nuclei of the muscle fibres.

British Medical Association.
CLINICAL AND SCIENTIFIC PROCEEDINGS.

BIRMINGHAM BRANCH.

Pathological and Clinical Section.

Birmingham, November 25th, 1904.

L. P. Gamgee, F.R.C.S., in the Chair.

Congenital Elevation of Scapula.—Mr. Milward showed a girl, aged 14½, with congenital elevation of the scapula. The deformity had been noticed as long as the mother could remember. The right shoulder was some 2 in. higher than the left, and the scapula was rotated some 45 degrees, bringing the upper angle prominently up under the trapezius, and causing pain there. Abduction of the arm from the side was limited. Infantile paralysis, scoliosis, and maldevelopment of the scapula were absent. The *x* rays showed a marked deformity of the first five ribs on the right side. They were variously contorted, and the fourth and fifth apparently projected backwards, pushing the lower end of the scapula upwards and inwards. Mr. Milward considered that this was the primary deformation, and that shortening of the muscles was secondary. Mr. Charles R. Keyser, in a paper recently read before the Clinical Society of London, had stated that cases of congenital elevation of the scapula might be classified into four groups: (1) Where there was a bridge of bone between scapula and spine; (2) where certain muscles were absent; (3) where there was a long and everted supraspinous portion of the scapula; (4) where the scapula was normal or small and the muscles defective. The present case did not seem to fall exactly into any of these groups, unless into the last, with the important addition of costal deformity. If treatment were called for it was proposed to remove the projecting supraspinous portion. At present such a measure seemed hardly justified, as the symptoms were but slight.

Excision of Both Lachrymal Sacs.—Dr. Jameson Evans showed a girl, aged 9, in whom both lachrymal sacs had been removed. She came under his care in August, 1904, when she was suffering from double interstitial keratitis and mucopurulent dacryocystitis, associated with disease of the bony lachrymal canals. The dacryocystitis and lachrymal strictures were treated for over a year by probing and injections of protargol without much improvement. Owing to the distress caused by the probing, the ineffectiveness and tediousness of conservative measures, and the inconvenience and expense of coming a long distance for treatment, excision of the lachrymal sacs was decided on. This was done by a slightly

curved incision extending downwards and somewhat outwards from the lower border of the internal palpebral ligaments. The sacs were separated from their attachments and removed without opening their cavities. The wounds healed by first intention, and the scars were barely perceptible. The amount of subsequent epiphora was insignificant, and contrasted forcibly with the condition before operation.

Intestinal Anastomosis.—Mr. Leedham-Green reported two cases of intestinal anastomosis. The first which he showed was a man aged 31, who from early boyhood had suffered from frequent and severe attacks of colic and vomiting. These attacks increased in severity and frequency as he grew older, until he was completely incapacitated for his employment. During an interval between the attacks a laparotomy was done, and the chronic obstruction was found to be due to firm adhesions binding down to the pelvis about 3 ft. of the lower part of the ileum. As it was impossible to release the bowel, the ileum above and below the obstruction was freely anastomosed. The patient made a good recovery, and at the present time, some eighteen months after the operation, he has no trace of his former trouble. The second case was that of a man aged 50, who had suffered from a chronic obstruction of the large bowel, due to the growth of a cancer in the transverse colon. As the tumour was too extensive to admit of excision, the lower part of the ileum was anastomosed to the splenic flexure of the colon. This short-circuiting of the bowel successfully relieved the patient of his former attacks of obstruction, and he lived for some time after, subsequently dying from the extension of the cancer.

Acute Haemorrhagic Pancreatitis.—Mr. George Heaton showed the abdominal viscera from a case of acute haemorrhagic pancreatitis. The patient, a man aged 48, was suddenly seized with acute abdominal pain four days before his death. The main symptoms of the case were excruciating pain in the epigastrium, collapse, vomiting, and constipation. Abdominal section was performed: the abdominal cavity containing a large quantity of blood-stained fluid; the pancreas was found to be enormously swollen and covered on its surface with numerous haemorrhagic patches. The abdomen was drained. The patient died suddenly some thirty-six hours after, having just before death brought up a large quantity of blood from the stomach. The specimens exhibited showed a liver with a distended gall bladder. The cystic and common bile ducts were patent. There were numerous typical areas of fat necrosis scattered about in the fat of the omentum, the root of the mesentery, and about the pancreas. The pancreas itself was much swollen, measuring more than 2 in. in thickness. There were numerous haemorrhages on its surface and in its substance. Microscopic sections were also exhibited showing acute inflammatory changes in the gland and areas of blood extravasation.

Abscess of the Pancreas.—Mr. Gamgee showed a specimen of abscess of pancreas. On October 8th, 1904, the patient received a violent blow in the centre of the abdomen from the pole of a cart. He immediately vomited and complained of great pain. Twenty-four hours after the accident there was an indistinct, tender swelling above the umbilicus. The pain became less and the swelling disappeared, but on October 17th the man became worse, having vomiting, pain, and pulse of 120, and a distinct, tender swelling beneath the middle of the right rectus muscle. There had been no blood in vomit or in stools, and there was no glycosuria. On October 18th the abdomen was opened and an abscess was found in the head of the pancreas containing about 3 oz. of thick pus. The patient died twenty hours after operation. At the necropsy the abscess was found to be situated partly within and partly on the front of the head of the pancreas.

Sarcoma of Mediastinum.—Dr. Walter Jordan showed a specimen of sarcoma of the mediastinum, which formed an enormous tumour involving the structures at the base of the heart, while the new growth had infiltrated the whole of the visceral pericardium, and there were large nodules on the parietal pericardium. The patient was transferred to a medical from a surgical ward of the Birmingham Workhouse Infirmary on June 25th, 1904, on account of pain "catching his breath" on the left side. He was cyanosed and suffered from hard expiratory dyspnoea. The pulse was good, signs of pericardial and left pleural effusion. On July 15th ℥xiij of clear fluid were removed from the pleura, but efforts to tap the pericardial fluid on July 22nd failed. Up to the end of August dropsy, especially in the legs, increased greatly. On August 8th, ℥lx of fluid were removed from the legs by Southey's tubes. At the same time the patient was put on Guy's pill, iron and strychnine, and mag. sulph. ℥j every night. He improved considerably, and was even able to get up, but by the end of September began to fail again. Dropsy returned, wasting became obvious, and on November 5th he died. At the *post-mortem* examination the pericardium contained a large amount of sanguineous fluid, there was moderate pleural effusion on the left, "nutmeg" liver, and the tumour as stated: other organs normal. There were no "pressure" symptoms throughout.

BATH AND BRISTOL BRANCH.

Bath, November 30th, 1904.

Mr. R. J. H. Scott, President, in the chair.

Communications.—Dr. Newman Neild read a paper on anaemic infarct of the liver, and comments were made upon it by Dr. Shingleton Smith.—Dr. C. J. Whitby read notes on treatment of phthisis and its present limitations. Dr. Shingleton Smith, Dr. Cave, Dr. Weatherly, and Dr. Wood joined in the discussion which ensued.—Dr. C. R. Wood read a paper entitled Automobiles in Medical Practice.—Dr. W. McDonogh Ellis described a case of bilharzia.—Dr. J. B. Dunlop and Mr. W. M. Beaumont showed a specimen of cerebellar tumour.

SOUTH-EASTERN BRANCH: DOVER DIVISION.

At a meeting held on November 24th, Dr. Parsons in the chair, Dr. Murphy read a paper on Appendicitis, in which he reviewed the gradual tendency of late years to regard inflammations in the right iliac fossa as being due to appendicitis only. Typhlitis and perityphlitis, when closely looked into, were themselves consecutive to the lesions of appendicitis. The severe pain in appendicitis was attributed to the conversion of the canal of the appendix, either by inflammation or calculus, into a closed cavity. In many cases the insidious onset and the gradual occurrence of important symptoms rendered it almost impossible to say when the peritoneal stage followed upon the stage of appendicitis. In cases of any severity medicinal treatment was practically useless; opium relieved pain but masked symptoms, and unless one had made up one's mind that an operation was inevitable it was better not to give it. With a temperature which kept up to 101° or 102° at the end of forty-eight or fifty-six hours operative interference was imperative. It was the only safe treatment against the immediate accidents of appendicitis, also the remote complications; it obviated relapses and their consequences. It was not sufficient merely to operate; it was necessary to operate at the right time. One never repented of having operated; one often repented of not having operated, or of having operated too late. The paper was based on a personal experience of 45 cases of operation without a death.

SOUTH-EASTERN BRANCH: ISLE OF THANET DIVISION.

At a meeting of this Division held on December 1st, Mr. C. H. Tamplin in the chair, Dr. William Ewart, Senior Physician to St. George's Hospital, read a paper entitled "The Principles of Treatment of Pneumonia." He commenced by reviewing the position of the medical profession with regard to the disease, and showed how the general line of treatment adopted was one of inactivity and expectancy, and he debated whether this position was justifiable. His own feeling was in favour of more active measures of treatment. Having surveyed from the clinical side the course of the disease, he considered the various aspects of treatment; the chief aims of the latter were to exclude infection or to restrict it, to limit the extent and degree of consolidation, and to eliminate the toxin. He advocated more prompt and assiduous efforts to check the pathological changes taking place at the onset of the attack. He then discussed the details of active treatment, the essence of which was to relieve the circulation by leeching, calomel, diaphoretics, and diuretics, and low diet to encourage absorption, and to support the heart by food and tonics. These points were illustrated by notes of a case of double pneumonia treated in the wards of St. George's Hospital. The paper was well discussed.

The twenty-sixth Congress of the German Balneological Society will be held at Berlin in March, 1905. Communications relative to the meeting should be addressed to the General Secretary, Dr. Brock, Thomasiusstrasse 24, Berlin, N.W.

REPORTS OF SOCIETIES.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Sir R. Douglas Powell, Bart., M.D., F.R.C.P., K.C.V.O., President, in the Chair.

Tuesday, December 13th, 1904.

Discussion on Chloroform Anaesthesia.

Sir Victor Horsley, in resuming the discussion, said that the question of the administration of chloroform was the administration of a drug in known doses. The suggestion that the personal attention of the anaesthetist, lacking this, was enough was, he considered, reactionary. The liminal point was probably the same for all adults; it was not minims for one and drachms for another. For the induction period it was not necessary to go beyond 2 per cent. strength of vapour, and this might be inhaled for a long time without any risk to life. The liminal point for the maintenance of anaesthesia was different; as soon as the skin and superficial tissues were divided ½ per cent. was enough, and this was absolutely safe. In this regard the use of a regulator would be of the greatest value. A Skinner's mask and drop bottle in unskilful hands gave an inconstant administration which might be the cause of death. An atmosphere might be suddenly presented of 4 per cent., which was dangerous. The first danger in point of time was, he believed, from the heart and not from the respiration. The respiratory failure occurred in prolonged anaesthesia. To regulate the dose any method was better than the open method. Asphyxia did not occur in chloroform anaesthesia unless, as he believed, the patient had had too much chloroform. Reflex spasms produced by operative procedures he had never seen, although often from too much chloroform, excluding, however, operations involving the vagus nerve. The tongue he had often seen fall back from too much chloroform. Reflex vasomotor phenomena had never been demonstrated; the fall of blood pressure was probably due to a primary effect on the heart. The effect on respiration was of little importance clinically, because, when the patient began to breathe slower, he breathed less deeply, and inhaled less chloroform. Stimulation of a sensory nerve, as the sciatic, caused a rise in blood pressure, which was of benefit to the patient. Clinically, chloroform produced a fall of blood pressure and of respiratory efficiency proportionate to the dose. The statement that deaths occurred during light anaesthesia and were unpreventable was not proved; he believed that if a constant percentage were given they would cease to occur. It was a dangerous statement to make that death might occur in light anaesthesia. Death occurred from a too high percentage being given by the open method.

Colonel E. Lawrie referred to the Hyderabad Commission, and especially to Colonel Bomford's work on it. Irregular, gasping breathing was the dangerous factor; a dilute vapour and regular breathing were the safety points. An apparatus he believed introduced an element of danger in chloroform anaesthesia in exact proportion to the attention required for it.

Dr. Paul Chapman recommended the Dubois apparatus. Any apparatus based on the suction principle involved the principle that the patient was himself an integral part of the machine producing the motive power which was dangerous. Had any deaths occurred under the Vernon Harcourt method? If so, unjustifiable experiments were being carried out. The Dubois apparatus did not depend on suction, the vapour in the chamber was passed by propulsion.

Dr. Dudley Buxton, speaking as Secretary of the Association Committee, said he had never met with or heard of any deaths occurring with the Vernon-Harcourt apparatus.

Mr. F. Eve considered that an apparatus preventing the administration of a toxic dose was a great desideratum. The Vernon Harcourt apparatus seemed to him cumbersome and was not suitable for some important operations, as those about the mouth, and involved fatigue of the inspiratory muscles. He preferred a skilful anaesthetist using a mask to an unskilful one using the Vernon Harcourt or other apparatus.

Mr. G. Rowell bore testimony to the value of Dr. Levy's apparatus. It showed that 3 per cent. was necessary for the induction period, and 1 per cent. was sufficient after. It made induction more expeditious than, say, the Vernon Harcourt apparatus. But he did not advocate any apparatus for giving chloroform. It could be, and was, safely given by the open method. The notorious difference in susceptibility in different persons could not be allowed for in physiological experiments. The requisite dose had no relation to body weight. The only scientific way was to carefully observe all the symptoms of anaesthesia in any case and act accordingly. Respiration must be good, and a too strong vapour should not be given, and by observation of the reflexes the proper depth of anaesthesia should be maintained. Interference with respiration was the chief cause of danger.

Dr. Silk associated himself with all the opinions expressed by Dr. Hewitt. The death-rate from chloroform was something under 1 in 3,000; the majority of deaths seemed to occur at the hands of inexperienced administrators. He argued for the better education of the student in the matter. It was necessary also to educate the patient in the need for an experienced administrator. He advocated the use of a mixture of chloroform and ether in the liquid state. He deprecated the use of special apparatus. The importance of administering known proportions of chloroform was, he believed, over-estimated; the susceptibility of individual patients to its action varied so much that nothing could supply the place of individual attention to the particular patient.

Dr. Brumfield had had personal experience of the Vernon Harcourt apparatus, the Dubois apparatus, and Dr. Levy's apparatus. The Vernon Harcourt had had claimed for it too much. The disadvantages were the time in the induction, its cumbrousness, and the difficulty of getting a satisfactory condition of the patient even with its maximum power. An advantage was the less quantity used and diminution of the after-effects. The true way of improving the safety of chloroform anaesthesia was to improve the education of the ordinary administrator.

Mr. Carter Braine had tried the Vernon Harcourt inhaler in 15 cases, not more because he had not been satisfied with its results. A great drawback was the inability to obtain anaesthesia within a reasonable time, but given anaesthesia induced, it gave great ease in maintaining it. One case was quoted in which it was used where all the symptoms of an overdose were present. In a later case there was agitation of the patient, and the chloroform escaped over the patient's face; in another case the valve did not work, and pure chloroform was being given. In 6 cases out of 15 there was failure with the apparatus. The need for the so careful application of the facepiece was a disadvantage, as also was the fact that it was much in the way of the surgeon. Of 7 cases in which Dr. Levy's apparatus was used all had been successful.

Dr. Scharlieb showed tracings taken by Professor Schäfer and himself, illustrating the effect of chloroform in animals and the effect of the simultaneous administration of alcohol and atropine, and advocating the administration of $\frac{1}{75}$ gr. of atropine before anaesthesia, the addition of 10 per cent. alcohol, and the administration of known quantities of anaesthetic. His average time for inducing anaesthesia with the Vernon Harcourt apparatus was 8 min.

Dr. Bellamy Gardner argued that the important point was that the administrator's attention should be mainly directed to keeping the airway of the patient free. As to dosage, the corneal reflex was the best test for the depth of the anaesthesia; it was neither necessary nor safe to abolish it completely in both eyes during any surgical operation; in such cases central respiratory failure was apt to occur.

Dr. A. Waller referred to the importance of interference with respiration, which he attributed to retention of chloroform in the blood, and not to asphyxia proper. The mask he thought was dangerous in the hands of unskilful anaesthetists. Dosage or no dosage was the chief point: he emphatically said that dosage was desirable. If so, what kind of apparatus was preferable, the plenum or vacuum apparatus? The plenum apparatus, as the Dubois or his own, or any other, was preferable, as safer than the vacuum apparatus.

Dr. E. Willet had used the Vernon Harcourt apparatus 300 times, and it did not, he thought, come up to what was claimed for it: it was only of use in selected cases.

Dr. Levy and Dr. Hewitt replied.

CLINICAL SOCIETY OF LONDON.

Frederick Taylor, M.D., F.R.C.P., President, in the Chair.

Friday, December 9th, 1904.

Intussusception in Children.

Mr. Cuthbert S. Wallace read a paper on 20 cases treated at St. Thomas's Hospital and the East London Hospital for Children between the years 1898 and 1904. The ages varied

between 3 months and 33 months. There were 12 males and 8 females. Of the 20 cases 19 involved both the small and the large guts; the remaining case was one of the colic variety. Eleven were single tumours and 9 were double. The diagnosis was clinched by the finding of a tumour, and if there was any doubt of the presence of a tumour an anaesthetic should be given and the matter settled at once. The treatment was primary coeliotomy, the most convenient incision being through the right rectus beside the umbilicus. The author did not lay any great stress on the reduction of the tumour within the abdomen, but thought that time was the most important element in the treatment. The method of suturing the belly wall favoured was by deep sutures through the whole thickness and buried sutures through the sheath of the anterior rectus. By this method the danger of the incision coming open from failure of union was reduced as far as possible. Of the 20 cases 4 died, giving a case mortality of 20 per cent. If the 2 cases of resection were excluded the case-mortality fell to 11.11 per cent. A great fall in the case-mortality had taken place of late years. At St. Thomas's Hospital a marked increase in the number of cases of intussusception admitted had lately been observed.

Mr. C. H. Fagge read a paper based on the results of eighteen laparotomies for intussusception in children, of which 17 were primary and one was undertaken after two attempts at reduction by inflation had failed. He drew attention to the variable position occupied by the tumour, and insisted on the importance of routine rectal and bimanual examination, if necessary under an anaesthetic, as aids in coming to a prompt diagnosis. Duration before operation varied from five hours to three weeks, and no case in which the duration was less than forty-eight hours had been irreducible. Eleven were single and seven double intussusceptions, of which at least ten were ileo-caecal and three colic-ileo-caecal; probably eight of his cases would not have been, owing to their origin above the ileo-caecal valve, in any way affected by inflation or irrigation. Reduction was by laparotomy, carried out with all possible speed through an incision usually in the right semilunar line, aided if necessary by an assistant's finger in the rectum, which reduced the intussusception well into the descending colon. Five cases were irreducible and all were fatal; in one an artificial anus was formed, and in all the others resection was performed and the ends of the bowel united. Of the 18 cases 7 died, giving a mortality of 39 per cent.; of the reducible cases (13 in all) two died, a mortality of 15.4 per cent.; in the 14 cases under 1 year the mortality was 21.4 per cent., or excluding the two which were irreducible, there was only one death, giving a mortality of 8.3 per cent.

Mr. A. Barker had never had a case of double intussusception although he had operated thirty times. He agreed with Mr. Fagge that escape of the bowel from the abdomen was serious, as it prolonged the operation and increased the shock. He advocated the smallest incision into which the fingers could be passed—2 in. at the outside. Possibly the bursting open of the wound in the cases that had been described was due to the length of the incision. He had never met with such an occurrence. The first dressing, too, should be done under an anaesthetic. The high temperature following the operation was probably due to toxaemia. His latest statistics contained 7 fatal cases, in 4 of which there was resection of the bowel. In fact, resection in a young child was well-nigh hopeless; he had never seen such a case recover. Early operation was most important.

Dr. C. Box thought all acute abdominal cases should first come under the physician. An anaesthetic should be used for diagnosis in doubtful cases. He did not think the escape of intestines from the wound during operation added to the gravity of the case, whilst it often aided the operator greatly. The rare bursting of the wound was probably due to its failure to heal in consequence of toxaemia, as the intestine operated upon for perforation during typhoid sometimes failed to unite.

Mr. Douglas Drew had operated on 13 cases, including one of double intussusception; and had had three deaths, two from gangrene, one from toxaemia. He reduced within the abdomen, but withdrew the caecum to examine it.

Mr. F. W. Brook asked if one should never attempt inflation: he had lately had a successful case so treated.

Mr. W. G. Spencer considered that toxaemia might arise from the intestinal canal, the strangulated vessels, or the peritoneal cavity. Would stimulation of the peritoneal phagocytosis remedy the condition?

Mr. James Berry had witnessed forty or fifty of these operations; and never saw a recovery after resection in a child under 2 years old; so that he doubted its justifiability. It was consequently better to use force by pulling and pushing in attempting the reduction than to resect.

Mr. McGavin inquired how often after operation relapses occurred as compared with relapses after inflation.

The President remarked that he had formerly assisted at inflation, and had related successful cases to the Society.

Mr. Wallace, in reply, advocated the longer incision; one could thereby examine the bowel thoroughly. The breaking open of the wounds was not due to their length, but, he believed, to their failure to unite from toxaemia. He thought inflation should never be done, as one could not be sure that reduction had been effected. He also had never seen a successful case of resection in a child of less than two years. In some cases, as in prolapse of the ileum through the ileo-caecal valve, a direct pull upon the intestine as well as pushing and squeezing should be tried. He had never seen a recurrence after operation.

Mr. Fagge, in reply, insisted that laparotomy was the proper treatment for all cases, otherwise double intussusceptions might be missed. His incisions were always 3 in. long, for the smaller the incision the longer was the operation. He did not object to a temperature of 103° F. after the operation; such cases mostly recovered. He always pulled if he could not push the intussusception, notwithstanding what the books said, knowing that if the bowel could not be reduced the child was sure to die.

MEDICAL SOCIETY OF LONDON.

John Langton, F.R.C.S., President, in the Chair.

Monday, December 12th, 1904.

Subphrenic Abscess.

Dr. E. R. Hunt read a paper on the medical aspect of this subject, based on nearly 40 cases, mostly derived from the records of St. Mary's Hospital. The principal causes were enumerated. It seemed probable that an abscess might be set up by gastric disease without actual perforation. Perforation of the duodenum rarely gave rise to subphrenic abscess. The modes of localization of the abscess were described, namely, as a part of a general peritonitis, by direct extension from other parts, as by the lymphatics, and by the blood stream. The function of the suction action of the diaphragm and of gravitation were alluded to. In all cases in which posterior gastric perforation was treated surgically it was important to provide for free drainage in the space between the spleen and the diaphragm. The clinical features of the series of cases were described in detail. The complications of subphrenic abscess were described, such as infection of the pleura, affections of the lung, pyopneumothorax, mediastinal abscess, etc. The symptoms, signs, and differential diagnosis were discussed.

Mr. Cuthbert Wallace, in discussing the surgical side of the question, drew attention to the unreliability of the aspirator in the detection of pus from its lying in a thin tenacious layer on the surface of the liver. In his experience appendicitis was the principal cause. Fluid set free near the middle line of the abdomen tended to pass to the lateral parts and to invade either the pelvis or kidney pouches. Subphrenic abscess was nearly always intraperitoneal. Of the four routes of opening the abscess that through the abdomen was indicated only when the abscess was in the hypochondrium and not localized to the subphrenic region; that through the loin in early stages of appendix abscess tracking up the colon; that through the pleura was the ideal operation, in which at least 5 in. of rib (the ninth on the right and the seventh on the left) with its periosteum should be removed; and the combined route through the pleura and abdomen when the pus was too tenacious to drain properly. The incision for the removal of the rib was carried into the abdominal cavity. The mortality from the disease was still probably 50 per cent., and there was danger of reinfection of the peritoneum even when the abscess was localized and drained.

Dr. de Havilland Hall thought the chief difficulty was to find out the cause of the abscess; there might have been no gastric symptoms. The diseases with which the condition had been confounded were alluded to. The *x* rays were sometimes of service in diagnosis. The differential diagnosis between pyopneumothorax and a subphrenic abscess containing air was given.

Dr. A. Morison thought the condition of the thorax was the most important matter in diagnosis; the thoracic symptoms

were not proportionate to the gravity of the patient's condition. A small amount of serous fluid in the pleura was a valuable sign.

Dr. BERTRAND DAWSON referred to two cases due to typhoid.

Dr. PORTER PARKINSON alluded to cases due to suppurating hydatid cyst.

The PRESIDENT thought that in cases of subphrenic abscess surgical aid must sooner or later be called in if the patient's life was to be saved. In his experience the majority of cases were associated with appendicitis. Early recourse to operation was imperative. Often aspiration was of little value.

Dr. HUNT and Mr. WALLACE replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.—At a meeting of the Section of Pathology on November 25th, the President, H. C. EARL, in the chair, the following were among the cases discussed: Dr. W. J. THOMPSON narrated the case of a woman, aged 27, admitted to the Jervis Street Hospital for jaundice of one week's duration, and commencing a few weeks after her confinement. At first the case seemed one of ordinary catarrhal origin; all organs were normal, the urine showing only a trace of albumen. She seemed to improve the first week, but got worse during the second week. Nausea became almost constant and acute: sharp, spasmodic pains in the liver became severe. During the third week liver dullness greatly diminished. Leucin and tyrosin were detected in the urine, and at the same time urea was diminished. At the end of the third week severe nervous and cerebral symptoms developed, and she died three days afterwards—four and a half weeks after first sign of jaundice. At the *post-mortem* examination the liver was found to be small and soft, and only weighed 29 oz. All the abdominal organs were in a healthy condition, save for a small ovarian cyst. The clinical points of interest were: (1) The protracted length of the attack—four and a half weeks; (2) the acute, spasmodic, and agonizing liver pains; (3) no haemorrhagic manifestations. Professor E. J. MCWEENEY described the character of the liver more in detail. It was very soft and pulpy; capsule wrinkled, pale red with yellowish mottlings. On section it was mostly reddish with bright yellow patches; lobular markings obliterated. Microscopy showed complete necrosis of the liver cells and patches of round-cell infiltration; the fatty degeneration was moderate. A few bacilli were demonstrable, but they were ordinary putrefactive germs. Professor O'SULLIVAN remembered one case of the kind. He had some sections of it which showed more advanced degeneration than those exhibited by Professor McWeeney. The process seemed to be starting from the hepatic veins, the portal areas being less affected. The PRESIDENT had seen portions of a liver from an undoubted case of this disease. There was a large portion of the right lobe involved, and on section of this, more than half the affected portion was a brilliant red colour, and the rest an equally brilliant yellow. In the red area the liver cells had disappeared, and in the portal canals there was small round-cell infiltration. In the yellow areas were cells which looked absolutely normal. The process seemed to be progressing from the centre of the lobule to the periphery. Professor MCWEENEY, in replying, said he considered that the cells were completely necrotic, though their outlines were preserved. The preparations showed no well-preserved liver cells. The bacteriology of these cases was very interesting, because it was very important to eliminate the theory of living bacteria. He thought the theory of a toxaemic origin still held the field.—The SECRETARY (for Dr. E. F. STEPHENSON) read notes of a fatal case of glanders in a man.—Mr. STORY and the PRESIDENT exhibited a glioma of the retina, with microscopic sections.—Dr. MOONEY exhibited a glioma retinae removed from a child aged 3. The optic nerve was wholly invaded by gliomatous cells up to point of section, only the fibrous trabeculae remaining.—Professor E. J. MCWEENEY described the haematology of a case of myelaemia occurring in a man aged 41, who had been insane for six years. Two years ago he began to lose weight, and finally he was found to have a large spleen. He died fourteen months after, having no anaemia or haemorrhages until shortly before death. Blood films taken about this time showed: Polymorphs, 35 per cent.; myelocytes, 45 per cent.; transitionals, 3.5 per cent.; small lymphocytes, 2 per cent.; eosinophiles, polynuclear and mononuclear, 14.5 per cent. A certain number of mast cells were seen, and polymorphs with mitotic nuclei were readily found in the peripheral blood. The marrow films revealed giant cells, myelocytes, eosinophiles of both kinds, large and small hyaline mononuclear cells and normoblasts in varying proportions. Megaloblasts were very few. Professor WHITE said that one section showed what was probably mitosis. He was convinced that mitoses did occur in the circulating blood under certain conditions. Professor O'SULLIVAN suggested that the giant cells in the liver capillaries might have been marrow cells carried there. Professor MCWEENEY, in replying, said that the giant cells were products of the endothelium.

GLASGOW SOUTHERN MEDICAL SOCIETY. — At the first ordinary meeting, on October 20th, the PRESIDENT (Dr. James Hamilton) gave an address on the influence remedial agents exercise in the treatment of disease. He adopted a critical attitude, and, taking acute pneumonia as an example, referred to the widely-divergent methods of treatment by stimulating expectorants; cardiac tonics; by sedatives; or expectant solely; under all of which patients get safely through the ordeal. This naturally raised the general question whether drugs did not after all play a much smaller part than was usually supposed, and, further, as to whether in not a few instances they were even harmful, probably retarding the material progress of the disease, although affecting favourably for the time being one or other symptom. He contended that the treatment should be approached more from the point of view of the causation of disease, and showed by referring to Metchnikoff's researches on phagocytosis that there was a natural tendency in all diseases towards recovery provided the patient was placed in favourable conditions. These researches only confirmed the doctrine, held as far back as Hippocrates, that "Nature after all was the true physician of disease." He thought this was too frequently forgotten at the present day, and that the large use of drugs, and especially new drugs, clearly pointed to the inference that we had not yet outlived the merely empirical and symptomatic treatment of earlier times, and that we were thus even now largely the slaves of tradition, so far as the administration of drugs was concerned. He thought that with the exception of the antitoxin treatment, we had made no advance in the therapeutics of disease generally. He specially referred to the fallacious reasoning of the actions of astringents, that although it might be clearly demonstrated that an astringent when applied locally to a mucous membrane precipitated albumen, or contracted the vessels, or formed a protecting pellicle (Lauder Brunton) on the surface, it surely did not follow that it would have the same effect in remote regions or organs of the body. As an instance he pointed out that adrenalin had been advocated for remote haemorrhages, and while he was quite assured of its valuable services when applied locally he could not understand how men found it serviceable, say, in lung, kidney, or bladder haemorrhage, as it increased blood pressure from its being a cardiac stimulant. He had seen two cases of abdominal haemorrhage where, after the exhibition of adrenalin, instead of a diminution there had been a decided increase of the symptom. Any remote action astringents were generally credited with was due, he considered, more to the regimen advised—complete rest, lowering blood pressure, dieting, etc.—than to the drug administered. Experience teaches us, he continued, to discard a large part of the materia medica, and with increasing years we use fewer and fewer drugs. The drugs we know to have any direct action on disease were very few, and when we mentioned quinine in ague, mercury and potassium iodide in syphilis, and iron in anaemia, we had pretty well exhausted the list. Beyond these there was, of course, a larger list, which, if they could not be said to cure disease, at least affected it so very materially as to assist to a more comfortable life, such as the bromides in epilepsy, opium in diabetes, digitalis and the nitrites in heart affections, coal tar products in nerve affections, etc. All these were recognized as useful, but they were at best merely palliative. He concluded by urging the more careful study of the natural history of disease, especially in the early stages, and that the medical profession, as the natural custodians of the public safety, should aim rather at discovering and eliminating the causes that lead to disease. Only in this way would general practitioners keep themselves abreast of the times and be able to assist the operating surgeon, who so often complained that he saw the cases too late to be of much service. If we took advantage of, and made ourselves familiar with, every new method of diagnosis—especially bacteriological—and adopted a more thorough and systematic method in the examination of our patients in the daily work of the consulting room, we would find ourselves infinitely more serviceable to our patients and would hear fewer complaints from the surgeons.

Liverpool Medical Institution.—At a pathological meeting on December 8th, Dr. Briggs, Vice-President, in the chair, among other specimens demonstrated, Mr. Rushton Parker showed a large ureteral calculus removed by suprapubic cystotomy, and a radiograph showing the calculus in the pelvis. He also exhibited several prostates removed by perineal prostatectomy: the microscopic specimens showed their structure to be that of an adenoma.—Messrs. Thelwall Thomas and E. Cleaton Roberts showed several specimens, one a tumour of the skin of the back which had the structure of a rodent, but secondary deposits were present in the glands of the axilla; another was a carcinoma of breast with markedly columnar-cell formation.—Dr. Nathan Raw showed three remarkable specimens of new growths of the lung which he considered to be primary lymphosarcoma. Dr. E. E. Glynn and Dr. Warrington considered that one of these might be carcinoma.—Dr. E. E. Glynn showed a specimen of very dense pleura the result of universal pleurisy of one side. It was demonstrated by microscopic structure and the presence of bacilli to be tuberculous; no lesion was found in the lungs.—Dr. Thurstan Holland exhibited the series of radiographs which had been awarded the medal of the Royal Photographic Society.—Dr. J. W. Stephens showed the larvae and flies of myiasis and the beetle larvae of canthariasis, and read a short note on the condition.—Mr. Monsarrat demonstrated the method he had used for some time to mount appendices in gelatine. The organ, after being placed in a mixture of potassium nitrate, potassium acetate, and formol, was washed in weak spirit, and then placed in large test tubes containing 25 per cent. of gelatine and 5 per cent. of carbolic acid.—Drs. E. E. Glynn and Roaf related the histological and chemical phenomena in a case of very marked diabetic lipaemia. Fat was demonstrated in the intestinal villi, the liver, heart and kidneys by means of osmic acid and sudan III, and it was shown that these reagents had a varying affinity for fats. The chemical analysis showed that the proteids in the blood were increased, and that the ethereal extract of the "fat" contained a considerable amount of some as yet unknown body.

Epidemiological Society.—At a meeting on November 18th, Dr. B. A. Whitelegge, the President, took for the subject of his inaugural address the Epidemiological Aspects of Industrial Diseases. Though there were many gaps in the knowledge of these diseases, there were, he held, sufficient data for inquiries. The numbers, age, and sex constitutions of the workers and the conditions under which they worked were very constant. The Public Health Act applied to them, as to the rest of the population, while the Factory Acts dealt with industrial conditions as a whole, as well as with those of particular trades and processes. A mean temperature of 62° F. was aimed at, but frequently far higher, and occasionally lower, temperatures were required. Limits had been set to the amount of vapour in the air of a workroom, but some processes could not be conducted except in a moist atmosphere. Adequate ventilation was insisted on, but had never been defined; nor had any standard of permissible impurity, as measured by the excess of CO_2 above the normal 3, 4, or 5 parts per 10,000 of pure air, been determined, since no definite relation between the proportions of 6, 9, or even 12 parts per 10,000, and the amount of sickness or the death-rate had been made out; where, however, in special cases, it had been fixed at a low figure the results had been very satisfactory, and much might be looked for from the reports to be published by Dr. Tatham on the influence of ventilation on phthisis. Great benefits had resulted from the efforts at the prevention or removal of dust and fumes by the use of sprays, exhaust fans and closed chambers for particular processes, and the protection of the workers by respirators, baths, etc., or by the substitution of other and safer materials, and the exclusion of children and susceptible persons. The vaccination of women employed in laundries, though not statutory, was a precaution of this kind. Infectious diseases generally came under the Public Health and Notification Acts, but the age-constitution of the operatives was not favourable to the spread of most infectious diseases, though mild unrecognized cases of small-pox, influenza, and diphtheria occasionally led up to epidemics. Small-pox and anthrax were spread by rags, hair, wool, and hides, which were often in so filthy a state as to lose 40 per cent. of their weight in washing. Other communicable diseases of industrial origin were tetanus, which had of late appeared somewhat frequently in jute mills, the spores being derived from the Indian soil, and skin diseases on the hands of fish-curers, which were probably connected with some disease of the fish. Ankylostomiasis was at present confined to a few west-country mines. As to the inorganic poisons—arsenic, mercury, lead, and phosphorus—the different symptoms were due to individual susceptibilities, the dosage, and the form or combination in which the poison was presented; thus, with lead, the duration of exposure, together with the dosage, determined the character of the phenomena, whether colic, convulsions, paralysis, to which men seemed more liable, or nephritis, while women were prone to abortions and sterile. Arsenic caused fewer deaths than might have been expected, and the symptoms caused by minute repeated doses, as in the recent beer poisoning, differed entirely from those met with in workshops. It was possible that some effects might be traced to the arsenical fumes given off from coal and coke fires. Phosphorus poisoning had been rare since red phosphorus had been substituted so far as possible for the white, the latter treated in closed vessels and the teeth of all workers inspected, though there was some doubt as to whether the caries was caused by or did not rather merely facilitate the entrance of the poison. Workers in these were "not as other men," they were always under the influence of "therapeutic" doses of these drugs or poisons which might predispose them to, or modify the course of, organic diseases. Hospitals in centres of industry provided ample materials for observation, but statistics were of little value unless attention were concentrated on particular processes, and the workers followed to their deaths, which might be deferred for years after the employment to which they were due had been abandoned.

Medico-Psychological Association.—The autumn meeting of the Irish division of the Medico-Psychological Association of Great Britain and Ireland was held on November 4th, at the Royal College of Physicians, Dublin. Dr. F. E. Rainsford occupying the chair. The report of the Statistical Committee having been considered and approved with certain modifications, and some other business having been transacted, Dr. Conolly Norman read a paper entitled Modern Witchcraft; a Study of a Phase of Paranoia. The sense of mystery was, he said, probably one of the primitive phases of thought, and in its morbid development was found intimately associated with suspicion in paranoia, a combination of which the belief in witchcraft furnished an example in the sane. One of the most frequent supposed manifestations of malign power in witchcraft was operation upon some object belonging to or representing the individual whom it was desired to injure, and this idea was common, in a modern garb, among the paranoiacs of to-day. Three cases were then detailed at length in which the patients believed themselves injuriously affected by operations conducted respectively upon an autograph signature, "the dry-plate" of the patient's portrait, and the phonogram of the patient's voice. The paper was discussed by Drs. Drapes and Leeper.—Dr. R. R. Leeper read notes on two cases of cancer of the liver in chronically insane patients suffering from visceral delusions, and called attention to the connexion between the physical and mental states. In both cases the patients' general health had remained excellent until a short time before death, although at the autopsy their livers were found to be very extensively infiltrated with cancer. The paper was illustrated with several microscopic preparations. Dr. Rainsford emphasized the fact that mental symptoms were often explained by the post-mortem discovery of visceral disease. He had not met with cancer of the liver in the insane, but gall-stones were common. Dr. Norman did not consider cancer of the liver uncommon in the insane, but alluded to the rarity of cirrhosis; this was curious, since so many insane patients were alcoholics. Dr. Nolan and Dr. Drapes supported Dr. Norman's view as to the infrequency of hepatic cirrhosis in the insane. Dr. Dawson also joined in the discussion, and Dr. Leeper replied.

Therapeutical Society.—At a meeting of the Therapeutical Society on November 22nd, Sir Lauder Brunton presiding, the Secretary read a paper for Dr. Gordon Sharp, of Leeds, on Strychnos toxifera and other paralysers of motor nerve endings. Many people, he said, had endeavoured to discover the plant that produced curare, but in vain, until Mr. Quelch brought him some poisoned arrows and specimens of the plant given him by an Indian chief of Guiana. The plant was proved by Mr. E. Holman to be the Strychnos toxifera, and curarine was found in the bark but not in the

leaves. This alkaloid was very deliquescent and easily decomposed. Its salts were more permanent. Commercial curarine contained 9 to 11 per cent. of the alkaloid. Curare had been used in chorea convulsions, and to prevent painful spasms in moving wounded persons. Its action might be compared with that of strychnine, delphocurarine, alstonine, aconite, snake poison, and diphtheria toxin. The President said that the paper reminded him of one by Majendi on the Upas poison, which was strychnos nux vomica. He considered that alstonine might be useful in cases of excessive itching, in diabetes, and albuminuria. Dr. G. Crichton remarked that death from curare in frogs occurred only after forty hours, while strychnine killed them in two hours.—Mr. G. Moor, F.I.C., read a paper on brandy, showing that though the different constituents of brandy could be accurately estimated by chemical analysis, it was quite possible to prepare a brandy which would answer every analytical standard. Brandy factories should, therefore, be properly inspected by Governments, as was the case with the Orion brandy factory in Australia. Sir Lauder Brunton said that some wines promoted merriment and other kinds quarrelsomeness, but it was impossible to say what this depended on, and so it might be with different brandies. Mr. McEwen said that nine-tenths of the brandies commonly sold were not really brandy at all, but a mixture; ether could so easily be added. Sir B. Richardson always prescribed tinctures instead of spirits, as being more constant in composition.

Laryngological Society of London.—At a meeting on December 3rd, Dr. Law showed a case of incrustations in the trachea, which had been shown at a former meeting. The patient suffered from considerable dyspnoea, and the question was raised as to whether tracheotomy might not be necessary. —Dr. Bronner showed some crusts from a case of dry catarrh of the nose and nasopharynx, which had been treated by formalin spray.—An interesting case of epithelioma of the larynx was shown by Sir Felix Semon. Thyrotomy had been performed, but was followed by fairly rapid recurrence. Subsequently a great part of the affected half of the larynx was removed, and the man made an excellent recovery. The striking part of the case was the extraordinarily good voice left.—An apparently almost unique case of a bony growth in the ethmoidal region of the nose in a girl was shown by Dr. Lambert Lack. There was obstruction of the maxillary ostium from the growth, and mucocele of the antrum. The diagnosis, microscopically suggested, was ossifying sarcoma.—Two cases were shown of tumours in the neighbourhood of the tonsil—one by Dr. Wyatt Wingrave, in a female aged 64, and the second by Dr. Tilley in a young man. In Dr. Tilley's case there were a large number of enlarged cervical glands, and in both cases the diagnosis was that of a lymphosarcoma. In Dr. Tilley's case the glands and the enlargement of the tonsil had almost entirely disappeared under the influence of large doses of arsenic.—An interesting case of chronic laryngitis in a man aged 32 was shown by Dr. Cathcart. The general opinion of members was that the condition was one of extreme pachydermia.—Mr. F. J. Steward showed a case of complete paralysis of the left vocal cord, due to a tumour of the thyroid. The clinical aspects of the tumour were those of non-malignancy, but the case was shown with the view to eliciting opinions on the point.

Ophthalmological Society of the United Kingdom.—At a clinical meeting on December 8th, Mr. John Tweedy, P.R.C.S., President, in the chair, the following were among the demonstrations given: Mr. E. Harries Jones showed a patient whom he had had under treatment since June 1st, 1904; his vision in the right eye was then $\frac{6}{6}$. Proptosis developed, and in August the vision was barely $\frac{6}{18}$. The orbit was explored and a soft, rounded mass was felt in the region of the optic nerve. On November 12th the vision was $\frac{6}{12}$, but by December 8th it had improved to $\frac{6}{9}$. Potassium iodide was given till October 1st, and the fields had always been full. In September there was some slight exudation on the papilla, with striate haemorrhages at the edge of the disc, all of which became absorbed. There was no history of venereal disease.—Mr. G. Winfield Roll showed a male infant, aged 14 months, with marked proptosis of each eye without pulsation. There was lateral nystagmus, and the child was apparently blind. The discs were atrophied, but the vessels were about normal in size; in the right eye were patches of choroiditis. The child was mentally deficient, but could sit up unaided. The testicles were undescended. There was abundant mucous discharge from the nares, but otherwise the child appeared healthy. The family history was not obtainable.—Mr. Devereux Marshall showed a well-marked case of posterior lenticonus in a woman aged 23. The vision in this eye was $\frac{6}{60}$, and in the other eye $\frac{6}{6}$. —Messrs. G. W. Thompson and Edgar Chatterton showed some sections of a cyst of Krause's gland. The patient from whom it was removed was 25 years of age, and when 13 had her lid cut accidentally; the mass had been growing since then, and had reached the size of a small pigeon's egg.—Mr. George Coats showed two sisters who had similar abnormalities in the branching of the retinal vessels. A third sister had minor peculiarities. —Mr. Leslie Paton showed a patient suffering from endothelioma of the orbit, sections of which had been shown at the last meeting of the Society. The patient, a female, aged 38, was first seen in May last, when there was slight lateral proptosis of the right eye; her vision was $\frac{6}{6}$, and the fundus was normal. Mercury and iodide produced no effect. An attempt was made to remove the growth without the eyeball, and this was done on September 20th, but it was found to extend to the posterior angle of the orbit. Its speedy recurrence, as well as its microscopic appearance, showed it to be an endothelioma. He also showed another patient upon whom he had operated for symblepharon. The mucous membranes of three frogs' mouths were used to cover a large area in the lower conjunctival cul-de-sac. The condition was produced by orbital cellulitis. During the year that had elapsed since the operation there had been practically no shrinking.—Mr. Stanford Morton exhibited a man, aged 28, who had suffered from recurrent haemorrhages into the vitreous, since which new vessels had developed in the vitreous.

British Gynaecological Society.—At a meeting on December 8th, Professor J. W. Taylor, President, in the chair, Dr. H. Macnaughton-Jones showed an alveolar carcinoma of the Fallopian tube, and alluded to the 53 cases recently tabulated by Mr. Alban Doran, most of which were papillomatous, the uterus being affected in 6 only. Neither uterus nor ovary was involved in the present case.—The President showed two Fallopian tubes removed at a third Caesarean section after being ligatured twice in previous operations. The inadequacy of ligature to prevent conception was, he said, now fully recognized; the better way was to remove the tubes with their insertions into the uterus by wedge-shaped incisions in the cornua.—Dr. William Alexander read a paper on adenoma of the endometrium, illustrated by microscopical sections, photographs, and lantern slides. He reported 5 cases in which the uterus was removed, with good results to the patients, on account of recurrent haemorrhage resisting all forms of treatment. In all cases the uterus was practically unchanged in size and shape: its cavity, however, presented a very definite and uniform appearance—a thick, semigelatinous, semifibrous membrane, running into folds or polypoid masses, affecting the whole of the mucous membrane of the cavity and of the uterine ends of the Fallopian tubes. It had been described by Dr. F. Griffith, of the Thompson-Yates Laboratory, as adenoma of the endometrium.—Dr. Macnaughton-Jones mentioned 2 cases of glandular hyperplastic endometritis, previously exhibited, in which the adenomatous change described by Dr. Alexander had been present.—Mr. Bowreman Jessett said that he had seen similar cases, and was certain that the gelatinous alteration in the mucosa was a pre-cancerous condition which, in time, would develop into malignant disease. He had known cases pronounced to be benign, on the evidence of curette scrapings, which afterwards became malignant.—Dr. C. H. F. Routh condemned the removal of the uterus except for the proved presence of malignant disease; he had invariably been able to control metrorrhagia by the intrauterine use of caustics or a red-hot iron.—Dr. Heywood Smith thought it was only when such treatment failed that hysterectomy should be considered.—The President questioned whether a woman was in a much better condition after the introduction of a red-hot iron into her womb than after hysterectomy; Mr. Lawson Tait, however, used the actual cautery extensively and with good results.—Dr. Alexander, in reply, said that in his experience the disease was not malignant, but he regarded the removal of a uterus which was not only useless but a source of weakness, as, nowadays, no heroic treatment; it was, in these cases, a simple and safe operation for a very grave disease. He always removed the uterus by the vagina and left the ovaries.—Dr. R. T. Smith showed a tubal sac containing a fetus with its head towards the uterus, which, in its structural complete-

ness, was a remarkably interesting specimen of ectopic gestation, the more so as the diagnosis had depended almost entirely on the physical signs, the patient, a Polish Jewess, knowing but little English.

REVIEWS.

ANTENATAL PATHOLOGY.

The first volume of Dr. Ballantyne's *Manual of Antenatal Pathology*—namely, that treating of the fetus—appeared in 1902; the companion volume now issued,[1] dealing with the embryo and the germ, completes the work. The two volumes together form a treatise on the principles of antenatal pathology, which is without a rival, and will deservedly rank as the standard work upon this subject. The subject itself is not only one of great interest from the standpoint of the scientific pathologist, but has bearings of practical importance in every department of medical science and practice. It is a subject, however, that has not hitherto received the general attention that is due to it, owing probably to the absence of a complete and systematic treatise, and it may be hoped that Dr. Ballantyne's manual will be the means of gaining for this branch of pathology a recognition in some measure proportionate to its importance.

The causes of antenatal disease are found, on ultimate analysis, to be identical with those which are active in postnatal life; but not only is the incidence of these causes affected by the environment of the developing organism, but their effects, as seen in the pathological states produced, are influenced in a striking degree by the physiological activities peculiar to the period within which the causes operate. The author gives great prominence to these physiological considerations, and adheres consistently throughout his work to the physiological point of view, which he justly regards as of signal importance for the comprehension of this intricate subject. He accordingly divides antenatal pathology into three sections, corresponding to the three periods into which antenatal life is naturally divided by differences in the physiological activities of the developing organism; these periods are the fetal, the embryonic, and the germinal.

The middle or embryonic period commences with the appearance of the first traces of the embryo in the embryonic area and terminates at the end of the sixth week of intrauterine life. The physiological phenomenon which specially characterizes this period is organogenesis, or the formation and differentiation of the organs and tissues of the body. The author illustrates the process of organogenesis by descriptions of the conditions of the embryo in succeeding weeks of early intrauterine life, commencing with a description of the early human ovum of Peters. The corresponding pathological states characteristic of this period are defective formations or malformations. Almost the whole of embryonic pathology is therefore included within the limits of teratology, and to this subject the second volume of Dr. Ballantyne's work is mainly devoted.

In dealing with the embryological theory of teratogenesis the author devotes a chapter to the consideration of the factors chiefly concerned, namely, (1) the physiological factor already referred to, (2) the amniotic factor, which in the main corresponds to the environment of the embryo, and operates by compression arising through defective development of one or other of the amniotic folds, or by the action of amniotic adhesions, and (3) the germinal factor, the existence of which in embryonic pathology is shown by frequently-occurring evidences of hereditary influence. Next follows a very able historical account of the theories of teratogenesis which have been held from the earliest times to the present day and of the modifications which they have undergone. In this historical survey the author discusses fully the question of the influence of maternal impressions, the theories of traumatism, of funic, amniotic and fetal pressure, the nosological theory, in which disease of the embryo or its membranes is regarded as the predominating factor, and, finally, the modern or embryological theory of developmental arrest, in connexion with which the bearings of experimental teratology, and more especially the work of Dareste and Féré, receive due consideration. The chapter on the nosological theory of teratogenesis contains a very lucid presentment of the amniotic theory and of the facts which have led to the belief that the amnion is one of the most important factors in the production of embryonic malformations. The author concludes the consideration of the general principles of embryonic pathology with a historical sketch of the systems of classification which have been adopted by previous writers, and after devoting two chapters to general and partial macrosomia and microsomia, forms which arise through disturbances of growth and serve as connecting links between fetal and embryonic pathology, proceeds to the systematic consideration of malformations of the embryo.

In describing the embryonic terata the author adopts a regional classification, taking in order the anomalies of the spinal column and its contents, the cranium and its contents, the face and the organs of sense, the neck and its constituent parts, the thorax and its contents, the abdomen and pelvis and their contents, and finally the embryonic annexa. In a work dealing primarily with the general principles of antenatal pathology a complete description of every anomaly that may occur in the body is not called for; on the other hand, the application of general principles in the elucidation of anomalies should be amply illustrated for every region of the body. Acting upon this principle, the author, in treating of each region, has chosen some one type of malformation which will serve to illustrate the application of teratological principles to the region, and has described that type in detail. Other malformations are less fully described, and the sources from which additional information may be obtained are in every case indicated in a copious bibliography, the references in which it has been an especial care of the author to render full and accurate.

Before entering upon the subject of germinal pathology the author devotes a chapter to heterotaxy or transposition, the teratogenesis of which is still obscure, but which in all probability is appropriately placed between the morbid states of the embryo and those of the germ.

The pathology of germinal life is dealt with in the last fifty pages of the volume. The author does not claim to have attempted more than a sketch of this part of the subject, but the outlines are drawn with a skilful hand, resulting in a suggestive account of the physiological and pathological events of this period in no degree falling behind the other parts of the work in point of interest. Germinal life commences in the ovum and spermatozoon which are to unite to form the future embryo, and it terminates with the appearance of the first traces of the embryo. The chief physiological events which characterize this period are the separate existences of ovum and spermatozoon within the genital glands, the maturation and fertilization of the ovum, the passage of the ovum from the ovary to the uterus, segmentation and the formation of the blastodermic vesicle and lastly the formation of trophoblast, amnion and umbilical vesicle, and of the first rudiments of the embryo. The pathology of maturation may be held to include such phenomena as the segmentation of the unimpregnated ovum in parthenogenesis, leading possibly to the production of dermoids of the ovary and certain teratomata of the testicle; that of fertilization includes the phenomenon of polyspermy or the fertilization of the ovum by more than one spermatozoon, the cause, according to modern ideas, of the production of double monsters. Under the heading of the pathology of the morula, the effects of experimental destruction of one or more of the blastomeres are appropriately described, and the view is expressed that in the human subject it is possible that blastomeres may be suppressed in this stage leading to such defects as, for instance, that met with in certain abortionsacs in which no trace of an embryo is present. Again, certain of the blastomeres may remain for a time in an undifferentiated state as Cohnheim's rests, which, by a resumption of activity in later life, may give origin to neoplasms of various kinds.

Possibly in this way some cells of the embryonic annexa (trophoblast, amniotic, or other) become embedded in the embryo itself, and give rise to the curious growths in the male which histologically resemble the hydatid mole, and the chorion-epithelioma in the female.

Under the pathology of the blastocyst, hydatid mole and chorion-epithelioma are briefly considered, as well as the defective development of the amnion, which is of such influence in producing malformations in the succeeding period of antenatal life. The only part of germinal pathology which is treated at any considerable length is the subject of poly-

[1] *Manual of Antenatal Pathology and Hygiene: The Embryo* By J. W. Ballantyne, M.D., F.R.C.P.E., F.R.S.E. Edinburgh: William Green and Sons. 1904. (Demy 8vo, pp. 717. 21s.)

somatous terata, pathological forms which the author considers are determined in the germinal period. A chapter is devoted to this subject under the subheadings of uniovular twins, allantoido-angiopagous twins, double terata, and triplets, quadruplets, and other plural births. The pathology of the first or preconceptional period of germinal life is identical with morbid heredity, and to this subject the author devotes the concluding chapter of this most interesting volume.

NEUROLOGY.

Dr. Galezowski's book on the fundus oculi in nervous diseases[2] consists for the most part of an account of the ophthalmoscopic observations made by others. Of its 150 pages, about 30, which are scattered throughout the volume, are purely bibliographical. Several pages are taken up with remarks on nervous diseases in which ophthalmoscopic examination has always given negative results. For example, one whole page is devoted to progressive muscular atrophy, but on it there are only three lines of descriptive matter, and those are to say that in this disease there are no characteristic visual changes. Besides these there are six pages of preface. When all this is allowed for it will appear that there is not very much left. The subjects which receive most attention are tabes, multiple sclerosis, cerebral tumour, and meningitis. A general idea of the scope of the book may be gained from an account of the manner in which tabes is dealt with. First there is a section on the frequency of optic atrophy in that disease, with a historical account of its recognition; then the ophthalmoscopic changes as regards the optic disc, the vessels, the retina, and the choroid are described; next, alterations in visual acuity, limitations of the visual field, modifications of colour vision, and such concomitant affections as muscular palsies and pupil changes are discussed; there is then a section on the prognosis of these ocular manifestations which, summed, up, amounts to this, that it is bad, but shows oscillations, the statement being made that not infrequently improvement in visual acuity takes place as the result of mercurial treatment: and lastly, there is a section on the etiology of the disease, which has of course special reference to syphilis. In regard to multiple sclerosis, a fact which is well known to neurologists is emphasized, that the prognosis of optic atrophy in this disease is much less serious than in tabes. The most interesting part of the book is probably that dealing with the subject of cerebral tumour, but even in this we have not observed anything of importance that is new. The effect of trephining in relieving the papillitis associated with cerebral tumour receives a satisfactory share of attention. As a whole, the book may be considered as a fair representation of current knowledge in this part of clinical medicine, but it may safely be said that it cannot be compared in excellence with, for example, the well-known work on much the same subject by Sir William Gowers and Mr. Marcus Gunn. The plates, which are in colour, are flat, lacking in detail, and cannot even be called artistic. The book might well be read through in a more or less cursory manner, but it is hardly the book to take as a standard work.

The object of Dr. F. Savary Pearce in writing his *Practical Treatise on Nervous Diseases*[3] for the general practitioner and the medical student was to "curtail details of the doubtful points in neurology, and to make most in small compass of practical facts in the study of nervous disorders." He has certainly curtailed details both of the doubtful and other matters in neurology, but he does not seem to have by any means accomplished the second object. The book is almost without system. In a short section entitled "Paths of Spinal Cord for Pain, Heat, and Cold; Muscular and Tactile Sensations," the following sentence occurs: "When there is a lesion in the pons there is a paralysis of the face on one side, and of the arm and leg on the opposite side. This is known as crossed hemiplegia." The sentence has nothing to do with the heading, and, in point of fact, is not true for the pons in general, nor does its repetition on a subsequent page make it any more satisfactory. The treatment of the subject of diagnosis is feeble to a degree. In relation to encephalitis there are twenty-six words, and just half of them consist of the following: "It should not be confused or confounded with any other form of disease," and of the few lines in regard to the diagnosis of cerebral tumour, the greater part of one consists of the statement, "This is a difficult matter, indeed." Among a group of prescriptions at the end of the book is one "for anaemia in neurasthenia," which is "Pil. Blaud, gr. v." The author, as it appears to us, has thought it would be possible to make a difficult subject easy by giving scraps of a bald outline; it would be too much to say that its matter gives a complete outline of neurology. There are many books on the subject of less compass much better, and in any case we are unable to recommend this work.

[2] *Le Fond de l'Oeil dans les Affections du Système Nerveux.* Par le Dr. Jean Galezowski. Paris: Felix Alcan. 1904. (Demy 8vo, pp. 152. Fr. 5.)

[3] *A Practical Treatise on Nervous Diseases for the Medical Student and General Practitioner.* By F. Savary Pearce, M.D. London: Sidney Appleton; and New York: D. Appleton and Co. 1904. (Demy 8vo, pp. 422. 14s.)

TREATMENT AFTER OPERATION.

Mr. P. L. Mummery's treatise *On the After-Treatment of Operations*[4] has already attained popularity, as shown by the appearance of a second edition less than a year after the first. Such a book was undoubtedly wanted; in the textbooks of operative surgery after-treatment is dealt with to a certain extent, but there is no English textbook in which the subject is considered in such detail as in this. The first seven chapters deal with general subjects, shock, haemorrhage, etc.; in the rest of the book particular operations are considered according to regions and systems. In the introductory chapter there is an interesting paragraph on posture after operation in which the author argues against the routine enforcement of the dorsal recumbent position. In considering the treatment of operation wounds it is stated that a rise of temperature during the first or second day after operation is to be expected, and in 27 per cent. a rise over 100° F. is not looked upon as exceptional; this does not exactly correspond with the experience of some surgeons who avoid chemicals and wear gloves. The subject of shock is admirably treated, and in this edition has been to a great extent rewritten. The researches of Crile and others on the physiology of the condition are given in considerable detail, and their bearing on its treatment is well brought out. As is well known, these researches have rendered necessary considerable alterations in the hitherto accepted methods of combating shock, and Mr. Mummery has fully appreciated this. Thrombosis after operation has given rise to much interesting discussion of late; the three cases illustrating this complication which the author gives are instructive, in all pulmonary infarction took place, but in none was it fatal. Of the chapters devoted to the after-treatment of special operations, those on empyema, laparotomy, and joint operations, are the best. In the last the author perhaps exaggerates the urgency of commencing movement after excision of the elbow. The chapter on the genito-urinary system might well be enlarged in order to give more detailed instruction, and it is to be noted that external urethrotomy is not considered. Mr. Mummery's style is dogmatic in a good sense; his book will appeal to the necessities of many, and the house-surgeon in particular will find that here at last he has got what he has wanted.

THE TREATMENT OF HIP-JOINT DISEASE.

It is somewhat unfortunate that in his work on the practical treatment of coxalgia[5] Dr. Calot should adhere to the old and incorrect nomenclature, and designate hip-joint disease by the word coxalgia, which etymologically signifies pain in the hip and not the disease itself, for which "coxitis" is the appropriate term. The work is, however, original in its scope and in much of its material. The writer places himself in the position of the general practitioner who is called upon to treat a case of hip disease and is bewildered by the numerous and often conflicting recommendations given in textbooks. Dr. Calot early intimates his intention to conduct the inquirer from the beginning to the end of treatment. This is rather an onerous undertaking, and it remains to be seen how the author acquits himself in his task. There is a great deal of the personal element throughout the book, but it is the better for that reason when the writer is such an authority on his subject as Dr. Calot. The method adopted by him in carrying out his scheme is that of question and answer, but this is not done in the style of a catechism, but rather that of proposition, problem, and skilfully-reasoned reply. Another

[4] *The After-Treatment of Operations: A Manual for Practitioners and House-Surgeons.* By P. Lockhart Mummery, F.R.C.S. Second Edition. London: Baillière, Tindall and Cox. 1904. (Crown 8vo, pp. 248; 37 illustrations. 5s.).

[5] *Technique du Traitement de la Coxalgie* [The Practical Treatment of Coxalgia]. Par Dr. Calot, Surgeon-in-Chief of the Rothschild Hospital, etc. Paris: Masson et Cie. 1904. (Demy 8vo, pp. 238, 178 illustrations. Fr. 7.)

valuable point about the book is that at the head of each chapter there is placed a succinct summary of its contents. The first part of the volume is devoted to a practical study of the therapeutic measures at our disposal, and the second gives accounts of cases illustrative of the varying aspects under which coxitis presents itself, and how the therapeutic measures detailed in the first part should be associated and combined in treatment. This is an admirable method of dealing with a difficult subject, and we have no words but those of commendation for the striking manner in which Dr. Calot has effected his purpose. As an instance of his method, we may take his description of the application of plaster-of-paris for fixation of the hip-joint. He shows that there are two ways of doing it: one the usual method, which does not fix the joint; and the other, that which he has adopted, which is effective. The illustrations are ample and excellent, and, as in many French works, some are highly artistic, and therefore pleasing. The book may be read with great pleasure, and the writer has done good service to surgeons in laying before them so clearly and pleasantly the results of his extensive practice in the treatment of diseased hips.

NOTES ON BOOKS.

We have received a copy of a medical account-book, entitled *The Simple Medical Yearbook, or Private Medical Ledger*.[1] Although opinions might differ as to its simplicity, there can be no doubt that a good deal of time and care has been given to its compilation. The general scheme seems to be to group in parallel columns places for cash owing and cash actually received, and in sundry other parallel columns places for tabulating the various items of expense usually incurred in carrying on a medical practice. Each page is arranged for one week, with the exception of five, four of which are intended to carry on the accounts to the corresponding quarters, and the fifth is arranged to show the annual result. There are memoranda pages at the end of the book, arranged alphabetically, and it contains also an explanation of the way to make an income-tax return, which ought to be found useful.

Cycle touring does not sound exactly attractive at this time of the year, but those who enjoy castle building might do worse than map out a holiday for next summer with the help of *Cycle and Camp*,[2] by Mr. T. Holding. The author for the past fifteen years has spent an annual holiday in cycling, and has made himself independent of inns by carrying a complete camp outfit with him. It sounds like a healthy kind of holiday, and how the author manages is told in a pleasantly-written sketch of an actual tour in Connemara.

The sixth volume of the fourth series of the *Medical Chronicle*[3] is made up of the numbers of this periodical which appeared between October, 1903, and March, 1904. It contains a certain number of original contributions and brief notes of the central point of such medical, surgical, pathological, and therapeutic articles in other journals as happen to have attracted the notice of the editor and his collaborators. The volume contains an index and a list of authors.

Garden Books.

Mr. Sanders has written many interesting and valuable books on gardening, and his last production, *Vegetables and Their Cultivation*,[4] surpasses, if possible, any he has yet given us. He is widely experienced in all kinds of gardening, so we turn with confidence to all he says on the subject. The present work is the most complete of its kind with which we are acquainted, and should be in the possession not only of the amateur, who will find it easy of comprehension, but of all professional and scientific gardeners. The chapters deal with soils, manures, cropping, pests and diseases, and popular vegetables. There is a table showing when to sow or plant, when crops are ready for use, the time they take to reach maturity, and so on. The notes on popular vegetables are excellent. Peas, which we all know, may be taken as an instance. The author gives the botanical name, foreign names, natural order, native habitat, duration, history, uses, soil, manures, distances and depth for sowing, early, second early, main, and late crop peas, pea protectors, general culture, forcing peas in pots, gathering the crop, exhibition notes. In a similar manner he deals with other vegetables, whether common or rare. The illustrations—140 in number—are life-like; there are also eight photo plates and five coloured plates of insect pests. There is an alphabetical index.

Nowadays, when new houses are springing up in every direction, with space for a garden attached, people want to know how to lay out those gardens to the best advantage, and to have a brilliant display in the least possible time, and at the least possible expense. For such as these *How to Make a Garden*[5] has been written. The author starts with the soil, and the laying out of a garden, and works through all the various gardening operations, how to grow plants and vegetables, what to grow, etc.; and with the aid of the very excellent illustrations no one should fail to be his own very successful gardener.

The *Amateur Gardener's Diary and Dictionary*[6] will be found invaluable by every one wishing to make the best use of every day and month in the gardening year. It is admirably arranged. To each month are devoted ten, or, in the case of busy months, twelve pages. On one hand there are notes on weather conditions during the month, general and special work to be done in frames, greenhouse, with fruit, vegetables, and hotbeds, planting, pruning, potting, cutting, and forcing; on the other is space for a record of each day's work. A page is devoted to garden accounts. The dictionary will be found most useful. An appendix in tabular form mentions plants worth growing.

Diaries.

We have received from the offices of the *City Press* a copy of a carefully-prepared but inexpensive form of diary and almanac known as *The City Diary*. It has been specially designed to meet the needs of those who work in or about the City of London, and, in addition to ordinary almanac information, there are some twenty-three pages of indexed notes, which convert the book into a comprehensive directory of the various municipal, social, and parochial institutions connected with the City. The diary part gives three days to a page, and is interleaved with good blotting-paper.

Messrs. Bale, Sons, and Danielsson have issued a diary and appointment book for 1905, quarto form, for the use of dental surgeons. There are spaces for the entry of appointments at every hour from 9 a.m. to 5 p.m., and an ample supply of index sheets. The early part contains a good deal of useful information, including notes upon such things as the dental requirements of the army and navy. The price is 7s.

NOTES ON NEW REMEDIES.

Malachite Green.

In the translation of a paper on Trypanosomiasis by Professor Robert Koch,[1] reference was made to the employment of malachite green as an agent for destroying trypanosomes in the blood. Professor H. Wendlestadt has published in the *Deutsche medizinische Wochenschrift* a paper describing the action of malachite green and other substances on white rats infected with nagana-trypanosomiasis. He finds malachite green an extremely toxic substance, a few drops of a 1 in 500 solution injected into a vein producing death in a short time; injected subcutaneously it is less toxic. However, amongst the many substances tried he found it most useful, for whereas rats treated with it lived as long as forty-one days after infection, those not treated died in five or six days. After injection of the malachite green solution the trypanosomes disappeared in forty-eight hours, at least as far as could be ascertained from blood preparations, but after some days the parasites again appeared, and death ensued without any large number being present. Most of the experiments were

[1] *The Simple Medical Yearbook, or Private Medical Ledger*. London: J. Bale, Sons, and Danielsson. (10s. 6d.)

[2] *Cycle and Camp*. By T. H. Holding. London: L. De Vere and Co. (Cr. 8vo. pp. 232. 1s.)

[3] Manchester: Sherratt and Hughes. (Demy 8vo. pp. 450. 10s. 6d.).

[4] *Vegetables and Their Cultivation*. By T. W. Sanders, F.L.S., F.R.H.S. London: W. H. and L. Collingridge. 1904. (Crown 8vo, pp. 494. 5s.)

[5] *How to Make a Garden*. By W. E. Blair. London Cable Printing and Publishing Company. 1904. (1s. and 1s. 6d.)

[6] *The Amateur Gardener's Diary and Dictionary*. 1905. London: Garden Life Office. (1s.)

[1] British Medical Journal, November 26th, p. 1445.

by subcutaneous injection, but an injection into the peritoneum also led to the disappearance of the trypanosomes. One c.cm. of a solution of 1 part in 2,000 of normal saline was found a sufficient dose, but dilutions of 1 in 500 and 1 in 800 were also employed. Various substances were associated with the malachite green in an endeavour to reduce its toxicity, and the author states that the addition of grape sugar and acacia appears to be effective to some extent, but this is not clear from the results given. Wendelstadt describes the substance used by him as Merck's "Anilin-Grün Malachit cyst" (*sic*). The name "malachite green" is, however, used somewhat indiscriminately for a number of different substances prepared from the base tetramethyldiamidotriphenylcarbinol; thus in Meyer and Jacobson's *Organic Chemistry* it is described as the zinc chloride double salt of this base, and the oxalate is also mentioned as being used under the same name. According to Merck's *Index*, various double salts of the base are said to be used, but generally the hydrochloride. No doubt further experiments will be made with this substance, and it would be well for workers to ascertain the exact chemical nature of the malachite green they use, as it is quite likely that this will have considerable bearing on the results obtained.

CEPHALOPIN.

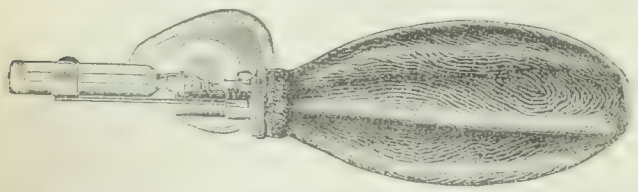
Cephalopin[2] is an oily extract prepared from fresh nerve substance, and should therefore contain myelin, lecithin, and such other constituents as are soluble in oil. It has been suggested that the preparation should be injected hypodermically as an antidote to strychnine, and that it should be used in the treatment of neurasthenia, hysteria, and neuralgia.

ISOPHYSOSTIGMINE.[3]

Ogiu has given this name to an alkaloid prepared by E. Merck from the portion of Calabar bean extract which is insoluble in ether. This alkaloid, which is chemically similar to physostigmine, and possesses the same formula, was first investigated pharmacologically by Kobert. Comparative pharmacological experiments show that it is superior to physostigmine in promoting peristalsis; the myotic action of its sulphate is also quicker, stronger, and of longer duration than that of physostigmine sulphate. Ogiu considers that the proper dosage is three-fourths that of physostigmine. In preparing solutions the same precautions should be observed as in the case of physostigmine, and they should be stored in amber glass bottles; if necessary, they may be preserved with a trace of boric acid.

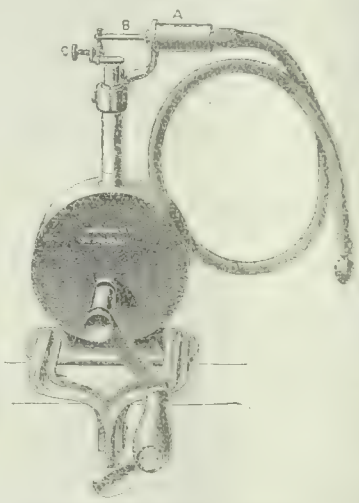
MEDICAL AND SURGICAL APPLIANCES.

An Ethyl Chloride Inhaler.—Mr. R. Stenhouse Williams, M.B., D.P.H., Honorary Anaesthetist, Royal Southern Hospital, Liverpool, sends the following description of an ethyl chloride inhaler, made for him by Messrs. White and Wright of Liverpool. It is, he says, so arranged that it can easily be attached to any Clover's inhaler. The apparatus consists of a rod with clamp at one end and a bayonet joint at the other, by means of which the bottle of ethyl chloride is held in position over a tube fitted with a tap, which passes directly into the bag of the inhaler. The ethyl chloride used is



Duncan and Flockhart's. In administering the anaesthetic, the facepiece is applied, and the patient encourged to breathe steadily to and fro. When the bag is moderately inflated, the tap in the tube is turned over, and the ethyl chloride gently sprayed into the bag, the tap in the tube is then turned off. The following advantages are claimed for this method: 1. The ethyl chloride bottle is always in position, and therefore anaesthesia may be prolonged as long as necessary without disturbance. 2. The anaesthetic may be presented to the patient as gradually as is desired: there is therefore no waste of material, or discomfort to the patient. 3. There is no inside tube to interfere with the air-way. 4. If the ethyl chloride ether sequence is desired, the ether chamber can be interposed. 5. The whole apparatus is extremely simple, and can be readily removed whenever necessary. As made for Mr. Williams the instrument has a reversible bag, and tray and facepiece can both be sterilized before use, a point to which he thinks too little attention is sometimes paid. To obtain satisfactory results with ethyl chloride, it is, he says, essential that a closed method should be adopted, and it is therefore necessary to have at least two facepieces of different sizes, and to see that the one in use accurately fits the patient's face.

An Otomasseur.—The annexed illustration shows a hand-driven otomasseur, which has been made by Krohne and Sesemann, of Duke Street, Manchester Square, upon the suggestion of Mr. Richard Lake, F.R.C.S. The special point about it is that the number of vibrations can, it is said, be made to reach 1,500 a minute by giving one complete revolution to the handle each second, and that the rate of vibrations can be estimated and diminished or augmented as desired. The strength also of the pump (A) can be regulated by lengthening or shortening the piston bar (B) by the screw adjustment (C). The instrument can be fixed to any table, and will probably be found to suit the requirements of those who find this form of ear treatment useful.



A Uterine Mop.—Dr. S. Jervois Aarons (London, W.), writes: The difficulty and amount of time wasted in removing the wool from the ordinary Playfair's probe after it has been used led me to try to devise some means by which the mop might be more easily and quickly removed. It occurred to me that a cap of some absorbent material which would fit over a conical probe would serve the purpose, and such a cap or mop I have had made; it slips over a conical or tapering metal probe, and is held in position by a small bayonet catch, which effectually prevents it from twisting round or leaving the probe. The dry mops weigh 13 gr. (0.70 gram); after being used they weighed 39 gr. (2.5 grams); they are, therefore, sufficiently absorbent for the purpose. The advantages over the ordinary Playfair's probe are: (1) Ease and rapidity of dressing the probe; (2) ease and rapidity of removing the mop after use; (3) both mops and probes are easily sterilized; (4) the tapered part of the probe, being made of plated copper, can be bent to any desired shape. The caps are put up in sterilized packets of four, or they may be had separately but not sterilized. Both probe and caps were made for me by the Galen Manufacturing Company, Limited, Wilson Street, New Cross Road, S.E., and my thanks are due to them for so successfully carrying out my suggestions.



A Splint for Congenital Hip Dislocation.—We have received from Dr. J. Rupert Collins, Surgeon in charge of the Branch Dispensary of the General Hospital, Cheltenham, a detailed description, illustrated by photographs, of a splint which he has invented for the treatment of cases of congenital dislocation of the hip. It is so contrived that traction in the desired direction can be kept up for any period of time deemed necessary, the splint being worn continuously, and being capable of adjustment to the growth of the child. The patient need not be confined to bed, for with the help of a pair of crutches and a patten on the foot of the sound side locomotion is easy. He also sent photographs of a child of 13 whom he had had under treatment with this splint. In those taken a year after it was first applied, the deformity of the limb is very slightly marked as compared with that evident in the earlier pictures. The splint was made for Dr. Collins by Messrs. Mason and Gerrard of Bristol.

[2] *Pharm. Zeitung*, 49, 990.
[3] Ibid.

THE TEACHING OF HYGIENE IN SCHOOLS.

II. Boys.

Boys are taught in public elementary schools the same subjects as girls *minus* needlework, and they are sent out from school as badly equipped to face the practical everyday problems and to undertake life's responsibilities. Reason is the great instrument of civilization, and unless a child's reasoning powers are developed, money and time spent on its education must be thrown away.

Unfortunately, the elementary education of the majority of children attending the Board schools is the only education they ever get. Most of the boys on leaving school are expected by their parents to commence to work and contribute to the family exchequer. It is, therefore, absurd to put forward arguments as to the advisability of waiting to give them instruction in hygiene until they have left school. Even were it certain that every boy on leaving his elementary school would attend higher grade schools or evening classes for several years, it would then be too late to begin to instruct him in hygiene. Like the girl, as a rule he gets no teaching at home, and more often than not home influence and example are really against him. It is therefore very important that his better feelings should be awakened at school not only by useful sensible teaching, but in a large measure by example.

Children are singularly imitative, and school impressions often last throughout life. The schoolmaster should be patient, and should rather encourage than punish. He should be an exampie of personal cleanliness and neatness, never appearing with untidy hair, doubtful collar, or dirty nails before his class. He should praise and hold up as examples those boys who do their best to come to school tidy and clean, pointing out to them how they may influence the younger boys. It is almost possible to judge of a capable teacher by the state of the stairs and school room. If he is content with dirty floors and dim, closed windows, then he will not do much practical good with his class.

In dealing with the children in elementary schools it should never be forgotten that from among these children teachers of future generations will have to be found, and since it is impossible to single these out and give them a special grounding, it is to the advantage of the whole class that the teacher should bear this in mind. He is bound to follow the school curriculum; but a good master should appeal to the boy's reason—and no one is so reasonable as a child—to human conscience, and to individual will; as has been already said, reason is the great instrument of civilisation, and without the faculty of reasoning and the power to distinguish good from evil, book learning is thrown away.

What average boy will by natural intuition have ideas of cleanliness and neatness? Our best born boys are not too fond of water up to the age of 14, and if left to themselves would be most unlikely to realize the value to them of good teeth, good sight, proper breathing, and holding themselves well. If left to their own inclinations they would contract habits which would stick to them all their lives, and habits mean the formation of character. Instincts, when uncontrolled, are rather bad than good, and moral training cannot begin too early, for habits quickly become a sort of second nature, whether good or bad. Indeed, already at school age—five—there is much mischief to undo in many of the children who come from bad homes. This cannot be helped, but, at any rate, no time should be lost in commencing to teach them moral hygiene. Then is the time to begin telling boys of the disgrace it is to come to school with dirty faces and hands. A good teacher finds that a great deal can be done with parents through the children. If a child begs its mother with sufficient insistence to put it on a clean collar, out of sheer desperation the deed will be done. Occasionally the mother will come down to the school and attack the teacher: "Mr. So-and-So, is this to be borne? Things have come to such a pitch that Bob refuses to go to school without a collar!"

Recent recruiting statistics have proved so clearly that a large percentage of rejections is owing to defective teeth, that the Army Council has recently determined to accept recruits otherwise suitable, provided they are prepared to put down a sum not exceeding £3 towards the expense of fitting themselves with suitable artificial teeth, or to agree to stoppages to that amount being made from their pay. Although the War Office is magnanimous enough to permit recruits to provide themselves with artificial substitutes for missing teeth, this is obviously only a makeshift. Surely a better remedy would be to teach a boy how to take care of the teeth which Nature gives him, rather than that he should begin his career in the army by borrowing money from the State to pay his dentist.

The remarks already made in the previous article with regard to straining of immature eyes, cramped attitudes causing curvature of the spine and other physical defects produced by want of intelligent supervision, apply with equal, if not greater, force to boys. But there are certain habits boys are liable to contract which should be sternly suppressed. Perhaps the most objectionable of these is spitting, which is not only dirty but dangerous. The duty of the teacher in correcting this habit should be to point out the risk to others of spreading disease. The boy would thus be taught the dual lesson of self-control and duty to his neighbour. That the risk of disseminating tuberculosis in schools is very real is well known to persons acquainted with those in the poorer quarters. Only the other day we saw in such a school two children suffering from pulmonary consumption with expectoration, and the teacher had ascertained that the father and mother and four other children were all in an advanced stage of the same disease. Such domestic tragedies are not uncommon, and in the same school were many children suffering from phthisis. Without discussing the other means which ought to be employed to cope with this scourge, it is evident that the responsibility rests with the school authorities not only to prevent children already suffering from the disease becoming sources of infection to their school-fellows, but also to give to all the children definite instruction with regard to the prevention of the disease.

It is true that the School Management Code of the London County Council lays it down that

> Consumption is to be regarded as dangerous, and sufferers, therefore, must be excluded, if this disease is accompanied by coughing or spitting.

But though the public conscience may be salved by this rule, the facts which may be observed daily prove that the regulation is for some reason not effectually carried out. It must be remembered that the London Education Committee has at present no organized system of local medical inspection. The responsibility appears to be thrown on the teachers, who may well hesitate to exclude a child in the absence of a definite medical certificate. Such facts as these are sufficient to prove that it is as important to teach the elements of hygiene to boys as to girls. The teacher should realize that it is to his own interest to promote the physical welfare of his pupils, for health of body means health of mind and the best work.

THE MEDICAL REPORT ON THE SOUTH AFRICAN WAR.*

The report on the medical arrangements in the South African war by Surgeon-General Sir W. D. Wilson, K.C.M.G., late Principal Medical Officer, South African Field Force, has been issued this week. It has been long and anxiously expected, but the delay in its appearance is more than justified by its completeness and general excellence. It gives a general account of the arrangements, but does not contain the vital statistics, the tabulation and analysis of which is not yet complete.

It extends to nearly 400 foolscap pages, with many maps, tables, and photographic illustrations; and we congratulate Sir William Wilson and his coadjutors on the successful completion of a heavy task. Any general review of this volume is out of the question here; we can only glance at its more salient features and at some of the conclusions it suggests.

There is no attempt at a vindication of the medical service, no advocacy or apology, but only a calm recital of incontrovertible facts, which clearly show that the acrimonious accusations so freely hurled at the medical service during the war were often founded on mere calumnious gossip, or, when they had any basis in fact, were grossly exaggerated; such shortcomings as did occur nearly all arose from circumstances entirely beyond the control of the medical department.

The report confirms the impression that we began the war in a furtive fashion, neither realizing the vast preparations the Boers had made for hostilities, nor their intention of forcing them on us; thus our preparations were needlessly hampered by the unnecessary fear of offending the suscepti-

* Report on the Medical Arrangements in the South African War. By Surgeon-General Sir W. D. Wilson, K.C.M.G., late Principal Medical Officer, South African Field Force. London: Eyre and Spottiswoode; Edinburgh: Oliver and Boyd; and Dublin: E. Ponsonby. 1904. (7s. 6d.)

bilities of resolute men at Pretoria! We are here told that, when medical provision for war had perforce to be begun, it was done "quietly," because "any overt preparation at the time was deprecated." But even had more aggressive energy been displayed in the early stages, it is doubtful whether the results would be much better, for we are told that the "Medical Service, like other branches, was hampered by an insufficiency of *personnel*, both officers and men, and the additions to it during the war were untrained in their special duties"; further, "provision of hospital accommodation, as at first estimated, fell far short of the actual requirements." Next, "the changes in the plan of campaign, at an early stage, upset the field medical arrangements for a time"; and there was not "sufficient elasticity" in the undermanned medical establishments to meet such a contingency; still further, "the greatest obstacle to the work of the Medical Service was the transport difficulty."

It is stated that the "deficiency of good non-commissioned officers (of the medical corps) was very greatly felt through the campaign." It is small wonder, then, that slackness or confusion was at times seen in the work of scratch teams of hospital servants. It is really wonderful that under such adverse circumstances the medical service in the war worked so well, as this volume incontestably proves it did.

We may quote as one illustration of this the operations extending from Magersfontein to Bloemfontein. The forced march for the relief of Kimberley necessitated the reduction of the ambulances to "one-fifth" of their proper strength; the subsequent pursuit of Cronje still further reduced hospital transport and supplies to the smallest dimensions, so that when the 1,200 casualties at Paardeberg had to be met, depletion was so complete that "blankets and great-coats of the non-commissioned officers and men of the medical corps were given up" to cover the wounded at the very time when these kindly men were heroically attending to their duties at the dressing stations under fire.

So completely were the hospitals stripped and disorganized in the race for Bloemfontein that on arrival there, with the railway blocked, the needs of the medical service had to be satisfied at first with what was obtainable on the spot, and that was scanty." Bloemfontein already "had a bad reputation on account of the prevalence of enteric fever," and the severe outbreak among our troops is explained in this sentence: "The local conditions were then an endemic area, provided with an impure water supply, and in a bad sanitary condition generally. To this was added the human factor—an army exhausted by excessive exertion, on a reduced diet, marching through a district where the only available water supply was scanty, and probably in many instances polluted." Also, before the general hospitals arrived the sick had to be treated in the field hospitals, having neither beds nor clothing suited for the continuous treatment of serious cases. If the sensational critics, who so loudly condemned the medical service at Bloemfontein, were aware of these facts, it says little for their sense of justice or their candour.

Expressions as free, frank, and unreserved as those here given might be quoted as to incidents all over the theatre of war, did space permit; we could also refer to the criticisms on the civil hospitals, on invaliding, and on other matters of much interest.

We hope that this volume will be studied, not only by medical men, but by all classes of military officers, especially those who aspire to command of troops in the field; they will learn much from it.

In submitting this report to the Director-General, Sir W. D. Wilson acknowledges his obligations to officers and men, civil surgeons and nurses, who served under him in the campaign, for their "untiring energy and devotion that made it possible to carry out a task which far exceeded any anticipation, both in magnitude and duration." He also thanks many officers who specially contributed to the report; and particularly his secretary, Lieutenant-Colonel R. J. S. Simpson, C.M.G., R.A.M.C., on whom much of the labour of compilation fell.

THE PREVENTION OF CONSUMPTION.

NEW SOUTH WALES.

The Notification of Tuberculosis.—The Health Committee of the Sydney Municipal Council has lately had under consideration new by-laws by the terms of which it is proposed to make the notification of pulmonary and laryngeal tuberculosis compulsorily notifiable. These by-laws have not yet received the confirmation of the City Council, but in the meantime steps have (according to the *Australasian Medical Gazette*) been taken by the medical profession which will strengthen the hands of the city health authorities in their endeavours to secure the passage of the by-laws. Up to the present time the only organized effort in the direction of the notification of tuberculosis in New South Wales has been an attempt to encourage voluntary notification of the occurrence of a death from pulmonary tuberculosis, or the recent residence of a patient suffering from that disease in any particular house. On the receipt of such a notice the city health officials offer to disinfect the room or dwelling recently occupied by the sufferer, and in the large majority of cases the offer has been accepted by the owner or tenant of the house. These measures have already led to a diminution of mortality from pulmonary tuberculosis, but it is felt that voluntary notification is inadequate to meet the necessities of the situation.

UNITED STATES.

A State Sanatorium for Tuberculosis in Massachusetts.—To the State of Massachusetts the credit is given in America of having provided the first institution for the care of tuberculous patients under State care, control, and largely under State support. The sanatorium at Rutland, established as the result of the earnest appeals of physicians and philanthropists, has, in the judgement of the great majority of experts familiar with its work, passed its experimental stage. Its methods are said to be thoroughly sound from the scientific point of view, its results satisfactory, and the cost of maintenance within the average of the best institutions of the kind. The sanatorium now has accommodation for 325 patients. On the completion of further plans now in preparation it will accommodate 400. The report for 1903 shows that 589 cases were admitted and 576 discharged. In 48.97 per cent. of these the disease is said to have been arrested and apparently cured: in 43 per cent. improvement was recorded, while in 7.9 per cent. no improvement was noted.

GERMANY.

A Popular Museum of Tuberculosis.—A Museum of Tuberculosis on the model of that at Charlottenburg, described not long ago by our Berlin correspondent, has been opened at Karlsruhe. The object of the museum is the education of the public in the mode of diffusion of tuberculosis and the means of preventing infection. Arrangements have been made for special excursions which will make it possible for working men from all parts of the Grand Duchy of Baden to visit the museum.

LITERARY NOTES.

WE are asked to state that Messrs. Baillière, Tindall, and Cox have undertaken the English agency for Dr. G. M. Gould's *Dictionary of New Medical Terms*, the publication of which in America was mentioned in this column last week. Messrs. Baillière, Tindall, and Cox will be in a position to place the work on the market in a few days.

According to the *Publishers' Circular*, Sir Frederick Treves's new work, *The Other Side of the Lantern*, in which the eminent surgeon describes his recent tour round the world, will not be ready before Christmas, as was anticipated, but will be published by Messrs. Cassell and Co. early in the New Year.

Death is the subject of a work by a Danish physician—Dr. Oscar Bloch—which is about to appear in English. The book is described as a careful inquiry into the phenomena attending death, illustrated by a number of examples collected by Dr. Bloch. Mr. Owen Lankester is the editor of the English translation, which will be published by Mr. Heinemann.

Messrs. J. and A. Churchill will publish in the new year an illustrated work by Mr. A. E. Maylard, of Glasgow, entitled *Abdominal Pain: Its Causes and Clinical Significance.*

The same firm will issue a *German-English Dictionary of terms used in Medicine and the Allied Sciences*, by the late Mr. Hugo Lang, edited and completed by Dr. Bertram Abrahams. In the preface it is stated that "especial care has been taken in the rendering of those diseases, symptoms, etc., to which in German personal names are applied; the use of such names on the Continent appears to be a somewhat random matter, and, except in the case of medicaments, they seldom refer to the real discoverer."

The forthcoming publication of a new work on *Materia Medica* by Mr. John Humphrey, joint author of *Pharmacopedia*, is announced by Mr. Henry Kimpton. The book deals with all the crude drugs of vegetable and animal origin in common use, including those official in the *British Pharmacopoeia* and

the Indian and Colonial *Addendum*, as well as the more important unofficial drugs. An introduction has been written by Mr. E. M. Holmes, F.L.S., and a special feature of the book is an exhaustive index which should be found extremely useful for reference.

It is well known that leprosy and syphilis were for centuries associated in the public mind as diseases which branded sufferers with a special moral taint. It is probably not so well known that it was held to be libellous to accuse any one of being affected with either of them. That this was the case may be inferred from the following passage in *Blackstone's Commentaries on the Laws of England* (twelfth edition, 1794): "There are only three disorders which the law deems it scandalous to report that a person labours under, namely, the plague, the leprosy, and the *lues venerea*." These three maladies in ancient times were so contagious and alarming that the person afflicted was abandoned by his friends. Therefore, says the legal oracle, "it is actionable to say a person has such a disorder, the infection of which may have long been removed."

In a thesis on the evolution of the treatment of dental caries recently presented to the University of Bordeaux for the doctor's degree by M. Mathis, it is stated that the Greeks never allowed their teeth to be extracted till they were on the point of falling out. Among the Jews a tooth for a tooth was the penalty inflicted on any one who knocked out or destroyed another's tooth; how the Chosen People of England must have longed to apply the *lex talionis* to the king, of whom it is written that when he wanted money he would

Day by day extract a grinder
From the howling Israelite.

Among the Mohammedans of old the permission of the Sultan was required before even a stump could be extracted. Artificial dentures were made by the Phoenicians. In one of the oldest tombs in the necropolis at Saida there was found in 1841 a portion of the upper jaw of a woman in which there were two canines and four incisors held together by a piece of gold wire; two of the incisors looked as if they had belonged to another person and had been used to replace the natural teeth. In the Middle Ages great value was attached to the teeth, and in cases of assault the penalty for the breakage of a tooth was as severe as for fracture of an arm. In French law reports still extant curious details may be found showing the minuteness of the examination made in such cases to determine whether the tooth was broken completely or incompletely, vertically or horizontally. At a later time the offence of eating meat in Lent was punished in France by extraction of teeth, a rather grim way of making the penalty fit the crime. In Auvergne the stealing of grapes was punished in the same way. The instrument (*dentaria*) used was something like the "key"—a kind of lever in the use of which the neighbouring teeth were utilized as a fulcrum. Dental surgery, which was at first in the hands of monks and quacks, was later for a long time the monopoly of barbers.

On looking through a back number of the *Atlantic Monthly* (May, 1903), we have come across in an article by J. T. Trowbridge, an anecdote of Oliver Wendell Holmes which may interest some of our readers. When the friends of the rival claimants of the discovery of anaesthesia were proposing monuments for each, Holmes suggested that all should unite in erecting a single memorial, with a central group symbolizing painless surgery, a statue of Jackson on one side, a statue of Morton on the other, and the inscription underneath—

To E(I)ther.

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 83.

FRIENDLY SOCIETIES AND HOSPITAL APPOINTMENTS.

We learn from the *Armidale Chronicle* that at a recent meeting of the General Committee of the Armidale Hospital, New South Wales, an application was read from Dr. Clune requesting that he should be made a member of the staff, and thus be placed in the same position as other local medical men by being enabled both to admit and treat patients in the hospital. A resolution according the desired position was moved and seconded. By request, Dr. Harris stated hit opinion upon the subject, which was to the effect that if Dr. Clune were appointed he would probably have to carry on the hospital by himself. Dr. Clune, he said, was a man whom members of the British Medical Association were not supposed to meet because he belonged to certain Friendly Societies which the Association considered inimical to the interests of the profession. The majority of the medical men of the State were members of the Association, and there would be great difficulty if assistance were required in getting any of them to fill a position in the hospital in conjunction with Dr. Clune. The motion was supported by many present on the ground that the Committee should not suffer dictation by medical men, but was lost. It was mentioned during the discussion that if Dr. Clune were appointed, the Matron, as a member of the Australian Trained Nurses' Association, would probably have to resign also.

Deductions by Employers: A Request for Information.

Colliery Surgeon writes: In the British Medical Journal of November 26th "Practitioner" makes some inquiry about employers, principally of colliers, deducting money to pay the doctor, and only deducting them for one man, and refusing to allow any other medical man to be paid through the club for attending on men. This course is followed at most collieries, and in some cases it is only fair and just that it should be so: for instance, a man buys a practice, and gives satisfaction to a majority of the men: the colliery grows, and when it is worth having, and the doctor has spent, perhaps, ten or fifteen years in the district, some other doctor starts practising and frequently agitating for a portion of the contract work. I am of opinion that, as long as the original doctor gives satisfaction to the majority of the men, the management are quite right in refusing to have the work shared with a newcomer. I may also inform "Practitioner" that no colliery owner can force his men to have his nominee as their doctor in the face of an adverse majority of the men, the ballot will see to that. I have held a colliery appointment for years on the men's vote, although the management did all in their power to have another man appointed. Some time back a doctor came to a colliery village where the club work had been in one man's hands since the pits were sunk: he got some men to approach the master so as to have his name proposed either for a portion or the whole of the work. The deputation was received, and had to admit there was no cause of complaint of the old doctor's skill or attention. The proprietor then replied "that Dr. —— had done the work for years while it was not very profitable, and as long as he did his work conscientiously he would allow no other doctor to have anything to do with the club when it had become a good thing for the doctor." I think he was quite right. I have been doing pit work for fourteen years, and consider a stranger coming here has no grievance whatever if I retain my clubs and have practically a monopoly of the contract work.

Tradesmen's Clubs.

Boycotted writes drawing attention to the injury done to his practice by a large tradesmen's club in his neighbourhood. He says that the population is mostly well-to-do, and that there is no real necessity for such a club. It was offered to him and he refused it, but it was then taken by practitioners residing six miles away from the head quarters of the club. They admit that it does not pay them, and that they only take it to keep another man out.

*** Our correspondent is deserving of sympathy. Clubs of this kind undoubtedly harm the profession, and it is to be regretted that there is not more *esprit de corps* among medical practitioners. If there were clubs of this kind would soon cease to exist. To hold a club to the detriment of a professional brother for no better reason than to keep another man out is also a somewhat questionable proceeding, and hardly in agreement with the best rules of medical ethics.

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ending November 5th and 12th the deaths from plague in India numbered 14,397 and 15,107 respectively. The principal figures were as follows: Bombay city, 60 and 79; Bombay Districts, 9,554 and 7,603; Calcutta, 5 and 6; North-West Provinces and Oudh, 2,146 and 2,746. In Bengal Districts during the week ending November 12th, the deaths from plague numbered 336, compared with 469 in those districts during the corresponding week of last year.

South Africa.

Port Elizabeth.—During the weeks ending November 12th and 19th the plague report was as follows:—Fresh cases: 1 and 4; death from the disease, 0 and 1. On November 19th 5 cases remained under treatment. At Port Elizabeth and East London plague-infected rats and mice continue to be found.

Mauritius.

During the weeks ending December 1st and 8th, the fresh cases of plague numbered 35 and 25, and the deaths from the disease 25 and 14 respectively.

Port of London.

On November 30th the ss. *Wepbridge* arrived at the Port of London from the River Plate, having a sailor on board suffering from plague. The patient was removed to the Port Hospital, near the mouth of the river, and the ship and crew (there were no passengers) placed under surveillance.

MEDICAL NEWS.

IT is proposed that a congress on malaria shall be held at Naples.

THE number of persons who died of pellagra in Italy in 1903 was 2,648.

A SANATORIUM for consumptives, intended as a memorial of King Humbert I was opened at Leghorn on November 19th, in the presence of the King of Italy.

A NEW policlinic for the relief of the sick poor is about to be established at Athens in the Piraeus. It is to be entirely managed and officered by women.

AT the meeting of the Royal Meteorological Society to be held on Wednesday next, at 7.30 p.m., at the Institution of Civil Engineers, Great George Street, Westminster, S.W., Mr. J. F. Brodie's paper on Decrease of Fog in London during Recent Years will be discussed.

VACCINATION AGAINST BOVINE TUBERCULOSIS.—A series of experiments on Behring's method of vaccinating calves against bovine tuberculosis is about to be undertaken by the Paris Society of Practical Veterinary Medicine. Four months ago a similar experimenial research was begun in the Belgian Agricultural Institute, under the auspices of the Ministry of Agriculture, by M. Scholl of Gembloux, and M. Lepoutre, Assistant in the Agricultural Institute.

AMERICA AND THE OPIUM TRADE.—Mr. Hay, the United States Secretary for Foreign Affairs, lately received a deputation of the International Reform Bureau, in regard to a petition addressed by that body to the American Government asking for diplomatic action, with the object of starting a movement throughout the world for the abolition of the opium traffic in China. Mr. Hay promised to lay the matter before the President.

THE UNIVERSITY OF KASAN.—On November 17th the University of Kasan celebrated the centenary of its foundation. In point of age it ranks third among the Universities of Russia. A century ago there was, with the exception of Dorpat, which was then wholly German, only one University in the dominions of the Czar—namely, that of Moscow, which then had only 210 students. Now the University of Kasan has 902 students; nevertheless, with the exception of Tomsk, in Siberia, it is the smallest University in Russia.

THE Surgical Aid Society held its annual meeting on December 5th at the Mansion House. It was shown that among much other work the society had supplied during the year 438 artificial eyes, 882 sets of teeth, and 461 artificial lower limbs. The three principal surgeons who carry out the more scientific part of the Society's work had to deal with 410 cases a week, the senior of them receiving a salary of only £130 a year. Arrangements had been made to supply gratuitously an artificial limb to the fisherman who, owing to an injury received during the Russian attack on the North Sea fishing fleet, had had to have his hand amputated. Sir Frederick Treves was elected to the post of honorary consulting surgeon to the society in place of the late Mr. Allingham. Donations to the amount of £450 were collected during the meeting.

CARE OF THE FEEBLE-MINDED.—At the annual conference of the Poor-law authorities of the South-Eastern and Metropolitan Districts, Mr. R. A. Bray, L.C.C., opened a discussion on the feeble-minded. He said that it was the county councils and not the guardians who should deal with the feeble-minded for it was a question not of poverty but of affliction and of education. The feeble-minded might be at present kept under the control of the education authorities up to the age of 16 and under that of the Metropolitan Asylums Board up to the age of 21, but it was estimated that there were in England upwards of 105,000 feeble-minded children, of whom only about one-third could be taught to be self-supporting; the rest should be compulsorily detained in special homes or workhouses. The speakers who followed expressed similar views.

CANADA AND THE INEBRIETY QUESTION.—The Inebriate Reform Society of Ontario was organized in Toronto a few weeks ago. The objects of the Society, as set forth in the draft constitution submitted to the meeting, are to promote the adoption of the probation system for the reformation of inebriates; to promote the adoption of the "home" or dispensary treatment in suitable cases; to promote the establishment of municipal sanatoriums for indigent inebriates; to seek the necessary permissive legislation as provided in the proposed Bill now before the Ontario Legislature; to distribute inebriate reform literature, and to favour long sentences for confirmed habitual drunkards. Funds are to be obtained from Government grants, city and county grants, and from private sources. Among the Honorary Vice-Presidents are Professor William Osler. Dr. W. B. Geikie, Dr. James Thorburn, and Dr. R. W. Bruce Smith of Toronto. Dr. A. M. Roseburgh, who for a number of years has taken a keen interest in the matter, has been made permanent secretary of the new organization.

THE ASSOCIATION OF ECONOMIC BIOLOGISTS.—At the inaugural meeting of this Association held, by permission of the Council of the Linnean Society, in their apartments, Burlington House, Mr. Fred. V. Theobald occupied the chair, and, in the course of his introductory remarks, he detailed the steps taken by Mr. Walter E. Collinge to found an Association of Economic Biologists. He hoped that the Association would welcome all investigators in economic biology, whether agricultural, medical, or commercial. The relationship between biology and agriculture was apparent to all, but only recently had we realized the importance of its relationships with medicine and commerce. Membership of the Association would be confined to workers in economic biology. All such biologists employed by the Government or by any county or city council, university, or agricultural or horticultural college or association, and all persons engaged in investigations in economic biology were elegible as members, and others might join the Association as associates. Mr. Collinge announced that about thirty persons had sent in their names as original members. A draft of the proposed laws of the Association was then read, and, after some minor alterations, was approved and ordered to be printed. The following officers were elected for 1904-5:—*President:* Fred. V. Theobald, M.A. *Vice-President:* A. E. Shipley, M.A., F.R.S. *Council:* Professor G. S. Boulger; Professor A. H. R. Buller, D.Sc.; Professor George H. Carpenter, B.Sc.; Dr. Francis Marshall; Robert Newstead; Major Ronald Ross, F.R.S.; Fraser Storey, Cecil Warburton, M.A. *Honorary Treasurer:* Herbert Stone, F.L.S. *Honorary Secretary:* Walter E. Collinge, M.Sc. It was decided to hold the next meeting at Birmingham, in April, 1905.

MEDICAL PRACTICE IN THE PHILIPPINE ISLANDS.—Regulations as to medical practice in the Philippine Islands have recently been promulgated by the Philippine Commission. Four forms of certificate of registration are issued to persons who pass a satisfactory examination before the Board of Medical Examiners—one for a doctor of medicine, one for a licentiate in medicine, one for a *cirujano ministrante*, and one for a midwife. A licensed *cirujano ministrante*—one who has studied medicine in St. Thomas's University, Manila, for a period of not less than two years—may be registered in a manner empowering him to practise in communities where neither a doctor nor a licentiate is easily accessible, on his passing a satisfactory examination before the Board of Health of the province in which he intends to practise. It is thought probable that both the *cirujano ministrante* and the licentiate will, within a limited time, become extinct. Then the entire medical profession of the archipelago will consist of graduates. According to information obtained by the *New York Medical Journal*, the number of registered physicians resident in the city of Manila on September 19th, 1904, was 223. Sixty-two of these, to judge from their names, were Americans or had gone to the Philippines in consequence of the annexation of the islands by the United States. Thirteen of them are in one way or another connected with the Board of Health, nine are medical officers of the army, and a few others are connected with the laboratories or are attached to the constabulary or to one or another of the consulates. In round numbers it may be said that 200 physicians, about a quarter of whom are Americans, are engaged in private practice in that city. We gather that any medical practitioner who may think of seeking his fortune in the Philippines will do well as a preliminary to acquire a conversational knowledge of Spanish, "a tongue that is not likely to fall into disuse for a long time to come." According to the *Journal* of the American Medical Association, however, a doctor who has recently returned to the States from the Philippines says there is little opportunity for successful practice in Manila, as that city "is suffering from a superabundance of medical men."

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1904.

SUBSCRIPTIONS to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, DECEMBER 17TH, 1904.

CHILL.

THE unpleasant experience of a sudden chill is one with which most people are familiar, and is inadequately expressed by the term by which it is usually described. It is so imperfectly understood that its leading characteristic of "shiveriness" has been utilized as a name that will convey some intelligible idea of its identity. The word lends itself to loose application, so that many vague conditions of disease are, either for convenience or from ignorance, labelled chill simply because one, if not the most, striking manifestation of such disorders is a sensation of cold or a rigor. Setting on one side the cases which are wrongly diagnosed and which, if more carefully investigated, would be capable of classification, there still remain at least three varieties of disturbed health which are somewhat indiscriminately called by one man chill, by another influenza, and which, though closely allied, will probably some day be proved to depend upon different causes. All three conditions contain many features of similarity—they are ushered in with shivers or rigors, frontal headache, aching in the limbs and back, anorexia or nausea, languor and an overpowering desire for rest, some disturbance of temperature, and a general feeling of wretchedness and inability for effort of either mind or body. They seem to have an incubative stage of one or more days, during which an undefined feeling of malaise, which mostly manifests itself in loss of appetite and dislike for food, is experienced; and they are liable to be complicated by the occurrence of events which indicate imperfect metabolism, depressed nervous energy, or a low type of inflammation.

But while there are those and other points of resemblance, elements of difference are not wanting. In one the whole attack is practically comprised within two or at most three days, and is seldom accompanied by special organic manifestations or followed by grave sequels; the patient feels out of sorts, comes home with headache, shiveriness and lassitude, and after one or two days' care he returns to the ordinary duties of his daily life feeling quite well. This corresponds most accurately to what might be considered as a typical form of chill. In the second variety the prodromal symptoms last longer, and though the actual onset is less acute, the patient feels more prostrate and is more convinced within himself that he is seriously out of sorts. He is mostly a person who has recently been living under an unaccustomed strain, either of extra physical work or of unusual mental anxiety. There is frequently evidence that the vigour of his malady is being expended specially on one part of his economy, and accordingly his symptoms, though perhaps indefinite, are still distinctively gastric, cardiac, pulmonary, or cerebral. He is liable to the development of complications which vary according to the type of his attack, and his recovery is slow and seldom completed until he has had a thorough rest and change of air. This variety closely resembles a mild attack of influenza, and is often so designated. In cases belonging to the third type, the illness is ushered in with the same general symptoms, but it is accompanied by an acute catarrh of the upper air passages, and is usually described as "a streaming cold" associated with extreme prostration. It differs, however, from the ordinary nasal or naso-pharyngeal catarrh in the greater rapidity with which it passes through its various stages, in the more marked debility both muscular and nervous which it leaves behind, and in its extreme infectiousness. For these reasons, it is in some parts of the country distinguished from an ordinary cold by being called an "influenzal cold," and there can be no doubt that, though a milder and shorter-lived ailment, many of its constitutional manifestations have a strong family likeness to those of true influenza.

If these disorders are due to microbes, they are either induced by the same organism in varying degrees of concentration or vitality, or by separate organisms which are closely related to one another. Until knowledge is more complete, however, it seems almost a pity that any of them should be dignified with the name of influenza. This title should be reserved for cases in which Pfeiffer's bacillus can be demonstrated, and in which all doubt as to the nature of the disease is removed by its epidemicity and characteristic complications. As regards the minor ailments which bear a superficial resemblance to the more serious disease, there is abundant reason for turning upon them the full light of scientific investigation, because, though minor, they are responsible for much personal discomfort and for considerable dislocation of business or professional engagements.

The subject is one about which much might be learned by free discussion and interchange of opinions, and we are encouraged to refer to it by a pertinent query recently sent us by a correspondent. He asks for suggestions for "a "prophylactic against influenza," and goes on to say: "Having had an attack in the spring, complicated by basal pneumonia, I should be glad to know if there are any methods a medical man might take to avoid another attack." Here we have an illness called influenza and the accuracy of its designation made probable by the occurrence of pneumonia as a complication. It may, however, have really belonged to the second type of disease to which we have referred; or it may have been from first to last dependent upon a pneumococcus invasion. In any case, it ought not, according to our view, to be dubbed influenza unless, at or about the time when our correspondent was ill, there was present in his neighbourhood an epidemic of the disease. It may be urged that this might be a sporadic case, but the only true proof of such a contention would be the discovery of the specific bacillus, which would surely be in a very inert and enfeebled state to produce only one case, and would probably have greater affinities to the organisms accountable for one of the varieties of chill than for the proper and virulent bacillus of Pfeiffer which is responsible for true influenza.

Apart from considerations of nomenclature and classification, the information sought by our correspondent is highly important, and, from the practical point of view, his desire to provide against the future must appeal strongly to most men. It is probable that until the

bacteriology of these disorders is elucidated, anything in the nature of a true prophylaxis will be impossible, more particularly if, as seems likely, a variety of organisms are capable of producing like results. The commonplace chill is not different symptomologically from the rigor, heat, and sweating stages of malaria or septicaemia, and may confidently be ascribed to the influence of a microbic infection, but the source and pedigree of the unwelcome visitor are still subjects for speculation.

There are many features about the cases coming under the head of chill which suggest the gastro-intestinal tract as the road of entry, and it seems not unlikely that the explanation of the conspicuous frequency with which town-dwellers "have a chill" shortly after their return from a long holiday in the country is to be found in a gastro-intestinal rebellion against the sudden change from a method of life which is simple, unexciting, and homely, to the ordinary routine of hurry and bustle, of irregular meals and imperfect exercise, of late hours and indigestible dinners which make up the daily record of most men engaged in busy and strenuous city life. If this be admitted, the direction in which prophylactic measures should proceed is towards maintaining the mouth in as perfect a condition of hygiene as possible, and providing against gastro-intestinal disturbance by a careful regulation of every-day habits. The danger of catastrophe is greatest either from over-application or over-indulgence on return from a holiday; or from working too long without one. In the former case the renewed vigour we bring back with us tempts us to plunge headlong into both work and pleasure, thus calling, without any preliminary training, upon our various functions to immediately resume their duties at fullest pressure; in the latter we try to reach our destination by flogging a tired horse.

When the premonitory symptoms of a chill are upon us, much may be done to limit the possible range of its duration by taking to bed at once, and reverting to the old-fashioned but reliable methods for the promotion of diaphoresis, diuresis, and mild purgation. Recurrence may be to some extent obviated by better regulation of the daily work and food, and by more frequent indulgence in short respites from work; for, even though the country or seaside visit be for but a limited period, the normal powers of protection which we all possess against the malign influence of evil germs get in this way repeated opportunities for restoring their spent energies, and for enabling them again to successfully wage war against their hereditary foes.

QUACK MEDICINES AND LYING TESTIMONIALS.

Simple-minded readers are greatly impressed by the testimonials as to the miraculous virtues of quack remedies which they read in the advertisement columns of newspapers. To them the men to whom life was a burden till a bottle of Bunkum's "Thaumaturgon" made them feel as if they were born anew, and the old women who suffered many things from many physicians till they were instantaneously cured by Gullemwell's "Pan-electric Pills," are witnesses of unquestionable truth. We do not say that these worthy folk are all liars; doubtless some of them are honest enough. The very fatuousness of the statements is a stamp of genuineness. The vendors of quack medicines know as well as Autolycus what a fool Honesty is, and what a very simple gentleman is Trust, his sworn brother. There is a larger class who are moved to testify by what the lawyers call "a consideration." Probably, however, such testimonials are for the most part pure—or rather impure—figments of the advertising imagination.

Some remarkable evidence has recently been obtained by the American Post Office Department as to the ways in which testimonials are procured by manufacturers of proprietary medicines. One large firm is said to have admitted that it had agents abroad whose business it was to seek out persons who, having formerly occupied prominent positions in the community, had suffered financial reverses and were harassed by debts which they were unable to discharge. These agents obtain possession of the unpaid accounts, and then apply pressure to the unfortunate victims, demanding immediate payment in full. Finally, after long persecution, the desperate victim is invited, or rather summonded, to the office of an attorney, where he is given to understand that, if he will sign and swear to a testimonial, a receipt in full for the claims against him will be given.

A few years ago some curious revelations were published in the *Lyon Médical* as to the testimonials of cure published in French newspapers by a notorious institute for the treatment of ear diseases. Letters were sent to a number of addresses purporting to be those of persons whose names were appended to these testimonials; in nine cases out of twelve the letters were returned marked "Inconnu." An amusing illustration of the methods of the testimonial-mongers is afforded by the case of a man who was not long ago brought before a French magistrate on a charge of vagrancy. In reply to a question from the bench as to what he did for a living the man, who was long and lanky and had a half-starved look, stated that he was by profession a fat man. He explained to the astonished magistrate that he was employed by a manufacturer of medicines for the cure of obesity to pose for an illustrated testimonial. For this purpose he was dressed in a suit of "tights" made of indiarubber, which was inflated so as to give him the appearance of a man of Falstaffian dimensions. A photograph taken of him in this character was described as "before treatment." He was then pumped out by degrees, photographs being taken at each stage of shrinkage and described as "after one month's treatment," "after two months,'" and so forth. It is not a profitable trade, as photographs once taken have an indefinite run; hence the "fat man' may illustrate the completeness of the cure by dying of starvation. In another case which has been largely used for the advertisement of an infallible cure for consumption, it has been proved that the patient died a week or two after the date of the testimonial!

An attempt was made some years ago to induce the French legislature to deal with the whole question of bogus testimonials, but nothing was done. Probably the Ministers, as is the way of politicians, were too much occupied with "matters of greater importance" to attend to such a trifle as the safeguarding of the health of the people. There might be technical difficulties in the way of such a reform, but if all concerned in the manufacture of lying testimonials—writers, traders, and publishers—could be made severally and jointly liable for an attempt to defraud, a blow would be struck at a particularly vile and mischievous form of swindling.

INFANTILE DIARRHOEA.

The Rockefeller Institute for Medical Research has recently published a report[1] upon its investigations during 1903 into the relationship of the bacillus of dysentery to infantile diarrhoea.

The bacteriological part of the research, under the direction of Dr. Simon Flexner, was carried out by twelve bacteriologists in the cities of New York, Philadelphia, Boston, and Baltimore. Summarizing the results, Dr. Flexner finds that the bacillus dysenteriae can be isolated from the intestinal discharges and the intestinal mucosa of a large percentage of children suffering from "summer diarrhoea." The bacillus is closely associated with the intestinal mucosa, and can most readily be obtained either from secreted mucus or from scrapings of the mucous membrane itself. From faecal matter admixed with mucus it is recovered with greater difficulty and in smaller numbers. When the discharges are mixed with blood, the isolation of the bacillus is more readily accomplished—a fact due not to the mere presence of blood, but to the greater severity of the infections when this type of discharge occurs. But, although it is generally found that the number of colonies of bacillus dysenteriae recoverable is greater in the severe than in the mild infections, this is not an invariable rule; in some instances more colonies were obtained from mild cases than from others of marked severity. As regards the numerical relationship of the bacilli to the usual intestinal bacteria, it was found that the latter organisms usually yielded a very much larger number of colonies upon plate cultures than the bacillus of dysentery; but, in a few cases, one-half or more of the colonies which developed proved to be those of bacillus dysenteriae, and in exceptional specimens this bacillus alone appeared in the cultures.

The use of differential culture media brought out interesting differences in the types of dysentery bacilli isolated. The well-known "Shiga" type was only occasionally met with. This bacillus, which was first described by Shiga in 1898, is characterized by its power to attack glucose and its inability to act on other carbohydrates, including mannite and lactose. In the great majority of cases the organism proved to be of the "Flexner-Harris" type, which attacks glucose, mannite, and dextrin, but does not attack lactose. Other less well established varieties were also occasionally met with. Amongst these were the bacillus "Y" of Hiss and Russell, which attacks glucose and mannite but has no action on dextrin or lactose, and another group possessing the special property of acting upon lactose.

The agglutinating action of the blood of patients upon the dysentery bacillus was investigated, but, so far, no very helpful results have been obtained. Agglutination, with high dilutions of the blood, was at times brought about, but did not proceed hand in hand with the occurrence of the bacillus in the intestine, and cannot, in Dr. Flexner's opinion, be treated as an index of the presence of, or infection with, bacillus dysenteriae.

The clinical observations recorded are also of considerable interest. Reviewing the results of the various investigators employed on this branch of the work, Dr. Emmett Holt points out that infection with the bacillus of dysentery has been found under a wide variety of conditions. It may occur (1) as an acute primary infection in children previously well; (2) as a subacute infection without previous acute symptoms; (3) coincident with or following other diseases, such as measles or pneumonia; (4) as a terminal infection in children suffering from extreme malnutrition. The disease was not found to exhibit any marked predilection for any one locality, but occurred with about equal frequency in New York, Boston, Philadelphia, and Baltimore, the only difference being that in the warmer cities the proportion of acute cases was rather larger. Nor was the disease peculiar to the poorer classes or hospital patients: a number of the cases observed were in children living in the best surroundings, some in the country. In most of the 237 cases upon which clinical observations are recorded the previous diet of the patient was investigated, but no special relationship, either to any kind of food or to water, could be demonstrated. It is interesting to note that 26 of these cases were breast-fed.

With regard to the relative frequency of infection with the dysentery bacillus as compared with other diarrhoeal diseases of infancy, the investigations were not sufficiently extensive to justify any general conclusion. There was found, however, a clear indication that the bacillus occurred much more frequently in summer than in winter. In a series of 64 summer cases reported from the Vanderbilt clinic, including every sort of intestinal disturbance attended by diarrhoea, the bacillus of dysentery was found in 62 instances; it is, of course, not alleged that in all these instances the bacillus was necessarily the cause of the intestinal disturbance. In another series of cases, covering a complete year, about one-half of all exhibiting clinical evidence of acute disorders of the intestinal tract showed the dysentery bacillus. In order to throw some light on the question whether the bacillus, when present, necessarily leads to the production of intestinal disturbances, Dr. Martha Wollstein undertook a research upon the stools of normal children. The excreta of 32 infants were examined, but in no case was the bacillus of dysentery found. In the case of 24 other infants dying from various diseases, not intestinal, cultures were made from the intestinal mucosa: in three instances only was the dysentery bacillus found; of these, two showed signs of catarrhal colitis, and the third had a history of previous diarrhoea. These results, therefore, lend no support to the view that the bacillus dysenteriae may be a harmless and normal inhabitant of the intestine.

On classifying the cases according to their clinical type, there were found 91 examples of severe infection, which were characterized by much mucus and generally blood in the stools, usually a raised, but not always a greatly raised, temperature, and by marked general prostration; 81 cases were described as moderately severe; in these there was much mucus and often blood in the stools, some fever, but not much constitutional depression. In the mild cases, which numbered 63, there was very little constitutional disturbance; blood was seldom passed, there was little or no fever, but the stools almost always contained mucus. The "Flexner-Harris" type of organism was present in 207 cases, the true "Shiga" in 23, and both in 7. No differences could be observed in the clinical manifestations between a "Shiga" and a "Flexner-Harris" infection.

The results of inoculation with antidysenteric serum were disappointing. Out of the 83 cases in which this treatment was employed, 38 proved fatal. In only 12 instances did decided improvement appear to follow its use. But Dr. Holt points out that the serum can hardly be regarded as having received a thorough trial. In a large

[1] *Bacteriological and Clinical Studies of the Diarrhoeal Diseases of Infancy.* Edited by Simon Flexner, M.D., and L. Emmett Holt, M.D. New York: Rooney and Otten Printing Co. 1904. (Medium 8vo, pp. 202.)

proportion of cases it was used late in the disease, and generally for only the most severe cases; four patients, in fact, were actually moribund. Frequently the doses given were too small, and there was no opportunity of repeating them. When the serum is given early in adequate and repeated doses, continued, if necessary, for several days, the prospects of its proving to be of value are distinctly more favourable.

The Rockefeller Institute is to be congratulated upon this valuable example of organized research. Quite apart from the utility of the results so far obtained, the method of attacking the problem is excellent, and provides a valuable object-lesson. A large body of investigators are set to work simultaneously in various parts of the country upon the same problem. They work independently, publish their results as their own, and are given all due credit for them; at the same time, as the work is co-ordinated and under a general supervision, the individual results obtained gain enormously in value by their conformity to the general methods and principles of the investigation as a whole. The American investigators have acted very wisely in confining their attention, so far, to the dysentery bacillus. In adopting this course they make it quite clear that they have no intention of prejudicing the main question. They fully recognize the difference between demonstrating the presence of this organism and proving its causal relationship to infantile diarrhoea, and they make no assumption that other infectious or toxic agencies may not be at work. But in dealing with so extensive and complicated a problem they are obviously right in selecting one possible factor to begin with and investigating that thoroughly.

We should be glad to see in our own country more examples, such as this, of organized research upon important problems of clinical pathology. Even without the much-to-be-desired stimulus of a beneficent millionaire or of large public endowments, better use might be made of existing opportunities. We have many important scientific societies, where valuable papers on medical research are read and discussed; but most of these papers represent disjointed individual efforts. How rarely do we find a society seriously endeavouring to formulate a concrete plan of research upon a definite problem, enlisting the co-operation of its members, and stimulating them so to arrange their individual shares of the work as to contribute the maximum of benefit to the scheme as a whole!

MEDICAL PRACTITIONERS CALLED TO ASSIST MIDWIVES.

The Medico-Political Committee of the British Medical Association has drawn up a memorandum on the payment of medical practitioners called in to assist midwives. Copies of the memorandum will be issued this week to the Honorary Secretaries of Divisions. It is hoped that the subject may be brought before a meeting of every Division at an early date, in order that the matter may be fully discussed and a general policy decided upon. The matter is one of considerable importance, and we would venture to suggest that it is desirable that individual members should not pledge themselves until the view of the members of the Association generally have been ascertained.

THE TEACHING OF PATHOLOGY AT OXFORD.

The necessity of obtaining an adequate endowment for the Readership in Pathology at Oxford has only been postponed by the generous contribution of the Rhodes Trustees, and it is felt that no time should be lost in endeavouring to secure permanent financial support for the working of the Department of Pathology. In order to discuss the best means of furthering this object, a meeting will be held at 20, Hanover Square, on Tuesday next, December 20th, at 5 p.m., at which Sir William Church has consented to take the chair. It is hoped that there will be a large attendance of Oxford men interested in the progress of medical science at the University, and that some definite proposals will be made for carrying out an agitation for better endowments. It is, perhaps, scarcely necessary to recall the difficulties of the situation, as an article on this very point appeared in the British Medical Journal so recently as November 19th, in reference to the contribution of the Rhodes Trustees. It may, however, be worth while to state that when the Pathological Institute was built, as the result of the gift of £5,000 to the University for this purpose by a medical student, Dr. Ewen Frazer, the University chest was unable to make adequate provision for its maintenance. The financial difficulties became so great that there was recently considerable danger of losing the services of the present teacher of pathology until the Rhodes Trustees came to the rescue. This has brought the state of affairs so prominently before the Oxford graduates that they have determined to try to do something to supplement Dr. Frazer's generosity by taking immediate steps to work for an adequate and permanent endowment for the Pathological Institute and its staff.

THE LONDON SCHOOL OF TROPICAL MEDICINE.

It is with special gratification that we call attention to a new departure of the highest importance in the study and teaching of tropical diseases. Chairs for research and teaching in Protozoology and Helminthology are about to be established in the London School of Tropical Medicine. In both these provinces of scientific research we as a nation have hitherto been far behind France and Germany. Now it may be hoped that before long this reproach will be removed. We understand that the funds for the establishment of the Chairs come from Colonial Governments, a circumstance which may be taken as a substantial proof of their appreciation of the work done by the school. The salaries offered are, as may be seen from an announcement in our advertisement columns, sufficiently liberal to encourage really competent men to devote themselves to the cultivation of a field of research in which virtue has hitherto been its own reward. It is a matter for satisfaction that Mr. Lyttelton sees his way to continue and still further advance the good work so successfully initiated by his distinguished predecessor at the Colonial Office. There can be no question of the vast and growing importance of the study of tropical diseases, or of the necessity of supplying to medical men whose lifework is to be in the regions where the white man's burden is heaviest, a scientific basis for practice and for original research. Recent discoveries in regard to the germ origin of most tropical diseases have caused a complete revolution both in our conception of the pathological processes involved and in the management of their manifestations and results. We heartily wish the Tropical School success in the new sphere of work on which it is about to enter. To young men filled with what Huxley called the divine thirst for knowledge no better opportunity could be offered of starting upon a career of discovery that may lead to practical results of incalculable importance. We are in a position to announce that Mr. Chamberlain has just intimated his willingness to preside at a banquet on behalf of the School to be held in London on May 10th, 1905. There is a special appropriateness in Mr. Chamberlain's presence on such an occasion, as it was his initiative that brought the School into being, and it is largely to his encouragement that it owes its success.

THE KING'S SANATORIUM.

A week or two ago the King paid a visit to Midhurst, and inspected the sanatorium for consumptives which is now in course of erection there and which is to bear his name. His Majesty expressed his satisfaction at the progress which has been made. The sanatorium was independently

visited on the same day by some members of the Advisory Committee under whose direction the work is being carried out, and we understand that they, too, expressed approval of the manner in which it is being done. The contract for the building of the sanatorium does not expire until December 1st, 1905, and there is every reason to anticipate that the work will be completed by that date. Already, as may be seen from an announcement in our advertisement columns, the appointment of a medical superintendent is considered to be within the sphere of actuality. The advertisement seems to dispose of a rumour which for more than a year past has been prevalent in quarters usually well-informed. It was positively stated with every appearance of authority that the Committee had actually signed an agreement with a well-known German physician whose special experience of sanatorium work had recommended him for the post. As it is expressly stated in the advertisement that candidates must be registered under the Medical Act, and as the gentleman in question is not, we believe, in possession of a degree or diploma registrable in this country, it is clear that the rumour was, to say the least, premature. We confess that we are relieved to learn that an appointment which, however excellent in respect of personal qualifications, would have given great and justifiable offence to the medical profession of this country, is not contemplated by the Advisory Committee.

SANITATION IN KINGSTON, JAMAICA.

From the local newspapers received by last mail we learn that for some time a very offensive odour has daily pervaded the city of Kingston and its suburbs, and that the local authorities, the City Council, and the Kingston General Commissioners are at variance as to the source from which the smell emanates. The opinion of the health officer is that it is due to defects in the sewerage system; on the other hand, it has been urged that the sewage submitted for analysis to the Island Chemist contained no sign of rapid decomposition, and did not indicate in any way that it would give off any pronounced unpleasant odour before it could be properly acted on by the deodorizing properties of the sea water at the outfall main. The true source of the odour, it was urged, was the gases emanating from the Yallah's ponds, which, having an area of 1,200 acres, are filled with water highly charged with decaying organic matter, and are quite capable, it is said, of generating a sufficient volume of noxious gases to be appreciable fifteen or sixteen miles to leeward. As neither the City Council nor the Commissioners appeared to be taking any steps to abate the nuisance, it was resolved at a special meeting of the Council of the Merchants' Exchange to appeal to the Governor to exercise his authority in the matter, and it was rightly pointed out that this was a matter which affected not only the tourist trade, but also the health of the families and children of those who were carrying on business in Kingston. We trust that the appeal to the Governor has resulted in the adoption of energetic measures to put a stop to what would appear to be a very serious, we might almost say an intolerable, nuisance.

THE SUNFLOWER AS A MEDIUM OF INFECTION.

A few years ago the sunflower was the oriflamme of the aesthetes. With the passing of that curious cult its adventitious glory faded, and it fell back into the life of rustic simplicity from which it came, and, like the beauty of a season, shone for a dazzling moment before the eyes of men. Now it again emerges from its native obscurity, but in an entirely new character. No longer the fetish of an artistic cult in England, it seems to be on the way, in another land, to become a symbol of disease and death. A French physician, Dr. Marcou, states[1] that one of the first things which struck him on his arrival in Russia was the enormous quantity of sunflower seeds consumed in that country. The seeds, which are oleaginous and have an agreeable taste, are constantly chewed by the people. The outer husk is detached with the teeth and spat out. These husks are seen scattered about on pavements and garden walks, in railway carriages, tramway cars and cabs, on the floors of restaurants and private rooms. On days of public festivity the ground everywhere is covered with them as thickly as the streets of Paris are strewn with confetti during the carnival. At every street corner a brisk trade is done in the seeds by old women. A striking proof of this passion—for it is nothing less—of the Russian peasant is the fact that the Czarina apparently could think of nothing that would be more welcome to the soldiers in Manchuria, and she is said to have spent £32,000 in satisfying their craving for sunflower seeds. As the seeds are very cheap, that sum represents an enormous consignment. When Russians of the lower orders are asked why they chew the seeds they admit that there is no nourishment in them, and that they make the mouth sore, but they plead that the habit gives them something to occupy their minds. It may be remembered that Dr. Johnson explained the attraction of smoking by the fact that it enabled a man to do nothing while appearing to do something. This, it may be gathered, is the charm of chewing sunflower seeds. A close parallel to the habit is the gum chewing which is so prevalent in the United States. As far as the individual is concerned there seems to be no particular harm in the chewing of sunflower seeds; but, as Dr. Marcou points out, the habit is dangerous to the public health. In spitting out the husk the chewer necessarily expels more or less saliva with it; hence everywhere in Russia all the dangers of the spitting nuisance are present in an aggravated form. Not only tubercle bacilli but the micro-organisms of diphtheria, pneumonia, and other diseases are freely distributed in this way. Dr. Marcou examined husks picked up in streets, workshops, restaurants and railway carriages, and in most cases found pathogenic germs of one kind or another upon them. On nearly every one he found staphylococci; streptococci were frequently met with; Koch's bacillus was present in 20 cases; the diphtheria microbe in 10. No extended statistical research is needed to confirm his inference from these casual observations that the habit of chewing sunflower seeds must be a fairly important means of disseminating infectious diseases in Russia.

[1] *Archives Générales de Médecine*, December 6th.

THE CLAN SYSTEM AND MODERN LIFE.

Dr. Lachlan Grant, of Ballachulish, delivered an interesting lecture on the Clan System and Modern Life in the High School, Ceilidh, on December 3rd. He said that whether or not the Highlands were peopled by a race prior to the Scots or Picts—such as the progenitors of the present Basque people of the Pyrenees, whose language was the most ancient in Europe—was not known; but, at all events, the nomadic tribes that reached Ireland and Scotland finding no more lands within reach would be compelled to select a fixed abode. Their tribal system would begin to crystallize in accordance with the new environment, and instead of wandering to and fro with their flocks and herds, they would become attached to localities. Agriculture would come once more into vogue, and the artistic element in human matters would begin to assert itself. In time the instinct of leadership would manifest itself in some, who would be followed by the mass. Thus arose certain families endowed with attributes of leadership, handed on from father to son, and eventually forming a kind of aristocracy, from which were selected chiefs and subchiefs, who guided their destinies in peace and led them in battle. The inevitable break-up of the clans by economic, political, and social changes loosened the bonds that bound the chieftains to their clansmen, and in time there arose, in place of the patriarchal relationship, an unsympathetic landlord class on the one hand, and a landless, unfranchised people on the other. At the present day the havoc played by an irrational land system might be easily seen all over the Highlands. In many parts of the Western Highlands the crofters were longing for land, and Dr. Grant believed they would make the best possible use of further additions to their holdings, should they

be enabled to obtain them on suitable terms. The Congested Districts Board was doing much to mitigate the lot of the poorer crofters, and the purchase of a large tract of land in the Isle of Skye marked the beginning of a new and better policy from which much might be expected. The tendency of modern commercialism was in the wrong direction. Under the old clan system no one had to starve; strangers, and even enemies, were entertained as friends. In the old clan days also, the common lands and bogs were free to all. The duties of hospitality were looked upon as sacred. That kind and chivalrous spirit was badly needed now to counteract the mercenary element in modern life. Without a good land and agricultural system there would never be real progress, and, when that was secured there would be every hope of reducing to a minimum the evils that afflicted society. The State support of all hospitals, and not of fever or poorhouse hospitals alone, was surely becoming a necessity, as evidenced by the constant appeals for funds to support present hospitals. The increasing number of paupers, lunatics, criminals, tramps, gaol-birds, the alarming physical degeneracy of the people, the high infantile mortality, the increasing drink bill, and the problems of modern life, required sobriety and concentration for their solution. The recurring periods of trade depression were the outcome of defective laws and of a false civilization. The humanitarian spirit was world-wide in its influence. Public bodies, like the Glasgow School Board, were rising above the habit of treating children like machines, to be crammed with knowledge and nothing more. Glasgow again led the way by providing, in some cases, free meals to the poor little things, who were in many cases too hungry to attend to their lessons. The well-being of all should be the concern of society. Highlanders should find it easy to accept this ideal. The clan system illustrated on a small scale what people were capable of when their best qualities were called into play.

THE VICTORIA HOSPITAL AT DAMASCUS.

OPINION is somewhat divided as to the value of foreign missions, but whatever may be said or thought of the religious aspect of missionary enterprise, few will be found to deny that when it is associated with a scheme for the skilled relief of pain and disease, it must carry with it, into whatever corner of the globe it penetrates, an incalculable boon to suffering peoples who are wholly ignorant of the benefits conferred by modern medicine and surgery upon civilized humanity. An article by Colonel Henry Knollys, M.V.O., in the December number of *Blackwood* directs attention to the good work which is being done by such a mission in the ancient city of Damascus. There the Edinburgh Missionary Medical Society has established one of its stations, and has built and equipped a hospital which is carrying on a beneficent and much-needed work. It is almost wholly concerned in the treatment of the native population which flocks to it in large numbers. The hospital, which has recently been enlarged, contains 60 beds. It is under the direction of Dr. Mackinnon, who is its founder and architect as well as its superintendent. His staff consists of one assistant surgeon and three Scottish nurses, all trained in Edinburgh. There is a large out-patient department, in which between 7,000 and 8,000 cases are treated annually. The majority of the admissions are surgical, and last year 307 operations were performed. The city of Damascus contains a population of 200,000, and is described as "a whitened sepulchre of insanitation." It possesses, of course, other medical agencies besides the Victoria Hospital which are doing good work in the struggle against disease and death, but they do not appeal to the sympathies of the outside world, and particularly of the British public, with the same intensity as an institution which is officered by men and women of our own nationality and conducted by them on the same principles as our hospitals at home. Relief is afforded gratuitously except in a small number of cases where the patient is able and willing to contribute a trifle towards the cost of maintenance. Damascus is comparatively seldom visited by Europeans, and the opportunities of obtaining benevolent assistance on the spot are few and far between. The Victoria Hospital would appear to be one of those institutions which well deserve practical assistance, and which may be reckoned upon to deal usefully and discriminately with any contributions which may be made to its exchequer. Colonel Knollys (4, Morpeth Mansions, London), who is deeply interested in its welfare, undertakes to remit direct to Damascus, without cost, any money gifts that may be sent to him.

LEAD IN WATER SUPPLIES.

MR. ASPINALL MARSDEN, M.R.C.S., of Lightcliffe, near Halifax, has issued a pamphlet with the title *Lead in Water versus Arsenic in Beer*, in which he sets forth his view that the well-known plumbo-solvent character of many public water supplies in the North of England still constitutes a serious danger to health, notwithstanding the remedial measures supposed to be adopted by the water authorities. Much of the pamphlet is occupied with a statement of the chemical and physical properties which underlie this action on lead—matters which have already been set out in a recent report of the Local Government Board. The main point, and one which might have been more fully dealt with, is that the author's observations have convinced him that the present modified conditions contain a subtle element of danger operating detrimentally on the general health, without necessarily producing the more marked symptoms of lead poisoning. Contrasting his experiences in two similar communities (one supplied with moorland water and one from other sources), he has been struck by the widespread prevalence in the former district of anaemia, gastric disturbances, constipation, etc. In Yorkshire, he says, the teeth are in a notoriously bad state, and ulceration and retraction of the gums are often present. Mr. Marsden does not suggest any remedy for the dangers which he apprehends, though he appears to regard as impracticable the suggestion that leaden service pipes should be abolished. Whilst the author's alarm at the present state of things is perhaps exaggerated, still, having regard to the fact that some two millions of people are concerned, it seems desirable that adequate supervisory powers should be vested in some central authority to enforce the efficient treatment of all moorland water supplies, so that even the last traces of plumbo-solvent ability may be constantly removed. Meanwhile, if Mr. Marsden would record more fully his observations as to actual cases of depreciated health attributable to the insidious cause in question, other medical practitioners might be led to study the minor manifestations ascribed to it by him.

M. DOYEN'S RESEARCHES ON CANCER.

IT is stated in certain newspapers that Professor Metchnikoff and Drs. Gallois, Blondel, Jean, and Stoeber, who were invited some weeks ago by M. Doyen to investigate his claim to have isolated and identified the microbe of cancer, have confirmed the fact of the discovery. It is said that M. Metchnikoff is satisfied that the micrococcus neoformans is "habitually" present in cancerous growths, and that the serum used by M. Doyen "habitually produces in cancerous tumours alterations of a favourable character sufficiently rapidly to diminish their volume and render it possible to operate on them two or three weeks after the beginning of treatment." The full report of the Committee will be awaited with interest, but in the meantime we think it right to point out that even if it be true that the micrococcus neoformans exists, and is associated in some way with cancerous growths, it by no means follows that it is a cause of the disease. The weight of scientific opinion, both in this country and in America, is at present against the parasitic theory of cancer. It may be added that the therapeutic question is absolutely distinct from the pathological problem, and requires for its solution evidence of a wholly different character

from that which bacteriological experts are specially competent to appreciate. We note, by the way that it is stated that Drs. Netter and Variot, who were members of the Committee as originally formed, were unable to continue their investigations and did not sign the report. This fact, though it may have no particular significance, is somewhat unfortunate, as their names would have carried more weight than those of the other physicians associated in the inquiry with Professor Metchnikoff.

A FRENCH VIEW OF THE ENGLISH NURSE.

In a recent number of the *Bulletin Médical* Soeur Marie Catherine, Superior of the nuns of the Order of St. Joseph of Cluny, who have charge of the nursing arrangements in the Hôpital Pasteur, Paris, gives her impressions of London hospitals and nurses derived from personal observation during a recent visit. She was especially struck by the homelike character of the hospitals, where, she says, it is evident that the first thought is not to keep down expenses but to promote in the smallest detail the comfort and well-being of the patients. The well-lighted wards—as Soeur Marie Catherine gracefully puts it, even the sun in London is generous to the sick poor—the flowers, the pictures, the cheerful fireplaces present a striking contrast to the barrack-like appearance of Paris hospitals. A full and accurate description is given of the care taken in the selection and in the training of candidates for the nursing profession. The French nun, like the French doctors, was greatly struck by the appearance, manners, and efficiency of the nurses in all the hospitals which she visited. The high moral character of the nurses and their strong sense of duty impressed her no less than their technical skill. It is evident, she says, that they take their profession seriously. They love their work, and take a keen interest in the patients to whose needs they minister. "The respect for themselves and for their neighbours, which is one of the best features of the English character, impels them to do whatever they have to do as well as they possibly can." It is hinted, however, that English nurses have to some extent the defects of their qualities. The very perfection of their training is apt to give them a somewhat overweening sense of their technical knowledge, and thus give rise to a tendency to attach an exaggerated importance to such knowledge and to relegate the womanly qualities of tenderness, sympathy, and tact to a lower place. Here the Nursing Superior of the Pasteur Hospital has unquestionably put her finger on the weak spot in our otherwise admirable system of nursing. The "new nurse" with the half knowledge that makes her magnify her office is a source of danger in the sick room, a grievous burden in the household, a nuisance, and too often a hindrance to the doctor. The nurse here has not yet set herself up as a professional rival to the physician as she has in America; this is probably due, however, not to a less vaulting ambition, but to the fact that the "graduate nurse" is still unknown among us. We are assuredly no believers in untrained native talent in the nursing, or any other, sphere; but we venture to think that the nurse of to-day is not infrequently overtrained in point of book knowledge. Hence many patients and not a few doctors prefer sensible women who, though they may have no smattering of elementary anatomy and physiology, know how to manage sick people, and can be trusted to carry out instructions not merely in the letter but in the spirit.

PRIZES OF THE ACADÉMIE DE MEDÉCINE.

At a sitting of the Paris Académie de Medécine held on December 14th the names of the successful candidates for the various prizes offered for medical researches of one kind or another were announced. The Audiffred prize of £960 for the best work on tuberculosis was not awarded, but sums varying from £60 to £20 were given, by way of encouragement, to Dr. Armand Delille of Paris for an investigation of the part played by the poisons generated by Koch's bacillus in tuberculous meningitis and tuberculosis of the nerve centres; to Dr. Nattan-Laurier of Paris for a research on mammary tuberculosis: to Dr. Pautrier of Paris for one on atypical forms of cutaneous tuberculosis: and to Dr. Lalesque of Arcachon for a memoir on the sea and consumptives. The Baillarger prize for £80 for researches on mental diseases was awarded to Dr. Paul Sérieux for a series of reports on the treatment of insanity and the organization of asylums. The Adrien-Buisson prize of £420 was awarded to MM. E. Leclainche. Professor in the Veterinary School of Toulouse, and H. Vallée, Professor in the Veterinary School of Alfort, for researches on symptomatic anthrax and gangrenous septicaemia. The Campbell-Dupierris prize of £92 was awarded to Dr. J. Tissot of Paris for an experimental investigation on the exchange of gases in the arterial blood. the ventilation of the lungs, and arterial pressure during chloroform anaesthesia. The Daudet prize of £40 was awarded to Professor Monprofit of Angers for a memoir on tumours; to the same surgeon also fell the Huguier surgical prize of £120 for essays on the surgery of the ovaries and Fallopian tubes, and on salpingitis and ovaritis. The Theodore Herpin (de Genève) prize of £120 was awarded to Drs. P. E. Launois and Pierre Roy of Paris for a biological study of giants. The Jacquemier obstetrical prize of £68 was awarded to Dr. Bouchacourt of Paris for a series of memoirs on the applications of radiography to midwifery; while Dr. Briquet of Nancy gained the Tarnier prize of £120 for a work on tumours of the placenta. The Laborie surgical prize of £120 was awarded to Drs. J. Hennequy and R. Loewy of Paris for a monograph on the treatment of fractures of the long bones. The Louis prize of £120 was awarded to Dr. Victor Balthazar of Paris for a memoir on the serumtherapy of typhoid fever, and the Saintour prize of £172 to Drs. Fernand Bezançon and Marcel Labbé for a treatise on haematology. A considerable number of prizes of smaller value was awarded to various competitors.

THE DISINFECTION OF SHIPS.

The question of the disinfection of ships to prevent the importation of disease is one of great importance to the public health, and of considerable financial interest to shipowners. In a report[1] to the Local Government Board on the destruction of rats and disinfection on shipboard, Drs. Haldane and Wade give an account of what is known as the Clayton process for disinfection, described in our columns some time ago, and also of the results of some experiments on the effects of this method in the destruction of rats and disinfection generally. In the Clayton process sulphur is burned in a special furnace and the fumes are conducted by pipes to the holds of the ship, and it is claimed by the inventors that these will kill all animal life, without at the same time destroying the fittings or general cargo of the ship. Dr. Haldane witnessed the application of the method to the ss. *Bavaria*, of 3,000 tons register. Unfortunately, impure sulphur seems to have been used in this instance, and a smell suggestive of putrefaction remained for days as a result. More important than this, however, was the fact that the process failed to kill off all the vermin in the ship generally and in the cargo, and this, apparently, has been noted before. Dr. Wade about the same time carried out a very carefully-planned series of experiments in the experimental chamber at the Blackwall Wharf on the action of the gas on animals, bacteria, articles of cargo, metals, seeds and grains, and moist and dry foodstuffs. He found that if the gas penetrates sufficiently it acts as a powerful destroyer of life and a disinfectant generally, though it has disadvantages in causing serious damage to various articles of food, and in penetrating masses of cargo very slowly. Its best and most potent action is undoubtedly exerted when the holds of the ship have been emptied of cargo, and then hundreds of dead

[1] Reports to the Local Government Board on the Destruction of Rats and Disinfection on Shipboard. By J. S. Haldane, M.D., F.R.S., and John Wade, D.Sc. London: Eyre and Spottiswoode; Edinburgh: Oliver and Boyd; and Dublin: E. Ponsonby. 1904. (6d., No. 201.)

rats and insects may be found; this has often been seen in ships treated in the Royal Albert Docks. The conclusion arrived at after reading the report, and after seeing the method in action, is that the Clayton process is better than the carbonic oxide and carbonic acid processes; that the best means to adopt in a plague-infected ship would be to fumigate all accessible parts of the ship, as the authors recommend; in other words, first to remove the cargo, at the same time preventing rats from escaping, and then to finish off by saturating the empty holds with the gas. Such a procedure would seem to be a safeguard against plague.

THE POLYCLINIC.

THE annual dinner of the Medical Graduates' College and Polyclinic took place on December 7th at the Trocadero Restaurant, under the chairmanship of Dr. Theodore Williams, this being the sixth of the series, and the first under the new rules by which ladies may be present. Altogether there were upwards of two hundred persons present, and the evening may be described as a great success: the forms and ceremonies common at public dinners were all duly observed, but there was an animation in the proceedings and an undertone of extra good fellowship which seemed to distinguish it somewhat from average dinners of the same kind. Dr. Theodore Williams gave a history of the institution. His description of the needs of medical men in active practice—the best of whom, he said, never ceased to be students—and of the way in which these are met by the Polyclinic fully accounted for the success which he was able to show this institution has attained. The College had at first both needed and received a good deal of assistance from persons not immediately connected with it, but who recognized what valuable service such an establishment might render; among those more specially to be mentioned in this connexion were Lord Strathcona, Lord Iveagh, Mr. Arthur Balfour, the Prime Minister, and Mr. Asquith; both the latter had added moral to financial support by attending and presiding at the dinners of the College. The institution was now, however, independent of outside support, and if the number of students rose, as he hoped it might, to 2,000, it would still be possible to provide for them. He concluded by coupling the toast with the name of the Resident Medical Superintendent, Captain Hayward Finch, F.R.C.S., late I.M.S., who gave further accounts of the work from several points of view. Mr. Mayo Robson, in proposing the toast of the guests, expressed the general regret at the absence, through indisposition, of Mr. Jonathan Hutchinson, whose support had always been of such value to the Polyclinic. He read a letter from Mr. Hutchinson, in which he said he would drink good luck to the assemblage at 10 p.m. in a cup of gruel, and made mention of the pleasure it had been to him to work for the Polyclinic in concert with the son of the former Dr. Theodore Williams, with whom he had been so closely associated in connexion with the New Sydenham Society. After Dr. William Armstrong, of Buxton, had replied for the guests, Dr. Herbert Tilley proposed "The Ladies." This was acknowledged on behalf of her professional and non-professional sisters then present by Dr. Mary Scharlieb. The claim of women to be allowed to become doctors had not, she said, received early recognition, but personally they had always been pleasantly treated, and there were many present who had materially assisted in a movement which was now successful; in return women doctors were acquiring and exhibiting the true corporate spirit. Lastly, the "Health of the Chairman" was proposed by Mr. Cantlie, and duly honoured and briefly acknowledged.

NOBEL PRIZES.

THE Nobel prizes for science have been awarded as follows: The prize in medicine and physiology has been awarded to Professor Pavloff, of the Military Medical Academy of St. Petersburg, whose name is well known by his important experimental researches on digestion and other physiological subjects. The prize in physics has been given to Lord Rayleigh, Professor of Natural Philosophy at the Royal Institute: that in chemistry to Sir William Ramsay, Professor of Chemistry at University College, London. The distribution took place in the Great Hall of the Academy of Music at Stockholm on Saturday, December 10th, in the presence of King Oscar. Lord Rayleigh, Professor Ramsay, and M. Pavloff received their prizes, together with diplomas and gold medals, from His Majesty. The sum of money attaching to each prize amounts to 140,858 kroner (about £7,825). The distribution of the prizes was followed by a banquet at the Grand Hotel. Covers were laid for 190 guests, the company including the Crown Prince, Prince Charles, and Princess Ingeborg. Professor Petterson proposed, in English, the health of Sir William Ramsay, and Professor Hasselberg, in Latin, that of Lord Rayleigh.

PROFESSOR KOCH'S NEW EXPEDITION.

PROFESSOR KOCH has arranged to start on a new expedition of scientific exploration on December 17th. He will first proceed to Dar es Salam in German West Africa for the purpose of completing the researches on cattle plague begun by him in South Africa. These investigations were directed to purely practical objects, while questions of importance from the scientific point of view had to be left untouched. These questions will now in the first instance engage Professor Koch's attention, but he will also study other tropical diseases affecting animals and man. As occasion arises he will go to other places suitable for purposes of research. Professor Koch estimates that he will be away six months. On December 11th a dinner was given by a Committee formed to celebrate the completion of his 60th year.

A FALSE REPORT OF PLAGUE NOCULATION.

IT was stated in several English newspapers last week that a medical student had died at Oporto of plague conveyed by a prick with a hypodermic needle which had been used for experimental inoculation. The statement is absolutely inaccurate. The student, we learn from *A Medicina Contemporanea*, died of blood-poisoning from a dissecting wound. In the course of a demonstration in the Anatomy Theatre, which is also a public mortuary, he used a knife with which a *post-mortem* examination had been made. The knife had not been disinfected, and the cadaveric poison introduced through an accidental cut caused death a few days later. The students of the school have since held a meeting at which a resolution was passed that they would not set foot in the Anatomy Theatre again till it had been thoroughly disinfected. It was also decided that the authorities should be urged to provide a separate mortuary for the bodies of persons dying without medical attendance or under suspicious circumstances.

THE centenary of the birth of Saint-Beuve, the greatest of literary critics, is to be celebrated, with the feasting and the flow of oratory customary on such occasions, at Boulogne on December 18th. The medical profession may claim a share in the famous writer, who studied medicine for several years. His medical knowledge showed itself so conspicuously in a tale of unhappy love which was his first work that Chateaubriand declared it had been written by a *Werther carabin*.

A MEETING will be held in the Town Hall, Manchester, on Thursday, January 19th, 1905, at 4 p.m., for the purpose of establishing an institution to promote the social and scientific unity of the medical profession. We are informed that nearly one hundred promises of support have been already received. Members of the medical profession are invited to be present at the meeting.

THE Cumberland County Council has appointed a Committee to carry out the provisions of the Midwives Act, and has co-opted Dr. Henry Barnes of Carlisle as a member. The Committee held its first meeting on December 9th, and resolved to request the medical officers of health of urban and rural districts in the county to supervise the midwives in their respective districts at the same scale of charges as has been adopted in Cheshire. They are asked to report quarterly to the Committee. The arrangement is to continue for a year.

Scotland.

Munificent Gift to the University of Edinburgh by Sir Donald Currie.

At a meeting of the Court of the University of Edinburgh on Monday, December 12th, Principal Sir William Turner announced that, in reply to an appeal to friends of the University for funds to purchase a site for laboratories and other educational buildings, and for making further financial provision for an extension of the teaching staff, and for the promotion of research, Sir Donald Currie had intimated a subscription of £25,000. In his letter Sir Donald Currie said that he wished the revenue from this money to be applied by the University Court to the remuneration of a staff of lecturers, such as the authorities of the University might find it advisable from time to time to appoint. An option was also given to the University Court to apply £5,000 of the amount towards the purchase of a site for the new laboratories, should it be necessary to use a portion of his gift for that purpose. In giving this intimation to the Principal, Sir Donald Currie said that it was his desire to assist in placing the metropolitan university of his native land on a sound and prosperous financial basis, and at the same time to aid the Carnegie Trust in carrying out one of the important objects which Mr. Carnegie had in view in his foundation of a trust for the Universities of Scotland. In consequence, Sir Donald Currie had communicated with Lord Elgin, the Chairman of the Executive Committee of the Carnegie Trust, and had asked that, in view of his gift, the £10,000 voted by the Committee in annual instalments as a capital sum for the endowment of teaching should be paid as soon as possible to the University, or that the income from it should become available from the beginning of the winter session 1905-6, and that a further substantial contribution should subsequently be made for the improvement and expansion of the University. Lord Elgin has expressed his personal sympathy with the purpose to which Sir Donald Currie desires his gift to be applied, and has undertaken to bring the whole matter before the Executive Committee, pointing out that the above contribution, already voted by the Trust to the endowment of teaching, and similar grants to the other Scottish universities, are evidence that any application made by the University Court for the purpose of carrying out Sir Donald Currie's wishes will receive the fullest consideration of his Committee at their next quinquennial distribution. At their meeting on Monday afternoon, December 12th, the Executive Committee endorsed Lord Elgin's views.

The University Court recorded their grateful thanks to Sir Donald Currie for the munificence of his gift, and expressed their sense of the important provision which it will enable them to make for the development of the teaching power of the University. In order to associate his name permanently with the fund, they resolved to designate it "The Sir Donald Currie Lectureship Endowment Fund." The Principal also announced that, in response to the appeal made to other friends of the University, subscriptions by them to the amount of £15,000 had been intimated to him, which he personally acknowledged on behalf of the Acting Committee for the University improvement and expansion scheme, the details of which will shortly be announced.

Queen Victoria's Jubilee Institute for Nurses.

The annual report of the Queen Victoria's Jubilee Institute for Nurses (Scottish Branch) for the year ending October 31st, 1904, has been issued. At that date the Scottish Council was responsible for the maintenance of 43 nurses. During the year 31 nurses had, on completion of their training, been engaged from the home by local committees, and six new branches had been established and affiliated to the institute. There were now 257 Queen's nurses in Scotland, under 165 affiliated branches, of which 21 were under two county associations. During the year 5,173 cases in Edinburgh and Leith appeared on the books, and 104,150 visits were paid. The ordinary expenditure exceeded the ordinary receipts by about £100. During the year 22 nurses resigned—7 to be married, 4 for private nursing, 2 for other work, 1 as unsuitable, and 8 on account of ill-health. Courses of lectures on hygiene, fevers, diets, obstetrics, district nursing, and sick cookery had been given during the year.

Edinburgh Royal Infirmary.

The managers have made the following two additions to the medical and surgical staff: Frederick Gardner, M.D., B.Sc., F.R.C.S.E., to be Second Assistant Physician for diseases of the skin; J. Malcolm Farquharson, M.D., F.R.C.P.E., to be Second Assistant Surgeon to the ear, throat, and nose department.

The Universities of Glasgow and Aberdeen.

Parliamentary Representation.

A meeting of Graduates of these Universities was held at the Holborn Restaurant, London, on December 8th, the Rev. Canon D. Reith, M.A., in the chair, to hear an address from Professor William R. Smith, M.D. It was subsequently moved by Mr. T. B. Browning, M.A.Glasg., seconded by J. Nelson Matthews, M.D.Glas., and carried:

> That this meeting of Graduates of Glasgow and Aberdeen Universities cordially endorse the candidature of Professor William R. Smith, M.D., and pledges itself to use its best endeavours to secure his return.

In supporting the resolution, Professor W. J. Simpson, M.D., F.R.C.P., and Dr. J. Ford Anderson, pointed out the totally inadequate representation of the medical profession in Parliament, and the difficulty always experienced in finding a medical candidate; this seat offered one of the very few opportunities for returning a medical man to Parliament; they insisted, too, upon the reflection which would be cast upon the graduates if they had to seek a representative from another university as was suggested, and urged that in Professor Smith, who had attained a prominent position in preventive medicine and had great public experience, they had a candidate whom it was most desirable should be elected. Meetings of medical graduates have also been held in Sheffield, Blackburn, and Lincoln, at which a similar resolution was passed.

The Glasgow Hospitals.

With the return of Hospital Sunday and the publication of the annual reports of several of the hospitals in Glasgow, the attention of the charitable public is again specially drawn to the work the hospitals are doing. Coming first in importance, there are the Royal, the Western, and the Victoria Infirmaries, and the Hospital Sunday Fund is divided between these three institutions. The work of these hospitals goes on increasing with the rise of the population. Their accommodation is taxed to the utmost, and large numbers of patients are constantly waiting their turn for admission. Though this is so, the annual subscriptions remain insufficient to meet the ordinary expenditure, so that large deficits—over £9,000 each for the Royal Infirmary and the Western Infirmary, and over £4,000 for the Victoria Infirmary—have to be made good out of extraordinary income, that is, from legacies of which the managers would like to use only the interest. Moreover, all the hospitals have extensions in hand, and when these are completed there will be a considerable increase in the annual expenditure for upkeep. Increased public interest and support is therefore called for, and it is hoped that this year's Hospital Sunday Fund will show a considerable advance on the £5,200 which was raised in that way last year.

The Western Infirmary.

The annual report of the Western Infirmary shows that an increased number of indoor patients have been treated—6,132, as compared with last year's 5,984. The outdoor patients—at the various departments of the dispensary, at the wards (minor accidents), and at the electrical department—have increased by no less than 2,108, being now 22,010 in all, these cases making more than 94,000 visits. While, therefore, a greater number of both indoor and outdoor patients have been treated, it is gratifying to learn that there was a decrease in the ordinary expenditure to the extent of £500. In spite of this, however, the ordinary income fell short of the ordinary expenditure by £9,445, a sum which was made up out of legacies, a few of which had opportunely come into the managers' hands. As to the new buildings, the managers report that the new dispensary is all but completed, and is expected to be opened early in the year. A part of the new wing is also well advanced, and this will add 50 or 60 beds; but the managers desire to make further additions to complete their scheme, and still appeal for subscriptions for that purpose.

The Victoria Infirmary.

The report of the Victoria Infirmary also calls attention to increasing numbers of patients from year to year—2,114 indoor patients and 4,037 at the dispensary, making 14,104 calls. An addition to the Nurses' Home is being made, and also a new pavilion, which will add largely to the accommodation for patients. These extensions will require £25,000 to £30,000, of which about a half is already subscribed.

The Royal Infirmary.

Recently nothing has been publicly announced regarding the much-needed reconstruction of the Royal Infirmary, but it is expected that the work will be begun at an early date, and a large proportion of the money required has been received. Here, again, an improved hospital and increased accommodation will mean increased cost of management, and to meet that greater liberality on the part of the public and a lesser tendency to rely on that uncertain source of income, the legacy, is desirable.

The Maternity Hospital.

After the general hospitals, the institution which is appealing most clamantly at present for special help in extending its work is the Maternity Hospital. It originated in 1834, and its history has been one of gradual expansion from time to time. The present hospital in North Portland Street dates from 1880, but it is now quite inadequate for the work that is being done. The increase in the work of the institution is shown by the following figures: The patients attended—both outdoor and indoor—numbered 944 in 1860, 1,288 in 1880, and 3,365 in 1902. Similarly the fees received from students and nurses in the earlier years came to about £100, but were £261 in 1880, and £1,856 in 1902. During the last ten years nearly 30,000 cases have been attended, while 1,244 students and 800 nurses have been trained. The extensions at present planned call for about £60,000, including £14,500 for the site. While this will provide the necessary accommodation for an increasing number of patients, it will greatly facilitate the instruction of the students and nurses in practical obstetrics and gynaecology. To stimulate interest in the Hospital and in this scheme of extension a largely attended and influential meeting was held two weeks ago, to which the Princess Louise (Duchess of Argyll) gave her patronage. It is hoped that the directors will soon have the satisfaction of receiving a hearty response to their present appeal, and this without recourse to a bazaar.

Ireland.

THE LOCAL GOVERNMENT BOARD OF IRELAND AND ITS POWERS.

IN the Court of Queen's Bench, Dublin, on December 6th, application was made to the Lord Chief Baron, Mr. Justice Andrews, and Mr. Justice Johnson, in the case of the King (Drs. Heelan and Carraher) *v.* the Local Government Board, to make absolute a conditional order for a writ of *certiorari* to have an order of the defendants brought up and quashed. The Local Government Board had abolished a dispensary district called Collon, and had attached part of it to Drumconrath and part to Dunleer.

It was contended that the order was made without jurisdiction, that it was made in direct opposition to the evidence at a sworn inquiry as to the medical requirements of the district, that the proposed abolition of Collon No. 1 and Drumconrath Dispensary is for the sole reason that difficulties have arisen in filling up the vacancy in Drumconrath Dispensary District owing to the inadequate salary proposed to be given to the medical officer. The Local Government Board by their order proposed to alter the dispensary districts as follows: Collon No. 1 District and Drumconrath District were to cease to exist as separate districts; Collon No. 2 District was to be altered by the addition of Drumconrath and Killary electoral divisions; and Collon electoral division was to be added to the Dunleer Dispensary District. Dr. Heelan in his affidavit stated that he had upwards of twenty-four years' service as dispensary medical officer, and that he had been appointed to the Dunleer district at a salary of £120 a year. The district comprised about 17,000 square acres, or about 27 square miles, and had a population of about 3,000; and the medical officer stated that during his residence in it he had built up a practice worth £500 or £600 a year in addition to his salary. The Collon district was about 14,000 acres, or 22 square miles in extent, population 1,604; and Dr. Carraher stated that he was appointed medical officer in 1899 at a salary of £115, his private practice amounting to £200 or £300 a year. In November, 1902, the dispensary doctor of Drumconrath resigned, and the Ardee Board of Guardians advertised for a successor at the old salary, £120 a year, with £25 as medical officer of health. However, no doctor would take the position on these terms, and a temporary officer had since been doing duty at £240 a year. The guardians had asked permission to permanently increase the salary attached to the position, but the Local Government Board would not permit this to be done.

Counsel went on to refer to the failure of the Ardee Guardians to obtain a medical officer for the Drumconrath district at the salary offered, £120, which with fees, etc., amounted to £155 a year. It was then the Local Government Board proposed to split up the districts and add Drumconrath to the Collon No. 2 District. The guardians advertised five times for candidates for the position of medical officer, but could get no one to fill the position. The Local Government Board wrote that if the guardians could not get a candidate it would alter the dispensary districts. The guardians protested, but as they could get no one to act as medical officer of the district the Local Government Board sent down a sealed order. The Board also proposed that one of the doctors who had obtained a good private practice in the district should leave it and remove to a house to be built at a cost of £1,000 in another district. This would possibly mean the loss of his present practice. The Local Government Board did not claim that a doctor's sole remuneration should be the £120 received for his services in the dispensary district. No doctor could keep up his position and live on that sum.

The Attorney-General, in reply, said if the rural dispensary districts were made for the doctors and not the doctors for the dispensary districts, he would agree with much that Mr. Matheson had said, because, if the contention of the other side was right, once a doctor was put into a dispensary district it could never be changed or altered without his consent. The Local Government Board was obliged to provide reasonable and adequate medical relief for the poor, and provide it in an economical manner, and the correspondence with the guardians refuted the disgraceful allegation that the interests of the sick poor were neglected. In the letters the Board stated that it was willing to provide liberally for the increased duties imposed on the doctors. It considered the proposed change would impose no hardships, and in making it it had regard not only to the wants of the sick poor but to the interests of those who had to pay the rates. It sent the guardians a minute of Dr. Flinn's inquiry, and in it it pointed out that the proposed rearrangement would entail little extra work, owing to the great decrease of population and the increased means of locomotion. The Board was not unwilling to sanction an increase of the doctor's salary, but it pointed out to the guardians that it would be wrong to give a newly appointed dispensary doctor a larger salary than that paid to men who had served in the union for many years.

The arguments having concluded after two days, the Lord Chief Baron, in delivering judgement dismissing the application, said the Court must not be taken as pronouncing any opinion on the vexed question as to what was the proper remuneration that should be allowed to dispensary medical officers. Certain rights were given to the dispensary doctors, as was quite proper, under the Medical Charities Act, but those rights were subordinate to the question of the relief of the sick poor, and the matter of altering dispensary districts was inseparably mixed up with the proper and efficient carrying out of the provisions of the law. Looking at all the Acts of Parliament bearing on the question, he considered that the Local Government Board had the power to alter dispensary districts where they were satisfied that such could be done without injury to the interests of the sick poor, but he thoroughly appreciated the hardship that this would involve to both these medical gentlemen, especially to Dr. Keelan, who had worked up a private practice worth £500 or £600 a year, which he might have to give up or resign his position as a dispensary medical officer. In refusing the application with costs, none of the members of the Court would be dissatisfied if the Local Government Board, having regard to the loss of practice which these gentlemen would sustain by the changes in the dispensary districts, would see their way not to enforce the order for costs.

Mr. Justice Andrews and Mr. Justice Johnson concurred.

Canada.

HEALTH OF MONTREAL.

THE annual report of the Health Department of Montreal for 1903 has just been completed, and it shows the results of the new card index system which has been inaugurated. The mean annual death-rate for the past eighteen years, excluding that for 1885, the year of the great small-pox epidemic, was 24.77 per 1,000 of the population. The rate for 1903 was 20.21, or 4.56 less than the mean rate for the preceding eighteen years; 3.04 less than in 1901, and 2.37 less than in 1902.

Tuberculosis.

There is a distinct decrease in deaths from tuberculosis. Before 1900 the number of deaths was 692; in 1901, 647; in 1902, 644; while in 1903 the number was only 633, notwithstanding the increase in population. That this decrease is in large measure to be accounted for by the preventive measures used by the Antituberculosis League cannot be doubted. This society has been very active for the past year, and by means of public meetings, lectures, and the dissemination of literature upon the subject, has interested the public in the prevention and cure of the dread disease. During the past four months 534 visits have been made by the inspectors of the League, and 209 houses disinfected. Sputum cups to the number of 3,980 have been distributed, and a large quantity of literature. A dispensary has been fitted up, and competent medical men are in attendance on three days of the week. The latest effort of the society has resulted in the city council

adopting an antispitting by-law which will come into force very shortly.

Small-pox.

In regard to small-pox the Health Officer reports that there were only two deaths as compared with ten the year before. The statistics in this department would furnish interesting reading for the antivaccinationist, a being now fortunately rare in Montreal, few having survived the year 1885. Of the 90 patients admitted to the small-pox hospital, 77 had never been vaccinated, 13 had been vaccinated more than five years before, and there were none who had been vaccinated within five years. At the present time Montreal may be considered to have a well-vaccinated population, as all the schools, institutions and factories require that their scholars and employés shall be vaccinated, and the Health Department sees that it is properly done. Some years ago more than a thousand children were withdrawn from school on account of this regulation, but this year the officials had no trouble in this respect.

The Birth-rate.

The birth-rate statistics are more accurate than they have been for some time on account of the new regulation compelling medical men to send a printed form to the Health Department filled in with all the details of the birth and parentage. It was thought that this would raise a great deal of opposition among medical men, but an editorial article in the *Montreal Medical Journal* apparently had the effect of discouraging any open condemnation of the new by-law. The total birth-rate for 1903 was 36.08 per 1,000. Of this, French-Canadians contributed 43.64 per 1,000; other Catholics, 30.69; Protestants, 20.52. The excess of births over deaths was 3,375, distributed as follows: French-Canadians, 2,541; other Catholics, 337; Protestants, 507.

Toronto Hospitals.

Two of the leading members of the Senate of Toronto University waited upon the Ontario Government a short time ago and were successful in obtaining the promise of 100,000 dols. towards a new general hospital in Toronto. This sum is given upon the understanding that the hospital will be used for clinical instruction by Toronto University Medical School. Mr. Murlock has donated 200,000 dols. for special departments in the hospital, and as the city is also to provide 100,000 dols., there should be sufficient to begin operations for a modern and complete hospital, suitable for carrying on clinical work and with facilities which have up to the present been lacking in Toronto.

The new Hospital for Consumptives at Toronto has been opened, and is receiving patients whether they are able to pay or not. The hospital is conducted by the National Sanatorium Association, and is maintained by a Government grant, civic grant, and by private subscription.

CENTRAL MIDWIVES BOARD.

Its Methods.

We have been requested to insert the following communication:

The report in the British Medical Journal of December 3rd of the meeting of the Central Midwives Board held on November 24th contains an inaccuracy which has led to a good deal of misunderstanding. On page 1526 a paragraph, headed "Midwives on the roll who cannot read or write," states that "it was decided that, though the Board was bound to put on the roll any woman who, at the time of the passing of the Midwives Act, had been for at least one year in bona fide practice as a midwife, and borne a good character, nevertheless, the local supervising authorities were not bound to have them on their lists." Nothing bearing on this subject was decided by the Board, though some member or members may have made the statement as reported.

While giving to this correction the same publicity as to the original statement, we desire to take the opportunity of pointing out that the error must be attributed to the unbusinesslike methods of procedure followed by the Board. At its meetings desultory conversations frequently take the place of orderly debates. Long discussions are permitted to take place, and at their conclusion no definite resolution is passed. Such a method of procedure is a waste of public time; the Board has certain statutory duties to perform, and these ought to be carried out in a businesslike manner and its decisions recorded in definite resolutions. The Board does not itself publish minutes of its proceedings, and as the interests of the public and of individuals are concerned, it appears to us that this deficiency should be remedied without delay. The deliberations of the Board should be so conducted that its opinions are definitely ascertained, and when that has been done the Board itself ought to record them for the information of the public and of the parties concerned.

ASSOCIATION NOTICES.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1905.

Meetings of the Council will be held on Wednesdays, January 18th, April 19th, July 5th and October 18th.

The January meeting of the Council, by kind permission of the Metropolitan Asylums Board, will be held in their Board Room at 2 o'clock in the afternoon of Wednesday, January 18th. The offices of the Metropolitan Asylums Board are situated on the Victoria Embankment, at the corner of Carmelite Street and near to Blackfriars Bridge.

ELECTION OF MEMBERS.

Any candidate for election should forward his application upon a form, which will be furnished on application to the General Secretary of the Association, 429, Strand.

Guy Elliston, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Members are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

BRANCH MEETING TO BE HELD.

Bath and Bristol Branch: Bristol Division.—The following reports of the Medico-Political Committee have been referred to the Divisions for consideration: (1) The interim report on contract practice; (5) the report on consultation of medical witnesses in legal cases; (3) the report on information supplied to coroners by medical practitioners; (4) the report on reorganization of the Local Government Board. The Medical Acts Amendment Bill is also to be considered. These reports and the Medical Acts Amendment Bill have been fully set forth in the Supplement to the British Medical Journal of November 26th. A meeting will be held to consider these subjects at 8 o'clock on Tuesday, December 20th, in the Medical Library, University College, Bristol.—Newman Neild, Honorary Secretary.

SPECIAL CORRESPONDENCE.

PARIS.

Académie de Médecine: Dr. Albert Robin on Metallic Ferments, their Action on Metabolism, their Effects in Pneumonia.—Experiments on Vaccination of Cattle against Tubercle.

At the last meeting of the Académie de Médecine, Dr. Albert Robin read an important communication on metallic ferments, their action on metabolism, and effects in pneumonia, the outcome of a research carried out with G. Bordet. Bredig and his followers, he said, have shown that, on passing a small electric arc between metallic electrodes immersed in distilled water, solutions are obtained containing 0·00009 gram to 0.0002 gram of the metal employed per cubic centimetre. These solutions they showed to be capable of bringing about certain diastatic reactions, and these reactions could be accelerated or inhibited by agents capable of a similar influence on the diastases themselves. Dr. Robin had followed up these researches by injecting under the skin solutions containing a few ten-thousandths of a gram of some metal, such as palladium, platinum, gold, silver, etc. He observed considerable chemical effects similar in every way to those obtained with diastases extracted from yeasts. These effects are:

1. An increase in the urea which can be increased more than 30 per

cent., and reach such a quantity that by the direct addition to the urine of some nitric acid, a large clot of nitrate of urea is more or less rapidly deposited at the bottom of the testing glass. This increase in the proportion of urea, variable in its intensity, is very frequent, exce in advanced cases of cancer and cachexias in general.

2. An increase in the coefficient of nitrogen utilized.

3. An increase of uric acid which may be considerable, and reach even three times the initial quantity.

4. A discharge of indoxyl in the urine.

5. A fall in the total quantity of oxygen consumed, without a parallel fall in the carbonic acid formed, or an elevation of the respiratory quotient.

6. A temporary rise of arterial tension.

Following these injections, Dr. Robin, with P. E. Weil, nas also remarked certain modifications in the cellular elements of the blood; during some hours after an injection there is a true leucocytosis, slight in healthy individuals, but intense in those infections which are commonly accompanied by leucocytosis. It began to diminish after one or two hours, and continued to decrease for one or two days, this being often followed by a secondary increase in the number of leucocytes, or else a return to the previous state. The destruction of leucocytes was at the expense of the neutrophile polynuclear cells; at the same time, an increase in the mononuclear cells was observed. From the above facts the following bio-chemical consequences follow:

1. An experimental confirmation of the celebrated formula given by Armand Gautier to explain the method of vital disintegration of albumen and the formation of urea without the addition of any external oxygen and by hydration and oxido-reduction, since the total quantity of oxygen consumed falls, or but slightly rises, while the urea shows, on the contrary, a notable increase.

2. A proof that the indoxyl in the urine is not formed only by gastro-intestinal fermentations, but is the further proof of organic processes of hydration and oxido-reduction.

3. A proof of the rôle that has been attributed to organic diastases in the chemical phenomena of disassimilation.

4. The possibility of assimilating metals in extremely dilute solution to organic diastases; hence the name of "metallic ferments" which Dr. Robin proposes to give them.

Up to a certain point this extreme division of the metals can be compared to the state of the matter contained in a Crookes's tube. It would seem that the gold, silver, platinum, or palladium, etc., do not act as specific bodies, but as "metallic matter in the radiant state." In the same way, the remarkably energetic action of these metals in such infinitesimal traces explains, Dr. Robin thinks, the therapeutic effects of certain mineral waters, the general composition of which does not account for their activity, and in which M. Garrigou has found traces of many metals. Coming now to facts Dr. Robin asked himself if the dominant action of these metallic ferments could not be utilized therapeutically in cases in which these vital actions were compromised or insufficient. In infectious pneumonia with a fatal termination the coefficient of nitrogen utilized falls on the average 68 to 73 per cent., and the production of urea is more or less diminished. In cases which recover at the height of the disease the coefficient varies from 77 to 82 per cent. It rises, as well as the urea, a little before the fall in temperature (precritic discharge) to increase again during the crisis. As at the same time the total oxygen consumed diminishes, and the respiratory quotient increases, it results that the crisis in pneumonia coincides with an exaggeration of hydrating and oxido-reducing chemical phenomena which demonstrate the energy with which the organism defends itself, and that these phenomena are one of the conditions of this salutary crisis. Chemically the results of the subcutaneous injection of 5 to 10 c.cm. of a metallic solution, containing 0.09 to 0.2 mg., two of the active principle per c.cm. are very distinct, that is, increase in urea, increase of the coefficient of nitrogen utilized, increase in uric acid, discharge of indoxyl. Clinically, the fall of temperature, six times out of ten, occurs before the seventh day. It is rapid in 8 cases out of 10, the fall varying from 1.6° to 2.5° C. In 2 cases out of 10 it is followed, two or three days later, by a fresh rise in temperature, at once yielding to a second injection. The physical signs of the pneumonia shows that it continues its evolution, in spite of the fall of temperature. The crisis of polyuria of convalescence seems to be retarded a few days. Dr. Robin has not had enough cases so far to justify statistics, but of 14 cases treated 13 recovered. The patient who died had the defervescence on the sixth day. He was beginning to eat, and complained of nothing, when he died suddenly on the tenth day on getting up to have his bed made. *Post mortem*, large clots were found blocking the pulmonary artery. The heart was soft, overladen with fat, but without valvular lesions. The lung was still hepatized; the liver voluminous and congested. The metallic ferments have, Dr. Robin added, no action on the pneumonic lesion itself. They stimulate the reaction of the organism against infection and its toxic products. Their utility lies in the help they bring to the normal means of defence. Reduced to this rôle of collaborator with the *vis medicatrix naturae*, this functional treatment could in no way comprise the treatment of pneumonia, since it does not meet the various special indications which may be present.

The first of a long series of experiments in vaccination of cattle against tubercle took place on December 11th at Melun. These experiments will be continued for about a year after the methods of Professor Behring of Berlin and of Professor Lignières of Buenos Aires; they have been instituted by the Société Centrale de Médecine Veterinaire de France. Twenty-four animals belonging to six different races of cattle were inoculated on Sunday, all except one having previously passed successfully the tuberculin test. After a banquet, Professor Vallée of Alfort and Professor Arloing of Lyon addressed a large assembly of veterinary surgeons and medical men.

BERLIN.

The Virchow Hospital.—The Empress Frederick Post-graduate House.—Professor Senator.—Lupus in Berlin.—Effect of Small-bore Bullet on Bone.

As the buildings of the Rudolf Virchow Hospital approach nearer and nearer completion, the organization of its staff has gradually taken shape. A special Committee has prepared a plan of all the arrangements, which has been submitted to and passed by the municipal authorities. There is to be a triumvirate of directors: one as head of the general management, and the other two in charge of the two great medical subdivisions or departments—external and internal diseases. All three directors are to live rent free in houses representing about M. 3,000 (£150) rental; the salaries of the medical directors have not yet been decided upon; that of the managing director has been fixed at M. 8,000 (£400), rising to M. 12,000 (£600). Conferences between the chief physicians of the hospital are to take place periodically.

Another medical institute in course of construction, the "Empress Frederick house for medical post-graduate instruction," reports progress. The building is to be roofed in by January, and completed in a year from then, so that the opening ceremony may take place in February, 1906, the time of the Imperial silver wedding. A special feature of the new institute will be the "permanent exhibition of medico-technical industries." The plan has been welcomed by manufacturers; instruments, apparatus, pharmacological preparations, and drugs, everything in fact that physicians and surgeons require in the exercise of their profession, will here be on view. The exhibits will be kept up to date.

One of the most distinguished among Berlin University teachers and clinicians, Professor Hermann Senator, celebrated his 70th birthday on December 6th. Almost the entire Faculty of Berlin, and numerous former pupils now living in other German towns, joined in ovations and congratulations, and thus gave the entire day a festive character. Senator's whole career has been connected with Berlin and its University. He took his degree in Berlin, and here he has lectured and taught since the year 1868. In the Franco-Prussian war of 1870-71 he so distinguished himself that the Iron Cross was bestowed on him. In 1881 he became Physician-in-Chief at the Charité Hospital, and to this hospital he has remained faithful ever since. At present he is Director of the third Medical Charité Clinic and of the University Medical Policlinic. The chief researches by which Senator's name will be remembered are those on kidney diseases, on diabetes mellitus, on albuminuria in health and disease, on the fever process and its treatment, and on the apparatus of mobility.

The Central Committee of the Berlin sick clubs has set on foot an inquiry to ascertain the number of cases of lupus among the working population of Berlin.

By means of a most ingenious electrical apparatus photographs have been taken in one ten-thousandth part of a second at the Institute for technico-scientific investigations in Neubabelsberg, near Berlin. Herr Schinning of this Institute read a paper on the process, and among other photographs demonstrated was a series showing the destruction of bone by a modern small-bore bullet. These interesting documents will require careful study; they seem to show an explosive action of the semi-liquid marrow.

MANCHESTER.

The Medical School Dinner.—Hospital Architecture.—Clay Soil.—Sanitation Fifty Years Ago.—Children in Police Courts.—Sick Nursing Association.

A DINNER in connexion with the Manchester Medical School was held on December 8th in the Whitworth Hall of the University. The Earl of Derby, who is President of the Royal Infirmary, presided. The dinner was an extension of the annual medical dinner, and was specially designed to celebrate the recent changes in the University, whereby Manchester becomes independent of the other federated colleges, the completion of the great scheme for the rebuilding of the Royal Infirmary, the amalgamation of the St. Mary's Hospital, and the erection of the new public health laboratories at the University, which will be formally opened on January 27th next. These events are sufficient to mark 1904 as a "memorable year" in the medical history of the city. About one hundred and sixty were present. Every one seemed to feel that a new era was opening up for advancing medical education and research in Manchester. Many laymen interested in the management of the infirmary and various hospitals were present. The Dean of the Medical School, Professor Stirling, proposed "The City of Manchester and the Borough of Salford." Already, he said, in the short period the University had been independent closer relations had sprung up between it and the Manchester and Salford Corporations while that local patriotism which was never wanting was also greatly stimulated. The medical students also profited from the generosity of the Corporations, for their medical officers of health taught an important department of medicine in the Medical School, while the Fever Wards at Monsall were open to them for instruction in certain infectious diseases. The University, also mindful of its high calling in the community in which it was placed, was striving, and successfully striving, "a double debt to pay" by providing efficient instruction in the theoretical and also in certain more practical parts of medical science. The Lord Mayor, who responded, spoke of Manchester as foremost amongst all provincial cities of England for the excellence of its educational provision. The Earl of Derby, in proposing "The Victoria University of Manchester," said that the great majority of young men and women who profited by the teaching which was given at the new universities could not possibly have been able to enjoy the advantages of university life but for these universities. Whatever storms and stress the Royal Infirmary might have suffered in the past were over; the ship was refitted and able to go on a voyage feeling that she was in closer association than ever before with the consorts who were around her. Medical science in Manchester was tending towards the avoidance of overlapping, and an endeavour to keep the functions of each hospital so separate as in some degree to give a specialism to each. The Vice-Chancellor spoke of the great work done by the Medical School, of the scientific men it had sent forth, and of the medical students who showed by the part they played that they were likely to become ornaments of their profession, as they had been ornaments of their university during their medical studentship. Great benefits would accrue to the community through the united efforts of the University, the Medical School, and the hospitals of Manchester. He believed that in the future they would see in Manchester the greatest medical school in the Empire, whether from the point of view of administration or the advancement of scientific knowledge. Sir Frank Forbes Adam, Chairman of the University Council, in submitting the toast of "The Hospitals in Manchester and Salford," said that there was no city in the United Kingdom or elsewhere which could compare with Manchester in the provision which it had made for the sick poor in its various hospitals. The Chairman of the Infirmary Board said they were on the point of letting the contract for the foundation of the New Infirmary, and he believed that the infirmary, when completed, would be second to none in the world. Sir William J. Sinclair proposed the toast of "The Guests," which was acknowledged by the High Sheriff of Lancashire.

Mr. E. T. Hall, one of the architects for the New Infirmary, in a lecture on "Hospital Design and Construction," said that architectural treatment must always be subordinated to the fundamental objects of a hospital, and must provide the maximum of sunlight and the best ventilation. The Hôtel Dieu of the eighteenth century in Paris contained from 700 to 1,000 patients in one ward, and the beds were made to accommodate four patients each, and often had to hold six. Some 5,000 patients were housed on 3 acres, which allowed only 30 ft. per patient. The mortality was as high as 22 per cent. Modern hospitals had an area thirty times as large, and modern fever hospitals an area sixty to a hundred times as large, for each patient as was provided in the old Hôtel Dieu.

By the passing of the City Extension Act the area of Manchester is increased by 6,000 acres, and its population by 70,000. The Corporation is projecting a new housing scheme. In giving evidence with regard to it, the medical officer of health stated that it was possible to live as healthily upon clay soil as upon sand. The clay could be drained. The health of the outlying districts of Manchester, which were built upon clay, was exceedingly good and the death-rate quite low. There was no proof that a clay soil of itself was necessarily injurious to health. Overcrowding and other insanitary conditions were far more productive of mortality. The death-rate in the lodging-houses of Angel Meadow was not less than 80 per 1,000, and the death-rate there from phthisis is 20 per 1,000. In an overcrowded area in Rochdale Road the death-rate reached 49 per 1,000, against 20 for the whole city.

Dr. J. M. Rhodes has stated recently that fifty years ago the number of scavengers in Manchester was 78, and the annual cost £5,000. The principal streets only were swept once a week. Although the infantile mortality-rate is now nearly as high as it was then, it has become comparatively low amongst the Jews, "who stop at home and look after their children, and whose laws in relation to the vessels in which they keep their food are very strict." The general mortality has been reduced from 1 in 4 to 1 in 12. Typhus fever has practically disappeared. Scarcely any cellar dwellings remain out of 18,000. Fifty years ago water was supplied to only one-half of the houses; the supply was four hours a day in rainy weather, and one hour a day in dry weather. There was no public park or public bath in the city, and only twelve schools with playgrounds.

The City Justices have adopted a wise plan in regard to the investigation of all cases against children and young persons at the police-court. Children's cases will in future be heard in a separate room. By this simple yet valuable practice children under 14 years of age who come before the court, mostly on minor charges, will be kept from contact with undesirable persons, and many other obvious advantages will accrue.

At the thirty-ninth annual meeting of the Sick Nursing Association it was stated that amongst the sick poor 10,059 patients had been attended in their own homes, and 245,344 visits paid by the nurses. The district nursing staff exceeds 60 in number. The Salford Home this year has become self-supporting. The income of the whole institution was £7,063, and the expenditure £7,246.

CORRESPONDENCE.

A USEFUL WORK FOR MEDICAL MEN.

SIR,—Those who have examined large numbers of elementary school children agree in stating that a considerable percentage are suffering from ailments which hamper their efficient education—for example, myopia, squint, extreme hypermetropia, deafness, etc.—or which are worsened by ordinary educational processes—for example, myopia, squint, etc.—or which may be communicated to other children—for example, ophthalmia, phthiriasis, itch, ringworm, impetigo, etc. Of the six or seven million children now attending primary schools in the British Isles probably quite one million are suffering from some ailment which should be attended to in the interests either of their own education, or of their own health, or of their fellow scholars.

It will take many years before every education authority appoints a medical officer to examine all the school children under its jurisdiction; but some definite progress might be made at a very insignificant cost if every education authority would issue to each scholar a circular, to be taken home to its parents, pointing out the urgency of attending to obvious defects of sight, hearing, breathing, etc., and to communicable ailments. Such circulars have been issued by both the Westmorland County and the Kendal Borough Education Committees to the 12,000 school children in Westmorland at the trifling cost of 6s. per 1,000; and the suggestion now is that every education committee in the kingdom, which has not yet appointed a medical officer, might advantageously do something similar, and that medical men are the likeliest persons to move in the matter. The teachers and parents

thus have their attention called to the chief defects needing attention, and it is trusted that some effect may be produced among those anxious and able to do the best for their children.—I am, etc.,

Kendal, Dec. 4th. Wm. Rushton Parker, M.D.

WESTMORLAND COUNTY EDUCATION COMMITTEE.

Defects in School Children which Require Immediate Attention.

It having been found that a large number of school children have their education seriously interfered with by a number of common complaints, many of which may be remedied, the attention of parents is earnestly drawn to the following points:

1. *Eyesight.*—Every scholar needs good sight in both eyes.

Children with faulty sight, by continually straining their eyes, become liable to headache, squint, and sore eyes.

Sore eyes, squint, and headache may often be prevented and cured by wearing proper spectacles.

If a "cast in the eye" is neglected, the squinting eye gets gradually weaker and at last blind. The squint can then be cured only by an operation; and even this will not cure the blindness.

Parents whose children have faulty sight, or sore eyes, or a "cast in the eye" (squint), or frequent headaches, should consult their doctor, to see if spectacles or other remedy be needed.

2. *Hearing.*—Every scholar needs good hearing in both ears.

Earache often leads to a discharge from the aching ear: and a neglected discharge often leads to deafness, and sometimes to serious brain disease.

Parents, whose children have earache, or an ear discharge, or are at all deaf, should consult their doctor before any serious damage arises.

3. *Breathing with Open Mouth.*—Everybody should breathe through the nose, not through the mouth: the air thus gets warmed before it reaches the lungs; in school drill, children are taught to breathe deeply with the mouth closed.

Children who breathe with open mouth have for a long time previously suffered from either large tonsils or some blockage in the nose, which has caused a thick voice, "wax kernels" in the neck, and a badly-shaped chest ("pigeon chest").

Breathing with open mouth causes a tendency to catch cold, a still further blockage in the nose, deafness, headache, a daft look, and stupidity.

Parents, whose children breathe with open mouth, or have large tonsils or a blockage of the nose, or who frequently catch cold, or who have "wax kernels" in the neck, or a badly shaped chest, should consult their doctor at once, for the health may be greatly improved by removing the obstruction.

4. *Shortness of Breath, Habitual Cough, Frailty, Deformity, Fits.*—An important part of children's education consists of outdoor games, swimming, drill, and other exercises; and, in order to get the full benefit of these, every child needs a sound heart, sound lungs, good general health, freedom from deformity, and freedom from fits.

Parents, whose children get out of breath from too slight a cause, or are troubled with habitual cough, or are weak and frail and pale, or have any deformity (such as bow leg, knock knee, club foot, flat foot, hip disease, curved spine), or are subject to faints or twitchings or fits, should consult their doctor without delay, as special precautions may be needed about games and other exercises, clothing or food.

5. *Ringworm, Sore Head, Head-Lice, Scabby Face, Itch.*—It is very important to prevent children from communicating their ailments to one another.

Head-lice and nits are exceedingly common in children. Boys' heads are best kept closely cropped. To destroy lice and nits, the hair should be kept wet with paraffin for several hours and then washed with soap and water; the same should be done next day and the day after, care being always taken not to bring a naked light near the paraffin; then the hair should be combed daily with a very fine comb, soaked in vinegar, till no more nits can be found. Children should not exchange caps.

Ringworm often takes months to cure; children, with doctor's permission and under proper treatment, may mix with other children and even attend school, if they continually wear some kind of cap until certified as cured.

Parents, whose children suffer from ringworm, scabby sores (crusts) on the head or face, itching spots on the hands or wrists, or any complaint that might possibly be communicable to another child, should consult their doctor at once, as most of these complaints are much more easily cured in the early stage.

This leaflet should not be lost or destroyed.

THE DECISIONS OF THE REPRESENTATIVE MEETING.

Sir,—Mr. T. W. H. Garstang justifies the action of members—and I suppose he means also Divisions—of the Association in ignoring resolutions passed by the Representative Meeting in two sets of circumstances.

First, when it is a question of "principles only." From the word "only" I gather that he attaches little importance to principles. Here I differ from him entirely, for I confess to attaching considerable importance to principles, and therefore to any resolutions the Association may come to respecting them. If the Representative Meeting passed a resolution adopting a certain principle, I should certainly hold myself bound by that resolution as far as my attitude towards outside bodies was concerned.

Secondly, he instances inadequacy of discussion and the existence of a powerful minority at a Representative Meeting. These circumstances were not in my mind when I was writing. I referred to a matter of importance that had already been brought before, and presumably discussed by, the Divisions. Moreover, who is to decide whether a discussion has been inadequate or not? This is a pretext not infrequently urged by defeated (and perhaps disappointed) minorities in their endeavours subsequently to thwart the action of majorities; and I am not saying that in every condition of political life such a pretext is unjustifiable. But if it is to be acted upon under the circumstances mentioned in my letter, then farewell to unanimity in the Association as regards its relations to the outside world. This is the point I especially desired to emphasize; and, judging by the examples brought forward by Mr. Garstang, he does not appear to have understood me. The formation of Divisions and the alteration of the subscription were questions of the internal policy of the Association. What I wrote of was a question of the policy of the Association with respect to external bodies. If the Association is to make itself heard effectually it must speak with no hesitating voice. But this can hardly be the case if, the Representative Meeting having acted as the spokesman of the Association to the public, Parliament, or whatsoever body you like, two or three Branches or Divisions offer the same audience exactly the opposite advice. Such an action strikes at the very *raison d'être* of the Representative Meeting. I submit that if any Divisions are dissatisfied with resolutions passed at a Representative Meeting, they should endeavour to get such resolutions rescinded at a subsequent meeting, or they should bring their views of the wishes of the Representative Meeting before the Executive—namely, the Central Council—which might under some circumstances consider that the Representative Meeting should discuss the subject again. But for these Divisions to approach outside bodies with the object I have mentioned in the name of the Association, which they do if they go as Divisions, does not seem to me to be playing the game. I join with Mr. Garstang in hoping that you may give an editorial opinion on the subject.—I am, etc.,

December 11th. A Secretary of a Division.

ON PRIMARY BRONCHOPNEUMONIA AND SUFFOCATIVE CATARRH.

Sir,—Having had the temerity to comment on Dr. Samuel West's article on the above subject, I would beg for a brief further space to answer his letter in the British Medical Journal of December 3rd, p. 1541. I quite agree with Dr. West that "the relative frequency of acute lobar or massive pneumonia in the child and in the adult is really not material"—provided, I would premise, that the extreme frequency of its occurrence in young children be recognized and acknowledged. This expression of opinion by Dr. West as to the value of the relative frequency of the complaint in children and adults would seem to me somewhat belated, and if he will turn to his article he will find that he himself introduced this aspect of the question in the statistics furnished from St. Bartholomew's Hospital. I merely quoted from his own figures to show that the deductions he drew from them as to the relative frequency of croupous pneumonia and bronchopneumonia in young children were hopelessly and absolutely erroneous. A frank acknowledgement of this error might, then, have come better from him than a charge of irrelevancy against his critics.

It would appear to me, and I gather it does to others, that Dr. West has largely modified in his letter the views he expressed in his article. He no longer asserts that, in acute pneumococcal inflammation of the lung, massive consolidation is rarely met with in children, but merely that it is less frequent than the disseminated form, which last he believes to be common. Even thus modified, I think he will find very few with any special experience of children's complaints to agree with his view, that in such young subjects primary bronchopneumonia is the type, and massive consolidation, closely corresponding to the adult form, the exception. In fact, the only evidence he produces to upset the now commonly-accepted belief in the frequency of ordinary croupous pneumonia in young children is one case with a *post-mortem* examination, and even this one is open to a very different interpretation to that which he places on it, a vague reference to others he could bring forward, and deduc-

tions from statistics that he has not ventured to defend. The latter part of his letter deals with subjects that have no obvious bearing on the point in dispute, and I will leave it to the writers of the textbooks to answer their own delinquencies in confusing "acute congestive bronchopneumonia" and "suffocative catarrh."

My object in twice troubling you will have been obtained if I have shown that Dr. West's views as to the frequency of primary bronchopneumonia and the rarity of massive croupous consolidation in children are misleading, and should not be accepted without much further proof than he adduces.—I am, etc.,

London, W., Dec. 6th. J. A. Coutts.

CIRCUMCISION AS A MARK OF IDENTIFICATION.

Sir,—As the report of the Commission of Inquiry into the case of Mr. Adolph Beck has now been published, it is permissible to discuss a point of medico-legal interest to which the greatest importance has been attached in this case. It appears to have been assumed by all the legal authorities concerned in this case that the fact of a circumcision having been performed can be definitely ascertained and sworn to by a medical man after examination; and, further, that the result of the operation of circumcision is permanent and indisputable, and can only be arrived at by such operation. I am of opinion that there are few medical men who would be prepared to swear to the operation of circumcision having been performed in any particular case, or indeed in the majority of cases in which it has been performed in early infancy as a rite.

Cases are not rare in which phimosis exists after a badly-performed circumcision in infancy, while it is well known that the habit of keeping the glans uncovered leads to atrophy of the prepuce to such a degree that it would be impossible to swear that the operation of circumcision had not been performed. An uncircumcised Christian may pass for a Jew without doubt, but, what is less obvious, a circumcised Jew or Mohammedan may by practice and device adopt the garb of an uncircumcised Christian or Hindu, while an uncircumcised Christian may pass at one time for a Jew and subsequently again as an undeniable Christian.

The Commissioners are reported to have expressed their opinion that the omission to record the fact of circumcision among the "identification marks" of Smith, whether due to defect of system or to negligence on the part of an individual, was the primary cause of the miscarriage of justice in the case against Mr. Beck; but, speaking as a medical man, and having had twelve years' experience as a gaol superintendent in recording "marks for identification" of prisoners, the fact of the glans being exposed (as a result of circumcision or not) would not commend itself to me as a distinctive and indelible mark for future identification which such record is expected to contain. It could not compare in value with the record of one or more accidental marks or scars carefully measured and accurately located. It would have been both interesting and instructive had the records of such distinctive and indelible marks or scars as were made by the prison authorities in the case of Smith in 1877 and of Mr. Beck in 1896 been published to enable one to see how it was that the prison authorities identified Mr. Beck as Smith, and took upon themselves the responsibility, brought home to them by the Commissioners in their report, of treating Mr. Beck as a person previously convicted. This identification by the prison authorities of Mr. Beck as Smith, after an interval of about fifteen years, without any intimation from outside suggesting such identity, appears now to be the most incomprehensible feature of the case, and the report of the Commission as published sheds no light on it.—I am, etc.,

November 26th. I.M.S.

CANCER AND PRE-CANCEROUS CONDITIONS.

Sir,—I regret to find myself in disagreement with nearly all of Mr. Mayo Robson's conclusions regarding pre-cancerous conditions and their significance; indeed, after a thorough study of this very subject in all its bearings, I claim to have proved in the most complete and convincing manner possible that these conclusions are absolutely untenable.

The truth is that until surgeons adopt the only scientific method of dealing with questions of this kind—the numerical method—they will always be liable to this type of error.

In support of this proposition I propose briefly to set forth the main features of the evidence bearing on four of the special instances cited in Mr. Mayo Robson's lecture.

First, as to "chronic eczema" of the nipple, etc., as a precursor of mammary cancer. Attention was first prominently directed to this subject by Paget's well-known essay on *Disease of the Mammary Areola Preceding Cancer of the Mammary Gland*, which was published in 1874. He reported cases in which initial lesions of this kind were, after various intervals, followed by the formation of cancer in the breast; and the conclusion was drawn that this sequence "very often" happened. In this there can be no doubt that Paget was mistaken. Indeed, he admitted that the areolar affection might often be cured without any ill consequences ensuing, and Velpeau had previously reported many instances of this kind. Paget adduced no statistical data in support of his dictum as to the presumed frequency of the cancerous sequel, for none were then available. Since then, however, the subject has been numerically investigated on a large scale—comprising a total of over 2,000 cases—and it has been thereby proved that cancer of the breast follows "chronic eczema" of the nipple, etc., in only about one half per cent. of the total cases. Surgeons may therefore disabuse their minds of the idea that "Paget's disease" plays an important part in the pathogenesis of mammary cancer. Areolar affections of this kind are only exceptionally followed by the outbreak of mammary cancer; consequently the mamma should never be extirpated for lesions of this kind, unless signs of concomitant malignant disease are also present. It is just the same with lingual, buccal, and other local leucoplasias; it is only exceptionally that they end in cancer.

The second item to which I wish to call attention is the alleged proneness of non-malignant tumours to become malignant. This is a matter of great practical importance; but, as I have dealt with it very fully elsewhere,[1] I can here only briefly indicate the general conclusions. My investigations relating to uterine, mammary, ovarian and other tumours prove conclusively that non-malignant tumours have no special proclivity to malignant disease; on the contrary, they are less prone to it than are the normal structures of the corresponding organs. These results are in agreement with those arrived at some years ago by Sir F. Semon, who found that of 10,747 cases of non-malignant laryngeal neoplasms, only 47 originated malignant disease.

The third item is with regard to the alleged causative connexion between cancer of the penis and phimosis. Phimosis is one of the commonest anomalies, and a very large proportion of the male population is affected in this way, often to an extreme degree. If, therefore, as alleged, phimosis is a potent cause of cancer of the penis, this particular local variety of cancer should be very common.

But the ascertained facts show that it is far otherwise; thus of 2,669 men with cancer under treatment in the chief London hospitals, I found that only 105 had cancer of the penis; and of 2,891 similar cases in Vienna hospitals, Gurlt found only 108 thus affected; therefore rather less than 4 per cent. of these male hospital patients were affected with this variety of cancer. Englisch's statistics, embracing a much larger number of cases—namely, 12,607, show that less than 2 per cent. (1.81) of all cancers in men affect the penis. The Registrar-General's reports show that the rarity of cancer of the penis is much greater than even these hospital data indicate, for of 9,685 men who died of cancer during the year 1900, only 100 died of cancer of the penis; and the United States census report for the same year shows that this local variety of the disease is even rarer in that country.

The United States negroes are said to be more universally and more severely affected with phimosis than any other race; yet, during the year 1900 although the cancer death-rate for male negroes amounted to 28.6 per 100,000 living not a single death from cancer of the penis occurred during the whole year. This great rarity of cancer of the penis in negroes is fully confirmed by Rodman's experience in Philadelphia, by the Louisville statistics, and by other independent testimony. Moreover, it is worth noting that Jews are as little liable to cancer of the penis as non-Jews. If phimosis were really a potent cause of cancer of the penis how very different all this would be.

The fourth and last item to which I have to refer is the frequent association of gall stones with cancer of the gall bladder, and the presumed causative relation of the former to the latter. In this connexion it is necessary to bear in mind

[1] For mammary tumours my work on *Diseases of the Breast*, p. 310; for uterine myomata, my work on *Uterine Tumours*, p. 111; for ovarian tumours, *Lancet*, vol. ii, 1903, p. 1530 and p. 1757; and for general review of the whole subject, *Twentieth Century Practice of Medicine*, vol. xv. i, p. 210.

the comparative frequency with which gall stones occur and the extreme rarity of primary cancer of the gall bladder. With regard to the former, it has been estimated by Kehr and others that gall stones are present in about 10 per cent. of all adults, as determined by *post-mortem* examination. With regard to the latter, the rarity of primary cancer of the gall bladder is so great that of 7,297 cancer patients under treatment in large London hospitals I found only 11 had primary cancer of the gall bladder; and of 11,131 cancer patients in the Vienna hospitals Gurlt found only 5 instances of primary cancer of the gall bladder. I submit that these figures only admit of one interpretation, namely, that cancer of the gall bladder is not caused by the gall stones so often found in association with it.

It seems to me that facts of this kind ought not to be ignored.—I remain, etc.,

Clifton, Bristol, Dec. 5th. W. ROGER WILLIAMS.

SIR,—In answer to Mr. Bilton Pollard's letter I am very sorry that during the transcription of my notes into type an error has crept into my published lecture, which, however, did not occur during its delivery, when I remarked that both Mr. Bilton Pollard and Mr. Charles A. Morton had each performed seven colectomies for cancer without a death.

In the typewritten copy sent to the BRITISH MEDICAL JOURNAL the subsequent histories of Mr. Morton's cases have been placed immediately after Mr. Pollard's name instead of in their proper place a few lines below, after Mr. Morton's name. It should read:

Mr. Bilton Pollard published in the BRITISH MEDICAL JOURNAL for January 23rd, 1904, reports of seven colectomies without a death, and in none of the cases had there been recurrence of the disease: one patient lived for four years and died of heart disease, and the others were living at periods of four years, two and a-half years, two years and two months, nine months, six months, and two months respectively after operation.

It adds additional interest to this important series of cases to know that these patients are still free from recurrence, and it fully bears out my statement that cases in which the disease is limited ought to be capable of cure by enterectomy if operated on early.—I am, etc.,

London, W., Dec. 12th. A. W. MAYO ROBSON.

THE CAUSATION OF INSANITY.

SIR,—With reference to an article in the BRITISH MEDICAL JOURNAL of November 26th, page 1474, may I be allowed to direct attention to a cause of insanity not included in the list quoted, and to which, I think, too little attention is being given by the Commissioners in Lunacy, as well as by the profession generally?

The question with regard to insanity at present chiefly occupying attention is that of its apparent great and steady increase within recent years; and what is anxiously looked for is some possibly removable cause which might tend to explain such increase. Now of the twenty causes stated (Table XXII, Appendix A of Report), while all are frequently direct causes of insanity, not one can be held as accounting for any increase in the prevalence of that terrible malady, there being no reason to suppose that any of them are more operative now than they were thirty years ago.

In the absence of any assigned exciting cause of recent origin, the question to be faced is as to the reason for an increasing amount of mental breakage under existing conditions of nervous strain: or, otherwise, a decreasing degree of staying power on the part of the brain manifesting itself within the last thirty years, according to Dr. Clouston, to the extent of about 40 per cent. What has to be sought for, then, is the cause or causes of physical degeneracy of the brain specially operative within that period; and the line upon which such an inquiry should be directed is obviously that of development in the young.

All experience in physical development, upon which staying power depends, goes to show that it is in direct relation to the conditions bearing upon and determining activity during growth. This principle is well understood and acted upon by all who have to do with horses, and it is demonstrated on the human body—to which less consideration is given—in certain trades in which boys have been put out to hard work, resulting in stunted growth and poor physique. There is nothing to warrant the assumption that the brain is exempted from this physiological law.

The great outstanding feature affecting the young specially operative during the last thirty years is, undoubtedly, the so-called "educational" high pressure commencing with the Education Act of 1870. The passing and application of this Act was speedily followed by an outcry in the country against what was called "over-pressure in school work," or, in other words, putting excessive strain upon the young brain as a result of the system of payment by results. After years of such a state of matters, a Royal Commission was appointed to inquire into the facts, and in its report confirmed the existence, to a considerable extent, of over-pressure, stating that a number of cases of serious illness, and even of death, were directly attributable to school work. Amending Acts and modifications of the Code followed till, after having been operative on the brain power of the country for many years, what is now admitted by all to have been the vicious system of payment by individual results was finally eliminated. Can it be doubted that we are now suffering, and our asylums being filled, as a result of those years of strain upon the young brain, development being greatly interfered with, resulting in stunted growth and poor physique, with tendency to break down under even moderate strain?

It is not, however, only in the past tense that I refer to over-pressure on the young brain. In Board Schools the strain has been greatly relieved, although much depends upon the methods employed and the temper of the teacher, nervous strain and worry being even worse than lesson cramming. But in the higher departments of school and college life the whole tendency of the age is to put unlimited pressure upon the young growing brain. Subjects of examination are being multiplied and rendered more and more difficult and comprehensive, apparently on the supposition that mental power consists of such pabulum, instead of the infinitely delicate and complex structure of nerve cells and filaments of which the brain is composed, and which are developed, or their development thwarted, on exactly the same lines of activity as are other voluntary parts of the body.

But worst of all is the prevailing system of competitive examination, which is that of payment by results in its worst form. Prizes, bursaries, scholarships, civil appointments, etc., are for those who work hardest, quite irrespective of the amount of work thus entailed in relation to brain power or the requirements of development. The system compares unfavourably with the "long-distance rides" of the Continent, which are very generally condemned as cruel and injurious to the horses. Such "rides" are a severe test of the staying powers of the horses, and many break down and even die on the road. It is most unlikely, however, that a three or four-year-old horse, which is at about the stage of development of an eighteen to twenty-three-year-old human brain, would be chosen to run in the race, nor is it likely that the winners find places in crack cavalry regiments. Much more probably they spend the short remainder of their days between the shafts of the hackney cab. Then the "ride" is of limited, though great, length with a certain definite goal and stable at the end. The race for prize, bursary, or appointment has no limit short of endurance and the date of examination. The competition is, doubtless, a test of the brain power to start with, and the winners are probably of the strongest. It has yet to be shown that these are more fit for future work than the horses just referred to. And what of those who are not winners—who may be as a hundred to one of the successful competitors—of those who break down on the road, and of those who, after many months of excessive work with a "crammer," reach the examination but fail, perhaps by a single mark, to obtain an appointment? I commend this as a line of inquiry to the Lunacy Commissioners.—I am, etc.,

Dollar, N.B., Nov. 29th. JOHN STRACHAN, M.D.

THE AFTER-TREATMENT OF PLEURISY AND THE PROPHYLAXIS OF POST-PLEURITIC TUBERCLE.

SIR,—Tuberculous pleurisy is so common, and it is so commonly a precursor to pulmonary tuberculosis, that its recognition and treatment, but much more still the after-treatment of the patient, must take their place in the front line of our prophylactic measures. No other form of tuberculous invasion gives us so timely a warning and so fair a chance to do the right thing; for though it may happen that a minute pulmonary lesion is the immediate antecedent, the lung may remain for months or for years an apparently sound lung, and the case amenable to an early and persevering prophylaxis by hygiene. The success of the latter largely depends upon the immediate after-treatment of the pleuritic attack no less than upon the treatment of the effusion itself, a subject to which Dr. Barr of Liverpool had been the most recent contributor. Professor Hayem's clinical work, as set forth in Dr. Georges

Rosenthal's paper to which your Paris correspondent refers in the British Medical Journal of December 3rd, p. 1538, deserves, therefore, our earnest attention, and its lessons may be said without any exaggeration to have their daily opportunity for application within our own individual practice.

In this country the same methods have probably been long familiar to a few practical physicians, and although they have not been prominently taught in our textbooks, it is not unlikely that they may yet be discovered in our own medical literature of a former generation. Meanwhile the following brief quotations, from the *Polyclinic*, vol. i. October 1st, 1899, may help to draw further attention to the importance of a proper management of these cases, whilst they may supplement Dr. Rosenthal's remarks on respiratory re-education as a prophylactic measure.

Page 71: I venture to think that their occurrence (namely, of tuberculous pleuritic adhesions) is likely to be influenced by treatment, as will presently be explained, and that something may be done to prevent it.

Page 74: A description of the treatment of the effusion by aspiration and its after-treatment, and of post-pleuritic laziness of breathing, its recognition by frequent testing, and its assiduous treatment by thoracic exercises, concludes thus: One of the great objections to our delaying interference, whether by medicine or by aspiration, is the fact that the stomata and lymph capillaries are likely to become more and more clogged by sedimentary fibrin. These considerations contain a great principle of treatment. If dangerous conditions, such as cancer or excavation of the lung, do not forbid it, free manipulation of the chest should be one of the chief elements of our treatment, with a view to reabsorption. . . . . When the chest has been relieved by aspiration, the re-expansion of the lung and the stimulation of the pleural membrane by movement should be taken in hand. This can be accomplished both by the thoracic compression method and also by pressure applied upwards from the abdomen, in other words, by diaphragmatic massage.

Enough has been said to justify us in reconsidering the principles which have hitherto governed the after-treatment of pleurisy. The prevailing practice has been to keep the patient in bed and at rest so long as any dullness, suggestive of a possible remainder of fluid, has persisted at the base—a safe method which in some cases may still be the best. As patients gradually stir and sit up in bed, they begin to ventilate their bases, and ultimately get rid of most of the dullness. The method which we are now discussing is a quicker one. In its full development it would include: (1) The immediate adoption after aspiration of the postural treatment; (2) the application at stated intervals of artificial forced expiration; (3) ceasing to lie in bed as soon as the pyrexia ceased, and being allowed to take gentle exercise; (4) meanwhile, the sound side of the chest, when the patient first gets up, may have to be strapped, to throw the full stress of breathing during exercise upon the disused lung.

Strapping has often been used, but at an early stage, and with the opposite object of allaying pain by immobilizing the side affected. This proceeding will not bear too strict an inquiry into its rational bearings, for it is open to the objection that it may promote adhesion, since the painful stage in question is also the time when fibrin is being thrown out. You may then, perhaps, prefer the employment of other means of relieving the pain, to one which might possibly eventuate in an impeded or diminished function.

—I am, etc.,

London, W., Dec. 3rd. Wm. Ewart.

ANTITYPHOID INOCULATION.

Sir,—I fully agree with Dr. Wright that it is idle to prolong this controversy indefinitely. This is especially unnecessary as he does not desire to reply "to the statistical minutiae of Professor Pearson," or to reopen "the general question of the utility of antityphoid inoculation—a question already thrice carefully adjudicated upon." This leads me to a wider matter which I have endeavoured to emphasize in my essay on the Function of Science in the Modern State. I hold that there is a crying need for a more exact treatment of statistics in medical science. I am fully aware that the medical curriculum is already overcrowded, but this does not hinder individual medical men from pursuing a special training in statistics, nor non-statistical medical men consulting professional statisticians. In this manner not only will a corps of expert medical statisticians be created (which is immensely needed not alone for medical research and the public health and registration services), but a more friendly relation will be established between the medical man and the professed statistician. In the days when this need is supplied, it will be impossible for such a "synoptical table," with "critical commentary" as that printed by Dr. Wright—a table without a single probable error calculated—to be taken as statistical evidence. It will be impossible, then, for three committees to report in favour of any form of inoculation without expert consideration of "statistical minutiae." Personally, I have found that the need I refer to has been fully recognized by a portion of the medical profession. Not only in the course of the last few years have a considerable number of medical men come to my laboratory seeking statistical training, but my staff has been asked to report on a variety of medical statistics ranging from lunacy rates to cancer inheritance and *post-mortem* measurements of a variety of kinds. It was precisely in this way that we came to report on the statistics of antityphoid inoculation provided by Lieutenant-Colonel Simpson. We knew of no controversy whatever on the subject, and we had and have no opinions whatever on the purely medical side of the problem. We reported that the statistics were inadequate to effectively demonstrate the efficiency of antityphoid inoculation, and this conclusion follows just as definitely from the statistics provided by Dr. Wright himself. So unconscious was I of there being any division of opinion in the matter that I believed I was giving a statement which was not sympathetic to those who had consulted me. My first awakening to the real state of the case was a letter followed by a call from the Chairman of the War Office Antityphoid Committee. He asked me to come as a witness before that committee. While perfectly courteous, the strong impression he—quite unconsciously, no doubt—made upon me was that I should be treated as a hostile witness. To one who has had a legal training as well as a considerable statistical experience, the futility of discussing statistical minutiae by oral question and answer with non-statistical experts was at once obvious. New data might be put forward—like Dr. Wright's Barming Asylum numbers or his Ladysmith mortality variations—which require an hour or two's quiet calculation to test their value, not the precipitancy of a verbal answer. As well put a test-tube into the hands of a chemical witness in court and ask him what it contained, as ask a statistician to express his opinion without preliminary analysis. I was quite aware that my refusal to interview the committee might possibly be made use of by those who do not realize that statistical evidence is expert evidence given after analysis. I therefore told the chairman of the committee that I would most gladly reply to any written questions the members of the committee chose to address to me. This reply I have no doubt he conveyed to the committee, but Dr. Wright does not refer to it. No such questions were addressed to me, and I must leave the reader to draw what conclusions he may from that fact. The final opinions expressed in my report—the words of it, indeed, to which the chairman of the committee drew my special attention—were:

If it were not presumption for me with no special knowledge whatever on the subject to give an opinion, I should say that the data indicate that a more effective serum or a more effective method of administration must be found before inoculation becomes a routine practice in the army. The statistics suggest the possibility of the discovery of a more perfect process rather than indicate that the existing method, even if it be shown to give a slight correlation between immunity and inoculation, is really worth continuing as a universal rule of the service.

No doubt the expressions used are those of a layman; but what does Dr. Wright himself say of his own process in the final words of his last letter? He describes it as

a scientific process which *may*, if it be *energetically improved* by research, prove itself to be of far-reaching utility.

I have italicized the above words. Now, with this statement of Dr. Wright's I am in complete agreement. As a layman it seems to me identical with my own words cited above. The single point of divergence is in the conclusion we draw from the statement. I do not hold with Dr. Wright and the three adjudicating committees that a process which *may*, if it be energetically *improved* by research, prove itself of far-reaching utility is ripe for adoption as a routine practice in the army. Tommy Atkins is not a negligible quantity, and I should not be at all surprised, now that attention has been drawn to the matter by recent leaders in the public press, that the effect of the discussion in the House which may result will not only be to reverse the decision of the War Office Antityphoid Committee, but unfortunately to check that energetic improvement by research and experimental inoculation, which I hold, no less than Dr. Wright, to be highly important and justified by the statistical results obtained.—I am, etc.,

University College, London, Dec. 9th. Karl Pearson.

PS.—In case there should be any further discussion on the question of the relative reliability of immunity and of mortality statistics, or indeed on "statistical minutiae" at all, I would wish to propound the following questions:

(*a*) To what extent is death from typhoid correlated with

the efficiency of nursing, which must vary largely from hospital to hospital under military necessities?

(*b*) Whether it is a fact that *post-mortem* examination is now a routine measure in the case of every soldier who dies in the army?

(*c*) Whether during a campaign *post-mortem* examinations can be or ever are made in any large majority of the cases? In particular, what percentage of typhoid cases were submitted to *post-mortem* examination during the South African war?

THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.

SIR,—It may interest some of your readers to know that at its meeting on December 9th, the Council of the London and Counties Medical Protection Society decided to impose an entrance fee of 10s. upon all candidates elected members of the Society on or after January 1st, 1905, and until further notice. The annual subscription (10s.) remains unaltered.

The Council decided to take this course chiefly for these reasons:

On January 1st, 1904, the number of members (including dentists) on the books of the Society was 2,682.

Since January 1st, 1904, the new members elected (including dentists) number 579.

The Society's reserve fund is now in this position:

Present investments	£1,796	15	4
Awaiting investment	600	0	0
Cash	1	7	0
	£2,398	2	4

No similar society in England could afford to spend, on each of its members, as much money as could be so spent by the London and Counties Medical Protection Society.

For these reasons the Council of the Society think, that to require newly-elected members to pay a small entrance fee, is merely an act of bare justice to the members of the Society who, for years, have exercised self-denial in order that the Society's funds might be placed on a fairly sound basis.

The trustees of the Society's reserve fund are Sir William Broadbent, Bart., and Mr. John Tweedy, President of the Royal College of Surgeons of England.—I am, etc.,

London, W., Dec. 8th. G. A. HERON.

Honorary Treasurer and Chairman of Council of the London and Counties Medical Protection Society.

MEDICAL DEFENCE.

SIR,—The annexed, from the *Natal Mercury*, shows how important a matter for the good of the medical profession, medical defence is likely to become in the Colonies as well as at home.

DISTRICT SURGEONS.

The following motion, introduced by the Lower Umzimkulu Association, was carried: "That the Conference is of opinion that the Government should make such alterations in the rules governing the employment of district surgeons that in future the maximum charges to which they are entitled legally shall be, for a consultation 5s., and 2s. 6d. per mile travelling expenses, one way, with a maximum inclusive charge of £3 anywhere in their own district; also that all district surgeons be *compelled* to attend any call to a case of illness, unless otherwise engaged."

A district surgeon may have to travel 100 miles over a very bad country and keep six horses. It is equally important that medical defence should be taken up by the British Medical Association and its various Branches. That Society is well known, and would command respect, which a number of little scattered societies certainly do not. Some years ago the necessity for medical defence was quite unrecognized in the State of New York, but having been recognized it was considered the business of the State Medical Societies (and not private ones) with the best results.

If it was felt that the cause of the individual practitioner would be taken up by a powerful association like the British Medical Association, the said practitioner would be looked upon as a much more dangerous individual to attack, malign, and defraud than he is at present.

Such an extract as the one enclosed should make intending students reflect, before it is too late, whether it is worth while to undergo all the work and expense to get into a profession about which such a resolution could possibly be passed. It is certainly in very strong contrast to the very optimistic opening addresses to which they have just been listening, and shows that the same disposition is in the Colonies, as at home, namely, to absolutely enslave the profession if the power existed.

Combination and well-organized defence is the only way to avoid this, for there is little doubt that the former privileges of the medical profession are being gradually entrenched on in all parts of the world.—I am, etc.,

November 7th. NATALIAN.

THE METRIC SYSTEM.

SIR,—Brigade-Surgeon-Lieutenant-Colonel Edward Nicholson's letter supports my contention. The two problems, as I said, were of the simplest kind. Brigade-Surgeon-Lieutenant-Colonel, starting with the advantage of "knowing his measures"—carrying in his head, for example, that an acre of water at a level of 1 in. weighs 101 × 2,240 lb., that there are 36 gallons to the barrel, 8 bushels to the quarter, 4,840 square yards to the acre, and all the rest of it—took three minutes to calculate the answer in each case. A similar simple problem stated metrically—litres, kilogrammes, hectares—in either instance would have almost answered itself: there would have been no figures to remember, and practically no calculation to do.

It is characteristic of the British system, by the way, that Brigade-Surgeon-Lieutenant-Colonel Nicholson was obliged to make a guess in order to answer my first problem. There is the "quarter" as a measure of the bulk of malt or other grain. There is also the "quarter of malt" as a standard weight (8 × 42 = 336 lb.). He assumed my "quarter" was the first of these: as a fact it was the second, the one usually employed in brewing transactions. The result which he obtained was consequently incorrect.—I am, etc.,

Dec. 11th. G. S. B.

THE EXTENSION OF HULL ROYAL INFIRMARY.

SIR,—In the article published in the BRITISH MEDICAL JOURNAL of December 10th, describing the great improvements recently made I notice the omission of the new ophthalmic theatre. This addition was kindly granted as an afterthought, owing to some of the proposed alterations not being carried out for lack of funds. Nevertheless (although somewhat small) I venture to think it will compare favourably with any such theatre in the United Kingdom, as being thoroughly up to date in every respect—except the Haab magnet—and already has proved an immense boon to the public as well as to yours, etc.,

December 12th. W. C. ROCKLIFFE,
Hon. Ophthalmic Surgeon, Hull Royal Infirmary.

HYDRONEPHROSIS DUE TO VALVE FORMATION IN THE URETER.

SIR,—In the BRITISH MEDICAL JOURNAL for December 10th, p. 1573, Mr. E. Harrison publishes a case of hydronephrosis due to valve formation in the ureter, and in his remarks upon the case states that as far as he has been able to discover only nine similar cases have been published. Cases, in addition to those which he mentions, have been recorded by Fenger (two additional), Küster, Van Hook, Richardson, Delbet, Helferich, Bazy, and Bardenheuer. In all, at least sixteen cases of plastic operation for valve formation and stricture of the upper ureter have been published, and if the lower ureter be included the number reaches thirty, excluding doubtful cases.—I am, etc.,

Liverpool, Dec. 11th. K. W. MONSARRAT.

AN M.D. FOR PRACTITIONERS.

SIR,—I am sure there are many men, like myself, who regret not having taken a degree, and are anxious to do so now. We are unable, owing to our practices, to go back to college and commence again, but are ready and anxious to take the M.D. for practitioners when old enough. We do not want a foreign degree, but an English one. Would it not be possible for the University of Durham to reduce their age limit from 40 to, say, 35 years, and fourteen years qualified? I myself will have been qualified fifteen years when I am 37, but cannot become a candidate for the degree until three years later owing to the age limit. My suggestion is that either Durham or some of the other universities should give an M.D. after examination to men over 35 and not less than ten years qualified. I myself would at once be a candidate, and I know numbers of other men also would. I hope the subject will be taken up by others in the columns of the BRITISH MEDICAL JOURNAL.—I am, etc.,

December 23rd. X. Y. Z.

OBITUARY.

WILLIAM GEORGE VAWDREY LUSH,
M.D., F.R.C.P.Lond., F.R.C.S.Eng.

We record, with much regret, the death of an old and valued member of the Association, Dr. W. G. Vawdrey Lush, Honorary Physician, Dorset County Hospital. Dr. Lush, while attending a Committee meeting at the Hospital on December 7th, was seized with sudden illness, fell from his chair to the floor and expired in a few minutes. Mr. Cosens, one of the Honorary Surgeons to the Institution, who was present, rendered every assistance in his power, which, however, proved unavailing. The cause of death was certified to be cerebral haemorrhage.

Dr. Lush enjoyed the distinction of possessing the highest medical and surgical qualifications obtainable in the United Kingdom. Educated at St. Bartholomew's Hospital, he obtained in 1865 the M.B. degree of the London University (with treble 1st class honours) and in the following year that of M.D., while he also became F.R.C.S.Eng. by examination. In 1879, he was admitted as M.R.C.P.Lond., and in 1889 had the honour of F.R.C.P. conferred upon him. He was the only Fellow of the College in Dorset. He also received the compliment of being elected a Fellow of the Royal Academy of Medicine in Ireland.



Dr. Lush, who was born on May 24th, 1834, had a distinguished professional career. He commenced practice in Weymouth, but a few years afterwards, the Honorary Physicianship to the County Hospital becoming vacant, he was unanimously appointed to the post. He discharged the duties of the office for the lengthened period of thirty-two years with the highest efficiency and success. Though conducting an extensive practice at Weymouth and surrounding district, he attended with unremitting regularity and devotion at the County Hospital, Dorchester, where the claims upon his time were often of an onerous character. But the institution was dear to him, and his work there was truly a "labour of love." Its motto, *Christo in Pauperibus*, was the ruling principle of his life. Besides being Physician to the County Hospital, Dr. Lush was Consulting Physician to the Weymouth Royal Hospital, and also to the Royal Portland Dispensary and the Dorset Friendly Society. Passionately devoted to his profession, he was a man of simple, unaffected piety, and his Christianity was shown by his good deeds, in the large pecuniary help he frequently gave to the restoration of churches, and other philanthropic work. Dr. Lush, though he was not a voluminous writer, contributed occasionally, from 1871 onwards, valuable papers to the British Medical Journal, the *Lancet*, and the *Medical Times and Gazette*.

Shortly after settling in Weymouth he exerted himself successfully in forming the Dorset and West Hants Branch of the British Medical Association, of which he became Honorary Secretary, and for many years its representative on the Central Council. After discharging the duties of secretary for thirty years, the members of the Branch recognized his valuable labours by presenting him with a handsome testimonial. The gift consisted of a service of silver plate, comprising tea and coffee sets, with other articles, and also a massive clock with cathedral chimes. The presentation took place at the annual meeting of the Branch held at Weymouth, and the speeches then made testified to the personal attachment to Dr. Lush of his professional brethren and their cordial appreciation of the zeal, energy, and earnestness which he had displayed in connexion with the Branch. The feelings of the members were ably voiced by Dr. Roberts Thomson (Bournemouth), Dr. Macdonald, Dr. Lawrie, and the President, Dr. Moorhead. Dr. Lawrie spoke of Dr. Lush as a man of strong convictions and sterling honesty; he was conscious personally of many chivalrous actions on the part of Dr. Lush, whose whole career was a most admirable example to them all.

Dr. Moorhead, in making the presentation, enlarged upon the services Dr. Lush had rendered to the Branch, and begged his acceptance of their gifts, not only as mementos of his official connexion with them, but as tokens of grateful appreciation by his professional brethren of his long-continued and untiring labours on their behalf.

Dr. Lush, in his response, spoke with much feeling of his association with the Branch, and said whatever pains he had taken in promoting its welfare had been already repaid a hundredfold by the valuable friendships he had made. He trusted the Branch might continue to prosper, and that by their gatherings the welfare of their profession and of mankind might be increased and strengthened.

The deceased as a consultant enjoyed the confidence of his professional brethren, who highly esteemed not only his skill, but his integrity of character, his upright bearing, and strict adherence to professional etiquette. Dr. Lush was an active member of the Salisbury Diocesan Synod, and at his death was Honorary Secretary of the Dorset Branch of the Queen Victoria Clergy Fund.

He leaves a widow to mourn his loss, and the feeling is shared by every one who knew him in all classes of the community:

> The actions of the just,
> Smell sweet and blossom in the dust.

The funeral, which took place on December 13th, was the largest known in Weymouth during the last forty years. The procession consisted of about fifty carriages, while the floral wreaths and crosses were so numerous that they were conveyed in a special vehicle. The Church was represented by two archdeacons, seven canons, and many clergy; the Corporation of Weymouth by the mayor, aldermen, and officials; while the medical profession, of which the deceased was so bright an ornament, had many representatives, not only from Weymouth, Dorchester, and Bournemouth, but from nearly every part of Dorset, Wilts, Hants, and Somerset. It is gratifying to record such a spontaneous tribute to departed worth.

Dr. Roberts Thomson, who was President of the British Medical Association in the year when it met in Bournemouth, and was long associated with Dr. Lush in the work of the Branch, writes: The sudden death of Dr. Lush has been a great shock to his many friends in this part of the country, and his removal will cause a sense of loss to be felt very widely. In Association matters Dr. Lush had always taken the deepest interest. It was largely through his influence and work that the Dorset and West Hants Branch was formed. He was its Honorary Secretary and Treasurer from the day of its formation till his death, and for some years he represented the Branch on the Council of the Association. At meetings of the Branch his was the best known and most prominent individuality, and the uniformly successful meetings which have characterized this Branch owe much to his personality and influence.

For some years Dr. Lush had had associated with him as Joint Honorary Secretary Mr. Watts Parkinson, the present representative of the Branch on the Central Council of the Association; but when the rules of the new Constitution made a Joint Secretaryship no longer desirable, Dr. Lush resumed the position he had at first occupied, as solely responsible for the work of the double office of Honorary Secretary and Treasurer. During his long and active life Dr. Lush was closely identified with the Dorset County Hospital, and it seems not unfitting that his work should cease in the institution to which he had given such a large portion of his time and activities. Dr. Lush's opinion was much sought and much valued in his own county, and if any of his professional brethren were in any domestic anxiety through ill health, his help and kindly sympathy could always be relied upon. A warm-hearted and generous disposition and a very kindly nature were perhaps somewhat obscured, to those who knew him only slightly, by a manner in some measure brusque and an incisiveness of expression in debate. But to those who knew him well this was only a very thin crust, underneath which was a depth of tenderness and the kindliest feeling. The profession in Dorset is all the poorer to-day by the removal of one whose actions were ever prompted by the desire to do what was right, and to give of his best to the work he had in hand.

MR. C. H. WATTS PARKINSON (Wimborne) writes: When the Southern Branch was formed in 1873, mainly by the energy and tact of Mr. Ward Cousins, Dr. Lush was one of the first to respond, and helped largely in its formation. As the area of the then Southern Branch was very great it was divided into Districts, and Dr. Lush was elected Honorary Secretary of the West Dorset District. After some years, as the members increased, the three Districts of the Southern Branch (East and West Dorset and Bournemouth and West Hants) petitioned to be allowed to form a separate Branch, and, mainly through the exertions of Dr. Lush, obtained the consent of the Council, and the Dorset and West Hants Branch was recognized in 1883. Dr. Lush was elected representative on the Council, and continued until 1889, when he resigned. In 1891, when the Annual Meeting of the Association was held at Bournemouth, Dr. Lush was appointed Vice-President of the Section of Medicine, and carried out the duties successfully. During the thirty years Dr. Lush was Secretary—first of the West Dorset District, and afterwards of the Branch—he hardly missed a meeting; and the writer, whose duty it was to act in Dr. Lush's absence, does not remember more than, at the outside, three times when he was so called on. Dr. Lush was the acknowledged leader of the profession in Dorset, and his life was spent in doing good to others. Many a young struggling practitioner has been helped through difficulties to success by the assistance and advice of Dr. Lush, and at the funeral one heard on all sides tales of kindnesses done unostentatiously and only known to the person benefited, and of poor hospital patients whose last hours had been made less sad by his generosity.

WILLIAM TURNER, J.P., M.R.C.S., L.S.A.,

Poole.

WE regret to announce the death of Mr. William Turner, which occurred at his residence at Poole on November 25th under distressing circumstances. On October 25th Mr. Turner operated at the Cornelia Hospital on a girl for acute peritonitis and appendicitis, and having performed the operation was stitching up the wound, when he pricked his finger with the needle. Acute blood poisoning set in, and his life was almost despaired of. Under the assiduous care of his colleagues Dr. Vincent Milner, of Parkstone, and Mr. Bernard Scott, of Bournemouth, he improved, and after three weeks great hopes of his recovery were entertained, but on November 23rd he had a relapse, and died on November 25th. The sad news cast a gloom over the town, and the inhabitants showed their grief and sympathy in many ways. Flags were hoisted half-mast high at the town hall and parish church. The tradesmen, clergy, magistrates, guardians, and the jury at the inquest all united in expressions of sorrow and respect for the good citizen and doctor who had died as he had lived, doing his duty to the poor and afflicted. He was buried at the Poole cemetery with every manifestation of sorrow and respect from all classes of the community, among those present being the Mayor and Corporation, justices of the peace, guardians of the poor with their respective officers, medical brethren, Freemasons, representatives of the Poole Yacht Club and Poole Regatta Committee, Cornelia Hospital, Dorset Home for Girls, and aged male inmates from the workhouse. The coffin was almost hidden by beautiful floral tributes from sorrowing friends and relations of all classes from Lord and Lady Wimborne to the poor inmates of the workhouse who had subscribed their mites to show their love and sorrow for one who had so long and tenderly watched over them.

Mr. Turner, who received his medical education at Guy's Hospital, obtained the diplomas of M.R.C.S. and L.S.A. qualified in 1867, and in 1868 came to Poole where he succeeded to the practice of the late Dr. Lacey. He held many public appointments; he was surgeon to the Cornelia Hospital and Dorset Home for Girls, Medical Officer of the No. 1 District and Workhouse, Poole Union, and the Post Office, and only a fortnight before his death was re-elected Medical Adviser to the Visiting Justices in Lunacy for the Borough of Poole; for some years he was Deputy Coroner for the Eastern Division of Dorset. Mr. Turner was one of the oldest members of the Dorset and West Hants Branch of the British Medical Association, and, although he could not attend the meetings very constantly owing to his public duties, he had filled the chair of Vice-President of the Branch and was highly esteemed by the members. He took the keenest interest in all local institutions of a useful or scientific nature, and in 1886 his public work was recognized by his being appointed a Justice of the Peace for the borough.

He was an ardent Freemason, and held the highest offices in Craft Mark, Royal Arch, Rose Croix, and Knight Templar degrees both in the local lodges and the province of Dorset. He was deeply interested in natural history and antiquarian research, and was a member of the Dorset Field Club, President of the Poole Natural History Society, and Secretary of the Old Club. Mr. Turner took great interest in sport and was a keen yachtsman, and at his death Chairman of the Sailing Committee of the Yacht Club and the Regatta Committee. Mr. Turner was in his 60th year, and leaves a widow and five children.

THE news of the death of Dr. DAN ASTLEY GRESSWELL, M.A., M.D.Oxon. and Melbourne, which has been received by cable from Australia, will cause regret to many friends in England in spite of the many years which have elapsed since he left this country. From first to last his career was one of distinction. He went to Oxford as the winner of an open scholarship at Christ Church, and took a First Class in Physical Science in 1875. After working at physiology at Bonn and Wurzburg, he entered at St. Bartholomew's, and in 1881 became M.R.C.S.Eng. and M.B.Oxon., rounding things off four years later by the D.P.H.Camb. Before leaving St. Bartholomew's he held several junior posts in the hospital and the medical school, and assisted Sir Lauder Brunton in his investigations into the physiological effects of amyl nitrite. Other positions which he occupied early in his career were those of Surgeon-Superintendent of the South Australian Emigration Service, and Assistant Medical Officer of the Stockwell Fever Hospital. Finally, he was selected by the Local Government Board as a Medical Inspector, and this office he held until—now some fifteen years ago—he was tempted to Australia by the offer of the post of Permanent Head of the Health Department of the Colony of Victoria; to this later was added the work of Chairman of the Board of Public Health. He proved, as might be expected, a most excellent man for the work, and a very successful administrator. In 1896 he was President of the Melbourne Intercolonial Small-pox Conference, and four years later was appointed to the same position at the Plague Conference; still more recently he had to preside at the Conference on Quarantine which took place shortly after the federalization of the Australasian Colonies. By his death the University of Melbourne loses, moreover, its Examiner in Therapeutics, Dietetics, and Hygiene. He continued in the active performance of the duties of his post up to the time of his death, and the loss of his services as a public officer will be much felt. In addition to his official publications, many of which are of marked value, Dr. Gresswell before he left England contributed a good many papers to the medical journals on subjects connected with zymotic disease and sanitation, while his thesis for the M.D. degree at Oxford, on scarlet fever, was published by the University as being of especial merit. His death occurred on December 10th, but its cause is not at present known.

Dr. Charles Douglas Fergusson Phillips, who recently died at the age of 74, was the son of Captain R. Phillips, of the 40th Regiment, a veteran of the Peninsular war and Waterloo. He studied medicine at Edinburgh and Marischal College, Aberdeen, where he graduated M.B. in 1852, proceeding M.D. in 1859. In early life we believe he practised as a homoeopath at Manchester. He left the fold of Hahnemann, however, and in 1867 removed to London, where for some years he earned a large professional income. In 1878 he was disabled by a railway accident, for which, after much litigation, he was awarded damages to the amount of £15,000, said to be the largest sum ever given for injuries received. It was proved that he had made nearly £21,000 the year before the accident, and that for several years previously his professional income had been from £15,000 to £20,000. It was several years before he was able to resume practice. Dr. Phillips was for a considerable time Lecturer on Materia Medica and Therapeutics at the Westminster Hospital Medical School, and acted as examiner in the subject at the Universities of Aberdeen, Glasgow, and Edinburgh. He was the author of several works on pharmacology and therapeutics, some of which achieved considerable popularity. In his later years Dr. Phillips, who was a member of the Physiological Society, took a great interest in the exposure of the methods of the antivivisectionists. He was a Fellow of the Royal Society of Edinburgh, and an honorary LL.D. of Edinburgh and Aberdeen. It may be added that his will has been proved at £39,814 18s. 6d.

Deaths in the Profession Abroad.—Among the members of the medical profession who have recently died are Professor Karl Koster, Director of the Pathological Institute of the University of Bonn, where he had worked for thirty years, aged 61; Dr. Henry M. Syman, Professor, successively, of Chemistry (1871-6), Diseases of the Nervous System (1876-7), Physiology and Nervous Diseases (1877-9), and Theory and Practice of Medicine in Rush Medical College, Chicago, of which he was for some time Dean, and author of works on artificial anaesthesia, insomnia, etc., and of a *Textbook of the Theory and Practice of Medicine*, aged 68; Dr. Davidoff, Professor of Forensic Medicine in the Military Medical Academy, St. Petersburg; Dr. Pasquale Penta, Professor of Criminal Anthropology and Psychiatry in the University of Naples; and Dr. Alban Fournier, President of the Hautes Vosges Section of the Alpine Club, President of the Administrative Council of the Vittet Springs, a historian and archaeologist, as well as a distinguished physician, aged 62.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE HEALTH OF THE NAVY.

The Statistical Report of the Health of the Navy for the year 1903, just issued,[1] states that the returns for the total force serving afloat in the year 1903 may be considered to be very satisfactory. The total force serving afloat was 103,100. With a *personnel* increased by 3,500 as compared with the previous year, there are decreases in the ratios of cases, invalidings, and deaths, both as compared with the previous year and the average for the last six years. The numbers are respectively 85, 735, 2,478, and 433, in comparison with 85, 769, 2,985, and 590 in 1902.

Wounds in Action.

Only 2 wounds in action are recorded, with 1 death, which occurred on the East Indies Station, a full account of which will be found in the remarks of that station.

Small-pox.

There were only 3 cases of small-pox, as against 14 in 1902.

Enteric Fever.

Enteric fever shows a slight increase of 0.15 per 1,000 of cases, but the deaths during the year were less by 7 as compared with the previous year.

Plague.

Ten cases of plague are recorded as having occurred on the China station; none of these proved fatal.

Cholera.

Only 1 case of cholera is recorded.

Venereal Diseases.

There was an increase in the ratio of cases of primary syphilis and gonorrhoea; constitutional syphilis showed a slight decrease, amounting to 0.25 per 1,000.

Sickness and Invaliding.

The total number of cases of disease and injury entered on the sick list was 85,735, which is the ratio of 831.57 per 1,000, being a decrease of 29.56 per 1,000 when compared with the previous year, also a decrease of 48.06 per 1,000 as compared with the average ratio of the last six years. The average number of men sick daily was 3,633.54, giving a ratio of 35.24 per 1,000, and showing a decrease of 0.13 per 1,000 compared with 1902, and of 1.56 in comparison with the last six years' average. The total days' sickness on board ship and in hospital was 1,326,244, which represents an average loss of service from disease and injury of 12.86 days for each person, which is 0.05 below the ratio of the previous year, also a decrease of 0.58, in comparison with the average of the last six years. The total number of persons invalided was 2,478, which is in the ratio of 24.03 per 1,000, and shows a decrease of 5.93 per 1,000 when compared with the average of the last six years. Of the above total 1,757 persons were finally invalided from the service (146 of these refused surgical operation), giving a ratio of 17.04 per 1,000 for the whole force, or 70.9 per cent. of the number invalided, thus showing a decrease of 3.7 per 1,000 when contrasted with 1902. The largest increase—namely, 8.23 per 1,000—was on the North America and West Indies Station; but a decrease amounting to 17.23 per 1,000 appears in the invaliding rate of the South-East Coast of America Station.

Death-rate.

The Mediterranean Station shows the lowest sick-rate and the Irregular Force the highest. The number of deaths was 433, which gives a ratio of 4.19 per 1,000, and exhibits a decrease of 1.73 per 1,000 in comparison with the previous year, also a decrease of 1.49 per 1,000 on the last six years' average. The highest death-rate appears on the East Indies Station. The total death-rate is the lowest recorded since 1856. The death-rate from disease alone was 2.79 per 1,000, which is 0.72 lower than the previous year.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Edward H. Meaden, Fleet Surgeon, to the *Fire Queen*, additional, to be lent to the *Apollo*, and then to the *Brilliant*, for twenty-one days, from December 7th; James C. F. Whicher, Fleet Surgeon, to the *Brilliant*, on recommissioning, December 13th.

HEALTH OF THE FRENCH ARMY, 1902.[1]

The medical report of the French army for 1902 is so exhaustive that its publication, towards the end of 1904, cannot well be considered belated.

It may, perhaps, be best reviewed by contrasting its statistical ratios with those of our own army; but it must be premised that the comparison is neither easy nor satisfactory, owing to dissimilar organization of units and difference of method in the compilation of statistics in the two services.

The French have statistical headings for which we have no equivalent, such as "Malades à la Chambre," under which are accounted many cases treated in quarters, for slight ailments, and not included in the formal hospital returns; yet the entire French army was so treated in 1902, fully once over, for sickness averaging from two to three days' duration, in the ratio of 1.058 cases per 1,000 of effective strength. All such cases, however, are expressly excluded from the statistical ratios given in the volume and quoted in this article, which are based solely on admissions into infirmaries and hospitals. It is obvious that such a system vitiates a fair comparison between the French and British hospital statistics; for our sick soldiers are never treated in quarters, and our hospital returns and ratios represent practically the entire amount of sickness among our troops.

General Statistics.—For statistical purposes this report is divided into two sections:

1. The statistics of nineteen army corps in France itself (Interieur).
2. Those of one army corps (Algerie-Tunisie).

For an effective strength in France in 1902 of 485,207, the

[1] London: Printed for His Majesty's Stationery Office, by Eyre and Spottiswoode, Printers to the King's Most Excellent Majesty; and to be purchased, either directly or through any bookseller, from Eyre and Spottiswoode, East Harding Street, Fleet Street, E.C., and 32, Abingdon Street, Westminster, S.W.; or Oliver and Boyd, Edinburgh; or E. Ponsonby, 116, Grafton Street, Dublin.

[1] Statistique Médicale de l'Armée pendant l'Année 1902. Paris Imprimerie Nationale. 1904.

sick ratios per 1,000 effectives were as follows, compared with similar averages in our home army in the decade 1891-1900:

	Admissions.	Deaths.	Sick Time each Soldier.	Duration of Case.
French, 1902	594	3 7	9.6	16.7
British, 1891-1900 ...	689.7	4.51	14.42	20.91

These figures seem much against us; but it must be remembered the French are only for one—perhaps exceptional—year, against a whole decade of ours, and do not include the à la chambre cases, which would raise every ratio except deaths.

The Algeria-Tunis army had an effective strength of 77,185 in 1902, and it is interesting to compare its sick ratios, per 1,000 effectives, with those of our Mediterranean stations of Malta and Gibraltar, 1891-1900.

	Admissions.	Deaths.	Sick Time, each Soldier.	Duration of Case.
French, 1902	634	7.2	13.9	20 5
British, 1891-1900 ...	765.4	6.31	18.23	23 91

The contrast here is less marked, and would doubtless be in our favour if à la chambre cases were included.

We may now contrast the statistics of the French home and North African army combined with those of our consolidated "Troops at Home and Abroad."

	Admissions.	Deaths.	Sick Time, each Soldier.	Duration of Case.
French, 1902	600	4.2	9 9	17.3
British, 1891-1900 ...	957.5	8 90	21.05	22 05

This seems badly against us, but probably only apparently so; for the reasons that our ratios include all our forces in every climate and quarter of the globe, whereas the sickness and mortality, notoriously great, of the French troops in West Africa, Madagascar, and Tonquin are not included, because not given in this volume. The à la chambre cases must also be discounted.

The vital statistics of the various units and arms are given with much precision. Of the various army corps located in home territorial centres the least healthy are those of Paris, Rouen, Orleans, and Tours; the most healthy are Lille, Rennes, Amiens, and Montpellier. Of the different arms the least healthy are cavalry and mounted artillery; the healthiest, foot artillery and legion de la garde republicaine. In Algeria-Tunis, the most sickly are the service corps, chasseurs d'Afrique, and Zouaves; the healthiest, the tirailleurs and the Spahis.

In France, climatic conditions are adverse in January, February, and March; and favourable in September, October, and November. In Algeria-Tunis the worst months are January, July, and August; and the best, April, November, and December.

Typhoid Fever.

The most important specific disease in the French army is typhoid fever, which, however, has fallen from 6,686 cases in 1888 to 3,224 in 1902; but with annual fluctuations and a few serious outbreaks, as in 1899, when the total cases in France and Algiers rose to 7,071. In France in 1892 the ratio of typhoid illness per 1,000 effectives was 3.79; average duration of cases, thirty-six days; deaths, 0 52; in Algeria-Tunis, 17.8 cases, forty days' duration, and 2.88 deaths.

The disease has long clung to some army corps and districts more than others, no doubt through local insanitary conditions. Thus, the 1st Corps (Lille) and 2nd (Amiens) are comparatively free: while the 14th Corps (Lyons) and 15th (Marseilles) always suffer. Speaking broadly, it is always more prevalent in the southern than the northern provinces of France.

Influenza.

Influenza is still the source of much inefficiency, causing in France itself 12,309 admissions in 1902, and ratios per 1,000 effectives of sickness 25.3, and deaths 0.41. It prevails chiefly in the Atlantic provinces, where it has been almost endemic for years.

Exanthematous Diseases.

Small-pox has steadily sunk from over 1,000 cases in 1878 to 76 in 1902, chiefly through more thorough attention to revaccination; but both measles and scarlatina have steadily increased for years past all over France except in a limited area in the north-west; diphtheria, also, shows a yearly increase.

Tuberculosis.

The tuberculous class of diseases gave a ratio of 7.3 per 1,000 effectives in 1902, and, like influenza, prevail most in the Atlantic provinces.

Venereal Diseases.

Notwithstanding drastic ordinances for their suppression, venereal diseases still cause a considerable amount of inefficiency in the French army, yielding a ratio of 21.0 per 1,000 effectives in 1902. With the exception of a limited area in the north (Rouen), they prevail most in the south.

This French Blue Book gives ample evidence of the skill, care, and fidelity with which it is compiled; we have little doubt it is more costly in its production than our own, but we could surely afford to adopt its admirably-shaded maps, say for Home and India, which show at a glance the incidence of groups of diseases in affected areas.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel J. R. Mallins, M.B., retires on retired pay, December 14th. He was appointed Surgeon, August 2nd, 1884; Surgeon-Major, August 2nd, 1896, and Lieutenant-Colonel, August 2nd, 1904. He served with the Soudan Frontier Field Force in 1885-6 (medal and Khedive's star), and in the South African War in 1902, for which he was mentioned in dispatches.

Lieutenant F. H. Noke is confirmed in his rank.

EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A Lieutenant, R.A.M.C., two years' service, wishes to hear of an officer in the I.M.S. willing to exchange, subject to regulations.—Address No. 6140, British Medical Journal.

CHANGES OF STATION.

The following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the month of October:

	From.	To.
Colonel P. M. Ellis	Colchester ...	Dublin Dist.
Lieut.-Col. W. T. Johnston, M.D.	Belfast	Canterbury.
,, H. C. Kirkpatrick, M.D. ...	Southampton..	Barbadoes.
,, T. M. Corker, M.D.	Cape Colony ...	Belfast Dist.
,, G. T. Goggin	O. R. Colony ...	Dublin.
,, W. Dugdale	—	Cape Colony.
,, B. T. McCreery, M.B.	Dublin	Kinsale.
,, J. Gibson, M.B.	Transvaal ...	Dublin.
,, L. W. Swabey	Limerick ...	Bengal.
,, R. I. D. Hackett, M.D.... ...	Natal	O. R. Colony
,, M. Dundon, M.D.	Malta	Devonport.
,, F. J. Jencken, M.B.	Aldershot ...	Bombay.
,, A. F. Russell, M.B., C.M.G. ...	Cape Colony ...	Colchester.
,, T. W. O'H. Hamilton, M.B., C.M.G.	Dublin	Limerick.
Major A. E. C. Spence, M.B....	Londonderry..	Newry.
,, C. T. Blackwell, M.D....	Netley	Bombay.
,, R. I. Power	Waterford ...	Ballincollig.
,, F. W. H. D. Harris	Devonport ...	Bodmin.
,, J. Kearney, M.D.	Netley	Chester.
,, J. J. O'Donnell, M.B....	York	Leeds.
,, H. W. Austin	Kinsale ...	Templemore.
,, T. Browning	Kilworth ...	Limerick.
,, T. Du B. Whaite, M.B.	Woking ...	Gibraltar.
,, H. T. Knaggs, M.B.	Egypt	Dublin.
,, F. S. Le Quesne, V.C.... ...	Devonport ...	Bengal.
,, W. J. Trotter	Dublin	Malta.
,, A. Y. Reily, M.B.	Finner Camp..	Madras.
,, H. St. G. S. Hore	Ballykinder Camp ...	Birr.
,, J. W. Bullen, M.D.	Dublin	Mullingar.
,, B. J. Inniss	Limerick ...	Bengal.
,, R. C. Thacker	Cape Colony ...	Dublin.
,, A. L. F. Bate	Galway... ...	Bombay.
,, G. F. Alexander, M.B.	Cape Colony ...	O. R. Colony.
,, G. A. T. Bray	Devonport ...	Newport.
,, J. D. Ferguson, D.S.O.	—	Cape Colony.
,, T. J. Leneham, M.B.	—	,,
,, I. A. O. MacCarthy	Dublin	Cork.
,, G. S. Crawford	Transvaal ...	Aldershot.
,, R. F. E. Austin	Portland ...	Malta.
,, H. W. H. O'Reilly, M.B.	—	Cape Colony.
Captain H. C. French	Egypt	Cyprus.
,, M. Boyle, M.B.	Aberdeen ...	Madras.
,, S. F. St. D. Green	Fermoy ...	Bermuda.
,, J. P. Silver, M.B.	Pembroke D'k.	Barbadoes.
,, G. T. K. Maurice	Portsmouth ...	Gosport.
,, H. W. Grattan	Trawsfynydd...	Wrexham.
,, A. H. Waring	Portsmouth ...	Gosport.
,, E. W. W. Cochrane, M.B.... ...	Dublin	Curragh.
,, R. W. Clements, M.B.	Chester ...	Manchester.
,, M. Swabey	York	Newcastle.

		From.	To.
Captain	L. Addams-Williams	—	Transvaal.
,,	C. H. Hopkins	York	Beverley.
,,	W. H. S. Nickerson, M.B., V.C....	Egypt	Salisbury Pl'n.
,,	E. A. Bourke	Dublin	Londonderry.
,,	H. Herrick	Aldershot ...	Deepcut.
,,	W. B. Winkfield	O. R. Colony ...	Portsmouth.
,,	F. J. Palmer	,,	Edinburgh.
,,	H. H. Scott, M.B.	Natal	O. R. Colony.
Lieutenant	A. B. Smallman, M.B.... ...	Home District.	Aldershot.
,,	W. F. Ellis	Chatham ...	Punjab.
,,	B. G. Patch	Salisbury Plain	
,,	D. P. Watson, M.B.	Dartmoor ...	Madras.
,,	C. R. Bradley	Salisbury Plain	Netley.
,,	F. M. G. Tulloch	R.A.M. Coll....	Aldershot.
,,	J. D. Richmond, M.B.... ...	Aldershot ...	Bordon.
,,	E. M. Glanvill, M.B.	Dundalk ...	Belfast.
,,	H. C. Hildreth	Aldershot ...	Longmore.
,,	M. D. Ahern	Clonaster ...	Curragh.

Lieutenant-Colonel E. M. Wilson, C.B., C.M.G., D.S.O., retired pay, has been placed in medical charge of Aldershot Military Prison.

Lieutenant-Colonels W. Finlay and R. W. E. H. Nicholson, retired pay, have relinquished the medical charge of troops at Jersey and at Aldershot Military Prison respectively.

ARMY MEDICAL RESERVE.

Surgeon-Captains W. B. Cockill and T. E. Stuart to be Surgeon-Majors, November 26th.

Surgeon-Captain R. Mitchell, M.D., to be Surgeon-Major, November 19th.

Surgeon-Lieutenant A. H. L. Stewart, to be Surgeon-Captain, November 22nd.

INDIAN MEDICAL SERVICE.

The retirement from the service of Lieutenant-Colonels F. R. Swaine, M.B., and S. Borah, M.B., of the Bengal Establishment, and which has been already announced in the British Medical Journal, has received the approval of the King.

Lieutenant-Colonel P. H. Benson, Madras Establishment, is confirmed as Principal Medical Officer, Madras District.

IMPERIAL YEOMANRY.

Mr. Herbert Meggitt to be extra Surgeon-Lieutenant in the Middlesex (Duke of Cambridge's Hussars), under para. 30, Yeomanry Regulations, December 10th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

Surgeon-Captain R. G. Nesbitt, 1st Cornwall (Duke of Cornwall's), to be Surgeon-Major, December 10th.

Surgeon-Lieutenant-Colonel J. Provan, M.D., 1st Lanarkshire, December 10th; he is granted the honorary rank of Surgeon-Colonel, and retains his uniform.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Lieutenant J. Bruce, M.B., the Glasgow Companies, to be Captain, December 10th.

Surgeon-Captain R. Mitchell, M.D., Lancashire Fusilier Bearer Company, to be Surgeon-Major, December 10th.

VOLUNTEER RIFLES.

Surgeon-Lieutenant E. L. Hughes, 4th Volunteer Battalion the King's (Liverpool Regiment), resigns his commission, November 26th.

Mr. John D. Comrie to be Surgeon-Lieutenant in the Queen's Rifle Volunteer Brigade, the Royal Scots (Lothian Regiment), December 3rd.

The undermentioned officers are granted the honorary rank of Surgeon-Colonel, from December 3rd: Brigade-Surgeon-Lieutenant-Colonel J. Adams, 21st Middlesex (Finsbury), Senior Medical Officer, 5th London Volunteer Infantry Brigade; Brigade-Surgeon-Lieutenant-Colonel W. R. Smith, M.D., 1st London, Senior Medical Officer, 4th London Volunteer Infantry Brigade; Brigade-Surgeon-Lieutenant-Colonel J. W. Blandford, 1st Volunteer Battalion the Durham Light Infantry; Surgeon-Lieutenant-Colonel G. Middlemiss, M.D., 1st Volunteer Battalion the Durham Light Infantry; and Surgeon-Lieutenant-Colonel F. W. Humphreys, 15th Middlesex (Customs and Docks).

Surgeon-Lieutenants F. J. P. Daly, 4th London, and J. F. Findlay, M.B., 1st Volunteer Battalion the Highland Light Infantry, resign their commission, December 3rd.

R.A.M.C. COLOURS COMMITTEE.

A meeting of the Colours Committee was held at 68, Victoria Street, on December 13th, when there were present: Colonel A. T. Sloggett, C.M.G., in the chair, Colonel H. E. R. James, Lieutenant-Colonel M. O'D. Braddell, Lieutenant-Colonel H. N. Thompson, D.S.O. Two patterns were selected and it was proposed by Colonel Sloggett, seconded by Colonel James, and carried unanimously: "That these two, together with a pattern of the Colours at present in use, should be sent to every P.M.O. both at home and abroad in order that a consensus of the opinions of all officers of the Corps, as far as possible, should be arrived at before coming to a final decision." The results will be notified at the next general meeting in June, 1905.

THE THIBET EXPEDITION.

In the *London Gazette* of December 13th General Macdonald recites the operations of the troops which accompanied the mission to Thibet, and which were under his command.

Writing of the peculiar climatic and physical conditions of the undertaking, which threw an additional strain on the Medical Department, the General says: "All requirements were met, and the force maintained in good health throughout the operations. The total number of deaths and men invalided, excluding war casualties, was 411 and 671 respectively, and of these numbers 202 and 405 were more or less due to the special climatic conditions. In addition to the above, 160 wounded from among our forces had to be cared for, exclusive of a large number of Thibetan wounded who also received medical attendance. That everything worked so well reflects great credit on the department."

MEDICO-LEGAL AND MEDICO-ETHICAL.

PAYMENT OF NOTIFICATION FEES.

The accuracy of the reply given in the British Medical Journal of October 29th, p. 1201, to a question raised on this subject by a correspondent, has been challenged in various quarters. There appears to have been an impression created that our reply was based for its authority upon the application to the question of the provisions of the District Board Debts Act, 1859 (22 and 23 Vic., cap. 49). This was not, however, the case, inasmuch as we were advised that this Act does not apply to a rural sanitary authority, except when exercising the powers of guardians of the poor.

We are advised that under the Infectious Disease Notification Act, 1889, the authority is required to pay "for each certificate," and that there is no legal obligation upon a medical man to send the authority a statement of fees apart from the certificates themselves, which, under the statute, he is bound to furnish. The fees thus become due as and when the certificates are received by the authority.

The doubt expressed in the reply which we published to our correspondent's question, as to his being enabled to recover fees more than six months overdue, was based upon the provisions of the Public Authorities Protection Act, 1893 (56 and 57 Vic., cap. 61). Under Section 1 of this Act and the subsections thereof the time within which an action can be commenced against a "public authority" within the meaning of the Act is limited to six months.

The intended scope and application of this last-mentioned Act has not at present been conclusively defined by decisions of the Court, and we are advised that there is no decided case directly bearing upon the application of the statute to the circumstances now under consideration. The opinion expressed in our reply is, however, based upon the language of the Section itself, which is wide and far-reaching in its terms.

If, as we understand to be the case, the auditor has in certain instances questioned the propriety of paying the fees accrued more than six months earlier, he has probably not considered the consequences of his action, for if carried to a logical extreme it would be necessary for medical men to insist upon the immediate payment of each separate fee as it became due. This consideration might in any specific case be pointed out. We are informed that in nearly all large towns it is customary for payment of fees due under the Infectious Disease (Notification) Acts to be made periodically without waiting for an account to be sent in by the medical man who notifies. This practice is growing in smaller districts. The simplest plan is for the medical officer of health to make out an account for each practitioner, using a form issued by law stationers and obtainable through the clerk to the district council. If each certificate as it is dealt with is stamped "passed for payment" it is impossible for the medical officer of health to certify for the payment of the same certificate twice over, an error which may otherwise be committed. It is necessary to ask for a statement on the notification certificate indicating whether the person to whom the certificate refers is being treated by the practitioner as the medical officer of any public body or institution, in which case only a shilling fee is paid.

AN ATTEMPT TO BLACKMAIL.

An important action was tried at last Glamorgan Assizes, the plaintiff being Dr. A. D. Griffiths, of Bridgend. Nominally, it was one for damages of £100 for assault, but really it was brought as an answer to a veiled attempt at blackmailing on the part of the defendant, a working electrical engineer in needy circumstances, named George Faithfull. The following notes, gathered from the *South Wales Daily News*, will sufficiently indicate the nature of the case. Dr. Griffiths had occasion to examine the defendant's wife per vaginam, and informed him of the fact beforehand, and at the patient's request made the examination without summoning the district nurse. The treatment prescribed was duly followed, but some months later the patient again began to complain of a recurrence of her symptoms. A second examination—in the dorsal position—was then made; during it the defendant entered the room, struck the plaintiff on the forehead, and used words implying that Dr. Griffiths was committing adultery. Dr. Griffiths immediately challenged the defendant to bring a divorce action, and this being refused he initiated the assault action. Meantime, however, by way of giving currency and support to the story, the defendant and his wife pretended to be living apart, though they were known to be meeting, and the wife brought a police-court action against her husband for maintenance. When it was heard the wife swore the allegation of adultery was well founded, and the maintenance order was, of course, refused. The day before the case came on, however, she telephoned to Dr. Griffiths, suggesting that he had better settle the matter out of court, but he refused to have anything to do with it. Subsequently the defendant and his wife quitted Bridgend separately, but met at Paddington. At the Assize Court the defendant did not put in an appearance, but it was deemed fair to Dr. Griffiths that all his witnesses should be heard. The evidence therefore given, by Sir John Williams among others, besides proving the

general facts as above stated, showed that the defendant at the time was endeavouring to borrow money in various quarters, and that Dr. Griffiths's conduct throughout had been in every way correct and proper. The judge pointed out that Dr. Griffiths's actions had been correct in every particular, and, in concluding his summing-up, told the jury that, although the damages which they might award would probably never be paid, they ought to give some such sum as would show that in their opinion the charges were absolutely groundless. The jury, after a brief consultation, declared a verdict for Dr. Griffiths, with £500 damages, or five times as much as he had asked.

At a meeting of the South Wales and Monmouthshire Branch of the British Medical Association, subsequently held at Carmarthen, a resolution was passed unanimously expressing the sympathy of the Branch with Dr. Griffiths in his painful experience, and congratulating him on the way in which he had justified its faith in his character.

To these congratulations we desire to add our own, together with an expression of the general appreciation which will be felt of the courage and determination with which so dangerous an attack was met by Dr. Griffiths.

THE ETHICS OF SUPERSESSION.

J. G. B.—Assuming that B. thought that he was summoned either to take sole charge of the case or to meet another practitioner in consultation, when he found out how things were he might have seen the case, and left a letter of explanation to be handed to A. by the father when arranging for the consultation; although he was not absolutely bound to write if the father undertook to make the necessary explanation, it would have been the more correct course to take. A. should have accepted the suggested consultation in the first instance; if he had done so none of the further difficulties would have arisen. When A. refused the consultation we should like to know how the matter was put to B. before expressing an opinion upon his conduct. If he was told that A. would retire from the case rather than meet him, he was justified in paying a second visit; afterwards, when A. expressed a desire to continue the case, the offer of the consultation looks as if an attempt were loyally made to enable him to get out of the difficulty he had created; we think he should have accepted it and have resumed his position in charge of the case.

RESIGNATION asks for an opinion upon the following case: Drs. A. and B. are in practice in the same district. They are friends, are in the habit of rendering each other mutual assistance, and A. is under some personal obligation to B. Mrs. Z. engaged B. to attend her in a confinement, though not previously a patient of his. When the labour came on B. was absent from home on a short holiday, and A. attended the case for him, B. taking charge on his return. Mrs. Z. subsequently removed to live quite close to A.'s residence, which is some little distance from B.'s. She now wishes to engage A. to attend her in her next confinement, shortly due. A. at first declined, on the ground that she was B.'s patient, whereupon she declared her intention to engage C. if A. persisted in his refusal. What is A.'s duty in the matter? He wishes to do what is right by B., but not to give C. a fee he could earn himself.

*** A. should explain the matter to B., with whose consent he can accept the engagement.

W. and S. are two medical practitioners in the same town. W. has been attending, and is in attendance, on a child, but has not seen her for six days. The child is suffering from slight rheumatism and chorea. Its mother calls on S. and asks him to call and see the child, who is in bed. The mother informs S. that W. has been attending the child, but has not called for six days. S. declines to see the child except in consultation with W., and S. arranges with the mother to see the child with W. next day at a certain hour. The mother informs W., who then goes to see the child, and informs S. by telephone that the illness is slight, the mother fidgety, and that *he* thinks a consultation unnecessary. Has W. acted honourably towards S.? What should S.'s future action be? Has one medical man any right to refuse to meet in consultation another who is the choice of the invalid? Mother and child were S.'s private patients till the child joined a club to which W. is surgeon.

*** It would have been wiser of W. to have accepted the consultation, as in future he has only himself to blame if S. shows him less consideration. As a general rule, medical men should agree to a consultation when asked for by the patient, or, in the case of a child, the parents

SUICIDAL PATIENTS.

JUDEX.—We have no doubt that the attempt was suicidal. It not infrequently happens that considerable amelioration, at all events for a time, follows a determined suicidal attack. Our correspondent would have been justified in giving notice to the police at the time, and his responsibility would then have ceased entirely. As the patient is at present at home, and not obviously insane or likely to die as the result of the fall, we are advised that no further steps should be taken. Should there be a development of mental disorder later our correspondent might communicate with the relieving officer, stating that a person of unsound mind and unfit to be at large is residing at such and such an address.

OPERATION IN HOSPITAL BY SURGEON NOT ON THE STAFF.

WITH reference to the note under this heading "J. F. W." writes: (1) That arrangements in the first instance were made for the performance of the operation at the patient's own house, but two days before the operation was to be performed the patient asked if arrangements could not be made for it to be done at the hospital; (2) that paying patients are admitted into this hospital; (3) that he considers he did consult the senior surgeon, and he complains that the senior surgeon refused to consider the matter; (4) that the cause of the paralysis from which the patient was suffering was pressure from a new growth and not an accident.

*** The opinion expressed was founded upon the facts as they were presented to us, and we do not consider that "J. F. W." has modified them in any essential particular. If there are rules and it was intended to admit the patient under them, there should have been no difficulty; if, on the other hand, it was proposed to do something unusual, adequate time does not seem to have been allowed to consult the proper authorities; telephoning to the senior surgeon does not in our opinion constitute such a proper consultation.

AMERICAN NOSTRUM VENDORS.

WE have repeatedly commented upon the circular sent out by the M. A. Winter Co., of Washington, D.C. Our correspondent does not tell us to whom the copy he forwards was addressed, but we can hardly suppose that the senders imagine that British medical practitioners are likely to act as agents for their nostrums.

THE PUFF INDIRECT.

QUAESITOR.—As the subject of the essay is restricted to the discussion of the value of therapeutic preparations, while the allotted space, about twelve hundred words, is insufficient for the proper treatment of the question, it is to be feared that the essays selected may prove to be masked puffs of particular proprietary preparations. Under these circumstances we do not advise our correspondent to compete.

NOTICES OF MEDICAL MEN IN THE LAY PRESS.

A CORRESPONDENT sends us a cutting from the *Lincolnshire Chronicle*, giving an account of a village entertainment got up to pay the cost of sending a boy to London to be operated upon for a harelip under the care of a London surgeon, who is stated to have been on a visit to the village, and to have offered, if the boy could be sent to London, to have him operated upon and the deformity put right.

*** Assuming the facts to be correctly stated, it might have been better if the surgeon in question had remembered that the same result could have been obtained without sending the boy so far away from home, but we cannot pretend in any way to hold him responsible for the paragraph sent to us.

THE CONDUCT OF DOCTORS' WIVES.

SUBURBAN asks whether it is in accordance with medical etiquette for a practitioner's wife to call on all the new inhabitants almost immediately on their arrival; also whether it is the right thing for the same lady to expatiate on the qualifications of her husband and his partner to their own glorification and to the depreciation of their colleagues, who are all London diplomates?

*** The wife of a medical man may call upon anybody she pleases, but she should be careful not to expose her husband to the charge of advertising by being too eager to call upon every new family. The answer to the second part of our correspondent's letter is, No; and, if trustworthy evidence can be obtained that the lady has used such language, a remonstrance may be addressed to her husband, but it would be well not to move in the matter without having first obtained evidence which can be produced if necessary.

EVIDENCE AT CORONER'S COURT.

KENT asks whether the rules in regard to the admissibility of evidence laid down by the English law apply to evidence given at inquests? Would a witness at an inquest be allowed to state what he heard another person not called as a witness say?

*** The coroner's court is a court of record, and a preliminary court of inquiry in cases where criminal verdicts are returned. All evidence recorded by the coroner should be legal evidence, and such only should appear in the depositions, but in the holding of an inquest some latitude is allowed to the witnesses in making their statements as to hearsay evidence and facts told them by other persons. Although such statements might not be regarded as legal evidence, opportunity is given for the police to summon at an adjournment further witnesses who may be able to give direct evidence material to the case, but were not known of previously.

VALUE OF SHARE.

JACK.—The price to be paid by the incoming partner should depend on the share of the practice given to him. This may be worth one, one and a half, or two years' purchase, according to the nature of the practice. It is usual for a partner to pay rent for a house, so that if he is to have a house rent free he might reasonably be required to pay something additional in the premium on this account.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

M.B. Examinations.—The following have passed the examination in materia medica and pharmacy:

F. J. Aldridge, Magdalen College; N. E. Grosvenor, Brasenose College; O. G. F. Luhn, B.A., Christ Church; C. T. Raikes, B.A., Trinity College; T. R. Walker, B.A., Hertford College.

UNIVERSITY OF CAMBRIDGE.

DR. RIVERS, of St. John's College, has been appointed a member of the Special Board for Moral Science.

Degrees.

At a Congregation on December 8th the following degree was conferred: *M.B.* and *B.C.*—E. J. D. Taylor, Gonville and Caius.

Examiners at M.B.

The following have been appointed additional Examiners for the Third M.B.: Part I—W. E. Dixon, M.A., Downing College, and T. S. P. Strangeways, M.A., St. John's College. Part II G. R. Murray, M.A., M.D., Trinity College; D. MacAlister, M.A., M.D., St. John's College; T. H. Kellock, M.A., M.D., Emmanuel College.

Schedules in Chemistry and Physics.

The Special Board for Medicine has published new Schedules in Chemistry and Physics, which come into force on January 1st, 1905.

UNIVERSITY OF LONDON.

B.Sc. Examination for Internal Students.

The new road to a degree in pure science opened up for medical students by the regulations now in force at London University does not as yet seem to have attracted as much notice as it deserves. Only two candidates presented themselves at the recent examination, which was the first of its kind, and they both came from one medical school, that of the Middlesex Hospital; they were Messrs. Victor Bonney and Gordon Taylor and both were awarded first-class honours. The examination is in human anatomy and the allied subjects of cytology, embryology, and vertebrate morphology. It is an honours and not a pass examination and is open to those who have passed the intermediate examination in medicine and have subsequently gone through an academic year of work at the subjects mentioned. Hitherto it has not been possible to obtain a B.Sc.Lond. in anatomy, and the examination, when it becomes better known, seems likely to appeal to those especially who having in view both the M.D.Lond. and the F.R.C.S.Eng., intend in any case to put in an extra year's work for the primary Fellowship.

Parliamentary Representation.

It is announced that the University of London Unionist Association has invited Sir Philip Magnus to contest the Parliamentary representation of the University at the next election, and that Sir Philip has consented to stand. The sitting member is Sir Michael Foster, M.D., F.R.S.

Meeting of the Senate.

A meeting of the Senate was held on November 23rd.

Recognition of Bombay Degrees.—In view of the fact that the University of Bombay does not permit a Licentiate of Medicine and Surgery of that University to proceed to the degree of M.D. unless he possesses the degree of Bachelor of Arts or of Science, it was resolved that the degree of Licentiate of Medicine or Surgery of the University of Bombay be not recognized for the purpose of Statute 116 in and after 1907.

Intermediate Examination of Internal Students.—It was resolved that candidates who have been referred to one subject at an intermediate examination be not permitted to substitute another subject for that in which they have been referred.

Lectures on Advanced Physiology.—It was resolved:

1. That a course of lectures in advanced physiology be not recognized as an approved course for the Honours Degree in Physiology, unless it consist of not less than eight lectures.

2. That a course consisting of not less than eight lectures on a single subject in advanced physiology may be recognized as an approved course, although different portions of the course be delivered by two different lecturers.

3. That courses of less than eight lectures may be regarded as falling within the general scheme of advanced physiological teaching of the University, and be advertised by the University as such, but shall not be approved as part of an honours course.

4. That Messrs. Ramsden, Beddard, Boycott, Spriggs, Hopkins, Locke, Myers, Dale, Schryver, Page-May, and Haldane be added to the panel of lecturers in physiology.

5. That the following courses of lectures be recognized as approved courses for honours degrees in physiology:—At University College (Wednesdays, 5 p.m.): S. B. Schryver, D.Sc., The Disintegration of Proteids, October to December (eight lectures); W. M. Bayliss, M.A., D.Sc., F.R.S., Enzymes and Enzyme Action, January to March (eight lectures); W. Page-May, M.D., D.Sc., Anatomy and Physiology of the Brain Stem, May to July (eight lectures). At King's College (Mondays, 4 p.m.): C. S. Myers, M.A., M.D., Physiology of the Special Senses, May to July (eight lectures). At Guy's Hospital (Thursdays, 4 p.m.): W. Ramsden, M.A., M.D., Coagulability, October to December; A. E. Boycott, M.D., The Blood, October to December; the combined course by the two lecturers will consist of eight lectures.

6. That the following courses of lectures be regarded as falling within the general scheme of advanced physiological teaching of the University, and advertised by the University as such, but not approved as part of honours courses:—At the University: F. W. Pavy, M.D., F.R.S.; the subject and dates of the lectures to be announced subsequently. At King's College (Mondays, 4 p.m.): January to March, F. W. Mott, M.D., F.R.S., Vision in Relation to Intelligence (three lectures); C. J. Martin, M.D., F.R.S., The Physiology of Defence against Invasion by Micro-organisms (three lectures); T. G. Brodie, M.D., F.R.S., The Physiology of the Kidney (four lectures); W. D. Halliburton, M.D., F.R.S., Degeneration and Regeneration of Nerves (two lectures); F. S. Locke, M.D., The Isolated Mammalian Heart (one lecture). At Guy's Hospital (January to March): A. P. Beddard, M.D., Glycaemia (four lectures); E. I. Spriggs, M.D., Digestion (four lectures).

Exemption from the Preliminary Scientific Examination.—It was resolved that internal students who have passed the examination in the final honours school in physiology in the University of Oxford, and who have passed the preliminary examination for the M.B. degree in that University in physics, chemistry, zoology, and botany, be exempted from the Preliminary Scientific Examination, Parts I and II.

Regulations for the M.S. Degree.—It was resolved that the regulations for the degree of M.S. for internal and for external students be amended by the deletion of the words "subsequently to taking the M.B., B.S. degrees" from the paragraph beginning "Certificate" on page 422 of vol. II. and on page 30 of the section on Medicine of vol. III of the *Calendar* for 1904-5.

Medals and Honours at the Medical Examinations.—It was resolved that the list of candidates who, having passed the M.B. Examination in or previously to May, 1904, shall qualify for the B.S. degree by passing in the surgery portion of the M.B., B.S. Examination in October, 1904, May, 1905, October, 1905, or May, 1906, be divided into (*a*) a list in alphabetical order of those candidates who have obtained honours, and (*b*) a list in alphabetical order of those candidates who have passed; and that a gold medal of the value of £5 be awarded to the most deserving of those candidates who have obtained honours, provided that in the opinion of the examiners he shall have evinced sufficient merit; but that the award of honours and of a gold medal to candidates qualifying for the B.S. degree by passing in the surgery portion of the M.B., B.S. Examination be discontinued after May, 1906.

Appointment to the Senate.—Dr. Thomas Gregory Foster, B.A., Ph.D., has been elected as a representative of University College on the Senate in the place of Dr. Carey Foster, resigned, and Mr. Henry Trentham Butlin D.C.L., L.R.C.P., F.R.C.S., has been elected as a representative of the Royal College of Surgeons of England on the Senate in the place of Sir Henry Howse, resigned.

Committee of Medical Members of the Senate.—Dr. James Kingston Fowler has been elected Vice-Chairman of the Committee of Medical Members of the Senate.

UNIVERSITY OF LIVERPOOL.

Veterinary School.

The School of Veterinary Medicine and Surgery was opened on December 13th by Mr. Walter Long, President of the Local Government Board. Vice-Chancellor Dale presided at the ceremony. Mr. Long congratulated the University on this latest addition to its educational equipment. He spoke of the importance of this department of study from the point of view of the physical welfare of the nation. The connexion between the health of the community and of the domestic animals was a vital matter, and he had often wondered at the comparative disregard of veterinary science. Liverpool was the first university in the country to open its arms to veterinary students.

It will be remembered that we announced a month ago that the rights and privileges of the New Veterinary College of Edinburgh had been transferred to the University of Liverpool, and that Mr. W. Owen Williams, of that College, had been appointed the first Professor of Veterinary Medicine and Surgery in the University.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A meeting of the Royal College of Physicians of Edinburgh was held on December 1st.

Election of President and Officers.

Dr. John Playfair was elected President of the College; Dr. Thomas S. Clouston, Vice-President; and Sir Thomas R. Fraser, Sir John Batty Tuke, Dr. Charles E. Underhill, Dr. James Ritchie, and Dr. R. W. Philip were elected to the Council with the President and Vice-President. The Council subsequently made the following appointments for the ensuing year: Peter A. Young, M.D., Treasurer; Harry Rainy, M.D., Secretary; D. Berry Hart, M.D., Librarian; Sir John Batty Tuke, M.D., Curator of Research Laboratory.

I. Examiners for the Licence.

First Board.

Physics.—Dawson Turner, M.D., and Alfred Daniell, D.Sc.
Chemistry.—W. G. Aitchison Robertson, M.D., and John Gibson, Ph.D.
Biology.—John Macmillan, M.B., and J. Beard, D.Sc.

Second Board.

Anatomy.—Sir James A. Russell, M.B., and Joseph R. Whitaker, M.B.
Physiology.—D. Noël Paton, M.D., and J. Craufurd Dunlop, M.D.

Third Board.

Pathology.—Robert A. Fleming, M.D.; Francis D. Boyd, M.D.; and Stuart MacDonald, M.B.
Materia Medica.—J. Murdoch Brown, M.D.; G. Lovell Gulland, M.D.; and Alex. Lockhart Gillespie, M.D.

Final Board.

Medicine.—Andrew Smart, M.D.; Claud Muirhead, M.D.; James O. Affleck, M.D.; Chas. E. Underhill, M.B.; W. Allan Jamieson, M.D.; Alex. James, M.D.; Byrom Bramwell, M.D.; G. A. Gibson, M.D.; J. Graham Brown, M.D.; Alexander Bruce, M.D.; Wm. Russell, M.D.; and R. W. Philip, M.D.
Midwifery.—Sir J. Halliday Croom, M.D.; D. Berry Hart, M.D.; A. H. F. Barbour, M.D.; F. W. N. Haultain, M.D.; J. W. Ballantyne, M.D.; and J. Haig Ferguson, M.D.
Medical Jurisprudence and Public Health.—James Andrew, M.D.; P. A. Young, M.D.; James Carmichael, M.D.; J. Allan Gray, M.D.; R. S. Aitchison, M.D.; and C. J. Lewis, M.D.
Insanity.—Sir John Batty Tuke, M.D.; T. S. Clouston, M.D.; Sir John Sibbald, M.D.; John Macpherson, M.D.; and John Fraser, M.B.

II. Examiners for the Membership.

A. R. Simpson, M.D.
Andrew Smart, M.D.
Claud Muirhead, M.D.
Andrew Davidson, M.D.
Sir Thos. R. Fraser, M.D.
John Wyllie, M.D.
James Andrew, M.D.
Sir John Batty Tuke, M.D.
T. S. Clouston, M.D.
J. J. Kirk Duncanson, M.D.
P. A. Young, M.D.
James O. Affleck, M.D.
John Playfair, M.D.
Sir John Sibbald, M.D.
Chas. E. Underhill, M.B.
W. Allan Jamieson, M.D.
Alex. James, M.D.
Peter M'Bride, M.D.
Byrom Bramwell, M.D.
G. A. Gibson, M.D.
Sir J. Halliday Croom, M.D.
D. Berry Hart, M.D.
Sir James A. Russell, M.B.
W. S. Greenfield, M.D.
J. J. Graham Brown, M.D.
A. H. F. Barbour, M.D.
Alex. Bruce, M.D.
James Ritchie, M.D.
William Russell, M.D.
G. H. Melville Dunlop, M.D.
N. T. Brewis, M.B.
R. W. Philip, M.D.
John Thomson, M.D.
J. Haig Ferguson, M.D.
G. Lovell Gulland, M.D.
W. G. Aitchison Robertson, M.D.
Norman Walker, M.D.
William Elder, M.D.
Charles Jas. Lewis, M.D.
Jas. Lamond Lackie, M.D.
Harry Rainy, M.D.
K. Mackenzie Downie, M.D.
Claud Buchanan Ker, M.D.

III. Examiners for Diploma in Public Health.

First Examination.

Practical Work in Laboratory.—W. G. Aitchison Robertson, M.D.
Chemistry.—Alex. Crum Brown, M.D.
Physics.—Dawson Turner, M.D.
Meteorology.—Sir Arthur Mitchell, K.C.B.

Second Examination.

Epidemiology and Endemiology.—Claud Muirhead, M.D.
Practical Sanitation.—J. Allan Gray, M.D.
Sanitary Law, Vital Statistics, and Statistical Methods.—Sir James A. Russell, M.B., and Jas. Craufurd Dunlop, M.D.
Registrar.—Harry Rainy, M.D.
Superintendent of Laboratory.—D. Noël Paton M.D.
Clerk.—Alex. Sholto Douglas, W.S
Auditor.—John Wilson Brodie, C.A.
Sub-Librarian.—F. C. Nicholson, M.A.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

An extraordinary comitia was held at the College on Thursday, December 8th, the President, Sir W. S. Church, in the chair.

Announcements.

The President announced that he had appointed Dr. G. R. Murray, of Newcastle-on-Tyne, to give the Bradshaw Lecture for 1905.

The President further announced that he had nominated Sir T. Lauder Brunton and himself as delegates to represent the College at the Conference of the Sanitary Institute on School Hygiene in February next.

Communications.

Communications were received:

1. From the Secretary of the Royal College of Surgeons of England, reporting proceedings of the Council on November 10th.

2. From the Secretary of the Royal Commission on the Care and Control of the Feeble-minded, asking the College to supply evidence and suggestions as to legislation. After a discussion in which Dr. Fletcher Beach, Sir William Gowers, and the President took part, a Committee, consisting of the President and Drs. Coupland, Savage, Ferrier, Mickle, Fletcher Beach, and Mercier, was appointed to discuss the matter and to arrange how the request of the Royal Commission could be best fulfilled.

3. From the Clerk of the Privy Council, forwarding by direction of the Lord President a note received from the Portuguese Legation, expressing the desire that the British Government should be represented by special delegates at the International Congress on Medicine, to be held at Lisbon, April 19th to 26th, 1906. This was postponed for discussion at a subsequent date.

4. From Dr. W. R. Smith, President of the Royal Institute of Public Health, inviting the College to send delegates to a Congress of the Institute, to be held in London, July 19th to 25th, 1905, with special reference to school hygiene. After a brief discussion, it was unanimously resolved that the communication lie on the table.

Date of Membership Examination.

The Registrar moved that, on the occasion of the examination for the Membership in April, 1905, the regulation appended to By-law CXV be suspended. This regulation requires that the examination should commence on the last Tuesday but one in April—that is, on the 18th in 1905; but, as this would bring the meetings of the Censors' Board into Easter week, it is proposed that it should begin a week earlier—namely, on April 11th. The motion was passed, and the proposed change in the date of examination agreed to.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

An ordinary council was held on December 8th, 1904, with Mr. John Tweedy, President, in the chair.

Diplomas of Fellowship and in Dental Surgery.

Diplomas were issued to 29 candidates found qualified at the recent examination. Diplomas for the licence in dental surgery were issued to 40 candidates found qualified at the recent examinations.

Report of the Board of Examiners in Dental Surgery.

The Board of Examiners in Dental Surgery reported that, as requested by the Council on June 9th, 1904, they have carefully considered the petition from 264 dental students, asking:

1. That the College will publish a reasonably detailed syllabus giving the general range of the knowledge required in (*a*) anatomy, (*b*) physiology, (*c*) surgery, as has been done in the subjects of chemistry and metallurgy.

2. That a quarterly examination may be instituted as for the M.R.C.S. diploma.

In reference to these proposals the following recommendations unanimously made by the Board were adopted by the Council:

I. That it be recommended to the Council to grant the request of the petitioners that a schedule of anatomy, physiology, and surgery, be issued, and that, in the event of the Council adopting this recommendation, the Board beg to report that they are willing to submit a syllabus for the consideration of the Council.

II. That it be recommended to the Council to continue to hold an examination in Part I (anatomy, physiology, and surgery) in February, so that there may be three examinations in that part during the year, but that the Board do not recommend the institution of a third examination in Part II.

The Board was requested to prepare a syllabus of anatomy, physiology, and surgery for the consideration of the Council.

Court of Examiners.

Mr. Bernard Pitts was unanimously re-elected an examiner in surgery.

Report of the Committee on the Proposed System of School Certificates.

The Committee having taken into consideration the proposals framed by the Consultative Committee of the Board of Education for a System of School Certificates and the report thereon from the Committee of Management of the Conjoint Examining Board of the two Royal Colleges, together with the criticisms upon the proposals which were raised at the meeting of the Council on November 10th, recommended the Council to approve and adopt the report of the Committee of Management. The Committee further recommended that the following reply be sent to the Board of Education, namely:

The Council of the Royal College of Surgeons of England having considered the suggested scheme for a system of school certificates, express their general approval of the scheme.

Annual Meeting of Fellows and Members.

The resolutions adopted at this meeting were reported.

The Council states that the subject of the first resolution, as to the title of "Doctor," is under careful consideration. In regard to the second and third the Council did not consider that they called for any answer.

TRINITY COLLEGE, DUBLIN.

Final Examination in Midwifery.—The following candidates have passed this examination:

B. Johnson, A. A. M'Neight, J. Cunningham, Lily A. Baker, W. J. Powell, W. R. Galwey, W. Nunan, T. J. T. Wilmot, Eva J. Jellett, J. H. C. Thompson, H. E. M'Cready, T. Creaser, G. McC. Millar, W. Hassard, C. Kelly, A. G. Alexander.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

VITAL STATISTICS OF IRELAND, 1903.

The main statistics in the annual report of the Registrar-General for Ireland (1903) are summarized on the first page. The marriages were 5.21 per 1,000 of the estimated population, as compared with 4.96 in the preceding ten years. The birth-rate was 23.1—exactly the average for the preceding ten years. The death-rate was 17.5, as compared with 18.1; and the emigrants were 9.0 per 1,000, as compared with an average of 8.9 for the decennium. Of the marriages, 4.91 out of a total of 5.21 per 1,000 of population were of Roman Catholics. The marriages of bachelors with spinsters constituted 88.9 per cent. of the total. It is a matter for regret that the Registrar-General has to note that in the great majority of instances the ages were not stated.

The birth-rate was 23.1 per 1,000, 2.6 per cent. of the total births being of illegitimate children. The percentage of illegitimate children varied from 3.3 in Ulster and 2.6 in Leinster to 2.3 in Munster and 0.5 in Connaught.

The death-rate in Connaught was 14.0, in Munster 16.1, in Ulster 18.1, and in Leinster 19.4 per 1,000.

Of the deaths, tuberculosis caused the largest number, old age coming next, and then in succession heart diseases, bronchitis, pneumonia, diseases of blood vessels, cancer, etc.

On the tenth page is a valuable table giving the annual death-rate for eleven years from each of the chief infectious diseases, from each form of tuberculous disease, from cancer, from certain local diseases, and from violence.

An interesting diagram is given showing the death-rates from measles in England, Scotland, and Ireland since 1871. Speaking generally, the death-rate from measles is lowest in Ireland, but this may be owing to the smaller proportion of children in that country. A more interesting point is that of the eight chief epidemic peaks shown in the Irish curve, five correspond to interepidemic years in England. Comparing Scotland with England, there is a similar lack of correspondence of epidemic years. The highest death-rates from measles in Ireland were in 1878 and 1887, when it was 0.4 per 1,000; the highest in England 0.52 in 1874 and in 1885, 0.6 in 1887, and 0.57 in 1896; the highest in Scotland 0.43 in 1883; 0.63 in 1890, 0.88 in 1893, and 0.53 in 1898.

A similar diagram is given for scarlet fever, showing that the death-rate from this disease in Ireland has been usually lower than that of the other divisions of the United Kingdom. In each of the three countries the highest death-rate from scarlet fever was in 1874, being 0.76 in Ireland, 1.04 in England, and 1.82 per 1,000 of population in Scotland. The curve for Ireland shows more evidence of regular epidemicity than that for England.

Whooping-cough is similarly dealt with. The comparison would have been more accurate had the death-rate from this disease and from measles been stated per 1,000 children aged 0 to 5. In their present form the curves of the two diseases are interesting in contrasting the differences in their epidemicity in the three countries. The lessons of the whooping-cough curve can be best displayed by the following tabular statement which is based on Diagram 5 in the report:

Maximum Epidemic Periods.

England ...	1872	1875	1871	1882	1885	1890	1894	1896	1901
Scotland ...	1872	1875	1878	1883	1887	1890	1894	1897	1900
Ireland ...	1874	1878-1880		1883	1887	1890	1894	1897	1901

In England the epidemic curves are much less marked than in Ireland and Scotland, the disease tending more to the endemic type. Probably this is due to the greater density of the English population.

The statistics relating to tuberculosis are especially interesting, in view of the importance of preventive work in connexion with this disease. The death-rate from phthisis is practically stationary, having been 214 per 100,000 in 1893 and 217 in 1903. There has been some decline under the headings of tuberculous meningitis and tabes mesenterica, but these may easily be due to changes of classification. The stationary condition of the death-rate from consumption when contrasted with the steadily declining consumptive death-rate in England is an interesting and important phenomenon.

The report embodies a valuable table of deaths from cancer classified according to the parts affected. This will become increasingly valuable as years pass.

The infantile mortality for the whole of Ireland was only 96 per 1,000 registered births. In this respect Ireland compares most favourably with the rest of the United Kingdom. Unless common testimony errs, it is striking testimony in favour of the better mothering which Irish infants receive.

A valuable report on the monthly meteorology of Ireland, contributed by Sir John Moore, forms the last item in the report.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 7,718 births and 5,426 deaths were registered during the week ending Saturday last, December 10th. The annual rate of mortality in these towns, which had been 16.6, 17.3, and 21.6 per 1,000 in the three preceding weeks, declined again last week to 18.5 per 1,000. The rates in the several towns ranged from 8.9 in Bournemouth, 9.5 in Smethwick, 10.4 in Aston Manor, 10.9 in Hornsey, 11.7 in King's Norton and in Newport (Mon.), 11.8 in Devonport, and 12.0 in Northampton and in West Hartlepool, to 23.2 in Manchester and in Wigan, 23.3 in Plymouth, 23.6 in Tynemouth, 23.9 in Reading, 24.5 in Hanley and in Newcastle-upon-Tyne, 25.0 in Salford, and 26.2 in Walsall. In London the rate of mortality was 18.1 per 1,000, while it averaged 18.7 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases in these towns averaged 1.5 per 1,000; in London this death-rate was equal to 1.1 per 1,000, while among the seventy-five large provincial towns the death-rates from the principal infectious diseases ranged upwards to 3.0 in Stockton-on-Tees, 3.1 in Gateshead, 3.2 in Plymouth and in Salford, 3.3 in Hanley, 3.4 in South Shields, 3.6 in Burnley, 3.8 in York, 4.3 in Wallasey, and 5.0 in Wigan. Measles caused a death-rate of 1.5 in Liverpool, 1.6 in Burnley and in Middlesbrough, 1.8 in Salford, 2.2 in Gateshead, 2.4 in South Shields, 2.5 in Wigan, and 2.9 in Tynemouth; scarlet fever of 1.4 in Devonport, 1.5 in Warrington, and 1.9 in York; diphtheria of 1.2 in Brighton and 2.6 in Wallasey; whooping-cough of 1.7 in Wigan and in Barrow-in-Furness and 2.3 in Preston; "fever" of 2.6 in Rhondda; and diarrhoea of 1.4 in Plymouth, and 1.5 in Oldham and in West Hartlepool. One fatal case of small-pox was registered in Hanley, but none in any other of the seventy-six large towns. The Metropolitan Asylums Hospitals contained 4 small-pox patients on Saturday last, December 10th, against 1, 1, and 3 on the three preceding Saturdays; one new case was admitted during the week, against 1, 2, and 2 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 2,774, 2,741, and 2,625 at the end of the three preceding weeks, had further fallen to 2,490 at the end of last week; 263 new cases were admitted during the week, against 259, 262, and 247 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

DURING the week ending Saturday last, December 10th, 869 births and 653 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 17.3, 18.0, and 21.2 per 1,000 in the three preceding weeks, declined again last week to 19.7 per 1,000, but was 1.2 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scotch towns the death-rates ranged from 12.3 in Perth and 13.0 in Leith, to 19.2 in Paisley and 23.1 in Glasgow. The death-rate from the principal infectious diseases averaged 2.1 per 1,000 in these towns, the highest rates being recorded in Glasgow and Aberdeen. The 354 deaths registered in Glasgow included 2 which were referred to measles, 2 to diphtheria, 32 to whooping-cough, and 6 to diarrhoea. Three fatal cases of whooping-cough and 3 of diarrhoea were recorded in Edinburgh; 7 of measles and 2 of diarrhoea in Aberdeen; and 2 of whooping-cough and 3 of diarrhoea in Dundee.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, December 10th, 461 births and 423 deaths were registered in six of the principal Irish towns, against 549 births and 409 deaths in the preceding period. The mean annual death-rate in these towns, which had been 19.6 19.5, and 21.2 per thousand in the three preceding weeks, rose slightly to 21.4 per 1,000 in the week under notice, this figure being 2.9 per 1,000 higher than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 13.7 in Limerick and 15.6 in Waterford to 24.7 in Cork and 26.4 in Dublin. The zymotic death-rate during the same period and in the same six Irish towns averaged 1.7 per 1,000, or 0.7 per 1,000 higher than during the preceding period, the highest figure, 3.2, being registered in Belfast, while Londonderry recorded no deaths under this heading at all. The principal zymotic cause of death in Dublin and Belfast was measles, 10 deaths from this cause being registered in Dublin and 18 in Belfast. In Dublin one death was ascribed to scarlet fever, but no deaths were recorded anywhere in Ireland from small-pox, typhus, or diphtheria.

A MINISTRY OF PUBLIC HEALTH.

DR. F. G. BUSHNELL (Brighton) writes: The annual health report for 1903 of Mr. A. G. R. Foulerton, F.R.C.S., the Medical Officer of Health of East Sussex, states that a decrease in the mortality of pulmonary tuberculosis would result from the more vigorous exercise of the provisions of the Public Health Acts. This is true, yet the question is in reality a part of the larger one of the lack of popular enthusiasm, or belief in measures and methods of improving public health conditions, and the way it should be met. Education, politics, imperialism, even religion, have been invoked, and all play their part in this object, but no wave of sentiment has of late years passed through the country in its favour, and the organization of State medicine remains quiescent. There is a magnetism in policies of State which succeeds elsewhere, and which would succeed in public health, in raising the standard of national health and happiness if it were adopted by one of the leaders of the profession. Mr. Foulerton would find the motive force he desires to combat disease at its root and not at its surface. An expert Cabinet Minister or Secretary of State, associated with a representative advisory committee and an administrative council, with a developed system of inspection, would infuse sympathy with his objects. A visit to Germany suggests possibilities. An Englishman is struck with advantages there that appear lacking in this country. The cleanliness and brightness of their fine towns, the absence of slums and "slummers," the broad streets well planted with trees and well lighted, the many public gardens, affording acceptable Nature studies to all, the order and arrangements of the workshops (including, if I may, in this term the laboratories of pathology and bacteriology), the size, airiness, cleanliness, and attractive appearance of the workmen's dwellings, the facilities for easy transit from town to country are evidence perhaps of a high level of knowledge and its application to daily life. May it not be that the State has induced, for certainly it promotes, a general acceptance of improved conditions of living? Mr. Foulerton believes that the general provision of sanatoriums for the isolation of tuberculous patients by public authorities is unsound from the scientific and economic points of view. This may be so, but it is noteworthy that no attempt is made to question the value of sanatorium treatment for individual cases of phthisis pulmonalis. Indeed, the medical or remedial aspect is in a sense the most important; further, sanatoriums are by far the most practical way of meeting present circumstances. And the part played by them in the prevention of tuberculosis is largely in their means of giving an object lesson to a (limited) number of tuberculous people, who may be expected to instruct others in gratitude for their own preservation. Again, the whole subject of medical institutions is involved in the provision of a Ministry, and it is hoped that the medical profession, on whom an obligation rests, will not allow this important issue to be forgotten.

DR. ARTHUR TODD WHITE (Sydenham) writes: Letters on the above subject have appeared from time to time in the press; of late the subject seems to have been forgotten. This seems to me to be a serious mistake. If we inquire into what would be that Minister's duties, we see how important it is to use any effort to obtain such an appointment. I venture to suggest a few:

1. The adulteration of food calls for strict inquiry and reform in our too lenient laws. We know the difficulty we have in feeding our patients; we order milk, and they get rubbish; wine, and they get a useless substitute, etc. I am not speaking of all foods and wines, but we cannot analyse everything; therefore the sale of substitutes should be suppressed by severe laws, imprisonment, etc.
2. The sale of tobacco and its substitutes, and the sale of above to children, requires supervision and fresh legislation.
3. Sanitation. Here is a difficult problem for a Minister of Health. We learn on great authority that, owing to the sanitary laws in force, it is impossible to build cottages in the country which a labourer could afford to rent, thus driving these labourers into our overcrowded towns, and causing trouble in our agricultural districts. The laws need adjusting so as to enable landowners to put up healthy dwellings, which can be made to pay.
4. Administration of laws relating to employment of children.
5. Administration of laws relating to drugs and their sale.
6. Regulation of the salaries of medical officers of health.
7. Supervision of water supplies.
8. Vaccination.
9. Investigation of epidemics, etc.

I am well aware that some of these matters are at present well looked after by various Government departments and public bodies, but they all want to be brought together and controlled by one central health office under a Minister of the Government.

EMPTYING OF CESSPITS: ISOLATION OF INFECTED HOUSEHOLD.

L. J. L. writes: Will you kindly advise in the following difficulties: (1) In this rural district cesspits are the prevailing arrangement at houses of any considerable size, there being no general drainage system. (I do not refer to houses with considerable grounds where the neighbours would not be affected.) Complaints have arisen owing to the cesspits having been emptied (or pumped) in the daytime, in the opinion of the medical officer of health (myself) they give rise to a nuisance. The clerk of the district council (a solicitor) appears indisposed to advise that this should be treated as a breach of the Public Health Act. He says there is nothing in the law to prevent a cesspit being emptied at any hour, but adds that a nuisance must not be caused (but without any emphasis on the last clause—which, to my mind, is the all-important one). I have personally acted on the assumption that cesspits should be emptied or pumped before 8 a.m. or after 10 p.m., say (when people are not about), and that if a nuisance is caused at other hours proceedings may be taken under the Public Health Act, 1875, Section XCI. Kindly inform me if I am wrong. I may say we have no by-law referring to this matter. (2) In the event of the occurrence of a case of scarlet fever in the family of a schoolmaster living in a cottage, what precautions are necessary beyond confining the affected child to an upstairs room? Should the other members of the family be allowed to go about freely and mix with others, or should an attempt be made to limit their intercourse (the mother who nurses the sick child has to mix with the rest of the family, and it is of course impossible to ensure that there is no communication between the affected and unaffected members)? If day school should be closed, what about Sunday school and church?

*** (1) In the absence of by-laws (which can be made by a rural district council under Section XLIV of the Public Health Act, 1875, and by an urban district council under the same section, or under Section XXVI of the Public Health Acts (Amendment) Act, 1890) it is very difficult to regulate the emptying of cesspits. The precise time for emptying must be defined by a by-law. The assistance of the nuisance sections (XCI *et seq.*) of the Public Health Act, 1875, might be sought, but there are obvious difficulties in enforcing them—for example, before a notice could be served upon the person causing the nuisance requiring him to abate it, there would no longer be a nuisance to abate.

(2) Where there is a patient suffering from a dangerous infectious disease in a cottage, it is most undesirable that the members of the household should mix with other people. Quite apart from the question of carrying infection, one or more of the infected family may sicken of the disease and infect others during the incubation period. The members of an infected household should not attend a Sunday school or public gatherings. Although a medical officer of health has no power to

enforce the closing of a Sunday school it is usual for him to suggest such closing where he has advised the closing of a public elementary school. In at least two large districts in this country an attempt has been made with some success to limit the spread of infection through social intercourse by placing in the window or in some prominent position of the infected house a card on which is printed in large type the name of the disease, and a request that the occupier will not permit any person to come to the house except those whose services are absolutely necessary.

THE INFECTIOUS DISEASE (NOTIFICATION) ACT.

H. P. writes: Could you tell me the amount paid to a doctor of a public school or college for a certificate reporting an infectious case? The Act reads thus: "Commissioners of the district will pay for every such certificate sent by a medical practitioner in accordance with the requirements of the Acts, a fee of 2s. 6d. if the case occurs in the course of his private practice, or a fee of 1s. if the certificate is given in respect of a case occurring as medical officer to any public body or institution." Am I right, however, in taking the terms "public body or institution" to mean schools, etc., supported by public subscription, or whose medical officer is elected by the ratepayers, Government, or local authorities?"

*** The expression "public body or institution" in Section IV of the Infectious Disease (Notification) Act, 1889, does not appear to have been defined. The latest (September, 1903) instructions to registrars of deaths issued by the Registrar-General defines "public institutions" for registration purposes as "workhouses, hospitals, infirmaries, and public lunatic asylums, but *not* schools (except workhouse schools), almshouses, private lunatic asylums, barracks, prisons, and reformatories." Most medical officers of health consider that for the purposes of the Infectious Disease (Notification) Act a certificate relating to a Poor-law patient, whether attended outside a Poor-law institution or not, entitles the certifier to a fee of 1s., but that 2s. 6d. should be paid if the patient is a member of a medical club or provident dispensary. In the case of a patient who is an inmate of a public hospital or infirmary, or public lunatic asylum, or prison, or reformatory, a fee of 1s. is usually paid. Other instances are treated on their merits, and we think it is probable that a "school supported by public subscription, or whose medical officer is elected by the ratepayers, Government, or local authorities" would be held to be a public institution.

CARE AND CONTROL OF IDIOTS AND EPILEPTICS.

THE Royal Commission on the Care and Control of the Feeble-minded continued its proceedings on December 5th, when evidence was given by Miss Dendy, Honorary Secretary of the Lancashire and Cheshire Society for the Permanent Care of the Feeble Minded, and a member of the Manchester Educational Committee. She had been interested in the question since 1896; soon after that year she selected from 39,600 Board School children in Manchester 525 pupils as being abnormal. Of these Dr. Henry Ashby examined 494, and found them defective. About two and a half years later their first special school for defective children was opened; they now had three and were shortly to open a fourth, but it would not suffice. In 1898 she found 149 feeble-minded children among the 4,860 pupils in outlying Board schools. In Manchester, which was no worse than other places and better than many, about 2 per cent. of the school population was feeble-minded, the ratio of boys to girls being as 3 to 2. These boys, when they grew up under present conditions, could not get skilled work, and many of them became criminals because they would obey bad suggestions just as readily as good ones. They usually died comparatively young, but often left children behind them to carry on the tradition. Such children should be educated first in special day schools and then in special boarding schools, whence in due course they should be drafted to special labour colonies there to remain for life if deemed advisable. She saw no hardship either to the children themselves or to the public in this: feeble-minded persons in idiot asylums should certainly be detained permanently. The principal causes of the trouble seemed to be weakness of intellect, deaf-mutism and progenital epilepsy. Accidents had little to do with it, and alcoholism nothing at all except so far as it might be the cause of accident to the mother before confinement. In Norway and Sweden, where drink had enormously decreased, feeble-mindedness had increased greatly. Drunkards tended to kill themselves and to die out, the feeble-minded did not. Guardians should have the power of detaining feeble-minded paupers under their care. If feeble-minded children were got hold of when young, the difference between the cost of their keep and their value as workers when grown up would be very small; they were quite able to do work under proper conditions, but the point was that they had no initiative. At present all their possibilities of utility were wasted, while they did an immense amount of harm. The measure she suggested would be a boon financially in the long run, but its greatest advantage lay in the fact that the future deterioration of the race would be prevented. The care of a feeble-minded child should not be a cause of pauperism. There should be one local authority only for the feeble-minded and epileptic, and that authority should be the County Council and not the guardians. The present practice of idiot asylums refusing to admit cases unless there was a chance of improvement being effected had led to very unhappy results. The Commission again adjourned.

The Commission held a further sitting on December 12th.

Miss Dendy, continuing her evidence, said that of the 1,100 feeble-minded children whom she had personally examined, less than ten were morally deficient in the ordinary sense. There should be statutory prohibition of marriage on the part of the feeble-minded. The latter, whether criminal, pauper, or otherwise, should be kept under control.

Mr. J. G. Legge, Government Inspector of Reformatory and Industrial Schools, explained that the former were for actual and the latter for potential delinquents. The Government contributed more per caput to the maintenance of the children in reformatories than to those in industrial schools. The children who could be sent to the latter were destitute children, vagrants, paupers, truants from public elementary schools, and children of bad parents. Juvenile delinquency had little to do with any special depravity of the offender, but much with parental neglect. Under certain conditions, the reformatories and industrial schools might well be amalgamated, but in addition there was urgent need for special classes of schools for children suffering from physical or mental defect. Both reformatories and industrial schools were more and more tending to become educational establishments in all ways, and the children specially discharged during the past five years had probably all been sent out because it was found impossible to deal with them owing to physical or mental defect. There were a number of weak-minded children who should certainly be detained for an indefinite period. If they improved so far as to be able to do light work so much the better; they could then be discharged to an industrial colony. Schools should be set apart for the so-called moral imbeciles. The best results would be obtained by combining the efforts of central and local authorities and voluntary organizations.

SEWAGE DISPOSAL IN RURAL DISTRICTS.

THERE is abundant evidence that the bacterial treatment of sewage in rural districts is receiving increasing attention at the hands of sanitary authorities. It is now difficult to open the annual report of any county medical officer without finding more and more space devoted to records of works, and, on the whole, of satisfactory results. It is well known that good work of this kind has been done in Staffordshire and other counties, and from the recent report of Dr. Barwise for the county of Derby it is evident that progress is being made, and effluents are being obtained from septic tanks and percolating filters (without land treatment) which are non-putrescible and free from suspended matter. Where sewers have already been laid, but the schemes of purification are not satisfactory, Dr. Barwise advises that the local authorities should, out of current rate, construct biological filters of hard clinker, pea gravel, saggers, or hard stone, broken to between ½ in. and ¾ in. pieces, but free from all dust. (Limestone and furnace slag are unsuitable materials.) The sewage should be distributed over these filters intermittently. In some places a revolving arm, in others an automatic intermittant valve may be used. This latter contrivance may be actuated by a float rising and falling in a tank as it fills and empties. In one form the motion of the float is transmitted to the valve through the intervention of a balanced iron tube containing mercury. As the mercury runs from one end to the other the valve is opened or closed. For small villages with stationary populations the sewage, Dr. Barwise says, can generally be got to some open spaces, where it can be dealt with in sections, by small tanks and filters. Where land is available filtration need not be carried out to the same extent as where the effluent from the filters is going direct to the stream. In the former case the effluent from the filters taken to a ditch which has been widened out to three or four yards in width, and planted with osiers, would be a perfectly satisfactory way of dealing with village sewage.

HOSPITAL AND DISPENSARY MANAGEMENT.

EDINBURGH ROYAL INFIRMARY.

MR. JOHN W. L. SPENCE, L.R.C.P. and S.Edin., has been appointed Senior Clinical Assistant for one year in the medical electrical department, under the charge of Dr. Dawson Turner: and Mr. F. K. Kerr, M.B., Ch.B., was appointed Second Clinical Assistant for one year in the same department.

JAMAICA LUNATIC ASYLUM.

IN the annual report of this institution, for the year ending the 31st of March, 1904, the Medical Superintendent, Dr. D. J. Williams, records the death on January 20th, 1904, of Dr. Plaxton, who for 18 years had been the medical superintendent of this asylum, and during his long tenure of office had discharged his arduous duties with unremitting attention. The number of inmates at the beginning of the year was 959, and at the end of the year 1,000, an increase of 41 or 4.27 per cent. This is less than the increase of the previous year, which was 96, or 11 per cent., but the statistical tables show a practically uninterrupted increase in the total numbers under treatment since 1869, the increase of 1903-4 on the previous year being 76. The admissions during the year numbered 206, of whom 146 were first admissions. The tables do not give any information as to the forms of mental disorder among the admissions, with the exception of the criminal lunatics, nor as to their bodily condition or the probable causes of insanity, but they are divided as to colour into white, 4; brown, 52; black, 144; coolie, 4; and Chinese, 2. From prisons there were admitted, 15; from constabulary lock-ups, 179; from almshouses, 6; from their own homes 3; and from public general hospitals, 3. Of the 206 admissions 17 were criminal lunatics, raising the total number of criminal lunatics in the asylum to 61. Of these 61 criminal lunatics, 28 were cases of mania, 10 of dementia, 5 of delusional insanity, 11 of imbecility, and 7 of epilepsy. During the year 67 were discharged as recovered, giving a recovery rate on admissions of 32.52 per cent., 3 as not improved, and there were 95 deaths. The percentage death-rate on the total number under treatment during the year was 8.15, which is slightly higher than the average death-rate for asylums in England and Wales (7.64 per cent. for the ten years 1894-1903), but is higher than the usual death-rate in this asylum, whose average death-rate for the ten years immediately preceding works out at 6.65 per cent. The causes of death were as follows:—Cerebro-spinal diseases, 18; general diseases, 18; thoracic diseases, 33; abdominal diseases, 22; and senile decay, 4. There were no deaths from accident. Unfortunately the report does not give more detailed information under this heading, and inasmuch as statistics relating to the causes of death and also the forms of mental disease encountered in asylums abroad are indispensable to comparative studies of insanity, it would be well that in future reports these omissions should be rectified. No mention is made of the general health in the asylum, but it is stated that malarial fever of a mild type was prevalent and efforts were made to stamp it out—with what effect is not stated—by the destruction of the mosquito.

THE Royal Mail Steam Packet Company has issued a convenient pocket diary illustrated with maps of the West Indies and South America, and by drawings of flags containing a time-table of their service to the West Indies and South America; it also contains the Jamaica coastwise service.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House-Surgeon, resident. Salary to commence, £70 per annum.

CARLISLE: CUMBERLAND AND WESTMORLAND ASYLUM, Garlands.—Junior Assistant Medical Officer. Salary, £130, rising to £150 per annum.

DORCHESTER: DORSET COUNTY HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

EASTERN DISPENSARY, Leman Street, E.—Resident Medical Officer. Salary, £120 per annum.

GUILDFORD BOROUGH.—Medical Officer of Health. Salary, £100 per annum, rising to £150.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Appointments for six months. Honorarium, £25.

KING EDWARD VII SANATORIUM.—Medical Superintendent, resident. Salary, £500 per annum, rising to £600.

LIVERPOOL: DAVID LEWIS NORTHERN HOSPITAL.—Two House-Surgeons, both resident. Salary at the rate of £60 per annum each.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, E.—Pathologist and Bacteriologist. Salary, £50 per annum.

NOTTINGHAM GENERAL HOSPITAL.—(1) Assistant House-Surgeon. (2) Assistant House-Physician. Both resident. Salary, £100 per annum each.

ST. THOMAS'S HOSPITAL.—Resident Assistant Physician.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House-Surg[illegible]. Salary at the rate of £80 per annum.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon, resident. Salary, £40 per annum.

STOKE-UPON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, HARTSHILL.—House-Surgeon, resident. Salary, £100 per annum, increasing £10 yearly.

SWANSEA GENERAL AND EYE HOSPITAL.—(1) House-Physician. (2) Assistant House-Surgeon. Both resident. Salary, £70 and £50 per annum respectively.

UNIVERSITY COLLEGE HOSPITAL, W.C.—Surgical Registrar.

APPOINTMENTS.

BYRNE, J. P., L.R.C.S., L.R.C.P.I., Senior Resident Surgeon, Provincial Hospital, Port Elizabeth, Cape Colony.

DAVIES, D. L., M.D.Lond., Certifying Factory Surgeon for the Wisbech and Walsoken District of the Counties of Cambridge and Norfolk.

DAY, Leigh, B.A., M.B., B.Ch.Oxon., M.R.C.S., L.R.C.P., Honorary Assistant Surgeon to the Essex and Colchester Hospital.

DELANY, K., L.R.C.P. and S.Irel. Certifying Factory Surgeon for the Carrick-on-Shannon District, county Leitrim.

FARQUHARSON, I. Malcolm, M.B., F.R.C.P.Ed., Second Assistant Surgeon to the Ear, Nose, and Throat Department of the Royal Infirmary, Edinburgh.

HOYES, W. T., M.D.Canada, Clinical Assistant to the Chelsea Hospital for Women.

KIDD, Archibald, M.R.C.S., L.R.C.P., D.P.H., Medical Officer of Health, Port Elizabeth, South Africa.

ROGERS, J., L.R.C.P. and S.Irel., Certifying Factory Surgeon for the Ballyfarnon District, county Sligo.

TENCH, M., M.D.Brux., L.R.C.P., M.R.C.S., Certifying Factory Surgeon for the Dunmow District, county Essex.

WILLIAMS, G. J., M.B., B.S.Durh., Medical Officer and Vaccinator, Eastern District and Halfwhistle Union and Workhouse, Certifying Factory Surgeon, Halfwhistle Division, vice G. W. Pickering, L.R.C.P., L.R.C.S., resigned.

DIARY FOR NEXT WEEK.

TUESDAY.

Chelsea Clinical Society, Chelsea Dispensary, Manor Street, Chelsea, S.W., 8.30 p.m.—Dr. R. L. Bowles: The Treatment of the Apparently Drowned, with a Demonstration of the best methods of resuscitation.

Pathological Society of London, 20, Hanover Square, W., 8.30 p.m.—Papers: Messrs. L. S. Dudgeon and H. E. Russell: Experimental Grafting of the Thymus. Dr. W. E. Dixon: The Production of Leucocytosis by Colchicine. Messrs. T. G. Brodie, F.R.S., and W. E. Dixon: Alterations in the Systemic Circulation which tend to produce Engorgement of the Lung Capillaries.

Therapeutical Society. Apothecaries' Hall, 4 p.m.—Papers:—Dr. Nestor Tirard: Some Clinical Observations with New Remedies. Mr. J. D. Gimlette: Notes on some Methods employed by Kelantan Malays in the Treatment of Puru or Yaws. (To be read by the Secretary.)

POST-GRADUATE COURSES AND LECTURES.

North-East London Post-Graduate College, Tottenham Hospital, N.—Tuesday, 4.30 p.m., Lecture-demonstration on Anaesthetics.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

ADDISON.—At Wican Croft, Northwood, Middlesex, on December 8th, the wife of Christopher Addison, M.D., of a son.

LE FEBVRE.—On November 9th, at Bulawayo, the wife of W. P. Le Fevre, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

BENTLEY—CONSTABLE.—On December 8th, at Rusthall Parish Church, Tunbridge Wells, Harold, second son of John Eugene Bentley, of Sandford Dene, Cheltenham, to Hannorah Marie Louise, daughter of the late William Constable, of Cahir, co. Tipperary.

PHILLIPS—COXON.—On December 7th, at Hampstead Parish Church, by the Rev. John Crosby, Precentor of Ely Cathedral, and the Rev. Brooke Deedes, Vicar of Hampstead, Llewellyn Powell Phillips, [illegible] M.D.Camb., F.R.C.S., M.R.C.P., of Kasr el Ainy Hospital and the School of Medicine, Cairo, Egypt, only son of the late Dr. James Matonas Phillips, of Cardigan, to Edith Helen, daughter of the late Alfred Coxon and of Mrs. Coxon, Grindon House, Surbiton.

SHARP—MURRAY.—At Christ Episcopal Church, Edinburgh, on December 14th, by the Rev. C. M. Block, M.A., Dr. Gordon Sharp, of Leeds, to Ada, youngest daughter of the late Lieutenant-Colonel Charles Stewart Murray, 72nd Duke of Albany's Own) Highlanders.

DEATHS.

LUSH.—On December 7th, at Dorchester, suddenly whilst attending a meeting at the Dorset County Hospital, William George Vawdrey Lush, M.D., F.R.C.P.Lond., F.R.C.S.Edin., of No. 12, Frederick Place, Weymouth. Funeral at [illegible] Tuesday, December [illegible].

RAPER.—On December 9th, at Great Wakering, Essex, in his 90th year, W[illegible] Raper, M.D.Lond., M.R.C.S., L.S.A.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aetiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):— EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

TREATMENT OF GLEET.

J. W. asks for suggestions in the treatment of a case of chronic gleet, which ceases entirely for a month at a time if santal oil be taken returning in two days if it be stopped.

ANSWERS.

M. A.—The term "gonion" is applied to the region of the angle of the jaw by Topinard and other anthropologists. It is derived from γωνία, an angle.

G. M. might consult Arlidge's *Hygiene, Diseases and Mortality of Occupations* (London: Percival and Co., 1892, 21s.) and Oliver's *Dangerous Trades* (London: John Murray, 1902, 25s.), both of which contain chapters on diseases peculiar to colliers.

LETTERS, NOTES, Etc.

VERONAL: A WARNING.

VERONAL writes: I think the following experience may serve as a warning to those who are in the habit of employing a very useful hypnotic—veronal. On two occasions I had read contributions to the BRITISH MEDICAL JOURNAL in which veronal was referred to as a safe and good hypnotic. Having a cerebral case long inured to the use of sedatives and wishing to withhold morphine I determined to use veronal. The dose recommended is from 5 to 15 gr. so I gave 10 gr. After one hour, no effect having been produced, I repeated the dose and again without result. I therefore waited over an hour again and gave a third dose, when the patient dropped asleep. After sixteen hours I called on my usual morning visit, and found her drowsy and unwilling to speak. On feeling the pulse I was alarmed to find it almost gone, and this led to a thorough examination. The pupils were contracted and irresponsive to light, the temperature 96°, clammy skin, and cold extremities. I therefore began to give hot coffee, stimulants, and enforced movements, and she began to wake up, but whenever we ceased our efforts she relapsed into an almost comatose condition. Towards night she improved and this morning I pronounced her out of danger, after twenty-four hours' sleep. A remarkable aspect of the case was the mental condition. The patient was quite oblivious to all surroundings, even when roused up, and now that she is recovered she is smiling foolishly and talking nonsense. The speech has become slurring, although it is more normal than yesterday. I wish to point out that though veronal is a good hypnotic, it seems to take time to act and to have a cumulative action. I think the dose recommended is correct, but at least two hours should elapse before repeating it. One highly satisfactory quality of the drug is that even after this overdose no nausea or headache was felt.

DISPENSING BY MEDICAL MEN.

H. B. writes: How much longer are the pages of the BRITISH MEDICAL JOURNAL to be filled with letters on the above and kindred subjects? By "kindred," I mean subjects affecting the pecuniary interests of the medical profession, for that is what they all hinge upon. Everybody will, I think, agree with me that an individual who is, by disease or accident, rendered unfit for work, is a loss to the community, for not only does he not produce anything, but he prevents others doing so, and therefore the nation is so much the poorer. Such being the case, I suggest that since it is to the interest of the nation to get the patient back to his or her work again as soon as possible, it is the duty of the State to provide the means. How many a valuable life would be saved if the afflicted man or woman could obtain medical or surgical assistance without a thought about the doctor's bill at Christmas! For numbers of years the State has been paying hundreds of thousands of pounds for the well-being of the souls of the people and I fail to see why it should not make similar provision for the care of their bodies. We should then have no more letters under the above heading, under "All for the worst" or under the eight or ten others which appear on pages 1123-4 of the JOURNAL.

AFEBRILE ENTERIC FEVER.

D.P.H.CAMB. writes: I have read with interest, and with some surprise, the notes on the case of afebrile enteric fever, in the BRITISH MEDICAL JOURNAL of December 3rd. I wonder how many physicians will agree with Dr. George Jubb in his diagnosis and in his conclusions. To me the only positive sign in the case in favour of enteric is Widal's reaction. This, however, only bears out my own not large experience of the

uncertainty of this test as an aid to diagnosis, nor have I read anywhere that this serum reaction is by any means infallible. What I should have diagnosed from the published notes of the case would have been an ordinary case of anaemia, complicated by the not rare complications of (1) femoral thrombosis, and (2) splenic enlargement. At any rate, if such a case is typhoid, then there are many typhoids missed.

THE ROYAL UNIVERSITY AND THE SIX MONTHS WITH A PRIVATE PRACTITIONER.

DR. THOMAS LAFFAN (Cashel) writes: The enclosed speaks for itself. It shows plainly how useless mere permissive regulations are, and how determined the monopolists are to allow no one to have the smallest share in teaching the young idea but themselves. I shall forward the letter from the Royal University of Ireland to the General Medical Council.

(Enclosure.) [COPY.]

December 6th, 1904.

Sir,—In reply to your letter of June 18th we are directed by the Medical Committee to state that the University does not grant recognition to any medical practitioner as person with whom students may spend the half of their fifth year of study.

R. MEREDITH,
J. MCGRATH,
Secretaries, R.U.I.

Dr. T. Laffan.

A NEW USE FOR HYDROCELE FLUID.

DR. A. F. MEREDITH POWELL (Minster, near Ramsgate) writes: The following may interest our medical photographers. Having "tapped" a hydrocele, it occurred to me to coat some paper with the fluid, and after drying, to float it on a 10 per cent. solution of silver nitrate. In this way I obtained a sensitive photographic paper, which after drying in the dark I exposed under a negative in the ordinary way, printing somewhat deeply. By treating the resultant print with a strong solution of sodium chloride prior to fixing in hyposulphite of soda, and subsequently washing and drying, a very pleasing reddish-brown print was the result. If the print is immersed in a strong solution of liq. ammon. instead of sod. chlor. prior to fixing, a lighter brown will result. The novelty lies in using hydrocele fluid with its contained chlorides and albumen as the photographic basis.

THE YOUNG IDEA IN ANATOMY.

IN *Punch* of December 7th there is a sketch of a small boy in a museum who invites his mamma to look at the skeleton of an animal, which he describes as "a Efelant wid only his inside on." An even more amusing illustration of the ingenuity of the youthful mind in framing anatomical concepts is afforded by the following story which appeared some time ago in *Lippincott's Magazine*: Two little fellows of 7 and 8 years heard older people speaking of skeletons. The 7 year-old boy listened intently to the conversation, when the elder boy, with an air of superior knowledge, said abruptly, "You don't know what a skeleton is, and I do." "So do I!" replied the younger. "I do know. I know for certain, I do!" "Well, now, what is it?" "It's bones with the people off!"

STRYCHNINE AND CHLOROFORM ADMINISTRATION.

DR. OWEN WILLIAMS (Glandovey) writes: I agree with much that Dr. Jepson has said, and considering the large number of deaths that annually occur from the administration of chloroform, it points out that it is a subject of importance. Acting upon the principle that if the injection of strychnine is beneficial in heart failure, under the influence of this anaesthetic, I invariably give an hypodermic injection of strychnine prior to its administration, and always with a successful result. As an instance of this I may say that I successfully operated upon an old woman, 82 years of age, for cancer of the lower lip. She was put under the influence of chloroform, but preceding that I injected strychnine, and she recovered all right. It was done out in the country. I concur with Dr. Jepson that it would be a good rule to give a heart tonic before the administration of chloroform, even if administered by the best of anaesthetists, and I think that it is well that this subject should have been brought prominently forward.

THE ABUSE OF PRESCRIPTIONS AND THE SALE OF PROPRIETARY POISONS.

D. M. writes: Some interesting correspondence took place in the pages of the BRITISH MEDICAL JOURNAL some time ago in regard to the abuse of prescriptions and various remedies were suggested. There is one remedy which I think would prove effectual, and that is for every practitioner of medicine who does not dispense his own medicines to have stamped post-cards with his name and address on them. He can write his prescription on the blank side; at the foot he will have printed, "This prescription to be dispensed and thereafter posted to the doctor whose name and address are given on the other side, and on no account is this prescription to be repeated for the patient or any other party." It is simply disgraceful that prescriptions should be handed round among patients and dispensed over and over again as they are at present. As regards the sale of proprietary poisons, I need only refer to chlorodyne. I have a patient just now who is addicted to the use of that drug, and nothing seems to be able to break her of the habit. She can procure it in spite of anything I can do, and she has been known to get a bottle every day at one chemist's for eight or ten days in succession and have these invoiced to her. Surely it is a scandalous state of matters, and legislation to prevent this is urgently needed. The sooner a Bill is passed through Parliament forbidding the sale of patent or any other medicines except those prescribed by registered medical practitioners the better for the population at large. How people can go on swallowing secret remedies and medicines prescribed by chemists over the counter shows a phase of mind and a credulity difficult to understand.

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A Clinical Lecture
ON
STONE IN THE KIDNEY.

Delivered at St. Thomas's Hospital.

By H. BETHAM ROBINSON, M.S.Lond., F.R.C.S.,
Surgeon in charge of Out-patients, and Surgeon to the Throat Department.

The subject I have chosen for our consideration to-day was determined by a very good illustrative case, that of the woman in Alexandra ward, upon whom I operated a few days ago, and where the calculous kidney formed a very definite abdominal tumour.

S. B., a married woman, aged 35, coming from India, was admitted into St. Thomas's Hospital, September 14th. At 10 she had fever, which left her with an enlarged spleen. At 14 she first noticed some pus in her urine; there was no inconvenience with it, and it soon disappeared. Within the last year she again noticed pus. The amount of urine passed seemed to be normal. For the last six months there has been pain in the back and in the left flank. In May a lumbar abscess was detected, which was opened in Calcutta on May 27th, in the left lumbar region. One month later another opening, higher up, had to be made, and since then discharge has continued.

On admission into hospital there were two sinuses discharging pus just about the outer border of the erector spinae; there was no urea in the pus. A hard mass was to be felt in the situation of the left kidney, having the shape of the latter, but much larger in size; its firmness gave the impression of a stony lump. Skiagraphy corroborated this, for a dark shadow was to be seen, having the outline of the pelvis and calices. The urine (on the 20th) was acid, specific gravity 1012, with a cloud of albumen and pus cells, and crystals of oxalate of lime and triple phosphates; the amount for twenty-four hours was 33 oz., which contained 6 gr. of urea to the ounce. The right kidney was abnormally mobile.

She was operated on on September 21st. The site of the upper opening being in the angle between the last rib and the erector spinae, an oblique incision was made in the loin between the two openings; in so doing a sinus was cut across which led from the lower opening towards the upper pole of the kidney, passing deeply through the fascia and round the anterior border of the quadratus lumborum. The perirenal fat was very matted, so that the kidney in its capsule was freed with difficulty; from the upper end of the kidney a considerable quantity of pus was set free, the cavity for which extended well up under the ribs. Into this perinephric abscess the upper portion of the calculus projected through the kidney substance and capsule. The sensation on manipulating the freed kidney was like that of "oyster shells in a bag." The kidney was now incised in its length posterior to the outer border, and some thick pus came out from the upper end. The calculous material completely filled the pelvis and calices, and the extremely thinned cortex was simply riddled with gritty particles. As the kidney appeared functionless, it was decided to remove the organ. It was difficult to clear the pedicle very satisfactorily owing to the infiltration of the fat; this was tied with 5½ silk, and effectually closed the vessels. A tube with a wick was placed down to the pedicle, and a gauze drain into the upper pocket. The wound was sewn up with thick salmon gut.

The calculus weighed 42 grams, and consisted of a nucleus of laminae of oxalate of lime with a very thick coating of phosphates on the outside; the part in the pelvis had a well-marked extension into the mouth of the ureter.

In reviewing this history, the first point to comment on is that she came from India, where, as you know, stone is extremely common. In our own isles we have stone districts, especially in the eastern counties. This geographical distribution is a very interesting matter, but it is one which is very inadequately explained. Quality of food, condition of subsoil, and the water supply have all been held responsible; whatever the cause may be, the result is some error in metabolism leading to the excessive production and excretion of such chemical products as uric acid, oxalate of lime, and phosphates. It is the cohesion of these crystals in a matrix of a colloid material that forms the calculus, the colloid menstruum having its origin from the local irritation. This is a subject that has special interest for us, as it was to the experiments of Rainey and afterwards by Ord, both connected with this hospital, that light was thrown on calculous formation.

It must not be supposed that stone does not occur out of special districts, for it does so, its victims usually having a gouty family history.

The symptoms of stone in the kidney are very variable and often very indefinite. Three signs stand out from others pointing to a renal calculus—pain, attacks of renal colic, and haematuria. In a large proportion of cases we have not all these signs present together, the only one being anything like constant is pain.

Now in the case before us we have to deal with an instance where the calculus itself had produced no symptoms—in fact, had she not developed the perinephric abscess, the calculus might have remained much longer unsuspected. If we consider the slight pyuria over twenty years ago related with the then presence of the calculus, we learn how long the kidney will tolerate such calculous formation. The reason for this was shown from the fixation of the calculus in the pelvis and calices, the mass producing a cast of the excretory structures.

When pain exists by itself as the only symptom, extreme care has to be taken in localizing it to the kidney, for it may be simulated by affections of neighbouring structures, as stomach, colon, gall bladder, or spine.

Certain generalizations may be stated with regard to pain from a stone. (1) That any stone free to move about in the pelvis or calices is likely to be the most painful. A freely-moving pelvic stone will be forced down into the extremely sensitive orifice of the ureter and may produce an attack of renal colic not less severe than the actual passage of a stone down the ureter. A stone free to move in a dilated calyx may also produce pain of a colicky nature but not so severe. The converse proposition may be stated that a stone fixed in both pelvis and calices may exist with little (perhaps dull aching) or no pain. (2) That stones fixed in the parenchyma may give no or only dull aching pain.

It has been considered by some that the nature of the calculus makes a difference in the amount of pain: an oxalate one, which is usually tuberculated on its surface, causes most irritation, then a phosphatic, and least a smooth uric acid one.

Pain may be a dull ache fixed behind just under the last rib or also passing to the front just along the border of the rectus below the umbilicus: it may be a sharp radiating pain as in the colic going down the front of the thigh, or into the testis. Such a pain would presumably only be on one side, and it is only a one-sided pain that can be of any use in diagnosis. Mere indefinite backache is of no value, for it may be present in most general kidney affections and its presence may be indicative of some such structural change.

A well-marked attack of renal colic is characteristic. The intense pain in the kidney region generally radiating downwards, especially into the testis, with nausea or vomiting, followed by sweating, and often accompanied by a rise of temperature, point to the cause. The most typical attacks are due to a stone travelling down the ureter, but a stone in the pelvis driven into the orifice of the ureter, and not able to pass further, may be almost equally severe. Again, much the same colicky attack may be seen when a blood clot is passing down the ureter.

Haematuria occurs far less often than we are led to believe from our textbooks. Perhaps this is due partly to accepting our patient's statements, where the ordinary smoky urine is not accounted by them as due to blood. It must be remembered that blood from the kidney is usually mixed with the urine without clots: the appearance of bright blood and clots would not be the case, except the bleeding was free, which is not the rule with a calculus. If the bleeding is considerable, casts of the pelvis or ureter may be got, the passage of which may be attended, as before stated, by marked colic. Haematuria of whatever amount when present is not constant, and its appearance may be related with exercise or jolting; such a haemorrhage suspected of being dependent on a stone should stop with rest. Additional signs may be frequency of micturition, which is common to most urinary disorders, and the detection of crystals in the urine.

The use of the *x* rays as a means of diagnosis is of very doubtful value. The best shadow should be obtained from an oxalate of lime calculus, next by phosphatic calculi, and least, if any at all, from one of uric acid. There are many difficulties to contend with, such as a thick loin, inability of the patient to keep the diaphragm quiet for even a short period, and the presence of blood. Under these conditions, even an oxalate calculus may not be defined. One may definitely say that no reliance should be placed on this test. Taken under favourable circumstances, in four recent cases of my own where the symptoms were strong enough to warrant exploration, two gave positive information and two negative. In all of them calculi were removed; of the positive, one was returned as being made up chiefly of calcium and magnesium phosphates with a small quantity of urates, while the other was a branched mixed phosphate and oxalate calculus; of the two negative, one was a small oxalate calculus and the other was one of calcium and magnesium phosphate. Besides the

error of not detecting a calculus that is present, cases have been met with where a very evident shadow was produced, and on thorough exploration no calculus has been found. To conclude: most surgeons are agreed that it is better where the signs are evident not to allow skiagraphy to have a casting vote; I have had myself two cases in private, where I had no doubt about a stone being present, refuse operation simply because *x* rays showed nothing.

Having decided to expose the kidney to remove the suspected stone, the question arises as to the best method of doing so. This should be through a lumbar incision, and, of course, behind the peritoneum. It has been advocated in cases where the pain present cannot be definitely referred to one or other organ to do a preliminary abdominal section before removing the stone through a lumbar wound. Such instances must be rare in which the pain cannot be fixed more on one side than the other, and when this is determined it behoves us to explore the more painful side. Another thing to be remembered is that even when the kidneys are palpated within the abdomen, no more certain information may be gained if the stone is a very small one. Where a stone has been felt after abdominal section it has been suggested to there and then remove it, on the supposition that no more dangerous infection of the peritoneum will have to be dealt with, say, than in dealing with an appendix abscess. This risk should not be taken, and this method cannot be sanctioned except under most unusual conditions.

The incision usually employed for performing nephrolithotomy is the oblique lumbar one, which begins above, just below the twelfth rib at its junction with the outer border of the erector spinae, and extends forwards for about 4 or 5 in. in a line directed towards the anterior superior spine. To get more room this can easily be extended above and below as may be necessary to explore the ureter, or when there is considerable induration of the perineal fat preventing satisfactory exposure through a smaller opening. Often the loin incision is made more transverse, but this involves more muscle section, and is difficult to extend.

With a view to cause as little damage as possible to the muscular wall, Abbé and Mayo Robson have exposed the kidney on McBurney's principle—the external oblique is split in a line from the tip of the last rib to the inner side of the anterior superior spine, and the internal in a line from the ninth costal cartilage to the posterior superior spine. I have not tried this incision, but its advocates claim that it gives plenty of room to thoroughly explore both kidney and ureter. In these incisions the loin must be opened out by an air-cushion or sandbag under the opposite loin.

Another incision that may be employed is that used by Edebohls for nephropexy. Here the patient is put in the prone position with an air cushion beneath the abdomen to push the kidney into the wound. The incision is along the outer border of the erector spinae; the fibres of the latissimus are separated, the lumbar fascia cut through, and the perirenal fat and back of kidney are readily seen. I have used this method for one case—that of the lad K., from whose kidney I removed 21 calculi, one large branched, and the others small, which I here show you. Although this was on the right side there was some difficulty in bringing the kidney well up into the wound, but this was in the main due to considerable induration of the perirenal fat. I think it might be more difficult on the left side, and, in any case, would be so when the distance between the last rib and iliac crest was limited.

In all these operations in freeing the organ after exposure care must be taken not to drag too violently on the structures composing the pedicle, for tearing through of the renal vein has been recorded.

Having got the kidney up into the wound and steadying it between the thumb and finger, the question comes where to incise it. It is an established fact that wounds through the parenchyma heal very readily, so such an incision is usually selected. This should be a vertical one about the convex border, passing well into the pelvis so that the finger can be easily introduced to make a thorough exploration; the bleeding, which may be free at first, very readily stops with pressure. With reference to this incision, Kelly has drawn attention to Broedel's researches on the distribution of the renal vessels in the parenchyma. There are two sets of arteries, the larger set supplying the whole of the anterior aspect and a part of the posterior, and a lesser set for the rest of the posterior aspect. If the incision is made in the line between these two there should be very slight haemorrhage; this line will be situated on the posterior surface about one-fourth of its breadth behind the outer border. This line, Kelly says, is much more defined when the renal pelvis is distended, and accordingly he has suggested artificially producing such distension by catheterizing the ureter and injecting fluid.

A systematic investigation of the pelvis and calices should be made with the finger and sound, and any stone removed with forceps or scoop. The surgeon should not omit to pass the sound down the ureter, so that no stone may remain behind lodged in this position.

If the stone is felt at the start in the pelvis, should it be cut down upon? Apart from the fact that great care must be taken in making such a cut, owing to the tendency to divide a branch of the renal vein, wounds here in the past have been frequently followed by a fistula, and as such a sequel is unusual with wounds through the parenchyma, the latter has been the approved method. Morris is, however, of opinion that, provided the wound in the pelvis is sutured, it tends to heal readily enough.

In suturing up the wound in the kidney in the ordinary way the stitches frequently, on tying them, cut through. To avoid this, in my last two cases I have again followed Kelly, who advises the use of mattrass sutures; the stitches used have been No. 1 catgut.

In the case we are considering to-day the operation had another termination. The extreme thinning of the cortex, and the riddling of what remained of it with calculous particles, showed us that the kidney was completely disorganized, and any attempt at saving it useless. The only course was to do nephrectomy, which was thereupon done.

The after-progress of the case has been most satisfactory, both as to the condition of the wound and as to what was of greater importance—namely, the secretion of urine. Although there was sufficient amount of urine being passed before the operation—and from the state of the left kidney, presumably, all this came from the right side—yet there was just the element of doubt as to the effect of doing the nephrectomy. Had we considered before the operation the possibility of having to nephrectomize our patient, we might have ascertained the amount of secretion from the respective kidneys. This may be done by a Luys's separator, which divides the bladder into two halves, as some of you saw me do in another kidney case recently. That the removed kidney did not secrete any urine is shown by the measurements and quality since the operation. The average amount passed has been 36 oz., having 6 gr. of urea per ounce, the same as before operation. The urine now has a specific gravity of 1010, is acid, without any albumen or pus.

NOTES ON LOCAL ANALGESIA.

By ARTHUR E. BARKER, F.R.C.S.,
Professor of Surgery, University College; Surgeon to University College Hospital, London.

Of late so many inquiries have reached me by letter and otherwise in regard to the method I occasionally employ for the production of local analgesia, and these are so difficult to answer offhand that it appears desirable to publish the newest experiences in this field. This seems the more necessary as, since a former paper, many details have been worked out and fresh observations made which simplify and perfect the procedure very materially. My own part in formulating the method has been a modest one, and yet many who have either used local analgesia themselves or have seen it employed by others state that my results are in most respects far more complete than they have obtained or seen elsewhere. If this be so the reason is not far to seek. There are, scattered through the literature of local analgesia in different countries, many most interesting observations—anatomical, chemical, pharmacological, physiological, and clinical—bearing on the subject. Some of these have apparently escaped the notice of those who have practised local analgesia or have not perhaps been fully appreciated. I have merely studied these, tested those which required it by careful experiment, and endeavoured to combine them all into a simple clinical procedure embodying their good points. This has resulted in the formulation of a procedure which I venture to think is an addition of some importance to surgery.

A careful study of the principles underlying the method is indispensable for efficiency, together with considerable experience in a variety of cases. This is a little laborious at first, but extremely interesting and well worth the trouble.

To obtain the best results from the injection of β eucaine many facts have to be kept in memory, although this drug is the only local analgesic employed in the method under consideration. We have first the discovery by Corning in America, and simultaneously (1885) by Feinberg, in Russia, that cocaine applied to the trunk of a sensory or mixed nerve abolished sensation throughout the whole distribution of the same. The practical significance of this last fact is still apparently not fully realized by many who try to carry out the procedure in question. Schleich, who undoubtedly did much to popularize local analgesia, gave it too little weight in his rather cumbrous procedure. But later Cushing gave it its full value in his very interesting observations. Of equal importance was the discovery of Oberst that if the circulation of a part was retarded by a ligature or the application of cold the action of the analgesic compound injected into it was maintained and even intensified so long as the circulation was controlled or retarded.

Based upon these observations the employment of local analgesia has grown considerably during the last few years and has improved in proportion to the full recognition of the importance of each. But its employment has been limited by two considerations. First, by the fear of the toxic effects of cocaine which restricted the use of this drug to small quantities over comparatively narrow fields of operation, and, secondly, the relatively short analgesia in those parts of the body where Oberst's method of restraining the circulation by band could not be applied. But the discovery of β eucaine which is far less dangerous than cocaine, while possessing analgesic properties little if at all inferior to it, has removed the first of these objections while Braun's suggestion of the concurrent use of adrenalin for the purpose of securing a retardation of the circulation equivalent to Oberst's constriction of the part has removed some of the objections both as to the duration of the analgesia, the extent of the area which can be dealt with, and the amount of the toxic drug to be employed.

It is now well known—Schäfer, Moore, and others—that adrenalin possesses the property of constricting the smaller vessels of a part into which it is injected. Such a part is seen to be blanched and anaemic, as though emptied of blood by constriction or cold. Now, when adrenalin combined with β eucaine is injected, several very notable effects are produced. By the retardation of the blood flow the eucaine remains in the area injected, and is not washed away at once by the blood stream into the general circulation. From this it follows that its effects on the nerves of the part are intensified and prolonged to a large extent, and therefore if combined with adrenalin less of the drug is required to produce a full effect. Moreover, as it is thus retained in the tissues locally for a long time, often hours, it only reaches the circulation, and through it the higher nerve centres very slowly, if it ever reaches them at all in the form of β eucaine. For there is reason to believe (Braun) that before it is parted with by the local tissue elements it is altered in their protoplasm into other compounds innocuous to the nerve centres. At any rate, it has been found experimentally that a dose of cocaine capable of rapidly killing an animal if injected alone, is quite harmless if combined with adrenalin.

A knowledge of these facts enables us on the one hand to employ less of the drug when adrenalin is added, seeing that its analgesic action is thereby intensified, and on the other justifies us in increasing the area of injection, and if necessary the amount of eucaine, seeing that its general toxic effects are restrained or abolished. As a matter of fact, I have several times injected more than 6 gr. of β eucaine combined with adrenalin in adults where large areas had to be dealt with, no ill effects being noted. Of course it is necessary to be very careful with a new drug, and I prefer to regard 6 gr. as the maximum, especially as in practice it suffices for the largest operations. To utilize these data in clinical work we have to keep in view several questions.

1. How to reach on the proximal side of our area of operation the nerve branches supplying it, and how to saturate them as far as possible with the solution containing the drugs mentioned.

2. How far we can dilute the latter so as (without forfeiting their potency) to have enough of the medium to carry the active agents to all the parts required, even if extensive.

3. How to maintain the analgesia long enough for any ordinary operation without being obliged to infiltrate further, as in the older methods (Schleich).

1. The first of these questions is mainly an anatomical one, best met by considering the course and distribution of all the possible nerves which supply a part. There are, of course, gaps in our knowledge of the ultimate distribution of many nerves, notably of those supplying the parietal peritoneum; but these are being steadily filled up by the anatomists (vide Ramström, Dogiel, Timofejew).

In reaching the nerves of a part hollow needles of varying length are thrust into their immediate neighbourhood or across their course at some distance from the area of operation, and thus the fluid injected through them is carried as near to them as possible. We can also make use of fascial planes and areolar spaces, along which the fluid will pass easily. For instance, in removing the vermiform appendix in the stage of quiescence we have to deal with the skin, muscles, parietal peritoneum, and its reflexion to form the mesenteriolum of the vermiform appendix. To render the skin and areolar tissues insensitive is a simple matter. We have only to inject a somewhat larger area of these than we are likely to cut (= local analgesia). The muscles are not quite so easy to deal with. Here we enter a very long, blunt, hollow needle through the skin already infiltrated about 2 in. outside the line of incision at its lower end and push it slowly upwards between the layers of the muscles, injecting slowly as we go until we have nearly reached the costal margin and used 10 c.cm. of fluid. From the upper end, in the same line, the needle is now pushed downwards through the deeper layers as near the peritoneum as possible, using another 10 c.cm. We thus cross the line of the nerves supplying both muscles and peritoneum (Ramström). In some cases I have injected the subperitoneal tissues underneath the caecum and appendix, either from above the iliac crest or from below Poupart's ligament, just inside the anterior iliac spine. I had done this previously on the cadaver with blue injecting fluid and been surprised at the way the fluid spread along the iliac fossa.

This is simply an illustration of how the nerves of a part can be reached ("regional analgesia"). For the groin no better guide can be taken than some diagrams published à propos of the subject by Cushing. These are especially valuable for radical cure of hernia and for removal of the testicle, of which I have had several cases in markedly phthisical patients, whose lungs would hardly have tolerated either chloroform or ether.

As to abdominal organs, it appears almost certain (Lennander) that they are *per se* insensitive to pain so far as they are independent of the parietal peritoneum in any of its reflexions. For instance, I have watched a patient's face while inserting a trochar in several directions deeply into the liver, and it showed complete indifference. When asked, he stated that he felt nothing. The incision through the abdominal wall had been previously made under eucaine. Again, I have several times divided the vermiform appendix with the actual cautery without pain, though the analgesic fluid had only been applied for the parietes. But a drag on the mesenteriolum or on adhesions about the vermiform appendix is felt as griping unless the injection have reached them.

It is plain, then, that our injection must in every case be carried out with special reference to the nerves of the part (regional analgesia).

2. The strength of the β eucaine solution has only been settled after much practical experience. We must, on the one hand, keep within the safe dose of the drugs, and on the other have at our disposal a large enough quantity of the fluid medium to render it possible to spread the analgesic agents over large areas. If we suppose 6 gr. of β eucaine to be about the full dose when combined with adrenalin, a good deal of fluid will be required. My own experience (now a long one) leads me to the conclusion that for ordinary surgical work the following solution answers well:

Distilled water	...	...	100 c cm. = 3½ oz.
β eucaine	...	...	0.2 gram = 3 grains.
Sodium chloride	...	...	0.8 gram = 12 grains.
1 pro mille adrenalin chloride solution			... m x

The actual strength of adrenalin in this solution is one in two hundred thousand (1 : 200,000).

All this quantity of fluid can be used in an ordinary case if necessary, and is quite sufficient for most. But I have often injected twice as much when large areas had to be dealt with, and have seen no ill results from the six grains of eucaine or m xx of adrenalin. The latter amount corresponds to just about 1 mg. of adrenalin, namely, m xx = circa 1 c.cm. of 1 pro mille solution.

I have also used 4 grains β eucaine to 100 c.cm., but noted no appreciable increase of analgesia.

I have made several observations on this fluid with Beckmann's apparatus to prove its osmotic tension, and found

that it is as nearly as possible isotonic with the blood. If not isotonic such a solution would produce pain on injection, and might also lead to necrosis of the tissues into which it was injected. This was actually the case in the practice of a friend of mine, who used 2 per cent. of eucaine simply dissolved in boiled water without any addition of sodium chloride. The analgesia was excellent, he told me, but necrosis of the injected tissue followed. To test the osmotic tension of a 2 per cent. of β eucaine alone I froze it in the Beckmann's apparatus and showed him that it registered −0.28 C. as against human blood −0.56 C. Hence his trouble.

With the solution given above we have never seen the slightest sign of loss of vitality. In short it was "isotonic" and "indifferent" to the tissues. It is very easily made. In a Jena glass beaker, or 7 oz. wide-mouthed flask into which a syringe will go, 3½ oz. (= 100 c.cm.) of distilled water is put and boiled. To this is added a powder containing the β eucaine 3 gr. and pure sodium chloride 12 gr. After a couple of minutes' boiling it can be let cool to blood heat, or cooled by standing the flask in cold water. Then 10 drops of the 1 per thousand adrenalin chloride solution of commerce is added, and the solution is ready for use.

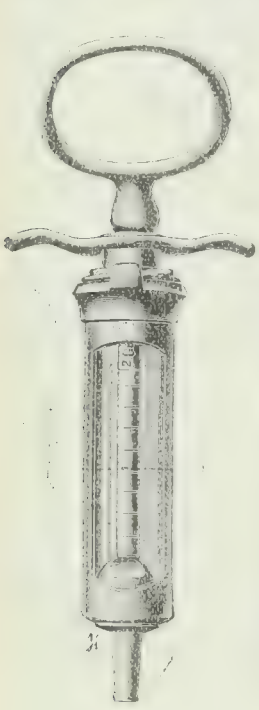


Fig. 1.



Fig. 2.



Fig. 4.



Fig. 5.



Fig. 3.

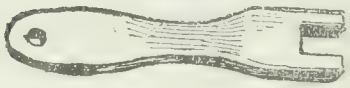


Fig. 6.

The adrenalin solution is best measured by drops from the bottle itself with a loosened stopper. Other ways of measuring are wasteful, and above all expose the fluid to air and light which soon spoil it, and to septic contamination of the whole bottle, which would be dangerous. If it is dropped as described, and the stopper refastened, the fluid in the bottle will keep good for months in my experience, if left besides in its box in the dark. I have often tested these drops with a standard measure, and find about 18 or 20 go to the cubic centimetre. Adrenalin solution should not require boiling. It is already sterile or will not keep. I have sometimes put the drops into the solution while boiling and found that this did not destroy its specific properties, but they seemed to pass off more rapidly than when the drops were added from the bottle direct to the solution at blood heat. Any alkali spoils it at once, hence the Jena glass. The syringes must of course be boiled, but not in the usual soda solutions, for the same reason. The needles are best sterilized in alcohol. Figs. 1 and 2 represent the syringe and needles which will be found most suitable out of a large number of patterns. The ordinary Freienstein's needles (Fig. 3), fitted into fine caps screwed on to hollow rods (Fig. 4), answer all the purposes of limited injections, the finest size being used for the skin, the larger for moderate depths of tissue. But where greater distances have to be reached—for example, the whole length of the inguinal canal—a longer needle is necessary. For this I have devised a needle which so far answers all purposes (Fig. 2). Two sizes—1 mm. and ½ mm. thick—are used. Each is 5 in. long. As such a length of fine steel tubing is very flexible and difficult to force through the tissues, especially if blunt (as it should be to avoid injury to vessels), it is so arranged by a little device of my own that it can be set to begin with at a short length until it has entered the tissues, when it can be lengthened up to 4½ in. This is provided for as follows: Each needle is a plain, straight, fine tube slightly bevelled at the distal end or closed blunt with a lateral opening. It is passed through the lumen of a small section of ½-in. of the finest rubber catheter (Jaques). This little rubber collar just fits into the screw-cap (Fig. 5), which is then screwed up on the straight rod into which the needle runs, the other end of which fits on the syringe. When the cap is screwed down on the rubber the needle is fixed water-tight. When it is unscrewed a turn or two the needle can be drawn out of the hollow rod or pushed in and again fixed. All these needles should be washed in plain hot water after use, to remove the salt solution, and then be washed in spirit, their stylets being finally replaced in them. The rubber cap should also be removed from them, as it spoils the metal if left long in contact with its bright surface. When thrusting these blunt needles through the skin it is well to prepare the way by a puncture with a large sharp-edged needle through the spot previously anaesthetized by the fine needle of the first injection.

3. The duration of the insensibility is secured by the admixture of the adrenalin. Without it sensation is only abolished by eucaine for about 15 minutes, with it for three or four hours—that is, as long as the anaemia lasts. But, on the other hand, the analgesia is produced more slowly when adrenalin is employed with the eucaine. It is therefore well, before all larger operations, to wait some 30 minutes after injection to allow time for the insensibility to become fully developed. After this the effect appears to deepen for a couple of hours. In one case of operation for a recurrence in the breast involving the removal of a mass of skin as big as half my hand, I had injected 2½ hours before. Sensation was still absolutely abolished, the patient spontaneously expressing her wonder and delight that she had felt no pain at all. She made an interesting remark besides—that is, that she could tell when a knife was used and when a needle by the touch, but both were absolutely painless. Others have said the same, showing it is not anaesthesia but analgesia. Waiting for half an hour or so may sometimes be inconvenient unless the time be utilized for preparation of instruments, etc. In hospital it gives little trouble. Three or four cases can be infiltrated at once, or one after the other, and left in the wards while some other operation requiring general anaesthesia is done. They can then come in in succession.

Waiting has another advantage which places this above the earlier methods of repeated infiltration of eucaine alone. When the latter is employed the operation must be practically done at once. It will then be found that the tissues are still in a state of artificial oedema from the amount of fluid injected. This oedema may mask the anatomical details unpleasantly for beginners. When, on the other hand, adrenalin has been added to the eucaine solution, and we have waited, say, forty minutes, the artificial oedema has disappeared, and we cut through pale and almost bloodless tissues, where the details are very clearly seen. Rapid injection is to be avoided; the sudden distension of the tissues is disagreeable if not painful. The fluid should not be allowed to become cold or be used too hot for the same reason. These and other small details will soon be learned by any one who is in earnest and patient.

Of course all dragging on the parts is to be avoided, lest structures be pulled upon which lie beyond the area of infiltration. This is the crux of abdominal operations. The parietes can easily be rendered insensitive to pain over a large area. But if the hand has to be introduced it will in many cases reach beyond this area and so produce pain, for the *parietal*

peritoneum is particularly sensitive (Lennander, Dogiel, Ramström). Again, in handling the intestines (themselves insensitive), say, in a colotomy, one must be careful not to drag on the mesentery, which has the reflexions of the parietal peritoneum at its root. For these reasons, at all events for the present, it appears undesirable to employ this method alone for the longer operations on the abdomen where dragging to some extent is unavoidable. But in such cases the prolonged use of the general anaesthetic can be much curtailed by the previous injection of the tissues by this method. Then the abdomen can be opened, and when the patients begin to feel pain chloroform can be given perhaps only for a few minutes until any dragging manipulations are over. Then the chloroform can be at once stopped and the tedious stitching, whether of the insensitive intestines or infiltrated parietes can be finished without pain. For instance, in an appendectomy in the "free interval" this course was pursued. My patient had chloroform for just one minute, a matter of some importance to her lungs and kidneys, and the avoidance of subsequent sickness, as she was a lady past sixty. She said the pain of tearing some adhesions round the appendix was slight and she could have borne it easily, but took the few drops of chloroform at my request. Another patient had seven or eight minutes of chloroform while I was finding and separating the appendix. Here there was short after-sickness.

As for general anaesthesia so also for the local the preparation of the patient beforehand is most important. But here a preliminary fast is not desirable. Those who have had a light meal previously are always, *caeteris paribus*, the better for it. The rule is to give them an egg beaten up with some milk and a little brandy, or a cup of tea or coffee not long before the operation. Again, some patients if anxious are soothed by a little morphine hypodermically. The feeling of *bien être* thereby induced enables them to bear the tedious lying on the back all the better. Of course some individuals are nauseated by morphine, and if this is known of any particular patient it will be avoided.

With a little experience the surgeon, too, will have confidence in the method; and by manner and a word or two will communicate this feeling to the patients. It is a very bad policy to suggest to them that they may have pain. At the very most, if they inquire, they can be told that, at their slightest wish, they shall have chloroform at any moment. A cup of tea or coffee given during the operation is a way of distracting the attention of the patient frequently employed with the best results.

As to the question of depressing effects following on the use of β eucaine, I can only say that I have never seen any in a long series of operations, although in several up to 6 gr. of the drug have been injected exceptionally. To judge from the reports of those who employ cocaine for producing local analgesia, the contrary is the case, and they recommend the subcutaneous injection of strychnine and the use of camphor and other stimulants during the operation (Lennander). They also insist that the patients should be kept quietly in the horizontal position for some hours after operation. With eucaine patients have taken no harm from walking away from my house, even when it had been used freely, and in hospital no after-treatment has been necessary. This appears to be a strong point in favour of eucaine in contrast to cocaine if the abolition of pain is in any degree equal in each. And from what I have seen and heard, the method here described appears to have given better results in this respect than those in which cocaine was employed; and the fact that all the injections can be finished before the operation has been begun, and need not be repeated, places it for long operations far above those in which (Schleich) injection has to be done over and over again in the course of an operation. With painstaking study and watchfulness in a large number of cases alone has it arrived at its present stage of efficiency; and that, with longer observation and wider experience, it is capable of further development seems certain. But when, during twenty-four hours, I have been able by this method to perform the following operations with the most satisfactory results, it must be admitted that important progress has already been made: (1) Amputation through the knee-joint for gangrene of the foot due to diseased arteries and diabetes; (2) abdominal section and opening of the stomach and jejunum in search of a source of severe bleeding (not found); (3) removal of a cyst of the thyroid; (4) Bassini's radical cure of inguinal hernia; (5) removal of a silver wire from round the patella.

There is one further point which contributes largely to success. It is that the surgeon should operate with delicacy, and without dragging more than is absolutely necessary on the structures in the field of operation. From this it follows that whoever injects shall be quite familiar with the details of the operation from beginning to end. It is undoubtedly better, therefore, for the operator himself to make the injection; but if this is inconvenient he must have an assistant who is quite familiar with all his methods and style of operation; in short, one who has frequently seen and assisted him, and is perhaps an operator himself. Such an assistant I can now rely upon for injecting my cases, and his results are all that can be desired.

With the following list of operations performed recently under eucaine analgesia before me I find it difficult to understand why any one still employs cocaine, which is admittedly far more dangerous, and can hardly yield better results.

Numerous samples of the drugs above mentioned are sent to me from time to time from both home and foreign sources. Some are in solid, some in liquid form in sealed glass capsules. They are designed to save time in the preparation of the injection fluid. After much laborious testing of various methods, it appears to me that greater certainty and safety are secured by making the solution for oneself as above described, and that no time is lost thereby. The preparation of the fluid is simplicity itself, and it is all the safer from being made fresh for each case.

This paper is not intended to suggest doubts as to the benefits we all derive wholesale from general anaesthetics. But we need no reminder that the latter have their drawbacks. And, from what I hear almost daily, this method appears likely to play a useful rôle, especially in the country and the Colonies, where the skilled anaesthetist is not always at hand. But, even among ourselves in town, there are many cases in which the chief anxiety of the operator is how the patient will bear the general anaesthetic, often necessarily prolonged. The diabetics—one of the amputation cases in the following list was on the borderland of acetonaemia—the aged people with strangulated hernia, the people with goitre, and even those simple cases where there is practically no danger from the operation itself, all undergo a certain risk from general anaesthetics, which can be avoided by the above procedure. It requires some patience and experience to master the details of the latter, but it is certain that these are not thrown away.

Last Series of Operations Performed under Eucaine Analgesia.

Abdominal sections	8
Herniae	23
Amputations (knee, 2; arm, 1; toe 1)	5
Varicose veins	12
Thyroid tumours	3
Orchidectomy	3
Internal derangement of knee	3
Pre-patellar bursae	3
Malignant tumours	4
Large papilloma of axilla	1
Fistula in ano	2
Large lipomata	3
Rodent ulcers of face	2
Empyema	1
Incisions of ulcers	5
Hydrocele	1
Varicocele	1
Cyst of breast	1
Adenoma of breast	2
Smaller operations	8
	91

International Congress on Accidents to Workmen.—It has already been stated in the British Medical Journal that an International Congress on Accidents to Workmen will meet at Liége on the occasion of the Universal Exposition to be held there in June, 1905. M. G. Francotte, the Belgian Minister of Industry and Labour, and Baron van der Bruggen, Minister of Agriculture, are honorary presidents of the Congress. The following is the programme of discussions as at present arranged: (1) Traumatic lesions and post-traumatic affections; (2) the organization of first aid for the injured, especially workmen who are the victims of accidents in the course of their work in large cities and industrial centres; (3) uniformity and centralization of medical statistics in regard to accidents to workmen; medical evidence relative to such accidents.

A PHYSIOLOGICAL CONTRIBUTION TO THE PROBLEM OF CHLOROFORM ANAESTHESIA.*

BY A. D. WALLER, M.D., F.R.S.

ALLOW me to preface my remarks by the briefest possible reference to the three diagrams. They are the diagrams that I utilized seven and six years ago at Montreal and at the Society of Anaesthetists to illustrate and emphasize what in my opinion are three capital points in the doctrine of safe anaesthesia.

The first point, illustrated by the diagram of the comparative effects of Et_2O and $CHCl_3$, is that ether is less powerful than chloroform, that $CHCl_3$ is more dangerous than Et_2O, from which I continue to draw the inference that the ignorant use of $CHCl_3$ for the purposes of minor surgery is not justified.

The second illustrates the parallelism between the action of anaesthetics upon nervous tissues and upon cardiac tissues.

The third illustrates and emphasizes the fact that $CHCl_3$ is not an uncertain reagent, but that it produces effects strictly proportional to the mass in which it acts. From this second portion of my inquiry I drew the inference and stated as a practical rule that $CHCl_3$ for purposes of anaesthesia should be administered in dilution with air at a percentage of not below 1 per cent. and not above 2 per cent.

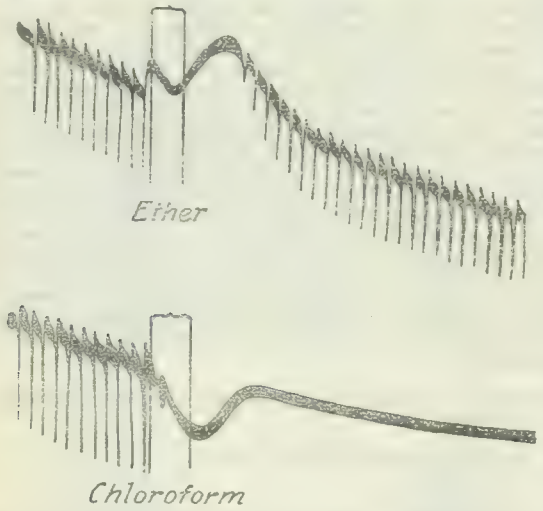


Fig. 1.—Showing that chloroform is more powerful than ether. A drachm of chloroform is physiologically equivalent to an ounce of ether.

By a fortunate conjuncture, you have brought together men possessing an extensive clinical experience of $CHCl_3$, like your Chairman, Dr. Eastes, and Dr. Hobdey, with students of the subject from the laboratory standpoint—and may I name myself in that capacity?—and, among our foreign visitors, Dr. Guglielminetti, who has been kind enough to give us an opportunity of witnessing in action an apparatus that has been considerably used in Germany during the past year for the regulated administration of $CHCl_3$.

It had been my original intention to confine to-day's demonstration to that of the apparatus now before you—the wick vaporizer—which has been in use in this laboratory for the last two months, to fulfil in more simple fashion the indication so well fulfilled by Dubois's apparatus of supplying to a patient—cat, dog, or man—a volume of $CHCl_3$ and air of desirable and easily-regulated dilution, and in volume more than sufficient for the requirements of normal respiration.

The Dubois apparatus is, in my opinion, as safe an apparatus as can be made. On the other hand, it is heavy, expensive, and of a complicated appearance. I must say, however, that I cannot admit that these disadvantages outweigh the supreme advantage of safety. In my own case or in that of a relative, if anaesthesia were required, I should certainly require Dubois's apparatus to be used. I am not alone in this opinion; it is shared by every competent and disinterested person who has witnessed the apparatus in use and mastered its principle. It is now in action; a cat is placed under a bell-jar, through which $CHCl_3$ and air nominally at 2 per cent. is being pumped at a rate of 10 to 20 litres per minute, precisely as it is pumped through an open facepiece for clinical purposes. Surgical anaesthesia will be induced in not less than five minutes, and not more than ten minutes.

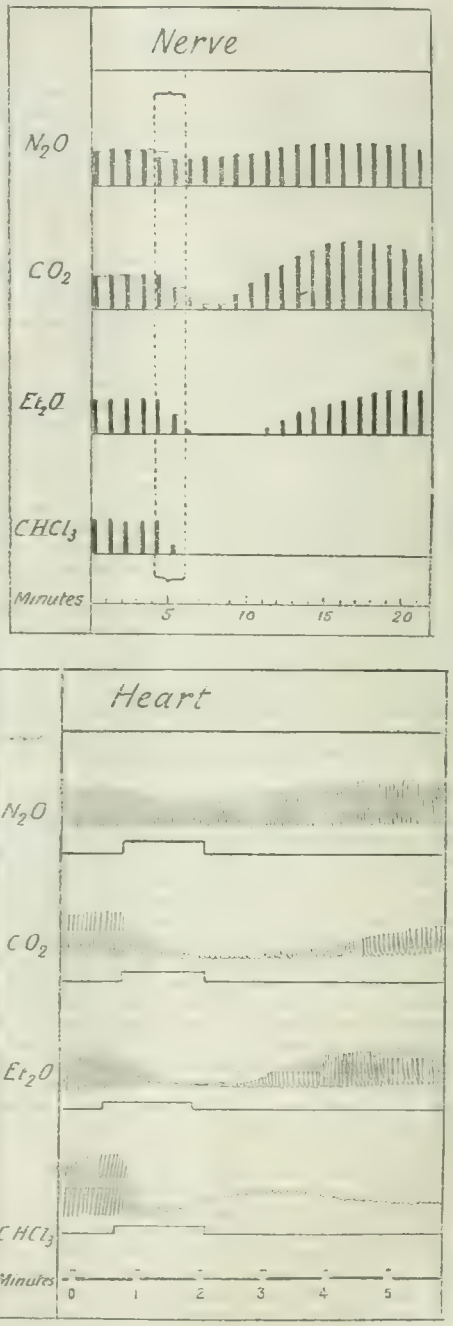


Fig. 2. Showing the parallelism of action of some anaesthetics upon nervous and upon cardiac tissues.

I say nominally 2 per cent., and shall control this value by means of this glass bulb that you see upon the delivery tube.

This method of estimation is in point of fact the most important part of my communication, and whatever the time at my disposal, be it short or long, I wish to make the demonstration and the explanation of this matter deliberately and intelligibly.

* Forming part of a communication to a meeting of the Kensington Division of the Metropolitan Counties Branch of the British Medical Association in the Physiological Laboratory of the University of London, October 13th. (Reported by A. Shapiro, laboratory clerk.)

The principle upon which the method is based is as follows:

1,000 c.cm. of $CHCl_3$ vapour weigh 5,325 mg.
1,000 c.cm. of atmospheric air weigh 1,293 mg.

Difference ... ... 4,032 mg.

that is, 1,000 c.cm. of $CHCl_3$ vapour replacing 1,000 c.cm. of air gives an increment of weight of 4,032 mg., or, that is, 1 c.cm. of $CHCl_3$ vapour replacing 1 c.cm. of air gives an increment of weight of 4 mg., or, that is, 2.5 c.cm. of $CHCl_3$ vapour; 2.5 c.cm. of air gives an increment of weight of 10 mg., so that with a 250 c.cm. bulb, each 2.5 c.cm. of $CHCl_3$ vapour, that is, each 1 per cent., is represented by an increment of weight of 10 mg. The bulb on the delivery tube of the Dubois now in action is stoppered, removed, and placed on the balance; the increment of weight is found to be 26 mg.: the percentage of $CHCl_3$ vapour in the atmosphere by which this cat was chloroformed was therefore 2.6, and I shall not trouble you with the temperature correction now, for it is negligible for our present purpose, and a 265 c.cm. bulb has been taken to allow for our average room temperature of 18° with the barometer at 760 mm.

The wick vaporizer consists of a 3-wick lamp with a breadth of wick of 66 mm., so that a length of 75 mm. exposes an area of evaporation of 50 cm^2. I found by preliminary trial that at ordinary room temperature this area gave off rather more than 1 per cent. of chloroform vapour to a continuous air-current of 8 to 12 litres per minute, and that a second and third wick raised the percentage to about 2 per cent. and to

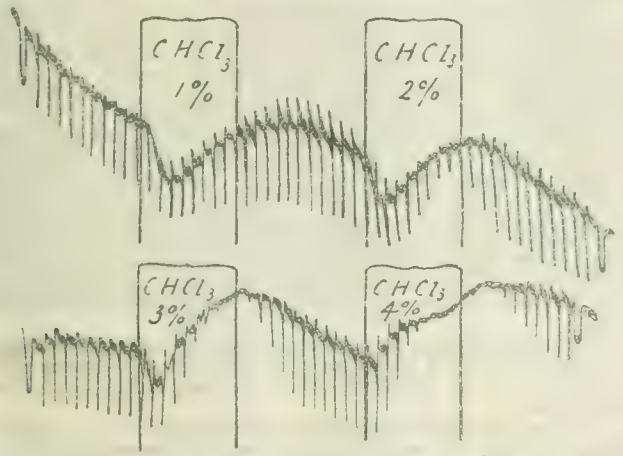


Fig. 3.—Showing that the effect of chloroform and air upon nervous tissue is in ratio with the concentration of the mixture.

nearly 3 per cent. The continuous air-stream was secured by a narrow orifice in a metal plate fixed in the tube leading to the vaporizer from an ordinary foot-bellows as used by glass-blowers. The figures of a particular trial made just previous to its application to the human subject were:

With 1 wick	...	1.3 per cent.
,, 2 wicks	...	1.9 ,,
,, 3 ,,	...	2.8 ,,

In the present case air is being pumped through a bell jar at the rate of 10 to 15 litres per minute, with two wicks in action, giving an anaesthetic mixture that I guess to be at or about 2 per cent., my guess to be confirmed or not by means of the densimetric bulb placed in the course of the delivery tube. The cat in this second case will be anaesthetized in not less than five minutes, nor more than ten minutes. (This proved to be the case, and the percentage indicated by the densimetric bulb was 2 per cent. This precise figure was of course an accident.)

By a fortunate coincidence I have had the opportunity this morning of applying the method of estimation that you have just witnessed to a method of anaesthetization that Dr. Hobdey has employed in many thousand cases on dogs and horses without any accident that he could attribute to the $CHCl_3$. In Dr. Hobdey's methods, $CHCl_3$ is delivered to the mask by a current of air passed over the surface of $CHCl_3$ instead of through the liquid itself as practised in the Junker apparatus. From the tests we made together this morning it turned out that the percentage by Dr. Hobdey's procedure came out at 1.9 and 2.2 in two successive trials.

By another fortunate coincidence Dr. Guglielminetti arrived in the laboratory half an hour ago with an apparatus now before you that has been successfully used in Germany during the past year. I take it that you will be as interested as I am to witness the mode of action of this apparatus and a first test of its percentage of delivery which we shall at once make by means of a densimetric bulb. Dr. Guglielminetti will himself explain the apparatus to you in detail. I will merely remark, without expressing any opinion on the combination, that the apparatus is designed to supply to the facepiece a mixture consisting of (1) a measured volume of oxygen, (2) a volume of $CHCl_3$ vapour derived from a measured number of drops of $CHCl_3$. In addition to this O_2+$CHCl_3$ vapour, the patient inspires more or less air. As Dr. Guglielminetti has now set the apparatus, the delivery is 3 litres of O_2 per minute+60 drops of liquid $CHCl_3$ per minute, which with ordinary respiration of a patient would be supplemented by the inspiration of 3 to 6 litres per minute of atmospheric air. We place a densimeter on the delivery tube to weigh the mixture of O_2 + $CHCl_3$, and compare it with the weight of O_2 alone. The difference of weight has come out at 44 mg., indicating 4.4 per cent. (or more precisely calculated 4.5 per cent.). If the patient to whom this mixture had been supplied breathed an additional 3 to 6 litres of air, the percentage of $CHCl_3$ in the inspired mixture would be 2.25 and 1.5.

I think you will be disposed to admit that a method of estimation enabling us to make expeditious determinations of $CHCl_3$ percentage, and in the course of a single day, in a lecture, which is notoriously an occasion of experimental difficulty and failure, to make an improvised determination of novel apparatus, is a valuable method.

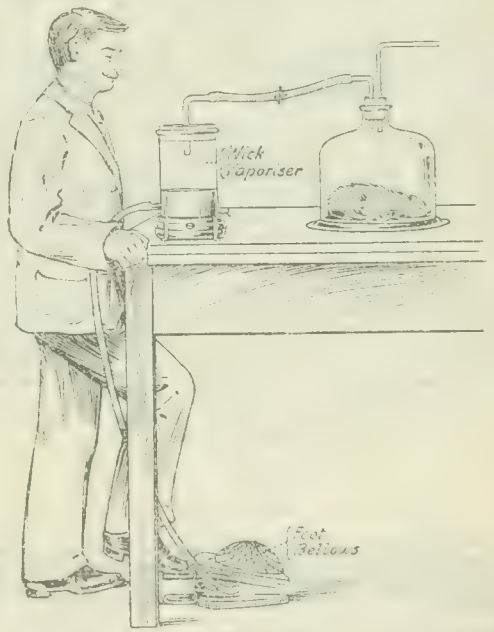


Fig. 4.—Delivery of $CHCl_3$ and air at between 1 and 2 per 100 dilution by a wick vaporizer to an animal under a bell-jar, as practised in a physiological laboratory. For clinical use an open facepiece takes the place of the bell-jar.

PS.—The delivery of the Roth-Dräger apparatus shown by Dr. Guglielminetti was subsequently tested at leisure by Mr. W. L. Symes. With an oxygen delivery of 3 litres per minute the drop-rates of the chloroform tallied exactly with the indications of the scale, and the concentration of the chloroform vapour in the mixtures delivered to the mask was as follows:

Chloroform Evaporated.	Concentration of Chloroform Vapour in Mixture of Chloroform and Oxygen.
25 drops per minute	2.5 per cent.
50 drops per minute	5.3 per cent.
75 drops per minute	7.6 per cent.

Ninety-eight to one hundred drops was the delivery per 1 c.cm. liquid chloroform, so that the volume of chloroform vapour per drop of $\frac{1}{80}$ c.cm. was as nearly as possible 3 c.cm.

AN OPERATION FOR FIXING MOVABLE KIDNEY.

BY ANDREW FULLERTON, B.CH., F.R.C.S.IREL.,

Examiner in Surgery, Royal College of Surgeons in Ireland, Assistant-Surgeon to the Royal Victoria Hospital, and to the Hospital for Sick Children, Belfast.

IT is not claimed for this operation that it exactly replaces the kidney in its normal position. The kidney is probably fixed a little lower than normal, but it is slung up by its own capsule, and for all practical purposes it is in excellent position.

In the method about to be described use is made of the strong, thickened upper border of the lumbar fascia which stretches from the transverse process of the first lumbar vertebra (T) to the outer end of the last rib—the ligamentum arcuatum externum. This strong, thick band (L A E in drawing) is very easily demonstrated from the incision for reposing the kidney, and is more horizontal than the last rib, besides being below the lower limit of the pleura. That portion of the ligament which is beyond the outer border of the quadratus lumborum (Q L) is made use of in this operation.

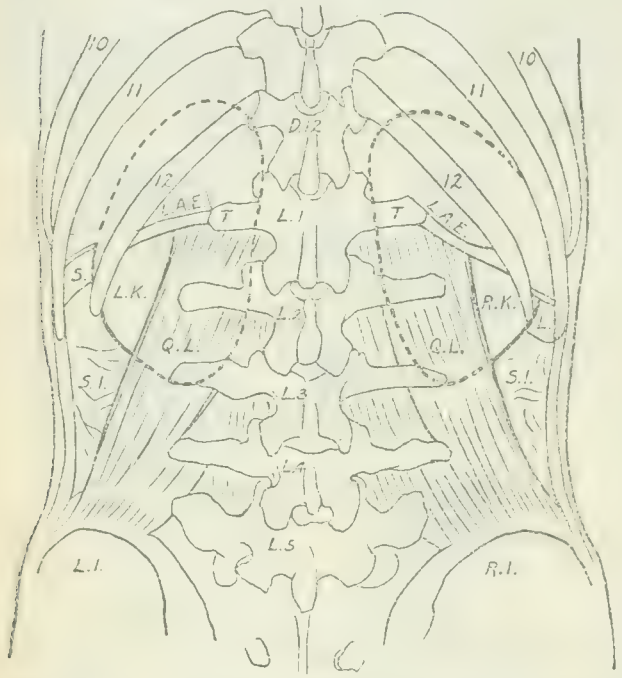


Fig. 1.—The kidneys from behind. 10, 11, 12, ribs; T, transverse process of first lumbar vertebra; L A E, ligamentum arcuatum externum; Q L, quadratus lumborum; L, liver; S, spleen; S I, small intestine covered by peritoneum; R K, right kidney; L K, left kidney.

Operation.—An incision about 4 in. long is made from a little to the vertebral side of the angle between the last rib and the erector spinae about a finger-breadth below the rib, to obviate all risk of injury to the pleura. The direction is downwards and outwards towards the anterior superior iliac spine. Deepening the incision the following structures are cut: The latissimus dorsi, a few fibres of the serratus posticus inferior, the external oblique, the internal oblique, the transversalis, and the thin transversalis fascia. The last structure is first nicked close to the vertebral end of the incision to avoid wounding the peritoneum and intestine (S I). The kidney is then sought for by carefully tearing through the perirenal fat. It is pushed up to but not out of the wound, and a small puncture is made in the true capsule, so that a probe or director may be insinuated and a large blister gradually separated from the posterior (vertebral) surface and outer border of the kidney (see Fig. 2). This is the portion of the kidney that normally looks backwards, and, by peeling the capsule off here, the organ is kept as nearly as possible in its proper place. A horse-shoe-shaped flap of capsule can be separated, so that the base is just above the centre of the horizontal axis of the kidney. One blade of a blunt-pointed pair of scissors is now inserted under the blister, and the margin cut in the form represented in Fig. 2. To preserve the inner tilt of the upper border of the kidney, the inner limb of the incision may be made a little longer than the outer, as represented in the diagram (Fig. 2).

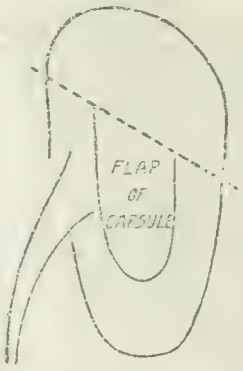


Fig. 2.—Diagram of right kidney and flap.

The finger is now insinuated under the ligamentum arcuatum externum (L A E), and the tissues on its deep surface peeled up, so as to get rid of the pleura should it descend lower than usual.

While the finger thus protects the pleura, an incision is made about a third of an inch or more above the lower margin of the ligament (L A E), and parallel to its fibres for the whole available distance between the quadratus lumborum (Q L) and the tip of the last rib (12). The last dorsal nerve, which can be seen at this stage of the operation, should be avoided.

A pair of Kocher's artery forceps is pushed through the slit thus made, and the free end of the separated capsule is drawn through, spread out, and stitched down to the ligament and neighbouring parts with formalin catgut or silk. The kidney is thus slung as on a pulley. Other stitches may be used to unite the capsule at the margins of the raw surface to the lumbar fascia at the sides, and below if considered necessary. The wound is sutured in layers, formaline catgut being used for the deep stitches, and silkworm gut for the skin.

I have performed this operation on the cadaver, and three times so far on the living subject. It is easy to perform, and, so far as my short experience of it goes, it fixes the kidney effectually.

For the accompanying drawing and diagram I am indebted to Mr. Henry Hanna, M.B., late House-Surgeon to the Royal Victoria Hospital, who assisted me at two of the operations.

A NOTE ON THE TREATMENT OF THROMBOSIS OF THE SUPERFICIAL VEINS OF THE LOWER EXTREMITIES.

BY C. MANSELL MOULLIN, M.D.OXON., F.R.C.S.,

Senior Surgeon and Lecturer on Surgery at the London Hospital; Examiner in Surgery at the University of Cambridge.

THROMBOSIS of the superficial veins of the lower extremity is a very common and a very tiresome complaint. The patient is laid up in bed for at least three weeks. Not infrequently, just as everything appears to have cleared up, there is a recurrence of the complaint in another segment of the vein, and this necessitates rest for three weeks more. There is always the risk of pulmonary embolism, or of the thrombus extending into one of the deep veins through a communicating branch, and causing a condition of venous congestion that persists off and on for life. Even when there is no special degree of phlebitis, the thrombosed veins are very tender and painful if touched; and as the veins are seldom obliterated by organization of the thrombus, a patient who has had one attack lives in a state of constant apprehension that some trivial blow or slight over-exertion may at any moment excite another.

The thrombosis may be limited to one venous segment, or it may involve several, and occasionally it occurs on both legs at the same time, with more or less symmetry; but, unlike the thrombosis of the deep veins of the thigh that is so frequent a complication of abdominal operations and such complaints

as typhoid fever, there is seldom any evidence of a septic or infective origin. Prolonged venous stasis with consequent malnutrition of the walls of the veins is the usual predisposing cause, and some trivial injury, perhaps scarcely noticed at the time, does the rest. In a few instances the thrombosis is secondary to an attack of phlebitis or periphlebitis. This is not uncommon in the early stages of constitutional syphilis; but in the class of case to which I am alluding at present, middle-aged men and women whose employment involves much standing, and who nearly all suffer from varicose veins with incompetent valves, the thrombosis is primary, and the inflammation around rarely of any extent.

The usual treatment for these cases, as I have mentioned already, is prolonged rest in bed with the leg elevated, and covered either with lead lotion, or with a mixture of extract of belladonna and glycerine. For some years past I have abandoned this entirely, and, instead, have at the very earliest opportunity excised the whole thrombosed portion of the vein, with the most excellent results. The wound is sound in a week, and the patient can get up cured and freed from all the risks of embolism, deep thrombosis, or recurrence. At first I limited this proceeding to cases in which there was merely a thrombosed loop or outlying pouch. But by degrees I have been led by its success to adopt it more and more extensively. In one instance in which both internal saphena veins were plugged right up to the saphenous opening, I cautiously exposed the vein, slit it open close to its termination, withdrew the clot, which must have reached almost, if not quite, to the femoral, and tied a catgut ligature around the vein immediately below its junction. The rest of the vein was then excised, and the patient left the hospital within the fortnight. Deep communicating branches the anatomical situation of which is fairly constant, if they are found to be thrombosed, should be treated in the same way. I have not found that a moderate degree of inflammation makes any difference. It begins to subside as soon as the offending vein is removed; but of course, in such a case, the wound should not be sewn up tightly, as there is sure to be a considerable amount of oozing afterwards.

I have no doubt that the same idea has occurred to many others, but, as I cannot find any mention of it in textbooks or in ordinary publications, I have thought it might be worth while to call attention to it.

THE ANTHROPOMETRIC INVESTIGATION OF HOSPITAL PATIENTS.

By F. C. SHRUBSALL, M.D.Cantab.,

Assistant Resident Medical Officer, Hospital for Consumption, Brompton.

The life-history of man, as of other animals, may be described as being the resultant of the two forces—race and environment; the former representing all that man is and inherits, the latter all that he does, and in large measure explaining the characters and tendencies that he acquires. Both are of importance, and in turn both have been looked on as of the greatest significance. In connexion with medicine, half a century ago hereditary tendencies held sway as the currently-accepted causes of many diseases, and the doctrine of types was considered to be unassailable. Nowadays, when so many disorders have been traced to the action of micro-organisms—vegetable and animal—the pendulum has swung round, and in dealing with any individual patient his past and present environment is almost exclusively considered. On general principles either of these methods seems to be objectionable, as in any and every case both factors must be in action. If we cannot conceive of illness arising without the seeds, whether micro-organisms or otherwise, which are sown as a result of the individual mode of life and surroundings, so also we should regard the soil, the product of ancestral inheritance, as profoundly modifying and often doubtless prohibiting the growth of the proximate causes of disease. Such being the case it would seem probable that a comparative study of healthy and suffering individuals from the same areas would throw some light on the relative influence of physical characters and environment, as also on any mutual interactions between these factors themselves. The chief features to which attention has been drawn under the conditions of modern life are the differences which exist between the rustic labourer and the citizen artisan, the former working usually in the open air, the latter in more or less ill-ventilated workshops and but rarely visiting the countryside even for a few hours at a time. There would appear to be a general impression that the town dweller has deteriorated in physique from his rural brethren, and that if this be the case, the problem of seeking out and removing the deleterious influences should be at once faced. It is, however, by no means clear whether in such a change we have to deal with a true degeneration of fixed racial elements under changed conditions of environment, or whether the differences in the surroundings and mode of life leads rather to the survival in predominant numbers of one race in the towns and of another in the country. That is to say, whether in reality one race does not show a greater aptitude for urban environment than another as a result either of its special physical, mental, or social qualities, or more probably from the aggregate of these. In such a way only does it seem easy to explain the constancy of the distribution of physical characters among the populations of Europe. The physical characters which have been more especially studied, and which are at present regarded as the best tests of racial differences, are head-form, stature, and the pigmentation of the hair and irides. Many more observations have been recorded of the last than of the two former characters, since the co-operation of the individual studied is not absolutely necessary, and the time required is not so long. Professor Ripley, in his treatise on the *Races of Europe*, states that the inhabitant of the city is usually longer-headed, shorter, and darker than his rural *confrères*, and that in the cities of the Grand Duchy of Baden, at any rate, this difference is progressive.[1] As only a small part of the population is truly urban, recruiting constantly going on by a stream of immigration from country districts, far and near, it would be only natural that the average of the population of any given city should closely correspond with that of the area from which it receives its accessions, which Lapouge has appropriately called its sphere of attraction. That the average should differ would show the influence of a constantly-acting set of causes of the utmost importance to the social economist.

Professor Ammon, of Carlsruhe, as a result of his investigations in Baden, formulated the hypothesis, which has since become generally known as Ammon's law, that the Teutonic race shows a special aptitude for city life. If the facts, so far as they are known, be collected into tables, this suggestion can be tested for each physical character in turn.

Head Form.

City populations have longer heads in	No difference between town and country in	City populations have shorter heads in
Baden. West, Central, and Southern France. Vienna. Munich. Madrid. Northern Italy.	British Isles. Scandinavia. Smaller towns of France and Switzerland.	Southern Italy. Spain.

Stature.

City populations are taller in	No difference between town and country in	City populations are shorter in
Belgium. Baden. Chief cantonal towns of Switzerland. Hungary. Capital cities of Russia.	Saxony. Smaller towns of France and the British Isles.	North Germany. Franconia. Bavaria. Alsace-Lorraine. Geneva. Turin. Madrid. British Isles.

Pigmentation.

City populations are fairer in	No difference between town and country in	City populations are darker in
Metz (children). Chief towns of Switzerland (adults).	Most of the smaller towns of Europe.	Germany, except Metz (children). Cities of the Rhine Valley (adults). Bavaria. Austria. Italy. Baden. Boston, U.S.A. British Isles.

The above tables show that Ammon's law is far from being universally true, and brings out strongly the relation between brunetteness and urban environment. Many of the phenomena are capable of a racial explanation. The population of Europe is usually classified into three great races:

The *Teutonic*, long-headed, tall, and fair, occupying the northern part of the Continent and the northern and eastern portions of the British Isles.

The *Mediterranean*, also long-headed, but with skulls distinctly smaller in their absolute dimensions; short and very dark. They occupy the south of Europe, on the borders of the sea whence they take their name, and appear to have outliers, whose ethnic purity has been much contaminated by Teutonic intermixture in the western portions of the British Isles.

The *Alpine*, broad-headed, but otherwise presenting physical characters intermediate between those of the preceding groups. They are at present found in the highlands of Central Europe, in Auvergne, and Brittany, but their former distribution may have been more extensive.

Bearing in mind the geographical range of these racial elements, it will at once be seen that Ammon's law is only true in the border countries between an Alpine population and one of the other two races, and therein it demonstrates that a city approaches more nearly the average of the whole country than do the rural districts in its vicinity. There remains unexplained by this approach to the general mean the decrease in stature and increased frequency of brunette traits observed in most of the larger cities. It has been observed that in these the population separates itself into layers far more than is the case in rural areas, and that while the richer quarters contain a large proportion of individuals of very good physique, the poor districts contain such an excess of poorly-developed, ill-nourished persons as to lower the general average below that of the surrounding country.

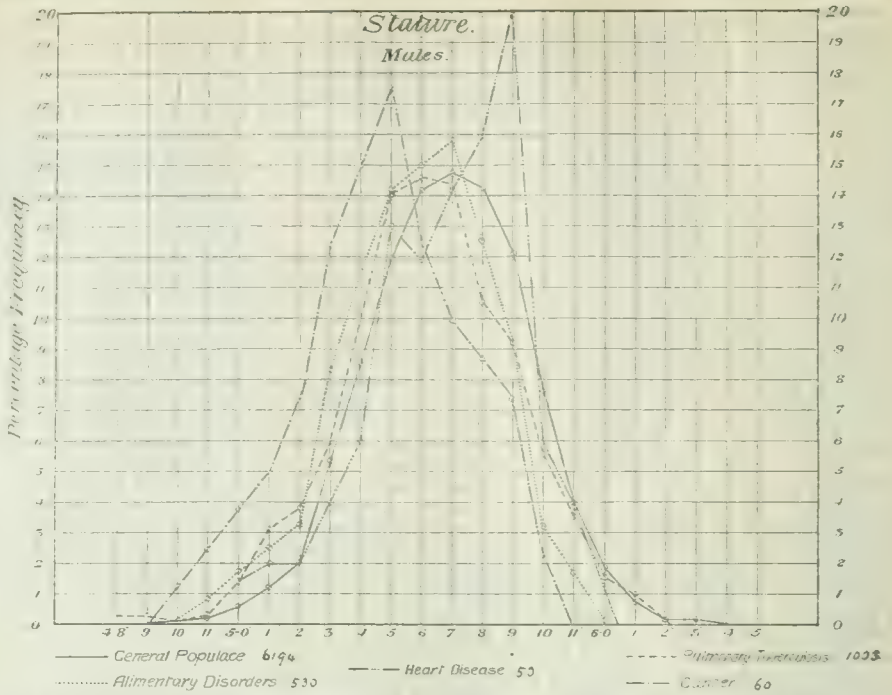


Fig. 1.—Distribution of stature in males. The curves show the percentage frequency of each stature among the general populace, and groups of hospital patients suffering from specified disorders. The figures after each name indicate the number of individuals examined in such a group. The ordinates of the curves represent the percentage frequencies, and the abscissae the statures.

Average Heights at the Ages of 20-23, compiled from Conscription Records in Paris by Vanderkindere.[2]

	Average Stature. ft. in.
Rich Quarters:	
Champs Elysées. Europe	5 5½
Odéon. St. Germain des Près	5 5⅛
Passy. Auteuil	5 5
Poor Quarters:	
La Roquette. Folie Mericourt	5 4⅜
Porte St. Denis. Hôpital St. Louis	5 4⅛
Belleville. Charonne	5 4

In Warsaw, Zakrezewski[3] *found the Relation of Stature to Social Environment to be:*

Environment.	Average Stature. Poles. ft. in.	Jews. ft. in.
Rich Quarters	5 5	5 4
Medium Quarters	5 4⅜	5 3⅜
Poor Quarters	5 4⅛	5 3

Similar results have been obtained in Madrid and Hamburg.

In London, Jacobs has shown that the West-end Jews are nearly 3 inches taller than their East-end brethren, while the report of the British Association Committee demonstrated that while the average height of adults of the professional classes in this country is 5 ft. 8⅛ in. to 5 ft. 9⅛ in., that of the indoor town artisan class is only 5 ft. 6½ in. to 5 ft. 6⅞ in.

In most of the towns of Europe in which investigations have been made it has been found that the richer classes are the fairer. This fact renders it possible that the marked differences noted in the statures may be in part explained by racial rather than environmental factors. On the other hand, the upper classes are exposed to few deleterious influences in urban life—they are not stinted for food or dwelling space, and pass a considerable part of each year in the open air.

The preceding roughly summarizes the evidence which has led to the conclusion that city populations show some degree of physical degeneracy or of ethnic stratification varying with the degree of environment. The present paper is devoted to a consideration of the same questions primarily in London, but with some comparisons with other districts in the British Isles. The same physical characters have been, as far as possible, recorded, namely, head form, stature, and pigmentation. Head form expressed as the cephalic index, which is the maximum horizontal breadth of the head expressed in its percentage ratio of the length from forehead to occiput.

$$\frac{\text{Breadth}}{\text{Length}} \times 100 = \text{Index.}$$

Records of head form and stature, which involve the co-operation of the individual observed, were made only in hospitals, on the patients themselves and some of their visitors. In the case of pigmentation further records were made from adults and children in the streets, playgrounds, etc., in the various quarters of London and other parts of the country. Whenever possible the records comprised not only a note on the condition as to illness of the individual, but also his family history, efforts being made to trace the environment of the ancestors as far back as possible.

STATURE.

The first and more important feature, stature, was noted in about 5,000 instances at various hospitals.[4] The patients were measured standing with their backs to a scale or marked door panel, and a deduction was made for the height of the heel of the boot in those cases in which considerations of time prevented the removal of that article of clothing. In the subjoined figures will be seen curves representing the percentage distribution of stature among patients suffering from various disorders contrasted with the curve obtained from the data given in the report of the Anthropometric Committee of the British Association.[5] It will be noticed at once that those patients suffering from disorders of the alimentary system, such as dyspepsia, flatulence, simple diarrhoea, and the like, present a curve closely resembling that of the general population, and with the same point of maximum frequency. This, of course, was to be expected, considering the very general incidence of such ailments in the pathological history of mankind. It should here be noted that throughout this inquiry Jews and alien immigrants of all kinds and their children have been excluded, so that the figures show statistics for the inhabitants of the British Isles

only. It would appear that patients suffering from pulmonary tuberculosis and cancer are in either sex shorter than the average, either of the general populace or of hospital patients *en masse*, the stature of maximum frequency being one to two inches below that shown by the curve derived from the Anthropometric Committee's statistics. Valvular disease of the heart, on the other hand, in both sexes presented more sufferers with a stature above the average.

In this connexion it may be noted that only those patients who could reasonably be supposed to have acquired the disease in adult life were recorded, in order to exclude those cases in which the heart disease might have led to a stunted growth, as such would represent merely a pathological result, and not a possible etiological factor. This exclusion also in some measure accounts for the paucity of observations on

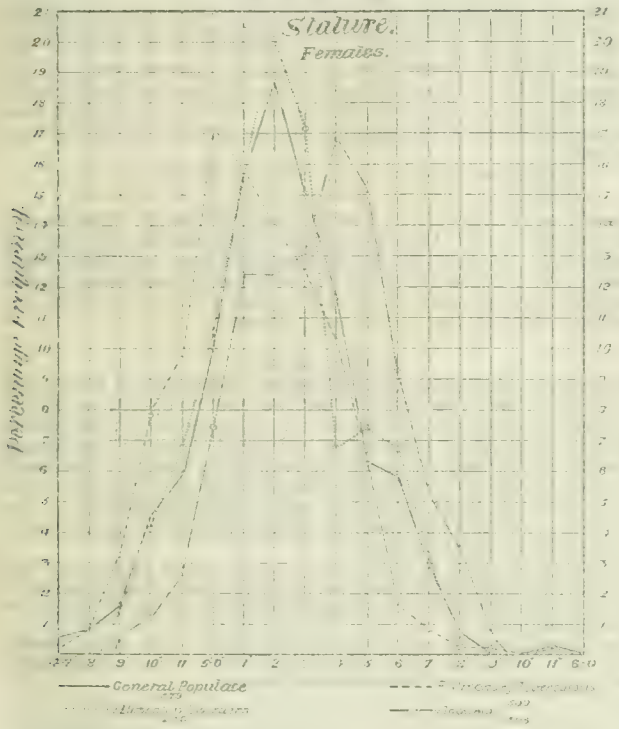


Fig. 2.—Distribution of stature in females. The curves show the percentage frequency of stature among the general populace, and groups of hospital patients suffering from specified disorders. The figures after each name indicate the number of individuals examined in such a group. The ordinates of the curves represent the percentage frequencies, and the abscissae the statures.

this class. Anaemic women were found to present a maximum frequency of stature much above the average, a feature probably better explained by the anaemia resulting from too rapid an overgrowth than by any special intrinsic selection of tall individuals by this disease. As a fact, the pallor of the short-statured Southern brunettes has always been well known, while the ruddy complexion of the taller Northern races was a feature recorded by many observers, even in comparatively early classical times.

Although representation by curves shows well the relative frequency of different statures, and enables a rapid comparison to be made, it is open to two objections: first, that it does not give a clear representation of the average of each class; and, secondly, that it is very susceptible to the influence of random sampling.

It is obvious that curves drawn from other groups of observations might differ to a greater or less degree without the general average for the class being materially affected. This influence of random sampling can be materially diminished, if not abolished, by a study of averages and standard deviations. If the nearest unit to the average be selected as a centre, then all the other dimensions can be regarded as so many units above or below this point. The method is most easily understood by means of an example (see table showing average deviations).

Here the average stature is seen by inspection to be somewhere near 66 inches, which is taken as the centre point from which the others may be reckoned as positive (taller statures) or negative (shorter statures). The products zx and zx^2 are then taken, and the columns added up. The sum of the first column (zx) divided by a total number of observations made (z) gives the amount to be added (+) or subtracted (−) from the centre selected by inspection, in this case + .271,

Table Showing Average Deviations.

Stature in Inches.	Number of Individuals in Each Group (z).	Deviation from Centre (x).	zx.	zx^2.
61	13	− 5	− 65	325
62	33	− 4	− 132	528
63	53	− 3	− 159	477
64	133	− 2	− 266	532
65	146	− 1	− 146	146
66	166	0	0	0
67	166	+ 1	+ 166	166
68	113	+ 2	+ 226	452
69	93	+ 3	+ 279	837
70	40	+ 4	+ 160	640
71	26	+ 5	+ 130	650
72	13	+ 6	+ 78	468
—	995	—	+ 271	5,221

so that the average M = 66.271. The square of the standard deviation is found by subtracting from the sum of the column zx^2, all the numbers in which must necessarily be positive, divided by the number of observations, the square of the resulting dividend zx. In this case—

$$\sigma^2 = \frac{5221}{995} - \left(\frac{271}{995}\right)^2$$
$$= 5.2162 - .0734$$
$$= 5.1428$$
$$\therefore \sigma = 2.256$$

This number is known as the standard deviation (σ), and represents the amount which has to be added or subtracted from the average in order to show the range within which the averages of other samples of the same group might fall. In this case the range would be 64.016 to 68.528.

A knowledge of the standard deviation enables the significance of the differences between any two averages to be tested by ascertaining the value. The following formula:

$$3 \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}$$

If the difference between two averages $M_1 - M_2$ is greater than this, such a difference is significant of the action of some cause or other, and cannot be explained by random sampling of either or both groups of observations, the averages of which have been recorded. If the difference between the average is less than the value derived from the formula, such a difference, although it may be significant of the action of some definite cause, could also be explained as resulting from the chance distribution of individuals in the two groups under observation.

Applying this method to the statistics represented graphically in the figures, the following table is obtained:

Table showing Deviation of Patients Suffering from Certain Diseases.

Variety of Observation.	Average Stature in Inches. M.	Standard Deviation. σ	Number of Individuals observed. N.	$\frac{\sigma^2}{N}$.	Significance of Difference from Average of Populace.
Males.					
General populace	66.97	2.567	6,194	0.01016	
Patients suffering from—					
Alimentary disorders	66.68	2.413	530	0.01118	0
Pulmonary tuberculosis	66.22	2.859	1,603	0.00808	—
Cancer	64.80	2.531	40	0.15870	—
Chronic bronchitis and emphysema	66.27	2.266	150	0.03428	—
Valvular disease of the heart	65.94	2.283	50	0.10432	0
Accidents	66.72	2.352	60	0.09218	0
Females.					
General populace	62.15	2.455	379	0.01593	
Patients suffering from—					
Alimentary disorders	62.10	2.290	266	0.01071	0
Chronic bronchitis and emphysema	61.11	2.243	70	0.07189	—
Pulmonary tuberculosis	61.37	2.375	500	0.01128	—
Cancer	60.80	2.315	50	0.10721	—
Organic nervous diseases	61.46	2.235	67	0.07455	0
Anaemia	63.36	2.368	306	0.01832	+
Valvular disease of the heart	61.98	2.902	50	0.16839	0

Applying the test previously mentioned, it will be seen that the difference between the average stature of the general populace and that of patients suffering from pulmonary tuberculosis is 0.75", while the formula—

$$3\sqrt[2]{\frac{\sigma_1^2}{N_1}+\frac{\sigma_2^2}{\mu_2}} = 3\sqrt[2]{.00106 + .00808} = 3\sqrt[2]{.00014} = .2868''$$

0.75 is greater than 0.2868, so that the difference is extremely significant. Similarly the difference between the averages of the general populace and those patients with cancer is 2.17 in., while the range of difference explicable by random sampling supplied by the formula is only 1.199 in. On the other hand, the difference between the averages of accident cases and the general populace is only 0.25 of an inch, while a difference of 0.916 of an inch could occur in the averages of samples collected by chance.

In the last column of the table the significance of the difference between the averages of the various groups and that of the general populace is recorded, the zero sign indicating that no significance at all is statistically demonstrated, the negative sign that such groups are shorter, and the positive sign that groups to which this is suffixed are taller than the general average. For this method to have any value it must be assumed that the racial constitution of hospital patients and the general populace is much the same. This assumption is justified by the fact that accident cases and the group of trivial alimentary disorders yield results not materially differing from the standard. It will be subsequently discussed whether the resulting features are to be looked upon in a causal or coincidental relation merely.

In one feature only do these observations show any marked difference from the results of previous investigations; that is, in recording the average stature of tuberculous individuals as below the general average of the country. It might at first be said that this was due to their being derived from a study of citizens only. This is not the case; the material was entirely collected at the Brompton Hospital, which draws its patients from all parts of the British Isles, and has not the overwhelming majority of Londoners which is met with in many of the metropolitan general hospitals, the proportion last year being 61.4 per cent. from large towns and 38.6 per cent. from the countryside. It must also be noted that the only previous records, at any rate on a large scale, of stature in relation to disease have been supplied by the recruiting records of the French and Belgian armies, and from the Northern (Federal) Army during the civil war in the United States of America. These statistics are biassed in the direction of undue elevation of stature from the facts that recruits deficient in stature or with other obvious infirmities were not taken before the examining medical officers at all, so that the figures given by the latter refer only to rejections from an already selected class; secondly, that the examination was in some cases obviously very perfunctory, owing to the conditions under which it was conducted and which led, as the various authorities have themselves pointed out, to more errors in diagnosis than would occur in a civilian hospital working without undue pressure. Thirdly, that these records show the statures of a number of men of a certain fixed age who are tuberculous, which is not quite the same as the stature of all adults of varying ages coming up for treatment of the disease.

The curves shown in Figs. 1 and 2 indicate that there were more tall individuals among tuberculous patients than among sufferers from most of the other diseases specially investigated. Titeca[6] has shown that the taller classes of recruits present the larger percentage of insufficiency of thoracic perimeter, and that it is these in particular who are attacked by tuberculosis. Probably the same explanation holds good in this country, and that, while the majority of tuberculous patients are short, tall stature associated with a narrow chest is distinctly disadvantageous.

HEAD FORM.

We may next consider the relations between physical characters and disease, or, in other words, the physical characters presented by patients suffering from certain definite groups of disorders. First, the head form was recorded of 405 male in-patients at the Brompton Hospital, with the results given in the following table.

These numbers show differences which are not statistically significant, and the indices agree very closely with such other observations as have been made in England, the average indices for which lie between 77.5 and 78.5.

Head Form.

Disorder.	No.	Average Index.	Standard Deviation.
Pulmonary tuberculosis	300	77·3	2.574
Chronic bronchitis	50	77·5	2.362
Heart disease	25	78.1	2.231
Other patients...	30	77·7	2.250

As regards this feature the British Isles differ from the greater part of the Continent of Europe wherein the range of variation of average indices is rarely less than ten units and where a slight change of location often results in a great alteration in the head form of the populace. M. J. Knapp,[7] in New York, thought that tuberculous patients had longer heads than the normal population, but has not published the actual numbers on which this conclusion is based. Dr. Polanski,[8] of Warsaw, has published observations on 270 persons, half of whom suffered from pulmonary tuberculosis, while the remainder were healthy. He also concluded that the tuberculous individuals had longer heads, but his average indices:

Tuberculous ... 80.667 ..... Standard deviation ... 2.823
Healthy ... 80.888 ..... ,, ,, ... 2.701

present no statistical evidence of any difference between the two groups other than could be accounted for by random sampling. As regards facial form, Galton and Mahomed[9] were unable to establish by the method of composite photography "any grounds for the belief that a special type of face predominates among phthisical patients."

PIGMENTATION.

The third character (pigmentation) can be more easily and rapidly studied than the others, as the co-operation of the individual observed is not absolutely necessary; in consequence particulars have been collected from a far larger number of patients, sufficient to enable results to be recorded and compared for a wider series of diseases. The hair and iris colour of each individual was noted according to the following scheme, the limits of each division being defined in accordance with Dr. Beddoe:[10]

Hair Colours.—Red; fair, including flaxen, yellow, golden, and very light browns; light brown; dark brown; black, including jet black and the very deepest shades of brown only distinguished from coal-black in a very good light.

Iris Colours.—Light, comprising all blue, bluish-grey, and light grey eyes; dark, including brown and dark hazel and so-called black eyes; and neutral, including all the remaining shades.

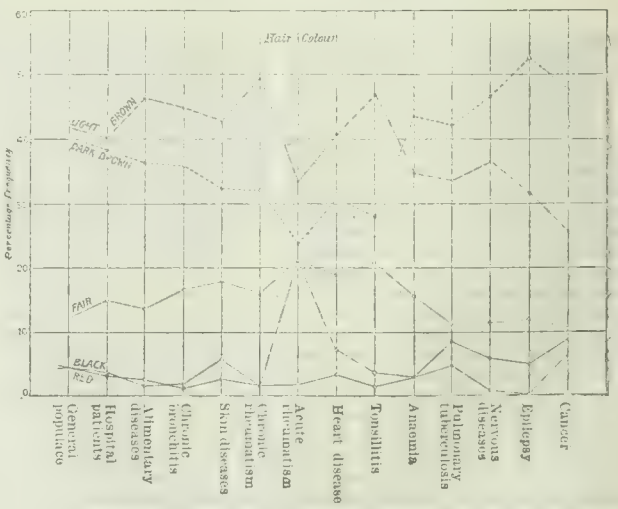


Fig. 3.—Percentage frequency of each hair colour among the general populace, all hospital patients, and separate groups of hospital patients suffering from specific disorders.

In Figs. 3 and 4 will be seen the percentage distribution of hair and eye colours respectively in the different groups of disorders. The results all point in the same direction. The diagrams show not only the percentage frequency of hair and eye colour for patients suffering from particular systems of diseases, but also the results for the sum total of 15,000 patients investigated and contrasted with results obtained

from observations made on 6,000 presumably healthy individuals of the lower classes in London by Dr. Beddoe. Subsequently a similar comparison is made with some 25,000 adults from various parts of London which I have personally observed.

Hair Colour.—The first feature to attract attention is that amongst hospital patients the frequency of red and black hair is much the same as among the general populace, but that there are more individuals with fair and fewer with light and dark brown hair. Considering the individual groups of diseases, two distinct types appear, the first comprising acute rheumatism, heart disease, and tonsillitis, in which the red hair is peculiarly prevalent, and in which also the fair element reaches its maximum of frequency, whereas dark brown is at a minimum; a second comprising pulmonary tuberculosis, nervous diseases, and cancer, in which dark brown and black reach their maximum absolute and relative frequency. The remaining disorders show no very special selection, but in skin and respiratory disorders fair and light brown sufferers predominate, while anaemia seems to fall slightly more heavily on the darker element.

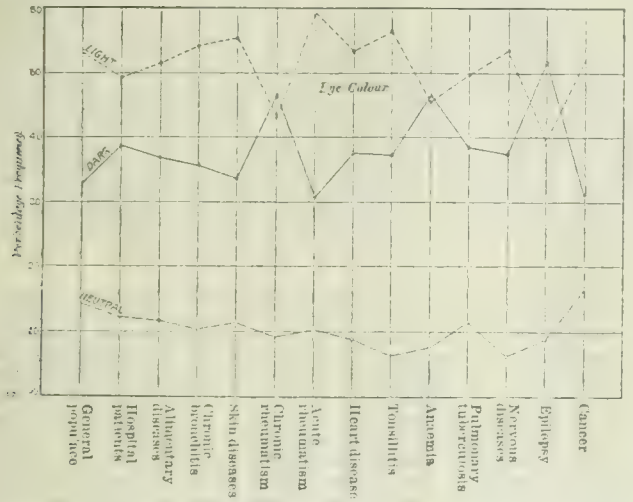


Fig. 4.—Percentage frequency of each eye colour among the general populace, all hospital patients, and separate groups of hospital patients suffering from specific disorders.

Eye Colour.—These, as shown in Fig. 4, do not seem to yield very definite results, save that light eyes are most common in acute rheumatism and its allies, and skin diseases and brown eyes in epilepsy. These groups of affections, indeed, seemed to show a special predilection for the pure blonde and pure brunette types respectively. Tables of the combination of hair, eye colour, and stature will be found in *St. Bartholomew's Hospital Reports*.

The value of these curves may be tested by means of averages and standard deviations, as was done for stature by means of a scale devised by Mr. Gray, the Secretary of the Anthropometric Committee of the British Association. He regards white hair as zero, red and fair hair as each containing 1 unit of pigmentation, light brown 2 units, dark brown 3 units, and black 4 units. The subsequent procedure is the same as in the case of stature, and the more important results are as follows:

Hair Colour: Deviation.

Variety of Observation.	Average. M.	Standard Deviation. σ.	Number of Observations. N.	σ^2 / N.	Significance from the Standard.
General populace of London (lower classes)	2.2975	0.7909	6,000	0.00010	
Hospital patients (London)	2.2351	0.7523	10,000	0.00006	—
Patients suffering from—					
Acute rheumatism	1.9644	0.9471	141	0.00636	—
Tonsillitis	2.0618	0.7820	275	0.00220	—
Heart disease	2.1155	0.8457	199	0.00379	—
Chronic rheumatism	2.1728	0.7164	243	0.00211	o
Pulmonary tuberculosis	2.4410	0.8660	4,524	0.00016	+
Chronic bronchitis and emphysema	2.2010	0.7357	867	0.00062	—
Alimentary disorders	2.2354	0.7169	1,011	0.00050	o
Anaemia	2.2839	0.7762	729	0.00082	o
Nervous diseases	2.4567	0.8841	486	0.00161	+
Cancer	2.5000	0.8820	250	0.00311	+

The last column of this table shows the significance of the difference between each average and that of the general populace taken as a standard; the negative sign means that the group to which it is suffixed is on the average fairer, the positive sign that such a group is darker, and the zero sign that the difference between the averages is not statistically proved to be significant at all. The chief results thus obtained are entirely in accordance with the deductions made from the frequency curves, and are that the rheumatic group of affections are associated with blonde traits, while pulmonary tuberculosis, cancer, and nervous diseases favour brunettes.

Relation of Pigmentation to Disease.

As it seemed to me possible that these peculiarities of distribution might be due to some chance selection or influence of environment in London, I have investigated the colours of patients in Inverness, York, Shrewsbury, Newbury, Southampton, Dorchester, Chard, Paignton, and Wadebridge, in some cases from visits paid to the out-patient rooms and wards of the local hospitals and dispensaries, and in others during *locum tenencies* in the districts. I found that, although the individual numbers were small in each case, the tendency was always in the same direction. The frequency of any given colour varied to some extent with that of the general population, but the special diseases above mentioned showed the same selection. The full details will be found in the *St. Bartholomew's Hospital Reports*, vol. xxxix, and would occupy too much space for reproduction. Further, as far as pulmonary tuberculosis is concerned, I found in the Volk sanatoria in Switzerland and the Black Forest an excess of brunettes as contrasted with the individuals met in the streets and the countryside. Similarly, in the sanatoriums for the upper classes at Davos brunettes were also markedly in evidence, a feature specially striking among those from North Germany, Holland, and Scandinavia, which are districts predominantly populated by blondes.

The next step was to ascertain whether in the areas occupied chiefly by blondes and brunettes respectively these particular diseases were especially prevalent, bearing in mind that, if physical characters had any predisposing value, it would be improbable that in any case they should be predominant to the exclusion of local differences of environment, favourable or unfavourable.

Taking the various groups seriatim: Acute rheumatism, as Sir William Church[1] has pointed out, is especially prevalent on the coast of Cumberland and in the Isle of Man; two of the tallest, fairest, and most purely Norwegian districts in the British Isles. Another area in which this disease is prevalent is along the Severn valley in Hereford and Shropshire, amidst a fair population who present rufous traits to an unusual extent, the very characters noted in the diagram of hair colours as being specifically related to rheumatic disorders.

The several diseases which are unfortunately classed together under the head of circulatory system diseases, by the Registrar-General, have somewhat different pathological histories, which tend to obscure the points at issue. Heart disease, which forms the majority of deaths in this section, is in large part a result of rheumatism, and is with this correlated with blood traits, but several other diseases, as aneurysm and arterio-sclerosis, have no such history, no special relation to pigmentation or stature. Cumberland, Westmorland, and Northumberland, for correspondingly placed areas show higher rates than Wales. East Yorkshire, Lincoln, Norfolk, and Suffolk, have higher rates than Essex, which is similarly situated. On the other hand Hereford has a higher rate of mortality, although a darker population than Stafford or Worcester. The Welsh borders, however, although dark, have, it should be noted, an unusual high proportion of red-haired individuals. Striking instances occur of increased mortality in fair areas, adjoining those with a darker population, for example, Pembroke and Gower, which are fair, have high rates, while the adjoining and darker Narberth and Llanelly have low rates. A prominent line of high mortality spreads inland from Southampton Water across the Hampshire and Berkshire Downs, corresponding to the fairest population in the counties.

The maps of mortality from nervous diseases show a close similarity to those of physical characters. The highest rate is seen in Wales; Cumberland, and Westmorland, with a similar environment, but a blonde population, show a mortality below the average. The Orkneys, Shetlands, and Hebrides present very low mortalities, in agreement with their blonde-

ness, and it is interesting that Dr. Beddoe has recorded of the two former that it is the dark members of the community who suffer from nervous disorders.

The maps of pulmonary tuberculosis show a definite relation to those of physical characters, brunetteness being associated with a higher mortality. The contrasts previously noticed between Wales and Cumberland, the east and west, still appear. There is again an increase in the Pennines and in the brunette area north-west of London, while low areas of mortality extend inland from the Wash and Southampton Water.

Dr. Beddoe has summed up his many years' experience by saying: "Although local situation, varieties of social habit, occupation, and the like, obscure in Britain anything like racial tendency, it would appear that the Gaelic and Ibero-Keltic stocks are, *caeteris paribus*, rather more subject to phthisis than the Saxon or Scandinavian." Cancer shows a slightly greater prevalence in areas occupied by dark-haired populations, but the evidence is not so clear as in the preceding instances. The subject of geographical distribution will be found discussed at length in a previous paper,[12] the general conclusion drawn being that both in this country and on the Continent it lends support to the deductions drawn from the characters of hospital patients.

If physical characters have any etiological significance, it might be supposed that these would also influence the course and result of the disease. To endeavour to test this I tabulated the hair colours of 1,257 patients suffering from pulmonary tuberculosis at the Brompton Hospital, classified according to the result of treatment:

Pigmentation: Relation to Results of Treatment.

Result.	Average Pigmentation.	Standard Deviation.	Number.	$\frac{\sigma}{\sqrt{N}}$
Much improved ..	2.4518	0.8837	270	0.00289
Improved	2.4763	0.8934	543	0.00149
In statu quo	2.5347	0.7986	144	0.00443
Not so well	2.6048	0.9087	167	0.00494
Died	2.6015	0.8311	133	0.00519

This table indicates an apparent gradation of increased brunette traits on passing from a favourable to a fatal result, and so far would support the view that this character, perhaps not *per se* but as an indication of the inherited constitution of each individual, had some definite importance. However, from the numbers as yet available for investigation, this is not mathematically demonstrated, though it must not be forgotten that, on the other hand, it is not denied. The results may have been due to random sampling, or they may not. I have collected a few similar statistics from other diseases which would appear at first sight to support the value of pigmentation as an index of constitution, but which are so few in number as yet as to be without significance. Further research on this subject would probably yield results of great interest, such large numbers being required as to render collective rather than individual investigation necessary.

Percentage Distribution of Result for Patients Suffering from Tuberculosis of Each Hair Colour.

Hair Colour.	Result. Much Improved and Improved.	Not so Well: *In Statu Quo.*	Died.	Total Number.
Red	75.0	20.0	5.0	40
Fair	72.5	18.7	8.7	161
Light brown	60.7	28.6	10.7	338
Dark brown	64.9	23.3	11.1	593
Black	58.1	30.6	11.2	125

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(To be continued.)

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

CHRYSOIDIN IN TRYPANOSOMIASIS.

I HAVE read with much interest the report of Koch's address in the BRITISH MEDICAL JOURNAL of November 26th. I note that so far the best results as regards treatment have been got by the use of certain aniline dye stuffs—namely, trypan red and malachite green. I would suggest that a somewhat similar substance, known in commerce as chrysoidin, and manufactured by Merck of Darmstadt, be given a trial. I confess this is merely a suggestion, unsupported by any proof of its value; but my advocacy of its use is to some extent based on experimental work in directions other than that of trypanosomiasis.

Some years ago I found that chrysoidin, the hydrochloride of di-amido-azo-benzene ($C_{12}H_{12}N_4HCl$), was extremely lethal to fish, even in very dilute solutions. Further, of all the dyes used in experimenting, it seemed to have the greatest penetrating power, appeared to pass very readily into the blood stream, and undoubtedly possessed a marked affinity for the central nervous system, staining the brain and spinal cord a brilliant yellow colour. Although so toxic to fish and to other low forms of life, comparatively large doses could be given with impunity to rabbits. Its toxic action probably depends on its being an azo compound, but its effects were very similar to those of methylene blue. It proved, however, more poisonous and more speedy in action.

As methylene blue is known to benefit cases of bilharzia disease, I asked Captain Ensor, E.M.C., to give chrysoidin a trial in that distressing condition, and he has already[1] reported favourably on two cases thus treated. Now, methylene blue is certainly somewhat toxic to the parasites of malaria, so that possibly chrysoidin may be found beneficial in cases harbouring protozoal blood parasites. I intend to employ it if I can succeed in inoculating laboratory animals with the cattle trypanosomes I recently mentioned as having been found in the Soudan.[2] So far I have failed to do so, and it is in the hope of inducing others who have greater opportunities to give chrysoidin a trial that I send this communication to your JOURNAL.

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Director, Wellcome Research Laboratories, Khartoum.

PANCREATIC INFANTILISM.*

IN Dr. Byrom Bramwell's journal, *Clinical Studies*, for January, 1903, p. 157, and in the same journal for July, 1904, p. 348, will be found descriptions of a case of Pancreatic Infantilism. To these descriptions I owe the capability of being able to fully diagnose the case I wish to describe. The patient is a girl of 18 years. Her complaint, as stated by her parents, is that "For about seven years she has grown none; all her life she has been troubled with diarrhoea; what she passed was of a floamy, oily nature, very large, and floated."

Family History.—Father living and healthy; all his people are healthy. Mother died of "galloping consumption," was only ill for about three months; had one miscarriage, and two full-term children, of which one is my patient. The other is a boy, who enjoys good health, and is well grown.

Personal History.—From infancy she was troubled with diarrhoea; was sleepy and heavy, but never dull in intellect, though at times she would talk to herself. She was easily tired, and did not incline to walk much. She always ate well, but never throve. She was always considered a "pretty child," and was well formed, save for enlargement of abdomen. The parents, after trying some remedies, and finding little benefit result from them, left her alone. She grew slowly till about 11, and from that till 18, her friends say, grew none.

Examination.—I found her to be bright in appearance and in intellect. She looked to be about 9 years old, instead of 18. The only abnormality I could see was the enlargement of the abdomen. This proved to be due entirely to flatus. The skin was healthy-looking. Pulse normal, but small and weak. Temperature normal. Heart and lungs healthy

1 *Journal Royal Army Medical Corps*, November, 1904.
2 BRITISH MEDICAL JOURNAL, November 26th, 1904.
* Read at a meeting of the Ulster Branch of the British Medical Association on October 5th, 1904.

There was no sexual development. Breasts were represented by small nipples. There was no hair on the pubes, nor in the axillae. Her urine, on ordinary examination, showed no peculiarity. Height 4 ft. 2¼ in.; weight, 4 st. ½ lb.; her bones and joints were quite healthy, and showed no evidence of rickets.

Diagnosis.—At this first examination I put the case down as infantilism with a pancreatic lesion. There was no evidence of rickets in either bones or cartilage. Tuberculous ulceration of the intestine was excluded by the fact of the diarrhoea lasting for eighteen years, and the patient lasting also. The condition had some points resembling cretinism—that is, (*a*) Not walking till about 4 years. This was accounted for by weakness alone, as there were no mental peculiarities resembling cretinism. (*b*) The swollen abdomen was, as previously stated, due to flatus. There was no protruding umbilicus. The patient was not a cretin, so I was forced to the diagnosis given above.

Treatment and its Results.—I put her on pancreatic extract, gr. x t.i.d., between meals. In two weeks she reported a great improvement; diarrhoea had ceased. Stool was healthy and more natural-looking. Abdomen was not so swollen. This helped to confirm my diagnosis. At this time I read Dr. Bramwell's article on the subject, in which he says, "I claim to have established that there is a distinct clinical entity—a pancreatic form of infantilism—which is due to deficient pancreatic secretion." I kept her on at the treatment, and at the end of a month she had gained ¾ in. in height, and 2½ lb. in weight. I now stopped all medicine for two weeks; at the end of that time I found she had gone back to her original condition, and lost ½ lb. in weight. I started the pancreatic extract again, only this time I used the liquid. The subjoined table will show the result:

Date.	Weight.	Height.
May 16th (medicine)	4 st. ½ lb.	4 ft. 2½ in.
*June 17th ,, ...	4 st. 3 lb.	4 ft. 3 in.
*July 4th	4 st. 2½ lb.	4 ft. 3 in.
August 4th (medicine) ...	4 st. 8 lb.	4 ft. 3½ in.
September 12th ,, ...	4 st. 8½ lb.	4 ft. 3⅝ in.
October 4th ,, ...	4 st. 10 lb.	4 ft. 4⅝ in.

* No medicine between these dates.

In a little over four months she has put on 9½ lb. in weight and has added almost 2 in. to her height. This improvement was gratifying, but more so was the improvement in her general condition. The breasts are now developing, and are a fair size. Hair has started to grow on pubes and in axillae. She is bright, happy, and willing for any work. These facts, I submit, prove it to be a case of pancreatic infantilism.

Lisburn, co. Antrim. J. L. Rentoul, M.B., Ch.B.Edin.

A "RELAPSE" CASE OF SCARLET FEVER.

As it has been stated that cases of secondary infection (relapse) in scarlatina, though not uncommon in hospitals, are unknown in private practice, the following notes of one such case may be of some interest.

M. A., female, aged 5 years, was suddenly seized with vomiting at 4 o'clock a.m. on January 31st, 1897. At 4 p.m. a scarlet rash was seen all over the body. At 7 p.m. the temperature was 103° F., the body was covered with a scarlatinal rash, the tongue was covered with a white fur, the throat was slightly swollen and red, the tonsils were not swollen.

A saline mixture was given, and the throat was ordered to be brushed with a saturated solution, in glycerine, of boroglyceride. This treatment was carried out by the mother of the patient.

On February 1st a white patch of ulceration was seen on the left tonsil. This ulceration spread slightly to the anterior pillar of the fauces on the same side and had healed by February 8th. Peeling had begun on the cheeks on February 3rd. The temperature became normal on February 6th. She remained fairly well, desquamating freely, up to the evening of February 14th, 1897, when, without previous vomiting, her throat began to be sore, the temperature went up to 100° F. At 3.30 p.m. it was 101°, the uvula, anterior pillars of the fauces, the tonsils, and the pharynx were swollen and injected, especially on the right side; the tongue had a streak of whitish-grey fur along its edges. There was a scarlatinal rash all over the body, with circumoral pallor. A greyish patch soon appeared on the right tonsil, which became enormously swollen so as to reach over the median line. This swelling went down suddenly on February 19th. The temperature was normal on February 20th. The glands on the right side of the neck were enlarged and painful. Peeling went on normally, the glandular enlargement subsided, but convalescence was retarded by right otorrhoea, which finally ceased on March 22nd, 1897.

Here, in the first attack the brunt of the attack appeared to be borne by the left side of the throat: in the second, the attack seemed to be borne by the right tonsil, which suppurated in the process.

Handsworth. J. Richmond, M.D.Oxon., D.P.H.Cantab.

RETURN OF VISION TO AN AMBLYOPIC EYE.

On November 1st last year I removed the left eye of a young girl, 14 years of age, for an injury she received while at work. This patient had had a marked convergent strabismus, the left eye being the fixing, the right the squinting eye. Owing to this the right eye was very amblyopic. As soon as she recovered from the operation I instilled atropine, and found the vision was $\frac{6}{18}$ with + 8.00 D. spherical and + 3.00 cylinder, axis 60°. I ordered nearly a full correction, and have since tested her vision at intervals:

In January ...	V. = $\frac{6}{36}$	Jaeger 14
,, February ...	V. = $\frac{6}{24}$	,, 12
,, March ...	V. = $\frac{6}{18}$	,, 10
,, April ...	V. = $\frac{6}{12}$	,, 6
,, September ...	V. = $\frac{6}{9}$ few letters	,, 1

It must be somewhat rare for a person who squints badly with one eye to have the misfortune of losing her "fixing" eye, and as the condition which then arises is the most favourable condition possible for promoting the power of an amblyopic eye, it occurred to me to publish this case in order to show how long it takes for the vision to return; roughly speaking, this is twelve months.

G. Aubrey Jelly, F.R.C.S.Edin.,
Ophthalmic Surgeon, Bury Infirmary.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

NORTHERN HOSPITAL, LIVERPOOL.

A CASE OF TETANUS TREATED SUCCESSFULLY BY INTRACRANIAL INJECTIONS OF ANTITETANIC SERUM.

(By K. W. Monsarrat, Surgeon to the Hospital.)

On October 15th, 1904, James W., aged 10 years, was admitted to the Northern Hospital, Liverpool. On October 5th the first and second fingers of the right hand were crushed by a plank of wood. He was taken to a dispensary, and the wounds were dressed every second day. On October 14th the mother noticed his jaw was stiff and his mouth "drawn." The next day tetanus was diagnosed at the dispensary, and he was sent to hospital. On admission granulating wounds were found on the fingers named; the first interphalangeal joint of the first finger was exposed; the wound of the second finger was superficial. He was unable to open the mouth, and his head was slightly retracted; tonic contraction was noted of the masseters, the facial muscles, the sternomastoids, the trapezius, and the deeper muscles of the back of the neck. Under chloroform anaesthesia, the two fingers were amputated at the metacarpo-phalangeal joints; the scalp was reflected, and the dura exposed with a small trephine to the right of the middle line in the angle between frontal and sagittal sutures. The needle of a syringe holding 6 c.cm. of antitetanic serum was pushed through the dura, and advanced in a forward direction about 1½ in.; the serum was then injected. The scalp flap was brought over the trephine opening, but was not sutured.

When admitted his temperature was 98.4° and his pulse 128. On the day following the muscles of the back and abdomen had become involved in the tonic contraction, in addition he had exacerbations, three in the morning and sixteen up to midnight. These began with complaint of pain in the abdomen and back muscles, the head retracted, the back was arched, and the limbs became rigid; the longest attack lasted 2 minutes, respiration was interfered with only slightly. At 3 p.m. on this day 10 c.cm. of serum were again injected, a small amount of chloroform being administered. During the course of October 17th he had 40 similar attacks, none of them severe. He slept in snatches of about 10 minutes' duration.

At 3 p.m. the skull wound was again exposed and 10 c.cm. of serum were injected in the same situation as before. Chloral hydrate gr. xij and sodium bromide gr. xx were given at night by the rectum. With this exception, he received no drugs, apart from aperients, during the course of treatment.

On the 18th he continued to have numerous minor spasmodic attacks, four were of more serious character, the diaphragm and chest muscles being more than usually affected. The fourth subdural injection (10 c.c.) was given at 2 p.m. The attacks were both more frequent and more prolonged than on the 17th.

On October 19th he was given a fifth injection of serum 10 c.cm.; minor attacks continued very frequently, but they were generally less severe than on the previous days. The temperature remained at or about the normal line, the pulse varied between 100 and 140.

His condition was again slightly improved on October 20th. On October 21st it was noted that the spasmodic attacks continued, but were not so frequent, the temperature continued normal, and the pulse averaged about 120, the latter at times very irregular. He commenced on this day to sleep much better. Throughout he had very little difficulty in swallowing, and was fed by means of a rubber tube attached to the spout of a "feeder" passed inside the cheek.

The last injection of serum was given on October 22nd. On this occasion the needle of the syringe was passed in a backward instead of a forward direction, and 10 c.cm. were injected. On the previous night he had the most severe spasmodic attack since the commencement, lasting five minutes, and accompanied by intense cyanosis. On this day, however, the intervals between attacks became greater.

On October 24th his general condition was much improved, and only two slight spasmodic attacks had occurred in the preceding twenty-four hours. It was noticed on this day that there was distinct paresis of the left arm and leg and left side of face. Constipation, which had been very obstinate, was overcome on this day, and he took food more readily.

From this date he gradually improved. The paresis, no doubt dependent on the last injection having been made over the motor cortical areas, persisted until the end of the first week in November, when it was no longer appreciable. The tonic contraction of the muscles passed off in the following order: legs, abdomen, back, neck, and face. After the last injection the scalp flap was sutured and healed uneventfully. During the progress of the injections no symptoms referable to the introduction of the fluid were noted, the pulse and respiration were unaltered. The case ran an apyrexic course throughout, on three days the temperature reached 99° F., which was the maximum.

REMARKS.—The case appears to support the already considerable amount of evidence in favour of administering antitetanic serum intradurally, particularly in view of the fact that the boy was treated entirely with the serum with the exception of the single dose of chloral and bromide mentioned. The serum has been injected in three ways, by lumbar puncture, into the cerebral ventricle, and into the cerebral subdural space. Satisfactory diffusion appears to be more probable by intracranial than by intraspinal injection, and the introduction of such considerable quantities as 10 c.cm. to 15 c.cm. is probably attended by less risk if the injection is made into the subdural space than if it be made into the ventricle even if the same quantity of cerebro-spinal fluid be withdrawn from the latter. No attempt was made in this case to withdraw a corresponding amount of fluid before injection; the paresis which occurred shows the risk attending the injection of this considerable quantity of fluid, fortunately it was transient. The injections first made, into the subdural space over the right frontal lobe, were unattended by any symptoms; they were of course given steadily and slowly.

A MEDICAL BLACK LIST IN BROOKLYN.—The medical practitioners in one of the populous districts of Brooklyn are, it is stated, preparing black lists of patients who do not pay their doctors' bills. A Physicians' Protective Association has been formed, and the lists, when completed, will be circulated among the members of the association for their information. It is said that the best practitioners are losing 25 per cent. of their bills, notwithstanding their knowledge gained through long and painful experience of the quarters where difficulties as to payment are likely to occur. The younger men often lose more than half their fees till they acquire like knowledge.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BIRMINGHAM BRANCH.

Birmingham, Thursday, December 8th, 1904.

T. E. UNDERHILL, M.D., President, in the Chair.

Acute Intestinal Obstruction due to a Band.—Mr. MORRISON showed a woman, aged 56, who was admitted into the Queen's Hospital on the evening of October 26th, 1904, with symptoms of absolute obstruction, which began suddenly four days before. Abdominal section was performed the same night, and a slender band, which broke under the examining finger, was found. The line of demarcation between distended and empty small bowel was seen, and the intestinal contents were caused to travel onwards by gentle pressure. The wound was sutured in the usual way without drainage. After the operation the stomach was washed out. Mr. Morrison called attention to the value of this procedure in all cases of stercoraceous vomiting. The band was probably the sequel of hysterectomy, performed fifteen years ago by Lawson Tait.

Acute Intestinal Obstruction due to a Meckel's Diverticulum.—Mr. MORRISON showed a woman, aged 37, upon whom he had operated on October 30th last, for absolute obstruction of five days' duration and sudden onset. The patient had a retroverted uterus, but reposition on October 28th had given no relief to the symptoms. On opening the abdomen a diverticulum was found; it was about 8 in. long, and its distal end was blended with the umbilical scar. Under the bridge thus formed a long loop of small bowel was twisted and strangulated, and where the pressure was greatest a small area of gut appeared of doubtful vitality, so that care was taken to leave this part just under the wound. Six inches of the diverticulum were resected, the proximal inch being utilized as a nipple, through which a glass tube tapped the distended gut, and a pint or two of foul contents was evacuated; the cut end of this piece was then inverted and sutured, whilst the cut end of the distal inch was sutured in the upper angle of the wound. On November 12th faecal discharge appeared and continued to escape from the upper part of the wound until November 17th; this was probably due to yielding of the bowel wall at the site mentioned above. The patient got up on November 28th, and the wound was healed by December 6th.

Strangulated Inguinal Hernia: Rupture of Bowel.—Mr. MORRISON showed a specimen from the body of a man, aged 58, whom he saw for the first time on December 5th, and upon whom he operated forthwith only to find that the distended gut had burst. According to the history, there had been complete obstruction for twenty days, but unfortunately an obscure swelling in the left inguinal region, due to a small knuckle of herniated and ultimately gangrenous gut, had not been appreciated until too late. Stress was laid on the importance of investigating the accessible hernial regions in every case of intestinal obstruction. In this instance the whole lumen of the small bowel was involved in a small sac just beyond the internal ring.

Actinomycosis.—Mr. LEEDHAM-GREEN showed a young woman with a patch of actinomycosis in the cheek which had gradually softened, and was evidently waning under treatment with iodide of potassium, gr. x, three times daily.—Dr. RICKARDS read a paper entitled, Notes, with Comments, of two Cases of Actinomycosis, under the following headings: Actinomycosis, a comparatively rare disease, probably not so rare as the number of cases recorded would indicate. Notes of two cases, thoracic and abdominal; the elements in diagnosis; the portal of infection; treatment with special reference to the exhibition of iodide of potassium.—Professor LEITH showed some interesting slides under the microscope prepared from Dr. Rickards's cases, and also specimens of streptothrix akin to the micro-organisms seen in cases in actinomycosis, and gave an account of the microscopical appearances of these organisms. In the discussion that followed, Messrs. LUCAS and LEEDHAM-GREEN, Dr. RATCLIFFE, and the PRESIDENT took part, and Dr. RICKARDS replied.

Gangrene due to Embolism.—Mr. GEORGE HEATON showed the blood vessels of a lower limb removed for embolic gangrene. The patient was a lady, aged 63. She had old-standing cardiac mischief. Seven months previously she had an embolus lodge in the posterior tibial artery, and gangrene threatened for a time. The second embolism took place suddenly some eight

days previously, and was followed by typical dry gangrene. The specimen showed an old embolism of the posterior tibial artery at the point of origin of the peroneal artery. Below this part the artery was converted into a fibrous cord. The recent embolus could be seen lodged in the mouth of the anterial tibial artery and completely blocking it. The popliteal and femoral arteries above were full of recent thrombus.

The Surgical Treatment of Intestinal Obstruction.—Mr Gamgee read a paper entitled, Some Remarks on the Surgical Treatment of Intestinal Obstruction, of which the following is an abstract: The variation in symptoms of intestinal obstruction; methods of diagnosis, in which special stress was laid on visible peristaltic action of the bowels; difficulties attending the diagnosis of such cases, especially with regard to the presence of peritonitis; general principles of surgical treatment and operative details. In the discussion that followed, Messrs. Morrison, Heaton, and Milward, Drs. Short and Sydenham, and the President took part; Mr. Gamgee then replied.

MALTA AND MEDITERRANEAN BRANCH.

Valetta, Thursday, December 1st, 1904.

Colonel W. O. Wolseley, R.A.M.C., President, in the Chair.

Convalescents from Typhoid and Mediterranean Fever.—Colonel W. O. Wolseley, R.A.M.C., read a paper on the danger of allowing convalescents from enteric and Mediterranean fever to go about without any control. In view of the fact that the specific organism of enteric fever was abundantly found in the urine of convalescents from that disease, the convalescent was dangerous. The lecturer understood that the convalescent from Mediterranean fever was in identical conditions. He then reviewed the various methods attempted to render the urine sterile in cases of enteric, and gave his personal views as to how the danger could be reduced to a minimum. The creation of convalescent camps for these convalescents was, he thought, highly desirable. He concluded by expressing the hope that the subject be given the best attention by both officers and civil practitioners, so that a practical conclusion might be arrived at in the near future.

Intermittent Fever in Malta.—Dr. Them. Zammit read a paper on this subject, which he said he had prepared with the help of the Senior Medical Officer of Health, Dr. Caruana Scicluna. The paper described a small epidemic of ague at a district called Kligha, in the central part of the island. Laveran's parasite was found in the blood of the patients examined, and an *Anopheles* was also discovered which carried the disease (*A. maculipennis*). The original cause of the infection was attributed by the authors to the military camp of Mtarfa, where soldiers infected with malaria from malarious stations were bound to have relapses, and thus convey the parasites to the mosquitos breeding in a collection of rain water not far from that locality. A practical demonstration of blood films containing the parasites was then given.

Diseases of the Middle Ear.—Major Austin, R.A.M.C., read a paper on some of the most important diseases of the middle ear. He described the different aspects of the diseases of that organ, and pointed out the treatment of each as tried by himself. He showed that the most important of those diseases were fairly within the domain of the surgeon and not necessarily confined to that of the ear specialist.

REPORTS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF LONDON.

Dr. William Pavy, M.D., F.R.S., Vice-President, in the Chair.

Tuesday, December 20th, 1904.

Experiments on the Grafting of the Thymus Gland in Animals.

Mr. L. S. Dudgeon and Dr. A. E. Russell read a paper on the effects of intraperitoneal grafting of the thymus of young animals into other animals of the same species and the same litter. One kitten, one rabbit and four puppies were grafted. In three of the puppies the thymus glands from two pups were inserted into the peritoneal cavity. Control animals were used and in one case (Dog H) the animal was anaesthetized and a negative operation performed, the abdomen being opened and forceps moved about in the peritoneal cavity. From an examination of the red cells, the haemoglobin, a differential count of 500 leucocytes, and from the results of the *post-mortem* examination in the case of the cat, the rabbit, and three of the dogs, it was concluded: (1) That intraperitoneal grafting of thymus gland tissue does not affect the health of the grafted animal; (2) that it does not produce any marked blood change, certainly no lymphocytosis; (3) that it does not produce any overgrowth of the lymphoid tissue throughout the body; (4) that it produces no change in the bone marrow, liver, or spleen; (5) that the grafted thymus attached itself to the peritoneum of the intestine, omentum or abdominal wall, speedily degenerated, became infiltrated with round and polynuclear cells, and, finally, was represented by a small mass of fibrous and adipose tissue. In the case of two of the dogs, marked rickets with severe blood changes occurred, but considering that in one of them (Dog A) only one thymus was grafted, and that the other (Dog H) had merely been subjected to a negative operation, it was felt that the changes were to be attributed rather to the general environment. In both animals the leucocytes diminished—in A from 30 400 to 4,140, and in H from 12,360 to 8,560. In the grafted animal a distinct lymphocytosis occurred, not in the control. Eosinophilia occurred in both. Large numbers of normoblasts and megaloblasts made their appearance. The presence of macrocytes, microcytes, poikilocytes, and of polychromatophilic degeneration appeared to be very common in young dogs. In these two animals these conditions were more marked after than before the operation. In both dogs at the time when they were killed, ten and twelve weeks respectively after operation, typical rickets was present. The spine was curved, the legs bent and bowed, the epiphyses enlarged, the abdomen protuberant, and the spleen and liver enlarged. In both there was a general enlargement of the glandular and lymphoid tissue throughout the body, with the exception of the tonsils. The thymus in each case was very large, weighing 20.65 and 17.8 grams, as compared with the normal of about 2.3 grams for young dogs. In the control Dog H the spleen showed marked endothelial cell proliferation with marked numbers of giant cells. The bone marrow also showed numerous giant cells, myelocytes, megaloblasts, and normoblasts. When the grafts were put into the peritoneal cavity no suppuration occurred, as happened when they were inserted between the muscles. As showing that no relation existed between the thymus grafting and the rickets, in one case the steps of the operation were carried out without any thymus being inserted into the peritoneal cavity, yet the animal became markedly rachitic.

The Production of Leucocytosis by Colchicine.

Dr. W. E. Dixon observed that colchicine was a slow poison, acting upon the medulla, which it paralysed. Rapid death was not induced, howsoever much of the drug was given. At first it was excreted in the urine; later, immunity was acquired, the alkaloid being oxidized. Upon the blood, as after the injection of proteids, a hypoleucocytosis arose. This was followed by hyperleucocytosis, the cells being mainly polymorphonuclear. The bone marrow gave evidence of increased leucoblastic changes; the cells showed mitotic figures in excess, he thought, of the normal. He acknowledged the difficulty pointed out by Dr. Lazarus-Barlow of finding a standard in the examination of bone marrow, which differed in different bones, and even in the same bone in different spots.

Alterations in the Systemic Circulation which Tend to Produce Engorgement of the Lung Capillaries.

Dr. T. G. Brodie, F.R.S., and Dr. W. E. Dixon gave a brief account of some preliminary work they had carried out upon this subject. The volume of blood in the lungs was diminished by cardiac inhibition and increased by cardiac acceleration. A marked rise in systemic pressure produced a rise in the pulmonary artery, but without rise in the left auricle—an observation they were unable to explain. An injection of blood into the circulation increased the amount in the lung; the result of venesection, unless carried to a considerable degree, was very transitory in the healthy animal. Light pressure on the abdomen raised the pulmonary pressure very rapidly. The authors held that the pulmonary circulation was quite passive; it depended solely upon the amount of blood passing through the heart. They did not hold, either, that the lung acted as a reservoir. In regard to drugs, adrenalin did not constrict the pulmonary vessels and was not indicated in haemoptysis; it acted deleteriously in raising the systemic pressure. Ergot acted solely as a cardiac stimulant, and led to engorgement of the lung.

OBSTETRICAL SOCIETY OF LONDON.

Sir William Sinclair, M.D., Vice-President, in the Chair.

Wednesday, December 7th, 1904.

Abdominal Gestation.

Lieutenant-Colonel A. C. Sturmer, I.M.S., forwarded a communication on a case of abdominal gestation in one of his patients at the Madras Government Maternity Hospital. The parts removed were shown. When the patient first came under observation the periods had ceased for five or six months; there was no sign of fetal life, and the abdominal swelling seemed to decrease in size during the four weeks she was under observation. At the operation a fetus, weighing 2 lb. 6 oz., was removed. Part of the placenta was separated without much difficulty from omentum and intestines, but in attempting to separate the lower attachments free bleeding was caused. It was found that the fundus of the uterus had come away with the placenta, and as the bleeding could not be otherwise controlled supravaginal hysterectomy was performed, both appendages being removed at the same time. The tubes appear to be macroscopically intact, and there was no history of any such occurrence as a rupture; but, pending further investigation, no opinion was offered as to whether the condition was primary or secondary. The specimen was referred to the Pathology Committee.

Supravaginal Hysterectomy versus Panhysterectomy for Fibroids.

Dr. Walter Tate related three cases of intestinal obstruction following operations for fibroid tumour of the uterus, with special reference to the choice of operation.

Case I.—Single woman, aged 23, had suffered from menorrhagia for twelve months, with gradual enlargement of abdomen. Tumour reached to 1 in. above umbilicus. Myomectomy performed on May 6th, 1902. No trouble till two days after operation, when vomiting commenced. On May 9th pain and vomiting worse; no result from aperients. At 10 p.m. abdomen reopened, knuckle of bowel found adherent to scar at back of uterus. Bowels well opened next day, followed by uninterrupted recovery. Case II.—Single woman, aged 46, with history of menorrhagia for seven years, especially severe the last twelve months. Solid tumour discovered reaching halfway up to umbilicus. On December 18th supravaginal hysterectomy performed. Good progress during first week. On eighth day after operation temperature began to rise, and patient complained of pain. On ninth day some distension appeared, and aperients failed to act; sickness began. Sickness continued, pulse-rate increased to 140, distension increased, and on December 28th abdomen was reopened. Several coils of bowel found adherent to stump, and some serous exudation tracking up towards left lumbar region. Convalescence protracted, but ultimately good recovery. Case III.—Young married woman, aged 22, was confined of her first child March 10th, 1904. Some fever on sixth day of puerperium, and tender swelling discovered in hypogastrium. Three weeks later second swelling discovered in right iliac region. Physical signs rather suggested dermoid disease of both ovaries. On April 14th supravaginal hysterectomy was performed. Patient got on well, and bowels acted well on morning of 17th. The same evening patient had abdominal pain and began to vomit. Pulse-rate rapidly increased, looked pinched and ill, vomiting continued, aperients and enemata entirely failed. At 5 p.m. on 18th abdomen reopened. Knuckle of bowel found constricted by band of omentum firmly adherent to stump. Band of omentum separated and ligatured. Bowels acted on next day, and patient made good recovery.

Dr. Tate had chosen supravaginal hysterectomy in nearly all cases of fibroids up till the last few months. The occurrence of three cases of obstruction in a series of 150 operations called for serious reflection. He thought dangerous adhesions of bowel were more likely to follow supravaginal hysterectomy than panhysterectomy. The immediate risks of the two operations in the large bulk of cases were equal, though in a few special cases the latter might expose the patient to greater risk at the time of operating. There was no advantage in leaving the cervix, and in some cases the presence of the cervix might give rise to complications. The possible danger to the ureters was not an argument against the operation of panhysterectomy, as the risk of injuring them was to a great extent imaginary. These structures ought not to be damaged when proper care was taken.

Mr. Alban Doran considered that the flaps of the uterine stump should be closed by a continuous suture, and that an enema as well as purgatives should be given on the second day. In his own practice, one case of obstruction had occurred in 98 supravaginal hysterectomies. He mentioned a case reported by von Winckel of a large vaginal hernia following panhysterectomy.

Dr. Peter Horrocks considered that panhysterectomy for fibroids was more difficult to perform, was followed by greater shock, had a higher mortality, and left the pelvic floor in a weaker state than supravaginal hysterectomy. He thought that of the three cases reported by Dr. Tate two should be left out of consideration, on the ground that one being a case of myomectomy and the other being associated with subinvolution after delivery, adhesions were specially likely to occur and obstruction to ensue. One case of obstruction in 150 supravaginal operations was about the average, and that was his own experience. He considered that a continuous suture was better than an interrupted one for the peritoneum covering the stump; in his own practice he used fine silk.

Dr. Galabin did not consider Dr. Tate's contention proved by the evidence adduced. He thought that the method of doing the operation might make a difference. He made no flaps, but cut across at the narrowest point, about the level of the internal os. But if fibroids involved the cervix so that he could not get below them, he always chose panhysterectomy. He adopted rather an elaborate suture, but thought that it was worth the increased time occupied, as he had never had a case of intestinal obstruction after either supravaginal hysterectomy, panhysterectomy, or vaginal hysterectomy.

Dr. Herbert Spencer said that he had relinquished the operation of supravaginal hysterectomy in favour of total hysterectomy for over five years. He had called attention two and a half years ago to the subject of intestinal obstruction after supravaginal operations, and had published a case of his own. On several occasions during the last ten years he had referred to the risk of septic peritonitis from infection of the cervical stitches long after the operation. Moreover, not uncommonly cases were met with in which pus was discharged per vaginam after the operation. Haemorrhage from, and the development of malignant disease in, the stump were other possible disadvantages. The lists of picked cases published produced a false impression of the advantages of supravaginal hysterectomy. Prolapse after total removal was not more likely to occur when done for fibroids than after a similar operation for cancer. He adopted the practice of leaving salt solution in the abdomen; he thought that it tended to prevent the occurrence of adhesions.

Mrs. Boyd questioned whether Dr. Tate's second case should be regarded as a case of typical mechanical obstruction, and thought it rather a condition of peritonitis with secondary matting of bowel.

Dr. Cullingworth stated that he had performed Baer's operation very nearly 100 times, and had had 4 undoubted cases of genuine intestinal obstruction, but in no case was it noted that the intestine had become adherent to the line of suture on the uterine stump. He thought that Dr. Tate was relinquishing the supravaginal for total hysterectomy on very slender grounds if his conversion really rested on the evidence brought forward in his paper.

Dr. Lewers had met with 2 cases only of intestinal obstruction after abdominal section. In both cases supravaginal hysterectomy had been performed. In one of these cases a coil of small intestine had become adherent to the scar over the stump across the floor of the pelvis. Dr. Lewers had never had any trouble after supravaginal hysterectomy due to suppuration in the neighbourhood of the stump. He had done a moderate number of panhysterectomies for fibroids, but the operation took longer, and, to his mind, presented no advantage over the supravaginal operation.

Edinburgh Medico-Chirurgical Society.—At a meeting on December 7th, Professor John Chiene, C.B., President, in the chair, Mr. A. G. Miller, F.R.C.S.Ed., read a paper in which he expressed the view that local pathological conditions might often be ascribed to lack of care in cleansing the anus after defaecation. He advocated the use of soap and water in a squatting position in addition to soft paper, and a small injection of water by way of completely emptying the rectum.—Professor D. J. Cunningham read a communication on the varying forms of the stomach, illustrated by lantern slides. After demonstrating four types of stomach, he showed that the stomach might roughly be divided into two parts: (1) cardiac, (2) intestinal-like part. The former was a sac-like body, the shape and direction of which varied with the amount of its contents. The latter was relatively long and narrow, resembling the duodenum, but markedly sacculated. The apparently temporary forms in a measure coincided with Mr. Cannon's observations of the stomach of a cat studied by the aid of the *x* rays. According to this observer, the food, after reception into the cardiac portion of the organ, passed from time to time and little by little into the intestinal-like part, where by a series of rhythmical con-

tractions it was passed backwards and forwards till it was thoroughly triturated with the gastric contents. Some of the mass was then driven through the pyloric orifice into the duodenum. Mr. Cannon had further observed that the drier the food was the longer did it remain in the intestinal-like portion of the stomach. Professor Cunningham then discussed the hourglass stomach and supported Mr. Moynihan's views on this subject. Mr. Alexis Thompson said that he did not believe in the existence of the empty stomach as described in the paper; if it did not contain food, it at least was occupied by gaseous material. He had not observed, as a result of operations on the living subject, the flexions, sacculations, etc., which had been described by Professor Cunningham. Dr. Harvey Littlejohn was of opinion that the muscular spasms, which Professor Cunningham believed were present at death and became crystallized by the formalin method of preparation which he used, were the result of rigor mortis. At death every muscle in the body became relaxed; therefore Professor Cunningham's argument was not admissible. Mr. Caird stated that in his experience spasm of the stomach was very difficult to obtain, the organ resembling a flaccid bag.

Medico-Legal Society.—At a meeting on December 13th, Sir W. J. Collins, President, in the chair, Dr. Robert Rentoul read a paper on degeneration and its causes and prevention. The importance and magnitude of the subject were, he said, both immense. As for numbers, in the census return of 1901 there were 484,182 recorded cases of degeneration. On census night, 1901, the number of idiots, imbeciles, and feeble-minded, married and single, was 18,900, and in addition there were 46,800 married and widowed lunatics. Thus, there were 66,000 persons all enlarging the sum-total of degeneracy. Alcoholic degenerates were difficult to estimate; to enable accurate returns to be prepared there should be a system of double death certificates, one certifying the fact of death to be given to the friends of the deceased, the other to the Registrar-General certifying its cause. The immigration of alien degenerates and the emigration of healthy persons were also increasing the ratio of degeneracy. The proportion of mental degenerates to the total population was now probably one to fifty. As to the cost of the maintenance of the physically and mentally diseased, it was probably forty-five millions sterling every year. As for the cure he urged that no person, sane or insane, had a right to stamp his offspring with mental and bodily disease. Consequently sterilization by vasectomy or salpingotomy should be compulsory in the case of idiots, imbeciles, the congenital deaf, confirmed epileptics, feeble-minded, backward, and defective children, lunatics, habitual criminals, inebriates, and many in reformatory and industrial schools, habitual vagabonds, tramps, vagrants, casuals, and prostitutes, and the children of each of these classes. When persons were certified to the Lunacy Commissions to belong to one of these classes of degenerates an order should be issued for their sterilization in the manner mentioned. The question of degeneracy was of national importance, and it would not do to tinker with it.—Dr. James Scott, of Brixton Prison, did not approve of the suggestion. He agreed that there were many persons who were unfit to perform the duties of citizenship, but thought the indication could be met by their enforced seclusion under an extension of the Idiots and Imbeciles Act of 1886.—Dr. H. B. Donkin asked for definitions of the main terms used.—Dr. T. B. Hyslop did not think Dr. Rentoul's remedy would meet the situation.—Sir John McDougall, L.C.C., while not agreeing with all the paper, thought physical means to prevent the unfit begetting children would, one day, certainly be used.—Dr. F. J. Smith would commence at once with some bodily punishment for those who were criminally violent.—Mr. Arnold White saw signs of national decadence which could not possibly be summarized by the statistician.—Mr. Bernard Shaw suggested that the meaning of heredity or degeneration was not known; it was the privilege of the medical man to instruct the public with authority, but his teaching was too often tinctured and compromised by ignorance. The population and its quality was the vital national question.—Dr. C. R. Drysdale advocated the extension of medical measures to check degeneracy.—Lord Russell feared a good case had been weakened by over-statement; society invaded Nature's processes of selection.—Dr. Howell Evans saw many children degenerate from accidents (often antenatal); the treatment of this cause must differ from that where heredity explained the unfitness.—Sir W. J. Collins, in summarizing, said the influence of environment had again been taking a prominent position in preventive medicine, and Weissmann had not said the last word on heredity, as Watson's recent experiments on inherited immunity showed. The inherited mean of a nation must be recognized. The ethical aspects of the proposed treatment had not been dealt with by the speaker. What would be the state of society with sterilized criminal eunuchs roaming at large? Elsewhere he might object to the operations suggested as unsurgical. He had little confidence in the short cuts of benevolent despots, and should hold up his hand against compulsory mutilation.—Dr. Rentoul briefly replied.

Epidemiological Society.—At a meeting on December 9th, Sir Patrick Manson, K.C.M.G., F.R.S., in the chair, Dr. G. H. F. Nuttall, F.R.S., read a paper on ticks and tick-transmitted diseases. The bite of the tick itself was, he said, sometimes poisonous, but it was as the intermediary hosts of the piroplasmata and other haematozoa that he should now consider them. These attacking the red blood cells gave rise to devastating epizootics, such as Texas and Rhodesian fevers, which at times destroyed 90 per cent. of the herds in a district, and to similar diseases of horses, sheep, and dogs, and one of fowls in Brazil. The male and immature forms of tick were not so voracious as the female, which when gorged with blood was distended to a hundred times her normal bulk. She laid 1,000 to 3,000 eggs on the ground, whence the young larvae climbed the stems of grass and shrubs to await the passing of an animal to which they might transfer themselves; otherwise, being purely blood-suckers, they died of starvation. Some species, as those of Texas fever, underwent all their metamorphoses on the same animal, on which they might be seen crowded in every stage of development; others, as that of the dog, dropped off after gorging themselves, and their changes taking place on the ground they required a new host after each, increasing their chance of perishing threefold. The geographical distribution of bovine pirosplasmosis was, as Texas fever or redwater, in the United States, West Indies, Venezuela, Brazil, etc., in Queensland, and in various parts of Africa, India, China, etc., and as Rhodesian fever in South Africa; the ovine disease occurred in France, Italy, Roumania, the United States, West Indies and South Africa; the equine in South Africa, Madagascar, Venezuela, and Germany, and the canine in Italy, France, Africa, and India. The Texas and Rhodesian fevers, and those of horses, sheep, and dogs were due to as many species of piroplasma, and the fowl disease of Brazil to a spirochaete, but the ticks concerned differed in different countries. A female sucking infected blood laid infected eggs, but larvae thus infected did not always communicate the disease, and a larva or pupa infected as such might or might not be infective before reaching the imago stage, different species behaving differently. The adult tick was long-lived, and could exist many months without food, while the parasite lived as long as its host. Little was known of the life-histories of either piroplasma or spirochaete, though Dr. Nuttall had noticed extracellular bodies, somewhat resembling the gametes of the malarial parasite, and Schaudinn had recently described a spirochaete developing out of a trypanosoma, which was but a stage in the life of the halteridium, an endoglobular parasite in birds. Animals recovering from an attack retained the parasite in their blood, which was infective to others, directly, or through the medium of ticks, and an intercurrent disease or depressing influence might bring about a recurrence of the fever. Immunized or "salted" animals were thus a danger to the healthy, and the only hope lay in the extermination of the tick. Insecticide dips, burning the grass of infected pastures, quarantine, and grazing only horses for two years in fields where cattle had been affected, or vice versa, were recommended. The peculiar localization of the disease, the exemption of stall-fed cattle and of dogs in towns when sporting dogs were affected were easily explained by the habits of the tick. Sir Patrick Manson was particularly struck by Dr. Nuttall's mention of the conditions under which the attacks recurred as illustrating the etiology of blackwater fever, in which, too, the destruction of the red blood cells led to haemoglobinuria and icterus. He called attention to the karapatti disease o Zambesi, which was believed to be caused by the kufu—a species of tick. It and blackwater fever were doubtless diseases of this class, in which the malarial attack, or the overdose of quinine, were merely exciting causes. In the discussion that

followed Dr. Lowe stated that a friend of his had demonstrated a spirillum in karapatti, like the S. obermeieri—an observation that might throw light on the obscure etiology of relapsing fever.

Glasgow Pathological and Clinical Society.—At a meeting on December 12th, the President (Professor Muir) in the chair, the following were among the exhibits: Dr. A. N. McGregor: A large ovarian cyst, torsion of the pedicle of which had given rise to symptoms simulating rupture of an extrauterine pregnancy. The patient gave a history which indicated pregnancy of four months' duration, and at the operation the uterus was found to be correspondingly enlarged.—Mr. A. E. Maylard: (1) A boy, 4 years old, who had suffered from extravasation of urine in consequence of the impaction of a calculus at the meatus of the urethra. The rupture of the urethra occurred about an inch above the meatus on the under side of the penis. The parts were incised three days after the impaction; a urinary fistula formed, which was successfully closed by a plastic operation after perineal section. (2) A case of cervical fistula communicating with the pharynx. In its formation it simulated the opening of a tuberculous abscess, but on examination it was found that the finger readily passed into the pharynx. Neither food nor fluid taken by the mouth escaped from the sinus. Mr. Maylard regarded it as most probably a branchial fistula.—Dr. Jas. A. Adams: A boy in whom excision of half of the lower jaw was performed on account of a tumour about the size of a duck's egg, which had distended the whole ramus on the right side. The tumour was a somewhat cellular fibrous growth, with epithelial processes scattered through it, and presenting considerable resemblance to tooth germs.—Dr. J. Crawford Renton: A tumour of the tibia regarded clinically as a central sarcoma, with skiagraphs showing the condition of the bone, but microscopical sections of the growth shown by Dr. Teacher proved it to be an endothelioma.—Dr. Henry Rutherfurd: (1) A tumour of the caecum the clinical course of which had simulated appendicitis. Three months after the opening of a perityphlitic abscess suppuration recurred in the scar, and the appendix was then sought for and removed. Two months later a tumour was recognized invading the abdominal wall; it was determined to be originating from the caecum and ascending colon. Exclusion of the part was performed with implantation of the ileum into the sigmoid flexure, and three weeks later the whole growth with part of the abdominal wall was removed. When shown, a month later, the patient was doing well. (2) A preparation illustrating appendicitis with abscess, apparently due to a fish bone. The bone was found in an abscess included in omentum; the appendix was inflamed, but the causal relation of it to the abscess could not be demonstrated.

Manchester Medical Society.—At a meeting on December 7th, the President (Dr. J. S. Bury) in the chair, Dr. Marsden exhibited an unusual case of late rickets. The patient was a female, aged 19½ years. Skiagraphs of the affected ends of the long bones were shown, the most prominent feature being a remarkable increase in the breadth of the epiphysial cartilage. Dr. Marsden suggested that this appearance might constitute a more reliable test as to the presence of rickets than a verdict based on enlargement of the ends of the long bones. A classification of cases of late rickets was made under two headings: (1) disseminated; (2) localized; and each of these was further subdivided into a primary and secondary form. In conclusion, Dr. Marsden expressed the opinion that rickets was frequently due to the absence of the conditions requisite for healthy growth. A faulty nutrition or unhygienic surroundings, by their influence on the composition of the blood, were able so to alter its characters as to prevent it serving its proper function in a perfect manner, and thus lead to the condition designated as rickets.—Dr. Hill Griffith gave a short account of the operative treatment of high myopia, as first introduced by Fukala in 1890. He had himself only done 10 cases, and, as far as he knew, very few cases had been done in Manchester. All his cases had been quite successful, although in two disciesion was followed by acute glaucoma the same night. In suitable cases the procedure was to be commended.

British Balneological and Climatological Society.—At a meeting on December 8th, the President (Dr. Bowen Davies) in the chair, Dr. N. Hay Forbes (Tunbridge Wells) read a paper on the climate and health resorts of Scotland. After sketching out the characters of our insular climate, he dealt in detail with the general climate of North Britain, especially dwelling on the great influence of the Atlantic Ocean on the west coast as regards sea and air temperatures and rainfall. He then passed to a description of the geological formation of the three great natural divisions of the country—that is, the Highlands, the Central Lowlands, and the Southern Uplands, and concluded by an estimate of various Scottish health resorts and localities. Dr. Fortescue Fox (Strathpeffer) spoke of the value of the climate of the north-east of Scotland from the Dee to Dornoch. It was of special value for neurasthenia and the disorders of middle life. The cool summers with longer days, the pure air and the richness of solar radiation were chief elements in the Scottish climate. Dr. Symes Thompson showed that many of the Scotch mountains had lost by denudation some 10,000 or 12,000 ft. of elevation. Dr. Ward Humphreys (Falmouth) questioned the wisdom of always estimating the value of health resorts merely from the point of view of isotherms and isobars, because mere temperature as recorded by the thermometer and barometric readings were not always safe guides in matters of health; there was a something in sunshine which affected the human body more than it affected the glass and the mercury. Dr. Black Jones (Llangammarch Wells) remarked that the rainfall on the western coast was higher than that on the eastern; as heat was liberated by condensation of the clouds, a portion of higher temperature of the west coast would be due to this cause. The mean annual temperature of Ireland was raised 2° by the heavy rainfall in that country. Dr. Moxon (Matlock) considered that Great Britain possessed all kinds of climates suitable for all kinds of persons and for all seasons of the year. The chief reasons why there went on a continuous migration to the Continent of those in search of health were the difficulties of access to British health resorts, and the want of enterprise on the part of municipal authorities in charge of them. Some means of acquainting the travelling public with the virtues of our own health resorts should be undertaken by the Society. Dr. Hay Forbes replied.

Association of Registered Medical Women.—At a meeting on December 6th, Miss Helen Webb, M.B., President, in the chair, Miss Florence Stoney, M.D., reported some results of electrical treatment. She showed a woman aged 62, in whom rodent ulcer on the face of three years' standing had been cured, with practically no scarring, by seven x-ray exposures of ten minutes each. A woman of 28 had suffered from prolapse of the rectum since birth, and was cured by ten administration of faradism and high frequency. Another, aged 50, had suffered from chronic eczema all over the abdomen for five years, and was cured by twelve exposures to x rays. A recurrence three months later disappeared after four exposures. Chronic psoriasis in a woman, aged 65, was cured by six exposures. Multiple papillomata on the trunk in a woman of 69 were removed without scar by a month's treatment. A woman, aged 60, with rheumatoid arthritis of both wrists showed increased movement in the joints with loss of all subjective symptoms after four een high-frequency treatments. In cases of this nature only the fibrous and inflammatory thickening could be influenced, no improvement took place in bone or cartilage. Two or three months' treatment was generally required. Three cases of cancer of the breast had all been too advanced for surgical treatment, x rays did not check the growth, although the darting pains were relieved and the ulcerating surfaces rendered odourless. X-ray treatment of mammary carcinoma would be most satisfactory when applied in the neighbourhood of the scar immediately after removal of the new growth by operation, and such treatment had been found to lessen the frequency of recurrence. High frequency proved most successful where there was lack of tone and flabbiness of tissues of not too long duration; such cases might be either local, as in varicose veins, piles, prolapse, or general, as sleeplessness, overwork and loss of tone after influenza.—Miss Sharpe, L.R.C.P. and S., read a paper on radiotherapy, dividing radiations into (*a*) the short wave group belonging to the violet end of the spectrum and having a therapeutic action mainly devitalizing; of these ultra-violet and cathode rays were types, (*b*) the long-wave group belonging to the red end and having a revitalizing action; of these electric and fluorescent rays were types. She said that progress in radiotherapy depended on improvement in the method of producing the radiations so as to utilize only one kind at a time. Recently a new kind of glass, which was quite transparent to ultra-violet rays, had been made in Germany. Radia-

tions possessing electroscopic properties, such as *x*, *n*, and *k* rays, must also be distinguished from others which did not possess them, as light and heat. Cathode rays had a violent action when in a vacuum tube they were stopped short by a metal plate, and it was conceivable that they might act somewhat similarly on a cancer growth. Granting the theory of bisexual development of cancer cells, a stream of negatively charged electrons might readily bring this about. A special high vacuum electrode (such as the old-fashioned *x*-ray tubes tubular in form or with very small bulbs) used in connexion with the Oudin resonator proved useful in healing ulceration of any kind. This revitalizing action of radiations was the cause of the unfailing success in the treatment of rodent ulcer, and also accounted for its value in preventing the recurrence of cancer after removal of the growths by operation.

Glasgow Medico-Chirurgical Society.—At a meeting on December 9th, Dr. R. M. Buchanan in the chair, Professor Muir delivered an address, illustrated by lantern slides and microscope specimens, on leukaemia and allied diseases. After demonstrating the various forms of leucocytes in normal blood and their genetic relationships, he showed the characteristic changes found in the lymphatic and medullary or myeloid forms of leukaemia respectively. In the organs the characteristic change was of the nature of an excessive deposit of lymphoid or of myeloid cells, without increase of stroma, this being in marked contrast to the changes in Hodgkin's disease, which had many of the features of an infective disease, and was characterized by an actual overgrowth of the connective tissue stroma. He regarded the condition of the spleen in the so-called spleno-medullary form of leukaemia as due to the deposit in it of myeloid cells carried from the bone marrow to the spleen by the blood spleen. The lecturer discussed the relationship of these conditions to the soft and hard pseudo-leukaemias of some German authors, and explained the respects in which they differed from Hodgkin's disease, tuberculous disease, and malignant conditions of the lymphosarcoma type. In concluding, he appealed for the co-operation of physicians and pathologists for the further elucidation of many important questions associated with the subject under review. Some discussion followed, in the course of which Dr. Muir's proposal for co-operative work was welcomed. Drs. Workman and Lindsay Steven said they were disinclined to abandon the use of the term "spleno-medullary" for one of the groups.—Dr. W. K. Hunter referred to a case which at an early stage possessed the features of the soft pseudo-leukaemia of the Germans, but latterly showed itself to be a typical lymphatic leukaemia.

Midland Medical Society.—At a meeting on December 7th, Mr. Wood White, the President, in the chair, Dr. Walter Jordan showed a case of congenital hypertrophy of limbs in a child aged 2 years. The mother had noticed, when the child was 3 weeks old, that the left arm was larger than the right, and two weeks later that the right leg was larger than the left. The child had never been ill, and was well developed for its age. The affected limbs were much enlarged, the increase being apparently in the subcutaneous tissue. There was no pitting on pressure. A skiagraph showed no trace of enlargement of bone. The right buttock and right side of the vulva shared in the hypertrophy. There were several cases on record of this "giant growth" in the upper and lower limbs of the same side—hemihypertrophy—and of one limb only; but he had not found any record of "crossed" hypertrophy.—Mr. Nuthall showed: (1) A specimen of double hydronephrosis, dilated ureters, and hypertrophy of the bladder, due to large vesical calculus, taken from a boy aged 8 years, who presented no symptoms till thirty-six hours before death, when a severe rigor occurred, death subsequently occurring from uraemia. (2) A specimen of bladder and kidneys showing large branched calculi in the pelvis of each kidney, the right being markedly hydronephrotic, and the left pyonephrotic. Dilatation of the ureters and chronic cystitis were present. The patient was a girl of 11 years, who had suffered from pain in the back and loins for four years, and in whom haematuria developed seven weeks before death. Great pain was present for three days before death.

The will of the late Dr. George Vivian Poore has been proved at £19,261.

REVIEWS.

DENTAL ANATOMY.

The fact that Mr. C. S. Tomes's *Manual of Dental Anatomy*[1] has reached a sixth edition is sufficient proof of its value and of the favour with which it is received by those who wish either to study the subject or to have at hand a concise statement of its position and of the main data bearing upon it. The book deals first with the various parts of the teeth and then with their development and calcification; afterwards the modes of attachment of the teeth in different vertebrates are considered, the homologies of the teeth are discussed, and in the last part of the book the teeth of the different groups of the mammalia are described. As Mr. Tomes points out, a large amount of work has been done of recent years in connexion with the structure, development, and homologies of the teeth, and, as matters stand at present, it is difficult for any one who is not biassed to form a definite conclusion with regard to some of the points under discussion, inasmuch as the accounts given by different observers vary so greatly with regard to essential details. Much of the ambiguity, however, which exists in many of the monographs is cleared away by Mr. Tomes's masterly survey of the position, and although he himself is not positive with regard to certain disputed points, nevertheless he places the evidence for and against any view so clearly that the reader is enabled either to accept the explanations offered or to decide that the evidence on both sides is inconclusive. Everything in the book is so admirable that it is difficult to select any special part for praise, but it may be said that the chapter dealing with the homologies of the teeth is a delightful example of well-balanced criticism. After all, too, that has been written in recent years regarding the possession by mammals of the germs of four sets of teeth, premilk, milk or temporary, permanent, and postpermanent, it is interesting to find so great an authority as Mr. Tomes driven to the conclusion that the premilk and postpermanent germs are at present quite hypothetical, and that the evidence with regard to them is insufficient to establish their existence. The chapter on the evolution of the forms of teeth is also most interesting; here again Mr. Tomes treats his readers to an excellent survey of the various theories, and although he gives a fair consideration to the concrescence theory, according to which the more complicated teeth are produced by the fusion of teeth of simpler form, he is obviously not impressed by it; on the contrary, he favours the idea that new cones are produced from the cingulum which runs round the lower margin of the enamel. There are, however, difficulties in the way of the acceptance of this theory, all of which are clearly put forward, and the reader has an excellent opportunity of arriving at a conclusion regarding the evidence without having himself to search through the numerous and long monographs which have been written upon the subject. The book is profusely and well illustrated, and there can be no doubt that it will receive at least the favour and appreciation which the earlier editions met with.

SYPHILIS.

The interest of Dr. Franz Nagelschmidt's paper on immunity in syphilis[2] lies in the fact that he has attempted to transplant skin from man to animals—with little success, be it said—and further, that he has also experimented with human serum on animals. He found also in his experiments on haemolysis that syphilis-serum brought it about as frequently as healthy serum. There was no difference in the agglutination processes. Further, that precipitation still occurred in syphilis-blood solution when saturated with human blood, whereas precipitation was not present at all, or was more feeble in the case of human blood and healthy blood solution respectively. For the moment, fractional precipitation does not help us in the diagnosis of syphilis. But it must be admitted that in some cases a difference obtains in syphilis blood and non-syphilis blood, pointing to changes in the body as a result of syphilis. The present contribution to this complicated question is furnished with tables and details of the author's experiments, which will be of value to those working specially on the blood in pathological laboratories.

[1] *A Manual of Dental Anatomy*. By C. S. Tomes, M.A., F.R.S., F.R.C.S. Sixth edition. London: J. and A. Churchill. 1904. (Demy 8vo, pp. 644, 286 illustrations. 12s. 6d.)

[2] *Ueber Immunität bei Syphilis nebst Bemerkungen über Diagnostik und Serotherapie der Syphilis*. [On Immunity in Syphilis, with Remarks on Diagnosis and Serotherapy of Syphilis.] Von W. Franz Nagelschmidt. Berlin: A. Hirschwald. 1904. (Demy 8vo. Pp. 71. M. 1·60.)

Professor LANG's textbook of venereal diseases[3] forms the second volume of a work on skin and venereal diseases, the first volume of which (on the skin) was published in 1902. The first portion of the present volume deals with gonorrhoea and the venereal ulcer or soft chancre. Neither of these sections (though both are good) calls for special remark. The greater part of the book is devoted to syphilis; and the effects of this disease on the various tissues and organs of the body are clearly and adequately described. As regards treatment, though the various preparations of mercury and iodine and the different ways of administration all receive attention, Professor Lang has most to say about the oleum cinereum, or grey oil, which he has been in the habit of injecting for the last twenty years. This grey oil is now composed of a mixture of two parts of metallic mercury and one part each of lanolin and liquid paraffin, and this is the strength he generally uses, though in certain cases a weaker preparation may be advisable. Precise directions for preparing and administering the oil are given in detail, and for these the book itself should be consulted. It may be mentioned, however, that the oil is injected subcutaneously—generally under the skin of the back, but occasionally under that of the abdomen; and Professor Lang states that with proper precautions this procedure is never followed by suppuration. Of the 50 per cent. oil he never injects more at one time than 0.05 c.m.[3] (containing 0.04 of mercury), and for a thorough mercurial course he finds that from eight to twelve injections—seldom more—are sufficient. In case of relapse from four to six injections usually suffice. The injections at first are given about twice a week, then, if all goes well, about every fifth or eighth day, and finally at intervals of ten to fourteen days. Thus, it will be seen that Professor Lang does not believe in very long courses of mercury, and he strongly disapproves of the "successive chronic intermittent" method of treatment recommended by Fournier. Deep injections into the muscles of the buttocks are not recommended, and it is pointed out that the cases in which pulmonary embolism has followed the injection of insoluble preparations of mercury have occurred mostly, if not exclusively, after injections made into the gluteal muscles. The book is one that may be read with profit both by students and practitioners. One drawback, however, is the not infrequent reference to matters in the volume on diseases of the skin, which, of course, to some extent renders the present one incomplete in itself. The illustrations are many of them very good; but as they are not coloured, some of those showing lesions of the skin and mucous membrane are of little value. There is a long and useful list of formulae at the end of the book, and, as the work is a German one, it may be added that there are headlines to the pages, and that it possesses an index, though a somewhat meagre one.

The *Treatment of Syphilis*,[4] by Colonel F. J. LAMBKIN, R.A.M.C., is devoted entirely to a reasoned consideration of all the ways in which syphilis may be treated and to a brief account of the author's experience of the disease. This, as he claims with considerable justice, is in many ways unique, since he has held for a number of years a position in the army which has compelled him to pay a great deal of attention to the disease personally, while it has also been part of his official duty to watch the results obtained by others. In this volume he considers in turn each of the treatments which have been in vogue, and sums up the arguments for and against their adoption, not omitting to give clear directions as to how each is to be carried out. The author is strongly in favour of some form of intramuscular treatment and gives a variety of prescriptions for injections; he prefers injections of the metal as it exists, in very small percentage, in his modification of Lang's original prescription. His arguments in this connexion are weighty, as also are his animadversions on the misuse or uninterrupted use of potassium iodide. The value of the book is not to be measured by its size, for, apart from the value which may be attached to the views expressed by the author, we are not aware of any other small work in which all the possible treatments of syphilis are so fully set forth and so much information given as to specific treatment otherwise than by the mouth. It therefore deserves to be popular.

[3] *Lehrbuch der Geschlechtskrankheiten.* Von Prof. Dr. Eduard Lang, Wien. Wiesbaden: J. F. Bergmann, and Glasgow: F. Bauermeister. 1904. (Demy 8vo, pp. 398. 85 illustrations. 10s. 6d.)

[4] *The Treatment of Syphilis.* By F. J. Lambkin, Lieut.-Colonel, R.A.M.C., Specialist to the Army Headquarters, India. London: Baillière, Tindall, and Cox. 1905. (Crown 8vo, pp. 60. 3s.)

Dr. C. F. MARSHALL's book on *Syphilis and Gonorrhoea*[5] is an attempt to give an account of the chief points concerning these two diseases. The result is as might be expected in a work of about 250 pages—a somewhat sketchy survey of two very important conditions. Howbeit, many interesting matters are dealt with, but several of them are open to criticism. The correctness of Dabry's contribution to the history of syphilis, for instance, has been impugned by a recent Japanese writer, who has gone over the same ground as the French author, not, by the way, a medical man. The heredity of syphilis, again, is a point about which we know very little. It would be better, therefore, to speak of congenital rather than of hereditary syphilis. With regard to so-called leucoderma syphiliticum, there is no doubt about its value as a sign of syphilis. Bullous syphilide as a label is better than syphilitic pemphigus, and nodule is more appropriate than tubercle. What is the evidence for the statement that the Jews were formerly very free from syphilis? As to that unfortunate term, *syphilis d'emblée*, which has led to so much discussion, it is well known that in some cases the so-called primary sore cannot be found. All our knowledge of the evolution and natural history of the disease points to the necessity of a solution of continuity, however slight, for the virus to penetrate into the blood stream. Here, again, facts support the view that the blood is infected before the formation of the chancre. There are other debateable points which might be discussed did space allow. A word must be said, however, with regard to Colles's law. Dr. Marshall accepts the alleged exceptions to this law as being true exceptions. The fact remains that, when these exceptions are carefully gone into, they are found to be not altogether convincing, but distinctly wanting in some respect or other. The truth is that much remains to be done in the way of elucidating many problems in syphilis. As to gonorrhoea, it is dealt with in some fifty pages. The book winds up with a note on venereal disease in the army and navy, with special reference to the Contagious Diseases Acts.

NOTES ON BOOKS.

YEAR BOOKS.

THE new edition of *Herbert Fry's Royal Guide to the London Charities*[6] is again edited by Mr. John Lane. It contains a comprehensive list arranged alphabetically. The editor states in his preface that the year 1904 has been a bad one for all hospitals and charitable institutions owing to the depression in trade. On the other hand, certain hospitals received very large legacies, special reference being made to the large bequests of Mr. Dresden, which will eventually amount to over £300,000.

DIARIES.

Messrs. John Walker and Co., Limited, Farringdon House, Warwick Lane, E.C., sends us a *Perpetual Diary* (5s. to 10s. 6d.). At this season of the year many people make a resolution to keep a diary; the majority probably break down before the month of January is over; but Messrs. Walker's diary is intended to encourage such weak brethren to keep their resolution. The diary shows a page for every day in the year, and there is room for brief entries for five years.

Having probably heard rumours of the great prevalence of golf in the medical profession, Messrs. Walker and Co. ask us to draw attention to a small *Golfer's Diary* (1s. to 10s. 6d.), bound in yellow leather, with a pencil in a back loop. It contains the Royal and Ancient rules, scoring pages, and a most elaborate table in which the devotee may record the varying fortunes of the year.

[5] *Syphilis and Gonorrhoea.* By C. F. Marshall, M.D., Ch.B., B.Sc.Vict., F.R.C.S.Eng. London and New York: Rebman, Limited. 1904. (Demy 8vo, pp. 267. 8s.)

[6] London: Chatto and Windus. 1s. 6d.

BEQUESTS TO MEDICAL CHARITIES.—By the will of the Reverend Charles Trollope Swan, of Sausthorpe Hall, Lincolnshire, who died on September 23rd, the following bequests are directed to be paid: To Lincoln County Hospital, £300; to the Lincoln Dispensary, £200; and to the Convalescent Home at Mablethorpe, £100.—The Royal United Hospital, the Royal Mineral Water Hospital, and the Eastern Dispensary, all situated in Bath, each receive the sum of £50 under the will of the late Mr. William Williams Phillips, of Beaufort House, in the same town, who died on October 21st.

JAMAICA AS A HEALTH RESORT.

III.

[*Concluded from p. 1470.*]

Kingston and Neighbourhood.

I found that the proprietor of one of the estates near the top of the adjacent hills had left a standing invitation to visitors to see his estate of about 1,100 acres, and I afterwards learned from the proprietor himself, Mr. Fuertado, that he had that very morning sent down a special invitation to the medical men who had, like myself, accepted Sir Alfred Jones's invitation to visit Jamaica. Bellevue, the estate referred to, lies at a distance of about four miles from Constant Spring Hotel. The road winds up the hillside through delightful scenery, with deep gullies on one side filled from the bottom with trees and tropical undergrowths of various kinds, with on the other a reddish rocky formation, having every now and then pimento trees growing out of it, stripped at this season of the year of their bark, a natural process which looks as if it had been performed by man. Every now and then at a turn of the road there was a glimpse of Kingston Harbour and the open sea, adding greatly to the picturesque effect. The situation of Bellevue is admirable: looking out from the drawing-room windows you see right over Kingston to the sea, and have mountains on each side closing in the view. The chief products of the estate are pimento and coffee; of the former about 300 bags were gathered this year. The coffee is said to be of very excellent quality. In the garden one of the most remarkable flowers I saw was the gloriosa superba, belonging to a small genus of the tuberous family of Liliacea, climbing by tendrils at the extremities of the leaves, and having a magnificent crimson flower well fitted to adorn a lady's breast, from which it gets its name. While I was at Bellevue a tropical shower came on and lasted perhaps an hour, and it was quite another hour before I could get my hospitable friends to let me send for my buggy. Driving back to my hotel it occurred to me that if a sanatorium were required in the neighbourhood of Kingston, the natural advantages of Bellevue pointed it out as the sort of place whereof, by the expenditure of a moderate amount of capital, a great deal might be made, the house itself being sufficient for administrative purposes, and the space around for at least twenty-five small villas or bungalows.

Spanish Town and Bog Walk.

The next day, with my companion, Dr. Rutter, I proceeded by rail to Spanish Town, the former capital of the island (a distance of twelve miles from Kingston), where the cathedral is situate. Here we visited the Leper's Home, an institution which receives lepers from all parts of the island, the average number in hospital being 120. Some of them were well enough to be playing games in the grounds, but the bad cases, with toes and fingers amputated by the disease, were a sad sight. Cases of both the anaesthetic and tubercular type are received, and not treated separately. The mortality is at the rate of 13 per cent. per annum. As to the origin of the disease, no weight seems to be attached here to the salt-fish theory, but hereditary influence with unclean habits is considered to be the most usual cause. There was not a single Jewish patient in the home at the time of our visit. From the home we drove on to Bog Walk, past a beautiful bit of river scenery, palms and luxuriant tropical foliage lining the banks on both sides. At one spot there was a cascade. At another the wild sugar-cane was growing 4 or 5ft. high, while the graceful bamboo on the opposite side bent over to the water's edge. On our road we passed the waterworks, from which the water of the Rio Cobre is conveyed in an immense pipe, 8 ft. in diameter, to work the electric tramcars. Here some thirty poor fellows were drowned a few weeks before our visit, while cleaning the pipe, by a mistake in turning on the water. By lofty and abrupt precipices, illuminated by a brilliant sun, we proceeded, until, emerging from the gorge, the sides of the ravine became less precipitous, and were clothed with bread-fruit, bamboos, and other tropical trees, besides flowering orchids. From the train we saw quite a number of fields illuminated by fire-flies, looking like little Chinese lanterns scattered about.

Mandeville in Middlesex.

Middlesex is one of the divisions of Jamaica, and there is also a Surrey and a Cornwall. Mandeville is a pretty little town 2,000 ft. above sea level, and is the centre of the orange district and about three hours' railway journey from Kingston. With its village green, its church, its court-house, and surrounding villa residences, it might be a little Worcestershire town. The drive of five miles from the railway station at Williamsfield is through very picturesque scenery, cocoanut palms and bananas abounding on each side of the road, and as we approached the town, orange trees laden with fruit in various stages of ripeness, sometimes dropping their ripe fruit into the public highway. At the Grove Hotel the proprietor and his wife were Yorkshire people, who had come out here for the benefit of his health, which had improved during the three years which he had been out. He had been an amateur photographer, and now turned his knowledge of the art to good account.

After lunch I called on Dr. George Cooke, to whom I had an introduction, and who has been practising in the neighbourhood for about a quarter of a century. He considers the Mandeville district very healthy, but too damp for certain classes of patients, especially consumptives. For other diseases, he says, it may be strongly recommended. As we visited Jamaica at the end of September,* the commencement of their rainy season, we naturally had several opportunities of witnessing tropical showers, and in fact my return drive from Mandeville in the early morning had to be made in one; on the Sunday, too, we had a downpour for an hour, in the course of which an inch and a quarter of rain was measured. In the report on the health of the island for the year 1903, issued by the Government Medical Department about the time of our visit, there is an interesting and important reference to this subject of rainfall as follows:

> The general health of the island in the earlier months of the year was very good, and as the season was dry there was very little illness in consequence, especially of a malarial type, but after the hurricane in August there was a heavy fall of rain, which caused a large increase in malarial fever and dysentery and bowel complaints in some districts in the last quarter of the year. The sickness did not immediately succeed the hurricane, but came on in September, when the drinking water became polluted with decaying vegetable matter and the washing of the soil, and when the foodstuffs gave out, the people having to fall back upon unripe fruit or bad food.

And every medical visitor to the island will agree with the Superintending Medical Officer that

> a better water supply generally throughout the island when it can be obtained, and instructions to the people not to pollute the water now in use for drinking purposes, would no doubt improve the general health; in fact, hygienic instructions for the poorer folks are much needed.

In the report on the state of Kingston the following passage occurs:

> The sanitary condition of Kingston shows, I think, some improvement, but there remain many insanitary areas within the town for which reconstruction is the only effective remedy; more attention would seem to be required in the direction of laying the dust, which is such an intolerable discomfort, besides being a possible source of danger to the public health.

The Voyage Home.

Our homeward voyage was quite as pleasant as our voyage out, and in some ways even more so. About a third of the cabin passengers who had gone out with us returned also in the *Port Royal;* and we had, in addition, the editor of one of the Jamaica papers, who was a Scotchman, bound for the land of cakes; two Girton girls returning to their studies, and students for Oxford, Cambridge, and Glasgow Universities. We had also on board a full cargo of bananas, and, by the courtesy of the captain and his chief officer, the medical men on board had the opportunity of seeing the arrangements for keeping these cool without freezing, which would prevent their subsequent ripening. As on the outward journey, we watched the flying fish, and even had the opportunity of examining one which was caught by a sailor; the seaweed carried from the coast of Mexico, and the porpoises that tumbled about in the water by the side of the ship; and it was not until within about two days' steam of England that a fog setting in, and causing the fog-horn to sound all night, made us glad to think that we had nearly reached the end of our journey.

* From November to April is the recognized season for visitors.

The Pan-American Medical Congress.—The Fourth Pan-American Medical Congress will be held in Panama in the first week in January, 1905. The Government of the Panama Republic has appropriated £5,000 for the purposes of that Congress and for the entertainment of the guests, who will be received in state by President Amador on the first day. The formal opening session of the Congress will take place the same evening. The Public Health Association will meet the following week in Havana, and arrangements have been made by which those who attend Congress at Panama can go on to Cuba.

THE TEACHING OF HYGIENE IN SCHOOLS.

III.—How should Hygiene be Taught.

It seems almost incredible that our Colonies should be so far in advance of the mother country in many matters of national import; yet this is true, and a striking example of it is found in the teaching of hygiene in schools. For instance, in Canada, Victoria, South Australia, New South Wales, and Natal, hygiene is systematically taught, and in most is made a compulsory subject in all public elementary schools. That foreign countries should always take the lead in progressive measures seems unfortunately to be taken as a matter of course and accepted without a blush. But it does seem ignominious that the British Colonies should set to Great Britain herself an example of wisdom and foresight. A brood of chickens would not be expected to teach their mother common sense, yet this is really very much the case with England.

It is taken for granted that America should, at the least hint of the wisdom of a new measure, immediately adopt it and give it a trial. What America does through wealth, enthusiasm and impulse, Sweden does from sound common sense. It is only natural, therefore, that in these two countries the teaching of hygiene is made compulsory—by education laws in America and by a decree of Parliament in Sweden. In Denmark, Holland, and Italy also hygiene is taught.

But there is teaching and teaching, and the question of how hygiene should be taught is one that requires the most careful consideration before the final adoption of any scheme. Attention has lately been drawn to "suggested courses of teaching in hygiene and temperance for boys and girls in the public elementary schools in the United Kingdom." This is based upon a scheme in use in the schools of the United States of America, and has been issued by the Committee of the Medical Profession in the United Kingdom constituted to promote the teaching of hygiene and temperance. Now, it must at once be admitted that in the minds of this committee the question paramount was the teaching of temperance to school children, and that hygiene was a secondary consideration.

The scheme which has been brought out is based upon that prepared by Mrs. Mary A. Hunt for use in the schools of the United States of America. There is much good in the scheme, but there is also room for criticism. We have lately had many occasions of discussing with teachers of exceptional ability and common sense the manner in which temperance teaching might best be conducted in schools. One and all are agreed that, while it is necessary to give teaching in temperance, it is unwise to commence this too early.

If a young child has dinned into it for six or seven years that alcoholic drinks have an irritating effect on the stomach, that they are injurious to health, and "the danger that cider, beer, or wine drinking may create the desire for more," what is the result? We can imagine elementary classes repeating this lesson over and over again in their fine sing-song style until the words lost all meaning and importance. As with the everlasting "Don't" of a mother or nurse, the admonition at last produces about as much effect as the passing of water over a duck's back. Now, while in other questions of hygiene bearing on everyday life it is not only advisable but absolutely necessary that the teaching should begin as early as possible, a mistake will, we believe, be committed if the drink question is thrust upon little children, whom after all it does not concern during their early years. Personal hygiene intelligently taught will do more, we venture to think, than the most elaborate temperance teaching; a child well grounded in the moral and practical aspects of hygiene will be likely to have a horror afterwards of anything degrading, such as drink. It has been contended by some that the time to teach hygiene to children is after they leave school, when they arrive at years of discretion. We would urge strongly that while this is too late for personal hygiene, the time for lessons on temperance is during the last year or two of school life, to be continued if possible by good influences after the boy or girl leaves school. After school life they commence to earn money, some of which they can spend as they choose. During their last school year they have suddenly learnt the dangers of drink, the poisonous properties of alcohol and tobacco. Before this they have by sensible instruction in general hygiene learnt right from wrong; they have learnt to reason, and have acquired self-respect and self-control. If the teaching has been practical and clear the soil will have been prepared and the seeds there sown will take root and bear fruit. In looking over the scheme containing a suggested programme for the teaching of hygiene and temperance, one is struck by the harping on alcohol. Out of the seven clauses contained in Section II. "Topics suitable for children of about 8 years of age," no less than five refer to alcohol, and this is much the same right through the scheme. But it is only when examining the series of books *Physiolcgy and Health* used in American schools that the great proportion of matter devoted to temperance can be appreciated. We may be allowed to question the wisdom of teaching little children the dangers of chewing, smoking and snuffing tobacco, and of opium eating. We quote at random from Number One textbook (for primary classes): "If a person takes opium many times he soon begins to want to take more opium. In this way an appetite for it may be formed. If a person then yields to such an appetite and keeps on taking opium, it will soon do great injury to his health and to his mind," and so on.

In considering this question of hygiene the education authorities are confronted with a greater responsibility perhaps than any they have yet had to take upon themselves, and we trust that the gravest thought will be given to the matter, and that it may be considered from the broadest point of view, always bearing in mind the true aim of education. It was Kant who said, Act as a man, not as an animal or vegetable which is the creature of circumstances; treat brothers, sisters, relatives, in fact all people, as persons, not as things, not as instruments of your own convenience or pleasure. Were teaching animated by this spirit many a boy and girl would be saved from the stigma of the reformatory: it would no longer be necessary to sing paeons of joy over the few lambs saved, yet branded by such institutions as Borstal, which, if effective preventive teaching were given, should not exist.

NOVA ET VETERA.

THE ORIGIN OF CIRCUMCISION.

In the *Independent Review* for November Dr. J. G. Frazer, the well-known author of *The Golden Bough*, discusses the origin of circumcision with reference to certain ceremonies of the Australian aborigines. He takes as his text a number of totemic rites in which a remarkable use is made of the blood of the men of the totem. All the known totems, says Dr. Frazer, with the single exception of a gigantic, but mythical, water snake, are natural objects of one kind or another, and the great majority of them are edible animals or plants. Hence the general result supposed to be accomplished by the magical totemic ceremonies is that of supplying the tribe with food and other necessaries. Oddly enough, at the present day, the men of a totem clan for the most part reap little or no direct benefit from their exertions; for, when their totem is an edible animal or plant, they may not eat of it, or may eat of it but sparingly. For this abstinence they are compensated by being allowed to profit by the exertions of all the other clans. The system is, in fact, a co-operative supply association on a great scale: only, the means taken to ensure the supply are not rational but magical, and the various purveyors of food are, as a rule, forbidden to partake of their own wares.

As an example of ceremonies in which a special use is made of the blood of the men of the totem, Dr. Frazer states that, in order to multiply emus, which are an important article of food, the men of the emu totem in the Arunta tribe proceed as follows: They clear a small space of level ground, and, opening veins in their arms, they let the blood stream out until the surface of the ground, for a space of about 3 square yards, is soaked with it. When the blood has dried and caked it forms a hard and fairly impermeable surface, on which they paint the sacred design of the totem, especially the parts of the animal which they like best to eat—to wit, the fat and the eggs. Round the painting they sit and sing. That is supposed to multiply emus. Men of the Kangaroo totem perform similar ceremonies for the multiplication of kangaroos, and others use a like method to ensure a plentiful supply of carpet snakes and iguanas. Human blood is used for other purposes. Dr. Frazer says that it is a common custom among central Australians to give human blood to the sick and aged with the object of strengthening them. The blood need not be drunk; it is sufficient to sprinkle it on the body of the patient. The blood is drawn from a man or woman related to the infirm person either by blood or by marriage. The idea is always to give strength. Thus, before a punitive expedition sets out to hunt for an enemy, all the

men stand up, open veins in their genital organs and allow the blood to spurt over each other's thighs. This ceremony is supposed to strengthen them mutually, and to knit them so close together that treachery becomes impossible. Sometimes, for the same purpose, blood is drawn from the arm and drunk by the members of the avenging party.

The blood shed in the ceremonies of circumcision and subincision, which all lads of the central Australian tribes have to undergo before they are recognized as full-grown men, is caught in a hollow shield and taken to certain kinsmen or kinswomen, who drink it or have it smeared on their breasts and foreheads. Dr. Frazer conjectures that the object of this practice is to strengthen the relatives who partake of the blood. This interpretation, he thinks, is confirmed by an analogous use in Queensland of the blood drawn from a woman in the operation which in the female corresponds to subincision in the male; that blood, mixed with another ingredient, is kept and drunk as a medicine by any sick persons who may be in the camp at the time. It receives further confirmation from an analogous use of the foreskin removed at circumcision; among the southern Arunta this piece of skin is given to the younger brother of the circumcised lad, who swallows it in the belief that it will make him grow strong and tall. In some tribes, the blood shed at circumcision and subincision is collected in paper bark and buried in the bank of a pool where water lilies grow; this is supposed to promote the growth of these flowers, the stems and roots of which are used by the savages as food. A fertilizing virtue is attributed to the blood. The Anula tribe, who observe the same custom, obviously ascribe the same virtue to the severed foreskin, which they also bury by the side of a pool. The Warramunga place it in a hole, made by a witchety grub, in a tree, believing that it will cause a plentiful supply of these edible grubs. Among the Unmatjera, the boy puts his foreskin on a shield, covers it with a broad spear thrower, and deposits it secretly in a hollow tree. This custom is founded on a tradition that the early mythical ancestors of the tribe placed their foreskins in their Nanja trees; that is to say, the trees from which their spirits came forth at birth, and to which they would return at death. Dr. Frazer thinks the intention of such a custom could hardly have been any other than that of securing the future birth and reincarnation of the owner of the foreskin when he died and his soul returned to the tree which was its dwelling place between two incarnations. The idea apparently was that a man's new birth would be facilitated if in his lifetime he could lay up a stock of vital energy for the use of his disembodied spirit after death, and that this object could be accomplished by detaching a part of himself and depositing it in a suitable place.

In this belief and practice Dr. Frazer suggests that the long lost key to the meaning of circumcision and subincision may be found. It may be conjectured that the blood shed during each of these rites being credited with strengthening and fertilizing virtues was applied, like the foreskin, to lay up a store of energy in the dwelling place of the soul against the time when it would be needed. The intention of both ceremonies, therefore, would be to ensure the future reincarnation of the individual by quickening his local totem centre, the home of his disembodied spirit, with a vital portion of himself. That portion, whether blood or foreskin, was regarded as seed sown that it might grow up and provide the immortal spirit with a new body when the old one had mouldered into dust.

LITERARY NOTES.

We are informed that Her Majesty the Queen, whose interest in sick nursing is well known, has accepted from Mrs. Sarah A. Tooley a copy of her *Life of Florence Nightingale* (Bousfield and Co., London), recently reviewed in our columns.

A special centenary number of the *Edinburgh Medical Journal* will be issued early in January. It will consist of a series of papers on the progress of medicine as reflected in the pages of the journal during the past hundred years.

The *Pall Mall Magazine* now offers for sixpence what it has hitherto given for a shilling. The issue of December 15th shows no reduction in the quantity of its contents, literary and pictorial, and no deterioration in quality. In addition to an article on "London, Old and New," by Mr. John Burns, M.P.; a sketch of Mr. Austen Chamberlain, by Mr. Herbert Vivian, who was at Cambridge with him; an account of explorations in the land of King Solomon's Mines, by Mr. R. N. Hall; the opening chapters of a new story by Mr. H. G. Wells, and other interesting matter, there is an interview with M. Marcelin Berthelot, in which the great chemist speaks in the character of a scientific prophet. He foresees a time not far distant when "chemistry will effect the economical manufacture of foods." There shall be no more chops or steaks. The diet of the human race is to be composed of substances "manufactured with carbon obtained from carbonic acid, with hydrogen extracted from water, and with oxygen extracted from the air." There will be no need either for corn or for cattle, and thus the fiscal question and the agricultural problem will find a solution unexpected either by Free Traders or Protectionists. We shall be warmed by tapping the central heat of the globe by means of shafts from two to three miles in depth. To another interviewer M. Metchnikoff discourses on the virtues of sour milk as the elixir of life. Altogether the *Pall Mall Magazine*, in its cheaper form, holds its place as one of the brightest and most stimulating of our "monthlies."

A committee of French medical men, with Professor Bouchard as Chairman and Dr. Paul Rodet as General Secretary, is engaged in drawing up a medical vocabulary in Esperanto. As we have said several times before, we have no faith in the future of Esperanto, or any artificial language, as a living speech. The arbitrary creation of a medical vocabulary seems to us to present difficulties of an especially formidable character, since the language of medicine, as it is now spoken among men, is in a state of chaos, and the values of terms differ so widely in different countries that it will be almost impossible to reduce them to a common denominator.

The book of Fa-hien, the earliest Chinese pilgrim (405-11 A.D.), translated and annotated by Dr. Legge, is among the publications of the Clarendon Press. Fa-hien spent three years at Pataliputra studying Sanskrit. The capital then possessed "an excellent free hospital endowed by benevolent and educated citizens." "Hither come," says the philosophic pilgrim, "all poor or helpless patients suffering from all kinds of infirmities. They are well taken care of, and a doctor attends them; food and medicine being supplied according to their wants. Thus they are made quite comfortable, and when they are well they may go away." No such foundation, says Mr. V. A. Smith in his *Early History of India*, recently issued from the Clarendon Press, was to be seen elsewhere in the world at that date; and its existence, anticipating the deeds of modern Christian charity, speaks well both for the character of the citizens who endowed it and for the genius of the great Asoka, whose teaching still bore such wholesome fruit many centuries after his decease. The earliest hospital in Europe is said to have been opened in the tenth century.

Mr. Benjamin Harrison, of Ightham, Kent, well-known to geologists and palaeolithologists and to many members of the medical profession who are interested in the records and relics of prehistoric man, as a very successful "flint-hunter," has given within the compass of a pamphlet of twenty pages an outline of the history of eolithic flint implements. Some of these implements seem to have been used for cleansing and rubbing the body and the feet. Similar body stones are in use at the present day among the primitive peoples of Australia and the East Indies, who employ them for the purpose of rubbing down the thickened and indurated skin which on the feet gives rise to callosities and corns and thus cause lameness. Mr. Harrison holds that the evidence is convincing that many of the eolithic implements were made and used by man on the now vanished Wealden hills, either as they originally existed or, as he thinks more probable, in their partially denuded condition; that after being discarded by man they were transported by natural agencies far down the ancient slope of what is now the highest land of the district; and that the former high land whence they were derived has been denuded to the extent of at least many hundreds, and perhaps thousands of feet, since such transportation took place. These conclusions point to an antiquity for the implements which Mr. Harrison says he will not venture to measure in years. The pamphlet is illustrated with drawings of typical specimens of implements and geological sections of the district in which they have been found.

The rat, if never exactly looked upon as a friend of man, was for a long time tolerated as a useful scavenger. Now he is regarded as a nuisance, with a highly-developed talent for self-multiplication which makes him formidable, and he is further known to be a potential disseminator of deadly disease. Therefore we no longer, like the eighteenth-century poet, invokes the Muse to inspire us to sing of him, but we ask the aid of science to rid ourselves of his hated and baleful presence. The problem is not an easy one, for his procreative

capacity has hitherto made him more than a match for the most destructive agencies of the laboratory. A method of dealing with the rat problem is described in the January number of the *World's Work and Play* by Mr. A. Pitcairn-Knowles. In Paris there is a "Ratodrome," or school of rat-catching, where dogs are trained to hunt and kill rats. The Vilie-Lumière, according to a recent estimate, has 4,000,000 rats within its walls. Last year 1,735,000 of these rodents were destroyed, a result largely due to the skill of dogs trained in the "Ratodrome." From all parts of the rat-haunted capital enthusiastic adherents flock to the school with its quaint arena and huge rat-cage, where "Monsieur le Professeur" awaits his pupils, whatever breed they may represent—poodles, fox-terriers, borzois, greyhounds, pointers, pugs, or bulldogs. It is all the same to him; sooner or later they will all acquire the useful art of despatching their fur-coated antagonists, and thus assist in freeing Paris of its millions of rats. The training involves no cruelty to the dogs.

KING EDWARD'S HOSPITAL FUND FOR LONDON

A MEETING of the General Council of King Edward's Hospital Fund for London was held on December 19th, at Marlborough House, for the purpose of awarding grants to the hospitals and convalescent homes for the present year, H.R.H. THE PRINCE OF WALES being in the chair.

ACCOUNTS FOR THE YEAR.

The minutes of the last meeting having been read and confirmed, Lord ROTHSCHILD, the honorary treasurer, stated that the funds received for general purposes up to December 13th amounted, after payment of expenses, to £67,000 18s. 11d.; in addition the League of Mercy would provide £14,000. On the last corresponding occasion the Council had thought it right to trench on its reserves so as to increase the contributions to the hospitals for the year to £100 000, but this year it proposed to distribute only the money which it had in hand, and not to trespass further upon capital. He regretted that the regular contributions to the Fund showed very little difference, but the League of Mercy had been very active, and was able to supply more than before.

REPORT OF THE EXECUTIVE COMMITTEE.

After Sir H. BURDETT had given an account of the working of the League of Mercy, and of the way in which its shilling subscriptions—contributed at the rate of a penny a month—were resulting in a steadily-increasing collection, Mr. H. C. SMITH presented the report of the Executive Committee. It recommended the distribution of £79,000 to the London hospitals, making, with the £1,000 entrusted to the Fund by the London Parochial Charities for the convalescent homes, a total distribution of £80 000. Regret was expressed that the Committee had been unable to meet the conditions imposed by the anonymous person who, through H.R.H. the Prince of Wales, had made a munificent offer designed to raise the permanent income of the Fund to £50,000 a year. Doing so would have entailed the raising of a sum of at least £300,000, and for various reasons the Committee had thought it inadvisable to attempt to collect this sum from the general public; no opportunity, however, had been lost of bringing the matter to the notice of persons commonly in contact with the Fund, and three appeals had also been made by means of letters to the newspapers. Reference was also made to the appointment of a special Committee, consisting of Lord Welby, Sir Edward Fry, and the Bishop of Stepney, to inquire into the financial relations of hospitals and their medical schools. The publication of its report might be expected by the end of the year.

REPORT OF THE DISTRIBUTION COMMITTEE.

Sir WILLIAM CHURCH, Chairman of the Hospitals Distribution Committee, then read its report. This year it had had placed in its hands £79 000, and in considering the grants which were recommended it was to be remembered that this sum was £20,000 less than last year, when some £18,751 were withdrawn from the capital account of the Fund, and placed at the Distribution Committee's disposal.

Special Hospitals.—In 1903 the Committee had set aside £10,000 to be drawn on as required, for the expenses incidental to the amalgamation of certain orthopaedic hospitals. The National Orthopaedic and the Royal Orthopaedic Hospitals had fallen in with this most desirable scheme, but, much to the regret of the Committee, the City Orthopaedic Hospital still stood out against it. In consequence, the Committee felt bound to recommend the withdrawal from this hospital of the annual grant of £250; inasmuch, however, as that sum had been given for the maintenance of the beds originally reopened by the Fund, it felt bound to cover the cos of those beds up to the end of the current year by a donation of £250, but reserved entire freedom of action as to the course which it would recommend next year. The Committee also stated that the opening of new special hospitals was undesirable, and that it would feel it to be its duty to discourage any efforts in this direction.

Hospitals and Medical Schools.—It was suggested that attention should be directed to the demands made on hospital accommodation by affording instruction in the Medical Schools in certain preliminary subjects; provision for it could be better made elsewhere.

St. Bartholomew's Hospital.—Application had been received from St. Bartholomew's Hospital for a grant towards its rebuilding fund, accompanied by an intimation that when the necessary money to reconstruct the hospital had been collected no further appeal would be made for assistance. The Committee having no precedent to guide it and being in doubt as to its powers to make a grant under such circumstances, referred the matter to the Executive Committee, which replied that in its opinion the King's Fund could not properly be devoted to capital expenditure on behalf of hospitals possessed of endowments substantially adequate to their maintenance, since such a departure would preclude the regular practice of the fund of associating contributions with annual inspection. In view of this instruction the Distribution Committee regretted that it had no power to consider the application from this ancient foundation, the work of which had for so long a period been of the greatest value to the sick poor of London. It desired to add that the hospital had been inspected by the Fund and the report received by its Visitors was favourable.

Sundry Observations.—The number of beds reopened by the Fund since the commencement of its work was 443. The Committee had again done its utmost to show appreciation of the scheme for the removal of King's College Hospital to South London. The utility of the Visitors' reports continued to be great, and in addition to its published remarks the Committee had followed the practice of making private suggestions to some of the hospitals, the expenditure of which appeared to be excessive. The list of proposed awards was then read.

CONVALESCENT HOMES.

The report of the Convalescent Homes Committee was read by Mr. F. M. FRY. It stated that the plan of making fairly substantial grants to a limited number of institutions had been continued, and expressed the opinion that the expenses of convalescent homes should be kept separate from those of the hospitals in connexion with which they worked. Grants were made to fifteen homes, and varied in amount from £25 to £200.

ADOPTION OF THE REPORT.

In moving the adoption of the reports read, H.R.H. THE PRINCE OF WALES said that he noted with pleasure that, as they were receiving a larger sum than had been anticipated from the League of Mercy, it would not be necessary to draw on the reserves in order to distribute £80,000 this year. It had been feared that this might have been required, but actually there would be a small surplus which would go toward replacing the sum withdrawn last year. The League of Mercy was growing in strength and popularity, and he would like to congratulate those whose labours had produced this result. The Fund could easily distribute £150,000 to hospitals which needed and would make good use of the money, but they had not got it; nevertheless, he thought means might be found of increasing the amount at the disposal of the hospitals for carrying on their ever-increasing work. If the expenditure of the hospitals could be decreased without impairing their efficiency, the result would be even more satisfactory than an increase in the money subscribed. Some of the hospitals certainly failed in point of economy. This was a matter of the utmost importance, and one with which the Fund very properly concerned itself. A statistical report had been prepared showing the expenditure of sixteen of the largest general hospitals, those which together received more than half the sums distributed by the Fund last year. This report gave the average expenditures of these hospitals on certain branches of expenditure over which control existed. The aggregate value of the sums paid in excess of these averages amounted to no less than £39,000 in the year 1903. All that sum could not be

saved at once, but every hospital should make sure that no other institution was doing the same work as itself, in similar circumstances, and equally well, but at a lower cost. The discrepancies in some of the prices paid for things commonly bought was remarkable. For instance, there was a difference of 3½d. per lb. between the highest and lowest prices paid for the same description of beef, of 3½d. as regards mutton, of 1s. 1d. in the price of fowls, of 2½d. per gallon of milk, of 7d. per lb. as regards tea. In drugs and household articles there were similar discrepancies; there might be a reason for them, but inquiry should be made. Many of the smaller hospitals might also with great advantage combine together to make large contracts for supplies, and in such combination the Executive committee would give its assistance. As for the question of hospitals and medical schools, it had been raised by the anonymous donor to whom reference had been made, and some doubt upon the subject also existed elsewhere. There were proper considerations which might be urged both for, and against, a contribution from the general funds of a hospital to those of its medical school, and a decision on the point could not be given off hand. A committee had therefore been appointed which was receiving every assistance from those able to set before it every side of the question. He thought, therefore, that they had shown their subscribers that they were endeavouring to lay out the money entrusted to them economically and properly, and that they were ready to endeavour to assist in the solution of any vexed questions which might arise, whether in respect of administration, reconstruction, removal, or amalgamation. The question of how to increase their income, and with it the incomes of the hospitals, still remained, but would be answered if the working of the Fund were appreciated by the public at its proper value. As for the offer of the anonymous donor, he did not know if it would be kept open for another year, but, if it were, he hoped that those who desired to see gifts wisely and economically distributed would help them to accept the offer. In conclusion he desired to express the obligations of the Fund towards the members of the various committees, to the honorary secretaries, and especially to one of them, Mr. Danvers Power, for his able statistical report on hospital expenditure. Before resuming his seat, the Prince of Wales added that the King desired him to express his unabated interest in the work of the Fund which he had started, and that as regards the satisfactory increase in the collections of the League of Mercy, he noted with pleasure that one of the largest increases was in a district the lady president of which was a member of his own family.

The motion for the adoption of the report having been seconded by the Lord Mayor and supported by Mr. Edgar Speyer, the application from St. Bartholomew's Hospital was mentioned by Sir Joseph Dimsdale. There were other well-endowed hospitals which received grants, and he could not see in what way it would have been inconsistent to make one to St. Bartholomew's. He was answered by the Chairman of the Executive Committee, who said that it was understood that, once the present needs of St. Bartholomew's had been met, the hospital would require no further assistance from the fund. If, therefore, a substantial grant from the Fund had been made it would not have carried with it the right of future inspection, and the latter was an indispensable condition of grants from the Fund.

The report having been adopted, the Bishop of Rochester moved a vote of thanks to His Royal Highness for presiding. An assurance, he said, of economy and efficiency on the part of the charitable agencies which the public was asked to assist was a great help towards the collection of funds, and what their President had said showed that the King's Fund was doing everything possible to provide that assurance.

His Royal Highness having briefly acknowledged the vote of thanks, the proceedings terminated.

Grants to Hospitals.

It is impossible to spare space for a complete list of the hospitals to which grants have been made, but the following selection will convey a conception of the principles upon which grants have been awarded or withheld. The Distribution Committee noted in its report that the absence of a grant did not necessarily imply dissatisfaction with the institution affected:

Central London Throat and Ear Hospital.—Donation, £300. Note: The Committee would view with satisfaction an amalgamation of the Throat and Ear Hospitals.

City of London Hospital for Diseases of the Chest.—Annual grant, £1,500; donation, £750. Note: £1,500 annual to support beds reopened by this Fund.

City of London Lying-in Hospital.—No grant. Note: An institution doing excellent work.

Eltham and Mottingham Cottage Hospital.—Donation, £25. Note: An institution deserving of support.

Free Home for the Dying, Clapham Common.—No grant. Note: The Committee are pleased to see that this useful institution is well supported.

French Hospital, 172, Shaftesbury Avenue, W.C.—Donation, £100.

German Hospital, Dalston Lane, N.E.—Donation, £150. Note: Towards new mortuary and *post-mortem* room.

Great Northern Central Hospital.—Annual grant, £750; donation, £1,000. Note: £750 annual to maintain beds reopened by this Fund, £250 for improvements now in hand.

Home and Infirmary for Sick Children, Sydenham Road, Lower Sydenham, S.E.—Donation, £25. Note: Towards cost of balcony.

Hospital for Consumption, Brompton, S.W.—Donation, £350. Note: Towards ward furniture.

Hospital for Diseases of the Throat, Golden Square, W.—Donation, £100. Note: The Committee would view with satisfaction an amalgamation of the Throat and Ear Hospitals.

Hospital for Women, Soho Square, W.—Donation, £1,100. Note: To maintain beds reopened by this Fund. The Committee draw attention to the desirability of removing this hospital to another site.

King's College Hospital, Portugal Street, Lincoln's Inn, W.C.—Annual grant, £1,000; donation, £3,500. Note: £2,500 to the Fund for removal of the hospital to South London, which the Committee view with great satisfaction.

London Throat Hospital, W.—Donation, £50. Note: The Committee would view with satisfaction an amalgamation of the Throat and Ear Hospitals.

Metropolitan Ear, Nose, and Throat Hospital.—No grant. Note: The Committee are unable to make a grant to this institution as a hospital, but would be prepared to consider a grant in the event of amalgamation with the other Throat and Ear Hospitals.

National Hospital for Diseases of the Heart.—Donation, £15. Note: To complete cost of *x*-ray apparatus.

National Orthopaedic Hospital.—Donation, £400. Note: This grant is given pending the amalgamation with the Royal Orthopaedic Hospital, which the Committee view with great satisfaction, and for which a special sum is set aside.

North-West London Hospital.—Donation, £500. Note: The Committee again urge that immediate steps be taken to provide funds, not only to maintain but to rebuild this hospital.

Passmore Edwards' Acton Cottage Hospital, Gunnersbury Lane, Acton, W.—No grant. Note: The Committee are glad to say that it does not require help from the Fund this year.

Royal Ear Hospital, Frith Street, Soho Square, W.—Donation, £500. Note: To building. The Committee would view with satisfaction an amalgamation of the Throat and Ear Hospitals.

Royal Free Hospital, W.C.—Annual grant, £750; donation, £1,500. Note: The Committee are glad that the improvements previously referred to have been carried out.

Royal London Ophthalmic Hospital.—Annual grant, £2,000; donation, £2,000. Note: The Committee consider this hospital should receive more support from the public.

St. Barnabas Hospital, 9, Lloyd Street, W.C.—No grant. Note: This institution does not appear to come within the scope of the King's Fund, not being managed by a duly appointed Committee.

Salvation Army Maternity Hospital, Ivy House, 271, Mare Street, Hackney, N.E.—No grant. Note: The Committee cannot continue to support this institution in its present condition.

University College Hospital.—Annual grant, £1,000; donation, £2,000. Note: The Committee trust that this hospital will now be able to reopen the remaining 19 closed beds.

Victoria Hospital for Sick Children.—Donation, £1,400. Note: The Committee trust that the vacant wards will shortly be opened for free patients.

West End Hospital for Diseases of the Nervous System.—Donation, £125. Note: Towards balcony.

Open Spaces.—The Metropolitan Public Gardens Association has recently issued a report which contains an interesting record of the work done by it during the twenty-one years of its useful existence. In addition to promoting steps to secure large parks and other open ground in the suburbs and elsewhere, it has contributed largely towards the supply of trees and seats in public places; it has also constantly to be on the watch against attempts to absorb air spaces into building ground. The work which it has helped to do is of marked value from a hygienic point of view, and the possibilities of valuable work are by no means exhausted. Financially it would seem to be fairly well off, but since legal proceedings in defence of the public rights have occasionally to be taken the Association would be greatly strengthened by additions to its reserve fund. It transacts its business at 83, Lancaster Gate, W.

MEDICAL NEWS.

Medical Magistrate.—Dr. R. A. Shelton Daly of Manchester has been appointed to the Commission of the Peace for that city.

Lord Strathcona and Mount Royal has promised to preside at a Festival Dinner, at the Whitehall Rooms, in aid of the National Hospital for the Paralysed and Epileptic, on April 13th next.

A Noble Lady Dentist.—The dental profession of Germany has received a new recruit who is notable for the twofold reason that she belongs to the fair sex and is a member of the nobility in a country where quarterings are thought more highly of than they are even in this tuft-hunting island. The Countess Helene von Schweinitz is said to have passed a very satisfactory examination.

Bequests to Medical Charities.—Under the will of the late Hon. Pascoe Charles Glynn, who died on November 3rd, the Royal Hospital for Diseases of the Chest, City Road, and the Home for the Dying, Clapham Common, each receive £1,000. The Royal United Hospital at Bath was left £50 by the late Miss Eliza Fuller, of the same town. Mr. Leonard Brierley, of Edgbaston, who died on October 28th, left £100 to the Queen's Hospital, Birmingham.

Until recently not very much attention was given to hygienic principles in the construction of theatres. The aim seems to have been to cram as many spectators as possible into the available space, and to let ventilation and even ordinary cleanliness take their chances. On the site of the old Prince of Wales's Theatre off Tottenham Court Road Mr. Distin Maddick F.R.C.S.E., has built a fine house which for lightness, airiness, comfort, and attention to sanitation marks a great advance. Moreover, many an old theatre was as inflammable as a bandbox; the new La Scala is built of concrete, iron, and marble, and has numerous exits. A large party inspected the house on Monday last, and Lady Bancroft, whose early success was achieved in the old theatre, made a speech, in which she praised the plans and arrangements of its successor.

Medical Fees in Berlin.—The question of the reform of the tariff of fees for medical attendance has for some time past been discussed by several medical associations in Germany. The Committee of the Medical Protection Association of Berlin has recently adopted resolutions to the following effect: (1) Fees for medical attendance must as a rule be paid immediately after the practitioner has given up active charge of the case; (2) certificates and reports for private purposes are to be given only on the understanding that they are to be paid for at once; (3) night consultations given, or night visits paid, to strangers, are to be paid for at the time. Already 700 practitioners have agreed to accept these resolutions as binding. They are to be brought to the notice of the public by repeated advertisement in a conspicuous manner in the newspapers.

Presentation.—On November 30th, Dr. D. C. Martin of Stourport, Worcestershire, was presented with an illuminated address and silver salver by his former patients on the occasion of his leaving the place, after a residence of seventeen years, to take up practice elsewhere. The address contained an expression of regret on his leaving Stourport, references to the high esteem and respect in which he was held, and cordial wishes for his future happiness and success. The Vicar of Stourport, in making the presentation, bore testimony to the great kindness Dr. Martin had always displayed, particularly towards the poor. Dr. Martin was also presented with a Past Master's jewel by the Vernon Lodge of Freemasons, and with a gold ring by the members of the Stourport Bowling Club.

International Congress on Home Assistance.—At the Third International Congress on Home Assistance, which was held at Edinburgh last June, it was decided that the fourth meeting should take place at Liége in 1905. The programme, which has been drawn up by the General Secretary, Dr. Déperon, Director of the Colony for the Insane at Lierneux, has just been published. The Congress will be under the patronage of MM. Van der Heuvel, Belgian Minister of Justice; Van der Bruggen, Minister of Agriculture; Gerard, French Minister; Cogels, Governor of Antwerp; Petz de Tozée, Governor; and Kleyer, Burgomaster of Liége. The President of the Congress will be M. J. Le Jeune, Minister of State, and the Presidents of Sections will be Dr. X. Francotte, Professor of Pathology and Psychiatry in the University of Liége; Dr. Kuborn, Member of the Belgian Academy of Medicine; M. Silvercruys, Councillor of the Court of Appeal; and M. Thiry, Professor of Criminal Law in the University of Liége. The work of the Congress will be divided among four Sections: (1) Women and Children; (2) Healthy Adults; (3) Sick Adults; (4) Old People and Incurables. The questions proposed for discussion are, in the first section, family puericulture, mutual family help for mothers, obstetric assistance in the home; in the second, family assistance for alcoholics, family care of convalescents; in the third, family care of lunatics, lunacy legislation, home care of tuberculous patients; in the fourth, home care of the aged, home care of the infirm (deafness, blind, epileptics); comparison of Poor-law and home care of the aged.

The Cause of Pneumonia.—Dr. Biehn, Director of the Laboratory of the Health Department of Chicago, has reported to the New York Pneumonia Commission that he has recently confirmed certain experiments, carried on by him during a number of years, which convince him that the cause of pneumonia is a mixed infection. He finds that rabbits injected intravenously with the sputum of a healthy person never develops pneumonia, but that an animal injected with the mixed sputa of two or more persons invariably falls sick of a pneumococcal infection. He considers that these results demonstrate, among other things, that pneumonia germs are very widely diffused; they are present in the secretions of the mouths and throats of most healthy individuals, but remain dormant until mixed with germs from other mouths; then they become active and dangerous.

Medical Graduation in France.—The total number of State diplomas of doctor of medicine given in France during the academic year, 1902-3, was 1,115, being less by 15 than the number for the previous year. For several years the number has fluctuated between 1,100 and 1,150. Probably, however, the diminution in the output of graduates is only temporary, as the number of students has increased from 1 522 in 1902 to 1,561 in 1903 and 1,646 in 1904. Moreover, if the figures for the several universities of France are examined, it will be seen that it is only in Paris and Toulouse that there has been any diminution in the number of medical graduates. While in Paris the number has fallen in the last three years from 679 to 546, and in Toulouse in the same period from 58 to 34, at Bordeaux it has increased from 84 to 158, at Lille from 30 to 52, at Lyons from 185 to 199, at Montpellier from 92 to 97, at Nancy from 22 to 29. The total number of degrees conferred by all the universities of France fell in three years from 1,150 in 1900-1 to 1,115 in 1902-3.

The French Government and its Medical Officers.—The French Government would seem to be of weakly constitution, if we may judge from the number of physicians required to minister to the needs of the officers of its various departments. Without taking into account the fairly large body of medical members of the Senate and Chamber of Deputies, there are no fewer than sixty medical officers specially appointed to watch over the health of the administration. The Ministry of the Interior has four all to itself, a circumstance suggestive of a condition of chronic invalidism, all the more remarkable since its official head, M. Combes, is himself, *formaliter* at least, a member of the medical profession. The Ministry of Justice is content with one, that of Public Instruction with two. The Foreign Office has four, a number which does not appear excessive in view of the shocks to the nervous system of officials which must be, like the language of Bret Harte's miner, "painful and frequent and free" in these times of daily-recurring complications. The Treasury rejoices in six medical officers, which may perhaps be taken as a recognition of its particular importance. The Department of Public Works has seven, which may be accounted for by its very large *personnel*. The Post Office has a small army of medical officers, comprising twenty-seven doctors, five "doctoresses," and two surgeons. Besides the vastness of the Post Office staff, nervous disturbances of one kind or another are said to be extremely frequent among the lady functionaries—to give them the title which, according to a legal decision, properly belongs to them—of the telephone service, who, in addition to the strain of their work, are exposed all day to the bad language of the public. The Ministries of War, Marine, and Colonies have at their disposal medical officers belonging to the services under their control, while those of Commerce and Agriculture are apparently able to do without doctors.

BRITISH MEDICAL ASSOCIATION.

SUBSCRIPTIONS FOR 1904.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, DECEMBER 24TH, 1904.

SURGERY AND CIVILIZATION.

If civilization does not create the need for surgery, it immensely increases the range of the applications of the art. Prehistoric man, who broke his enemy's head with the thighbone of an ancestor, must have learnt some elementary facts about the structure of the human body by that rough experimental method; he had also theories of disease which led him to make holes in the skull with his flint implements to ventilate the brain and let loose evil spirits. The progress of civilization gave him more effective weapons and corresponding opportunities of enlarging his knowledge of wounds. De Quincey says that Homer knew enough about wounds to qualify him for the post of house-surgeon at a London hospital. The invention of gunpowder, again, brought with it, together with new types of wounds, new developments of surgery. Advancing civilization also carries with it, like an army on the march, seeds of disease by the growth of which it is always in danger of being undermined. While, on the one hand, the physical conditions produced by civilization make the need of surgery ever more imperative, and thus tend to promote its perfection, on the other the ever-increasing multiplicity and severity of the diseases with which the surgeon has to contend make greater demands on the resources of his art, and render its imperfections more manifest. It may therefore be said that there is a race between civilization and surgery, and it must be confessed that the issue is still doubtful.

An interesting exposition of some of the evil effects of civilization from the surgeon's point of view was given not long ago at Guy's Hospital by Mr. Arbuthnot Lane.[1] He considered the question with the object of discovering what price in physical deprecciation members of the community pay for the advantages derived from civilization. He points out that in crowded communities a considerable proportion of parents have been reduced below a standard of reasonable size, vigour and health, and he contends that their children at birth consequently possess these qualities in a correspondingly subnormal degree. In infancy improper food causes disturbances of the gastro-intestinal tract with consequent imperfect nutrition. The inadequate supply of nutritive material lowers the power of resistance to the entrance of organisms. The abdomen is distended, and fluid or intestine, or both, are driven along the lines of least resistance, giving rise to various forms of hydrocele or hernia. The distension of the abdomen also interferes with the entry of air into the lower part of the chest, and the consequent diminution in the oxygenation of the blood and tissues impairs still further the digestive and nutritive function. The most serious result of indigestion, according to Mr. Arbuthnot Lane, is the mechanical interference with the passage of the intestinal contents and their prolonged sojourn, especially in the large bowel, which he calls the cesspool of the alimentary tract. The most important part of this cesspool is the caecum and ascending colon. Into this segment the small intestine pours its contents, and during the prolonged maintenance of the erect or sedentary posture, which is one of the conditions of civilized life, the cesspool may become very considerably enlarged and distended. This tendency, which is more marked in woman than in man, is greatly exaggerated by the straining which takes place in defaecation. The form of water-closet in common use is, he thinks, largely responsible for this descent and for the production of inguinal and femoral hernia. The squatting position adopted by man in a state of nature obviates these evils. As a consequence of distension, the walls of the intestine become slightly inflamed, and adhesions form between the outer aspect of the caecum and the adjacent abdominal wall, by means of which the upper part of the caecum and ascending colon are fixed and their mobility diminished. Hence the muscular coat becomes progressively thinner and less capable of performing its function of emptying the cesspool by propelling the contents. The tender and inflamed caecum interferes by its presence, and afterwards by an extension of the inflammatory process, with the function of the bladder and with the position and delicate movements of the ovaries and Fallopian tubes. Constipation appears to Mr. Arbuthnot Lane to be largely responsible for the sterility which is so common among women. The movements of the caecum during its distension exert an important influence upon the exit of the secretion from the distal portion of the appendix, which may be more or less completely obstructed by kinking. Such obstruction may result in an acute inflammation of the distal part. Mr. Arbuthnot Lane says the more frequent occurrence of severe inflammation of the appendix is possibly due to the fact that in the present day doctors do not always administer at the onset of symptoms a blue pill and a black draught, or some similar drugs, as used to be the routine practice, but generally confine themselves to watching symptoms and carefully avoiding any interference with what they consider the natural course of the disease.

The conditions of the large bowel which result from chronic constipation may, Mr. Lane holds, be dealt with surgically by the severance of adhesions or bands which bind it down and constrict it, or by division of the ileum at its lower limit and its introduction into the sigmoid or rectum. When after the establishment of an opening of the ileum into the lower limit of the large bowel there is still much pain associated with distension of the caecum and ascending colon by gas, this segment of the large bowel may with advantage be excised.

Mr. Arbuthnot Lane appears to hold with Metchnikoff that in a physical sense man's worst enemy are those of his own household, and especially his large bowel. That his deliverance from that incumbrance would make for human progress in the moral order can easily be believed, for the "cesspool" is to an incalculable extent the breeding ground of error, intolerance, superstition,

[1] *Clinical Journal*, November 9th.

fanaticism, cruelty, and mental obliquity of the most diverse kinds. If the disturbing influence of indigestion could be removed, one of the greatest hindrances to the advance of civilization would disappear. On the other hand, we must not overlook the fact that it is civilization which has been the principal cause of indigestion, and it may therefore be feared that it will continue to operate even after the sacrifice of the large bowel. Man as he reaches higher degrees of civilization may have to part with his small intestine and even with his stomach, an organ which recent triumphs of surgery have shown not to be essential to life. There will be the less need of a digestive apparatus as, if we are to believe the oracles of science delivered through the mouths of its prophets, M. Berthelot and Professor Ray Lankester, a time is coming when we shall no longer eat flesh or fish, or even milk and vegetables, but exist more or less beautifully on products of the chemical laboratory administered in pills and tabloids.

If we pursue the premisses here indicated to their logical conclusion, we find a new world opened out to the civilizing agency of the surgical knife. It has already been suggested that the appendix should be removed in every infant as a routine measure of prevention. But in view of the manifold dangers entailed by civilization, this is clearly insufficient. The prophylactic surgery of the future, if it is to develop in accordance with this teaching, must include within its scope the removal or obliteration of canals and cavities where microbes most do congregate; the sealing up of hernial orifices; and the clearance of the upper respiratory passages of tonsils and turbinate bones. The too readily decaying teeth provided by nature will be replaced at the earliest opportunity by artificial dentures; and the use of properly adjusted spectacles will be enforced in childhood to compensate for the diminution in visual acuity which is a penalty of progress and to obviate the unnumbered woes attributed to eyestrain. Early indications of deficient moral sense will be dealt with by the new brain surgery of which whispers have already reached this benighted country from the cradle of invention across the Atlantic, and the potential criminal and degenerate will be sterilized in good time before there is any chance of the taint being propagated.

Thus protected against the perils of civilization the man of the coming centuries will be able in his journey through life to defy, with the cheerfulness of a *vacuus viator*, the countless enemies that seek to rob him of health. In any case he will be prepared from the outset of his career to enter on the last scene of all—

Sans teeth, sans eyes, sans taste, sans everything.

AN ARMY MEDICAL RESERVE.

AMONG the striking object lessons presented to us by the late war in South Africa was the need of an efficient and adequate reserve for the Army Medical Service, so that the Royal Army Medical Corps might be able to expand, and thus meet the increased strain thrown upon it in time of war.

In attempting to solve this difficult problem it is clearly essential to bear in mind two points: One is that the expansion of the Royal Army Medical Corps in time of national emergency must be so organized that it is productive of the least amount of friction and dislocation to the working of the military and civil sections of the medical profession; the other is that there must be no division of control as to the manner of carrying out and utilizing the expansion of the medical corps in war time—in other words, the sole authority governing the immediate and remote results of expansion on mobilization must be vested in the Royal Army Medical Corps itself.

It is more particularly to the second point that attention needs to be devoted at the present time, as in the only two serious attempts to propound a scheme of military medical expansion for war times, this principle is insufficiently realized. We allude to the strikingly able and thoughtful paper by Lieut.-Colonel Coates, which appeared in the October number of the *Journal of the Royal Army Medical Corps* (vol. iii, p. 408), and to the scheme sketched out by Dr. George Stoker in a letter to the *Times*. There is internal evidence in Lieut.-Colonel Coates's article that he has suffered from that bane of our War Office system, which permits different sections of the army to work like moles in the dark—one branch not knowing the thoughts, aims, and efforts of other cognate and closely-related branches; in other words, our military system is like a ship divided into water-tight compartments. We have read his article very carefully, but put it down with the conviction that he has been obliged to think out his solution of the problem for himself and without being in close touch with official thoughts, aims, and schemes at army head quarters. Had there been that ideal relationship between the Officer Commanding the Manchester Volunteer Companies of the R.A.M.C. and the medical branch of the War Office, we think his proposals would have taken a slightly different form, and that they would have been for the evolution and transformation of the existing volunteer medical units on the same lines as those about to be inaugurated for the regular medical units. This state of affairs should not be, and we hope that some way may be found for a better utilization and co-ordination of that constructive critical ability which undoubtedly exists in both the regular and auxiliary medical services.

Dr. George Stoker may be congratulated on the ingenuity and apparent effectiveness of the suggestions he has made in his letter to the *Times* for the founding and organization of military general hospitals in connexion with the large civil general hospitals, but mature consideration compels us to say that we think the principle unsound. It means an overlapping of authority and a two-fold control, military and civil. The equipments for as many general hospitals as, we believe, the army is likely to need on mobilization, are in existence in the mobilization godowns at Woolwich, but what does not exist, or rather is not readily and automatically available is the *personnel* for those general hospitals. The Royal Army Medical Corps at its present establishment certainly cannot supply the staff for these general hospitals as well as for the various stationary hospitals and the field ambulances: in time of a great war at least half must be provided from civil sources.

It is precisely in this direction that action should be taken at the present time. The object must be to secure and retain the services of numbers of young medical men suitably trained, by whom the vacancies in the *personnel* of the military general hospitals, on mobilization, may be automatically and rapidly filled. This would involve the giving of a small retaining fee to individuals of approved quality for a short term of years—say three to seven—in return for which the War Office will demand instant service on a call to arms, and also some practical evidence during peace time of military medical

efficiency in the form of attendance, probably for a week's training at some garrison centre. We would hope to see active steps taken on these lines without delay. A definite scheme was, we understand, drawn up many months ago, and while it has been reposing in the pigeonholes of the Army Council valuable time and valuable men have been lost. Were a good scheme promulgated there can be no doubt that the response from the very best young men in the profession would be worthy of both the army and the country. The direction of the Army Medical Service is now passing into new hands, and we ask, with no uncertain voice, that this grave and urgent question may be dealt with promptly and comprehensively. We fear that it is true that at the present moment the Service is far less ready to meet an emergency than it was at the close of the South African war.

THE REPORT OF THE INSPECTOR UNDER THE INEBRIATES ACTS.

Dr. Branthwaite's reports on the work of his department become of greater general and special interest with each succeeding year. Each new report records fresh indications with regard to the pathology and treatment of the inebriate condition, and also much valuable information as to the various abnormal and degenerate types of human being whose inebriety, although but one of many gross morbid features of their case, has brought them for the first time under proper scrutiny and control. This is especially true of the report just issued.[1]

Probably no other class of "submerged" men and women possess a better chance of coming again to the surface than those who have the good fortune to find themselves inmates of the reformatories provided under the Act. These men and women numbered at the end of 1893 1,012, as against 88 under detention five years previously, and were to be found in nine different institutions, as against 4 in 1899. The arrangements for the proper classification and treatment of these persons is already admirably complete, and it speaks volumes for the high ideals of those responsible for the working of the Act that they are not yet satisfied. Under the existing system there is no one individual of the thousand under detention who may not, if he respond to the efforts made on his behalf, month by month improve his own chances until he steps outside the reformatory in an entirely different position from that in which he entered it. No sick man, mentally or bodily, escapes diagnosis, and no insane man remains long without being mercifully relegated to his proper place.

One of the most highly interesting sections of the report deals in detail with the physical and mental conditions of these persons as observed in the reformatories where they are under control and their real state unconcealed by drink.

The physical condition of the whole class is surprising. The instances of serious disease are remarkably few. The report says: "There has been one clear case of chronic Bright's disease. Many inmates have been admitted suffering from symptoms of hepatic congestion accompanied by liver enlargement, slightly jaundiced conjunctivae, and habitual constipation. But there has been no case of liver trouble which has not subsequently improved and apparently disappeared under treatment. Notwithstanding the fact that more than a thousand of the worst drunkards in the country have been admitted to reformatories up to the end of last year, we have not been able to record one typical case of cirrhosis of the liver. Not one patient has required treatment for haematemesis, not one case of marked jaundice has occurred, and no instance of ascites or other symptom of serious portal obstruction has come under our notice."

The inspector further notes the very small proportion of venereal disease among the cases.

The mental aspect of these cases discloses, however, a much more disquieting state of matters than the physical. The report says: "There is no doubt whatever in detaining and treating the majority of persons sent to us under the Inebriates Act that we are dealing mostly with those known (for want of a better term) as "feeble-minded," not amenable to any jurisdiction in lunacy, but nevertheless to a certain degree irresponsible, and, in consequence, a danger and constant burden on the community. There are, of course, many rational beings in reformatories, otherwise it would be dreary and hopeless work; but, in my opinion, it would be difficult to find more than a third who are capable of passing muster as quite sane as compared with persons of average mental capacity."

The report goes on to give a most interesting account of the types of mental abnormality found in the reformatories corresponding to their prototypes found in asylums —melancholia, dementia, mania, etc. It further says: "We are finding that the mental condition of an individual is a true indication as to his reformability or otherwise." The careful research that has been made by the inspector in this direction, aided by frequent consultations with the superintendents and medical officers of reformatories, is deserving of the highest praise.

The inspector lays great stress on the necessity of completely separating the quiet, well-disposed reformable cases at all times and in all institutions from the ill-behaved, violent, half sane and practically irreformable cases. In the section of his report dealing with the cases in licensed retreats, the inspector gives it as his opinion that their usefulness is at the present time impeded by the tendency to resort to the various secret remedies sold in this country. He found that 37 per cent. of all persons admitted to retreats in 1903 had previously submitted to treatment by secret remedies.

The question of the financial aspect of reformatories to the community is one of practical importance, and is treated at some length in the report. It is proposed to refer to it separately on another occasion.

[1] Report of the Inspector under the Inebriates Acts, 1879 to 1900, for the year 1903. London: Eyre and Spottiswoode; Edinburgh: Oliver and Boyd; and Dublin: E. Ponsonby. 1904. 1s. 5d. (Cd. 2285.)

THE TEACHING OF PATHOLOGY AT OXFORD.

The meeting of the Oxford medical graduates in London on Tuesday last was presided over by Sir William Church, and among those present were Sir John Burdon Sanderson and Drs. Acland, Champneys, Collier, and Theodore Williams. Altogether between thirty and forty attended, and many letters of regret and inability to be present were received; a cablegram from Egypt was read from Dr. Armand Ruffer strongly supporting the movement and wishing its success. Sir William Church explained that after the laboratories had been built through the munificent gift of a graduate, Dr. Ewen Frazer, the University found itself unable to provide a sufficient annual subsidy. The Reader in Pathology, who was in charge of the laboratory, had an allowance of £300 a year only from the common University fund, and the fees of students

were entirely absorbed in paying for the ordinary working expenses of the department. The Reader, Dr. Ritchie, had kept on other professional work, but had recently intimated that he felt it desirable to devote himself entirely to pathology, and would therefore seek a post elsewhere. The immediate difficulty has been met by an increased grant from the common fund and by the contribution of £200 a year for five years from the Rhodes Trustees; the crisis would thus be tided over, but the remedy was only temporary, the grants being made for a limited number of years and being dependent on the tenure of office of the present Reader; in fact, the Rhodes grant was given for the specific purpose of enabling the University to retain the services of Dr. Ritchie. A breathing space was, however, now afforded which should be utilized to get a sufficient permanent endowment for a chair of pathology, and it was hoped that some one of the colleges might come forward with an offer of a permanent fellowship. Further efforts would, however, be necessary to form an endowment fund. A resolution, moved by Dr. Champneys, and seconded by Dr. Acland, to the effect that in the interests of medical education at Oxford it was desirable that steps should be taken to bring before the University the necessity of permanent and adequate support for a pathological department, was carried unanimously after a brief discussion. The chairman then announced that an Oxford graduate had offered a sum of £1,000 to start an endowment fund. Dr. Theodore Williams moved that such a fund should be opened, observing that pathology was the basis of all medical science and ought to be properly endowed at Oxford. Dr. Arthur Latham, in seconding, observed that if the graduates formed a nucleus they would have a strong case to present to outsiders. Dr. Pembrey, speaking in support of the resolution, expressed the opinion that it was not the amount only, but also the number of subscriptions which would be of importance; if the graduates generally contributed, a strong impression would be made upon the University authorities. Finally, the following resolution was adopted: "That with the view to showing the strong feeling the Oxford medical graduates have on the necessity for promoting the study and teaching of pathology a fund be started for the purpose of assisting in this object, and that it be primarily for the establishment and endowment of a professorship in pathology." An Executive Committee of seven graduates was appointed to carry out the resolutions and to report to a Standing Committee of forty empowered to act for the whole body of graduates in London and the provinces. Dr. Collier, President of the British Medical Association, considered it necessary that very wide powers should be given to the executive committee, and suggested that the best course would be to form an association on a broad basis, as at Cambridge, to provide for the wants of the whole science side, medical and other. A vote of thanks to Sir William Church brought the proceedings to a close.

M. DOYEN'S TREATMENT OF CANCER.

REFERENCE was made in the BRITISH MEDICAL JOURNAL of December 17th to a report recently made by a Committee which has investigated M. Doyen's claims to have discovered a micro-organism, called by him "micrococcus neoformans," which he holds to be an etiological factor in the production of cancer. It was further stated in accounts which appeared in some English papers that the Committee testified to the favourable effect of a serum used by M. Doyen in the treatment of cancerous tumours. A translation of the report will be found in a letter from our Paris correspondent which is published at p. 1720. That our readers may be in a better position to form a judgement on the question, it may be well to recall the circumstances which led to the inquiry. At the meeting of the French Surgical Association held in October, M. Doyen presented a communication which gave rise to much discussion not only among members of the medical profession but in the public press. It was proposed that the Association should appoint a committee of inquiry, and this was agreed to by M. Doyen. The Association refused to take action in the matter on the ground that it was not a permanent body; it consented, however, to act as intermediary between the Pasteur Institute and the Surgical Society with a view to the institution of a series of control experiments, bacteriological and clinical, by experts in each of these branches of work. M. Metchnikoff was invited by M. Doyen to undertake the bacteriological part of the inquiry. With him were associated Drs. Gallois, Blondel, and other clinicians. These observers have watched fifty cases under treatment. At a largely-attended meeting of the Surgical Society on December 15th M. Doyen read Professor Metchnikoff's report and described his own methods of culture. He then presented eight cases for examination. As far as we can gather from reports published in the French newspapers—which have all along been better, or, at any rate, more fully informed on the subject than the medical journals—in only two cases was anything in the nature of a definitive result claimed. In one of these the serum was said to have proved an efficient vaccine against recurrence after operation. In another it was alleged that regression of an inoperable tumour had taken place. The other cases were so recent that, although many who saw them were struck by the improvement which had followed the injections, it was generally recognized that sufficient time had not elapsed for a proper appreciation of the value of the treatment. The Committee appointed by the Surgical Society consists of men in whose judgement confidence will be felt by the profession, and M. Doyen has promised that they shall have the fullest opportunities of watching the progress of the cases. Their report will be awaited with the keenest interest. In the meantime it is earnestly to be hoped that the public mind will not be led astray by sensational statements into prejudging the case. The Paris correspondent of the *Daily Telegraph* stated in the issue of that newspaper of December 15th that M. Doyen had shown him M. Metchnikoff's report in the Professor's own handwriting. A comparison of the abstract of the document given by the correspondent with the authentic text shows that the account given by him of its purport was, doubtless unintentionally, misleading. The gist of M. Metchnikoff's report is that in most of the cancerous tumours submitted to him, but not in all, he found a microbe identical with that described by M. Doyen under the name of "micrococcus neoformans"; and that from what he saw of the effects of the treatment he got the impression that "improvement" had taken place in several cases. This is a very different thing from the statement, fathered on M. Metchnikoff and the other members of the Committee by the correspondent of the *Daily Telegraph*, that the treatment "habitually produces in cancerous tumours alterations of a favourable character sufficiently rapidly to diminish their volume and render it possible to operate on them two or three weeks after the beginning of the treatment." M. Metchnikoff expressly states that, not being a surgeon or even a medical practitioner, he is not competent to form a judgement on the clinical phenomena. Moreover, speaking as a bacteriologist, he says that the question of the specificity of M. Doyen's micrococcus, so far from being definitively settled, will require two or three months' further work for its solution. We are still, therefore, on M. Metchnikoff's own showing, a long way from the final elucidation of the mystery of cancer. We are compelled to add that, with every wish to believe that a cure for this terrible scourge has been discovered, the evidence, so far as it has been disclosed, appears to us inadequate to warrant a confident hope that M. Doyen's serum will prove to have any more thorough or more lasting effect than the various serums, toxin extracts, and other remedies having some kind of scientific basis which have in recent years been tried and found wanting.

THE ADVANTAGES OF BEING AN ASSISTANT.

A RECENT number of the *London Hospital Gazette*—which it may be remarked is brightly written throughout—contains an answer to the greater part of a question raised in these columns two or three months ago. It is a crisp statement

of the advantages of serving as an assistant for six or twelve months to a general practitioner, and it is, perhaps, all the more convincing because it is from the pen of one of the consulting physicians of the hospital, Dr. G. E. Herman. In his remarks, Dr. Herman has in view the work of an assistant living in the house of a medical man in good-class family practice, and not that of a man who manages a branch practice in the East End or a colliery district; his remarks, too, are perhaps chiefly addressed to those who have held resident appointments at a hospital. The advantages are commercial, personal and professional. To a man who intends to buy a practice, it is commercially advantageous not to have to depend entirely on others for an opinion as to the value and nature of what may be offered him, as would be the case had he had no experience of private practice himself. Personally, he learns to bring himself into proper focus with his life's work. While at a hospital he has been vested with its reputation and authority; his patients have been to him merely samples of disease—human beings it is true, and to be treated with all kindness, but persons with whose private affairs and personal opinions he has not had to reckon. Once he gets into practice he finds the position reversed; the public looks upon him as a young man of small experience and at first has no sort of confidence in him. He finds that he can no longer dictate; he must persuade. It is quickly borne in upon him that his patients are men and women whose opinions, prejudices, tastes, and family circumstances, have to be taken carefully into account. The practitioner who fails to grasp the patient's point of view will suffer for it in any kind of practice, but to an assistant the need for a sympathetic comprehension of his patient's whole position will be brought home with special rapidity. Patients in short will not mind telling his principal why they do not like or do not trust his assistant. The art of managing patients is not a mere trick of manner or speech, but consists in the power of perceiving what is important to them and in taking it into account. Professionally, hospital work is the very reverse of private practice. The cases which fill the wards are only exceptionally encountered in the work of a family doctor, and most of the cases which the man who has just left his hospital will have to treat will be new to him, however diligent a student he may have been. He may never have watched a case of whooping-cough or measles, or a really bad case of hysteria or neurasthenia. The latter get well when they come to hospital; it is only in their own homes that the medical men can realize what they are. In private practice he will learn the real beginnings and endings of disease, and learn more of the final results of operations, of fashionable "cures," and drug habits than the specialist knows. The good general practitioner is himself a specialist in the slight ailments of life, and there are few of them who cannot teach most consultants something in therapeutic detail. In hospital work, too, no thought for nursing need be taken; but in private practice, though a nurse may be sought, finding her takes time, and meanwhile the medical attendant must look after the nursing or direct it himself. It is no small gain to learn by practical experience how to do this. The advantage of learning in private practice something more than can be acquired in hospital work about prescribing, and several other points also receive notice; finally, Dr. Herman concludes with a story which seems to show that, in his opinion, those also who aim at consulting work alone would be better physicians did they, too, work for a time as assistants to general practitioners.

PROPOSED METROPOLITAN CENTRAL HOSPITAL BOARD.

Dr. Knowsley Sibley had published in the *Charity Organization Review* for this month a thoughtful paper on hospital organization in London. He advances arguments in favour of the establishment of a Central Hospital Board for London, and points out that the Select Committee of the House of Lords reported in favour of the establishment of such a Board no less than twelve years ago. He also recalls that in 1897 the Charity Organization Society formed a large representative General Committee for the purpose of drawing up a scheme for the formation of a Central Hospital Board for London, and that a small Executive Committee was appointed. A good deal of work was done by this Committee, but it was found impossible to promote any general reform on account of the widely diverging interests of hospitals, and their natural indisposition to have their administration criticized. Dr. Sibley contends that the need for a Central Board has rather increased than diminished since 1897. After referring to the efforts of the Metropolitan Hospital Sunday and Saturday Funds to co-ordinate the financial administration of hospitals in London he mentions the steps taken by the King Edward's Fund in appointing visitors to inspect the institutions applying for grants, and in promoting the amalgamation of certain hospitals and the removal of hospitals to parts in the metropolis where they are more needed, and calls attention to the resolution of this Fund to the effect that in future any new hospital or those reconstructing or extending to a considerable extent within the area dealt with by the Fund be requested before taking definite action to submit their proposals to the Fund. Dr. Sibley urges that these four bodies—King Edward's Fund, the Saturday and Sunday Funds, and the Charity Organization Society—which have all the machinery ready, should combine for the purpose of appointing a central hospital board for London. With the force of the purse behind them, apart from any other power they may receive, they would soon be in the position to dictate their own terms to all institutions receiving money grants at their hands. The first business of a central metropolitan board should be, Dr. Sibley considers, to draw up a "Hospitals or Charities Act" on somewhat parallel lines to the Public Companies Acts, which should define the legal position of members of charity committees and the responsibilities of all those holding fiduciary positions. The subscribing public, he contends, have a right to know that the money voluntarily given by them is not, through negligence and stupidity, wantonly squandered in a manner that the law would not permit in any but a charitable institution.

HOSPITAL PHYSICIANS AND SURGEONS AS CIVIL SERVANTS.

Reference was made not long ago to a scheme by which medical practice at Zurich was to be converted into a department of the Civil Service. Another step in the same direction was recently attempted in the United States. The Board of Cook County Commissioners conceived the idea of putting the county institutions, including the Cook County Hospital, under the rules of the Civil Service. This was carried into effect, and a decree was issued that any physician or surgeon ambitious of a position on the visiting staff of that hospital must undergo a competitive examination. A Medical Examining Board of thirty-two members was appointed, and this body, after electing Dr. Hugh T. Patrick Chairman, designated an Executive Committee of seven members. Separate examinations were to be held in each of the departments of work—medical, surgical, obstetric, etc.—in which the staff has to engage. The proposal excited great indignation among members of the medical profession, who regarded the application of civil rules to such appointments as foolish. Representatives of the several medical colleges and of the three different schools of medicine met in conference, and, after discussing the situation, agreed to bring a joint suit. To the number of 350, they petitioned the judicial authorities for an injunction restraining the county authorities from carrying out their scheme. The grounds on which the restraining writ was asked for were that the services rendered by physicians and surgeons to the hospital are gratuitous, and therefore do not come within the jurisdiction of the merit law which covers paid employés. It was pointed out that such a test as that proposed would be unfair to men of national reputation who were on the

attending staff, inasmuch as technical knowledge would naturally be marked high. Students fresh from their books would be better qualified to answer certain questions than men of long experience, whose knowledge has become practical rather than theoretical. The result of the agitation is that the county authorities have been enjoined from placing members of the medical profession under Civil Service rule. The court expressed the opinion that the County Board had exceeded its authority in attempting to hold an examination for positions on the staff of hospitals. The result is satisfactory, but the fact that such a proposal should have been made and actually carried into effect may, perhaps, be taken as a sign that the medical profession will have to be careful to safeguard its independence. As the late Sir William Harcourt said, we are all Socialists now; and America and Switzerland are not the only countries where reformers of a certain type would be glad to place our necks in the yoke of public service.

MEDICAL MEN AND PROPRIETARY DRUGS.

THOSE who are in the habit of reading German and American periodicals cannot fail to have been struck by the publicity which many of them give to the advertisements of various nostrums. Such is the virtue of some of these that they not only command the hospitality of the advertising columns, but also claim the support of scientific writers in the body of the paper. Ethically speaking, this matter is viewed quite differently here and abroad. There the inventor of a new patent drug has no difficulty in finding pharmacologists who are willing to test its effects upon animals or clinicians prepared to try and to record its properties when administered to the human subject. All this is in the main a simple commercial transaction; the investigator is compensated for the time he has spent in the research, and his paper goes out as a *Separat-Abdruck* with the rest of the literature relating to the drug. This practice is, we repeat, not regarded as illegitimate in foreign countries; in England—rightly, as we think—other counsels prevail, and it is considered derogatory, and, indeed, unprofessional, for a medical man to allow his name to be so used even in the medical press. It is therefore with deep regret that we note a growing tendency on the part of certain medical men and journals to transgress the limits of this unwritten law. More or less accidental infringements may, of course, occur at any time. A doctor obtains a good result with the aid of a proprietary drug, many of which are, no doubt, excellent products; he writes a little unguardedly to a medical paper, or is reported injudiciously when speaking at a medical society, and one morning he wakes to find himself famous in a flood of advertisements. He writes an indignant letter, an apology and a withdrawal follow, and the incident ends. The puff deliberate is a very different matter; its mechanism appears to be somewhat as follows: Herr Kurpfuscher or his agent has a drug which he wishes to put upon the English market. He may proceed in one of two ways. The more obvious is to approach one of those medical journals, known to the initiated, which are willing to balance a lucrative advertisement with an editorial puff. The climax of this process has been attained in a recent number of what purports to be a magazine of the medical sciences, in which money prizes are offered to medical men for essays on certain methods of treatment of two specified complaints. Reference to the advertisement pages of this production shows them to be replete with notices of drugs which are vaunted as remedies for the particular diseases. As the unsuccessful essays are also to be considered the property of the journal, it is evident that any medical man who may be unwise enough to compete runs no inconsiderable risk of finding himself in a very false position. But there is another method more subtle and not less reprehensible at the command of our German or American visitor. It is said that for a stated sum, rising with the professional reputation of the gentleman concerned, "scientific" papers can be procured from medical men in which the advantages of the nostrum obtain incidental allusion. The danger of this is obvious. An article may be received by any editor—the more reputable the better—from a Fellow of a Royal College of Physicians or a teacher in a medical school; it professes to be a contribution to clinical medicine, and it is only after its insertion and the circulation of extracts from it in advertising pamphlets that its real nature becomes evident. Here again an innocent author may stumble into giving an unintentional testimonial; but if, as is alleged, there be those who write such things deliberately and for gain, it becomes a professional duty to warn them as to what may happen should their conduct gain the publicity which it merits.

THE TREATMENT OF SNAKE BITES IN BRAZIL.

SNAKE bites are very common and very serious in Brazil. Calmette's serum has been employed, but the results have not been so good as was anticipated. The reason of its relative failure doubtless is that the nature of the venom varies in different species of snakes. Taking this fundamental principle as his guide, M. Vital Brazil has succeeded in obtaining by the immunization of dogs and goats two kinds of antivenomous serum—one effective against the bite of the *Crotalus*, the other against that of *Bothrops*. Unfortunately, both preparations soon undergo changes and lose their potency. Dr. von Bassewitz[1] set himself to find a remedy for this. Having ascertained by experiments on rabbits that the immunity of serpents in regard to their own venom is due to the neutralizing and antitoxic action of their bites, he makes the following suggestions:—As in the majority of cases the serpent which bites is at once killed, nothing is easier than to utilize the liver for the purpose of antivenomous inoculation. The gall bladder is removed, triturated in a solution of physiological serum; the fluid is then filtered, and the filtrate injected under the skin of the back or flank. This method, says Dr. von Bassewitz, gives excellent results. The procedure, which is somewhat complicated, should be used only in cases where freshly-prepared serum is not available. Moreover, the injection of hepatic extract often gives rise to abscesses at the site of injection. This accident, however, in view of the grave emergency which has to be met, need scarcely be taken into account.

THE UNIFICATION OF PHARMACOPOEIAL FORMULAE.

IT is now more than two years since the International Conference for the Unification of Pharmacopoeial Formulae for Potent Drugs met in Brussels. The recommendations resulting from its labours were discussed shortly afterwards in the BRITISH MEDICAL JOURNAL of January 28th, 1904. At the meeting of the General Medical Council on November 26th the Pharmacopoeia Committee presented its report and recorded the fact that a communication and enclosures had been received from the Privy Council, which showed that a large measure of approval had been accorded to the agreement arrived at by the Brussels Conference. In moving the adoption of the report the Chairman, Dr. MacAlister, remarked that the Conference proposals had been favourably received by all civilized countries, all the nineteen countries which published a pharmacopoeia having agreed with the suggestions. The question, therefore, which is of great importance, not only to those who have their prescriptions dispensed in foreign lands, but also in connexion with the simplification of medical literature, now seems in a fair way towards solution. The proposals will be borne in mind when the revision of the *British Pharmacopoeia* is next undertaken. Other authorities concerned in the production of national pharmacopoeias will doubtless do the same, and the desired change will gradually come about. We are glad to observe that in signing the agreement Great Britain has held itself free to make such slight modifications in the formulae as the advance of science may render necessary from time to time. Most of the proposals were good, but in two cases—nux vomica and belladonna—our present formulae are far in advance of those recommended; it

[1] *Münch. med. Woch.*, May 10th, 1904.

would appear, however, that the above reservation will enable us to retain these—perhaps slightly modified—without violating the spirit of the agreement.

ICE AND COLD STORAGE.

The London County Council has issued a report by Dr. Hamer, prefaced by an introductory letter from Sir Shirley Murphy, upon the fitness for consumption of the ice which is sold in this country and the conditions under which the cold-storage business is conducted. The greater part of the ice used in London at the present time comes from small lakes and ponds in Norway, which, for the most part, are said to be situated in such solitary and secluded sites as to render any contamination with animal matter highly improbable. But it is by no means certain that in the case of all the natural ice which is sold for use with food the conditions which prevail at the harvesting grounds satisfy hygienic requirements. In view of this uncertainty and of the many risks of contamination, by transit and storage, to which natural ice is exposed before it reaches the consumer, Dr. Hamer strongly recommends that when ice is required either for actual consumption or to be brought into direct contact with food-stuffs, artificial ice only should be used, and that this should be manufactured from absolutely pure, and preferably from distilled, water. There is, again, need that more precautions than are at present observed should be adopted with a view to preserving pure ice from contamination subsequent to its manufacture. The conditions under which perishable food-stuffs can be safely preserved in cold storage also demand more careful consideration than they have hitherto received in this country. Dr. Hamer points out that it is to the interest of public health not merely that any unsound food in a cold store should be seized and destroyed, but that consideration should be given, in originally designing refrigerating premises, to questions of structure and arrangement having importance in relation to health. To obtain this object it will, he thinks, probably be found necessary in the near future to require registration of all such places.

A PROPHET AND HIS DISCIPLES.

Medical men have never had any doubt as to the true character of the "cures" wrought by Dowie, the quack who allows silly people to believe that he is a reincarnation of the Prophet Elijah, or, as he now calls himself, the First Apostle. That many sufferers from imaginary diseases, and from functional disorders of one kind or another, have been restored to health, or at any rate to comparative comfort by faith in his supposed gift of healing, no one who knows the power of suggestion will be disposed to deny. An intelligent reader of his reports of "cases" cannot, however, fail to see that he is an impostor of a particularly blatant type. He beats the big drum so openly, indeed, that the British public, gullible as it is, was disgusted by his impudence. But for the sake of poor sufferers who may become his dupes the medical profession might well be content to leave him alone. On this account it is satisfactory to note that even his victims are beginning to find him out. This is clearly shown by a letter from one of them which was published in the *Glasgow Evening Times* not long ago. The writer is described by a sympathetic friend as "an antivaccinist and health reformer." It may therefore be assumed that his mental constitution predisposes him to quackery. This makes his testimony against Dowie all the stronger. Referring to *Leaves of Healing* and other publications of the "prophet," the writer explains that "Dowie's papers are so embellished with the glories of Zion City that the other side of things is as carefully suppressed and concealed as the good things are exaggerated. The truth is neither told nor practised in Zion City." The writer goes on to say: "If those who know Dowie and his Zion City do so only through reading his publications, then let me warn them most emphatically that they know very little indeed of what really exists here, and of what takes place. . . He (Dowie) boasts of the number who are coming from even distant lands to his city, but he is absolutely silent regarding the many thousands of people who have gone out again." It is bluntly stated that *Leaves of Healing* is the most grossly untruthful paper published in any cause." The "divine healer" cannot, it appears, heal himself. Before sailing for Australia, we are told, he suffered for many months from a severe cough which the writer says he tried as much as possible to conceal. It is added that Mrs. Dowie is very seldom seen in public as she is on the sick list and "there is no answer to prayer on her behalf." This is confirmed by a recent telegram from New York, which states that the "prophet's" methods having failed to cure his wife, that unfortunate lady had been ordered to winter in the South. Dowie attributes her illness to "the vile conduct of the mobs in Australia, London, and San Francisco"; but even if this etiology be admitted, it does not explain the conspicuous failure of the healer in a case where failure must necessarily expose before the whole world the futility of his pretensions.

CLUBS AND MALINGERING.

The *Daily Telegraph* reports a rather interesting movement among members of friendly societies at High Wycombe. A conference has been held with representatives of slate clubs to consider the question of malingering. At the present time there are, it is reported, many members of friendly societies whose wages average from 15s. to 22s. per week, and a good proportion of them belong to two or three, or more, slate clubs, in addition to the registered friendly society. It is felt that the receipt during sickness of a sum equivalent to double the amount of wages is an inducement to malingering, and unless some specific rule is adopted to meet such cases, the effect will be detrimental both to friendly societies and slate clubs. An instance mentioned at the conference was that of a member of a friendly society who was also a member of five slate clubs. When in work he earned 22s., but he received 42s. more when he went on the funds. Statements to the effect that malingering is not uncommon among a certain class of club members have frequently been made by medical officers, but have been warmly repudiated by the officials of the clubs. It is very difficult for the medical officer to expose such frauds, unless the officials will honestly investigate the cases. Such co-operation has heretofore generally been wanting. Yet it is as desirable to stop these practices in the interests of the general body of club members as of the medical officers. It is therefore a sign of the growth of a healthy spirit among the workmen that the question has been seriously raised, and we trust that the expressed intention to take the subject up in the new year will be carried out.

YELLOW FOGS.

The dense fogs which have prevailed on several days during the past week, not only in London, but in some other large towns, have caused great interruption of business. A fog in London on Wednesday, for instance, threw into some confusion the arrangements of several committees of the British Medical Association which had been summoned for the afternoon of that day. The total loss of money in London alone by a day of bad fog must be enormous, to say nothing of the loss of temper and energy. Yet, in spite of the efforts of smoke-abatement associations and reports from societies and municipalities, we seem no nearer a plan of prevention. Indeed, the most recent reports—those made to the Meteorological Council as the result of an inquiry instituted with the aid of a grant of £250 from the London County Council—only serve to call in question some theories which appeared to be helpful. Captain Alfred Carpenter, R.N., for instance, has reported that there is no evidence to connect the London fogs with the London clay or any other geological formation, and that they do not form in any particular part of the metropolis by preference. He has found that no severe fog occurs with an air temperature above 40° F., and no doubt they usually come with frost after damp

weather. He also finds that there is during fog a slight inflow of air from all sides to the central parts of London, and Mr. Lempfert points out that there must in consequence be a rising column of air over this district. This authority rejects the theory that fog is generated over the river and spreads from thence, but Captain Carpenter finds that the temperature of the river is often much above that of the air in Regent's Park, the difference amounting in some instances to as much as 25° F. If this be so we have all the conditions for the production of mist over the river, and that, if it drifts inland, will quickly be converted into fog when it mingles with smoke which coats each droplet of water suspended in the air. At a meeting of the Royal Meteorological Society on Wednesday evening Mr. J. E. Clark asserted that factory chimneys were now well looked after, and that the rise of fog on any day was marked by the increased activity of the chimneys of city offices, restaurants, and hotels. The most feasible cure so far suggested has been the more general adoption of gas fires, especially for cooking, but Sir Oliver Lodge is so confident in the powers of electricity that he has actually taken out a patent for improvements in means for the production of continuous high potential electrical discharges applicable for the disposition of dust, fume, smoke fog, and mist, for the production of rain and for other purposes; that is to say, Sir Oliver Lodge would rid us of fogs by artificially producing mild thunder storms.

A CENTURY OF MEDICAL GRADUATION IN FRANCE.

M. L. PICARD has published the results of a statistical investigation as to the number of medical degrees and diplomas of *officier de santé* conferred in France from 1803 to 1903. The total number of persons who received the doctor's degree in France during that period was 52,349. Of these 34,400 obtained it from the Medical Faculty of Paris. Some idea of the increase in the number of practitioners in France may be got by comparing the numbers for the period covering the First Empire, the Restoration, the Monarchy of July, the Republic of 1848, the Second Empire and the first years of the existing Republic with those of the last thirty years. In the seventy years from 1803 to 1873 the degree was conferred on 28,807 candidates, of whom 19,603 received it from the Paris Faculty. From 1874 to 1903 the total number of graduates was 23,542, of whom 15,000 received their degree from the Paris Faculty. The total number of diplomas of *officier de santé* conferred from 1803 to 1885 was 16,940; that for the period 1871 to 1903 was only 862.

CENTENARY OF THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

A PRELIMINARY announcement of the arrangements for the celebration next May of the centenary of the Royal Medical and Chirurgical Society has been issued. There will be a reception by the President, Sir R. Douglas Powell, Bart., K.C.V.O., at the Society's House, 20, Hanover Square, W., at which, it is expected, distinguished foreign and other guests will be present. An exhibition will be held of books, printed portraits, instruments, drugs, etc., published or in use at the time of the foundation of the Society. A centenary volume will be published, giving a narrative history of the Society and its work. There will be a festival dinner, which it is hoped will enjoy very high patronage; and a *conversazione*, to which ladies will be invited, will be held at the Royal College of Surgeons, by the permission of the President and Council. The provisional arrangements make it clear that everything will be done to make the celebration of the centenary worthy of the occasion and of the Society's reputation.

ANNIVERSARIES OF THE MONTH.

THE month of December seems to be particularly rich in medical anniversaries. In addition to Galvagni—who, as already stated, died on December 4th, 1798—the death roll for this month of gloom includes the great names of Abraham Colles (December 1st, 1843); Morgagni (December 5th, 1771) and M. J. P. Flourens (same day 1867); Robert Liston (December 7th, 1847); Esquirol (December 10th, 1840) and Southwood Smith (same day, 1861); Richard Bright (December 11th, 1858); Sir Thomas Watson (same day, 1882) and Sir William Jenner (same day, 1898); Albrecht von Haller (December 12th, 1777); Sir William Petty, Physician-General to Cromwell's Army in Ireland (December 16th, 1687) and James Hinton (same day, 1875); Sir Richard Owen (December 18th, 1892) and Pirogoff (same day, 1881); Ambroise Paré (December 20th, 1590) and Robert Knox the anatomist (same day, 1862); Percival Pott (December 22nd, 1788); Thomas Sydenham (December 29th, 1689); Van Helmont (December 30th, 1644) and Sir James Paget (same day, 1899). On the other hand, Max von Pettenkofer was born on December 3rd, 1818; Theodor Schwann, whose name is closely associated with the formulation of the cell theory, on December 7th, 1810; Josef Skoda on December 10th, 1805, and Philippe Ricord on the same day in 1800; William Cullen made his first appearance on the world's stage on December 11th, 1712; Joseph Hyrtl, the anatomist, on the same day in in 1811, and Robert Koch on the same day in 1843. Darwin was born on December 12th, 1731, Louis Pasteur on December 27th, 1822, Andreas Vesalius on December 31st, 1514, and Hermann Boerhaave on the same day in 1668. It may be added that the centenary of the birth of Eugene Sue, who, though known to fame as the author of *The Wandering Jew* and *The Mysteries of Paris*, began his career as a naval surgeon, falls in December. There seems, however, to be some uncertainty as to whether he was born on the 10th or 11th of the month. On December 19th Sir John Kirk completed his 72nd, and on the 21st Sir John Burdon Sanderson his 76th year.

MR. LUTHER HOLDEN.

ON December 24th, 1844, the senior Fellow of the Royal College of Surgeons of England received his diploma by examination. This was Mr. Luther Holden, who now, in his 90th year, enjoys good health at Ipswich. It falls to the lot of few to survive a professional examination for sixty years, and we venture to offer Mr. Holden our felicitations on the happy event.

THE annual report of the Local Government Board for Ireland for the year ending March, 1904, has been issued this week; it is a volume of over 550 pages. We shall hope to deal with the report in an early issue.

PROFESSOR SENATOR of Berlin has, in honour of his 70th birthday, which he recently celebrated, been presented by his pupils, friends, and admirers, with a bronze bust of himself; this, with the permission of the Cultus Minister, has been placed in the auditorium of the new Policlinic of the University of Berlin.

THE KING held an investiture at Buckingham Palace on December 19th. Among those who received the honour of knighthood were Sir C. H. Marriott, Sir Shirley Murphy, Sir Allan Perry, and Sir W. Japp Sinclair. On the same occasion the Companionship of the Order of the Bath was conferred upon Lieutenant-Colonel Lawrence Augustine Waddell, C.I.E., Indian Medical Service, in recognition of services rendered in connexion with the Thibet Mission.

IT is with very great regret that we have to announce the death of Mr. A. Quarry Silcock which occurred on December 19th after a short illness. Mr. Silcock, who was only 49 years of age, was Surgeon and Joint Lecturer on Surgery at St. Mary's Hospital, and Surgeon to the Royal London Ophthalmic Hospital. He was a man of great professional ability and of fine personal character. His untimely death will be sincerely mourned by many friends, and the sympathy of all who knew him will go out to the bereaved wife and her two boys. We hope to publish a full obituary in a future issue.

Scotland.

Edinburgh Medical Schools.

The University and Extra-Academical School of Medicine close for the Christmas Recess on Friday, December 23rd, to meet again on Tuesday, January 10th, 1905.

The Royal Victoria Hospital for Consumption, Edinburgh.

His Majesty the King has graciously been pleased to grant the title "Royal" to the Victoria Hospital for Consumption, Edinburgh.

Health of the City of Glasgow.

The report of Dr. A. K. Chalmers, the Medical Officer of Health for Glasgow, for the year 1903, just issued, shows very satisfactory results in several directions.

General Death-rate.

During the year there were 15,073 deaths from all causes, representing a death rate of 19 2 per 1,000 living on the Registrar General's estimate of population. But a certain number of these deaths were in institutions, of persons whose usual residence was beyond the city boundaries, and the Medical Officer's estimate of the population of the city is considerably below the Registrar-General's. Making allowance for these two facts the death-rate is reduced to 18 5 per 1,000 living. The actual number of deaths was less than in any year since 1896, although the population now exceeds the estimate for that year by 81,000. Glasgow's death-rate compares favourably with that of other large towns—Liverpool and Manchester, the two English towns which nearly approach it in population, having death-rates of 20.5 and 19.7 per 1,000 respectively.

The Registrar-General estimated that at the middle of 1903 the population of Glasgow was 786,897, or an increase of 11,296 on his estimate for 1902. This is based on the rate of increase during the last intercensal period, 1890 to 1901. The Medical Officer, however, basing his estimate of population on the number of tenanted houses, calculates that the population of the city is 782,110, or 4,787 less than the Registrar-General's estimate. At present there is a fairly large proportion—1½ per cent.—of unoccupied houses, and it is a matter of doubt whether this is due to the present depression of trade or to the movement of the population to the outskirts of the city, aided by the increasing convenience of the methods of locomotion.

Marriages and Births.

In 1903 7,201 marriages were registered, as compared with 7,304 in 1902. The number of births was 25 050, which represents a rate of 32 per 1 000 living, and gives an excess of births over deaths of about 10,000.

Zymotic Diseases.

In an interesting table Dr. Chalmers indicates the causes of death and the proportions in which they occurred. The principal zymotic diseases accounted for 1,960 deaths, or 2.5 per 1,000 living, and in this connexion it may be noted that 16,487 cases of infectious disease were registered and dealt with by the sanitary department during the year, no less than one-third of these being treated in hospital.

Phthisis.

Pulmonary comsumption accounted for 1,260 deaths, or a rate of 1.6 per 1,000, and other tuberculous diseases 935 deaths, or a rate of 1.2 per 1,000. For phthisis this shows that the death-rate is steadily diminishing, the death-rates for several periods being as follows: 1881-90, 2.680 per 1,000; 1891-1900, 2.015 per 1,000; 1900, 1.876; 1901, 1.764; 1902, 1.672; 1903, 1.611 per 1,000 persons living.

Other Causes of Death.

Other points of interest in the death-rate are that diseases of respiration account for 3.9 per 1,000, diseases of circulatory organs 1.5 per 1,000, nervous diseases 1 8 per 1,000, and cancer 0.7 per 1,000.

Infantile Death-rate.

Unfortunately the infantile death-rate remains very high, and even shows an increase this last year of 14 per 1.000 children born. The total deaths of infants under 1 year were no fewer than 3 563, or 142 per 1,000 children born. This average death-rate was much exceeded in certain of the crowded poorer districts of the city; indeed, in certain of the city wards children die from causes which are only one-half as fatal in the suburbs, a fact which is very closely related to the carelessness amongst the poor in the matter of infant feeding.

Bacteriological Laboratory.

Special reference is made in the report to the Corporation's Bacteriological Laboratory, which is under the care of Dr. R. M. Buchanan. During the year 2,943 specimens of morbid products were forwarded by 360 practitioners for bacterial examination from doubtful cases of enteric fever, diphtheria, and pulmonary tuberculosis. This is an increase of specimens submitted of 567 as compared with 1902, and in practitioners availing themselves of the laboratory facilities an increase of 56. In connexion with the work of the Port Local Authority, bacteriological examination was made of 56 ship rats, all with negative results.

Lunacy in Glasgow.

The annual report of the Glasgow Parish Council for the year ending May 15th, 1904, by Dr. Carswell, Certifying Physician in Lunacy to the Council, was published on December 2nd, and, as it deals with the lunacy figures of the second city of the kingdom and concerns questions of the utmost importance to the community, it merits careful attention. It appears that during the year 885 applications for certification of persons as insane were made to the Parish Council, with the result that 544 were certified. During the previous year 840 applications were made and 549 certified, thus showing a small decrease of 5. Of the 544 cases certified, 164 had suffered from previous attacks, the remaining 380 representing the actual number of fresh cases for the year. This is 7 less than that of the previous year, and works out in proportion to the general population as 63.3 per 100,000. In dealing with the question of an increasing mental deterioration Dr. Carswell divides his cases into two age-periods, from 15 to 45 and from 45 upwards, and shows that for the years 1901, 1902, 1903, and 1904, whilst the proportion to population of the older group has varied from 11 per 10,000 to 16 per 10,000, that of the age period 15 to 45 has been almost uniform, the average in this group for the four years in question being 8.25 per 10,000, and the greatest departure from this average showing a difference of only 1.25 per 10,000. Not only, therefore, is there a greater tendency to insanity in the older group, but, Dr. Carswell says, an important difference in the manner in which the causes of insanity operate above and below 45. He writes:

> Economic and social considerations which have little to do with the causation of insanity viewed as a disease, account for the relatively larger number of persons who become pauper lunatics at the later ages in life and for the fluctuations in the production rate at those ages.

There is no doubt that there is an increasing tendency amongst the proletariat, all over the country and particularly in large towns, to rid themselves of the trouble and expense of their harmless senile cases by throwing the burden on parochial and asylum authorities. This tendency, which has been repeatedly pointed out by the London County Council Asylum authorities, throws their maintenance on the tax-paying community and injuriously affects statistics relating to the increase of insanity. From the uniformity of the rate of incidence of insanity in the age period 14 to 45, the period of greatest stress, temptation, and functional activity, Dr. Carswell concludes that there is no evidence, so far as the masses of the people in Glasgow are concerned, of an increasing mental deterioration. The report contains, further, an interesting statement of the author's views of the relation between alcohol and lunacy. The number of public-houses in various districts are taken as the nearest approach possible to an indication of the amount of drinking in each district, and this is compared with the lunacy rate of the district. The result of this investigation is that no definite relationship can be established. Whitevale, for instance, has one public-house to 369 inhabitants, and a lunacy rate of 4.7, while Dalmarnock has only one public-house to 666 inhabitants, but a lunacy rate of 7.5. Whitevale and Springburn have almost the same lunacy rates, but the number of public-houses to inhabitants is 1 to 369 and 1 to 1,186 respectively. Dr. Carswell would be the first to admit that owing to the implication of other economic factors—shifting in the population, etc.—these statistics have no conclusive value, but they undoubtedly possess a negative worth. He writes:

> Speaking generally, it may be said that the greater the drunkenness of a community the greater will be its production of insanity. The figures before us confirm that general view, but they give no support to the exaggerated views that have been expressed in various quarters that lunacy caused by alcohol is seriously increasing in Scotland. . . .

The point to be kept in view is that our review of the district lunacy rates of Glasgow parish shows that an important element in the problem of the causation of the lunacy of a community is not expressed in either the death-rate or the drinking habits of the people. That element is a congenital tendency towards the occurrence of insanity, and evironmental conditions do not greatly affect it either one way or another.

Aberdeen Medico-Chirurgical Society.

The annual dinner of the Medico-Chirurgical Society of Aberdeen was held in the Society's hall, King Street, on December 17th. Dr. George Rose, the President, occupied the chair. Dr. John Marnoch acted as croupier, and the attendance both of city and county medical men was very large. Among the guests present were Dr. Kynoch (Dundee), Dr. Alexander (Aberdeen), Mr. Wallace (Edinburgh), Dr. H. R. Laing (Aberdeen), Dr. Bramwell (Edinburgh), Mr. T. Kennedy Dalziel (Glasgow), Dr. G. M. Duncan (Aberdeen), Colonel Allerdyce, LL.D. (Chairman Aberdeen Royal Infirmary Directorate), Major Watson, R.A.M.C. (Aberdeen), etc. After covers had been removed the loyal toasts were proposed by the Chairman, who thereafter gave "The Medico-Chirurgical Society" in a reminiscent speech, and spoke with hopefulness of the results that might accrue from the recent union of the Aberdeen Branch of the British Medical Association and the Society for scientific purposes. Dr. Dalziel proposed "The University and Medical School," Professor Cash responding. Other toasts were "The Medical Charities of Aberdeen," proposed by Dr. Albert Westland and acknowledged by Colonel Allerdyce; "The Founders of the Society," by Dr. Thomas Milne; "The President" by Dr. Angus Fraser; "The Guests," by Professor Stephenson and acknowledged by Mr. Wallace.

Lecture on the Antarctic Region.

Mr. William C. Souter, M.B.Aberd., late Surgeon to H.M. Antarctic relief ship *Terra Nova*, lectured in the Y.M.C.A. Hall, Aberdeen, on December 16th, on his experiences during the voyage to relieve the ice-bound *Discovery*. Professor Ogston presided over a very large and appreciative audience. Dr. Souter delivered a most lucid and instructive lecture, which was eagerly followed by the audience, and well illustrated by beautiful lantern-slides prepared from photographs he had taken during the voyage.

Small-pox in Scotland.

During the period from December 1st to 15th inclusive 9 cases of small-pox were intimated to the Local Government Board. Two cases occurred in Glasgow, 2 in Falkirk, and in each of the following places—Dundee, Coatbridge, Hamilton, Linlithgow District, and the Central District of the County of Stirling.

Ireland.

Ulster Medical Society.

Annual Dinner; Presentation to Sir William Whitla.

At the annual dinner of the Ulster Medical Society, the President, Dr. William Calwell, occupied the chair, and 107 were present. The President gave the toast of "The King," which was loyally honoured. Dr. John Campbell proposed "The Lord Lieutenant and Prosperity to Ireland," which was responded to by the Lord Mayor. The President, in calling upon Sir Lauder Brunton to unveil the bust of Sir William Whitla, gave a brief account of the origin, building, and opening of the Medical Institute, and its presentation to the Society. He expressed to Sir Lauder the thanks of the Society for coming so far to do them honour. The Fellows and members of the Society had desired to show their appreciation of Sir William Whitla's generosity and had decided to present a bust. Sir Lauder Brunton referred to the generosity and the other good personal and professional qualities of Sir William Whitla, and unveiled the bust, which is of marble, and is the work of an Irish artist, Miss Kathleen Shaw.

Sir William Whitla expressed his thanks to Sir Lauder Brunton, to the Fellows, and to Miss Kathleen Shaw. He said he was not worthy of the compliment, and that it afforded him great pleasure to make the gift to the Committee.

Professor Lindsay, F.R.C.P., President of the Ulster Branch of the British Medical Association, proposed "The Dublin Schools of Medicine," which was responded to by Mr. Chance, President of the Royal College of Surgeons of Ireland; Professor Walter Smith, T.C.D., and Sir John Moore, ex-President of the Royal College of Physicians of Ireland. Dr. J. Walton Browne proposed "Our Guests," which was responded to by Sir Lauder Brunton, the President of the Queen's College, Belfast (Rev. Dr. Hamilton), and Sir Thomas Myles (Dublin). Dr. Charles Kevin proposed "The President," which was responded to by Dr. Calwell, who, before sitting down, said that they all owed a deep debt of gratitude to their Honorary Secretary (Dr. Thomas Houston), to whose indefatigable exertions all the credit of the success of the dinner belonged, and whose health he asked them to drink with enthusiasm. Dr. Houston responded.

Dr. W. G. Mackenzie and Dr. R. W. Leslie very kindly contributed songs, and Dr. H. Mulholland arranged the musical programme.

A New Hospital for Dublin.

It is announced that the late Mrs. Jane Isabella Lewis, of Kilcullen, co. Kildare, who died in August, has left a sum of £80,000 to be expended in the erection of a new hospital in Dublin to be called the Harvey Lewis Memorial Hospital, in memory of her husband. The realization of the estate will take place after the close of two lives, and the balance remaining after the erection of the building is to be applied to the maintenance of the hospital.

We do not know what the residue is likely to be, but it is hoped that the upkeep of the new hospital will not become another claim upon the already overweighted subscribing public in Ireland. The difficulty of the Dublin Clinical School is the large number of small hospitals, which entail by their multiple staffs an enormous waste of money; and from this point of view the announcement of yet another hospital cannot be received with unmixed pleasure. It is a pity that Mrs. Lewis's advisers did not consult some persons in Dublin acquainted with the bearings of the hospital question. Had this been done a wiser course might have been followed, and many hospitals which are badly in need of improvement could have been brought up to a state of the highest efficiency. There is really no need for another hospital, and its creation will be a distinct disadvantage to the Medical School. What really is wanted is the rebuilding or remodelling of some of the existing institutions, and there is no more worthy object for the generous assistance of the wealthy than this.

Prevention of Tuberculosis.

The Lord Mayor presided at the fourth annual meeting of the Dublin Branch of the National Association for the Prevention of Tuberculosis, which was held in the Royal College of Physicians last week.

The Honorary Secretary, Dr. Alfred E. Boyd, read the report, which contained the following:

The total number of deaths caused by tuberculosis in its many forms in Ireland during 1903 was 12,180, representing a rate of 2.8 per 1,000, whilst in 1902 the rate was 2.7. Of the 12,180 deaths, consumption was responsible for 9,559, corresponding to a rate of 2.2 per 1,000 of the population. Of these deaths, 4,667 were of males and 4,892 were of females. Of the males who died from consumption during the year, 64 per cent., and of the females 58 per cent., were between the ages of 20 and 45 years. During 1903 tuberculosis caused more than twice as many deaths as were caused by influenza, epidemic diarrhoea, whooping-cough, measles, typhoid, and diphtheria together. In the face of these figures, the fact was deplored that the methods by which the death-rate from this cause is being lowered in other lands are still so imperfectly understood and adopted at home. Their application into Ireland would doubtless be followed by similar happy results.

Among the speakers were the Lord Mayor, Mr. Edmondson, Dr. E. J. McWeeney, Rev. J. Denham Osborne, and Dr. Roche.

Progress of Public Health in Belfast.

Dr. O'Neill delivered a second lecture on the health of Belfast on the evening of December 13th in the People's Palace, Donegall Road. This was a sequel to the lecture delivered in the Ulster Hall some weeks ago. Mr. Henry Hutton, High Sheriff of Belfast, presided. Dr. O'Neill began by giving a history of the various epidemics which had visited the town and district in times past, with an account of the old Fever Hospital and vaccination. So severely did the town suffer from these diseases that in 1840, on the occasion of Queen Victoria's marriage, a resolution was passed that, in consequence of the prevalence of epidemic disease, the town be not illuminated, but the money be devoted to the Fever Hospital. Typhus, small-pox, cholera, dysentery, were all from time to time rampant, and the number of deaths due to these scourges was appalling. The lecturer then proceeded to deal with the progress of sanitary legislation in

Belfast from the first of the great series of Public Health Acts in 1849 to the present date. The city had now four public baths and six public parks; meat inspection was carried out: experimental bacteria beds instituted for the treatment of the town sewage; numerous other public and private sanitary and philanthropic projects were also mentioned. The lecture was fully illustrated by limelight views, and a cordial vote of thanks to the lecturer was moved by Mr. J. S. Shaw, seconded by Mr. John Thompson, and passed with acclamation.

The Foreshore Nuisance of Belfast Lough.

Mr. P. C. Cowan, M.Inst.C.E., Chief Engineering Inspector, and Dr. D. Edgar Flinn, Medical Inspector of the Local Government Board, have held an inquiry with regard to the petition praying for a provisional order that the three authorities, the Castlereagh Rural District Council, the Holywood Urban Council, and the County Borough of Belfast form a united district for the purpose of abating a nuisance on the foreshore of Belfast Lough. The inquiry lasted several days and much evidence was taken, including that of Dr. Donnan, Medical Officer of Health No. 2 District, and Dr. Greenfield of Holywood; Dr. Charles O'Neill, Medical Superintendent, Castlereagh Rural District, and Professor Letts, Queen's College, Belfast, and many officials of various boards interested. The report has not yet been published.

THE MIDWIVES ACT.

METHODS ADOPTED BY ENGLISH AND WELSH COUNTIES.

The Clerk of Committees of the Cumberland County Council (Mr. C. W. Allan Hodgson) has drawn up an "Epitome of Replies received from English and Welsh County Councils." Sixty-one County Councils are enumerated, and replies to seven questions forwarded were received from all except four—namely, Anglesey, Cardigan, Merioneth, and Pembroke County Councils. Further, two more—namely, E. and W. Sussex—have come to no decision.

Question I. Has your Council retained the Powers of this Act in their own hands, or delegated them to District Councils?

Forty-eight County Councils have retained the powers of the Act, while 7 leave them to the District Councils; but one of these 7—namely, the Kent County Council—has made the delegation subject to an annual Report to the County Council.

II. *If retained, has a Special Committee been appointed?*

Fifteen County Councils have appointed a Special Committee.

In 21 County Councils the Public Health Committee carries out the Act.

In 8 County Councils the General Purposes Committee does this (in Westmorland, the By-laws Committee; in Hertford, the District and Parish Councils Committee).

In 3 County Councils—namely, Holland (Lincs), Peterborough, and Oxon, no Special Committee has been appointed.

III. *If so, does this Committee consist wholly of Members of the County Council?*

Twenty-eight County Councils reply in the affirmative (but one of these—namely, Oxon, has not appointed a Special Committee apparently).

Thirteen County Councils have "co-opted" two or more ladies on the Committee.

Three County Councils also have retained power to co-opt.

The Worcester Committee has co-opted 5 ladies, Cumberland 4; London, Lindsey, East Suffolk, Northumberland, and Somerset, each 3; Bedford, Cambridge, Cornwall, Hereford, and West Suffolk, each 2; Wilts has 12 "co-opted members."

Thus, 28 per cent. (16 out of 57) County Councils have adopted the principle of co-opting ladies on the Committee that deals with the Midwives Act.

IV. *Have any arrangements been made as to Inspection of Midwives and their appliances, and also as to their qualifications and the manner in which they perform their duties?*

Eighteen County Councils reply in the negative; some replies are "not as yet."

Six County Councils have not completed their arrangements.

Seven County Councils have charged the County Medical Officer with the arrangements, and 5 County Councils have appointed a Nurse under the supervision of the Chief Medical Officer. Further, of the following County Councils: Cambridge has temporarily appointed a Lady Inspector and a Medical Officer; Huntingdon, a Medical Officer; London, a Lady Inspector; and Staffordshire, two Lady Inspectors under the Chief Medical Officer. Lastly, in Flint, local practitioners undertake the arrangements.

V. *If so, by whom is this work to be carried out, and what are the terms of remuneration paid for so doing?*

Only seven County Councils appear to have increased the salary of the County Medical Officer, the addition averaging about £100 a year; in some of these cases, travelling and actual expenses are also paid. These Councils are Essex, Gloucester, Hertford, Lancaster, Warwick, N. Riding (Yorks), and Worcester.

The District Medical Officers of Health are paid in Cheshire and Surrey, in the former 31s. 6d. per Midwife, but in no case less than 5 guineas, in the latter 1 guinea per Midwife. In Huntingdonshire a medical officer has been appointed at £20 yearly and travelling expenses.

The Lady Inspector (or Nurse) is remunerated by the following County Councils: Lancaster, £104 and expenses: Lindsey, £90; London, £150, rising by £15 yearly to £250; Northampton, £90; Notts, £50 (additional to existing salary); Salop, £120 and expenses (this Nurse has to lecture); Glamorgan, £80 and expenses; Derby, a Lady Inspector is visiting (and reporting) at 15s. a day inclusive.

In Staffordshire, two Ladies Inspectors each receive £120.

VI. *What means have been adopted to induce Midwives to qualify, or send copies of their applications to practise in accordance with the Rules of the Central Midwives Board?*

All the 48 County Councils that have retained their powers have taken action; 36 have sent Circulars (and Forms and Rules) to all known midwives in their respective areas; 6 have relied on public advertisement in various ways, while 5 have used both means. The Oxon County Council has adopted no special means.

VII. *Has this Committee (sic) appointed any Secretary or Clerk to act for them: if so, what are his duties and remuneration? If not, by whom is the general working of the Act carried out?*

In 25 County Councils the clerical work relating to midwives is done by the Clerk of the Council; in 10 County Councils by the County Medical Officer (in one—Glamorgan—provided with a clerk for the purpose); in 7 County Councils both Clerk and Chief Medical Officer perform this duty, in 3 County Councils no clerk is yet appointed; and in the Cumberland County Council the work is done by the Clerk of Committees.

Here the questions end, and it is evident that there is very great variety in the way in which the County Councils have begun to administer the Act.

The British Medical Journal of October 31st, 1903, gave information as to the decision of 17 County Councils in regard to the Act; 8 had decided not to delegate their powers, and 5 more were advised by their medical officers not to delegate. Several had appointed Special Committees.

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page So.

THE PREVENTION OF CONSUMPTION.

America.

National Association for the Prevention of Tuberculosis.—The first annual meeting of the American National Association for the Study and Prevention of Tuberculosis will be held in Washington on the third Tuesday in May, 1905. At a recent meeting of the Board of Directors, Professor Osler being in the chair, it was decided to appoint an advisory committee of prominent medical practitioners and laymen throughout the United States. It was also decided to make a public appeal for contributions, and to seek the help of municipal bodies throughout the United States.

Spain.

At the last meeting of the Managing Committee of the Spanish Anti-Tuberculosis Association it was announced that

the number of provincial branches now existing was thirty, and that ten additional branches were in course of formation. Besides these there were fifty local committees in organic relation both with the provincial branches and the central committee. It was decided to press on the Government the expediency of official recognition of the Association as having the character of an institution of national beneficence such as has been granted to the Assistencia Nacional aos Tuberculosos in Portugal. Queen Amelia is the perpetual President of the Portuguese Association, which owes its existence largely to her initiative, and she and King Carlos headed the list of subscribers with a large sum. Their example was widely followed by bishops, nobles, and philanthropists. The Spanish Committee decided to convene a general meeting at an early date in order to complete the organization of a campaign against tuberculosis throughout Spain. For this purpose it was resolved to ask for an adequate grant from the Government.

ASSOCIATION NOTICES.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1905.

MEETINGS of the Council will be held on Wednesdays, January 18th, April 19th, July 5th and October 18th.

The January meeting of the Council, by kind permission of the Metropolitan Asylums Board, will be held in their Board Room at 2 o'clock in the afternoon of Wednesday, January 18th. The offices of the Metropolitan Asylums Board are situated on the Victoria Embankment, at the corner of Carmelite Street and near to Blackfriars Bridge.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished on application to the General Secretary of the Association, 429, Strand.

GUY ELLISTON, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

BRANCH MEETING TO BE HELD.

BIRMINGHAM BRANCH: COVENTRY DIVISION.—The next meeting of this Division will be held at the Coventry and Warwickshire Hospital on Tuesday, January 3rd, 1905, at 8.30 p.m. Agenda:—Specimens.—Dr. Bawley: (1) Multiple Fibroids of Uterus; (2) Dr. Harman Brown: Fetus and Placenta from Case of Placenta Praevia. Papers.—(1) Dr. J. Orton: Diagnosis and Treatment of Typhoid Fever; Dr. E. H. Snell: Notes on the Treatment of Typhoid Fever as Exemplified in a Series of 100 Cases with one death.—E. H. SNELL, Honorary Secretary, Coventry.

DORSET AND WEST HANTS BRANCH: BOURNEMOUTH DIVISION.—A meeting of this Division will be held on Wednesday, January 4th, 1905, at the Medical Society's rooms, Shaftesbury Hall Chambers, Bournemouth, at 3.30 p.m. Agenda: General business, report of Executive, consideration of matters referred to the Divisions (see SUPPLEMENT, November 26th, which contains full information and which members are requested to bring with them to the meeting). Members wishing to show cases or read papers are requested to give early notice to the Honorary Secretary. Tea will be provided by the kindness of the Bournemouth Medical Society.—C. H. W. PARKINSON, Honorary Secretary, Wimborne.

METROPOLITAN COUNTIES BRANCH: WESTMINSTER DIVISION.—The next meeting will be held at St. George's Hospital, on January 26th, 1905, at 8.30 p.m.—W. KNOWSLEY SIBLEY, 70, Duke Street, Grosvenor Square, Honorary Secretary.

THE annual report of the Livingstone College for the year 1903-4 shows that the institution is making steady, if not very rapid, progress. To those missionaries who have not had the advantage of going through a complete medical curriculum, the training offered by this college must be so extremely useful that, as we have before had occasion to remark, it is a little surprising that it is taken advantage of by so few.

SPECIAL CORRESPONDENCE.

PARIS.

Société de Chirurgie: Dr. Doyen communicates M. Metchnikoff's Report on the "Micrococcus Neoformans."—A Special Commission Appointed to Study the Results of the Treatment of Cancer by Dr. Doyen's Method.—The International Congress on Tuberculosis.

AT the last meeting of the Société de Chirurgie Dr. Doyen communicated the results of the control research carried out in his own laboratory and in the Institut Pasteur by MM. Metchnikoff, Borel, and Burnet, following the late French Congress of Surgery, at which he described the "micrococcus neoformans," the method of preparing the serum, and the results he had obtained in the treatment of cancer. The following are the principal conclusions of M. Metchnikoff's report: "(1) In several series of tubes into which M. Doyen had in my presence introduced fragments of cancers operated on by him, I have been able to obtain pure cultures of a microbe identical to that described by Dr. Doyen under the name of 'micrococcus neoformans.' In one case the tubes remained sterile, but in several others cultures were obtained. In the great majority of cases they were cultures of Doyen's microbe, whilst in a few cases the cultures consisted of a streptococcus, the bacillus pyocyaneus, and some other microbes (in ulcerated cases). All the necessary precautions were taken to ensure the sterility of the culture media employed, and the non-contamination of the fragments of the tumours introduced into the tubes. (2) In the cultures of Doyen's microbe we were able to observe all the characteristics described by M. Doyen respecting the micrococcus neoformans. The question of the specificity of this microbe has not been definitively answered. This is a very difficult problem, for bacterial species are generally hard to delimit. It is useful, for example, in order to distinguish them to apply perfected methods, such as the power of agglutination of the microbes by specific serums. We are now preparing such serums, but no results can be obtained before two or three months. From the appearance of the cultures of the 'micrococcus neoformans,' this microbe presents a great analogy with those of the 'coccus polymorphus' of the skin, but an examination of the cultures on agar-agar shows a certain difference between the two microbes. (3) The study of the pathogenic action of Doyen's microbe on animals requires a much longer time than I have had, so far, at my disposal. (4) My rôle as bacteriologist is limited to the three first paragraphs of this note. My microbiological knowledge does not in any way authorize me to approach the clinical side of the question, the more so as I am neither a surgeon nor even a practitioner. I am not in any way competent to pass judgement; but as, at the time of my bacteriological investigation, I have been able to examine repeatedly during nearly two months a large number of cancer patients at M. Doyen's clinic, I have received the impression that several patients attacked by very grave cancers have been benefited by the injections of M. Doyen." After reading the above report, Dr. Doyen proceeded to give a summary of the numerous observations of the most diverse cancers, new or old, operated on or non-operated, to which he has applied his anticancerous treatment. He then showed to the Society a certain number of patients cured for a longer or shorter period, or who are still undergoing treatment. Dr. Doyen drew the following conclusions: (1) The "micrococcus neoformans," with all its characteristics, has been found in aseptic cancers from divers sources. The constant presence of this microbe in cancerous tumours is, then, an established fact. (2) The anticancerous treatment in malignant neoplasms generally in two or three weeks brings about favourable modifications, and is capable of reducing their volume, mobilizing them, and rendering operable tumours which were inoperable before treatment commenced. The other points concerning the specific nature of the "micrococcus neoformans" and its pathogenic action are still under investigation, and this investigation requires several months and even years to be brought to a conclusion, for experiments on animals are very long. As to the complete cure of a certain number of cases treated by his method, Dr. Doyen is of opinion that it is already clinically demonstrated for the first cases treated, lasting for two, three, and in one case for nearly four years; this will be proved scientifically only by further observation

of all the cases treated, and which must be followed up during several years.

The Société de Chirurgie has appointed a Special Commission to study the results of the treatment of cancer by Dr. Doyen's method. This Commission consists of Drs. Berger, Kirmisson, Nélaton, Monod, with Dr. Delbet as reporter.

At a recent meeting of the Ministerial Council, the Prime Minister submitted to his colleagues a project which he has laid on the bureau of the Chamber of Deputies, opening an extraordinary credit of £40,000 for the International Congress on Tuberculosis. This Congress is placed under the patronage of the President of the Republic. The following have been appointed to make the necessary preparations and direct the deliberations:

Honorary Presidents: MM. Casimir-Périer and Léon Bourgeois.
President: M. Berthelot.
Vice-Presidents: MM. Brouardel, Chauveau, and Hegard.
Presidents of Sections: First and Second Sections—Medico-Surgical Pathology, Experimental and Comparative; Medical Pathology: Professor Brouardel; Surgical Pathology; Professor Lannelongue. Third and Fourth Sections—Preservation and Assistance: (1) For Children, Professor Grancher; (2) For Adults, Professor Landouzy.
General Secretary: Dr. Letulle.

MANCHESTER.

Receiving House and the Battle of the Beds.—Ear Hospital.

THE battle of the beds in the central receiving house, which it is proposed to erect in connexion with the new Royal Infirmary, is still undecided. The trustees met on December 15th, when the following resolutions were submitted by the Board of Management:

> That accommodation for the treatment of medical and surgical casualties and dispensary out-patients near the Piccadilly site, and in a northerly direction therefrom, be provided for the following purposes:
>
> (*a*) The administration of first aid. (*b*) The treatment of minor casualties. (*c*) The treatment of out-patients who dwell at an inconvenient distance from the new Infirmary. (*d*) The dispensing of medicines and appliances to such out-patients and to home patients; and (*e*) The detention under observation for a few hours of patients in cases where diagnosis is difficult.

These resolutions represent the decision of the majority of the Board of Management. Both parties are agreed about the erection of a central receiving house, the only point of difference is as to whether there should be beds in the hospital sense. At the end of July the Board appointed a special committee, which has met six times, to prepare a scheme. Before July the Board were on the way to make arrangements by which the new Infirmary should be placed in telephonic communication with every police and ambulance station and with other places in the city. It is hoped by the majority to have the ambulance system arranged by the time the new Infirmary is ready. The chairman estimated that the capital outlay on the receiving house—without beds—would be £10,000. There would also be an annual expenditure of £1,000 or more. In the course of the correspondence in the lay press £30,000, or even £40,000 has been mentioned as the probable cost of a really effective receiving house with beds, without taking into consideration the annual upkeep which would amount perhaps to £4,000 per annum, or even more. The following amendment was submitted:

> That before the removal of the present Infirmary, accommodation for the treatment of medical and surgical casualties and dispensary out-patients near the Piccadilly site, and in a northerly direction therefrom, be provided for the following purposes:
>
> (*a*) The administration of first aid. (*b*) The treatment of minor casualties. (*c*) The treatment of out-patients who dwell at inconvenient distance from the new Infirmary. (*d*) The dispensing of medicine and appliances to such out-patients and to home patients; and (*e*) the treatment of urgent cases in which removal would be attended with danger, for which twenty beds, with all necessary equipment, shall be provided.

On a show of hands being taken a majority voted for the resolutions, and the amendment to provide beds was defeated. A poll was demanded, and the matter is in abeyance until the votes are counted.

From the annual report of the Manchester Ear Hospital we learn that during the year 3,058 out-patients had been treated and 231 in-patients. The increasing demands made on the hospital are not met by increased revenue, so there is a balance on the wrong side of £500. The patients themselves, it was stated, contributed one-fourth of the expenditure.

SOUTH WALES.

Typhoid Fever in the Rhondda.—Meeting of Branch of Incorporated Society of Medical Officers of Health.—Sanitary Committee of the Glamorgan County Council.—Training of Midwives.

THE epidemic of typhoid fever in the Rhondda Valley referred to on previous occasions shows unmistakable signs of abatement. Up to November 20th, 338 cases were notified, and from that date up to December 17th 19 fresh cases were notified, making a grand total of 357 cases. The district implicated contains 1,250 houses with an estimated population of 7,500 persons, and the incidence of the disease up to the present has been 4.6 per cent. of the population; in other words, in every group of 22 persons, or 5 houses, in the affected area one individual was notified as suffering from typhoid fever during the period under review. Elaborate preparations to disinfect the mains and service pipes were made and carried into effect, and there is reason for believing that the desired result was attained by the methods adopted.

A meeting of the West of England and South Wales Branch of the Incorporated Society of Medical Officers of Health was held at the Town Hall, Cardiff, on December 15th, the President, Dr. Ebenezer Davies, Swansea, in the chair. Instructive papers were read by Drs. Scholberg and Jenkin on the agglutinating reaction in typhoid vaccination, and on an outbreak of typhoid fever due to milk supply respectively. At the conclusion of the meeting it was unanimously resolved to pass a vote of sympathy with Dr. Arthur Griffiths, of Bridgend, with regard to the painful position in which he was recently placed by a charge brought against him, and congratulating him on having so completely vindicated himself.

At the last meeting of the Sanitary Committee of the Glamorgan County Council, several important matters were discussed, amongst them the expediency of the formation of a National Water Trust. It was decided, on the motion of Sir John Llewelyn, Bart., that the matter be further considered at a special meeting of the Sanitary and Water Committee of the County Council.

The seven studentships given quarterly by the Glamorgan County Council towards the training of midwives have been awarded, and the next course of instruction will commence at the University College, Cardiff, in the first week in January, 1905. A revision course has been authorized by the College Council for the theoretical training of midwives. This course will be open to students who have previously attended the ordinary course for pupil midwives, as well as to fully-certified midwives who may wish to attend.

INDIA.

Plague Policy in India.

Two important resolutions on plague policy have recently been issued, one by the United Provinces and one by the Bengal Government, both following very closely on the same lines, and clearly laying down what should and what should not be done by those who have to deal with plague outbreaks. The policy adopted is essentially a further step in the direction of doing nothing without the approval of the people, which is not very far removed from doing nothing at all. The principle underlying the new orders is clearly defined in the following sentence from the Bengal resolution:

> Experience has shown that the efforts of the Government to prevent the spread of plague have been of no avail where the people themselves will not take the necessary measures of precaution and readily co-operate with the authorities. The essential basis, therefore, of any measures adopted by Government in dealing with the epidemic must be the avoidance of the least appearance of interfering with the rooted prejudices of the people. The function of the Government should be to inspire and encourage them to help themselves, and to place within their reach all material means to that end of which they may be disposed to avail themselves.

The measures proposed by Government are as follows:

Preventive Action.—Under this heading are included general sanitary improvements of municipalities, the people being "encouraged" to keep their houses clean and to admit light and air freely, a specially selected officer being deputed to instruct the people on the importance of these points at the beginning of the plague season. The destruction of rats and mice by poison is to be encouraged. Inoculation should be widely encouraged, but not pressed on the people where it is unpopular and might interfere with other measures.

In towns ward committees should be appointed to organize all private assistance that may be available and to gain the confidence of the people.

Preliminary Arrangements in Anticipation of an Outbreak.—Sites with sufficient water supply should be selected for the accommodation of persons evacuating their houses, and materials for building huts collected, a plague hospital and accommodation for vagrants being supplied, and disinfectants provided.

On the Outbreak of Plague.—The following measures should be carried out: Disinfection by the simple method of burning cowdung cakes and straw on the floors of the houses, this method being preferred to the use of mercury perchloride, which is disliked by the people, while it has hitherto failed of complete success. The materials for disinfection should be collected beforehand and made over to the people to enable them to perform the operation themselves. Chemical disinfectants should also be provided for such people as ask for them. The people should be encouraged to allow their infected clothing and bedding to be burnt by the offer of compensation on the spot, and infected grain should be exposed to the sun. When the disease has become epidemic disinfection cannot be relied on to check it, and evacuation is advisable, the people being allowed to build huts for themselves where they like, and materials supplied free to the poor. The evacuated quarters will be patrolled by police for the protection of property. Ventilation and sanitation will be insisted on in the new dwellings. Removal to plague hospitals must only be adopted in the case of vagrants and friendless strangers. Other cases will be left in their own homes, free medical treatment being provided when asked for. Vehicles used for moving plague patients should be disinfected. Charity should be organized by the ward committees to help to meet the expenses, while the Government has provided funds to the extent of half a lakh of rupees for the affected parts of Bengal outside Calcutta, and two medical officers have been placed on special duty to carry out plague measures.

It will be seen from the above outline that no compulsion is ever to be used in carrying out plague measures, but everything possible is to be done to encourage the people to adopt the best means of prevention, and all facilities for doing so are provided for them. As the disease is now widespread throughout India, so that no practicable measures can prevent further spread, this appears to be a sound policy. Such people as are enlightened enough to take advantage of the opportunities afforded to them will reap the benefit of their wisdom, while those who refuse to save themselves cannot be saved from their own folly. In actual working the main difficulty will be that the lower class natives will not understand the absence of all pressure to get them to carry out the necessary measures, and most of them will refuse to do anything at all under such circumstances. The plague officers will thus find themselves in a difficulty, for without some pressure they will not be able to get anything done, while any attempt to use such persuasion as alone the people will understand will be liable to get them into trouble should any turbulent element make things unpleasant.

SYDNEY.

The Crusade against Consumption.—Proprietary Medicines.—Sydney Water Supply.

THE crusade against consumption in Sydney has recently entered upon a more active phase. The Western Suburbs Medical Association carried the following resolution unanimously:

> That in the opinion of the members of the Western Suburbs Medical Association it is desirable that all cases of pulmonary tuberculosis should be notified to the Board of Health.

On October 14th, at a special meeting of the New South Wales Branch of the British Medical Association, the following resolutions were passed:

1. That this meeting of the New South Wales Branch of the British Medical Association requests the Board of Health to take steps to provide for the compulsory notification of pulmonary tuberculosis.
2. That it be an urgent recommendation that hospitals for advanced cases of consumption should be erected without delay.

These resolutions were duly forwarded to the Board of Health, and at a meeting of that body on October 25th the following resolutions were agreed to:

1. That legislation ought to be introduced to carry into effect the compulsory notification of phthisis with suitable limitations.
2. That hospital accommodation should be provided, and should be thrown open to all those consumptives whose domestic duties are such that they could not but continue to be a danger to their housemates.
3. That a copy of this resolution be forwarded to the Premier.

Important steps have been taken by the City Municipal Council at the instance of its Health Committee. Some new by-laws have been passed, the most important of which deals with the question of compulsory notification of pulmonary tuberculosis. It states, in effect, that immediately on a medical practitioner becoming aware that a patient is suffering from pulmonary consumption he must, under a penalty not exceeding £10—the penalty attached to infringement of any of the by-laws—give notice in writing to the city health officers, conveying the name, age, sex, employment or occupation, and residence of the patient, and whether the case occurs in the practitioner's private practice or in his practice as a medical officer of any hospital, public body, friendly or other society, or institution. The owner or occupier of any premises in which a person suffering from consumption is known to reside shall also be compelled to give notice of it immediately on becoming aware of it, and power is also given to the Council to remove and disinfect any clothing or other goods which may have been exposed to the infection. A branch of the National Association for the Prevention of Consumption and Other Forms of Tuberculosis has recently been organized in Sydney, and life and ordinary members are now being enrolled. The objects of this Association are the same as those of the parent Association, and it is hoped that much good will result from its operation. At a public meeting held in the town hall last month, a proposal by Alderman Dr. Camac Wilkinson for the establishment of a city dispensary in connexion with the crusade against consumption was approved. The objects of this institution were stated to be as follows: the treatment of the consumptive, by which the sources of infection are automatically discovered; instruction of the patient and his immediate relatives as to the nature and origin of consumption, and the best means of avoiding and preventing infection; the services of a trained nurse to attend in their own homes those who cannot be taken to a sanatorium or hospital; inspection of the home and disinfection of the rooms; supply of all medicines, food, and all other necessaries for invalids, and examination of the other members of the family for evidence of fresh infection. Some opposition to this scheme was expressed, it being suggested that it was undesirable to establish a new and independent institution, and that the matter might be dealt with by the New South Wales Branch of the Society for the Prevention of Consumption or by the Committee of the Queen Victoria Consumptives' Homes. An executive committee was appointed, consisting of a few medical men and laymen.

At a meeting of the Chambers of Manufactures held in Brisbane last August, some resolutions were passed with reference to deleterious drugs sold under deceptive names and secret formulae, and commending the matter to the Governments of the several States. Last month a deputation waited upon the Federal Minister for Customs to draw his attention to portions of the evidence given before the New South Wales Commission on the birth-rate, especially those portions wherein witnesses stated that large quantities of proprietary medicines containing poisons were extensively sold; that many of these medicines were dangerous on account of morphine or opium in their composition; and that they were often innocently administered by mothers to their children. The Minister was asked to use his powers as far as the law would allow to stop the traffic, and, if necessary, to obtain some parliamentary legislation to deal with the evil. The Minister gave a sympathetic reply, pointing out that in the Trades Marks Bill now before the Federal Parliament there was a provision to compel persons to label imported medicines properly. He pointed out, however, that after they had paid duty and passed the customs there was no power to prevent the removal of these labels or their alteration so as to deceive the public. He promised to give the matter his earnest consideration.

Steps are now being taken to pass an Act which will give the Metropolitan Board of Water Supply more complete control of the catchment area at the source of the city water supply than it now has. A new dam is now being constructed on the Cataract River to impound about 18,000,000,000 gallons, and the alienated lands to be covered by the water have been resumed; but without further resumption of the alienated lands at the head of the streams there is nothing to prevent

further settlement, particularly at the head of the southern branch of the Cataract River. The whole of that area right down to the extreme limit of the water to be impounded in the reservoir has been either purchased by the colliery proprietors or is under lease to them. Unless the Board have the power to decide where and under what conditions shafts in connexion with mining are to be sunk, it will be open to the colliery proprietors to put them where they please, even on the very margin of the reservoir. Naturally, the residents on the catchment area object to interference. The resumption of their holdings would, no doubt, be the best way to settle this difficulty, but the heavy cost, estimated at £150,000, prevents this action being taken at present. It would appear, therefore, that the only alternative will be to give the Board entire sanitary control of the surface over which the rain is collected.

CORRESPONDENCE.

CHILL.

Sir,—The article in the British Medical Journal of December 17th, 1904, p. 1651, on the disease or diseases grouped under the head of chill, offers much food for thought.

Some years ago I returned two men in an army report as suffering from chill. The principal medical officer wrote back that there was no such disease. On my demurring he referred me to the official *Nomenclature* of the College of Physicians, and I found myself in this dilemma—that I must either return the disease as coryza or influenza. Coryza is a synonym for acute rhinitis—a purely local affection—so that it hardly covers the same ground as the term chill. Nor can such affections as cold or catarrh be returned. There are no such diseases officially recognized unless the term "epidemic catarrh" is used, but this is, in the *Nomenclature* simply a synonym for influenza.

It is a strange circumstance that the three varieties of chill described have each their analogue in influenza—thus, there is a simple or nervous, a gastric, and a respiratory influenza. You admit that there is only cause for influenza—the bacillus of Pfeiffer—and yet you would invoke three separate causes for the varieties of chill. Would it not be more reasonable to carry the analogy between these two affections still further, and to conclude that as there is one bacillus for the different varieties of influenza there is only one germ for the different varieties of chill? The varying symptoms can be well explained by the varying power of resistance of the individuals affected. In one the germ would find no foothold; in another it would spread along the respiratory tract; in another along the digestive system, following in each individual the path of least resistance.

As to the cause of chill—if its most prominent symptom is, as you say, chill, so is its most popularly-accepted cause also chill. It is a most common experience that a heavy cold or chill often occurs after exposure to a draught in a railway carriage, in crowded assemblies, or in badly-ventilated rooms—that once introduced into a house it quickly spreads through the house. This surely points to a specific infectious disease acting chiefly on those tissues and on those individuals whose vitality has been temporarily lowered by the draught of cold air. In fact—the symptoms, course, and origin of chill and influenza are often so alike that one is almost compelled to think that they are the same disease, one perhaps a mild form of the other. But if one recollects their history, this is seen to be impossible. I remember the pandemic of influenza in 1890. The previous recorded visit of the disease was fifty years before, but as for "chills" and "influenzal colds" we have them, and have had them always, with us, especially in winter, so that in spite of official nomenclatures I believe that there are two diseases—one which should be called "chill," "catarrh," or "epidemic catarrh," and the other influenza or pandemic catarrh. I am confirmed in this view by an essay written on influenza 100 years ago, in which the author states:

> I have hinted in a former essay at the *diminutives* of certain diseases. There is a species of influenza which is less violent and more local than that which has been described. It generally prevails in the winter season. It seems to originate from a morbid matter, generated in crowded and heated churches, and other assemblies of the people. I have seen a cold, or influenza, frequently universal in Philadelphia, which I have distinctly traced to this source. It would seem as if the same species of diseases resembled pictures, and that while some of them partook of the deep and vivid nature of mosaic work, others appeared like the feeble and transient impressions of water colours.

As chicken-pox is to small-pox, as rubella is to measles, as petit mal is to epilepsy, as benign tertian or quartan is to malignant malaria fever, so I believe is "chill" to influenza.—I am, etc.,

Newport, Dec. 18th. C. Stuart Vines, D.P.H.Cantab.

Sir,—The first step towards the prophylaxis against the disorders commonly called by this name appears to be a change in the nomenclature.

Your leading article deprecates calling all these disorders "influenza," but this name, objectionable as its indiscriminate use is, does not convey so false a suggestion of the etiology as the term "chill" does; and in consequence, I believe, of this false suggestion there is a tendency to over-zeal in keeping the surface of the body from alternations of temperature; we try, in fact, to keep the skin warm by clothing and artificial heat instead of expecting the skin to perform its physiological function of maintaining the bodily temperature with clothing and artificial heat as auxiliaries, with the result of paralyzing the vasomotor system and inducing a susceptibility to "chill."

I would advise your correspondent, anxious to avoid influenza, to guard against the infection of "chill" by discarding his carpets and superfluous furniture, to disinfect his house and clothes; to take ordinary care in regulating rest and exercise, food and drink (he will probably be better without alcohol); to open his windows night and day; to take an air-bath as well as his daily tepid water bath; and above all to abstain from attending churches, theatres, and, I fear I must add, scientific meetings; he should, in fact, lead a more natural life.—I am, etc.,

Bournemouth, Dec. 19th. Frank Fowler.

CANCER AND PRE-CANCEROUS CONDITIONS.

Sir,—In a letter published in the British Medical Journal of December 17th Mr. W. Roger Williams makes the following statement:

> I claim to have proved, in the most complete and convincing measure possible, that these conclusions are absolutely untenable.

This parapraph refers to my conclusions in the Bradshaw lecture regarding pre-cancerous conditions.

To put it in the mildest way possible, this is a very strong assertion, and in support of it one naturally looks for arguments that are beyond the reach of criticism.

In the first place, the opinions of such eminently keen clinical observers as the late Sir James Paget and Mr. Jonathan Hutchinson, to say nothing of the confirmatory observations of their many followers, are swept aside as worthless by Mr. Roger Williams. Let us see what others say on the subject of "Paget's disease of the nipple."

One of the latest textbooks, by Mr. Pearce Gould and Mr. J. Collins Warren, states:

> This affection is an excellent example of that marked state of the epidermis known as the pre-cancerous stage.

Keen and White, in their textbook of surgery, state:

> This condition of constant irritation unquestionably predisposes to carcinoma mammae.

Roswell Park in his *Surgery* by American authors states:

> At the end of a few months, or in some cases only after many years, the disease enters on its last stage, that of cancerous degeneration.

Other opinions could be quoted were it necessary to prove that Paget's disease of the nipple is the precursor of cancer and that this fact is generally recognized by medical men all over the world.

Is it not possible that in the 2,000 cases referred to by Mr. Roger Williams, many cases of simple eczema of the nipple, which occurs frequently during lactation and which is readily curable even though chronic, may have been included with a few cases of true Paget's disease which occurs chiefly after the menopause and is frequently followed by cancer. Before accepting Mr. Roger Williams's figures as entering into the argument, I should want to know the ages of the patients, what surgeon was responsible for the diagnosis of Paget's disease in these 2,000 cases, and other details not given in the letter.

Mr. Roger Williams apparently concludes that I would amputate the breast for this pre-cancerouus condition, but if he will refer to my lecture he will see that I only advocate amputation when cancer has supervened.

Mr. Roger Williams says: "It is just the same with lingual, buccal, and other leucoplasias." Let me refer to the quotation from Mr. Jonathan Hutchinson given in my lecture:

> No medicine or local applications can be relied on to cure true leucoplakia of the tongue and it is wise to operate in the pre-cancerous condition and so to remove the source of the danger.

Apparently Mr. Roger Williams considers that opinion not

sufficient; then let me refer him to Mr. Butlin's work on *Cancer*, or to Rose and Carless's *Surgery*, p. 702, where Mr. Barker is stated to have carefully investigated 110 cases of chronic superficial glossitis, out of which number cancer developed in 43. I could give other authorities and other numbers, but these should suffice.

Perhaps the most unsatisfactory point in Mr. Roger Williams's letter is based on a method which he would have all surgeons to adopt—namely, the numerical method. A mere collection of figures bearing on the proportion of penile cancers to other cases of cancer can serve no useful purpose, except to show that cancer of the penis is far from uncommon. For these figures to be of service we should want to know the nature and site of the disease, the ages of the patients, how many of the cancer cases had phimosis, whether they were simple phimoses that could be cleansed or neglected cases where cleansing was impracticable, also the social position and the race of the patient and many other particulars, for without these the whole of the statistical evidence is worthless.

With regard to the tendency of simple tumours to undergo a malignant change, I can speak from personal observation of chronic inflammatory tumours of the breast and adenomata becoming malignant, of papillomata of the bladder, of the tongue and of the skin turning into epithelioma and of many other simple tumours undergoing a malignant change.

I think Mr. Roger Williams cannot have read the evidence I have given, both from my own and the experience of others, to show how frequently gall stones are the precursors of cancer of the gall bladder and liver, and what a number of authorities are agreed on the causative relationship between the two, otherwise he would have been more careful about his statements. If further evidence is required, I would refer Mr. Roger Williams to the third edition of my book, *Diseases of the Gall Bladder and Bile Ducts*.

In this matter I feel that I can speak with authority based on a large personal experience, and the figures I have given in my lecture prove to my mind without a doubt that there is a distinct relationship between cholelithiasis and cancer of the bile passages.

Although I have in this letter based my arguments chiefly on the evidence of other observers, my own experience in the different subjects referred to by Mr. Roger Williams leads me to believe the truth of every word that I have said in my Bradshaw lecture, both with regard to the importance of precancerous conditions and the desirability of treating them, where possible, on the principle that "prevention is better than cure."—I am, etc.,

London, W., Dec. 19th. A. W. MAYO ROBSON.

SIR,—Mr. Roger Williams' laborious cancer researches entitle to respect anything he says under the above heading, but he surely places too much reliance on statistics; and, without the careful discrimination of possible sources of error, such arguments are prone to involve highly misleading and even dangerous conclusions.

Mr. Williams contends, for example, that Paget's disease, "eczema of the nipple," only exceptionally ends in cancer, has, in fact, very little to do with it; and he bases this proposition upon an analysis of over 2,000 cases. Now, Paget's observation that irritative conditions about the nipple ultimately often lead up to carcinoma is not so easily demolished. If every ulcerative condition, syphilitic or otherwise, which may be found at the nipple be denominated "eczema," Mr. Williams' contention is largely correct. Many such will promptly yield to suitable treatment, though always dangerous if neglected. But, on the other hand, if the term "eczema" be restricted to that rather rare disease, "granular mastitis," in which the ulcer presents a peculiar resemblance to a strawberry, then, in my experience, at least, the generalization is wholly wrong. The sore will not heal under any treatment short of excision. It will finally end in cancer as a matter of certainty.

Again, reliance upon merely numerical arguments serves to obscure the only general and universal principle that can be laid down on so-called pre-cancerous conditions, and which may be summed up in the phrase, "Long-continued congestion of any tissue is apt to result in malignancy." Witness what occurs in the mouth, bladder, breast, rectum, etc. The primarily benign local polypus of the bladder is apt finally to involve malignant symptoms, by reason of the attendant congestion and irritation. I doubt if buccal epithelioma ever appears in a really healthy mucous membrane: the precedent irritative and congestive conditions are always conspicuous. And though Mr. Roger Williams rightly regards the transformation of a benign tumour into a malignant one as exceptional, I have seen numerous cases about the female pelvic organs in which such a growth has apparently played the part of a local irritant, and has thus set up some form or other of malignant disease.

On the same principle it can, I submit, hardly be doubted that although numerous people with gall stones escape malignancy, yet the tendency of these concretions is to generate cancer by the associated congestion and irritation. And although it may be granted that primary cancer of the gall bladder is not so prevalent as uterine or mammary, still, one can hardly regard it as the extremely rare malady which Mr. Williams's figures would seem to indicate.—I am, etc.,

London, W., Dec. 18th. HERBERT SNOW.

THE BUSINESS OF THE GENERAL MEDICAL COUNCIL.

SIR,—As one of the Direct Representatives of the medical profession for England and Wales I wish to bring under the notice of my constituents some of the salient points of the matters that have been discussed in the Council at its recent meetings. It may be within the memory of those who have taken an interest in the proceedings of the Council that there has been a long-standing dispute between the Royal Colleges of Physicians and Surgeons of England and the Council as to what should be recognized as a sufficient preliminary scientific examination. A report on these examinations was presented to the Council in May, 1903, but the consideration of it was deferred on account of the gravity of it to a special meeting held in July of the same year. The report was made by Mr. J. Campbell Brown and Dr. Windle. With reference to the first year's examination of the English Conjoint Board, they reported that the standard of the examination was a low one. "The physics portion of the examination amounts to nothing, while the chemistry portion does not afford any assurance that knowledge has been acquired of such a kind as will fit a student to commence the study of physiology, and enable him to understand his reading, and acquire a wider knowledge in after-life. The syllabus, the details of the paper, the plan of the first and principal part of the practical examination are at fault, and especially the absence of any guarantee of sufficient preparation for the examinations. The remarks on the examinations of the Apothecaries' Hall, London, and the Scottish Conjoint Board were not so unfavourable, but the standard in each case was considered too low, as was also the case with regard to the Irish Conjoint Board examination, although this examination on the whole was perhaps the best. Resolutions were passed at the July meeting that, in the opinion of the Council, both the examinations and courses of study recognized by the Royal Colleges of England were insufficient, and the examination of the Apothecaries' Hall was insufficient.

In consequence of the representations made to the examining bodies, the syllabuses and the examinations have been very much improved. It is, however, much to be regretted that the English colleges still recognize as places of study institutions which are not suitable in the opinion of the Council. It is important that the teachers should be themselves well qualified, that the laboratories should be well-equipped, and that the work should be done in the daytime, not at night, as the mental faculties of the students will probably be exhausted by other studies and work during the day.

REGISTRATION OF STUDENTS.

It is well known that owing to the increased work of the Council, the increasing number of the members of the Council owing to the increase in the number of universities entitled to send representatives to the Council, and to the diminishing number of registrations, the financial condition of the Council is not in a satisfactory state.

In order to remedy this various proposals have been made from time to time. With the approval of the Privy Council a proposition was made and carried by a large majority at the May meeting of the Council, to the effect that a short Bill should be introduced into the Houses of Parliament to make registration by the Council compulsory on students, and that a fee of £1 should be paid by the student.

Unfortunately, at the November meeting of this year, exception was taken to this course, and it was evident that the

Bill would be opposed in Parliament by the representatives of various corporations, more especially by those of the Royal Colleges of England—these bodies objecting to the Council having the power to register students, and by inference to lay down the conditions of registration. The result was that the Council reversed its resolution of May last, and finally resolved to send a reply to the Privy Council—namely, that, owing to the opposition by certain licensing bodies, the Council does not desire to ask the Lord President to introduce the measure formerly proposed into Parliament. Personally, I did not agree with this resolution, and voted against it, as did the other Direct Representatives for England. In my opinion it would tend to the unification of the system of medical education if one body had the control of the registration of students and their courses of study.

With regard to the financial part of the question, I have always favoured a small annual licensing fee. I moved a resolution in favour of this some sessions ago, but it did not meet with much support. It would have supplied the Council with sufficient funds to carry out its work properly: it would also have brought every practising medical man in touch with the Council, so that if his conduct had not been satisfactory in the past it might be inquired into.

Medical Pupilage.

At the commencement of the recent meeting of the Council I asked the President to define what was the exact meaning to be attached to the phrase—"the proper training and instruction of bona-fide medical students as pupils"—occurring in the notice regarding the employment of unqualified persons as assistants or otherwise, issued on November 24th, 1897. The President replied in effect that it referred to the fifth year of the curriculum, six months of which may be passed as a pupil to a registered practitioner possessing such opportunities of imparting practical knowledge as shall be satisfactory to the medical authorities.

The reason of my asking the question was that it has come to my knowledge that unqualified assistants are employed in numerous cases, more especially in the colliery districts in the North of England, under the guise of pupilage. I ascertained that the Conjoint Board of the Royal Colleges of England does not recognize any such pupilage, and that the English Apothecaries' Hall has had no application for such recognition. It cannot, however, be too widely known that the General Medical Council cannot institute any prosecution in such a case, but that the case must be brought before them by some person or body of persons, such as one of the Medical Defence Unions. It therefore now rests with the persons who are acquainted with such cases to take action in the matter. I am informed that medical men generally are not acquainted with the resolution of the Council referring to the matter, so that it is possible that many are acting in ignorance of it.

With reference to the desirability of reviving in some form and to some extent the old system of pupilage, Mr. George Brown, one of my colleagues, as a Direct Representative on the Council, moved a resolution with reference to it, which I seconded, the purpose of it being that students who had served one year's pupilage with a practitioner—who could satisfy the medical authorities that he could give sufficient opportunities of imparting practical knowledge—should be exempted from six months' clinical work at a public hospital. Both Mr. George Brown and myself promised when we were candidates for election as Direct Representatives on the Council, that we would urge this matter on the Council. Unfortunately it met with little support, Dr. Bruce, the Direct Representative for Scotland, alone supporting it, in addition to ourselves. The remarks I made on this matter have been partially misunderstood. I did not intend to say that the medical student as a pupil would be taught the art of treating the patient instead of always treating the disease. I wished to convey the idea that the student should be taught the art of treating the patient as well as the disease, and that he would be more likely to learn that from an experienced medical practitioner than in the wards or out-patient departments of hospitals. I very well remember the late Mr. Arthur Durham sketching out what he thought would be an ideal student's career, and including in it twelve months with a general practitioner who had large opportunities for seeing practice.

Final Examinations of the Scotch Universities.

There was an animated discussion on this report, especially on the part referring to the practical part of the examination in surgery at the University of Edinburgh, where it appears that operations on the cadaver are not required from every candidate, but only from those selected, I believe, by ballot, so that it is only fair to say that any candidate may be required to operate. This part of the examination was considered unsatisfactory by the Inspector and Visitor, who appeared to think that this part of the examining process is usually unsatisfactory, except at Glasgow, where they expressed great satisfaction with it. There is no doubt of the necessity for it, seeing the advances that surgery has made of recent years, and how impossible it is to acquire the requisite dexterity without sufficient practice on the cadaver.

It is somewhat noticeable that none of the Scotch universities, except St. Andrews, lay much stress in their examinations on knowledge of diseases of eye, ear, throat, nose, and skin, but at this University there was an elaborate examination in these diseases—well arranged, and on all points satisfactory. In the end it was decided that there should be a reinspection of the final surgical examination of the University of Edinburgh. There is no doubt but that this University suffers from a plethora of students, and, in consequence, a lack of teaching material.

Medical Companies Bill.

This is a matter of extreme interest to the medical profession at large. It arises, as is well known, from the fact that seven persons can combine and form a company and do that which it is unlawful for one man to do. This practice has received a check by the judgement of Chief Baron Palles in Ireland, by which the Registrar was interdicted from registering such a company, but as Sir Charles Ball remarked, a company may go on for ever, and therefore it is necessary to deal with the companies already registered. An attempt in that direction is being made in Ireland, but the matter is at present *sub judice*. The Council has communicated with the Lord President of the Privy Council on the matter, expressing the hope that the Government will take such steps as may be necessary to prevent the provisions of the Medical and Dental Acts being evaded by persons improperly taking advantage of the provisions of the Company Acts.

The penal business of the Council does not appear to call for any especial comment, substantial justice being done in each case. Finally, Dr. Donald MacAlister, who has been the Chairman of the Business Committee of the Council, was elected President in the place of Sir William Turner, who has resigned.—I am, etc.,

Plymouth, Dec. 19th. Geo. Jackson.

THE PROPOSED GENERAL REGISTER OF MEDICAL STUDENTS.

Sir,—Although I have ceased to be a member of the General Medical Council, I continue to be much interested in its proceedings, and with regret observe the abortive issue of the recent discussion on the above subject, and I think few of your readers but will admit that Sir Victor Horsley accurately stated the case when he said that the "Council was stultifying itself." I cannot imagine anything more likely than this vote to bring discredit on the Council, and to lower it in the estimation of the profession. The Council accepted a meaningless resolution as a means of escaping from expressing any opinion on a question of vital interest to the profession. I venture to think that it is worth while trying to elucidate the reason why this resolution was adopted by so large a majority.

The question before the Council, as you have pointed out, involved two distinct questions: (1) The advisability of increasing the income of the Council by imposing a fee of £1 on the registration of medical students; and (2) that of the compulsory registration of medical students.

It is admitted that the income of the Council is insufficient for the due performance of its duties, and three methods have been suggested of augmenting it: First, a tax of, say, £1 per annum on all registered medical practitioners. This would bring in a large revenue, but it would be very difficult to collect, would be resisted by many members of the profession, and as it would necessarily entail erasure of the name of the defaulter from the *Medical Register*, would react very harshly and unfairly on not a few medical practitioners who failed to pay it punctually. It is supported, however, by some members of the Council, obviously because it would be a step towards having the Council composed entirely, or nearly so, of "Direct Representatives."

The second method proposed is by raising the present registration fee of £5 to £10; this is objected to by Sir Victor

Horsley and others on the ground of its being "a tax on the profession," which it certainly is not. It is the parents or guardians of the medical student who pay this fee for him on his admission to the profession. The stamp duty or fees paid by certain classes of law students might as fairly be called a tax on their profession; but the strange feature is that many who approve of the imposition of a real tax of £1 per annum on registered practitioners object to this increase of the registration fee, which is not such.

Lastly, we have the proposal that a small fee be paid on the admission of students to the *Medical Register*. Against this a great outcry is raised. Is it possible that any one thinks in all sincerity that the registration of students is not advisable? If it be advisable, should it not be compulsory? And if so, should not a contribution be made by the student seeking registration for office expenses, etc.?

The entire opposition to the imposition of the fee is without doubt due to this dread of "compulsory registration," and the fear that the General Medical Council may obtain the power to enforce a higher standard of preliminary education than that at present accepted by at least some of the universities and licensing bodies.

The real question at issue during the recent debate was not how an additional income had best be raised, but whether the General Medical Council should be entrusted with power to inspect the examinations of intending medical students in the subjects of preliminary education, so as to exclude from entrance into the profession those whose education is so defective as to render them unfit ever to become efficient medical practitioners.

For myself I have ever held that to raise the standard of professional education it is absolutely necessary first to raise the standard of preliminary education, but at present the General Medical Council have not the power to do so efficiently.

I do not think the University of Oxford can have any objection to the General Medical Council inspecting the examinations held by it in the case of candidates for its medical degrees. But I do not think such inspection should be required from any students who take out the full course of studies and pass the examinations required for the B.A. degree in that or any other university, but certainly those universities which grant their M.B. or M.D. degrees without requiring this should be inspected, and the fear of this accounts for the opposition of the representatives of more than one of the universities.

But the most determined opposition to the compulsory registration of students comes from the conjoint English colleges, and as I am satisfied that they are far from opposing the raising the standard of preliminary education, it is not difficult to see the real grounds of their opposition. It evidently rests mainly, if not entirely, on the opposition of the Council to the study of chemistry and physics at other than medical schools and a few scientific institutions, an opposition in my opinion which is very unwise, and to this opposition I think the failure to improve the standard of preliminary education will be mainly if not altogether due.

I am not going to repeat the arguments embodied in my letter on this subject which you were good enough to publish last May: but I would point out how strongly the views held by the English Royal Colleges is supported by the discussion on Dr. Lindsay Steven's resolution, for if intending medical students studied the subjects to be passed in what in that resolution is termed "the Preliminary Scientific Examination" before becoming medical students, much if not all of the evils on which he and his seconder enlarged would be removed.

There can be no doubt but that the raising the standard of preliminary education would for a time injuriously affect Ireland, where the standard of such education is lower than in the sister islands. Much as I regret that such should be the result, specially as regards the Irish Conjoint Colleges, it would ultimately be for their advantage. There is, I know, much comment here on the low standard of success attained by candidates from these bodies in the examinations for commissions in the army and naval medical services, and the question is discussed, How this failure is to be accounted for. To me it seems that the fault lies in the lower standard of preliminary education in Ireland, for the purely professional teaching I believe to be excellent, and this opinion is confirmed by the fact that the success obtained by candidates from the University of Dublin, who are required to take the A.B. degree in all cases, stands very high.

In my former letter I stated that I felt confident that, sooner or later, the study of physics and chemistry, and possibly of biology also, would form part of subjects to be passed in the examinations to be held previous to registration as medical students, and I feel equally confident that in like manner the compulsatory registration of medical students will also be adopted, for it is impossible that the public good, which demands the services of highly-educated medical practitioners, equally for the poor as for the rich, will be sacrificed to the interest of a few universities or licensing bodies.—I am, etc.,

Dublin, Dec. 10th. LOMBE ATTHILL, M.D.

TICK FEVER.

SIR,—The notes on this subject by Drs. Ross and Milne, which appear in the BRITISH MEDICAL JOURNAL of November 26th, p. 1453, are of interest, pointing as they do to the possibility of this disease being caused by a spirillum instead of a piroplasma, as seemed most probable. The symptoms of so-called tick fever are, however, such as one would expect in piroplasmiasis, and, as far as I know, have none of the relapsing features so characteristic of spirillum fever.

Ornithodorus, or *Argas moubata* (Murray), the supposed transmitter of African tick fever, as will be seen by Mr. R. I. Pocock's note attached to my paper on "Tick Fever in Man," in the JOURNAL of September 19th, 1903, is quite distinct from *Ornithodorus savignyi* (Audouin), the former being blind (hence named by Neumann *var. caeca*), and easily identified by the yellowish spots on the dorsum, except in very young specimens. The bite of *O. savignyi* apparently does not produce any ill effects, but it is of importance for those having opportunities of studying tick fever, both in Africa and Asia, to clearly identify the species of tick associated with it.

In 1903 I found *O. moubata*, which hitherto had only been reported from Angola and from the Upper Zambesi—extremely common in certain parts of the Uganda Protectorate. In the old walled fort of Lewekula's I found thousands in all stages of development in the dust and straw on the floors of the buildings, a 2-lb. sugar tin being filled with them by my people in half an hour or so.

During the last twelve months I have gained additional information bearing upon the distribution of this bug-like tick and the fever caused by it.

At Leopoldville, on Stanley Pool, in the Congo Free State, Mr. Bently, a well-known missionary, who has spent most of his life in the Congo, informed us (members of the Liverpool Trypanosomiasis Expedition) that, in the pre-railway days, when Stanley's caravan road from Vivi to the Pool was in full swing, and when hundreds of natives employed as porters slept in the rest houses built for their accommodation at intervals along the route, he had known a great deal of sickness amongst the men. He assured us that it was not sleeping sickness, but was due to the bites of ticks inhabiting the thatch of the rest houses, some of which had a bad reputation, and, when possible, were shunned in consequence. He had known, he said, of whole caravans being delayed for weeks owing to the number of porters suffering from this illness, which was called "road sickness." Stanley's old road, past the cataracts, is now in parts a mere track, most of the rest houses have disappeared, and the tick is apparently scarce, for we were only able to collect two immature specimens after a great deal of trouble. These have been identified by Mr. Pocock as *O. moubata*, as were two immature specimens sent by the Swedish missionaries at Nganda—also in the Cataract region.

Other young specimens were sent to us from the Ituri district by Dr. David, one of the medical officers of the Free State, with the following note from the *Chef de Zone du Haut Ituri*: "The *Kimputu*, which is known as Bini (? Fort Mbeni, Semliki River) and Rutchuru is the *Garropato*. The natives fear its bite, which causes at first strong fever, with general weakness, and afterwards complete depression. They die often between the tenth and fifteenth day after being bitten."

A gentleman who spent several months in the Ituri district last year says, in a letter to me on this subject: "From the south end of Lake Albert, northwards to Dufilé, I encountered the tick known as the *Kimputu*, and much dreaded by the natives." He found them in villages and disused camps. Several of his people were bitten, and were very ill for fourteen or eighteen days, violent and constant sickness being generally the first symptoms.

At the present date the known distribution of this disease appears to be, in the western provinces of the Uganda Protectorate: the western districts of German East Africa, between the Victoria Nyanza and Tanganyika; the eastern regions of the Congo Free State, from Tanganyika northwards to the Lado Enclave: and certain places on the Upper Zambesi. It is not clear whether it still exists in the Lower Congo.

Liverpool, Dec. 13th. C. CHRISTY.

ANTITYPHOID INOCULATION.

Sir,—I had hoped that no further words would have been required of me on the subject of antityphoid inoculation. I will, however, with your permission, once more answer Professor Pearson. I am moved to do so by the fact that the issues which he raises in his last letter go down to the very roots of this discussion.

Before addressing myself to those issues, I would say a word upon the manner in which Professor Pearson meets my suggestion "that the interests of science would surely have been better served if he had accepted the invitation of the Antityphoid Committee to come and discuss with them the statistical results of inoculation." To this Professor Pearson rejoins that, while unable to find fault with the manner in which the invitation in question was conveyed to him, he was entitled to refuse that invitation, inasmuch as he feared that he would be treated as a hostile witness.

That legal training to which Professor Pearson lays claim in his letter has surely been of small profit to him if it be that he really believes that A. or B., whose testimony is required in a court of law, justifies his non-appearance when he objects that he is averse to cross-examination. I will not take it even from Professor Pearson that it is his considered legal opinion that an important witness has done all that can be asked of him when he has informed the court that he is prepared to answer any questions which it may be pleased to reduce to writing. The Antityphoid Committee was, I submit, a scientific court appointed by the Secretary of State to adjudicate upon the question of antityphoid inoculation. Was the Committee to indite to Professor Pearson polemical letters such as I am now inditing? And were those letters to be answered by Professor Pearson in the strain in which he has answered mine? Or was Professor Pearson to be approached only in a spirit of humility? Finally, was the Antityphoid Committee to abdicate its office in favour of Professor Pearson?

I pass to the subject matter proper of this letter. On the question of the importance of cultivating medical statistics there will, I think, among the thoughtful members of our profession be agreement with Professor Pearson. But they will feel that the fallacies which are incident to statistical methods in medicine impose very narrow limitations upon the useful exploitation of these methods. Further, they will, I think, feel that the relative importance of the different fallacies which attach to medical statistics is quite other than that which is postulated by Professor Pearson.

Let me remark, in passing, that it is a difference of opinion with regard to this question which is at bottom responsible for the engendering of the present discussion.

Professor Pearson, I take it, sees in the operation of chance the most important of all sources of fallacy. He demands, if I understand him aright, that the effect of this factor shall be in each case set out in the form of a mathematical expression.

The weight of medical opinion is, I believe, with me when I contend against Professor Pearson that the operation of the factor of chance is not by any means the most serious source of fallacy in medical statistics. If it were, all that would be necessary to the attainment of perfect statistics would be to insist in each case upon the bringing together of considerable figures. I am confident that medical statistics are vitiated much more seriously by those other sources of fallacy which I have dealt with in my critical commentary. I refer to the fallacy of a want of conformity between the "test cases" and the "control cases," to the fallacy which is associated with the uncertainty of clinical diagnosis, and to the fallacies which are introduced by the carelessness, untrustworthiness, or ignorance of individual observers.

If I am correct in my appraisement of the relative importance of the different fallacies, Professor Pearson will, I think, stand alone when he hopes for a time when a synoptical table and critical commentary such as I have published will be anathema on the ground that there is not to be found in it a mathematical expression for the effect exerted by the operation of chance. I think that every common sense man is, even without the aid of a mathematical expression, capable of forming a judgement as to whether or not a particular result can be the result of the operation of chance. On the other hand, he is not, in the absence of a critical sifting of the statistical data, in a position to form any judgement with respect to their trustworthiness. If this is so I submit that no medical statistician could attach any value to a statistical report such as Professor Pearson's, which proceeds to set forth a mathematical expression for the effect of the operation of chance, while it neglects to make inquiry into the trustworthiness of the statistical data and into the manner of their selection, or even into the comparative value of a death-rate and an incidence-rate as criteria of the efficacy of an inoculation process.

In connexion with the subject matter which has just been in question differences of opinion are manifestly permissible. Professor Pearson has throughout made dogmatic assertions with respect to this subject matter. And in his last letter he has not contented himself with these. He has now arrogated to himself and to his guild an exclusive right of passing judgement upon every matter which can be treated by statistical methods. "It ought to have been impossible"—I am quoting Professor Pearson almost literally—"for the three committees of medical and bacteriological experts who have successively adjudicated upon the question of antityphoid inoculation to have arrived at a decision without referring the matter to me or to one of my guild." It is exactly as if a calculator, whose office it was to compute the strength of certain shipbuilding materials, were to contend that he, and not the practical seaman, was the proper judge of the performances of a ship.

One last word I have to say to Professor Pearson. It is this: It is surely unworthy of any one who follows science to exult, as he does at the close of his letter, in the thought that the forces of ignorance may perchance have been set in motion by his words and that these may step in and once again withdraw from the soldier who volunteers for it a protective inoculation which has had as its minimum recorded result the reduction of the death-rate from typhoid by one-half.—I am, etc.,

London, W., Dec. 20th. A. E. Wright.

TEACHING OF HYGIENE TO MEDICAL STUDENTS.

Sir,—At the present time there seems to be a righteous wave of both professional and popular opinion in favour of the teaching of hygiene in the elementary schools and even in the Universities. I have for many years been endeavouring to induce the Board of National Education for Ireland to include this subject in the course of instruction for its teachers with the ultimate aim of reaching the pupils. The Queen's nurses are obliged to attend a course and pass an examination. The Department of Agriculture and Technical Instruction for Ireland require the ladies who are candidates for the positions of instructresses in domestic economy throughout the country to attend a very complete course and pass an examination in sanitation. This department has also made arrangements for classes for sanitary inspectors, plumbers, etc. The authorities of Maynooth College, the great Catholic ecclesiastical seminary in Ireland, have instituted a course for their students. It will appear strange, then, when I mention that the Conjoint Board of the Royal Colleges of Physicians and Surgeons for Ireland do not require the candidates for their diploma to attend a course. All that is required of them is the attendance of a few lectures, which are included in the short summer course of medical jurisprudence and toxicology. In thirty lectures of one hour each the students are supposed to receive sufficient instruction in medical jurisprudence, toxicology, and sanitary science. This in Ireland, where many of the candidates of these colleges become dispensary medical officers, and as such ex-officio medical officers of health of their districts. I need hardly say this is a grave injustice to both the students themselves and the public. That the men when appointed appreciate this I know from many of themselves; indeed, I never met a student who did not, even when a student, acknowledge this defect in the curriculum.

The practical result in the future will be when some grave health question arises in their district—often remote—that they will be obliged to seek information from the better instructed national school boy, the district nurse, or the Catholic curate. The present result is that, knowing little of sanitation—they have not been taught it—they are not too anxious to raise any question of sanitary reform. Many years ago I acted as secretary to a petition to the General Medical Council advocating the inclusion in the curriculum of the various medical corporations of a course of sanitary science. That petition was largely and influentially signed by members of the profession. The Royal University of Ireland and the Conjoint Colleges in London thereupon added the course to their curriculum, but the Dublin colleges, where on account of the positions of the dispensary medical officers it was most needed, did not do so. Is it too late to expect that they will do so now or that the General Medical Council

will call their attention to the necessity of so doing? I may point out that one of the results of the absence of such a course in the conjoint curriculum is that of the three medical schools in Dublin one alone—the Catholic University Medical School—gives a course in sanitary science; neither the school of the Royal College of Surgeons nor Trinity College Medical School does so. The medical press, which is rightly advocating the teaching of hygiene in lay schools and of popular lectures, should even more strongly impress upon the Irish Conjoint Board the necessity of an efficient course for their candidates.—I am, etc.,

ANTONY ROCHE, M.R.C.P.I.,
Professor of Public Health, Catholic University Medical School.
Dublin.

THE RISK OF CONTRACTING SYPHILIS.

SIR,—Foremost among the dangers of medical practice is the risk of contracting syphilis in obstetric or surgical cases.

In the course of a long professional experience it has come to my knowledge that seven of my friends in general practice have been infected by sores on the right hand or arm. In some instances the results have been disastrous, whilst in all the anxiety and expense have been heavy indeed. Naturally, the sufferers do not care to narrate their own cases, and sometimes whilst in doubt as to the nature of the sore valuable time for treatment is lost, and there is risk of conveying infection to patients. In workhouse and district practice I and my assistants have had several narrow escapes, and latterly in all cases presenting the least suspicion I have taken the precaution of inspecting the vulva. This, however, is only a partial safeguard, as in most of the above-mentioned cases the disease was contracted from chance or emergency patients of respectable appearance whose previous history was unknown.

In such circumstances I recommend that the external parts be inspected, that as few digital examinations as possible be made, and that the greatest care be taken to cover effectually any "hang nails" or abrasions; also that the hands be well cleansed with germicide soap after each examination.

In the hope that this warning may save some from calamity and that others may give the result of their experience.—I am, etc.

Weybridge. ADMONITIO.

OPERATIVE INTERFERENCE IN DISEASES OF THE STOMACH.

SIR,—As Dr. Saundby did me the honour, and at the same time the unintentional injustice of incorrectly quoting an opinion which I do not hold, and never did, you will, perhaps, permit me the privilege of uttering a few words in self-defence. The paragraph to which I take exception runs thus:

> Robin is undoubtedly right when he says that "no physician of experience in diseases of the stomach would accept the opinion expressed by Maylard at the Paris Congress that every case of *severe* and *persistent dyspepsia* justifies an early exploratory incision."[1]

I have italicized the words specially referred to. Where M. Robin got them from I am at a loss. My paper before the Congress in 1900 was entitled "The Value of Early Exploratory Operations upon the Stomach in Intractable and Obscure Diseases of that Organ."

I can only conceive that through some error of translation M. Robin must have construed "intractable and obscure diseases" into "severe and persistent dyspepsia," for throughout the paper these words were never once used. But, while these words have been placed into my mouth, I am not altogether disposed to have them displaced if employed under certain distinct qualifications. Nor am I inclined to believe, from the very broad, catholic, and, to wit, scientific attitude which Dr. Saundby assumes in regard to what surgery is capable of accomplishing in certain gastric diseases, that he, too, would be unwilling to allow and even consider justifiable an exploratory operation in severe and persistent dyspepsia which had become intractable to all his good efforts at cure by conservative measures.—I am, etc.,

Glasgow, Dec. 19th. A. ERNEST MAYLARD.

PRIMARY BRONCHOPNEUMONIA.

SIR,—I am sorry that Dr. Coutts writes with so much warmth, for the question is too simple to require heated controversy. What I have said is that, among the cases commonly described as broncho-pneumonia, there is one group not generally recognized, which runs the course from beginning to end of acute lobar pneumonia. Clinical observation establishes this beyond doubt. My own belief is that these cases are really what they seem to be—namely, acute croupous or pneumococcal pneumonia in a disseminated and not in the lobar form. Whatever pathological evidence there may be to support this view, it cannot be conclusively proved without more bacteriological evidence than is at present forthcoming.

If the existence of this form of bronchopneumonia be granted, its relative frequency as compared with the other form on the one hand, and with lobar or massive pneumonia on the other, is a question of much interest, but of comparatively subordinate importance.

Let me say, in conclusion, that I have not seen any reason to change or modify in any respect the opinions I have expressed, for they are the result of long clinical observation. On the contrary, I entertain no doubt that the views I am empressing will ultimately be accepted.—I am, etc.,

London, W., Dec. 19th. SAMUEL WEST, M.D.

*** This correspondence is now closed.

THE DECISIONS OF THE REPRESENTATIVE MEETING.

SIR,—If you think the subject worth discussing, I will ask for space to reply again to "A Secretary of a Division"; not that his second letter contains any new agument, but for the purpose of explanation; for I am quite as anxious as he is for the solidification of the profession.

As to the word "principles," I used it because it appeared in the letter I was answering. My own meaning might, perhaps, have been more fitted by the expression "matters of opinion."

I prefer, when possible, to discuss facts rather than theories. I will take a case of "policy towards an external body." The BRITISH MEDICAL JOURNAL to-day contains a notice that the "payment of practitioners called in to assist midwives" is to be sent to the Divisions. When the result is made known, if it shows an overwhelming majority in favour of a certain policy, I hold it to be the duty of the small minority to sink their personal views for the sake of unanimity. But if—this is only for the sake of argument—it shows the profession nearly evenly divided between two opposite policies, I hold that the Representative Meeting would not be justified in passing a resolution by a small majority in favour of either; and I should consider the other side perfectly justified in trying to reverse the decision. Surely it is not contended that a resolution once passed at a Representative Meeting is to be binding on everybody for all time!

Now, in writing my former letter, I had a specific case in my mind, where the Representative Meeting at Oxford did pass a (far from unanimous) resolution on a matter which I emphatically assert had not been considered by the Divisions. If a Divisional vote had been taken, and I found myself in a small minority, I would have accepted the decision with resignation if not with approval, but, as that was not the case, I and my Division intend at present to continue to do our best to rescind the resolution, and, of course, in the meantime to agitate against it.

At our meeting on December 14th, we decided to ask the Central Council to advise us as to the proper procedure; and I trust "A Secretary of a Division" will see that we do wish to "play the game," and also that we mean to play it hard.—I am, etc.,

Altrincham, Dec. 17th. T. W. H. GARSTANG.

SIR,—"A Secretary of Division," in the BRITISH MEDICAL JOURNAL of December 3rd, puts forward a rational question to which generally the answer would be in the affirmative, but occasionally such an answer would not be given, I think. In the question of the "State registration of nurses," for instance, to which possibly he refers, I do not remember the Bill or subject having been placed before the Lancashire and Cheshire Branch of the Association for debate. The Bill was sent up to the Altrincham Division, but there was no time for discussion before the Oxford meeting after its receipt. A subject of that sort cannot be settled in a short time: it is far too important. As far as the evidence before the Select Committee of the House of Commons is concerned, Dr. Fenwick is reported to have said:[1]

"So far I have only heard of two or three—I think it is only three Branches—that have discussed it."

[1] BRITISH MEDICAL JOURNAL, December 17th, p. 1621.

[1] Report Registration of Nurses Blue Book, p. 7.

If that be correct, it would appear that the subject of State registration of nurses has not been discussed to any extent, and I should think scarcely sufficient to justify a vote being taken in consequence by the meeting at Oxford, but if taken in that case or a like case the opponents are quite justified in calling into question any decision arrived at after so slight a discussion.

Probably many medical men were in the position of the writer until he had read the Blue Book, and knew little of the subject—the very important subject—and the proposed Bill.

Such a resolution as was passed by the Altrincham Division would, I think, naturally be sent to the members of the Select Committee who were considering and examining with reference to the proposed Bill.

A letter from Mr. Garstang appeared in the JOURNAL on December 10th, with which, I think, most medical men will agree, and is straight to the point of the letter of "Secretary of Division" in the JOURNAL of December 3rd.

I would refer all who take an interest in the "State Registration of Nurses" to your sensible words upon page 1657, which, although applied to a "French View of an English Nurse," might well be used to the matter about which I have written above.

Ashton-upon-Mersey, Dec. 19th. CHARLES J. RENSHAW.

DIPHTHERIA IN BRISTOL.

SIR,—Dr. Davies and Mr. Heaven, in support of their belief that Hofmann's bacillus is under certain circumstances capable of being transformed into the diphtheria bacillus, and of causing diphtheria, mention 21 cases which occurred in or near Bristol within the last four years. In these a first examination failed to reveal the diphtheria bacillus, but showed the presence of Hofmann, but the diphtheria bacillus appeared at a later period in all of them. They also mention other cases, some of which were severe and fatal, while others were mild but confirmed by more or less subsequent paralysis, in which Hofmann's bacillus alone was found. Now, Sir, I think it must have happened to all of us who have had a wide experience of bacteriological examinations in cases of diphtheria, to fail to find the bacillus on a first examination, but to succeed later. That Hofmann's bacillus was present in these cases seems to me of no significance, because of its general prevalence.

But even if, for the sake of argument, it be assumed that there were no other organisms present in the throats of these patients than were found in the cultures, I maintain that such cases cannot be accepted as evidence when a scientific point of great importance is in question, unless the identification of the bacilli found was confirmed by the acid production test, and by the inoculation of animals. The appearance of the organisms alone, though doubtless of value in practice, when supported by clinical evidence, cannot be held sufficient for scientific purposes. Wesbrook has described a diphtheria bacillus which is pathogenetic to guinea-pigs, and which is counteracted by antitoxin, and yet which is so like Hofmann's bacillus that he thinks it is probably included under the pseudo-diphtheria group of other authors. It certainly looks very like a Hofmann's bacillus in his figures. I hope, therefore, it will not appear discourteous if I ask Dr. Davies and Mr. Heaven whether the identification of the bacilli found in the cases which they mention was established by testing for the power of forming acid out of glucose, and by inoculating guinea-pigs.—I am, etc.,

Stansted. LOUIS COBBETT.

THE PROPHYLAXIS OF MALARIA.

SIR,—In your leading article on the Discussion on Malaria Prophylaxis at the late British Medical Association meeting (page 687 of the BRITISH MEDICAL JOURNAL of September 17th), I note that you suggest, from some remarks in the papers and of the speakers, that it would appear that the larva of the malaria-parasite-conveying *Anopheles* prefers fresh water and running streams, "and that it is only the harmless mosquitos, as far as malaria is concerned," that breed in puddles round dwellings.

It seems to me to be a matter of duty to point out that, so far as this part of the world is concerned, at any rate, the acceptance of such a belief, as applicable to all affected regions, would be a retrograde step of great gravity. Here, *Anopheles* larvae swarm in small street puddles round dwellings, and have been found in all the various receptacles for water named by me in my little contribution to the discussion published in the same number of the JOURNAL.

Were vigilance to be relaxed in respect of attention to such localities as breeding places for *Anopheles*—by householders and sanitary inspectors, the great difficulty we experience in dealing with the anti-mosquito portion of the fight against malaria would be terribly increased.

It must further be remembered that other species of mosquitos are carriers of yellow fever and of filariae (possibly of other diseases), hence the need for fighting against all mosquitos that breed in and near human habitations.—I am, etc.,

HENRY STRACHAN,
Lagos, Oct. 25th. Principal Medical Officer.

A CLIMATIC PARADOX.

SIR,—The climate of Mentone and of the Riviera has been written about often enough to have, perhaps, almost ceased to be interesting; yet what might be called its characteristic feature has practically been overlooked, certainly never duly emphasized. A sunny seaside resort, enjoying the shelter of a belt of adjacent high mountains to the north, conveys the impression of a climate very different from that which actually exists. Travellers to whom a seaside climate is trying or harmful are warned against the Riviera, and those for whom mountain air is desirable are recommended elsewhere. In spite of this, numbers of these very visitors are found on the Riviera constantly during the season, who neither find the sea level nor the sea proximity the drawback their English experience and advice would lead them to expect.

The fact is the Riviera—certainly this part of it—should be described as having a mountain climate, though at sea level. During 90 per cent., at least, of the nights the air passes down from the mountains (3,000 or 4,000 ft. high) behind Mentone, and sets gently seaward through the town. During two-thirds of all the days in winter the air likewise sets seaward, coming quietly over the mountains from a northern quarter. Thus, in the winter 1864-5, according to the statistics of Dr. Bennet, the wind was from a northerly direction (that is, from over the mountains) on 84 days out of the 121, leaving 37 for more or less southerly winds (that is, from over the sea). During several of the remaining days, when there is a sea breeze, the air is merely the night air which has gone seaward, and is sucked back again as the sun heats the land. Though it comes from a southerly direction, it has neither been warmed in the south nor travelled far over the sea, and feels and behaves like what it really is—a northerly air.

Obviously, therefore, Mentone and the adjacent Riviera, though by the sea as regards position, are not by the sea as regards climate, since the air almost always comes over the mountains from the land.

I live in summer five miles inland in Devonshire, and here less than a furlong, but my Devonshire home is a seaside resort compared to this.

Thus may, perhaps, be partly explained why the Riviera had formerly the reputation which fashion later transferred to the Engadine, since in both places it is high mountain air, fresh, exciting, dry, and diathermanous which is breathed, but with a difference in pressure and temperature, bringing certain advantages to each.

Practically, therefore, patients may be recommended to the Riviera who require a dry and sunny mountain climate at a low level, fairly remote from the sea.—I am, etc.,

D. W. SAMWAYS, M.D., M.R.C.P., D.Sc.
Mentone, Dec. 15th.

MENTAL PHENOMENA DEPENDENT ON PHYSICAL DISEASE.

SIR,—A note under the heading of "Visceral Disease and Mental Phenomena," in the BRITISH MEDICAL JOURNAL of September 10th is commented upon by Dr. L'Heureux Blenkarne in the JOURNAL of September 24th, and I agree with him that the statement he quotes as having recently appeared in a scientific article regarding the hopefulness of patients in chest diseases and their hopelessness in abdominal complaints is worthy of notice, but I would mention that some sixteen years ago I heard the late Dr. Humphrey Broomfield, of Dublin, advance the remarkable statement that in "all cases of disease and injury below the middle line you invariably got depression of spirits, and in all diseases and injuries above you had the patient full of hope and

anxious to live." I have reason to believe that this was made as the result alone of his personal observation in practice; and since listening to his valued teaching I have had occasion many a time to verify the truth of this statement (amongst many others).

Cases will doubtless readily occur to readers of depression and intense melancholia following acute diarrhoea, dysentery, gunshot wounds, and injuries to the abdomen; and on the other hand, it is proverbial how full of hope the consumptive is; how full of plans for the future when within even a week of his grave. In injuries to the chest—surgical emphysema, fractured rib, etc., the patient is generally cheery and hopeful.

The depression following abdominal injury may be explained by the interference with the sympathetic nervous system, but the explanation of the thoracic phenomenon is not so easy or satisfactory. I consider the inhibitory nerve fibres and their action on the cerebral capillaries responsible for the phenomenon, for with dilatation and contraction you naturally get mental stimulation or depression.

One of the most interesting cases I remember to have seen came under my notice when a ship surgeon on the old Union Line. A clergyman had been sent out to South Africa for his health (before the war) by a London specialist. He had been suffering from intense melancholia, which, when I met him on his journey home, had developed into almost acute mania, so much so that I had to hold him down in his cabin one night to prevent him going overboard. He arrived in Southampton a hopeless mental wreck, and was sent to his home under charge. A few voyages later a gentleman introduced himself to me as Dr. K——, and explained that he wished to see me with reference to my former patient. He informed me, to my great surprise and pleasure, that he was quite well, and engaged again in the work of his large parish. I inquired the reason of his recovery from what I thought to be hopeless dementia, and I learned that Dr. K.'s diagnosis after seeing the patient on his return from South Africa had been cerebral anaemia due to cardiac dilatation. The latter condition was successfully treated, and with the cardiac improvement came complete recovery from the mental condition.

Mens sana in corpore sano is so old and hackneyed that one almost refrains from even mentioning it, but do we not all of us in active practice see the truth of it exemplified almost daily?—I am, etc.,

JOHN F. ELLIOTT, L.R.C.S.C.P.Irel.

Verulam, Natal.

THE CAUSATION OF INSANITY.

SIR,—With reference to an article under the above heading, supplemented by Dr. Strachan's letter in the BRITISH MEDICAL JOURNAL of December 17th, might I suggest as a cause—the indiscriminate use of the forceps in labour cases?

As an assistant in general practice in one of the poorer districts of London, I was forced to use the forceps in every case of labour I saw, simply because the practice was a "business," and rush and time saving its characteristics, from one end of the year to the other.

I must not be taken as decrying the use of the forceps. I use it, and shall continue to use it when necessary, but governed by a far greater consciousness of responsibility than that which marked my use of it in younger days.

Who that has seen, as we often see in difficult labour cases, the marks of the blades on the child's head after delivery, its elongated outline, its high crest, and its squeezed temples, can say that there has not been harm done to the internal delicate brain matter? We "mould" the head, leaving the alienist of a future generation something to go on in theory.

The forceps is a boon and a blessing to suffering woman, but continual practice in the use of it, if giving the operator a deftness of manipulation, limits his view to an end to be gained—the delivery of the child without doing injury to the mother. Guided by such, gentleness and delicacy mark the operator's method; but gentleness and delicacy are but virtues fixed only in their relation to the personal factor of the operator, and one man's gentleness would be to another rough. It might serve as a guide for future medical men if the Registrar-General supplemented his Birth Register by a Column, No. 12, which certainly would be of far more value for the future than Column 11 (for baptismal name added after registration) to contain such information as duration of labour, variety, stating whether instrumental aid necessary, and the cause for its use.

If in natural labour a certain amount of maternal pressure is used on the child's head, certainly in such cases as partial contraction of the pelvis, in which the forceps can be used, a far greater amount of pressure is borne. I have delivered children in cases of contracted pelvis by the forceps, when failing such I should have to do craniotomy. Thus, between the pressure borne by the head in natural labour and the pressure in a degree of contracted pelvis available for the use of the forceps, in which the children are delivered dead, there are various degrees of pressure, rising in a gradual ascending scale, consistent with the delivery of a living child. I may be wrong, but I certainly think that pelvic measurements have a bearing not alone on the causation of insanity, but on the causation of a good deal of our modern degeneracy.—I am, etc.,

Ardrahan, Dec. 18th. C. H. FOLEY.

A CONDITION OF THE LOWER LIMBS OFTEN MISTAKEN FOR PHLEBITIS.

SIR,—May I suggest that "the condition of the lower limbs often mistaken for phlebitis," described by Sir William Bennett in the BRITISH MEDICAL JOURNAL for December 10th, was caused by an acute inflammation of the fibrous tissue of the muscles of the same character as that which, in its subacute and chronic forms, is generally known as "rheumatic myositis," and of at present unknown bacteriology? In 3 of the cases described the swellings were localized, and in Case IV it appears to have been limited to the fleshy part of peroneus longus.

An inflammation of the fibrous tissue in its acute form—that of serous exudation—whether commencing in the fibrous parts of the muscles themselves or in the tendons and fasciae, has a tendency to spread by contiguity to the nerve sheaths and to the subcutaneous connective tissue.

The latter may have been the cause of the more diffuse swelling in Case III. But the pain complained of in these affections is more often caused by actual pressure on the nerves by the inflamed parts, especially if subacute and localized. The inflammation is seldom, even when localized, severe enough to cause palpable oedema, but, on careful palpation, one can generally make out a loss of elasticity and feeling of resistance in the muscle.

The free oozing found on incision in Case IV is explained by the serous exudation and the pain on gentle pressure by the implication of the sheaths, or by pressure on the more superficial nerves; but it is more difficult to understand why the pain should be relieved on deep pressure, unless the pressure on the nerves caused by the inflamed tissues in this mechanical way becomes severe enough to paralyse the sensory nerve fibres. It is known that a "cramp" in the muscles of the forearm can at once be stopped by a firm grip, which paralyses the motor nerve for the moment.

Acute diffuse inflammation of the fibrous tissue, except from traumatism, is rare, but subacute or chronic localized inflammations of the fibrous tissue of the muscles are familiar as lumbago, stiff neck, occipital and other "neuralgias," the more common forms of sciatica, and more rarely "brachial neuralgia."

An interesting and concise description, with microscopical appearances of the pathological conditions found in these affections, was published by Dr. Ralph Stockman in the *Edinburgh Medical Journal*, vol. i, 1904. This is, I believe, the only publication in England on this subject since 1816, when Dr. William Balfour published an evidently forgotten or ignored book on chronic rheumatism, where he describes definite fibrous thickenings in the muscles.—I am, etc.,

London, W., Dec. 20th. G. B. JACOBI.

MEDICO-LEGAL AND MEDICO-ETHICAL.

WITNESS'S FEE.

INDEX.—We sympathize with our correspondent on having had to attend for three days at police court and assizes for the quite inadequate remuneration of one guinea, but as he was not giving professional evidence, and so ranks as an ordinary witness, for whom the maximum allowance in the Home Secretary's scale is fixed at 7s. a day, we fear he has no remedy. He can, if he likes, appeal to the Home Office, but the reply is very likely to be as indicated above.

MEDICAL ADVERTISING.

MEDICUS.—Whether a medical practitioner should put his name in small or large type upon the labels of his medicine bottles is rather a matter of taste than of ethics. As a matter of taste, it is generally regarded as better to put merely the directions to the patient, except in the case of poisons, where the Pharmacy Act directs that the name and address of the person dispensing the medicine shall be placed upon the label.

HEATHER.—Under the circumstances no letter need be sent.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: William Jackson, M.B., Staff Surgeon, to the *Spartan*, January 3rd; George Waters, M.B., Fleet Surgeon, and Bryan Pick, Surgeon, to the *Illustrious*, January 3rd; John H. McDowall, M.B., Surgeon, to the *Good Hope*, January 3rd: Henry F. Iliewicz, Fleet Surgeon, to the *President*, additional, and lent to Deptford Yard for forty-five days from December 21st; David H. Vickery, Surgeon, to Haslar Hospital, additional, for the *Fisgard*, for dépôt of torpedo destroyers, December 17th: Charles M. Woods, Surgeon, to Haslar Hospital, additional, for the *Erebus*, for dépôt of torpedo destroyers, December 17th; Charles E. C. Stanford, M.B., Surgeon, to the *Robin*, December 10th; Bernard Ley, Surgeon, to the *Ocean*, December 10th; Robert W. B. Hall, Surgeon, to the *Vengeance*, December 10th: William W. Keir, M.B., Surgeon, to the *Alacrity*, temporary, December 10th; Richard F. Clark, Surgeon, to the *Iphigenia*, December 10th: Joseph Crowley, Fleet Surgeon, and Harold G. F. Major and Guy L. Buckeridge, Surgeons, to the *Bulwark*, on recommissioning, January 3rd.

Deputy Inspector-General George Andrew Campbell died at Ealing on December 19th, aged 68. He was appointed Surgeon, February 28th, 1860; Staff Surgeon, January 20th, 1872: Fleet Surgeon, March 23rd, 1883; and Deputy Inspector-General on retirement, November 30th, 1891. He was Staff Surgeon of the *Hecla* at the bombardment of the Alexandria forts in 1882, and during the subsequent campaign (medal with clasp and Khedive's bronze star), and during the operations near Suakin in 1884 (clasp).

ROYAL ARMY MEDICAL CORPS.

The retirement of Major A. E. C. Spence, M.B., is to take effect from November 21st, and not as stated in the *London Gazette* of November 15th. (*Vide* British Medical Journal, November 19th.)

CHANGES OF STATION.

The following changes of station amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during the month of November:

	From.	To.
Colonel J. F. Williamson, M.B., C.B., C.M.G.	Somaliland	India.
Lieut.-Col. G. T. Goggin	Dublin	Belfast.
,, R. L. Love, M.D.	O. R. Colony	Fermoy.
,, H. O. Trevor	Madras	Aldershot.
,, W. W. Pike, D.S.O.	Aldershot	Madras.
,, E. H. L. Lynden-Bell, M.B.	Longmoor	Bengal.
,, G. D. Hunter, D.S.O.	Bengal	Portsmouth.
,, H. N. Thompson, M.B., D.S.O.	Aldershot	Woking.
Major F. D. Elderton	Cape Colony	Devonport.
,, C. A. Lane, M.B.	Colchester	Ceylon.
,, P. C. H. Gordon	York	Madras.
,, J. H. Brannigan	Punjab	York.
,, H. Cocks, M.B.	Fermoy	Madras.
,, F. W. G. Hall, M.B.	Punjab	Chester.
,, H. M. Adamson, M.B.	Bodmin	Bengal.
,, C. J. Macdonald, M.D.	Malta	Cork.
,, H. A. Cummins, M.D., C.M.G.	Woolwich	Punjab.
,, E. S. Marder	Madras	Dover.
,, G. Scott, M.D.	Edinburgh	Punjab.
,, A. O. C. Watson, M.B.	,,	Aberdeen.
,, H. I. Pocock	Bombay	Aldershot.
,, G. T. Rawnsley	Punjab	Portsmouth.
,, A. J. Luther	Bombay	Bengal.
,, N. Faichnie, M.B.	Madras	York.
,, I. A. O. MacCarthy	Cork	Kilkenny.
,, C. W. Duggan, M.B.	Stoke Camp	Edinburgh.
,, H. D. Mason	Manchester	Bengal.
,, T. McDermott, M.B.	Dublin	,,
,, A. J. Chalmers	Bermuda	Netley.
Captain A. E. Master, M.B.	Devonport	Malta.
,, H. A. Berryman	Home District.	Gibraltar.
,, S. H. Fairrie, M.B.	Canterbury	Shorncliffe.
,, J. H. Campbell, D.S.O.	Dover	Colchester.
,, S. A. Archer	Bengal	Dublin.
,, A. J. MacDougall, M.B.	Edinburgh	Piershill.
,, J. Poe, M.B.	Punjab	Dublin.
,, E. T. Inkson, V.C.	Cape Colony	Portsmouth.
,, B. Watts	Punjab	York.
,, W. P. Gwynn	Madras	Devonport.
,, J. Cowan, M.B.	,,	Netley.
,, J. M. Sloan, M.B. D.S.O.	Cape Colony	Edinburgh.
,, H. D. Packer	Natal	Dublin.
,, H. K. Palmer	Transvaal	,,
,, S. G. Butler	Madras	Devonport.
,, J. I. W. Morris	Transvaal	Home District.
,, J. Matthews	Bombay	Aldershot.
,, H. C. R. Hime, M.B.	O. R. Colony	Netley.
,, F. McLeman, M.B.	Somaliland	Bengal.
,, H. J. McGrigor, M.B.	Barbados	Woolwich.
,, J. L. Jones	Woolwich	Ceylon.
,, M. F. Foulds	Punjab	Bengal.
,, A. W. Sampey	Dublin	West Africa.
Lieutenant L. Cotterill	Somaliland	Madras.
,, A. B. Smallman, M.B.	Aldershot	Bengal.
,, R. M. Ranking	,,	Hong Kong.
,, J. H. Duguid, M.B.	,,	Sts. Settlemts.
,, S. L. Pallant	Gosport	Bengal.
,, C. R. Bradley	Netley	Bombay.
,, W. MacD. Macdonald	Aldershot	,,
,, F. J. Turner	Netley	,,
,, D. S. B. Thomson, M.B.	Curragh	Dublin.
,, L. Bousfield, M.B.	Aldershot	R.A.M. Coll.
,, D. P. Johnstone	Glen Imaal	Madras.
,, A. A. Meadeu	Woolwich	Bombay.

Captain G. St. C. Thom, M.B., has assumed duty as Adjutant at the Dépôt and Training School, Aldershot, vice Major H. A. Hinge, appointed to command the B Company.

Exchange.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 2s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A Lieutenant, R.A.M.C., two years' service, wishes to hear of an officer in the I.M.S. willing to exchange, subject to regulations.—Address No. 6140, British Medical Journal.

ARMY MEDICAL STAFF.

Surgeon-General Sir W. Taylor, M.D., K.C.B., K.H.P., is placed on retired pay, December 2nd. Appointed Assistant Surgeon, September 30th, 1864, he became Surgeon, March 1st, 1873; Surgeon-Major, September 30th, 1876; Brigade-Surgeon, February 5th, 1890; Surgeon-Colonel March 10th, 1895; Surgeon-Major-General, March 25th, 1896; and Director-General of the Army Medical Service, December 2nd, 1901. Sir William was granted a reward for distinguished services, October 1st, 1899; appointed Honorary Physician to the King, August 21st, 1901; and made a Knight Commander of the Order of the Bath, June 26th, 1902. He was also a Knight of Justice of the Order of St. John of Jerusalem. His war record is as follows:—Jowaki expedition, 1877 (medal): Burmese expedition, 1885-6—served on the Staff of the Commander-in-Chief in India (mentioned in dispatches, clasp); Hazara expedition, 1888: Burmese expedition, 1888-9; Japan and China, 1894-5—attached to Head Quarters, Japanese Army (Japanese war medal); Ashanti expedition, 1895-6—as Principal Medical Officer (honourably mentioned, promoted Surgeon-Major-General, star); Nile expedition, 1898—as Principal Medical Officer, including the battle of Khartoum (mentioned in dispatches, C.B., second class of the Medjidie, Egyptian medal with clasp, British medal).

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

The undermentioned officers have resigned their commissions from December 17th: Surgeon-Captain R. B. Wright, 1st Cheshire; Surgeon-Lieutenant J. H. F. Way, 2nd Hampshire; Surgeon-Lieutenant H. E. Hewitt, M.D., 2nd Sussex.

Mr. Andrew Elliot, M.D., to be Surgeon-Lieutenant in the 2nd Middlesex, December 17th.

VOLUNTEER RIFLES.

Mr. Maurice Hogan to be Surgeon-Lieutenant in the 1st Volunteer Battalion the East Lancashire Regiment, December 17th.

Surgeon-Lieutenant J. A. Angus, 3rd Volunteer Battalion the Royal Fusiliers (City of London Regiment), to be Surgeon-Captain, December 10th.

Supernumerary Surgeon-Major (Brigade-Surgeon-Lieutenant-Colonel) W. D. Waterhouse, 4th Volunteer Battalion the Royal Fusiliers (City of London Regiment) (Senior Medical Officer, 2nd London Volunteer Infantry Brigade), to be Surgeon-Lieutenant-Colonel, December 10th.

Surgeon-Lieutenant F. Robinson, 2nd Volunteer Battalion the Loyal North Lancashire Regiment, resigns his commission, and is appointed Second Lieutenant, December 10th.

Surgeon-Major C. Godson, M.B., 18th Middlesex, to be Surgeon-Lieutenant-Colonel, December 10th.

HEALTH OF THE UNITED STATES ARMY.

The report of the Surgeon-General of the United States army for the fiscal year ending June 30th, 1904, has recently been issued.

The health of the army during the year was very satisfactory, the admission-rate per 1,000 of strength—1,451.13—showing a considerable diminution as compared with 1902, when it was 1,716.51. This result has been brought about by the more careful attention given to sanitary matters. The number of cases and rates per 1,000 of mean strength for disease in the army, reported in the calendar year 1903, were as follows: Admissions, 83,096, rate 1,228.45; discharges for disability, 1,462, rate 21.61; deaths, 475, rate 7.02. Those for external causes were: Admissions, 15,063, rate 222.68; discharges for disability, 120, rate 1.77; deaths, 154, rate 2.28. The admission-rate in the United States per 1,000 for disease and injury was 1,206 89, and the death-rate 5.94, as compared with 1,343.77 and 7.83 in 1902. Of this rate, 961.50 men per 1,000 were admitted, and 4.12 died from disease, and 245.39 admitted, and 1.82 died from external causes.

The report states that there was a decided decrease of cholera in the Philippine Islands. This is undoubtedly due to the untiring efforts of the army medical officers in preventing the spread of the disease among the troops serving at the island stations. Typhoid fever and malarial fevers showed a gratifying decrease. The prevalence of tuberculosis varied but little from that of previous years. There were 636 cases of beri-beri, almost entirely confined to the Filipino soldiers, while of bubonic plague there was not a single case during the year 1903. A further reduction in intestinal affections among the troops was noted.

The number of admissions to sick report, however, for venereal disease during 1903 was still large. Although the admission rate for the whole army was slightly lower than that of the preceding year, the ratio of discharge per 1,000 of strength was a little in excess of 1902, and a total of 4 deaths was reported.

A slight decrease in the number of admissions for alcoholism is noted. Of the total number of admissions 1,541 were for acute, 73 for chronic alcoholism and 56 for delirium tremens, equivalent to 22.78, 1.08, and 0.83 per 1,000 men. Of the 42,264 troops serving in the United States, 1,041, or 24.63 per 1,000, were admitted for acute alcoholism; 6 cases, or 0.14 per thousand, terminated fatally. For troops serving in Cuba and Porto Rico a higher rate than the large one of last year was reported. The rate of admission for acute alcoholism was 51.25, or nearly three times as great as the corresponding rate for the troops in the Pacific Islands and China. A slight increase in alcoholism is recorded in the Pacific Islands and China as compared with the rate of last year. Insanity was far less prevalent during 1903 than in the previous year.

OBITUARY.

COUNT PIETRO GRADENIGO, M.D.,

Professor of Ophthalmology, University of Padua.

COUNT PIETRO GRADENIGO, Director of the Ophthalmic Clinic in the University of Padua, died on December 1st. He was a descendant of an illustrious patrician family which gave four Doges to Venice, and many members of which up to the end of the Venetian Republic, held the highest political and administrative offices in the State. He was born in 1831, and received his preliminary education at Venice. When only 17 he served with distinction as a volunteer in the rising against Austria in 1848-9. He studied medicine at Padua, where he took his doctor's degree in 1855. After serving for some time in the Venice Hospital he became assistant in the Ophthalmic Clinic at Padua. Three years later he was appointed Surgeon to the Venice Hospital, a post which he held for ten years. In 1873 he succeeded Gioppi in the Chair of Ophthalmology in the University of Padua. His contributions to the literature of his speciality have been gathered together in a large volume, edited by his pupils Ovio and Bonamico, which was published in the present year.

Gradenigo was one of the first in Italy to use the ophthalmoscope. Among the subjects to which he gave special attention were the treatment of corneal opacity, antisepsis of the eye, and the operative treatment of cataract. He invented a special thermometer, and a stethoscope for use in investigating the condition of the eye, and published in 1881 and 1882 the results of observations made by him with the help of those instruments. He also studied the application of electricity to the eye, and was a warm advocate of digital massage in various ocular affections, especially in detachment of the retina. His observations on massage of the eye were published in 1882.

JOSE ANTONIO SERRANO, M.D.,

Professor of Anatomy, Lisbon.

DR. JOSÉ ANTONIO SERRANO, Professor of Anatomy in the Medico-Chirurgical School of Lisbon, who has just died, was born at Castello de Vide, Portugal, in 1851. He studied medicine at Lisbon, where he took his Doctor's degree in 1875. After practising his profession for some time in his native place, he was in 1878 appointed Conservator of the Anatomical Museum in Lisbon. He was also Demonstrator and Lecturer on Surgery. In 1882 he was appointed to the Chair of Descriptive Anatomy, which he continued to hold till his death. He was also Professor of Artistic Anatomy in the Academy of Belles Lettres. In addition to these chairs, Dr. Serrano held the offices of Secretary and Librarian to the school and Director of the Department of Medical Statistics in the San José Hospital. He was President of the General Assembly of the Portuguese Medical Association, Chairman of the Benevolent Society for Poor Students, and of the Legislative Committee of the National League against Tuberculosis. He was a Fellow of the Portuguese Royal Society of Sciences, and held various offices in the medical societies of Lisbon.

Professor Serrano had been chosen for the presidency of the Section of Anatomy, Anthropology, Embryology and Histology in the fifteenth International Medical Congress to be held in April, 1906. He was the author of dissertations on the anatomy and physiology of the vasomotor nerves; on nutrition, inflammation, and new formation; of a synoptic manual of descriptive anatomy; and a treatise on human osteology.

Professor Serrano was a conspicuous figure in the professional life of Portugal. He was a man of the strictest sense of duty, and gave his whole life to the study and teaching of anatomy. He was widely read in general literature, and wrote his native language with remarkable power and elegance of diction; even his descriptions of bones are often marked not only by the greatest lucidity but by wonderful literary grace.

THE LATE DR. VAWDREY LUSH.

SIR SAMUEL WILKS, Bart., M.D., F.R.S. (formerly President of the Royal College of Physicians of London), writes: You gave in the BRITISH MEDICAL JOURNAL a very excellent and appreciative notice of my late friend Dr. Lush, and, with great accuracy, speak of his strong convictions and sterling honesty, whereby he set a most admirable example to his professional brothers. A marked exemplification of this being not alluded to, I may be allowed to mention it. After being elected a Fellow of the College of Physicians he thought it his duty to attend all the *comitia*, and so Dr. Lush might be always found in his place at the four quarterly meetings. He started from his home at an early hour for London, then went to his old hospital (St. Bartholomew's), and afterwards came on to the College. If he remained to the dinner he was obliged to leave early, and so arrived home at midnight or soon after. I take this opportunity of alluding to the certified cause of his sudden death as cerebral haemorrhage. I vainly imagined that such an old-fashioned notion was completely exploded, and that all accurate knowledge had shown that sudden death was due to failure of the heart, and never arose from cerebral haemorrhage.

ON December 14th, within three days of his 81st birthday, ROBERT BARTLEY MOORE, of Rockcarry, co. Monaghan, passed away full of years and honour. In 1858 he obtained the diploma of L.F.P.S.Glasg., and practised for some years in Newbliss, co. Monaghan, until he was appointed Medical Officer of the Dawson Grove dispensary district of the Cootehill Union, which appointment he held for upwards of thirty-eight years, until advancing years compelled him to seek relief from the hardships of a dispensary doctor's life. Notwithstanding his many years of service, during which we believe he never cost the guardians one penny for sick leave, they refused to give him any retiring allowance. Fortunately, unlike many of his fellow servants, he was able to live without that much grudged dole. From end to end of the two counties of Cavan and Monaghan Dr. Moore's name was a household word. His practice was very large, and the confidence of the people in his skill was unlimited. Even when he was on his deathbed people were coming to his house seeking his aid, and their belief in him was well deserved, for he was all his life a most able practitioner. Living as he did in a rural district far from any of the centres of medical activity, he never allowed himself to degenerate into the mere "dispensary hack." He read much, and was always prepared to give his patients the benefit of the latest advances in the science of medicine. He was, too, a great favourite with his professional brethren. They were always glad to have him in consultation, for his advice was ever worth having, and he was the soul of honour in every relation of life.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

THE following candidates have passed the examinations indicated:

First M.B.: Organic Chemistry.—P. P. W. Andrews, University College; T. B. Batchelor, University College; A. W. Burnyeat, Queen's College; D. C. Dobell, Christ Church; H. J. B. Fry, Magdalen College; C. Gouldesborough, Christ Church; H. F. Newsholme, Balliol College; J. A. Noble, Queen's College; E. W. M. Phillips, Jesus College; J. Wallace, Exeter College; T. S. Wright, Brasenose College.

First M.B.: Human Anatomy and Human Physiology.—M. B. Baines, Exeter College; R. Evans, Jesus College; F. Howson, non-collegiate; G. H. Hunt, Christ Church; W. W. Wells, Merton College.

Second M.B.: Pathology.—L. T. Burra, University College; R. A. Chisolm, Wadham College; T. Harris, non-collegiate; R. Jamison, Trinity College; L. J. J. Orpen, Keble College; J. E. Rutherford, Corpus Christi College; H. C. G. Semon, Magdalen College; C. A. Smallhorn, Wadham College; B. H. Spilsbury, Magdalen College; H. L. Tidy, New College; E. H. White, University College.

Final Examination: Medicine, Surgery, and Midwifery.—A. W. Brodribb, University College; E. Burstall, Trinity College; R. A. Chisolm, Wadham College; H. R. Dean, Magdalen College; H. Frankish, Worcester College; J. Freeman, University College; A. H. Hogarth, Christ Church; R. H. Sankey, Christ Church; C. J. Singer, Magdalen College; E. McL. Smith, Queen's College; P. F. Tinné, Magdalen College; J. A. Vlash, New College.

UNIVERSITY OF CAMBRIDGE.

MICHAELMAS EXAMINATIONS FOR MEDICAL AND SURGICAL DEGREES.—The following candidates have been approved in the subjects indicated:

First Examination: Chemistry and Physics.—W. A. Anderson, Cla.; W. Boys-Stones, Cai.; W. T. Chaning-Pearce, Emm.; W. N. Child, B.A., Christ's; H. C. Davis, Cla.; M. E. Dellschaft, Jes.; E. V. de Souza, Down; C. A. Dottridge, Cla.; A. W. Gaye, Cai.; A. H. Gosse, Cai.; H. G. Greaves, Emm.; C. C. Harrison, Cai.; J. Harrison, Christ's; R. Heaton, Christ's; G. C. Kidd, Christ's; N. F. Lock, Cai.; C. H. Maxwell, Christ's; C. C. Messiter, Cai.; B. L. Miles, Pemb.; G. R. Mines, Sid. Suss.; C. G. H. Moore, Cai.; A. F. Morcom, Cla.; J. D. Morgan, B.A., Trin.; C. G. H. Morse, Emm.; N. Mutch, Emm.; J. H. Newmarch, Pemb.; H. B. Richmond, King's; A. Sandison, Trin.; F. D. Saner, Christ's; F. P. Saunders, Cla.; A. S. Seabrooke, Christ's; J. E. S. Sheppard-Jones, Magd.; W. Shipton, Emm.; H. C. Snell, B.A., Cai.; R. C. Staples-Browne, B.A., Emm.; A. W. Stoit, Trin.; W. W. C. Topley, Joh.; J. van Schalkwijk, Cai.; L. C.

Walker, Christ's; J. M. Wallace, Down.; M. H. Whiting, Down.: H. F. Wilson, Christ's.

Elementary Biology.—P. B. M. Allan, Cla; W. A. Anderson, Cla.; H. A. Ash, Pemb.; E. Billing, Cai.; L. Bromley, Cai.; J. S. Burn, Trin.; H. C. Davis, Cla.; M. E. Dellschaft, Jes.; R. Ellis, Cath.; H. G. Greaves, Emm.; A. R. Hargreaves, Trin.; T. W. Haward, King's; R. Heaton, Christ's; G. Holmes, Cai.; O. R. Horwood, Corp. Chr.; R. H. Hutchinson, B.A., Cla.; A. P. Methuen, Trin.; G. R. Mines, Sid. Suss.; C. G. H. Moore, Cai.; A. F. Morcom, Cla.; G. W. Morrice, Trin.; N. Mutch, Emm.; J. H. Newmarch, Pemb.; W. M. Penny, Jes.; H. B. Richmond, King's; J. B. Ronaldson, Joh.; A. Sandison, Trin.; R. C. Staples-Browne, B.A., Emm.; R. J. Vernon, B.A., Cai.; J. M. Weddell, Christ's.

Second Examination: Human Anatomy and Physiology.—A. Abrahams, Emm.; H. T. Ashby, B.A., Emm.; A. G. Atkinson, Trin.; H. S. Berry, B.A., Cla.; J. P. Buckley, B.A., Trin.; L. S. T. Burrell, B.A., Trin.; H. V. B. Byatt, B.A., Cla.; B. P. Campbell, B.A., Cla.; H. J. B. Cane, M.B., Cai.; J. R. C. Canney, Christ's; H. B. Carlyll, B.A., Joh.; H. Chapple, B.A., Joh.; R. G. Chase, Trin.; F. Clayton, B.A., Trin.; L. Colledge, B.A., Cai.; B. Day, B.A., Cai.; L. T. Dean, B.A., Sid. Suss.; A. T. Densham, B.A., Joh.; H. Dimock, B.A., Sid. Suss.; G. H. Drew, B.A., Christ's; W. H. F. Eales, B.A., Emm.; H. B. Ellison, B.A., Cai.; M. F. Emrys-Jones, B.A., Cai.; F. S. Eschwege, B.A., Christ's; A. W. Ewing, B.A., Christ's; P. G. Fildes, B.A., Trin.; H. B. Follit, B.A., Cla.; J. L. Graham-Jones, B.A., Emm.; R. W. Ironside, B.A., Pemb.; N. W. Jenkin, B.A., Christ's; C. E. M. Jones, B.A., King's; K. S. Koh, Joh.; W. S. Leicester, B.A., Emm.; H. M. J. F. de P. P. Leite, B.A., Cai.; R. L. Ley, B.A., Pemb.; H. N. Little, B.A., Cai.; A. J. May, Sid. Suss.; L. Nicholls, B.A., Down; A. H. Owen, B.A., Cai.; W. G. Parkinson, B.A., Emm.; H. Parsons, Cai.; B. A. I. Peters, B.A., Jes.; K. Pretty, King's; R. F. F. Priestley, Cai.; C. Raymond, B.A., Cai.; A. L. Sachs, M.A., Pemb.; M. J. Sawhny, Down.; G. L. Siddle, B.A., Cai.; A. E. Stansfeld, Joh.; A. C. Sturdy, Pemb.; T. S. Suan, Christ's; W. W. Treves, Cai.; R. R. Walker, B.A., Joh.; H. N. Webber, B.A., Joh.; T. A. Weston, Joh.; J. F. Windsor, B.A., H. Selw.; A. E. M. Woolf, Emm.

Third Examination: Pharmacology and General Pathology.—P. H. Bahr, B.A., Trin.; J. Barcroft, M.A., King's; J. W. B. Bean, B.A., H. Selw.; E. Beaton, B.A., Cai.; G. G. Butler, B.A., Emm.; R. N. Chopra, Down; H. N. Coleman, B.A., Christ's; L. Courtauld, B.A., Trin.; F. D. Crew, B.A., Emm.; A. J. W. Cunningham, B.A., Trin.; A. W. C. Drake, B.A., Pemb.; J. R. Draper, B.A., Joh.; E. G. Fearnsides, Trin. H.; W. J. Fison, Sid. Suss.; G. B. Fleming, B.A., King's; C. F. Fothergill, B.A., Emm.; F. Gayner, B.A., King's; B. C. Ghosh, M.A., Joh.; C. W. Greene, B.A., Emm.; J. W. Grice, B.A., King's; J. M. Hamill, B.A., Trin.; G. A. F. Heyworth, B.A., Trin.; W. D. Hopkins, B.A., Trin. H.; A. F. Jackson, Pet.; A. R. Jordan, B.A., Cla.; H. E. Kitchen, B.A., Sid. Suss.; C. N. le Brocq, B.A., Pemb.; R. B. Lloyd, B.A., Emm.; T. C. Lucas, B.A., Cla.; S. G. Luker, B.A., Pemb.; R. G. Markam, B.A., Cai.; C. D. Mathias, B.A., Trin.; A. W. Moore, B.A., Emm.; E. V. Oulton, B.A., Christ's; J. H. Pratt, B.A., Trin.; R. Puttock, B.A., Emm.; A. C. H. Rothera, B.A., Emm.; C. E. F. Salt, B.A., Pemb.; R. B. S. Sewell, B.A., Christ's; A. L. Singer, B.A., King's; P. J. Verrall, Trin.; K. M. Walker, B.A., Cai.; E. G. Wheat, M.A., Christ's; A. B. Wilson, B.A., Pemb.; F. L. Woods, B.A., Cai.; R. F. Young, B.A., Christ's.

Master of Surgery.—A. R. Brailey, M.A., Down; A. J. Fairlie-Clarke, Emm.

UNIVERSITY OF EDINBURGH.

University Court.

Examiners.—At a meeting of the Edinburgh University Court on Monday, December 12th, Professor C. S. Sherrington, University of Liverpool, was appointed an additional examiner in physiology, and Dr. George A. Gibson, Edinburgh, an additional examiner in clinical medicine. It was agreed to advertise the vacant additional examinerships in the following subjects: (1) Public Health Laboratory Work; (2) Botany; (3) Chemistry; (4) Anatomy, including Anthropology; (5) Pathology; (6) Practice of Medicine; (7) Midwifery; (8) Forensic Medicine; and (9) Public Health (for medical graduation), and Sanitation, Sanitary Law, and Vital Statistics (for graduation in science). Professor Arthur Robinson, King's College (London), Dr. J. J. Dobbie (Edinburgh), and Dr. J. C. McVail (Glasgow), were appointed additional examiners in connexion with theses for the degree of D.Sc.

Lectureship in Anaesthetics.—On the recommendation of the Senatus it was agreed to institute a Lectureship in Anaesthetics, and to appoint Mr. Thomas D. Luke, M.B., F.R.C.S.E., as University Lecturer on that subject. Dr. Burn Murdoch was reappointed University Lecturer on diseases of children.

Education in Military Subjects.—The Court approved of draft regulations submitted by the Senatus for education in military subjects, and directed that copies be forwarded to the War Office for information and approval.

UNIVERSITY OF ABERDEEN.

Association of Lecturers and Assistants.

Mr. James Hendrick, B.Sc., Lecturer in Agricultural Chemistry, President of the Association, occupied the chair at the recent annual dinner of the Association held in the Imperial Hotel on the evening of Friday, December 9th. Dr. G. M. Duncan and Mr. A. R. Lord were croupiers, and there was a large attendance of members. Among the guests were Principal Lang, Mr. Bryce, M.P., Professor Stephenson, and Professor Baillie. The loyal and patriotic toasts were given from the chair, as was also "The Imperial Forces," replied to by Surgeon-Captain H. M. W. Gray, M.B. Mr. Bryce gave the toast of "The University" in a most interesting speech contrasting American and Scotch university life and methods. Principal Lang, responding to the toast, alluded to the great changes in the teaching staff in recent years by addition to the number of lecturers and assistants, and to the excellence of the work done by the junior staff. "The Association" was pledged on the call of Professor Baillie, who advocated the development of closer relations between the senior and junior staffs, and Professor Stephenson, who replied to the toast of "The Guests," warmly seconded Professor Baillie's remarks. An excellent musical programme was submitted at intervals, the accompaniments being ably played by Mr. J. M. Nisbet, organist to the University.

Gifts to the Anatomical Museum.

A meeting of the University Anatomical and Anthropological Society was held on December 10th in the Anatomical Department, Professor Reid, President of the Society, presiding. A number of papers on anatomical variations discovered by students in course of recent dissections were read and discussed by members of the Society. Professor Reid then exhibited a series of valuable anatomical models presented to the Anatomical Museum by Mr. Thomas Bryant, Surgeon to the King and ex-President of the Royal College of Surgeons (England). The models were greatly prized, as they had been made by the late Joseph Towne, modeller to Guy's Hospital for fifty-three years, and also because they were the first attempts made in this country to represent the different parts of the human body in wax. Professor Reid also gave a brief account of the life of Joseph Towne. Mr. S. Piarroux, medical student, then gave an exhaustive description of the Madagascar negroes in Mauritius. After a discussion on the paper Mr. Piarroux was heartily thanked. It was intimated that Captain A. W. Cook-Young, I.M.S., who took part in the recent expedition to Lhassa, would favour the Society, at their next meeting with an account of his experiences among the Thibetans.

UNIVERSITY OF DUBLIN.

Honorary Degrees.

At the meeting of the Senate on December 20th Lord Rosse, the Chancellor, conferred honorary degrees of Master in Surgery and Doctor in Medicine upon Sir Frederick Treves, Bart., and Major Ronald Ross, C.B., F.R.S. The Public Orator (Dr. Purser), in presenting Sir Frederick Treves, in a Latin speech referred to his work during the South African War and his personal services to the King, remarking: "If the Romans of old were wont to give the special honour of a civic crown to one who in battle had saved a single citizen, what adequate return can be made to this eminent man, not only for restoring a beloved Monarch to the rejoicing citizens, but also for preserving many citizens amid the dangers of war to their grateful Sovereign?" In presenting Major Ross the Public Orator referred to his valuable researches in the department of tropical medicine.

Ordinary Degrees.

A large number of ordinary degrees were conferred, including those of M.A. and B.A., on 21 and 39 ladies respectively, most of whom had qualified for the degrees at Cambridge, and were admitted under the decree passed by the Board of Trinity College at the beginning of the present year.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

Admission of Fellows.—At a meeting of the College held on December 15th, the following gentlemen, having passed the requisite examinations, were admitted ordinary Fellows: William Hope Fowler, M.B., Ch.B., Edinburgh; David Fyfe, L.R.C.S.E., Glasgow; Sidney Alfred Gibbs, M.B., C.M., Nelson, New Zealand; John Stroud Hosford, M.R.C.S.Eng., L.R.C.P.Lond., London, S.W.; Trevor Howell, M.R.C.S.Eng., L.R.C.P.Lond., Walsall; William Irwin, M.B., C.M., Singleton, N.S.W.; John Alexander Campbell Kynoch, M.B., C.M., Dundee; Roderick Murdoch Matheson, M.D., Edinburgh; and Walter Silverwood Richardson, M.R.C.S.Eng., L.R.C.P.Lond., Boscombe, Hants.

TRINITY COLLEGE, DUBLIN.

Final Examination in Surgery.—The following candidates have passed this examination: Eva J. Jellett, H. Stewart, W. Hassard, T. Creaser, R. S. Smyth, J. Cunningham, R. Kelly, A. A. M'Neight, C. E. Fawcett, T. J. T. Wilmot, T. Wilson, G. A. Crowley, K. R. C. Hallowes, W. J. M'Ivor.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,438 births and 5,631 deaths were registered during the week ending Saturday last, December 17th. The annual rate of mortality in these towns, which had been 17.3, 21.6, and 18.5 per 1,000 in the three preceding weeks, rose again last week to 19.2 per 1,000. The rates in the several towns ranged from 7.7 in Hornsey, 8.7 in Barrow-in-Furness, 10.2 in Southampton, 12.2 in Leyton, in Walthamstow, and in Handsworth (Staffs), 12.9 in Bournemouth, and 13.0 in Wallasey, to 24.7 in Stockton-on-Tees, 25.5 in Bristol, 25.7 in Wigan, 26.1 in Burton-on-Trent, 26.2 in South Shields, 26.4 in West Bromwich, 27.4 in Plymouth, and 30.2 in Hanley. In London the rate of mortality was equal to 19.0 per 1,000, while it averaged 19.3 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.4 per 1,000 in the seventy-six towns; in London this death-rate was equal to 1.0 per 1,000; while among the seventy-five other large towns the rates ranged upwards to 3.6 in Merthyr Tydfil, 3.8 in Middlesbrough, 3.9 in Tynemouth, 4.0 in Stockton-on-Tees, 4.2 in Wigan, 5.5 in Plymouth and in Grimsby and 5.8 in South Shields. Measles caused a death-rate of 1.7 in Bristol and in Liverpool, 2.1 in Devonport, 2.5 in Wigan, 2.7 in Middlesbrough, 3.7 in Plymouth, 3.9 in Tynemouth, and 4.7 in Grimsby; scarlet fever of 1.6 in West Bromwich; diphtheria of 1.7 in Derby, 2.0 in Stockton-on-Tees, 2.3 in West Hartlepool, and 2.6 in Handsworth (Staffs.); whooping-cough of 1.0 in Hull, 1.2 in St. Helens, 1.4 in Merthyr Tydfil, 1.7 in Barrow-in-Furness, and 2.9 in South Shields; "fever" of 1.0 in Burnley and 1.3 in York; and diarrhoea of 1.6 in Hanley. Two fatal cases of small-pox were registered in Preston, 2 in South Shields, 1 in Oldham, and 1 in Halifax, but none elsewhere of the seventy-six large towns. The Metropolitan Asylums hospitals contained 6 small-pox patients on Saturday last, the 17th inst., against 1, 3, and 4 on the three preceding Saturdays; 2 new cases were admitted during last week, against 2, 2, and 1 in the three preceding weeks. The number of scarlet fever patients in these hospitals, which had been 2,741, 2,625, and 2,490 at the end of the three preceding weeks, had declined again to 2,403 at the end of last week; 242 new cases were admitted during the week, against 262, 247, and 263 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, December 17th, 890 births and 747 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality, which had been 18.0, 21.2, and 19.7 per 1,000 in the

three preceding weeks, rose again last week to 22.6 per 1,000, and was 3.4 per 1,000 above the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 16.9 in Perth and 17.1 in Edinburgh, to 24.8 in Paisley and 26.6 in Glasgow. The death-rate from the principal infectious diseases averaged 2.4 per 1,000, the highest rates being recorded in Glasgow and Aberdeen. The 407 deaths registered in Glasgow included 3 which were referred to measles, 5 to diphtheria, 26 to whooping-cough, 4 to "fever," and 6 to diarrhoea. Three deaths from whooping-cough and 2 from diarrhoea were recorded in Edinburgh; 4 from diarrhoea in Dundee; 10 from measles and 2 from diarrhoea in Aberdeen; and 3 from measles in Leith.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, December 17th, 495 births and 428 deaths were registered in six of the principal Irish towns, against 461 births and 423 deaths in the preceding period. The mean annual death-rate in these towns, which had been 19.5, 21.2, and 21.4 per 1,000 in the three preceding weeks, rose to 27.1 per 1,000 in the week under notice, this figure being 7.9 per 1,000 higher than the mean annual rate in the seventy-six English towns for the corresponding period. The figures ranged from 19.9 in Cork and 21.4 in Waterford to 27.7 in Londonderry and 45.1 in Limerick. The zymotic death-rate during the same period and in the same six Irish towns averaged 1.4 per 1,000, or 0.3 per 1,000 lower than during the preceding period, the highest figure, 3.5, being registered in Belfast, while Londonderry and Limerick recorded no deaths under this heading at all. Measles was again the principal zymotic cause of death. From small-pox, scarlet fever, and typhus no death was registered in any part of Ireland, and only 1 death from diphtheria.

BIOLOGICAL TREATMENT OF SEWAGE.

SURGEON-MAJOR LEWIS CAMERON, M.D., late Bengal Medical Establishment, who has been interested in the article published on November 26th, under the above heading, writes to describe a process which he has invented and, since his retirement, patented, for the oxidation of sewage and allied matter. It is as follows:

"The process consists in a tank and paddle wheel. The tank has a division down its middle, leaving a space at each end vacant equal to one-half of the width of the tank. The wheel is mounted with one end of its axle resting on one of the sides of the tank and the other end on the division.

"The sewage, after coarse settling by means of lime, alum, etc., is filled into the tank to a depth proportionate to the size of the tank, the wheel, and its paddles.

"The wheel is then set in motion at about 40 to 50 revolutions per minute. The effect is to whip up the liquid with air, and to drive it round the tank and back to the wheel again. This action goes on continuously as long as the wheel is in motion. The result is to again and again incorporate the sewage with air till the maximum of oxidation is obtained.

"The principal ingredients dissolved in sewage are derivatives of starch, albumen, salts, etc. The derivatives of starch will be oxidized into acetic acid and those of albumen into nitrous and nitric acid. These are precipitated by lime.

"It is not likely that all the derivatives of albumen can be oxidized. If the liquid was not satisfactory after precipitation it could be submitted to the action of anaërobic bacteria for a month or six weeks. The liquid would then be pure enough to be disposed of in streams or on land. A very valuable manure would remain in the sludge and in the precipitate."

MR. GERARD JENSEN (London) writes: As an old pupil of Mr. Scott Moncrieff, who has followed his work on the bacterial purification of sewage for many years, I think it is only fair to him to point out that he no longer regards the trays which he adopted at Ashtead and at Caterham as essential to the practical application of the principles he has advocated. They served the important purpose of enabling him to identify the various stages of the process of nitrification, but all along it was obvious that the same zonal sequence of oxidation must occur in a filter in which the material is continuous from top to bottom. The result of his inquiry has been that, excluding the question of temperature, there are only four factors to be dealt with, namely: (1) The rate of flow, (2) the period between each discharge, (3) the quantity of air required for the life-processes of the organisms, and (4) the depth of filter required under standard conditions in order to obtain the required degree of purity in the effluent.

I think I am right in saying that this has been the only attempt that has so far been made to place the subject upon a scientific footing, and Mr. Scot tMoncrieff has followed it up by designing an apparatus by means of which these four factors can be accurately measured. In the article on the biological treatment of sewage in the BRITISH MEDICAL JOURNAL of November 26th, it is stated that "the general practice appears now to be to use large material for the first contact beds and small material for the second." This appears to me to be very like Mr. Scott Moncrieff's cultivation tank in which he advocated the use of large material long before Mr. Cameron brought out the "septic tank" at Exeter.

No one can doubt, who has made a study of Mr. Scott Moncrieff's experiments at Ashtead and at Caterham, which may now be regarded as classical, that, as the results far surpass all others in the amount of mineralized organic matter in the effluent, the means of attaining them, however much they may be modified in practice, cannot be very wide of the mark in theory.

It is surprising that no more advantage has been taken of the work he has done, and the more so as it has all been in the direction of preserving the nitrogen in a stable form, which would go far to realize Sir Wm. Crookes's estimate of £16,020,000 per annum for the wasted nitrogen of sewage in England alone, if it were capable of universal application. In any case, if, as many experts believe, Mr. Scott Moncrieff is right in his contentions, there is at least a ready means now available for placing the subject on a really scientific footing.

WORKHOUSE IN QUARANTINE.

SENEX.—We know of no regulation which enables the medical officer of a workhouse to place it and the premises in quarantine. Moreover, this could hardly have been necessary under any circumstances if the patients affected were properly isolated. Under the circumstances described the porter should have consulted the master of the house, and it would then have been for the latter to decide the question whether a guardian should be admitted, and to take all responsibility for doing so.

PAYMENT OF NOTIFICATION FEES.

DR. H. G. ARMSTRONG (Wellington College) writes: Some twelve years ago my local sanitary authority declined to pay my account for notifications on the plea that it had not been rendered at the proper time. I pointed out to them that each notification was itself a claim for payment which ought to be discharged at once. As they persisted in their refusal I appealed to the Local Government Board, who upheld my contention and directed the sanitary authority to pay my whole account.

REMOVAL OF PATIENTS TO INFECTION HOSPITAL.

ARGUS asks: A. and B. are practitioners in the same town. A. is M.O.H. for the district; B. is medical superintendent of the joint fever hospital of which A.'s district is joint owner. Is B. entitled to remove his own cases to hospital before certifying them to A.; and if entitled, is he acting courteously to A. in so doing? The board's removal certificates state that "patients will only be admitted upon the order of the board or M.O.H. of constituent councils, a J.P., or the medical officer of the joint board." A. sometimes does not receive the notification of B. until several days after cases have been removed by B.

*** Section III. (1) of the Infectious Diseases (Notification) Act, 1889, requires a medical practitioner to send a certificate notifying a case of infectious disease to the medical officer of health "forthwith" on becoming aware that the patient concerned is suffering from a notifiable infectious disease. "Forthwith" cannot mean after the lapse of even one day. A medical practitioner who is not the medical officer of health, even though he may be the medical superintendent of the fever hospital, should certainly send his notification certificate to the medical officer of health before he arranges for the removal of the patient to the hospital. It is of the first importance for the medical officer of health to have the earliest intimation of cases of infectious diseases occurring within his district, otherwise he is handicapped in his efforts to find out the source of a particular outbreak.

HOSPITAL AND DISPENSARY MANAGEMENT.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL.

QUEEN CHARLOTTE'S HOSPITAL is appealing for help to enable it to raise £5,000. This sum is required in order to extend the nurses' home and thus provide room for the staff nurses. The latter are at present lodged in the main building, and the rooms devoted to them could be converted into further accommodation for patients. Last year there were 1,444 in-patients, while 1,577 other lying-in women were attended in their own homes. The settled income of the hospital is about £2,100; its annual expenditure averages £6,000. The Secretary is Mr. Arthur Watts, Queen Charlotte's Hospital, Marylebone Road, W.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE annual general meeting of the constituents of the Metropolitan Hospital Sunday Fund was held at the Mansion House on December 16th, the Lord Mayor presiding. The report of the Council showed that in 1904, being the thirty-second year of the Fund's work, the collections totalled £63,054. Upon the adoption of the report being moved, Sir John Bell urged that support ought not to be withdrawn from the City Orthopaedic Hospital, and the Hon. Stephen Coleridge proposed an amendment to the effect that, in the opinion of the Council, no moneys should be assigned to any hospital which contributed out of its general fund towards the support of a medical school or laboratory. This was seconded by the Rev. L. S. Lewis, who complained that since the Metropolitan Hospital Fund had contributed to the London Hospital, that institution had given £3,200 to its medical school, though before it gave nothing, and had also spent £7,000 upon a sports ground. A discussion followed, in which Mr. Sydney Holland maintained the wisdom of the investments made of the funds of the London Hospital; finally, Mr. Stephen Coleridge accepted a suggestion that consideration of the question should be adjourned for a year, and withdrew his amendment. The report of the Council was then adopted, a vote of thanks being passed to Mr. Herring for his percentage contribution of £11,926; June 25th was fixed as Hospital Sunday for next year.

Upon the following day the Lord Mayor presided at a meeting of London commercial travellers, invited by him to consider the means by which the collection on Hospital Sunday could be increased to £100,000. In welcoming his guests the Lord Mayor said that commercial travellers had special opportunities of introducing the claims of the Hospital Sunday Fund to the notice of their fellow-citizens, and he believed that they could utilize those opportunities without prejudice to their own charities, which they supported so well. A resolution that the hospitals were worthy of support was then moved by Sir Joseph Dimsdale; it was seconded by Sir Frederick Treves, who said that it was mainly the London hospitals and their medical schools that England had to thank for the supply of efficient medical men. Several other speakers also spoke in favour of the resolution, which was unanimously passed. A further resolution to the effect that those present, being desirous of assisting the hospitals, pledged themselves to do their utmost to raise a fund to be added to the collection at St. Paul's on June 25th, 1905, was adopted, and the meeting then terminated.

BEQUESTS TO MEDICAL CHARITIES.—Under the will of the late Mr. James Thomas Smith, of Lee, Kent, who died on October 21st, the Miller Hospital, Greenwich, the British Home for Incurables, Clapham Road, and the *Dreadnought* Hospital each receive £1,000, while the London Hospital receives £500. The same testator left £100 each to the National Hospital for the Paralyzed and Epileptic, the Provident Surgical Appliance Society, the Eltham and Mottingham Cottage Hospital, the Female Lock Hospital, and the National Truss Society.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM: QUEEN'S HOSPITAL.—Honorary Ophthalmic Surgeon.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House-Surgeon, resident. Salary to commence, £70 per annum.

CHELSEA HOSPITAL FOR WOMEN, S.W.—Resident Medical Officer, unmarried. Salary, £80 per annum.

DORCHESTER: DORSET COUNTY HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

DINBURGH UNIVERSITY.—Additional Examiners in (1) Public Health Laboratory Work, (2) Botany, (3) Chemistry, (4) Anatomy, including Anthropology, (5) Pathology, (6) Practice of Medicine, (7) Midwifery, (8) Forensic Medicine, (9) Public Health (Medical Degrees Examination) and Sanitation, Sanitary Law and Vital Statistics.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—Dental Surgeon.

FARRINGDON GENERAL DISPENSARY.—Honorary Dental Surgeon.

GROCERS' COMPANY.—Two Scholarships in Sanitary Science, £300 a year each.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Appointments for six months. Honorarium, £25.

KING EDWARD VII SANATORIUM.—Medical Superintendent, resident. Salary, £500 per annum, rising to £650.

LEEDS UNIVERSITY.—Lecturer in Pharmacology, Therapeutics, and Materia Medica.

LINCOLN: HOSPITAL FOR THE INSANE.—Assistant Medical Officer. Salary, £100 per annum.

LIVERPOOL HOSPITAL FOR CONSUMPTION.—Non-resident Stipendiary Medical Officer. Salary, £70 per annum.

LONDON COUNTY ASYLUM, Banstead.—Junior Assistant Medical Officer, resident. Salary, £150 per annum.

LONDON SCHOOL OF TROPICAL MEDICINE.—Teachers of (1) Protozoology, (2) Helminthology. Salary, £250 per annum, rising to £500 each.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square.—Director of Neuro-Pathological Research. Salary, £250 per annum.

NEW ZEALAND: UNIVERSITY OF OTAGO.—Professor of Physiology. Salary, £600 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Members of the Honorary Medical and Surgical Staff.

ST. PANCRAS.—Medical Superintendent of the South Infirmary and Workhouse adjacent. Salary combined, £350 per annum, rising to £450.

SCARBOROUGH BOROUGH.—Medical Officer of Health. Salary, £350 per annum, increasing to £400.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House-Surgeon, resident. Salary, £70 per annum.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Assistant Physician.

STOKE UPON-TRENT: NORTH STAFFORDSHIRE INFIRMARY, HARTSHILL.—House-Surgeon, resident. Salary, £100 per annum, increasing £10 yearly.

UNIVERSITY COLLEGE HOSPITAL, W.C.—Surgical Registrar.

WAKEFIELD: CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—(1) Senior House-Surgeon. (2) Junior House-Surgeon. Both resident. Salary, £120 and £80 per annum respectively.

WATERFORD COUNTY AND CITY INFIRMARY.—Resident House-Surgeon. Salary, £100 per per annum.

WEST HAM AND EAST LONDON HOSPITAL, Stratford.—Junior House-Surgeon. Appointment for six months, eligible for election as Senior. Salary at the rate of £75 and £100 respectively.

APPOINTMENTS.

ADAMS, George, M.A., M.B., Ch.B.Aberd., House-Physician, Royal Aberdeen Hospital for Sick Children.

ENGLISH, T. Crisp, B.S.Lond., F.R.C.S.Eng., Lecturer on Operative Surgery, St. George's Hospital Medical School.

FIELD, F. A., M.D.Lond., Honorary Anaesthetist to St. Paul's Hospital, Red Lion Square, W.C.

FORBEST, J. L., M.B., Medical Officer of Health, Marshland Rural District.

GAGE, D. P., L.R.C.P.Edin., L.F.P.S.Glasg., Certifying Factory Surgeon for the Kilwinning (Burgh) District, Ayrshire.

GUTCH, John, M.D., B.C.Cantab., Member of the Honorary Medical Staff to the East Suffolk and Ipswich Hospital, vice Dr. Cashy (resigned).

HOLDING, C., L.R.C.P. and S.Edin., District Medical Officer, Whitchurch Union.

LUFF, A. P., M.D., F.R.C.P.Lond., a Member of the In-patient Staff, St. Mary's Hospital, vice W. P. Cheadle, M.D.Camb. (retired).

LUKE, Thomas D., M.B., F.R.C.S.Edin., Lecturer on the Practice of Anaesthetics at the University of Edinburgh.

PICTON, G. B., M.B., B.S.Durh., District Medical Officer of the Redruth Union.

ROGERSON, O. H., L.S.A., District Medical Officer of the Northallerton Union.

RYAN, J. B., L.R.C.P. and S.Irel., Certifying Factory Surgeon for the Taghmon District, Wexford.

SHEPPARD, J. F., L.R.C.P. and S.Irel., Certifying Factory Surgeon for the Newport Pagnell District, Buckingham.

SMITH, A., M.D., Medical Officer of Health, Whickham Urban District.

SUGDEN, F., M.B., District Medical Officer of the Doncaster Union.

SPARK, H. L., M.B., B.S.Edin., District Medical Officer of the Bradford Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

AGNEW.—On December 13th at Ibstock, near Leicester, the wife of Colville S. Agnew, M.R.C.S., L.R.C.P., of a daughter.

DARDEL.—On December 12th, at Aix-les-Bains, Savoy (France), the wife of Jean Dardel, M.D., of a daughter.

FIELD.—On December 10th, at Friern Lodge, 119, Lordship Lane, Dulwich, the wife of Frederick A. Field, M.D.Lond., of a son.

MARRIAGES.

FOXCROFT—COCKBAIN.—On December 15th, at Christ Church, Sefton Park, Liverpool, by the Rev. Canon Irving, Frederick Walter Foxcroft, M.D., C.M., Birmingham, youngest son of the late Joseph Foxcroft, Cheetham Hill, Manchester, to Mary Lydia, daughter of the late Thomas Cockbain, Liverpool and Valparaiso.

WARING—SCOONES.—On December 16th (by licence), Captain Anthony H. Waring, R.A.M.C., son of Henry R. Waring, of Palma de Mallorca, Spain, to Isabel Frank Fenella, widow of the late Offley Scoones, only daughter of the late Lieutenant-Colonel F. M. Salmond, Royal Scots Fusiliers, and grand-daughter of the late General H. G. Hart.

DEATHS.

HILL.—On Sunday, December 11th, at 2, Bedford Square, London, Hannah, the loving and beloved wife of J. Higham Hill, M.D.

NORMAN.—At 21, Clarendon Crescent, Edinburgh, on December 21st, Reginald Francis Norman, dearly loved eldest son of Keith Norman Macalister MacDonald, M.D., F.R.C.P.Edin., aged 30 years.

YOUNG.—December 14th, William Musson Young, M.D., of 3, Pembridge Road, Notting Hill Gate, London, eldest son of the late Samuel Young, of Lisburn, co. Antrim,

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National)—EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

F.R.C.P.E. desires to hear of an institution, in or near Liverpool, where a female patient, aged 73, suffering from rheumatism, could be admitted at a small weekly payment.

TREATMENT OF THREAD-WORMS.

VEXATUS asks for advice in the treatment of a man, aged about 55, suffering from thread-worms. He has used all the ordinary methods of treatment with no success, such as enemata of salt, quassia, etc., and internal anthelmintics.

TRANSIENT OEDEMA.

BRUTUS asks for suggestions as to cause and gravity of the occasional occurrence in the morning of slight oedema of the lower eyelids in a boy aged 16 years. It has been observed for about seven or ten years. He is otherwise strong and healthy. The urine is normal, the nitric-acid test showing no trace of albumen. A brother suffers from occasional attacks of oedema of the hands when exposed to cold.

MEDICAL STATISTICS.

DR. T. A. DUKES (Croydon), writes: In common with many of your readers I should be interested if Professor Karl Pearson would tell us: (1) How, being given a heterogeneous mass of statistics about antityphoid inoculation, he calculates "probable error" in those heterogeneous statistics. (2) When the probability of error telling in favour of a method is not equal to the probability of error telling against that method, how he ascertains that inequality, and how he allows for it. (3) Why a method should not be recommended as a routine practice unless its efficiency is comparable to that of vaccination for small-pox. For example, modern sanitation has much less justification.

INCOME TAX.

C. W. B. writes: I am in practice with my wife. We have our separate practices, and keep our books, billheads, bills, etc., distinct from each other. How do we stand with our income-tax returns? Will it be to our advantage to keep our returns separate, or should I return our united income in my own name only? If the first, what proceedings do we take?

*** If the total joint income of our correspondent and his wife exceeds £500 he must return the united income in his own name, and no separate claim can be made in regard to the wife's profits. If, however, the total joint income does not exceed £500, and the wife carries on one practice by means of her own personal labour and the husband a separate practice, unconnected with that of the wife, by means of his own personal labour, the wife may treat her profits as a distinct income and claim exemption or abatement accordingly, the husband returning the rest of the total income in his name and claiming any allowance to which he may be entitled. The necessary forms of claim can be obtained from the local surveyor of taxes, who will give any information required as to the method of substantiating the claims.

TREATMENT OF PRE-CANCEROUS CONDITIONS.

SAPERE AUDE writes: As a humble member of the rank and file of the profession, and as one who has read Mr. Mayo Robson's Bradshaw Lecture with very great interest, I should like to venture one observation. It is laid down as a reason for dealing with gall stones by operation that not only are they, with our present knowledge, beyond the resources of medicine, but may by their continued irritation, as proved by experience, be possible excitants of malignant disease in the ducts or gall bladder. Such irritation sets up a condition in time which is recognizable as cancer, but preceding this a condition also recognizable *in situ* as the pre-cancerous. Why, then, is not the gall bladder removed at the same time along with the irritants? Is one in this particular case of what, so far as I can see, ought to be more or less under suspicion of being one of pre-cancer, to use one's discretion, or ought not one to have the courage of his conviction and put aside the time-honoured notion of an essential and recognizable [illegible] between a malignant and a non-malignant or simply [illegible] condition of parts as no more than a time-honoured [illegible]? There may, may be, be degrees of malignancy, and possibly of pre malignancy, but the general trend of the lecture is that delays or half-measures are dangerous, and if in one case why not in the other?

ANSWERS.

TREATMENT OF GLEET.

R. H. J. S. writes: "J. W." might find that his case of chronic gleet would cease if the treatment by santal oil be discontinued very gradually and not suddenly. Failing this, it is necessary to know whether the anterior or posterior urethra or both are infected, so that suitable treatment be adopted. I would suggest that the "two-glass test" be applied to arrive at these conclusions, after which a thorough urethroscopic examination, with topical application of silver nitrate, gr. v. to x. to ʒj, to the lesion found, or dilatation of the urethra with a Kollman's dilator, and subsequent irrigation of the canal be carried out. By these means most, if not all, chronic gleets can be cured.

LETTERS, NOTES, Etc.

VERONAL.

D. J. M. writes: As a corollary to "Veronal: a Warning," which appears on p. 1679 of the current issue of the BRITISH MEDICAL JOURNAL, may I mention a tendency which I have noticed (in two cases) in the action of this drug to produce a rash? In the one case urticaria, lasting three days, in the other erythema with much local oedema, lasting a week, with great irritation, and leaving "measly" stains behind. In each case two doses of 10 grains each had been given.

MEDICAL STUDENTS AND THE HIGHER MATHEMATICS.

THE *Manchester Medical Students' Gazette* is responsible for the following: In the University Book Room, the other day, two final medicals were gazing at a work by a distinguished member of the Arts Staff on *Infinitesimal Calculus*. Said one to the other, "I suppose an infinitesimal calculus is one that can't be crushed by a lithotrite!"

AFEBRILE ENTERIC FEVER.

LIEUTENANT-COLONEL H. H. FORMAN, R.A.M.C., writes: With reference to Dr. Geo. Jubb's case of afebrile enteric fever, in the BRITISH MEDICAL JOURNAL of December 3rd, and the letter of "D.P.H.Camb." thereanent in the JOURNAL of December 17th, it is a somewhat curious coincidence that on returning from India a few weeks ago, Captain R. Selby, R.A.M.C. and I, handed notes of a similar case to the Editor *R.A.M.C. Journal* for publication. In our case there can be no question of diagnosis, for the patient died of haemorrhage, we made a *post-mortem* examination, and, foreseeing that there might be scepticism, we brought a small portion of the bowel home, showing the typical ulceration.

PLACENTAL RESPIRATION AFTER BIRTH.

DR. HENRY DUTCH (London, W.) writes: I was called to a primipara about 2 a.m., the messenger at the same time informing me that the child was born. I reached the house in twenty minutes and to my horror found the patient sitting on a bedroom slop-pail, the child being completely immersed in a mixture of blood, urine, and dirty water. About twenty minutes had elapsed since the birth. Although the mother and another mother present felt that the child must drown they were afraid to move; in fact had completely "lost their heads." I quickly removed the infant and applied artificial respiration, etc, in the usual manner and was soon rewarded by the reanimation of the child. As the head was completely under water and the air passages full of clot I can only assume that the circulation must have been carried on through the placenta which was still *in situ*. A case like this might be of medico-legal interest.

MISTAKEN DIAGNOSIS OF PHLEBITIS.

MR. G. SHERMAN BIGG, F.R.C.S.E. (London, S.W.) writes: The symptom described by Sir William Bennett in his clinical lecture delivered at St. George's Hospital is of fairly frequent occurrence, and once recognized is not readily mistaken for any other disease than the one which causes its appearance. It is met with in gouty, rheumatic, and other subjects whose organs of elimination are defective. It is apparently caused by a toxin, resulting, not from any one disease, but from many sources. Being a symptom of toxaemia, the treatment varies and depends solely on the recognition of the original cause, the correction of which usually causes the disappearance of the swelling.

THE METRIC SYSTEM.

DR. GORDON SHARP (Leeds) writes: The long-continued discussion which has occupied the pages of the BRITISH MEDICAL JOURNAL shows the interest taken in this subject, and I should not have added to the mass of words had it not been that I believe many writers have not any idea of the extent to which the metric system is employed and has been for many years among pharmacists in Great Britain. Every lad preparing for his examination uses the system in his volumetric analysis, and for over thirty years every boy sitting for the preliminary examination of the Pharmaceutical Society has had to show a thorough acquaintance with the metric system of weights and measures. I was educated as a pharmacist, and as a boy, over twenty years ago, I remember both in the far north and in the south of Scotland we often received Continental prescriptions, and we found no difficulty in dispensing them, so that pharmacists must laugh at the depreciatory remarks which many writers have directed against the poor Briton. Although I have for years employed the metric system in my pharmacological work, I like to always have in my mind at the same time the proportions in grains or part of grains, for the decimal system is not exact, because you cannot push it to a finality. Further, it has some objections, one being the danger of mistaking the multiples, and one cannot read the journals of pharmacy without finding frequent records of deaths because the Continental pharmacist has dispensed 10 or 100 times the intended dose. Some of your correspondents have mentioned that the metric system was introduced into Germany without opposition on the part of the people. In reply to such a statement I have to say that the system is only partly in force in that country. In my visits (the last this year) to imperial Berlin I have never found goods sold except by the old German pfund, equal to about 1½ lb. of our weight. Those writers who are enamoured of the exactness of the Continental methods of prescribing and dispensing have forgotten that while the pharmacist weighs all the ingredients of the prescription (solid and liquid) the patient takes his doses by measure. In these days of belief in the degeneracy of the Briton it is well to remember that we owe the idea of a metric system to a Scot, James Watt. Summing up the whole question, my own view is that the metric system of reckoning is the best for pharmacological, physiological, and analytical work, but that in prescribing and dispensing the old British system is handiest and best for every one concerned.

D.P.H.CAMBRIDGE.

A MEMBER of the Association writes to express his satisfaction with the six weeks' course of instruction given at the Cambridge laboratories for the Diploma in Public Health.

AN M.D. FOR PRACTITIONERS.

AN M.B., B.S. (Durham), writes to protest against the suggestion contained in the letter from X. Y. Z. published in the BRITISH MEDICAL JOURNAL of December 17th, p. 1668, to the effect that the University of Durham should reduce the requirements from practitioners desiring to take the degree of M.D. without possessing a lower degree of the University. As a graduate of Durham he expresses the hope that the University will not take any such step without at least first obtaining an expresion of opinion on the subject from the general body of graduates holding its lesser medical degrees.

ERRATUM.—In the report of the meeting of the Royal Medical and Chirurgical Society, published on p. 1638, the name of Dr. J. Blumfeld should have been so spelt, and not as printed.

LETTERS, COMMUNICATIONS, ETC., have been received from:

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A Clinical Lecture

ON

OPERATIONS FOR DISEASES OF THE UTERUS AND SOLID OVARIAN TUMOURS.

By JAMES SWAIN, M.S., M.D.Lond., F.R.C.S.,

Professor of Surgery, University College, Bristol; Surgeon, Bristol Royal Infirmary.

I have tabulated the last fifty operations which I have performed for diseases of the uterus and solid tumours of the ovary in order that you may judge of the conditions most commonly demanding operative treatment; for it is surprising how slowly the knowledge of what is and is not a fit case for a surgical procedure seems to be appreciated; and often as you may have seen me perform hysterectomy, you have probably still more often seen me reject as unsuitable cases that have been sent in for operation.

Of these fifty cases, seven were solid tumours of the ovary, and I have included them because, as many of you know, the irregular and nodular surface which often obtains may lead to confusion in clinically diagnosing them from myofibromata of the uterus. Beyond this I do not propose to refer to solid ovarian tumours, as I have somewhat recently given a lecture on the subject of ovarian tumours generally.[1]

Of the remaining forty-three cases, thirty-one were operated upon for uterine myofibromata, six for uterine cancer, and five were cases of hysteropexy. As the great bulk of the cases were myofibromata I shall deal mainly with that subject, after a few remarks on uterine cancer and hysteropexy.

Hysterectomy for Cancer.

The operation of hysterectomy for cancer is very unsatisfactory in its remote results. You might suppose that cancer of the uterus would be more amenable to a radical operation than in many organs of the body, and yet we practically find that comparatively few cases do not recur within three years of the time of operation. Good results are obtainable in cases that come early, but there is an appalling amount of ignorance amongst women as regards the early symptoms of cancer of the womb, and this combined with the natural insidiousness of the disease and an objection which many patients raise to the necessary examination, determines the fact that in about five cases out of six we have to decline a radical operation. I discharged such a case a few days ago, where a woman, of about 52 years of age, had had a sharp attack of uterine haemorrhage about two months before she sought advice, and until direct questions were put to her she made no complaint of the existence of the other cardinal symptoms of pain and discharge which were present. Yet this patient had an extensive adenocarcinoma of the cervix uteri invading the broad ligaments, base of the bladder and utero-sacral ligaments, causing complete fixation of the uterus, and rendering the case unsuitable for any radical operation.

Every woman who has reached the menopause should know that it is highly desirable that she should submit to a thorough examination in the event of the occurrence of uterine haemorrhage. When such a patient is examined the existence of cancer may or may not be evident. There is often little difficulty in correctly diagnosing that variety of epithelioma of the vaginal portion of the cervix which springs from the outer surface; but, it is otherwise in those forms of adenocarcinoma which arise from the epithelium of the mucous membrane lining the cervical canal or the body of the uterus. In the early stages of these latter cases the os uteri is frequently closed, and nothing is to be seen or felt; but before giving an opinion on the nature of the case it is your duty to dilate the cervix, and if the disease is not obvious, a portion of any suspicious tissue or a scraping of the mucous membrane should be taken for microscopic investigation. Only by taking such scrupulous care will you be able to give the patient the chance which an early operation affords, and hysterectomy for cancer would be attended with better results.

For cases diagnosed early I believe that colpohysterectomy is the best operation, and all of the six cases in this list were so treated. Abdominal hysterectomy offers certain advantages—we can cut more widely of the disease, and the sacral glands can be removed, bringing the operation into line with operations for cancer in other parts of the body; but, practically, the results are not so good as in cases of colpohysterectomy, where the primary mortality and incidence of recurrence are distinctly lower. We must be selective, for though colpohysterectomy is the best for early cases there are others for which abdominal hysterectomy is more suitable, though at present it seems undesirable to adopt this latter operation as the routine procedure.

Abdominal Hysteropexy.

Little need be said of the comparatively simple operation of abdominal hysteropexy, of which there are five cases in the list. With the exception of one case—where a very heavy, enlarged uterus had been completely extruded outside the vulva by an ovarian cyst—all the operations were performed for painful retroflexion uncontrollable by ordinary means. I prefer the abdominal route, because it enables the surgeon to deal with the adhesions that are not infrequently present. I do not wish to speak of the details of the operation, but I would remind you that the correct place to put the sutures is on the anterior aspect of the uterus near the fundus, and not at the top of the uterus. The risk of abortion, should the patient become pregnant, is very small if the sutures are placed properly, and a few days ago a patient came to show herself who had been delivered of a child at full term after I had performed hysteropexy in the manner referred to.

Hysterectomy for Myofibroma.

We have now to deal with the 31 cases of hysterectomy for myofibroma. Of these 21 were treated by supravaginal division of the cervix, 2 by panhysterectomy, and 9 by myomectomy.

You must not suppose that the mere presence of a tumour is a sufficient excuse for operation; it is the duty of every surgeon, before he advocates the removal of a myofibroma, to show either that it is dangerous to life or that it produces so much discomfort as to render existence more or less intolerable.

The presence of a myofibroma is in many cases a menace to the life of the patient, and Matthews Duncan says: "I am sure the fatal number of cases is greater than is generally supposed." One of the most common causes of death is from the pressure effects of a large myofibroma, and I have been called upon several times to operate for intestinal obstruction in cases of neglected myofibroma. Fatal results may also follow pressure on the urethra or ureters. Haemorrhage may cause death as a direct result of excessive bleeding, or indirectly from extreme anemia. I have also seen death occur from necrotic changes in the tumour and producing a septic peritonitis. Should pregnancy occur in association with a myofibroma fatal results may follow from abortion, which is common, or from interference with natural delivery and haemorrhage.

A great deal of misunderstanding exists as regards the influence of the menopause on myofibromata; women are so often led to suppose that when once the "change of life" occurs all their troubles will cease, and much valuable time is thus often lost by relying upon a false hope. Not only is the menopause often, indeed generally, delayed for some eight or ten years at least, but in many cases the tumour grows more rapidly at the time when it is usually supposed that a diminution in size may be expected.

Much depends upon whether the myofibroma is of the "hard" or "soft" variety. In the hard myofibroma, which is generally multiple, comparatively non-vascular, and slow-growing, a temporary enlargement may occur with menstruation and pregnancy, and after pregnancy and during the menopause it commonly shares in the physiological involution of the uterus which then occurs. On the other hand the soft myofibroma, which is usually single, is much more vascular and has a more rapid growth, which appears to be independent of uterine conditions and unaffected by the menopause. It is this form which so commonly becomes larger as the functional activity of the uterus declines. It is, therefore, highly necessary that the late occurrence of the menopause and the uncertain effect of that epoch on many of these tumours should be borne in mind when we are dealing with a case of myofibroma in a patient who considers that under normal circumstances the final cessation of menstruation should soon occur.

We may now consider the chief indications for operative treatment in cases of myofibroma. The mere size of the tumour may, under certain circumstances, afford a sufficient indication for removal. The largest tumour in this series weighed 15½ lb. after about 3 pints of blood had escaped from

it after removal. It was 28½ in. in the transverse and 30 in. in the vertical antero-posterior circumference.

It is commonly ten or twelve years before a myofibroma reaches the size of a pregnant uterus at full term; but when the tumour extends to a point 2 or 3 in. above the umbilicus it frequently causes considerable annoyance from its bulk, even apart from any definite or important pressure symptoms. A comfortable existence is scarcely possible in many of these cases, and often, in addition to the inconvenience of getting about and attending to the duties of life, a condition of chronic invalidism is induced by repeated haemorrhages and more or less constant pain. In the more wealthy classes a sufficiently tolerable existence may be dragged out on a sofa, but in others, where a necessary wage-earning capacity is seriously interfered with, the risk of operation is generally considered preferable. In single women, too, much mental distress may be caused by the comments evoked by the prominence of the abdomen, and the unjust suspicions to which they are subjected may induce them to seek the relief which removal of the tumour affords. There was a poor servant girl in the house some time ago in whom the loud souffle which is so often heard over a myofibroma was mistaken by several medical men for a placental souffle, but her character was cleared by the performance of hystero-myomectomy.

Haemorrhage is one of the commonest symptoms of myofibromata, and is also one of the most important indications for operation on account of the insidious way in which the patient's health and strength are gradually undermined by its repetition. It is, however, quite remarkable how easily a woman recovers from a very considerable loss of blood, though occurring again and again, and therefore we must not be led to advise operation simply because there is a severe menorrhagia.

Profuse haemorrhage—menorrhagia or metrorrhagia—occurs in about 50 per cent. of cases of myofibromata. It is associated with all forms of these tumours—the large and small, hard and soft, subperitoneal, interstitial and submucous—though doubtless it is more common and more severe as the tumour approaches the uterine mucosa.

The size of the tumour is not necessarily indicative of the amount of blood lost. At first the "periods" occur at regular intervals, but the flow is excessive, and later on with the growth of the tumour the flow is of longer duration, the amount lost is increased, and the intervals between the periods are shortened. Definite "floodings" may also occur. In the early days the patient fully recovers in the intervals the effects of the excessive flow at the periods, but with the progress of the disease she becomes increasingly anaemic and utterly prostrate.

Recognizing the very severe effects of prolonged haemorrhage, we have to decide when operation is required in these cases. The blood comes from the increased surface of the endometrium (for the uterine cavity is enlarged), but haemorrhage is also favoured by the endometritis which so commonly accompanies the growth of the tumour. This, perhaps, explains the highly satisfactory relief which may be afforded by curettage, though this operation is impracticable in cases where there is much displacement and the uterine canal is tortuous. But where minor measures have failed and the patient is steadily losing ground there should be no hesitancy in resorting to a radical operation. This should be advised when the patient ceases to regain in the intervals the loss of strength incidental to the excessive flow at the periods. As soon as we are convinced of this fact, operation should be undertaken. Delay means further prostration, and jeopardizes the successful result of removal of the tumours.

The occurrence of pain as an indication for operation presents some difficulty. Most fibroids give rise to a sense of dragging and some tenesmus, and these are increased at the menstrual epoch, owing to the exaggeration of the vascular engorgement, which normally takes place at that period. But even severe and persistent dysmenorrhoea must be accepted with great caution as a plea for radical cure, for the degree of pain is difficult to gauge, and is apt to be unduly emphasized in neurotic subjects.

It is somewhat different, however, with a persistent intermenstrual pain. This is often associated with pressure symptoms in the pelvis, or with degenerative changes in the tumour, which I shall presently refer to.

A diseased condition of the ovaries and tubes frequently coexists with myofibromata. Pelvic peritonitis, resulting in the fixation of ovaries and tubes in the pelvis, with hydrosalpinx or pyosalpinx, may occasion attacks of pain, or the pain may be due to dragging on the adhesions so produced. At all events, the development of pain in a case which has hitherto caused no trouble, or any marked increase of pain, requires serious consideration; and where pain of a more or less persistent character is so distressing as to produce a condition of chronic invalidism in spite of sedatives, rest, and massage, a radical operation is indicated.

A rapid enlargement of the tumour, especially if associated with pain, may almost certainly be regarded as demanding operative treatment. Such symptoms are generally indicative of serious degenerative changes in the tumour itself. Of these there are many—cystic, suppurative, calcareous, fatty, myxomatous, and neoplastic—but I cannot do more now than refer thus briefly to them. I have certainly seen myofibromata associated with malignant disease some four or five times in as many years, and therefore it cannot be regarded as of so infrequent occurrence as was at one time supposed. Elevation of temperature and other constitutional disturbance sometimes occur with the rapid increase in size of the tumour, and in cases associated with suppuration or sloughing the patient may exhibit all the phenomena of a severe sapraemia.

Practically it may be said that operative interference is required if examination at intervals of three months shows a myofibroma to be rapidly increasing in size, and that it has reached nearly up to the level of the umbilicus or beyond.

The discomfort and chronic invalidism produced by large myofibromata are partly dependent upon the pressure effects due to the presence of a tumour occupying so much space. As a consequence the intestines, stomach, liver, and diaphragm are pushed upwards, and considerable interference with circulation and digestion may occur. Flatulence is often very distressing. In other cases pressure upon the ureters results in hydronephrosis or other changes in the kidney, and pressure on the bladder causes frequent micturition or perhaps cystitis. The necessity for removal in these large tumours has already been considered.

Even worse pressure effects are produced by smaller tumours incarcerated in the pelvis and prevented from expansion upwards by the sacral prominence. Pressure on the urethra may cause complete retention, and the use of the catheter may be necessary. Severe pain arises from pressure on nerves, causing a false sciatica, and in all cases of obscure pain in the region supplied by the sacral nerves the pelvis should always be carefully examined. Pressure on the ovaries, especially if prolapsed, causes a pain of a sickening character, and results in those pathological conditions of the ovaries and tubes which so often accompany myofibromata and to which I have referred. Pressure on the rectum causes piles and severe constipation, amounting, in some instances, to a definite obstruction, though it is remarkable how great a degree of pressure the rectum will tolerate without causing urgent symptoms.

In many of these cases the tumour can be displaced above the pelvic brim, with consequent relief of symptoms, much in the same way as a retroverted gravid uterus can be rectified; but great care must be exercised in the manipulation, lest an undue traumatism may cause tearing of adhesions or degenerative changes of a serious nature in the tumour itself. If rectification is impossible or undesirable, a radical operation should be undertaken without delay, and it is highly desirable that we should not wait for the development of urgent symptoms when we have ascertained that there is a growing tumour choking the pelvis. Such a tumour often presents great difficulty in removal, for its situation on the top of the vagina prevents it from being delivered through the abdominal wound, and the filling of the pelvic cavity leaves little room for the fingers to tie the ovarian and uterine vessels; hence the need for prompt relief in the early stage of a tumour confined to the pelvis in its development. One case of this class was only 25 years of age, which is the youngest age at which I have been called upon to perform hysteromyomectomy.

Owing to the presence of endometritis, or a diseased condition of the ovaries and tubes, which so commonly accompany myofibromata, sterility is fortunately common. The coexistence of pregnancy with uterine myofibroma is a serious condition, but, bearing in mind that two lives are involved, it appears unjustifiable to adopt radical measures unless the symptoms are urgent.

Before the child is viable operation may be required, because of excessive pain or rapid growth, as in non-pregnant cases; and it is worth remembering that in some of these cases the myofibroma may be shelled out without interfering with

the normal course of pregnancy. So, too, when the tumour occupies such a position that delivery cannot be effected *per vias naturales*, operation must be undertaken, though some pelvic tumours with a long pedicle can be displaced upwards into the abdomen, where they no longer menace the safe continuation of pregnancy and delivery. If, however, the patient has gone almost to full term with a myofibroma, which would, if left, require removal at a subsequent operation, it is better to effect delivery by Caesarean section, and then proceed to the removal of the myofibromatous uterus.

These, then, are the various considerations which should guide you in the selection of cases for operation. If operation is decided on, the best time is about a week before the expected "period," but in all cases it is desirable that the patient should be brought into the best possible condition before any operation is undertaken.

Myomectomy is the operation of choice in young women, provided that the general condition is fairly satisfactory, that the tumour does not extend much above the umbilicus, and that there are no important complications such as severe inflammatory disease of the tubes and ovaries or advanced anaemia. Within proper limits the operation of shelling out the tumour should always be adopted, as by this means the functional activity of the uterus is unimpaired.

In cases where myomectomy is undesirable I prefer the operation of retroperitoneal hysteromyomectomy rather than the so-called panhysteromyomectomy. When the myofibroma is associated with malignant disease, nothing short of the removal of the whole uterus and tumour would be desirable, whereas in ordinary uncomplicated cases there is no prima facie reason for the removal of any more of the uterus than is included in the supravaginal operation of retroperitoneal hysteromyomectomy; but though we may regard the last-mentioned operation as the method of election, it would be foolish to insist on a slavish adherence to it under all circumstances.

These various procedures are of such severity that they should not be undertaken if any grave organic mischief in other organs coexists. Advanced disease of the heart, lungs, or kidneys should certainly be regarded as contraindications to operation.

REFERENCE.

[1] British Medical Journal, 1904, i, 354.

A TUBAL PREGNANCY OF SOME YEARS' (?) DURATION.

SAC CONTAINING MACERATED FETUS: FISTULAE BETWEEN SAC AND BOWEL AND BETWEEN SAC AND BLADDER: LAPAROTOMY: DEATH.

By E. HURRY FENWICK,
Surgeon, London Hospital.

The following case seems worthy of publication, if only for criticism. I was asked to see a patient, aged 45, who had a large abdominal tumour, faecal urine, pneumaturia, hectic temperature of long duration, and great emaciation and cachexia. I received the following notes from a gynaecologist:

Breasts do not look active; right nipple retracted; children all suckled at left breast.

Abdomen.—Central swelling reaching within two fingerbreadths above umbilicus. Skin over abdomen takes impression of stethoscope readily.

Auscultation.—Crackling sounds heard over swelling.

Percussion.—Resonance over swelling.

Abdomen is distended as a whole, though not very large.

Per Vaginam.—Uterus fixed. Vaginal cervix small and not soft. Hard mass (fixed) in front of uterus continuous with swelling felt by abdomen; felt more to the left than right.

Catheter passed. A few drops of yellow, purulent, offensive fluid withdrawn (patient had previously micturated). Sound passed rather less than normal distance into uterus.

On cystoscopy the bladder was comparatively healthy, but I noticed it was bulging forwards, and under the prominence was a fistulous opening. I diagnosed suppurating ovarian dermoid, and cut into the tumour above the pubes. It was evidently intraperitoneal, but adherent to the abdominal wall, so that the peritoneal cavity was not opened. Pus, faeces, and gas escaped in large quantities. After a thorough irrigation a bare fetal femur appeared at the incision, and then a humerus. I now felt a macerated fetus lying in a puddle of faeces, pus, and liquid rottenness, and gradually enucleated it piece by piece. Parts of the skull bones were adherent to the walls of the sac, and had to be peeled off with some force. I then tried to open the peritoneal cavity at the sides, in order to dissect out the wall of the sac in which the fetus had been, but the bowels were not only adherent to it, but so greatly softened, that I desisted. Finally, I was forced to pack the

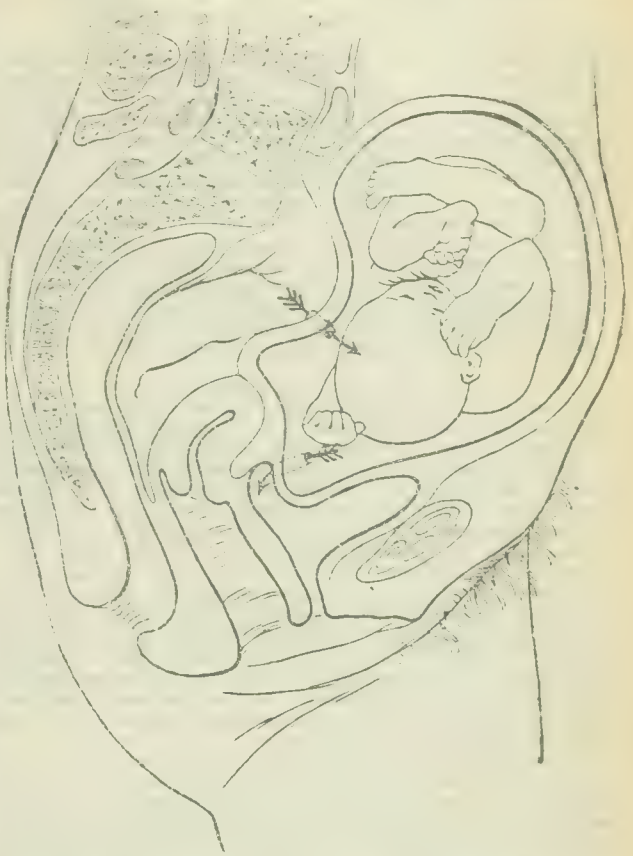


Fig. 1.—Tubal pregnancy of some (?) years' duration breaking into bladder and sigmoid bowel.

big cavity of the sac. The patient rallied, and died in a few hours.

Before she died I was able to obtain a history from her, but it is open to doubt as regards the accuracy of the time.

She stated that eight (?) years before she came under my care she became pregnant, and when she was decidedly big she made arrangements for her confinement. The various symptoms of pregnancy, however, gradually disappeared, and her abdominal swelling subsided slightly, but for the last seven (?) years she has had a "large lump" in her right side, which remained after her belly had gone down. Three months ago she received a severe blow on this lump, and two days later she had great pain in her belly, and sickness. Since then she had been ill.

On *post-mortem* examination it was evident I had been dealing with a left tubal pregnancy, which had suppurated, become adherent in every direction, and perforated into the bladder and the sigmoid bowel. The sac which had contained the fetus could not be dissected away from the hollow viscera which surrounded it. The bones of the fetus were examined by an expert, and stated to be about the fifth month.

The Philadelphia College of Physicians.—Plans have been adopted for the erection of a new building for the College of Physicians at Philadelphia. The estimated cost is £48,000. The building will comprise a library with shelves for 30,000 volumes, a floor for museum exhibits, a large lecture and assembly room, with other rooms and modern conveniences. The College has at its disposal, including cash and real estate, about £74,000.

Remarks
ON
THE VALUE AND SIGNIFICANCE OF CERTAIN SIGNS AND SYMPTOMS OF PANCREATIC DISEASE.

By B. G. A. MOYNIHAN, M.S., F.R.C.S.,
Senior Assistant Surgeon, Leeds General Infirmary.

The pancreas, like many other glands, has an internal and an external secretion. The internal secretion is the product of the islands of Langerhans, and controls the assimilation of sugars. The islands of Langerhans have no connexion with the secreting cells or with the ducts of the pancreas, and any pathological change in them produces, therefore, no alteration in the external secretion. The external secretion, poured into the second part of the duodenum at the diverticulum of Vater, is the most active and the most important of all the digestive juices. Diseases of the pancreas may affect the islands of Langerhans only, thereby interfering with the internal secretion, or with the parenchyma of the gland, thereby interfering with the external secretion, or, rarely, and in advanced stages only, the whole gland may be involved and both secretions may be lessened or abolished.

1. *Glycosuria and Diabetes.*

The association of diabetes with diseases of the pancreas was first pointed out by Cawley in 1788 in the *London Medical Journal*. Bright and other observers have confirmed the existence of the association by many recorded cases. The experimental work of von Mering and Minkowski, and later of Minkowski alone, showed that removal of the pancreas caused diabetes. The pancreas controls the carbohydrate metabolism, and loss of the organ is followed by diabetes. It was suggested by Laguesse, Schäfer, and others that the islands of Langerhans were mainly concerned in the exercise of this important function. Observations by Ssobolew, and finally and chiefly the original work of Eugene Opie, have proved beyond doubt that the internal secretion of the pancreas, which regulates the process of carbohydrate metabolism, is derived from the islands of Langerhans, and from them alone. Any lesion destroying the islands (a hyaline degeneration is the most common) results in diabetes.

The great complexity of the process of carbohydrate metabolism is shown, however, by the fact that other lesions affecting, for example, the nervous system, or certain toxic materials, may all result in glycosuria. But so far as the pancreas is concerned, it is solely by reason of the damage done to the islands of Langerhans that glycosuria follows upon any disease of this gland. Von Mering and Minkowski have further shown that if a portion of the pancreas only be removed, glycosuria does not develop. Minkowski, investigating the process of assimilation of sugars in a dog so operated upon, found that though glycosuria was not present when ordinary diet was given, yet it could be produced by increasing the sugar in the diet. The pancreas which remained, though adequate for the performance of the ordinary work, was unequal to the greater strain then put upon it. The condition so resulting is generally termed alimentary glycosuria. It has been further investigated by Wille.

In order to produce glycosuria in ordinary healthy individuals a dose of 150 to 250 gr. of glucose is needed. Wille administered 100 gr.—a quantity below the minimum mentioned—in ½ litre of tea or coffee to 800 individuals. The urine was collected from each one at intervals of two hours, and the subsequent history of each individual was carefully noted; 77 of the patients died; of these, 15 had shown alimentary glycosuria; at the *post-mortem* examination a lesion of the pancreas was found in all, though in some the lesion was slight and only ascertainable on microscopic examination. In 4 cases of cancer of the pancreas, a positive result was given in 3. Though no diagnostic aid has been rendered as yet by this method, it is possible that, carefully regulated, it may prove of value. It will be necessary to discover in any case the minimum dose of glucose necessary to cause glycosuria, and also the quantity and percentage of sugar obtained from the urine. It is not unlikely that alimentary glycosuria may be shown to be present as an earlier manifestation or as a warning of pancreatic diabetes. If discovered in small quantity after the administration of the dose named, it will be suggestive of early changes in the islands of Langerhans. It is probable that the measure of the glycosuria produced will be also the measure of the involvement of the islands of Langerhans.

The relationship existing between diseases of the pancreas and the condition known as "bronzed diabetes" is receiving careful investigation at the present time. There seems to be no doubt that in all cases which have been closely examined chronic interstitial pancreatitis has been present. In the condition described by von Recklinghausen as "haemochromatosis" there is a deposit of pigment in many of the organs of the body; this pigment was believed to be derived from the haemoglobin. In addition there is usually an enlarged and cirrhotic liver. The pancreas may also be affected, and when that is so the inflammation is of the chronic interacinar type, which finally involves the islands of Langerhans. Diabetes, therefore, is the result. Haemochromatosis has therefore as its natural termination diabetes of the "bronzed" type.

2. *Steatorrhoea.*

The presence of visible fat in the faeces was first recognized by Kuntzmann in 1820 as bearing a relationship to disease of the pancreas.

His patient was a man who died from chronic induration of the pancreas. There was complete obliteration of the common and pancreatic ducts, and dropsy was present. Large stools containing fat had been constantly seen. Bright, in his record of cases of disease of the pancreas, all accompanied by jaundice, found excess of fat in the faeces in three. The presence of an excessive quantity of visible faecal fat was noted by many observers subsequently. The fat was recognized at first in a liquid form, but later as a solid constituent of the faeces: the oil floating on the surface of urine passed at the same time being, of course, at once a matter for comment. In many of the early cases jaundice also was present, as well as the pancreatic disease, and some doubt was felt as to the influence of the lack of bile in the intestine in the causation of the fatty stools. Friedrich Müller, for example, attributed the steatorrhoea entirely to the absence of bile.

Claude Bernard, in his experimental work, destroyed the pancreas of a dog by injecting oil into the main duct. He found that fat was subsequently present in the faeces and often in such quantity that it formed a sort of coating to them. Abelmann asserts that after total extirpation of the pancreas in dogs, all the unemulsified fat taken with the food reappears in the faeces. Other observers, however, have found that, even when no pancreatic juice enters the intestine, some of the unemulsified fat may be absorbed. Fitz of Boston, the pioneer in all the recent clinical work on the pancreas, in an address before the Congress of American Physicians and Surgeons in May, 1903, presented the following table (see p. 1741), which shows the relationship between visible faecal fat, jaundice, diabetes, and pancreatic disease.

This table, as Dr. Fitz remarks, does not support the view that jaundice is an important factor in the origin of the fatty stools connected with disease of the pancreas. It suggests that in about three fifths of the cases of steatorrhoea attributable to pancreatic disease there is neither diabetes nor jaundice, that in two-fifths there is either diabetes or jaundice in about equal proportion, and in but few instances is there a combination of diabetes and jaundice.

Oser, in his work on the pancreas, describes the whole as being clay-coloured or white, and as being covered with or surrounded by an oily yellow fluid. Fles relates the remarkable case of a diabetic patient who had atrophy of the pancreas, and who ultimately died of phthisis. He daily passed with his stools a large quantity of fat, and a considerable quantity of unaltered, undigested muscle fibre. A fresh calf's pancreas (sweetbread) was well beaten in a mortar, with 6 oz. of water, and strained; the so obtained milky fluid was taken by the patient in separate doses, one after each meal, so that in this way an entire pancreas was consumed in the twenty-four hours; and although the previous diet, which largely consisted of bacon and fat meat, was continued, still, at the end of two days, all the fat, and in great part the undigested muscular fibre, had disappeared from the faeces. Each time the pancreatic infusion was left off the fat and muscular fibres again appeared. The favourable effects of the daily use of the calf's pancreas on the general health were exceedingly marked; the rapid emaciation seemed to be stayed, and the body to reassume its rounded proportions. The quantity of urine and the amount of sugar voided still remained entirely unaltered.

Lesion.	Stools.	Diabetes or Glycosuria	Jaundice.	Authority.
Fibro-adenoma	Fatty	Present	Present	Biondi, Oser, Diseases of the Pancreas, Nothnagel's *Encyclopaedia*.
Cancer	,,	Absent	,,	Bowditch, *Boston Med. and Surg. Journ.*, 1872, lxxxvii, 65.
,,	Like butter	,,	Absent	Bright, *Med. Chir. Trans.*, 1833, xviii, 1.
,,	,,	Present	Present	,, ,, ,,
"Cyst"	Free fat	,,	Temporary	Bull, *New York Med. Journ.*, 1887, 376
Calculi	Fatty	Absent	Absent	Capparelli, Oser, op. cit.
,,	,,	,,	,,	Chopart, Oser, op. cit.
Calculus passed	Fatty diarrhoea	Present	,,	Cipriani, *Therap. Monats.*, 1898, xii, 617.
Cancer	Like butter	Absent	,,	Clark, *Lancet*, 1851, ii, 152
Atrophy, cong. syphilis	Like asbestos	,,	,,	Demme, Oser, op. cit.
Calculus	Oily at times, like butter	Present	,,	Elliotson *Med. Chir. Trans.*, 1835, xviii, 77.
"Cyst" atrophy, fibrous tissue ... head of pancreas	Masses of fat crystals, once consistency of sweet oil	,,	,,	Goodman, *Trans. Path. Soc.* Phil., 1878, viii, 41.
Indurated pancreas, obliterated duct	Fatty	Absent	Present	Kuntzmann, Friedreich, op. cit.
Cancer	,,	,,	,,	Labadie-Lagrave, Oser, op. cit.
Calculus, atrophy, growth of fibrous and fat tissue	Fatty before onset of diabetes	Present	,,	Lancereaux, *Bull. Acad. de Méd.*, 1888, xix, 283.
Cancer	Fatty	Absent	,,	Luithlen, Oser, op. cit.
,,	Grey, with white portions: fat with microscope	,,	Absent, bronzed	Mager, *Wien. med. Pr.*, 1899, xl, 15.
,,	Fatty	,,	Present	Maragliano, Oser, op. cit
,,	Very fatty, tenacious, slimy	Present	Absent	Marsden. *Amer. Journ. Med. Sci.*, 1854, xxviii, 212.
Scirrhus of head, obliteration of duct	Fatty diarrhoea	,,	,,	Martsen, Oser, op. cit.
Cancer	Fatty	Absent	Present	Molander and Blix. Oser, op. cit.
Enlarged pancreas, marked fatty degeneration	,,	,,	,,	Motta. *Union Méd.*, 1881, xxxi, 289.
Calculus, fibrous pancreas. Duct did not communicate with common duct or duodenum	Grey, greasy at times, solid, fat on cooling	Present	,,	Phillips, *Lancet*, 1900, ii, 104.
Cancer	Fatty	Absent	Present	Pott, Oser, op. cit.
Fatty degeneration	Oily	Present	Absent	Silver, *Tr. Path. Soc.*, London, 1873, xxiv, 121
Cancer	Fatty	Absent	Present	Roques, *Bull. Soc. Anat.*, 1857, ii, 245.
Cancer, closed duct	Silver grey, 25 per cent. fat	,,	,,	Ziehl, *Deut. med. Woch.*, 1833, ix, 538.
Rarefied pancreas, obstructed pancreatic duct	Silver white consistency of salve	,,	,,	Müller, loc. cit.
Pancreas appeared like fat. Calculus in duct	Free oil or fat	,,	,,	Walker, *Med. Chir. Trans.*, 1889, lxxii, 257.

The presence of fat in the stools is, however, by no means pathognomonic of disease of the pancreas. As much as 5 per cent. or 10 per cent. of the fat taken into the stomach may normally pass away unabsorbed. In jaundice, even of the catarrhal variety, this amount is doubled at least. In certain diseases of the intestine, as Nothnagel and others have shown, and especially in diseases of the mesenteric glands, the amount of fat undergoes a large increase. Many observers, chief among them being Müller, have endeavoured to discover a special character in the fatty excrement characteristic of diseases of the pancreas. This observer endeavoured to show that a reduction in the amount of fat which had undergone cleavage, when the quantity of total faecal fat remained normal, was specially significant. The chemical analyses of the faeces made in cases of proved disease of the pancreas are, however, so few that no assured position can be taken in the question.

The stools, when the pancreatic secretion is absent from the intestine, are often quite characteristic. They are very bulky, pultaceous in consistence, and of a whitish or white-grey colour. This colour is still present, even when it can be subsequently shown that all the bile has passed into the intestine during life. It has been suggested that the stool is white because of the large amount of fat it contains—a view which is upheld by many. It is, however, also possible that the absence of the normal colour is due to the fact that the bile pigments are capable of absorption from the intestinal canal unless acted upon and made non-absorbable by the pancreatic juice.

The bulky fatty stools associated with chronic interstitial pancreatitis are often remarked upon by the patient. In two recent cases of this kind, in both of which the pancreatitis had been due to a stone which I had removed from the common duct, the stools were found to alter very rapidly after the administration of fresh pancreas by the mouth, together with regular quantities of pancreatic extract. The stools became natural in quantity, and the fat was reduced almost to the normal. The colour of the stools, however, did not show any marked change, a sufficient indication that their peculiar tinge was not due to the excess of fat alone.

The following conclusions may be stated:

1. Fat is normally present in the stools, about 5 to 10 per cent. of that taken in as food being discharged as unaltered.

2. If an excess of fat be taken in health, a proportionate excess of fat is found in the faeces.

3. In simple catarrhal jaundice, and in certain diseases of the intestine, the amount of fat in the faeces is approximately doubled.

4. Steatorrhoea as an isolated sign affords no evidence of pancreatic disease.

5. Steatorrhoea when associated with azotorrhoea in the absence of jaundice points strongly to disease of the pancreas.

6. Steatorrhoea, with azotorrhoea, diabetes, and epigastric tumour, is evidence of undoubted pancreatic disease.

3. *Azotorrhoea.*

The presence of undigested nitrogenous food, such as muscle fibre in the stools, was first recognized by Fles, in the case to which reference has already been made, as being a symptom of value in diseases of the pancreas. In this case chronic interstitial pancreatitis was found at the *post-mortem* examination; during life a large quantity of unaltered and undigested muscle fibre had been passed in the stools. Since the digestion of proteids in the intestine depends so largely upon the pancreatic juice, the absence of this juice in large or small amounts should be capable of recognition in the altered faeces. In certain cases of diabetes, which were possibly due to lesions of the pancreas, Hirschfeld found as much as 32 per cent. of the ingested nitrogenous material in the stools. Weintraud, in a case which was proved by autopsy to be one of chronic pancreatitis, found that as much as 45.2 per cent. of ingested proteids were discharged unaltered. Abelmann found that, after complete extirpation of the pancreas in dogs, 44 per cent. of the albuminous foods were absorbed; if a portion of the pancreas were allowed to remain, 54 per cent. of the foods were absorbed. Some part of the deficient absorption was ascribed by him to the presence of undigested fat in the intestinal contents.

Sandmeyer, after partial extirpation of the pancreas, found that as much as 70 per cent. of ingested albuminous foods might undergo absorption.

Azotorrhoea is an extremely inconspicuous symptom. In 8 cases observed by v. Ackeren, Fles, Harley, Lichtheim, Oser, Riegner, Teleky, and Müller, in which azotorrhoea was present with disease of the pancreas, in 6 sugar was present, in 5 there was steatorrhoea, and in 2 there was jaundice.

It is necessary, in examining a patient, to eliminate certain sources of error. If much meat be taken in the diet, or if there be a persisting diarrhoea, there will always be found, whether pancreatic disease be present or not, an excess of undigested muscle fibre in the faeces. As Fitz

very tersely and truthfully asserts, "any significant increase of undigested muscle fibres in the stools would be expected only when there was extreme diminution of pancreatic juice in the bowel, gastric digestion was relatively normal, the diet contained no excess of meat, and there was no diarrhoea."

In certain cases fat has been given in excessive quantity in the food to determine the activity of the pancreatic juice. Similarly it would be desirable to recognize in the first place the normal digestive power of an individual for proteids, and then to administer meat in excess in order to see the results thereby recognizable in the faeces. Meat, however, undergoes certain changes in the stomach, and, if possible, it would be desirable to introduce a proteid into the duodenum without having undergone any digestion in the stomach. Sahli suggested that "glutoid" capsules containing iodoform or salol might be administered by the mouth with food. The coating of the capsules is so hardened by treatment with formalin, that it remains unaffected by the action of the gastric juice for several hours. As soon, however, as the capsule is passed onwards into the intestine, it is rapidly digested by the pancreatic juice, and its contents are liberated. Nencki has shown that salol is split up by the pancreatic juice into salicylic acid and phenol, and that the former is rapidly eliminated in the urine. If iodoform be used, the iodine reaction can be elicited from the saliva as soon as intestinal digestion is begun. In order that the test with the glutoid capsules should be accurate, there must be a normal activity of the gastric juice, a normal or nearly normal gastric motility, and a normal intestinal absorption. Failing any, but especially the two latter, the test loses much of its value. Sahli has related a series of cases in which the test showed absence of the reaction, or its delay for periods over twenty-four hours, and in which malignant disease of the pancreas was found. This test has since then been generally known as the "signe de Sahli." There has been so little purposeful investigation of this method that its value, though probably not small, has never yet been even approximately determined.

4. *Fat Necrosis.*

This condition was first described by Balser in 1882. In five cases opaque white areas, which microscopically proved to be composed of necrotic fat cells, were found in the fat around, and in the immediate neighbourhood of, the pancreas. In two cases the fat at some distance from the gland was affected also. Since these observations of Balser abundant confirmation of their accuracy has been made. The cause of the fat necrosis was discovered by Fitz. It was he who first suggested that a lesion of the pancreas was the determining and causative factor, and he drew attention to a series of cases in which the two conditions—pancreatic disease and fat necrosis—occurred together. The complete dependence of the fat necrosis upon disease of the pancreas is now universally admitted. The appearances caused by necrosis of the fat are quite typical.

Smaller or larger opaque, white unraised areas are seen studded irregularly in the fat; their colour contrasts in the most striking manner with the bright yellow colour of the fat. Near the pancreas the spots are larger, even a quarter or a third of an inch in diameter, and several of them may be confluent, so that a white streak results. The white areas are generally marked off abruptly from the surrounding tissues, but at times a bright red haemorrhagic zone may surround them. As a rule, the further the patches of necrosis are from the pancreas the smaller and the fewer are they. It is rare to find the fat outside the abdominal cavity affected, though the subcutaneous fat of the abdominal wall, and the pericardial fat, may be affected also. The nature of the fat necrosis was first shown by Langerhans. It consists in the splitting of the fat into fatty acid and glycerin; the fatty acids, deposited at first as acicular crystals in the cell, combine with the calcium salts to form a soap, while the glycerin is absorbed.

The immediate cause of the fat necrosis, whether localized or disseminated, has been shown to be the pancreatic secretion. The juice escaping from the gland diffuses more or less widely, and is in part, perhaps, taken up by the lymphatics. A fat-splitting ferment, probably that of the pancreatic juice, has been found by Flexner in foci distant from the gland, and Opie has possibly discovered its presence in the urine of a patient suffering from acute pancreatitis. Fat necrosis may, therefore, be said to consist in the action upon normal fat of the fat-splitting ferment of the pancreatic juice, which has escaped from the duct as the result of some serious lesion of the pancreas. It is most commonly found in association with acute pancreatitis, of the haemorrhagic or gangrenous forms, but may also be found in association with chronic interstitial (interlobular) pancreatitis. The significance of fat necrosis is therefore considerable. If in any operation for some acute, but indeterminable, condition within the abdomen, a sharply-defined white, opaque, or ivory-like patch be seen in the omentum, or in any part of the intra-abdominal fat, the operation from being exploratory, becomes at once purposeful, and the pancreas is sought forthwith.

In one remarkable case related by Hansemann, bright red spots seen upon the skin were found to be due to underlying foci of necrosis in the fat of the abominal wall.

The view that fat necrosis is wholly dependent upon lesions of the pancreas has been verified beyond dispute by the experimental work of Flexner and Opie.

5. *Jaundice.*

Jaundice is not uncommonly associated with diseases of the pancreas. Its existence is due to the anatomical relationship between the head of the pancreas and the common bile duct, and to the mode of termination of this duct and of the canal of Wirsung in the ampulla of Vater. In chronic pancreatitis or in malignant disease of the head of the pancreas, the enlargement of the gland causes pressure upon the duct from the outside, and, the calibre of the duct being narrowed, the free escape of bile is prevented and jaundice results. In calculus of the pancreas jaundice may be caused by the obtrusion of the stone into the ampulla of Vater. Inflammation of the canal of Wirsung, of the mucous membrane of the ampulla, and of the common duct ensue, and the cholangitis is attended by jaundice. In acute haemorrhagic pancreatitis a slight tinge of jaundice has been occasionally observed. In many of these cases, as Opie has shown, the pancreatitis depends upon the retrojection of bile into the canal of Wirsung, as a result of the impaction of a biliary calculus in the papilla of Vater. A cholangitis exists in these cases also.

In cancer of the head of the pancreas the jaundice appears insidiously, deepens gradually, never varies in depth of tinge from day to day, becoming paler and deeper alternately, but progressively and without intermission becomes more and more pronounced. In many cases the gall bladder can be felt to be greatly distended. So constant is the rule that persisting jaundice associated with distension of the gall bladder depends upon cancer of the head of the pancreas, that it is now formulated as "Courvoisier's law," in deference to the distinguished clinician who first called attention to it.

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REPORT XC.

THE LYMPH-FLOW FROM THE PANCREAS.

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Introduction.

The discovery of secretin by Bayliss and Starling has made it possible to obtain pancreatic juice at will; and in 1902 I showed that the injection of secretin caused, concomitantly with the secretion of pancreatic juice, an increased flow of lymph from the thoracic duct. This increase still occurred, though in smaller degree, after ligature of the portal lymphatics, and the lymph was therefore derived from either the pancreas or the intestines, presumably the former.

Recently, Falloise has carefully investigated the action of secretin on the lymph-flow. He found that secretin increased the lymph-flow from the thoracic duct, but that after ligature of the portal lymphatics the increase no longer occurred; ileum extract also caused an increased flow from the thoracic duct, notwithstanding that no pancreatic juice was secreted. On the other hand, secretin solutions, when freed from albumoses and depressor substance, caused a flow of pan-

creatic juice, but no increased flow of lymph; and a similar result was obtained by injecting hydrochloric acid into the duodenum. Falloise therefore concluded: First, that the increased lymph-flow was derived entirely from the liver, and that it was not due to secretin itself, but was produced by the albumoses or bile salts usually present in secretin solutions; and, secondly, that secretory activity of the pancreas (or liver) did not increase the formation of lymph.

The experiments here described were made to ascertain how far the pancreas falls into line with the liver and salivary glands as regards the effects of its metabolism upon lymph formation.

METHODS.

All the experiments were carried out on dogs anaesthetized with the A.C.E. mixture after a preliminary dose of morphine (½ to 1 gr.). In every case the lymph was collected from the thoracic duct. The abdomen was opened, a cannula was placed in the main pancreatic duct, and the abdomen was closed by means of clips or sutures. A cannula was also placed in the jugular vein for the injection of secretin or ileum extract. The blood pressure in the femoral artery was always recorded. The animals were kept without food for the twenty-four hours preceding the experiment; the pancreas was then in a resting condition, and the lymph was clear and free from fat. The secretin (or ileum extract) was injected from a burette at the rate of from 1 to 2 c.cm. per minute; by making the injections slowly, the fall of blood pressure was comparatively slight, the animals remained perfectly quiet, and rapid physical changes in the circulation were avoided. The injection period generally lasted for twenty minutes. The pancreatic juice and lymph were collected in graduated cylinders, and the amount recorded every five or ten minutes.

RESULTS.

1. *The Injection of Secretin and Ileum Extracts.*

If secretin be injected rapidly, as was done by Falloise, it gives rise to generalized muscular contractions, intense dyspnoea of short duration, a rapid fall of blood pressure, and an increased flow of lymph commencing immediately after the injection. This increased lymph-flow might well be the result of the dyspnoea and muscular movement, independently of any more specific cause. On the other hand, if secretin be injected slowly the animal remains perfectly quiet, the respirations are not appreciably altered in depth or frequency, the fall of blood pressure is slight, and there is no immediate increase in the flow of lymph. An increase in the lymph-flow does occur, however, after a time; it begins from ten to twenty minutes after the commencement of the injection of secretin, reaches its maximum about twenty minutes later, when the blood pressure has returned to its normal level, and lasts altogether for about an hour. The flow of lymph after the injection is two or three times as large as that previous to the injection.

The slow injection of ileum extract also increases the lymph flow from the thoracic duct, but its effects are less marked than those of secretin.

It appears, therefore, that an important distinction must be drawn between the effects of a rapid and those of a slow injection of secretin (or ileum extract). In the former case the increase in the lymph flow can be accounted for by the changes in blood pressure and by muscular movements: in the latter case no such factors are at work, and the increased lymph-flow must be brought about by some other means.

Experiment 1.

Dog anaesthetized with morphine and A.C.E. mixture. Cannulae in thoracic and pancreatic ducts, femoral artery and femoral vein. The dog showed no dyspnoea or muscular twitchings throughout the experiment.

Time.	Lymph-flow.	Remarks.
	c.cm.	
3.55 to 4.5	3.5	Lymph-flow clear; good steady flow.
4.5 to 4.15	3.1	
4.15 to 4.25	2.5	Injected 80 c.cm. ileum extract 4.15 to 4.35.
4.25 to 4.35	2.5	
4.35 to 4.45	4.7	
4.45 to 4.55	6.1	
4.55 to 5.5	5.9	
5.5 to 5.15	4.4	
5.15 to 5.25	3.9	Injected 75 c.cm. secretin 5.15 to 5.35
5.25 to 5.35	4.7	
5.35 to 5.45	5.7	
5.45 to 5.55	9.2	
5.5 to 6.5	9.7	
6.5 to 6.15	9.0	

Experiment 2.

Dog anaesthetized with morphine and A.C.E. mixture. Cannula in thoracic duct, blood pressure taken in femoral artery. The dog remained quiet throughout the experiment.

Time.	Lymph in c.cm.	Blood pressure in mm. Hg.	Remarks.
4.4 to 4.14	1.4	—	
4.14 to 4.24	1.4	—	Thoracic duct cannula slipped 4.25, and was replaced: 4.53 to 5 5 injected 35 c.cm. secretin (bile free).
4.40 to 4.50	1.3	4.50 94	
4.50 to 5.0	2.0	4.55 84	
5.0 to 5.10	2.8	5.00 84	
5.10 to 5.20	5.1	5.10 86	

The first of these experiments illustrates the difference between secretin and ileum extract with respect to the magnitude of their effect upon the flow of lymph from the thoracic duct. The second experiment shows the comparatively small depression of the arterial blood pressure produced by a slow injection of secretin; such a fall of blood pressure is insufficient to account for the increased flow of lymph actually observed.

2. *Ligature of the Portal Lymphatics.*

After ligature of the portal lymphatics secretin solutions still cause an increased flow of lymph, whereas ileum extract has practically no effect. The increased lymph-flow caused by the secretin solutions is less marked, however, when the portal lymphatics are tied than when they are intact. Now, both ileum extract and secretin solutions contain albumoses, and usually small quantities of bile-salts, both of which increase the formation of lymph by the liver. It seems probable, therefore, that the increased lymph-flow caused by ileum extract is derived solely from the liver, and is due to the depressor substances and bile salts which it contains. And no doubt the depressor substance (and bile salt) present in secretin solutions partly accounts for the increased lymph-flow caused by such solutions; but they are not the only factors, as is shown by the fact that, after ligature of the portal lymphatics, secretin solutions still increase the flow of lymph. Since secretin solutions differ from ileum extract only in the fact that the former contain the specific substance secretin, and since, after ligature of the portal lymphatics, secretin increases the flow of lymph from the thoracic duct whereas ileum extract does not, one must conclude that this increased flow of lymph is due to secretin itself, not to the depressor substances, which are present in both ileum extracts and secretin solutions. Further, this lymph must be formed either by the intestines or by the pancreas.

Experiment 3.

Dog anaesthetized with morphine and A.C.E. mixture. Ligature of the portal lymphatics. Cannulae in thoracic duct and pancreatic duct. No dyspnoea or muscular twitchings throughout the experiments.

Lymph in c.cm. Time per 10 min.	Pancreatic juice in c.cm. per 10 min.	Remarks.
1	—	
0.3	—	
0.7	6.2	Injected 35 c.cm. secretin in 25 min.
2.2		
2.2		
2.7	2.0	
3.1	2.2	
2.4	1.6	
1.6	0.5	
1.5	0.1	
1.3	—	Injected ileum extract 62 c.cm. in 21 min.
0.9	—	
0.8	—	
0.5	2.5	Injected secretin rather rapidly, 30 c.cm. in 13 min.
1.6	2.9	
2.4	3.0	

3. *Relation between Lymph and Pancreatic Juice.*

When secretin is injected, and the lymph and pancreatic juice are collected simultaneously, it is found that the variations in the rate of flow are very similar for the two fluids. The secretion of pancreatic juice reaches its maximum, and falls again to zero earlier than does the lymph-flow; otherwise, graphic records of the flow of lymph and pancreatic juice closely resemble each other, except that the increased lymph-flow is of longer duration than the secretion of juice. This point is illustrated by Experiment 3, where the contrast between the action of secretin and of ileum extract is well

marked. The depressor substance can be removed from secretin solutions by means of alcohol, as described by Bayliss and Starling; such preparations cause little or no fall of blood pressure, but give a good secretion of pancreatic juice, and an increased flow of lymph, as is shown in Experiment 4.

Experiment 4.

Dog anaesthetized with morphine and A.C.E. mixture. Cannulae in thoracic duct and pancreatic duct. Dog quiet throughout the experiment.

Time.	Lymph.	Pancreatic Juice.	Remarks.
	c.cm.	c.cm.	
3.40 to 3.50	1.0	—	
3.50 to 4.0	0.9	—	
4.0 to 4.10	2.0	0.5	4.0 to 4.8 injected 50 c.cm. secretin free from depressor substance; very slight fall in blood pressure.
4.10 to 4.20	2.3	1.7	
4.20 to 4.30	2.7	1.4	
4.30 to 4.40	2.7	1.0	

It seems clear that the lymphagogue action of secretin solutions (after tying the portal lymphatics) is due, not to the depressor substance which they contain, but to secretin itself. And since secretin has a specific action on the secretion of the pancreatic juice, but has, so far as is known, no action on the intestines, it is natural to suppose that the increased lymph-flow produced by secretin also has its origin in the pancreas. This view is supported by the close relation already described as existing between the secretion of pancreatic juice and the flow of lymph. This relation between the lymph-flow and the secretion of pancreatic juice is, moreover, strictly analogous to that shown to exist between the flow of bile and the formation of lymph. I conclude, therefore, that the increased flow of lymph from the thoracic duct consequent on the injection of secretin (after ligature of the portal lymphatics) is derived entirely from the pancreas.

This lymph might be formed by the pancreas in one of two ways. On the one hand, May has shown that secretin causes vaso-dilatation of the pancreas, lasting as long as juice is being secreted; it is possible, therefore, that the lymph might be the result of increased filtration, although I have shown that this does not occur in the submaxillary gland under similar conditions. On the other hand, it is possible that the lymph is formed as a result of metabolic changes in the pancreas accompanying the secretion of the pancreatic juice; if so, the pancreas resembles the liver and salivary glands in that its secretory activity invariably causes an increased formation of lymph, due to the rapid formation of metabolic products, and their entrance into the lymph spaces. On the whole, the evidence is in favour of the second explanation.

SUMMARY AND CONCLUSIONS.

1. The injection of secretin or ileum extract causes an increased flow of lymph from the thoracic duct. This has been previously shown by Falloise and by myself.

2. After ligature of the portal lymphatics secretin still causes an increased flow of lymph, whereas ileum extract has no effect.

3. The increased lymph-flow produced by secretin is not caused by the depressor substance, but by secretin itself.

4. There is a close relation between the secretion of pancreatic juice and the increased flow of lymph. The lymph is derived entirely from the pancreas, and is probably formed as a result of metabolic changes occurring in the pancreas during the secretion of juice

I wish to express my thanks to Professor Starling for his kindness in allowing me to work in his laboratory.

It is my duty to state that this research formed part of my work as scholar of the British Medical Association; the expenses of the research were defrayed by a grant from the Royal Society.

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MEDICAL STUDENTS IN PORTUGAL.—The total number of medical students in Portugal is 584, distributed as follows in the three medical schools of that country: Lisbon Medico-Chirurgical School, 246; Oporto Medico-Chirurgical School, 209; University of Coimbra, 129.

A PRELIMINARY NOTE ON THE BACTERIOLOGICAL FINDINGS IN SEVEN CASES OF ENLARGED PROSTATE.

BY

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NEARLY all observers are decided that the initial change in enlargement of the prostate gland lies in the glandular tissue. There is not, however, the same unanimity concerning the cause and mode of production of the increase.

Three main opinions are held:

1. That the growth is really a neoplasm.

2. That the increase is due to a fibrosis constricting the ducts near the urethra, and causing a retention of the gland products. The fibrosis is suggested to be the result of a chronic inflammatory process, possibly gonorrhoeal in origin.

3. That the increase is due to an inflammation of the gland tissue, which produces blocking of the ducts by a desquamation of the cells. This inflammation is said to be brought about by an extension of septic organisms from the bladder.

In consequence of these divergent views, it is thought that the following brief investigation will be of general interest.

TECHNIQUE.

Microscopy.—Microscopical examination has been made of each prostate gland. The sections have been stained with haemalum and eosin, and also with van Gieson's picro-fuchsin stain, so as to definitely determine the amount of fibrous tissue present. Lastly, sections were stained by Gram's method so as to demonstrate whether micro-organisms were present in the specimens which were examined.

BACTERIOLOGY.

Urine.—The urine was drawn off into a modified Erlenmeyer flask, with special bacteriological precautions, about thirty-six hours before the prostatectomy was performed. Ten cubic centimetres of the urine were then incubated for twenty-four hours in a large flask of broth. A complete bacteriological investigation was then made from this flask.

PROSTATE GLANDS.

As soon as the tumours were removed the surface of each furthest removed from the urethra was burnt with a red hot flat knife. Sections were then made into the interior of the gland with bacteriologically sterile instruments. In every case we were most careful to avoid the tissue in the immediate neighbourhood of the urethra.

Blood agar and agar plates were inoculated either with small pieces of the gland rubbed over the surface of the media, or platinum loops of the fluid, which is present in the prostates, were used in a similar manner. A complete bacteriological investigation was then carried out in those cases in which colonies appeared on the surface of the agar.

We wish to draw attention to the fact that although we used a medium of blood agar in each case for the examination of the prostatic tumours, we failed to isolate gonococci.

CASE I.

S. J. S., aged 65. Frequent micturition for seven months; catheter passed for similar period; 6 oz. of residual urine; history of gonorrhoea doubtful. Urine: 1007, neutral. Parts removed: Small adenoma. Microscopy: Cystic myo-adenomatous tissue; extensive round-celled infiltration present; no micro-organisms seen. Bacteriology of tumour: Pure cultures of the staphylococcus albus; gelatine media were liquefied on the third day.

CASE II.

F. W. F., aged 66. Catheter passed four years ago for an attack of retention; frequent micturition at present time; 3 oz. of residual urine. Urine: Acid and clear. Parts removed: Weight, 34 grams; twin tumour type, with the urethra enclosed; "capsule" well marked. Microscopy: Fibro-adenomatous tissue; extensive round-celled infiltration present; no micro-organisms seen. Bacteriology:—Urine: Two strains of bacillus coli isolated. Prostate: One strain of bacillus coli isolated. Serum test: Patient's serum was found to cause marked agglutination of the strain of bacillus coli isolated from the prostate gland in the dilutions of 1 in 10 and 1 in 20, but no reaction with dilution of 1 in 50.

Case III.

R. P., aged 63. No history of gonorrhoea; retention nine days; catheter two days. Urine: Neutral, contained blood. Parts removed: Weight, 28 grams; horse-shoe type of tumour with the urethra enclosed; "capsule" well marked. Microscopy: Fibro-adenomatous tissue; extensive round-celled infiltrations present; no micro-organisms seen. Bacteriology:—Urine: A pseudo-diphtheria bacillus. Prostate: Pure culture of the staphylococcus albus; neutral red jelly was decolourized and liquefied at the end of two days' growth. Serum test: Patient's serum was found to cause marked agglutination of the staphylococcus isolated from the prostate gland in the dilution of 1 in 20, but no reaction took place with a dilution of 1 in 50.

Case IV.

R. I., aged 75. Two months' frequent micturition; fourteen days' retention, for which the catheter was passed three times during the twenty-four hours. Urine: 1020, alkaline; contained blood, and pus, and crystals of oxalate of lime. Parts removed: Weight, 147 grams; twin tumour type with the urethra enclosed; "capsule" well marked. Microscopy: Spheroidal celled carcinoma. Bacteriology: Blood agar and agar media were inoculated with the fluid from the interior of the gland. Result: Sterile. Urine: Not tested bacteriologically.]

Case V.

J. H., aged 74. Difficulty of micturition eight months; much pain and almost hourly micturition on admission; retention for four days, catheter for a similar period. Urine: Slightly acid, contained pus and albumen. Parts removed: Weight, 100 grams; horseshoe type of tumour: urethra enclosed; "capsule" well marked. Microscopy: Fibro-adenomatous tissue; very extensive round-celled infiltration present, especially around the ducts; no micro-organisms seen. Bacteriology: Pure culture of the staphylococcus albus; gelatine media were completely liquefied at the end of four days' growth; urine was not examined.

Case VI.

G. S., aged 64. Difficulty of micturition three months; retention requiring catheter four days. Urine: Result of examination is not stated in notes. Parts removed: Weight, 64 grams; twin tumour with urethra enclosed; "capsule" well marked. Microscopy: Fibro-adenomatous tissue; extensive round-celled infiltration present; large numbers of very short and stout bacilli with rounded ends, which do not stain by Gram, present in sections of the gland. Bacteriology: Pure culture of a bacillus coli isolated from the gland; diplococci, which stained by Gram, were present in the original culture, but were lost in plating; urine not examined.

Case VII.

D. C., aged 75. No history of gonorrhoea. Six years' difficulty of micturition, requiring catheter at times; one month complete retention. Urine, acid. Parts removed: Weight, 105 grams; twin tumour type with urethra enclosed; "capsule" distinct. Microscopy: Adenomatous hypertrophy; extensive round-celled infiltration present; no micro-organisms seen. Bacteriology:—Urine: Pure culture of a bacillus coli was isolated from the urine. Prostate gland: Sterile; film preparations were also made from the milky fluid present in the interior of the gland and stained by Gram; no micro-organisms were seen; large numbers of mononuclear cells and a few polymorphonuclear cells were found.

It will be seen that in the greater number of these observations the tumours removed from the prostates showed unmistakeable signs of infection by micro-organisms, and that in some instances the infecting organisms were the same as those found in the urine. To a certain extent, therefore, the results lend support to the view that the initial lesion in prostatic enlargement may in certain cases be a septic infection from the bladder. At the same time, it is difficult to accept the view that all such enlargements are due to such a cause, as this would involve the septic infection of a large proportion of bladders in individuals above the age of 50 years.

REMARKS ON A CASE OF GUMMATA OF THE HEART:

DEATH FROM HEART-BLOCK: RHYTHMICAL CONTRACTION OF THE AURICLES DURING THE LONG PAUSES.*

By HENRY HANDFORD, M.D., F.R.C.P.,

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The case I am going to bring before you may fairly be called a rare one, inasmuch as I have not met with a similar one during five and twenty years' observation. I should not, however, bring it to your notice simply on account of its rarity, for that would be the best evidence of its small practical utility. It is because the combination of circumstances present in this case teaches important lessons both in general pathology and in the more recent physiology and pathology of the heart, which have been so greatly advanced during the past ten or fifteen years, that it seems to me worth while to go rather more fully than usual into details.

History and Symptoms.

The patient was a married woman aged 32, admitted into the General Hospital, Nottingham, on August 24th, 1904. She was an actress, but had been unable to follow her profession for several months on account of breathlessness and fainting attacks. From the age of about 14 until 23 she had been a professional swimmer, and had been accustomed to give exhibitions of diving, during which she held her breath for long periods. Nine years ago she was compelled to give up this occupation on account of breathlessness, palpitation, and other cardiac symptoms. A year ago she was in the Liverpool Royal Infirmary with some obscure cardiac condition.

There was no dropsy, and the patient was able to lie flat in bed. The urine was free from albumen. The apex beat was in the fifth interspace, $5\frac{3}{4}$ in. from the middle line, but was not easily defined by palpation, except when the heart was acting regularly, and then the beat was forcible. There was a slight mitral systolic murmur, audible at the apex, and not propagated in any direction. A faint diastolic murmur was heard at the bottom of the sternum, and also at the apex.

The action of the heart was sometimes regular, with a speed of eighty to ninety beats a minute, but more frequently very irregular. Upon several occasions, on many different days, the heart was observed to beat at the rate of 84 per minute for a variable period, and then stop for five to fifteen seconds. During this interval, on auscultation over the right heart and over the pulmonary area, the auricles could be heard to continue beating. There was no second sound, no pulse could be felt at the wrist, and no cardiac impulse at the praecordia. The face became very pale; the patient had a slight convulsion affecting the face, arms, and legs; the eyes were turned upwards and to the left; a few deep inspirations (four or five) were taken, and the whole heart resumed regular and somewhat violent action. At the same moment the face flushed and consciousness returned. Occasionally the heart acted regularly for several hours, and during this period there was no dyspnoea and no distress of any kind. During the "attacks" or "fits" the patient described her feelings as those of a nightmare. She was unable to move, and thought she was dead. These fits were always associated with the cessation of the proper and complete action of the heart, and recurred sometimes two or three times an hour; at other times every two or three minutes for many hours together. On September 4th the whole heart would beat regularly at the rate of 80 to 90 per minute for 9 or 10 beats, then cease for ten seconds or longer, during which time the right auricle could be heard beating for eight or nine times, and no pulse could be felt at the wrist. The patient died in one of these attacks on the morning of September 7th.

It was not clear whether the sounds audible during the apparent cessation of the heart's action were due to the simultaneous contraction of both auricles, or whether the right contracted alone. Probably both contracted; but the left was small compared with the greatly-enlarged right auricle, and it would not receive much blood while the right ventricle remained inactive, and while the pulmonary circulation was only carried on by the right auricle.

I ought also to state that cardiac remedies were most carefully and persistently tried. Neither digitalis nor strophanthus produced more than temporary benefit, and then seemed to do harm. Most relief was obtained by hypodermic injections of strychnine and by alcohol.

Morbid Anatomy.

The necropsy was performed on the morning of September 8th. The left lung was retracted, and a large portion of the heart was uncovered. The pericardium was not adherent, and contained no excess of fluid. There was a slight excess of fat on the surface of the heart. The right auricle was very greatly distended with recent blood clot, and the walls were hypertrophied. The tricuspid valve admitted four fingers. The right ventricle was moderately distended with clot, the cavity was greatly dilated, and the walls moderately hypertrophied.

There was a large, ill-defined, thickened mass in the upper part of the anterior wall of the right ventricle, involving the auriculo-ventricular septum.

A smooth bulging of the endocardium was noticed on the interventricular septum just below the pulmonary valves, and another in the wall of the pulmonary artery

* Read before the Nottingham Medico-Chirurgical Society.

just above the valves, and extending some distance along the vessel. The posterior segment of the pulmonary valves was adherent, evidently as the result of a previous inflammatory process. The other segments were healthy. There was a band of thickened endocardium below the valves, which likewise appeared due to an antecedent inflammation.

On section, the growths presented all the appearances of syphilitic gummata. On the outer surface of the right ventricle was a smooth, yellowish, firm tumour, irregularly rounded and about $\frac{5}{8}$ in. in diameter. At the upper part of the outer surface of the left ventricle, near the auriculo-ventricular ring, was a puckered cicatrix, looking like a healed gumma. The left ventricle was empty, hypertrophied, but not much dilated. The mitral valve was slightly incompetent, and the valve curtains were a little thickened. Several small tumours about $\frac{1}{2}$ in. in diameter were found in the upper part of the interventricular septum behind the curtain of the mitral valve. Almost continuous with this series of growths was a considerable, ill-defined thickening of the left auriculo-ventricular ring, and bulging from this mass into the left auricle was another smooth growth. The aorta was slightly dilated, the walls were considerably thickened and showed signs of atheroma. The left coronary artery was dilated so as to take a No. 9 silver catheter for $\frac{1}{8}$ in., and then contracted to about one-third that size. The right was as large as a crow quill. The heart, when opened and washed, weighed 20 oz. Specimens were sent from three of the growths to the Clinical Research Association, and the report returned was as follows:

> The tumours are gummata, having typical appearances. In the centre of each is a necrotic, caseous mass, around which is a proliferating layer, surrounded in its turn by a fibrous layer. The heart muscle is somewhat fibrous wherever it can be recognized. The specimens are very characteristic. In addition an occasional small blood vessel can be found showing endarteritis and periarteritis.

No disease was found elsewhere in the body, but the brain was not examined, as permission to do so could not be obtained.

Pathology.

It is clear that in the condition of the heart we had to do with two separate causes. I have no reasonable doubt that the excessive dilatation and hypertrophy of the right side was of long standing and had been followed by a certain amount of muscular degeneration. It is reasonable to suppose that it was due to excessive exertion in diving and holding the breath for long periods during childhood and early adult life. The cardiac breakdown at the age of 23 affords strong confirmation of this view. The syphilitic affection I take to have been of more recent date. It added materially to the muscular degeneration, and the gummata, no doubt, caused a great hindrance to the conductivity of the heart, especially at the auriculo-ventricular groove. There was no evidence of any syphilitic affection during the few days she was under observation before death, and the presence of the gummata was not suspected. The case seemed to me to be one of excessive dilatation and degeneration of the right side of the heart, due to the exertions of swimming years ago, with threatened total failure. The convulsive movements which followed every prolonged cessation of the heart's action afforded a very clear illustration of the effects of cerebral anaemia. Previously to admission into the hospital, these attacks had been treated by bromides, on the ground that they were of epileptic origin; but they were so clearly associated with cessation of the heart's action, and never occurred when the heart was acting regularly, that there can be no doubt they were caused solely by anaemia of the brain, just as in cases of rapid haemorrhage. I was much puzzled how to interpret the sounds which were audible during the long intervals when the heart had apparently ceased to beat. I was at first inclined to look upon them as an instance of feeble hemisystole,[1] the left side remaining inactive, and so accounting for the absence of any pulse at the wrist. But under these circumstances, however feebly the right ventricle contracted, it must have produced an evident impulse on the chest wall. I am much more inclined to think that the sounds I have described were due to auricular contraction, both ventricles remaining passive. On such a hypothesis the conduction of the wave of muscular contraction, originating at the venous sinuses, would be stopped at the auriculo-ventricular groove by the interposition of the new growths, inflammatory products, and degenerated muscular fibres previously described, and would fail to pass from the auricles to the ventricles. Such cases have been admirably described by Wenckebach and others, and illustrated by elaborate tracings. My patient was too seriously ill during the whole time she was under observation to be worried by pulse and heart tracings. The explanations of this remarkable case that I have offered depend upon the acceptance of recent views of cardiac pathology, an epitome of which I now give, derived from Wenckebach's recent work upon arhythmia of the heart.[2]

> "The view, which has recently been held as to the origin and regulation of the action of the heart, is essentially different from that which was generally taught less than ten years ago."
>
> "The theory, in which the myogenic origin of the heart's action is advocated, may be stated in this way, that the stimulus that causes the contraction ('contraction-stimulus') is formed in the heart-muscle cells themselves, and is therefore not rhythmically conducted from the nervous system to them."
>
> "This property of automatic action belongs to the entire heart, but the muscle-cells situated at the venous end possess it in greatest measure."
>
> "In contrast with the cells of voluntary muscles there is no distinct line of division between those of the heart; there is no sarcolemma, the individual cells are united to one another by means of anastomoses; indeed the question has been raised whether it is possible at all to separate the individual cells."
>
> "The changes in the rapidity of conduction can be studied most easily at those places where it is always slowest, namely, at the points of junction between the chambers."
>
> "It has long been suspected with very great probability that there are cases in which only the systole of the ventricle falls out; or, in other words, the conduction is arrested at the auriculo-ventricular groove; and a great number of cases have now been recorded which prove this with certainty."

In the case I have been describing death was most probably due to a failure in the conduction of the contraction-stimulus from the auricles to the ventricles, at the auriculo-ventricular groove—the place where conduction is normally slowest and most difficult. The cause of this failure in conduction was no doubt mainly the presence of the gummata and syphilitic inflammatory products in the region of the auriculo-ventricular groove, interrupting the continuity of the muscular fibres.

Other causes had already impaired the heart's powers both of contraction and of conduction; and, no doubt, contributed materially to the fatal result. The gummata in the walls of the pulmonary artery, already described, added somewhat to the difficulty of maintaining the pulmonary circulation. The disease of the coronary arteries must also necessarily have contributed to the muscular degeneration. In consequence of the excessive dilatation of the right side (both auricle and ventricle) the circulation could only be carried on at a mechanical disadvantage.

There is some question whether the muscular hypertrophy, which normally results from long-continued and violent exertion, is not in some measure replaced by fibrous tissue in the process of involution which follows a cessation of that exertion.

In the above case the right side of the heart was especially dilated on account of the peculiar nature of the exertion. The necessity for holding the breath for very long periods under water during diving would cause a far greater obstacle in the pulmonary than in the systemic circulation, and would result in dilatation and hypertrophy of the right heart. The total abandonment of this form of exertion when serious symptoms of cardiac overstrain became apparent would lead to muscular involution—by no means necessarily contraction of the cavities—and fibrous change.

It will be noticed that there was no orthopnoea, notwithstanding the extensive disease of the heart and the general cardiac distress. That is a circumstance I have frequently observed when the right heart is mainly affected.

Dr. Sidney Phillips, in the *Lancet* for January 23rd, 1897, vol. i, p. 223, gives a list of 25 fatal cases of syphilis affecting the muscular substance of the heart. The cases are collected from the literature between 1851 and 1895. Of these 25 cases, 17 died suddenly, and 16 out of the 17 had gummata or syphilitic infiltration in the muscular substance of the heart. This proportion of sudden deaths is much greater than the average in fatal heart disease, and tends to confirm the suggestion I have put forward that the presence of gummata and infiltration causes a block in the conduction of the contraction-stimulus which may at any time prove sufficiently prolonged to cause death.

SUMMARY.

Great dilatation of the right heart was caused by excessive exertion during adolescence, leading to a general break-down from cardiac failure.

Comparative recovery, lasting several years, was interrupted by fresh symptoms shown *post mortem* to be due to the presence of syphilitic gummata in the muscular substance of the ventricles, especially numerous in the neighbourhood of the

auriculo-ventricular groove. These symptoms consisted in great disturbance of the cardiac rhythm, with frequent periods of apparent cessation of the heart's action, lasting for five to fifteen seconds or longer. During these periods faint sounds could be heard, presumably due to continued rhythmical contraction of the auricles. There was no pulse at the wrist, and no cardiac impulse. The face became pale; there was a slight general convulsion from cerebral anaemia; then a few deep respirations were followed by a resumption of the regular heart's action.

For days each period of cessation seemed likely to be final, and eventually the heart's cessation was permanent, and she died in an attack.

The most probable mechanism was a failure in the conduction of the contraction-stimulus from the auricles to the ventricles at the auriculo-ventricular groove—the so-called heart block.

REFERENCES.

[1] A remarkable case of hemisystole, in which the left ventricle alone carried on the circulation, the right ventricle remaining passive, is related in detail by Sir W. Broadbent in his book on *Heart Disease*, 3rd edition, p. 305. [2] William Green and Sons. 1904.

THE ANTHROPOMETRIC INVESTIGATION OF HOSPITAL PATIENTS.

BY F. C. SHRUBSALL, M.D.CANTAB.,

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(*Concluded from page 1694.*)

INFLUENCE OF CITY LIFE.

THE first part of this study being completed, it is now necessary to return to a further consideration of the population of London, to ascertain, if possible, the influence of city life.

For this purpose, I have classified 1,378 patients whose history I was able to obtain in detail and with considerable probability from the agreement of at least one relative besides the patient himself as to its correctness, under the headings employed by Ammon in Baden.

Urban.—When two or more generations have resided in London or other large town.

Semi-urban.—When the parents were immigrants from the country, but the individual observed was born in London.

Semi-rural.—When the individual was born in the country but lived most of his life in London.

Rural.—When the individual patient was both born and lived in the country.

The numbers observed are small both on account of the difficulty in obtaining the family history with probable accuracy and also because large numbers of individuals have an urban family history on one side and a rural on the other. These, owing to the difficulty of classification, were altogether omitted. I have ascertained the hair and eye colours and stature of these individuals, and for comparison have also ascertained the coloration of 846 visitors to the hospitals whose history I was able to obtain in the same way. The numbers here are still smaller, not so much on account of the paucity of visitors, but because they were, as a class, uncommunicative and disposed to resent inquiries as to their origin even after full explanations of its scientific value. I regret to say they practically all refused to be measured.

From the diagram (Fig. 5) it will be seen that while the visitors showed a steady increase of brunette traits passing from rural to urban environment, the distribution among the actual patients was somewhat irregular. This irregularity is not due to any one class of disease being more prevalent among the available patients of any one known environment, for the different diseases were well distributed. The increased number of fair semi-rural and rural patients might well be explained by a proportionately greater immigration of individuals presenting these traits into London; but this explanation meets with the difficulty that among visitors to the hospitals the decrease of blonde traits is regular and progressive. While fully recognizing that the numbers observed are very small for deductions the figures suggest that the blondes, perhaps, feel most acutely the change in their environment, and that they are relatively not so healthy as those of the next generation born and bred amidst urban surroundings. The increase in hospital attendance of blonde patients of two generations, as contrasted with one generation in town, suggests a certain degree of lack of vitality under the prevailing conditions. An alternative possibility is that the family has gradually sunk in social status, and that, while the first generations were able to pay for their medical attendance, the latter were not; but

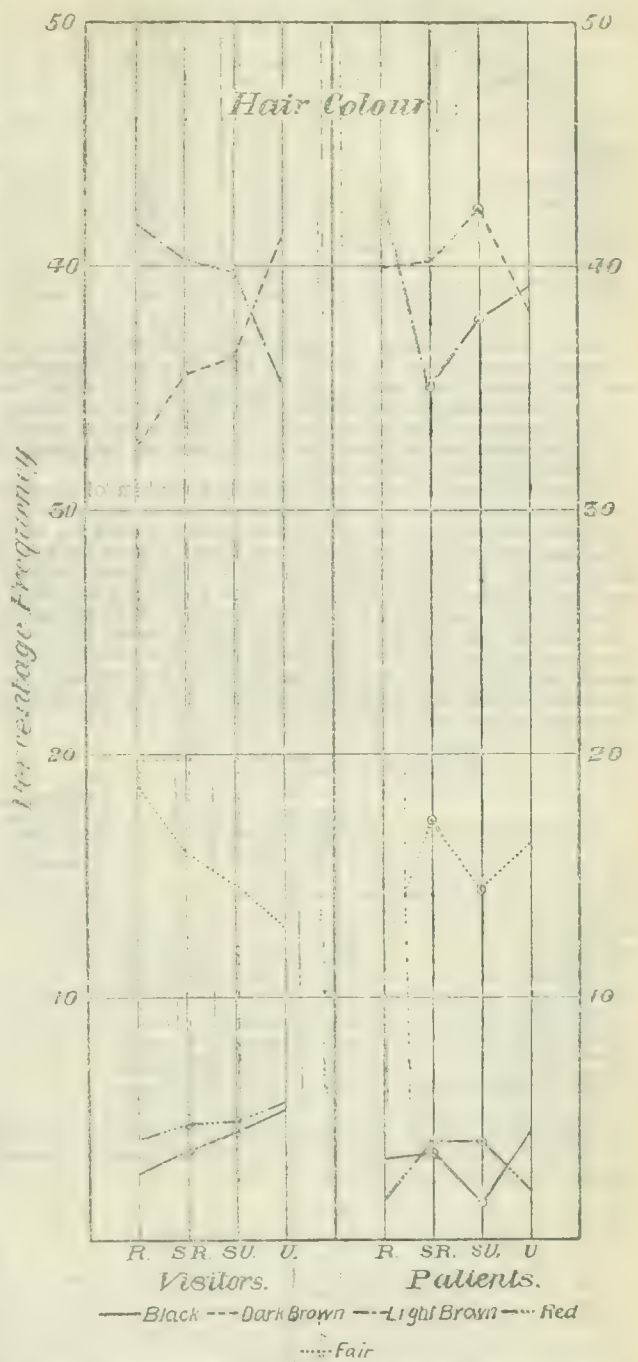


Fig. 5.—Percentage frequency of each hair colour among visitors and patients classed in groups according to length of city residence. R., rural. SR., semi-rural. SU., semi-urban. U., urban.

this is quite without proof, and against it is the observation that in London brunette traits are more prevalent the lower the social scale. Applying to these statistics the method employed above, the results given in the table showing relation of environment to pigmentation (p. 1748) are obtained.

As regards these averages, among the groups of hospital patients the only significant difference is that between semi-rural and urban, the latter being the fairer. The other groups have averages falling within the range explicable by random sampling. For the group of visitors the various grades all show significant differences from the urban class, but none as between themselves. Contrasting patients with visitors in

the respective groups, it appears that the urban series present significant differences, while the others do not.

Relation of Environment to Pigmentation.

Environment of Individuals.	Average Hair Colour.	Standard Deviation.	No. of Observations.	$\frac{\sigma^2}{N}$.
Patients:				
Urban	2.1600	0.8459	788	0.00091
Semi-urban	2.2710	0.7709	328	0.00181
Semi-rural	2.3229	0.7005	192	0.00325
Rural	2.3333	0.7454	60	0.00920
Visitors:				
Urban	2.5166	0.6581	300	0.00144
Semi-urban	2.2943	0.8138	251	0.00257
Semi-rural	2.2237	0.8109	219	0.00300
Rural	2.1486	0.8001	74	0.00865

The gradual increase of pigmentation demonstrated by Ammon for the cities in Baden is therefore only suggested, and not proved, for London, save in so far as it is clear that those of the longest city residence are darker than the others.

The divergence between patients and their visitors, strictly comparable classes, suggest that the blondes feel most acutely the change in their environment.

The stature could unfortunately only be taken of hospital patients, and yields results in accordance with expectations, the phenomenon that the semi-rural group should be taller than the rural receiving a simple explanation from the immigration into London of those of the country-folk the best-endowed physically and mentally. The great majority of the rural patients came from the home counties. For purposes of comparison, the average results for the different classes of the community obtained by the British Association Committee are appended. It must, however, be remembered that the latter results are from observations made in all parts of the country, and not in London only:

Relation of Environment to Stature.

Environment.	Average Stature in inches.	Standard Deviation.	No	$\frac{\sigma^2}{N}$	Significance of Difference from Urban as Standard.
Patients:					
Urban	65.901	2.0307	203	0.02041	
Semi-urban	66.241	2.1006	83	0.05316	+
Semi-rural	67.117	1.9770	77	0.04836	+ +
Rural	66.962	2.1121	60	0.074.0	+ +
B. A. results:					
Professional classes ...	68.645	2.2281	107	0.04642	+
Commercial classes ...	67.480	2.2209	180	0.02760	+ +
Country labourers	67.050	2.4903	945	0.00655	+ +
Town artisans	66.108	2.0598	342	0.01240	0
Sedentary town-workers ...	65.477	2.3631	193	0.02594	0

From this it may be concluded that there is some evidence of a progressive diminution of stature and increase of brunette traits in successive generations of city life.

Relative Percentages of the Three Classes of Londoners in London as a whole and among Hospital Patients.

	Out-patients St. Bartholomew's Hospital.	In-patients, Brompton Hospital.	Census of London, 1901.
Semi-rural	15.3	18.0	35.0
Semi-urban ...	24.9 } 34.7	82.0	65.0
Urban	59.8 }		

That the unhealthy conditions of city life—long hours, hurried meals, and insufficient ventilation—should stunt the growth of those exposed to their influence is only reasonably to be expected, but that the same influences should tend to the predominance of brunette traits is less obvious. If, however, by some features associated with their physical characters the blonde element be handicapped in the struggle for existence, as has been suggested by the statistics, the phenomenon might be explained by the gradual but progressive extinction of this class; also, if the constitution associated with this type of coloration be in reality inferior to that associated with other types, the resulting want of resistance might be expected to show itself by the individuals succumbing earlier in life. A study of pigmentation in children might therefore be expected to yield profitable results.

Fig. 6 represents graphically the percentage frequency of the different hair colours in children from the medical casualty departments of several London hospitals, and contrasts with these the same characters as noted in children in the schools and playgrounds of various quarters of the metropolis, care being taken to comprise the area of attraction of each of the hospitals under consideration. The hospital patients were under 12 years of age, and excluded actual infants, while the others were, as far as could be judged, of corresponding age. Two distinct features are brought out by the curves—the differences between hospital patients and healthy children and the influence of environment and social status.

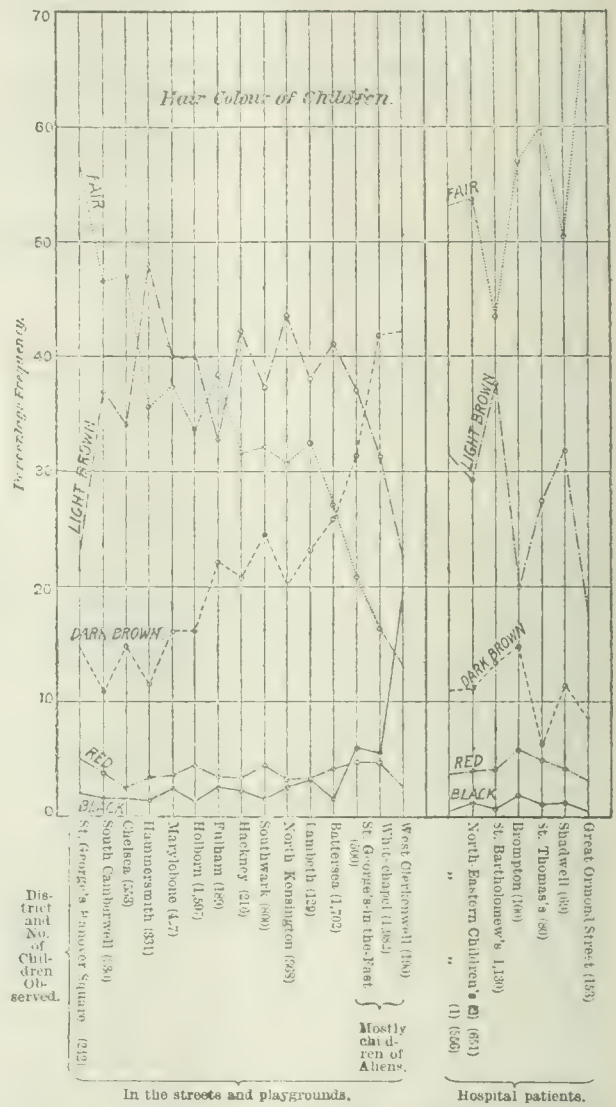


Fig. 6.—Percentage frequency of each hair colour among healthy children from the playgrounds of the several districts and among medical patients from the children's hospitals mentioned. The figures indicate the number of children examined in each district. (I am indebted to the kindness of Dr. A. E. Jones for many of the records of the colour of hair in children in the hospitals.)

As regards the former, they show the marked preponderance in hospitals of the fair element and the relative absence of dark brown, while red and black hair appear in about the normal proportions. That dark-brown haired children should be relatively more frequent at the Brompton Hospital than elsewhere was to be expected, since, as before indicated, pulmonary tuberculosis seems to exercise a special preference for such traits. The greater brunetteness of the children recorded at St. Bartholomew's Hospital

is due to the fact that the statistics therefrom, which were the first taken, comprise a certain number of accident cases, and the distribution of pigmentation among these is the same as in the general populace. The curves, then, strongly suggest that disease during childhood falls unduly heavily on the fair element. This feature is also brought out by the application of the method of standard deviations, but the resulting table is too large for publication in the British Medical Journal. That not only disease but mortality shows this special selection is indicated by such statistics as I have up to the present collected, but so far these are too few in number to be statistically significant.

As regards environment, it will be seen that the most marked preponderance of brunette traits occurs in West Clerkenwell, where a great part of the population is Italian by race if not by birth; and in Whitechapel and St. George's-in-the-East, which are largely if not exclusively inhabited by Polish and other Jews. These, therefore, must be left out of consideration. Further, it will be noted that the blonde element decreases from the periphery towards the centre of the city, and that the degree of brunetteness forms a fair indication of the social status of the several districts. The Borough of Marylebone is perhaps unduly low, owing to the presence of a large alien population in its south-eastern quarter.

Conclusions.

So far, then, it would appear:

1. That certain diseases show special affinities for certain types of the population.

2. That adult hospital patients, as a whole, are slightly fairer than the population within the sphere of attraction of each hospital.

3. That with each successive generation of city life the fair element sends an undue proportion of its members to the hospitals.

4. That child patients are markedly fairer than the children in the districts around the hospitals.

5. That diminution of stature and increase of brunette traits are almost certainly progressive with increased heredity of an urban environment.

It remains only to discuss the possible influence of these factors towards changing the distribution of physical characters in successive generations of Londoners. During the earlier years of each generation the fair element certainly presents its maximum representation. During this period the chief causes of death are disorders of the alimentary and respiratory systems, coming on either directly or as sequelae of some of the infectious diseases common in childhood. These even in adult life show, as far as case incidence is concerned, a certain degree of greater frequency among the blonde class of the community, and furnish the children's hospital, in which the fairer element particularly predominates, with the greater proportion of their medical casualty cases. The diseases associated with brunette traits are at this period at their minimum. The quinquennial period 10 to 15 is characterized by a very low mortality evenly spread over the different disorders, but still falling least on the "brunette group." The special incidence of illness on the lighter classes of the community continues until the period 20 to 25, when owing to the sudden rise both of case-incidence and mortality from pulmonary tuberculosis, the darker element begins to suffer severely. At this period, 20 to 25, it seems certain that dark traits are at their maximum frequency. This time, however, is that at which most marriages occur, so that assuming the marriage-rate to be uniform among the different types, which is, however, susceptible of proof, the parents of the next generation should present a maximum of pigmentation. It is true that the children show a regression towards the mean type of the population, but it is towards the mean type of existing parents and not the mean of the previous generation in early infancy. Supposing the difference to be but slight, yet in time it might produce and even accentuate the features of predominant brunetteness visible even now in all urban areas. The vast majority of marriages take place with the ages of the contracting parties between 21 and 30, and the majority of children are born in the earlier years of married life. Between the ages of 20 and 40 about half the deaths that occur are due to pulmonary tuberculosis, which, both in case-incidence and death-rate, draws most heavily from the brunette class, so that, as time passes on, the relative frequency of dark individuals is diminished. Consequently the parents of children born later in life are more likely to present a normal frequency of blonde traits; but, on the other hand, fewer children are born of late than early marriage, so that this scarcely serves to equalize the proportions. The remaining brunette-selecting disorders, cancer and nervous diseases, present their maximum incidence and mortality later in life, and only slightly affect the population during the all-important period of early adult life.

The most overcrowded areas are, on the whole, both the darkest and those characterized by a high infant mortality. That they do not become still more brunette is to be explained by immigration, and perhaps, to a lesser extent, by the earlier rise of mortality from pulmonary tuberculosis, the greatest scourge of the child-bearing period.

The object of this paper has been to show that, as regards the influence of urban residence, London follows the same rules as the Continental cities, and to inquire if any relation exists between health and physical characters. The facts contained remain unvitiated by any wrong interpretation which may have been placed on them, and should their publication serve as a stimulus to the collection of further records, the desired object will have been fully attained.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

A CHEMICAL TEST FOR TINEA VERSICOLOR.

Tinea versicolor is a disease much more prevalent than is commonly supposed. This is due, in part, to its causing very little inconvenience, and in part to its being passed over as a mere discoloration of the skin. When the skin is washed frequently and the superficial part of the growth thus removed, the disease is very hard to detect. The following, however, affords an excellent chemical test. Dissolve a little acetate of lead in water, and suspend in the solution a little sublimed sulphur. Apply a little of this lotion over the suspected parts. In a few hours, and still more by the next day, the tinea will appear clearly marked out in distinctly blackened patches. Not only is this an excellent test for the disease, but it is also probably the best remedy for it.

The sulphur and acetate of lead may be kept in the above lotion indefinitely without change; but the tinea, by its action, brings about combination of the sulphur and lead, the blackening of the tinea being due to the deposition of black lead sulphide in the tinea itself. The adjoining healthy skin is not affected.

If the same lotion is applied to the roots of the hair the same result evidently takes place in the hair follicles and inside the hairs themselves. Hence the use of this mixture (with the addition of scent, glycerine, etc.) as a lotion for the hair in certain proprietary hair lotions which need not be named. The lead sulphide darkens the hair, and so prevents its growing grey. What it is that brings about the combination of the lead and sulphur in the hair follicles and hairs I am not quite prepared to say. There is obviously danger of lead poisoning if such lotions are used without medical advice.

Hugh Woods.

London.

A CASE OF ACUTE ALCOHOLIC POISONING IN A CHILD AGED 4 YEARS.

On Sunday, August 15th, I was called at 1 p.m. to see a boy aged 4 years who, having escaped the vigilance of his parents, rose at 5 a.m. and extracted from a cupboard in an adjoining room about 6 oz. of rum and 10 oz. of beer, drank them, and returned to bed. About midday both spirit and beer were missed, but no particular importance was attached to the matter, as it was thought that the liquids had possibly been consumed by one or other of the adult members of the family then absent.

Shortly after, however, the unusually prolonged slumber of the child aroused suspicion, and it was then discovered that his breath smelt strongly of rum, and that he could not be roused. Medical aid was then summoned.

On examination the breath had a strong alcoholic odour. The head was hot, the cheeks pale, and the hands and feet very cold. The temperature in the axilla was 99.4°, the pulse 100, and respirations 36, the latter being somewhat shallow. The eyelids were half closed, and there was marked internal strabismus, the pupils, which were only moderately dilated and reacted to light, being directed downwards and inwards.

The head was thrown back and the spine arched forwards. The abdomen was slightly carinated, but the integument had not lost its elasticity. The *tâche cérébrale* was also unobtainable. The patient was also the subject of violent and frequent tonic convulsions, but was able in the intervals of the paroxysms to swallow a very small quantity of fluid by the mouth.

Up to the time of examination the child had not vomited, emetics were therefore given, but without result; while tickling the fauces with a feather only proved how deep was the anaesthesia. A gastric tube was next used, and the stomach thoroughly washed out. The liquid removed had a marked alcoholic odour, and showed an increase of about 5 oz. over and above the water injected. Ice was applied to the head and hot-water bottles to the feet and trunk. The convulsions continuing, small doses of potassium bromide were given at intervals of two hours throughout the night.

On the following day, August 16th, the patient still remained very convulsed, passing urine and faeces unconsciously. The strabismus was now external, the pupils still reacting to light and slightly dilated, being directed upwards and outwards instead of downwards and inwards as on the previous day.

Signs of bronchitis now began to show themselves all over both lungs, and the respirations increased to 40, the pulse to 120, and the temperature rose from 99° in the morning to 100.2° at 6 p.m. As the patient by this time was much exhausted, chloroform was used to control the convulsions, and a nutrient enema, consisting of half a pint of milk and the yolks of two eggs, given and partly retained; after this the patient had about an hour's sleep, only to be followed by further but less severe convulsions.

On the morning of August 17th the convulsions ceased, and the patient, though very weak, became conscious and spoke to his parents, but finally died of heart failure on the afternoon of the same day, although strong beef-tea and other stimulants were tried.

W. J. BURROUGHS, M.R.C.S.Eng., L.R.C.P.Lond.
London, N.W.

CASE OF DERMOID CYST OF THE STERNUM.

As the following case seems to me to be one of a kind not often encountered, it seems worth while to put it upon record. The patient, a man aged 45, first noticed a lump in his sternum, about the size of a marble, two years ago. Very gradually this lump increased in size. He adopted various treatments which had no effect, and at last came under my care in the Victoria Cottage Hospital, Sidmouth. He was a bloated, florid man, with acne all over him, and presented for inspection a large round tumour about the size of a turkey's egg, situated in the mid-sternal region of his chest, not adherent to the skin, but seemingly attached above to the manubrio-gladiolus juncture; it did not pulsate, but fluctuation was easily obtained. Some thick, turbid, and somewhat curdy white fluid was drawn off with an exploring syringe. Subsequently, the man being anaesthetized with A.C.E. mixture by my colleague, Dr. Leon, of Sidmouth, I cut down upon the growth, which proved to be a cyst attached by a pedicle dipping down between the gladiolus and manubrium. I removed it entire and found it to be a dermoid.

ARTHUR C. BIRD, M.R.C.S.Eng., L.R.C.P.Lond.,
Surgeon, Sidmouth Cottage Hospital.

A DEVICE FOR CONJUNCTIVAL THERAPEUSIS.

THE methods hitherto available for benumbing the palpebral conjunctiva preparatory to such small operations as the evacuation of tarsal cysts and the expression of trachoma granules have certain disadvantages. Perhaps the most usual plan consists in tucking a small pledget of cotton-wool, soaked with cocaine solution, between the eyelid and the eye, where, like a two-edged sword, it operates equally in two directions, on the eyeball and the lid. This makes it unsafe to employ a very concentrated solution, and since the tears percolate the pledget, they make the solution gradually weaker. It is rare, therefore, by this method to obtain complete anaesthesia. By a better method the lid is everted and solid cocaine in powder form is applied to the conjunctiva. But as it takes five minutes, however, for cocaine to attain its maximum effect, and it is tedious to evert the lid all this while, the operation is generally commenced before the anaesthesia is complete. To combine the advantages of both methods without the disadvantages of either, I have devised small discs of thin fabric, backed with delicate impervious tissue, like, indeed, microscopic spongiopiline. These are impregnated with solid cocaine and hemisine, and when taken up by cilia forceps, and tucked between the lid and the eye, they cling to the lid and protect the globe. These enable the lid to be safely and yet powerfully anaesthetized, so that tarsal cysts can often be removed with absolutely no pain. When cut to an oval shape and large enough to come in contact with the entire inner surface of the upper lid, they can be employed for therapeutic purposes by charging the fabric with various medicaments, such as copper sulphate, cuprol, mercurol, etc., which are thus maintained in prolonged contact with the conjunctiva without damaging the cornea. They are obtainable from Burroughs, Wellcome and Co.

ERNEST E. MADDOX, M.D., F.R.C.S.Edin.
Bournemouth.

ANENCEPHALOUS FETUS: SCALP SIMULATING BAG OF MEMBRANES.

A SHORT time ago I delivered a woman of a seven months' child in which all the bony vault of the skull was absent. The child had been dead for some time, and the whole body was soft and macerated, the head and limbs being easily detached from the trunk. On examining the head I found that the face was quite normal, and all the features perfect; but that the bones of the vault of the cranium were entirely absent, the brain being enclosed simply by the scalp and the dura mater. The base of the skull was more or less completely ossified, and all the cranial nerves could be distinguished. The patient had previously had several normal labours. On examining her when the labour was well advanced, I found the scalp protruding into the os exactly like the bag of membranes, and I ruptured it under the impression that such was the case, the result being a copious discharge of semi-fluid brain substance. The labour terminated quite easily, and the patient has since done perfectly well.

Ealing. A. L. SCOTT, M.R.C.S.

DIPHTHERIAL CONTACTS.

A SCHOOLBOY, a diphtherial "contact," who had been in quarantine for one month, came for a certificate to pronounce him safe to return to school. I took a swab of his throat, rubbing especially over a whitish-yellow spot, the size of a small pin's head, on his right tonsil, and sent it for examination to Mr. Duncan, our county bacteriologist. His report stated that no diphtherial bacilli were found, but streptococci and staphylococci were present. The spot still being visible on the third day after the first swab was taken, I squeezed out with a pair of sterilized forceps a plug of inspissated pus, dissolved it in water, fixed and stained it in the usual way. In this Klebs-Loeffler bacilli were seen without much difficulty, and Mr. Duncan confirmed this.

Throughout the boy had no visible hyperaemia around the plug and no symptoms of diphtheria. After a prophylactic injection of antitoxin and free application of antiseptics there was no reappearance of follicular accumulation. Antiseptics then being discarded, repeated swabs gave negative results.

This case, I think, is interesting—first, in showing how easily these bacilli may become buried in the crypts and follicles without their reaching the surface for the ordinary swab to touch; and, secondly, in demonstrating the long period—namely, one month—they lurk in "contacts."

Great Malvern. GILBERT CHARSLEY, M.B., M.R.C.S.

DIPHTHERIA IN INDIA.

DURING the last five years I have come across only three genuine cases of diphtheria in Hyderabad. From one of these a pure culture of diphtheria bacillus was obtained, which, in morphological and cultural characters and in pathogenic effects upon animals proved to be identical with the specific bacillus discovered by Klebs and Loeffler. Hence it is clear that diphtheria does occur in tropical climates. As far as my knowledge goes it occurs in sporadic form and in cold weather.

The urine in all the three cases contained albumen and also casts which, however, could not be detected in the urine of several cases of severe throat affections. Hence the presence of albumen and casts in the urine of a child suffering from an acute throat affection but otherwise healthy would incline me to the conclusion that the case was one of diphtheria.

S. MALLANNAH, M.D Edin., D.P.H.Camb.,
Lecturer, Medical School, Hyderabad.

A TEST FOR CONSTIPATION.

It is, I believe, within the experience of all medical practitioners that many persons complain of being constipated who are not so, and similarly, many state their bowels are in good working order, when it is not the case. Subject to correction I would put it that the matutinal motion ought to be the débris of the food consumed during the previous day, and if it is so, constipation does not exist. While if it is the débris of food consumed some days previously, constipation does exist.

To determine this, in many cases, vital matter, I have administered a tablespoonful of animal charcoal to doubtful subjects, and timed its appearance in the stool. In normally-constituted persons I find it comes through within twenty-four hours, and I have seen it delayed for a week in a patient who was under the impression that because she went to stool every morning, she could not be constipated. I have found this test of value in cases of suspected intestinal obstruction, the gritty charcoal being unmistakeable in the excreta, and by its presence clearly demonstrating the patency of the canal. It is even possible by this test to convince mothers that their children do not require to be dosed with castor oil every night.

C. Graham Grant, L.R.C.P.Edin., L.R.C.S.Edin.

London, E.

ADMINISTRATION OF ANTITOXIC SERUM BY THE MOUTH.

Dr. Goodall in his paper on serum therapeutics at Oxford said that, as far as he knew, there was no valid clinical proof in favour of, and experimental evidence was against, giving serums by the mouth or rectum. Two years ago, while injecting antidiphtherial serum (2,000 units) in a "confirmed" case in a child aged two years, something went wrong with the syringe, and I poured the rest—about half—into a teaspoon and gave it by the mouth, with the very happiest results as compared with my previous orthodox cases. Being encouraged by this case, I have never since used the syringe, and in both preventive cases (500 units) and curative ones (2,000 units) have been very pleased with the efficacy of the method; one very obvious advantage is that of ease, and also that a preventive case will have no objection to the remedy if the needle be held back. I have not only given the serum by the mouth to others, but on one occasion when I had reason to believe I had a slight attack of diphtheria, I took it myself with good results. My own case was not verified bacteriologically, but all the other cases in which I have administered serum in this fashion have been "confirmed" cases.

Sheffield. A. M. Pilcher, M.B., Ch.B.

ABSENCE OF UTERUS AND VAGINA.

Reading the account of this case in the British Medical Journal of December 10th, 1904, p. 1571, I think it will be interesting to put on record an exactly similar case that came under my notice five years ago. The patient, a well-developed girl of 18, was brought to me by her mother with an adenoma of the right breast. She stated that she had never been "unwell," and as this was the cause of considerable anxiety to her mother and herself, I suggested that whilst under chloroform for the removal of the adenoma I should make an examination. This revealed a total absence of vagina and uterus, although both ovaries could be made out in their normal positions.

Charles E. Bell,
Surgeon, Royal Devon and Exeter Hospital.

AIR IN THE HEART.

In the British Medical Journal of July 9th I recorded a somewhat strange case of air in the heart; I have now to report another which recently came to my notice. I was instructed to make a *post-mortem* examination of a young woman who had died shortly after a normal labour at the eighth month. The patient was attended by an unskilled midwife, who stated that shortly after confinement the patient complained of intense pain in the precordial region and died "almost suddenly" about twenty-two hours after delivery. At the autopsy I found the heart healthy, but with very pale blood clots in all its cavities, those on the right side being large and extending into the pulmonary artery and the veins of the right auricle. The right side of the heart also contained much frothy blood. With the exception of the kidneys, which were much congested with swollen cortex, I found nothing noteworthy in the condition of the other organs. There was no blood clot in the uterus, and many of the sinuses at the placental site were open, a large one especially, and I think that death was undoubtedly due to the entrance of air into one of these sinuses: a somewhat rare accident, but to most obstetricians a well-recognized possibility. I should add that this unfortunate woman was not seen by a qualified medical man until after her death.

Southport. P. O. Malabre, M.B., C.M.Edin.

A CASE OF TETANUS.

The following case presents points of interest:

J. F., aged 27, a butcher, was thrown from his horse on June 18th, 1904, and was dragged by his foot in the stirrup for some distance. He was brought at once—about 8 a.m.—to my house, and I found extensive lacerated wounds over the right knee and elbow, dirt was rubbed into subcutaneous tissue, fascia, and lacerated muscle and there were skin abrasions over forehead and nose full of dirt. The wounds were well irrigated with carbolic lotion, and hot boracic fomentations were applied, and I then sent the man to the Cottage Hospital. He was put to bed, and the wounds were irrigated with carbolic and redressed three times a day. He did well for the first three weeks, but on the twenty-third day he complained of pain and stiffness in neck, back, and legs. His legs became rigid and his jaw stiff, so that he could only take slops: he could not use his teeth, nor could he swallow fluids well. He took bread and milk quite easily. He had no spasms, and his temperature was never above 99°. He was given potassium bromide, gr. xv, three times a day, and syrup of chloral at bedtime; he slept well. His condition remained much the same for the next few days, and on July 14th, 16th, and 18th he was given an injection of tetanus antitoxin. He gradually improved, and at the end of ten days could take his food better, but the stiffness of back and legs lasted for nearly three weeks. He left the hospital on August 6th quite well.

Remarks.—The mildness of the attack was doubtless due to the prompt cleansing of the wounds and the frequent irrigation and changing of fomentation. The antitoxin seemed to affect its course very little. I must thank Mr. R. Martyn for looking after the patient during my absence, for the symptoms of tetanus developed whilst I was away on my holiday.

Exmouth. R. Stanley Thomas, M.A., M.D., B.C.Cantab.

METOL AS A CAUSE OF ACUTE DERMATITIS.

A man, aged about 50 years, neurasthenic, of a uric acid diathesis, and not having regained his strength fully since an attack of influenza a few months before, and in which he had no rash, was seized with a severe cold, which he increased by going out in the wet. The attack began about four days previous to my visit, and the last twenty-four hours he had remained in bed; nine days before this he had been using metol as a developer in photography. The temperature was 101° (it never became higher than 102° during the illness); he complained of sore throat, and I found the parts congested. He was feeling very weak and had great irritation of the skin. The hands were affected with a few small blisters, and had an erysipelatous appearance; there was a rash on the chest and arms very like scarlet fever (I could not definitely say when it first appeared); numerous marks, the result of scratching, were observed. He said that he thought nothing of the state of his hands, as they had been just the same before after using metol, and that all the skin had come off. The rash gradually spread over the body, but was not so profuse on the legs; on the feet the appearance was that of erythema; the cervical glands on both sides became affected, and sudamina appeared, and were very profuse on the chest and arms. He complained very much of the great itching and heat of the skin; the rash gradually passed away in about a week, but was followed by great burning and pain, particularly in the skin of the right arm, where the rash had been very profuse. Desquamation began, and was very thorough; I never saw so much before. It was more than six weeks before the soles of the feet were clear, and the patient regained strength slowly.

I found this dermatitis rather obstinate in responding to treatment; of the different local applications used for the irritation, emol-keleet and sponging with vinegar and water did the most good. Ammonium bromide did good, but he did not care to take anything at night to ease him. I think that metol was the cause of the dermatitis, which, of course, increased the patient's weakness and thereby retarded convalescence and caused very acute suffering.

Arthur Storrs, M.D.McGill, M.R.C.P., L.R.C.S.Ed.

Southport.

REPORTS

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL VICTORIA HOSPITAL, DOVER.

A CASE OF HAEMORRHAGE INTO THE LATERAL VENTRICLE.

(Reported by Egerton L. Pope, B.A., M.D.McGill, M.R.C.S.Eng., House-Surgeon.)

History.—The patient, a woman aged 24, previously healthy, one month previous to admission was at work in a stooping posture, and on rising struck her head against a beam. She was stunned, though not rendered unconscious. She was put to bed and treated by the practitioner who was summoned as a case of concussion, there being no sign of fracture. After a day or two she resumed work, and though she continued to complain of some headache, she gave her parents no reason to think that she was any the worse of her accident. Eventually, however, one month after her injury, she was compelled to stay in bed on account of the intense pain in her head and the onset of vomiting. Her doctor being called again, then advised her immediate removal to the hospital.

State on Admission.—On admission she was found to be in a state of stupor—though conscious and able to converse; complaining of intense headache. The following details were noted: Sensation undisturbed; motor power present but equally diminished in all four limbs; no rigidity; no ankle clonus; reflexes normally present in toes but diminished in knees; pupils small but equal; insensitive to light though photophobia existed; failure of accommodation; no nystagmus; slight divergent strabismus; optic discs swollen and pale; multiple haemorrhages in the retina. Haemic murmur at the base of the heart. Urine negative; bladder and rectum incontinent; temperature subfebrile; respirations 26; pulse 120.

Progress.—Her condition remained thus for twenty-four hours, and there was gushing vomiting at frequent intervals. Then she began to have rigidity of one or two limbs at a time, followed by relaxation in these limbs and rigidity in the others, but at no time was there any symmetrical distribution of symptoms, so as to render possible a definite localization of the lesion. The stupor deepened; she could only be roused with difficulty.

Result.—About thirty-six hours after admission her right pupil became dilated, her stupor deepened into coma, her temperature ran rapidly up to 106°, her respirations became irregular and laboured, and her pulse became more rapid though it remained strong and regular almost to the last. It was apparent that death was beginning in the higher centres, for her respiration persisted, as it were, obstinately, and the circulation, with an almost uncanny perseverance, seemed to be trying to survive the overpowering influences from above.

Post-mortem Examination.—The cranium was opened and the exposed meninges carefully examined, but beyond a little congestion there was nothing of interest. The dura mater was divided on either side of the longitudinal sinus and the flaps thrown outward. The brain was carefully removed by dividing the structures at the base, and at the last moment a rent was inadvertently made in the base of the right lateral hemisphere, and from this a substance resembling raspberry jam began to ooze. Reversing the brain quickly, the finger was inserted into this hole and the right lateral ventricle was explored, and this was found to contain a large quantity of the jam-like material, which had greatly distended the cavity. The whole ventricular system of the brain was then opened up, and the same condition was found to obtain in the third ventricle through the foramen of Monro. The lateral ventricle of the opposite side, however, and also the fourth ventricle, did not share in the condition. In addition, there were two small haemorrhages, about the size of a marble, into the brain substance, one in the central part of the left frontal lobe and the other in the central part of the right occipital lobe. No fracture of the skull could be found, and there was no sign of meningitis.

Remarks.—Unfortunately, leave to examine the organs of the thorax and abdomen was not obtained, but there were no clinical symptoms to indicate any disease in them. There was no history of haemophilia. The case was diagnosed on admission as basal meningitis and was treated as such, and probably no better conclusion could have been reached under the circumstances. The case is especially interesting inasmuch as a whole month elapsed between the time of the accident and the time of onset of severe symptoms. I am indebted to Mr. J. Reginald Long, under whose care the patient was placed while in hospital, for permission to publish the case.

COLONIAL HOSPITAL, TRINIDAD.

GUAIACOL CARBONATE IN PNEUMONIA.

(By E. A. Gaynes Doyle, Resident Surgeon.)

Many drugs have been vaunted as cures for certain diseases, especially phthisis and pneumonia. I am therefore loth to bring forward guaiacol carbonate as a cure in many cases of acute pneumonia, were it not for the very exceptional benefit it has given to cases in this hospital.

The method of administration requires one observation, and that is the drug must be given in large doses and pushed—20 to 30 gr. every two hours, or even every hour if *in extremis*, until the temperature drops and the urgency of the dyspnoea abates. It should then be reduced to half-doses, less frequently, or stopped altogether if the temperature is subnormal. No bad effects have ever followed the use of the drug; in a few cases the urine has got a little dark; skipping a dose or two has allowed this to clear up.

One of my first cases was a female with acute lobar pneumonia of the right lung. She took 6 drachms of the drug from 5 p.m. to 8 a.m., and then 10 gr. every three hours; this was stopped on the third day. The patient made a complete recovery. It is very difficult to state definitely the day of the disease, owing to the class of patients admitted as a rule, and also to the fact that it is not a common thing to find acute pneumonia running a typical course here.

VICTORIA COTTAGE HOSPITAL, GUERNSEY.

FRACTURED SKULL: RUPTURED MIDDLE MENINGEAL ARTERY: OPERATION: RECOVERY.

(Under the care of E. Laurie Robinson, M.R.C.S.Eng., etc.)

On Friday, March 18th, 1904, at about 4.30 p.m., my colleague, Dr. F. Carey, was sent for to see the patient, P. L., aged 20, who gave him the following history: "At about 3.30 p.m. I was standing upon the counter at our shop, when I fell, striking my right temple against the corner of a shelf. I was stunned for a few minutes, then got up and walked home, a distance of about a quarter of a mile. My nose bled a little, and after I reached home I was sick and vomited some blood." She had only just finished her story when she suddenly became unconscious, showed signs of left hemiplegia, became pale and collapsed, her pulse at the wrist being scarcely perceptible. The right pupil was widely dilated, and the eye was turned outwards. She was immediately placed in a horizontal position, and after a little time she rallied somewhat, the pulse being rather fuller, and she kept moving her right arm. I saw her first at 7 p.m., and found her in just the same state, except that she had rallied still more from the shock. I urged immediate operation, but the parents would not give their consent until about 10 p.m. She was removed to the Cottage Hospital. The operation was commenced at 11.30 p.m. I was ably assisted by Drs. F. and C. Carey.

Operation.—I made an oval flap, commencing at the right external angular process, and finishing just in front of the ear. On exposing the bone a fracture was seen in the anterior third of the temporal fossa, running downward to the base of the brain. The bone was not depressed. I then applied a large trephine over the position of the right middle meningeal artery. I got through the bone almost at once, as it was so extremely thin, and immediately fresh arterial blood and clot welled into the opening. The brain could not be seen at first in consequence of the large size of the clot. The trouble now was the rapid flow of arterial blood; it was impossible to see where it came from. After trying compression of the right carotid and direct pressure with cyanide gauze dipped in adrenalin for nearly an hour, and finding that the bleeding was still uncontrolled, I tied the right common carotid. This was successful at once. I then replaced the flap and sewed it up leaving a little strip of gauze at the lower and back end (this was left in for twenty-four hours). The patient was then put to bed, and as she came round from the anaesthetic I saw that the left hemiplegia was quite overcome, but the right eye was still turned outwards and the pupil widely dilated.

Progress.—March 19th: Patient rather drowsy, but quite conscious; left-hand grasp as good as right. Right pupil rather more active, but still signs of paralysis of third right nerve. From this time onwards there was a steady improvement. The chief complaint for about a fortnight was severe headache, which was somewhat relieved by pot. bromid. and antipyrin. The wound healed by first intention. At the end of three weeks she left the hospital quite well in every respect, except that she sometimes saw double if she turned her eyes quickly to the left. She is now—May 20th—absolutely well.

Remarks.—I think that the favourable ending of this case may be attributed to three causes: (1) the clear history of ruptured middle meninges given to me by Dr. F. Carey, which led to (2) early operation; (3) the great care and attention given to the case by the nurses at the hospital.

LONDON THROAT HOSPITAL.

NOTES ON A CASE OF RHINITIS CASEOSA.

(By W. H. Kelson, M D Lond., F.R.C.S.Eng., Assistant Surgeon and Pathologist to the Hospital.)

W. W., aged 10, was brought to the London Throat, Nose, and Ear Hospital in October, 1903, by his father, who stated that for three years past the boy had complained of his nose being stopped up; he also stated that the nose, particularly at its root, was getting wider, and that there was a good deal of watery discharge at night.

State on Examination.—The patient was found to be a well-nourished lad, who kept his mouth continually open. He presented no evidence of congenital syphilis or tuberculous disease, though his upper central incisors were very large, suggesting the conditions found in the so-called strumous diathesis. The family history did not point to either tubercle, syphilis, or malignant disease. On directing attention to the nose, it was apparent that the whole external organ was broader than normal, but particularly that part between the eyes, giving the boy a somewhat frog-faced appearance. Occupying the vestibule on either side were fleshy-looking masses, with muco-purulent discharge oozing out from beneath them. That on the right side when examined with a probe seemed continuous with the septum, that on the left with the outer wall of the nasal cavity.

Transillumination showed the infraorbital crescent of light to be wanting on the left side, slightly shown on the right.



Fig. 1.—Rhinitis caseosa.

Posterior rhinoscopy showed the posterior wall of the naso-pharynx to be apparently normal. The movements of the eyeballs and sight in both eyes seemed unaffected, as also were the ears; sense of smell was abolished, and taste very defective. Air could be passed through the right side of the nose only with great difficulty. A little watery fluid streaked with pus was oozing from the nose all day, and the nurse stated that there was a good deal of similar discharge at night; beyond occasional tinges of blood there was no haemorrhage. There was no spontaneous pain, but the parts were tender.

Operation.—The patient was anaesthetized with ether by Dr. De Prenderville, and I found that the left side of the nose was blocked by a mass of caseous material, pale yellow in colour, putty-like in consistency, and of horribly fetid odour; enough of this material was removed to fill a 3-oz. glass measure. Two small polypi the size of raisins were also removed. It was now found that the septum nasi had been thinned, perforated, and pushed over to the right side, and its flabby wall constituted the swelling which appeared in the vestibule on the right side, the swelling noticed on the left side being the hypertrophied end of the left inferior turbinate. There was a wide opening into the left antrum, which contained much of the caseous material. No bare bone could be felt. Haemorrhage was moderate, and the nose was not plugged.

Progress.—The after treatment consisted of syringing with a solution of peroxide of hydrogen. The temperature was never raised above normal. Seen a week afterwards the patient felt quite well. There was a slight watery discharge from the huge cavity through which the posterior wall of the pharynx was plainly visible.

Microscopic Examination.—A portion of the tissue forming the wall of the cavity was removed at the time of the operation from the middle turbinate region, and was cut and examined microscopically. There was no membrane on the surface of the columnar epithelium, which was intact. The mucous membrane and submucosa were infiltrated with leucocytes, and there were areas of haemorrhage. No tubercle bacilli could be found. The caseous material itself was soluble in ether and consisted chiefly of fatty matter, and except for a faint striation

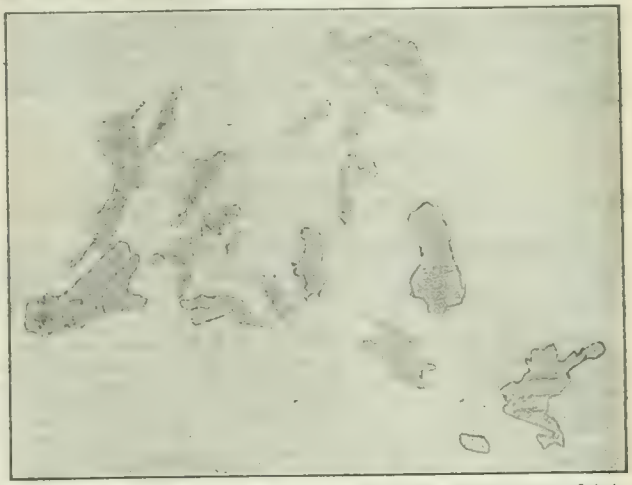


Fig. 2.—Flakes of caseous material showing no structure except faint striation. × 350 diameters.

appeared structureless; no cholesterine could be found. A bacteriological examination was made by Dr. G. L. Eastes, who reported: "After inoculation of the caseous material on to various solid media and into broth and glucose formate broth, the following organisms were obtained: B. diphtheriae (Klebs Loeffler B.), staphylococcus pyogenes aureus, and a micrococcus albus. Sections of the tissues

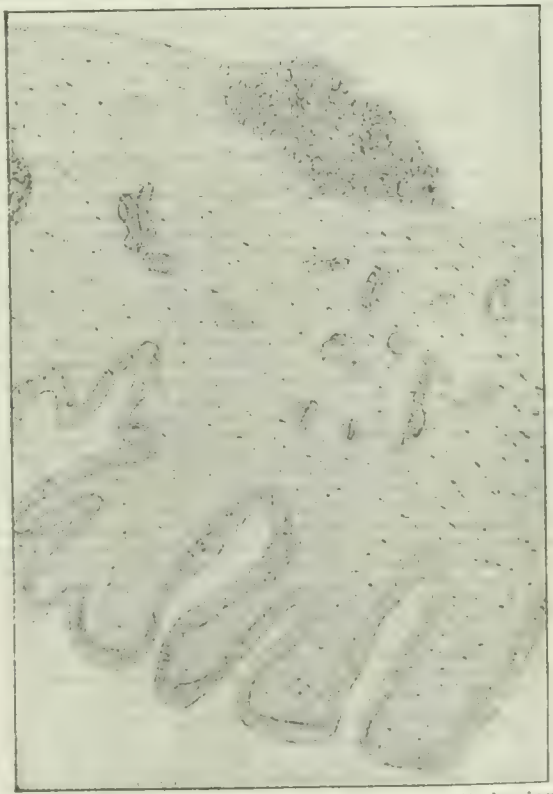


Fig. 3.—Mucous membrane from left middle turbinati showing infiltration with leucocytes and haemorrhage. × 350 diameters.

and material were stained by the Ziehl-Neelsen process, and examined for the bacillus tuberculosis with negative results."

Remarks.—Rhinitis caseosa must be looked upon as a rare disease, although a fair number of cases have now been reported by MacBride, Hill, Bark, Neuman, Wagner, Micheli, and others, but its nature seems still somewhat obscure. It is at first sight highly suggestive of tuberculous disease, but the

absence of tubercle bacilli and the favourable prognosis common to these cases are much against that theory. Various microbes have been accredited as specific, for example, streptothrix alba, but apparently on insufficient grounds; the condition has also been likened to cholesteatoma in the ear, but the absence of epithelial débris and cholesterine in at any rate many cases tends to negative that view. Perhaps a more probable cause is that of chronic suppuration with obstruction and consequent retention with peculiar changes in the retained pus. A curious point is that the disease is almost invariably one-sided.

SUNDERLAND INFIRMARY.

A CASE OF RUPTURED GASTRIC ULCER.

(By T. F. Hopgood, M.R.C.S., L.R.C.P., Surgeon to the Infirmary.)

G. S., aged 24, was admitted into the infirmary on May 25th, 1904, at 8 p.m., in a state of profound collapse, which had come on three hours previously, and had immediately followed a sudden acute abdominal pain.

History.—Two days previously she had applied for admission, stating that she had always been perfectly healthy, and had been able to follow her appointment as a general servant until January, 1904. Then she commenced to have pain after food; this gradually increased in severity; she frequently vomited, but never noticed anything peculiar about the vomit; it consisted of the food she had taken, sometimes stained with bile. She had never consulted a doctor, and had, in fact, since infancy never been attended by a medical man at all. During the past few weeks her symptoms had greatly aggravated; she could retain scarcely anything but milk. She was an undersized, anaemic girl, of dull, apathetic nature, slightly emaciated. The abdomen was a little tender in the epigastrium, the only other symptom of note being a well-marked heaving pulsation of the abdominal aorta, a condition which we have frequently recognized in cases of gastritis. A diagnosis of gastritis, with possible ulceration, was made, and she was promised a bed at an early date.

Condition on Admission.—She was sent to the infirmary two days later by a practitioner who stated that he had just been called to see her, and that he diagnosed a ruptured gastric ulcer. This diagnosis was confirmed by us, her temperature on admission being 96.6° F., pulse 130 beats a minute, weak and small, the recti abdominis muscles strongly contracted, and the abdominal wall hard and rigid. There was great epigastric pain and tenderness, and a facial expression denoting great and urgent distress. The last food had been taken four hours before admission.

Operation.—The girl was immediately prepared for operation, this being commenced half an hour after admission. The incision was made in the middle line, and on the peritoneum being incised a gush of air and partially digested food escaped into the wound. The wound in the parietes was rapidly enlarged, and the stomach drawn up into it, when a large ruptured ulcer was found at the mid-point of the lesser curvature. This was temporarily closed by pressure, whilst the neighbouring parts were roughly cleansed, and the rest of the peritoneal cavity packed off with gauze. Attention was now turned to the ruptured ulcer, which was found to easily admit the tip of one finger, and to be in the centre of a circular area, 1½ in. in diameter, of greatly thickened stomach wall. There were several flakes of lymph on the peritoneal surface of this area, whilst the stomach was practically empty, and only contained about 1 oz. of semi-digested bread and milk. An effort was made to close the rupture by means of a purse-string suture, but this was found to be impossible owing to the greatly softened and thickened condition of the surrounding stomach wall, whilst to have gone to the periphery of this area would have involved too great a sacrifice of stomach space, so that it was decided to close it by means of a longitudinal row of Lembert sutures. Silk was used for this purpose, the gauze pads being then removed, and the peritoneal cavity, which was extensively soiled to the level of the umbilicus, cleaned, when the wound in the abdominal wall was closed by interrupted sutures of silkworm gut, each strand being passed through the whole thickness of the parietes. A narrow gauze strip was left in the lower end of the wound to act as a drain, the whole operation being completed in 40 minutes.

Progress.—The after-progress was uneventful: recovery was rapid and she was discharged cured to our Convalescent Home on July 26th, at which time she had been on ordinary diet for some weeks and was entirely free from pain.

Remarks.—The first point of interest in this case is the great rapidity of development of the ulcer. For a patient to be perfectly healthy and in four months to have a large ruptured gastric ulcer with such extensive thickening of the surrounding stomach wall must be unusual, though it is of course possible that the ulcer had existed for some time without giving rise to any symptoms. The next point of interest is the very early lymph formation which takes place in the peritoneal cavity. This girl's peritoneum was opened three hours after her initial attack of violent pain and well-formed flakes of lymph were found on the stomach wall, and thus we have another example of the directly proportionate effort that Nature makes at repair—the greater the injury the greater the effort. The last point is the further proof afforded of the happy results that may be expected in these cases when they are received at such an early stage. This ulcer had ruptured directly into the general peritoneal cavity and in a very few hours hopeless general peritonitis would have supervened; it is with the object of further impressing upon the profession the necessity of early recognition and treatment in such grave abdominal catastrophes that this case is recorded. For the above notes of this case I have to thank Dr. Raw, my House-surgeon.

EAST LONDON HOSPITAL FOR CHILDREN, SHADWELL, E.

A CASE OF PYOPNEUMOTHORAX IN AN INFANT.

(By P. Stanley Blaker, M.R.C.S.Eng. and L.R.C.P.Lond., late House-Physician and Resident Medical Officer, East London Hospital for Children, Shadwell, E.)

R. R., a Jewish female child, aged 1½ year, was admitted into the Children's Hospital at Shadwell on account of cough and feverishness, from which the patient had been suffering for some months past.

History.—About three months previous to admission tracheotomy had been performed, probably on account of diphtheria, and a fortnight later the child contracted measles, and since then she has been gradually getting worse, especially during the last two weeks. Two days before admission the patient became very feverish, and there was great difficulty in breathing. There has been occasional vomiting and more or less constant diarrhoea during the last six weeks. There was one other child in the family, living and healthy. The father and mother were healthy.

State on Admission.—The temperature was 102° F.; respirations 72, and the pulse very feeble—132 a minute. Tongue clean and pale. The body somewhat emaciated. The heart sounds normal, and no displacement of the apex beat. The right lung apparently normal. On the left side the movements of the chest were very deficient; the percussion note was much impaired over the back from the base to a little above the angle of the scapula. It was resonant in the axilla, and was somewhat hyperresonant over the front of the lung. The breath sounds were extremely feeble all over the left side of the chest, both front and back, and were distantly tubular in character over the back. The abdomen was rather prominent, the edge of the spleen and liver both being felt about two fingerbreadths below the costal margin. The fauces were rather congested, and the tonsils a little enlarged. The extremities were normal. The patient had a spasmodic laryngeal cough, which was very troublesome and accompanied occasionally with marked cyanosis. The cough suggested pressure on the lower part of the trachea or main bronchus.

Progress.—The general progress of the patient was a gradual downward course. The cough remained paroxysmal and irritating in character. The temperature varied very much. For the first fortnight it was more or less continuous (between 100° and 101°), but after that it became very irregular and ranged between 96° or 97° F. in the mornings and 100° to 101° F. in the evenings. The physical signs showed that there was extension of mischief in the lungs. Moist râles were now heard all over the right lung, and on the left side there was a little more dullness on percussion, and the breath sounds were generally less audible. About two days before death there was a marked alteration in the physical signs on the left side. The percussion note over the base posteriorly was markedly hyperresonant, and the breath sounds were loudly amphoric in character; metallic tinkling and the bell sound were very typical. Over the right upper lobe there was dullness, and tubular breathing and crepitations all over the lung. The child gradually sank and died.

Post-mortem Examination.—The *post-mortem* examination of the case was very interesting, since it showed the sequence of events which probably took place during the life of the patient. An enlarged tuberculous gland broke down, and by a process of ulceration discharged its contents into the left bronchus. By tracing this bronchus towards the periphery it was seen to be distinctly connected with a saucer-like depression on the surface of the lung, which originally formed a part of the wall of a subpleural abscess cavity. This eventually ruptured into the general pleural cavity, and produced pyopneumothorax.

Remarks.—The case above recorded is extremely interesting, especially when studied in connexion with the *post-mortem* observations. The physical signs were such as in the first instance to lead to the correct diagnosis of pressure on the left bronchus by enlarged tuberculous glands, and those that appeared a few days before death were most significant of pyopneumothorax. Holt says that "pneumothorax and pyopneumothorax are very rare in children under 3 years of age." The youngest patient suffering from pyopneumothorax in the series recorded by Dr. Samuel West in his book was 3 years old. Ormerod mentions a case in a baby 6 months old as the result of pulmonary phthisis; Douglas Powell one of 7 months old, Norman Moore one of 11 months old; but the youngest patient on record is probably one by Angel Money, which was 3 months old. I have to thank Dr. J. A. Coutts for kind permission to publish the notes of this case.

REPORTS OF SOCIETIES.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM.

[Thomas Barr, M.D., in the Chair.

Monday, December 5th, 1904.

Influenzal Leptomeningitis.

Mr. A. E. Cumberbatch read notes of a case of fatal leptomeningitis following upon acute suppurative otitis media of influenzal origin. The antrum and lateral sinus were explored by the usual radical operation. Pus was found in the antrum, but none in the groove of the sinus nor over the tegmen. There were no symptoms of any kind except a rise of temperature to 106° F. after operation. At the *post-mortem* examination the leptomeningitis discovered could not be traced directly to the lesion in the temporal bone. Mr. Cumberbatch put forward a suggestion that it should be a routine practice in cases in which the symptoms were not relieved by the mastoid operation to explore the sulcus lateralis and upper surface of the tegmen, and asked whether the administration of 10 c.cm. doses of antistreptococcus serum every hour might be expected to arrest the suppuration.

Severe Tinnitus.

Dr. Furniss Potter read notes of a case of severe tinnitus, with almost complete loss of hearing, in a male aged 21. Drug treatment had proved valueless; he asked whether, in the opinion of members, operative measures should be adopted—that is to say, the cochlea be removed or the auditory nerve divided. An interesting discussion followed, in which several members took part, the unanimous opinion being that as the tinnitus was diffused over the whole head, and not confined to the ear or ears, and as there was no precise knowledge of its cause, operation would be unjustifiable. This also proved to be Dr. Potter's own opinion.

Sudden Deafness.

Mr. Arthur Cheatle read notes of a case of internal ear deafness of sudden onset. The patient, a middle-aged woman, noticed loud noises in the ear after yawning seven or eight times. The noises lasted from twenty to thirty minutes, and then the patient found that she was deaf in her left ear, and that the latter had a "dead feeling." There was no giddiness. The deafness persisted, and the noises became "occasional." Examination of the ear revealed nothing beyond marked nerve deafness. Mr. Cheatle suggested that the "numbness" of the ear was due to an associated affection of the second and third cervical nerves.

Acute Cerebral Abscess.

Mr. A. L. Whitehead read notes of a case of acute cerebral abscess. A boy, aged 14 years, had suffered from otorrhœa for twelve months. When first seen he had had acute headache for twenty-four hours, drowsiness for six hours, coma for three hours. Both middle ears were filled with pus and granulations, and both mastoids were tender. The radical mastoid operation and subsequent exploration of both temporo-sphenoidal lobes gave a negative result, but thirty-six hours later an abscess, with sloughing brain material, was evacuated on the right side. The patient recovered. Mr. Whitehead remarked on the rarity of acute cerebral abscess and the comparative frequency of acute extensions of chronic abscess, and the difficulties of diagnosis in acute abscess.

Restoration of Hearing after Mastoid Operation.

Mr. Chas. Heath read a paper (based on an experience of 400 operations) on the restoration of hearing after removal of drum and ossicles by a modification of the radical mastoid operation for suppurative ear disease. Instruments and patients illustrating the paper were shown. Owing to the lateness of the hour the discussion was adjourned until February.

Exhibits.

Mr. Richard Lake exhibited an otomasseur, driven by a turbine motor, for hospital use. A speed of about 2,000 strokes per minute could be attained.—Dr. Albert Gray exhibited some lantern slides of certain specimens of the organs of hearing in various animals; and one of the human membranous labyrinth, showing an accessory ampulla in the horizontal canal and supernumerary otoliths or calcareous deposits in the labyrinth.

Liverpool Medical Institution.—At a meeting on December 15th, Dr. J. R. Logan, Vice President, being in the chair, Dr. Middlemass Hunt showed a case of primary syphilitic infection of the nostril. The chancre was situated on the left side of the septal cartilage. The patient, a youth of 17 years of age, had suffered from one-sided nasal obstruction and discharge for two months. There was considerable glandular enlargement on the affected side, and within the last fortnight a characteristic rash had appeared on the face and body. No history could be obtained as to the source or mode of infection.—Mr. Douglas Crawford read a note on two cases of actinomycosis. The first case was that of a ship surgeon, the skin of the flank being the affected area. In the second case the patient was a butcher, and the submaxillary region the part infected. Excision was performed in both cases with satisfactory results.—Mr. K. W. Monsarrat read a note on constriction of the ureter. After enumerating the different types of constriction, he related three cases illustrative of the condition. The first was a case of true stricture of the pelvic ureter, which gave rise to symptoms mistaken for those of appendicitis; a cure was effected by dilatation of the ureter from the bladder. The second case was one of hydronephrosis, in which the ureter was bound by adhesions to and flattened against the hydronephrotic sac; a plastic operation upon the ureter was successfully performed. In the third case there was pyonephrosis with stricture of the ureter at its junction with the renal pelvis. Mr. Monsarrat suggested that in the etiology of similar cases of primary pyelitis of obscure origin, renal stasis, caused by ureteral obstruction, probably played an important part.—Mr. Rushton Parker read a note on perineal prostatectomy. He practised the operation as described by Dr. Parker Syms at the Manchester Meeting of the British Medical Association in 1902. He had thus operated upon 8 cases between December, 1902, and November, 1904. The ages of the patients varied from 59 to 76 years, five of them being over 70 years of age. The prostates removed varied in weight from ⅝ to 3⅝ of an ounce. All the patients before operation had been unable to pass urine without the use of a catheter, and all had subsequently become enabled to hold and to pass water comfortably, except 1 case, which terminated fatally. The after-treatment consisted in bladder drainage, by means of a long tube, for two to five days, and plugging of the prostatic gap for twenty-four hours with strips of gutta-percha tissue in preference to gauze. The gutta percha strips could be removed without disturbing the patient or causing haemorrhage. A catheter was passed daily and the bladder washed out.—Mr. C. Thurstan Holland read a note based on a case of central round-celled sarcoma of the upper end of the femur. The patient was under the care of Mr. G. P. Newbolt at the Royal Southern Hospital. A series of radiographs were shown illustrating various diseases of bone bearing on the subject. The *x*-ray appearances of central round-celled sarcoma, myeloid sarcoma, periosteal sarcoma, abscess of bone, etc., were discussed. The fact that operations for malignant bone disease were so frequently followed by return of the growth was considered to be probably due to the condition being diagnosed too late. By the help of a good radiographic examination suspicion might be cleared up very much earlier in the history of these cases, and thus enable better results to be obtained by means of operative treatment. Mr. G. P. Newbolt described the clinical history of the case. He had performed amputation at the hip-joint, but the patient died the day following the operation.

Pathological Society of Manchester.—At a meeting on December 14th, Dr. Donald in the chair, Drs. Orr and Rows gave a description of the origin and nature of the tabetic process. By a series of lantern slides, they showed that in general paralysis and in various other toxaemic conditions, degeneration of the fibres of the posterior roots always began at the point where these became intramedullary fibres. From this point the degeneration spread peripherally along the fibres to their terminations, and it was shown, by the Marchi method, that the degeneration followed the anatomical course of the fibres as they ascended the spinal cord. As for the causation of this degeneration, reference was made to the suggestion of Homén, that it depended on the action of some toxin which attacked the fibres at the point where they entered the cord. By other lantern slides, it was shown that at the point where the fibres began their intramedullary course, changes in the histological structure of the fibres were always found. In the first place, the fibres here lost their neurilemma sheath, which, whether it were of mesoblastic

or epiblastic origin, exercised an important protective influence on the enclosed fibres. In the second place, at the point where the fibres lose their neurilemma and for a very short distance beyond, that is, at the ring of Obersteiner and Redlich, there was also an absence of the myeline sheath. At this point, therefore, the axis cylinders were fully exposed to the action of any toxin which might approach them, and they also, as they passed up the cord, continued to be acted on by the toxin. There was thus produced a parenchymatous degeneration of the fibres of the posterior roots, which began at the point where the neurilemma sheath was lost—a point to which the term "vulnerable point" had been applied—and which spread peripherally along the fibres to their terminations.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—At a meeting on December 9th, Dr. BRONNER in the chair, Mr. LAWFORD KNAGGS read a paper on 2 cases of bullet wound of the brain, in both of which the bullets had penetrated to a considerable depth, and were left *in situ*. In the first case no ill-effects had been noted during the seven years that had since elapsed. In the second serious symptoms developed a fortnight after the injury, and a large area of bone was removed in the nearest position to the bullet. The dura was crucially incised and gold foil placed over the protruding brain. The flap was replaced. Rapid subsidence of symptoms followed, and the patient left the hospital quite well. This was eleven months ago, and no further trouble had occurred. —Dr. WARDROP GRIFFITH showed two brothers with the hereditary form of spastic paraplegia. There were no sensory phenomena. Babinski's sign was well marked in one patient, while the other had incipient bulbar symptoms, and showed a tendency, when walking, to stagger to one side. This appeared to be of possible interest, in view of the statement which had been made, that in such cases the sclerotic changes were not confined to the lateral column, but affected the ascending and descending cerebellar tracts. Dr. Griffith also commented on a case of infective endocarditis in which the lesion was confined to the pulmonary valve. This presented a large fungating mass, almost completely occluding the orifice, and leading to aneurysmal dilatation of the left wall of the artery. The primary lesion was probably an acute pleurisy with scanty pus formation, which had come on with great suddenness. There was practically a total absence of the interauricular septum, and, as previous to the occlusion of the pulmonary artery by the endocarditic granulations the flow of the blood was probably from left auricle to right, the pleura would in consequence of this septal deficiency be put more certainly within the gathering ground of the right ventricle and the valves of the right side of the heart be thus exposed to greater risk of infection.—Mr. A. L. WHITEHEAD read a paper on nasal disease as a cause of headache. The various conditions of the nose giving rise to headache were mentioned, the differential diagnosis indicated, and the following conclusions arrived at: (1) Headache is rarely, if ever, caused by any disease or deformity of the nose which does not give rise to discharge or obstruction to normal nasal respiration; (2) in all cases of persistent headache the nose should be as carefully examined as the urine, the teeth, and the eyes, since in some instances the nasal symptoms may be ignored by the patient; (3) suppuration in the nose and obstruction to nasal respiration, constant or intermittent, must be thoroughly treated; (4) small spurs, deviations, and hypertrophies, not causing obstruction, should be left alone; (5) if the middle turbinate bone is enlarged and pressing upon the septum, and other causes of headache can be excluded, partial or complete removal should be advised, since in many such cases complete relief is thus given.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—At a meeting on December 2nd, Mr. C. M. TUKE, President, in the chair, Dr. A. E. RUSSELL read a paper on the diagnosis of acute abdominal diseases. He laid great stress on the necessity of thorough examination of the thoracic viscera, the rectum, and vagina, and pointed to the general condition of the patient, especially as regarded the pulse, facial aspect, and vomiting, as of almost equal diagnostic importance as local abdominal signs. He strongly deprecated giving opium in cases of doubtful diagnosis, and insisted upon the advisability of early operation in grave cases. Consideration of the relative frequency of the different varieties of acute abdominal disease, and of the age and sex of the patient, as illustrated by a large series of cases, was very helpful in forming an opinion based upon probabilities.—Mr. L. A. BIDWELL thought the existence of a rapid pulse and low temperature to be the gravest symptom in acute cases, and nearly always indicated the need for immediate operation. In the differential diagnosis between appendicitis and suppurative gall bladder, it was to be remembered that in the former the rounded edge of the tumour was above, and there was an area of resonance between it and the liver, whereas in the latter the rounded edge was below and the dullness continuous with that of the liver.—Mr. D. J. ARMOUR did not agree with Dr. Russell with regard to the question of the facies, and related three acute cases, none of which showed by their appearance the slightest sign of their condition.—Mr. E. P. PATON referred to the quiet period following immediately after the acute onset, and warned practitioners not to be misled by this, as often the acute symptoms returned in an aggravated form.—Dr. MANSELL MOULLIN alluded to the frequency of acute abdominal trouble occurring in women of the child-bearing age, the most serious cases being those of haemorrhage due to tubal rupture.—Mr. MCADAM ECCLES thought the high percentage of cases of intussusception, namely, 16 per cent., must be accidental for the years mentioned by Dr. Russell. As to the administration of morphine, he advised one dose subcutaneously when the patient had to be removed; but if an operation were to be undertaken at the patient's own house without any removal, he would not give morphine or opium. Sometimes there were two or more causes of acute abdominal symptoms in the same patient.—Dr. SEYMOUR TAYLOR pointed out that indican in the urine was almost invariably present in acute abdominal cases, and considered its presence of use in deciding the diagnosis between injury to intestines and peritoneum or muscles. As to latent symptoms in cases of peritonitis, he submitted that the quiet pulse was the indication of the condition of shock, the first and most prominent result of abdominal injury; it was soon succeeded by rapid pulse and temperature.—Mr. ASLETT BALDWIN said that the cutaneous hyperaesthesia mentioned by Mr. Eccles was of great interest, but at the same time it might be a misleading symptom. If present in a case of appendicitis, and it passed off without amelioration of other symptoms, it was a serious sign, and indicated immediate operation. As for shock being invariably present, he had seen cases of severe abdominal injury where there was not the slightest sign of it.—Dr. A. E. RUSSELL, in reply to Mr. BIDWELL, commented upon the difficulty in the diagnosis of appendicitis and suppurative gall bladder. In answer to Dr. SEYMOUR TAYLOR, he said that pain commencing definitely in a region such as the iliac fossa or gall bladder was probably indicative of the organ at fault, but he fully agreed that, when the pain was referred vaguely to the umbilicus or general abdominal wall, it was valueless.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—At a meeting on December 16th, Dr. FREDERICK PAGE in the chair, a discussion was opened on "Sudden and Unexpected Death in Children" by Dr. C. J. MACALISTER. First, he mentioned the fact that death might be simulated, and that death might result unexpectedly from exhaustion during or after the crises of acute illness. Next, he referred to toxic cases in which death resulted so suddenly and unexpectedly that no medical man had seen the child. Of these he gave illustrative cases occurring in certain school institutions. In two of these pulmonary congestion was found *post mortem*. He had reason to suppose this peculiar and deadly disease was due to toxaemia, the toxin having a special effect on the respiratory centre. Some cases might be due to the poison of acute anterior poliomyelitis acting on the vagus nucleus. Among other causes, he mentioned specific fevers and septic fevers associated with gastric haemorrhage, suprarenal haemorrhage, typhoid fever, diphtheria, and myocarditis; and he referred shortly to certain organic diseases of the circulatory and respiratory systems.—Dr. J. PORTER PARKINSON, in considering the functional causes, referred to heart failure and sudden death in marasmus, to convulsions usually acting through asphyxia, and to excessive emotions and laryngismus stridulus as rare causes; spasm of the glottis might occur with fatal result from pressure of glands on the recurrent laryngeal nerve. The pathological changes in these conditions and in "overlaid" babies were described.—Mr. J. W. THOMSON WALKER discussed the question in relation to the thymus gland and the status lymphaticus. The clinical pictures of the latter condition were: (1) No previous evidence of illness, (2) previous restlessness, etc., and (3) thymic asthma. In many cases rickets was present, in others, some concurrent disease might be sufficiently serious to prove fatal of itself. Possibly the condition might occasionally account for

stillbirths, and for deaths under the influence of violent emotion or sudden shock, for example, cold water and anaesthesia. Hyperplasia of the heart and coarctation of the aorta had also been noted. The thyroid might be enlarged. He laid stress on the association of rickets, adenoid tissue in the naso-pharynx, and laryngismus; also on the state of lymphatism as an important factor in producing a fatal issue in an otherwise simple illness. He discussed the pathology in reference to the pressure and toxic theories.—Mr. A. H. Tubby considered the surgical causes in reference to (1) the circulatory conditions—such as haemorrhage in the newborn, haemophilia, scurvy, ulcer of stomach or duodenum, haemorrhage during operation, thrombosis; (2) shock and the means of diminishing it. The shock following washing out the pleural cavity he ascribed to the nature of the fluid rather than the actual washing. Among toxic conditions he mentioned the absorption of carbolic acid, iodoform, toxins, and uraemia. Many other surgical causes connected with the throat and larynx, and mechanical causes due to tying the hands of the child or to foreign bodies, and pressure on the trachea were also considered.—Dr. J. Blumfeld referred to the subject in connexion with anaesthesia, confining himself to those cases of children in which the ailment had caused no loss of general health. The importance of skilled anaesthetists could not be overestimated in infants. Death in the pre-anaesthetic stage almost always occurred with absolute suddenness, and was due to too strong a vapour of chloroform.—Dr. Page drew attention to sudden death in serious diseases, such as phthisis, in which the cause might be due to an auto-intoxication.—Dr. A. Young insisted on the frequency with which the lymphatic state might be found in children and adults if looked for, and drew attention to sudden death in exophthalmic goitre and myasthenia gravis.—Dr. E. Cautley insisted on the importance of the subject to general practitioners, and gave instances of cases in which the diagnosis made from *post-mortem* examination was probably incorrect.—Dr. L. Guthrie, Mr. G. Pernet, and Mr. A. Edmunds discussed the subject in its relations to congenital syphilis, and the too rapid curing of extensive cutaneous eruptions.

REVIEWS.

PUBLIC HEALTH.

The second edition of *The Purification of Sewage*,[1] by Dr. Barwise, is considerably enlarged, and deals with most of the developments of the subject which have recently so rapidly followed one another. In the opening chapters the author discusses the composition of sewage and the changes it undergoes in the process of purification, but what he has to say on these changes only serves to emphasize how little we really know of the details of the process. The effect of sewage discharges upon rivers is lightly touched upon, and a darker picture might have been drawn of the state of some of our streams without going in any degree beyond the facts. The land treatment of sewage is dealt with in a single chapter, which is perhaps natural at the present time when the biological methods are so new and so rapidly changing, but it seems to be accepted that, given a sufficient area of suitable soil, land treatment is still the best. In dealing with the precipitation of sewage and the methods of getting rid of the resulting sludge, little is said of the uses to which sludge can be put, or of its value when properly used. Much information is being accumulated, both on the Continent and in this country, showing that its manurial value or its fuel value is considerable, and that it may yet become a useful commodity because of the by-products which may be recovered from it. Dr. Barwise has surely made a mistake when he describes secondary decomposition of a chemically precipitated sewage as the deposition of carbonate of lime. It is more generally understood to be the putrefaction which has been checked by the presence of the precipitant—lime, for example—and which afterwards takes place when the limed effluent is mingled with river water. His description of the various forms of settling-tank is by no means complete; but for this the limited space he allows himself for so large a subject is no doubt responsible. The first chapter, treating of the biological purification of sewage, deals with the liquefaction of sewage, and too much importance is given to the original view that most if not all of the sewage sludge proper can be got rid of by the use of septic tanks, while more recent reports as to the accumulation of sludge in septic tanks are not mentioned. This is unfortunate in view of the fact that the Local Government Board in its inquiries into new schemes is usually very careful to see that means exist for dealing with this sludge. From recent experience, moreover, many will be inclined to join issue with the author when he states definitely that some form of septic tank is necessary. On the contrary, the opinion seems to be gaining ground that in many cases, owing to the nuisance they produce, septic tanks are a mistake, and that better results in purification can be obtained by simple sedimentation or by chemical precipitation. The chapter in which is traced the evolution of the biological filter from land treatment of sewage is interesting, and the various artificial processes of purification are dealt with in some detail, although, as is natural in dealing with a subject undergoing so rapid evolution, the author has missed several developments which might have materially altered some of his conclusions. He discusses, for instance, the advantages and disadvantages of contact beds and continuous or percolating filters respectively, and says that the latter must be supplied with sewage intermittently, and that the material should not exceed $\frac{1}{4}$ in. to $\frac{3}{4}$ in. in diameter. But large numbers of such filters are working satisfactorily where material of much greater size is used, and where it is found much better to supply the sewage continuously and not in gushes. Properly enough, a considerable amount of space and a wealth of illustrations are given to the subject of automatic distributors, for on these the reliability of percolating filters depends. The rapidity of the changes that are taking place is shown by the fact that even since the republication of this treatise several new forms of distributor have been introduced, but the chapter dealing with this part of the subject will be found very useful. The considerations which should guide the selection of a method of purification for any individual case are set out with commendable fairness in a concluding chapter; and, finally, as a sort of warning not to indulge too much in personal predilections and theories, the particulars required by the Local Government Board with respect to new schemes are set out. A useful appendix on methods of analysis is given, but nothing is said as to the processes for estimating dissolved oxygen or the quantity of oxygen taken up by an effluent from water saturated with oxygen, one or other of which is likely to become a very important matter in deciding upon the nature of a sewage effluent. Dr. Barwise has produced a very readable book, and one which will be exceedingly useful to all who are charged with the duty of establishing or improving works of sewage purification.

In its new garb Dr. Newman's *Bacteriology and the Public Health*[2] will, no doubt, be as popular—and deservedly so—as in its former less pretentious editions, for plainly no effort has been spared by either author or publisher. The earlier editions were frankly intended for lay consumption, and even in his present preface Dr. Newman remarks that the general student of hygiene requires an elementary book in which bacteriology is "viewed broadly and particularly as it concerns the practical everyday problem of health and preventive medicine." If by the general student of hygiene the author really means the lay members of urban and rural sanitary boards and the like, we are in perfect agreement with his view; we concede the necessity, and consider his book admirably calculated to meet it; but when he enlarges his scope, and includes the medical officer of health, then we are by no means convinced of the unqualified accuracy of the statement, for there are surely many works, more technical in character it is true and in many languages, including our own, of which the M.O.H. may avail himself. In the first chapter the position of bacteria in the natural world is clearly set forth, and the biology, morphology, and physiology of these minute vegetables adequately described. Then follow seven chapters devoted to an extremely interesting exposition of the economic and technical applications of bacteriology, from the point of view of the agriculturist, the brewer, the dairyman, and the food purveyor. Practical

[1] *The Purification of Sewage; being a Brief Account of the Scientific Principles of Sewage Purification and their Practical Application.* By Sidney Barwise, M.D., B.Sc., M.R.C.S., D.P.H., etc. Second edition; revised and enlarged, with an Appendix on the Analysis of Sewage and Sewage Effluents. 1904. London: Crosby, Lockwood, and Son. (Demy 8vo, pp. 220. 46 illustrations. 10s. 6d.)

[2] *Bacteriology and the Public Health.* By George Newman, M.D., F.R.S.E., D.P.H., Medical Officer of Health of the Metropolitan Borough of Finsbury. Third edition. London: John Murray. 1904. (Demy 8vo, pp. 497, 31 plates and 48 illustrations. 21s.

hygiene is represented in the excellent sections devoted to the relationship of bacteria to water and water supplies, the bacteriological examination of air and of soil, the contamination of milk and other food stuffs by bacteria and their products—with the resulting evils to the consumers—and the treatment of sewage by the comparatively recently introduced biological methods, namely, by bacteria beds and septic tanks. The last portion of the book deals with the fission fungi and the pathogenic protozoa as the essential causes of various diseases in man, together with remarks on some of the remedial measures introduced by the bacteriologist for the treatment of such infections. A short appendix gives a general outline of the methods adopted for the study of bacteria, but with the exception of the directions for the examination of water the details given are obviously inadequate for use in actual practical work.

We are informed that the Parkes Memorial Prize, 1904, consisting of seventy-five guineas and a bronze medal, was awarded to Major R. CALDWELL, R.A.M.C., for his essay, *The Prevention of Diseases in Armies in the Field.*[3] It appears to have been written in the hope that what is, in the main, a record of sanitary experience in the field might prove of interest to those whose attention is drawn particularly to the physical well-being of the soldier on service. Although the author puts forward his sanitary experiences in an interesting and thoughtful manner, we doubt whether any professional reader is likely to acquire any specially valuable information from this small volume. We confess to finding very considerable difficulty in reviewing it, as the essay is a curious mixture of extracts from certain well-known sources and of disquisitions arising out of the author's experiences in Egypt and South Africa. So far as they go, his views are sound, but they fail to throw any new light upon particular sanitary problems connected with armies in the field. We had hoped to find some constructive attempt at sanitary organization, but, beyond a general reference to a suggested mode of developing an establishment of subordinate sanitary assistance within the army, the chapter which deals with sanitary organization is unsatisfactory and colourless. The book contains some illustrations, but the greater number appear to be lacking in sanitary point. If this volume represents the best work upon disease prevention in armies in the field which the military and naval services of the Crown can produce in competition for a valuable prize, we are forced to conclude that practical interest in the subject among the officers of those services must be at a very low ebb.

That the first edition of Dr. BERGEY's book on the *Principles of Hygiene*[4] has been exhausted in a little more than two years is sufficient to indicate that it has been appreciated. The present edition is longer than the last by some forty pages, but the general plan and scope of the work has not been changed—in fact, except in regard to the chapters on immunity, air, and school hygiene, we do not note any great changes. The book is an excellent type of manual for those who wish to grasp the theory and principles of public health, but, as we said in regard to the first edition, it is lacking in those analytical details which are so essential for the student of hygiene preparing for any public health examination in this country. Moreover, being an American work, and primarily written for American readers, it considers sanitary regulations and enactments from their standpoint; these are features which naturally will not enhance its value as a textbook in this country.

OBSTETRICS.

IN the first of his lectures on *Deaths in Childbed*,[5] Dr. WILLIAMS demonstrates two broad facts. One is that childbirth in England is attended with a mortality amounting to from 2 to 3 per 1,000 from puerperal septic diseases; and that this mortality is not appreciably less to-day than it was fifty years ago, notwithstanding the introduction of antiseptics. The other is that in certain lying-in hospitals the death-rate from puerperal septic diseases up to 1880 was considerably higher than that in the general population, but that since 1880 the death-rate from septic diseases in the lying-in hospitals has been much less than that outside. He examines with much care the mortality from puerperal fever in certain Welsh districts; but we cannot say that he throws much light on this. Lastly, he shows that the death-rate from septic disease is much higher in young mothers (aged from 15 to 25) than in those older. The same law, he shows, applies also to eclampsia. Puerperal mania is a little more frequent in the young, but not much. But the death-rate from placenta praevia, flooding, and rupture of the uterus is much higher in the older than in the young. Dr. Williams's explanation is that the uterus wears out. In the second lecture Dr. Williams considers the etiology of puerperal fever. He brings forward instance after instance of the occurrence of series of cases of puerperal fever in the practice of particular medical men and midwives. He has sought carefully for evidence connecting puerperal fever with defective drainage, scarlet fever, diphtheria, or other zymotic disease, but finds none. The third and last lecture deals with preventive measures. The author gives a historical survey of the attitude of the Royal Colleges towards midwifery, and of the various steps which led up to the passing of the Midwives Act. He gives an account of that Act and of its working up to the present. The means of prevention of puerperal fever that seem to him needed are: (1) That "every girl among the poor and artisan classes should be taught the elementary principles of nursing and hygiene," an excellent proposition; but why limit it to the poor and artisan classes? (2) The combination of "voluntary interest with State control and effort," to promote the good training of sufficient midwives. He would have a "national council" for training them, which should "map out the country with a view to the best organization for training and the provision of midwives;" to collect funds to found training scholarships; to utilize our present hospitals; to give grants to poor districts to help to support a midwife; and later to found, or help to support, a "national maternity hospital." He thinks the county councils and other public bodies will undertake the training of midwives. But he is not sanguine. He says, "the horizon is very dark, and at present I cannot detect a silver lining to it." Dr. Williams might have adduced much more evidence in favour of his main conclusions had he used foreign as well as English experience. But he has used very well the material under his hands. The tone of the book is that of the loftiest public spirit. All who are in any way concerned in administering the Midwives Act ought to read and carefully ponder Dr. Williams's interesting lectures.

Dr. FRITSCH's introduction to the practice of midwifery[6] is not too ambitious a book. It contains no bibliography. Conflicting theories and alternative methods of treatment are not discussed. It is a plain, straightforward account of what the accoucheur ought to know, what he ought to do, and how he ought to do it, by a practitioner and teacher of large and long experience. Its object is practical instruction, not controversy. If we think that there are better methods than those recommended by the author, we do so with deference, knowing that he speaks from experience. We shall best illustrate the character of the work by quoting the author's opinions on some points. First we will take an ethical point, which has been somewhat lately under the attention of British obstetricians. Professor Fritsch says:

> It is self-evident that the woman in labour has the right of disposing of her own body. If she will accept a risk the doctor should not hesitate to comply with her wish. If she is averse to an operation and prefers to sacrifice the child, she has a right to decide. The doctor may and ought to recommend Caesarean section, but he is without doubt not justified in doing it against the will of the patient. If the patient is willing the question should be put before her whether the operation should be so performed as to exclude further pregnancies or to allow the possibility of another pregnancy. He should bring to the notice of the patient that in the first case, if, as it is always possible, the child dies, self-evidently every hope of offspring is at an end, but that if the operation is done so as to preserve the possibility of pregnancy, the same peril, pain, and trouble may recur. If, after consultation with those who seem to her suitable advisers, she decides upon the one or the other course, the doctor should comply with her wish (p. 363).

Professor Fritsch is conservative, not to say old-fashioned.

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[3] *The Prevention of Diseases in Armies in the Field.* By Major R. Caldwell, R.A.M.C. London: Bailliere, Tindall, and Cox. (Cr. 8vo, pp. 190, 28 illustrations. 5s.)

[4] *The Principles of Hygiene.* By D. H. Bergey, M.D. Second Edition. London and Philadelphia: W. B. Saunders and Co. 1904. (Demy 8vo, pp. 530. 13s.)

[5] *Deaths in Childbed, a Preventable Mortality.* Being the Milroy lectures, delivered at the Royal College of Physicians, 1904. By W. Williams, M.A., M.D., D.P.H.Oxon., Medical Officer of Health to the Glamorgan County Council, etc. London: H. K. Lewis. 1904. (Demy 8vo, pp. 99. 2s. 6d.)

[6] *Geburtshilfe, eine Einführung in die Praxis.* [Midwifery: an Introduction to its Practice.] Von Dr. Med. Heinrich Fritsch, Professor der Gynäkologie und Geburtshilfe und Direktor der königlichen Frauenklinik an der Universität Bonn. Leipzig: S. Hirzel. 1904. (Demy 8vo, pp. 467. M.10.)

We find no mention of the axis traction forceps. The practitioner is advised to ascertain the position of the head by feeling the sutures and fontanelles, and to vary the direction of traction according to the natural mechanism. The only allusion to the cephalotribe is in these caustic sentences:

It lies in human nature that continually new instruments are invented with the object of diminishing the size of the head. I intentionally do not mention these complicated instruments, and strongly recommend the simplest as the best to keep to.

Most of his readers will thank Professor Fritsch for this; but some of us may think cephalotripsy both simpler and better than delivery by the craniotomy forceps, which is the method recommended by him. Professor Fritsch astonishes us by saying that hebotomy is better than symphysiotomy. Surely this cannot be the outcome of experience. Hardly any operation can be simpler than subcutaneous symphysiotomy (of which Professor Fritsch seems not to have heard); but hebotomy—that is, sawing through the pubic bone with a chain saw—as described here must be a very tedious and troublesome proceeding. The author has a taste for irony; he tells us that

Incision of the abdomen and washing out the peritoneal cavity with disinfectants in streptococcal peritonitis has an advantage in that the patient's sufferings are shortened by the more rapid approach of death. No patient has been saved by it.

We note with interest one summary of experience by Professor Fritsch. He tells us that for a long time he treated cases of parametritis by opening exudations from the vagina as soon as they could be felt. But although he often found and let out pus, yet this was often difficult, and the attempt sometimes led to injury to the rectum, bladder, ureters, or uterine arteries, the last-named accident leading to great bleeding. As compensation for these risks he found the advantage slight. Recovery was slow; the openings contracted and had often to be dilated or reopened; so that the course of the disease was not shortened. He now recommends expectant treatment, with moist compresses, which, as he drily says, oblige the patient to keep at rest. If the exudation points above Poupart's ligament, then an incision parallel to that structure should be made. The book will be interesting and instructive to the German general practitioner, and to all whose knowledge of the German language is sufficient to enable them to run through it easily. The English student and practitioner who reads German slowly and painfully we will console by saying that he may find better books in his own language.

The first edition of EDGAR'S *Practice of Obstetrics*[7] was noticed in these pages on March 26th. The revision of the work for the second edition has been very thorough. Many illustrations have been remade, and new ones added. The section on puerperal fever has been rewritten. We have already expressed our high appreciation of the book. It is a large book, and there are places in which the author has been rather too ambitious of completeness, so that the pruning knife might be used with advantage. Thus, at p. 1025 several methods of "cephalotomy" are mentioned, none of which the author recommends, and none of which have ever come into practical use. Why, then, muddle the student's head and burden his memory by referring to them? At p. 943 a writer is quoted who recommends the Trendelenburg position for prolapse of the funis. This is not a wise recommendation, for in the Trendelenburg position the axis of the uterus is horizontal, just as it is in the lateral position, which is far more comfortable; and Dr. Edgar does not endorse the advice; why, then, need he quote it? Dr. Edgar has read largely, but the direction in which his knowledge seems least extensive is that of English literature. He seems not to have heard of Oldham's perforator or of Braxton Hicks's cephalotribe, although these are far superior to the instruments Dr. Edgar recommends. Ramsbotham's sharp hook he calls Schultze's, although Ramsbotham had invented this hook long before Schultze was heard of. Page 1027 is occupied by a description of decapitation with Braun's decollator, a comparatively inefficient instrument, which Dr. Edgar does not use. Why, then, waste a page over it? Dr. Edgar might improve his description of decapitation by the sharp hook if he were to read Ramsbotham's directions for using it. Dr. Edgar describes "the subcutaneous, which is beginning to be styled the Ayers or American method" of symphysiotomy; but this method is not subcutaneous, for there is a skin wound in which the operator is instructed to place gauze. An account of subcutaneous symphysiotomy is to be found in the *Transactions of the Obstetrical Society of London* for 1900, and no one acquainted with that method of operating would ever think of doing the "Ayers or American method." Dr. Edgar is not carried away by the wild recommendations of those who would treat retroversion of the gravid uterus by abdominal section. But he seems unaware of the fact that in most cases of retroversion and incarceration, if the patient is kept recumbent and her bladder empty, the uterus will right itself within forty-eight hours. Not every one will agree with the sweeping advice given as to the treatment of ectopic pregnancy: "Whenever the fetus is alive laparotomy should be employed." This will be admitted to be good practice in the first half of ectopic pregnancy. But is it so during the second half? Dr. Edgar does not help us to judge, for he gives no estimate of the mortality attending abdominal section in the second half of ectopic pregnancy. The lowest estimate that we know of puts the mortality at 36 per cent., and why should the mother run this awful peril? Is it for her own sake? She is in no immediate danger. Is it for the child's sake? Dr. Edgar says the children are often deformed. If the case is left till the placenta has become thrombosed, which will happen before suppuration begins, the risk of operation is then slight. Dr. Edgar says, "If the fetus has died . . . putrefaction is to be feared at any moment." "Putrefaction" in the literal meaning of the word—that is, decomposition with the liberation of offensive gases—is excessively rare, either in uterine or extrauterine pregnancy. We presume that Dr. Edgar means by "putrefaction" decomposition with suppuration, and in connexion with a process so chronic the word "moment" is hardly the fittest to use. It would be more correct to say suppuration may begin in any week: and in ectopic pregnancy it is hardly a thing to be "feared," because it is a process which greatly reduces the danger of operation. We trust Dr. Edgar will pardon us for dwelling so much upon points in which we venture to differ from him. Our divergence of opinion on some points does not detract from our high estimate of his work.

[7] *The Practice of Obstetrics, designed for the use of Students and Practitioners of Medicine.* By J. Clifton Edgar, Professor of Obstetrics and Clinical Midwifery in the Cornell University Medical College, etc. Second edition. London: Rebman Limited. 1904. (Demy 8vo, pp. 1153; 1264 illustrations. 30s.)

Dr. FRUMERIE'S course of massage[8] is the work of a man thoroughly convinced of the value of massage in almost every morbid condition to which the human body is subject. We willingly admit that the various manipulations included under the general term "massage"—stroking, tapping, rubbing, kneading, etc.—when not applied to unsuitable cases, can hardly do harm, and may often be beneficial. We are glad to add that Dr. Frumerie is careful to warn his readers what are the cases in which his methods may be productive of injury. But, admitting that massage does good, we must point out that its advantages are relative. No doubt, as the author says, massage of a little baby may increase its appetite, improve its nervous tone, act on its vaso-motor system, and so help it in cutting its teeth. But the highest possible estimate we can form of the value of massage as an adjuvant to teething does not make us think that two or three visits of a masseur daily are likely often to be prescribed for this purpose. It may be good, but there are other things quite as good, and much simpler and cheaper. The same criticism applies to many other conditions for which massage is here recommended.

[8] *Cours de Massage. Accessoire des Soins d'Accouchements a donner aux Femmes Enceintes et Parturientes, aux Nourrices et Nourrissons.* [A course of massage supplementary to attendance in childbirth, to be given to pregnant and parturient women, to wet nurses and to infants.] Par le Dr. de Frumerie, de la Faculté de Médecine de Paris. Paris: Vigot Frères. 1904. (Crown 8vo, pp. 145. Fr. 2.)

IN a work on the Psycho-Physiology of Human Monstrosities, recently published, Drs. N. Vaschide and Cl. Vurpas have embodied the results of a close study of two monsters, one anencephalic, the other xiphopagous. In the former, which lived two days, the authors studied the working of various parts of the vital machinery and made some researches in the sphere of psychology. They were led to conclude that the brain is not indispensable for a rudimentary psycho-biological life; its function is mainly that of a co-ordinator of the respiratory movements, the vaso-constrictor system and reflexes. The xiphopagous monster "united in itself two lives and displayed reciprocal biological reactions towards the same causes."

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ending November 19th and 26th and December 3rd the deaths from plague in India numbered 14,115, 14,528, and 17,728 respectively. The deaths during the week ending December 3rd were: Bombay City, 69; Bombay Districts, 6,670; Calcutta, 8; Bengal Districts, 722; North-West Provinces and Oudh, 4,425; Punjab, 2,446; Kashmir, 30; Rajputana, 292; Karachi, 9; Central Provinces, 529; Central India, 206; Hyderabad State, 768; Mysore State, 1,157; Madras Presidency, 392.

South Africa.

Port Elizabeth.—During the weeks ending November 26th and December 3rd the fresh cases of plague numbered 0 and 0, deaths 1 and 0. Four cases remained under treatment on December 3rd. Plague-infected rodents continue to be found at Port Elizabeth and East London.

Mauritius.

During the weeks ending December 15th and 22nd the fresh cases of plague numbered 11 and 14, and the deaths from the disease 9 and 6 respectively.

Hong Kong.

During the weeks ending December 10th and 17th the fresh cases of plague numbered 3 and 2, and the deaths from the disease 3 and 2 respectively.

Russia.

In the Ural territory two districts have been declared plague-infected. The disease is reported to have appeared in November, and between November 24th and December 26th 190 persons are said to have died of the disease. The outbreak, at first unrecognized, first occurred amongst a family of Kirghiz and then spread to the Cossack population.

Suez.

A telegram dated Port Said, December 27th, states that "a case of plague has occurred here."

MEDICAL NEWS.

The late Professor Tillaux, of Paris, has left £20,000 to the French fund for pensions to working men. He has also bequeathed considerable sums to the Medical Association of the Seine Department and to other professional bodies.

The Naples Antirabic Institute.—The statistics of the Naples Antirabic Institute for the three years 1901-1903 have just been published. The number of persons admitted during that period was 1,470. The percentage of deaths in the total number was 2.

The Liverpool coroner held thirteen inquests on the day succeeding Boxing Day; seven of these were on the bodies of infants who had been suffocated in bed. On the conclusion of one of them he said it was deplorable that so many young lives should be sacrificed through want of proper care on the part of parents.

At the last meeting of the Zoological Society of London, the Hon. Walter Rothschild, Ph.D., F.Z.S., read a paper on the Anthropoid Apes, in illustration of which he exhibited a large collection of mounted skins, skeletons, and skulls. A gorilla from South Cameroon and the white-faced chimpanzee of the Gaboon were characterized as new.

A private citizen has placed in the hands of the Government of the Grand Duchy of Baden a sum of £12,500 towards the foundation at Heidelberg of an institute for the study of cancer. The Government has given a site for the purpose in the immediate neighbourhood of the University Hospital, and has promised a grant for the maintenance of the institute.

A Distinguished Centenarian. — The Laryngological Society of London is organizing a celebration in honour of Señor Manuel Garcia, the inventor of the laryngoscope, who will complete his 100th year on March 17th, 1905. The Society proposes to present the famous maestro with a testimonial and an address on the occasion.

A Short Way with Degenerates.—It is stated that Dr. Henry Hatch, recognized in America as an authority on criminology, recently read a paper before the Prison Association at Quincy, Illinois, in which he advocated the elimination of degenerates and chronic lunatics by some painless mode of death. He further urged that suicide should be legalized in the case of helpless incurables.

The Board of Delegates of the Metropolitan Hospital Saturday Fund Association states, in its circular for the final quarter of the year, that the receipts up to the date of issue exceeded those at the corresponding period of 1903 by £369. In that year, however, some large contributions came in at Christmas time, and the total collection for the year constituted a record. To equal it this year nearly £7 000 must be received by January 9th next, the date on which the accounts are closed.

The estate of the late Mr. Herbert William Allingham has been sworn at £41,942. Among the bequests contained in his will was one of a sum of £2,000 to St. George's Hospital Medical School for the foundation of a scholarship to be known as the Herbert Allingham Surgical Scholarship.

The Midwives Act.—As stated in the British Medical Journal of December 24th, out of 61 county councils mentioned, 48 have retained their powers under the Act in their own hands. The councils of Devon, Dorset, Kesteven, Southampton, Isle of Wight, West Suffolk, and Brecknock have delegated their powers to the district councils. The county councils of East and West Sussex came to no decision on the subject. The county councils are prompter in acting than the district councils. Two of the latter, both in Sussex, seem to show hesitation in putting the Act into force. The Newhaven Urban Council has decided to inform the county council that the council does not see its way clear to undertake the administration of the Midwives Act in their district. The Cuckfield Rural Council is prepared to carry out the Act provided an adequate sum be allowed to defray the cost.

Temperance in the Army.—At a temperance medal distribution at St. George's Barracks on December 27th, a letter from His Royal Highness the Duke of Connaught was read containing the following passage: It is very satisfactory to think of the great strides in the army this (Royal Army Temperance) Association has made of late years. On every ground the army has been the gainer by the spread of temperance principles, with the result that crime decreases, the soldiers are happier, and the service is more looked up to by all classes of His Majesty's subjects. At the same meeting, Lord Methuen, who presided, said that the recruit of the present day was a very different man morally to the recruit of ten years ago, and the improvement was in a great measure due to temperance aided by the influence of the Church Lads' Brigade and improved education.

The Treatment of Consumptives.—Dr. G. Petit, Editorial Secretary of the *Revue Internationale de la Tuberculose*, has issued to the medical practitioners of France what he calls a "referendum," consisting of the following questions: (*a*) 1. Should a practitioner who has diagnosed tuberculosis in a given case tell the patient that he has done so? 2. Besides the dispensary and the sanatorium, are there not other organizations which could help in the solution of the tuberculosis problem? (*b*) 1. From the point of view of the individual, is it to the interest of the patient to be exactly informed as to the condition of his disease? 2. Is it to the interest of the family to be informed that the relative is suffering from tuberculosis? 3. Is it to the interest of the community that tuberculosis should be officially notified? (*c*) 1. What in your opinion is the essential and dominating factor of tuberculosis? 2. What do you think of the isolation of consumptives in large urban hospitals? 3. Is there not in France, apart from the dispensary and the sanatorium, another weapon in the antituberculous armoury? 4. Could not certain large buildings belonging to the State, which now stand empty and unutilized, be used for the treatment of consumptives? Do you know many such places? 5. Could not suburban and intercommunal hospitals with special accommodation, and even pavilions, be fitted up at small cost for the reception and isolation of consumptives?

The Adelaide Hospital. — We have received from Dr. Leonard W. Bickle of Adelaide a letter with reference to a paragraph in the letter of our special correspondent in Adelaide, published in the British Medical Journal of September 24th. Dr. Bickle states that the difficulty at the Adelaide Hospital began in 1894, when he was on a visit to England, and that he did not accept a position on the staff of the hospital until 1897. He adds that he had every reason to believe that, had he not done so, the hospital, which is mainly supported by the Government, would have been turned into a Government institution pure and simple, and its value from an educational point of view to the profession lost. He states, further, that before accepting the position he wrote to the then president of the Branch, giving his reasons for the step, and encloses us a copy of the president's acknowledgement of this letter, dated March 26th, 1897. Dr. Bickle also states that he received expressions of regret from five members of the Board who would have voted for his re-election had they been present, and also from many members of the profession and others. We have also received a letter from Dr. A. D. Leith Napier of Adelaide, in which he characterizes the reference to him in the same letter from our Adelaide correspondent as misleading; as the matter is at present *sub judice*, he prefers not to discuss it further.

BRITISH MEDICAL ASSOCIATION.
SUBSCRIPTIONS FOR 1904.

Subscriptions to the British Medical Association fall due on January 1st each year. All members who have not yet paid should forward, without delay, postal order or cheque for 25s., to the General Secretary, 429, Strand, London, W.C., or, in the case of Colonial members, to their Branch Treasurer.

British Medical Journal.

SATURDAY, DECEMBER 31ST, 1904.

THE MEDICAL SERVICE OF THE ARMY.

For a month the medical service of the army was without an official head. We are not prepared to say whether such a state of things is without precedent, but certainly it is anomalous to a degree sufficient to excite considerable curiosity as to what was passing behind the scenes during the interregnum. To those whom experience has taught that "for ways that are dark and for tricks that are vain" the War Office is as peculiar as the Heathen Chinee, the situation was clear enough without the help of any special information. It could safely be taken for granted that the delay in appointing a Director-General in succession to Sir William Taylor simply meant that the military authorities were striving to do by craft what, fortunately, they are no longer able to do by force. It is no secret now that this is precisely what was taking place. A comparatively junior officer had been recommended for the appointment because his previous services marked him out as pre-eminently fit for the post. On the other hand, the military authorities, though they could find no objection to the appointment, could not bring themselves to depart from the routine method. Every influence that could be brought to bear on the Secretary of State for War was made use of to prevent an appointment which was looked upon by the Sir Leycester Dedlocks of Pall Mall as an opening of the floodgates of revolution. The struggle was indeed a death-grapple between the old system and the new, and the obstinacy of the resistance of the War Office is a measure of its appreciation of the importance of the issue in regard to its traditional policy of standing on the ancient ways. The War Office may at least be congratulated on having once in a way seen things as they really are; for there can be no doubt that the appointment of Surgeon-General Keogh to the position of Director-General marks the end of the old order of things as far as the medical service of the army is concerned.

It would be utterly wrong to regard the selection of a comparatively young man for so responsible a post as in any sense a disparagement of the distinguished officers who have been passed over. We heartily sympathize in the disappointment that must necessarily be felt by men who have grown grey in the service at their failure to reach the goal of their honourable ambition. But they would themselves be the first to acknowledge that the good of the service must be the first and paramount consideration in the choice of a Director-General. It was for this reason that the principle of selection was substituted for that of seniority in promotion to the higher grades; and if the principle is to be fairly acted upon, there can be no limitation in the range of such action. The new system is founded on the Napoleonic maxim, *La carrière ouverte aux talents*—a principle which is recognized as the basis of efficiency everywhere except in the public services. The Advisory Board was appointed for the express purpose of securing efficiency in the medical service of the army by the application of that principle.

Apart from any question of professional equipment or official experience, Surgeon-General Keogh has the accidental, but none the less important, advantage over officers otherwise well-fitted for the post that he has inherited none of the traditions and prejudices of the older militarism. He was one of the first batch of officers who entered the service after it was made autonomous, and thus he never came under the influence of the regimental system which the military mind, as represented by the older generation of combatants, has never ceased to hanker after. In addition to this, Surgeon General Keogh's record of service shows that he possesses in an eminent degree the personal and professional qualifications for the great position which he has been chosen to fill. A brief account of his career will be found elsewhere. It cannot be said of him that he might be considered *capax imperii nisi imperâsset*, for he has already been in charge of the Royal Army Medical Corps during Sir William Taylor's absence, and has had a long experience of the administrative duties of the office of which he is now to be the chief. In the discharge of the duties of the important appointments which he has held he has given proof of great administrative capacity, readiness of resource in meeting practical difficulties, and firmness, tempered by tact and sympathy, in dealing, on the one hand, with the military authorities, and on the other with the officers of his own corps.

Strong testimony to the excellence of Surgeon-General Keogh's work in the Boer war is borne by Sir W. D. Wilson in his recently issued *Report on the Medical Arrangements in the South African War*. He took a prominent part in the work of the Committee to which the task of rearranging the medical service of the army was entrusted by Mr. Brodrick; and his mastery of the problems of medico-military administration has been conspicuously displayed in his work at the head quarters office. It is therefore no untried man who is now to command the Royal Army Medical Corps, but one who has given the most convincing evidence of his special fitness for the position. His appointment will, we feel sure, be approved by the general voice of the profession to which he belongs. It will be particularly welcomed as an indication that the spirit of arrogant hostility towards the medical service which has proved so disastrous to the best interests of the army has passed away.

One of the personal characteristics of the new Director-General which inspires the best hope for the success of his administration is the fact that in him the doctor has never been submerged in the officer. His heart has always been in his professional work, and he has kept his scientific knowledge fresh and adequate to the exigencies of medical practice. He is known to be particularly anxious that the officers of the Royal Army Medical Corps should be thoroughly efficient in their proper work, which is the treatment and especially the prevention of disease. As his appointment is the knell of the parting day of promotion by seniority, we hope it may also be taken as an omen that the time is gone by when the army could be regarded either as a refuge for the professionally incapable,

or an easy career in which playing at soldiers was agreeably diversified by the dissipations of garrison society and the excitement of sport.

The irritation of the "old gang"—if we may use Lord Randolph Churchill's racy phrase—has shown itself in paragraphs, obviously inspired, which have appeared in society and service journals. It is unnecessary to refer to these further than to point out that it is simply fatuous to attribute the choice of the new Director-General to "outside influences." The Advisory Board was called into existence in order to advise the Secretary of State. In recommending Surgeon-General Keogh for the appointment the Board has simply discharged the duty placed upon it. The members of the Board are surely better judges of the professional qualifications of medical officers than military authorities or bureaucrats of any kind or description can be. These are the "outside influences" which the medical service of the army has to fear.

ANKYLOSTOMIASIS IN COLLIERIES.

IN an interim report on "the probability of ankylostoma becoming a permanent inhabitant of our coal mines in the event of its introduction," the Committee, appointed by the British Association for the Advancement of Science to inquire into this subject, indicates the dangers that would ensue if this were to take place. The importance of the subject is evident enough from the financial point of view, if one takes into account the trouble this pest has caused in the Westphalian coal fields, and the vast sums of money spent in trying to eradicate it.

On this aspect of the subject some interesting information is given in a paper published in a recent issue of the *Transactions of the Institution of Mining Engineers*, by Dr. Thomas Oliver, on "miners' worm disease," as seen in Westphalian and Hungarian collieries. The centre of the Westphalian coal-mining industry is Bochum, a town with a population of 70,000. This town possesses an infirmary containing 400 beds, in which, during last year, 3,000 patients were treated for ankylostomiasis. In the valley of the Ruhr, again, the number of cases has increased from 107 in 1896 to 1,030 in 1901, and 1,355 in 1902. Within the last two years ankylostomiasis has cost the Miners Union and owners in Westphalia £100,000. In Hungary, Dr. Oliver visited the Sopron-Brennberg colliery, where he was received by Dr. Goldman, medical officer to the mine. Seven years ago, when Dr. Goldman received his appointment, upwards of 90 per cent. of the miners were affected by the worm, but at the time when Dr. Oliver paid his visit the percentage of sufferers was about 30. It has been found that the spread of the disease is greatly facilitated by high temperature and moisture, these being the conditions which favour the transformation of the ova of the parasite into larvae. A few years ago, in consequence of explosions which occurred in the Westphalian mines through coal-dust, the Government made water-spraying compulsory; it is noteworthy that the remarkable increase already mentioned in the number of cases occurring in the valley of the Ruhr has been coincident with the enforcement of this regulation.

Vigorous efforts are being made to stamp out the disease. Experience shows that infected mines must, in so far as natural conditions will allow, be made drier and cooler, in order to render them less favourable for the development of the parasite. Infected men must be prohibited from working underground; this necessitates medical inspection of the miners and a careful microscopic examination of their faeces by experts in the diagnosis of ankylostoma. Miners ought to be absolutely prohibited from defaecating underground, unless into receptacles specially provided for the purpose, which ought to be emptied and disinfected daily.

In the discussion which followed the reading of Dr. Oliver's paper, Dr. J. S. Haldane called attention to the eosinophilia which accompanies ankylostoma infection and to the practical value, for diagnostic purposes, of this characteristic of the blood. In normal persons the percentage of white corpuscles which are eosinophiles is from 0.5 to 5. On the other hand, at Dolcoath mine, in Cornwall, which was found to be thoroughly infected, out of 148 underground workers only eight showed less than 7 per cent. of eosinophile leucocytes, the average being 18.2 per cent. The advantage of this method of investigation is that a blood film can be much more readily obtained than a sample of faeces.

There is undoubtedly a danger of the general introduction of the parasite into this country; the Cornish tin mines have already shown this: and the warning certainly ought to be attended to by hygienists and owners of mines alike. The question of the different temperatures commonly found in English mines is worthy of more detailed study, but it is generally believed that 70° F., a temperature sufficient for the egg to hatch and the larva to reach the encapsuled stage, is generally found in them. Prevention is better than cure, and if the preventive measures advocated by the Committee of the British Association for non-infected mines are acted upon, it should be comparatively easy to avoid any risk of contamination. They may be summed up as an enforcement of regulations against indiscriminate soiling of underground roads by excrement, and the medical examination of all foreign workmen or persons who have lived in the tropics to ascertain that they are free from the parasite. The adoption and enforcement of such methods of prevention largely depend on the owners of coal mines, and it is to be hoped that they will take an intelligent interest in the subject, and by so doing fend off this approaching danger.

DUST PROBLEMS.

THERE is still no inconsiderable number of people who cry anathema upon motors and motorists, but even these will have to admit with Henry V. that there is some soul of goodness in things evil, if the existence of these things accurs'd should eventually lead to a general reduction of dust both in and out of towns.

The discomforts induced by dust need no demonstration, nor has its detrimental effect on all things domestic failed of due recognition. In short, with the single exception of lawyers, who cherish dust on their documents, it may be declared that every one is a foe to dust; even our housewives, notwithstanding the liberality with which they import it from the streets on their skirts and deposit it lovingly in their bedrooms.

The general hostility, however, might be materially sharpened were it more thoroughly recognized what dust really is. Much of it no doubt is the harmless detritus of inorganic matter, but still more of it, especially in towns and anywhere within reach of dwellings, is powdered dirt of the very nastiest description. And not merely nasty: it is dirt of a kind often dangerous to health, if we inhale it, or if it gets into our food. Dust, in short, is a fruitful

disseminator of disease germs, and should be treated both by domestic and public sanitarians with the determined and considered hostility due to a subtle foe.

It is the modern bacteriologist who has demonstrated its powers for evil beyond the possibility of dispute, and made it clear that dust should occupy a much more prominent place in the Sanitary Commination liturgy than has hitherto been the case. It will, however, be to the motorist rather than the man of science that the truthful historian will assign the greater part of the credit if complete reform be effected. Science has shown us how very deleterious dust may be, but it is the motorist who has convinced an unwilling world what an extraordinary amount of it there is.

It cannot truthfully be said that motors themselves cause dust—animals and vehicles with iron-tyred wheels probably cause a great deal more—but motors bring its existence into prominence by raising it in whirlwinds wherever it lies, and thus make roads detestable to wayfarers, and the houses which border motor-frequented roads almost uninhabitable—at all events, in summer. Why this should be the case is not quite clear. The shape of the body of the car—or, in other words, the form of the unbroken block of air displaced by its movements—the vacuum caused by a rapidly-moving vehicle, the draught caused when parts of the body are carried close to the ground, the action of the wheels and especially the aprons of mud-guards, are all factors; but as to which of them predominates the experts are not agreed. In short, the shape of the perfect car, from a dust point of view, is still undiscovered, and must so remain until it has been determined what are the precise mechanical differences which make one car raise much and another comparatively little dust.

The failure to settle the point so far is not, however, to be regretted, for the Automobile Club, which wisely endeavours to protect the interests of its members by regarding those of other people, has thus been led to study dust problems from other points of view. A summary of the investigations which it has promoted, directly and indirectly, was given at a meeting of the club recently, and showed that, while the evils of existing dust can certainly be palliated, dust formation can to a considerable degree be avoided altogether if roads are correctly constructed with this object. A road to be dust-proof should have a smooth, impermeable, enduring surface, and a hard foundation which will not work out through the top; such a road can be built by using slag taken hot from the furnace and dipped in tar until soaked from surface to centre, after a method invented by Mr. Hooley of Nottingham under the name of "tarmac." The initial cost scarcely exceeds that of granite, while there is a great after-saving in the matter of scavengering and upkeep. The evidence produced as to the efficacy of this material was considerable; but it is not to be expected that many existing roads should be taken up and replaced by it. When, however, new roads have to be built in anything but wood, or when old ones require to be replaced, the sanitary importance of the avoidance of dust should be remembered, and the propriety of adopting some such process as that above mentioned should be taken into consideration.

As to the palliatives of which Westrumite and Akonia are examples, there is little doubt that they are worthy of extended application. Their use is not expensive, and their effect upon dust is so much more enduring than that of mere watering, that it seems as though they might well be applied in the interests of the public health to all roads, streets, and courts which do not, like many central London highways, receive a daily thorough washing. Some experiments in this direction were, we believe, undertaken at Edmonton last summer, and while we are not prepared to say that the direct hygienic value of dust palliatives on other places than motor-frequented roads has been placed beyond a doubt, the subject may be commended to the attention of medical officers of health.

SMALL-POX IN ANTIVACCINIST COMMUNITIES.

The Antivaccination League seems to be "rounding" on Dewsbury as it did on Gloucester and threatened at one time to do on Leicester. All these three places are centres of antivaccination and are customarily lauded by the League for their neglect of the Jennerian "rite." Gloucester used to be complimented for its sanitation, and in a pamphlet dedicated to the then Home Secretary, an antivaccinating scribe pointed to the town's freedom from small-pox as a fact to be noted in view of its neglect of vaccination. But in its own time small-pox came to Gloucester and it suffered from a terrible epidemic. Then the League's tune changed, and Gloucester was denounced as a type of filth and nastiness instead of cleanliness. So, also, when small-pox broke out in Leicester in the early Nineties, the *Vaccination Inquirer* made ready to take up the position that the "Leicester method" had never been tried in Leicester! But on the appearance of some indication that, under the management of Dr. Priestley, who, of course, urged vaccination and did his utmost to promote it, especially among contacts, and was vigorously denounced by local faddists, the disease was likely to be held somewhat in check, the *Inquirer* reversed its attitude and decided to regard the course of the epidemic as an evidence of the success of the "method." The recent Leicester outbreak included more than 700 known cases of the disease, and one can only speculate how much further it would have extended had not the present medical officer followed the example of his predecessor in using every means at his disposal for obtaining the vaccination of contacts, and especially of intimate contacts. Needless to say, for his activity in this direction he receives no thanks from local antivaccinators. On the contrary, pressure towards vaccination is declared to be one of the causes of the epidemic! It is now the turn of Dewsbury to suffer for its folly. In that antivaccinating community the Board of Guardians seem practically to have refused to carry out the Vaccination Acts, and in presence of a small-pox epidemic the Local Government Board issued an order empowering the Town Council and the medical officer of health to provide vaccination and revaccination in the stricken town. And now that small-pox is inflicting heavy punishment the *Vaccination Inquirer* resorts to its stock explanation—inefficient sanitary administration. If that be the cause of the epidemic, the *Inquirer*, instead of confining itself in the past to praising Dewsbury for neglecting vaccination, should also have warned it to attend to sanitation; but it is only when small-pox begins to levy its toll that the organ of the League tells its readers that Dewsbury has been in any danger of small-pox.

THE STUDY OF THE HISTORY OF MEDICINE.

By way of warning scientific investigators against the too common habit of mind which refuses to see anything but error and superstition in the work and ideas of their predecessors, Bacon pointed out that at every period in the evolution of knowledge men were like dwarfs perched on the shoulders of giants. To prevent the dwarf from fancying himself a giant it is necessary that he should know something at least of the labours of the giant to whose lofty stature, more than to any strivings of his own, he owes his intellectual coign of vantage. An acquaintance with the history of medicine would not only be a wholesome lesson in humility for many

who dismiss antiquity with ignorant contempt, but would save modern workers a good deal of needless trouble in rediscovering truths already found and lost perhaps many times before. A course of lectures on the history of medicine should be given in every medical school, and it would be well if prizes could be offered to encourage students to give some attention to the subject. Its importance is insisted on by Dr. Eugene F. Cordell of Baltimore in a discourse delivered on the one hundred and fifth anniversary of the Medical and Chirurgical Society of the State of Maryland, which has been reprinted in pamphlet form. Holding that the history of medicine is a part of general history, he complains of the very different estimation in which it is held in the educational system of to-day. While no subject is considered of greater importance in the literary studies of universities, it is rare in America to find the subject mentioned in the curricula of the medical schools. In our own schools, as far as we are aware, it has no place at all. A full course of lectures, fourteen to sixteen in number, is given in only three American Universities — those of Pennsylvania, Maryland, and Minnesota. There are four lectureships, one quite recently established and still without an incumbent, and another held jointly with a clinical professorship of dermatology. One of the "courses" consists of three lectures; there is but one professorship, and that an honorary one. At Yale five or six lectures are delivered by the Professor of Therapeutics; at Buffalo the assistants in surgery give "more or less" instruction in the history of their art. At Harvard lectures were attempted, but as no great interest was shown in the subject, they were discontinued. Only in the University of Pennsylvania is the course compulsory; nowhere is there any examination. There are two societies in the States which take medical history for their province. One of these, the Historical Club of the Johns Hopkins Hospital, Baltimore, which was founded in 1890, has exercised a great influence throughout America. Dr. Cordell takes occasion to correct a statement made by Professor Roswell Park to the effect that the course of lectures delivered by him in the University of Buffalo in 1897, and published under the title *An Epitome of the History of Medicine*, was the first attempt made in America to give systematic instruction in the subject. More than three-quarters of a century ago provision was made for the teaching of medical history in the University of Virginia, and a course of lectures delivered there by the late Professor Robley Dunglison was published in 1872. Dr. Cordell sums up the advantages of the study as follows: (1) It teaches what and how to investigate. (2) It is the best antidote we know against egotism, error, and despondency. (3) It increases knowledge, gratifies natural and laudable curiosity, broadens the view and strengthens the judgement. (4) It is a rich mine from which may be brought to light many neglected or overlooked discoveries of value. (5) It furnishes the stimulus of high ideals which we poor, weak, mortals need to have ever before us; it teaches our students to venerate what is good, to cherish our best traditions, and strengthens the common bond of the profession. (6) It is the fulfilment of a duty—that of cherishing the memories, the virtues, the achievements of a class which has benefited the world as no other has, and of which we may feel proud that we are members.

CHOLERA IN PERSIA.

A REPORT by the British Consul-General, Mr. Preece, on the trade of Isfahan and district, recently published by the Foreign Office, gives some interesting information on the epidemic of cholera which ravaged Persia this summer. It appears to have entered the country by two routes, one from the valley of the Tigris eastward through Kirmanshah and Hamadan to Kum, whence it spread north and south to Teheran and Isfahan respectively, the other from the head of the Persian Gulf to Shiraz. These two streams met at Komishah, 45 miles south of Isfahan, but the latter city for a long time remained immune, though the villages of the district suffered considerably. The late Dr. Tholozan, physician to Nasr-ed-Din Shah, always declared that Isfahan was the last place in Persia to be attacked, and when attacked usually escaped easier than other places. He ascribed this immunity in great measure to the position of the city, and especially to its altitude and dryness, but Mr. Preece is more inclined to attribute it to its well water, and to the fact that while in almost every other town there are very deep cesspits full of liquid filth which permeates and thoroughly pollutes the loose subsoil, there is in Isfahan what is practically a dry earth system, the latrines, which are very shallow, being periodically emptied, mixed with earth, and left exposed to the sun, and then dug in as manure. It was probably owing to this that, while Teheran, with a population of about a quarter of million, lost some 25,000 persons from cholera this year, and Shiraz 5,000 of its 45,000 inhabitants, Isfahan, with a population of nearly double that of the latter town, only lost 500. In the great epidemic of 1892 about the same number died; while Teheran, as on this present occasion, suffered terribly. The opinion of the Consul-General is confirmed by a perusal of the minutes of a meeting of the Central Council of the Persian Empire held last August, with a copy of which we have been favoured by a correspondent. This Council consists partly of Persian officials and partly of European medical men; one of these, Dr. Odling, C.M.G., who insisted on the necessity of establishing public washhouses in Teheran, was met by one of the Persian members with the assertion that four large washhouses and ten small ones already existed in the town. The President, also a Persian, further reported that they were insufficient and unknown to the public, because any day women might be seen washing linen which had sometimes been used by sick or dead persons through holes broken into the channels by which water was conveyed; this same water was afterwards drunk by the inhabitants of houses further on. The Committee resolved unanimously to recommend that twenty new washhouses should be established immediately, that the holes in the water channels should be closed, and that the police should be instructed to prevent the inhabitants from making new ones. The Council further resolved that the bodies of animals should not be allowed to remain in the streets and vacant places in the town, and that filth of all sorts should be cleared away every night. It also recommended that public latrines should be established, and appointed a Subcommittee to inquire into the condition of the public baths, which, it was stated, were usually sunk below the level of the soil and seldom emptied. The public abattoir was reported to be in a repulsively unhealthy and dirty state, and the Council recommended that pending the establishment of a new building in a more suitable locality, the present abattoir should be kept clean and frequently whitewashed. That it should be necessary to make recommendations of so elementary a kind casts a lurid light on the sanitary condition of the capital of the Persian Empire.

RUSSIAN MEDICAL ORGANIZATION IN MANCHURIA.

THE Italian military correspondent who has been contributing a series of articles on the Russian army in Manchuria to the *Times* deals in the last with the military medical organization, of which he gives a very depressing account. He estimates that the total number of sick and wounded down to the time of the great action on the Sha-ho at 150,000, or about 30 per cent. of the total force in Manchuria. He states that of the 32,000 sick and wounded registered at the Central Board in Kharbin from June 15th to August 15th about one-fifth were wounded. During the first six months of the war the most common diseases were dysentery and rheumatic fever; the dysentery was of a mild type. The correspondent hints that a good many men who were but little, if at all, ill contrived to be sent to the base hospitals in order to obtain two or three weeks' rest and better food. Several severe outbreaks of dysentery occurred among the younger soldiers of certain regiments, and the cause of their illness was generally attributed to the drinking of river water;

preventive measures were prescribed by army orders, but the regimental medical officers took no trouble to see that they were carried out. After the month of July typhus, by which we understand enteric fever, increased rapidly, and caused much sickness and invaliding. Preparations for treating the sick and wounded were made on a very large scale, not only by the War Office but by the Russian Red Cross Society and by the Zemstvo or county councils; in addition twenty-four hospital trains, most of them well, and some of them luxuriously, equipped, were provided by private generosity, and have been a great boon wherever available. Owing to the large number of sick and wounded the hospital accommodation had often been inadequate, and this evil has been intensified by imperfect organization and a failure to provide an adequate number of beds at places where they were most wanted. The military medical staff of the Russian army is very badly paid and is numerically quite incapable of grappling with the present emergency; in consequence a large number of civilian practitioners mostly, the correspondent states, of Jewish extraction, have been called upon to proceed to Manchuria. This improvised medical staff is said to have worked on the whole exceedingly well under very great disadvantages, not only have the hospitals been encumbered and the food supply frequently insufficient, but even necessary dressings have been wanting. The usual practice of issuing first aid dressings to the soldier has not been followed systematically, although there is an immense stock of such packets in Russia.

INSANITY, HEREDITY, AND ALCOHOLISM.

The thirty-ninth annual report of the Glamorgan County Asylum, the last from the pen of its retiring Medical Superintendent, Dr. H. T. Pringle, contains matter of much interest. Dr. Pringle, who, we are sorry to note, is retiring on account of ill-health, gives in this, his valedictory report, his opinion as to the causes of insanity, an opinion founded on thirty-seven years' experience of asylum management. Constant intermarriage is first mentioned. "In this county," he says, "until it was opened up by the railway, the vale of Glamorgan was its blackest spot as regards insanity, and its inhabitants were nearly all related and constantly marrying amongst each other." And again, "Glamorgan owes much of its mental healthiness to the fact of its exceedingly mixed population, one-third consisting of aliens—that is, of people not born within its borders." Germane to this is Dr. Pringle's comment on the large part played by heredity, and the somewhat startling statement that it is not an uncommon experience at this asylum to admit parents of large families who have been epileptic or imbecile all their lives. The next etiological factor mentioned—alcohol—is one of considerable controversial interest. In the British Medical Journal of July 9th was published a notice of the report of the Montrose Royal Asylum, whose Medical Superintendent found that in not more than 10 per cent. of the inmates was the insanity traceable to alcoholic or other vicious exercises. Other Scottish alienists, on the other hand—notably, Dr. Clouston—place alcohol much higher in the list, and credit it with almost 50 per cent. of the admissions. Dr. Pringle does not go to this length, but ascribes 141 of the 543 admissions to alcoholic intemperance. Whether intemperance causes the insanity in this large proportion, or whether it is only an expression of a pre-existing mental instability is a question yet awaiting solution. Like many other asylums, Glamorgan Asylum has been for some time uncomfortably overcrowded, and at the end of the year had an excess over proper accommodation of 132. To this overcrowding an increased death-rate, and a particularly rapid increase of the tuberculous death-rate, is in Dr. Pringle's opinion partially attributable.[1] By the removal of patients chargeable to the Borough of Cardiff, numbering 408 at the end of 1903, this overcrowding will be for the time avoided. On January 1st, 1903, the numbers in the asylum were 1,910, and on the last day of 1903, 1,933, showing an increase of 23; but as 66 were removed to other asylums by the Borough of Cardiff the actual increase was 89. There were admitted during the year 543, and of these 33 were transfers from other asylums. The total cases under treatment during the year were 2,453; 138 were discharged as recovered, a recovery-rate on the total admissions of 27.7 per cent.; 41 were relieved, and 110 not improved. There were 231 deaths in the year, a death-rate on the average numbers present of 12.1, which is 2.4 above that of the previous year. Of the deaths the outstanding feature is, as pointed out by the medical superintendent, the proportion of deaths from tuberculous disease, there being 36 cases of phthisis and 3 of general tuberculosis. There were also 48 deaths from general paralysis, and 15 from epilepsy.

[1] In this connexion it is of interest that under the advice of the Commissioners of Lunacy sun-shelters for consumptive patients are to be erected at Parc Gwyllt.

FEMALE NURSES FOR MALE INSANE PATIENTS.

The progressive amelioration in modern times in the care of the insane, of which the almost complete abolition of mechanical means of restraint, the housing of patients in villas and family colonies instead of their former rigid incarceration, and a general approximation to hospital methods in the treatment of acute cases form important landmarks, has its latest development in Scotland in the proposed employment, where possible, of female nurses in male wards. This has evoked a strong protest from Dr. Urquhart,[1] of the Murray's Royal Asylum, Perth, on the ground that "it is necessary for the adequate nursing of many patients that trained male nurses should be employed, and, if this be so, then training schools for male nurses should not be abolished." This means that male nurses or attendants should not be ousted by female nurses from their present position, in which they can be instructed in the nursing of the insane, or reduced, as Dr. Urquhart puts it, "to the position of hired bullies or common labourers to do the heavy lifting with no hope of advancement in the asylum and no prospect of developing in their profession in the world of medicine." We were not aware that a wholesale substitution of female for male nurses in male wards was contemplated, but this is evidently feared by Dr. Urquhart, and is assumed throughout the paper. The matron of the National Hospital for the Paralysed, Queen Square, where male probationers are trained, is quoted as saying that the care they exercise as regards cleanliness of patients, etc., is quite equal to that of women nurses, and that after a year's experience they are quite as capable as many women after two years' training. As regards the comparative gentleness of the two sexes, Dr. Urquhart gives an amusing account of an inquiry into the breakages in the asylum dining halls during 1903, which showed that there were only 20 such occurrences on the male side, whereas "neat-handed Phyllis" was responsible for 127. He dismisses as futile such arguments as have been presented as to the comparative ease with which male patients are fed by female nurses, and says "the converse is quite as relevant, but it has not yet been suggested to replace nurses on the female side by male attendants." The writer further quotes a lengthy statement by a male nurse trained at the National Hospital, pointing out the sufficiently obvious disadvantages of female nursing in the case of violent and indecent male lunatics. These disadvantages are so considerable that we do not share Dr. Urquhart's fear that there will be any universal and complete adoption of this change in the nursing staff of asylums, although when much-needed reforms in the classification and distribution of patients have been accomplished, it is quite possible that the female nursing of some classes of male patients might be advantageous. The fear—and this, we take it, is the gravamen of Dr. Urquhart's interpellation—that there will be a shortage in the supply to private patients and asylums of properly trained male nurses is not likely to be realized, for so long as "it is necessary for the adequate nursing of

[1] *Journal of Mental Science*, October, 1904.

many patients that trained male nurses should be employed," so long will it be necessary that male nurses should discharge their responsible and difficult duties in those asylums and mental hospitals which are their training schools.

DYING DECLARATIONS.

It is a rule of criminal law that a statement adverse to a prisoner is not admissible unless it be shown that the prisoner, or some person on his behalf, had an opportunity of cross-examining the person who made the statement. Further, it is a general principle that hearsay evidence is inadmissible. An exception to these rules is that a statement made by a person who is in certain expectation of death may be admitted. It must be shown, however, that the deceased, at the time he made the statement, was under the impression that death was impending, not merely that he had received an injury from which death must ensue, but that, as the popular phrase goes, he then believed he was at the point of death. So strict is this rule that a dying declaration made by a person who said, "I have no hope at present of recovering," was not admitted in evidence. This exception to a stringent rule of evidence took its origin in the presumption that a man who knows he will soon be in the presence of his Maker will not say that which is false. The hopes or fears of one who is dangerously ill are often to a large extent based upon the opinion of his medical attendant. A case which was recently tried by Mr. Justice Bigham at the Maidstone assizes shows that the opinion expressed by a medical practitioner is of the utmost importance. A gamekeeper was charged with the manslaughter of a man whom he found poaching in a wood. The witnesses for the prosecution admitted that all the indications were consistent with the story put forward by the defence—namely, that the prisoner, in running through thick undergrowth to catch the deceased man, stumbled over a stump, and in so doing discharged both barrels of his gun accidentally. The deceased was shot in the knee. He afterwards died from gangrene. Before he died he made a deposition before a magistrate, and it was sought to put this deposition in evidence against the prisoner. A medical man who was present when the deposition was taken told the magistrate that he thought the prisoner was not likely to recover, and it would seem that this was also the opinion of the deceased. At the trial, however, the surgeon made a statement on oath to the contrary effect. The learned judge refused to exclude the evidence on this ground, though he held it to be otherwise objectionable on the technical ground that there was no statement on the deposition to show where it had been taken. The report of the case in the *Times* does not state the purport of the deposition; it was probably to the effect that the prisoner had deliberately shot at the deceased. Inasmuch as it was excluded, no harm was done, the prisoner being acquitted; but if the evidence had been admitted the case might have gone hard with the gamekeeper. The mere fact that a declarant does not die for some time after his declaration does not seem to invalidate his testimony. In a recent American case, where a man was charged with murder, a dying declaration was admitted under the following circumstances: The wife of the deceased said that she saw her husband about an hour after he was shot. She nursed him continuously until he died a month later. When she reached him after he was shot he was in a serious condition, and told her that he would die that night. He called a lawyer, made his will, and gave directions as to the management of his business. He never afterwards expressed any hope of life, and continued to say that he was bound to die, although his wife did her best to encourage him. About ten days before he died he told her who shot him, and the circumstances of the shooting. It was decided that the declaration should be admitted, in spite of the evidence of his medical attendants to the effect that, although on the day when he was shot the deceased was in grave danger, his condition greatly improved afterwards.

THE SIGNIFICANCE OF FETAL MENSTRUATION.

It is well known that a red vaginal discharge is occasionally noted in the case of female newborn infants. Halban[1] believes this to be the visible sign of a fetal menstruation. He is of opinion that during the last months of pregnancy the same kind of changes are occurring in the organs of mother and female fetus. The mammary glands of the fetus after the eighth month show histological changes similar to those seen in the mother's breasts, and the uterus about the same time exhibits a distinct hypertrophy. Histologically, hyperaemia is recognizable, and the mucosa shows alterations analogous to those seen during menstruation in the adult. According to the strength of the reaction, all the stages from premenstrual hyperaemia up to subepithelial haemorrhages and the escape of blood into the uterine cavity can be recognized. The highest degree of the reaction leads to the genital haemorrhages of the newborn infant; there is absence of any evidence that these are due to pathological processes, such as infection. It may be thought that these fetal changes are due to active substances formed during pregnancy; in the mother's uterus they cause the mucosa to form into the decidual membranes; in the case of the fetal uterus they produce a weaker effort, and lead to changes like those in menstruation. Probably other active substances come from the placenta, and constitute its internal secretion, acting upon both mother and fetus. After birth both mother and child are shut off from the placenta, and therefore, according to Halban, both show the signs of puerperal involution; the involution of the infantile breasts and uterus takes about three weeks. It is stated that in the case of the male fetus these placental substances cause hypertrophy of the mammary glands, and even of the prostate, to be followed likewise by involutionary changes after birth. Besides causing this reaction in the generative organs of mother and fetus, these substances are regarded as acting in a toxic fashion, as shown by changes in the kidneys and blood of both the maternal and the fetal organism. If the toxic effect be extreme, eclampsia is believed to result. Halban's observations are most interesting and suggestive; it should be easy to confirm or to disprove them by the histological examination of the uterus and prostate gland of stillborn infants, but in the meantime some hesitation is justifiable before all the conclusions arrived at be accepted.

AMOEBIC DYSENTERY.

Cases of dysentery are now usually referred to two main types or groups—the bacterial and the amoebic. A very useful report, entitled "On the Cultivation and Etiologic Significance of Amoebas and the Treatment of Intestinal Amoebiasis (Amoebic Dysentery) in the Tropics,"[2] by Dr. W. E. Musgrave, M.D., and Mr. M. T. Clegg, of the Philippine Islands, will help to clear up some of the obscure points. The first part of the report deals with the cultivation of the amoeba, and the literature of the previous experiments performed on this rather difficult subject is well given. The authors corroborate and enlarge the work of previous observers; the general conclusion is that amoebae will not grow alone, but only in the presence of what are known as symbiotic bacteria, selectiveness for various species being particularly marked in some amoebae cultivated from the human intestines. The part of the report which deals with the etiological significance of those protozoal parasites is the most important from a purely medical point of view. It has long been held by many that the amoebas are harmless parasites or that some are pathogenic and others non-pathogenic. The authors strongly condemn this view, subjecting it to some very destructive criticism, and at the

[1] *Zentralbl. f. Gynäk.*, xxviii, 1270. October 29th, 1904.

[2] No. 18, October, 1904. Department of the Interior Bureau of Government Laboratories Biological Laboratory. Part I. Amoebas: Their Cultivation and Etiologic Significance, by W. E. Musgrave, M.D., and Moses T. Clegg. Part II. Treatment of Intestinal Amoebiasis (Amoebic Dysentery) in the Tropics, by W. E. Musgrave, M.D. Manila: In Bureau of Public Printing. 1904. (Demy 8vo, pp. 117.)

same time producing statistics from prisoners in a goal in Manila which are very striking. From these it would seem that unless cases are followed up after once finding amoebae in the stools, they cannot be declared to be harmless, and this opinion is doubtless correct. The experiments on monkeys and other animals appear to have been carefully and accurately carried out and are convincing. The chapter on the treatment of amoebic dysentery is not very striking. Ipecacuanha, a drug usually found to be of the greatest service in this form of dysentery, elsewhere is declared to be useless, and the rather impracticable method of large quinine enemas is recommended instead.

A SIGN OF DEATH.

Although premature burial is extremely rare, except perhaps on the battlefield, the possibility of such an occurrence cannot be denied. It is well known that owing to this possibility, remote as it is, many otherwise strong-minded persons have lived under the shadow of a great fear, and have in their wills directed payments to be made to physicians who should be willing to run the risk of homicide to prevent live burial. It may safely be said, however, that the horrors of the accident are imaginary rather than real. If a person in a state of trance were to be buried while life still persisted in a latent state, it is scarcely conceivable that the victim could awake; the unconsciousness of catalepsy would simply deepen until it became fixed in the dreamless sleep of death. The danger of premature burial is, of course, greatest in time of epidemic, when the disposal of the dead becomes a matter of urgency, and the risk of infection may conceivably cause undue haste in the verification of the fact of death. Many signs of death are set down in the books, but none of them, except the commencement of decomposition, furnishes a proof amounting to positive certitude. It may therefore be interesting to state that Dr. Icard has lately published[1] a test which he regards as absolutely trustworthy. After the injection of a solution of fluorescin deeply into the cellular tissue, if circulation still goes on, intense jaundice of the skin and mucous membranes follows the absorption of that substance, whilst the eye becomes green "like an emerald set in the orbit," to use the author's phrase. If the circulation has completely stopped nothing of the kind is seen. When, therefore, after some time has elapsed from the time of the injection, none of these phenomena of coloration are seen, it may safely be concluded that death has occurred. A return to life would be manifested by renewal of circulation, and this would automatically be followed by yellow staining of the skin and green coloration of the eye. In time of epidemic Dr. Icard thinks it would be expedient, at least two hours before a body is placed in the coffin, to make a subcutaneous injection of fluorescin. If the person is dead this causes no disfigurement; if he is alive only a transient discoloration is produced.

THE JAMAICA CYCLONE AND THE HEALTH OF THE ISLAND.

The Colonial Office Report on Jamaica just issued is unusually bulky, its extra size being chiefly due to the record of the cyclone of the 11th August, 1903, and the means taken to combat the distress resulting from it. We need not enter into these here, but it is interesting to note the effect that this tremendous hurricane produced upon the health statistics of the island. The general health conditions in the earlier months of the year appear to have been unusually good, and the season being dry there was very little illness, especially in the way of malaria. The heavy rainfall at the time of the cyclone and after it caused masses of leaves, the detritus of the storm, and all sorts of decaying matter to be swept into the streams and watercourses, and the consequent pollution of the water caused a large increase in dysentery and bowel complaints, which, with rheumatism and malaria, were very prevalent. The sickness began in September, and continued till February this year, and the death-rate of the island rose from 19.8 to 24.7 per 1,000. There were 5,183 cases of malaria, or 2,420 more than in the previous year; but the type of fever was not abnormally severe, and the rate of mortality did not increase. The returns of admissions to hospitals show an increase of more than 50 per cent., and of out-patients of 33 per cent. on the preceding year. Outside the hurricane-stricken districts, however, the health of the island generally was very good. It may be noted—though not, of course, as having any connexion with the foregoing—that there were 36 admissions to the leper hospital, bringing the number of inmates to the total of 118.

[1] *Ann. d'Hygiène Publique et de Méd. Lég.*, October, 1904.

THE PREVENTION OF YELLOW FEVER IN BRAZIL.

A translation issued by the Liverpool School of Tropical Medicine of a part of the report of the preliminary yellow fever expedition of the Hamburg Tropical School shows very clearly that the authorities in Rio Janeiro are alive to the fact that yellow fever is caused by mosquitos, and are determined to emulate the feat of the Americans in Cuba by stamping it out. Their antimosquito measures follow the American lines very closely. They include, for example, the disinfection of houses where cases have occurred by pyrethrum, the wiring of windows to prevent mosquitos getting in to bite patients suffering from the disease, and the organized employment of 2,000 men to exterminate the insects as far as possible throughout the town. One large source of mosquitos is found in the rain-water drains which form a vast network of pipes close under the surface of the streets; for these the Clayton apparatus comes in very handily. All outlets being covered by mosquito netting, the system is then divided into sections and the gas blown through, rats as well as mosquitos and other life being exterminated. It is to be hoped that this enlightened policy will bear fruit, and be another lesson to the world at large demonstrating how much can be done in mosquito extermination.

The meeting of the Pathological Society of London announced for next Tuesday, January 3rd, 1905, has been postponed.

A committee has been formed in Paris for the erection of a monument to the late M. Péan. The Chairman is M. Mézières, Member of the French Senate and of the Académie Française.

An international convention, providing that hospital ships in time of war shall be exempt from all dues and taxes imposed on vessels for the benefit of the state, has been signed at The Hague by most of the powers. It has not been signed by Great Britain—probably because no such dues are levied.

Dr. Norman Moore, Chairman of the Board of Advanced Medical Studies of the University of London and the representative of the Royal College of Physicians of London upon the General Medical Council, has been appointed a member of the Consultative Committee of the Board of Education, vice Professor Bertram C. A. Windle, M.D., F.R.S., who has resigned his membership on appointment as President of Queen's College, Cork.

CONTRACT MEDICAL PRACTICE.

Notice as to Districts in which Disputes Exist.

A notice as to places in which disputes exist between members of the medical profession and various organizations for providing contract practice will be found among the advertisements, and medical men who may be thinking of applying for appointments in connexion with clubs or other forms of contract practice are requested to refer to the advertisement on page 71.

Scotland.

Stirling District Asylum.

The thirty-fourth annual report of the Stirling District Lunacy Board contains, besides the usual statistical tables, matter of much interest in the reports of the Medical Superintendent, Dr. George M. Robertson, and the Commissioners in Lunacy, Drs. Macpherson and Fraser.

Alcohol and Insanity.

Dr. Robertson, in discussing the causation of insanity, gives the place of first importance to alcoholic intemperance. The difficulties in estimating the exact part played by alcohol is admitted, and their influence on the statistical tables ably treated, but he concludes that "in spite of all these difficulties and the errors of various kinds into which individuals may fall, the broad facts are substantiated that alcohol is the most important single factor in the production of insanity among men in this country, that we have lately experienced an enormous increase in the amount of alcoholic insanity, and that the average layman has a most inadequate conception of the mental injury that may be insidiously done by what he believes to be "drinking in moderation." A table, however, which accompanies this part of the report, setting forth the proportion of cases of alcoholic insanity—and by this it is evident are meant all cases in which alcohol was a distinct etiological factor, and not only those cases clinically separable as alcoholic in type—and their estimated percentage to the admissions, had male and female admissions been equal in number, shows that for the last decennium, alcoholic insanity has described a curve beginning at 13 3 per cent., rising during the year 1900-1 to 25 8 and falling steadily since then to the present figure of 13 2 per cent.

Boarding-out.

Another point of interest concerns the patients discharged as "unrecovered." During the last three years 203 patients who had so far improved as to be harmless and manageable were so discharged, the greater number being provided for by their natural guardians or "boarded-out." This method has been more extensively employed during the last three years than ever before, and the advantage both to the patients, to the ratepayers, and to the asylum are suitably commented upon by Dr. Robertson and the Commissioners.

Female Nurses for Male Patients.

A third point of interest concerns the nursing in the asylum. At the head of the whole nursing staff, nurses, and attendants, there is the matron. Under her there are assistant nurses in charge of both male and female wards, with the exception of the industrial block, where the patients are able-bodied men not in need of nursing. This system of female nursing of male patients receives the most favourable mention by the Commissioners, who say that the lay supervision is more reliable and that the influence of the nurses is productive of good results, both as to the welfare of the patients and the work done.

Statistics.

There were in the asylum on May 15th, 1903, 684 patients, and on May 14th, 1904, the same number, 684. There were 255 cases admitted during the year, of which 169 were "first attacks" of within twelve months' duration on admission. As to the probable causes in the admissions, moral causes were only assigned in 4. Alcohol was assigned as exciting cause in 39, that is, in 15.2 per cent. of the admissions; adolescence, senility, the climacteric, etc., in 56; general paralysis of the insane in 18; previous attacks in 29 and hereditary influences in 42, that is, in 16.4 per cent. of the admissions. Venereal disease is not specifically mentioned, but was probably included under general paralysis. Of the forms of mental disorder, mania was present in 61, melancholia in 99, dementia in 29, delusional insanity in 24, delirious insanity in 12, general paralysis in 19, stuperose insanity in 2, and congenital or infantile defect in 9. There were 89 patients discharged as recovered during the year, giving a percentage recovery-rate on admissions of 34.9. This is lower than the usual recovery rate of this institution, which in 1897 was 43.4 per cent., and rose in 1900 to 45 per cent, afterwards declining to the present figure, the diminution being partly due, Dr. Robertson says, to the decreasing alcoholic admissions. There were discharged as relieved 72, as not improved 2, and there were 92 deaths.

As is usual, the principal causes of death were phthisis (19) and general paralysis (18). There were also 18 deaths from heart disease, 5 from pneumonia, 14 from cerebro-spinal diseases, 6 from abdominal diseases, and 9 from general diseases, including one death from tuberculosis. The tuberculous death-rate was thus 21.7 per cent. of the total deaths from all causes. This high tuberculous death-rate is receiving due attention from the Board, who intend to erect a sanatorium for consumptive patients. The high general death-rate of this asylum (13 5 per cent.) is not due to any actual increase in the mortality of the patients, but is the result of comparing the deaths with the average numbers resident. Obviously, in an asylum like this, which drafts large numbers of its patients to the care of outside guardians, retaining acute and dangerous cases and those requiring hospital attention, the conditions are not comparable with asylums which, with an equal number of admissions, have a larger population. The margin of difference between this death-rate and those of other asylums is thus more apparent than real. The general health appears to have been good, and the Commissioners comment most favourably on the management of this asylum.

Ireland.

Down District Asylum, Downpatrick.

Statistics.

The number of patients in this asylum is in excess of the provided accommodation. The nominal limit of the asylum accommodation (621) was exceeded on December 31st, 1902, by 42. It was decided to erect additional blocks to accommodate 179 patients, and by this time these will be in occupation. During the year 1903, however, only the most pressing cases were admitted, 139 in number as against 184 the previous year. The patients numbered at the beginning of the year 640, and 663 on the last day of 1903. Of the admissions 115 were first admissions, 49 cases of mania, 60 of melancholia, and 10 cases of dementia, including 1 case of primary dementia. Of the probable causes of insanity in these, hereditary influences were ascertained in 46, previous attacks in 15, intemperance in drink in 10, moral causes in 13, and bodily diseases given as causing insanity in 27. There were 45 discharged as recovered during the year (a recovery rate of 32 4), 8 as relieved, and there were 63 deaths, a percentage death-rate on daily average number of 9.7. All the deaths were due to natural causes: 24 from heart disease, 11 from phthisis, and 11 from dysentery, the remainder being distributed over the usual causes. Both the Medical Superintendent and the Inspector of Lunacy, Sir George Plunkett O'Farrell, comment on the proportion of deaths from dysentery, which they say has long been endemic in this institution, and on its tendency to recrudesce. There appear to have been 39 cases of dysentery altogether, with 11 deaths.

Finance.

The report contains a reprint of a most interesting communication to the Asylums Conference held at Dublin in 1903, by Dr. Dolan, the Medical Superintendent, on the Asylum Budget and the fiscal side of lunacy administration. After examining the various sources of income for asylums in Ireland in detail, he suggests, among other things, (1) that an increase of capitation grant be made *pro rata* with the increase of lunacy, and also individually, and that in certain cases it be extended to the support of lunatics outside asylums; (2) an increased rebate on agricultural charges; (3) inducements for support from patient's relatives; (4) a more equitable distribution of charges between landlord and tenant; and (5) that a certain class of the insane should be provided for outside asylums.

The Value of an Eye.

The Recorder of Belfast on December 19th heard a case in which the compensation which should be assigned for the loss of an eye was the point at issue. The case may be worth noting though the point was not decided. The applicant, who was a fitter in the employment of the Midland Railway Company, was struck in the right eye by a piece of steel, which flew off a punch which he was using. In consequence of the injury the eye had to be removed. The accident happened on March 17th, and on September 28th the respondents stopped the payment of half his wages, which he had been receiving, on the ground that his incapacity for work had ceased. The witnesses agreed that the applicant's wage

earning capacity had been reduced by the accident, and Mr. Henry O'Neill, one of his counsel, stated that in France the law estimates that the loss of an eye reduces the wage-earning capacity by one-third. His honour, without deciding this point allowed the applicant half wages to the present time, stopping payment to enable him to get employment without prejudice to an application for a further order; and he added that any subsequent order would depend on the wages he might be able to earn.

Proposed Bacteria Beds in the Victoria Park, Belfast.

At a special meeting of the Belfast City Council, held on December 21st, a proposal was made and carried to amend Section xx of the Belfast Dock Act 1884, by repealing provisions prohibiting the use of any portion of the Victoria Park for any other purpose than a park, and to permit the use of a small piece of the ground for sewage purification works in connexion with the proposed Sydenham District drainage. The works would occupy only about 10 acres, and could be arranged not to absorb the whole sea front. At a meeting of the General Committees of the two wards most interested in the Victoria Park, held on December 23rd, considerable opposition was expressed to the scheme as interfering with the Victoria Park; doubt existed as to whether the bacteria beds would be offensive or not. Dr. King Kerr, the Alderman for Victoria Ward and Chairman of the Health Committee, said the matter had been rushed, as those in charge of the Sydenham drainage scheme had, owing to want of foresight, found themselves at the last moment without a proper outlet for the drainage. Finally a resolution was carried appointing a deputation to wait on the council and urge that the proposal be abandoned.

An Insanitary Town.

Mr. P. C. Cowan, M.Inst.C.E., Chief Engineering Inspector, Local Government Board, held an inquiry on December 19th regarding a petition praying for a provisional order constituting the town of Ballyclare an urban sanitary district. There was no opposition. The evidence went to show that the town was in a wretched sanitary condition and improvements urgently required. Dr. A. K. Stevenson, Medical Officer of the dispensary district and Medical Officer of Health, said that the principal defect was want of drainage, and that there was only one sewer. Dr. H. A. Logan, Chairman of the Town Commissioners, deposed that the sanitary condition was bad and required improvement. Other evidence was given and the inquiry terminated.

Irish Local Government Report, 1903-4.

The report for the year ending March 31st, 1904, has just been issued. The first thing that strikes the reader is the absence of that laudation of the local councils which in our comments upon the previous report we stated was not intended for home consumption, and was certainly not concurred in by the members of the profession unlucky enough to serve under these bodies.

Finance.

We observe that the expenses under the Medical Charities Acts have increased during the year under review by £8,000, of which sum just £150 represents increased salaries of Poor-law medical officers, while £3 500 has been saved in the cost of drugs, by so worrying the medical officer that he may order as few as possible. The sum of £3 345 additional was expended in the year upon remuneration of temporary medical officers, representing the extension of the annual holiday system. Vaccination fees, owing to the small-pox epidemic, increased by £3,700. It would appear that some 2,000 fewer tickets were issued for medical relief; but this is a most unreliable statistic, because dispensary medical officers have such multifarious clerical duties that they neglect to enter tickets in the relief registers; this is most unwise on their part, as the Local Government Board use it as a reason for refusing to augment their salaries by showing they have less to do.

Midwives.

Nearly £1,000 more has been expended upon district midwives, appointments which the Local Government Board is wisely pressing upon Boards of Guardians.

Lunatics.

We observe with regret that the number of dangerous lunatics certified—2,322—is practically the same as the previous year.

Boarded-out Children.

We must refer with appreciation to the reports of the inspectors of boarded-out children. These two ladies, Mrs. Dickie and Miss Kenny, have evidently entered into their disagreeable and disheartening duties with a whole-hearted desire to do their work faithfully and honestly, and how well they have done it is evidenced by the abuse that has been poured upon them with no niggard hand by the "guardians of the poor." These ladies have shown since their appointment how capable women are of discharging such duties; their vigilance in the cause of these poor waifs has been untiring. They had 2,184 children under their care, and the inspection, even once a year, of such a number scattered over the country far and near, must entail much physical exertion. Making allowance for Sundays and holidays it means an average of four visits daily for each inspectress; but we believe these ladies visit the children at least twice a year, so that the charge of laziness cannot be brought against them. Such ladies as inspectors of workhouses would be an incalculable blessing. The report shows that more than one-third of the pauper children are boarded out, which is very satisfactory as far as it goes.

Roads.

Though not strictly a professional matter, we are pleased to see that the Local Government Board has plucked up courage to admit that Irish roads are not the best in the world, because to the Irish rural practitioner the condition of the highways is only of secondary importance to his emoluments. In plain language, the Irish highways have been allowed to go to ruin by the rural and urban councils, and will cost many thousands of pounds of the ratepayers' money to restore, if they ever are restored.

In recent years the Local Government Board has required the hard-worked medical officer to take samples of drugs every quarter and send them for analysis, needless to say without any remuneration for this troublesome duty; 3 091 samples were so analyzed in 1903-4, of which number 2,234 were selected from a dozen drugs, a fact which dishonest contractors will note. Medical officers would be wise to make a wider selection if they wish to check roguery, which is unquestionably still largely prevalent.

Alcoholism and Pauperism.

These, we think, are the only matters in the report of special interest to the profession, but it is worth noting that the total poor-relief expenditure is just one-twelfth of the drink bill, and the figures have more than a casual relation to each other.

LITERARY NOTES.

Dr. G. T. Beatson, C.B., who is Chairman of the Council of the St. Andrews Ambulance Association, and a member of the British Central Red Cross Committee, has written a history of the Knights Hospitallers in Scotland and their Priory at Torphichen, which is published by Mr. James Hedderwick and Sons, of Glasgow. After sketching the origin of the Order of the Hospital of St. John of Jerusalem and the work of the Order in the Holy Land, he traces its history in Malta till its end in the surrender of that island to Napoleon in 1798. About 1100 a Province of the Order was established in London, and in 1124 a Settlement was made in Scotland. The Knights chose the west of Linlithgowshire for the place of their settlement, and they built a priory near "the picturesque village of Torphichen, which lies nestling on gently-undulating ground at the foot of a range of hills dividing it on the east from Bathgate and Linlithgow." In 1153 King David confirmed by charter the foundation of the Priory, and as long as the Order existed in Scotland it continued to have its head quarters at Torphichen. The Knights were ever mindful of the charitable origin of their Order, and Dr. Beatson has no doubt that at the gate of the Priory many were fed who would otherwise have starved, and that not only were the sick admitted and nursed back to health, but in times of war the wounded also. It is on record that Edward I., who was hurt by a kick from his horse on the night before the battle of Falkirk, was afterwards carefully tended in the Priory of Torphichen. Dr. Beatson's very interesting booklet is well written and contains a number of good illustrations.

To the *Revista de Medicina y Cirugia Practicas* of November 14th Dr. Felix Antiguedad Diez contributes a list of authors who have written on the medical topography of Spain. The

list is a long one, and shows that Spanish writers have shown a special predilection for the climatology, vital statistics, and epidemiology of their country.

The famous house, No. 3, The Grove, Highgate, where Samuel Taylor Coleridge lived in the household of Mr. James Gilman, surgeon, from 1816 to 1834, and where he died in July of the latter year, is, according to the *St. James's Gazette*, about to be pulled down. Coleridge put himself under Gilman's care in order that he might be cured of the opium habit. Gilman's treatment was only a partial success. Not many years ago a curious piece of evidence came to light which showed the pitiable depths to which the poet-philosopher descended when the drug craving was upon him. A Highgate curate, visiting an old labourer, discovered that he was using laudanum for rheumatism, and warned him of the risks he ran. "I know better, parson," retorted the old man, "my brother was doctor's boy to Mr. Gilman fifty years or more ago, and there was an old chap there called Colingrigs, or some such name, as Mr. Gilman thought he was acuring of drinking of laudanum, and my brother he used to fill a bottle with that stuff from Mr. Gilman's own bottles, and hand it to me, and I used to put it under my jacket and give it to old Colingrigs, and we did that for years and it never hurted him."

Dr. W. Moss Bristow (Liscard, Cheshire) writes:—

In your Literary Notes of October 29th you mention an article by M. F. Crozat, in which he contends that Molière advocated cold baths in fever. I have no means of seeing the article in question, but may I point out that in my edition of Molière (Bohn's) edited by C. H. Wall, there is a footnote to the verses you quote, saying that they are not Molière's, but are to be found in *Les Œuvres Galantes* de M. Cotin, Paris, 1663, that is nine years before *Les Femmes Savantes* was written. May I say briefly that I think the idea of the cold-water treatment far-fetched, as most of the baths taken at that period were warm spring baths, as, for instance, those tried by Montaigne during his tour through Germany and Italy? A warm spring bath is, to my mind, indicated in the verses.

We are obliged to our correspondent for his very interesting note, but we think he takes the claim put forward on behalf of Molière a trifle too seriously.

In the *Johns Hopkins Hospital Bulletin* for October, Dr. Francis R. Packard relates the history of some famous quacks. One of them is Valentine Greatrakes, an Irishman of the seventeenth century, who after a variegated career settled down in 1656 on his estate at Affane where he was a Justice of the Peace, and doubtless, like his brother magistrate Shallow, wrote himself "in any bill, warrant, quittance or obligation, *armigero*." In 1662 he awoke to the consciousness that he possessed a gift of healing and he began, like Dowie, to lay hands on persons who had the misfortune to suffer from scrofula or other diseases. Before long his proceedings attracted the attention of the authorities—it must be remembered that it was before the days of free trade in medicine—and the Bishop's Court at Lismore forbade him to practise. He disobeyed the injunction, however, and soon found favour with persons of rank who seem to be in every age predestined victims of quackery. In 1666 Lord Orrery brought him to England to treat Lady Conway, who suffered from chronic headaches. He did her no good, but that did not prevent his curing a number of her neighbours. Such notoriety did he acquire by these cures that one Stuble wrote an account of them in the form of a letter to no less a person than Robert Boyle, in which he said that "Mr. Greatrakes was possessed of some peculiar temperament, as his body was composed of some particular ferments, the effluvia whereof being introduced, sometimes by a light, sometimes by a violent friction, restore the temperament of the debilitated parts, regenerate the blood, and dissipate the heterogeneous ferments out of the bodies of the diseases, by the eyes, nose, mouth, hands, and feet." Boyle, who was at first disposed to scoff, was converted by seeing the cure wrought as he fancied before his eyes in several cases. Queen Anne knighted a tailor named Reade for treating her for an affection of the eyes, and made a shoemaker named Grant her oculist-in-ordinary. The most resplendent figure in the history of quack oculists, however, is the Chevalier John Taylor, "Ophthalmiator, Pontifical, Imperial and Royal," who treated Pope Benedict XIV, Augustus III, King of Poland, Frederick V, King of Denmark and Norway, and Frederick Adolphus, King of Sweden. Joshua Ward, called "Spot Ward" from a blemish on his face, was another eighteenth-century quack, who cured all diseases with oil of vitriol. George II provided him with a dispensary in Whitehall where he treated the poor at the expense of the King. In a letter written in 1748, Lady Mary Wortley Montague says:

I find that tar water has succeeded to Ward's drops; and it is possible that some other form of quackery has by this time taken place of that. The English are more than any other nation infatuated by the prospect of universal medicine.

John Bull, for all his boasted common sense and hatred of humbug, is still more quack-ridden than any member of the human family except his 'cute cousin Jonathan. Among other quacks mentioned by Dr. Packard are St. John Long and Elisha Perkins, the American inventor of the metallic "tractors" by which he professed to be able to draw out of the system "rheumatism, gouty affections, pleurisies, inflammations in the eyes, erysipelas, and tetters; violent spasmodic convulsions, as epileptic fits; the locked jaw; the pain and swelling attending contusions; inflammatory tumours; the violent pains occasioned by a recent sprain; the painful effects of a burn or scald; pains in the head, teeth, ears, breast, side, back, and limbs;" and, indeed, most kinds of painful topical affections.

Dr. Lluria, a well-known physician of Madrid, has in the press a work entitled *Superorganic Evolution and the Social Question*. Professor Ramon y Cajal contributes an introduction.

The *Statistical Report of the Health of the Navy*, recently issued, contains in addition to the returns comprised under that title an Appendix occupying about half the Blue Book. Fleet Surgeon Bassett-Smith contributes a paper entitled Lessons that can be Learnt from the Examination of the Blood as a Means of Diagnosis, and a note on the Distribution and Etiology of Mediterranean Fever. Surgeon R. T. Gilmour reports a case in which the micrococcus melitensis was isolated from the synovial fluid of a knee-joint in a patient suffering from Mediterranean fever. Fleet Surgeon W. W. Pryn relates his experience of infectious diseases during the three years he has been in medical charge of Greenwich Hospital School and the Royal Naval College, Greenwich; Fleet Surgeon H. F. D. Stephens describes a case of hydatid cyst of the liver; Staff Surgeon G. T. Bishop, "having lately helped or performed about 100 operations for the radical cure of inguinal hernia," discusses the operation most appropriate for patients in the naval service. Staff Surgeon A. Gaskell contributes a case under the heading, A New and Important Fact in Ligature of the Internal Jugular Vein in Septic Thrombosis of the Lateral Sinus; the case is published for the purpose of placing on record the fact that it is possible for a patient to recover even when a foul "suppurating" thrombus exists in the lateral sinus continuous with a thrombus in the internal jugular vein, that vein being ligatured at a thrombosed spot—that is to say, with thrombus still present on the proximal side of the ligature. Staff Surgeon E. J. Finch reports a case in which syphilis was conveyed by tattooing. Staff Surgeon C. H. J. Robinson writes on various points relating to yellow fever; and Surgeon C. R. Nicholson contributes notes on an epidemic of abortive enteric fever.

From a report presented to the French Senate some months ago it appears that the position of medical officers in the French navy at the beginning of the eighteenth century was not a very exalted one. The widow of a surgeon of the port of Rochefort, who sought to have her son admitted to the naval guards, was informed by the Minister—M. de Pontchartrain, who held that office from 1699 to 1715—that he could not grant such a favour to the son of a surgeon. About the same time a surgeon named Viaud, practising in the same seaport, having been moved to address to the Minister some verses in praise of the King, incurred the wrath of the authorities for his presumption. The unfortunate poet had to promise not to offend further in the same way, either in French or in Latin. The Marquis de Conflans, an ensign in the navy, who married the widow of a surgeon, had an intimation of the royal displeasure conveyed to him, while the port authorities were severely reprimanded. The Minister of Marine further ordered that the priest who performed the marriage ceremony should be denounced to his ecclesiastical superiors. But perhaps the most striking proof of the contempt with which the surgeons were regarded by the naval authorities is the fact that at Brest when a soldier had been condemned to the galleys the executive officers held that it was the duty of the port surgeons to cut the convict's hair. It is pleasant to read that the surgeons refused to render this ignominious service, but the mere fact that it was attempted to impose such a duty upon them shows the official view of their position.

NOVA ET VETERA.

THE WILL OF SIR WILLIAM BROWNE, M.D. (1692—1774).

The following transcript of the curious will of a somewhat remarkable man may interest readers of the British Medical Journal. Since making this copy from the will registers of the Prerogative Court of Canterbury, I have referred to the original will and codicil in the testator's own bold and legible handwriting. The official copyist of the registry omitted, *more suo*, nearly all marks of punctuation, besides occasionally changing the spelling, and everywhere substituting double minuscule *f's* for the capital letter used by the writer of the will. In the transcript I have restored, so far as I could, the original punctuation and spelling; and the several quotations from Horace, Vergil, Juvenal and Terence, with one or two phrases from the Greek, which are so distinctive of this will, are reinserted in capitals, as they appear in the original, instead of in the badly-written and rather illegible cursive characters used by the copyist, who seems to have had a difficulty with interpolations so unusual in the documents to which he was accustomed. Therefore the following copy is *verbatim*, and nearly, if not quite, *literatim*.

The will mirrors the man, who was well read, successful, and a most estimable character, though evidently rather vain and fussy. He was educated at Peterhouse, Cambridge, and after graduating B.A., M.A., and M.D., and practising medicine for many years at Lynn, became a Fellow, and subsequently President, of the College of Physicians of London. This office he held in 1765-6. He was a Fellow of the Royal Society, and was knighted in 1748. The Browne medals at Cambridge were of his foundation. His daughter's husband was brother of the antiquary Martin Folkes, President of the Royal Society in 1741. Various amusing stories are told of Sir William Browne, illustrative of his vanity and harmless eccentricities. At one period he was caricatured by Foote, the actor, but he does not appear to have objected in the least.[1] I am informed by my son, Mr. Cuthbert E. A. Clayton, that there are in the possession of the Royal Medical and Chirurgical Society three portraits of Sir William Browne, together with two of his works, one of the latter containing an interesting MS. note, possibly written by Browne himself.

An error occurs in the will, and is copied in the register. Sir W. Browne was President of the College of Physicians in 1765-6, and died in 1774; but in his directions concerning the inscriptions on the Gold Medals, by a *lapsus calami* he gives the date MDCCLXXVI, which of course should be MDCCLXVI.

THE LAST WILL

of Sir William Browne, Knt., M.D., of Queen Square, in the Parish of St. George the Martyr, Middlesex. My Soul, DIVINAE PARTICVLAM AVRAE, under the deepest sense of Duty and Gratitude, for a plentiful Possession of the Blessings, and merciful Praeservation from the Accidents of this Life, I most devoutly Resign into the hand of Our Almighty and Almerciful Creator, most humbly hoping for a Future Life of Felicity and Immortality, through the Merits and Mediation of Jesus Christ, his beloved Son, Our Gracious Saviour. Under whose Banner, NIL DESPERANDVM EST CHRISTO DVCE, ET AVSPICE CHRISTO. EN TOUTO NIKH. Whose Revelation, however incomprehensible, in its plan and Execution, is demonstrable in its End and Intention to make Men Virtuous and happy: which must therefore necessarily build Christian Faith upon its onely Foundation Reason. Detestable are all Attempts to set these two at Variance: on the one side by certain Minute Philosophers, absurdly assuming the Name of Free thinkers, and yet denying the Existence of Liberty itself, who set up Reason in Opposition to Faith: on the Other Side, by certain Enthusiastic Divines, as absurdly claiming the Character of Just-reasoners, and yet denying the Jurisdiction of Reason itself, who set up Faith in Opposition to Reason. Both parties, how different soever in principle and Design, concurring in Consequence and Effect to sap the Foundation of Christianity; to Cancel our Divine Magna Charta; and to rob us of Our Sheet-Anchor of Security, with regard to the Evils of This Life, and of Hope, with regard to the Injoyments of a Life Aeternal.

My Body, MORS SOLA FATETVR QVANTVLA SINT 'OMINVM CORPVSCVLA, on signs of Putrefaction, I direct to be Deposited in the Bosom of my Mother Earth, close by that of Dame Mary, my Wife for Forty Five years, in the most private manner, without Pall Bearers, Escutcheons, or Equestrian Ornaments, or any Attendants, except my Men-Servants: that my Funeral may neither be an Object of Entertainment to Spectators and Strangers by Attracting their Observation, nor of Concern to Friends and Relations, by requesting their Attendance. On my Coffin, when in the Grave, I desire may be deposited in its Leather Case or Coffin my Pocket Elzivir Horace, COMES VIAE, VITAEQVE DVLCIS ET VTILIS, worn out with, and by me. Having erected my own and Ladys Monuments in Hillington Chancel I appoint a Marble Monument to be Erected for me, in Westminster Abbey, (where I designed to have been interred if I had died first,) according to my Draught, Inscription, and Directions left for this purpose. I desire it may be placed as near that of my Master Doctor Mead, MEDICORVM FACILE PRINCIPIS, as any Vacant Arch may admit, otherwise in the Poets Corner over against that of Mr. Prior. Monuments, furnishing a MEMENTO VIVERE, as well as, MEMENTO MORI, deserve to be regarded, not as Insignificant and lying Memorials of the Dead, but as beneficent and truth-telling Lectures to the Living: the most Mendacious of them all being a Panegyric on Virtue, and Satire on Vice, and consequently perpetuating their proper Distinction. VIRTVTEM ET VIVOS SPERNIT, QVI NON HABET VRNAM.

My Estate with which God hath been pleased most bountifully to bless me, far beyond my Wants and Expectations, even up to a Rental of Eleven Hundred Pounds a Year, ET AVITVM APTO CVM LARE FVNDVM, ET PROPRIO MARTE PARTVM, I dispose of in manner following. I devise all my Manors, Messuages, Lands, Tenements and Hereditaments, situate in Runcton-Holme, Wallington, Thorpland, Stow-bardolph, Wimbotsham, Downham, Bexwell, Denver, Hilgay, Wigenhall, St. Peter, Tilney All Saints and St. Lawrence, Islington, Terrington St. Clement and St. John, Walsoken, Clenchwharton, West Lynn, North Lynn, South Lynn, Kings Lynn, Gaywood, Bawsey and Grimston in the County of Norfolk, Freehold, Copyhold, and Leasehold, in Possession, Reversion, and Remainder. (Subject as well as my Personalty and Stock in the Funds, to the Payment of my Debts, Legacies, Funeral Charges, and Monument; and subject to a Rent-Charge of One Hundred and Fifty Pounds a year, which I devise to be paid half-yearly from my Decease, clear of Taxes and Deductions, to my Grandson, Martin Folkes, Esq, during the Life of his Father. And I give him for the same Term, the Use of my Dwelling House, Coach House, and Stable in the Parish of St. George the Martyr, and Use of my Plate, Linnen, House-hold-Furniture, Chariot, Horses, and Stable-Furniture, (the absolute property whereof is hereinafter given,) and subject to a perpetual Rent-Charge of Twenty Guineas a year, which I devise to be paid yearly from my Decease, clear of Taxes and Disbursements, to the Chancelour, Masters, and Scholars, of the University of Cambridge, and their Successors, In Trust for founding a Classic Scholarship: by electing the best Classic Scholar, who shall offer himself for Examination within a Year from his Matriculation, public notice being given by the Vice-Chancellor a Month before such Election. I will that my Scholar, so to be elected, shall enjoy the Rent-Charge, with Arrears which may happen by Vacancy, for Seven Years, on these Conditions, that he shall Admit himself at Peterhouse, and reside there every intire Term, during his Under-Graduate-ship: that he shall behave well, Studiously, and religiously, and give up to the Fellows Table every Sunday a Copy of Greek, or Latin Verses. That he shall go to Lectures with the Mathematic Professor for Three Years, being sensible from depending on my own sole strength how much LABOR IMPROBVS may be saved by such Assistance: That he shall regularly and reputably perform all his College and University Exercises, an Act, first, second, and third Opponencies, in the Sophs-Schools, and take the Degrees of Batchelor and Master of Arts: and subject to a Rent-Charge of Twenty Pounds a Year, which I devise to be paid Quarterly, from my decease, clear of Taxes and Deductions, to my long-faithful Servant, Elizabeth Ashley, for life, to her sole and separate Use: and subject to a Rent-Charge of Fifty Pounds a year, which I devise to be paid Quarterly, from my Decease, clear of Taxes and Deductions, to my long-faithful Servant Alice Sigley, for life, to her sole and separate Use: and Subject to a Rent-Chage of Ten-Pounds a Year, which I devise to be paid, Quarterly from my decease, clear of Taxes and Deductions, to my servant Mary Dunn, Sister of Alice Sigley, for life, to her sole and separate

[1] See D.N.B. VII, 75; also Munk, *Roll of the Royal College of Physicians of London*, 1878.

use: and Subject to a Rent-Charge of Ten Pounds a Year, which I devise to be paid Quarterly, from my Decease, clear of Taxes and Deductions, to my late Servant Thomas Mott for Life:) To my Friends Charles Pepys, Esq., of Imington, in the County of Cambridge, Thomas Western, Esq., of Abington, in the same County, and Maximilian Western, Esq., of Cockthorp in the County of Oxford, their Heirs, Executors, and Administrators, IN TRUST, for preserving Contingent Remainders, and for the Uses following. That is, after my Decease to the use of my Daughter Mary, wife of William Folkes, Esq., of Hillington, in the County of Norfolk, for Life; after her Decease, to the Use of William Folkes, for life; after his Decease, to the Use of my Grandson for Life, without Impeachment for Waste by either of the three, and with power to them to grant Leases not Exceeding Twenty One Years, and for the last to Settle in Jointure or Marriage, in the proportion of One Hundred Pounds a Year Rent for fifteen Hundred Pounds Fortune in Money or Value: after his Decease, to the Use of his Son or Sons, whom he shall have Appointed by Deed or Will, and the Heirs of their Bodies respectively, and for want of such Appointment, of his Son and Sons Successively, and Heirs of their Bodies; and for want of Sons, to the use of such Daughter or Daughters, whom he shall have so Appointed, and Heirs of their Bodies, and for want of such Appointment, of his Daughter and Daughters Successively & Heirs of their Bodies; and for want of Daughters, to the Use of the Heirs of my Body, and for want of such Issue, QVOD AVERTAT D. O. M. it is my most Melancholy Will to Devise All my said Manors, Messuages, Lands, Tenements, and Hereditaments to the Chancellor, Master, and Scholars of the University of Cambridge, and their Successors, IN TRUST for Founding two Physic Fellowships: HOMINES AD DEOS NVLLA RE PROPIVS ACCEDVNT, QVAM SALVTEM HOMINIBVS DANDO. The Candidates to be Batchelors of Arts, between Four and Seven Years standing, and strictly examined in Physic, and general Learning, by All the Electors, whom I appoint to be, not Ministers of State, but the Vice-Chancellor, Master of Peterhouse, Regius Professor of Physic, Doctors of Physic resident in the University, the Praesident and three Senior Elects of the College of Physicians, London, all for the time being: by the Majority of whose Suffrages in Person, or in Writing, on a Day to be named, with public Notice One Month before, by the Vice-Chancellor, all Elections shall be made. The Vice Chancellor to decide, in Case of equal Suffrages. I trust to the Conscience of each Elector, and Adjure him most solemnly, that his Rule be DETVR DIGNIORI. My Fellows residing in Peterhouse for at least three months together in each of the first five Years; shall injoy their Fellowships Ten Years: and shall attend Courses of Anatomy, Botany, Chemistry, and Materia Medica, and the Practice of Physic in St. Thomas's, or St. Bartholomew's Hospital for two years at London: and shall regularly take the Degree of Doctor, by keeping two Acts and Opponencies, on forfeiture of their respective Fellowship for Non-Performance of any one of these Directions. They shall not go out of the Kingdom: as I am certain, that by the infinitely Superior Public Libraries, Regulations, Studies, and Disputations of our two Universities, over all others, and the much more rational and simple Practice of Physic in England, than Elsewhere, (and particularly better suited to an English Constitution, as each Nation has peculiar Diseases from its Climate and Customs.) far more excellent Scholars and Physicians must always be formed there, than any where else upon the Globe. Therefore I desire that mine may be called, KAT' EXOXHN. Non traveling Physic Fellows. The Rents and Profits of my Estates shall be aequally divided between my Fellows, by half Yearly Payments on the first Tuesdays of January, and July in each year, so far as to Three Hundred Pounds a Year to each. All Overplus beyond that shall be distributed by the Vice Chancellor, at every commencement, in Gold Medals of Five Guineas Value, (to be Struck by a like Dye to that hereinafter mentioned,) to such Batchelors of Arts, and Undergraduates, who shall deliver to Him the best Performances in Verse and Prose, and in Greek, Latin, or English, on Subjects to be published by Him in January before. All which Performances shall be fairly written, dated, and subscribed by the Authors in a Book, to be laid upon the Register's Table, at every Commencement, for publick Inspection. The Annual Account of the Rents and Profits of my Devised Estates, fairly entred in a Book, shall also be laid on the Register's Table, for the same purpose. I Appoint my Daughter, Son in Law, and Grandson Executors of my Will, and give them Fifty Guineas each for Mourning. I give Rings to them, to Mr. Folkes's four Daughters and Husbands, to my Friend Captain Wilson, Mrs. Hudson and to my Trustees, to Mrs Spelman, Mrs. Pepys, and Miss Spelman, to have this Motto, MEMENTO VIVERE, the Name and Date to be on the inside. I devise to my Executors my Lands and Tenements in Marham, Norfolk, and in Welney and Littleport, Cambridgeshire, Freehold and Copyhold, now let for twenty two, but worth Thirty Pounds a year, to be sold, worth above Six Hundred Pounds, and the Money aequally divided among the Sons of my late Kinsman Richard Browne, Custome-House Officer, who shall be living, and the Representatives of them who shall be dead: Provided the Eldest Son shall surrender the Copyhold to the Use of the Purchasor and his heirs, (his Father having been [sic] admitted, by a Declaration of Trust, that it was to the Use of me and my Heirs.) but if he shall refuse to do this, then he shall be compelled to surrender the same to my Heir, who shall surrender the same to the Purchasor and his Heirs, and Divide the Money equally among the other Sons and their Representatives, excluding the Eldest Son from any Share at all, for such refusal. But I devise my Estates to the Use of my Daughter, and of my Son in Law, and of my Grandson, for their Lives, on these Conditions onely, That they, or some of them, who can perform the same, shall Sufficiently settle my Copy-hold Lands and Tenements to the Uses of my Will, which I have either not Surrendered, or not Sufficiently Settled to those Uses, and if they neglect or refuse to do this, then my Trustees shall hold all such Copyhold Praemises to Charitable Uses, and Divide the Rents aequally for setting up Young Men in Trade, and in portioning Young Maids in Marriage. That they or any of them, who can perform the same shall not bar my Reversion of in Fee of the Estates I settled on my Daughter's Marriage, or if they have so done, that the same Estates shall be settled to the Uses of my Will. That my Grandson, his Sons and Daughters and their Husbands, while in Possession of my Estates, shall take and write my Surname before their own, and quarter my arms, And on any of them failing in the Performance of any of the said Conditions, my Trustees shall hold my Estates, for the life of each Person so failing, to the Use of the Chancelor, Masters, and Scholars of the University of Cambridge, to distribute the Rents and Profits in such Gold Medals, in such manner, and for such purpose as before mentioned. I direct my Executors to procure a Die to be Engraved, proper to Strike Medals of Gold of Five Guineas Value. The obverse to be an Imitation of my Marble Medallion Bust, the Motto, ESSE ET VIDERI. On the Exergue, in two lines, GVLIELMVS BROWNE, EQVES | NAT. III. NON. IAN. A.I. MDCXCII. On the Reverse, Apollo, radiated seated on An Advanced Throne, resting his Lyre on his left Knee with his left hand, and extending his Right hand with a Laurel-wreath over the head of a Scholar, with a Gown and band, kneeling on the Steps, and praesenting a Scroll in his Right hand, and holding down his Square Cap with his left hand. The Motto, SVNT SVA PRAEMIA LAVDI. On the Exergue, in two Lines, ELECTVS COLL. MED. LOND. | PRAESES. A.S. MDCCLX[X]VI. With this shall be struck Two Gold Medals of Five Guineas Value, and sent to the Vice Chancellor of Cambridge annually in the beginning of January, to be given by Him, at the following Commencement, to Two Under-graduates: one of whom shall Deliver to Him in June before, the best Greek Ode, in imitation of Sappho; the other the best Latin Ode in imitation of Horace, on a Subject to be appointed by Him, in January before. Which Odes shall be fairly written, dated, and subscribed by the Authors, in a Book, to be laid on the Register's Table, for public Inspection, at the Commencement. And I charge my Estates for the perpetual Performance of this annual bequest. I give to the Praesident and College or Commonalty of the Faculty of Physic, London, Two Hundred and Fifty Pounds, In Trust, for Founding a Latin Medical Lecture, to be read every Year on three Successive Days, in their Theatre, Notice being given three Days before in the Newspapers, by one of the twelve junior Fellows, to be Appointed by the Praesident and Senior Elect, on a Subject of his own Choice: for which he shall be paid by the College the clear Sum of Ten Pounds. And in every Year, when the Lecture shall not be read, that Sum shall be paid by the College to the Society for Promoting Christian Knowledge in Hatton Garden, of which I have long been a Member, or to the Society for propagating the Gospel in Foreign parts, at their Choice. I give my Daughter All my Personal Estate, Money in the Funds, Plate, Jewels, Pictures, Linnen, Household-Furniture, Chariot, Horses & Moveables, except such as herein specifically given. I give my Grandson

my Diamond Rings, Diamond Buckle, and Stone Imitation of it, Gold Watch & Chain, and Seals, and my Gold Crook-headed Hickary Stick, and all my Books and Papers, except such as my Daughter shall chuse, and those having her Maiden Arms, Desiring him to continue them in their four Classes, and to charge his Successors so to continue them. The remaining Pieces, which I published, I desire he will give amongst Friends, and dispose of as he pleases. I give Alice Sigley the Furniture of my fore Parlour, except Pictures, and Marble Table, and Bust, and also of my two Pair of Stairs Blue Bed-chamber, together with my Leather bottom-Chairs, and three smaller claw-Tables, and the Furniture with the Clock of my Kitchin and back Kitchin. I give her Sister the Furniture of my two pair of Stairs Green Bed-Chamber, and Servants Garret. And I give each of them a complete Set of China Coffee and Tea things with six Silver Tea Spoons & a pair of Tongs. I give all my Servants a Year's Wages, that is, to my House-keeper Ten Pounds, to my Cook Seven Pounds, to my Coach-man Fourteen Pounds, to my Footman Seven Pounds. I give Ten Guineas to be distributed among twenty poor Widows of the Parish of St. George the Martyr, not receiving the Parish Relief* In Witness whereof, I have to this my Will contained in three Sheets of Paper, all written with my own Hand, set my hand and Seal on this Eleventh Day of February in the Year of Our Lord One Thousand Seven hundred and Seventy two

EPITAPHII DISTICHON PENTAMETRVM.
HOMO, HVMANI A SE ALIENVM NIL PVTANS! } W. Browne.
PATRIA, O! PERPETVA ESTO ET LIBERA!

Signed, Sealed, Published, and Declared by the Testator to be his last Will, in Our praesence, and Witnessed by us, in his praesence, the Interlineations, and Addition, to which an asterisc refers, being first made. Charlotte Schaw—Elizabeth Schaw—Charlotte Schaw Junr.

CODICIL.

I Sir William Browne of Queen Square in the Parish of St. George the Martyr, and County of Middlesex make this Codicill to my last Will, in manner following. I devise the Moiety of Two Leases of Lands, lying in Runcton Holme, and in Wigenhall and Elsewhere in the County of Norfolk, holden under the Master and Fellows of Gonville and Caius College in the University of Cambridge, which I lately Purchased of the Assignee of Robert Harvey, a Bankrupt, to my Friends and Trustees in my Will named, In Trust to renew the same from time to time in their Names, out of the Rents and Profits thereof, and to permit my Grandson Martin Folkes, of Hillington, in the County of Norfolk, Esq., to receive the rest of the Rents and Profits thereof for his life, and after his decease, to permit his Son and Sons, whom he shall have Appointed by Deed or Will, and his and their Executors and Administrators, and for want of such Appointment his first, second, and every other Son Successively, and his Executors and Administrators, to receive the rest of the Rents and Profits thereof, and for want of Sons, to permit his Daughter and Daughters, whom he shall have appointed by Deed or Will, and her and their Executors and Administrators, and for want of such appointment, his Daughter and Daughters Successively, and her and their Executors and Administrators, to receive the rest of the Rents and Profits thereof, and for want of Daughters I will that my Trustees shall Assign over the Moiety of my two Leases to the Chancellor, Masters, and Scholars of the University of Cambridge. In Trust, for the same Uses, to which I have Appointed my other Estates, that I have devised to them in my Will. By Recommendation of Doctor Cooke, Vice-Chancellor of the University of Cambridge, I will that a Third Gold Medal of like kind with those two in my Will mentioned, shall be sent by my executor annually, with those Two, to the Vice-Chancellor of that University for the time being, to be given by him to the Undergraduate, who shall produce the best Greek Epigramm after the Model of Anthologia and the best Latin Epigramm, after the Model of Martial, on a Subject of his appointing, to be given all Three on the Commencement Day. I Charge my Estates also with this third Medal for ever. I will that my Executor shall cause a Marble Monument to be erected for me in Westmr. Abbey, according to the Draught No. III, left by me for that purpose, with the Inscriptions I have directed for it. The Arch on the West Side of the East Door leading into the Cloisters, whereon is a small Oval Bust, which it seems may be put up on the Vacancy over the Arch, is the place I appoint for it. I desire my Executor to shew the Draught first to Mr. Wilton, in Portland Street, and then to Mr. Moore in Berners-Street, and whose Proposals he most approves, to prefer him to execute it. I bequeath to my Housekeeper Alice Sigley, for her very long and faithfull Service, from her Age of Fifteen Years, to her Lady, to my Daughter, and to myself, a Gold Mourning Ring, and all my Household Furniture, being grown Old-fashioned and useless to my Grandson, with my Household and Wearing Linnen, and Cloaths, except that my worst Suit shall be given to my Footman, and my Slippers and all my Shoes to my Coachman. I give her also all my China, except the Furniture of my Dining Room Chimney Piece, and Eleven Dishes and Covers, with the Plates to them belonging, and the curious Red China Tea-Pot with Silver Spout, and the Cups and Saucers with a Butterfly on their bottoms, and beautiful Basons, which as they were remarkable Favourites of his Mother and Grandmother, I desire my Grandson will keep, and also set a high Value on them. And as I know it will be the greatest gratification to my Housekeeper, to have the Custody during her life of the Pictures of her Lady, and Father, and of my Daughter, and of myself, which all four hang in my Dining Room, I Desire that she may have this gratification from my Executor. Lastly I will that my three Favourite Coach-Horses, and my Daughters Favourite Clara shall be taken Care of, and Indulgently maintained by my Executor, during their respective Lives. In Witness whereof, I have to this my Codicil set my hand and Seal, this Twenty First day of July, in the Year of Our Lord 1773. W. Browne. Signed, Sealed, Published, and declared to be a Codicil to his last Will, by the Testator in Our Presence, and Attested by us, in his Presence. Witness Charlotte Schaw—Elizabeth Schaw—Charlotte Schaw, Junr.

This Will was Proved at London with a Codicil the twelfth day of April in the Year of Our Lord One thousand Seven hundred and Seventy four before the Worshipful Andrew Cottee Ducarel Doctor of Laws Surrogate of the Right Worshipful Sir George Hay Knight Doctor of Laws Master Keeper or Commissary of the Prerogative Court of Canterbury lawfully constituted by the Oath of Martin Folkes Esquire the Grandson of the Deceased and Surviving Executor named in the said Will to whom Administration was granted of all and singular the Goods Chattels and Credits of the said Deceased having been first Sworn duly to Administer.

Edwy G. Clayton.

CENTRAL MIDWIVES BOARD.

A meeting of the Central Midwives Board was held on December 22nd, at 6, Suffolk Street, Pall Mall, with Dr. F. H. Champneys in the chair.

Scheme of Examinations.

A letter was received from the Privy Council with reference to the scheme of examinations as submitted by the Central Midwives Board for approval. The Privy Council considered that the Examiners appointed by the Central Midwives Board should be duly qualified medical practitioners. The Central Midwives Board altered the scheme of examinations in this respect and also accepted the intimation of the Privy Council that it should be optional to the Examiners when they thought fit, with the consent of the Board, to employ for certain parts of the examinations properly qualified women who were not registered medical practitioners, the examiners paying these women themselves. The date of the first examination, which was to have been held in July, 1905, was altered to June, 1905, and it was arranged that after that date the examinations shall be held three times a year or oftener if necessary. The scheme of examinations as amended will be submitted again to the Privy Council for approval.

Institutions for Training Pupil Midwives.

Letters were received from Mrs. Wallace Bruce and from Dr. Florence Fleetwood-Taylor, asking the Board to formulate conditions in compliance with which it would be prepared to approve institutions for the purpose of training pupil midwives under the Board's rules. After some discussion the Secretary was directed to reply that the Board did not see its way to formulate the conditions referred to in the letters.

An Application for Certificate Postponed.

A letter was read from a medical officer of health reporting certain circumstances about a woman who had applied for the certificate of the Central Midwives Board. It was inferred from the report that the woman whose conduct was in question

had not been afforded an opportunity for explanation; the consideration of the application was therefore postponed.

Charge of Intoxication.

A letter was received from a local supervising authority in the provinces containing a charge of intoxication against a midwife when in charge of a patient; depositions were read in support of the charge. Mr. Parker Young observed that what the Board had heard amounted only to an *ex parte* statement, and it was decided that the local supervising authority be asked to investigate the charge, and should a prima facie case be established to report the same to the Board.

A Certified Midwife Suspended from Practice.

A letter was received from Dr. M. Young, Medical Officer of Health of Stockport, reporting the suspension from practice of a certified midwife on account of her connexion with a case of puerperal fever. It was decided that a letter should be sent to the midwife reprimanding her for her breach of the rules of the Board.

Private and Confidential Communications.

A letter from a registered medical practitioner as to the character and competence of a certified midwife was reported to the Board as having been sent marked "private and confidential." The Board decided that no communications to the Board marked private and confidential should be considered.

Notification by Midwife of Stillbirth or Death.

A letter was read from Dr. Sargeant, medical officer of health, Lancashire, as to the action to be taken by local supervising authorities on receipt of notification by a midwife of a stillbirth or death under Rule E 18. It was agreed that an answer should be sent recommending that an investigation should take place if it was considered necessary.

Number of Women on the Roll.

After consideration of applications for certificates, the names of 938 women were passed under Section 11 of the Act, and ordered for entry on the roll. The following table shows the numbers of the various qualifications at present appearing on the roll:

Royal College of Physicians of Ireland ...	5
Obstetrical Society of London	3,787
Rotunda Hospital	189
Coombe Hospital	54
Queen Charlotte's Hospital	228
Liverpool Lying-in Hospital	153
British Lying-in Hospital	5
Glasgow Maternity Hospital	136
St. Mary's Hospital, Manchester	140
Manchester Maternity Hospital	27
City of London Lying-in Hospital ...	62
Royal Maternity Hospital, Edinburgh ...	41
Salvation Army Maternity Hospital ...	17
National Maternity Hospital, Dublin ...	12
Limerick Lying-in Hospital	6
Cork Lying-in Hospital	7
Eden Hospital, Calcutta	2
Women in bona-fide practice, July, 1901 ...	6,605
Total enrolled...	...11,476

ASSOCIATION NOTICES.

NOTICE OF QUARTERLY MEETINGS OF COUNCIL FOR 1905.

MEETINGS of the Council will be held on Wednesdays, January 18th, April 19th, July 5th and October 18th.

The January meeting of the Council, by kind permission of the Metropolitan Asylums Board, will be held in their Board Room at 2 o'clock in the afternoon of Wednesday, January 18th. The offices of the Metropolitan Asylums Board are situated on the Victoria Embankment, at the corner of Carmelite Street and near to Blackfriars Bridge.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished on application to the General Secretary of the Association, 429, Strand.

GUY ELLISTON, *General Secretary.*

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

BRANCH MEETING TO BE HELD.

BIRMINGHAM BRANCH: COVENTRY DIVISION.—The next meeting of this Division will be held at the Coventry and Warwickshire Hospital on Thursday, January 5th, 1905, at 6.30 p.m. Agenda:—Specimens.—Dr. Rawley: (1) Multiple Fibroids of Uterus; (2) Dr. Harman Brown: Fetus and Placenta from Case of Placenta Praevia; (3) Mr. W. E. Bennett: Two Appendices. Papers.—1) Dr. J. Orton: Diagnosis and Treatment of Typhoid Fever; (2) Dr. E. H. Snell: Notes on the Treatment of Typhoid Fever as Exemplified in a Series of 100 Cases with one death.—E. H. SNELL, Honorary Secretary, Coventry.

DORSET AND WEST HANTS BRANCH: BOURNEMOUTH DIVISION.—A meeting of this Division will be held on Wednesday, January 4th, 1905, at the Medical Society's rooms, Shaftesbury Hall Chambers, Bournemouth, at 3.30 p.m. Agenda: General business, report of Executive, consideration of matters referred to the Divisions (see SUPPLEMENT, November 26th, which contains full information and which members are requested to bring with them to the meeting). Members wishing to show cases or read papers are requested to give early notice to the Honorary Secretary. Tea will be provided by the kindness of the Bournemouth Medical Society.—C. H. W. PARKINSON, Honorary Secretary, Wimborne.

METROPOLITAN COUNTIES BRANCH: WESTMINSTER DIVISION.—The next meeting will be held at St. George's Hospital, on January 20th, 1905, at 8.30 p.m.—W. KNOWSLEY SIBLEY, 70, Duke Street, Grosvenor Square, Honorary Secretary.

PERTHSHIRE BRANCH.—At a meeting of Council held on Friday, December 16th last it was decided, in view of the unsuitability of the present time for calling a meeting of the Branch, to ascertain the views of the members by writing on the matters which the Annual Representative Meeting decided should be referred to Divisions. Members are requested to send early replies to the Medico-Political Committee. The questions are as follows:—1. The interim report on contract practice: (1) Necessity of contract practice; (2) medical control; (3) distribution of work; (3A) Friendly Societies—choice of medical attendant; (4) minimum rate: (5) exclusive of infants: (6) provision against abuse; (7) special services. 2. The desirability of consultation between medical witnesses in legal cases likely to be brought before the court. Details of the questions will be found in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL, November 26th. The clinical meeting will be held in the Perth Infirmary on Friday, February 10th, at 3.45 p.m. Any members wishing to show cases might kindly communicate with the Secretaries by January 31st, 1905.—WILLIAM A. TAYLOR and ALEXANDER TROTTER, Joint Honorary Secretaries, 10, Marshall Place, Perth.

SOUTH-WESTERN BRANCH.—The next meeting of this Branch will be held at the Athenaeum, Plymouth, on Tuesday, January 10th, 1905, at 3 p.m., the President (Dr. J. Alexander) in the chair. The following communications are already promised:—Mr. G. C. Wilkin: The National Importance of the Thorough and Systematic Removal of Adenoids in Childhood.—Dr. W. Gordon: Some Facts and Fallacies about the Climate of South-East Devon.—Mr. C. Hamilton Whiteford: Intravenous Injection of Saline Solution in Cases of Haemorrhage, Shock, and Sepsis.—Mr. W. Woollcombe: Post-peritoneal Rupture of Abdominal Aneurysms.—On the conclusion of the business of this meeting a special general meeting will be held (by order of the Council) to consider and adopt the Code of Rules (copies of which have been sent to members) to regulate procedure in ethical matters.—G. YOUNG EALES, 1, Matlock Terrace, Torquay, Honorary Secretary.

SPECIAL CORRESPONDENCE.

MANCHESTER.

Royal Infirmary.—The Eye Infirmary.—Burnley Schools and their Ventilation.—A Substitute for Tobacco.

REGARDING the question of beds or no beds in the Central Receiving House of the Royal Infirmary, the following are the motion and amendment submitted to the decision of the trustees. The trustees number about 1,300, and to every one of them, according to the regulations of the infirmary, a circular, specifying the motion and the amendment, has been issued. The replies were returnable on Saturday, December 24th—that is, within seven days of the date of issue.

At a recent meeting of the Board of Management of the Royal Infirmary it was resolved to arrange for the purchase by the Eye Hospital of 1,600 square yards of land adjoining the Eye Hospital, free of chief rent, from the infirmary authorities, at a cost of £2,500. It was also reported that the foundation plans of the new infirmary were not as far advanced as was hoped. They have to be designed from the top, as every pier and other part had to be considered with a view to the weight

from the top, and this required a very considerable amount of calculation.

On December 21st the Education Committee in Burnley received an important report on the hygienic condition of its schools. The medical officer of the corporation recently condemned the bad ventilation and overcrowding of the class-rooms as being in great measure responsible for the spread of measles and other infectious diseases. This report was characterized as exaggerated and unwarranted, especially as regards the modern council schools, by members of the Education Committee. An independent investigation was undertaken by the medical officer to the education authority, in conjunction with the borough analyst and surveyor. Their first report deals with four schools, and in two of these —both voluntary schools—serious defects in ventilation were found. In one class-room the carbon dioxide reached 16·47 parts per 10,000. How can children do good work in such an atmosphere? The effects upon their physical health must also be considerable.

The medical officer of health of Gorton, in writing about a substitute for tobacco, says: "Though smoking is generally voted by non-smokers and the opposite sex to be a dirty habit, it nevertheless becomes by constant use a soothing one to some millions of men, and certainly is not nearly so harmful, individually or socially, as drinking alcoholic beverages." The substitute proposed is "the dried petals of the chrysanthemum flower." The petals can be dried on a newspaper after they have served their purpose as decorations, or may be used fresh. To obtain a scented mixture, add a small quantity of cascarilla bark, broken fine.

CORRESPONDENCE.

THE GENTLE CRAFT OF ADVERTISEMENT.

SIR,—My attention has been called to the fact that in the current number of the *London Magazine* there appears an advertisement of a patent dentifrice, of the merits or demerits of which I know nothing, in the form of an article, at the head of which my name appears in such a way as to create the impression that I am the author.

Should any one chance to read the article—perhaps an unlikely supposition—bewilderment must follow, for whereas my name appears in full and in large type, where the author's name should be, there are in the article quotations from an address of mine to the Sanitary Inspectors' Association in the third person singular. I should not wonder if the conclusion were that the diligent use of this particular dentifrice had resulted in mental aberration and megalomania, a conclusion which may derive support from the circumstance that I am about to start on a voyage to the West Indies.

Permit me to say that I am not the author of the article, that I never before heard of this particular tooth tout, and that the use of my name is entirely unauthorized. I have asked for, and shall, I hope, obtain an apology and undertaking that the advertisement shall not appear again in its present form. I can, of course, have no objection to quotations from my published writings, but the typographical *suggestio falsi* in this advertisement calls for prompt exposure, as it is obviously capable of indefinite extension.—I am, etc.,

London, Dec. 24th. JAMES CRICHTON-BROWNE.

THE CAUSATION OF INSANITY.

SIR,—For many years I have made special inquiries on the point raised by Dr. C. H. Foley. Dealing with patients of the middle class, about 1,000 cases have been under care in Murray's Royal Asylum during the last twenty-five years. A few have occurred with a history of the forceps having been used at birth, but not one of these was uncomplicated by other causal factors. I quite agree that it would be important to have records of the life-history of persons so brought into the world. The immediate effects of the midwifery forceps are apparent enough, and cases have been recorded of undoubted cerebral traumata. One would suppose that later effects would be apparent in asylum statistics; but the references are scanty. Bucknill and Tuke quote Dr. W. A. F. Browne as having attributed to the forceps the occasional origin of idiocy, moral insanity, and a tendency to mental and nervous weakness. Kellogg (1897) states that difficult and instrumental delivery may result in an intellect "nipped in the bud," but supports his dictum by no statistics. Dr. Langdon Down's observations on 2,000 feeble-minded children show that 3 per cent. had been born after the use of the forceps, but in nearly all there was a distinct neurotic inheritance; and Dr. Shuttleworth concludes that protracted pressure without instrumental interference is a much more potent cause of mental defect than can be attributed to the use of the forceps.

In my experience it has been impossible to correlate this cause with occurring insanity; but it is just in relation to these important questions that the careful statistics of general practitioners would be of value to the profession, if they were only recorded.—I am, etc.,

Perth, Dec. 24th. A. R. URQUHART.

VISCERAL DISEASE AND MENTAL PHENOMENA.

SIR,—The perusal of Dr. John F. Elliott's letter in the BRITISH MEDICAL JOURNAL of December 24th leads me to give a few notes of what I thought to be a remarkable recovery of lost mental power after the removal of a large stone from the bladder.

The patient was a clergyman, and owing to his utter mental failure with a few delusions he was placed in a private asylum under the late Dr. Forbes Winslow. After a time he developed symptoms that induced us to take him to the late Sir Henry Thompson. Sir Henry, after one or two soundings, at last detected a stone in the bladder of such a size that it was judged best to remove it by lateral lithotomy. The reverend gentleman recovered well from the operation, and the remarkable point was that his mind became restored, so that for several years he was able to preach in various churches and seemed perfectly restored to health. After a time, however, he failed and became weak in mind, eventually dying about the age of 80 years in the country.

At one time there was a suspicion of a return of the bladder trouble, but no stone could be found when he was sounded by Mr. Buckston Browne. I feel it due to the memory of that eminent surgeon, Sir Henry Thompson, to say that, learning the patient was but poorly provided with means, he would not accept any fee from his friends for the operation.—I am, etc.,

Bognor, Dec. 27th. JOHN C. THOROWGOOD, M.D., F.R.C.P.

SIR,—It is always best to "verify one's quotations," and the letter of Dr. Jno. F. Elliott, of Natal, in the BRITISH MEDICAL JOURNAL of December 24th, quoting with approval what I wrote in the JOURNAL of September 24th, under the above heading, was not, as I then thought, from "a recent scientific article," but is from the pen of that keen observer of human nature in health and disease, the late Oliver Wendell Holmes, M.D., the exact quotation being:[1]

> It is a remark I have heard from the wise Patriarch of the Medical Profession among us, that the moral condition of patients with disease *above* the great breathing muscle, the diaphragm, is much more hopeful than that of patients with disease *below* it, in the digestive organs. Many an honest ignorant man has us given *pathology* when he thought he was giving us *psychology*.

Oliver Wendell Holmes must have written this at least thirty years ago. It would be interesting if any of my medical brethren could tell us to whom Oliver Wendell Holmes was referring as "the wise Patriarch of the Medical Profession."—I am, etc.,

Worthing, Dec. 26th. W. L'HEUREUX BLENKARNE.

ANTITYPHOID INOCULATION.

SIR,—Dr. Wright having dismissed "the minutiae of statistics" on which alone the divergences between the data provided by Lieutenant-Colonel Simpson and those provided by Dr. Wright himself depend, now proceeds to dismiss logical method from the field. The differences on which stress is laid by Dr. Wright in his book are largely of the order of the probable errors of random sampling. If "the uncertainty of clinical diagnosis," and the fallacies introduced by "the carelessness, untrustworthiness, or ignorance of individual observers" are in this case a more serious source of error than the deviations due to random sampling, then there is no reliance whatever to be placed on the slight balance which I certainly find in favour of antityphoid inoculation. I think Dr. Wright can hardly be conscious of the manner in which his latest proposition logically destroys his own case.

I fear there must be some weaker spot than I have hitherto noticed in Dr. Wright's defence, or he would scarcely condescend to ask, "Was the Committee to indite to Professor Pearson polemical letters such as I am now in-

[1] The passage occurs in *The Professor at the Breakfast Table*, p. 182, in The Breakfast Table Series, published by Geo. Routledge and Sons, 1902.

diting?" A Committee which, in Dr. Wright's opinion, could not ask written questions without adopting Dr. Wright's polemical attitude would undoubtedly be one to be avoided, and could hardly be described as a "scientific court." Indeed most "courts" embrace a judge, who is fairly impartial, and do not include the plaintiff on the jury. In other words, the constitution of royal and other commissions in this country, on which all or some of the interests concerned are represented, bears the least resemblance to that of a judicial court of any investigating body I know. Dr. Wright tells us that my venturing to differ from the three adjudicating committees on a question of statistics is "exactly as if a calculator, whose office it was to compute the strength of certain shipbuilding materials were to contend that he, and not the practical seaman, was the proper judge of the performances of a ship." The illustration is an apt one, for I take it that the calculator would be a better man than the practical seaman to determine as a result of his calculations whether the loads the seaman insisted on the vessel carrying would not cause it to "hog" badly when launched. I opine that the ship "Routine Inoculation," if built on the present design, stands a fair chance of hogging badly if she be ever launched.

Dr. Wright evidently considers that readers of the British Medical Journal do not preserve their back numbers. For the few who do not I put in parallel columns my original words and Dr. Wright's version of them:

My Statement.	*Dr. Wright's Version.*
I. In the days when this need [that is, a corps of expert medical statisticians] is supplied, it will be impossible for such a "synoptical table" with critical commentary as that printed by Dr. Wright—a table without a single probable error calculated—to be taken as statistical evidence. It will be impossible, then, for three committees to report in favour of any form of inoculation without expert consideration of "statistical minutiae."	"It ought to have been impossible"—I am quoting Professor Pearson almost literally—"for the three committees of medical and bacteriological experts who have successively adjudicated upon the question of antityphoid inoculation to have arrived at a decision without referring the matter to me or one of my guild." [The quotation marks are Dr. Wright's, who states that in my last letter I have arrogated to myself and "my guild"—whatever that may be—an exclusive right of passing judgement on statistical methods.]
II. I should not be at all surprised, now that attention has been drawn to the matter by recent leaders in the public press, that the effect of the discussion in the House which may result will not only be to reverse the decision of the War Office Antityphoid Committee, but unfortunately, to check that energetic improvement by research and experimental inoculation, which I hold, no less than Dr. Wright, to be highly important, and justified by the statistical results obtained.	It is surely unworthy of any one who follows science to exult as he does at the close of his letter, in the thought that the forces of ignorance may perchance have been set in motion by his words. [The "forces of ignorance," if they have been set in motion at all, have not been aroused by any words of mine in this Journal, but by a very indiscreet leader in a public newspaper.]

Since Dr. Wright has declined the consideration of "statistical minutiae," and will not regard the "mathematical expression," which is the only satisfactory test of whether differences in rates are significant or not; and, since rejecting these forms of reasoning, he has fallen back on arguments such as I have displayed above, it appears to me more than ever unprofitable to continue this controversy.—I am, etc.,

London, Dec. 23rd. KARL PEARSON.

CANCER AND PRE-CANCEROUS CONDITIONS.

SIR,—In reply to Mr. Mayo Robson's communication in the British Medical Journal of December 24th, I venture to believe that the very precise and detailed facts contained in my previous letter (p. 1665) cannot be confuted merely by citing the opinions—more or less antiquated—of various so-called authorities. Mr. Robson seems strangely oblivious of the fact that nothing could possibly be more authoritative and to the point than such data as I have there adduced; for, with regard to this particular matter, these facts are really crucial. I am sure if his "authorities" had been aware of these new facts, they would have formed more correct opinions with regard to the matter at issue than they were able to do with the imperfect information formerly at their disposal.

Whatever may have been the state of affairs in the days of other years, I am convinced that at the present time, in scientific circles, the opinions of "authorities" cannot possibly have any weight as against such facts as I have brought forward.

It is this blind following of "authority" that has led Mr. Robson so far astray. I am of course, acquainted with his book on *Diseases of the Gall Bladder, etc*, as well as with the chief publications relating to primary cancer of the gall bladder. In treating of the comparative incidence of the latter malady, Mr. Robson merely says: "It is not nearly so uncommon as was once believed;" but he offers not one particle of evidence in support of this pious opinion, which I suppose he derived from his predecessors—Courvoisier, Musser, Delcao Ames, etc.—all of whom say exactly the same thing, without making the slightest attempt to verify their assertions. Yet it would not have been difficult for any or all of them to have done so; and how much more convincing a few independently ascertained facts would have been, than these oft-repeated, but never verified, platitudes!

Having myself thoroughly proved this problem by analysing the data published by several of the chief London hospitals during a long series of years, I am able to state positively that primary cancer of the gall bladder is one of the very rarest forms of cancerous disease, for of 18,428 cancer patients consecutively under hospital treatment only 16 had primary cancer of the gall bladder, or 1 in 1,152 cases. On the other hand, gall stones are common in cancerous patients, Muir having estimated the percentage at 12.5 per cent. These facts clearly prove that cancer of the gall bladder can very rarely be caused by gall stones. When gall stones and cancer of the gall bladder are concomitant, I submit that all the indications point to antecedent morbid conditions of the cystic mucosa, as being the determining factor of these concretions.

I am convinced that my conclusions with regard to these matters will remain as firm as a rock until some more powerful solvent for them has been discovered than Mr. Robson's so called "authorities," who, in the points here at issue, really have no jurisdiction.—I am, etc.,

Clifton, Dec. 24th. W. ROGER WILLIAMS.

LEAD IN WATER SUPPLIES.

SIR,—In your comments on my pamphlet in reference to the above occur the words, "Notwithstanding the remedial measures supposed to be adopted by the water authorities," and you make the excellent suggestion that adequate supervisory power should be vested in some central authority to enforce the efficient treatment of all moorland water supplies, "so that even the last traces of plumbo-solvent ability may be constantly removed."

The effect of a public discussion by public analysts and eminent water engineers resulting upon the issue of my pamphlet was that 100 samples of water were analysed by the West Riding County Council, when it was discovered that most of the Yorkshire towns are still using water containing a dangerous quantity of lead. The county council then upon unanimously resolved to promote a Bill in Parliament seeking powers to compel the offending corporations to neutralize the acidity of their water.

I am pleased to learn also that an eminent member of the Local Government Board medical staff is at the present time investigating the effects of lead poisoning produced by long-continued small doses.—I am, etc.,

Halifax, Dec. 21st. ASPINALL MARSDEN, L.S.Sc.Durh.

NEGRO IMMUNITY FROM MALARIA AND YELLOW FEVER.

SIR,—There are side issues arising from the discovery of the mosquito conveyance of malarial and yellow fever infection which deserve at least a passing notice. Darwin states, in his *Descent of Man*[1] "that negroes and even mulattoes are almost completely exempt from the yellow fever, and that they likewise escape to a large extent the fatal intermittent fevers that prevail along . . . the shores of Africa." Whence he postulates "that this immunity seems to be partly inherent, depending on some unknown peculiarity of constitution, and partly the result of acclimatization." He moreover tentatively suggests that this "unknown peculiarity of constitution may bear some relation to the colour of the negro skin."

There are some questions I should like to ask, and some suggestions I should like to make on this subject.

1. Is this negro exemption from either malaria or yellow fever real, apparent, or entirely imaginary? That, so far as

[1] Second Edition, 1885, Part I, chap. vii, p. 193.

malaria is concerned, it is not real, is proved by Professor Koch's discovery of the plasmodium malariae in the blood of a majority of young negro children in malarious districts. That it is not entirely imaginary is equally well proved by the enormously higher malarial white death and sickness rate on the West Coast of Africa than the negro rate for the same disease in the same region, and by the much higher malarial death and sickness rates among American negroes imported into Africa, as noted by Darwin[2] and Mary Kingsley,[3] than those among aboriginal Africans.

Granting that this negro immunity to malaria is only apparent, or, rather, comparative, still a second question arises—namely:

2. What produces this comparative immunity in the aboriginal African negro? It must arise from either (*a*) the same kind of comparative immunity to endemic disease which we find in all resident races when compared to maiden communities (cf. the low European death-rate from measles when contrasted with the terribly high mortality of the epidemic in the Fiji Islands in 1876[4]); or (*b*) from a less extensive or virulent original infection—that is, from a comparative negro immunity, inherent or artificially acquired, to the bite of the mosquito, or (less probably) to an inherent insusceptibility to the toxins of the plasmodium malariae, and of the bacteria of yellow fever.

That it does not arise from an endemic immunity is shown from the fact, already noted, that imported American negroes many of whom must come from the malarial swamps of the Southern States of the Union, are much more prone to malaria than the aboriginal Africans.

That it does not arise from any inherent insusceptibility in the negro to the poison of malaria is shown by the same fact. For we cannot reasonably hold that a negro immunity, which, as Darwin says,[2] "implies exposure (to infection) during a prodigious length of time," could be lost by a race residence extending over less than 200 years on another continent, where, moreover, the malarial poison is equally present and potent, as in Africa.

There remains, then, as a probable cause of this comparative negro immunity to malaria, some insusceptibility, inherent or acquired, to the bite of the mosquito. If so, does this lie in some special natural peculiarity of the negro skin? There is nothing improbable in this, since, as Darwin notes, "the colour of skin and hair is sometimes correlated in a surprising manner with a complete immunity from the action of certain vegetable poisons, and from the attacks of certain parasites," of which, of course, the mosquito may be one. On the contrary, the increased susceptibility to the malarial poison of imported American negroes in Africa almost, if not quite, equalling that of the white race, negatives this theory, since the skin structure of these two branches of the same race must be identical.

There must, then, be some protective artificial condition, probably affecting the skin, under which the African native lives, which is absent from the environment of the white man and of the imported American negro. May this not be found in the universal custom of the African negro of smearing his naked body all over with palm oil or other greasy material? The following suggestive paragraph in one of Mary Kingsley's works[5] lends some small amount of support to this theory. "He," she says, writing of a certain M. Saguin (temp. 1788), "does not mind them—that is, mosquitos—himself. Oh, dear no! being a sort of savage, he says, totally indifferent to the impression he creates on the fair sex, so, if you please, he smears himself over with butter, which preserves him from the mosquito's impertinent sting." This theory of negro immunity to malaria in Africa depending upon a special artificial treatment of the skin has two advantages: (1) It fits all the conditions of the problem to be solved; (2) it is simple—and it must be remembered that a simple solution of a biological problem is always the most probable one.

In this very question of the origin of malaria, a simple explanation of a recorded fact would have supplied the solution of the problem nearly a hundred years ago. When reading Dr. Mason Good's *Study of Medicine* (fourth edition, 1834) for the *New English Dictionary* some six or seven years ago, I found it there recorded,[6] and had the pleasure of drawing at the time Sir Patrick Manson's attention to the fact, that M. Rigaud de l'Isle recommended so long ago as 1817 the wearing a fine silk gauze over the mouth and nose in malarial regions (a precaution which Sir James Outram actually successfully adopted in India in 1830[7]), while even more amazing, M. Brocchi, about the same time, both successfully adopted de l'Isle's suggestion, and also recommended "the sleeping under a fine mosquito net in all places where intermittents were epidemic." That the mosquito net repelled mosquitos, which hence must be the cause of malaria, was too simple an explanation to be received. The imaginary high specific gravity of the imaginary miasmic particles was held to more scientifically explain the phenomena and a great discovery was hence postponed for seventy-five years.—I am, etc.,

Paignton, Dec. 19th. W. Sykes, M.D., F.S.A.

[2] Loc. cit.
[3] *West African Studies*, chap. ii, pp. 53 and 54.
[4] Hirsch's *Handbook*, N. Syd. Soc., edit. i, 169.
[5] Op. et loc. cit.
[6] Fourth edition, vol. i, p. 631.

MEDICAL CERTIFICATES.

Sir,—To those who have followed your reports of the proceedings of the General Medical Council *re* medical certificates it now seems established that any one can give such certificates providing there is no false assumption of medical titles. If this be the case in law, as it is according to Mr. Muir Mackenzie's opinion, it should save medical men much time and vexation when, under any pretext and without thought of reward, they are asked for medical certificates of sickness. Unless the Attorney-General is moved to upset this decision, it clears the air for a demand on the part of medical practitioners for an adequate fee when required to grant a medical certificate, as such certificates would convey an expert opinion as distinguished from the unprofessional statements of chemists, unregistered persons, and others.

Hitherto it has been regarded by the medical profession—and indeed by the laity, excluding, of course, the lawyers—that a medical certificate could only be given by a registered medical man, with the result that medical men have been constantly pestered for certificates—from insurance companies down to Poor Law—for inadequate remuneration down to nothing. As, however, henceforth any Tom, Dick, or Harry can fill the gap for our public bodies and corporations, it behoves us to drop our pens, and conserve our energies for better things in the future.

The Medico-Political Committee already has in hand the matter of fees for medical certificates to the Education Department, and, in view of the above decision, it is to be hoped that the General Medical Council will assist medical men throughout the country in resisting the unwarrantable pressure that is now being indirectly brought to bear upon them to grant these certificates whenever demanded of them. For instance, our county Education Committee's "warning" to parents contains the following sentence: "If the child is under medical treatment a certificate should be sent to the school at once." In poor districts and amongst club practices such a peremptory demand, with no provision for the medical man's time and services, already imposes considerable gratuitous work on the greatly overworked doctor, as poor parents will not if possible pay anything for them, especially when they feel that education and everything belonging to it is as cheap as dirt and simply forced on them, and also when they know they have been in the habit of getting as many club certificates as they liked for the asking. There would, perhaps, be little to complain of if county and borough educational authorities placed these certificates, when required of registered medical men, on the same footing as the infectious disease notification certificates of sanitary authorities; at any rate, nothing less will satisfy the bulk of our overtaxed and underpaid general practitioners.—I am, etc.,

Mumbles, Dec. 12th. A. Lloyd Jones.

DISPENSING BY MEDICAL MEN.

Sir,—My attention has been directed to certain correspondence in the British Medical Journal for and against medical men dispensing their own medicines, and I can thoroughly understand, after forty-five years' experience, that the point of view taken by a Harley Street specialist and a general practitioner will be slightly different.

The druggist's business is to deal in drugs, and the doctor's business is to cure his patients, which are two very different standpoints, and I append an extract from the *National Druggist* to show that the doctor cannot always rely on the druggist as on himself to second his efforts:

> Let no honest chemist delude himself with the idea that substitution does not exist, or "be of the opinion that it it exists at all, it is only to a small extent." It is alarmingly prevalent, as every physician will declare, and as every person can ascertain who will take upon himself the task of investigation.

[7] *The Bayard of India*. By Captain J. L. Trotter. 1903. Chap. iv, p. 38.

There are a very large number of people who judge by appearances, and believe the dispenser must be better acquainted with the properties of medicines than the man who never touches them.

It has been a frequent experience of mine, when I have given a prescription for "repeats," to be told that the results had neither the same taste nor the same effect.—I am, etc.,

F. A. MONCKTON, M.R.C.S.Eng.

Fielding, New Zealand, Oct. 17th.

DIPHTHERIA IN BRISTOL.

SIR,—After very careful study of the letters of Drs. Cobbett and Graham Smith, and of their original papers, I find nothing contrary to the position I took up two months ago in your columns. They describe, in almost identical terms, the two organisms between which they differentiate. For instance, the typical Hofmann bacillus is a spindle, with central streak, which they also admit (and in this I fully agree) to be a frequent form in young cultures of young Klebs-Loeffler bacilli, whilst of atypical forms of both, describable in interchangeable terms, the name is legion. I have investigated this by subculture and litmus broth, and find it impossible to distinguish between them under thirty-six to forty-eight hours—which is the whole of my contention.

Drs. Davies and Heaven's reference to the "Cambridge school" is hardly justified, since I have the best possible reason for saying that the head of the pathological department of that school does not accept the dicta of Drs. Cobbett and Graham Smith.

I am now investigating the whole question on the lines laid down by these gentlemen, but see no present reason to alter my practice of calling every diphtheroid bacillus from a suspected throat, diphtheria, if compelled to decide within twenty four hours.—I am, etc.,

London, Dec. 24th. EDWD. C. BOUSFIELD.

*** This correspondence is now closed.

THE ALLEGED INCREASE OF SYPHILIS.

SIR,—With reference to the letter of your correspondent in the BRITISH MEDICAL JOURNAL of November 26th relating to the increase of syphilis in London, my opinion is based on the practice of the Skin Department of University College Hospital, which I have carefully followed for many years.—I am, etc.,

GEORGE PERNET,
Assistant to the Skin Department, University College Hospital.

London, W., Dec. 23rd.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ARMY MEDICAL SERVICE.

THE NEW DIRECTOR-GENERAL.

THE King has been pleased to approve, on the recommendation of the Secretary of State for War, of the appointment of Lieutenant-Colonel (temporary Surgeon-General) Alfred Henry Keogh, M.D., C.B., R.A.M.C., to be Director-General, Army Medical Service, *vice* Surgeon-General Sir W. Taylor, M.D., K.C.B., K.H.P., retired. The appointment will run as from January 1st, 1905. Surgeon-General Keogh, though comparatively young in years, has a distinguished record of service in the army. Born in 1857, he received his professional education at Queen's College, Cork, and Guy's Hospital, London. He took the degrees of Doctor of Medicine and Master in Surgery at the Royal University of Ireland in 1878. After holding the appointment of House-Physician at the Brompton Consumption Hospital, he entered the medical department of the army in 1879, coming out second of nearly seventy successful candidates. This was the first batch of officers commissioned under the Warrant of 1879. For a considerable time before that, owing to the shuffling policy which had become traditional in the War Office, the discontent in the Service had been so acute that there had been the greatest difficulty in getting suitable men to come forward. Surgeon-General Keogh is now the senior of the batch who entered under the non-regimental system. He distinguished himself highly at Netley, winning the Martin Memorial Gold Medal and the Herbert Prize, and passing out with the highest total of marks of all the candidates, Army, Indian, and Naval. He was first stationed at Woolwich. His first tour of foreign service was in Bermuda, whence he proceeded to India. On his return he was on duty at the Royal Arsenal, Woolwich, for five years; during that period he gained a large surgical experience. On completion of this appointment in the beginning of 1894, he was sent to India where he served in the Madras Presidency; later he was transferred to Barrackpore, near Calcutta, where he was in charge of the Military Hospital. He was also Civil Surgeon there, and in that capacity had large opportunities of ordinary professional work among the operators in the factories and civilian population. The experience thus obtained was put to good use. Returning to England in 1899, he did duty at the manœuvres on Salisbury Plain in the summer of that year. In November, 1899, he went to South Africa as Secretary and Registrar of No. 3 General Hospital, which was located at Rondebosch near Capetown in the early part of the war. When Bloemfontein was taken hospital accommodation was required on the lines of communication, and Surgeon-General Keogh was sent to Springfontein with half of No. 3 General Hospital. This hospital was very quickly got into good order. While at Springfontein he was for a short time Principal Medical Officer of the lines of communication from Bloemfontein to Norval's Pont.

He was soon transferred to Pretoria to take charge of No. 2 General Hospital, where chaos reigned at the time. Thanks to his administrative ability the hospital was soon in admirable order. In November, 1900, it had 1,000 beds, and this number was maintained till the following March. Surgeon-General Keogh was also a Senior Medical Officer of "Howitzer Camp," which included the Langman Hospital, and direction of the sanitation of the eastern outskirts at Pretoria. At the end of 1900, he contracted enteric fever, and was invalided home in February, 1901. He was mentioned in Lord Roberts's first dispatch, received the decoration of C.B., and was specially advanced from the lower to the higher rate of Lieutenant-Colonel.

When the reform of the medical service of the Army was undertaken, he was invited to join Mr. Brodrick's Reorganization Committee. His work as a member of this Committee is recognized by his colleagues as having been of the highest value. He was appointed Deputy-Director-General from January 1st, 1902. In 1903 he was made a Knight of Grace of the Order of St. John of Jerusalem.

Surgeon-General Keogh has throughout his career retained the keenest interest in professional work. A first-rate officer and administrator, he has never ceased to be a "good doctor." During his home service he has always taken every opportunity of extending his professional experience by attendance at hospital, and by special study.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON FRANCIS HENRY BLAXALL, M.D., retired, died at Bath on December 23rd, aged 78. He was appointed Surgeon, March 8th, 1848; Staff Surgeon, May 10th, 1856; and Fleet Surgeon, April 27th, 1869. He was Assistant Surgeon of the *Colossus* in the Baltic during the Russian war in 1855, and had received the Baltic medal.

CIVIL PRACTITIONER EDWIN HENRY has been appointed Surgeon and Agent at Portleven and Gunwalloe, December 24th.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT F. M. G. TULLOCH is seconded for service under the Foreign Office, December 1st.

EXCHANGE.

The charge for inserting notices respecting Exchanges in the Army Medical Department is 3s. 6d., which should be forwarded in stamps or post-office order with the notice, not later than Wednesday morning, in order to ensure insertion in the current issue.

A LIEUTENANT, R.A.M.C., two years' service, wishes to hear of an officer in the I.M.S. willing to exchange, subject to regulations.—Address No. 6140, BRITISH MEDICAL JOURNAL.

ARMY MEDICAL STAFF.

COLONEL (temporary Surgeon-General) W. F. STEVENSON, M.B., C.B., R.A.M.C., Professor of Clinical and Military Surgery, Royal Army Medical College, to be an Honorary Surgeon to the King, *vice* Surgeon-General J. Jameson, M.D., C.B., retired pay, deceased, September 14th.

Surgeon-General W. F. BURNETT has been awarded a good service pension.

ARMY MEDICAL RESERVE.

CAPTAIN H. W. THOMSON, M.D., Glasgow Companies, Royal Army Medical Corps (Volunteers), to be Surgeon-Captain, December 24th.

INDIAN MEDICAL SERVICE.

COLONEL W. R. BROWNE, M.D., Madras Establishment, to be Surgeon-General from October 11th. As already announced in the BRITISH MEDICAL JOURNAL, he was from date confirmed as Surgeon-General with the Government of Madras.

Lieutenant-Colonel P. H. BENSON, M.B., Madras Establishment, is promoted to be Colonel from October 11th. He was appointed Assistant Surgeon, March 31st, 1874, and became Brigade-Surgeon-Lieutenant-

Colonel, December 29th, 1898. Colonel Benson is confirmed as Principal Medical Officer, Madras District, from October 12th.

STATION HOSPITALS IN INDIA.

I. M. S. writes advocating the institution of the station hospitals for native troops in India and the abolition of the regimental medical officer, whose position and functions he considers very unsatisfactory. He is liable to fall between two stools: if there is unusual sickness in his corps, then the district principal medical officer demands explanation; if he traces the sickness to faults of regimental administration, then he incurs the displeasure of his commanding officer, and the certainty of an unfavourable confidential report at the end of the year. He maintains that excessive sickness in a native corps can usually be traced to faulty regimental administration. First, the regiment may be carelessly and badly recruited, and the ranks filled with weakly men; the company native officer who contracts to feed recruits may do so very indifferently, unless properly supervised; sepoys may be allowed to starve themselves in order to feed, if permitted, a host of relatives; there may be faulty clothing and housing through inattention on the part of quartermasters. All these faults in regimental administration will swell the sick list, and fall to the discredit of the regimental medical officer. Station hospitals would render medical officers more independent and able to point out faults in regiments.

MEDICO-LEGAL AND MEDICO-ETHICAL.

CONVICTIONS FOR ILLEGAL OPERATIONS.

At the last Bristol Assizes, according to the *Bristol Times and Mirror*, a woman named Georgina Smith, a beer retailer, was tried for the performance of illegal operations for the purpose of bringing about abortion in women. There were four indictments, two of which were heard; in both the jury brought in a verdict of guilty. In neither of them had the death of the prospective mother occurred; but it was stated that the prisoner had originally been arrested in connexion with the death of a woman whose evidence could not be used owing to the way in which it had been taken. In passing sentence the Judge said he had no doubt that he had to deal with a wholesale criminal, who must be kept in penal servitude for eight years.

FEES AT INQUESTS.

E. W. R. writes: I recently attended and gave evidence at an inquest, which was adjourned for a *post-mortem* examination, which I made. I gave evidence again at the adjourned inquest. To what fee am I entitled? I obtained £2 2s. at first, but have subsequently on protesting received a third guinea, on condition that I refund this if the county council refuse to pass it. I shall be greatly obliged if you will inform me what the rules.

*** We are of opinion that £3 3s. is the proper fee in this case, but that the law is not so clear as to enable our correspondent to refuse to refund the third guinea should the county council decline to pass it; besides, he is bound by his promise. The Medico-Political Committee will no doubt keep the point in view in reference to the Coroners Bill.

DOORPLATE ETIQUETTE.

E. W. St. C. H.—It is not thought becoming in this country to put the speciality practised upon the doorplate.

UNREGISTERED DENTISTS.

R. was called to see a woman who was said to be in a state of collapse after the extraction of a tooth by an unregistered dentist, and he wishes to know whether he did right by so going.

*** Undoubtedly. An urgent summons should always, if possible, be obeyed, for the greatest of all our ethical obligations is to save life.

THE POSITION OF A SUBSTITUTE.

J. G. M.—C. might have charged his usual fee, but it was a friendly act to refuse to take payment from B.'s patient, leaving B. to charge for the work as if he had done it himself.

PROFESSIONAL SECRECY.

Aspera.—The secret is the patient's, and must not be disclosed without permission, but it is our correspondent's duty to advise the husband to take the necessary measures to prevent further chances of infection. The general term "blood poisoning" may be used, and will probably be accepted as satisfactory.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 7,500 births and 5,674 deaths were registered during the week ending Saturday last, December 24th. The annual rate of mortality in these towns, which had been 21.6, 18.5, and 19.2 per 1,000 in the three preceding weeks, rose again last week to 19.4 per 1,000. The rates in the several towns ranged from 10.2 in Willesden, 10.5 in Bournemouth, 11.3 in Leyton, 11.4 in Leicester, 11.7 in Aston Manor, 12.0 in West Hartlepool, 12.2 in Walthamstow, and 12.5 in Rotherham, to 25.0 in Bury, 25.3 in South Shields, 25.5 in Newcastle-upon-Tyne, 25.6 in Rhondda, 26.5 in Manchester, 27.0 in Stockton-on-Tees, 28.5 in Tynemouth, 29.1 in Middlesbrough, 31.9 in Huddersfield, and 32.6 in Hanley. In London the death-rate was 17.6 per 1,000, while it averaged 20.1 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.4 per 1,000 in the seventy-six towns; in London this death-rate was equal to 0.9 per 1,000, while among the seventy-five large provincial towns the rates ranged upwards to 4.0 in Stockport, 4.3 in Rhondda, 4.4 in Halifax, 4.7 in Grimsby, 4.8 in Devonport, 4.9 in Tynemouth, 5.0 in Wigan, 5.9 in St. Helens, and 6.5 in Hanley. Measles caused a death-rate of 1.4 in Liverpool and in Merthyr Tydfil, 1.8 in St. Helens, 2.0 in Stockton-on-Tees, 2.2 in Stockport, 3.1 in Grimsby, and 3.3 in Wigan, and 4.8 in Devonport; scarlet fever of 1.3 in York, and 1.6 in Hanley; diphtheria of 1.6 in Hanley, 1.7 in Wigan, and 1.8 in East Ham; whooping-cough of 1.3 in Rhondda, 1.4 in Norwich, 2.0 in Tynemouth, 2.7 in Preston, and 2.9 in Halifax; and "fever" of 1.6 in Grimsby. The mortality from diarrhoea showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Gateshead, but none in any other of the seventy-six towns. The Metropolitan Asylums Hospitals contained 14 small-pox patients at the end of last week, against 3, 4, and 6 at the end of the three preceding weeks. Nine new cases were admitted during the week, against 2, 1, and 2 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 2,625, 2,490, and 2,403 at the end of the three preceding weeks, had further fallen to 2,393 at the end of last week; 242 new cases were admitted during the week, against 247, 203, and 242 in the three preceding weeks.

HEALTH OF SCOTCH TOWNS.

During the week ending Saturday last, December 24th, 992 births and 700 deaths were registered in eight of the principal Scotch towns. The annual rate of mortality in these towns, which had been 21.2, 19.7, and 22.6 per 1,000 in the three preceding weeks, declined again last week to 21.2 per 1,000, but was 0.8 per 1,000 above the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scotch towns ranged from 13.6 in Leith and 15.6 in Paisley, to 23.1 in Perth and 23.7 in Glasgow. The death-rate from the principal infectious diseases averaged 2.8 per 1,000, the highest rates being recorded in Aberdeen and Perth. The 363 deaths registered in Glasgow included 7 which were referred to measles, 2 to diphtheria, 24 to whooping-cough, 8 to "fever," and 13 to diarrhoea. Two fatal cases of whooping-cough and 2 of diarrhoea were recorded in Edinburgh; 4 of diarrhoea in Dundee; 9 of measles and 3 of diarrhoea in Aberdeen; and 2 of measles and 2 of diarrhoea in Leith.

MEDICAL ATTENDANCE IN VENEREAL DISEASE.

D. G. H., who is a district medical officer, receives an order from the relieving officer to attend a patient suffering from gonorrhoea. He asks whether he is obliged to attend the case, or refuse and report the facts to the Board of Guardians.

*** The safest and best course for a district medical officer to pursue would be to give all necessary attention to the case, but to report the facts to the guardians at their first meeting after his receipt of the medical order. It will then be for the Board to decide whether his attendance ought to be continued or not.

VITAL STATISTICS OF IRELAND, 1903.

Hygiene writes in reference to the article under this heading in the British Medical Journal of December 17th: I believe it is generally admitted that poverty and insanitary dwellings greatly increase the amount of disease in localities, and that overcrowding in families and want of decent habitations conduce to immorality. Now the foregoing conditions—namely, poverty, insanitation, overcrowding, and wretched dwellings—are predominant in Connaught. Nevertheless, we find that, as compared with the other provinces, it has the lowest death-rate, and that its percentage of illegitimate births is almost nil, namely:

	Death-rate.	Illegitimate birth-rate.
Ulster	18.1 ...	3.3
Munster	16.1 ...	2.3
Leinster	19.4 ...	2.0
Connaught	14.0 ...	0.5

Perhaps some of your Irish correspondents may be able to elucidate this interesting feature of the vital statistics of Ireland.

OBITUARY.

ARTHUR QUARRY SILCOCK, M.D., B.S.Lond., F.R.C.S.,

Surgeon, St. Mary's Hospital and the Royal London Ophthalmic Hospital.

We had to record last week with very deep regret the death of Mr. A. Q. Silcock, which occurred on December 19th. He was born at Chippenham, Wilts, in 1855, and was educated privately; after matriculating at London University he commenced his medical studies at University College, London, in 1873. His abilities as a student were soon manifest, the numerous examinations required by the London University being passed in rapid succession and without apparent effort, so that in 1878, at the age of 23, he had obtained the degrees of M.B., B.S., as well as the Membership of the Royal College of Surgeons. The M.D. degree of the University he took in 1880, and he became a Fellow of the Royal College of Surgeons in 1882.

Mr. Silcock's bent was always towards surgery, and after holding in succession the posts of House-Physician and House-Surgeon at University College Hospital, he was appointed Surgical Registrar to the hospital, and later also Senior Demonstrator of Anatomy in the Medical School.

There was then no immediate prospect of any opening for promotion at his own school, and he left it in 1883 on receiving the appointment of Pathologist at St. Mary's Hospital. There he became Lecturer in Pathology in 1884, a post which he held until 1897, when he undertook instead the instruction in operative surgery. In 1900 he became Joint Lecturer on the

Principles and Practice of Surgery, a post which he held till his death.

Meanwhile he had been elected to the staff of the hospital in 1886 as surgeon in charge of out-patients, and on the expiration of Mr. Edmund Owen's term of office in May, 1902, he succeeded him as one of the full surgeons to the hospital.

Mr. Silcock had from an early period in his career devoted special attention to ophthalmology, and during the long period of holding subordinate offices, had worked regularly as Clinical Assistant at the Royal London Ophthalmic Hospital, then at Moorfields. He was appointed Assistant Surgeon to that institution in the same week in 1886 in which he was promoted to the staff of St. Mary's Hospital; in due time he became full surgeon at the Royal Ophthalmic Hospital.

Mr. Silcock was the only surgeon on the staff of the Ophthalmic Hospital who also held the post of surgeon at a general hospital and medical school, and his wide knowledge of general medicine and surgery contributed to his success in ophthalmic work. He was a skilful operator and spared no pains in the investigation of any obscure case of eye disease. His opinion and advice were widely sought and appreciated. Within the last two years, when the son of the present President of the Royal College of Surgeons received a terrible injury to the eye, requiring an operation of much delicacy, it was to the care of Mr. Silcock that he was confided and to his skill in treatment that complete recovery was due. Mr. Silcock was one of the original members of the Ophthalmological Society, and was for a time its Honorary Secretary: he made several valuable contributions to its *Transactions*. So recently as the present year he was elected also a member of the Court of Examiners in Surgery to the Board of the two Royal Colleges, and Examiner in Surgery for the Fellowship of the Royal College of Surgeons.

It will be seen that he led an active and busy life—in consulting practice, in teaching, and in the work of two large hospitals. The great increase in operative procedure of late years leads to frequent and trying demands at all hours of day and night on the surgical staff of large general hospitals, and it is probable that Mr. Silcock's never very robust constitution suffered severely from the strain. He was called late on the night of December 10th to St. Mary's Hospital to perform a long and difficult operation, and appeared then in good health and spirits. He was out on the next day, but on that evening he was attacked by severe chills, and soon showed indications of a very acute and serious attack of appendicitis. He was attended by Dr. Cheadle, Sir Frederick Treves, and by his old fellow student and colleague Mr. Pepper. He was operated on by Mr. Pepper, with the assistance of Mr. Clayton Green, who remained in the house with him during his illness, relieved at times by Mr. Gay French, his house-surgeon at St. Mary's. Mrs. Silcock was with him throughout, but the attack was of a most virulent nature, and notwithstanding all that skill and devotion could do, he died after a week's illness at the comparatively early age of 49 years.

Besides the appointments already mentioned, Mr. Silcock was Honorary Ophthalmic Surgeon to the Royal Normal College for the Blind, to the Cripples' Home, and to the Indigent Blind Visiting Society. He contributed to Druitt's *Vade Mecum of Surgery* the article on Injuries of the Eye, and made many contributions to the *Transactions* of the Pathological and Clinical Societies, and to various professional publications.

Mr. Silcock was a man of fine character and undeviating straightforwardness; he was independent in mind, and unhesitating in acting as he believed to be right. Having nothing to conceal, and having the courage of his convictions, he resorted to no equivocal or ambiguous phrases, but spoke and acted with directness and decision. If he was sometimes abrupt in manner, it was never long before his kindly nature and his genuineness impressed themselves upon those who came in contact with him, and won for him their esteem and regard. He worked strenuously and never spared himself. The success he merited had come to him within the last few years, and he had every reason to look forward to a distinguished and prosperous future, when he was prematurely and suddenly called away.

Mr. Silcock married in 1889 Emmeline, daughter of the late Henry Vernon Chichester, by whom he leaves two sons, aged 13 and 11 years. He was unassuming, simple, and hospitable in his home life; music was his favourite recreation. Some who were his fellow residents at University College Hospital may call to mind the evenings he made pleasant by his musical talent. Then, as afterwards, he never missed an opportunity of being present at any high-class musical performance.

His body was cremated, by his own expressed wish, and the respect and affection in which he was held were testified to by the large attendance of professional and other friends at the memorial service held on December 22nd at St. Peter's, Vere Street. Among the mourners were his two sons, Messrs. T. B. Silcock and Harry Silcock, and Mr. Morton Bult; among others were all his colleagues from St. Mary's and the Royal Ophthalmic Hospitals, besides many students and nurses, and representatives from the Bromley Cottage Hospital, to which Mr. Silcock was Consulting Surgeon. There were also present Sir William and Lady Broadbent, Sir James Walker, Sir Frederick Treves, Mr. Christopher Heath (whose House-Surgeon Mr. Silcock had been), Sir Thos. Smith, Mr. Henry Harben (Chairman of St. Mary's Hospital), Mr. Watson Cheyne, Mr. Ballance, Mr. Golding-Bird, Mr. Plimmer, and Mr. A. P. Gould.

Professor NIKOLAI SKLIFOSSOWSKI, M.D., Moscow.

We regret to announce the death of the distinguished Russian surgeon, Professor Nikolai Sklifossowski, sometime Director of the Clinical Institute of the Grand Duchess Helena Pawlowna, Moscow, at the age of 68. He studied medicine in the University of Moscow, where he obtained a qualification to practise in 1859. For ten years subsequently he served as Superintendent of the Municipal Hospital at Odessa. Afterwards he proceeded to the degree of Doctor of Medicine, and visited the schools and hospitals of Berlin, Paris, and Edinburgh.

In 1870 he was appointed to the Chair of Surgery in the University of Kieff, from which in the following year he was called away to be Head of the Surgical Clinic in the Medico-Chirurgical Academy of St. Petersburg. When that institution was amalgamated with the Military Medical Academy, Sklifossowski accepted an invitation to Moscow. In 1897 he was President of the International Medical Congress held in that city. Two years later he retired from the active practice of his profession, and he spent the remainder of his life on his estate at Jakowzy in the Poltawa Government. He was a skilful operator, and contributed more than 100 papers and monographs to surgical literature.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. A. S. Herrero, Professor of Clinical Medicine in the University of Madrid; Dr. William F. Cushman, a well-known physician of New York, who was for many years Treasurer of the New York Academy of Medicine, aged 65; and Dr. Alexander Bobroff, Professor of Surgery, Director of the Surgical Clinic of the University of Moscow, and a former President of the Russian Surgical Society, aged 54.

INDIA AND THE COLONIES.

NEW ZEALAND.

The Lunatic Asylums.

The annual report for 1903 of the Inspector-General of Asylums for New Zealand, Dr. D. MacGregor, shows that the certified insane of the colony numbered 2,959 on the 31st of December, 1903. This is an increase of 111 on the previous year and is in the proportion of 3 38 per 1,000, or 1 in 296 of the general population inclusive of Maories. Exclusive of Maories, this proportion is 3.53 per 1,000 or 1 in 284. The incidence of certified insanity thus appears to be very much less amongst the native than amongst the white population. Of the 2,959 patients, 1,912 were natives of Great Britain, 704 (not including Maories) were born New Zealanders, and 85 were natives of Australian colonies. European countries, other than Great Britain, contributed 131, China 26, other countries 71, and of Maories there were only 29.

Increase of Insanity.

The statistical tables of this report go back to 1876, and show that there has been an uninterrupted increase in the numbers of the insane since that year. As the following table, extracted from the Inspector-General's report, will show, this increase has been not only a numerical increase natural to a growing colony, but an increase proportionally to the population.

Proportion of the Insane to the Population.

1876	...	...	1 in 509 or 1.97 per 1,000
1878	...	...	1 in 471 or 2.12 ,,
1883	...	...	1 in 393 or 2.54 ,,
1888	...	...	1 in 361 or 2.77 ,,
1893	...	...	1 in 330 or 3.03 ,,
1898	...	...	1 in 300 or 3.33 ,,
1903	...	...	1 in 284 or 3.53 ,,

This increase, however, Dr. MacGregor considers due, not to an increasing liability to insanity amongst the general population, but to three factors: first, to an increase in the age of the population, the early immigrants being, as a rule, in the prime of life; secondly, to the accumulation of chronic incurable cases in the asylums: and thirdly, to the improved care, treatment, and hygienic surroundings of the patients. That the increase is more apparent than real is borne out by the relative diminution of the admissions, and the proportional increase in patients past middle life shown in the following tables, though it will be noted that the proportion of admissions to population has shown of late years an upward movement.

Proportion of Admissions to Population.

	Per 1,000.		Per 1,000.
1878 ...	... 0.83	1893 ...	... 0.68
1883 ...	... 0.75	1898 ...	... 0.63
1888 ...	... 0.59	1903 ...	... 0.70

Percentage of Admissions over Fifty Years of Age on Total Admissions.

	Per 1,000.		Per 1,000.
1878 ...	... 13.26	1893 ...	... 27.97
1883 ...	... 16.50	1898 ...	... 25.61
1888 ...	... 21.00	1903 ...	... 31.27

Admissions.

The number of those admitted during the year was 691, of whom 489 were first admissions. In 537 the attack was within twelve months of admission, in 119 the attack was of more than twelve months on admission, and in 33 the duration was unknown. No mention is made of the forms of mental disorders amongst the admissions, but a lengthy table is given of the probable causes of insanity.

Alcoholism was assigned in 84, that is, in 12.1 per cent. of the total admissions; congenital defect and hereditary influences were ascertained in 125, or 18 per cent., syphilis in 10 cases, and mental and moral causes in 80. Periodic causes, adolescence, the climacteric, etc., were assigned in 119, and masturbation in 34. In 37 cases previous attacks are noted, and the remainder are fairly equally distributed over the usually cited causes.

Discharges and Deaths.

During the year 245 were discharged as recovered, giving a recovery-rate on admission of 42.17 per cent.; 66 were discharged as relieved, 96 as not improved, and 173 died. The percentage death-rate on the average numbers present was 5.96, which unusually low death-rate has been fairly well maintained since 1876, the highest death-rate recorded being 7.70 per cent. (in 1877) and the average death-rate for the whole working period working out at 6.2 per cent. Of the causes of death the salient features are: Cerebro-spinal diseases, 56 (including 16 deaths from epilepsy and 22 from general paralysis); chest diseases, 53, and senile decay 22. Only 15 deaths were due to phthisis, which, with 1 case of tuberculous meningitis and 3 cases of general tuberculosis, raises the number of tuberculous deaths to 19, or 10.9 per cent. of the total deaths.

Overcrowding.

Notwithstanding that serious overcrowding has been present in most of the asylums for some years, the general health appears to have been excellent. The Government, however, has authorized numerous additions, and Dr. MacGregor says that for the first time in the history of the department he can see his way to having a number of spare beds in excess of the statutory accommodation. It is evident, from the reports of the medical superintendents which are included in this report, that their work has been carried on under many difficulties, and though, owing to their care and unremitting vigilance, no serious ill results had to be recorded for 1903, it is to be hoped that the recommendations of the Inspector-General and the medical superintendents will soon be carried out.

HOSPITAL AND DISPENSARY MANAGEMENT.

THE NEW EAST SUSSEX COUNTY ASYLUM, HELLINGLY.

We have received the first annual report of this new asylum, the main building of which was only opened for the reception of patients on July 20th of last year. It is built on 400 acres of land, and consists of a detached acute hospital, a main building, four villas, and an isolation hospital, and its construction is very favourably commented upon by the Commissioners in Lunacy. The number of patients for whom accommodation is provided is not stated, but from the report of the medical superintendent, Dr. F. R. P. Taylor, we see that up to December 31st 778 patients were admitted. Only 70 of this number were fresh cases, all the others being transfers from Haywards Heath and other asylums. Of the total admissions 543 were admitted for the first time, and in 566, whether first admissions or not, the condition was of more than twelve months' duration on admission. The bulk of the 708 transfers were thus chronic cases, offering little hope of recovery, and containing, moreover, Dr. Taylor says, a greater percentage than is usual of old and feeble people: 8 were discharged as recovered, 1 as relieved, 2 as not improved, and there were 13 deaths.

Of the total admissions there were 280 cases of mania of all kinds, 119 of melancholia of all kinds, and 101 of dementia. There were also 114 cases of congenital or infantile deficiency, 47 cases of acquired epilepsy, and 18 general paralytics. A marked feature of the 70 fresh cases was, Dr. Taylor says, the absence of gross dementia, which he attributes to the fact that the majority came from the country, and had thus not been subjected to any considerable "stress." On the other hand, a large proportion showed a mild amentia, and the "stigmata of degeneration" were very commonly found. From this Dr. Taylor argues that, whilst town dwellers are liable to break down in the struggle for existence and develop dementia, people who live secluded lives in country villages and frequently intermarry develop in their descendants a tendency to congenital mental enfeeblement.

Concerning the causes of insanity, hereditary influences were ascertained in 212, but, as is pointed out in the medical superintendent's report, the usual difficulties in the way of eliciting information were much increased by the fact that nine tenths of his admissions were old chronic cases whose friends were either dead or had forgotten the facts. A further 85 showed evidences of congenital defect, 132 had suffered from previous attacks: in 40 alcohol was assigned as the exciting cause of the disorder and venereal disease in 7. Moral causes were assigned in 97, and in 354 the cause is stated as unknown.

The time which elapsed between the opening of this asylum and the end of 1903 is too short to permit of any deductions from the statistical tables given. The asylum is excellent in structure and admirably staffed, and will undoubtedly be of great service to East Sussex.

WILTS COUNTY ASYLUM.

Considerable and costly additions to this asylum have been made since 1901: a new laundry, additional water supply and a detached block for 54 female patients having been furnished. Notwithstanding this the increase in certified lunatics has been so considerable in this district that of the 54 beds provided and not yet in occupancy, 31 had already been hypothecated at the time of publication of this the fifty-third annual report. The authorized accommodation available on December 31st, 1903, was for 950 inmates, but the numbers resident on January 1st, 1903, were 956, and on December 31st, 980. There were admitted during the year 159, which is the lowest number since 1897. Of these 134 were first admissions, of whom nearly one-half belonged to the first class, that is, the attack commenced within three months of admission; 85 were cases of maniacal states (acute mania 48, recurrent mania 23, chronic, puerperal and senile mania 14): melancholic states 44 (acute 28, recurrent 8, chronic and senile 8). There were only 11 dements, of whom 3 were cases of primary dementia. With such a large number of acute cases a good recovery rate may be hoped for. Of the probable causes of insanity in the admissions, hereditary influences were ascertained in 68, intemperance in drink either as predisposing or exciting cause in 27, previous attacks in 37, moral causes—in the majority of cases as exciting cause—in 46, and bodily diseases in 22. There were 59 discharged as recovered during the year, or a recovery-rate of 37.1 per cent. on the admissions: 9 were sent out as relieved and 3 as unimproved. There were 64 deaths, a low percentage death-rate on average numbers resident of 6.5. The chief causes of death were: phthisis, 10; senile decay, 7; general paralysis, 6; organic disease of brain and cardiac degeneration, 5 each; apoplexy, 5; and dysentery, 5. An inquest was held on one case, resulting in a verdict of death from syncope from fatty degeneration of heart. Autopsies were made in 81 per cent. of the deaths, and the results of the *post-mortem* examinations are summarized in the statistical tables, which throughout are thorough and complete, and contain valuable additions to the usual data. The general health of the asylum has been satisfactory, and there have been no cases of infectious disease apart from a somewhat serious outbreak of dysenteric diarrhoea attacking 28 patients, and terminating fatally in 5 cases. The medical superintendent considers that the overcrowding which existed in 1903 may have conduced to the occurrence of this disease in epidemic form.

THE LIMITATION OF OUT-PATIENTS.

We are asked to state that the Committee of the Birmingham and Midland Free Hospital for Sick Children has decided to limit the number of new cases that can be seen in the out-patient department on any one day to 65. This reform, which will take effect from January 2nd, 1905, has been made in response to representations from the medical staff, who pointed out that on certain days it was no uncommon thing for as many as 40, 50, or 60 new cases to be referred for treatment to a single member of the staff, and that under such circumstances it was impossible to give proper attention to each case. The necessity for the new regulation has arisen not so much from the excessive number of out-patients applying for treatment in the twelve months, as from the fact that the large majority present themselves on Mondays and Tuesdays, thereby crowding the out-patient department and making satisfactory work impossible on those days. The object aimed at is not the diminution of the number of out-patients as a whole, but their more even distribution over the week. Patients coming with a recommendation from a medical man will always

be seen, notwithstanding the new regulation, while care will also be taken that no hardship is inflicted on patients coming from a considerable distance.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

MICHAELMAS EXAMINATIONS.

Surgery, Midwifery, and Medicine.

THE following have now satisfied the Examiners in all three sections:

C. E. A. Armitage, B.A., Emm.; G. F. Bird, B.A., Trin.: W. V. Braddon, Trin. H.; H. M. Clarke, B.A., Cla.: S. H. Clarke, B.A., Cai.: L. Courtauld, B.A., Trin.; G. Cowan, B.A., King's: C. R. Crowther, B.A., Joh.; C. W. Cunnington, B.A., Non-coll.: T. Drysdale, B.A., Jes.; L. Dukes, B.A., Trin.: F. Gayner, B.A., King's: H. P. Gibb, B.A., Sid Suss.: H. E. Graham, B.A., Jes.; M. F. Grant, B.A., Trin.; R. E. G. Gray, M.A., Pemb.; J. M. Hamill, B.A., Trin.; H. Hardwick Smith, B.A., Joh.; N. G. Harry, B.A., Jes.. A. E. Harvey, B.A., Joh.; W. R. Higgins, B.A., Cai.; E. C. Hughes, B.A., Cla.: A. E. Kerr, B.A., Christ's; W. B. Knobel, M.A., Trin.; W. Lowe, B.A., Cai.; C. D. Mathias, B.A., Trin.; R. C. Mott, M.A., Trin.; S. A. Owen, B.A., Trin.; C. E. Palmer, B.A., Cai.; F. W. M. Palmer, B.A., Jes.; O. V. Payne, B.A., Joh.; J. S. Pearson, M.A., Trin.; R. N. Poignand, B.A., Cai.; R. Puttock, B.A., Emm.; R. Rees, Down.; E. W. Sheaf, B.A., Down.; H. Spurrier, B.A., Cai.; C. M. Stevenson, Joh.; W. H. Thresher, B.A., Cai.; A. W. Wakefield, B.A., Trin.; G. T. Western, M.A., Pemb.; J. D. C. White, M.A., Trin.; R. G. Wills, B.A., Joh.; F. L. Woods, B.A., Cai.

The degree of M.D. was conferred on December 15th on G. B. Davis, M.A., Corpus Christi.

The examination in Tropical Medicine and Hygiene will commence on Tuesday, January 10th, in the New Medical Buildings.

UNIVERSITY OF LONDON.

THE following is a list of the successful candidates at the December examination for the degrees mentioned:

M.D. in Medicine.—W. M. Anderson, B.S., London Hospital; A. Harmer, Guy's Hospital; J. H. Arthur, London Hospital; J. B. Burt, University College; Janet M. Campbell, B.S., London School of Medicine for Women; A. R. J. Douglas, B.S., St. Bartholomew's Hospital: R. Hatfield, St. Barthlomew's Hospital; H. C. Jonas, B.S., St. Thomas's Hospital; F. S. Langmead, St. Mary's Hospital: J. J. S. Lucas, B.A., University College, Bristol, and Royal Infirmary, Bristol: G. E. Malcolmson, Guy's Hospital and Victoria University; W. J. Morrish, St. Mary's Hospital; E. M. Niall, B.S., St. Bartholomew's Hospital; R. Norman, London Hospital; H. E. Ridewood, London Hospital; *C. N. Sears, B.S., St. Thomas's Hospital: A. R. Short, B.S., B.Sc., University College and University College, Bristol (University medal): E. Wethered, St. Bartholomew's Hospital; O. T. Williams, B.Sc., University of Liverpool and Royal Infirmary, Liverpool; Louisa Woodcock, B.S., London School of Medicine for Women; G. T. Wrench, B.S., Guy's Hospital.

* Obtained the number of marks qualifying for the University medal.

M.D. in Pathology.—C. P. Lukis, St. Bartholomew's Hospital (University medal).

M.D. in Mental Diseases and Psychology.—M. A. Collins, B.S., Guy's Hospital and Heath Asylum, Bexley.

M.D. in Midwifery and Diseases of Women.—T. Holmes, B.S., Guy's Hospital; L. G. Hopkins, University College: A. Ricketts, University College; P. M. Smith, St. Mary's Hospital; Jane H. Turnbull, B.S., London School of Medicine for Women: Asa C. Ali Van Buren, B.S., King's College and St Bartholomew's Hospital: E. C. Williams, B.S., St. Bartholomew's Hospital and University of Liverpool; C. W. Wirgman, B.S., University College.

Master in Surgery.—F. Barnes, University of Birmingham; *R. C. Elmslie, St. Bartholomew's Hospital; L. Jones, St. George's Hospital; C. A. R. Nitch, St Thomas's Hospital (University medal): Florence Elizabeth Willey, B.Sc., London (Royal Free Hospital) School of Medicine for Women; E. E. Young, St. Bartholomew's Hospital.

* Obtained the number of marks qualifying for the University medal.

TRINITY COLLEGE, DUBLIN.

MICHAELMAS TERM, 1904.

THE following candidates have satisfied the examiners at the examinations mentioned:

Medicine: Final Examination.—T. Creaser, C. E. Fawcett, J. Chambré, J. F. W. Leech, F. W. Bury, J. Cunningham, A. A. M'Neight, C. E. C. Williams, R. Kelly, K. R. C. Hallowes, M. J. M'Auliffe, W. G. Harnett, G. A. Crowley, R. S. Smyth, T. J. T. Wilmot, W. L. Myles, R. Bailey, J. H. C. Thompson, H. H. White.

Diploma in Public Health.—Part I: J. T. Wigham, M.D.; W. R. Dawson, M.D.; C. R. Kilkelly, M.B., B.Ch.; T. F. Griffin, M.D. Part II: C. R. Kilkelly, M.B., B.Ch.

SOCIETY OF APOTHECARIES OF LONDON.

AT the December Examination the following gentlemen satisfied the Examiners in the subjects indicated:

Surgery.—W. Archer, *J. J. Comerell, P. C. Franze, †F. E. Gubb, *M. E. Jeremy.

Medicine.—*J. J. Comerell, W. L. Crabtree, P. C. Franze, *J. A. R. Wells, *P. B. Whittington.

Forensic Medicine.—P. C. Franze, F. E. Gubb, W. V. Pegler, A. F. Reardon, P. L. Vawdrey, R. J. S. Verity, P. C. West, P. B. Whittington.

Midwifery.—D. L. E. Bolton, J. J. Comerell, P. C. Franze, F. E. Gubb, C. F. Kernot, J. W. Rollings.

The diploma of the Society was granted to Messrs. W. Archer, P. C. Franze, and P. B. Whittington.

* Sections I and II. † Section I.

MEDICAL VACANCIES AND APPOINTMENTS.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House-Surgeon, resident. Salary to commence, £70 per annum.

DERBYSHIRE ROYAL INFIRMARY.—(1) House-Surgeon, (2) House-Physician, (3) Assistant House-Surgeon. Salary for (1) and (2) £100 per annum, and for (3) £60 per annum.

DORCHESTER: DORSET COUNTY HOSPITAL.—House-Surgeon, resident. Salary, £100 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—Dental Surgeon.

GLOUCESTER; GENERAL INFIRMARY.—Assistant House-Surgeon, resident, Salary at the rate of £30 per annum.

GROCERS' COMPANY.—Two Scholarships in Sanitary Science. £300 a year each.

LANCASHIRE COUNTY ASYLUM, Winwick.—Assistant Medical Officer, resident. Salary, £150 per annum, increasing to £250, and further increase on promotion to £350.

LONDON SCHOOL OF TROPICAL MEDICINE.—Teachers of (1) Protozoology, (2) Helminthology. Salary, £250 per annum, rising to £500 each.

NEW ZEALAND: UNIVERSITY OF OTAGO.—Professor of Physiology. Salary, £600 per annum, and half of the class fees.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, N.E.—House-Surgeon, resident. Salary at the rate of £60 per annum.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—Assistant House-Surgeon, resident. Honorarium, £20 for six months.

LANCASTER: COUNTY LUNATIC ASYLUM.—Assistant Medical Officer, resident. Salary, £150 per annum.

LINCOLN: HOSPITAL FOR THE INSANE.—Assistant Medical Officer. Salary, £150 per annum.

ROYAL DENTAL HOSPITAL OF LONDON.—Demonstrator in Mechanical Pupils' Department. Stipend £120 per annum, rising to £150.

ST. MARY'S HOSPITAL, Paddington, W.—Two Physicians in charge of Out-patients.

SALISBURY: FISHERTON ASYLUM.—Assistant Medical Officer, resident. Salary, £150 per annum.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Clinical Assistants.

SCARBOROUGH BOROUGH.—Medical Officer of Health. Salary, £350 per annum, increasing to £400.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Assistant Physician.

WAKEFIELD: CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—(1) Senior House-Surgeon, (2) Junior House-Surgeon. Both resident. Salary, £120 and £80 per annum respectively.

WESTERN GENERAL DISPENSARY, Marylebone Road, N.W.—Honorary Surgeon.

APPOINTMENTS.

BAKER, W. I. T., L.R.C.P. and S.Edin., L.F.P.S.Glasg., Medical Officer of Health, Winterton Urban District.

GASK, G. E., F.R.C.S., Assistant Surgeon to the Metropolitan Hospital.

GOLDIE, E. M., M.D.Edin., Public Vaccinator to the Woodford District of the West Ham Union, vice Dr. Sayres, resigned.

HILL, J., L.R.C.P. and S.Edin., Certifying Factory Surgeon for the Miltown Malbay District, co. Clare.

HOYLAND, S. S., M.D., District Medical Officer of the Samford Union.

JOHNSON, R. G., M.B., Certifying Factory Surgeon for the Poole District, Dorsetshire.

LAPAGE, C. P., M.B., Ch.B.Vict., Senior Resident Medical Officer to the St. Mary's Hospital, Manchester.

LEGGE, S. C., M.R.C.S., L.R.C.P., Medical Officer of the Workhouse and Cottage Homes Worcester.

LIVINGSTONE, T. H., F.R.C.S., M.D.Edin., Honorary Assistant Surgeon to the Hospital for Children, Newcastle-upon-Tyne.

MATHEWS, T. G., M.D.Edin., Certifying Factory Surgeon for the Kirby Lonsdale District, Westmorland.

MATTHEY, Arthur, M.R.C.S., L.R.C.P., Medical Officer in Charge of the Port Morsant District of British Guiana.

PRICE, Florence M. S., M.B., Ch.B.Edin., House-Physician to the Swansea General and Eye Hospital.

SAMUEL, H., M.R.C.S.Eng., Resident Medical Officer to the Cardiff Infirmary.

SCHORSTEIN, Gustave, D.M., M.A.Oxon., F.R.C.P., Physician to the Brompton Hospital.

DIARY FOR NEXT WEEK.

WEDNESDAY.

Obstetrical Society of London, 20, Hanover Square, W., 8 p.m.—Short communications:—Surgeon-Captain Leicester: On a Case of Chyluria with Pregnancy, and one by Dr. A. W. W. Lea. Paper.—Dr. Victor Bonney and Mr. A. G. R. Foulerton: The Etiology of Puerperal Fever. Specimens will be shown by Drs. Lewers, Williamson, Malcolm, Targett, Handley, and Taylor.

THURSDAY.

North-East London Clinical Society, Tottenham Hospital, 4 p.m.—Discussion on The Medico-Legal Aspects of Alcoholism, to be opened by Dr. A. J. Whiting.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 8s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

MARRIAGE.

POYNTON—CAMPBELL-ORDE.—On December 20th, at St. John's Church, Paddington, by the Rev. A. Simeon, Rector of Yattendon, assisted by the Rev. G. S. Karney, Incumbent of St. John's, Frederic J. Poynton, M.D., F.R.C.P.Lond., son of the late Rev. Francis John Poynton, Rector of Kelston, Bath, to Alice Constance, daughter of the late Sir John Campbell-Orde, Bart., of Kilmory, Argyllshire.

DEATHS.

COPLEY.—On December 26th, at Mounpesson House, Wisbech, Cambs., William Henry Copley, Esq., M.R.C.S., L.R.C.P., aged 49.

MACDONALD.—At 21, Clarendon Crescent Edinburgh, on December 21st, Reginald Francis Norman, dearly loved eldest son of Keith Norman Macalister MacDonald, M.D., F.R.C.P.Edin., aged 30 years.

MILNE.—On December 19th, at Oxford Bridge, Guiseley, James Milne, M.D., of Straffan, co. Kildare, Ireland. The remains were conveyed to Ireland, and interred at Naas on December 22nd.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 2, Agar Street, Strand, W.C., London; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 429, Strand, W.C., London.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone, unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):— EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

Pruritus in Gouty Albuminuria.

NAVALIS asks for advice in the treatment of a male patient, over 60, in a very advanced stage of gout, who has latterly developed albuminuria with oedema of legs and ascites. There is also a definite specific history of both secondary and tertiary symptoms. Now there is eczema of the trunk, which causes the most intolerable pruritus, which almost entirely precludes sleep. All the usual local remedies for eczema have been tried and have failed, and the usual constitutional remedies for gout have given no relief.

The Facies of Tapeworm.

C. H. G. P. asks: Is there any peculiar "facies" recognized in cases of "tapeworm"? In a limited experience of patients suffering from these pests I have noticed in several long-standing cases a high colour over the "cheek bones" caused by dilated and congested capillaries, with sunken cheeks below. In fact, their friends have called them "consumptive" from their appearance. My cases have been hardly plentiful enough to exclude coincidence. I should much like to hear if others have noticed this point in their experience.

Motor Broughams.

B. H. 351 writes: Could any of your readers give me their experience of a small two-seated motor brougham or landaulet? I have been driving an ordinary open car this winter, and have suffered a good deal of discomfort from cold and wet, so hanker after the comfort of a closed carriage that I can drive myself. Of course, there are plenty of cars with hoods and wind-snields, but they seem to me to have all the disadvantages of a closed carriage and would none of them be fit to take a lady out to dinner. The points on which I specially desire information are: Would such a carriage be safe and convenient to drive, especially at night? What would be its approximate weight? What horse-power should it have for a very hilly district with rough roads?

ANSWERS.

DOLMEN.—Mr. Benjamin Harrison's pamphlet on eolithic implements can be obtained from the author (Ightham, Kent). The price is 6d.

Epilepsy Remedies.

H. S. AND H. C.—An analysis of Dale's remedy for epilepsy made for us at the beginning of this year showed that it contained ammonium bromide. According to an analysis made for us in 1899 elipizone is an aqueous solution of sodium bromide, ammonium bromide and carbonate.

Sale of Cocaine.

C. H.—Cocaine being a poisonous vegetable alkaloid, comes under Part I of the poisons schedule. The purchaser must be personally known or introduced by a person personally known to the chemist. Several formalities have to be observed during the sale, but no order is required from a medical man, nor is this the case with any poison, as our correspondent appears to believe.

The Triangular Cartilage.

A. W.—The cartilaginous portion of the nasal septum is commonly referred to as the "septol" or "triangular cartilage." It represents approximately the anterior third of the whole septum. The two posterior thirds with which it unites are bony, and are the lower and the perpendicular plate of the ethmoid. Occasionally the triangular cartilage is normal; it is then also perpendicular.

LETTERS, NOTES, Etc.

The Return of Vision in an Amblyopic Eye.

DR. ALBERT CORNER, M.R.C.S., etc. (Forest Gate), writes: Following on the letter headed as above in your issue of December 24th, the following case may be of some interest. It occurred in my own practice, and so I can vouch for it. A male, aged 15 years, had internal strabismus (concomitant) of his right eye and partial amblyopia of it; its vision on March 23rd was $\frac{1}{60}$. The fixing—the left—eye then became affected with interstitial keratitis, and so had a shade over it for some months. In the meantime the vision of the squinting eye improved from $\frac{1}{60}$ to $\frac{6}{9}$ partly. This improvement had taken place in ten weeks—a quick improvement—and due, I think, to the amblyopia being partial only (slight).

The Penalty of Non-Prevention.

IT is announced that chief medicine man Eunapatcha, of the Piute tribe of Indians, was recently officially killed by Aralecha, the chief, at San Bernardino, California. The death penalty was inflicted by way of punishment because the medicine man had failed to prevent a disease which was decimating the tribe. The chief afterwards committed suicide as an act of atonement for the whole of the tribe. The Indians appear to have a high ideal of preventive medicine which we should be glad to see in peoples who would doubtless call themselves more civilized. Their methods are, perhaps, a trifle drastic for general application in this humanitarian age, but the principle is sound. If sanitary authorities could be held personally liable for failure to prevent preventable disease, an incalculable improvement in the public health would soon be brought about.

Treatment of Haemoptysis.

DR. ST. GEORGE EYRE HARRIS (Bournemouth) writes: I was interested in an article on the treatment of haemoptysis, written by Dr. Hyslop Thomson, which appeared in the BRITISH MEDICAL JOURNAL of December 17th, pp. 1635-6. In my experience of cases of severe haemoptysis I have found that the specific action of morphine combined with atropine is much reduced, and that the alkaloid may be safely injected in much larger doses than mentioned by Dr. Hyslop Thomson. Whilst admitting that chloride of calcium is useful in the after-treatment of severe haemoptysis, I do not think the patient should be disturbed to give a rectal injection, as absolute rest, avoidance of all excitement, and sleep are to be desired. Examination of a patient's chest after severe haemorrhage is, in my opinion, a mistake, as I have frequently known it to bring on fresh haemoptysis and very little knowledge is to be gained by such examination. I have long since discarded the icebag, having on several occasions observed its use followed by bronchopneumonia. If the patient must have ice, let him hold a lump in his hands for a few moments: this may cause contraction of the arterioles; a little ice to suck is useful as it allays the cough and thirst, but it should be limited in amount. I notice Dr. Hyslop Thomson does not mention the use of saline cathartics combined with the mineral or aromatic acids in his treatment. I quite agree with Dr. Thomson's other remarks, particularly as to the usefulness of ergot, but would not confine its use to those cases preceding or accompanying menstruation.

The Metric System.

DR. GEORGE CRICHTON (London, W.) writes: Professor Cash has certainly pointed out the way we must follow in making use of the metric system. Discarding the tablespoonful, etc., let us adopt at once the 10 c.cm. and 20 c.cm. measures. In a paper on the subject (which will appear in the *Therapeutical Society's Transactions*) I proposed to call the 20 c.cm. "a metric spoonful." It has a sort of familiar ring about it, and would not startle even the trained nurse. We require, besides this measure, a dispensing bottle of 200 c.cm. capacity. This elementary need is unattainable (see BRITISH MEDICAL JOURNAL, April, p. 1051). Failing this, we might prescribe "ad ℥viij," and order one-tenth. The chemist will put on the bottle a gummed slip dividing into tenths. I have met with the most extraordinary difficulties in endeavouring to carry out the metric system in my own dispensing. For instance, I have a 10 c.cm. measure, but it is left-handed and of an inconvenient shape for rapid dispensing. I had heard of the unprogressive methods of the English tradesmen. The word "metric" or "decimal" throws him into a state of bewildered excitement. The pharmaceutical chemist may be relied on to dispense a metric prescription correctly. In London, I believe, these are pretty frequent, many, no doubt, foreign. He does not dispense *according to* the metric system, but *translates into* the old system. The reason is psychological. He thinks in that, and fears the chance possibility of error. To enforce the new method before the minds of men have been accustomed to its use would be disastrous.

DR. JOHN DALEBROOK (Seville, Spain) writes: I see that the correspondence on the metric system still continues. I have watched it with great interest because, having practised for five years on the Continent, I have had actual experience. The metric system may be very useful for dealing with potatoes, corn, etc., but it is by no means an ideal system for prescribing. For ordinary dispensing, and especially for liquids, the English is far the most practical system, as even foreign chemists who have experience thereof admit, the reasons being: (1) Accuracy of dosage; (2) practical approximation of drachm to teaspoon and ounce to tablespoon; (3) the habit we have of prescribing medicines to be taken twice or three times a day for three or four days, or two, three, or four-hourly, and not in multiples of five. I have asked many doctors here such a question as, How much potassium iodide is there in this mixture per dose? The answer invariably is, "I don't know, but I give so many grams of the iodide in so many of water and syrup, and that lasts so many days." At the end they are only approximately right, because they only have an approximate idea of the relation of 15 grams of this mixture (of whose specific gravity they know nothing) to a tablespoonful. As the tablespoon does not divide the bottle accurately the medicine is not properly finished, and they are still further out. On the other hand, that the simplicity of the metric system has led to mistakes against which it has been thought well to guard, is shown first by the fact that prescription papers are issued with a careful alineation at the side, as in an account book, for grams, centigrams, and milligrams; nor does a foreign medical journal follow your example, Sir, and write gram 1·75, but 1 gram 75 centigrams. Secondly, when accurate dosage is required for liquids, drops, not milligrams, are invariably resorted to. Are drops accurate as minims? Why, then, is the advantage over the English system? Does this lie only in the easiness of multiplication and division by 10? Surely one might as soon suggest that pounds were easier reckoning than guineas. For percentage doses, whether for large quantities as in lotions, or for small, as in hypodermic solutions, the metric system is convenient. All medical men have a nodding acquaintance with the metrical system: they need have no more. When the *Pharmacopoeia* gave strengths, amounts, and doses in metrical measures, it brought us authentically into line with foreign countries. No more is heard of us. I may add that the fluid cubic centimetre, instead of the weighed gram, helps, but helps little.

A Living Testimonial.

THE following advertisement appeared not long ago in a Paris newspaper: Wanted, a man of an appearance at once robust and distinguished, to pose as a cured patient in a doctor's consulting room.

AN M.D. DEGREE FOR PRACTITIONERS.

DIPLOMA writes: Durham appears to be the only University in the United Kingdom which grants the degree of M.D. by itself to registered practitioners without the necessity of passing the earlier examinations, but the conditions of waiting for fifteen years and minimum age of 40 have always seemed to me to be rather on the prohibitive side. Most men when they reach the age of 40 have already settled down in some sphere of professional work which does not give them sufficient time to read for extra qualifications, and in any case at the age of 40 they are unable to study as well and as closely as when they were younger. I would suggest that the Senate of Durham University be petitioned to reduce the waiting years from fifteen to five, or at most seven, and the minimum age from 40 to 30. This, on the face of it, would be much more reasonable, would, owing to the greater youth, secure better study, better preparation and hence better candidates, and it would give the recipients ten years longer in the enjoyment of their M.D., a most important factor in considering the money value of such a degree. I shall be glad to join "X.Y.Z." and his friends in petitioning the Senate at Durham, and I know several young practitioners who are also interested in this matter.

M.D.DURHAM writes: Permit me to hope, with M.B., B.S.(Durham), that the present regulation for the degree of M.D. will not be relaxed. We who have obtained our degrees at Durham are proud, and may I say justly proud, of our Alma Mater, and would feel deeply to see the University reduced to a "penny in the slot" degree granting institution. Why cannot men, who are ambitious to obtain a degree, try some of "our modern universities"? I have been told that practitioners have gone in by a side or back door at one of these and come out at the front entrance with as many as three degrees at once! These are the sort of universities for men who are too idle or incompetent to work for a good degree, and Durham, standing next to Cambridge in seniority as an English university, has a proud position which, may we hope, she will maintain.

PROFESSOR SCHÄFER'S METHOD OF PERFORMING ARTIFICIAL RESPIRATION.

DR. JAMES ROSS (Bowmore, Islay) writes: I read with much interest the article on the above subject in the BRITISH MEDICAL JOURNAL of October 29th, p. 1179. A short time ago I delivered a primipara under chloroform with forceps. The case was stiff and tedious, and all present thought the child dead. At first I tried the Sylvester method, but soon desisted, as there was no attempt at breathing. I thereupon placed the child's hands under its neck, and with my own extended fingers resting on the sides of the child's thorax, and my thumbs placed under the lower ribs near the ensiform, suddenly jerked the ribs upwards, and with regular intervals continued this action for a few minutes. Soon we were gratified with hearing a slight sigh, then a weak cry, and in a short time I was able to give the child to the nurse with breathing well established. I have been practising this method for twenty-five years, with the best results. If at any time I have to treat a case of asphyxia, I will trust to this method. The danger of the tongue falling back into the fauces, and thereby obstructing respiration when the patient is in the supine position, I believe to be a time-honoured bogey. Let any one try to do this in his own person, and the impossibility of the occurrence will be immediately manifest.

HOW TO ADMINISTER CHLOROFORM.

DR. NEWTON DAVIES (Liverpool) writes: The remarks *re* the archaic method of administering chloroform and the reply to "Opsimathes" in the BRITISH MEDICAL JOURNAL of November 19th, p. 1443, incline one to think that the present-day tendency is to a perfect faith in a machine which supplies "more or less accurately" a definite percentage of vapour. The "archaic" method of administering chloroform is essentially one which insists upon the necessity of watching the effect produced upon the patient, and be guided, by that rather than upon the amount of chloroform used. The inexperienced man "who has not learnt to discriminate between respiration peculiar to chloroform narcosis and faulty respiration" is, I venture to think, less likely to be found among those who have been taught the "archaic" method than among those who pin their faith to an instrument which supplies a "more or less" definite percentage of vapour, and which, at a critical moment, may prove fatally faulty. In an age which has produced so many valuable mechanical aids to the diagnosis and treatment of disease it is still necessary to remember that we have to deal with the individual, and, whilst taking advantage of those instruments which make for precision of dosage, it is well to bear in mind that the dominant factor is the patient's reaction to the drug—not the amount or manner in which it is administered.

VERONAL.

DR. F. S. TOOGOOD (Lewisham) writes: Your correspondent "Veronal," who writes in the BRITISH MEDICAL JOURNAL of December 17th, appears to have been somewhat careless in the administration of the drug veronal. Ten grains thrice in two hours is certainly more than should have been given. Veronal rarely acts under an hour, but provided it be not taken immediately after a meal a suitable dose will usually produce sleep in two hours. I have given Mercke's veronal in many scores of cases during the past eighteen months. I usually commence with 7½ gr., repeated if need be in two hours. I have found it useful in mania, the restlessness of senile dementia, in mild cases of delirium tremens, and in the insomnia of heart disease, and of acute pneumonia. In the more severe type of delirium tremens associated with great violence, I have given as much as 40 gr., repeated in four hours, with no effect whatever, and in this particular condition I prefer to use pot. brom. 5ss, chloral hydrate 9j, repeated in two hours if necessary. The only toxic effect I have noticed occurred in a case of mental excitement where gr. x t.d.s. had been taken for a week, and in this instance a general redness of the skin was produced, with raised plaques of a deeper red, accompanied by great itching. This persisted for four or five days. I regard veronal as an exceedingly useful drug, which in ordinary doses has no depressing effect upon the heart.

THE GREAT AMERICAN CANAL.

AN American physician, Dr. John Nelson Gottra, relates that in a school in one of the Western cities a teacher asked the class, "What is the greatest canal in the United States?" Whereupon a small boy promptly answered, "The alimentary canal!" That boy is evidently predestined to be a specialist in abdominal surgery.

A GENUINE HOMŒOPATH.

AN American lady doctor, who practises in India, relates that, riding one day in a tramway car with a Mohammedan doctor, she asked him whether he was an allopath, a homœopath, or an osteopath. He answered modestly that he did not know. The lady then asked him how he practised and what kind of medicine he gave. Opening a box which he carried, he exhibited seven bottles containing liquids of all the colours of the rainbow. "You see," he said, "fever makes the patient red, and then I give him red medicine; a cold makes him blue, and then I give him blue medicine; if he is bilious he is yellow, and then I give him yellow medicine," and so on through all the shades of the spectrum. A day or two later the lady, on walking down a street, passed the Mohammedan doctor's sign, which bore an inscription to the following effect:

"Gee-ul-whiz Servant of God,
"Homœopathist."

An attempt to reinstate the doctrine of signatures was made a few years ago by a leading member of the homœopathic fraternity. He seems to have found at least one disciple, in the simple-minded "Servant of God," who applies the colour treatment on the simple plan here set forth.

PATHS TO THE GRAVE.

THE poet tells us that the path of glory leads but to the grave. But that is not the only path to the goal of which another poet said *Omnes eodem cogimur*. An Irish brakeman was the victim of a railway accident, and the question of sending for a doctor naturally arose. With a delicate consideration for the patient's wishes, he was asked whether he would like to have the ministration of an allopath or a homœopath. He answered: "It doesn't matter; all paths lead to the grave."

WISE VIRGINS AND THE VACCINATION ACT.

IT is said that at a public dinner not long ago an Irish doctor declared that, under the existing Vaccination Act, it was "left for the wise virgins to protect their own children."

LETTERS, COMMUNICATIONS, ETC., have been received from:

A Mr. A. E. Aspinall, London. **B** Dr. A. Bronner, Bradford; W. C. Buck, M.B., Southend-on-Sea; Dr. T. E. Brown, C.I.E., London; Dr. F. C. Bottomley, Bournemouth; Mr. E. C. Bousfield, London; Mr. W. L'H. Blenkarne, Worthing; J. Brunton, M.B., London; B. H. 351; W. P. Beattie, M.B., Airdrie; Dr. F. W. Bennett, Leicester. **C** Dr. C. H. Cattle, Nottingham; C. H. G. P.; Caesar; Sir J. Crichton-Browne, Dumfries; Mr. E. C. Cripps, Cirencester; Mr. A. Corner, London; Dr. M. Coplans, Canterbury. **D** Diploma. Dr. T. W. Dewar, Dunblane; Messrs. Dalston, Son and Elliman, London; Dr. F. W. Dobbin, London; V. C. de Boinville, M.B., Liverpool; Dolmen. **E** E. F. E. B. **F** Dr. T. Fisher, Clifton. **G** P. G. Griffith, M.B., London; Mr. G. E. Gask, London; Galen Manufacturing Company, Manager of, London; Mr. T. W. H. Garstang, Altrincham. **H** Hygiene; Mr. J. Hutchinson, London; Dr. St. G. E. Harris, Bournemouth; Dr. J. Houston, London; Dr. F. E. Hare, London; Dr. R. Harley, Dublin; Mr. F. Haydon, London; Dr. L. Humphry, Cambridge. **I** Mr. T. M. Ingram, Grimsby; International Plasmon, Limited, Manager of, London. **J** Mr. H. E. Jones, Liverpool; J. A. G.; W. T. James, M.B., Carmarthen; Mr. W. R. Jordan, Birmingham. **K** Mr. R. M. Kalapin, London; Dr. T. B. Keys, Chicago. **L** Dr. T. H. Livingstone, London; Dr. V. A. Latham, Chicago; C. P. Lapage, M.B., Manchester. **M** Dr. A. B. McMaster, Rochdale; Mr. W. Marriott, London; Mr. A. Marsden; Mr. A. Maude, Westerham; M.D.Durh; M.A. **N** Navalis. **O** Dr. H. O'Neill, Belfast; Mr. J. H. Ogilvie, Birtley; Mr. J. Oldfield, London. **P** Petrol; Dr. K. Pearson, London; S. B. Pollard, M.B., Leicester; Mr. G. Pernet, London; Plexim eter; Miss F. M. S. Price, M.B., Carmarthen; Mr. J. F. Palmer, London. **R** R. C.; Mr. U. R. Rau, Madras; Mr. G. L. H. Revill, Lincoln; Dr. A. C. F. Rabagliati, Bradford; Dr. J. Ross, Bowmore. **S** Dr. A. Sellers, Manchester; Dr. F. C. Shrubsall, London; Dr. G. A. Stephens, Swansea; G. C. Stewart, M.B., Falkirk; S. W.; Mr. A. P. H. Simpson, Liverpool; Dr. E. H. Snell, Coventry; Dr. G. F. Still, London; Dr. G. Schorstein, London. **T** Mr. J. L. Thomas, C.B., Cardiff; Dr. F. S. Toogood, London; Dr. J. C. Thorowgood, Bognor; Tabes; W. A. Taylor, M.B., Perth. **U** Dr. A. R. Urquhart, Perth. **W** Mr. H. de C. Woodcock, Leeds; Messrs Wallace and Guthrie, Edinburgh; Dr. C. J. Whitby, Bath; Mr. H. G. Willis, Stockport; Mr. C. E. Wallis, London; Mr. W. R. Williams, Clifton. **X** X. Y. Z.

BOOKS, ETC., RECEIVED.

A Textbook of Human Physiology. By Albert P. Brubaker, A.M., M.D. London: Rebman, Limited. 1904. 17s. 6d.

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OF
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MEDICINE.

(1) Hyperacidity and Hypersecretion.

F. RIEGEL regards the conditions known as hyperacidity and hypersecretion as two totally distinguishable conditions, and states that they are neither rare (*Berl. med. Woch.*, May 12th and 19th, 1904). By hyperacidity is understood the secretion of a gastric juice which contains more acid than normal during digestion. It is thus a qualitative disturbance of secretion. By hypersecretion is understood an increased amount of the gastric secretion, and this may be associated with an increase of acidity. In milder forms the hypersecretion takes place only in response to digestive stimulation, and is termed the alimentary form, while in the more severe forms the flow is continuous, and is known as the continuous form or Reichmann's form. It is therefore a disturbance of quantity. The latter, Reichmann's form, is again divided into an acute intermittent form and a chronic one. It is supposed that the chronic form is nothing else than a result of a disturbance of the motor sufficiency of the stomach; for if the organ cannot expel its food contents then when there is no food in the stomach there would be a retention of the gastric juice. That is not the case, for the reasons which Riegel explains. The first question to be decided is whether, normally, the fasting stomach is empty or not. He has found that although there are people whose stomachs contain a few c.cm. of fluid, the majority show an empty organ. Even when there is some fluid he finds that this has not the digestive qualities of gastric juice, and he goes on to say that a stomach which secretes a fluid possessing the ordinary digestive properties without any stimulation of food is in a pathological condition. In cases with motor insufficiency associated with acidity he has found that on washing the stomach out in the evening and then again on the following morning, without allowing any food to be taken in the meantime, that the stomach does not contain any secretion. Motor insufficiency, therefore, even when associated with hyperacidity, is not enough to determine a hypersecretion. One has next to explain why the stomach does not pass its excessive secretion on into the intestine, if there is no motor fault to account for this. Pawlow has given the answer to this question. He found that the fault lies in the upper segments of the gut. When the secretion which is acid passes into the intestine there follows a reflex pyloric spasm, and when there is too much acid secretion this reflex spasm leads to retention of the secretion. The upper bowel, as it were, protects itself against an excess of acid. In the alimentary form the diagnosis is not so easy. One has to determine the increase of fluid in response to the ingestion of food, and this may be almost impossible. Something may be learned from the macroscopical appearance of the gastric contents after a trial breakfast and it is especially suggestive of this form of hypersecretion if the contents divides itself into two layers—an upper, almost clear, layer of fluid and a lower sediment. The chief differential diagnosis must be made from motor insufficiency, and much assistance may be derived from the determination of the difference between the total acidity and the free HCl. When this difference is high the stomach is generally insufficient, and when the difference is slight, it speaks in favour of hypersecretion. He instances this by illustrative cases. One must keep in mind that the actual acidity value will not serve to form a diagnosis. The atropine experiment sometimes lends a useful hand. This depends on the fact that when one gives a patient atropine, if there is hypersecretion as well as hyperacidity, which is the rule, the quantity of secretion is diminished, and the case is changed into one of hyperacidity. In treating a case of alimentary hypersecretion, it will be found advisable to give the stomach a complete rest for a while. The patient is fed per rectum. Later, one must attempt to diminish the quantity of acid, and this is best done by allowing an albuminous-fat diet. Fat or oil in large doses is of the greatest value in the treatment of this form, and at times one may employ atropine. The question of washing the stomach out is decided as follows: in cases of Reichmann's form, it is wise to wash out before the evening meal, so that while the organ is relieved of a great deal of its tension, the food taken may be allowed to tone down the excessive secretion during the night. In the alimentary form, one washes the stomach out the last thing at night; in this way the organ obtains some rest. The stomach tube, of course, is the best means of combating the discomfort of an excessive quantity of secretion, and may be used for this purpose. Lastly, he discountenances the question of all operative treatment of hypersecretion, and says that it is quite out of the question that it could ever cure the actual condition. He never sanctions an operation on a patient suffering from hypersecretion.

(2) House Infection of Tuberculosis.

LAWRENCE F. FLICK, Director of the Phipps Institute, Philadelphia, read a paper on this subject at the Tuberculosis Exposition, held in Baltimore (*Med. Rec.*, June 4th). According to him the most striking feature about the communicability of tuberculosis was that it depends almost entirely upon the house. "Were it not for the house," he said, "the tubercle bacillus would soon have to perish from the face of the earth. It could not be preserved. Sunlight, air, and water are its natural enemies. The water dissolves it out of its cache, and the sunlight and air destroy it." The house also prepares the soil for the germ of consumption. The system, through living in unhealthy surroundings and through insufficient nourishment, becomes devitalized, and harbours and develops the germ with great readiness. Malnutrition is one of the most predisposing causes of tuberculosis. Next to the house, the workshop is chiefly responsible for the spread of consumption. The writer asserts that some people work with the contagious stage of tuberculosis for the greater part of a working lifetime, occasionally being thrown out of employment for a few weeks or months on account of an exacerbation, and again returning with as much vigour as before. Owing to the spitting habits of men and women in workshops a few consumptives can contaminate an entire shop. The house is the *fons et origo* of tuberculosis, and is also the most potent means of its dissemination. Flick summarizes his views on the matter as follows: (1) Tuberculosis is a disease due to the parasitic growth of a micro-organism on the tissues of a human being or animal. (2) Tuberculosis is contagious. The contagion of tuberculosis is different from the contagion of acute contagious diseases, however. It is slow, and can be avoided easily in the presence of a consumptive, whilst that of acutely contagious diseases is rapid, and cannot be avoided in the presence of those who have such diseases. (3) The contagion of tuberculosis is closely associated with the house. An enclosure of some kind is necessary to make it effective. (4) The house is the granary of the tubercle bacillus. It is the place in which tuberculous matter is kept vital until the bacillus can find a new host. (5) Out of doors tuberculous matter becomes devitalized in a short time through water, light, and air. Enough cannot accumulate in a vital state to create a contagious environment. (6) Every one has some resisting power to tuberculosis. Some have more than others. Practically all have sufficient resisting power to withstand occasional exposure to tuberculosis and exposure out of doors. (7) For an implantation of tuberculosis prolonged intimate exposure and an intensely contagious environment is necessary to overcome resisting power. This is had in the home and the workshop. (8) The house prepares soil for the tubercle bacillus.

(3) The Position of the Human Stomach.

THE former teaching that the lowest part of the stomach is formed by the greater curvature was founded upon observations on the cadaver and is not now generally received. W. B. Cannon (*Amer. Journ. Physiol.*, vol. x, p. 19, February, 1904), extending his researches upon the digestive movements from animals to man, has confirmed the modern view by the *x* rays. From the shadow cast by a normal human stomach containing food with bismuth subnitrate, it can be seen that as digestion proceeds the longitudinal and oblique muscular fibres contract, and lift up the organ toward the fixed cardiac orifice, hence in the later stages the pylorus is the lowest point, and when it opens, the fluid will pass out of the stomach by gravity.

SURGERY.

(4) Treatment of Gall Stones found in Abdominal or Pelvic Operations.

AT the twenty-ninth annual meeting of the American Gynecological Society

held in Boston, Mass., May 24th to 26th, 1904 (New York *Med. News*, June 4th) John G. Clark, of Philadelphia, stated that among the unsettled questions in abdominal surgery, the treatment of gall stones found as a coincidence in abdominal or pelvic operations might be considered a debatable one. He followed the plan at present of removing gall stones which were found in the course of another operation, if the patient's condition permitted of this extra operation. Although it was stated that 95 per cent. of gall stones produced no symptoms, he believed that this statement could not be applied to cases as one met with them at the time of an operation. In his review of recent literature he had been especially impressed with the fact that knowledge of the early stages of cholelithiasis was very indefinite, and that many cases which came to operation for more or less urgent symptoms did not have the clinical symptoms of colic and jaundice, as usually taught in medical schools. In view of this hiatus in the early history of this disease, he believed that many symptoms now attributed to gastralgia, indigestion, functional disturbances of the gastro-intestinal tract, etc., would, as knowledge increased, be ascribed to the presence of gall stones with associated infection, which was so frequently found in cholelithiasis. In referring to the etiology of gall stones, he said that three facts had been firmly established: (1) That the bile was not bactericidal; (2) that the micro-organisms in the gall bladder were predisposing, if not absolute, causative factors in the formation of gall stones; (3) when gall stones were present in the gall bladder, infection in that viscus was much more likely to take place. He mentioned three general avenues through which infection might enter the gall bladder: (1) From bacteria circulating in the genital blood stream and reaching the liver through the hepatic veins; (2) by the direct passage of bacteria into the common bile duct from the duodenum; (3) by the transportation of bacteria from the intestine through the portal circulation. He then recurred to the frequently-quoted statement that 95 per cent. of gall stones did not produce symptoms, and showed from his own series of cases that in at least 50 per cent. there were varying symptoms from undoubted attacks of colic and jaundice to less pronounced intestinal symptoms. To justify operative intervention in cases which were not producing well-defined symptoms, the mortality and morbidity should be very low. In his own experience no death had occurred, nor had there been any serious complication referable to the secondary operation. In lieu of the fact that the additional operation did not seriously jeopardize the life of the patient, and also because he had seen two patients die from cholelithiasis a year or more subsequent to an abdominal operation, in which, had the routine exploration been made, the gall stones might have been easily removed, he believed that the best interests of the patient would be conserved if the gall stones were removed as a secondary part of another operation, in the event of their being found. He appended the history of 12 cases to his paper, in which the various operative points, as well as the significant facts in symptomatology were elaborated.

(5) A Predisposing Cause of Appendicitis. George Rubin, of Chicago, contributes (*Med. News*, June 4th) a preliminary note on this subject, with an account of some laboratory experiments. The technique was as follows: Portions of bowel, about 50 cm. long, including caecum and appendix, were resected from subjects dead of other diseases than what would affect that part of the intestinal tract. Specimens from very recent necropsies were more desirable, but not always obtainable. After cleansing the piece of bowel, the colon end was ligated; shot, peas, and beans were introduced as to indicate more or less peristalsis. The rolling of these bodies was often done with more vigour than normal peristalsis would do. It was observed that none of the contents entered the cavity, although the appendix was held at the most dependent point. Then the bowel was inflated, still containing those substances, the same process of rolling again gone through, with the result that in all the experiments, with one exception, where only one small shot entered, owing to a highly hypertrophied appendix wall and constricted lumen, the appendical cavity was filled with shot, and in 2 cases peas of medium size gained entrance there. Ten such experiments were carried out. The appendix was readily ballooned during the process of inflation. It is reasonable to suppose, says the author, that similar phenomena might occur in the living. Fitz recorded 19 out of 267 cases of appendicitis which were supposed to be due to indirect violence. Such cases can only be explained in the following manner—that by forcing a larger mass of faecal matter through the caeco-appendicular orifice than the appendix is able to expel, following that, trauma to the mucosa, with subsequent infection taking place. It is not improbable that heavy labour, such as heavy lifting, may operate in a similar manner—that is, owing to the increased intra-abdominal pressure produced by tension of the abdominal wall. These considerations help to explain the marked disproportion in the sexes. Regarding the size of the obstructive mass no definite statement can be made. The calibres of appendices vary very much. What would be an insignificant particle for one may competely obstruct another. As to the rôle the valve of Gerlach plays in preventing matter from entering the appendix little can be said, as in all the specimens of bowel the author has examined, in only one was there a lengthening of the mucosa that might have been called a valve. Under ordinary circumstances the mucous lining is sufficient to act as such.

(6) Treatment of Irreducible Obturator Luxation of the Head of the Femur. Gross (*Rev. d'Orthop.*, No. 3, 1904) reports a case of the very rare condition of unreduced luxation of the thigh into the obturator foramen, in which after an unsuccessful attempt to resect the displaced head of the femur, he practised infratrochanteric osteotomy with good results. The injured limb, the author states, is now quite straight, and notwithstanding coxo-femoral ankylosis there is very satisfactory compensating mobility of the pelvis and vertebral column. The patient, though limping slightly, is able to walk over necessary distances without difficulty and fatigue. The shortening of the limb does not exceed 4 cm. The author has collected 8 published cases of old and irreducible obturator luxation treated by surgical operation, in three of which reduction was effected after arthrotomy, and in the remaining five the head of the femur was resected. Of the 3 cases of arthrotomy two were fatal, and in the third the results of the operative treatment were very unsatisfactory. The author concludes that in cases of old and irreducible luxation into the obturator foramen, resection of the head of the femur is preferable to forcible reduction after arthrotomy, but is disposed to regard infratrochanteric osteotomy as an infinitely more simple and easy procedure than either of these two operations, and one also that may be regarded as absolutely safe and likely to be followed by equally good, if not better, results.

MIDWIFERY AND DISEASES OF WOMEN.

(7) Surgery of the Female Urethra. At the twenty-ninth annual meeting of the American Gynecological Society, held in Boston, Mass., May 24th to 26th, 1904 (New York *Med. News*, June 4th), Ely Van de Warker read a paper on this subject. The urethra, he said, appeared like an insignificant part, its vital relations were negligible, its anatomy was relative, and acquired its importance from its related organs, but it might be said to epitomize a large share of the suffering that woman's pelvic organs inflicted upon her. The amount of disturbance caused by a simple irritation of the urethra to the bladder, and indirectly to the kidneys, afforded striking proof of the validity of reflected nervous disturbance. The term sacculation was regarded as better than the old one—urethrocele. Its major cause was mechanical, as inflammation alone was not adequate to its production. The urethra might be said to belong to the perineal rather than the pelvic zone of organs. The walls of the canal depended in a measure upon the support of the perineal body. It was often associated with long-standing rupture of this part. Restoration of the perineum was, therefore, essential to treatment of the sacculation. When large, an elliptical flap of the walls of the urethra was removed and the edges brought together by fine silk sutures. Prolapse of the mucous lining of the urethra the author had generally associated with long-standing urinary troubles of various kinds. It was, therefore, probably due to a gradually progressive condition, and was a typical ptosis, and complied with the general law of genital prolapse. After removing the prolapsed portion there was a marked tendency to recurrence unless the conditions which gave rise to it were treated and cured. Bladder incontinence and dribbling were often lifelong conditions. That this was due to a defective action of the sphincter vesicae was more than doubt-

ful. Dribbling was one of the symptoms of hysteria. Narrowing, by operation, the bladder end of the urethra, linear cauterization at this point, had afforded relief. Any treatment was liable to fail, and relapses were frequent. The powerful influence of hysterical disturbance over the urinary tract was constantly observed. Dribbling was the related phase of retention. The treatment of this form was more satisfactory. The urethral stricture, when of small calibre, was frequently found with dysuria and dribbling. The author referred to but two cases of urethral mucous polypus, and concluded that they must be rare. These growths ought never to be twisted off, as the tissues were too friable. Removal of the growth through the mucous membrane, so that no stump was left, was the proper procedure. Stricture of the urethra, in the author's experience, is common in women. Any condition that tended to produce linear or annular thickening thus led to stricture. Specific urethritis might produce stricture, but it was not the frequent cause alleged by some writers. Stricture of large calibre might be located and measured by the Otis bulbs, but never by the sound, as was recommended by old systematic writers. Annular stricture of the meatus was the form most commonly met with. These ought to be incised and made to heal in an open condition by the frequent passage of the sound. Dilatation alone was too painful and required too much time. As to eversion of the mucous membrane at the meatus, its prototype was the fusiform stricture of Otis, and its surest cure was by dilatation. Caruncle of the urethra was a common occurrence. Removal, involving the whole thickness of the mucous membrane, being careful not to leave a stump, was an effectual cure.

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(8) Puerperal Eclampsia Treated by Renal Decapsulation.

AT the twenty-ninth annual meeting of the American Gynecological Society held in Boston, Mass., May 24th-26th, 1904 (New York *Med. News*, June 4th), George M. Edebohls, of New York, read a paper on this subject. He referred to a previous case, reported to the society a year ago, which illustrated the immediate cure by renal decapsulation of puerperal convulsions, recurring with great and increasing violence after the birth of the child, a period at which the hitherto final resource of force delivery was, of course, no longer available. In presenting the case the opinion was advanced that resort to renal decapsulation in the undelivered woman suffering from puerperal eclampsia might obviate the necessity of forced delivery. The case now reported illustrated the correctness of that opinion. Renal decapsulation was performed upon a woman pregnant near term, suffering from puerperal eclampsia, and almost complete suppression of urine. The convulsions were arrested, the flow of urine was re-established, and a threatened death from uraemia was averted. Two days after all this had been accomplished labour began spontaneously, and living twins were born. One child died soon after birth. The second child and the mother were in perfect health four and a-half months after the termination of pregnancy. Renal decapsulation thus became the rival of forced delivery in cases of puerperal convulsions of renal origin in the undelivered woman. In puerperal convulsions occurring or recurring after delivery, it constituted the final resort when all other measures had failed.

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(9) Placental Opotherapy.

ORTALI (*Gazz. degli Osped.*, May 8th, 1904) discusses the possibility of extract of placenta being useful as a galactogogue. Apparently it has already been used empirically for that purpose by the peasants of Abruzzi, who make a decoction of placenta and fowl and give the soup to the mother to induce a greater flow of milk. The idea that the placenta acts merely in a physical way and by processes of osmosis is not sufficient nowadays; it probably exerts a special activity of its own and possesses an internal secretion. In ruminants the placenta secretes a liquid very similar to milk. The fetal theory of eclampsia is based on the hypothesis that the placenta gives rise to special toxins. And recognizing the close relation between the breast and the uterus, the author thinks it quite possible that the placenta may be made to play a part in stimulating the heart to greater activity. Some experiments on these lines have been carried out, but the results at present are not sufficiently satisfactory to form any definite conclusion.

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(10) Lead Poisoning from Paper Hangings in Pregnancy.

LEFOUR (*L'Obstét.*, May, 1904) reports the case of a pregnant woman who was mysteriously seized with pain and other symptoms which on close examination suggested lead poisoning. The urine was examined and found to contain 1 milligram of lead to the litre. The poisonous metallic element was traced to paper hangings heavily charged with lead. The poison had clearly entered through the lungs.

THERAPEUTICS.

(11) Bleeding in Acute Haemorrhagic Nephritis.

IN a clinical lecture delivered in the Institute of Clinical Medicine of Rome, Baccelli discussed the treatment of acute haemorrhagic nephritis. He laid stress on the hydraulic mechanical conditions which develop during acute nephritis, and chiefly in glomerulo-nephritis. In that form the exudates and the leucocytes that accumulate in Bowman's capsule press on the glomeruli on all sides, and produce a state of paralysis with consequent alteration of function. From the beginning of the inflammation, however, there is an increase of the pressure of the arteries, but the kidneys do not experience any advantage from this, on account of the state of imperviousness existing in the delicate ramifications of the renal arteries, in which the pressure and the velocity of the blood become diminished, while in the renal veins the pressure increases. The venous congestion produces a state of anoxaemia of the tissues leading to disintegration and shedding of the epithelia, with serious disturbances of the dialytic functions of the kidney and obstacles in the process of repair of the kidney. Baccelli, in view of the fact that the inferior vena cava and the renal veins are destitute of valves, and that the withdrawal of blood from a part at any distance from a given organ produces beneficial effects on that organ, determined to treat the renal condition by bleeding to the amount of 250 gr. to 300 gr. from the back vein of the foot. In the case of a boy aged 7 years suffering from acute glomerulo-nephritis of a few days' standing, with serious haematuria and general anasarca, he performed wet cupping to 100 c.cm. from the vein of the left foot. Immediately afterwards the urine became less rich in blood, the albumen markedly diminished; after four days there was no blood in the urine, the quantity of the renal excretion was increased, the albumen was reduced to a trace, and oedema had disappeared. In a few days the child was well. The first benefit obtained after the bleeding was the great diminution of the blood in the urine, as was naturally to be expected, since the first effect was to remove the congestion of the kidneys. Baccelli said that if the improvement had not been so rapid and lasting he would have repeated the bleeding two or three times, as sometimes complete recovery is brought about only after three or four bleedings. Naturally the bleedings should be done as soon as possible; the shorter time the epithelium of the kidney has been exposed to the injurious influence of the passive hyperaemia, the more favourable is the prospect.

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(12) Influence of Suprarenal Extract upon Absorption and Elimination.

AT a meeting of the Society for Experimental Biology and Medicine held on April 20th, 1904 (New York *Med. News*, June 4th), A. J. Meltzer and John Auer reported that in a series of experiments it was found that a previous intravenous injection of adrenalin will make a rabbit resistant to a surely fatal dose of strychnine. In experiments with subcutaneous injection of fluorescein it was also found that in the animal which had previously received injections of adrenalin, the greenish-yellow colour of the conjunctiva, mucous membranes, and skin appeared much later than in the control animal. Both results might be due to delayed absorption or delayed transudation, or to both. In further studies with subcutaneous injections of fluorescein it was found that the colour entered the blood later and in diminished quantity in the adrenalin animal than in the control. Among other observations it was noted that the kidneys of the control animal were coloured more intensely than those of the adrenalin animal. The same difference was found when equal quantities of the stain were injected directly into the blood stream. The lesser coloration of the kidney is therefore due to the diminished elimination by the kidneys in the adrenalin animal. Other related

problems are still under consideration. But the reported series of experiments already justify the conclusion that suprarenal extract delays absorption as well as elimination. The starting point for the investigation was the hypothesis stated by Meltzer in another publication, that since capillary endothelia possess irritability and contractility their pores are surrounded by rings of contractile protoplasm, which act like sphincters upon them, thus increasing and decreasing the permeability of the endothelia. The explanation for the observed facts is now offered that suprarenal extract, which causes a contraction of the smooth muscle fibres of the arterioles, causes also an increase of the contractility of the endothelia, diminishing thereby their permeability, and thus reducing their powers of absorption and elimination.

(13) Aspirin in Carcinoma.

J. Ruhemann (*Deut. med. Woch.*, June 2nd, 1904) deals with the symptomatic treatment of inoperable carcinoma, and especially with the value of aspirin in relieving the pain. He briefly mentions the communications made by other observers on the same subject, and goes on to detail his experience with 5 cases. In none did he find any need to have recourse to morphine, with the exception of one patient, who was given ¼ gr. of morphine by the mouth during the last stage; but, as this drug excited her very much, it was stopped, and aspirin was substituted with good result. He describes the cases, showing that ½ to 1 gram of aspirin sufficed to produce sleep and freedom from pain. He suggests that 2 grams per diem should stand as a maximum dose, while 1.5 gram will generally be found to be sufficient. The stomach appears to tolerate the drug very well, even when, on account of direct involvement of that or in response to the cachexia, the stomach refuses to retain food or other medicaments.

(14) Maretin.

J. Barjansky reports on maretin in the *Berl. klin. Woch.*, June 6th, 1904. It is described as antifebrin freed from its toxic effects, and is a carbaminic acid-tolyl hydracid, occurring in the form of shining white tasteless crystals which are soluble in 1,000 parts of water at room temperature, and has a melting point of 183° to 184° C. At a high temperature it decomposes, giving off ammonia. It reduces silver nitrate solution with slight heat. In boiling water 1 part is soluble in 42 parts, and in boiling alcohol 1 part in 18 parts. While it did not produce any toxic effects in animals, its physiological action became apparent even with small doses. In human subjects it neither produces pain in the stomach, sickness, nor nausea. The secretion of the stomach is not affected by its use, and the pulse and respiration are not influenced by it at all. About three-quarters of an hour after its exhibition the temperature begins to sink, at first slowly, then rapidly, then it remains stationary for fifteen to twenty hours, and at the end of this time again rises. The indications for its application are against the fever of the first and second stages of phthisis, typhoid fever, febrile gastric catarrhs, influenza, septicaemia, and the like. In phthisis he finds it best to begin with a dose of 0.2 gram, and then to work it up to 0.5 gram. He gives some of the details of the cases in which he employed it. He concludes that meretin is an antipyretic which may be said to lower the temperature with certainty, and thus is preferable to pyramidon. It acts best if given in two powders, one in the afternoon and the second in the evening, each of 0.25 gram. It does not harm the respiratory, digestive, or urinary symptoms, and does not produce any rash. In one case it caused a slight collapse of short duration. It has no cumulative action, and therefore may be given daily. With regard to price it compares favourably with pyramidon, 1 gram costing 25 pfg. (about 3d.) against 40 pgf. (about 5d.). He mentions that he is trying whether a combination with agaricin may not yield good antihydrotic as well as antipyretic effects in phthisis.

(15) The Pharmacology of Tannin.

L. Lewin (*Deut. med. Woch.*, May 26th, 1904) recalls his work which went to show that tannic acid, when given in the form of alkaline tannates, either in human beings or dogs, is excreted by the kidneys as tannic acid. This indicates that a distant or indirect action is possible. Since the alkaline tannates do not coagulate albumen, it has been found that it is a good way of giving this drug. Many find tannic acid given with the bicarbonate of sodium useful. The fact that tannin has such a great affinity for albumen led Lewin to suggest giving it in the form of an albuminate, so that the irritation of the gastric wall might be prevented. The albuminate which he introduced many years ago is made by adding to a 2 to 5 in 150 solution of tannic acid the white of one egg dissolved. This albumen is well divided in water and will not damage the tissue with which it comes into contact. That there is any especial advantage in the more modern compounds of tannic acid and albumen he will not admit, and deals chiefly with the compound known as tannalbin. He speaks very openly against the fact that tannalbin is a patent preparation, which has been so exploited by its introducer, Gottlieb, as to make it ridiculous. It is claimed that no other albuminous tannin has the same curative properties, etc., and warning is given against inferior imitations and infringements of the patent. Lewin states that all albuminates of tannin act equally, and points out that any one is free to prescribe the formula which he has found so useful, especially when given for a long time in nephritic conditions.

PATHOLOGY.

(16) Internal Glandular Secretions.

R. Cecca and F. Zappi (*Bull. del Sci. Med.*, March, 1904), in what is described as a first memoir on this subject, describe some experiments undertaken by them to investigate the connexion between the sexual glands and some of the other glands which have been considered to be closely connected with them. They give an account of the whole theory of the internal secretions of glands and other organs, starting from Brown-Séquard's first suggestion in 1869 that such a secretion was received by the circulation from the ductless glands. They describe their own work as an attempt to trace experimentally the functional connexions amongst the different glands which furnish an internal secretion. They consider that the most suitable glands for inquiry are the thyroid, the thymus, the suprarenal capsule, and the pituitary body, and they furnish bibliographical notes on previous observations and theories as to the internal secretions of these glands and the sexual glands. They experimented on eighteen pairs of rabbits, each pair belonging to one litter and being as nearly as possible alike. From one of each pair of animals the testicles or ovaries were removed, while the other was kept entire as a control. Any pair of which either member died or fell ill within three months was rejected from the record. At the end of three months or later the remaining six pairs of rabbits were killed, their weights and the weights of their organs noted, and a histological examination made with constant technique of the thyroid and parathyroid, the thymus, the suprarenal capsules, and the pituitary body in each case. The findings in each case are reported at some length. In most cases the castrated animal, whether male or female, increased in weight more than the control. In every case the thyroid gland was larger, in proportion to the body weight, in the castrated than in the entire animal. The thyroid vesicles contained a largely increased amount of colloid matter in the castrated animals, without increase in the number of cells and without any indication of karyokinesis. In the castrated rabbits there was also a hypertrophy of the medullary substance of the suprarenal capsules due to an increase of volume of the neuro-epithelial elements, with an apparent hypertrophy of the cortical zone, but the cells showed no sensible alterations either in number or appearance. No alteration worthy of note was found in the parathyroid, the thymus, or the pituitary body. Throughout the experiments no distinction was found to be possible between the effects of ovariectomy and orchiectomy. The authors, while they admit that the number of successful experiments was small, state that they have repeatedly compared the weights of similar organs, in pairs of rabbits of the same breed and body weight, without finding such differences as those revealed in the experiments which they record. They consider that the connexion between the glands is a neural connexion, and that the proximate cause of the increase in size of the thyroid gland is that the parathyroid continues the elaboration of fresh ferment which the thyroid is for some unknown reason unable to discharge into the circulation. Some explanation of the connexion between the suprarenal capsule and the sexual glands is afforded by the development of the capsule from the germinative epithelium of Waldeyer.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(17) Malarial Fever of Subcontinuous Typhoid Type.

Baccelli (*Il Policlinico*, April 2nd, 1904) discusses the resemblance between enteric and a variety of malarial fever. He attaches hardly any importance to the diazo-reaction as a means of diagnosis and very little to the rash, which he refers to as being especially valued in England. Widal's reaction is not conclusive, because a positive result may be obtained in the case of a patient who has for some time recovered from enteric and now suffers from some other fever. Moreover, it must always be remembered that the existence of malarial parasites in the blood does not preclude the co-existence of enteric in the same patient, nor is a positive Widal reaction conclusive as to the absence of malaria. The safest guide to a correct diagnosis is a careful consideration of every symptom in each case, its intensity, its time-relations, and its connexion with the other symptoms, to determine with what degree of accuracy the case approximates to the classical picture of enteric. Such a method of examination is of especial importance in some very grave cases of malaria in which Golgi has shown that the malarial parasites are only to be obtained from the blood of internal organs, and yet the patient's life very probably depends on the prompt and efficient administration of quinine. Baccelli refers particularly to several means of establishing a diagnosis. In both diseases the spleen is enlarged, and it is no larger in a first acute attack of malaria than it is in enteric. In the great majority of cases malarial fever shows itself by decided paroxysmal exacerbations and remissions, but even when these are wanting the temperatures, if taken sufficiently often—for example, every two hours—follow a different course from those in enteric; the rise of temperature is sudden, with flushes of heat from feet to head, excitement, and delirium, and any slight remission is apt to be attended by sweating. In the subcontinous typhoid form of malaria headache is not common at the onset, while severe and lasting headache is the rule in enteric. In malaria the cornea has a slight yellow tint, while the cough and catarrh of the upper air passages usual in enteric are absent. Diarrhoea, abdominal distension, and gurgling in the right iliac fossa are not usually found in malaria, in which, moreover, any abdominal symptoms which do occur usually come and go in paroxysms, without exhibiting the constant steadily ingravescent character of enteric symptoms. Enteric is marked by a characteristic exacerbation on the third day, and by an orderly progress, the second week being unlike the first, and the third unlike the second. The author quotes three cases of malaria which might well have been mistaken for enteric, but all promptly yielded to treatment by quinine. In one case the patient suffered an attack of enteric beginning thirty days and ending five days before the onset of the malaria, which thus simulated a relapse. Cases of the kind referred to are very rare, and Baccelli notes the fact that all three have occurred in the hospital in the course of one year.

(18) Malnutrition and Infantile Tuberculosis.

Louis Fischer (*Med. News*, June 11th, 1904), in a paper read at the annual meeting of the American Medical Association held June 7th to 10th, said that in the study of 5,000 ordinary clinic cases of children belonging to the poorer classes the appearance of tuberculosis was noted in 59, and in 1,700 of the cases there was some form of pharyngeal or laryngeal disease but no tuberculosis of the lungs or other organs. He said that of the tuberculous patients only 2 were breast-fed, and in these the mothers were poorly nourished and in no condition to nurse their babies, and that most of the tuberculosis cases showed improper nourishment as shown by poor frame, weak bones, flabby muscles, and other evidences of rickets. His cases had been corroborative of the facts shown in the literature on the subject, and he thought that the majority of tuberculous babies were bottle-fed babies: therefore the importance of cow's milk. He said that opinion was divided as to the route of invasion in tuberculosis, but that there were good reasons for believing that either the bronchial or the mesenteric glands might be first infected, and mentioned Osler as favouring the former and Delafield the latter route to the lungs. As to prophylaxis, Fischer said that if possible all babies should be breast-fed, so that the danger of faulty feeding is lessened; and in this connexion he said that perhaps the serum of mother's milk may contain an immunizing substance acting in the child antagonistically to the tubercle bacillus, and that fresh air and sunshine were of equal importance. Jacobi said that if he were asked what he would do with the tenement-house baby if its mother were tuberculous, he would say do not allow her to nurse her baby, not that the milk was dangerous, although it might be, but because of the danger to the child because of her expectoration and the particles of sputum scattered about when she coughed. If the baby be removed from the mother, its chances of growing up well and strong are greatly increased; but if it remains with the mother it will almost certainly become tuberculous. He said that milk from one cow is always dangerous, but that the danger is greatly lessened when a baby is fed with the mixed milk of a herd. He also said that intestinal tuberculosis is certain, and that he had demonstrated tubercle bacilli in ascitic fluid *post mortem* in a case where there were no lesions of the mucous membrane of the intestines, thus proving that the bacilli may pass through healthy tissues, and that this was true also of lung tissue. Infections through the nose also occur, but that in reality it is not an infection by inhalation, for the bacilli lodge in the pharynx and larynx, and when conditions permit infection occurs from there through the lymph spaces to the glandular structures of the neck and mediastinum. W. B. Ulrich, of Chester, Pa., said that there is a tuberculous diathesis in children of tuberculous parents, and that the beginning of prophylaxis should be in the control of marriage, and that a tuberculous woman should not have children. Fischer said, in closing, that the tuberculous mother certainly should be isolated from her child, and also, if possible, from her husband. He said, also, that a large percentage of children infected with tubercle bacilli had been previously fed upon condensed milk, and that this was the cause of a poorly-nourished condition of children.

(19) Human Pancreatic Juice.

The opportunities of studying the properties of human pancreatic juice are rare, and in such cases as have occurred the material can hardly be supposed to be normal, being usually the contents of a cyst or the drainings from a wound. The report by Glaessuer (*Zeits. f. Phys. Chem.*, January, 1904) of the examination of human juice is therefore of all the more interest. The patient was operated upon by Korté to relieve severe jaundice, which was ascribed to carcinomatous obstruction of the bile duct. No growth, however, was present, but the duct was found to be stenosed by the scar of an old duodenal ulcer. This was excised, and in order to prevent a recurrence of the constriction, the pancreatic duct and the common bile duct were kept open for eight days by a small drainage tube, and in this way pure pancreatic juice was collected. Its properties were then studied with especial reference to the results of Pawlow, Schepowalnikow, and Delezenne, as to the absence of proteolytic power, unless the ferment be rendered active by admixture with intestinal juice, and also as to the effect of food, and the administration of acid, on the secretion. (See Epitome to the British Medical Journal. Bayliss and Starling. 1902. Vol. ii., p. 386). The fluid obtained was clear, of a specific gravity of 1007, and alkaline; it contained 15 per cent. of the proteid, of which more than half was albumen, and 6 per cent. of ash—500 to 800 c.cm. were secreted per diem. The juice did not digest proteid, unless intestinal juice obtained from the *post-mortem* room was added. Intestinal juice from the dog was not effective in rendering the proteolytic ferment active. The diastatic ferment converted starch to maltose, and did not attack cane sugar or lactose. The fat-splitting ferment was present in the fresh juice, and produced the greatest result in the presence of bile and intestinal juice. The taking of hydrochloric acid into the stomach was followed by an increased flow of pancreatic juice, which sank to the normal in an hour. Alkali and fat produced no effect. A meal of soup, meat and bread cause a rise within the hour, due to the hydrochloric acid produced in the gastric juice, and a further rise in four hours. The diastolic ferment reached its maximum activity in the third hour after the meal, the proteolytic and fat-splitting ferments in the fourth. The alkalinity was greatest when the ferments were most powerful. The above results show that the work of

physiologists upon the pancreatic juice of other mammals is applicable to man.

SURGERY.

(20) The Modern Treatment of Cancer of the Breast.

Schmidt (*Deut. med. Woch.*, No. 15, 1904) holds that in the course of the last twenty-five years decided progress has been made in the surgical treatment of mammary and other varieties of cancer, but at the same time points out that surgeons cannot remain fully satisfied with any therapeutical methods that are not based on definite and assured knowledge of the primary cause of malignant disease. So long as such knowledge is wanting all that practical surgeons can do in the way of investigation is to learn as much as possible of the clinical history of cancer and the results of its operative treatment by the study of extensive and well-arranged statistics. With the object of furthering such study the author has made a statistical collection of the records of all the hospital cases treated by Braun, of Gottingen, in the course of the last nineteen years. The results of a careful analysis of 211 cases and of the issues of 273 operations performed in these cases are compared with similar statistical returns recently published by other German surgeons. The author states that they support the conclusions that the climacteric period is an important factor in the etiology of mammary cancer in women; that the disposition to the disease is not influenced by the number of previous pregnancies; that attacks of acute mastitis due to lactation have little, if any, influence, but that chronic or subacute mastitis caused by frequent or continuous pressure on the breast, or by contusion, often results in the formation of hard and persistent nodules in the gland which are liable to undergo cancerous degeneration. The question of hereditary transmission he regards as still an open one, although his collected cases include some striking instances of the prevalence of cancer amongst members of the same family. The right breast was affected in 99 cases, the left breast in 94 cases, and both breasts in 8 cases. In dealing with the results of operative treatment the author states that in 162 of the 211 cases primary removal of the cancerous breast was performed. Deducting 44 cases in which no information could be obtained of the patients' subsequent condition, it is estimated that the percentage of cases, Volkmann's three years' test being observed, was 28.32. This result, which compares unfavourably with those obtained by Halsted and other surgeons, was, it is stated, much influenced by the advanced stage of the disease in many cases at the time of the operation. The operative method almost universally adopted in Braun's practice consists in free removal of the glands and fatty tissue in the axilla, but excludes removal of the pectoralis major except in cases in which this muscle is involved. The author insists strongly on the importance of dealing with mammary cancer at an early stage, as the prospects of a radical cure depend mainly on the possibility of removing the whole of the diseased structures.

(21) Heart Suture.

Vogel (*Zentralbl. f. Chir.*, No. 22, 1904) reports a case of punctured wound of the heart and left pleura treated with good results by suturing. The patient, who was 16 years old, but whose sex is not stated, came under surgical observation with a punctured wound of the breast, about one hour after the receipt of injury. Intense anaemia, the physical signs of pneumothorax, extension of the cardiac dullness to the right side of the sternum, and the presence of a deep wound about 1 in. in length in the fourth intercostal space on the left side, suggested a diagnosis of wounded heart, and indicated immediate operation. After resection of the fourth and fifth costal cartilages on the left side, a large wound from which there was free bleeding was found involving both the pericardium and the left pleura. This wound having been dilated and a large clot of blood removed from the pericardial sac, a transverse penetrating wound about two centimetres in length was exposed in the anterior wall of the right ventricle. This wound was closed by five sutures of silk, and the wounds in the pericardium and the pleura were also sutured. The external wound was but partly closed, so as to allow free drainage. A portion of the eighth rib was resected in the scapular line with the object of removing effused blood from the left pleural cavity. Two days later, as the patient was very restless and suffered much from dyspnoea, the pericardium was again exposed and opened up and exit thus afforded to a collection of turbid serum. In spite of high fever and indications of septic mischief in both lungs during the next four weeks, the patient ultimately made a good recovery, and was discharged as cured about three months after the date of operation, the heart and lungs being then in a normal condition. This case, the author points out, would seem to favour the practice of free drainage of the pericardial sac in cases of wound of the heart, in preference to closure of the opening in the wall of the sac by sutures.

(22) General Gonococcal Infection.

Busquet and Bichelonne (*Rev. de Méd.*, May 10th, 1904) give a review of our knowledge of this condition and report one case. They point out that one of the rarest complications is the production of subcutaneous or intermuscular abscesses, far from the urethra and in the absence of all external channels. Direct inoculation beneath the skin has usually given negative results, but Wertheim in 1892 twice succeeded in producing circumscribed areas of inflammation not going on to suppuration upon himself. Several cases are now recorded of abscesses which contained gonococci to the exclusion of all other germs. In Busquet and Bichelonne's case, a soldier of 23, the site of the abscess was determined by a previous injury. During a forced march he felt a sudden pain in the right calf; this was neglected, and in spite of pain and swelling he went through manœuvres for twenty days. Seven months afterwards he contracted gonorrhoea; a week later the pain and swelling in the calf, which in the meantime had considerably lessened, came on with great intensity, and an abscess developed from which 100 grams of dark blood mixed with thick pus were evacuated. A similar abscess developed on the left forearm, but there were no joint or chest complications. Microscopical examination of the pus showed large numbers of gonococci. Cultures on ordinary media were sterile, but a special medium consisting of 20 c.cm. gelatine and 5 c.cm. pleuritic effusion gave a pure culture of the gonococcus.

MIDWIFERY AND DISEASES OF WOMEN.

(23) Chronic Endometritis and Chronic Metritis in Virgins.

A. Donald (*Journ. of Obst. and Gyn. of the British Empire*, April, 1904) deals with the cases of chronic endometritis and metritis which occur in virgins, and are independent of such causes as cancer, tubercle, fibroid tumour, membranous dysmenorrhoea, or infective diseases. Forty of these cases have come under his care. In 30 of them the characteristic points were a small cervix, an acute flexion and enlargement of the body of the uterus. In 8 cases the cervix was normal, but the body of the uterus was heavy, and there was retroversion or exaggerated anteversion. In the last two cases there was erosion and hypertrophy of the cervix, but a normal uterus. The symptoms in order of frequency were: (1) Pain or dragging sensation in one or both iliac regions or pain in the lower part of the abdomen generally; (2) dysmenorrhoea; (3) leucorrhoea; (4) menorrhagia and metrorrhagia; (5) remote symptoms, such as headache, bladder troubles, difficulty in walking, sickness and nervous symptoms as a whole. As regards pathology both the uterine mucous membrane and the mesometrium were hypertrophied. Fothergill examined portions of the mucosa removed by the curette, and found that in addition to the general hypertrophy, the interglandular connective tissue after a preliminary stage of swelling or oedema presented the appearance of granulation tissue advancing towards the formation of fibrous tissue. In none of the specimens was there any inflammatory change. In considering the cause of the abnormalities of the cervix and uterus found in the larger number of the cases it may be supposed either that there are two independent primary factors, the infantile cervix and the hypertrophied uterine mucosa, or that the hypertrophy results from the insufficient development of the cervix and stenosis of the internal or external os. In either case hypertrophy of the mesometrium follows hypertrophy of the mucosa, and the increased weight of the uterus, together with the small size of the cervix, leads to the acute flexion. The cases may be mistaken either for cases of pure neurosis or for simple lack of development of the uterus as a whole. The permanence of the symptoms and their association with one another are rare in neurosis, while a vaginal examination shows that the uterus is of more than normal size. The treatment adopted by the author is to

curette the uterus thoroughly under an anaesthetic, wash it out with sterilized water, and pack for twenty-four hours with sterilized gauze. The results have been good in the 26 cases which have been followed up for some time; 14 are practically well, 10 very much improved, and only 2 have received no benefit. The full effect of the treatment is not experienced at once, and patients have continued to improve for six months after the curettage. The best symptom to disappear is usually the dysmenorrhoea. The alternatives to this treatment are dilation or incision of the cervix. The effect of dilatation is temporary only, while the cicatricial tissue resulting from the incisions may be distinctly harmful. Although marked retroflexion or retroversion may be present ventrifixation is not indicated. The simpler operation is effective and therefore preferable, and in one of these cases ventrifixation had been previously carried out without relieving the symptoms.

(24) Artificial Interruption of Pregnancy.

PATELLANI-ROSA (*Il Morgagni*, March, 1904) compares the practice of Calderini's clinic at Bologna, in respect of the artificial interruption of pregnancy during a period of fourteen years, with the opinions advocated by other authorities. The principal points which he establishes are as follows: (1) The frequency of the provocation of premature birth, for pelvic deformity does not diminish, in spite of the improvements in Caesarean section and the introduction of symphysiotomy; (2) the provocation of premature parturition is especially useful for pelves with a true conjugate diameter of from 75 mm. to 85 mm.; above the higher limit it may be called for, especially in cases of excessive physiological development of the fetus; with a conjugate between 70 mm. and 75 mm. it should be restricted to very exceptional cases—as, for example, that of a woman who has already undergone the operation of Caesarean section; it should not be done with a true conjugate of less than 7 cm.; (3) there is no ground for the restriction of the operation to multiparae; with a pelvis between the assigned limits there is more reason for producing premature birth in a primipara than in a multipara; (4) the best date for the operation is in the thirty-fourth week; in making this estimate the author considers the real mortality amongst the children born, and not merely that part of the mortality which occurs during the progress of parturition; (5) the method employed for the termination of pregnancy should be chosen with a view to the special indication which has made interference necessary, bearing in mind that the fetus will still have to pass through the deformed pelvis; (6) as it is impossible to know accurately beforehand the volume of the fetus, and especially of its head, or to measure exactly the diameters of the pelvis, or to determine with certainty the age of the fetus, the provocation of premature birth demands considerable skill and experience, and should only be performed by one who is likely to be able to give approximately correct answers to the questions suggested above; (7) the fetal mortality during and after premature parturition can be and ought to be diminished. For the better security of the child's life the puerperal woman whose premature delivery has been provoked in hospital on account of pelvic stenosis should be kept in the institution for a longer time than is usual—a much longer time than the administrative exigencies of hospitals now permit.

(25) Hyperemesis Gravidarum: Mortality and Treatment.

ZABORSKY (*Zentralbl. f. Gynäk.*, No. 24, 1904) recently discussed the soundness of current teaching and practice. He considered that hyperemesis was a neurosis, and confined the name to cases where the vomiting was solely due to the pregnancy. Strict diet and other hygienic measures succeeded in curing most cases, whilst induction of labour was an extreme course, to be resorted to in exceptional cases, nor did experience show that it always stopped the fits. Zaborsky induced premature labour in three desperate cases of vomiting during pregnancy, and all died. At the necropsy pulmonary tuberculosis was detected in the first case, cancer of the pylorus in the second, and enteritis, yellow atrophy of the liver, and erosions on the gastric mucous membrane in the third. Had no necropsy been allowed in these cases, statistics would have been vitiated by their registration as deaths from hyperemesis gravidarum, and it would have been argued that the induction of labour had been injudiciously delayed, otherwise that practice would have saved all three patients. Zaborsky found that it was just in such cases as were not cured by diet that emptying of the uterus also proved fruitless. Tauffer did not agree with the above views. He practised induction of labour whenever the vomiting was not stopped by diet and medicine; for sixteen years had he followed that principle, and succeeding as a rule by diet, he found operation necessary in six cases, all proving successful.

THERAPEUTICS.

(26) The Action of Radium on Micro-organisms.

ALAN B. GREEN (*Proc. Roy. Soc.*, May 5th, 1904) has made investigations upon the germicidal action of radium emanations, and the induced radio-activity of micro-organisms exposed to the emanations. One centigramme of pure radium bromide, contained in a vulcanite and brass capsule fronted with thin talc, was employed. This specimen caused pigment to disappear after eighteen days from a mole with 15 minutes' exposure, the talc being in contact with the skin; twenty minutes' exposure almost produced ulceration. The bacterial growth was spread as a thin film in the centre of the depression of a hollow-ground glass slide, around the circumference of which depression a metal ring had been cemented. The capsule containing the radium bromide was placed upon this ring so that the salt was within 1 to 2 mm. of the bacteria, nothing separating them but the talc and the intervening air. Calf vaccine with its contained extraneous genus, S. pyogenes aureus and albus and S. cereus flavus and albus, were first exposed, exact control experiments being made. The specific germ in no case survived a longer exposure to radium than twenty-two hours, at the end of which time it had completely lost its ability to cause any visible irritation at the site of inoculation on a calf. In seventeen out of twenty-five experiments it was destroyed after ten hours. The extraneous germs were destroyed in rather less time, in no case surviving after fifteen hours. Several other species of micro-organisms were tested. All the non-spore-bearing bacteria were killed after two to fourteen hours' exposure. Bacteria containing spores were by far the most resistant, for they were not killed by less than seventy-two hours' exposure. As the distance between the radium and the micro-organism was increased the germicidal action became less marked, so that after thirty hours' exposure at 1 centimetre all were not killed though the numbers were lessened, and at 10 centimetres there was no apparent action. After exposure at a distance of 1 mm. to the radium emanations for twenty-four to a hundred and twenty hours, micro-organisms themselves may show signs of radio-activity, and affect a photographic plate, the best results being obtained from bacterial masses containing a number of spores. Radio-active micro-organisms have continued to give off photo-actinic emanations after three months have elapsed since their exposure to radium.

(27) Haemoantitoxin.

F. FIGARI (*Il Morgagni*. March, 1904) announced to the last Italian Congress of Internal Medicine that he had prepared a substance which, when administered to guinea-pigs by the mouth, caused the appearance in the blood serum of the animals experimented on of special defensive substances against the tuberculous poison. Continuing his experiments during the last year, he has been able to produce in the serum of guinea-pigs, rabbits, dogs, and asses not only a high agglutinating and antitoxic power, but also the appearance of specific defensive energy against the direct infection of the tubercle bacillus. The animals thus treated were able to resist the endovenous injection of quantities of living and virulent tubercle bacilli such as were very quickly fatal to the animals used for control experiments. It is impossible to repeat such experiments on the human subject, but the author has produced in human blood serum agglutinating and antitoxic substances which, it is reasonable to hope, are capable of causing immunization to Koch's bacillus. The initial difficulty of making his remedy sufficiently palatable has been overcome by the preparation of haemoantitoxin, a liquid of an agreeable taste, which, besides a strong solution of the antitoxin, contains glycerine, haemoglobin, and aromatic substances, and is of a stable nature. Administering this by the mouth the author obtained (1) a notable increase of the agglutinating power, and the production in the serum of antitoxic power and antibacillary substances; (2) great amelioration of the toxaemic symptoms of phthisis; for example, fever, sweating, anorexia with improvement in nutrition and increase of weight; (3) a favourable influence on

the course of the bacillary infection, with retardation of the course of the disease; (4) clinical results varying with the form and extent of the tuberculous process, the surroundings and mode of life of the patient, and his power of reaction to the remedy. The author quotes in some detail the histories of 18 cases of phthisis; 5 of these he considers to have been clinically cured after about six months' treatment. Most of the others were much improved. The best results were obtained in the case of out-patients, who could live under better conditions of air and light than were obtainable in hospital. In several of the cured cases it is noted that hyperalimentation was not employed. In some of the cases classified as improved the author expects ultimately to obtain complete cure.

(28) Forman.

R. Fuchs (*Die Heilkunde*, May, 1904) points out the importance of treatment in cases of coryza, a complaint which is disagreeable to the sufferer, and which may spread to the middle ear or the eye. Many general and local measures have been employed, but no local treatment has as yet come into general use. The latest remedy is forman, a chlormethyl menthyl-ether with the formula $C_{11}H_{21}OCl$. When brought into contact with moist air, forman breaks up into menthol, formaldehyde, and a trace of hydrochloric acid. In the nose the hydrochloric acid is rendered harmless by the nasal secretions, the menthol and formaldehyde are vapourized, and while the menthol produces local anaemia and anaesthesia the formaldehyde acts as a disinfectant and deodorizer. Forman can be obtained in three forms as a pastille, a dressing, and an ointment. The two latter preparations each contain 33⅓ per cent. of forman. When the pastilles are used, one is placed in a specially-prepared nasal glass, which is half filled with hot water, and the steam is inhaled four or five times a day. When the dressing is used a small piece is put into the nasal cavity, but room is allowed for nasal breathing to be continued. The ointment is most useful in the treatment of young children. Specialists in diseases of the nose have highly recommended these preparations. Seifert maintains that forman, if used at the beginning of a cold, will frequently bring about recovery within twenty-four hours, and if used when the cold is already developed will afford considerable relief to the symptoms. Suchanek holds forman to be an ideal remedy. Goliner Erfurt recommends it in rhinitis and in acute illnesses of the nose and throat. Fuchs has employed the drug since last autumn in many cases of acute and chronic rhinitis. He has found also that it gives relief in cases of erosion and of eczema of the nose, and in one case of erosion it prevented the onset of an attack of erysipelas of the head, which in that patient usually followed erosion. Cases of ozaena, of pain and offensive discharge from a nasal growth, of habitual nose bleeding in a young girl, of bronchial asthma, and of chronic bronchial catarrh have all been benefited by the use of forman. The preparations of forman are all cheap, easily obtainable, and in no case do harm.

(29) The Diuretic Action of Theocin.

Hundl (*Therap. Monats.*, April, 1904) deals with the diuretic action of theocin, an alkaloid discovered by Kossel, and synthetically prepared by Fischer and Traube. All observers appear to agree that the diuretic action of this drug in congestive conditions depending on cardiac disease is very marked, but few have expressed themselves as satisfied with it in nephritis. Hundl has tried it in a number of cases, and had found that it acts exceedingly well in cardiac oedema. In some cases in which the quantity of urine did not exceed 800 c.cm. during the time when digitalis was being given, 0.15 gram of theocin given six times a day increased the urine to 2,700 c.cm. on the first day, to sink to 1,400 c.cm. to 1,800 c.cm. on the following days. In chronic nephritis he did not attain a very satisfactory result, and at all events did not find it work better than other diuretics. In acute nephritis, on the other hand, the results were surprisingly good. He tried theocin in 7 cases of nephritis, and in only 2 did it fail. One of these two cases was that of a 12-year-old boy with haemorrhagic nephritis, which ended fatally, while the second case was that of a boy, aged 11, who had scarlatinal nephritis. In this case Hundl suggests that perhaps the failure of the theocin may have been partly due to the incidence of an acute otitis media, which led to a large abscess at the angle of the jaw. He recites the details of a very striking case of a woman suffering from acute parenchymatous nephritis, with sparse urine, colossal oedema, and ascites and high fever. The theocin secured a plentiful diuresis after diuretin had failed to give a satisfactory result. In cases of pleural effusion he failed to obtain the desired effect, as also in tuberculous peritonitis. In cirrhosis of the liver, too, the diuresis was slight and transitory. He found it useful in combating the oedema in phthisis, but useless in splenic leucaemia with oedema. The drug appears to have some unpleasant side-effects. It frequently produced very copious diarrhoea, while severe epileptiform convulsions were also noticed. In two cases attacks of excitement followed the continued use of the drug. All these unwished-for symptoms, however, disappeared on discontinuing the drug. As a rule, he gave the theocin in tablets or powders. The dose was 0.15 gram from four to six times a day, while to children he gave 0.1 gram. The action diminishes after from two to five days, but if interrupted for a while, the original action can be again attained.

PATHOLOGY.

(30) Tuberculosis and Pseudo-tuberculosis.

Sanfelice (*Rif. Med.*, June 4th, 1904) has made a study of various cultures of streptothrix isolated from the air, which has a bearing on the question of pseudo-tubercle. Three main groups were isolated: (1) S. alba, giving a white colony on agar; on potato, the cultures varied in colour; (2) S. flava, which preserves its colour fairly well, although changes occur with age; (3) S. violacea, giving an amethyst coloured colony. Sanfelice, experimenting with a pure culture of an acid-resisting bacillus isolated by Petrie and Rabinowitsch, found that the organism really belonged to his first group of streptothrix. All the streptothrix belonging to the first group did not resist acids, but many, capable of exerting pathogenic power on rabbits and guinea-pigs, had the property of dividing into bacillary forms, resisting acids and appearing microscopically just like tubercle bacilli, and some, which did not possess acid-resisting powers at first, acquired them by cultivation in butter and lard. All the streptothrices of the second group possessed acid-resisting power in a greater or less degree, and those of the third group possessed this property, whether in young or old cultures. The S. alba, when injected into guinea-pigs and rabbits, seemed separable in two types—one pathogenic for both animals, the other only for rabbits. Dogs injected in the jugular with the first sub-type showed lesions (one to two hours later) similar to those in tubercle of the mesenteric glands. Guinea-pigs, dead after endovenous injection of human tubercle, showed lesions identical with those following endovenous injection of S. alba. S. flava was not pathogenic, whilst S. violacea, giving an amethyst colour on agar and a brown colour in potato, was constantly pathogenic in rabbits and guinea-pigs, producing pseudo-tuberculous lesions in the lungs and kidneys.

(31) The Secretions in Acute Catarrhal Ophthalmia, Measles, and Influenza.

Giarrè and Pischi (*Lo Sperim*, an 57, f. 5, 1903) publish a full account of their researches on the various secretions in the above diseases. With regard to the conjunctival mucosa, in 20 cases of acute catarrhal ophthalmia they found the B. haemophylus in 90 per cent. of the cases, in 83 per cent. of 65 cases of measles, and 66 per cent. in 3 cases of influenza. In the healthy conjunctival mucosa the bacillus was found 5.8 per cent. in 34 cases. Of the 3 cases of granular ophthalmia examined the bacillus was not seen once. The nasal and bronchial secretions were similarly examined. In 8 cases of measles with pleural effusion the same bacillus was found 87.5 per cent. in the exudate. A study of the cases showed that during an epidemic of measles several patients who had been in contact developed an acute catarrhal ophthalmia, associated with the B. haemophylus, and not accompanied by measles. This bacillus was sometimes the only microbe present, and in every case it was the predominating type when other bacilli were also present. In the bronchitis and broncho-pneumonia of children, whether primary or secondary, this same bacillus is frequently to be met with, although in a less degree than with measles or influenza. It may, exceptionally, be found in a saprophytic condition in the normal conjunctival secretion. No distinct morphological or biological characters have as yet been found so as to enable one to distinguish the haemophylitic bacillus of measles from that of influenza, but apparently the bacillus isolated from measles is of the greatest virulence, then that of influenza, and, lastly, that of acute catarrhal ophthalmia.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(32) "Floating Liver" in a Man.

IN describing a rare case of "floating liver," E. Meyer (*Berl. klin. Woch.*, April 18th, 1904) points out that men have rarely been observed to suffer from this condition, and states that he has only been able to learn of 5 other cases. The details of the clinical history are as follows: The patient was a tram conductor, aged 35, who stated that he had enjoyed good health up to the present time. He first noticed that on one occasion on which his tram had shaken considerably a peculiar feeling of pressure in his abdomen was present. This did not amount to pain, but in the course of a few days incapacitated him from his work. One medical man advised immediate operative treatment, having diagnosed a malignant tumour. His appearance was healthy and nutrition good. The examination of the heart, lungs, nervous system, and urine failed to reveal anything abnormal. On lying nothing peculiar was noticed by palpating the abdomen, but in the upright position, on palpating the region in which the peculiar feeling was felt, one came across a large tumour. The upper margin lay some 3½ in. below the ensiform cartilage, the height of the tumour measured about 6½ in., and the breadth about 9½ in. Its surface was hard, smooth, and it was movable beneath the abdominal wall. In the site of the liver dullness, which was present in the prone position, there was loud tympanitic resonance. It was easy to return the liver to its natural position, when it was found that the lower edge extended about 1 in. below the costal margin. The liver was anteflexed and anteverted. The diagnosis of floating liver was further confirmed by a Roentgen examination. With regard to the treatment, he states that for the present he is attempting to remove the symptoms by applying bandages, etc. If the patient finds that these means are not sufficient to allow him to work, Meyer will consider the advisability of employing surgical means of fixing the liver in its position.

(33) The Etiology of Severe Icterus.

S. RIVA-ROCCI (*Gazz. med. Ital.*, April 28th, 1904), after briefly referring to a case reported by Cornil, relates a similar case of his own. The two cases show that severe icterus, leading to a fatal termination, may be caused by a new growth in the ductus choledochus so small that without microscopical examination it might escape notice and leave the jaundice unexplained, or wrongly explained. A man of 68 had felt out of sorts and digested his food badly for some months. On October 7th, 1903, the wheel of a cart passed over the right side of his pelvis and abdomen. Little damage seemed to have been done. He was not laid up, but continued to go about his business. Five days later his friends noticed that he was jaundiced. The colour deepened, the urine became brown, the faeces lost their colour, and the tongue became coated. Medical treatment was followed by temporary improvement, but he quickly relapsed. On December 4th he was admitted to hospital, very yellow, much wasted, and rather dull, but still conscious. He had no pain or fever. The liver was a little enlarged, and the enlarged gall bladder could be felt in the right flank. The urine was of specific gravity 1033. The patient's condition steadily deteriorated, and an operation was performed in two stages on December 22nd and 24th. The gall bladder was found distended and thickened, and united by old adhesions to the transverse colon and the neighbouring organs. It was fixed to the abdominal wall, opened, emptied of a quantity of purulent fluid, and drained by means of a catheter left in the wound. No stone was found and no tumour. The patient died on December 28th. At the necropsy the hepatic ducts and the ductus choledochus were found enlarged, thickened, and empty, and their internal surfaces smooth and coloured with bile. A passage was with difficulty found along the cystic duct and a valvular arrangement found inside it, which accounted for the absence of recent bile from the gall bladder. In the duodenum there was a decided prominence of the papilla at the mouth of the ampulla of Vater. The ampulla itself was not hard or thickened. Its inner surface was reddened but not haemorrhagic. No communication between the ductus choledochus and the ampulla could be made out until the parts were fixed in formalin and alcohol, when a passage one-third of a millimetre in diameter was discovered running through tissue of the type of a racemose cylindrical celled adenoma, which almost blocked the duct and replaced the normal lining membrane of the ampulla, infiltrating also the muscular wall of the duct. The growth in its typical form was of very slight extent, giving place, even ½ cm. from the bottom of the choledochus, to a mere increase of connective tissue rich in nuclei. Riva-Rocci considers that a rather earlier surgical interference would possibly have led to results equivalent, considering the age of the patient, to a cure. He also thinks it likely that the case may furnish the true explanation of other cases of severe icterus in which nothing has been found on examination except a papillitis.

(34) The Digestion of Milk Sugar.

IN the early part of life, when lactose in milk is a regular constituent of the food, the pancreatic juice contains a ferment known as lactase, which converts lactose into galactose and dextrose preparatory to absorption. In adult life this ferment is not present (as has been found recently by Glassuer) in man. In the dog the ferment also disappears when milk ceases to be a constituent of the food, although extracts of the mucous membrane contain it. If the animal, however, be fed for two or more weeks on a milk diet its pancreatic juice invariably contains lactase. This very interesting example of the adaptation of a digestive gland to the altered nature of the food has been studied by Bainbridge (*Journ. of Physiol.*, May, 1904). He finds that, as in the case of Bayliss and Starling's secretin (see EPITOME, 1902, vol. ii, par. 386), the lactase is produced from the pancreas by a chemical mechanism. The milk sugar, or lactose, acts upon the intestinal mucous membrane to produce some substance which is carried in the blood stream to the pancreas, and stimulates the pancreas to form lactase. Injection of lactose subcutaneously does not cause the pancreas to produce lactase. At any given time the secretion of the gland contains all the ferments present in the gland, and this research indicates that the actual composition of the juice at any time depends mainly upon the previous diet and little upon the nature of that particular meal. This is in accordance with practical experience, which has shown that a new diet is better digested after a few days than at first.

(35) Syphilitic Reinfection in a Diabetic.

MOLLE (*Lyon Méd.*, May 29th, 1904) has recently had under his care a patient who suffered from a second attack of syphilis. The man, whose age is about 54, was treated for a preputial ulcer followed by lesions of the skin and mucous membranes in 1883. He persisted with mercurial treatment for about two years, and afterwards married. His wife had two abortions at four months and no further pregnancy. In 1891 the patient sought advice for excessive thirst and exhaustion, and the urine was found to contain sugar. Mercury and iodides caused no diminution of the glycosuria, but on a rigid diet the patient kept in good condition. In 1898 there was again an ulcerated sore upon the penis, undoubtedly syphilitic, followed by mucous plaques on the tonsils and lower lip, which persisted for four months in spite of treatment. Shortly after the appearance of the plaques the urine was found to be free from sugar, and the glycosuria did not return until the mucous patches disappeared. The diabetes in this case was probably not syphilitic, for there were no cranial symptoms: mercury and iodide had no effect upon the amount of sugar, and the first attack of syphilis must have been cured before a second infection could occur. The secondary symptoms of the last attack were very mild, making it probable that the first infection had attenuated the second.

SURGERY.

(36) Thoracic Surgery.

VON MIKULICZ speaks of the experiments which have been carried out at his instigation in connexion with the prevention of pneumothorax (*Deut. med. Woch.*, April 7th and 14th, 1904). The reason why thoracic surgery has not been able to find a place in modern surgery, like that of abdominal surgery, is that as soon as the pleura is opened the lung collapses and is put out of action. The collapse of one lung is a serious condition, and, as a rule, the other lung also suffers from the occurrence. The pressure inside the chest is always negative, save during the act of coughing, and may be taken to average − 7 mm. of mercury. If both pleurae are opened the subject dies very soon. This production of pneumothorax is the most serious difficulty in the way of thoracic

operations; and even in the operation of suture of the heart is the most frequent cause of failure. Sauerbruch undertook to investigate this subject, and as the result of his labours he reported that he had constructed a sort of pneumatic chamber, which admitted of the free opening of the thorax without any danger of collapse of the lungs. The experiments were carried out on dogs for the most part. Inside the chamber a negative pressure was kept up by suction, and in the case of the dogs it was found that −10 mm. was sufficient. The whole body of the dog was placed in the chamber save its head; around the neck there was a guttapercha collar which fitted exactly, but which did not compress the dog's neck. The operator and his assistant were also inside the chamber, while the anaesthetist remained outside at the dog's head. Thus the dog was breathing air at the ordinary pressure, while as soon as the thorax was opened the external pressure on the lung remained about the same as under natural conditions. As a matter of fact, instead of collapsing, the lung protruded somewhat out of the wound. This protrusion, however, was easy to control. The breathing continued spontaneously and without difficulty. Some experiments were also carried out in a chamber, having a raised positive pressure, in which the dog's head was kept, but this offered many difficulties. In the first place the chamber was small, and the anaesthetist had to bear the enclosed vapour of the anaesthetic. He became so much affected by the chloroform vapour that after twenty minutes the experiment had to be interrupted. With the negative pressure chamber, in spite of this lowered pressure, the operator and his assistant did not feel any inconvenience even after a two hours' stay in the chamber. Should it be found that the conditions of the raised pressure through the respiratory passages offers as satisfactory results as the diminished pressure, several methods are mentioned which might be of value. Sauerbruch considers that the diminished pressure has advantages over the reverse order. Mikulicz next deals with the possibilities of operations performed in the Sauerbruch chamber. He introduces the word "thoracotomy" as indicating the opening of the thorax. The only limitation necessary for thoracotomy is that after the operation the chest wall must be closed and must be air-tight. This is at times difficult after an extensive resection of ribs; while it will be necessary to bear in mind that resection of many ribs in itself produces severe distress of breathing, which may continue for a long time; and, further, that there is always the possibility of the stumps of the ribs injuring the surface of the lung. He therefore sought for a safer way to gain a free access to the organs of the chest, and considers that this is to be found in what he terms "intercostal thoracotomy." The incision must be made exactly midway between two ribs, so that there may be sufficient muscular tissue above and below to admit of secure suture after the end of the operation. The wound can be enlarged by retracting the ribs, and he states that one obtains a good space for operating at a depth. In some cases the ribs are so rigid that one cannot pull them asunder, and then it is necessary to break them, which has the advantage over sawing them through, that they are covered with periosteum, and a later suture of the bone will be found unnecessary. He performs anterior and posterior intercostal thoracotomy. He deals next with some of the possible applications of these operations. After touching on diseases of the lung and mediastinum, he turns his attention to the surgery of the oesophagus. The chief difficulty in removing a malignant growth from the swallow will be met with when one comes to attempt to reunite the ends of the tube. In simple division of the oesophagus, there is already some difficulty in bringing the divided ends together again, but this difficulty becomes much more formidable, or may be impossible, when a portion has been resected. The oesophagus is normally tense, and it is not elastic, and even when one succeeds in pulling the cut tube together, one may fail to make the sutures hold. Another difficulty is that one cannot apply the usual method of uniting serosa to serosa as it is performed in abdominal surgery, and there appears to be very little chance of making use of the pleura in the same way as one covers the wound in the gut with peritoneum. He finds that in spite of the prospects of thoracic surgery being good, there are very many difficulties still in the way which will need careful experimentation before the method can be applied to actual practice. He describes some of the operations, which he performed in dogs, on the oesophagus as establishing the ground work for an upper and a lower oesophageal resection.

(37) Post-Operative Jaundice.

Santucci (*La Clin. Med.*, An. x, N. 14) discussing this subject, deals almost entirely with mild benignant jaundice. The graver forms, due to pyaemia or chloroform poisoning, are generally admitted. In the author's opinion jaundice, severe or mild, is more likely to follow abdominal or quasi-abdominal operations than any other. Whilst it is generally admitted that severe and fatal jaundice may be due to chloroform poisoning, it is not so well recognized that mild benignant types may also be due to the action of chloroform. Other causes may be found in emotion, fear of operation, or in the necessary manipulation of the peritoneum (which is not absolutely insensible) during operation. But in the author's experience jaundice never followed operation without anaesturia, where the pain due to manipulation was manifestly felt by the patient. Some one or a combination of the above factors may excite reflex spasm of the biliary canal and subsequent jaundice.

(38) Wounds of the Heart.

Biondi (*La Clin. Med.*, April 13th, 1904) discusses the above subject chiefly from the point of view of length of survival after injury. On the whole, survival for a certain period is more common than sudden death. The position and nature of the wound, and especially the amount and rapidity of haemorrhage, are the chief determining factors. Wounds of both ventricles, of the aorta at its origin, of the atria, all of which lead to great haemorrhage, are more likely to cause rapid death by anaemia; whereas, after oblique wounds of one ventricle, life may be prolonged. Some importance, too, is to be attached to the condition of the coronary artery or its branches; damage to this is usually rapidly fatal. Again, injury to the nervous mechanism of the heart has to be reckoned with. Haemopericardium may be a cause of rapid death either by direct mechanical effect or *quâ* haemorrhage. Death from rupture of the coronary artery is not unlike what occurs in embolism of the same vessel. The absence of marked anaemia, coupled with the presence of only a moderate quantity of blood in the cardiac cavity and evidence of injury to the coronary, help in arriving at a diagnosis. In the great majority of cases of haemopericardium death has occurred very rapidly, almost fulminating in fact. But a very small leakage might occur, in which case life would be prolonged further.

MIDWIFERY AND DISEASES OF WOMEN.

(39) Burns of the Breast and Lactation.

Planchu and Pellanda (*L'Obstétrique*, May, 1904) relate 2 cases where a woman with the breast damaged by a burn bore a child, and report the influence which the old and long-standing injury had on lactation. Billroth taught that the gland developed during pregnancy, but underwent atrophy after delivery because it could not get rid of its secretion. Delbet showed, by a case under his care, that this theory was doubtful. A child aged 12 was severely burnt on the chest; one nipple was destroyed and replaced by a scar. At puberty the damaged breast enlarged, but less than its fellow. At 22 the patient became pregnant, and was delivered of a child whom she suckled with the sound breast. During lactation the opposite breast became swollen and very painful, and milk escaped from small points around the periphery of the cicatrix at the site of the nipple. The patient went on suckling; the fistulous orifices in the damaged breast nevertheless closed up owing to atrophy of the glandular tissue. She afterwards suckled two other children, without any repetition of the phenomenon observed on the injured side. In Planchu and Pellanda's first case, a child aged 3 was badly burnt on the thorax. A large cicatrix replaced the left nipple; the right breast was uninjured. At puberty the left breast developed, but not quite to the same degree as its fellow. At the age of 22, the patient became pregnant. Forty-eight hours after delivery both breasts swelled considerably. As she did not think that she could suckle her child she sent it to a wet-nurse. Compresses were applied to both breasts and the affected gland returned to its former dimensions in five days without any sloughing or inflammatory change. The second patient was seriously scalded when 3 years old; a wide cicatricial area involved the front of the thorax, drawing the breasts towards each other; they were quite movable over the pectoral muscles. The skin of the mammae was cicatricial but supple,

the left nipple small, but not involved in the scar, so that it was readily extruded on suction. The right nipple was retracted; its areola was tough, resistant, and therefore incapable of being drawn forward by suction. On pressure the ill-developed nipple went back into an orifice formed by the inner border of the cicatricial tissue of the areola, just as an incipient umbilical hernia slips back through its neck. Lactation was quite practicable. Planchu and Pellanda observed it after the second patient's delivery at the age of 22. The child at first only took the left breast, and suction was easy because of the absence of deep cicatricial tissue in the areola. When it attempted to take the right nipple, its lips could not depress the rigid areola, so that the base of the nipple could not be grasped; in fact, that structure was depressed unless its point happened to be seized by the lips at the first attempt. Yet at last, after massage of the areola and drawing out of the nipple, the child was quite able to draw plenty of milk from the right just as from the left breast. Thus the first case shows that neither atrophy nor sloughing necessarily follows the evolution for lactation of a breast damaged by a burn in the region of its excretory ducts. The second proved the importance of the integrity of the nipple and the part which the areola plays in the mechanism of normal suction. It also showed how, by perseverance and local treatment, an areola and nipple damaged by cicatricial tissue may sometimes be made capable of discharging their normal functions.

(40) Haematuria in Pregnancy.

KUBINGI (*Zentralbl. f. Gyn.*, Nov. 24th, 1904) relates how a woman, aged 32, had an attack of vesical haemorrhage after lifting a weight when in the eighth month of her seventh pregnancy. Then followed attacks of retention, and nothing but blood came away through the catheter. The patient on the third day was admitted into hospital in a state of acute anaemia, and very restless. A swelling as big as two fetal heads lay in front of the gravid uterus, it contracted in parts occasionally, and at each contraction blood escaped from the urethra. The abdomen was distended, and singultus and vomiting were present. No blood could be drawn off by the catheter. The urethra was dilated, a very large recent clot was discovered and broken up, and was followed by a quantity of fetid blood, broken-down coagula, and lastly several pints of stinking urine. No morbid condition could be detected on the inner wall of the bladder by palpation, but afterwards the cystoscope was used, as it had already been observed that the patient had numerous subcutaneous varices, and then the vesical haemorrhage was traced to the rupture of a varix in the submucous tissue of the bladder. The catheter was retained for twenty-four hours, the bladder washed out with a solution of boracic acid. On the next day the patient passed urine spontaneously, and the haemorrhage did not recur.

(41) Imperforate Hymen: Pus in Vagina.

LAROYENNE (*Ann. de Gynéc. et d'Obstét.*, April, 1904) states that a girl aged 17 was admitted into a hospital for headaches, lumbar pain, and retention of urine. The period had never appeared. The pain was severe, but relieved at once by use of the catheter. The hymen bulged out from the vulval cleft, the hypogastrium was tender, and a swelling could be defined in that region reaching to the umbilicus. On its uppermost part the outline of the uterus and a cord-like structure could be defined. The rectal temperature was 101.5°. Haematocolpos was diagnosed, and the hymen opened crucially by the thermo-cautery. Over a pint of pus came away. It was free from sanies or broken-down tissue, and contained staphylococcus albus and streptococcus. The vagina was thick-walled, with rugae, the uterus was free from distension, and the upper part of the genital tract seemed normal. Hence the morbid condition was pyocolpos without pyometra and pyosalpinx. The period appeared for the first time two months after the operation. The cause of the presence of pus in the closed vagina was doubtful. Primary pyocolpos, independent of previous haematocolpos, has been recorded by Rheinstäter, but Laroyenne believes that in his case there was suppuration of accumulated menstrual blood. The germs probably came into the vagina through the blood channels.

(42) Ovarian Tumour after Removal of Cancerous Uterus.

FLAISCHLEN (*Zentralbl. f. Gynäk.*, No. 5, 1904) recently exhibited before a medical society a large ovarian tumour which he had removed from a woman aged 70. Fourteen years earlier he had removed the entire uterus for cancer of the cervix. He noted that Olshausen (ib., No. 1, 1902) had reported several cases of ovarian tumour developing after vaginal extirpation of the cancerous uterus, and attributed their development to degenerative alterations in nutrition caused by ligatures.

THERAPEUTICS.

(43) The Serum Treatment of Hay Fever.

A. LUEBBERT AND C. PRAUSNITZ report from Dunbar's Hygienic Institute on the results obtained by the "pollantin" treatment of hay fever (*Berl. klin. Woch.*, March 14th and 21st, 1904). It has been shown that the toxin of grass pollen is extremely active, $_{10}\frac{1}{000}$ mgr. sufficing, when introduced into the conjunctival sac of a fever patient, to produce irritation which will last for several hours. Dunbar has produced an antitoxin from this toxin, and up to the present date there are reports on the treatment of some 285 patients. Of these, 60 per cent. have been completely relieved from the malady, 29 per cent. have been partly relieved, and in 11 per cent. no effect has been obtained. The antitoxin is known under the name of "pollantin." The serum of the horses which have been immunized is collected with every aseptic precaution, and to it is added ½ per cent. of carbolic acid. The "pollantin" cannot be applied by subcutaneous injection as it produces very unpleasant side-effects and does not lend itself well in this way; it must be applied externally either to the nasal or conjunctival mucous surfaces. It has been proved to be sterile, and when it produces any irritation this is due to the carbolic acid and not to the antitoxin. In using the preparation, the patients are warned that the effect only lasts for a few hours, that the antitoxin must be repeatedly applied for the result to be satisfactory, and that during the hay-fever season windows and doors must be closed at night-time. Since several patients have found that the irritating effects of the carbolic acid are very disturbing and since the fluid serum will not keep sterile after having been opened for more than a short time, Dunbar has prepared a dry powder preparation of the pollantin which will keep for months without decomposing and which has no added preservative in it. In discussing the cases treated with the fluid and dry serum, the authors first analyse those in which a negative result has been reported. These number 24; and of that number they find that 4 can be excluded at once as being in all probability not real cases of hay fever. In some of the remainder, the method followed of applying the serum was of such a description that no satisfactory result could be reasonably expected. One patient introduced the serum three times during three months instead of several times a day; others refuse to sleep with shut windows, and only apply the serum when the attacks are already very severe. There are, however, some who have presumably followed out the instructions carefully, and the cause of the failure in their cases is not at first sight quite clear. The authors, however, consider that they can explain at least some of these by pointing out a certain lack of attention to details: for example, one man stated that he applied the dry serum according to the instructions, but, on seeing him carry the sniffing out, it was seen that he took a pinch of the powder between his thumb and finger, and, before he was able to sniff it up his nose, the wind had blown it all away. The fluid and the dry serum must be applied to the mucous surface so that it will have a chance of being absorbed. In those cases in which the result was only partial they deal at some length with the class of case, and come to the conclusion that with a little more perseverance better results may be looked for in these and similar cases. Lastly, they turn to the majority of the treated cases, in which the result was completely successful. They cite a number of clinical histories, and pay especial attention to cases complicated with asthma. In reviewing the results, they come to the conclusion that the dry serum will be found to act better than the fluid in a certain number of cases, and the reverse. Both must be tried before a failure may be recorded. For details of the cases, we must refer the reader to the original paper.

(44) Treatment of Acute Rheumatism.

F. MENDEL (*Therap. Monats.*, April, 1904) points out that one can divide rheumatic polyarthritis into three groups, according to the effect of the salicylates; first, those cases in which one obtains an immediate and complete result of the drug; secondly, those cases in which the pain and swelling disappear on giving the drug, but which

tend to recur and are only cured on repeating the treatment; and, thirdly, those cases in which the salicylates have no beneficial effect at all. Menzer regards rheumatism as a part of a pyogenic process and believes that the only specific rheumatism is the gonorrhoeic form. According to him, therefore, a specific action of the salicylates does not exist. He goes still further and believes that the treatment is actually harmful, inasmuch as he finds that it tends to favour the implication of the endocardium. Mendel attacks this theory very hotly and maintains that true acute polyarthritic rheumatism is a disease *sui generis* and that the action of salicylates is curative, and does not influence the occurrence or non-occurrence of heart disease. The important point, in his opinion, is that one should distinguish those forms of joint affection which are not rheumatic from those which are truly rheumatic. Many forms of chronic arthritis depend on entirely different causes to rheumatism, and as an example he cites those cases which follow disturbances of the genital organs (not gonorrhoea) and which are best treated by local applications to the genital organs, and only massage, etc., to the joints. The action of salicylates is also the subject of dispute: Menzer denies an antibacterial and antitoxic action, and considers that the pain is relieved only by a vaso-dilatation action. This, he says, hastens the excretion of the fever-producing substances which circulate in the blood. Against this assumption, Mendel points out that mesotan and the oil of gaultheria exert a very marked effect in removing the pain and swelling of the joints without affecting the fever and sweating. He thinks that this is proof of a specific direct action. The fact that the minute quantities of salicylic acid which are absorbed into the blood after the external application of mesotan produce such a marked effect strengthens this view. He considers that the quantities required to be effectual when given by the mouth speak for a considerable loss of activity in the digestive track, and therefore he wishes to apply the drug directly. The salicylates are not suitable for subcutaneous injection, although good results have been obtained with the sodium salicylate of caffeine. He has tested the action of the salicylates by intravenous injection, and reports very favourably on this form of administration. The first step necessary to decide before applying a drug directly into a vein is its behaviour to the blood and the coats of the vessels; 20 per cent. solutions of sodium salicylate attacks the red blood cells, and causes their disintegration, but 5 per cent. solutions do not affect them. He assumes that the 20 per cent. solution will also attack the tunica intima of the vessels. It is thus necessary to be very cautious in applying this drug into the veins, and he found that if one dilates the vein ad maximum by repeated constriction and loosening of the arm in a pendant position, and if one is very careful to inject cleanly into the vein, that there is no risk. He has carried it out over 300 times without once having met with any local or general disturbance. He uses 8 grams of sodii salicylici, 2 grams of caffeinsodii salicylici to 50 grams of water, or 8.75 grams of sodii salicyl., 1.25 gram of caffeine to the same quantity of water. He injects 2 grams of this solution (about ½ drachm) for an adult, and the corresponding dose for children. The injections are repeated at intervals of from twelve hours to three days according to necessity. The effect of the injection was most surprising on account of the certainty and rapidity of the effect. The pain and swelling disappeared almost at once after the injection, and all the other symptoms due to true rheumatism also disappeared as quickly. That the action is the specific action of the salicylate is shown by the disappearance of the objective signs, and also by the fact that only rheumatic affections were thus influenced. In no case was there any unpleasant side-effects from the injections. He appends some short accounts of the cases treated. He recommends this method of treating rheumatism, especially as it is more certain and much more rapid than any other.

(45) Styptol.

Haemorrhage from the uterus is often extremely difficult to control and the drugs which we have frequently lead to disappointing results. E. Toff (*Deut. med. Woch.*, June 9th, 1904) says that when the cause lies in a tumour of the uterus, in purulent salpingitis, or in retention of portion of membranes after an abortion, the gynaecologist knows that he has to remove the cause of the haemorrhage; but at times the patient will not consent to an operation and then one has to fall back on palliative measures. The more tedious cases are those in which the bleeding is not due to any ascertainable gross lesion. Ergot and ergotin, hydrastis and hydrastin are often unreliable, and he therefore is pleased to try a new styptic, which is known as styptol. This is a phthalate of kotarnin, thus combining the action of two styptics together. It is an orange-red powder, which dissolves in water to form a lemon-yellow solution. It contains 73 per cent. of kotarnin. On account of its very bitter taste it is given in sugared tablet form. Each tablet contains 0·05 gram of styptol (that is, about ¾ gr.). Having learned of the good results which Katz obtained with this preparation, he employed it in a number of cases of gynaecological haemorrhage, mostly after the ordinary means had failed to arrest the bleeding. He was often surprised to find the new preparation act so well. He gives the details of some of his cases, which show that the styptol was capable of controlling very obstinate haemorrhages of various kinds from the genital passages. He finds that at times it has also a sedative action, which is a distinct advantage in a uterine haemostatic.

PATHOLOGY.

(46) The Tuberculous Serum Reaction in Mother and Fetus.

Cavazza (*Il Policlinico*, March 5th, 1903) states that the relation between the specific agglutinating powers of maternal and fetal blood serum has been only very slightly studied. In the case of enteric different observers have obtained contradictory results, but the majority find that the serum of a fetus born by a woman suffering from enteric has no specific agglutinating power. In the case of tuberculosis the only results hitherto published are as follows: Romberg, examining the blood of 39 new-born children, one only being the child of a tuberculous mother, found no agglutinating power in any single case; Descos, examining 20 cases, and De Nobele and Beyer, examining 19 cases, found that the serum of new-born children without a tuberculous family history had no specific agglutinating power. Descos also examined the serum of 4 new-born children of tuberculous mothers and obtained a negative result in each case, though the maternal serum in each case possessed some agglutinating power. To these records Cavazza adds a case of his own. The fetal serum, in different dilutions up to 1 to 1, was examined macroscopically and microscopically after two, six, and ten hours, and gave always negative results. The maternal serum after ten hours gave a decided positive reaction in a dilution of 1 in 10. The mother died, apparently of phthisis, on the second day after parturition during the seventh month of gestation.

(47) The Conservation of Virulence.

Pfeiffer (*Fest. z. sechzigsten Geburtstage von Robert Koch.* Jena: Gustav Fischer, 1903, p. 35) compares the loss of virulence in bacteria grown for a long time on artificial media to the atrophy which takes place in bodily organs owing to disuse. On this analogy, it ought to be possible to maintain the virulence of bacteria by inducing the functional activity of their receptors. This, as is well known, can be done by passage through animals or by enclosing the bacteria in collodium sacs and keeping them in the peritoneal cavity. But it ought, theoretically, to be possible to attain the same object outside the animal body by growing the bacteria upon media which are rich in the specific immune bodies, and consequently maintain the functional activity of the bacterial receptors. In support of this theory Pfeiffer records the following experiments. He selected two strains of cholera vibrios, the one known to be virulent and the other known to be non-virulent. They were both cultured for more than six months on two kinds of broth. One of the broths contained guinea-pig cholera-immune serum, the other goat cholera-immune serum; the proportion of serum added being from 1 in 20 to 1 in 30. Inoculations were also made in nutrient gelatine to which cholera-immune serum had been added. Subcultures were made fortnightly. There was a marked restriction in the growth, as compared with serum-free media. After six months the virulence of the two strains was tested. It was found that the strain known to have been virulent had fully retained its pathogenicity, the goat serum and the guinea-pig serum proving equally effective. There was, on the other hand, no increase in the virulence of the strain previously known to be non-virulent. Pfeiffer suggests that cultivation in specific immune-serum may prove a useful method for preserving the virulence of other bacteria.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(48) Catisophobia.

V. BEDUSCHI (*Riv. di Patol. e Nerv. e Ment.*, March, 1904) describes a case similar to the two cases first described by Haskovec, and called by him "acatisia" on the analogy of astasia-abasia. Beduschi considers that the disease is one of the physiophobias, and proposes the name "catisophobia" (from καθίζω, I sit down). The patient, a man aged 54 years, always weakly, had been diagnosed as a neurasthenic ten years before this illness was recorded. Five years before the illness he was infected with syphilis, and afterwards attributed any symptom of ill-health, however slight, to that infection, although it was thoroughly treated. He had headache, pain in the neck and along the vertebral column, gastric and intestinal atony, palpitation of the heart, vertigo, myasthenia, failure of memory, and habitual moral depression. For about a year before he came under observation he had suffered from internal agitation and a severe sense of ill-being whenever he was obliged to stand still. This condition gradually became intensified, and during the last three months he had suffured from the symptom of catisophobia. After being seated for a very short time he began to have a sense of vertigo and an intolerable oppression. Thus it became impossible for him to sit still long enough to be shaved or to eat a meal. The family history showed no cases of neurosis. The patient's fingers were deformed with Heberden's nodes. He had a distinctly high-tension pulse. His deep reflexes, his vasomotor reflexes, and his plantar cutaneous reflexes were increased; other reflexes normal, or a little diminished. He had pain on pressure over the manubrium and the lowest dorsal vertebrae. His mental condition was good except that he was absorbed in the history and details of his illnesses. He was treated by isolation, regular diet, and hot baths, followed by massage. After a month he was very much better, and was able to sit still. Haskovec's two cases seem to have been of a very similar nature, and another case has been reported by Raymond and Janet. Haskovec explained the symptom of acatisia as an expression of hyperexcitability of the cortical and subcortical centres. One of his patients had the same difficulty in standing as is recorded above, being affected with vertigo and tremors of the legs when he stood. Beduschi points out that such an affection is very different from the astasia present in cases of astasia-abasia, and the analogy between the two classes of cases breaks down altogether. In these cases of catisophobia and stasophobia the action is not impossible, but is attended after a very little time by mental distress. By distracting the attention the symptom could be much alleviated. Raymond and Janet, whose patient was a goldsmith, considered that the affection was a professional abulia, but such an explanation could not apply to this case, in which the patient had not done any work for several years before the symptom showed itself. The author points out the analogy between this symptom and the restlessness of paralysis agitans, but he finds a more complete analogy in agoraphobia, basophobia, and other forms of fear referred to natural acts and to possible impotence. He therefore considers catisophobia to be the best name for the condition.

(49) Inflammation of the Pericardium and Paracentesis.

A. DOEBERT (*Berl. klin. Woch.*, May 2nd, 1904) reports on three and a-half years' experience of pericarditis cases in Jinn's clinic in Berlin. During this time 56 cases came under treatment, and of these 37 (= 66 per cent.) were associated with rheumatic polyarthritis. Of the remainder, 3 depended on metastatic changes (carcinoma, empyema, and pyaemia), 3 followed nephritis, 2 were tuberculous, 9 followed myocarditis or endocarditis of doubtful origin, 1 gonorrhoeic, and 1 was of unknown cause. Of the rheumatic cases, 27 (= 78 per cent.) were discharged "perfectly well," 2 were much improved, and 8 (= 22 per cent.) died. Of the remainder 15 (= 70 per cent.) died. The cause of death in the latter was mostly the advanced degree of the causal disease. Eighteen of the rheumatic and 6 of the non-rheumatic cases had certain or probable effusion. Paracentesis pericardii was performed in 4 cases. In the first the puncture was made in the fifth intercostal space, close to the left border of the sternum, and 130 c.cm. of fluid was cautiously aspirated. The puncture had to be repeated twice at intervals of four days, but the patient, a woman of 56 years, died in spite of this of increasing insufficiency of the cardiac muscle. The necropsy revealed brown atrophy of the cardiac muscle, myocarditis, with fatty metamorphosis, and degeneration. The second case was that of a man of 19 years, who was suffering from severe rheumatic polyarthritis, endocarditis, and pericarditis. The puncture was carried out at the same spot, but in this case, too, the cardiac changes were very great, and the patient died eight days later. In the third case, Doebert inserted the needle on the right side of the sternum in the fourth space, after he had failed to aspirate the fluid on the left side. The result was marked in relieving the dyspnoea, but a second aspiration had to be performed two days later. While the effect of the pericardial effusion passed off the condition of the heart got steadily worse, and the patient died twelve days after the second paracentesis. In the fourth case the pericarditis was of rheumatic origin, and occurred in a boy of 17 years. The puncture was made on three occasions to the right of the sternum; pleura aspiration had also to be carried out. In spite of the extreme condition of the patient, the aspiration succeeded in relieving the urgent symptoms, and recovery ultimately took place. The effect of the puncture in each case is graphically represented in the original by diagrams. Doebert discusses briefly the advantages of aspirating the fluid from the right parasternal line, and advises this procedure, at all events in cases when the result of left-sided puncture is unsatisfactory.

(50) Haematuria from Rhubarb.

SCHULTHESS (*Corr.-Bl. f. Schweitz-Aerzte*, September 15th, 1903) reports a case in which a boy, aged 7, ate about 100 grams of stewed rhubarb at midday on May 25th. At bedtime he passed 80 c.cm. of turbid, reddish-brown, dichroic urine, which was acid and of specific gravity 1029. It contained numerous red corpuscles, and gave the reactions of blood. There were no casts. After standing twelve hours numerous crystals of oxalates were precipitated. The next morning the first 150 c.cm. of urine passed was somewhat smoky, and contained a trace of albumen. The precipitate obtained by centrifugalization contained red corpuscles, leucocytes, and oxalates. But the boy felt perfectly well, and presented none of the classical symptoms of oxalic acid poisoning, such as prostration, gastro-intestinal irritation, cardiac failure, mydriasis, numbness of the limbs, and shooting pains in the head, back, and kidneys. The second portion of urine passed on May 26th was of normal appearance, but contained a trace of albumen. Thereafter the urine was normal. There was constipation until May 27th, when a formed motion was passed. Oxalic acid normally occurs in urine, but in quantities not exceeding 0.0056 per cent., even on a diet rich in carbohydrates and vegetables. The urine passed in the first twelve hours after the meal of rhubarb contained 0.217 gram, or 0.09 per cent. About two-thirds of the stewed rhubarb consisted of thick rhubarb stalks, which, according to F. Schaffer, contain about 1 per cent. of oxalic acid, so that as much as 0.6 gram was probably swallowed. Of this, a-third was recovered from the urine; the remainder was evacuated in the faeces or was oxidized: 0.5 gram is a very large dose of oxalic acid, 2 grams are toxic, and 4 grams may be fatal. Thus the amount of oxalic acid ingested was insufficient to produce symptoms of poisoning. The boy had often eaten rhubarb without ill-effects. Probably the constipation favoured more thorough absorption, and the amount of oxalic acid was sufficient to produce haematuria.

SURGERY.

(51) Abscess of Spleen.

MUSCATELLO (*Gaz. Med. Ital.*, April 14th, 1904) reports a case of abscess of the spleen with several remarkable features. The patient, a peasant woman aged 32, was attacked by sudden and severe febrile illness a week before her admission to hospital on May 31st. She then had a temperature of 39° to 40°, headache, pain in the right axillary region, spleen palpable during deep inspiration, abdomen somewhat tumid but not painful, no diarrhoea or constipation. On the following day there appeared for the first time signs of broncho-pneumonia in the upper and middle lobes of the right lung and some jaundice. The blood serum diluted to a strength of 1 in 40 gave a positive Widal reaction; the diazo-reaction was also positive and well marked, and by puncture of the spleen the bacillus of Eberth

was isolated in pure culture. The sputa contained the diplococcus of Fraenkel. On June 20th the broncho-pneumonia had almost disappeared and the patient seemed decidedly better. On that day the temperature again rose almost to 40°, and there was severe pain in the left hypochondriac region. On June 21st the spleen was very much enlarged, dullness reaching to the middle line and downwards to the level of the umbilicus, and the dull area gave to the hand a sense of deep fluctuation. During the next few days the patient became very ill, and a larger swelling appeared on the middle and lower thirds of the right thigh. Koch's bacillus was detected in the sputa. on June 27th the abdomen was opened under cocain-adrenalin anaesthesia, and a huge abscess was evacuated, bounded above by the diaphragm and on the right by the stomach, and containing necrotic piece of spleen, soft and friable, and some blood-stained pus. The pieces of spleen, including some lightly attached to the diaphragm, were removed, and the cavity washed and drained. At the same time a large sub-aponeurotic abscess in front of the right thigh was opened and cleared out. The subsequent history of the case was uneventful. Eight weeks later the patient was discharged cured, and she has remained well. The pus from both abscesses contained a lanceolate diplococcus, with evident capsule, resisting Gram's stain. The pus from the splenic abscess was sterile, but that from the abscess in the thigh when inoculated into peptonized broth, gelatine and agar, gave colonies of Fraenkel's diplococcus. This is the first published case of a large abscess of the spleen produced by the pneumococcus. It is remarkable as the result of a mixed infection, and the early disappearance of Eberth's bacillus, which was found in the spleen at first and could not be found in the abscess, is unlike the usually persistent character of the bacillus. Large abscesses of the spleen, causing symptoms and threatening life, are decidedly rare.

(52) Gastro-enterostomy for Bleeding from Simple Gastric Ulcer.

Tuffier (*Bull. et Mém. de la Soc. de Chir.*, No. 17, 1904), in the course of a discussion on the treatment of bleeding from simple ulcer of the stomach by gastro-enterostomy, considered the indications for this operation and also its mode of action in such cases. In some preliminary remarks this surgeon pointed out that the extent, depth, and situation of a florid or open gastric ulcer have but very slight influence on the bleeding to which such ulcer may give rise. A very minute ulcer may cause very profuse and even fatal loss of blood, whilst an extensive ulcerated surface may be the source of but slight oozing. The origin of the bleeding in gastric ulcer varies in different cases, being in some the ulceration of a large vessel such as the splenic or the coronary artery, and in others a general rather than a local condition. Consequently such bleeding does not indicate in every case the same plan of operative treatment. Gastro-enterostomy, according to Tuffier, affords not complete but only relative rest to the stomach, and it was pointed out that even after jejunostomy, when the stomach is kept empty, the presence of food in the small intestine may excite secretion from the gastric glands. With regard to the indications for surgical intervention in acute cases—those in which the bleeding is profuse and persistent, and the patient has thus been rendered intensely anaemic—Tuffier is of opinion that such intervention should not be attempted unless a suitable medical treatment has failed after thorough trial. When the surgeon intervenes after such failure, gastro-enterostomy forms but one of the elements of his operative treatment. Medical treatment, the three chief elements of which are complete abstinence from food, serum injections, and absolute repose and immobility of the patient, has, when vigorously applied, proved much more successful than treatment by operation, which in cases of acute gastric bleeding must be more or less hurriedly practised on an anaemic and much enfeebled subject. When gastro-enterostomy is performed under such conditions it is usually combined either with excision or with free exposure and curetting of the ulcer, and when performed alone is an indication of failure to deal effectually with the source of danger. In cases of gastric ulcer in which the bleeding is of a chronic character, gastro-enterostomy, whether as a single operation or combined with others, is, according to Tuffier, decidedly indicated as likely to prove an efficient and safe operation. In such cases this operative procedure meets several indications as the slow loss of blood is often associated with other factors, such as gastric troubles with or without stenosis. It facilitates the expulsion of gastric chyme and sets a limit to the morbid processes which are derived from and keep up the haemorrhage.

(53) Radical Treatment of Cancer of the Bladder.

Berg (*Zentralbl. f. Chir.*, No. 21, 1904) describes a radical operation for the removal of malignant growth of the urinary bladder, together with the corresponding glands and lymph vessels, and reports two cases in which he has recently practised this method with good prospects of durable success. In this operation, which is especially applicable to cases of cancerous infiltration of the posterior wall and the fundus of the bladder, median laparotomy having been performed by a short incision commenced at the pubic symphysis, and the patient placed in the Trendelenburg position, the parietal peritoneum is dissected away from the floor of the pelvis as far as the common iliac artery on both sides, and the glands with surrounding connective tissue carefully removed along the course of each internal iliac artery. The bladder is then opened and washed out, and the growth freely removed. If the ureters be involved in the disease the affected portions are removed, and the stumps attached to the bladder. The opening in the bladder having been closed by two rows of sutures, the floor of the pelvis is drained by gauze which is brought outwards: in the female through the vagina, in the male through a perineal counter-opening made between the rectum and the prostate; the dissected layers of peritoneum are finally brought over the gauze and their margins fixed together by sutures. The advantage of this operation, the author states, consists in its affording the freest possible access to a tumour involving the posterior wall of the bladder. It is the only method that enables the surgeon to attack the diseased glands and lymphatics situated near the internal iliac artery, and it facilitates exposure of the ureters and proper treatment of those ducts when involved in the disease. The danger of infection presenting the chief objection to this operation can, the author asserts, be reduced to a minimum by careful protection of the intestine by gauze and warm compresses during the operation. and by cleansing of the inner surface of the bladder as soon as its cavity has been opened. The large vessels exposed in the dissection of the floor of the pelvis may be easily recognized and if due care be taken, the haemorrhage during the operation should not be so severe as to cause serious shock.

MIDWIFERY AND DISEASES OF WOMEN.

(54) Treatment of Uterine Cancer in Pregnancy.

Toth (*Zentralbl. f. Gynäk.*, No. 24, 1904) attended a patient, aged 27, in the ninth month of pregnancy. She had already borne three children; the labours were normal. During this pregnancy she had been troubled with bloody discharge. The vagina was stuffed with a cauliflower mass attached to the anterior lip of the cervix. On microscopical examination it proved to be an adeno-carcinoma. Toth removed all the diseased part of the cervix, pushed up the bladder, and incised the cervix antero-posteriorly without opening the peritoneum either in Douglas's pouch or in the utero-vesical fold. The membranes were ruptured, the long forceps applied, and a living child 17½ in. long and over 5 lb. in weight delivered. The placenta was removed manually. Then the uterus was extirpated per vaginam, and the parametrium ligatured; the patient recovered. Tauffer operated on a precisely similar case three years previously. The parametria were already infiltrated, so that a ureteral fistula resulted, owing to damage by a clamp forceps. Toth at the same time when he operated on the above case had under his care a 10-para, aged 39, in the third month of gestation. There was bloody discharge, and a doubtful ulcerated patch was detected on the anterior lip of the cervix; it was well circumscribed. A piece was excised; it proved to be a medullary cancer. Total extirpation was at once practised, and the patient recovered. Lourich, in a discussion on Toth's cases, stated that in one instance a cancer of the cervix was mistaken for a placenta praevia. Turning and extraction were practised and the child saved, but hysterectomy was impossible. In another case the patient, in the seventh month, was so ill that

Caesarean section was contemplated, but labour pains came on. The cancerous cervix was scraped and the thermo-cautery applied. Then the child was delivered by turning, and extracted after great difficulty. Fever occurred in the puerperium.

(55) Auditory Disturbance from Prolonged Lactation.

FERRERI (*Archiv. Ital. di Otol., Rinol., e Laringol.*, November, 1903) says that in Italy, and especially in the southern part of the peninsula, artificial feeding is much less common than in Anglo-Saxon countries, and prolonged lactation is very frequent. Diseases of the ear are usually made worse by lactation, and especially in catarrh of the middle ear, the discharge becomes more profuse and all the concomitant phenomena are exaggerated. Operative treatment is then less successful than at other times, and if any complications of middle-ear disease make a mastoid operation necessary it is better to postpone it until the child has been weaned. He has often been struck by the frequency with which hospital patients date the beginning of their auditory troubles from lactation. These disturbances are of two kinds. First, prolonged lactation causes anaemia of the cortical centres and of the sense organs shown in the case of the sense of hearing, by vertigo, noises in the ears, vomiting, and progressive diminution of auditory perception. If the lactation be quickly brought to an end these symptoms tend to disappear. Secondly, there are cases in which after a few days of increasingly-disturbed hearing, with pain in the ear, the patient suffers from vertigo and vomiting, with sudden complete loss of hearing, while intelligence and power of movement are unaffected, and no lesion of the ear can be diagnosed by the otoscope. Such cases must be distinguished carefully from cases with somewhat similar symptoms arising during lactation, but caused by leukaemia, albuminuria, acute anaemia, neurasthenia, or hysteria. The first two of these causes can be excluded by examination of urine and blood. The disturbances due to neurasthenia may be recognized by the localization of the noises in the head, by their diminution during and after prolonged external noises, as, for example, in railway travelling, and by the coexistence of neurasthenic symptoms. The hysterical origin of deafness may be suspected if the deafness becomes more absolute, without noises or vertigo, when a current of 1 or 2 milliampères is passed through the ears. The prognosis is these cases is bad and the deafness soon becomes permanent. No microscopical examination has yet been made of an ear affected in this way. In the absence of the definite information which can only be obtained by such examination the author suggests that the cause may be the same as that of the sudden deafness sometimes observed in cases of leukaemia, namely, a haemorrhage determining inflammatory processes in the labyrinth, vestibule, and semicircular canals. Some such theory is necessary to explain the permanence of the effects. The author quotes 9 cases occurring in his practice during the last two years and illustrating both classes of aural disturbance associated with prolonged lactation. He concludes that for a mother to suckle her own child beyond nine months is dangerous to her hearing, and that the whole trade of wet-nursing is an abuse liable to react injuriously both on nurse and infant—a position which is considerably strengthened by adopting Behring's recently-published opinion that phthisis dates from infancy, and is only stimulated into activity and not implanted by the circumstances of later life. Ferreri, therefore, recommends that sterilized cow's milk should be used much more freely as a substitute for human milk.

THERAPEUTICS.

(56) Rheumasan.

THE treatment of the minor ailments of phthisical patients is often a matter of considerable difficulty. Even if a drug does not cause vomiting it may diminish the appetite and so do more harm than good. There are often also several symptoms needing treatment together, and for these reasons external application of drugs, when it is practicable, may be a useful form of treatment. M. Behr (*Therap. Monat.*, 1904) has found that salicylic acid is readily absorbed when rheumasan, a combination of salicylic acid and superfatted soap, is rubbed into the skin, and the applications may be made daily for weeks without giving rise to any unpleasant effects. Even 20 to 30 gr. of salicyl may be rubbed in daily without causing any trace of albuminuria, and in one case where 6 gr. of sodium salicylate taken by mouth had given rise to slight albuminuria the larger doses rubbed into the skin proved harmless. It is true that the amount of salicylic acid actually absorbed by this method cannot be accurately estimated, but that some is quickly absorbed is shown by the speedy appearance of the salicyl reaction in the urine, while the results of this treatment, which are often more marked than when salicylic acid is given internally, negative the possibility that small quantities only have been absorbed. An example of the action of rheumasan is that of a patient with advanced phthisis in whom a painful swelling of both wrists, accompanied by fever, developed. After rheumasan had been rubbed in, the temperature fell and the pain and swelling diminished rapidly. Rheumasan should not be given more than once a day. Behr administered it three times a day to four of his patients, two of whom complained of *malaise* and loss of appetite on the second day, a third had a rise of temperature, apparently, however, due to a chill; a fourth complained of headache caused by the smell of the drug; and in one case slight albuminuria showed itself on the second day. Rheumasan has been used with more or less effect in cases of acute muscular rheumatism, acute joint rheumatism, chronic arthritis, intercostal neuralgia, trigeminal neuralgia, migraine, lumbago, and pleurisy. The advantages claimed for it are that the patient obtains the benefit both of the drug and the massage, no extra work is thrown upon the stomach, it has very little tendency to induce sweating, in suitable doses it does not irritate the kidneys, and the suggestive effect of a local application is useful.

(57) Tobacco in Intestinal Paresis.

TORRESI (*Gazz. degli Osped.*, May 8th, 1904) believes that the value of tobacco injections, although well known as an old remedy in intestinal paralysis, is not sufficiently recognized. Where atropine or eserine are available there seems no doubt as to their value when given hypodermically, but these drugs are not always at hand, whereas tobacco is usually to be obtained in any house. The author has had 7 cases of intestinal obstruction due to intestinal paresis where tobacco injections per rectum gave good results. In one the abdomen was so distended that it almost looked as if it would burst, and obstinate faecal vomiting was present. Atropine and other means had been tried without avail. But immediate relief took place when a litre of warm water containing 30 grams of tobacco leaf was injected high up the rectum (32 cm.) by means of a soft tube. As a rule the author did not use more than 25 grams. Even in hernia or mechanical obstruction tobacco injections may be tried with caution. But it is in pseudo-ileus that the best indication is obtained.

(58) Stagnin, a New Styptic.

T. LANDAU has noticed that the spleen in persons who have died of carcinoma with metastatic nodules in almost every other organ remains free (*Berl. klin. Woch.*, May 30th, 1904). This fact caused him to experiment with the juice of the spleen on carcinoma patients, but without success. The extract which he obtained from this organ was found to be extremely rich in iron-albumen, and he found it of great value in anaemia. Of this he proposes to report at a later date. As quite an accidental observation, he came across a peculiar characteristic of this extract. A girl of 21 years suffered from menorrhagia, and the loss had rendered her very anaemic. On giving his spleen extract he was surprised to find that, despite the inability of other remedies to arrest the haemorrhage, the bleeding came to a stop after two days. On applying the extract in other cases of menorrhagia and metrorrhagia he found that the extract had a very powerful styptic action. Hirsch reports on the method of obtaining the extract. The method is that of autolysis. He took the pulp scraped from the spleen of a horse and added twice its quantity of 0.91 per cent. salt solution. To this he added chloroform and soda solution. The fluid was kept in a closed vessel after having been well mixed, and allowed to stand for from twenty-four to forty-eight hours at from 30° to 37° C. The mixture was filtered after this time, and the filtrate, being found by animal experiment to be harmless, was employed in the experiments. In order to obtain a more concentrated form he tested the action of heat on the extract,

and, finding that none of the styptic activity was lost, evaporated the mixture to one-fourth its volume. This new extract was subjected to three experiments:—First, it was evaporated to dryness, and the residue collected and completely dried in alcohol. This powder was found to be nearly completely soluble in water. Next, the second mixture was precipitated with alcohol and filtered. The precipitate was dried in alcohol, and the resulting powder was found to be soluble in water. The third experiment was the same as the second, only the precipitate having been filtered off, the filtrate was evaporated, and the residue collected. The second method was found to yield the most active solution, and is introduced into the drug market under the name of stagnin. They found that the styptic properties depended on some alteration in the coagulation of the blood, and not on the contraction of vessels, as is the case with adrenalin. It has not produced the least harm on any occasion, and has proved to be of value in a number of cases of haemorrhage from the female genital passages. The authors are of opinion that it deserves further therapeutic testing.

(59) Active Immunization against Typhoid and Cholera.

Wassermann (*Festschrift zum sechszigsten Geburtstage von Robert Koch*. Jena: Gustav Fischer, 1903, p. 527) communicates some of his latest experiments on the production of active immunity, with special reference to typhoid and cholera, and summarises his conclusions as follows: (1) The utility of the cultures to be employed must be tested by making a quantitative determination of their combining powers for amboceptors, and those strains must be selected which possess this power in the highest degree; (2) for active immunization it is better to employ not a single virus, but a large number of strains of the same species; (3) we ought not to inject the bodies of the bacteria, but only their soluble components, which after autolysis pass over into the germ-free filtrate, and, on evaporation *in vacuo*, are obtained as a dry powder, which can be weighed, and preserves its properties for a long time.

PATHOLOGY.

(60) The Specific Parasite in Rabies.

Lina Luzzani (*Gazz. Med. Ital.*, February 18th, 1904) gives an account of other investigations into the occurrence in rabies of the parasite described a year ago by Negri, and a full description, with drawings, of the histological examination of the central nervous system in a boy who died of the disease. No very complete examination has been made in any case of rabies in man since the discovery of the parasite. Negri, examining the bodies of dogs dead from rabies, described round, oval, elongated, and pear-shaped bodies, constantly present in the nerve cells of the ganglia and central nervous system. Their length varied from 1 μ to 27 μ and their breadth from 1 μ to 5 μ. They were only found in the cell bodies and their protoplasmic prolongations. The best stain for these bodies was Mann's eosin-methyl-blue, but both their outlines and their intimate structure could be clearly seen in fresh preparations without the addition of any colouring reagent. Inside each parasite were one or more rounded or oval corpuscles. Negri described the bodies found by him as protozoa. They retain their vitality, their characteristic form, their structure and colour reactions, in spite of putrefaction or prolonged immersion in glycerine. Subsequent investigators, to whose publications as many as fourteen references are made, have fully and unanimously confirmed Negri's observations. Luzzani's case was that of a boy 10 years old bitten on the left cheek by a dog. He remained in good health for more that a month, then he developed symptoms of hydrophobia and three days later died in hospital in a paroxysm of hydrophobia, presenting a typical picture of the raging form of rabies. Besides pieces of the central nervous system the author examined sections of the salivary glands and of the cicatrix which had formed at the site of the wound. Both glands and cicatrix gave negative results. The brain gave positive results, though the parasites did not reach the dimensions attained in the case of rabid dogs. An important point noted by Negri in animals is that, in the furious form of the disease, the endocellular parasites are especially abundant and well-developed in the different parts of the encephalon: in the paralytic form the parasites are found best in the spinal ganglia and medulla, being either absent or few and small in the encephalon. In this case parasites such as Negri describes were found in considerable numbers throughout the nerve cells of the cerebral cortex, the cerebellum, the Gasserian ganglion, the ganglion of the vagus, and the superior cervical ganglion of the sympathetic. They were not found in the pons, the medulla oblongata, or the spinal medulla. They never reached a greater diameter than 7 μ. The author suggests that this may be accounted for by the shortness of the time elapsing between the onset of symptoms and the death of the patient. Possibly a similar explanation will account for the absence of endocellular parasites from the pons and bulb, an occurrence which is sometimes noted in the experimental rabies of dogs. A complete explanation must depend on a fuller knowledge of the cycle of development of the parasite.

(61) Vitality of Plague Bacilli in Dead Rats.

Otto (*Festschrift zum sechszigsten Geburtstage von Robert Koch*. Jena: Gustav Fischer, 1903, pp. 331) has fed rats on the dead bodies of other rats which had died of plague, and finds that the time after death during which his experimental animals contained living plague bacilli was directly dependent upon the degree of putrefaction of the cadaver, and indirectly upon the height of the external temperature. When the bodies were kept at a temperature of 22° C. they attained a high degree of putrefaction by the thirteenth day, and were capable of infecting guinea pigs with plague when kept as long as twenty-four days after death. But when the dead rats were kept at a uniform temperature of 60° C. they remained as long as twenty-eight days without reaching a very pronounced degree of putrefaction, and continued to infect guinea-pigs with plague even when sixty-one days old. The higher the temperature, therefore, and the more intense the putrefaction, the shorter is the life of the plague bacilli. Comparing his work with that of other investigators, he concludes that, although the persistence of living bacilli for longer than two months is exceptional, we must consider that ship's rats may be a possible source of plague infection for as long as three months after they have succumbed to the disease.

(62) Bacterial Absorption from the Intestine.

Rogozinski (*Verhand. der Naturwissen. d. Akad. im Krakau*, Bd. xlii) shows by very careful methods that in the lacteals and the mesenteric glands of normal animals the bacillus coli, the bacillus mesentericus vulgatus, the bacillus subtilis, and the numerous varieties of cocci may be demonstrated. When dogs were fed with food containing the bacillus prodigiosus, the bacillus kiliense, and the bacillus mycoides, these organisms were found in the lacteals and mesenteric glands in each case, although bacteriological examinations of the blood, liver, and spleen gave negative results. These results differ from those of earlier workers, but it is claimed that they have been obtained by more reliable methods. They certainly throw considerable light on some of the cryptogenetic affections of the intestine, and upon the relation of food to tuberculous lesions.

(63) The Chemical Conditions in Epiphyseal Cartilages in Health and when Affected by Rickets.

Much has been written concerning the pathology of rickets, and it is very generally suggested that the conditions met with in the epiphyseal cartilages of rickety children are due to a deficiency of lime salts, but this suggestion is based upon but little positive knowledge, and the observations of Grandio and Mainini, which are described in the *Arch. Ital. de Biolog.*, T. xxxviii, Fasc. i., go far to prove its incorrectness. These observers find, by means of chemical investigations, that there is no dearth of the salts of lime in the epiphyseal cartilages in rickets, but, whilst the salts of lime are not deficient, phosphorus or some compound containing phosphorus is differently distributed. In normal epiphyseal cartilages they obtained evidence of phosphorus in the cartilage cells, and they assume that the cells, or their nuclei, extract the phosphorus from the fluids of the body and prepare it so that it can form the insoluble compounds which are deposited during the process of ossification. In the epiphyseal cartilages of a rickety child they found the phosphorus not in association with the cartilage cells, but irregularly distributed in the matrix, and they conclude that the phenomena of rickets are due to a qualitative and quantitative alteration in the distribution of phosphorus in the cartilages, and not to any diminution of the salts of lime.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(64) Chromocystoscopy.

The suggestion which Voelcker and E. Joseph made to test the functional activity of the kidneys individually by means of chromocystoscopy has met with a certain amount of opposition, and these two observers again describe their method and exemplify the uses of it by cases (*Deut. med. Woch.*, April 7th and 14th, 1904). They first describe a case which illustrates the ease in which the situation of the ureteral opening in the bladder can be found in those cases, when it cannot be seen by ordinary cystoscopy, and the type of discharge of urine from that opening when found. This case was one of ovariotomy, and by injecting 4 c.cm. of a 4 per cent. solution of indigo-carmine into the muscles of the buttock, they could watch the flow of urine tinged blue issuing from the right ureter, while from the depths of a saccule on the left side they found a faint bluish cloud issuing. From the want of propulsion force and from the very slight coloration they were able to diagnose that the ureter had been included in a ligature at the operation. The next case illustrates the uses in determining the functional activity of the second kidney before deciding to remove the obviously-diseased one. As long as the urine is propelled in a strong stream and is highly coloured blue, they find that the functional activity is sufficient to justify the removal of the diseased kidney. They liken this method to the trial meal for stomach disorders. The injection of the indigo carmine is not merely a tinctorial procedure; it sets the kidneys a task of excreting the pigment which only an actively functioning organ can accomplish. In this sense they claim that the method is a truly functional one. The next case was one in which a specialist had recommended exposing both kidneys, as ureteral catheterization had shown that the left kidney was much diseased, and that the right kidney was also affected; the method showed that although the right kidney was not free from disease, it was still functional, and as there was marked tuberculous disease of the left kidney and ureter, it was decided to remove the latter organ. This was done with good result. The other cases quoted show the same sort of conditions, and all tend to illustrate that by means of the intramuscular injections of indigo-carmine the condition of each kidney can be made out, from a functional point of view, and the wisest course of procedure can be decided on after the examination had been carried out. The last case has a special interest, inasmuch as the operation undertaken was a most desperate one, and was performed as the last slight chance for the patient.

(65) Paratyphoid.

Allaria (*Rif. Med.*, November 25th, 1903) publishes two cases of paratyphoid infection in children, and discusses the symptomatology in these cases. Clinically the cases may present all the symptoms of typhoid—"typhoid" state, variola, enlarged spleen, gurgling, etc.—from slight to severe types. Hyperleucocytosis is absent. On the whole the course of the disease is somewhat milder than that of ordinary typhoid, and may terminate by crisis in a few days or last a long time with relapses. It very rarely ends in death; only 3 fatal cases have been published, and in 2 of these no intestinal lesions were found; however, in children this is not uncommon in true typhoid. In the third case numerous ulcerations and recent cicatrices were found in the ileum and caecum. The only means of differentiating paratyphoid or colibacillary infection from true typhoid is by the sero-agglutination test. The blood of a paratyphoid patient agglutinates with a B. paratyphi but not with Eberth's bacillus, and vice versa, and even in mixed infections this test can be applied with success; practically, the author says, it has never failed. The B. paratyphi may give rise to other diseases—septicaemia, abscesses, etc—just as the Eberthian bacillus may, but these do not constitute paratyphoid any more than those do typhoid. To have paratyphoid one must have the clinical symptoms of typhoid+the presence of paratyphoid bacilli in the organism with corresponding serum reaction. The author believes that typhoid, paratyphoid, and coli-bacillary infection are three separate diseases and not varieties or subspecies of one and the same disease.

(66) Mycosis Fungoides after Injury.

Riecke (*Arch. für Derm. und Syph.*, November, 1903) reports a case of mycosis fungoides which dated from an injury. Soon after a fall on the back of the head, a firm elastic swelling was found on the scalp. This spread to the size of the palm, and became depressed in the centre and covered with dirty scales. Several months later similar tumours appeared on the scalp, and had a tendency to break down. Infiltration occurred in the skin of the neck and ulcerating tumours developed on the hard palate. *Post mortem* metastatic growths were found in the dura mater, kidneys, suprarenals, and retro-peritoneal glands; and these had the same histological structure as the scalp tumours.

(67) Pentosuria.

M. Bial (*Berl. klin. Woch.*, May 23rd, 1904) records an instance of pentosuria occurring in three members of one family, and discusses the subject. The first patient was supposed to be suffering from glycosuria and adiposity, and her urine was said to contain 0.3 per cent. of sugar. On examining the urine, Bial found that a strong reduction took place during boiling with Fehling's reagent; with his pentose reagent it gave a striking reaction, the green colour coming out when a few drops of urine were added to 5 c.cm. of reagent and heated; the fermenting and polarizating tests for sugar were both negative; and, lastly, by means of repeated crystallization, the osazon was gained, which was found to be pentose-osazon, having a melting point of 150°, and a N value of 17.01 per cent. (Glucose-osazon has a melting point of 205°, and a N value of 15.6 per cent.) The second case was that of the brother of the first patient. He, too, was supposed to be suffering from diabetes, and his urine had been examined in various laboratories, and found to contain from 0.1 to 0.3 per cent. sugar. His urine gave the characteristic reactions of pentose as mentioned in the first case. The third case was that of a sister of the two patients. In this case, too, the diagnosis of diabetes had been made and had disturbed the patient's peace of mind. There was no sugar in the urine, but only pentose. Bial points out that it is a serious mistake to confuse this harmless condition pentosuria with diabetes, and the general practitioner need not fear that the detection of pentose in the urine needs a complicated analysis and expensive apparatus; the spectroscope and polarimeter are not necessary; his reagent is able to determine when the reducing substance is pentose.

(68) The Ileo-caecal Valve.

T. R. Elliott (*Journ. of Phys.*, May, 1904) has performed experiments on cats to determine whether the separation of the contents of the ileum from those of the large intestine is effected by the so-called valve, acting mechanically, or, as has been urged of late, by a contraction of sphincter-like circular muscle fibres. He concludes that the junction of the small and large intestine is controlled by a muscular sphincter, not by a mechanical valve. This is made to contract by the sympathetic nerves, and at the same time the circular fibres on each side of it are relaxed. A similar effect is produced by adrenalin.

SURGERY.

(69) Post-Appendicular Pericolitis.

Tavel (*Rev. Méd. de la Suisse Romande*, January 20th, 1904) emphasizes the necessity of inspecting the whole of the ascending colon in every operation for appendicitis. If this is omitted the results of appendectomy are frequently disappointing. Franke and others explain continuance of pain as being due, in the majority of cases, to neuralgia of the ileo-hypogastric nerve. The writer reports 8 cases which show that it is frequently due to pericolitis and the adhesions which result. Though the formation of adhesions, and the occurrence of pericolitis, periovaritis, and perisalpingitis, are well-known complications of appendicitis, it is less generally recognized that they may not only persist after the subsidence of acute symptoms or the removal of the appendix, but may even become aggravated. The symptoms are those of chronic or relapsing perityphlitis—pain, pyrexia, *malaise*, and vomiting. The following case first drew the writer's attention to this affection. A woman, aged 32, had an attack of appendicitis in 1893. Between then and 1895 she had several mild attacks. She was then well until January, 1900, when after a miscarriage there was renewal of the pain and complete anorexia. During menstruation there was severe pain, the source of which might have been the appen-

dix or the uterine appendages. On July 3rd, 1900, an incision was made under ether. The appendix, which was apparently healthy, was excised, and the ovary, which was large and adherent, was also removed. Microscopically the ovary and Eustachian tube proved normal, but the mucous membrane of the appendix had been replaced by an infiltrated lining of fibrous tissue. The pain was not relieved, and there were frequent pyrexial attacks, especially during the fortnight preceding each menstrual period. She slept badly and could not lie on the left side. In the right iliac fossa was a movable, tender swelling, which had been diagnosed by several surgeons as a floating kidney, though the right kidney could be distinguished higher up. Tuberculosis of the caecum was suspected, and on April 23rd, 1902, a second laparotomy was performed. The caecum was normal, except for extreme mobility. But on further examination a thick fibrous band was found, which united the outer side of the middle portion of the ascending colon to the abdominal wall. The caecum and lower part of the ascending colon could, owing to abnormal length of their mesentery, be made to revolve round this band as a centre until they touched the liver. The external surface of the caecum was fixed to the iliac fossa by a few sutures, and the band was divided. The caecum was opened, but proved to be normal. Thereafter the pain and pyrexial attacks ceased. The patient slept well on either side. The band produced no stenosis. Evidently the traction on the colon was sufficient to produce reflex irritation with pain and constipation, the resulting stercoral intoxication accounting for the pyrexia. Of the remaining 7 cases the most remarkable was that of a single woman, aged 25, whose appendix had been removed after two attacks of appendicitis; it was adherent and oedematous. The operation, which was performed in February, 1900, was useless, and pain and constipation persisted. In May, 1902, she fell and probably lacerated the right kidney. Cystitis and pyelitis resulted and were accompanied by attacks of pain and elevations of temperature, which frequently attained 111.2° F. (controlled by Sahli). Vomiting, pyrexia, and pain were attributed to a probably infected movable kidney. But nephropexy produced no improvement and the temperature persisted. In May, 1903, the writer diagnosed periovaritis and pericolitis and performed median laparotomy. The cicatrix of the former appendectomy was normal and without adhesions, but the outer aspect of the ascending colon was fixed to the abdominal wall by bands, which superiorly were directed from above downwards and inferiorly from below upwards. The inner aspect of the ascending colon was adherent to the omentum, which in turn was attached to the summit of the uterus. In addition, the anterior longitudinal muscular band of the ascending colon was thickened, fibrous, and contracted in such a way that the intestine was thrown into folds like those of a concertina. Thus the adhesions from their direction tended to extend the colon, and the anterior band to shorten it, so that peristaltic action was greatly impeded. The high pyrexia was regarded as hysterical, and the anatomical basis was interesting. The longitudinal band was excised, the wound being covered with peritoneum, and the adhesions and the right Fallopian tube and ovary were removed. On the fifth day after the operation the temperature became normal, and in June recovery was complete. The diseases most likely to be confounded with pericolitis are tuberculosis and tumours of the ascending colon. An operation is the only radical treatment, but massage, large doses of tincture of valerian, and atropine may be of service.

(70) Retroperitoneal Cyst; Splenectomy and Partial Excision of Pancreas.

Monprofit (*Gaz. méd. de Paris*, March 12th, 1904) operated last year on a woman who had observed a swelling in the abdomen for about six years. It caused local pain, and grew slowly; ultimately, when it became very bulky, the patient suffered from attacks of vomiting without emaciation. The uterus was high up, the fornices free, but the lower part of the tumour came down below the level of the pelvic brim. The tumour felt elastic, and rose three finger-breadths above the level of the umbilicus. On exposing it its surface was found to be smooth and white; it was tapped and nearly 9 pints of a syrupy brown fluid came away. Enucleation at first was easy, and the cyst apparently had no connexion with the genital tract. Above, however, it was so closely connected with the spleen and pancreas that the spleen had to be removed with it, and the tail of the pancreas excised after ligature with stout catgut. Over 7 in. of the splenic artery were firmly blended with the wall of the cyst, and were removed with it. The patient recovered. The tumour was certainly not of splenic or pancreatic origin. Monprofit believed that it was a Wolffian cyst developed close to the metanephron or permanent kidney; he admits that the ovaries, tubes, and uterus were not seen during the operation. He adds references to other cases of cysts of Wolffian origin relatively high up in the abdomen.

(71) Osseous Varices.

Buschi (*Archiv. di Ortoped.*, An. 21, 1904) records the case of a woman, aged 26, who at the age of 9 years first noticed a reddened patch over the left internal malleolus associated with pain on standing and walking. There was also considerable development of the subcutaneous veins. A little later the reddened patch ulcerated, and practically never healed. Three years ago the large saphena vein was removed both along the leg and in Scarpa's triangle. But no relief followed; there was more pain than ever in walking and on standing. The pain remained fixed in the tibia, especially at its lower third. The ulceration increased, and from time to time more or less severe haemorrhage occurred. She was admitted into hospital on June 19th, 1899. The development of superficial veins was then enormous up the whole left leg and thigh. No definite alteration in size or shape of the tibia could be made out, but it was tender on pressure in the lower half. On examination it was decided to amputate the leg in the upper third. Subsequent examination showed the bone to be of very light, much rarefied cribriform, and the spaces filled with dilated veins. The periosteum was not much thickened, but was exceedingly vascular and strongly adherent to the bone; the spongy part of the bone was destroyed, and only a very thin, almost transparent, layer of compact tissue left outside. The most marked changes were found in the posterior portion of the tibia, where the long flexor tendon rubbed against the bone, and, generally speaking, the changes were most marked where the tendons exercised pressure. The question arises whether the changes in the bone were primary or secondary to the varicose condition of the external and internal veins. The changes in the bone resembled those seen in early rickets or osteomalacia. But there was no evidence of either of these conditions elsewhere. The practical deduction from this case is the uselessness of operating on the veins when this condition of bone is present also—a condition which might be recognized by the *x* rays.

MIDWIFERY AND DISEASES OF WOMEN.

(72) Breast Secretion in Nursing Mothers.

T. Ziocisti (*Berl. klin. Woch.*, February 1st, 1904) points out that the mortality among bottle babies is very great, and for many other reasons he urges the necessity of the mother nursing her own baby in almost every case. He thinks that whenever there is a secretion of milk the woman should suckle the baby. If one considers how economically the human organism fulfils its work, and remembers how one function is preserved in order to allow another to be fulfilled, one will not regard even tuberculosis, syphilis, or any other wasting disease to be a contraindication for nursing, and one will far less recognize such an elastic term as "weakness" to be used as an excuse for bringing the baby up on the bottle. The only reason why a woman cannot suckle her child is a disturbance of the breast gland itself. As long as the gland is healthy the mother must and can supply her baby with milk. The author briefly considers the factors which act harmfully in respect to the act of suckling. He believes that alcohol is one of the important disturbers of the capability of suckling, and urges that one should be on one's guard not to overlook this. After discussing some hygienic aspects of the problem, he turns his attention to those substances which increase the secretion of milk. Cotton-seed is said to have this effect, and cotton-seed oil is largely utilized for this reason in the feeding of cows. The reason of this physiological action and the constituent of the seed which produces it are not known. In order to apply this to women attempts have been made to purify the seeds, and a preparation, bearing the name of lactagol, has been the outcome of these investigations. It is a fine white powder having a not unpleasant taste. The patients take it well, and it does not produce any disturbances of digestion. In one case the author saw a mild gastro-enteritis, but he is inclined not to lay

this to the cost of the lactagol. The action on the breast becomes evident after the patient has taken the powder for three or four days and has swallowed from 25 to 30 grams. The effect on the breast is that they become fuller, that the baby is able to suck for a longer period, and that at the end of the meal the mother does not complain of pain in the breasts. The action does not appear to be lost if one discontinues the lactagol for one day, but if one leaves it off for two or three days the secretion becomes less. If one uses it in women who have already been suckling for some time one finds it necessary to give nearly double the amount before the action is obtained.

(73) Abdominal Section during Pregnancy.

Werder (*Amer. Journ. Obstet.*, March, 1904) reports 4 cases of abdominal section during pregnancy without removal of the uterus and 2 of removal of the gravid fibroid uterus; all recovered from the operation. Of the 4 cases, one was an instance of ovariotomy at the third month, six weeks after the patient had hurt her left side through a fall from a bicycle. There were recent adhesions. Notwithstanding the accident and the not uncomplicated operation, delivery occurred at term. In a second case the right appendages, strongly adherent, were removed in the second month. The patient was lost sight of after recovery. In the third case an ovarian cyst containing three gallons of fluid was removed in the sixth month; the patient had after recovery a normal labour and convalescence. The remaining case was an example of bilateral dermoid in a woman, aged 29, in the third month; abdominal pains simulating appendicitis came on. In the middle of the fourth month two dermoid ovarian tumours were removed; the pedicle on the left side was twisted. About three months after the operation attacks of severe eclampsia came on suddenly, and the patient's condition was very critical for a few days. The urine was loaded with albumen and casts. The attack subsided under appropriate treatment, and pregnancy went on to full term. The patient was then delivered spontaneously of a healthy child.

(74) Rare Maldevelopment in a Fetus.

J. T. Hewetson (*Journ. of Obst. and Gyn. of the Brit. Empire*, April, 1904) describes a series of abnormalities present in a fetus, and discusses the manner of their production. The abnormalities of the pelvic floor and pelvic contents were as follows: The urethral, vaginal, and anal orifices and the perineal body were absent, the single perineal depression showing no subdivision into urogenital and anal portions. The labia majora were united behind the perineal depression in a scrotum-like posterior commissure; the labia minora, clitoris, and hymen were absent. To the bottom of the perineal dimple was attached a stalked vesicle of pyriform shape, whose internal cavity was continuous with the urethra. The bladder was normal except for a vesico-vaginal fistula, and the urethra normal except for marked narrowing above the opening into the perineal vesicle. A complete double uterus and vagina were present; the right vagina opened into the urinary bladder and both vagina and uterus on this side were distended with urine; the left vagina ended as a blind tube and was filled with a creamy liquid. Both vaginae were lined with stratified squamous epithelium and well-marked anterior and posterior median raphé were present in either uterus. The rectum ended as a conical-shaped blind tube just behind the right vaginal wall to which it was adherent. In addition to these pelvic abnormalities the feet of the fetus were in a state of double talipes varus, there was a well-marked dimple over the lower part of the lumbar vertebrae and a large deficiency in the anterior abdominal wall in the neighbourhood of the umbilicus. Two explanations of the perineal vesicle are suggested. The first and perhaps more probable one is that the lateral genital folds united by their inner free margins and covered in the urethra, while perforation of the genital eminence failed to take place, and a blind *cul-de-sac* covered by labia minora and prepuce was left. A gradual accumulation of urine dilated this *cul-de-sac* and caused it to assume a pyriform shape. According to the second view the cloacal membrane persisted and became the wall of the vesicle: urine then accumulated in the lower part of the urogenital sinus or urethra and bulged out the cloacal membrane, finally producing the vesicle under consideration. The double uterus and vagina were clearly due to complete absence of fusion of the Mullerian ducts, the opening of the right duct into the urogenital sinus having remained patent and formed the vesicle vaginal fistula. The line of fusion of the Mullerian ducts has been hitherto held to be represented by the median raphé of the cervical canal, and the presence of median raphé in both uteri in the case is, therefore, of great interest.

THERAPEUTICS.

(75) The Treatment of Whooping-cough.

T. W. Kilmer (*Med. News*, June 11th, 1904), in a paper read at the annual meeting of the American Medical Association, held June 7th to 10th, said he had treated 17 consecutive (not selected) cases of whooping-cough by means of the elastic abdominal belt. The method was to apply a stockinette band extending from the axillae to the hips, and over this an elastic bandage of similar material to that used in elastic stockings, putting it slightly on the stretch, and stitching the upper and lower edges to the stockinette band to prevent curling. If necessary to produce the desired results, the bandage may be made tight. He showed charts of his cases indicating the ratio in frequency of the cough to the vomiting. During the first week of observation, the child being only under placebo treatment, this was as 12 to 8. After he applied the belt, at the end of one week the results were always marked, sometimes spectacular, and only in 1 case in 18 did he fail to stop the vomiting, while in only 6 was there failure to stop or greatly lessen the cough, and in 1 case in which the coughing and vomiting had been entirely stopped by the application of the belt, they began again when the belt was removed by the mother. He said incidentally that this method of treatment had been tried with success in the vomiting of pregnancy, and, in conclusion, that he thought the application of the elastic belt should be given a fair and impartial trial in the treatment of whooping-cough, since in his experience it had apparently aborted many cases, and had practically stopped the vomiting in all but one of the other. Bernhardt suggests that perhaps the impossibility of the inspiration might be the cause of lessened cough. Kerley had seen the cases reported upon, and noted the particular efficiency of the treatment in children of 1 year in whom the administration of drugs is difficult. Gilbert suggested the danger of hernia, since this sometimes occurs in the newborn after the application of the ordinary abdominal binder, and asked Kilmer's theory as to the cause of favourable results. Kilmer said, in closing, that the action of the belt was of course purely mechanical, that he had no case of hernia following the application of the belt, and that in the cases reported he had given no other treatment, and compared this treatment to the relief known to follow application of pressure over the stomach in sea-sickness.

(76) Pyelo-nephritis Cured by Massage.

La Policlinique, April 15th, 1904, contains an account of a case of pyelo-nephritis shown to the Policlinic at Brussels by Bastin-Williams, who describes the patient as being completely cured by massage. Two days before a confinement at term she fell on her right side. Four days after the confinement her urine was observed to be thick. There had been no catheterism. Seven weeks later she came complaining of a dull pain in the right flank, with occasional exacerbations. She was passing urine without pain every two hours during the day, and twice in each night. Her appetite failed, she had slight fever, and her general health had deteriorated. The urine was very thick with pus, and contained no blood. The right kidney was prolapsed, and sensibly larger than normal. When the urine from the two kidneys was separated by Luys's method it was found that two-thirds came from the left kidney and was clear, the remainder from the right kidney was purulent. About 50 grams of retained urine could be brought away by pressure on the pelvis of the right kidney. The treatment adopted consisted of daily massage of the kidney, and the administration of salol by the mouth. From the first fever disappeared, pain diminished, appetite returned, and the patient was obviously better. The pus gradually disappeared from the urine. When the patient was brought before the policlinic she was in robust health, the right kidney was still a little prolapsed and enlarged, and there was still retention of about 30 grams of clear and aseptic urine in the ureter. There were no subjective symptoms. At this time all treatment had been at an end for six months, and Bastin-Williams therefore claimed that the disease was finally cured. His explanation of the case was that traumatism had led to the microbic inva-

sion of the pelvis of the kidney from the blood, and that massage effected a cure by regularly emptying the retention pouch and producing the ordinary circulatory reactions.

(77) Biosin, a new Iron-Albumin-Lecithin Preparation.

M. HEIM is of opinion that the reason why the majority of nutrient preparations do not find favour for any length of time is that they mostly are not good of taste, and do not suit everybody, in spite of possessing excellent capabilities of being absorbed (*Berl. klin. Woch.*, May 30th, 1904). He doubts whether there is really any need for a new albuminous preparation, although at times one would like to have a good preparation at hand which the patients would care to take for a long time and which is cheap. On the other hand, he regards the need of a good iron preparation which would serve at the same time as a nutrient as more pressing. He therefore has introduced a compound containing iron and lecithin together with albumin, and calls it biosin. The albumin is derived from casein, which he believes is the most easily-digested form of albumin. He claims for this preparation that it has a pure taste and smell, and is capable of being kept in good condition for a long time; that by means of peculiar precipitation the casein is preserved in its natural form without the aid of chemicals or heat; and, lastly, that it can be offered at a low price. It contains 0 24 per cent. of iron in organic compounds, 6.5 per cent. of yolk of egg, that is, 1.2 per cent. of lecithin and 94.9 per cent. of the total N substances are said to be capable of being absorbed. It takes the form of a yellowish brown powder of pleasant taste, and is nearly completely soluble in water. Heim gives the details of an experiment carried out with a chlorotic girl, which goes to show that the new preparation is largely used up in the body. He has tried it in over 100 cases, and states that it is always readily taken, that it does not produce any bad effects, even when given in very large quantities and when continued for a long time. The patients put on weight at the rate of between ½ kilo. to 5 kilo. per week while taking biosin; in hyperemesis it was retained when everything else was vomited. In scarlet fever he had occasion to give it for about a fortnight, with three-quarters to one litre of milk, and no other food, and was absolutely satisfied with the result. In anaemia the preparation took the place of iron medicament, and gave excellent results, and in neurotic conditions it assisted to keep up the nutrition of the patients. He finds that he can confidently recommend it to the general practitioner in the conditions named.

PATHOLOGY.

(78) Ultramicroscopic Investigations.

SIEDENTOPF'S new microscope does not differ from the ordinary instrument in its magnifying power or in the set of lenses, but the difference lies in a new kind of illumination. This illumination is a sideways (oblique) focal one, which is so concentrated on to the field that the smallest particles which are otherwise invisible become visible by their reflecting the light directed on them. The source of light is the sun. Raehlmann (*Berl. klin. Woch.*, February 22nd, 1904) describes some investigations which he has carried out with this microscope. He states that solid tissue is not adapted for examination by these means, but the substance must be suspended in a fluid medium or must be in a transparent solid medium. He has examined glycogen and albumen minutely. The former is soluble in hot water and can be diluted very greatly, without losing a slight opalescence. Under the highest power of the ordinary microscope, the fluid does not show any material particles, and is regarded as a homogeneous fluid. With the new microscope, it becomes clear that this solution is composed of very minute particles, having a characteristic form and size. These particles are endowed with oscillating movement, and the movement appears to depend on the mass, size, and specific gravity of the particles, and also on the number of them, that is on the proximity of each particle to its neighbour. Other substances which are soluble in water show particles which are similarly endowed with movement. If one dilutes the solution more and more the movements will be seen to become slower and slower, until they cease altogether and the particles only float about. Raehlmann regards this movement as the optically visible motor expression of the action of gravitation, by means of which the particles hold each other in a state of tension, that is, attract and cast away one another. The individual particles represent molecular complexes of typical structure and regular construction. They must be regarded as molecules of the second order, which take a definite position in the aggregation behaviour and in their relation to the water, in which they form the typical solution of glycogen. In support of this, he found that if a solution of glycogen of such a strength that the particles are grouped close to one another is taken and to this a few drops of a 1 in 20 solution of diastase be added, the molecular aggregation is destroyed; the groups of particles become less and less until they finally disappear. In order to study these particles in various solutions, it is necessary to use very dilute solutions, when the characters become apparent. He deals further with the characters of certain albuminous solutions. Turning to the phenomenon of putrefaction, he states that he has observed the bacteria in a living state, and finds that the new microscope offers many advantages. The micro-organism will, however, appear different according to the position in which it is examined and the form it has. With the focal illumination, a micro-organism having a size of ¼ mm. can be distinguished as to form and parts, but when it is less than this size it appears only as a point. It must be borne in mind that the refraction to light affects only those parts of the particle or micro-organism examined which fall directly in the line of the light, and only those substances which have a different refraction than the medium in which they are suspended can be seen at all. By means of this illumination one can distinguish without any preliminary culturing, staining, or other process a given germ in a fluid; the diagnosis as to the kind and species of the germ can within certain limits be determined, and the form of the germ can be made out, if one observes it very minutely and allows for the optical peculiarities which this form of illumination gives rise to. The sort of movements possessed by a micro-organism helps to differentiate it from other species. Raehlmann goes on to describe various forms of putrefaction bacteria which he has been able to separate by this means. He has also watched the effect of bactericidal and antiseptic fluids on micro-organisms and also of electric currents.

(79) The Remote Effects of Typhoid Fever upon the Cardio-vascular System.

THAYER (*Amer. Jour. Med. Sci.*, March, 1904) gives the results of observations upon the condition of the heart and vessels in 183 patients who have had typhoid fever in the Johns Hopkins Hospital during the past fourteen years. The ages of the patients varied from 3 to 69 years, and the period since discharge ranged from one month to thirteen years. Measurements of the blood pressure, the pulse, and the size of the heart were made in the recumbent position for comparison with the previous hospital records. In 60.4 per cent. of the cases the pulse was between 60 and 90, in 8.7 per cent. it was above 110. In 30 instances irregularity of the pulse was noted, and of the cases in which the pulse was over 90 irregularity was found in 18.3 per cent. The blood pressure showed a higher average than that observed in a control series of normal individuals of the same ages and under the same conditions, while the individual records in a considerable proportion of cases exceeded the figures usually regarded as normal. In these same cases the radial arteries were palpable with much greater frequency than was observed in individuals who had never had the disease. The average distance of the heart's apex from the middle line was greater when compared with figures taken when in hospital, showing evidence of some cardiac enlargement. There were 10 instances of cardio-vascular lesions which had developed following typhoid fever in the absence of the ordinarily recognized etiological elements: of these, 7 were cases of hypertrophy with initial insufficiency, 2 of aortic insufficiency, and 1 of marked arterio-sclerosis with hypertonus in a young man. The after-examination of 31 patients who during the fever had a systolic murmur showed a strikingly high blood pressure with increase in the size of the heart, one-half of the cases of extreme hypertension being observed in this small group. Thayer concludes that the fact that these 183 patients are materially older from a point of view of their heart and arteries than the average individual would tend to support the views of those who regard typhoid fever as an active element in the etiology of a considerable number of cases of cardiac hypertrophy and dilatation, as well as of arterio-sclerosis.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(80) The Diagnosis of Carcinoma of the Stomach.

J. Sigel considers the means at disposal for rendering the diagnosis of gastric carcinoma certain, and states that neither the absence of free hydrochloric acid nor the presence of lactic acid, nor yet the absence of digestion leucocytosis, nor the proof of obscure haemoptyses are quite reliable signs, and even when they do point to the disease this has generally passed the very early stages when the diagnosis is of greatest importance (*Berl. klin. Woch.*, March 21st and 28th, 1904). In more recent time four methods have been suggested. The first is the tryptophan reaction, which consists of the appearance of a reddish-violet colour body when the proteinochrome produced in the disintegration of albuminous compounds is treated with either chlorine or bromine. The red-violet colour is said to appear in carcinoma of the stomach when the contents is gained by a "trial breakfast," and is treated with chlorine. The results obtained by various observers differ largely, and Sigel therefore tested this reaction in 15 cases of cancer of the stomach, and only in 2 cases was it distinctly positive. The second method has been introduced by Salomon, and depends on the determination of the amount of albumen in the gastric secretion. This observer found that gastric carcinomata always exude an albuminous fluid, and therefore considers that this may be made of use in diagnosis. The patient is given only fluids during the morning; from 2 p.m. the diet is fluid and free from albumen, nothing is taken during the night, and next morning the stomach is washed out with 400 c.cm. of physiological salt solution very thoroughly. The albumen is estimated by Esbach's test and the amount of nitrogen in the fluid by Kjeldahl's test. Distinct flocculent precipitation by Esbach's reagent and a value of nitrogen exceeding 25 mgr. in 100 c.cm. of the fluid speak for carcinoma of the stomach. Sigel tested this method in 20 cases, and comes to about the same results as Salomon. But just in those cases in which a differential diagnosis is most difficult the method is not to be relied upon. The cases quoted are those of benign ulcer of the stomach and malignant ulcer of the lesser curvature. The results in simple gastric ulcer vary within wide limits. However, he considers that the method should be practised, and in certain cases it may assist in clearing up a doubtful diagnosis. The third method is that of Gluzinski, and depends on the suggestion that the acid catarrh of gastric ulcer changes into a mucous catarrh either if the ulcer becomes malignant or when fibrous healing takes place. By careful attention to the other signs, if one determines the time when the acid catarrh changes into the mucous, one can determine whether the case has gone to scarring or malignant degeneration. The stomach is washed out during fasting in the morning, later on it is again washed out after a trial breakfast; and, lastly, still on the same day, after a trial dinner. If free hydrochloric acid is absent in one of the washings, and is markedly present in the others, there is evidence that the acid catarrh is passing into the mucous. Sigel finds that at times this method may help one to a correct diagnosis, but it fails one in other cases. The great discomfort of having the stomach washed out three times in one day falls away when one considers that this test is only to be applied in cases when the diagnosis is either simple or malignant ulcer of the stomach, and since the correct decision is of so much importance to the patient that if the position is explained to him he will readily submit to the test. The fourth test is the testing for fatty acids in the urine. Rosenfeld found that in gastric ulcer and gastrectasis, with normal acidity or hyperacidity, the volatile fatty acids in the urine are much increased; in stasis of the contents of the stomach depending on pyloric scar or gastroptosis with subacidity or anacidity, the fatty acids are either little or greatly increased. Sigel has also tested the truth of this statement, and finds that one cannot base either a diagnosis or differential diagnosis on this analysis. He therefore is forced to the conclusion that none of these methods is capable of forming a certain diagnosis of sarcoma of the stomach, and one must therefore rely on the physical and other well-tried signs, and spare no pains in attempting to elicit in each case all the data on which one may be able to build up a correct diagnosis.

(81) Pneumococcal Parotitis.

Pennato (*Rif. Med.*, June 1st, 1904) discusses the occurrence of mumps in pneumonia, and records some cases illustrating this complication. Authors differ very much as to the frequency and as to the gravity of the phenomenon. Some statistics seem to suggest it is fairly common whilst others make it a rare occurrence. Most authorities describe it as a rather serious complication and one likely to lead to prolonged and even fatal illness, but probably this is too serious a view. The question also arises as to whether it is a true complication of pneumonia and due to the same diplococcal infection or merely a concomitant affection. Cases could be quoted to prove either view. In the author's case a woman, aged 38, with right upper lobar pneumonia, the parotitis appeared on the tenth day of the illness—fifth since the pneumonia was detected—on the left side, and remained confined to that side. As fluctuation appeared later it was opened and some blood-stained serum let out; it never suppurated. Examination of the blood on the fourth day of the pneumonia showed diplococci, and the same results were found on examining the parotid fluid. Whether infection takes place via the blood or via stenosis direct is uncertain. The prognosis seems to depend largely on the condition of the patient, and need not necessarily be as serious as is often said.

(82) Hysterical Anuria.

Scarpini (*La Clin. Mod.*, October 7th, 1903) reports the case of a woman, aged 28, admitted into hospital January, 1902, with the following history: Menstruated at 11, anaemia at 13, followed shortly by severe convulsive attacks occurring daily for about three years and then gradually ceasing. At 19 dysuria necessitating catheterism for about three months. The next thing was exudative pleurisy followed by absorption. At 24, sudden haematuria without cause; treated by vesical lavage and cured. A little later she was confined to bed with fever, cough, and bloody sputum, and during convalescence right hemiplegia supervened, which lasted about eight months. Ischuria, requiring catheterism, and diminished diuresis again set in, accompanied by diffuse headache, afterwards localized over the right mastoid. Eventually anuria set in, associated with oedema of the lower limbs (at first transitory and then permanent), nausea, and headache. No diarrhoea. Diaphoretics caused considerable salivation and finally vomiting of clear fluid. Severe haematemesis also occurred one day. Vomiting after food became the rule, and the vomit assumed the character and appearance of urine. The quantity was about 400 grams daily. A second haematemesis occurred a few months later, and she was further troubled with haemorrhage from the ear. No disease of the internal organs could be detected. The tendon reflexes were normal, but there were various disturbances of sensation. The anuria was practically complete, although occasionally a few drops of urine could be withdrawn by catheters, containing traces of urea, acid; no albumen. The bowels were open slightly about every fifteen days. The fluid vomited was pale yellow, 1010 to 1020 specific gravity, slightly acid, urea 5 to 25 per cent., chlorides 6 per cent., and a few phosphates sugar, albumen, bile or urobilin absent; indican sometimes present. Pepsin and hydrochloric acid absent. There was slight evening rise of temperature. No marked wasting occurred. Altogether the anuria lasted about two years. The absence of uraemic symptoms may perhaps give some support to recent theories as to nephrolysins, and changes in the internal secretion of the kidney are ultimately due to perverted nerve influence rather than vasomotor changes. The prognosis, in spite of the prolonged duration, is said to be not unfavourable.

SURGERY.

(83) Causes of Non-Union Fracture.

Cornil and Coudray (*Rev. de Chir.*, No. 7, 1904) publish the results of some experiments made with the chief object of determining the part played by mobility of the fragments of a broken bone in failure of osseous union and the formation of a pseudarthrosis. Failure of union, the authors conclude, is not due to mobility alone. The idea that mobility excited by frequent displacement of the fragments inevitably results in non-consolidation of a fracture is held to be an erroneous one. Union is thus slightly retarded, but it is established with much vigour and the formation of an excess

of callus. This conclusion is one of practical importance in its bearing on objections to the treatment of fracture by early movement of the injured limb and frequent massage. Muscular interposition, long recognized as an actual and frequent cause of non-union of fracture, is held to be more common than is generally supposed. In some instances over-riding of fragments seems to have been the only, or at least the predominant, cause of non-union. Rarefying osteitis and fatty rarefaction of bone, either singly or in association with other causes, are occasional factors in the production of a pseudarthrosis. Very little is known as to the influence of any general morbid condition on failure of union of a fractured bone. According to Le Dentu the only constitutional condition that can be accepted as a cause of such failure is syphilis, especially in its early secondary stage. To these causes others may be added in which complex elements exist. Examples of these occasional and complicated causes have recently been collected and recorded by Roy. In some of these cases a detached fragment of bone seemed to play the principal, or at least an important, part. A very abundant effusion of blood at the seat of fracture may prevent union. In cases of pseudarthrosis, following a compound fracture, and particularly one in which suppuration has occurred, the causation is very complicated, as in such forms of injury one often finds associated—over-riding of fragments, interposition of muscle, and the presence of dead bone.

(84) The Fate of Antiseptic Mops Accidentally Left in the Abdominal Cavity.

Riese (*Zentralbl. f. Chir.*, No. 27, 1904) in a communication to the *Deut. Gesell. f. Chir.* reports 2 cases in which gauze mops had been accidentally retained in the abdominal cavity after laparotomy. In one of these cases the foreign body, which had made its way into the intestinal canal and there caused obstruction, was successfully removed by enterotomy. In the second instance, in the course of a laparotomy for rupture in tubal gestation, performed four years after ovariotomy, an aseptic mop was found enclosed in a cyst that had been developed in the meso-sigmoid. According to our present knowledge the retention of a soft foreign body in the abdominal cavity after laparotomy may be followed by one or other of these four results: peritonitis, penetration into the intestinal canal, discharge of the foreign body through an abscess formed in the abdominal wall or in the pouch of Douglas, and inclusion in a cyst. The author states that penetration into the intestinal canal occurs quite as frequently as external elimination by an abscess. The passage of the foreign body into the intestinal canal may occur without suppuration, and its discharge by the anus need not give rise to any alarming symptoms. A foreign body such as an antiseptic compress or mop may, the author states, be retained within the peritoneal cavity for many years. In cases of intestinal obstruction following the passage of such body into the intestinal canal, it is held to be better to have recourse at once to laparotomy than to attempt to dislodge the cause of the obstruction by purgatives. Several surgeons have had experience of the accidental retention of antiseptic appliances. In Neugebauer's practice a foreign body of this kind was left in the abdominal cavity in 10 of 1,000 laparotomies, and Riese has had a similar experience in 2 out of 900 laparotomies.

(85) Congenital Imperforation of the Oesophagus.

Villemin (*Bull. et Mém. de la Soc. de Chir. de Paris*. No. 25, 1904) reports a case of imperforate oesophagus in an infant, in which he performed gastrostomy on the third day after birth. This operation was followed by continuous emission of gas by the opening in the stomach, and also, after each attempt to introduce food into the stomach, by expulsion from the mouth of frothy milk. In a report on this case Demoulin sums up his views in the following conclusions: (1) That the surgeon, when dealing with a case of imperforation of the oesophagus in an infant, should bear in mind the most frequent variety of this malformation, in which the upper segment of the canal ends in a *cul-de-sac*, and the lower segment communicates freely with the trachea; (2) that in cases of this kind gastrostomy, though performed without any difficulty, and well supported by the patient, fails to do good, as milk injected into the stomach does not pass into the intestine, but is discharged either by the trachea or by both the trachea and the opening in the stomach, so that the dangers of asphyxia and of pulmonary complication are added to that of inanition; (3) that with the view of preventing death from inanition the surgeon might prefer jejunostomy to gastrostomy, but it is pointed out should not entertain any illusions with regard to the efficacy of such intervention.

(86) Surgical Treatment of Pulmonary Abscess.

Cavazzani (*Rif. Med.*, May 11th, 1904) discusses the importance of early diagnosis and the value of *x* rays in these cases, and then briefly reports 11 cases treated by free drainage by him. He says that the danger from the entrance of air may be considerably lessened by withdrawing the air by means of a syringe before finally closing the wound. If the air cannot be thoroughly withdrawn, the empty spaces may be filled up by injecting some harmless fluid, for example, normal saline solution. With this precaution the lung may be treated surgically with far better hope of good results. Of the author's 11 cases (with 13 operations) 3 only died (1 from hepatic mediastinal and pulmonary abscess, another from disseminated small abscesses, and the third probably from some dietetic error). Obviously the prognosis is better in cases of single rather than in multiple abscess.

MIDWIFERY AND DISEASES OF WOMEN.

(87) Sarcoma of the Vagina.

H. Jellett (*Journ. of Obstet. and Gyn. of the British Empire*, March, 1904) describes a case of sarcoma of the vagina. The patient was a woman of 55 who had borne nine children, the youngest of them 11 years before. Menstruation had ceased for five years. For two years before she sought advice there had been a vaginal discharge, at first white in colour, but becoming purulent after six months; it contained traces of blood at times. The patient had been losing weight and strength for a year; she complained of no pain, but of weakness of the back and of occasional attacks of dizziness. The urine was passed in normal quantities, but for four or five months there had been occasional incontinence of urine. The following was the appearance on examination:—At the vulvo-vaginal junction there was an area of what at first sight appeared to be congested and hypertrophied mucous membrane separated below from the surrounding parts by two sharply-cut sinuous edges running backwards from behind the clitoris. The surface of the area was below the surrounding level, but was covered over by irregular bosses and tubercles. Anteriorly a curious flap was present beneath the orifice of the urethra; this flap became much smaller under treatment, and was therefore probably due to a chronic inflammatory process. On separating the vaginal walls the growth was found to be limited anteriorly by this flap; laterally it extended on one side from 1 in., on the other for 1½ in., up the vaginal wall; posteriorly it reached at one point 2 in. up the vagina, and its course seemed to have been determined by that of an old perineal laceration. The surface was covered by purulent discharge. The entire area was firmer in consistence than the surrounding parts. The growth was apparently confined to the vaginal wall and the adjacent tissue. The diagnosis of the case was obscure, even after microscopical examination of one of the tubercles. Treatment was at first directed to cleaning the vagina, but at the end of a fortnight the base of the growth had become slightly more infiltrated, and it was decided to remove the growth. This was done without difficulty, and the wound had healed up when the patient left the hospital three weeks after operation. When she was next seen five weeks later small patches of granulation tissue were present round the urethral orifice and on the right vaginal wall. This tissue was treated with nitric acid. When the patient next presented herself two months later, in January of the present year, the wound had completely healed, and all traces of granulation tissue disappeared. Earl examined the growth after removal, and reported that it was an infiltrating sarcoma. The cells were small and for the most part round, but there were a few oval or short spindle cells; the nuclei stained darkly in haematoxylin. Numerous thin-walled vessels were present in the growth. The growth was situated chiefly on the mucous membrane, but also invaded the muscular coat: 39 cases of primary vaginal sarcoma have so far been reported, 17 of them spindle-celled, and 9 round-celled growths, but it is probable that at least six of the spindle-celled tumours were endotheliomata and not sarcomata. Vaginal sarcomata appear to arise slightly more often from the anterior than the posterior wall, and in only one case besides the one here reported has the tumour surrounded the vagina. Of the two types, the infiltrat-

ing and the circumscribed, the infiltrating type of sarcoma is much the less frequently seen. The prognosis of vaginal sarcoma is distinctly bad.

(88) Strangulated Fibroid Obstructing Labour at Term: Operation: Recovery.

Dickinson reports (*Amer. Journ. Obstet.*, April, 1904, p. 544) a case of obstructed labour where the difficulty was surmounted, as usual in these days, by radical measures. A woman, aged 37, became pregnant for the second time after an interval of twelve years. A tumour was clearly present; at the ninth month the breech was found at the level of the symphysis; the rest of the fetal body lay very high in the abdomen, and the uterus was separated by a sulcus from a round elastic tumour on the right. Between the uterus and tumour inferiorly a band could be felt. It was naturally taken for the right round ligament, so that the tumour was supposed to be situated on the right cornu, extending to the back of the uterus. External verson was practised, and a few days later, close upon term, an attempt was made to induce labour by dilating bags. But nearly 2 in. above the inlet a kind of shelf roofed the entire left half of the pelvis. Version was successfully performed, but the shelf or ridge puzzled the obstetrician; it seemed to be a retraction ring very unsymmetrically developed. The chin caught against the ridge and the uterus contracted badly on the head during extraction; the child died an hour later. Three days after delivery the tumour seemed larger and there was constitutional disturbance. Supracervical hysterectomy was, therefore, performed with successful results. The condition detected at the operation was most remarkable, and it was not surprising that the obstetrician was puzzled. When the abdomen was opened the uterus presented, and the tumour was seen to the right, apparently behind it. A round ligament was detected running up from the pubes on to the right side of the uterus, but an ovary and tube lay on the left or inner aspect of the round ligament. When the uterus was delivered it was discovered that it had rotated to the right, so that it was its posterior aspect which lay forwards. The tumour was a fibroid springing from the anterior aspect of the uterus, which, in consequence of the rotation, lay backwards. Another result of the twisting of the uterus was extreme traction of the left round ligament. It formed a very tense band, which ran from its attachment to the left cornu, displaced entirely to the right, down to the left inguinal canal. Hence it lay as a big, unyielding valve pressing into the lower uterine segment. The case adds one more item to the causes of dystocia. When a fibroid is found associated with a pregnant uterus and a round ligament detected on palpation, let the obstetrician be sure which round ligament it is, for this case shows how an expert may be deceived. The fibroid was undergoing strangulation in consequence of the torsion.

(89) Calculus of Female Ureter.

Jacobs (*Bull. de la Soc. Belge de Gynéc. et d'Obstét.*, vol. xiv, No. 4, 1903-4), after referring to the case where he removed a calculus weighing nearly 1½ oz. from the ureter of a woman by an abdominal incision, reports a second instance of calculus in the ureter. The patient was 69 years old, and, though a multipara, had never suffered from any disease of the genito-urinary tract until sharp attacks of pain in the left side of the pelvis set in, radiating to the left flank. Pus usually appeared in the urine after one of these paroxysms, the earliest of which occurred over seven years before operation. The symptoms—pain and purulent urine—became very marked. On exploration, a long, smooth, movable swelling, hardly tender to pressure, could be detected in the left fornix in the track of the ureter. It was not possible to push the mass into the bladder. A free incision was made in the vaginal fornix, the ureter exposed by dissection, and a loop of it drawn out of the vaginal wound by the operator's left forefinger, which was hooked under it and kept in that position during incision of the ureter; extraction of the calculus and suture of the wound in that duct. The calculus came out easily. It weighed a little under ½ oz. and its surface was very irregular, hence urine passed freely over it from the kidney to the bladder, and there were no symptoms of dilatation of the renal pelvis. For suture a layer of catgut and a second of fine silk, both interrupted, were applied. The finger was then removed from the ureter and the vaginal wound closed with fine silk. Three months later a silk suture was discharged from the bladder after attacks of local pain.

(90) Recurrence of Myoma after Enucleation.

Flaischlen (*Zeitschr. f. Geb. u. Gyn.*, vol. li, Part 3, 1904) operated thirteen years ago on a woman aged 35, removing a myoma of the uterus of the size of a child's head by enucleation. Five years later he examined the patient and found that the uterus was perfectly normal and free from any trace of a fibroid. At the end of eight years she came to him again, and he detected numerous myomas in the uterus. He operated, removing the uterus by supravaginal amputation; there were very close adhesions to the bladder and large intestine. The patient was convalescent when the report was read before a German society. Flaischlen added that eleven years ago, or two years after the myomectomy, he removed three fibromas from the abdominal wall of the same subject.

THERAPEUTICS.

(91) The Prevention and Treatment of Hay Fever.

R. Mohr (*Deut. med. Woch.*, January 21st, 1904) points out that although there appears to be no doubt that Dunbar's antitoxin of hay fever, the so-called "pollantin," exerts a beneficial influence on the individual attacks of hay fever (and he has experienced this influence on himself), one has not obtained a means of either immunizing a sufferer against the disease or even of preventing an attack. In order to give Dunbar's preparation its best chance, one should take it continuously during the whole of the hay-fever period of each year. The difficulty of producing a sufficient quantity of the antitoxin, its high price, and the necessity of constantly having to apply it as long as one is in the open air, render it less useful than one had hoped it would be when first it was brought out. Mohr has devised a method of treating or rather preventing hay fever, which he considers supplies the wants of the sufferers. Since the condition depends on the penetrating of the specific irritant, the pollen, into the mucous membranes of the respiratory passages, it occurred to him that if one could apply an instrument which would filter the air completely, one would prevent the attacks. He therefore set himself the task of constructing an instrument which would not allow any unfiltered air to pass alongside of it; that it must fit the nostrils exactly; which can be worn without being seen and without altering the appearance of the wearer; and which would not inconvenience the wearer. This he succeeded in accomplishing, by making a wax cast of the interior of the nose, and from this, he constructed a funnel-like apparatus, provided with a very thin, almost transparent, disc of wool, which was further provided with an arrangement by means of which the wool filter can be changed in the course of a few seconds. The objection to this form of instrument is that it would be expensive to have to make a cast and from it a special instrument for each patient, and he therefore now uses an instrument, made after the principle of the Schmidthuisen nostril elevator, which can be moulded by heating in warm water. He has worn this apparatus, and found that it is capable of entirely preventing the attacks from coming on. The same results were obtained by some of his patients. He finds, further, that the susceptibility to the pollen diminished somewhat after wearing the instrument for a long time. He points out that although the eyes were not protected, the pollen do not appear to have been able to make their entrance through the conjunctival mucosa.

(92) X Rays in Sarcoma.

Mertens (*Deut. med. Woch.*, March 24th, 1904) finds that there are many reports on the favourable influence of *x* rays on superficially-situated malignant tumours, but very few of these are sarcomata. He has had a case of sarcoma which he treated by *x* rays, and reports on it. The patient was a girl, aged 11 years, who had complained nine months previously of pain in the region of the right scapula. The pains had become more intense and continuous, and three months before admission a swelling of the shoulder blade was noticed. During the last four weeks this swelling had increased rapidly in size. On examination it was found that the whole region of the right scapula was occupied by a soft, almost fluctuating, tumour of the size of a small fist. This reached almost as low as the angle of the scapula, while its upper limit reached the edge of the cucullar muscle and the median limit, the inner border of the scapula. The whole tumour moved with the scapula

within very narrow limits. There were four soft glands of the size of hazel nuts in the axilla, and several small ones at the posterior border of the sterno-mastoid. Mertens made an attempt to extirpate the tumour under chloroform anaesthesia. On attempting to raise the scapula from the thorax the bone broke in many places, and it was found that it was completely infiltrated with the growth. On removing the tumour piecemeal he found that the surrounding muscles, and especially the subscapular muscle, were infiltrated with the growth as well. After he had removed about half of the mass, the patient suddenly collapsed, and he was forced to stop the operation. As was to be expected, the growth recurred *in situ* at a very early date. The removed tumour proved to be a spindle-cell sarcoma. Since a second operation was out of the question, Mertens attempted to treat the condition with *x* rays. He used an induction apparatus with a 50 cm. spark length, with a very hard tube. He applied the rays during twenty sittings, each of six minutes' duration. At first he applied it every day, but after the first fourteen days he applied it every other day. There were no ill-effects of the treatment. After the sixth application the nodules which had appeared in the skin began to get smaller in size, and after the tenth they had entirely disappeared. After fourteen applications there was no trace of the tumour to be seen or felt. The glands diminished in size, and eventually were no longer palpable, and up to the present—that is, six weeks after the commencement of the treatment—there has been no recurrence. Mertens discusses the suggested explanations for the action of the rays on malignant growths. He does not claim a definite cure for his case, as the time is too short to justify such an assumption, but he points out that a case reported by Chrysospathes was actually cured by the rays. He subsequently tried the treatment on a second case of sarcoma of the scapula, this time a small round-cell sarcoma, in a child of 1½ year. The tumours disappeared almost entirely after the treatment, but this had to be interrupted on account of the local effect on the skin. The sarcoma recurred rapidly, and metastatic growths preceded death, which took place about fourteen weeks after the beginning of the treatment.

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(93) The Action of Theocin.

Foà (*Rif. Med.*, May 11th, 1904) publishes 10 cases where he has tried theocin with success. The patients were suffering from hepatic cirrhosis, pleural effusion, malignant ascites, cardiac disease, etc., respectively. He finds that theocin is a powerful diuretic and decaloridrant, largely increasing the amount of urine and chlorides eliminated. It is very rapid in its action, but not of lasting effect. Sometimes it produces nausea, vomiting, headache, and insomnia, particularly in cirrhotics, but hardly ever in cardiac patients. If given for several days consecutively it sometimes seems to fatigue the kidneys. The best way to avoid these inconveniences is to give small doses for two days (for example, 15 gr. three times a day) and then larger doses on the third day, leaving off the drug for one or two days afterwards. Theocin is probably a renal diuretic, but it did not appear to increase the albumen when present, or to induce albuminuria in non-albuminuric subjects. It proved a useful drug in causing reabsorption of oedematous fluid. Theobromin is less active as a decaloridrant and less active as a diuretic, but more lasting in its effect, and does not give rise to the disturbances which were noted with regard to theocin. Theocin proved superior to agurin as a diuretic.

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(94) Diet in Nephritis.

Koster (*Nordist. Med. Archiv.*, Bd. 36. Heft. 4) has made a series of careful observations on a number of patients clinically and from exact chemical methods, and draws therefrom the following conclusions: In acute nephritis, uraemia, and the acute exacerbations of chronic nephritis, a pure milk diet should be observed, and it should not be discontinued until all the acuter symptoms have disappeared. Milk alone or milk and vegetable diet ought always to be used at the commencement of the treatment of a case of chronic nephritis, but when the albumen and sediment have reached a constant level then a mixed diet may be gradually introduced. Lardaceous disease is, however, a strong contra-indication against mixed food. In oedema and ascites, a mixed diet may be continued if the patient specially desires it, although its administration must always be accompanied by daily examinations of the urine for urea and albumen. If many red corpuscles are found in the sediment, then flesh food should only be taken in small quantities. There is no difference in the effect of white or red meats. Between the meat periods milk diet should be interpolated and the urinary constituents estimated. The albumen contents of the food do not materially alter the amount of urinary albumen. The urine passed immediately on rising contains the least amount of urine albumen; that passed after breakfast has the largest percentage, although individual variations are not infrequent.

PATHOLOGY.

(95) Action of Radium on the Cerebral Cortex.

Giulio Obici (*Riv. di Pat. Nerv. e Ment.*, Feb., 1904) describes a series of experiments to determine what effect is produced on the excitability of the cerebral cortex by the radiations from bromide of radium and barium. The fact that decided changes in the cortex could be produced in this way had been previously demonstrated by Danysz, Darier and Rohn. Obici's experiments were made on rabbits by removing a part of the skull (and in some cases the dura mater beneath it) and stimulating the cortex with a faradic current before and after it had been exposed for a measured time to the radiations from 1 gram of the radium salt. The author did not aim at the gross results such as ataxy, convulsions and paralysis, which have been produced by other observers, but measured the strength of the current necessary for causing a given movement, for example, the lifting of a paw. In the earlier experiments a second rabbit was used for control observations and its cortical excitability tested twice with the same interval as in the first rabbit, and after the same treatment, except that that there was no exposure to the radiations. Afterwards a more accurate control was obtained by the exposure of two symmetrical cortical areas in the same rabbit, one area being exposed to the action of the radium salt, and the other protected from it. In all cases the control experiments showed only slight and irregular variations in excitability. After ten, twenty, or twenty-five minutes of application of the rays there was a constant increase in the electrical excitability of the cortex. This increase of excitability was not apparent until the radium treatment had been continued through the dura mater for at least fifteen minutes, or after removal of the dura mater not until the treatment had been continued for at least ten minutes. When the radium treatment was continued for an hour or more the increase of excitability usually only lasted thirty or forty minutes (the dura mater being removed) and was then succeeded by a very noticeable diminution of excitability. These electrical phenomena were accompanied in every case by a noteworthy hyperaemia of the cortex and pia mater which began a few moments after the action of the radium, and went on gradually increasing. After ten or twenty minutes the pia mater was swollen and oedematous, and the cortex was covered with blood corpuscles, possibly the result of small haemorrhages. In the case of rabbits with both sides of the brain exposed to view vascular disturbances were seen only on the side exposed to rays from the radium salt.

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(96) The Protective Action of Pus.

Binaghi (*Rif. Med.*, May 4th, 1904) has carried out a series of experiments *in vitro* and *in vivo* tending to show the bactericidal action of pus upon certain virulent organisms. The method was to induce the formation of an abscess in rabbits, and then inject cultures of various bacilli (charbon, tetanus, malignant oedema, staphylococcus aureus) into the abscess cavity, and watch the effects. Out of the fifteen rabbits operated upon in this manner, only two died (from charbon), and in them the abscess was small and hard, and the injection got into the surrounding healthy tissue. The control animals all died. Further experiments showed that pus does not confer a true immunity, but only a relative and temporary immunity, for it was quite possible to reinfect the same animals. The protective action of the pus was not owing to hindered absorption of virulent toxin or failure of penetration of the germs into the circulation, for in the reinfection the same obstacles were present as before. Possibly, reinfection occurred because of the saturation of the pre-existent alexins, and failure to produce flesh, owing to impeded leucocytosis. The abscesses were produced by inoculation of pure cultures of staphylococcus aureus and B. coli, or by starch powder suspended in sterilized water.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(97) The Importance of Examining the Faeces.

In emphasizing the importance of systematic examination of the faeces in the clinical study of diseases of the digestive organs, J. Strasburger (*Berl. Klin.*, April, 1904) finds that in this direction especially are the observations of the patient but little to be relied on. It becomes necessary to see and examine the dejecta, and he insists on the patient bringing some of the faeces in a wide-mouthed bottle provided with a patent stopper, which he lends the patient for the purpose. In the case of infants, when the diaper is not already soiled, one can always obtain faeces by using a "stool collector." Since the constitution of faeces varies widely according to the diet taken in, in a number of cases he finds it advisable to prepare his patient by giving a diet consisting of milk, bouillon, eggs, oatmeal, meat, butter, and sugar in definite quantities. This diet is kept up for several days until the faeces, which are coloured by giving a tablet of carmine on the first day, lose their red colour. The systematic examination consists in a macroscopic and a microscopic examination: elaborate chemical and bacteriological tests are only required in rare cases. He first deals with the frequency of the motions. Vegetable diet produces a larger quantity of faeces and on account of the richness in bacteria, exerts a more powerful stimulation on the intestinal wall, and thus a more frequent motion than animal diet. Whether the number of motions is still within the limits of health must be decided in each case, but, as a general rule, one may assume that copious infrequent stools indicate trouble in the upper portions of the intestinal tract, whilst sparse frequent stools disturbances in the lower segments. Next the consistence and size of the faeces must be noted. In the various "hunger" conditions—for example, stenosis of a portion of gut, with contraction of the rest, in spastic contraction of the gut, etc.—the motion is very narrow—"pencil motion." The colour must be noticed. This varies according to the form of diet, and may be changed by various medicaments. Fermenting motions, containing gas bubbles, are usually quite pale, while decomposing motions are dark. Clay-colour stools occur when the bile is absent, and also when, instead of hydrobilirubin being present, leucorubin takes its place. This can be recognized by treating the motion with acid alcohol, which will extract hydrobilirubin. When blood is present in small quantities it is only detectable by the spectroscope or by chemical means. One must be careful to distinguish blood in the stool, which was contained in the food; while the dark colour of melaena must be carefully distinguished from the dark coloration due to bismuth or iron. The smell of the motion may be of clinical importance. The next point to be noted is the reaction. This should be tested either in several parts of the motion or after it has been well stirred up. Normally faeces vary from faint acidity to faint alkalinity. Markedly acid stools indicate fermenting processes, and contain volatile fatty acids. The acidity of the faeces may be due to fixed acids, and is then associated with an increase of fats. Alkaline reaction when marked occurs when there is decomposition in the intestinal contents. It will be found necessary to examine small pieces in the faeces, and in order to carry this out some method of dividing the faeces up must be employed. Usually the "stool sieve" is used, but the spiral wire, which has been described by Gruetzner and which is used with alcohol, will be found very serviceable. By working up a portion of the motion one can detect small particles of undigested vegetable matter and the like, and from the nature and quantity of these particles one can form conclusions as to the process of digestion. Portions of connective tissue when found in the motion indicate disturbance of the stomach, as this is not digested by the pancreatic fluid. The search for remains of muscle will instruct one as to the capability of digesting meat. When the microscope reveals many particles of muscle, with sharp edges and distinct striation, one can place the digestive disturbance in the small intestine; this is confirmed if the fibres are of a golden yellow colour (due to bilirubin) instead of a brownish-yellow colour (due to hydrobilirubin), as is normal. The distinction can be clearly shown by mixing a small quantity of faeces with a concentrated watery solution of perchloride of mercury in a mortar. After standing for a day all substances containing hydrobilirubin will be coloured red, while all containing bilirubin will be seen to be green. Starch is next to be sought for, and is best detected by means of Lugol's solution. Fats occur in many different forms in the motions, and must be sought for carefully, since in adults—save when castor oil has been taken—no fats are found normally. Mucus can be recognized under the microscope, especially if one adds acetic acid. Mucus when recognized in the motion points to a catarrh in some portion of the intestine, and roughly one can decide that the catarrh is in the large gut when the mucus is recognized macroscopically, and in the small intestine when it is only detected microscopically. One learns more by noticing whether the mucus is intimately mixed with the faecal material, and whether there are many cells associated with it. Blood and pus must be carefully looked for, and one must bear in mind that the red corpuscles may not be sufficiently preserved to be recognized under the microscope when the source is high up in the small intestine. Strasburger next deals briefly with the detection of bacteria and animal parasites. He points out that the comparatively mild affections due to staphylococci may be readily distinguished by means of the microscope from the more dangerous infections of streptococci. Typhoid, cholera, and dysentery bacilli can only be detected by culture; but tubercle bacilli may be demonstrated with comparative ease on cover-glass preparations. The amoebae of dysentery or certain forms of enteritis can be seen under the microscope in fresh stools, but one must be careful not to press the cover glass firmly on to the slide, and to keep the slide warm if one wishes to recognize their movements.

(98) Trypanosomiasis.

Günther and Weber (*Münch. med. Woch.*, June 14th, 1904) report the following case: A man, aged 33, went to German East Africa in September, 1898, where he suffered from repeated slight attacks of malaria. In February, 1900, he returned home, but had severe malaria and haemoglobinuria. He went again to Africa (Cameronia) in May, 1901, living in tents on marshy mosquito-infected ground. He was fairly well until March, 1902, when he had severe fever lasting seven days, together with painful oedematous inflammatory swellings in both thighs. For a long time he continued out of order and with bad appetite and digestion, and was subject to occasional attacks of fever lasting two to three days, but without rigors, sweating, or herpes. Later he again had transitory swelling of the right ankle and thigh, with some enlargement of the spleen. In January, 1904, he returned to Europe, while on the voyage he suffered from a sudden paralysis of the left side of the face and a peculiar skin eruption. On March 22nd he was admitted to hospital. His temperature was then 37.5°, there were dull red non-itching spots about the size of a dollar on the right cheek, below both collar bones, and on the back. There was a large diffuse swelling and redness on the right thigh, firm, tender, and painful on movement. On the outer side of the right calf there was a purpuric spot. The pulse was quick, regular, 100. Respirations 20. The heart and lungs were normal. The spleen was felt on deep pressure, and was tender. Liver not felt, urine and faeces normal. There were tender spots over the left trigeminal and great occipital nerves, and the skin was erythematous. Blood: Haemoglobin 64 per cent.; the reds were not counted, but were normal in appearance; the white cells were 6,000 per c.mm., and showed relative increase of the mononuclears; polymorphs 39 per cent., mononucl. 33 per cent., lymph. 26 per cent., eosin. 2 per cent. In one out of six films from the ear three typical trypanosomes were found. No malaria parasites. The next day the temperature was normal and the swelling less. No trypanosomes were found. Inoculation of blood into rats and mice gave negative results. The patient improved until March 30th, when the temperature rose to 38°, and later to 40.3°. There was much occipital headache, swelling of the left side of the face, loss of appetite, and fresh spots appeared on the skin. The spleen was much enlarged but not tender. Numerous trypanosomes were again found, but disappeared the next day when the temperature was normal. The case was thus characterized by (1) its chronic course since March, 1902; (2) irregular fever; (3) general loss of strength and diminution of haemoglobin; (4) local oedema of a fugitive kind; (5) a peculiar

skin eruption; (6) enlargement of the liver and spleen; (7) acceleration of the pulse and abnormal excitation of the nervous system. The exacerbations of fever coincided with the appearance of the parasites in the blood, these being absent when the temperature was normal. Infection was almost certainly through a mosquito bite. Most of the parasites found were young slender forms.

SURGERY.

(99) The Association of Pancreatitis with Diseases of the Bile Ducts.

Körte (*Z ntralbl. f. Chir.*, No. 27, 1904), in a communication to the German Surgical Society, points out that inflammatory processes in the biliary passages may extend to the pancreas either directly from the wall of the common duct to the glandular tissue, or by the common opening of this duct and the pancreatic duct in the ampulla of Vater. If the apex of the papilla be ligatured a coloured solution injected into the common bile duct will pass into the pancreatic duct. It may be assumed, therefore, that if the orifice of the papilla be closed by a calculus, a cicatrix, or a tumour, the passage of infective fluid from the biliary into the pancreatic duct is rendered possible. It has been shown by Riedel that chronic inflammation of the head of the pancreas is often associated with cholelithiasis, and disappears after successful treatment of the latter affection by removal of biliary calculi and by drainage. Acute pancreatitis in association with disease of the biliary passages has been observed by the author in 7 cases—2 of abscess in the head of the pancreas, 2 of peripancreatic abscess, 1 of acute fat necroses, and 2 of acute necrotic pancreatitis with fat necrosis. It is assumed that in 6 of these cases cholelithiasis in the form of cholecystitis was the originating cause of the inflammatory process in the pancreas. The symptoms of this latter affection cannot be readily distinguished from those of disease of the bile ducts. The presence of a distinct swelling extending from side to side in the epigastric region is a very important element in the diagnosis. This complication of pancreatitis is a very serious one. Of the 7 cases here recorded 4 were fatal.

(100) Intestinal Exclusion.

E. Garbarini (*Il Morgagni*, January and February, 1904) gives a complete account of the history of operations for the exclusion of a part of the intestinal tract, with a list of the cases hitherto recorded, and reasons for adopting a modification of the usual operation which he has suggested and justifies by experiments on dogs. In the circumstances in which exclusion is performed, the ideal operation would usually be excision of the affected tract followed by enterorrhaphy. Cases of disease are seldom seen and operated on so early as to make this operation possible. Until 1880 it was customary to fall back on the device of making an artificial anus, thus leaving the patient in a deplorable condition usually incompatible with prolonged existence, and necessitating further operative interference. Garbarini considers that the formation of an artificial anus is now hardly justifiable under any circumstances. The only excuse for it is the existence of an acute strangulation or other condition calling for immediate relief, while the patient is not able to bear a prolonged operation. In such cases the author recommends that the intestine above the obstruction shall be opened and emptied by means of a trocar and cannula to facilitate investigation into the site of the mischief, the intestines being on no account removed from the abdomen. Even when such investigation fails he does not recommend the formation of an artificial anus, but rather an operation for the exclusion of part of the intestinal tract. The credit for introducing into surgery the operation of lateral entero-anastomosis belongs to Maisonneuve, who reported his first case in 1854. Maisonneuve's first two cases ended fatally, and experimental evidence was brought forward by Hacken and Adelmann to show that such a procedure must lead to faecal accumulation in the excluded portion with subsequent stercoraemia. The operation thus fell into disrepute, until Senn, by further experiments, disproved the contentions of Hacken and Adelmann. Senn also made the operation easier and quicker by introducing his method of reunion with decalcified bone, and subsequently modified it by suggesting termino-lateral entero-anastomosis or entero-anastomosis by implantation. Such operations, though sometimes successful, were never free from the danger of faecal accumulation with bad results both local and general. Salzer's operation of intestinal exclusion, the complete separation of a part of the intestinal tract with re-establishment of the canal, was free from this disadvantage. The operation was successfully performed by Hochenegg in 1891, and since that time the only question has been between exclusion with closure of the excluded tract, and exclusion of a tract communicating by one or more apertures with the surface of the body, or with the intestine or some other cavity within the body. There is a great volume of evidence, derived mainly from experiments on animals, showing that exclusion with complete closure leads to great accumulation of faeces, with sloughing or rupture of the excluded tract, or to torsion of its mesentery with peritonitis. The operation has been successfully performed on the human subject by Baracz in 1894, and by Obalinski a few months later, but is now completely abandoned, and it is considered probable that the successful result of the two cases mentioned was due to the formation of a communication between the excluded tract and the rest of the intestine—an accidental rectification of a defective method of operation. Garbarini's list of recorded cases of intestinal exclusion without complete closure of the excluded tract shows 52 successful results and 11 deaths, a mortality of 17.5 per cent. These satisfactory results have led to a recognition of the fact that the operation is more widely useful than was at first supposed. Originally planned for cases of faecal fistula and of extensive tuberculous disease of the caecum, it is now seen to be applicable to cases of malignant tumour of the caecum, to new growths of other parts of the digestive tube, to vagino-intestinal fistulae, and, finally, to inflammatory chronic ulcerative lesions of the intestine. Its immediate results are most satisfactory. Cases of intestinal tuberculosis may be cured by the rest afforded to the diseased tissues. Inflammation of the caecum and the surrounding parts may be so much relieved that at a subsequent operation the excluded tract can be successfully removed. Malignant growths, when no longer subject to constant irritation from the passage of faeces, cease to cause pain, haemorrhage, or discharge. The drawback which must be set against all these good results is the external opening necessary to ensure the safety of the excluded intestine. The existence of such an opening is a constant source of annoyance to the patient, and necessitates careful cleansing, repeated several times a day. Starting from the hypothesis that the good results obtained by Baracz and Obalinski were due to an accidental communication between the intestinal canal and the excluded tract, Garbarini proposes to imitate such a communication and so avoid both the external opening and the dangers of exclusion with complete closure. To show the practicability of the procedure he relates the histories of eight experiments on dogs, four of which lived for three months or more. He cut the ileum a few inches above its junction with the caecum, and divided the colon near the hepatic flexure. He then closed the four extremities and reconstituted the intestinal canal by anastomosing the afferent extremity of the ileum laterally with the transverse colon by means of Murphy's button, subsequently joining the colic extremity of the excluded tract with the sigmoid flexure of the colon in the same way. The operation thus simulated very closely the exclusion of that part of the human intestine which most frequently needs such treatment. The author considers that the thickness of the intestinal walls and the shortness of the colon in dogs makes them unfavourable subjects for the operation, and that decidedly better results will be obtained in the case of operations on the human intestine. He states that the operation does not take more time than is occupied in performing an intestinal exclusion and fixing to the skin the extremities of the excluded portion of intestine.

MIDWIFERY AND DISEASES OF WOMEN.

(101) The Microbes of the Suckling's Mouth.

Jeannin (*L'Obstétrique*, July, 1904) publishes a valuable bacteriology of the mouth of the new-born child and the suckling. The following are his conclusions: (1) At birth the infant's mouth is, as a rule, aseptic. (2) Germs invade the mouth within the first hours of life and before the child has been put to the breast. These germs, always in small numbers, are streptococcus salivae, S. aërobius micros, and staphylococcus parvulus. (3) The beginning of suckling causes free development of the germs. Within a few hours from three to six species, aërobian and anaërobian, make

their appearance. (4) Jeannin has discovered an almost fixed formula for the bacteriology of the healthy suckling's mouth. There are some four to six species, mostly aërobian (pneumococci, streptococci, staphylococci, and bacillus coli). The anaërobians, always in a majority, are relatively inactive, and do not develop gas. (5) There is also a pathological formula for infants which are sickly, independent of diseases where specific germs are to be found. The microbes are very abundant, and multiply actively, and the anaërobians increase still more in proportion to the other kinds, and develop gas when cultured. (6) Extreme development of the microbes of the infant's mouth is invariable amongst infants placed in the *couveuse*.

(102) Artificial Interruption of Pregnancy in Tuberculosis of the Larynx.

The fate of women who are affected with tuberculosis of the larynx during the course of pregnancy has been shown to be practically hopeless. Of 71 cases which have been published, nothing is known of the after-history of 14, 1 lived eight years later, after undergoing the operation of tracheotomy, and the remainder died during or soon after the confinement. R. Sokolowsky (*Berl. klin. Woch.*, July 4th, 1904) discusses the question of interrupting the course of pregnancy in such cases. In 2 cases he induced labour in the eighth and seventh month respectively. They both stood the interference well, but in spite of a temporary improvement, both died within four weeks of the birth. In 2 other cases, reported elsewhere, the labour was induced and the patients died within a few weeks of the delivery. The continuation of pregnancy has undoubtedly a bad influence on the course of the laryngeal disease, and although the 4 cases do not offer a hopeful prospect, there can be no doubt that it is wise to end the pregnancy as soon as the diagnosis of laryngeal tuberculosis can be made. Unfortunately the 4 cases were interfered with too late; induction of labour must offer a less good chance to the mother than induced abortion. With regard to the sacrifice of the child, Sokolowsky points out that the chances of continued life are so slender that one can reasonably look upon it as a lost life under any circumstances. Even if one can only hope to prolong the life of the mother, and to free her from the sufferings of pregnancy, which are added to the almost unsupportable sufferings of the laryngeal disease, one is more than justified in sacrificing the other precarious life. In his two cases, the one patient was under treatment in the earlier stages of her pregnancy, but did not tell him of her condition until the seventh or eighth month. In the second case, the patient was not seen in the early stage of the pregnancy. Thus in neither case was it possible for him to have employed artificial abortion instead of labour. In conclusion he considers it the duty of the physician to advise all tuberculous women to take precautions against conceiving.

(103) Laparo-hysterectomy in Cancer of the Cervix.

A. Pettazzi (*Il Morgagni*, January and March, 1904) investigates the conditions under which it is justifiable to open the abdomen and remove a cancerous uterus. Comparing the statistics of recent authors, he finds between them such a discrepancy as makes it certain that under the same names they are really comparing different things. It is important to separate cancers strictly circumscribed and limited to the uterus from diffuse cancers, which have already spread beyond the limits of the uterus, and attacked the pelvic fasciae and the lymphatic glands. In the first case, the uterus should be at once extirpated. In the second case, all errors of diagnosis being supposed to be excluded, Pettazzi considers that palliation alone is possible, and laparo-hysterectomy is an exceedingly dangerous form of palliation. It should, therefore, be reserved for cases of circumscribed cancer. The author bases these views on a careful examination of 13 cases of diffuse cancer of the uterus, which have been studied by himself and operated on in the hospital of Mairia Vittoria at Turin. Five of these operations were successful, in the sense that the patients recovered from the immediate results of the operation. Of these five one could not afterwards be traced, one was free from relapse five months after operation, and was not seen at any later date, one died with recurrence of cancer six months after operation, and two died from recurrence of the growth nine months after operation. Of the cases succumbing to the direct results of operation, two died of shock, the result of the long operation necessary and the grave condition of the patient before the operation began. Two died of peritonitis, another result of very long pelvic operations carried out on tissues whose vitality is already low. Three deaths are ascribed to septicaemia. In one case the extensive dissections led to necrosis of ureters, bladder, and intestine with death from uraemia. The author considers that these results are insufficient to justify operation, when the growth has passed beyond the limits of the uterus, and *a fortiori* when the uterus is fixed to surrounding tissues, and when pain is felt in the lumbar regions and in the kidneys; and he quotes with disapproval Mackenrodt's maxim that operation should be attempted whenever the removal of the whole growth is technically possible. He deprecates operative interference in all cases, except those in which diagnosis and treatment can follow immediately on the first signs of the disease.

(104) Laceration of the Funis.

Zaborsky (*Zentralbl. f. Gynäk.*, No. 24, 1904) described before a medical society a labour where a large infant 21 in. long and 8 lb. in weight was delivered by forceps asphyxiated. It was resuscitated and cried lustily, but died suddenly in ten minutes. At the necropsy a rent 1 in. long was detected in the umbilical vein and much blood infiltrated the subperitoneal connective tissue. The funis was 25 in. long, but was not twisted around the neck or any other part of the child, therefore one usual cause of laceration was absent. Von Kubinge related a case where the cord was torn through owing to the ligature having been drawn too tightly. The ligature could not be reapplied owing to the retraction of the vessels, so two folds of skin had to be pinched up on each side of the umbilicus and fixed with a safety pin, around which a ligature was passed. The vein is unusually lacerable in some subjects.

THERAPEUTICS.

(105) The Egyptian Climate for Phthisis.

F. Plehn (*Zeit. f. Tuberk. u. Heil.*, Bd. v, Heft 1). In discussing the effect of the Egyptian climate on phthisis, is of necessity without such statistics as are obtainable from European sanatoriums. The proportion of advanced and complicated cases seeking relief in Egypt is probably greater than in the sanatoriums at home. The only slight cases are, as a rule, the patients who come in the hope that a more favourable climate will enable them to continue to work. Neither in the advanced cases nor in the slight ones, where continuance of work is a necessity, would the prognosis be considered good, yet in many of the first class the disease is brought to a standstill, and in many of the latter absolute recovery ensues. There can be no doubt, therefore, of the beneficial effects of the climate. Even when the general rule is accepted that patients suffering from uncomplicated phthisis are best treated in sanatoriums comparatively near their homes, a warmer climate is indicated for special conditions. Where phthisis has developed during residence in a tropical country a sudden change to a cold climate is dangerous, and such patients benefit by treatment in Egypt. The Egyptian climate is also indicated where phthisis is complicated by inflammation of the kidneys, laryngeal affections, rheumatism, syphilis, or anaemia in women, or where, in spite of treatment at a European sanatorium, the lung condition has ceased to improve, and there is a strong tendency to catarrhal affections. No general rule can be given as to the desirability of sending hopeless cases to Egypt. Against the advantage of a probable lengthening of life and of the period of activity and enjoyment must be set the danger of a long journey and the greater distance from home in case of death. The only place in Egypt where special accommodation is provided for the sick is at Helouan, just within the desert area. The great hotels and pensions of Cairo and Luxor open on the dusty streets; the conditions of life are at best a compromise between those suited to the sick and to the healthy, and there is no constant medical supervision as in sanatoriums. Some of these disadvantages also characterize Helouan, but will be removed on the completion of the sanatorium which is in course of construction there. The desert air is dry, free from organic taint, and no dust is breathed, for the sand never rises except in a storm, to the height of the mouth. In judging the climate, the effects of the cold, the extreme heat of summer, and the long-continued bright sunlight must be considered. The cold weather is short, but while it lasts is in danger of doing harm to patients living in houses without adequate heating arrangements. This difficulty will be lessened with the completion of the sanatorium, and even now the journey to Upper Egypt, which is recommended

in some cases, probably does more harm than good to phthisical patients. Most patients bear the dry heat well, though some need protection from it at midday. Patients with heart disease should leave at the end of March or the beginning of April, before the extreme heat, but the others should not leave before May. Patients staying for the whole summer often improve more rapidly during that season, and the desirability of such a course can be clearly seen by the beginning of May, the ordinary time of departure. The bright sunlight increases the activity of the skin and the metabolism of the body generally, and is a considerable factor in the cure. The intense light, for so many hours, may be harmful at first to nervous patients, but they quickly become accustomed to it if at the outset they keep in the shade for a part of each day.

(106) Yeast Soap.

Dreuw states that the beneficial action of yeast in the treatment of both internal and external diseases is now generally accepted (*Deut. med. Woch.*, June 30th, 1904). Yeast contains albumen, fats, carbohydrates, water, and salts, as well as nuclein, zymase, endotrypsin, and katalase. Nuclein is of therapeutic importance: first, on account of the property of producing a leucocytosis after absorption through the gastro-intestinal tract; and, secondly, on account of its capability of neutralizing and destroying certain bacterial toxins. Katalase has a powerful reducing action. Among the many pathological conditions for which it has been employed, Dreuw makes special mention of certain skin diseases: abscess, acne, dermatitis, suppurative conditions of the skin, erysipelas, folliculitis, furuncle, impetigo, and urticaria. Yeast can be applied externally or internally, but, since many difficulties have been met with in the former method of application, the author has composed a soap which contains the active principles of yeast, and, by being over-fatted, is found to be non-irritant to the skin. The soap can be applied by simply soaping the surface and thorough washing, by allowing the suds to dry on the affected part, and rubbing it in with a woollen or flannel cloth; and, lastly, by allowing the suds to dry under a water-tight dressing. The intensity of the action of these three methods increases in the order given. The soap may be used in massage. The simple soap is a neutral soap, and Dreuw has also compounded yeast soaps containing salicylic acid, salicylic acid and sulphur, ichthyol, borax, benzoin, etc. In testing the action of the soap he states that he has obtained good results in acne of the face, neck, and back; folliculitis, small furuncles, and chronic dry eczema. The best results were in the cases of the acne of the face and back. For furuncle and folliculitis he finds the salicylic acid sulphur yeast soap of considerable value.

(107) Veronal for Children.

In a short note F. Schiffer (*Deut. med. Woch.*, June 16th, 1904) states that he has given children veronal in doses of from 0.025 to 0.075 gram (=about ⅜ to 1¼ gr.) once or twice a day with good results. Sleep takes place after a quarter to half an hour and lasts for longer or shorter periods, according to the cause of the restlessness and insomnia. In organic disturbances combined with fever and pain—for example, meningitis—the child may sleep for three hours, but the sleep is not quiet. When given for digestive disturbance in infants it acts well, and in tetany with convulsions also it has a prompt effect. Older children stand veronal well. With regard to dosage, Schiffer says that one may give half of the dose of chloral for the corresponding age.

(108) Treatment of Craniotabes.

Spietschka (*Jahr. für Kinderheilk.*, March, 1904), one of Epstein's assistants, has investigated the congenital origin of rickets and its treatment, studying for the purpose the 1,468 newborn children admitted to the Foundling Institute at Prague in 1902. About 50 per cent. of them showed softening of the cranial bones, or craniotabes, in varying degrees, from mere gaping of sutures or softening of their borders to soft islets in the bone or softening of the whole bone, usually the occipital. Noticing how slight stages developed into severe ones, and that other signs of rickets developed in these children, he regards congenital craniotabes as the earliest sign of rickets. He believes that in most cases rickets is a congenital disease, and that digestive disorders are not its cause but its complications. The best treatment of craniotabes is phosphorated cod-liver oil in the proportion of ½ gr. of phosphorus to half a pint of cod-liver oil. A remarkable case is given in detail. Others were all beneficially influenced by this mixture, if not all in so striking a manner. The child at birth had one soft islet in the occipital bone. Others soon appeared and coalesced, so that by six weeks the occiput was quite soft. A month later the process had spread to the parietal and temporal bones, both of which had many softened areas, and one the size of a shilling could be felt in the left frontal bone. So far the case, fed on its mother's milk, had been untreated. Phosphorus in oil was now given, and eleven days later the frontal bone had hardened over and islets of bony matter could be felt in the parietal and temporal bones. After three weeks of treatment these bones had almost completely consolidated. After six weeks of treatment the occipital bone was hardened in all but three small places. Examined a year later the child showed no signs of rickets.

(109) Borax in Epilepsy.

J. Hoppe (*Berl. Klin. Woch.*, July 4th, 1904) finds that there are four large groups of epileptics who tolerate the usual bromide treatment very badly, but who can be considerably improved by it if it is combined with other drugs, or with a dietetico-physical treatment. The first group consist of those persons whose excretion organs functionate badly. The second group consist of those whose cardiac and arterial systems are incapable of discharging their daily functions properly. The third group consist of patients whose epilepsy is complicated with organic brain lesions. The last group consists of those whose gastric functions are insufficiently carried out. The last named suffering from hyperacidity or motor insufficiency tolerate bromides very badly. Many of these conditions can be assisted by giving other drugs with the bromide, but there are still many cases which remain intolerant to the bromides. Gowers suggested giving these patients who do not derive any benefit from bromides, borax. Acting on this suggestion, Hoppe employed it in 12 cases, 7 proved themselves as refractory toward the action of the borax, while 5 showed unmistakable improvement from its use. These patients were suffering from disturbances of the stomach. In one case there was a marked loss of weight, which may be ascribed to the action of the borax. They all stood the continuous exhibition of borax in doses of 0.3 gram three times a day for long periods, well, and did not show any ill effects at all. One must be careful not to give it when the excretion organs are not functionating properly, as both the skin and the kidneys may be attacked by borax. Hoppe realizes that borax is not a specific for epilepsy, but points out that a beneficial action may be met with, especially in those cases in which there are stomach disorders (chiefly pure hyperacidity.)

PATHOLOGY.

(110) Haemolysis and the Diagnosis of Cholera.

In 1883 R. Koch noticed that when cholera vibriones are cultured on gelatine plates, in which there is an admixture of blood, that those parts where there is no growth appear as opaque red, while around the colonies there is seen a sharply defined pale area. Other workers have shown that this change in the medium is due to a regular haemolysis, and the process has been closely studied. Meinicke (*Deut. Med. Woch.*, June 2nd, 1904) has experimented with 65 true cholera vibrio cultures and 23 cultures of vibrio like cholera. He followed the directions given by Kraus minutely, and was struck from the first that only isolated colonies were capable of showing the haemolytic changes. Of the 23 cultures of cholera-like vibriones, 10 did not cause any change in the medium at all, 3 gave a more or less narrow zone of pale area, and 10 gave a typical pale zone. It appears that the appearance in this class of organism is by no means regular. Of the 65 true cholera cultures, 3 were not productive of any change, in 7 there was an indistinct zone, in 16 the zone was very narrow, in 20 the zone was fairly marked and in the remaining 19 it was typical. There was no difference to be made out between the zones of the 10 cholera-like cultures and the 19 true cholera cultures. It thus must be accepted that this method of culture cannot be relied on for a differential diagnosis. This applies further to differential diagnosis between the cholera vibrio and the bacteria of the faeces. He further comes to the conclusion that one is not justified in assuming without more data that the cultures examined form any haemolysin. True cholera vibriones do not form a haemolysin, while some of the cholera-like cultures do form varieties of haemolysins which are not identical with one another.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(111) Malignant Growths of the Heart.

Curtis (*L'Echo Méd. du Nord*, July 10th, 1904) describes two cases. The first was taken from a man who died of oesophageal cancer. There were no clinical notes. The heart was slightly smaller than normal, and weighed 330 grams; the left ventricle was contracted, but the right showed enormous hypertrophy of the base. This was due to a large secondary nodule situated in the anterior wall, and involving the whole region of the infundibulum and neighbouring parts. Anteriorly the surface had a mammillated appearance from the projection of several small white nodules. On the posterior surface there projected a large oval white mass just below the auriculo-ventricular groove, and internal to the right border. Microscopically, the tumour showed a substratum of fibrous tissue, in which were embedded irregular alveoli containing stratified pavement epithelial cells. There were a few degenerated areas, but no cell nests. There were also remains of the cardiac muscle in the form of dissociated fibres, and a few compact bundles. The second case was that of a boy of 18, who was operated on for a myeloid sarcoma of the lower end of the femur, but died five months later. Very extensive metastases were found in both lungs, but none in the abdominal organs. The heart weighed 310 grams, and was of a globular shape from great dilatation of the right ventricle, which contained a large polypoid tumour attached to the interventricular septum 4 cm. below the pulmonary orifice, and curving upwards into the pulmonary artery for 1½ cm. above the valves. On section it showed a horseshoe-shaped mass surrounding a cavity which communicated with the ventricle. The tissue was white, and contained numerous lacunae and large blood clots. It was composed of large, irregular and fusiform cells with numerous blood spaces. Cornil, in 1902, collected 150 cases of cancer; secondary was ten times as common as the primary form. The most common sources were the oesophagus and stomach, metastases travelling via the lymphatics of the pericardium. The symptoms—those of interference with the heart muscle—are indefinite and obscured by the general cachexia. Sarcoma usually forms a polypoid tumour, growing from the muscular network of the ventricle in which the cells are entangled. The most common primary source is bone. It gives clinical signs by producing valvular incompetence.

(112) Haematuria in Barlow's Disease.

E. Nicter (*Deut. med. Woch.*, May 5th, 1904) describes a case of Barlow's disease, in which haematuria was the only symptom, and discusses this rare occurence. The patient was born on May 8th, 1903, and was fed first on "Soxhlet's milk" and then on "malt soup." In January, 1904, the mother noticed that the child was passing urine which was different from what it had hitherto passed. It was thick and slightly coloured red. The general condition was affected, the child being restless, lost in weight, and did not drink well. On examination the child was found to look well, to be well nourished, and to weigh 7,950 grams. There were no objective signs in the whole body save a well-marked craniotabes. The urine was light-red in colour and turbid. It was alkaline, the phosphates were not appreciably increased, there was a very faint trace of albumen, not measurable by Esbach, and the quantity per diem varied between 400 and 500 c.cm. Microscopically it was found that the plentiful sediment consisted of red blood corpuscles, a very few white cells, no epithelium, and no casts. The diagnosis of Barlow's disease was arrived at partly by exclusion. Haemorrhagic nephritis could be easily excluded, and there were no grounds for assuming that it was a case of some malignant renal condition, such as sarcoma or tuberculosis. The treatment was prescribed in accordance with the diagnosis, and consisted in giving at first milk which was only boiled once, and should this not prove sufficient then the milk was to be given raw. But little change took place at first, and it was decided to give raw milk from a reliable source four days after the beginning of the treatment. On the following day, the improvement made itself apparent, and five days later no abnormal constituents could be detected in the urine. The child remained well. Neter briefly reviews the sparse literature of the subject, and deals with the condition from its clinical as well as pathological side.

(113) The Identity of Asiatic and Ship Beri-beri.

The theory has recently been advanced by Nocht, Bullmore, and others that beri-beri, as it occurs in the white crews of sailing ships, is distinct from the beri-beri of Japan and Asia. The former, according to Nocht, is a variety of scurvy, the latter is an infectious disease. The two diseases are clinically distinct. In ship's beri-beri the course is prolonged for weeks or months, but if the patients are removed from the ship they recover completely in a week or so. The symptoms are more uniform than in Asiatic beri-beri, and no division into atrophic and acute pernicious cases is possible. In Asiatic beri-beri, which may occur among the coloured members of a crew, convalescence is prolonged for weeks or months, even though the patients are removed from the ship and given a diet of fresh food. These views are controverted by Professor Uchermann (*Zentralbl. f. inn. Med.*, June 18th, 1904), who was the President of the Norwegian Commission on the occurrence of beri-beri on Norwegian ships. A large amount of evidence and reports showed that there was no essential difference between beri-beri, as it occurs respectively among Europeans on sailing ships and Asiatics. Nocht's descriptions are erroneous because based on scanty material. Slight cases in which recovery is rapid may occur in Asiatic beri-beri, and severe cases in which convalescence is tedious among European crews. Oedema may be absent in both cases. The characteristic symptoms are those of neuritis. Beri-beri is related to scurvy because it is a food disease but is not identical with it. It is now known that scurvy may occur after exclusive alimentation with rice and vegetables—for instance, among the Hindu soldiers in North-West India; but it occurs neither on an animal nor vegetable diet if the food is good and fresh. So with beri-beri. There is no special food connected with its origin. The chief cause is bad preserved and tinned foods, whether vegetable or animal. Possibly the fact that oedema is more common on board ship than in Japan, where it is present in less than half the cases of beri-beri, is due to a difference of diet; if this is the case, ship's beri-beri would be due to bad preserved meat, and the Japanese variety to bad vegetables. The special form of decomposition of nitrogenous food which produces beri-beri is probably of bacterial origin. The organisms are probably not specific, and may differ in animal and vegetable food. Probably beri-beri is a clinical rather than an etiological entity, and sporadic cases may be caused by different intoxications, just as multiple neuritis may depend on dysentery, malaria, rheumatism, lead, and alcohol. The intoxication theory is that generally held by Japanese physicians, though in Europe Japan has been cited as a proof of the infective nature of the disease. Thus Saneyöshi states that, though patients who contract kakka in Tokio frequently recover when sent to the hills, a person who was healthy in Tokio will contract kakka in the hills if fed on the food used by the patients affected in Tokio. Thus both ship's and Asiatic beri-beri are intoxications not infections.

(114) The So-called Pericarditic Pseudo-Cirrhosis of the Liver.

Schupper (*Rif. Med.*, March 2nd, 1904) gives an account of the necropsy of a case illustrating the above condition and the results of further study of the question. Patients suffering from pericardial adhesion may present the ordinary symptoms of cardiac asystoly, or, in virtue of extensive ascites, may present symptoms strongly resembling those of hepatic cirrhosis. In the first group of cases the ascites is very slight and is associated with oedema elsewhere, just as in ordinary failure of compensation in heart disease. In the second group—where the ascites is copious—it is not associated with oedema elsewhere. In these cases the ascites is rarely owing to hepatic cirrhosis, cardiac, alcoholic, or tuberculous, but in the great majority of cases it is owing to a chronic and very slow peritonitis, causing transudation down the vessels which are already predisposed to this through the effect of the pericardial disease upon the circulation. In fact, in considering the genesis of ascites one ought to think primarily of alterations in the capsule of the liver and the tendinous centre of the diaphragm. Unusually in these cases the pleurae are affected also, particularly the right, so that one can speak of a polyseritis. Even where definite cirrhotic lesions of the liver coexist, they may not be the

chief cause of the ascites, which still is due mainly to the above-mentioned causes.

SURGERY.

(115) Surgical Treatment of Perforating Ulcer of the Stomach.

Villard and Pinatelle (*Rev. de Chir.*, No. 7, 1904), in concluding a lengthy paper on perforation of ulcers of the lesser curvature of the stomach, based on 115 collected and 2 original cases, sum up the results of their study of this material by some remarks on the surgical treatment of perforating gastric ulcer. Gastric perforation due to ulcer occurs, it is stated, in only a third of all the cases in the lesser curvature, notwithstanding the prevalence of ulceration in this limited region. The high situation of the ulcer, its fixity, and, above all, the frequent existence of adhesions, explain this comparative immunity. These adhesions often limit peritoneal infection to the range of a perigastric abscess, and impress on this infection when it has been decidedly developed special but inconstant regional characters. In cases of perforating ulcer of the lesser curvature, persistent vomiting is an habitual clinical feature. Antecedents of ulceration are very frequently found in the history of the patients, and the development of the complication is sometimes subacute, or occurs in successive but intercurrent attacks. This last clinical character would suggest, it is thought, the advisability of intervening with a view to the prevention of perforation in cases in which there are indications of a rapidly-developed patch of perigastritis, accompanied by symptoms of peritoneal reaction. Surgical intervention in such circumstances should, it is held, consist in gauze packing around the suspected region, associated with gastro-enterostomy. If perforation has occurred laparotomy should be practised without delay, and an attempt be made to close the orifice by suturing. The application of sutures will in most cases be rendered difficult by the deep situation of the orifice in the lesser curvature, and also be prevented by the presence of adhesions and by the friability of the margins around the ulcer. Adhesions, which ought always to be respected, will render any search for the perforation both difficult and dangerous. In such cases it will be advisable for the surgeon to content himself with protective gauze packing. Such treatment, the authors state, gives excellent results. If the seat of perforation be quite free from adhesions suturing may be contraindicated by the extent of the ulceration, the friability of the marginal zone, and the impossibility of making adequate resection. The surgeon should then have recourse to procedures of mediate obliteration, such as remote suturing, attachment of omentum to the ulcerated wall of the stomach, and gauze packing.

(116) Rupture of Small Intestine by Indirect Violence.

A. L. Bonanome (*Il Policlin.*, April, 1904) reports a case of rupture of the small intestine by indirect violence. It is believed that no case of the kind has been recorded hitherto, although many cases have occurred of rupture of intestine resulting from very slight direct violence. The patient, a man 37 years of age, jumped to the ground from a height of about two feet, and came down heavily on his heels. He immediately felt acute pain in the hypogastrium, accompanied for a very short time by slight mental confuson, and followed by vomiting. Feeling unable to continue his work, he walked home about two miles and then walked to the hospital, where he was seen an hour and a-half after the accident. Inspection of the abdomen revealed nothing. Palpation caused pain in the hypogastrium, and especially in the abdominal muscles. The recti muscles were contracted a little. No pain was caused by palpation of the epigastrium, the hypochondrium, and the flanks. In the iliac fossae it was possible to press back the abdominal wall so as to feel the bones. Voluntary contraction of the abdominal muscles caused increased hypogastric pain. The liver and spleen did not pass the costal arch, and their areas of dullness on percussion were normal. No free fluid could be made out in the abdominal cavity; 150 c.cm. of normal urine were removed from the bladder by catheter. The pulse was full and regular, 80; respirations 22; temperature 36.9°. The face was a little pale. He remained in hospital, and ice was applied to the abdomen. In the evening the temperature was 37.5°, pulse 85, respirations 24. The abdomen was soft except at the hypogastrium. There no meteorism. Flatus had been passed and urine, but no faeces. The patient had anorexia, but not thirst. The next morning he was in rather better condition after several hours' sleep. On the afternoon of that day, beginning twenty-seven hours after the accident, the appearance of the case completely changed. The pain, the muscular contraction in the hypogastric region, and the meteorism were increased. The area of hepatic dullness disappeared. The face indicated distress. The patient, who had all along stated that but for the pain he felt well, now complained of illness. Temperature 38°, pulse 90, respirations 26. A diagnosis of peritonitis was now made, and an abdominal section decided upon. Gas and liquid were found in the peritoneal cavity. An oval opening into the small intestine was found on the convex side of the intestine at a point diametrically opposite to the insertion of the mesentery. The long diameter of this aperture, about 4 mm. in length, lay in the direction of the course of the intestine. The edges were cleanly cut, and not ecchymosed. The mucous membrane protruded a little through the wound. No appearance was found of other recent or old-standing disease or injury of the intestine. The wound was closed with two planes of Lembert sutures, and the abdomen cleansed and drained. The patient died ninety-nine hours after the accident. At the autopsy the opening in the intestine was found to be about 9 ft. from the ileo-cæcal valve. The sutured portion was healthy, and the whole intestinal mucosa presented a normal appearance. No foreign body was found in the intestine or the peritoneal cavity. The cause of death was general peritoneal infection. The author finds reason to believe that the rupture was caused by liquid in the intestine which, gathering momentum during the jump, impinged on the wall of the intestine when the patient reached the ground. In addition to the mechanical problem of the causation of the rupture, the case is of interest on account of the difficulty of early diagnosis. The author quotes other recorded cases, in which for the first twenty-four or thirty-six hours a peritoneal injury has run a very insidious course. He maintains that in all such cases definite symptoms exist from the first, if they are carefully sought. These symptoms are usually pain, muscular contraction, oliguria or anuria, and an increase of temperature, pulse-rate, and respiration-rate. If a diagnosis be not made nor an operation performed, until the patient presents a typical picture of general peritoneal infection, recovery is improbable. Bonanome, therefore, recommends that in all cases of doubt an abdominal incision from 2½ in. to 3 in. long shall be made under local anaesthesia, any further operation that may prove necessary, being then performed under general anaesthesia.

(117) Anaesthetization of Diabetics.

Kausch (*Zentralbl. f. Chir.*, No. 27) at the last meeting of the Deutschen Gesellschaft für Chirurgie, laid down the following rules with regard to the administration of anaesthetics to patients suffering from diabetes: (1) General anaesthetics should be avoided if possible, and some method of local anaesthesia be selected, if such be not contraindicated; (2) the use of a general anaesthetic for strictly diagnostic purposes is to be rejected; (3) the repeated administration at short intervals of a general anaesthetic should be avoided; (4) ether is regarded as the special anaesthetic for diabetic subjects. Chloroform is decidedly more dangerous than ether, and is much more liable than the latter agent to set up intense acetonuria; (5) the quantity of the anaesthetic and the duration of its administration should be restricted as much as possible; (6) the administration of a general anaesthetic to a diabetic patient should always be practised early in the morning, so that the longest period of physiological abstinence may not be unduly extended; (7) every diabetic subject should before the operation be put under the sodium treatment; (8) if coma be threatened, or is already developed, the sodium treatment should be energetically applied by mouth and by rectum, and by subcutaneous and intravenous injections.

MIDWIFERY AND DISEASES OF WOMEN.

(118) Retention of an Extrauterine Fetus for Four Years.

Demelin and Bouchacourt (*L'Obstét.*, November, 1903) describe a case of extrauterine pregnancy advancing almost to term, in which the fetus was retained in the abdomen for four years. The patient, a woman 41 years of age, had had five previous pregnancies. She presented herself at the Tarnier clinic on January 11th, 1899, when she was about eight months pregnant, complaining of

a feeling of fatigue which incapacitated her for work. Her last menstrual period had ended on June 5th, but there had been only slight loss, and it seemed probable that conception had occurred about the end of May. On June 10th she had been seized with severe abdominal pain, and had been treated by absolute rest, free purging and the local application of ice. When examined in January the abdomen was larger than normal, considering the date of the pregnancy, and the tension of its walls made palpation difficult. The head was presenting and *ballotement* was obtained. The patient was admitted. Severe abdominal pain again occurred on January 14th, and was thought to be of intestinal origin, because there had been marked constipation during the preceding weeks. An enema and a saline purgative were given without effect, the condition becoming steadily worse. On January 16th the pain in the epigastrium and hypochondriac regions was so severe that palpation was impossible, but it was found that on the left side the zone of intestinal resonance had completely disappeared. The temperature was 100·7° F. in the morning, and rose to 101·4° at night, and the patient began to vomit. The condition did not improve till January 21st, when a large, horribly fetid, stool was passed. The vomiting and pain then ceased, although the abdominal wall was still tense. On that day the fetal movements were felt for the last time. As the patient improved and the abdomen became less tense a small mass could be made out in front, distinct from the fetus. It could not be made to contract, and was thought to be a sessile fibroma of the anterior wall, but was afterwards found to be the uterus itself. On March 26th periodical pains set in, and continued for eight hours; the cervix became shortened, and labour was thought to be imminent. At the end of that time, however, the pains ceased, and the cervix regained its normal length. A blood-stained discharge from the uterus began, and continued till April 15th. At the end of April the patient returned home, the abdomen having diminished to the size of a six months' pregnancy. She was re-examined in February, 1900, when the small tumour previously mentioned was easily recognizable as the uterus. Behind and above it a large mass was felt, reaching about to the umbilicus, and very hard in parts. The case was shown to the Obstetrical Society of Paris as one of extrauterine pregnancy with retention. It was unanimously decided to adopt expectant treatment until, if ever, symptoms should arise to make laparotomy necessary. The patient herself at that time refused operation. She continued well until August, 1903, but she then had an attack of abdominal pain and returned to the hospital. A large ovoid mass, with its long axis transverse, could now be felt in the abdomen. Bimanually this mass was rounded and very hard, and a uterus of practically normal size could be felt in front. Laparotomy was performed, and a cyst found which contained a fetus. The fetus was flexed on itself and was in parts adherent to the cyst wall. It was extracted, together with parts of the débris adherent to the cord, but the placenta was too firmly attached to the cyst to be separated, nor could the cyst itself be removed because of the firm adhesions between it and the neighbouring structures. The opening in the sac was sewn up almost throughout its length, two drainage tubes were inserted and the abdominal wall closed. The patient made a somewhat tedious but satisfactory recovery. The fetus was 55 cm. long, of yellowish colour, with particles of sebaceous material adherent to the skin. Loss of substance in different regions gave it somewhat the appearance of a body corroded by acids. Although long retention of the fetus is rare, yet in the whole literature a fair number of cases are recorded. There are several points of interest in connexion with them. In some cases the fetus was retained to the end of the mother's life without causing discomfort, in others it was expelled by different routes, as, for instance, by the rectum or by the formation of an abscess opening externally. The fetus was at one time supposed to undergo petrification in the body, and, according to Sappey, this took place by the substitution molecule for molecule of normal tissue by calcareous or silicious substances, the primitive form being thus retained. The more recent cases have not, as a rule, presented this extreme hardening, and where it has been found it has probably been sometimes due to desiccation caused by exposure to air after saturation in a preservative fluid. Where true petrification has taken place it may have been by a process analogous to that occurring frequently in fibroid tumours. The fetus is usually found enveloped in a sac, which is sometimes membranous, but may have become the subject of calcareous deposits, and which always has formed numerous adhesions to neighbouring structures if it has been long retained in the body. The fetus as it becomes mummified or dried up often undergoes a fatty degeneration of the soft parts tending to denude the bones. Microscopically, the framework and form of the organs remains intact, and the structure of all the fundamental tissues is admirably preserved; the cells, however, are atrophied and dead, and the nuclei do not stain. There is thus death without putrefaction, a state of things similar to that found in coagulation necroses. The cavities of the body are as a rule filled with calcareous salts, or salts derived from fat, the cartilages are infiltrated, and all the interstices of the tissues more or less filled with crystals of fat. The red and white blood corpuscles and all the more easily altered cells have disappeared, the liver cells being reduced to granulations of bilirubin and fat. While the tumour remains in the body the patient is constantly exposed to dangers such as the occurrence of peritonitis, the formation of communications between the sac and the neighbouring viscera, or the infection of the fetus by micro-organisms. Active treatment is, therefore, indicated. The abdomen should be opened if possible and the whole sac removed before adhesions have had time to form. Should numerous firm adhesions have formed total removal of the sac is often impracticable.

(119) Vagitus Uterinus.

Bacura (*Zentralb. f. Gyn.*, No. 5, 1904) reports a case where the cry of a fetus could be distinctly heard *in utero*, adding a long series of references to other instances already recorded. The patient in his own case was 25, and subject to rickets. Craniotomy was found necessary at her first labour, when she was in Chrobak's maternity. About a year later, the eighth month of her second pregnancy, labour was induced, as she desired a living child and refused to allow of Caesarean section at term. During dilatation of the cervix, pains set in, the membranes ruptured, and the funis prolapsed. Reposition failed, and as it was important to save the child turning was practised. There was some difficulty in pushing up the head. Just as the foot was drawn down till the knee was delivered, the fetus was heard to cry quite distinctly and twice. The assistants present at the labour all noticed these intrauterine cries. After delivery the asphyxiated child was revived and breathed well for three hours, then dyspnoea set in, and it died four and a half hours after birth. On dissection dislocation of the cervical spine was detected. Bacura observes that for medico-legal reasons it is advisable to remember that a child may live for over four hours after its neck has been broken during delivery. He doubts if the injury occurred when the head was pushed up, the only stage of the turning which was slow and difficult. Most likely it occurred during extraction, that is to say, after the two cries were uttered, so that they did not denote pain.

THERAPEUTICS.

(120) Thiosinamin in Diseases of the Digestive Organs.

As much has been expected from the action of thiosinamin for cicatricial formation in the digestive track, and as Tabora claims to have cured a case of hour-glass contraction of the stomach by this preparation, R. Baumstark considered it worth while to test the action in Ewald's clinic, and reports on his observations in the *Berl. klin. Woch.* of June 13th, 1904. He employed a 20 per cent. solution in glycerine and water, and injected 1 c.cm. at a time. First of all, he tried it in 3 cases of carcinoma stenosing the pylorus and 2 of carcinoma of the oesophagus, and states that the results were so definitely negative that he does not waste time in giving the details of the cases. Turning to benign stenosis of the stomach, he deals with the cases more fully. The first 3 cases were examples of organic stenosis of the pylorus following ulcer ventriculi. The ordinary treatment which had been employed before the thiosinamine was injected had been successful in improving the condition of the patients, and to a certain extent in relieving the symptoms of the stenosis. The anatomical and objective clinical examination, however, revealed that the stagnation was not lessened, and then the thiosinamin treatment was begun. After six weeks the trial breakfast showed that the same quality and quantity of food-rest remained in the stomach as before the treatment, and inasmuch as the

patients had lost in weight, one would rather speak of a getting worse than of an improvement. The fourth case was one of a perigastric tumour, complicated with a badly functionating gastro-intestinal anastomosis. Here thiosinamin, like all the other forms of treatment which were tried, proved absolutely incapable of producing any improvement. The last 2 cases were examples of a pericholitis and of a perigastritis. In both the thiosinamin was begun at the same time as the diet and general treatment. The subjective symptoms improved and the objective symptoms also showed some improvement, in that the tenderness over the liver became less in the one case, and the perigastric inflammatory products in the other became distinctly less. Whether this improvement was due to the careful dieting, rest, etc., or to the thiosinamin is impossible to be sure of, but as the second patient got a severe return of pain on making a small addition to her diet, it would seem as if the diet, etc., were the responsible factor. In conclusion, Baumstark warns his colleagues from placing too much faith of expectations on this form of treatment, since his trial shows a definite failure on the part of the drug to act beneficially in these cases, and makes a special point of the importance of not wasting the time, when an operation can be performed with a reasonable chance of success, by trying the drug.

(121) Maretin.

W. KAUPE has tried maretin as an antipyretic in phthisis and reports very favourably on its action (*Deut. med. Woch.*, June 30th, 1904). Maretin is, chemically speaking, carbaminic acid-m-tolylhydrazide is practically tasteless, occurs in the form of white crystals, which are only soluble in the proportion of 1 to 1,000 at room temperature, and is non-toxic when given to experiment animals in doses of 1 gram. He employed it in nine cases, some of which were advanced tuberculosis with high fever. Giving the maretin three or four hours before the usual time for the rise of temperature, it was found that 0.5 gram sufficed to prevent the fever, while when 0.3 gram was given the effect was not complete, and with 0.2 gram little or no effect was obtained. He found further that the action lasted for six to eight, and at times even as long as twenty-four, hours after a dose of 0.5 gram. Comparing the action of pyramidon with this drug he found that the former, even when given in two ½-gram doses, did not produce the same antipyretic effect as the latter. At times the reduction in temperature was enormous, inasmuch as patients who had been running a temperature of 104° F. showed a normal or subfebrile curve after taking the drug. Only in one case was there any complaint of headache, and with this exception there were no unpleasant side symptoms. As an indirect result, following the fall of temperature, the appetite improved, and the general condition became better.

(122) Yersin's Serum.

L. CAIRNS (*Therap. Monat.*, May. 1904) has made use of Yersin's serum in the outbreaks of bubonic plague occurring in Glasgow, and during the second of these has especially noted the effect of the serum upon the bacilli within the bubo. When no serum is used, the bacilli can be readily detected in the fluid withdrawn from the bubo at any time in the first week, when in mild cases they may then disappear, although they may be present up to the end of the first fortnight, or even later; degenerated forms persist for a longer time. The first case in which the action of the serum was observed was that of a young woman with a large inguinal bubo; fluid was withdrawn from the bubo on the second day, and the characteristic bacilli were found. On the third day 40 c.cm. of Yersin's serum were injected into the lymph vessels going to the bubo. The patient died early on the fourth day, and at the necropsy the bacilli in the glands were already degenerated; they stained with difficulty, but uniformly; they had lost the customary bipolar aspect, their outline had become indistinct, and they were of differing sizes. The bacilli in the spleen were not degenerated. The next patient treated by the serum appeared to be hopelessly ill when first seen on the fifth day of illness. Eighty c.cm. of the serum was injected subcutaneously in the neighbourhood of the bubo, and on the following day 100 c.cm. was injected into the abdominal wall, and 40 c.cm. into the veins; the patient died the same night. Here the bacilli, both in the bubo and spleen, were degenerated. These two cases showed that the serum exerted a true bactericidal as well as an antitoxic influence, and they suggested the method of administration for future cases—that is, the method of injections into both the lymphatics going to the glands and into a vein. Injecting the serum into the veins allows it to neutralize any toxins already in circulation, and also to kill any bacilli which may have escaped to the spleen or other organs. In the first outbreak of plague at Glasgow the cases were as a rule mild, and temporary improvement was found to follow the injection of 20 c.cm. of serum into the lymphatics, followed by permanent improvement when a similar injection was made into the veins. In the second outbreak the cases were more severe and large doses of the serum was used. The first case was that of a woman aged 23 years. When admitted to the fever hospital the temperature was 104.6°, pulse 132, respirations 32. She presented every appearance of acute illness. There was a painful and very tender glandular swelling in the groin, and the bacillus pestis was found in the blood withdrawn from it; 160 c.cm. of Yersin's serum was injected subcutaneously the same night, and within six hours improvement followed within the general and local conditions; the temperature fell from 106.6° F. to 100.4° F., the pulse from 132 to 88, and the gland was no longer tender. This improvement, however, was not maintained and 160 c.cm. of the serum was next injected into the median basilic vein. Within thirty-six hours the temperature fell to normal, and convalescence set in. The patient left the hospital well in about six weeks' time. The second case was also a severe one. This time injections were made simultaneously into the lymph vessels and the median basilic vein. Within thirty-six hours the temperature fell to normal, and did not again rise above 98.8° F. Recovery was rapid and complete. The conclusions at which Cairns arrives are that: (1) Yersin's serum is of great value in the treatment of bubonic plague; (2) it is both a bactericidal and an antitoxic agent: (3) the double effect is best obtained when the injections are made early and are both intravenous and subcutaneous (intralymphatic); (4) in very slight cases subcutaneous injections may suffice, but in severe ones the combined method should be used. For this method the total initial dose may be from 150 to 300 c.cm., the proportion to be injected into the veins varying with the severity of the symptoms.

(123) The Action of Saline Purgatives.

MACCALLUM (*Amer. Journ. of Physiol.*, January, 1904) relates that he has found peristalsis equally manifested by the direct application of the salt to the surface of the intestine; it is also inhibited by the subsequent application of calcium or magnesium chloride, and in a less degree by strontium chloride. A number of measurements was made of the fluid in the small intestine before and after the administration intravenously or locally of these salts, and the secretion of fluid into the intestine was found to be produced or inhibited by the same solutions as call forth motion or inhibition respectively of the musculature of the gut.

PATHOLOGY.

(124) The Bacteriological Diagnosis of Typhoid Fever.

ROLLY (*Münch. med. Woch.*, June 14th, 1904) gives the result of the examination of 50 cases, and an account of his procedure; 20 c.cm. of blood were obtained in a sterile syringe, and added to melted glycerine agar at 42-45, the mixture was plated and the growths examined after 1-2 days. Out of the 50 cases a growth was obtained in 44, the number of colonies varying from 1 to 480. The bacilli were more numerous on the whole at the onset and at the height of the fever than later. No bacilli were ever found when the temperature was normal. The number of bacilli afforded no help to prognosis, some grave cases having many bacilli while others equally grave and even fatal had few. In 16 cases early in the fever, bacilli were found, although the serum test and blood count were both negative. The author holds that it is especially at the onset, when other symptoms are absent, that the bacteriological examination is especially valuable. If a culture on agar cannot at once be made the author recommends the following simple fluid in which the blood may be preserved for a short time without destroying the bacilli, until the proper medium can be obtained. Dissolve 5 gr. of peptone and 50 gr. of glucose in 100 c.cm. of water, boil for 5-10 minutes, pour into large test tubes, so that each contains 20 c.cm., sterilize, and add 20 c.cm. of blood taken from a patient when necessary.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(125) Tabes Dorsalis.

E. Coester (*Berl. klin Woch.*, July 4th and 11th, 1904) considers that in the vast majority of cases the diagnosis of tabes is made much too late, and that it should be the endeavour of every physician to diagnose this disease as early as may be possible. He does not think that it is necessary, however desirable it may be, that we should discover any fresh "early" symptoms, but if one is well acquainted with the symptomatology of the disease, and knows how to examine the patient, one can make the diagnosis long before the pupils become fixed or the knee-jerks have disappeared. Coester finds that a very large number of people suffering from the early symptoms of tabes comes to Wiesbaden, not with this diagnosis, but with that of gout, neuralgia, or rheumatism. In the course of fourteen years he has met with upwards of 93 cases of tabes. Many of these cases were what he calls incipient tabes, but not a single case was seen in which he had not the firm conviction that it would have been possible to have made the diagnosis years before. With regard to the etiology, he says that no practitioner who sees many of these cases now doubts that there is an intimate connexion between tabes and syphilis. He further believes that absolute proof will be obtained as soon as large numbers of cases are diagnosed very early and treated with antisyphilitic remedies. The earlier the treatment is made the better is the chance of success with this form of treatment. In dealing with the symptomatology he finds that it would occupy too much time to discuss this fully, but makes a few pointed remarks on some special symptoms instead. First, he mentions that lightning lancinating pains are very frequently the first indications of the illness. These pains are generally mistaken for rheumatic pains, and mostly have existed a very long time when the diagnosis is made. They usually occur in the lower extremities, but may be elsewhere. Paraesthesia, occurring in any situation, may also be an early sign. The most common localizations are the toes, fingers, feet, and hands. These paraesthesiae may be of the nature of itching, creeping, "dead" and "asleep" feelings. Hyperaesthesiae and hypaesthesiae can be made out objectively, and not uncommonly as hypalgesiae and analgesiae. The diminution of the sensation of pain is a very frequent and valuable early sign. Of other common symptoms, he mentions headache, migraine, giddiness, and fainting, as well as apoplectiform and epileptiform attacks. Next he touches on the paralyses of the muscles of the eye, the difference of the size of the pupils, and the implication of the optic nerve. Rarely disturbances of the auditory and vagus nerves herald the onset of the disease, while he also includes disturbances of the trigeminus among the early symptoms. On dealing with the treatment of the disease, he limits himself to an antisyphilitic treatment. Although many observers have failed to obtain encouraging results with this form of treatment, he calls attention to the fact that Erb strongly recommends it. He finds from his own experience that one is able to cure, or at all events to improve, tabes by an antisyphilitic treatment, and by the same means he has succeeded in arresting the progress of well-marked disease. In no case has he seen any harm follow from the treatment, while in many it did undoubted good. Some cases were not influenced by it, which he ascribes to the late date at which the treatment was begun. In support of his view that a mercurial inunction treatment does actual good, he gives some details of a number of cases which he has treated in this way. In all these he has had the advantage of consulting with either Erb or Hoffmann prior to applying the treatment. The account of many of the cases is striking, showing that when the treatment was discontinued for other forms of treatment the improvement which had been attained disappeared until the inunction was again resorted to. For the actual details of the cases we must refer the reader to the original paper.

(126) Cretinism.

Weygandt (*Verhandl. der Physikalisch-med. Gesellsch. zu Würzburg*, Bd. xxxvii, No. 2, 1904) has been engaged upon a comparative study of cretinism and allied conditions, and urges the importance of its etiological relationship to myxoedema and to cachexia thyreopriva. The features which cretinism possesses in common with these two diseases are the following: In the skeletal system there is stunted development, longer duration of the epiphyses and cartilaginous union; the skin is myxoedematous and dry, and has a scanty development of hair; the general aspect is sluggish, broad, and thick-set; the psychical condition is one of apathy and feeble intelligence, and the specific treatment is the administration of thyroid extract. All these features are also exhibited by animals which have been subjected to experimental thyroidectomy, and in these animals there are to be found in the cortex of the brain and in the peripheral nerves lesions similar to those discovered in the nervous systems of cretins.

(127) Death from Hysterical Haemoptysis.

Il Morgagni (July 9th, 1904) contains an account of a case brought before the Lancisian Society of the Hospital of Rome by Dr. Pende, in which hysterical haemoptysis is said to have caused death. The patient, a girl of 17 years of age, had been much distressed by the death of a sister from pulmonary tuberculosis, and soon afterwards began to suffer from repeated haemoptysis accompanied by cough, thoracic pain, and fever. She was very robust and without any history of preceding disease, showed evident hysterical stigmata and only slight signs of congestion at the apex of the right lung. Repeated examinations of the expectoration showed no elastic fibres and no tubercle bacilli. It was inoculated into the peritoneum of guinea-pigs without causing tuberculosis. The patient reacted to injections of tuberculin. A diagnosis of hysterical haemoptysis was made at the hospital of S. Giovanni. Treatment was by suggestion, and verbal injunctions to bring up no more blood were followed by the disappearance of haemoptysis, fever and all pulmonary signs. She left the hospital cured; but a few days later was seized with fresh and severe haemoptysis, and taken to the hospital of Santo Spirito, where, after a few hours, she died. A *post-mortem* examination was made, but no lesion was found in the lungs or in any other organ capable of explaining the fatal haemorrhage. This fact was verified, so far as the lungs were concerned, by Marchiafava. The author explains the haemorrhage as due to diapedesis from dilated vessels. He bases on this case, at present unique in literature, the statement that hysteria can simulate pulmonary tuberculosis to perfection. Differential diagnosis is to be made by the absence of elastic fibres and tubercle bacilli from the sputum by the negative results of inoculation of animals with the sputum, and by the presence of hysterical stigmata. Less importance must be attached to the reaction to tuberculin.

SURGERY.

(128) A New Method of Gastro enterostomy.

G. Masnata (*Il Policlin.*, May, 1904), after a criticism of other methods of performing gastro-enterostomy, describes a method of his own based on those of Wölfler and Braun-Jaboulay. It has been performed on numerous dogs, and in one case, of which no detailed description is given, on the human subject. Its object is to avoid the regurgitation of bile and pancreatic juice into the stomach, and, what is still more important, to avoid the formation of a spur, which sometimes obstructs the passage from the stomach into the efferent portion of the intestine, leads to a vicious circle in the course of the alimentary tract, and brings an otherwise successful case to a disastrous termination. The operation recommended consists of two parts, described as entero-entero anastomosis and gastro-entero anastomosis respectively. Six or eight inches of jejunum are brought out through an incision in the middle line of the abdomen, after the peritoneum has been fixed to the skin by a few stitches, and the remainder of the operation is extra peritoneal. The gut is folded on itself so as to bring the mesenteric insertions into mutual contact. The upper three or four inches of the two folds of gut are now united by a row of Lembert's sero-serous sutures. An incision is made with knife and scissors passing round all these sutures and freely opening up the intestine. Through this opening the posterior walls of the two folds of gut are united by sutures passing through the whole thickness of the intestinal walls. The edges of the anterior opening into the intestine are now brought together by

sutures with the two serous surfaces in contact, only leaving an opening 1½ in. or 2 in. in diameter to communicate with the stomach. Thus an intestinal tube is formed ready to anastomose with the stomach and free from any excess of tissue which can form a spur. The wall of the stomach is then drawn into the abdominal incision, and the posterior lip of the intestinal aperture is united to the stomach wall by a row of sero-serous sutures. An incision is then made into the stomach wall. The edges of the two incisions, gastric and intestinal, are united by an inner ring of sutures passing through the whole thickness of each wall, and then the outer ring of sero-serous sutures is completed. There is thus free communication between stomach and intestine without any opening into the peritoneal cavity. No important haemorrhage is met with when the intestine is incised, and little when the opening is made into the stomach. The whole operation takes thirty-six minutes to perform. As a proof of the good results obtained the author mentions the case of a dog which was submitted to this operation, and in addition had its pylorus closed. During the three months following operation the weight of the animal increased from 17.5 kilog. to 22 kilog. The author considers that the dangers of operation in such cases have been exaggerated.

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(129) Transient Traumatic Diabetes.

Kausch (*Zentralbl. f. Chir.*, No. 27, 1904), in a paper read at the last meeting of the German Surgical Society, stated that in eleven cases of recent injury—nine of fracture and two of contusion—he had noted the occurrence of glycosuria which invariably presented some interesting points. Sugar was found in minute quantities—the maximum 1 per cent., the average ½ per cent.—almost immediately after the injury and in the first specimens of urine that were examined. It disappeared in the course of a week, usually about the third day, and in not one of these instances was its presence associated with any diabetic symptoms. The most important point in this series of observations was the fact that with one exception the patients remained subsequently in a normal condition with regard to metamorphosis of glycogen. In these observations, the author points out, that physiologically normal subjects may, after an injury, show signs of spontaneous and transient diabetes—a fact, it is asserted, that had been previously ascertained. The association of this transient diabetes with traumatism is regarded as the result of physical disturbance and not of a cerebral lesion or of a spinal concussion.

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(130) Primary Sarcoma of the Spleen.

Jepson and Albert (*Ann. Surg.*, July, 1904) report a case of primary sarcoma of the spleen in which splenectomy was successfully performed. The patient was a girl aged 15 who came under surgical notice for a slowly-increasing swelling in the left hypochondriac region, which caused no particular discomfort beyond a slight dragging sensation after walking. The authors have collected 32 cases of sarcoma of the spleen, including the one here reported, of which 12 were subjected to operative treatment, 11 to splenectomy, and 1 to enucleation of the growth. Of the 11 cases of splenectomy 3 were fatal, and of the remaining 8 patients 3 have died from recurrence. An analysis of the symptomatology of primary sarcoma of the spleen has led the authors to the conclusion that the diagnosis of this affection must, for the present at least, be largely based upon the recognition of the existence of a solid growth of the spleen, and that a definite diagnosis cannot be made until the spleen is exposed by an exploratory laparotomy, which, it is held, would always be indicated when doubt exists. As to treatment, no question can exist, the authors believe, as to the advisability, in the absence of secondary involvement of other organs, of removing the spleen, which operation in the hands of experienced surgeons must be associated with but a low mortality. The results of experience hitherto acquired justify the hope that a very large percentage of cases of primary sarcoma of the spleen will be found susceptible of a radical cure.

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(131) General Infection in Surgical Infective Diseases.

Bertelsmann describes the results of the blood examination of 230 patients suffering from surgical infective disorders (*Deut. Zeit. f. Chir.*, Bd. lxxii, 209). A number of these had also some additional internal lesion (pneumonia, tuberculosis, etc.), leaving 154, of which 48 gave a positive and 106 a negative result; of the 48 positive cases 28 recovered. In lymphangitis, erysipelas, and peritonitis no bacteria were found in the blood; in infections of the tendon sheaths they were frequently present, and in acute osteomyelitis, acute septic infections of the joints, almost always. Often in apparently local infections organisms were present in the blood and absent, on the other hand, in pronounced general sepsis. In the latter cases the blood is bactericidal, but becomes loaded with bacterial toxins, and this toxaemia may bring about a fatal result. Organisms do not as a rule flourish and multiply in the blood unless of exceptional virulence, or when the resistance is for some reason low. In 28 cases streptococci were found, in 13 staphylococcus aureus, staphylococcus albus and a mixed infection each in 2 cases, and pneumococci, anthrax and B. coli 1 each. Of the streptococcus cases 19 recovered (68 per cent.), of the staphylococcus cases 4 only recovered (30 per cent.). The bacteriological examination of the blood has an importance in indicating the advisability of amputation, but has of course to be checked by other considerations, the local condition in particular. Treatment with therapeutic serums is, of course, to be guided by the results of the blood examination. In cases of peritonitis where organisms are in the blood in large numbers, treatment with saline infusion results in a dilution of the blood and a lowering of its bactericidal powers; it is particularly indicated where organisms are absent from the blood, and after operation the patient suffers from intoxication. Four cases of so-called urethral fever were examined, two gave a positive, two a negative result. The negative results were probably to be explained on the ground that at the time of examination the organisms which had gained access to the blood were already killed. The greater part of the bacterial poison is set free in the blood when the organisms are killed and dissolved, so that probably the rigor marks that point where the toxin material is set free by the destruction of the organisms.

MIDWIFERY AND DISEASES OF WOMEN.

(132) Obstruction after Abdominal Operations.

Falk and Lomer (*Zentralbl. f. Gynäk.*, No. 30, 1904) recently reported two cases of very insidious intestinal obstruction which ended fatally. Falk removed a uterine fibroid over six pounds in weight, sewing the peritoneum over the stump of the cervix. The omentum was drawn down and spread out before the abdominal wound was closed. Tympanitic distension set in on the evening after operation. Twenty-four hours later an enema was given and flatus escaped freely, but the distension did not subside. For the next three days the patient remained in the same condition: the distension increased, although flatus passed after enemata. The abdomen was not tender on touch, the pulse did not exceed 100, the temperature only reached 99°. One stool was passed on the third day; vomiting set in. On the fifth it became faeculent; an enema then brought away a solid motion, yet the distension continued. Paralytic ileus was diagnosed and it was proposed to open the intestine. At the operation the ileum was found to be strangulated 10 in. above the ileo-caecal valve by a long adherent tag of omentum. The patient died six hours later. Falk noted that it was not always possible to diagnose paralysis of the gut from mechanical obstruction, and discussed how far strychnine, given subcutaneously in this instance, may be an aid in diagnosis and how far it may be dangerous. Lomer operated on a broad ligament cyst which had been repeatedly tapped, and drained the cavity left after enucleation through the vagina. There was much vomiting after operation, but the pulse and temperature remained normal, flatus passed and a few motions for several days. On the seventh day the abdominal wound parted and a distended coil of intestine was found adherent to the parietal peritoneum around the wound. On the eighth day flatus passed freely with a motion, but the vomiting did not stop. Nutrient enemata were given for two days, the vomiting ceased, and the patient could sit upright in bed holding a heavy book in her hand. But directly she was fed by the mouth the sickness returned and became faeculent. On the thirteenth day peristaltic movements of intestine down to an evidently strictured point were noted; the coil of gut adherent to the parietal wound was opened and liquid motion came away in quantities. Yet the patient grew worse and died on the eighteenth day after the ovariotomy. The intestine was found to be sharply

kinked immediately below its adhesion to the parietes; there were no bands of adhesion and not a trace of peritonitis could be detected. The intestine above the opened adherent gut was enormously dilated; the opening, it was remarked, lay within 5 ft. of the pylorus. Hence inanition must have been the main cause of death, the distended jejunum not allowing of absorption of nourishment. The stomach and spleen were extremely small.

(133) Interstitial Gestation and Vesicular Mole.

HENKEL (*Zentralbl. f. Gynäk.*, No. 29, 1904) writes of a woman, aged 32, in her first pregnancy, who was admitted into hospital with symptoms of acute intraperitoneal haemorrhage. The uterus was enlarged correspondingly to the stage of pregnancy, and when abdominal section was performed the external appearances of interstitial gestation were evident; the round ligament ran from the inner side of the sac, which had ruptured above. A fetus over 10½ in. in length lay in the peritoneal cavity. On removing the contents of the sac, a typical vesicular mole was discovered. A wedge-shaped piece of the uterine cornu, including the sac, was excised, the wound united with interrupted catgut sutures, and the serous coat closed with a continuous catgut suture. The patient's convalescence was retarded by an attack of bronchitis.

(134) Twin Pregnancy: Albuminuria: Puerperal Tetanus.

LOP (*L'Obstét.*, July, 1904) attended a woman, aged 37, in her sixth pregnancy. The abdomen was extremely distended either by oedema or by twin pregnancy or hydramnion; the labia majora reached half way down the thighs. The urine was scanty and full of albumen, the liver enlarged and tender. Active treatment was prescribed, free purgation, 18 oz. of blood withdrawn, besides wet cupping and washing out of the bowel with warm water night and morning. The oedema of the labia was immediately reduced by small punctures. The general condition grew worse, although the patient had already been kept on milk diet for two months before the active treatment, which was also evidently ineffective, so labour was induced. Artificial serum was freely injected, and the patient began to look better; the twin infants were placed in the *couveuse* and did well. On the fifth day a rigor occurred with rise of temperature, next day the uterus was swabbed and its cavity washed out; two days later the patient seemed convalescent. On the thirty-second day she was attacked by what seemed to be a rigor, but trismus was observed. All the symptoms of acute tetanus developed, chloral and antitetanic serum proved unavailing, and death occurred on the third day. Lop could not explain the cause of the tetanus.

(135) Pre-Operative and Post-Operative Treatment in Abdominal Section.

POUCHET (*Rev. de Gynéc. et de Chir. Abd.*, May to June, 1904) considers that in the interests of the patient strict preparation is necessary whenever hysterectomy or any abdominal operation is performed. Unless the case be urgent the patient should be kept for a week on vegetable soups, oranges, lemon water, etc., whilst the bowels should be freely cleared by purgatives and enemata. This system empties the bowels of faeces and gas. In consequence the patient does not suffer from chloroform vomiting, nausea, colic, and tympanitic distension, complications due to intoxication by the contents of the alimentary canal, and a fat subject requires much longer preparation, as resistance is feeble, the high abdominal tension interferes with the conduct of the operation, the feeble myocardium does not well tolerate elevation of the pelvis, and the chances of pulmonary complication are high. Vegetable and water diet greatly improves a case of this kind, reducing fat, and favouring the functions of the liver and kidney. Thorough cleansing of the teeth prevents respiratory infection. After operation treatment depends more on circumstances. The management of hysterectomy patients is especially important in respect to their future health, as they are liable to severe constitutional shock from the artificial menopause, such as flushings, excitability, *malaise*, migraine, and rheumatic pains; there is also a tendency to obesity. An exclusively vegetable diet is highly advisable. Where there is depression meat may be given once daily, and kola, alcohol, or coffee allowed. Eggs and milk may be taken but sparingly. Altogether, however, it is better for the patient to consume farinaceous food, vegetables, and fruit. Pouchet finds that when this diet is enforced the patient always does well, and does not grow fat; whilst the "feeding up" of a patient, so widely popular in surgical practice, means discomfort and obesity.

THERAPEUTICS.

(136) Intravenous Injections of Hetol.

R. BLUM (*Therap. Monat.*, June, 1904) has obtained good results from the treatment of phthisis by intravenous injections of hetol according to Landerer's method. As compared with ordinary treatment by drugs, this method has the advantage of keeping the doctor in constant communication with the patient, and thus increasing the chance that he may be able to induce him to order his life as far as possible on sanatorium lines. The treatment also, in that it is within the reach of all classes, compares favourably with sanatorium treatment. During the first week in which the injections are made the patient is kept from work, but is afterwards allowed gradually to resume it. The treatment is begun as soon as the tuberculous nature of the illness is established, and continued until neither the objective nor subjective condition appears to need it. No attempt is made at the end of the treatment to prove that the tubercle bacillus has disappeared from the sputum, in the first place because such disappearance does not show freedom from disease and in the second because of the time involved. The initial dose is 0.5 mg., and this is increased by 0.5 mg. or 1 mg. at a time until 10 to 15 mg. is reached. The dose is diminished for a time if headache or any unpleasant symptom should supervene. No injury resulted from the injections in any case under the author's care. There may be difficulty in carrying out Landerer's recommendation to treat only patients in an early stage of illness, but no harm is done by treating more advanced cases if the friends are told at the outset that a cure is not to be hoped for. Of the cases described the first was that of a patient who had suffered from phthisis for three years, and had undergone a sixteen weeks' course of sanatorium treatment at the beginning of his illness. While receiving the injections he gained 10 lb. in weight, his cough and breathlessness diminished, the spit ceased to be fetid, and he was able to work as he had not done for years. Another patient who had suffered from phthisis for years, and whose larynx was affected, did not improve under treatment except for an increase of weight of 3 lb. Of the other 10 cases described one received only one injection, the others followed out the full course, and in all of these there was improvement in the local condition and an increase of weight. In some patients the improvement was such that they would certainly at the end of the cure have been accepted for life insurance. That hetol does not act merely by "suggestion" is shown in the marked improvement of a girl who was depressed and unwilling to be treated by hetol, and who had already given up treatment by rest in the open air because of the extreme depression it induced. While it is too soon to say whether the effects of the treatment are permanent, yet no considerable change for the worse could be discovered in any patient who returned after an interval, and theoretically it would seem as probable that the improvement obtained under ordinary conditions of life should be as permanent as that obtained under the special conditions of sanatorium treatment.

(137) Validol in Sea-Sickness.

K. KOEPKE (*Therap. Monat.*, June, 1904) has during the last three years administered validol in hundreds of cases of sea-sickness, and has seldom failed to do good. In a slight case taken in the early stage of headache, dizziness, bad taste in the mouth, and salivation, 10 to 15 drops of validol are given on sugar, and the patient told to lie down for half an hour. A glass of wine and a biscuit may also be taken. The treatment almost invariably succeeds, and after an hour the patient feels refreshed, and has an appetite. The process is repeated as often as the symptoms return. In severe cases when the patient has suffered from sea-sickness for a day or more, and has become physically and mentally depressed before seeking advice, he should be sent to bed as a preliminary measure, and validol be then given on sugar as before. Its sharp taste and the feeling of warmth which it soon gives rise to are pleasing to the patient, and the headache and sense of gastric oppression are quickly relieved. If the first dose is vomited, as sometimes happens, a second is given, and is nearly always retained. Half an hour after validol has been taken, two or three teaspoonfuls of an iced mixture of yolk of egg and sherry are given, and practically never cause vomiting. After this pro-

cedure has been carried out many times in the day, and a good night's sleep has been obtained, a gradual return to ordinary light diet may be made, but care should be taken not to do this too quickly. A few of the author's patients have been obliged to keep to the egg-and-sherry mixture for a week at a time, because of the vomiting which any change in diet brought on. Occasionally egg and sherry cannot be taken, and in such cases gruel is given. Koepke believes that the different symptoms of sea-sickness are due to anaemia of the brain, and that validol acts upon this condition by raising the blood pressure. It also influences the gastric disturbances by lowering the sensibility of the nerve endings in the gastric mucous membrane, and is indeed both a good stomachic and a good analeptic. To explain its failure in a few instances, he accepts Rosenbach's view that two forms of sea-sickness can be differentiated, the somatic and the psychic form, and suggests that validol acts only upon the more common of these two.

(138) The Haemolytic Action of Perchloride of Mercury.

The study of haemolysis has been applied to the action of certain drugs and led to distinct results. L. Detre and J. Sellei have investigated the poisonous action of corrosive sublimate on the red blood cells, and report their results in the *Berl. klin. Woch.*, July 25th, 1904. They carried out the experiments to a great extent according to the methods of Ehrlich. They find (1) that the perchloride of mercury belongs to the red blood cell poisons. Too large doses of this substance "fix" the cell, while very weak doses either only partly dissolve the cell or do not affect it. (2) The strength of the haemolysis depends on the length of time of action and on the temperature; at 37° C. solution may take place within five hours, while at 45° C. it may take place in one hour. (3) The haemolysis is preceded by a period of incubation which is in inverse proportion to the concentration and the temperature. (4) While the blood of normal individuals behaves almost constantly, that of syphilitics who have been treated with mercury exhibits large variations. (5) The serum of the blood to a certain extent protects the cells from the haemolysis. (6) The protection of the serum is lost when the serum is heated to 80° C. (7) Shaking up the serum with ether or chloroform robs the serum of its protective property, but the same is acquired by the ether extract. The protective bodies are therefore soluble in ether and chloroform, are capable of fixing the sublimate, and correspond to Overton's lipoids. (8) The dissolved blood cells act in the same way as serum, only more powerfully. The authors have further made some interesting observations with mixtures of ether or chloroform and lecithin, together with perchloride of mercury. On shaking the mixture it is found that the sublimate loses its power of dissolving the blood cells to a certain extent.

(139) Veronal.

San Pietro (*Clin. Mod.*, July 20th, 1904), as the result of trials of the above drug in 30 cases, speaks very favourably of the results. He finds it an excellent hypnotic, and never failed to produce satisfactory sleep in doses of at least 15 gr. It is easily given in cachet, suspended or in solution, and is practically tasteless. No unpleasant after-effects were noticed; no headache or nausea on waking, and the pulse and respiration do not seem to be influenced in any deleterious way. The blood pressure was not lowered; on the contrary, in some cases of weak heart, with failing compensation, a distinct rise was observed, the drug acting somewhat like digitalis. Veronal may be given for some time in the same doses without losing its effect, as toleration is slowly established. By administering alternately another hypnotic, the good results obtained with veronal are more lasting and it is longer before it becomes necessary to increase the dose.

(140) Sanatorium Treatment for Consumptives.

Bardswell and Chapman (*Med. Chir. Trans.*, vol. 87, 1904) place on record the life histories of 28 consumptive patients who were treated by the open-air method at the Sheffield Royal Infirmary between June, 1899, and March, 1900. Of these cases 10 died during treatment, 5 within a year afterwards, 4 more within two years, and 2 more within four years; 2 were lost sight of. With regard to the remaining 5, it is reported that, four years after treatment, one is in "fair health" and the other four are in normal health and at full work. Many of the cases recorded were of a severe type.

(141) Transfusion and Infusion.

Van Amstel (*Wiener Klinik*, July-August, 1904) has compiled an extensive historical summary of the clinical experience of various authorities as to the therapeutic value of blood transfusion and of the now more generally practised method of injecting saline solution. The collection of recorded instances in which the latter method has proved of great clinical utility is very varied and extensive. The article is itself a summary, and does not lend itself to further condensation; to those interested in the subject of saline infusions it will prove a very useful work of reference.

(142) "Djoeat" Treatment of Diabetes.

M. Dapper finds that there have been a very large number of secret remedies brought out for diabetes, and each of these promises more than the last. One of these patent preparations is Djoeat, and since it claims to work wonders for the diabetic he has tested its action and reports on it in the *Deut. med. Woch.* (August 4th, 1904). In 4 cases he gave the preparation, always choosing the time for its application when he had succeeded in reducing the quantity of sugar excreted by the kidneys to a low level by diet and rest. The test was carried out by comparing the curve of the sugar excretion and of the acetone of the Djoeat period with the period before and that after the trial. In all these cases he was able to convince himself that the patients were distinctly harmed by the preparation. In the majority of cases the patent treatments for diabetes rely on the giving of a certain concoction at the same time as a rigorous diet is being followed, and when an improvement is noted this is certainly due to the dietary. At times a slight variation may be sufficient to mask the result of a trial of such a treatment, as he exemplifies in a case in which the diet of the period prior to the patent medicine treatment differed from that of the latter by containing Aleuronat, a so-called diabetic bread, which, however, contains a not inconsiderable amount of starch. Djoeat is said to be made of jambol fruit, among many other ingredients, and the author has no doubt that this fruit at times does exert a beneficial influence on the amount of sugar excreted in diabetes. It is, however, the experience of most therapeutists that jambol must be absolutely fresh for it to have a full action, and it is best given in the form of a maceration. A very useful formula is given by von Noorden. Take 200 grams of the jambol fruit, as fresh as possible, mash them (including the seeds) well, and place in 2 litres of water, with 10 grams of common salt and 4 grams of salicylic acid. The mixture is kept at incubator temperature (not higher), and shaken several times during twenty-four hours, after which time it is filtered off. The two litres will suffice for ten days, 100 grams being taken night and morning. In conclusion, he expresses himself very strongly against the very impudent tone of the advertisements of the patent medicines, which claim to do so much and which in reality cannot do anything.

PATHOLOGY.

(143) Disseminated Sclerosis.

Tredgold (*Review of Neurology and Psychiatry*, July, 1904) has made a careful study of the pathology of three cases of disseminated sclerosis, involving the examination of more than 500 histological preparations from the central and peripheral nervous systems. He supports the view that the initial change is in the myelin substance, beginning as cloudy swelling and proceeding to fatty degeneration, disruption, and absorption of the myelin sheath. The process may occur at any part of the nervous system; a focus once started has a tendency to spread centrifugally. A clinical evidence of this degeneration may be obtained by the demonstration of cholin crystals in the blood. The axis cylinder persists for a time after the disappearance of its sheath, but later exhibits swelling and varicosity, and finally disappears. As a result of these destructive changes, a proliferation of neuroglia takes place, producing the patches of sclerosis, which, according to this view, are secondary in Nature. As a result of the complete severance of the nerve fibre secondary degeneration takes place. The ganglion cells show an absence of acute change; they nearly always contain a large amount of granular pigment, and in the later stages undergo a chronic atrophy which is probably secondary to the destruction of their axis cylinder processes. The vascular changes which occur in a certain proportion of cases are regarded as secondary and concomitant, and not as the cause of the nervous degeneration.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(144) Metabolism during an Attack of Subacute Tetanus.

Nesti and Marchetti (*Riv. Crit. di Clin. Med.*, June 25th, 1904) describe researches on the metabolism of a patient recovering from tetanus, and supply brief notes of the results of similar inquiries conducted by others in other cases of the same disease. Full notes of the history of the case are given. It was peculiarly favourable, inasmuch as the progress of the case was slow, there was no dysphagia, the patient had a good appetite, and there was very little elevation of temperature, although sweating was a marked symptom of the disease. The observations were made when recovery was beginning to take place, after the disarticulation of a wounded finger through which the body was infected. The nature of the case was verified by the preparation of pure cultures of the tetanus bacillus from the pus which was freely secreted by the wound. The medicinal treatment consisted in the administration hypodermically of 10 centigrams or less of phenol every day, and the introduction per rectum of 8 grams of potassium bromide and 4 of chloral hydrate, amounts which were gradually reduced as the patient recovered. It is believed that this medication can have had no appreciable influence on the metabolism of the body, except in so far as it modified the manifestations of the disease. A table shows the amount of food taken on each of the eleven days during which the inquiry was conducted, and an estimate of the nitrogen and phosphoric acid contained in it. The quantity, specific gravity, and reaction of the urine are given, and the daily amounts of creatinin, urea, total nitrogen, organic nitrogen, inorganic nitrogen, total sulphur, sulphuric acid, neutral sulphur, and phosphoric acid. The weight of the dried faeces is given, and the amounts of nitrogen and phosphoric acid contained in them. The conclusions formulated by the authors are:—(1) The urine had an acid reaction, at first very intense, but less so as the patient gradually recovered. (2) It never contained any abnormal constituents. (3) The absorption of phosphoric acid was good and that of nitrogenous substances very good. (4) The urinary elimination of nitrogen, sulphur, and phosphoric acid was increased. The relation between these elements was normal, as also was the ratio between the organic nitrogen and the total nitrogen. (5) The elimination of creatinin was relatively increased. (6) The ratio of the neutral sulphur to the total urinary sulphur was also increased. The toxin of tetanus is therefore a catabolic agent, destroying albuminoid molecules.

(145) Korsakoff's Disease.

Soukhanoff and Boutenko (*Soc. de Neuropath. et Psych. de Moscou*, January, 1904) describe a typical case of this condition. A man of 43, a pronounced alcoholic of many years' standing, had delirium tremens at the beginning of 1902, and in the autumn of the same year epileptiform seizures, which left him very stupid, with slight pyrexia. As he got better his memory proved poor and he showed the characteristic tendency to tell "fairy tales." In November signs of multiple neuritis (loss of knee-jerks, tenderness of calves, uncertain gait, and wasting of lower limbs) appeared; this, together with the loss of memory for recent events and false reminiscences, giving a typical example of the syndrome described by Korsakoff. Both psychical and physical symptoms improved, but did not completely disappear. A careful review of the literature (nearly 200 cases) brings out the following points: This combination of a special paramnesia with multiple neuritis is very constant, nine-tenths of the patients being chronic alcoholics, though in a very few enteric fever, gastro-intestinal disturbances, etc., seem to have been responsible. It occurs in men between the ages of 40 and 50, in women between the ages of 35 and 40; three-fifths of the patients are men. In the discussion following this paper the association of a set of psychical symptoms with a set of physical symptoms, constituting Korsakoff's disease, was compared with general paralysis of the insane; and it was pointed out that the paramnesia which constitutes the commonest type of psychosis in these cases cannot be looked upon as diagnostic, for it occurs as a result of cerebral softening and other gross intracranial lesions.

(146) Examinations of Gastric Contents.

H. Oerum (*Nord. Med. Arkiv.*, Bd. 36, Heft 4) states that in 600 estimations of the acidity of the gastric contents, he found absence of the acidity in gastric carcinoma and pernicious anaemia, diminished acidity in pulmonary tuberculosis, normal acidity in anaemia and gastroptosis and hyper-acidity in gastric ulcer, chlorosis, chronic constipation, and cholelithiasis. In 125 cases there was complete absence of acid. Of these there were 35 cases of carcinoma of the stomach, and 13 cases of pernicious anaemia. In 57 cases, while single examinations showed a complete absence of acidity, further estimations revealed a normal or hyperacidity. Oerum advocates repeated examinations in every case, and thinks thereby the diagnosis, therapy, and prognosis will be considerably aided. H. Seidelin (*Hospital stidende*, Bd. 46, No. 47) has made 75 estimations of the gastric contents in patients over 50 years of age. In a large number of cases, although there were no gastric symptoms, there was definite subnormal acidity, and he considers that there may be some relation between arterio-sclerosis and alterations in the composition of the gastric juice.

(147) Traumatic Aneurysm of the Aorta.

Boyer (*Lyon Méd.*, July 10th, 1904) has had occasion recently to examine an aneurysm of the thoracic aorta which was attributed to an accident, thus raising a question of compensation. A drayman who had for years been accustomed to heavy work in loading and unloading barrels was raising one by means of a pole, the handle of which broke off and hit him a heavy blow on the chest and threw him backwards from a height of about four yards to the ground. He lost consciousness, and was taken to hospital. Afterwards he complained of pain in the dorsal region, but no signs of injury to the spinal cord were seen. He went back to work in a fortnight, but complained of tearing pains in the chest, of trembling, and of his breath leaving him. He returned to hospital about eight months later suffering from severe pain in the dorsal region of the vertebral column and in the right breast. Radioscopy showed a large pulsating mass in the thorax. There was no history or sign of syphilis or of alcoholic excess. The peripheral arteries showed no trace of atheroma. The fact that a certain amount of heavy work was possible after the accident does not exclude the traumatic causation, as an aorta with torn coats is known to dilate slowly.

SURGERY.

(148) Prevention of Relapse after Cancer Operations.

H. Mohr (*Therap. Monat.*, July, 1904), while not denying the great difficulty in estimating accurately the proportion of cases in which permanent recovery follows operation for cancer, has no doubt that, owing to improved knowledge of the lines on which cancer spreads within the body, and to improved technique, the number of such cases has steadily increased during the last ten or twenty years. Early diagnosis and operation are still the most important factors of success. The suggestions for treatment before operation are of doubtful utility; they include dietetic and drug treatment and a preliminary operation for suturing the vessels going to the tumour region. As far as present-day operations are concerned, it seems possible that the limit has been reached in the direction of total removal. Indeed, so radical are some of the proposed operations that the immediate mortality which would attend their performance might well be such as to outweigh the future possible benefit. Küttner, for example, has found that to radically remove a cancer of the tongue not only must the submaxillary, suomental, and deep cervical glands be removed, but also the supraclavicular glands on both sides of the neck. This could hardly be carried out in all cases, and, even if it were, the tissues could not be removed in one piece. Moreover, even with the most extensive operation it is impossible to make certain of the removal of the whole growth. As a remedy for a form of relapse which sometimes occurs in distant and perhaps in operable glands, Kacvinsky recommends that operations for cancer should be carried out in two parts, the first for the removal of the growth itself, the second after an interval of fourteen days for the removal of the lymphatics into which any free cancer cells left behind at the operation may have found their way. With such a procedure, however, the risk of implantation relapse might be increased. How frequent are the relapses which are due to

implantation of cancer cells on the wound surfaces is still in dispute. Among the methods suggested for their prevention are: Operating in healthy tissue, removing the growth and the surrounding tissues *en masse*, taking care not to break up the growth, cauterizing the wound at the end of the operations, washing out the wound. Operations carried out by cauterization or ended by cauterization are said to be less liable to local relapse than those in which the knife alone is used. Cauterization is specially useful for cancer of the cervix uteri after amputation by the knife. The proportion of cases so treated which remain well for at least two years varies according to different authorities from 42 per cent. to 75 per cent. Heat seems to have a specific action in lowering the vitality of cancer cells at some distance from its point of application, and by its use permanent cures are said to have been effected in cancers which could not be removed by the knife. The after-treatment of operation cases is still in an experimental stage. The site of operation has been treated by ice applications in order to diminish the stimulus to growth which hyperaemia might give to any remaining cancer cells. Those who believe in the parasitic nature of the disease have injected alcohol, formol, and europhen after operation. The use of Roentgen rays repeatedly and over a long period of time has been frequent of late. It is recognized to be important to keep the operation scar from any source of irritation and to cauterize any suspicious growth. The different serums against cancer have been little used, but Wlaeff claims to have cured early relapses by serum treatment. It is clear that Nature is able to check the progress of already existing growths, but the method of protection is not known. Some observers have found that an infectious or toxic fever after operation improves the chance of a permanent cure, others that continued suppuration of the wound or a great loss of blood at the operation have a similar effect. The factor common to all these conditions is a marked alteration or destruction of the blood, and cauterization may perhaps act in the same way. Working from these facts Lomer has prepared a haemolytic epithelium serum which has yet to be tested. The post-operative treatment of cancer opens a wide field of action and in the future may perhaps effect more than the most elaborate operation.

(149) Prevention of Bleeding in Trephining Operations.

VON HACKER (*Zentralbl. für Chir.*, No. 29, 1904) discusses appreciatively Heidenhain's method of preventing haemorrhage during operations on the scalp and cranial vault, which method consists in compressing the margins of the incision in the scalp by two parallel lines of continuous "in-and-out" sutures, one line placed on the proximal, the other on the distal, side of the incision. Each of the so-called percutaneous sutures, including both the skin and the galea, is applied before the incision is made in the scalp, and is allowed to remain until after adhesion of the flap. The author has found this method of preventing bleeding from a large wound or flap in the scalp of much practical value, but has been led by the results of his own experience to the conclusion that it is not always necessary in forming a flap to apply the percutaneous suture along both sides of the line of incision. In many cases it is unnecessary, he holds, to apply more than a single line of suturing on the distal side of the margin of the flap. It is suggested that in forming a large curved or horseshoe flap from the tissues of the scalp it might often be found advisable to place the base or attached portion of such flap neither below nor above, but in such direction that the direct track of the temporal or any other large artery is avoided, precaution, however, being taken not to endanger the vitality of the flap. The author claims certain advantages for his method of a single and distal row of percutaneous suture over the double row advocated by Heidenhain. With the former method there is a saving of time; the tissues of the flap are less disturbed, and the risk of stitch-abscess is diminished.

(150) Combined Transverse and Longitudinal Incision in Laparotomy.

STIMSON (*Ann. Surg.*, August, 1904) directs attention to what he conceives to be the great advantages of a method of opening the abdomen by a combined transverse and longitudinal incision. This method, which was first suggested by the author in 1901, had then already without his knowledge been advocated by Küstner and others. The objects of this modification of the ordinary technique of laparotomy are the obtaining of a scar that will be inconspicuous, and the prevention of hernia by establishing a firm reunion of the divided abdominal wall. The following are the steps of this method as practised by the author in at least 150 cases of laparotomy, in the great majority of which he operated on the uterine appendages. The transverse incision, which crosses the median line three or four centimetres above the pubic symphysis, is a shallow curve with its concavity upwards. The sides extend towards the antero-superior spines of the ilium, the extent depending upon the purpose of the operation and the thickness of fat in the abdominal wall. The aponeurosis of the external oblique having been exposed, it is divided in the line of the transverse incision, together with the anterior wall of the sheath of the rectus. The cutaneo-aponeurotic flap is at first freed upwards with the knife in its middle along the linea alba and the pyramidales, and afterwards, when these muscles have been passed, is rapidly stripped off on each side from the rectus with the fingers, the final separation along the median line being made with the knife. The incision of the aponeurosis is not, as a rule, carried beyond the outer borders of the recti, and if more room be required is extended upwards rather than transversely. The flap is then drawn upwards, and the abdomen opened in the median line in the usual manner. After the chief stages of the operation have been completed the aponeurotic flap is secured in place by catgut sutures. The space beneath the flap is usually drained for a day or two by strips of rubber tissue. The author, in conclusion, states that he feels justified in recommending this method as one easy of execution, adequate for any abdominal work that can be done through a median incision below the umbilicus, facilitating ready repair, and affording apparently complete protection against post-operative ventral hernia.

(151) Umbilical Hernia at Birth.

FOURNIER (*L'Obstét.*, July, 1904) operated upon an infant with umbilical hernia on the day of its birth, and without anaesthetics. The incision was made along the median line, three loops of small intestine were found in the sac, one bearing a Meckel's diverticulum, and all adhered to each other and to the walls of the sac. The adhesions were separated with the finger. The operator passed the nail of his forefinger under the lower border of the neck of the sac, which he divided with a bistoury, and then was able to reduce the herniated intestine. The parietes were closed with catgut sutures. Cure was complete by the ninth day. Fournier considers that a congenital hernia requires immediate operation on the day of birth, and that anaesthesia is unnecessary.

MIDWIFERY AND DISEASES OF WOMEN.

(152) The Blood in Puerperal Fever.

POTOCKI (*Ann. de Gynéc. et d'Obstét.*, June, 1904) has investigated the state of the blood during puerperal fever in several cases, and has differentiated two conditions—one corresponding to the milder forms of infection likely to end in recovery, the other to the more severe forms tending to a fatal result. The milder cases are characterized as a rule by a moderate leucocytosis, the number oscillating between 8,000 and 10,000—an increase in the polynuclear cells up to a proportion of about 85 per cent. and a decrease of eosinophiles down to 2 per cent. or 1 per cent. The leucocytosis, however, sometimes increases above 15,000, and a favourable result is still to be looked for so long as the polynuclear cells do not rise to above 80 per cent. or 85 per cent., and still more so long as the eosinophiles are still present up to 1 per cent. A typical example of the slighter form of illness is given. Here the number of leucocytes never rose above 9,200, the polynuclear cells never above 76 per cent., nor the eosinophiles below 2 per cent. The patient's temperature rose repeatedly during twenty days, once being as high as 104.4° F., but she recovered satisfactorily under the simplest treatment. In another case of infection, with a temperature of 104.4°, in which the number of leucocytes had risen to 23,500, the polynuclear cells to 79 per cent., and the eosinophiles fallen to 1 per cent., laparotomy was performed and a retro-uterine cavity filled with seropurulent fluid was found and drained. The patient made a good recovery. The day after the operation the number of leucocytes and the proportion of polynuclear cells had already diminished, but the eosinophiles did not rise to 2 per cent. until fourteen days later. In a third case, which ended in recovery, and in the early stages of which the blood condition was not unfavourable, the onset of phlegmatia alba dolens was accompanied

by an increase of leucocytes from 20,000 to 30,000, of polynuclear cells up to 90 per cent., and a diminution of eosinophiles from 2 per cent. to 1 per cent. This unsatisfactory condition lasted for one day only. In the most serious forms of puerperal infection the number of leucocytes may exceed 25,000, the polynuclear cells be in a proportion of more than 95 per cent., and the eosinophiles be either wholly absent, present in insignificant numbers, or may disappear as the illness grows worse. When recovery takes place in such cases its onset is marked by an increase of eosinophiles and a decrease of polynuclear cells. All these facts are exemplified in one or other of the cases described. In one case, in which death occurred two hours after admittance, the number of leucocytes was 17,600, the polynuclear cells 95 per cent., and the eosinophiles absent. In another rapidly fatal case the leucocytes were 16,470, polynuclear cells 96.5 per cent., and the eosinophiles again absent. The proportion of eosinophiles in a third fatal case never rose above 0.5 per cent. In another the preliminary blood investigations gave not unfavourable results, the eosinophiles being at one time up to 2.5 per cent.; but on development of arthritis of the knee they fell to 1 per cent., and a few hours before death had altogether disappeared. The number of leucocytes, which at one time was only 6,000, rose during the illness as high as 18,000. A severe case showed, as improvement set in, a rise of eosinophiles from 1 per cent. to 2 per cent., and a fall of polynuclear cells from 76 5 per cent. to 69 per cent. From all these facts it would appear that the examination of the blood corpuscles is a valuable help to a correct prognosis, and that cases in which eosinophile cells are absent or present in a scanty and diminishing proportion call for particularly active treatment.

(153) Cancer and Myoma of Vagina.

Strassmann (*Zeitschr. f. Geb. u. Gyn.*, vol. li, pt. 3, 1904) attended a woman aged 40, subject for a year to haemorrhages. Her youngest child was 5 years old. He found her very much emaciated; the cervix was covered with hard tuberous masses; there was a friable bleeding deposit in the posterior fornix, and the vagina was full of hard swellings like those in the cervix. A sanious watery discharge escaped. At first sight the case seemed inoperable. The bleeding deposit was scraped and cauterized; then it was found, contrary to expectation, that the cervix was quite movable. Then it was clear that the tuberosities in its substance were fibroids, as was proved when the cervix was amputated. Two similar swellings were excised from the vagina, and on examination proved to be pure myoma without a trace of any kind of malignant element. There was much discussion on this case at a meeting of the Berlin Obstetrical Society. Brose noted that uterine tumours resembling common fibromyoma have been known to be complicated by metastases in the lungs. Olshausen spoke of racemose sarcoma sometimes seen in the vagina, and sometimes in the uterus, and it is noteworthy that their degree of malignancy varies. Assuredly the vaginal myomas in Strassmann's case were suspicious. The vaginal tumour in the posterior fornix was undoubtedly a cancer.

(154) Placenta Praevia, Kidney in Pelvis, and Contracted Pelvis.

Salemi and Lautard (*L'Obstétrique*, May, 1904) report that a woman aged 25, of small stature and clearly rachitic, was admitted into a hospital at Nice close on term. Already exhausted by a voyage from Corsica she had become anaemic from flooding. The conjugate measured only 9 c.m., and there was a friable bleeding mass in the patulous os, evidently the lower border of the placenta. A firm, oval tumour, distinct from the uterus, occupied Douglas's pouch. The patient was kept at rest for the night; next day, when flooding recurred, version was performed. A live child, over 7 lb. in weight, was delivered. The pelvic tumour, as suspected, proved to be a floating kidney; it was reduced whilst the patient was under anaesthesia. The puerperium was normal.

(155) Missed Abortion.

Orthmann (*Zentralbl. f. Gynäk.*, No 5, 1904) observed this condition in a woman aged 27, subject to mitral incompetence, who had already aborted twice. At the end of October, 1902, she came once more under treatment, and stated that she had not menstruated for five months. The uterus reached to the level of the umbilicus; the parts of the fetus could not be defined nor had the mother felt any movements. There was a little show four weeks later. At the beginning of January, 1903, the condition of the patient seemed unchanged, and towards the end of March a mummified fetus was expelled; it measured hardly 2½ in., but had reached about the third month of development. There was very little liquor amnii. The fundus still lay midway between the umbilicus and pubes. After application of the tampon to the cervix, powerful contractions set in, and the placenta was expelled entire; it appeared as a cast of the uterine cavity 4 in. in length, 3 in. broad, and 2 in. thick. The placental tissues displayed extensive retrogressive changes; numerous minute white patches were detected, and they each showed central softenings so that they were becoming cystic. These changes had originated in degenerated villi.

THERAPEUTICS.

(156) Treatment of Alopecia Areata.

Although much was expected from the use of the "iron electrode" light, during more recent times, this form of light treatment has fallen into more or less disuse. Kromayer (*Deut. med. Woch.*, July 28th, 1904) deals with the treatment of alopecia areata by this means. On comparing the action of the iron light with the carbon light, he finds that the latter has more penetrating power, but although this is of importance in the treatment of such conditions as lupus, which has its deep seat in the cutis, one should not ban altogether a form of treatment which is capable of producing an erythema lasting for weeks, after a few seconds' application. The therapeutic action of the iron light depends on blue, violet, and long-waved ultra-violet rays, as well as a large number of short-waved ultra-violet rays. These latter are the chemical agents which lend to the iron light its activity. The disadvantage of these rays is that they have but little penetrating power. The carbon light is richer in the long-waved rays and in blue and violet rays, and it therefore appears that the application of iron light must be limited to superficial disturbances, while the deeper-seated changes may be dealt with by the carbon light. The iron light has a further advantage that it is comparatively cool, and can be applied without a compression lens. Large areas of skin can be exposed to the light at the short distance of about 4 cm. for a short time—for example, three minutes. Some six seconds after such an exposure a reddening of the skin appears, and may last for days or even weeks. This reddening can be used as the index for the degree of irritation of the tissues. During fifteen months Kromayer has had 32 cases of alopecia under his care, and of these 26 were treated with perchloride of mercury spirit, chrysarobin ointment or eugallol, and either were cured by these means or the treatment was prematurely interrupted by the patient staying away. The remaining 6, after having been treated without effect by these or similar means, were subjected to treatment by iron light. All these cases were extensive and severe, and two were alopecia totalis. In one of the two, the light treatment was carried out from February 25th to May 12th, in fifteen sittings of from half an hour to three-quarters of an hour duration. Each portion of the scalp was exposed to the light for four minutes. The reaction was well marked. The principle followed was to produce the reaction and keep it up for fourteen days, then to pause until the result could be determined, and eventually to repeat the whole process. When seen in June, the patient was found to have hair over the whole scalp, and in some parts the growth was quite luxurious. The other five were treated in a similar manner, and one was completely cured after one treatment cycle, one after three cycles, one after six, and the last one after one cycle. On repeating the treatment, Kromayer found that it takes longer exposure to produce a reaction than at the first application. In one case, a recurrence of the alopecia set in after six months, but this was easily cured by a renewal of the treatment. He therefore claims to have cured all the six cases. Finsen has obtained good results with carbon light in this disease, and considers the result as due to the parasiticidal action. Kromayer, however, does not regard alopecia as a parasitic condition, and believes that the treatment produces its results in response to the inflammatory reaction which the light produces. He further suggests that the treatment might be applied for eczema in those cases in which other means fail. Another possible field of activity for this light treatment may be the disinfection of the skin. These suggestions need following out.

(157) Rheumasan and Ester-Dermasan.
M. FRAENKEL deals with two salicylic preparations for external use (*Deut. med. Woch.*, July 28th, 1904). Rheumasan used as a 10 per cent. ointment gives excellent results not only in acute rheumatic conditions, but also in chronic forms. The author used it for lumbago, sciatica, as well as joint and muscle rheumatism. Some of the cases were particularly obstinate, and nevertheless did very well with this form of treatment. He states that after three or four times of rubbing the ointment in, relief from pain is experienced, and points out that this result is most striking in the chronic cases. It produces an active hyperaemia, which can be increased by first soaping the skin and then rubbing it with ether or spirit. The massage probably enhances the favourable effect. Irritation of the kidneys and disturbances of the gastro-intestinal track were not met with, even after prolonged use of rheumasan. Notwithstanding this, the salicylic acid appears very rapidly in the urine. Ester-dermasan can be used for other conditions as well as rheumatism with good results. It has answered well in helping the absorption of the inflammatory products in acute or chronic parametritis, perimetritis, and salpingitis. Fraenkel thought that it might prove of use in psoriasis, and obtained surprisingly good results both in this disease, in old-standing cases, and in pityriasis versicolor. The curative action depends on the increase of the local circulation and the consequent absorption of inflammatory products.

(158) A New Treatment for Spastic Aphonia.
E. BARTH gives his experience of a new form of treatment which he devised for cases of spastic aphonia (*Deut. med. Woch.*, August 4th, 1904). Although this condition is a rare one, he happened to have three cases of it last winter. The first case showed clonic contraction of the cords during the expiratory abduction, while inspiratory clonic spasms were noted when the patient became excited. During phonation there was only a very narrow space left between the cartilaginous glottis, through which the patient could with great difficulty whisper indistinctly. The respiration was rapid, but no organic changes in the lungs or heart could be found to account for this. On careful treatment this last-named symptom disappeared, but the aphonia resisted all attempts to improve. He then thought that if one interposed something between the vocal cords one might be able to prevent the excessive closing of the glottis, which rendered phonation impossible. He therefore cocainized the larynx and passed a probe into the glottis. During this he was able to notice that phonation became possible. On removing the probe the voice remained fairly well, and with a little careful practice regained its natural tone. The result, however, had disappeared by the next day, but on introducing a larger instrument (endolaryngeal electrode) the result lasted longer. From time to time the aphonia reappeared, but could always be removed by this means. The second and third cases were of a similar nature, but the result of the interposition of the probe sufficed to cure the condition entirely. Lastly, he records a case of spastic aphonia in a tuberculous subject, in which the method had to be repeated several times, but which was successful in the end. It is necessary to direct the patients to practise the voice after the probe has been passed so that they may be able to relearn the proper position of the vocal cords in phonation, or rather the feeling of the proper position. The method shows that the condition is a disturbance of co-ordination and the relief of it must depend on the severity of the central lesion which is its cause.

PATHOLOGY.

(159) Bacteria in Chinese Dysentery.
MORGENROTH (*Archiv für Schiff- und Tropen-Hygiene*, Band viii, Heft 1) has made investigations as to the bacteria found in cases of dysentery in China. Amoebae were occasionally found in the stools of dysentery patients in Tientsin, but they were often absent even in cases going on to the formation of liver abscesses. The pus from such abscesses might be sterile, but more often either the pus or the lining membrane of the abscess contained bacteria, especially streptococci and staphylococci. Cells closely resembling amoebae, but never showing amoeboid movements, were often present in the pus. A local abscess never resulted when the pus or pure cultures of the bacteria from the pus were injected into animals, although a fatal streptococcus septicaemia occasionally developed. Bacilli were also found in the pus which could not be distinguished from the bacilli coli communis, except from the fact that they were agglutinized on the addition of diluted blood serum from the patient; the serum of other dysentery patients did not have this effect. By means of plate cultures a bacillus was found in the mucus of the stools which, as far as staining properties and growth on agar, gelatine, etc., were concerned, could not be distinguished from the bacillus described by Shiga and Kruse in Japanese dysentery. Agglutination experiments, however, showed differences to exist in some cases, for these bacteria were agglutinized in 65 out of 80 cases by the addition of the blood serum of different dysentery patients, while Shiga's bacilli were only agglutinized in 11 cases. When injected into rabbits the bacilli led to the formation of a local abscess, from which pure cultures of the bacilli could be again obtained. Slimy motions also often followed the injections. In one case a rabbit which had been inoculated accidentally died, and its small intestine was found to be filled with blood and mucus, and there were patches of necrosis of the mucous membrane. As a rule the rabbits recovered. The effect of the injections on young dogs was more striking. The local reaction was marked, severe diarrhoea set in, and the animals died after twenty-eight hours. The small intestine was then found filled with blood and mucus, and the inner wall speckled by innumerable small ecchymoses beneath the mucous membrane. In the case of one dog which was inoculated a second injection was made of blood serum from a sheep, which had previously reacted to an injection of a pure culture of the bacilli, and which had recovered. In this case the dog recovered, although it showed at first signs of a general acute illness, with swelling at the site of injection. Eleven specimens of pure cultures of the bacilli were taken to Europe and tested by Lentz at Koch's Institute. In three cases the bacilli were found to be identical with those described by Shiga and Kruse, and in four cases identical with those described by Flexner. It was therefore clear that there must be a group of nearly-allied bacilli giving rise to dysentery. This view is supported by the great differences in symptoms and cause which occur in different attacks of dysentery. The author suggests that as a preventive against the spread of the disease to Europe the stools of patients convalescent from dysentery should be examined for bacteria before the patients are allowed to embark on transport vessels.

(160) Pathogeny of Fat Necrosis.
A. W. HEWLETT (*Journ. of Med. Research*, Boston, May, 1904) undertook a research to find the actual way in which pancreatic disease produces fat necrosis, which has been shown by previous writers to consist in a splitting of fat molecules into glycerine and fatty acids. It has been further shown that the necrotic areas contain a fat-splitting ferment, probably that of the pancreatic secretion—that is, lipase. But as fat necrosis does not only occur in the immediate neighbourhood of the diseased pancreas, but also at a distance—for example, in the pericardial fat and in bone marrow—it seems as if, at any rate in these latter instances, lipase must reach its area of operation by the lymph and blood currents. By way of confirming this, lipase was found by Opie in the urine of a fatal case of acute haemorrhagic pancreatitis; unfortunately, however, this discovery is not above suspicion of error. Hewlett, therefore, set to work to produce lesions of the pancreas in dogs, whose urine was tested (with careful controls) for lipase before and after operation. The method employed was to add ethyl butyrate to urine taken before and to urine taken after operation; lipase, if present, produced a great increase in the acidity of the urine by liberation of butyric acid. All possible precautions were taken to exclude errors. After ten experiments, which are described in detail, he comes to the following conclusions: 1. It is possible to show the presence of lipase in the urine and to roughly estimate its amount. 2. Very little, if any, lipase is present in normal urine. 3. Lipase appears in the urine after a variety of "insults" to the pancreas of dogs. 4. It was found in greatest amount as a result of experimental acute haemorrhagic pancreatitis. 5. It was also found after obstruction of the pancreatic duct. 6. Probably severe pancreatic trauma can cause the appearance of lipase in the urine. 7. The above are the conditions in which fat necroses are most apt to occur in human pancreatic disease.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(161) Tabes.

P. J. Möbius (*Jahr. der in. und ausland. Gesem. Med.*, Jahrgang, 1904, Heft i) reviews the publications of the last year on the subject of tabes. There has been a tendency to class under the name of tabes lesions differing in site from those of ordinary tabes: thus the syphilitic spinal paralysis of Erb may be called motor tabes, and the chronic ophthalmoplegia following syphilis tabes of the eye muscles. The pathological anatomy of the subject has been studied with the utmost care in France. Nageotte recognizes syphilis as the cause of tabes, but holds that a real syphilitic meningitis is present, with a spread of inflammation to the nerve roots. Both Nageotte and Marie appear to overlook the systemic nature of the disease, the primary affection of the eye muscles, and the uniformity of the process as a whole. Thomas and Hauser have published a large work on the anatomy of tabes. They differ from Nageotte, and believe that a primary segmentary death of the posterior roots and spinal ganglia occurs, resembling a toxic nerve atrophy. The view that syphilis is essential to the production of tabes gains ground, especially in France. "Traumatic" tabes is still spoken of, but scarcely needs serious consideration. Nonne, although he describes cases which speak strongly for syphilis as the cause of tabes, recognizes tabes without syphilis. Pitres has inquired into the family history of 209 married tabetic patients. Of these, 42 had no children; 32 had amongst them 67 children who were stillborn or died soon after birth; and 135 had 286 living, and for the most part healthy, children, and 230 who were stillborn or died almost immediately. Among the deaths a larger proportion belonged to the children of the fathers who acknowledged to syphilis. Brooksbank James describes a family in which the father was syphilitic, and two, if not three, of the children suffered from tabes. Brissaud points out that the classical type of locomotor ataxy appears to be less frequent of late, and to be giving way to an incomplete, slowly advancing, stationary, or even retrogressive, form of the disease. How far treatment by mercury has led to this result is still a matter of dispute. Collins finds loss of the Achilles tendon reflex in 88 per cent. of cases, loss of knee-jerk in 84 per cent., and of the triceps in 13.3 per cent. According to Sarbo, the age of onset is earlier amongst the working than amongst higher classes. Lightning pains were the earliest symptom in 67 per cent. of his cases; at a later stage the symptoms in order of frequency were, first, lightning pains and Romberg's sign; then loss of the Achilles tendon reflex, loss of knee-jerk, reflex pupil changes, bladder and optic nerve changes. Kollarits, after careful study of the different reflexes, finds that the Achilles tendon reflex is most frequently lost. Carrez has tested the sensitiveness to deep pressure in different regions of the body, and finds that although analgesia as a rule progresses with the disease, isolated sensory changes may be present at any stage: for example, loss of sensation in the tongue may occur as an isolated sensory symptom early in the disease. According to Förster, the changes whether of increase or decrease in the innervation of muscle groups are due to the loss of centripetal impulses, and tabetic crises are the expression of a permanent state of irritation, culminating in an explosive paroxysm in the sensory and motor-secretory fields. Pierret differentiates between a purely motor or a purely sensory tabes, with brain symptoms on the one hand, and a true meningo-encephalitis on the other. Cassirer looks upon tabes and general paralysis as distinct diseases, and believes that paralysis is too often diagnosed in cases of tabes with mental disturbance. The more correct opinion is, however, probably that paralysis is more often overlooked, but the difficulty in establishing a diagnosis is such that the question cannot be absolutely settled. O. Meyer, amongst 30 cases of tabes with mental symptoms, has had no case of paralysis. Widal and Genossen have given a new method of diagnosis. The fluid obtained by lumbar puncture is centrifugalized, and the deposit examined microscopically. In healthy subjects no small lymph corpuscles can be seen, but in cases of syphilis and tabes six to ten at least of these bodies are visible in the field. Babinski and Nageotte have found lymphocytosis present in 25 out of 26 tabetic patients, and other writers have obtained similar results. Leredde holds both tabes and progressive paralysis to be curable by active mercurial treatment, but in some of the cases he gives the presence of tabes appears to be doubtful, while in others its onset has followed quickly on syphilis. Lejeune supports Leredde, and even regards paralysis as more amenable to treatment than tabes.

(162) The Relation between Epilepsy and Acidity of the Urine.

Galdi and Tarugi (*Il Morgagni*, June, 1904) describe a case in which the precise correspondence between epileptic attacks and the appearance of labial herpes led Professor de Giovanni to suspect that the epileptic fits were connected with hyperacidity of the urine. Numerous examinations of the urine were made and tabulated by the authors, who find themselves in a position to affirm the existence of a connexion between epilepsy and urinary acidity, and to deny the existence of a connexion between epilepsy and urinary toxicity. They measure the toxicity of the urine by means of the amount of urine per kilogram of body weight, which must be injected into a rabbit's veins to kill it. They give reasons for rejecting the plan of diluting the urine until it is isotonic with rabbit's blood. They attach great importance to experimenting with rabbits of the same kind, and find that the resisting power of rabbits to urinary toxins varies with the colour of the animal, black rabbits resisting most and white rabbits least. Fifty-six examinations of urine are recorded, including eleven examinations in which the toxicity was measured experimentally. The authors carefully distinguish toxicity or the power to cause the death of the animal experimented upon from the power to cause convulsions, and find the two properties to be quite distinct. The conclusions at which they arrive are as follows: (1) The specific gravity of the urine was related with the acidity but not with the toxicity of the urine. (2) The acidity did not correspond to the toxicity of the urine. (3) The increase of the acidity of the urine coincided with the diminution and ultimate disappearance of the power to cause convulsions. (4) The urine in this patient was generally hypotoxic, a few times hypertoxic, but only when tested in the intervals between the fits. The authors, therefore, could trace no causal relation between the increase of toxicity and the epileptic fits. (5) The power to cause convulsions was always present in the urine passed just before a fit, never in that passed after. (6) There was a relation between the urinary acidity and the fit inasmuch as the acidity was increased after a fit. Basing their opinions on these observations and deductions the authors adopt and amplify the theory of Ceni, who held that epilepsy was caused by two different substances. They hold that one of these is an acid substance circulating in the blood in the period between the attacks and stimulating the cells to produce a second substance which has the power of directly causing convulsions. The authors also record a series of observations on the comparative powers of resistance of the red blood corpuscles, just before and just after a fit and in the intervening period, to different hypotonic solutions of sodium chloride. They find this resisting power diminished in the epileptic patient, the diminution being more noticeable just before a fit, and less so just after it than during the intervening period.

(163) Pericardial Effusions.

Thayer (*Bull. Johns Hopkins Hosp.*, May, 1904) discusses fully the indications and procedure in paracentesis for this condition. The amount of fluid the sac may contain is enormous. Verney extracted 900 c.cm. of fluid from the pericardium of a man of 23, on two occasions separated by an interval of three days. At the autopsy twenty-three days later the sac contained over 4,000 c.cm. of yellowish fluid. The largest effusions are usually purulent, and records of the evacuation of 1,000 to 2 000 c.cm. of pus are not extremely rare. The opening of the pericardium should be reserved for those cases only where the limits of the tolerance of the heart are passed or the phenomena of cardiac dynamia begin to appear. Great dyspnœa, irregular and rapid pulse, extensive precordial dullness, and difficulty in appreciating the heart sounds demand intervention whatever may be the chronicity of the affection. Rotch's sign is not always reliable in diagnosis, as dullness in the fifth right space may occasionally be present in dilatation or hypertrophy of the heart. The essential point was shown by Ewart, who called attention to the fact that it was the shape of the area of relative dullness

which is important. The right side of the heart, however hypertrophied, always has a curved outline, which forms an acute angle with the line of dullness of the liver. If there be fluid in the pericardium the dullness is triangular and the angle with the liver becomes obtuse. On general principles it is best to aspirate at that point at which the most perfect drainage can be obtained. The dangers to be avoided are: (1) Infection of the pleura. It is often difficult to avoid the pleura, as the sternal ends of the fifth and sixth spaces are not always uncovered by pleura; but in ordinary sero-fibrinous pericarditis the danger of serious spread is slight; (2) injury to the internal mammary vessels. These can be avoided by puncturing in any interspace immediately contiguous to the sternum or 4 cm. to the left; (3) puncture of the heart. This has always to be considered, but the consequences are not, as a rule, serious; still, several deaths have occurred. It is probably true that in large effusions the heart is retained in place by the great vessels while the diaphragm descends, but its relation with the chest wall is doubtful. Skoda believed that the heart tends to fall backwards, but Shapojshnikov has found that in most cases the heart remains close to the anterior wall of the sac. The fifth space, either close to the sternum or 5 cm. or 6 cm. away, has usually been chosen as the best position for puncture: but Thayer agrees with Shapojshnikov, who advises aspiration in the sixth left space in very large effusions where the diaphragm is depressed and the semilunar space is dull. In other cases he prefers the third or fourth space close to the sternum, provided there be dullness at that point. In all cases an exploratory puncture with the hypodermic needle should be performed.

SURGERY.

(164) Carcinoma of the Prostate.

Hawley (*Annals of Surgery*, June, 1904) holds that carcinoma of the prostate is more common than was formerly believed, and that radical cure of this disease is possible in early cases. It is, the author states, often unrecognized, both during life and on macroscopical *post-mortem* examination. In recent histological investigations made by Albarran and Hallé, several specimens of cancer of the prostate have been found among those labelled as simple hypertrophy in the Musée Guyon. The disease, it is believed, is decidedly operable before metastasis has taken place, and as decidedly inoperable before secondary invasion of the bladder and glands and bones. The operative treatment in suitable cases should consist in liberal perineal exposure of the prostate after preliminary exploration of the bladder and periprostatic structures, and in total intracapsular enucleation. In a paper on the operative treatment of hypertrophied prostate (*Bull. et Mém. de la Soc. de Chir.*, No. 21, 1904), Pousson points out that recently-acquired knowledge with regard to the histological lesions of prostatic enlargement has led surgeons to consider the question of the indications of prostatectomy from a fresh point of view. In addition to the essentially benign forms of senile degeneration of the gland, presenting a glandular, a fibrous, or a mixed type, there is also a form of malignant tendency which, commencing as true adenoma, may undergo a conversion into some form of epithelioma. In five out of twenty-three enlarged prostates removed by the author, the prostatic new growth deviated more or less from the benign type, and in one instance the disease gland presented the aspect of carcinoma. If clinical investigations confirm these results of pathological research, and show that prostatic hypertrophy is often complicated by malignant degeneration, it will become necessary to widen the field of surgical intervention which has hitherto been restricted to cases of dysuric trouble. In the absence of positive signs which would permit an early diagnosis of this conversion of a benign into a malignant growth, it would be prudent, the author holds, for the surgeon to look with suspicion on all cases of prostatic hypertrophy in which the disease, commencing too early or too late in life—that is to say, before the age of 55 or after that of 70—takes a rapid course, and gives rise even before the period of retention to haematuria and pain. The prostate in such cases will usually be found on rectal examination to be of stony hardness, tender, and irregular at its surface.

(165) Treatment of Wounds by the Open Method after Skin Grafting.

Brüning (*Zentralbl. für Chir.*, No. 30, 1904) states that he has in cases of skin grafting by Thiersch's method on both fresh and granulating wounds obtained excellent results by leaving the seat of operation exposed to the open air during the period of after-treatment. This method, he states, is especially indicated in cases in which it is thought inadvisable to administer a general anaesthetic. When skin grafting has been practised over a large open surface, perfect rest of the patient for some hours after the operation is regarded by the author as an important condition of success. In the open method of treatments the grafts, it is asserted, have usually contracted close adhesions by the end of the first week. The advantages of this method are, according to the author, much greater than those obtained by the usual plan of treatment by thick and close dressings. When the wound is covered by "protective" and, over this, by ointment, and the external air is thus shut out, the grafts in consequence of the retention of serous discharge become displaced and are macerated. There is much less risk in the open method of elevation and displacement of the grafts by effused blood, as coagulation and desiccation take place more readily when blood is exposed to the air. There is, of course, no risk of disturbance of the grafts by pressure or accidental movement of the dressing.

(166) The Immediate Dangers of Ligature of the Common Carotid.

Guinard (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 24, 1904), in summing up an important discussion on the immediate prognosis with regard to grave cerebral lesion of ligature of the common carotid, expressed the opinion that in a healthy condition of the trunks and branches of the carotid and vertebral arteries on both sides, ligature of the common carotid on one side is not likely to be followed at the time of the operation by any symptoms of cerebral disturbance. Much importance is attached to the condition that the anastomotic channels remain healthy and intact. There are, however, certain conditions which render ligature of the common carotid a very dangerous operation. In cases of tumours of the face and neck, in which one or more branches—the lingual and facial, for instance—have already been tied, the chief anastomosis between the carotid systems of the right and left side have been much disturbed. Profuse haemorrhage also is an unfavourable condition, as the arterial system may fail in sufficient tension for forcing the blood through the small collateral vessels. Disease of the arterial system, such as atheroma, must also be regarded as a contraindication. Aneurysm, however, is regarded as a purely local lesion, which by no means indicates a morbid condition of the general arterial system.

MIDWIFERY AND DISEASES OF WOMEN.

(167) The Treatment of Uterine Myomata.

J. Pfannensteil (*Deut. med. Woch.*, March 31st, 1904) says that the only rational treatment of myomata of the uterus is extirpation, as this is the case for every other new growth. As long as the operation was a severe and dangerous one, the indications were limited to cases in which life was actually threatened, but to-day, thanks to the improved technique and asepsis, symptomatic treatment is becoming less and less the proper course to pursue and the chief question is whether one should perform a radical or conservative operation. Pfannensteil does not advise the extirpation in every case as soon as the diagnosis has been made, but reminds his readers that one must consider each case on its own merits, and above all one must bear in mind that while the symptoms are mild an operation may be safely performed, but if one waits until they have become severe, the risk to the patient increases materially; an operation performed for slight symptoms prevents those dangers which may threaten life at a later date. The symptoms of myomata are to a great extent due to the size and seat of the growth. Tumours which lie high up in the abdominal cavity generally reach a very voluminous size before they produce marked suffering; on the other hand, deeply-situated growths, and especially subperitoneal ones cause distress, and under circumstances even dangerous pressure symptoms, at an early date. He finds that among the symptoms produced in this way, haemorrhage is the most important one, but mentions a number of others, including inflammation of the tumour with disintegration, twisting of the pedicle and subsequent necrosis, thrombosis, and the so-called "malignant degeneration." He points out that it has been recently made out by various observers that myomata are by no means so benign as they were for-

merly supposed to be. The next point dealt with is the teaching that the majority of myomata disappear at the menopause, which teaching he believes is not only wrong in the larger number of cases, but in his experience many women's lives have been sacrificed by waiting for this spontaneous cure, the patient dying of haemorrhage during the climacteric period. Frequently the tumors continue to grow after this epoch, and, since the majority of myomata occur in young women, one has to allow the patient to wait in discomfort, pain, and even danger for a frighteningly long time. The prognosis of operation is at the present time exceedingly good, and many of the deaths which are ascribed to the operation are avoidable, if one desists from unreliable and even harmful intrauterine interferences, which are carried out before having recourse to operation. He analyses the causes of death after operation carefully and comes to the conclusion that the majority of them are caused by infective peritonitis, which has its origin in the uterus itself. There has been a previous curetting, cauterization, or plugging, which has produced a focus of infection. In his opinion, injections of ergotine are directly harmful and never do the least good. In dealing with the indications for the operation he puts the absolute size of the tumor in the first place, irrespective whether it produces symptoms or not. Tumors which produce symptoms; submucous myomata, which bleed readily; deeply seated myomata, which are growing excentrically; pedunculated subserous tumours; rapidly growing tumours of all kinds, and all complicated cases are to be operated on without delay. It is best to operate in the post-menstrual period, as long as there are no reasons which render the operation at any given time unwise (for example, fever or any intercurrent affection). As contraindications, he mentions those diseases which may be expected to terminate fatally in a comparatively short time, and in a few cases, local conditions in the genitals, which may render the operation technically very difficult. The next point considered is how one should operate. The ideal operation naturally is the conservative removal of the growth alone. But in many cases the uterus is the seat of chronic changes, in the form of metritis and endometritis, and after the removal of the tumour the patient still will have to suffer. The performance of the conservative operation as a principle has brought the whole operation into discredit. Large interstitial myomata, multiple tumours, and diffuse adenomyomata must be removed with the uterus regardless of the disturbance of function to the organ. Submucous polypoid growths and those submucous growths which are placed inside the uterine cavity may be dealt with conservatively. Pfannensteil considers that one should always attempt to retain the ovarian functions in women of conceptionable years. He regards the operation by laparotomy in the majority of cases as the best method, but in each case one must choose the time and method of operation according to the peculiarities of the case. If performed carefully, at the correct time and by a well-planned method, the mortality of myomotomy will be found to vary between 4 and 5 per cent., a mortality which may be regarded as very satisfactory.

(168) Pigmentation during Childbed.

MORALLER (*Zentralbl. f. Gynäk.*, No. 4, 1904) attended a primipara, aged 23, who had been delivered spontaneously; double pyosalpinx developed afterwards. Already, during the ninth month, pigmentation of the skin, from the pubes up to the breast, had been noted; this greatly increased after delivery, so that on the eighth day the integuments below the umbilicus were brownish black, whilst from the navel to the breasts they were of a rich brown colour. Lukewarm poultices were applied to promote absorption of the pyosalpinx. Then, as the tubal complication subsided, the pigment disappeared, coming off in the form of small brown epidermic scales. The pigmentation was doubtless related to the genital functions, and was homologous to chloasma and to the pigmentation of the nipples and linea alba.

(169) Jaundice in Pregnancy.

LOURICH (*Zentralbl. f. Gynäk.*, No. 24, 1904) reports a case where two sisters both became jaundiced during pregnancy. The elder is a 5-para. During the third pregnancy symptoms of cirrhosis appeared. Gestation occurred four times in the younger sister, inclusive of two abortions; one child, 2 years of age, survived. In both patients the jaundice disappeared after delivery. There appeared to be a family tendency to jaundice. The pregnancies had been carefully watched, by the same physician, in both sisters.

(170) Abdominal Pregnancy: Placenta in Tube.

PESTALOZZA (*La Ginecologia*, No. 2, 1904) operated on a woman for secondary abdominal pregnancy. The fetus lay in Douglas's pouch, whilst the placenta occupied the ampulla of the Fallopian tube, the cord passing out of the ostium; its head was in extreme extension, as in face presentations. Douglas's pouch had not been spacious enough to lodge the fetal body conveniently. Pestalozza compares this case to another described by Leopold, where the fetus was expelled from a ruptured uterus, yet continued to develop in Douglas's pouch.

THERAPEUTICS.

(171) Suprarenin.

MÜLLER (*Münch. med. Woch.*), Nos. 5 and 6, 1904) records experimental observations on the action of suprarenin when injected into skin, mucous membrane, muscle, and the parenchymatous organs. A solution of hydrochloride of suprarenin in physiological salt solution was employed in a strength from 1 in 10,000 to 1 in 1,000. Injection is followed by anaemia of the tissue, so that incisions can be made without haemorrhage unless a large vessel is cut; the solution also appears to restrict haemorrhage from the larger vessels to a certain degree. A series of liver resections were done on animals, after injection of the area about to be removed, with a fine needle and a solution of 1 in 1,000. Not one of the dogs operated on died from haemorrhage at or after the operation. Necrosis of the injected liver tissue at the borders of the resection wounds did not occur in any case; the latter healed in an entirely normal manner. The kidney was similarly operated on with the same satisfactory results. Rib resection, excision of salivary glands, laryngectomy and other operations were also done on dogs after injection of the solution into skin, subcutaneous tissue, and muscle, with a complete absence of haemorrhage when the larger vessels were tied and the incisions restricted to the injected area. Symptoms of intoxication were absent. Suprarenin will stand long sterilization by heat without damage; it is best used in a freshly-prepared solution in physiological salt solution—1 in 10,000 to 1 in 5,000 in the case of tissues not highly vascular, and 1 in 2,000 to 1 in 1,000 in the case of the parenchymatous organs. Its effect is obtained in from one to two minutes with the more dilute solutions, and in about thirty seconds with the more concentrated. Müller advises that in adults not more than 10 c.cm. of a 1 per cent. solution should be injected, since this amount is sufficient for all purposes. It is worthy of note that when injected to the amount of 1 c.cm. of a 1 in 20,000 or 1 in 10,000 solution into the heart muscle it stimulates the action of the latter; it may therefore be of value in syncope.

(172) Trunecek's Serum for Atheroma and Arterio-sclerosis.

ENRICO DE SILVESTRI (*Progresso Medico*, No. 13, 1904) describes experiments in the treatment of atheroma and arterio-sclerosis by the injection of an inorganic serum invented by Trunecek, and stated by him to cause improvement in the subjective disturbances due to degeneration of the great vessels, a subclavian aneurysm and other equally well-marked diseases proving amenable to such treatment. The serum contains: Sulphate of soda, 0.44 gr.; sodium chloride, 4.92 gr.; phosphate of soda, 0.15 gr.; carbonate of soda, 0.21 gr.; sulphate of potash, 0.40 gr., to 100 gr. of distilled water. It is not a serum in the sense of containing any albumenoid material. Trunecek began with injections of 1 c.cm., increasing the dose by $\frac{1}{10}$th c.cm. to $\frac{1}{2}$ c.cm. every four or five days until he reached a maximum dose of 9 c.cm. The present author, beginning with 1 c.cm., increased the dose daily by 1 c.cm. until he reached a maximum of 9 c.cm. or 10 c.cm., and then diminished it to 5 c.cm. The injections were made into the muscles of the gluteal region. There was no appreciable pain or induration, and therefore no inducement to use the salts in the form of a rectal instead of an intramuscular injection. No other treatment was used during the time that the patients were under Trunecek's treatment. Nine cases are recorded. In every case the arterial tension underwent a diminution of from 25 to 120 mm. Hg. The treatment had a favourable action on the sensory disturbances due to atheroma, such as cramps and tingling in the extremities, on the functional disturbances of arterio-sclerosis, even during the first period or cardio-sclerosis,

on the dyspnoea, feebleness, painful palpitation, habitual sense of oppression, precordial anxiety, violent headache, and noises in the ears. It had no good effect in the later stages of dilated heart with a systole. It was useful in slight forms of cerebral sclerosis due to diminished elasticity of the arteries. It was useless in severe cases of cerebral arterio-sclerosis and in cases with motor symptoms. It did nothing for a case of arterio-sclerosis with severe neurasthenia. Trunecceck's theory was that atheroma was due to the deposit of calcium phosphate, and that his serum promoted the solution of this salt. The author found that this view was supported by experiments carried out *in vitro*, though he does not accept so simple an explanation of the nature of atheroma and arterio-sclerosis. He recommends the treatment for the classes of cases mentioned above, and suggests that it can be repeated if the effects prove to be only temporary.

(173) The Early Reaction of Roentgen Rays.

Roentgen rays act harmfully chiefly on the epithelial structures, and can produce a falling out of the hair, or the healing of a cancroid without producing a dermatitis. By the application of larger doses of the rays, inflammatory changes are produced, and these changes affect the vessels, and probably also the nerves. The characteristic features of these destructive changes consist in the occurrence of a long period of incubation. H. E. Schmidt finds that this period usually extends over one to four weeks (*Deut. med. Woch.*, May 12th, 1904). Occasionally there are premonitory signs of this Roentgen reaction, which take the form of a peculiar turgescence or a pigmentation of the skin, or more commonly of a diffuse yellowing of the skin of a transitory nature, accompanied by a feeling of itching or burning. The premonitory signs of the ordinary reaction has nothing in common with the condition which he speaks of as the "early reaction." This is a typical erythema, which takes place within a few hours of an active application of the rays. Schmidt finds that this occurrence is by no means rare. In discussing the method of production of this early reaction he points out that, in spite of the opinion expressed by Holzknecht that the character of the tubes had a great deal to do with it, he has found that the same tube has produced it in some persons and not in others, and that it can be readily separated from the premonitory signs of the late reaction. The early reaction takes place as frequently with new tubes as with old ones which have become coloured violet. It appears to depend on the individual susceptibility of the person, but the active cause lays in the *x* rays themselves.

(174) Aristochin in Whooping Cough.

Aristochin is an absolutely non-poisonous derivative of quinine, and has been recommended for pertussis. A. Bargebuhr (*Deut. med. Woch.*, June 30th, 1904) has tested its action in 32 cases; and although he considers that one should show utmost precaution before forming an opinion that a drug acts favourably in pertussis, he believes that this drug exerts a beneficial influence on the course of the disease. His patients were all children, save one, who was the mother of one of the little patients. The youngest was 3 months, and the eldest child was 6 years. In 26 of the cases the attacks became less frequent and less severe, mostly within a very short time. When convulsions occurred the aristochin appeared to stop them, and the fever generally was lessened or removed by the drug. In 6 cases it was incapable of affecting the attacks: in 3 cases the action was strikingly prompt, and, especially in the case of the mother, complete. Testing it in bronchopneumonia and bronchitis he found of no value, and suggests that it might be used as a means of differential diagnosis between these conditions and the catarrhal stage of pertussis, in which he has obtained excellent results. With regard to dosage, he found that for children it was of no use to give less than 1 decigram two or three times a day, while, as a rule, he gave as many decigrams as the children were years old. The mother received ½ gram twice a day. The taste allows of it being taken either in any fluid or together with a little sugar, and in not a single instance did he meet with any deleterious effects. He considers that it is worth while for other practitioners to try the remedy for themselves.

PATHOLOGY.

(175) The Anatomical Relationship between Acromegaly and Tumour of the Hypophysis.

Cagnetto (*Virch. Arch.*, Bd. 176, Hf. 1) describes 2 cases of tumour of the hypophysis from the point of view of their pathological anatomy. In the first case, in which the characteristic signs of acromegaly were absent, a soft spongy tumour the size of a nut came forwards from the sella turcica and, after destroying the tubera cinerea and the corpora mammillaria, made its way into the cavity of the third ventricle and encroached on its walls. Histologically the tumour was a telangiectatic sarcoma. It did not appear to have arisen from the anterior section of the hypophysis, this being crushed down on to the floor of the sella and reduced to a narrow strip of glandular tissue. No chromophil cells were seen in the tumour and only a very small amount of colloid material. The second case presented typical signs of acromegaly. The tumour was of larger size, it had eroded the lamina quadrilatera of the sphenoid and the floor of the sella turcica; there were also numerous small metastases in the spinal canal. Histological examination showed a hyperplastic process with adeno-carcinomatous changes, and the presence of colloid matter and chromophil cells. The first of these 2 cases showed, with a marked interference with the function of the hypophysis, no acromegalic changes; the second, which, in spite of the distinct and probably old-standing malignant degeneration of the tumour, showed even in the later period an advancing enlargement of the extremities, speaks rather in favour of the hypothesis that acromegaly begins as a primary affection of metabolism, which excites a hyperplastic process in the bones of the skull and limbs and sometimes in a selective manner in the hypophysis coincidently.

(176) Negri's Corpuscles in Rabies.

Amato (*La Rif. Med.*, June 8th, 1901) has carried out a series of experiments in relation to the above corpuscles described by Negri last year. Amato examined 53 animals, and found Negri's corpuscles constantly and exclusively present in various animals. In a dog experimentally inoculated, and dying of paralytic rabies, the corpuscles were found, but very sparsely, in the cornu amonis, brain, and cerebellum. The number and size of the corpuscles does not seem to bear any relation to the virulence of the rabies or to its course. In the majority of cases the corpuscles were intracellular, but sometimes they could be seen outside the cells. They react to the usual staining reagents, but sometimes with Nissl's method a central nucleus could be stained blue, whilst the ground substance stained with the acid colour. The presence of a distinct nucleus could not, however, be demonstrated with certainty. The corpuscles were found in large quantities in the spinal and Gasserian ganglia (especially in the rabbit). Many of them were surrounded with a clear halo. The corpuscles reacted to iodo-iodide solution like red blood corpuscles. In rabbits inoculated with rabies subdurally or through the anterior chamber, and in vagrant dogs, the cornu amonis seemed to have a greater virulence than the bulb. This difference did not exist when the rabbits were inoculated in the sciatic.

(177) Experimental Syphilis in the Chimpanzee.

Arnal and Salmon (*Ann. de l'Inst. Past.*, July 25th, 1904) report on the histological features of the lesions produced by Metchnikoff and Roux in the chimpanzee by inoculation of syphilitic virus. Two animals were infected. The female presented a chancre on the prepuce of the clitoris; this showed signs of a secondary infection, and possessed no particularly characteristic features. The animal had also a secondary syphilitic eruption forty-nine days old; histologically the secondary lesion showed a thinning of the epithelium, with mononuclear infiltration below; the inflammation appeared to be in course of retrogression, shown by the proliferation of connective tissue and the relatively small number of mononuclear round cells. More important and more characteristic were the lesions in the second animal—a male. The epidermis was intact over the chancre, thin at the centre, and hypertrophied at the margins. In the dermic tissue buds of the Malpighian buds were present, with numerous ramifications. The cellular tissue of the dermis had disappeared, and was infiltrated with fibrin containing serum and large numbers of leucocytes of the plasma cell type; these were grouped in particular around the arterioles. Endophlebitis of a vein in the subcutaneous tissue was observed. This histological picture is identical with that found in human chancre.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(178) A Rare Localization of the Typhoid Bacillus.

Ravenna (*Il Policlinico*, May and June, 1904) reports a case of typhoid infection leading to death from noma and meningitis, but showing after death no sign of intestinal lesions. The paper starts with a prolonged examination of the views expressed by previous authors with regard to the causation of noma and the micro-organisms found in connexion with it. It contains also a critical record of earlier cases in which meningitis has been found to be due to the typhoid bacillus, with or without intestinal lesions. The patient, aged 15 years, was attacked by typhoid at the same time as a sister in the course of an epidemic in Torreglia. The fever lasted three and a half weeks, and after a few days of apyrexia noma followed. The condition grew rapidly worse. The patient entered the hospital in a dying condition, and there was no doubt about the diagnosis of noma following typhoid. The autopsy was performed twenty-four hours after death. A large part of the left cheek was in a state of necrosis. The meninges contained a yellow, serо-purulent exudation. The brain and heart were anaemic. The spleen was twice the normal size, soft in consistency, and of a deep-red colour on section. The mesenteric glands were distinctly swollen, and the cut surface showed signs of medullary infiltration. The kidneys were in a state of acute parenchymatous inflammation. The intestine, examined minutely throughout its length, showed no signs of old or recent inflammatory processes, no swelling of solitary follicles or Peyer's patches, no ulcers or cicatrices. Microscopic examination of the necrosed area in the cheek showed the ordinary signs of necrosis, with dense masses of micro-organisms in the middle of the area, and towards the spreading edge two organisms only; cocci found sparingly, and a bacillus, identified for reasons given below with Eberth's bacillus, found in larger numbers. Similar cocci and bacilli were found in sections of the spleen and cultivated from the spleen juice, and the bacilli were cultivated from the blood. The same bacillus was also found in the meningeal exudate, in sections of one of the swollen meningeal glands, and in the liver, but not in the kidneys. The bacilli were from $1\frac{1}{2}\mu$ to 3μ in length and from $\frac{1}{2}\mu$ to 1μ in thickness, had rounded margins, often showed an empty space in the centre, were very mobile, stained well with fuchsin-Ziehl, and were decolorized by Gram's method. They retained their vitality, and after two months grew rapidly when transplanted to a fresh medium. They were quickly agglutinated by the serum of a typhoid patient. In all these respects, and also in their method of growth on different media and in their effects when inoculated into animals, they resembled Eberth's bacillus. A very complete examination, therefore, established the existence of a septicaemia due to the typhoid bacillus without apparent intestinal lesion, a sero-purulent cerebro-spinal meningitis due to the same bacillus, and a noma of the left cheek with the typhoid bacillus as the most plentiful bacillus at the growing edge of the diseased tissue. The author considers that the bacilli probably entered the body through the intestinal wall and thence passed to the mesenteric glands. The time from the onset of the disease to the date of the necropsy was too short to allow of the possibility of typical typhoid ulcerations having formed and been healed, but it was not too short to admit the possibility of slighter atypical intestinal lesions having healed after allowing the passage of the bacilli. It is possible also that an intact intestinal mucosa might allow the passage of the bacilli without at any time presenting recognizable lesions. The author also suggests, as an alternative explanation of the typhoid septicaemia, that the bacillus may, as has been shown to be possible, have been long domiciled in the liver, and may thence have spread to the other organs. As an appendix to this case the author more briefly describes bacteriological researches into a case where an abscess of the breast led to pyaemia and noma, soon followed by death. No spirilla or fungi were found in the necrosed tissues, but a coccus most abundant in the central part of the dead tissue and a bacillus, with characters corresponding to those of the bacillus fluorescens liquefaciens, found most abundantly towards the margin of the affected part, and slightly infiltrating the healthy tissues.

(179) Perityphlitis, Peritonitis, and Meteorism.

A. Oppenheim says that if any disease should be understood by the general practitioner, perityphlitis is that disease (*Berl. klin. Woch.*, February 1st, 1904). It is the general practitioner who has to diagnose the cases early: the result of his correct observation will lead to the use of the knife at the right time, but if he has failed to interpret the signs in the early stages, the death of the patient will be partly his fault, for every patient dying from perityphlitis has gone through a stage in which his condition was curable. As a supplement to his former works on this subject, he now attempts to give the practitioner some directions, illustrating his arguments by 6 cases which have recently come under his care. In calling attention to the title of his paper—Perityphlitis, Peritonitis, and Meteorism—he says that it is a wrong idea to speak of "ileus"; the three signs named should be considered separately, and treated according to the existence of each one. Meteorism can be detected early, and must always be looked for before an extensive tympanites mask the abdominal signs. It is further necessary to distinguish between meteorism of the large, small intestine, and stomach. The importance of this lies in the fact that if one punctures the inflated intestine, one kills the patient before his time. On the other hand, if one empties the gut at the proper site and at the proper time, before it has lost all its elasticity, one will save the patient from a "mechanical heart-death." The first case deals with a patient who was admitted with the signs of perforation. This had taken place two hours before admission. The subumbilical region was slightly distended: the liver dullness was present; continuous with this, downwards and toward the middle line, there was an area of dullness to light percussion, and tympanitic resonance to heavier percussion. The pulse was over 140, small but distinct, and there was sweating. The diagnosis of perforation, peritonitis, free pus under the abdominal cavity, and meteorism of the small intestine was made. This was confirmed at the operation. The peritoneum contained thin, odourless pus, while an old abscess, containing characteristic stinking pus, was found around the appendix. The small intestine was inflated. In spite of the operative treatment of the peritonitis, the meteorism increased, and later the stomach became involved. The patient died, and at the necropsy it was found that the peritonitis had not spread, that there was no pus left in the cavity, but that the meteorism was very extensive. Oppenheim discusses the condition of the pus in increasing meteorism. The small, uncountable pulse is due to the fact that, when the vessels of the bowel are dilated in response to a paralysis of the splanchnic nerve, they are capable of taking up the greater part of the whole mass of blood, and the heart finds less and less to pump in the general circulation. Before the death of the patient the caecum was opened, its wall sutured to the abdominal wall, and a drain inserted through it into the ileum. This had not the least palliative effect: the meteorism had gone too far. With regard to the character of the pulse, he points out that three different types of pulse must be recognized in perforation. First, the rapid, distinct pulse, occurring immediately after the perforation. As long as this lasts the patient will tolerate surgical interference. The second type has been mentioned in connexion with increasing meteorism, and the third type, always accompanied with a change in the temperature, may be called the infection pulse. The second case also showed meteorism of the small intestine, and the liver dullness was present. The operation, performed twenty hours after the perforation, saved the patient's life. He emphasizes the importance of the presence of liver dullness as indicating the absence of large intestine meteorism. He next deals with cases of obscure nature, without pain, or with but little pain. The operation reveals the perityphlitic nature of these cases. The other cases illustrate the importance of observing the meteorism of the intestines and differentiating between the various localization. Oppenheim says that one can diagnose inflation of the caecum from physical signs, according to the distension of the abdomen and the typical tympanitic resonance. By means of this exact diagnosis the chance of a correct time being chosen for the operation is greatly favoured.

SURGERY.

(180) Diagnosis of Affections of the Pancreas.

Neumann (*Zentralbl. f. Chir.*, No. 32, 1904) at a recent meeting of the Freie Vereinigung der Chirurgie of Berlin, pointed out that though most cases of disease of the pancreas take a characteristic course and admit of a ready diagnosis, there are some which cannot be easily recognized and be distinguished without difficulty from affections of other abdominal organs, especially the kidney. Reference is made to a case under the author's own care, in which a pancreatic cyst presented the diagnostic features of a suppurating cyst originating in the right kidney. On laparotomy this organ was found to be normal and the swelling was discovered to be a cystic tumour of the size of a man's head which, when incised through a lumbar incision on the right side, proved to be connected with the pancreas. A second case is reported in which laparotomy was performed for the relief of symptoms pointing to acute intestinal obstruction. Section of a fibrous cord compressing the ascending colon was followed for a time by a successful result, but six days later a return of the former symptoms necessitated a second operation. A large cystic swelling was now found between the two layers of the transverse mesocolon, which at first was taken for a cyst of the head of the pancreas, but which subsequently proved to be the result of paranephritic suppuration on the right side. The patient, who was 22 years of age, was ultimately cured by nephrectomy. The lesion, it is assumed, had originated in an injury to the abdomen in childhood, which injury had resulted in hydronephrosis and, after a time, in renal suppuration. The cord causing intestinal obstruction in the first instance had probably been formed by the localized peritonitis set up by the extension of the suppuration in the kidney to surrounding parts.

(181) Peptic Ulcer of the Jejunum.

Mayo Robson (*Ann. of Surg.*, August, 1904) fears that surgeons have not properly grasped the fact that gastro-enterostomy is still only an incident in the treatment of gastric ulcer, which treatment ought to be continued on general lines for some time, or until good health is again established. Inattention to oral asepsis and to the gastric condition of hyperchlorhydria subsequent to the operation may, it is stated, be followed not only by a relapse of gastric ulceration, but also by peptic ulcer in the jejunum, which, as it is likely to be acute and not to lead to adhesions, must be regarded as a very serious complication. Jejunal ulceration, however, does not seem to be a frequent sequela of gastro-enterostomy, as the author has succeeded in collecting only 16 cases, which table includes one under his own care. Of these cases, the anterior operation had been done in 13, the posterior in 2, and the Y operation of Roux in 1. This sequela is much more likely to occur after the anterior than the posterior operation. The author's case occurred after the anterior operation, 1 out of 30 that he has performed. Out of 136 posterior gastro-enterostomies which he has personally performed, he has not observed a single example, nor —it is stated—has one occurred among 100 posterior operations operated on by a colleague. In all the recorded cases perforation, associated with acute, subacute, or chronic symptoms occurred. Hence there can be no question, the author asserts, as to the absolute necessity of early operation. When the abdomen has been opened the treatment will depend on the condition found. If perforation has occurred into the general peritoneal cavity the condition, it is pointed out, will be one of the utmost peril and only capable of relief by immediate cleansing of the peritoneum and closure of the opening, or by excision of the ulcer with subsequent suture. The author's case—which is here fully reported—was one of peptic ulcer of the jejunum occurring three years and four months after anterior gastro-enterostomy, and successfully treated by enterectomy and Roux's Y operation.

(182) The Treatment of Large Pelvic Abscesses of Appendicular Origin.

Chaput (*Bull. et Mém. de la Soc. de Chir.*, No. 22, 1904) is of opinion that purulent accumulations in the pelvis following appendicitis may be best dealt with in the adult female by vaginal and, in the young woman and the male, by rectal incision. In such cases the usual method of attacking the abscess through a median or lateral incision of the anterior abdominal wall is open, the author holds, to several objections. As it is necessary to drain the abscess the abdominal incision must weaken the anterior wall and expose the patient to the risk of eventration; it is liable, also, to result in stercoral abscess. It is unfavourable to free drainage, the opening being above and not at a dependent part of the purulent collection, and, consequently, the surgeon is often obliged to make a counter-opening, either in the vagina in the female or in the perineum or the sacral region in the male. There is also a risk in the abdominal incision of destroying the protective intestinal adhesions and of inoculating the peritoneum. The after-treatment with the abdominal incision is often prolonged over several months, whilst with the vaginal or the rectal incision cure, it is stated, may be effected in eight or ten days. Whilst the abdominal method is attended by considerable mortality—about 33 per cent.—the methods advocated by Chaput are regarded as absolutely safe. A further advantage of the vaginal or the rectal incision over the abdominal method is the possibility of relieving the patient without administering a general anaesthetic.

(183) Inflammatory Tumour of the Salivary Glands.

Gangitano (*Rif. Med.*, July 6th, 1904) reports a case of so-called inflammatory tumour of the salivary gland, with a detailed macroscopic and microscopic examination of the tumour. Kütines, in 1898, first drew attention to this affection. Of the 6 cases described by him, 5 were diagnosed as malignant and 1 as chronic adenitis. In the author's case syphilis and tubercle were excluded, and, on removal of the tumour, it was found to correspond exactly to the cases described by Kütines. Macroscopically it looked like a tumour, but presented clearly a glandular structure and microscopically it was characterized by increase of interstitial connective tissue and extensive small-celled infiltration. In the author's case he was able, in addition, to make out a blastomycetic organism, to which he attributes the formation of the tumour, infection probably occurring via the lymphatics. Clinically, these cases are distinguished by the presence in the submaxillary region of a swelling varying from the size of a nut to that of a hen's egg, of oblong or rounded shape, of hard consistence, slightly movable, almost painless, and covered with normal skin, which may or may not be slightly adherent. These tumours are most often confused with malignant tumours, and hence extensive operations are liable to be undertaken needlessly. In the author's case the duration of the disease was about two years.

MIDWIFERY AND DISEASES OF WOMEN.

(184) Tuberculosis of the Female Genitalia and Peritoneum.

J. B. Murphy (*Amer. Journ. of Obst. and Dis. of Women and Children*, December, 1903; January, 1904; February, 1904) reviews the subject of tuberculosis of the female genital tract. Some authors hold that in as many as 12 per cent. of tuberculous women the genital organs are attacked, while others put the number as low as 2 per cent. The secondary form of the disease is more common than the primary. Primary tuberculosis may occur, according to Hegar, by penetration of germs from outside, directly to the mucosa of the vagina, etc., or through minute breaches of the genital mucous membrane into the lymphatics. Amaun would also consider as primary those forms of genital tuberculosis where the genitalia are the only localizations of long latent tuberculosis, or where the bacilli, entering the blood or lymph stream, cause lesions in the genital tract alone. The sources of the bacilli in the production of genital tuberculosis in general may be said to be haematogenous, lymphatic, by contiguity of tissue or contiguity of surface. Some authors still deny the possibility of infection by the blood current. Direct infection may occur from dirty instruments or clothing, from the accoucheur's or patient's fingers, and especially from coitus. The latter cause may be overlooked in some cases from the possibility of bacilli being present in the semen without any perceptible disease of the genital organs. The fact that, in spite of obvious tuberculosis in the genital tract of the man, the wife may escape infection, points to the necessity of some initial lesion in the female genital tract, and experiments on monkeys bear out this view. Gonorrhoea, or any disease which causes abnormal secretions and prohibits the bactericidal action of the vaginal mucus, furnishes the requisite predisposing cause. The traumatism of labour is a common cause of infection, while extension from the intestine, though possible, is rare. The organs are attacked in

the following order of frequency—tubes, uterus, ovaries, vagina, and vulva. A single segment is rarely attacked, and the whole genitalia may be involved. As regards diagnosis, Martin states that we have no clinical symptom pathognomonic of genital tuberculosis, and the diagnosis must rest in the discovery of the bacillus. Sterility is a prominent symptom; menstrual disturbances are slight at the onset, although menorrhagia occurring in young girls is suspicious, and amenorrhoea may be present if the inner wall of the uterus become caseous; discharge is not always complained of, and pain is not common. The prognosis depends mainly on the presence or absence of lesions elsewhere in the body. Spontaneous cure is possible; rapid death may ensue when the patient is in the puerperal state. The matter is next considered with respect to the special part involved. The vulva, though easily accessible, is seldom attacked, probably because the internal parts present a more suitable soil for the bacillus. The disease here leads to the formation of multiple ulcers of varying size and shape, with infiltrated undermined edges and miliary tubercles often visible about the borders; there may, in later stages, be proliferation of tissues and the formation of nodules and polypi. Pain on urination is often the first symptom. In some cases the diagnosis can be made only by microscopic examination and by animal inoculations. Radical extirpation is the only effective treatment. The vagina is usually attacked in combination with the upper part of the tract. Only one case of primary vaginal tuberculosis is known. The symptoms are not pathognomonic. In mild cases curettement or the use of chemical agents may suffice, but in more severe ones vigorous measures, and even partial or complete removal of the uterus with the vaginal wall, may be necessary. Tuberculosis of the portio vaginalis and cervical canal is very rare and seldom found together with tuberculosis of the fundus. It occurs in several forms—the ulcerative, the papillary, and "bacillary catarrh." The diagnosis between different forms of this disease and erosion, inflammatory proliferation, or early carcinoma may be difficult. Small nodules and areas of caseation and ulceration are to be looked for. If the cervix alone be affected, amputation is adequate treatment; panhysterectomy is precluded by the large mortality recorded. Curettement and chemical and thermal agents may be employed with good effect when amputation is not indicated. The fundus is a common site for the disease. Three forms have been differentiated—miliary, ulcerative, and pyometric—but they are probably stages of the same process. The relation of this form to pregnancy and parturition is important. Pregnancy may advance to full term, but there is danger of rupture of the uterus: extrauterine fetation sometimes occurs in this form of disease; a tuberculous placenta may lead to a general tuberculosis; pre-existing tuberculous disease may again become active during pregnancy and parturition. The symptoms are those of endometritis, and profuse leucorrhoea in very young or in old people suggests tuberculous infection. Spontaneous cure is unknown, palliative treatment is, as a rule, ineffective, although it should be attempted in the case of children, while for adults a radical operation by the vaginal route is indicated. Disease of the Fallopian tubes is usually bilateral, and the area involved is most commonly the site of constriction of the tube. The symptoms are those of salpingitis, and in addition, whenever the fimbriated end of the tube is open, frequent periodic attacks of pelvic peritonitis, due to the expulsion of tuberculous matter into the peritoneal cavity. Pain is common, menstrual disturbances uncommon, and rise of temperature is by some considered characteristic of the disease. Tuberculous nodules may be palpable by the finger through the vagina or rectum. The diagnosis has to be made from gonorrhoeal salpingitis and from recurrent appendicitis. Treatment consists in the removal of the tubes, the abdominal operation being preferred. The uterus should be preserved, if possible, and one at least of the ovaries. Tuberculosis of the ovaries is relatively infrequent. The primary form is rare and practically nothing is known of the symptoms. The secondary form spreads from the tubes or peritoneum, and the treatment consists in the removal of the disease and of the primary focus. In children, when both ovaries are involved, one or both may be often preserved by shelling out diseased Graafian follicles. Four varieties of tuberculosis of the peritoneum are described: (1) Disseminated, exudative, miliary, non-confluent serous variety; (2) nodular, ulcerative, or perforative; (3) adhesive, fibroplastic, cystic, partition or obliterative variety; (4) suppurative, circumscribed, or general mixed infection. While the symptoms and treatment vary with the type of disease, the general indications for treatment are to remove or shut off from the peritoneum the source of supply of new tuberculous matter, to remove products of the infective process from the peritoneum, to increase tissue proliferation in order to bring about the encapsulization of existing foci and to avoid mixed infections. The symptoms of the first form of this disease are those of periodic attacks of pelvic peritonitis, and surgical treatment is needed. The second form can be diagnosed with certainty only by exploratory incision, and surgical or medical treatment may be employed. The symptoms of the third variety are those of continued inflammation combined with a minimum of septic intoxication until mixed infection occurs. Here no radical operation is possible, though cysts may be opened and emptied. The danger of mixed infection makes continuous drainage inadvisable. The fourth variety may be a further stage of any of the other three. Surgical treatment is possible in circumscribed and mild cases, but where a general tuberculous peritonitis exists operation is hopeless. As before, continuous drainage is inadmissible.

(185) Dermoid of Abdominal Wall.

Schauta (*Monats. f. Geb. u. Gyn.*, April, 1904) has observed 5 cases in thirteen years, and reported them at a recent meeting of the Obstetrical Society of Vienna. One, the last under his care, appeared directly after a pregnancy, and grew in eleven months to a diameter of 6½ in. vertical by over 6½ in. horizontal. It was divided into two parts by a longitudinal groove. At the operation it was found that the tumour grew from the outer aponeurosis on the right, and extended inwards to the left; the abdominal cavity was opened because of the close connexion of the new growth to the peritoneum. The hole made in the serous membrane was easily closed, but a gap as big as a half-crown piece was left in the fascia; it was closed in with skin.

THERAPEUTICS.

(186) An Immunizing Treatment of Phthisis.

C. Spengler finds that the toxin of bovine tubercle bacilli (*Perlsucht* toxin) is less toxic than human tubercle bacilli toxin (*Deut. med. Woch.*, July 8th, 1904). The former toxin is therefore much preferable as an immunizing substance. He further says that tuberculosis is cured in a shorter time and with less danger and more certainty by this means than with the human toxin. The average time for cure with old tuberculin for early cases was about 160 days, while the new tuberculin cured in a shorter time. But the *Perlsucht* tuberculin cures in from sixty to eighty days. Even cases of more advanced phthisis, with fever, can be cured by the new treatment, although the cure takes six months or more. Only very acute tuberculosis and those cases of phthisis nearing the end, with rapid pulse and much dyspnoea, are not available for the treatment. The *Perlsucht* tuberculin is made like new tuberculin (TOA) by filtering a bouillon culture of bovine bacilli; then it is allowed to evaporate to about half its original volume, and either glycerine or glycerine and saline solution is added to the original volume. One gram of this contains 100 mg. of PTO (that is, original *Perlsucht* tuberculin). The dose to begin with is 1 mg., or ½ mg. for weakly patients. This is applied by means of a syringe with an asbestos piston and a platinum-iridium needle, which can be readily sterilized. The injections are best carried in the forearm, in a centrifugal direction. The second injection must not be made until the swelling of the first has entirely disappeared. This swelling is an oedema, and can be recognized by pitting on pressure. Hard nodule or slight redness of the skin need not prevent a further injection. The aim of the treatment is to double the doses in the shortest time possible. Spengler deals in detail with some of the necessary variations of dose and injections, and also deals with the inunction of the PTO in certain cases. After one has attained the dose of 50 mg., one increases the pauses, 100 mg. being injected every two or three weeks. Next one begins to change the poison, and injects alternately PTO, TOA, or some other form of tuberculin. "Closed" tuberculosis may be regarded as cured, if an injection of 100 mg. of PTO, and one of TOA or tuberculin after a pause of fourteen days, is stood without any reaction. Phthisis may also be regarded as cured

by the same means in connexion with a negative result of the examination of the sputum. This must, however, be repeated some months later. He states that there is absolutely no danger connected with the treatment. In conclusion, he discusses the method of action of the tuberculin, and speaks of its purely immunizing properties.

(187) The Treatment of Acute Middle-ear Inflammation.

In sketching the treatment of inflammation of the middle ear, as it is practised in Lucae's clinic in Berlin, Heine remarks that the usual division of acute catarrh and acute suppuration of the middle ear is a source of some difference of opinion (*Deut. med. Woch.*, March 31st, 1904). The older textbooks regard the catarrhal form of otitis media as a milder form of the purulent form, and therefore not a disease *sui generis*. He believes that catarrh of the middle ear is not a result of an inflammatory process in the tympanum, but rather the result of a mechanical obstruction of the ventilation tube—the Eustachian tube. The result of an obstruction of the tube is that there will be a negative pressure in the tympanum, on account of the rarefying of the contained air. The tympanic membrane is therefore drawn inwards, and mostly a fold is seen in it; the membrane is seen to be of a faint reddish colour. This colour is due to the hyperaemic mucous membrane shining through, as will be discerned by the normal shininess and by the absence of all swelling. Inside the tympanic cavity a transudation of fluid takes place, which is free from micro-organisms. On the other hand, when there is an inflammatory exudation in the cavity, one sees characteristic changes in the tympanic membrane. This may retain its shining appearance, but there is swelling of the region of the handle of the malleus, the short process is not so prominent as it normally is, and is very indistinct. In such a case there is no doubt as to the acute inflammatory nature of the condition. The general principle of the treatment of the acute otitis is rest and avoidance of all bodily exertion. In mild cases, the least which one should be satisfied with is that the patient remains in one room, while in the more severe cases one should insist on the patient remaining in bed. Once in bed, the surgeon must see that the bowels are regularly opened. Locally in early stages, whether the tympanic membrane is perforated or not, or even after paracentesis, Heine applies warm or hot compresses externally. If hot compresses are employed, he usually adds some solution of the acetate of aluminium. At times it will be found more convenient to apply dry heat, in the form of baked linseed, especially when the skin shows signs of becoming macerated or eczematous. With regard to local blood-letting, either by means of leeches or by other means, he considers that in aseptic days one should not employ these. Painting with iodine or rubbing in ointments do not do any good. Neither does he care for the local application of cocaine, which at times affects the membrane. After the membrane has been artificially or has spontaneously perforated, he syringes the tympanum out with sterile water or boracic acid solution very carefully, and with very small pressure. Actually he washes the cavity out, and does not syringe it out. He finds that the dry method is a bad form of treatment. When there is retention of pus, he carefully swabs the external meatus out, using dry pledgets of wool, but is careful not to touch the tympanic membrane if possible. After the meatus has been cleaned, he introduces a small strip of sterile gauze loosely into the passage, and changes it after about twenty-four hours. After the acute symptoms have subsided, if there is still free discharge, he allows a syringing to be carried out about two or three times a day, but not earlier than three or four weeks after the beginning of the acute stage. This is, however, not frequently necessary. In speaking of air douching, he states that if one aims at supplying rest for the inflamed part, this method must be harmful. Bezold's modification, too, appears to him to be open to many objections, and he never employs it. For the same reason—that is, in order to procure as much rest as possible—he comes to the conclusion that it is unwise to remove any adenoid vegetations during an acute attack of otitis media. At times the removal of adenoids appears to cause an acute attack, and more especially if the vegetations are very completely removed. In conclusion, he states that his treatment is very simple: it consists of rest for the inflamed part and free exit for the pus.

(188) Lactogol.

J. A. Goldmann (*Therap. Monat.*, July, 1904) recommends the use of lactogol in cases in which the mother's milk begins to fail, when the child is a few weeks or months old. Lactogol is prepared from cotton seeds, and can be obtained in the form of a yellowish white powder from the firm of Pearson and Co., Hamburg. An extract of cotton seeds has long been known to country people to have a lactogenic effect, and is given by them to cows in increase the supply of milk. The author has given it to fourteen women, and always successfully. In one case the mother had suckled her child without difficulty to the tenth week, when for some unknown reason the milk rapidly diminished in quantity, and had almost disappeared when she came for treatment. Lactogol was given to the amount of four heaped-up teaspoonfuls (about 4 grams) per day. On the first day it had no effect, on the second day there was a slight, and on the next two days a striking, increase in the amount of milk secreted. After six days the dose was diminished to one or two teaspoonfuls a day, and the supply of milk continued to be adequate for the child's needs. While the quantity of milk was deficient, the child had been fed in addition on diluted cow's milk, and begun to suffer from constipation and colic, but these symptoms disappeared when the cow's milk was no longer needed. In another case the mother fed her child for five weeks, after which the secretion of milk in the left breast failed in consequence of an attack of mastitis, and did not return with the subsidence of the attack: the right breast alone did not give enough milk for the child. By the use of lactogol the amount of milk in the right breast was doubled, milk appeared again in the left breast, and the secretion became normally established by the twelfth day; the child quickly regained its strength. In a third case also lactogol acted as a specific. The mother, a weakly and overworked but organically sound woman, lost her appetite when the child was about 5 weeks old, and in spite of forcing herself to eat, had no longer enough milk for the child, who came pale and restless, and began to suffer from dyspepsia and to pass watery stools. Lactogol was given, and after eight days the amount of milk was doubled; the mother was still feeding her child at the eleventh week, both mother and child being then quite well. The author has never found lactogol to give rise to any unpleasant side-effects.

PATHOLOGY.

(189) The Freezing Point Depression in Cancer.

In three cases of cancer of the breast, Israel found that the freezing point depression of the blood was −0.60, −0.62, and −0.63. Engelmann also found that among ten cases of carcinoma, five gave a high freezing point depression of the blood. Israel thought that this was due to a change of the composition of the blood by the presence of substances which gain an entrance from the new growth into the circulation. Engelmann explained some of the cases by a mechanical compression of the ureter either in the small pelvis or in the abdomen. In other cases he suggested that the presence of albumen derivatives, the product of the toxins in the blood, could alter the molecular concentration. K. Engel attacks the problem both from a theoretical as well as from a practical point of view (*Berl. klin. Woch.*, August 1st, 1904). He points out that the presence of albumen derivatives does not lower the freezing point, and exemplifies the concentration of diphtheria serum. Before attempting to give an explanation of the finds in Israel's and Engelmann's cases, he has inquired into the actual condition of things, and examined a number of cases of malignant disease to see if carcinoma generally gave a lower freezing point to the blood. Among the 13 examined, he did not once meet with a lower freezing point than −0.58 when the blood was in a cyanotic condition, and when it was treated with oxygen it was never lower than −0.57. In the cases with marked cachexia and anaemia the freezing-point depression was rather diminished than raised. On the other hand, he suggests that in the two observers' cases the heightened depression might be due to acetonaemia, as this is known to alter the concentration of the blood, and is not infrequently associated with malignant disease. Another possibility is that there might have been some arterial sclerosis affecting the renal vessels, which does increase the freezing-point depression. He, therefore, is forced to come to the conclusion that the molecular concentration of the blood is not increased in cases of carcinoma as a disease, and that when this change is found in the blood it is due to some extraneous cause.

AN EPITOME

OF

CURRENT MEDICAL LITERATURE.

MEDICINE.

(190) Vincent's Angina.

Dubar (*Progrès Méd.*, July, 1904) was consulted by a woman, aged 29, for deafness which had existed for several years. For a fortnight she had had a sore throat, the deafness had increased, and pus reappeared in the left ear. The right ear showed a thickened drum and ankylosis of the small bones. There was abundant fetid pus in the left ear. The otitis media dated from childhood, when she suffered from measles, scarlet fever, and small-pox. Her general health had always been poor. The pharynx, especially on the right, was hyperaemic, and there was a small ulcer on the upper part of the right anterior pillar surrounded by marked redness. Four days after (December 18th) the pain had increased, and on the site of the ulcer was a small white adherent patch, bleeding easily. It spread on to the upper part of the tonsil and to the supratonsillar fossa. The tonsil was scarcely swollen; two submaxillary glands were enlarged. The other tonsil was normal. There was no temperature, but anorexia, and pain in the back. Microscopically, there were numerous fusiform bacilli and staphylococci. On the 21st the membrane was thicker, but less adherent. On January 15th the patient was cured, but on the 26th the symptoms reappeared, with considerable swelling of the right side of the neck, and the temperature rose to 38.7° C. A little gangrenous tissue was seen above the right anterior pillar, with some pseudomembrane on the soft palate. This disappeared under antiseptic gargles and oxygenated water, and on February 3rd no trace was left. Ulcero-membranous tonsillitis forms a well-defined clinical type, characterized by a false membrane and the presence of Vincent's bacillus. It was first described in 1894 by Ruault. The bacillus described by Vincent the same year is fusiform, swollen in the middle and pointed at the ends; it is longer and broader than Loeffler's bacillus. It is associated with fine spirilla or staphylococci. The lesion is usually situated on the upper third of the tonsil; it has an anfractuous base, which bleeds easily; there is always some diffuse catarrh of the throat. It occurs chiefly in debilitated subjects. Its course is characterized by relapses, and it may persist for a fortnight to two months or more. It may be complicated by local suppurations or by true diphtheria. When a membrane is present it has to be diagnosed from diphtheria, which can only be done by bacteriological examination. During its ulcerative period syphilitic and tuberculous ulcers must be borne in mind. The affection is contagious. Methylene blue applied directly has been much advocated. Dubar recommends applications of oxygenated water with the usual antiseptic gargles.

(191) The Stokes-Adams Syndrome.

Gillies (*Montreal Med. Journ.*, June, 1904) gives a summary of our knowledge of this interesting condition. The symptom-complex—bradycardia, with attacks of loss of consciousness and accompanied by disturbances of respiration—is by no means due to a single pathological lesion. In the heart may be found fatty degeneration, fibroid myocarditis alone or associated with sclerosis of the cerebral vessels. The bradycardia may be permanent or transitory. The pulse-rate is not influenced by position, exertion, or fever. The vessels are frequently thickened and tortuous, but not constantly so. Pallor is common, either from the blood condition or from active vaso-constriction in certain areas. The attacks of loss of consciousness vary from a slight attack of vertigo to deep coma or typical epileptiform convulsions. The third cardinal symptom is the disturbance of respiration; Cheyne-Stokes respiration, dyspnoea, or irregularity of breathing may be present. Disturbances of digestion are often seen—epigastric distress, vomiting, diarrhoea, or obstinate constipation. The condition is most common in elderly people, but many cases under 30 have been reported. Arterio-sclerosis is present in the majority. Syphilis and other infectious diseases seem to play a part in the etiology. Injury to the central nervous system and tumours may produce it. In some cases no cause can be found. The pathology is doubtful. Stokes and Adams both considered the cardiac lesions as essential, leading secondarily to anaemia and hyperaemia of the brain. Charcot considered the medulla to be the seat of the disease. The nervous symptoms were explained by lesions of this part and the bradycardia by irritation of the vagus. Huchard regarded the pathogenic factor to be sclerosis of the coronary and cerebral arteries, bringing about an insufficiency of the heart and nutritional disturbances of the brain. Jacquet believes that the vaso-motor influences play an important part, as indicated by the extreme pallor at the beginning of an attack, which gives place to a diffuse blushing when consciousness is returning. Prognosis is always grave, as the patient may die during an attack. Treatment is unsatisfactory. Amyl nitrite, nitroglycerine, and inhalations of oxygen seem to give the best results.

(192) Pulsus Paradoxus.

Galli (*Il Policlin.*, N. 41, f. 7, 1904) points out that, as Kussmaul originally observed, the presence of pulsus paradoxus alone is not characteristic of mediastino-pericarditis, but only when associated with inspiratory swelling of the veins of the neck. The pulsus paradoxus alone may exist in the most varying diseases; indeed, it is so common that some authors have denied any clinical value to it. The author attributes much importance to the pulmonary traction in the origin of diastolic reduplication and pulsus paradoxus. The heart, being a hollow vessel, is constantly exposed to the elastic traction of the lungs and diaphragm, between which it lies. Owing to the greater elasticity of the lungs in early life, the pulsus paradoxus is more common at that time than in mature years. Cardiacs suffering from severe orthopnoea breathe with mouth wide open, so as to admit air readily and lessen the intensity of the pulmonary traction, whilst they expire with closed lips, instituting a kind of miniature valsalva experiment. The pulsus paradoxus is a sphygmographic signal indicating lessened cardiac resistance, which may be temporary or permanent according to the cause. The author illustrates one cause of a temporary nature which came under his observation—namely, the use of digitalis.

(193) Hydatid Cysts of the Lung.

Launois and Mauban (*Arch. Gén. de Méd.*, May 17th, 1904) report the following case. A man, aged 52, previously quite healthy, was admitted to hospital with the history that the previous evening he had felt a sudden and severe pain in the right side of the chest, at the same time having a severe fit of coughing with considerable haemoptysis. The sputum since had been bloodstained and nummular. On examination a dull patch the size of the palm was found behind over the middle-third of the right lung. Vocal fremitus was absent, but a well-marked inspiratory rhonchus accompanied by fine subcrepitant *râles* was heard. The rest of the lungs gave the signs of emphysema. The patient had occasional attacks of dyspnoea and fits of coughing. The sputum consisted of mucus and blood. The heart was slow but free from valvular disease, the arteries were hard and atheromatous, and the pulse feeble. The patient seemed to improve, but two days afterwards died suddenly in a fit of coughing with haemoptysis. At the autopsy a cyst the size of an orange was found in the centre of both the middle and lower lobes of the right lung. The cysts had smooth, pearly walls and were easily enucleated. They contained yellowish fluid in which were numerous hooklets. There were no daughter cysts. Around the cysts were recent circumscribed haemorrhages. The pleurae were free except along the fifth rib on the left side. A diagnosis was not made during life, the only marked symptoms being the cough and occasional haemorrhages; exploratory puncture was not made from the fear of aggravating the haemorrhage. Haemorrhage usually accompanies or precedes rupture of a hydatid cyst, and in this case it formed an important feature, which, however, could not be regarded as pathognomonic.

SURGERY.

(194) Primary Cholecystectomy.

Lilienthal (*Annals of Surgery*, July, 1904) holds that extirpation of the gall bladder in non-cancerous cases is a very safe operation, and that it is far more satisfactory in suppurative, calculous, and atrophic conditions than cholecystostomy. In support of this conclusion 42 cases are published in which cholecystectomy was performed with 1 fatal result. It is quite possible, the author asserts, to extirpate the gall bladder with speed and comparative ease through a 4-inch opening in the abdominal wall; and if, at the same

time, the surgeon can assure himself, by actual inspection and all other tests, that the common duct is free, and if he can at once remove obstructing stones from the common duct, either by incision or by manipulating such stones out by way of the cystic duct, the choice of the operator, it is suggested, should be in favour of total removal. If there be no active infection, the matter of drainage of the bile ducts becomes unimportant; and when active infection is present it seems to the author to be wise to remove the septic viscus, and, if necessary, drain the biliary system, provided the anatomical conditions are not such as to make prolonged and difficult manipulation necessary. If drainage of the biliary system be thought desirable, it can be easily accomplished by means of a tube in the hepatic duct; but, in the author's opinion, it seems reasonable enough that, when the common duct is free, the best drainage of all is the natural one through that duct into the intestine. In a case of septic cholangeitis it would be necessary to divert the flow of infectious material directly to the outside of the body. Of the 42 cases on which the author has performed cholecystectomy, 29 were operated upon during the progress of acute active infection, and 13 in the chronic or latent state of infection. There was gangrene of the gall bladder, more or less extensive, in 7 of the total number of cases. Choledochotomy was performed six times, together with cholecystectomy. The following conditions are contraindicative of cholecystectomy: (1) Extensive carcinoma involving neighbouring viscera; (2) cholecystitis with large perforations and pericholecystic abscesses, so that on entering the abscess with his finger, the surgeon at the same time finds that it has entered the gall bladder; even here the author thinks the procedure will depend upon the extent of the disorganization and the condition of the patient; (3) in cases of known haemorrhagic tendency; (4) in obviously moribund patients. The author describes at length the different stages of his operation, which, he states, may be greatly simplified by the employment of a table with an enamelled iron piece about 6 in. wide, which may be raised or lowered by means of a crank, so as to serve instead of a sandbag or pad under the patient's back. This device, it is asserted, permits the surgeon to hyperextend the patient to any desired degree of lordosis, the gain in accessibility being thus found most remarkable.

(195) The Diagnosis and Treatment of Azoospermia.

THE knowledge of the anatomical changes connected with the condition of azoospermia have been made out half a century ago by the French anatomist, Gosselin. C. Posner and J. Cohn (*Deut. med. Woch.*, July 14th, 1904) deal with the clinical features of the affection. Atrophy of the testis is not a necessary result of the inactivity produced by the blocking of the seminal tubes in the epididymis. The blocking of these tubes is, in an overwhelming majority of cases, the result of gonorrhoea, and the authors go on to state that the same condition is more frequently the cause of sterile marriages than is abnormal conditions of the woman. The affection usually does not produce any symptoms, the scarring of the epididymis is not subjectively felt by the patient, his potence is unaltered, and the semen is apparently normal. The microscope alone is capable of settling the diagnosis. Sometimes there is a little difficulty in obtaining semen for examination, and the authors suggest that this may be at times got over by pressing on the vesiculae per rectum, or by gathering the mucus expressed from the urethra after urine has been passed; but while the presence of spermatozoa will remove the suspicion of impotentia generandi, the negative find when carried out in this way proves nothing. The etiology, too, does not often help one much. A certain diagnosis on which one can express an opinion as to whether a man is capable of begetting children can be made by Fuerbringer's "Surgical Revision," an operation made for diagnostic purposes only. At times, spermatozoa have been found, but not living ones. Less severe is the methods of puncture of the testis for diagnostic purposes. This can be carried out aseptically, and can be regarded as absolutely safe. The treatment will depend on the presence or absence of the sperm cells. In the latter case, no palliative or operative means can reproduce the generating power. If sperm cells are found, and there are distinct hard fibrous strands in both epididymes, several operations have been suggested. Resection of the scar and seminal canal, and dilatation of remaining tubes, is too technically difficult to allow of a reasonably good chance of success. The authors have followed the example of others, and haved attempted to carry out a plastic operation, which cuts out the obliterated portions of the epididymis, and forms a direct connexion between the vas deferens and the testis, or at all events, with head of the epididymis. So far their results have not led to a positive result, but they are sanguine that they may attain their aim if they can get earlier cases than they have hitherto had. They further plead for a more careful treatment of the inflammatory affections of the testis, so that some of the cases of obliteration may be avoided.

(196) Early Surgical Treatment of Appendicitis.

ANGELO SIGNORELLI (*Il Policlin.*, June 25th, 1904) gives an analysis of 42 cases of appendicitis treated by Rossoni and Zeri, and bases on this analysis a claim that all cases of appendicitis should be treated by early operation—that is, operation within forty-eight hours of the onset of the disease. Of the 42 cases under consideration, 4 were subjected to operation on the first day and 6 on the second, with recovery in all 10 cases. The other 26 successful cases were operated upon at different dates up to the twenty-fifth day. Two fatal cases were operated upon on the third day, 1 on the fourth, 1 on the seventh, 1 on the tenth, and 1 on the eleventh. The history of several of these cases suggests that earlier intervention might well have been successful. Apart from the cases here recorded, Signorelli argues that as it is impossible to distinguish clinically at an early stage between slight cases tending to early recovery and apparently slight cases tending to grave illness and possible death, no exception should be allowed to the rule laid down above. The difficulty of diagnosis is inherent in the whole field of surgical work, but is not a reason for postponing operation until it becomes dangerous. The author quotes one case, apparently free from all unfavourable symptoms, where in the course of an operation on the third day the appendix was found to be gangrenous. Early operation is also recommended on the ground that, unlike either medicinal or expectant treatment, it brings about a complete and final cure by the removal of the offending organ. We must therefore suppose that the operation to be performed is the excision of the appendix at the onset of the disease. The author also recommends that in all cases seen after an attack of appendicitis the appendix should be removed without waiting for further trouble.

(197) Abdominal Teratoma in a Man.

BAYER (*Beiträge zur klin. Chirurg.*, vol. xli, Part 2, 1904) writes of a man, aged 26, with an abdominal tumour between the spleen and the liver. It was of the size of a fetal head, spherical and cystic. An exploratory incision was made, and the growth was found to lie behind the gastro-colic ligament. The peritoneal capsule was opened, and the tumour fixed by a suture to the parietes. It was laid open, and emptied a few days later, and at the end of a month removed altogether. The latter operation was difficult on account of close connexions with the pancreas. The patient recovered. The tumour was a teratoma, containing connective tissue, bone, sudoriparous glands, sebaceous glands and mucous glands, pavement epithelium, and hair. Diagnosis, Bayer admitted, was difficult; radiography might be of assistance. Eight teratomas have already been treated radically, only three with permanent benefit to the patient, the remainder either dying of the operation or succumbing later on to metastatic deposits.

MIDWIFERY AND DISEASES OF WOMEN.

(198) Osteochondrosarcoma of the Ovary.

MARIO DONATI (*Gazz. Med. Ital.*, March 10th, 1904) describes a unique case of osteochondrosarcoma of the right ovary containing giant cells. The patient, a woman aged 46 years, had borne five children at term and aborted three times. Five months before the tumour was removed she began to suffer from pain in the right lower quadrant of the abdomen radiating to the thigh, and a sensation as of something moving in the belly. For the last two months she was confined to her bed by great and progressive swelling, which began suddenly and caused great pain. The tumour was removed by Carle, but the patient died on the third day. A large cystic cavity in the tumour was ruptured during the operation, and yielded 3 litres of serosanguinolent fluid. The remaining part of the tumour weighed 1,580 gr. The solid part of the tumour occupied the

pelvis and took its shape; above it became continuous with the main cystic cavity, and a smaller cyst occupied its left side. The inner surface of the large cyst was covered with grey nodosities of different sizes, hard to the touch, and resisting when cut. The principal mass of the tumour was hard on section, presenting a greyish-red section divided into lobes by strands of connective tissue, which seemed to be derived from the external sheath of the tumour. Here and there, especially towards the centre of the growth, were knots of tissue resembling the spongy tissue of bones. Pieces from different parts of the growth were fixed in alcohol, decalcified when necessary, cut into sections in paraffin, and stained with haematoxylin, eosin, lithiocarmin, v. Gieson and Weigert, and mounted in balsam. Some of the preparations unstained or stained in lithiocarmin were mounted in glycerine and water. The histological appearances of sections from different parts varied widely. In some parts the appearance was that of a fusiform-celled sarcoma with large nuclei, with more or less abundant ground substance and few vessels, for the most part surrounded by round or polyhedral cells. The walls of the large cyst, amongst other parts, were of this description. In some points were small blocks of hyaline cartilage with abundant ground substance and large cells. At other points this changed gradually into sarcomatous tissue, the ground substance disappearing and the cells becoming elongated and losing their capsules. Or the cartilage had become infiltrated with calcium salts, with substitution of bone corpuscles for the cartilage cells. The most common formation was a round-celled or polymorphic sarcomatous tissue mixed with giant cells, more or less large and numerous in different parts, separated by a scanty intercellular substance and trabeculae of osteoid or true osseous tissue. Round these trabeculae were cells like osteoblasts, of various forms and dimensions, but for the most part arranged in regular order. The intercellular substance mentioned above had lacunae, some empty and some containing giant cells of different shapes—round, elongated and stellate. The protoplasmic substance of these cells was homogeneous and stained with eosin; the nuclei were ovoid, independent of one another, occupied the centre or the whole of the cells, and were often very numerous, reaching in one case to the number of 200. Giant cells were found in parts of the growth in which there were no osseous trabeculae. No elastic fibres were found. The author considers that the growth may be explained by the theory of aberrant embryonal germs. The cystic cavity was probably formed by haemorrhage. Giant cells have previously been described in some rare sarcomata of the ovary, but there is no other recorded case of their presence in an osteochondrosarcoma of the ovary.

(199) Fibro-myoma of Abdominal Wall in Women.

Stein (*Monats. f. Geb. u. Gyn.*, March, 1904) reports a case where a woman, aged 30, who had borne four children, was operated upon by Kehrer, who removed a tumour of the abdominal wall associated with the sheath of the rectus; it was of the size of a fist. It was made up of fibrous tissue and plain muscle-cells; its vessels, as in uterine fibroid tumours, had thick muscular coats. Doléris and Mangin have recorded an example of fibro-myoma of the abdominal wall where recurrence followed operation. Stein himself operated on two sisters for the same disease. The first operation was performed on a woman, aged 37, a year after she had undergone ovariotomy. A firm, solid tumour, as big as a hen's egg, was enucleated from between the right obliquus internus and transversalis. The other sister underwent operation for a rather large tumour over Poupart's ligament connected with the oblique (? external). Recurrence took place, and half a year later a tumour as big as a fist was removed. There was reason for believing that a piece of the growth was left behind at the first operation, so that there was not true recurrence. All the three tumours removed by Stein were made up of white fibre and plain muscle-cells. This form of new growth has never been found in males, who rarely, as compared with women, suffer from pure fibroma of the abdominal walls. The plain muscle-cells are probably derived from the coats of the vessels in the abdominal muscles. Schauta (*Zentralbl f. Gyn.*, No. 9, 1904) removed a pure fibroid weighing 2½ lb. from the abdominal wall of a woman, aged 28, who had borne two children, the youngest 11 months old. The peritoneum had to be opened and resected.

THERAPEUTICS.

(200) Thiosinamin in Disturbances of the Digestive Organs.

The action of thiosinamin in softening scar tissue has led to its employment for stenosis of the stomach, and several strikingly favourable accounts have been published. Hourglass contraction is said to have been cured, and benefit is said to have been obtained by a number of clinicians in malignant stricture of the pylorus. As the material in Ewald's clinic is especially suitable for an investigation of this kind, R. Baumstark has experimented with thiosinamin, and reports on his results in the *Berl. klin. Woch.*, June 13th, 1904. He used a 20 per cent. solution in glycerine and water; 1 c.cm. of this solution was injected at a time, but the first injection was often somewhat smaller. In 3 cases of stenosing carcinoma of the pylorus and 2 of oesophagus cancer the preparation did not have the least effect. He states that the want of all effect was so striking that it is not necessary even to give the clinical histories of the individual cases. In one case thirty-two injections were made, and it was found that the fasting stomach after this treatment contained between 400 and 500 c.cm. of food remains, as it did before the treatment. All the patients died within a short time of the end of the treatment. He says that he had not expected any other effect of the drug, and from a theoretical point of view regards it as quite impossible that thiosinamin should have any beneficial effect, in spite of the reports of others. Turning to benign stenosis, he goes into the cases more fully. In the first 3 cases the condition was that of an organic stenosis following ulcer of the pyloric end of the stomach. Two were mild cases and one was severe. Some improvement was obtained by the usual dietetic and lavage treatment, and then the thiosinamin was begun. Neither from an anatomical nor from an objective clinical standpoint was the least improvement to be seen from the treatment; and, indeed, the patients got rather worse. The quantity and quality of the gastric contents were controlled by trial breakfasts in the usual way, to control the effect of the treatment. In one case of perigastric tumour no treatment had previously any effect, and the thiosinamin also remained without benefit to the patient. In one case of pericholecystitis and one of perigastritis the thiosinamin was begun at the same time as the general treatment. Subjectively, the patients were relieved by this form of treatment, and objectively, some improvement was noted, inasmuch as in the one case the tenderness diminished, and in the other the perigastric inflammatory products became distinctly less. How far this improvement was due to the thiosinamin cannot be stated, but that it is not impossible that the rest and lavage were responsible is suggested by the fact that on giving small additions to the prescribed diet the severe pains again appeared. He, therefore, is forced to come to the conclusion that thiosinamin is not of any value in the treatment of stenosing disorders of the stomach, and warns one not to be led away by the optimistic accounts given by some observers, which, in all probability, are based on the results of the general treatment and not of the thiosinamin.

(201) Hermitol.

M. Lewitt gives an account (*Deut. med. Woch.*, July 14th, 1904) of the action of hermitol, which he has gathered from the various reports on this preparation. The drug has been introduced to remedy the shortcomings of urotropine. The action of the latter depends on the splitting off of formaldehyde; but inasmuch as this splitting off takes place extremely slowly and insufficiently in alkaline fluids (that is, ammoniacal urine), it was felt that a new preparation was required. Hermitol is obtained by allowing methylene-citric acid to act on urotropine, and the resulting compound is found to give off formaldehyde much more readily. It is soluble in water up to 7 per cent., but insoluble in alcohol. It renders the urine acid, and at the same time prevents fermentation. As an antiseptic for the urinary passages it has been used with excellent results in urethritis, gonorrhoic. poster. chron., in cystitis, and in chronic prostatitis. Bacteriuria, too, was also relieved by hermitol by several physicians. In acute gonorrhoea and in phosphaturia the preparation is said to have failed. In the gonorrhoeal affections it appears to act on the inflammatory process and arrest their spread, while it does not actually attack the gonorrhoeal process itself. The dose given is 1 gram three times a day, while 5 or 6 grams represent the maximal dose. The most convenient

method of applying it is by prescribing the tabulettae hermitoli, which contain ½ gram each. The price for Germany for a box of twenty tablets of ½ gram each is 90 pfg. (about 11d.).

(202) Protylin.

PROTYLIN (Bürger, *Therap. Monat.*, June, 1904) belongs to the group of paranucleins and is a synthetic combination of phosphous and albumen. It is almost insoluble in water, but soluble in alkaline solution, and is readily assimilable. The absorption of phosphorus is shown by the appearance of calcium phosphate in the urine during the administration of protylin; the output of indican in the urine is increased at the same time. The use of protylin is indicated in all those states of lowered power of assimilation and absorption of food which generally form indications for the use of some synthetic food preparation. In addition to this the large proportion of phosphorus in an easily assimilable form makes it of special benefit in affections of the blood forming and nerve regenerating organs and tissues, and in general illnesses associated with anomalies of the bony system. The cases in which it should be used may, therefore, be divided into three groups. In the first group are included cases of anaemia, general weakness and loss of weight, and the conditions which follow infectious fevers or long illnesses. As an example, its effect is described upon a case of convalescence from typhoid, in which the patient was disinclined for all food and stomachics and stimulants had no effect. Protylin was given in tea without the patient's knowledge, with the result that within a fortnight her energy returned, and she was demanding a more ample diet. The next group of cases are those of affections of the nervous system, such as hysteria or neurasthenia. Here protylin has a distinctly favourable effect in increasing the capacity for work, and for withstanding exciting influences; the appetite, weight, and general aspect, as well as the blood condition, improve. A greater or less degree of anaemia often accompanies nervous affections, and protylinum ferratum, which contains 2.3 per cent. of iron, is specially useful in these cases. The author successfully treated 9 such cases by the administration of 4 to 6 gr. a day of protylinum ferratum for from six to eight weeks. The third, and perhaps most important, group of cases is that in which the phosphorus contained in protylin is needed because of defects of the bone system, and this group includes in particular rickets and osteomalacia. The author has treated with protylin eighteen children with well-marked rickets, seven of whom had craniotabes and six had, in addition, bending of the ribs and thickening and abnormal loosening of the epiphyses. The ages of the children lay between 7 months and 2 years. The first child treated was 11 months old and showed a high grade of craniotabes with much bending of the tibiae. Half a teaspoonful of protylin was given twice a day, first with Nestlé's food and afterwards with sweetened malted milk. After five weeks the child could sit upright and raise himself to his feet, and the bending of the tibiae and the ossification of the skull were both much improved. All the cases treated went to prove that phosphorous treatment can be adequately carried out by means of protylin. The drug was also given in 6 post-rachitic cases of anaemia, weakness and slow development occurring in children of from 3½ to 7 years of age, and in all of these improvement quickly set in. Control experiments were undertaken by the treatment of children under the same general conditions in a similar state and of corresponding ages with food preparations poor in phosphorus, with iron mixtures, etc. In these children no such rapid improvement took place as in the former ones. In addition to the improvement it brings about in the bony system protylin increases the power of withstanding illnesses of all sorts. The restlessness, constant whimpering, and jactations of young children diminish, and with the return of ordinary power of bone formation, teething is normally regulated. Older children gain a normal resisting power to those diseases which are apt to be specially dangerous to rickety subjects. The author has given protylin in doses of 4 gr. four or five times a day to the patients suffering from advanced osteomalacia, and obtained in both instances excellent results. The ordinary dose of protylin is 1 to 2 gr. three times a day, and it should always be given after meals.

(203) Peroxide of Hydrogen in Cutaneous and Venereal Diseases.

M. OPPENHEIM (*Wien. med. Woch.*, January 30th, 1904) has employed Merck's solution of peroxide of hydrogen which contains 30 per cent. by weight of pure H_2O_2 in a number of cutaneous and venereal affections. In acute and chronic eczema compresses soaked in peroxide of hydrogen aggravate the symptoms. It is also useless in simple sycosis. In psoriasis it rapidly removes the scales and prepares the way for further treatment. Lupus is uninfluenced. Excellent results were obtained in favus with compresses dipped in a 5 per cent. solution and changed every two hours. Twenty-four hours later all yellow crusts, and with them the diseased hairs were removed and a clean, reddened scalp was exposed. The reddening soon subsided, and three weeks after cessation of treatment there had been no relapse. Even the concentrated solution had no effect on naevi pigmentosi and pilosi, beyond producing dermatitis round them, though Cohn reports that he rapidly removed a pigmented naevus by painting it with concentrated H_2O_2. The best results were obtained in venereal diseases. In soft chancres, as long as there is a tendency to the spread of ulceration, it appears to be useless, but when the process is at a standstill it rapidly cleans the surface and hastens healing. As an injection of gonorrhoea H_2O_2 aggravates the symptoms. But in ulcerated cutaneous gummata the concentrated solution sponged on the surface rapidly cleanses it and stimulates granulation. In noma of the genitals sponging the surface twice daily with the concentrated solution and the application of pieces of gauze soaked in a 5 per cent. solution and changed every two hours gave brilliant results. The adherent slough separated in twelve to twenty-four hours, and in three days the ulcer had a healthy granulating surface. Equally good results were obtained in mercurial stomatitis by painting the ulcerated gums once daily with the concentrated solution, and gargling frequently with a 3 per cent. solution. The good results obtained in noma and mercurial stomatitis may depend on the fact that these affections are caused by anaërobic bacteria. H_2O_2 is also a good haemostatic in parenchymatous haemorrhage (oozing), and is useful for the removal of adherent dressings.

PATHOLOGY.

(204) Section of the Vagi.

ENRICO MARTINI (*Giorn. della R. Accad. di Med. di Torino*, April, 1904) states that two patients whose carotids, jugulars, and vagi were divided in the course of operations for the removal of sarcomatous thyroid glands both recovered. There was no disturbance of the cerebral circulation and no pulmonary symptom. The only permanent trouble was an impairment of the voice, though for a short time there was also an increase of pulse frequency. These cases raised in the author's mind a doubt as to the accuracy of the statistics of mortality after vagotomy. He considers that a large part of this mortality is really due either to a concurrent division of the large vessels in the neck or to the surgical condition which has led to vagotomy. To test the point he experimented on 20 dogs, dividing the vagi in the neck, sometimes at once and sometimes at two operations separated by a variable interval. The results obtained were that: (1) Unilateral vagotomy was well tolerated without the appearance of any grave disturbance of heart, lungs, or digestive disturbance due to the operation. (2) Section of the two vagi in the neck with an interval of days between the two operations was followed sometimes by recovery and sometimes by death. (3) Double supradiaphragmatic vagotomy, performed at one operation, produced no disturbance of digestion. (4) Double vagotomy in the neck, performed at one operation, was constantly followed by death between the fourth and sixth days. (5) The resection of the vagi in the neck, done at an interval of a month, was compatible with life only for a limited time. (6) No changes were found, either microscopic or macroscopic, in the lungs, heart, stomach, liver, or kidneys. One dog survived for fifty days the resection of the right vagus and for thirty days that of the left vagus. During that time it lost half its original weight. There was no regeneration of the stumps of the vagi, and no anatomical lesions were found to account for the death of the animal. From these experiments the author concludes that death after vagotomy is due to no indirect cause such as pneumonia, fatty degeneration of the heart, or trophic lesions, but to the suppression of the action of these nerves, leading to the destruction of the equilibrium amongst the functions of vegetable life.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(205) Carcinoma of the Oesophagus.

E. Schütz (*Zentralbl. für die gesamte Therap.*, May, 1904) discusses the diagnosis and treatment of oesophageal cancer. Oesophagoscopy, when it is practicable, enables a diagnosis to be made quickly. The oesophagoscope can be inserted with a minimum of discomfort when the patient is in a sitting position. The preliminary extensive use of cocaine, with its accompanying dangers, becomes unnecessary as soon as the patient is accustomed to the instrument. There are many cases in which oesophagoscopy cannot be conveniently adopted, and other methods of diagnosis are needful. Schütz has had under his care 100 cases of cancer of the oesophagus. Of these 10 were situated in the upper, 33 in the middle, and 57 in the lower part of the tube. The distance from the teeth to the growth varied in the different cases from 18 to 47 cm. Fifty per cent. of the patients were between 50 and 60 years of age, the youngest patient was 31, the oldest 76 years of age. There was a history of alcoholism in 41 cases. In making a diagnosis the first point to determine is whether there is stenosis. This may be absent in the earlier stages, or later when the growth has broken down, or in some few cases may perhaps be absent throughout the disease. Such signs as a sensation of unevenness on passing the sound, or bleeding following the most careful use of the sound or localized pain as it is passed, would then strongly suggest carcinoma, and even if stenosis be present the diagnosis of carcinoma should be made with the utmost caution in the absence of such signs. Many authorities recommend that a soft gum elastic stomach tube should be used in testing for stenosis, but Schütz prefers a stiff sound as being more under the operator's control, and as a more accurate measure of the resistance encountered. He himself uses Starck's sound, an instrument on to the end of which an olive-shaped metal addition is screwed; metal ends of various sizes, and either straight or curved, can be obtained. The curved ends are useful in exploring for diverticula, as well as in getting through a constriction; indeed, since using this instrument, or some modification of it, the author has never encountered an impassable stricture. In passing the sound great care should be bestowed upon the condition of the walls as well as on the permeability of the tube. A cause of error in some cases of stenosis is the assumption that the oesophagus extends to only 40 cm. from the line of the teeth, whereas in some of the author's cases it was found to extend as low as 48 cm. The symptoms due to a growth at the lower end of the oesophagus or to disease of the stomach may be almost indistinguishable, and in cases of doubt the history should be taken with great care. A fact occasionally elicited, and which strongly supports the diagnosis of oesophageal growth is that fat meat can be more readily taken than lean meat. In some cases the passage of the sound may be found to be checked sometimes at one point and sometimes at another, and the difficulty must then be due to oesophageal spasm which often accompanies malignant oesophageal growth. Schütz holds that the daily passage of a sound is a most useful treatment. The risk of perforation is exceedingly small, and he has not found that it encouraged the development of the growth. It has relieved the symptoms and led to great improvement in the nutrition of the patient. In patients who have come to him when swallowing had became difficult and constant regurgitation occurred, the power of swallowing returned after the first time of using the sound, and with the continuation of the treatment regurgitation soon completely ceased. Artificial methods of feeding are necessary when swallowing becomes impracticable. Rectal feeding is useful in emergencies, but is necessarily only a temporary measure. Feeding by a hollow oesophageal tube is often useful. The instrument Schütz employs is a strong tube invented by Starck. He has abandoned the practice of washing out the oesophagus, as being distressing to the patient and not free from risk. As concerning diet, his patients take before each meal a small quantity of olive oil, which acts as a food and more especially as a lubricant of the tube. To relieve the pain on swallowing, morphine may be given, and if there is spasm of the oesophagus, belladonna. The application of a 3 per cent. solution of eucaine at the site of the growth is also useful. The prospect of life of patients treated by daily passing of a sound is equal to that of those treated by gastrostomy and their discomfort is decidedly less. Schütz would therefore only employ gastrostomy as a last resource.

(206) Gonorrhoeal Endocarditis.

Coulon (*Arch. Gen. de Med.*, July 12th, 1904) reports the case of a woman of 23 who contracted gonorrhoea in the fifth month of pregnancy. There was purulent vaginitis and urethritis. She was treated with vaginal douches of perchloride of mercury and permanganate. The patient was confined a month prematurely. About three weeks after confinement the gonorrhoeal discharge recurred and was followed by severe pelvic pain. The uterus was found enlarged and the tubes swollen. Gonococci were found in the vaginal pus. On the fifty-ninth day phlebitis occurred in the thigh, and soon afterwards effusion in the left knee and phlebitis in the right thigh. A few days later the patient suffered from precordial pain, palpitation, and attacks of syncope. A mitral systolic murmur was discovered. The patient recovered, and the author regards the heart affection as gonorrhoeal endocarditis, since the heart was normal before confinement. Finley and McCrae (*Montreal Med. Jour.*, April, 1904) also report a similar case in a man of 25. The patient had gonorrhoea in January, and his present illness occurred in September in the form of a rigor followed by pains in the limbs. In October he went to hospital, where a syphilitic eruption was found. The cardiac dullness was increased, and a diastolic murmur was detected. There was no discharge from the urethra. After fifty-five days' illness the patient died. The chambers of the heart were all dilated, and the muscle soft. The aortic valves were covered with vegetations. Gonococci were found in the pus cells from the vegetations, and also in the urethra. The authors remark on the fact that a gonorrhoea apparently completely cured should give rise to a fatal endocarditis after such a long interval. That the organisms were gonococci were shown by their reniform shape and intracellular position, by their decolorization with Gram's stain, and by their failure to grow on ordinary media.

(207) Deformities in Syringomyelia and Tabes.

Patti (*Archiv. di Ortoped.*, An. 21, f. 2, 1904) points out that the deformities met with in these diseases are almost always due to alterations in the bones, ligaments, and joints. In syringomyelia these deformities are chiefly seen in the upper extremities, which is the reverse of what occurs in tabes. Out of 138 cases of deformity in syringomyelia, 115 were situated in the upper extremities; and this proportion is still more marked in the case of fractures. Of the joints, the most commonly affected in order of frequency are the shoulder, the elbow, and the radio-carpal. In fractures the forearm bones are more often affected than all the rest of the bones put together. Men are more often attacked than women. Most cases occurred about 40 years of age. The duration is usually prolonged, especially in the case of the joint affections; in some cases they have appeared as an early manifestation of the disease. It is important to bear this in mind, for they have generally been looked upon as late symptoms. The author quotes two interesting cases illustrating this early appearance of joint lesions. Dislocations, subluxations, marked grating sounds on movement, and painlessness are common types in the joint affections. The affection may come on quite suddenly, and the joint is apt in these cases to become enormously distended. Relapses after reduction are frequent, and there is very little tendency to sound and lasting cure. Spontaneous necrosis of the bone was thought at one time to be a peculiarity of syringomyelia, but it has lately been described as a complication of tabes. Of the spinal deformities, cypho-scoliosis is the most common, with the convexity towards the right. Quite apart from the secondary deformity due to the scoliosis, the thorax may be deformed as a primary lesion; the photograph of the author's case illustrates many of these points. Isolated limbs may also be deformed in the sense of enlargement or atrophy, giving in some cases an appearance of acromegaly.

SURGERY.

(208) Articular Haemophilia.

Froelich (*Revue d'Orthopédie*, No. 4, 1904) reports 4 cases of articular haemophilia. In the first of these, both knees and both elbows were affected; in the second, the right knee; and in the third

and fourth, the right hip. The respective ages of the patients were 7, 9, 4, and 20 years. The author has been led by a careful study of the clinical features of this affection to question the view held by Koenig that it is developed in the three successive stages of haemarthrosis, arthritis, and articular deformity. This succession of morbid changes is, he believes, by no means constant, and, indeed, quite exceptional. Three forms are recognized, and are described as acute, subacute, and chronic haemophilic arthritis, the first of which never, and the second rarely, passes into the succeeding form. In discussing the important question of diagnosis, the author states that it is not difficult to make out the nature of the articular affection in its acute and subacute, and even in its chronic forms, if it be associated with evident signs of haemophilia, especially large ecchymotic patches. In many cases the surgeon is informed by the parents of the existence of an haemorrhagic diathesis. The problem becomes a difficult one in the absence of actual signs and a clear history of haemophilia. The surgeon in such case should inquire closely into the antecedents of the patient with regard to heredity, a tendency to bleeding, and the occasional appearance of subcutaneous ecchymoses, and in his clinical investigations take note of such indications of the disease as firm periarticular swelling and repeated attacks of intra-articular effusion. Articular haemophilia is apt to be confounded with tuberculous arthritis, and, especially when it involves the hip-joint, with osteomyelitis. The absence of doughy patches, of open fistulae and the scars of old fistulae, of pulpy thickening of the synovial membrane, and of marked inequality in size of the femoral condyles or of the had of the tibia will be of service in distinguishing haemophilia from tuberculosis, whilst an absence of redness in the oedematous skin, and an enormous and sudden development which is very characteristic of acute haemophilic arthritis of the hip, will enable the surgeon to eliminate osteomyelitis. Transient attacks of articular swelling antecedent to the development of chronic arthritis, and temporary thickening of the synovial membrane in the course of the evolution of the disease are often pathognomonic. Radiography, which would demonstrate the integrity of the bones, might be employed. In very difficult cases the surgeon might carry out Koenig's practice of distinguishing between haemophilic and tuberculous cases by injecting Koch's tuberculin, but such method of research will, Froelich holds, be very rarely indicated. In his directions on treatment the author advocates rest in bed, cooling applications to the joint, and retention of the limb in splints in acute and subacute cases, and compression by bandaging, rest of the joint, gradual extension, massage, and faradization in chronic cases. Aspiration of the swollen joint, tenotomy, and forcible extension of the contracted limb ought, he holds, to be carefully avoided.

(209) The Surgical Treatment of Septic Thrombosis of the Lateral Sinus.

Joubert (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 27, 1904) puts on record a case of thrombophlebitis of the left lateral sinus, following acute mastoiditis, treated with rapid and complete success by exposure and curetting of the affected sinus without ligature of the internal jugular. In his comments on several points of interest in this case, such as the race association of septic thrombosis of the sinus with the acute form of mastoiditis, the rapid evolution of the septic lesions, and the absence of any grave subjective symptoms, notwithstanding the clear evidence of the nature of the attack afforded by intense rigors, profuse sweating, and oscillating temperature, the author directs attention to the fact that in his operative treatment he attacked only the mastoid and the thrombosed sinus, and not the internal jugular vein. Whilst there is general accord as to the necessity of treating the thrombosed and infected sinus as an abscess—that is to say, by free incision and drainage—there is much difference of opinion with regard to complementary ligature of the internal jugular. The author's views on this question are, he states, corroborated by the statistics of Körner, which demonstrate that the proportion of cures is about the same in both operations. Thus in 308 collected cases of exposure and incision of the lateral sinus, the percentage of successful results was 58.3 when the sinus had been simply incised and curetted, 59.6 when this operation had been preceded by ligature of the vein, and 59.9 when the order of the two operations had been reversed.

(210) The Operative Treatment of Prostatic Hypertrophy.

Watson (*Ann. of Surg.*, June, 1904), in concluding an elaborate review of the different operative methods that have been practised for the cure or relief of prostatic hypertrophy, states that the experience of the last fifteen years has removed the previous opposition to the operative treatment of this malady, and has demonstrated its right to a legitimate and recognized place among the therapeutic measures of modern surgery. Owing to improved technique, and, in a smaller degree, to a better selection of cases, the operative mortality has in a general way fallen to at least one-half of what it was fifteen years ago. It is held that the greatest gain in this respect is that shown by the perineal and suprapubic operations, the least by Bottini's method. The operations for total removal of the gland under improved technique are attended by a smaller mortality than are the partial removals of obstructing parts. While injury to the prostatic urethra is not necessarily harmful, it remains to be shown what compensating advantage can be secured by any manner of operating which involves injury to the prostatic urethra which should lead surgeons to adopt it instead of an operation which offers the chance of preserving the parts with very little, if any, injury. The results with respect to cure are, the author asserts, far better in the perineal and suprapubic operations than those attained by Bottini's operation. The most important single factor in determining whether or not radical operative treatment should or should not be applied is, it is thought, the capability or the reverse of the renal function. With regard to the choice of operations, the author concludes that under conditions in which there is nothing to interfere with a free selection of method (1) the total removal of the gland by the best perineal method is to be preferred; (2) when any condition is present which renders the perineal operation difficult or is a contraindication of any sort to its application, the suprapubic is the operation of choice, and when contraindications are present which make this latter operation undesirable, the Bottini becomes the operation of choice, and when the patient's condition is such as to render any of these three methods inappropriate, the surgeon, if obliged to do something, has as his only resource palliative operation for drainage.

MIDWIFERY AND DISEASES OF WOMEN.

(211) Incipient Rupture of Uterus detected in Labour.

Staude (*Zentralbl. f. Gyn.*, No. 22, 1904) attended the labour of a woman, aged 25, in the seventh month of her fourth pregnancy. Four years previously she had aborted and the curette was used. During the pains a swelling developed on the anterior surface of the uterus below the umbilicus, growing very tense and almost disappearing as the pain increased and subsided. The finger could be passed into the os. The head presented and a sharp-bordered round hole as big as a crown-piece could be felt in the anterior wall; the membranes bulged into it. The nature of the swelling detected on palpation became clearer, yet there was neither shock nor haemorrhage. The patient was anaesthetized; then on laying the hand over the swelling the outline of the fetus inside the uterine cavity could be defined. On opening the abdominal cavity, the membranes were seen projecting through a round hole in the uterus of old standing, for the serous and mucous coats were blending all round its thin, sharp border. This hole was enlarged by a vertical incision above and below and the child extracted; it died within a few hours. The edges of the hole in the uterus were freely pared, so that an equal thickness of all the uterine coats could be placed in apposition, and it was closed by interrupted silk sutures after extraction of the placenta. It is not clear whether the hole in the uterus—due very probably to damage from the curette after the abortion—had enlarged during the evolution of the uterus in pregnancy or had not been stretched until labour pains came on. The lesion was analogous to stretching of an old Caesarean-section scar during a subsequent pregnancy (Wayer).—Herzfeld (*Zentralbl. f. Gyn.*, No. 44, 1901) reported a similar case where the curette had caused the weakening in the uterine wall, and Staude also referred to Jellinghaus's case, where the damage to the uterine wall had been set up by injuries during the separation of an adherent placenta. Staude considered that the curette is too often used in cases of recent abortion; the finger should be employed by preference.

(212) Adenomyoma of the Uterus.

S. J. M. Cameron and F. E. Taylor (*Journ. of Obst. and Gyn. of the Brit. Emp.*, March, 1904) describe a case of adenomyoma of the uterus. The patient was a woman, aged 49, who had suffered for two or three years from gradually-increasing menorrhagia, and for five weeks from profuse metrorrhagia. The case was diagnosed as one of fibromyoma, and the uterus, with both appendages, removed. After removal the tumour appeared at first sight to be an ordinary interstitial fibromyoma: but when the anterior wall of the uterus was incised, it was found that there was no trace of a capsule to the growth. The wall was 1½ in. in thickness, and could be divided into three layers from within outwards—(1) a thin layer of spongy, rather ragged endometrium; (2) a mass of spongy-looking, coarsely-striated tissue, the striae running in all directions, and not presenting the characteristic walled appearance of fibromyoma: (3) a layer of apparently normal uterine tissue, about ½ in. in thickness. The same formation was visible in the posterior wall, and extended downwards almost to the os internum. At the junction of normal and abnormal tissue a small encapsuled growth, looking like an ordinary fibromyoma, could be seen. On histological examination, the bulk of the tumour was found to be made up of bundles of plain muscular tissue, interspersed among which were gland tubules embedded in a mass of richly cytogenic lymphadenoid connective tissue. A double nucleus was found in some of the cells of the acini of the glands, and in this respect the condition closely resembled that described by Mr. Bland-Sutton as occurring in the tubular variety of cancer of the uterus. Adenomyomata of the uterus have been supposed by different authors to originate in persistence of embryological structures, especially of the Wolffian ducts, or from the uterine mucous membrane, or to be of microbic origin. The authors suggest that the tumours may be formed by proliferation of the uterine peritoneum, which has become modified and has dipped into the surface of the uterus. The growths differ in consistency, according to the relative proportions of muscle and gland tissue, and have been divided by von Recklinghausen into four groups: the hard, the soft, the telangiectatic, and the cystic adenomyomata. There is no regular capsule round the tumour margin, and they are therefore of an infiltrating nature. They are found in any part of the broad ligament, and Pick differentiates between an epoopheral form occurring in the lateral parts of the ligament and a paroopheral form in the mesial part. They are found also in the round ligaments. Freund gives the following clinical characters as occurring in connexion with adenomyomata: (1) Patient's age, 20 to 50 years; (2) generally weak and unhealthy in childhood; (3) menstruation appears late; (4) they have suffered from anaemia; (5) a constant symptom is dysmenorrhoea with profuse menstruation; (6) the majority are sterile; (7) pelvi-peritonitic symptoms appear early; (8) disturbed functions of the bladder and rectum; (9) the patient's general health fails; (10) the genitals are infantile in character. The cases are less favourable than ordinary myomata, and there is a tendency to carcinomatous degeneration. The case here described showed characteristics differing from these in several particulars. The patient was not anaemic before the onset of the illness. Although she had suffered from dysmenorrhoea for many years, this had ceased of late years, nor had menstruation been excessive until the last three years. She had borne children, had never suffered from pelvi-peritonitis, had no rectal or vesical disturbance, the genitals were well developed. She recovered rapidly from the operation, and has since gained strength.

(213) Cerebral Embolism during Colpo-perineorrhaphy.

Keiffer (*Bull. de la Soc. Belge de Gyn. et d'Obstét.*, vol. xiv, No. 4 1903 4) operated on a woman, aged 45, for tubal procidentia. Beyond occasional palpitations her general health appeared to be good. The curette was used, and anterior colporrhaphy performed, but after the sutures were applied blood was seen oozing from between the lowest close to the meatus. On cutting through two or three sutures it was found that very extensive haemorrhage had taken place in the perivesical tissue. Free irrigation with hot sterilized water proved unavailing, so pressure was applied by a gauze pad, part of the vaginal wall being sutured behind the pad. As the patient recovered from the chloroform marked left hemiplegia was observed. This complication diminished for a few days, but then became worse, death occurring on the eighth day. The bleeding had quite stopped, and the vaginal as well as the perineal wound had united perfectly. The precise relation between the haemorrhage, which was checked before it could become serious, and the embolism was not quite clear, Keiffer admits; most probably the cerebral lesion caused vasomotor disturbances, which interfered with haemostasis.

(214) Prognosis and Treatment of Papilloma of the Ovary.

Pozzi (*Rév. de Gyn. et de Chir. Abd.*, May-June, 1904) has published an important contribution to the study of papillomatous cysts and tumours of the ovary in respect to prognosis and treatment. The conclusions of this experienced authority are clearly stated thus: (1) Papillomatous tumours of the ovary (cystic or solid) should not be considered as always malignant; a great porportion evolve as innocent growths, and do not recur after removal, or, if they recur, the tumour tissue is reproduced long after operation locally and without systemic infection; (2) it is necessary to distinguish generalization of malignancy, which is effected by the blood and lymphatic vessels from the grafting on to the adjacent peritoneum of papillomatous ovarian vegetations; the latter processes are seen in warts elsewhere; (3) a certain proportion of papillomatous ovarian tumours undergo malignant degeneration; it is impossible to distinguish this change by the naked eye in its earlier stages; the microscope can alone decide, and sections must be made from several parts of the tumour, as the malignant change is often very local at first; (4) when there is no cachexia or visceral metastasis the surgeon should act as though the tumour were innocent; disseminated papillary growths, often lying high up in the peritoneal cavity, may be overlooked: then they tend to disappear; or, if they develop again, their removal by a later operation can be easily affected: (5) so often is this disease bilateral that the opposite ovary should be removed, even if apparently healthy, at least in women near the menopause, for when the patient is young it were better to risk the chance of another operation; (6) bilateral tumours generally require total or supracervical hysterectomy; (7) where there is ascites it is advisable to drain the peritoneum after the removal of a papillomatous tumour. Incomplete operations are usually followed by diminution of the ascites and general and local improvement; even a simple exploratory incision may do good. Drainage is to be avoided only when the papilloma is entirely inside a cyst, and when at the same time ascites is absent.

THERAPEUTICS.

(215) Therapeutic Application of Radium.

W. Scholtz (*Deut. med. Woch.*, January 14th, 1904) finds that the physiological action of these rays are, to a certain extent, like that of Roentgen rays. He experimented with 25 mg. of radium, which was enclosed in a small vulcanite capsule, and covered by a thin mica sheet. The capsule was fastened on to the skin of the animals and human subjects by strips of plaster. After short application—that is, four or five minutes—as is the case with *x* rays, the hair of the part falls out after two or three weeks; after ten to fifteen minutes' application a fairly intense inflammation appears after the same period; after from twenty to thirty minutes' application an ulcerative process, affecting the subcutaneous connective tissue, sets in in the third or fourth week. The difference between the action of the radium rays and that of the *x* rays is well marked in one direction. The visible effects of the latter are manifest after about fourteen days, and only rarely does one come across an erythema after twenty-four hours. This rare appearance, called by Holzknecht "the *Vorreaktion*" (preliminary reaction), is probably not due to the *x* rays themselves, but to some other factor, in connexion with old tubes. About twenty hours after a short application of radium one comes across a somewhat intense erythema. This disappears in the course of from four to six days, leaving a brownish pigmentation behind. Scholtz thinks that some use may be made of this erythema, from a therapeutic point of view. Another action of the radium rays is a bactericidal one. In this particular its action is much more powerful than that of *x* rays, but not so powerful as concentrated light from an iron electrode. In apply-

ing this to practice, he considered that it might prove of use in cellular new growths and in some infective processes. Sarcoma, carcinoma, and lupus of the skin appeared to him to deserve some investigation, but he thought that it would be necessary for the rays to be able to act on the deeper layers of the skin. He therefore experimented on the deep action of the rays, and found that after passing through a single rabbit's ear the rays lost about 50 per cent. of their activity, while after passing through twice the thickness from 70 to 75 per cent. was lost. He considers that this is encouraging. The hope that the therapeutic action may be directed toward destroying bacteria is scarcely great, since it has been shown that after having placed a tube of radium within 2 mm. of a culture of typhoid bacilli on agar, three hours were required to sterilize the exposed portion of the plate; and it further appears that one must not expose the skin of a patient for longer than a quarter of an hour, lest ulceration and deep destruction of tissue take place. To overcome this difficulty, at all events in part, he thinks that one may be able to attain the same result by repeating short exposures many times. In this way he tried without success to deal with a furuncle. A case of lupus erythematodes was very slightly improved by a course of applications. With lupus vulgaris, he applied the radium rays until superficial excoriation took place. On this healing it appears as if the lupus had healed as well, but time is needed before definite conclusions can be drawn. He further tried it on two cases of skin carcinoma. In the first case, the growth took the form of a small ulcerated carcinoma of the cheek. The treatment was carried out until a marked amount of inflammation and some ulceration took place. The ulceration healed up slowly, leaving a smooth, soft, white scar in its place. The second case also appears to have been cured by the treatment. He considers that one has to gain much more experience yet with this substance before one can come to any definite conclusions.

(216) The X Rays in Mycosis Fungoides.

Jamieson (*Brit. Journ. of Dermatol.*, April, 1904) reports on the alterations in the structure of the new growth in mycosis fungoides effected by the *x* rays, by comparing sections made before and after their employment. The case of a female, aged 49, who had had the disease for six years was examined. The scalp was tense and covered with dry scales. The skin of the left side of the forehead was thin: on the right side it was thick and scaly. The face, chin, and upper part of the trunk were red and indurated. The trunk and limbs were covered with brick-red patches, enclosing areas of normal skin. Some parts were scaly or crusted, resembling dry eczema. The inguinal and cervical glands were enlarged, and there was much itching. Exposures to the *x* rays were made to the whole body, the daily duration being 35 minutes, the surface affected being mapped out into seven areas, which were exposed for five minutes, at a distance of 6 to 10 in. After a week three superficial burns developed on the back, on and around parts that were crusted, but these soon healed under zinc ichthyol ointment. In two months the lesions had faded leaving only some slight staining. The epidermis peeled off leaving a smooth surface. The hair on the crown fell off, the crusts disappeared, and the scalp became pliant. Soon afterwards some new patches developed in regions which had not been submitted to the action of the rays. These disappeared under renewed treatment and the general health improved. Pieces of skin before and after treatment were excised and the changes found to be as follows: The normal structure of the corium was replaced by granulomatous tissue, consisting of cells varying in size and shape set in a delicate intercellular network. Two kinds of cells predominated: cells of the fixed connective tissue-cell type and round cells with deeply staining nuclei, resembling lymphocytes. The process apparently begins in swelling and proliferation of the connective-tissue cells, and of the endothelial cells of the blood vessels. The *x* rays, perhaps by acting in the vasomotor nerves, restore the constitution of the connective-tissue cells, and enable them to resume their function of specialization. After two months of *x*-ray treatment the granuloma and infiltration, oedema, and hyperaemia disappear, and there is a restoration of the corium and both collagen and elastic fibres.—Marsh (*Amer. Journ. of Med. Sci.*, August 1903) also reports a case of mycosis in a woman aged 60, with three distinct tumours, which disappeared under *x*-ray treatment. Exposures of ten to fifteen minutes were given at intervals of four to seven days for three months.

PATHOLOGY.

(217) Eosinophilia in the Bony and Articular Tuberculosis of Children.

Gianasso (*Giorn. della R. Acad. di Med. di Torino*, April, 1904) records the results of examinations of the blood in 48 cases of tuberculosis in children, with special reference to the eosinophile corpuscles. The article is a step in the direction of supplying a special haemoleucocytic formula for the disease. He prefixes to his paper an account of the inquiries of others into the nature of the eosinophile counts in different forms of disease. The leucocytes with eosinophile granules are usually from 2 to 4 per cent. of the whole in the blood of healthy children, but they may occasionally and for a short time be as many as 19 per cent. without any indication of disease. Probably they come directly from the medulla of the long bones. Many observers note their frequency in diseases of the skin. Zappert found them increased in scarlatina. Observers differ as to their frequency in the early and later stages respectively of this disease. In bronchial asthma Gollasch and Müller found them increased at the beginning of the disease and diminished later. Numerous and contradictory observations are recorded of the frequency of eosinophile leucocytes in cases of helminthiasis. Weir, David, and Rezançon, and Labbé all found them increased in cases of appendicitis tending towards cure. Numerous references are given to works dealing with the number of eosinophile leucocytes in these and many other diseases. Lanza examining the fluid from blisters on the skin of a tuberculous child, found that improvement in the general and local conditions was constantly accompanied by an increase in the eosinophile leucocytes. Barson and Cade found eosinophilia to be a favourable prognostic indication in tuberculous pleurisy. Roger and Josué, and Humbert, examining the fluid from blisters on two healthy persons and twenty-four sick, found that eosinophiles were more numerous in the healthy, and disappeared altogether in those suffering from infectious diseases; in tuberculosis they were absent or few in number, becoming more numerous as the disease ran a more favourable course. The author of this paper examined the blood from the tip of the middle finger, determined the haemoglobin value of the corpuscles by Fleischl's haemometer, and counted the corpuscles with Thoma-Zeiss instrument. To distinguish the eosinophile leucocytes he fixed the blood on a cover-glass for half an hour with a mixture of equal parts of absolute alcohol and ether, and coloured with an alcoholic solution of eosin and methyl-blue. He distinguished the leucocytes as small mononuclears, large mononuclears, neutrophile polynuclears, and eosinophile polynuclears. His 48 patients were children with bony or articular lesions of a tuberculous nature; all but 5 of them were under 12 years of age; 29 were males and 19 females. They were all examined as soon as they entered the hospital before there had been time for medical or surgical treatment to change their condition. In each case the author gives the age and sex and a brief note on the clinical condition, gives the number of the red corpuscles and their haemoglobin value, and enumerates and classifies the leucocytes as mentioned above. The most striking fact apparent from the tables given is the approximately constant proportion of eosinophiles observed—usually from 4 per cent. to 7 per cent., but rising to a maximum of 16 per cent. In the blood of healthy children the proportion is usually from 2 per cent. to 4 per cent., and the author believes that this increase may be used to settle the diagnosis in doubtful cases. He found this eosinophilia most marked in slight cases where the patient was in good condition or in process of cure. It was slight or absent in severe cases with much wasting, fever and cachexia. But these results were not obtained with absolute constancy, and the exceptions are regarded as being due to unrecognized disturbing factors. Without claiming for the eosinophiles an immunizing power, in Metchnikoff's sense of the word, the author attributes improvement in the patients' condition to the production of substances with an antitoxic and antibacterial power, connected with the elaboration by the bony medulla of large numbers of eosinophiles subsequently discharged into the blood.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(218) Endocarditis and Mumps.

Of the numerous reported complications of mumps endocarditis is one of the rarest, and is not even mentioned by most writers. It is thus remarkable that, during a small epidemic of parotitis, R. Tatschner (*Wien. med. Woch.*, July 30th, 1904) observed four cases of endocarditis in one family, which appeared to be a complication or sequela of mumps. On November 26th a girl, aged 9, had an attack of mumps which ran a normal course and rapidly subsided. A week later two sisters, aged respectively 11 and 7, and a brother, aged 5, were attacked. In the second half of January all but the eldest girl, who remained in excellent health, suffered from a catarrhal affection with acute coryza, headache, pharyngitis, earache, bronchitis, and occasional nocturnal elevations of temperature—symptoms which were prevalent at the time both among children and adults. On examination the character of the pulse induced the writer to examine the heart of the girl aged 9. There was a systolic apical murmur. The hearts of the other children were normal. But early in March a systolic musical murmur was found in the eldest girl and extreme cardiac arrhythmia was present in her youngest sister. In the second girl the loud systolic murmur persisted, and there was slight pericardial friction, with increase of cardiac dullness. There was also a loud apical systolic murmur in the boy. The children were kept in bed, with the result that on March 16th the cardiac sounds in the eldest girl were normal, and the arrhythmia in the youngest girl, who was taking strophanthus, disappeared. On June 30th, when the strophanthus had been discontinued for a fortnight, the arrhythmia was returning. On the same date the systolic apical murmur in the second girl was less intense than formerly, there was no pericardial friction, and the cardiac dullness was almost normal. The eldest girl was kept in bed till April 5th, when there was no trace of a murmur in the recumbent posture; but, on standing or walking, a loud, metallic, ringing sound was heard synchronously with the unaltered first sound, or between the systole and diastole. The pulse in the recumbent posture was 80 to 90, but rose on standing or walking to 100 or 120. This metallic sound was so loud that on the day she first got up it was plainly audible at a distance of three paces from the chest. This condition was practically unchanged on June 30th. Though no murmur was present in the case of the youngest girl, the arrhythmia, in view of the physical signs present in the other children, was probably of endocardial origin. The reasons for attributing the endocarditis to mumps were three: (1) The writer had repeatedly examined the children before the parotitis, and had found no trace of cardiac disease; (2) the cardiac complication could not have been due to the catarrhal affection of the following January (which, in the writer's opinion, was not influenza), because, though the eldest girl escaped infection, she nevertheless developed heart disease; and (3) there was no other possible cause.

(219) Quinquaud's Sign.

P. Fürbringer finds that but few medical men know what Quinquaud's sign is, and he therefore chooses it for the subject of a paper (*Deut. med. Woch.*, June 30th, 1904). In 1893 Quinquaud, Director of the Hôpital Saint-Louis, made his students place their extended finger at right angles on his palm, and after passing over the majority of them, looked at two of the students somewhat ironically, but said nothing. He died a month later, and the secret was lost to the world until seven years later, when Maridort, who had imitated the proceeding, described the phenomenon. During the first two or three seconds nothing is noticed, but then one feels slight concussions (*petits chocs*) which may be as if there were a light rubbing of the bones of the fingers against one another, or if the phenomenon is intense and the impacts are rapid, as if there were a coarse creaking. This phalangeal crepitation, however, does not depend on any joint changes as in the various forms of arthritis. Aubry followed out Maridort's suggestion that the phenomenon occurred in alcoholics, and found that those who partook of alcohol usually showed the sign, that occasionally it was absent in confirmed drinkers, but that when it is found one can be certain that the patient is not a total abstainer. Fürbringer tested the sign in a very large number of cases and comes to a somewhat different conclusion. With regard to the technique of the test, he states that he recognizes three degrees—a mild, a moderate, and a strong degree. The best method of applying the sign is to place the ring and middle finger in an extended position so that the tips press on the palm of the hand of the physician. The amount of pressure is readily learned by a short experience. The result of his experience is summed up as follows: (1) Individuals who do not show the Quinquaud sign are in all probability not drinkers in the ordinarily accepted meaning of the term. (2) In mild or medium degree the sign does not justify the assumption of alcoholic abuse. (3) A strong degree of phalangeal crepitation points with great probability to a drinker. Comparing this sign with the tremor of the hands in alcoholics, he finds that when the latter is well marked it points with more probability to alcoholic abuse than Quinquaud's sign, but he considers that it is valuable to test by both methods.

(220) Masked Malaria.

Bindi (*Clin. Mod.*, July 6th, 1904) reports the case of a man, aged 38, who first contracted malaria in 1888 and again in 1897 and 1901. In November, 1903, he developed a masked form, characterized by attacks of shivering coming on daily at about the same time for a period of twenty days. The shivering was similar to that which ushers in an ordinary attack of ague, but in this case it was never followed by a hot or sweating stage. The temperature was never above 37.7° C. The attack usually began about 8 a.m. and ceased six or seven hours later, and was accompanied by severe headache, pains in the eyes and tenderness over the liver and spleen. The proof that these attacks were malarial lay in the fact that the malarial parasite (of the tertian type) was discovered in the blood on two occasions. This, coupled with the fact that the man had previously suffered from malaria, served to diagnose the case as one of true masked malaria. Quinine did not seem to have any material effect on the disease. Masked malaria is said to attack weakly subjects, but this patient was a robust, healthy man. The author is sceptical as to the true malarial character of the numerous affections which have been called masked malaria—for example, neuralgia, asthma, dyspepsia, cutaneous eruptions, etc. They may possibly be after-effects like the parasyphilitic affections, but do not deserve the name of malaria. Such attacks seem to be more common in temperate than in tropical countries, and usually take to quotidian type, rarely tertian, and still more rarely quartan.

(221) Serum Diagnosis in Primary Tuberculosis of the Middle Ear.

De Simoni (*Gaz. degli Osped.*, May 1st, 1904) draws attention to the value of the above test in cases of middle-ear disease of uncertain origin. He publishes 3 cases of middle-ear disease with otorrhoea where the serum agglutination test for tubercle was applied, and gave positive results; no other tuberculous lesions were discovered. In another series of control experiments carried out on twenty patients suffering from otorrhoea, no serum reaction was obtained. It is said that in tuberculosis the serum reaction is the more marked the earlier the stage of the disease, and that in advanced phthisis the reaction is very slight, and often absent. If this is so (and it requires further experiment), the test becomes more valuable as a means of early differential diagnosis.

SURGERY.

(222) Urethral Transplantion from the Ox to the Human Subject.

Pringle (*Ann. of Surg.*, September, 1904) publishes 3 cases in which patients with urethral defects have been treated by grafting into their tissues portions of the urethra of the ox. Two of the patients thus treated were men who had sustained a complete and extensive rupture of the urethra in the perineum, and the third was a boy with hypospadias, in whom there was a deficiency of the floor of the urethra along the whole of the penile portion of the channel. The treatment of these three patients represents five operations in which portions of an animal's urethra, varying in length from 2 to 5 in., have been implanted with success. The grafted tissue, it is stated, lived and formed a patent channel. A photomicrograph of a section of a graft excised from one of these cases in a *post-mortem* examination, after having been in the living tissues of the penis for nineteen months, shows a perfect canal lined by a normal layer of epithelium. Reference is made to a

case in which Fenwick transplanted a portion of a sheep's urethra for the treatment of intractable stricture, but, so far as Pringle is aware this method is quite new in cases of hypospadias. In cases of congenital defect of the urethra this method of implanting a true urethral tube is held to be at least as certain as any other that has been suggested, while the advantages of having a canal ready-made, which can be obtained in unlimited quantity, and which has been developed for the actual purpose of transmitting urine, is a very great one. It is, the author believes, greatly superior to the methods hitherto employed in the treatment of those deficiencies of the urethra which result from traumatic rupture.

(223) Operative Treatment of Gout.

SOME time ago Riedel briefly mentioned that he had successfully operated on two cases gout of the great toe, and he now gives an account of the cases (*Deut. med. Woch.*, August 25th). His first case was that of a man aged 45 years. His patient had spent a whole day shooting partridges, in very hot weather. He arrived home with a good "bag," feeling quite well. During the night he was suddenly attacked by severe pain in the right great toe, swelling and fever soon followed, and on the following morning the foot was intensely swollen and discoloured from the great toe to the ankle. The skin was shiny, and there was extreme pain. The temperature was 102.2° F. Riedel found that the patient had a certain degree of hallux valgus, and presumed that a bursa had developed in connexion with this; that the bursa (as is frequently the case) communicated with the joint, and that both bursa and joint were acutely inflamed and suppurating. The patient was therefore immediately admitted into hospital and anaesthetized. A bloodless operation was performed. The incision was made over what he took to be the bursa. No bursa was found. On cutting deeper, the knife opened a typical "gout" joint. There were large quantities of urates in the joint; the capsules were very red, and infiltrated with sharp urate crystals. Inside the joint he found a serous exudation under positive pressure. He therefore proceeded to clear away all the uratic deposit. The capsule was removed, the bones and the sesamoid bone were freed from the deposit. The soft parts were then replaced, but the wound was kept open. In the evening the patient was free from pain and had no fever. The swelling rapidly disappeared, and the wound healed within five or six weeks, leaving a narrow scar. The patient was highly satisfied with the result. The joint remained well until the patient's death, fifteen years later. In spite of much seeking, and in spite of the warm recommendations of this patient, Riedel could not find a single gout patient who would allow him to operate during the following twelve years. Then he was called upon to treat a lady of 70 years, who was under ophthalmic treatment. On August 7th, 1894, she was taken with pain in the right great toe. The physical signs pointed to a suppurating bursa, but the remembrance of the other case led him to open the joint. First he incised over a prominence, which turned out to be a bursa, infiltrated with urates, and communicating with the joint. Here, too, he found great masses of urates. The wound was prolonged, the capsule and bursa were extirpated, and the joint freed from urates. The wound, which was left open, healed in a few weeks, and no further trouble arose in the toe up to the date of the patient's death, eight years later. In discussing the advisability of operating on gout joints during the acute attack, he states that when the trouble is limited to the great toe the conditions are peculiarly well adapted for successful treatment. The joint stands the removal of the capsule well, since the ends of the bones are very freely supplied with blood.

(224) Foreign Body Removed by Bronchoscopy.

G. KILLIAN (*Deut. med. Woch.*, August 11th, 1904) reports on his sixteenth successful removal of a foreign body from the bronchi by means of his bronchoscopy. He considers that it is still necessary to record each case, as many eminent authorities continue to regard the operation sceptically. He points out, however, that he is not the only operator in whose hands the method has proved of utility, and maintains that, with practice and experience, the method can be readily learned. His patient was 56 years of age. On February 7th he swallowed and aspirated a piece of bone which was in his soup. The immediate results were an attack of choking and much cough. Dyspnoea with stridor followed, but no bronchitic or pneumonic signs, and no fever presented themselves. An attempt was made in Brussels to deliver the piece of bone by means of upper bronchoscopy, but this failed. At length, on May 20th, the patient determined to journey to Freiburg and see Killian. At that time the percussion note was less resonant all over the left lung than over the right; the breath sounds on the left were weak, and were accompanied by a loud stridulous *bruit*, as well as by some dry rhonchi. The vocal fremitus was diminished, chiefly at the left base. By laryngoscopy the right bronchus appeared normal, but only the top of the left could be seen, and this was reddened. Radiography did not reveal any foreign body. The bone was supposed to lie 35 cm. from the level of the upper incisors. Under an anaesthetic, with everything ready, even tracheotomy instruments, the bronchoscope was passed into the trachea, and, after a little difficulty, into the left bronchus. The mucous membrane here appeared to be very red. Passing the long forceps, he soon succeeded in reaching the piece of bone, and in seizing it. The whole instrument was then withdrawn. The bone was covered with fetid pus, and measured 2 cm. by 1 cm. by ½ cm. On awaking from the anaesthesia the patient felt his breath much relieved. He spat a little blood. Within a few days the signs disappeared, and he has remained well since. He adds a few remarks on the method of operating.

(225) Deformities after Fracture of the Femur.

ROSSI (*Archiv. di Ortoped.*, An. 21, No. 2) reports 4 cases of deformity after fracture of the femur successfully treated by osteotomy, and to application of a special apparatus. In one case of fracture in the middle third in a man of 39, the deformity (6½ cent. shortening) was absolutely cured, and the patient was walking about in the apparatus eight days after osteotomy (done three months after the fracture). The chief point in the author's treatment is the application of strong traction (50—60 kilog.) after osteotomy; the traction to be applied directly to the skeleton after the method of Codivilla—that is, fixing a peg into the tuberosity of the os calcis, and getting traction in that way. Beyond some temporary pain this introduction of the peg (which may be kept in from twelve to thirty or more days) does not cause any trouble. Wherever possible the ambulatory treatment gives the best results. The author suggests that even in recent fractures this method is to be recommended. The traction in these cases to be applied by a Crosby splint, or associated with rigid fixation from head to foot. Each of the four cases reported by the author is illustrated by successful radiographs.

MIDWIFERY AND DISEASES OF WOMEN.

(226) Obstructed Labour.

ROBERT JARDINE (*Journ. of Obst. and Gyn. of the Brit. Emp.*, vol. v, No. 5) gives notes of 22 cases of obstructed labour, including 8 cases of induction of labour, 4 of symphysiotomy, and 10 of Caesarean section. In the first case of induction of labour described the patient was seen when seven months pregnant, at which time the head could easily be pushed into the brim. She, unfortunately, did not return for examination for three weeks, and it was then found that the head no longer entered the brim. Labour was induced, but it was necessary to perform craniotomy before delivery could be effected. Another case of interest was one in which the patient's temperature rose to 99.8° F. a few hours after the first introduction of bougies. On the next day the temperature rose again to 103° F., and the bougies were taken out. Labour ended naturally, but the child was dead. The mother's temperature kept at about 102° F. from the evening of the delivery to the seventh day, when it reached 105° F., and the patient died. The lochia remained throughout perfectly sweet, and there was nothing to indicate septic infection. At the necropsy the heart was found to be fatty and dilated, and heart failure had probably caused death, but no explanation of the temperature or of the death of the child was arrived at. In a third case in which a dead child was delivered death appeared to have been due to the chloroform administered to the mother when the bougies were inserted. A fourth child delivered at the eighth month seemed well, but died suddenly at the fifth day. In the other cases of induction of labour the children were born alive and both mothers and children did well. The author holds

that induction of labour is a perfectly justifiable operation in properly-selected cases, especially in the hands of general practitioners who can scarcely undertake symphysiotomies or Caesarean sections. In the future, with a lowering of mortality of the major operations induction of labour will probably be less frequently resorted to in hospitals. The child's chance of life is poor before the thirty-second week. After this date the patient should be seen every week, and labour induced as soon as the head enters the brim with difficulty. In the 4 cases of symphysiotomy all the children were born alive and survived. In two cases there was severe haemorrhage, and in one of them the left ramus was fractured, the fractured end causing a laceration into the vagina, while in the other the distal end of the urethra was torn away from the vagina, but was stitched into place again at the operation. Considerable laceration of the soft parts is almost inevitable where much separation of the joint is needed. The nursing of a case of symphysiotomy is difficult, and convalescence lasts, on an average, a fortnight longer than after Caesarean section. Under these circumstances it seems improbable that the operation will become popular in this country, although there is no doubt that it has the advantage of causing a slight permanent increase in the size of the pelvis. Ten cases of Caesarean section are described. In the first of them extensive cancer of the cervix was present, and in the other nine marked contracted pelves. In the case of cancer, and in a case where the uterus was probably already septic, supravaginal amputation of the uterus was also performed; in both instances the child was dead before the beginning of the operation. The mothers in all 10 cases recovered from the operation, and 9 out of the 11 children were born alive. Two of the children did not thrive and died in the third week, and a third child became jaundiced and died on the third day. In each of the cases in which the mother's abdomen was especially tense there was cessation of respiration just before the uterine incision was made. Artificial respiration had no effect, but natural breathing began again as soon as the incision was made. In nearly every case the children needed resuscitation. When operating the author makes a high abdominal incision about 5 in. in length, two-thirds of it lying above the umbilicus, and incises the uterus longitudinally in the middle of the anterior wall, so that the top of the incision is at the fundus. The placenta has been on the anterior wall in nearly nine-tenths of all the cases in which he has performed Caesarean section.

(227) Pyosalpinx and Uterine Fibroid.

Strassmann (*Zentralbl. f. Gynäk.*, No. 4, 1904) is of opinion that long-standing pressure of hard tumours tends to close the tubes at the abdominal extremity, so that should bacteria be present in the uterine cavity pyosalpinx may develop—a condition homologous to pyonephritis in cases of renal calculus. Pyosalpinx has been recently noted at least twice in association with calcified fibroid. Strassmann publishes three cases of this tubal complication in fibroid disease, two ending fatally after operation. (1) Sterile woman, aged 51, no evidence of old gonorrhoea, a large pyosalpinx, lying under a calcified fibroid, burst and caused diffused peritonitis. The uterus and appendages were removed entire, but the patient died on the second day. The tumour had been noticed for fifteen years, the pains for a month. (2) Woman, aged 41, had borne a child, no fever in puerperium, never had gonorrhoea. Four years before observation suffered from what was described as appendicitis, but might have been inflammation of the appendages. The uterus and appendages were removed through the vagina. There was a necrotic fibro-myoma, subcutaneous, and of the size of a fetal head; numerous smaller intestitial growths were found in the uterine wall, and both tubes were dilated and full of pus. Recovery. (3) Woman, aged 38, large tumour, great abdominal pain for four weeks. Tenderness and resistance on both sides above the umbilicus; the tumour seemed fixed. Abdominal section, two large suppurating tubes which almost reached the ribs were ruptured; total hysterectomy. Death from sepsis in thirty-six hours. The correct line of treatment in such cases seemed uncertain. Expectant treatment might result in fatal rupture of the pus tube as in the first case; operation involved the danger of diffusion of germs as in the third. Strassmann considered that cases where the tumour was too large to allow of the vaginal operation were specially dangerous. Lehmann, in discussing these cases, stated that in a patient where a fibroid was observed growing for three years several attacks of fever with all the symptoms of perimetritis occurred, yet at the operation no pus could be detected in the tubes or elsewhere.

(228) Hysterectomy in Acute Puerperal Infection.

Cristeanü (*Rev. de Gyn. et de Chir. Abd.*, July-August, 1904) discusses this subject at great length. The removal of the uterus in cases of acute and diffused puerperal infection without localization is most unsatisfactory. Cristeanü sets aside 39 cases reported by Hofbauer, Asch, and Hirst, because details, especially as to localization, are insufficient. There remain 41 cases, with 31 deaths, over 75 per cent.; 6 recoveries, with 22 deaths after labour at term, or 78 6 per cent. mortality, whilst the mortality in abortions is 76.7 per cent. Yet Cristeanü remains sceptical, and believes that after thorough scrutiny of the above series there is only one recovery (Terrier's case) where the absence of a local complication was certain, and was authenticated by competent workers with means of research at their disposal. In this case labour was at term; all the genuine abortion cases died. He therefore holds that hysterectomy is absolutely contraindicated under the above-named conditions. By other means the mortality is only 10 per cent. When local complications are present the case is different. In puerperal parametritis and allied affections the mortality after hysterectomy is 17 in 29 authentic cases, or 58.7 per cent., 13 of the deaths being after labours at term, 4 after abortions. These statistics show that the operation must be rejected, as local measures, such as incisions, are followed by better results. Hysterectomy for rupture of the uterus with symptoms of infection are not to be included, as the share played by the damage to the organ, independent of subsequent infection, plays a great part in killing the patient. Again, statistics of hysterectomy for puerperal infections associated with appendicitis, ovarian cyst, pleurisy, etc., must be set aside. Cases where there is puerperal sloughing or suppuration of a fibroid may be included, with certain reservations. Out of 6 hysterectomies 3 died, but the operation under the circumstances seems imperative. Of extreme importance is the record of hysterectomy for infection from one of the commonest causes—retention of portions of the ovum or placenta. Out of 34 cases 19 died, but closer analysis is demanded by the practical obstretrician. In 22 of the cases labour had occurred at term, 14 died, a mortality of 63.7 per cent.; in the remaining 12 the operation followed abortion, 5, or 41.7 per cent., dying. These results are sufficiently grave to lead us to consider whether removal of the uterus be superior to the use of the curette and tampon. But, in conclusion, Cristeanü insists that under one condition hysterectomy is absolutely indicated as a remedy for puerperal infection, and that condition is perforation of the uterus by the curette, whether after labour or abortion; 5 cases are recorded, and in all the patient recovered. The author lays stress on the fact that hysterectomy for puerperal infection, complicated or otherwise, is more fatal after term labours than after abortions.

THERAPEUTICS.

(229) Diuretin and Agurin.

A. Torchio (*Riv. Crit. di Clin. Med.*, September 3rd and 10th, 1904) describes his observations on the effects of diuretin and agurin in diseases of the kidneys and heart, and classifies the conditions in which he finds them useful. The same method was adopted in each of the 21 cases submitted to observation. For three days before treatment, for five days while treatment with the drugs named was in progress, and again for three days after treatment was at an end, the author noted the frequency of the pulse and respiration, the arterial tension, the quantity and density of the urine, the amount of albumen and of urea in the urine, the quantity of casts of the tubes, and the amount of any exudates and transudates. The results arrived at are: (1) Between diuretin and agurin there are no fundamental differences of action, but only differences of degree; (2) both act on the urinary secretion, increasing not only the filtration of water, but often, also, the elimination of urea and of salts; (3) usually the diuretic value of diuretin is greater than that of agurin; (4) the diuretic effect is shown quickly, and the increase of diuresis is sometimes regular, sometimes irreguiar, and usually of short duration, ceasing a day or two after the administration of the drug has been suspended; (5) except in cases of extreme gravity, along with increase of urine, there is

found improvement in the subjective symptoms, reduction of the pathological elements of the urine, such as casts and albumen, and reabsorption of oedema and of effusions into the serous cavities; (6) a true cardiac and vasomotor action is not manifest; on the contrary, the arterial tension often has a tendency to fall, showing that the increase of diuresis may be independent of any elevation of arterial tension, and due to a direct action on the renal epithelium; very often, and more markedly after the exhibition of agurin than after diuretin, a more regular and less frequent pulse is observed, with an improvement in dyspnoea; (7) in doses of 2 grams a day these drugs are not toxic, and they produce no ill effects on the kidneys or any other organs, except in the case of diuretin, some gastro-intestinal disturbance; (8) they are of great value in Bright's disease, except where the renal epithelium has undergone profound alterations, or the heart does not respond to more energetic cardio-kinetic treatment, or the power of absorption of the subcutaneous tissues is lost. In cases of Bright's disease running a favourable course, the alterations of the urine (the presence of casts and albumen) show a tendency to improvement, more marked and more rapid with agurin than with diuretin; (9) in the contracted kidney agurin has the greater effect, both on the excessive arterial tension and on the dyspnoea; sometimes it increases the excretion of urea; (10) both drugs are equally indicated in mitral disease when compensation has broken down; in long-standing cases the improvement is only temporary; (11) they are useless in cases of aortic disease, but they do no harm; (12) in affections of an inflammatory nature the effects are transitory, slight, or altogether absent; (13) in ascites from atrophic cirrhosis of the liver they produce little effect; (14) in a condition of dyspnoea agurin is often useful.

(230) Endoarticular Injections of Salicylate of Soda in Rheumatism.

SANTINI (*Gazz. degli Osped.*, August 21st, 1904) has practised with success endoarticular injections of a 3 per cent. solution of salicylate of soda in distilled water in cases of acute articular rheumatism. Stringent antiseptic precautions are, of course, necessary and a very fine needle is used. If there is much distension of the joint it is well to aspirate a little serum as a preliminary. Usually there is little difficulty in finding the way into the joint. In some of the deeper joints, for example, hip and vertebral, one must be content with periarticular injections. And in several cases periarticular injections afford useful aid to endoarticular ones. From 3 to 4 c.cm. is, as a rule, as much as it is necessary to inject at a time. Some temporary pain (occasionally severe) is set up, but is soon followed by decided relief. In one case of rheumatism affecting both knees, one knee was injected endoarticularly and the other treated generally, and the first got better speedily, whilst the reverse was the case in the second. Relapses are said to be uncommon after injection. Not every case requires this local treatment, but where salicylates are not tolerated or inadvisable for some other reason, when given in the usual large doses, endoarticular injection may be used with advantage. Whether the salicylates act merely as analgesics and not as specific antirheumatic drugs is still disputed, but this local action when injected, if confirmed by further experience, may help to decide the question. It is of no use in gonorrhoeal or non-rheumatic forms of arthritis. Obviously the amount of salicylate that reaches the joint by this method is considerably more than would be the case when given orally.

(231) Citarin.

GERNSHEIM (*Therap. Monat.*, 1904) has treated three cases of gout with citarin. In two cases the attack was a first one, the patients being men of about 45 years of age; 6 grams to 8 grams of citarin, given in 2-gram doses every two hours, sufficed to remove the pain and swelling within ten hours. The third case was a chronic one of two years' standing, and for nine months the patient had suffered from pain in the first metatarsal phalangeal joint, worse after any excess in drinking. Here 5 grams were given on five consecutive days, with the result that the symptoms disappeared almost completely. No new attack developed in any of the three cases, and the further use of the drug in the chronic case led to absolute cessation of the pain. Alcohol was forbidden to all of the patients, but otherwise no change of diet was made. The citarin was taken either as a powder or tablet, and caused slight diarrhoea in each case.

(232) The Local Anaesthesia of Inflamed Tissues by Injection of Cocaine-Adrenalin.

M. RIBALLIER (*Thèse de Paris*, 1904) shows that adrenalin markedly increases the analgesic property of cocaine. The subcutaneous injection of a mixture of cocaine and adrenalin into healthy tissues produces a remarkable anaesthesia, and this mixture has the further advantage of acting well upon inflamed tissues, whereas cocaine alone has little action. The injection of the mixture produces an intense local vaso-constriction, together with a rise of arterial tension and slowing of the pulse-rate. No respiratory trouble nor nervous symptoms have been observed. The toxicity of the mixture is nine or ten times less than that of cocaine. He advocates a mixture composed of 10 c.cm. of a solution of hydrochloride of cocaine, 1 in 200, and 10 minims of adrenalin, 1 in 1,000. Similar precautions to those for the injection of cocaine only must be employed. Anaesthesia by this method is indicated in all operations of minor surgery, but particularly in those involving inflamed tissues. It is contraindicated in cases requiring more than 10 c.cm. of injection, in young infants, and in cardiac insufficiency; and especially in those suffering from angina pectoris, lest the rise in blood pressure should determine an anginal crisis.

(233) Intramuscular Injections in Infantile Syphilis.

INVERCOOL (*Semaine Médicale*, June 22nd, 1904) recommends the intramuscular injection of a 5 per cent. solution of perchloride of mercury in cases of infantile syphilis. The author points out that administration by the mouth is often contraindicated by gastro-intestinal disturbance, and that the method of inunction is liable to cause irritation of the skin. He has used the injection treatment with success in 40 cases of infantile syphilis. The number of injections was three to five.

PATHOLOGY.

(234) Bacteriology of Appendicitis.

LANZ AND TAVEL (*Rev. de Chir.*, Nos. 7, 8, 1904) publish the results of bacteriological investigations in 138 cases of appendicitis. The following review of these results is given at the end of the authors' paper. The normal appendix, they state, is never sterile, and usually contains several microbic forms. The bacillus coli is always present; in one case only was it found alone. The pathological appendix, in most instances one resected in a quiet interval, is sterile in 10 per cent of cases. The microbic flora is the same as that of the normal appendix from a qualitative point of view. The more advanced the pathological changes in the appendix, the smaller is the number of microbic forms to be found in this structure. The appendicular is a transition from between the pathological appendix and a cold extra-appendicular abscess; this is sterile in 37·5 per cent. of the cases, and in the majority of cases contains a small number of microbic forms. The cold or quiescent extra-appendicular abscess is sterile in 75 per cent. of the cases, and in the few instances in which it is microbic contains but few specific forms. The acute extra-appendicular abscess (perityphlitic abscess) is always microbic, and usually contains a large number of specific forms, its flora being the same as that of the normal appendix and intestine. These results, the authors believe, will cause surprise, and disturb those who see everywhere microbic processes. The bacteriological conditions, however, are regarded as being in perfect harmony with the pathology of inflammation. The normal appendix would, it is pointed out, naturally present a microbic flora of the same kind as that of the large intestine, and there would be no grounds for supposing it to be sterile. The pathological appendix, on the other hand, contains in its secretion a profusion of leucocytes, and an active phagocytosis is thus effected, which results in a certain number of cases in sterility of the appendicular contents. When the appendix has recovered from the inflammatory attack and become quiescent, the leucocytes are no longer present, and the conditions of the normal appendix are renewed. The same conditions are observed, but with a higher percentage, in cases of appendicular cyst and of quiescent extra-appendicular abscess. With regard to acute extra-appendicular abscess, a varied flora exists, which is necessarily the same as that of the appendix and intestine, and indeed identical with that of every infection originating in the intestinal canal or any other part contaminated by faecal matter.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(235) The Disturbances of the Heart in Scarlet Fever.

Schmaltz (*Münch. med. Woch.*, August 9th, 1904) has made a study of the heart in 191 cases of scarlet fever, in 35 per cent. of which there was some abnormal sign in the vascular system. Epidemics vary very much in the frequency of the different complications; most of the author's cases belong to an epidemic in which nephritis was rare, but the incidence of heart trouble and also of middle-ear disease was high, but there was no apparent relation between these two conditions. The pulse at the onset of the fever is quick; 150 to 160 in children, 120 to 140 in adults, are not uncommon, but they do not afford much indication of the heart condition. The pulse-rate has also no bearing upon prognosis. Heart lesions may be present with a slow pulse. More significance attaches to the pulse at a later period. As a rule its rate falls to normal with the temperature, and may become for a short time subnormal. Sometimes the pulse-rate falls very suddenly, at others its fall forms a step-like curve. The fall often precedes that of the temperature. A common condition about this time is an irritable state of the heart, the pulse-rate showing daily fluctuations of 20 or more beats. The pulse-rate finally may remain high with a normal temperature. All these phenomena may be present without other circulatory disturbances, but if exaggerated they generally point to some heart lesion. Sometimes the pulse, after being normal or slow during the first part of convalescence, shows a later acceleration, if this is marked and isolated it always means some heart lesion. In such bases an apical systolic murmur may be found; this may be fleeting or permanent, and of varying quality. The apex beat is displaced outwards, the heart's dullness shows increase transversely, and the second pulmonary sounds is accentuated. Accentuation of the second pulmonary may be present alone. Arrhythmia is a common accompaniment. The subjective symptoms are absent or slight. All grades of severity are seen. It is not only the severe cases which show this heart disturbance, but also quite mild ones. The relation to scarlatinal rheumatism is shown by the following figures: Of 23 cases complicated with rheumatism 10 showed heart affection, 70 other cases showed heart trouble without signs of rheumatism. Previous heart disease seemed to have little influence. In 29 of the affected cases the heart trouble had cleared up before leaving hospital; of 24 examined several months later, 5 showed no heart trouble, but in 16 there were definite signs of mitral regurgitation, in 2 there was an apical murmur without enlargement of the heart. A necropsy was held on 13 cases; in only 1 was endocarditis found. Of 20 other cases quoted, endocarditis was found in 2. The heart disturbance thus resembles that of diphtheria in affecting the heart muscle rather than the valves. The author insists on careful examination of the heart in all cases, with rest in bed and application of ice to the heart region if disturbances result. The author has found no benefit from digitalis.

(236) Xiphoid Crepitation.

Campani (*Rivist. Critic. di Clin. Med.*, July 16th, 1904) draws attention to a curious phenomenon first described by Galvagni in 1881—that is, a sensation of crepitation, rather like cutaneous empyema, to be felt on pressure over the apex of the xiphoid cartilage, and in some cases over the edges of the ribs. The author reports 14 cases altogether where this symptom was observed. The majority (9) of these cases had peritonitis, either acute or chronic, and in nearly every case there was disease of the liver. Position and the presence of ascites made a difference in the degree of crepitus in most of the cases. Galvagni attributed the crepitus to the mechanical separation of thin layers of peritoneal adhesions; but further experience, coupled with *post-mortem* examination, has thrown doubt on this explanation as applicable to all cases. Another possible cause is the generation of gas in the subcutaneous tissue as the result of bacillary activity. In some of the cases there seemed no doubt that the crepitation was quite superficial. There appear to be two types: In one the bullae are small and numerous and rarely coalesce, and only to be felt over the xiphoid and occasionally along the edges of the costal arch; the sensation is to be obtained by light pressure without moving the skin over the bone; it is, as a rule, only noticed in patients who are seriously ill. In the second type the bullae are large and scarce, may be felt over other bone margins, can be best obtained by rolling the skin over the edge, and may be felt in healthy subjects.

(237) Hereditary Syphilis of the Nervous System.

Ingelrans (*Echo Méd. du Nord*, April 3rd and 10th, 1904) remarks that the nervous system is not so often affected in hereditary syphilis as in the acquired disease. He quotes Antonelli, who described certain changes in the fundus oculi, marbling of the choroid and retina, and slate-coloured patches in the retina. According to Antonelli, these occur in the children of heredo-syphilitics, which implies the third generation. Ingelrans divides the lesions of heredo-syphilis into three classes: (1) Dystrophic, causing changes in evolution and development; (2) specific, or true syphilitic changes; (3) predisposing, leading to parasyphilis. Lesions of evolution, in extreme cases, cause monstrosity and teratology, but it cannot be proved that these are due to changes in the nervous system. Malformations concern the nervous system, and among these is spina bifida. Congenital club-foot is said to be due to atrophy of the cells of the anterior cornu of the cord and of Clarke's column. The second class of cases comprises specific lesions of the nervous system, which are similar to those of acquired syphilis. Hydrocephalus often occurs in heredo-syphilis, and in this there is degeneration of the optic thalami. The author states that syphilis attacks the organs in their order of development, the basal ganglia being affected before the convolutions. Cerebral syphilis in the infant may present gummata, enteritis foci, of softening, and cortical encephalitis; but these lesions are far more rare than in the acquired disease. Partial or complete hemiplegia may result from local encephalitis, or from a patch of gummatous meningitis. Hemiplegia is rare as an initial symptom of hereditary syphilis, but common in acquired. Lesions of the cranial nerves are generally due to basal meningitis; gummatous neuritis is rare. The facial, trigeminal, and third nerves are most often affected. The nervous manifestations of heredo-syphilis become less marked as age advances, but they have been described as late as 32 years. The symptoms are of four kinds—epileptic, headache, mental, and apoplectic. The initial epilepsy may be simple or combined with other cerebral symptoms. The whole of classic epilepsy, major and minor, is capable of arising from heredo-syphilis. As a rule, treatment is successful. Cephalalgia is more frequent than epilepsy, and may be the precursor of cerebral lesions. The third form, with intellectual and moral troubles, is rebellious to treatment, and often fatal, ending in convulsions—paralysis, and death. Sometimes it leaves permanent mental defect or idiocy. Hereditary cerebral syphilis commences with isolated phenomena, but afterwards may constitute a combination of severe manifestations—paralysis, dental defect, convulsions blindness, and deafness. These lesion may be confounded with tuberculou meningitis, tumours of the brain, and ordinary epilepsy. Cerebral syphilis differs from tuberculous meningitis in the absence of fever, the retracted abdomen, and variable pulse. The hydrocephalic cry is rare and the wasting not so rapid. Atrophy of the optic nerve may occur in hereditary syphilis; also bilateral deafness. The latter is rapid and results in total loss of hearing; it is probably due to disease of the auditory nerve or the labyrinth. It is a common cause of deaf-mutism. In the spinal cord the changes are the same as in acquired syphilis. There may be fibrosis, infiltration, endarteritis, and sclerosis of the meninges. Extension of the disease to the bulb and base of the brain may cause vertigo, ptosis, gastric crises, and dyspnoea. If the dorso-lumbar cord is affected there is spasmodic paraplegia with sphincter troubles, exaggerated reflexes, ankle clonus, and paraesthesia. Diagnosis in infants has to be made from the pseudo paralysis of Parrot, due to separation of the epiphyses. Concerning the question of parasyphilis, the author remarks that the three chief affections called parasyphilitic—namely, general paralysis, tabes, and a special form of epilepsy—may be caused by syphilis. The author mentions tabes and general paralysis in heredo-syphilis, and points out that the latter is characterized by arrest of development and absence of change at puberty. Parasyphilitic epilepsy is said not to be influenced by treatment.

SURGERY.

(238) Laparotomy for Extirpation of the Rectum.

Schloffer (*Beitr. z. klin. Chir.*, Bd. xlii, 396) considers critically all the methods of extirpation of the rectum, in which the peritoneal cavity is opened from above by laparotomy. He finds recorded 36 cases of combined amputation in which an artificial anus was established above the carcinoma, and the whole distal bowel extirpated partly from above and partly from below. In 5 or 6 cases the sphincters were removed, because of the extent of the disease; in the remainder they were sacrificed for the purpose of obtaining a satisfactory condition of the wound. Of 31 cases of which the operation result was known, 14 died. Of 12 men only 1 recovered, of 15 women only 1 died. Another class of cases consisted of those in which the operation from below was supplemented by laparotomy for the purpose of freeing the rectum. Of 23 cases operated on by Kraske's method, 12 died and 11 recovered. Of 13 men 8 died, of 10 women 4 died. A group of cases was treated by laparotomy and mobilization from above, prolapse of the tumour through the anus, and resection at the anus; the number of these cases is uncertain; the mortality appears to be high. A larger number of cases have been resected entirely through an abdominal wound, and the results compare favourably with those treated by the above-mentioned methods. The author discusses the class of case in which the abdominal operation is called for, and the details of the operative technique. Abdominal operation, alone or combined with operation from below, is called for when the growth is 6 to 8 cm. above the sphincter. It possesses the great advantage of giving access to the lymphatic glands. The purely abdominal operation is able to show a smaller mortality than the combined method.

(239) The Treatment of Pancreatic Cysts.

Villar (*Archiv. Provinc. de Chir.*, Nos. 7 and 8, 1904), in concluding an article on glandular cysts of the pancreas, based on a case under his own care, discusses the surgical treatment of these growths. Total extirpation, it is held, is the logical and ideal method, and is the only kind of intervention that is really useful when the cyst is neoplasic and of the nature of a malignant growth. Unfortunately, this operation is a serious one, and the surgeon will often be compelled to have recourse to marsupialization, which, as has been proved by statistics, affords excellent results. The following are the different stages in the operative treatment of a case in which pancreatic cyst has been diagnosed:—(1) Laparotomy; (2) exposure of the cyst by successive division of the membranes over its anterior surface; (3) puncture of the cyst and evacuation of its fluid contents; (4) closure of the orifice in the cyst wall by pressure forceps; (5) exploration of the abdomen with regard to adhesions and the relations of the tumour with neighbouring organs. The surgeon has now to decide between two alternatives. If the adhesions can be readily divided and are not very vascular, he should remove the whole of the cyst; if, on the other hand, the adhesions be very dense and very vascular, he should marsupialize the cyst, and, if anterior drainage seem to be insufficient, make also an opening for posterior drainage in the lumbar region.

(240) Implantation of the Fetal Suprarenal Capsule.

Umberto Parodi (*Lo Sperimentale*, February, 1904) describes operations for the implantation in the kidneys or other organs of the fetal suprarenal capsule. References are given to the works of Poll, Christiani, Schmieden, and other operators who have, with more or less success, transplanted adult suprarenal tissue, the most successful being those named. Foà and Vanzetti have shown that fetal tissues are more suited for transplantation than adult tissues. The great means of success is to attain speedy vascularization of the transplanted tissue. In the case of the suprarenal capsule there is a special reason for using fetal tissue, inasmuch as the great difficulty is to maintain the vitality of the medullary substance—a delicate tissue, with little resisting power, which, in the fetus, comes out to the surface of the organ. Another advantage is that the fetal capsule is small and therefore more easily vascularized. Parodi made his experiments on rabbits. The gravid uterus was cut from the animal and at once placed in a thermostat at 37°. The kidney of another rabbit was exposed by a lumbar incision, and an incision was made sometimes into the kidney substance, sometimes only through the capsule. Into this incision the fetal suprarenal capsule was gently pressed by means of a sound. The fetal rabbits were of a length of from 7 to 10 c.cm., and the rabbits into which the implantations were made were aged from 2 to 4 months, young animals giving better results. Implantations were also made in the liver and the sciatic nerve with very similar results to those described below, but on the whole with rather less success. The cases are not described separately, and the descriptions of the appearances presented at different intervals after the date of operation are derived from a consideration of all the more successful cases—that is, those in which a good supply of blood was obtained for the implanted tissue and a considerable part of the tissue maintained its vitality. In these cases, when they were examined during the first four days, there was great proliferation of connective tissue round the implantation and invading its central zone. No evidence could be obtained of continued vitality of the medullary substance of the capsule; its vascular lacunae had entirely disappeared. The cortical portion of the capsule retained its vitality, its cells being a little less regular and distinct than in the normal embryonal capsule. By the tenth day the connective tissue reaction was more intense, about two-thirds of the implantation was still to be made out. The outer part of the cortical substance closely resembled normal tissue, and there was an inner zone composed of very irregularly-arranged cells with deeply-stained nuclei. After twenty-one days the implantation was often a little increased in volume, but otherwise not much changed from what has been already described. Examinations made after thirty, fifty, sixty, and, in one case, eighty days, showed gradual increase of connective tissue, strangling, and at last almost obliterating the original capsular elements. These processes are to some extent analogous with those by which occasionally in man parts of the suprarenal capsule have been developmentally included in the liver and other organs, and Parodi states that some of his preparations are not unlike those of formations usually considered to be adenomata. Natural inclusions, however, have the advantage of occurring at a time when both including and included tissues have their maximum potential vitality. As compared with implantations of adult suprarenal capsules, Parodi's experiments show that the implanted fetal capsules have a greater power of attachment to surrounding tissues, and a greater activity of proliferation, but that they more rapidly undergo involution, and offer less resistance to the connective tissue which wraps them round. Neither in adult nor fetal implantations is the medullary substance of the capsule maintained.

MIDWIFERY AND DISEASES OF WOMEN.

(241) Premature Labour and "Accouchement Force."

J. Whitridge Williams read a paper in February, 1903, before the Pathological Society of Buffalo on the indications for the most satisfactory methods of bringing about premature labour and *accouchement forcé*. With respect to the indications for the induction of premature labour he confined himself to the question of its justifiability in (1) contracted pelves, (2) toxaemia of pregnancy, and (3) placenta praevia. In cases of contracted pelvis premature labour is induced solely in the interests of the child, and since equally good maternal results can be obtained by other methods, the operation is only justifiable if it can be shown that a greater number of children are saved by this than by any other procedure. The fetal mortality in premature labour is estimated by Kleinwächter at 21.7 per cent., increasing to 39 6 per cent. before the children leave the hospital. But the real mortality is greater than these figures suggest, for premature children need much care and skilful nursing, and probably not more than a third of the original number survive the first year of life. On the other hand, if pregnancy of this type be allowed to go on to term 70 per cent. terminate naturally, and even supposing that the other 30 per cent. of the children all die, which is far from the truth, the results for the children are not much worse than by the other method, when allowance is made for the better chance of life possessed by the fully-developed as opposed to the premature child. The only cases of this kind in which Whitridge Williams induces premature labour are, therefore, those in which pregnancy is prolonged beyond the normal tenure or where there is an unusually large child. The other cases are allowed to go to term. If in spite of good pains the head shows no sign of engaging two hours after the beginning

of the second stage, and if the conditions are otherwise suitable, Caesarean section is at once resorted to. This is rarely necessary, as delivery usually occurs spontaneously, or at worst can be effected by a high or mid-forceps operation. The toxaemia of pregnancy often yields to general dietetic and medicinal treatment, but in some cases interference is necessary in the interests of the mother. In placenta praevia pregnancy should be terminated as soon as possible after the condition has been diagnosed, but the method of delivery is considered under *accouchement forcé*. Only two methods of inducing premature labour are universally available—Krause's method and the use of Champetier de Ribes's bag, the latter being the quicker procedure. The indications for *accouchement forcé* are: (*a*) Eclampsia, (*b*) profound toxaemia, (*c*) accidental haemorrhage resulting from premature separation of the placenta, (*d*) placenta praevia, (*e*) cases which have fallen into labour spontaneously, but in which symptoms indicative of danger to the mother or child supervene before the cervix has become fully dilated. Of the methods employed it may be assumed that the use of the hand as a cone, the early metallic dilators, the Duhrssen incisions, and the various bimanual manœuvres are far inferior to the other methods; and those of practical importance are the use of Champetier de Ribes's bag, Bossi's dilator, and Harris's manual method. The first method is not rapid enough where immediate delivery is needed. Whitridge Williams has employed in 87 cases of *accouchement forcé* Harris's method, which is available whenever the cervical canal is sufficiently patulous to admit one finger. In these 87 cases 3 deaths resulted directly from the operation. The first was one of eclampsia in a primipara where the cervix was of almost cartilaginous density. Prolonged manipulation was needed before the canal could be dilated to admit a finger, and death resulted from infection of a cervical laceration which occurred during the later manual dilatation. Caesarean section would have been the correct treatment in this instance. The other two deaths resulted from incomplete rupture of the uterus occurring, one in a case of toxaemia, the other in a placenta praevia where dilatation had been achieved with the exercise of very little force. Such is the special liability to laceration in placenta praevia that bipolar version and the use of the breech as a tampon is the right treatment for the majority of the cases. If the child be viable, complete dilatation by Champetier de Ribes's bag may be undertaken. No death occurred in the 34 cases in which *accouchement forcé* was resorted to after labour had already set in. In addition to the 3 fatal cases, there were 7 cases of cervical laceration needing immediate repair. Although by Harris's method dilatation can be accomplished as quickly, or even more quickly than by Bossi's dilator, the facts here related emphasize the necessity of performing the operation slowly, an average of thirty minutes to each case not being an excessive time. When complications so serious can take place from digital manipulation, it is obvious that the use of a powerful instrument—such as Bossi's dilator—must be attended with great risk, at all events unless under expert hands.

(242) Tubal Abortion and Rupture of Tube.

Gottschalk (*Zentralbl. f. Gynäk.*, No. 4, 1904) recently reported at a meeting of the Berlin Obstetrical Society a case of tubal abortion where strong contractions of the tube could distinctly be defined, and where the first attack of bleeding from the tube into the peritoneum was so severe that the pulse could not be felt. Free haemorrhage from the first is the rule in rupture of the tubal sac but much less usual in tubal abortion. The patient was 39 and had aborted nine times, besides passing through an attack of pelvic peritonitis; the last period was seen just two months before the abortion occurred. The ovum lay in a coagulum which formed a perfect cast of the tubal canal including the isthmus, and the corpus luteum lay in the corresponding ovary. Gottschalk remarked that free intraperitoneal haemorrhage was not rare in cases of tubal abortion, but usually occurred after several attacks where the loss of blood had been trifling. In his case it was severe at the first attack, so that the patient's life was endangered. Recovery was complete.

(243) Perimetric Tertiary Syphilis.

Jeanne (*La Gynécologie*, April, 1904) admits that syphilitic salpingitis is extremely rare, Pozzi doubting its existence. He claims to have observed an authentic case. A woman, aged 49 years, had been subject for several years to syphilis; there had been a rash and also a big subhyoid swelling which had disappeared under specific treatment. Then, about a year later, a tumour was detected in the left iliac fossa and pelvis, apparently suppurative disease of the appendages; the swelling vanished in a fortnight under the same treatment. Two years afterwards Jeanne detected three firm round masses, each as big as a Tangerine orange, one in each lateral fornix and one in the anterior. They were diagnosed as fibroids of the broad ligament or salpingitis complicating fibroids. Operation was refused. Subcutaneous injections of cyanide of mercury were administered for three weeks and the masses disappeared.

(244) Ovary in Femoral Hernial Sac.

Keiffer (*Bull. de la Soc. Belge de Gyn. et d'Obstét.*, vol. xiv, No. 4, 1903 4) was consulted by a woman suffering from an elongated tumour in the right groin. It looked like a hernia, but on palpation felt unlike either an enterocele or an epiplocele; indeed, it simulated to a great extent a collection of inflamed glands. Keiffer operated, and exposed a hernial sac adherent internally to a mass of fat surrounding a firmer body—in fact, an ovary enveloped in thickened omentum. The displaced organ was removed, the omentum resected with the sac, and the crural canal closed. The ovary was as big as a large almond and extremely sclerosed; it contained some atrophied corpora lutea, and a small follicular cyst of the size of a pea. The patient stated that she had felt increase of pain in the hernia, with swelling and redness at each period.

THERAPEUTICS.

(245) The Action of Roentgen and Radium Rays.

In a short article in the *Deut. med. Woch.* of June 16th, 1904, W. Scholtz deals with the therapeutic action of Roentgen and radium rays. The latter possess a great advantage over the former, in that they can be applied more easily in certain parts of the body. He instances lupus of the mucous membrane of the hard and soft palate. The part may be exposed to the action of the radium for a considerable time before the mucous membrane is seriously affected, and he therefore chose to apply the rays for fifteen to thirty minutes; the neighbouring parts are treated one after another for the same time, and after a pause of from one to two weeks the affected part is again treated. In three or four weeks the granulations of the lupus patches begin slowly to disappear; while, after intense treatment, superficial ulceration follows, which rapidly heals up in a few weeks. The ultimate result in nearly all cases is a normal-looking mucosa. Scholtz further reports on the result which he has obtained in a case of carcinoma of the skin. With the exception of a small area of about the size of a pea the growths became entirely absorbed, and he states that one is justified in speaking of a clinical cure of the case. The patient was a man of 60 years, who had noticed that the carcinoma began a few centimetres below the right eye some seven or eight years previously, and gradually had spread to the outer and inner canthus. Five years previously the growth had been incised and the skin defect covered by transplantation. The growth recurred two years ago. All the local and general treatment that was tried failed to arrest the growth. At the time when the radium treatment was begun the skin below the right eye was completely infiltrated, and was firmly adherent to the bone. All the parts were treated by fixing the radium capsule to the skin by means of strapping for ten to fifteen minutes, with the exception of the inner corner of the eye, which was treated for half an hour, the radium being placed about ½ cm. away from the skin. A portion of the affected part was treated every second or third day. The result was obtained in five months, and the skin became soft, flat, and freely movable from the deeper tissues. Only at the inner canthus is there any carcinomatous tissue left. He hopes that this result will remain a permanent one, and bases these hopes on two other cases which he treated three-quarters of a year ago, and which have remained free from recurrence. In conclusion, he compares the results with radium and Roentgen rays, and pays some attention to the histological changes in the testes after exposure to both kinds of rays.

(246) The Eosin Light Treatment.

F. J. Pick and K. Asahi (*Berl. klin. Woch.*, September 12th, 1904) have experimentally employed the eosin light treatment in certain cases and have found it of much value. The treatment was applied by painting the affected surface over with a 1 per cent. solution

of eosin, and this painted part was then exposed to the direct influence of the sun, the other parts of the body being, when necessary, protected from the rays. Crusts or scabs were removed by ointment or other means, and granulating surfaces were for the most part cleaned up by various means. In all, 22 patients were treated in this way. Twelve were suffering from lupus, 1 from tuberculosis cutis verrucosa, 5 from trichophytie (tinea), 3 cases of scrofuloderma, and 1 case of rodent ulcer. The lupus cases included L. vulgaris, L. serpiginosus, etc., and some were severe cases. The authors detail the local condition and course of several cases. In all they have found that the treatment is capable of removing the inflammatory appearances within a very short time, and point out that the regression of the changes are most marked in cases with hypertrophic processes. In these cases the affected area becomes flattened to the level of the surrounding skin, and in many instances the ultimate result is absolute healing. In the other skin affections they also obtained extremely good results. The results in tinea were obtained in very short periods. In summing up, while they praise the action of the eosin light treatment, they state that they do not yet feel inclined to speak of actual cures in lupus, and that a much longer observation is necessary before one can be sure of the ultimate results.

(247) Hetralin.

L. Ebstein (*Deut. med. Woch.*, August 25th, 1904) has employed hetralin in a number of cases, and regards it as a good urinary antiseptic. Hetralin is a derivative of urotropin, and has the chemical constitution of dioxybenzol-hexamethylen-tetramin. It crystallizes in snow white crystals, which resist the action of air, and which are not decomposed below the temperature of 160° C. It is freely soluble in water and in alcohol, has a very sweet taste and not unpleasant odour. He employed it in "tablet form," each tablet containing $\frac{1}{2}$ gram. The patients mostly received one tablet three times a day. The urine of cystitis rapidly becomes freed from leucocytes and albumen, and becomes acid. This was especially well exemplified in a case of cystitis complicating chronic myelitis. At times it succeeds after urotropin fails, and it appears always capable of performing the same services as urotropin. In two cases of severe tuberculous disease of the kidneys and bladder it failed to produce a good effect. Ebstein points out that the price is about the same as urotropin; but if one prescribes the latter as "hexamethylen-tetramin," its price is ten times reduced. He warmly recommends the use of hetralin.

(248) Chloride of Ethyl Narcosis.

Gaudiani (*Rif. Med.*, January 29th, 1904) has administered chloride of ethyl as a general anaesthetic in more than 200 cases, and as the result of his experience he says that the chief advantage is the rapidity with which anaesthesia may be induced—for example, 25 to 90 sec. Alcoholics sometimes resist a little longer. In only one case did the author fail altogether to induce anaesthesia, and that was in the case of a robust young man suffering from a deep-seated lumbar abscess. Narcosis is peaceful and quiet, and, as a rule, devoid of unpleasant accidents. But occasionally a temporary paralysis of respiration was noted, and that in cases where every other anaesthetic would have been contraindicated. It was used in albuminurics, cardiacs, bronchitis, etc., without any bad effect. The awakening is rapid and complete. If given on an empty stomach vomiting never occurred, or hardly ever, but if food had been taken recently vomiting was the rule; continued vomiting was only noticed twice. Chloroform or ether narcosis can easily be given subsequently. The chief disadvantage is the uncertainty, and sometimes the impossibility, of producing muscular relaxation, hence it is very unsuitable for abdominal operations. Analgesia occurs readily and rapidly, but muscular relaxation requires much larger doses, and when accomplished is very uncertain in its duration, so that sudden rigidity may occur just when it is least expected and least desired. In the author's opinion chloride of ethyl ought not to be used for abdominal operations, and it is obviously unsuitable for long operations. Chloride of ethyl is much safer than bromide of ethyl, but neither are suitable anaesthetics for alcoholics. Up to now 24 deaths have been recorded under bromide of ethyl. The author discusses and discounts the deaths which have been put down to chloride of ethyl.

(249) Tuberculin.

A. Moeller (*Zeit. fur Tub. und Heil.*, Bd. v, Heft. 5), in his yearly report on the Berlin Brandenburg Sanatorium and the Samuel Bleichroder Institution, gives the results of sanatorium treatment when combined with treatment by tuberculin. An emulsion of tubercle bacilli was the form of tuberculin employed. The initial dose for adults of $\frac{1}{10}$ mg. was gradually increased until a fairly high grade of immunity was obtained, a strong reaction being as far as possible avoided. At first the emulsion was injected, either subcutaneously or into the veins, but the latter method proved the more effectual. Of 308 adults discharged from the sanatorium during 1903, 170 received ordinary treatment, and 130 received in addition treatment with tuberculin; 11.1 per cent. of the former and 27.5 per cent. of the latter were discharged "cured," 15 8 per cent. of the former and 54.3 per cent. of latter showed substantial improvement; 8.2 per cent. grew worse and 1.8 per cent. died of the former class as compared with none in the latter class, although thirty of the patients treated by tuberculin were in the third stage of illness. A marked difference was seen in the number of cures by the two methods in patients in the second stage of illness. Of those not treated by tuberculin only 8.5 per cent. were cured, as compared with 15 4 per cent. of those who received tuberculin. No cures were reported by either method among patients in the third stage. Statistics drawn from a longer period give similar results. During three years 772 patients were discharged after ordinary with 11 per cent. of cures; 193 after tuberculin treatment with 30.1 per cent. of cures. Of the children discharged from the sanatorium during the year, thirty-six had received ordinary and eight—none of whom were in the third stage—tuberculin treatment; 8.3 per cent. of the former and 37.5 per cent. of the latter class were cured, while 25 per cent. of the former and 50 per cent. of the latter showed substantial improvement; 5.7 per cent. of the former and none of the latter class grew worse under treatment.

PATHOLOGY.

(250) Experimental Glycosuria.

Silvestrini and Nesti (*Riv. Crit. di Clin. Med.*, 1904, Nos. 35 and 36) describe a series of experiments designed to explain the origin of glycosuria following the injection of phloridzin into the blood. The experiments were based on Williamson's methyl-blue and caustic potash test for diabetic blood. A preliminary series of experiments showed that the test was extremely delicate, and that a dose of one or two centigrams of phloridzin was enough to cause glycosuria lasting for some hours. The authors claim to have established the following points: (1) No increase in the reducing power of the blood is caused in man by the subcutaneous or intravenous injection of small doses of phloridzin, such as are quite sufficient to cause temporary glycosuria; (2) the injection of phloridzin into the renal artery was shown by Zuntz in 1895 to cause immediate glycosuria—a proof that phloridzic glycosuria is of renal origin; but the authors find that glucose appears almost at once in the separate urine secreted by each kidney, though the injection has been made only into one renal artery; (3) the injection of phloridzin does not cause a hyperglycaemia in animals previously treated by nephrectomy. This negative result is unchanged when juices extracted from the kidneys are injected at the same time as phlordizin. The desired effect is produced only by the living renal epithelium.

(251) A New Chromogenic Bacillus.

Herzog (*Bureau of Government Laboratories, Manila*, Report No. 13, 1904) describes a bacillus which he isolated from the body of a Filipino who was thought to have died of plague. No plague bacilli were found, but from the liver pure cultures were obtained of a short bacillus which stained readily, was decolorized by Gram's method, and on all solid media produced an intense golden yellow pigment. Gelatine media were liquefied very rapidly. No gas formation occurred on glucose or lactose agar. Litmus milk was strongly reddened in forty-eight hours. Anaërobic cultures developed as typically as the aërobic. All the cultures had a "very fetid, cheesy, and somewhat cadaverous smell." Inoculations of the cultures into a monkey, a rabbit, or a rat produced negative results. The author regards his bacillus as different from any hitherto described, and calls it "the bacillus aureus fetidus."

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(252) The Early Diagnosis of Phthisis.

Giulio (*Gazz. degli. Osped.*, July 17th, 1904) draws attention to the quality of the inspiration in the diagnosis of phthisis. For the early diagnosis, he says more value is to be attached to inspiration than to expiration, and he advises attention being paid to that alone. Inspiration, he says, gives data, direct and precise, as to the condition of the alveolar canals and lobuli, whilst expiration indicates more especially the state of the bronchial channels, and the early localizations of phthisis are in the alveoli; hence it is more likely that inspiration should give early evidence of disease than expiration. The chief modes in which it becomes pathologically modified are in the way of roughness, weakness, and interruption, and of these he lays most stress on the first. It is useful to remember that respiration is normally more marked in women, especially at the right apex, than in men; more marked in the erect than the prone position, after meals than before; and in subjects who breathe badly one can sometimes get better breathing by telling them to breathe rapidly with the mouth closed. Interrupted respiration (cog-wheel) probably means impaired elasticity of the lung, and possibly weakening of external respiratory muscles.

(253) The Cerebro-Spinal Fluid.

E. Siemerling gives his experiences of the systematic examination of the cerebro-spinal fluid for the diagnosis of lesions of the central nervous system (*Berl. klin. Woch.*, May 23rd, 1904). He says that the fluid has been examined not only histologically, but also as to its physical properties, its color, and chemically. The fluid is gained by Quincke's lumbar puncture, and if a blood vessel is wounded in the puncture, the blood present in the fluid may be detected as such by centrifugalizing, when the fluid will become clear and the blood cells will collect at the bottom, which is not the case in subarachnoid haemorrhages. Accidental bleeding, moreover, causes the fluid to assume a light red colour. The author discusses many points of technical examination, quoting the various observers who have studied the subject. In his own observations he has dealt with a large number of cases, including general paralysis, delirium tremens, chronic alcoholism, epilepsy and epileptic conditions, pure mental diseases, tumours and syphilis of the nervous system, tabes and multiple sclerosis, fracture of the skull, cerebral haemorrhage, neuroses, and meningitis. In 37 out of 38 cases of general paralysis of the insane he found distinct lymphocytosis, and chemically, clouding occurred with magnesium sulphate after filtration. He has got the impression that lymphocytosis may be classed among the early symptoms of this disease. No such changes were found in the delirium tremens cases, while alcoholism gave a slight lymphocytosis in one of 5 cases. In 4 cases of epilepsy and in 6 of simple mental disorders no lymphocytosis was found, but in one case with religious mania a slight degree was registered. In cerebro spinal lues, tabes dorsalis, and tumour of the medulla, the lymphocytosis was very marked, while it was absent in the neuroses. In one case of delirium tremens and influenza, he found that the fluid was tinged slightly yellow, contained many pus corpuscles, and but few lymphocytes, and gave a distinct clouding with magnesium sulphate during the acute stage; a week later the fluid was clear, showed distinct lymphocytosis, much fewer pus cells and much less clouding with $MgSO_4$. In a case of pyaemia with purulent meningitis, there were very many leucocytes of the polynuclear variety present. In tuberculous meningitis there was distinct lymphocytosis, pus cells, and slight clouding with $MgSO_4$. In summing up his experiences he states that he regards the cytodiagnosis as a valuable aid to diagnosis, and also chromodiagnosis. Lymphocytosis points to meningeal irritation, while the clouding with magnesium sulphate indicates an increase of the amount of albumen in the fluid. Under certain circumstances, the physical appearance of the fluid (chromodiagnosis) may reveal the source of haemorrhage.

(254) Arterial Tension in Typhoid Fever.

Carrière and Dancourt (*Rev. de Méd.*, August, 1904) give the results of a study of 41 cases of typhoid fever in children. Nothing is known of the arterial tension during the prodromal stage, but at the beginning of the fever it is lowered, being on the average 8.7 instead of 13 or 14. It then gradually rises without much oscillation, and during the second and third weeks measures 9.2. This is slightly higher than the average for the whole disease. During defervescence it always falls, to rise again to normal during convalescence. In children the tension is lowered both relatively and absolutely more than in adults. Although hypotension is the rule, hypertension is sometimes found, and is at least as common as very low hypotension. A slight attack without febrile symptoms generally passes through its course with slightly-raised tension. The tension renders no aid to the diagnosis or prognosis of the general clinical form of the fever. On the other hand, it is of considerable use in the discovery of complications. Increased tension is found the day before, or even several days before, a haemorrhage. It very frequently accompanies congestion, especially of the lungs, and may be the only sign to put the physician upon his guard. Pericarditis causes an augmentation. Myocarditis does not necessarily lead to lowering of the tension; on the contrary, the opposite is often seen. It is necessary to auscultate regularly and keep a record of the pulse-rate, as it is rather the frequency than the tension which is then important. The tension is not influenced by alimentary trouble, by the formation of an abscess, an infectious disease, nor by aortic lesions. Arterial tension is thus able to reveal the onset of complications, and taken together with the frequency of the pulse, the temperature chart, and the general aspect, it is of considerable use in prognosis. It is, too, a useful indication for therapeutics. The authors use spirits of nitrous ether to reduce tension, but to raise it employ cardiac tonics rather than vaso-constrictors.

(255) The Visceral Equivalent of an Epileptic Fit.

Alessi (*Clinica Moderna*, June 1st, 1904) describes a patient of 55 who had for a long time been an epileptic and had suffered from several attacks of bronchitis and an attack of pneumonia in his youth. Both parents had died insane. When brought to hospital he was delirious, and showed much motor excitement, with the signs of epileptic mania. No visceral lesions were then present. On the fourth day he had a typical epileptic attack, and his mental condition improved. The following day he was seized with very violent dyspnoea without loss of consciousness; his face was cyanosed, pulse small, respirations deep and frequent, temperature normal; there was a feeling of impending suffocation and a cough with abundant watery expectoration often tinged with blood. There was moderate dullness to percussion, and on auscultation fine *râles* and medium-sized bubbles were heard in both lungs. This condition remained for 24 hours, and then, after treatment with oxygen and caffeine, the dyspnoea expectoration, and other signs disappeared gradually. Two days afterwards auscultation revealed nothing abnormal, but the patient remained delirious and excited for some days. On recovery he remembered nothing that had transpired. One year later there had been no fresh pulmonary attack, but several ordinary motor fits. The author regards the condition as due to cortical excitation of the pulmonary nerves, the lungs in this case being a place of least resistance owing to the previous pulmonary disease. Strümpfell has reported one similar case—a man of 25, who while in apparent good health fell down unconscious while walking, and on recovering consciousness he had intense dyspnoea. The lungs showed the signs of acute pulmonary oedema, to which he succumbed. The condition was confirmed by the autopsy.

SURGERY.

(256) Diagnosis and Treatment of Cystitis in Early Life due to the Colon Bacillus.

G. Cecchi (*Il Morgagni*, August, 1904) gives an account of 7 cases of cystitis in children, shown to be caused by the invasion of the colon bacillus, and discusses the questions whether such cases can be diagnosed by the serum reaction and successfully treated by the injection of specific serum. In each of these cases a pure culture of the colon bacillus was obtained from the urine, and in some cases from the vulvar secretions and from the faeces. The 7 cases are divided into five groups. The characters, both microscopical and cultural, of the bacilli and the results of agglutination experiments showed that each group of cases was caused

by a separate variety of bacillus, agglutinated by the serum obtained from one or other of the patients in the same group, but not agglutinated by the (reasonably diluted) serum from patients in other groups. In one case the serum reaction—absent when the patient was admitted to hospital—was present five days later. Only one of these five strains of bacilli was agglutinated by Celli's serum, and that patient died before this fact could be utilized in the treatment. In each of the two groups containing 2 cases, the 2 cases were either both severe or both slight—an observation which seems to show that the gravity of the case depends on the virulence of the bacillus. From his observations, the author concludes that urinary infections due to the colon bacillus generate specific serums with the power of agglutinating the bacilli, but there is no single specific strain of colon bacilli always found in such cases, and therefore, in the present state of our knowledge, a negative serum diagnosis is not final, though a positive result from a properly-conducted agglutination test is of great value. Before a case can reasonably be subjected to treatment by Celli's serum, two tests must be satisfied. In the first place, the bacterium to which the disease is ascribed must be cultivated and found to be agglutinated by the patient's own serum. In the second place, the cultivations must be agglutinated by Celli's serum. The author's observations seem to show that only a small minority of all cases will present these indications for specific treatment. It is noted that the discovery of the colon bacillus in the vulval discharges suggests that the path of the infection may well be from the anus to the urethra, and not, as has usually been assumed, through the intestinal walls or by the blood vessels.

(257) Strangulated Hernia of the Appendix.

Tapie (*Arch. Prov. de Chir.*, No. 8, 1904) reports a case of strangulated appendicular hernia, and discusses the question whether, in cases of this kind, strangulation be the primary morbid condition or the result of appendicitis. He concludes that strangulation of a herniated appendix may occur quite independently of inflammation of this organ. This herno-appendicular strangulation, he states, may give rise to very serious symptoms, and result in a short time in acute appendicitis. It should be treated by prompt kelotomy, and, as a rule, the strangulated appendix should be removed. In some cases, however, as in those in which it is impossible to expose the caecum, and in which, in consequence of the enormous size of the appendix, such step would acquire the proportion of an actual resection of intestine, and so compromise, by the length of the operation, the prospects of the surgical treatment, it would be advisable, the author believes, simply to reduce the appendix, provided it be only congested by the strangulation, and not intensely inflamed.

(258) Subcutaneous Linear Osteotomy.

Heine (*Zentralbl. f. Chir.*, No. 34, 1904), whilst acknowledging that the risk of wound infection in open osteotomy has been very much reduced by modern methods of aseptic practice, holds that this operation is often followed by septic mischief, especially when a large wedge of bone has been detached. He suggests, therefore, that it might be well to devise means of simplifying as far as possible the section of bone with the view of rendering the operation a subcutaneous one. It is admitted that osteotomy is far from being so simple as tenotomy, but still it is possible, the author holds, to divide a large bone under the same conditions as those in which a tendon or a band of fascia is subcutaneously divided. Reference is made to three methods of subcutaneous osteotomy that have been practised by the author, and the details are given of the third of these methods, which, it is stated, is the only one likely to find general favour. In his description of the successive stages of this method the author takes as an example a case of rachitic curvature of the lower third of the leg. The skin having been stretched by an assistant from the outer to the inner surface of the limb, so that the portion normally in relation with the tendons of the tibialis anticus and extensor tendons is brought over the inner surface of the tibia, the surgeon makes a small longitudinal incision directly down to this subcutaneous surface of bone, without, however, dividing periosteum; and then, with chisel and mallet, divides the bone—though at this stage not completely—in an oblique direction from before backwards and below upwards. The skin is then allowed to fall back into its proper relation to the bones so that the small cutaneous wound is no longer over the cleft in the tibia. The division of bone is then completed by fracturing the remaining intact portion of tibia, together with the fibula, and the deformity is corrected and the limb enclosed in a plaster bandage. This method, it is believed, presents the following advantages: (1) The brief duration of the operation, which lasts but for a few minutes; (2) the small size of the wound in the skin, which is just large enough to admit the chisel; (3) the exclusion of air from the wound during the operation; (4) the analogy of the surgical traumatism in this operation to a simple fracture of bone; (5) the absence of direct communication between the external wound and the cleft in the bone; (6) the subcutaneous character of the operation. With the exception, however, of the detail of sliding of skin, to which the author attaches much importance, this method really differs but very slightly, if at all, from methods of osteotomy that have been long practised by other surgeons, of which a good type is presented by Macewen's well-known operation for division of the lower end of the femur in cases of genu valgum.

(259) The Regeneration of Nerve.

J. N. Langley and H. K. Anderson have recently made some experimental investigations on the regeneration of nerve (*Journ. Phys.*, vol. xxxi, No. 5, August 22nd, 1904), which are, they consider, as far as they go, decidedly against the recently-revived autogenetic theory, and are in favour of the view that the regeneration occurs by the ingrowth of fibres into the peripheral end of the divided nerve from a central end. This ingrowth need not be from the central end of the same nerve, for they find that when the peripheral end of a cut nerve is sewn into the skin or left lying amongst the muscles it may make connexions with the central nervous system by means of the nerves of the surrounding cut tissues, although it makes no connexion with its own central end. As both they and Münzer have shown in this relation, the peripheral end of a nerve left in contact with muscle becomes firmly adherent to it, and nerve fibres pass from the muscle to the nerve. The Cambridge observers further found that all the medullated nerve fibres which reform in the peripheral end of a nerve degenerate when the nerves which run to the tissues in the neighbourhood of the cut end are divided near the spinal cord—that is, in their experiments all medullated fibres in the peripheral ends of the cut nerves were fibres that had become connected with the central nervous system; and they point out that if autogenetic regeneration of the fibres had occurred, every one of these must have become connected with the central end of some nerve fibre, which, on the basis of the autogenetic theory itself, seems to them in the highest degree unlikely. They are able to confirm from their own observations those of Büngner, v. Notthaft, Stroebe, and Wieting, that the formation of new fibres occurs more rapidly near the nerve cells, and that the number of medullated fibres decreases towards the periphery. As one of the main conclusions of their work, they found that when the peripheral end of a divided nerve had acquired a motor function there was always more or less conclusive evidence of reunion with centrally-connected nerve fibres. In the cases in which the nerve was cut a second time, and in which other nerves which might have made connexion with the peripheral end were also cut, the peripheral end examined some days later by the method of electrical stimulation showed no motor effect.

MIDWIFERY AND DISEASES OF WOMEN.

(260) Primary Uterine Congestion.

L. M. Pierra (*La Gynéc.*, June, 1904) reviews the subject of primary uterine congestion occurring in nervous subjects of arthritic diathesis. Among the manifestations of the nervous arthritic diathesis found in the 12 cases described are: Articular affections, migraine, neuralgia, dyspepsia and dilatation of stomach, skin troubles—such as eczema and urticaria—hepatic and nephritic colic, a tendency to polysarca, visceroptoses, haemorrhoids, constipation almost invariably, and a nervous state evidenced by neurasthenic depression or excitableness. The author holds that the arthritic diathesis leads to uterine congestion as to pulmonary, hepatic, or renal congestion, and would accept Bouchard's view that an essential element of the diathesis is an abnormality of nutrition accompanied by nervous and circulatory erethisms and congestive tendencies. It is easily

comprehensible that such tendencies should attack specially an organ like the uterus predisposed to vascular ruptures. The form of uterine congestion here dealt with has in most cases an insidious onset and never leads to an initial rise of temperature. The most important symptoms are, perhaps, the general ones detailed above. Locally the uterus is enlarged and soft, freely movable without pain, except where there is retroflexion; the uterine cavity is enlarged. The cervix uteri is little if at all tender to the touch, and shows no laceration, pseudo-ulceration, eversion of the mucous membrane, nor muco-pus. There is no affection of the peritoneum nor adnexa, except that pain in the region of the ovaries may correspond to a polycystic degeneration of those organs; a purulent discharge is never seen. Three forms of the disease can be differentiated: (1) The haemorrhages form especially frequent at puberty or the menopause; (2) a form in which pain is prominent, and as a rule either the ovaries are degenerated or there is a movable retroflexion; (3) a catarrhal or parenchymatous form with, on the one hand, glandular hypersecretion, and, on the other, a hypertrophied uterus. The disease must be diagnosed from metritis and from fibromatous change in the uterus. The latter diagnosis is not always easily made, but in simple congestion the uterus hypertrophies *en massse* and its surface remains regular and smooth. From metritis congestion is diagnosed by its onset without sign of infection, the state of the cervix uteri, the absence of fever and of the general phenomena of infection, the lack of tendency to generalization, the absence of purulent secretions, and, above all, by the presence of the etiological factors already considered. The distinction between metritis and simple congestion is of great practical importance. The main treatment in acute metritis is to confine the patient to bed, a measure which in simple congestion does no good and may do harm, because it tends to diminish metabolism and increase the acidity of the blood, and may in cases of retroflexion induce hypostatic congestion. Other treatments for metritis, such as vaginal injections, cauterization of the uterine mucous membrane, and especially curettage, are useless in simple congestion; glycerine plugs may be beneficial when there is a discharge. Considering the prominence of the rheumatic diathesis in causation of primary uterine congestion, the general antirheumatic treatment is of chief importance. With respect to food, wine, coffee, excess of meat, all tonic medicines, and iron preparations are to be avoided, and a milk and vegetarian diet aimed at. As to general hygiene, the patient should have moderate exercise daily in the fresh air, and, in addition, massage or combined massage and gymnasium treatment. Failing ordinary massage, the patient should daily himself apply friction to the abdomen. An abdominal bandage of flannel or velpeau crêpe should be worn. As a nervous sedative, hydrotherapy is to be strongly recommended; douches should be ordered, or, if they be impracticable, alkaline baths, or a daily tub and envelopment in a wet sheet. A mineral-water cure should also be tried. The next point is the treatment of the constipation. If this is acute, an enema of oil and camomile should be given, followed by an ordinary enema. The best habitual aperients are cascara, rhubarb, and especially belladonna. It has been justly said that all medicines are harmful to those of rheumatic diathesis, but alkalies are an exception to this rule, and should be given in full doses. As sedatives, antipyrin, morphine, or, for more constant use, belladonna and valerian may be given. For haemorrhage during the acute stage ordinary haemostatics are of little use, but a combination of tincture of pixidia erythrina and of viburnum sometimes does good; hamamelis is of great benefit if given during the later days of the menstrual period. As local treatment for pain, suppositories of belladonna and opium, hot compresses and Priessnitz applications on the abdomen, should be tried. Rectal irrigation is more useful than vaginal douching. The other two local forms of treatment are dilatation of the cervix carried out slowly, and followed in some cases by the insertion of a drain, or a tamponnade of the vagina three or four times between the menstrual periods. The author has obtained remarkably good results from the latter treatment. The insertion of pessaries to correct displacements is useless. Where medical treatment fails to relieve symptoms Pierra recommends a total vaginal hysterectomy.

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(261) Results of Operation for Uterine Cancer.

Duret and Besson (*Rev. de Gyn. et de Chir. Abd.*, May-June, 1904) report their experience in hospital practice from 1891 to 1903 inclusive. Out of 173 cases of uterine cancer, 104 were too advanced for operation when admitted, 69 underwent hysterectomy—namely, the vaginal operation in 40 with 6 deaths (15 per cent. mortality), and the abdominal operation in 23 with 10 deaths (43.4 per cent. mortality). Turning to the 6 deaths after the vaginal operation, 3 patients were in bad general health, and 1 of these died of internal haemorrhage, 1 of suppurative peritonitis, and 1 from damage to the sigmoid flexure. There remain 3 who were in good health, and of these 1 died of shock, 1 of pneumonia, and 1 of cardiac disease on tenth day, with no evidence of sepsis or haemorrhage. The 10 deaths in the 23 abdominal operations were due to shock in 4 cases, septicaemia in 3, ligature of both ureters in 1, laceration of bladder and section of a ureter in 1, and cardiac failure due to mitral obstruction in 1. Thus, although the abdominal operation is becoming more popular than it was ten years ago, the immediate results are unfavourable. Duret and Besson find that the after-histories are yet more unsatisfactory. For after carefully following up 34 of the vaginal cases and 9 of the abdominal which recovered, the results in the vaginal cases were: 13 patients free from recurrence at the end of one year, 8 free between one and two years, and 13 free over two years after operation. Of the 9 abdominal cases which recovered from hysterectomy and were followed up, 6 died within ten months, 1 seven months after operation, and 1 in six months. The patient who died in seven months was reported as "in advanced cachexia." Nor do Duret and Besson consider that the abdominal operation is best because it allows of the free removal of diseased lymphatics by deliberate dissection. This radical measure has been shown to be insufficient when lymphatic infection is advanced, whilst in cases where it has not commenced the vaginal operation is quite sufficient to allow of the removal of all cancerous tissue.

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(262) Tubal Gestation Due to Tuberculosis.

Kober (*Monats. f. Geb. u. Gyn.* June, 1904) recently demonstrated a tubal sac where the cause of the abnormal gestation seemed to be tuberculous disease of the Fallopian tube. He noted that the most probable cause of arrest of the ovum in the tubal canal was, as Opitz has demonstrated, adhesion of the edges of the tubal plicae, the result of salpingitis. The cause of the salpingitis is usually gonorrhoea or the septic germs of puerperal fever, but tuberculous germs rarely play a part in causing tubal pregnancy. To the naked eye there was no sign of tuberculous disease in Kober's case. By the microscope tuberculous changes in the tubal mucosa were detected; they were specially marked in the middle segment of the tube; the ovum had become implanted in the ampulla. The tubal canal must have been viable for spermatozoa in this case, transmigration of the ovum being impossible, as the opposite tube was closed at its abdominal end.

THERAPEUTICS.

(263) Treatment by Light after Sensibilization.

In offering the details of the result of the application of light treatment after sensibilization, Forchhammer (*Deut. med. Woch.*, September 15th, 1904) explains that the clinical side has been little written on hitherto, and that he is now in a position to sum up the results obtained in Finsen's Institute. In order to obtain deeper action than is possible with Finsen light, Dreyer found that by the application of certain substances, the inactive, but penetrating, yellow and yellow-green rays could be made as bactericidal as the non-penetrating chemical rays (ultra-violet). The test of the treatment was, therefore, carried out on 23 patients suffering from lupus vulgaris, and included about 350 sittings. Erythrosin, in 1 in 1,000 dilution in physiological salt solution, was injected either cutaneously or subcutaneously, according to the situation of the lupus. Four to eight hours after the injection, the light treatment was applied for from fifteen to twenty minutes. The action is generally as follows: There is mostly considerable pain, which can become so severe that it is scarcely to be stood. The injections are usually but little painful, and no swelling, infiltration, or tenderness follows; as a rule within twenty-four hours of the light exposure

the pain sets in. Not infrequently the reaction of the light is like a phlegmonous process, and at times there is central necrosis. The deep reaction disappears after two or three days. The same exposure of light without sensibilization does not produce this reaction. The therapeutic result does not stand in proportion to the severity of the reaction. He has seen troublesome late affections arising from the treatment. In one case the infiltration lasted for several months, and from time to time an erysipelas-like erythema accompanied it. The same disappointing results were obtained in lupus affecting the mucous membranes, for which fifty-four sittings were employed. Experiments were made to attempt to lessen the reaction by using weaker solutions of erythrosin and by applying a less strong light, but no satisfactory results were met with. Forchhammer considers it his duty to warn others that excessive pain and but little therapeutic gain is to be got from this form of treatment, at all events in its present position.

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(264) Renal Opotherapy.

ETTORE FORNAROLI (*Gazz. Med. Italiana*, August 4th, 1904) gives a history of renal opotherapy, with reference to the principal writings on the subject, and quotes 4 cases of his own in which the treatment was adopted. The method dates from Brown-Séquard's suggestion that all the organs of the body produced internal secretions. In myxoedema and acromegaly the theory has been applied with brilliant results. In the case of other organs, and especially the kidneys, the results obtained have been much more doubtful. Brown-Séquard found that there was no constant correspondence between anuria and uraemia, and some of his followers found that animals from which both kidneys had been removed lived rather longer if treated with injections of renal substance or of blood serum taken from the emulgent veins than if left untreated. The differences obtained were not very great, and other observers have failed to discover any difference in favour of the animals treated by injections. Still less importance is to be attached to experiments showing that ligature of both ureters is rather less rapidly fatal than the extirpation of both kidneys. The results obtained by renal opotherapy in the human subject have hitherto been contradictory. Some considered that such treatment was useless or even harmful, others obtained better results, some of the more striking cases going much beyond what might reasonably have been expected. One observer claims to have found pyonephrosis curable by renal opotherapy. The recent researches of Metchnikoff and others on the existence and action of cellular poisons have given an explanation of and a fresh importance to the results of those who have found renal opotherapy distinctly harmful. It is no longer possible to say that the treatment gives patients another chance and cannot hurt them. In his own experiments Fornaroli used a glycerine-and-water extract of pig's kidneys similar to that used with good results by Dieulafoy and others. He injected only 5 c.cm. or less a day and never made injections more often than once a day. One patient was a boy convalescent from acute parenchymatous nephritis, the second had suffered for six months from haemorrhagic nephritis, the other two both had chronic nephritis, and made little or no progress under ordinary treatment. The experiments showed no useful result of the treatment by opotherapy. There was no diuretic effect and no diminution of arterial tension. On the other hand, there was a return of albuminuria in the first case, and an increase of albuminuria in each of the other 3 cases. The author concludes that renal opotherapy does harm to the kidneys, which as depuratory organs have to deal with any extraneous substances introduced into the circulation.

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(265) Liver Extract for Snake Bites.

BASSEWITZ (*Münch. med. Woch.*, No. 19, 1904) states that Calmette's antiserum, obtained from a mixture of snake toxins, has not proved efficacious against the venoms of the types of snakes usually met with in Brazil. Very satisfactory results, however, have been obtained with two specific antiserums prepared by Dr. Vital Brazil, Director of the Pasteur Institute of Santo Paulo. Unfortunately, these serums do not keep long, and are often not available when required. As an alternative method of treatment, when the proper specific serum is not obtainable, Bassewitz recommends inoculation with an extract obtained by emulsifying the liver of the snake which caused the bite. There is generally no difficulty in finding and killing the snake. The liver ought then to be removed under aseptic precautions and emulsified with from 50 to 100 c.cm. of normal saline solution. The filtered emulsion should be inoculated subcutaneously. He also recommends the administration per os of the contents of the snake's gall bladder. He has established the neutralizing effect of liver extract by experiments in vitro and by inoculation of susceptible animals which had received a lethal dose of the poison. His investigations are based on the working hypothesis that a snake is immune against its own toxin owing to the production by the liver of an antitoxic "internal secretion."

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(266) Cure of Tabes by Mercury.

OLTRAMARE (*Journ. des Mal. Cut. et Syph.*, March, 1904) reports a case of tabes cured by severe and prolonged mercurial treatment. The total duration of treatment was 230 days, and the amount of metallic mercury administered was 2.4 grams by injection, without reckoning that absorbed by inunction. The treatment consisted in 14 injections of salicylate of mercury of 0.05 gram; 15 injections of a mixture of calomel and salicylate, 0.025 gram; 19 injections of salicylate, 0.075 gram; 25 injections of salicylate, 0.05 gram; and 24 inunctions of colloidal mercury. No iodide was given. After this treatment, which was well borne, the gait became normal; the lightning pains and gastric crises disappeared; the pupils remained unequal, but reacted both to light and accommodation; the patellar reflex did not return.

PATHOLOGY.

(267) The Morbid Histology of Diabetes.

THOINOT AND DELAMERE (*La Presse Méd.*, August 3rd, 1904) consider the problem of the actual changes in the pancreas which result in *diabète maigre*, with special reference to the interalveolar cell islets. They examined the pancreas in 5 cases of diabetes with the following results: (1) Integrity or only slight lesions of the cell islets in 3 cases of *diabète gras*; (2) almost complete disappearance by primary atrophy in 1 case of *diabète maigre*; (3) considerable numerical reduction, with atrophy, necrosis, and pigmentary infiltration in 1 of *diabète bronzé*. From the literature they have collected 167 cases in which the cell islets have been examined, and 130 times lesions of these structures have been found. These lesions are constant in *diabète maigre*, inconstant in *diabète gras*, and absent in glycosurias of nervous or toxic origin. They may exist alone or with interstitial fibrosis, around the vessels, ducts, or alveoli. The lesions of the islets may be interstitial or parenchymatous. The former consist of congestion, haemorrhages, and sclerosis around the islets or intercellular and hyaline degeneration; the latter of atrophy or more rarely hypertrophy of the islets, and cytolysis, necrosis, fatty or pigmentary changes of the cells. Hyaline degeneration is almost always primary; sclerosis is generally secondary. The atrophy may be either. The authors maintain the existence of a causal relation between certain alterations of the cell islets and certain forms of diabetes—that is, that diabetes is the clinical expression of an insufficiency of the interalveolar islets.

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(268) The Bacteriology of Empyema in Children.

BYTHELL (*Journ. of Path. and Bact.*, July, 1904) finds that empyema in children is generally due to a process of direct invasion on the part of the micro-organisms from a patch of lobular pneumonia. The causative agent in a very large proportion of cases is the pneumococcus, which is most frequently present in a state of purity. Apart from these cases, and except where the streptococcus is present, the infection is generally mixed. A sero-purulent effusion is not inconsistent with the exclusive presence of pneumococci, nor a thick viscid pus with that of streptococci. The unmixed pneumococcic cases are, on the whole, the mildest, but the pneumococcus may, by dissemination, give rise to very dangerous complications; and, on the other hand, a streptococcal infection may result in very mild symptoms. Bacteriological examination affords the following information as regards the prognosis: (1) If the pus contains but a small number of poorly-stained micro-organisms, and gives feeble cultures, the prognosis is generally good; (2) if the micro-organisms are abundant and well stained, and the cultures vigorous, the prognosis is not necessarily bad, especially when there is a large amount of phagocytosis; if, however, the phagocytosis is poor or absent the prognosis is almost always bad; (3) vigorous cultures are not in themselves a sign of pathogenic activity.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(269) Scarlet Fever.

At the annual meeting of the New York State Medical Association, October 17th to 20th (*Med. Record*, October 22nd), Louis Fischer read a paper entitled Clinical Observations in Scarlet Fever, with Special Reference to the Heart and other Complications. He said that in that disease more attention should be paid to the heart and less to the temperature. Some important questions arose for consideration, such as: (1) Was the temperature a positive indication of the condition of the patient? A moderate rise of temperature was often encountered in the most malignant forms of the disease, and, on the other hand, the mildest forms of scarlet fever sometimes begin with a temperature of 102° to 105°; therefore one could not say that very high fever was any guide to the severity of a given case. (2) Does fever invariably indicate disease? No. This was a fact that he had frequently verified. He had operated on cases of empyema in which there had been a normal temperature for days, and he had seen other suppurative complications without any fever. He was convinced that too much stress was laid on the fever, and the temperature curve was given far more credit during convalescence than it deserved. (3) Was the decline of temperature always a favourable sign? A drop of several degrees in the temperature did not indicate improvement in all cases. Frequently a complication will be detected when the temperature indicated improvement. He believed the toxins of scarlet fever inhibited the proper action of the thermic centre in the brain, because the most malignant form of this disease frequently showed no rise, or only a slight rise above the normal. (4) By which symptom should we be guided in determining a favourable or unfavourable termination? The greatest attention should be bestowed on the condition of the heart. The pulse, its character, its frequency, and its tension were the most important guides. The necessity for immediate support of the system was apparent if the heart and pulse rate were studied. Experience had taught him that he was facing a danger point when feeble or muffled heart sounds were noted or a bruit was heard, when, during this same time, a normal temperature would have been a misleading factor. The mortality in private practice was high, and he accounted for it simply by the one fact, that children were not kept in bed long enough to permit the toxaemia to be modified. Every case of scarlet fever was kept in bed at least four weeks. The temperature of the room should be between 68° and 70° F. and ventilated frequently. The temperature was no guide as to the time when the child should be permitted out of bed. The heart and the pulse should be the true determining guide as to the prognosis and the condition of the patient. The diet should be liquid, principally of milk and alkaline waters. The emunctories should be stimulated. A hot saline colon flushing—one or two quarts—at a temperature of 115° to 120° F. should be given once a day after the first week, regardless of the necessity of the same. It stimulated diuresis, cleansed the bowel, and nourished the blood.

(270) Paralysis of the Third Nerve in Aneurysm of the Internal Carotid Artery.

S. Beykovsky (*Wien. med. Woch.*, May 7th, 1904) was consulted by a woman, aged about 40, for complete paralysis of the right oculomotor nerve, which had appeared a few days previously. During the examination she suddenly fell unconscious to the ground. Attempts at resuscitation were fruitless; acute oedema of the lungs appeared, and death shortly supervened. *Post mortem* some old haemorrhages in the right temporal lobe, and a layer of recent coagulated blood between the dura mater and pia mater were found. The recent haemorrhage was obviously due to a minute laceration in a sacculated aneurysm of the right internal carotid artery, close to the origin of the posterior communicating artery. The aneurysm was of the size of a pea. Its walls were partially calcified, and in places of the thinness of paper; the perforation was at the lower part. It was firmly adherent to the third nerve, which was compressed and flattened. The tissue round the sac was pigmented from former haemorrhages. There was a somewhat smaller aneurysm in the same situation on the left internal carotid artery. There was fatty degeneration of the heart. Inquiries showed that the woman had had severe attacks of headache for more than two years, which were localized in the right temple, and frequently ended in vomiting. She had become excitable, though formerly she was of a placid disposition. She consulted a practitioner for increasingly severe right hemicrania a fortnight before her death. Six days later the levator palpebrae superioris became paralysed; then there was ophthalmoplegia externa, and twenty-four hours before death the third nerve became completely paralysed. The etiology of these aneurysms was obscure. They were formed by stretching of all the walls of the vessels. The patches of atheroma in the right aneurysm were doubtless due to secondary degeneration, and were not the cause, for atheroma was present in no other vessel in the body, nor was there any sign of syphilitic arterial disease. They were not of embolic origin, as, though an embolus might have escaped through the rent on the right side, there was no sign of such a process on the left. Bilateral aneurysms of the internal carotid arteries are extremely rare. Lebert observed such a condition once in nine cases. They are usually small, though Czermak observed one of the size of a Tangerine orange, and Dittrich one larger than a hen's egg. In the former the sixth nerve first became paralysed. This was followed by trigeminal neuralgia, and shortly before death occurred from cerebral haemorrhage, six years after the first symptom, by complete ptosis, oculomotor and trochlear paralysis, amaurosis, and neuroparalytic keratitis. There was tertiary syphilis of the buccal mucosa. The latter, which was situated in the frontal lobe, gave rise to no symptoms, and was found after death from another cause. The diagnosis is usually impossible. Ophthalmoplegia may be of cerebral or basilar origin. But whether it is due to a new growth or an aneurysm there is nothing to show. Several cases of new growths or aneurysms have been reported in which paralysis of the extrinsic muscles of the eye preceded that of the intrinsic. Probably the fibres which supply the latter run in the centre of the oculomotor nerve, and are the last to become compressed. In several cases of aneurysms of the internal carotid artery the neighbouring optic nerve was also involved. In a case reported by Lindner, an aneurysm on the left side produced paralysis of the left third nerve and right optic neuritis. Spontaneous obliteration of the aneurysm appears to occur in about half the cases. In the remainder rupture occurs. In view of the possibility of spontaneous cure few would recommend operative treatment. But Zur-Mühlen, who in two cases not only diagnosed the presence of an aneurysm, but localized it correctly, obtained brilliant results by ligature of the common carotid under local anaesthesia, after it had been compressed four or five times daily for five minutes at a time on the preceding sixteen days.

(271) Adenoids in Relation to Ear Troubles.

Grazzi (*La Clin. Mod.*, An. 9, Nos. 4, 5, 6, 7) says the percentage of adenoid cases seems to differ widely in different countries. Amongst his patients suffering from ear, nose, or throat trouble the author found 6 per cent. suffered from adenoids. In the etiology, heredity seems to exercise a marked influence; dampness *per se* does not seem to play a very important part; bad hygienic surroundings, tuberculosis, and hereditary syphilis, rickets, zymotic diseases, each have a more or less marked influence. They have also been attributed to degenerative processes in the nervous system, to disturbances of the thyroid etc. Of all the symptoms due or attributed to adenoids, the most important are those relating to the ear—for example, deafness, otorrhoea. In children the commonest type is that of catarrhal otitis; in adults, hyperplastic sclerosing otitis. Skeletal alterations in the upper jaw are often present as a secondary result. The first deleterious effects of adenoids on the auditory apparatus usually start in the middle ear and afterwards on the internal, which may be damaged via the blood vessels or the lymphatics. Earache, again, may be due to adenoids. Where surgical interference is postponed, palliative treatment by nasal douches and politzerizing may be tried. For removal the author prefers local cocaine anaesthesia (10 to 20 per cent.) or general anaesthesia by ethylic bromide. The post operative treatment is purely hygienic (keeping to the house and closing the nostrils with sterile gauze). The operation is contra-indicated by the presence of haemophilias, any marked dyscrasia, epidemic disease, or tuberculosis.

SURGERY.

(272) Prostatectomy in Emergency Cases.
AT the annual meeting of the New York State Medical Association, October 17th to 20th (*Med. Record*, October 22nd), J. F. Erdmann called attention to the advantages of doing prostatectomy in every instance possible when the prostate was in part the cause of obstruction in cases coming under the head of emergency drainage of the bladder. He related several cases. The first was one of impassable urethra, due to stricture, with rupture and gangrene of the entire scrotum and perineum. The second was one of retrograde haemorrhage, the bladder being full of clots and bloody urine, with malignant disease of the prostate. The third was one in which there were false passages, retrograde haemorrhage and suprapubic aspiration, with infiltration of the abdominal wall extending to the thorax and to the gluteal regions. The fourth case was one of acute obstruction, due to exposure to cold and wet, with inability to catheterize, and injury of the urethra. The fifth was one of injury of the urethra, in which catheterization had been performed for three days, with retrograde haemorrhage and large prostatic obstruction. The sixth case was one of deep stricture of the urethra, with obstruction and cystitis with absorption. The seventh and eighth were cases of obstruction, with slight injuries of the urethra, in which it was advisable to operate, both because of the injury and to secure drainage. For this emergency operative procedure was recommended, because only a few minutes more were required to remove the gland, and the haemorrhage, as a rule, was not excessive, and the operative procedure itself did not increase the shock to any degree. The removal of the prostate gave proper exit to the urinary outflow, and admitted of easy drainage. Washing the bladder was much facilitated. The perineal route in emergency operations was recommended, because the opening was practically at the lowest point of the bladder, and complicated devices for drainage, such as were required in suprapubic sections, were not necessary. Old people, being irritable and feeble, and requiring to be moved frequently, the drainage in the suprapubic method was constantly interfered with, while in the perineal method it was readily controlled. The after-soiling, when the tube was removed, was slight and easily controlled in the perineal method, as compared with the suprapubic. The bladder irrigations were more readily done, with less soiling of the bed, by this method.

(273) The Radical Cure of Hernia in Children.
AT the annual meeting of the New York State Medical Association, October 17th to 20th (*Med. Record*, October 22nd), W. T. Bull and W. B. Coley presented a paper embodying the results of 1,400 operations for the radical cure of hernia in children, performed at the Hospital for the Ruptured and Crippled, from 1891 to 1904. From 1890 to 1903, 49,974 patients were treated for inguinal and femoral hernias, and more than one-third (14,218) occurred in children under 14 years of age. Operation was seldom advised in cases under 4. The results of operation were quite uniform, and the mortality was practically eliminated; and, therefore, operation was advised in children over four years of age. It was important to know the proportion of cases that were curable by truss treatment. This was very difficult to ascertain. Of 709 cases carefully examined, it was shown that the sac was congenital in 284 cases, and of the acquired type, 425. There were 27 cases of femoral hernia under the age of 14. Since 1890, 2,179 cases of femoral hernia had been observed, 69 being under 14 years of age, and 13 of these under 10 years. High ligation of the hernial sac was performed without a single relapse. There were 229 operations for inguinal hernia on 222 patients. The operation performed was practically a Bassini. The veins of the cord were not excised; this he considered unnecessary in children. The purse-string method was used in femoral hernias. In 108 operations the cord was not transplanted, but brought out at the lower end of the wound. The Bassini method, without transplantation of the cord, had been strongly recommended. Thirteen cases of hernia of the caecum and appendix were reported. When the normal appendix was adherent to a hernial sac it was thought best to remove it. There were 2 cases of sigmoid hernia, which was very rare in children. There were 12 cases of strangulation in children under 14 years of age. The strangulation in all cases was the result of tight constriction at the external ring. Dr. Henry O. Marcy, of Boston, referred to his first operations with buried suture for the cure of hernia, which were published by him in 1870. F. H. Wiggin strongly advocated the use of kangaroo tendon as sutures in abdominal wounds. W. B. de Garmo operated only upon those who were over 4 years of age. He had operated 228 times on 182 children without any relapses, and with but 1 death, and this from acute syphilitic meningitis. He said that congenital hernia could be cured by truss, but that it was more difficult than in the acquired form. W. B. Coley said that there were many cases of congenital hernia that could be cured by means of the truss, and that it was impossible to say whether the hernia was congenital or acquired until an operation was done.

(274) Infantile Inguinal Hernia of the Appendix.
STANTON AND SHAW (*Albany Medical Annals*, August, 1904) describe one case. A boy born November 10th, 1902, was admitted on January 31st, 1903, and died October 28th the same year. While under observation there were no symptoms referable to the appendix or genital organs, the patient dying of bronchopneumonia following measles. At the autopsy the appendix was 8 cm. long; it extended directly downwards with free meso-appendix from the caecum through the internal ring and inguinal canal, and was so united by adhesions to the testicle that the latter could be drawn up into the inguinal canal by traction on the appendix. When the testicle was in a normal position there was a slight evagination of the peritoneum around the appendix at the right of the internal ring; otherwise the funicular process was completely obliterated, and there was no evidence of a hernial sac. The tunica vaginalis on both sides was thickened. Hernia of the appendix is uncommon, but Coley found it without other parts of the intestines 5 times in 351 operations for hernia. There are two forms—congenital and acquired. The congenital form is always inguinal, and almost always in the male. There are adhesions between the appendix and some remains of the processus vaginalis—the cord, wall of the sac, or to the tunica vaginalis. These adhesions have enabled the same forces which cause the descent of the testicle also to bring the appendix down into the inguinal canal. The attachments probably originate in fetal folds of the peritoneum. Inflammatory conditions occurring either in the appendix or testicle, and resulting in adhesions, would also cause the descent of the appendix with the testicle.

MIDWIFERY AND DISEASES OF WOMEN.

(275) Rupture of Uterus during Pregnancy.
IVANOFF (*Annal. de Gynéc. et d'Obstét.*, August, September, and October, 1904) has published a series of important observations on the etiology, prophylaxis, and treatment of puerperal rupture of the uterus. He insists that there are no true pathological changes in the tissues of the uterus over and above the physiological modifications which take place during pregnancy and labour. No special pathological change has ever been found in the elastic tissue of a ruptured uterus. Most ruptures in placenta praevia and transverse presentation labours are due to violence, whilst, after clumsy attempts at version, the chances are increased that the uterus will be ruptured even when an expert delivers the child. Ivanoff strongly objects to Braun's decapitator as an imperfect instrument, liable to cause rupture. As a rule, a rupture caused by violence is to be found on one side of the cervix, and tends to run longitudinally, and to penetrate the parametrium between the layers of the broad ligament. Ruptures where the fetus is hydrocephalic are caused not only by the thinning of the distended uterine walls, but also through the complication being usually not detected till late in the labour. Ivanoff supports the opinion that in contracted pelvis rupture is due not only to the distension of the lower segment of the uterus, but also to the friction of its outer surface against a point in the bony pelvis. There is likewise predisposition to rupture on the same account, the friction in earlier labours causing, Ivanoff finds, the development of cicatricial tissue in the uterine walls. Spontaneous rupture in flat pelvis nearly always involves the supravaginal part of the cervix, and is transverse: the accident for the most part takes place early in labour. "Colporrhexis" is in the great majority of cases simply transverse laceration of the supravaginal part of the neck of the uterus. In cases of contracted pelvis, if several lingering labours have taken place and obstetrical operations performed, conservative treatment of rupture is dangerous, especially when cica-

tricial tissue can be detected on palpation in the supravaginal portion of the cervix. Parametric inflammation predisposes to rupture, as does cicatricial tissue, malignant growths, and arrested development of the uterus. Conservative treatment of ruptures of the uterus is unsatisfactory, surgical measures giving results twice as favourable. The latter ensure permanent arrest of bleeding, and the thorough cleaning of the damaged, lacerated parts and the structures around them. The recurrent haemorrhage is not rare after conservative measures, and sepsis, more or less serious, from clots or torn tissues, very frequent. Surgery demands that bleeding vessels must be sought for and ligatured, and that the tissues and parts around the rent, and the peritoneal cavity as well when the rupture is complete, be cleaned to avoid sepsis.

(276) Missed Labour: Fetus Retained Three Months.

Goldenstein (*Zentralbl. f. Gyn.*, No. 26, 1904) was consulted by a patient who had become pregnant, and noted that after feeling the motion of the child it ceased completely one day, when labour pains set in and continued for a few hours. Apparently this attack of uterine pain occurred at term. No vaginal discharge followed. The patient's health was good, and all she asked for was to be delivered of her uncertainty about her condition. She was 40, and had been normally delivered eight times. She had enlarged spleen from malaria (living near Jassy). The abdomen was pendulous, with a small umbilical hernia. There was neither pain nor high temperature. The uterus on palpation seemed as large as at term; the fetal outline was clear. The cervix was very soft, the os admitted two fingers, the breech presented. Goldenstein ruptured the membranes, and a little fetid brown fluid escaped. He brought down the right foot with care, and had to extract the fetus very slowly, as it was in an advanced state of maceration, and he feared that the head might be torn off. The left femur was broken. The fetus was at length delivered entire. There were no uterine contractions, and no pain of any kind was caused by the manipulations. On compression of the fundus, the placenta —a necrotic mass—fell out. No haemorrhage followed. The uterus was washed out with a sublimate solution, and the puerperium was normal. The fetus was nearly 20 in. long. Goldenstein notes the evident authenticity of this case as a "missed labour," the good health of the patient during the retention of the fetus, the entire absence of uterine pains when the child was extracted, and the freedom from flooding or even from the least haemorrhage during or after extraction and removal of the placenta.

(277) Delivery 269 Days after Double Ovariotomy.

Essen-Möller (*Zentralbl. f. Gyn.*, No. 28, 1904) describes an operation by Borelius, of Lund, on September 6th. The woman was 43 years of age, and had been regular till the date of the operation. She showed all the symptoms of ovarian cystic disease. The tumour had developed in the left ovary, and contained over 10 pints of fluid. The right ovary was as big as a walnut, and was removed as suspicious. The uterus was noted as somewhat enlarged. A distinct corpus luteum of pregnancy was discovered in the right ovary, so that it was deemed advisable to inform the patient that she was probably pregnant, as soon became evident. On June 2nd she gave birth to a child, which died six days later of congenital heart disease. There was no doubt that both ovaries were removed entire.

THERAPEUTICS.

(278) Prolonged Fasting in the Treatment of Acute Diseases.

At the annual meeting of the New York State Medical Association, October 17th to 20th (*Med. News*, October 22nd), Norton Jerome Sands read a paper on prolonged fasting in the treatment of acute diseases. He said that during the course of acute diseases the digestive powers were in abeyance in proportion to the severity of the disease, and that too frequently the patient was overfed. This aggravated the condition of the patient by setting up intestinal indigestion, with resulting toxaemia. During twenty-one years Sands said he had gone to the other extreme by withholding all food during the active stages of the acute diseases, giving only water. He reviewed his treatment of typhoid fever, saying that he withheld all food for twenty-one days, and, after thoroughly cleaning out the bowel, he gave 2 quarts of water a day. His experience had shown him that there was no tympanites and no diarrhoea, and that the temperature was usually two or three degrees lower than is common in typhoid. He had also found that the cold sponge was not necessary after the first week. After the third week he began again to give liquid food, and contrary to the usual expectation the patient was not weakened by the prolonged fast, and did not even seem to be as weak as the patient fed in the customary way in typhoid. All other acute intestinal diseases had been treated similarly. Food was imperfectly digested during the course of all acute intestinal diseases, and feeding was therefore irrational; it only added to the gastro-intestinal disturbance. In the discussion Wiggin said that he had found that sepsis was a condition in which it was not advisable to feed the patient, and he thought fasting was valuable in such conditions.

(279) The Strychnine Treatment of Diabetes Insipidus.

Stimulated by the good result which Feilchenfeld obtained in diabetes insipidus by strychnine injections, B. Leick (*Deut. med. Woch.*, August 11th, 1904) determined to try the same on a case of his. The patient was a man of 49 years, and stated that he had not had syphilis, but admitted being a moderate drinker. In 1870 he had an inflammatory affection of the abdominal muscles. On November 21st, 1903, he fell down some high stairs, and remained unconscious for one day. No external signs of an injury were discovered, and the man resumed his work a few days later, but he was soon troubled with much headache and excessive thirst. He passed a large quantity of urine, and drank up to 21 litres of fluid (over 4½ gal.) daily. His skin became dry and cracked, and the secretion of sweat ceased altogether. He felt "slack" and tired, and suffered from his stomach a great deal. On examination, no very marked objective changes were found. The urine was clear, slightly acid, but did not contain albumen or sugar. The quantity was greatly increased, and the specific gravity very low. Under a suitable diet and quinine the daily quantity of urine varied between 9,900 and 6,300 c.cm., and had a specific gravity of between 1002 and 1007. The strychnine injections were begun on April 16th. On the first day, 0.0025 gram (about 1/25 gr.) of the nitrate of strychnine was injected; on the second, 0 003 g.; on the third day and on each day till the 25th, 0 005 gram was given. The quantity of urine sank after the first injection to 4,500 c.cm. As complaints of nausea, vomiting, etc., were made, the injections were stopped for three days. On the 29th and 30th 0 005 gram was injected; on May 1st 0.0075 gram, and on the 2nd, 3rd, 4th, and 5th 0 01 gram was injected. Then the sickness reappeared, and there was some twitching, so that it was thought inadvisable to continue the strychnine. In the meantime, the daily quantity of urine had further decreased to 3,400 c.cm., and the specific gravity was 1005. On June 4th the improvement had continued, and only 2400 c.cm. were passed daily. The patient felt well, all his symptoms had disappeared, and he had put on 9 lb. in weight. The thirst—the dry skin and dry mouth—appeared to have been permanently cured. He was cautioned, on discharge, to present himself early should any of the symptoms reappear. This good result in a case of diabetes insipidus depending on cerebral trauma leads the author to advise others to try the treatment, and to publish their results, so that one may later be able to determine the value of it when there is a large number of cases.

(280) Belladonna Poisoning in Ophthalmic Practice.

J. Fejér (*Berl. klin. Woch.*, August 8th, 1904) reports two cases, which may serve as warnings to the general practitioner. The first case was that of a medical man, who complained that he had not seen distinctly for some time, that he could not read. The pupils were moderately dilated, did not react well to light; the vision was 5/7, and only improved with 2 5 D convex glasses. Ophthalmoscopically, there were no changes in the fundus. The diagnosis of paralysis of accommodation was made. On closely questioning the patient, he at last elicited that he was taking a powder to improve the appetite, containing extract of belladonna as well as rhubarb, sodium bicarbonate, etc. The prescription gave the total quantities of each ingredient, and directed that "a knife point" full was to be taken before meals. The quantity of belladonna extract was 0.10 in 20 grams of the other ingredients. On the presumption that the belladonna had not been properly mixed up, and that a too large dose had been taken Fejér ordered the patient to

leave the powder off, and with the assistance of a purgative succeeded in removing the eye symptoms. The second case was that of a female, aged 36 years, who had been examined for glasses by Fejér shortly before. She was in bed, suffering from gastric ulcer, and complained that her vision had for the past three days been getting gradually worse so that she could not see anything. The pupils reacted very sluggishly to light and accommodation. Sensibility to light was absolutely absent, and the projection of the light was also absent in all directions. This puzzled Fejér, especially as the fundus proved to be normal. It then was found that she was taking a powder containing belladonna extract. She had taken 60 powders (three a day), in all consuming 1.7 or 1.8 grams of the extract (one or two powders were still in her possession). On stopping the powders the paralysis of the accommodation and the temporary blindness soon passed off. He points out that in neither case was the dose of the extract ordered excessive, but in the first the mixing had been carried out badly, while in the second case the patient had continued taking the powders without authority from the medical man in attendance. Fejér also discusses the rare and interesting condition of temporary amaurosis after belladonna, which is practically unknown. In conclusion, he relates of a case which showed general signs of atropine poisoning after dropping into the eye a 1 per cent. solution of atropine with 2 per cent. of the hydrochlorate of cocaine. This case shows that one should be extremely careful in applying the ordinary solutions of atropine.

(281) Calomel Injections in Optic Neuritis.

Jullien (*Journ. des Mal. Cut. et Syph.*, July, 1904) reports the case of a medical man, who, in May, 1891, was found to have a detached retina supposed to be due to sarcoma. On the chance that the lesion might be syphilitic, the patient having been treated for syphilis ten years previously, injections of cyanide and biniodide of mercury were given, but with no result. The eye gradually became worse and was enucleated in April, 1902. Examination showed no evidence of sarcoma. A few months later the other eye became affected with optic neuritis, and injections of cyanide and biniodide of mercury were again tried with no effect. The patient then came under the hands of the author, who commenced weekly injections of 0.05 gram of calomel. After twenty-nine injections (1.45 gram of calomel) the eye was completely recovered. The author draws attention to the success of calomel injections after the failure of soluble preparations.

(282) The Use of Bisulphide of Carbon in Tuberculosis.

Coramilas, of Athens, Greece, read a paper on this subject before the Chicago Medical Society on October 5th (*Med. News*, October 15th). He gave an epitome of his work from 1891 up to the present time with the use of this agent. After detailing numerous experiments on animals with the bisulphide of carbon, and presenting a report of 64 cases, the author drew the following conclusions: (1) Bisulphide of carbon has no disagreeable effects; (2) it has a strong action against tubercle baculli; (3) by its action as a parasiticide, antizymotic, antiseptic, dissolving, and penetrating all tissues, it cures tuberculosis; (4) it should not remain in obscurity, but take its place in therapeutics as a valuable remedy.

PATHOLOGY.

(283) The Pathogenesis of Basedow's Disease.

Salmon (*Clin. Med.*, August 3rd, 1904) points out that the whole group of symptoms in this disease suggests that there exists some alteration in the internal secretion of those glands which control organic metabolism. The early symptoms of the disease are all suggestive of a central nervous lesion especially in the bulbar centres. The thyroid hypertrophy is really an initial symptom, and is much more likely to be a consecutive symptom due to some morbid stimulus, most likely of toxic nature, in the nerve centres which govern its secretion. According to the author, the nervous centre which is most likely to furnish the necessary requisites is the hypophysis cerebri. It is situated at the base of the brain, near the bulbar centres; it is credited with an internal secretion essential for the nutrition of the nervous elements; it presents marked relations with the central nervous system, and is very sensitive to various mechanical or toxic stimuli; it is connected with the thyroid by close anatomical and functional relations, so that if the one is affected the other generally shows some alteration. The author therefore suggests that the origin of Graves's disease is to be sought in some disturbance of the hypophysis, causing insufficiency of its internal secretion, to which the thyroid responds secondarily by functional hyperactivity. The close relation of the hypophysis to the vagus and ocular centres would help to explain many of the symptoms—for example, tachycardia, exophthalmos, glycosuria. And the altered function, and hence the withdrawal of the defensive action of its secretion on the nutrition of the nervous system, would explain the great vulnerability of the nervous system in Basedow's disease. This hypothesis further helps to make intelligible the common association of functional or organic disease of the nervous system. Those cases of Graves's disease which show no thyroid enlargement are not easily explained on the thyroid theory of pathogenesis.

(284) Micrococcus Rheumaticus.

Lewis and Longcope (*Amer. Journ. Med. Sci.*, October, 1904) record a case of rheumatic chorea with bacteriological findings. A girl aged 8 was taken ill with acute rheumatism in August, 1903, but recovered under treatment. At the end of September choreic movements began and increased in intensity till her admission to hospital on October 15th. On the 16th hyperpyrexia supervened; on the 17th an apical systolic murmur was heard, and the same evening death occurred. No autopsy was allowed, but blood withdrawn from the median basilic vein was cultivated in milk and in bouillon. Growth occurred—in the milk medium only—of a small diplococcus, occasionally in short chains. On agar plates the growth was indistinguishable from that of streptococcus pyogenes. Milk was acidified, and in bouillon subcultures traces of formic acid could be detected. Five rabbits were inoculated, two at first and others successively; in each, polyarthritis appeared after an interval of four to nine days. The cardiac muscle in four animals underwent degenerative changes of varying degree; one rabbit developed a fungating endocarditis with white infarction of spleen and kidneys, which proved fatal. In another instance a subcutaneous nodule appeared on the extensor aspect of the right carpus. The authors hold that, though there was nothing in the cultures to distinguish the organism from other streptococci, yet the results of inoculation are sufficient proof of its identity with that already described by Poynton and Paine, Walker and Beaton, and others as responsible for the rheumatic infection. They consider, however, that before the specificity of this organism can be definitely accepted, many inoculation experiments are needed to determine whether a similar type of arthritis, endocarditis, etc., can be produced by infection with any streptococcus other than the one present in their case.

(285) Experimental Arthritis from a Streptococcus in a Fatal Case of Acute Rheumatism.

Lewis and Longcope (*Amer. Journ. of Med. Sci.*, October, 1904, p. 601) have recorded a case of chorea endocarditis and rheumatism, from the blood of which before death they isolated a streptococcus which proved to be moderately virulent for rabbits when injected intravenously and gave rise with the greatest constancy to a multiple arthritis which was rarely fatal unless complicated by an acute vegetative endocarditis. The onset of the joint affection was only noticeable after a more or less definite incubation period of four to nine days. Before this the animals appeared perfectly well. The joint involvement usually started with pain and tenderness in the ankle with limping on moving about. The infection might be localized or spread to almost all the joints of the body. Small swellings sometimes developed on the muscle tendons. The streptococcus was recoverable from all the affected joints. The organism could not with certainty be differentiated by its morphological and biological characters from the ordinary varieties of streptococcus pyogenes. When the organism was grown in bouillon for six to eight days and subsequently distilled with sulphuric acid, formic acid could be demonstrated in the distillate. Although the organism was passed through several animals its virulence was little altered. The authors believe that the streptococcus is the same as that described by Wassermann, Meyer, Poynton and Payne, and Walker, but in discussing its specificity they point out the possibility of a streptococcus infection supervening as a terminal event in the fatal cases of rheumatic fever, for they—except in this fatal case reported—had never obtained a growth of streptococci from cultures of the blood and joint fluids of cases of rheumatic fever.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(286) Lesions of the Kidney in Diphtheria. Mario Flamini (*Il Policlin.*, September, 1904) records a large number of observations of the urine of diphtheritic children with a smaller number of microscopical and macroscopical examinations of the kidneys of patients dead from diphtheria. In only 22 cases was it possible to measure accurately throughout the illness the amount of urine passed. In half these cases the amount was normal, in the other half it was diminished. This diminution was not usually very great. In 4 cases out of more than 300 there was suppression of urine, and all 4 proved fatal. The diminution in the amount of urine varied irregularly, and sometimes returned after normal quantities had been passed for several days. In 10 of the 11 cases oliguria was accompanied by albuminuria, and when the urine became more plentiful the albumen showed a tendency to disappear. Usually a diminution in the amount of urine was accompanied by a still better-marked increase in the specific gravity, which in 3 cases was observed to be 1030 or 1031. The author attributes the increase of specific gravity to an excess of urea, partly from the febrile process but chiefly due to the antidiphtherial serum, being the result of the serum itself and not of the antitoxin contained in it. Observers differ as to the effect of the injection of antitoxic serum on the amount of urine secreted, and Flamini considers that it produces no effect in either direction. It is noted that phosphaturia was very frequent, and often very well marked, but that subject is not further investigated. Albumen was found in 32 out of 70 cases in which a systematic daily search was made for it. It often appeared on the fourth day, but might not be found until as late as the seventeenth day. When present at all it usually lasted several days. Out of the 32 cases, 20 were cases with severe toxaemia. Severe cases without albuminuria were rare, and so were very slight cases with albuminuria, but there were examples of both these kinds. The author's proportion of cases with albuminuria is much lower than that given by some other observers—notably those whose statistics deal with cases occurring before the introduction of serumtherapy. The author dwells on this fact in opposition to the prevalent opinion that either directly or indirectly serumtherapy has caused an increase in the number of cases with albuminuria. A further fact bearing on the question is that the author has frequently noted the disappearance of albumen from the urine on the day following injection. Acetone was found in 20 out of 30 cases in which it was looked for systematically, and in many of these cases it was abundant. It may be present only once, or there may be acetonuria for as long as sixteen days. The author adopts Bottazzi's theory that the diphtherial toxin circulating in the blood infiltrates the protoplasm of the cells, increasing the disintegration of their proteid constituents, and at the same time hinders the complete oxidation of the results of this disintegration, so causing azoturia and acetonuria. Like albuminuria, acetonuria has a tendency to diminish or disappear very soon after the injection of antidiphtherial serum. Flamini attaches very great importance to the examination of the urinary sediment, and states that the presence of morphological elements in it is the distinguishing characteristic of the urine of those suffering from diphtheria. Out of 70 cases there were only 8 in which he failed to find such elements. Thus, they were present in 32 out of 38 cases in which there was no trace of albumen from first to last, as well as in all the 32 cases in which albumen was found. These elements were, in the great majority of cases, leucocytes and renal epithelium cells. Often bladder cells were found, very rarely granular or hyaline casts. The leucocytes are granular and refracting, often showing no nucleus. They may appear in masses of varying number and size. The renal cells are usually in good preservation, but may be swollen and granular. These results are, according to the author, confined to diphtherial urines, and are practically never found in other febrile diseases, such as bronchitis, pneumonia, enteric. They usually last for at least a week, and sometimes almost for a month. They must be taken as an index of the severity of the renal lesion. In 11 cases the author describes at some length the clinical history, the condition of the urine during life, and the naked-eye and microscopical appearances of the kidneys after death. From these histories he deduces that the kidneys are almost always injured in an attack of diphtheria, and that the degree of the renal change depends on the severity of the attack rather than on the stage which it has reached. The renal changes are very strictly proportional to the severity of the intoxication. The changes fall mainly on the renal parenchyma, where the epithelial cells are swollen and granular, and the nuclei stain badly. Sometimes there is a leucocytic infiltration of the parenchyma, not usually of a very severe description. Haemorrhages are very rare. In very mild cases (fatal through some accident, such as laryngo-stenosis) changes may be confined to the epithelium of the convoluted tubules. In more severe cases the change involves also, first, the ascending and then the descending limbs of Henle's loop, and in the most severe cases the glomeruli also may be involved. The collecting tubules almost always remain unaltered. The diphtheria toxin has a special predilection for the renal epithelium, and leaves the renal vessels almost immune. These microscopical observations on the kidney agree with the results previously described which the author arrived at by examining the urinary sediment. Probably it is mainly by the epithelium of the convoluted tubules that the toxin is excreted. The author suggests that since the toxin is excreted by the epithelium of the tubules, probably the glomerular changes noted in some severe cases are not caused directly by the diphtheria toxin, but by some non-diphtherial micro-organism circulating in the blood.

(287) Examination of the Stools. E. Koziezkowsky has worked to improve the methods of the examination of faeces, and deals with some points in the *Deut. med. Woch.*, August 11th, 1904. First, he considers the detection of blood. Since the guaiacum resin test leads to unsatisfactory results, he has paid more attention to the aloin test, and finds that a modification of it gives reliable results. The sources of error lie in the excessive presence of urobilin, chlorophyl, bilirubin, and iron chloride. It is therefore necessary to carry out the test as follows: If the faeces are highly coloured (that is, contain much urobilin) one rubs up a portion in alcohol, and removes the latter by filtration. The residue is then well shaken up with ether, either directly or after evaporation over a water bath, to remove the fats. Then the fat-extracted faeces is treated with glacial acetic acid for one to two minutes, the equal weight of acid as of faeces being used, and to this ether is added. To 5 grams of stools, 5 grams of acetic acid, and about 5 to 10 c.cm. of ether are added. This mixture is allowed to digest, and, if necessary, it must be filtered later. To the fluid one adds at first 1 or 1½ c.cm. of ozonic turpentine; and, lastly, ½ c.cm. of a freshly-prepared 3 per cent. solution of aloin. The turpentine may form a layer above the ether extract, and the blood will be demonstrated by a red ring forming at the junction of the two fluids, or it may mix with the extract, and if blood is present the whole will be tinted an equal red color, or it may sink to the bottom of the tube, and then the red colour will be seen at the extreme apex of the test tube. Before carrying out the examination it is necessary to put the patient on a suitable diet, consisting of milk, flour, bread, eggs, fruit, very little vegetable, and very little fat. This diet is marked by some charcoal at first, so that after the stools lose their black colour, one may safely undertake the examination. Care, however, must be taken that no sources of external or additional haemorrhage are overlooked, such as haemorrhoids, polypi, etc., of the rectum, as well as changes in the nose, gums, lungs, etc. He tested the reaction in cases of gastric ulcer, cancer of the stomach, and controlled it in cases of nervous gastralgia, etc. To determine the quantity of "rest" albumin in faeces, he takes a certain weight of stool, rubs it well with alcohol, filters through a nitrogen-free filter, and washes off with 3 per cent. HCl (sp. gr. 1 to 10). Two equal portions are treated in this way. Both are then placed in closed flasks, and to one of them 50 c.cm. of the digestive fluid (= HCl 10.0, aqua dest. 1,000.0, and pepsin 30.0) is added; while to the other 50 c.cm. of the same fluid, which had been boiled for three-quarters of an hour to destroy the pepsin, is added. The acidity is tested by Meth's test. Both flasks are put into the incubator for twenty-four hours. Then the fluids are filtered, and the free and attached acid is determined by titration with ¼ normal soda solution with

dimethyl-amido-azobenzol and phenolphthalein. Next he deals with a method of determining the length of time which the contents take in passing through the digestive passages. This is done by employing a fixed diet, and marking the beginning of this diet with carmine (0.5 gram). The time from the beginning of the diet to the first red coloration of the faeces is taken as the time occupied by food in its passage through the gastro-intestinal canal. Lastly, he deals with the reaction of the faeces. Instead of testing with litmus papers he prefers to use a 10 per cent. dilution of litmus tincture (aqueous). Two wide test tubes must contain a few c.cm. each of the fluid, and to one a little stool is added by means of a glass rod. By daylight it is easy to determine whether the stool is acid, neutral, or alkaline in this way.

SURGERY.

(288) Suturing and Sutures.

J. von Mikulicz (*Deut. med. Woch.*, September 22nd and 29th, 1904) holds that attention to minutiae of suturing frequently determines the success of an operation. Too often one meets with highly-skilled young operators, who have mastered the steps of the most difficult operations, but whose results are marred by too little attention to the mode of applying sutures and of choosing the material. The surgery of to day demands the skilled suture of each organ in the body except the brain and spinal cord. Bone, tendon, nerve, fascia, muscle, and various organs, all require suture, and it is the skilful surgeon who can feel the exact amount of tension which must be applied to the suture to keep the parts in apposition, without running the risk of cutting through. Buried sutures are deserving of the most care, and certain points must be borne in mind. First, one must choose the suture material according to the degree of resorbability or non-resorbability required, which will depend on the structure to be sutured. Next one has to consider the ease in which the material can be made and kept sterile; next its smoothness and slipperiness, and its resistance against rubbing. Some sutures lend themselves better to being knotted and remaining firm than others, and this also has to be taken into account. Dealing with the essentials of asepsis, he states that practically all the modern sutures are capable of being sterilized, and while such material as silk absorbs fluids, one should be careful not to employ it where there is any internal risk of infection, as in the case of intestinal suture. He always operates in cotton gloves, which can be frequently changed and redisinfected. That one does not lose in skill by wearing these gloves he is certain, and is even of opinion that he can apply a suture more rapidly and more exactly in them than with naked hands. Practice is, of course, essential for rapid and exact application of sutures, and he lays great stress on the method by which students should be taught. In dealing with the choice of material, he states that from an aseptic point of view silver and aluminium-bronze sutures are the safest for sunken sutures, since they are easily sterilized, and, besides being unimbibitionable, they exert a certain degree of inhibition to the growth of micro-organisms. Next comes catgut, which is a great improvement on silk and such-like material, and in stating that he has employed this suture largely during the last few years and has never experienced one suture causing suppuration, he means to give it high praise. Silkworm gut is also trustworthy. When one is dealing with absolutely aseptic wounds one may further trust silk for sunken suture. The next point is the strength of the different sutures. Aluminium-bronze and silkworm gut deserve the first place in this respect. Silk is not much less resistant, but catgut is considerably less so. Reindeer tendon makes very strong sutures, but for its use in such operations as radical cure of hernia it is absorbed within twelve days, which is too short a time to be reliable. Turning to the capability of being resorbed, he places catgut, animal fibres, tendon, fascia, periosteum, etc., on the same level, while metal sutures, with the exception of magnesium wire, and silkworm gut are not resorbed. Silk becomes disintegrated after a time and is eventually cast out, and the same applies to flax and other vegetable material. Where it is desired to hold the edges of the tissues together for not more than one week, and where there is no great tension he advises catgut to be used. When one needs a more reliable support for a longer time silkworm gut or metal are to be preferred. Silkworm gut has, however, one drawback as a sunken suture. It always heals in without reaction, but later it acts as a foreign body, and may produce symptoms of irritation. He finds that catgut which has been subjected to a particular process of "tanning" is, therefore, to be preferred, since he finds that it resists resorption for 83 to 99 days, is as strong as the usual catgut, and is readily sterilized. It heals well in without reaction. This applies especially for radical cures, for suture of facia in the abdomen and for tendons. Dealing with skin sutures, he points out that much care must be exercised here. He prefers catgut or silver wire as material, and states that silk is not adapted to this use. Percutaneous silver wire suture yields very excellent results. This and scrupulous aseptic care help to diminish the risk of ugly scars in the sites of the puncture. A third means to prevent this is to remove the sutures early, if possible on the second day. Kocher has pointed out that if one makes one incision in the direction of Langer's skin lines one can avoid undue tension of the skin, and not only can the sutures be taken out very early, but the scar will remain linear and will not afterwards broaden. He has shown that this is so especially well in his well-known "goitre incision," which is circular.

(289) Flat-foot.

Bossi (*Archiv. di Ortoped.*, An. 21, f. 3, 1904) states that according to statistics flat-foot comes immediately after pes varus in order of frequency, and its correlation with certain races (for example, negroes, Jews, etc.) is well known. Moreover, it seems to be more common amongst epileptics, and may be looked upon as one of the stigmata of degeneration. In congenital flat-foot the muscular apparatus is usually sound, whilst there is generally some alteration in the skeletal parts. Of the many theories which have been adduced to explain its origin, that which receives most acceptance is the mechanical pressure theory, whether acting by direct pressure of the fetal feet or fixation in a faulty position from defective evolution of the lower limb. Certain forms of flat-foot are clearly due to disease of the nervous system—for example, in Little's disease. The usual symptoms and pathological anatomy are fully discussed, and then the author passes on to the discussion of acquired flat-foot. This commonly sets in about early adolescence; either side or both may be affected. Traumatism, disease, or functional changes may act as causes. Very often—and particularly in the functional cases—the venous circulation in the limb is impaired, and inasmuch as CO_2 dissolves the calcium phosphate, and as there is an excess of CO_2 in the blood in these cases, this condition probably assists in the production of flat-foot. Scoliosis is not infrequent in association with flat-foot. The effects of carrying heavy weights with immature bones is sufficiently well known. A full discussion of various views on the pathogenesis of acquired flat-foot follows—how far it is due to articular lesions (osteo-arthritis), how far to muscular lesions (contraction of the peronei, paralysis or contraction of the peroneus longus, etc.), how far to carrying heavy weights (causing relaxation of the ligaments, yielding of the bone or abnormal development of bone). Again, there are discussions as to the relative importance and relative appearance of the symptomatic triad pain, disappearance of the arch and valgism. Finally, there is a full account of a series of experiments carried out by the author. He concludes that the foot is made up mechanically of a series of arches arranged in two systems, the first consisting of two arches hinged together, and the second of three arches. The corollary from this view is that flat-foot can only occur by a yielding of the anterior supports of the arch, inducing a rotation of the calcaneum around its point of support. Further, this causes an elongation of the whole system and a lowering of the anterior tuberosity of the os calcis, followed by flexion, pronation, and reflexion of the foot.

MIDWIFERY AND DISEASES OF WOMEN.

(290) Repeated Rupture of the Uterus.

In preantiseptic times, the maternal mortality of rupture of the uterus was variously estimated at from 89 to 95 per cent. If the fetus had escaped into the abdominal cavity, the accident was even more fatal to the mother, and the child was practically never saved. The accepted treatment was to deliver per vaginam at all costs. If the child had escaped from the uterus, it was brought back through the rent, or mother and child were left to their fate. As regards the modern treatment of this complication by laparotomy, no statistics are

available, but the results hitherto obtained do not appear to be encouraging. All the more noteworthy, therefore, is a case reported by Patz (*Wien. med. Woch.*, August 27th, 1904), in which a woman, aged 29, survived laparotomy for ruptured uterus twice within six years. On the evening of August 6th, 1898, she was admitted to hospital with a scarcely perceptible pulse, and apparently moribund. Labour had begun in the morning, and proceeded normally until 2 or 3 p.m.—five hours before admission. Though the head was visible at the vulva, a practitioner decided to terminate labour with forceps. But, no sooner was a blade applied, than the presenting head disappeared. Per vaginam, no fetal parts were palpable. The abdomen was distended, and the fetus could be felt through its its walls with unusual distinctness. Obviously the child had escaped into the abdominal cavity. Though it appeared improbable that the woman would survive the operation, laparotomy was performed. An enormous quantity of blood and clots escaped. The recently-dead child, weighing 7 lb., was seized by a leg and extracted with the placenta. The laceration involved the anterior wall of the vagina, and extended from the attachment of the bladder vertically upwards through the entire cervix. A spurting artery in the cervical laceration was ligatured. A thin roll of iodoform gauze was introduced through the laceration into the uterus, the other end projecting at the vulva. The laceration of the vagina and cervix and the abdominal wound were closed with silk sutures, and a litre of normal saline solution was injected under the skin of the thorax. Convalescence was uneventful, and four weeks later she was discharged cured. The woman was delivered of her first child with forceps at 22. Four years later a second child was born spontaneously. A year later she had an abortion at the third month. The present was the fourth pregnancy. She was small, with bilateral genu valgum and a generally-contracted rickety pelvis. Evidently the rupture was due to disproportion between the head and the pelvis. If pregnancy again occurred she was advised to have it artificially terminated. But on July 13th, 1902, she was admitted in labour at term. The os was fully dilated and the liquor amnii had escaped. As attempts to deliver with forceps failed, the head was perforated and the child extracted with the cranioclast. She was discharged in good health six days later. On October 9th, 1903, at 9 p.m., she was again admitted in labour. The os was of the size of a crown piece, and the head had engaged in the pelvis. The membranes were intact. The writer hoped to deliver by craniotomy, and instructed the midwife to call him when the os was fully dilated. At 1 a.m. pains suddenly ceased, and no trace of the child could be felt per vaginam. Fetal parts were unusually distinct directly beneath the thin abdominal wall. Half an hour later the abdomen was opened at the site of the old cicatrix. A large quantity of blood was evacuated, the dead child, which weighed nearly $7\frac{3}{4}$ lb., was rapidly extracted with the placenta, and a search was made for the laceration. Against expectation, it was situated posteriorly, and involved the cervix and vagina in an oblique direction from below and to the left upwards and to the right. The former cicatrix was sound. To obviate similar occurrences in the future, the writer ligatured the cervix at a level with the middle of the laceration with an india-rubber tube which included the adnexa, reinforced the ligature with two long needles, and removed the uterus and adnexa above the ligature. A drainage tube was passed out of the vulva through the rupture, which was then entirely closed by sutures, except for a small opening beneath the ligature through which the drainage tube projected. The abdominal wound was closed in such a way that the drainage opening and the stump of the uterus above the ligature were entirely without the abdominal cavity. The ligature separated and the drainage tube was removed on the eighth day, the wound rapidly healed, and five weeks after the operation she was discharged in good health.

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(291) Gastric Ulcers at the Menopause.

A. Bossi (*Centralbl. f. inn. Med.*, July 9th, 1904) has collected 12 cases from Cohnheim's policlinic in Berlin, in which typical symptoms of gastric ulcer first appeared, or, after being latent for years, reappeared at or about the menopause. That gastric ulcer is not confined to young persons, and may occur in both sexes in middle life, is well known; but that there is a connexion between its production and the cessation of menstruation is but little recognized. Crisp has reported 14 cases of perforated gastric ulcer in women, in 13 of which menstruation had ceased or become very irregular. Evidently the frequency with which gastric ulcer occurs at the menopause is due largely to the circulatory disturbances associated with it. There are probably other factors. For instance, Kuttner has demonstrated that uterine irritation may produce congestion of the stomach and predispose to haematemesis. These facts support Virchow's views as to the etiology of gastric ulcer in deficient or abnormal gastric circulation.

THERAPEUTICS.

(292) The Feeding of Infants Suffering from Gastrointestinal Disease.

At the annual meeting of the American Paediatric Society (*Med. News*, Oct. 22nd), Maynard Ladd of Boston read a paper in which he said he had studied the effects of laboratory feeding upon 216 infants with ileocolitis, fermental diarrhoea, and other diseases of the gastrointestinal tract. These infants were under treatment of the clinic for periods varying from one to thirty-one weeks, and the average duration of illness was about seventeen days in the acute cases, while some of the chronic ones had continued for several months before coming under observation. The weight increase of each infant was used as an aid in estimating the effects of the method of feeding upon children of varying ages and stages of development. The infant's weight was taken at the beginning and at the end of treatment, and the ratio of this weight to that of the average normal infant obtained, the result being the weight index. More than half the cases under consideration had a weight development of only 40 to 70 per cent. of the normal when they were first placed under observation. The author divided the results of his observations into four groups, as follows: The first group comprised those infants who made complete recovery from the acute gastric and intestinal symptoms, and whose weight index was maintained or augmented while they were being fed on laboratory milk. There were 109 cases in this group, or a little more than one-half the entire number. There was a gain of 8 per cent. for this entire group, and the greatest average gain per week was 156 grams reckoned from the lowest average gain attained during treatment. The second group included those infants who recovered from their symptoms and gained in weight, yet displayed a loss in weight index. There were 58 cases in this group, and the greatest gain per week from the lowest weight attained was 94 grams. The infants in this group were not as long under treatment as those of the first group, the duration of treatment averaging only 5 9 weeks in comparison with an average of 8.5 weeks of treatment given to the infants in Group 1. The gain made in this second group was not great enough to keep up the weight indices, so that there was an average loss of 3.4 per cent. The third group was made up of those infants whose weight did not increase to any great extent, although in general they recovered from the acute symptoms, gastric and intestinal, for which they came under treatment. Thirty-seven children were included in this division. Eleven cases did not improve under treatment, and no further history has been obtainable in eight instances, so that there may have been a fatal outcome in some of them. The average loss in weight in this group from the lowest point attained was 6.5 grams per week, and the loss in weight index 7.2 per cent. The average length of time under treatment was 3.7 weeks. The fourth group consists of the fatal cases, of which there were 12, so that the average mortality for the whole number of cases under discussion was 5.6 per cent.

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(293) Injections of Iodipin in Gonorrhoeal Rheumatism.

Schuster (*Journ. des Mal. Cut. et Syph.*, August, 1904) has tried injections of iodipin in doses of 10 to 20 grams of a 20 per cent. solution. Iodipin is said to act more slowly than iodides and to avoid the effects of iodism. The author quotes a case of a young man with arthritis of the shoulders, knees, ankles, and spine, who for three years had been treated with drugs and baths. Injections of iodipin were made in the region of the affected parts, but not into the joints. Ten grams were injected every other day, and in four months the cure was complete, except for some stiffness of the neck.

(294) The Treatment of Hereditary Syphilitic Children.

E. Welander states in the *Berl. klin. Woch.*, September 12th, 1904, that an attempt was made in Sweden in 1817 to check the spread of syphilis which up to that time had devastated the country, by introducing free treatment of syphilis in hospitals. This had the effect of making the disease very rare in small towns and in the country, and also in diminishing the attacks in the larger towns. But in spite of this improvement, there are still a number of children who are suffering from hereditary syphilis, and who are a source of danger to the population. He therefore broaches the questions, "How and where are we to treat these children"? The first question is easy to answer, and the author deals with the treatment of the mother during pregnancy and lactation as well as with the treatment of the child directly. It is important to treat the mother during pregnancy, not only to cope with her infection, but also to deal with the fetal infection. Potassium iodide passes rapidly into the fetal circulation, and so does mercury, although not so rapidly and completely as the former. The mercury should not be given internally during pregnancy, nor should it be applied either by inunction or injection, because both have deleterious effects, by increasing the discomfort of the pregnancy in the mother. Welander, therefore, employs the inhalation of Hg, which is carried out by means of the mercury bag or apron. The treatment should be carried out even in cases of old-standing infection, and of course should be intermittent. During lactation, the treatment must be continued, since he has determined that mercury is excreted in the milk. In treating the infant, the same method of application will be found to be the best form. For infants of very tender age, ½ gram of ung. hydrarg. every day or every alternate day should be placed in the sack, and for children of 2 or 3 months 1 gram may be given. He has determined that the mercury is absorbed by this means by examining the blood, liver, kidneys, etc., for mercury in some cases where the children died of an intercurrent illness. One must be careful to watch the urine lest the mercury irritates the kidneys. The question where the treatment is to be carried out is not so easy to answer. As the treatment of syphilis is offered free in hospitals, it is easy to apply the treatment of the mothers during the pregnancy and during the parturition and lactation, and of the infant during the first weeks of life. In well-situated families there is but little difficulty in explaining the danger to the community and to the child itself of neglecting the care and treatment; but in the poorer classes the difficulties are often considerable. Inasmuch as the treatment should be carried out for two, three, or four years after the last symptom, the author considered it necessary to devise a special means of carrying this out. He founded a home for hereditary syphilitic children, and has so far been able to treat some 22 in the home. That he has been successful in removing a dangerous source of further infection is certain, and he hopes that he has also succeeded in permanently curing the children of their disease and rendering them useful members of society. He regrets that the home is so small, but up to the present he has not been able to extend it. Three of the 22 children have died of other diseases (cholera nostras and bronchopneumonia). The remaining 19 have not shown any symptoms of their syphilis since the treatment succeeded in removing the first signs. Many of these have remained from two to three years under observation. A suitable home for the further care of the children has been found for 6 of the children after the completion of the treatment. In conclusion, Welander expresses the hope that means will soon be forthcoming to enable him to extend the home and its sphere of utility.

(295) The Effect of Preventive Inoculation for Rabies.

In recording a case (*Berl. klin. Woch.*, September 19th, 1904), L. Heydenreich leaves it to the readers to discuss whether the symptoms were due to rabies acquired by a bite of a dog or to the treatment. The patient was an active intelligent servant of a rich lady. She was bitten by a puppy, who was kept on the chain in the yard and who was not ferocious. The animal also bit the cook in the same house. A veterinary surgeon who saw the dog could not state that the dog was rabic, but considered that it would be better to kill him. No examination of the dog was made. The bites were quite superficial, and according to Heydenreich not like those of a mad dog. When he saw the patient, four days had elapsed since the bite. Her mistress was very anxious that the girl should be treated by Pasteur's inoculations, and she was therefore sent to the Pasteur Institute in Odessa, which was some 2 kilometres distant from the house. She walked the distance twice a day—that is, she covered about 4½ miles each day. The treatment was carried out for twelve days, but from the sixth day onwards the patient complained of excessive tiredness, in spite of her wonted activity. During the last three days she complained much of vague pains, feeling ill, weakness, and heaviness in the feet. She became very depressed. On June 12th the treatment was discontinued and she was put to bed. Constipation was first noticed, and then retention of urine. On the evening of the 15th she became delirous; slight fever. The patient lay motionless all day long, complained of tenderness in the abdomen; the extremities became cold, and she wandered in her mind a great deal. On the 21st there was complete paresis of the muscles of the face; swallowing became difficult. The lips and tongue could not be moved, even when attempting to eat. She had to guide her food into the fauces with the finger. Epiphora was also noticed. The eyelids could not be completely closed. On the 23rd the pareses began to diminish, and no pain was complained of. Later she complained of fear and of being so sad. These symptoms of depression and half-unconsciousness gradually cleared up, but attacks of pain in the chest and in the back and feelings of inexpressible fear possessed her. On recovering from this stage she developed into a typical melancholic, and her character became completely changed. The mental trouble deepened to amentia, and she died in the asylum with any further ascribable cause, ten months and ten days after the bite. In summing up the illness, Heydenreich points out that although the symptoms were suggestive of rabies, the fact that the first onset was within thirteen days of the dog bite and eight days after the beginning of the preventive treatment, and therefore extremely unusual for a case of true rabies. Cases have been recorded in which the incubation period was fourteen or fifteen days, but in these cases the course of illness was very different and much more acute than the case just described. It is also noticed that cases with a short incubation period follow severe and multiple bites. In the present case there is much doubt whether the dog was really rabic, and the author points out as a significant fact that the cook, who was also bitten, did not receive any treatment and did not show any symptoms. Her bites, although not extensive, were, at all events, worse than that of the patient. Several cases have been reported in which similar symptoms have been noted, but in all these cases the symptoms have been ascribed to the dog-bite and not to the preventive treatment. The author himself believes that the symptoms would not have been so severe and would not have led to the death of the patient had the injections been continued instead of being interrupted after twelve days. He suggests that a more complete immunity would have been gained, especially if the continued treatment had been carried intravenously.

PATHOLOGY.

(296) The Retina in Tabetic Amaurosis.

A. Levi (*Nouvelle Iconographie de la Saltpêtrière*, Juillet-Août, 1904) remarks how scanty are the investigations into the morbid anatomy of the optic tracts, and especially of the retina, in tabes. He reviews what little literature there is, the general conclusion of which is that optic atrophy in tabes is a consequence of malnutrition and atrophy of the ganglionic cells of the retina. This has been deduced from the fact that the atrophic optic nerve contains a larger proportion of diseased fibres at its retinal than at its chiasmal end. There is a fallacy here, as Levi points out, for if the disease process did actually begin in the ganglion-cells of the retina, degeneration would be furthest advanced at the distal ends of the processes of the diseased cells, that is, in the optic fibres nearer to the chiasma than to the retina. After an examination of retinae from 11 cases of tabetic amaurosis, controlled by examination of 4 normal retinae, he comes to the conclusion that optic atrophy in cases of tabes does not begin in the retina; that it is not primarily an atrophy of the ganglionic layer, or of the layer of nerve-fibres, of the retina; for he finds that where blindness has existed for years and atrophy is far advanced in the nerve itself, little or no morbid change is perceptible in either of these retinal layers.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(297) Grocco's Paravertebral Triangle.

Baduel and Siciliano (*Riv. Crit. di Clin. Med*, January, 1904) describe and explain their researches into the causation of this symptom. Grocco's triangle is an area of relative dullness and diminution of respiratory murmur, found at the back of the healthy side of a chest when the patient is suffering from pleural effusion on the other side. The superior angle of the triangle is situated on the spine, at about the level of the upper limit of the effusion; its base is formed by a line from 3 cm. to 6 cm. in length, running along the lower border of the natural pulmonary resonance, and its internal side is formed by the middle line of the back. Within this area the deficiency of resonance is greater the nearer one gets to the base and the inner side of the triangle. Resonance returns when the fluid on the opposite side is removed by aspiration, or is absorbed naturally, and it is lost again when the fluid reaccumulates. All these symptoms are more marked when the pleural effusion is on the right side than when it is on the left. They are caused by any kind of effusion, whether serous or purulent, and in the absence of effusion they are not caused by tumour or by any variety of pneumonia, or by plastic inflammation of the pleura. The importance of Grocco's sign is that it furnishes an additional means of diagnosis between these diseases on the one hand and pleural effusion on the other. Since Grocco described his symptom it has been investigated by numerous authors, who, in almost every case, fully confirm his observations. The authors regret that they have been unable to obtain the body of a patient dying with large pleural effusion. The most satisfactory investigation possible would be by freezing such a body, and afterwards cutting it into sections. In the absence of this opportunity they have experimented on ordinary *post-mortem* room subjects, choosing those likely to be free from disease of the respiratory organs, injecting the pleura on one side, and observing the effects produced on the other side of the thorax. The defect incidental to this procedure is that it is impossible thus to reproduce the slow and gradual accumulation of fluid in an ordinary case of pleural effusion. To produce a condition resembling that existing during life they found it necessary to support the diaphragm by injecting into the peritoneal cavity a 15 per cent. solution of gelatine. As the experiments turn chiefly on the displacement of the posterior mediastinum, it was necessary also to inject with a similar solution the descending aorta, the principal support of the mediastinum. Its consistency and elasticity were thus very accurately reproduced. These preparations having been made, the liquid was slowly introduced into the pleural cavity, with the cadaver in the sitting position. The existence of the triangle was at once verified, and just as occurs in the case of disease during life, the triangle increased in size as the level of the fluid rose, being large, and more distinct when the artificial effusion was on the right side. An aperture being made in the chest wall on the opposite side to that on which was the fluid, it became possible to feel with the hand the displacement of the posterior mediastinum and the gradual increase of the displacement as the injection proceeded. Along with this was an increase in the pressure on the lung, so that when the aperture in the chest wall was made, a part of the lung was pressed out through it. Similar conditions obtaining during life would lead to the expulsion of much of the air in the compressed lung, and thus to a much greater degree of compactness of lung tissue than could be obtained experimentally. The foregoing observations were made on subjects injected (in the pleural cavity) with salt solution. Other subjects received injections of 10 per cent. gelatine solution, and were then treated with formalin, so as to harden all the tissues; horizontal sections were then made at the level of the nipple and at the level of the second intercostal space. A horizontal section through the nipple after injection of the right pleural cavity showed the posterior mediastinum moved to the left of the vertebral column, whilst its normal position in front of the column was occupied by a part of the artificial effusion. The aorta was entirely on the left of the vertebral column instead of being towards the left and in front of it. The heart was almost entirely situated on the left side of the median plane of the thorax. A similar section, after injection of the left pleural cavity, showed a less marked displacement of the mediastinum, the aorta being in the middle line just in front of the vertebral column. Somewhat similar results were furnished by sections made at the level of the second intercostal space. From these experiments the authors conclude that Grocco's sign is due primarily to the displacement of the mediastinum acting both directly and indirectly. A subsidiary cause is the displacement of the heart; and the heart dullness is rendered more perceptible by compression of the lung. The existence of fluid in front of the vertebral column, and in contact with it, must tend to deaden vibration both in it and in the ribs. The authors consider that this absence of vibration extends further outwards at the base of the chest than higher up, because the pressure at the base is both greater and of longer standing. Incidentally the authors direct attention to the danger lest the aorta should be wounded in the course of an exploratory puncture within the area of Grocco's triangle.

(298) Psychoses of Thyroid Origin.

Latarjet (*Lyon Méd.*, September 18th, 1904) believes that the neuroses observed in women, especially at the menstrual periods and at the menopause, are often dependent upon the state of the thyroid gland. He publishes the case of a woman whose mental condition was due, as proved by the result of surgical treatment, to thyroid disturbance. His patient was 51 years of age, looked in good health, had been married at 17, and had two healthy daughters. When 37 years old, she noticed a small tumour above the sternum, which increased for a short time and afterwards remained stationary. With the appearance of the goitre, the woman underwent a change of disposition; she became stouter, more active, and fonder of gaiety. This state persisted until she was 50 years of age, when her husband died. After a period of depression the exuberance became exaggerated. The patient could not bear solitude; she wandered about without object and was in a condition of constant agitation at the menstrual periods, her head felt empty, she became emotional, and she lost both memory and the power of reasoning. There was no sign of Basedow's disease, of hysterical stigma, of epilepsy, or of definite mental degeneration. An incision of 5 to 6 centimetres was made in the middle line of the neck, and two very small adenomata were easily enucleated. These seemed to consist of young thyroid tissue. The wound was left open; the serous discharge was very profuse at first, and persisted to some extent until the completion of cicatrization. The patient was observed for two months after the operation, which was followed by a complete mental transformation. The agitation disappeared, the sleep was sound, and the psychical equilibrium was perfectly restored. Latarjet thinks that to treat cases such as this with bromides and the allied drugs is to waste time and to mask the symptoms upon which a satisfactory diagnosis depends. He lays stress upon the necessity of allowing the operation wound to granulate without sutures, believing that the drainage of thyroid serum is equally as important as the removal of abnormal tissue from the gland. He compares the effect of simple incision over the thyroid to that of laparotomy for tuberculous peritonitis, and insists that examination of the thyroid should be a routine part of the examination of cases of mental aberration, and that surgical interference is just as urgent in the psychical trouble of thyroid origin as it is for such physical symptoms as dyspnoea or dysphagia.

SURGERY.

(299) Enterostomy in Cases of Peritonitis.

Gerhart (*Deutsche Zeitschr. f. Chir.*, Bd. 74, Hft. 1 and 2), in a paper on enterostomy in the prevention and treatment of peritonitis, states that this practice was suggested by the fact that, in his experience, many cases of perforative peritonitis not treated by intestinal suturing, and also cases of acute peritonitis of other origin in which the intestine had been accidentally or intentionally opened, terminated in the patient's recovery. The good results obtained under these circumstances are explained by the assumptions that in many instances of peritoneal sepsis, absorption from the intestinal lumen plays as prominent a part as peritoneal absorption, and that, under certain pathological conditions, the intestinal wall is permeable by bacteria. By establishing

an intestinal fistula and by emptying the intestine the surgeon can, it is concluded, eliminate a source of general infection, and reduce the risk of peritoneal infection caused by the passage of bacteria through the intestinal walls. The results of clinical experience have led the author and his senior colleague, Haffter, to advocate enterostomy and the establishing of a temporary intestinal fistula as a prophylactic operation (*a*) against peritoneal infection of intestinal origin, and also due to general sepsis, in all cases of paralytic ileus, and of intestinal obstruction, in which the cause of such obstruction is unknown or not amenable to direct operative treatment; and (*b*) in patients too exhausted to withstand an operation for the discovery and removal of the cause of obstruction. It is held, moreover, that in a case of acute peritonitis following intestinal perforation it might, under certain circumstances, be found more advisable to stitch the margins of the intestinal opening to the external wound and to establish a fistula than to close the opening by suture. If the opening has been sutured before the development of peritonitis, or if it be impossible to find the opening, or inexpedient on account of the patient's condition to search for it, enterostomy should be performed at one of the seats of election. In a case of suppurative peritonitis treated by laparotomy, if general sepsis be threatened or already developed, a protruded loop of intestine should either be opened and sutured to the external wound, or enterostomy be performed at a seat of election. In a case of septic peritonitis without suppurative exudation into the peritoneal cavity, emptying of the intestine by enterostomy will, the author holds, be found a suitable method of treatment. The intestinal fistula established under such conditions is not a permanent one, and closes spontaneously at the end of the seventh or eighth week. Enterostomy, when performed in accordance with the indications suggested in this paper, is regarded as a safe and simple operation which does not necessitate general anæsthesia, and, when practised at the proper time and in a proper manner, may be the means of saving life in cases in which other methods of treatment are absolutely hopeless.

(300) The Surgical Treatment of Acute Hepatitis.

FAURE (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 28, 1904), in a report on a communication from Denis of Constantinople, discusses the surgical treatment of acute hepatitis. The interesting case on which this report is based presents the following features: A marine came under the surgical care of Denis, with symptoms of severe hepatic infection, suffering from jaundice, fever, and pain in the right hypochondrium, which together with enlargement of the liver indicated acute or suppurative hepatitis. Median laparotomy was performed, and the liver thus exposed found to be enlarged and congested. Denis made several punctures into the swollen organ with the expectation of finding a purulent cavity, but without success. He then closed the abdominal wound, and to his surprise this exploratory operation was followed by an immediate fall of temperature, and by speedy and complete cure of the patient. Faure, in his comments on this case, refers to similar instances reported by other French surgeons of the successful results of simple intrahepatic punctures practised in the course of exploratory laparotomy indicated by severe and acute infective disease of the liver. It cannot be held, he states, that the mere puncture of the inflamed organ relieves congestion to such an extent as to place it in better conditions for spontaneously overcoming its infection, or that the small quantity of blood that is discharged involves at the same time the removal of any number of infective agents. Notwithstanding our ignorance, however, of the mechanism of the action of puncture of the liver in the cases referred to in Faure's report, there can be no doubt, he asserts, of the beneficial results of such treatment. In the discussion of this report opinions were expressed that such results might be due rather to the exposure of the inflamed liver than to the punctures, and it was also pointed out that acute hepatic disease of an infective nature may get well spontaneously, and be treated with success by rest and careful attention to diet.

(301) A Substitute for Rubber Gloves.

AT the annual meeting of the New York State Medical Association, October 17th to 20th (*Med. News*, October 22nd), F. H. Wiggin said that in consequence of the frequency of perforation of the rubber glove used by surgeons a substitute was desirable, and he offered the following as a very satisfactory substitute: R Ether. ℥ xlix; alcohol (96 per cent.), ℥ xlix; celloidin, ℥ j; castor oil, ℥ ss. The hands of the operator were sterilized and then dipped in that solution. This, he said, when applied to the hands soon hardened, and formed a thick, firm, dry elastic coating which did not crack. It gave protection equal to that of rubber gloves, was flexible, and was not easily injured. It was not soluble in water or ordinary alcohol, but it could be easily removed by washing in strong alcohol and ether, equal parts. Moreover, it was cheaper than rubber gloves.

(302) Bone Passed per Rectum.

AT a recent meeting of the North Branch Philadelphia County Medical Society (*Med. News*, October 22nd), Dr. Anna M. Reynolds exhibited a specimen of bone passed per rectum by a woman who six years before had fallen downstairs and struck her left side; it was six months before she felt quite well again. On physical examination the lower rib on that side could not be found, and the specimen looked very much like a rib.

(303) The Heredity and Treatment of Squinting.

H. COHN (*Berl. klin. Woch.*, October 3rd, 1904) holds that Hippocrates's view that squint is hereditary is true. In his experience of forty years, dealing with 27,000 private patients, he has found a large number of convergent stabismus cases—805; of these 23 per cent. showed that there was squint in other members of the same family. After discussing the question as to what is actually inherited in these cases, and as to whether the hypermetropia causes the squint or the squint the hypermetropia, he passes on to discuss the treatment. He advises that glasses should not be given to children under 5 years of age under any circumstances. It suffices to bandage the better eye for half an hour each day in young children. When the children reached the age of 5 years he gives them convex glasses, and teaches exercises with the stereoscope. This does not often really lead to binocular vision, but is the best form of treatment which we have at our disposal. Should a spontaneous cure not appear by the ninth or tenth year, recourse should be had to an operation; but one should remember that as there is no possibility of exact dosage in operation for convergent stabismus, it is impossible to guarantee that the result will be lasting. In his own experience it is very rarely so, the result usually being only temporary cure, and when a case remains well altogether he regards it as due to chance. It is the duty of the ophthalmic surgeon to advise the patient's friends that while a perfect cure cannot be guaranteed, in a large majority of cases the cosmetic result will be satisfactory.

MIDWIFERY AND DISEASES OF WOMEN.

(304) Molar Pregnancy and Chorion-Epithelioma.

J. D. MALCOLM AND R. H. BELL (*Journ. of Obst. and Gyn. of the Brit. Emp.*, December, 1903) report a case of hydatidiform mole accompanied by bilateral cystic disease of the ovaries and chorion-epitheliomatous growths. The patient, when first seen in April, 1901, was 40 years of age, the mother of three children, the youngest born eight years before. She had been in good health up to Christmas, 1900, but then began to lose flesh rapidly. She stated that the only recent date on which conception could have occurred was in February, 1901. After that date a period was missed, and in April she consulted a doctor because of severe haemorrhages from the uterus. An abdominal tumour was found, which resembled in shape and position the pregnant uterus, but which enlarged more rapidly. Malcolm saw the patient in consultation on April 29th, when the upper border of the uterus was above the level of the umbilicus. The lower part of the uterus, behind the cervix, was slightly nodulated, and firmer in some parts than in others. The cervix was hard and firm. Neither fetal heart nor uterine souffle could be heard. It was decided that the patient was not pregnant but suffering from a soft uterine tumour, and she was admitted into the Samaritan Free Hospital. After further examination, in which a uterine sound was passed 5 in. or 6 in. into the posterior part of the mass, the patient's temperature rose, and on the next day was 103° F., the pulse being 150. The os had become soft and dilated, and the patient was now held to be pregnant, an immediate emptying of the uterus being required. At the operation a hydatidiform mole was removed and the uterus washed out and packed. The patient's collapsed state prevented a thorough scraping of the uterus. No abnormal

condition outside the uterus was suspected. After the operation the temperature became oscillating, and on one occasion after a rigor rose to 107°. When the uterus had been carefully curetted the temperature fell, only once afterwards rising above 99 2° F. About the middle of May the patient began to suffer from attacks of pain in the right side of the pelvis, and a tender mass, gradually increasing in size, could be made out in this position. On May 29th the abdomen was opened and a cystic tumour, the size of a large cocoanut, removed. A similar but smaller tumour of the left ovary was also removed. The uterus was big and flabby, and of varying consistence, and it was decided to remove the fundus. On cutting the uterine wall two small reddish-yellow areas were formed, which suggested new growth, and in consequence the whole uterus with its appendages was removed. The patient's convalescence was delayed by the formation of a bedsore, but forty days after the operation she was able to leave the hospital, and has since then remained well. Microscopical examination of the tissues removed showed that the nodules in the uterine wall were typical chorion-epitheliomata. These growths cannot have arisen before the pregnancy of the patient, and her previous rapid loss of flesh was therefore probably due to the ovarian disease. The presence of chorion-epitheliomata three weeks after the removal of a hydatidiform mole is of great importance in considering the causation of such growths. The co-existence of molar pregnancy and of bilateral multilocular ovarian cysts is also of interest, and the authors have studied the literature and noted eight similar cases. These cases suggest a causal relationship between cystic disease of the ovaries and cystic disease of the chorionic villi. The view that a diseased ovum may acquire its pathological tendencies when within the ovary is also strengthened by the occurrence of twin pregnancies, in which one ovum develops normally, while the other degenerates into a hydatidiform mole.

(305) Cancer and Pregnancy in Youth.

KAISER (*Zentralbl. f. Gynäk*, No. 27, 1904) reports the case of a woman, aged 26, in the second month of her second pregnancy. She consulted him on account of haemorrhages following coitus, noted over five months. A hard, deeply-fissured tumour, of the size of a hen's egg, occupied the posterior vaginal wall; the vulva and perineum were free from disease, but the rectal mucosa adhered to the posterior part of the tumour. The uterus was retroflexed and fixed, metastatic deposits were to be felt in the rectum and on the surface of the sacrum. A radical operation seemed out of the question; the tumour was scraped and touched with the cautery. Kaiser, at the same time, dilated the cervix with Hegar's instruments, and removed the ovum, because he believed that pregnancy caused cancer to advance rapidly, and that delay and Caesarean section after the child was viable would involve too much danger in this case. The patient recovered; the tumour was proved to be carcinomatous. In a discussion on Kaiser's case, Leopold admitted that in every case the stage of pregnancy in relation to the extent of the cancer must be taken into account, but found that, as a rule, the obstetrician might wait until term and save the child. The cancer did not appear to grow quicker during the puerperium. Induction of abortion was not, as a rule, to be practised unless the cancer bled a great deal, so as to reduce the patient's strength.

(306) Subcutaneous Emphysema in Newborn Child.

KIRCHGESSNER (*Zentralb. f. Gynäk.*, No. 22, 1904) delivered a child by turning and extraction on account of prolapse of the cord, which could not be reduced. At birth a little swelling was noted in the left half of the thorax, the child was asphyxiated but revived within ten minutes. The swelling had become much larger by that time, bandages were applied to the thorax. Within three days the swelling, which was due to subcutaneous emphysema, had greatly increased, reaching to the right side, but by the tenth day the child was quite free from any sign of the lesion and in good health. No injury to the clavicles or ribs could be detected, the *x* rays showed no injury. Probably there had been intrauterine respiration during extraction, and in an expiratory effort the air could not escape, so that increased pressure in the lungs caused yielding of its substance and interstitial emphysema. The air must have passed under the skin through the anterior mediastinum.

(307) Malignant Non-Visceral Pelvic Tumour.

POLLACK (*Monats. f. Geb. u. Gynäk.*, September, 1904) reports a case of cylindroma of the pelvic connective tissue. A patient, whose age is not given, had noticed abdominal swelling for six years. Two tumours, each as big as a man's head, irregular in shape and deeply lobulated, were found springing from the pelvic organs; their tissue was very friable. They clearly sprang from the parametrium, and opened up the broad ligament. Both tubes and ovaries, as well as the uterus and cervix, were intact. A gauze tampon had to be applied, and when it was changed there was free haemorrhage. It seemed to be a large-celled, round-celled sarcoma, with very pronounced hyaline degeneration of its numerous vessels.

(308) Ruptured Cornual Pregnancy.

CLARENCE WEBSTER (*Amer. Journ. Med.*, June, 1904) reports a case where a woman was almost moribund from intraperitoneal haemorrhage; ruptured tubal pregnancy was diagnosed. She rallied and was operated upon. A ruptured left cornual pregnancy was detected; the cavity of the cornu did not communicate with that of the other half of the uterus, which had already been the seat of pregnancy. The corpus luteum was in the left ovary, so that the sperm-cell must have passed up the right cornu, through the right tube, and across the pelvic cavity, fertilizing the ovum of the left side. That ovum then entered the left tube and passed into the left cornu, where it developed. Emil Ries, in discussion, reported two similar cases where operation proved successful. One patient was three months pregnant, the other six months. In both the cornual cavity was quite cut off from the rest of the uterus, with which the cornu was connected by a solid fibrous band.

(309) Yeast in Leucorrhoea of Pregnancy.

AUDEBERT (*Rev. de Gynéc. et de Chirg Abd.*, May-June, 1904) states that beer yeast, already known to be beneficial in gonorrhoeal vaginal discharge, is, in his experience, most efficacious in any form of leucorrhoea in women. He has employed yeast in 29 cases, 26 being cured and the remaining 3 improved. As a rule the discharge disappears in about three weeks (10 in 29 cases). In the majority (14) of Audebert's cases the colpitis was of the granular type, in 3 it was gonorrhoeal. He assures us that even when there was generalized gonococcal infection or deep cervical lesion the yeast treatment was followed by good results.

THERAPEUTICS.

(310) Errors in the Treatment of Pulmonary Tuberculosis.

AT a meeting of the Chicago Medical Society held on October 5th Norman Bridge said that the current method in the treatment of the pulmonary form of tuberculosis averaged better than those of old. Results showed this fact. The mortality of tuberculosis had been reduced in less than three decades by probably 29 per cent. of the former figure, or from 14.25 to 10 per cent. of all deaths. These results were not accidental, but were clearly due more to the better management of the pulmonary form than to any other influence. He said it was somewhat easier for the practitioner to think that quinine or cod-liver oil, or creosote, or a change of climate, some inhalations of drugs, or a so-called antitoxin was good for tuberculosis than it was to understand that the great first purpose of all treatment was to increase the physiological power of the patient to resist the disease and destroy or circumscribe its course within his own body. With all our study and experimentation, and notwithstanding all our theories and hopes, this truth stood as the one cardinal postulate of the subject up to the present moment. The greatest and most common error had been against this truth, and the results had been correspondingly sad. To give creosote to the extent of lowering the digestive power, or to give serum injections to the production of phlegmons and higher temperature, or to give coal-tar drugs for fever, while the patient was allowed to go on in his usually unhygienic course of life without advice of correction, was an error so disastrous in its results that not even confession and penance were sufficient atonement. And all practitioners had sinned in some of these directions, and some of them grievously. Every patient should be constantly supplied with outdoor atmosphere, in such abundance that every successive inspiration brought a fresh dose of air to the lungs and none from previous expirations. Every one should have long hours of rest; if feverish, the rest recumbent should be almost or

quite constant, for exercise increases the fever. The digestive powers should be made to do their best under the most careful supervision and direction toward improving the nutrition, and possibly also the resisting power of the patient. Practitioners have believed the patients who say they could not eat because they had no appetite, forgetting that a patient could usually be led to take the right food as well as to take medicine. Practitioners have agreed with the patient's theory that an appetite is necessary and that food must be adjusted to the appetite; whereas, the truth was that in tuberculosis the food ought to be adjusted to the patient, and the appetite to be ignored almost completely. A tuberculous patient was never helped to resist the disease by muscular development above his normal standard. A consumptive's body should always be well and equably clothed, and never be hampered or restricted by garments. Snug corsets and conventional gowns were an abomination for the tuberculous woman. Worn as they were by most such women, they frequently tipped the scales in favour of death rather than recovery. Pulmonary tuberculosis was a long disease, and required a long and steady course of the best hygiene and management to ensure final and lasting recovery. Climatic treatment of tuberculosis had rightly become popular the world over; yet he was compelled to the belief from abundant observation that of all the remedies prescribed for the tuberculous, one of the most unfortunate and unsatisfactory was climate as it was usually employed. Going away for climate was one of the most abused and misused of all the great measures for the sick; and thus what ought to be a blessing unspeakable, often became a pitiable deception and a vision of death. This misfortune was largely an error of the people, but the profession was greatly at fault about it also. In more than half of the instances where it was advised it was for the wrong kind of cases, or at the wrong time, or for the wrong people; that is, with poor regard for all the circumstances in the situation. The author mentioned a list of faults of climatic treatment. Finally, the surest proof of skill and usefulness of a physician was his capacity to turn to the benefit of the sick the simple and homely facilities that were all about them. The best results with the fewest tools was the test; and no more inviting task was ever offered to physicians than to bring to the thousands of tuberculous victims, who were unable to go properly to the better climates, and at or near their homes, the benefits of the modern treatment of this disease. And it could be done, either in their own houses or in home sanatoria, and done superbly in a large proportion of cases. If it were done, it would reduce the mortality another 10 per cent., and this ought to be done.

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(311) The Preventive Treatment of Appendicitis.

At a recent meeting of the Mississippi Valley Medical Association (*Med. News*, November 5th), William M. Harsha, of Chicago, stated that from available figures it would seem that appendicitis was more frequent in America than elsewhere. This inference was on the assumption that the mortality-rate was much the same in England, Germany, and France, where modern methods of medical and surgical treatment were practised, and where statistics were or should be reliable. In England and Wales, with a population of about 33,000,000, there were 1,244 deaths from appendicitis and perityphlitis in 1901, or 28 per million. In 1902 there were 1,485 deaths, or 45 per million. In Illinois, with a population of about 5,000,000, there were in 1903 471 deaths from appendicitis, or 94 per million. In Chicago alone, which represented nearly two-fifths of the population of the entire State, there were 249 deaths in 1902, and 260 in 1903, being at the rate of 140 per million. The same high death-rate was approximated in other cities of the United States, especially in similar latitudes. New York City had, in 1903, 439 deaths, or 123 per million. Statistics of death from this disease in various cities, both at home and abroad, were given. Passing to the consideration of the causes that might be influenced by treatment, the author believed errors of diet were the most frequent. The disease occurred most frequently at the age and in the sex in which faulty habits of eating and errors of diet were most common, from ten to thirty years. It was common to see attacks follow an immoderate meal, or the ingestion of indigestible articles of food. If one had transgressed in either of these ways, and felt the approach of an acute digestive disturbance, the rational treatment was the prompt evacuation of the whole digestive tract, keeping it empty, and urging strict recumbency. Cholera morbus ushered in many cases of appendicitis, which were regarded as the primary trouble. The acute digestive disturbance, irritating the mucosa, was followed by stenosis of the base of the appendix, and the infection ensued. This Harsha said he had observed formerly in a considerable general practice. While faecal concretions or foreign bodies were less frequent causes of appendicitis than was formerly supposed, they caused probably 10 per cent. of cases. As to treatment, the individual case must be considered by itself, its etiology carefully studied, as well as any peculiarity, and treatment adapted accordingly. In one case it would be necessary to regulate the habits of eating, in another to cultivate immunity from colds or proper habits of exercise, while digestive disturbances of various kinds would require attention in others. In all the proper hygienic conditions should be secured to keep the vital resistance up to the highest point. During the past six or seven years he had advised these measures as prophylactic after one attack in which there had been no operation, and, so far as can be known, he believed recurrence had not occurred in over 20 per cent., most of these being in young people, partly because of the greater frequency in the young, and in part, he believed, because of lack of intelligent co-operation on the part of the patient. The consensus of opinion was that more than 50 per cent. of the cases not operated upon recurred.

PATHOLOGY.

(312) The Pathogeny of Pernicious Anaemia.

Syllaba (*Arch. Gen. de Med.*, September 20th, 1904) holds the view that pernicious anaemia is a definite clinical entity caused by an unknown but powerful haemocytolytic toxin. He bases his arguments on 8 cases and some experimental work. The course of the disease is characteristic. It is generally chronic, in some cases slow but progressive, in others remittent with grave exacerbations and supervening remissions. In favour of the view that it is due to increased destruction of the red cells, there are the coloration of the excreta, the alterations in the urine, the increased destruction of albuminoids, the alterations of the blood, the pigmentation and siderosis of the organs and jaundice. In one patient who had jaundice and grave pernicious anaemia, the blood serum was red stained, and contained haemoglobin and bilirubin; 5 other cases were bled and the serum examined, in each it was much darker than normal, and contained bilirubin, but no haemoglobin. Bilirubinaemia is a constant symptom in these cases; it may produce marked jaundice. The haemoglobin is separated by haemolysis and dissolved in the plasma; it is retained by certain organs, especially the liver and spleen, and is transformed into derivative pigments—bilirubin, haemosiderin, and fuscine. The haemosiderin and fuscine lead to pigmentation and siderosis of the organs in which they are deposited. The bilirubin formed in excess may be partly reabsorbed and produce bilirubinaemia and icterus. Absorbed from the intestine it increases the urobilin. Haemoglobinaemia depends upon the intensity of the haemolysis and the relative insufficiency of the liver. Rarely is the destruction of red cells so great that the liver is not able to eliminate the dissolved haemoglobin. Experiments were made on dogs with various haemocytolytic toxins—for example, pyrogallol, cyclamine, toluylene, diamine, etc. These toxins in some animals provoked anaemia, in others plethora, or anaemia and plethora might alternate in the same animals. This paradoxical result the author regards as due to a struggle between haemolysis and blood formation. The same agent which destroys the red cells causes plethora by the products of destruction acting powerfully on the blood-forming organs. These organs showed marked reactive alterations. The older the animals and the stronger the poison the less the reaction. These experiments explain the remittent cause, and show that the haemolysis postulated from clinical experience may be caused by a chronic toxaemia. The author sums up: there are toxaemias of which the first effect is a considerable destruction of red cells in the general circulation. This excites the blood-forming organs to powerful reaction, and a struggle takes place between the two forces. If destruction is less active there is restitution of the reds; this is what the author thinks occurs in bronzed diabetes and its allies. If there is more active destruction a grave anaemia results; if then the forces at times are equal improvement obtains.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

(313) Occupations and "Rheumatic" Pains.

At a meeting of the New York State Medical Association (*Med. Rec.*, October 22nd), James J. Walsh stated that in dispensary and office work, nothing was more frequent than to have patients complain of pains, especially on rainy days, which they believed to be rheumatic. Chronic rheumatism was supposed to be one of the most frequent diseases, and the explanation had been given that the circulation was too passive. As a consequence, there was nervous irritability, and the blood was not nutritious. During the past five years there had occurred a decided reaction regarding the so-called uric acid diathesis; at the present time, very few scientific men considered uric acid of any etiological importance in the production of pathological conditions of the body, except, possibly, gout. In all these cases, when the causation had been determined, treatment was made easy. In many of the so-called rheumatic patients pains in the shoulder was not infrequent. He had three such cases in one day, one being a motorman. The second man had an occupation in which he used the deltoid muscle, using a hammer. The third man complained of pain in the left hand and forearm, especially on the ulnar side. He constantly used the muscles supplied by this nerve. In all these three cases in all probability a neuritis had been set up, for which he could not give a satisfactory reason. It was possible that the ingestion of alcohol might prove the cause. Lumbago was common among sailors as well as among iron-workers and moulders. So-called rheumatic pains were noted among those who suffered from lead, alcohol, diabetic, syphilitic, etc., poisons which exercised an influence upon the nerves. Sciatica was common in those who bent the body at the hips, as in shovellers. Motormen, who were accustomed to stand on one foot, suffered from lumbago. Dentists who used the old engines were found to limp. Those occupations which caused people to stand upon the foot would have pain referred to the same leg, which would be worse on rainy days. These pains that were worse on rainy days were probably due to the wearing of old shoes, which failed to give the foot proper support. Dampness and rheumatism seemed to be associated in all minds. Sciatica was often found in those who sat in awkward positions.—William M. Bemis said he had had a great many cases of cramps in the legs and feet, and had been at a loss to know how to account for them. He finally found that supporting the instep would relieve these cramps. He had seen cases of general neurasthenia due to pain in the back, and the probabilities were that some pressure upon the nerve low down at the sacro-iliac junction had been present, and this was relieved by support and holding up the upper portion of the body, thus relieving pressure upon the tender nerves.

(314) The Diagnostic Use of Tuberculin.

Bandelier (*Beit. zur klin. der Tuberk.*, Bd. ii, Heft 4) strongly recommends the use of tuberculin as a method of diagnosis of early phthisis. A physical examination, however carefully and skilfully conducted, in many cases does not definitely determine whether tuberculosis is or is not present, and, even when the history is suggestive, it may only suffice to increase the probability of the presence of active disease. The diagnosis between an early and a healed tuberculous process is often of especial difficulty, and the great value of the tuberculin method is that it draws a definite line of distinction between the patient with active tuberculous disease and the non-tuberculous patient, or the one with inactive tuberculosis. It cannot be denied that in exceptional cases injections of tuberculin have roused into activity some quiescent forms, but for the most part the complications ascribed to the use of tuberculin have followed its unskilful administration, or have arisen independently of it; the author, who daily makes twenty or more injections, has personally never known it do serious harm. To avoid complications, injections should never be made unless the patient has been found by examination every two hours during the preceding days to be free from fever, and the first injection should not be made at night, lest a slight reaction occurring during sleep should be overlooked, and a severe reaction should follow the larger dose next given. Some of the opponents of the tuberculin method deny the accuracy of the results obtained. It is, of course, true that, unless a local reaction be obtained, the reaction to tuberculin only shows the presence of active tuberculosis somewhere in the body without definitely locating it, but other considerations will usually make it clear whether or not the lungs are the organs attacked. The pseudo-reactions to tuberculin are not difficult to distinguish from typical reactions when Koch's method of administration is followed, and when it is remembered that a cumulative action is characteristic of tuberculin. The preliminary dose given is, as a rule, 1 mg., the next dose 5 mg., the third 10 mg. A single rise of temperature following any of the smaller doses is not held by itself to denote a true reaction. The dose of 10 mg. is not exceeded, because larger doses may cause reaction in non-tuberculous patients. Even should no reaction follow the first injection of 10 mg. of tuberculin, a second injection of the same amount should be made, or some cases will be overlooked. The author emphasizes the importance of having a uniform method of administration everywhere if accurately corresponding results are to be obtained, and he gives statistics in support of his contention. Of 500 of his own patients who received injections during a period of two years, 34.6 per cent. reacted to 1 mg. of tuberculin, 31.2 per cent. first reacted to 5 mg., 19.6 per cent. reacted to the first injection, and 7.2 per cent. to the second injection of 10 mg. The maximum dose recommended by many authorities is from 3 to 6 mg., and it is clear that with such doses a large proportion of the author's cases would have been unrecognized. Thirty-seven patients, or 7.4 per cent. of the whole number, did not react; these were discharged from the sanatorium, with instructions to report themselves to their own doctors, and during two years not one of them reappeared at the sanatorium. The history given by many of them suggested that tuberculosis had been present at some period, but had been recovered from. To test whether 10 mg. was the highest dose giving trustworthy results, larger doses were injected into 8 patients who did not react to 10 mg.; of these, 4 reacted weakly to 20 mg., and 2 did not react even to 50 mg. Tuberculin was again administered at the end of sanatorium treatment to 173 patients whose symptoms had completely disappeared, and 114 of whom were held to be completely cured; 43 were found to no longer react. Bandelier had an opportunity from twelve to twenty months later of examining 22 of the 43 patients, and 20 of them appeared to be permanently cured.

(315) Haemorrhagic Tuberculous Myocarditis.

Guido Sotti (*Giornale della R. Accad. di Med. di Torino*, February-March, 1904) gives an account of the *post-mortem* examinations of two rare cases of myocarditis, showing that (1) amongst the different forms of tuberculous myocarditis there is a distinct haemorrhagic form; (2) haemorrhagic tuberculous myocarditis may show itself by isolated foci in the cardiac muscle, or by a disseminated tuberculosis diffused throughout the whole substance of the heart; (3) haemorrhagic tuberculous myocarditis may be associated with tuberculous pleurisy and pericarditis presenting no haemorrhagic characters.

SURGERY.

(316) Surgical Intervention in Cases of Tumour of the Caecum and Colon.

Hartmann (*Bull. et Mém. de la Soc. de Chir.*, No. 32, 1904) has in the course of the last three years operated in 10 cases of tumour—in 6 malignant, in 4 non-malignant, of the caecum and colon, with 2 deaths and 8 recoveries. The following rules are observed by the author in the surgical treatment of cases of this kind: When there are symptoms of obstruction, apart from a condition of extreme exhaustion in which a very rapid operation is indicated, the establishing of a simple artificial anus seems to the author to be inadequate, and less satisfactory than the practice of resecting the growth and fixing the two ends of the divided intestine to the external wound. This practice of resecting the growth and forming an artificial anus at the same time is held to be more prudent in cases of obstruction than that of resection, followed at once by restoration of the intestinal canal, and also than that of merely establishing a false anus. In cases in which there are no indications of obstruction the author would be guided by the seat of the lesion. If the caecum alone be involved he would resect the growth and bring together the divided portions of intestine, whilst in cases in which any other portion of the large intestine is involved he would act in the same way as in

cases complicated by obstruction. In dealing with the caecum it is easy, the author points out, to limit very closely the field of operation to the iliac fossa, and to prevent infection of the general serous cavity. In such cases he would establish lateral entero-anastomosis and drain the deep portion of the wound. By such practice it is anticipated that the previous high rate of mortality noted in the surgical treatment of tumour of the large intestine will be considerably reduced.

(317) Scraping the Bladder.

ROLANDO (*Rif. Med.*, September 27th, 1904) reports the case of a woman, aged 23, who contracted gonorrhoeal cystitis two years ago. No adequate treatment was carried out at the time, but a year later the bladder was washed out with nitrate of silver, but without much benefit. At the present time she is much wasted, constantly tormented with hypogastric and perineal pain. Micturition frequent (every half hour) and painful. Urine weakly acid, not fetid, much mucus and some pus, no blood. The vesical capacity was 25 grams. Rest in bed and sublimate injections gave only slight relief. The patient was then chloroformed, the bladder well washed with boracic acid solution, the urethra dilated, and a Volkmann's spoon passed along, and the bladder scraped and fully irrigated. A catheter dipping into boric solution was kept in for ten days, and then finally removed. There was some haematemesis in the first twenty-four hours, and a sign on the second day. But the ultimate result was excellent, so that when the patient left the hospital she was definitely cured, urinating only five or six times in the twenty-four hours, and suffering no pain. Certain experiments carried out in animals to see how far scraping was followed by permanent deleterious effects on the vesical mucous membrane showed that there was no reason to fear this untoward result, as the epithelium is rapidly and promptly renewed.

(318) Treatment of Carbuncle by Extirpation.

REBOUL (*Arch. Provinc. de Chir.*, No. 10, 1904) advocates extirpation in dealing with certain varieties of carbuncle, as he believes that such treatment will certainly arrest the evolution and diffusion of the infective process; that pain will thus be promply and completely abolished, and that repair will be effected much more rapidly by this than by other methods. In instances in which primary union cannot be established, and it is found necessary to apply secondary sutures, or to allow the wound to heal by granulation, a more supple and less unsightly cicatrix is formed after this than after other plans of treatment. Free and complete excision is not applicable in every case of carbuncle, and the author points out that the operative indications and contra-indications recognized in the treatment of this infective condition ought always to be considered. Extirpation by means of the knife is held to be absolutely indicated in cases of ligneous carbuncle, of carbuncle of the upper lip, and all other forms of this affection in which surgical treatment is contra-indicated by albuminuria, diabetes, by extreme exhaustion, and advanced age.

(319) The Time for Operative Intervention in Appendicitis.

MURPHY (*Amer. Journ. Med. Sci.*, August, 1904) in an article on his personal experience of two thousand operations for appendicitis, deals, amongst other points of practical bearing, with the indications for operative treatment at different stages of the disease. The time for operative intervention may, it is pointed out, be divided into four stages: (1) Within the first forty-eight hours; (2) in the actively increasing inflammatory process from the third to the fifth day; (3) the period of subsidence of the acute inflammation; and (4) in the quiet stages between attacks. The most favourable time for operation, the author holds, is within the first forty-eight hours of the attack, and before perforation of the appendix or infection of the tissues surrounding the appendix. The diagnosis, he believes, can be made with accuracy in a great majority of cases before the end of the first twenty-four hours, and almost universally within the first forty-eight hours. Most surgeons of greatest experience agree in this, that from the symptoms and clinical course of the attack in the first forty-eight hours it is impossible to predict with any degree of certainty what the subsequent course of the case will be. The danger of operative treatment in the early stage is regarded as scarcely greater than that of an exploratory laparotomy. An operation performed in the second stage and during the increasing or spreading inflammatory process must be a limited one, and aimed almost exclusively at the relief of pus tension. The author is convinced that the great mortality which has been reported as resulting from operations in the second stage may be attributed to excessive manipulation and flushing, to the separation of adhesions, and to prolonged operation. Surgical treatment in the third stage, in which the inflammatory process has subsided, or the process of absorption has been retarded, is not at all so urgent as in the first or second stage, but the surgeon must bear in mind that the presence of pus is always an element of danger, and not feel content until it has been removed. The author argues in favour of appendectomy on every patient who has gone through an acute attack. The reasons given for operating in the fourth or intermediate stage are these: (1) After an attack of appendicitis the patient is exposed to the risk of recurrence; (2) more than 60 per cent. of the cases operated on by the author in the intermediate stage had had more than one attack; (3) in a large proportion of the cases in which the operative treatment consisted only in incision and drainage of the abscess, the attacks recurred; (4) the pathological changes, such as adhesions, stenoses, etc., following a primary attack, very much favour a recurrence; (5) even if there be no risk of recurrence of the inflammatory conditions, the results of the first attack of inflammation are likely to produce sufficient disturbance of the digestive tract to demand an operation for their prevention; (6) recurrent infections are, practically, as dangerous as primary attacks; (7) the appendix can be removed in the intermediate stage without danger.

MIDWIFERY AND DISEASES OF WOMEN.

(320) The Oxytoxic Power of Sugar.

KEIM since 1898 has maintained that an easy method of expediting the expulsion of the fetus at term is the administration of sugar, and particularly lactose. A recent *Thèse de Paris* on this subject by Marquis has incited him to redirect attention to the matter, and to make some researches on the action of sugar on the uterine muscle (*Arch. Gén. de Méd.*, September 27th, 1904). Muscular work, he points out, is produced by the combustion of hydrocarbons, particularly glycogen, and the glycogen of the liver is mainly derived from the alimentary hydrocarbons. Mosso and Paoletti have pointed out that small or medium doses of sugar, from 5 to 60 grams, develop in fatigued muscle the maximum amount of energy. According to Keim's observations, the rapidity of the absorption of sugar varies from 10 to 30 minims, and depends on its being taken in the intervals between meals and on its solution being but little diluted. Owing to the normal hepatic insufficiency towards the end of pregnancy the sugar taken is absorbed most readily then, but is assimilated with little rapidity because general nutrition is slackened. The following results were obtained after giving 25 grams of lactose dissolved in a little water at half-hourly intervals for three doses. Before the beginning of labour it had no influence on the pregnancy. After the beginning of labour, but before the dilatation of the cervix, with the system saturated with glycogen, its use is as a general tonic. At the beginning of dilatation, if this period tends to be prolonged and has lasted several hours, when presumably the accumulated glycogen has been used up, sugar rapidly increases the intensity and frequence of the uterine contractions. Marquis, who observed this 21 times in 22 cases, considers that the best time to give it is in primiparae after three and a half hours and in multiparae after two and a half hours of this stage. When dilatation had progressed considerably (to the size of a 5-franc piece) the administration of sugar greatly accelerates the progress of labour. In a multipara, for example, who had always had long labours of twenty-four to forty-eight hours, the uterine contractions were greatly accelerated ten minutes after the ingestion of 25 grams of lactose, so that the labour, which had already lasted fifteen hours, was terminated in one hour. In the presence of uterine inertia in the later stage sugar helps the expulsion of the fetus by increasing the contractions and giving tone to the abdominal muscles. The value of sugar as an oxytoxic is increased by its non-medicinal character, unlike ergot and quinine, and by its non-toxicity, also from its rapid action, its influence being not only on the uterus but on the muscles of the abdominal wall and the

muscular system generally, and in that it is always obtainable and within the reach of all.

(321) Ruptured Interstitial Pregnancy Simulating Obstruction.

VINEBERG (*Amer. Journ. Obstet.*, May, 1904) relates a case where the patient was 27 years of age, and had not borne a child for six years. The period had been absent for two months, when a violent attack of pain in the right iliac fossa occurred. There was vomiting, and next day the abdomen was markedly distended and rigid. The tongue was dry, bearing a dirty fur, the pulse 140, the temperature 102.5°. No mass could be felt in Douglas's pouch nor in the lateral fornices, but a considerable enlargement of the uterus with indistinct fullness on the right side of its fundus could be defined. Rupture of the pregnant uterus was suspected. Abdominal section was performed and blood, amniotic fluid, and a fetus of the fourth month were found floating about amidst the intestines. The whole fundus of the uterus appeared as though blown off. Total hysterectomy was performed and the patient recovered.

(322) Appendicitis and Pyosalpinx.

PÉRAIRE AND BENDER (*Bull. et Mém. de la Soc. Anat. de Paris*, April, 1904) publish a case where a woman, aged 20, suckled her child for fifteen months, the period continuing regular all the while. Then a violent attack of abdominal pain and vomiting set in, and evidence of inflamed appendix was present. There was a tender, soft body in the right vaginal fornix. An operation was performed, and signs of severe, though localized, peritonitis detected. There was pus on the surface of the appendix, which adhered to the right tube, much inflamed and thickened. Both were removed, with the right ovary, which was undergoing cystic degeneration. There was pus in the tube, as well as in the appendix. The surface of the ovary was covered with membranous deposit. Péraire speaks of this case as an example of acute appendicitis with concomitant salpingo-oöphoritis, but suspends his judgement as to which was the primary disease.

(323) Preperitoneal Fatty Tumours in Women.

MICHEL (*Zentralbl. f. Gynäk.*, No. 41, 1904) reports a case of lipoma of the abdominal wall diagnosed as an ovarian cyst. The patient was a nullipara, aged 57, of small stature, and lean to a marked degree. She was subject to bronchocele, which had recently increased. She complained of complete prolapse of the uterus, noticed for about three weeks, whilst the lower part of the abdomen had been enlarging for three years. A somewhat dense, spherical tumour was found extending above the umbilicus, for about two fingerbreadths. There appeared to be fluctuation. The uterus and vagina were completely prolapsed, the appendages could not be defined by palpation. When the abdominal incision was made great masses of fat protruded before the parietal peritoneum was reached, and it was at once clear that the tumour was a lipoma entirely outside the peritoneal cavity. Enucleation was effected without difficulty, although the growth burrowed into the pelvis. In detaching the lower portions from its connexions, the bladder and uterus were drawn up to their normal level, and no damage was done to any viscera. The parietal peritoneum which formed a capsule for the posterior part of the tumour was as thin as a spider's web. A plastic operation was performed for the prolapse. Recovery was uninterrupted. The tumour weighed 9 lb., and was a pure lipoma free from sarcomatous elements. Michel adds some information about the literature of the subject. At least five such tumours have been mistaken for ovarian cysts, as soft fat seems to fluctuate on pressure. They also simulate mesenteric cysts, solid tumours of the renal capsule, gravid uterus, and in sickly children tuberculous peritonitis. Dettinger removed from a boy, aged 6, a soft lipoma as big as a child's head, which reached from the umbilical region to the symphysis, and was very tender, the skin over its surface was quite movable and not inflamed. It was made up of three lobes one of which occupied the prevesical space. Diagnosis from lipoma of the omentum and from retroperitoneal fatty tumour may be difficult. Preperitoneal lipoma, when developed above the umbilicus, has been known to cause attacks of pain simulating gastric disease. This was a marked symptom in two cases under Kisch, both elderly males of good position. The fat herniated through gaps in the fascia transversalis, and could be reduced. Diagnosis between this condition and ventral epiplocele is hardly possible in such cases.

THERAPEUTICS.

(324) Prophylactic Use of Quinine.

WENDLAND (*Arch. f. Schiffs und Prop. Hy.*, Bd. viii, Heft 10) has received reports from 41 Europeans in New Guinea who have taken quinine for the prevention of malaria. Many of them took the quinine only at irregular intervals in inadequate doses, and received no benefit. The chief methods of administering quinine for purposes of prophylaxis are (1) Koch's method of 1 gram of quinine on each of two consecutive days at intervals of ten days; (2) Plehn's method of 0.5 gram given every fifth or every fourth day; (3) 1 gram given once a week, or two doses of 0.5 gram given on two consecutive days once a week, and four doses of 0.1 to 0.25 gram given every day. The last method is not customary in New Guinea, and no examples of it are given. Only four people followed Plehn's method, and no definite conclusion as to it could be arrived at. Two out of the four had each an undoubted attack of malaria while under treatment, one described a probable attack, and the fourth (who remained free from fever) had only taken quinine for seven weeks. One gram of quinine given once a week, or 0.5 gram twice a week, do not protect from malaria. The author himself on his first arrival in Kaiser Wilhelmsland had two attacks of malarial fever within two months in spite of taking regularly 1 gram of quinine every week. One person who took the double dose of 0.5 gram had remained well for a year. Eight out of the 41 persons followed Koch's method; two had no attack while taking quinine, one for ten months, another for four months, and a third had one slight attack only in fifteen months; a fourth remained well for four months, but then discontinued the use of quinine, and promptly sickened with malaria. Two unsuccessful cases are explained by the fact that the patients stopped taking quinine at intervals, by way of experiment; another because during an attack of malaria an insufficient amount of quinine was taken, and the patient therefore suffered from relapses, and a fourth from a combination of the two causes. The author himself treated by Koch's method seven natives who came from a malaria-free district, and sickened as soon as they were within reach of infection; all of them remained free from malaria while taking quinine. In applying the method, Wendland would give the quinine every eighth and ninth days, or every ninth and tenth days after consideration of the individual case. None of the patients who followed Koch's instructions suffered from blackwater fever; indeed, the 9 out of the 41 who were attacked by haemoglobinuria had all taken doses of quinine too small to protect them from malaria. The older residents in the tropics appeared to have become more sensitive to the side-effects of quinine in small doses. In one case 1 gram of quinine gave rise to a tremor of the hands, which interfered with the patient's work, in another to diarrhoea-like stools, and in another to bladder symptoms. The author gives the quinine, as a rule, at about five o'clock in the evening, an hour before a meal, that is, when the stomach is empty. He does not believe that the prophylactic use of quinine can be made compulsory, but recommends that a course of instruction on the subject should be given to officials before they come to the tropics. His conclusions as to Koch's method of administration are: (1) That by it the most effective protection against malaria can be obtained; (2) that it has no injurious effect upon an otherwise sound organism; and (3) that it will greatly contribute to diminishing the prevalence of blackwater fever.

(325) Diet for the Tropics.

AT a recent meeting of the Medical Association of the Greater City of New York (*Med. News*, November 12th), Harvey W. Wiley, Chief of the Bureau of Chemistry, United States Department of Agriculture, read a paper on the proper diet for the tropics. Experience has shown, he said, that with a change of environment the character of the food must also be changed. If it were true that the activities of the human family were the same in all climates, then the quality of food necessary to furnish energy would be practically the same from the equator to the poles. In point of fact, however, human activity is greater in the temperate zones than it is either at the tropics or the poles; hence the amount of food used up as energy is greatest in temperate zones. The great variant in food is that part of it which is necessary to furnish heat. As the quantity of food for furnishing heat is largest in the polar region and smallest at the equator, tropical foods should be less of a heat-

forming character than those used in the temperate zones, and especially those used in the polar regions. The kind of food which especially furnishes heat is represented by the fats and oils, which differ somewhat from the carbohydrates in that the latter are active both in building tissue and in furnishing heat and energy. As the amount of radiation or loss of heat by radiation is less in the tropics than in either of the other zones, the oils and fats should form only a moderate portion of the diet in the tropics. Furthermore, as the degree of activity is usually less by reason of the character of the climate, the quantity of matter necessary to repair waste tissue is evidently less in the tropics, and hence the quantity of nitrogenous food should be less in tropical than in temperate climates. It so happens that nature provides very abundantly in each zone the character of food which is best suited for that region. Thus, in the tropics the indigenous fruits supply most freely the character of food which seems best suited to the nourishment of the people. A fruit diet, as is well known, is one in which nitrogenous and fat elements are reduced practically to a minimum, while sugar and starch are far more abundant. The Bureau of Chemistry has lately taken up a study of many of the tropical fruits, and a table showing the composition of a number of the most common of these was presented. The principal oil food of the tropics is found in the cocoanut and their chief starchy food is derived from the cassava in some of its numerous varieties. The prevailing characteristics of the natural food of the tropics is found in the excessive quantity of sugar which they contain, or, as in the case of cassava, of starch. The amount of protein is very small, and the amount of oil is, with the exception of the cocoanut, not marked. On the whole, it appears that the natural tropical food is one composed of a large excess of carbohydrates, in which sugar predominates. The use of food suitable to the environment is one of the conditions necessary to the preservation of health, and those who go from temperate to tropical climates should be impressed with the importance of gradually changing the character of their diet from the highly nitrogenous one which is characteristic of the temperate zones to the highly carbohydrate diet which is characteristic of the tropics.

(326) Electrotherapy in Diseases of the Eye.

Ludwig Mann (*Zeit. für Diät. und Physik. Therap.*, November 1904) discusses the treatment of eye diseases by electricity, a treatment which has fallen into disrepute during the last 20 to 30 years, although before that time it had able advocates. He was led to study the subject not only by the results obtained by earlier workers, but also from a consideration of the fact that new methods of electrical treatment have become available in recent times. It has, for instance, only of late become recognized that galvanic currents of great strength can be use for a long time at a sitting with excellent results in the treatment of affections both of motor and sensory nerves, and that these currents can be applied to the head without risk, so long as the apparatus is a good one and the strength of the current fairly constant. A study of the earlier proceedings shows that the strength of current formerly used in eye work was probably not greater than from 1 to 2 milliampères, or even later workers have not gone beyond 3 milliampères. The author holds that only those parts of the nervous system can be successfully treated which are within reach of electrical irritation, and from this he explains the differences of result obtained in the electrical treatment of cord lesions on the one hand and peripheral nerve lesions on the other. It is well known that by application of the galvanic current to a nerve, the electrical irritability or electric tone of the nerve is charged, or looked at from a different standpoint, the electro-chemical molecular constitution of the nerve is changed, and that the nerve does not immediately return to its former electric tone or to its former molecular constitution. It is therefore conceivable that by repeated application of the current a permanent change in the nerve may be induced, and on these grounds the author lays down as necessary conditions for successful treatment of a nervous organ: (1) That it must be electrically irritable and, (2) that it must be capable of proof that a change of electrical irritability is present immediately after the application of the current. The eye nerves fulfil in a marked degree the first condition, and repeated proof has been obtained that normally they fulfil the second condition, and it is known the field of vision and the colour sensation are both altered immediately after the application of electricity. A systematic examination of the effects of the electric current on the eye in disease has still to be made. The author has himself treated twelve cases of eye disease by galvanization, the cases including one of arterio-sclerotic atrophy, one of neuritic atrophy, one of hemianopsia, two of retrobulbar neuritis, three of intoxication amblyopia, and four of tabetic atrophy. The strength of the current employed was as a rule 10 milliampères; one case of tabetic atrophy, and one of intoxication amblyopia showed no improvement, but the other ten cases all gave positive results. The subjective changes were marked, and nearly all the patients declared that they could see more clearly. The central vision was examined and was found to improve at each sitting. Between the sittings there was some retrogression, but not back to the initial point. On Snelling's tables an improvement of from $\frac{5}{200}$ to $\frac{5}{70}$ would be observed at a sitting. In a case of tabetic atrophy treated from the 5th of May to the 21st of July, the acuity of vision rose from $\frac{5}{200}$ to $\frac{5}{50}$. Still more marked improvement was obtained in a case of arterio-sclerotic atrophy where the vision rose from $\frac{1}{10}$ to $\frac{1}{3}$ during one month. Improvement both in the colour sense and in the extent of the visual field was also observed. A further proof of the effect of treatment was obtained by measuring the sensitiveness to light by means of a condenser before, during, and after the application of the galvanic current. It was found repeatedly that the sensitiveness to light rose steadily during the application of the current, fell to some extent, though not to its former level, as soon as the current was discontinued and then began to fall gradually. Every care was taken in these experiments to shut out errors due to the carelessness or fatigue of the patients. The author admits that eye affections run so irregular a course that a great many experiments will be needed before positive conclusions are reached.

PATHOLOGY.

(327) Chloroma.

Dock and Warthin (*Trans. of the Assoc. of Amer. Phys.*, 1904) report a new case of chloroma with leukaemia, and have made a critical study of all the cases of chloroma which have been placed on record since 1893. They describe chloroma as a tumour-like hyperplasia of the parent cells of the leucocytes, primary in the red marrow, the periosteum being involved only secondarily. As leucocytes, either atypical or corresponding to one or other of the normal types, may appear in the circulating blood in varying numbers, chloroma is to be classed with the leukaemias. The essential difference between chloroma and other forms of leukaemia is the more marked neoplastic character of the former, and the formation of green metastases and infiltrations. The atypical hyperplasia of certain elements of the bone marrow leads to a crowding-out of the erythroblasts and a consequent lessening of red cell formation. Chloroma is therefore associated with severe anaemia; but this anaemia, while it may resemble pernicious anaemia in many ways, is essentially an anaemia of deficient haematopoiesis, and not one of excessive haemolysis. The cause of the green colour is unknown.

(328) The Intermediary Metabolism of Uric Acid, etc.

Mendel and White (*Amer. Journ. of Phys.*, p. 85, vol. ii. 1904) say it is well established that not all the uric acid that is either introduced into the body or formed within the body is eliminated in the excretions. Some varying amount is destroyed within the body, and the different tissues evince different powers in this regard. Of late there has been actively revived the theory of the synthetic formation of uric acid in mammals; but this hypothesis rests on even more slender a basis of facts than does the view that uric acid is a primary rather than a secondary product. Mendel and White have for some time worked at the appearance of allantoin in the urine of the cat and dog. That this allantoin is not always present in the urine is admitted, and it is rather regarded as an escape of ordinary intermediary products when certain substances are taken or formed in excess. The authors find that the intravenous injection of urates into the cat and dog occasions the excretion of allantoin more constantly when they are introduced into the portal circulation than when they are injected directly into a peripheral vein. This excretion of allantoin is markedly interfered with by the administration of sulphonal, which appears directly to diminish the elimination of allantoin. The liver appears to be the most active seat of allantoin formation.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(329) The Passing of Neurasthenia.

AT a meeting of the Medical Society of the County of New York (*Med. News*, October 8th), Charles L. Dana read a paper bearing this title. He said that he was associated with Beard when he introduced the word "neurasthenia," and at that time he considered it, as he did still, a useful word; unfortunately, however, a number of affections had come to be included under it which might well merit a more definite designation given them in the course of the development of diagnosis. Neurasthenia replaced a series of even more indefinite terms, as dyspepsia, latent gout, hypochondria, hysteria, the spleen, the vapours, liver troubles, or the apparently more scientific yet scarcely less definite designations, lithaemia, oxaluria, and even vaguer terms. The word "neurasthenia" itself, however, had come to impede progress somewhat by making practitioners satisfied with hasty diagnosis. Dana's attention was first called to the too wide application of the word "neurasthenia" by having patients who were evidently suffering from melancholia tell him frequently that they had suffered some time before from neurasthenia or nervous prostration. Careful investigation of these cases seemed to make it clear that many of the hypochondriacal states of middle and later life, which were really of melancholy nature, were made to appear less serious to patients by the comforting term "neurasthenia." Of a series of 100 cases of melancholia, one-third of them had suffered from previous attacks which had been diagnosed as nervous exhaustion. In all of these apathy, retardation, difficulty, and slowness of thought were present. The real ailment was evidently recurrent melancholia. The difficulty in the diagnosis was the differentiation between the psychoses and the neurosis. Beard laid considerable stress in many cases of neurasthenia on the presence of unreasoning fears. For these he invented many of the names by which they have since become familiar—"misophobia," "siderophobia," "acrophobia," and the like. In the severer forms these patients were really insane. The basis of their condition was evidently a psychosis and not a neurosis. It might be spoken of as a neurasthenic insanity. There was a term, however, for this which is coming into more common use—phrenasthenia or psychasthenia. General practitioners were familiar with one form of this so-called sexual hypochondria, in which patients got a fixed sexual idea that their sexual powers were seriously impaired, or that they were suffering from loss of manhood. In women there were hysterical conditions, evidently of mental or nervous origin. Many of these might be spoken of as abortive types of exhaustion psychoses. When young persons became queer and lost interest in their work, and failed to have the ordinary interests that young persons of their state in life enjoyed, it was the custom sometimes to speak of their condition as "neurasthenia." Such persons might run away from home, or run away from school, or insist on staying home from school, pleading that they were unable to work. In these cases the difficulty was mental and not neurotic. Of late years the insanities of adolescence had come to be studied more than formerly, and the serious condition known as dementia praecox (precocious dementia), might be preceded by pseudo-neurasthenic symptoms. Paranoiacs often suffered from symptoms that were not manifestly psychical, and yet were due to their congenital mental condition. Depression was not uncommon, and often was the keynote by which these cases were recognized from true neurasthenia. A certain number of physical conditions that were very different from neurasthenia might be confounded with it when the symptoms were incipient and obscure. In young people the status lymphaticus, with the phlegmatic condition sometimes consequent upon it, might prove difficult of recognition. In older people, arteriosclerosis might give rise to the tired feelings, the sluggish mental operations, the ready occurrence of fatigue and the general discouragement which was sometimes considered to be one of the most prominent symptoms of neurasthenia. During the next ten years, as the result of more careful diagnosis, the use of the word "neurasthenia" would probably disappear completely, or certainly to a very great extent, from serious diagnosis. In discussing Dana's paper Rockwell said that while many groups of nervous symptoms with psychic manifestations had been grouped under the word neurasthenia, in Beard's mind there seemed to be one ailment that was pathognomonic of the disease. This was some form of phobia, or morbid fear. When patients suffered from this and were unable to control it, there was often found a physical basis in a tremor evidently originating in the nervous system, and the symptoms were corporeal rather than mental. For this group of cases the word "neurasthenic" should still be preserved. Robert T. Morris said that surgeons saw many cases of neurasthenia, and Dana's explanation that they were psychoses rather than neuroses was helpful. Another interesting feature was the declaration that migratory fever—what the Germans call *Wanderlust*—which sometimes made young folks run away from home, and which seemed to be a sort of reversion to the migratory instinct that occurred so commonly in birds and in a few animals, was of psychic origin. Martin pleaded for the use of the word "neurasthenia" for charity's sake. There were many patients and their friends who were satisfied with the diagnosis of neurasthenia, when perhaps the true condition was a slight mental aberration. So many persons, however, suffered from slight mental aberrations that it would be too bad to label them all. As had been said, "Nearly all the world is cracked, but some succeed in concealing the crack better than others." The use of the word "psychosis" would inevitably lead to the suspicion of insanity and to unfortunate consequences, especially to the arousing of prejudices. Dana, in closing the discussion, said that major psychoses must be confined in asylums; minor psychoses, however, could well be treated quite apart from the prejudices as to insanity, and quite successfully.

(330) The Mode of Turning, in Walking, of Organic Hemiplegics and Spastic Paraplegics.

L. J. KIDD contributes a note on this subject to the *Review of Neurology and Psychiatry* for November. He has watched some hundreds of cases of organic hemiplegia and spastic paraplegia with the object of determining to which side the patient turned round in walking. In fully 99 per cent. the patient spontaneously turned to the spastic or more spastic side when told to walk to the end of the room, turn round, and come back. In many of the cases the gait was tested thus two or more times; in no case did the patient turn to the opposite side to that chosen at his first trial. In the very small minority (less than 1 per cent. probably) there was not in a single case the slightest doubt, from a consideration of other physical signs, that the condition was organic. He has never seen a functional hemiplegic turn round to the affected side. As far as his one year's experience on this point goes, he looks upon von Schuller's phenomenon as a diagnostic point of the highest importance. He thinks he will not be going in excess of the facts if he enunciates the following propositions: (1) If a spastic hemiplegic or a spastic paraplegic turns round in walking to the affected or the more affected side, an organic lesion is present; (2) if he turns to the sound or less affected side, the case is either one of functional or of organic affection. If the latter, there will be no difficulty in deciding in its favour by a careful physical examination. A point of much interest and of possible importance, says Kidd, arises out of his observations. In the few cases (five or six) he has seen during the last twelve months of what is often called "hemichorea," the patient in every instance turned to the affected side. He thinks von Schüller's phenomenon may have a much wider range than that of hemiplegia, and that a wider and longer experience will very likely show that in cases of unilateral weakness of organic origin the patient usually turns to the weaker side. He urges clinicians to watch, in testing the gait of all nervous cases, to which side the patient turns, especially in those that show unilateral weakness, or spasm, or stiffness. Observations are needed also to decide whether flaccid organic hemiplegias follow the rule of the spastic cases.

SURGERY.

(331) The Mortality of Appendicitis.

AT a meeting of the Mississippi Valley Medical Association (*Med. News*, November 5th) Channing W. Barrett, of Chicago read a statistical paper on this subject which was accompanied by a series of tables. Table 1 showed that Chicago still had a mortality in appendicitis

about equal to 0 01 of the mortality from all causes. Table 2 showed that the percentages of female mortality from appendicitis varied very little from the percentage of female mortality from all causes, and that appendicitis was to be looked for as common in the female, notwithstanding the old belief that it was rare. Table 3 showed the greatest mortality at the best period of life, early adult life, the greatest number dying at any one year of age being 22 at the age of 19 years, the average age for all deaths being 26.54 years. Table 4 showed that leaving out the chronic cases, the average duration of the disease in the 372 cases in which the time was mentioned was 8⅝ days. Murphy's mortality cases showed that the average time after operation until death was 2 8 days. This demonstrated that his vast number of fatal cases were operated upon at the end of the sixth day, while all authorities conceded that an operation on the first or second day was safe and desirable. Table 5 showed that the most frequent cause of death from appendicitis was suppuration of the appendix, caused by perforation, gangrene, or passage of the infection through the wall and peritonitis; and, further, that adhesions and obstruction were common. Many cases did not have the advantage of hospital treatment or an operation. An early diagnosis was more desirable, yet the Bureau of Vital Statistics considered that a diagnosis was not made at all in 105 cases; a few of the remainder were made by the coroner. Some were made *post mortem*, and one could never know how many were made too late for any operation to save life. The long, but only partial, list of vague diagnoses copied from the death certificates showed that in all probability some cases escaped detection. The author submitted the following conclusions: (1) An early diagnosis is of the first consideration. (2) All troublesome appendices should be removed without waiting for an acute attack. (3) All acute cases should be dealt with surgically in the interval between the onset of appendicitis and the dangerous rupture, without waiting for pus outside the appendix, for peritonitis for adhesions, or for a possible but remote interval. (4) Cases of perforation or gangrene, with localized abscess, should be operated on, with drainage or removal of the appendix, according to the judgement of the operator. (5) Cases with perforation or gangrene without a wall of adhesion are in still greater need of an outlet for the infection to lessen the tendency of infection to travel inwards. (6) Price, Murphy, Hawkes, and others have shown a better percentage of recovery by the operative treatment of acute perforative peritonitis. (7) A case of acute appendicitis should be operated upon at any time if the patient's condition will admit of an operation, unless the case is rapidly and beyond a question of doubt convalescing. In this latter case we should wait until all acute symptoms have passed. (8) Healthy appendices should be left alone. (9) Proper treatment does not contraindicate the use of stomach lavage, or the withholding of food, and when proper, these things should be employed, with or without operation. (10) Life is not the only consideration. The time of cure and after-conditions are important. A case going through an acute attack without operation is saved by the adhesions. Adhesions are life-saving for the time, but they may be death-dealing afterward. The waiting treatment favours adhesions; early operation avoids them. An early operation sends the patient home in from ten days to three weeks. Twelve cases treated by the rest treatment, reported in the *Journal of the American Medical Association*, June 22nd, 1902, showed an average of 60½ days from the onset of the disease to the discharge of the patients from the hospital.

(332) The Treatment and Histology of Roentgen Ulcers.

Baermann and Linsar (*Münch. med. Woch.*, Nos. 21 and 23, 1904) describe 8 cases of Roentgen ray ulcer treated by transplantation of pedunculated skin flaps. Thiersch's epithelial grafting is useless. Regarding the histology of these ulcers, examination shows that the surface vessels are, to a large extent, destroyed, and in the deeper layers a marked endarteritic process can be seen, the vessels being much narrowed in lumen; the connective tissue has a swollen appearance, and stains badly. The ulcers treated by transplantation were examined histologically. Shortly after the operation numerous young vessels proliferated into the badly-vascularized tissue, and the histological features of the connective tissue became distinct. At the end of four to six weeks excised portions showed the ordinary appearances of scar tissue. Damage to and destruction of blood vessels appears to be the chief factor in the pathogenesis of these ulcers, and this explains the difficulty of getting them to heal and the futility of the ordinary epithelial graft. At the edges of the ulcers there is often considerable epithelial overgrowth, but on the ulcer surface the epithelium cannot establish itself. In their second communication the authors describe certain researches which give experimental proof of their contention that in these cases the vessels suffer chiefly and primarily.

(333) A New Operation for Varicocele.

Vince (*Journ. de Chir. et Ann. de la Soc. Belge de Chir.*, No. 6, 1904) describes a novel procedure for the radical cure of varicocele, which he has practised with good results in the course of the past four years. Opposed to the practice of venous resection, except in cases of very large varicocele, and objecting to free removal of the scrotum on account of the risk of haemorrhage, this surgeon has been led to rely mainly on partial resection of the cremaster. This, he points out, is the suspensory muscle of the testicle, the contraction of which approximates the gland to the pubes and thus facilitates the return of blood. Whilst elevating the testicle it compresses the whole surface of the venous plexus, and by this direct pressure drives the blood towards the pelvis. By shortening this muscle the surgeon will not only assist the useful effect of its contraction but will also suspend the testicle in a good position. The following are the different stages of the author's operation: Incision of the integument from the external inguinal opening to the upper pole of the testicle; longitudinal section of the fibrous sheath of the cord over the same; longitudinal section of the exposed cremaster and isolation of the spermatic cord, which is held over to the outer side of the scrotum; the cremaster having been compressed by two long forceps applied at a distance of about 6 cm. from each other, the whole of the intervening portion of the muscle is cut away; the two margins of the resected cremaster are brought together by a continuous suture, and the spermatic cord is replaced over the shortened muscle; the margins of the incised fibrous sheath and of the wound in the skin are brought together by sutures. The cremaster, the author points out, varies in thickness in different subjects, but is always developed to a degree permitting its recognition.

(334) The Treatment of Brain Tumours.

Einar Brunniche, in a graduation thesis presented to the University of Copenhagen, had embodied a careful review of some 209 cases of cerebral tumours. Amongst these were 17 cases of tuberculous masses, 11 due to syphilitic changes and 125 new growths. The diagnoses were verified either by operation or *post mortem*. In 14 cases the tumour was localized sufficiently to permit of operation being advised. Radical operations were undertaken in two instances; one patient was cured and the other was considerably benefited. In 4 cases, palliative operations were undertaken and of these, 2 were much improved, 1 living for seven years after the operation. Brunniche considers that with improved technique, as well as a possible better localization of the tumours, the operation offers a degree of success which medical treatment cannot in any way hope to attain.

MIDWIFERY AND DISEASES OF WOMEN.

(335) Cardiopathy and Uterine Fibromyoma.

T. Wilson (*Journ. of Obst. and Gyn. of the Brit. Emp.*, vol. vi, No. 2) has observed the frequent coexistence of functional and organic affections of the heart and of fibromyoma of the uterus—an association of conditions of which numerous isolated instances have been previously given, and which has been discussed in some textbooks. Strassmann and Lehmann found that 40.8 per cent. of 71 patients with myomata presented objective changes or marked functional disturbances of the heart, and Fleck came to an almost identical conclusion after examining 325 cases. The subject may be studied either from the pathological or clinical side. At the Birmingham General Hospital there are accounts of ten autopsies carried out on patients who died after operation for fibroids, and in four of them some pathological condition of the heart or large vessels is described. In three the form of degeneration was a mixture of brown induration and of fatty degeneration, and in the fourth fatty degeneration alone. The evidence of direct connexion between the cardiac and uterine conditions is not very convincing, especially as there had been in

most of the cases some additional factor which might in itself have led to the degeneration, but the coexistence of the cardiac and uterine lesions in 4 out of 10 cases is at any rate suggestive of some link of causation between the two. Of 16 cases of fibromyoma seen by the author in the early part of the year, 7, or 43.7 per cent., gave objective evidence of changes in the heart or circulatory system, and a similar state of things was present in about 46 per cent. of the 72 cases of fibromyoma on which he operated during the preceding eleven years. These cases included 1 of adherent pericardium, 6 of valvular disease, 14 of myocardial affections, and 12 of heart murmurs which were probably haemic. A history of rheumatic fever was present in 3 out of the 6 cases of valvular disease, and in a large proportion of all the cases there was some other disturbing factor as well as the fibroid. The presence of a uterine tumor may react upon the heart in one of several different ways—for example: (1) Respiration may be embarrassed, and direct pressure made on the heart and large vessels by a fibromyoma of large size; (2) degeneration of the kidneys may be induced by pressure on the ureters; (3) long-continued anaemia due to menorrhagia often leads to defective nutrition of the heart walls; (4) a fibroid may act through the medium of the nervous system, cerebro-spinal or sympathetic, and give rise to disturbances of the functions of the circulatory system; (5) the heart may possibly hypertrophy to meet the extra demand made upon the circulatory organs by the presence of enormously enlarged vessels in the neighbourhood of the tumour, or the fibroid may set up a condition of essential hypertrophy, or the fibroid and the hypertrophy of the heart may both depend on some common, but as yet unknown, factor; (6) in a patient already the subject of valvular disease the extra work due to the presence of a fibroid may lead to a rapid failure of compensation. The author recommends that in every case of fibromyoma of the uterus a careful examination be made of the state of the heart and vessels, and that where there are physical signs or serious symptoms of circulatory disturbance which do not readily yield to medicinal treatment, a radical cure of the uterine tumour be undertaken. Where dilatation or degeneration is already present, the patient should be treated by rest in bed before the operation. Where there is menorrhagia and also cardiac weakness the use of ergot is contraindicated, as being likely to lead to further embarrassment of the heart's action. After successful removal of the uterine tumour the prognosis of the accompanying heart disease becomes distinctly more favourable, and very remarkable improvement is often observed.

(336) Hydrocolpos and Imperforate Hymen in Infant.

Commandeur (*L'Obstétrique*, July, 1904) observed this condition in a very robust female infant which weighed over 8¼ lb. at birth, on the next day the midwife observed that when it cried a protrusion like a prolapse appeared at the vulva. The urethra was patent and the anus and rectum normal. The tumour at the vulva was surrounded by a groove and on close inspection the hymen was seen to be imperforate and pushed forwards by the mass. An incision was made from behind the urinary meatus to the posterior fourchette and 3½ fluid oz. of a white viscid fluid escaped. It had been secreted by the vaginal mucous membrane, but the uterus was not dilated—a complication met with in some cases of dilated vagina with imperforate hymen and watery contents. In haematocolpos the uterine complication is yet more usual. Commandeur's patient recovered.

(337) Fibroma of Abdominal Wall diagnosed as Ovarian.

Füth (*Zentralbl. f. Gynäk.*, No. 37, 1904) publishes a case of some importance, as the tumour was diagnosed as an intraperitoneal growth even after careful examination under anaesthesia; he further observes that Olshausen has already recorded a similar error. Füth's patient was 48, unusually old for a subject with this class of tumour; she had not been pregnant for twenty-seven years and had noticed enlargement of the abdomen for one year, her neighbours believing her to be pregnant. The period remained regular and the patient, annoyed by suspicions, consulted three doctors who all diagnosed ovarian tumour. Admitted into the clinic of a university, the diagnosis was confirmed, indeed the shape of the tumour was very like that of a solid ovarian fibroma. Under anaesthesia the right ovary could not be detected on palpation; this appears to have confirmed the diagnosis, whilst the small extent of mobility of the tumour was attributed to parietal adhesions. At the operation the tumour was found to be entirely external to the peritoneum, it sprang from a kind of pedicle connected with the anterior sheath of the rectus and weighed a little under 6 lb. It was made up of very dense fibrous tissue with much fat in its peripheral part, but apparently no sarcomatous elements. The incision was drained and the result was satisfactory.

THERAPEUTICS.

(338) Serum Treatment of Typhoid.

M. Einhorn (*Zeit. für Diät. und Phys. Ther.*, October, 1904) reviews the subject of the serum treatment of typhoid fever, and has himself treated by this means 10 cases of the disease. The particular form of serum used was Jez's anti-typhoid extract, which is claimed to be a specific treatment for typhoid and an aid to diagnosis. It is said, also, that Jez's extract can be given uninterruptedly throughout an attack; that it leads both to a lowering of the temperature and strengthening of the pulse; that it shortens the duration of the attack and diminishes or absolutely neutralizes the action of the typhoid toxine. Einhorn gave the serum for the most part subcutaneously, in doses of 6 c.m. to 12 c.m. daily until the temperature remained below 38° C. Occasionally he gave it in smaller doses by the mouth. The injections were made as soon as the diagnosis was established beyond doubt, in no case earlier than the ninth day. Seven of the 10 cases gave a positive Widal's reaction, and the remaining three presented all the other signs of typhoid, such as swelling of the spleen, roseola, etc. They were either severe or moderately severe cases—one was complicated by otitis media and two by double pneumonia. All the cases recovered, and the author arrived at the conclusion that (1) the serum treatment did not in most cases cut short the attack; (2) that on the first or second day after the injections were first made a remission of fever set in—about 1° to 2° greater than before—and that the remission was of larger duration; the general condition, and especially the sensorium and nervous symptoms, showed marked improvement, so that sleeplessness, restlessness, headaches, and delirium almost completely disappeared. It is possible that even better results might have been obtained if the serum treatment had been begun earlier in each case. The only side effects of the injections were that in 2 cases a transitory erythema was observed at the site of the injection, and in a third a rigor followed the injection.

(339) The Diatetic Value of Sanatogen.

Benno Chajes, assistant in Senator's Clinic at Berlin, in a paper entitled Refractometric Estimation of Proteids as a Control of Therapeutic Feeding (*Therap. d. Gegenwart*, October, 1904), says that a few months back H. Strauss and he in a paper on Refractometric Estimation of Proteids in Human Blood Serum and its Clinical Signification, referred to the clinical value of this method after Strubell, Grober, Reisz, had taken up the question. They were able by means of this method to determine the proteid contents of the blood serum with accuracy sufficient for clinical purposes, with a single drop of blood. It can, in particular, be used for the determination of an abnormal dilution of the blood serum in cases of heart disease, blood and kidney diseases. This method is also adapted for use in experiments by which the effect of a particular diet on the proteid contents of the blood serum is studied. It immediately occurred to them to supply the organism with large quantities of proteid and to observe the effect. Experiments were made to determine the effect of a diet rich in proteids on the proteid contents of the blood serum of a series of patients suffering from the most various complaints. The patients were given daily 40 gr. to 45 gr. of sanatogen, which consists of 95 per cent. casein, and 5 per cent. glycero-phosphate of sodium. This preparation has, in the author's experience, had a very beneficial effect, and can be taken in large quantities for a prolonged period with ease. Then Chajes estimated the refraction point of the blood serum for a period of eight to fourteen days, according to the case, before the sanatogen diet was taken, in order to determine accurately the degree of possible variations in the proteid contents of the blood serum, and exclude other influences. He took the blood from the patient always at the same time—shortly before the midday meal—and thus again avoided accidental variation. They used Abbe's refractometer, and collected the blood taken from the finger in a glass capillary tube, both

ends of which were then closed by heat. The tubes were left upright at the ordinary temperature of a room, and the next day were opened with a sharp-edged file at the place at which the serum stood. This then either flowed out on the prism or was projected on to it by means of a small suction tube. The experiments were carried out at a temperature of 17°. Chajes examined in all 9 cases, and only chose patients in whom no alteration of the blood was due to their disease, and who remained at least three weeks (the shortest time the experiments lasted) in hospital. Again, all cases were excluded in which, through the presence of sugar, proteid, or retention nitrogen, the refraction could be altered or affected. He also in some cases gave the sanatogen intermittently, in order to see if any alteration in the blood serum was thus produced. In a series of cases an increase of proteid contents in the blood, according to all appearances due to the sanatogen diet, occurred. The increase varied from 18 to 200 mg. per 100 c.cm. Excluding 3 cases in which the increase was only 18 to 30 mg. per 100 c.cm., and was probably due to normal variations or mistakes, there remains 6 cases in which an important increase occurred. In regard to all the experiments it must be remembered that the improvement in the condition of the patients, and their stay in hospital, may have had an influence on the increase of proteid contents in the blood serum, though it is not very probable that this was so in all cases. The authors conclude from these experiments that a diet containing large amounts of easily assimilated proteid (in this case sanatogen) produced, in a series of cases, an increase in the proteid contents of the blood serum.

(340) Agurin.

AGURIN, a compound salt containing 60 per cent. of theobromine, has been in use as a diuretic for the last three years. It can be obtained in the form of a powder or in tablets, the usual dose being 1 gram three times a day; it is easily soluble in water, has a salt taste, and an alkaline reaction. Heinrichsdorff (*Therap. Monat.*, October, 1904) has given it to twenty-eight patients suffering from anasarca, oedema or ascites, with good results in many of the cases. The patients treated could be divided into three groups according as the heart, the kidney, or the liver was the organ affected. The cases in which the use of agurin is especially indicated are those of dropsy due to heart disease and Heinricksdorff found that cases of cirrhosis were absolutely uninfluenced, while of the 2 cases of kidney disease which improved under treatment, one was complicated by marked arteriosclerosis, the other by myocarditis. In every instance agurin was given by itself and not until the effect of a few days' rest in bed with some indifferent medicine had been tried. Only 4 out of 17 cases of dropsy due to heart disease did not respond to the agurin treatment; in one of these the drug caused nausea and vomiting and its use had to be discontinued, in another the patient died on the second day, and in the remaining two the patients had been previously treated with heart tonics and diuretics and after agurin had been tried and proved useless, all the other heart tonics and diuretics were given without result. In many instances the improvement was striking: in one, for instance, the output of urine increased in a few days from between 300 to 400 c.cm. per day to a maximum of 3,500 c.cm. Nausea and vomiting occurred in 9 cases, but in only 3 to such an extent as to forbid the use of agurin; in 3 out of the 9 cases the vomiting was uraemic in origin. The effect of agurin becomes apparent during the first few days of its administration, usually on the first day. In the majority of cases the amount of urine was increased during the whole time in which agurin was given and in two of the three instances in which this was not the case, the dropsy disappeared before the quantity of urine excreted fell. It is doubtful whether the drug acts primarily upon the heart or the kidneys, but during its use the pulse becomes more regular, full and slow, and the blood pressure rises. It should be given alone, without heart tonics, which usually act best when the dropsy has been removed. Diuretin and agurin produce similar results and agurin forms a useful substitute for diuretin when the latter gives rise to vomiting. It also possesses an advantage over diuretin in that it contains no salicylic acid, a compound which is known to have an irritating effect on the kidneys.

PATHOLOGY.

(341) Variations in the Agglutinating Properties of the Blood in Typhoid Fever.

AXEL JORGENSEN (*Habilitations-schrift*, Copenhagen, 1904) says the quantitative measurement of agglutinin is best performed macroscopically, and when undertaken by Madsen's and Jorgensen's method, given in the "Festskrift ved Indvielsen af Statens Serum Institut, Copenhagen," gives an error of less than 9 per cent. After a single injection of a culture of B. typhosus, B. coli or V. cholera curve may be made from the measurement of the agglutinins, which shows three distinct phases, a first phase lasting two to three days, in which no agglutinin is present in the blood (latent period); a second phase occurring from the sixth to ninth days, during which the quantity gradually rises to a maximum; a third phase, which begins suddenly and slowly continues. The extent and the form of the curve shows an individual type. Daily injections with small quantities of the cultures gives a curve in which the first and second phases are lengthened. Injections made every third day produce a curve showing variations which answer somewhat to those following each single injection. In 29 cases of typhoid fever the amounts of agglutinin were daily measured, and the results gave a curve which corresponded exactly to that obtained from animals who had been injected daily. The variations in the amount of agglutinin in the blood of typhoid patients cannot be taken as any indication for prognosis, but they are a great help in the diagnosis of typhoid fever, as well as an indication of the intensity of the infection and resistance.

(342) Methods of Infection in Pulmonary Tuberculosis.

J. O. COBB (*Zeits. für Tub. und Heilstatt*, Bd. vi, Heft i) discusses the sources and methods of infection in pulmonary tuberculosis. He assumes that the bacillus probably does not grow on a mucous membrane with mucus as a medium, and that it can and does penetrate mucus membranes, alimentary or respiratory, without leaving the slightest sign of its passage. The first disputable point is whether foreign matter can be inhaled directly into the lungs, and the author bases his affirmative answer largely upon the study of anthracosis and the allied conditions. The basement membrane of the bronchi is not perforated by the lymph radicles, and foreign matter can therefore only reach the bronchial glands by penetrating the air sac to the lymph radicles below or as by being "screened out" of the pulmonary circulation into the interalveolar lymph radicles. In favour of the former as a possible method is the fact that in rabbits which have been confined in a heavy atmosphere of lamp black the pigment is found both in the air sac itself and sticking through the walls of the sac. Another observation pointing in the same direction is that the pneumococcus when introduced experimentally into the circulation of animals seeks a serous membrane and does not cause pneumonia. By analogy it would appear probable that in pneumonia as met with clinically infected dust has been able to reach the air sacs of the lung directly. The question whether foreign matter can reach the lungs by way of the intestinal tract is also answered in the affirmative. The method by which the cow contracts the disease is important. The author believes it to be by ingestion of food infected by tuberculous sputum, and probably never by inhalation. Against the view that in man the infection is due in many cases to food infection is the rarity of abdominal tuberculous lesions, but little weight attaches to this argument when it is remembered that the site of the lesion does not indicate the point of entrance of the bacillus. A useful formula in this connexion is that "a specific organism seeks an organ, serous or mucous membrane, for the reason that the particular animal tissue furnishes the exact kind and exact amount of nutritive medium under exact biothermal conditions which make it possible for it to multiply, colonize, and survive its incubative period in the animal organism." In adults such tissue is found in the lung, while in children intestinal affection is more common. That tuberculous milk is only a minor link in the chain of infection to man is indicated by the prevalence of tuberculosis among oriental nations, to whom milk as an article of diet is almost unknown. The author believes that infection by either the alimentary or respiratory tract is possible, but that the former is a frequent and possibly the most frequent method, and that the common house fly forms a medium for the conveyance of the bacilli from the ejected sputum to the food.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(343) Primary Ulceration of the Tonsil.
Harris (*Amer. Med.*, July 23rd, 1904) says that most practitioners have been puzzled by a form of sore throat resembling diphtheria, but free from violent constitutional disturbances. A true ulceration goes on involving a limited area or all the tonsil, either superficial or deep. Primary ulceration may be defined as including all forms of tonsillar ulceration in which the ulcerative process has its origin in the tonsil, and represents the entire cycle of the disease. There are several different causes and varieties. One of the most frequent is: Membrano-ulcerative tonsillitis, Vincent's angina, which has the following clinical picture: A healthy young adult presents himself complaining of slight discomfort of the throat. Temperature is slightly raised, tongue coated, throat dry, and appetite poor. One tonsil alone is usually affected, occasionally both. There is slight glandular enlargement on the affected side. Early in the disease there is a greyish white membrane, surrounded by a red zone of infiltration. Attempts at removal cause bleeding. The tonsil becomes much swollen, and the membrane spreads over it. In one to three days the ulcerative stage begins—a flat ulcer with a hard base and sloping edges. After cleansing, an eroded area covered with bleeding points is left. Vincent discovered in such throats two forms of bacteria, (*a*) a fusiform bacillus 10 to 12 mm. long and 0.5 broad, (*b*) a spirillum with a wide curve and hard to stain. The chief interest is the diagnosis from diphtheria and syphilis; for this the microscope is necessary. The disease lasts about a week, but there may be relapses. Acute lacunar ulcerative tonsillitis: an ulcerative inflammation, benign and isolated, producing in the acute stage a latent encysted lacunar tonsillitis and resulting in more or less destruction of the tonsil. It has three stages, (1) preulcerative, (2) ulcerative, (3) cicatricial. In occurs in young people with enlarged tonsils. Examination shows a smooth rounded elevation on the tonsil, surrounded by a zone of inflammation. Soon this elevation breaks down and forms an ulcer, round or oval, variable in size, and at times multiple. It is covered with a brown detritus. The cicatricial stage comes on gradually. No specific germ has been found, but a great number of various organisms. There is a possibility of confusing it with tuberculous or syphilitic ulcers. Pseudo-diphtherial ulcers are a still greater source of difficulty, from their close resemblance to diphtheria. Bacteriology has done much to remove doubt in diagnosis, but the discovery of Loeffler's bacillus does not help much in prognosis. Diphtheria may be slight and pseudo-diphtheria grave. The false membrane is usually streptococcal, but Vincent's bacillus, B. coli, and others have been found. The membrane is thick, friable, greyish-bloody in appearance, and may involve the pharynx and nasal fossae. It persists three days, and after removal irregular ulcers are left. Positive diagnosis can only be made by bacteriology. Gangrene of the tonsil may very rarely produce a primary ulcer. A circumscribed purple spot is seen on the tonsil, which soon turns dark and causes an ulcer, which spreads rapidly, soon eating away all the tonsil. The above forms may be mistaken for advanced syphilis, but a primary chancre is not very uncommon. Primary tuberculous ulcer is very rare. It is liable to be multiple, and to involve the pharynx. The diagnosis of these forms from secondary ulceration is fully discussed, but for this the original paper must be referred to.

(344) Mongolian Idiocy: its Treatment by Thyroid Substance.
The histological examination of the brain of three mongolian idiots and of the thyroid gland in two is recorded by Oberthur in *Le Progrès Médical* (October 1st, 1904, p. 215). In each case the brain showed evidence of meningo-encephalitis, but this was more severe in two of the cases than in the third. The thickened pia mater was adherent to the brain substance, not as in general paralysis to the surface of the convolutions, but at the bottom of the fissures, and here in the two severe cases there was ulceration and softening of the cortex. The cell changes were of the nature of atrophy with chromatolysis. The thyroid gland was examined in one severe case and in the case with slight cerebral implication. In both it showed signs of sclerotic thyroiditis, but this was less marked in the former case, in which the brain was more affected, than in the latter. In the former the changes principally affected the vessels and fibrous structure, the trabeculae and capsule being hypertrophied and the vessels thickened, but there were interstitial haemorrhages here and there. In the latter case in which the brain was less affected the colloid substance was almost completely replaced by cellular elements derived from the glandular epithelium, but in this also the fibrous stroma was much hypertrophied.—Bourneville and Maugeret record a case which improved under treatment by thyroid substance, and eventually died from pulmonary tuberculosis (*Le Prog. Méd.*, October 1st, 1904, p. 209). There was nothing of importance in the family history, although the father was short in stature. Both parents were well advanced in years at the time of the birth of the child, the father being 49, and the mother 42, and it was the last of a family of nine. There was a strong tendency to tuberculosis among the children. The development of the child, in its slowness and incompleteness, and the peculiar physical characters were typical of mongolian idiocy. Under the administration of fresh thyroid substance, up to 1 gram daily, with hygienic treatment, the child increased in height 2 cm. (¾ in.) in three months, from 1.09 to 1.11, this, the highest record, being 26.5 cm. below the average height of a child of its age at the time of death, 12 years 6 months. The weight at first decreased under treatment, and then increased. The mental state showed slight improvement, which was, however, apparently to be attributed, in part at least, to the hygienic treatment and school training. The thyroid medication was stopped in August, 1902, and the child died of pulmonary tuberculosis in March, 1904. At the autopsy the thymus was found persistent, but there was no obvious change in the thyroid gland. The lungs and bronchial glands showed tubercles, and the aortic valve small vegetations. There was evidence of some purulent peritonitis, and of meningo-encephalitis of moderate degree, especially affecting the temporal and parietal lobes. The microscopical examination of the brain was made by Oberthur, and is one of the more severe cases referred to above, in which the thyroid was not examined.

(345) Typhaemia.
Memni (*Rif. Med.*, August 10th, 1904, finds that typhaemia in typhoid fever is frequently in strict proportion to the gravity of the typhoid infection. The most favourable period of the disease to demonstrate the presence of typhoid bacilli in the blood is from the end of the first to the beginning of the third week; although in severe cases or in relapses at this period may be considerably prolonged. Typhoid bacilli isolated from the blood in stages of early development often show weak active movements, and are sometimes united in groups, which phenomenon is closely related to the high agglutinative power of the serum. Castellani's method of free dilutions of the blood in water is useful for demonstrating the presence of Eberth's bacillus in the blood. No relation was found to exist between Gruber-Widal's serum reaction and typhaemia. Typhoid bacilli isolated from the blood, when put in contact with typhoid serum, are weakly agglutinable, becoming more powerfully agglutinating after acclimatization to a saprophytic life. Cultures of typhoid blood sometimes show other organisms besides the Eberth bacillus, the commonest being the streptococcus and Fraenkel's diplococcus. Cases of typhoid without intestinal localization are not as rare as is generally imagined. The so-called typhoid septicaemia should be considered as a very high degree of invasion of the blood by the Eberth bacillus.

(346) Tuberculosis and Heart Disease.
G. W. Norris (*Amer. Journ. of Med. Sci.*, 1904, p. 649) frames the following conclusions upon a basis of 1,764 autopsies at which tuberculous lesions were found: Valvular heart disease presents no special association with pulmonary tuberculosis, and does not appear to have any curative or detrimental influence. Mitral stenosis in particular is also without any such influence. Although it is customary to find that the heart in advanced cases of tuberculosis is small in size, this fact is apparently not concomitant with any special tendency to or weakened resistance to the disease. Stenosis of the pulmonary orifice, however, appears to favour the development of the disease in the lungs. Tuberculous endocarditis, myocarditis, and aortitis are very rare conditions, and it is probable that tuberculous endo-

carditis is never followed by such thickening of the valves as will produce incompetency. Fatty and fibroid changes are very common in the cardiac muscle of tuberculous patients, a fact which explains the signal failure of digitalis and certain other cardiac stimulants to benefit these cases. The whole trend of the inquiry seems to show that pulmonary tuberculosis exhibits such varying stages of progress and the individual resistance often increases so considerably, even in hopeless cases, that it is almost impossible to conclude whether the presence of any other pathological condition influences the process, or even, indeed, if the administration of a special remedy is directly beneficial.

SURGERY.

(347) Operative Treatment of Retained Testis.

Ruff (*Zentralbl. f. Chir.*, No. 40, 1904) suggests some modification in the operation for placing a retained testis in the scrotum, that is likely, he believes, to lead to less unsatisfactory results than have hitherto been attained by the surgical treatment of inguinal malposition. The following are the successive steps of the method described by the author: oblique incision of the skin over the course of the inguinal canal; free exposure of the testis and cord by division of the external oblique; and careful separation of the testis and cord from enveloping structures, firm fibrous bands being carefully divided by scissors, with precautions against wounding of any of the blood vessels of the cord. After the cord has been rendered freely movable by its separation from surrounding parts, the testis is drawn down and placed in a cavity formed by blunt dissection in the rudimentary scrotum. The most important part of the operation consists in close constriction by sutures of the inguinal canal, so that the cord is compressed, and the volume and weight of the testis are increased in consequence of venous congestion. The testis can no longer slip back into the inguinal canal, which is now almost completely obliterated, and its increased weight tends to stretch and attenuate the cord. The author does not regard as important any objections to this method with regard to the risk of necrosis or atrophy of the testis. Surgeons who have had much experience of the operations of Bassini and Kocher for the radical cure of hernia will, he states, readily acknowledge that the cord may be closely compressed without any great danger of complete stasis or anaemia. The practice of fixing the testis in the scrotum by suture is rejected, as it is held to be useless in the nature of the case to stitch a movable object to a point that is also movable.

(348) Amputations of the Lower Extremity.

F. T. Murphy (*Bull.* iii, *Surgery*, Harvard Medical School) undertook an investigation into 500 cases of amputation of the lower extremity, particularly in reference to the after-usefulness of the limb. He addressed inquiries to patients and to articial limb makers. The latter were remarkably in agreement on the different values of stumps; they agreed that after the foot amputations and those of Syme and Pirogoff much difficulty attended the provision of a satisfactory apparatus. Above the ankle the long stumps obtained by amputations through the lower third of the leg were undesirable, and tibial stumps between 6 in. and 8 in. long are the most serviceable. The longer stumps show a tendency to swell at the end, and the greater leverage without material gain in handling the foot increased the liability of play in the socket and irritation of the anterior border of the tibia. Amputations through the knee-joint are inferior to those just above the condyles, but provided the condyles have been removed the longer the thigh stumps the better. In general, in tibial amputations, down to 4 in., and in thigh amputations down to 5 in., it is good practice to sacrifice bone if this is necessary to obtain good muscle flaps. Anterior and posterior muscle flaps, when obtainable, are to be preferred to the circular cuff of skin. Suture of the periosteum over the end of the bone and approximation of the muscles and fascia is desirable, while drainage of the stump should be undertaken unless the spaces are carefully obliterated by the use of buried sutures. In some cases disability was caused by leaving the fibula too long, in others by the insufficient bevelling of the sharp tibial edge. The opinions of patients and instrument makers were remarkably in accord regarding the satisfactory nature of the short tibial stump.

(349) A Case of Talma's Operation for Liver Cirrhosis.

Riane (*Zentralbl. f. Chir.*, October 8th, 1904) reports the following case: A woman, aged 21, the subject of probable congenital syphilis, developed symptoms of cirrhosis with ascites soon after a premature labour. Operation was performed, and in two months the ascites had disappeared; it remained absent at the time of reporting, nine months after operation. At the operation the much-thickened omentum was fixed between the peritoneum and the muscles, and the spleen was at the same time attached to the thickened parietal peritoneum. Recovery was complicated by suppuration in the abdominal wall. Antisyphilitic treatment had not been given in order to arrive at an estimate of the value of the operation. The general condition had improved, and a yellowish discoloration of the skin had disappeared; some swelling of the feet persisted. Borchardt, in discussing the case, stated that he had operated twice in cases of syphilitic cirrhosis without any good result.

(350) A Posterior Incision in Operations for Appendicitis.

Sheldon (*Ann. of Surg.*, September, 1904) advocates a posterior or lumbar incision in certain appendicitis operations. In this method a vertical incision exposing the quadratus lumborum is made along the outer border of the latissimus dorsi, and extends in an upward direction from the crest of the ilium. The second incision is made transversely close to the iliac crest, through the lumbar fascia and the transversalis, exposing the parietal peritoneum directly over the ascending colon and caecum. It is stated that in cases of suppurative appendicitis the abscess, except in some very rare forms, is in direct contact with the caecum, and can be opened more quickly, and with less difficulty and danger, through a posterior incision than by any other route. The abscess is by this method opened in the most dependent part, and the infected area is reached and treated without free exposure of the omentum or small intestine. In instances of the common and serious complication of retroperitoneal infection drainage is much more efficiently established through a posterior than through an anterior incision. With the posterior incision there is less risk, it is held, of post-operative hernia. The author has practised this method in 58 cases, and has found no disadvantages in it.

MIDWIFERY AND DISEASES OF WOMEN.

(351) Palliative Treatment of Cancer of the Cervix.

W. B. Chase (*Amer. Journ. of Obstet. and Dis. of Women and Children*, January, 1904) discusses the palliative treatment of cancer of the cervix uteri. Although the use of antiseptic vaginal douches and the administration of opiates comprise all that can be done for the most advanced cases, much more is possible for the earlier ones. The chief indication is the removal as far as possible of all ulcerated and infected tissue. If the disease involves the vaginal walls, the broad ligament, and the adjacent structures, it is better to limit the destructive treatment to the superficial area of ulceration. The thermo-cautery is the best method of accomplishing the destruction, for by its use the cervix may be amputated without haemorrhage, and the greater part of the uterine body be removed, leaving little more than its peritoneal covering. Skill is needed to limit the destructive process to the diseased tissue, to avoid the bladder, rectum, ureters, and intestines, and to keep the cautery knife at the right temperature. The patient has usually no pain after cauterization provided that the muco-cutaneous surfaces are not burned. To protect the vaginal surfaces the author has employed strips of asbestos paper of suitable size and shape. Where ulceration is widespread and the tissues friable, a preliminary curettement is advisable. The haemorrhage caused by it can be checked by pressure with plugs dipped in dilute acetic acid, or by the use of adrenalin chloride. After curetting the surfaces are thoroughly charred by the cautery knife. Hydrogen peroxide is afterwards used daily for washing the parts and dressings of iodoform gauze applied; where healing is imperfect and unhealthy granulations appear, they may be touched with carbolic acid or silver nitrate. In some cases cauterization may have to be repeated at intervals of two, three, or six months. The use of the cautery is more satisfactory than that of strong caustics, in that it causes less pain, and the extent of tissue destruction can be more accurately regulated. The heat of the

cautery also has a destructive effect on cancer cells beyond the area of actual charring and by closing vessels of the part it arrests the infective process. Where the patient refuses cauterization caustics may be employed. Present knowledge of the Roentgen and Finsen rays and of radium is still in an experimental stage. Pain may be treated by the use of antiseptics to prevent irritation from the discharge by cocaine applications, by rectal suppositories containing codeine and hyoscyamus. The opiates employed are first codeine in increasing doses, then sulphate of morphine, and in some cases the tr. opii deodorata. The patient should be kept as far as possible in cheerful surroundings. The author describes five cases in which the thermo-cautery was employed. In the first a large growth on the cervix was reflected on to the vaginal wall. The growth was removed and the cervix amputated at the vaginal junction by the cautery. The vaginal wound having healed, an abdominal hysterectomy was performed ten months later—in May, 1901. The patient made a good recovery, and has remained well since. In the second case the carcinoma involved the whole cervix, and was reflected on to the vaginal wall. The parts healed after a high thermo-cautery amputation, and the patient has now remained well for nearly three years. The time that has lapsed without recurrence raises the hope that these two patients may have been finally cured. Another case of high thermo-cautery amputation for cancer was seen three months after operation, and showed no sign of recurrence. The next patient showed a bleeding ulcerated cauliflower excrescence on the cervix extending to the vaginal wall and nearly filling the vagina. She came under treatment in September, 1902, when her condition was such that she was not expected to outlive the winter. She had three applications of the cautery at intervals of some months, and, in addition, the Roentgen-ray treatment. The last cauterization was in June, 1903, and healing has taken place to a great extent, though all signs of malignancy have not disappeared. The fifth patient had typical cancer of the cervix and was cachectic when first seen. After the removal of the growth by cautery her general health improved and she returned to ordinary life. When the patient was seen fifteen months later the growth had returned.; she was then seven months pregnant. The growth was again removed to facilitate labour, and a healthy child was born. The convalescence was satisfactory, the cautery wound healed, and the patient remained well for nearly a year. The growth then recurred, and the patient died from cerebral embolism a few weeks after a final attempt at removal. The author suggests that palliative treatment of this nature is applicable in post-operative cases after recurrence, and in cases too far advanced to permit of radical operation, or in which the patient refuses more active treatment.

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(352) Sac of Femoral Hernia Diagnosed as Cyst of Round Ligament.

Cottu and Kuss (*Bull. et Mém. de la Soc. Anatom. de Paris*, April, 1904) report a case under Peyrot. The patient was 33 years of age. Three years before observation she detected a swelling in the left groin, at first as big as a cob nut, which had attained the proportions of a mandarin orange. It often vanished and developed again. Two months before admission into hospital an attack of vomiting and abdominal pain occurred, and the swelling became tender. Six weeks later a second attack came on. When admitted the swelling was seen to lie in the left groin, somewhat elongated; it appeared as though above the crural arch, and seemed to invade the uppermost part of the labium majus. The integuments were very thin—semi-diaphanous, in fact—so that the swelling assumed a bluish hue, as though it might be a mass of varicose veins. It did not fluctuate, and was dull on percussion. It was diagnosed as a cyst of the round ligament owing to its position as defined by palpation, although the recent history implied that there might be a hernia. A vertical incision was made through the integuments. On dissecting out the cyst thus exposed it was seen at first to lie in front of the external ring, and to push its way internally into the subcutaneous connective tissue of the labium majus. But when the dissection was complete, it was found that there was a pedicle postero-inferiorly, in such a position that it could not have been defined by palpation. This pedicle came from below the crural arch; the cyst was then seen to be the empty sac of an old femoral hernia. It contained bloody serum. The sac was excised and a radical cure for a hernia performed. The wound healed well. The authors note that the most recent writers on tumours of the broad ligament—Duplay, Sänger, and Guinard—do not mention cystic degeneration of an empty femoral sac as a cause of error in diagnosis.

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(353) Tubal Gestation and Gonococcal Infection.

Hitschmann (*Zentrabl. f. Gynak.*, No. 27, 1904) recently exhibited before a society a specimen of importance in relation to the cause of tubal pregnancy. In this instance the sac lay in the isthmus, and was of the size of a cob nut. On the posterior aspect of the sac wall was an area of dehiscence big enough to lodge a hemp seed. The villi had here weakened the wall and set up severe haemorrhage, so that operation was needed. The short segment of tube between the uterus and the sac was thick and tough, being the seat of advanced inflammatory processes. The mucosa had been destroyed; minute abscesses developing in the submucous tissue had discharged into the lumen so as to obstruct it. The pus was full of the gonococcus; on the other hand, no trace of inflammation or germs could be found in the tubal tissue immediately surrounding the ovum. The situation of the ovum was distinctly within the muscular coat of the tube. Some of the villi had grown through into the inflammatory exudation. There was hardly any extravasation of blood within the membranes of the ovum itself. Thus the Fallopian tube had become blocked near its uterine end by an acute suppurative process ascending from below. Closure of the lumen resulted, and allowed of modification of an ovum in the tube. Acute suppuration, though not the direct cause of the tubal gestation, did not, on the other hand, prevent its development close to the seat of the abscesses.

THERAPEUTICS.

(354) Experiments on Strychnine in Shock and Collapse.

A summary of an experimental research into strychnine in shock and collapse has been published, with illustrative proctocols by G. W. Crile (*New York Med. Journ.*, September 24th, 1904, p. 577). In the majority of instances in the normal animal (dogs were used) when sufficient strychnine was given to caused increased excitability of the cord, as evidenced by increased reflexes and muscular tone, a rise in blood pressure was noted. After smaller doses no noteworthy change occurred in the blood pressure. When more was given after the stage of increased excitability had been reached, convulsions appeared and the blood pressure rose abruptly and high, sometimes even more than doubling the normal. If the convulsions were prevented by curare, large doses of strychnine caused the blood pressure to rise as high as when they did occur. Division of the vagi and accelerator nerves produced no material difference in the results. The rise following the physiological dose of strychnine continued from half an hour to one hour and a-half. Successive doses produced a less and shorter rise until a period was reached in which no further effect was produced. After each dose, when the effect had worn off, the blood pressure fell to a lower level than it was at before the injection was given. Electrically stimulating the sciatic nerve or other sensory stimulation, so long as repeated doses of strychnine caused a rise in blood pressure, was followed by a rise of about the same height, though of less duration than that in the normal animal. When strychnine no longer produced a rise no effect was produced by the stimulation of afferent nerves. Small doses of strychnine, on the whole, seemed to improve respiration. Larger doses were frequently followed by respiratory failure. After the blood pressure had reached the stage of terminal helplessness, the infusion of saline solution caused a rise which continued for some time during the flow. On cessation of the infusion the blood pressure fell to the previous level, and if it was continued beyond a certain limited period of time the blood pressure fell to or near its former level during the infusion. The administration of adrenalin, after the final strychnine influence had occurred, was followed by a rise in proportion to the amount given. Bandaging and other means of external pressure produced a rise of blood pressure. Digitalis given in the terminal breakdown in the strychnine experiments produced no rise in the blood pressure. In animals in which varying degrees of shock were produced, strychnine caused a rise of blood pressure proportional to the degree of shock. On repeating the injections, if the shock was deep, frequently no rise occurred. When the shock was nearly to the fatal degree,

only a slight rise occurred, and lasted but a few minutes, after which no amount of strychnine produced a rise. In any degree of shock less than fatal after the administration of a therapeutic dose of strychnine, the animal passed into a deeper degree of shock. When animals were bled until the blood pressure had fallen to the level of the final breakdown from excessive doses of strychnine, the administration of therapeutic doses caused a marked rise of blood pressure. The condition of low blood pressure, due to exhaustion of the vasomotor centre, is described in the paper as shock, that from causes other than this is designated collapse. The rise of blood pressure following the injection of strychnine in conditions of collapse, as from asphyxia and excessive haemorrhage, in which there is no fatigue of the vasomotor centre, is contrasted in the tracings given with the negative effect in an equally low blood pressure, from exhaustion of the vasomotor centre, in shock induced by manipulation of the intestines and other means.

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(355) Rectal Injections of Dextrose in Diabetes.

J. ARNHEIM (*Zeit. f. Diät. und Physik. Therap.*, vol. viii, Heft. 2) has treated a case of diabetes by the injection of dextrose into the rectum. The patient was a man, 27 years of age, with a healthy family history, who had suffered from symptoms of diabetes for about three months before coming under treatment. To judge of the severity of the case, Arnheim ordered at first a diet which contained, in addition to fat and albumen, 150 grams of carbohydrates and found that 220 grams of sugar were excreted in the urine per day; diacetic acid, acetone to the amount of 4 grams per day, and β oxybutyric acid were present in the urine, and occasionally short hyaline cylinders were formed in the sediment. Considering the age of patient and the state of the urine, the prognosis was somewhat bad. The patient was put to bed on a restricted diet, but the amount of acetone in the urine prevented the adoption of a diet absolutely devoid of sugar. The condition improved under treatment, and the amount of sugar excreted sank to between 30 and 40 grams per day, which practically corresponded to the amount of sugar given as food: the acetonuria, however, became more severe. An injection of 35 grams of a 30 per cent. solution of dextrose was now made into the lowest part of the rectum. An oil tampon, which had been passed into the rectum before the injection, was taken out six hours later and found to contain only traces of sugar. The sugar in the urine on the day of the injection and the two following days was 42.7 grams, 18.1 grams, and 38.1 grams respectively. The acetone and diacetic acid in the urine diminished in amount, and altogether disappeared on the second day. With the disappearance of the acetonuria a rigid diet containing no sugar was adopted, and the sugar then completely disappeared from the urine for two days. As, however, acetonuria again set in, and β oxybutyric acid was also present, a second injection of dextrose, this time to the amount of 50 grams, was made into the rectum. The first stool passed after the injection, and an oil tampon, which had been passed as in the first attempt, contained between them only about 3 grams of sugar; no sugar appeared in the urine. Both the diacetic acid and the acetone diminished in amount, and the diacetonuria disappeared after two days. From this time onwards 20 to 30 grams of carbohydrates given by the mouth could be tolerated. The injections were repeated on two occasions, and on one led to the temporary disappearance, and on the other to the lessening in amount of the acetone in the urine. The patient left the institute after a month's treatment, having gained 12 lb. in weight, and with a marked improvement of the general condition. He still passed from 5 to 20 grams of sugar daily when on a diet which contained 40 grams of carbohydrates. As a possible explanation of the power of the organism to make use of sugar given per rectum, when unable to assimilate it given per os, the author suggests the extreme slowness with which the sugar is absorbed when given by the former method.

PATHOLOGY.

(356) The Influence of Small Injuries on the Localization of Tuberculosis.

E. SALVIA (*Il Policlinico*, July-August, 1904) describes experiments devised to show the effect of slight injuries inflicted on an animal which is exposed at the same time to the action of the tubercle bacillus. Virchow, Burkhardt, and others have pointed out that evidence of tuberculous invasion is exceedingly common in the bodies of those who die of non-tuberculous diseases. Krause noted the influence of traumatism, especially in the form of torsion, in inducing tuberculosis of bones. He ascribed the effect to damage of the blood-vascular system, in the shape of embolism or thrombosis. Rottenbilder, who produced grave tuberculous lesions of the joints by traumatism, ascribed the infection to the haemorrhage involved in the traumatism. Weir and Sokolowsky have both discussed the likelihood of some cases of pulmonary tuberculosis being caused by injury to the chest wall. Salvia performed five series of experiments, each involving four or five rabbits which were injected in the marginal vein of the ear with a virulent culture of tubercle bacilli. In each series of experiments one rabbit was kept as a control. The others were subjected to different forms of traumatism, such as slight percussion, repeated daily for three or four minutes, over the whole abdomen, with a common glass stirring rod, or similar percussion with the hammer of a pleximeter over the liver under the costal arch, or over a small area on the thoracic wall or on the elbow. Careful observations were made of the weight, temperature, appetite, and general condition of the animals, and after several weeks they died or were killed, and were examined both microscopically and macroscopically, and the effects produced by traumatism on the different organs were noted. The author arrived at the following conclusions: (1) Slight and repeated trauma over the liver, carried on only for short periods of time, predisposes the hepatic tissue to permit of a distinct localization of tuberculosis, with the formation of large, rapidly-growing nodules surrounded by smaller microscopic tubercles, a manifestation of the disease which is very uncommon in animals injected with tubercle bacilli, but not exposed to traumatism. (2) The origin of such tubercles is clearly due, not to the existence of haemorrhagic foci, which are very rarely met with, but to less obvious disturbances of the lymphatic circulation. (3) In the thin, flat, spongy ribs such trauma always causes an evident localization of tubercle, which, however circumscribed it may appear, always involves the whole thickness of the bone, usually extending to the pleura or the subpleural tissue. (4) Traumatism applied to the ribs clearly diffuses itself to the subjacent lung, as is shown by the greater number and more rapid growth of tubercles in the pulmonary area nearest to the injured rib. (5) In the bones of the limbs, and especially in their articular extremities, no localization of tubercle results from slight trauma. (6) If, at the same time as the injection is made, a joint is exposed to slight chemical injury, there results an extensive localization of tubercle, limited, however, to the soft tissues of the articulation.

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(357) The Relation of Acute Infections to Arteriosclerosis.

THAYER AND BRUSH (*Journ. Amer. Med. Assoc.*, September 10th, 1904) from an examination of the records of nearly 4,000 patients entering consecutively the medical wards of the Johns Hopkins Hospital find that: (1) The percentage of palpable arteries is materially higher among those individuals in whom there is a history of heavy physical labour and of the use of alcoholic stimulants than in the remaining cases. This percentage is appreciably higher in the cases giving a history of heavy work. (2) The percentage of palpable radial arteries is higher among those cases presenting a history of severe infectious diseases than among those in which this history is absent or among those in which a history of no causal factor could be obtained. The proportion is, however, far below that in the case of work or alcohol. (3) Rheumatism appears to be the acute infection after which the percentage of palpable vesssels is highest, and next to rheumatism, typhoid fever. The authors think that there can be no doubt that the main etiological factor in the development of the hyperplastic thickening of the intima, which constitutes so important an element of arteriosclerosis, is overstrain of the vascular walls, continued or intermittent high tension, whatever its ultimate cause may be. Heavy physical labour is assuredly one of the most important of these causes. It is not inconceivable that the rôle of the acute infections may be rather in the production of those focal degenerations with secondary regenerative changes which constitute the other important element in arteriosclerosis.

AN EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(358) The Etiology of the So-called Acute Catarrhal Suppuration of Joints.

W. von Brunn (*Berl. klin. Woch.*, July 4th, 1904) writes of the condition spoken of as acute catarrhal joint suppuration. Formerly it was supposed that all suppurative joint affections could not heal up without leaving a stiffness of the joint, but Volkmann first showed that certain cases, at times due to infectious processes, such as dysentery or gonorrhoea; at times due to trauma; and at times occurring spontaneously, heal up completely after letting the pus out. In these cases the contents of the joint is found to be a muco-purulent exudation, and no changes are to be found in the cartilages or bones. Von Brunn has had a case of this sort under his care. The patient was a child of 11 months, who had been taken ill five days before admission, with swelling of the left knee and fever. The joint was found to be much swollen, tender; there was floating of the patella; the skin was pale and oedematous. The temperature was 103.1° F. On puncture, some 40 c.cm. of a greenish, thick muco-purulent material was evacuated, and 10 c.cm. of iodoform glycerine was injected. The leg was placed on a Volkmann splint. In four days the temperature was normal, and in twelve days the patient was well enough to be discharged. No further trouble has taken place in the joint since the discharge from the hospital, and it (the joint) presents a normal mobility, both to active and passive movements. The microscopical and bacteriological examination of the exudation showed that the suppuration was due to the pneumococcus, while a few other bacteria (proteus) were seen in the pus as well. On inquiry it was found that shortly before the beginning of the joint trouble the child was noticed to have a mild catarrh of the lungs. In all probability the cause of the chest condition and that of the joint condition were one and the same. He also records a second case of suppuration of the knee joint, due to pneumococci, which was complicated with an acute suppurative osteomyelitis. In examining the pus for pneumococci he states that culture on Behring's ox-blood nutrient material assists very greatly in establishing the nature of the cocci. In the osteomyelitis another diplococcus was responsible for the changes, and therefore he claims that this case, too, was one of suppuration of the knee-joint, which had arisen without ascertainable cause, and which was dependent on the presence of pneumococci. In all, 55 such cases have been recorded, and the author deals with some of the points of interest of the other cases. The treatment is to let the pus out and to inject some iodoform glycerine in the majority, while the severest cases may call for more radical means. The prognosis is good.

(359) The Reflexes in Hysteria.

Crocq (Congres de Médecins Alienistes et Neurologistés de France, *Arch. Gén. de Méd.*, September 6th, 1904), from a study of 100 cases of hysteria chosen from among the more typical, draws the following conclusions:—(1) Abolition of the pharyngeal reflex is frequent, especially in the forms accompanied by anaesthesia, less often in hysterical fits, still less in paralyses and contractures. This sign is found in many other affections, and even normally, and is therefore of little diagnostic value in hysteria. (2) Exaggeration of the tendon reflexes is more frequent than abolition of the pharyngeal reflex, and is a sign at least as important as the latter. It is very frequent in hysterical seizures, less constant in paralyses and contractures, still less in anaesthetic cases. It is, however, found in many toxic conditions, and even normally, and so has no pathognomonic value. (3) Abolition of plantar sensibility is frequent in hysteria, especially in the forms with anaesthesia, then in paralyses, and last in convulsions. (4) Simultaneous abolition of cortical plantar reflex or flexor type, and of medullary or *fasciolata* type is very frequent, most in anaesthetic cases, a little less often in paralyses, contractures, and convulsions. This sign the author terms the *phenomène plantaire combiné*. These two reflexes are remarkably constant in the normal state, their abolition has considerable importance in the diagnosis of hysteria, of which it may be regarded as a special sign. (5) Plantar anaesthesia is not necessarily present with the combined plantar phenomenon; it may co-exist, but the latter may be present without alteration of sensation. (6) The deep plantar reflex is often exaggerated in hysteria but it may be normal, feeble, or abolished. (7) The abdominal reflex shows inconstant variations; most often it is normal, but may be abolished, exaggerated, or feeble. (8) Ankle clonus is not very rare, patellar clonus is less frequent, and wrist clonus the author has not seen in these cases. Ankle clonus is especially frequent in the paralytic forms, less common in the others. Patellar clonus is also most frequent in paralyses and contractures, very rare in convulsions, and never seen in anaesthesias. (9) The author has never seen a true Babinski's reflex in typical cases, but in 8 cases there was *le signe de l'eventail:* the latter sign, therefore, has not the same clinical importance as the extensor reflex.

(360) Muco-membranous Enteritis of Traumatic Origin.

Vinay (*Lyon Méd.*, October 30th, 1904) records three cases of mucous enteritis dating from accidents, which differed but little from cases of idiopathic origin. His first patient, 24 years old, had enjoyed good health save for occasional attacks of migraine, until four years before, when, in making a violent effort to draw a cork, he felt a sudden acute pain over the caecum and ascending colon. The abdomen remained sensitive, and digestive trouble became frequent. From time to time, paroxysmal pains were accompanied by glairy stools mixed with a little blood, and occasionally with a definite false membrane. The attacks were followed by diuresis, analysis of the urine showing an increase of acidity, of uric acid, and of urea. The patient became markedly neurasthenic. In the second case, a man, 44 years old, had suffered from acute pain below the umbilicus, with cramp in the precordial region during a violent effort to move a pump handle. Diarrhoea came on almost immediately, the discharge being almost indistinguishable from catarrhal expectoration. Actual false membranes were not passed till some time later. The paroxysmal pains recurred on an average once a fortnight, and lasted for a day at a time. Constipation was not constant. Symptoms of enteroptosis were noted, and the patient was neurasthenic. In the last case, a young woman, 25 years of age, had fallen three years before, and bruised the left side of the abdomen. Sharp pains in the ascending colon and sigmoid flexure were followed by the passage of constipated stools, with white mucous membrane and a little blood. The pain and discharge recurred on exertion and digestion was disordered, but in this instance rest, diet, and the use of injections of oil given through a long tube caused rapid improvement. Vinay believes these cases to be examples of traumatic neurasthenia. In all the injury had been slight, and the pain was different in position in the three. It would seem that the enteritis was a reflex phenomenon, the impulse having travelled from the injured part to the solar plexus and from thence to the colon.

(361) Fatal Intestinal Obstruction and Intussusception due to Ascarides.

Antonin Porot (*Lyon Médical*, August 14th, 1904) records the following case: A boy, 2½ years of age, was suddenly seized with abdominal pain. For the first six days he had several attacks of colic each day, with constipation but no vomiting. He was then examined in hospital. There was a moderated rise of temperature. The abdomen was enlarged but the wall remained supple. There were no rose spots, no pain on pressure over the appendix, no tumour. The abdominal meteorism increased rapidly and peristaltic contractions could be seen. The constipation was obstinate; rectal douching cleared away a little offensive faecal matter, but a dose of castor oil had no effect. The child died from pseudolobar pneumonia on the thirteenth day of his illness. The day before death an ascaris came away with douching. At the autopsy, the intestines were found free from exudate or fluid. The transverse colon and stomach were much distended. The appendix was healthy. On examining the small intestine, parts were found distended and on palpation gave the feel of lengths of cord. Near the beginning of the small intestine was found a definite invagination, without adhesions or signs of peritoneal reaction, which only yielded to moderately strong traction. The inner coat of the invaginated bowel showed two large ecchymoses. In all, twenty-six ascarides were found in the small bowel, situated in groups of two or three and all inactive when examined. The obstruction had not been absolute, vomiting was absent

throughout. The parents denied that anything abnormal had previously been seen in the child's stools. Operation was considered and deferred. Towards the end pneumonia made any idea of laparotomy impossible. It is possible that a sharp purge soon after the onset of the illness would have saved the boy's life, but this seemed contraindicated by the symptoms of obstruction, there being nothing in history or symptoms to point to intestinal worms as the cause of the illness. The invagination, difficult to reduce, probably occurred before death although no blood was passed per rectum and no tumour could be detected.

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(362) The Diagnosis of Primary Renal Calculi.

Zuckerkandl deals with the diagnosis and operative treatment of primary renal calculi (*Wien. med. Presse*, 1904, No. 21, reported in the *Centralbl. f. d. med. Wissenschaften*). Among the most important diagnostic symptoms this observer considers that the increase of pain on movement, and the disappearance of pain on resting, is a means of distinguishing this disease from other renal affections, such as pyonephrosis, tumour, etc. The urine contains albumen even when the kidneys are not infected and blood. When the red blood cells are sparse, the differential diagnosis is considerably strengthened. Skiagraphy also is a valuable aid to the diagnosis, and will render valuable data as to the kind of calculi and the size to an experienced examiner. Operative treatment should be undertaken in all cases when the stone is too large to pass through the urinary passages. For large, impacted calculi, Zuckerkandl prefers the operation of nephrotomy, while for small stones he finds pyelotomy is sufficient. When the kidney has been transformed into a fibrous mass of tissue, which is no longer capable of functionating, he recommends nephrectomy.

SURGERY.

(363) Final Results in the Treatment of Congenital Hip Dislocation.

At a recent meeting of the Medical and Chirurgical Society of Maryland (*Med. News*, November 12th) Baer reported seven cases showing the results of operative and non-operative treatment in congenital dislocation of the hip. The first patient, a girl of 5, had shown a dorsal dislocation of the left hip with a shortening in Bryant's line of 3 cm. Continuous traction was applied for five weeks, and then by means of forcible extension (Bradford's method) the head was brought to the acetabulum and replaced by the Lorenz method. Six months after operation the position was good, and the stiffness then present yielded later to massage. Preliminary extension and the use of the extension apparatus at operation proved useful in this case. The functional result had been perfect. The second patient, a girl of 5½ years, with shortening, external rotation and atrophy, had been operated on by Lorenz at the Johns Hopkins Hospital. The leg was flexed to 90 degrees and abducted, the abductor fibres being ruptured. The posterior muscles and the tissues in front of the joint were then stretched, and a plaster dressing applied, the leg being flexed on the thigh, and the thigh on the abdomen, and the leg flexed posterior to the plane of the body. The acetabulum was poor, and Lorenz gave a bad prognosis. Marked extravasation of blood occurred in the leg, and persisted for four months. The original dressing was removed in nine and a half months, and the leg redressed. The anatomical result had been perfect (Bryant's line the same length on the two sides), and the functional result was proven, by the exhibition of the patient, to be equally satisfactory. The other patient treated by Lorenz on the same day had not done so well. The girl was 8½ years of age, and the case a difficult one. On removal of the plaster nine months after operation the head was found bulging in the groin, 3½ cm. below, and medial to the anterior superior spine, showing that an anterior transposition had taken place. The patient was unable to stand. Operation was done, and a rent in the capsule found through which the head of the femur had slipped. The head was replaced, and the functional result was finally good. There was, however, about 2 cm. shortening, possible to correct by a bloody operation. In the fourth case reported the head had been brought to the acetabulum by preliminary extension and reduction then accomplished under ether by the Lorenz method. Six months later the head had slipped out, and this again occurred after a second reduction. At operation a rudimentary acetabulum was found and excavated, the head being replaced, and the leg put up in internal rotation to overcome anterior bending of the neck. The fifth case showed a brilliant result. The patient was a girl of 18 years, who had suffered with great pain and disability from double congenital dislocation. She was markedly sway-backed, and walked with a monstrous waddle. Both hips were treated by the open method, new acetabula being formed and preliminary traction being used. The patient had had a very good functional result in spite of the marked coxa vara of both legs. Lordosis, pain, and disability had entirely disappeared. One patient was shown whose convalescence after an open operation had been complicated by the formation of adhesions resulting in false ankylosis of the hip-joint. These had, however, been broken up under ether, and the final functional result was good, though a shortening of ½ in. had persisted. A seventh case showed a fair but not perfect functional result after the bloodless Lorenz method. In this patient anterior transposition of the head had occurred, due to anterior bending of the neck and failure to put the leg up in internal rotation. The lessons taught by this series of cases were that operative procedure is the method of choice when anterior bending of the neck is present; that preliminary traction is always advisable; that good results may be expected even in older cases; that the bloodless method is the better method in cases under 6 years of age (except when an anterior twist of the neck has occurred), and that the bloody method is the operation of choice after the sixth year.

(364) Traumatic Detachment of the Epiphyses and the Growth of the Limb.

Kirmisson (*Rev. d'Orthop.*, No. 6, 1904) in a communication to the French Congress of Surgery held in October, discussed the recent progress, especially that effected since the application in cases of fracture and allied injuries of the Roentgen rays, that has been made in the clinical study of traumatic epiphysial detachment. This injury, it is pointed out, occurs during late childhood and adolescence, and is very rare in infancy and, indeed, before the age of 12 years. In an immense majority of instances it is caused by indirect violence. As a rule, the detached epiphysis carries with it the whole of the cartilage of conjunction; but to this rule, the author holds, there are exceptions in which the solution of continuity passes across the intermediate cartilage, leaving one part adherent to the epiphysis, the other part to the shaft of the bone. Epiphysial separation is often associated with extensive detachment of the periosteum, especially that surrounding the lower part of the diaphysis or shaft. There is not, it is stated, a single epiphysis in the skeleton that may not be detached by injury, but by far the most frequent seats of this traumatic condition are the inferior epiphysis of the femur, that of the radius, and the superior epiphysis of the humerus. The author is of opinion that, notwithstanding the contrary results of experimental research, shortening of the injured limb has been rarely noted in actual practice after traumatic separation of an epiphysis in the human subject. Probably, he thinks, the shortening may have been slightly masked, and when present in the upper limb may have caused very little, if any, trouble. It is necessary, also, to take into consideration compensatory elongation of the neighbouring epiphyses. In one case to which reference is made in the paper, shortening of the injured humerus was neutralized by elongation of the bones of the forearm to the extent of 1 centimetre.

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(365) Diverticula of the Appendix and Associated Appendicitis.

Lejars and Ménétrier (*Rev. de Chir.*, No. 10, 1904) report 2 cases of chronic and relapsing appendicitis in which pathological examination of the resected appendix revealed a diverticular or pouched condition of this organ. In one of these cases the appendix was studded over almost the whole extent of its serous surfaces by saccular protrusions varying in size from that of a grape seed to that of a small pea: in the second case there was but one pouch which was situated near the free extremity of the appendix. The authors state that this pouched condition is invariably the result of appendicitis, and that in consequence of destructive inflammatory lesions, and of partial necrosis, the muscular coat is interrupted here and there, and the mucous coat is protruded through the gaps thus formed, and expanded under cover of the serous coat. These diverticula, it is pointed out, are of interest from a really practical point of view, as they have a tendency to become converted into closed cavities, and consequently to favour, more or less, acute inflammatory processes,

ending in perforation. The narrowness of the orifices by which they communicate with the lumen of the appendix, and the disposition of each in a cul-de-sac, render these pouches veritable infective recesses, in which septic agents intrench themselves and multiply, and the starting-points of repeated attacks of appendicitis. Again, the tenuity of their walls, which are deprived of muscular fibres and reduced to a sparse fibro-cellular layer, presents the most favourable conditions for perforation. Allusion is made to the frequently-observed localization of these pouches along the mesenteric border of the appendix. Such localization, it is suggested, might account for certain rare varieties of subperitoneal iliac suppuration of appendicular origin.

MIDWIFERY AND DISEASES OF WOMEN.

(366) Puerperal Haematoma: Fatal Cerebral Embolism.

DORLAND (*Amer. Journ. Obstet.*, June, 1904) observed this complication in a woman, aged 22, subject since the age of 9 to mitral regurgitation after acute rheumatism. Abortion at the fifth month occurred in May, 1903; the fetus had long been dead, but no bad sequelae were observed. In August the second pregnancy commenced; the patient soon began to ail, and albuminuria with oedema of the legs developed. Labour set in at 11 p.m. on April 3rd, 1904; a stillborn male child was delivered at 1.15 p.m. on the 4th; the placenta and membranes came away normally and ergot was given. There were no signs of haemorrhage until 4 a.m. on April 5th, when blood ran freely from the uterus. A dark spot was noticed on the right labium majus; it slowly increased in size; tympanites developed, with severe pain in the right ovarian region. The distension was relieved in the evening by an assafoetida injection; the bowels were opened and the ovarian pain ceased. But by the morning of April 6th the dark swelling on the labium had extended to the perineum and anus, which became patulous, and had ascended around the vaginal walls. At noon right hemiplegia set in, without facial paralysis, but the power of speech was lost. The hemiplegia became more and more marked, and death occurred seventy-six hours after delivery. The peritoneal cavity and broad ligaments were free from blood. A mass of clot extended from the upper side of the vagina on the right, outwards and downwards, losing itself below in the structures forming the pubic floor. Examined from without, the clot was found to reach from the pubic ramus back to the coccyx and out towards the obturator foramen. The mass was thoroughly encapsulated and tightly adherent to the adjacent structures which formed its walls. It measured 7 in. by 3½ by 1. The uterus was opened and found to be normal in every respect. Chronic valvular lesions and chronic renal disease alike predispose to a varicose condition of the vessels of the lower portion of the body, which, when complicated by the physiological thinning of the walls of the veins in gestation, would strongly predispose to rupture and the development of haematoma. Dorland is not certain whether the embolon which caused the cerebral lesion came from the haematoma or from the placental site.

(367) Ovarian, Uterine, and Vulval Tumours in Old Age.

FLAISCHLEN (*Monats. f. Geb. u. Gyn.*, April, 1904) exhibited before a meeting of the Berlin Obstetrical Society a large ovarian tumour removed from a woman, aged 70. The patient had undergone total hysterectomy for cancer fourteen years earlier. Flaischlen thought, as did Olshausen, that the first operation entailed disturbances in circulation which prevented the growth of the ovarian tumour. He also exhibited the uterus of a virgin, aged 71, who had suffered from no pain, but her doctor had used the curette, presumably for discharge, and detected in the scrapings advanced malignant adenoma. The uterus was therefore removed and the patient recovered. The importance of the microscopic examination of scrapings was dwelt upon.—Bokelmann (*Zentralbl. f. Gynäk*, No. 20, 1904) operated on a woman, aged 68, for a tumour of the vulva which she had noticed for twenty-three years. At first sight it seemed cancroid; on inspection it was found to consist of two parts; one, which was the smaller, sprang from the right labium, and was made up of several small fibromas, whilst the larger, which grew mainly from the left labium, was papillomatous. There was no enlargement of the inguinal glands, and no evidence of any kind of venereal taint. Olshausen considered that the growth was a cancroid. Bokelmann promised a report of a careful microscopical examination of the tumour.

THERAPEUTICS.

(368) The Action of Radium Rays on Animal Tissues and the Part Played by Lecithin in such Action.

WERNER (*Zentralbl. f. Chir.*, No. 43, 1904) publishes a summary report of the chief results of an elaborate research he has recently made on the action of radium rays under varying conditions on the external tissues of living animals. His experiments were made on the ears and on the dorsal and abdominal integument of rabbits and of some few guinea-pigs. The following is an abstract of the most important conclusions which the author has formulated after what is but a preliminary stage of his investigation: (1) The intensity of the physiological action of radium rays is not absolutely conformable with the degree of fluorescence, nor is it directly parallel with the duration of its action; it is irregular, fluctuating, and evidently under the influence of complex laws. (2) The influence of the anatomical structure of the skin on its reaction to the radium rays is thus summed up: the stronger and more abundant the growth of hair, the more widely scattered the cutaneous glands, the greater the prevalence of coarsely fibrous over finely nucleated elements, the thicker the layer of subcutaneous fat, the greater is the capacity for resisting the action of radium; sensitiveness to such action is favoured by a richness of the cutaneous tissues in capillary blood-vessels and lymphatics. (3) Prolonged application (from sixteen to twenty hours) of the rays causes tissue changes which do not extend deeply but are diffused over a surface which in superficial extent exceeds that on which the rays directly act. (4) With regard to the cumulative action of repeated radiations, it has been found that frequent applications of very small doses, carried on at very short intervals over from three to five days, results in considerable thickening of the skin with desquamation; this thickening does not increase indefinitely but is soon arrested; the hypertrophied epidermis resists the action of increased doses of radium rays, and thus seems to have acquired a relative immunity. (5) Living animal tissue is most sensitive to the action of radium rays when it is either in a state of active and healthy growth, or when it has been artificially excited, that is to say, in young subjects or during some process of repair. (6) The skin may be rendered hypersensitive to the action of radium rays by any of the following methods: (*a*) repeated and transient refrigeration of the surface of the skin by the spray of ether or ethyl chloride; (*b*) by frequent immersion, which can be done most conveniently by experimenting on the ear of a rabbit, in water heated to about 50° C.; (*c*) by the cautious application of croton oil, care being taken not to set up suppuration; (*d*) moderate congestion repeatedly produced by arrest of the return current of blood; (*e*) energetic recurrent and frequently renewed production of anaemia by artificial means; (*f*) frequently repeated mechanical injury (hammer-strokes); on the development under either of these methods, of hyperaemia and swelling of the integument, associated with infiltration of leucocytes, increased sensitiveness of the tissues to the action of radium rays is indicated by widely-spread destruction of its surface. (7) If any of the above methods be continued until its efficacy is diminished or exhausted, so that the cutaneous swelling disappears, and the hyperaemia and infiltration of the tissues becomes much reduced, then the sensitiveness of this part to the action of the radium will be much lessened. (8) Open sores produced by radium rays are less readily infected by septic micro-organisms; but it is not practicable or very difficult to disinfect a septic wound by the action of radium. Werner attaches much importance to the results of his endeavour to imitate by means of other agents the peculiar action of radium rays on the skin, made with the object of learning the immediate cause of the lesions. The application, both to the surface of the skin and by subcutaneous injection, of certain acids and alkalies, and other irritants led to no satisfactory results, as the lesions for the most part differed absolutely from those produced by the rays of radium. The author was then led by the results of the experiments of Schwarz and Schaper, which showed that the lesions caused by radium were mainly the result of the disintegration of the organic compound contained in leucocytes, which is known

as lecithin, made intracutaneous injections of solutions of this substance that had been previously subjected to the action of radium rays, and then found that the lesions thus set up in the injected part presented an absolutely typical resemblance to those caused by intense radium action. Further experiments showing that this capacity for causing such lesions may be imparted to lecithin by other means—oxidation, for instance—than by submitting it to the action of radium rays, led the author to the assumption it might be possible to produce similar changes in tissues, and at the same time to dispense altogether with the use of radium. The following questions, he states, have to be decided by future research: (1) Must lecithin be decomposed by the action of radium rays before it can excite the above described tissue changes, or can this property be imparted to it in some other way—as by the action of the Roentgen rays, electrolysis, concentrated illumination, or bacterial action? (2) Has unaltered lecithin the same specific perective action as radio-active substances on tissues rich in this organic compound? (3) Does it when injected subcutaneously act in an elective manner on structures rich in lecithin? It is not improbable, the author concludes, that the results of these researches (in which he has been assisted by suggestions from Czerny) may lead to a therapeutical development in dealing with all pathological processes associated with the accumulation of lecithin-containing cells, as, for instance, infiltrations of leucocytes and epithelial cells of varying origin, and, indeed with that still invincible enemy—malignant disease.

(369) Veronal.

THADDÄUS PISARSKI (*Therap. Monat.*, Oct., 1904) has tested the value of veronal on 60 patients—35 men and 25 women—who suffered from sleeplessness. The ages of the patients varied between twelve and seventy-eight years. The diseases involved included phthisis, diffuse bronchitis, pulmonary infarct, chronic endocarditis and myocarditis, pericarditis, acute rheumatism, neurasthenia, hysteria, chorea, and senile dementia. The primary cause of sleeplessness in most cases was a general nervousness, but in some symptoms—such as cough—dyspnoea or pain prevented sleep. Many of the patients had already tried other narcotics with various results. The initial dose of veronal given was 0.25 gram, and this was gradually increased until, if necessary, a maximum of 3 grams was obtained; it was taken as a rule at about 8 o'clock at night. The time which elapsed before sleep was obtained depended on the individual patient, the dose of veronal, and the manner of its administration; but ordinarily a dose of 0.25 gram induced sleep in from one to one and a-half hours in the case of women or weakly men; 0.5 gram caused sleep both in men and women at latest in one hour, 0.75 to 1 gram in half an hour, 1.5 to 3 grams in ten to fifteen minutes. The patients slept as a rule for from six to seven hours, but after doses larger than 1.5 grams for as long as nine to ten hours. The sleep was quiet, and after the smaller doses the patient could be awakened at any time, but when large quantities were taken they slept more deeply, and in one instance a patient fell out of bed without awaking; 151 times out of 284 the patients woke up feeling refreshed, and with no unpleasant sensation, but on 75 occasions there were different subjective symptoms, such as headache, singing in the ears, unsteadiness of gait, etc.; these symptoms were transitory, and were only observed when large doses of veronal had been given. Most authors hold that veronal never has a cumulative action. Pisarski, however, takes a different view, and on the side of cumulative action states that if a small dose is ineffective, and has to be repeated on the following days, a long period of sleepiness, such as usually occurs only after large doses, will follow the third small dose. Moreover, if veronal be taken at short intervals for any length of time, smaller rather than larger quantities become needful. Veronal is least successful for cases in which the lack of sleep depends on such symptoms as pain or cough, but it may then be given in combination with codeinum phosphoricum or dionin, and the results are most satisfactory. The author has never found veronal to lead to any change of temperature or loss of appetite; the pulse rate may be quickened, but the pulse tension is never heightened. The reaction and the colour of the urine are not altered, albumen never appears, and, although in a few of his cases the urine excreted increased in amount and in a few cases diminished, the cause of these variations could not be definitely determined; no change in the quantity of urine was found in any of the cases of Bright's disease or of valvular heart disease treated by veronal, but in one case of diabetes the quantity of urine and the percentage of sugar in it both diminished and increased again when the use of veronal was discontinued, other conditions remaining the same. As a result of his investigations Pisarski would give veronal a high place as a sleep-producing agent, and holds that its effect is mainly a sedative one, that is, that it has little power of soothing pain. He has given it by the mouth dissolved in hot tea, in milk, or in wine, in the form of a powder and in tablets, and has also administered it by the rectum and by subcutaneous injection. Veronal compares favourably with trional, in that only small doses are needed and that it has no effect on the haemoglobin of the blood.

(370) Dietetic Treatment of Acetonuria in Diabetes.

A. POLLATSCHEK (*Zeit. für Diät. und Phys. Ther.*, June, 1904) has treated at Karlsbad a case of diabetes and acetonuria with large quantities of fat. The patient, an elderly man, had suffered for years from diabetes and had been treated on ordinary lines. Acetone and diacetic acid had been present in the urine for years. A year before the new treatment was tried the patient had a slight attack of bronchitis, and, following the attack, muscular pains, drowsiness, and superficial and irregular breathing set in, while at the same time there was a strong odour of acetone about the breath, and the urine was found to contain large quantities of acetone, diacetic acid, and β oxybutyric acid. By means of the administration of large doses of alkalies and a return to a carbohydrate diet the symptoms disappeared within twenty-four hours, but the acetonuria persisted. The next year, when the patient returned to Karlsbad, Pollatschek began to diminish the amount of fat in the diet, especially the amount of butter. Acetone disappeared from the urine, and at the time when the article was written only traces had been found in the urine for eight months, the patient's weight had remained the same and his general condition was very good.

PATHOLOGY.

(371) The Poison of Diphtheria.

R. P. VAN CALCAR reports the results of experiments which should settle the dispute between Ehrlich and Arrhenius on the existence of diphtheria toxon (*Berl. klin. Woch.*, September 26th, 1904). Ehrlich's views are that the poison of diphtheria consists of toxin, which acts acutely in producing symptoms both in human subjects and animals; and toxon, which acts chronically in producing paralytic symptoms. The toxin and toxon have common "haptophoric" groups; or, in other words, have the chemical possibility of attaching themselves to the common class of substances, of which the most important are the protoplasm of the cell and the free molecule of antitoxin. The differences consist in the active groups of these two bodies, which Ehrlich calls the "toxophoric" groups. That quantity of poison, consisting of toxin and toxon, which may be neutralized by one antitoxin unit, is termed the Lo dose, while that quantity of poison, which corresponds to a sufficient excess of toxin to kill after the addition of one antitoxin unit—the toxon is therefore not covered in this case by antitoxin—is termed the L+ dose. Thus, L+—Lo=the toxon contents of the poison. Arrhenius denies the existence of toxon. Van Calcar has devised a method of demonstrating the presence of toxon: If a dialysing membrane is stretched, colloidal material will be able to pass through it. By employing a special dialyser he first gets rid of the crystalloid material in the usual way, and then, putting the membrane on the stretch, he finds that the first substance to pass through is toxin, later toxon passes through, and lastly the albuminous substances. That this is really so he shows by injecting the dialysed fluid. The fluid which has received the first product is capable in suitable doses of killing the animal acutely, while the substance left in the original fluid loses this power and is only capable of producing paralysis. The difference of their power of dialysing is dependent on the size of the molecules, and therefore the separation is mechanical and absolute. Van Calcar also refers to researches which he has carried out on the recovery of the fluid of the toxin-antitoxin mixture after intraperitoneal injection in guinea-pigs, which further shows that Ehrlich's view on the plurality of the poison in diphtheria is unattackable.

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PROGRAMME OF ANNUAL MEETING

MEDICAL BILLS IN PARLIAMENT

PROCEEDINGS OF THE GENERAL MEDICAL COUNCIL

ETC.

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Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

BATH AND BRISTOL BRANCH.

THE annual meeting of this Branch was held at Bath on June 22nd, Dr. BARCLAY J. BARON, President, in the Chair, and there were 31 members and visitors present.

President's Address.—Dr. Barclay Baron resigned the chair to Mr. R. J. H. SCOTT, the President-elect, who delivered the Presidential address. A vote of thanks to the President for his valuable and interesting address was proposed by Dr. BARCLAY BARON, seconded by Mr. FOWLER, and carried unanimously.

Report of Council.—Mr. W. M. BEAUMONT, Honorary Secretary of the Bath District, read the report of the Council, which showed that a successful year's work had been accomplished. The changes in the constitution of the Association had made no alteration in the routine of the scientific meetings of the Branch, and the papers had been quite equal to the standard of former sessions. There had been changes in the list of members, and the roll-call showed that they had lost by death Dr. J. Martin, of Clevedon, Mr. Garlike, of Sutton Benger, Surgeon-General Hogg, and Mr. W. F. Tuckett, of Bath. Mr. J. S. Bartrum, a former Bath member of the Branch, was also dead. He belonged to a past generation, but the remembrance of his services to the Association lived on. He was appointed Local Secretary to the Provincial Medical and Surgical Association before it became the British Medical Association, and he held office for fourteen years. In 1866 he was President of the Branch. Other members have left the district, but the balance shows that the numbers have increased from 406 to 408. The balance sheet showed that the total receipts for 1903 were £78 16s., and the expenses £33 9s. 9½d., leaving a balance of £45 6s. 2½d. From that portion of the balance with which the Branch could deal the Council recommended that a donation of £5 5s. each be given to Epsom College and the British Medical Benevolent Fund. At the April meeting held in Bath an interesting debate on forms of joint disease met with in medical practice was opened by Dr. Hale White, and it led to a prolonged discussion. The following gentlemen have been elected to fill the vacancies on the Council: Dr. Shaw by the Bristol Council, Mr. Bloxam, Mr. H. G. Terry, Mr. Beath, Mr. Helps, and Mr. Bayliss by the Bath Divisions. There had been no changes in the Trowbridge Division. Dr. Michell Clarke was re-elected representative in Representative Meetings for the ensuing year, and Dr. J. Pearse was appointed to represent the Bath and Trowbridge Divisions. For the representation of the Branch on the Council of the Association two nominations were received, duly signed by three members, one for Dr. Cave of Bath, and one for Mr. C E. S. Flemming of Bradford-on-Avon, and consequently no ballot had been necessary. The Council announced with much regret the resignation of one of their Honorary Secretaries, Dr. Michell Clarke. Dr. Clarke had held office for nine years, and had earned the gratitude of the Branch by the capable way in which his duties had been performed. During his term of office the number of members had increased from 266 to 408, a success which was, in no small measure, due to his energy and enthusiasm. The Council had much pleasure in nominating him President-elect. To succeed Dr. Clarke as Secretary for the Bristol District they recommended Dr. Newman Neild. It was proposed by Dr. LANSDOWN, seconded by Mr. TERRY, and carried:

That the report and balance-sheet be received and adopted.

President-elect.—Mr. F. R. CROSS proposed, Dr. CAVE seconded, and it was unanimously carried:

That Dr. J. Michell Clarke be appointed President-elect.

Honorary Secretary for Bristol Division.—It was proposed by Dr. HARRISON, seconded by Mr. BEATH, and carried, that Dr. Newman Neild be appointed Secretary for the Bristol Division.

Votes of Thanks.—A vote of thanks to the retiring President, Dr. Barclay Baron, for his able and courteous conduct in the chair during the past year was moved by Dr. E. MARKHAM SKERRITT, seconded by Mr. Goss, and carried. A vote of thanks to the Council and Secretaries, with a request to Mr. Beaumont to remain in office, was proposed by Dr. BEGG, seconded by Mr. WILLETT, and carried. A vote of thanks to the Committee of the Royal Mineral Water Hospital for permission to hold the meeting in its board-room was proposed by Mr. BAYLISS and carried by acclamation.

Dinner.—In the evening a dinner at the Empire Hotel was attended by thirty-nine members and friends.

Bath Division.

The annual meeting of this Division was held at Bath on June 24th. There were present Mr. R. J. H. Scott (in the chair) and nine members.

Report and Balance-Sheet.—The report was read, and showed that during 1903 two meetings of the Division had been held, as well as a combined one with the Trowbridge Division. At the first meeting (in April) rules were drawn up and officers appointed. At the second meeting questions submitted to the Division by the Central Council were dealt with. At the combined meeting of the Bath and Trowbridge Divisions a Representative at Representative Meetings of the Association during the ensuing year was appointed. The number of members of the Division was 126. The balance-sheet showed that the expenses had been £2 2s., which had been met by a grant from the Branch.

Contract Medical Practice.—A scheme for a proposed inquiry into contract practice was considered, and it was resolved that such an inquiry could be better carried out from London head quarters.

Proposed Extension of Trowbridge Division.—The proposed extension of the Trowbridge Division was considered, and it was resolved to obtain the views of the members in the affected area.

Election of Officers.—The following officers were elected for the year:—*Chairman:* Dr. Cave. *Vice-Chairman:* Dr. Field. *Ordinary Members of the Executive Committee:* Dr. Norburn and Dr. Ellis. *Honorary Secretary:* Mr. W. M. Beaumont. *Representatives on the Branch Council:* Mr. Bloxam, Mr. H. G. Terry, Mr. Beath, Mr. Helps, and Mr. Bayliss.

Bath and Trowbridge Divisions.

A combined meeting of the Bath and Trowbridge Divisions was held at Bath on June 24th. Mr. R. J. H. Scott, Chairman of the Bath Division, was in the chair, and there were twelve members present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Representative Meetings.—Dr. James Pearse was elected Representative at Representative Meetings during the ensuing year.

BORDER COUNTIES BRANCH:

West Cumberland Division.

The annual meeting of this Division was held in the Board Room of the Whitehaven Infirmary on Tuesday, May 17th. Eleven members were present.

Election of Officers.—The following officers were elected for the ensuing year:—*Chairman:* Dr. G. J. Muriel. *Vice-Chairman:* Dr. A. A. H. Knight. *Honorary Secretary:* G. Bertram Muriel, M.B. *Representative on Branch Council:* J. W. Crerar, M.B. *Executive Committee:* J. Clark, M.B., Dr. J. H. Dudgeon, Dr J. B. Fisher, and Dr. H. Mitchell.

Annual Report.—The annual report was read by the retiring Secretary (Dr. Mathews), whose resignation and loss owing to his leaving the Branch were very much regretted. The year's work was considered satisfactory, but the attendance was not as large as it ought to have been. It was resolved that meetings should be held at Keswick and Maryport during the year, the former in September, 1904, and the latter in February, 1905, the exact dates to be decided on later.

Consultations between Medical Witnesses.—A discussion followed on the Medico-Political Committee's letter *re* medical witnesses, and it was considered by the majority that the idea was "good but impracticable."

Communications.—Dr. Crerar then read a paper on blood examination in general practice, which was much appreciated. —Dr. G. Bertram Muriel showed a case for diagnosis, and read a paper entitled Notes on some Uses of Hyoscine.

Medical Practitioners and Hydropathic Establishments.—A letter was read from the Ethical Committee on the advertising of hydropathic establishments, and the unanimous opinion was expressed by the meeting that advertising in the medical profession, in any form, was to be deprecated.

The Association and Medical Defence.—After an unsatisfactory and indefinite discussion on medical defence the meeting adjourned, and seven members sat down to an enjoyable dinner at the Grand Hotel.

Scottish Part Division.

A meeting of this Division was held at Stranraer on June 18th.

Communication from Exeter Division.—A short discussion arose on a memorandum sent out by the Exeter Division of the South-Western Branch of the British Medical Association.

Medical Acts Amendment Bill.—The new draft of the Medical Acts Amendment Bill was discussed.

Annual Representative Meeting.—The more important motions to be brought before the Annual Representative Meeting were discussed in order that the Representative of the Division might be instructed as to the lines he is to follow at this meeting.

Dinner.—Dinner was afterwards served in Meikle's Hotel, and one of the most successful meetings of the Division was brought to a close.

EDINBURGH BRANCH:

North-East Edinburgh Division.

The annual meeting of this Division was held on Tuesday, June 14th, in the Royal College of Physicians, Sir John Sibbald, Chairman presiding.

Confirmation of Minutes.—The minutes of the last meeting were read and approved.

The Honorary Secretary's Report.—The Honorary Secretary submitted his report, which was adopted. He intimated that there were 65 members in the Division, and that there was a balance of £1 12s. 3d. at the close of the financial year. The accounts had been audited by Drs. Leslie McKenzie and Johnstone Alexander.

Contract Medical Practice.—The Secretary mentioned he had issued the Association schedules on contract practice to twenty-four members and twelve non-members in the Division.

Re-election of Officers.—All the present office-bearers were re-elected for the ensuing year, namely:—*Chairman:* Sir John Sibbald. *Vice-Chairman:* Dr. James Carmichael. *Secretary and Treasurer:* Dr. G. Keffie Paterson. *Executive Committee:* Drs. W. A. J. Alexander, J. Cormack Smith, G. Fyfe, J. Mackay, H. G. Langwill, W. Leslie McKenzie, and Andrew Balfour. *Representative to the Annual Meeting:* Dr. James Carmichael. *Representative to the Branch Council:* Dr. G. Keffie Paterson. Dr. James Carmichael was re-elected Representative at the Annual Representative Meeting.

Consultation between Medical Witnesses.—The meeting considered consultation between medical witnesses at trials to be advisable when practicable.

The Association and Medical Defence.—It was decided not to support the scheme at present, the general feeling being against it. The Secretary intimated that on sending circulars to each member of the Division 57 had not replied, 2 were in favour of the scheme, and 4 against.

Medical Practitioners and Hydropathic Establishments.—The meeting considered that when the doctor is in practice in the neighbourhood the practice of advertising his name in connexion with the hydropathic is very objectionable, and should be stopped.

Vaccination Acts.—On the six points referred to the Division for its opinion the conclusions come to were as follows:

1 and 2.—The Division approves.

3.—The Division does not approve of the Act being administered by a department of the Local Government Board, the practice in Scotland being the more satisfactory.

4.—The Division does not approve of the number and area of the vesicles being defined in the certificate, it being considered sufficient to state if the vaccination has been successful.

5.—The Division approves.

6.—The Division does not approve of the Local Government Board giving a fee if a fixed standard is reached, as it was thought it would lead to trouble with patients.

Representation of Association on the General Medical Council.—The proposal that the British Medical Association should be directly represented on the General Medical Council was not supported, as it was considered that there were too many on the Council already, and that the Government would probably never agree to a private body being given representation.

The Out-Patient Department of the Royal Infirmary.—It was remitted to the Executive with powers to meet the Executive of the South Edinburgh Division regarding the administration of the out-patient department of the Royal Infirmary.

Vote of Thanks.—The proceedings terminated with a vote of thanks to the Chairman.

EAST ANGLIAN BRANCH.

The annual meeting of this Branch was held at the Royal Hotel, Lowestoft, on Thursday, June 23rd. There was a large attendance.

School Certificates.—In the morning a meeting of the Council

was held, and this was followed by a general meeting of members, at which the following resolution, proposed by Dr. EDGAR BARNES, was agreed to:

That any certificate of inability to attend school required by the education authorities should be given by duly-authorized officers of the authority, and should be paid for by the authority, and that the East Anglian Branch be requested to take steps to confer with the education authorities on the question.

A Subcommittee, consisting of Dr. H. B. Walker, Dr. Barnes, Dr. Baxter, and Dr. Nicholson, was appointed to deal with Dr. Barnes's motion.

Papers.—Mr. W. K HATCH (Norwich) read a paper on a case of ectopian vesicae treated by implanting the ureters into the rectum.—Dr. H. H. BROWN (Ipswich) showed a specimen of hair-ball removed from the stomach of a child and read notes of the case.—Mr. A. E. LYSTER (Chemsford) read a paper on the open-air treatment of tuberculosis, with notes of eleven cases treated in a new shelter.—Miss L. GARRETT ANDERSON, M.D., read notes on a case of uterus bicornis with haematometra of one horn.—Dr. W. W. SINCLAIR (Ipswich) showed specimens and read notes on (*a*) a curious accident to an eye; (*b*) a case in which a large foreign body was successfully removed from the interior of the eyeball by means of the electro-magnet.—Mr. A. Y. PRINGLE (Ipswich) read notes of a case of chronic obstruction of the bowel, and showed the specimen.

New Members.—The following were elected members of the Branch: Miss M. E. Everett, L.R.C.S, L.R.C.P. (Rushmere, Ipswich), V. J. Hodgson, M.R.C.S., L.R.C.P. (Westcliffe-on-Sea, Essex), F. S. Jones, M.B., B.C. (Westcliffe-on-Sea, Essex), A. C. Lewis, M.R.C.S., L.R.C.P. (Rochford, Essex), R. W. Mullock, M.D. (Southwold Suffolk), M. H. Raper, M.D., D.P.H. (Great Wakering, Essex), H. M. Reeve, M.B.Lond. (Southend-on-Sea, Essex).

Election of Officers.—The following officers were elected:—*President:* Dr. H. B. Walker (Lowestoft). *President-elect:* S. Barton, M.D. (Norwich). *Vice-Presidents:* Dr. C. S. Kilner (Bury St. Edmunds), Dr. W. E. Wyllys (Great Yarmouth), Dr. J. C. Thresh (Chelmsford). *Members of Central Council:* E. G. Barnes, M.D. (Eye), M. Beverley, M.D (Norwich). *General Secretary and Treasurer:* B. H. Nicholson, M.B. (Colchester). *Secretary for Essex:* B. H. Nicholson, M.B. (Colchester). *Secretary for Norfolk:* H. A. Ballance, M.S. (Norwich). *Secretary for Suffolk:* J. Gutch, M.D. (Ipswich).

Luncheon.—The members were entertained at luncheon by the President-elect, Dr. H. Bournes Walker, Mayor of Lowestoft. Luncheon over, the President-elect (Dr. Walker), having read apologies for absence from Mrs. Garrett Anderson, Dr. Fanning, and others, proposed "The King," and was sure that His Majesty had no more loyal subjects than those of the medical profession. The deep interest which the King had taken in the public health, both before and since he became King, and the deep interest he had taken in the movement for assisting the metropolitan hospitals, must always appeal to medical men. He thought they might feel that day, so far as their profession was concerned, that whatever His Majesty could do for the interest of the communities they had to serve, they might depend upon it the King would continue to do to the end of his reign. The Rev. SYDENHAM L. DIXON proposed "The British Medical Association," which was responded to by Sir ALAN REEVE MANBY, who jocularly remarked that they must have time to see whether the "resurrection" of their Association was a resurrection to salvation or the other thing. Dr. WALKER replied in graceful terms.

Introduction of New President.—Dr. W. A. ELLISTON (Ipswich) introduced Dr. Walker as President of the Branch, in succession to Dr. Thresh (Chelmsford). He first moved a vote of thanks to Dr. Thresh for the admirable way in which he had presided over the East Anglian Branch during the past year, in the course of which they had had three successful meetings and excellent papers and discussions. Dr. Thresh had always been a loyal supporter of the British Medical Association, and in former days, when they had gone to Chelmsford, they had always received the greatest possible hospitality from him. He moved that their thanks to Dr. Thresh be recorded on their minutes. He now had pleasure in introducing Dr. Walker as President, and said they had conferred the position upon a highly honourable and successful practitioner in that town, and it was also a matter for congratulation that he had had the further honour of having been elected chief magistrate of Lowestoft. They were pleased to see a member of their profession in that exalted position. He thought it would be a good thing for the profession if men in all parts would accept those civic distinctions. He thanked their new president for his hospitality that day. The PRESIDENT thanked the members for the cordiality of his reception, and as to his hospitality, he ought to explain that that hospitality had been that of all the members of the Association who resided in Lowestoft. When they found that the Association was to honour their town with a visit, the members of the profession in Lowestoft decided to unite to entertain their brethren, and they fully appreciated the honour done them by the visit of the Branch that day. He regretted the absence of Dr. Thresh, their past president, but he well remembered the address he gave them at Chelmsford upon sanitary matters. Dr. Walker next made sympathetic allusion to three famous surgeons who were present at the last meeting of that Association held at Lowestoft, but who had since then passed away, and the medical profession was the poorer for the loss of their services—Sir George Humphry, Sir James Paget, and Mr. Cadge, of Norwich. He well remembered the divergent views expressed by Sir George Humphry and Sir James Paget in their discussion upon the cause of cancer. Great difficulty still surrounded that question, and it seemed to him that it must yet take a considerable time before they could decide upon the cause of that fell disease.

Tea.—Afternoon tea was served on the lawn at the southern side of the hotel (overlooking the esplanade and sea), and a long programme was performed by a uniformed band under Mr. R. C. Luxton, conductor of the Lowestoft Harmonic and Orchestral Society.

GLASGOW AND WEST OF SCOTLAND BRANCH:

GLASGOW SOUTHERN DIVISION.

THE annual meeting of this Division was held on June 17th.

Report of Executive Committee.—The report of the Executive Committee showed that nine executive and six ordinary meetings were held during the past year, at which questions affecting the welfare of the profession were discussed.

Election of Officers.—The following gentlemen were elected office-bearers for the ensuing year:—*Chairman:* Dr. James Hamilton. *Vice-Chairman:* Dr. Alex. Miller. *Secretary and Treasurer:* Dr. John Stewart. *Representatives to Branch Council:* Drs. Stewart and Miller. *Representative in Annual Representative Meeting:* Dr. C. E. Robertson. *Other Members of Committee:* Drs. Wauchope, R. Weirdrop Forrest, Lawson, Brown, Burges, Dunning, Leask, Rankin, Macgilvray, Hugh Kelly, Kilpatrick Thomson, J. C. Howie, Weir and Forrester.

Annual Representative Meeting.—The business of the Annual Representative Meeting was discussed and instructions given to the representative.

METROPOLITAN COUNTIES BRANCH.

ST. PANCRAS DIVISION.

THE annual meeting of this Division was held on May 27th at the Athenaeum, Camden Road, Islington, N. The CHAIRMAN (Dr. William Wynn Westcott, H.M. Coroner for N.E. London) presided.

Annual Report.—The annual report showed that nine meetings had been held, and five hospitals had been visited, and, in addition, the St. Pancras and Islington Infirmaries.

Election of Officers.—Dr. William Wynn Westcott was re-elected Chairman; Dr. Walter Smith, Vice-Chairman; and Dr. Pooley and Mr. Westcott Hon. Secretary and Hon. Assistant Secretary. Dr. Walter Smith was chosen Delegate to the coming annual meeting at Oxford; and the Chairman, Vice-Chairman, and Secretary were elected to represent the Division on the Branch Council.

The Midwives Act, 1902.—Dr. FRANCIS J. BUCKELL opened a discussion on the Midwives Act of 1902, and the proposals formulated by the Wandsworth Division were approved.

The Association and Medical Defence.—Dr. BUCKELL also gave a most instructive address on medical defence. A discussion ensued in which every member expressed his views. Dr. WALTER SMITH proposed, Dr. WALTER H. YELD seconded, and it was resolved:

That this meeting is of opinion that the British Medical Association should undertake individual medical defence, but does not approve of the scheme now proposed.

Annual Representative Meeting.—Dr. Walter Smith, the Delegate to the Oxford meeting, was given permission to vote

according to his discretion on all questions brought up for settlement.

Next Meeting.—The next meeting was fixed for October.

Hampstead Division.

The annual meeting of this Division was held on June 3rd at the Hampstead Conservatoire, Dr. Ford Anderson presiding. Sixteen members and one visitor were present.

Confirmation of Minutes.—The minutes of last meeting were read and confirmed.

Election of Officers.—The following officers were elected for the ensuing year:—*Chairman:* Dr. Heath Strange. *Vice-Chairman:* Dr. W. Winslow Hall. *Honorary Secretary:* J. D. Russell, F.R.C.S. *Representative at Representative Meetings of the Association:* Mr. R. H. Wellington. *Representatives on Branch Council:* Mr. F. R. Humphreys and Dr. H. J. Macevoy. *Committee:* J. Ford Anderson, M.D., H. W. Armit, M.R.C.S., L.R.C.P., N. B. Harman, F.R.C.S., W. E. Hills, M.R.C.S., L.R.C.P., H. Oppenheim, M.D., J. Smith Whitaker, M.R.C.S., L.R.C.P.

Annual Report.—The annual report of the Executive Committee was read by the Chairman, and accepted unanimously.

Annual Representative Meeting.—The notices were read and discussed, great help being given by Mr. J. Smith Whitaker, Medical Secretary of the Association. The Representative was instructed to give his support to all the motions except the following, namely: Cardiff, Stratford A., Wandsworth A., B., D., and E., Wigan. He was to use his own discretion in reference to Wandsworth F. G.

Alteration of Rules.—On the proposal of the Committee it was unanimously agreed to alter Rule 5 to read:

The officers of the Division shall be a Chairman, Vice-Chairman, and Secretary (who shall also act as Treasurer and Assistant Secretary).

Provided the Central Council gave their consent to the alteration, Dr. R. A. Yeld was elected Assistant Secretary. The Committee proposed that Rule 6 should read:

The officers shall be elected annually at the annual meeting of the Division, the Chairman being eligible for re-election for one year, after which he may not hold the same office within five years.

Dr. Macevoy proposed as an amendment, seconded by Dr. Morton, that the rule remain as before. The amendment was carried, with the idea that it be understood that the Vice-Chairman is expected to take the Chairmanship the next year.

Exeter Division.—A memorandum from the Exeter Division was read.

Exhibition.—Messrs. Hockin, Wilson, and Co. gave an exhibition of surgical instruments.

Vote of Thanks.—A very hearty vote of thanks was given to Dr. J. Ford Anderson, the retiring Chairman.

Kensington Division.

The annual meeting of this Division was held at the Kensington Town Hall on Wednesday, June 5th, 1904, at 5 p.m.; H. Campbell Pope, M.D., in the chair.

Election of Officers.—The following officers and members of Committee were elected for 1904-05: *Chairman:* George Eastes, M.B. *Vice-Chairman:* H. Campbell Pope, M.D. *Four Elected Members of the Branch Council:* H. Campbell Pope, M.D.; W. H. Lamb, M.B.; G. Crichton, M.D.; G. Crawford Thomson, M.D., Honorary Secretary. *Seven Members of Executive Committee:* W. H. Kiallmark, J. Brindley James, E. C. Barnes, J. Rice Oxley, M.D., Walter Rigden, E. Reginald Morton, F. W. Cock, M.D. *Representative in the Representative Committee:* G. Crawford Thomson, M.D.

Annual Report.—The annual report was received and adopted.

Annual Representative Meeting.—The resolutions concerning the business of the Annual Representative Meeting were proposed and passed.

The Association and Medical Defence.—The voting for the medical defence scheme was declared: 64 in favour, and 61 against.

Medico-Political and Ethical Committees.—Resolutions with regard to communications from Medico-Political Committee and Ethical Committee were proposed and passed.

Votes of Thanks.—A cordial vote of thanks to Dr. H. Campbell Pope for his services as Chairman of the Division for the year 1903-04 was carried with acclamation, and a wish was expressed that in the future a law might be passed to enable a Chairman to act for more than one year. A vote of thanks was also unanimously voted to the Honorary Secretary.

North of England Branch.

Council Meeting.

The Branch Council meeting was held at South Shields on June 8th, the President, Dr. Burman, in the chair. *Present:* Drs. McDowell (Morpeth Division), Dagger (Newcastle), Adams and Fraser (Tyneside), Todd and Modlin (Sunderland), Blacklock (Gateshead), Charles (Consett), Paxton (Bishop Auckland), Howell and Knott (Cleveland), Dr. J. Drummond (President-elect), Dr. James Hunter, and Dr. Cox (Honorary Secretary).

Next Meeting.—It was decided that the next meeting should be held in September.

Report of Council.—This was taken paragraph by paragraph and confirmed. In reference to the absorption of the Northumberland and Newcastle Medical Association, it was resolved, on the motion of Dr. Todd, seconded by Dr. Paxton:

That in the event of the annual meeting adopting the course recommended by the Branch Council, the Honorary Secretary should engage Mr. Garforth Drury, the Secretary of the Northumberland and Newcastle Medical Association, at a salary of £25 per annum, and that until the next meeting of the Branch Council the old Executive of the Association should be empowered to deal with any business which might arise.

Annual Meeting.

The annual meeting of the Branch was held in the King's Hall, Golden Lion, South Shields, at 2.30 p.m., Dr. Burman in the chair. Between sixty and seventy members were present.

Election of Officers.—The following were elected office-bearers for the ensuing year:—*President:* Dr. James Drummond. *President-elect:* Dr. John Hedley, subject to his consent; in the event of his inability to accept office the post to be filled by the Branch Council. *Honorary Secretary and Treasurer:* Dr. Alfred Cox. *Elective Members of Branch Council:* Mr. Rutherford Morison and Drs. T. Beattie and J. Limont were elected.

Report of Representatives on Central Council.—Dr. Murphy, on behalf of himself and colleague Dr. James Hunter, thanked the Branch for having re-elected them without a contest, and read a joint report which touched on the chief work of the Council during the past year.—Dr. D. F. Todd moved that the thanks of the Branch be given to the Branch Representatives for their past work. He moved in addition that in the opinion of the Branch the work specially belonging to the Medical Secretary's department is of such importance and is growing so fast that it is necessary that skilled assistance be given to Mr. Whitaker if the work of the Association is not to suffer. Dr. Todd gave several reasons, speaking both as a member of the Association and as a Secretary of a Division, why the work was and ought to be too much for any one man. Dr. James Drummond seconded the motion, which was carried unanimously, and the Representatives on the Central Council were requested to bring the matter before that body.

Report of Council.—The following is the text of the report: Your Council has pleasure in reporting the continued success of the Branch. The usual three Branch meetings have been held during the year, and have been very well attended—more so than usual. Both at Hartlepool and Newcastle the cases shown and the work done were of great interest, and the scientific side of the Branch work may be said to be satisfactory, considering the small number of meetings held and the limited time at our disposal at each meeting.

Membership.—During the year 83 new members have been added, and there have been practically no resignations. The increase is not so large as last year, when it reached 105, but it must be considered very satisfactory, and is of course very much above the normal increase in former years. We give the figures as nearly as possible: 1900, 459; 1901, 473; 1902, no figures available; 1903, 547; 1904, 604. Removals, together with a few struck off for arrears, will account for any discrepancy. According to a list the Honorary Secretary has had prepared, there are 984 practitioners in the Branch area, so that there is a good deal of work to be done before the profession and the British Medical Association become synonymous terms in the North of England. The following analysis will be useful in indicating the strength of the Association in Northumberland, Durham, and Cleveland respectively: Northumberland, practitioners 397 members 246, being a percentage of about 62; Durham, 516 practitioners, 298 members, a percentage of 57; Cleveland, 71 practitioners, 52 members, a percentage of 73. We would appeal to all

members, and more especially to Secretaries of Divisions, to spare no effort to persuade every respectable practitioner that it is his duty to be a member of the British Medical Association. We cannot feel satisfied until at least 80 per cent. of practitioners are inside the Association.

Meetings of Council.—Five meetings of the Council have been held and have been very well attended. It is most refreshing to find that as the meetings come round they are attended by representatives from all parts of the Branch, some of whom come long distances, and most of whom attend at considerable inconvenience. It seems to us that if the reorganization of the Association had done nothing else than create the new kind of Branch Council, that work would have been well worth doing. The Council meetings have undoubtedly been the means not only of clearing off a lot of routine work which would otherwise have cumbered the Branch meetings, but have interested in the work of the Branch many workers who up to now have not had the opportunity of taking a hand. The principal work done by the Council during the year has been the conduct of the negotiations whereby the Northumberland and Newcastle Medical Association has been induced to give up its separate existence, and merge itself with the Branch. If the annual meeting passes the new rule whereby this arrangement will be sanctioned, another and an important step will have been taken in the direction of bringing to one focus all the work done on behalf of the profession, thus saving time, money, energy, and much overlapping.

Ethical Committee.—A strong and representative Committee was appointed by the Branch Council, but so far no business has come before it. We would remind Divisions that they have here a body to which all ethical difficulties incapable of local solution may be referred.

Matters referred by Divisions to the Branch Council.—Several matters have been referred to us by Divisions, but it is probably not sufficiently recognized yet that the chief duty of the Council is to bring the support of the whole Branch, both moral and financial, to the aid of those Divisions which feel that they are unable to deal locally with certain matters. The most important item came to us from the Newcastle Division, and on its initiative we resolved that the Honorary Secretary write to all the education authorities in the Branch area pointing out the injustice of their action in requiring from parents medical certificates for which the Education Committees are apparently unwilling and the parents often unable to pay, so that the whole onus comes on the medical man, who is already too much looked on as a sort of public (unpaid) servant. On receiving the replies of these Committees the Council expects to be able to recommend some definite course of action to all the Divisions. In conclusion we would point out that some Divisions are practically moribund, others are doing very little, while still others are setting a good example of life and vigour. Much depends on the Division Secretaries, but in many cases they receive but scant encouragement from the rank and file. We would urge every one to remember that he owes a duty to the Association which is not finished when he pays his subscription and gets his Journal. Various comments were made on the report.—Dr. Blacklock thought the estimate of the respectable members of the profession—80 per cent.—too low, and that the Branch ought not to rest satisfied with less than 95 per cent. of the practitioners in the area.—Dr. Pope moved the adoption of the report together with a vote of thanks to the Branch Council and Honorary Secretary.—Dr. Limont seconded, and the motion was carried unanimously.

Financial Report.—This showed a balance in hand of £104 7s. 10d., and the auditors announced that they had found the accounts correct.—Dr. Peart moved, Dr. Modlin seconded, and the report was adopted.

Contract Practice.—Dr. Burman then moved that the following be added to the Branch rules:

> The Branch Council shall at its first meeting after the annual meeting of the Branch, appoint a Committee whose duty shall be the protection of the members resident in the County of Northumberland and in the City and County of Newcastle-on-Tyne, who are engaged in colliery and other forms of contract practice, and the consideration of any similar matters which may be referred to it from time to time by the Branch Council. This Committee shall be known as the Northumberland Committee, and shall be responsible to the Branch Council, to which it shall report from time to time.

Dr. Burman said he looked on the negotiations which had led to the proposal of this rule as the chief work done during the year of his presidency, and he hoped it would be carried unanimously. He felt sure the Branch could do this or any other work connected with the profession as well as any smaller association, and he thought they were all agreed that if medical organization was to be efficient concentration of energy was desirable. Dr. Limont seconded.—Dr. F. C. Mears and Dr. Lachlan Fraser, who had previously opposed the absorption, now frankly withdrew their opposition, as they said it was now made clear that any committee formed would be under the control of the Branch Council, and would, therefore, be responsible to the Branch. The new rule was then passed unanimously.

Introduction of New President.—Dr. Burman then resigned the chair. In doing so he made a few appropriate remarks, and expressed himself as having enjoyed his year of office. He was pleased to look back on such an eventful and prosperous year in the history of the Branch.—Dr. Drummond then took the chair amidst applause, and moved a vote of thanks to the retiring President, who had, he said, been one of the most energetic the Branch had ever had.—Dr. Cox, in seconding, said that he probably knew more as to the ex-President's energy than any other member of the Branch, and could testify that Dr. Burman had put his whole heart into the work, and had been most assiduous in his attendance at the various meetings in spite of the fact that he lived at the far end of the Branch. The vote was passed with enthusiasm.

President's Address.—The President then, with much thoughtfulness and self-effacement, delivered only those parts of his address which were more particularly professional. He said that various arrangements had been made for the entertainment of those present, and he would not interfere with these by prolonging his address.—On its conclusion Dr. Murphy moved and Mr. John Rutherford seconded a hearty vote of thanks to the President for his address and for his hospitality, and also that the address be printed and circulated amongst the members of the Branch. This was carried unanimously.

Entertainments.—Some 55 members accepted the President's invitation to lunch. The party was then photographed, after which some had a voyage on the Tyne in a steam launch, while others went off to the golf links, while still another party were entertained to croquet and tea at the house of the President by himself and Mrs. Drummond.

Dinner.—Dinner was held at 7.30 p.m., when about 70 dined. The Chairman and Secretary of all the 18 Divisions had been specially invited by the President, and a goodly number turned up. The whole of the company were entertained to wine by the President, and a most enjoyable evening was spent. The Mayor of South Shields, the Chairman of the Health Committee, Canon Savage, and several other prominent citizens were present. Several toasts were honoured, that of "The President" being especially well received. In returning thanks Dr. Drummond characteristically deprecated his part in the provision of the day's enjoyment, and said he had been loyally helped by his colleagues of the town, specially mentioning Drs. Hunter, Goudie, and Crichton.

The meeting was in every way a most successful one, and Dr. Drummond and the South Shields Division may congratulate themselves on creating a record which will be very hard to beat.

Gateshead Division.

The annual meeting of this Division was held on June 7th, the Chairman (Dr. Green) in the chair. Twelve members were present.

Election of Officers.—The following were elected officers for the ensuing year: *Chairman:* Dr. J. L. Speirs; *Honorary Secretary:* Dr. Alfred Cox; *Honorary Assistant Secretary:* Dr. W. Smith. *Representatives on Branch Council:* Dr. Mearns, Todd, and Blacklock; *Executive:* Re-elected.

Introduction of New Chairman.—Dr. Green, in leaving the chair, gave a short summary of the work undertaken by the Division during his year of office. Dr. Speirs then took the chair and moved a vote of thanks to his predecessor, which was heartily carried.

Recent Allegation of Bribery against the Profession.—The Honorary Secretary gave an account of this matter. At the May meeting of the Town Council Alderman Dunn made a general statement to the effect that medical men were bribing children with pennies to go and be vaccinated now that the guardians were paying every medical man for vaccinations done. This statement had gained wide publicity, and some newspapers and many of the public had assumed that all the doctors in the town were guilty of the practice. The Chairman of the

Division, noticing these statements, asked the Secretary to call the Executive together to deal with the matter. The Executive had sent a letter to the Press asking Alderman Dunn to make his statement a little more definite, and, if he had any evidence, to produce it, as his general statement had cast suspicion on the whole body of the profession. The Executive had discovered that a doctor in the district had undoubtedly been offering small bribes to children, but as he was not a member of the Division and had previously been before the General Medical Council, where he was reprimanded for unprofessional conduct, it was felt that the Division could undertake no responsibility on his behalf. Alderman Dunn in an interview had indicated that he was afraid to give any name but would not withdraw. The Honorary Secretary had then written a personal letter to the Alderman urging him to speak out, and at the least to vindicate the mass of the local profession. As nothing came of this appeal, the Honorary Secretary, as a member of the Town Council, thought it his duty to make a statement in the Council in June, pointing out that the doctors in the town could not be held responsible for the acts of a man outside their organization, and stating plainly that the doctors generally thought the act complained of a bad breach not only of medical etiquette but of good taste. Dr. Galloway moved and Dr. McKay seconded that the action of the Executive and of the Honorary Secretary be approved, and that both be thanked for their promptness in dealing with the matter. Carried unanimously. Resolved:

That the action of the medical practitioner who has not only admitted but attempted to justify his action in giving bribes to children *re* vaccination be reported to the Ethical Committee of the Association.

Matters Referred to Divisions.—Medical practitioners and hydropathic establishments. This question was considered, and it was resolved:

That the practice of advertising the names of medical practitioners to the lay public in connexion with hydropathic and kindred institutions is contrary to the best traditions of the profession and ought to be discouraged.

This was carried unanimously.

Consultations between Medical Witnesses.—After discussion of this question, Dr. Blacklock moved, and Dr. Mearns seconded:

That it is advisable that the medical witnesses engaged on each side in legal cases should meet in consultation.

Both mover and seconder thought that this plan, while not interfering with the course of justice, would do a great deal to prevent the painful scandals now occasionally seen in connexion with medical evidence. Dr. Gilbert moved a direct negative, and Dr. Cox seconded. Several members took part in the discussion, which the Chairman closed by giving the following summary of the reasons against the proposal: (1) Such a course would probably not be allowed, as it would be considered an interference with the course of justice; (2) it is the function of the court to sift evidence which should be presented in as fresh and unsophisticated a form as possible; (3) the evils which the proposal is intended to abate are kept in check by the decisions of the court, and by professional and public opinion. The gradual elevation of the moral standard of the minority, who at present bring discredit on the profession, by the pressure of an organized professional opinion, and the elimination of the unfit by stricter educational tests will lead, slowly probably but surely, to an improvement in the status of medical evidence. It was resolved by eight to three (the Chairman not voting) that such consultations are not advisable.

Communication from Exeter Division.—The Secretaries were directed to acknowledge this, and express the entire agreement of this Division with the principles there laid down.

PERTHSHIRE BRANCH.

The summer meeting of this Branch was held at the Golf Club-house, Moncrieffe Island, Perth, by the courtesy of the Committee of the King James VI Golf Club, Dr. Kennedy, President, in the chair. There were present Drs. Urquhart, R. Stirling, Trotter, Menzies, Burnett, Haig, Borrowman, Paton, Keay, Stewart, Taylor, and Dr. T. Mitchell as guest.

Confirmation of Minutes.—The minutes of last meetings were read, approved, and signed by the President.

Annual Representative Meeting.—On the motion of Dr. Haig (Crieff), seconded by Dr. R. Stirling, Dr. Alexander Trotter was appointed representative of the Branch at the annual meeting at Oxford.

The Association and Medical Defence.—After a discussion on medical defence Dr. Urquhart moved:

That in the opinion of the Branch the British Medical Association should defend any of its members at the present subscription; and the Branch deprecates any interference with existing associations.

—Dr. R. Stirling seconded, and that became the finding of the meeting.

Golf Competition.—This was all the business of the meeting, and after tea a golf competition was held with members from Dundee Branch. Play as follows:

Dundee.	Holes.	Perth.	Holes.
Dr. Young	0	Dr. Taylor	5
Dr. Mackay	0	Dr. Stirling	2
Dr. Johnston	0	Dr. Keay	6
Dr. McEwan	0	Dr. Paton	3
Dr. Duncan	0	Dr. Stewart	10
Dr. Kynoch	0	Dr. Burnett	10
Dr. Rogers	5	Dr. Alcock	0
Dr. Thornton	0	Mr. T. Mitchell	12
	5		48

Perth winning by 43 holes, or 7 matches.

SOUTH-EASTERN BRANCH.

The annual meeting was held at the Grand Hotel, Eastbourne, on Wednesday, June 22nd. The President-elect (Mr. J. H. Ewart) kindly invited members to lunch.

Introduction of New President.—Mr. Nappin (the retiring President) thanked the members for their support during his year of office, and introduced Mr. Ewart, who welcomed the Branch to Eastbourne.

Election of Officers.—The Honorary Secretary reported the election of the following officers: *President-elect* (to become President 1905-6): Dr. Whitehead Reid. *Vice-Presidents, 1904-5:* Mr. A. A. Napper, Dr Hayman. *Vice-Presidents, 1905-6:* Mr. J. H. Ewart, Mr. Wacher. *Hon. Secretary and Treasurer, 1904-5:* Dr. H. M. Stewart. *Representatives of the Branch on the Central Council:* Dr. Galton, Dr. Tyson, Mr. T. Jenner Verrall.

Report of Council.—This alluded to the work of the Divisions during the past year and to the recommendation that in future Divisions should combine for the purpose of holding meetings for scientific and social purposes. These meetings would take the place of those held for years past in the various Districts into which the Branch was formerly divided. It being the turn of Kent to hold the annual meeting next year, the Council had ascertained that the city of Canterbury would welcome the Branch members. In view of this, Dr. Whitehead Reid had been nominated and elected President for the year 1905-6. The satisfactory financial condition of the Branch was dwelt upon, but it was pointed out that the expenditure of last year was no guide for the future, as Divisional expenses would certainly be heavier as Divisions organized their work more completely. There were already indications that the demands of the central authorities for extensive inquiries and reports were increasing the local expenses. The report was adopted on the motion of Mr. Napper, seconded by Mr. Verrall.

Financial Reports.—The Honorary Secretary and the Treasurer reported that the balance in favour of the Branch on January 1st was £159 10s. 10d. Up to the present time this had been materially increased. The accounts, which had been audited, were passed. The Honorary Secretary further explained that all demands on the funds belonging to the Branch as it existed before the reorganization had been met, and that there remained a sum of £35 11s. 9d. at the disposal of the old members.

Rules of the Branch.—Mr. Verrall drew attention to the rule adopted by the Branch last year continuing the old Districts, each with its separate Secretary. In consequence of the opinion of the Council that the work done by the Districts would now be better done by the existing Divisions, he thought this rule might well be repealed.—Dr. Douglas criticized the course taken both as to the matter of altering the rule and as to the financial reports.—After discussion, it was decided, at the suggestion of Dr. Allfrey, to leave the rule unaltered at present till further trial had been given of the scheme of Divisions.—Dr. Douglas moved:

That the Council be asked to consider in what way more full and earlier notice could be given to the Branch members as to the reports (general and financial), and as to proposed changes of rule or otherwise.

—This was seconded and carried.

Proposed Division of the Branch.—Dr. Larking moved:

That in the opinion of this meeting the present South-Eastern Branch should be divided into two Branches, separated by a line running roughly between London and Hastings, and that the opinion of the Divisions concerned be obtained on the question.

Dr. Muir Smith seconded. The arguments were chiefly that

the size of the Branch prevented general combined interest between the extreme portions, that it militated against a good attendance at Branch meetings, and that there was waste in representation on the Central Council, the proper representation of the area if more divided being much over three, the present figure. In the discussion which followed the general feeling was obviously against the proposal, and eventually Mr. C. O'B. HARDING moved, and Mr. NAPPER seconded, the following amendment:

That the opinion of the Divisions be obtained before the next annual Branch meeting as to the desirability of dividing the Branch.

This was carried by 24 to 6, and also as a substantive resolution.

Election of Associate Member.—Mr. VERRALL pointed out that Dr. Holman was now a member of the Metropolitan Counties Branch, and proposed that he should be elected an associate member of the South-Eastern (his old) Branch, in which he had many friends.

Holman Testimonial Fund.—Mr. VERRALL further moved:

That the balance of money at the disposal of the members of the old Branch should be voted to the Holman Testimonial Fund, which would be applied to the building of a library or science room at Epsom College.

This was seconded by Mr. NAPPER, and carried unanimously.

Votes of Thanks.—Votes of thanks were accorded to the President, Vice-Presidents, Honorary Secretaries, and Council for the past year.

Retirement of Honorary Secretary.—Special allusion was made to the retirement of Mr Verrall, who had held the posts of Honorary Secretary and Treasurer for twelve years.

CANTERBURY DIVISION.

The annual meeting of this Division was held on Thursday, June 23rd, at the Kent and Canterbury Hospital, Dr. GOGARTY presiding.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Vote of Thanks to Officers.—A vote of thanks was passed to the officers of the Division for their services during the past year.

Election of Officers.—The following were elected officers for 1904-5:—*Chairman:* Dr. Fitzgerald. *Vice-Chairman:* Dr. B Rigden. *Honorary Secretary and Treasurer:* Dr. Henchley. *Representative at Representative Meetings:* Dr. Gosse. *Representative on Branch Council:* Dr. Whitehead Reid. *Executive Committee* (additional member): Dr. Prentice.

Gateshead Resolution and Medical Defence.—A communication from the Representative to Representative Meetings (Dr. Gosse) was considered with reference to the Gateshead resolution and medical defence, and he was requested to support it.

Annual Representative Meeting.—The proposed resolutions and other business at the Annual Representative Meeting at Oxford were considered, and the Representative of the Division was given a free hand, with certain suggestions with regard to them.

Division Rules.—The rules of the Division as agreed to at the inaugural meeting remain unaltered.

Communication from Exeter Division.—A communication from the Exeter Division on general ethical matters, as regards the medical profession, was read. No resolution was proposed thereon.

Reorganization of the Association.—Mr. SMITH WHITAKER delivered an address, in which he went into detail as regards the advantages of the reorganization of the British Medical Association. He threw new light on various matters, where there had previously been doubt, concerning the splitting-up into Divisions and the possibilities of developing them in many ways, and more particularly with reference to the latent powers for good of the Association as a whole.

The late Mr. George Rigden.—Dr. GOGARTY proposed a vote of condolence with Dr. Brian Rigden and family on the death of Mr. George Rigden, for over fifty years medical officer to the Canterbury Dispensary, and an old member of the British Medical Association.

Votes of Thanks.—Votes of thanks were passed to Mr. Smith Whitaker for his excellent address and to Dr. Gogarty for presiding.

FAVERSHAM DIVISION.

The annual meeting of this Division was held at the Cottage Hospital, Faversham, on June 17th. The following members were present: Drs. Alexander, Evers, Gosse, Gowlland, Hayward, and Robson.

Next Meeting.—It was resolved that the next meeting be held at Whitstable in October, when Dr. Hayward has kindly offered hospitality, and Dr. Gowlland will open a discussion on Pernicious Anaemia.

Annual Report.—The report stated that there were now twenty-one members in the Division; it had lost four and gained five. Still only half the medical men in the area of the Division belonged to the British Medical Association, although during the year the non-members were canvassed by means of a circular drawn up by a subcommittee appointed for that purpose. The Division had also obtained the support of the members of Parliament for the Revaccination Bill, in response to a communication from the Imperial Vaccination League. There had been no complaint before the Ethical Committee.

Statement of Accounts.—The statement of accounts was passed, and the report adopted.

Election of Officers.—The following were elected officers for the ensuing year: *Chairman:* Dr. C. Keswick Bowes. *Vice-Chairman:* Dr. S. R. Alexander. *Honorary Secretary:* Dr. W. Gosse. *Member of Branch Council:* Dr. W. Gosse. *Executive Committee:* Drs. Evers, Gowlland, Hayward, and Selby.

Annual Representative Meeting.—The business was duly considered, and the views of the members were noted by the Representative, Dr. W. Gosse.

Paper.—A paper was read by Dr. S. R. ALEXANDER on the Surgical Treatment of Cirrhotic Ascites. The operative treatment was founded on the observation of Dr. Hale-White at necropsies that paracentesis was rarely performed twice in these cases, and therefore the supervention of ascites was the gravest import. This indication being then given the object of the operation was to produce adhesions between the parietal and visceral peritoneum, and thereby to relieve the blood pressure in the liver, by establishing collateral circulation. Twenty-nine cases were quoted, of which eight died in fourteen days, five within nine months; four were unimproved, and ten were cured.

Votes of Thanks.—Votes of thanks were passed to Dr. Evers and Gosse for their services as Chairman and Honorary Secretary respectively; and to Dr. Alexander for his paper, and to Dr. Evers for his hospitality.

YORKSHIRE BRANCH:

BRADFORD DIVISION.

THE annual meeting of this Division was held at the Eye and Ear Hospital, Bradford, on Tuesday, June 14th. Mr. MOSSOP, Vice-Chairman, presided.

Confirmation of Minutes.—The minutes of the last meeting were read and adopted.

Election of Officers.—The following officers for the ensuing year were then elected:—*Chairman:* Mr. Mossop. *Vice-Chairman:* Dr. S. Johnston. *Honorary Secretaries:* Drs. A. Little and J. Metcalfe. *Representative in Representative Meetings of the Association:* Mr. Horrocks. *Representatives on the Yorkshire Branch Council:* Mr. Mossop, and Drs. Little, Bampton, and Berry. *Executive Committee:* Drs. and Messrs. Althorp, Bronner, Campbell, Clow, Crowley, Eames, Farrow, Hall, Hunter, Mercer, Mitchell, McGee, Oliver, and Peck. *Ethical Committee:* Drs. and Messrs. Althorp, T. C. Denby, Horrocks, Johnston, Manknell, Mitchell, McGee, H. E. Taylor, Shackleton, and the officers Drs. Mossop, Little, and Metcalfe.

Report of Executive Committee.—The SECRETARY then read the Report of the Executive Committee on the work of the Division for the past year. The following is the text of the Report: Your Committee has much pleasure in submitting its first annual report on the work of the Bradford Division for the past year. A good deal of time has naturally been taken up in the formation of rules and the consideration of numerous ethical and medico-political questions referred from the central organization. But in addition to these matters, some specimens and papers of scientific interest have been brought before the Division. Your Committee cannot but think that the establishment in our district of a local habitation of a powerful organization like the British Medical Association must be of the greatest possible advantage to the medical profession. The name of the Association is so well known to the country that any decisions it may come to on important public questions receive a recognition which no smaller body would obtain. But we shall speak with still greater authority if it can be shown that we act for a united profession. It is this anxiety for promoting the interests of the profession that stimulates your Committee in endeavouring to obtain an amalgamation of the local medical societies.

It is believed that more efficient and economical administration combined with a maximum of scientific result, and a minimum of expended energy of members, can be obtained by the suggested fusion of societies. Your Committee is glad to think that many active members of all the local societies are apparently of this way of thinking. It only hopes that before the next annual meeting this "ideal" may be "un fait accompli." The first meeting of the Division was held at the Eye and Ear Hospital, Bradford, on Wednesday, May 6th, 1903, at 4.45 p.m. Dr. Swanson (President of the Branch) took the chair, and he was supported by eighteen or twenty members. The model by-laws suggested for Divisions, with some alterations, were adopted, and the officers for the year were elected. The first meeting of the Executive Committee was held at the Eye and Ear Hospital on Wednesday, May 27th, at 8.30. It was determined that the meetings of the Division should be held on the second Tuesdays of January, March, June, and October, and at other times if desired, at 8.30 p.m. The June meeting was to be considered the annual meeting. The next meeting of the Division was held on Tuesday, July 14th, 1903. It was agreed that the meetings should take place at the Eye and Ear Hospital, which had been kindly placed at the disposal of the Division by the Board of Management of the institution. At this meeting an Ethical Committee was elected, consisting of the following members: Drs. and Messrs. Shackleton, McGee, Mitchell, Manknell, S. Johnston, H. E. Taylor, T. C. Denby, and Althorp, and the officers, Drs. Goyder, Little, and Metcalfe. At a later meeting the name of Mr. Horrocks was added to the list. Afterwards Mr. Basil Hall read an interesting paper on electrical treatment at the Bradford Royal Infirmary, which elicited considerable discussion. The Executive Committee met again on October 2nd, 1903, and considered the agenda for the October meeting, with various details relative to the management of the affairs of the Division. The October meeting of the Division was mainly taken up with a consideration of the subjects of vaccination and the Medical Acts Amendment Bill, referred from the Council of the Association. The clauses were discussed *seriatim*, and were generally approved of, but suggestions and alterations were proposed for remission to the Council of the Association. The meeting had to be adjourned to October 27th, when the discussion was continued. At the October meeting Dr. Major, of Bedford, was unanimously elected an associate member of the Division. The first meeting of the Ethical Committee was held on Tuesday, September 29th, 1903. The rules for the guidance of the Division in ethical matters were carefully and exhaustively discussed. The rules suggested by the Council of the Association were generally approved of, but as these were not considered sufficiently comprehensive various rules and suggestions in use by the Bradford and West Riding Medico-Ethical Union were proposed and agreed to. The second meeting of the Ethical Committee was held on Thursday, January 9th, 1904. Suggested rules for the regulation of contract practice were approved of. An ordinary meeting of the Division was held on January 12th, 1904. It was determined, in conjunction with the Bradford and West Riding Medico Ethical Union, to invite Mr. Whitaker, Medical Secretary to the British Medical Association, to address a meeting of the medical practitioners of the Bradford District on medical organization. The ethical rules suggested by the Ethical Committee were considered and agreed to if approved by the Ethical Committee of the Association. The Executive Committee met on Monday, February 8th, 1904. The report on the year and the Treasurer's statement for the Yorkshire Branch Council were read and approved. It was determined to ask the Branch Council for a capitation grant of 3s. per member for the expenses of the Division for the current year. Dr. Metcalfe was authorized to attend a meeting composed of the Chairmen of Council, of the Medico Political and Ethical Committees, and the Solicitor to the Association on some questions connected with organization at the offices of the Association in London on Wednesday, February 10th. The address on "Medical Organization" was given by Mr. Whitaker at the Victoria Hotel on Wednesday, February 17th. Nearly 80 medical practitioners were present and an animated discussion took place. Your Committee was delighted with the success of the meeting, and hopes to be able to take a part in promoting similar discussions on some future occasions. An ordinary meeting of the Division was held on Tuesday, March 8th. The question of supporting a candidate to represent the medical profession on the Board of Guardians, and also a resolution on the vaccination question were considered. The Executive Committee met again on Wednesday, March 30th. Two special meetings of the Division were approved of, and the agenda for the meeting on Tuesday, April 12th, considered. The Honorary Treasurer stated that the Branch Council had agreed to allow the Division a grant of 3s. per member for working expenses. The allowance for the present year amounted to £22 10s. The special meeting of the Division was held on Tuesday, April 12th, 1904. Dr. Metcalfe proposed a resolution instructing the Representative of the Division to move a motion at Oxford in favour of the formation of "a supplementary grants fund" for special scientific work in Divisions. With some alterations this was carried. Three subjects referred from the Council of the Association were then considered: (*a*) Whether it is advisable that the medical witnesses engaged on each side in legal cases should meet in consultation. The answer to this was "Yes, when practicable." (*b*) The question of advertising of medical practitioners in connexion with hydropathic establishments. This was answered by the opinion "that the advertising of medical practitioners in connexion with hydropathic or any other establishments except in the medical press is to be condemned. (*c*) Medical Defence.—The following resolution was approved of: "The Bradford Division is in favour of the principle of medical defence being undertaken by the Association; but until a complete scheme has been formulated is unable collectively to express a definite opinion on the proposed method." A special meeting entirely devoted to scientific subjects was held on Tuesday, May 10th, 1904. Mr. Basil Hall showed and described six specimens. Dr. Metcalfe read a paper on a case of gastric ulcer treated by high-frequency currents; and Mr. Horrocks read a paper on two cases of Porro's operation. It will thus be seen that eight general meetings of the Division, six meetings of Committee, and Mr. Whitaker's meeting have been held during the past year. "Nearly all of the medical practitioners in the Bradford Division who are not members of the Association have been circularized during the past year. The advantages of joining the Association have been shown, and a printed copy of Mr. Whitaker's address sent to each one of them. The distribution of the various forms of contract practice inquiry has also been undertaken by the Division." Your Committee thinks that this is evidence of the activity which has been displayed in carrying on the work of the Division. The number of members at the commencement of the year was 140. It is now 156, and a very considerable increase will probably take place in the near future. By the rules of the Yorkshire Branch, the Division which was represented on the Branch Council by three members will now be entitled to four representatives. The following is the financial statement. (Up to the end of last December the individual accounts were paid by the Yorkshire Branch Council):

1904.

Cr. *Income.*				Dr. *Expenditure.*			
By				To			
Mar. 30th: Cheque received from Treasurer, Yorks Branch capitation grant for 150 members at 3s. ...	22	10	0	January 19th: Typewriting ethical rules	0	9	0
April 20th: P.O.O. from Central Association, half cost of C. Ogden's account for shorthand and typewriting Mr. Whitaker's address	3	14	2	February 26th: Half cost of room Whitaker's meeting	0	10	6
				April 12th: Half printing Whitaker's meeting (Field's)	1	7	0
				April 17th: 175 copies Whitaker's address ...	1	5	0
				April 17th: C. Ogden's account, shorthand and typewriting	7	8	4
				April 17th: Postage, cash book, etc.	0	15	0
				June 13th: Messrs. Field and Sons (printing, etc.), including annual meeting	8	0	0
				June 13th: Surplus at this date	6	9	4
	26	4	2		26	4	2

J. Metcalfe,
Honorary Treasurer.

June 14th, 1904.

This was received and adopted.

Annual Representative Meeting.—Some discussion took place on the business of the Annual Representative Meeting.

Thanks to Dr. Goyder.—The Chairman heartily thanked Dr. Goyder for the management of the chair during the past year.

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SCIENTIFIC GRANTS COMMITTEE

OF THE

British Medical Association.

REPORTS ON PROGRESS OF RESEARCHES.

THE Scientific Grants Committee has received the following reports from the Research Scholars and the recipients of grants upon the investigations carried out:

PHYSIOLOGY.

LYMPH FLOW FROM THE PANCREAS.

Dr. F. A. BAINBRIDGE (Research Scholar) reports as follows in reference to the lymph flow from the pancreas:—

Methods.—The experiments were carried out on dogs anaesthetized with A C.E. mixture after a preliminary injection of ½ to 1 gr. morphine. The lymph was collected from the thoracic duct. The arterial blood pressure was usually recorded, and a cannula was placed in the jugular vein for the purpose of injecting secretin and ileum extract. These substances were prepared according to the method described by Bayliss and Starling. In some of the experiments the portal lymphatics were ligatured. As a rule a cannula was placed in the pancreatic duct, and the flow of juice observed.

Results.—In 1902 he showed that the injection of secretin caused an increased flow of lymph from the thoracic duct, and that this increase still occurred after ligature of the portal lymphatics. It was presumably derived from the pancreas. These results have been extended and confirmed in the present investigation. The slow injection of secretin causes an increased lymph flow from the thoracic duct: this commences about ten minutes after the beginning of the injection, and lasts for about an hour. After ligature of the portal lymphatics the increase is less marked, though the flow after the injection may be three times as great as that existing before the injection of secretin.

The injection of ileum extract usually causes a moderate increase in the lymph flow from the thoracic duct; but after ligature of the portal lymphatics this increase no longer takes place.

If the lymph flow from the thoracic duct (after ligature of the portal lymphatics) and the flow of pancreatic juice be observed simultaneously it is found that they vary concomitantly; secretin causes an increased flow of pancreatic juice, which is accompanied by an increased flow of lymph, whereas ileum extract has no effect either on the pancreatic juice or on the lymph flow.

The increased lymph flow caused by secretin is not due to increased muscular movements or violent respiratory movements, since the secretin was injected *slowly*, and the animals remained perfectly quiet. Nor is it due to changes in blood pressure, first, since the increased lymph-flow persisted long after the blood pressure had returned to the normal, and, secondly, because the changes in the blood pressure produced by ileum extract had no effect on the flow of lymph. Moreover, after ligature of the portal lymphatics, and in the absence of muscular movement, the extra lymph must have come either from the pancreas or from the intestines; and the constant association between the flow of pancreatic juice and the increased flow of lymph strongly suggest that the lymph is derived irom the pancreas. I consider that the increased lymph flow is the result of the increased metabolic activity of the pancreas during secretion, and depends on the formation by the pancreas of crystalloid metabolites, which enter the lymph and raise its osmotic pressure. In the case of the pancreas, as in that of the liver, increased metabolism leads to increased lymph formation.

COMPOSITION OF PANCREATIC JUICE.

Dr. LUCIAN DE ZILWA's research consisted in a chemical analysis of pancreatic juice under varying conditions, to wit,

1. When collected after injecting pilocarpin intravenously.
2. When collected after injecting secretin intravenously.
3. At the beginning of secretion.
4. At the end of secretion.
5. After injecting $NaHCO_3$ intravenously.

A report has been sent in to the *Journal of Physiology*. Among the points investigated were the alkalinity, total solids, total proteids, ash, total chlorides, kinds of proteids, total nitrogen.

BILE ACIDS: AUTOLYSIS.

Dr. S. B. SCHRYVER reports that experiments have been carried out on the preparation and oxidation of the bile acids. This part of the work is still incomplete, and has been temporarily given up owing to the relatively greater importance of other results incidentally obtained. Experiments were carried out with the object of obtaining synthetically glycocolic acid from glycocol and cholalic acid. An account of this work was published in the *Proceedings* of the Physiological Society (January 23rd, 1904). Further experiments were then made with the object of throwing some light on the chemical mechanism of the liver, and other organs generally. This part of the work was commenced in conjunction with Miss J. E. Lane Claypon, and some of the results already obtained will be published very shortly in the forthcoming number of the *Journal of Physiology*. It is unnecessary therefore to refer to these in greater detail here, but the following is a list of the various researches, some of which have been already commenced, which have been suggested by the results obtained. A. The autolysis of muscular tissue, tetanized and resting. B. The autolysis of secreting glands, active and resting. C. The autolysis of mucous membrane of the stomach, resting and during active digestion. D. The influence of various sera on the rate of autolysis. This part of the research will entail a large number of experiments. Of special interest is the determination of the relation of cytolytic sera to autolysis. This indicates, however, only one line of investigation which can be placed under this section. E. Experiments to determine the general mechanism of autolysis, and with special reference to the so-called latent period. It is also proposed, should time permit, to continue the work on the preparation of the bile acids. Preference will, however, be given to the work outlined above.

VISCOSITY OF THE BLOOD.

Mr. R. J. EWART has carried out a research on "The Viscosity of Blood, its Physics and Physiology," and the following is his preliminary report:

The experiments on which this brief summary is based were conducted in the Thompson-Yates Laboratories, University of Liverpool, under Professor Sherrington, F.R.S. The expenses were partly covered by a grant from the British Medical Association:—

The estimation of the viscosity of blood is one attended by some considerable difficulty, for the following reasons: Not only do the corpuscles, which apparently are an important factor, tend to settle in an experiment lasting any considerable period of time, and so altering the consistency of the fluid as a whole, but also they undergo chemical changes, becoming deoxidised; further than this we have the difficulty of coagulation to overcome; and lastly we have only extremely small quantities to deal with, in fact the conditions are such as to render accuracy in the physical sense an impossibility. The first point investigated was to find the constituent or constituents of the blood which gave it its viscosity and the part individually or collectively these constituents played. As fairly large quantities could be procured for this purpose, an apparatus was employed, designed by Professor Sherrington and modified by Mr. Ewart. The details need not be given. With this apparatus, the viscosities of saline solutions, and native albumins of various strengths were worked out—serum, plasma, and blood and saline individually and in mixtures of varying strength and temperature were also investigated. From the above data he was able to demonstrate that, amongst other factors, the viscosity depended chiefly upon (*a*) the proteids, (*b*) the corpuscles. At the temperature of the body, 36.4°C, human blood gave a viscosity of about 0.0243 cg. units, or about 3.3 times that of water at a corresponding temperature. Defibrinated pig's blood 0.0235 cg. Serum from a pig, 0·0126 cg., or 1.7 times that of water. This is considerably lower than a solution of egg albumin of corresponding strength; the latter giving under similar physical conditions a value equal to 0.049 cg.

The corpuscles are, however, a more important factor than the proteid strength, a circumstance which must have some considerable influence upon the circulation in all anaemias, for it would appear as if the increased rapidity of the circulation which necessarily follows a fall of viscosity compensates for the impoverished nature of the blood.

Pig's blood diluted with serum and saline respectively and the same with human blood (see Figs. 21 and 22 of Report) gives values varying from 0.0285 cg. to 0.0156 cg. Temperature also has a marked effect both on blood and serum. With serum there appears to be a fall, decreasing for each degree centigrade from 0° C. to 65° C.; from 65° onwards it rises with increasing rapidity until the coagulation point is reached (see Fig. 23). The same is shown by egg albumin. It appears, therefore, as if the coagulation of a proteid is not a sudden but a gradual physical change; if, however, a certain point is reached the change is of a permanent character. This fact throws some doubt on the separate existence of several varieties of serum-albumin as demonstrated by fractional heat coagulation. The temperature curve for defibrinated blood is a much steeper gradient than that for serum, showing that the corpuscles themselves undergo some physical change. The difference of viscosity for the usual variations of temperature met with (35° C. to 42° C. (pig's blood) being (0·0262 cg. and 0.0196 cg.) 0.0066 cg., or about one-fourth the normal viscosity. A quantity sufficient to ease off the heart considerably when working under very unfavourable circumstances; chloroform 1 in 800 does not appear to have any effect on this physico-chemical character. Leucocytes if in any quantity add considerably, even after being filtered through flannel, whilst purulent lymph some blocks a capillary if of a bore of less than 1 mm. in diameter.

In experimenting on changes of viscosity that occur in the living animal, he devised apparatus by means of which extremely small quantities could be manipulated, about 10 c.mm. being all that was required for an experiment. It consists of an automatic mechanism by means of which the fluid under examination can be oscillated through a capillary, the amplitude and time of oscillation being measured. In a second piece of apparatus the time of oscillation was constant, so that the amplitude then became a factor of viscosity. The actual description of this apparatus is given elsewhere. In all these estimations, as in the previous series, water under similar physical conditions was taken as a standard.

The Effect of Haemorrhage.—In these experiments, so as to avoid the effects of the anaesthetic, the animals were first anaesthetized with chloroform and ether and then decerebrated, the anaesthetic then being discontinued. The effect of withdrawal of blood from the circulation appears to have a uniform effect on that which remains, being always followed by an almost immediate fall in viscosity, and further, if the animal remains in good condition and the blood-pressure is well maintained, the fall of viscosity is a factor of the amount withdrawn; as a deduction from this it would appear as if the circulating volume of blood is a constant. The withdrawal of a quantity equal to one-tenth that circulating in the vessels causes a fall in a dog from 0.0289 cg. to 0.0261 cg., or a fall of 0.028 cg.:—Diluting pig's blood with one-tenth saline causes a fall from 0.0255 cg. to 0.0215 cg., being a fall of 0 040 cg, the inference is obvious. This simple observation may supply the *rationale* of bleeding, for it can easily be imagined that the lowering of the peripheral resistance under unfavourable conditions would benefit the circulation considerably.

Saline injection, on the other hand, appears to have very little permanent effect on this physical character, and even such temporary effect rapidly disappears. This transitory influence, however, is quite sufficient to vitiate any experiment that makes use of the injection of saline as a means of estimating the circulation time. If the blood pressure is falling, saline solution appears to remain for some period of time circulating in the vessels.

Injection of Blood.—These experiments did not give results which were very clear, owing to the fact that the injection was to a greater or less extent overshadowed by the withdrawal of quantities large enough for estimation and the almost inevitable loss that accompanies every surgical procedure. In one experiment, where the quantity injected was much larger than the quantity withdrawn, there was a marked rise in viscosity, specific gravity, and percentage of corpuscles. The rise was not maintained, as towards the end of the experiment they

began to fall again. It appears as if, even under these conditions, there is an attempt to maintain the circulating volume of blood; that this may be so is further borne out by the fact that the flow of lymph becomes increased. There does not appear to have been any destruction or physical alteration of the corpuscles, as the blood of similar animals was used.

Asphyxia.—If a small quantity of defibrinated blood is allowed to oscillate in a capillary, the "period of oscillation" is noticed to become gradually longer; as its colour gradually changes, this change appears to be due to the reduction of the haemoglobin. The period of oscillation of serum and serum containing haemoglobin remains constant. Arterial blood taken from his finger gave a lower viscosity than blood taken some five minutes after a tight ligature had been tied round the base. Blood taken from a cat before, during, and after temporary asphyxia gave similar results, the blood during asphyxia being more viscous than normal. If the animal is revived by artificial respiration it rapidly falls again. The rise appears to be due partly to reduction of the blood and also to more obscure changes in the blood as a whole, due probably to the disturbed state of the circulation. Blood taken directly from the right and left ventricles, its wall being pierced by a hypodermic needle, gave a higher value for the right side than the left ventricle. It appears as if the rise of blood pressure in asphyxia may be due to this physical change in the blood and not to constriction of the arterial system. Experiments were also performed with the object of observing how far the viscosity of blood influenced the conditions under which it could be thrown into vibration. The apparatus used was a modification of that devised by Professor Hill-Shaw to demonstrate "stream line motion." It consists of two sheets of plate glass fixed at any desired distance apart between which blood is driven, a stream line of saline being introduced in the course of the flow. A field of blood with a thin, well-defined, clear line consisting of saline, as no mixing takes place, is thus produced. If the motion becomes sinuous, or, if eddies are produced, the clear line of saline loses its definition.

The experiments are still incomplete.

Gases of the Blood.

Dr. E. A. Russell: The object of the research was to study the action of the heart with regard to its blood gas exchange under varying conditions.

For this purpose it was necessary to perfuse the heart artificially. Cats and dogs have been used.

The animal is anaesthetized and bled. All the veins entering the heart are ligatured, and a cannula is placed in the aorta on the cardiac side of a ligature round the arch. This cannula conveys the filtered defibrinated blood to the arch and to the coronary arteries. It is in communication with a glass receiver containing the blood, through which oxygen bubbles, any desired pressure being maintained by a mercury valve. The blood after passing through the cardiac muscle is conveyed by a cannula and tube from the pulmonary artery to a pump and thence back to the receiver. This perfusion method is that devised and published by Professor T. G. Brodie.

Considerable difficulties have been experienced owing to the toxicity of the defibrinated blood even to the heart of the same animal, and experiments are now being conducted with the view of overcoming this difficulty and of securing a uniform action of the heart over a period of time sufficient to allow of observations on the blood gases.

Metabolism.

Dr. M. S. Pembrey reports in reference to metabolism during fasting and feeding. A preliminary paper by Dr. Pembrey and Dr. Spriggs was given at the meeting of the Physiological Society at the Physiological Laboratory, London University, in July, 1903. Further experiments have been made and the paper is nearly ready for publication. The research upon the pathology of diabetes by Dr. Beddard, Dr. Pembrey, and Dr. Spriggs is in progress. A preliminary paper, "Observations on the Blood Gases in Diabetes," was published in the *Lancet*, May, 1903, and a communication, "Further Observations on the Blood Gases in Diabetes, with special reference to Diabetic Coma," was given at the meeting of the Pathological Society at Oxford in July, 1903. Communications by Dr. Beddard and Dr. Spriggs on "Metabolism in Diabetes" and the "Relation of Ammonia to Total Nitrogen in five cases of Diabetes" were given at the meetings of the Pathological Society at Oxford, 1903, and at Guy's Hospital, March, 1904.

Regulation of Temperature.—Further experiments have been made upon the regulation of temperature, especially in relation to muscular work.

Purin Bodies: Functions of Kidney.

Dr. Walker Hall's observations on the purin bodies of human faeces in health and disease have been continued, and some of the results have been published in the British Medical Journal, August 22nd, 1903, and in the *Journal of Pathology*, March, 1904. Experiments upon the decapsulation of the kidney after the production of artificial nephritis have been conducted, and a preliminary account of the results attained was published in the British Medical Journal, April 9th, 1904. Investigations are now in progress upon the action of some substances and toxins upon the endogenous formation of uric acid and its output in relation to the etiology of gout, and some of the results will be communicated at the next meeting of the Pathological Section of the British Medical Association. The regeneration of renal cells after decapsulation and after the production of degenerative nephritis are also being studied.

The Acquirement of Secondary Sexual Characters, indicating the Formation of an Internal Secretion by the Testicle.

Mr. S. G. Shattock and Mr. C. G. Seligmann report that the question they have investigated may be concisely stated as follows:

The most prominent and obvious function of the testicle is the formation of the sperm. Under normal circumstances this is discharged; it constitutes, that is to say, an external secretion.

In spermatogenesis the male attributes culminate. There is, however, another element in maleness, of a different kind, less essential, yet in many cases well-pronounced, namely, the acquirement of certain external characters which distinguish the male from the female in many groups of living forms.

That the development of such secondary characters is related to some function of the testicle appears from the results which follow castration when carried out before the advent of sexual maturity. On what, then, does the production of these characters depend?

The experiments consisted in ligation of the vasa deferentia in the young of certain forms in which the male exhibits marked secondary characters. The forms selected were a breed of sheep the male of which is furnished with long horns of which the female is quite destitute, and the common fowl. In the sheep castrated either no horns appeared externally, and on preparation the skull exhibited only two low osseous tubercles or horncores, or very diminutive horns were produced, and beneath them a slightly more prominent core than in the first case. In the ewe of the Herdwick breed there is no external trace of horn, nor does the prepared skull show any osseous core.

As contrasted with the results of castration, those of vasotomy are very striking. The horns attain their full size, and the skull its complete male characters, so that the head in no way differs from that of the normal or intact ram. Corresponding results were obtained in the fowl.

From the fact that in the young of the Herdwick sheep and fowl, occlusion of the vasa deferentia does not inhibit the full acquirement of secondary male characters, it is clear, in the first place, that the discharge of the sperm is not in any way the factor responsible for the production of the characters referred to.

This conclusion admits of being extended to mean that the production of secondary characters is not due to metabolic changes set up by a nervous reflex arising out of the mere physical function of the sexual mechanism. This is made still more forcible by the results of incomplete caponization in those cases where the grafts were found in situations far removed from the normal, and altogether disconnected from the nerve supply proper to the testicle in its natural position and connexions.

Such grafts, devoid as they are of any channels communicating externally, and consisting as they do of tubuli only, are virtually ductless glands, and the metabolic results arising from their function must, as in analogous cases elsewhere, be attributed to the elaboration of an internal secretion and its absorption into the general circulation.

Intraocular Pressure.

Mr. E. Erskine Henderson has investigated the influence of changes in the intraocular circulation on the intraocular pres-

sure. An investigation on accurate lines with exact measurements of both the intraocular pressure and the general blood pressure as a preliminary to a further investigation into the nature and amount of the intraocular fluid and the laws that govern its production has seemed to him necessary in view of the numerous inaccurate observations that have been recorded. The method he has adopted for the measurement of the intraocular pressure is similar to that employed by Bayliss and Hill for the intracranial pressure. In this method no movement of fluid is permitted, and a bubble of air serving as an indicator is kept at a given position by opposing a counter pressure equal to that which obtains in the interior of the eyeball. The pressure applied is measured by a manometer filled with normal salt solution, whose movements are traced on the drum by a piston recorder. The general blood pressure is recorded at the same time in the usual manner. The animals used were cats and dogs. Anaesthesia was induced by either the A.C.E. mixture or by ether; morphine was also administered. When the anaesthesia was constant the trachea was opened, and air charged with the anaesthetic in use was artificially administered. An injection of curare was subsequently administered.

The first effects investigated were those of a mechanical nature. The ligature of any large artery such as the abdominal aorta is followed by a marked rise of general blood pressure. The intraocular pressure shows a precisely similar passive rise. The same result follows stimulation of the splanchnics. Ligature of the carotid and vertebral on the opposite side also produces a rise, but of somewhat less extent. On ligature of both carotids and vertebrals, as the vaso-motor centre is now deprived of blood, a considerable rise of general blood pressure takes place, the intraocular pressure falls to only a millimetre or two of mercury. He next investigated the influence of nerves. The effect of stimulation of the sympathetic in the neck in both cats and dogs is to produce first a short, sharp rise of intraocular pressure followed by a long, slow fall. As the rise is produced in both animals after death it can be due to no vaso-motor effect, and is probably due to the contraction of the unstriped muscle in the orbit. The operative difficulties in isolating the fifth nerve proximal to the ganglion, and separating it from the brain, in order to avoid any rise of general blood pressure from stimulation of the dura mater, have caused many previous observers to make very inaccurate statements with regard to its vaso-motor effects. He found that when the operation was successfully performed no rise of general blood pressure followed stimulation of the distal end of the nerve. A rise of intraocular pressure was observed, which lasted the whole time of stimulation, and ceased at once when the stimulation stopped. It was observed that at the same time some movement of the nictitating membrane took place. To eliminate the effect of the sympathetic fibres running in the fifth nerve the superior cervical ganglion was removed under antiseptic precautions in three cats. After time for degeneration had been allowed it was found that stimulation of the fifth nerve no longer produced any effect on the intraocular pressure. The subject of the effect of drugs is not yet completed, but we have so far found that when small doses of adrenalin or nicotine are administered there is evidence of a local constricting mechanism, as the rise of blood pressure is not followed by the usual amount of rise in intraocular pressure, and in two cases even a slight fall in intraocular pressure has been observed. In one cat in whom the sympathetic had been allowed to degenerate after removal of the superior cervical ganglion the intraocular pressure followed the general blood pressure passively.

NEUROLOGY.

The Functions of the Cortex in the Anthropoids.

Professor C. S. Sherrington, F.R.S., reports in reference to the inquiry into the functions of the cortex of the brain in the anthropoid apes that the examination of the cortex of the anthropoid ape has been carried on by him as arranged in the current year by help of the sum kindly granted by the Committee of the Association, with the following results:

The localization already reported to the Committee and Association has been confirmed without any contradiction whatever in any of the new observations; it stands as in the figures already furnished and published in the Journal of the Association. Fresh instances have been accumulated of the influence of excitation of one area upon stimulation of another area in the same hemisphere. Observations on bilateral excitation are being prosecuted and extension of these observations seems very desirable, but the heavy expense of the material makes collection of observations slow. Endeavour to find lateral conjugate deviation of the eyeballs as a primary movement in the field of the ascending frontal convolution still fails. This movement seems confined to the area in the frontal region signalized by Dr. Beevor and Sir Victor Horsley, F.R.S., in their original work.

He has, with Dr. Grünbaum, obtained some interesting and perhaps practically important observations by means of localized application of cold and warmth to the cortex. These observations are still too incomplete to report in detail now, but it is hoped they will be sufficiently advanced to furnish the subject of a communication to the Section of Physiology at the Annual General Meeting of the Association in Oxford.

Effects of Section of Nerve Trunks.

Dr. Wilfred Harris reports on—1. Stimulation of the primary nerves of the brachial plexus in monkeys and cat, noting carefully the muscular contractions corresponding to the different roots. The results of these experiments were used in an article by Dr. Harris, and Mr. V. W. Low in the British Medical Journal of October 24th of last year. 2. Division of the fifth and sixth cervical nerves in the monkey on one side, and the sixth cervical nerve on the other; and studying the resulting paralysis. This showed conclusively that the brachial plexus of the monkey is considerably post-fixed compared to that of man, at any rate as regards the upper roots, since even after division of both the fifth and sixth roots in the monkey, the animal recovered very good power of abduction of the shoulder and of flexion of the elbow. In man, on the other hand, complete paralysis of the deltoid and biceps (Erb's palsy), ensues on destruction of the fifth cervical nerve. 3. Division of the external popliteal nerve in the monkey, and suture of the peripheral cut end into a nick cut in the internal popliteal, to observe how much recovery of dorsiflexion of the foot would take place. None was seen after five months, when it became necessary to kill the animal. 4. Division of the median, ulnar, and musculo-spiral nerves in three cats, and studying the anterior horn nuclei by Nissl's method subsequently. These results are as yet incomplete, and further experiments will be necessary before any definite statement can be made as to the relation of these nerves to particular spinal cell-groups.

Regeneration of Nerves.

Dr. Arthur Edmunds reports that the work has been carried out in conjunction with Drs. Mott and Halliburton. A preliminary notice of the results of the investigation has appeared in the *Proceedings* of the Physiological Society. An annotation on this paper has already been published in the British Medical Journal, May 21st, 1904. Stated as briefly as possible, the main result is that the old doctrine that in regeneration the essential part of the new nerve fibre grows from the central stump, in a peripheral direction, is confirmed. The work is still unfinished, but is being pursued.

Neuro-pathological Investigations in the Thompson Yates Laboratory.

Dr. Warrington reports on the work done in neuropathology in the Thompson-Yates Laboratory as follows:—1. A series of observations have been made in conjunction with Dr. F. Griffith, Alexander Fellow in the University, on the spinal ganglia. The object has been to consider if the different kinds of cells present in the ganglia could be related to the several different functional distributions of their axons. The animals used have been cats, and the specimens prepared by the intraventricular injection of Mann's fluid. In this way many flawless preparations have been obtained. The work of previous observers on the classification of cells of the normal cells have been studied and the main confirmed. Their pathological conditions have been studied after the following nerve lesions:—(1) Section of the great sciatic nerve; (2) section of the "hamstring" nerve, a nerve distributed entirely to muscle; (3) section of purely cutaneous nerves; (4) removal of stellate ganglion of the sympathetic; (5) section of the first and second dorsal nerves at a point just below the origin of the rami communicantes; (6) section of the first and second rami communicantes. A few additional observations and some numerical results still remain to be determined, but the workers hope to be able shortly to publish their results. 2. With Dr. Löwenthal a number of experiments were made on the caudate nucleus for the purpose of studying degenerations resulting from injury.

It was found very difficult to obtain perfectly-defined lesions, and the research has been temporarily abandoned. 3. Two papers have been published: Note on the ultimate fate of ventral cornual cells after section of a number of posterior roots.—*Journal of Physiology*, Nos. 5 and 6, 1904. Pneumococcal meningitis and records of the value of cytological examination in cases of meningitis.—*Review of Neurology and Psychiatry*, Feb., 1904. 4. The anatomy of the following cases of disease has been studied:—(*a*) Several cases of tumour cerebri, etc.; (*b*) complete transverse destruction of the cord (Dr. Kelly); (*c*) disseminated sclerosis (Dr. F. Griffith). It is hoped that some of these records will form part of a forthcoming number of the Thompson-Yates Laboratory reports. Dr. Warrington wishes to acknowledge with many thanks the assistance given by the Scientific Grants Committee.

CHEMIOTAXIS.

Dr. J. O. WAKELIN BARRATT (Research Scholar): An investigation upon chemiotaxis. The first part of his research on chemiotaxis consisted of an investigation the object of which was to discover if any modification of the staining and chemical reaction of the living protoplasm of paramoecium was produced by the acid and alkaline solutions to which these organisms were positively or negatively chemiotactic, since it might reasonably be supposed that if any such relation existed it would be likely to afford an insight into the nature of chemiotaxis towards acids and bases, which formed the ultimate aim of his research. This investigation has now been brought to a conclusion and an abstract of the work has been forwarded to the BRITISH MEDICAL JOURNAL, while the full paper, together with illustrations, will appear in the *Zeits. f. allg. Physiol.* The following is an outline of the line of investigation adopted. The staining reaction of normal paramoecia was first ascertained. As stain a solution of methylene-blue-eosin, a salt formed by the combination of the basic radicle of methylene-blue with the acid radicle of eosin, was employed. Since the protoplasm of paramoecia does not take on the purple colour of the dye, but, on the contrary, some of its constituents stain red (oxyphile granules) and others blue (basophile granules, nucleus), it follows that the resulting staining is of the nature of a chemical reaction between the cell-constituents and the dye, and that a purely physical process of dying, such as might conceivably occur if methylene-blue and eosin were applied in succession to the organisms, is thereby excluded. Tested in this way it was found that an essential difference exists between the staining reaction of the cell-protoplasm of living paramoecium and that of dead paramoecium, when both are exposed to the action of acids and alkalies. Briefly stated, the difference is the following:—When the dead protoplasm is acted upon by acids or alkalies of sufficient concentration, the alteration of staining reaction familiar to histologists when tissues in section are treated with acids and alkalies, consisting in an increased capacity for basic and acid staining respectively, is observed. When, however, living protoplasm is acted upon by acids and alkalies in such strength as is employed in experiments on chemiotaxis, and when in addition the action is arrested before death has actually occurred, it is then found that the cell-protoplasm reacts normally to the dye, no intensification of basophile reaction after exposure to the action of acids nor of oxyphile staining after exposure to alkalies being now recognizable. The action of acids and alkalies upon living protoplasm is therefore of a different order from that upon dead protoplasm. In the latter the haptophore side-groups, which determine the combination with the dye radicle of the stainable constituents of cell-protoplasm, are profoundly altered. In living protoplasm, on the other hand, although, as later investigation has revealed, acids and alkalies produce a specific effect, nevertheless the haptophore side-groups of the chromophile material of paramoecium remains as yet unaffected, the change in staining reaction occurring only at a later period, when a more prolonged action is exerted upon dead paramoecia by acids and alkalies. When paramoecia are acted upon by a constant current the action can similarly be shown to be slight in character, like that of acids and alkalies upon living protoplasm, no quantitative change of staining reaction occurring. Passing now to the chemical reaction of protoplosm, an attempt was made to ascertain if a change in reaction followed the exposure of paramoecia to acids and alkalies in such concentration as is employed in studying chemiotaxis. For this investigation indicators were employed, but owing to experimental difficulties connected with the employment of protoplasm, the same delicacy is not obtainable as when colourless liquids are tested. Although the method employed does not permit of acidity and alkalinity being determined with the same completeness which is possible when M^+ or OM^- ionization is investigated by physico-chemical methods, nevertheless it has been ascertained that, within the limits permitted by the method, no acid or alkaline reaction is imparted by acids or alkalies to living protoplasm, and an independent confirmation is thus afforded of the result of later investigation.

The next problem selected for investigation was the determination of the lethal concentration of a series of strong and weak acids and bases. In the course of this work several new relationships have been ascertained which throw new light upon the nature of the action of acids and alkalies upon living protoplasm. In particular the dependence of the lethal character of acids and bases upon chemical constitution and chemico-physical characters has received close attention. This work has been in part completed, but it has been thought preferable to defer its publication until the object with which this part of his research was undertaken, namely, to place the phenomena of chemiotaxis upon a quantitative basis, has been carried a step further, and several new inquiries of considerable interest which have presented themselves in the very large field for investigation which has been entered upon have been solved. When the work in hand has been completed it is to be expected that a conclusion as to the essential nature of chemiotaxis in respect of acids and alkalies will be reached. A further investigation into some of the physico-chemical characters of the medium in which the paramoecia, which have been almost exclusively used for experiment, are cultivated, in respect of the acid and alkaline solutions employed, has been rendered necessary by the results already obtained.

The research has been carried out at Göttingen in the physiological laboratory of Prof. Verworn and in the physical-chemical laboratory of Prof. Hernst, to both of whom his thanks are due for the facilities for research which have been afforded him and the very valuable assistance which has constantly been at his disposal.

In addition to the above a research upon the nature of the stimulation of nerve by galvanic current, which serves as a prelude to further work upon the chemical aspect of galvanotaxis and chemiotaxis, has been carried out by Prof. Hernst and himself, and has been communicated to the *Deutsche Bunsen Gesellschaft für angewandte physikalische Chemie* (*Hauptversammlung, Bonn*, 1904).

PATHOLOGY.

PNEUMOCOCCUS INFECTION.

Dr. R. MURRAY LESLIE reports in reference to his work on pneumococcus infection during the past year that his research has been divided into two parts.

1. An investigation into the inflammatory and other morbid conditions produced by the pneumococcus, in structures and viscera other than the pulmonary tissue, and an inquiry into the source and channels of pneumococcic infection.

2. An investigation into the degrees of virulence manifested by different strains of pneumococci, as obtained from various morbid lesions in the human subject.

He states that this research is only in its preliminary stage, and that he intends to devote another year to the further investigation of this interesting and important subject. He will therefore at this stage simply give a brief summary of the approximate results obtained up to date, which are necessarily incomplete. As regards the extrapulmonary lesions, he has had the opportunity of investigating a large number of cases of sero-fibrinous pleurisy and empyema. His observations have confirmed the generally-accepted view that the large proportion of empyemas in children are pneumococcic in origin, while a much smaller proportion of those in adults are due to the same organism. In pneumococcic empyemas in adults he has generally found either clinical or *post-mortem* evidence of preceding or intercurrent pneumonia, though this has not invariably been the case. In children, on the other hand, there was frequently no such evidence, the empyema being, not uncommonly, the only discoverable manifestation of the pneumococcic infection, though in children also there was often preceding or intercurrent croupous or catarrhal pneumonia. In searching for the pneumococcus he used the inoculation method in all doubtful cases in addition to cultivation on suitable media. Rabbits were in all cases employed as being extremely susceptible to pneumococcic infection. The routine method adopted was to inject about 1 c.cm. of the pus, either into the peritoneal cavity of the rabbit, or into the subcutaneous tissues of the

abdomen, which had previously been shaved and carefully disinfected. The needles were also boiled before use. If the pneumococcus was present in the exudate, the animal usually died within 18 to 48 hours in the case of the intraperitoneal inoculations, and in from one to several days when the pus was injected into the subcutaneous tissue. The blood from the rabbit's heart was then examined and was generally found crowded with encapsuled diplococci; cultures were also made from the blood, the medium employed being blood-agar prepared according to Dr. Washbourn's formula. It is generally possible to tell whether the pus obtained on exploration of the chest is pneumococcic or streptococcic in origin by the characteristic naked-eye appearances, which are quite different in the two varieties. In the case of pneumococcic empyemas the pus consists of a yellowish-grey fluid of uniform thin consistence throughout on immediate withdrawal, but on its being put into a test-tube and allowed to stand, it is found that the pus cells sink to the bottom of the glass, and within a very short time we have a greyish deposit of pus occupying from one-quarter to one-third of the whole, the upper two-thirds or three-quarters consisting of almost clear though slightly turbid supernatant fluid. This appearance stands out in marked contrast to that presented by streptococcic pus, which is of a uniformly thick, yellowish consistence throughout and does alter materially on standing. This auto-sedimentation is so characteristic of pneumococcic pus when obtained from the pleural or peritoneal cavities that, in the absence of facilities for accurate bacteriological examination, its presence may be taken as almost certainly indicative of the presence of pneumococci. The clinical value of this fact cannot be over-estimated, as the prognosis is so much more favourable in the pneumococcic variety of empyema. Some of the empyemas investigated were of a mixed bacteriological origin. In those cases where the empyema had ruptured into the lung, and in those where the pus had not been examined until 24 hours after death (as in those empyemas only discovered *post-mortem*) the presence of the accompanying streptococci or other organisms was probably often due to secondary invasion.

He has made a special study of a considerable number of cases of what might be called pneumococcic septicaemia, comparable in some measure to the condition met with in rabbits and mice after inoculation. He has had the opportunity, as pathologist to the Royal Hospital for Diseases of the Chest, of making necropsies in several such cases, and of afterwards cultivating the pneumococcus in the bacteriological laboratory of Guy's Hospital. Thus he had one case where clinically pneumonia of the left lung had been followed by pericarditis, and a few days later by pneumonia of the right lung, in which he found at the necropsy lobar consolidation, well-marked pericarditis, and endocarditis. In another case there was pneumonia, pericarditis, endocarditis, synovitis, and slight peritonitis, the blood also containing pneumococci. In yet another there was primary pericarditis and endocarditis, followed by pneumonia and meningitis. In yet another otitis media, cerebellar abscess and meningitis, with localized empyema. He likewise investigated several cases of primary pneumococcic peritonitis, meningitis, and pericarditis. From the effusions in all of these, the pneumococcus was readily cultivated and its virulence confirmed by inoculation into rabbits. These cases gave him the opportunity of arriving at one or two fairly definite conclusions regarding the source and channels of pneumococcic infection. His observations, supported by all the evidence he has collected, strongly support the view that the mouth and naso-pharynx are by far the most important sources of infection. The original discovery by Sternberg and Fraenkel of virulent pneumococci in the saliva and general secretions of the buccal mucous membrane of healthy persons has been confirmed by all recent observers who have investigated the subject. He is at present engaged in examining the secretions in the healthy mouth, nasal cavity, pharynx, tonsils, Eustachian tube, tracheal and bronchial mucous membranes, with a view to determining the particular sites most favoured by the pneumococci, and how far their growth may be checked by the use of local disinfectants. The commonest channel of infection in man seems undoubtedly to be the respiratory tract, thus accounting for the preponderance in the human subject of pneumonia and frequently also empyema. Another very common channel of infection appears to be the Eustachian tube, leading to otitis media with its cerebral complications. A large number of the cases of acute spinal meningitis are undoubtedly due to the pneumococcus, the source of infection being most probably the nasal mucous membrane. These conclusions he hopes to confirm by later investigations. Careful examination of the secretion from the tonsillar follicles so constantly reveals the presence of the pneumococcus that it seems probable that in some at least of the cases of general pneumococcic infection the tonsils are the source of infection. He recently investigated a case of acute tonsillitis, which a few days later was followed by well-marked lobar pneumonia and pleurisy with effusion. The fact that so many of the recorded cases of primary pneumococcic peritonitis occur in females suggests that the vagina may sometimes be the source of infection. He has not as yet had any opportunity of confirming this hypothesis nor of making any investigation into other possible channels of infection, such as the skin and alimentary canal, but hopes to do so in the course of the coming year. It is probable that in the large majority of cases of multiple lesions pointing to general blood infection there is some initial local lesion, though in many cases it is extremely difficult to trace the exact primary source of the infection.

With regard to the second part of his research, namely, an investigation into the degrees of virulence manifested by the pneumococcus, the number of cases examined has been much too limited to enable him to come to any definite conclusions regarding this subject, but at the same time has been quite sufficient to indicate that there is a remarkable difference in the pathogenicity of different strains of pneumococci. Many recent observers, including the late Dr. Washbourn, have shown that many pneumococci found in the saliva and on the surface of the buccal mucous membrane are largely saprophytic and have very little pathogenic power, though these are capable of acquiring virulence on passage through susceptible animals. It is possible that these saprophytic forms found so commonly on the surface of the buccal mucous membrane may, after penetration into and growth in the subepithelial tissues of the nasopharynx, trachea, bronchi, and bronchioles, acquire a certain degree of virulence, so rendering them capable of producing pathogenic results. It is comparatively easy to modify the virulence of the pneumococci by artificial methods. It has long been known that the saprophytic varieties can be grown within a fairly wide range of temperatures, while the pathogenic forms are readily destroyed by temperatures very little above or below the body temperature. The saprophytic forms are also much more resistant and can be readily grown on several media, which are useless as culture media for the pathogenic forms. He has found that the keeping of the pneumonic lung, pus, or other morbid product in an ice safe for a day or so seems to diminish the virulent properties of the pneumococci. The older the culture the less virulent are its properties, though the virulence can be readily restored by reinoculation into susceptible animals.

The few experiments he has conducted have been performed with pneumococci actually cultivated from the morbid products derived from pneumococcic lesions in the human subject. In some cases 1 c.cm. of the pus, lung-juice, or other morbid product was injected directly into the rabbits, in others a measured loop of a blood-agar culture after emulsification in 1 c.cm. of bouillon, and diluted one hundred-thousandth part, was used. If the injection in either case was done intraperitoneally, the animal died in from 18 to 48 hours, generally within 24 hours. If on the other hand the injection was made subcutaneously there were marked differences in the apparent toxic effects, the animal dying in periods varying from 1 or 2 days to as many as 7 or 10 days, while in a few instances the animal survived the process and completely recovered. Such experiments are open to the obvious fallacy that there was no constancy in the approximate amount of septic matter injected; though this objection did not apply to the measured loop inoculations. Still, the remarkable variations which do exist point strongly in favour of the view that there are marked differences in the actual virulence of pneumococci, though the clinical differences observed in the human subject and also in rabbits are no doubt partly due to varying degrees of resisting power on the part of the individual.

Further, he thought he was able to trace an ill-defined relationship between the clinical severity of the case in the human subject and the degree of virulence manifested in the animal submitted to inoculation. Thus, for instance, the strains derived from those septicaemic cases already alluded to, with multiplicity of lesions, almost invariably exhibited a high degree of virulence; while in a few cases of mild pneumonias and empyemas in children the virulence was only moderate. The cases, however, as already mentioned, were

far too few to come to any definite conclusion on this important subject.

The inoculated rabbits further showed marked variation in the amount of local reaction. In some of the animals there was practically no local reaction, while others exhibited large inflammatory swellings at the site of inoculation. Whether this fact denoted differences in the resisting power of different animals, or was due to different degrees of virulence on the part of the pneumococcus itself, it is at present impossible to say. The late Dr. Washbourn was of opinion that strains derived from cases of catarrhal pneumonia produced cellular inflammatory products, while those obtained from the sputum or lung juice of croupous pneumonia produced fibrinous products. His experiments tend on the whole to confirm this view. Here, too, there seemed to be some sort of relationship between the amount of local reaction and the length of time elapsing before the animal's death. On the whole, one feels inclined to state that the greater the local reaction, the longer as a rule will be the duration of the disease. There were also marked differences in the number of pneumococci found in the blood of the various rabbits after death. In most of the cases the blood swarmed with pneumococci, while in others there were extremely few. The longer the duration of the disease the fewer cocci were found in the blood. In one rabbit which had lived for a week after subcutaneous inoculation one or two pneumococci only could be discovered after a prolonged search. Examination of the blood and bone marrow of different rabbits further revealed considerable variation in the proportion of the several varieties of leucocytes. In some cases there was a considerable lymphocytosis and phagocytosis and not so in others. Thus in the bone marrow the oxyphile cells would in some instances show cocci within their protoplasm, while in others none could be seen after careful search. The question as to how far in the human subject the association of the pneumococcus with other organisms such as Loeffler's bacillus or the streptococcus pyogenes increases its pathogenic properties is one of the many interesting and important side-issues which I have not been able to investigate.

He wishes to express his indebtedness to Dr. Eyre, the Director of the Bacteriological Laboratories at Guy's Hospital, for his valuable assistance and guidance in this research, and states that all the experimental inoculations were performed in these laboratories by Dr. Eyre himself in his presence.

Bacteria of Human Alimentary Canal and their Relation to Inflammatory Processes.

Dr. John T. Hewetson reports as follows with regard to his research on the bacteria of the human alimentary canal and their relation to inflammatory processes: Thirty-two cases of catarrhal or relapsing appendicitis were carefully investigated, in order to determine what organisms were present within and without the appendix. Cultivations were taken from the inflammatory lymph in the vicinity of the appendix. When the appendix was removed cultivations were made from its interior. If a stenosis was present in any part of its length, cultivations were made from the distal chamber as well as from the proximal chamber. Aërobic and anaërobic cultivations were invariably made; from these sufficient subcultures were taken in order to separate and identify the organisms present. Thirty-four cases of suppurative appendicitis came under observation. The pus was taken from each case as it was being evacuated by the surgeon. Several films were made and stained by different methods. Two anaërobic cultivations and four aërobic cultivations were made in each case, from these subcultures were taken to separate and identify the organisms present. The organisms found upon the stained films of pus were carefully compared with those revealed by cultivation. The organisms found on the anaërobic cultures were similarly compared with those on aërobic cultures. Aërobic cultivations were always made of those organisms that grew on the first anaërobic cultures, and vice versa. When two or more organisms were found in the pus of a case of suppurative appendicitis cultivations were often made from the discharging sinus on successive days following operation to determine which organism most quickly died out. If the appendix was removed in cases of suppurative appendicitis it was opened, and from its interior cultivations were made. Many photographs were taken of the appendices in catarrhal or relapsing appendicitis, of the growths of various organisms on culture media, and many photomicrographs of the organisms as revealed in films of pus, and on culture media. Five cases of abdominal suppuration of doubtful origin were examined in a similar method to that just described in appendicitis. Cultivations were taken from several parts of the upper alimentary canal of twenty-four newly-slaughtered animals. Cultivations were taken from the human stomach on twenty-four different occasions, whilst that organ was being operated upon, for such conditions as cancer of the oesophagus, pyloric stenosis, atonic dilatation, hour-glass constriction, and malignant disease. In a similar way the human jejunum was examined on nineteen occasions during the operation of gastro-jejunostomy. Many of the organisms found were carefully photographed both in film and in culture. Human gastric juice was collected from two cases possessing a gastrostomy opening; this was used in order to test its antiseptic properties outside the body. He has also tested on his own stomach the rate at which organisms are killed after being passed into the stomach through a sterile stomach tube.

Similar observations have been made on gastrostomy patients. In three cases cultivations have been made from various parts of the human small intestine whilst this part of the gut has been opened during operation. In a similar way three cases in which wounds were made into the large intestine were bacteriologically examined. The colostrum of three newly-born children delivered by Caesarean section was examined to determine if it were sterile or not.

In seven cases of acute perforating gastric ulcer the contents of the peritoneal cavity and also the stomach contents have been examined.

Films were made of the peritoneal contents, and aërobic and anaërobic cultivations were taken from the peritoneum and if possible from the interior of the stomach. Similar examinations were made in two cases of acute perforation of duodenal ulcers. The pus from two cases of perigastric abscess associated with gastric ulcer was examined carefully, to determine the exact organisms present. In a similar way one case of abscess, due to a subacute perforation of an ulcer of the duodenum, was carefully investigated.

Cultivations have been made from the human biliary passages in sixteen cases, sometimes during an inflammatory attack, sometimes in a quiescent period, and sometimes when these passages were quite normal.

Human bile has been carefully collected from several cases, and has been used to determine if it had any antiseptic properties or not. Photographs of culture media and photomicrographs of organisms found have been carefully made. Brief notes have been taken of each case giving the chief points relative to history, symptoms, and physical signs.

As Research Scholar (six months) Dr. John T. Hewetson reports that he has investigated twelve cases of catarrhal or relapsing appendicitis. The organisms found within the appendix have been photographed in growth and in film. The pathogenicity of the organisms found was estimated by subcutaneous and intraperitoneal injection into animals. The pus of ten cases of suppurative appendicitis was examined by film and culture methods. Aërobic and anaërolic cultivations were made in each case. The pathogenicity of the organisms found was tested by subcutaneous and intraperitoneal injection into animals. The pus of one case of acute pancreatitis was examined; the pathogenicity of the organisms found was determined. On twelve occasions cultivations were taken from the human stomach whilst it was opened during the operation of gastro-jejunostomy. If organisms were found their pathogenicity was determined. On twelve occasions cultivations were taken from the human jejunum whilst it was open during the operation of gastro-jejunostomy. If organisms were found their pathogenicity was determined by intraperitoneal injection into animals. On four occasions the biliary passages were carefully examined for organisms. The pathogenicity of the organisms found was determined in the usual manner. In practically all the cases examined during his work as Research Scholar photographs of culture growths and photomicrographs of the organisms have been made. Much of his time during the last few months has been occupied in collecting and analysing his results up to date, so that it is almost ready for publication.

Pathology of Acute Rheumatism.

Dr. Ainley Walker reports that he has been engaged throughout the year in further work on the Pathology of Acute Rheumatism. In association with Mr. J. H. Ryffel he has investigated the acids produced by the micrococcus rheumaticus in culture media, and finds them to be acids of the fatty-acid series—chiefly, but not exclusively formic and acetic acid. From the urine of patients suffering from acute

rheumatism the same acids are obtained in pathological amounts. A short account of this work has been published in the British Medical Journal (September 19th, 1903).

Effects of Colouring Matters on Bacteria.

Work has also been carried on, partly in association with Mr. W. Murray, on the effect of certain colouring matters upon the growth and morphological characters of various bacteria, especially the bacillus typhosus. Interesting results have been obtained, and an account of the first part of the work was published in the British Medical Journal, July 2nd, 1904, p. 16.

Channels of Infection in Tuberculosis.

Dr. Jobson Horne (the Ernest Hart Memorial Research Scholar) reports that he has continued his investigations into the paths of infection in tuberculosis, and the factors, natural or acquired, which determine the results of infection. The regions mainly dealt with were the ear and the upper respiratory tract. A report of his research into tuberculosis of the ear was published in the British Medical Journal on July 11th, 1903. The results of the research into tuberculosis of the larynx and the upper respiratory tract he briefly referred to in a paper at the Swansea Meeting last year, when opening a discussion on "The Upper Respiratory Tract as a Source of Systematic Infection," which was subsequently published in the British Medical Journal. A detailed report is being prepared. Dr. Jobson Horne more recently has commenced a research into the etiology and pathology of cancer; the research is based upon a considerable amount of statistical and pathological material. A preliminary report shortly will be submitted dealing with the pathological aspect of the subject.

Strains of the Tubercle Bacillus.

Mr. Alexander G. R. Foulerton (with him Mr. Leslie Milburn, M.R.C.S.), have during the last two years been engaged in carrying out a series of experiments in order to ascertain whether any definite differences could be determined between the bacilli causing tuberculosis in different species of animals. A number of cases of tuberculosis in man and other of the higher animals have been submitted to investigation, and certain facts of more or less importance have been established. Their animal experiments will be completed in the course of the next eight weeks, and they hope to be able to publish their results in full in the course of the next three months.

The Pseudo-Diphtheria Bacillus.

Dr. R. T. Hewlett states that the aim of the work has been to attempt to find similarities or differences between the true diphtheria (Klebs-Loeffler) bacillus and the pseudo-diphtheria (Hofmann) bacillus in order to prove or disprove the view that the last-named is a modified non-virulent form of the former. The work has been pursued in several directions—(*a*) By passing through certain birds, attempts have been made to enhance the virulence of the pseudo-diphtheria bacillus, but no positive results have been obtained. The pseudo-bacillus when recently isolated is virulent for certain birds (*e.g.*, the chaffinch) but by continued cultivation on agar it loses its virulence even for the bird. (*b*) Experiments have been made to ascertain whether toxoids of the nature of diphtheria toxoids, are present in the pseudo-diphtheria toxin. No positive results have been obtained. (*c*) The diphtheria and pseudo-diphtheria toxins have been perfused through the excised mammalian heart. Neither had any action. (*d*) Experiments are in progress to transmute a virulent diphtheria bacillus into a pseudo-diphtheria bacillus. So far they have not succeeded.

Etiology of Carcinoma.

Dr. K. W. Monsarrat reports that researches regarding the etiology of carcinoma mammae have been continued throughout the year, and the results were communicated in full to the Committee in a paper which appeared in the Journal of January 23rd, 1904. This paper showed that an organism whose characters and life-cycle are fully described in the paper was isolated from seven cases of carcinoma mammae out of twelve investigated. The organism was used experimentally for inoculation into guinea-pigs, rabbits, and dogs. It gave rise to the formation of nodules in many organs whose histological characters resembled those which are looked upon as characteristic of carcinoma. The organism was demonstrated in the cells of these nodules, and it was shown that bodies of similar histological character could also be demonstrated in the cells of human carcinomata. The researches have been continued since the publication of this paper, but no new facts of importance have been added to those then described.

Toxic Action of Oxalates.

Dr. James Scott reports that the effects of different oxalates, when injected subcutaneously, seem to act as toxic substances and bring about an alteration in the metabolism and in the distribution of the different nitrogenous compounds. In one case death was caused. In one case suppuration followed. He hopes to forward shortly a full report for publication.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

BIRMINGHAM BRANCH:

Warwick and Leamington Division.

The annual meeting of this Division was held on June 25th at Selwood, Leamington, at the invitation of Dr. T. W. Thursfield.

Election of Officers.—The following officers were elected for the ensuing year:—*Chairman:* F. G. Gardner. *Vice-Chairman:* P. Hicks, M.D. *Honorary Secretary:* T. E. C. Cole, M.D. *Representative:* T. W. Thursfield, M.D. *Two Members of the Committee:* J. F. H. Ellerton, M.D., and R. Latimer Greene. *Two Members of the Branch Council:* T. W. Thursfield, M.D., and O. F. Wyer, M.D.

The Association and Medical Defence.—It was unanimously decided that medical defence should be undertaken by the Association of an optional character.

Medical Practitioners and Hydropathic Establishments.—It was also resolved that medical practitioners should not be advertised in connexion with hydropathic establishments.

Consultation between Medical Witnesses.—It was decided that medical witnesses engaged on either side in legal cases should not consult.

EDINBURGH BRANCH.

The annual meeting of this Branch was held in the Hall of the Royal College of Physicians, Queen Street, Edinburgh, on Friday, June 24th, Dr. Charles E. Underhill, the President, in the chair. There were present twenty-seven members, with the two Honorary Secretaries, Drs. Norman Walker and Logan Turner.

Confirmation of Minutes.—The minutes of the previous meeting were read and approved.

Representatives on Council of Association.—The result of the poll for the election of two members to represent the Edinburgh and Fife Branches upon the Central Council of the Association was then declared as follows: Dr. Norman Walker, 153 votes; Dr. M'Kenzie Johnston, 119 votes.

Election of Officers.—The following office-bearers were then elected for the ensuing year:—*President-Elect:* Dr. Allan Jamieson. *Vice-Presidents:* Dr. Blair and Dr. A. Ballantyne. *Treasurer:* Dr. James Ritchie. *Secretaries:* Drs. Norman Walker and Logan Turner.

Alteration of Rules.—The following proposed alterations in the rules were moved by Dr. Norman Walker: (*a*) Page 2, par. 3, to add the words

And of two members co-opted by the Council.

After discussion, Dr. Haddon moved, and Dr. Cullen seconded, as an amendment, that the rule be left as it stood. Four members voted for the amendment, and the motion was carried—(*b*) page 5, par. 7—to add the words

Each candidate for membership shall be proposed by two members of the Association to whom he is personally known.

After considerable discussion regarding the competency of the suggestion, the motion was carried. (*c*), page 5, par. 7. That the words "seven days" be substituted for the words "one month." After discussion, it was moved by Dr. Balfour and seconded by Dr. Ballantyne, that if the Association approved and accepted the change above proposed, the Branch should adopt it. This was carried by the meeting.

Financial Statement.—The Financial Statement was then read by Dr. James Ritchie, and accepted by the meeting.

Proposed Meeting Outside Edinburgh.—A proposal to hold a meeting of the Branch outside Edinburgh was submitted. After discussion, it was moved by Dr. Balfour and seconded by Dr. Hamilton:

That it be remitted to the Council to arrange for the holding of at least one scientific meeting outside Edinburgh.

The general feeling was that the annual meeting should be held in Edinburgh.

Other Competent Business.—Dr. KEPPIE PATERSON (N.E. Division) brought forward the two following items of business: (1) In order to increase the membership of the Association, the Edinburgh Branch be asked to consider the desirability of bringing the Association and its benefits before the doctors of the District who are not members. The general feeling of the meeting was that this was a matter for the Divisions and not for the Branch to take up. (2) The Division had under consideration the resolution adopted at the Representative Meeting at Swansea with reference to the insertion of the names of the medical staff of hospitals from time to time in the daily papers, and decided to draw the attention of the Branch to the desirability of carrying out this recommendation in this District. Dr. JAMES CARMICHAEL moved, and Dr. CORMACK SMITH seconded:

That this Branch approves of the action of the Committee of the Association and the Representative Meeting in Swansea in reference to publishing the names of members of hospital staffs in the local newspapers, and requests the Secretary to communicate this resolution to the staff of the Edinburgh hospitals, notifying the fact that the resolution does not apply to the notification of newly-appointed residents.

Dr. HAMILTON moved as an amendment, which was duly seconded:

That Dr. Carmichael's motion be postponed until the publication of the report of the British Medical Association's Hospitals Committee.

The amendment became the finding of the meeting by 15 votes to 4.

Poor-law Medical Relief.—The meeting approved of the following recommendation:

That the Branch approves of the recommendations contained in the report of the Departmental Committee appointed by the Local Government Board for Scotland to inquire into the system of Poor-law medical relief and into the rules and regulations for the management of poorhouses, dated March 17th, 1904, which apply to the duties and powers of medical officers and their tenure of office, and direct the Secretary to forward a copy of this motion to the Local Government Board.

Vote of Thanks to Retiring President.—On the recommendation of Dr. DEWAR the meeting accorded to Dr. Ballantyne a hearty vote of thanks on his retirement from the Presidency of the Branch.

NORTH-WEST EDINBURGH DIVISION.

THE annual meeting of the North-West (Edinburgh) Division was held in the Hall of the Royal College of Physicians, Edinburgh, on Tuesday, June 28th. Dr. JAMES RITCHIE, Chairman, presided.

Confirmation of Minutes.—The minutes of the previous meeting were read and approved of.

Election of Officers.—The following were elected office-bearers for the ensuing year:—*Chairman:* Mr. J. W. Hodsdon. *Vice-Chairman:* Dr. James Ritchie. *Honorary Secretary and Treasurer:* Dr. T. F. S. Caverhill. *Representatives of the Division to the Branch Council:* Mr. J. W. B. Hodsdon and Dr. Harvey Littlejohn. *Representative of the Division at Representative Meetings of the Association:* Mr. Hodsdon.

Annual Representative Meeting.—On the motion of Dr. WM. RUSSELL it was resolved that Mr. Hodsdon should be asked to exercise his own judgement on the various motions at the Annual Representative Meeting at Oxford.

Consultation between Medical Witnesses.—After some discussion as to the desirability of medical witnesses on both sides meeting in consultation before a case was called in court, it was agreed to pass on to the next business.

Medical Practitioners and Hydropathic Establishments.—On the motion of Dr. NORMAN WALKER, seconded by Dr. CAVERHILL, it was resolved to disapprove of the advertising of medical practitioners in connexion with hydropathic establishments.

The Association and Medical Defence.—In connexion with the question of medical defence, Dr. MACKENZIE JOHNSTONE moved and Dr. WM. RUSSELL seconded that owing to the small attendance of members it was not advisable to formulate any opinion on the subject.

Edinburgh Royal Infirmary.—A motion in regard to the regulations for admission to the out-patient department of the Royal Infirmary was delayed till an autumn meeting.

Addition to Rules.—It was unanimously resolved, on the motion of Dr. CAVERHILL, seconded by Dr. NORMAN WALKER, that the following be added to the rules of the Division:

Vacancies among Officers.—In the event of the death or resignation of any officer of the Division, or of his ceasing to be a member of the Division, the Executive Committee shall appoint some member of the Division to hold the office thereby vacated until the next annual meeting.

Vote of Thanks to Chairman.—After a vote of thanks to the Chairman the meeting was brought to a close.

METROPOLITAN COUNTIES BRANCH:

ANNUAL MEETING.

THE fifty-second annual meeting of the Branch was held at the Hotel Cecil on Tuesday, June 28th.

Report of Council, etc.—The reports of the out-going Council, the Treasurer, and the Divisions were received and adopted.

Election of Officers.—In the absence of other nominations the PRESIDENT announced the elections of the following officers for the ensuing year:—*President-elect:* Mr. Andrew Clark, to enter into office as President June, 1905; *Vice-President:* Mr. H. W. Kiallmark. *Treasurer:* Mr. H. Betham Robinson. *Honorary Secretaries:* Mr G. Rowell and Dr. F. J. Smith.

Members of Council.—The PRESIDENT announced the scrutineer's report of the result of the ballot for representatives on the Central Council as follows: Dr. Ford Anderson, 614 votes; Dr. Major Greenwood, 596; Dr. C. J. Morton, 510; Mr. Fothergill, 490; Mr. Andrew Clark, 442; Dr Radcliffe Crocker 423; Mr. Eastes, 355; Dr. Heron, 309; Mr. Betham Robinson, 300; Dr. Shuttleworth, 280; Dr. Hugh Woods, 172. The first five of these gentlemen were declared elected.

Introduction of New President.—The new PRESIDENT (Dr. Radcliffe Crocker) then took the chair, and after the usual votes of thanks to the retiring President, officers, and Council delivered a most interesting inaugural address.

Dinner.—Subsequently the members and their friends, 62 in number, dined together, and enjoyed some excellent music, under the direction of Mr. Wilhelm Ganz, which was kindly provided by the President.

EALING DIVISION.

THE annual meeting of this Division was held on June 16th, Mr. S. AIRD JOLLY (Acton) in the chair.

Election of Officers.—The following were elected officers for the ensuing year:—*Chairman:* F. E. Fenton, F.R.C.S.E. *Vice-Chairman:* W. A. Rudd, M.D. *Representative:* J. D. Windle, M.D. *Secretary:* R. P. Cockburn, M.D. *Executive Committee:* Mr. S. Aird Jolly, B. Boyd Joll, M.B., F. W. Lyle, M.D., Mr. E. J. Parrott, Mr. A. L. Scott, W. H. Walter, M.D. (In addition to the above *ex officio* members). *Representatives on Branch Council:* Mr. S. Aird Jolly, and Dr. R. P. Cockburn.

MIDLAND BRANCH:

BOSTON AND SPALDING DIVISION.

THE annual meeting of this Division was held on May 24th at the Red Lion Hotel, eight members and one visitor being present.

Confirmation of Minutes.—The minutes of the last meeting (held on April 26th) were read and confirmed.

Financial Report.—The financial report showed a balance of 13s. 1d.

Election of Officers.—*Vice-President of the Branch:* Dr. South. *Chairman:* Dr. W. H. Smith. *Vice-Chairman:* Dr. Moxham. *Representative on Branch Council:* Dr. Wilson. *Secretary and Treasurer:* Dr. Wilson. *Executive Committee:* Dr. Coleman, Dr. Galloway, Dr. Howes, Dr. Mason, Dr. Miller, Dr. Pilcher, Dr. Slocock, and Dr. Stack. *Representative at Representative Meetings:* Dr. Pilcher (this appointment has been confirmed by the Stamford Division).

Change of Rules.—It was agreeed to hold meetings once a quarter, and to leave to the Committee the arrangements of time and place.

Matters Referred to Divisions.—The questions had been previously discussed at the meeting held on April 26th. The conclusions arrived at after discussion are given under the several headings.

The Association and Medical Defence.—It was resolved:

That it would gain largely by the support of the Association, especially if the existing medical defence societies could be incorporated with it.

Consultation between Medical Witnesses.—After discussion a general wish was expressed to hear the opinion of legal men upon such procedure.

Medical Men and Hydropathic Establishments.—It was recognized how difficult it would be to influence the hydropathic authorities, and thought that the experience of medical men residing in the immediate neighbourhood of such institutions should be obtained, with any suggestions they had to make of a remedial nature. There was also a feeling that each case should be judged on its own merits.

Vote of Thanks to Chairman.—A vote of thanks to the Chairman for presiding closed the meeting.

Luncheon.—Nine gentlemen sat down to luncheon in the hotel afterwards.

SOUTH-EASTERN BRANCH:

Canterbury Division.

Temporary Filling up the Vacated Appointments.—It should have been stated in the report of the annual meeting of this Division, which was published in the Supplement to the British Medical Journal of July 2nd, p. 7, that the suggestion sent out recently with reference to vacated appointments being filled up temporarily by the Executive Committee was adopted by the Division.

Dover Division.

A meeting of this Division was held at the Royal Victoria Hospital, Dover, on March 24th, Dr. Parsons in the chair. Present: Drs. Robinson, Roberts, Koettlitz, Arkwright, Wood, Murphy, Ibbotson, R. Long, Ormsby, Howden, Menzies, and Larking (Representative at Annual Representative Meeting) and Osborn.

Medical Practitioners and Hydropathic Establishments.—The question of the advertising of medical practitioners in connexion with hydropathic establishments was discussed. Dr. Parsons said the question was, what could be done to prevent friction between local medical practitioners and the medical men attached to the hydropathic establishments?—Dr. Wood thought no complaint was made when the medical man attached to the hydropathy was not engaged also in general practice. After further discussion, Dr. Wood proposed:

That this Division disapproves of the advertisement of the name of any medical man in connexion with a hydropathic establishment excepting that of one resident medical officer.

—Dr. Robinson seconded this on the understanding that such resident medical officer's services were giving exclusively in the hydropathy. This was carried unanimously.

Consultation between Medical Witnesses.—The question "Whether it is advisable that the medical witnesses engaged on each side in legal cases should meet in consultation" was next discussed. Dr. Robinson suggested that in cases where there was a conflict of opinion the judge should be requested to appoint an expert as arbitrator.—Dr. Howden thought it would be to the advantage of the profession for the judge to appoint an expert, and moved:

That it is not advisable that the medical witnesses engaged on each side should meet in consultation.

—Dr. Murphy seconded this, and the motion was then carried.

The Association and Medical Defence.—The scheme of the Medical Defence Committee was next discussed. Dr. Parsons thought the time had not yet arrived for such a step to be taken. The Association as at present organized was only just getting into thorough working order, and, until the financial position had been stated and fully considered, such a step as taking up individual medical defence would be premature.—Dr. Wood proposed:

In the opinion of this Division it is not advisable for the Association to undertake the work of individual medical defence.

—Dr. Murphy seconded this proposal, which on being put to the vote was carried by 8 votes to 2.

Annual Meeting.

The annual meeting of the Division was held at the Royal Victoria Hospital, Dover, on June 29th; Dr. Parsons in the chair.

Election of Officers.—The following were elected officers for the ensuing year:—*Chairman:* C. Parsons, M.D. *Vice-Chairman:* M. K. Robinson, M.D., M.O.H. *Honorary Secretary and Treasurer:* F. A. Osborn. *Representative of Deal and Sandwich on Executive Committee:* L. Roberts. *Representative on Branch Council:* F. A. Osborn.

New Model Rule.—It was proposed by Dr. Ormsby, seconded by Dr. Wood, that this be adopted.

Communication from Exeter Division.—A communication from the Exeter Division was read, and the Secretary was asked to acknowledge the same.

Annual Representative Meeting.—As regards instructions to be given the Representative at the Annual Representative Meeting at Oxford, the Division was asked to consider the summary on page 198, vol. i, Supplement to the British Medical Journal for 1904. The representative was left free to act as regards the nomination of candidates for the General Medical Council and as regards the revised Medical Acts Amendment Bill.

Medical Men and Coroners.—Regarding information supplied to coroners Dr. Robinson proposed:

That this Division considers it is inexpedient for any medical man to contribute information to the coroner bearing on the cause of death without receiving an an adequate fee.

—Dr. Ormsby seconded, and this was carried unanimously.

Registration of Nurses.—Dr. Wood proposed that the consideration of the principles of registration be postponed to the next meeting, when he hoped a full discussion would take place.

Finances.—The accounts of the Division were presented to the Executive Committee and were duly passed.

SOUTH MIDLAND BRANCH.

The forty-ninth annual meeting of this Branch was held at Winslow, Bucks, on Thursday, June 16th, under the presidency of Dr. T. L. Kennish.

Luncheon.—Previous to the commencement of the meeting the President entertained the members at luncheon at the Bell Hotel. There were thirty-three members and two visitors present.

Confirmation of Minutes.—The minutes of the autumnal meeting were read and approved.

New Member.—One new member, Dr. Greenfield (Rushden) was declared elected by Branch Council.

School Certificates.—A letter was read from the Rugby practitioners, embodying the following resolutions:

1. That no medical certificate will be signed for the education authority without payment.
2. That no fee will be accepted from any parent who is summoned for the non-attendance of a child at school on account of illness.
3. That no medical man will attend the petty sessions in these cases without a subpoena.
4. That these resolutions be laid before the Rugby Division of the British Medical Association at their next meeting, with a request that the Branch bring the matter before the Parliamentary Committee with a view to the amendment of the Act of Parliament in this respect.

The document was signed by all the Rugby doctors. The subject was freely discussed, and Mr. Linnell proposed and Mr. Powell seconded:

That this meeting is of opinion that all school certificates required by poor children should be paid for by the School Attendance Committees, and hopes that no member will sign certificates at the expense of parents. That a copy of the foregoing resolution be sent to the county councils of Herts, Beds. Bucks, and Northants, and also to every practitioner residing within the Branch area, whether a member of the Association or not.

This was carried unanimously.

Capitation Grant to Divisions.—A letter from Dr. Savory (Bedford) concerning capitation grants to Divisions was referred to the Branch Council.

The late Dr. Newman, of Stamford.—It was proposed by Mr. C. J. Evans, seconded by Dr. Goldsmith, and carried:

That a letter of condolence be sent to the widow of the late Dr. Newman, of Stamford, a former President of the Branch.

Presidential Address.—Dr. Kennish chose for his subject the advances in medical science for the last twenty years, and delivered a most interesting address on Bacteriology, Immunity, Haematology, Organic Extracts, Treatment by *X* Rays, Finsen Light, Radium, etc.—Mr. G. H. Percival proposed a vote of thanks to the President for his very able address. Dr. P. L. Benson seconded, and this was carried unanimously.

Communications.—Mr. Whitlocke (Oxford) spoke in some detail on four cases of ectopic gestation which he had treated by operation. The diagnosis was often extremely difficult, it being important to exclude gastric and intestinal conditions. The speaker laid special stress on the presence of some vaginal discharge and tenderness in the hypogastrium, together with the history of the patient. There was also frequently retention of urine in these cases.—Mr. Savory (Bedford) read notes of a case of benign papilloma of renal pelvis which had made its way into the pleural cavity and caused a large haemothorax. The kidney, which was about 9 in. long, was excised, and the patient made a good recovery. The specimen was shown, together with a plate showing the microscopical appearances.

Afternoon tea provided by the President terminated the programme of a most successful meeting.

SOUTHERN BRANCH:

Southampton Division.

The annual meeting of this Division was held on June 22nd at Southampton.

Election of Officers.—The following officers were elected for

the ensuing year:—*Chairman:* Dr. Chinery. *Vice-Chairman:* Dr. Gwillim. *Secretary:* Dr. Wade. *Representative at the Annual Representative Meeting* (with Jersey and Guernsey): Dr. Mackeith. *Representative on Branch Council:* Drs. Purvis and Weston and Colonel McLeod. *Members of Executive Committee:* Drs. Buckell, Simmons, Bullar, Shettle, and Norman Aldridge.

Vote of Thanks to Retiring Chairman.—The CHAIRMAN proposed a hearty vote of thanks to the out-going Chairman, Colonel McLeod, for his very efficient services during his year of office. This was carried unanimously.

Annual Report.—The annual report was read and received.

New Rules.—Two new rules were adopted.

Chairman's Address.—Colonel McLEOD gave an interesting address on sleeping sickness.

GLOUCESTERSHIRE BRANCH.

THE annual meeting of this Branch was held on May 26th at the Stroud Hospital, the PRESIDENT (Dr. Storry) in the chair. There were about forty members present.

Election of Officers.—Mr. C. Firmin Cuthbert, of Gloucester, was elected President for the ensuing year, and Mr. W. R. Buckell and Dr. Pruen were appointed to the Branch Council in the room of Dr. Fowler and Mr. G. A. Cardew resigned.

Paper.—Dr. DUNCAN, of Middlesex Hospital, read a paper on Uterine Haemorrhage, its Causes and Treatment. Messrs. STORRY, HOWELL, BUCKELL, LOMAX, CUTHBERT, and BOWER, and Drs. FERGUSON and PRUEN took part in the discussion.

Supper.—Thirty-three members afterwards sat down to supper at the Stroud Club.

The meeting was in every way a success, and Dr. Storry is to be congratulated on so successful a termination to a successful session.

STAFFORDSHIRE BRANCH.

THE thirty-first annual meeting of this Branch was held at Wolverhampton on June 16th. Seventeen members were present.

Introduction of New President.—The chair was taken by the retiring President, Mr. F. MILNES BLUMER, who then introduced as his successor Dr. E. DEANESLY, and retired from the chair.

Report of Council and Financial Statement.—The report of the Council was adopted, as was also the financial statement, showing a balance on March 3rd of £18 7s. 6d.

The Annual Meeting.—It was decided to hold the next annual meeting at Stoke-upon-Trent.

Election of Officers.—The following were elected officers for the ensuing year:—*President-elect:* Dr. G. S. Hatton. *Secretary:* Dr. Petgrave Johnson. *Treasurer:* Mr. J. Clare. *Representative on the Central Council:* Mr. W. D. Spanton.

Time Limit for Papers.—The following additions to Rule XI was adopted:

> The time allowed for the reading of a paper on the opening of a discussion shall be limited to twenty minutes. Subsequent speakers shall be limited to seven minutes.

President's Address.—The PRESIDENT then delivered his address.

YORKSHIRE BRANCH:

WAKEFIELD AND DONCASTER DIVISION.

THE annual meeting of this Division was held in the Board Room of the Infirmary, Doncaster, on Thursday, June 23rd, Dr. STANGER (Wakefield) in the chair. There were present Dr. Arbuckle (Thorne) and Drs. Clarke, Willey, and McLean of Doncaster.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed and signed.

The Filling of Vacancies among Officials.—It was resolved that the rule suggested by the Medical Secretary pertaining to the filling up of vacancies in the officials be adopted and added to the general rules.

Election of Officers.—The following officers were elected for the year:—*President:* H. J. Clarke, M.D., Doncaster. *Vice-President:* J. F. Horne, M.D., Barnsley. *Honorary Secretary:* C. J. R. McLean, M.D., Doncaster. *Executive Committee:* R. Blair, M.D., Goole; G. E. Coleman, Hemsworth; T. Percival, Knottingley; E. W. Selby, M.D., Doncaster; W. A. Statter, Wakefield; W. Stanger, M.B., Wakefield; H. W. Arbuckle, M.D., Thorne. *Representatives to Branch Council:* Drs. H. J. Clarke and J. F. Horne. *Representative to Annual Meeting:* Dr. C. J. R. McLean.

SEVENTY-SECOND ANNUAL MEETING

OF THE

British Medical Association.

OXFORD, 1904.

THE seventy-second annual meeting of the British Medical Association will be held at Oxford on Tuesday, Wednesday, Thursday, and Friday, July 26th, 27th, 28th, and 29th, 1904.

President: THOMAS DRYSLWYN GRIFFITHS, M.D.Lond., M.R.C.S., Swansea.

President-elect: WILLIAM COLLIER, M.D., F.R.C.P.Lond., Physician, Radcliffe Infirmary, Oxford, and Litchfield Lecturer in Medicine, University of Oxford.

Chairman of Representative Meetings: Sir VICTOR HORSLEY, F.R.S., Surgeon, University College Hospital; and Surgeon, National Hospital for the Paralysed and Epileptic, London.

Chairman of Council: ANDREW CLARK, F.R.C.S., Surgeon to the Middlesex Hospital and Lecturer on the Principles and Practice of Surgery.

Treasurer: EDWARD MARKHAM SKERRITT, M.D., F.R.C.P. Lond.; Senior Physician to the Bristol General Hospital; Professor of Medicine, University College, Bristol.

The Reception Room will be arranged in the Examination Schools, High Street.

The General and Representative Meetings will also be held in these Schools.

The general Addresses will be delivered in the Sheldonian Theatre.

An Address in Medicine will be delivered by Sir WILLIAM SELBY CHURCH, Bart., K.C.B., M.D.

An Address in Surgery will be delivered by Sir WILLIAM MACEWEN, M.D., F.R.C.S., LL.D.

A popular lecture will be delivered by Dr. G. BAGOT FERGUSON, F.R.C.S., M.Ch.Oxon., who was President of the British Medical Association when the annual meeting was held in Cheltenham in 1901. The lecture will be given in the Town Hall on Thursday evening, July 28th.

SECTIONS.

The annual meeting this year will comprise 14 Sections as shown in the subjoined list. Except where otherwise stated each Section will meet on Wednesday, July 27th, Thursday, July 28th, and Friday, July 29th, at 10 a.m. on each day and will adjourn at 1 p.m.

The president, vice-president and secretaries of each Section constitute a committee of reference for that Section.

No paper must exceed 15 minutes in reading, and no subsequent speech must exceed 10 minutes.

The text of papers submitted for publication in the BRITISH MEDICAL JOURNAL as part of the report of the Section should represent what is actually read in the Section.

Each author should hand the text of his paper in proper form for publication to one of the honorary secretaries of the Section immediately it has been read, or at the latest at the end of the day's meeting of the Section.

Papers read are the property of the British Medical Association and cannot be published elsewhere than in the BRITISH MEDICAL JOURNAL without special permission. Papers cannot be taken as read. If not read they form no part of the proceedings of the Section.

In response to a desire expressed by many members an attempt has been made to publish abstracts of papers introducing the special discussions in the several Sections at an earlier date than usual. A certain number appeared in the SUPPLEMENT dated June 11th, and references to them will be duly found hereinunder. Such other abstracts as have been since received are now published under the Sections to which they respectively belong.

The Sections will be housed in rooms in the University Museum, with the exception of the Sections of Ophthalmology and Dental Surgery, which will be held in Keble College.

Section of Medicine.

*Large Lecture Room in Museum.**

President: Walter Tyrrell Brooks, M.B., Oxford. *Vice-Presidents:* Patrick John Cremen, M.D., Cork; Theodore Dyke Acland, M.D., London; Gustave Schorstein, M.B., London. *Honorary Secretaries:* Ashley Watson Mackintosh, M.D., 9, Bonaccord Square, Aberdeen; William Cecil Bosanquet, M.D., 117a, Harley Street, W.; William Arthur Pernow Waters, M.B., 99, Holywell, Oxford.

The Committee of Reference for this Section has chosen the following subjects for discussion:

A. The Treatment of Tuberculous Pleural Effusion and Pneumothorax.
B. The Serum Treatment of Disease.
C. The Treatment of Chronic Renal Disease.
D. The Maternal Heart in Pregnancy and the Management of Pregnancy Complicated by Heart Disease.

Discussion A. will be introduced by Professor W. Osler, F.R.S., Professor of Medicine in the Johns Hopkins University, Baltimore. He will be followed by Sir W. Whitla, Professor Finlay, Dr. J. Mitchell Bruce, Dr. A. James, Dr. G. A. Gibson, Dr. Philip, Mr. Stanley Boyd, Dr. J. J. Perkins, and Dr. N. Raw.

Discussion B. will be introduced by Dr. E. W. Goodall, Medical Superintendent of the Eastern Hospital, N.E., a synopsis of whose remarks will be found at page 169 of the Supplement dated June 11th. He will be followed by Professor G. Sims Woodhead, Dr. F. F. Caiger, Dr. C. J. Martin, F.R.S., Dr. A. E. Wright, Mr. Cantlie, and Dr. W. Bulloch. This discussion will be held conjointly with the Section of Pathlogy.

Discussion C. will be introduced by Dr. W. Hale White, Physician to Guy's Hospital, in a paper based on the following lines:

For the purpose of confining the discussion within requisite limits chronic renal disease will be taken to mean chronic Bright's disease, and no other chronic renal conditions will be alluded to in the opening remarks. It will be pointed out that there is as yet no sure knowledge of the pathology of the condition, and that therefore it is only possible to treat symptoms or to treat the disease in accordance with theoretical views. As for the treatment of symptoms, it will be suggested that the treatment of albuminuria in itself is unsound and that the mere passage of albumen through the kidneys probably matters but little. The symptoms connected with the circulation will be next discussed and the view advanced that treatment should be directed to keeping the tension of the arteries as near as possible to that of health. The next symptom discussed is that of oedema, and the various means of dealing with this will be mentioned.

The theoretical part of the subject will be divided into two: First, the discussion of what substances should be withheld in virtue of a belief that they irritate the kidneys; secondly, the means of attempting to deal with the poisoning which is supposed to be the cause of uraemia.

In the first division drugs believed to be harmful to diseased kidneys will be mentioned. The action of alcohol and various articles of diet will also come in for discussion, including tea, coffee, and tobacco, and the amount of water that it is desirable for these patients to drink.

As regards the poisons supposed to cause uraemia, it will be pointed out that there is no evidence whatever that they are derived from food, and that they are probably formed within the body.

In view of the existing ignorance of the nature of the poisons and of any antidote to them, the only treatment that can be discussed is that directed to helping their elimination by other channels than the kidney.

Other symptoms of uraemia will be shortly discussed, and brief mention made of the surgical treatment of chronic Bright's disease.

Dr. Hale White will be followed by Professor v. Noorden, Sir John William Moore, Sir W. Whitla, Dr. Goodhart, Dr. Byrom Bramwell, Professor R. Saundby, Dr. J. Finlayson, Dr. Samuel West, and Dr. J. Rose Bradford, F.R.S.

Discussion D. will be introduced by Dr. J. Mackenzie, of Burnley, and by Dr. H. O. Nicholson, of Edinburgh.

Dr. H. O. Nicholson in his part of the paper will consider the following points:

1. The blood pressure during normal pregnancy.
2. The conditions which lead to hypertrophy of the heart during pregnancy.
3. The state of tone of the arteries and arterioles, as observed (*a*) in primiparous women; and (*b*) in multiparous women during normal pregnancy; and when pregnancy is complicated by disease of the heart.
4. General principles of treatment: (*a*) medicinal, and (*b*) obstetrical, of cases of pregnancy complicated by cardiac disease.

The nature of Dr. Mackenzie's contribution will be gathered from the following abstract: The results of an inquiry into the changes in the circulation during pregnancy in healthy subjects are succintly alluded to. These changes give an insight into the reason for the grave effects of pregnancy in certain forms of valvular disease, and may be summarized as an impairment of the left ventricle and a distinct tendency to engorgement of the right side of the heart. Where these symptoms are already present in valvular disease the pregnant state aggravates the condition and thus induces the danger. The question then arises, What are those conditions that would justify the medical adviser in forbidding pregnancy, or in interfering if conception has already taken place or in permitting the pregnancy to pursue its normal course?

To arrive at a safe conclusion an analysis of the patient's symptoms has then to be made and the diagnostic significance of certain features in the circulation appreciated. Any evidence of distinct failure of compensation at once decides the danger of conception, but the difficulty arises when the patient is in fair health with only a limited impairment of heart energy. Here the diagnostic significance of certain symptoms help greatly in arriving at a decision, and certain of these points are discussed, such as the position and nature of the clinical apex beat, whether it is due to the left ventricle or the right, the significance of a loud systolic mitral murmur, and more particularly the nature of the murmur in mitral stenosis. As mitral stenosis is the condition that gives rise to the greatest trouble certain symptoms are considered in detail, and the significance of the murmur, whether presystolic alone, presystolic and diastolic, or diastolic alone, is duly discussed. As in mitral stenosis the orifice has a tendency to become narrower, the embarrassment of the auricles increases, till they become gradually over-distended, and are thereby paralysed. The recognition of auricular paralysis forms an important factor in prognosis in regard to pregnancy. Its recognition may be assumed from three circumstances—first, the occurrence of a diastolic murmur without a presystolic murmur of the crescendo type; secondly, the occurrence of continuous irregularity of the pulse; and, thirdly, the alteration of the jugular pulse from one where it is produced mainly by the auricle to one where there is only one wave synchronous with and due to the right ventricle. As this means that the rhythm of the heart no longer passes from the auricle to the ventricle, proofs are adduced in demonstration of the fact that the ventricle can start and maintain its independent activity. The recognition of this condition should be a bar to further pregnancies; and if conception has taken place, it should be an indication in the interest of the mother to prevent the pregnancy going to full term.

As this inquiry has resulted in the observation of several hitherto unrecognized symptoms, a brief allusion will be made to the individual functions of the heart muscle as described by Gaskell and Engelmann and to certain symptoms produced by affections of these functions, and more particularly to disturbances of the conducting power of the heart muscle fibres.

The time remaining after the discussions will be devoted to the reading of such papers as may have been selected by the Committee of Reference.

Section of Surgery.

*Clarendon Laboratory.**

President: Horatio Percy Symonds, F.R.C.S Edin., Oxford. *Vice-Presidents:* William Bruce Clarke, F.R.C.S., London; Richard Hy. Anglin Whitelocke, F.R.C.S., Oxford; William Frederick Brook, F.R.C.S., Swansea. *Honorary Secretaries:* Herbert Edward Counsell, F.R.C.S., 27, Banbury Road, Oxford; David Wallace, C.M.G., F.R.C.S.Edin., 11, Rutland Street, Edinburgh.

Special discussions have been arranged to take place on the two following subjects:

A. The Present Aspects of Asepsis and Antisepsis.

* The rooms marked with an asterisk can be darkened and lantern used.

B. THE INDICATIONS FOR AND METHODS OF PERFORMING HYSTERECTOMY.

Discussion A. will be introduced by Professor WATSON CHEYNE, who will deal with the following points:

1. The sources of septic infection, with special reference to the skin, the instruments, the air, etc.

2. The methods of opposing septic infection, the relative value of the various forms of heat and of various disinfectants, and their applicability for the purpose required. It will be pointed out that, while heat, wherever applicable, is no doubt the most certain disinfectant, still certain points cannot be satisfactorily dealt with without the use of chemicals.

3. The question of drainage, various forms of drains, all kinds of dressings, etc., will also be referred to.

Discussion B. will be introduced by Professor BLAND-SUTTON, a synopsis of whose remarks will be found on page 169 of the SUPPLEMENT, dated June 11th.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

*Lecture Room, Morphological Department.**

President: FRANCIS HY. CHAMPNEYS, M.D., London. *Vice-Presidents:* Sir ALAN REEVE MANBY, M.V.O., M.D., East Rudham; THOMAS BABINGTON GRIMSDALE, M.B., Liverpool; JOHN CAMPBELL, M.D., Belfast. *Honorary Secretaries:* FRANK GRÉGOIRE PROUDFOOT, M.D., 43, St. Giles, Oxford; JOHN SHIELDS FAIRBAIRN, M.B., 60, Wimpole Street, W.

Special discussions have been arranged to take place on the two following subjects:

A. THE TREATMENT OF ACCIDENTAL HAEMORRHAGE.

B. THE SO-CALLED OVARIAN PAIN: ITS CAUSES AND TREATMENT.

Discussion A. will be introduced by Sir A. V. MACAN.

Discussion B. will be introduced by Dr. HERMAN in a paper of which the following is an abstract:

Women commonly complain of persistent pain referred to a spot about 2 in. internal to the anterior superior iliac spine. It is often spoken of as "ovarian" pain, and evidence of it may be elicited by deep pressure over this point; it has been thought by many that this was because pressure was made upon the ovary, and attempt has often been made to cure such pain and tenderness by surgically treating the ovary. The nature of this pain and the results of treatment are discussed.

The subject divides itself into three: The pain, the changes in the ovary supposed to produce it, and the results of treatment.

The so-called "ovarian" pain may be one of four kinds:

1. *Peritoneal Pain.*—As no one questions that pelvic peritonitis causes pain, this is outside the discussion.

2. *Reflected pain* from visceral disease. The zone of integument in which "ovarian" pain is felt is supplied with sensory nerves from the tenth dorsal segment of the spinal cord. This segment provides the nervous supply of the ovary and other organs. Reflected pain and tenderness over the whole of this zone, or over certain specially sensitive spots in it, may be produced by disease of the ovary. But it may also be produced by disease of the bowel, liver, gall bladder, kidney, ureter, uterus, or Fallopian tube. When produced by disease of the ovary, it is pain and tenderness of the skin, not of the ovary. There are causes not associated with signs of diseases which may bring about this pain.

3. *Neurasthenic Pain.*—When from any cause the resistance of the higher nervous centres is weakened, pain from slight local causes may become aggravated and extended, or pain may be felt in certain sensitive areas without local disease. Among the causes which thus break down resistance are (*a*) anaemia, (*b*) cachexia, (*c*) fever, (*d*) menstruation. The most frequent cause in the cases which come to the gynaecologist is neurasthenia.

4. *Hysterical Pain.*—This kind of pain is not limited to anatomical boundaries. It is associated with certain hysterical stigmata.

Apart from peritonitis, two conditions of the ovary have been stated to be causes of chronic pain: (1) sclero-cystic disease; (2) cirrhosis.

Sclero-cystic disease is common with uterine fibroids; and in such cases usually causes no pain. Ovarian cysts are usually painless.

Cirrhosis of the ovary resembles the changes which normally take place in the ovary as a result of age, and then do not cause pain. The diseases to which cirrhosis of the ovary is allied are not painful diseases. So long as it was studied by morbid anatomists, cirrhosis of the ovary was never thought to be a disease; its pathological nature was not discovered till abdominal section came to be performed for pain.

The author can find no good evidence that sclero-cystic disease of the ovaries is painful, or that cirrhosis of the ovary is either painful or morbid. The so-called chronic "ovarian" pain is either a reflected pain due to some cause other than the state of the ovary, or depends upon neurasthenia, or is a manifestation of hysteria.

1. The treatment of reflected pain is the removal of its cause.

2. The treatment required for neurasthenia is rest, food, and sleep. Hospital treatment before and after an operation usually implies these requisites, and therefore neurasthenic patients treated by an operation usually experience great temporary benefit. But if they go back to the mode of life which produced neurasthenia they invariably relapse.

3. The treatment of hysteria is by suggestion and moral treatment. An operation is a very powerful means of suggestion; and the moral influence of trained nurses on hysterical subjects is usually good. For these reasons the immediate results of operations for hysterical pain are often brilliant. But unless the moral treatment is continued, fresh manifestations of hysteria will certainly develop.

SECTION OF STATE MEDICINE.

*Geology Lecture Room.**

President: JOHN SCOTT HALDANE, M.D., F.R.S., Oxford. *Vice-Presidents:* Sir THOMAS STEVENSON, M.D., London; INNES GRIFFIN, M.R.C.S., Banbury; ARTHUR NEWSHOLME, M.D., Brighton. *Honorary Secretary:* HAROLD MEREDITH RICHARDS, M.D., Town Hall, Croydon; ARTHUR LATHAM ORMEROD, M.D., Oxford.

The following subjects have been selected for special discussion:

A. STANDARDS OF VENTILATION.

B. THE CONTROL OF THE MILK SUPPLY.

C. POVERTY AND PUBLIC HEALTH.

Discussion A. will be introduced by the PRESIDENT and by Dr. M. H. GORDON. The former will briefly review the evidence as to the effect on health of the more common impurities or abnormalities in the air of confined spaces, gaseous impurities, vapours, micro-organisms, other particulate impurities, temperature, and stagnation of air. He will also discuss existing and proposed standard requirements as regards ventilation, with more special reference to factories, schools, and sleeping rooms; also the requirements to be made in respect of (1) quantity of air supplied; (2) air space; (3) proportion of permissible CO_2; (4) number of micro-organisms; (5) temperature.

Discussion B. will be introduced by Dr. G. NEWMAN, a brief summary of whose remarks will be found on p. 170 of the SUPPLEMENT dated June 11th.

Discussion C. will be introduced by Mr. T. P. WHITTAKER, M.P., in a paper on Alcohol, and by Mrs. HELEN BOSANQUET in a paper on Pauperization. The following is an abstract of Mr. Whittaker's paper:

The bearing of alcohol upon poverty and public health is very close. The annual outlay is a heavy burden on the nation. For the great mass of the people it is an expenditure incurred at the cost of inability to provide much that is essential to health and to wage earning, efficiency, and well-being.

The expenditure on drink in the United Kingdom is about £180,000,000 a year. In England and Wales it is about £150,000,000, which represents an annual average outlay of about £18 per family for the non-abstaining working classes and those who have working-class incomes, and about £46 per family for the other non-abstaining classes.

People with working-class incomes cannot afford such an expenditure as £18 a year on drink. It represents about one-seventh of their income. A prudent expenditure in other directions of that one-seventh would make an enormous difference.

Many of the problems of public health, especially amongst the working and less well-to-do classes, resolve themselves into questions of cash. People are usually badly housed, overcrowded, and insufficiently and unhealthily fed, and children and delicate adults are not satisfactorily cared for because the money required to enable them to provide what is necessary is not available.

The result is misery, weakness, incapacity, disease, and innumerable social difficulties, culminating in a terribly high death-rate, especially amongst children.

Social problems are complex, and causes and results act and react. Poverty, weakness, and degradation tend to create and perpetuate the conditions which cause them. No doubt poverty, overcrowding, and insanitary conditions tend to promote drinking, but it is also true that a very large proportion of the poverty, overcrowding, and residence amongst those insanitary conditions is due to drinking. Drinking is far more the cause of poverty than poverty is the cause of drinking. The largest consumption of drink is not amongst the very poorest. Many of the poor are where they are because of the drinking of themselves and others; but when they have sunk into the direst poverty they are not the heaviest drinkers They have not got the money. Overcrowding and the slums are not nearly so much the cause of drinking as drinking of overcrowding and slums.

The expenditure of money on drink and the waste of time which it involves, and the loss of earnings which result, lead to families being badly housed and insufficiently clothed and fed. Not only is the expenditure on drink incurred by an enormous number of people at the expense of the necessary conditions of health and comfort, but the drink itself is injurious and tends to weaken physical vigour and shorten life, even when taken in quantities which are usually considered moderate. Consequently, on the one hand, inability to secure satisfactory housing, food, and clothing, because the money that would provide them is spent on drink, results in conditions which beget disease, and, on the other hand, the consumption of the drink thus improvidently bought also deteriorates physical vigour, predisposes persons to disease, and renders them less able to resist and overcome its attacks. Again, both drinking and physical deterioration render people less able to do their work and discharge their duties, with the result that they lose their employment or earn less than they should. The temptation to drink increases as the difficulties of their position accumulate and the moral power to resist the temptation weakens; and, as though it were the object of legislation to make it easy to do wrong and difficult to do right, our licensing system has resulted in placing facilities for drinking in the greatest number precisely in those most crowded and poorest parts of our towns where the very condition and character of the people render it most necessary that they should be helped and protected against the greatest enemy to their health and well-being.

Mrs. BOSANQUET's paper is based upon the following lines: The fact that many people lead unhealthy lives, and that many children are inadequately nourished, is fully recognized, and is generally attributed to poverty as the main if not the sole cause. Hence the remedies suggested take the form of subsidies, such as Poor-law or charitable relief, school feeding, soup kitchens, etc. As against this view the writer maintains that experience of the class in question shows the unsatisfactory conditions to be more often due to ignorance or carelessness than to actual want of means, and that the remedy lies in a direct attack upon such ignorance or carelessness by methods of popular instruction, which are already being experimentally worked out, and should become universal. Further, that to approach the problem in this way will also tend to diminish the amount of actual poverty by stimulating the interest of the people in the maintenance of a higher standard of well-being for themselves and their children; while experience shows that the method of subsidies, unless under very exceptional conditions, actually increases poverty, by removing that hope of independence which is one of the saving interests of life.

A paper by Dr. MCCLEARY on the Influence of Antenatal Conditions on Infantile Mortality and another by Dr. DAVID SOMMERVILLE on Physiology in Schools has been accepted by the Committee of Reference of this Section; other subjects on which papers might be received are the following:

Physical Degeneration.
Direct Infection in Enteric Fever.
The Teaching of Hygiene in Elementary Schools.
The Causes of Infantile Mortality.
Tramps and Disease.
The Application of Statistical Methods to Public Health Problems.
Return Cases of Scarlet Fever and Diphtheria.
The Supervision of Houses let in Lodgings.
The Administrative Control of Diphtheria.

Subsection of Forensic Medicine.
*Mineralogy Lecture Room.**

On July 27th there will be a meeting of the Forensic Medicine Subsection, over which Sir T. STEVENSON will preside. The programme of work is not yet definitely arranged, but the following subjects will probably be considered from the point of view of legal medicine: Wounds of the Throat (Dr. Littlejohn), Arsenic (Dr. Willcox), Blood Tests (Dr. Graham Smith), Civil Responsibility of the Insane (Dr. F. Smith).

SECTION OF PSYCHOLOGICAL MEDICINE.
*Small Morphology Lecture Room.**

President: CHARLES ARTHUR MERCIER, M.D., London. *Vice-Presidents:* ERNEST WILLIAM WHITE, M.B., Dartford; JAMES NEIL, M.D., Oxford; THOMAS SEYMOUR TUKE, M.B., London. *Honorary Secretaries:* WM. FORD ROBERTSON, M.D., 7, Hill Square, Edinburgh; REGINALD LANGDON LANGDON-DOWN, M.B., 47, Welbeck Street, W.

The following subjects have already been selected for special discussion:

A. CRIMINAL RESPONSIBILITY AND DEGENERACY.
B. HEREDITY IN ITS BIOLOGICAL AND PSYCHIATRICAL ASPECTS.
C. DEMENTIA PRAECOX.

Discussion A. will be introduced by Dr. CHARLES A. MERCIER, who will be followed by Dr. MAX NORDAU.

In Dr. Mercier's paper the following propositions will be set forth:

The view that the chief aim in dealing with criminals is to protect the community, and the view that regard should be paid to the individual peculiarities of the offender, are not antagonistic, but complementary.

Superior to both is the aim of cultivating and increasing the sense of responsibility in all citizens.

This aim is prevented by the doctrine that criminals form a "natural kind," distinct from other men. That doctrine is unproved, and its consequences are pernicious, both to the criminal himself and to the community.

The problems to be solved are, Who ought to be punished? and with how much punishment?

The answer to the first question is—Wrong-doers; by which is meant those who, for their own gratification, and without justifying provocation, wilfully do harm to others. This definition excludes from wrongness certain cases of harming, whether wrought by the sane or the insane, and applies the same criterion of responsibility to both. So that:

1. Insanity in the wrong-doer does not of itself necessarily exonerate him from punishment.

2. Insanity may exonerate him, wholly or partially, but only by bringing the harm that he has done within the exonerating provisions of the definition of wrong-doing; that is to say, it must be shown, in accordance with the answers given by the judges in 1843, that the *animus nocendi* or *sclerandi* was wanting. Consequently, the injurer should not be punished if:

(*a*) The harm was done with no intention of obtaining gratification for the harmer.

(*b*) The harm was done to prevent injury threatened, and was not more than was justified by the threat.

(*c*) The act was not wilful. A wilful act means an act done with knowledge of the act and of its obvious consequences, and with intention to do the act and bring about these consequences. With respect to knowledge the judges' answers may be accepted as a guide, with one proviso. With respect to Will—if the true Will of the man himself did prompt the act, he is guilty and punishable; if not, not.

When the citadel of personality is itself invaded; when not merely Will, but Desire itself is morbid, the case becomes extremely difficult, and is arguable both ways. The suggestion of the address is that in such cases a mitigated punishment most nearly satisfies justice.

Discussion B. in its Biological aspect, will be introduced by Dr. J. BEARD, an abstract of whose paper appeared on p. 170 in the SUPPLEMENT dated June 11th. The Psychiatrical aspect will be dealt with by Medizinalrath Dr. W. KÖNIG, Dalldorf Asylum, Berlin, by a paper in which the following views will be developed:

Certain types of mental disturbance are, or may be, acquired. These will be considered with regard to Dr. Beard's teaching and in the light of the author's own experience.

Three principal groups of heredity may be distinguished with respect to the purpose which is in question: (1) Homo-

logous heredity, (2) dissimilar heredity, (3) "mixed" heredity.

The main questions to be discussed are:

1. Is there any clinical evidence of acquired mental abnormalities being transmitted to the offspring?

2. To what extent in insanity does environment influence the germ cells and under what circumstances does it affect the soma?

Adult general paralysis is an acquired disorder which is not propagated to posterity, but in all individuals of neuropathic heredity the parental germ cells may be adversely affected. In certain families there is an uncommonly high degree of predisposition towards parasyphilitic sequelae. A leading rôle must be imparted to environmental agency in chronic alcoholism.

Among chronic alcoholics there is a large percentage who show homologous heredity, a rather low percentage of hereditarily untainted individuals, and an intermediate proportion of dissimilar heredity.

Among the adult descendants of alcoholics are numerous habitual drunkards, many instances of essential paranoia, dementia praecox, and imbecility. There is a very close relation between alcoholism and epilepsy.

The majority of chronic inebriates have a neurotic history. While there is no transmission of the habit, or even of the craving for drink, clinical evidence favours the view that the germ cells are so modified as to render the offspring particularly liable to the injurious influence of intoxicants.

Idiopathic epilepsy is that type of mental disorder which discloses the disastrous consequences of heredity perhaps more distinctly than any other nervous condition. It may be assumed that in essential epilepsy the germ cells are so seriously altered that the inherited disposition is duly developed. Disorders due to arterio-sclerotic changes frequently show hereditary disposition towards atheromatous degeneration.

The different types of functional psychoses show a more or less powerful hereditary disposition to insanity and other nervous disorders. Hereditary modification of the germ cells in one respect is apparently of a twofold nature. Sometimes, as in a case of essential paranoia, the morbid character of the germ cell develops at some time of life in spite of the most favourable surrounding factors; while in other cases environmental factors are necessary to awaken a dormant disposition.

There is no clinical evidence of acquired mental abnormalities being transmitted to the offspring. It is highly probable that the influences of the environment are reflected on the germ cells. The hereditary potentialities of the germ cells may in some cases develop in early or later life unaided by any traceable environmental influences; in other cases they certainly remain dormant or in a rudimentary state of development until roused to life by inimical extrinsic factors.

Discussion C. will be introduced by Dr. CONOLLY NORMAN.

Other Business of the Section.

The time remaining after the discussion on each morning will be devoted to the reading of such papers as may have been selected by the Committee of Reference.

On each day there will be one or more microscopical demonstrations upon subjects connected with the pathology of insanity. Any member wishing to contribute to this part of the work of the Section is requested to communicate with one of the Honorary Secretaries without delay, in order that the necessary arrangements may be made regarding the provision of the number of microscopes required.

SECTION OF PATHOLOGY.

*Pathology Department.**

President: JAMES RITCHIE, M.D., Oxford. *Vice-Presidents:* HUMPHRY DAVY ROLLESTON, M.D., London; Professor JAMES LORRAIN SMITH, M.D., Belfast; WILLIAM BULLOCH, M.D., London. *Honorary Secretaries:* STUART MCDONALD, M.B., F.R.C.P., 40, Marchmont Road, Edinburgh; ERNEST WILLIAM AINLEY WALKER, M.D., University College, Oxford.

The subjects selected for special discussion in this Section are as follows:

A. IMMUNITY.

B. THE RÔLE OF THE LYMPHOCYTE.

C. THE CHEMICAL PATHOLOGY OF GOUT.

The discussions in this Section will be conducted as follows: A number of papers will first be read by persons each of whom has made a special study of a particular portion of the subject. The discussion will then be thrown open to all speakers who desire to take part, not excluding those who have read papers on the subject.

Discussion A. will be opened by the PRESIDENT OF THE SECTION, Dr. James Ritchie, who will try to estimate the points in relation to immunity regarding which it may be said that definite conclusions have been reached and accepted. He will then take up the bearing of certain recent researches on questions at issue. He will also consider the problems awaiting solution and the possible relationship of the processes concerned in immunization to normal processes. Professor Wright will treat of Opsinines and of his own special view upon Immunity; Professor Muir will take Haemolytic Sera in Relation to Immunity; Professor C. J. Martin, Snake Venom in the same relation; and Dr. Bulloch the Cellular Aspect of the same question; Professor Wassermann (Berlin) and Dr. Madsen (Copenhagen) will each also take some portion of the general subject.

In *Discussion* B. Dr. Lovell Gulland and Professor Muir will deal with the Origin and Development of the Lymphocyte. Dr. J. H. Drysdale will discuss the Clinical Significance of Lymphocytosis and its relation to Special Pathological Conditions, and Dr. Beattie the Relation of the Lymphocyte to Inflammation; Dr. Whitfield, the Relation to Inflammation and to Skin Diseases; Dr. Houston (Belfast), its Relation to Leucocythaemia; Dr. C. Melland (Manchester), the same; Dr. A. Ferguson (Glasgow), its Relation to Small-pox; Dr. W. J. MacCullum (Johns Hopkins University), its Relation to Typhoid Fever Lesions; Dr. Gillman Moorhead (Dublin), its Relation to Typhoid Fever; Dr. Mott, its Relation to Pathological Changes in the Central Nervous System.

Discussion C. will be opened by Professor Von NOORDEN, who will be followed by Dr. A. Garrod, Dr. Smith-Jerome, Dr. Walker Hall, and Dr. W. Bain.

SECTION OF PHYSIOLOGY.

*Physiology Department.**

President: Professor FRANCIS GOTCH, M.R.C.S., F.R.S., Oxford. *Vice-Presidents:* Professor WILLIAM HY. THOMPSON, M.D., Dublin; MARCUS SEYMOUR PEMBREY, M.D., London. *Honorary Secretaries:* WALTER RAMSDEN, M.D., Pembroke College, Oxford; HORACE MIDDLETON VERNON M.D., 3, Bevington Road, Oxford.

The following subjects have been selected for discussion:

A. THE THALAMIC REGION.

B. CHLOROFORM ANAESTHESIA.

Discussion A. will be held in conjunction with the Section of Anatomy.

Discussion B. will be introduced by Sir VICTOR HORSLEY, who will be followed by Professors Sherrington, MacWilliam, and Moore, and Drs. Dudley Buxton, Waller, Paul Chapman, and C. J. Martin.

The following papers have been accepted for perusal and discussion:

Professor J. A. MacWilliam: Some Points in the Physiology of the Mammalian Heart.

Dr. Hugh Maclean: The Action of Muscarin and Pilocarpin on the Heart.

Dr. McGregor Robertson: The Need of a Clinical Method for Estimating the Energy of the Cardiac Contractions in Man.

Professor B. Moore and Mr. J. S. Edie: On Combinations of Chloroform with Haemoglobin and the Serum Proteids in Relationship to Chloroform Anaesthesia.

Drs. F. Griffith and W. B. Warrington: On the Varieties of the Cells of the Spinal Ganglia and their Relationship to Axons of Different Distribution.

Dr. Robert Kennedy: On the Histological Changes occurring in Ununited Divided Nerves.

Professor E. Wace Carlier: (1) Some Changes observable in Liver Cells during Activity; (2) On the Elastic Tissue of the Eyeball.

Dr. Grossmann: (1) Further Investigations on Accommodation; (2) The Purkinje-Sanson Reflex Image of the Anterior Lens Surface.

Dr. H. M. Vernon: The Protective Value of Proteids and their Decomposition-products on Trypsin.

Dr. A. G. Levy: A Method of Administering Chloroform in Definite Quantities.

Dr. Paul M. Chapman: The Administration of Chloroform by Du Bois's apparatus.

Drs. A. P. Beddard and E. I. Spriggs: Some Points in the Metabolism of Diabetes with Reference to Present-day Treatment.

Dr. A. P. Beddard: Subcutaneous and Intravenous Injection of Saline Purgatives.

Dr. A. E. Boycott: Observations upon the Respiration of Intestinal Worms.

Dr. Gustav Mann will exhibit some Animals with Lesions of the Central Nervous System.

Owing to the illness of Professor Gotch the discussion previously announced on Colour Vision has been abandoned.

It is proposed also to hold an exhibition of apparatus and objects of physiological interest. Every care will be taken of exhibits, which should be sent to one of the Honorary Secretaries, addressed "Physiological Laboratory, University Museum, Oxford," if possible by July 21st, and should be accompanied by a short description.

Section of Anatomy.

*Anatomy Department.**

President: Professor Arthur Thomson, M.D., Oxford. *Vice-Presidents:* Professor Johnson Symington, M.D., F.R.S., Belfast; Professor Robert Howden, M.B., Newcastle-on-Tyne; Thomas H. Bryce, M.D., Glasgow. *Honorary Secretaries:* William Wright, F.R.C.S., The University, Birmingham; Gustav Mann, M.D., the University Museum, Oxford.

Arrangements have been made for special discussions on the following subjects:

A. Giants and Dwarfs.

B. The Thalamic Region.

Discussion A. will be introduced by Professors Cunningham and Windle, who will be followed by Professor Dixon and Dr. Peter Thompson.

Discussion B. will be held conjointly with the Section of Physiology. It will be introduced by Dr. Gustav Mann and Sir Victor Horsley, who will be followed by Dr. Gladstone.

These two discussions will be held on the first and second days appointed for sectional meetings. The third day will be given up to a meeting to be held conjointly with the Anatomical Society of Great Britain and Ireland.

The following other papers have been accepted:

Professor Robinson: Observations on the Tail.

Drs. Berry and Shepherd: Cranio-cerebral Topography.

Professor Patten: A Suggested Method of Mounting Anatomical Preparations for Museum Purposes.

Dr. Reith will show models and diagrams illustrating the Respiratory Movements of the Lungs.

Mr. Jenkinson will demonstrate microscopically the Arrangement of the Maternal and Fetal Glycogenic Cells in the Placenta of the Mouse.

Professor Patten will show wax models of Human and Anthropoid Lungs illustrating the topography of the fissures, and also a cast of the Duodenal Diverticulum.

Any member who desires to exhibit anatomical or histological preparations, or any apparatus, is requested to send it, accompanied by a short description, to Dr. Gustav Mann, the University Museum, Oxford, on or before July 20th, in order that all necessary arrangements may be made.

Section of Ophthalmology.

Keble College.

President: Robert Walter Doyne, F.R.C.S., London. *Vice-Presidents:* George Edward Wherry, F.R.C.S., Cambridge; Cyril Hutchinson Walker, F.R.C.S., Bristol; Fergus Menteith Ogilvie, F.R.C.S., Oxford. *Honorary Secretaries:* Sydney Stephenson, F.R.C.S.Edin., 33, Welbeck Street, W.; Frank Griffith Thomas, M.B., 2, Brunswick Place, Swansea.

The following subjects have been selected for special discussion:

A. Retro-ocular Neuritis.

B. Intraocular Haemorrhage.

C. Keratitis Profunda.

Discussion A. will be introduced by Mr. Marcus Gunn in a paper of which a sketch appeared on page 172 of the Supplement dated June 11th.

Discussion B. will be introduced by Dr. Hill Griffith. A synopsis of his paper was published on page 173 of the Supplement already quoted.

Discussion C. will be introduced by Mr. W. T. Holmes Spicer in a paper of which an abstract will be found in the Supplement dated June 11th, at page 173.

The following other papers have also been accepted for perusal and discussion:

Dr. Lucien Howe: Time required for a Normal Eye to wing Laterally through a given Arc.

Mr. Ernest Clarke: A *Résumé* of Twenty Years' Treatment of Myopia.

Dr. J. Hern: Adenoid Vegetations in the Naso-pharynx a Causative Factor in some Eye Diseases.

Mr. W. W. Griffin: A Modification of Bowman's Suction Curette.

Mr. Andrew Little: The Electro-magnet in Ophthalmology.

Mr. Charles G. Lee: Cases of Cataract Extraction by Teale's method.

Dr. G. H. Burnham: Combined Treatment in Disease, especially of the Uveal Tract.

Mr. N. B. Harman: (*a*) The Work of H. M. Bernard on the Retina. (*b*) Follicular Conjunctivitis.

Dr. K. Grossmann: (*a*) Treatment of Conical Cornea with the Hot-Air Cautery. (*b*) Further Investigations on Accommodation. (*c*) Operative Treatment of Detached Retina.

Dr. George Carpenter: An Observation on the Production of Optic Neuritis by Intracranial Pressure.

Dr. James Hinshelwood: A case of Congenital Word Blindness.

Drs Hinshelwood, McPhail, and Ferguson: A case of Word Blindness with Right Homonymous Hemianopsia.

Dr. A. Bronner: A case of Thrombosis of the Cavernous Sinus due to Empyema of the Sphenoidal Cells.

Dr. A. H. Benson: Two Cases of Disease of the Canaliculi.

Dr. G. A. Berry: (*a*) On Glaucoma and Glaucoma Operations. (*b*) On Visual Efficiency after Accidents to Sight from the Point of View of Employers' Liability.

Mr. W. Adams Frost: The Operative Treatment of High Myopia.

Dr. Emile Javal, Paris: Reforms in the Notation of the Acuteness of Vision.

Mr. W. Lang: Sepsis and Intraocular Inflammations.

Dr. Angus McGillivray: The Temperature of the Cornea and its Relation to Corneal Therapeutics.

Professor M. McHardy: Upon the Maturation and Extraction of Senile Cataract.

Professor Poulton, F.R.S.: Conclusions as to the Vision of Birds based upon a Consideration of Mimetic Colour and Pattern in Insects.

Dr. W. H. R. Rivers: Visual Acuity in Savage Races.

Dr. James Taylor: Ophthalmoplegia Externa.

Mr. T. Pridgin Teale: Paracentesis of the Cornea for the Relief of Tension Consequent upon Tearing Opaque Capsule.

In addition to the names already announced, the following gentlemen have intimated their intention of attending the Section of Ophthalmology: Karl Grossmann, Cecil Shaw, Jabez Thomas, N. B Harman, G. W. Roll, G. V. Miller, R. J. Coulter, J. B. Story, Leslie Paton, J. H. Tomlinson, A. E. Cobbledick, F. W. Edridge-Green, C. Higgens, Edgar Stevenson, Charles Blair, R. H. Dickson, H. Mooney, James Hinshelwood, J. A. Menzies, C. J Lee, R. D. Batten, R. J. Hamilton, Simeon Snell, R J. Montgomery, Andrew Little, E. H. Myddelton-Gavey, C. W. Dean, Major J. F. Barke, George Carpenter, E. J. Smyth, S. J. Taylor, W. W. Griffin, R. R. Thomas, Arthur Sandford, C. Devereux Marshall, E. F. Drake-Brockman, H. E. Ensor, F. M. Granger, F. P. Cresswell, W. Fingland, A. H. Thompson, Captain D. J. Collins, John Ellerton, Arthur Greene, D Mowatt, A. Levy, J. Hern, Ludford Cooper, G. W. Baker, H. H. Folker, Ernest Clarke, and Joseph Nelson, The foreign guests and visitors include Professors Hirschberg and Haab and Drs. G. H. Burnham, Eversbusch, Goldzieher, Ole Bull, E. Landolt, A. Darier, Valud, Charles A. Oliver, Risley, Lucien Howe, and Frank W. Marlow.

Owing to the amount of work to be got through in this Section it is desirable for members to understand that they cannot count upon being called upon to speak, either in the discussions or the papers, unless they have previously given notice of their intention to do so.

Section of Dermatology.

Histology Room, Physiology Department.

President: Thomas Colcott Fox, M.B., London. *Vice-Presidents:* James Herbert Stowers, M.D., London; James Limont, M.B., Newcastle-on-Tyne; Leslie Roberts, M.D., Liverpool. *Honorary Secretaries:* Ernest Mallam, M.B., 3, Holywell Street, Oxford; Edward Stainer, M.B., 60, Wimpole Street, W.

Arrangements have been made for special discussions on the following subjects:

A. The Treatment of Pruritus Ani.

B. THE COMPARATIVE VALUE OF OLD AND NEW METHODS OF TREATMENT OF LUPUS AND OTHER SKIN DISEASES.

C. THE RELATIVE IMPORTANCE OF THE BACTERIAL AND OTHER FACTORS IN THE CAUSATION OF SKIN DISEASES.

Discussion A. will be introduced by Mr. MALCOLM MORRIS n a paper of which the following is an abstract:—After defining the term puritus ani and discussing the various causes, general and local, that might give rise to the symptom, he considers in detail the treatment of its different forms. The first principle of treatment is to search for the cause, and, if possible, remove it. Disorders of the digestive apparatus, constipation, diabetes, gout, and other constitutional conditions must be treated by appropriate medication. Reflex disturbances traceable to the genito-urinary organs, uterine disease, pregnancy, gall stones, must be dealt with by treatment directed to their source. Local conditions—piles, fissure, fistula, worms, diseases of the crypts and glands, irritating discharges from the rectum or the vagina—must be treated by local measures. The general treatment must include a bland and unirritating dietary, careful maintenance of regularity in the action of the bowels, and the administration of tonics when required. Sedatives must be employed with caution and only in response to definite indications. In a certain proportion of cases the disease appears to be a neurosis, no local cause or relevent constitutional disorder being discoverable. In such cases moral treatment endeavours to divert the patient's attention from the affected part, to arouse him to a sense of the duties and responsibilities of life, is likely to be more effective than drugs. In cases in which local treatment is required, the applications must be adapted to the condition and especially to the patient. There is no infallible remedy, but no case should be regarded as incurable. The strictest cleanliness must be insisted on. Hot bathing is generally most useful. Anodynes, antiseptics and caustics must be used according to circumstances. Eczema, if present, must be treated by suitable applications. Pressure, as by wearing a plug, often gives great relief. If a local centre of the trouble can be found, the spot should be destroyed with the cautery or excised.

Discussion B. will be introduced by Dr. J. H. SEQUEIRA in a paper of which the following is a synopsis:—Lupus Vulgaris: Treatment by excision, scraping, cautery, caustics, etc.; their limitations, treatment by Finsen's method, *x* rays, radium, high-frequency electricity; the comparative value of these methods, their limitations, choice of measures. Lupus Erythematosus: Dependent upon general conditions; treatment by local measures rarely permanently successful; Finsen's method, *x* rays, high frequency. Rodent Ulcer: Treatment by excision, scraping caustics, etc.; limitations; treatment by *x* rays, radium, Finsen's method; advantages of operation followed by *x* rays in certain cases. Epithelioma: Experience with *x* rays and radium. Mycosis Fungoides: Experience with *x* rays.

Discussion C. will be introduced by Dr. ARTHUR WHITFIELD, of whose paper the following is an abstract:

Diseases in which organisms are found may be divided into:

1. Those that are inoculable, the organism being known.

2. Those in which the organism present is found only in the particular disease, but the disease is not contagious.

3. Those in which the organism present is one that may be usually found on the normal skin, but the disease is contagious and inoculable.

4. Those in which the organisms found are present on most skins, and in which, owing to the difficulty of inoculation, the precise part played by the organism is doubtful.

The first class, exemplied by ringworm, needs no further discussion. The second may be taken to be due to the specific organism invariably found, but the absence of contagiosity introduces a new factor. The third class is one of great interest, and is exemplified by those diseases usually attributed to the staphylococci and streptococci. Many factors are here at work, and the etiology may be either complex, or, owing to the increase in virulence by suitable cultivation, may be due to contagion alone. With regard to the fourth class, almost all remains to be discovered. The organisms concerned are the micro-bacillus, the bottle bacillus, and the non-liquefying staphylococci. They are to be found on most skins in certain regions, but they are associated chiefly if not entirely with certain lesions. An inquiry into the so-called normal flora of the skin according to Sabouraud leads to the conclusion that there is no normal flora in the sense of organisms in a state of growth upon the healthy skin. This, though mainly correct, does not sufficiently take into consideration the possibility of growths taking place in normal or excessive secretion of the skin.

The distribution of the micro-bacilli and its position in the lesions.

Difficulties in the way of accepting it as a causal agent.

The distribution of the bottle bacillus, associated with a definite lesion of the horny layer, apparently less related to secretion, and therefore probably truly parasitic.

The non-liquefying coccus. Its presence in the sweat and in all liquid media associated with the skin. Its action purely secondary and due to its putrefactive effects.

Other factors besides bacterial. The age factor; the natural variety in amount and quality of secretion; the pathological increase of secretion and possibly its altered quality; the specific irritability of the skin, its increase from malnutrition; possible decrease of skin resistance owing to decreased bactericidal power of the blood.

It is proposed to form a collection of recently-executed drawings and photographs of Cutaneous Diseases of interest. Members desiring to contribute to the collection are requested to communicate with the London Secretary.

SECTION OF LARYNGOLOGY AND OTOLOGY.

Class Room.

President: CHARTERS JAMES SYMONDS, M.S., London. *Vice-Presidents:* FRANK MARSH, F.R.C.S., Birmingham; CECIL EDWARD SHAW, M.D., Belfast; HARRY LAMBERT LACK, M.D., London. *Honorary Secretaries:* WALTER JOBSON HORNE, M.D., 27, New Cavendish Street, W.; EDMUND CECIL BEVERS, M.B., 117, Woodstock Road, Oxford.

The following subjects have been selected for special discussion:

A. TREATMENT OF NON-SUPPURATIVE DISEASE OF THE MIDDLE EAR.

B. ETIOLOGY, TREATMENT, AND PROGNOSIS OF INNOCENT GROWTHS OF THE LARYNX.

C. DISEASE AS A DETERMINING FACTOR IN THE PRODUCTION OF LARYNGEAL AND PULMONARY AFFECTIONS.

Discussion A. will be introduced by Professor URBAN PRITCHARD in a paper of which a sketch appeared on p. 174 of the SUPPLEMENT dated June 11th.

Discussion B. will be introduced by Dr. DUNDAS GRANT in a paper of which an abstract was published on p. 175 of the SUPPLEMENT of June 11th, and by Professor ALBERT ROSENBERG, of Berlin, in a paper of which the following is an abstract:

Reference is made to cases in which before the invention of the laryngoscope laryngeal tumours were removed through the mouth, to rare instances in which a polypus has been spontaneously expelled by coughing and to the occasional spontaneous disappearance of papilloma following an exanthematous disease. Although astringent applications may be of use in inflammatory nodules and in so-called singer's nodules, it is difficult to say how much is due to the simultaneous disuse of the voice. In other endolaryngeal growths, inhalation, insufflation, and injections are useless. As a rule operation is the only proper treatment, and endolaryngeal methods are to be preferred. General anaesthesia is generally necessary in children, but in adults local anaesthesia by cocaine is almost always sufficient. When the epiglottis lies far back, or when the growth is in the anterior commissure, it may be desirable to have the epiglottis pulled forward by a retractor in the hand of an assistant. Professor Rosenberg also discusses the special difficulties in treating papilloma in children owing to their refusing to permit the use of the laryngoscope, and in referring to intubation he points out the possible risk of dissemination of the growth. With regard to endolaryngeal instruments, he expresses a preference for the cutting curette, while admitting that in certain cases better results may be obtained with the snare, a special form of which he will describe. He then briefly discusses the treatment of amyloid, lipomatous, myxomatous, and adenomatous growths, of tumours of thyroid origin and of angiomata.

Discussion C. will be introduced by Dr. GREVILLE MACDONALD and by Dr. SAMUEL WEST. A synopsis of Dr. Macdonald's paper will be found on p. 177 of the SUPPEMENT already quoted.

Members are invited to contribute any preparations, specimens or drawings, or any instruments or apparatus pertaining to the work of the Section, which have been designed by themselves, in order that the Committee of the Section may make arrangements to form a special exhibit of such objects.

Foreign and Colonial visitors will be cordially welcomed in the Section, and such as may desire to attend are requested to send in their names as soon as possible to the Honorary Secretaries, together with the titles of any papers they may wish to read.

The offer of a paper will not be accepted on its title alone. Offers of papers will not be accepted in excess of the number likely to be read. As the ratio between the number of papers sent in and the time available for reading and discussing them at the Meeting of the Section will probably be very disproportionate, preference will be given in the case of communications of equal importance to those which are first received.

The following is a list of those which have been accepted up to the present:

Dr. William Milligan: Some Practical Points in the Treatment of Frontal Sinus Suppuration, with an analysis of the ultimate results of 40 cases.

Mr. Griffith C. Wilkin: The National Importance of the Thorough and Systematic Removal of Adenoids in Childhood.

Dr. Eugene S. Young: Observations on the Mode of Origin of Nasal Polypi.

Mr. John Mackie: Disease of the Posterior and Sphenoidal Cells as a cause of Laryngeal and Bronchial Affections and of Ozaena.

Dr. William Milligan: Menière's Disease: a Clinical and Experimental Inquiry.

Dr. Walker Downie: A Bloodless Method of Removing Intralaryngeal Growths in Adults.

Dr. StClair Thomson: Cure of a Case of Maxillary Sinusitis by Spontaneous Expulsion of Polypi through the Natural Ostium.

Dr. Walker Downie: Two and a-half Years' Experience of the Subcutaneous Injection of Hard Paraffin for the Removal of Deformities of the Nose.

Professor Onodi (Buda Pesth): The Disturbances of Vision and Development of Blindness of Nasal Origin, induced by Disease of the Posterior Accessary Sinuses.

Professor Onodi will also demonstrate his preparation in illustration of the anatomy and surgery of the accessory sinuses of the nose.

The following gentlemen, in addition to those above mentioned, have intimated their wish to take part in the special or other discussions in this Section: Dr. Adolph Bronner (Bradford), Dr. E Deanesly (Wolverhampton), Dr. Albert A. Gray (Glasgow), Dr. N. C. Haring (Manchester), Mr. R. Lake (London), Dr. James Kerr Love (Glasgow), Dr. S. Moritz (Manchester), Dr. Knowles Renshaw (Manchester), Dr. Henry Smurthwaite (Newcastle), Dr. Frederick Spicer (London), Dr. Scanes Spicer (London), Dr. Ernest Waggett (London), Dr. Watson Williams (Bristol).

Communications relating to the exhibition of preparations, instruments, etc., may be addressed to Dr. E. C. Bevers, 117, Woodstock Road, Oxford; and all others relating to papers and discussions to Dr. Jobson Horne, 27, New Cavendish Street, W., and marked "Section of Laryngology and Otology."

Section of Tropical Diseases.

Old Radcliffe Library.

President: Alexander Crombie, C.B., M.D., London. *Vice-Presidents:* Brigade-Surgeon-Lieutenant-Colonel George Maconachie, M.D., Aberdeen; John William Watson Stephens, M.D., Liverpool. *Honorary Secretaries:* Henry Edward Annett, M.D., Crofton Lodge, Higher Runcorn, Cheshire; Robert Fielding-Ould, M.D., 94, Mount Street, Berkeley Square, W.

The following subjects have been selected for special discussion:

A. Trypanosomiasis.

B. Prophylaxis of Malaria.

C. The Significance of the Leishman-Donovan Bodies.

Discussion A. will be introduced by Colonel D. Bruce, F.R.S., R.A.M.C., in a paper of which a synopsis will be found on page 177 of the Supplement dated June 11th.

Discussion B. will be introduced by Dr. J. W. W. Stephens, an abstract of whose paper was published in the Supplement already quoted at page 177.

Discussion C. will be introduced by Major W. B. Leishman, R.A.M.C., in a paper of which a summary appeared on p. 178 of the Supplement dated June 11th.

The following papers have also been accepted:

Fleet Surgeon Bassett Smith: The Fungus of Tinea Imbricata.

Mr. T. J. Tonkin: The Curability of Leprosy.

Dr. G. A. Williamson: A Case of Mycetoma in Cyprus.

Major Donovan: Leishman-Donovan bodies.

Professor Nocht (Hamburg): The Results of Malarial Prophylaxis in German Colonies.

Captain James, I.M.S., Dr. Christopher, and Captain Sewell will also read papers on Malarial Prophylaxis.

Dr. Armand Ruffer (Egypt) will demonstrate some specimens, and Dr. Navarro: Trypanosomata from Uganda and East Africa.

Intimations of their intention to take part in the proceedings have been received from Sir Patrick Manson, Professor R. Boyce, Major C. Donovan, Dr. A. Duncan, Major Mathias, Dr. L. Sambon, Captain E. P. Sewell, Captain Anderson, Dr. Navarro, and Professor Lortet.

Papers bearing on the discussions or otherwise will be read for gentlemen who are unable to be in England for the meeting. It is also hoped that pathological specimens, drawings, photographs, and microscopic preparations will be lent for exhibition.

Section of Navy, Army, and Ambulance.

Ashmolean Room.

President: Surgeon-General A. Frederick Bradshaw, C.B., K.H.P., M.R.C.P., Oxford. *Vice-Presidents:* Surgeon-General George Joseph Hamilton Evatt, C.B., M.D., Junior United Service Club, London; Fleet-Surgeon John Lloyd Thomas, R.N., H.M.S. *Excellent*, Portsmouth; Colonel J. Edward Squire, M.D., V.D., R.A.M.C. (Vol.), London. *Honorary Secretaries:* Major Thomas McCulloch, R.A.M.C., 68, Victoria Street, S.W.; Staff-Surgeon H. W. Gibbs Doyne, L.R.C.P., R.N., H.M.S. *Mercury*, Portsmouth; Surgeon-Captain Eustace M. Callender, M.D., 40, Connaught Square, Hyde Park, W.

The following subjects have been selected for special discussion.

A. Malta Fever.

B. Organization in Peace of Civilian Aid to the Sick and Wounded in War.

Discussion A. will be introduced by Colonel D. Bruce, F.R.S., R.A.M.C., in a paper, of which an abstract will be found on page 178 of the Supplement dated June 11th.

Discussion B. will be introduced by Colonel J. E. Squire, C.B., V.D., M.D., R.A.M.C.(Vol.), an abstract of whose paper appeared on page 179 in the Supplement already quoted.

The following other papers have also been accepted:

Brigade-Surgeon-Lieutenant-Colonel P. B. Giles, V.D., F.R.C.S.: (1) Camp Sanitation, with special reference to the disposal of excreta and refuse; (2) The Medical Equipment and Transport for Volunteer Brigades.

Mr. S. Hamilton, B.A., M.D.: Is the Widespread Slight Training in Ambulance Work Beneficial to the Community, or would it be better to make the training more thorough at the expense of numbers?

Colonel T. H. Hendley, C.I.E., I.M.S.(ret.): First Aid in Civil Life in the Tropics.

Section of Dental Surgery.

Keble College.

President: Edmund Augustine Bevers, M.R.C.S., Oxford. *Vice-Presidents:* John Howard Mummery, M.R.C.S., L.D.S., London; Frank Earle Huxley, M.R.C.S., L.D.S., Birmingham. *Honorary Secretaries:* John McKno Ackland, M.R.C.S., L.D.S., 24, Southernhay, Exeter; Kenneth Weldon Goadby, L.R.C.P., L.D.S., 21, New Cavendish Street, Cavendish Square, W.

Details as to the work to be conducted in this Section have not been received.

Honorary Local Secretaries.

Arthur John Drew, F.R.C.S., Water Hall, St. Aldates, Oxford; William Duigan, M.B., 66, Woodstock Road, Oxford; Arthur Percy Parker, F.R.C.S., 2, Holywell Street, Oxford.

(Continued on p. 32.)

To be Stamped with a Penny Stamp and Posted.

BRITISH MEDICAL ASSOCIATION.

SEVENTY-SECOND ANNUAL MEETING.

JULY 26th, 27th, 28th, and 29th, 1904.

Members of the British Medical Association who intend to visit **OXFORD** during the Annual Meeting will greatly facilitate the labours of the Local Committee if they will fill up the following form and forward it by post as addressed on the other side. This will eventually be sent to the General Secretary of the Association, who will then send a certificate to enable members to obtain Railway Tickets at reduced fares.

MEMBERS DESIRING ACCOMMODATION ARE REFERRED TO NEXT PAGES.

The Forms are intended for the use of Members of the British Medical Association exclusively.

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*It is my intention to be present at the ANNUAL MEETING in OXFORD, and I expect to be accompanied by** .....

Name .....

Address .....

* Here indicate whether accompanied by a lady, as separate vouchers are required to enable Members to obtain Railway Tickets at reduced fares.

It is my intention to be present at the ANNUAL DINNER of the Association on Thursday Evening, July 28th, and I herewith enclose Cheque (or P.O.O.).†

Signature .....

† DINNER TICKET, with Wine inclusive, £1 1s. DINNER TICKET without Wine, but inclusive of Aerated Waters, 15s.

Cheques and Postal Orders should be made payable to the Secretary of the Dinner Committee, H. A. WHITELOCKE, Esq., F.R.C.S., and enclosed in an envelope, together with this form, directed as on the reverse.

Early application for Tickets is requested by the Committee, to enable them to provide accommodation and allot seats.

SEVENTY-SECOND ANNUAL MEETING, OXFORD, July 26th, 27th, 28th, and 29th, 1904.

LIST OF LODGING-HOUSES, WITH SCALE OF CHARGES.

CENTRAL.

Name and Address.	No. of Sets. Sitting Room and Bedroom.	Extra Bedrooms.	Bed and Breakfast.	Luncheon.	Dinner.	Full Rate per day. Board and Lodging.	Notes.
Broad Street.							
1-2 Collins, Miss ...	4	5	6/-	1/-	2/6	12/-	
13 Hawkins, Mrs. ...	2		2/6	1/-	2/-	5/-	
45 Pierce, T.	6		5/6	1/6	2/6	10/6	
New College Street.							
5 Dickens, E.	3		3/6	1/3	2/-	6/9	
Museum Road.							
1 Negus, Miss	2	1	4/-	1/-	2/-	7/-	
3 Higgins, Mrs. ...	2					6/-	
7 Henderson, Miss ...	2	1	4/6	1/4	2/6	7/6	
9 Slater, Miss	2	2	4/-	1/-	2/-	6/6	
10 Stacey, Miss ...	3		3/6	1/-	2/-	6/-	
12 Johnson, Mrs. ...	2		4/-	1/-	2/-	6/6	One let. *d* Double Bed.
19 Luker, Miss	2	1*d*	3/6				
21 Perkins, Miss ...	2	1	3/6				
31 Huggins, Mrs. ...	2	1*d*	4/-	1/6	2/6	6/-	*d* Double Bed.
Trafford, Mrs., Museum Cottage	2		3/6	1/-	2/-	8/-	

Name and Address.	No. of Sets. Sitting Room and Bedroom.	Extra Bedrooms.	Bed and Breakfast.	Luncheon.	Dinner.	Full Rate per day. Board and Lodging.	Notes.
Parks Road.							
2 Smith, W. S. ...	2		4/6	1/6	3/-	10/-	
3 Spiller, Mrs. ...	2	1	3/6	1/-	2/6	6/-	
4 Bannister, W. ...	1	1	3/6	1/6	2/6	7/-	One let.
6 Bellamy, Mrs. ...	3		4/6	1/6	2/6	8/6	
Blackhall Road.							
1 Allnutt, Miss ...	2	1	4/-	1/6	3/-	8/6	
2 Skinner, W.	3		3/-	1/-	2/-	6/-	
New-Inn-Hall Street.							
29 Ellis, J.	3		3/6	6*d.* to 1/6	2/- to 3/-	10/-	
42 Kemp, Mrs.	3		3/6	1/6	2/6	From 5/6	Three Sets.
44 Edens, G.	2*d*	1*d*	4/-	1/-	2/6	7/6	Double Beds.
Ship Street.							
2 Ing, Mrs.	1		3/6	1/-	1/6	6/-	
3 Brown, Mrs. ...	6		4/-	1/3	2/-	6/6	
5 Dines, Miss	2	1	3/6	6*d.*	2/6	6/6	
13 Dalgleish, J. ...	5		3/6	1/-	2/-	6/6	
15 Ives, Mrs.	2	1	4/-			6/-	

Penny Stamp.

H. A. WHITELOCKE, Esq., F.R.C.S.,
6, Banbury Road,
OXFORD.

LIST OF LODGING-HOUSES, WITH SCALE OF CHARGES—*Continued.*

Name and Address.	No. of Sets. Sitting Room and Bedroom.	Extra Bedrooms.	Bed and Breakfast.	Luncheon.	Dinner.	Full Rate per day, Board and Lodging.	Notes.
St. Michael's Street.							
10 White, W.	3		3/6	1/-	2/-	6/6	
11 Hubert, Mrs... ..	3		4/-	1/6	2/-	7/6	
19 Burrows, Mrs. ..	3		4/-	1/-	2/6 to 3/-	10/6	
21 Haynes, J.	3		3/-	1/6	2/6	6/-	
24 McIntyre, Mrs. ...	5					10/-	
Magdalen Street.							
14–15 Watson, Miss ..		19	4/6	1/6	2/6	7/-	Boarding House [Ten let.
Turl Street.							
15 Hedderley, Mrs. ...	5	1	4/-	1/6			Two let.
16 Addis, Mrs.	8	1	3/6	6*d.* to 1/6	2/6 to 3/-	6/6	
High Street.							
22 Bassett, Miss ...	2	2				7/6	
37 Clements, Miss ..	1	1	3/6	6*d.*	2/6	7/6	
39 (P.O.) French, Miss			5/-				Party of Six.
43 Prince, Miss ...	2					6/-	Party of four, [One let.
44–45 Taylor, Mrs.	4	1	3/6	1/-	2/6	6/6	Three let.
46 Adams, T. J. ...	2	4	5/-	1/6	4/-	7/6	
47 Carter, F.	4		3/6	1/-	2/-	6/6	
48 Galpin, Mrs.... ...	4		4/6	2/-	3/6	10/-	Board party of [nine or ten.
49 Pickering, F. O. ...	3	2	4/6	1/6	3/-	10/-	
51 Davis, Mrs.	6	1	4/-	1/6	3/-	8/6	
52 Herbert, N. S. ..	4		4/-	1/-	2/6	8/-	Three let.
55 Fitzpatrick, Mrs. ...	2	2	4/6	1/6	2/9	6/6	
58 Chamberlain, J. ..	4					10/6	
63 Horsley, R.	2	3	5/-	1/6	4/-	7/6	Boarding House
67 Penny, Mrs. ..	2	1	4/-			7/6	
69–70 Andrews, W. E. ...	3	5	4/-	2/-	3/6	8/6	
85 Parker, Miss... ...	4	1	5/-	2/6	5/-	12/6	Two let.
90 Shillingford, J. ...	10		4/-	1/6	2/6	7/6	Six let.
96 Haylett, Mrs. ...	4		4/6	1/6	2/6	6/6	
97 Green, Mrs.	4	1	4/-	6*d.*	2/-	7/6	
102–103 Patey, E. C. ...	14		3/6	1/6	2/6	6/6	Boarding House
104–105 Chaundy, Mrs. ..	3	1	4/-	8*d.*	3/-	10/-	
106 Wheeler, W. H. ...	4	1	3/6	1/-	2/6	6/-	
116 Freeman, J.	3						
117 Goodall, E. E. ..	2	1	4/-	1/6	3/-	6/-	
124 Garlick, J.	12		3/6	1/-	3/-	7/-	For 12 persons.
127–129 Flight, Mrs.		8				6/-	Boarding House
35 Clayton, Mrs. ...		4 *s* 1 *d*				6/-	Boarding House
King Edward Street.							
1 Round, W. H. G. ...	5	1				10/6	Boarding House
3 Germer, W. H. ..	2					10/6	
4 Hurcomb, Miss ..	3		4/6	1/6	2/6	6/6	One let.
5 Looker, Miss ..	2		4/6	1/6	2/6	9/-	
6 Sanders, T.	3		4/6	1/6	2/6	6/6	
7 Buckner, F.	3	1	5/-	2/-	3/-	10/-	
8 Clarke, E.	9		5/-	1/6	2/6	7/6	Party of 15 at 7/6
14 Oliver, Mrs.	3	2				7/6	[each per day.
King Street, High St.							
4 Ham, J. E.	3		4/6	1/-	2/6	7/6	
Grove Street.							
5 Collins, Miss ...	4		3/6	/-	2/6	8/-	
13 Bunce, W. H. ..	2*d*		3/6	1/6	3/-	8/-	*d*Double Bed.
Merton Street.							
12 Thicke, Mrs.... ...	3		3/-	1/-	2/-	6/-	
14 Walton, W.	2	2	4/6	1/6	3/-	6/-	Party of five.
15 Johnson, T. H. ...	3		4/6	1/6	2/6	8/-6	
16 Weedon, Miss ..	3					10/-	Party of four.
Oriel Street.							
7 Shrimpton, Mrs. ...	2	2	3/6	1/6	2/6	7/6	Two let.
8 Herbert, A. J. ...	3		3/6	1/-	2/6	7/-	
13 Faulkner, Mrs. ..	2	6	4/-	1/-	2/-	6/6	
15 Gibbens, C. R. ..	6		3/6	6*d.* to 1/6	2/6	6/6	
Holywell Street.							
9 Hinton, Mrs.	2						
10 Chamblain, W.	3	1	3/-	6*d.* to 1/-	2/6	7/6	
19 Giles, Mrs	10					7/6	Party.
31 Vincent, Mrs. ...	2	1	4/-	9*d.*	2/6	7/-	
55 Dix, Mrs.	3					6/-	
58 Alder, F.	4					8/-	
61 Huckerby, W. ..	2		3/6			6/-	
84 Adamson, Miss ...	2	1	4/-	1/6	2/6	7/6	
98 Brown, Mrs.	2	2	4/6	1/6	2/6	8/6	
Bath Place, Holywell.							
5 Walklett, Mrs. ...	2		4/-	1/-	2/6	7/6	
Manor Road, Holywell.							
2 Ockenden, Miss ..	2*d*		3/-	1/-	2/-	7/6	*d*Double Bed.
4 Calcott, Mrs. ..	2	1*d*	3/6	1/-	1/6	6/-	*d*Double Bed, [One let.
6 Phillips, L.	2		3/-	6*d.* to 1/-	2/6	5/-	
7 Wren, C.	2		3/6	9*d.* to 1/3	2/-	7/6	
8–9 de Enciso, Mrs. ...	3	1	4/-	1/-	2/6	7/6	
Manor Place, Holywell.							
1 Clarke, Miss	2		3/-	6*d.*	2/-	5/6	
6 Phillips, E.	2		3/-	1/-	2/6	5/-	
12 Price, Mrs.	1		3/6	1/-	2/-	7/6	
14 Styles, Mrs.	1						
16 Rowlands, Mrs. ..	2						
18 Tubb, Mrs.	2		3/6	1/-	2/-	6/6	
20 Price, Mrs. L. ..	2		3/6	1/-	2/-	6/6	
Long Wall Street.							
Loxley, Miss, Long Wall House ...	5		3/9	1/3	2/6	8/-	
1 Clarke, Miss	2		3/-	6*d.*	2/-	5/6	One let.
4–5 Kingston, H. ..	3	2	4/-	1/6	2/6	9/6	Three let.
8 Horn, C.	5					10/-	
9 Bateman, Mrs. ..	2		3/6	1/6	2/6	8/-	
10 Barnes, Mrs. ..	2		4/6	2/6	3/-	11/-	
12 Mansell, Mrs. ...	2		4/-	1/6	2/6	8/-	
15 Bateman, Mrs. ..	3		3/6	1/6	2/6	7/6	
17 Nicholson, Mrs. ...	2		4/-	*a*1/6	*a*2/6	*a*6/-	

SOUTH.

St. Aldate's Street.							[For party of six
6–7 Thornton, W. J. ...	3*d*	1	4/6	1/6	3/-	6/-	*d* 2 double beds
70 Baycock, Mrs. ..	2	1	2/6	1/6	2/6	5/6	
89 Annis, W.	5		4/-	6*d.* to 1/-	2/6	6/-	For party.
90 Westell, H.	2		4/6	1/6	2/6	8/-	
Gordon, G. W., York House	5		4/6	1/6	2/6	6/-	
95–96 D'Aye, Mrs.		12	3/6	1/-	2/-	6/-	Boarding House
97 Hall, Mrs.	3	3					According to re-
98 Bridges, Miss ..	4		4/6	9*d.* to 1/6	3/-	8/6	[quirements.
Rose Place, St. Aldate's							
1 Bossom, Mrs. ..	2		3/6	1/6		6/6	
6 Smithers, Mrs. ..	2		3/6	1/-	3/-	7/6	
Blue Boar Street.							
10 Bellow, H.	2		3/6	1/-	2/-	6/6	
Brewer Street.							
1 Armstrong, Mrs. ...		12	3/6	1/-	2/6	5/6	Boarding House [Two let.
6 Swift, T.	6	2	5/-	2/-	3/-	10/-	
Pembroke St. (St. Aldate's 12–13 Daniell, Mrs. ..	5		4/6	2/-	2/6 to 4/6	6/6 to 8/6	
21 Mallett, Mrs. ..	2		3/6	1/-	2/-	7/6	
Isis Street.							
1–2 Benwell, Mrs. ..	4	2	5/-	2/-	3/-	9/-	
3 Millin, W. H. ..	3		3/6	1/6	2/-	6/-	
18 Lavis, Mrs.	1	1	3/6	1/6	2/6	6/6	
***Marlborough Road.**							
98 Bates, F.	1		3/6	9*d.* to 1/6	2/6	7/6	
***Western Road.**							
49 Townsend, T. ..	2		4/6	1/6	3/6	9/-	
***Botley Road.** (Near Railway Station.)							
55 Smith, A. A. ..	2		3/-	1/-	1/-	4/-	

WEST CENTRAL.

†Beaumont Builings.							
17, Norgrove, Mrs. ...	1		4/-	1/2	2/6	7/6	
†Alfred St. (St. Giles').							
2 Ponsford, Miss ..	3		4/-	1/-	2/-	7/-	

LIST OF LODGING-HOUSES, WITH SCALE OF CHARGES—*Continued.*

Name and Address.	No. of Sets. Sitting Room and Bedroom	Extra Bedrooms.	Bed and Breakfast.	Luncheons.	Dinner.	Full Rate per day. Board and Lodging.	Notes.
Beaumont Street.							
4 Dines, Mrs.	4		5/-	2/-	2/6	8/6	
38 Whiting, Mrs.	2		3/6	1/- to 1/6	2/6	7/6	
†St. John Street.							
Symonds, C. J., Beaumont Cottage	3		4/-	1/6	2/6	6/6	
4 Brain, G.	3		3/-	1/-	2/6	6/6	
5 Horn, W. H.	2		5/-	1/6	3/-	9/-	
6 Richmond, R.	2		4/-	1/6	2/-	7/6	
9 Hill, Mrs.	2	1	4/-	1/3	2/6	10/-	One let.
10 Newport, Miss	2	1	3/6	1/-	2/-	6/-	
12 Balk, C. G.	3		3/6 to 6/	1/- to 2/6	2/- to 3/6	5/6 to 7/6	
16 Knapp, Mrs.	1		3/6	1/6	2/-	7/-	
18 Muller, Mrs.	3		3/-	1/-	2/6	6/-	
24 Fortescue, Mrs.	1		3/6	1/-	2/6	7/-	
27 Ham, Mrs.	2		3/6	1/3	1/9 to 2/6	6/6	
38 Whitlock, Mrs.	1		5/-	2/-	3/6	10/6	
39 Johnson, Mrs.	2		3/6	1/6	2/6	7/-	
44 Bennett, C. A.	1		2/6	6d.	1/9	5/6	
46 Wagstaff, Mrs.	3		3/6	6d. to 1/-	2/- to 2/6	6/-	
48 Collins, Mrs.	3		3/-	1/-	2/-		
50 Franklin, Miss	3	1d	3/6	1/-	2/-	6/6	d Double Bed.
53 Tebby, Mrs.	2		3/-	1/6	2/-	6/6	
55 Smith, Miss	3					6/6	
56 Nibbs, A. S.	3		4/-	1/6	3/-	8/6	
57 Jones, Mrs.	1d		3/6	1/-	2/3	6/-	d Double Bed.
59 Wiggins, Mrs.	3		3/6	1/6	2/6	7/6	
63 Sowden, C.	2		3/6	1/-	2/-	6/6	
†Wellington Square.							
8 Pain, A.	3					7/6	
10 Slay, F. J.	3		3/6	1/-	2/6	6/6	
11 Wheeler, Mrs.	3		2/6	1/-	2/6	5/6	
14 Duck, Mrs.	3	1d	7/-	2/-	a3/6	10/- to 12/-	d 1 Double Bed.
15 Rowles, Mrs.	5		4/-	1/- to 2/-	2/6	7/6	
16 Ray, Mrs.	2	3	3/6	1/-	2/-	6/6	For Party.
17 Quarterman, A. E.	3	1	3/-	1/-	2/-	5/6	
18 Newman, T.	3						
19 Clinch, Mrs.	2	1	3/-	1/-	2/-	a5/6	
22 Peake, Mrs.	3		3/6	6d.	2/-	6/6	
24 Groves, Mrs.	3	2					
25 Dorrill, G. E.	3	2	4/-	1/6	2/6	8/6	
27 Dudley, Miss	2					8/6	
28 Tysoe, Miss	3	1	3/6 to 4	1/3 to 1/9	2/- to 3/-	5/- to 6/-	
30 Wilsdon, H.	3		4/-	1/6	2/-	6/6	
33 Taylor, Mrs.	2	2	3/-			a5/-	
34 Newman, A. D.	2	2	3/3	9d.	2/-	6/-	
36 Ward, Mrs.	3	1	3/6	1/-	2/-	6/-	
37 Nurton, Mrs.	6		3/6	1/6	2/-	6/6	
38 Gibbens, Mrs.	2	1	3/-	1/-	2/-	5/6	
39 Field, Miss	3	2	3/6	1/-	2/6	6/6	
45 Hayward, The Misses	3		3/-	1/-	2/3	7/6	Two let.
48 Pemberton, Mrs.		6	3/-	1/6	2/6	7/-	Party of six, [Four let.

NORTH.

St. Giles' Street.							
22 Paterson, Mrs.	2	1	3/6	1/3	2/-	7/-	
58–59 Denton, Miss, and Mullett, Miss	4		3/6	1/-	2/6	7/-	
†Winchester Road.							
15 Eaton, Mrs.	1	1	3/6	1/6	2/-	4/-	
†Banbury Road.							
8 Butler, F.	4		4/-	6d.	2/6	6/-	
10 Browne, Mrs.	2		4/6	1/6	2/6	8/6	
14 Fletcher, The Misses	3		3/6	1/-	2/6	7/-	
***Beechcroft Road.**							
2 Sewell, Mrs.	2		4/-	1/6	2/6	7/6 to 10/-	

NORTH-WEST.

†Woodstock Road.							
20 Walklett, T. W.	1	1	3/6	1/6	2/6	7/6	
34 Hartmann, Miss	2		3/6	1/6	2/- to 2/6	6/6	
†Little Clarendon St.							
Hoare, R., Garfield Villa	2	1	3/6	8d. to 1/3	2/-	5/6	
†Chalfont Road.							
3 Castle, Miss	1d	1	3/6			6/-	d Double Bed.

Name and Address.	No. of Sets. Sitting Room and Bedroom	Extra Bedrooms.	Bed and Breakfast.	Luncheons.	Dinner.	Full Rate per day. Board and Lodging.	Notes.
†Walton Street.							
9 Brimfield, Mrs.	2	1	3/-	1/-	2/-	6/-	
10 Beesley, Mrs.	2	1	3/-			6/-	
11 Chapman, G. E.	2		2/6	1/-	2/-	5/6	
14 Parsons, Mrs.	2		7/-	1/6	3/-	11/-	
19 Green, Mrs.	1	2d	3/-	1/3	1/6	5/9	d 1 Double Bed.
45 Watters, C. F.	2		3/6	2/-	3/-	7/-	
112 Jeeves, Mrs.	1		3/6	1/6	2/6	7/6	
118 Hughes, G.	2		3/6				
129 Eiles, Mrs.	2					5/-	
130 Harries, Mrs.	2		4/-			10/-	
131 Ferris, Mrs.	1	1	4/-	2/6	3/6	10/-	
132 Tombs, Mrs.	1	1	4/-			6/-	
136 Quelch, Mrs.	1	2d	4/-			6/-	d 1 Double Bed.
138 Barrett, W. J.	2		2/6	1/-	1/9	5/3	
140 Bumpus, C.	2	1	3/6	1/-	2/-	6/-	
142 Browning, Mrs.	1	1	4/-	6d.	1/6	6/-	
143 Watts, T. H.	2	1	4/-	8d.	1/6		
144 Brown, A.	2		4/6	1/6	2/6	8/-	
147 McInnes, Miss	2	1	3/-	1/-	1/6	5/6	
149 Pollicott, W. R.	2		3/6				
155 Dawson, H.	2	1	2/6	1/6	2/-	6/-	One let.
157 Palmer, J. F.	3						
158 Wright, Mrs.	2	1	3/6	2/-	3/-	7/6	
159 Thicke, Mrs.	3	1	3/-	6d.	1/6	5/-	
161 Piper, E. R.	1	1d				5/-	d Double Bed.
162 Earney, Mrs.	3		2/6	8d. to 1/6	1/9	5/6	
163 Peach, A. E.	3	1	3/6 to 3/6	2/- to 2/6	2/- to 2/6	6/- to 6/6	
165 Putt, Mrs.	2	2	3/6	1/6	2/6	7/-	
169 Sims, W. J.		1	3/6	2/-	2/6	8/-	
†Worcester Place.							
14 Higgs, Miss	2		3/-	1/-	2/-	6/6	
15 Sharpe, Mrs.	2		3/-	1/-	1/6	6/-	
16 Harris, Mrs.	2	1	3/-	1/-	2/-	6/-	
17 Salaman, Mrs.	1	1	3/6	6d. to 1/6	2/6	7/6	
20 Preston, Miss	2		3/6			6/-	
21 Pearson, Mrs	2					6/-	
22 Brown, W. H.	2	1					
†Richmond Road.							
14 Young, Mrs.	3		3/-	9d.	1/6	5/-	
16 Owen, Miss	2	1	3/6	1/-	2/-	8/6	
17 King, J.	1		3/-	1/- to 2/-	a2/-	7/-	
18 Taylor, Mrs.	2		2/6	6d. to 1/6	1/9	5/-	
27 Morris, J. R.	2		3/6	1/6	2/- to 3/-	7/6	
28 Blake, Miss	2	1	2/6	1/-	2/-	5/-	
37 Sutters, T.	1	1	3/6	9d.	2/6	6/9	
44 Bridges, Miss	1		3/6	9d. to 1/3	2/6	6/-	
†Walton Crescent.							
8 Drake, Miss	2	1	3/6	1/-	2/-	6/6	
10 Clarke, Mrs.	2		3/6	1/6	2/6	7/-	
22 Buckingham, W. E.	1		3/6	1/6	2/6	7/6	
23 Banwell, Mrs.	1		3/6	1/6	2/6	7/6	
29 Gough, Mrs.	3		3/-	1/-	2/6	6/-	
30 Godfrey, G. L.	4		3/-	6d.	2/-	5/-	
31 Sanders, W. H.	2		3/6	1/-	2/-	6/-	
34 Robinson, T.	2		3/6	1/6	2/6	7/6	
43 Parsons, G.	1		3/6	6d.	1/6	5/-	
47 Nixey, C.	1d		3/-				d Double Bed.
50 Chessman, T. H.	1		3/-	1/6	1/6	6/-	
†Walton Well Road.							
2 Vines, Mrs.	2		3/6	2/-	3/-	7/6	
4 Slatter, J.	2	1	3/-			5/-	
6 Mason, Mrs.	1	1	2/6	1/-	1/6	5/-	
8 Howse, Miss	2		2/6	1/-	1/6	5/-	
19 Goldsmith, Miss	1	1	3/6			7/6	
†St. John's Road.							
3 Hartmann, Miss	1	1	4/6	1/6	2/6	7/- to 8/-	
84 Millward, Mrs.	2		2/9	1/-	1/6	5/3	
***Kingston Road.**							
2 Anniss, Mrs.	1	1	3/6	2/-	3/-	7/6	
7 Randall, Miss	2		3/6	1/9	2/6	7/-	
9 Adams, Mrs.	2		3/6	1/-	3/-	7/6	
12 Berry, Miss	1		3/6	1/-	3/-	7/6	
15 Turner, Miss	1		3/6	1/6	3/-	7/6	
39 London, Mrs.	2		3/-	1/-	2/-	6/-	
51 Horsman, Mrs.	1	1	2/6	9d.	1/3	5/-	
84 Crowe, S. H.	1	1	4/6			8/-	
135 Young, W. H.	1	1	3/-	1/-	1/6	6/-	
138 Pittman, Mrs.	1		2/6	1/-	2/-	5/6	
140 Gibbens, Mrs.	2		3/-	1/6	3/-	7/6	

LIST OF LODGING-HOUSES, WITH SCALE OF CHARGES—*Continued.*

Name and Address.	No. of Sets. Sitting Room and Bedroom.	Extra Bedrooms.	Bed and Breakfast.	Luncheon.	Dinner.	Full Rate per day, Board and Lodging.	Notes.
† **Leckford Road.**							
10 Osmond, Mrs.	1	1	2/6	1/6	3/-	7/-	
† **Longworth Road.**							
6 Cheshire, J.	2		3/6	1/6	2/6	7/6	One let.
* **Southmoor Road.**							
10 James, C.	1		3/-	6*d.*	1/-	4/6	
17 Haycroft, W. H. ...	2		3/6				
19 Thurland, J.	2		3/6				
31 Frimley, Mrs. ...	1		3/-	1/6	2/-	6/6	
37 Spencer, Mrs. ...	2	1	2/6	1/-	2/-	5/6	
43 Wilkins, J.	2		3/6	1/-	2/-	6/6	
45 Adams, T.	2		3/-	1/-	2/6	7/-	
46 Bone, Mrs.	2		3/-	1/-	1/6	5/6	
48 Busby, T. W. ...	2		3/-	1/-	1/6	5/-	
50 Hull, Mrs.	2	1	2/9	9*d.*	1/6	5/6	
68 Tester, Mrs.	2		2/6	1/-	1/6	4/6	
90 Kennah, Mrs. ...	2	1	2/6	1/-	1/6	5/-	
92 Keene, E.	2		3/-	1/-	2/-	6/-	
94 Tucker, T. J. ...	1		2/6	1/-	1/6	5/-	
97 Farrington, Mrs. ...	2		5/-	2/6	3/-	10/-	
99 Williams, Miss ...	1		3/6				
100 Davis, Miss	1	1	3/-	1/6	2/6	7/-	
110 Poulton, Mrs. ...	1	1	3/6				
SOUTH-EAST. (Beyond Magdalen Bridge.)							
St. Clement's Street.							
4 Wells, Mrs.	2		3/6	1/-	2/6	6/-	
London Pl. (St. Clement's)							
12 Ayers, Mrs.	3		2/-	1/-	1/6	4/-	
17 Panting, Mrs. ...	2		3/6	1/6	2/6	6/6	
* **Regent Street.**							
1-2 Gribble, R.	1	2					
5 Tustin, J. W. ...	1	1	5/-	2/-	3/-	10/-	
21 Turpey, Mrs. ...	2		4/-			6/6	
39 Medcraft, G. ...	2	1				7/6	
40 Kay, A. J.	1	1				7/-	
William Street.							
25 Clarke, Miss	2		3/6	1/6	2/6	7/6	
Alma Place.							
7 Pitt, J.	2	1	3/6	1/4	1/4		
24 Pike, Mrs.	1		3/6	6*d.*	1/6	5/6	
* **Argyle Street.**							
Liddell, A. B. M. ...	1	1	3/-				
* **St. Mary's Road.**							
84 Neville, Mrs. ...	1*d*		2/6	1/6	2/6	6/6	*d* Double Bed.

Name and Address.	No. of Sets. Sitting Room and Bedroom.	Extra Bedrooms.	Bed and Breakfast.	Luncheon.	Dinner.	Full Rate per day, Board and Lodging.	Notes.
Iffley Road.							
1 Clark, Mrs.	2					5/-	
5 Penstone, Miss ...	2	1	3/6	1/6	2/6	6/-	
7 Beesley, H.	2	1	4/-	1/-	2/6	7/6	
19 Beesley, C. H. ...	2	1	5/-	2/-	3/-	11/-	
21 Horser, Mrs. ...	2	1	2/8	8*d.*	1/6	5/-	
29 Shrubb, Mrs. ...	1	1				7/6	
31 Packford, Miss ...	2		4/6	1/6	2/6	10/-	
33 Green, Miss	3		4/6	2/6	3/6	10/-	
37 Clare, A.	2	1	3/6	1/6	2/6	7/-	
39 Mundy, A. J. ...	3	2	3/6	1/-	2/-	6/6	
41 Chapman, Mrs. ...	2	3	4/-	2/-	3/-	9/-	
47 Ware, Mrs.	3	2	3/6	1/-	2/-	6/6	
49-51-53 Jeffrey, Mrs. ...		12				7/6	Boarding House [Three let.
65 Osborne, Mrs. ...	2	1*d*				5/-	*d* Double Bed.
81 Warwick, Mrs. ...	2	1					
91 Harris, Mrs.	2		3/6	9*d.*	1/-	5/-	
Cowley Road.							
31 Wyatt, Mrs.	2		3/6	6*d.*	1/6	5/6	
32 Hawtin, Mrs. ...	2		3/6	6*d.*	1/9	5/6	
44 Piper, E. E.	2		3/6	6*d.*	2/-	6/6	
59 Abbey, T.	2	1*d*	3/-	1/-	2/6	6/6	*d* Double Bed.
69 Allnutt, Mrs. ...	2		2/9	9*d.*	1/3	4/6	
81 McDonald, Mrs. ...	2		3/6	1/6	2/6	7/6	
83 Burchell, W. G. ...	1		2/6	1/6	2/-	5/6	
* **East Avenue.**							
27 Buckland, Mrs. ...	1		3/6	2/-	2/6	8/-	
31 King, F.	1		4/-	2/6	3/6	8/-	
Stockmore Street.							
1 Osmond, Mrs. ...	2		3/6	1/6	2/6	7/-	
Marston Street.							
46 Tuckett, Miss ...	2	1					
* **Crown Street.**							
14 Wilkins, Mrs. ...	1		3/-				
* **Hurst Street.**							
20 Massingham, Mrs. ...	1		3/-	1/-	3/6	7/-	
* **Bartlemas Road.**							
18 Street, Mrs.	2*d*		4/6				*d* Double Bed.
SUPPLEMENTARY LIST.							
Fairacres Road.							
15 Bond, Mrs.	2		3/6	1/6	2/-	7/-	
Park Street.							
5 G. H. Bourn, Rev. ...	2		3/6	1/-	2/-	6/-	

PRINCIPAL HOTELS.

	Accommodation.
* **CLARENDON**, Corn-Market Street	50
CASTLE (Temperance), near Stations	18
EAST GATE, High Street	20
GEORGE, Corn-Market Street	12
GOLDEN CROSS, Corn-Market Street	12
KING'S ARMS, Parks Road	12
JONES'S HOTEL, Park End St., near Stations	12
MITRE, High Street	50
* **RANDOLPH**, Beaumont Street	90-100
ROEBUCK, Corn Market Street	20
WILBERFORCE (Temperance), Queen Street	16

* Luncheon will be provided at the Clarendon and Randolph Hotels, at a charge of 2/6 per head.

NOTICES.

This list of Hotels and Lodging-Houses has been prepared for the convenience of visitors, who must communicate with them *direct, and not through the Reception Committee.*

In communicating with any of the lodging-house keepers, visitors should quote the terms indicated in the list. A *set* of rooms consist of one sitting-room and one bedroom.

All the lodging-houses in the following list are situated within about half-a-mile radius of the Reception Room (Examination Schools), with the undermentioned exceptions:—

Streets marked with an *asterisk* (*) are beyond this radius.

Streets marked with a *dagger* (†) are within about half-a-mile of the University Museum, where the Sections will meet.

The lodging-houses are for the most part within easy reach of tram-lines or omnibus routes.

***** To obtain a revised List of Lodgings please communicate with the Secretary of Lodgings, British Medical Association, The Student's Delegacy, High Street, Oxford.**

THE PATHOLOGICAL MUSEUM.

IN the whole programme of the annual meeting of the Association perhaps no single section possesses greater possibilities for usefulness than those enjoyed by the Pathological Museum; yet, certainly, none may more easily entirely fail to fulfil its purpose.

It is, indeed, no easy task for those who are responsible for the Museum to steer a middle course between the Scylla of rejecting valuable and instructive material and the Charybdis of presenting merely an ill-assorted series of heterogeneous specimens on which the visitor can at best bestow but a cursory glance.

The considerations which should govern the collection and arrangement of the Annual Museum are clearly emphasized in the letter published in the JOURNAL of June 4th over the signature of Mr. Jonathan Hutchinson. The aim in view has been to present as far as possible a visible summary of what has been achieved most recently in medical science, and to bring before the Association generally the knowledge gained by the research of individual members.

We understand that the Local Committee in Oxford has been keenly alive to the importance of the points mentioned, since it is felt that, especially in Oxford, where, as Mr. Hutchinson points out, the Annual Museum first saw the light, no effort should be spared to ensure an exhibition of exceptional interest.

The Committee are anxious to secure the assistance of all members of the Association who can lend instructive specimens or apparatus. With this object a circular was prepared in November last and distributed widely as a general appeal for assistance: and lest this should fail to reach some members who might be able to afford important service in this direction, a copy of the circular was published in the BRITISH MEDICAL JOURNAL for December 12th, 1903, p. 1554, and in the SUPPLEMENT to the JOURNAL of May 7th, 1904, p. 123.

In order to render the material as accessible as possible, it is proposed to arrange the exhibits under the following headings:

1. Specimens, photographs, drawings, etc., illustrating recent advances in medical science.
2. Skiagraphs and apparatus for skiagraphy.
3. Colour photography in relation to medical, surgical, and pathological work.
4. Photomicrographs and apparatus for photomicrography.
5. Instruments for clinical diagnosis.
6. Surgical anatomy.
7. Specimens bearing on any of the discussions in the various sections.

A very considerable number of important exhibits have been promised already, but we understand that the Secretary of the Museum Committee (Dr. Ainley Walker, University College, Oxford) will be very glad to receive further offers, and to supply any information desired by intending exhibitors.

Exhibitors will as far as possible be given opportunities of personally demonstrating their specimens or apparatus at stated times during the course of the meeting.

In view of the letter from Mr. Hutchinson we may mention specially that skiagraphs, drawings, photographs, and colour photographs form a considerable part of the exhibits promised.

Among the important contributions which will be displayed in the museums are exhibits bearing on ankylostomiasis, miners' lung disease, tropical diseases, cell division in carcinoma, prostatic disease, congenital dislocation of the hip before and after treatment by Lorenz's method, the estimation of the phagocytic power of the blood, the estimation of the purin bodies in the urine, etc.

The Museum is being kept quite separate from the trade exhibits, and will be located in an entirely different building. It will be arranged in the large, well lighted, ground-floor rooms of the Anatomical Department of the University, and will thus be in the immediate neighbourhood of the meeting places of all the various sections.

EXHIBITION.

A collection of medical, surgical, dietetic and sanitary apparatus, medical books, and hospital appliances will be arranged in the Examination Schools, High Street, Oxford, in the same building as the Reception Room.

PROGRAMME OF BUSINESS.

TUESDAY, JULY 26TH.

9 a.m.—Council Meeting.
10.30 a.m.—Service in Christ Church Cathedral.
12 noon.—Annual General Meeting, followed by Representative Meeting. Examination Schools.
8 p.m.—President's Address. Sheldonian Theatre.

WEDNESDAY, JULY 27TH.

9 a.m.—Meeting of 1904-5 New Council.
10 a.m. to 1 p.m.—Sectional Meetings. University Museum.
2 p.m.—Adjourned General Meeting, followed by Representative Meeting. Examination Schools.
8 p.m.—Address in Medicine. Sheldonian Theatre.

THURSDAY, JULY 28TH.

9 a.m.—Meeting of Council.
10 a.m. to 1 p.m.—Sectional Meetings. University Museum.
2 p.m.—Address in Surgery. Sheldonian Theatre.
3.30 p.m.—Representative Meeting (if business not already concluded). Examination Schools.
7.30 p.m.—Annual Dinner of the Association.
8 p.m.—Popular Lecture by Dr. G. Bagot Ferguson, F.R.C.S., M.Ch.Oxon. Town Hall.

FRIDAY, JULY 29TH.

9 a.m.—Meeting of Council.
10 a.m. to 1 p.m.—Sectional Meetings. University Museum.
2 p.m.—Representative Meeting (if business not already concluded). Examination Schools.

PROGRAMME OF ENTERTAINMENTS.

WEDNESDAY.

Afternoon.—Reception by the President (Dr. W. Collier, F.R.C.P.) and members of the Oxford Division, in Wadham College Gardens. Duelling and fencing exhibition. *Epée* contest between Oxford and Cambridge.
Evening.—Soirée at the Museum, given by the Vice-Chancellor and members of the University.

THURSDAY.

Afternoon.—Garden Party given by Mr. H. Morrell, M.P., at Headington.
Garden Party by Dr. Neil at the Warneford Asylum.
Promenade Concert in a College Garden.
Evening.—Annual dinner in Christ Church Hall.
Ladies' Entertainment in New College Gardens and Hall

FRIDAY.

Afternoon.—Garden Party at Blenheim Palace.
Music in a College Garden.
Evening.—Reception by the Mayor, Mr. E. A. Bevers, M.R.C.S., in the City Buildings.

SATURDAY.

Excursion to Leamington and Warwick. The Corporation of Leamington provides lunch. The Colonial Secretary will take the Chair. The Countess of Warwick gives a Garden Party in the afternoon.
River Excursion to Reading and Henley.

VICE-CHANCELLOR'S SOIRÉE.

The Vice-Chancellor and members of the University will give a *soirée* on Wednesday evening, July 27th, and members of the Association who may have exhibits of exceptional scientific interest and are willing to show them are requested to communicate as early as possible with Mr. G. H. Nagel, Trinity College, Oxford.

GOLF MATCH.

It has been decided to hold an International Golf Match during the meeting between teams representing England *versus* the Rest. Residence, not birth, will be the qualification for inclusion in the teams. English and Irish players may send in their names with their club handicaps to Dr. Proudfoot, 43, St. Giles, Oxford, while Dr. Norman Walker, 7, Manor Place, Edinburgh, will receive names and handicaps from Scotch players. Professor Symington, Queen's College, Belfast, is also prepared to receive the names and handicaps of Irish players.

CRICKET MATCH.

We are requested to state that it is proposed that a cricket match should be played during the Annual Meeting between members of the Association on one side and a local team on the other. Members willing to take part in the match are requested to send their names to Dr. R. Hitchings, 37, Holywell Street, Oxford, before July 16th.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 16TH, 1904.

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ASSOCIATION INTELLIGENCE.

PROCEEDINGS OF COUNCIL.

AT a meeting of the Council held in the Council Room of the Association, 429, Strand, W.C., on Wednesday, July 6th, 1904,

Present:

Mr. ANDREW CLARK, Chairman of Council, in the Chair.
Dr. T. DRYSLWYN GRIFFITHS, President.
Dr. WILLIAM COLLIER, President-elect.
Sir VICTOR HORSLEY, F.R.S., Chairman of Representative Meeting.
Dr. E. MARKHAM SKERRITT, Treasurer.

Dr. EDGAR G. BARNES, Eye.
Dr. JAMES BARR, Liverpool.
Dr. MICHAEL BEVERLEY, Norwich.
Dr. J. BRASSEY BRIERLEY, Old Trafford.
Dr. H. LANGLEY BROWNE, West Bromwich.
Dr. R. C. BUIST, Dundee.
Dr. DUNCAN BURGESS, Sheffield.
Mr. JAMES CANTLIE (Hong Kong Branch), London.
Dr. W. A. CARLINE, Lincoln.
Dr. JAMES CRAIG, Dublin.
Dr. H. RADCLIFFE CROCKER, London.
Dr. GEORGE W. CROWE, Worcester.
Lieutenant-Colonel E. F. DRAKE-BROCKMAN, I.M.S. (ret.), (South Indian and Madras Branch), London.
Mr. GEORGE EASTES, M.B., London.
Surgeon-General G. J. H. EVATT, C.B., Havant.
Dr. EDWARD LAWRENCE FOX, Plymouth.
Dr. JOHN H. GALTON, Upper Norwood.
Dr. BRUCE GOFF, Bothwell.
Dr. JOSEPH GROVES, Carisbrooke.
Dr. JAMES HAMILTON, Glasgow.
Dr. W. M. HARMAN, Winchester.
Mr. W. F. HASLAM, Birmingham.
Dr. T. ARTHUR HELME, Manchester.
Dr. G. A. HERON, London.
Dr. JAMES H. HUNTER, South Shields.
Mr. EVAN JONES, Aberdare.
Mr. R. H. KINSEY, Bedford.
Dr. C. G. DRUMMOND MORIER (South Australia Branch), London.
Mr. W. JONES MORRIS, Portmadoc.
Dr. JAMES MURPHY, Sunderland.
Dr. JAMES MURRAY, Inverness.
Mr. D. A. O'SULLIVAN, London.
Mr. EDMUND OWEN, London.
Mr. C. H. WATTS PARKINSON, Wimborne Minster.
Dr. ROBERT W. PHILIP, Edinburgh.
Dr. FRANK M. POPE, Leicester.
Dr. EDWIN RAYNER, Stockport.
Mr. H. BETHAM ROBINSON, M.S.Lond., London.
Dr. J. MAXWELL ROSS, Dumfries.
Professor ROBERT SAUNDBY, M.D., LL.D., Birmingham.
Mr. W. D. SPANTON, Hanley.
Mr. J. LYNN THOMAS, C.B., Cardiff.
Mr. T. JENNER VERRALL, Brighton.
Dr. NORMAN WALKER, Edinburgh.

The minutes of the last meeting having been printed and circulated were taken as read and signed as correct.

Read letters of apology for non-attendance from Sir Francis Lovell, K.C.M.G., Dr. E. J. Cave, Dr. C. H. Milburn, and Brigade-Surgeon-Lieutenant-Colonel Moriarty.

Surgeon-General Evatt, C.B., a co-opted member of the Council, was introduced to the Council as attending for the first time.

Read acknowledgements to the resolutions of sympathy passed at the last meeting in reference to the deaths of Sir Edward Sieveking, Sir William R. Kynsey, K.C.M.G., and Dr. Alexander Davidson, which were ordered to be entered on the minutes.

Read letter from the Midland Branch inviting the Association to hold its annual meeting in Leicester in 1905, when it was decided to lay the invitation before the meeting at Oxford, and to recommend that, should the invitation be accepted, the date of the meeting be fixed for July 24th to 27th, 1905.

Resolved: That this Council desires to congratulate Sir Constantine Holman, Vice-President of the British Medical Association, on receiving the honour of Knighthood at the hands of His Majesty the King.

Read acknowledgements from the County of Durham Medical Union and the Northumberland and Newcastle Medical Society for the financial assistance voted at the last meeting of the Council, which were ordered to be entered on the minutes.

Dr. Groves reported that, at the request of the Chairman of Council, he had on behalf of the Association joined the deputation from the Royal Statistical Society arranged to wait upon the President of the Local Government Board with a view of urging the importance of taking an intermediate census of the United Kingdom in 1906, restricted to particulars of number, sex, and age.

Resolved: That the thanks of the Council be given to Dr. Groves for representing the Association.

Read resolutions passed by the County Meath Branch and the County Galway Branch of the Irish Medical Association, and the North of England Branch of the British Medical Association on the publication in the BRITISH MEDICAL JOURNAL of the report on the Irish Poor-law Medical Service, which were ordered to be entered on the minutes.

Resolved: That it be a recommendation to the Annual General Meeting that the following be elected Honorary Members of the British Medical Association for their valuable services rendered to the Association in connexion with the Oxford Meeting: The Vice-Chancellor, Oxford University (Dr. D. B. Monro); the Dean of Christ Church (the Very Rev. Thomas Banks Strong, D.D.); and the Master of University College (the Rev. James Franck Bright, D.D.) who will preach the Annual Sermon; also Professor Augustus G. Vernon Harcourt, M.A., F.R.S., for the valuable services he has rendered to the Association through the Special Chloroform Committee.

On consideration of the candidates for election to the Association it was resolved that the thirteen candidates whose names appear on the circular convening the meeting be and they are hereby elected members of the British Medical Association.

On the reception of the minutes of the Premises and Library Committee (see p. 50) it was resolved:

That the accounts for the quarter be received and the Treasurer be empowered to pay them.

That the application of the Swansea Division be acceded to, and that a list of the duplicate set of volumes be forwarded for selection.

The minutes of the Scientific Grants Committee were then considered. (See p. 50).

In reference to the following recommendation:—

That it be a recommendation to the Council that this Committee is of opinion that another scholarship of £200 should be founded which might for the present be allotted to the department of Tropical Medicine.

An amendment was moved and seconded,

That instead of an additional Scholarship being established from the funds of the Association the Treasury should be approached in order that a National Fund should be created for the purpose of Research in Tropical Medicine.

The amendment having been put was declared to be carried.

Resolved: That Dr. J. O. W. Barratt be elected Research Scholar for a further period of one year.

Resolved: That Dr. J. T. Hewetson be elected Research Scholar for a further period of one year.

Resolved: That Miss Janet Lane-Claypon be appointed to the vacant scholarship.

Resolved: That Dr. Thomas Evans be appointed Ernest Hart Memorial Scholar for a period of twelve months, *vice* Dr. W. Jobson Horne.

The report of the Scientific Grants Committee was considered and approved, and ordered to be entered on the minutes. This report was published in the SUPPLEMENT of July 9th, p. 9.

Resolved: That the Middlemore Prize be awarded to John Herbert Parsons, M.B., F.R.C.S., on account of his work in connexion with the Intraocular Circulation and Pressure and their Relation to the Intracranial and General Circulation, on the Course of Fibres in the Optic Nerve, and on the Influence of the Cortex Cerebri on the Movements of the Pupil.

The minutes of the Journal and Finance Committee were then considered (see p. 50).

Resolved: That the report of the Subcommittee on the Publication of Reports of Societies in the BRITISH MEDICAL JOURNAL be approved.

Resolved: That the appointment of Mr. A. H. Lawford as Assistant Secretary be confirmed.

Resolved: That the Council regrets it is unable to make a grant to the Liverpool School of Tropical Medicine.

Resolved: That the accounts for the quarter ending June 30th last, amounting to £9,950 14s. 6d., be received and approved, and that the Treasurer be empowered to pay those remaining unpaid, amounting to £2,795 11s. 4d.

Resolved: That the Council sanction the payment of the skilled assistance referred to in the minute of the Medico-Political Committee relating to the analysis of the replies on contract practice.

Resolved: That the Premises and Library Committee be instructed to take into consideration the general accommodation of the various departments of the building, especially that relating to the printing department, and bring up a report to the Council on the subject.

The minutes of the Royal Naval and Military Committee were then considered (see p. 42) and the action of the Committee approved.

The minutes of the Medico-Political Committee of May 4th and June 15th, 1904, were then considered.

On the consideration of the minutes of the Medico-Political Committee of May 4th and June 15th, 1904, it was resolved:

That the Council approves of the report contained in Appendix A (see p. 36).

That the Council expresses its disapproval of the proposals of the Spectacle Makers' Company on sight-testing, as being fraught with special risk to the public.

That the Council desires to call attention to the inadequacy of the provisions made by the Company for controlling the advertisements of its freemen; to the misleading nature of many of the said advertisements, and to the dangers arising from systematic deception of the public as regards the competence of those who undertake so important a duty as the treatment of visual defects.

That Report B (see p. 37) be issued for the information of the Divisions.

That Memorandum C (see p. 37) be communicated to the Chief Secretary for Ireland and to all members of both Houses of Parliament.

That action be taken in support of the conclusions of the Scottish Committee concerning the report of the Departmental Committee on Poor-law Medical Relief in Scotland.

That a Memorandum be addressed to the Privy Council in support of the petition of the General Medical Council in favour of the establishment of statutory registration of medical and dental students.

In consideration of the minutes of the Colonial Committee (see p. 41) it was resolved:

That the Council is of opinion that it is expedient that only those medical qualifications which are available for registration in Great Britain and Ireland should be registrable in Australia.

That a copy of the foregoing resolution be forwarded to the Colonial Secretary, with a respectful request that copies may be transmitted to the Australian Colonial Governments for their consideration.

The question was raised as to members resident in England representing a Colonial Branch on the Council of the Association, when it was decided that the whole question of representation of the Colonial Branches on the Council of the Association be referred to the Organization Committee.

The minutes of the Hospitals Committee (see p. 49) were then considered, and the Council approved the principles drafted on the question.

The minutes of the Scottish Committee were then considered and approved.

The minutes of the Organization Committee of June 7th, 1904, were then considered, and the Council approved of the rules of the following Branch and Divisions:—

Branch: Leinster.

Divisions: Altrincham, Coventry, Darlington, Hampstead, South Staffordshire, Stratford, Westminster; and the adoption of new model rules as to the filling of casual vacancies of the following Divisions—Canterbury, Devonport, Dover, Wakefield, and Westminster.

The minutes of the Ethical Committee of June 17th, 1904, were then considered; and the Council approved the rules of ethical procedure of the following Branch and Divisions—Leinster Branch; Darlington, Lanarkshire, South Suffolk Divisions, and Westminster; also special ethical rules of the Swansea Division.

Resolved: That the Council is of opinion that it is contrary to the interests of the medical profession and the public that medical practitioners should take part in the examinations of the Spectacle Makers' Company.

The minutes of the Public Health Committee of June 10th, 1904, were then considered, and it was resolved that the President of the Local Government Board be approached to include security of tenure in the Public Health (Security of Tenure of Sanitary Officers) Bill in the present session. That in the event of his refusal, the Bill of the Association be redrafted to provide for security of tenure only, and every effort made to secure its introduction in the next session of Parliament.

That the Council approves of the Alkali, etc., Works Bill, 1904.

That the Council disapproves of the Tuberculosis (Animals) Compensation Bill, 1904.

That the Council urges the adoption of the amendment which Sir Hugh Shaw-Stewart proposes to move in the House of Commons to the Scottish Education Bill with a slight modification to the effect that instead of inspection and supervision being carried out "under the supervision of" the Medical Officer of Health, it shall be carried out "in co-operation with" the Medical Officer of Health.

The minutes of the Medical Defence Committee of June 23rd, 1904, were then considered, when it was resolved that the analysis of the replies received from the Divisions relating to Medical Defence be referred to the Representative Meeting.

The Chairman of Council reported that a member of a Branch had been in communication with him as to the legality of the election of representatives from that Branch on the Central Council, when it was resolved that the question of the mode of election by Branches for representatives on the Council, together with the correspondence referred to by the Chairman of Council, be remitted to the Organization Committee, with an instruction that it should suggest a uniform scheme of nomination and voting paper to be used generally by Branches throughout the Association.

It was proposed that in consideration of the advantage of securing adequate geographical distribution of the members of Standing and other Committees a Nomination Committee be appointed, consisting of, in addition to the President and Chairman of Council, the Treasurer, the Chairmen of the Medico Political, Organization, and Ethical Committees, and of four other members of Council, and that they be instructed to prepare a list of nominations for the vacancies in the Committees and present it to the next Council. On the motion being put from the Chair it was declared to be lost.

Read resolution passed by the New Zealand Branch regarding the administering of anaesthetics for unregistered dentists:

Wellington, March 30th, 1904.

Dear Sir,—At the last Council meeting the following resolution was passed: "That the matter of giving anaesthetics for unregistered dentists be brought before the General Medical Council, with a view to its warning medical men in New Zealand against such practice."

It has been reported that some medical men who are not members of the Association do commit breaches of the regulations in this respect, and it is understood that some such warning was sent to medical men who are on the Imperial *Register* some two or three years ago.

I am directed to request that you will kindly convey the above resolution to the General Medical Council, as it is thought advisable that it should pass through your hands.

I am, dear Sir,
Yours faithfully,
H. M. GORE, Secretary.

The General Secretary,
British Medical Association.

Resolved: That the resolution passed by the New Zealand Branch be transmitted to the General Medical Council as a recommendation from this Council.

Read resolution passed by the North of England Branch urging the necessity of providing skilled assistance for the Medical Secretary, when it was resolved:

That a Committee be appointed consisting of the President and Chairman of Council *ex officio*, the officers of the Association, and the Chairmen of all the Committees to consider and report upon the resolution of the North of England Branch.

Read resolution passed by the Council of the Southern Branch relating to the clerical duties involved upon the Division Secretaries, which was ordered to be entered on the minutes.

Read resolution passed by the Midland Branch requiring sponsors for the election of members, which was approved and ordered to be entered on the minutes.

Resolved: That permission be granted to the following Societies to hold meetings during the Annual Meeting at Oxford: (1) Irish Graduates' Association; (2) New Sydenham Society; (3) the United Kingdom Police Surgeons' Association; and (4) Annual Medical Temperance Breakfast of the National Temperance League.

Read letter with reference to a special canvass of medical men non-members of the Association resident in Ireland, with a view to inducing them to join the British Medical Association. This was referred to the Organization Committee.

Resolved: That in future issues of the List of Members of the British Medical Association the names of the Representatives for the Representative Meeting be printed in the List immediately after the names of the Council.

Read communication from the Council of the Midland Union on the Position of the Medical Attendant in Criminal Cases, which was referred to the Medico-Political Committee.

Read communication from the Wandsworth Division of the Metropolitan Counties Branch, when the General Secretary was instructed to inform the Wandsworth Division that its proposal (*a*) might preclude the Council from taking the initiative on any subject; while with regard to (*b*) the Council is of opinion that when matters are being discussed in a Division it is desirable that notice be published in the JOURNAL, so that the subjects may be generally known.

Proceedings of Standing Committees.

MEDICO-POLITICAL COMMITTEE.

A MEETING of the Medico-Political Committee was held at the office of the Association, on May 4th, 1904, when there were present Sir Victor Horsley, F.R.S., in the chair, Mr. Andrew Clark (Chairman of Council), Dr. H. Langley Browne, Dr. R. C. Buist, Dr. Major Greenwood, Dr. G. A. Heron, Mr. T. Garrett Horder, Mr. G. Jackson, and Dr. J. A. Macdonald.

THE PAYMENT OF MEDICAL MEN CALLED IN TO ASSIST MIDWIVES.

Communications received from the Editor containing certain suggestions as to the payments to medical men called in to assist midwives were considered, and the Medical Secretary was instructed to prepare a memorandum on the subject for consideration by the Committee at its next meeting.

POOR-LAW MEDICAL RELIEF IN SCOTLAND.

The report of the Departmental Committee of the Scottish Office on Poor-law Medical Relief in Scotland,[1] and a communication received from the Editor relative to certain certificates of health for educational purposes were referred to the Scottish Committee.

THE SPECTACLE MAKERS' COMPANY.

The Medical Secretary laid before the Committee a *précis* of correspondence with the Worshipful Company of Spectacle Makers and others concerning the diploma scheme of that Company and also the advertisements of certain freemen of that Company. The Chairman and Secretary were instructed to prepare a memorandum on the subject for consideration by the Committee at its next meeting.

THE NATIONAL DEPOSIT FRIENDLY SOCIETY.

A report on the National Deposit Friendly Society drafted by a special Subcommittee[2] was approved and ordered to be circulated to the Divisions as the report of the Committee.

POOR-LAW MEDICAL OFFICERS SUPERANNUATION (IRELAND) BILL.

The Chairman and the Medical Secretary were instructed to prepare a memorandum for submission to the Chief Secretary for Ireland on the Poor-law Medical Officers Superannuation (Ireland) Bill,[3] supporting the principle of the Bill, and suggesting as an amendment that any period of service in the Poor-law Medical Service in any part of the United Kingdom should count for superannuation.

THE MEDICAL ACTS AMENDMENT BILL.

The Medical Acts Amendment Bill[4] was considered clause by clause, amended, and ordered to be submitted to a Parliamentary draftsman, and then laid before the Divisions.

A further meeting of the Committee was held at the office of the Association on June 15th, 1904, when there were present: Sir Victor Horsley, F.R.S., in the chair, Dr. T. D. Griffiths (President), Mr. Andrew Clark (Chairman of Council), Dr. E. Markham Skerritt (Treasurer), Dr. H. Langley Browne, Dr. R. C. Buist, Dr. Major Greenwood, Dr. G. A. Heron, Mr. T. Garrett Horder, Dr. J. A. Macdonald, Mr. M. A. Messiter, Dr. C. H. Milburn, Dr. J. Murphy, and Mr. D. A. O'Sullivan.

[1] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, April 30th, 1904, p. 80.
[2] Ibid., May 28th, p. 132.
[3] Ibid., April 30th, 1904, p. 92.
[4] Ibid., May 28th, 1904, p. 127.

INVALID CERTIFICATES AND THE GENERAL MEDICAL COUNCIL.

The Committee considered the reply of the General Medical Council[5] concerning the matter of a medical certificate signed by a chemist which the Education Committee of Bootle had brought to the notice of the Association, and the Association had referred to the General Medical Council. The Chairman and Secretary were instructed to obtain a legal opinion on the matter, and to write to the General Medical Council pointing out that the Executive Committee of that Council had misunderstood the professional question involved.

REPEATED DISPENSING OF PRESCRIPTIONS.

The Chairman, Dr. Major Greenwood, Dr. Heron, and Mr. Messiter were appointed a deputation to confer with the representatives of the Pharmaceutical Society on the subject of the unduly repeated dispensing of prescriptions, if the Pharmaceutical Society should accept the invitation of the Association for a conference on the subject.

MEDICAL OFFICERS OF ASYLUMS IN IRELAND.

The Committee approved of the action of the Chairman in instructing that the matter of an appointment on religious grounds to the post of medical officer of an asylum in Ireland[6] should be referred to the Public Health Committee of members of the House of Commons.

THE SPECTACLE MAKERS' COMPANY.

The following report on the Spectacle Makers' Company was approved for presentation to the Council:

Report upon the Diploma Scheme of the Worshipful Company of Spectacle Makers.

The Medico-Political Committee of the British Medical Association has carefully considered the diploma scheme of the Spectacle Makers' Company in which sight-testing is now included.

(*a*) The attention of the Committee was first directed to this matter in connexion with certain advertisements issued by persons holding the diploma of the Company, which have from time to time been brought by members of the Association and others to the notice of the Committee, either directly or through the Editor of the BRITISH MEDICAL JOURNAL.

The Committee has called the attention of the Spectacle Makers' Company to such advertisements as being deemed contrary to the conditions on which the freedom of the Company has been stated by the Company to be granted, and the Committee has in reply been informed by the Spectacle Makers' Company of the steps which it has taken to enforce the conditions named, and thereby to fulfil the guarantees which the Company has entered into with the public, that its freemen will not be allowed (1) to use drugs for the purpose of paralysing the accommodation of the eye, or (2) to mislead the public in relation to their qualifications for dealing with visual defects.

(*b*) The Committee has further had referred to it applications received from three members of the Association who, having severally been offered the post of examiner for the Company under its new scheme of examination, have asked for guidance from the Association as to the propriety of undertaking such an examinership, and have expressed their determination not to accept the office except with the approval of the Association.

One of the applicants is a former examiner to the Company, who resigned his appointment when the Company determined to include sight-testing in its examinations.

(*c*) The Committee has had before it various documents, supplied by the gentleman last mentioned, in which are stated the circumstances which have led to the adoption by the Company of the present scheme of examination, and which include certain communications to the Company, signed by Lord Kelvin, Sir Robert Ball, and other physicists of eminence, expressing approval of the course which the signatories understood the Spectacle Makers' Company to be proposing to adopt.

It is observed that none of the signatories are either medical practitioners or physiologists.

(*d*) By the courtesy of the Royal College of Physicians of London and of the Royal College of Surgeons of England, the Committee has been furnished with copies of expressions of opinion by the Censors Board of the Royal College of Physicians and by the Council of the Royal College of Surgeons, which were given in reply to applications made to these bodies by the Spectacle Makers' Company at the time when the new diploma scheme was under consideration.

It is noted that both opinions are to the effect that the proposals of the Spectacle Makers' Company are fraught with danger to the public.

As the result of full consideration of the whole matter, based upon the information stated in the foregoing paragraphs, the Committee begs to report as follows:

1. As regards, in the first place, the testing of errors of refraction, the Committee is of opinion that any proposal which holds out to the public the suggestion that such errors can be tested adequately without the use of all known means, including mydriatic drugs, is essentially misleading. Persons who have not received a medical and surgical training are properly debarred from using such drugs, and, therefore, the guarantees of qualification in sight testing, which the Spectacle Makers' Company suggests to the public that its examinations provide, are illusory.

2. In the second place the eye, being not a separate optical instrument but a living and inseparable portion of the human body, shares the diseases of the body, and, therefore, while defects of refraction occur in eyes which are otherwise healthy, they are so frequently associated with conditions of local and general disease that their meaning and nature can only be diagnosed and treated by persons who have received a complete medical and surgical training.

3. In many cases of grave local and general disease, impairment of sight is the symptom which first or most prominently attracts the attention of the patient. If in such cases no proper diagnosis of the actual disease is made, and treatment is confined to compensation of the merely co-existent errors of refraction, as by an optician, the public manifestly is exposed to disastrous risks.

4. The dangers indicated in the foregoing paragraphs appear to the Committee to be enhanced by the entirely inadequate control exercised by the Company over the conduct of its freemen.

It is alleged by the Company that its freemen are bound by certain undertakings which they have entered into with the Company, and that by virtue thereof the public have a guarantee from the Company that the freemen will not undertake, and will not represent themselves as qualified to undertake, tasks for which their training has not fitted them.

The Committee has carefully considered to what extent the guarantees thus offered by the Spectacle Makers' Company to the public have been carried out in the specific instances which have been brought to their notice and which they have referred to the Company.

In such advertisements occur phrases of which the following are examples:

"We are qualified to treat the most difficult cases where glasses will be of use."

"We can guarantee the greatest possible satisfaction in all cases of faulty eyesight from refractive errors."

The use of such phrases is obviously a direct violation of the undertaking given by the advertisers that they will not issue advertisements misleading to the public, but the Committee has been unable to ascertain from the Spectacle Makers' Company any instance in which such misconduct has been dealt with by withdrawal from the offender of the freedom of the Company. The only action which the Committee is informed that the Company has taken is that a mild remonstrance has been addressed to the advertiser, and he has been induced to modify the advertisements. Further, apart from the use of directly false statements of the kind cited, the Committee is of opinion that the entire tenour of many of the advertisements in question is a suggestion to the public that the advertiser is competent to undertake duties which, in fact, only a person who has passed through a complete training in medicine and surgery could, with safety to the patient, undertake.

The Committee, therefore, recommends:—

That the Association should express its disapproval of the proposals of the Spectacle Makers' Company on sight-testing, as being fraught with special risk to the public;

Further, that the Association should call attention to the inadequacy of the provisions made by the Company for controlling the advertisements of its freemen, to the misleading nature of many of the said advertisements, and to the dangers arising from systematic deception of the public as regards the competence of those who undertake so important a duty as the treatment of visual defects.

[5] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, June 4th, 1904, p. 160.

[6] BRITISH MEDICAL JOURNAL, 1904, vol. i, pp. 914, 1039, 1160, 1384, 1457.

THE PAYMENT OF MEDICAL MEN CALLED IN TO ASSIST MIDWIVES.

With respect to the payment of medical men called in to assist midwives, the Committee approved of the following report to the Council, with the recommendation that it should be issued for the information of the Divisions.

Memorandum on the Payment of Medical Men called in to assist Midwives.

Two proposals to provide for the above object have been brought to the notice of the Medico-Political Committee as having been made by persons who have given special attention to the subject.

(1) The first proposal is that the County Councils should themselves undertake to arrange that there shall be in every district some doctor or doctors on whom midwives can rely to attend when summoned, and that the County Councils should make themselves responsible to such doctors for their remuneration.

It is proposed that the County Councils, having paid the fees (or salaries, as the case might be) in the first instance, should recover from the patient, if able to afford it, or, in the case of persons unable to pay, from the Board of Guardians under some standing arrangement.

As to the mode of remuneration of the doctors it is suggested that this might be either—

(*a*) by fee for each case according to a fixed scale; or

(*b*) by salary paid to those who undertook to act when called upon, the salaries being readjusted from time to time in accordance with the actual work done.

The reason is put forward in favour of the latter course, that it would prevent any suspicion of collusion between individual medical practitioners and individual midwives.

(2) The alternative proposal is to dispense with the intervention of the County Councils, the medical practitioner looking for payment directly to his patient, except in the case of those who may be suitable objects for medical relief, and with regard to these looking to the Board of Guardians.

The question arises as to how the practitioner is to know, when attending, whether, if the patient should prove unable to pay, the guardians would recognize the obligation. By the nature of the case the attendance will, as a rule, be a matter of urgency, and it is essential that time should not be lost in obtaining an order from the relieving officer, and in investigations by him as to the suitability of the applicant for medical relief of the kind.

It is suggested that this difficulty can be in great part overcome by the application of the "loan system," that is, that the relieving officer should, without waiting for investigation, issue an "order on loan," the guardians recovering the fee from the patient if able to pay.

Under the scheme (2) the fees to be charged by medical practitioners when called in in the cases contemplated could be fixed by local agreement through the agency of the Divisions of the Association.

If payments were made though the intervention of the County Councils it might possibly be more difficult for the local profession to determine the rates of payment.

The arrangements under the proposal (1) (*b*), that individual practitioners engaged in general practice should be selected by the County Council in each district, and paid salaries to attend to this work, would probably be specially difficult for the profession to control by united action.

The Committee has framed the foregoing memorandum with a view to the information of the Divisions. It appears to the Medico-Political Committee that the second of the two schemes above stated is less open to objection from the point of view of the profession.

POOR-LAW MEDICAL OFFICERS SUPERANNUATION (IRELAND) BILL.

The following memorandum in support of the Poor-law Medical Officers Superannuation (Ireland) Bill was approved, and the Council was recommended to send the same to the Chief Secretary for Ireland and to all members of both Houses of Parliament:

To the Right Honourable George Wyndham, M.P.,
Chief Secretary to His Excellency
The Lord Lieutenant of Ireland.

The British Medical Association, as representing the Medical Profession in the United Kingdom and Colonies, desires most respectfully to represent to the Chief Secretary for Ireland the following grounds upon which it appears to the Association that the principle of the Poor-law Medical Officers (Ireland) Bill, which was introduced into the House of Commons on April 18th, 1904, by Mr. T. W. Russell, M.P., should receive the approval and support of His Majesty's Government.

(1) The general considerations in favour of the principle of superannuation, as affecting civil servants and persons similarly engaged in the regular service of public bodies, are so well established and are without doubt so well known to the Chief Secretary for Ireland that the Association, while calling attention to those considerations as applying to the case of the Irish Poor-law Medical Officers, does not think it necessary to enter into them in the present memorandum.

(2) The Association would submit that the general considerations to which allusion has been made apply with special force to the case of medical officers (as compared with other civil servants), having regard to the arduous nature of their duties, and the special risks involved therein, which render them more liable than others to premature breakdown consequent upon the performance of their official work.

(3) The principle of superannuation has already been recognized by Parliament in the case of Poor-law Medical Officers in England and Wales.

(4) In the case of the Irish Poor-law Medical Officers, the Association would point out that they have an exceptional claim to superannuation with the assistance of public funds, based upon the fact that in most districts the opportunities for private practice are so limited that the Medical Officer cannot by private earnings make adequate provision for old age and infirmity, from which it results that the Medical Officer is obliged to cling to his office for a livelihood after age and infirmity have incapacitated him for efficient discharge of his duties.

(5) The Association would also desire to suggest that a Poor-law Officer who has served as such in different parts of the United Kingdom should, for the purposes of superannuation, be able to count the entire period of his service as a Poor-law Medical Officer.

THE MEDICAL ACTS AMENDMENT BILL.

The Committee approved of the explanatory memorandum which had been issued with the Medical Acts Amendment Bill[7] and also the covering letter[8] which the Medical Secretary had issued to the Honorary Secretaries of Divisions to accompany a reprint of various reports prepared by the Committee.

CONTRACT MEDICAL PRACTICE.

The Medical Secretary reported that up to the time of the meeting 1,080 replies had been received to the contract practice inquiry of the Committee, and that a large number of the replies were very full. Difficulties which had arisen with respect to the distribution in certain Divisions and inquiries received from Honorary Secretaries of some Divisions concerning the payment of the expenses of the inquiry out of central funds were also reported, and it was decided—

That the replies received to date should be analysed, and a detailed preliminary report prepared for submission to the Annual Representative Meeting, the Medical Secretary being instructed to obtain special skilled assistance for the purpose, and that the report be laid before the Committee prior to a Special Meeting to be held in July.

IRISH POOR-LAW REPORTS.

The Chairman laid before the Committee the Irish Poor-law reports, which, on the recommendation of the Committee, were being issued in a collected form, with a general introduction by the Editor, and a concluding paragraph prepared by the Medical Secretary to explain the special reforms which the British Medical Association, in co-operation with the Irish Medical Association, is now urging upon the Government and the Boards of Guardians in Ireland.

The action taken was approved.

POOR-LAW MEDICAL RELIEF IN SCOTLAND.

The Committee recommended the Council to take action in support of the conclusions of the Scottish Committee[9] with reference to the report of the Departmental Committee on Poor-law medical relief in Scotland.

EDUCATION CERTIFICATES IN SCOTLAND.

On the subject of education certificates in Scotland, the Committee, having before it a report by the Scottish Committee,[10] and also a letter of inquiry from a medical practi-

[7] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, May 28th, 1904, p. 125.
[8] Ibid., June 25th, 1904, p. 167.
[9] Ibid., April 30th, 1904, p. 86.
[10] Ibid., July 16th, 1904, p. 41.

tioner in Scotland as to whether a parent is compelled to produce a medical certificate excusing a child's non-attendance at school on account of illness, it was decided to postpone the consideration of the subject in order that further information might be obtained and a memorandum prepared.

WORKMEN'S COMPENSATION.

Dr. Langley Browne and the Medical Secretary laid before the Committee the following *précis* of the evidence which they had given on behalf of the Association before the Departmental Committee of the Home Office on Workmen's Compensation, and reported also the answers which they had given to further questions put to them by the Committee.

(*a*) *By H. W. Langley Browne, Esq., M.D., F.R.C.S.E., a member of the Council and of the Medico-Political Committee of the Association, and a Medical Referee under the Act for Circuit No. 25.*

I propose to draw attention to the conditions under which the Medical Referees were appointed and the loss entailed through compliance with those conditions.

Under Clause 11 (Schedule I). If the fees in this case were paid by the State many workmen would avail themselves of the benefit of the clause. Most of the cases going into court are covered by insurance. The insurance company demands that the workman shall submit to a medical examination and generally makes use of influential expert evidence. The workman is unable to afford the same class of evidence.

To suggest the value of an early medical report such as the one necessary under the French Act; to refer to the reports already made by the Certifying Surgeons.

To draw attention to the necessity of altering the present regulations if Medical Referees are to be retained.

(Signed) H. LANGLEY BROWNE.

(b) By the Medical Secretary of the Association.

1. I submit evidence as Medical Secretary of the British Medical Association as to the result of inquiries made by the Medico-Political Committee, of which I am Secretary, into the working of those clauses of the Workmen's Compensation Act in which the medical profession is more directly concerned.

2. I am instructed on behalf of the Association to explain briefly:

(*a*) The interest of the Association in the matter as a Society representative of the medical profession:

(*b*) The source of the information now submitted, namely, inquiries addressed to the medical referees appointed under the Act in February, 1903, of whom 230 replied out of 318 (314) then holding office;

(*c*) That the replies (1) showed that 144 had not acted: (2) contained statements of fact and opinion concerning reasons why Referees had not been employed as was originally expected; and (3) contained suggestions for improving regulations and procedure if office of Referee is to be continued.

3. The information thus obtained falls under two heads. (A) Matters which the Association would lay before the Committee as affecting principally the public interest. (B) Matters which are laid before the Committee as more directly concerning the interests of the medical profession.

(A) It is convenient to consider separately the work of Referees arising under Schedule I, section (11) and Schedule II, section (13).

(I.) Schedule I (11),

(*a*) Is in active operation in some districts, giving evidence of appreciation of principle;

(*b*) The causes of disuse in other districts are (i) ignorance of clause, (ii) procedure defective in following respects: employer cannot call in referee; workman is required to pay fee; Referee cannot be called in at sufficiently early stage. (These difficulties evaded in some districts.)

(II.) As to Schedule II (13).

(1) Evidence shows clause chiefly in operation in circuits of a few judges.

(2) In most circuits a dead letter.

(3) Evidence that certain judges indicated at time of appointment of Referees that they did not intend to employ them.

(4) Evidence that considerable misconception prevails as to proper procedure, for instance, as to whether a medical referee may be summoned as a witness on one side in a case arising in his own district.

(5) Evidence as to the public advantage of some provision of the kind in shortening litigation and saving expense.

(6) Suggestions that, if office continued, (*a*) Judge should have power to call the Referee to his assistance whether conflict of medical evidence has arisen or not; (*b*) where there is conflict of medical evidence it is desirable in public interest that Referee should always be employed; (*c*) the procedure of the Admiralty Courts is suggested as a model.

(III.) It is recognized that one cause of the non-employment of Referees has been the formation of Conciliation Boards and adoption of other systems of contracting out. If these were universally adopted Official Medical Referees appointed by the State would perhaps be unnecessary, being replaced by Medical Referees appointed jointly by the parties to the agreements.

(B) As touching the interests of the medical profession, the Association submits:

(*a*) That the list of Referees shows that a considerable number of medical men of high professional standing were originally appointed;

(*b*) That many of these sacrificed valuable appointments, and have since refused important private work, thought to clash with the duties of the Referee; this done in some instances on the advice of the Home Secretary:

(*c*) If the office is thought to be worth continuing in the public interest, then it will be necessary that the conditions of appointment should be modified, or it will cease to attract medical men for the service whose experience and professional standing will command the respect necessary for the position.

It was resolved:

That the Committee approves the evidence given by Dr. Langley Browne and the Medical Secretary, and that the thanks of the Committee to them for giving the said evidence be recorded on the minutes.

POST-OFFICE MEDICAL APPOINTMENTS.

The consideration of a letter from the South Manchester Division concerning Post Office appointments was adjourned to the next meeting of the Committee, the Medical Secretary being instructed in the meantime to make inquiries of the British Postal Medical Officers' Association, as the matter appeared to be one of more than purely local concern.

REGISTRATION OF MEDICAL AND DENTAL STUDENTS.

The Committee considered a resolution of the General Medical Council adopted on May 30th, as follows:

That the Lord President of the Privy Council be requested to introduce into Parliament a Bill to confer upon the General Medical Council statutory power to establish and maintain registers of medical and dental students, and to impose a fee not exceeding £1 for registration therein.

It was resolved:

That the Council be recommended to address a memorandum to the Privy Council in support of the petition of the General Medical Council.

CONSULTATION OF MEDICAL WITNESSES.

The Medical Secretary reported as to the replies received from Divisions concerning the consultation of medical witnesses, and the matter was referred to the Emergency Subcommittee to investigate and report thereon, with the assistance of co-opted members if desired.

COLLIERY PRACTICE IN SOUTH WALES.

Communications from the General Secretary, from the Editor, and from the Honorary Secretary of a Division, drawing attention to various matters concerning colliery appointments in South Wales, having been considered, it was resolved:

That the Medical Secretary be instructed to visit South Wales for the purpose of investigating the special conditions of contract practice in the district, and to report thereon to the Committee, communication first being made with the Honorary Secretaries of the South Wales Branch and of the Divisions of that Branch as to the most suitable procedure to be adopted for the investigation.

MEDICAL PRACTITIONERS AND THE CORONER FOR SOUTH-WEST LONDON.

The Chairman having reported as to the present position of matters with reference to the action of Mr. Troutbeck, it was recommended that the societies acting together in the matter be again convened to consider the propriety of further action.

CONSTITUTION OF THE LOCAL GOVERNMENT BOARD.

The Emergency Subcommittee was instructed to prepare

a report on the report of Lord Jersey's Committee on the constitution of the Board of Trade and the Local Government Board.

ETHICAL COMMITTEE.

At a meeting of the Ethical Committee, held at the office of the Association, 429, Strand, W.C., on Friday, June 17th. Present: Professor R. Saundby (in the chair), Mr. Andrew Clark (Chairman of Council), Mr. H. A. Ballance, Dr. J. Barr, Dr. A. G. Bateman, Mr. G. H. Broadbent, Dr. Bruce Goff, and Mr. R. H. Kinsey.

The Medical Secretary reported and the Committee approved of replies which had been given to inquiries as follows:

1. That a registered medical practitioner could not administer an anaesthetic for, or otherwise professionally recognize, an unregistered dentist, or a registered dentist acting in the employment of an individual unregistered dentist, but that with regard to the position of a registered dentist who was employed by a limited company of unregistered dentists the Executive Committee of the General Medical Council had refused to express an opinion, and that therefore it could not at present be said definitely that a person meeting such a dentist would be liable to have his name removed from the *Register*. As a matter of medical ethics the inquirer must judge for himself whether the fact that the unregistered employers of a registered dentist were or were not formed into a limited company should make any difference to his attitude towards such dentists. The Committee further pointed out that the responsibility for ascertaining whether a dentist for whom a registered medical practitioner was asked to administer an anaesthetic was registered or not, lay with the practitioner himself.

2. That the action of a medical practitioner who having been an assistant set up in practice in opposition to his former principal would certainly be regarded by the Committee as raising issues of medical ethics.

3. That a medical practitioner who, immediately after acting as *locum tenens*, commenced practice in the same district as his former principal, could not attend any patients to whom he had been introduced as *locum tenens*, and exposed himself to suspicions injurious to his professional reputation in practising in the district at all.

Contract Medical Practice.

In reference to a matter upon which the Committee has been previously consulted, concerning a club appointment which a member of a Division had resigned, with the approval of his fellow members, on the ground of inadequacy of rate, and which a practitioner not a member of the Division had accepted, the Committee received an intimation from the Division that as the result of representations made to him, the practitioner in question had now withdrawn from the appointment, and the Committee expressed satisfaction at this amicable settlement of the question.

Advertisement of a Provident Dispensary.

In reply to an inquiry from the medical staff of a provident dispensary, the Committee expressed the opinion that advertisements of a change of constitution of the dispensary should not be inserted in local newspapers, and that handbills notifying the same should not be circulated to other than the actual members of the dispensary.

The Practice of Electro-therapeutics.

In reply to an inquiry from the lay proprietor of an electro-therapeutic establishment, the Committee expressed the opinion that the treatment to be carried out in such an establishment should certainly be under direct medical supervision and control, and that the medical board of directors which it was proposed to form must be responsible for conducting the establishment in accordance with professional opinion.

Cards of Specialists.

In reply to an inquiry from a medical practitioner, the Committee saw no objection to the insertion on cards, circulated only among members of the profession, of an intimation of the special departments in which the inquirer practised.

Private Clubs.

In reply to an inquiry from a member of the profession who with others proposed to establish a private club for colliers, for which it should be open for every practitioner in the district to act, as to the propriety of employing a canvasser for such club, the Committee stated that it could not approve of the appointment of a private canvasser.

Trade Advertisements.

The Medical Secretary's report of action taken in respect of trade advertisements was approved and ordered to be filed for reference.

Arising out of the report, the Committee accepted an explanation given by a practitioner, who stated that the advertisement was issued only to members of the profession; the case of a practitioner who had ignored the communication addressed to him was ordered to be referred to the licensing body from which he obtained his diploma.

The Use of Secret Remedies.

A practitioner concerning whom the Committee had previously considered, and brought to his notice, a complaint that he was advertising to the profession a special method of treatment, particulars of which had not been disclosed, now drew attention to an article which he had published in a medical journal, and which the Committee accepted as a full disclosure of the treatment.

Advertisements of Hydropathic Establishments.

The Medical Secretary reported as to 120 replies which had been received from the Divisions upon the question of the advertisement of medical men in connexion with hydropathic establishments, and the Chairman and Medical Secretary were constituted a Subcommittee to consider the replies and submit a report thereon.

Advertisements of "Private Hospitals."

In the matter of cards advertising a "private hospital," which had been referred for investigation of the facts to the Division of which the practitioner against whom complaint was made was a member, the Division reported that their Ethical Committee had investigated the case and that the practitioner concerned had undertaken to withdraw the card, and in the opinion of the Division no further action need be taken. The Committee accepted and approved of the report of the Division.

Medico-Ethical Complaints.

In three matters which had been referred for investigation to the Councils of the Branches of which the practitioners against whom complaint was made were members, the Branch Council reported certain findings as to facts, but made no recommendation as to action. The Committee decided to ask the Branch Council further to consider the matter.

Ethical Rules.

The Committee recommended the Council to approve of the rules of procedure in ethical matters of the Leinster Branch, Darlington, Lanarkshire and South Suffolk Divisions. The rules as to professional conduct of the Swansea Division were also recommended for approval.

Model Division Rule as to Certain Notices.

A draft model rule which the Committee at its last meeting had recommended to the Council for adoption, and which the Council had referred back for further consideration upon a point of detail, was now recommended for approval in the following form:

Draft Rule of Divisions re Circulation of Notices in Certain Cases.

Rule Z.—In every case in which the Division shall, after due inquiry in accordance with the rules thereof, have passed a resolution declaring that in the opinion of the Division the conduct of any medical practitioner or practitioners, whether by contravention of the rules of the Division or otherwise, is detrimental to the honour and interests of the medical profession, it shall be the duty of the Executive Committee to submit a report of the whole facts of each particular case to the Ethical Committee of the Association, and, subject to the approval of the said Committee, or, if the opinion of the said Committee be adverse, subject to the approval of a three-fourths majority of those present and voting in a special meeting of the Division convened to consider the comments of the Ethical Committee, to cause such resolution to be brought directly to the knowledge of every member of the Division, by means of a notice in the following form, which notice it shall be the duty of the Honorary Secretary of the Division to authenticate by his signature.

BRITISH MEDICAL ASSOCIATION.

Division.

(PRIVATE AND CONFIDENTIAL.)

NOTICE.

In pursuance of Rule Z of the Division, Notice is hereby given by the Executive Committee of the said Division that at a general meeting of the Division, held at , on the of , a resolution in the following terms was duly passed:

"*That in the opinion of this Division the conduct of Dr. of is (in contravention of the Rules of the Division, and)* detrimental to the honour and interests of the Medical Profession, within the meaning of the Rule(s).....*

Signed by order of the Executive Committee of the Division of the British Medical Association,

Honorary Secretary.

TRADE ADVERTISEMENTS.

With reference to trade advertisements containing the names of medical practitioners, which might be of a questionable nature, but which appeared to be issued only to members of the medical profession, or as to which there was no evidence that they were not issued to the general public, the Committee authorized the Chairman and Medical Secretary to exercise a discretion in dealing with such advertisements under the standing instruction already given concerning trade advertisements issued to the general public.

PATENTING OF SURGICAL APPLIANCES.

In reply to an inquiry from a member of the Association the Committee expressed the opinion that the addition of a medical man's name to an invention was not improper when the invention was a genuine one and intrinsically desirable. The inquiry stated that it was only proposed to advertise the instrument in the catalogue of the instrument maker and in the medical journals.

THE EXAMINATIONS OF THE SPECTACLE MAKERS' COMPANY.

In response to applications for advice from three members of the Association, the Committee expressed the opinion that it is contrary to the interests of the medical profession and the public that medical practitioners should take part in the examination of the Spectacle Makers' Company, and recommended the Council to pronounce accordingly.

EMPLOYMENT OF AN UNREGISTERED ASSISTANT.

After careful consideration of a complaint against a medical practitioner that he had employed an unregistered person to act professionally on his behalf and of the explanation by the practitioner accused of the special circumstances under which in a few instances this had occurred, and of his expression of regret and undertaking not to repeat the offence, the Committee accepted the assurance given, and decided to take no further action.

NURSING HOMES.

A consulting surgeon who had sent a patient to a nursing home connected with a hospital, with a view to his operating upon the patient there if found necessary, complained that the names and addresses of members of the visiting staff of the hospital had been given to his patient's friends by the resident medical officer of the home. It was resolved:

That in the opinion of the Committee the names of members of the hospital staff should not have been given to the patient's friends until the reply of the surgeon to the inquiry addressed to him, as to whether he considered that there was any understanding with the patient that he should operate if an operation became desirable, had been received.

ADVERTISEMENTS OF INEBRIATE HOMES.

An advertisement of an inebriate home in a lay newspaper was referred for consideration and report to the Subcommittee appointed to consider the replies of Divisions concerning the advertising of hydropathic establishments.

ORGANIZATION COMMITTEE.

A MEETING of the Organization Committee was held at the offices of the Association on June 20th, when there were present: Mr. T. Jenner Verrall in the chair, Dr. T. D. Griffiths (President), Mr. H. A. Ballance, Dr. J. C. McVail, Professor J. T. J. Morrison, and Professor A. H. White.

* Delete words in ( ) if not required.

The Committee took into consideration the question raised by the Honorary Secretary of a Division as to the relative advantage of central or local issue of circulars to medical practitioners, not already members of the Association, to induce them to join the Association, and the consideration was adjourned to give time for investigation.

The Medical Secretary's report on his attendance at meetings of the Oxford and Reading Branch, the Altrincham Division, and the Wood Green Medical Society was approved, as were prospective visits to Canterbury and King's Lynn.

ALTERATIONS OF RULES OF DIVISIONS AND BRANCHES.

The Committee recommended for approval alterations of rules of certain Divisions and Branches. The transfer of Tiverton and Bampton from the Barnstaple to the Exeter Division of the South-Western Branch was approved.

GROUPING OF DIVISIONS.

By instruction of the Council the Committee considered questions of alteration of the grouping of Divisions for the election of representatives to the Representative Meeting, and resolved that Newcastle and South Shields should be independent constituents for the ensuing year, and that Hexham and Tyneside should be grouped together, and also Lincoln with Boston and Stamford.

CONFERENCE WITH COLONIAL COMMITTEE.

The Committee met the Colonial Committee in conference to consider an application from Australasian Branches that they should be allowed to charge an annual subscription to their members in order to provide for the maintenance of the *Australasian Medical Gazette*.

After careful consideration the conference was adjourned until July 12th, in order that further information bearing on the matter might be obtained.

PUBLIC HEALTH COMMITTEE.

A MEETING of this Committee was held at the office of the Association on June 10th, when there were present: Dr. J. Groves in the chair, Dr. T. D. Griffiths (President), Mr. Andrew Clark (Chairman of Council), Dr. J. H. Manley, Mr. C. H. Watts Parkinson, and Dr. J. Maxwell Ross.

SECURITY OF TENURE OF SANITARY OFFICERS.

A deputation from the Sanitary Inspectors' Association conferred with the Committee as to the Public Health (Security of Tenure of Sanitary Officers) Bill of the Association, and joint action between the British Medical Association and the Sanitary Inspectors' Association with respect to the Bill was agreed upon.

It was decided to recommend to the Council that the President of the Local Government Board should be approached with an invitation to include security of tenure in his Bill in the present session of Parliament, and that failing the consent of the President of the Local Government Board to this application, the Bill be redrafted to provide fo security of tenure, and that every effort be made to secure its introduction into the next session of Parliament.

BILLS IN PARLIAMENT.

The Council was recommended to express approval of the Alkali, etc., Works Bill, 1904, and to express disapproval of the Tuberculosis (Animals) Compensation Bill, 1904.

SCOTTISH EDUCATION BILL.

It was recommended that the Council should support the adoption of the amendment which Sir Hugh Shaw-Stewart proposed to move in the House of Commons to the Scottish Education Bill as follows:[1]

Sir Hugh Shaw-Stewart's Amendment to the Scottish Education Bill, with Minor Amendments in Italics suggested by the Society of Medical Officers of Health for Scotland.

It shall be the duty of each local authority *under the Public Health (Scotland) Act, 1897*, acting within *an education district other than an enumerated district*,* to cause a systematic supervision to be exercised over the health conditions of the *public or State-aided elementary schools* within their district, and it shall be the duty of the medical officer of the local authority,

[1] The amendment is printed in the form in which it was approved by the Council on July 6th.

* The "enumerated districts" in the Bill are Edinburgh, Glasgow, Dundee and Aberdeen, and in these large urban districts it is felt that if the Boards desire to retain the medical examination and supervision of the school children in their own hands, they might be permitted to do so.

in addition to any special reports which may be required, to report each year *in his annual report* to the local authority as to the health conditions of the schools within their district, and particularly as to (*a*) the lighting, (*b*) the heating and ventilation, (*c*) the conditions as to cleanliness, (*d*) the sanitary conveniences, and (*e*) any action which he has taken in the course of the preceding twelve months with respect to infectious diseases in connexion with schools. The local authority shall forthwith transmit to the School Board *and to the Board of Management of any public or State-aided elementary schools other than Board schools* within their district, and to the Education Department a copy of this report.

It shall be the duty of the local authority to carry out a system of medical examination and supervision of the children on the registers of the public or State-aided elementary schools within their district, *except in cases where the district is or forms part of an enumerated district*, upon such lines and in such manner as the Education Department may prescribe, and to supervise the health conditions of the schools, and it shall be the duty of the local authority to appoint such medical inspectors as may be necessary for the proper medical examination, inspection, and supervision of the children and schools, and such examination, inspection, and supervision shall be carried out in co-operation with the medical officer of health. The local authority shall forthwith transmit the reports of medical inspectors to the School Board.

In consideration of the inspection and supervision of the health condition of the schools and of the medical examination and supervision of school children thus devolving upon the local authority, the Education Department shall each year pay to the local authority out of the education fund such sum as shall adequately meet the cost involved, upon a scale to be fixed by the Secretary for Scotland, having regard to the particularity of the medical examination required and the amount of work involved, on a basis of a payment per pupil upon the registers of the schools within the districts of the local authority, always provided that the Education Department may withhold such payment if the Department is of opinion that the inspection and supervision of the schools and school children within the district of any local authority has been inefficient.

It shall be the duty of the School Board to report forthwith to the local authority all cases in which the reason assigned for the absence from school of a child is the existence of infectious disease in the household.

SCOTTISH COMMITTEE.

THE Scottish Committee met in the Station Hotel, Perth, on May 27th, when there were present: Dr. Bruce Goff (Chairman) in the chair, Dr. Cochrane Buist, Dr. James Hamilton, and Dr. Munro Muir.

POOR-LAW MEDICAL RELIEF IN SCOTLAND.

The Committee considered the report of the Departmental Committee on Poor-law Medical Relief in Scotland,[1] and adopted the following resolutions:

That the Committee approve generally of the report and specially welcome the official recognition of the necessity for security of tenure of parish medical officers.

That provided the salary be adequate it should be inclusive of all fees for medical work.

That in parishes where the parochial salary constitutes a large proportion of the medical officer's income the parish council should be obliged at their own expense to provide a substitute during an annual holiday of a month.

That with reference to the proposed increase in the number of returns of the medical work the form of the registers should be much simplified, and that all multiplications and copies should be made by the clerical officials of the parish council.

MEDICAL CERTIFICATES FOR SCHOOL BOARDS.

Correspondence relating to medical certificates for School Boards was read and the following resolutions adopted:

That all parents or guardians, whether paupers or not, requesting medical certificates of the unfitness of children for school attendance should be asked to refer the school authorities to the medical attendant.

That in the event of the school authorities requiring a certificate "on soul and conscience" they should be charged a proportionately higher fee.

[1] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, April 30th, 1904, p. 86.

COLONIAL COMMITTEE.

A MEETING of the Colonial Committee was held at the office of the Association on May 11th, when there were present: Mr. Edmund Owen (Chairman) in the chair, Dr. T. D. Griffiths (President), Lieutenant-Colonel E. F. Drake-Brockman, Dr. J. Groves, Dr. C. G. D. Morier.

COLONIAL MEMBERS.

The General Secretary read the minute of the Council authorizing the Colonial Committee to invite to its meetings any members who have been resident members of a Colonial Branch, and reported that by instruction of the Chairman the following had been invited to attend: Mr. Donald Armour (Ontario), Dr. T. W. Corbin (South Australia), Dr. Francis Clark (China), Dr. Fox-Symons (South Africa), Dr. G. T. Hankins (New South Wales).

MEDICINE AND SANITATION IN INDIA.

The absence of any representative of medicine and sanitary science on the Council of the Viceroy of India was further considered, together with the regulations under Section 1 (4) of the Indian Councils Act, 1892, for the nomination of additional members of the Council of the Governor-General of India. The consideration of the matter was adjourned for further inquiry.

MEDICAL REGISTRATION IN AUSTRALASIA.

On the motion of the Representative on the Council of the South Australian Branch, the following resolution was adopted:

That it be a recommendation to the Council that it is expedient that only those medical qualifications which are available for registration in Great Britain and Ireland be registrable in Australia.

It was further resolved to recommend the Council to forward a copy of this resolution to the Colonial Secretary with a respectful request that copies should be transmitted to the Colonial Governments for their consideration.

SUBSCRIPTION IN AUSTRALIA.

Dr. Hankins, Honorary Secretary of the New South Wales Branch, raised the question of the amount of subscription to be charged to members of the Association resident in Australia, and after discussion a special committee, consisting of Drs. Morier, Hankins, and Corbin was appointed to prepare a report for submission to a joint meeting of the Colonial and Organization Committees.

A further meeting of the Committee was held on June 7th, when there were present: Mr. Edmund Owen (Chairman) in the chair, Dr. T. D. Griffiths (President), Mr. Donald Armour, Lieutenant-Colonel E. F. Drake-Brockman, Mr. James Cantlie, Dr. C. G. Gooding, and Dr. C. G. Drummond Morier.

SUBSCRIPTION IN AUSTRALIA.

The Colonial Committee held a conference with the Organization Committee to consider a report signed by Drs. Corbin, Hankins, and Morier as to subscriptions to be paid by members of the Association residing in Australia. After discussion the further considerstion of the matter was deferred for the presence of Dr. Hankins. In the meanwhile Dr. Morier undertook to obtain further particulars.

MEDICAL REGISTRATION IN BRITISH COLONIES AND DEPENDENCIES.

It was reported that the following letter had been received in reply to a letter addressed to the Colonial Office in accordance with the recommendation of the Committee at its meeting on March 4th, 1904.[1]

Downing Street, May 14th, 1904.

Sir,—I am directed by Mr. Secretary Lyttelton to acknowledge the receipt of your letter of the 5th instant, and to state, for the information of the Council of the British Medical Association, that he has taken note of their expression of opinion as to the desirability of compulsory registration of medical practitioners in every British Colony and Dependency.

2. I am to observe, however, that the circumstances of some of the smaller and less organized Colonies vary very considerably as regards population and language, and that this is a matter in which the Secretary of State feels bound to give great weight to the views of loca Legislatures.

I am, Sir,
Your obedient Servant,
H. BERTRAM COX.

The General Secretary,
British Medical Association.

[1] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, May 7th, 1904, p. 117.

A Subcommittee, consisting of Mr. Donald Armour, Mr. Cantlie, and Dr. Morier was appointed to prepare draft questions which the Committee might think proper subsequently to transmit to the various Crown Colonies.

MEDICINE AND SANITATION IN INDIA.

A memorandum by Dr. Groves was considered, and a copy directed to be forwarded to the Honorary Secretary of the Burmah Branch. The thanks of the Committee were given to Dr. Groves for his memorandum.

ROYAL NAVAL AND MILITARY COMMITTEE.

A MEETING of the Royal Naval and Military Committee was held at the office of the Association on Thursday, June 30th, when there were present: Mr. Andrew Clark (Chairman of Council) in the chair, Dr. T. D. Griffiths (President), Surgeon-Lieutenant-Colonel Decimus Curme, Lieutenant-Colonel E. F. Drake-Brockman, Surgeon-General G. J. H. Evatt, C.B., Major Valentine Matthews. At the request of the Committee the Editor and Assistant-Editor also attended. The General Secretary reported that in accordance with the instructions of the Chairman he had invited certain representatives of the Indian Medical Service to be present, but unfortunately they could not attend.

MILITIA MEDICAL SERVICE.

A reply from the War Office to the communication of the General Secretary in reference to the following minute was read:

That this Committee, recognising the inadequacy of the pay of officers of the Militia Medical Staff, do write to the Secretary for War calling his attention to the injustice suffered in this matter, and recommend that the pay and allowances of officers of the Militia Medical Staff should be at least equal to those of the officers of the Royal Army Medical Staff Corps according to rank and service.

War Office, 68, Victoria Street, London, S.W.,
May 24th, 1904.

Sir,—I am commanded by the Army Council to acknowledge the receipt of your letter of the 2nd instant, stating that the British Medical Association had had under its consideration the question of the difference in the rates of pay of the officers of the Militia Medical Staff and those of the Royal Army Medical Corps Militia, and recommended that the pay and allowances of the former should be made equal to those of the Royal Army Medical Corps.

In reply, I am to acquaint you that the duties of officers belonging to the Militia Medical Staff during embodiment, training, and preliminary drill are limited by the Royal Warrant under which they are serving, and the Militia Regulations, to the place at which they are stationed with the unit to which they belong. They do not, therefore, receive the same rates of pay as the officers of the Royal Army Medical Corps Militia, who, when embodied, etc., are available for duties at any station at home, and perform all duties required of R.A.M.C. officers.

In these circumstances the Army Council sees no good reason for any alteration of the rates of pay.

I am, Sir, your obedient servant,
R. H. BRADE.

The General Secretary,
British Medical Association, 429, Strand, W.C.

When it was resolved:

That this Committee, having considered the reply of the War Office dated May 24th, 1904, declining to alter the rate of pay of officers of the Militia Medical Service on the ground that these officers are not employed on duties away from their units, desires to point out that during embodiment in the late South African war officers of the Militia Medical Service were employed on duties ordinarily performed by officers of the R.A.M.C. and away from their units, recommend that a letter be written again to the Secretary for War calling his attention to this fact and urging a reconsideration of the claims of the officers of the Militia Medical Service in regard to pay when employed away from their units.

WAR OFFICE RECONSTITUTION.

The Chairman reported that a formal acknowledgement had been received of the letter which he addressed to the War Office Reconstitution Committee on April 27th. After discussion, the following resolution was adopted:

That the Chairman of Council be requested to again write to the War Office (Reconstitution) Committee and endeavour to ascertain when the British Medical Association may expect a reply to the representations contained in his communication of April 27th, 1904.

MAJORS R.A.M.C. IN INDIA.

The General Secretary reported that he had received the following reply to the letter, which, in accordance with the instructions of the last meeting of the Committee, he had addressed to the India Office:

India Office, Whitehall, London, S.W.,
June 15th, 1904.

Sir,—In reply to your letter of May 11th, 1904, I am directed to inform you that the decision not to increase the pay of majors of the Royal Army Medical Corps serving in India, at the time when the pay of the other ranks was increased, was arrived at by the Secretary of State for India in Council after careful consideration, and after consultation with the Government of India.

A copy of your letter will, however, be forwarded to the Government of India for their consideration.

I am, Sir, Your obedient servant,
HARDWICKE.

The Secretary,
British Medical Association, 429, Strand, W.C.

The letter was directed to be entered on the minutes.

STATION HOSPITALS IN INDIA.

The Committee then proceeded to consider the recent rule of the Government of India that an officer of the Royal Army Medical Corps transferred to a station carrying a higher rate of charge allowance must be viewed as transferred to a more lucrative appointment for the purposes of Paragraph 103 (2) Army Regulations, India, vol. x.

The Committee adopted the following resolution:

That the Council be recommended to write to H.M. Secretary of State for India calling his attention to the fact that the Government of India have ruled that an officer of the Royal Army Medical Corps transferred to a station carrying a higher rate of charge allowance must be viewed as transferred to a more lucrative appointment for the purposes of Paragraph 103 (2) Army Regulations, India, vol. x, and also to express a wish that this Rule may be reconsidered and more equitably modified.

INDIAN MEDICAL SERVICE.

Civil Employ.

The General Secretary reported that, in accordance with the instructions of the last meeting, he had transmitted to the India Office the text of the following minute of the Committee regarding the pay of officers of the I.M.S. in civil employ:

The Military I.M.S. were given increased pay from 13th August. Up to date we have heard nothing about the Civil. The result is that a man temporarily in Civil draws more while unoccupied—that is, on military pay—than when filling a billet in the Civil. No doubt we shall eventually get increased pay, but the question is, from what date? If not from 13th August we shall be suffering a great injustice as compared to the military side, who do half the work we do for their pay. It will be just as in the R.A.M.C., when men out here lost several months' increase of pay as compared to men at home. Now is the time to draw attention to it before the deed is done.

Whereupon the Committee resolved:

That the General Secretary be instructed to communicate with the India Office to ascertain if the Government of India have arrived at any decision regarding the pay in civil employ.

To this communication the following replies had been received from the India Office:

India Office, Whitehall, London, S.W.,
June 9th, 1904.

Sir,—With reference to your letter of 26th ultimo, I am directed by Mr. Secretary Brodrick to state, for the information of the British Medical Association, that the Government of India have not yet submitted to him their proposals regarding the pay of officers of the Indian Medical Service in civil employ.

He has inquired of that Government by telegraph when he may expect to receive their proposals.

I am, Sir, your obedient servant,
A. GODLEY.

General Secretary,
British Medical Association, 429, Strand, W.C.

India Office, Whitehall, London, S.W.,
June 20th, 1904.

Sir,—With reference to my letter of 9th instant, I am directed to inform you that a telegram has been received from the Government of India stating that the replies of the Local Governments regarding the question of the pay of officers of the Indian Medical Service employed in the Civil Medical Department are under consideration, and that a dispatch on the subject will be sent as soon as possible.

I am, Sir, your obedient servant,
A. GODLEY.

Guy Elliston, Esq.,
General Secretary, British Medical Association,
429, Strand, W.C.

The correspondence was directed to be entered on the minutes.

Restrictions on Medical Fees.

The Committee proceeded to consider the following Order issued recently by the Government of India:

The Governor-General in Council is pleased to direct that the following shall be substituted for paragraphs 3 and 4 of the Home Department Notification No. 437, dated July 25th, 1893, amended by the Home Department Notifications of 1900 and 1901 regarding the remuneration of medical officers for attendance on native chiefs and nobles and native gentlemen of high position in a native State. The native chief or gentleman may offer any medical officer of the Government attending

him such fee as he thinks fit to make, and it will be reported by the medical officer to the political agent or other officer of the Government exercising political functions in the State of which the said chief, noble, or gentleman is a resident, for the consideration of the local government within whose jurisdiction the native State is situated. This report will state the period during which he was in attendance, and the number of visits paid. The medical officer will at the same time submit to the administrative medical officer or inspector-general of hospitals, to whom he is subordinate, a full medical statement of the case, showing the nature and extent of the relief afforded, the importance of the case from a professional point of view, and the circumstances in which he attended the patient. The local government is required to satisfy itself that the fee proposed is not out of proportion to the relief afforded and to the circumstances of the case, and has authority to sanction the acceptance of a fee not exceeding Rs. 2,000. In considering these questions it will, if necessary, refer to the administrative medical officer or inspector-general of civil hospitals as the case may be. If the proposed fee exceeds this sum, the matter will be submitted with a full report by the local government for consideration and orders of the Government of India. The reports prescribed in the preceding paragraph will not be required from a medical officer when the fee does not exceed Rs. 50 a visit, or Rs. 1,000 in the aggregate, for repeated visits in the course of a year.

The Committee adopted the following resolution:

That, in reference to an Order of the Governor-General in Council directing certain regulations to be substituted for Paragraphs 3 and 4 of the Home Department Notification No. 437, dated July 25th, 1893, and amended by the Home Department Notifications of 1900 and 1901, this Committee recommends the Council to make representations to the Secretary of State for India pointing out that the conditions laid down therein might necessitate the violation of professional secrecy. That the British Medical Association deplores this improper interference between the patient and his medical attendant, and would urge His Majesty's Secretary of State for India to draw the attention of the Government of India to the impolicy and impropriety of the Order.

The Committee resolved to recommend that a legal opinion be obtained with regard to the interpretation of Articles 24 and 25 of the East India Company's Act, 1772, commonly known as the Regulating Act of George III, c. 63.

MEDICAL DEFENCE COMMITTEE.

A meeting of the Medical Defence Committee was held at the office of the Association on June 23rd, when there were present: Mr. Andrew Clark (Chairman of Council) in the chair, Dr. T. D. Griffiths (President), Sir Victor Horsley, F.R.S. (Chairman of the Representative Meeting), Dr. E. Markham Skerritt (Treasurer), Dr. Bruce Goff, Dr. G. A. Heron, and Mr. W. Jones Morris.

Report on the Result of the Polling.

The following report on the result of the polling of Divisions in the United Kingdom was adopted, and the Council at its meeting on July 6th directed it to be presented to the Annual Representative Meeting.

The membership in the United Kingdom of the whole of the Divisions polled is 14,703.

From the accompanying Analysis it will be seen that 189 Divisions have been communicated with out of 203; the balance have not been polled, as they have no officers. The approximate number of members unpolled is 250.

Of the 189 Divisions to whom the Defence question was remitted, 145 have replied, while 44 Divisions have made no reply. The membership of those that have replied represent 11,819; while the membership of the Divisions that have not replied represent 2,843.

Of the 145 Divisions that have replied, 85 have passed definite resolutions on the question: 46 Divisions Approve of the principle of Medical Defence, and 39 Disapprove of the principle. The remaining 60 Divisions have passed no definite resolution, the Secretaries merely forwarding the Forms of undertaking to join.

The membership of the 46 Divisions which approve is 3,473.

The membership of the 39 Divisions that Disapprove is 3,586.

The membership of the Divisions which have passed no definite resolutions as to Approving or Disapproving represents 7,728.

As a result of the poll of the members willing to join the Medical Defence Department of the Association, the total number is 1,460, while a further 144 have signified their willingness to join provided the existing Defence Societies are amalgamated.

Branch and Division. (i.)	No. of Members in Division. (ii.)	No. of Members present at Meeting. (iii.)	Approves or Disapproves of the Principle. (iv.)	Remarks. (v.)	Promise to join Department. (vi.)	In Favour provided existing Defence Societies are Amalgamated. (vii.)
Bath and Bristol:						
Bath	125	...	Disapproves	... ...	6	...
Bristol	243	25	Disapproves	... ...	19	...
Trowbridge	37	11	Disapproves	... ...	5	...
Birmingham:						
Bromsgrove	22	...	Disapproves	... ...	4	...
Central	296	35	Disapproves	... ...	31	1
Coventry	39	...	Disapproves	... ...	1	...
Dudley	35	...	Disapproves	... ...	...	...
Nuneaton and Tamworth	18	...	...	As it seems impossible for the existing societies to amalgamate with B.M.A. it is wiser not to proceed in the matter	...	...
Warwick and Leamington	53	...	...	... ...	8	...
W. Bromwich	50	...	...	... ...	4	...

Branch and Division. (i.)	No. of Members in Division. (ii.)	No. of Members present at Meeting. (iii.)	Approves or Disapproves of the Principle. (iv.)	Remarks. (v.)	Promise to join Department. (vi.)	In Favour provided existing Defence Societies are Amalgamated. (vii.)
Border Counties:						
W. Cumberland	34	...	...	... ...	8	1
N. Cumberland	53	...	...	... ...	15	1
Scottish	75	...	Approves ...	Desires the question of collective defence considered	5	...
Dorset and W. Hants:						
Bournemouth	117	30	Disapproves	... ...	7	1
W. Dorset	76	...	Disapproves	... ...	24	...
East Anglian:						
N. E. Essex	50	...	...	... ...	15	...
Mid Essex	34	...	...	... ...	...	...
S. Essex	32	...	...	... ...	1	...
Norwich	45	...	Disapproves	Suggest alteration of Memorandum in order to undertake collective defence in the interests of the profession	12	...
Mid Norfolk	55	23	Approves ...	... ...	18	2
W. Norfolk	32	...	Disapproves	... ...	1	...
E. Norfolk	30	...	...	... ...	...	...
N. Suffolk	33	14	Disapproves	Majority could not join a non-existent society	2	...
W. Suffolk	41	...	Disapproves	Considers it may safely be left to the present organizations	...	...
S. Suffolk	69	...	...	... ...	18	4
E. York and N. Lincoln:						
E. York	113	...	Disapproves	... ...	7	...
North Lincoln	27	...	...	... ...	8	1
Edinburgh:						
Lothians	60	...	Approves ...	... ...	14	...
N.E. Edinburgh	64	...	Disapproves	... ...	4	...
N.W. Edinburgh	134	...	...	... ...	...	...
South Eastern Counties ...	53	...	Approves ...	... ...	7	...
S. Edinburgh...	122	...	Approves ...	... ...	36	...
Glasgow and W. of Scotland:						
Ayrshire	66	...	Approves ...	... ...	11	...
Dumbartonshire and Argyllshire	57	...	...	... ...	6	
Glasgow (Central)	123	...	...	... ...	18	3
„ (Eastern)	80	...	...	... ...	12	2
„ (N.-Western) ...	106	...	Approves ...	... ...	15	1
„ (Southern)... ...	92	...	...	... ...	18	1
Lanarkshire	64	...	Approves ...	... ...	30	...
Renfrewshire	73	...	...	... ...	2	...
Lancashire and Cheshire:						
Altrincham	59	9	Approves ...	In completing details, full use should be made of the local Divisional organizations	13	...
Ashton-under-Lyne	52	...	Approves ...	Should absorb the existing Societies ...	8	...

Branch and Division. (i.)	No. of Members in Division. (ii.)	No. of Members present at Meeting. (iii.)	Approves or Disapproves of the Principle. (iv.)	Remarks. (v.)	Promise to join Department. (vi.)	In Favour provided existing Defence Societies are Amalgamated. (vii.)
Lancashire and Cheshire— *continued.*						
Birkenhead	83	...	Approves	... ...	13	3
Blackburn	74	...	Approves	Substitute for the last six words in paragraph 12, "subject to confirmation by the Central Committee"	...	...
Blackpool	48	...	Approves	Desire amalgamation, and for all members of Association to come under the scheme	6	5
Bolton	57	...	...	... ...	...	...
Burnley	30	...	...	... ...	...	...
Bury	34	...	Approves	The fees should be lower than those required by the existing Societies	3	...
Chester	49	9	Approves	The Central Council be instructed to take necessary steps to harmonise the resolution with the Articles and By-laws	...	...
Glossop	8	...	...	... ...	4	4
Leigh	25	...	...	... ...	6	4
Liverpool (Bootle)	61	...	Approves	... ...	7	...
„ (Central)	65	...	...	... ...	...	...
(Northern)	60	...	...	... ...	7	...
„ (Southern)	60	...	Disapproves	... ...	3	...
„ (Western)	63	...	...	14 in favour, and 14 against	...	...
Manchester Central	80	...	...	... ...	...	...
„ North	73	...	Approves	Inclusive subscription should not exceed 30*s.* per annum	11	...
„ Salford	72	...	Approves	Scheme to be compulsory upon all members resident in Great Britain and Ireland, and not more than 5*s.* per member to be charged	10	...
„ South	84	...	Approves	... ...	8	...
„ West	73	...	...	... ...	...	...
Oldham	62	...	Disapproves	... ...	1	...
Preston	55	...	...	Suggests amalgamation	8	1
Rochdale	55	...	Disapproves	... ...	8	4
St. Helen's	29	...	...	... ...	...	...
Southport	64	...	...	... ...	11	11
Stockport and Macclesfield	77	...	...	If the Scheme is to supplant the existing Societies it must be at least equally comprehensive, if not it would be a failure	12	...
Warrington	27	...	...	... ...	...	...
Wigan	37	...	Approves	... ...	7	...
Leinster:						
Dublin	172	...	...	... ...	...	...
E. Leinster	122	...	...	... ...	...	...
Mid Leinster	13	...	...	... ...	2	...
Metropolitan Counties:						
Chelsea	93	...	...	... ...	...	...
City	169	...	Approves	Disapproves of Scheme	24	...
Ealing	106	...	...	... ...	...	...
Hampstead	180	...	...	... ...	31	8
Kensington	241	...	...	61 approve and 61 disapprove	64	10
Lambeth	173	...	...	... ...	15	3
Marylebone	557	...	Disapproves	120 are in favour of instituting the department, 73 against	11	...
Richmond	158	...	Disapproves	... ...	22	6
St. Pancras	170	...	...	... ...	...	...

Branch and Division.	No. of Members in Division.	No. of Members present at Meeting.	Approves or Disapproves of the Principle.	Remarks.	Promise to join Department.	In Favour provided existing Defence Societies are Amalgamated.
(i.)	(ii.)	(iii.)	(iv.)	(v.)	(vi.)	(vii.)
Metropolitan Counties— *continued.*						
Stratford	114	...	...	... ...	14	5
Tottenham	114	...	...	... ...	...	...
Walthamstow	72	...	Approves ...	The present Scheme is inadequate, and should include all the members resident in the United Kingdom	3	...
Wandsworth	150	...	Approves ...	The Division issued a special report on the subject	9	...
Watford	41	...	...	... ...	...	...
Westminster	289	9	Approves ...	... ...	...	...
Midland:						
Boston and Spalding ...	32	...	...	... ...	11	...
Derby	142	...	...	If the Association starts Medical Defence and shows it is able to carry it out most of the members will "come in."	32	3
Leicester	117	...	...	... ...	12	...
Lincoln	48	...	...	... ...	...	...
Nottingham	150	...	...	... ...	16	...
North of England:						
Bishop Auckland	35	...	Approves ...	... ...	22	...
Blyth	15	...	...	... ...	9	...
Chester le Street	10	...	...	... ...	...	...
Cleveland	52	...	...	... ...	...	...
Consett	16	...	...	... ...	6	...
Darlington	22	...	...	... ...	...	...
Durham	19	...	...	... ...	...	...
Gateshead	43	...	...	... ...	17	...
Hartlepools	26	...	...	... ...	4	...
Hexham	17	...	...	... ...	...	...
Morpeth	22	...	...	... ...	...	...
Newcastle-on-Tyne	131	...	...	... ...	...	...
N. Northumberland	24	...	...	... ...	...	...
S. Shields	56	...	...	... ...	...	...
Stockton	22	...	...	... ...	...	...
Sunderland	55	...	...	... ...	...	...
Tyneside	39	...	Approves ...	Disapproves of Scheme	7	...
N. Lancs. and S. Westmoreland:						
Furness	13	...	Disapproves	... ...	3	1
Kendal	28	...	Disapproves	... ...	6	...
Lancaster	57	...	Approves ...	Suggest not to be compulsory on members of Association	[illegible]	...
N. Wales and Shropshire:						
Denbigh and Flint	55	...	...	... ...	11	6
N. Carnarvon and Anglesea	75	...	...	... ...	17	...
Shropshire, Montgomery, and Radnorshire	130	...	...	... ...	3	...
S. Carnarvon and Merioneth	[illegible]	...	...	... ...	13	...

Branch and Division. (i.)	No. of Members in Division. (ii.)	No. of Members present at Meeting. (iii.)	Approves or Disapproves of the Principle. (iv.)	Remarks. (v.)	Promise to join Department. (vi.)	In Favour provided existing Defence Societies are Amalgamated. (vii.)
Oxford and Reading:						
Oxford	154	...	...	...	7	...
Reading	72	...	Disapproves	...	8	1
South Eastern:						
Ashford	19	...	...	...	...	...
Brighton	138	...	...	...	10	1
Bromley	48	...	...	...	...	...
Canterbury	19	...	Disapproves	...	...	...
Chichester and Worthing	44	...	...	...	...	...
Croydon	127	...	...	...	...	...
Dartford	56	...	...	...	...	...
Dover	31	...	...	...	4	1
Eastbourne	45	...	...	...	11	...
Faversham	21	...	...	...	...	1
Folkestone	33	...	...	...	...	...
Guildford	69	...	...	...	1	1
Hastings	80	...	...	Further consideration should be given to the matter before embarking on proposed Scheme	12	...
Horsham	16	...	...	...	...	...
Isle of Thanet	44	...	...	...	6	4
Maidstone	45	...	Disapproves	...	5	...
Norwood	224	22	Disapproves	...	14	1
Reigate	51	...	...	...	...	...
Rochester and Chatham	32	...	...	...	...	...
Sevenoaks	28	12	Disapproves	...	4	1
Tunbridge Wells	67	...	...	...	8	9
Southern:						
Guernsey and Alderney	25	...	Approves ...	Provided the advantages are extended to the Channel Islands	...	...
Isle of Wight	51	...	Disapproves	... ...	5	...
Jersey	21	...	Approves ...	It is pointed out that the scheme is not applicable to the Channel Islands	...	...
Portsmouth	106	...	...	... ...	8	...
Salisbury	50	...	...	... ...	3	...
Southampton	76	...	...	... ...	35	...
Winchester	65	...	...	... ...	...	...
South Midland:						
Aylesbury	52	...	Approves ...	Non-members of Association should have the advantage of Medical Defence	8	1
Bedford and Herts	93	...	...	... ...	23	6
Northamptonshire	87	...	...	... ...	10	...
S. Wales and Monmouthshire:						
Cardiff	126	18	...	Too premature to give an opinion	13	2
Monmouth	84	...	Approves ...	... ...	28	2
N. Glamorgan & Brecknock	80	25	Approves ...	... ...	10	...
S.W. Wales	78	20	Approves ...	... ...	9	1
Swansea	79	...	Approves ...	Furnishes a series of amendments	20	7

Branch and Division. (i.)	No. of Members in Division. (ii.)	No. of Members present at Meeting. (iii.)	Approves or Disapproves of the Principle. (iv.)	Remarks. (v.)	Promise to join Department. (vi.)	In Favour provided existing Defence Societies are Amalgamated. (vii.)
South Western:						
Barnstaple	47	...	Disapproves	... ...	3	...
Devonport	62	6	Approves	Do not regard Scheme as satisfactory	4	1
Exeter	86	...	Disapproves	... ...	14	...
Newton Abbot	85	...	...	... ...	...	...
Plymouth	71	...	Approves	... ...	9	...
Truro	69	...	...	... ...	13	...
Staffordshire:						
Mid Staffordshire	60	...	Approves	Considers existing societies should join in	6	4
N. Staffordshire	76	...	...	... ...	3	1
S. Staffordshire	61	...	Disapproves	New constitution too young to take up matter	...	3
Ulster:						
Ballymoney, N. Antrim, and E. Derry	28	...	...	The members are practically covered by the Irish Medical Association	...	...
Belfast	202	...	Approves	... ...	...	...
Derry	42	...	...	... ...	1	...
Portadown and W. Down	68	...	Approves	Scheme requires amending in certain details	18	...
Worcestershire and Herefordshire:						
Hereford	53	...	Disapproves	Opposed to any scheme in opposition to existing Societies	6	...
Worcester	69	...	...	... ...	...	...
Yorkshire:						
Bradford	156	...	Approves	Unable to express a definite opinion collectively as to whether its members will join or not until complete scheme has been formulated	10	...
Halifax	44	...	Approves	... ...	3	...
Harrogate	52	...	Disapproves	... ...	2	...
Huddersfield	45	...	Approves	Scheme provisionally approved	5	...
Leeds	178	...	...	... ...	...	...
Scarborough	42	...	Disapproves	The majority of objections would be removed if amalgamation of existing Societies were to take place	6	...
Sheffield	122	...	Disapproves	... ...	14	...
Wakefield and Doncaster	69	...	Approves	Every effort should be made to bring in the existing Societies	5	...
York	56	...	...	... ...	...	...
The following are Division-Branches:						
Cambridge and Huntingdon Branch	158	...	...	... ...	5	...
Dundee Branch	105	...	...	... ...	20	...
Fife Branch	73	...	Approves	... ...	33	...
Gloucestershire Branch	131	...	Disapproves	Any scheme under the auspices of the Association is unnecessary	...	...
Northern Counties of Scotland Branch	114	22	Disapproves	... ...	14	2

Branch and Division. (i.)	No. of Members in Division. (ii.)	No. of Members present at Meeting. (iii.)	Approves or Disapproves of the Principle. (iv.)	Remarks. (v.)	Promise to join Department. (vi.)	In Favour provided existing Defence Societies are Amalgamated. (vii.)
The following are Division-Branches—*continued.*						
Perth Branch	56	...	Approves ...	The present annual subscription should cover all outlays, and the Association should defend any of its members at the present subscription. The Branch deprecates any interference with existing Association	7	1
Stirling Branch	65	...	Disapproves	... ...	4	...
West Somerset Branch ...	83	...	Disapproves	... ...	11	...
The following Branches have Divisions but no acting Secretaries:						
Aberdeen Branch	192	...	...	... ...	18	...
Munster Branch	104	...	...	... ...	...	...
S.E. of Ireland Branch ...	67	...	...	... ...	2	...

HOSPITALS COMMITTEE.

A MEETING of the Hospitals Committee was held at the office of the Association on May 12th, when there were present: Dr. M. Beverley (Chairman) in the chair, Dr. T. D. Griffiths (President), Mr. Andrew Clark (Chairman of Council), Dr. J. Brassey Brierley, Dr. E. Lawrence Fox, Dr. John R. Hamilton, Mr. T. Garrett Horder.

A letter was read from Dr. Walter Carr stating his inability to serve on the Committee owing to the day upon which it met.

PRINCIPLES OF HOSPITAL MANAGEMENT.

The Chairman reported that on consideration of the minutes of the Hospitals Committee, the Council had passed the following resolution:

That the Draft Memorandum be referred back to the Committee, and that members of Council are requested to send to the General Secretary any suggestions they may have to make on the individual clauses of the report of the Hospitals Committee.

To enable the Committee to appreciate what had passed in the Council when the proposed Model Principles were under consideration, the Chairman called upon the General Secretary to read the shorthand notes of the discussion. Afterwards the Committee drafted certain principles for adoption at a subsequent meeting.

Communications from Dr. Heron, Dr. R. C. Buist, and Dr. Norman Walker on the proposals of the Committee as submitted to the Council were read and ordered to be entered on the minutes.

The Chairman of Council reported the receipt of a letter from the Manchester Medical Guild, and the General Secretary was directed to inform the Guild that the suggestions it had made had been practically adopted by the Hospitals Committee.

The General Secretary reported that in accordance with the instructions of the Council he had forwarded the list of questions agreed upon by the Committee and published in the SUPPLEMENT of January 20th, 1904, page 12, to the Aberdeen Royal Infirmary, Dundee Royal Infirmary, Glasgow Royal Infirmary, Glasgow Victoria Infirmary, Glasgow Western Infirmary, Bradford Royal Infirmary, Hull Royal Infirmary, and Hull Victoria Hospital, and that replies had been received from all these institutions.

REMOVAL OF KING'S COLLEGE HOSPITAL.

A communication from the Honorary Secretary of the Special Committee appointed by the Lambeth, Norwood, and Wandsworth Divisions of the Association to meet the Medical Board of King's College Hospital to discuss the best system for the new out-patient, in-patient, and paying-patient departments of the hospital at its new site in South London, referred by the Journal and Finance Committee to the Hospital Committee, was read. The communication pointed out that any decision come to might be of considerable value in deciding the question of hospital abuse generally, and asked the Council to make a special grant out of the central funds to meet the expenses incurred. The Hospitals Committee instructed the General Secretary to obtain from the Divisions mentioned more specific particulars as to the expenses likely to be incurred, and to inform them that the Committee would then be disposed to consider the application.

A further meeting of the Committee was held on June 9th, when there were present: Dr. M. Beverley (Chairman) in the chair, Dr. T. D. Griffiths (President), Dr. J. Brassey Brierley, Dr. E. Lawrence Fox, Mr. T. Garrett Horder, and Mr. Edmund Owen.

REMOVAL OF KING'S COLLEGE HOSPITAL.

The General Secretary reported that in accordance with the instructions of the Committee he had communicated with the Honorary Secretary of the Special Committee of the Lambeth, Norwood, and Wandsworth Divisions, and had received a reply to the effect that the expenses would not be great, and would consist chiefly in cost of postage and the hire of places of meeting for the practitioners in the neighbourhood. The Committee, after consideration, adopted the following resolution:

That inasmuch as it is the opinion of the Hospitals Committee that it is inadvisable that any charge should be made either to out-patients or in-patients at the new King's College Hospital, this Committee is unable to recommend the Journal and Finance Committee to make a grant towards the expenses of the inquiry suggested by the Lambeth, Norwood, and Wandsworth Divisions.

HOSPITAL ABUSE.

Certain notices of motion for the Annual Representative Meeting at Oxford standing in the name of the Wandsworth Division were then considered and generally discussed as to their relation with the work of the Hospitals Committee, and the Chairman was requested to explain to the Representative Meeting the opinion of the Hospitals Committee upon the points raised by the Wandsworth Division.

Poor-law Patients.

The Committee then considered the question of Poor-law patients, and it was agreed that the Chairman should report to the Council that the Committee had considered the question of the relationship between the guardians of the poor and the admission of paupers into hospitals, and that it was deemed inadvisable to make any recommendations upon the subject.

Principles of Hospital Management.

The Committee then considered the principles as drafted at a previous meeting, and finally made the following recommendations to the Council with regard to the question of hospital management:—

Memorandum.

(1) That poverty and sickness shall be the considerations for the admission of all patients for hospital treatment.

(2) That no charge for the treatment of any patient shall be made, though voluntary contributions may be accepted.

(3) That the production of subscribers' letters shall cease to be compulsory, and that where possible the system shall be abolished.

(4) That some means of investigation into the circumstances of the applicants for relief shall be employed in all medical charities, and where possible a special officer shall be appointed for this work.

(5) That the foregoing recommendations apply to both in-patients and out-patients.

(6) That, except in emergencies, before a patient is admitted into any hospital, sufficient evidence shall be obtained on two points, (*a*) that the patient is not in a position to pay for treatment; (*b*) that the case is, from a hospital point of view, suitable for treatment.

(7) That all cases of serious accident and severe sudden illness shall be attended to on their first application, and, if deemed eligible for further treatment, shall be referred to the appropriate department of the hospital, but if ineligible shall then be referred for treatment elsewhere.

(8) That all cases of trivial accident or illness deemed ineligible for the out-patient department shall, after having been attended to, be referred for treatment elsewhere.

(9) That it is inexpedient that any patient be able to leave the hospital without having been seen by a registered medical practitioner.

(10) That the number of new cases to be seen on any one day by an honorary medical officer shall be limited.

(11) That special hospitals shall treat only those cases that come strictly within the scope of their work.

(12) That in all hospitals there shall be an age-limit for the retirement of the medical officers.

Proportion of Out-patients to Population.

The question of the proportion of out-patients attending hospitals to the population of the principal towns in the United Kingdom was considered, when it was resolved:

That the Committee take steps to ascertain the present proportion of out-patients to the population in the chief towns of the United Kingdom, as was done some years since by a Special Committee of the Bath and Bristol Branch.

JOURNAL AND FINANCE COMMITTEE.

A meeting of the Journal and Finance Committee was held at the office of the Association on July 6th, when there were present: Mr. Andrew Clark (Chairman of Council) in the chair, Dr. T. D. Griffiths (President), Sir Victor Horsley, F.R.S. (Chairman of Representative Meeting), Dr. E. Markham Skerritt (Treasurer), Dr. Edgar Barnes, Dr. James Barr, Dr. Langley Browne, Dr. J. H. Galton, Dr. T. Arthur Helme, Mr. W. Jones Morris, Mr. C. H. W. Parkinson, Dr. F. M. Pope, and Dr. Norman Walker.

Publication of the Proceedings of Medical Societies in the Journal.

The Committee received a report from a Subcommittee of the Journal and Finance Committee, consisting of the President and Chairman of Council *ex officio*, the Treasurer, Dr. Helme, and Dr. Radcliffe Crocker, with reference to the publication of the proceedings of medical societies in the Journal. The report made the following recommendations which were adopted by the Committee and transmitted to the Council:

That all reports sent in by Medical Societies be treated on their merits as eligible for publication in the Journal.

That in the opinion of this Subcommittee mere lists of names, of cases shown, or of the names of those taking part in discussions should be omitted from such reports.

That the Editor be empowered to use his discretion in the selection of the more important reports to be published; and may when necessary obtain expert advice in regard to the reports of special societies.

That the Editor be empowered to send a circular letter to the secretaries of the various Medical Societies embodying these recommendations.

Payment of Members of Council.

The following resolutions passed by the Council of the Lancashire and Cheshire Branch were considered:

That a sum of one guinea be paid out of the Branch funds to each representative of this Branch on the Council of the Association for each attendance in London upon Council or Committee business.

That it be a recommendation to the Council of the Association to consider the advisability of paying members of Committees other than those representing Branches, a sum of one guinea for each attendance.

When it was resolved:

That a Subcommittee consisting of the President, Chairman of Council *ex officio*, the Treasurer, Dr. Helme, Mr. Parkinson, Dr. Langley Browne, and Dr. Galton be appointed to consider the communication from the Lancashire and Cheshire Branch, and report to the next meeting of this Committee.

Finance.

The accounts for the quarter ending June 30th were received and approved, and the Council was recommended to authorize the Treasurer to pay the outstanding amounts. The auditors' report was received and entered on the minutes.

Contract Medical Practice.

It was resolved to recommend the Council to sanction the payment of skilled assistance to the Medical Secretary for the purpose of preparing a detailed report on the replies received to the inquiries as to contract practice for submission to the Annual Representative Meeting.

Research Scholarship.

After discussion a recommendation from the Scientific Grants Committee that another scholarship of £200 should be founded, which might for the present be allotted to the Department of Tropical Medicine, was adopted. This recommendation, however, was not adopted by the Council.

Central Offices.

The Committee adopted the following resolution:

That it be a recommendation to the Council that the Premises and Library Committee be instructed to take into consideration the general accommodation of the various departments of the building, especially that relating to the printing department, and bring up a report to this Committee on the subject.

The Editor, the General Secretary, and the Medical Secretary were instructed to prepare reports on the respective accommodation of their departments.

PREMISES AND LIBRARY COMMITTEE.

A meeting of the Premises and Library Committee was held at the office of the Association on July 5th, when there were present: Mr. Andrew Clark (Chairman of Council) in the chair, Dr. T. D. Griffiths (President), Dr. Edgar Barnes, Dr. J. H. Galton, Dr. Bruce Goff, Sir Constantine Holman, M.D., and Dr. F. M. Pope.

The Librarian reported a list of new books received during the past three months, including 107 *Thèses de Paris*. He also reported a gift of books by Dr. Bridgwater, Vice-President of the Association, who was thanked for his valuable addition to the Library. The accounts for the quarter were received, and the Treasurer was empowered to pay them.

An application from the Swansea Division for a grant of books from the duplicate volumes towards a proposed library for the Division at the General Hospital was acceded to.

SCIENTIFIC GRANTS COMMITTEE.

A meeting of the Scientific Grants Committee was held on June 20th, when there were present: Mr. Andrew Clark (Chairman of Council) in the chair; Dr. William Collier (President-Elect), Mr. C. A. Ballance, Dr. James Barr, Dr. T. Arthur Helme, Mr. H. Betham Robinson, Professor J. Lorrain Smith, Professor E. H. Starling, F.R.S., Dr. Norman Walker, Dr. Dawson Williams, and Dr. G. Sims Woodhead.

MIDDLEMORE PRIZE.

The Committee considered the reference from the Council transferring the duty of advising the Council as to the award of the Middlemore Prize to the Scientific Grants Committee, and instructing it if possible to make provision for a Middlemore Grant for research in ophthalmic medicine and surgery. A letter was read from the Solicitor to the Association, who also attended the meeting. After discussion the Committee resolved to appoint a Subcommittee consisting of Mr. Ballance, Mr. Nettleship, and Professor Starling to inquire into the recent work in ophthalmic surgery and report.

PROPOSED SCHOLARSHIP IN TROPICAL MEDICINE.

In accordance with a minute of the Council the Committee proceeded to consider the advisability of giving an annual scholarship for research, if the funds permit, in tropical medicine, and resolved to recommend the Council that another scholarship of £200 should be founded, which might for the present be allotted to the department of Tropical Medicine.

RESEARCH SCHOLARSHIPS.

The General Secretary reported that Dr. F. A. Bainbridge had held a research scholarship for two years, and that the general practice of the Committee was not to reappoint a scholar for a period in excess of two years. The Committee recommended the Council to re-elect Dr. J. O. Wakelin Barratt and Dr. J. T. Hewetson research scholars for a further period of one year, and to appoint Miss Janet Lane-Claypon to the vacant scholarship.

The General Secretary reported that Dr. W. Jobson Horne had held the Ernest Hart Memorial Scholarship for one year and nine months, and the Committee recommended that Dr. Thomas Evans be appointed Ernest Hart Memorial Scholar for a period of twelve months. The subject which Dr. Thomas Evans proposes to investigate is the study of the soil-history of the coli-typhoid group of bacilli as illustrated by the bacilli of human enteric fever and swine fever.

GRANTS.

The Committee resolved to recommend that the grants to Dr. A. Edmunds, Dr. I. Walker Hall, Dr. E. E. Henderson, Dr. R. M. Leslie, Dr. M. S. Pembrey, Dr. A. E. Russell, Dr. S. B. Schryver, Dr. J. Scott, Dr. C. S. Sherrington, and Dr. W. B. Warrington should be renewed.

The Committee further recommended that the following new grants should be made.

	£ s. d.
BOWN, S. H., M.B., University College Hospital, Gower Street, W.C.—Microscopical changes in central and peripheral nervous system and heart-muscle of rabbits resulting from injection of diphtheria toxin	5 0 0
BRODIE, T. G., M.D., 4, Lancaster Terrace, Regent's Park, N.W.—(*a*) On the course of efferent fibres from the occipital cortex. (*b*) The pathology of uraemia	20 0 0
DALE, H. H., B.C Cantab., Physiological Laboratory, University College, Gower Street, W.C.—An investigation of the excitatory mechanism governing the contractions of the gall bladder, and the secretion of bile	10 0 0
DIXON, W. E., M.D., Pharmacological Laboratory, Cambridge.—The action of expectorant drugs with special reference to their effect on cilia	10 0 0
ELLIOTT, ROBERT HENRY, Major I.M.S., c/o Messrs. Grindlay and Co., 54, Parliament Street, S.W.—The study of the physiological action of snake venoms and allied poisons. The investigation of the value of various remedies and remedial measures for snakebite	10 0 0
GRÜNBAUM, ALBERT S., M.D., University of Liverpool (Department Experimental Medicine).—Further investigations into the specificity and effects of Eberth's bacillus in the causation of enterica and its relation to paratyphoid bacilli. Definite proof of its responsibility for enterica	20 0 0
JONES, F. WOOD, M.R.C.S., L.R.C.P.—The development of the vagina in lower animals	20 0 0
LITTLE, WILLIAM GORDON, M.A.Aberd., M.B. and C.M.Edin., Altdee, Great Crosby, near Liverpool.—1. On urea estimation. 2. Urea as a reputed solvent of uric acid. 3. The effects of small percentages of added salines on water as a solvent of sodium biurate. 4. The effects of small percentages of added	
Carried Forward	£95 0 0

	£ s. d.
Brought Forward	95 0 0
salines on water as a solvent of uric acid. 5. On the effect of the soluble salts of the various organs in causing or preventing precipitation of sodium biurate (unfinished). 6. On fluoride of ammonium as a speedy, easily soluble, and reliable precipitant of uric acid for purposes of clinical estimation. The "urea estimation" includes an attempt to provide a better clinical nitrometer	25 0 0
MALDEN, WALTER, M.A., M.B. (Pharmacological Laboratory), 6, Mills Road, Cambridge.—Physiological action of yeast cells. 1. To investigate the conditions under which yeasts can exist and grow in blood and tissues. 2. Their action, if any, on various micro-organisms	10 0 0
MANN, GUSTAV, M.D.Edin., B.Sc.Oxon., Physiological Laboratory, The Museum, Oxford.—To model the normal thalamic nuclei in man, monkey, cat, and rabbit, and to study further the alterations produced in these nuclei	40 0 0
MILROY, JOHN A., Physiological Department, Queen's College, Belfast.—The products of the action of reducing agents upon haematin	10 0 0
MILROY, T. H., M.D., Physiological Department, Queen's College, Belfast.—Influence of different forms of light upon the development of the retina. I desire especially to find out the way in which the retinal pigment is developed and the influence of light upon its development	10 0 0
MOORHEAD, T. GILMAN, M.D., D.P.H., Pathological Laboratory, Trinity College, Dublin.—Physiological and pathological results produced by the injection into animals of extracts of lymphoid tissues	10 0 0
STEPHENS, JOHN WILLIAM WATSON, M.D.Cantab, D.P.H., The Johnston Laboratory, Liverpool University.—Study of bacterial flagella	5 0 0
STOKES, HENRY, M.B., 24, Clyde Road, Dublin.—Path of infection of rabbits fed on tubercular material	5 0 0
	£210 0 0

	£ s. d.
Total amount of renewed grants	140 0 0
Total amount of new grants	210 0 0
	£350 0 0
Total of grants...	350 0 0
Total of research scholarships	650 0 0
	£1,000 0 0

A further meeting of the Committee was held on July 5th, 1904, when there were present: Mr. Andrew Clark (Chairman of Council) in the chair, Dr. T. D. Griffiths (President), Mr. C. A. Ballance, Dr. T. Arthur Helme, Mr. H. Betham Robinson, Professor R. Saundby, LL.D., Professor E. H. Starling, F.R.S.

The Middlemore Prize.

The Committee considered a report by a Subcommittee, consisting of Mr. Nettleship, Mr. Ballance, and Professor Starling, upon the award of the Middlemore Prize, and adopted the following resolution:

That it be a recommendation to the Council that the Middlemore Prize be awarded to John Herbert Parsons, M.B., F.R.C.S., on account of his work in connexion with the Intraocular Circulation and Pressure and their Relation to the Intracranial and General Circulation, on the Course of Fibres in the Optic Nerve, and on the Influence of the Cortex Cerebri on the Movements of the Pupil.

The Committee passed a vote of thanks to the members of the Subcommittee for acting as adjudicators.

Tenure of Research Scholarships.

A letter from Dr. Thomas Evans, recommended at the last meeting for election to the Ernest Hart Memorial Scholarship, was read. The writer stated that he had accepted an unpaid appointment as Clinical Assistant, occupying two mornings a week, and inquiring whether the Committee would construe this as giving his whole time to the appointment. On the motion of Professor Starling, seconded by Mr. Robinson, it was resolved:

That Dr. Thomas Evans should be permitted to hold the post of Clinical Assistant on the understanding that he would utilize the experience so gained for the purposes of the report.

THE RELATION OF CORONERS TO THE MEDICAL PROFESSION.

CONFERENCES AS TO THE ACTION OF THE CORONER FOR SOUTH-WEST LONDON.

The following is an account of the action taken by the British Medical Association, the South-West London Medical Society, the Medical Defence Union, and the London and Counties Medical Protection Society, with the object of obtaining a pronouncement by the Lord Chancellor on the conduct of Mr. Troutbeck.

In the spring of 1903 the attention of the British Medical Association was drawn to the action adopted by Mr. John Troutbeck, Coroner for South-West London, with respect to the medical evidence at inquests held by him, and the matter having been referred to the Medico-Political Committee, the Council, on the recommendation of the Committee, resolved to act in co-operation with the South-West London Medical Society, the Medical Defence Union, and the London and Counties Medical Protection Society, in bringing the conduct of Mr. Troutbeck under the notice of the Lord Chancellor.

The Lord Chancellor on being approached, consented to receive a joint deputation from the four Societies named, and accordingly a deputation waited upon him on May 12th, 1903. The substance of the matters to be laid before his Lordship was previously submitted to him in the following memorandum:

MEMORANDUM.

In the Matter of the Joint Deputation to the Right Honourable the Earl of Halsbury, Lord High Chancellor of Great Britain, from the British Medical Association; South-West London Medical Society; the Medical Defence Union, Limited: and the London and Counties Medical Protection Society, Limited, relative to the practices and procedure recently adopted in the conduct of Inquests by Mr. John Troutbeck, His Majesty's Coroner for the City and Liberty of Westminster and the South-Western District of the County of London.

The Deputation respectfully desire to bring under the notice and consideration of the Lord High Chancellor the following facts and circumstances and crave leave to be permitted to address his Lordship thereupon.

In consequence of the death of the late Mr. A. Braxton Hicks in May, 1902, Mr. John Troutbeck was appointed his successor as Coroner for the South-Western District of the County of London, in addition to the District of the City and Liberty of Westminster, over which last-mentioned District Mr. Troutbeck then held the appointment of Coroner.

Since his appointment as Coroner over the joint area, Mr. Troutbeck has in a variety of instances, and especially at Inquests held by him in the South-Western District of London, departed from the usual and recognized procedure adopted by Coroners, in that he has dispensed with the evidence of the Medical Practitioner who had been in attendance upon the deceased prior to death, or who had been called in immediately thereafter; also by restricting the medical evidence placed before the Jury to, and directing them as regards such evidence solely upon, that resulting from a *post-mortem* examination made by a Medical Practitioner who has had no other direct knowledge of the facts of the case: and in other ways acted not in accordance with the usual judicial procedure.

Further, Mr. Troutbeck has recently adopted the practice of only informally notifying the Medical Practitioner who attended the deceased, or who was called in at or immediately after death, that a *post-mortem* examination would be made, without officially directing such practitioner to take any part therein.

The Deputation will respectfully submit—

(1) That Medical evidence of cause of death is of two kinds, being either

(A) *Clinical*, as to facts observed during life, or

(B) *Pathological*, as to facts observed by examination of the body after death.

(2) That clinical evidence, if obtainable, is essential to the finding of the true cause of death and should not be withheld from the Jury.

(3) That the Medical Practitioner in attendance upon the deceased during life should be officially directed to make, or to assist in making, the *post-mortem* examination (if any), and should be summoned to give evidence at the Inquest.

(4) That where clinical evidence is not obtainable, the observations made by the Medical Practitioner who saw the deceased immediately after death may be material to the finding of the true cause of death, and should therefore be presented to the jury, such Medical Practitioner consequently being officially directed to make, or to assist in making, the *post-mortem* examination (if any) and being summoned to give evidence at the Inquest.

(5) That where it is deemed by the Coroner that the pathological investigation presents special difficulties demanding expert assistance, such assistance should be obtained, but as a supplement to, and not in substitution for, that of the practitioner called to the case during life or immediately after death.

(6) That the procedure herein submitted is that contemplated by the provisions of the Coroners Act, 1887, and that the practices recently introduced by Mr. Troutbeck are not in accordance with such Act, and are gravely inimical to the interests and welfare of the public.

Signed on behalf of the Joint Deputation,

ANDREW CLARK, F.R.C.S.,
Chairman of Council of the British Medical Association.

The proceedings at the interview between the Lord Chancellor and the Deputation were reported in the British Medical Journal of May 16th, page 1178.

On June 4th, 1903, the Medical Secretary of the British Medical Association, as Secretary to the Conference, received from the Permanent Secretary to the Lord Chancellor the following letter and enclosures:

Copy of Correspondence passed between the Lord Chancellor and Mr. Troutbeck, Coroner for Westminster and the South-Western District of the County of London.

1054/8 House of Lords, S.W.,
3rd June, 1903.

Sir,—I am directed by the Lord Chancellor to enclose, for the information of the Medical Associations represented at the Deputation to his Lordship on the 12th ult., a copy of the Lord Chancellor's communication to the Coroner, and his reply.

I am, Sir,
Your obedient Servant,
K. Muir Mackenzie.

J. Smith Whitaker, Esq.

1054/8

House of Lords, S.W.,
May 18th, 1903.

Sir,—I am directed by the Lord Chancellor to inform you that his Lordship has received a representation from several Medical Societies on the subject of the procedure at inquests held by you. The substance of the matter is contained in the enclosed printed memorandum. The Lord Chancellor would be obliged if you would be good enough to favour him with your observations before he makes any reply to the Medical Associations; and, for the present, has only to remark that the Coroners Act appears to describe very fully, for the guidance of Coroners, the general course of procedure in relation to medical witnesses.

(Signed) K. Muir Mackenzie.

J. Troutbeck, Esq.,
H.M. Coroner.

[*South-Western District.*]

1054/8

CORONER'S OFFICE,
PHILLIMORE CHAMBERS,
21, GREAT SMITH STREET,
WESTMINSTER, S.W.
26th May, 1903.

MY LORD,—In accordance with your Lordship's desire I beg to submit my observations on the representations from the two Medical Societies and the two Limited Liability Companies formed for medical defence and protection on the subject of the procedure at inquests held by me.

The verbal observations made by the Deputation which expanded the points raised in the printed memorandum were published in the BRITISH MEDICAL JOURNAL of May 16th, together with an abridged report of your Lordship's reply, and I beg your Lordship's leave to refer to both the printed and verbal statements in anything I have to say in reply to the questions on which my observations are desired.

They have submitted for your Lordship's approval a series of six propositions of what they allege is the law; after the remarks your Lordship is reported to have made, I need not dwell on the curiously narrow views put forth in these propositions.

There is some cause for surprise at the inaccuracy of the statements of fact made concerning myself. Considering that the complaints are in the nature of a charge before the Lord Chancellor, who has power of discipline, I should have thought that these gentlemen would have remembered that they should exercise all the care in correct statement expected from persons who adopt the attitude of prosecutors.

But the foremost object of the Deputation was to obtain your Lordship's approval of the six new propositions, which would establish a peculiar and privileged position for a special class against the general interests of the community.

The first fact alleged in the printed memorandum is that I have departed from the usual and recognized procedure adopted by Coroners in that I have dispensed with the evidence of the Medical Practitioners who have been in attendance on the deceased prior to death.

This is supplemented by Sir Victor Horsley, who states that he has evidence to establish a charge against me that I have contravened the Coroners Act, in that I have in a large number of cases deliberately set aside the clinical evidence.

I have carefully read the memorandum and report in search of any particular case quoted which could support the allegation, and I fail to find one such case quoted, or particulars given of the clinical evidence rejected.

I know of no such case, and it would be contrary to my practice and expressed opinion to fail to call any clinical evidence which had any bearing on the cause of death.

The second allegation is to the same effect as to Medical Practitioners called in for the first time after death.

In such cases a letter is written to the Medical Practitioner calling his attention to the report to me that he was called in after the death and had expressed his ignorance as to the cause of death, and asking him, if he was aware of any circumstance bearing on the cause of death, to communicate it to me at once in order to enable me to decide whether or no his evidence would be necessary.

If the medical man has nothing to communicate he would not be required. If the case as it developed showed that he was a necessary witness he would then be called. Hitherto in such cases the cause of death has been easily and clearly established.

In all cases where I have any reason to think that the medical man so called in can give any clinical evidence of any material value, however slight, he is summoned as a witness.

I have looked also for particulars of these cases alleged and failed to find any given.

The third allegation is that I restrict the medical evidence placed before the Jury and direct them solely on the *post-mortem* examination only.

That allegation again is not supported by evidence, and is inconsistent with what has actually occurred.

The fourth allegation is as to giving an informal notification of a *post-mortem* examination.

I have given the opportunity to every Medical Practitioner of attending the *post-mortem* examination if he so desires, not because I require him to assist at the *post-mortem* examination, but because it was represented by another Deputation that the General Practitioners desired to attend the examination for their own information. I find, however, that it is comparatively rare for any Medical Practitioner to take advantage of the opportunity so offered, and now the practice may be discontinued.

Fifthly, Surgeon-Major Mark Robinson is reported to have said that the London County Council now required applicants for appointment as Coroner to agree to a set of conditions, among which was the following:—

> "Are you prepared to entrust the *post-mortem* examination to a skilled Pathologist as desired by the Council in all cases except where you are satisfied that the medical man connected with the case is competent to make a trustworthy *post-mortem* examination?"

He left it to be understood that the condition he quoted had been required from me, and was one of the reasons of my action.

No such condition in any form was ever at any time required from me, nor have the London County Council made any attempt by any means whatever to limit my judicial discretion in these matters.

This should have been mentioned to your Lordship, as the facts are well known to the members of the Deputation.

Sixthly, Surgeon-Major Mark Robinson is reported to have stated that 60 to 65 per cent. of the total number of inquests had been given to the Pathologist.

For the whole period from my appointment, on July the 1st to April the 30th last, the percentage is one-third of that figure.

But the number of cases (excluding public institutions) in which for various reasons I have considered it inappropriate to ask the Medical Practitioner in attendance before death to make the *post-mortem* examination is 4.3 per cent. only of the total number. In such cases the Medical Practitioner would be summoned to give evidence at the inquest, even if his first attendance, as is frequently the case, were only a few minutes before death.

The view your Lordship is reported to have expressed with regard to the powers, duties, and discretion of the Coroner is the view which has been so bitterly opposed by these Medical Societies, and it is in the endeavour to re-establish this correct practice that I have had a long struggle against the action of these societies. It has been my duty, as I conceived it, to restore in the South-Western District the independence and authority of the Coroner, and I should add that so far from wishing to derogate from this the London County Council have constantly given their support to my general attitude of perfect independence, and to the view that it is my duty to exercise in each case a discretion judicially to the best of my ability. They have in addition given to all London Coroners greatly increased facilities for calling in expert Pathological evidence.

I submit then to your Lordship that the charges have been based on a series of misapprehensions of the facts and on mistaken views of the law, and fail in every particular.

There is not, as has been suggested to your Lordship, a general rule to call in a Pathologist, but to consider each individual case on its merits, and endeavour to put the best evidence before the Jury that has to decide it, with due regard to the law.

The arguments now presented to your Lordship by the Deputation differ only in mode of expression from those first used to me. It was claimed that Medical Practitioners had a legal, moral, and customary right to make *post-mortem* examinations in every case without exception, whether they had seen the person before or after death, and that the Coroner had no discretion at all, but the calling in of a Pathologist was a question to be decided by the medical man after he found he was unable to go on with the *post-mortem* examination, and not by the Coroner.

It is unnecessary further to refer to the manner in which the agitation, which I think is a very limited and artificial one, has been worked up by the Medical Societies.

The result is satisfying to me in so far that their application to your Lordship has been the means of publishing an authoritative opinion which has established all that I have contended for.

These Medical Societies have given no indication that they have appreciated any of the considerations which have to be remembered by a Coroner before he makes up his mind on the proper course to pursue in each particular case.

The largest proportion of all the inquests in London are taken for the reason that there is no medical history at all of the case, and that the cause of death is unknown; if in many of these cases the *post-mortem* examination is entrusted to any ordinary Medical Practitioner it would be of small value. The Coroners Act expressly gives wide powers to the Coroner in such cases.

Some cases are in relation to public institutions, such as the General Hospitals (of which there are six in my district), Lunatic Asylums (of which there are several), Workhouses, Infirmaries (of which there are several) and Prisons. In all these Institutions, as your Lordship can imagine, there are from time to time complaints made, justly or unjustly, of the treatment received. It would be most unsatisfactory if the Coroner were to be restricted with regard to the *post-mortem* examination to the Medical Practitioners employed at these Institutions.

Then there are many cases where the inquest is only a preliminary to other proceedings. Inquests are now used under various Acts of Parliament, and by request of various Government Departments and of County Councils, for the purpose of obtaining information on the facts, not only in criminal cases, but also in connection with, for example, Prisons, Lunatic Asylums, Factories, Mines, Workhouses and Infirmaries, and in cases of Insurance and Employers' liability and workmen's compensation, and for the Registrar-General's work. In such cases there are frequently points of pathological difficulty which cannot subsequently be properly disposed of, if a mistake be made at the *post mortem* examination, or the examiner be inexperienced.

Again there are cases where the main difficulty arises from purely pathological changes which are frequently unrecognisable, except by an expert on the subject. I may instance cases of suspected overlaying of infants, where injustice has not infrequently been done to parents in the past.

There are also cases where complaint is made of the Medical Practitioner himself.

It is dangerous to represent as a fact that in the vast majority of inquests a General Medical Practitioner is perfectly competent to perform the *post-mortem* examination. The contrary view is held by Pathologists of medico-legal experience. On this matter, as on all others, the Coroner should keep an open mind.

I submit to your Lordship that the general line of conduct for a Coroner is laid down in the Coroners Act; that he shall "diligently and truly do everything appertaining to his office after the best of his powers and for the good of the inhabitants within the County," without preferring any special class among them.

In conclusion, I beg to thank your Lordship for having given me the opportunity of making these observations,

I am, my Lord,
Your Lordship's obedient servant,
J. TROUTBECK,
Coroner for Westminster and the South-Western District of the County of London.

The Right Honourable the Lord Chancellor.
June 8th, 1903.

The Conference of Medical Societies having considered the letter of Mr. Troutbeck to the Lord Chancellor, it was resolved that a categorical reply should be prepared for communication to the Lord Chancellor containing all necessary particulars of cases proving the charges made by the deputation against Mr. Troutbeck, and accordingly the following letter was sent to the Lord Chancellor on July 27th, 1903:

THE OFFICES OF THE
BRITISH MEDICAL ASSOCIATION,
429, STRAND, W.C.,
July 27th, 1903.

To the Right Honourable the Lord Chancellor.

MY LORD,—

On behalf of the several Medical Societies represented by the Deputation which had the honour of waiting upon your Lordship on May 11th, for the purpose of making certain representations on the subject of the procedure at inquests held by Mr. John Troutbeck in his capacity of H.M. Coroner for South West London, we are desired to thank your Lordship for communicating for the information of the said Societies the reply of Mr. Troutbeck to your Lordship concerning the matters raised by them. Seeing that Mr. Troutbeck challenges the accuracy of the statements put forward by the Deputation on behalf of the Medical Societies concerned in respect of matters of fact, and having regard also to the assertions and criticisms made by Mr. Troutbeck as to the action and motives of the said Societies, we most respectfully crave permission to submit to your Lordship particulars of cases in support of those statements made by us which Mr. Troutbeck has traversed, and to reply to his criticisms as concerning our action.

Before proceeding in detail to the observations upon Mr. Troutbeck's letter, which it is desired to submit for your Lordship's consideration, it seems proper that explanation should be made of the reason why the particulars of cases supplied herewith were not furnished by the Deputation which waited upon your Lordship.

The issue, as understood by us, was essentially one of principle, and the limited time which the Societies were informed that your Lordship could give to hearing the Deputation did not permit of the speakers entering into details of fact which we imagined to be beyond dispute.

We would offer also as a general reply to the criticisms of Mr. Troutbeck upon the views of the Coroners' Act put forward by our Societies, that while submitting, of course, absolutely to the judgement of your Lordship, we do not understand this judgement yet to have been delivered, as Mr. Troutbeck would appear to suggest. Pending such deliverance, we would venture to observe that the views of the law submitted by us for your Lordship's consideration are put forward not on our own authority, being laymen, but as expressing the opinions of eminent counsel, Mr. Muir Mackenzie and Mr. Clavell Salter, by whom we have been advised upon the interpretation of the Coroners' Act.

These explanations being given, we would next ask permission of your Lordship to deal seriatim with the paragraphs of Mr. Troutbeck's letter as numbered by us in the printed copy appended hereto, and set forth in the first column* of this communication.

"1. *There is some cause for surprise at the inaccuracy of the "statements of fact made concerning myself. Considering that "the complaints are in the nature of a charge before the Lord "Chancellor, who has power of discipline, I should have thought "that these gentlemen would have remembered that they should "exercise all the care in correct statement expected from persons "who adopt the attitude of prosecutors.*"

On the first paragraph numbered (1) it appears sufficient to remark that the particulars of cases, herewith supplied, will enable your Lordship to judge as to the accuracy of the statements respectively made by the Deputation of Medical Societies and by Mr. Troutbeck.

"2. *But the foremost object of the Deputation was to obtain "your Lordship's approval of the six new propositions, which "would establish a peculiar and privileged position for a special "class against the general interests of the community.*"

The paragraph numbered (2) conveys an assertion as to the object of the Deputation which approached your Lordship. Though we observe that Mr. Troutbeck makes no attempt to substantiate this assertion, we ask leave to repudiate it entirely. The action of the Societies was taken in what they conceived to be the interest of the community, namely, the accurate determination of the cause of death. Further, no class interest can be held to be involved in the issues raised before your Lordship in this matter, since different sections of medical practitioners have divergent interests therein, and yet all are represented by such a Society as the British Medical Association.

"3. *The first fact alleged in the printed memorandum is that I "have departed from the usual and recognized procedure adopted "by Coroners in that I have dispensed with the evidence of the "medical practitioners who had been in attendance on the deceased "prior to death. This is supplemented by Sir Victor Horsley, "who states that he has evidence to establish a charge against me "that I have contravened the Coroners Act, in that I have in a "large number of cases deliberately set aside the clinical evidence. "I have carefully read the memorandum and report in search of "any particular case quoted which could support the allegation, "and I fail to find one such case quoted, or particulars given of the "clinical evidence rejected. I know of no such case, and it would "be contrary to my practice and expressed opinion to fail to call "any clinical evidence which had any bearing on the cause of "death.*"

In the ensuing paragraphs collectively numbered (3) in the print, Mr. Troutbeck denies the accuracy of the statement that he has dispensed with the evidence of the medical practitioner who had been in attendance on the deceased prior to

* In the letter sent to the Lord Chancellor the passages from Mr. Troutbeck's letter and the comments thereon of the Committee were set forth in parallel columns. For convenience the former passages are here printed in italics.

death; secondly, he asserts that he knows of no such case in which he has done this; and, thirdly, that it would be contrary to his practice and expressed opinion to fail to call any clinical evidence which had any bearing on the cause of death.

In substantiation of our former statement, we submit the following table of cases in which the clinical evidence bearing on the cause of death was withheld from the jury by Mr. Troutbeck.

We also append in the footnote to the table brief details of facts in the cases mentioned.

(*Attention is here drawn to the fact that owing to several of the cases illustrating different points, certain of them necessarily appear several times in the following tables.*)

TABLE A.

Cases in which the Medical Practitioner in attendance during life has not been summoned to give evidence at the inquest.

Date of Inquest (or of Medical Attendance).	Name of Patient.	Name of Medical Practitioner.
November 5th, 1902 ...	H— M— ...	John A. Bouck.
November 25th, 1902 ...	J— V— S— ...	H. Woodley Joyce.
November 25th, 1902 ...	E— M— C— ...	H. Woodley Joyce.
December 15th, 1902 (Date of Attendance) ...	(Baby) A— ...	H. Fred Armstrong.
February 20th, 1903 ...	J— H—	James Smyth, and E. T. Whitehead.

Details of Cases.

H— M—This was a baby, whom Dr. John A. Bouck, of 447, Battersea Park Road, S.W., was on October 30th called to see, with her brother H—, aged 2, and other members of the same family, all suffering from mussel poisoning. Dr. Bouck attended the deceased twice on October 30th, when she died, and H— M— up to November 1st, when he also died. Dr. Bouck was not called upon to assist in the *post-mortem* examination, or to give evidence at the inquest as to the facts within his knowledge, in the case of H— M—; nor did he receive any communication from the Coroner in reference to this case. He was, however, instructed to make a *post-mortem* examination of the body of H— M—, and summoned to give evidence thereon.

J— V— S—This was a baby, aged 3 months, who had been attended by Dr. Woodley Joyce, of 70, Queen's Road, Battersea, S.W., at intervals from birth, and the parents had been warned by Dr. Joyce against giving improper food. Dr. Joyce was called to see the baby one day, and it died in his presence: death in the opinion of Dr. Joyce, being due to the neglect of his instructions. Dr. Joyce had no communication from the Coroner in reference to the death of the deceased, and the only medical evidence given at the inquest was that of Dr. Freyberger, resting solely upon a *post-mortem* examination made by him, at which Dr. Joyce was not instructed to be present.

Mrs. E— M— C—This patient, who had previously consulted Dr. H. Woodley Joyce, as to the cessation of monthly periods, there being a doubt as to her pregnancy, became suddenly ill when shopping one afternoon, and was taken home, and Dr. Joyce summoned. Dr. Joyce saw her at home again at 9 p.m., and at midnight, and warned the friends of the serious nature of the illness. At 4 a.m., Mrs. C—, contrary to instructions, attempted to get out of bed and fell back dead. Dr. Joyce was not only not summoned to take part in the *post-mortem* examination or to give evidence at the inquest, but did not receive a letter from the Coroner requesting information.

A—'s Baby—In this case Dr. H. Fred Armstrong, of "Gilnockie," Lower Richmond Road, Putney, S.W., had attended the mother in confinement. The baby, a full-time child, was big and healthy and cried vigorously from birth. Dr. Armstrong continued to see it during his attendance on the mother, and it gave every sign of being a healthy child. On the early morning of December 15th, when it was two days old, he received an urgent call to see it, and found it dead in bed beside its mother. Dr. Armstrong investigated the circumstances attending the death, carefully noting the position of the child, which admitted of the possibility of overlying. Dr. Armstrong received no communication from the Coroner upon the matter, and was not summoned to take part in the *post-mortem* examination or to attend the inquest.

J— H.—Dr. James Smyth, 77, Falcon Road, Clapham Junction, S.W., was called to see this man in a fit, and he died in Dr. Smyth's presence. The deceased had been attended for years by Dr. E. T. Whitehead, 118, Lavender Hill, S.W. Neither Dr. Smyth nor Dr. Whitehead was summoned to take part in the *post mortem* examination, or to give evidence at the inquest. The only communication received by Dr. Smyth from the Coroner, Mr. Troutbeck, was an intimation that "under the special circumstances the *post-mortem* had been given to Dr. Freyberger." Dr. Smyth also received from Dr. Freyberger, one hour before the time fixed for the *post-mortem* examination, a post-card informing him when it would take place.

"4. *The second allegation is to the same effect as to medical "practitioners called in for the first time after death. In such "cases a letter is written to the medical practitioner calling his "attention to the report to me that he was called in after the death "and had expressed his ignorance as to the cause of death, and "asking him if he was aware of any circumstance bearing on the "cause of death to communicate it to me at once in order to enable "me to decide whether or no his evidence would be necessary.*"

On the next paragraphs, collectively numbered (4), we beg to submit—First, that the procedure therein described by Mr. Troutbeck is irregular; secondly, that in our view it is impossible to elucidate the truth by such a procedure, and that, with every respect to your Lordship, and subject to your Lordship's opinion, we traverse the right of the Coroner to demand information in the manner described. Further, we regret that we are unable to accept the statement of Mr. Troutbeck that he has in all cases carried out even the irregular and imperfect investigation described by him, and we append, for the information of your Lordship, the following Table (B) of cases in which the medical practitioner who first saw the deceased after death never received any communication from the Coroner. We add in a footnote the details of three of the cases as examples.

TABLE B.

Cases in which the Medical Practitioner who first saw the deceased after death had no communication from the Coroner.

Date of Inquest (or of Medical Attendance).	Name of Patient.	Name of Medical Practitioner.
December 4th, 1902 ...	Mrs. P— ...	J. T. Richards.
December 6th, 1902 ...	H— B— ...	S. H. Snell.
December 8th, 1902 ...	Mrs. H— ...	H. Stanley Turner.
December 12th, 1902 ...	M— A— R— (Details given under Table C)	H. Woodley Joyce.
January 5th, 1903 ...	W— H— A— (Details given at foot)	L. S. McManus.
January 20th, 1903 ...	Miss A— M—	Mrs. F. Sinclair McDade.
February 7th, 1903 ...	Mrs. B— K—	W. Robinson.
February 21st, 1903 (Attendance) ...	Mrs. M—'s Baby (Details given at foot)	W. Piercy Fox.
March 4th or 5th, 1903	Mrs W— (Details given at foot)	C. T. C. Kingdon.
April 6th, 1903 ...	A— B— ...	S. Verdon Roe.
April 6th, 1903 ...	W. G— ...	S. Verdon Roe.

Details of Cases.

W— H— A.—Dr. McManus, of 54, St. John's Hill, S.W., was called to see W— H— A—, aged one month, of 76, Speke Road, at about 8 a.m. On arriving at the house he found the infant dead. It had been sleeping in a narrow bed between its parents, and presented all the appearances of having been overlaid. Dr. McManus made careful notes of what he saw, and wrote to the Coroner stating he was unable to give a certificate without a *post mortem*.

In the meantime the body was washed, the limbs straightened, the tongue put back between the lips, and most of the *post-mortem* signs observed by Dr. McManus removed.

Dr. McManus received no answer to his communication from the Coroner, and only read in a local paper a week afterwards that Dr. Freyberger had made a *post-mortem* examination on the fourth day after death, and had thereupon given evidence that the child had died of convulsions, which it certainly had not, and which could not be ascertained by a *post-mortem* examination only.

Mrs. M—'s Baby.—Dr. W. Piercy Fox, of 122, Clapham Road, was called at 3 p.m. on February 21st, 1903, to Mrs. M—, of 3, Albert Square Mews, Clapham Common, in confinement, and found the baby born but still attached to

the mother. It was dead, and had been, in his opinion, smothered by the mother accidentally lying on it, owing to the mode in which birth had taken place. Dr. Fox severed the baby, and removed it to a sofa. Dr. Fox was alone with the patient, but was obliged to leave her before anyone else came. No one else saw the mother and child until after 6 p.m.

Dr. Fox received no letter of inquiry from the Coroner, and was not summoned to the inquest on the baby, though he was the only person who could identify the remains. The only medical evidence submitted to the Jury was that of Dr. Freyberger, who had made a *post-mortem* examination, but had no other knowledge of the facts of the case.

Mrs. W.—In this case the deceased was taken ill at Clapham Junction while on her way to consult her medical attendant. Dr. C. T. C. Kingdon was sent for, but found the deceased dead on his arrival. Dr. Kingdon had no communication whatever from the Coroner in reference to the case, and neither he nor the usual medical attendant was called upon to assist in the *post-mortem* examination, or to give evidence at the inquest.

"5. *If the medical man has nothing to communicate he would "not be required. If the case as it developed showed that he was "a necessary witness he would then be called. Hitherto in such "cases the cause of death has been easily and clearly established. "In all cases where I have any reason to think that the medical "man so called in can give any clinical evidence of any material "value, however slight, he is summoned as a witness. I have "looked also for particulars of these cases alleged and failed to find "any given.*"

Next, with reference to paragraph (5), we fail to understand by what means, except by holding an inquest, Mr. Troutbeck satisfies himself as to whether a medical practitioner can or cannot give evidence of material value.

If an inquest be held to which a medical practitioner is not summoned, but whose evidence is by the inquiry found to be indispensable, extra expense to the community and inconvenience to all parties concerned are entailed by the necessity for an adjourned inquest. On the other hand, if the value of the medical evidence is not so ascertained, a partial and imperfect view of the cause of death may be clearly and easily established, but the true cause, we would submit, will frequently fail to be elucidated. The following cases, grouped in Table C, appear to us to bring out clearly the essential dangers to the community involved in Mr. Troutbeck's procedure. We supply, as before, in a footnote the details of two illustrative cases.

Table C.

Cases in which the Medical Practitioner first called in after death and possessing material evidence was not summoned to give evidence at the inquest.

Date of Inquest (or of Medical Attendance).	Name of Patient.	Name of Medical Practitioner.
December 12th, 1902	M— A— R— .. (Details given at foot)	H. Woodley Joyce.
January 5th, 1903	W— H— A— ... (Details given under Table B)	L. S. McManus.
January 24th, 1903	E— R— V— H— (Details given at foot)	Ernest R. Badcock.
February 21st, 1903	(Baby) M— .. (Details given under Table B)	W. Piercy Fox.
February 23rd, 1903	C— D— G— ..	C. N. F. Poole.
March 4th or 5th, 1903 ..	Mrs. W— ... .. (Details given under Table B)	C. T. C. Kingdon.
April 6th, 1903	W— G—	S. Verdon Roe.
April 21st, 1903	J— D—	John A. Bouck.
May 8th, 1903	— B—	J. Reid.

Details of Cases.

M— R.—In this case Dr. H. Woodley Joyce, of 70, Queen's Road, Battersea, S.W., when called to the deceased found that she had died about five minutes before his arrival. The body was covered with a full measles rash. Dr. Joyce had no communication from the Coroner in reference to the death; and owing to his not being called to assist in the *post-mortem* examination or to give evidence at the inquest, the fact that the child had been suffering from measles was not brought out in the medical evidence submitted to the jury. The medical practitioner employed by Mr. Troutbeck to make the *post mortem* examination is reported to have found evidence of "blood poisoning," but, having no previous direct knowledge of the facts of the case, appears to have overlooked the possibility that measles was the primary cause of death.

E— R— V— H.—Dr. Ernest R. Badcock, 129, East Hill, Wandsworth, S.W., was called to attend this baby, aged 11 weeks, and found him dying or dead. Efforts were made by Dr. Badcock to restore animation by the use of the battery, by artificial respiration prolonged for over ten minutes, by hypodermic injections of brandy, and other means, but the deceased was found to be beyond recovery. Dr. Badcock was present at the birth of deceased, and saw him during his subsequent attendance on the mother, but was never called to treat him during life. Dr. Badcock was not summoned to give evidence at the inquest or to assist in the *post-mortem* examination, but having been informed of the time when the latter would take place, was present thereat. On arriving at the time specified, he found that the body had already been opened. Dr. Badcock observed that Dr. Freyberger did not touch the body or any of the organs removed. At the inquest a question arose as to the improper feeding of the child, and the mother (as she afterwards alleged in a letter to the Press, through a misunderstanding) gave evidence that Dr. Badcock had recommended certain food, which had been given, and the Coroner thereupon commented severely to the jury on the supposed wrong advice given by Dr. Badcock. Dr. Badcock, in point of fact, had not given such advice, but not having been called to give evidence had no opportunity of explaining this to the jury, nor was the inquest adjourned for the purpose of definitely ascertaining who was responsible for the improper feeding which was found by the jury to have contributed to the death. We append newspaper extracts containing a report of this case, and letters from Dr. Badcock and Mrs. Harvey in reference thereto.

"6. *The third allegation is that I restrict the medical evidence "placed before the jury and direct them solely on the post-mortem "examination only. That allegation again is not supported by "evidence, and is inconsistent with what has actually occurred.*"

On the next paragraph (6), we would point out that the statement put forward by us was that Mr. Troutbeck directed the jury, not as regards evidence generally, but as regards medical evidence, solely on that obtained by a *post-mortem* examination made by a medical practitioner who had no previous knowledge of the cases. We submit that the following cases, grouped in Table D, bear out this contention:—

Table D.

Cases in which the only medical evidence submitted to the Jury has been that obtained by a post-mortem examination performed by a Medical Practitioner having no other direct knowledge of the facts of the case.

Date of Inquest (or of Medical Attendance).	Name of Patient.	Medical Evidence at Inquest.	Name of Medical Practitioner who had previously seen the deceased.	Name of Medical Practitioner performing the *Post-mortem* Examination.
Nov. 5th, '02 ..	H— M— ...	Dr. Freyberger	John A. Bouck	Dr. Freyberger
Nov. 25th, '02 ..	E— M— C—	,,	H. Woodley Joyce	,,
Nov. 25th, '02...	J— V— S— ..	,,	,,	,,
Dec. 4th, '02 ...	Mrs. P— ...	,,	J. T. Richards	,,
Dec. 6th, '02 ..	H— B— ...	,,	S. H. Snell ...	,,
Dec. 8th, '02 ..	Mrs. H— ...	,,	H. Stanley Turner	,,
Dec. 12th, '02 ...	M— A— R—	,,	H. Woodley Joyce	,,
Dec. 13th, '02 ..	(Baby) A— ...	,,	H. Fred Armstrong	,,
Dec. 13th, '02 ..	A— J— H— ...	,,	J. Miles ..	,,
Jan. 5th, '03 ...	W— H— A—	,,	L. S. McManus	,,
Jan. 20th, '03 ...	Miss A— M—	,,	Mrs. F. Sinclair McDade	,,
Jan. 24th, '03 ...	E— R— V— H— ...	,,	Ernest R. Badcock	,,
Feb. 7th, '03 ...	Mrs. B— K—	,,	W. Robinson..	,,
Feb. 20th, '03 ...	J— H— ...	,,	J. Smyth and E. T. Whitehead	,,
Feb. 21st, '03 ... (Attendance)	(Baby) M— ..	,,	W. Piercy Cox	,,
Feb. 23rd, '03 ...	E— J— B—	,,	T. Crofts Neville	,,
Feb. 23rd, '03...	C— D— G—	,,	C. N. F. Poole	,,
March 4th or 5th, '03 ..	Mrs. W— ..	,,	C. T. C. Kingdon and another	,,
April 6th, '03...	W— G— ...	,,	S. Verdon Roe	,,
April 6th, '03 ..	A— B— ...	,,	,,	,,
April 21st, '03...	J— D— ..	,,	John A. Bouck	,,
May 8th, '03 ...	— B—	,,	J. Reid... ..	,,

"7. *The fourth allegation is as to giving an informal notification of a post-mortem examination. I have given the opportunity to every medical practitioner of attending the post-mortem examination if he so desires, not because I require him to assist at the post-mortem examination, but because it was represented by another Deputation that the general practitioners desired to attend the examination for their own information. I find, however, that it is comparatively rare for any medical practitioner to take advantage of the opportunity so offered, and now the practice may be discontinued.*"

On the next paragraph numbered (7) we must repeat the objections which we have already submitted against the irregular methods adopted by Mr. Troutbeck for obtaining evidence. We consider that it is to the public interest that the medical practitioner who has been in attendance on a patient during his or her last illness, or is first called in after death, should as a rule officially take part in the *post-mortem* examination. We would submit that a medical man who has been in attendance on the deceased during life, or has been the first to see the body after death, thereby acquires such immediate knowledge of material facts as to be in a position to give indispensable assistance to even the most skilled expert who may be instructed to perform the *post-mortem* examination. We further submit that if his assistance is to be given, it should be obtained in a regular and responsible manner—that is, under a formal instruction from the Coroner. We suggest this course, not as being specifically laid down in terms by the Coroners Act, but as being in accordance with the general spirit and intention thereof, and obviously in the public interest.

We append a table of cases (Table E) in which the medical practitioner having such special knowledge was, nevertheless, not instructed by Mr. Troutbeck to take part in the pathological investigation:

TABLE E.

Medical Practitioner seeing Patient during life (or being first to see body after death) not summoned to Post Mortem.

Date of Inquest.	Name of Patient.	Name of Medical Practitioner.	Post-mortem Examination made by
Nov. 5th, 1902	H— M—	S. Verdon Roe	Dr. Freyberger
,, 25th ,,	E— M— C—	H. Woodley Joyce	,,
,, 25th ,,	J— V— S—	,, ,,	,,
Dec. 2nd ,, (attended)	C— G—	James Smyth	,,
Dec. 4th ,,	Mrs. P—	J. T. Richards	,,
,, 4th ,,	W— B— D—	James Smyth	,,
,, 8th ,,	Mrs. H—	H. Stanley Turner	,,
,, 12th ,,	M— A— R—	H. Woodley Joyce	,,
,, 15th ,,	(Baby) A—	H. F. Armstrong	,,
Jan. 5th, 1903	W— H— A—	L. S. McManus	,,
,, 20th ,,	Miss A—M—	Mrs. F. Sinclair McDade	,,
,, 24th ,,	E—R—V—H—	Ernest R. Badcock	,,
,, 28th ,,	—— N—	C. E. McDade	,,
,, 31st ,,	A— W—	C. E. Hibbard	,,
Feb. 7th ,,	Mrs. B—K—	W. Robinson	,,
,, 9th ,,	W— J— B—	D. Kernohan	,,
,, 20th ,,	J— H—	James Smyth and E. T. Whitehead	,,
,, 23rd ,,	E— J— B—	T. Crofts Neville	,,
,, 27th ,,	C— K—	H. Stanley Furner	,,
Mar. 4th or 5th, 1903	Mrs. W—	C. T. C. Kingdon	,,
Mar. 6th, 1903	W— W—	J. M. Wheeler	,,
,, 25th ,,	(Baby) R—	Llewellyn Williams	,,
Apl. 6th ,,	A— B—	S. Verdon Roe	,,
,, 6th ,,	W— G—	,, ,,	,,
,, 6th ,,	R—W—A—L—	C. N. F. Poole	,,
,, 21st ,,	J— D—	John A. Bouck	,,
,, 24th ,,	Baby E—	E. Rowland Fothergill	,,
May 8th ,,	—— B—	J. Reid	,,
,, 19th ,,	Mrs. M—	R. Thorpe	,,
,, 20th ,,	—— M—	C. E. McDade	,,
,, 20th ,,	W— G— S—	Llewellyn Williams	,,
,, 25th ,,	B— C—	D. Kernohan	,,
June 17th ,,	R— T—	H. Woodley Joyce	,,

W— G— S— (aged 4).—In this case tracheotomy had been performed by Dr. Ernest R. Badcock, 129, East Hill, Wandsworth, and Dr. L. Williams, 23, North Street, Wandsworth, a short time prior to death. Drs. Badcock and Williams were not instructed to make, or to assist in, the *post-mortem* examination. Being informed, however, of the time when it would take place, they attended on account of their interest in the case. On arriving at the mortuary at the time appointed, they found that the mortuary attendant had already opened the body. Dr. Freyberger did not arrive until some time later. Owing to the nature of the case, it was important that the incision for opening the body should be so made as to disturb as little as possible the relations of the parts in the neighbourhood of the tracheotomy wound. Unfortunately, through the incision having been made by an unskilled person, this precaution had not been taken, and the evidence obtainable from the condition of the tracheotomy wound and neighbouring parts was to a great extent destroyed.

"8. *Fifthly, Surgeon-Major Mark Robinson is reported to have said that the London County Council now required applicants for appointment as Coroner to agree to a set of conditions, among which was the following:—*

> *'Are you prepared to entrust the post-mortem examination to a skilled Pathologist as desired by the Council in all cases except where you are satisfied that the medical man connected with the case is competent to make a trustworthy post-mortem examination?'*

"*He left it to be understood that the condition he quoted had been required from me, and was one of the reasons of my action. No such condition in any form was ever at any time required from me, nor have the London County Council made any attempt by any means whatever to limit my judicial discretion in these matters. This should have been mentioned to your Lordship, as the facts are well known to the members of the Deputation.*"

OBSERVATIONS THEREUPON.

In the next paragraphs, collectively numbered (8), Mr. Troutbeck quotes certain remarks of Surgeon-Major Mark Robinson as to the conditions now imposed by the London County Council upon candidates for the office of Coroner. We append a copy of the conditions laid by the County Council before candidates for a Coronership at a recent election, Number (9) of the said conditions being that quoted by Surgeon-Major Robinson.

Propositions to which applicants for appointment as Coroner for the South-Eastern District should be asked to agree, as approved by Subcommittee of the Public Control Committee on December 2nd, 1902:

(1) Shall you be prepared to furnish proof that you possess sufficient land in fee in the County of London to satisfy the requirements of Section 12 of the Coroners Act, 1877?

(2) Do you agree to give your whole time to the duties of the office, that is, not to practise any other profession or hold any other public appointment?

(3) Are you prepared to resign the office of Coroner on reaching the age of 70 years?

(4) The Council has resolved: That the salaries of newly-appointed Coroners continue to be calculated on a basis of not exceeding 30s. per inquest, until the salary reaches £1,350, but that no salary be fixed or revised above that amount unless the average number of inquests held would, on a basis of 21s. per inquest, produce a higher salary. Do you agree to the office of Coroner of the South-Eastern District on this basis?

(5) The cost of Coroners' inquests largely depend upon the discretion exercised by the Coroner. Will you be prepared to exercise that discretion in all cases, with a view to limiting the expenditure to such as is reasonably necessary?

(6) Complaint has justly been made of the manner in which the jury is summoned, and it is the Council's desire that, as far as possible, the juries should be chosen strictly in rotation from persons in the parish eligible for service, and where so summoned the Council has approved the payment of a fee of 2s. per juryman on application being made by the juryman for the fee. Are you prepared to see that these stipulations are properly carried out in the District?

(7) The Council desires that Coroners' officers should be men serving in the Metropolitan Police Force, and nearly the whole of the Coroners' officers in London are in the police force. Are you prepared to only appoint police officers, and to exercise reasonable supervision over the manner in which they perform their duties?

(8) It is believed that many inquests are held unnecessarily. Are you prepared to hold inquests only in those cases in which preliminary inquiry has indicated an inquest to be desirable?

(9) Are you prepared to entrust *post-mortem* examinations to a skilled pathologist, as desired by the Council, in all cases except where you are satisfied that the medical man connected with the case is competent to make a trustworthy *post-mortem* examination?

(10) Do you agree to keep the records of inquests in your District in one of the courts in your District provided for holding inquests, and to regard such records as county records, and not as the property of the Coroner?

(11) Do you agree to pay your deputy an agreed sum for each inquest he may hold in the District, and if so, what sum do you consider a reasonable one?

(12) Should you be one of the candidates selected by the Committee for recommendation to the Council, it will be necessary for you to state in writing your agreement with these propositions. Are you prepared to do this?

We observe that Mr. Troutbeck does not question the accuracy of the statement upon this point by Surgeon-Major Robinson, but states that: "No such condition in any form was ever, at any time, required from me, nor have the London County Council made any attempt, by any means whatever, to limit my judicial discretion in these matters," and he suggests that "this should have been mentioned to your Lordship, as the facts are well known to the members of the Deputation."

We cannot understand the ground on which Mr. Troutbeck bases the assertion that the facts as now stated by him were well known to members of the Deputation, and the members of the Deputation severally and collectively deny such knowledge. As Mr. Troutbeck's appointment was made without being thrown open to the usual competition, the Deputation had not the means of knowing directly, as in other cases, what conditions, if any, were laid down by the County Council for the acceptance of the candidate prior to his appointment. The facts in possession of the Deputation were—

(*a*) That, as shown by a letter which we now submit, the County Council came to the decision referred to at the precise time when Mr. Troutbeck was appointed.

London County Council,
Spring Hall, Spring Gardens, S.W.
17*th December*, 1902.

Sir,

In reply to your letter of the 2nd inst., I have to inform you that Dr. Freyberger has not been appointed pathologist to the London County Council, and it is incorrect to so describe him.

On 1st July last the Council decided that Coroners should be informed that in the opinion of the Council it was desirable that *post mortem* examinations in inquest cases of a special nature should be entrusted to a specially-skilled pathologist, and in accordance with the directions of a Committee of the Council, the Coroners were also informed that Dr. Freyberger was prepared to make such examinations and give evidence at the statutory fee of £2 2*s.*; and that it might be desirable for them to avail themselves of Dr. Freyberger's services whenever the circumstances indicated that special pathological skill and knowledge were desirable. Dr. Freyberger has also been selected by the Committee to make toxicological examinations in cases of suspected poisoning. Dr. Freyberger is paid by the Coroner, and his fees and other disbursements at inquests are, in accordance with the Coroners Act, subsequently repaid by the Council.

I am, Sir,
Your obedient Servant.
G. L. GOMME,
Clerk of the Council.

M. Mackintosh, Esq.,
Frankfort House,
West Side,
Clapham Common, S.W.

(*b*) That at subsequent elections of Coroners the conditions set forth in the print to which we have previously referred, and from which Surgeon-Major Robinson quoted, have been laid down for the prior acceptance of candidates.

(*c*) That the procedure of Mr. Troutbeck as Coroner for South-West London has been in general accordance with the provisions formulated by the County Council for the guidance of Coroners, while Mr. Troutbeck has not, so far as the Deputation has been able to ascertain, adopted the same course in Westminster, of which District he was appointed Coroner prior to the steps recently taken by the County Council.

Under the circumstances the Deputation ventures to think that your Lordship will agree that they had every justification for the views that they expressed in this connexion.

"9. *Sixthly, Surgeon-Major Mark Robinson is reported to have "stated that 60 to 65 per cent. of the total number of inquests had "been given to the pathologist. For the whole period from my ap- "pointment, on July the 1st to April the 30th last, the percentage "is one-third of that figure. But the number of cases (excluding "public institutions) in which for various reasons I have considered "it inappropriate to ask the medical practitioner in attendance "before death to make the post-mortem examination is 4.3 per cent. "only of the total number. In such cases the medical practitioner "would be summoned to give evidence at the inquest, even if his "first attendance as is frequently the case, were only a few "minutes before death.*"

In the next paragraphs (numbered 9) Mr. Troutbeck questions the accuracy of the figures stated by Surgeon-Major Robinson as to the proportion of cases in which the services of the special pathologist employed by Mr. Troutbeck were requisitioned. The figures stated by Surgeon-Major Robinson were based on the only information to which we at that time had access—namely, that obtained from a careful collation of newspaper reports of inquests, and private information supplied by medical men. Although we have not access to the official figures in the possession of the Coroner, we are, however, through the courtesy of the Medical Officer of Health for Battersea, now enabled to furnish the following particulars of inquests held in that part of the South-Western District.

Table H.

(1) No. of Inquests held				131
(2) No. of *Post-mortems* performed under Coroner's order at places other than Mortuary—				
(*a*) Infirmary			9	11
(*b*) Bolingbroke Hospital			2	
(3) No. of *Post mortems* performed under Coroner's order at Mortuary				108
(4) No. performed by—				
(*a*) Dr. Freyberger				58
(*b*) Police Surgeons				11
(*c*) Private Doctors				39

In twelve instances no *Post-mortems* were performed.

These figures cover a period from 22nd November, 1902, to June 9th, 1903.

The figures above stated show that of the total *post-mortem* examinations made at Battersea Mortuary under Mr. Troutbeck's orders, 55 per cent. had been performed by Dr. Freyberger in the period to which the figures relate, as against 20 per cent. stated by Mr. Troutbeck.

We observe that in this connexion Mr. Troutbeck states that in the cases, stated by him as 4.3 per cent. of the total number in which he has considered it inappropriate to call upon the practitioner in attendance before death to make the *post-mortem* examination, "the medical practitioner would be summoned to give evidence at the inquest, even if his first attendance, as is frequently the case, were only a few minutes before death."

In relation to this statement of Mr. Troutbeck, we most respectfully request your Lordship to refer to the particulars already given by us in Table A, of cases in which the practitioner who had been in attendance on the deceased, not merely a few minutes before death, but in some cases for an appreciable time, has not been summoned to give evidence at the inquest.

"10. *The view your Lordship is reported to have expressed with "regard to the powers, duties, and discretion of the Coroner is the "view which has been so bitterly opposed by these Medical Societies, "and it is in the endeavour to re-establish this correct practice "that I have had a long struggle against the action of these "societies. It has been my duty, as I conceived it, to restore in the "South-Western District the independence and authority of the "Coroner, and I should add that so far from wishing to derogate "from this the London County Council have constantly given their "support to my general attitude of perfect independence, and to "the view that it is my duty to exercise in each case a discretion "judicially to the best of my ability. They have in addition given "to all London Coroners greatly increased facilities for calling in "expert pathological evidence. I submit, then, to your Lordship "that the charges have been based on a series of misapprehensions "of the facts and on mistaken views of the law, and fail in every "particular. There is not, as has been suggested to your Lordship, "a general rule to call in a pathologist, but to consider each in- "dividual case on its merits, and endeavour to put the best evidence*

"*before the jury that has to decide it, with due regard to the* "*law.*"

In the next and succeeding paragraphs numbered (10) Mr. Troutbeck would appear to claim that your Lordship in the remarks made to the Deputation on May 10th, 1903, and reported in the BRITISH MEDICAL JOURNAL, gave judgement in entire accordance with the views of correct procedure adopted by Mr. Troutbeck, and in entire opposition to the principles submitted by us for your Lordship's consideration. We beg to be permitted to say that we did not so understand the observations with which we were favoured by your Lordship, but that your Lordship, as we gathered, postponed pronouncing any definity opinion on the matter.

"11. *The arguments now presented to your Lordship by the* "*Deputation differ only in mode of expression from those first* "*used to me. It was claimed that medical practitioners had a* "*legal, moral, and customary right to make post-mortem examina-*"*tions in every case without exception, whether they had seen the* "*person before or after death, and that the Coroner had no dis-*"*cretion at all, but the calling in of a pathologist was a question* "*to be decided by the medical man after he found he was unable to* "*go on with the post-mortem examination, and not by the* "*Coroner.*"

In the paragraph (numbered 11), Mr. Troutbeck makes an assertion as to the position taken up by our Societies in the matter. Inasmuch as the material for forming an opinion as to the justice of this assertion is in your Lordship's possession in the Memorandum presented by us in which our position is stated, it is, we trust, unnecessary to trouble your Lordship with any refutation of this assertion. It seems proper, however, definitely to repudiate the suggestion of Mr. Troutbeck that we have expressed the view that the decision as to calling in a special pathologist in exceptional cases should be left to the discretion of the medical practitioner already concerned in the case. We can perceive no justification for this suggestion of Mr. Troutbeck in the Memorandum submitted to your Lordship, or in the remarks of the Deputation.

"12. *It is unnecessary further to refer to the manner in which* "*the agitation, which I think is a very limited and artificial one,* "*has been worked up by the Medical Societies. The result is* "*satisfying to me in so far that their application to your Lord-*"*ship has been the means of publishing an authoritative opinion* "*which has established all that I have contended for. These* "*Medical Societies have given no indication that they have appre-*"*ciated any of the considerations which have to be remembered by* "*a Coroner before he makes up his mind on the proper course to* "*pursue in each particular case.*"

The remarks of Mr. Troutbeck in the next two paragraphs (numbered 12) do not appear to require any comment from us further than most respectfully to submit that the Societies whom we have the honour to represent, collectively, including as they do twenty-five thousand members of the medical profession, may perhaps be thought competent to form a just estimate of the evidence necessary to establish satisfactorily the cause of death, and therefore to appreciate the principal considerations which should weigh with a Coroner when engaged in investigating this. We must leave to your Lordship the question whether we have shown such appreciation in the present matter.

"13. *The largest proportion of all the inquests in London are* "*taken for the reason that there is no medical history at all of* "*the case, and that the cause of death is unknown; if in many* "*of these cases the post-mortem examination is entrusted to any* "*ordinary medical practitioner it would be of small value.* "*The Coroners Act expressly gives wide powers to the Coroner* "*in such cases.*"

Particularly we claim to be competent to form an opinion on the matter raised by Mr. Troutbeck in the next paragraph (numbered 13), as to the scientific value of *post-mortem* examinations made by ordinary medical practitioners, and the kindred questions of the qualifications which should be required in those who are employed as pathological experts in cases of exceptional difficulty. We fully recognize the discretion reposed in the Coroner in the latter matter, and, therefore, are debarred from raising here the issue upon which, if occasion arose, we should be quite prepared to meet Mr. Troutbeck, as to the relative value of *post mortem* examinations as commonly performed by the pathologist usually employed by him, and as commonly performed by the majority of general practitioners.

"14. *Some cases are in relation to public institutions, such as the* "*General Hospitals (of which there are four in my district), Lunatic* "*Asylums (of which there are several), Workhouses, Infirmaries* "*(of which there are several) and Prisons. In all these institutions,* "*as your Lordship can imagine, there are from time to time com-*"*plaints made, justly or unjustly, of the treatment received. It* "*would be most unsatisfactory if the Coroner were to be restricted* "*with regard to the post-mortem examination to the medical prac-*"*titioners employed at these institutions.*"

On the following paragraph (numbered 14) it appears sufficient to observe that we have not suggested that the Coroner, in the case of deaths in institutions, should be restricted to employing the officers of those institutions to make *post-mortem* examinations. But we urge that in the majority of such cases the value of the *post-mortem* examination in the elucidation of the cause of death would be materially increased by the assistance thereat of the medical practitioner who by his previous attendance had acquired important knowledge of the facts of the case. On this point we invite the attention of your Lordship to the facts brought out in evidence at a recent inquiry held by the Local Government Board, in consequence of an inquest conducted by Mr. Troutbeck. We append marked copies of newspaper reports of the inquiry.

"15. *Then there are many cases where the inquest is only a pre-*"*liminary to other proceedings. Inquests are now used under* "*various Acts of Parliament, and by request of various Govern-*"*ment Departments and of County Councils, for the purpose of* "*obtaining information on the facts, not only in criminal cases* "*but also in connexion with, for example, Prisons, Lunatic* "*Asylums, Factories, Mines, Workhouses and Infirmaries, and* "*in cases of Insurance and Employers' Liability and workmen's* "*compensation and for the Registrar-General's work. In such* "*cases there are frequently points of pathological difficulty which* "*cannot subsequently be properly disposed of if a mistake be made* "*at the post-mortem examination, or the examiner be inex-*"*perienced.*

"*Again there are cases where the main difficulty arises from* "*purely pathological changes which are frequently unrecognizable* "*except by an expert on the subject. I may instance cases of* "*suspected overlying of infants, where injustice has not infre-*"*quently been done to parents in the past.*

"*There are also cases where complaint is made of the medical* "*practitioner himself.*"

The next paragraph (numbered 15), appears to us irrelevant to the issues raised by us, since, as Mr. Troutbeck's statements have compelled us repeatedly to submit to your Lordship, it is quite contrary to the view presented by the medical societies to suggest that the most skilled expert assistance obtainable should not be employed by Coroners in cases of exceptional difficulty.

"16. *It is dangerous to represent as a fact that in the vast* "*majority of inquests a general medical practitioner is perfectly* "*competent to perform the post mortem examination. The con-*"*trary view is held by pathologists of medico-legal experience. On* "*this matter, as on all others, the Coroner should keep an open* "*mind.*"

In reply to the statement in the following paragraph (numbered 16), as to the danger of regarding the general medical practitioner as competent to perform *post-mortem* examinations in the majority of cases, we beg definitely to submit to your Lordship the opinion of the medical profession that he is so competent, and we would further submit that on a matter of this kind the opinion of the Medical Societies, whom we have the honour to represent, may receive at least equal weight with that of the anonymous "pathologists of medico-legal experience" relied upon by Mr. Troutbeck. The essence of our complaint against Mr. Troutbeck is that in this matter he has not kept the open mind which he justly states that the coroner should possess, but has given undue attention to the nomination by a Committee of the London County Council of an individual medical practitioner, and has been led thereby to make invidious distinctions and unwarranted reflections upon the professional capacity of other medical men.

In conclusion, we beg leave of your Lordship briefly to restate the position maintained by us, which Mr. Troutbeck appears to us seriously to have misrepresented. While adhering to our recognition of the value of the assistance of competent pathological experts in exceptional cases, we suggest that such assistance should be obtained as a supplement to, and not in substitution for, the evidence, and assistance at the *post mortem* examination, of the medical practitioner who has acquired from his previous experience of the case a direct knowledge of facts having a material bearing on the investigation of the cause of death. We humbly beg leave of your Lordship to repudiate with

indignation the suggestions repeatedly, and we most respectfully submit to your Lordship, unwarrantably and improperly made by Mr. Troutbeck, that our Societies are proceeding in this matter in the interests of a class. The interests we claim to represent are those of the community, since our object is to secure that the cause of death shall be established in all cases by the best evidence obtainable.

We are,

Your Lordship's most humble, obedient Servants,

ANDREW CLARK,

Chairman of Joint Committee representing the British Medical Association, the South-West London Medical Society, the Medical Defence Union, Limited, and the London and Counties Medical Protection Society, Limited.

J. SMITH WHITAKER,

Secretary of Committee.

No reply whatever beyond a formal acknowledgement having been received from the Lord Chancellor to the foregoing communication, the following letter of inquiry with a further list of illustrative cases was, by instruction of the Conference, sent to the Lord Chancellor on May 14th, 1904:

THE OFFICES OF THE BRITISH MEDICAL ASSOCIATION,
429, STRAND, W.C.,
May 17th, 1904.

MY LORD,—On behalf of the British Medical Association and other medical societies, we had the honour to communicate to your Lordship on July 27th, 1903, a document in relation to the action of Mr. John Troutbeck, H.M. Coroner for South-West London, in withholding from the jury, in inquests held by him, certain kinds of medical evidence which were deemed by the societies whom we represented to be necessary for the adequate investigation of the cause of death and essential for the true finding of a jury in relation thereto.

It will be within the recollection of your Lordship that by such communication we, in reference to a letter of Mr. Troutbeck which your Lordship had done us the honour to communicate to us, and by which he had traversed the statements made by us, submitted for the consideration of your Lordship particulars of cases which established those statements made by us which Mr. Troutbeck had traversed.

Inasmuch as the matter is one of great public importance and of special interest to the medical profession, and inasmuch as the document to which we have referred was deemed by us to afford a categorical proof of the position which Mr. Troutbeck repudiated, we are instructed most respectfully to inquire when we may hope to receive, as the result of your Lordship's consideration of the matter, an expression of your Lordship's opinion thereon?

We are further instructed to submit to your Lordship a further list of cases appended hereto in evidence of the continuance by Mr. Troutbeck of the practices to which the attention of your Lordship was drawn.

We are,

Your Lordship's most humble, obedient servants,

ANDREW CLARK,

Chairman of the Joint Committee representing the British Medical Association, the South-West London Medical Society, the Medical Defence Union, Limited, and the London and Counties Medical Protection Society, Limited.

J. SMITH WHITAKER,
Secretary of Committee.

To the Right Honourable the Lord Chancellor.

[*Enclosure.*]

LIST OF CASES ILLUSTRATING THE PROCEDURE OF THE CORONER FOR SOUTH-WEST LONDON IN RESPECT OF MEDICAL EVIDENCE AT INQUESTS HELD BY HIM.

Death August 15th, 1903. Inquest August 18th, 1903.

A child, aged 8, was seen to slip and fall into a pond. Dr. E. Rowland Fothergill, Torquay House, Southfields, was sent for and saw the child fifteen minutes after immersion. Dr. Freyberger made a *post-mortem* examination and gave evidence thereon at the inquest. Dr. Fothergill was not called to give evidence.

Death August 16th, 1903. Inquest August 18th, 1903.

A man found dead was seen by S. L. Craigie Mondy, Esq., M.R.C.S., L.R.C.P., University College Hospital, Gower Street, W.C., immediately afterwards. He was supposed to have taken "Epsom Salts." Dr. Mondy sealed the box containing the remainder of the "Salts," together with the glass, spoon, etc., and took them away with him. The Coroner's Officer called for them with a message from the Coroner that Dr. Mondy ought not to have taken them. At the inquest evidence was given by Dr. Freyberger as the result of a *post-mortem* examination. Dr. Freyberger thought that "death was from corrosive poisoning," but the inquest was adjourned for an analysis of contents of stomach, which was not performed by Dr. Freyberger but by a public analyst. Dr. Mondy, who had not been called to the first inquest, was called to the adjourned inquest on September 12th, four weeks all but one day after the death.

Death, September 18th, 1903.

A woman brought her infant to the surgery of A. H. W. Ayling, Esq., L.S.A., 155, Kennington Park Road, saying she did not know if it were alive or dead. Dr. Ayling found that it had been dead about an hour. Dr. Ayling wrote to the Coroner's Officer stating the facts, and next evening he received a letter from Mr. Troutbeck asking him to tell him what he knew of the case. He at once replied, practically repeating his note to his officer.

The next day he was informed by Mr. Troutbeck that Dr. Freyberger had been instructed to undertake the pathological examination, and that Dr. Ayling's evidence would not be required at the inquest.

Inquest November 12th, 1903.

Dr. J. Reid, Heathfield Lodge, Southfields, was called in emergency to deceased on October 26th, at 5.20 p.m. He found her suffering from haematemesis, basal pneumonia, plastic exudation on tonsil, hysterical swallowing, tenderness over stomach. She was partly comatose from alcohol, and the vomit smelt strongly of brandy. A history was given of stomach trouble and getting wet.

H. S. Revell, Esq., M.R.C.S., L.R.C.P., 11, Granville Road, Southfields, had attended the deceased from October 12th to October 23rd for gastric catarrh and general depression, probably due in part to the menopause. On the 23rd she was so much better that he discontinued attendance.

On the 26th Dr. Revell saw the patient at 7 p.m., and his observations agreed with those of Dr. Reid. In particular, Dr. Revell observed no indications of corrosive poisoning. Dr. Revell continued to attend the deceased for a fortnight, an attack of broncho-pneumonia developing with acute follicular tonsillitis, and, as the patient recovered from this disease, symptoms of climacteric melancholia became marked. On November 6th Dr. Revell certified that deceased was "of unsound mind due to the menopause," and she was removed to the Wandsworth Infirmary, where she died.

Dr. Neal, Medical Superintendent of the Wandsworth Infirmary, and Dr. Freyberger were summoned to the inquest, the latter having made a *post-mortem* examination. Dr. Freyberger stated that death was due to exhaustion following corrosive poisoning, and that the poison "might have been spirits of salts." "Deceased must have gulped it down as the gullet was not affected."

Dr. Neal stated that the possibility of poisoning had been considered when the case was under his care, but there were no definite symptoms thereof. There was nothing peculiar about the mouth.

Dr. Reid and Dr. Revell, who saw the deceased on October 26th, the date on which she was supposed to have taken poison, if at all, were not called to the inquest. Dr. Reid states that there was no evidence of deceased having access to hydrochloric acid, and nothing in her appearance, when he saw her, to indicate that she had taken any corrosive poison. He considers that Dr. Freyberger, not having seen the patient during life, mistook a condition of chronic gastric catarrh, the effect of alcohol and rheumatism in a subject suffering from influenza, for the effect of corrosive poisoning. Dr. Freyberger

appears to Dr. Reid to have relied on thrombosis in the blood vessels of the stomach as proof of hydrochloric acid poisoning.

Death November 23rd. Inquest November 27th, 1903.

On November 10th, 1903, M. J. B. Anderson, Esq., L.R.C.P., Cedars Road, Clapham, was called by a midwife to attend the deceased woman, the case being reported to him as urgent. He attended at once, and found the patient suffering from severe haemorrhage. Dr. Anderson stopped the haemorrhage, informed the midwife that he believed the case would now turn out satisfactorily, and offered to see the patient again if required. On November 18th, having heard nothing of the case since his first visit, Dr. Anderson was called again by a relative, and found the patient very ill indeed, having a high temperature, hacking cough, and pain in the right side. Having regard to her condition and her want of means, he advised that she should enter the infirmary hospital, where she would receive good nursing, attention, and food. This the patient declined, and declined also the services of a free district nurse. At her request Dr. Anderson continued to attend until November 23rd, when she died.

Dr. Anderson, having heard rumours that the attack of illness as to which he had first been called to attend deceased was brought about by shock following a firework explosion, deemed it necessary to report the facts to the Coroner, Mr. Troutbeck, stating, however, that he was prepared to give a certificate of death if the Coroner thought he was justified in so doing.

Dr. Anderson received no acknowledgement of this communication. On Saturday morning, November 27th, Dr. Anderson found, on coming home from a round of visits, that a telephone message had been received asking him to go at once to the Coroner's Court, as the Coroner and jury were waiting for him. Dr. Anderson replied that he was prepared to attend if he received a proper order to do so.

Mr. Troutbeck at the inquest, addressing the Jury, commented on the absence of Dr. Anderson, and expressed regret that he had not thought fit to attend the court. According to the report in the London *South-Western Star* for December 4th, 1903, Mr. Troutbeck also stated, presumably in explanation of the fact that he had not summoned Dr. Anderson to give evidence, that he had never forced, and never intended to force, anybody into the witness-box. The Jury found that the deceased died from septic poisoning, accelerated by the inattention of the doctor.

Death November 26th, 1903. Inquest December 1st, 1903.

Dr. J. Reid, Heathfield Lodge, Southfields, was called to the deceased on November 15th, 1903. She was stated to have taken oxalic acid. He washed out the stomach until the reaction of oxalic acid ceased. Deceased was then removed at once to the Wandsworth Infirmary. Dr. Neal was called to the inquest on December 1st, and also Dr. Freyberger, who had made a *post-mortem* examination. Dr. Reid was not summoned to give evidence.

Death December 15th, 1903.

T. L. Archer, Esq., M.R.C.S., 83, Vincent Square, Westminster (Acting Police Surgeon), was called by the police to deceased, who was found dead in a chair. He received a letter from Mr. Troutbeck, asking for "information," which Dr. Archer replied that he was prepared to give upon receiving a proper summons. The Coroner then, as Dr. Archer has been informed, requested the Inspector of Police to compel Dr. Archer to give the information to them, but the police refused to take such action.

Dr. Archer's evidence was not placed before the jury. A *post mortem* examination was made by Dr. Freyberger, and his evidence as to the result thereof was the only medical evidence taken.

Death January 26th, 1904.

On Tuesday, January 26th, 1904, C. Atkey, Esq., M.R.C.S., L.R.C.P., King's College, Lincoln's Inn Fields, was called in to attend the deceased at the time of his death, and naturally expected to receive an intimation as to the time and place of the autopsy. On Wednesday, at 1.45 p.m., as he had received no such information, he telephoned to Mr. Troutbeck, who referred him to Dr. Freyberger, adding that the autopsy was already completed, or, at any rate, was in progress. Dr. Atkey states that, while recognising the demands on the Coroner's time are very great, he considers that it would have been in the interests of the public, as well as due to him as a member of the medical profession, that the courtesy should have been extended to him of an intimation from the Coroner as above suggested.

The receipt of the above letter was formally acknowledged, but no reply was received. The Conference thereupon decided to take further action. As the Lord Chancellor had kept the medical profession waiting for over a year for his pronouncement of judgement upon the charges they had laid against Mr. Troutbeck, they addressed to him the following letter:

The Offices of the British Medical Association,
429, Strand, W.C., July 1st, 1904.

My Lord.—With respect to the matters affecting Mr. Troutbeck, the Coroner for South-West London, which we have had the honour on three occasions to bring to the notice of your Lordship, we are instructed to inform your Lordship that as the Annual Meeting of the British Medical Association, one of the parties interested in this case, will take place at the end of this month, it is desired to publish at an early date the facts and evidence which have been submitted by us to your Lordship in order that they may be before the Association prior to the meeting.

With a view to such publication we are instructed to inquire whether we may expect any further communication from your Lordship.

We are,
Your Lordship's most humble, obedient Servants,

ANDREW CLARK,
Chairman of Joint Committee representing the British Medical Association, the South-West London Medical Society, the Medical Defence Union, Limited, and the London and Counties Medical Protection Society Limited.

J. SMITH WHITAKER,
Secretary of Committee.

To the Right Honourable the Lord Chancellor.

The Conference also decided that if no reply was received within a week, the attention of the Prime Minister should be drawn to the miscarriage of justice which was resulting from the inaction of the Lord Chancellor; and, further, that the London County Council should be asked to consider the whole matter, as affecting the conduct of officers employed by them.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

BIRMINGHAM BRANCH:

WEST BROMWICH DIVISION.

THE annual meeting of this Division was held in the Board Room of the District Hospital on Wednesday, June 29th, at 4 p.m., H. LANGLEY BROWNE, M.D., in the chair.

Confirmation of Minutes.—The minutes of the last annual meeting were read and signed by the Chairman.

Apologies for Non-Attendance.—Apologies were received from Dr. W. H. Stephen and Dr. C. Robertson.

Election of Officers.—The following were elected officers for the ensuing year: *Chairman:* Mr. S. T. D. Weston. *Vice-Chairman:* W. H. Stephen, M.D. *Honorary Secretary:* H. B. W. Plummer, M.D. *Representatives on Branch Council:* J. H. H. Manley, M.B., and H. B. W. Plummer, M.D. *Representative at Annual Representative Meeting:* J. H. H. Manley, M.B.

Executive Committee.—The following were elected members of the Executive Committee: H. G. Crew, A. Croll, M.D., H. P. Motteram, M.D., H. Shillito, M.B., T. Sansome, W. D. Urquhart, M.D.

Report of Executive Committee.—The Executive Committee presented the following report: "Your Committee beg to report that the first meeting of this Division was held in the Council Chamber, Town Hall, on Monday, June 29th, 1903,

and that since then two ordinary meetings of the Division have been held in the Board Room of the District Hospital, one in September, 1903, and one in April of the present year. Dr. H. Langley Browne was elected first Chairman of the Division. That the model rules as suggested by the Association were adopted as the rules of this Division, as was also the model ethical code. The Executive Committee have met three times, when the ordinary routine business has been discussed. During the year the following important matters have been discussed and either approved or amended: Vaccination Acts, representation on General Medical Council, the proposed Medical Acts Amendment Bill, the question of consultation between medical witnesses, and the advertisement in connexion with hydropathic establishments. A poll of the Divisions having been demanded on the question of whether or no the Association should take up medical defence, your Committee report that, as far as this Division is concerned, the reply was in the negative. Papers of questions relating to contract practice have been sent to the members of the Division, and your Committee hope that all will assist the inquiry by filling up the papers and returning them to the Medical Secretary of the Association. The number of members in the Division is fifty-two, an increase of three during the year. It is hoped that members will endeavour to get recruits, as there are many medical men in the district who are not members of the Association. Your Committee at the same time express their regret at the small attendance at the meetings, and the general lack of interest on matters affecting the welfare of the profession. The expenses of the Division up to December 31st, 1903, amounted to 17s. 6d. This sum has been paid by the Branch."

Annual Representative Meeting.—The business coming before the Representative Meeting at Oxford was then considered, and the representative instructed to support: (1) The nomination of candidates for the General Medical Council by the Association and also the suggested scheme; (2) the registration of nurses; (3) payment for information to coroners; (4) the proposed Medical Acts Amendment Bill.

Memorandum from Exeter Division.—A memorandum from the Exeter Division was read and it was ordered to be laid on the table.

Temporary Vacancies among Officers.—The following new rule was adopted:

That in the event of the death or resignation of any officer of the Division, or of his ceasing to be a member of the Division, the Executive Committee shall appoint some member of the Division to hold the office thereby vacated until the next annual meeting.

CAMBRIDGE AND HUNTINGDON BRANCH.

The annual meeting of this Branch was held at the new Medical Schools, Cambridge, on Thursday, June 30th. Dr. L. Humphry, President elect, occupied the chair, and a fair number of members were present.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Report.—The report and balance sheet of the Council were read and passed.

Election of Officers.—The following officers were elected:—*President-Elect:* Mr. W. H. Copley. *Direct Representative:* Mr. H. Stear. *Honorary Secretary and Treasurer:* Mr. F. E. Apthorpe Webb. *Council:* Mr. Fordyce, Dr. Deighton, Dr. Giles.

Adoption of Rules.—The rules of the Branch were adopted.

Extra Rule.—The following extra rule was adopted subject to acceptance by the Central Council: "Each candidate for election to the Branch must be nominated by two members of the Branch to whom he is personally known."

Luncheon.—The meeting then adjourned to luncheon at the invitation of the President, Dr. L. Humphry, at which over eighty members and guests were present. The President proposed "The health of the late President," Dr. Carr Sprague, who replied and proposed "The health of Dr. Humphry."

Papers.—After lunch the following papers were read in the Medical Schools:—Dr. L. Humphry: Family predisposition and the onset of disease. Dr. Hugh Walsham: The Roentgen rays as a means of diagnosis in diseases of the chest (illustrated by the lantern). Dr. J. N. Collins: A case of acromegaly. Mr. W. H. Copley: Notes on unpublished cases.

Vote of Thanks.—Professor Marsh proposed a hearty vote of thanks to Dr. Hugh Walsham, which was carried with acclamation.

Garden Party.—Subsequently Dr. and Mrs. Humphry gave a garden party at "Lensfield," which was greatly appreciated by the members and their lady friends.

The meeting was a thorough success in all ways, and the thanks of the Branch are due to Dr. and Mrs. Humphry for their hospitality.

LANCASHIRE AND CHESHIRE BRANCH:

Crewe Division.

The first annual meeting of this Division was held in Crewe on July 1st, Dr. J. W. Moody in the chair. There were seven members present.

Election of Officers.—The following were elected office-bearers for the ensuing year:—*Chairman:* Dr. Atkinson. *Vice-Chairman:* Dr. J. W. Moody. *Secretary and Treasurer:* Dr. A. J. Laird. *Representative on Branch Council:* Dr. R. T. Turner. *Other Members of Committee:* Drs. Ingles, Lowe, and Millar.

Adoption of Rules.—The Model Rules of the Association were adopted.

Vote of Thanks to Chairman.—The meeting terminated with a vote of thanks to Dr. Moody for presiding.

Liverpool Central Division.

The annual meeting of the Division was held in the Liverpool Medical Institution on June 29th, Dr. T. R. Bradshaw in the chair.

The Report of the Executive Committee was received and adopted.

The following officers were elected for the ensuing year:—*Chairman:* C. J. Macalister, M.D. *Vice-Chairman:* T. D. Leigh. *Honorary Secretary:* Frank H. Barendt, M.D. *Representative for Representative Meeting:* A. Gordon Gullan, M.D. *Representatives on Branch Council:* Frank H. Barendt, M.D., G. P. Newbolt, M.B. *Executive Committee:* T. R. Bradshaw, M.D., W. M. Cairns, M.B., D. Douglas-Crawford, M.B., E. E. Glynn, M.B., G. P. Newbolt, M.B.

The Report of the Executive Committee was received and adopted.

Instructions to the delegates were adopted.

METROPOLITAN COUNTIES BRANCH:

Westminster Division.

A special meeting of this Division was held at 20, Hanover Square, on Thursday, June 30th, at 5 p.m. Dr. Haslip was in the chair, and there were six members present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

The Association and Medical Defence.—The Honorary Secretary announced that, as the result of the poll on the question of medical defence, 78 members had voted in favour and 24 against the Association adopting a defence department, and 12 had signed the form agreeing to join the defence scheme if instituted.

Vacancies among Officers.—The following rule was adopted for the Division vacancies among officers:

In the event of the death or resignation of any officer of the Division, or of his ceasing to be a member of the Division, the Executive Committee shall appoint some member of the Division to hold the office thereby vacated until the next annual meeting.

Instructions to Representatives.—The reports of the Medico-Political Committee were considered, and it was resolved to instruct the Representative to support the following: No. 1. Nomination of candidates for General Medical Council. No. 3. Nurses' registration. No. 4. Information supplied by medical men to coroners; and No. 8. Revised Medical Acts Amendment Bill (with Memorandum).

The Coroner for Westminster and the Medical Profession.—The meeting next proceeded to a discussion on certain questions arising out of the recent action of the Coroner for Westminster in respect of the appointment of a pathologist. After various remarks by the Chairman and Drs. O'Connor, Hilliard, Dauber, and Sibley, Dr. O'Connor proposed:

That the Council of the Association be called upon to take such steps as may be desirable for the introduction of a Coroners Act Amendment Bill, dealing especially with the action of coroners in appointing their own private pathologists, and that this Division is of opinion that such appointment should be a public one.

—This was seconded by Dr. Hilliard, put to the meeting, and carried unanimously.

Proposed Combined Meeting.—The Honorary Secretary read a letter from the Honorary Secretary of the Wandsworth Division suggesting a combined meeting of their two Divisions in the autumn to consider the matter again. It was decided to leave the subject to the Executive Committee to deal with later on.

Branch Rules.—The rules of the Branch were next considered, and it was proposed by the HONORARY SECRETARY and carried:

That it be suggested that Rule 9 be altered as follows: "four weeks" in the fifth line read "at least fourteen days."

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH.

THE annual meeting was held at the County Hotel, Ulverston, on Wednesday, June 29th, at 3 p.m. Dr. LOWTHER was voted to the chair, and, after various letters of apology and the minutes of the previous meeting had been read, he introduced the new President, Dr. A. W. COLLINS.

Election of Officers.—It was announced that the following officers had been nominated by the Branch Council and they were declared duly elected:—*President-Elect:* J. Mason. *Vice-President:* W. Hall. *Treasurer:* W. D. Barrow. *Secretary:* A. S. Barling.

Branch Council.—The SECRETARY reported that the following members had been elected by the Divisions to the Branch Council: *Furness Division:* P. L. Booth, Richard Lowther. *Kendal Division:* G. A. Johnston, P. F. Sturridge. *Lancaster Division:* W. Hall, H. F. Oldham.

President's Address.—The PRESIDENT then delivered an address on "The Importance of Insurance for Medical Men." He pointed out the advantages of insuring with a Mutual Society, and urged all practitioners to insure against accidents and illness. He particularly commended a scheme whereby a pension was secured if permanent disablement occurred.

SOUTH WALES AND MONMOUTHSHIRE BRANCH.

THE thirty-fourth annual meeting was held at the Infirmary, Newport, Mon., on Thursday, June 9th, Dr. J. TATHAM THOMPSON, and afterwards Mr. O. E. B. MARSH, in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were confirmed.

Report of Council.—The report of the Council stated that the annual meeting of the Branch was held at Swansea, in June, 1903, at which the model by-laws, with some slight modifications, were adopted. In order to assist the Divisions to get into working order, the Council decided to limit the number of Branch meetings this year, and accordingly in addition to the annual meeting only two general meetings—one at Cardiff in December and one at Swansea in March—have been held. The attendance at both was good. The number of members of the Branch was now 447. The Council recommended that donations of 5 guineas should be again given this year to Portheawl Rest and Epsom College.

Balance-Sheet.—The following balance-sheet for 1903 was presented:

CR.

Income.	£ s. d.
1903	
Balance, Dec. 31st, 1902	23 12 7
Jan. 8th. Subscriptions, 1902, General Secretary ...	5 0 0
Feb. 5th. Do. do. do. ...	0 15 0
May 28th. Subscriptions, General Secretary, 1903 ...	70 14 0
Oct. 12th. From deposit and interest	51 11 11
Oct. 16th. Subscriptions, 1903, per General Secretary ...	10 17 6
	£140 10 6

DR.

Expenditure.	£ s. d.
1903	
Jan. 10th. Andrews, Neath, Use of Room, etc., October 31st, 1902 ...	0 13 6
Feb. 6th. Lewis, Printing account and stamps ...	3 14 6
June 5th. Do. do. do.	3 15 0
July 23rd. Do. do. do.	4 12 0
July 25th. Donation, Swansea Meeting...	50 0 0
Oct. 3rd. Portheawl Rest	5 5 0
Oct. 15th. Royal Medical Benevolent College ...	5 5 0
1904	
April 22nd. Petty cash: Council Meeting	0 3 6
April 22nd. Petty cash: Lewis, printing account...	0 16 6
May 19th. Stamps	0 2 0
Balance, December 31st ...	65 13 6
	£140 10 6

Examined and found correct.
D. NAUNTON MORGAN.
B. M. LEWIS.

May 17th, 1904.

The University of Wales and Medical Degrees.—The following motion by Cardiff Division was passed:

That this meeting heartily approves the application of the Court of the University of Wales for a supplemental charter to grant Degrees in Medicine; it further appreciates the fact that the application is supported by H.R.H. Prince of Wales, the Chancellor of the University, and hereby records its opinion that by the granting of such a charter much benefit will accrue to the people of Wales.

Alteration of Rule.—A motion by the Branch to substitute word "May" for word "December" in Rule 6 was passed.

Election of Officers.—The following were elected officers for 1904-5:—*President-elect:* William Williams, M.D. *Treasurer:* Evan Jones. *Secretaries:* Frank G. Thomas, W. Mitchell Stevens. *Representatives on Central Council of the Association:* J. Lynn Thomas, C.B., Pearson R. Cresswell, C.B.

Installation of New President.—The new President, Mr. O. E. B. Marsh, of Newport, was formally installed.

Votes of Thanks.—A vote of thanks to retiring President was carried unanimously. A vote of thanks was awarded to the retiring Honorary Secretary, Dr. Paterson, for his services to the Branch during the last four years.

President's Address.—The PRESIDENT delivered an address entitled Some Remarks upon the Past and Present Position of Surgical Disease and its Treatment.

SWANSEA DIVISION.

THE annual meeting of this Division was held at the General Hospital, Swansea, on Thursday, June 16th. Sixteen members were present.

Report of Executive Committee.—The report of the Executive Committee was read, and, after some discussion as to whether the report should not cover the previous twelve months rather than the Association year, it was resolved:

That the report of the Executive Committee be adopted.

Election of Officers.—The officers for the ensuing year were then elected as follows:—*Chairman:* T. D. Griffiths, M.D. (re-elected). *Vice-Chairman:* D. A. Davies, M.D. *Honorary Secretary (*to act as *Treasurer):* A. Hanson. *Representatives on Branch Council:* W. F. Brook, J. Arnallt Jones, M.D., E. M. Cronier Lancaster, M.D. *Representative for Representative Meetings:* H. A. Latimer, M.D. (re-elected). *Elected Members of Executive:* F. G. Thomas, M.B., Rhys Davies, M.D., Edgar Reid, J. A. Rawlings, J. H. S. Roberts, Llewellyn Lewis.

Ethical Committee.—The question of the election of an Ethical Committee was then brought forward, and after some discussion it was resolved:

That an Ethical Committee be elected.

And further:

That the Ethical Committee shall consist of four elected members, together with the Chairman and Honorary Secretary *ex officio*, four to be a quorum.

D. Thomas, M.D., Eben. Davies, Joseph Davies, and H. A. Latimer were then elected as members of this Committee.

Annual Representative Meeting.—The business of the Annual Representative Meeting as published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of May 7th was then brought forward, but as no one wished to draw attention to any particular item it was decided to leave the matter in the hands of the representative.

SOUTH-WESTERN BRANCH.

THE sixty-fifth annual meeting of this Branch was held at the Public Hall, Paignton, on June 21st, previous to which members were hospitably entertained at luncheon by the President-elect, J. Alexander, M.D. The President, Dr. W. F. THOMPSON, was in the chair and supported by fifty-five members.

Confirmation of Minutes.—The minutes of the last annual meeting were read and confirmed.

President's Address.—Dr. W. F. Thompson resigned the chair to the PRESIDENT-ELECT, who delivered his inaugural address, prefacing his remarks with a hearty welcome to Paignton on this the first occasion of the annual meeting in that town whose history dated back to the Saxon era. He then proceeded to deal with the following questions of medical politics, namely: The undertaking of medical defence by the Association, the consultation of medical witnesses before giving their respective evidence in cases which involved litigation, the advertising in connexion with hydropathic establishments with the names of visiting medical men who are also in general practice, and the conditions of club practice. In regard to medical defence, Dr. Alexander submitted that it would not be for the benefit of the profession that another defence society should be added to the five already existing. As to the consultation between medical witnesses before a trial at law, such consultation would be contrary to the principles upon which our English system of trial by jury was based, and contrary also to the principles of equity. It might prove some gain to the general reputation of the profession, but if, as was possible, it were viewed with disfavour in

legal quarters, the profession would in the long run gain nothing by it but discomfort and the distrust of lawyers and the public. In regard to the advertising of names of local practitioners in connexion with hydropathic establishments, a practice confined chiefly to the Northern and Midland Counties, it certainly was not consistent with the dignity which should attach to their profession and should be checked, by gentle means if possible, and failing those by action by the General Medical Council. Concerning the condition of club practice, Dr. Alexander dealt in detail with the various abuses incidental to this class of practice against which it behoved the profession to work with might and main. Finally he pointed out that the great trouble in getting medical reforms was the want of cohesion in the medical profession owing to petty jealousies.—On the proposition of Dr. Deas, seconded by Mr. George Jackson (President-elect), and supported by Dr. Gordon, a hearty vote of thanks to Dr. Alexander for his able address was accorded by acclamation.

Election of a Vice-President.—Dr. Gould proposed, and Mr. J. Somer seconded, a vote of thanks to Dr. W. F. Thompson at the end of his year of office, and that he be elected a Vice-President of the Branch, which was carried unanimously.

Report of Branch Council.—The Report of the Branch Council was then read by the Honorary Secretary, and it was resolved that it be received and adopted.

Election of Officers.—The Honorary Secretary announced that Drs. P. M. Deas and E. L. Fox were re-elected as Elective Members of Council, the election having been conducted under the provisions of By-laws 22, 23, 25, 26.—Dr. Odell then proposed that Mr. G. Young Eales be re-elected Honorary Secretary and Treasurer, which was seconded by Dr. W. F. Thompson, and carried unanimously.

Irish Dispensary Service.—The President then put from the chair the following recommendation from the Branch Council:

That a vote of sympathy be passed with the Irish Dispensary Service, in the treatment they had received from the governing authorities.

—This was carried unanimously.

Garden Party.—After the meeting members were entertained by the President and Mrs. Alexander at a garden party.

Annual Dinner.—Thirty members and guests dined together in the evening at the Public Hall, the President in the chair; after which the day's proceedings were brought to a conclusion with an enjoyable amateur dramatic entertainment, arranged by Mrs. Alexander.

SYDNEY AND NEW SOUTH WALES BRANCH.

Annual Meeting.

The annual general meeting of the Branch was commenced at the Association Rooms, 121, Bathurst Street, Sydney, on Thursday, March 24th, Dr. MacCormick, Vice-President, in the chair.

The Chairman appointed Drs. Sawkins and Palmer scrutineers and Drs. Blackburn and Windeyer assistants, and handed the ballot papers to the scrutineers.

The meeting then adjourned.

Adjourned Annual Meeting.

The adjourned annual meeting was held at the Royal Society's Rooms, on Friday, March 25th; Dr. MacCormick, Vice-President, in the chair. There were forty members present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—The Chairman announced the election of the following new members: Dr. Page, Dr. R. Schentte, Dr T. D. Bertram, Dr. Taylor Handcock, Dr. H. R. Rice, Dr. T. S. Davis, and Dr. E. De Marco.

Report of Council.—The Acting Honorary Secretary (Dr. Abbott) proposed that the annual report of the Council be taken as read. This was carried.

Balance Sheets.—The Honorary Treasurer (Dr. Crago) explained the balance sheets, and moved the adoption of the report and balance sheets. Dr. Abbott seconded the resolution, which after discussion was carried. A discussion ensued, in which Drs. Carruthers, Pockley, and Crago took part.

President's Address.—In the absence of the President (Dr. Brady) the Acting Honorary Secretary (Dr. Abbott) read the address of the President. Dr. MacCormick moved a vote of thanks to Dr. Brady for his address, which was carried.

Election of Officers.—The Chairman announced the result of the election of office-bearers and Councillors:—*President:* Dr. A. MacCormick. *Vice-President:* Dr. Beeston. *Councillors:* Drs. Abbott, Crago, Rennie, Hankins, Dick, Pockley, Maitland, Newmarch, Hinder, Worrall, Brady, and Hood. *Auditors:* Dr. F. H. Hall and Dr. F. S. Sawkins. *Representatives of the Branch at the Annual Meeting of the Parent Association at Oxford, England:* Dr. A. J. Brady and the Hon. Dr. Mackellar, M.L.C.

Proposal Concerning Papers.—Dr. Taylor Young suggested that the Council should take steps to circulate to those members interested a synopsis of the paper to be read at the general meetings, so that better discussions would take place.—Dr. Crago said it would throw too much work upon the Secretary to prepare such a statement.

WEST SOMERSET BRANCH.

The sixty-second annual general meeting of this Branch was held at the Crown Hotel, South Petherton, on Tuesday, June 28th. There were present fourteen members and three guests.

Introduction of New President.—Dr. David Brown, the retiring President, introduced the new President, Mr. A. W. Sinclair, who then took the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Report of Council.—The report of the Council for the past year, and the treasurer's accounts, were passed.

Election of Officers.—Mr. Gordon Henry was elected President-elect. Dr. J. A. Macdonald was re-elected Representative at Representative Meetings. Mr. W. B. Winckworth was re-elected Hon. Secretary and Treasurer. Messrs. J. Brice Bunny and R. H. F. Routh were elected members of the Council of the Branch.

Ethical Committee.—The Branch Council was re-elected the Ethical Committee of the Branch.

Ethical Case.—The report of an ethical case recently before the Committee was read by the Secretary; after which the Chairman moved a resolution condemning the conduct of one of the members, and referring the matter to the Council of the Association.—This was seconded by Dr. J. D. Adams, and carried unanimously.

Expenses of Members of Council.—The Chairman also moved:

That Members of the Council attending ordinary meetings of the Council at Taunton shall receive their second-class return railway fare.

—This was seconded by Dr. Macdonald, and also carried without dissent.

Presidential Address.—An address on Neurasthenia had been prepared by the President, but owing to lack of time he suggested that it should be printed and circulated among the members instead of being read at the meeting.

Luncheon.—The members present, with several guests, then lunched together, and afterwards, on the invitation of the President, were driven to Hinton House, the seat of the Earl Poulett, over which they were kindly shown.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.

The annual meeting of this Branch was held at Hereford Infirmary on Friday, June 24th, A. O. Holbeche, President, in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and passed.

Election of Officers.—The following were elected officers for the ensuing year:—Dr. Fitzsimons (Hereford) was elected President and then took the chair. Mr. Gostling (Worcester) was elected President elect. Dr. G. W. Crowe informed the meeting that he had been elected Representative on the Council of the Association. Dr. Crowe was elected Secretary.

President's Address.—Dr. Fitzsimons read a paper on "The Influence of Hospital Isolation upon Scarlet Fever in Hereford."

The Association and Medical Defence.—The Secretaries of the two Divisions of the Branch reported that only twelve acceptances of the scheme had been received—seven for Worcester Division and five for Hereford Division, and the following resolution was carried:

That this Branch disapproves of the scheme of medical defence sent out to the Divisions by the Council of the Association.

Demonstration.—Dr. Paul Chapman gave a demonstration of the administration of chloroform by Dubois's method.

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SUPPLEMENT

TO THE

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MEDICO-POLITICAL COMMITTEE.

ANNUAL REPORT TO ANNUAL REPRESENTATIVE MEETING FOR THE YEAR 1903-4.

THE Medico-Political Committee received from the Annual Representative Meeting, held at Swansea, the following instructions:

(A) That it be an instruction to the Medico-Political Committee to investigate the economic conditions of contract practice, as carried on in various ways in this country, to report thereon to the next Annual Representative Meeting, and to present an interim report to the Council on any points which appear to call for action during the year.

(B) That the Medico-Political Committee should, as far as possible, place the services of the Organizing Secretary at the disposal of any Division, which may make application to the Committee that he should act on its behalf in negotiations with outside bodies, or in the adjustment of differences among medical men, in connexion with contract practice.

(C) That it be an instruction to the Medico-Political Committee to consider and report upon the advisability of running at the next election of Direct Representatives on the General Medical Council a candidate or candidates under the auspices of the British Medical Association.

The following matters having, by instruction of the Annual Representative Meeting, been submitted to the Divisions, the replies received from the Divisions have been referred to the Medico-Political Committee for consideration and report:

(D) That the six conclusions regarding vaccination arrived at by the Council be forwarded to the several Divisions for consideration.

(E) That the following motion be referred to the Divisions: That a petition be presented to the Privy Council praying that in any future legislation the British Medical Association be directly represented on the General Medical Council in proportion to its magnitude and representative character.

The following instructions from the Annual Representative Meeting to the Council have been referred by the Council to the Medico-Political Committee for consideration and report:

(F) That it being considered that the present system of death certification and registration renders unreliable the statistics of death from disease, tends to encourage and assist quack practitioners in their impositions upon the public, and facilitates the concealment of crime, the Council be instructed to take forthwith such steps as may be deemed best calculated to bring about an early amendment of the law on the subject.

(G) That, in the opinion of this meeting, the conditions of the Irish Poor-Law Medical Service require amendment in the following respects:—

1. That a minimum salary be fixed of £200 per annum for dispensary appointments, and £120 per annum for workhouse appointments, with a reasonable reduction where both appointments are held jointly.
2. Superannuation.
3. An annual holiday of at least a month.

That it be an instruction to the Council of the Association to take such steps as may be deemed best calculated to bring about the early adoption of these reforms.

The Medico-Political Committee has given careful consideration to the matters which have thus been brought before it in pursuance of decisions of the Annual Representative Meeting, as well as to many other matters which have been referred to it by the Council, or have been brought before it by communications from Divisions or from individual members of the Association who have sought information, advice, or assistance, or who have drawn the attention of the Committee to matters in which action by the Association on behalf of the profession might be desirable.

The following table exhibits succinctly the nature and origin of the matters that have come before the Committee during the past year, the action taken on each, and the result.

A.—*Matters arising out of Instructions of the Annual Representative Meeting of 1903.*

Subject.	Origin.	Action taken, and Result.
1. Contract practice inquiry	Instruction received from Annual Representative Meeting of 1903	Questions issued to medical practitioners: Preliminary Report on replies presented to Representative Meeting; also Interim Report on the general subject.
National Deposit Friendly Society	Inquiries for advice from members of the Association	Information obtained from the General Secretary of the Society, and from various Divisions of the British Medical Association. Report prepared and submitted for information of Divisions and Representative Meeting.
2. Nomination by British Medical Association of candidates for General Medical Council	Instruction received from Representative Meeting of 1903 to consider if advisable, and, if so, prepare a scheme	Recommended; after questions had been referred to Scottish Committee which advised that no action be taken in Scotland Scheme prepared.
3. Vaccination: (a) Six propositions of Medico-Political and Public Health Committees	Instruction from Annual Representative Meeting to refer propositions to Divisions	Referred to Divisions. Analysis of replies prepared. Report now presented to Representative Meeting.
(b) Revaccination Bill	Committee informed of introduction of the Bill into Parliament	Memorandum on Bill presented to Council recommending support.
(c) Public Vaccinators' fees	Committee informed of appointment of Departmental Committee of Local Government Board to consider the question	Resolution expressing opinion of Association communicated to Local Government Board and to Departmental Committee, and evidence offered.
4. Representation of British Medical Association on General Medical Council	Instruction from Annual Representative Meeting of 1903 to refer to Divisions	Replies of Divisions analysed. Report herewith.
5. Death certification and registration	Instruction from Annual Representative Meeting of 1903 to Council referred by Council to Committee.	Memorandum prepared, laid before Registrar-General by deputation.
6. Irish Poor-law Medical Service	Instruction from Annual Representative Meeting of 1903 to Council, referred by Council to the Committee	(i) Memorandum to Chief Secretary for Ireland in support of Poor-law Medical Officers (Ireland) Superannuation Bill. (ii) Irish Poor-law Reports to the BRITISH MEDICAL JOURNAL by Sir William Thomson, C.B., Surgeon-General Evatt, C.B., and Miss Wood, collected and circulated to Members of Parliament, Boards of Guardians, and others.

B.—*Other Matters.*

7. Poor-law Medical Relief in Scotland. (Report of Departmental Committee of Local Government Board, Scotland.)	Communication from Editor, BRITISH MEDICAL JOURNAL, drawing attention of Committee to the matter	Referred to Scottish Committee. On receiving report the Medico-Political Committee recommended the Council to support the conclusions of the Scottish Committee.
8. Local Government Board, constitution of	Proposals for Ministry of Public Health referred to Committee	Conference of Medico-Political and Public Health Committees. Memorandum submitted by Editor of BRITISH MEDICAL JOURNAL in favour of reorganization of Local Government Board. Bill prepared. Deputation waited upon President of Local Government Board. Memorial to Lord Jersey's Committee. Memorandum on Report of Lord Jersey's Committee presented to Representative Meeting.
9. Security of tenure of sanitary officers	Continued minute	Memorandum prepared. Action suspended during preparation of Local Government Board Bill. Bill now re-drafted by Public Health Committee in amended form. Representations made to President of Local Government Board.
10. Workmen's Compensation Act (Medical Referees)	Continued minute	Home Secretary asked to receive deputation. Committee referred to Departmental Committee of Home Office, then sitting. Evidence given before Departmental Committee by Dr. H. Langley Browne and the Medical Secretary.
11. Consultation between medical witnesses	Referred by Scottish Committee to Medico-Political Committee	Referred to Divisions. Replies analysed. Report presented to Representative Meeting.
12. Law relative to Coroners (a) Coroners Bill	Continued Minute	Coroners' Society communicated with and expressed sympathy.
(b) Information furnished by medical men to Coroners, otherwise than on subpœna	Complaints received from medical practitioners	Memorandum prepared for information of Divisions.
(c) Coroner for S.W. London	Complaints received from medical practitioners	In conjunction with the S.W. London Medical Society, Medical Defence Union, and London and Counties Medical Protection Society, laid case before Lord Chancellor, by deputation. Charges against Mr. Troutbeck formulated in letter with particulars of illustrative cases. Nine months later, no reply having been received, second letter, with further cases, sent. Application to Prime Minister.
13. Midwives Act: (a) Payment of fees to medical men called to assist midwives	Communication received from Cardiff Division	(i) Memorandum of information submitted to Divisions. (ii) Circular letter of inquiry addressed to County Councils.
(b) Certificates of character and of bona-fide practice given by ministers of religion to midwives	Communication received from Wandsworth Division	Circular letter issued to the religious newspapers in England and Wales.
14. Nurses Registration Bills	Committee informed of introduction of Bills into Parliament.	Explanatory memorandum submitted to Divisions. Divisions asked to instruct Representatives.
15. Public Health Committee of House of Commons	Resolution of Committee to endeavour to improve organization of profession in Parliamentary matters	Medical Members of Parliament invited to confer with Medico-Political Committee; conference held; support promised; subsequent formation of the Public Health Committee of Members of the House of Commons.
16. Memorandum of Parliamentary matters of interest to the profession	Request received from a Secretary of a Division.	Memorandum prepared and circulated to the Divisions

B.—*Other Matters*—(continued).

Subject.	Origin.	Action taken, and Result.
17. Medical Education and Registration (*a*) Medical Acts Amendment Bill	The Bill, as previously drafted by the Medico-Political Committee, submitted by the Council to Divisions, and the replies of the Divisions referred to the Committee	Replies of Divisions considered by Committee; also communications from British Dental Association; Bill redrafted incorporating:—(*a*) Amendments desired by Divisions; (*b*) Amendments of Dentists Act; (*c*) Parliamentary draftsman's amendments. Redrafted Bill submitted again to Divisions with explanatory Memorandum.
(*b*) Registration (Statutory) of Medical and Dental Students	Committee informed of petition of General Medical Council to Privy Council, asking for legislation	Council recommended to support petition of General Medical Council.
(*c*) Education (secondary) Leaving Certificates	Dr. P. Maury Deas drew attention of the Committee to the matter	Memorandum sent to Board of Education.
18. Payment of fees to medical men for certificates of unfitness to attend school	Application from Division Secretary for information	Circular letter to County Councils. Answers under analysis Scottish Committee asked to report as to Scotland. Report of Scottish Committee under consideration.
19. Certificates of unfitness to attend school issued by a chemist	Communication from Bootle Education Committee	Referred to General Medical Council, who refused to act. Legal opinion taken with view to action by Association. Action stopped on disappearance of offender.
20. Spectacle Makers' Company	(*a*) Advertisements of spectacle makers referred to Committee (*b*) Members of the Association seek advice respecting new diploma scheme	Documents from Spectacle Makers' Company, and Reports of Colleges of Physicians and Surgeons considered; also advertisements. Report submitted.
21. Pharmacy Law: (*a*) Schedule A of Pharmacy Act: alteration proposed by Departmental Committee of Privy Council	Continued minute	Memorandum prepared in opposition to proposed change, and maintaining principle of public protection by restricting privilege of selling poisons (for example, arsenic) to qualified and registered persons.
(*b*) Pharmacy Act Amendment Bill, prepared by Pharmaceutical Society	Communication from Pharmaceutical Society	Council recommended to support the Bill, privileges of medical profession being now safeguarded.
(*c*) Dispensing of prescriptions unduly repeated	Member of Committee drew attention to correspondence in JOURNAL	Memorandum prepared. Conference with Pharmaceutical Society arranged.
(*d*) Dispensers in Public Institutions.	Communication from Public Dispensers' Association.	Council recommended to support principle that only qualified dispensers be employed in public institutions.
22. Insurance examination fees	Report of Special Committee communicated by Norwich Division.	Memorandum prepared and submitted for information of Divisions.
23. Special Rule of Divisions as to issue of certain notices relating to cases of unprofessional conduct	Application from Norwich Division	Conference of Chairmen of Council, Medico-Political, and Ethical Committees, with Solicitor, and Secretaries of Divisions interested. Rule drafted considered and approved by Medico-Political and Ethical Committees, and by Council.

The Committee presents the following more detailed statement as to its deliberations, and the action it has taken upon each of the matters contained in the foregoing table.

1. CONTRACT PRACTICE.

(*a*) *General Investigations.*

In carrying out the instruction (A) as to the investigation of Contract Practice, the Committee has sought information (*a*) by inquiries addressed directly to those medical practitioners who are engaged in such practice; (*b*) by the inquiries of the Medical Secretary in various districts which he has visited, and his reports thereon; (*c*) by considering various reports which have from time to time been published by those who have given special attention to the subject, notably a valuable report by a special Committee of the East Kent District of the South-Eastern Branch.

The results of the inquiry under (*a*) are contained in the Preliminary Report which is published at p. 70 of this issue.

Pending the completion of this inquiry, the Committee, guided by the information obtained through the sources (*b*) and (*c*) above referred to, has formulated for the consideration of the Divisions the propositions contained in the Interim Report published at p. 107 of the SUPPLIMENT of May 7th, 1904.

(*b*) *National Deposit Friendly Society.*

As a special branch of the Contract Practice Inquiry the Committee has given separate consideration to, and has prepared a special report (SUPPLEMENT, May 20th, 1904, p. 132) upon, the working of the National Deposit Friendly Society.

(*c*) *Visits by Medical Secretary.*

In pursuance of the special instruction (B) as to placing the services of the Medical Secretary at the disposal of any Division which might desire his assistance in matters relating to Contract Practice, the Committee authorized the Chairman to deal with any such application. The Medical Secretary has during 1904 made 54 visits to meetings of Divisions, of which 10 have been specially connected with the general instruction of this Resolution.

2. NOMINATION OF CANDIDATES FOR GENERAL MEDICAL COUNCIL.

Instruction (C) of the Representative Meeting was carefully considered, and the Report on the Scheme for the election of candidates for the General Medical Council (SUPPLEMENT, January 30th, 1904, p. 5) contains the conclusions of the Committee on the subject.

3. VACCINATION.

(*a*) With respect to Vaccination Law Reform the Committee was, upon constitutional grounds, unable to take any action until the end of March, when the replies of Divisions on the six propositions, submitted to them by instruction of the last Representative Meeting, had been received and analysed.

The replies indicate that the Divisions are by a majority in favour of all the propositions submitted by the Committee, though the majority with respect to Clause 2, which relates to the principle of "conscientious objection," was small.

An analysis of the replies is published at page 77 of this issue.

Guided by this verdict of the Divisions, the Committee was able to recommend the Council to support the Revaccination Bill, as printed at p. 40 of the SUPPLEMENT of March 19th, 1904, with an explanatory memorandum (SUPPLEMENT, May 7th, 1904, p. 109) prepared by the Committee.

(*b*) The Vaccination Act Amendment Bill, for the abolition of compulsory vaccination, has been opposed on the recommendation of the Committee.

(*c*) Public Vaccinator's fees. The Committee learning that a Departmental Committee of the Local Government Board had been appointed to inquire into the expenses of Public Vaccination (including the fees of Public Vaccinators), the Council, on the recommendation of the Committee, communicated to the Permanent Secretary of the Local Government Board the following resolution:

That the adequate discharge of the duties of the Public Vaccinator, including as they do attendance at the houses of patients, and executing the various certificates and clerical work required under the Vaccination Act, 1898, cannot reasonably be undertaken at a less fee than the minimum at present allowed by the Local Government Board.

The Council, on the recommendation of the Committee, also offered to give evidence before the Departmental Committee if desired. This offer was not accepted, but it was stated by the Local Government Board that the letter communicating the above resolution of the Council of the Association would be laid before the Departmental Committee.

4. Representation of British Medical Association on General Medical Council.

The advisability of petitioning the Privy Council in favour of the direct representation of the Association on the General Medical Council was referred to the Divisions for consideration by the Annual Representative Meeting of 1903. The resolutions of Divisions reported to the Committee indicate that 51 are favourable and 31 adverse to the proposal.

5. Death Certification and Registration.

The amendments required in the law relating to death certification and registration have been carefully considered by the Medico-Political Committee, and in a Memorandum published in the SUPPLEMENT of January 30th, 1904, p. 4, are contained seven propositions, embodying those principles which in the opinion of the Committee, and of the Council of the Association, should be included in any measure for the amendment of the Death Registration Acts.

These have been laid before the Registrar-General by means of a deputation, and it is intended to press for the consideration of them by the Local Government Board.

6. Irish Poor-law Medical Service.

On consideration of the resolutions as to the Irish Poor Law which the Council referred to the Medico-Political Committee, the Committee has found that the most effective action in regard to (1) the question of minimum salaries that can be taken is for the Irish Divisions of the Association, in co-operation with the Irish Medical Association, to induce medical practitioners in Ireland not to accept the District Dispensary appointments at inadequate rates.

The British Medical Association can also assist by making the facts of the case widely known to medical practitioners in other parts of the Empire, and warning them against accepting the appointments in Ireland, which are salaried at inadequate rates.

With respect to Resolution 2, the Medico-Political Committee has recommended the Council to support the Poor-law Medical Officers (Ireland) Superannuation Bill, introduced into the House of Commons on 21st April, 1904 (SUPPLEMENT, April 30th, 1904, p. 92). A Memorandum on the subject, which has been addressed to the Chief Secretary for Ireland, was published in the SUPPLEMENT of July 16th, 1904, p. 37.

On the recommendation of the Committee, the successive Reports on the Irish Poor-Law System, prepared by Sir William Thomson, C.B., Surgeon-General Evatt, C.B., and Miss Wood, Commissioners of the BRITISH MEDICAL JOURNAL, were collected and, with an introductory narrative explaining the action which the British Medical Association through the BRITISH MEDICAL JOURNAL has, during the last 20 years, taken in support of the Irish Poor-Law Medical Officers, and a concluding paragraph stating the special objects to which the British Medical Association, in co-operation with the Irish Medical Association, is at present devoting its efforts for the betterment of the Irish Poor-Law Medical Officers, were circulated to the Members of both Houses of Parliament, Boards of Guardians, and others.

7. Poor-Law Medical Relief in Scotland.

The valuable report of a Departmental Committee on Poor-Law Medical Relief in Scotland was referred by the Medico-Political Committee to the Scottish Committee for consideration (SUPPLEMENT, April 30th, 1904, p. 86).

The Scottish Committee having reported (SUPPLEMENT, July 16th, 1904, p. 41) in favour of the general principles of the Report, with certain specific suggestions for amendment, the Committee recommended the Council to take action in support of the conclusions of the Scottish Committee.

8. Reorganization of Local Government Board in the Interests of Public Health.

The suggestions made by the President of the Association, in his Presidential Address at Swansea (BRITISH MEDICAL JOURNAL, August 1st, 1903, p. 229) on the subject of the reforms needed in public health administration in this country, and proposals for the establishment of a Ministry of Public Health, received from Dr. F. Bushnell and others, having been considered by the Medico-Political and Public Health Committees, a conference of the Committees was held, at which the documents named were considered (BRITISH MEDICAL JOURNAL, January 2nd, 1904, p. 27), together with a valuable and exhaustive memorandum from the Editor of the BRITISH MEDICAL JOURNAL. The Committee decided to urge the reorganization of the Local Government Board, as the policy most likely to advance the much-needed reform of public health administration, and a Bill (SUPPLEMENT, January 30th, 1904, p. 7) embodying this principle was prepared by the Committee and approved by the Council.

The Committee, through the kind offices of Dr. Hutchinson, M.P., obtained the privilege of laying before the President of the Local Government Board the views of the Association upon those changes in the constitution of the Local Government Board which are necessary in the interests of public health. The full discussion of this very important matter is stated in the Committee's Memorandum upon the Report of Lord Jersey's Committee (see p. 75 of this issue), and in the memorial to Lord Jersey's Committee (SUPPLEMENT, March 19th, 1904, p. 35), the considerations which the Association urged in favour of the Association's Bill are set forth.

9. Security of Tenure of Sanitary Officers.

As the result of a conference held in July, 1903, between representatives of the Medico-Political Committee and of the Incorporated Society of Medical Officers of Health, certain conclusions arrived at were stated in the form of a memorandum, which was approved by the Committee, and which the Council was recommended to transmit to the President of the Local Government Board with the request that he would receive a deputation thereon. At the same time, however, the proposals above stated with reference to the creation of a Ministry of Public Health, or, in the alternative, the reconstitution of the Local Government Board, were brought to the notice of the Council, and action as to security of tenure was deferred.

The Committee has further been advised by the Secretary of the Public Health Committee in the House of Commons that there is no prospect of the Security of Tenure Bill receiving consideration in the present Session of Parliament.

10. Workmen's Compensation Act.

In the Annual Report of 1902-3 the Committee explained the action which had been taken to ascertain the views of medical referees in the United Kingdom as to the working of the Workmen's Compensation Act as affecting their duties and remuneration. A Departmental Committee of the Home Office having been appointed to investigate the working of the Act generally, the Medico-Political Committee transmitted to the Home Secretary the results of its inquiry and its conclusions in the form of the Memorandum published at page cxxi of the SUPPLEMENT of July 11th, 1903, and offered to give evidence thereon. The offer having been accepted, Dr. H. Langley Browne and the Medical Secretary gave evidence on behalf of the Association, and a *précis* of their evidence is published in the SUPPLEMENT of July 16th, 1904, p. 38.

11. Consultation between Medical Witnesses.

The Medico-Political Committee having considered the recommendation of the Scottish Committee to the Council, that the question "whether it is advisable that medical witnesses engaged on each side in legal cases should meet in consultation," should be submitted to the Divisions in Scotland for consideration, it appeared to the Committee desirable that this important question should also be submitted to the Divisions in other parts of the United Kingdom. This was accordingly done, and the replies of Divisions to the number of 120 were collected, analysed and considered by a special Subcommittee, composed of the Emergency Subcommittee of the Medico-Political Committee and the following experts who kindly acceded to the request of the Committee to assist in the matter: Mr. Herbert Page, Dr. Clifford Allbutt, Mr. Thorburn, Mr. William Rose. A memorandum on the subject has been prepared, and will be found at p. 76 of this issue.

12. THE LAW RELATING TO CORONERS.

(*a*) *Coroners Bill.*

The introduction of the Coroners Bill of the Association (SUPPLEMENT, February 7th, 1903, p. viii) into Parliament has again been deferred, the Committee having been led to believe that the support, or, at least, the sympathy, of the Coroners' Society might be obtained for the Bill before its introduction.

On 1st March the Medical Secretary attended by request, as a deputation from the Association, at a meeting of the Council of the Coroners' Society, in order to explain the precise objects which the British Medical Association had in view in promoting the Bill, and the kind of support which was desired from the Coroners' Society.

The Coroners' Society made clear their sympathy in general with the objects of the Bill, but explained that, on account of the position of the members of the Society as public officials, and their special relations with the Home Office, it was the rule of the Society not to take official action in support of private legislation.

The position of the Coroners' Society being thus made clear, the Bill will be introduced into Parliament next Session.

(*b*) *Information supplied to Coroners.*

Numerous complaints have been received by the Association from time to time from medical practitioners as to the discourteous and unjust manner in which they were treated by Coroners in respect of supplying information otherwise than under subpoena, and specially information furnished to enable a Coroner to decide whether an inquest is necessary. This being a prominent example of the manner in which the State endeavours to obtain the skilled services of the medical profession without recompense, it appeared to the Committee that an important step towards remedying this serious grievance would be taken, if the exact legal position of the matter were made clear, and some pronouncement thereon made by the Association. A memorandum on the subject has therefore been prepared and issued to the Divisions. (SUPPLEMENT, May 7th, 1904, p. 107.)

(*c*) *The Coroner for South-West London.*

The action taken to bring the conduct of the Coroner for South-West London to the notice of the Lord Chancellor, has engaged the attention of the Association, together with other medical societies, throughout the year, and a narrative of the action taken, and copies of various letters which have passed between the Association and the Lord Chancellor and Mr. Troutbeck are published in the SUPPLEMENT of July 16th, 1904, p. 52.

13. MIDWIVES ACT.

(*a*) *Payment of Medical Men called in to Assist Midwives.*

As one of the many questions arising out of the operation of the Midwives Acts which are likely to require watchful care from the Association, on behalf of the profession, the Committee has taken into consideration the question of the payment of medical practitioners who may be called in to assist midwives. Inquiries have been made of the County and County Borough Councils throughout the country as to their practice in the matter, and an abstract of the replies will be laid before the Representative Meeting.

The Committee has also prepared and issued for the information and consideration of the Divisions a Memorandum (SUPPLEMENT, July 16th, 1904, p. 37) explaining and comparing certain suggestions which have been made on the subject.

(*b*) *Certificates by Ministers of Religion as to* Bona Fide *Practice of Midwives.*

The Wandsworth Division having drawn attention to the importance of the certificates given by ministers of religion, as to the previous practice of persons applying for registration under the Midwives Act, being filled up with care, and only given on the ground of personal knowledge, the Committee instructed the Medical Secretary to address a circular on the subject to religious newspapers in England and Wales.

14. NURSES REGISTRATION BILLS.

Bills for the Registration of Nurses, introduced into Parliament at the commencement of the present Session (SUPPLEMENT, March 19th, 1904, pp. 36, 38), were taken into consideration by the Medico-Political Committee, and a special Report (SUPPLEMENT, May 7th, 1904, p. 106) prepared in order that the Divisions might be assisted in forming an opinion on this important matter, and prepare for a vote of the Annual Representative Meeting thereon.

15. PUBLIC HEALTH COMMITTEE OF THE HOUSE OF COMMONS.

The Committee at its first meeting of the year took into consideration the steps necessary to improve the Parliamentary influence of the profession, and, as one means to this end, to draw together more effectively those who are interested in Parliamentary matters from the standpoint of the medical profession or of public health. To promote these objects a Conference was convened, on December 10th, of medical Members of Parliament with the Committee. Though only two of those invited—namely, Sir Michael Foster and Dr. Hutchinson—were able to attend, sympathetic letters were received from Members of Parliament who were unavoidably absent, and, as the outcome of the Conference, a Public Health Committee of Members of the House of Commons was constituted. The Committee is at present composed of medical Members exclusively, but the Medico-Political Committee understands that it is hoped that other Members of the House who are interested in Public Health will also co-operate in the work of the Committee.

In the opinion of the Committee no more important task can at present be undertaken by the medical profession in the interests of the public, as well as in its own interests, than that of acquiring for the profession an influence in the Legislature more commensurate with the importance of medical work in a civilized community than it now possesses.

To this end it is essential that medical men should, in co-operation, use such influence as each may possess to assist in bringing together Members of Parliament who are sympathetically disposed towards the consideration of questions of public health in an enlightened and progressive spirit.

16. MEMORANDUM OF PARLIAMENTARY SUBJECTS.

With the object of promoting the Parliamentary influence of the profession, it is important that the Divisions should from time to time make representations to their own Parliamentary representatives, and in order that such efforts may be harmonious, the Committee has issued for the information of the Divisions a short list of Parliamentary questions which are at present of special interest to the profession. (See Memorandum on Parliamentary Matters published at p. 109 of the SUPPLEMENT of May 7th, 1904.)

17. MEDICAL EDUCATION AND REGISTRATION.

(*a*) *Medical Acts Amendment Bill.*

The Medical Acts Amendment Bill was submitted to the Divisions in August, 1903, and the replies of the Division were taken into consideration in March.

The replies received from the Divisions having been analysed and carefully considered, the Bill was revised by the Committee and by a Parliamentary draftsman, and was issued to the Divisions with an explanatory memorandum. The memorandum was published in the SUPPLEMENT of May 28th, 1904, p. 125, and the Bill on page 127 of the same issue.

In December the British Dental Association approached the British Medical Association with the request that those amendments of the Dentists Act, which the British Dental Association desired, should, if possible, be incorporated in the Medical Acts Amendment Bill, and that the two Associations should co-operate in the promotion of the Bill. As the matter was at that time before the Divisions, no action could then be taken, but subsequently conferences between the representatives of the two Associations were held, and the Medico-Political Committee decided to recommend the Association to accede to the proposal of the British Dental Association.

The Medico-Political Committee have, therefore, in redrafting the Bill, embodied in it those amendments proposed by the British Dental Association, which your Committee could recommend the British Medical Association to adopt.

(*b*) *Registration of Medical and Dental Students.*

The subjects of preliminary medical education and registration, and of the registration of medical and dental students, are dealt with in the Medical Acts Amendment Bill, but the attention of the Committee has also been drawn to both these matters in other connexions. The General Medical Council having decided to petition the Privy Council in favour of the statutory registration of medical and dental students, the Council of the British Medical Association has been recommended by the Medico-Political Committee, and has decided, to support the petition.

(*c*) *Secondary Education Leaving Certificate.*

The attention of the Committee was drawn by Dr. P. Maury Deas, the former Chairman of the Committee on Preliminary

Medical Education, to the fact that the Government is preparing a Secondary Education Leaving Certificate, which might affect the preliminary general education of medical students. A memorandum on the subject has been prepared by the Committee and forwarded to the President of the Board of Education (see p. 77 of this issue of the SUPPLEMENT).

18. PAYMENT OF FEES TO MEDICAL MEN FOR CERTIFICATES OF UNFITNESS TO ATTEND SCHOOL.

In response to an application from the Honorary Secretary of a Branch it was decided that an inquiry should be addressed to the County Councils in England and Wales concerning the payment by Educational Committees to medical practitioners for certificates of unfitness of children to attend school, and a Report on the replies will be laid before the Annual Representative Meeting. The special question of the position of medical practitioners in Scotland with respect to school certificates has also come before the Committee, which now has under consideration a report from the Scottish Committee thereon.

19. CERTIFICATE OF UNFITNESS TO ATTEND SCHOOL ISSUED BY CHEMIST.

A document purporting to be a medical certificate of unfitness to attend school, signed by a chemist at Bootle, was referred to the General Medical Council, and the Committee regrets to report that the General Medical Council refused to take any action in the matter. The Committee, therefore, decided to take a legal opinion with a view to action being taken by the British Medical Association, but after the matter had been placed in the hands of the Solicitor of the Association, a letter was received from the clerk of the Bootle Education Committee, stating that the man who issued the certificate had disappeared.

20. SPECTACLE MAKERS' COMPANY.

The attention of the Association was directed at the commencement of the official year to the advertisements issued by members of the Spectacle Makers' Company, concerning which numerous complaints were received from members of the profession. Communications were also received drawing attention to other aspects of the examinations and diplomas of the Company in question, and the Committee presents the Representative Meeting with a report on the subject (SUPPLEMENT, July 16th, 1904, p. 36), which has already been presented to and approved by the Council.

21. PHARMACY LAW.

(*a*) *Amendment of Pharmacy Act suggested by Departmental Committee of Privy Council.*

The Committee took into consideration at the first meeting of the official year a Report (SUPPLEMENT, October 31st, 1903, p. ccv) which the Medical Secretary had prepared by instruction of the Committee, on the changes in the Pharmacy Act suggested in the report of a Departmental Committee of the Privy Council. As those changes appeared to the Committee, and to the Council, to involve the establishment of new principles dangerous to the community, a memorandum pointing out these dangers was addressed to the Privy Council (see SUPPLEMENT, already mentioned, p. ccvi).

(*b*) *Pharmacy Act Amendment Bill* (1904) (*Pharmaceutical Society.*)

A communication was received from the Pharmaceutical Society pointing out that they were preparing to reintroduce their Pharmacy Bill into Parliament, and that they had decided to insert the following clause, in order not to interfere with the privileges of registered medical practitioners.

> "The provisions of this Act shall not interfere with or abrogate any of the rights reserved by Section XVI of the Pharmacy Act, 1868, or by Section 1 of the Pharmacy Act (1868) Amendment Act, 1869."

Since the principle of the Bill is, in the opinion of the Committee, essentially sound, as proposing to do away with the system of Company practice which is as prejudicial to pharmaceutical as it is to medical and dental work, and having regard to the fact that the proposed new clause removes the objection to the former draft, that it might interfere with the rights of medical practitioners hitherto reserved under the Pharmacy Acts, the Council, on the recommendation of the Committee, resolved to support the Bill.

(*c*) *Unduly Repeated Dispensing of Prescriptions.*

Letters which appeared in the BRITISH MEDICAL JOURNAL drew attention to the dangers to the community resulting from the dispensing of prescriptions more frequently, or for longer periods, than was intended by the prescriber, and the Committee being of opinion that directions as to how often or for how long a prescription is to be dispensed should be regarded as an integral part of a prescription, has arranged a conference with the Pharmaceutical Society to consider how such a principle could best be carried into effect.

(*d*) *Dispensers in Public Institutions.*

The Public Dispensers Association having asked the support of the British Medical Association to the principle that only duly-qualified dispensers should be employed in public institutions, the Committee recommended the Council to approve the same.

22. FEES PAID FOR EXAMINATION FOR LIFE INSURANCE.

A special Committee appointed by the Norwich Division, having carefully investigated the subject of fees paid for examination for life insurance, and having prepared a valuable report thereon which was published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL for March 19th (page 33) .....the Committee considered the Report and prepared a memorandum thereon which was issued to the Divisions.

23. SPECIAL RULE OF DIVISIONS AS TO ISSUE OF CERTAIN NOTICES RELATING TO CASES OF UNPROFESSIONAL CONDUCT.

The Medico-Political Committee has taken into consideration the subject of adoption by Divisions of Rules to provide for the circulation of notices to their members relative to cases of medical practitioners whose conduct is contrary to the honour and interests of the profession, and has concurred in the recommendation of the Ethical Committee that a form of Rule be approved by the Council for adoption by those Divisions who may desire to include in their Rules such a provision. The Council has, after full consideration, approved the Rule proposed.

VICTOR HORSLEY,
Chairman of the Medico-Political Committee.

14th July, 1904.

The Medico-Political Committee has held Nine Meetings, at which the Attendances have been as Stated Below.

Name.	Attendances.	
	Committees.	Subcommittees.
Sir Victor Horsley, F.R.S., Chairman	9	7 (possible 7).
Dr. T. D. Griffiths, President	7	0 („ 2).
Mr. Andrew Clark, F.R.C.S., Chairman of Council	9	3 („ 7).
Dr. E. Markham Sherritt, Treasurer	6	
Dr. H. Langley Browne	7	1 („ 2).
Dr. R. C. Buist	7	
Dr. Major Greenwood	9	4 („ 5).
Dr. G. A. Heron	8	5 („ 5).
Mr. T. Garrett Horder	8	2 („ 2).
Mr. G. Jackson, F.R.C.S.	7	
Dr. L. Kidd	2	
Dr. J. A. Macdonald	0	
Mr. M. A. Messiter	4	
Dr. C. H. Milburn	4	
Dr. S. Woodcock	2	
Dr. J. Murphy	6	1 („ 2).
Mr. D. A. C. Sullivan	4	2 („ 2).

APPENDICES TO ANNUAL REPORT.

CONTRACT PRACTICE INQUIRY.

Preliminary Report on Replies Received from Medical Practitioners.

I. INTRODUCTION.

THE Medico-Political Committee received from the Annual Representative Meeting of 1903 the following instruction:

(A) That it be an instruction to the Medico-Political Committee to investigate the economic conditions of contract practice, as carried on in various ways in this country, to report thereon to the next Annual Representative Meeting, and to present an interim report to the Council on any points which appear to call for action during the year.

It has appeared to the Committee that a necessary part of the investigation which it was thus instructed to make is to

obtain from those medical practitioners who are themselves engaged in contract practice such information as they may be able and willing to give.

With this object printed forms of inquiry were prepared by the Committee, and the assistance of the Divisions was sought for the purpose of distributing them to those members of the profession who are engaged in contract practice.

The Committee issued three different sets of questions relating respectively to the following broad groups of contract practice appointments :—

(*A*) For those clubs in which each individual who is to be entitled to attendance is paid for separately, and in which there is some kind of organization through which the contract between the medical practitioner and the person to be attended is made.

(*B*) Family clubs, that is, those in which the contract for attendance relates to each family treated as a unit.

(*C*) Private clubs, that is, those in which the sole control rests with the individual practitioner, who contracts directly with members of the public for medical attendance, whether on individual or on family club principles.

The following are the questions which were submitted :

INVESTIGATION OF CONTRACT PRACTICE.

(**A**) CLUBS PROVIDING ATTENDANCE FOR MEMBERS ONLY.

I. (*a*) Do you hold any appointment as Medical Officer to a Friendly Society, Provident Association, or Club?
(*b*) Have you a Private Club?

(For a Private Club, please use the special Form **C**.)

II. If you hold an appointment or appointments, please give the following particulars as far as you can :

1. (*a*.) Names of all *Societies for which you act.
(If you hold more than one appointment, please give the answers to the following questions on a separate form for each appointment.)

(For a Family Club, use Form **B**.)

(*b*) Name of *Society to which the replies given on this form relate.

2. Does it belong to any general Order, or is it purely local?
3. Number of members of the *Society to which you are Medical Officer.
4. Rate per annum paid by members to the Society for medical benefits.
5. Rate per annum per member paid by Society to Medical Officer.
6. Definition of duties of Medical Officer in rules of *Society.
(Please send a printed copy, if available.)
7. Rates for extra services, such as Midwifery, Vaccination, Operations, etc.
8. Notice prescribed for termination of contract.
9. Have you the power to refuse to attend under your contract persons whom you consider to be, on the ground of means, unsuitable for medical benefits?
10. Are you the only Medical Officer to the *Society?
If not, by what regulations is the work distributed, and for how many members are you personally responsible?
11. What is your experience of the amount of medical attendance required per member per annum :
(*a*) Visits ;
(*b*) Consultations at surgery ;
(*c*) Medicine?
12. What are your regular fees for attendance on the same class of patients in private practice :
(*a*) Visits :
(*b*) Consultations at surgery ;
(*c*) Medicine (if supplied, and charged for separately)?
13. How old is the Society?
14. (*a*) What is the average age of the present adult members?
(*b*) If there are "juvenile" members, (i) what is the earliest age at which they are admitted, and (ii) at what age do they cease to be counted as such?
15. Can you ascertain how many of the members are members of more than one Friendly Society, or other organization for providing contract medical attendance?
16. Can you estimate the proportion of members who, for the above or other reasons, do not employ the club doctor?

III. 1. Do you consider that (*a*) the rates paid by any Society to which ou are Medical Officer, or (*b*) the current rates paid by Friendly Societies and similar institutions in the district, are too low?
If so, what rates would you consider suitable?
2. Do you consider that a wage limit should be fixed in contract practice?
If so, of what amount?
3. Do you consider that the relations of Medical Officers to Friendly Societies or similar institutions in the district require readjustment in any other respect?

IV. Please give any other information or add any remarks that you desire.

(**B**) FAMILY CLUBS.

I. (*a*) Do you hold any appointment as Medical Officer to a Friendly Society, Provident Association, or Club?
(*b*) Have you a Private Club?

(For a Private Club, please use special Form **C**.)

II. If you hold an appointment, or appointments, please give the following particulars as far as you can :

1. (*a*) Names of all *Societies for which you act.
(If you hold more than one appointment, please give the answers to the following questions on a separate form for each appointment.)

(For a Non-Family Club use Form **A**.)

(*b*) Name of *Society to which the replies given on this form relate.

2. Does it belong to any general Order, or is it purely local?
3. (*a*) Number of members of the Society to which you are medical officer ; (*b*) number of persons whom you are under contract to attend.
4. Rate per annum paid by members to the Society for medical benefits. (If the rate varies at all in relation to the number in family please give details.)
5. Rate per annum per member paid by Society to medical officer. (Please give details of variations in rate, if any, as desired under Question 4.)
6. Definition of duties of medical officer in rules of *Society.
(Please send a printed copy, if available.)
7. Rates for extra services, such as Midwifery, Vaccination, Operations, etc.
8. Notice prescribed for termination of contract.
9. Have you the power to refuse to attend under your contract persons whom you consider to be, on the ground of means, unsuitable for medical benefits of this kind?
10. Are you the only Medical Officer to the *Society? If not, by what regulations is the work distributed, and for how many members are you personally responsible?
11. What is your experience of the total amount of medical attendance given per annum under your contract :
(*a*) Visits :
(*b*) Consultations at surgery
(*c*) Medicine
12. What are your regular fees for attendance on the same class of patients in private practice :
(*a*) Visits :
(*b*) Consultations at surgery ;
(*c*) Medicine (if supplied, and charged for separately)?
13. How old is the Society?
14. (*a*) What is the average age of the adults entitled to attendance?
(*b*) If the rate for children differs from that for adults, at what age does the adult rate become chargeable?
(*c*) Is there any limit of age below which children are not admitted?
15. Can you ascertain how many of the members are members of more than one Friendly Society, or other organization for providing contract medical attendance?
16. Can you estimate the proportion of those who, for the above or other reasons, do not employ the club doctor?

III. 1. Do you consider that (*a*) the rates paid by any Society to which you are Medical Officer, or (*b*) the current rates paid by Friendly Societies and similar institutions in the district, are too low? If so, what rates would you consider suitable?
2. Do you consider that a wage limit should be fixed in contract practice? If so, of what amount?
3. Do you consider that the relations of Medical Officers to Friendly Societies or similar institutions in the district require readjustment in any other respect?

IV. Please give any other information or add any remarks that you desire.

(**C**) PRIVATE CLUBS.

I. (1) Do you hold any appointment as Medical Officer to any Friendly Society, Provident Association, or Club (other than the Private Club to which your answers on this form relate)?
2. If so, please give the names of all *Societies of which you are Medical Officer.

II. With reference to your Private Club, please give the following particulars as far as you can :

1. Number of members.
2. Does the subscription cover attendance on members only or on their families also?
3. Rate paid to you per annum per member.
If the rate covers families of members, and if there is any variation according to the number in family, please give details.
4. Rates (if any specified) for extra services, such as Midwifery, Vaccination, Operations, etc.
5. (*a*) What is the average age of the adults in your Club?
(*b*) If the rate for children differs from that for adults, at what age does the adult rate become chargeable?
(*c*) Do you make a rule not to admit children below a specified age, and if so, what is the age specified?
6. Have you any rules prescribing other conditions of the contract besides rates? If so, please state the same, or enclose a copy.

* *By "Society" is meant each individual Club, etc. : for instance, in the case of general Orders, such as the Oddfellows or Foresters, each "Lodge" or "Court."*

7. Do you adopt any general principle, or definite rule, with respect to excluding from your club persons whom your consider it undesirable to admit, on the ground that they can afford to pay ordinary fees?
8. What is your experience of the amount of medical attendance required per member per annum:
   (*a*) Visits;
   (*b*) Consultations at surgery;
   (*c*) Medicine?
9. What are your regular fees for attendance on the same class of patients in private practice:
   (*a*) Visits;
   (*b*) Consultations at surgery;
   (*c*) Medicine (if supplied, and charged for separately)?
10. How long as the Club been carried on?
11. Are the subscriptions paid to you direct, or do you employ a collector?
   If you have a collector, is he paid by commission?

III. 1. What are the reasons which in your opinion make it profitable to you to conduct such a club in connexion with your practice?
   (For example, to meet the competition of Friendly Societies or similar organizations? to meet the competition of other practitioners, who have private clubs? to obtain payment from patients who might not pay bills? or, to extend your professional connexion?)
2. Do you think it desirable, in the interests of the profession, that there should be a local agreement among the practitioners in your district not to carry on such clubs?
   Would you be a party to such an agreement?

IV. Please give any other information or add any remarks that you desire.

The circulation of the above sets of questions was commenced in March of this year, but owing to special difficulties in certain Divisions it has not yet been found possible to complete the issue of the forms and the present report deals only with those replies which were received on or before June 24th.

Though the inquiry is thus incomplete, the replies received up to the date named contain so much information that the Committee has felt it to be its duty to present to the Annual Representative Meeting at Oxford a preliminary report, which will serve to indicate the nature and value of the results which the inquiry, when completed, may be expected to yield.

II. General Summary.

(1) *Replies.*

1,145 replies have been received up to the date named, of which, however, 482 are from practitioners who state that they are not engaged in any form of contract practice. It was originally intended by the Committee that the forms should be circulated only to those members of the profession who were known to be engaged in contract practice, but the difficulty of ascertaining this fact in some districts was so great that the Divisions preferred to circulate the forms either to all members of the profession or to all members of the Association. The 663 replies which have been received from practitioners engaged in contract practice give, more or less completely, the information desired by the Committee concerning upwards of 1,750 appointments.

In many cases the information is supplied with great fullness; one report, for example, includes separate detailed statements relative to eleven club appointments and occupies almost sixteen foolscap pages.

The Committee wishes to place on record its strong sense of the indebtedness of the profession to those practitioners who have devoted so much time and care to the answering of these questions.

(2) *Classification of Clubs.*

The conditions of contract practice described in the replies vary so widely that no attempt at a minute classification has been made for the purpose of this report. This difficulty has been experienced even with reference to the three broad groups of individual clubs, family clubs, and private clubs, to which the forms of questions issued by the Committee were intended respectively to apply; thus there are clubs based on the principle of individual contract in which children of one family above a certain number are admitted free of charge, and which, therefore, approximate in character to family clubs; again, there are works clubs in which the conditions of appointment are such that they partake of the nature of private clubs. The numbers of these exceptions, however, are not sufficient to affect the broad results obtained by the otherwise convenient system of classification which has been adopted.

Of the clubs to which the replies relate, upwards of 1,300 provide attendance for members only, 154 are described as family clubs, and 292 as private clubs. The great Friendly Societies as a rule adopt the system of a purely individual contract. The family club system is more often found in connexion with works clubs, while among private clubs both systems are about equally frequent.

Time has not permitted the precise enumeration of the replies relating to each Friendly Society, but it may be stated that all the important general orders are represented in the returns, together with many local societies, slate or yearly dividing clubs, and societies connected with works, collieries, etc. Slate, or yearly dividing, clubs are usually connected with public houses or places of worship. Returns relating to 130 of these clubs have been noted, but the number is probably higher, as there is frequently no indication in the name of the society that it is worked on this principle. Reports have been received relating to 24 Medical Aid Societies—that is to say, clubs which operate in combination with Industrial Insurance Companies, or in which medical aid is the only benefit provided.

In addition to the above, particulars have been received of 18 Provident Dispensaries, 2 Public Medical Services, 24 appointments connected with the National Deposit Friendly Society, and of 2 lodges belonging to other general Orders in which the National Deposit Society system of payment has been adopted in place of the regular scale of the Order.

Among the non-private clubs, particulars have been received of 946 which appear to admit male adult members only, of 301 which admit juvenile members but not adult females, of 30 in which adult females are admitted but not juveniles, and of 64 which admit both females and juveniles. Among the private clubs there are 37 which appear to provide for males only, 9 for adult males and juveniles, 2 for females only, and 144 for all ages and both sexes.

The particulars furnished show that the number of members in a single club varies between very wide limits—from about 6 to 16,000; a considerable number of returns, however, contain no statement of the number of members of the society concerned or of the number of persons whom the respondent is under contract to attend.

III. Analysis of Information.

A. *Individual Non-Private Clubs.*

1. Conditions of Contract Affecting Rates.

(*a*) *Rates Paid.*—The material is not at present sufficient to present a complete report showing the local variation of rates in different parts of the country. It is, however, curious to note that the highest rates appear to be paid in purely agricultural districts where wages are low, the lowest rates occurring in manufacturing districts.

In the non-private clubs, providing attendance for members only, as to which particulars are available, the annual rates for adult males stated in the replies may be summarized as follows:

Per Member per Annum.	Cases.
2s., and under 3s.	103
3s., and under 4s.	175
4s., and under 5s.	625
5s., and upwards	306

In one or two cases the lower rates apply to sickness only, accidents being attended by the medical officer attached to a works club; in other cases the rates apply to accidents only. In some of the Scottish districts a supply of medicine is not included in the contract; this accounts for the low rate of subscription of some clubs in these localities.

(*b*) *Yield to the Medical Practitioner for each Attendance.*—Among the questions submitted by the Committee was one as to the amount of attendance per member per annum given under contract, the object of which was to obtain, if possible, data upon which an estimate could be made of the actual remuneration per attendance received by medical practitioners for work done on contract terms. Though the Committee realized that many practitioners would not be in possession of the materials necessary for answering such a question with precision, yet it was hoped that the replies would be sufficiently full to afford some useful indication on the subject, and this expectation has been justified.

The estimate here submitted, of the remuneration per attendance, has been limited to the case of male adults and juveniles belonging to non-private individual clubs. The inclusion of the female members of such clubs might lead to erroneous conclusions. The available particulars relating to family and private clubs are not sufficient to justify the framing of similar estimates relating to them.

A number of respondents were only able to give a verbal expression to their idea of the proportion of the contract work they were doing to the pay which they were receiving; others again, though giving a reply in figures, unfortunately stated these in an ambiguous manner.

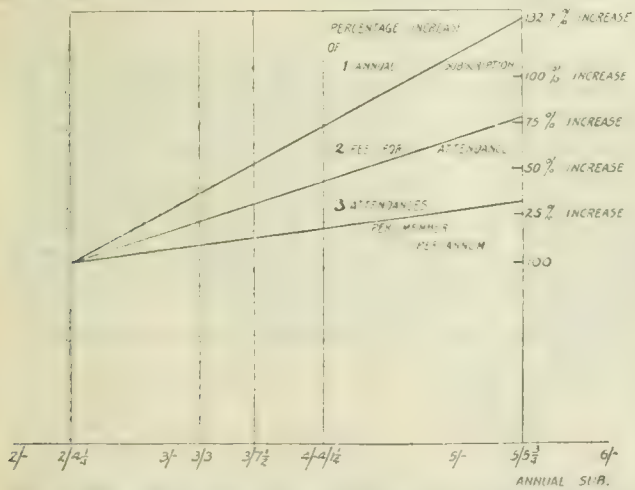
After excluding, however, all merely verbal answers, and all answers of doubtful interpretation, there still remain apparently reliable data relating to the amount of work done for, and the amount of pay received from, 31,702 male adults and juveniles attended under contract in 200 clubs.

Rate of Subscription per Member per Annum.	Members.	Aggregate Subscriptions per Annum (in shillings).	Aggregate Attendances per Annum.	Average Subscription per Member per Annum.	Average Attendances per Member per Annum.	Average Fee per Attendance.
				s. d.		d.
2s. to 3s. ...	8,198	19,635	20,684	2 $4\frac{3}{4}$	3·57	7·9
3s. to 4s. ...	7,801	25,320	30,712	3 3	3·94	9·9
4s. to 5s. ...	12,093	49,618	51,061	4 $1\frac{1}{4}$	4·25	11.6
5s. upwards ...	3,610	19,778	16,946	5 $5\frac{3}{4}$	4·69	14.0
	31,702	114,441	124,403	3 $7\frac{1}{2}$	4·05	10·6

The above table shows that the average number of attendances (that is, visits and consultations with or without medicine) is almost exactly 4; the average annual subscription over the whole group being 3s. $7\frac{1}{2}$d. per member, the yield to the medical practitioner is about $10\frac{1}{2}$d. for each attendance (medicine included).

The returns summarized in the table would further appear to indicate a tendency to a rise in the amount of attendance required, concurrently with a rise in the club rate; and, therefore, that the yield to the practitioner does not increase proportionately to the increase of annual subscription.

This interesting fact is exhibited graphically in the diagram appended.



On the base line the measurements are proportional to the amount of subscription paid, ordinates being erected at points corresponding to the averages stated in the fifth column of the table. The measurements along the ordinates are proportional to percentage increase of subscriptions.

Many of these returns are based mainly on the experience of the year 1903, which was a very healthy year. One practitioner states that his work was exceptionally light in that year.

It will be interesting to observe whether the indication afforded by these preliminary figures is confirmed when the complete results of the inquiry are obtained.

(c) *Duplicate Membership of Clubs.*—Closely affecting the question of the medical practitioner's actual remuneration is that of the extent to which club members belonging to more than one club pay more than once for medical attendance, and questions directed to the elucidation of this matter were included in the forms issued by the Committee. This question is of special interest in those districts in which both Friendly Societies and works clubs are common.

With reference to 54 club appointments, it is reported that none of the members belong to other clubs; in 45 cases the proportion is said to be less than 25 per cent.; in 37 cases, 25 per cent. to 50 per cent.; and in 32 cases 50 per cent. or more. In 181 cases it is stated that very few members belong to more than one club, and in 75 cases that "many," "a good many," or "most" do so. Respondents, however, do not specify whether members who belong to more than one club pay more than once for medical attendance. The practice on this point varies in different Orders. The proportion of club members who, on account of duplicate membership, or for other reasons, do not employ the club doctor is estimated by 11 practitioners at 50 per cent. or more; by 12 at from 25 per cent. to 50 per cent.; and by 33 at less than 25 per cent. In the case of 81 clubs it is stated that all the members employ the club doctor.

One practitioner states that 90 per cent. of the members of a Friendly Society to which he is surgeon pay to him also as surgeon to a works club. In this instance the Friendly Society subscription is only 1s. per member per annum.

(d) *Extra Services.*—The range of the duties of the medical officer is very seldom well defined, especially with reference to the subject of operations; there are very few cases in which the rules of the society give reliable statements as to whether the medical officer is called upon to perform operations or even to attend in the case of serious accidents. A large number of respondents give particulars as to their fees for midwifery and vaccination, but it is evident that in most cases these fees are matters of private arrangement, and do not form part of the actual club contract.

2. Conditions of Contract other than those affecting Rates.

(a) *Notice to Terminate Contract.*—Information as to the length of notice required to terminate the contract has been received with reference to 823 club appointments. Among these the appointment is stated to be held "at the pleasure of the court" in 74 cases, and there are 150 in which no agreement as to notice has been made. In 345 cases the prescribed term of notice is three months or less; in 141 cases, six months; in 27 cases, from six to twelve months. In 81 cases the appointment is made annually. In 2 cases there is a three years' agreement, and in 3 cases a five years' agreement. These particulars do not relate to individual clubs exclusively.

(b) *Wage Limit.*—There is no case recorded, in the class of clubs providing attendance for members only, in which a definite wage limit is fixed, but in the case of 80 appointments the practitioners concerned state that they have the power to exclude candidates for membership whom they consider to be, on the ground of means, unsuitable for medical benefits. In a few other cases the respondents are doubtful as to whether they have or have not this power. Some practitioners state that they would not scruple to exercise the privilege if they thought fit.

(c) *Individual Choice of Medical Attendant.*—The distribution of contract practice work among all or most of the medical men resident in a district is less common among the Friendly Societies than in some other classes of appointments; 176 cases are reported in which the members of the society have the privilege of choosing their own medical attendant, and 102 of these cases are found distributed among only 8 of the Divisions of the Association.

B. Family Clubs.

The replies received under this head relate chiefly to Works Clubs and Provident Dispensaries.

(1) *Works Clubs.*

(a) *General Summary.*—Ninety-one returns have been received relating to works clubs. The number of appointments is actually greater than this, as several of the respondents state that they hold office in connexion with several works or collieries, but do not specify the number of appointments which they hold. Of the returns, 41 relate to collieries, and 36 of these are family clubs; 5 relate to family clubs connected with quarries, 8 to family clubs connected with iron works, 37 relate to miscellaneous works appointments, 18 of these being family clubs and 19 individual clubs.

(b) *Rates.*—The data available are not sufficient to warrant the drawing of general conclusions as to the rates paid in

works clubs in different localities. The rates in colliery clubs, however, though they vary widely throughout the country, are as a rule fairly uniform in any given district, and the following particulars probably give an approximately reliable representation of the local distribution of rates.

Eleven returns relating to family clubs connected with collieries have been received from Scotland; in 8 of these cases the rate of payment is 13s. per family per annum, and 6s. per annum for boys working in the collieries; in 2 cases the family rate is 13s., and in one case it varies from 8s. 8d. to 13s.

From Northumberland 7 returns have been received; of these, 3 show a rate of 13s. per single member and 19s. 6d. per family, while 4 show a rate of 8s. 8d. per single member and 17s. 4d. per family.

From Cumberland 1 return has been received, the rate per family being 13s.

From Yorkshire 3 returns have been received; in 1 case the rate is 13s. per family, with an additional payment of 2s. per annum to cover accidents (this sum is paid by the colliery proprietors); in the other 2 cases the rate is 13s. per annum per family and 6s. 6d. per boy.

From Lancashire one return has been received, the rate being stated as 8s. per family; 5 returns have been received relating to the Lancashire and Cheshire Miners' Permanent Relief Society, this though not conducted on the family system may be conveniently referred to here; the members pay 2s. 6d. per annum for accidents, and 3s. for sickness.

From Nottinghamshire 3 returns have been received; in one the rate stated is 8s. 8d., in one 10s., and in the third club a fixed salary is paid to the medical officer.

From North Wales 2 returns have been received: the rate stated in one is 13s. per family, and in the other 8s. 8d. per family or 2d. in the £ of wages.

From South Wales 8 returns have been received: in 6 cases the rate is 3d. in the £ of wages, in one case 2d. to 2½d. in the £, and in one case the rate is not stated.

Five returns have been received from clubs connected with quarries in which the family rates range from 9s. to 15s. 2d.

Of the remaining works clubs, 31 are conducted as family clubs and 19 on the individual system. The rates per annum in the former class range from 6s. to 26s. per family, and in the latter from 4s. to 8s. 8d. per member.

Complete particulars relating to twelve provident dispensaries have been received. Among these the lowest subscription for a complete family is 8s. 8d. per annum, the highest 32s. In four cases a definite wage limit is fixed, the amounts ranging from 15s. to £2 per week. In the other eight instances the benefits are stated to be limited to the working classes. The appointment of medical officer is terminable after three months' notice in four cases, in the others the appointment seems to be an annual one. There is an elected staff of medical officers in five cases, in the remainder all the doctors in the district may join the staff. In every case members choose their own medical attendant from among the staff. A special fee payable for confinements is quoted in eight cases, and varies from 7s. to 21s. It is not, however, clear whether, his amount is the patient's contribution towards the fee, or represents the actual fee paid.

C. PRIVATE CLUBS.

A considerable amount of information has been acquired with reference to the working of the 192 private clubs of which particulars have been sent in.

(1) *Sex and Age.*—In 157 private clubs medical attendance is provided for all ages and both sexes, and in 77 of these an inclusive family fee is charged, or a reduced fee to members of a family above a specified number.

(2) *Rates and other Conditions of Contract.*—The rates are too various for a complete classification, but appear to have a close relation to the local rates of other clubs.

An adult male rate was specified in 131 cases. These were:

	Cases.
2s. to 3s.	3
3s. to 4s.	3
4s. to 5s.	47
5s. and over	58

It must, however, be remembered that in most of these clubs the collector's salary or commission must be deducted from the above subscriptions.

It is more often the case in private clubs than in others that extra services such as midwifery and vaccination are covered by the subscription, or are provided at a reduced fee. Many of these clubs are provided with printed rules, and in 142 cases out of 177 in which the question is answered there is either a definite wage limit prescribed, or some other means is adopted in order to exclude persons who are able to pay ordinary fees.

(3) *Collection of Subscriptions.*—On account of the recognized danger that, where a collector is employed, and paid by commission, he will indulge in a certain amount of canvassing, specific questions directed to this subject were included in the forms relating to private clubs. In 102 clubs of which particulars are available, the subscription is paid direct to the medical officer. In 58 clubs a collector is employed, and in 42 of these instances is paid by commission. The inquiry was unanswered in 32 cases.

(4) *Reasons for holding Private Clubs.*—By far the larger proportion of those who hold private clubs give as their reason for so doing a desire to obtain payment from patients who might not pay bills. Others state that their private clubs are conducted in order to serve as an introduction to private practice, while a few clubs are described as purely charitable organizations.

IV. ANALYSIS OF SUGGESTIONS AS TO REFORM.

Expressions of opinion were invited by the Committee:

1. As to the adequacy or otherwise of present club rates, and the level to which they should be raised if at present inadequate.

2. As to the advisability or otherwise of the adoption of a wage limit in contract practice, and the amount at which it should be fixed.

3. As to the expediency of carrying on private clubs.

1. *Present Club Rates.*—Three hundred and fifty-one practitioners consider that the rates which they receive at present are inadequate, and 296 state the amounts to which rates should, in their opinion, be raised. These suggestions may be summarized as follows:

4s. or below	8
5s.	106
4s. to 6s.	52
6s.	57
8s.	16
10s.	20
Other amounts between 5s. and 10s.	25
12s.	2
Over 12s.	4
Total	290

Five practitioners suggest family rates between 12s. and 26s., and one that the National Deposit Friendly Society's system should be adopted; 116 practitioners are satisfied with the rates they receive at present, but 34 of these consider that the rates paid by clubs in the neighbourhood are too low.

2. *Wage Limit.*—438 practitioners consider that a wage limit should be imposed; 255 of these specify amounts at which it should in their opinion be fixed. In addition to these, 60 practitioners express a general approval of a wage limit, but regard its imposition as impracticable, while 36 practitioners are definitely opposed to the imposition of a wage limit.

The specific wage limits proposed may be summarized as follows:

20s. and under	29
30s. and under	105
40s. and under	101
Over 40s.	20
	255

Many practitioners suggest that a different wage limit should be adopted in the cases of single and married club members.

3. *Local Agreement not to carry on Private Clubs.*—Practitioners holding private clubs were asked whether they thought it desirable in the interests of the profession that there should be a local agreement not to carry on such clubs, and whether they themselves would be parties to such an agreement, 52 replied to both questions in the affirmative, and 24, though convinced that such an agreement was undesirable, were yet willing to take part in it if it met with local approval; 47 practitioners neither thought such an agreement desirable, nor were they willing to take part in it if made; 10 practitioners thought such a local arrangement undesirable, but gave no indication as to what their course of action would be if it were made; 7 were doubtful as to the desirability of the course, but expressed their willingness to take part in it, while the remaining 52 left the question unanswered.

V. MISCELLANEOUS SUGGESTIONS FOR REFORM.

A number of suggestions have been made by respondents, some of them with considerable detail, which do not fall under the head of any of the questions submitted. These suggestions have not yet been analysed; a consideration of them will, however, be included in the final report.

CONCLUSION.

From the foregoing report it will be seen that the inquiry entered upon by the Committee from individual medical practitioners has already been fruitful, and that even thus far preliminary conclusions of great value have been drawn.

The Committee would express the hope that, in view of the facts stated, those practitioners who have not yet replied will do so even though the information they may be able to offer be only partial. They will thus assist in building up that exact scientific knowledge of contract practice which in the opinion of the Committee must be the condition precedent to effective action by the Association for aiding medical practitioners engaged in contract practice, in raising the general earning power of the profession.

MEMORANDUM ON THE REPORT OF THE TREASURY COMMITTEE APPOINTED TO CONSIDER THE POSITION AND DUTIES OF THE BOARD OF TRADE AND OF THE LOCAL GOVERNMENT BOARD OF ENGLAND AND WALES.

FOR PRESENTATION TO THE ANNUAL REPRESENTATIVE MEETING.

THE British Medical Association has carefully considered the report of a Committee[1] appointed by the Treasury to inquire, under the chairmanship of the Earl of Jersey, into the constitution, duties, and pay of the Board of Trade and the Local Government Board. The Association, being specially interested in that part of the reference of the Committee which concerns the Local Government Board as being the Department of State chiefly responsible for the public health, has observed with disappointment and regret the omission from the Treasury report of any reference to the fact that the administration of public health is very seriously affected by the present status and organization of the Board.

The Association regards such an omission as a matter of grave importance to which the attention of the public and of the Government should be drawn.

The Association, which includes over 15,000 members of the medical profession practising in the United Kingdom, has constantly had brought under its notice the dangerous defects of the administration in this country of public health matters, and has for a long time been profoundly impressed by the need for extensive official reform in our methods of preventing disease and degeneration if the health and physique of the nation are to be maintained at an adequate standard. The Association fully realizes the magnitude and complexity of the problems that arise for consideration in this connexion as affecting both the central and the local government of this country, and recognizes that many years must naturally be required for the complete attainment of those reforms which medical opinion indicates as necessary or desirable.

But the Association has not merely dealt with this matter in a critical spirit. It has, through its Committees, reviewed the whole position from a medical standpoint and has become convinced that the proper commencement of well-directed reform in this matter must be sought through the establishment of a Central Government Authority appropriately constituted in respect of (*a*) its internal organization, (*b*) its status among public Departments, and (*c*) the arrangements for its co-ordination with those local authorities with whom in this country rest chiefly the details of public health administration. Further, the Association considers that the reforms stated under (*a*) and (*b*) are of primary consequence and yet require such relatively simple changes in the law as to be capable of immediate accomplishment if approved by the Government.

The British Medical Association, therefore, after thorough discussion of the primary questions involved, drew up certain conclusions thereon and embodied these in a Bill which was published in February of this year in the BRITISH MEDICAL JOURNAL, proposing a complete scheme for the reconstruction of the Local Government Board of England and Wales.

The Local Government Board at present is theoretically composed of the following members: a President, the Lord President of the Council, the Lord Privy Seal, the Secretaries of State, and the Chancellor of the Exchequer. As a matter of fact it never meets, and its functions are performed by the President, who acts in the name of the Board.

In the Bill of the Association (*a*) as regards the internal organization of the Local Government Board as the Department of State chiefly concerned in the administration of public health, provision was made for the establishment, in place of the present fictitious Board, of an effective Board containing expert members, following the precedent of the Local Government Board in Scotland: and (*b*), as regards the status of the department, that the President of the Board should be made equal in rank with the Principal Secretaries of State.

Upon approaching the Government in the hope of enlisting its interest in these much-needed reforms, the Association was met with the objection that a Committee was then sitting under the chairmanship of the Earl of Jersey to report on "the position and duties of the Board of Trade and the Local Government Board: and whether any, and if so what, alterations should be made in the constitution and status of those offices: also whether, in the interests of administrative efficiency, any rearrangement of duties between those and other Government Departments is desirable."

This Committee had been appointed by the Treasury on July 18th, 1903. The other members were Sir John Gorst, M.P., Sir James Mackay, a member of the Council of India and of the Committee on the Board of Trade (1898-9), Sir Charles Ryan, K.C.B., a former Controller and Auditor-General, and Mr. Alfred Emmott, M.P. for Oldham. Sir John Gorst resigned, and was succeeded on February 1st, 1904, by Sir George Ryder, K.C.B., Chairman of the Customs Commission. The constitution of this Committee, which did not include any person acquainted with public health or Poor-law administration, and the fact that it was appointed by the Treasury, which is prone to look upon questions of policy mainly from the financial point of view, did not give grounds for any sanguine expectation that its report would deal with the questions of the status and organization of the Local Government Board from the point of view of what was generally expedient for the public health of the country.

As, however, the Association was referred to the Treasury Committee, an application was made thereto that the Committee should hear evidence from the Association on the subject of those material changes in the constitution of the Local Government Board which appeared to the Association necessary in the interests of public health administration.

The Committee declined to hear the evidence offered by the Association, and requested instead that a written communication should be forwarded from the Association. A memorandum was accordingly presented in support of the proposals embodied in the Bill of the Association, which was also appended.

The Association also had the privilege of laying its views by a deputation before the President of the Local Government Board, who, while expressing himself as opposed to the formation of an effective Board, undertook to bring before the Treasury Committee the views of the Association as to the desirability of raising the status of his Ministerial office.

It appears from the report that the Treasury Committee took the evidence of Sir Michael Foster as representing the Public Health Committee of the House of Commons, who expressed the opinion that a special department of the Local Government Board should be created to deal with public health administration.

The Association regrets to find that in the report of Lord Jersey's Committee there is no evidence that the Committee gave any consideration to the constitution of the Local Government Board as affecting the efficiency of public health administration.

Further, the only reason assigned by the Committee for not recommending any change in the constitution of the present fictitious Local Government Board is that the Board consists entirely of members of the Cabinet.

The Committee, though freely condemning the imaginary nature of the Board of Trade, does not explain how the equally imaginary Local Government Board, which never

[1] The precise terms of the reference to the Committee are as follows:—"That there should be appointed a Committee to consider the position and duties of the Board of Trade and the Local Government Board, and to report whether any, and if so what, alteration should be made in the constitution and status of those offices; also whether in the interests of administrative efficiency any rearrangement of duties between those and other Government departments is desirable."

meets, can possibly be rendered efficient by the fact that its members are members of the Cabinet, that is, are great officers of State, each holding an office the duties of which demand his whole attention.

Apparently in justification of its failure to recommend the termination of this fiction of the Constitution, the Treasury Committee also referred to the comparatively recent creation of two other purely nominal Boards—the Board of Agriculture (1889) and the Board of Education (1899).

Neither has the Committee dealt satisfactorily with the proposal to raise the status of the President of the Local Government Board to that of a Secretary of State, though Paragraph 16 may be taken to contain the reasons for not making this recommendation. In this paragraph, while recognizing that the administrative business of the office of the Local Government Board is laborious and important, and the parliamentary business especially heavy, the Committee has made two statements which it would seem to have thought justified it in refraining from recommending any change in the Local Government Board beyond certain increases of the salaries of the President, the Parliamentary Secretary, and the Permanent Secretary. These statements are:

(1) That "the jurisdiction of the Local Government Board is limited to England and Wales."

(2) That the Local Government Board "is not charged with the main responsibility for the decision of great questions of policy."

On both points the British Medical Association strongly dissents from the conclusions of Lord Jersey's Committee. In the matter of jurisdiction the Association would urge that questions of public health and prevention of disease affect all parts of the United Kingdom equally, and that this principle is already recognized in certain cases in regulations of the Local Government Board. In a matter of such importance as public health the present demarcation of the duties of the several Departments of State concerned should not be rigidly adhered to when modification would be conducive to efficiency of administration.

It appears to the Association that in matters of public health efficient administration would be best attained by treating the United Kingdom as an administrative unit, and that the Local Government Board should therefore be so reorganized and given such jurisdiction in health matters as would correspond to this principle of organization.

So, also, if in any other matters of Local Government it were found expedient that each part of the United Kingdom should form a separate unit, it appears to the Association that this would be better attained by reform of intradepartmental organization than by the sacrifice of the unity of public health administration.

On (2) the Treasury Committee does not define what it means by "great questions of policy," and in the absence of such information the Association is unable to understand why this term does not plainly apply to questions of national policy in relation to public health.

The prevention of epidemic and endemic disease; the protection of the kingdom from invasion by zymotic diseases, such as cholera or plague; the construction and regulation of the water supply of great centres of population; the housing of the working classes, and the purity of the food supply may all be instanced as questions which raise "great issues of policy" affecting our relations with foreign States, important commercial considerations, the constitution and administration of local public authorities, their co-ordination with one another and with the central administration, and the adjustment of the financial burdens of the country, both national and local.

Thus, for the decision of great questions of policy, the Public Health Department of a Government is as much responsible as any other office of State.

While drawing attention to the fact that the report of the Treasury Committee fails to fulfil the scope of the reference to the Committee the British Medical Association recognizes that this failure may have been due to an appreciation by the Committee of its own incompetence to deal with a problem of such magnitude as the adaptation of the Local Government Board to the present needs of the nation in respect of public health administration, and the further questions of the part to be played by central and local authorities respectively in such administration, and the duties which should be assigned to the expert members of an efficient Board.

The British Medical Association deeply regrets that the opportunity afforded by the appointment of Lord Jersey's Committee to commence the reorganization of public health affairs in this country has thus been lost.

The Association, however, hopes that inasmuch as the nation recognizes more and more the importance of social and sanitary as distinguished from purely political reforms, and that the maintenance of the physical and mental health of the people is the one true foundation of national prosperity, the question of the reorganization of the Local Government Board and of the public health administration of the country will be soon reopened and entrusted to an inquiry by a Royal Commission, the procedure of which in the opinion of the Association would be more likely to secure an adequate pronouncement on so vital a question as the safeguarding and furtherance of the health of the people.

(DRAFT) REPORT CONCERNING THE DESIRABILITY OF CONSULTATION BETWEEN MEDICAL WITNESSES IN LEGAL CASES LIKELY TO BE BROUGHT BEFORE THE COURTS.

The inquiry concerning the desirability of consultations being held between medical witnesses which the Medico-Political Committee, acting upon a resolution of the Scottish Committee, addressed to the Divisions of the Association in March last, has elicited replies from 120 Divisions; 108 replies were received in time to be considered by the Committee while preparing the Report now presented, and these have been classified under seven heads:

(*a*) Divisions who thought it unreservedly desirable that medical witnesses should meet in consultation . .	46
(Of these 15 use the phrase "desirable as a rule" or "desirable whenever possible," or some equivalent expression).	
(*b*) Divisions who thought it desirable, subject to certain specified conditions	7
(The principal conditions attached were as to the consent of the parties or of their legal advisers, or as to approval of the Judge).	
(*c*) Divisions who thought it "desirable if practicable" . .	9
(*d*) Divisions who thought it "desirable but impracticable" .	5
(*e*) Divisions who thought it undesirable	33
(*f*) Divisions who thought that the object aimed at would be better attained by the appointment of medical assessors .	4
(*g*) Divisions who report that they were unable to arrive at a conclusion or declined to discuss the subject . . .	4

The Committee has carefully considered the whole subject, giving special attention to the opinions expressed by the Divisions, and the difficulties which they have mentioned.

The foregoing analysis shows that while a majority of the Divisions, whose replies are dealt with, are in favour of the consultation of medical witnesses, a considerable minority are at present opposed to such procedure, and there is evidently doubt in the minds of some as to its practicability.

Such opposition and hesitation appear to have arisen in part from a misunderstanding of what was proposed under the term "consultation," partly, perhaps, from the fact that the question submitted by the Committee was purposely stated in general terms, in order to elicit a full expression of opinion.

Two points appear to have given rise to special difficulty, namely, (*a*) the fear that the consultation of witnesses might legally constitute "collusion," and (*b*) the fear that parties to cases or their legal advisers might object to such consultations. Both points are, therefore, specially considered in the subsequent paragraphs of this report.

The Committee submits to the Divisions the following general conclusions on the principle of consultation of medical witnesses:—

1. Medical evidence in legal cases is of two kinds:—
   (*a*) Questions of fact, for example, as to the amount of injury or disease present in the patient.
   (*b*) Questions of opinion and expert knowledge.

2. Medical evidence at the present time suffers from the disadvantage of being occasionally conflicting under both heads, and difference between medical witnesses in their statements as to questions of fact expose them to accusations of partisanship, which are prejudicial to the credit of the profession and to the value of medical evidence.

3. The determination of matters of fact must be arrived at by the ordinary methods of medical examination, and such examination for purposes of evidence is clearly best carried out by the witnesses for the two sides simultaneously, in

order that the condition of the patient may be observed by both at the same time and under the same circumstances.

4. Such associated examination has the further advantage that it diminishes the danger of any material fact being overlooked by the medical advisers of either party.

5. This system would in many cases put each party in more complete possession than they could otherwise enjoy of the knowledge obtainable by medical examination, and would thus diminish the number of cases which now only come before the Courts through imperfect knowledge of material facts by one or both parties. The diminution of litigation thereby effected would benefit not only the parties immediately concerned but also the community.

6. Although it is not supposed that such combined examinations would necessarily be followed in every case by ordinary consultation between the medical practitioners concerned, yet such consultations should as far as possible be held.

7. The procedure above indicated has the great advantage, both to the profession and the public, that it tends to place the medical witness in his true position as a witness of scientific fact, and not as an advocate or partisan of the party by whom he is employed.

8. The above considerations have for a number of years governed the action of many medical practitioners, and the procedure now suggested for more general adoption by the Association was carried out with success by the profession in Leeds, the effect being that the estimation of professional evidence in that district was unquestionably raised, and both Judges and leading members of the Bar expressed their emphatic appreciation of the good results attained.

9. It has been feared by some that such consultations would in the eyes of the law constitute "collusion" between witnesses, but it appears to the Committee that the term "collusion" is wholly inapplicable to the case of consultations between medical men, who meet for the purpose of coming if possible to a joint conclusion as to the facts of the case.

10. It is the belief of the Committee that as soon as the more ethical procedure herein indicated has become the recognized practice of the medical profession, any objection which lawyers or their clients might entertain to consultation between their medical witnesses would tend to be regarded as an indication that there was some element in the case which would not bear unbiassed examination. Consequently the practice of raising such objections would prejudice the case of the party objecting, and in a short time would cease.

11. A few Divisions have suggested that the difficulties arising through the conflict of medical evidence might be met in another way, namely, through the appointment of medical assessors.

The Committee, while fully appreciating the value, both to the public and to the profession, of the regular appointment of medical assessors for the assistance of Courts when medical evidence is being submitted, is of opinion that this reform should not be proposed in substitution for the system of consultation of witnesses explained in the present Report, but should be urged as an independent reform.

VACCINATION LAW REFORM

ANALYSIS OF REPLIES OF DIVISIONS.

The following six proposals, which had previously been approved by the Council of the Association on the recommendation of a conference of the Medico-Political and Public Health Committees, were considered by the Annual Representative Meeting at Swansea in 1903, and the meeting ordered that they be referred to the Divisions for consideration:

1. That revaccination be made compulsory by law, and that it be performed between the ages of 10 and 13 years.

2. That both primary vaccination and revaccination be subject to the same provisions for conscientious objection as in the present Vaccination Act but that the procedure for exemption should be more strictly defined in any future legislation.

3. That the Vaccination Act should be administered directly by a Department of the Local Government Board.

4. That in future no vaccination certificate should be accepted unless it contains a statement as to the number and area of the vesicles produced.

5. That all lymph shall be supplied by the Government, or by private establishments under Government supervision and guarantee.

6. That every private practitioner furnishing the vaccination authority with certificates of successful and efficient vaccination, satisfying a standard fixed by the Local Government Board, should receive a suitable fee for each such certificate.

115 Divisions have replied, and the replies having been analysed show the following result:

	For	Against	Doubtful or Special
Clause 1	115 ...	None ...	6
,, 2	64 ...	44 ...	5
,, 3	105 ...	3 ...	19
,, 4	104 ...	5 ...	20
,, 5	114 ...	1 ...	6
,, 6	98 ...	11 ...	9

(The figures in the third column overlap in some instances those in the first and second.)

On each clause certain Divisions have adopted resolutions, the effect of which cannot be stated simply as for or against. The Committee, therefore, gives the purport of these separately as follows:—

Clause 1.—The proposed amendments all relate to the age at which vaccination should be performed.

One Division suggests the omission of the words prescribing age.

One Division has resolved that revaccination be performed before the age of 13, and again before the age of 23; other Divisions that the age limits be between 7 and 13, between 10 and 14, and between 10 and 12, respectively.

Clause 2.—Three Divisions have adopted resolutions to the effect that they only approve that conscientious objection to revaccination should be accepted as exempting if this is necessary to secure the passing of the Revaccination Bill, but that it should be made clear that the profession does not approve of the principle of conscientious objection as applied to vaccination.

Many of the Divisions which have approved the clause, express their approval in terms which indicate that they have been influenced by similar considerations of expediency, and not that they approve the principle.

One Division was in favour of deleting the reference to procedure from the resolution, and one Division thought that the word "more" should be deleted.

Clause 3.— Eight Divisions were of opinion that the administration of the Vaccination Act should be placed in the hands of the local sanitary authority or of the Councils of administrative counties or county boroughs.

One Division was of opinion that the cost of vaccination should be defrayed from Imperial funds.

Clause 4—Seven Divisions were of opinion that the words "and area" should be deleted.

Eight Divisions were of opinion that, in any certificate of successful vaccination, the standard attained should be defined.

Three point out difficulties as to measurement of area.

One thinks statement as to area unnecessary.

One proposes that the Local Government Board Inspector should inspect all cases.

Clause 5.—Three Divisions propose that the words "free of charge" be added. One proposes that the words "and guarantee" be deleted, and one that "or control" be substituted therefor.

One Division proposes that the requirement should be that Government lymph should be supplied to private practitioners "on application."

Clause 6.—Two Divisions propose that every medical practitioner should be recognized as a public vaccinator, and receive a fee for each efficient vaccination performed by him.

Five Divisions propose amendments for the purpose of making more precise the wording of the clause, as, for example, that the word "notification" be substituted for "each certificate," that the words "from vaccination authority" be inserted after "receive," or that the words "and revaccination" be inserted after "vaccination."

One Division proposes that this clause should be merged in Clause 4, doing away, however, with the fee.

One Division proposes that there should be a medical inspector of all vaccinations who is not in private practice.

MEMORANDUM TO THE BOARD OF EDUCATION

Relative to the fact that the said Board has now under consideration a Government Secondary Leaving Certificate, and bringing to the notice of the Board the views held by the British Medical Association as to the standard of general (secondary) education requisite in persons entering the medical profession.

The Council of the British Medical Association, having learnt that the Board of Education has under consideration

the adoption of a Government Leaving Certificate for Secondary Schools, recognizes that the question of the standard of requirements to be laid down by the Board for such certificates is closely related to a question which deeply concerns the medical profession, that, namely, of the standard of general education to be required from persons seeking to become practitioners of medicine and surgery.

On this ground the Council of the British Medical Association would most respectfully submit to the Board of Education the following conclusions, which have been arrived at after most careful deliberation by the Association with respect to the question of the preliminary general education and examination of medical students.

The Association, being satisfied that 17 is the earliest age at which a course of medical study can with advantage be entered upon, holds that the standard of preliminary general education required should not be below that which persons of the said age, who have enjoyed ordinary educational advantages, may reasonably be expected to attain.

In the opinion of the Association, the examination should include a pass and honours division, as in University Local Examinations. The subject of the pass should comprise at least Latin, mathematics (including arithmetic, algebra and geometry), English grammar, literature and essay writing, history, geography, and either French or German; the honours division should include Greek and physical science as compulsory subjects.

The Association is of opinion that of existing examinations the Senior Local Examinations of Oxford and Cambridge approximate most closely to the scope and standard which the Association considers requisite.

Finally, the Association, being also convinced that the present system of multiple preliminary examinations for medical students is injurious to the public interest, as prejudicing the prospective efficiency of persons entering the medical profession, and holding that the adoption of a uniform standard is of vital importance, would, for these reasons, welcome the institution of a Government Secondary Leaving Certificate, and the acceptance of such certificate as the standard qualification for entry upon medical studies, provided that the subjects named in this memorandum are included, and provided also that the standard herein indicated is required.

ETHICAL COMMITTEE.

ANNUAL REPORT TO THE ANNUAL REPRESENTATIVE MEETING AND COUNCIL.

THE matters which it has been the duty of the Ethical Committee to consider during the year 1903-4 have greatly exceeded, in respect both of number and variety, those which came under the notice of the Committee in the previous year. This has arisen, in part at least, from an increase in the number of questions upon which, as they have taken up active work, Divisions have sought the advice of the Committee, especially regarding rules and matters of procedure.

Contract Practice.

The Committee reports first on its action in respect of the following instruction received from the Annual Representative Meeting at Swansea:

"That it be an instruction to the Ethical Committee to investigate the ethical position of medical men engaged in various kinds of contract practice with reference to (*a*) the amount of canvassing associated with the several varieties of contract practice; (*b*) the ethical position of medical men who accept, or continue to hold, appointments which the general body of medical men in the locality have agreed not to hold on the ground that the conditions of tenure are detrimental to the honour and interest of the profession."

The Committee, having carefully considered the subject of this instruction, came to the conclusion that systematic investigation of the matters named in the reference to the Committee could with greater advantage be undertaken when the results of the investigation of the economic aspects, which the Medico-Political Committee was at the same time instructed to make, became available, and that in the meantime many important points could be established in connexion with specific cases brought under the notice of the Committee.

The Committee reports the following opinions which it has in this way expressed:

(*a*) With respect to canvassing and similar practices:—

(i) That a medical practitioner ought not to allow his name to appear on handbills issued to advertise a club of which he is medical officer.

(ii) That handbills issued by a club, even though not containing the name of the medical officer, must not be distributed in such a way as to advertise him to the disadvantage of his neighbours.

(iii) That full particulars such as were contained in a handbill brought before the Committee of a provident dispensary should not be advertised in newspapers, or handbills issued to others than the subscribers.

(iv) That canvassers for private medical clubs should not be employed even though, as in a case brought before the Committee, it is open to all practitioners in a district to be connected with the club.

(*b*) As to conditions under which contract practice appointments ought not to be accepted:—

(i) The Council, on the recommendation of the Committee, has approved Rules submitted by certain Divisions, under which members are debarred from accepting appointments at lower rates, or under other conditions, than may from time to time be prescribed by resolution of the Division.

(ii) The Committee has expressed the opinion that a practitioner who has entered a district to accept an appointment upon terms disapproved by the general body of the local profession, cannot justly complain when professional recognition is refused to him, and rules of Divisions based on this principle have been approved by the Council, on the recommendation of the Committee.

(iii) The Committee has advised that a member of a Division accepting an appointment in another Division must be bound by the Rules of the latter Division in respect thereto.

(iv) In order that practitioners from a distance may not unwittingly accept appointments upon terms which will bring them into conflict with their fellow practitioners, the Council, on the recommendation of the Committee, has resolved that a warning notice concerning such districts may be inserted in the advertisement columns of the JOURNAL.

Rules of Procedure.

The Committee has had before it Rules of procedure in ethical matters of 57 Divisions and 7 Branches, which have adopted, with few or no modifications, the model Rules framed by the Committee in 1902, and such Rules, on the recommendation of the Committee, have been approved by the Council.

Rules as to Conduct.

The Council has also approved, on the advice of the Committee, Rules which have been passed by the Ashton, Bradford, Cleveland, Norwich, Sunderland, and Swansea Divisions, for the regulation of the professional conduct of their members. These special rules received very careful consideration from the Committee, and before being recommended to the Council for approval were in some instances materially modified by the Divisions at the suggestion of the Committee. In this way precedents for such Rules are gradually accumulating which, it is hoped, may prove serviceable to other Divisions.

Special Rule as to Notices.

In connexion with those Rules of certain Divisions, under which members are debarred from meeting professionally practitioners whose conduct has been declared by resolution of the Division to be contrary to the honour and interests of the medical profession, the Committee, in conjunction with the Medico-Political Committee, has considered the means whereby a Division may inform its members of the adoption of such a resolution. Upon their joint recommendation the Council has approved the following model rule for suggestion to those Divisions which may desire to adopt such a Rule:

MODEL RULE FOR DIVISIONS RE CIRCULATION OF NOTICES IN CERTAIN CASES.

Rule Z.—In every case in which the Division shall, after due inquiry in accordance with the Rules thereof, have passed a resolution declaring that in the opinion of the Division the conduct of any medical practitioner or practitioners, whether by contravention of the rules of the Division or otherwise, is detrimental to the honour and interests of the medical pro-

fession, it shall be the duty of the Executive Committee to submit a report of the whole facts of each particular case to the Ethical Committee of the Association, and, subject to the approval of the said Committee, or, if the opinion of the said Committee be adverse, subject to the approval of a three-fourths majority of those present and voting in a special meeting of the Division convened to consider the comments of the Ethical Committee, to cause such resolution to be brought directly to the knowledge of every member of the Division, by means of a notice in the following form, which notice it shall be the duty of the Honorary Secretary of the Division to authenticate by his signature.

BRITISH MEDICAL ASSOCIATION.

_____ *Division.*

(PRIVATE AND CONFIDENTIAL.)

NOTICE.

In pursuance of Rule Z of the Division, Notice is hereby given by the Executive Committee of the said Division that at a general meeting of the Division, held at , on the of , a resolution in the following terms was duly passed:—

"*That in the opinion of this Division the conduct of Dr. of is (in contravention of the Rules of the Division, and)* detrimental to the honour and interests of the Medical Profession, within the meaning of the Rule(s).....*

Signed by order of the Executive Committee of the Division of the British Medical Association,

Honorary Secretary.

* Delete words in ( ) if not required.

Association Procedure in Ethical Cases.

Closely allied to the subject of Rules of Divisions and Branches are various questions of procedure which it has been the duty of the Committee to consider, either as affecting its own action in co-operating with Divisions and Branches in the investigation of ethical matters, or as concerning the procedure of Divisions and Branches which have applied for advice.

Matters Referred to Divisions or Branches.

In one of the concluding paragraphs of the Annual Report for 1902-3, the Ethical Committee pointed out that during the year many matters had been considered which, had the Divisions been in active existence, would have been referred to them at least for inquiry, and the Committee expressed the opinion that this course would be desirable for the future.

The principle thus enunciated has guided the practice of the Committee during the past year. Cases in which the facts are in dispute are referred for preliminary investigation to the Division, or, in special instances, to the Council of the Branch, of which the person against whom complaint is made is a member. The Committee further has advised that the finding arrived at by the local body should be communicated to the members concerned before the matter is again referred to the Central Council or Ethical Committee. In several instances difficulties have been completely and amicably settled by means of such local inquiries.

When, on the other hand, the facts have been investigated locally, but a question of principle remains in dispute, the case has naturally been brought before this Committee for decision.

Disputes between Members of Different Divisions.

In reply to an inquiry, the Committee has advised that a complaint by one member against another, belonging to a different Division, should be investigated first by the Division to which the member belongs whose conduct is called in question, and subsequently, if necessary, by a joint Committee of the two Divisions, or, if they belong to one Branch, by the Branch Council.

Disqualification for Election on Ethical Grounds.

In reply to a Branch Council the Committee pointed out that, in the regulations of the Association there is no disqualification on ethical grounds for election to membership, unless the candidate, having previously been a member, has been expelled under Articles XLII, XLIII, and XLIV. It is for the Branch Council to judge whether a candidate is suitable for election.

Expulsion Cases.

The Committee has not been called upon, during the period to which this report relates, to advise the Council upon any case of a charge brought by a Branch against a member under Article XLIV.

Cases for General Medical Council.

The Committee has, however, had before it certain cases in which offences were alleged which it might be proper to bring to the notice of the General Medical Council.

In a case of persistent advertising, the Medical Secretary was instructed to make a statutory declaration as to the facts ascertained by him, and, in conjunction with the Solicitor, to take such other steps as might be necessary in order to present the case to the General Medical Council. The matter was referred by the General Medical Council to one of the licensing bodies from whom the practitioner had obtained diplomas, and in the result the advertisement was withdrawn.

In a case of employment of an unqualified assistant the Committee found that such employment had occurred in only a small number of instances, under special conditions, and the practitioner having expressed regret and promised not to repeat the offence, the case was not reported to the General Medical Council.

Institutions for Treatment.

The Committee has been called upon to give an opinion on several matters affecting the conduct of institutions for the treatment of disease, such as hydropathic and electro-therapeutic establishments. (*a*) The question of the advertisement of the names of medical men connected with such institutions was referred to the Divisions, and a large majority has replied adversely to such advertising. A detailed report on the subject, based on the replies of Divisions, will be prepared. (*b*) The question of the part to be taken by medical men in the management of such establishments has also received attention in two cases, and the Committee has expressed the view that there should be a medical board of management, and that such board must be responsible to the profession for the proper conduct of the establishment.

Hospital Advertisements.

In pursuance of the decision of the Committee reported to and approved by the Annual Representative Meeting of 1903, the Committee has, in the cases brought to its notice of the advertisement of the surgeons for the week of hospitals, drawn the attention of the staff of each hospital to the advertisement, which has generally been withdrawn. The Committee regrets to report that in some instances the Boards of Management of hospitals have refused to comply with the requests of the staffs that such advertisements should be discontinued.

Trade Advertisements containing Names of Medical Men.

The action commenced by the Committee in the year 1902-3, with a view to checking the use of the names of medical practitioners in trade advertisements, has been continued, with, on the whole, satisfactory results. In those cases in which practitioners, not being members of the Association, have taken no steps to withdraw their names from such advertisements, they have been reported to the licensing bodies from which they received their diplomas. The Royal College of Physicians of Edinburgh, in particular, has taken action in every case of the kind brought to its notice.

Advertisements containing Extracts from Medical Journals.

In a case in which an article from the *Lancet* was being used for advertisement, the proprietors of that journal, on being informed, promptly enforced their copyright, and suppressed the advertisement. The Council had previously decided, on the recommendation of the Committee, that similar action shall be taken in defence of the copyright of the BRITISH MEDICAL JOURNAL if occasion shall arise.

The attention of the Committee has also been directed to objectionable newspaper notices of various kinds, and in several instances the withdrawal of such notices has been obtained.

The Title of "Dr."

Upon the question of the right to use the title of "Dr.," the Committee in reply to an inquiry expressed what has hitherto appeared to be the principle generally accepted by the profession. As certain Divisions appear to be dissatisfied with the view expressed by the Committee, the Association, through the Representative Meeting, will be asked to make a definite pronouncement upon the subject.

Collection of Cases decided by the Committee.

The Committee has been called upon to consider a number of other cases to which it does not appear necessary to refer in detail in the present report, but as the Committee has, during the two years which have elapsed since its formation, expressed upon many important questions opinions which, when ratified by the Council and by the Representative Meeting, have become findings of the Association, the Medical Secretary is undertaking the task of collecting and arranging the decisions of the Committee in a form which will be useful for reference. It is hoped that this compilation may be laid before the Council in October.

ROBERT SAUNDBY,
Chairman, Ethical Committee.

14th July, 1904.

Meetings and Attendance.

The Committee has held four meetings during the year. The attendances have been as follows:

Professor R. Saundby (Chairman)	3
Dr. T. D. Griffiths (President)	1
Mr. Andrew Clark (Chairman of Council)	4
Mr. H. A. Ballance	4
Dr. J. Barr	2
Dr. A. G. Bateman	3
Mr. G. H. Broadbent	4
Dr. W. A. Elliston	2
Dr. W. S. A. Griffith	1
Dr. Bruce Goff	4
Dr. E. Jepson	2
Mr. R. H. Kinsey	3

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

SOUTHERN BRANCH.

Annual Meeting.

The annual meeting of this Branch was held at Southampton on July 7th, when the President delivered the following address:

THE GROWTH OF THE MEDICAL CHARITIES OF SOUTHAMPTON.

By J. F. Bullar, M.A., M.B.Cantab., F.R.C.S.Eng.,
President of the Branch.
Ophthalmic Surgeon, Free Eye Hospital, Southampton, and the Royal Hants County Hospital, Winchester.

Dr. Bullar commenced his address by giving a brief history of the origin of medical charitable institutions in Southampton. He said that in the year 1823, during the mayoralty of John Rushworth Keele, himself a member of the medical profession, a meeting of the inhabitants of the town and county of Southampton and its vicinity was convened by the mayor to consider the propriety of establishing a general dispensary for affording gratuitous advice and medicine to the sick poor of Southampton and its vicinity. At that meeting the following statement, signed by three physicians and seven surgeons practising in the town, was read:

> We, the undersigned, resident physicians and surgeons, beg to offer our gratuitous service to so desirable an object, and our exertions shall not be wanting to forward so charitable an institution.

Although unable to find any statement on the point Dr. Bullar considers it not unreasonable to infer that the medical men were the prime movers in the matter, and that to them Southampton owes the first of its medical charities. After this meeting the dispensary was duly established, and a committee was elected consisting of eleven members, five laymen and two medical men elected for a year, the two medical men on duty for the current week and the two who were on duty during the previous week, in all five laymen and six medical men. As a temporary arrangement the dispensary occupied rooms over the shop of Messrs. Randall, chemists, in the High Street. The terms were, for use of the rooms and coal, £30 per annum; drugs and dispensing, not including leeches; every patient to renew the letter of recommendation every three months; four shillings each patient. This temporary arrangement lasted for more than forty years, till 1865, when the dispensary was moved to its present site.

In November, 1835, a letter signed by the medical practitioners of the town and neighbourhood of Southampton to the number of twenty-two, was addressed to the committee of the dispensary, suggesting the expediency of establishing an infirmary or hospital in the town for the benefit of the poor of the Southern Division of the county of Hants. It contained the following passage:

> We have been induced to take this step from a consideration of the increased and constantly-increasing population of this place and its extensive neighbourhood; from its being the capital of the Southern Division of Hampshire; from the distance of Winchester for the transmission of cases; from the removal of several of the Workhouses (under the new Poor-law plans), rendering the transport to any considerable distance difficult and dangerous; from the increased and increasing quantity of shipping and frequent accidents thence arising; and from a general wish to promote the welfare of the sick and helpless poor, under the influence of those severe and urgent cases especially which no prudence can guard against, and from which their families as well as the individuals suffer so severely, and for whose relief the existing dispensary is inadequate.

After various meetings and discussions this proposal was dropped.

The dispensary was originally a purely charitable institution, and that attempts were soon made to abuse it may be gathered from the fact that so early as the year 1836 steps were taken with a view to make some improvement in the issue of dispensary tickets "so as to confine their application exclusively to persons entitled to dispensary relief." In 1865 the dispensary was removed from Randall's shop to its present site in New Road.

A great fire, which occurred in some stores in November, 1837, in which 22 of the helpers lost their lives and many more were injured, raised a considerable amount of local interest; meetings were held in Winchester, Andover, Lymington, and the Isle of Wight, and some £5,000 were collected for the relief of the sufferers. On December 23rd a public meeting was held, at which it was said that

> The medical officers of the dispensary have frequently pointed out the necessity of having a room or two with suitable attendants attached to that Institution, but as the funds of the Dispensary cannot be appropriated to this object, the medical officers of the dispensary have unanimously offered their services to a proposed casualty ward.

Eventually a house, 44, South Front, Kingsland, capable of containing three beds for patients, was taken, and the casualty ward was opened in January, 1838. Soon after the adjoining house with five beds was added. These houses belonged to Mrs. Kenrick, an experienced nurse, who, in addition to the rent for her houses, received £10 per annum for her valuable services as nurse. As was to be expected, this first step towards a hospital was found of great benefit, and became so popular that it could no longer meet the demands on it. In March, 1839, the casualty ward was removed to premises in St. Mary's Street, on the site now occupied by Albion Chapel, and became the South Hants Infirmary. In 1851 it was removed to a building of its own in Fanshawe Street, which has gradually developed into its present condition.

In 1869 the Dispensary Committee communicated with the committee of the Royal South Hants Infirmary to ask whether it would unite in approaching the clergy with a view to the establishment of a Hospital Sunday, already so successful in Birmingham and other large towns. The suggestion was not at that time accepted, but a renewed application in 1873 led to a conference, and a few months later the distribution of the first Hospital Sunday Fund took place, the dispensary receiving £67 and the infirmary £430.

Dr. Bullar continued: The dispensary, at first established as a purely charitable institution, was continued in that way till 1877, when, in consequence of representations made by the Southampton Medical Society, a so-called Provident Branch was added; other changes have been made, the rules for provident patients have been altered, and the number of medical officers was reduced at one time to three; the management fell more and more into the hands of laymen, and I am told symptoms of sleeping sickness were at one time observed, and a certain little hardness of hearing to the voice of the medical officers. I shall not follow the history of the dispensary further; it has done much good, and is a monument of the energy of our predecessors in the medical profession at Southampton.....

No one can fail to be struck with the rapid growth and success of these our oldest medical charities; they were started by medical men, and in the beginning the medical profession had in them its proper weight and influence. It is a curious, and I believe very general fact, that as hospitals grow older the medical staff gets less power in the management and the lay element gets more. It may be that the medical men who start a hospital take a more keen and practical interest in its success than those who are subsequently appointed to it as a going concern which does not so obviously depend for its vitality upon their individual efforts.

I think I have also observed that there is sometimes a tendency among the lay members of hospital Committees rather to overrate their power of making a hospital good or bad, and to treat the advice of the medical staff with less attention than it deserves. After all the usefulness of a hospital depends entirely upon the way the medical work (using the term in its broadest sense) is done, and the most any lay Committee can do—and a most important and laborious duty it is—is to make the medical work possible by providing the material means for its execution. They can buy the organ and work the bellows, but the doctor is the artist who must produce the music; his is the highest function in the hospitals, and, recognizing that fact, we shall be right in doing all that is necessary to maintain our due influence in them.

Before leaving the subject of medical charities, there are one or two things to which I should like to call your attention. A figure that takes my fancy very much is Mrs. Kenrick, the experienced nurse and owner of houses in South Front, whose valuable services you will remember were obtained for the casualty ward for £10 a year. We can picture to ourselves the work she did and how much laudable pus she wiped up with the linen rags sent in by the kindly neighbouring gentry. There has been a great change in nursing, but we may reasonably doubt whether Mrs. Kenrick, could she return, would be more out of date than we shall be eighty years hence. Nursing has improved, but most of us must have had occasion to observe that the actual performance of nursing, even in the highly superior times in which live, does not in every case come up to the level of the somewhat bombastic strain in which "trained nursing" is often spoken of. I think this is partly the fault of the medical profession. There are nurses who are properly trained and there are a large number who are not trained at all, but merely decorated with caps, aprons, scissors, and other more dangerous weapons, and foisted upon a credulous and simple public accustomed from their youth to judge by the outward appearance only. It is our business to protect the public, and to distinguish between trained and merely ornamental nurses, and not to be parties to that quackery in nursing which is the chief hindrance to its improvement. It is hard and unfair that a fully-trained nurse should be competed with and paid at no higher rate than an upstart who has merely been six months at a lying-in hospital, but that is what happens now. Talking of quackery, it may interest you to know that the income derived by the local papers from advertisements of a very questionable character seems to have been enjoyed for a very long time—indeed, they were probably born in sin and have continued in it since. At any rate, in a local paper of 1837, are advertised Kemp's female pills, carefully prepared by Mrs. Martin, of Shirley, Hants; Lady Huntingdon's female pills—to say nothing of Frampton's pills for both sexes, Ramsbottom's bunion solvent, Ashley Cooper's botanical purifying pill, or Mulready's cough elixir, "one dose of which is sufficient to convince the most scrupulous."

There always have been quacks, and there will always be a temptation, in the form of a consideration, for our free and glorious press to advertise them. Some few papers I believe, to their honour, refuse the worst class of advertisements, but the great majority take all that come regardless of any harm that may result. When I consider what a number of rogues have been fostered, how many sick people swindled and deceived, how much money wasted in paying half-a-crown for a mess worth less than a halfpenny, the mere fact that proprietors and shareholders have been enriched gives me little satisfaction. I must confess that in view of these things our British press is an institution for which I entertain but a chastened admiration. We may perhaps do a little to check the quackery in our own profession, though in attempting it we must expect to be opposed rather than helped by the public. Whenever a new thing comes out it is sure to upset somebody's morals. Just as a motor car gives a man, who, going on two legs might easily be mistaken for a gentleman, the opportunity of demonstrating that he is nothing of the kind—so a new operation or a new instrument will give the man who might in its absence have been a respectable humdrum practitioner the chance of showing that he is really a most unscrupulous quack. At one time the abdomen was opened for the removal of the uterine appendages with such frequency that it seemed as if all the privacy desirable in such a situation would be lost. We hear less of that now—but more of removal of the appendix. Is that operation a little too frequent? At present the chief field for this sort of thing seems to be in the treatment of all sorts of diseases by light and high-frequency currents. No doubt the uses of these means are as yet very imperfectly known, and it is justifiable and necessary for competent persons to experiment with them with proper precautions that no harm may be done. I think as a profession we should entirely set our faces against such experiments being carried out with a view to gain, and upon persons who are unable to know that the treatment they undergo and pay for has not been proved to be of any value in the diseases from which they suffer, even if it has been shown to have some effect in cases of a totally different nature.

I must now leave the medical charities in the hope that some day their histories may be written more fully, and turn to the organization of the profession here by medical societies, and give you some account of what these societies have done and are still striving to do.

The Southampton Medical Society was established in 1852, and has had a considerable effect in various ways, besides promoting friendship among the medical men of the town. I have told you that in 1877 the Society was instrumental in establishing the Provident Branch of the Dispensary, a step no doubt highly desirable. That branch has done an immense amount of work, and, with certain modifications, could easily be made as perfect as such a thing can be.

Another useful thing due to the representations of our Society was the covering of our drinking water reservoir on the common, formerly an open pond into which all kinds of rubbish was liable to fall or be thrown.

Our Medical Society has on occasion expressed a very definite opinion on medical matters of which its members were in a position to judge, and if these opinions have not been immediately well received by the public, in the end they have turned out to be right. I think the best judges of matters concerning any profession are the members of that profession, and without believing that everything that falls from the mouth of a medical man is necessarily a pearl, or that we are any wiser than other people, I have a fancy that we understand our own business better than outsiders, and that whenever the great majority of the medical men of a town are found to hold strongly a certain view with regard to some matter within their province, they generally turn out to be right.

In 1893 the Medical Society took up the question of club practice; a Subcommittee, of which I was a member, was appointed to collect information from the local doctors. Many meetings were held, and much work was done, and there seemed a fair prospect of good results, but at the last the effort failed from want of unanimity. It is probable, however, that this movement did good; it brought us together, and I think made us realize more clearly that combination and unity are the only means by which the position of the medical profession can be bettered; it prepared the way for the next effort in the same direction.

The decision of the General Medical Council with regard to medical aid societies gave us an opportunity to move again, as the appointments to these societies had to be relinquished. The Medical Society took the matter up, and appointed a Committee to take measures for establishing a provident medical association. A general meeting of the profession was called in February, 1902; the declaration was signed in the following August, and the necessary notices to clubs having been sent out in September, the Association began work in January, 1903. The Association is supported by fifty-six of the medical men resident here at its formation, and is opposed by one and by three others who arrived in Southampton at the moment of its starting. These men were communicated with and called upon, and every effort was made to induce them to act with us, but they refused, and a certain number of clubs are treated by them at the former low rate. We have felt it our duty to refuse to meet these men professionally so long as they thus act in fostering a system which we consider bad, not only for the profession but for the public. The result to the members of our Association who are engaged in club practice has on the whole been very satisfactory; we have worked with great harmony, and I think have every reason to be pleased with the practical unanimity attained.

Of one thing I am certain, and that is that the numerous meetings we have had, and discussions of all kinds of points, have brought us all more together, and made us ready to take the best view of any differences of opinion that may arise. We have, so far, had no serious differences, none that by discussion and a reasonable amount of give-and-take has not been settled satisfactorily. This gives me reason now to look to the future with some confidence of hope that medical unanimity is, after all, not so difficult to arrive at as is often said. Of course rivalry and competition in practice are un-

avoidable, but fair competition is a thing of which few men complain.

With the reasonable amount of tact and sense possessed by most of us, it should surely be possible for the medical men in any district to agree upon a minimum below which they will not take contract work. They must fix the minimum according to the requirements of the district, and after discussions to which every medical man in the district is invited. Having once fixed the minimum, their competition must in future take place only above that level, and not by undercutting an already underpaid brother, and so lowering the condition of the profession by which we all live. I consider that any man who takes a club or an appointment at a lower rate than the last holder, or who, during a discussion as to terms or payment, steps in and takes the work at even the same rate, is an enemy to his profession, for he does his best to make it worse for those who are to come after him. We are ready to fight or make other sacrifices that our country may be as satisfactory for our children as for ourselves: and in the same way we owe loyalty to our profession. If it had been in a worse position than it was when we joined it, our own personal positions would now be worse: and the least we can do is to hand it on to our successors in as good, if not in a better, state than that in which we found it. People who live and work together squabble no doubt sometimes, but they develop a certain *esprit de corps*. One sees it at school, at college, and in the medical schools: and the reason why we medical men in after-life seem to have little of it is because we work apart and do not meet often enough together. Certainly, lately, here in Southampton, we have had meetings enough, and if we do disagree it must be due to our own inherent wickedness. One may have too many meetings. A symptom of having had enough is that hardly anybody turns up at them.

It is a mistake to have too many societies all formed of the same people and with similar objects. We have here the Medical Societies, the Southampton Division of our Association, and the Southampton Provident Association. Hitherto the Southampton Division, ever since its foundation in 1874, seems to have led the life of a dormouse. It has awaked once a year to have a conjoint annual meeting with the Medical Society, and has immediately slept again. Many of us do not wish to destroy the old Medical Society, but we have curtailed its meetings, and the Division is to meet more often, and we hope sometimes in the parts of the district outside the town.

Speaking as a member of the Southampton Provident Association, I may say that we are very anxious that similar action should be taken in the neighbourhood, and that it should eventually extend to the whole of the area of the Southern Branch. The advantages that would arise from such an arrangement are obvious, for the frontiers of any area in which the medical men have combined to raise club rates are liable to be raided by dwellers in the unorganized regions outside, and this may become a serious hindrance. A small area may also be injured by the importation of men from a distance by disaffected clubs.

Dr. Mackeith, the Honorary Secretary of the Southampton Provident Medical Association, to whose untiring energy its success is very largely due, has very kindly prepared, in the form of an Appendix to this paper, a statement of the means by which our Association might become a part of the British Medical Association, and by which other district Associations, managing their own affairs but working for the same ends, may be formed. I commend this Appendix to your earnest consideration, and I have every hope that it may have a period of fruitful incubation in your minds, and may prepare the way for a real improvement in the arrangements for contract practice.

As soon as we are sufficiently organized to act together, we shall feel the benefit of it, and shall be ready to extend the uses of co-operation beyond club practice.

NOTES ON THE INAUGURATION OF PROVIDENT MEDICAL SERVICES.

By A. A. Mackeith, M.B.Glasg.,
Representative for the Southampton Division.

In the following remarks an endeavour is made to sketch a plan for the inauguration of a Provident Medical Service, to embrace that form of Contract Practice usually called Club Practice. Contracts with Boards of Guardians, Post Office, Municipal and similar authorities are not here alluded to, as together they should constitute a Public or State Medical Service.

Club Practice may be divided into three classes:—

(1) Clubs where medical attendance is the chief or only benefit derived, *e.g.*, Private Medical Clubs, Provident Dispensaries, Medical Aid Societies.

(2) Clubs where substantial sick pay is the principal benefit, medical attendance being a subsidiary yet important one, *e.g.*, Foresters, Rechabites, Oddfellows, Trade Societies.

(3) Clubs of the nature of the National Deposit Friendly Society.

Club Practice has obtained such a hold in this country (there being comparatively few districts where it is not found in some form), that it would be difficult to abolish it altogether. It is unnecessary here to discuss the general question of its advisability, as in pursuance of this scheme that matter would be settled locally.

It being granted that in a particular district there is dissatisfaction among the profession concerning Club Practice an endeavour should be made to form a Provident Medical Service in that district, embracing an area in which wages, conditions of employment, social conditions, customs and habits are so fairly similar that all clubs in such area may be governed by uniform rules and regulations, and pay uniform fees.

The objects in forming a Provident Medical Service are:—

1. To enable the poor to obtain medical advice, on payment of a small premium, which premium may be paid weekly, monthly, or quarterly.

2. To improve the conditions under which contract work in general is carried on.

3. To enable medical men to retain a proper control over the conditions under which they are employed in providing such services.

4. To afford hospitals a means of diminishing the number of their out-patients, by referring them to the Service, as has been done at Bournemouth.

5. To provide a means whereby persons, who as members of certain institutions are at present being attended as charitable patients, may be encouraged to make provision for themselves on the provident principle.

6. To prevent the rich demanding medical attendance at a rate intended only for the poor.

In establishing a Provident Medical Service, the following points are to be always kept in mind as absolutely necessary for the success thereof:—

(*a*) The fees paid for contract work in the particular area must be raised when necessary, so that a minimum capitation fee shall be established. It will be necessary to charge a fee at which every medical club in the area can be amalgamated into the service. It is advisable to have the service in working order before making any alterations in the current rates or conditions of club work. One result of instituting the service will be to vastly diminish the number of medical clubs.

(*b*) A uniform set of rules and regulations for all clubs in the area must be framed.

(*c*) All clubs must be merged into the Service as soon as practicable.

(*d*) That the medical officership of the Service shall be open to all medical men in the district who agree to abide by its rules, thus giving equal opportunities to all medical men who take contract work, and affording to each patient a choice of doctors probably in his immediate neighbourhood.

The first step in the establishing of a Provident Medical Service is to call a meeting of every member of the profession in the district to discuss contract practice. Experience shows that the following points among others will require consideration:—

(*a*) Should the clubs in Class (1) only be dealt with?

(*b*) Should the clubs in Class (2) be dealt with at once or left for future consideration?

(*c*) Should medical men accept clubs in Class (3)?

(*d*) Who should be attended as provident patients? Males only or females as well?

(*e*) At what ages should patients be accepted? minimum and maximum?

(*f*) What is to be the minimum capitation fee? It should be the same for both sexes and all ages.

(*g*) Is it advisable to have a composition fee to include all the children in a family?

(*h*) That it is not admissible to treat patients sent by companies or persons who tout or canvass for patients.

(*i*) That it is not advisable for individual medical men to have collectors collecting contract payments at patients' homes.

(*k*) That it is advisable to keep in "strict quarantine" medical men who refuse to support the Service. See Appendix A, Clause 5.

(*l*) Is it advisable for medical men to have private clubs, payments being received at the surgery?

(*m*) Is the service to employ a collector or collectors, or are the payments to be made only at a central or at branch offices? or shall both systems be allowed?

(*n*) If collectors are employed what sum must be added to the medical fee? Experience has shown that 15 per cent. to 20 per cent. is necessary.

(*o*) Shall special charges (and if so what?) be made for: Midwifery, vaccinations, operative dentistry, urgent visits, night visits, surgical operations, serious accidents, surgical dressings, anaesthetics, certificates?

Before a general agreement on all these points is secured, it may be necessary to hold several meetings. A committee, of which the chairman and secretary are *ex-officio* members, should be elected. The duties of the committee will be:—

(*a*) To put the principal points agreed upon in the form of a declaration, and to get the declaration signed, if possible, by every medical man in the district. See Appendix A.

(*b*) To frame rules for the Provident Medical Service, including regulations for patients. See Appendix B.

(*c*) To draw up a card of membership for patients. See Appendix C.

(*d*) If it has been decided that collectors be employed, to draw up agreement with collectors (see Appendix D); and instructions to collectors (see Appendix E).

Further meetings of the general body of medical men should now be held to receive, discuss, and adopt these reports and recommendations. This having been done, the Service should be in working order. Alterations and improvements may be found necessary from time to time, and may be adopted into the scheme. The initial cost of inaugurating a service of this kind need not exceed £10, and would probably be much less.

I feel that this paper is most sketchy and very imperfect. I should, therefore, like to suggest that the Medico-Political Committee call a conference of those medical men who have practical experience of the working of Provident Medical Associations, Provident Dispensaries, and similar institutions to draw up a more perfect scheme so that Provident Services just beginning may be started on the most satisfactory lines.

Note on the relations of the British Medical Association to the formation of local Provident Medical Services.

The question naturally arises as to the extent to which the organization of the British Medical Association lends itself to the promotion of the objects considered in this paper. The Divisions of the Association being essentially local Medical Societies can, of course, each in its own area carry through such work for the profession provided that they are successful in including all reputable members of the profession in the district.

A difficulty arises, however, from the fact that in order that the divisional organization may cover the whole country it has been found necessary to include in the area of one Division districts which are not homogeneous as regards the conditions of practice. It may thus happen that a town may necessarily have included with it in the same Division a neighbouring country district in which the problems of Medical Practice are quite different from those of the town itself. Such cases may, perhaps, be provided for by the formation of "Sections" on principles analogous to those recently approved by the Council of the Association in the rules for the Forest of Dean Section, which rules have been slightly modified below to meet the case with which I am most intimately acquainted.

(*a*) The members of the Association included in any section, that is, part of a Division, shall be entitled to hold such meetings as they may desire for the consideration of matters of special concern to those residing within the area named, and to pass such rules as they may deem expedient for the convening and holding of such meetings. Resolutions duly passed by such meetings, which do not conflict with the rules of the Division, or with any regulations of the British Medical Association, shall be binding on the members of the section.

(*b*) The members of the section shall be free to elect such officers and executive committee as they may deem expedient, and to pass rules for their own government in relation to the election of such officers.

(*c*) The members of the section shall be entitled each year to elect, from their own members, one member of the Executive Committee of the Division for every complete twenty in the section.

(*d*) There shall annually be made from the funds of the Division a grant to the section of such amount as the Committee of the Division may deem necessary for defraying the ordinary working expenses of the section, provided that a report of the expenditure of such grant shall be made annually by the section to the Committee of the Division at such time as such Committee may direct.

(*e*) The suggested area of the section shall be submitted to the Executive Committee of the Division for approval.

(*f*) All rules adopted by the section for its own government shall be submitted to the Executive Committee of the Division for approval before coming into operation.

APPENDICES.

The following declaration, rules and agreements, have been tried in the starting and working of a Provident Medical Service and are suggested as rough models which have been found workable in practice.

A.—Declaration to be signed by each medical man resident within the area.

I will not take any new contract patients (or continue to treat contract patients) at a lower rate than that paid to the Provident Medical Service.

I will not advertise for patients directly or indirectly, or treat patients sent to me by companies or persons who advertise for patients.

I will not take any club which has discharged its Medical Officer on account of his asking the rate agreed upon for the Provident Medical Service.

I will not employ a collector to collect subscriptions from contract patients at their homes.

I will not meet professionally any medical man resident within the area of the Section or carrying on contract practice therein who is not a Medical Officer of the Association, except in cases of immediate urgency, when no fee shall be accepted. All such cases shall be reported to the Committee within a week.

I will obey the rules of the Service and do nothing contrary to its welfare.

B.—THE ——— PROVIDENT MEDICAL ASSOCIATION.

COMMITTEE FOR 190 ,

Chairman. Hon. Treasurer.

Hon. Secretary.

I.—The following are Honorary Medical Officers of the Association:

II.—The following are Active Medical Officers of the Association:

III.—The following, while refusing to join the Association, have signed a statement acceptable to the Committee:

1. The Association is intended to provide medical attendance and medicines for persons unable to pay the ordinary medical fees.

2. The Association shall, in the first instance, consist of all the registered medical men resident in the neighbourhood who can be persuaded to join it. All newcomers shall be invited to join, and the Secretary shall furnish each with a copy of the rules.

3. The medical officers shall be of two kinds: active and honorary.

4. Every medical officer, either active or honorary, shall be entitled to attend the meetings of the Association, and, if elected, to hold any office in it.

5. There shall be an annual general meeting in the month of January. During the first fortnight in December, the Hon. Secretary shall send a notice to each medical officer inviting him to nominate any candidate or candidates for the Committee for the following year. All nominations must be returned to the Hon. Secretary by the last day of the year. At least fourteen days before the date of the meeting the Hon. Secretary shall cause a list to be made of those medical officers who have signified their willingness to stand for the following year, together with the names of those who have nominated them, and shall transmit one copy of such list to every medical officer of the Association, together with the notice calling the annual general meeting. Each medical officer shall put a cross against the names of those he wishes to vote for, and shall not vote for more than eleven candidates. The voting papers shall be opened by the Chairman at the annual general meeting, and the result of the voting shall be declared at that meeting. The Committee so formed shall elect from among themselves a chairman, an hon. treasurer, and an hon. secretary. Should eleven candidates not be nominated, the Committee formed shall have power to fill up the vacancies, and in the event of any vacancy occurring in their number during the year they shall have power to fill it up.

6. A special general meeting may be called at any time by the Committee of Management, or shall be called by the Hon. Secretary at the written request of any six medical officers of the Association. Fourteen days' notice of such meeting shall be sent to each medical officer of the Association by the Hon. Secretary, with a statement of the business to be transacted, and no other matter shall be discussed.

7. Alterations or additions to the rules shall be made only at special general meetings, and the alteration or addition suggested shall be sent with the notice calling the meeting. A majority of two-thirds of the medical officers present and voting shall be required to carry any alteration or addition.

8. At all general meetings one-fourth of the medical officers shall form a quorum.

9. The Chairman, if present, shall take the chair at all meetings, and shall have a second or casting vote.

10. The Hon. Secretary shall keep minutes of all meetings, and shall at the beginning of every meeting read the minutes of the last meeting

of the same kind, and, if correct, they shall be signed by the Chairman.

11. The Secretary shall have power to call Committee meetings at any time, and shall do so at the request of the Chairman or any two members of the Committee. Three clear days' notice of Committee meetings shall be given.

12. The Committee shall transact the general business of the Association; four to form a quorum.

13. The Committee shall have power to appoint and pay one or more professional auditors to carry out any duties they think necessary.

14. The Committee shall pay all the working expenses of the Association by cheques, which shall be signed by the Hon. Treasurer and one other member of the Committee.

15. The medical officers of the Association shall inform all persons who wish to be treated by them as contract patients of the Association that the terms of the Association are per week for each patient.

16. The patients shall pay their subscriptions in advance, and shall be provided with a receipt (on a card or book), and unless they have paid up to date they shall not be entitled to treatment, and if a patient has not paid his subscriptions for a period of four weeks he shall cease to be a patient of the Association.

17. Persons wishing to join as patients shall, in the first instance, apply to the medical officer of their choice for permission to join. If he thinks them eligible he will hand their names to the collector, to whom their subscriptions will subsequently be paid. In case of a medical officer ceasing to act as an active medical officer his patients will be transferred for the ensuing quarter to whom he directs.

18. The collectors shall be appointed by the Committee, and shall be paid by salary and not by commission. No gratuity of any kind shall be given to the collectors except by the Committee.

19. The Association shall maintain one or more offices with the requisite staff, at which contract payments may be made.

20. The Committee shall, every quarter, pay the rent and other necessary expenses; and, after providing a sufficient balance at the bank, they shall divide the remainder of the money among the medical officers, in proportion to the number of patients on their respective lists.

21. All candidates are liable to be examined by the medical officer of their choice before being placed upon the list, and he may refuse or accept them as he pleases.

22. Any medical officer having a patient whom he thinks too well off to belong to the Association, shall report the matter to the Committee, who shall investigate and decide the question.

23. Every medical officer on joining the Association shall sign a properly drawn declaration (see Appendix A).

24. If the Committee become aware that any medical officer does not abide by the declaration, or that he is for any reason unfit to be a medical officer of the Association, they shall communicate with him, and if necessary they shall call a meeting of the Association to consider the case, and by a majority of two-thirds of those present and voting he may be expelled from the Association, or asked to resign, and his patients may immediately choose another doctor.

CLERK:

COLLECTORS:

To any of whom names of members may be sent by the medical officers.

MEDICAL DISTRICTS.

In large towns it has been found necessary to divide the area up into districts, so that each medical officer may state in which districts he is willing to take patients.

C.—PROVIDENT MEDICAL ASSOCIATION.

PATIENT'S CARD OF MEMBERSHIP.

Full Name.	Date of Entrance.	Age at Entry.

Patient's Address.

.....

Letter and folio of Collector's Book .....

PLEASE READ THE RULES CAREFULLY.

Object.—To provide medical advice, attendance, and medicine to persons unable to pay the ordinary medical fees.

RULES.

Only persons between — and — years of age may join, unless by special permission of their medical officer.

Candidates must be in good health when applying to join, and must be passed by their medical officer before being accepted as patients.

The weekly premium is , and it must be paid in advance, weekly, fortnightly, or monthly. Cards are issued free of charge.

Patients are in immediate benefit. Should it subsequently be discovered that they were suffering from any disease which was concealed at the time of their admission they will not be entitled to treatment. They will not be entitled to treatment for diseases brought on by their own misconduct. A domestic servant is not entitled to claim attendance at her employer's house, but may do so at her own home if such is in the medical officer's district.

In case of consultations, special arrangements as regards fees must be made.

Midwifery, vaccination, fractures and dislocations, and important surgical operations are not included in the above premium. Surgical appliances are not supplied.

Patients shall choose their own medical officer, but they may not change except at the usual quarter-days, and then only with the consent of the new medical officer. In case of removal, however, at any time to a district in which the medical officer does not attend patients of the Association, a change to another doctor may be made.

Patients, if well enough, must attend at the surgery at the hours mentioned on this card. They must bring their cards at each attendance. They must also provide their own bottles or pay for those supplied. Medicine must be called for or sent for.

Patients will not be entitled to medicine until they have been seen by the medical officer.

Patients too ill to attend at the surgery and requiring to be visited at their own homes must send their card to the surgery at the morning surgery hour. Medical officers are not bound to attend the same day to messages received after that time.

Patients allowing their premiums to get in arrear for more than a fortnight are out of benefit until their arrears are paid off. If anyone is in arrears for four weeks he must be passed again by the medical officer before being allowed to rejoin. He shall not be readmitted unless he pay up all arrears in addition to a charge of 1/- (which must be paid to the medical officer), for a family or single patient.

Patients must see that their payments are entered on the card at the time they are paid.

Patients not regularly called upon for their premiums are requested to give notice to their medical officer or to the clerk.

Clerk's Name— Collector's Name—
,, Office ,, Address—
Medical Officer..... Surgery.....

Surgery Hours: Daily (Sundays excepted) between and a.m. and between and p.m.

D.—AGREEMENT WITH THE COLLECTOR.

1. The collector is to call personally at least fortnightly on subscribers, unless written permission be given him to employ a deputy, for whose actions he shall be responsible to the Committee.

2. The collector undertakes not to collect for any other medical club or any life assurance society during his term of employment and for six months after.

3. The collector shall not tout or canvass for members, but shall direct all would-be members to apply personally to the doctor whom they desire.

4. The collector shall on a certain day in each week pay in all monies collected during the preceding week into the bank, and shall hand the treasurer a duplicate paying-in sheet on the same day.

5. The collector shall draw his salary from the bank each week after paying in his collection.

6. The collector shall receive no commission of any kind and the amount of his salary shall be subject to revision when a fresh agreement is made.

7. The collector shall produce any of his books whenever required and shall leave them all with the clerk for three days in each month, at a fixed convenient date.

8. The collector shall treat as confidential all matters concerning the Association.

9. The collector shall give a receipt on the member's card for every payment made, and shall also note on the card any visit he makes even if no money is received.

10. The collector shall find sureties or guarantees to the amount of——

11. The collector shall be liable to summary dismissal at any time by written notice from the Association if he fail in carrying out the duties. In such case he shall only be entitled to that portion of his salary due at the date of his discharge.

12. If the collector or his deputy commit any breach of Clause 2 he shall pay the Association ——— as liquidated damages for breach of contract.

13. The collector shall forthwith deliver up to the Association all the books within 48 hours after the termination of his employment, however determined.

E.— —— PROVIDENT MEDICAL ASSOCIATION.

INSTRUCTIONS TO COLLECTORS.

1. You must collect all money either personally or by your authorised deputy only.

2. You should call regularly every week, but must call at least once a fortnight on every patient, unless he is clear with his payments.

3. You must collect the exact amount for a week or weeks; that is, do not receive a part of a week's subscription.

4. Whatever sum you receive during a week, enter the whole of it for that week, marking your collecting book and card, thus in the space for the week in which no visit was made.

5. If a patient does not make any payment when you call, mark your collecting book and the card thus **X**.

6. All entries on cards and in collecting books must be made in ink, and must be made at the time the money is paid.

7. You must not tout nor canvass for patients. To a patient desiring to join you must show a complete list of the medical officers who are willing to attend patients of the Association in the district in which this patient resides, so that he might make his own choice of a medical officer.

8. You must give all new patients an entry form to be taken to the medical officer of their choice; and to him the patients must personally apply for permission to join.

9. You must not enter any patient on your books until he is passed by a medical officer.

10. Divide your patients between two books, A and B, so that while book A is at the clerk's office, book B can be used for collecting, and vice versa.

11. When any patient changes his address you must at once make the necessary alteration in your collecting book and on his card.

12. After a month's collecting has been checked by the clerk no further entries are to be made in that month.

13. Complete every column in your collecting book by name, address, age, date of joining, etc., and enter every name separately.

14. Complete every card with name, address, age, date of joining, the letter of your collecting book, A or B, and the folio on which patient's name appears.

15. If on calling on a patient you find he has paid his subscription to a medical officer or to the clerk you must at once call on the medical officer or the clerk for it.

16. Whenever a member is weeks in arrears you must fill up and send him one of the printed notices provided.

17. If, during a quarter, a member removes out of a medical officer's district, application should be made to the Hon. Secretary, who will arrange for the attendance of a new doctor.

WEEKLY:

(*a*) You must pay into the bank every Monday the exact amount taken during the preceding week; (*b*) you must send your weekly report to the clerk every Monday on the form provided for that purpose with all the particulars fully entered in; (*c*) you must, every Monday, hand the duplicate pay-in slip to the clerk; (*d*) the clerk will visit twelve patients with you each week.

MONTHLY:

(*a*) Hand your collecting books to the clerk for a few days at some agreed time each month, so that he may make up the medical officer's book.

QUARTERLY:

(*a*) Patients may only transfer from one medical officer to another at the beginning of each quarter, and before being placed on his list they must first be passed by that medical officer (see par. 17 above). (*b*) When handing in your books to the clerk for the last month of the quarter, supply him with a summary of arrears due at that quarter; that is, add up the arrears column in your collecting book.

YEARLY:

(*a*) When making out new collecting books, arrange the names in districts and streets for convenience in collecting.

In all cases of disputes on matters connected with the Association, communicate with the Hon. Secretary forthwith, giving full information.

NORTH WALES AND SHROPSHIRE BRANCH.

ANNUAL MEETING.

THE annual meeting was held at the Salop Infirmary, Shrewsbury, on July 7th. Dr. LLOYD WILLIAMS, President, in retiring from office, briefly reviewed the work of the year, and called upon Dr. E. CURETON, President-elect, to take his place.

REPORT OF COUNCIL.

The report of the Council of the Branch for the year, read by Mr. H. JONES ROBERTS, was submitted and unanimously adopted as follows:

Your Council, in presenting its first annual report, has cause to congratulate the Branch on its satisfactory condition. It has held three meetings during the year at Chester, that being the most accessible and convenient for the members from the widely-scattered area of the Branch; and, although it is situated outside the boundary, the meetings were well attended. The preliminary meetings to carry out the organization in connexion with its four Divisions were characterized by perfect unanimity and co-operation and a sincere desire to make the Branch under its present formation as successful as under the old organization as the North Wales and Shropshire Branches.

Your Council hopes the members will be satisfied with the result of its first year's working, as it has, generally speaking, justified the expectations of the more sanguine, and the fears and doubts of the others have not been realized.

It has elected 24 associate or honorary members, many of whom were members of the North Wales and Shropshire Branches under the old régime, thus showing that these gentlemen desire to keep up their connexion under the new system; and also 14 new members of the Branch, so that the numbers now greatly exceed those under the separate Branch system. Five application forms for membership have been received, but inasmuch as twenty-eight days' notice must be given every member of the Council of their names and addresses, and as three months will elapse before another Council is held, it is suggested they be provisionally elected at this meeting on the condition that they be formally elected hereafter.

The Council regrets to record the death of Mr. T. Hunter Hughes, Pwllheli, a coroner for Carnarvonshire, and a former President of the North Wales Branch, of which he was one of the oldest members, having joined in 1854; Mr. Thomas Morgan, of Montgomery, who qualified in 1849: and Mr. Hugh Prytherch, of Menai Bridge, all of whom took a warm interest in the affairs of the Association. Its finances are in a satisfactory state.

The Divisions have held successful meetings, at which the necessary routine work of organization was accomplished, and a number of papers on professional subjects were read and discussed. The subjects referred by the various Committees of the Association to the Divisions for consideration were thoroughly discussed, and their views thereon were communicated to the Representative—and in case of subjects not reported upon a free hand was given to the delegates at the Representative Meeting.

Your Council begs to record its sincere thanks to the Honorary Secretaries of Divisions for their untiring energy and devotion to the affairs of their respective districts, and it is to be hoped that their endeavours will be supplemented by prompt attendance of members at the divisional meetings and a thorough consideration before the meetings of the subjects to be discussed, many of which will be of vital importance for the well-being and consolidation of the profession generally, and thus strengthen the hands of the various Central Committees who are strenuously working to make the Association a real and effective force in all medical matters.

Your Council elected Dr. Emyr O. Price, of Bangor, President-elect for 1905, and re-elected the Honorary Secretaries. The nomination of Mr. W. Jones Morris as the Representative of the Branch on the Council of the Association being the only one, he again, for the eighteenth year in succession, retains his seat on the governing body of the Association; it is twenty-five years since he accepted office on the old Committee of Council at the annual meeting at Cork.

Annual Meeting, 1905.—It was resolved to hold the annual meeting in 1905 at Bala in the second week in July.

Vote of Thanks.—A hearty vote of thanks to Dr. Lloyd Williams for his conduct in the chair during the last year was heartily accorded.

The PRESIDENT then delivered

AN ADDRESS ON THE PRESENT CONDITIONS OF MEDICAL PRACTICE.

By EDWARD CURETON, M.D.Brux., M.B., B.Ch.Birm., M.R.C.P.Edin.,

Senior Physician, Salop Infirmary; President of the Branch.

IN rising to thank you, gentlemen, for the honour which you have conferred on me to-day by making me the first President of the newly-constituted Branch, and for the compliment which you have paid to the position which I occupy at this hospital, no one can feel more fully how far short I shall come of what is expected of a President, but this can be promised at all events, to do the best I can for the Branch, and to ask you to deal lightly with my many shortcomings; and here we Shropshire medicals wish to offer to our medical brethren over the border a most hearty welcome, and to express a hope that the more they see of us the oftener they will pay us a visit at our meetings, and let us all hope that the Association under its new rules may awaken to renewed life and professional usefulness.

Competition in Medical Education.

In thinking of a subject with which to address you to-day, it occurred to me that, having been in the profession for nearly thirty years, it may not be out of place to draw attention to a few points which have occurred to me as to medical life and experience; and at the very commencement it must strike all how difficult it must be for the student of medicine or his parents to decide by which of the many doors to the medical profession he had best try and enter, and what advantages are offered by these numerous portals, one qualifying body advertising its advantages in the medical press as

against another, and this grinder and that one ready for a fee to cram you up in a special way to pass this or that examination.

Gentlemen, is all this in the best interests of the profession and for the public good? It cannot be, it can only serve to perpetuate, and as the number of qualifying bodies is steadily on the increase, to intensify that greatest of all blots on the escutcheon of the medical man—professional jealousy. And, gentlemen, have we not in a measure to thank these professional bodies for this very thing? Do we not all remember as students, when talking of this professor or of that one, or of this medical man or of that one: "Oh! this professor is a double fellow of London and this medical practitioner is only an L.S.A." And is this going to be altered? I hope and trust it may. And how? By increasing the number of direct representatives on the General Medical Council from the rank and file of the profession, so that the body of the profession may be able to make its voice heard and its power felt over and above the present dominating influence of the various competing universities, colleges, and corporations; and yet is one not justified in taking this view by the trend of events; by the things that are happening? Look at that large body of men, the Members of the Royal College of Surgeons of England, how many years have they been knocking at the door of their own College, asking that they may have a voice in the conduct of the affairs of the College of which they are Members, but which at present is controlled by its Fellows. What interest or notice do the Colleges take of you after you have paid your fee and obtained your diploma? None! unless you break the law and suffer imprisonment, or behave infamously in a professional respect, when you will probably quickly receive the usual intimation from them.

Of course, more or less laudable ambition lies in every man's breast and a very natural desire to excel, and this must account for the supply and demand on the part of these medical bodies. But what is contended here is that there should be one and only one Examining Board conducted by the State, by which all who wish to qualify must enter, and then afterwards he or she can apply to any of the various universities or colleges, if desirous of showing any special attainments in any branch of the profession with a view to a hospital appointment or some special branch.

The Privy Council will not move in this direction without being influenced by the House of Commons, and here we have no medical members as such; those medical men who are in the House are outside the burden and heat of professional life, and cannot be expected to take any but a platonic interest in the medical profession.

Gentlemen, I think and believe, although I hope I am quite wrong, that we as a body are hopeless, I believe nothing on earth will ever induce the members of the medical profession all to pull together for their own good and advantage. Either we are careless or forgetful—or what is it? The only name that suits is professional apathy, otherwise pride of the wrong sort. What do all other communities of men do to protect their own interests? Why, combine! Can you get doctors to combine for their own interest? Never! Look at medical defence. What proportion of the profession have made provision against blackmailing, and how many took the trouble to return the circular sent to them by the Association on this very important subject. And here I would ask, are we all businesslike enough and do we all make that provision for a rainy day, or trust to chance, or, sadder still, do we all try and make every possible provision for our belongings in the case of our death; and here the weekly appeals in the British Medical Journal and the *Lancet*, and the sad tales that reach those who have to do with the Medical Benevolent College and Fund, make it obvious that something more can be done to mitigate the trials that may at any moment assail the families of those whose calling is of such a personal character.

Turning to another point in the changes in medical training, it has struck me that a great mistake was made in the "abolition of pupilage," with the consequent ignorance of the ways of private practice in the case of the recently qualified who come to assist us in our work, and the ignorance displayed by them of much knowledge of prescribing. You have probably many of you experienced this; and six or twelve months' assistantship prior to qualification would eradicate all this, and, in addition, it would turn out a far more useful medical man. We know that such a provision is suggested by the General Medical Council in the case of the fifth-year student, but it is not taken advantage of to the extent which it should be by the final student.

Contract Practice.

Some improvement has taken place in large industrial centres where contract practice prevails to a large extent, but only here and there; and this has come about through the spirited action of a few medical men doing the one and only thing we need—combining together to prevent our calling being "sweated" and ourselves "undersold"; and, as contract practice will prevail, it can only be pride which prevents all who do this work pulling together in a body; although recently a laudable attempt has been made through the various Branches to get at the bottom of the club question, it was done in such a way that here, we in Shropshire, did not think it workable, and combination in Birmingham soon put a stop to the mushroom growth of the cheap consultant.

The Title of "Doctor."

What a babel of voices and storm of letters have appeared in the medical press around the magic word "doctor." As it seems to me, good or bad taste notwithstanding, as long as the public call us doctors and speak of us individually as such, why, in Heaven's name, should not every one have the legal right when he is qualified to call himself what the public have decided he is to be called, and what we cannot prevent the public calling us: this seems at all events a solution of the difficulty.

Vaccination.

Since the new Act came into force and better pay, more people are being vaccinated; but it can never be fair to all the profession until every medical man in general practice is a public vaccinator, and all who are vaccinated are paid for by the State. Then, and then only, can we have efficient vaccination and fair play all round to the profession. As it is now, patients who can well afford it get vaccinated for nothing, and however careful a public vaccinator may be, when calling on another man's patient to offer to vaccinate the infant, his visit is often resented by the attending practitioner, and a regrettable misunderstanding may ensue.

The Profession and Public Affairs.

Our profession is not, as a rule, sufficiently represented on public bodies, and it is to the disadvantage and loss of the profession that this is so, as it so frequently happens that medical questions turn up, and in the absence of a medical man to explain the matter in hand a most erroneous view is taken by the non-medical mind, and on such bodies as county councils and Boards of Guardians the great use made of medical men in these bodies is evidenced in the daily press. And here it may not be out of place to instance that the creation of the appointment of County Medical Officer of Health for Shropshire was largely due to the work of a medical man and a member of our Branch, and all honour to him for having done so.

Gentlemen, I wish we were stronger in the Councils of the State, and, also, that this could be brought about without having to sacrifice any of our principles which we justly hold so dear.

An anomaly that strikes me here is this. The Infectious Disease Notification Act compels all practitioners to notify, under a penalty, the presence of an infectious disease, and pays a fee for so doing. But for the much fuller and as important, if not more so, medical certificate of the cause of death for the purpose of registration no fee is allowed, but it must be given free under a penalty. Is this just? Certainly not, and we can only put a stop to it by combining together and compelling payment.

Another point that has struck me since the introduction, first, of compulsory education and Board schools, and now in the new Education Act, and that is, that there is no medical inspection of the children as to their health and mental capacity. All are treated alike, no matter how they differ in intelligence, and also the methods of conveying knowledge is so distasteful that the children are glad of any excuse to stay away, even to the extent of, in some instances, becoming truants, and eventually, it may be, being educated in a reformatory.

No attempt appears to be made by the educational authority, nor, so far as I know, is there any adequate provision in the Act for the daily inspection of the children by a medical man, who alone would be able to detect the first signs of infectious disease, and, it may be, stay a wholesale epidemic, attended, it may be in several instances, by permanent disablement and often death as a consequence; because beyond all question the great breeding ground of certain kinds of epidemic disease is our free public schools, and it must be

admitted that any State which compels all her children to be brought to school should make it, as far as lies in her power, as difficult for a child attending one of its schools to contract or convey infectious disease as it is in private schools or private life. And this can only be done by having medical officers to all these schools. And surely our future generation ought all to be examined when it commences its studies, and all children should be daily inspected, to ward off, as far as possible, preventable disease, and it may be, as is frequently the case, the closure of the school and the great waste of time and money paid to officials whilst the school is shut.

Such an arrangement as this I have read Mrs. Watt Smyth records as working splendidly in the United States and in Germany, who also refers to the excellent results from physical exercise whilst the body is young and growing, and it would not take up much time to measure the height and register the weight of every child each term, as is done at most public schools.

Consultations.

It would seem best that these should be freely held amongst us for the patients' good and our own satisfaction, and to share some of the responsibility, always bearing in mind that we are oftener than not called in in critical cases more for the satisfaction of the friends than for anything else, and never to give a brother medical away but loyally to support him in his anxious work, so that as far as possible to leave the practitioner in charge more firmly established in the estimation of the patient and his friends than he was before the consultation took place.

Midwifery.

It is impossible to over-estimate the enormous gain that this branch of medicine has achieved since the introduction of antiseptics and the resulting fall in mortality in lying-in cases, and the great boon that chloroform is to the patient; but the profession has not quite decided whether to continue the daily douching or not after labour; and, as to the use of forceps, some men get blamed for their too frequent use, while, on the other hand, others are found fault with for delaying to use them until later on in the progress of the case. One would suppose that the personal equation of skill and patience or otherwise will explain this seeming anomaly.

Professional Fees in General Practice.

This important subject has not always received the attention it should at the hands of the profession, and there appears still to be a good deal of want of uniformity in respect to charges, so different to the law where all these are cut and dried and businesslike. One often gets asked what the proper charge for such and such work should be: and although some years ago a professional tariff was issued by one of the two Branches then existing in this locality, it was not of universal application, and a few years ago I ventured to suggest a remedy for this state of things by calling the attention of members of the Association to the fact that now there is published each year in the 2s. *Whitaker* a regular professional tariff of fees, applicable more or less to all cases, and which is being used by the legal profession in taxing our fees. I just wish to remind this Branch of its existence, and in doing so to say that the general practitioner who does not send out his accounts regularly, is doing a grave injustice to his profession and to himself.

The Need for Union.

Gentlemen, the times are altering fast, and, just as in our schooldays manners and deportment used to be taught, so now in our profession the shiny silk hat and black frockcoat and its consequent mannerism and deportment are becoming less frequent, and the advent of the bicycle and motor-car has necessitated other methods of dress. Still, it is very refreshing now and then to meet one of these gentlemen of the old school, as I had the good fortune to do not long ago, and had a little talk with him. He was speaking very scathingly of the young doctor, and I well recollect he said: "The young medical man nowadays does not know how to enter a sick bedroom, and when he gets there he does not know how to leave it"; and then he said, when he was talking how lightly he was esteemed by the young doctor: "Ah, well; the young doctors think we are fools, but we know they are."

Gentlemen, a great deal of this is a twice-told tale, and those of us who are gone some way on their journey in professional life may be excused if they pause awhile in the way and give expression to a few thoughts which have impressed themselves on the mind, and we may be sure that the oftener we meet one another the better it is for us.

The interchange of thought and idea is good for us and our patients, and it makes our work the easier and pleasanter, and, looking over the vexations and anxieties of practice, there are many things to compensate us. It is a calling where a high-minded gentleman will always shine, where honour and integrity are held in high esteem, because, gentlemen, beyond all question we are the cleanest-handed body of men to be found, who work year in, year out, for the relief of suffering humanity.

It is hoped that these few fragmentary remarks will be received in the same spirit in which they are given: and, above all, what most impresses me in this age is the urgent need for us all to hold together to protect what not only concerns ourselves, but to look further afield and see if we cannot shield and strengthen a weaker brother—such a one as is obliged to do contract work, club, or what not, and those of us who have no such work are the very ones who can best help those who cannot so well help themselves.

At our annual meetings the various Sections comprise all the scientific matter, but the daily round of the rank and file is left to the Ethical and Political Committees, and so we do not get them all to join our Association as we could wish, because our Association should be the hall-mark of respectability.

Finally, let me suggest as our watchword, "Unity," and as our two mottoes:

(1) Doing the very best we can for all our patients.

(2) Taking care of our beloved profession, and in so doing we shall be trying to do our duty.

Vote of Thanks.—A vote of thanks to the President for his interesting and able address was, on the motion of Dr. LLOYD ROBERTS, Colwyn Bay, seconded by Dr. KEYWORTH, of Wem, unanimously adopted.

Clinical Papers and Demonstrations.—Sir WILLIAM MITCHELL BANKS, of Liverpool, read a paper on excision of the elbow, and exhibited the two last patients he had operated upon displaying most useful and strong limbs.—Dr. EDGE, of Wolverhampton, read the notes of a case of haemorrhage into the peritoneal cavity from a vein in a twisted ovarian pedicle, detailing the steps taken at the operation and the subsequent treatment to a successful issue.—A demonstration of *x*-ray apparatus was given by Dr. SALT, Radiographer to the Salop Infirmary.

Dinner.—In the evening the members with some guests, including the Rev. Prebendary Moss, Headmaster of the Shrewsbury School, dined together at the Music Hall.—A hearty vote of thanks was passed to Dr. H. H. B. MacLeod for organizing a most successful and pleasant meeting.

SOUTH CARNARVON AND MERIONETH DIVISION.

THE annual meeting of this Division was held at Barmouth.

Election of Officers.—The officers for the ensuing year were appointed as follows: *Chairman:* Richard Jones, M.D., D.P.H. *Vice-Chairman:* H. P. Rowlands, M.D. *Secretary:* Mr. W. Jones Morris. *Representative for Representative Meeting:* Dr. Richard Jones. *Representatives on Branch Council:* Mr. Roger Hughes and Mr. H. Gladstone Jones. *Representatives on Executive Committee of Division:* Hugh Jones, M.B., and W. Walter Williams, M.B.

Papers.—Papers were read by Drs. HILL ABRAM (Liverpool), Professor BRIGGS, G. P. NEWBOLT, and W. THELWALL THOMAS, and a most interesting discussion followed, taken part in by a large number of those present, who included Fleet Surgeon BANKART, M.V.O., of the Royal yacht *Victoria and Albert*.

Annual Representative Meeting.—The resolutions on the various subjects remitted by the Committees of the Association were communicated to the Representative.

It was resolved to hold the next divisional meeting at Bala in the third week in August.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:

MONMOUTHSHIRE DIVISION.

A SPECIAL meeting of this Division was held in the Newport and County Hospital on Friday, July 8th, at 3.30 p.m., Dr. G. A. BROWN in the chair. The members present were: Drs. Glendinning, Mason, Hamilton, Neilson, J. McGinn, D. J. Jones, Coulter, Coumbe, O'Keefe, Paton, Gamble, Marsh, Garrod-Thomas, Greer.

Confirmation of Minutes.—The minutes of the last annual meeting were read and confirmed.

Midwifery Training.—The report of the Executive Committee and the Special Subcommittee on the Monmouthshire Training Centre for Midwives was received and approved. It showed that the efforts made were likely to be successful, that private generosity had enabled the Committee to press the establishment of the centre, and that a request made to

the Directors of the Newport and County Hospital by a deputation to consider the formation of a training department in connexion with the hospital, so that pupil nurses could get practical instruction there, had been favourably received. Deputations were also to meet the Monmouthshire County Council and the Newport Corporation, and it was expected that these public bodies would give their sympathy and support. The members of the Special Subcommittee are Drs. Garrod-Thomas, Marsh, Paton, Howard-Jones, and Greer.

Contract Practice.—A draft of the suggested rules as to contract practice and appointments was read and discussed.—Dr. Marsh proposed and Dr. Gamble seconded that a copy be supplied to each member of the Division, and that they be considered at a special meeting to be held immediately before the next ordinary meeting at Pontypool.

Model Rules.—The suggested model rule as to vacancies among officers was adopted.

Representative Meeting.—Instructions were given to the Representative (Dr. W. D. Steel), on the motion of Dr. Gamble, seconded by Dr. O'Keefe, to support the scheme of the Association to run candidates for all the vacancies in the direct representation on the General Medical Council.

Registration of Nurses.—With regard to the registration of nurses, and the question of information supplied to coroners, the representative was instructed to exercise his own judgement. The revised Medical Acts Amendment Bill was considered and approved, with the exception, on the motion of Dr. McGinn, seconded by Dr. Mason, that the annual fee be 10s. 6d.

Instruction.—The Honorary Secretary was instructed to forward the tickets for Porthcawl Rest to the Newport and County Hospital as a small acknowledgement of many courtesies of the Directors to the members of the Division.

Vote of Congratulation.—On the motion of Dr. Glendinning, seconded by Dr. Marsh and supported by the Chairman, a vote of hearty congratulation was passed to Dr. James on his election to the distinguished position of High Sheriff of the County of Monmouthshire.

OXFORD AND READING BRANCH:

Oxford Division.

At the annual meeting of this Division, held on July 6th, the following business was transacted:

Election of Officers.—Mr. A. J. Drew, F.R.C.S., Oxford, was inducted as Chairman; Dr. Bloxsome, Fairford, was elected Chairman-elect.

Vice-Chairman.—Mr. Innes Griffin, of Banbury, retiring Chairman, was elected Vice-Chairman; the other Vice-Chairman being Mr. Doyne, of Oxford.

Divisional Representative.—Mr. Innes Griffin, of Banbury, was elected, vice Dr. Collier.

Divisional Council.—Two new members were elected, namely, Dr. Collier, Oxford; and Surgeon-Captain Hall, of Islip, to serve on the Council with the remaining members, namely, Dr. Proudfoot, Dr. Nelson, Dr. Taylor, and Dr. E. Mallam.

The Council's Report was read and adopted, and the names of the following eleven new members elected this year were read out, namely: Surgeon-General Bradshaw, C.B., Oxford; Dr. Gustav Mann, Oxford; Dr. Vernon, Oxford; Dr. Hitchings, Oxford; Mr. Ogilvie, Oxford; Dr. E. C. Bevers, Oxford; Mr. Dowling, Oxford; Dr. Haldane, Oxford; Mr. R. H. Sankey, Littlemore; Mr. H. B. Long, Bicester; Dr. J. Miller, Warneford Asylum.

LANCASHIRE AND CHESHIRE BRANCH:

Southport Division.

A special meeting of this Division was held on July 13th to consider instructions to the Representative.

General Medical Council.—The scheme for nomination by the Association of candidates for the General Medical Council was approved in principle and detail.

Registration of Nurses.—A resolution was passed approving of the registration of nurses, including midwifery nurses, who should have the three years' training, of which at least one should be in a lying-in hospital, but that the penal clauses should not apply to nurses who do not claim to be registered.

Information to Coroners.—Respecting this question it was resolved:

That it is desirable that coroners should be empowered to pay fees for information obtained privately from medical practitioners, and that where inquests are held the medical practitioners should be called as witnesses.

Medical Acts Amendment.—The revised Bill was approved generally, but paragraph 2 (Clause 7) respecting the enforced display of names of assistants or deputies was objected to as vexatious.

Consultation between Witnesses.—At the annual meeting on May 25th the following resolution was passed:

That this Division is of opinion that the consultation of medical witnesses engaged on either side in legal cases is impracticable and undesirable as a rule for general observance.

Hydropathic Advertisements.—At a special meeting on March 7th it was unanimously resolved:

That this meeting of the Southport Division strongly disapproves of the advertising in the lay newspapers and other advertising media of the names of medical practitioners as medical officers of institutions, especially those of a commercial character such as hydropathic establishments, and requests the Ethical Committee of the Association to take steps to obtain the condemnation of the practice by the General Medical Council.

METROPOLITAN COUNTIES BRANCH:

City Division.

An ordinary general meeting of this Division was held at the London Institution at 4 p.m. on July 14th; Mr. Hope Grant, Chairman of the Division, presided. The following are the more important matters dealt with and resolutions passed at the meeting:

Correspondence.—Letter and memorandum received from the Exeter Division; resolved that the receipt of these be acknowledged. Letter from Secretary of Metropolitan Counties Branch *re* alteration of Branch Rules; resolved that a Committee of three members—namely, the Chairman, Secretary, and Dr. Major Greenwood—be formed to go through the rules and report as to what alterations were necessary. Letter from Stratford Division *re* scale of fees under the Midwives Act; resolved that the receipt of the letter be acknowledged.

Nomination by the Association of Candidates for the General Medical Council.—Resolved: (1) That this Division considers it advisable that candidates should be nominated and supported for election on the General Medical Council under the auspices of the British Medical Association. (2) That this Division approves of the scheme drawn up by the Medico-Political Committee.

Registration of Nurses.—Resolved: That this Division is of opinion that the registration of nurses by the State is advisable.

Information supplied by Medical Men to Coroners.—Resolved: That this Division is of opinion that it is advisable that the British Medical Association should make a pronouncement with the object of securing a proper recognition of the true relation of medical practitioners to the State in this matter.

Revised Medical Acts Amendment Bill.—Resolved: That this Division approves of the recommendation of the Medico-Political Committee to the Representative Meeting that after matters of principle have been determined by the approaching meeting at Oxford, the Bill should be referred back to the Committee for further consideration of details and points of drafting, and submitted again to the Divisions, with a view to final consideration and adoption if approved by the Annual Representative Meeting of 1905.

After some discussion on the details of the revised Bill, it was resolved that further consideration be deferred till the time when the revised Bill is again brought before the notice of the Division.

The Representative in Representative Meetings was instructed to vote on the questions discussed in accordance with the resolutions passed by the Division.

LEINSTER BRANCH:

East Leinster Division.

A meeting of this Division was held on Friday, June 24th, in the Royal College of Physicians, Dublin.

Election of Officers.—The officers elected for the ensuing year were as follows:—*Chairman:* Isaac Usher, J.P. (Dundrum); *Vice-Chairman:* H. C. Earl, M.D.; *Honorary Secretary:* R. C. Peacocke, M.D. (Blackrock); *Representative:* J. Wallace Boyce, M.D. *Representatives on Branch Council:* W. R. Dawson, M.D.; H. C. Earl, M.D.; J. Mason, M.B.; J. F. Pollock, M.D.; Isaac Usher, J.P. *Ordinary Members of Divisional Executive:* C. J. O'Connor, F.R.C.S. (Celbridge); E. W. Lynch; J. D. Hillis, F.R.C.S.; R. L. Heard, M.D.; P. M. Laffan.

GLASGOW AND WEST OF SCOTLAND BRANCH.

A recent election of Representatives for the Branch on the Council resulted as follows: Dr. Bruce Goff, 229 votes; Dr James Hamilton, 207 votes; Dr. L. Muir, 97 votes.

ANNUAL REPRESENTATIVE MEETING.

LIST OF REPRESENTATIVES RETURNED FOR THE ANNUAL REPRESENTATIVE MEETING TO BE HELD AT OXFORD ON JULY 26TH, 1904.

The total number of Representatives returned is 153.

Branch.	Division.	Representative.
ABERDEEN	Aberdeen	Dr. Ashley W. Mackintosh.
	Orkney	
	Shetland	
BATH AND BRISTOL	Bath	Dr. J. Pearse.
	Trowbridge	
	Bristol	Dr. J. Michell Clarke.
BIRMINGHAM	Bromsgrove	M. A. Messiter, Esq.
	Dudley	
	Central Birmingham	Dr. Thomas Wilson.
	Coventry	Dr. Milner Moore.
	Nuneaton and Tamworth	
	Warwick and Leamington	Dr. T. W. Thursfield.
	West Bromwich	Dr. J. H. H. Manley.
BORDER COUNTIES	North Cumberland	Dr. F. R. Hill.
	West Cumberland	
	Scottish	Dr. F. H. Clarke.
CAMBRIDGE AND HUNTINGDON		Henry Stear, Esq.
CONNAUGHT	Mid Connaught	No return.
	North Connaught	
	South Connaught	
	Enniskillen	
	Monaghan and Cavan	
	Omagh	
DORSET AND WEST HANTS	Bournemouth	Dr. Wm. Johnson Smyth.
	West Dorset	Dr. T. Henry Jones.
DUNDEE		Dr. D. M. Greig.
EAST ANGLIAN	North-East Essex	W. W. Baxter, Esq.
	Mid Essex	Lieutenant-Colonel S. Westcott, C.M.G., R.A.M.C.
	South Essex	
	Norwich	H. A. Ballance, Esq., M.S.
	West Norfolk	
	Mid Norfolk	Dr. J. T. Skrimshire.
	East Norfolk	A. C. Mayo, Esq.
	North Suffolk	
	West Suffolk	G. S. Elliston, Esq.
	South Suffolk	
EAST YORKS AND NORTH LINCOLN	East Yorks	Dr. James McNidder.
	North Lincoln	
EDINBURGH	The Lothians	Dr. A. M. Easterbrook.
	North-East Edinburgh	Dr. Jas. Carmichael.
	North-West Edinburgh	James W. B. Hodsdon, Esq.
	South-Eastern Counties	Dr. W. Blair.
	South Edinburgh	Dr. G. W. S. Paterson.
FIFE		Dr. H. W. Laing.
GLASGOW AND WEST OF SCOTLAND	Ayrshire	R. Girvan, Esq.
	Dumbarton and Argyllshire	Dr. John Gilmour.
	Glasgow Central	Dr. T. K. Monro.
	Glasgow Eastern	Dr. William Patrick.
	Glasgow North-West	Dr. J. G. Gray.
	Glasgow Southern	Dr. C. E. Robertson.
	Lanarkshire	Dr. Bruce Goff.
	Renfrewshire	Dr. James Lawrie.
GLOUCESTERSHIRE		Dr. G. Bagot Ferguson.
LANCASHIRE AND CHESHIRE	Altrincham	T. W. H. Garstang, Esq.
	Ashton-under-Lyne	Dr. W. White.
	Atherton	
	Birkenhead	Dr. J. Lambert.
	Blackburn	E. H. T. Nash, Esq.
	Burnley	
	Blackpool	Dr. F. J. H. Coutts.
	Isle of Man	
	Bolton	Jas. Young, Esq.
	Bury	Dr. Robert Mitchell.
	Rochdale	
	Chester	Dr. H. W. King.
	Crewe	
	Leigh	Dr. F. Rees.
	Wigan	
	Liverpool (Bootle)	Joseph Walker, Esq.
	Liverpool (Central)	Dr. A. Gordon Gillan
	Liverpool (Northern)	Dr. E. T. Davies
	Liverpool (Southern)	Dr. J. R. Logan
	Liverpool (Western)	Dr. K. A. Grossmann.
	Manchester (Central)	W. G. Booth, Esq.
	Manchester (North)	Dr. G. H. Broadbent.
	Manchester (Salford)	R. H. Wolstenholme.
	Manchester (South)	S. Bagley, Esq.
	Manchester (West)	Dr. J. Brassey Brierley.
	Oldham	T. Fawsitt, Esq.
	Preston	Dr. D. Turnbull Smith.
	St. Helens	No Return
	Warrington	
	Southport	Dr. F. J. Baildon.
	Stockport and Macclesfield	Dr. John B. Hughes.
LEINSTER	Dublin	Arthur Chance, Esq., F.R.C.S.
	East Leinster	Dr. J. Wallace Boyce.
	Mid Leinster	No Return
	North Leinster	
	North-West Leinster	
	South-East Leinster	
METROPOLITAN COUNTIES	Chelsea	Dr. Wm. A. Bonney.
	City	Dr. E. W. Goodall.
	Ealing	Dr. J. D. Windle.
	Watford	
	Hampstead	R. H. Wellington, Esq.
	Kensington	Dr. G. J. Crawford Thomson.
	Lambeth	Dr. T. B. Hyslop.
	Marylebone	Sir Victor Horsley, F.R.S.
	Richmond	Dr. R. L. Langdon-Down.
	St. Pancras	Dr. Walter Smith.
	Stratford	Percy Rose, Esq.
	Tottenham	Dr. J. R. Fuller.
	Walthamstow	Dr. C. J. Morton.
	Wandsworth	Dr. M. G. Biggs.
	Westminster	Dr. W. Ewart.
MIDLAND	Boston	O. W. Pilcher, Esq.
	Lincoln	
	Stamford	
	Derby	W. St. A. St. John, Esq.
	Leicester	Dr. R. Sevestre.
	Nottingham	Dr. F. H. Jacob.
MUNSTER	North Munster	Professor H. Corby, M.D.
	South Munster	
	West Munster	
NORTH OF ENGLAND	Bishop Auckland	Dr. John Paxton.
	Chester-le-Street	
	Durham	
	Blyth	Dr. R. Laing.
	Morpeth	
	North Northumberland	
	Cleveland	G. Stephens Pope, Esq.
	Consett	Dr. Alfred Cox.
	Gateshead	
	Darlington	Dr. G. Victor Miller.
	Hartlepool	
	Stockton	
	Newcastle-on-Tyne	Dr. A. T. Wear.
	Hexham	Dr. L. G. Fraser.
	Tyneside	
	South Shields	Dr. Henry Goudie.
	Sunderland	D. F. Todd, Esq.
NORTHERN COUNTIES OF SCOTLAND		Dr. J. M. Moir.
NORTH LANCASHIRE AND SOUTH WESTMORLAND	Furness	Dr. B. R. Johnston.
	Kendal	
	Lancaster	Dr. H. F. Oldham.
NORTH WALES AND SHROPSHIRE	Denbigh and Flint	E. D. Evans, Esq.
	North Carnarvon and Anglesea	Dr. Emyr Owen Price.
	Shropshire, Montgomeryshire, and Radnorshire	Dr. G. H. Keyworth.
	South Carnarvon and Merioneth	Dr. Richard Jones.
OXFORD AND READING	Maidenhead	J. H. Walters, Esq.
	Reading	
	Oxford	Dr. Innes Griffin.
PERTHSHIRE		Dr. A. Trotter.
SOUTH-EASTERN	Ashford	Dr. A. E. Larking.
	Dover	
	Folkestone	
	Brighton	W. J. Stephens, Esq.
	Bromley	Arthur Maude, Esq.
	Sevenoaks	
	Chichester and Worthing	Dr. F. Hinds.
	Horsham	
	Croydon	Dr. J. J. Macan.
	Dartford	C. T. W. Hirsch, Esq.
	Guildford	No return.
	Hastings	Dr. C. H. Allfrey.
	Eastbourne	
	Isle of Thanet	
	Faversham	Dr. W. Gosse.
	Canterbury	
	Maidstone	Dr. W. Douglas.
	Rochester and Chatham	
	Norwood	John Rand, Esq.
	Reigate	Dr. John Walters.
	Tunbridge Wells	Dr. C. R. Watson.
SOUTH-EASTERN OF IRELAND	Carlow	Dr. R. R. O'Brien.
	Kilkenny	
	Waterford	
SOUTHERN	Isle of Wight	Dr. R. Robertson.
	Portsmouth	Mr. John Ward Cousins.
	Salisbury	C. R. Straton, Esq.
	Southampton	Dr. A. A. MacKeith.
	Guernsey and Alderney	
	Jersey	
	Winchester	David Browne, Esq.
SOUTH MIDLAND	Aylesbury	Dr. E. O. Turner.
	Bedford and Herts	Dr. R. H. Coombs.
	Northamptonshire	C. J. Evans, Esq.
SOUTH WALES AND MONMOUTHSHIRE	Cardiff	Dr. J. Tatham Thomlinson.
	Monmouth	Dr. W. D. Steel.
	North Glamorgan and Brecknock	Evan N. Davies, Esq.
	South West Wales	D. J. Williams, Esq., F.R.C.S.
	Swansea	Dr. H. A. Latimer.
SOUTH-WESTERN	Devonport	A. D. Williams, Esq.
	Exeter	Dr. John Miller.
	Barnstaple	
	Newton Abbot	Dr. W. Odell.
	Plymouth	G. Jackson, Esq.
	Truro	W. Whitworth, Esq.
STAFFORDSHIRE	Mid Staffordshire	Dr. W. G. Lowe.
	North Staffordshire	Dr. W. Hind.
	South Staffordshire	Dr. T. Ridley Bailey.
STIRLING		Dr. R. C. Highet.
ULSTER	Ballymoney, North Antrim, and East Derry	Dr. J. G. Cooke.
	Derry	
	Belfast	Dr. A. B. Mitchell.
	Enniskillen	
	Monaghan and Cavan	No return.
	Omagh	
	Portadown and West Down	Dr. J. S. Darling.
WEST SOMERSET		Dr. J. A. Macdonald.
WORCESTERSHIRE AND HEREFORDSHIRE	Hereford	Dr. Paul Chapman.
	Worcester	Dr. Stanley Haynes.
YORKSHIRE	Bradford	Dr. W. H. Horrocks.
	Halifax	No return.
	Huddersfield	
	Harrogate	
	Richmond and Northallerton	Dr. Charles Gibson.
	Leeds	Dr. James Allen.
	Sheffield	G. E. Mould, Esq.
	Wakefield and Doncaster	Dr. C. J. McLean.
	York	W. J. Jalland, Esq.
	Scarborough	
COLONIAL	Cape of Good Hope	Dr. E. B. Fuller.
	Colombo and Ceylon	Dr. E. R. Lourensz.
	South Australia	Dr. Alfred Wigg.
	Malta and Mediterranean	Professor S. Grech.
	Grahamstown	Dr. J. B. Greathead
	South Indian and Madras	Colonel T. H. Pope.

DEPUTIES.

DUNDEE	Dundee	Dr. J. Mackie Whyte, vice Dr. D. M. Greig.
FIFE	Fife	Dr. W. E. Henderson, vice Dr. H. W. Laing.
LANCASHIRE AND CHESHIRE	Manchester West	Dr. J. S. Prowse, vice Dr. J. Brassey Brierley.
	Southport	Dr. Stanley A. Gill, vice Dr. F. J. Baildon.
SOUTH-EASTERN	Ashford, Dover, and Folkestone	Dr. P. V. Dodd, vice Dr. A. E. Larking.

SEVENTY-SECOND ANNUAL MEETING

OF THE

British Medical Association.

OXFORD, 1904.

THE seventy-second annual meeting of the British Medical Association will be held at Oxford on Tuesday, Wednesday, Thursday, and Friday, July 26th, 27th, 28th, and 29th, 1904.

President: THOMAS DRYSLWYN GRIFFITHS, M.D.Lond., M.R.C.S., Swansea.

President-elect: WILLIAM COLLIER, M.D., F.R.C.P.Lond., Physician, Radcliffe Infirmary, Oxford, and Litchfield Lecturer in Medicine, University of Oxford.

Chairman of Representative Meetings: Sir VICTOR HORSLEY, F.R.S., Surgeon, University College Hospital; and Surgeon, National Hospital for the Paralysed and Epileptic, London.

Chairman of Council: ANDREW CLARK, F.R.C.S., Surgeon to the Middlesex Hospital and Lecturer on the Principles and Practice of Surgery.

Treasurer: EDWARD MARKHAM SKERRITT, M.D., F.R.C.P. Lond., Senior Physician to the Bristol General Hospital; Professor of Medicine, University College, Bristol.

The Reception Room will be arranged in the Examination Schools, High Street.

The General and Representative Meetings will also be held in these Schools.

The general Addresses will be delivered in the Sheldonian Theatre.

An Address in Medicine will be delivered by Sir WILLIAM SELBY CHURCH, Bart., K.C.B., M.D.

An Address in Surgery will be delivered by Sir WILLIAM MACEWEN, M.D.. F.R.C.S., LL.D.

A popular lecture will be delivered by Dr. G. BAGOT FERGUSON, F.R.C.S., M.Ch.Oxon., who was President of the British Medical Association when the annual meeting was held in Cheltenham in 1901. The lecture will be given in the Town Hall on Thursday evening, July 28th.

SECTIONS.

The annual meeting this year will comprise 14 Sections as shown in the subjoined list. Except where otherwise stated each Section will meet on Wednesday, July 27th, Thursday, July 28th, and Friday, July 29th, at 10 a.m. on each day and will adjourn at 1 p.m.

The president, vice-president and secretaries of each Section constitute a committee of reference for that Section.

No paper must exceed 15 minutes in reading, and no subsequent speech must exceed 10 minutes.

The text of papers submitted for publication in the BRITISH MEDICAL JOURNAL as part of the report of the Section should represent what is actually read in the Section.

Each author should hand the text of his paper in proper form for publication to one of the honorary secretaries of the Section immediately it has been read, or at the latest at the end of the day's meeting of the Section.

Papers read are the property of the British Medical Association and cannot be published elsewhere than in the BRITISH MEDICAL JOURNAL without special permission. Papers cannot be taken as read. If not read they form no part of the proceedings of the Section.

In response to a desire expressed by many members an attempt has been made to publish abstracts of papers introducing the special discussions in the several Sections at an earlier date than usual. A certain number appeared in the SUPPLEMENTS dated June 11th and July 9th, and references to them will be duly found hereinunder.

The Sections will be housed in rooms in the University Museum, with the exception of the Sections of Ophthalmology and Dental Surgery, which will be held in Keble College.

SECTION OF MEDICINE.

*Large Lecture Room in Museum.**

President: WALTER TYRRELL BROOKS, M.B., Oxford. *Vice-Presidents:* PATRICK JOHN CREMEN, M.D., Cork; THEODORE DYKE ACLAND, M.D., London; GUSTAVE SCHORSTEIN, M.B., London. *Honorary Secretaries:* ASHLEY WATSON MACKINTOSH, M.D., 9, Bonaccord Square, Aberdeen; WILLIAM CECIL BOSANQUET, M.D., 117A, Harley Street, W.; WILLIAM ARTHUR PERNOW WATERS, M.B., 99, Holywell, Oxford.

The Committee of Reference for this Section has chosen the following subjects for discussion:

A. THE TREATMENT OF TUBERCULOUS PLEURAL EFFUSION AND PNEUMOTHORAX.

B. THE SERUM TREATMENT OF DISEASE.

C. THE TREATMENT OF CHRONIC RENAL DISEASE.

Discussion A. will be introduced by Professor W. OSLER, F.R.S., Professor of Medicine in the Johns Hopkins University, Baltimore. He will be followed by Sir W. Whitla, Professor Finlay, Dr. J. Mitchell Bruce, Dr. A. James, Dr. G. A. Gibson, Dr. Philip, Mr. Stanley Boyd, Dr. J. J. Perkins, and Dr. N. Raw.

Discussion B. will be introduced by Dr. E. W. GOODALL, Medical Superintendent of the Eastern Hospital, N.E., a synopsis of whose remarks will be found at page 169 of the SUPPLEMENT dated June 11th. He will be followed by Professor G. Sims Woodhead, Dr. F. F. Caiger, Dr. C. J. Martin, F.R.S., Dr. A. E. Wright, Mr. Cantlie, and Dr. W. Bulloch. This discussion will be held conjointly with the Section of Pathology.

Discussion C. will be introduced by Dr. W. HALE WHITE, Physician to Guy's Hospital; an outline of his paper was published in the SUPPLEMENT dated July 9th, p. 20. Dr. Hale White will be followed by Professor v. Noorden, Sir John William Moore, Sir W. Whitla, Dr. Goodhart, Dr. Byrom Bramwell, Professor R. Saundby, Dr. J. Finlayson, Dr. Samuel West, and Dr. J. Rose Bradford, F.R.S.

The following papers have been accepted in addition to those of Drs. Mackenzie and H. O. Nicholson on the Maternal Heart in Pregnancy and the Management of Cases of Pregnancy complicated by Heart Disease, synopses of which appeared in the SUPPLEMENT quoted:

Dr. MACRAE: Acute Leukaemia.
Dr. SAMUEL WEST: A Disseminated Form of Croupous Pneumonia in Children, or Primary Broncho-pneumonia.
Dr. ARMSTRONG: Functional Albuminuria.
Dr. MITCHELL STEVENS: The Clinical Features of Splenic Anaemia.
Dr. NATHAN RAW: Human and Bovine Tuberculosis.
Dr. LEWIS JONES: The Character of the Faradic Current.
Mr. HASTINGS GILFORD: Ateleiosis.
Dr. GIBSON: Bradycardia.

SECTION OF SURGERY.

*Clarendon Laboratory.**

President: HORATIO PERCY SYMONDS, F.R.C.S Edin., Oxford. *Vice-Presidents:* WILLIAM BRUCE CLARKE, F.R.C.S., London; RICHARD HY. ANGLIN WHITELOCKE, F.R.C.S., Oxford; WILLIAM FREDERICK BROOK, F.R.C.S., Swansea. *Honorary Secretaries:* HERBERT EDWARD COUNSELL, F.R.C.S., 27, Banbury Road, Oxford; DAVID WALLACE, C.M.G., F.R.C.S.Edin., 11, Rutland Street, Edinburgh.

Special discussions have been arranged to take place on the two following subjects:

A. THE PRESENT ASPECTS OF ASEPSIS AND ANTISEPSIS.

B. THE INDICATIONS FOR AND METHODS OF PERFORMING HYSTERECTOMY.

Discussion A. will be introduced by Mr. BURGHARD owing to the absence through illness of Professor Watson Cheyne. He will be followed by Messrs. Gilbert Barling, Jordan Lloyd, H. Stiles, C. P. Childe, K. Monsarrat, G. Hamilton, J. Bush, C.M.G., W. Brown, C. B. Ball, Professor Rodman, C. W. Carthcart, and Professor Macewan.

Discussion B. will be introduced by Professor BLAND-SUTTON, a synopsis of whose remarks will be found on page 169 of the SUPPLEMENT dated June 11th. He will be followed by Messrs. W. Duncan, Professor Rodman, J. Bush, Shaw Mackenzie, Stanmore Bishop, Bowreman Jessett, and C. Martin. The following papers will also be read:

Mr. A. H. TUBBY: Operative Treatment by Muscle Grafting of Paralysis of the Serratus Magnus.
Mr. W. H. BROWN: Plastic Operations (with cases).
Mr. H. STILES: Operative Treatment of Hernia in Infants; 350 consecutive cases.

* The rooms marked with an asterisk can be darkened and lantern used.

Mr. R. KENNEDY: 1. Remote Results of 100 operations for Radical Cure of Hernia: 2. Remote Results of operations for Varicose Veins in the lower extremity.
Mr. R. CLEMENT LUCAS: Two cases Renal Calculus in which *x* rays failed to indicate the presence of Stone.
Mr. C. B. LYNN THOMAS: 1. A case of Lightning Stroke: 2. New Forceps Tourniquet.
Mr. HERBERT SNOW: Cancer Facts and Fallacies.
Mr. H. GILFORD: The Use of temporary removable Silk Sutures in treatment of Movable Kidney.
Professor J. DREVER (Philadelphia): On Hepatic Drainage.
Mr. B. G. MOYNIHAN: Value and Significance of certain Signs and Symptoms of Pancreatic Disease.
Professor RODMAN (Philadelphia): Carcinoma of the Mammary Gland. Early Diagnosis and Radical Operation necessary for its Cure.
Mr. W. S. HANDLEY: Certain Defects in the usual Operation for Mammary Cancer (lantern slides).
Mr. W. THOMSON WALKER: Anatomy of Freyer's Operation (lantern).
Mr. P. J. FREYER: Fourth series of Removal of Prostates.
Mr. HEERING: Cause and Effect of Enlarged Prostate.
Mr. W. BLAIR BELL: Chronic Appendicitis (with specimens).
Mr. S. PAGET: Use of Paraffin in Surgery.
Mr. T. GRIFFITHS: Unexplained Acute Recurrent Necrosis of Skin.
Mr. MORETON: A Series of Cases of Resection for Malignant Growth of Colon.
Mr. J. MICOLL: Congenital Hypertrophic Stenosis of Pylorus: its Surgical Treatment.
Mr. T. G. ATKINS: Gastro-Jejunostomy and Jejuno-Jejunostomy in Chronic Gastric Ulcer and Adhesions and Dilatation of the Stomach with adhesions.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

*Lecture Room, Morphological Department.**

President: FRANCIS HY. CHAMPNEYS, M.D., London. *Vice-Presidents:* Sir ALAN REEVE MANBY, M.V.O., M.D., East Rudham; THOMAS BABINGTON GRIMSDALE, M.B., Liverpool; JOHN CAMPBELL, M.D., Belfast. *Honorary Secretaries:* FRANK GRÉGOIRE PROUDFOOT, M.D., 43, St. Giles, Oxford; JOHN SHIELDS FAIRBAIRN, M.B., 60, Wimpole Street, W.

Special discussions have been arranged to take place on the two following subjects:

A. THE TREATMENT OF ACCIDENTAL HAEMORRHAGE.
B. THE SO-CALLED OVARIAN PAIN: ITS CAUSES AND TREATMENT.

Discussion A. will be introduced by Sir A. V. MACAN.

Discussion B. will be introduced by Dr. HERMAN, a synopsis of whose remarks will be found on page 21 of the SUPPLEMENT dated July 9th.

The following have expressed their intention of taking part in the discussions:

Accidental Haemorrhage.—Dr. J. E. Gemmell, Dr. John Campbell, Dr. Munro Kerr, Dr. Alfred Smith, Dr. Robert Boxall, Dr. Olifant Nicholson, Dr. Ewen Maclean, Professor Byers, Dr. W. E. Fothergill.

Ovarian Pain.—F. B. Jessett, Dr. John Campbell, Dr. Munro Kerr, Mr. Herbert Snow, Dr. Robert Boxall, Dr. Florence N. Boyd, Dr. Ewen Maclean, Dr. Heywood Smith, Dr. Cuthbert Lockyer, Dr. Inglis Parsons, Dr. A. Rabagliati, Dr. W. E. Fothergill, Dr. H. Macnaughton-Jones, Dr. J. B. Hellier, Professor Byers.

The following papers have been accepted:

Dr. ROBERT KENNEDY: The Treatment of Birth Paralysis of the Upper Extremity by suture of the fifth and sixth Cervical Nerves.
Dr. EWEN MACLEAN: Sphygmographic Tracings and some other Observations in Gynaecological Surgery.
Dr. J. B. HELLIER: A Case in which Ovarian Tumour was simulated by Lymphangeioma of the Great Omentum.
Dr. LEWERS: Calcified Tumour, unconnected apparently with Uterus or Ovaries, removed by Laparotomy from Douglas's Pouch.
Dr. J. SINGLETON DARLING: Removal of Fibro-myoma of Left Ovary, 22½ lb. in weight.
Dr. F. J. MCCANN: Two Cases of Urethro-vaginal Fistula treated by Operation.
Dr. SMALLWOOD SAVAGE: An Early Case of Chorion-epithelioma following Hydatid Mole.
Dr. CHRISTOPHER MARTIN: A Case of Deciduoma Malignum.
Professor BYERS: Suggestions for the Prevention of Puerperal Infection in Private Practice.
Dr. MUNRO KERR: Cancer of the Cervix complicating Pregnancy, with cases.
Dr. ADDINSELL: A Further Contribution towards the Study of the Natural History of Tubal Gestation.
Dr. MACNAUGHTON-JONES: Cirrhotic and Sclerotic Disease of the Ovary.

SECTION OF STATE MEDICINE.

*Geology Lecture Room.**

President: JOHN SCOTT HALDANE, M.D., F.R.S., Oxford. *Vice-Presidents:* Sir THOMAS STEVENSON, M.D., London; INNES GRIFFIN, M.R.C.S., Banbury; ARTHUR NEWSHOLME, M.D., Brighton. *Honorary Secretary:* HAROLD MEREDITH RICHARDS, M.D., Town Hall, Croydon; ARTHUR LATHAM ORMEROD, M.D., Oxford.

The following subjects have been selected for special discussion:

A. STANDARDS OF VENTILATION.
B. THE CONTROL OF THE MILK SUPPLY.
C. POVERTY AND PUBLIC HEALTH.
D. CAISSON DISEASE.

Discussion A. will be introduced by the PRESIDENT in a paper of which a synopsis appeared in the SUPPLEMENT dated July 9th.

Discussion B. will be introduced by Dr. G. NEWMAN, a brief summary of whose remarks will be found on p. 170 of the SUPPLEMENT dated June 11th.

Discussion C. will be introduced by Mr. T. P. WHITTAKER, M.P., in a paper on Alcohol, and by Mrs. HELEN BOSANQUET in a paper on Pauperization. Synopses of these papers appeared in the SUPPLEMENT dated July 9th.

Discussion D. will be introduced by Dr. OLIVER.

The following papers have been accepted:

Dr. MCCLEARY: The Influence of Antenatal Conditions on Infant Mortality.
Dr. A. E. BOYCOTT: The Recognition of Ankylostomiasis.
Dr. C. J. THOMAS: Experience of School Diphtheria in the Metropolis.
Dr. DAVID SOMMERVILLE: Physiology in the Curricula of Primary and Secondary Schools.
Dr. N. BARLOW: The Teaching of Hygiene in the Elementary Schools, and the desirablility of Excluding Young Infants from such Schools.
Dr. K. W. GOADBY: A Plea for Oral Hygiene.
Dr. BUSHNELL: The State in relation to Public Health and Pathological Laboratories.
Dr. BIRMINGHAM: The Achill Method *versus* the Leicester Method of dealing with Small-pox.

Subsection of Forensic Medicine.

*Mineralogy Lecture Room.**

On July 27th there will be a meeting of the Forensic Medicine Subsection, over which Sir T. STEVENSON will preside.

The following papers will be read:

Dr. WALDO: Notes on the Klosowski Antimony case.
Dr. LITTLEJOHN: Wounds of the Throat.
Dr. WILLCOX: Infantile Mortality from Overlaying.
Dr. F. SMITH: Civil Responsibility of the Insane.
Dr. PARKINSON: Rigor Mortis in New-born Infants.

SECTION OF PSYCHOLOGICAL MEDICINE.

*Small Morphology Lecture Room.**

President: CHARLES ARTHUR MERCIER, M.D., London. *Vice-Presidents:* ERNEST WILLIAM WHITE, M.B., Dartford; JAMES NEIL, M.D., Oxford; THOMAS SEYMOUR TUKE, M.B., London. *Honorary Secretaries:* WM. FORD ROBERTSON, M.D., 7, Hill Square, Edinburgh; REGINALD LANGDON LANGDON-DOWN, M.B., 47, Welbeck Street, W.

The following subjects have been selected for special discussion:

A. CRIMINAL RESPONSIBILITY AND DEGENERACY.
B. HEREDITY IN ITS BIOLOGICAL AND PSYCHIATRICAL ASPECTS.
C. DEMENTIA PRAECOX.

Discussion A. will be introduced by Dr. CHARLES A. MERCIER, some of whose main propositions appeared in the SUPPLEMENT of July 9th, at p. 22. He will be followed Dr. Max Nordau, Mr. Marshall Hall, M.P., K.C.; Mr. A. Douglas Cowburn, Mr. Herbert Toomer, Drs. David Bower, Fletcher Beach, Theo. B. Hyslop, Robert Jones, Conolly Norman, Savage, J. Shaw, Shuttleworth, Weatherly, Wiglesworth, Oscar Woods, Yellowlees, and others.

Discussion B., in its Biological aspect, will be introduced by Dr. J. BEARD, an abstract of whose paper appeared on p. 170 in the SUPPLEMENT dated June 11th. The Psychiatrical aspect will be dealt with by Medizinalrath Dr. W. KÖNIG, Dalldorf Asylum, Berlin, by a paper a synopsis of which was published in the SUPPLEMENT dated July 9th, p. 22. He will be followed by Professor Carl Pearson, and Drs. C. R. Drysdale, Edridge Green, Andriezen, and many of those names have already been mentioned.

Discussion C. will be introduced by Dr. CONOLLY NORMAN, who will be followed by some of those already mentioned, with the addition of Dr. W. R. Dawson.

Other Business of the Section.

The time remaining after the discussion on each morning will be devoted to the following demonstrations and papers:

Drs. DAVID ORR and R. G. ROWS: A Lantern and Microscope Demonstration on Degenerative Lesions of the Posterior Columns in General Paralysis, with remarks on the Point of Origin of Tabes Dorsalis.
Dr. W. FORD ROBERTSON: A Microscopical Demonstration of Preparations by New Silver-gold and Silver platinum Methods, showing especially the Neuro Fibrils in Normal and Pathological Conditions.
Dr. E. S. PASMORE: How to take a Family History.
Dr. R. G. ROWS: The Bacillus Pyocyaneus in the Central Nervous System (with microscope demonstration).
Dr. A. T. SCHOFIELD: The Cure of Quackery.

Section of Pathology.

*Pathology Department.**

President: James Ritchie, M.D., Oxford. *Vice-Presidents:* Humphry Davy Rolleston, M.D., London; Professor James Lorrain Smith, M.D., Belfast; William Bulloch, M.D., London. *Honorary Secretaries:* Stuart McDonald, M.B., F.R.C.P., 40, Marchmont Road, Edinburgh; Ernest William Ainley Walker, M.D., University College, Oxford.

The subjects selected for special discussion in this Section are as follows:

A. Immunity.

B. The Rôle of the Lymphocyte.

C. The Chemical Pathology of Gout.

The discussions in this Section will be conducted as follows: A number of papers will first be read by persons each of whom has made a special study of a particular portion of the subject. The discussion will then be thrown open to all speakers who desire to take part, not excluding those who have read papers on the subject.

Discussion A. will be opened by the President of the Section (Dr. James Ritchie), who will try to estimate the points in relation to immunity regarding which it may be said that definite conclusions have been reached and accepted. He will then take up the bearing of certain recent researches on questions at issue. He will also consider the problems awaiting solution and the possible relationship of the processes concerned in immunization to normal processes. Professor Wright will treat of Opsinines and of their relation to the problems of Immunity; Professor Muir will take Haemolytic Serums in Relation to Immunity; Professor C. J. Martin, Snake Venom in the same relation; and Dr. Bulloch the Cellular Aspect of the same question; Professor Wassermann (Berlin), Dr. Madsen (Copenhagen), and Drs. Noguchi and Dreyer will each also take some portion of the general subject. Dr. Ruffer will read a paper on Haemolytic and Haemasozic Serums.

In *Discussion* B. Dr. Lovell Gulland and Professor Muir will deal with the indications as to the genetic relationships of the lymphocyte supplied by pathological conditions. Dr. J. H. Drysdale will discuss the Clinical Significance of Lymphocytosis and its relation to Special Pathological Conditions, and Dr. Beattie the Relation of the Lymphocyte to Inflammation; Dr. Whitfield, the Relation to Inflammation and to Skin Diseases; Dr. Houston (Belfast), its Relation to Leucocythaemia; Dr. C. Melland (Manchester), the same; Dr. A. Ferguson (Glasgow), its Relation to Small-pox; Dr. W. J. MacCullum (Johns Hopkins University), its Relation to Typhoid Fever Lesions; Dr. Mott, its Relation to Pathological Changes in the Central Nervous System; Dr. Moorhead, the nature of Lymphatic Leukaemia.

Discussion C. will be opened by Professor Von Noorden, who will be followed by Dr. A. Garrod, Dr. Smith-Jerome, Dr. Walker Hall, and Dr. W. Bain.

Section of Physiology.

*Physiology Department.**

President: Professor Francis Gotch, M.R.C.S., F.R.S., Oxford. *Vice-Presidents:* Professor William Hy. Thompson, M.D., Dublin; Marcus Seymour Pembrey, M.D., London. *Honorary Secretaries:* Walter Ramsden, M.D., Pembroke College, Oxford; Horace Middleton Vernon M.D., 3, Bevington Road, Oxford.

The following subjects have been selected for discussion:

A. The Thalamic Region.

B. Chloroform Anaesthesia.

Discussion A. will be held in conjunction with the Section of Anatomy.

Discussion B. will be introduced by Sir Victor Horsley, who will be followed by Professors Sherrington, MacWilliam, and Moore, and Drs. Dudley Buxton, Waller, Paul Chapman, and C. J. Martin.

The following papers have been accepted for perusal and discussion:

Professor J. A. MacWilliam: Some Points in the Physiology of the Mammalian Heart.

Dr. Hugh Maclean: The action of Muscarin and Pilocarpin on the Heart.

Dr. McGregor Robertson: The Need of a Clinical Method for Estimating the Energy of the Cardiac Contractions in Man.

Professor B. Moore and Mr. J. S. Edie: On Combinations of Chloroform with Haemoglobin and the Serum Proteids in Relationihip to Chloroform Anaesthesia.

Drs. F. Griffith and W. R. Warrington: On the Varieties of the Cells of the Spinal Ganglia and their Relationship to Axons of Different Distribution.

Dr. Robert Kennedy: On the Histological Changes occurring in Ununited Divided Nerves.

Professor E. Wace Carlier: (1) Some Changes observable in Liver Cells during Activity; (2) On the Elastic Tissue of the Eyeball.

Dr. Grossmann: (1) Further Investigations on Accommodation; (2) The Purkinje-Sanson Reflex Image of the Anterior Lens Surface.

Dr. H. M. Vernon: The Protective Value of Proteids and their Decomposition-products on Trypsin.

Dr. A. G. Levy: A Method of Administering Chloroform in Definite Quantities.

Dr. Paul M. Chapman: The Administration of Chloroform by Du Bois's Apparatus.

Drs. A. P. Beddard and E. J. Spriggs: Some Points in the Metabolism of Diabetes with Reference to Present-day Treatment.

Dr. A. P. Beddard: Subcutaneous and Intravenous Injection of Saline Purgatives.

Dr. A. E. Boycott: Observations upon the Respiration of Intestinal Worms.

Dr. Leonard Braddon: A New Method of Staining Red Blood Corpuscles.

Dr. Gustav Mann will exhibit some Animals with Lesions of the Central Nervous System.

Section of Anatomy.

*Anatomy Department.**

President: Professor Arthur Thomson, M.D., Oxford. *Vice-Presidents:* Professor Johnson Symington, M.D., F.R.S., Belfast; Professor Robert Howden, M.B., Newcastle-on-Tyne; Thomas H. Bryce, M.D., Glasgow. *Honorary Secretaries:* William Wright, F.R.C.S., The University, Birmingham; Gustav Mann, M.D., the University Museum, Oxford.

Arrangements have been made for special discussions on the following subjects:

A. Giants and Dwarfs.

B. The Thalamic Region.

Discussion A. will be introduced by Professors Cunningham and Windle, who will be followed by Professor Dixon, Dr. Peter Thompson, and Dr. Hastings Gilford.

Discussion B. will be held conjointly with the Section of Physiology. It will be introduced by Dr. Gustav Mann and Sir Victor Horsley, who will be followed by Dr. Gladstone.

These two discussions will be held on the first and second days appointed for sectional meetings. The third day will be given up to a meeting to be held conjointly with the Anatomical Society of Great Britain and Ireland.

The following other papers have been accepted:

Dr. T. H. Bryce: Origin of Embryonic Leucocytes.

Professors A. H. Young and Robinson: Observations on the Tail.

Drs. Berry and Shepherd: Cranio-cerebral Topography.

Professor Patten: A Suggested Method of Mounting Anatomical Preparations for Museum Purposes.

Mr. Jenkinson will demonstrate microscopically the Arrangement of the Maternal and Fetal Glycogenic Cells in the Placenta of the Mouse.

Professor Patten will show wax models of Human and Anthropoid Lungs illustrating the topography of the fissures, and also a cast of the Duodenal Diverticulum.

Section of Ophthalmology.

Keble College.

President: Robert Walter Doyne, F.R.C.S., London. *Vice-Presidents:* George Edward Wherry, F.R.C.S., Cambridge; Cyril Hutchinson Walker, F.R.C.S., Bristol; Fergus Menteith Ogilvie, F.R.C.S., Oxford. *Honorary Secretaries:* Sydney Stephenson, M.B., F.R.C.S.Edin., 33, Welbeck Street, W.; Frank Griffith Thomas, M.B., 2, Brunswick Place, Swansea.

The following subjects have been selected for special discussion:

A. Retro-ocular Neuritis.

B. Intraocular Haemorrhage.

C. Keratitis Profunda.

Discussion A. will be introduced by Mr. Marcus Gunn in a paper of which a sketch appeared on page 172 of the Supplement dated June 11th.

Discussion B. will be introduced by Dr. Hill Griffith. A synopsis of his paper was published on page 173 of the Supplement already quoted.

Discussion C. will be introduced by Mr. W. T. Holmes Spicer in a paper of which an abstract will be found in the Supplement dated June 11th, at page 173.

The following other papers have also been accepted for perusal and discussion:

Dr. Lucien Howe: Time required for a Normal Eye to swing Laterally through a given Arc.

Mr. Ernest Clarke: A *Resumé* of Twenty Years' Treatment of Myopia.

Dr. J. Hern: Adenoid Vegetations in the Naso-pharynx a Causative Factor in some Eye Diseases.

Mr. W. W. Griffin: A Modification of Bowman's Suction Curette.

Mr. Andrew Little: The Electro-magnet in Ophthalmology.

Dr. G. H. Burnham: Combined Treatment in Disease, especially of the Uveal Tract.

MR. N. B. HARMAN: (*a*) The Work of H. M. Bernard on the Retina. (*b*) Follicular Conjunctivitis.
Dr. K. GROSSMANN: (*a*) Treatment of Conical Cornea with the Hot-air Cautery. (*b*) Further Investigations on Accommodation. (*c*) Operative Treatment of Detached Retina.
Dr. GEORGE CARPENTER: An Observation on the Production of Optic Neuritis by Intracranial Pressure.
Dr. JAMES HINSHELWOOD: A case of Congenital Word Blindness.
Drs. HINSHELWOOD, MCPHAIL, and FERGUSON: A case of Word Blindness with Right Homonymous Hemianopsia.
Dr. A. H. BENSON: Two Cases of Disease of the Canaliculi.
Dr. G. A. BERRY: (*a*) On Glaucoma and Glaucoma Operations. (*b*) On Visual Efficiency after Accidents to Sight from the Point of View of Employers' Liability.
Mr. W. ADAMS FROST: The Operative Treatment of High Myopia.
Dr. EMILE JAVAL, Paris: Aids to the Blind.
Dr. ANGUS MCGILLIVRAY: The Temperature of the Cornea and its Relation to Corneal Therapeutics.
Professor M. MCHARDY: Upon the Maturation and Extraction of Senile Cataract.
Professor POULTON, F.R.S.: Conclusions as to the Vision of Birds based upon a Consideration of Mimetic Colour and Pattern in Insects.
Dr. W. H. R. RIVERS: Visual Acuity in Savage Races.
Dr. JAMES TAYLOR: Ophthalmoplegia Externa.

In addition to the names already announced, the following gentlemen have intimated their intention of attending the Section of Ophthalmology: Messrs. Karl Grossmann, Cecil Shaw, Jabez Thomas, N. B. Harman, G. W. Roll, G. V. Miller, R. J. Coulter, J. B. Story, Leslie Paton, J. H. Tomlinson, A. E. Cobbledick, F. W. Edridge-Green, C. Higgens, Edgar Stevenson, Charles Blair, R. H. Dickson, H. Mooney, J. A. Menzies, C. J Lee, R. D. Batten, R. J. Hamilton, Simeon Snell, R. J. Montgomery, Andrew Little, E. H. Myddelton-Gavey, C. W. Dean, Major J. F. Barke, George Carpenter, E. J. Smyth, S. J. Taylor, W. W. Griffin, R. R. Thomas, Arthur Sandford, C. Devereux Marshall, E. F. Drake-Brockman, H. E. Ensor, F. M. Granger, F. P. Cresswell, W. Fingland, A. H. Thompson, Captain D. J. Collins, John Ellerton, Arthur Greene, D. Mowatt, A. Levy, J. Hern, Ludford Cooper, G. W. Baker, H. H. Folker, Ernest Clarke, and Joseph Nelson, The foreign guests and visitors include Professors Hirschberg and Haab and Drs. G. H. Burnham, Eversbusch, Goldzieher, Ole Bull, E. Landolt, A. Darier, Valud, Charles A. Oliver, Risley, Lucien Howe, Frank W. Marlow, Elliot Square, H. E. Juler, R. Hayes, and F. M. Wilson.

Owing to the amount of work to be got through in this Section it is desirable for members to understand that they cannot count upon being called upon to speak, either in the discussions or the papers, unless they have previously given notice of their intention to do so.

SECTION OF DERMATOLOGY.

Histology Room, Physiology Department.

President: THOMAS COLCOTT FOX, M.B., London. *Vice-Presidents:* JAMES HERBERT STOWERS, M.D., London; JAMES LIMONT, M.B., Newcastle-on-Tyne; LESLIE ROBERTS, M.D., Liverpool. *Honorary Secretaries:* ERNEST MALLAM, M.B., 3, Holywell Street, Oxford; EDWARD STAINER, M.B., 60, Wimpole Street, W.

Arrangements have been made for special discussions on the following subjects:

A. THE TREATMENT OF PRURITUS ANI.
B. THE COMPARATIVE VALUE OF OLD AND NEW METHODS OF TREATMENT OF LUPUS AND OTHER SKIN DISEASES.
C. THE RELATIVE IMPORTANCE OF THE BACTERIAL AND OTHER FACTORS IN THE CAUSATION OF SKIN DISEASES.

Discussion A. will be introduced by Mr. MALCOLM MORRIS in a paper of which an abstract was published in the SUPPLEMENT dated July 9th.

Discussion B. will be introduced by Dr. J. H. SEQUEIRA in a paper of which a synopsis appeared in the SUPPLEMENT quoted.

Discussion C. will be introduced by Dr. ARTHUR WHITFIELD in a paper of which an abstract appeared in the SUPPLEMENT quoted.

SECTION OF LARYNGOLOGY AND OTOLOGY.

Class Room.

President: CHARTERS JAMES SYMONDS, M.S., London. *Vice-Presidents:* FRANK MARSH, F.R.C.S., Birmingham; CECIL EDWARD SHAW, M.D., Belfast; HARRY LAMBERT LACK, M.D., London. *Honorary Secretaries:* WALTER JOBSON HORNE, M.D., 27, New Cavendish Street, W.; EDMUND CECIL BEVERS, M.B., 117, Woodstock Road, Oxford.

The following subjects have been selected for special discussion:

A. TREATMENT OF NON-SUPPURATIVE DISEASE OF THE MIDDLE EAR.

B. ETIOLOGY, TREATMENT, AND PROGNOSIS OF INNOCENT GROWTHS OF THE LARYNX.

C. DISEASE AS A DETERMINING FACTOR IN THE PRODUCTION OF LARYNGEAL AND PULMONARY AFFECTIONS.

Discussion A. will be introduced by Professor URBAN PRITCHARD (in a paper of which a sketch appeared on p. 174 of the SUPPLEMENT dated June 11th) and also by Dr. THOMAS BARR.

Discussion B. will be introduced by Dr. DUNDAS GRANT in a paper of which an abstract was published on p. 175 of the SUPPLEMENT of June 11th, and by Professor ALBERT ROSENBERG, of Berlin, in a paper of which an abstract appeared in the SUPPLEMENT dated July 9th.

Discussion C. will be introduced by Dr. GREVILLE MACDONALD and by Dr. SAMUEL WEST. A synopsis of Dr. Macdonald's paper will be found on p. 177 of the SUPPEMENT of June 11th.

The following is a list of papers which have been accepted:

Professor ONODI (Buda Pesth): The Disturbances of Vision and Development of Blindness of Nasal Origin induced by Disease of the Posterior Accessory Sinuses. Professor Onidi will also give a Demonstration of Photographs of his Preparations, illustrating the Anatomy and Surgical Treatment of the Accessory Sinuses of the Nose.
Professor A. ROSENBERG (Berlin): Pulmonary Infusion: a Method of Locally Treating Diseases of the Lungs.
Dr. MARCEL NATIER (Paris): Deafness: its Treatment through Acoustic Exercises by means of Tuning Forks: Physiological Re-education of the Ear.
Dr. ADOLPH BRONNER: On the Treatment of Non-suppurative Catarrh of the Middle Ear by the Local Application of Remedies with Nebulizer and Compressed-air Apparatus.
Dr. WALKER DOWNIE: Two and a-half years' Experience of the Subcutaneous Injection of Hard Paraffin for the Removal of Deformities of the Nose.
Dr. ALBERT A. GRAY: Demonstration of Macroscopic and Microscopic Preparations.
Mr. L. A. LAWRENCE: Notes of a Case of Mastoid Abscess five weeks after Measles: Operation: Recovery.
Dr. JOHN MACKIE: Diseases of the Posterior Ethmoidal and Sphenoidal Cells as a Cause of Laryngeal and Bronchial Affections and of Ozaena.
Dr. WILLIAM MILLIGAN: Some Practical Points in the Treatment, Operative and Non-operative, of Frontal Sinus Suppuration, with an Analysis of the Ultimate Results obtained in 40 Cases.
Dr. WM. MILLIGAN: Menière's Disease: a Clinical and Experimental Inquiry.
Dr. HEMINGTON PEGLER: Benign Neoplasms of the Septum Nasi, with Particular Reference to Bleeding Polypus.
Dr. W. S. SYME: A Case of Congenital Word-Deafness.
Dr. STCLAIR THOMSON: Arrest of a Case of Maxillary Sinusitis by Spontaneous Expulsion of Polypi through the Natural Ostium.
Dr. GRIFFITH C. WILKIN: The National Importance of the Thorough and Systematic Removal of Adenoids in Childhood.
Dr. EUGENE S. YONGE: Some Observations on the Mode of Origin of Nasal Polypi.
Dr. EUGENE S. YONGE will Demonstrate his Model of Meyer's Apparatus for Laryngeal Demonstrations.

The following gentlemen, in addition to those above mentioned, have notified their intention of taking part in the work of the Section: Dr. E. Deanesly, Dr. P. S. Donnellan, Dr. N. C. Haring, Mr. Mark Hovell, Dr. H. Macnaughton-Jones, Mr. R. Lake, Dr. James Kerr Love, Dr. S. Moritz, Dr. Knowles Renshaw, Dr. Henry Smurthwaite, Dr. Frederick Spicer, Dr. Scanes Spicer, Dr. Herbert Tilley, Dr. Ernest Waggett, Dr. Watson Williams, Dr. Colin Campbell, Mr. F. Marsh, and Dr. W. Milligan.

The Committee of the Section has made arrangements to form a special exhibit of any preparations, specimens, or drawings, or any instruments or apparatus pertaining to the work of the Section, and which have been designed and contributed by members themselves.

Foreign and Colonial visitors will be cordially welcomed in the Section, and such as may desire to attend are requested to send in their names as soon as possible to the Honorary Secretaries.

SECTION OF TROPICAL DISEASES.

Old Radcliffe Library.

President: ALEXANDER CROMBIE, C.B., M.D., London. *Vice-Presidents:* Brigade-Surgeon-Lieutenant-Colonel GEORGE MACONACHIE, M.D., Aberdeen; JOHN WILLIAM WATSON STEPHENS, M.D., Liverpool. *Honorary Secretaries:* HENRY EDWARD ANNETT, M.D., Crofton Lodge, Higher Runcorn, Cheshire; ROBERT FIELDING-OULD, M.D., 94, Mount Street, Berkeley Square, W.

The following subjects have been selected for special discussion:

A. TRYPANOSOMIASIS.

B. PROPHYLAXIS OF MALARIA.

C. THE SIGNIFICANCE OF THE LEISHMAN-DONOVAN BODIES.

Discussion A. will be introduced by Colonel D. BRUCE, F.R.S., R.A.M.C., in a paper of which a synopsis will be found on page 177 of the SUPPLEMENT dated June 11th.

Discussion B. will be introduced by Dr. J. W. W. STEPHENS, an abstract of whose paper was published in the SUPPLEMENT already quoted at page 177.

Discussion C. will be introduced by Major W. B. LEISHMAN, R.A.M.C., in a paper of which a summary appeared on p. 178 of the SUPPLEMENT dated June 11th.

The following papers have also been accepted:

Fleet Surgeon BASSETT SMITH: The Fungus of Tinea Imbricata.
Mr. T. J. TONKIN: The Curability of Leprosy.
Dr. G. A. WILLIAMSON: A Case of Mycetoma in Cyprus.
Major DONOVAN: Leishman-Donovan bodies.
Professor NOCHT (Hamburg): The Results of Malarial Prophylaxis in German Colonies.
Mr. E. E. AUSTEN (National History Museum): Biting Flies.
Dr. C. CHRISTY: (1) Ticks and African Fevers. (2) Dermatitis Vermium.
Dr. LEONARD ROGERS, I.M.S.: Treatment of Snake Bites.
Dr. S. R. CHRISTOPHERS: Tropical Splenomegaly and Oriental Sore.
Captain JAMES, I.M.S., Dr. CHRISTOPHERS, and Captain SEWELL will also read papers on Malarial Prophylaxis.
Dr. ARMAND RUFFER (Egypt) will demonstrate some specimens, and Dr. NABARRO: Trypanosomata from Uganda and East Africa.
The members of the CONGO EXPEDITION OF THE LIVERPOOL SCHOOL OF MEDICINE will contribute (1): Human Trypansomiasis and its relation to Congo Sleeping Sickness: (2) The Cerebro-Spinal Food in Trypansomiasis; (3) Sleeping Sickness in Europeans; (4) The Congo Floor Maggot.

Intimations of their intention to take part in the proceedings have been received from Sir Patrick Manson, Professor R. Boyce, Major C. Donovan, Dr. A. Duncan, Major Mathias, Dr. L. Sambon, Captain E. P. Sewell, Captain Anderson, Dr. Navarro, and Professor Lortet.

SECTION OF NAVY, ARMY, AND AMBULANCE.

Ashmolean Room.

President: Surgeon-General A. FREDERICK BRADSHAW, C.B., K.H.P., M.R.C.P., Oxford. *Vice-Presidents:* Surgeon-General GEORGE JOSEPH HAMILTON EVATT, C.B., M.D., Junior United Service Club, London; Fleet Surgeon JOHN LLOYD THOMAS, R.N., H.M.S. *Excellent*, Portsmouth; Colonel J. EDWARD SQUIRE, M.D., V.D., R.A.M.C. (Vols.), London. *Honorary Secretaries:* Major THOMAS MCCULLOCH, R.A.M.C., 68, Victoria Street, S.W.; Fleet Surgeon H. W. GIBBS DOYNE, L.R.C.P., R.N., H.M.S. *Mercury*, Portsmouth; Surgeon-Captain EUSTACE M. CALLENDER, M.D., 40, Connaught Square, Hyde Park, W.

The following subjects have been selected for special discussion.

A. MALTA FEVER.

B. ORGANIZATION IN PEACE OF CIVILIAN AID TO THE SICK AND WOUNDED IN WAR.

Discussion A. will be introduced by Colonel D. BRUCE, F.R.S., R.A.M.C., in a paper, of which an abstract will be found on page 178 of the SUPPLEMENT dated June 11th.

Discussion B. will be introduced by Colonel J. E. SQUIRE, C.B., V.D., M.D., R.A.M.C.(Vols.), an abstract of whose paper appeared on page 179 in the SUPPLEMENT already quoted.

The following other papers have also been accepted:

Fleet Surgeon BASSETT SMITH: Some Points on the Etiology of Mediterranean Fever with Regard to the Presence of Specific Organism in the Blood.
Staff Surgeon CLAYTON, R.N.: The Organization of the Treatment of Syphilis in the Navy.
NORMAN G. BENNETT, M.A., M.B.: The Treatment of Dental Diseases in the Navy.
Staff Surgeon J. FALCONER-HALL: The Present Dietary on board a Man-of-War.
Major W. C. BEEVOR, R.A.M.C.: The Recruiting Problem.
Surgeon-Major C. R. KILKELLY, C.M.G.; The General Hospital in War, its Working and Staff.
Lieutenant-Colonel A. M. DAVIES, R.A.M.C.: The Sterilization and Disposal of Infective Discharges
Major E. C. FREEMAN, R.A.M.C.: Camp Sanitation.
Brigade-Surgeon-Lieutenant-Colonel GILES, F.R.C.S., V.D.: Camp Sanitation.
Colonel J. H. HENDLEY, C.I.E.: First Aid in Civil Life.
S. HAMILTON, B.A., M.B.: Is Widespread Slight Training in Ambulance Work Beneficial to the Community, or would it be better to make it more Thorough at the Expense of Numbers?
Captain W. SHEEN, M.D., M.S., F.R.C.S., R.A.M.C. (Vols.): The Training of Hospital Orderlies.

Papers bearing on the discussions or otherwise will be read for gentlemen who are unable to be present at the meeting.

SECTION OF DENTAL SURGERY.

Keble College.

President: EDMUND AUGUSTINE BEVERS, M.R.C.S., Oxford. *Vice-Presidents:* FRANK EARLE HUXLEY, M.R.C.S., L.D.S., Birmingham; JOHN HOWARD MUMMERY, M.R.C.S., L.D.S., London. *Honorary Secretaries:* KENNETH WELDON GOADBY, L.R.C.P., D.P.H., L.D.S., 21, New Cavendish Street, Cavendish Square, W.; JOHN MCKNO ACKLAND, M.R.C.S., L.D.S., 24, Southernhay, Exeter.

This Section will hold a discussion on Oral Sepsis on Wednesday, July 27th. The subject will be introduced by papers on Oral Sepsis in relation to general surgery, by Mr. J. Rickman Godlee; on its relation to general medicine, by Dr. William Hunter; and on its pathology, by Mr. Kenneth W. Goadby. The following have expressed their intention of taking part in the discussion:

Professor J. Arkövy, Mr. Morton Smale, Mr. J. Norman Bennett, Mr. Sidney Spokes, Mr. J. G. Turner, Dr. Dundas Grant, Sir Thomas Barlow, Bart., K.C.V.O.; Dr. StClair Thomson, Dr. H. Tilley, Dr. Dalton, Dr. G. Newton Pitt, Dr. Ewart, and Dr. Lambert Lack.

The following papers are also announced:

Mr. J. G. TURNER: Growth of Bone in relation to Position of the Teeth.
Mr. W. R. ACKLAND: Some cases of Neuralgia.
Dr. SIM WALLACE: Physical Degeneration in Relation to the Teeth.
Mr. SIDNEY SPOKES: The Care of Children's Mouths.
Professor J. ARKÖVY: Clinical Observations on Caries Alveolaris Specifica.
Mr. J. HOWARD MUMMERY: Stereoscopic Methods of Examining Colonies of Bacteria.
Dr. WM. WALLACE: Immunity in Dental Caries.

EXHIBITION.

A collection of medical, surgical, dietetic and sanitary apparatus, medical books, and hospital appliances will be arranged in the Examination Schools, High Street, Oxford, in the same building as the Reception Room.

HONORARY LOCAL SECRETARIES.

ARTHUR JOHN DREW, F.R.C.S., Water Hall, St. Aldates, Oxford; WILLIAM DUIGAN, M.B., 66, Woodstock Road, Oxford; ARTHUR PERCY PARKER, F.R.C.S., 2, Holywell Street, Oxford.

THE PATHOLOGICAL MUSEUM.

The Local Committee at Oxford, recognizing the great possibilities for usefulness possessed by the Pathological Museum, has spared no pains to make this feature of the meeting a success.

The considerations by which it has been moved in the collection and arrangement of specimens are very much those which were emphasized in a letter published in the JOURNAL of June 4th over the signature of Mr. Jonathan Hutchinson, and the aim that has been kept in view is to present as far as possible a visible summary of what has been achieved most recently in medical science, and to bring before the Association generally the knowledge gained by research of individual members. The exhibits will be arranged under the following headings:

1. Specimens, photographs, drawings, etc., illustrating recent advances in medical science.
2. Skiagraphs and apparatus for skiagraphy.
3. Colour photography in relation to medical, surgical, and pathological work.
4. Photomicrographs and apparatus for photomicrography.
5. Instruments for clinical diagnosis.
6. Surgical anatomy.
7. Specimens bearing on any of the discussions in the various Sections.

Among the exhibits which may be specially mentioned are those bearing on ankylostomiasis, miners' lung disease, tropical diseases, cell division in carcinoma, prostatic disease, congenital dislocation of the hip before and after treatment by Lorenz's method, the estimation of the phagocytic power of the blood, the estimation of the purin bodies in the urine, etc.

A certain number of exhibitors will, it is understood, demonstrate their specimens personally at times to be stated during the course of the meeting.

The Museum is being kept quite separate from the trade exhibits, and will be located in an entirely different building. It will be arranged in the large, well-lighted, ground-floor rooms of the Anatomical Department of the University, and will thus be in the immediate neighbourhood of the meeting places of all the various Sections.

As it is now known that a considerable number of members of the Association are to arrive in Oxford on Monday, July 25th, it is hoped that all exhibitors in the Pathological Museum will see that their exhibits reach Oxford, if possible, by the 23rd inst., in order that the Museum may be open for inspection on Tuesday morning, the 26th. The afternoon of that day is fairly free from business, and many members will like to take advantage of their leisure to visit the Museum.

PROGRAMME OF BUSINESS.

TUESDAY, JULY 26TH.

9 a.m.—Council Meeting.
10.30 a.m.—Service in Christ Church Cathedral.
10.30 a.m.—Special Mass at the Church of St. Aloysius.
12 noon.—Annual General Meeting, followed by Representative Meeting. Examination Schools.
8 p.m.—President's Address. Reception of Distinguished Guests. Sheldonian Theatre.

WEDNESDAY, JULY 27TH.

9 a.m.—Meeting of 1904-5 New Council.
9 a.m.—Service at Mansfield College Chapel and at Manchester College.
10 a.m. to 1 p.m.—Sectional Meetings. University Museum.
2 p.m.—Meeting of Convocation and conferment of Honorary Degrees in the Sheldonian Theatre.
Adjourned General Meeting, followed by Representative Meeting. Examination Schools.
8 p.m.—Address in Medicine by Sir William Church. Sheldonian Theatre.

THURSDAY, JULY 28TH.

9 a.m.—Meeting of Council.
10 a.m. to 1 p.m.—Sectional Meetings. University Museum.
2 p.m.—Address in Surgery by Sir William Macewen. Sheldonian Theatre.
3.30 p.m.—Representative Meeting (if business not already concluded). Examination Schools.
7.30 p.m.—Annual Dinner of the Association.
8 p.m.—Popular Lecture by Dr. G. Bagot Ferguson, F.R.C.S., M.Ch.Oxon. Examination Schools.

FRIDAY, JULY 29TH.

9 a.m.—Meeting of Council.
10 a.m. to 1 p.m.—Sectional Meetings. University Museum.
2 p.m.—Representative Meeting (if business not already concluded). Examination Schools.

PROGRAMME OF ENTERTAINMENTS.

WEDNESDAY.

Afternoon, 3.30.—Reception by the President (Dr. W. Collier, F.R.C.P.) and members of the Oxford Division, in Wadham College Gardens. Duelling and fencing exhibition. *Epée* contest between Oxford and Cambridge.
Evening, 9.15.—Soirée at the Museum, given by the Vice-Chancellor and members of the University.

THURSDAY.

Morning, 8.0.—The Annual Medical Temperance Breakfast, in the Assembly Room at the Town Hall.
Afternoon, 3.30.—Garden Party given by Mr. and Mrs. G. H. Morrell, at Headington (limited to 1,000).
3.30.—Garden Party by Dr. and Mrs. Neil at the Warneford Asylum (limited to 600).
Promenade Concert in St. John's College Garden.
Evening, 7.30.—Annual dinner in Christ Church Hall.
9.15.—*Ladies' Entertainment in New College Gardens and Hall.

FRIDAY.

Afternoon, 3.30.—Garden Party at Blenheim Palace. Invitations are being issued by the Duke.
4 to 6.—Boat-racing on the Isis.
Evening, 9.0.—Reception by the Mayor, Mr. E. A. Bevers, M.R.C.S., in the City Buildings.

SATURDAY.

10 a.m.—Excursion to Leamington and Warwick. The Corporation of Leamington provides lunch; the Colonial Secretary will take the Chair. The Countess of Warwick gives a Garden Party in the afternoon.
10 a.m.—River Excursion to Reading and Henley. Special Boat leaves Folly Bridge for Reading, arriving there at 6.15 p.m.

* In the event of a wet day the entertainment will be held at the Town Hall.

EXCURSIONS

EXCURSION TO LEAMINGTON AND WARWICK.

On Saturday, July 30th, an excursion, 300 in number, will visit Leamington and Warwick. A special train will leave Oxford at 10 a.m., arriving at Leamington at 10.55. The party will be met at the station and conducted to the Royal pump rooms and baths. Here they will be received and welcomed by the Mayor and Mayoress (Alderman and Mrs. Flavel). After the reception they will be conducted by members of the Committee over the establishment, which has recently been brought up to date and modernized, and now comprises: Aix massage douches and Vichy douche, current from the main, high frequency, and *x*-ray applications, radiant heat and light baths, Turkish and swimming baths (for ladies and gentlemen), douches ecoisse, vibratory massage, and an anthromotor for lesions, stiff joints, etc. Special attention is drawn to this instrument, which, driven by a one-horse power motor, embodies in simple form many similar appliances to those used so successfully by Zander. Afterwards the various parks and pleasure grounds will be open to the delegates, and the municipal orchestra will play in the Pump Room Gardens. At 1.30, by invitation of the Mayor and Corporation, the delegates will meet at the Town Hall for luncheon. The chair will be taken by the Right Honourable Alfred Lyttelton, K.C., His Majesty's Secretary of State for the Colonies, and the member for the parliamentary borough of Warwick and Leamington.

After the luncheon carriages will be provided to take the delegates to Warwick Castle, by invitation of the Earl and Countess of Warwick. The Countess has kindly invited the visitors to afternoon tea in the Castle grounds. In the evening the Jephson Gardens will be illuminated and a concert will be given by the Municipal Orchestra, to which the Corporation invites the delegates. To secure tickets for the above excursion application should be made without delay, in writing, to E. C. Bevers, Esq., 117, Woodstock Road, Oxford. As this excursion is limited to 300, and applications have been very numerous, it is impossible to promise all the applicants that they will receive tickets; these will be awarded in order of priority. In cases where four and five tickets have been asked for it is necessary to remind members that it is improbable that they will receive more than one in addition to their own.

These tickets should be applied for at the Reception Rooms, and they will not be reserved later than 2 p.m. on Wednesday, July 27th. Any tickets not applied for by that time will be distributed to applicants at the Reception Rooms. The list will be finally closed at 7 p.m. Wednesday, July 27th.

RIVER EXCURSIONS.

A steamer, reserved for members of the British Medical Association and their friends, will leave Folly Bridge on Wednesday, at 3 o'clock, for Nuneham, reaching Oxford, on the return journey, at 6.30. Fare 1s. 6d. On Thursday and Friday it will leave at 2.30 for Abingdon, arriving at Nuneham at 3.30 and Abingdon at 4.10, leaving Abingdon for the return journey at 4.30 and Nuneham at 4.55, arriving at Oxford at 6.30. Those desiring to do so can disembark at Nuneham, the grounds having been thrown open by the kindness of Sir William Harcourt. Fare for the double journey 2s. There will be accommodation for 150. Tickets should be obtained before 10 o'clock each morning at the Reception Rooms. If any tickets remain after that hour application should be made to Messrs. Salter, Folly Bridge, either directly or by telephone (No. 121). There will be a telephone at the Reception Rooms.

RIVER EXCURSION TO READING.

On Saturday one or two steamers reserved for members of the British Medical Association and their friends will leave Folly Bridge at 10 o'clock, arriving at Wallingford (for lunch) at 2.10 and Reading at 6.15. Fares: Wallingford, 3s. 6d.: Goring, 4s. 6d.; Pangbourne or Reading, 5s. There will be accommodation for 150. Tickets can be obtained at the Reception Rooms at any time until 2 p.m. on Friday, when the list will be closed.

Messrs. Salter Brothers, Folly Bridge, have also undertaken to reserve 50 punts, 50 rowing-boats, and 30 Canadian canoes. These may be obtained by application each morning before 10 a.m. at the Reception Rooms. No boats will be reserved after that hour, but application can be made at any time, either directly or by telephone (No. 121) to Messrs. Salter. The price by day will be: For punts, 2s.; for rowing-boats, 1s. for two and 6d. for each extra person; for Canadian canoes, 1s. for two and 6d. for each extra person.

Notices by the Oxford Executive.

Service in Christ Church Cathedral.—Arrangements have been made for members to meet at the Town Hall, about 200 yards from the Cathedral, at 10.15 a.m. on Tuesday, July 26th, and to go in procession from thence to the Cathedral, where the service will begin at 10.30 a.m.

Roman Catholic Service.—We are requested to state that a Roman Catholic service will be held at the St. Aloysius Catholic Church, Woodstock Road, Oxford, on Tuesday, July 26th, at 10.30 a.m.

Academic Costume.—Gowns should be worn at the Cathedral service, at all meetings in the Sheldonian Theatre, at the Vice-Chancellor's *soirée*, and at the Mayor's reception. It is thought that the colour introduced by the various gowns will break the monotony of the ordinary evening dress at the evening entertainments.

Ladies accompanying Members.—Ladies will be admitted to the Sheldonian Theatre on Tuesday evening, July 26th, when the President (Dr. Collier) will give his address, and on Wednesday afternoon at 2 p.m., when honorary degrees will be conferred; they will also be admitted to the popular lecture by Dr. Ferguson at 8 p.m. on Thursday in the Examination Schools, High Street. Tickets for ladies for the various garden parties and entertainments must be obtained by members at the Reception Room. In consequence of the great demand for tickets and the limit of space at their command, the Oxford Executive will be reluctantly compelled to limit the distribution of tickets to one lady's ticket for each member who is accompanied by one or more ladies.

The Annual Dinner.

The number of applicants for the dinner has been so large that the space at the disposal of the Local Executive is now filled. Tickets are being allotted, and will be obtainable at the Reception Room. Those who have applied too late will receive notice shortly.

Golf.

We are requested to state that if members who intend to play golf during the meeting would communicate as soon as possible with Dr. Proudfoot, 43, St. Giles, Oxford, arrangements will be made to have vehicles ready to convey them to the links at a small charge per head. The course is four miles from the centre of the city. The University Golf Club has made members of the British Medical Association honorary members of the club for the week of the annual meeting. Sherlock, the professional in charge of the ground, is making special efforts to put the links into as good condition as possible, and it is believed that they will test the abilities of players to the utmost.

The international match will take place on Thursday, July 28th, at 2.30 p.m., instead of Friday.

Garden Parties.

Mr. and Mrs. G. H. Morrell will invite 1,000 guests to a garden party at Headington Hill Hall on Thursday, July 28th; and Dr. Neil, the Medical Superintendent, with the Chairman and Committee of the Warneford Asylum, Headington Hill, are inviting 600 guests to a garden party on the same afternoon. The number of invitations to be issued for the Vice-Chancellor's *soirée* at the Museum on Wednesday evening, and to the reception given by Dr. Collier, the President, and the members of the Oxford Division in Wadham College Gardens on the same afternoon, must be limited to 2,000. Invitations to the Garden Party at Blenheim have been issued by the Duke of Marlborough personally.

Ophthalmological Section.

We are informed that, attached to the Section of Ophthalmology, an exhibition has been arranged in Keble College. It will include instruments, electric and other appliances, ophthalmoscopic pictures, optical and colour apparatus, pathological specimens, and other things of interest to ophthalmic surgeons. A number of rare and interesting eye cases will be exhibited at the Eye Hospital, some seven minutes' walk from Keble College.

Any gentlemen intending to attend the Section of Ophthalmology who have not yet notified the Secretaries are requested to do so forthwith. There is still accommodation available in Keble College at an inclusive charge of 7s. 6d. per diem. Those who propose to be present on one day alone are advised to spend the night before in the College. Members not staying in the College are reminded that lunch and dinner may be taken in the College hall. Ladies may be invited to lunch.

The more purely medical communications will be read on Friday, July 29th, for the convenience of physicians attending other Sections.

Accommodation for Members at Oxford.

A list of lodging-houses, with scale of charges, is published at pp. 15—19 of the Advertisements in the Journal.

Special Railway Arrangements.

To members and their friends attending the annual meeting at Oxford the railway companies of the United Kingdom will grant return tickets, on payment at the time of booking, at a single fare and a quarter. To secure this concession each passenger must produce a special voucher, and these may be obtained on application to the General Secretary, 429, Strand, London, W.C. The reduced fares will be available from July 22nd to August 2nd, both dates inclusive.

Members attending the annual meeting, but staying at places outside Oxford, may, on production of cards of membership, obtain return tickets at a single fare and a quarter (minimum charge 1s.), from Oxford to London or Birmingham or to any station not more than fifty miles distant to which through bookings are in operation; these tickets will be available to return on the same or following day. Members availing themselves of this privilege should use the original return ticket for the first journey to and the last journey from Oxford. The member's ticket, which is obtained at the Reception Room when registering attendance, will enable members to get the reduced fares from Oxford to London and to places within the fifty-mile radius for any intermediate journeyings.

Dr. John R. Hamilton, of Hawick, writes to point out that members from the West of Scotland and the Border Counties can travel via Carlisle and Birmingham direct to Oxford either by the Midland or the London and North-Western Railway route.

Annual Temperance Breakfast.

The National Temperance League will give a breakfast at Oxford on Thursday morning, July 28th. The occasion will this year be of exceptional interest in view of the memorial by the profession to the Education Department, and of the evidence which the National Temperance League presented to the Physical Deterioration Committee of the Privy Council. The chair will be taken at the breakfast by Mr. McAdam Eccles, and among those who have accepted invitations to be present are Sir William Broadbent, Sir Victor Horsley, Surgeon-General Evatt, C.B., and Professor Murdoch Cameron. Members attending the Oxford meeting who may wish to attend the breakfast are invited by the Secretary Mr. John Turner Rae, to apply for tickets at the table of the League in the Reception Room at Oxford.

(Continued from Page 88.)

SOUTH-EASTERN OF IRELAND BRANCH.

At a meeting of this Branch in the Town Hall, Clonmel, on June 22nd, Dr. Laffan (President) in the chair, and Drs. Carey, Brown, Wynne, Walshe, Morris, Murphy, Hennessy, O'Connell, O'Brien, Farmer, and Colonel Riordan present, the following business was transacted.

Confirmation of Minutes.—The minutes of the previous meeting were duly read and confirmed.

Resolutions.—The Exeter Division memorandum was approved, and the Secretary was instructed to communicate the same to the Secretary of the Exeter Division. The following resolutions were also carried:

That our representative be instructed to support the scheme of Medical Defence as recommended by the Medical Defence Committee of the British Medical Association.

That Dr. Wynne act as substitute for Dr. O'Brien, in case the latter should be unable to attend the annual meeting at Oxford as our representative.

Insurance Fees.—A discussion took place about insurance fees for medical examination, and the Secretary was instructed to have circulars printed and posted to each member stating that a guinea was the minimum fee which should be accepted by members of the Branch.

Vote of Thanks.—A hearty vote of thanks to the Mayor and Corporation of Clonmel was passed for the use of the Town Hall.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 30TH, 1904.

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SEVENTY-SECOND ANNUAL MEETING

OF THE

British Medical Association.

OXFORD, 1904.

ANNUAL GENERAL MEETING.

FIRST GENERAL MEETING, TUESDAY, JULY 26TH.

THE seventy-second annual general meeting of the British Medical Association was opened on Tuesday, July 26th, in the Examination Schools, Oxford.

The President, Dr. THOMAS DRYSLWYN GRIFFITHS (Swansea), took the chair at 12 o'clock.

The minutes were taken as correct.

DEATH OF SIR JOHN SIMON.

The PRESIDENT, before proceeding to the ordinary business of the meeting, wished to make a brief allusion to the recent death of Sir John Simon, who, he said, was the pioneer of modern sanitary science. They all revered his name, and they owed a great debt of gratitude to his memory for the incalculable benefits he had conferred on the whole civilized world. It might safely be said that he had saved far more lives during the last fifty years than all the armies of the world had destroyed during the same period. Sir John Simon had done for sanitation what Lord Lister had done for surgery and what Pasteur had done for bacteriology.

VALEDICTORY ADDRESS.

Dr. GRIFFITHS then said: We have now come to the close of the first year of the new constitution of the Association, and it is very gratifying to find that it is fully realizing our anticipations. The changes and alterations are now practically complete; the Divisions are all arranged, the boundaries are fixed, and they possess their own rules and regulations which have been sanctioned by the Central Council. One great advantage of the new constitution is the formation of Divisions which are well calculated to answer the purposes of local medical societies, and in addition to form part of the British Medical Association. Some of these local societies are being amalgamated with the Divisions, for the sake of economy, convenience, and policy. Membership of a Division carries with it all the privileges and advantages of the Association (including the BRITISH MEDICAL JOURNAL), which are far greater than those of local societies. Every member of a Division has a voice in the management of his Division, and through that Division he is directly represented in the Representative Meeting which determines the policy of the Association. Under this new organization every member is *ipso facto* a member of the Division embracing the area in which he resides. These Divisions, which are now 300 in number, cover the whole of the United Kingdom, most of the Colonies and the sister States. Another advantage which has been gained by the reconstruction is additional power to carry out the three great objects of the Association: (1) Greater power to promote the interests of the profession, (2) greater power to improve public health, the well-being of the community, and (3) greater power to influence and guide Parliament in legislating for the health of the people. The Council and the Standing Committees have devoted much time and a great deal of labour in these three different direc-

tions during the last twelve months. Not only are there Standing Committees appointed jointly by the Representative Meeting and the Council, and other Statutory Committees nominated by the Council, but the Council appoints special Committees to report on specific subjects. The work done by these Committees is afterwards submitted to the Council, which meets once every three months. If you have studied the reports of the proceedings of the Council and the various Committees which have been published in the Supplements to the Journal, you will see that the Association, through its Council and Committees, has during the past year done at least double the usual amount of work. No one except those who have been in the habit of serving on Committees can have any idea of the amount of time, thought, and labour involved in the work which has been accomplished by the Association since the meeting at Swansea last year. I confess that I have gained a profound admiration of the thorough and earnest way in which the work has been done by and for the Association during my presidential year. If I mention especially the work accomplished by the Medico-Political, by the Ethical, by the Public Health, the Organization, and the Hospitals Committees, it is because the number and general importance of the questions with which they have had to deal have made very great calls upon the public and professional spirit of their members. To the Chairmen of these Committees—to Sir Victor Horsley, to Professor Saundby (of Birmingham), to Dr. Groves (of the Isle of Wight), to Mr. Verrall (of Brighton), and to Dr. Beverley (of Norwich), the best thanks of the Association are especially due for the great time and energy with which they have devoted themselves to the work. Finally, it is my belief that the Association cannot fail, under the new democratic organization, to enlist within very few years the sympathy and the active co-operation of all qualified medical practitioners in the British Empire—"a consummation devoutly to be wished." I feel that I should fail in my duty if I left the chair without alluding to the kindness which I have received during my year of office. I wish to offer my best thanks to Mr. Andrew Clark, the Chairman of Council, to Dr. Dawson Williams, the able Editor of the Journal, to Mr. Guy Elliston, the General Secretary, and to Mr Whitaker, the Medical Secretary, for their courtesy and the invaluable kindness and assistance they have always given me. Also I gratefully acknowledge the kindly consideration of my shortcomings by the Council. Gentlemen, the first duty which I had to perform as your President was one which I felt to be a great honour and a particular pleasure to me as a native of the Principality. It was to propose the election of H.R.H. the Prince of Wales as an honorary member of this great Association. His Royal Highness, like His Majesty the King—Patron of the British Medical Association—has always shown very great interest in the medical profession and in all questions relating to the improvement of public health and well-being of the community. And now the last duty I have to perform is also one which gives me great pleasure. It is to introduce Dr. Collier to you as my successor. Dr. Collier may not be known to some of you personally; he is well known to you all as an able and accomplished physician, as a lecturer in the Medical School of this great historic University whose hospitality we are now enjoying. He has without any influence except his own ability, perseverance, and force of character, advanced at a very early age to the first rank in the profession—an enviable position even for one of more mature years.

Induction of New President.

Dr. Collier then took the chair and thanked the members very heartily for the great honour they had done him in raising him to the position of President of the British Medical Association. He thoroughly realized that honour, and he only hoped that he would be able in some degree to prove worthy of it. He knew how valuable their time was, but he would ask them to allow him to trespass on it for a very few minutes. First of all he wished to disarm criticism and to elicit their sympathy. When the Oxford Division ventured to invite the British Medical Association they had not the faintest conception that Oxford would prove such a pleasant and such a very popular place of meeting. They also had no idea that so many wives and daughters would absolutely refuse to allow their husbands to come to Oxford unaccompanied by them; but they were very soon agreeably undeceived. The Oxford Executive realized that they could not increase the College gardens, and could not put up new buildings. It was absolutely necessary to warn members in the way that they had done. They also recognized the fact that it was one of the characteristics of the British nation that when they met together—might he say in crowds?—that the characteristic of the crowd was that it was cheerful and good-natured, and it was, perhaps, a great characteristic of the medical practitioner that he was prepared to be cheerful and prepared to put up with certain discomforts, and he hoped for the next week medical practitioners would live up to that reputation. For weeks past their Executive, and especially the Secretaries, had been talking and thinking and dreaming of nothing but how best to make this meeting a great success, and he certainly hoped they would be able to do so.

Vote of Thanks to Retiring President.

Dr. Galton then moved:

That the warmest thanks of the Association be given to Dr. Thomas Dryslwyn Griffiths for so ably presiding over the Association during the past twelve months, and that in accordance with By-law 36 he be, and he is hereby, elected a Vice-President of the Association for life.

It gave him peculiar personal pleasure to propose a vote of thanks to the late President, in that the first steps of his professional career were taken among the Welsh people at the village of Sandersfoot, and his year of practice there had given him always the warmest interest and sympathy in all things connected with Wales. To all the members of the Association the time of the Presidency of Dr. Griffiths had been very pleasant. Not only in his conduct of meetings and the matters that he had brought before them, but in the way in which he had attended all the meetings of the Council and of many Committees. Dr. Griffiths had been an exemplary President. He also feared he must bring in that special axe which he (Dr. Galton) had to grind, and had been grinding, namely, the Holman Testimonial Fund. He had received no more warm encouragement, and no more generous subscription, than from their late President, and the letter which he wrote would be treasured by himself for many years. He was sorry this example had not been followed by as many members of the British Medical Association as he would have wished, but possibly they were waiting to come in. At all events, he was sure they would all agree on one point—namely, that their President's kind, skilful, and amiable conduct in the chair had stolen the hearts of all of them, and he would carry with him into his retirement a knowledge of the deep sense of the Association that the chair had during the past year been worthily and well filled, and that the thanks of all the members of the Association were due to him.

Mr. Jones Morris, in seconding, said this was the twenty-fifth annual meeting of the British Medical Association it had been his privilege to attend, and he did not think that any had been presided over with more grace, dignity, and ability that the meeting presided over by his fellow-countryman, Dr. Thomas Dryslwyn Griffiths. It afforded very great gratification to Welshmen that they had had such a man to fill the chair of this great Association; it was a source of great pride to Welshmen that he was elected, and it was a source of greater pride, now that he was retiring, to know that no one had filled the post with more dignity than he. No President had thrown more spirit into the work of the Association than he, and no one had taken a more pronounced interest in its work during a critical time than he; and the smooth working of the committees of the Association during the past year was in a great measure due to his conduct in the chair.

The resolution was then put and carried unanimously.

Dr. Griffiths, on rising to respond, was received with loud and continued applause. He said: Mr. Chairman and Gentlemen,—I thank you one and all from the bottom of my heart for the kindly expression of your approval. I also thank you for the great honour you have paid me. I shall always treasure this and remember it as one of the most happy incidents in my professional career.

Election of Honorary Members.

The President then moved the following resolution:

That the following be elected Honorary Members of the British Medical Association for their valuable services rendered to the Association in connexion with the Oxford meeting: The Vice-Chancellor of Oxford University (Dr. D. R. Monro), the Dean of Christ Church (the Very Rev. Thomas Banks Strong, D.D.), and the Master of University College (the Rev. James Franck Bright, D.D.).

The Oxford Division was a very small Division, and when the question of issuing invitations came up the members felt that they could not possibly issue an invitation without some backing from the University. They knew that they would

get that backing, but they had no idea that the University would behave in the extraordinarily generous manner in which it had behaved. He was not going into details, but he would mention the fact that the Executive had never asked the University to do anything which the University had refused to do, and that was saying a great deal. It was a very happy thing to be able to name the three gentlemen mentioned in the motion because two of them were associated with the medical profession in a very close and peculiar fashion. The Vice-Chancellor of Oxford University (Dr. Monro) belonged to the same family as the Dr. Monro who founded the great medical school at Edinburgh, and Dr. Franck Bright was the son of that Dr. Bright who was so well known as the great physician of Guy's Hospital. It was a peculiarly happy thing that the Association was able to ask these gentlemen to honour it by becoming honorary members of the Association.

Mr. ANDREW CLARK seconded the motion, which was carried by acclamation.

Sir VICTOR HORSLEY then moved:

That Professor Augustus G. Vernon Harcourt, M.A., F.R.S., be elected an honorary member of the British Medical Association for the valuable services he has rendered to the Association through the Special Chloroform Committee.

It was one of the great debts which the Association owed to the University that three years ago Professor Harcourt came forward with his invaluable assistance in the matter of chloroform research. What Professor Harcourt had done for the Association could not be said in a few moments, and, therefore, he would simply content himself with moving the resolution in order that the Association might in some sense express its gratitude to a man of academic eminence who had come forward at such a juncture.

The motion was seconded by the TREASURER, Dr. Markham Skerritt, and carried unanimously.

FINANCIAL STATEMENT.

The CHAIRMAN OF THE COUNCIL (Mr. Andrew Clark) then took the chair.

The TREASURER moved:

That the financial statement for the year ending December 31st, 1903, be received and adopted.

Dr. LANGLEY BROWNE seconded.

Dr. HADDON said that he saw from the balance sheet that the balance of income over expenditure for 1903 brought from Revenue Account amounted to £5,571 10s. 1d. He thought that that was a most excellent return, but he wished to ask whether something could be told the meeting as to what was expected to be done with that £5,000. Some of those present might not know that he was the only member who objected to the Association purchasing the property in the Strand. It seemed to him that the Association had nothing to do with property, but ought to use its income for the benefit of medical science.

Dr. BRASSEY BRIERLEY said they had been informed that the membership of the Association had vastly increased since the reconstitution. In 1902 the postage for the dispatch of the JOURNAL was £3,815, and last year it was only £3,743. He wished to know whether these figures indicated an increase or decrease in the membership.

Dr. DOUGLAS thought the members of the Association would be behaving very ungraciously if they did not express their thanks to the Treasurer for the extended balance sheet and particulars.

Dr. NASH inquired whether the £1,000 which was the Editor's salary was for all work he did, or whether he was paid extra for contributions to the JOURNAL.

The TREASURER, replying to Dr. Haddon, said that what was done with the profits of the year was that they were invested. The Association must have premises, and those premises were now the property of the Association. It was also necessary to have a reserve fund in case of need. In reply to Dr. Brassey Brierley, he said the answer to his question was an indication of the attitude of the General Secretary towards the business of the Association, because by careful manipulation he had arranged for a good and thin paper for the foreign journals, and that accounted for the difference in the postage. He was glad to find that the publication of the balance sheet was appreciated. In regard to the question asked about the Editor, he said the Editor was paid for his contributions, in addition to his salary. This matter had from time to time been considered by the Journal and Finance Committee and by the Council, and it was felt that the best interests of the JOURNAL would be preserved by continuing that arrangement.

The resolution was then put to the meeting and carried.

OFFICE SUPERANNUATION FUND.

Dr. LANGLEY BROWNE moved:

That the sum of £300 be added to the Superannuation Fund, which they had already started, to help those of the staff who might at some future time be in need of help.

On the whole, perhaps, it would have been better if an organized scheme, which could have been made compulsory, had been adopted; but that was found very difficult and expensive, and a course had been adopted which was followed by a large number of companies—to vote an annual sum to the fund, so that in the future it might form a very good superannuation fund.

Dr. D. C. BROWNE seconded, and said that the question was well threshed out at the last meeting, and most members were satisfied that there should be such an annual grant.

The resolution was put and agreed to.

APPOINTMENT OF AUDITORS.

The TREASURER then moved:

That Messrs. Price, Waterhouse, and Co. be, and they are hereby, appointed auditors to the British Medical Association until the next annual general meeting, at a remuneration of £105.

Dr. MAJOR GREENWOOD seconded, and it was agreed to.

The meeting then adjourned.

CONFERMENT OF HONORARY DEGREES.

ON Wednesday, July 27th, the degree of D.Sc. *honoris causâ* was conferred in the Sheldonian Theatre on Dr. Clifford Allbutt, Regius Professor of Physic in the University of Cambridge; Mr. Andrew Clark, Surgeon to Middlesex Hospital, and Chairman of Council, British Medical Association; Dr. T. D. Griffiths, President of the British Medical Association; Mr. Jonathan Hutchinson, late President, Royal College of Surgeons of England; Sir William Macewen, Regius Professor of Surgery in the University of Glasgow; Sir Patrick Manson, of the London School of Tropical Medicine; Sir John William Moore, formerly President of the Royal College of Physicians of Ireland, and Professor Osler, of Johns Hopkins University.

The following is the text of the speeches delivered by Professor LOVE (Sedleian Professor of Natural Philosophy) in presenting the recipients:—

PROFESSOR CLIFFORD ALLBUTT.

Inter eos qui in arte medica res novas reppererunt et aliis optimas investigandi vias ostenderunt agmen ducit Thomas Clifford Allbutt, Academiae Cantabrigiensis, sororis nostrae, in qua Professor medicinae est, exemplar atque ornamentum. Cuius viri, ut laudes et honores, quibus plurimis auctus est, omittam, ad rem venio, quae nomen eius semper illustrabit, quod hoc hortante et curante omnibus fere medicis et chirurgis, qui in hac civitate inclaruerunt, rei incumbentibus et symbolam conferentibus maximus ille de arte medica tractatus felicissime confectus est. Cum enim omnia artis medicae et chirurgicae genera ipse doctrina complecteretur, omnes morbos summa sollertia et cognosceret et curaret, viris omnibus, qui minutissimis quaerendi rationibus se totos dabant, familiarissime uteretur, id consecutus est ut in hoc libro praeclarissimo, optimae profecto doctrinae referto, probatissimae rationes, quibus hodie utuntur medici, omnes contineantur.

[Prominent among those who have made discoveries in the science of medicine, and have pointed out to others the best methods of investigation is Thomas Clifford Allbutt, in whom also we honour a representative of the sister University of Cambridge, for it is in that University that he is Professor of Physic. To pass over the other distinctions which he has gained and the honours which have been bestowed on him, I come to the work with which his name will always be associated—the publication under his editorship of that great treatise on medicine for which he has enlisted the assistance of nearly all the great physicians and surgeons of the country. His wide knowledge extending to all branches of medical and surgical science, his minute practical acquaintance with the diagnosis and treatment of all sorts of diseases, his intimate personal relations with those who have made special studies of the most obscure departments of medicine have combined to make this work a monument of learning and

a trustworthy guide to the most approved practice of the day.]

Mr. Andrew Clark.

Justissima prosequimur laude Andream Clark, chirurgum maximum, qui non solum in arte sua et exercenda et instituenda summam laudem adeptus est, sed operam praecipuam dedit quo medici et chirurgi apud cives maioris aestimarentur et fide digniores essent. Hoc consecutus est Societatis medicorum Britannicorum Vice-Praeses et Princeps, quae inter suos numerat omnes fere in omnibus huius regni locis qui medicinam vel chirurgiam exercent. Quid igitur vult haec praeclara Societas? cui rei praeter ceteros semper incubuit hic noster Andreas Clark? Nonne ut medici inter sese consocientur, ut eorum reperta qui scientiae et investigationibus vacent alii cognoscant, ut novissimas et optimas medendi rationes nemo non discere et exercere possit? Illud addiderim eum non solum medicorum utilitatibus profuisse, sed militia voluntaria rei publicae inserviisse inter eos qui patriam contra hostium incursionem defensuri sunt, et in numero medicorum, quorum scientia civibus martem temptantibus praesto erit, locum principem obtinere.

[In Andrew Clark we honour a great surgeon who, besides having achieved the highest distinction in the practice and teaching of surgery, has also contributed notably to raising physicians and surgeons in general in the public estimation, and to making them more worthy of public confidence. This he has done by his work as Vice-President and Chairman of the Council of that British Medical Association which counts among its members nearly all those who practise medicine and surgery in all parts of the kingdom. To make them acquainted with each other, to give them opportunities of learning the discoveries made by those who have leisure to pursue scientific investigations, to enable them to adopt into their practice the most improved modern methods—these are the objects of the Association, and to all these objects Andrew Clark has devoted himself. Besides increasing the usefulness of the medical profession, he has served the State as a Volunteer in that body of men who give themselves to the defence of our country against invasion, and he is now a high officer among those who can be called upon to render medical service to the army in case of war.]

Dr. T. D. Griffiths.

Libentissime profecto salutat Academia nostra multos insigni laude viros, huius coetus lumina, et maximo cum gaudio inter suos Doctores ascribit nonnullos ex iis qui vel in chirurgia vel in medendi arte singularem peritiam adepti aut discipulis instituendis usuque et scientia adornandis, aut morborum causis investigandis, civium commoda auxerunt, rei publicae inservierunt, cognitionis humanae fines promoverunt: quo in numero tanquam fax maior inter minora sidera emicat huius coetus Praeses, Thomas Dryslwyn Griffiths. Declarat maximus hic concursus medicorum et chirurgorum ex omni parte regni confluentium hunc insignem virum non solum sodalium voluntates optime perspicere et exsequi sed ab iisdem maximi aestimari. Quid mirum, cum ipse in arte medendi magno opere inclaruerit, multos de re medica magni momenti commentarios conscripserit, et inter populares suos, suorum laudi, ut par est, faventes, medicorum princeps habeatur?

[Our University welcomes the many distinguished members of the British Medical Association which is now holding its Congress in our city, and she is proud to enroll among her Doctors some of those who by their skill in surgery or in medicine, by their teaching of the principles and practice of these arts, by their investigations of the causes of diseases have made the lives of the people happier, have served the State and have advanced the boundaries of human knowledge; and of these the man who more than any other is the object of our felicitations is the President of the Association, Thomas Dryslwyn Griffiths. The great concourse of physicians and surgeons drawn from all parts of the kingdom and now assembled here bears witness to the energy of the President in furthering the objects of the Association and to his tactful management of its affairs as well as to the estimation in which he is held by his brother practitioners. He has achieved great distinction as a physician, he is the author of numerous memoirs of great value relating to medical subjects, and, in Wales especially, he is looked up to as a leader of the profession.]

Mr. Jonathan Hutchinson.

Praeclarissimus profecto inter chirurgos est Ionathan Hutchinson, vir clarissimus non domi solum sed apud exteras gentes, Societatis Regalis Londiniensis sodalis, Societati Chirurgicae Parisiensi litterarum commercio coniunctus, ab Academiis Glasgoviensi, Cantabrigiensi, Dublinensi gradibus ornatus. Praeses etiam erat Regalis Chirurgorum Britannicorum Collegii et in eodem Collegio Chirurgiae et Pathologiae Professor. Neque scalpello tantum adhibendo praestat vir summus sed morbis et cognoscendis et sanandis qui non nisi a chirurgo curandi sunt: principem vero locum tenet inter eos qui oculorum morbis minutissime student: ita vere affirmare possumus huis opera multos, qui, nisi per eum stetisset, caeci fuissent, hanc suavissimam lucem adhuc videre. Doctrinae autem arcana non sibi tantum et discipulis reservabat sed, cum musaeum quoddam Pathologicum in usum huius Societatis conderet, ipsos scientiae fontes omnibus medicis et chirurgis ostendit. Neque alienum a se ornat Academia nostra qui apud nos sex et triginta abhinc annos prima monumenta pathologica huic ipsi Societati exhibuit.

[Jonathan Hutchinson is a most excellent surgeon, one who is honoured abroad and at home, for he is a Fellow of the Royal Society of London and a corresponding member of the Surgical Society of Paris, and has received degrees from the Universities of Glasgow, Cambridge, and Dublin. He has been President of the Royal College of Surgeons of England and Professor of Surgery and Pathology in that College. He excels not only in the practice of operative surgery, but also in the investigation of the causes and in the treatment of those diseases of which the surgeon is the true healer. In particular, he is pre-eminent among those who have made a special study of the diseases of the eye, so that it may be said that through him many who would otherwise be blind see. But he has not kept for himself and his pupils the secrets of his skill, but, by instituting a museum of pathology in connexion with the British Medical Association, he has brought the sources of his knowledge under the eyes of all physicians and surgeons. In him, also, our University honours one who is no stranger to her, for it was here some thirty-six years ago that he prepared and showed the first pathological exhibit displayed at a meeting of the Association.]

Sir William Macewen.

Personam Scotiae hodie gerit Willelmus Macewen, in Academia Glasgoviensi Chirurgiae Professor, humani generis defensor contra minutissimos et infestissimos hostes vulneribus luem tabemque inlaturos. Constat enim hodie apud omnes tenuissimorum animalium agitatione id fieri ut vulnera, quae sine his sanari poterant, mortifera sint. Dux est inter eos qui agendi modos et quaesiverunt et reppererunt quibus haec innocua fiant, egregio sane successu, cum hodie chirurgi multas res securi navent, quas priores tentare timuerunt, laborantibus salutem fere certam adlaturi. Laudem tantis meritis in hoc chirurgiae genere debitam accepit a Rege Eques creatus, a Regali Societate inter sodales adscitus, cum multis doctissimorum virorum Societatibus et in Europa et in America litterarum commercio coniunctus.

[The representative of Scotland to-day is William Macewen, Professor of Surgery in the University of Glasgow, a man famous all over the world for his skill in repelling the attacks of those extremely minute and extremely virulent enemies of mankind which are the causes of septic poisoning in wounds; for all are now agreed that it is by the action of very small living creatures that wounds which might otherwise be healed become fatal. He is a leader among those who have sought and found methods for rendering these creatures innocuous, with the result that very many operations of surgery which but a few decades ago were almost too dangerous to attempt can now be performed with safety and can result almost certainly in the cure of the patients. His brilliant work in this department of surgery has been recognized by the King who knighted him, by the Royal Society of which he is a Fellow, and by many learned societies in Europe and America of which he is a corresponding member.]

Sir Patrick Manson.

Magna haec Britannia, cum tot gentes diversissimas in fidem reciperet, confessa est se debere et indigenis vivendi rationes meliores reddere et efficere ut in eorum finibus cives nostri habitare possint. Quo in opere Patricio Manson adiutore egregio usa est, quem in natura morborum cognoscenda, quibus obnoxii sunt regionum sole perustarum incolae, auctorem insignissimum habent cum medicorum scholae Londiniensis, tum Regalis Societas, tum ipsi rei publicae rectores in coloniis gubernandis versati. Quorum morborum causas ut cognosceret in diversissimas orbis terrarum partes

navigavit, in regionibus omni pestium et febrium genere infestatis multos menses vixit. Tot itineribus perfunctus, tantam cognitionem adeptus, multos commentarios conscripsit, summae patientiae, peritiae, sagacitatis testes, qua arcana naturae reseraret et reperta praeclarissime exponeret. Tanto de imperio nostro, de omni humano genere meritus praemium accepit a Rege Illustrissimi Ordinis Sanctorum Michaelis et Georgii Eques creatus.

[Great Britain in extending her dominion over many lands has assumed the responsibility of improving the conditions of life among the natives and of rendering the territories fit for habitation by her citizens. In this work she has received the greatest assistance from Patrick Manson, for, in regard to those mysterious diseases to which the inhabitants of tropical regions are liable and which are seldom met with in more temperate climates, he is accepted as the leading authority in the medical schools in London, in the Royal Society, and by the Government in its dealings with the Colonies. For the purpose of investigating the causes of these diseases he has made many voyages to distant parts of the world, and has lived for many months at a time in districts infested with plagues and fevers. As the result of his travels and researches he has written many memoirs which are monuments of patient skill and keen insight in unravelling the accumulated results of inquiry and in detecting the mode in which Nature operates. His services to mankind and to the Empire have been rewarded by the King, who created him K.C.M.G.]

Sir John William Moore.

Academiae Dublinensis, sororis suae, alumnum salutat Academia nostra, Ioannem Willelmum Moore, inter medicos et chirurgos Hibernos nobilissimum, Collegii Regalis Medicorum Hibernorum olim Praesidem, in Regali Chirurgorum Hibernorum Collegio artis medicae Professorem: a Regina etiam Victoria pro meritis in suos cives collatis Equitem creatum. Qui vir non solum urbes incolentibus maxime profuit cum causas cognosceret quibus pendeat salubritas vel urbana vel rusticana, sed libros plures maximi pretii conscripsit, in quibus rationes ostendit, quibus utantur hodie, si qui contra morbos et febres vel halitu vel tactu disseminatos pugnare volunt. Leges etiam Naturae exposuit, quibus parendum sit ab omnibus qui vel ipsi in hos morbos incidere vel ceteris pestem inferre nolint. Exemplo certe est verum illud esse quod aiunt curanti praestare prohibentem.

[Our University welcomes a representative of the sister University of Dublin, John William Moore, a leader among those who practise medicine and surgery in Ireland, for he has been President of the Royal College of Physicians of Ireland and Professor of the Practice of Medicine in the Royal College of Surgeons of Ireland. For his services to the people of Ireland he was knighted by Queen Victoria. He has done a great work in improving the conditions of life among the dwellers in cities, for he has not only investigated the causes upon which depends the general health of the population of towns and villages, but he has also written several most excellent books, in which he has laid down the principles invoked by modern science in fighting against fevers and other infectious and contagious diseases, and has explained the laws to which all must conform in order to escape such diseases themselves, and to avoid being sources of danger to others. His work exemplifies the proverb, "Prevention is better than cure."]

Professor William Osler.

Inter eos qui novissimis scientiae repertis freti morborum causas cognoscunt et opem aegris adferunt nescio an nemo maiorem laudem adsecutus est quam Willelmus Osler. Qui vir sive discipulos primo in Academia Montrealensi dein in Baltimorensi institueret, sive libellos conscriberet, in quibus modo de scientia, modo de artis medicae usu ageretur, sive ipse aegros peritissime curaret, illud multos annos prae se ferebat, qui morbis mederi vellet scientiae subtilissimae subsidiis uti debere. Quam rationem cum multis exemplis felicissime probaret et ipse in vario scientiae genere plurimum proficeret, a Societate Regali Sodalis creatus est. In hoc viro salutamus ipsam Canadam, cuius personam gerit, quam tanquam filiam dilectissimam habet haec nostra communis patria, tot liberorum parens, tum maximam illam Rem Publicam Occidentalem, cuius cives non adfinitatis solum sed etiam amicitiae artissimis vinculis nobis coniunguntur.

[Among those who apply the results of modern science to the investigation of the causes and the cure of diseases, few have attained greater distinction than William Osler. By his professorial teaching, first in Montreal, and afterwards in Baltimore, by his writings, which deal partly with questions of abstract science and partly with questions concerning the practice of medicine, by his skill as a physician, he has been for many years a leading exponent of the principle that the art of medicine should be based upon the most exact scientific knowledge of the day. For his work in exemplifying this principle, as well as for the merit of his contributions to science, he was elected a Fellow of the Royal Society. In him also we welcome a representative of one of those daughter States which are the pride of the Mother Country—the Dominion of Canada—and also of that great Republic of the West whose people, bound to us by the closest ties of kinship, are also among our best friends.]

Dr. T. G. Roddick, of Montreal, on whom an honorary degree was also to have been conferred, was unavoidably prevented from being present.

ANNUAL REPRESENTATIVE MEETING.

First Representative Meeting, Tuesday July 26th.

The Annual Representative Meeting of the Association was held on Tuesday, July 26th, in the Examination Schools, High Street, Oxford.

Sir Victor Horsley took the chair at 2 p.m.

Preliminary Business.

The Chairman reported that the agenda paper had been arranged according to the Standing Orders. The Standing Orders were precise as to what was to be the order of business, but some alteration of the order of business might at times be necessary, and he therefore asked members to give the matter attention either at Oxford or at the next Representative Meeting as to the advisability or not of appointing a Business Committee which might take whatever steps it thought fit so that the order of business might be altered if necessary. He called upon the meeting to receive the return of the election of Representatives for the year and to receive notices, if any, of the appointment of substitutes for Representatives unable to be present. He then asked whether any member's return was not accurately stated. As no member rose he announced that Dr. Comyns Leach had been elected by the Weymouth Division in place of Dr. Jones. His election took place before July 5th, and he took it that the meeting accepted the return as correct, and this was agreed to. He next asked the meeting whether it would accept the returns altogether, and this was agreed to. He then said his next duty was to leave the chair. He considered that the wording of the Standing Orders as to the procedure suggested that the Chairman of Council should take the chair. He therefore vacated the chair in favour of the Chairman of Council.

Election of Chairman.

Mr. Andrew Clark, Chairman of Council, then took the chair and said that his duty was to ask the meeting to elect a Chairman for the year.

Dr. Douglas (Maidstone, etc., Divisions) said that last year he had the honour and privilege of proposing Sir Victor Horsley as the Chairman of the Representative Meeting, and this year he had again to ask the meeting to elect him. (Loud applause.) It required little, if anything, from him to add to the good things which had been said of Sir Victor Horsley last year. They had had a year's experience of him and that experience showed that the work had been well done. Therefore, it was to him a great pleasure to propose that Sir Victor Horsley should be the Chairman for the ensuing year. He had an idea that perhaps Sir Victor Horsley might make some stipulation that he should not be asked a third time to fill the office of Chairman of the Representative Meeting, but he asked him not to take the principle of the election of President of the United States as a precedent.

Dr. Cox (Consett, etc., Divisions) seconded the proposition, saying that he had the honour of doing so last year, and he thought it a great honour to do so this year.

The Chairman stated that as no other names had been suggested he did not think it necessary to ask for any other nominations, but he put the resolution to the meeting, which was carried unanimously, and with great applause.

Sir Victor Horsley (Marylebone Division) then resumed the Chair, and said that he was extremely obliged to the Representatives for again conferring such an honour upon him. He was very sorry to do anything that might be dis-

sonant to Dr. Douglas's feelings, but the election of officers, and, above all, the election of the Chairman of the Representative Meeting, was a matter which in the interests of the Association could not be considered lightly. Certain of the officers of the Association had been held for three years, but he had long been of opinion, and had expressed that opinion, that two years was an adequate length of time. Continuity of office was not really a necessity, and it too often happened that there was not sufficient openness towards new ideas owing to persistent occupation of the chair. He had no intention whatever of allowing himself to be nominated for election next year, and therefore he hoped that during the coming year the members would consider whom they would nominate to take his place. He thanked them once more for the honour that they had conferred upon him.

Dr. WALTER SMITH (St. Pancras Division) inquired if it was proposed to elect a deputy-chairman. He believed that under the Standing Orders there was no provision for such an appointment, but he thought it necessary owing to the large amount of work to be gone through.

The CHAIRMAN replied that there was no suggestion at present before the meeting to that effect: if Dr. Smith would put a notice upon the paper the members might discuss it, or if he thought it sufficiently important he might bring the matter up on the motion with reference to Standing Orders.

MINUTES.

The CHAIRMAN said that he had arranged that the minutes of each day's proceedings should be placed in the hands of the Representatives on the following morning in print, and that the commencement of each day's proceedings should be the confirmation of those minutes. It would be for the Representatives to decide what should be done on the last day, whether they would wait for a quarter-of-an-hour or half-an-hour after the conclusion of business to receive the minutes which would then have been transcribed, or whether they would postpone the confirmation of the last day's minutes until next year. He should be glad to receive suggestions on that subject from Representatives.

APOLOGIES FOR ABSENCE.

The GENERAL SECRETARY then read letters of apology for absence from Mr. W. Whitworth (Truro Division), Mr. C. T. W. Hirsch (Dartford Division), Dr. J. T. D. Windle (Ealing and Watford Division), Dr. T. Henry Jones (West Dorset Division), Dr. Stanley L. Haynes (Worcester Division), and Mr. W. J. Stephens (Brighton).

STANDING ORDERS.

The CHAIRMAN said the next business was entered on the paper as to "Confirm Standing Orders." That was not quite correct. The Standing Orders which were before the Representatives were passed and agreed to at the last meeting, and it was now for them to adopt or amend them if they thought fit. If, therefore, any member wished to move an amendment of the Standing Orders that was the time.

Dr. WALTER SMITH inquired whether he could move that there should be a deputy-chairman.

The CHAIRMAN replied that if notice were given the matter could, with the permission of the meeting, be brought up as the first business on the following day; and Dr. SMITH then gave notice, permission being given by the meeting.

The Standing Orders were confirmed.

ANNUAL REPORT OF COUNCIL.

The CHAIRMAN said that the next business was to receive the annual report of the Council. This carried with it the financial statement but not the financial estimate, which was a separate item. He would ask the meeting to follow the precedent of last session and to regard the report of the Council as a record, and therefore not to discuss it more than was absolutely necessary, because many of the points contained therein would come up under the special reports.

Mr. ANDREW CLARK moved that the report be received and approved. He called attention to the fact that the Prince of Wales had been elected an honorary member of the Association. He pointed out that the military medical services had not yet been represented on the Council of the Association, as had been intended when the Constitution was changed. The reason was that it was found impracticable for the Services to nominate a representative. The meeting would have before it a recommendation of the Council to alter the by-law so that the Council might co-opt—if he might use the word—a member of the Royal Navy, Army Medical, and Indian Medical Services respectively. That would be a practical way of getting a representative of those three Services. In the report the Council naturally expressed regret that the Sanitary Congress was being held this year at Glasgow at the same time as the British Medical Association meeting. For this reason, the Association was unable to send representatives, as it had generally done. The Association *Year Book*, issued for the first time during the year, had been found of very great service by all members of the Association particularly by secretaries and officers of the Association. The *Year Book* was not perfect, and a large number of suggestions had been made for improving it. The Council was very much obliged to those members who had taken the trouble to make suggestions, and a good many of them would be acted upon. He referred to the superannuation fund for the clerks in the employment of the central office, and referred to the fact that at the general meeting an addition of £300 had been made to that fund and it was hoped in due course to make it a valuable fund to old servants.

Dr. BRASSEY BRIERLEY (Manchester, West Division) said that he would formally second the adoption of the report for the purpose of making one or two remarks. The financial statement showed a gross total increase in the receipts over the expenditure of £5,600, which was a very handsome sum. Dr. Brierley was proceeding to refer to the cost of printing the JOURNAL when the CHAIRMAN said that that matter was not under discussion.

Dr. BROADBENT (Manchester, North, Division) said that the list of members was published on May 1st, too late to be useful.

Mr. POPE (Cleveland Division) asked whether there was or was not a scheme of superannuation, and whether disbursements were not actually taking place out of the fund.

Dr. WALTER SMITH asked whether the question of the officials of the Association contributing a proportion of their salary to the superannuation fund had been considered. This was usually done in the offices of public bodies.

Dr. NASH (Blackburn, etc., Divisions) said that the Association was asked to pay £300 for its servants, but made no grant to provide for the children of the members of the Association. He thought that the first duty of the members was to themselves.

A REPRESENTATIVE asked whether more detail as to how the Branches were getting on could be given. It might lead to a friendly form of rivalry.

Dr. BRASSEY BRIERLEY said that he was entirely in sympathy with Dr. Nash.

Dr. NASH said that in the last year or two the salary of the Editor of the JOURNAL had been raised from £750 to £1,000. He believed that it was the idea, when the salary was raised, that it was to be inclusive, and he wanted to know whether contributions were paid for as well. Another question he wished to ask was whether the Editor was allowed private practice as well.

Dr. WOLSTENHOLME (Manchester, Salford Division) said that what the Editor got and what the Sub-Editor got should be stated in black and white.

Dr. GOODALL (City Division) said that it would be convenient if an account of the Representative Meeting were published as a Supplement.

Mr. ANDREW CLARK, in reply, said there were many difficulties with regard to publishing a list of members at an earlier period, but the matter should be inquired into. With regard to the superannuation fund and contributions by the clerks of the Association, a subcommittee had gone carefully into the subject two or three years ago; it would be considered again, and it might possibly be found desirable to invite contributions from the officers who were to benefit. The Articles of Association did not permit subscriptions to be made to medical charities, but the General Secretary received special subscriptions for the medical charities, and the plan had resulted in a large sum of money going into their coffers. If he had had notice he could have given the exact figures with regard to the increase of members, but he understood that there had been a decided increase. The Journal and Finance Committee decided some two or three years ago that the Editor should not engage in private practice. The Treasurer had a list of those who were paid for contributions, and every contributor was paid *pro rata* for what he contributed to the JOURNAL.

The CHAIRMAN then called on the Editor.

Dr. DAWSON WILLIAMS said it was a little difficult and disagreeable to talk about oneself. He had been Editor of the JOURNAL for seven years now. Originally the agreement with

him was very indefinite, but two or three years ago it was settled that the editorship should be a whole-time appointment, and he had given up private practice. His present salary was £1,000 per annum, and he also received, like any other contributor, payment for articles which he wrote for the JOURNAL, and at the same rate. He had got out the figures for the last five years, and he found that in the year 1899 he received £232, with a smaller salary; in 1900, £204; in 1901, £190; in 1902, £163; and in 1903 £187 for contributions. There was an Assistant-Editor and Sub-Editor, and the proportion of the total sum for contributions which went to members of the editorial staff was about 21 per cent.

The CHAIRMAN said it appeared to be the general feeling on the part of members of the Association that the business part of the affairs of the Association should be contained in a SUPPLEMENT, and that the JOURNAL should be retained for the scientific matter. It took a little time to arrange these things, but he thought that in the SUPPLEMENT were now found all the matters connected with the business of the Association with the exception of a few notices.

Dr. DOUGLAS (Maidstone, etc., Divisions) explained that he desired the SUPPLEMENT to be kept for a record of politics and business matters of the Association, which in his opinion was a very desirable thing.

Mr. G. S. POPE (Cleveland Divisions) complained that he had received no reply to his question as to whether there was or was not a scheme of superannuation, and whether disbursements were not actually taking place out of the fund.

The CHAIRMAN pointed out that Mr. Andrew Clark had distinctly stated that there was not at present any scheme, and the fund was not being administered; all that was being done was to endeavour to form a nucleus of such a fund.

Mr. POPE expressed his satisfaction at the reply.

The CHAIRMAN, before putting the resolution, wished to draw attention to an important matter in connexion with the reference in the Report of the Council to the proposal of the Colonial Committee "to take up the question of colonial registration and medical reciprocity in Australasia." In the interests of Imperial federation in medical subjects, he was glad to announce that on July 6th the Council passed the following resolution: "That the Council is of opinion that it is expedient that only those medical qualifications which are available for registration in Great Britain and Ireland should be registrable in Australia." A copy of the resolution would be forwarded to the Colonial Secretary with a respectful request that copies should be transmitted to the Colonial Governments for their consideration.

The Report was then put to the meeting and it was agreed to.

FINANCIAL ESTIMATE.

The CHAIRMAN stated that the next business was the financial estimate for the year ending December 31st, 1904, and inquired if any member had any remarks to make. No member asking any question,

The TREASURER moved:

That the estimate of receipts and expenditure for the year 1904 as prepared by the Council be received and approved.

Dr. MAJOR GREENWOOD seconded the resolution, which was carried.

MEDICAL DEFENCE.

The CHAIRMAN said that the next business was the consideration of the documents as to medical defence, which consisted (1) of the scheme of medical defence as originally circulated from the Council to the Divisions, (2) of a minority report, and (3) of a statistical statement of the answers of the respective Divisions as to whether they approved or disapproved of the scheme, and of individual members as to whether they would join a defence department if such were formed. Arising out of the circulation of the scheme, the Wandsworth Division had given notice of motion, and he wished to draw attention to the following paragraph of the notice:

(C.) "That should any defence society decline to send representatives to act officially on this Committee, or later to join in with this Association in one Medical Defence Department, clauses be added to the scheme allowing of members of any defence society joining the Defence Department individually."

This was an instruction to the Council to include in its scheme a proposition whereby persons who were not members of the Association should nevertheless obtain the privileges and advantages of members of the Association. When he received the proposed resolution it occurred to him that it was contrary to the Memorandum and Articles of Association, and he had consulted the solicitor to the Association, who had confirmed that view. Under these circumstances until the Memorandum and Articles of Association were altered he must rule that the paragraph was out of order. The other paragraphs were in order, and he thought it would conduce to a satisfactory discussion of the subject—and they were going to discuss the principle, not the scheme—if they were to settle whether the matter should or should not be referred for further consideration.

Several speakers pointed out that the analysis and tabular statement were not completely up to date.

Dr. LATIMER (Swansea Division) pointed out that the returns were faulty, inasmuch as they did not specify the number of members attending the meeting.

Dr. WOLSTENHOLME (Manchester, Salford Division) said that his Division wished the scheme to be compulsory on all members resident in Great Britain and Ireland, so long as the charge was not more than 5s. He inquired whether he should be in order in moving a resolution to that effect, and the CHAIRMAN replied that he would accept it as an amendment: and, in answer to Dr. DOUGLAS, said that the answers were taken from the replies of Secretaries of Divisions as to what passed at the meetings.

Mr. VERRALL would like to be sure what the figures actually represented. The Division to which he belonged (Brighton) appeared as disapproving because only ten were prepared to join. It must not be taken that the figures were derived from Divisional meetings, because there had been no meetings in his Division.

The CHAIRMAN said that the analysis was only brought down to June 27th. Not all the Divisions had sent definite answers: of the 145 which had replied, 84 had passed definite resolutions; the remaining 61 had not. Consequently a definite statement could not be inserted in the abstract. There was sufficient evidence to show that the figures could not be relied upon in the debate, but he pointed out that this did not prevent the progress of the debate. He then called upon Dr. Biggs to move the resolution of the Wandsworth Division.

Dr. BIGGS (Wandsworth Division) said that his Division believed that there was a strong feeling in the Association for medical defence; the objection was to the scheme, and the only thing to do was to prepare a further scheme. He moved:

That in accordance with By-law 37 this Representative Meeting do appoint a Committee of six, in addition to all *ex-officio* members, to prepare a scheme of medical defence for all members of the Association resident in the United Kingdom.

The United Kingdom only was mentioned, because he believed that it was settled that it was impossible to include the Colonies. It was quite competent, he thought, for the meeting to appoint such a Committee.

The CHAIRMAN announced that he had received notice of an amendment by Dr. Buist, which was to insert after the word "six" in the second line the following words:

and instruct the Council to add six others:

that was to say, to form a Committee on the principle of the Medico-Political Committee.

Mr. KINSEY seconded the amendment.

Dr. BUIST, in supporting his amendment, said that the six members chosen would probably not be geographically representative of the country, and he thought it necessary to leave the Council to name representatives for those parts of the country which had not been included.

Dr. LANGLEY BROWNE asked the meeting to accept neither the amendment nor the resolution. The Committee appointed to consider this matter had done some very hard work during the past year. If they were not satisfied with the scheme, the proper course was to refer it back to the Committee. It would be very unfair to ignore what the Committee had done and the immense amount of time it had given to the matter.

Dr. WARD COUSINS (Portsmouth Division) thought the scheme should be referred back to the Committee.

Dr. PRICE (North Carnarvon and Anglesea Division) hoped that neither the amendment nor the original resolution would be accepted. The Committee had produced a scheme for medical defence which had been referred to the Divisions with the most unsatisfactory results. The meeting was being asked to vote upon a scheme before the principle had been accepted. The vote on the question referred to the Divisions had been as follows: The members of 45 Divisions which approved of the scheme numbered 3,473, and those of 39 Divisions which disapproved numbered 3,586. Further, of 69 Divisions which had not voted 61 passed no definite resolution, and he believed the members of those Divisions numbered something over 7,000.

He hoped under those circumstances that the meeting would refer the matter back, so that it might be discussed further by the Divisions and that it might come up at the next annual meeting.

Dr. Wolstenholme (Manchester, Salford Division) said that what they were asked to do by the Wandsworth Division was to say that they approved of the principle of medical defence. He felt quite sure that if that were put before the whole of the Divisions as a simple question an almost unanimous approval would be expressed of the principle of medical defence. His Division desired that it should be made compulsory, and that the extra subscription should not be more than 5s. If this meeting were to accept these two propositions it would have accepted the principle of medical defence, and the details of the scheme might be brought up at another meeting.

Dr. Messiter (Bromsgrove, etc., Divisions) did not think that the meeting would wish that all the work of the Committee should be thrown away, and that another Committee should be appointed. To adopt such a course would be to cast reflection on the Committee. The returns before the meeting were incomplete, and it had not yet before it the information necessary to enable it to discuss the question. The resolution was a grave reflection on a body of men who had worked hard, and the matter should be postponed until a complete record of what the Divisions wanted could be furnished.

Dr. Rees (Leigh, etc., Divisions) thought there was nothing to prevent the meeting adopting the resolution and showing its appreciation of the old Committee by re-electing them members of the new Committee. He further thought that the returns ought not to be considered disappointing. The subject matter was new to the profession; but he had no doubt that in time changes would take place. A large majority of the profession were in favour of the British Medical Association taking up the matter. They had to educate members of the profession to understand that the British Medical Association should practically do everything for every member of the profession in the country. There was a surplus of £5,000, and it would require very little more in the way of subscription to bring it about that every member of the Association would be entitled to have adequate medical defence. The meeting should not throw cold water on the principle, but should make it clear that it was in favour of medical defence being taken up.

Dr. Latimer (Swansea Division) was of opinion any scheme should be compulsory; to leave it optional would be merely playing with it. His Division approved of the Association taking up medical defence if it was made compulsory, and if the payment were less than had been proposed.

The Chairman reported that Dr. Biggs had accepted Dr. Buist's amendment, and it was now open to any member to propose any other amendment.

Dr. D. Browne (Winchester Division) proposed that instead of appointing a new Committee the question of the principle of medical defence should be referred back to the original Committee appointed by the Council.

Dr. Ferguson (Gloucestershire Branch) seconded, as it seemed to him that the only thing to be done was to refer the matter back to the gentlemen who had taken so much trouble about it, so that they might formulate some more acceptable scheme.

Mr. Garstang (Altrincham Division) said that it was proposed, as far as he could gather, to refer the principle back to the Committee. He objected to that. The meeting accepted the principle, and referred the details.

Dr. Brassey Brierley (Manchester, West Division) hoped that the amendment would not be adopted, and that the question would not be shelved any longer.

Dr. Pope (Leicester) said that unless the members had some sort of scheme which showed that there was a practicable method of doing what was proposed, he could not see how they could express themselves for or against the principle of defence. The only thing to be done was to let the Committee thresh the matter out and report again.

Dr. Young (Bolton Division) said that to discuss a scheme for defence before agreeing on the principle was to put the cart before the horse. Let the matter go back for another twelve months, and let it be settled whether the members were in favour of the Association taking up defence or not.

Dr. Latimer moved that the question be now put.

The motion was seconded and carried.

The amendment was then put to the meeting and carried, and thus became a substantive motion.

Dr. Biggs (Wandsworth Division) said that he had not the faintest notion of superseding the Committee or of saying anything whatever against the members of it. On the contrary, he believed that they had done good work. Certainly the first thing he should have done would have been to propose some of the names again.

Dr. MacKeith (Southampton, etc., Divisions) said that he claimed for the Representative Meeting the right to dictate the policy of the Association. He moved as an amendment:

That, instead of appointing a new Committee, the matter be referred to the original Committee appointed by the Council, with instructions to frame suggestions for constructing a compulsory scheme of medical defence.

The motion was seconded by Dr. Nash (Blackburn, etc., Divisions), and at the suggestion of

Dr. Rose (Stratford Division), the mover and seconder accepted the insertion of the word "compulsory."

Mr. Messiter said that the whole principle of medical defence as connected with the Association could be put into a very short compass—that the members of the Association thought that they were going to get medical defence for much less than the different defence societies gave it. The Committee which was appointed to go into the matter spent, he thought, two afternoons practically on that very point, and found that defence could not be undertaken at any cheaper rate than it was done by the existing medical defence societies and unions at the present moment. The insertion of the word "compulsory" in any resolution would undoubtedly end in one of two things—there might be great schism in the Association, a huge leakage in membership. The largest medical defence society had a membership of 6,000. The Medical Defence Union kept employed every day and practically all day two or three people for 6,000 members. It would be absolutely impossible for the Association to cope with such a sudden influx of work in connexion with medical defence. But the great point would be that there would be a tremendous danger of a split in the ranks of the Association. It would be a disastrous thing if the word "compulsory" ever got into any resolution of the Association.

Dr. Heron said that if the meeting insisted upon making medical defence compulsory it would do the best interests of the Association very serious injury. He was convinced of that from what he had read, and seen, and heard. He was also convinced that at the present time the Association could not hope to carry on medical defence for much less than the subscription to the defence societies now engaged in the work. He was quite sure of that. When the Association came to have its surplus profits apportioned to what was pressing, then it could turn its attention to the question of medical defence by devoting a certain fixed sum for medical defence purposes for the current year. If the Association attempted now to run medical defence on a 5s. basis it would make a mistake, and it would have to fall back upon the funds of the Association to an extent which would make medical defence extremely unpopular in the Association.

Dr. Rees thought the matter was being looked at in the wrong light. There was no question of compelling members of the Association to go in for medical defence. It ought to be one of the privileges of membership of the Association that the members should be entitled to medical defence. If the work was necessary to be done, it was right that it should be done by the British Medical Association. Why should they not, as business men, do things cheaply if they could? A big Association, with twenty thousand members, should do it at very little expense indeed compared with the expense incurred by the existing societies.

Dr. Gullan (Liverpool, Central Div.) said that in Liverpool they felt that the existing societies did their work admirably, and that no scheme of medical defence should be taken up by the British Medical Association without trying first, by some practical method of work or by some careful arrangement, to combine with the existing medical defence societies. It had been said that the membership of the largest of the medical defence societies was 6,000. Many of those members were perfectly satisfied with the way in which defence was carried out and many were members of the Association. If the motion were passed it would do a great deal of harm because many would leave the Association.

The Chairman, replying to Dr. Ward Cousins, could not say, if the resolution were adopted, whether the Committee would refer the question of compulsory defence back to the Divisions.

Dr. Walter Smith (St. Pancras Division) was perfectly

satisfied with the way in which medical defence was carried on by the existing societies, and considered it premature for the British Medical Association to take it up. He moved to omit the word "compulsory."

Dr. DOUGLAS (Maidstone, etc., Divisions) was personally in favour of compulsion, but as a Representative he had no right to bind his constituents. He was in favour of the resolution if the word "compulsory" were omitted, because it was not possible to insist on it.

Dr. BAILDON (Southport Division) moved, Dr. WARD COUSINS (Portsmouth Division) seconded, and it was agreed, that the question be now put.

Dr. WOLSTENHOLME (Manchester, Salford Division) claimed a vote by card.

The CHAIRMAN pointed out that under the by-laws that must be carried by a majority and would considerably delay matters. He then put the amendment, which was lost, and

Dr. LATIMER (Swansea Division), moved that the question be now put. This was seconded and agreed to.

The CHAIRMAN then put the original resolution, which was carried.

Dr. WALTER SMITH (St. Pancras Division) moved:

That it be an instruction to the Committee in framing any scheme of medical defence to include both collective and individual defence.

This was agreed to.

Dr. WALTER SMITH also moved:

That it be an instruction to the Committee to consider the previous scheme, and to propose a scheme for all members of the Association without any increase of subscription, if practicable, and if not, that the increase shall not exceed 5s.

Dr. POPE pointed out that that involved compulsion, which had already been voted on.

Dr. LATIMER thought these instructions would take the matter out of the hands of the Committee.

The CHAIRMAN, on the point raised by Dr. Pope, agreed that the instruction was not in order.

Mr. JACKSON (Plymouth Division) moved:

That the Committee consider the practicability of providing medical defence without any increase of subscription.

Dr. MORTON (Walthamstow Division) seconded.

Mr. INNES GRIFFIN (Oxford Division) said the Association had a balance of £96,000 assets over liabilities, and he would like to know what the Association did out of the money it had got in hand for the general body of members.

The CHAIRMAN ruled the question out of order, and Mr. Jackson's instruction on being put was lost.

Dr. PRICE (North Carnarvon and Anglesea Division) moved:

That it be an instruction to the Medical Defence Committee to state in their scheme or statement which shall be submitted for approval or otherwise to the Divisions in what way it provides for the amalgamation of the existing medical defence societies.

Dr. GULLAN (Liverpool, Central) seconded.

Dr. BROADBENT (Manchester, North Division) asked how it would affect those members of the Association who were members of the existing societies.

The CHAIRMAN, replying to Dr. MACDONALD (West Somerset Branch), said the motion was a distinct instruction to the Committee to discuss fully and provide if possible for the amalgamation of the existing societies.

The motion was then put and agreed to.

Dr. KINSEY proposed, and Dr. DOUGLAS (Maidstone, etc., Divisions), seconded:

That it be an instruction to the Committee that any additional sum proposed to be paid for medical defence shall not exceed 10s.

He did not mean that it must necessarily be 10s., but if on consideration it were found that a smaller sum would be sufficient then that smaller sum should be charged.

The motion was lost.

Dr. WARD COUSINS (Portsmouth Division) moved:

That any scheme prepared by the Subcommittee shall be submitted to the Divisions before the next Representative Meeting.

Mr. GOSSE (Faversham, etc., Divisions) thought it should be first referred to the Divisions, and that the Representatives should receive instructions from the Divisions.

The CHAIRMAN said that was not contrary to the terms of the motion.

Dr. MACDONALD suggested the insertion of a date so as to afford time for its consideration by the Divisions.

Dr. WARD COUSINS agreed to a time limit.

The CHAIRMAN suggested the 31st of March, 1905.

This was agreed to, and the motion as amended was adopted.

Dr. HORROCKS (Bradford Division) moved, Mr. ST. JOHN (Derby Division) seconded, and it was resolved to proceed to the next business.

HOSPITAL REFORM.

The CHAIRMAN stated that the next business was a report setting out the principles of hospital reform proposed by the Hospitals Committee and adopted by the Council on July 6th.

Dr. BEVERLEY said, in asking them to approve this report, he might at once say that they must not consider it in any way a final one. It was the result of the labours of a Committee over which he had had the honour to preside during the past year. They had taken into consideration a very large amount of evidence collected from various hospitals in connexion with the great subject of hospital reform, hospital abuse, and hospital administration. The result of their labours was embodied in some twelve model principles. He did not wish to claim more for these than that they should be accepted as principles from which it was hoped that at some subsequent period a more perfect scheme might be evolved. It would be noticed that the Committee suggested, if they approved the principles, that it should have the power of co-opting certain members of the laity interested in the administration of hospitals, so that when this report and these principles were finally adopted they might go forth to the various hospitals, not as principles formulated by the doctors only, but by the laity and approved by those who had to do with hospitals. They must take into consideration the fact that they had not simply the interests of the profession to guard, but they had also the interests of the subscribers to the hospitals, the patients, and the public. These principles, which he hoped they would approve, would form the basis, if the Council thought fit to reappoint the Committee, to enable them to go on with the work which, during the past year, they had been engaged in. If there were any question arising out of the report which any member desired to ask he should be pleased to answer it if he could; but he would content himself by simply moving that this report be approved.

Dr. POPE seconded the motion. There were one or two points which he desired to explain. As Dr. Beverley said, these were simple suggestions which they wanted to follow up. Everything the Association had tried to do up to the present in the way of remedying hospital abuse had been by way of pious opinions, and those pious opinions had been forwarded to the hospital authorities and had been in nearly every case pigeon-holed, and nothing heard of them again. The Committee had resolved not to work on that line, but on the lines they had before them. It hoped, if possible, to get the representatives of every hospital into the same room. It was a large aspiration, but they thought they would do it, and that then they would be able to put the joint medical and lay opinion before them; and that it would carry such weight with it that they really believed they would have done some good.

Mr. ST. JOHN (Derby Division) endorsed the observations of Dr. Pope.

Dr. GROSSMANN (Liverpool, Western Division) agreed with the report. At the hospital to which he was attached in Liverpool, beyond a certain radius, which he believed was twenty miles, the patients had to pay 10s. a week, whether they were poor or not.

Replying to Dr. MORTON, the CHAIRMAN said the recommendations would not be referred to the Divisions.

Dr. ROBERTSON (Isle of Wight Division) said that he was attached to a hospital (Ventnor Hospital for Consumption) where every one paid a uniform subscription of 10s. a week, and where subscribers' letters were essential. The hospital drew patients from all parts of the United Kingdom, and depended for its maintenance upon subscriptions from all parts.

Dr. GOODALL (City Division) did not know whether the Committee had made any distinction between the ordinary hospital and fever hospitals where patients paid.

Dr. BEVERLEY said the report applied to the general hospitals and not to institutions like fever hospitals.

The motion was then put and carried.

MAKE-UP OF THE JOURNAL.

The CHAIRMAN said that the next business, as to the make-up of the BRITISH MEDICAL JOURNAL, was contained in another report from the Council. It was a matter which had already been discussed at the general meeting which had expressed its approval, and as it was open to all the Representatives to attend there it did not seem necessary to have a discussion upon it now; neither was it necessary for them to pass any

resolution with regard to it. Before passing to the next business, with their approval he read a notice of motion which was received too late from the Walthamstow Division, because it bore on the use of the Supplement of the Journal. He was sure, speaking for himself as Chairman and his colleagues, they were prepared to accept it as an instruction in the current year provided they were in office.

Report of Medico-Political Committee.

The Chairman said that the matters dealt with in the report of the Medico-Political Committee were so important that they must take it paragraph by paragraph. He would put them to the meeting from the chair, and then invite consideration on each subject as it arose.

Contract Practice.

The Representative Meeting instructed the Medico-Political Committee to carry out an inquiry into the economic state of all contract practice. That inquiry the Committee made in the following way: It first held a series of meetings and came to certain general conclusions, and those general conclusions were presented to the meeting as an interim report. Further, the Committee drew up a list of questions to be addressed to medical practitioners who were engaged in contract practice, and as, of course, it was entirely unknown to the central office who were and who were not engaged in contract practice, the Medico-Political Committee appealed to the Secretaries of Divisions to help them in this matter, and the Association was greatly indebted to the Secretaries of Divisions for the trouble they had taken in carrying out that request. The mass of material that had already been received was enormous, and the Committee, with the sanction of the Council, appointed Dr. Ewart, who had special experience of statistical work under Dr. Tatham, to co-operate with Mr. Whitaker in analysing those returns; that analysis was simply a record of fact, and therefore not material for discussion. The meeting thus had before it two reports—one an interim report on general principles which seemed to the Committee to be just, and which were matters for debate, and one which was a survey of the answers received from men all over the country, which was merely a matter of record of fact. Further, the inquiry was not concluded; a final report would be presented at the next Annual Representative Meeting. He thought the best course would be to put the propositions one by one. The first proposition was:

1. That it is inevitable in present conditions that there should be in some parts of the United Kingdom some system of contract medical service of the poor.

2. That where the deparment of contract practice relates wholly to medical work, it is essential that medical men should be adequately represented on the management.

The paragraphs were passed.

3. That it should be a fundamental principle of the constitution of all such departments that every medical practitioner in the district for which the service provides, who wishes so to act, should be a medical officer of the service, provided that he conforms to the rules of the service.

That meant that with regard to any contract service started in a district there should be no one medical officer attached to the service, but that every member of the medical profession practising in the district should give in his name if he wished to act as a medical officer, and any member contracting for such service, if he wished, should employ him.

Dr. Robertson (Glasgow Southern Division) proposed as an amendment that, instead of its being in the hands of the medical officer of the Society,

The individual members of Friendly Societies be entitled to choose the medical man by whom they desired to be attended.

In Glasgow there were societies of large numbers of men, and each of those societies had one particular doctor. There was a great deal of grumbling that such an amount of work should be done for such a small fee, especially as, in many instances, the members were able to pay a larger fee. The officers of these societies had asked the assistance of the medical profession of Glasgow to endeavour to increase the amount received; but at a meeting of the profession a resolution was passed by an overwhelming majority that they would not support them unless the officers of these societies were prepared to give up the monopoly which they held.

The amendment having been seconded,

Dr. MacKeith (Southampton, etc., Divisions) expressed the opinion that the recommendation did not refer to those societies where sick pay was given; it referred to those clubs which provided for medical attendance only. He was in thorough accord with Dr. Robertson's suggestion, which was the only way to diminish competition among themselves, and he was positive there would be no solution of the matter until the suggestion was carried out.

Dr. Latimer (Swansea Division) said that the question arose in Swansea in connexion with optional payment. Members of Friendly Societies had of late developed a hostile attitude towards the medical profession generally. The profession had to deal with two classes: those who had learnt the value of being provident in their youth and those who had not been provident. In Swansea the profession gave them the choice of an optional payment or a bill, and a good many men availed themselves of this system in order to avoid payment altogether. They had been appealed to to put their foot down on the system of optional payment, and to say that members of Friendly Societies shall not be able to choose this or that medical man in a town unless they belonged to two or three clubs and should be compelled to pay into one Lodge which had a medical man attached to it.

The Chairman observed that this proposal was not identical with Dr. Robertson's.

Dr. Pope pointed out that that would not be a rule for medical practitioners, but for medical societies; the only rule they could lay down was that no one should be medical officer to such a society.

The Chairman pointed out that the meeting could not make a rule for Friendly Societies; it was a pious opinion, though a rather important one.

Dr. Cox (Consett, etc., Divisions) pointed out that it was an important new point, and he thought it would be wrong for the Representative Meeting to affirm a principle of the kind which had never been before their constituents. He hoped it would not be passed before it was brought before the Divisions, although he personally was in favour of it.

The Chairman remarked that if the meeting passed that particular resolution, then he had also a motion to bring before them which was to refer all these propositions, and the present motion too, to the Divisions. If a Representative moved a motion of the kind in question, as he was entitled, the meeting must vote upon it; whether it was acccepted or rejected was for the meeting to decide.

Dr. Young (Bolton Division) desired to move an amendment—

That it be referred to the Divisions so as to prevent the present meeting voting upon it.

Dr. Cox seconded.

The Chairman said that that was not an amendment. The only way Dr. Young's purpose could be met would be by moving the previous question, which would throw away the whole subject. He thought it was better to take a vote upon it now and include it with the report to be sent to the Divisions.

A Representative asked, if the resolution were lost whether a record of it would be printed or whether it would be deleted.

The Chairman replied that it certainly would be printed in the minutes.

Mr. Verrall thought it would be unfair to delete it. He quite sympathized with the feeling of members, that they did not like to have a thing sprung upon them which had not been before the Divisions; but he thought it would be a great help and a guide to the Divisions to know that a proposition had come up before the Representative Meeting, and a certain decision had been come to.

The Chairman then put the resolution to the meeting and it was carried.

The Chairman then passed to the other resolution of Dr. Biggs:

That the foregoing resolutions and the propositions contained in the interim report on contract practice be referred to the Divisions.

Dr. Rees (Leigh, etc., Divisions) seconded, and it was agreed to.

National Deposit Friendly Society.

The Chairman said that the next business was in reference to the National Deposit Friendly Society. The Medico-Political Committee was instructed to inquire into the working of that Society, and it did so. Members would find the report of the Committee on the subject. That report simply expressed the opinion of the Committee, and was supplied for the information of the Representative Meeting. The report concludes that "until the rules of the Society are amended it is not, in the opinion of the Committee, desirable that individual medical men should allow themselves to be recognized, directly or indirectly, as specially acting for the

Society in any district, or as willing to accept payment on the scale laid down in the rules of the Society." If the members approved of that paragraph it, to a certain degree, bound them to approve of the statement of the Committee. He asked whether any member had any motion to make in reference to the subject?

Dr. GOSSE (Faversham, etc., Divisions) moved that the conclusion be accepted, and this was seconded.

Dr. COX (Consett, etc., Divisions) inquired what was the outcome of this: Did the matter go to the Divisions as a resolution of the Annual Representative Meeting, or what steps would be taken to impress on the Divisions the necessity for taking some united action? In the North of England Branch all the large Divisions had come to the conclusion that they would have nothing to do with Societies in the North of England. He would like to know what was to be done in the way of impressing the necessity of a united action by the Association upon other Divisions which had not considered the matter up till now.

The CHAIRMAN said if the meeting approved in a general way of the report it would then be sent to the Divisions, and it would then be open for members in each Division to raise the subject. If members thought that the Medico-Political Committee ought to go further in the matter, the better way then would be to instruct the Committee to do so.

Dr. NASH (Blackburn, etc., Divisions) thought there was one point which was of importance. In the Society in question the burden of the contract was on the working man, and not on the medical practitioner. In all other contracts the burden was on the medical man.

The CHAIRMAN thought that was a question which would arise after they had taken the vote as to whether the meeting approved or disapproved of the report. He then put to the meeting whether the report should be approved or not, and it was agreed to.

The CHAIRMAN said that the questions which came next were those raised by Dr. Cox and Dr. Nash. Dr. Cox had asked how this matter should be brought forward. He would suggest that Dr. Cox should move that the Medico-Political Committee be instructed to send it to the Divisions with proposals for concerted action on the part of the Divisions.

Dr. COX inquired if the present was the time for doing that.

The CHAIRMAN replied in the negative, saying that the Committee would consider it upon instructions. He asked Dr. Nash to consider whether he could put his point in the form of an instruction.

Dr. GOSSE thought it would be a very serious thing to encourage any combination or contract of a lay society against the profession. There was no need for medical men to encourage any form of club.

The CHAIRMAN said that Dr. Gosse's instruction was as follows:

That the Medico-Political Committee be instructed to transmit the resolution of this meeting respecting the report on the National Deposit Friendly Society to the Divisions with proposals for concerted action.

Dr. GOUDIE (South Shields Division) seconded, and this was agreed to.

The CHAIRMAN said that the Medical Secretary (Mr. Whitaker) had investigated the methods of the Society not only by ordinary study of the rules but by inquiry from the Secretary at the office. He did not suppose that the Society, as a contract practice society, was likely to pay more than it considered it should do at the present time from what the Secretary had stated. He thought it was desirable to work naturally in harmony with the profession, but the Society was doing as much as they were called upon to do at the present time.

Dr. MACKEITH (Southampton, etc., Divisions) moved:

That it be an instruction to the Medico-Political Committee to endeavour to secure that any members of the profession whose names appear on the prospectuses of the National Deposit Friendly Society should prevent their names from being so published.

The CHAIRMAN suggested that it was a matter for the Ethical Committee, and that the words "Ethical Committee" should be substituted for "Medico-Political Committee." This was agreed to by Dr. MACKEITH, and the resolution was seconded by Dr. D. BROWNE (Winchester Division).

A REPRESENTATIVE suggested that this should apply to men, whether they were honorary members or paid.

The CHAIRMAN agreed, and on putting the resoultion to the meeting, it was agreed to.

Dr. NASH moved:

That this meeting instructs the Medico-Political Committee to consider the desirability of considering the position of the National Deposit Friendly Society, should they revise their scale of fees and rules so as to commend them to the profession generally.

The motion was seconded.

Dr. WOLSTENHOLME (Manchester, Salford) said he had given considerable attention to this Society, and his opinion was that the profession should not under any circumstances allow itself to be concerned with it.

Dr. TODD (Sunderland Division) said his Division in the North had made investigations as to this Society, and had decided that the Society was detrimental to the medical profession, that it was lowering its dignity, and that the members of the Division would have nothing to do with it. Now that the profession had taken up a stand in regard to contract practice he hoped they would not take a retrograde step in the direction indicated.

A REPRESENTATIVE pointed out that if the Society went on growing as it had done it would be a serious thing for the profession in the future. He thought the medical profession should make a definite stand on the question. In fact, on this question the medical profession was fighting for liberty.

Another REPRESENTATIVE said the matter which had been brought up was very important; it was a question whether they, as members of the medical profession, would in another way support or encourage contract practice of another sort. One of the resolutions that had been referred to the Divisions was that in certain districts contract practice was necessary. He thought when they went so far they were going as far as they as a profession should go. They were not going to act as agents for any contract society, however excellent its rules might be, and he therefore hoped the meeting would reject this instruction.

Dr. NASH, in reply, said he had brought forward the matter to elicit an expression of opinion. Nobody was more against contract practice than he was. In the face of what had happened he was prepared to withdraw his resolution.

The CHAIRMAN said that being so the next point was simply a record of the report of the Committee, which stated that the Medical Secretary had carried out their instructions and wherever the Division had applied for his assistance to attend a meeting he had fulfilled that request, following out his, the Chairman's, instructions. He was sure that members of the Divisions had found the attendance of the Medical Secretary had been of great use to them.

The General Medical Council.

The next business related to an important question, and that was as to the nomination of candidates for the General Medical Council. At the last meeting of the Representatives the Medico-Political Committee was instructed to consider and report upon the advisability of running, at the next election for Direct Representatives on the General Medical Council, a candidate or candidates under the auspices of the British Medical Association. The Committee had made a report, and he proposed to take the first paragraph of that report as a substantive resolution for the approval or disapproval of the meeting:

In the opinion of the Committee it is advisable, if found practicable, that candidates should be nominated and supported for election on the General Medical Council under the auspices of the British Medical Association.

That did not apply to the question of the return of representatives for Scotland, because the Scottish Committee, having considered the question, thought it was not desirable, and therefore Scotland was not referred to in the resolution of the Committee; England and Ireland were alone referred to. He would move the first resolution from the chair at once, and he would be glad to have the approval of the meeting, first, of the principle whether they agreed or disagreed with the view that it was advisable that the Association should support candidates at the election of direct representatives on the General Medical Council.

Dr. R. ROBERTSON (Isle of Wight Division) said that he had much pleasure in supporting the proposal.

Dr. COX said that the Division that he represented was very well satisfied with the scheme which had been put forward. He was convinced that the Association, if it was to fulfil its mission of being everything to the medical man, must enter into this matter as into many other things. In the North of England they had formed a very high ideal of what the future of the Association was to be, and they believed that there was nothing in which the medical man was interested which the Association would not help him in. As regards the

general principle, he thought that most men were beginning to see that the old plan as to nominations by the General Medical Council in the way that had been adopted in some most notorious instances could not go on. Now there was an Association which was able, and which they hoped would be willing, to select men and put them forward in a proper constitutional way, and back them up for all it was worth.

Dr. Ward Cousins said that he was bound to support the principle of the British Medical Association taking an active part in the selection of candidates for the General Medical Council. What other organization could be looked to? His Division thought that they should certainly support the principle of the British Medical Association.

Dr. Maude (Bromley and Sevenoaks Divisions) said that it must be borne in mind that the Representatives were going to consider later on the question of appealing to the Privy Council for direct representation. If the Association accepted the principle that they were going to push forward their own unofficial member, they might put it into the power of the Privy Council to say, "No; you have already got your representative; you are already represented." Therefore he thought they ought to consider carefully before they approached the one point whether they should not take the other first. It might be well to refer back the one immediately before the meeting until the other was decided upon.

A Representative asked whether it would not be invidious, if there were two members of the Association standing, for the Association to support the one instead of the other.

Dr. MacKeith (Southampton, etc., Divisions) asked what would be the legal position of the representative of the Association on any matter coming before the Council and affecting the British Medical Association or any of its members.

The Chairman: Are you referring to penal cases?

Dr. MacKeith: Yes.

The Chairman: As regards penal cases, the decision in the High Court really covered a different point. The only relationship of importance would be where the British Medical Association was acting as prosecutor. Under those circumstances the members of the Council could not take part in the discussion of the case as a judge.

The proposal was put to the meeting and agreed to.

The Chairman said that now they came to the scheme itself, which was to embody the last vote.

Dr. Walter Smith (St. Pancras Division) asked whether the Committee must nominate those whose names were sent up by the Divisions, or could they nominate any one outside on their own initiative.

The Chairman said that it was to be entirely an Associational matter, entirely in the hands of the Divisions, and certainly not entrusted to any committee.

A Representative asked why the Irish Divisions had been left out.

The Chairman; That is a mistake.

Dr. Latimer (Swansea Division) said that he would suggest that the vote should not be by card, because if it were he could not conceive the chance of any man getting a nomination if he came from a small Division. He would propose that instead of "voting by card" it should be "voting shall be by show of hands."

This was seconded and put to the meeting, and a count taken, when the amendment was declared carried by 54 to 42.

Dr. Buist said that the object aimed at would be best attained by striking out after the word "candidates" the words "and to give to each as many votes as there are members in the constituency represented by the voter."

The Chairman said that he thought that Dr. Latimer's resolution was applicable to any number of candidates. It fitted in with the scheme and did not require altering.

The scheme as a whole as amended was then agreed to.

Vaccination.

The Chairman said that the next subject was the extremely important one of vaccination, but as far as the Report of the Medico-Political Committee was concerned it was a matter of record. As to revaccination the Committee had recommended the Council to support the Revaccination Bill. With regard to public vaccinators' fees the Committee had offered to give evidence, but they had not been asked to. An analysis had been made of the replies of the Divisions on the six principles which were sent to the Divisions early in the year. That analysis was useful, but it did not take the matter any further. It only confirmed the position that those principles represented fairly the opinion of the Association. He, therefore, did not feel that it was necessary to ask for a resolution on No. 3.

After a short discussion the meeting was adjourned until half-past two on Wednesday.

[Owing to the large amount of matter to be dealt with we are obliged to hold over a full report of Wednesday's meeting. A summary will be found on page 250]

The Annual Exhibition
OF
FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[First Notice.]

The Annual Exhibition this year was very happily situated, ample space being found for it in the Examination Schools, the same building as that in which the General Reception Rooms were situated, and in immediate contiguity to the hall which was used both for the general meetings and for those of the Representatives. It was peculiarly accessible, therefore, to members of the Association, and consequently received the attention which so comprehensive an exhibition deserved. In former years the general arrangements and responsibility for this exhibition have been left in the hands of the local authorities, but this year it was thought that possibly it would be more convenient to all concerned if the whole preparation and management of the Exhibition were left in the hands of the head quarters staff. *Post hoc* or *propter hoc*, the Exhibition seems to have given more than usual satisfaction to all concerned, so the plan seems likely to be continued in future years.

Instruments and Appliances.

The Holborn Surgical Instrument Company, Limited (26, Thavies Inn, Holborn Circus, E.C.), had a very large collection of instruments of all kinds. In particular may be mentioned a number of the latest patterns of urine segregators and a large selection of different forms of sterilizing apparatus, of which this firm makes a speciality.

J. J. Griffin and Sons, Limited (20 and 26, Sardinia Street, Lincoln's Inn Fields), showed the chloroform inhaler which the firm has patented, and which was the invention of Mr. A. Vernon Harcourt, F.R.S. The illustration (Fig. 1) shows its general appearance, together with the pointer by which the percentage dosage of chloroform is adjusted. The special points of the instrument are that the operator sees the actions of the valves which indicate the frequency of respiration, can hear their slight click, and can thus estimate the force with

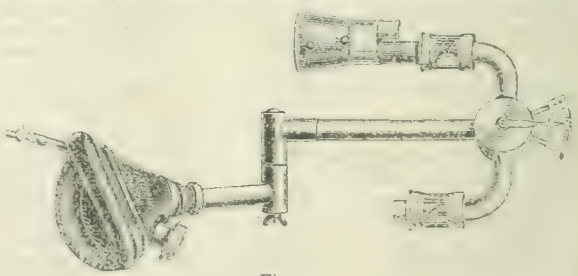


Fig. 1.

which respiration is carried on, while he knows precisely what percentage mixture of chloroform and air he is administering. No chloroform vapour escapes except that which has been inhaled by the patient, and considerable economy is thereby effected. This instrument was first introduced to the Special Chloroform Committee of the British Medical Association, upon whose behalf the claims of the apparatus were investigated by Dr. Dudley Buxton. His report, which will be found in the Supplement to the British Medical Journal of July 18th, 1903, was favourable, and since then this precise method of chloroform administration has grown in favour. A further reference to it will be found in the third report of the Chloroform Committee, published in the British Medical Journal of July 23rd.

S. Maw, Son, and Sons (7 to 12, Aldersgate Street, E.C.) had an exhibit which occupied two stands. One of these was given up to general instruments and the other to operation

tables, cabinets, and instrument stands. The following seemed worthy of special notice: The Paterson grip-eyed needles, which have an elongated eye with the top part flattened. After threading the needle the silk is pulled up towards the flattened part, which grips the silk and prevents the needle becoming unthreaded during the operation. (Fig. 2). For Hammersley's coccoon silk it is claimed that,



Fig. 2.

being more loosely spun than ordinary silk twist, it does not require so much boiling as usual to secure sterility; that a knot, when tied, is less likely to slip, and that it mingles with the tissues in such a way as to be less irritating than ordinary silk. A registered Aseptic Operating Case shown was so made that, thanks to the folding arrangement attached and the spirit lamp contained, it could be used at once as a sterilizer, while it was rendered portable by a waterproof

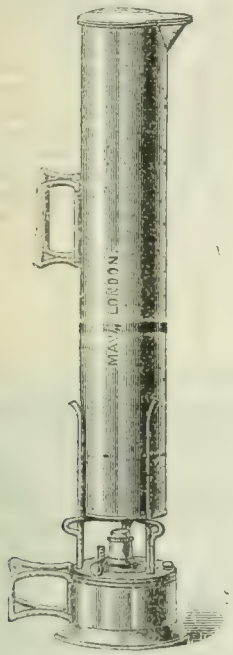


Fig. 3.



Fig. 4.

canvas cover and handle. A number of catheters and bougies, made to the specification of Mr. Herring, were also shown. The material of which they are made is less affected by boiling than that of ordinary catheters or bougies. The semi-coudée form has a short bend and large eye, the distal end being bevelled to denote the direction of the point. The olivary bougies are fitted with a lead stilette, which, while not interfering with the suppleness of the instrument, gives greater control over it while being passed. Mr. Herring's apparatus for sterilizing catheters and bougies, both singly or in quantities, was also shown. Their principal advantage is that catheters are not only sterilized and lubricated with a sterile lubricant, but can then be sealed ready for future use in sterile tubes with sterilized corks. That for many catheters is here illustrated (Figs. 3 and 4).

HOSPITALS AND GENERAL CONTRACTS COMPANY, Limited (33, Mortimer Street, W.), exhibited several novelties in aseptic furniture and surgical appliances. The tables for operating theatres or wards, constructed of aluminium throughout, and combine lightness, strength and facilities for cleansing, should meet with favour. Of sterilizers several useful specimens were shown, notably an electric sterilizer adapted for use with either the continuous or alternate current of any voltage, a metal cage being fitted to facilitate the removal of instruments. A universal portable sterilizer, made to enable midwifery forceps to be sterilized, and fitted with a container in which dressings may be sterilized simultaneously, seemed useful. Another modern apparatus was a sterilizer 7½ in. by 3½ in., made of nickel-plated spun metal. It is intended for the sterilizing of small instruments, and contains a cage to facilitate their removal therefrom.

The KING SURGICAL COMPANY (15, Thavies Inn, E.C.) had a small assortment of surgical appliances, notable among which was the Perfection Steam Sterilizer for the sterilization of all surgical dressings and materials in a vacuum chamber under high-pressure steam. It is an appliance which has already been supplied to the Royal Infirmaries at Liverpool and Manchester, and to St. Thomas's Hospital, and several others in this country. The firm also had upon view models of their high-pressure water sterilizers, which appeared to be well turned out and to be of a thoroughly practical character.

MAYER AND MELTZER (71, Great Portland Street, W.C.), amongst many other excellent instruments, showed a modified form of University Ward Locker, 100 of which have been supplied to the new St. Mary's Hospital, Manchester. It consists of an enamelled steel cupboard for holding the patient's clothes; the top is of plate-glass surrounded by a bronze rail; at the side is a rack for case sheets, and sur-



Fig. 5.

mounting the whole a frame with holders for diet and temperature charts (Fig. 5). Specimens of cabinets were also shown, which differ from any others we remember in the method

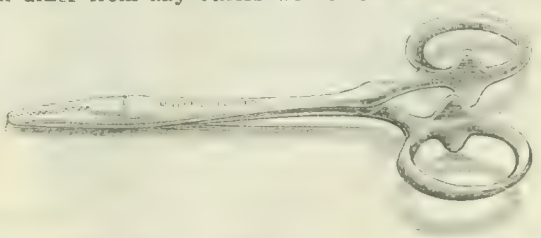


Fig. 6.

used for supporting the shelves. The latter can be cleaned without that removal from the cabinet which is a frequent source of breakage. Amongt the general instruments shown were Dr. Nyulasy's headrest for obtaining a hanging-head position for post-nasal work; a noiseless surgical motor

designed by Mr. Hugh Jones, of Liverpool; Mr. Charles Heath's mastoid instruments and his lifter forceps were also shown. Most operators are familiar with the difficulty of rapidly picking up a pair of forceps or scissors during operation, and the lifters as shown attached to a pair of Spencer Wells forceps appear likely to become popular (Fig. 6, p. 109).

F. Davidson and Co. (140, Great Portland Street, W.) had a large exhibit of ophthalmic and aural instruments, including models of the throat, ear, and eye, designed both for the purposes of practice and examination, and instructional purposes. A new Electric Ophthalmoscope shown seemed to have special advantages. It may be used with a house current or with an accumulator. While giving much clearness and strength of light, contraction of the pupil is not caused and the yellow spot easily found. It appears well suited for the use of practitioners not specially skilled in ophthalmoscope work, and for instruction in examination of ophthalmoscopy by the direct method. The paragon illuminated types also seem useful. They are here illustrated (Fig. 7). A case of trial glasses also attracted attention. Each class of lens was distinguished by a different coloured disc of celluloid, the ring of which was all in one piece, heavily nickelled and strong. Each disc had the focal number stamped upon it in a form easily decipherable in a dark room. Dr. Ensor's



Fig. 7.

astigmeter, intended for use with Davidson's improved sight test, is so designed that by an arrangement of cylindrical lenses, each revolving independently on its own axis, astigmatism can be readily determined subjectively. An enlarged model for demonstrating the physiology of accommodation, which was also shown, is from a design by Dr. Cohn. It should prove useful for purposes of instruc-

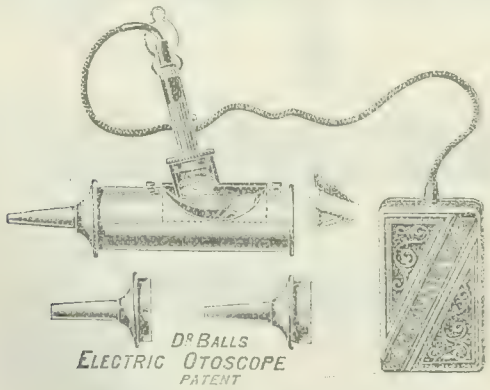


Fig. 8.

tion. Dr. Ball's Electric Otoscope substitutes for existing styles a concave imperforate glass mirror and black interior. The light admitted is thus focussed entirely on the spot under examination and its condition shown with great clearness. Like the electric ophthalmoscope, it can be used with the house current or an accumulator as here shown (Fig. 8).

Salt and Son (Birmingham) showed a number of newly-devised appliances for the mechanical treatment of deformities of different kinds. A number of belts and trusses were also exhibited; noticeable amongst them was Dr. Suckling's belt for dropped kidney. The belt itself is of an ordinary character, but the pad is double (Fig. 9).



Fig. 9.

Arnold and Sons (Smithfield, E.C.) had a very large exhibit, from which we pick out for illustration an improved sterilizer for dressings, designed by Mr. Bruce Clarke (Fig. 10). An improved aseptic vaccinator, as suggested by Mr. E. W. Orton, is also shown. The advantages claimed for it are that, the points being turned up at the angle, it is easily manipulated, while the flattened portion behind the points act as a spatula to rub in the vaccine (Fig. 11). Mr. A. de Prenderville's apparatus for administering ethyl chloride practically consists of a circuit of lint fixed to the face-piece of an ordinary Clover bag and kept in position by a spring collar. The advantages claimed for it, amongst others, are that it is light and handy, and that the insertion of fresh lint ensures cleanliness, while anaesthesia is easily and rapidly induced.

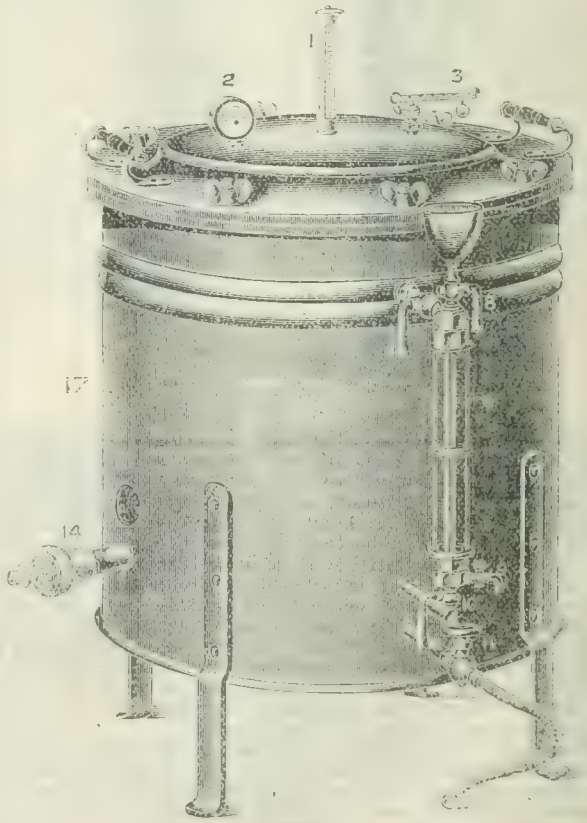


Fig. 10.

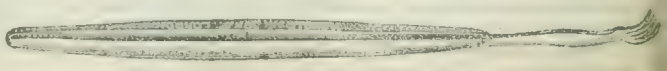


Fig. 11.

J. GARDNER AND SON (32, Forest Road, Edinburgh) had upon view a large number of surgical instruments; included among them were a variety of forceps, self-holding retractors, Kocher's stomach clamp, Arbuthnot Lane's bone-screwing instruments, Milne Murray's curette, Logan Turner's modification of Zaufal's forceps; a useful Combined Portable Dressing and Instrument Sterilizer was also shown.

BRADY AND MARTIN (Newcastle-upon-Tyne) showed a general assortment of surgical instruments and appliances, medicinal preparations, and scientific apparatus. Amongst the preparations were Triturates, which are similar to tablets, but much more lightly compressed, so that they can be readily reduced to powder. Amongst the instruments shown was a new pattern of Cathelin's urine separator, which can be introduced while the patient is lying down, also a form of Bossi's uterine dilator, which has the advantage over the original hinged form in that it can be more readily dismantled for sterilizing purposes. The colotomy of Adams Brewis, of which we give an illustration (Fig. 12), also appeared to present good points. The collection of scientific apparatus was composed more specially of such instruments as are needed by general practitioners and medical officers of health. Among them was a New Short Beam Balance to carry 100 grams; it turned to a milligramme, and seemed effective and cheap. A museum jar, of which we also give an illustration, is in its original form well known, but has recently been improved by the fitting of a more effective clamp, whereby easy access to the specimens and security against evaporation are both achieved (Fig. 13).

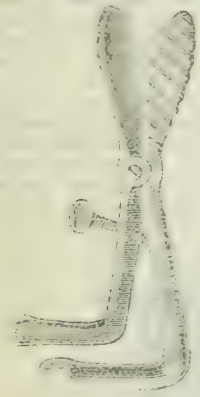


Fig. 12.

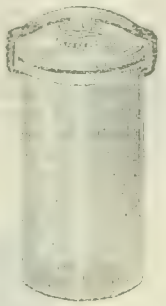


Fig. 13.

HARRY W. COX, Limited (9, 10, 11, Cursitor Street, Chancery Lane, W.C.), had upon view induction coils, contact breakers, tubes, couches, accumulators, and high-frequency apparatus. The induction coils are guaranteed against breaking down for five years. Amongst the tubes, attention may be drawn to the specimen illustrated, which has a shield and a ray director (Fig. 14); by its aid it should be possible to concentrate the rays on any affected spot without injuring the surrounding tissues. Amongst the couches, the Hall-Edwards couch, which enables the operator to take stereoscopic radiographs with much precision, and the Mackenzie-Davidson couch, which is capable of being folded up, seemed useful. The former is here shown (Fig. 15).

DOWN BROTHERS, Limited (21, St. Thomas's Street, S.E.), had upon view a varied selection of surgical instruments among which were a number of excellent new models of recent introduction.

W. H. BAILEY AND SON (38, Oxford Street, W.) exhibited some of their specialities in aseptic hospital furniture, including Aseptic Lockers, and their Special Registered Operation Table, as made for King's College Hospital. There were also some novelties in sterilizers, an irrigator stand, and a convenient couch suitable for consulting rooms and surgeries.

MARCONI'S WIRELESS TELEGRAPH COMPANY, Limited, had upon view a variety of surgical instruments and apparatus in which induction coils form an important feature, including high-frequency apparatus of various patterns, electrodes, accumulators, switch-boards, rheostats, and converters. A special trolley, which is designed to meet the need of a portable apparatus, and a tube stand were also shown: the latter is fitted with a low broad foot, so as to be steady, and has universal joints so as to enable the tube to be placed into any position and make it suitable for bedside work.

F. GUSTAV ERNST (80 and 82, Charlotte Street, Fitzroy Square, London, W.) had upon view a collection of orthopaedic appliances, artificial limbs, etc. Amongst these was noticeable an apparatus, made after the specification of Sir Victor Horsley, and intended to keep the head steady after laminectomy. There were also several new patterns of walking instruments for the use of persons paralysed in the lower limbs, and, in addition, a variety of splints for loose cartilages, cases of fractured patella, and other conditions of an allied character.

JOHN WEISS AND SON, Limited (287, Oxford Street, W.), had upon view a selection of their latest improved patterns of general operation instruments; included in the exhibit were some well-designed eye instruments, cabinets, and sterilizers.

The MEDICAL SUPPLY ASSOCIATION (228, Gray's Inn Road, London) showed various appliances which they make for M. D'Arsonval, and some new forms of *x*-ray apparatus. There

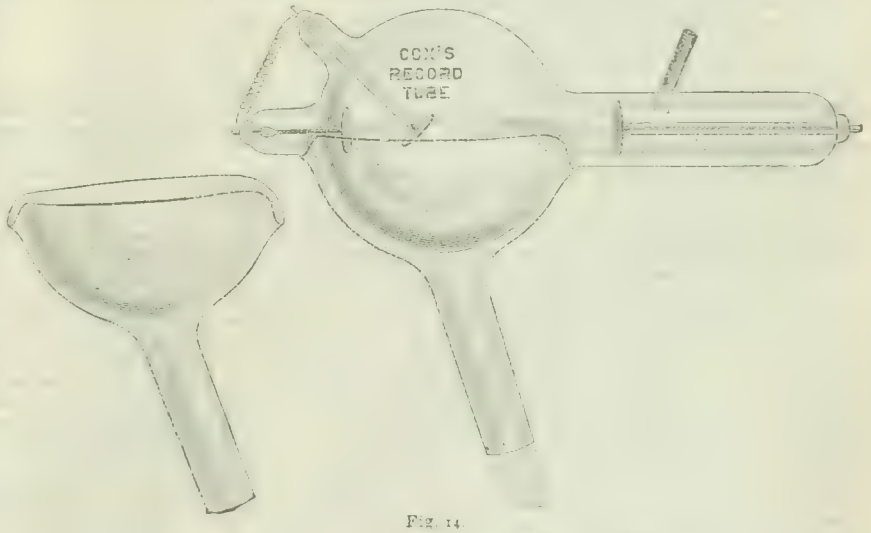


Fig. 14.

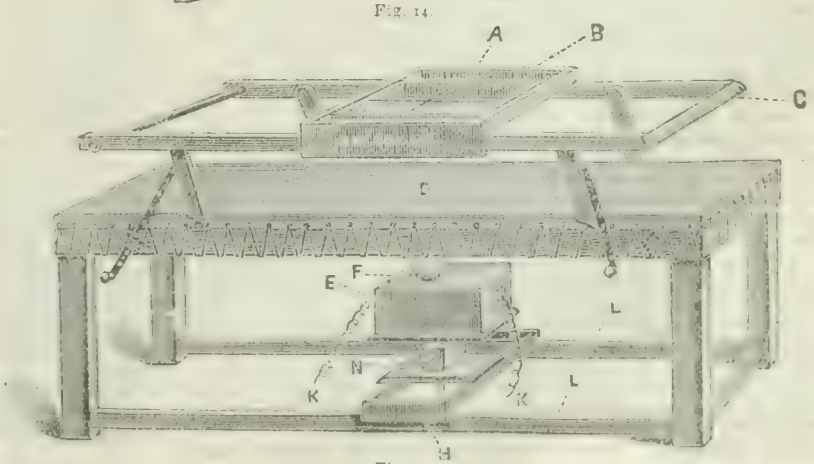


Fig. 15.

was also upon view for the first time in England the special D'Arsonval apparatus, the feature of which is that it dispenses entirely both with coil and interrupter for *x*-ray and high-frequency work. Other exhibits were a Bifluent Current Condensateur, Portable High-tension Oscillator, and a silent compression spark cap.

(To be continued.)

MISCELLANEOUS.

PHILIP HARRIS AND CO., Limited (144 and 146, Edmund Street, Birmingham), showed a number of pharmaceutical specialities, surgical dressings, and antiseptic furniture.

The DOWSING RADIANT HEAT COMPANY, Limited (24, Budge Row), had an exhibit which included the firm's ordinary cabinet for the application of light and radiant heat, and also an apparatus called the Solarium, or Electric Sun Bath, which is meant for home use. There was also to be seen at work the Scholder arthromotor.

The HARROGATE CORPORATION showed models of the Harrogate Combination Bath, views of town and neighbourhood, and samples of various mineral waters.

The BUXTON URBAN DISTRICT COUNCIL had upon view chromographs of the scenery of Buxton and its neighbourhood.

HODGKINSON ELECTRO-NEUROTONE (26, Old Bond Street, W.) showed various models of the apparatus which gives its name to the firm; it was also shown in active operation at the stand.

JEYES' SANITARY COMPOUNDS COMPANY, Limited (64, Cannon Street, London), had upon view a large array of their various preparations. The well-known name "creolin" has been changed to Cyllin, except in the case of some of the soaps and compounds with lanolin. A special inhaler was shown for use with the medical cyllin, and also some palatinoids, each containing 3 minims of the same drug.

BROOMFIELD AND CO. (83, Upper Thames Street, E.C.) showed Albene, which is stated to be vegetable fat, free from water, salt, or any admixture, and never to turn rank. It is recommended for all cooking purposes, especially for frying fish and biscuit making. As a base for ointments it is stated to be particularly suitable for use, because it is rapidly absorbed by the skin.

The MARSHALL SANITARY MATTRESS COMPANY, Limited (34, Eagle Street, London, W.), exhibited a new form of patent mattress and pillow, and a mattress support and folding portable bed. The Sanitary Mattress consists of coppered steel springs, each encased in a calico pocket, and independent of one another. The body of springs is enclosed in a canvas case and upholstered with horse-hair and ticking. At each end are ventilators to allow free circulation of air. The pillow is made upon much the same principle, and is intended as a substitute for feather pillows, and which would doubtless prove cleaner and cooler. The folding bed is made chiefly of steel tubing and canvas, is easily carried, and appears suitable either for permanent use or as an open-air couch.

GEORGE GALE AND SONS, Limited (Dominion Works, Birmingham), exhibited a variety of the well-known Lawson Tait bedsteads for hospital, asylum, and domestic use in various forms. Specimens of aseptic hospital furniture were also shown, and a variety of useful fittings in the way of wooden and india-rubber feet and easy running castors with india-rubber tires, irrigator rods, extension pulleys, etc.

DOULTON AND CO., Limited (Lambeth), exhibited an assortment of their sanitary appliances, which included the Compact Simplicitas wash-down closet, with Metallo Keramie joints and an extension for the seat, strong white earthenware circular-fronted lavatory, and a white Vitreous Enamelled Rolled-edged Bath, fitted with their patent anti-scalding mixing valves. A patent shower bath with the same apparatus, together with illustrations of special fittings for hospital and asylum use, was also shown.

S. GOFF AND CO. (17 and 18, King Street, Covent Garden, W.C.) had a useful exhibit which included all kinds of stable appliances suitable for medical work.

The SANITARY WOOD-WOOL COMPANY, Limited (26, Thavies Inn, Holborn Circus, E.C.), showed Hartmann's Patent Wood-wool Tissue, prepared for various purposes, medical, surgical, and domestic. In addition, Hartmann's Catgut, put up in bottles (on glass rollers), and prepared with juniper oil, carbolized or sublimated, was also exhibited.

The LONGFORD WIRE COMPANY, Limited (Warrington), showed a number of their hospital bedsteads, most of which are well known, and, in addition, an Obstetric Bedstead, specially designed for lying-in hospitals; the Carlton C. bedstead, designed for accident and emergency cases in which an anaesthetic is required, and an Epileptic Bedstead, in which the mattress and sides are woven in one continuous piece. It has already, we believe, found favour. In one variety the sides let down.

RONUK, Limited (Portslade, near Brighton), had upon view their sanitary polishes, intended for use in wards and private houses; also a special stain for wood flooring of all kinds.

CADBURY BROTHERS, Limited (Bournville, Birmingham), showed their popular specialities, including Mexican chocolate and Alaska chocolate.

The MALTICO FOOD COMPANY, in addition to Leci-maltico, Cremalto and Nutrico—all well-known dietetic preparations—showed a patent apparatus intended to prevent contamination of milk and the loss of cans. It consists of the small locked hook which can be attached to the doorpost, and on which the milkman can hang his can on his round in such a fashion

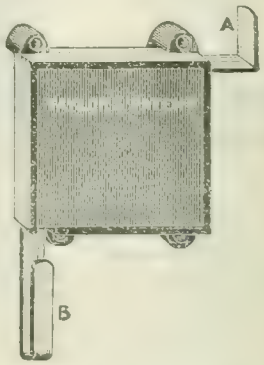


Fig. 16.

that it cannot be removed or the milk interfered with except by the owner of the house. The illustration here given shows the appliance open (Fig. 16).

MELLINS FOOD, Limited, showed their various dietetic preparations which are too well known to require description. The Lacto-Glycose, which is perhaps less well known than the others, is a food beverage intended for temporary use when desirable cow milk cannot be obtained. A new Cylindrical Feeding Bottle possessing good points was also shown; it has a non-collapsible teat, and admits of rapid cleansing.

The LIVERPOOL LINT COMPANY (Mark Street Mills, Netherfield Road, N. Liverpool) showed a great variety of lints, wools, flaxes, and other surgical dressings. The exhibit included a special splint padding, Impermiette, a substitute for Jaconet, bed-sheeting, and body belts, chest protectors, etc., made of a material called Transpirable. It is a woollen material having on the inner side a finely-raised close fleece which is washable.

The CLARENDON MOTOR BICYCLE was shown by WYLEYS, Limited (Coventry), who are the sole agents for the medical profession of this autocycle.

The BOROUGH OF LEAMINGTON SPA exhibited a number of illustrations of their bathing establishment, and of the public parks and gardens, which many members afterwards visited for themselves.

The TRADING AND MANUFACTURING COMPANY, Limited (Temple Bar House, Fleet Street, E.C.), makes a speciality of bringing out devices of various characters for facilitating the conduct of business. Several of these were on view, and most of them seemed capable of being used to advantage in a medical man's work. The Dade system should prove useful in account keeping, while the Card Index System is of obvious utility to physicians and others who desire to record their cases in a readily available form.

The CELLULAR CLOTHING COMPANY (72 and 73, Fore Street, E.C.) exhibited a variety of underclothing both for men, women, and children. The principles on which the material used is manufactured are entirely scientific, and the clothes made from it are porous and easily cleaned. This firm's form of underclothing has, indeed, justly obtained popularity among those who are not wedded to the older form of close-woven material for underclothing.

(To be continued.)

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 6TH, 1904.

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SEVENTY-SECOND ANNUAL MEETING

OF THE

British Medical Association.

OXFORD, 1904.

ANNUAL REPRESENTATIVE MEETING.

SECOND MEETING, WEDNESDAY, JULY 27TH.

THE Annual Representative Meeting, adjourned from the previous day, was held on Wednesday, July 27th, at the Examination Schools, High Street, Oxford.

Sir VICTOR HORSLEY took the chair at 2.45.

The minutes of the meeting on the previous day were read and, as amended, confirmed and signed by the Chairman.

DEPUTY CHAIRMAN.

Dr. WALTER SMITH (St. Pancras Division) moved:

That in consequence of the great increase of subjects coming before the Representative Meetings, it is desirable that a Deputy Chairman be appointed at the next annual meeting, and that steps be taken, if necessary, to alter the articles accordingly.

He pointed out that there might not only be annual meetings of representatives, but meetings in the course of the year, and it could not be expected that a man in active practice should give practically the whole of his time to this work.

Dr. D. BROWNE (Winchester Division), seconded, and the motion was agreed to.

OFFICE SUPERANNUATION FUND.

It was proposed by Dr. POPE (Cleveland Division), seconded by Dr. MILLER, and resolved:

That it be an instruction to the Council that, previous to the administration of the Superannuation Fund, a scheme be formulated and submitted to the Annual Representative Meeting for approval.

DIRECT REPRESENTATION OF THE ASSOCIATION ON THE GENERAL MEDICAL COUNCIL.

The analysis of the returns from Divisions on the question of the direct representation of the Association on the General Medical Council was then considered, and it was resolved that no further action in the matter be taken at present.

REPORT OF MEDICO-POLITICAL COMMITTEE.

The meeting then resumed the consideration of the Report of the Medico-Political Committee.

Death Certification.

The CHAIRMAN invited the meeting's approval or disapproval of the principles which the Medico-Political Committee had proposed for the amendment of the law relating to death certification. He explained that a deputation of the Committee had waited on the Registrar-General with these principles as their guide after they had been submitted for approval to the Council; the Committee suggested that the same principles should be pressed upon the attention of the President of the Local Government Board. It was now his duty to present the suggestions[1] to the meeting for final approval, and he asked some one to move that the report be approved.

Dr. POPE (Cleveland Division), as he had brought up the sub-

[1] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, January 30th, 1904, p. 4.

ject originally in his Division, moved that the report be approved.

Mr. TODD (Sunderland Division) seconded.

Dr. ROBERTSON (Glasgow Southern Division) thought medical men in the counties were quite competent to act, and that Clause 6 of the report was a slur on them; moreover, it seemed to add to the expenses of the county. He moved an amendment, that Clause 6 be deleted.

Dr. GOODALL (City Division) seconded.

Paragraph 6 was as follows:

6. In every coroner's district there shall be appointed by the county council a special medical officer, whose duty it shall be to examine the body and report to the coroner in all cases of death where no registered medical practitioner is able to give a certificate. In such investigation the special medical officer shall have associated with him the usual medical adviser (if any) of the deceased, or any registered medical practitioner who may have been called to see the deceased at or about the time of death.

Dr. REES (Wigan Division) considered it would be a very convenient thing for the general practitioner to refer assurance companies and the friends of the assured to the assessor and let him take the onus of the statement with regard to the cause of death.

Dr. LATIMER (Swansea Division) was of opinion that if the clause was passed, a rider should be added stating that a medical officer was unnecessary if the coroner were a medical man.

The CHAIRMAN pointed out that there was possibly a little misapprehension as to the meaning of the clause. It was not intended in any way that the medical man who was in attendance upon the case should not be present and take part in the pathological investigation; it was only in exceptional circumstances that the expert should be called in.

Dr. BIGGS (Wandsworth Division) would like to see all coroners appointed by the County Council after advertisement.

Mr. ROSE (Stratford Division) did not see the necessity of appointing an expert to deal with ordinary cases, which could be dealt with by medical practitioners in the ordinary way.

Dr. CHAPMAN (Hereford Division) thought the clause as it stood debarred the ordinary practitioner from making a *post-mortem* examination, and that the meeting should not adopt it in its present form.

Dr. DOUGLAS (Maidstone, etc., Divisions) was of opinion that it should be referred back to the Committee to frame a clause to meet the circumstances; he moved accordingly.

Dr. WARD COUSINS (Portsmouth Division) seconded.

The CHAIRMAN accepted this on behalf of the Committee, but suggested that the proper thing would be to refer the whole report back. The mover and seconder adopted the suggestion and Dr. ROBERTSON withdrew his amendment.

Dr. MACKEITH (Southampton, etc., Divisions) pointed out that it was proposed that the fee for a visit and certificate should be half-a-crown. He thought the fee should be half-a-crown for the visit and half-a-crown for the certificate.

The CHAIRMAN replied that if, as was proposed, the whole report was referred back to the Committee, the point would naturally be considered. The amendment, as modified, referring the whole report back to the Committee, was then put and carried.

The CHAIRMAN, in answer to Dr. NASH, said that if any instructions were to be moved, and members would kindly give notice of them, he would take care that they were brought on as early as possible.

Poor-law Officers (Ireland) Bill.

The steps taken by the Medico-Political Committee in furtherance of the reform of Irish Poor-law medical administration were considered, together with the memorandum[2] framed in support of the Poor-law Medical Officers (Ireland) Bill, by the Committee.

Professor BYERS (Council) said it would be remembered that last year the Representative Meeting received a statement made by gentlemen who were deputed from Ireland to put before it the grievance of Irish Poor-law medical officers. The Representative Meeting received that deputation in an extremely kind and sympathetic way. As President of one of the Branches of the Irish Medical Association he would take that opportunity of thanking the British Medical Association for the exceedingly kindly action it had taken in reference to this question. The resolution which he had been asked to propose was:

That this meeting approves of the action taken by the Medico-Political Committee and by the Editor of the JOURNAL in furtherance of the reform of the medical administration of the Irish Poor Law.

The action which the British Medical Association had taken had been in different directions. First it had warned practitioners in other parts of the country not to go over to Ireland and take appointments at the miserable remuneration which was offered. In the next place it had ventilated the whole question, and they on the other side of the Irish Channel felt that they owed a very great debt of gratitude to the Editor of the JOURNAL and to Surgeon-General Evatt for his exceedingly able report. They thought that that Report had put the whole question on an entirely different platform. It had been shown that, at any rate in this case, the grievances of Irishmen were a little more real than they were usually assumed to be. Another question was that of superannuation. He might say that he did not belong to the Poor-law Service, and therefore could speak the more freely. Considering the miserable pay, and considering the fact that in many districts in Ireland private practice was so very slight that the members of the Irish Poor-law Medical Service should be brought into line with the Poor-law medical officers in other places, therefore they entirely approved of the action of the Medico-Political Committee in supporting Mr. Russell's Bill, to which Dr. Thompson, M.P., had given his very strong support.

Dr. O'SULLIVAN (Council) said that he had never read a report in all his life on medical matters that had more effect upon him than the report of Surgeon-General Evatt. One of the objects with which the JOURNAL was conducted was the amelioration of the profession from all points of view. The Association was a strong body able to put forward its will at a given time, and to do its duty both in Parliament and elsewhere. He hoped that they would have a representative yet in Parliament to make them stronger. He praised the ability with which the JOURNAL was conducted, and said that he might spend an hour on the wonderful services which Surgeon-General Evatt had rendered to the members in Ireland. Every peasant and every wife of a peasant, and every child of a peasant was the property of the State to be relied on for the benefit of the State, and the State should see that the people were properly looked after, and that the wearied and the tired doctor was not always to be called in when he could not do full justice to the people he was dealing with.

Professor CORBY (Munster Divisions) said that perhaps the meeting would allow him as a representative of the South of Ireland to join in thanking this meeting of Representatives for the very kindly and very able help they had given to the Poor-law medical officers of Ireland. Such a favourable impression had been made by the action of the Representative Meeting, that he thought and hoped that there would be a more cordial connexion between the British Medical Association and the Irish Medical Association. It would be well if the Council of the British Medical Association could meet the members of the Irish Medical Association so as to fuse the two Associations, which were both doing very good work.

Dr. COX (Gateshead and Consett Divisions) said that it struck him that one thing the Council could do very easily was to put in every week in the BRITISH MEDICAL JOURNAL a standing warning of the strongest possible nature, warning men off Ireland. ("Agreed.")

The CHAIRMAN said that he was sure that the Council would take this as an instruction.

The motion was then put and carried.

The CHAIRMAN said that in view of the importance of this meeting a resolution ought to go directly from the meeting to be transmitted to the Government. Under the circumstances he concluded that it might properly be moved from the Chair and did not require seconding. He begged therefore to move:

That this meeting of Representatives of the British Medical Association earnestly presses upon the Government the urgent and immediate necessity of reforming the condition of the Irish Poor-Law Medical Service, inasmuch as the gravest sanitary evils and social distress follow from the present deplorable character of the Irish dispensary appointments.

The motion was carried.

The CHAIRMAN suggested that the resolution should be forwarded to the Chief Secretary for Ireland and the members of the Cabinet.

This was agreed to.

Poor-law Medical Service in Scotland.

The next business was the consideration of the report of the Scottish Committee on the report of a departmental com-

[2] SUPPLEMENT, July 16th, 1904, p. 37.

mittee of the Scottish Office on Poor-Law Medical Relief in Scotland.[3]

The Chairman said that this was simply a record, and the action of the Committee in supporting the conclusions of the Scottish Committee on the Report of the Departmental Committee of the Scottish Office on Poor-Law Medical Relief in Scotland was approved.

Reorganization of the Local Government Board (England and Wales) in the Interests of Public Health.

The Chairman said the next matter was really simple. It dealt with the organization, duties, and pay of the Local Government Board in England and Wales. The agenda contained a memorandum which had been furnished to a Treasury Committee, which sat under the chairmanship of Lord Jersey.[4] It was appointed practically by the Board of Trade. That Committee had under discussion the organization of the Board of Trade and the organization and status of the Local Government Board. The reference was absolutely wide. If the Committee had reported in accordance with the reference it would have furnished the country with a scheme, not only for the reconstruction of the Board of Trade, which it practically did, but also with a scheme for the reconstruction of the Local Government Board. The Local Government Board, as the meeting knew, was merely a political figment. It consisted of certain members of the Cabinet, who of course had no time to attend, and of a head, a President, who was really a bureaucratic officer. The President was advised by a medical officer, but as the deputation of the Association was very plainly informed by Mr. Long, that medical officer was an adviser and nothing more. Practically, therefore, the Local Government Board consisted of but one man, a Minister, and he a Minister who had not necessarily Cabinet rank. Under those circumstances it could well be understood that the administration of the Public Health Act was not what was desired by the medical profession. The Association rejoiced in the possession of a very active-minded Editor. Dr. Dawson Williams had prepared a most careful memorandum on this subject; not only that, but he had cast the conclusions into the form of a draft Bill, and that draft Bill had been referred to a conference consisting of the Public Health Committee (with Dr. Groves in the chair), and the Medico-Political Committee, and the conference had considered Dr. Dawson Williams's memorandum and the Bill, and they thought that both were excellent. The Bill provided for the reorganization of the Local Government Board, which, he might say, their Scotch brethren, with their usual acumen, had already obtained in the manner which was adopted in the case of the Admiralty, that was to say, that the Board should be a real and not a fictitious Board. It should consist, of course, of a President as head, and that President should be a Minister of Cabinet status, so that he could press upon his colleagues the importance of matters connected with public health, just as well as they could press upon him matters relating to the Navy, the Army, and the Home Office. The Bill proposed to reform the construction of the Board, beginning at the head. As to the Board itself, instead of the present fictitious Board, the Bill proposed that the Board should consist of a few experts. In view of the Poor-law administration, a Poor-law expert; in view of engineering matters and water supply and sewerage, an engineering expert; in view of the legal difficulties involved in the work, a legal expert; and in view of the medical difficulties, of a medical expert. The Board would be a real working Board. The point as far as the medical profession was concerned was that the members of that Board would have an administrative power, and no longer merely advisory. The medical officer under those circumstances would become an administrator on his own subject to a degree which certainly had never been approached except in the direction of the Admiralty Board. The Council of the Association warmly adopted the memorandum and the Bill sent from the conference of the Public Health Committee and the Medico-Political Committee, and had requested Mr. Walter Long, the President of the Local Government Board, to hear them on the subject. He regretted to say that Mr. Walter Long took the view that the present bureaucratic administration was quite a good one. He gave the deputation to understand that he thought on the whole the work of the Board was as well carried out as it could be, and he referred the deputation to Lord Jersey's Committee. Lord Jersey's Committee was sitting at the time, and the Medico-Political Committee forwarded at once an explanatory memorandum and the Bill to the Committee. Lord Jersey's Committee received them, and in its report mentioned that it had received those documents; but, although it mentioned that it had received the evidence of Sir Michael Foster, who went to it not as representing the medical profession, but as representing the Committee of Members of the House of Commons who were interested in public health, and, though it dealt with the points that Sir Michael Foster raised, it did not refer to the points raised by the British Medical Association, nor did it refer to the Bill except indirectly, and with regard to the status of the President of the Local Government Board only. What, then, were the conclusions of Lord Jersey's Committee on the important question of the reorganization of the Local Government Board? Practically nothing, save one interesting point that it proposed to raise the salary of the President of the Board by £1,000. In so proposing to raise the salary the Committee referred somewhat to the status of the office, but did not directly suggest that the President should be a Cabinet Minister, so that practically Lord Jersey's Committee did nothing more than recommend that the salary of the President of the Board should be raised. That was the condition of things which the Association naturally could not suffer to pass without comment, and therefore a detailed criticism of the report of Lord Jersey's Committee had been framed by the Medico-Political Committee for presentation at the present meeting. He now had to ask whether the meeting approved of the memorandum. The expressions in it might be considered by some to be strong in places, but he did not think that they were stronger than the circumstances justified.

Dr. Brassey Brierley (Manchester West Division) said that he looked upon the report of the Medico-Political Committee as a most extraordinary, marvellous, and perfect production, and if the suggestions contained in it could be carried out it would be a very great advance. The Local Government Board, as they were all aware, did require reforming.

The Memorandum and Bill on the Reorganization of the Local Government Board[5] was then approved of.

The Chairman said he thought that before the meeting passed away from this subject they ought to go a little further. The end of the report, which had just been approved, suggested to the Government that, as Lord Jersey's Committee had failed really to deal with the all-important part of its reference, namely, the constitution of the Local Government Board, the matter ought to be reopened by the appointment of a Royal Commission. The appointment of a Royal Commission was the proper procedure because, as was stated in the report, Lord Jersey's Committee practically consisted of Board of Trade officers who knew nothing of Local Government work, and certainly knew nothing about the Public Health Acts. Therefore, he begged to move from the Chair a resolution simply giving effect to the suggestion of the Medico-Political Committee. It ran thus:

That this meeting of the Representatives of the British Medical Association having special knowledge and experience of the gravely defective constitution and status of the Local Government Board (England and Wales) in regard to the administration of public health, requests the Government to show its recognition of the urgent necessity of reorganizing the Local Government Board by appointing a Royal Commission to report upon the whole question.

In answer to an inquiry as to whether any reference to the Irish Local Government Board had been left out purposely, the Chairman stated that the matter in the first instance was with reference to the English Local Government Board, and the matter of the Irish Local Government Board must be brought up at another time.

Dr. Cox asked whether it would not be more effective if the report was sent to the Divisions, with a request to each Division that it should move its member of Parliament to support the appointment of a Royal Commission. This might be done in addition to passing the motion proposed by the Chairman.

The Chairman said that he would be glad to accept the suggestion as an instruction to the Medico-Political Committee.

The motion was then put to the meeting and carried.

Security of Tenure of Medical Officers of Health.

The Chairman next referred to the report of the Committee relative to the question of security of tenure to medical officers of health,[6] and the memorandum of consideration, to

[3] Supplement, April 30th, 1904, p. 86.
[4] Ibid., July 23rd, 1904, p. 375.
[5] Supplement, January 30th, 1904, p. 7.
[6] Ibid., October 31st, 1903, p. ccvii.

be submitted to the President of the Local Government Board in favour of legislation giving security of tenure to medical officers of health.

Dr. Brassey Brierley thought there could be no doubt of the advisability of making the position of a medical officer of health permanent, but he did not see why the principle should not apply to all public servants.

Dr. Groves (Chairman of the Public Health Committee) considered that it would be a mistake under present circumstances to accept the proposal of the last speaker. The British Medical Association was doing all it could in the matter by promoting a Bill in Parliament. It had continually made representations to the Local Government Board, and was determined to see the thing through sooner or later. He thought if they were to mix up the questions with the broader questions they would weaken their position.

Dr. Straton (Salisbury Division) agreed with what Dr. Groves had said. He spoke with some experience on that matter, and while appreciating Dr. Brassey Brierley's wish to get the practice made uniform, he thought it ought to be limited to medical officers of health.

Mr. C. Watts Parkinson (Council), speaking as a member of the Public Health Committee, said that when that Committee met the sanitary inspectors, a Bill which included superannuation as well as fixity of tenure, was under consideration, and he was much struck with the anxiety of the sanitary inspectors to give up their own personal application in respect of superannuation, and do what was best in the interests of the public in sanitary matters.

The Chairman then, there being no amendment, put to the meeting the following resolution, moved by Dr. Groves, seconded by Dr. Walter Smith, which was agreed to.

That the memorandum of considerations to be submitted to the Right Hon. Walter Long, President of the Local Government Board, in favour of legislation giving security of tenure to medical officers of health, be approved.

Medical Referees under the Workmen's Compensation Act.

The Chairman, in his dual position of Chairman of the Medico-Political Committee and Chairman of this meeting, explained that the attention of the Committee was drawn to the inoperative character of the provisions as to the Medical Referees contained in the Workmen's Compensation Act. Though the matter affected only a small number of the profession it was nevertheless important, because it involved a great injustice to certain members of the profession, and the Medico-Political Committee drew up a memorial, which was sent to the Home Secretary. The Committee issued inquiries to Medical Referees under the Workmen's Compensation Act and received a large number of answers, which showed that the so-called apathy of the profession did not exist, except, perhaps, in the minds of persons who would rather wish to see it. From the replies received the Committee was able to frame a memorial, which evidently impressed the Home Office, because a request was received for evidence to be given before the Workmen's Compensation Committee of the Home Office. Dr. Langley Browne, an officer under the Act and Mr. Whitaker, the Medical Secretary, gave evidence accordingly, and were thanked by the Home Office for their assistance.

Dr. Ward Cousins moved:

That the action of the Medico-Political Committee be approved.

This was duly seconded and agreed to.

Consultation between Medical Witnesses.

The Chairman stated that this question was referred to the Medico-Political Committee by the Scottish Committee, which had resolved that the question, "whether it is advisable that medical witnesses engaged on each side in legal cases should meet in consultation," should be referred to the Scottish Divisions. The matter seemed so important to the Medico-Political Committee that it had been referred to all the Divisions in the United Kingdom. The replies of the Divisions were, by a considerable majority, in favour of the proposal. The Committee appointed a Subcommittee, with power to co-opt well-known experts in that branch of forensic medicine, and Mr. Herbert Page, Professor Clifford Allbutt, Mr. Thorburn, and Mr. William Rose consented to assist the Subcommittee; the thanks of Association were due to those gentlemen. The report of the Subcommittee was approved by the Committee,[7] and if the report should be approved by this meeting it would go forth as the final report of the Association. The Association had at some time or other, though it could not be traced documentarily, at an annual meeting expressed the same opinion as was contained in the report, namely, that it was advisable for medical men to meet.

Dr. Wolstenholme (Manchester, Salford) moved the adoption of the report.

Dr. Cox moved that the report be sent back to the Divisions. It had not been considered by any Division in his part of the country, and it had come upon them so recently that they had not had time to consider it. The final opinion of the Divisions might be ascertained.

A Representative seconded, saying that when the measure came before his Division the unanimous opinion was that the course proposed was undesirable, and the South-Western Branch at its Annual Meeting when the President, Dr. Alexander, dealt with the subject in his address, came to the unanimous opinion that it was undesirable.

Dr. Douglas stated that his Division did not see its way to recommend this principle, for the reason that they thought it would only be a pious opinion. The difficulty was that the question of consultation was in the hands of the lawyers on each side, who might have something to say as to the evidence that should be given.

Dr. Fraser (Hexham, etc., Divisions) said he had been instructed to oppose the suggestion. His Division considered the matter carefully, and even went so far as to induce some lawyers to join in considering it. As a result of that discussion and the opinions expressed they came to the conclusion that medical men had not the legal power to carry the proposed scheme into effect. He supported the amendment.

The Chairman explained that the Committee had taken the advice of the Solicitor to the Association, but it was evident that the wish of the meeting was that the matter should go back to the Divisions.

Dr. Douglas inquired whether the legal profession would accept the proposed plan.

The Chairman replied that judges had expressed their opinions in favour of it. It was almost unknown in London to do anything else. It was generally done on the initiative of the medical officer of the company, for these actions were nearly always brought by individuals against a company, and the practice in London was that the medical officer of the company wrote to the medical man in charge of the patient to meet him in consultation over the case, but it did not follow that was the custom everywhere. He then put Mr. Cox's amendment, and declared it carried. It was then put as a substantive motion, and was declared to be carried.

The Law Relating to Coroners.

The Chairman said that the Association long ago decided that amendment of the Coroners Act was needed, and a Bill was framed by a committee which consulted with the Coroners Society.[8] There was nothing new in the Bill printed on the agenda, and the meeting was not asked to approve it. It had not been found possible to obtain its introduction into Parliament, and under the circumstances the Committee thought it must be held over for a time. The next paragraph of this section of the report dealt with the subject of information supplied to coroners. Cases were brought from time to time to the notice of the Medico-Political Committee in which a coroner obtained information from a medical practitioner respecting a case, which enabled the coroner to dispense with the necessity of holding an inquest. That was tantamount to the State obtaining information without paying for it, and the Medico-Political Committee therefore drew up a memorandum on the subject. Having inquired into the legal position, the Committee suggested to the meeting that paragraphs 1 to 4 should be accepted as fairly representing the position of the profession in the matter, as follows:

(1) That no legal obligation rests at the present time on medical practitioners, as such, to render any assistance to coroners in the investigation of the cause of death, other than that of making a *post-mortem* examination when so ordered by a coroner in writing, and that of attending to give evidence at an inquest when duly summoned so to do.

(2) That, under present conditions, the practice whereby medical practitioners furnish to coroners information of the kind considered in this memorandum, not being defined or required by law, is entirely informal and irregular.

(3) That if a preliminary inquiry by the coroner is to be regarded as an integral part of the procedure sanctioned by the State for the investigation of the cause of death, it would appear that the procedure therein should be definitely regularized by

[7] Supplement, July 23rd, 1904, p. 76.

[8] Supplement, February 7th, 1903, p. viii.

legislation, which should prescribe the respective obligations of coroners, medical practitioners, and others who may assist in the inquiry, and that definite provision should be made for the adequate remuneration of the several parties concerned in respect of the services thus rendered.

(4) That, pending such action by the Legislature, it is necessary to lay stress upon the fact that medical practitioners, who furnish the information indicated, are rendering services to the State in excess of any obligations resting upon them; and that where the assistance thus voluntarily given is not duly recognized by coroners, members of the medical profession may find themselves compelled to refuse to continue such assistance.

Dr. Manley (West Bromwich Division), as a general practitioner having a good deal of experience in these matters, thought that the papers before the meeting met exactly the cases that continually arose. He therefore moved:

That the memorandum on the present position of registered medical practitioners in the matter of furnishing certain information to coroners be approved.

Dr. Browne seconded, and gave an illustration of a case that recently occurred within his own knowledge which bore out what had been said on the subject.

The motion was then carried.

Dr. Milburn (Council) thought it would be desirable and he moved:

That it be an instruction to the Committee to forward a copy of the Memorandum to the Divisions and to suggest that it might be advisable to act upon the principles it set out if occasion arose.

Dr. Walker (Liverpool, Bootle Division) inquired if it would be practicable to bring this matter before the notice of the coroners in the country.

The Chairman remarked that this was a question of expediency, and stated that if a motion were proposed he would put it to the meeting.

Dr. Walker then moved:

That a copy of the memorandum of the Medico-Political Committee be sent to each coroner.

Dr. Horrocks seconded.

Dr. Baildon (Southport Division) stated that he had spoken to a coroner on this subject, who had said: "You must consider my position: and if you withhold information from me which makes it necessary for me to hold an inquest, and you put the country to expense, I shall have to say that you are the cause of it." They had to consider the matter from that point of view.

Dr. Ewart (Westminster Division) thought if any legislation was to be brought forward on the point it would not seem expedient to warn those who had given occasion for it.

Dr. Brassey Brierley endorsed this view.

The Chairman observed that a large number of medical men were under the impression that they could not refuse to give the information, and under the circumstances the circular ought to be sent.

Dr. Brassey Brierley questioned very much if any auditor could surcharge a coroner for a fee paid.

Dr. Mackeith did not think it was against the law for a coroner to pay for a certificate without a public inquiry being held.

The Chairman remarked that that was one reason why the memorandum should be sent out because many members of the profession were not aware of that. He then put the resolution, which was lost.

The remainder of the memorandum was then put and agreed to.

The Coroner for South-West London.

The Chairman said that this matter had got beyond Mr. Troutbeck now, and even beyond the Lord Chancellor.[9] The circumstances were that eighteen months ago the Association, through the Medico-Political Committee, conferred with the South-West London Medical Society, the Medical Defence Union, and the London and Counties Medical Protection Society, and conjointly represented to the Lord Chancellor that Mr. Troutbeck was not fulfilling his duties under the Coroners Act. In so doing the various medical societies of course traversed Mr. Troutbeck's legal position. The South-West London and the London and Counties Medical Protection Societies took the opinion of eminent counsel as to the interpretation of the Coroners Act. It was to the effect that clinical evidence at an inquest was of paramount importance and should not be omitted. Mr. Troutbeck's practice had been to omit it altogether in a large number of cases, and not to summon the medical man who was either in attendance or saw the deceased immediately before death, and to charge the jury upon the pathological evidence which was derived, in a large majority of cases, from a *post-mortem* examination made by Dr. Freyberger. In May, 1903, a deputation from the conference was received by the Lord Chancellor, who referred to Mr. Troutbeck, who replied by denying *in toto* the allegations of the deputation, or that he had rejected the clinical evidence of medical practitioners. The Conference then, on July 27th, 1903, gave in tabular form the names and dates and occasions on which Mr. Troutbeck had so far infringed the Coroners Act. It would naturally have been thought that the Lord Chancellor would have replied to the Conference, but he regretted to say that no answer at all had been received. The Chairman of Council, who was Chairman of the Conference, wrote to the Lord Chancellor on May 17th, 1904, to know whether the Conference might expect to receive a judgement on what was a judicial point. That letter had been simply acknowledged.[10] As it appeared that the Lord Chancellor was determined to ignore the medical profession absolutely it was resolved, if no answer were received within a week, to apply to the Prime Minister, who, theoretically, was the superior of the Lord Chancellor on a matter of this sort, and a letter had been sent to the Prime Minister pointing out that a very serious question, which affected the community quite as much as the medical profession, was involved. As yet there had been no time for Mr. Balfour to reply; but the Conference were resolved to carry the point through, even so far as petitioning the Crown. The British Medical Journal had recently published a strong leading article on the subject,[11] from which the *Times* newspaper had freely quoted. It might therefore be concluded that on this matter of public justice the *Times* was on the side of the profession. He then put a draft letter to the press in the form of a resolution, which, after various suggestions by Representatives as to the form which it should take, it was agreed should be corrected by the Chairman and held over until a reply was received from the Prime Minister on the subject, or, if no reply were received after a reasonable time, that it should be communicated to the press.

Midwives Act.

The Chairman observed that the memorandum[12] on the payment of medical men called in to assist midwives was simply a statement of suggestions received by the Committee, which was in no sense responsible for them; he did not ask for any resolution at all with regard to it.

Dr. Ward Cousins moved:

That as the Midwives Act, 1902, contains no provision for the payment of medical practitioners, it be an instruction to the Medico-Political Committee to take steps for the amendment of the Act by the introduction of a section or otherwise in order to provide just remuneration for medical men when called in to assist midwives in cases of danger or difficulty.

He thought this a very important matter and one that would affect the profession seriously in the future. The present Act, unless the co-operation of members of the medical profession was secured, might as well be blotted out of the statute book, as without their assistance it would not be worked efficiently. No satisfactory conclusion had been come to with reference to the payment of medical men, but the Central Midwives Board was strongly in favour of something being done in that direction. Midwives, who in future would be under the control of the local supervizing authority absolutely depended upon the assistance of medical men, and were to return the name of the medical practitioner called in to the local supervising authority, and yet no steps had been taken to see that medical men should be justly remunerated for the services which they rendered.

Dr. Rees seconded the motion, as at the present time there was a great tendency amongst midwives always to call in the Poor-Law medical officer in cases of difficulty, relying always upon his being paid afterwards by the guardians.

The Chairman thought the motion could be accepted as an instruction to the Committee without further debate, especially as the matter was still being investigated by the Committee.

Dr. Brassey Brierley pointed out that repeatedly a clause had been inserted in the Midwives Bill providing that the local supervizing authority should be responsible for the fee of the medical practitioner called in.

Dr. Allerey (Hastings, etc., Divisions) said that it must be borne in mind that certain Local Government orders had

[9] Supplement July 16th, 1904, p. 52.

[10] A reply from the Secretary of the Lord Chancellor received subsequently will be found at p. 125.

[11] British Medical Journal, July 16th, 1904, p. 136.

[12] Supplement, July 16th, 1904, p. 27.

been practically suspended, especially the order which dealt with the payment for extra midwifery services, and in some cases the Poor-law medical officer received no remuneration for attendance in such cases.

A Representative pointed out that the question of payment or non-payment by a local supervizing authority depended upon whether it had a Local Government Board auditor or not; if there were a Local Government Board auditor he would probably surcharge any such fee paid, but if not it would probably be allowed.

The motion was then put and agreed to.

Dr. Walter Smith said he had an instruction from his Division to move:

That the County Councils and County Boroughs be requested to prepare a list of those who were willing to attend cases, and that steps should be taken to secure the fees.

The Chairman pointed out that this matter would come up again next year.

Dr. Walter Smith said he had specific instructions on that point, and he inquired whether something could not be done at once.

The Chairman stated that it might be moved on behalf of the Division if it were put in a practical shape, but he could not accept it as a general statement. It had better be drafted in proper form and put on the paper for consideration at the next meeting.

The subject then dropped.

Nurses Registration Bills.

The Chairman said that the memorandum on the Nurses Registration Bill was simply explanatory;[13] the Committee did not express an opinion because it felt that so important a subject should be left entirely in the hands of the Representative Meeting as to whether it felt itself prepared to pass a resolution in favour of the registration of nurses.

Dr. Langley Browne (Council) moved:

That this meeting approves of the principle of the registration of nurses.

It was well known that for many years nurses had tried to get a defined status, and had tried to improve their training all round; they had found that the only way to do so was to get registration and a Central Board which would draw up proper rules for the training of nurses, so that medical men might be sure that a nurse whose name appeared on the register had had three years' training. There had been a great deal of opposition to registration, coming principally from London, but almost every one he had spoken to in the provinces agreed it was desirable, and that a certain minimum training should be insisted upon at all the hospitals before a nurse could get a certificate.

Dr. Kinsey (Council) seconded the motion. He said it constantly happened that a nurse had three months' training in some obstetric hospital and then was engaged at a nursing home or got an introduction to a town or district, and set up on her own account as a trained nurse. Unless there was some registration which would secure that a general nurse should not be recognized as a nurse without a sufficient amount of training this short period of training might be taken to be something which was much more valuable than it really was.

Dr. Ward Cousins opposed the resolution. What would be the advantage to the nurse? What would be the advantage to the public? and what would be the advantage to the profession of registration and of a State examination? Would the public look to the roll for guidance in the selection of a nurse? No; the public would look to the medical man. The nurses got their employment through the medical profession, therefore he said that the putting of the name of a nurse on a nurses' roll would be of no advantage to the nurse at all. Then, he would ask, what effect the registration of nurses would have upon the members of the profession? The technical training in London and provincial hospitals was quite sufficient. Three years' thorough training gave a woman a technical knowledge, which answered all the purposes of her work as a nurse under a physician or a surgeon or a general practitioner. But a large number of the best nurses in the country did not want registration. They did not want to be put on the roll because their connexion was a private one, gained, not by their technical knowledge, but because they were women whom the profession could trust; because they were good-hearted women—women of tact, women of patience, and women with knowledge of human nature. Nurses were not wanted to diagnose disease, but simply to act as nurses, to practise their useful art. Throughout the length and breadth of England there was a class of women who were doing their work well, and there was no need to divide them two classes—registered and unregistered.

Dr. Gullan (Liverpool Central Division) said that he had been instructed to oppose the registration of nurses strongly. There was not a medical man who had had any experience at all who did not feel this difficulty, but registration would not bring about a revolution in the character of the nurses, and in Liverpool they felt very strongly that if nurses were registered their present position would not be improved at all, because any medical man anywhere if he wanted a trained nurse could apply to some of his friends—if he was not at a hospital himself—for the names of nurses who had been thoroughly trained, or he could get in his district the nurses whom he knew to be thoroughly trained and whom he could trust. If nurses were registered there must be a minimum standard, and there would be included not only all the good nurses, but the inferior also, and the inferior nurses, by registration, would have a higher status than they deserved. He hoped that the meeting would consider the question very carefully.

Dr. Robertson said he did not see what the words "trained nurse" meant. There was no effort made to distinguish between a hospital trained nurse and one who had been trained anywhere else. Should there not appear some statement as to the place where it was expected that the nurses should be trained?

The Chairman said that the details of the Bill were being discussed, but that the only matter before the meeting was the motion that the meeting approved of the principle of registration of nurses. The detail that Dr. Robertson had mentioned was an important detail.

Dr. Allfrey would not trouble the meeting with his own private opinions because his hands were tied. He had received a telegram saying that he was to oppose registration strongly.

Dr. W. H. Horrocks (Bradford Division) strongly disagreed with what Dr. Ward Cousins had said as to registration being unfavourable to the profession. In the first place he thought that everybody would agree that if there were registration more uniformly trained nurses would be obtained. Then the better trained the nurse was the less likely she was to undertake to diagnose disease. His second point was with regard to quackery. Frequently in lay papers it was stated that "Nurse Jones" commended some one's syrup. If there were registration there would also be a Board for nurses. That point ought to be considered in favour of registration. The one point against the Bill, to his mind, was the difficulty as to nurses in special hospitals. How was training in special hospitals to count as regards the registration? He supposed that that point would be considered when the Bill was drafted.

Dr. Sevestre (Leicester Division) thought that many of the objectors to registration had mixed up what might be called the personal element with training. Registration would simply register the fact that the nurse had had three years' training and had passed a minimum and not a maximum examination. The same thing applied in many other professions. It was quite easy for those practitioners who lived in large towns where there were large hospitals to obtain a nurse of whom they knew a great deal, but in small country towns and rural districts the medical practitioner could only rely on the fact that a nurse belonged to an institution without knowing whether she had had three years' training or whether she donned her uniform after a quite insufficient experience. It would very soon be recognized that registration meant nothing but the fact of training for three years, but it would have a great effect on the nurses themselves. It was an injustice that at the present time any woman should be allowed to don a uniform and go about as a trained nurse. It was unjust to those who had been through a long training that they should be handicapped by inexperienced persons. Registration merely meant that a medical man could get a nurse who was registered. Of course, if a medical man had a patient who did not require an experienced nurse it was quite possible to get some woman who had had some training. He thought it would be a great injustice to nurses not to have this question of registration settled. A Select Committee was now sitting, and it seemed to him that it would be a good opportunity to send from the Representative Meeting some expression of opinion to the Committee to guide it in its deliberations. A representative said that he would have no machinery for examining nurses or for testing their

[13] Supplement, May 7th, 1904, p. 106.

capabilities, but would simply register their qualifications what they were fit for. He could not see that this would do any harm to nurses or to the medical profession; it would certainly enable the public to decide whether a nurse had had sufficient training or not, and he thought that that was all that was required. He had known nurses who had been for six weeks at a lying-in hospital put themselves forward as qualified nurses. That was a state of things which ought not to continue. He thought that registration would be a very good thing both for the nurses, for the medical profession, and for patients.

Dr. Nash (Blackburn, etc., Divisions) said that in the North there were many nurses whose training was totally inadequate. They had some sort of training and were then let loose on the public to earn money for the institutions to which they belonged. They went forth to the world with the same hall-mark as those who had had proper training in hospitals.

Dr. A. B. Mitchell (Belfast Division) moved that the question be now put.

The motion was seconded by Dr. Groves and carried. The motion,

That this meeting approves of the principle of the registration of nurses,

was then carried by a large majority.

The Chairman said that now that the meeting had settled the question as far as the principle went, he might express the opinion that had been so well expressed by Dr. Sevestre. It seemed to him that considering that they as a profession maintained the necessity of registration for the express purpose of protecting their professional knowledge, it would have been a very grave injustice to any body of people who were similarly seeking the protection of their profession to have decided otherwise.

It was then proposed, seconded, and agreed that the resolution just passed should be transmitted to the Select Committee of the House of Commons which was now sitting.

Public Health Committee of the House of Commons.

The Chairman said that the next paragraph of the report stated that the Medico-Political Committee felt that there was no concerted action on medical subjects in the House of Commons, and that under those circumstances it would be desirable to bring the medical members of the House of Commons together to form a committee of the medical members of the House of Commons, in the same way as the service members formed a Service Committee. All the medical members of the House had been approached, and they were found to be very willing to agree to form what they preferred to call a Public Health Committee, and no doubt that was the best title to take. That Committee had been formed; Dr. Farquharson was the Chairman and Sir Michael Foster was the Secretary. The profession was also greatly indebted to Dr. Hutchinson, the member for Rye, and Dr. Thompson, the member for N. Monaghan, for representing the interests of the profession when occasion demanded. It was to be hoped that other members of the House, not medical members, who were also interested in public health questions would join the committee of members in the House, so that throughout the House the wishes of the medical profession might be extended. The concluding paragraphs of that section of the report and the next section pointed out the importance of medical men and the Divisions making representations to their own Parliamentary representatives, and in order that such efforts might be harmonized the Committee had issued for the information of the Divisions a short list of Parliamentary questions.

The Medical Acts Amendment Bill.

The Chairman said that the meeting was only asked to approve the principle of the Medical Acts Amendment Bill[14] before it. The present meeting was not the meeting which would have the responsibility of accepting the details. The Bill, which consisted of five parts, differed in certain respects from the Bill which had been forwarded to the Divisions. When the replies of the Divisions were returned, and when the Committee considered those replies and inserted such amendments as seemed to be the general wish of the Divisions in accordance with its instructions, it handed the draft so amended to a Parliamentary draughtsman, he greatly improved the draft by recasting it in many respects, and the form in which it was now presented to the meeting was as it left his hands. It would be better to take the parts of the Bill and approve or disapprove of the principle of each of those parts. As Chairman of the Committee he would move:

That the meeting approves of the principle of Part I, which provided that the General Medical Council should consist of a majority of direct representatives of the profession and a minority of representatives of universities and corporate medical bodies, and a few representatives of the Crown.

He must draw attention to the inclusion of dentists, which was a new principle. Dentists at the present time were in exactly the same position as medical men; their interests were absolutely identical. They had a very complete organization, and they were extremely active in commending their wishes to members of Parliament and the public. From every point of view the Committee welcomed the suggestion of the British Dental Association that it should co-operate with the British Medical Association with regard to this Bill. If, therefore, the meeting approved of Part I, as he now suggested, it would also approve of the principle of co-operation with the dental profession.

Dr. Wolstenholme said that he was instructed by his Division to oppose the inclusion of the dentists in any and every part of the Bill. The reasons he had to give were, first, that they wished not to overweight the Bill; secondly, the greater part of dentists' work was not professional, and was chiefly done by skilled artizans, who never qualified, or even registered as dentists or dental students; thirdly, the interests of dentists and medical practitioners were not identical, nor were their relations with the public similar, dentistry being much more in the nature of a trade; fourthly, the amount of advertising and general unprofessional conduct among dentists being much greater than it was among medical practitioners, it was not fair or reasonable to take up the time of the General Medical Council, or to use the money of the medical profession for such purposes.

The Chairman said that he must point out that the time and the money of the General Medical Council were already devoted to the purpose.

Dr. Wolstenholme said that as a matter of fact there were hundreds of people practising dentistry whom it would be the duty of the General Medical Council, if the Bill were passed, to put down. To do that would take an enormous amount of time and a considerable amount in money, and the opinion of his Division was that that was not a right or proper thing to be done. He would quote from the Bill Section 23, Subsection 1:

Prohibition of practice by unregistered persons. Any person other than a registered medical or dental practitioner who (1) applies any medical or dental treatment to any person without the supervision of a registered medical or dental practitioner and demands or receives any valuable consideration for such treatment, whether by way of remuneration, gratuity, or otherwise, and so on.

That would make it legal for a dentist to employ as many as twenty or thirty unqualified assistants, so long as he gave a general superintendence to them, and if the medical profession were to be included with the dental the unqualified medical assistant would be reinstated.

Dr. Brassey Brierley said that he agreed with the remarks of Dr. Wolstenholme.

Dr. Nash said that in the Midlands and in the North there were a large number of dentists still on the register who got on when registration began. There was a herbalist in his town who had over his door "registered dentist." Another man who was once a stonemason, now had a very large practice as a dentist and was doing very well indeed. There was another man who ran a sort of dental factory, who visited four or five towns, and he had about twenty hands constantly making teeth of which he made the impressions. Were such men to be put on equality with medical men?

The Chairman said that there was no proposal of the kind in the Bill.

Mr. Chance (Dublin Division) said that he had been instructed by the Dublin Division to oppose the Bill. He would move that the Bill be referred back to the Divisions and that would enable him to speak to the whole question.

Dr. Mitchell seconded the motion.

Mr. Chance said that broadly speaking his Division objected to the Bill because it would destroy the licensing corporations in Ireland; that would be very strongly resisted by Irish members of the Association. Further, that the representation of the licensing bodies was very curiously dealt with in the previous Bill. Apparently the principle that had guided the

[14] Supplement, May 28th, 1904, p. 127.

provision as to the representation of the licensing bodies had been that they should be teaching bodies. The Dublin Division were unanimously opposed to the Bill and he might say that they would use every legitimate Parliamentary influence they possessed against it.

Dr. Goodall supported the proposal for sending the Bill back to the Divisions.

The motion was put and carried.

Dr. Cox asked whether before the Bill went back to the Divisions the Committee would ascertain the objections of the Irish members.

The Chairman said that he was quite ready to accept Dr. Cox's proposal as an instruction to the Committee.

Dr. Darling (Portadown and West Down Division) asked whether it would not be possible to get the opinion of the College of Surgeons of Dublin on the matter.

Dr. Robertson said that he was instructed by his Division to say that no Bill would be acceptable to them unless the term "infamous conduct" was properly defined, and not left for definition to the General Medical Council.

Dr. Gosse (Faversham, etc., Divisions) asked that the Committee, when sending the Bill back to the Divisions, should make an epitome of the main point on the subject.

The Chairman said that he was glad that Dr. Gosse had made that suggestion, because the Committee had been in a great difficulty on this very matter. It felt that if it sent out such a document as this Bill to the Divisions, and if it took out of that Bill certain parts and put them into the form of a stereotyped resolution, it would be dictating to the Divisions, and it had been scrupulously careful to avoid in any way appearing to do so. But if it were the wish of the meeting that this step should be taken by the Committee, of course the Committee could do what was suggested. He hoped that there would be a very explicit statement on the subject, and that the instruction which had been moved by Dr. Gosse would be voted upon, because it would be very painful to the Committee if it was at any time thought it were thrusting its personal opinion upon the Association.

The motion was seconded, and being put to the meeting, was carried, as follows:

That it be an instruction that an epitome of the principles of the Medical Acts (Amendment) Bill should be included among the documents sent to the Divisions, with a request that the Divisions will vote upon those principles.

Registration of Medical and Dental Students.

The Chairman said that the second part of this section of the report simply recommended that the action of the General Medical Council in favour of making the registration of medical and dental students compulsory throughout the whole of the United Kingdom should be approved, while the third referred to the institution of a leaving school certificate which had been so frequently brought forward and had now been crystallized by the work of the Education Committee; a memorandum on the subject had been prepared and forwarded to the Board of Education. The action of the Committee in respect of these matters was approved by the meeting.

Payment of Fees to Medical Men for Certificates of Unfitness to Attend School.

The Chairman said that this subject must come up again at the next meeting, and invited any Representatives who could furnish information on the subject to forward it to the Committee in their individual capacity.

The further consideration of the subject was deferred and the Chairman said that the Committee had had before it a certificate of unfitness to attend school issued by a chemist at Bootle. The Association sent the information to the General Medical Council, but he regretted to say that the Executive Committee of that body declined to take any action. As this obviously infringed the privileges of registered medical practitioners, the Medico-Political Committee resolved to take action on its own part, but while it was considering the matter the person who issued the certificate absconded.

Eyesight Testing by Spectacle Makers.

The Chairman said that with regard to the action of the Spectacle Makers' Company in granting certificates and diplomas in sight testing, the question whether a medical man should take the position of medical examiner for such a diploma had come before the Ethical Committee, which had reported that it was unethical for a medical man to take part in such an examination, and that report had been debated by the Council. The economic side of the matter was dealt with in the memorandum presented to the meeting by the Medico-Political Committee.[15]

Dr. Grossmann (Liverpool, Western Division) moved the adoption of the memorandum.

A Representative stated that the present state of things was entirely due to the fact that the general practitioners did not test patients for spectacles, but sent them to local infirmaries. Some people did not care to do this, but went to spectacle makers, whom they regarded as specialists in eye testing. He suggested that universities and schools should educate the students so that they should be able before going out to practise to test their patients' sights for spectacles.

Dr. Tatham Thompson (Cardiff Division), speaking as an ophthalmic surgeon, supported the recommendation. He thought it their duty to raise their voice to try and protect the British public, and the ophthalmic surgeon also, who was trying to get an honest living.

Dr. Ward Cousins wished to endorse the statement with regard to the use of mydriatic drugs, and even atropine, by spectacle makers.

Dr. Allfrey inquired if, after the new Medical Acts Amendment Bill was passed, men practising under the Spectacle Makers' diploma would be liable to prosecution.

The Chairman stated that that was so.

Dr. Wolstenholme inquired if action had been taken against those members of the Association who had associated themselves with the Spectacle Makers' Company.

The Chairman stated that they had had certain inquiries from medical men who had been asked to become examiners as to what the attitude of the Association would be, and he assumed that now that the terms of the report were known those members would not take office under the company.

The motion approving the Paragraphs 1 to 4 in the report embodying the conclusions of the Committee was then put and adopted.

Duration of Meeting.

At this point several inquiries were made as to the time the meeting would sit.

The Chairman stated he was in the hands of the members, and after some discussion it was resolved to sit until the conclusion of the business on the agenda.

Pharmacy Law.

The Chairman submitted the memorandum[16] prepared by the Medico-Political Committee, which the Council of the Association had forwarded to the Privy Council, expressing, on behalf of the Association, its disagreement with the report of the Departmental Committee, which practically proposed to abrogate many of the provisions with regard to poisons by making changes in Schedule A of the Pharmacy Act, 1868. He moved from the Chair that the action of the Committee be approved, and this it was agreed to.

Fees Paid for Examination for Life Assurance.

The Chairman said that the Memorandum of the Committee on this subject was in the main simply a confirmation of the terms of the Report of the Norwich Division,[17] and he begged to move from the Chair that it be approved. This was agreed to.

Report of the Ethical Committee.

The adoption of the Report of the Ethical Committee was, in the absence of Professor Saundby, moved by Dr. Bruce Goff (Council), who said at that late period of the evening he did not think it necessary to go into the various points that were recorded in the Report, which he presumed had been read by all. He would content himself by formally moving the adoption of the Report.

Dr. Smyth (Bournemouth Division) seconded.

Dr. Griffin (Oxford Division) said that he was instructed to state that his Division did not agree with the suggestion that the names of surgeons and physicians of hospitals for the week should not be published in newspaper advertisements.

Dr. MacKeith pointed out that this question had already been decided by the meeting.

The Chairman ruled that it was competent for a Representative to bring up an adverse resolution of his Division.

Dr. Hinds (North Staffordshire Division) stated that no notice would be taken of the ruling of the Committee because after the decision last year it was stated that it was merely an expression of a pious opinion.

[15] Supplement, July 16th, 1904, p. 36.
[16] Ibid., October 31st, 1903, p. ccvi.
[17] Ibid., March 19th, 1904, p. 33.

Dr. Browne thought the opinion of the last meeting was strongly in favour of doing away with any form of advertisement.

Model Rule for Divisions re Circulation of Notices in certain Cases.

Dr. Horrocks asked by whom the letter with regard to members breaking the rules was to be sent.

The Chairman said it was a matter for the exercise of the autonomic power of the Division. It had been suggested that in order to obtain concerted action among the Divisions, when a point of this sort arose, it should be referred to the Ethical Committee, so that it might know what was going on, and should offer, if necessary, advice, and even legal advice, to help the Division.

Dr. Cox inquired if the point was not that if a Division sent out the notice with the approval of the Ethical Committee the Association was prepared to take the risk.

The Chairman said that if a Division resolved to take action with regard to any member of the profession who was not a member of the Association, then the action of that Division would be supported by the whole force of the Association. He hoped he would not be misunderstood because he saw that this matter was very difficult to understand. The whole idea of the new constitution was to give autonomy to the Divisions, and this autonomy was perfectly preserved here. But there must be some means of concerted action throughout the Association, and the only way in which that could be obtained was to inform the Ethical Committee of the circumstances, so that, if it thought fit, after consulting the Solicitor to the Association, it could take action; it did not interfere with the autonomic power of the Division in any way.

The motion for the approval of the report was then put and adopted.

Alteration of By-laws.

The Chairman said that the proposed alterations of by-laws as set out on the agenda paper had been carefully considered by the Council and by the Divisions which had sent them up, and they had been examined by the various officials of the Association with the advice of the solicitor where necessary, and he could not see that they required much discussion. He called upon the Chairman of Council to move Block I.

Dr. MacKeith proposed that the meeting should adjourn until 2 p.m. on the following day, as it was getting very late.

The Chairman could not accept the motion. The meeting had come to a distinct resolution an hour earlier to sit to the conclusion of the business, and it certainly could not rescind that now. He thought the quicker plan would be for him to move the alteration of by-laws from the Chair. He, therefore, moved Block I.

I. By-laws proposed to be Altered because not Applying.

1. That By-law 10 be amended in the following respects, namely:
   (*a*) That so much of such said by-law as is contained in Section (*a*) thereof be deleted and no longer form part of such by-law.
   (*b*) That the words "At any time after January 1st, 1903," with which Section (*b*) of such by-law commences be deleted.
   (*c*) That Section (*b*) of such said by-law, as thus amended, be designated Section (*a*) thereof, and that Section (*c*) be designated Section (*b*).

By-law 10. Autonomy.

(*a*) At any time before January 1st, 1903, the Council may, in relation to any Division or Branch, make such rules as the Council may think expedient, and may repeal and alter the same.

(*b*) At any time after January 1st, 1903, subject to the Regulations and By-laws of the Association, each Division and each Branch shall be free to govern itself in such manner as it shall think fit, and for that purpose to make from time to time such rules as it think fit, and to repeal or alter the same as and when it shall consider it expedient.

(*c*) The rules so made and for the time being in force shall be binding on the members constituting the Division or Branch in reference to which they are made.

The motion was agreed to.

Mr. Andrew Clark (Chairman of Council) said that Block II consisted of new by-laws, which the Council had, after careful consideration, concluded would be for the better working of the Association. He did not propose to make any further observations in proposing them:

II. Proposed New By-laws, or Addition to By-laws.

3. That the following new by-law be made, and form one of the by-laws of the Association, namely: "In the month of May in each year a list of members of the Association shall be prepared and published showing the ordinary membership of each Division and Branch as shown by the register of members of the Association on April 30th of that year, and those named in the said list as members of any Division or Branch shall be deemed to be the ordinary members of such Division and Branch for the purpose of Article XXVII, and for the purposes of By-laws 7, 18, 21 and 22."

4. That By-law 15 be amended by the addition of the following clause at the end thereof, namely: "For the purposes of this by-law, those named in the Annual List of Members, prepared in May in any year, as members of any Branch, shall be deemed to be members of the said Branch for the said year, and those elected by any Branch Council, whose membership dates from July 1st in any year, shall be deemed to be members of the said Branch for the ensuing half-year."

As from the 1st January, 1903, the Treasurer of the Association shall annually pay or allow to the Treasurer of each Branch the sum of 4s. for each member of the said Branch who has paid to the Association the full current annual subscription for that year, and the sum of 2s. for each member elected after the 1st July, who has paid to the Association half the current annual subscription.

5. That the following new by-law be made and form one of the by-laws of the Association, namely: "The powers conferred under Article XXX upon any constituency to appoint a substitute in the place of a Representative unable or unwilling to attend a Representative Meeting, shall be exercised by such constituency in general meeting, or by some officer or member of the Division or Divisions composing the constituency who shall have been authorized by the rules of the said Division or Divisions, or shall by a resolution of the said constituency be authorized to exercise such powers."

6. That By-law 32 be amended by the addition of the following clause at the end thereof, namely: "In addition to the above-mentioned report the Council shall have power to present to any Annual Representative Meeting such further report or reports as it may deem advisable, and the same shall be published in the Journal if time permits."

By-law 32. Reports.

The Council shall annually prepare a balance sheet and financial statement of the Association for the past year, to be presented to the Annual General Meeting of the Association and an estimate of the probable income and expenditure of the Association for the coming year, and a Report of the general state and proceedings of the Association for the past year to be presented to the Annual Representative Meeting. A copy of such statement, estimate and Report shall be sent to the Secretary of every Branch and Division and published in the Journal not less than two months before the Annual Meeting.

Dr. H. W. King (Chester and Crewe Divisions) suggested that as the annual meeting of a Division was generally held in May it would be better to issue the list of members in April.

Dr. J. Lawrie (Renfrewshire Division) was instructed to move the modification of No. 6 by inserting the words "prior to the Annual Meeting" instead of the words "if time permits."

Dr. King seconded the motion.

Mr. Andrew Clark pointed out that the by-law was framed so as to enable the Council to place any matter of importance which came up at the last moment before the Annual Representative Meeting, instead of leaving it over for twelve months.

Dr. Browne thought it better to leave the by-law as proposed by the Council.

Dr. Lawrie, with the consent of his seconder, then withdrew the amendment.

The Chairman then put Block II, which was agreed to.

Mr. Andrew Clark said that the Council was not responsible for the whole of Block III. He moved No. 7 as follows:

That By-law 2 be amended in the following respect — namely, that the words "one month" occurring in the last line but one thereof be deleted, and that the words "seven days (or such longer period as the Branch may by its rules prescribe)," be inserted in substitution therefor.

which was agreed to.

Dr. Morton (Walthamstow Division) proposed No. 8, reserving his right to make a speech in reply.

An amendment was proposed and seconded "that instead of the word 'twenty' the words should be 'one-third of those present.'"

The amendment was then put and declared lost.

Dr. Wolstenholme said he was instructed by his Division to say that five would be a better figure. For himself he thought it would be well to leave the by-law as it now stood.

Dr. Morton's motion was put and carried.

Representation of Military Services on Central Council.

Mr. Andrew Clark moved:

(c.) That the words "elected by the members of the Association attached to the Royal Navy Medical Service, the Army Medical Service, and the Indian Medical Service respectively, in such manner as may be determined by the said services respectively, subject to the sanction of the Council," in Section (c) of By-law 20 be deleted, and that the following words, "and of one member of the Royal Navy Medical Service, one member of the Army Medical Service, and one member of the Indian Medical Service, annually appointed by the Council to represent the said services respectively on the Council," be inserted in substitution therefor, so that the by-law as thus amended shall read as follows:

"The Council shall be composed of the officers and ex-officers named as members of the Council, *ex officio*, in Article XXXVIII of the foregoing regulations, together with the members duly elected or appointed by the Branches and other bodies authorized by the by-laws to elect or appoint members of the Council, and of one member of the Royal Navy Medical Service, one member of the Army Medical Service, and one member of the Indian Medical Service, annually appointed by the Council to represent the said services respectively on the Council, and of members annually co-opted by the Council in manner hereinafter provided."

The present by-law had been found, after consultation with the members of the Army and Navy Medical Services, to be practically inoperative, and those services would be really unrepresented as long as the by-law remained as it was.

Dr. DOUGLAS seconded.

Dr. MACDONALD inquired if the member was to be an active or retired member of the service.

Mr. ANDREW CLARK replied that he was not sure that an active member could serve.

Dr. WOLSTENHOLME was instructed to oppose the by-law on the ground that it gave the services an undue proportion of representation on the Council.

The motion was put and agreed to.

The CHAIRMAN, in reply to Dr. POPE (Cleveland), ruled that a motion of which notice had been given did not require a seconder.

Election of Branch Representatives on Central Council.

Dr. BIGGS moved, on behalf of the Wandsworth Division, that the words "or by a Division" be inserted after the word "writing" in By-law 22, so that an elected member of the Council might be nominated by a Division, and this was adopted.

Dr. BIGGS moved that:

Any Branch can require by its rules that a nomination, not by a Division, be signed by such number of members exceeding three as the Branch may deem expedient.

The CHAIRMAN said that this was a question of principle, and he would ask them to vote as to whether they would accept it or not.

The motion was then put and carried.

He then asked Dr. Biggs to move a specific alteration in the by-law embodying this principle.

Dr. BIGGS therefore moved to insert after the words "nominated by a Division or in writing by such number of members, not less than three, as by its rules prescribed."

This was put and agreed to.

Dr. BIGGS moved accordingly, and the by-law as amended stands thus:

By-law 22 of the British Medical Asssociation:

The elective members of Council shall be elected by voting papers sent to each elector by post, the said voting papers containing the names of those candidates who have been nominated *by a Division or in writing by such number of members not less than three as by its rules prescribed* to the Secretary of the Branch, on or before an appointed day, of which not less than fourteen days' notice has been given in the JOURNAL.

Mr. ANDREW CLARK moved:

(5) That By-law 28 be amended in the following respect, namely: That after the words "Annual Election" occurring in the fifth line thereof, the following words be inserted and form part of such said by-law: "Or, in respect of election by a Branch, in such other manner as may be prescribed by the Rules of the said Branch," so that the by-law as thus amended shall read as follows:

"Any casual vacancy occurring in the Council, not less than four months before the annual general meeting, may be filled up by any Branch or body the representation of which may have become vacant, and such election shall be conducted in the same manner as the annual election, or, in respect of election by a Branch, in such other manner as may be prescribed by the Rules of the said Branch. Any person so chosen shall retain his office so long as the member in respect of whom such casual vacancy may have occurred would have retained the same."

As the by-law stood at present certain Branches ran the risk of being disfranchised for a year, as had happened to the Metropolitan Counties Branch last year.

This was then put and adopted.

Public Health Committee.

Mr. ANDREW CLARK moved:

That Section (3) of By-law 30 be amended in the following respect, namely: That the words "The public health service, the Poor-law medical service, and the vaccination service" be deleted, and that the words "public health and the Poor-law medical service" be inserted in substitution therefor.

Dr. BRASSEY BRIERLEY was instructed to oppose it, as his Branch failed to see any reason for altering the present by-law.

Mr. WATTS PARKINSON pointed out the alteration proposed slightly to extend the scope of the Committee by including matters affecting the public health which were not absolutely connected with the Public Health and Poor-law Medical Services.

The motion was then put and carried.

Consequential Revision of By-laws.

Mr. ANDREW CLARK moved:

That the officers of the Association be hereby authorized and instructed, in conference with the Solicitor of the Association, to determine the respective positions in which the new by-laws made this day by the Representative Meeting shall be placed among the existing by-laws, to number the said new by-laws accordingly, to make such alterations in the numbering of the existing by-laws as may be necessary, and to alter accordingly the numerical references contained in any of them.

This motion was put and agreed to.

REPRESENTATION OF THE MEDICAL PROFESSION IN PARLIAMENT.

Dr. THOMAS WILSON moved the following resolution, of which the Birmingham (Central) Division had given notice:

That the representation of the medical profession in Parliament at the present time is inadequate, and in the interests of the public and profession alike should be improved, and that the Council be instructed to consider how this may be effected.

The CHAIRMAN pointed out that another resolution, of which the Cardiff Division had given notice, was similar to this, and suggested that the Representative of the Cardiff Division should agree to the Birmingham resolution as covering that.

This was acceded to by the Representative of the Cardiff Division.

The motion was then put and adopted.

PROPOSED FUND TO FACILITATE AMALGAMATION OF OTHER SOCIETIES.

Mr. HORROCKS moved the following resolution of which the Bradford Division had given notice:

That the Council be instructed to transfer annually from the central funds such amount as the Council shall deem expedient, having due regard to the expenditure necessary to carry out other objects of the Association, to a special fund to be designated "The Supplementary Grants Fund," and that out of such fund grants be made from time to time to such Divisions and of such amounts as the Council may think proper, having regard to the evidences of work done, and to the amount of local subscription for any purpose for which a supplementary grant may be given, the Council to be advised by the Organization Committee as to the distribution of the amount available.

The object was to facilitate the amalgamation of existing local Societies, and he thought that the proposal was properly guarded, because a grant could only be made with the permission of the Council on the recommendation of the Organization Committee.

Dr. BRASSEY BRIERLEY trusted that the principle would not be entertained.

Dr. GOSSE supported the view put forward by Dr. Brassey Brierley.

Dr. COX supported the proposal in the motion. It was safeguarded by reference to the Council, which would not fritter away money on objects which did not appeal to the members.

Dr. WALTER SMITH opposed it on the ground that the organization was new, and some two or three years hence would be quite soon enough to consider the matter.

The CHAIRMAN pointed out that the resolution was only an instruction to the Council to earmark a certain amount of the funds of the Association. The Council had power at the pre-

sent time to give a grant of that kind on application, and if the motion was rejected that should be understood by the Bradford Division. He then put the motion, which he declared lost.

Election of Members of Association.

Dr. Dodd (Folkestone) moved:

That the present method of election by the Branch Council is unsatisfactory, and that new members should be elected by the members of the Division in which they reside.

The object of the Folkestone Division in bringing this matter forward was the delay that often occurred in electing a new member, as the meeting of the Branch Councils did not take place very often. They wanted to make it as easy as possible for a man to become elected.

Mr. Horrocks seconded the motion.

Dr. Wolstenholme was instructed to oppose on the ground that the Division was too small a body, and might be influenced by some local prejudice.

After some discussion the motion was put and declared lost.

Dr. Grossmann proposed, on behalf of the Liverpool Western Division:

That the present method of admission to membership of the British Medical Association is unsatisfactory, and that in future the candidates be nominated or proposed by at least two members to whom he is personally known before his name is placed on the list for election by the Council of the Branch.

The Lancashire and Cheshire Branch, which was one of the largest of the Association, wanted to know who the individual was who was proposed for membership, and therefore it desired that he should be nominated by two gentlemen to whom the candidate was known.

The Chairman pointed out this would make the condition of things, which was at present permissive, compulsory throughout the Association.

Dr. Cox hoped that the matter would be left optional. In the North of England Branch, of which he was Secretary, they had taken the very definite line of throwing the responsibility of the election of the members upon the representatives in the various Divisions.

Dr. Ferguson (Gloucestershire Branch) remarked that the matter was left permissive last year, and in his Division it had been adopted and found to work satisfactorily.

Mr. Andrew Clark explained that he was responsible for bringing the permissive principle before the Reconstitution Committee; he thought it would be opposed if it were made compulsory.

The motion was then put and declared lost.

Dr. Dodd then moved, on behalf of the Folkestone Division:

2. That all members of over thirty years' standing should be made honorary members of the Association.

He thought it would be a graceful act if this course were adopted.

The Chairman remarked that it would be a graceful act if Dr. Dodd withdrew the motion.

Dr. Dodd acceded to the suggestion, and the motion was withdrawn.

Contract Practice: Notice of Disputes.

Dr. Cox moved, on behalf of the Gateshead Division:

(A.) That a prominent place shall be reserved in the British Medical Journal for notices from Divisions and Branches where disputes are taking place as to contract terms, etc., and from which districts it is advisable that decent members of the profession shall keep away. Each such notice shall be repeated, free of charge, until in the opinion of the Division or Branch in question the necessity for it has disappeared.

A notice was already put in the advertising columns of the Journal pointing out that in such and such a Division members were requested to keep away, for the reason which would be found by looking at the advertising columns.

The Chairman understood that the object of the resolution was that a separate paragraph should appear in the substance of the Journal in addition to the paragraph in the advertisement columns.

Dr. Cox replied that it was so.

The Chairman was sure the Council would accept that as an instruction from the Representative Meeting if it were adopted.

The motion was then put and agreed to.

Alteration of Memorandum of Association.

Dr. Cox then moved the following resolution, of which the Gateshead Division had given notice:

That the Council of the Association be instructed forthwith to take the steps necessary to obtain the alterations in the Memorandum of Association contained in the Birmingham resolutions, subject to such modifications as are required to harmonize them with the present articles, submitting the same for adoption by extraordinary general meeting in their amended form as a special resolution, before application to the High Court, if legally advised necessary.

The best reasons for the alterations of the Articles of Association would be found in the preliminary part of the report to the Medical Defence Scheme. When the Medical Defence Committee commenced to work it was found that in order to introduce medical defence to the Association it was absolutely necessary to alter the Memorandum of Association. Many years ago it was found that such an alteration was necessary, and resolutions were actually passed in Birmingham asking the Council to make the alterations and take the necessary legal steps to give effect to them.

Dr. Douglas inquired the nature of the Birmingham resolutions.

The Chairman stated that they were resolutions passed ten years ago with great difficulty by the Reform Party in Birmingham, and they provided, as far as they could, for altering the Memorandum of Association so that it should be possible for the Association to take up medical defence.

The resolutions are as follows:

Special Resolution, but not Operative without the Confirmation of the Court, which Confirmation has not been Obtained.

That the provisions contained in the Memorandum of Association with respect to the objects of the Association be altered as follows:

1. By substituting for Paragraph (*a*) the following paragraph, namely:

(*a*) By holding the meetings of the Association in different parts of the United Kingdom and different parts of the British Empire.

2. By substituting for paragraph (*d*) the following paragraph, namely:

(*d*) By the grant of expenditure of such sums of money out of the funds of the Association for the promotion of the medical or allied sciences, or for the defence, promotion, or maintenance of the honour or interests of the medical profession, by such means and in such manner, as the Council of the Association may think fit, including in particular taking or defending legal proceedings, and promoting or opposing Bills in Parliament.

3. By substituting for paragraph (*e*) the following paragraphs, namely:

(*e*) By undertaking any trusts that may seem to the Council of the Association directly or indirectly conducive to the interests of the medical profession.

(*f*) By delegating to any Branches of the Association in the United Kingdom or elsewhere such of the powers of the Association as in the opinion of the Council of the Association it shall be expedient to delegate.

(*g*) And by such other lawful means as in the opinion of the Council of the Association shall seem best calculated to promote the medical and allied sciences, or to maintain the honour and interests of the medical profession.

By omitting from Clause 6 of the Memorandum of Association the words "Committee of."

Passed at Birmingham, July 13th, 1896.
Confirmed at Carlisle, July 28th, 1896.
Registered August 11th 1896.

The motion was put and agreed to.

Dr. Cox stated that Dr. Milburn, who had had to go away, had asked him to hand in a rider to the motion.

The Chairman read the rider as follows:

And that power should also be taken to enable the Association or any Branch or Division thereof to make a grant to any benevolent or provident institution connected with the profession.

Dr. Gosse seconded, as he had just handed up a rider to a similar effect. They were absolutely powerless to do anything for the widow and family of any practitioner, although a grant could be made to the superannuation fund of their servants.

A Representative inquired if the word "Division" included a Division which constituted a Branch in itself.

The Chairman felt he must rule that such a Division was a Branch. He would first take a vote as to whether the word "Division" should be retained.

A Representative stated that it had been customary for his Branch to make a grant to the Benevolent Fund of Epsom College.

Dr. Rees observed that his Division had been in the habit of making a grant towards the same body. Were they to understand that they could not do that?

The Chairman replied that it was absolutely illegal. He then put to the meeting the inclusion or exclusion of

the word "Division," and declared the word excluded. He then put the resolution as amended, and it was agreed to.

Dr. BUIST moved:

That power be taken to provide for the entertainment of guests of the Association, or any of the Branches or Divisions.

Up to the time of the New Constitution it had been the custom of the Branches to entertain guests on the occasion of the annual meeting. This was a valuable privilege, which smoothed the negotiations between the Branches and the local magistracy, and the local governors of hospitals. He desired that Branches should at least have that power again, if they wished to exercise it; they should have as wide a power as possible while they were changing the Memorandum of Association.

A REPRESENTATIVE moved that the word "Division" be left out.

The CHAIRMAN thought it seemed somewhat ungenerous towards Divisions to leave them out. He could not see why the Divisions, any more than any other integral part of the Association, should not entertain guests, and he appealed to the member to withdraw his amendment.

Dr. REES stated that his Division had votes to Epsom College which they had now lost through not being able to make a contribution.

The amendment was then withdrawn.

The motion on being put was carried.

SUPPLY OF GOVERNMENT LYMPH TO PRIVATE PRACTITIONERS.

Dr. HENSLOWE WELLINGTON, on behalf of the Hampstead Division, did not dwell upon motions as to the insertion of all business notices in the SUPPLEMENT to the JOURNAL, and as to the extension of the *Year Book*, because they had been covered by the previous business of the meeting; but he moved the third resolution of which notice had been given, namely:

That it is advisable that, having regard to the purity and reliability of the lymph supplied to the public vaccinators by the Local Government Board, every practitioner should be put on the same footing as public vaccinators in respect to the Government supply of vaccine lymph.

He was asked to say that in the present day they were all equally skilful in vaccinating, and as there was equality in vaccinating there should be equality in the vaccine; therefore they considered there should be no such thing as a public vaccinator in contradistinction to themselves. They were all one, and all as good as one another, and they should all be put on the same footing. If A. was recognized as a public vaccinator, why should not B. and C. be recognized in the same manner?

The motion was put and agreed to.

RECORD OF VOTES OF DIVISIONS.

Dr. WARD COUSINS moved, on behalf of the Portsmouth Division:

That in recording the votes of members of Divisions on matters to be referred to Representative Meetings the following plan should be adopted, namely: The number voting affirmative present; the number voting negative present; the number absent.

This was no modification of the law at all. His Division thought that all Divisions should have a uniform plan of recording their voting.

Dr. WOLSTENHOLME said he was instructed to oppose.

The CHAIRMAN put the motion, which was agreed to.

THE TITLE OF "DOCTOR."

Dr. ROSE understood that the subject of the motion, of which the Stratford Division had given notice, namely, to insert in the Medical Acts Amendment Bill words providing that registration shall confer the title of "Dr.," had already been referred to the Divisions again.

The CHAIRMAN replied that it had, but the motion of which the Wigan and Leigh Divisions had given notice was not quite the same, and he called on Dr. Rees to move it.

Dr. REES said his motion opened up a very big question, and he took it that it was too big to be decided by the meeting in its present state of mind. He therefore took it upon himself as a protest against the way in which the business had been conducted to withdraw the resolution in order that he might bring it forward at a more convenient time.

The CHAIRMAN pointed out that he could not do that without permission, and he put it to the meeting whether permission should be given, and declared it lost.

Dr. REES moved:

In the opinion of the Representative Meeting all medical practitioners are entitled to use the title "Dr."

This, he said, was a question that had caused a considerable amount of friction, and it was more or less mixed up with the question of State final examination. He had a shrewd suspicion that it did not originate in the Branch, but had been inspired in another place after the fashion of flying kites to see which way the wind blew. The man in the street, when he heard the title "Dr.," naturally thought it applied to the healing profession. Whatever it might have conveyed in the past, there was no doubt at the present time it was applied to any one connected with the profession of doctoring.

The CHAIRMAN, in reply to Dr. MACKEITH and Dr. DOUGLAS, having stated that the question had been before the Ethical Committee, which had sought the advice of the Divisions, put the resolution, which he declared lost.

MEMBERSHIP OF THE ASSOCIATION.

Dr. ROSE moved:

That the Council of the British Medical Association be asked to consider what steps are advisable to increase the Association's membership, and that this resolution be submitted to the Annual Representative Meeting.

The motion was carried.

PAYMENT OF MEDICAL MEN CALLED IN TO ASSIST MIDWIVES.

Dr. WALTER SMITH moved:

That the County Councils and Boroughs be requested to form a list (after circularizing all registered medical practitioners within their area) of all who are willing to attend in answer to a request on the part of a midwife or her patients and to supply all midwives with this list as far as this area is concerned.

That would enable those who wished to attend these midwifery cases to do so and those who did not would not be troubled.

The CHAIRMAN said he would put it to the meeting, but pointed out that it was part of the business that the Committee was to inquire into, although it was true that the Representative Meeting could cover the current year.

Dr. WALTER SMITH said that was what he wanted.

The motion was then put and was lost.

ELECTION OF MEMBERS OF THE MEDICO-POLITICAL AND ETHICAL COMMITTEES.

On the suggestion of Dr. FOTHERGILL it was decided to take the election of Committees next in order to save time.

The CHAIRMAN announced that the Council had co-opted Dr. Radcliffe Crocker, Dr. Bagot Ferguson, Mr. Edmund Owen, Dr. D. A. O'Sullivan, and Professor Saundby.

Nominations were then received, and the CHAIRMAN subsequently announced that the following were elected:

MEDICO-POLITICAL COMMITTEE.

Dr. Garrett Horder	Mr. Messiter
Dr. Macdonald	Dr. Leonard Kidd
Mr. Jackson	Dr. Nash.

ETHICAL COMMITTEE.

Dr. Jepson	Mr. Ballance
Dr. Broadbent	Dr. Bateman
Dr. Elliston.	

DOMESTIC AND NON-COMMERCIAL ADVERTISEMENTS.

Dr. BIGGS moved the following resolution, of which the Wandsworth Division had given notice:

(A.) That it be referred to the Central Council to consider whether it would not be possible that all announcements of births, marriages, and deaths should be inserted free of charge for members of the Association and their immediate family; and also to charge members of this Association for advertisements at a much lower scale of fees than at present, in cases when these are of a private and non-commercial character, and at the same time, by appending to all such some special sign, to indicate that the advertisements are those of members, and in their private capacity.

It was proposed that members who wanted to advertise on matters of private and non-commercial character should be able to do so free of charge.

The resolution was put and declared lost.

PRICE OF "JOURNAL" TO NON-MEMBERS.

Dr. BIGGS next proposed:

(B.) That it be referred to the Central Council to consider whether it would not be an advantage to charge for the BRITISH MEDICAL JOURNAL, from the beginning of 1905, sevenpence a copy to all non-members of this Association. (75,000 copies are annually sold besides those sent to members.)

Dr. COX supported the motion, as he considered the BRITISH MEDICAL JOURNAL quite as good as the *Lancet*, which charged 7d.

The resolution was then put and declared lost.

Hospital Abuse.

The Chairman stated that the following motions, of which the Wandsworth Division had given notice

(c.) In order to reduce the present misuse of Charity Trust Funds put at the disposal of hospitals, the constant necessity for hospital appeals, the indiscriminate issuing of "commends" for treatment, as also the consequent gradual reduction now taking place in the scope offered for practice to general practitioners through this largely-increasing attendance of the laity at hospital out-patients' departments, hospital authorities should endeavour to make obligatory:

1. The presentation of a form signed by a medical practitioner.
2. That this form should be produced by all before they receive a *second* gratuitous visit or consultation, or apply for admission to the hospital for treatment.

(d.) That a copy of the above resolution be sent (by a deputation if possible) to the King Edward Hospital Fund Committee, as also to all hospital and other similar committees, together with a copy of a proposed form, and, after pointing out the necessity for same, a hope be expressed that they will use their influence to have it adopted, either alone or in conjunction with any subscriber's recommend at present in use.

(e.) That the Central Council of the Association are hereby asked to carry out the above resolutions and to take into their consideration the desirability of offering to make donations towards the salaries of almoners properly trained, who could thus be expected, while safeguarding the expenditure of Charity Trust Funds, to indirectly aid the interests of the local general practitioners

referred to matters which were now being dealt with by the Hospital Committee, and were partly answered by the principles drawn up by that Committee, and approved in this session. It was for the meeting to decide what they would do with the motions.

Dr. Biggs suggested that they should be approved and sent to the Hospital Committee.

The Chairman thought it better to refer them direct to the Committee.

Dr. Biggs then formally moved, and it was agreed, that the motions should be forwarded to the Hospital Committee.

Proposed Printing and Stationery Department.

Dr. Biggs moved, on behalf of the Wandsworth Division:

That in the opinion of this Representative Meeting, the time has come that the Central Council should take into its consideration the advisability of forming a Printing and Stationery Department of the Association, not necessarily at the head office, from which all necessary stationery, circulars, and general printing could be supplied and charged to the Branches and Divisions at a sum only sufficiently over cost price to cover working expenses.

The Chairman suggested that it would expedite business, as the Council were now considering the question of accommodation at the office, if this were referred to the Council as an opinion of the meeting.

Dr. Biggs assented, and it was agreed to.

Prevention of Abuse of Drugs.

Dr. Biggs then moved, on behalf of the Wandsworth Division, and it was agreed:

That it is desirable that the Central Council draw the attention of the Medical Profession individually to the fact that by recommending by name certain drugs and certain preparations of those drugs, they are not only allowing themselves to be used indirectly as touts for wholesale druggists, but are also helping their patients to form, either in themselves or others, serious habits of drug abuse.

The following motion was moved, on behalf of the Wandsworth Division, by Dr. Biggs:

That with the view of checking the indiscriminate dispensing of dangerous drugs, the Central Council of this Association be requested to appoint a Committee to investigate the subject, either alone or in conjunction with the Pharmaceutical Society, and to report what steps they would recommend should be taken to remedy the present grave defect in the Law.

The motion was withdrawn as the matter was under the consideration of the Medico-Political Committee.

Minutes.

The Chairman observed that the minutes of the meeting, which had lasted a record time, would take so long to get out and correct that they could not possibly be accepted at Oxford, but must stand over to the next Annual Meeting.

The Chairmanship.

A hearty vote of thanks was then accorded the Chairman for so ably conducting the business of the meeting.

The Chairman having expressed his thanks,

Dr. Nash then put it as the strong representation of the meeting that Sir Victor Horsley would reconsider his decision not to stand for the Chairmanship next year, and he put it in the form of a resolution which, having been seconded by Dr. Latimer, was carried unanimously.

Sir Victor Horsley stated he was bound by the vote of the meeting, and the proceedings terminated.

The Law Relating to Coroners.

The following reply to the letter addressed to the Lord Chancellor on July 1st on behalf of the British Medical Association has been received since the session of the Annual Representative Meeting at which this matter was discussed (see p. 117) took place. The letter addressed to the Lord Chancellor is reproduced for convenience of reference from the Supplement to the British Medical Journal of July 16th.

The Offices of the British Medical Association,
429, Strand, W.C., July 1st, 1904.

My Lord,—With respect to the matters affecting Mr. Troutbeck, the Coroner for South-West London, which we have had the honour on three occasions to bring to the notice of your Lordship, we are instructed to inform your Lordship that as the Annual Meeting of the British Medical Association, one of the parties interested in this case, will take place at the end of this month, it is desired to publish at an early date the facts and evidence which have been submitted by us to your Lordship in order that they may be before the Association prior to the meeting.

With a view to such publication we are instructed to inquire whether we may expect any further communication from your Lordship.

We are,
Your Lordship's most humble, obedient Servants,
Andrew Clark,
Chairman of Joint Committee representing the British Medical Association, the South-West London Medical Society, the Medical Defence Union, Limited, and the London and Counties Medical Protection Society, Limited.
J. Smith Whitaker,
Secretary of Committee.

To the Right Honourable the Lord Chancellor.

[Reply.]
House of Lords, S.W.,
July 29th, 1904.

Sir,—With reference to the letter of the 1st inst. signed by yourself and Mr. Smith Whitaker, and previous communications, the Lord Chancellor has not found it possible to give time for a minute examination of all the facts and arguments which have been placed before him in the controversy. Though his Lordship's present impression is not in favour of the coroner's practice, his Lordship does not as yet see that there is such a case as would found the exercise of the only jurisdiction which he possesses, namely, to remove a coroner for misconduct in his office.

I am, Sir,
Your obedient servant,
(Signed) K. Muir Mackenzie.

Andrew Clark, Esq., F.R.C.S.

ANNUAL GENERAL MEETING.

Second General Meeting, Tuesday, July 26th.

On Tuesday, July 26th, the annual general meeting was continued in the evening in the Sheldonian Theatre, the Vice-Chancellor of the University (Dr. D. B. Monro) presiding. The Vice-Chancellor having welcomed the Association to Oxford on the part of the University, was followed by the Mayor (Mr. E. A. Bevers, M.R.C.S.), who performed the same office in the name of the Corporation. They were succeeded by Dr. Collier, who, speaking on behalf of the Oxford Division, extended a special welcome to the foreign guests and Colonial delegates. Dr. Drew then presented the President, Dr. Collier, with an official badge of office in the name of the Executive Committee of the Division, and this duty performed introduced the guests and delegates. The President next announced the acceptance by the Vice-Chancellor, the Dean of Christ Church and the Master of University College and Professor Vernon Harcourt of the honorary membership of the Association, which it had been decided to offer them at the meeting in the morning, made graceful reference

to the generous assistance which the Executive Committee had received from all the University authorities alike in their task of preparing for the meeting, and then presented the Middlemore Prize.

Votes of Thanks.

These preliminaries completed, the Presidential address, published in the Journal of July 30th, page 221, was delivered.

Upon its conclusion, Dr. Clifford Allbutt said the duty which had been entrusted to him that night of returning thanks on behalf of the brilliant gathering for the admirable address to which they had listened was one which any one of those present would regard as a great distinction. Personally, he had the more satisfaction in moving this resolution, considering the share that Cambridge had in the distinguished President of the Association. Cambridge had something to do with the education, and much to do with the graduation, of Dr. Collier, but it had lost to its elder sister the advantage of his residence in Cambridge, and of his direct assistance in its Faculty of Medicine. A great part of the address to which they had listened dealt with the attenuation, almost to the point of disappearance, of the Faculty of Medicine as one of the functions and purposes of the old universities. This decay had taken place not only in Oxford and Cambridge but also in the old university of Paris and in other universities of Northern Europe, but not to the same extent in the universities of North Italy, where clerical and feudal disdain for practical occupations was less dominant. These thoughts reminded him of a visit that he had paid that afternoon—not for the first time—to the Hall of Christ Church, where he saw the portraits of many remarkable men, some of extraordinary powers of intellect, others of profound spiritual insight, but in the midst of them he saw one, the powerful, penetrating, subtle, and original features of John Locke, the friend and counsellor of Sydenham. He dwelt on the thought of the discontinuous ways of the progress of mankind; that if the message John Locke had given to the human race had but entered into the thoughts and quickened the lives of his great intellectual and spiritual contemporaries and successors whose portraits adorned that great chamber, how much quicker, brighter, and greater the progress of England would have been, and how strange it was that it had been left almost to the present day to apply those principles of John Locke, without which the loftiest thought or the most illuminated spirit was perverse or ineffectual. "Great indeed is the spiritual life; great indeed is the life of the mind! What would man have been without them? but whence must they derive that by which they are edified? By the gates of the senses; through the eye, the hand, and the ear." This was Locke's message to his fellows; but his message was not listened to. Every handicraft was regarded as base; and every outward avenue by which the world of mind and soul could be fed and instructed was closed. But Sydenham, perhaps for all in all the greatest physician since Hippocrates, learnt the true lesson from his friend. Had the intellectual and spiritual leaders of Oxford also listened to Locke in his own day and in later days, they would have had at Oxford and Cambridge long ago active and honoured scientific schools amongst which medicine whould have taken its ancient Hippocratic place. The activity that had been reserved for the time of Henry Acland, George Rolleston, George Humphry, and Michael Foster in their own day would have had an earlier spring and a mellower harvest. It was impossible for him to go over the ground which had been traversed by the President in his interesting address. He should have liked to have said more upon the exceedingly interesting story of historical development to which they had listened, not merely as an antiquarian record, but as a sketch of the lines upon which progress had been made, which it was now following, and which it would surely pursue. He had shown them how, if in these days we must become specialists in any or every form of study, it was the particular gift of the two old Universities (he thought on such an occasion as this in Oxford they might be allowed to take a little liberty of speech) to preserve and enlarge that breadth and tradition of education which was exposed to the great danger of being split up into incoherent and divergent fragments. He could not say more, although he would gladly have done so, on the interesting address and the humour which had made it so entertaining—an address which would compare honourably with any of those of his distinguished predecessors. But he must content himself with proposing:

That the members of the British Medical Association assembled in Oxford at the Seventy-second Annual Meeting desire to place on record their thanks to the President for his interesting and scholarly address.

Professor Osler (Baltimore) seconded the resolution, and expressed his pleasure at having listened to such a delightful address. Coming from the other side of the water, he might perhaps publicly answer a question which a young man had asked him that day. The question was, "Why do you Americans swarm in Oxford in this way; we can scarcely get along the streets;" and he went on to speak of the entanglement in the blue and brown veils which the American girls wore. He would tell them why the Americans liked Oxford. They liked it because here were ideals which they on the other side of the water very often had to lose, and which they had not always with them in their lives. A man could not do much without ideals. Much had been done with ideals alone, although not so much as when these ideals were embodied in a man of action. The British Empire and the United States had been made by this type of man, who combined ideals with action, such as Raleigh and the late empire maker, Mr. Cecil Rhodes. Speaking as a physician and as a student, he thought they owed a deep debt of gratitude to that noble man Linacre, who studied not only medicine but the humanities, and who brought Greek studies to England. It was a curious coincidence after what Professor Allbutt had said that he too had jotted down upon the paper before him the name of John Locke, a physician and practitioner of medicine in Oxford, and a graduate (M.B.) of medicine in Oxford. He quite agreed with the last speaker that it was he who probably taught Sydenham common sense, since Locke was the Anglican Socrates who brought philosophy down to the level of ordinary understandings. If one thing above another characterized English medicine and English physicians it was common sense. Met with occasionally in the clerical profession and in rare instances on the Bench and at the Bar, it was such an every-day occurrence in the medical profession that the people had almost ceased to recognize it. In all probability the life-long intimacy of Sydenham with Locke gave to him this most distinguishing feature in his character. He had the greatest pleasure in seconding the motion, which was carried.

Dr. Ferguson then proposed:

That the best thanks of this Association be given to the Vice-Chancellor of the University for his welcome to the Association, and for so kindly presiding on the occasion of the Presidential address.

It gave him the very greatest possible satisfaction to propose that resolution, and he asked them to agree to it; not so much because of the distinguished position which the Vice-Chancellor occupied, not because of his reputation as a great scholar, not because of the distinguished College over which he presided, but in consequence of the fact that he was the living incarnation of the great medical dynasty of Edinburgh—the Monros—the makers and teachers of that great school. Therefore he asked them to agree with the resolution of thanks to the Vice-Chancellor for presiding in the ancient theatre of Archbishop Sheldon, the hall of college song and of dignified ceremonial.

Dr. Barnes said it gave him great pleasure to second the resolution, and it was perhaps fit that as the resolution had been proposed by a graduate of the University of Oxford, it should be seconded by a graduate of the University of Edinburgh, upon which the name of Monro had shed such a great lustre. The resolution was put to the meeting and carried unanimously.

The Vice-Chancellor thanked the meeting for the very kind vote of thanks it had passed. It was a great privilege to him to be in the chair on this occasion, and no function he had had to perform as Vice-Chancellor had given him so much pleasure as the present, which, as Dr. Ferguson had reminded him, he thought he had some hereditary right to share in. He expressed his wish for the complete success of the meeting at Oxford, which he was sure would in every way be a memorable one.

Address in Medicine.

The Address in Medicine, which was published in the British Medical Journal of July 30th (p. 226), was delivered by Sir William Church in the Sheldonian Theatre on Wednesday evening, July 27th, at 8 o'clock, before a large audience, Dr. Collier being in the chair.

The President, in introducing Sir William Church, said he felt it quite unnecessary for him to say any words of introduction, for the reason that he (Sir William Church) for the last six years had held the very honourable position of President

of the Royal College of Physicians, but he should be neglecting his duty if he did not say, on behalf of Oxford men, that it was with a feeling of profound gratitude that they learnt that Sir William Church could tear himself away from the very numerous duties which fell upon him, and that he could be present that evening to give his address. He was quite sure that all Oxford men would heartily thank Sir William Church for making the effort he had. (Applause.)

Sir William Church then delivered his address.

Sir John William Moore moved:

That the cordial thanks of the meeting be given to Sir William Church for his able and interesting address.

He thought that very few words were needed from him to commend the resolution to the consideration of those present. Sir William Church had given them a survey of the marvellous progress which had been made in medicine. Referring to that part of the address which dealt with State medicine, he said it might not be in the recollection of many present that State medicine was the term introduced by such pioneers of that great department of medicine as Henry Rumsey, of Cheltenham; Henry Acland, of Oxford, and William Stokes, of Dublin. It was with pardonable pride that he stated that it was as a result of a conference between those three great men that the University of Dublin, of which he had the honour to be a graduate, instituted in the year 1871 a diploma in State medicine, and in June of that year that diploma was won by four of the medical graduates of that University. He spoke in the presence of the Regius Professor of Physic of Cambridge, who, perhaps, was under the impression that Cambridge was the first University to institute a diploma in State medicine, but in that he was misinformed; Dublin was the first. He was sorry that in modern times the term "State medicine" had given place to such indifferent terms as "sanitary science" and "public health." He would like to recall in this connexion the name of one, who, by his marvellous investigation of statistics, laid the foundation of modern State medicine, namely, William Farr. He was pleased to think that that gentleman in his position of Medical Registrar of Statistics had been worthily succeeded at Somerset House by Dr. Tatham, another distinguished graduate of Dublin University. One feature about the splendid address to which they had listened was the absence of any of the symptoms of catarrh in the theatre which might have been expected to become epidemic after three days of almost continuous downpour; but no coughing was heard, and he would like to compare that with what was heard in many a place of worship on a Sunday morning. From that comparison he thought he had no difficulty in gaining the approbation of those present to the resolution. The motto of the address was "National Health." A Latin motto had been suggested to him, which was, *Salus populi suprema lex*. The object of State medicine was not merely to prolong human life: it would be a poor world if it were full of decrepit, old invalids passing into the second century: they wanted to induce people to live a healthy life so as to enable people to enjoy good health and live *ad multos annos*. He had the greatest pleasure in moving the resolution.

Dr. Markham Skerritt (the Treasurer) had very much pleasure in seconding the resolution. Sir William Church had given them a most interesting and masterly survey of the history of medicine and its advances in modern times. Those advances had been so great in the science of medicine and in the practice of it, that one wondered what might be in store in the future. They all knew how greatly the increase of their knowledge of the causation of disease increased their power of meeting it. He, with others, regretted the apathy which was shown by the laity in matters affecting public health. He was sure that the members of the profession were most disinterested in their endeavours to diminish their own work, that was to take the bread out of their own mouths: but they might have the comforting reflection that there was no prospect of that for a very long time so long as the laity took no more interest in this matter than they did at present. He thought the great British Medical Association had been an important factor in State medicine, and it would continue to be so, because it was able by organization to bring pressure to bear in such a complete manner as was not possible in any other way. Sir William Church had referred to the work of the Association, and they all tendered him their most grateful and hearty thanks.

The resolution was carried with acclamation.

Sir William Church thanked the Association for the kind resolution it had passed, and wished he had been able to have provided something better for them.

Third General Meeting.

The third annual general meeting was held in the Sheldonian Theatre on Thursday, July 28th, the President of the Association being in the chair.

Annual Meeting, 1905.

The Chairman of the Council reported that the Council had had before it an invitation from Leicester that the Association should hold its annual meeting there next year, and the Council unanimously resolved that that invitation should be brought before this meeting. He formally moved:

That it be recommended to the general meeting to accept the invitation of the Midland Branch to hold their annual meeting at Leicester in 1905, and that Mr. G. C. Franklin, Surgeon of the Leicester Infirmary, be nominated as President-elect.

Sir Victor Horsley formally seconded the motion.

The resolution was put to the meeting and carried unanimously.

Dr. Pope said that Mr. Franklin, whom they had just elected as their President-elect, had commissioned him to represent him on the present occasion. Mr. Franklin, though not able to be present, had charged him to say that he thoroughly appreciated the great honour which the Association had conferred upon him, and he assured them that everything would be done by him to render the meeting at Leicester a great success.

Address in Surgery.

The President then stated that it was with very great pleasure that he had to introduce Sir William Macewen, although they hardly needed an introduction, because two years ago Sir William Macewen was good enough to honour the Oxford Medical Society with an address, which they were very pleased with. They were extremely gratified to find that he was able to give them a second address that afternoon.

Sir William Macewen then delivered his Address in Surgery, which was received with great applause. The address was published in the British Medical Journal of July 30th (p. 231).

Sir Victor Horsley moved:

That the cordial thanks of the meeting be given to Sir William Macewen for his able and interesting Address in Surgery.

Of all those who were assembled there that day to express their gratitude to Sir William Macewen, no one was entitled to do it with a fuller heart than himself. As one of the pupils of Sir William Macewen, at a distance, he was to be followed in proposing this resolution by Dr. Whitelocke, who had had the advantage of being one of Sir William Macewen's pupils under his immediate charge. It seemed to him that Oxford was the most suitable place in which the Association could hear a speech from the pioneer of what was sometimes rather foolishly called brain surgery. The most noble patient, he supposed, who entered that hall soon after it was completed was Prince Rupert, and they remembered in *Evelyn's Diary* the ghastly brain surgical operation that was performed upon that patient. That day they had heard exactly the other end of the story. They had heard the most perfect way of dealing at the present time with that branch of their great profession. It was their profit as well as their pleasure to have listened to a man who had not only shown that he possessed extraordinary originality of purpose, but that he also possessed the power of constructing the greatest generalizations in what appeared to be commonplace things. They, as operating surgeons, knew that everything depended upon the minutest detail, and when they remembered what they owed to Sir William Macewen in first showing them what were the essential details of brain surgery, they classed him with their greater leader, Lord Lister, in thanking him for furthering his methods. He congratulated the Association on having had the opportunity of listening to an address from a philosophic surgeon.

Dr. Whitelocke, in seconding the resolution, said it gave him the greatest possible pleasure in thanking Sir William Macewen for his admirable address. He specially thanked him for the Oxford Branch of their great Association. Fortunately for them Sir William Macewen was not a stranger among them, as he had visited them on a former occasion, and they sincerely hoped he would visit them again. Sir Victor Horsley had introduced, in his usual terse and excellent language, the resolution, and had left very little for him to say. He endorsed all that Sir Victor Horsley had said, and desired to thank Sir William for coming there that day. He, personally, owed almost everything he knew of surgery to Sir William Macewen's kindly assistance in his early life, and there was nothing that he prized or honoured more in his

profession than the fact that he had had the privilege of previously being Sir William's assistant.

The resolution was carried with acclamation.

Sir William Macewen, in reply, thanked the meeting very heartily for the vote of thanks, and he especially thanked Sir Victor Horsley and his old assistant, Dr. Whitelocke, for the very kind words they had used in moving the resolution.

Popular Lecture.

A popular lecture was delivered by Dr. G. Bagot Ferguson in the Examination Schools, Oxford, on Thursday, July 28th, 1904, Councillor Druce, M.R.C.S., in the chair.

The Chairman, in introducing the lecturer, said he should like to say a few words regarding the condition of Oxford. He had recently looked at the Report of the Medical Officer of Health for the year 1844, which was by a curious coincidence written by Dr. Ormerod, an ancestor of their present Medical Officer of Health who had been such a great help to Oxford. The Medical Officer of Health then went into statistics, as they were always obliged to do, which showed that the death-rate of Oxford was practically 30 in 1 000. Oxford at that time had not half the population that it had at the present time, and yet, as those who had the happiness to live in Oxford would be glad to know, their death-rate varied from 12 to 15 in 1,000. It showed how greatly sanitary science was indebted to the medical profession. They had seen enormous advances in surgery as one of the great branches of the medical profession, and he thought the other that stood out conspicuously in the progress that had been made was the department of preventive medicine, and it was that special department which was their pride. They had found by careful treatment that the death-rate had been diminished to that enormous extent and in other ways that particular department had been of special help to Oxford. That night one had come to give this lecture who was well-known to the British Medical Association as a Past-President and Vice-President, Dr. Ferguson, who needed no words of introduction. He had studied at Christ Church, and graduated at that great home; he had taken the highest degree as Master of Surgery in Oxford, and he would that night in his treatment of this enormously attractive subject of disease germs interest them exceedingly, and they would be pleased with the lecture he was about to give.

Dr. Ferguson then delivered the lecture, which was published in the Journal of July 30th, p. 239.

Mr. Drew expressed on behalf of those present their deep sense of gratitude to Dr. Ferguson for coming and giving so able and interesting a lecture. He was sure they would signify by their acclamation that they fully appreciated Dr. Ferguson's kindness in giving it.

The motion was then put and carried with loud applause.

Councillor Druce thought no words were necessary to thank Dr. Ferguson for the lecture. He had said that they should have been born one hundred years later, but he—Councillor Druce—was sure that every one present was satisfied to have been born when he was, because, if he had been born one hundred years hence, he would not have had the pleasure of listening to the lecture.

Dr. Ferguson expressed his thanks, and the proceedings terminated.

ANNUAL DINNER.

The annual dinner of the Association was held in the Hall of Christ Church on Thursday evening, July 28th. There were about 300 people present. The Very Rev. the Dean (the Rev. T. B. Strong) presided, and the guests included the Vice-Chancellor (Dr. Monro), the Mayor (Mr. E. A. Bevers), the President of the Association, the Rector of Lincoln, the President of Magdalen, the Warden of Wadham, the Senior and Junior Proctors, Sir John Moore, Sir W. Markby, the Recorder of Oxford (Mr. R. D. B. Acland), Dr. Theodore Acland, Professor Love, Sir W. Macewen, Surgeon-General Bradshaw, Mr. E. B. Symonds, Mr. R. W. Doyne, Mr. A. Winkfield, Dr. Sankey, Dr. Duigan, Captain Slessor, Dr. Brooks, Mr. H. Anglin Whitelocke, Professor Myers, Dr. Proudfoot, Dr. Ritchie, Mr. E. C. Bevers, and many others.

The King.

The President proposed the toast of "The Patron of the Association, His Majesty King Edward VII." This toast was drunk with great enthusiasm, those present singing "God Save the King."

The Queen, the Prince and Princess of Wales, and the Royal Family.

The President, in proposing this toast, said the Queen had endeared herself to the nation by the wonderful tact and kindly sympathy which she always exhibited whenever she appeared on a public occasion. Speaking of the Prince of Wales, he said that in regard to medical matters the Prince was apparently following in the footsteps of the King. No king had ever shown more sympathy towards the medical profession, its objects and aims, than our King. The Prince of Wales quite recently took the chair at a meeting of the Society of Research for Cancer, and a year ago he also took the chair at the Epsom College Festival, on which occasion he made the most eloquent speech that he (the speaker) had ever heard, which was a generous admission of the indebtedness of the British nation to the medical profession. Within the last twelve months the Prince of Wales had honoured the Association by becoming an Honorary Member. They were disappointed to find that he could not attend at Oxford to receive the certificate of membership. If he had done so they would have given him a right royal welcome.

The toast was then drunk.

The Imperial Forces.

The Warden of Wadham proposed this toast. In doing so he said he did it with much diffidence because he was a man of peace. The use of the word "Imperial" needed no apology from him, because the word included Australia, New Zealand, South Africa, and our other Colonies, who had come to our assistance in times of need in a way never to be forgotten. Such an Empire as we possessed could not rest on mere sentiment. It wanted something more solid—union, strength, and force. He thought they could find that in their Imperial forces. He then spoke of the British "Tommy" as he was affectionately called, who was a very patient and courageous fellow. As to the Volunteers, he expressed the hope that they would not be organized out of existence, and as to the representatives of the medical service they had done work which it was impossible for him to describe.

The toast was then drunk.

Surgeon-General Evatt, C.B., in responding, said it was always a great honour to return thanks in the name of the British army, and especially was it an honour to reply to that toast in the Hall of that most ancient College of an historical University. It was a particularly pleasant duty for him to respond to that toast at one of the greatest meetings of the British Medical Association, because he was speaking to his comrades and brethren of the civil profession of medicine, who were bone of their bone, flesh of their flesh, and who were entirely bound up with them in the struggle for humanity. When he looked at the history of the army he could safely say that there was no profession in England which had been so closely linked with it in peace and in war as the medical profession. In the moment of success they had shared their victories, and in the moment of danger they had suffered with them. In the long history of the army their hope had been that the position of the private soldier should be so raised that he would be a citizen serving in the army, and in no sense to be looked down upon. Had the Government of the country proceeded on the lines that they had constantly suggested, he questioned whether the present crisis would have arisen when the organization of the army was again to be thrown into the melting pot and again to be reorganized. Had their views been considered they would have had troops of soldiers glad to serve the Empire everywhere, because they were always for betterment, and they were so still. It was a pleasure to reply to the toast of "The Army" in Oxford, because out of that ancient University there came to the army two splendid men. In the dark days of the Seventies, when our comrades and allies were borne down under the foot of aggressive militarism, there arose at Oxford a statesman who did much for the army—his name was Cardwell—and who brought the army back to the nation. The other name was the name of one who freed the army from the greatest of curses—the abolition of purchase; his picture stood upon the walls of that hall, and for long centuries his name would stand; he referred to William Ewart Gladstone. There should be a close connexion between the army and the University. The army wanted their best men, not their idlers or wasters, if such there were. It was the duty of the heads of houses to see that a living wage was given to the younger officers, and that they were saved from heavy expenses. If the army was to be a national army, they

could not leave out the culture and breadth of view of men from the universities. He thanked them for the way in which they had received the toast.

The British Medical Association.

The Rector of Lincoln, in submitting this toast, said he was exceedingly flattered and overwhelmed by having it committed to his care. He regarded it as the toast of the evening, and he thought he should not be able to do it justice. He expressed the hope, in which the whole of Oxford joined, that their guests had as much pleasure in visiting them as they had in welcoming their guests. It had been a singular pleasure to welcome them, not only to the beautiful and historic Oxford and its University, but also to the Oxford of Linacre, of Sydenham, of Boyle, and Radcliffe, and, coming to later times, of Acland (and he was delighted to see Sir Henry Acland's son at the table), and the Oxford of Burdon Sanderson, the close connexion with whom he regretted for reasons of health had been recently severed. There was a difficulty, no doubt, in selecting those upon whom honorary degrees were to be conferred. In looking down the list there had been a recognition made of their sister University. He had Scotland on the one side of him and Ireland on the other, and more than that he had the satisfaction of knowing that there came amongst them a most distinguished American whom they were glad to see present. They, however, regretted that circumstances of family anxiety prevented them having Dr. Roddick, of Canada, with them. He felt it no light matter for a solitary non-professional person to stand before the eyes of something like 300 of the cleverest and most indispensable gentlemen in the world. It was always a source of great anxiety to him to be present at a great gathering of indispensable people. He said that with his hand on his forehead, and the thought occurred to him how could the world get on when they were all present together? When there was a great conference of the clergy he always thought that England was within an ace of lapsing into heathenism, because of the clergy being all in one place. But here were they, the pick of the medical profession, and the noblest experts in the profession, and the thought occurred to him how could the world get on without them. It made him think of what the old woman said when she heard there was this gathering: "Oh, sir, sir! think of the number of people that will die natural deaths this week!" (Loud laughter.) He then referred to the great advance which had been made in the medical profession since the Association was started seventy-two years ago, and how completely the position of the medical man and the surgeon had altered. Instead of being outside the household, and not in touch with the members of the family, a doctor was now worthy of his name, and was the sympathetic friend, the pillar of the house, and how many young men's careers had been saved by words spoken in time and by the advice which had been given at the right moment. The presence of good doctors among them was one of the greatest elements of their happiness. He had been informed that their President delighted them by giving a most luminous account of the great development that had been made in the Oxford School. He hoped that his words might form the very best advertisement for the Oxford School. They wanted every one to know about it, and every possible light to be thrown upon it. He did not know how many millionaires were present, but he would be very glad if any one before leaving the room would leave a million in his charge or the charge of the Dean, or any other respectable person, to be devoted to the development of that Medical School. He had much pleasure in coupling with the toast the name of Mr. Andrew Clark, the Chairman of the Council of the Association. They all knew what his value to the Association was. He devoted perhaps almost more time than he should do to the work of their great Association. They knew that he was a Lecturer at the Middlesex Hospital, but they were not to forget that he was also Brigade-Surgeon-Lieutenant-Colonel, or something of that kind. He was not very happy in his military nomenclature, but whatever title he called him by he could not call him by any title too high for him to deserve or for the Association to appreciate.

The toast was drunk with much enthusiasm.

Mr. Andrew Clark said he felt somewhat embarrassed in having to reply after so eloquent a speech. It was his duty as Chairman of the Council of the British Medical Association to act as their mouthpiece on that occasion, and he would endeavour in a few words to express what he believed were the views of every member of the Association present. The first duty he had to perform was to thank the Oxford University for the princely hospitality with which they had received them, and for the excellent arrangements which they had succeeded in making for the comfort of the very large number of members of the Association who had attended on that occasion. He also expressed their indebtedness to the University of Oxford for the use they had given them of their magnificent buildings, which had enabled this meeting to be one of the most memorable for the scientific work it had been able to do. They were also indebted to the several members of the University for allowing the Association to elect them as honorary members. It was seventy-two years ago since the Association first started in the City of Worcester as the Provincial Medical Society. At that time there were very few members of the Association. Before it had been in existence many years it held its annual meeting at Oxford. Since then it had again met at Oxford, and this was the third occasion on which the Association had been privileged to meet in that ancient city. During those seventy-two years considerable changes had been made in the constitution of the Association, but the greatest change took place two years ago, when the Articles of Association and the By-laws were changed, and the Association was put on a somewhat different basis. They had now as many as 19,500 members of the profession throughout the United Kingdom and the Colonies. They had succeeded in making the British Medical Association an Imperial Association. The number of members that they had in the Colonies was considerable, and the growth of the Association in the United Kingdom was also very remarkable. The new constitution was of so elastic a character that it could be made adaptable to the wants of all parts of the United Kingdom. They found that the working of the Association was fairly smooth, but there were a few difficulties that had presented themselves during the last two years since that constitution had been established, and at a meeting of the Representatives which was held the day before certain by-laws were changed which he hoped would enable the Association's work to proceed more smoothly. As things stood, they were gradually drawing in a large number of the medical profession, and he hoped, indeed he felt sure, that within a very few years every member of the medical profession who was a desirable member in the United Kingdom, and a great number abroad, would be members of the Association, so that the medical profession and the British Medical Association would be practically synonymous terms. He again thanked them for the way that they had received the toast of the British Medical Association, and also for the way in which they had received his name in connexion with it. (Loud applause.)

The University and City of Oxford.

Sir John William Moore said he had much pleasure in proposing the toast of the great and ancient University of Oxford, of which he had the great pride and satisfaction to find himself the junior honorary graduate. The robe which he wore that night was to him a source of infinite pride and satisfaction; and he personally thought that he was quite unworthy of its reception. But he knew he owed the distinction which had fallen to his lot to his connexion with the great Association of which he was proud to be a member. The University of Oxford was of world-wide reputation, and he was quite sure the British Medical Association felt the compliment which the University had paid it in welcoming its members within its classic halls. Nothing could possibly have exceeded the hospitality to those members who were present in Oxford on the part of every one connected with the University. As to the University their thanks were especially due to the Vice-Chancellor, who, as had been pointed out before, bore a name honoured in the annals of medicine—that of Monro. On behalf of the Association he wished to thank him. In regard to that part of the toast which dealt with the City of Oxford he was glad to think that with singular propriety Oxford had chosen for its head this year a member of their own profession who was also a member of the Association. Dr. Collier and his wife had welcomed the Association to Oxford and had also extended to the members of the Association and the ladies accompanying them their generous hospitality.

The toast was received with great applause.

The Vice-Chancellor, in reply, said that the last speaker had described himself as the junior graduate of the University. He (the Vice-Chancellor) in the same way could describe himself as the junior member of the British Medical Association. Whatever he could do to further the objects of the great and powerful Association which had attended at Oxford during this week, he would always have the greatest

pleasure in doing. The University was a sort of State institution, and although its endowments came from private persons they had been adopted and regulated by the State, whereas the British Medical Association was a great voluntary Association, and an example of the genius of the English people in creating such an organization. Whatever had been done towards completing the medical school of Oxford, the aim of the University had been to complete the scientific teaching of medicine. He was glad to think that the Mayor of Oxford would follow him in replying to this toast, this being an occasion in which the University ought to be in sympathy with the City of Oxford. He begged to thank them very much for the way in which they had received the toast.

The MAYOR thanked the members present for the cordial manner in which they had responded to the toast of "The City of Oxford," over which for the year he happened to be the Mayor. The citizens of Oxford thoroughly appreciated the visit of the British Medical Association. Many things had happened since the Association paid their last visit to the city. The status of the Corporation had been changed; the city had become a borough, and the Corporation had become a Sanitary Authority, but with increased responsibilities. They were only too anxious to perform the duties which fell upon them in a proper manner. The public health was their first and last care. At a great expense extensive drainage and sewage disposal works had been perfected; a copious supply of pure water had been provided; hospitals for the reception of infectious diseases had been built, and capital cemeteries had been laid out; in fact everything had been done to improve the sanitary condition of Oxford. He ought not to forget the services which the late medical officer of health, Mr. Winkfield, who after thirty years had just relinquished his office, had rendered to the city for so many years. He was glad to say that his successor, Dr. Ormerod, had brought capital qualifications for the office, and he had the advantage of comparative youth.

The President and the Executive of the Oxford Division of the Association.

Sir WILLIAM MACEWEN said he had been asked to propose this toast. When one heard that there were about 20 000 members of the Association it could be easily understood that they must have representatives for the conduct of the business of a great Association such as theirs, and that that involved a very great deal of work. He was present at a little of it during the week, and he had also heard from Sir Victor Horsley that he had spent six hours at one of the business meetings. He also knew that the Association met very frequently in London, and that the work must be very heavy. Therefore he thought they owed a vote of thanks to them for the services which they rendered to the Association. He often wondered, with all the advance that had been made in sanitation and other things, what was to become of those 19,000 odd people when all their requirements had been carried out. He was afraid that the gentleman who had spoken during the evening would have to ask for another million, or that some one would be asked to leave a large sum of money for a place to be kept for the unemployed. He had been requested to couple this toast with the name of Dr. Collier, a gentleman who had done a great deal for the schools. They had all had an opportunity of hearing his admirable address, which he delivered at the opening of the meeting. He understood that Dr. Collier was also a famous athlete. They knew that he occupied a very distinguished position in his profession, and that he had a very great desire to promote the welfare of the Oxford Medical School. He hoped that the Medical School would soon be not only equal to the sister University at Cambridge but very much ahead of it. They knew that it had been handicapped in the past by a great many circumstances, but he believed the future of the school was secured. He had much pleasure in coupling with this toast the name of the President and the Executive of the Oxford Division of the British Medical Association. Dr. Collier, he believed, was the youngest gentleman who had ever occupied the Presidential chair of the British Medical Association.

The toast was received with much enthusiasm.

The PRESIDENT thanked those present for the hearty response which had been given to the toast. When Sir John Burdon Sanderson was asked to take the Presidential chair, and declined on account of ill-health, and when the Division did him the honour of asking him to take the chair, he should have refused had he not known that he had a good many medical friends in the Division to back him up. On the Executive they had men who for the last few months had talked of nothing, thought of nothing, and dreamed of nothing except making this meeting a success. He was sure their grateful thanks were due to those men and also to the Secretaries of the Executive Committee, because they had worked very hard indeed. Their thanks were also due to those gentlemen who had worked so hard to make the meeting a success. He should like to repeat once more that they could never have ventured to invite the Association to visit Oxford had they not felt that they had the support of the University behind them. They had been absolutely overwhelmed by the generous help which the University had given them. They had not asked for a single thing that the University had not granted. This remark also applied to the Colleges and to the individual members of the Colleges, who had vied with each other in making the meeting a great success. Their thanks were also due to the Mayor of Oxford, who in the most generous manner came forward on his own initiative and offered to give them an entertainment the following night. Also they ought to thank the Duke and Duchess of Marlborough and Mr. and Mrs. Morrell for their generosity and kindness. He thanked them for the way in which they had received the toast.

Foreign and Colonial Guests.

The PRESIDENT said it fell to his duty to make the next speech, and he had great pleasure in doing it, because it was an easy task. He believed that the Association had never received so many distinguished foreign and Colonial guests as it had on this occasion. The list contained the names of seventy distinguished foreigners and twenty-five Colonial guests who had honoured them that week by taking part in the work of the Association. He was sure those present were most anxious to give these gentlemen the most hospitable welcome possible, and he therefore asked them in the most enthusiastic manner to drink the health of the foreign and Colonial guests, and he coupled with it the name of Professor Osler, who was well known to the members of the British Medical Association.

Professor OSLER said that as an Anglo-American it gave him great pleasure to be there that evening. He was born in England and his love for the old island still remained, but his greater love was for Canada, the land which had taken so many and made them, if not citizens, at any rate men who could loyally appreciate what a great land she was, and what a noble heritage Great Britain had in such a daughter. The first man among the navigators and explorers who thoroughly understood it was not for spoil but for sentiment that Englishmen crossed the seas was Raleigh, and it was he who gave England her great Colonial Empire. Raleigh appreciated that it was sentiment and not barbaric conquests that made a nation. He was sure that sentiment ruled the world to-day; it was sentiment that ruled them all in their private, public, and national relations, and woe betide the statesman who did not recognize that it was sentiment that united the Colonies to the Motherland. He was glad to think the Association was going to visit Canada again, because it did Englishmen good to go abroad. The spirit he would invoke in that hall that night was one that was as dear to him as it should be to every medical man. There had been three great doctors in literature—Rabelais, Sir Thomas Browne, and Oliver Wendell Holmes—but he could not mention any layman who had reached so distinguished a position in medicine as the Student of Christ Church (Robert Burton), and he advised those present when they were melancholy, or when their patients were not quite as they should be, as often was the case, to turn to Burton, turn to Burton, turn to Burton.

The Governing Body of Christ Church.

Dr. THEODORE ACLAND esteemed it a very great honour to be asked to propose this toast, for he knew the reason why he had been asked to propose it was no personal one, but was a tribute to the memory of a Student of that house who occupied the Presidential chair the last time the British Medical Association met in the City of Oxford, and the last time the dinner of the Association was held in that great and noble hall. In the President who occupied the chair thirty-six years ago there was a man who had not only formed high ideals of the profession he loved, but had worked them out, and gave his life to the working of them out. He had high ideals at the time—ideals that seemed too high for some of his profession—as to the duties of this great University towards medicine, and of the duties of this great Association to itself. Speaking of the subject of his toast, he said that nobody could have been more generous or more

attentive to the needs of the Association than the Dean had been. From the first it had been his earnest desire not only to do but to contribute to the doing of everything which could make this great meeting successful and pleasant to those who had honoured the University with their presence. He coupled with the toast the name of the Dean.

This toast was also well received.

The Dean of Christ Church thanked those present very cordially for the way in which they had received the toast. The name of Acland was a very great name within those walls, and he thought no greater honour could have been paid to the Association than that a member of that family to whom medicine in Oxford and scientific education owed so very much should have been entrusted with the duty of proposing the toast then before them. Sir Henry Acland also had a great deal to do with changing the whole matter of science in that University, and without him the scientific school and the medical school which now existed would have been in a very different condition. Before sitting down he wished to thank the Association most sincerely for the great honour it had done him in electing him as honorary member. (Cheers.)

EXCURSIONS AND ENTERTAINMENTS.

EXCURSION TO LEAMINGTON AND WARWICK.

Address by the Colonial Secretary.

On Saturday a large party of about 350 members and lady friends visited Leamington, at the invitation of the Mayor and Corporation. A special train was provided by the Great Western Company, but an unlooked-for accident, in the shape of a hot axle-box, delayed the arrival of the party by nearly an hour. At the station the guests were met by the Town Clerk and members of the Reception Committee, and a few minutes later a reception was held at the Pump Rooms by the Mayor and Mayoress. During this ceremony members were entertained by the music of the Municipal Orchestra, and ample opportunity was provided for testing the virtues of the spa water.

When all the members of the party were in the room, the Mayor, in the course of a short speech, extended a hearty welcome, and referred to the benefits conferred on the town by members of the medical profession, notably Dr. Jephson.

The party was afterwards conducted over the Pump Rooms, the Warneford Hospital, and the beautiful public gardens. The former building, which was inspected with much interest, has recently been considerably improved. Extensions were made some time ago, and a new suite of saline and fresh water private baths erected. There is an excellently arranged Turkish bath and shampooing room fitted with needle and lumbar douche. Vichy and Aix douches have also been provided, and apparatus for high frequency, x rays, and radiant heat treatment has been installed in special rooms, and an arthromotor, for stiffened limbs, has recently been added. The fittings are carefully insulated, and the supply is drawn through a transformer direct from the service supply. There are also special baths for the use of the infirm, and a chair with crane and travelling carriage for those unable to get into the ordinary baths. The supply of the spa water, the use of which is indicated in cases of gout, rheumatism, and digestive disorders, is practically inexhaustible.

Later the party was entertained by the Mayor and Corporation to luncheon in the Town Hall. The Right Hon. Alfred Lyttelton (Secretary of State for the Colonies), presided, and amongst others present were Dr. Collier (President of the Association) and Mrs. Collier, the Mayor and Mayoress of Leamington (Alderman and Mrs. Sidney Flavel), the Countess of Aylesford, Sir J. Tyler, Dr. Dawson Williams, Professor Howe, Sir John Moore, Sir William Macewen, Professor Uhthoff, and a number of Leamington medical men.

Mr. Lyttelton, in proposing the health of the guests, said he had always found that medical men were experts in the art of speech, and to instance three names, he would mention Sir James Paget, Sir Andrew Clark, and Professor Humphry. He supposed the reason was that the audiences of doctors generally consisted of those who were sick, or thought they were—(laughter)—and it was natural that exhortations to these should be dignified and sonorous. (Renewed laughter.) He rejoiced to welcome them to Leamington, and particularly as he understood that amongst them were representatives from the Colonies. He wished to refer to the great work being done by the medical profession in our tropical possessions. He had been reading an article by Professor Ray Lankester about the novel diseases which had arisen in tropical climates with the advent of the white man. Through the medium of the tsetse fly and the mosquito, bacteria which hitherto had been harmless were now the cause of diseases most deadly to white men, and domestic animals. The discovery of these facts had been made by men with whose names they were familiar—by Sir Patrick Manson, of the Colonial Office, and also by Ross and Bruce. (Applause.) As temporary head of that Government office, he felt that no men were doing more splendid work for the Empire than those who were facing deadly risks in investigating diseases which were so deadly to those who had to administrate England's tropical possessions. By means of these investigations the ravages of malarial fever had been checked in a remarkable degree, and still better results might be anticipated. It was his privilege to couple with the toast the name of Dr. Collier. He was glad to say that he was a Cambridge University man, and it was possibly owing to that fact that he was the head of the medical profession in Oxford. (Laughter and applause).

Dr. Collier, in responding, said that a most successful week was being rounded off by that excursion, and he thanked all concerned for the generous welcome they had received. The Association had Branches in all parts of the world, and these were kept in close touch with the central organization by means of their Journal. They felt that this close union with the Branches in the Colonies tended in no small degree to strengthen the bond of union between the Colonies and the mother country, while the fact that they had prominent members all over Europe and America did something to break down the racial prejudices and suspicions which did so much to bar the peaceful federation of the nations of the world.

Dr. Collier, in appropriate terms, then gave the toast of "The Mayor and Corporation of Leamington," and

The Mayor, in responding, asked for the co-operation of members in making known the claims of the town as a health resort.

After the health of the Chairman had been drunk with musical honours the members of the party had a very pleasant drive to Warwick Castle, whither they had been invited by Lady Warwick. Unfortunately, her ladyship was detained in London by indisposition, but every provision had been made for the comfort of her guests. The private apartments, as well as those usually shown to the public, were specially thrown open, and the visitors were privileged to wander about the rooms at will. Tea was served in a marquee in the beautiful grounds, and later in the evening the party returned to Leamington, where an illuminated concert was given in the Jephson Gardens.

Although a few showers fell during the day, they were insufficient seriously to interfere with the success of the visit, and altogether a very enjoyable time was spent.

Various Entertainments.

The weather, which did its best for the Sectional work and its worst for the social side of the Oxford meeting, was luckily everything which could be desired on Thursday, July 28th, upon which date some of the most enjoyable entertainments of the week took place. These were the garden parties given respectively by Dr. and Mrs. Neil in the private grounds of Warneford Asylum, and by Mr. George Herbert Morrell, M.P., and Mrs. Morrell at Headington Hill Hall, a promenade concert at St. John's, and an evening entertainment at New College given by Mrs. Collier and the ladies of the Reception Committee. Some 500 guests were received by Dr. and Mrs. Neil, and spent a pleasant couple of hours strolling about and listening to the music of the Oxford Orchestral Band. The garden party at Headington Hill Hall took place at a somewhat later hour, and was on a more extensive scale, scarcely fewer that 1,500 guests being present. The grounds of this house are of unusual extent and beauty, and in addition those present had the pleasure of listening to the singing of the Amato Neapolitan Singers and to the band of the 1st Life Guards. The ladies' entertainment at New College was an unqualified success, and commencing soon after 9 was kept up until the last possible canonical moment, 12 o'clock. The whole arrangements were excellent. Perfect taste was shown in the lighting of the trees, walks, and lawns with fairy and other lights, while for those who preferred indoor amusement to strolling and chatting to the accompaniment of the Royal Marine Band, there were a number of dramatic sketches in the Great Hall. On Friday the wet weather recommenced, and proved disastrous to outdoor amusements and, amongst other things, to the musical promenade, for which arrangements

had been made at Worcester College. Fortunately, however, the Blenheim expedition, as will be seen lower down, was brought off successfully, and the Mayor's reception in the City Buildings late in the evening likewise in no way suffered from the inclemency of the weather. An enormous number of people were present, and all seemed to appreciate the entertainment provided for them by Oxford's medical Mayor, Mr. E. A. Bevers.

Blenheim Palace.—The brilliant sunshine of Thursday, which presaged so well for the garden party at Blenheim Palace, was succeeded by rain, which commenced at an early hour on the Friday morning. Notwithstanding the unfavourable weather, a large party of guests found their way to Woodstock. Passing through the well-kept little town, the triumphal entrance to the park at the bottom of the main street was soon reached. Thence a fine drive leads to the palace, where the numerous visitors were received and hospitably entertained by the Duke and Duchess of Marlborough. Owing to the steady downpour, the garden party, which had been so carefully arranged by their Graces, had to be abandoned, much to the regret of every one concerned, for the grounds are of the finest. In the event, however, the visitors lost but little, for, thanks to the graciousness and kindness of the beautiful hostess, who devoted herself to her guests, a most enjoyable time was spent in examining the innumerable historic and artistic treasures with which the palace is replete. The hospitality and thoughtfulness of the Duke and Duchess were greatly appreciated by all present, and the visit to Blenheim, with its associations, will long be remembered by many of the visitors on this occasion.

The Golf Match.—The international golf match was played on the University links at Hinckesey on Thursday afternoon in glorious weather, and resulted in a victory for England by eight matches to five. The following list shows the result of each match, the name of the winner in each case being placed first, the names of those representing England appearing in small capitals and those who played for "The Rest" in italics. Dr. *Paterson v.* Dr. Batten, Dr. *Armstrong v.* Dr. F. G. Proudfoot, Dr. *Duncan v.* Dr. Flitcroft, Dr. Jeffrey *v.* Professor *Howden*, Dr. Lamont *v.* Dr. *Rutherford*, Dr. Tod *v.* Dr. *McKerron*, Dr. *Norman Walker v.* Dr. Parsons, Dr. Standing *v.* Dr. *Bryce*, Dr. *Scott v.* Dr. Stark, Dr. Eastes *v.* Dr. *Lyon*, Dr. Goodall *v.* Dr. *Gulland*, Dr. Pope *v.* Dr. *Ballantyne*, Dr. Ferguson *v.* Dr. *Morton* (draw), Dr. Creasy *v.* Dr. K. *Proudfoot*.

The Annual Exhibition
OF
FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[Second Notice.]

Drugs and Preparations.

Duncan, Flockhart, and Co. (143, Farringdon Road, E.C.) exhibited anaesthetics, soaps, compressed tablets, and a number of special preparations, including Duncan's capsules. The soaps shown by the firm included Sapo Antisepticus Aetherius, which contains 1 per 1,000 red iodide of mercury; it is intended for use in preparing the skin prior to an operation. Amongst the anaesthetics were several varieties of the brand of chloroform for which the firm is already well known, as also Ethyl Chloride. The firm estimates that the use of this anaesthetic is for short operations much cheaper than nitrous oxide, and has devised a tube with an ingenious nozzle by which the desired quantity of ethyl chloride may be abstracted with accuracy.

Andrus and Andrus (46, Holborn Viaduct, London, E.C.) exhibited Formolyptol, which is a germicidal preparation, stated to contain formaldehyde, aceto-boro-glyceride, pinus pumilio, eucalyptus, myrrh, storax, and benzoin; also an organic compound known as Hemaboloids, and Kolacardinette, which is a preparation of kola, coca, cinchona, nux vomica, and cereal phosphates.

Peptenzyme Company (80, Gloucester Road, South Kensington, S.W.) showed the preparation from which the firm derives its name. It is stated to contain the digestive secretions of the salivary, peptic, pancreatic, hepatic, splenic, and other glands. Trophonine (a liquid food), Zymocide (an antiseptic), Protonuclein, and other preparations were also shown.

A. and M. Zimmermann (3, Lloyd's Avenue, E.C.) exhibited a variety of the special chemical preparations for which the firm is agent. These included Schering's antistreptococcus and diphtheria serums, Exodine (a new synthetic aperient), and Euphthalmin, which is a mydriatic. Kalle and Co.'s preparations and pharmaceutical products were also shown. They include Orexin, a stomachic.

Frank A. Rogers (327, Oxford Street, W.) exhibited a large number of sprays, intended for various medical and surgical purposes, antiseptic handkerchiefs, throat brushes, and Hypodermules. The latter are intended for the administration of hypodermic injections.

C. De Trey and Co. (Shaftesbury Avenue, London, W.) showed their preparation Soemnoforme. It consists of the chloride of ethyl and methyl, with bromide of ethyl. The firm recommends for the administration of this recent but already well-known anaesthetic the ideal inhaler, as supplied by the Dental Manufacturing Company, Limited.

Oppenheimer, Son, and Co., Limited (179, Queen Victoria Street, E.C.), had upon view Bipalatinoids of powders, liquids, animal substances, and syrups, together with Renaglandin, an aseptic solution of the active principles of the suprarenal gland. An insufflator, known as the Optimus Powder Insufflator, seemed to have good points about it, as the rubber bulb was sufficiently strong to distribute the powder freely. The Patent Aseptic Hypodermic Syringe shown by the same firm is of glass, but so made that the piston cannot fall out easily, as is commonly the case with glass syringes.

Wyleys, Limited (Coventry), exhibited a great variety of chemical preparations, many of which, as vended by the firm, have obtained popularity. They include Elixirs, Glycerols, Liquors, Tropels (a form of compressed drug suitable for use as pills, or for hypodermic injection), liquid extracts, ointments in collapsible and other tubes, and Neuracetin, an analgesic headache and neuralgia compound.

Burgoyne, Burbidges and Co. (12 and 16, Coleman Street, E.C.) had upon view a large number of chemical and pharmaceutical preparations which included Acöine, Antiseptic Credé (citrate of silver), Calodal, Collargolum (argentum colloidale Credé), Creosotal (creosote-carbonate), Salit (salicylate of borneol), Salocreol and Xeroform. The latter is stated to be an efficient substitute for iodoform, and in use to be practically odourless, haemostatic, analgestic and deodorizing, and non-toxic, even when given in large doses as an intestinal antiseptic.

C. J. Hewlett and Son (35 to 43, Charlotte Street, E.C.) exhibited a number of new synthetic remedies and pharmaceutical preparations. Among the former were Adrenal-eucaine, a combination introduced by the firm as a local anaesthetic, and which is stated to be specially successful in dental work; Argyrol, an organic silver compound; and Ichthargan, a silver salt, stated to be a powerful antiseptic. The pharmaceutical preparations included the popular Mist. Pepsinae co. c Bismutho. A useful appliance also shown was an apparatus specially devised for facilitating the application of Unna's pastes in skin affections.

Angier Chemical Company, Limited (32, Snow Hill, E.C.), showed their emulsion of petroleum with hypophosphites which has attained considerable popularity in some quarters.

M. Hoff (29, New Bridge Street, E.C.) showed their well-known malt extract and also Ironal, a preparation which contains a precise percentage of organic iron in a form stated to be easily assimilable, and to cause neither digestive disturbances nor constipation nor blackening of the teeth.

Hedley and Co. (92, Harrow Road, Leytonstone) exhibited the pure ethyl chloride, to the manufacture of which this firm devotes itself. It was shown in forms suitable both for local anaesthesia and for administration as a general anaesthetic, and ready for use in the special tubes which the experience of this firm has shown to be the most suitable for the purpose.

Roberts and Co. (76, New Bond Street, W.) had an exhibit which included Messrs. Battle and Co.'s Bromidia, Papine, and Neurilla, their own glycero-phosphate preparations and various foreign specialities.

Arthur and Co. had an exhibit which included Bromaurum and Hydraurum. The former is a nerve tonic and the latter intended for use in nervous disorders of syphilitic origin. Other exhibits were Ext. Radicis Pernionis intended for chilblains and bruises, Tannopumilio, a preparation for skin irritation and Tonic Saline, a neutral solution of the chlorides of lime and iron. A vaccine prepared from goat lymph was also shown.

The C. H. Phillips Chemical Company (14, Henrietta Street,

Covent Garden) showed a number of the special preparations which bear their name, and include a compound of phosphomuriate of quinine. It contains a certain amount of strychnine which is held in permanent solution and appears to be an elegant preparation. The exhibit included Solvettes intended for the preparation of antiseptic solutions and a pure hydrate of magnesium known as Milk of Magnesia.

Parke, Davis and Co. occupied two stands, on the larger of which they showed a selection of medicine chests and cases, standardized fluid extracts, compressed tablets, pills, and their various specialities, including Adrenalin, Acetozone, Brometone, Chloretone, Digitalone, Ergot Aseptic, Uritone, Thermofuge, etc. Brometone is a product of bromoform and acetone under the action of caustic alkalies. It serves a purpose similar to that of bromides, but, it is believed, with the advantage of causing less depression and less liability to "cromism." Digitalone is said to be an aseptic, non-alcoholic, non-irritating, permanent solution of digitalis, physiologically assayed, and suitable for hypodermic as well as oral administration. On the other stand were shown the biological products of the firm, antidiphtheria serum and other serums, tuberculin, etc. A decided novelty was a series of lantern views which were shown on a small screen by means of an electric lantern; these included photographic representations of the different processes in the preparation of serums and vaccines, the physiological standardization of ergot, digitalis, strophanthus, and cannabis indica; charts, tracings, and pictures illustrating the complex organization of a modern pharmaceutical and biological laboratory.

H. and T. Kirby and Co., Limited, showed compressed Glyceoles, compressed drugs, glycerine suppositories, pills, and antiseptic preparations. Both Purgen, a mild aperient, made in tablets of three strengths, and Sal Mineralis, introduced as a substitute for Carlsbad and other waters, seemed convenient preparations.

The Bayer Company, Limited (19, St. Dunstan's Hill, E.C.), showed some fifteen or twenty of the salts of which this firm makes a speciality. The less familiar ones—Helmitol, Mesotan, Aspirin, Citarin, Theocin sodium acetate, and Veronal are of recent production. Aspirin is a substitute for sodium salicylate, and stated to cause no after-effects, such as singing in the ears. Helmitol is a new urinary antiseptic, which liberates formaldehyde both in alkaline and acid urine. Citarin, which is an anhydromethylene citrate of sodium, is stated to be of service in the treatment of pure gout, and to be a powerful analgesic in cases of inveterate rheumatism. Veronal, which belongs to the urea group, has already met with approval in some quarters as a safe hypnotic without secondary ill-effects.

The Denver Chemical Manufacturing Company (110, Cheapside, E.C.) showed the preparation called Antiphlogistine. From an analysis by an independent authority it would appear to be prepared from a pure clay or silicate. It has attained popularity for use as a kind of poultice both in deep-seated and superficial inflammations, in America, and has also been found to be of value by sundry medical men who have used it in England. In the *Medical Annual* for 1903-4, cases were narrated in which it had been found to be decidedly useful as a firm, flexible, support for swollen knee-joints and for the reduction of oedema in the lower limbs of an aged patient. It would appear to be worthy of more extensive trial than it has yet received at the hands of the bulk of the profession in England.

W. Martindale (10, New Cavendish Street, W.) had a very large exhibit. It included Boracic Acid Cartons, prepared in two sizes, intended respectively to produce a pint of 2 per cent. and a saturated solution; Collapsubes of various medicaments prepared for attachment to catheters and rectal tubes; also an inhaler intended for thorium and for use in phthisis. The exhibit of sterilized dressings in cartons and tins included those which have been suggested by Mr. Jackson Clarke. It is a series which has been rendered complete by the introduction of sterilized towels, bandages, and aprons. The tins having been washed in an antiseptic solution, are opened by tearing off a strip of thin foil the moment before the dressing is required by the surgeon, as depicted in the woodcut; there are no labels to interfere (Fig. 17). Copies of the 11th edition of the *Extra-Pharmacopoeia*, which this firm publishes, were also shown. It has been revised by Dr. W. Harrison Martindale, Ph.D., F.C.S., and Dr. W. Wynn Westcott, M.B.Lond., D.P.H.

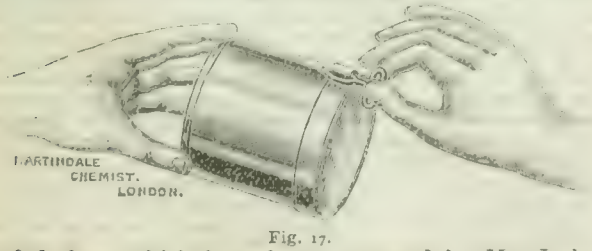


Fig. 17.

Armour and Co. (46A, Holborn Viaduct, E.C.) had a large exhibit, which included a variety of digestive ferments and glandular extracts in powder and tablet form, samples of which were at the disposition of persons interested. The suprarenaline products included a snuff which it is stated has been found of great utility in hay fever. There was also shown a Glycerine Extract of Red Bone Marrow, the constituents of which are constant, and which has been prescribed by many medical men in various forms of anaemia and neurasthenia. The firm's Soluble Beef, which a recent analysis by an independent authority states to contain 54 per cent. of food value, was also shown; likewise Vigoral, which is a solid extract prepared from the firm's extract of beef, with the addition of seasoning constituents, and is intended for the rapid preparation of hot or cold bouillon.

The Ferroleum Company, Limited (86, Clerkenwell Road, E.C.), showed the preparation from which the firm derives its name. It is stated to be a solution of the problem How can iron be prepared so as to be readily formed into a molecular basis of chyle, as cod-liver oil is?

Fairchild Brothers and Foster (Snow Hill Buildings, E.C.) showed a number of their well-known digestive preparations, including Zymine, Trypsin, and Enzymol. Panopepton—a soluble preparation of lean beef and wheat flour—was also shown, together with Peptogenic Milk Powder for the home preparation of humanized milk.

Instruments and Appliances.

The Berkefeld Filter Company, Limited (121, Oxford Street, W.), among its well-known filters showed the pressure filter H. and F. for attaching to the main service pipe for domestic, hospital, and dispensary use; also table and travelling filters. Among those specially intended for hospital use were the Berkefeld Aseptic Irrigator for supplying sterilized water of regulated temperature for use during surgical operations; as well as the steam-heated aseptic irrigator, shown in the illustration. This apparatus should be found of great value where there is not sufficient pressure in the hot-water pipes to pass a sufficient quantity of water

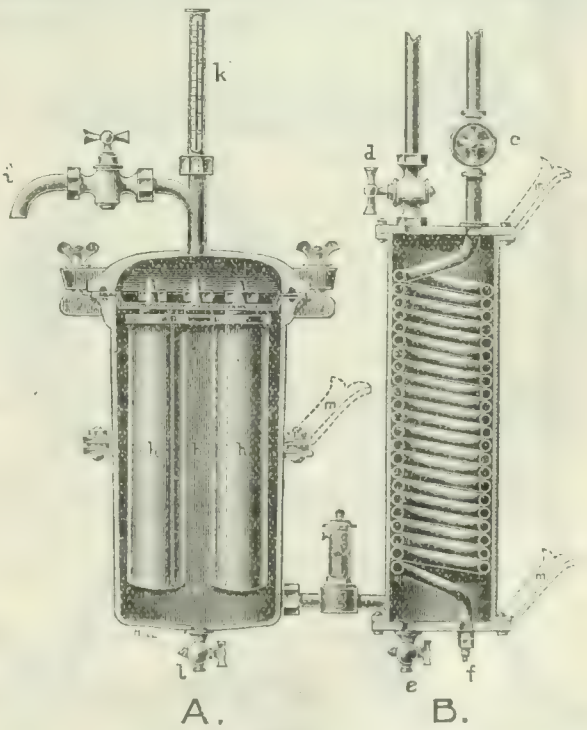
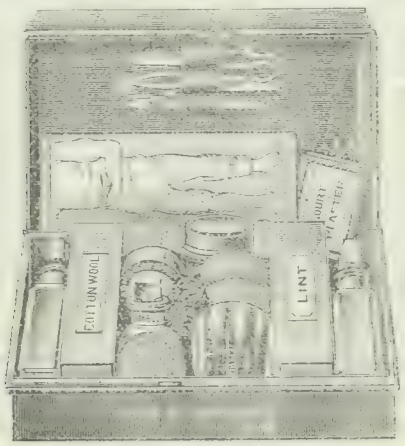


Fig. 18.

through a filter, since with it the water can be filtered cold and the desired temperature then obtained by means of steam (Fig. 18, p. 133).

Allen and Hanburys, Limited (48, Wigmore Street, Cavendish Square, London, W.), had an exhibit which occupied two stands. Amongst the things which attracted attention were the "Allenbury" motor-car accident emergency case, which is intended for carrying about on every motor car, and contains just sufficient material to apply first-aid in cases of accident (Fig. 19). Its price is only 6s. 9d. The "Allenbury" ambulance box shown was a specimen of that made by the firm for the Great Northern Railway Company. It is adapted for use on railways and in collieries and corresponding works, and is also sold at a low price. The Lynn Thomas portable operation table seemed to possess more stability than portable tables commonly possess (Fig. 20), while among the newer instruments may be noted Luy's Segregator (Fig. 21) and the Pozzi Retractor (Fig. 22).



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Fig. 19.

A new Portable Sterilizer, made after the specification of Dr. Stack, was also shown. It was made of copper throughout and had a container for sterilized dressings; it can be used indifferently with a fire, gas, or spirit lamp.

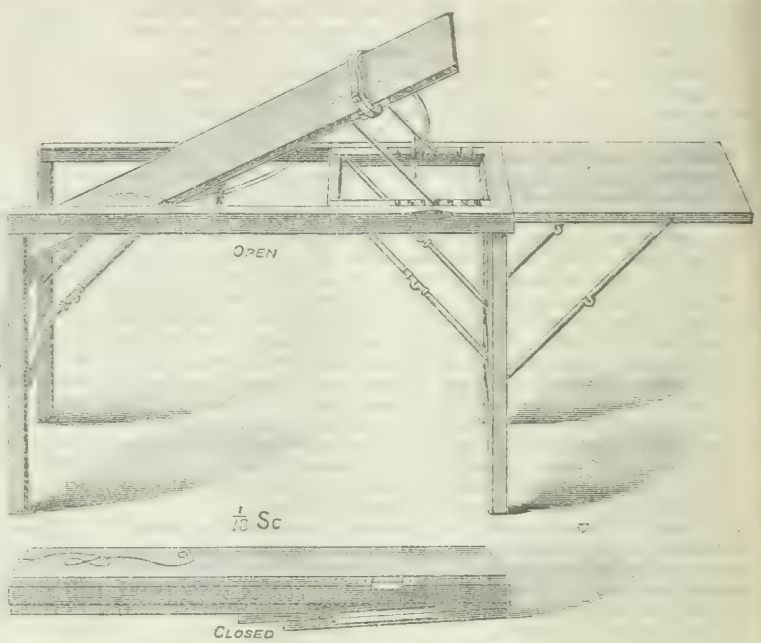


Fig. 20.

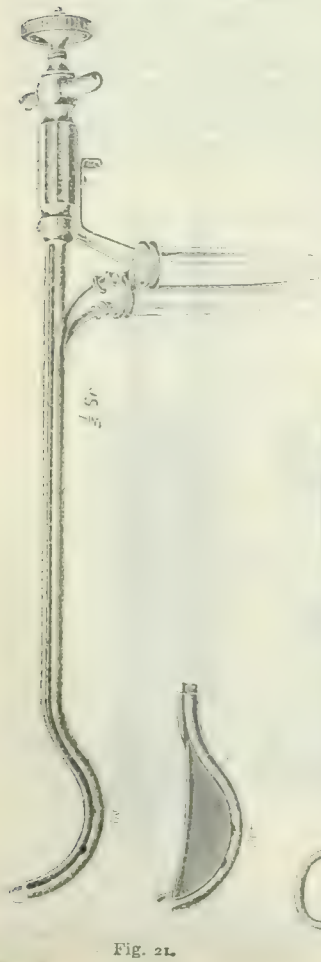


Fig. 21.

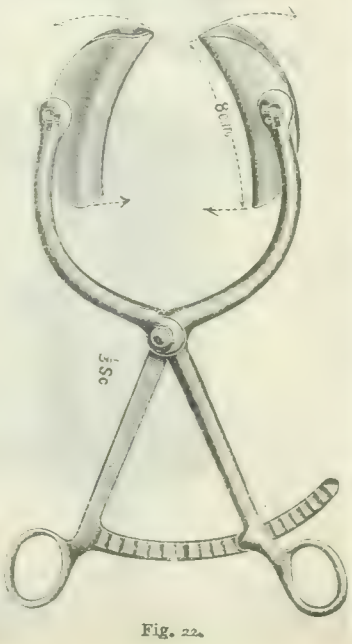


Fig. 22.

Messrs. Holland and Son (40, South Audley Street, W.) exhibited a variety of orthopaedic contrivances; amongst these was the improved instep arch sole for flat-foot, a contrivance already sufficiently well known, and also a bunion splint for the relief of hallux valgus. The special point of the latter is that it pulls the big toe back into its proper position, instead of pushing it, as does a toe post (Fig. 23). Another appliance having the same object in view was one of American origin. A novel instrument with an allied object was for the cure of hammer-toe; it appeared to have good points about it. The "natural shaped" boots and shoes shown by this firm differed from the ordinary "anatomical" variety of boot and shoe in that, though straight on the inner side and broad outside over the metatarsal joints, they were narrow at the point. The natural shape foot, therefore, appeared to be preserved without the ugliness common in surgical boots.

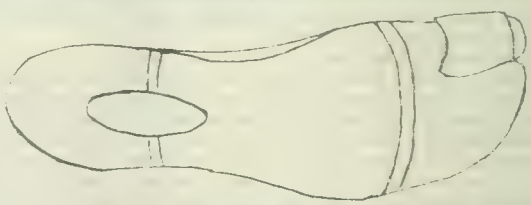


Fig. 23.

Down Bros., Limited (21, St. Thomas Street, E.C.). This firm, to which a very brief reference was made last week, had three distinct exhibits—one devoted to general instruments, another to aseptic furniture, and a third to ophthalmology. Notable among the former were the firm's noiseless surgical hand motor, which can be carried about and is operable either by hand or by electric current; a variety of inhalers, especially Dr. Snow's somnoform inhaler, in which the facepiece is lined with lint; and an excellent array of instruments for laparotomy work. Among these we pick out for illustration the spring pressure forceps suggested by Mr. Paul, of Liverpool, and intended to cause atrophy of the spur in colotomy (Fig. 24, p. 135), and the intestine clamp forceps with roller blades (Fig. 25, p. 135), designed by Mr. Sargent, of St. Thomas's Hospital. Conspicuous among the aseptic hospital furniture was the firm's "Paris Model" operation table. This table, with which the firm gained the Grand

Prix at the Paris Exhibition, was fully described in these columns last year, but has since then had some further improvements added, and is now very complete. An excellent Surgeon's Washhand Basin, arranged to wheel from bed to bed, was also exhibited, and is here shown (Fig. 26). Among

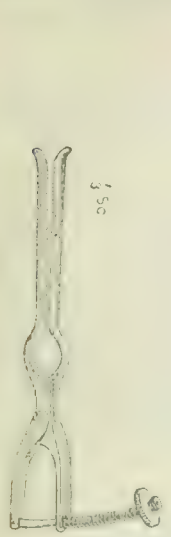


Fig. 24.

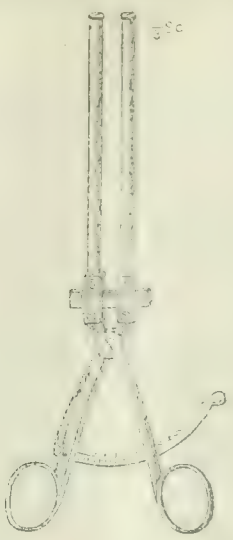


Fig. 25.

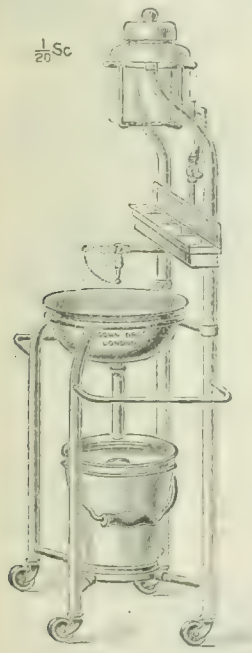


Fig. 26.

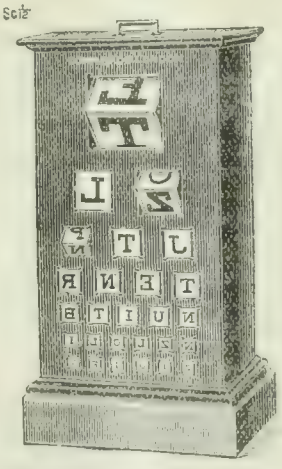


Fig. 27.

the eye instruments and appliances (which were shown in the Ophthalmological Section at Keble College) were Ramsay's Forceps for extracting a tough capsule, McHardy's Steel Curette with hooks for removing atoms of chalky consistency, and Wray's Test Type Cabinet. In this (Fig. 27) the types are placed in cubes revolving in a spindle; it is an invention which should save time and energy, and prove specially useful in school eyesight examination work.

Isenthal and Co. (85, Mortimer Street, Cavendish Square) exhibited a comprehensive variety of appliances required for radiography and electric therapeutic work in general. Among these was the new Guilleminot Spiral Resonator. It takes up but little space, and it is claimed for it that it emits a more powerful discharge than other resonators, and that its regulation and adjustment can be effected within much lower limits. In addition, various ways were shown in which electricity may be used for heating purposes as applied to medicine and surgery. Among these the Electric Sterilizer seemed

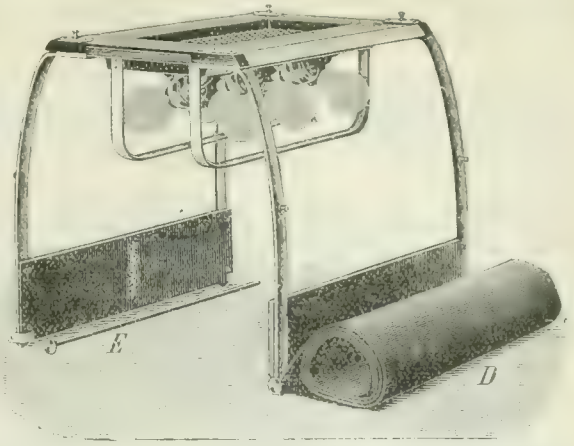


Fig. 28.

particularly useful; while the Partial Light Bath here shown should find favour with adherents of light treatment (Fig. 28).

Miscellaneous.

Liebig's Extract of Meat Company (4, Lloyd Avenue, London, E.C.) showed a number of their preparations, including Lemco and Oxo, a fluid beef, together with Fraybentos ox-tongues, corned beef, and ox-tail soup. They are all too well known to require description.

Frederick Wright (Cheltenham, Gloucester, and Bath) had upon view the tobacco which he sells with the trademark "My Own." It is claimed for it that it is prepared from a pure Virginian leaf, and unadulterated by admixture with other American, Eastern, or German tobaccos.

Cuxson, Gerrard, and Co. (Crown Buildings, Corporation Street, Birmingham) had upon view a number of dressings, wool sponges, plasters, and ligatures; also the Zuderoid pneumonia jacket, and Lignola, a new protective.

H. Zeal (82, Turnmill Street, E.C.) showed a great number of clinical thermometers. Of these the Repello has an ordinary registering bulb at one end and at the other a long flattened bulb filled with mercury, while a column of air separates the two. It requires no shaking down, and after use can be reset by simply pressing the flattened bulb (Fig. 29). The Patent Aseptic

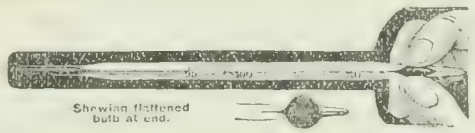


Fig. 29.

Clinical Thermometer shown by the firm was made in two parts, the outer sheath or container having the scale upon it, the inner tube or thermometer proper having no scale. It thus presents a smooth surface easily kept absolutely clean, while after use the temperature is read off by reinserting it into the container. Another point about it is that, as the thermometer itself is not marked, nervous patients cannot tell their own temperatures. It is here shown (Fig. 30).

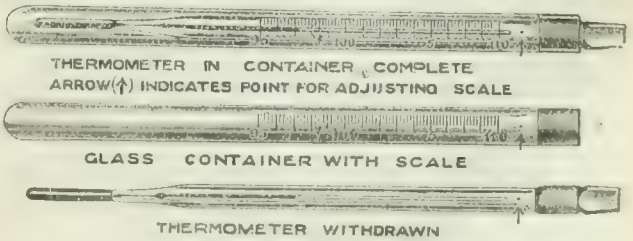


Fig. 30.

The O'Connor Extension Company (2, Bloomsbury Street, W.C.) showed a number of their well-known appliances for the use of those who are halt or lame. Most of them have at various times received favourable notice in the British Medical Journal. One completely new one, however, appeared in

the form of an extension apparatus recently invented by Messrs. Gunthorp and Dell. It is intended for a person having one leg shorter than the other, and is particularly applicable to those cases in which the shortening is from 2 in. to 4 in.

Peat Product Company (71A, Great Russell Street, W.C.), had upon view a number of original preparations from peat, or rather from Sphagnol or oil of peat. The preparations are all standardized, and the odour even in the 15 per cent. soap would to many people be more attractive than ordinary scent.

N. Bletchly (89, Northgate Street, Gloucester), who has devoted himself for several years to the production of anatomical boots, showed a number of boots and shoes and instruments, intended either for ordinary use or for special cases of foot deformity or leg weakness. He also had upon view a number of cork patterns, diagrams of the feet, and photographs of orthopaedic boots.

Foods, Mineral Waters, Etc.

S. Allsopp and Sons, Limited, made a special feature of their light lager beer, manufactured at Burton-on-Trent. Independent analysis shows that it is a pure malt-and hop preparation, which has the same flavour and general properties as the original Continental lagers.

C. Oppel and Co. (10 and 12, Milton Street, E.C.) exhibited Friedrichshall, the natural aperient mineral water which has been popular for so many years.

International Plasmon, Limited, showed Plasmon put up in various forms. The preparation itself has now attained wide popularity, and was shown in the form of biscuits for diabetics and for ordinary use, of granulated powders, and as combined with beef and arrowroot.

Henri Nestlé (41, Cannon Street, E.C.) showed the well-known Swiss milk prepared by this firm; also the Viking brand of unsweetened milk, ; a new food for infants known as Milo, lately introduced by this firm, was also exhibited.

Idris and Co., Limited (Camden Town), exhibited a variety of table and medicinal waters in siphons and bottles. Amongst others was Tonalka, an alkaline tonic aperient water, and liquor magnesiae carbonitis, prepared with an excess of carbonic acid gas; an aërated lime water of the same strength as liquor calcis (*B. P.*), but containing bicarbonate of lime in solution, was also shown. Distilidris, also shown, is perhaps less well known than many of the table waters supplied by this firm; it is a distilled water, impregnated with oxygen gas and carbonic acid.

Messrs. Reynolds exhibited samples of their wheatmeal brown bread, which is stated to contain no admixture of any material other than wheat products.

The Maltine Manufacturing Company, Limited (24 and 25, Hart Street, Bloomsbury, W.C.), showed its special preparation, Maltine, and various compounds of it, including one called Malto-yerbine: this is a combination of malt extract with yerba maté, to the properties of which attention was drawn in these columns some months ago. Another somewhat novel compound was Malto-creosote, made upon the supposition that maltine forms a good excipient for the internal use of this somewhat irritating oil. The same firm showed Carnrick's Liquid Peptonoids—a preparation of beef, wheat, and milk, sterilized and predigested.

Arabella, Limited (2A, Hay Hill, Berkeley Square, W.), showed the Arabella Natural Mineral Water, which is bottled at the springs of that name at Kelenfold in Hungary. It is a natural mineral water, recommended for use in cases of torpid liver, haemorrhoids, uric acid diathesis, hepatitis, gout, obesity, and the like.

Cheltine Foods, Limited (Cheltenham), showed their "Cheltine" specialities, which consist of foods, biscuits, bread and milk chocolate, and are designed to fulfil various dietetic purposes.

Ingram and Royle, Limited (East Paul's Wharf, 26, Upper Thames Street), showed Celestin, Hôpital, and other well-known Vichy waters. Carlsbad salt and Carlsbad mineral waters were also included in the exhibit.

Keen Robinson and Co., Limited, showed Robinson's Patent Barley and Robinson's Patent Groats. The former is a flour prepared from fine Scotch barley, and the latter one from oats grown in Scotland. They are both popular for the preparation of gruel for children, nursing mothers, and invalids. Colman's Sinapisms were also shown.

Virol, Limited (152 and 166, Old Street, London), had upon view the special preparation from which the firm derives its name. It is understood to be compounded of red bone marrow, malt extract, eggs, lime and lemon juice. In appearance and consistency it resembles honey, and tastes like toffee. It is recommended for the use of children and invalids.

The Aylesbury Dairy Company, Limited (St. Petersburg Place, Bayswater, W.), exhibited a variety of milks, such as humanized and peptonized milk; also kephir and koumiss, as prepared according to the formula of Dr. Jagielski.

The Apollinaris Company, Limited (4, Stratford Place, London, W.), had an exhibit consisting of Apollinaris water, Johannis water, Johannis lithia, and Apenta water, the natural bitter aperient, with all of which the public and medical men alike are equally well acquainted.

Galak Milk Products, Limited (118, Fenchurch Street, London, E.C.), showed their preparation. It is a dry milk in the form of a cream-coloured powder produced by a new process, and can be used either for the preparation of ordinary milk or eaten in tablets.

Reinheimer and Co. (Surbiton) showed their Nektar wines, which are stated to contain neither alcohol nor preservatives, and to consist purely of pasteurized grape-juice.

The Manhu Food Company, Limited (Liverpool), showed its diabetic food, in various forms, such as flour, biscuits, macaroni, flaked wheat and barley.

George Back and Co. (13, Devonshire Square, Bishopsgate, E.C.) exhibited their G.B. Diabetes Whisky, with the qualities of which many medical men are well acquainted.

Coleman and Co., Limited ("Wincarnis" Works, Lower Westwick Street, Norwich), showed their preparation Wincarnis; it is stated to be a combination of choice wine, extract of meat and extract of malt.

Stephen Smith and Co., Limited (Malmesbury Road, Bow, E.), showed Hall's Wine, which is said to be a useful substitute for alcohol; Keystone Burgundy, stated to be a pure natural wine; and Keystone Beef and Malt wine, in which Lemco is used.

Brand and Co., Limited (11, Little Stanhope Street, Mayfair, W.), exhibited their various specialities for invalids. These as shown included various soups, beef, mutton, veal, and chicken essences, jellies, lozenges, and nutrient powders, most of which have already become popular.

Feltoe and Smith, Limited (25, Augustus Street, Regent's Park, N.W.), showed Spécialité lime-juice cordial, lemon squash, and squash crystals, all of which are well known.

G. Van Abbot and Sons (Baden Place, Crosby Row, Borough, S.E.) showed a large number of different foods, intended for diabetics, dyspeptics, and persons who suffer from obesity.

Camwal, Limited (112, Pembroke Street, Caledonian Road, London, N.), showed all descriptions of the aërated waters prepared by the firm, whether for use as domestic beverages or for other purpose. The exhibits included Fontalis, a Harrogate natural table water, artificially aërated.

Alexander Riddle and Co. (36 and 38, Commercial Street, E.) exhibited Stowers's Lime-juice Cordial and Clarified Lemon Squash, both of which are guaranteed to be produced from the product of the fruits mentioned, with the addition merely of refined lump sugar converted by a simple process into pure glucose.

Cosenza and Co. (95, Wigmore Street, Cavendish Square, W.) showed a variety of the Maggi preparations, many of which have come into domestic use; they have also been used largely in South Africa and on various exploring expeditions.

Billon's Ovo Lecithin Dépôt (16, Water Lane, Great Tower Street, E.C.) had upon view its Ovo Lecithin, which is apparently a distearo-glycerophosphate of choline derived from yolk of egg. It is stated that its use is indicated in a general way in all maladies in which debility and malnutrition have to be fought. Upon the same stand were shown the antitetanic and antivenom serums, which are prepared at the Institut Pasteur of Lille, and sold by Poulenc Frère, of Paris. A new local anaesthetic, named Stovaine, was also shown.

Callard and Co. (74, Regent Street, W.) showed a variety of the starchless and sugarless foods for which the firm is well known. With most of them those of our readers specially interested in diabetes are already familiar, but it is worth while to draw special attention to a new diabetic biscuit called Prolacto, and to an improved form of the firm's Diabetic Marmalade, which is a considerable advance upon the older preparation.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 13TH, 1904.

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ASSOCIATION INTELLIGENCE.

PROCEEDINGS OF COUNCIL.

AT a meeting of the Council of the British Medical Association held in the Examination Schools, Oxford, on Tuesday, July 26th, 1904.

Present:

Mr. ANDREW CLARK, Chairman of Council, in the Chair.
Dr. T. DRYSLWYN GRIFFITHS, President.
Dr. WILLIAM COLLIER, President-elect.
Sir VICTOR HORSLEY, F.R.S., Chairman of Representative Meetings.
Dr. E. MARKHAM SKERRITT, Treasurer.

Dr. EDGAR G. BARNES, Eye.
Dr. JAMES BARR, Liverpool.
Dr. MICHAEL BEVERLEY, Norwich.
Dr. J. BRASSEY BRIERLEY, Old Trafford.
Dr. ADOLPH BRONNER, Bradford.
Dr. H. LANGLEY BROWNE, West Bromwich.
Dr. R. COCHRANE BUIST, Dundee.
Dr. DUNCAN BURGESS, Sheffield.
Professor J. W. BYERS, Belfast.
Dr. W. A. CARLINE, Lincoln.
Dr. EDWARD J CAVE, Bath.
Dr. JAMES CRAIG, Dublin.
Dr. H. RADCLIFFE CROCKER, London.
Dr. GEORGE W. CROWE, Worcester.
Dr. P. MAURY DEAS, Exeter.
Lieutenant-Colonel E. F. DRAKE-BROCKMAN, I.M.S. (ret.), (South Indian and Madras Branch), London.
Mr. GEORGE EASTES, M.B., London.
Surgeon-General G. J. H. EVATT, C.B., Havant.
Dr. EDWARD LAWRENCE FOX, Plymouth.
Dr. JOHN H. GALTON, Upper Norwood.
Dr. BRUCE GOFF, Bothwell.
Dr. JOSEPH GROVES, Carisbrooke.
Dr. JAMES HAMILTON, Glasgow.
Dr. T. ARTHUR HELME, Manchester.
Dr. G. A. HERON, London.
Dr. JAMES H. HUNTER, South Shields.
Mr. EVAN JONES, Aberdare.
Mr. R. H. KINSEY, Bedford.
Dr. C. H. MILBURN, Hull.
Brigade-Surgeon T. B. MORIARTY, M.D., Cork.
Dr. C. G. DRUMMOND MORIER (South Australia Branch), London.
Mr. W. JONES MORRIS, Portmadoc.
Dr. JAMES MURPHY, Sunderland.
Mr. D. A. O'SULLIVAN, London.
Mr. C. H. WATTS PARKINSON, Wimborne Minster.
Dr. ROBERT W. PHILIP, Edinburgh.
Dr. FRANK M. POPE, Leicester.
Dr. EDWIN RAYNER, Stockport.
Mr. H. BETHAM ROBINSON, M.S.Lond., London.
Professor ROBERT SAUNDBY, M.D., Birmingham.
Mr. W. D. SPANTON, Hanley.
Mr. J. LYNN THOMAS, C.B., Cardiff.
Mr. T. JENNER VERRALL, Brighton.
Dr. NORMAN WALKER, Edinburgh.
Mr. DENIS WALSHE, Graigue.

The minutes of the last meeting having been printed and circulated, and no objection received, were taken as read and signed as correct.

Read letters of apology for non-attendance from Professor Finlay and Mr. Edmund Owen.

On consideration of the election of candidates, it was resolved that the three candidates whose names appear on the notice convening the meeting be and they are hereby elected members of the British Medical Association.

The following attendances of the 1903-4 Council were then reported, eight meetings in all having been held.

	Attendances.
Griffiths, Dr. T. D., Swansea, President	8
Collier, Dr. Wm., Oxford, President-elect	5
Whitehead, Mr. Walter, F.R.C.S.Ed., Manchester, Past-President	0
Horsley, Sir Victor, F.R.S., London, Chairman of Representative Meetings	8
Clark, Andrew, Esq., F.R.C.S., London, Chairman of Council	8
Skerritt, Dr. E. Markham, Bristol, Treasurer	6
Barnes, Dr. Edgar G., Eye, R.	8
Barr, Dr. James, Liverpool, R.	7
Beverley, Dr. M., Norwich, R.	7
Brierley, Dr. J. Brassey, Manchester, R.	7
Bronner, Dr. Adolph, Bradford, R.	4
Browne, Dr. Langley, West Bromwich, R.	7
Buist, Dr. R. C., Dundee, R.	8
Burgess, Dr. Duncan, Sheffield, R.	3
Byers, Professor J. W., M.D., Belfast, R.	3

	Attendances.
Calwell, Dr. W., Belfast, R.	0
Cantlie, Mr. James, F.R.C.S., London, R. (Hong Kong Branch)	3
Carline, Dr. W. A., Lincoln, R.	8
Cave, Dr. Edward J., Bath, R.	3
Cheatle, Mr. T. H., Burford, R.	2
Craig, Dr. James, Dublin, R.	5
Crocker, Dr. H. Radcliffe, London, R.	7
Crowe, Dr. G. W., Worcester, R.	7
Deas, Dr. P. Maury, Exeter, R.	3
Drake-Brockman, Lieutenant-Colonel E. F., F.R.C.S., London, R. (South Indian and Madras Branch)	5
Eastes, Mr. George, M.B., London, R.	7
*†Evatt, Surgeon General G. J. H., C.B., London	2
Finlay, Professor David W., M.D. LL.D., Aberdeen, R.	2
Flemming, C. E. S. (resigned Council)	2
Fox, Dr. Edward Lawrence, Plymouth, R.	7
Galton, Dr. J. H., London, R.	8
Goff, Dr. Bruce, Bothwell, R.	8
Gooding, Dr. C. G., London, R. (Barbados Branch)	1
Groves, Dr. J., Carisbrooke, R.	8
Hamilton, Dr. James, Glasgow, R.	8
Harman, Dr. W. M., Winchester, R.	6
Haslam, Mr. W. F., Birmingham, R.	3
Helme, Dr. T. Arthur, Manchester, R.	7
Heron, Dr. G. A., London, R.	8
Hunter, Dr. J. H., South Shields, R.	6
Jones, Mr. Evan, Aberdare, R.	8
Kinsey, Mr. R. H., Bedford, R.	4
Little, Colonel C. G. (gone abroad)	1
Lovell, Sir Francis, K.C.M.G., London, R. (Trinidad Branch)	0
Milburn, Dr. C. H., Hull, R.	4
Moriarty, Brigade-Surgeon T. B., M.D., Cork, R.	2
Morier, Dr. C. G. D., London, R. (Adelaide Branch)	4
Morris, Mr. W. Jones, Portmadoc, R.	8
Murphy, Dr. James, Sunderland, R.	7
Murray, Dr. James, Inverness, R.	3
*†O'Sullivan, Mr. D. A., London	3
*Owen, Mr. Edmund, F.R.C.S., London	4
Parkinson, Mr. C. H. W., Wimborne Minster, R.	1
Philip, Dr. R. W., Edinburgh, R.	6
Pope, Dr. F. M., Leicester, R.	7
Rayner, Dr. Edwin, Stockport	6
Robinson, Mr. H. Betham, M.S.Lond., London, R.	8
Ross, Dr. J. Maxwell, Dumfries, R.	4
*Saundby, Professor R., M.D., LL.D., Birmingham	7
Spanton, Mr. W. D., Hanley, R.	6
Thomas, Mr. John Lynn, C.B., Cardiff, R.	4
*Thomson, Dr. J. Roberts, Bournemouth	3
Tyson, Dr. W. J., Folkestone, R.	5
Verrall, Mr. T. Jenner, Brighton, R.	5
Walker, Dr. Norman, Edinburgh, R.	7
Walshe, Dr. Denis, Graigue, R.	4
Woodcock, Dr. S. (deceased), Old Trafford, R.	3

R = Branch Representative. * Co-opted Members.

† Co-opted during year, attended all meetings possible.

Permission was accorded to the British Electro-Therapeutic Society and to the South Wales Branch of the Society of Medical Officers of Health, respectively, to hold meetings during the Oxford Meeting

It was unanimously agreed to recommend to the general meeting that Dr. T. D. Griffiths be elected Vice-President of the Association for his distinguished services as President of the Association during the past year.

Read resolution adopted at the annual meeting of the Lancashire and Cheshire Branch, which was ordered to be entered on the minutes.

At a meeting of the Council of the British Medical Association held in the Examination Schools, Oxford, on Wednesday, July 27th, 1904.

Present:

Mr. Andrew Clark, Chairman of Council, in the Chair.

Dr. William Collier, President.

Dr. T. D. Griffiths, Past-President.

Sir Victor Horsley, F.R.S., Chairman of Representative Meetings.

Dr. John Ford Anderson, London.
Dr. Edgar G. Barnes, Eye.
Dr. James Barr, Liverpool.
Dr. M. Beverley, Norwich.
Dr. J. Brassey Brierley, Old Trafford.
Dr. H. Langley Browne, West Bromwich.
Dr. R. Cochrane Buist, Dundee.
Dr. Duncan Burgess, Sheffield.
Professor J. W. Byers, M.D., Belfast.
Mr. James Cantlie (Hong Kong and China Branch), London.
Dr. W. A. Carline, Lincoln.
Dr. Edward J. Cave, Bath.
Dr. James Craig, Dublin.
Mr. Pearson R. Cresswell, C.B., Dowlais.
Dr. George W. Crowe, Worcester.
Dr. P. Maury Deas, Exeter
Dr. Thomas Douglas (Cape of Good Hope Branch), Lydney, Glos.
Lieutenant-Colonel E. F. Drake-Brockman (South Indian and Madras Branch), London.
Mr. C. E. S. Flemming, Bradford-on-Avon
Dr. E. Rowland Fothergill, London.
Dr. Edward Lawrence Fox, Plymouth.
Dr. John H. Galton, Upper Norwood.
Dr. Bruce Goff, Bothwell.
Dr. D. Goyder, Bradford.
Dr. Major Greenwood, London.
Dr. Joseph Groves, Carisbrooke
Dr. James Hamilton, Glasgow.
Dr. T. Arthur Helme, Manchester.
Dr. James H. Hunter, South Shields.
Mr. R. H. Kinsey, Bedford.
Dr. C. H. Milburn, Hull
Dr. C. G. Drummond Morier (South Australia Branch), London.
Dr. W. Jones Morris, Portmadoc.
Dr. C. J. Morton, London.
Dr. James Murphy, Sunderland.
Dr. James Murray, Inverness.
Mr. C. H. Watts Parkinson, Wimborne
Dr. Frank M. Pope, Leicester.
Dr. Edwin Rayner, Stockport.
Dr. J. Maxwell Ross, Dumfries.
Dr. Cecil E. Shaw, Belfast.
Professor W. R. Smith, M.D. (Malta and Mediterranean Branch), London.
Mr. W. D. Spanton, Hanley.
Mr. J. Lynn Thomas, C.B., Cardiff.
Dr. W. J. Tyson, Folkestone.
Dr. T. Jenner Verrall, Brighton.
Dr. Norman Walker, Edinburgh.
Dr. Denis Walshe, Graigue.

The newly-elected members attending the Council for the first time were introduced to the Chairman, and took their seats.

Read letter of apology for non-attendance from Professor Morrison.

The minutes of the last meeting having been printed in the *Daily Journal* were taken as read, and ordered to be signed as correct.

On consideration of the affirmation of the standing orders for the Council it was resolved that the standing orders be affirmed and be declared the standing orders of the Council for the ensuing year.

The General Secretary reported the returns of the election of Representatives of Branches on the Council:

Aberdeen Branch.—Professor David W. Finlay, M.D., LL.D., 2, Queen's Terrace, Aberdeen. *Barbados Branch.*—Dr. C. G. Gooding, 67, Brockley Road, S.E. *Bath and Bristol Branch.*—Dr. Edward John Cave, 20, Circus, Bath; Mr. C. E. S. Flemming, Manvers House, Bradford-on-Avon. *Bermuda Branch.*—(No return.) *Birmingham Branch.*—Dr. H. W. Langley Browne, West Bromwich; J. T. J. Morrison, Esq., 3, Great Charles Street, Birmingham. *Bombay Branch.*—(No return.) *Border Counties Branch and North Lancashire and Westmorland Branch (United).*—Dr. J. Maxwell Ross, County Buildings, Dumfries (see also North Lancashire and South Westmorland). *Brisbane and Queensland Branch.*—(No return.) *British Guiana Branch.*—(No return.) *Burmah Branch.*—Captain C. E. Williams, I.M.S., c.o. Messrs. T. Cook and Son, Ludgate Hill, E.C. *Cambridge and Huntingdon Branch and East York and North Lincoln Branch (United).*—Dr. C. H. Milburn, 158, Anlaby Road, Hull (see also East York and North Lincoln). *Cape of Good Hope Branch.*—Dr. Thomas Douglas, The Warren, Lydney, Glos. *Colombo, Ceylon Branch.*—Dr. C. B. Lorensz, 20, Marmaduke Street, Edgehill, Liverpool. *Connaught Branch and Ulster Branch (United).*—Professor J. W. Byers, M.D., Lower Crescent, Belfast (see also Ulster); Dr. Cecil Shaw, College Square East, Belfast. *Dorset and West Hants Branch and West Somerset Branch (United).*—Mr. C. H. Watts Parkinson, Wimborne Minster (see also West Somerset). *Dundee Branch, Perth Branch and Stirling Branch (United).*—Dr. R. Cochrane Buist, 166, Nethergate, Dundee (see also Perth and Stirling). *East Anglian Branch.*—Dr. Edgar George Barnes, Eye, Suffolk; Dr. M. Beverley, 54, Prince of Wales Road, Norwich. *East York and North Lincoln Branch and Cambridge and Huntingdon Branch (United).*—Dr. C. H. Milburn, 158, Anlaby Road, Hull (see also Cambridge and Huntingdon). *Edinburgh Branch and Fife Branch (United).*—Dr. Robert McKenzie Johnston, 2, Drumsheugh Gardens, Edinburgh (see also Fife); Dr. Norman Walker, 7, Manor Place, Edinburgh (see also Fife). *Fife Branch and Edinburgh Branch (United).*—Dr. Robert McKenzie Johnston, 2, Drumsheugh Gardens, Edinburgh (see also Edinburgh); Dr. Norman Walker, 7, Manor Place, Edinburgh (see also Edinburgh). *Glasgow and West of Scotland Branch.*—Dr. Bruce Goff, The Lindens, Bothwell, Lanarkshire; Dr. James Hamilton, 1, Royal Crescent, Crosshill, Glasgow. *Gloucestershire Branch and Worcestershire and Herefordshire Branch (United).*—Dr. G. W. Crowe, 43, Foregate Street, Worcester (see also Worcester and Hereford). *Grahamstown and Eastern Province Branch.*—Dr. J. B. Greathead, c.o. Standard Bank of Africa, 10, Clements Lane, Lombard Street, E.C. *Griqualand West Branch.*—(No return.) *Halifax, Nova Scotia Branch.*—(No return.) *Hong Kong and China Branch.*—Mr. James Cantlie, F.R.C.S., 46, Devonshire Street, W. *Jamaica Branch.*—Dr. P. O. Malabre, 21, Scarisbick, New Road, Southport. *Lancashire and Cheshire Branch.*—Dr. James Barr, 72, Rodney Street, Liverpool; Dr. J. Brassey Brierley, Alma House, Old Trafford, Manchester; Dr. T. Arthur Helme, "Mayfield," Victoria Park, Manchester; Dr. Edwin Rayner, 19, Teviot Dale, Stockport. *Leeward Islands Branch.*—(No return). *Leinster Branch and South-Eastern of Ireland Branch (United).*—Dr. James Craig, 18, Merrion Square, Dublin (see also South-Eastern of Ireland); Dr. Denis Walshe, Bellevue, Graigue, co. Kilkenny (see also South-Eastern of Ireland). *Malaya Branch.*—Dr. Thomas Kerr, c.o. Sir Patrick Manson, K.C.M.G., F.R.S., 21, Queen Anne Street, W. *Malta and Mediterranean Branch.*—Professor W. R. Smith, M.D., F.R.S.E., 74, Great Russell Street, W.C. *Melbourne and Victoria Branch.*—(No return.) *Metropolitan Counties Branch.*—Dr. John Ford Anderson, 41, Belsize Park, N.W.; Mr. Andrew Clark, F.R.C.S., 71, Harley Street, W.; Dr. E. Rowland Fothergill, Torquay House, Southfields, S.W.; Dr. Major Greenwood, 243, Hackney Road, N.E.; Dr. Charles James Morton, 56, Orford Road, Walthamstow. *Midland Branch.*—Dr. W. A. Carline, Lincoln; Dr. F. M. Pope, 4, Prebend Street, Leicester. *Montreal Branch.*—(No return.) *Munster Branch.*—Dr. Joseph J. Guisani, Patrick's Hill, Cork. *Natal Branch.*—(No return.) *New Zealand Branch.*—(No return.) *North of England Branch.*—Dr. J. H. Hunter, Havelock Street, South Shields; Dr. James Murphy, 6, Thornhill Crescent, Sunderland. *Northern Counties of Scotland Branch.*—

Dr. James Murray, 6, Ardross Terrace, Inverness. *North Lancashire and South Westmorland Branch and Border Counties Branch (United).*—Dr. J. Maxwell Ross, County Buildings, Dumfries (see also Border Counties). *North Wales and Shropshire Branch.*—Mr. W. Jones Morris, Portmadoc. *Oxford and Reading Branch.*—Dr. C. W. Marriott, Aubrey House, Bath Road, Reading. *Perth Branch, Dundee Branch, and Stirling Branch (United).*—Dr. R. Cochrane Buist, 166, Nethergate, Dundee (see also Dundee and Stirling). *South Australia Branch.*—Dr. C. G. D. Morier, 1, Hamilton Terrace, St. John's Wood, N.W. *South-Eastern of Ireland Branch and Leinster Branch (United).*—Dr. James Craig, 18, Merrion Square, Dublin (see also Leinster); Dr. Denis Walshe, Bellevue, Graigue, co. Kilkenny (see also Leinster). *Southern Branch.*—Dr. J. Groves, Carisbrooke, Isle of Wight. *South Indian and Madras Branch.*—Lieutenant-Colonel E. F. Drake-Brockman, I.M.S. (Ret.), F.R.C.S., 281, Willesden Lane, N.W. *South Midland Branch.*—Mr. R. H. Kinsey, 10, Rothsay Gardens, Bedford. *South Wales and Monmouthshire Branch.*—Pearson R. Cresswell, Esq., C.B., Dowlais; John Lynn Thomas, Esq., C.B., F.R.C.S., 21, Windsor Place, Cardiff. *South-Western Branch.*—Dr. P. Maury Deas, Exeter; Dr. Edward Lawrence Fox, 9, Osborne Place, Plymouth. *Staffordshire Branch.*—Mr. W. D. Spanton, Chatterley House, Hanley. *Stirling Branch, Dundee Branch, and Perth Branch (United).*—Dr. R. Cochrane Buist, 166, Nethergate, Dundee (see also Dundee and Perth). *Sydney and New South Wales Branch.*—Dr. C. J. Martin, Lister Institute of Preventive Medicine, Chelsea, S.W.; Dr. G. E. Twynam, 31, Gledhow Gardens, South Kensington, S.W. *Toronto Branch.*—(No return.) *Trinidad and Tobago Branch.*—Sir Francis Lovell, K.C.M.G., 18, Clifton Villas, Maida Vale, W. *Ulster Branch and Connaught Branch (United).*—Professor J. W. Byers, M.D., Lower Crescent, Belfast (see also Connaught); Dr. Cecil Shaw, College Square East, Belfast. *West Australian Branch.*—(No return). *West Somerset Branch and Dorset and West Hants Branch (United).*—Mr. C. H. Watts Parkinson, Wimborne Minster (see also Dorset and West Hants). *Worcestershire and Herefordshire Branch and Gloucestershire Branch (United).*—Dr. W. G. Crowe, 43, Foregate Street, Worcester (see also Gloucestershire). *Yorkshire Branch.*—Dr. Duncan Burgess, 442, Glossop Road, Sheffield; Dr. D. Goyder, 88, Great Horton Road, Bradford.

The following deputation attended from the Midland Branch, and invited the Association to hold its annual meeting at Leicester in 1905: Mr. G. C. Franklin, F.R.C.S., Dr. F. M. Pope (President-elect of the Midland Branch), Mr. C. J. Bond, F.R.C.S., Dr. G. Lorimer, Mr. R. C. Stewart, Dr. Jacob, Dr. Astley Clarke, Dr. Sevestre, Mr. St. John and Dr. Genney, when it was unanimously resolved to recommend to the general meeting of members that the annual meeting for 1905 be held in Leicester, and that Mr. G. C. Franklin, F.R.C.S., be nominated President-elect.

The Chairman of Council reported that the number of Representative members returned to the Council was 64, and therefore under By-law 29 the Council was entitled to co-opt six members. On a vote being taken, the following were declared elected as co-opted members of the Council for the ensuing twelve months: Dr. H. Radcliffe Crocker, Dr. George Bagot Ferguson, Mr. D. A. O'Sullivan, Mr. Edmund Owen, and Professor Saundby.

Resolved: That a vote of thanks be given to the retiring members of Council for their past services.

At a meeting of the Council held in the Examination Schools, Oxford, on Thursday, July 28th, 1904:

Present:

Mr. ANDREW CLARK, Chairman of the Council, in the chair.
Dr. WILLIAM COLLIER, President.
Dr. T. D. GRIFFITHS, Past-President.
Sir VICTOR HORSLEY, F.R.S., Chairman of Representative Meetings.
Dr. E. MARKHAM SKERRITT, Treasurer.

Dr. JOHN FORD ANDERSON, London.
Dr. E. G. BARNES, Eye.
Dr. JAMES BARR, Liverpool.
Dr. M. BEVERLEY, Norwich.
Dr. J. BRASSEY BRIERLEY, Old Trafford.
Dr. H. LANGLEY BROWNE, West Bromwich.
Dr. R. COCHRANE BUIST, Dundee.
Dr. DUNCAN BURGESS, Sheffield.
Professor J. W. BYERS, M.D., Belfast.
Dr. W. A. CARLINE, Lincoln.
Dr. EDWARD J. CAVE, Bath.
Dr. JAMES CRAIG, Dublin.
Mr. PEARSON R. CRESSWELL, C.B., Dowlais.
Dr. H. RADCLIFFE CROCKER, London.
Dr. G. W. CROWE, Worcester.
Dr. P. MAURY DEAS, Exeter.
Dr. THOMAS DOUGLAS, Lydney.
Lieutenant-Colonel E. F. DRAKE-BROCKMAN, I.M.S. (ret.) (South Indian and Madras Branch), London.
Dr. G. B. FERGUSON, Cheltenham.
Mr. C. E. S. FLEMMING, Bradford-on-Avon.
Dr. E. ROWLAND FOTHERGILL, London.
Dr. EDWARD LAWRENCE FOX, Plymouth.
Dr. JOHN H. GALTON, Upper Norwood.
Dr. BRUCE GOFF, Bothwell.
Dr. D. GOYDER, Bradford.
Dr. MAJOR GREENWOOD, London.
Dr. J. GROVES, Carisbrooke.
Dr. JAMES HAMILTON, Glasgow.
Dr. T. ARTHUR HELME, Manchester.
Dr. J. H. HUNTER, South Shields.
Mr. R. H. KINSEY, Bedford.
Dr. C. W. MARRIOTT, Reading.
Dr. C. H. MILBURN, Hull.
Mr. W. JONES MORRIS, Portmadoc.
Dr. JAMES MURPHY, Sunderland.
Dr. J. MURRAY, Inverness.
Mr. D. A. O'SULLIVAN, London.
Mr. C. H. W. PARKINSON, Wimborne Minster.
Dr. F. M. POPE, Leicester.
Dr. EDWIN RAYNER, Stockport.
Dr. J. MAXWELL ROSS, Dumfries.
Professor ROBERT SAUNDBY, M.D., LL.D., Birmingham.
Dr. CECIL E. SHAW, Belfast.
Professor W. R. SMITH, M.D. (Malta and Mediterranean Branch), London.
Mr. W. D. SPANTON, Hanley.
Mr. JOHN LYNN THOMAS, C.B., Cardiff.
Dr. W. J. TYSON, Folkestone.
Mr. T. JENNER VERRALL, Brighton.
Dr. NORMAN WALKER, Edinburgh.
Dr. DENIS WALSHE, Graigue.

The minutes of the last meeting having been printed in the *Daily Journal* were taken as read and ordered to be signed as correct.

A deputation from Toronto, consisting of Professor Cameron, Professor J. J. Mackenzie, M.D., Dr. Hall (Ottawa), Professor H. A. McCallum, M.D., attended to invite the Association to hold its 1906 annual meeting in Toronto, when it was resolved that the deputation be informed that the Council hopes to be able to accept this kind invitation for 1906, and that the Council will be pleased to have the invitation renewed next year.

The question of the reappointment of the representatives of the British Medical Association on the Joint Committee of the British Medical Association and the Medico-Psychological Association was considered and referred to the October meeting of Council, as also was the reappointment of the Therapeutic Committee.

The following Committees were appointed, of which the President and Chairman of Council are members *ex officio*.

The Annual Meeting Sections Committee to consist of:

The Treasurer, Professor Saundby, Dr. W. J. Tyson, and Dr. Norman Walker.

Resolved: That the Sectional Committees shall send the proposed subjects of sectional discussion to the General Secretary not later than March 15th, and the Annual Meeting Sections Committee shall report to the Council meeting in April.

Resolved: That all doubtful questions in connexion with the work of the Section be referred to the Annual Meeting Sections Committee.

The Arrangements Committee to consist of:

Dr. R. C. Buist, Dr. James Craig, Dr. H. Radcliffe Crocker, Dr. G. B. Ferguson, Dr. J. H. Galton, and Mr J. Lynn Thomas, C.B., together with six members nominated from Leicester.

The Colonial Committee to consist of:

Dr. J. Groves and Mr. Edmund Owen as the representatives of the Council, together with five members to be appointed by the representatives of the Colonial Branches on the Council.

The Ethical Committee to consist of:

Dr. G. B. Ferguson, Dr. Bruce Goff, Mr. D. A. O'Sullivan, Professor Saundby, and Mr. W. D. Spanton, together with the following members elected by the Representative Meeting, namely, Mr. H. A. Ballance, Dr. A. G. Bateman, Mr. G. H. Broadbent, Dr. W. A. Elliston, and Dr. E. Jepson.

The Hospitals Committee to consist of:

Dr. M. Beverley, Dr. J. Brassey Brierley, Dr. E. Lawrence Fox, Dr. John Rogerson Hamilton, Dr. T. Arthur Helme, Mr. T. Garrett Horder, Mr. Edmund Owen, and Dr. F. M. Pope,

with power to add to their number.

The Journal and Finance Committee to consist of:

Sir Victor Horsley, F.R.S. (Chairman of Representative Meetings), the Treasurer, Dr. Edgar Barnes, Dr. James Barr, Dr. J. Brassey Brierley, Dr. J. H. Galton, Dr. J. Groves, Mr. R. H. Kinsey, Mr. W. Jones Morris, Mr. C. H. W. Parkinson, Professor Saundby, Mr. T. Jenner Verrall, and Dr. Norman Walker.

The Chairman of Council reported that arising out of the report of the Medical Defence Committee the Representative Meeting had passed an amendment referring the principle of medical defence back to the original Committee, whereupon it was resolved that the Medical Defence Committee be reappointed *en bloc*, to consist of:

Sir Victor Horsley, F.R.S.; the Treasurer, Dr. M. Beverley, Dr. Bruce Goff, Dr. G. A. Heron, Dr. J. H. Hunter, Dr. G. Balfour Marshall, Mr. M. A. Messiter, Mr. W. Jones Morris, and Dr. Denis Walshe.

The Medico-Political Committee to consist of:

The Chairman of Representative Meetings and the Treasurer *ex officio*; Dr. R. C. Buist, Dr. Major Greenwood, Mr. W. Jones Morris, Dr. James

Murphy, Mr. C. H. W. Parkinson, and Mr. D. A. O'Sullivan, together with the following members elected by the Representative Meeting:—Mr. T. Garrett Horder, Mr. George Jackson, Dr. Leonard Kidd, Dr. J. A. Macdonald, Mr. M. A. Messiter, and Mr. E. H. T. Nash.

The Organization Committee to consist of:

Mr. H. A. Ballance, Dr. E. J. Cave, Dr. James Hamilton, Professor J. T. J. Morrison, Dr. Edwin Rayner, Mr. T. Jenner Verrall, and Professor A. H. White.

The Premises and Library Committee to consist of:

Sir Victor Horsley, F.R.S. (Chairman of the Representative Meetings), Dr. Edgar Barnes, Dr. H. Radcliffe Crocker, Dr. J. H. Galton, Dr. Bruce Goff, Dr. T. D. Griffiths, and Dr. F. M. Pope.

The Public Health Committee to consist of:

Dr. Herbert Manley, Mr. C. H. W. Parkinson, Dr. F. C. Martley, Dr. John C. McVail, Dr. T. G. Nasmyth, Dr. Herbert Jones, and Dr. J. Roberts Thomson.

The Royal Naval and Military Committee to consist of:

Surgeon-Lieutenant-Colonel Decimus Curme, Lieutenant-Colonel E. F. Drake-Brockman, Brigade-Surgeon-Lieutenant-Colonel G. S. Elliston, and Surgeon-General G. J. H. Evatt, C.B., together with three members to be appointed by the Council at a future date.

The Scientific Grants Committee to consist of:

Mr. C. A. Ballance, Dr. James Barr, Dr. Duncan Burgess, Dr. E. J. Cave, Dr. T. D. Griffiths, Dr. T. Arthur Helme, Dr. R. McKenzie Johnston, Mr. H. Betham Robinson, Dr. J. Maxwell Ross, Professor Saundby, Professor E. H. Starling, F.R.S., and Professor A. H. White.

The Medical Secretary Committee was reappointed, consisting of:

The Chairman of Council, the Past-President, the Officers of the Association, and Dr. M. Beverley, Dr. H. Radcliffe Crocker, Dr. Bruce Goff, Dr. J. Groves, Sir Victor Horsley, F.R.S., Mr. Edmund Owen, Professor Robert Saundby, and Mr. T. Jenner Verrall.

The Special Chloroform Committee to consist of:

Dr. James Barr, Dr. T. G. Brodie, Dr. Dudley Buxton, Dr. H. Radcliffe Crocker, Professor Dunstan, F.R.S., Professor Vernon Harcourt, F.R.S., Sir Victor Horsley, F.R.S., Dr. W. J. McCardie, and Professor C. S. Sherrington, F.R.S.

At a meeting of the Council, held in the Examination Schools, Oxford, on Friday, July 29th, 1904:

Present:

Mr. ANDREW CLARK, Chairman of Council, in the Chair.

Dr. WILLIAM COLLIER, President.

Dr. T. D. GRIFFITHS, Past-President.

Sir VICTOR HORSLEY, F.R.S., Chairman of Representative Meetings.

Dr. E. MARKHAM SKERRITT, Treasurer.

Dr. JOHN FORD ANDERSON, London.
Dr. E. G. BARNES, Eye.
Dr. JAMES BARR, Liverpool.
Dr M. BEVERLEY, Norwich.
Dr. J. BRASSEY BRIERLEY, Old Trafford.
Dr. R. COCHRANE BUIST, Dundee.
Dr. DUNCAN BURGESS, Sheffield.
Professor J. W. BYERS, M.D., Belfast.
Dr. W. A. CARLINE, Lincoln.
Dr. EDWARD J. CAVE, Bath.
Mr. PEARSON R. CRESSWELL, C.B., Dowlais.
Dr. GEORGE W. CROWE, Worcester.
Dr. P. MAURY DEAS, Exeter.
Lieutenant-Colonel E. F. DRAKE-BROCKMAN, I.M.S. (ret.), (South Indian and Madras Branch), London.
Dr. G. B. FERGUSON, Cheltenham.
Mr. C. E. S. FLEMMING, Bradford-on-Avon.
Dr. JOHN H. GALTON, Upper Norwood.
Dr. BRUCE GOFF, Bothwell.
Dr. D. GOYDER, Bradford.
Dr. J. B. GREATHEAD (Grahamstown and Eastern Province Branch), London
Dr. MAJOR GREENWOOD, London.
Dr. J. GROVES, Carisbrooke.
Dr. JAMES HAMILTON, Glasgow.
Dr. T. ARTHUR HELME, Manchester.
Dr. J. H. HUNTER, South Shields.
Mr. R. H KINSEY, Bedford.
Dr. P. O. MALABRE (Jamaica Branch), Southport.
Dr. C. H. MILBURN, Hull.
Dr. C. G. D. MORIER (South Australia Branch), London.
Mr. W. JONES MORRIS, Portmadoc.
Dr. CHARLES JAMES MORTON, London.
Dr. J. MURRAY, Inverness.
Mr. D. A. O'SULLIVAN, London.
Mr. C. H. W. PARKINSON, Wimborne Minster
Dr. F. M. POPE, Leicester.
Dr. EDWIN RAYNER, Stockport.
Dr. J. MAXWELL ROSS, Dumfries.
Professor ROBERT SAUNDBY, M.D., LL.D., Birmingham.
Dr. CECIL E. SHAW, Belfast.
Professor W. R. SMITH, M.D. (Malta and Mediterranean Branch (London
Mr. W. D. SPANTON, Hanley
Mr. JOHN LYNN THOMAS, C.B., Cardiff.
Dr. W. J. TYSON, Folkestone.
Mr. T. JENNER VERRALL, Brighton.
Dr. NORMAN WALKER, Edinburgh.
Dr. DENIS WALSHE, Graigue.

The Chairman of Council reported that the Council had met for the purpose of considering the resolutions passed by the Representative Meeting and deciding whether a referendum was necessary under Article XXII (2), should any of the resolutions, in the opinion of the Council, not properly represent the wishes of the Association.

In reference to the following minute of the Representative Meeting,

> That this meeting approves of the principle of the registration of nurses;
> That the foregoing resolution be transmitted to the Select Committee of the House of Commons which is now sitting;

it was moved and seconded:

That this Council orders a Referendum to be taken in regard to the foregoing minute relating to the principle of the registration of nurses.

The motion having been put from the Chair was declared to be lost.

In reference to the following minute of the Representative Meeting,

> That the Council of the Association be instructed forthwith to take the steps necessary to obtain the alterations in the Memorandum of Association contained in the Birmingham resolutions, subject to such modifications as are required to harmonize them with the present articles, submitting the same for adoption by extraordinary general meeting in their amended form as a special resolution, before application to the High Court, if legally advised necessary,

it was moved and seconded:

That this Council orders a Referendum to be taken in regard to the resolution instructing the Council to take the steps necessary to obtain the alterations in the Memorandum of Association contained in the Birmingham resolutions.

The motion having been put was declared to be lost.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

COLOMBO, CEYLON BRANCH.

THE first meeting of the year was held on Saturday, January 30th, when the Hon. Dr. W. G. ROCKWOOD, the President, took the chair, and eighteen members were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—Three new members—Dr. Aldo Castellani, Dr. S. A. Sittampalam, and Lieutenant P. J. Bodington, R.A.M.C., of Colombo—were elected.

Resignation.—Dr. Geo. P. Schokman's resignation was accepted with much regret.

The late Sir W. R. Kynsey.—The Branch regretted the death of Sir W. R. Kynsey, late P.C.M.O. and I.G.H., of the Ceylon Medical Department, and sent telegrams of condolence to Lady Kynsey and Mrs. Buckworth.

Medical Certificates to Government Officers.—Dr. J. C. NICHOLAS (Colombo) proposed the following resolution:

That this Association requests the Ceylon Government to authorize heads of departments to accept medical certificates granted to Government officers by qualified medical men other than those in Government service.

—After a long discussion it was decided by vote that a letter be sent by the President of the Branch to the Honourable the Colonial Secretary of Colombo for his consideration regarding the above resolution. The following letter was forwarded to the Honourable the Colonial Secretary regarding the same:

Sir,—I have the honour to invite your attention to a grievance which is felt by the qualified medical practitioners of the Colony. They complain that the heads of certain Government departments refuse to accept their certificates stating that an official of that department is ill, while the heads of other Government departments accept the same. Consequently they are in the invidious position of being unable to tell their patients whether the certificate which they give them is valid or not.

In consequence of this difficulty the following resolution was passed at a meeting of the Ceylon Branch of the British Medical Association held on January 30th, 1904, by the vote of the majority present:

"That this Association requests the Ceylon Government to authorize heads of departments to accept medical certificates granted to Government officers by qualified medical men other than those in Government service."

I respectfully beg to ask that you will kindly give the matter your

favourable consideration, and request you to favour me with a reply to lay before the Branch.

I am, Sir,
Your obedient servant,
(Signed) W. G. Rockwood, M.D.,
President, British Medical Association,
Ceylon Branch.

An ordinary meeting was held on Saturday, March 26th, the Hon. Dr. W. G. Rockwood, President, in the chair. There were fourteen members present.

Confirmation of Minutes.—The minutes of the two previous meetings were read and confirmed.

Delegate to Annual Meeting.—It was proposed by Dr. H. Marcus Fernando and seconded by Dr. Albert J. Chalmers, that Mr. C. B. Lourensz, then in England, should be elected delegate to represent the Branch at the annual meeting of the British Medical Association, to be held at Oxford from July 26th to July 30th, 1904.

Medical Certificates to Government Officers.—The Honorary Secretary next read the following letter received from the Honourable the Colonial Secretary, Colombo, dated March 14th, 1904, regarding medical certificates to Government officers, in reply to the President's letter of February 11th, 1904:

Sir,—I am directed to acknowledge the receipt of your letter of February 11th, 1904, forwarding a resolution passed at a meeting of the Ceylon Branch of the British Medical Association, held on January 30th, 1904, requesting Government to authorize heads of departments to accept medical certificates granted to Government officers by qualified medical men other than those in Government service.

2. In reply, I am to invite your attention to Leave Regulation No. 5 (*vide* p. 215 Ceylon Civil List Edition, 1904), which rules that when an application for leave or an extension of leave is based on the ground of ill-health, a certificate from a Government medical officer should invariably be sent in. His Excellency the Governor has ordered that this rule should be adhered to, and heads of departments will be directed to observe it strictly in order that the anomaly referred to in the opening paragraph of your letter may be obviated.

I am, Sir, your obedient servant,
(Signed) A. G. Clayton,
For Colonial Secretary.

—After a long discussion regarding the above matter, Dr. W. H. de Silva gave notice of a motion which he would bring forward at the next meeting.

DORSET AND WEST HANTS BRANCH.

The summer meeting of this Branch was held at the Grand Hotel, Swanage, under the Presidency of Mr. A. J. H. Crespie. There were also present twenty-nine members and visitors. It was resolved unanimously that John Ward Cousins, M.D., F.R.C.S., and Sir Constantine Holman, M.D., be elected associate members of the Branch. It was resolved that the next meeting be held at Yeovil conjointly with the West Somerset Branch. It was resolved that the Branch offer no opposition to the transference of the Shaftesbury members to the Southern Branch. Mr. Hosken, one of the Vice-Presidents, with an able paper opened a discussion upon epilepsy, in which the President, Dr. Snow, Dr. Lush, Mr. Curme, Mr. Philpots, and Dr. Alderson took part. The members and visitors lunched at the hotel previous to the meeting.

GLASGOW AND WEST OF SCOTLAND BRANCH:

Glasgow Eastern Division.

The annual meeting of this Division was held on June 1st. Dr. William Findlay presided over a comparatively small attendance.

Minutes.—The minutes of the last meeting (November 6th, 1903) were read, approved, and signed by the Chairman.

Contract Practice.—The Secretary read a communication from the Secretary of the Local Committee on Contract Medical Practice, two members of which are elected by the Division, announcing five resolutions accepted by the meeting of practitioners in the Faculty Hall, Glasgow, on May 11th, and asking that they may be empowered to proceed with the inquiry. As this communication had not been received in time to be printed in the billet, it was decided that the matter be left over in the meantime.

Model Rules.—The draft model rules of a Division to regulate the procedure thereof in ethical matters were accepted, with the provision that the Executive Committee of this Division take upon itself the duties of an Ethical Committee.

Medical Witnesses.—The President announced that the Executive Committee had discussed this question, and had come to the conclusion that consultation of medical witnesses was not practicable and therefore not to be recommended. This finding was accepted by the Division.

Hydropathic Advertisements.—The question of advertising of medical practitioners in connexion with hydropathic establishments was then discussed, and the finding of the Executive Committee on this matter accepted—namely, that the alleged grievance did not exist in this district, and that no recommendation on the subject be made.

Medical Defence.—The Secretary announced the result of the poll on the medical defence scheme of the Association as follows: Favourable replies, 21; negative replies, 11; neutral replies, 2; no replies, 46. Of the favourable replies only 12 signed the form of undertaking to join a medical defence department.

Office-bearers.—The following were elected office-bearers for 1904-5: *President:* Dr. William Whitelaw. *Vice-President:* Dr. W. L. Muir. *Secretary and Treasurer:* Dr. John Patrick. *Representatives on Branch Council:* Dr. Millar Semple, Dr. John Patrick. *Representative to Annual Meeting at Oxford:* Dr. William Patrick. *Executive Committee:* Dr. William Findlay, Dr. Service, Dr. P. S. Buchanan, Dr. Malcolm Black, Dr. William Bryce, Dr. W. B. Armstrong, Dr. Hamilton Marr, Dr. J. McKie, Dr. Davidson.

Communication.—The Secretary read a short communication from the Exeter Division on the general policy of the profession.

LANCASHIRE AND CHESHIRE BRANCH:

Chester Division.

An ordinary meeting of the Chester Division was held in the Board Room of the Chester General Infirmary on July 19th, at 4.30 p.m. In the unavoidable absence of the Chairman, Mr. Taylor, the chair was taken by Dr. Stolterfoth.

Reports and Resolutions.—The report of the last meeting was taken as read as it had appeared in the British Medical Journal. The report of the Executive Committee was then read and approved of, as also the following propositions which had been suggested by it. Proposed by Dr. Mann, and seconded by Dr. Jephcott:

That the Division approves of the by-laws proposed by the Council of the Association.

—Proposed by Dr. Hamilton, seconded by Dr. Stolterfoth:

That the amendment proposed by the Folkestone Division be supported.

—Proposed by Dr. Mann, seconded by Dr. Parry:

That the instruction to the Representative respecting the other notices of motion and all other matters on the agenda be to use his own discretion and to vote as he thinks best in the interests of the Division.

—These three propositions were carried *nem. con.*

Vote of Thanks.—A vote of thanks to the Chairman concluded the meeting.

METROPOLITAN COUNTIES BRANCH:

Hampstead Division.

A meeting of this Division was held at the Hampstead Conservatoire on July 21st, at 4.30 p.m.; Dr. Heath Strange took the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Executive Committee.—The meeting unanimously elected Dr. C. W. Cunnington and Miss May B. Doine to fill the two vacancies in the Executive Committee.

The Filling of Temporary Vacancies.—The following rule was, on the proposition of Drs. Humphreys and Cunnington, agreed to:

In the event of the death or resignation of any officer of the Division, or of his ceasing to be a member of the Division, the Executive Committee shall appoint some member of the Division to hold the office thereby vacated until the next annual meeting.

Branch Rules.—The Metropolitan Counties Branch rules were discussed, and the Secretary was instructed to forward the recommendations of the meeting to the Secretaries of the Branch.

SHROPSHIRE AND MID-WALES BRANCH.

The last meeting of this Branch under its old name was held at the Salop Infirmary on Tuesday, May 3rd, at 3 p.m. The President, Dr. F. K. Pigott, was in the chair, and thirty members were present.

Minutes and Financial Statement.—The minutes of the last meeting were read and confirmed, and the financial statement of the Branch Council approved.

Medical Witnesses.—Upon the motion of Mr. Jackson, seconded by Dr. Law Webb, it was resolved:

That this Division considers it most desirable that the medical witnesses engaged on either side in legal cases should meet in consultation at a convenient date prior to the trial of such case.

Hydropathic Advertisements.—It was proposed by Dr. Cureton, seconded by Dr. Bowen-Davies, and carried *nem. con.*:

That this Branch (Division) considers that any resolution drafted against advertising the names of medical officers to hydropathic establishments should be made to include in its scope all other establishments of a similar character.

Medical Defence.—The Secretary communicated the result of the voting upon this subject. Only three members had returned affirmative papers.

Paper, etc.—Mr. Gilbert Barling read an instructive paper, Some Observations on Enlarged Prostate, with special reference to Enucleation. It was illustrated by lantern slides.—Dr. King, of Ludlow, showed a specimen of ovarian tumour removed successfully (ior axial rotation) during the fourth month of pregnancy.

By the invitation of the President, members partook of tea at the Infirmary after the meeting.

SYDNEY AND NEW SOUTH WALES BRANCH.

The regular monthly meeting of the Branch was held at the Royal Society's Rooms, Sydney, on Friday, April 29th, Dr. A. MacCormick President, in the chair. There were thirty-nine members present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Communications.—Dr. G. E. Rennie read a paper on myasthenia gravis, with notes of two cases. Drs. Crago, Charles MacLaurin, Gordon Craig, Mills, Sinclair Gillies, and Jamieson discussed the paper; and Dr. Rennie replied.—Dr. Stacy read a record of necropsies, with clinical notes. Drs. Jamieson, Rennie, and Litchfield made some remarks on the paper; and Dr. Stacy replied.—Dr. Maitland read notes on three cases: (1) A case of severe and prolonged mononephros haemorrhage; nephrectomy; (2) a rare form of tumour of the small intestine; excision with end-to-end anastomosis; (3) a congenital malformation of the gall bladder complicated with cholelithiasis; removal of gall bladder. A discussion ensued, in which Drs. Hinder, Bowker, Corlette, Sydney Jones, Litchfield, MacCormick took part; and Dr. Maitland replied.

The regular monthly meeting of the Branch was held at the Royal Society's Rooms, Sydney, on Friday, May 27th, Dr. MacCormick, President, in the chair. There were forty-one members present. An apology was received from Dr. Abbot, Acting Honorary Secretary, for non-attendance.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Elections.—The President announced the nomination of the following members: Dr. Eames, Dr. A. C. Macarthur, Dr. A. G. Corbin, Dr. L. W. Roberts, Dr. J. S. Gutheridge, Dr Rees F. Llewellyn.

Papers.—Dr. Charles MacLaurin read a paper on "Peritonitis or Ileus?" A discussion ensued, in which Drs. Hinder, Worrall, MacCormick took part; Dr. MacLaurin replied.—Dr. Hinder read a paper on conservatism in renal surgery. Drs. Maitland, Worrall, Bowker, and Binney discussed the paper, and the author replied.—Dr. Litchfield read a paper (for Dr. Wade) on the recent epidemic of infantile paralysis, and one for himself on the same subject. A discussion ensued, in which Drs. Mills, Millard, MacDonald Gill, Jamieson, Sinclair Gillies, and Binney took part; Dr. Litchfield replied.

ULSTER BRANCH.

The twenty-sixth annual meeting of this Branch was held in the Medical Institute, Belfast, on July 20th, at 3 p.m. The President, Dr. Thomas McLaughlin, Derry, occupied the chair, and there was a large attendance.

Confirmation of Minutes.—The minutes of the last annual meeting were read and confirmed.

Apologies for Absence.—Professor Byers apologized for the unavoidable absence of Dr. Calwell, Honorary Secretary, Dr. Cecil Shaw, and Mr. A. Fullerton.

Annual Report.—The adoption of the annual report of the Council and statement of accounts were moved by Dr. Darling, Lurgan, seconded by Dr. Watson, and passed.

Branch Rules.—In the absence of Dr. Calwell, the following amendments to the Branch rules were moved by Dr. Mitchell, seconded by Dr. Coates, and passed:—

(*a*) That the immediate ex-President of the Branch and the Division Representatives on the Representative Body be *ex-officio* members of the Branch Council; so that Rule 3 will read as follows:—"3. The management of the affairs of the Branch shall be vested in the Branch Council, which shall consist of the officers named in Rule 4, together with the members of the Central Council of the Association elected by the Branch, the immediate ex-President of the Branch, the Representatives of the Divisions on the Representative Body, and the members elected by the Division in the manner prescribed in Rule 6."

(*b*) That the words "Presidents of the Divisions" in Rule 4, line 7, page 2, be deleted, and the words "Chairmen of the Divisions" be substituted.

(*c*) That the following paragraph be added to Rule 4:—"In case no nominations be received from individual members, no voting papers shall be sent out; but the nominations of the Council, together with the returns from the Divisions, shall be printed on the notice paper summoning the Annual Meeting, and the whole results shall be submitted to the Annual Meeting for confirmation."

Election of Officers.—The following were elected office-bearers for 1904-5, forming the Council of the Branch:—*President:* *Professor J. A. Lindsay, M.D., F.R.C.P. *Ex-President:* Dr. Thomas M'Laughlin. *Vice Presidents:* Lieut.-Colonel Allison, Dr. Calwell, Dr. S. H. B. Allison, and Dr. Taylor. *Members Elected by Divisions:* North-East—Dr. Martin (*Secretary*) and two others; Belfast—Dr. Craig (*Secretary*), Dr. Mitchell (*Representative*), Sir W. Whitla, Dr. J. Campbell, Mr. A. Fullerton, Dr. G. St. George, Dr W. Donnan, and Dr. H. J. Boyd; Derry—Dr. Cooke (*Secretary* and *Representative*), Dr. Thomas M'Laughlin, and Dr. James Craig; Portadown—Dr. Darling (*Secretary* and *Representative*), Dr. Agnew, Dr. Lawless, and Dr. Brownrigg. *Representatives on Central Council of the Association:* *Professor J. W Byers and *Representative*), Dr. Thomas M'Laughlin, and Dr. James Craig; Portadown—Dr. Darling (*Secretary* and *Representative*), Dr. Agnew, Dr. Lawless, and Dr. Brownrigg. *Representatives on Central Council of the Association:* *Professor J. W Byers and *Dr. Cecil Shaw. *Honorary Treasurer:* *Dr. Darling. *Honorary Secretary:* *Dr. Cecil Shaw. Those names marked (*) are nominated by the Council; the others are returned by the Division.

Resignation of Dr. Calwell.—On the motion of Professor Byers, seconded by Dr. J. W. Watson (Limavady), the following resolution was unanimously passed:

That the resignation by Dr. W. Calwell of the post of Secretary of the Ulster Branch be accepted with extreme regret, and that the best thanks of the members be given to him for his valued and unwearied devotion to the duties of the office he has now resigned.

Death of Dr. McKeown.—Dr. J. W. Watson, having very feelingly referred to the death of Dr. McKeown, ex-President of the Branch, moved, as an old College friend of his:

That a record be placed on the minutes expressing the great loss the Ulster Branch had suffered owing to Dr. McKeown's recent removal by death, and that a vote of condolence be sent to his widow.

—This was seconded by Dr. Agnew (Lurgan) and carried unanimously.

YORKSHIRE BRANCH:

Huddersfield Division.

At the annual meeting of the Division held on July 15th the following officers were elected:—*Chairman:* T. Smailes. *Vice-Chairman:* Mr. Norman Porritt. *Honorary Secretary and Treasurer:* Mr. J. G. Rowell. *Representative on Branch Council:* Mr. Norman Porritt. *Executive Committee:* J. Irving, M.B., Mr. J. W. Draper, Mr. T. H. Haigh, Mr. S. G. Moore, Mr. H. Pullen, Mr. S. Knaggs, and E. Walker, M.D.

THE ASSOCIATION AND MEDICAL DEFENCE.

Sir,—In the copy of the British Medical Journal of August 6th, I find in your leader the following in reference to medical defence:

It may be permissible to point out that the existing medical defence societies will accept a grave responsibility if they do not enter into the negotiations now proposed . . . with a desire to come to some equitable arrangement whereby the benefits of medical defence which they themselves have had the wisdom to secure may be extended to the whole body of the British Medical Association.

This statement of the position may unintentionally give rise to a mistake. Each individual member of the whole body of the British Medical Association within the United Kingdom can secure to himself or herself at the present time the benefits and the security of medical defence by joining one of the existing defence societies, and in no sense is any member of the Association other than welcomed by such

societies. I do not suppose that any defence committee of the Association could undertake the protection of any of its members outside the United Kingdom.—I am, etc.,

M. Arden Messiter,
Anglesey, Aug. 8th. President, Medical Defence Union.

ANNUAL REPRESENTATIVE MEETING.

Sir,—Allow me to congratulate you on the report of Representative Meetings. There is one alteration I ask you to note. Page 121, Resolution No. 8. I did not say I thought it would be well to leave the by-law as it now stood. On the contrary, I approved of the resolution, only I thought a smaller number than "20" would be preferable.—I am, etc.,

Salford, Aug. 7th. R. H. Wolstenholme.

THE ANNUAL MEETING: A CORRECTION.

Sir,—In the last number of the British Medical Journal, p. 285, you refer to a communication I made at Oxford upon teeth, and you give my name as Dr. Mildred Sims.

There may be doubts as to my scientific results, but I can certainly say that there can be no doubt as to my sex.—I am, etc.,

H. W. Marett Tims.

King's College, Cambridge, Aug. 9th.

The Annual Exhibition
OF
FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[Concluding Notice.]

Books, etc.

Macmillan and Co., Limited, afforded members a convenient opportunity of examining the works which this firm publishes on general medicine and surgery and the various specialities. Amongst others were Allbutt's *System of Medicine* and Allbutt and Playfair's *System of Gynaecology*; the works of Lauder Brunton; *The Healing of Nerves*, by Charles A. Ballance; *Appendicitis. its Pathology and Surgery*, by Lockwood; *Vaccination, its Natural History and Pathology*, by Copeman; *Modern Methods in the Surgery of Paralysis*, by Tubby and Robert Jones; and *The Treatment of Injuries by Friction and Movement*, by Wharton P. Hood.

W. and A. K. Johnson had an exhibit of diagrams on hygiene as published by the firm under the direction of Dr. Collie, Medical Officer of the late London School Board. They have been found very useful in illustrating the health lectures now so common. There was also shown a series of anatomical and physiological diagrams prepared by Sir William Turner.

H. K. Lewis (136, Gower Street, W.C.) exhibited a large selection of the medical, surgical, and scientific works published by this firm, and also some of those for which Cassell and Co. are responsible. Amongst the former were the well-known Practical Series, and the Cambridge Biological, Geological, and Physical Series, also the more recent publications of the New Sydenham Society. This includes Fasc. 1 to 11 of an *Atlas of Clinical Medicine, Surgery, and Pathology*. The books shown for Messrs. Cassell included *Therapeutics of Mineral Springs and Climates*, by I. Burney Yeo; Sir Frederick Treves's *Surgical Applied Anatomy*; the same author's *Operative Surgery*, and many other well-known works.

W. B. Saunders and Co. (9, Henrietta Street, London) had upon view a large array of their Medical Hand Atlases, and a number of their other publications. Among the latest was Barton and Wells's *Medical Thesaurus*, Hirst's *Diseases of Women*, and Pusey and Caldwell on *X Rays in Therapeutics and Diagnosis*.

John Bale, Sons, and Danielsson, Limited (Oxford House, Great Titchfield Street, W.), had upon view a large selection of the scientific works which this firm publishes. They included brain diagrams (engraved on slates), anatomical lecture diagrams, specimens of monochrome process blocks, together with a number of the periodicals published by the firm, clinical charts and figures, reports, case-books, and general medical works.

John Wright and Co. (Bristol) had upon view a large selection of their medical works, including the *Medical Annual* and the advance sheets of a work upon *Diseases of the Ear*, by James K. Love, M.D. It is profusely illustrated with stereoscopic photographs. There were also to be seen Warwick and Tunstall's *First-Aid Diagrams*, for use at lectures and classes, together with selections from the firm's well-known medical account books, visiting lists, and charts.

Messrs. J. P. Lippincott Company (5, Henrietta Street, Covent Garden) displayed a large number of the medical, nursing, and general scientific works published by the firm. The exhibit included the *Photographic Atlas of Diseases of the Skin* of Dr. G. H. Fox. The firm's own *Pocket Medical Dictionary* and a good many works by American authors have not at present become so popular over here as they are in America.

Food and Mineral Water.

Bovril, Limited (152-156, Old Street, City Road, E.C.), showed a number of their preparations, the majority of which it is superfluous to describe, as they are already thoroughly well known and appreciated. The various Ration Cartridges, some of which may alternatively be eaten unprepared or converted into soup, were originally intended for the use of soldiers, but have gained considerable popularity amongst travellers, cyclists, and others who desire to carry food about with them in a handy form.

The Shredded Wheat Company (C. E. Ingersoll, 6 and 8, Eastcheap, London) showed in various forms the preparation for which the firm is already well known. The wheat used is not deprived of the germ coats and of a large part of the gluten, as is the case with white flour such as is used for bread. We have ourselves referred to it before as valuable and agreeable food product, and Dr. Robert Hutchison in his work on *Food and Dietetics*, stated that it represented the whole grain in a very digestible form. Various dishes were on view of a kind suitable for invalids and people of weak digestion. The wafer form Triscuit is, it is stated, coming into common use by people undergoing "cures" at various health resorts.

The Perrier Water Company (New Bond Street, W.) is a new competitor for public favour. The Perrier water which it is introducing is a natural water drawn from some springs in a plain some nine miles from Nîmes in France. It is a table water containing but a small proportion of salts of any kind, but so heavily charged with carbonic acid gas that the small lake into which the spring was until recently allowed to waste itself has for centuries been known as *les bouillens*. It should be a formidable rival to other waters of its class.

BRITISH MEDICAL ASSOCIATION LIBRARY.

List of Presentation of Books, etc.

Presented by the Authors:
- Dukes, Clement. Health at School. 3rd edition. 1894.
- ——— School Diet. 2nd edition. 1899.
- Hopewell Smith. Histology and Histopathology of the Teeth. 1903.
- Juler, Henry. Ophthalmic Science and Practice. 3rd edition. 1904.
- Lewers, A. H. N. Practical Textbook of the Diseases of Women. 6th edition. 1903.
- Parkes and Kenwood. Public Health. 2nd edition. 1902.
- Poynton, F. J. On Rheumatic Fever. 1904.
- Rideal, S. Water and Water Purification. 2nd edition. 1902.
- Sawyer, Sir James. Contribution to Practical Medicine. 4th edition. 1904.
- ——— On Insomnia. 1904.
- Senn, N. Surgical Notes from Four Continents and the West Indies. 1903.
- Thomson, Major G. S. A Treatise on Plague. 1901.
- Watt, D. Campbell. Medical Ethics. 1903.

Presented by the Widow of the late Dr. Dale (Lostwithiel):
- Carswell. Pathological Anatomy (imperfect). 1835.
- Hind. Illustrations of Fractures. 1835.
- Monro, jun. Abdominal Viscera (engravings). 1814.
- Sibson. Medical Anatomy. 1869.
- Scarpa. (Plates.) Aneurysme. 1815.
- ——— (Plates.) Traité des Hernies. 1812.

Presented by George Jones, Esq., M.R.C.S., Lee:
- Cooper, Sir A. Fractures and Dislocations. 1842.
- Laennec. Mediate Auscultation. 1846.

Presented by the New Sydenham Society:
- Atlas of Illustrations in Clinical Medicine and Surgery. 1903.

Presented by Dr William Ogle (Derby):
- British Medical Journal. 1854-6.
- *Medical Times and Gazette* 1872-6
- Oppert. On Hospitals, Infirmaries, and Dispensaries. 2nd edition. 1883.

Presented by W. D. Spanton, Esq., F.R.C.S.:
- Minutes of the North Staffordshire Medical Society. 1864-85.

Presented by the Superintendent of Government Printing, Calcutta:
- Scientific Memoirs by Medical Officers. Nos. 6 and 7. 1903.

Presented by A. WALKER, Esq., M.D. (Budleigh, Salterton):
Annesley, James. Diseases of India. 2 vols. 1828.
Presented by the EDITOR of the BRITISH MEDICAL JOURNAL:
Ahlfeld, F. Lehrbuch der Geburtshilfe. 3 aufl. 1903.
Allchin. Manual of Medicine. Vol. 5. 1903.
Baruch. Principles and Practice of Hydrotherapy. 2nd edition. 1904.
Béclère. Les Rayons de Röntgen et le Diagnostic des Maladies Internes. 1904.
Calvert. Pharmacy and Dispensing. 2nd edition. 1903.
Choksy. The Treatment of Plague with Professor Lustig's Serum. 1903.
Cohen, S. S., System of Physiologic Therapeutics. Vol. 8. Rest. Mental Therapeutics. Suggestion. 1904.
Cooke, J. B. Nurses' Book of Obstetrics. 1903.
Dutton, J. E., and J. L. Todd. First Report on the Trypanosomiasis Expedition. 1903.
Edgar, J. C. Practice of Obstetrics. 1903.
Eisendrath, D. N. Clinical Anatomy. 1903.
Encyclopedia Medica. Vol. 14. Index.
Fothergill, W. E. Midwifery. 3rd edition. 1903.
Gadd, H. W. Drugs, their Production, Preparation and Properties. 1904.
Hulbert, H. H. Natural Physical Remedies in the Treatment of Disease. 1903.
James, Captain S. P. Causation and Prevention of Malarial Fevers. 2nd Ed. 1903.
Jellett, H. Practice of Gynaecology. 2nd Ed. 1903.
Khory and Katrak. Materia Medica of India. 2 vols. 1903.
King, W. H. Electricity in Medicine and Surgery. 1902.
Marshall. Stretcher Drill. 1904.
Noorden, C. Disorders of Metabolism and Nutrition. III, Colitis. 1903 IV, Autointoxication 1903.
Rockwell. Medical and Surgical Electricity. 1903.
Roger, G. H. Introduction a l'étude de la Médecine. 2nd Ed. 1904.
Scott, H. H. Compounding and Dispensing Made Easy. 1903.
Skinner, C. E. Therapeutics of Dry Hot Air. 1902.
Stephens and Christopher, Malaria. 1903.
Sutherland. Dispensing Made Easy.
Toldt. Atlas of Human Anatomy. Sections I, II, III. 1904.
Turner, Dawson. Medical Electricity. 3rd Ed. 1903.
Wiggins, W. D. Midwifery for Midwives. 1904.
Williams, Chisholm. High Frequency Currents in the Treatment of Some Diseases. 1903.
Transactions, Calendars, and Reports have been received from the following bodies:
Academy of Medicine in Ireland Transactions. Vol. 21, 1903.
Agra and Oudh Sanitary Commissioner's Report, 1902.
——— Triennial Report on Hospitals and Dispensaries, 1901.
——— Vaccination Report, 1899-1902
American Dermatological Association Transactions. Vol 26, 1903.
——— Gynaecological Society Transactions. Vol. 28, 1903.
——— Surgical Association Transactions. Vol. 21, 1903.
Assam Report on Dispensaries. 1899-1902.
——— Sanitary Commissioner's Report. 1902.
——— Vaccination Report. 1899-1902
Association of American Physicians Transactions. Vol. 18, 1903.
Bacteriologist to the Government of India Report. 1902-3.
Bengal Sanitary Commissioner's Report. 1903.
——— Report on Charitable Dispensaries. 1901-2.
——— Vaccination Report. 1899-1902.
Bombay Civil Hospitals Report. 1901.
——— Health Officer's Report. 1902.
——— Report on Plague. 1901.
——— Sanitary Commissioner's Report. 1902.
——— Vaccination Report 1900-2.
British Laryngological and Rhinological Association Transactions. 1903.
Burmah Report on Hospitals and Dispensaries. 1899-1901.
——— Report on Sanitary Administration. 1902.
——— Vaccination Report. 1901-2.
Central India, Report on Dispensaries. 1900-1.
Central Provinces Sanitary Report. 1901.
Ceylon Administration Report. 1902.
Clinical Society of London Transactions. Vol. 36. 1903.
Dublin University Calendar. 1903-4.
General Medical Council Minutes. 1903.
Guy's Hospital Reports. Vol. 58. 1904.
His Majesty's Inspector of Factories Report. Supplement. 1902.
Hyderabad Assigned Districts. Report on Sanitary Administration. 1902.
——— Civil Hospitals. 1901-2.
——— Vaccination. 1901.
Johns Hopkins Hospital Reports. Vol. ii. 1903.
Kashmir Cholera Report. 1900-1.
Laryngological Society of London Proceedings. 1904.
Life Assurance Medical Officer's Association Transactions, 1900-1. 1902.
London County Council Medical Officer's Report. 1902.
Local Government Board. Second Report on Lead Poisoning and Water Supplies. 1904.
Madras. Report on Civil Hospitals. 1901.
——— Report of Sanitary Commissioner. 1902.
——— Vaccination Report. 1901-2.
Massachusetts State Board of Health Report. 1903.
Navy. Statistical Report of the Health of. 1902.
North-West Provinces. Report on Vaccination. 1900-1.
Obstetrical Society of London. Transactions. Vol. 45. 1903.
Ophthalmological Society of the United Kingdom Transactions. 23. 1903.
Pathological Society of London. Transactions. Vol. 54. 1903.
Pharmaceutical Society of Great Britain. Calendar. 1903-4.
Philadelphia Hospital Reports. Vols. 4 and 5. 1900-2.
Punjab. Report on Charitable Dispensaries. 1901.
——— Sanitary Commissioners' Report. 1902.
——— Vaccination Report. 1900-2.
Punjab University Calendar. 1903-4.
School Board for London. Report of the Medical Officer. 1903.
Scientific Memoirs by Medical Officers with Army in India. NS. No. 6. 1903.
Society for the Study of Disease in Children. Transactions. Vol. 3. 1903.
Southern Surgical and Gynecological Society. Transactions. 15. 1902.
Thompson-Yates Laboratory Reports. Vol. 5. 1903.
University College of South Wales. Calendar. 1903-4.

BOOKS NEEDED TO COMPLETE SERIES:

The Librarian will be glad to receive any of the following volumes which are needed to complete series in the Library:

American Climatological Transactions. Vols. 1, 4, 5, 6.
——— Dermatological Associations. Transactions. Vols. 5, 7, 8, and 11.
——— Journal of the Medical Sciences. New series, vols. 4, 5, 1842-3; vols. 14, 15, 1847-8; vols. 18-30, 1850; vol. 33, 1857; vol. 46, 1864-5; vol. 59; or any parts of these vols.
——— Journal of Ophthalmology. Vols. 1-9.
——— Laryngological Association. Transactions. Vols. 1-6, 8-9.
——— Medical Association. Transactions 1-28, 30, 31.
——— Otological Society. Transactions. Vol. 3, part 2, 1883.
——— Public Health Association. Transactions. Any vols.
Analyst. Vols. 1-24.
Archiv für Dermatologie und Syphilis. Prior to 1874, 1892, and 1893.
Annals of Surgery. Vols. 11; 13-16 and 26-27.
Archives Générales de Médecine. 1831-9 inclusive; 1846-55 inclusive; 1857-64 inclusive; 1871.
——— of Ophthalmology. Vols. 1-3, 6, 7, 14-21,
——— of Otology. Vols. 1-7, and 20, 21, 22.
——— of Pediatrics. Vols. 1-11.
Asylum Journal of Mental Science. Vol. 1, 1854,
Bentley and Trimen. Atlas of Medicinal Plants.
British Journal of Dermatology. Vol. 2, part 3.
Caledonian Medical Journal. Vol. 1 prior to 1894.
Carmichael Essays. Laffan, 1879. Rivington, 1879.
Centralblatt für Augenheilkunde. Hirschberg. All prior to 1891, Index to 1891.
——— für Bakteriologie. Bound volumes prior to 1899.
——— für klinische Medicin. 1880-3; all 1888, 1891, No. 26; 1892, No. 17.
——— für medicinischen Wissenschaften. Vols. 1-19.
Congrès Français de Chirurgie. Transactions 1, 2, 3, 6, and 10.
——— Internat. d'Obstétrique et de Gynécologie. 3, Amsterdam, 1899.
Connecticut State Board of Health Report. Vol. xi. 1887-8.
Denman. Midwifery. 1801.
Dermatological Congress. Vienna, 1892, and Paris. 1900.
Dublin Quarterly Journal of the Medical Sciences. Vols. 1-10, 13-28, 35-40.
Edinburgh Medical and Surgical Journal. Vols. 67-82. 1847-55.
——— Obstetrical Society. Transactions. Vol. 5.
Gale. Surgery. 1563.
Glasgow Medical Journal. 1833-68.
——— Pathological Society. Transactions. Vols. 1 and 2.
Guy's Hospital Gazette. Nos. 1 and 5, 1872; and 1881-1886 inclusive.
Hunterian Transactions containing 76th Report.
Indian Medical Gazette. 1866-84.
International Congress of Hygiene. Congresses 1 to 6 and 10 to 12.
——— Ophthalmological Congress. Transactions of 5th, New York, 1876.
Johns Hopkins Hospital Bulletin. Vols. 1-10.
Journal of Laryngology. Vols. 1-9.
Lancet, 1850, vol. 2, pages 425-6, and August 23rd, 1851.
Pediatrics, prior to 1902.
Ophthalmic Review, January, 1882.
Pathological Society of London. Transactions. vol. iii, 1851.
Pollatschek. Therapeutische Leistungen des Jahres. 1894, 1895, 1900
Provincial Medical and Surgical Journal. March to September, 1841.
Recueil d'Ophtalmologie. 1891, Jan.-June; 1892, December.
Registrar-General's Decennial Report, 1871-80.
Revue Générale d'Ophtalmologie. Prior to 1888, and 1891-2.
St. Bartholomew's Hospital Gazette. Vols. 1-6.
St. George's Hospital Gazette, 1-7,
St. Mary's Hospital Gazette. 1-5.
Semaine Médicale. Prior to 1890, and title and index to year 1892.
South African Medical Journal. February, April, 1895. And titles for vols. 3 and 4.
Turner (D.). Art of Surgery. Vol. 2. 1725.
University College Hospital Reports. Before 1877 and 1892-3.
Virchow's Archiv. Any vols. prior to 151.
Wiener klinische Wochenschrift. Nos. 5 and 6. 1899. Titles 1892 and 1888.
Willcock. Laws of the Medical Profession. 1836.
Ziemssen's Cyclopaedia. Supplem. vol.

Applications for duplicates from medical societies forming librarie may be addressed to the Librarian, 429, Strand.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

MEMBERS are reminded that the Library and Writing Rooms of the Association are fitted up for the accommodation of the members in commodious apartments, at the office of the Association, 429, Strand. The rooms are open from 10 a.m. to 5 p.m. Members can have their letters addressed to them at the office.

GUY ELLISTON, *General Secretary.*

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

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Proceedings of Standing Committees.

HOSPITALS COMMITTEE.

A MEETING of the Hospitals Committee was held at the offices of the Association on October 13th, 1904, when there were present: Dr. M. Beverley (Chairman) in the chair, Dr. William Collier (President), Mr. Andrew Clark (Chairman of Council), Dr. J. Brassey Brierley, Dr. E. Lawrence Fox, Dr. John Rogerson Hamilton, Mr. T. Garrett Horder, Mr. Edmund Owen, Dr. Frank M. Pope.

Dr. Beverley was reappointed Chairman of the Committee.

The minutes of the last meeting were signed as correct.

A letter of apology for non-attendance from Dr. Helme was read.

PRINCIPLES OF HOSPITAL MANAGEMENT.

The Chairman reported that the principles relating to the question of Hospital Management[1] as drafted by the Committee at their last meeting were approved and adopted by the Council on July 6th, 1904.

PROPOSED REMOVAL OF KING'S COLLEGE HOSPITAL.

It was reported that the following resolution adopted by the Committee at its last meeting had been transmitted to Dr. Stoddart:

> That, inasmuch as it is the opinion of the Hospitals Committe that it is inadvisable that any charge should be made either to out-patients or in-patients at the new King's College Hospital, this Committee is unable to recommend the Journal and Finance Committee to make a grant towards the expenses of the inquiry suggested by the Lambeth, Norwood, and Wandsworth Divisions.

Dr. Stoddart had replied as follows:

> Bethlem Royal Hospital,
> London, S.E.,
> September 29th, 1904.
>
> Dear Sir,—I have to thank you for your letter of the 13th inst., which I laid before the Joint Committee of the Lambeth, Norwood, and Wandsworth Divisions to-day.
>
> In reply I am to say that the Committee is unable to understand the resolution of the Hospital Committee, because there has been no suggestion on the part of our Committee that any charge should be made either to in-patients or out-patients at the new King's College Hospital.
>
> If there appeared to be any such suggestions in my original letter of last April, it was quite unintentional on my part, and did not represent the intentions of my Committee.
>
> We, therefore, hope that the Hospitals Committee will see their way to the reconsideration of their decision.
>
> I am, dear Sir,
> Yours faithfully,
> W. H. B. STODDART,
> Honorary Secretary.
>
> To the Secretary of the Hospitals Committee,
> British Medical Association,
> 429, Strand, W.C.

The Committee adopted the following resolution:

> That Dr. Stoddart be informed that, in consequence of a misunderstanding with regard to the exact meaning of his letter (undated), the Hospitals Committee were led into a misapprehension in their reply. They are of opinion, however, that it is undesirable that provision should be made in the new King's College Hospital for the reception of paying patients. In no circumstances, however, could the Committee recommend a grant of money for the kind of investigation proposed.

RESOLUTIONS FROM THE REPRESENTATIVE MEETING AT OXFORD.

The following resolutions passed by the Representative Meeting at Oxford and referred to this Committee[2] were then considered:

> 112. In order to reduce the present misuse of Charity Trust Funds put at the disposal of hospitals, the constant necessity of hospitals appeals, the indiscriminate issuing of "commends" for treatment, as also the consequent gradual reduction now taking place in the scope offered for practice to general practitioners through this largely-increasing attendance of the laity at hospital out-patients' departments, hospital authorities should endeavour to make obligatory;
>
> 1. The presentation of a form signed by a medical practitioner.
> 2. That this form should be produced by all before they receive a second gratuitous visit or consultation, or apply for admission to the hospital for treatment.

[1] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, July 16th, 1904, p. 50.

[2] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, August 6th, 1904, p. 125.

113. That a copy of the above resolution be sent (by a deputation if possible) to the King Edward Hospital Fund Committee, as also to all hospital and other similar committees, together with a copy of a proposed form, and, after pointing out the necessity for same, a hope be expressed that they will use their influence to have it adopted, either alone or in conjunction with any subscriber's recommend at present in use.

114. That the Central Council of the Association are hereby asked to carry out the above resolutions and to take into their consideration the desirability of offering to make donations towards the salaries of almoners properly trained, who could thus be expected, while safeguarding the expenditure of Charity Trust Funds, to indirectly aid the interests of the local general practitioners.

It was resolved:

That as this Committee has already considered the proposals contained in the foregoing resolutions (112 and 113), it is unanimously of opinion that such proposals are inexpedient. Further, this Committee considers the latter part of resolution 114 undesirable.

HOSPITAL LETTERS.

A communication transmitted by the Editor, containing a circular of a Benefit Society in Soho, was then considered. The circular showed that one of the inducements held out to persons invited to join the Society was the following: "Hospital letters when required by sick members."

The Committee expressed the opinion that the circumstances reported tend to illustrate the abuses which may arise in connexion with the system of hospital letters. The letter of recommendation used by the Royal Victoria Hospital, Bournemouth, was considered, and the Committee adopted a resolution expressing their regret that the names of the medical staff should be printed on the back. The Committee added that it appeared to supply another argument against the system of hospital letters in general.

SCHOOL CERTIFICATES.

The following question submitted by Mr. W. M. Beaumont, Honorary Secretary of the Bath and Bristol Branch, was considered:

"At the suggestion of a Local Education Authority, the Committee of a county hospital are considering a scheme, the object of which is to provide that, when parents require certificates of their children's unfitness to attend school, in consequence of infectious disease, they shall be supplied to them by the hospital staff, and that a fee of 2s. 6d. shall be paid in each case by the Education Authority to, and for the benefit of, the hospital." Will you kindly inform me whether it is usual (or legal) for a lay body to earn fees for its institution in this manner?

It was resolved:

That Mr. Beaumont be informed that in the opinion of this Committee the system is both unusual and undesirable, and further, that the education authority should pay for the certificate in the case of children unfit to attend school owing to illness, whether this be of an infectious nature or otherwise.

PROPOSED CONFERENCE.

The Committee decided to suggest to the Council the nomination of certain lay gentlemen to confer with the Committee, and that, previous to the conference, they be furnished with a copy of the Principles relating to Hospital Management as agreed upon at the last meeting of the Committee and approved by the Council on July 6th, 1904.

MEDICAL DEFENCE COMMITTEE.

A MEETING of the Medical Defence Committee was held at the Office of the Association on October 6th, 1904, when there were present Mr. Andrew Clark (Chairman of Council), in the chair; Dr. William Collier (President); Sir Victor Horsley, F.R.S. (Chairman of Representative Meetings); Dr. E. Markham Skerritt (Treasurer); Dr. M. Beverley, Dr. Bruce Goff, Dr. J. H. Hunter, Mr. W. Jones Morris.

The minutes were signed as correct, and letters of apology for non-attendance were read from Mr. Messiter and Dr. Walshe. On the motion of Mr. Jones Morris, seconded by Sir Victor Horsley, Dr. Heron was asked to reconsider his decision to resign his membership of the Committee.

RESOLUTIONS FROM THE REPRESENTATIVE MEETING AT OXFORD.

The resolution of the Annual Representative Meeting[1] referring back to the original Committee appointed by the Council the question of the principle of medical defence was read, as also the following resolutions:

That it be an instruction to the Committee, in framing any scheme of Medical Defence, to include both collective and individual defence.

That it be an instruction to the Medical Defence Committee to state in their scheme or statement, which shall be submitted for the approval or otherwise of the Divisions, in what way it provides for the amalgamation of the existing Medical Defence Societies.

That any scheme prepared by the Committee shall be submitted to the Divisions before March 31st, 1905.

SCHEME TO BE FORMULATED.

On the motion of Dr. Beverley, seconded by Sir Victor Horsley, it was resolved:

That the Committee formulate a scheme for Medical Defence in accordance with the instructions of the Representative Meeting.

[1] Supplement to the British Medical Journal, July 30th, 1904, p. 103.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

BIRMINGHAM AND MIDLAND COUNTIES BRANCH: COVENTRY DIVISION.

THE annual dinner of this Division was held at the Volunteer Headquarters, Coventry, on October 6th. Dr. WEBB FOWLER occupied the chair; thirty-five members and guests were present. After the dinner Dr. Webb Fowler gave his address, as chairman for the year, on a Comparison of Old and New Methods in Medicine. A short toast-list followed. Mr. SMITH WHITAKER was present as the guest of the Division, and in proposing the toast of "The Division," he reviewed briefly the work which the Divisions of the Association might be expected to accomplish, and he referred especially to the ethical aspects of this work. Other toasts and some songs brought an enjoyable evening to a close.

BORDER COUNTIES BRANCH.

THE thirty-seventh annual meeting of this Branch was held in the County Hall, Carlisle, on the afternoon of Thursday, June 30th. Dr. MAXWELL ROSS (Dumfries) the retiring President, occupied the chair, and there was a good attendance of members and their friends.

Confirmation of Minutes.—The minutes of the last meeting were read, approved, and signed by the President.

Report of Council.—The report of Council, which had been printed and circulated amongst the members, was then discussed, when the question of the disposal of the balance at the credit of the Branch under the former Constitution came up for settlement. It was unanimously agreed that this sum should be equally divided between Epsom College and the British Medical Benevolent Fund.

Irish Poor-law Medical Service.—The PRESIDENT announced that the Council that day had recommended that the following resolution be sent from the Branch to the Medico-Political Committee of the Association:

That the Branch records its sympathy with the demands to improve the status of the Irish Poor-law Medical Service, and directs that this resolution be forwarded to the Medico-Political Committee of the Association.

This was unanimously agreed to.

Election of Officers.—The PRESIDENT next announced that Sir James Crichton-Browne had been elected President-elect for the ensuing year, and that Dr. F. R. Hill (Carlisle) had been re-elected Secretary and Treasurer. The SECRETARY announced that Dr. Maxwell Ross had been re-elected without opposition as the Representative on the Central Council from the Border Counties and North Lancashire and South Westmorland Branches.

Members of Council.—The following gentlemen were then elected to the Council of the Branch: Dr. Bell (Lockerbie), Dr. Livingston (Dumfries), Dr. Murdoch (Annan), Dr. G. J. Muriel (Whitehaven), Dr. Thomson (Penrith), Dr. Powers (Southwaite).

New Members.—It was also announced that the Council had that day elected Dr. J. B. Hodge (Dumfries) a member of the Association, and Dr. W. S. Syme (Glasgow) an Associate Member of the Branch.

Places of Meeting for Next Year.—After considerable discussion it was agreed to hold a meeting in Penrith at the end of October, and another in Whitehaven about the end of March, 1905.

Introduction of New President.—Dr. MAXWELL ROSS then briefly thanked the members for their courtesy to him during

his term of office and congratulated the Branch in having for its President Dr. Henry Barnes, of Carlisle, in whose favour he then vacated the chair.

President's Address.—After thanking the members of the Branch for having elected him their President, Dr. Barnes proceeded to read a most interesting paper on the medical worthies of Cumberland, which was listened to with the greatest interest and pleasure by every one present. On concluding, Dr. Barnes was most warmly thanked on behalf of the meeting by Drs. Maxwell Ross and G. J. Muriel. Dr. Barnes, in replying, moved a vote of thanks to Dr. Maxwell Ross for the manner in which he had carried out his presidential duties, which was carried with acclamation.

Tea.—Subsequently all the members partook of a most excellent tea on the invitation of the new President.

West Cumberland Division.

A meeting of this Division was held at the Mary Hewitson Cottage Hospital, Keswick, on Friday, September 9th. Mr. G. J. Muriel (Chairman of the Division) presided, and six other members were present, besides Dr. C. D. H. Drury, of Darlington, as a visitor.

Cases.—Several interesting cases were shown by Drs. Knight and Burnett, and papers were read by Drs. Mitchell (Cockermouth) and Burnett (Keswick), which were followed by lively discussions, joined in by all present. Other minor subjects were brought up and discussed, and the meeting dispersed at about 6.15.

Tea.—The Keswick doctors kindly provided tea, which was much appreciated by those present.

Inspection of Hospital.—Prior to the meeting several members inspected the little hospital, which was admired by all for its completeness and up-to-dateness, and for its picturesqueness, both of situation and construction.

Vote of Thanks.—A hearty vote of thanks was accorded to Drs. Knight and Burnett for their kindness and hospitality.

BRITISH GUIANA BRANCH.

The third quarterly meeting of this Branch was held at the Public Hospital, Georgetown, on Friday, July 15th; Dr. C. Gomes, President, in the chair. The following were also present: Dr. J. E. Godfrey, the new Surgeon-General, Drs. J. M. de Freitas, Jardim, Hodgson, Fowler, Ozzard, Wishart, Rohlehr, Belmonte, Wharton, Ross, and the Honorary Secretary.

The late Sir David Palmer Ross.—The President, Dr. C. J. Gomes, said it was unnecessary for him to say very much about the late Sir David Ross, for they all knew what active interest he took in this Branch since he came to the colony, and until his health began to fail him. He was ever ready to give any matter connected with the interest of the Branch his warmest sympathy and support. He (the Chairman) remembered when a few years ago he approached him with a view to getting the Medical Ordinance amended in accordance with that of Trinidad, so as to facilitate the prosecution of irregular practitioners, the untiring energy and interest Sir David then took in the matter. He never rested until he got the ordinance altered to its present state, in spite of great opposition by some of the members of the Court at that time. It was also to Sir David, in a great measure, that they owed the resuscitation of the Branch, which only two years ago was to all appearance dead. He held for several years the presidential chair of the Branch, and during that time he delivered many valuable addresses, in which he gave them the benefit of his wide experience and sound professional knowledge. He had left behind him a record of a long life filled with honest work conscientiously done. He asked the members to pass the following resolution:

> That this meeting of the British Guiana Branch of the British Medical Association desires to express its profound regret at the sad loss the Branch has sustained by the death of Sir David Palmer Ross, one of its vice-presidents; and this meeting desires to record its deep sense of the loss, and that a letter of condolence be forwarded to Mrs. Lucie Smith, conveying an expression of the deep sympathy of its members.

The resolution was seconded by the Surgeon-General and unanimously agreed to.

The New Surgeon-General.—The Chairman then alluded to the elevation of the Hon. Dr. Godfrey to the distinguished position of Surgeon-General. He was sure they all looked upon this appointment on the part of the Government as a proof that Dr. Godfrey was held in the highest estimation not only socially, but that the Government acknowledged above all Dr. Godfrey's exceptional professional ability for the high post. From the moment the post became vacant it was the unanimous opinion of the whole profession, and the more enlightened public, that no one else would fill it so well as Dr. Godfrey, and this opinion the Government, he was happy to see, had endorsed. He asked the members to pass the following resolution:

> That this meeting of the British Guiana Branch of the British Medical Association desires to congratulate the Hon. Dr. J. E. Godfrey, M.B., C.M., Vice-President of this Branch, upon his well-merited elevation to the distinguished position of Surgeon-General of British Guiana.

This resolution was seconded by Dr. Ozzard, and was unanimously adopted.—Dr. Godfrey, in reply, stated that he would be happy to give his medical brethren every facility possible to conduct the important business of the Branch.

Proposed Annual Meeting of West Indian Branches.—The Surgeon-General moved:

> That this Branch should communicate with the West Indian Branches and seek their co-operation in the establishment of an annual meeting for British Guiana and the West Indies.

Dr. Ozzard seconded the motion, which was passed *nem. con.*

Appointment of Auditors.—Drs. Fowler and Ross were appointed auditors for the current year.

Operations in the Public Hospital.—The Honorary Secretary made some remarks based on the number and variety of operations performed in the male surgical wards of the Public Hospital under his charge for the past six months; he detailed the special features of the most interesting cases.—The Surgeon-General moved a vote of thanks to the Honorary Secretary for his remarks; this was seconded by Dr. Ozzard.

Proposed Revival of Annual Dinner.—The Surgeon-General suggested that the annual dinner of the Branch should be revived.

Public Hospital.—The Surgeon-General announced that the Roentgen-ray apparatus at the Public Hospital would soon be in working order.

Specimens.—Dr. W. S. Barnes: (1) Malignant epulis of the lower jaw removed by operation; (2) ainhum of the little toe.

EAST ANGLIAN BRANCH.

A meeting of the Council was held at the Kelling Open-air Sanatorium, Holt, on September 29th, at 2.30 p.m.

Confirmation of Minutes.—The minutes of the last meeting were confirmed.

New Members.—The following were elected members of the Association and Branch: W. O. Beddard, M.R.C.S., L.R.C.P. (Harleston), C. A. S. Ling, M.R.C.S., L.R.C.P. (Brightlingsea), W. Tuke-Johnson, M.R.C.S., L.R.C.P. (Carlton Colville), Miss Ethel Maud Stacy, L.S.A. (East Anglian Sanatorium, Nayland), Francis H. Weekes, F.R.C.S. (Stradbroke, Eye).

Ethical Committee.—The following were elected members of the Ethical Committee for the Branch: Mr. H. B. Walker, Dr. Barnes, Mr. Ballance, Dr. Baxter, Dr. Beverley, Dr. Cleveland, Mr. George Elliston, Sir Alan Reeve Manby, Dr. Mayo, Dr. Skrimshire, Dr. Hinnell, Dr. Nicholson.

Spring Meeting.—It was decided that the spring meeting should be held at Bury St. Edmunds.

Minimum Limit of Members of Divisions.—Mr. Ballance proposed that the present minimum limit of fifty members necessary for a Division to secure representation should be lowered to thirty or a smaller number, and this was carried unanimously.

The autumn meeting of the Branch was held at the Kelling Open-air Sanatorium on September 29th.

Communications.—Mr. T. H. Morse (Norwich) read a paper entitled, Some Points in the Treatment of Appendicitis, illustrated by the results of 40 operations. Dr. F. W. Burton-Fanning (Norwich) read a paper entitled, Observations upon Sanatorium Work.

The late Sir Frederic Bateman.—A vote of condolence to the family of the late Sir Frederic Bateman was proposed by Dr. Beverley, and carried unanimously.

Exhibition of Surgical Instruments.—Messrs. Down Bros. exhibited a number of surgical instruments.

GRAHAMSTOWN AND EASTERN PROVINCE BRANCH.

A meeting of this Branch was held at Steinman's Hotel, Capetown, on September 10th; Dr. Purvis in the Chair. There were present Drs. Bays, Greenlees, Coutts, Mullins, Drury, and Mr. H. Conder.

Confirmation of Minutes.—The minutes of the meeting of July 12th were read and confirmed.

Proposed South African Council.—A letter from Surgeon-General Evatt was read on the subject of forming a South African Council of the British Medical Association to deal with local questions. It was resolved that the Branch would co-operate with the other South African Branches in any steps they may take to form such a Council. It was pointed out that the distances and the cost of travel would militate against any frequent meeting of such a Council.

Amendment of Medical Acts.—On the question of amending the Medical Acts of 1891 and 1899 the Branch was of opinion that the time had not arrived for a complete revision, but would support an amendment to the penal clause which would bring the Act into line with the English Act of 1858.

Communications.—Dr. Bays read a paper on Some Disputed Points in Medicine, dealing, amongst other matters, with the use of midwifery forceps, douching in the puerperal state, lancing the gums of teething infants, feeding of enteric patients, and venesection.—Dr. Hill Aitken, of East London, also sent a communication.

LANCASHIRE AND CHESHIRE BRANCH: ALTRINCHAM DIVISION.

Registration of Nurses.

We have received for publication from the Honorary Secretary of the Altrincham Division of the Lancashire and Cheshire Branch the following resolution, passed at a meeting of the Division held on September 29th:

That the members of the Altrincham Division, assembled in quarterly meeting, having considered the subject fully, after due notice given, desire to record their great regret that the Representative Meeting at Oxford expressed approval of the principle of State registration of nurses.

They have all experienced in the past the effects of the competition of unqualified persons; and particularly of so-called "nurses," who now attend, without supervision, many minor cases, both medical and surgical, to the direct pecuniary disadvantage of the medical profession. They are convinced that no Registration Act can, or will, prevent such unqualified practice (which, in their opinion, is also detrimental to the best interests of the public), and they foresee that it would, on the contrary, directly increase it, by enabling such nurses to advertise themselves as "registered," which, to the unthinking public, would be as good as a medical diploma.

They feel that it is one of the chief duties of the Association to protect the material interests of its members, and they respectfully request the Council to receive and consider their most earnest and emphatic protest against official approval being given to any Bill for the registration of persons many of whom will, with absolute certainty, use such registration as a cloak for unqualified practice.

MALAYA BRANCH.

The Malaya Branch held its annual meeting at Kuala Lumpor on August 3rd and 4th. Dr. Middleton occupied the chair.

Election of Officers.—The following office-bearers were elected for the ensuing year:—*President:* C. W. Daniels, M.B. *President-Elect:* T. C. Mugliston. *Vice-Presidents:* Singapore—Lieutenant-Colonel W. Dick, M.B.; Penang—T. C. Avetoom; Malay States—M. J. Wright, M.B. *Secretary:* Major J. Ritchie, M.B. *Treasurer:* George A. Finlayson, M.B.

Report of Council.—The Report of Council stated that a year of unprecedented success had just closed. There had been 18 new members the Association elected; 10 members of the Association had joined the Branch, which now numbered 70 instead of 45. Fourteen ordinary meetings had been held and the average attendance at each had been 14. The papers had been as follows:—May: Kidney Disease in the Tropics, by Dr. Kirk. June: The Fevers of West Africa, by Major Ritchie. July: A Case of Anthrax Erysipelatus, by Dr. More. August: The Radical Cure of Hernia, by Colonel Dick. September: A Case of Traumatic Aneurysm of the Carotid, by Dr. Ford. October: The Consumption of Alcohol in the Tropics, by Dr. Middleton. November: Aberrant Types of Fever, by Dr. Galloway. December: Disinfection, by Dr. Brooke. January: Analyses of Cases Occurring at Tan Tock Seng Hospital, by Dr. Dane. February: Discussion of Proposed New Rules. March: Acetonaemia, by Dr. Fowlie. April: The Mosquitos of Singapore, by Dr. Finlayson. June: Some Personal Experiences in the South African War, by Major Ritchie. July: Immunity, by Dr. Finlayson. All the papers were of a high order of ability. The discussions were animated and brought out several aspects of the subject, so that all the meetings were most interesting. During the year a scheme was formulated for dividing the Branch into the Singapore, Penang, and Federated Malay States Divisions, and modified rules were accordingly drawn up. These had been approved by the Home Association, and the Branch would begin under its new system next month. The financial condition of the Branch would be shown in the statement of accounts, to be circulated shortly.

Installation of New President.—Dr. Daniels then took the chair. After thanking the members for the honour they had done him, he stated that he had chosen as the subject of his address the Diffusion of Disease, a subject the importance of which could not be overrated, although the means of diffusion of only a few diseases were known. It was all the more important in these parts, as only a small portion of the population was indigenous, the larger proportion being imported. They thus had a double set of difficulties in battling with disease, as the new-comers brought fresh diseases to the country and at the same time contracted the diseases which existed among the natives. Thus, the filaria bancrofti was not indigenous in the Malay States, and no history could be obtained of a case of elephantiasis in a Malay as yet. It was, however, common in Madrasees, and to a small extent among the Chinese. The filaria nocturna occurred in the blood of new-comers, and as the *Culex fatigans*, a mosquito which spread the disease, occurred in the country, a wide diffusion might be expected. This view was borne out by the fact that the disease occurred only in crowded towns and was absent from small villages and scattered houses. The parasites found in horses and cattle were always imported. Again, there was an acquired immunity among the indigenous inhabitants. This was best illustrated in the case of malaria. Practically all the young in the Malay States had attacks; many died, but among the survivors a high degree of immunity was acquired. As the blood of these contained the parasite, and the mosquito which carried the disease, the *Anopheles treacherii*, was widely distributed, though not common, if new-comers, such as Chinese who had not suffered from the disease, came amongst them, all who were susceptible would go down with malaria. This was the real explanation of the epidemics which followed the opening up of new works. Indian and Siamese cattle had a great power of resistance to pirosoma bigeminum, the parasite causing Texas fever; but if the strength of the animal had been reduced by an attack of rinderpest this parasite was found in the blood. But cattle not immune from this disease died in large numbers when introduced into this country. This happened in cattle from Southern Australia, and was one of the greatest obstacles to the improvement of the breed. As regards diseases introduced affecting human beings, the most serious, plague and cholera, had never been widespread, though introduced over and over again. The cause of this could not be explained. Neither the elaborate precautions taken nor the temperature sufficed to account for this. The most important cases introduced were typhoid and tuberculosis. The first was certainly preventable. Here flies and dust might be discounted as vehicles; therefore, the poison must always be borne by water or milk, generally the latter diluted with bad water. The geographical distribution of tuberculosis taught important lessons. In East and Central Africa it was practically unknown. In West Africa it existed to a slight extent, but it was a great scourge in the West Indies. In the Malay States they had ample evidence of its introduction and spread in recent times. In British Guiana there was a record of 1,500 *post-mortem* examinations made in 1849. Out of these only 29 showed tubercle, and none of these occurred in natives of the Colony. About fifty years later Dr. Daniels found that 28 per cent. of the *post-mortem* examinations made by him in the same hospital were cases of tubercle, and the proportion was greatest in natives of the Colony. In Singapore, also, tubercle had become more common, and was attracting more attention recently. What was to be aimed at was: (1) A greater knowledge of diseases and their means of diffusion; (2) full powers from Government to deal with the spread of disease; (3) a greater appreciation by the Government of the importance of these researches.—A discussion followed the President's address.

Control of Medical Practice.—The rest of the business was of a routine character, but the following important resolution, proposed by Major Ritchie and seconded by Dr. Travers, was carried unanimously:

That this meeting records its protest against the non-existence in the Straits Settlements of any Acts for the control of medical practice. It does so on the following grounds:

1. The unnecessary suffering and danger to life caused by the practice of ignorant and unqualified men.

2. The protection given to prisoners and other criminals by the fact that deaths can be registered by any one.
3. The hindrance to medical research from the impossibility of obtaining statistics of any value as to the incidence of disease and the causes of death in the Colony.
4. The adoption of such Acts by every Colony of importance under the British flag, except the Straits Settlements, Queensland, and Ceylon, in the last-named of which such legislation will be proposed in the forthcoming session.

This meeting therefore calls upon the Government for early legislation on the lines of the Bill presented to them in April, 1903.

Entertainments.—Recreation was not forgotten during the meeting. A garden party was given by Dr. Daniels at the Institute for Medical Research. The Selangor State Band was in attendance. The guests were received by Mrs. McClosky and Mrs. Leicester. Among those present were the Resident-General, Lady and Miss Treacher, the Resident (Mr. Campbell), Mrs. Talbot, and many other ladies and gentlemen. All were much interested in the magnificent laboratory, animal houses, and other buildings attached to the institute. The annual dinner was held on the 3rd. A motor-car drive to the famous Batu Caves was greatly enjoyed. The medical practitioners rashly challenged all the non-medical part of Kuala Lumpor to meet them at golf, and were beaten for their audacity, though not ingloriously.

Next Annual Meeting.—It was arranged to hold the 1905 meeting at Penang.

METROPOLITAN COUNTIES BRANCH:

Chelsea Division.

A meeting of this Division was held at the Chelsea Town Hall on October 4th; Dr. Bonney took the chair at 5.15.

Communications.—The Secretary read a communication from the Wandsworth Division on certain resolutions moved on September 29th at their ordinary meeting, and also a letter from the Honorary Secretary of the Branch on the rules of the Branch.

Annual Representative Meeting.—Dr. Bonney—the Representative to the Oxford meeting—then gave his report.

The Conduct of Inquests.—On the motion of Dr. O'Sullivan it was decided to invite all the medical men in the district to the next ordinary meeting—in January—to discuss the present conduct of inquests in the south-west division of London.

Wandsworth Division.

An ordinary meeting of this Division was held at the Wandsworth Town Hall on Thursday, September 29th; Dr. George Walker, Chairman, presided, and there were present: Drs. Lambert, Williams, D. Roe, Caldwell Smith, Laing, Stocks, McManus, Wallace, Dillon, Barkley, Badcock, Spurgin, Johnson, Shearer, Haig, Pritchard, Miller, Turner, Richards, McCleary, and E. Rowland Fothergill, Honorary Secretary.

Confirmation of Minutes.—The minutes of the annual meeting in May were read and approved.

Communications from General Secretary, etc.—Communications from the General Secretary and the Honorary Secretary of the Exeter Division were read; and it was decided to acknowledge them.

Representative Meeting at Oxford.—In the unavoidable absence of the Representative in Representative Meetings (Dr. M. G. Biggs) his report on the Annual Representative Meeting in Oxford was read by the Secretary. Arising out of matters referred to in this report and other points discussed, the following resolutions were approved; and it was decided to send them to the various departments concerned:

Resolution for the Joint Committee re Coroner Troutbeck.

That this meeting of the Wandsworth Division of the British Medical Association, having heard the present position of the negotiations with reference to the actions of Coroner Troutbeck, does earnestly urge the Committee who have undertaken the matter to persevere in their endeavours, and would welcome a meeting (at an early date) of the medical profession resident in the areas affected if, in their opinion, it were considered desirable; and that the lay press should be admitted.

Resolution for Central Council re Annual Representative Meeting.

1. That it is desirable, in order to avoid having the Annual Representative Meeting conducted with undue haste and the agenda insufficiently discussed, that the Central Council should take into its consideration the advisability of entirely rearranging the programme for the annual meeting.
2. That the Central Council take into its consideration the advisability of printing in a supplement, early in February, all resolutions, reports, and motions received to the end of January, to be placed on the agenda of the Annual Representative Meeting, in order to allow of reasonable time for full consideration.
3. That the Central Council, while printing and issuing as a separate document to all Divisional Secretaries the report, resolutions, memorandum, and proposed Bill dealing with the Local Government Board, asking them to approach the local member of Parliament with a medical deputation, do request them to report with a view to further concerted action.
4. That the Central Council are hereby requested to take into their immediate consideration the advisability of making the necessary arrangements for bringing the subjects of vaccination and re-vaccination before Parliament in its next session.
5. That, in the opinion of this meeting, it is desirable that all Secretaries of Branches and Divisions do receive copies of the agendas of all Representative Meetings.

Additions suggested to Standing Orders of Representative Meetings.

1. All Representative Meetings if not concluded by 6.30 p.m. shall stand adjourned either to 8.30 p.m. of the same day, or to the next day, as may be decided by a show of hands; all such meetings shall stand adjourned at 10 p.m. until the next day.
2. Any resolution or notice put on the agenda of a Representative Meeting by the Council or a Branch or Division can be temporarily withdrawn from discussion at any evening meeting, if the Chairman of the Council or the Representative of the Branch or Division, as the case may be, give notice at 6.30 p.m. that he so desires it.
3. That the Representative Meeting do elect bi-annually a Chairman-elect for two years, who shall become Chairman during the third and fourth years, and Vice-Chairman during the fifth and sixth years, when he shall be ineligible for election for two years.
4. That in the absence of the Chairman, the Vice-Chairman do take the chair, and should the Vice-Chairman be also absent, the Chairman-elect shall do so. In the absence of all these the meeting do elect its own Chairman.
5. That there be a Business Committee, to consist of the Chairman, Vice-Chairman, and Chairman-elect, who shall arrange the order of business and other details.
6. That where necessary the Articles of Association, By-laws, and Standing Orders be altered, so as to incorporate the above resolutions.

Information to Coroners.—It was decided to send copies of the four resolutions approved by the Representative Meeting to the coroners appointed in the area of this Division.

Special Divisional Report on the Midwives Act, 1902.—It was decided to send copies of this to each coroner, with an explanatory letter. It was unanimously decided to send copies of the two above documents to every practitioner—not a member of the Association—resident in the area of the Division.

Revision of Rules.—The report of the Subcommittee on the revision of the Rules was approved.

Papers.—Dr. W. D. Turner read a paper on Tuberculosis: its Origin and Extinction, illustrated by the optical lantern. This was followed by a hearty vote of thanks and an interesting discussion.

Advertising in the Daily Papers.—Two cases of advertising by medical practitioners in the daily papers were considered, and it was decided to refer them to the Ethical Committee of the Branch for consideration.

NORTH WALES AND SHROPSHIRE BRANCH:

Denbigh and Flint Division.

An ordinary meeting of this Division was held at the Westminster Hotel, Rhyl, on September 30th. Dr. J. Medwyn Hughes, Ruthin, Chairman of the Division, presided, and nineteen members were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Vaccination and Revaccination.—A resolution, requesting the Central Council to take into its immediate consideration the advisability of making the necessary arrangements for bringing the subjects of vaccination and revaccination before Parliament in its next session, was unanimously approved of.

Matters referred to Division.—It was also resolved:

That the Central Council be requested to forward an official statement of matters referred to Divisions to the Honorary Secretaries, that this be accompanied by a concise statement of the facts necessary to form an opinion on the points on which an expression of opinion is required, and that the whole be also published in the Supplement.

Representative Meeting at Oxford.—The Honorary Secretary, as Representative of the Divisions on the Representative Meeting, gave an account of the Oxford meeting, and drew attention to several subjects under discussion at that meeting.

Paper.—A paper—Remarks on Appendicitis, with and with-

out Operation—was read by Mr. Rushton Parker, M.B., B.S.Lond. An interesting discussion, in which several members took part, followed.

SOUTH AUSTRALIAN BRANCH.

The twenty-fifth annual meeting of this Branch was held in the Adelaide University, at 4 p.m., June 30th. The retiring President, Dr. M. Jay, in the chair.

Confirmation of Minutes.—The Minutes of the last annual meeting were read and confirmed.

Report of Council.—The following report was presented: Your Council offers its congratulations to members on the strong position of the Branch at the completion of this the twenty-fifth year of its existence. Our funds remain in a satisfactory condition, our meetings have been all well attended, and a strong *esprit de corps* permeates the entire Branch. Several of our old members, at present in England, are being consulted, in conjunction with other Colonial members, by the Reorganization Subcommittee of the Association. It will be proposed at this annual meeting to alter Branch Rule No. 11, so that the Annual Report and Balance-Sheet shall for the future be made to cover each year from January to December instead of as at present, and thus coincide with the currency of subscriptions, with payments to the medical periodicals, and with the date when such reports must be sent by the Branch to the Council of the Association. Your Council is gratified at the response to their appeal on behalf of the Medical Benevolent Association of South Australia, and again urges those members who have not subscribed to now do so. Several members have permanently left the State, and one (Dr. Shand) has died, but the new members elected have balanced our loss in numbers; present total, 123 members. As in past years, our thanks are due to the University for the use of rooms for our meetings. One special meeting was summoned during the year. The following papers have been read during the year at the monthly meetings: Dr. Jay, Macroglossia; Dr. Todd, Umbilical Hernia; Dr. W. A. Giles, Prostatectomy; Dr. Gault, Pneumothorax; Dr. W. T. Hayward, Pneumothorax; Dr. A. A. Hamilton, Chronic Ascites; Dr. Marten, Gastric Surgery; Dr. Lendon, Icterus Neonatorum; Dr. H. Newland, Case of Aneurysm; Dr. Gault, Acute Rheumatism and Chorea; Dr. E. E. Moule, Acute Rheumatism; Dr. Swift, Some Rheumatic Affections; Dr. Hone, Heart Disease and Pregnancy; Dr. J. A. G. Hamilton, Pregnancy with Fibroid; Dr. Poulton, Bullet Wound in Abdomen; Dr. J. C. Verco and Dr. Poulton, Hydatid of Brain; Dr. W. A. Verco, Gunshot Wound of Abdomen; Dr. Poulton, Bullet Wound of Aorta. The report was adopted. The suggested alteration in Rule No. 11 was agreed to.

Treasurer's Report.—The following statement of receipts and expenditure for the year ending June 30th, 1904, was presented:

Dr.

To	£	s.	d.
Balance in bank, June, 1903	273	4	4
Interest	6	3	5
Capitation grant from Parent Association (on amounts paid in London only)	1	2	0
Subscriptions	251	3	0
	£531	12	9

Cr.

By	£	s.	d.
Subscription to B.M.A. ...	126	0	0
Subscription to *A.M.G.* (*Australasian Medical Gazette*)	96	0	0
Exchange	1	13	9
Printing and stationery ...	13	5	0
Clerical assistance and postage	9	15	0
Gas	1	1	0
Gratuities to porters ...	1	10	0
Balance in bank	282	7	6
	£531	12	9

Assets.

	£	s.	d.
Balance in hand	282	7	6
Outstanding subscriptions	39	18	0
	£322	5	6

Liabilities.

	£	s.	d.
Subscription to B.M.A. for 1904	129	3	0
Subscription to *A.M.G.* for 1904	18	0	0
Expenses for ensuing half-year (estimated)	10	0	0
	£157	3	0

W. T. Hayward,
Honorary Treasurer.

The accounts were certified correct by the President, Dr. Jay, and adopted by the meeting.

Election of Officers and Council.—The following were elected as officers and members of Council: Honorary Treasurer, Dr. W. T. Hayward; Honorary Secretary, Dr. J. B. Gunson; ordinary members of Council (3), Drs. Cudmore, Lendon, and Sangster (senior), the retiring President being a member *ex-officio*; Parliamentary Bills Committee were re-elected; local editor of *Australasian Medical Gazette*, Dr. H. S. Newland, was re-elected; Honorary Auditor, Dr. A. E. Wigg, was re-elected; Vice-President: Dr. A. A. Lendon was nominated.

Presidential Address.—Dr. M. Jay delivered an address (published in *Australasian Medical Gazette*).

Installation of New President.—The incoming President (Dr. C. W. Hamilton) then took the chair.

New Members.—The Council has elected the following new members of the Association and Branch: Drs. Formby (Strathalbyn) and Caw (Adelaide).

Votes of Thanks.—Votes of thanks to retiring officers and to the Council of the University were passed.

Annual Dinner.—The annual dinner was held in the evening, and was largely attended.

SOUTH-EASTERN BRANCH:
Isle of Thanet Division.

The sixth meeting of this Division was held at the Grand Hotel, Broadstairs, on September 27th, Dr. Brightman in the chair. There were present seventeen members of the Division and three visitors—Dr. Gosse, Representative, the House Surgeon, Sea-Bathing Infirmary, and another.

Confirmation of Minutes.—The minutes of the last (annual) meeting were read, confirmed, and signed.

Letters.—The Honorary Secretary read letters from: (1) The Secretary of the South-Eastern Branch asking for opinion of the Division as to the suggestion to divide the Branch into two separate portions. Mr. Larking's motion to this effect had been supported at the last meeting and the resolution was confirmed. (2) Dr. Galton *re* Holman Testimonial Fund. (3) The Honorary Secretary of the Walthamstow Division asking for support in obtaining from the Central Council facilities in bringing before members medico-political matters.—Dr. Watts proposed, and Dr. Hemming seconded, that the following resolutions on the matter be sent to the Central Council of the British Medical Association:

> This Division requests the Central Council to forward to its Secretary an official statement of all matters to be referred to the Divisions, together with a summary of the necessary facts, and of the points on which an expression of opinion is required.

This was carried unanimously, the Honorary Secretary of the Wandsworth Division asking the support of the Division in urging the Central Council to bring the subject of vaccination soon before Parliament.—Dr. Moon proposed, and Dr. Biddle seconded:

> That the Central Council be requested to take into their immediate consideration the advisability of making the necessary arrangements for bringing the subjects of vaccination and revaccination before Parliament at its next session.

—This was carried unanimously.

Annual Representative Meeting.—Dr. Gosse, the Representative of the Division at the meeting of Representatives at Oxford, read a full report of the meeting and of the matters he supported or the contrary on behalf of this Division, laying special stress upon matters of medical defence, contract practice, and the Medical Acts Amendment Bill.—A discussion followed, in which the Chairman, Drs. Courtenay, Nicholl, Heaton, Halstead, and Raven took part, and expressions of regret were shown at the number of the important matters having to be referred again to the Division for reconsideration.—A hearty vote of thanks was passed to Dr. Gosse for so ably representing the views of the Division, and for attending the meeting and reading his report.

Next Meeting.—Dr. Halstead proposed, and Dr. Nicholl seconded, that Dr. Tamplin be asked to take the chair at the next meeting at Ramsgate in November.

Vote of Thanks.—A vote of thanks was passed to the Chairman for presiding.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:
Monmouthshire Division.

A special meeting of this Division was held in Pontypool Hospital on September 2nd, at 3.30 p.m. In the absence of Dr. G. A. Brown, Dr. Mulligan was voted to the chair. The members present were Drs. Mulligan, Mason, W. D. Steel, Avarne, Vines, Essex, Lewis, O'Keefe, Howard-Jones, Williams, Ryan, Campbell, Wilson, Hamilton, Haslett, Coulter, D. J. Jones, Paton, Frost, Captain Probyn, and Green.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Welcome to Members.—Dr. Essex, a member of the consulting

staff and a governor of the hospital, welcomed the members of the Division. Dr. Essex said that on this occasion he was authorized to speak specially on behalf of the lay members of the House Committee, who were delighted to have a visit from the members of the Monmouthshire Division.

Code of Rules.—The proposed code of rules, a copy of which was already in the hands of each member, was discussed in detail and passed.

ORDINARY MEETING.

The business of the ordinary quarterly meeting was then taken.

Letters.—Letters were read from Dr. James, High Sheriff, Dr. G. A. Brown, Dr. Redwood, and Dr. Glendinning.

Invitation from Newport Medical Society.—Dr. Howard Jones, President of the Newport Medical Society, gave an invitation to all the members of the Division to be present at a meeting of the Society on October 26th, when Professor Gilbert Barling, of Birmingham, would deliver the opening address of the session. The CHAIRMAN (Dr. Mulligan) expressed the thanks of the members of the Division for the invitation, and said that he hoped that as many members as possible would be present at the meeting.

Cases.—Dr. MULLIGAN showed a case of rodent ulcer of the inner canthus of the eye under treatment by *x* rays. The case was discussed by Drs. COULTER, WILLIAMS, PATON, and GREER.—Dr. HASLETT showed a case of Mules's operation.—After tea, which was very kindly provided for the visitors, the members were shown round the wards of the hospital, and several interesting cases under the care of Drs. Mulligan, Mason, D. J. Jones, and Haslett were discussed.

Dinner.—The members of the Division were the guests of the Eastern Valleys Medical Association at dinner in the Crown Hotel, under the presidency of Dr. Wilson. A very enjoyable evening was spent. Taken altogether, this meeting was one of the most successful gatherings that the Division has had.

SYDNEY AND NEW SOUTH WALES BRANCH.

THE regular monthly meeting of the Branch was held at the Royal Society's Rooms, Sydney, on Friday, June 24th, Dr. G. E. RENNIE in the chair. There were 39 members present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Members.—The CHAIRMAN announced the election of the following members: Dr. Eames, H.M.S. *Torch*, Dr. A. C. MacArthur (Grafton), Dr. A. G. Corbin (Sydney), Dr. L. W. Roberts (Cowra), Dr. J. S. Guthridge (Braidwood), Dr. Rees F. Llewelyn (Braidwood).

Letter.—The Acting Honorary Secretary read a letter from Dr. C. A. Muller.

Communications.—Dr. MCKAY gave a demonstration on Alexander's operation on the round ligament of the uterus. A discussion ensued in which Drs. SANDES, TAYLOR, YOUNG, BOWKER, WORRALL, S. P. JONES, jun., took part. Dr. MCKAY replied. Dr. FURNIVAL read notes on a case of cystic dilatation of the lower end of the ureter. Dr. STACY read the pathological report on the case reported by Dr. Furnival. Dr. HINDER made remarks on the case. Dr. MACDONALD GILL read notes on a case of diffuse glioma of the cord and exhibited some microscopic specimens. Dr. PALMER exhibited specimens of abnormalities of kidney.

The regular monthly meeting of the Branch was held at the Royal Society's Rooms on Monday evening, July 29th, Dr. BEESTON, Vice-President, in the chair. There were 38 members present.

Minutes.—The minutes of the previous meeting were read and confirmed.

Elections.—The PRESIDENT announced the election of the following new members: Drs. St. John Dansey, C. S. Bowker, and Newton. Dr. Baar was nominated for membership.

Expulsion.—The ACTING HONORARY SECRETARY explained the position of the Branch with reference to the expulsion of a member who would not conform with the Articles of Association and proposed the confirmation of the minute of the Council expelling such member. This was seconded by Dr. CRAGO and carried unanimously.

Papers and Demonstration.—Dr. R. STEER BOWKER read a paper on aids to diagnosis in renal surgery, and exhibited various instruments. A discussion ensued in which Drs. STACY, MAITLAND, MCKAY and CRAGO took part. Dr. BOWKER replied. Dr. E. C. HALL read a paper on eucalyptus oil in the treatment of typhoid fever. Drs. CLARENCE READ and MCKAY made some remarks upon the paper, and Dr. HALL replied.

ULSTER BRANCH.

THE autumn meeting of this Branch was held in the Medical Institute, Belfast, on October 5th. Dr. THOMAS MCLAUGHLIN (Derry), and subsequently Professor J. A. LINDSAY (Belfast), occupied the chair. Fifty-two members were present.

Confirmation of Minutes.—The minutes of the last ordinary meeting were read and confirmed.

Report of Council.—Dr. CECIL SHAW (Honorary Secretary) reported that the next meeting had been arranged for January, to be held in Derry, and that the Council had passed a resolution *re* vaccination.

Induction of New President.—Dr. MCLAUGHLIN said his term of office had now come to an end, and he desired to thank the members of the Branch for all their kindness to him, and to call on Professor Lindsay to take the chair as President for the ensuing year.

Vote of Thanks to the Retiring President.—On the motion of Dr. A. B. MITCHELL (Belfast), seconded by Dr. DARLING (Lurgan), a vote of thanks was passed to Dr. McLaughlin for his conduct in the chair.

Resolution re Locum Tenentes.—On the motion of Dr. R. M. FRASER (Belfast), seconded by Dr. CALWELL (Belfast), and supported by several members, the Council was instructed to consider the question of forming a register of registered practitioners willing to act as *locum tenentes*.

President's Address.—The PRESIDENT delivered his opening address, taking as his subject the serum treatment of disease.—Dr. JAMES CRAIG (Derry) moved, and Dr. SHECKLETON (Holywood) seconded:

> That the best thanks of the meeting be given to Professor Lindsay for his interesting address.

This was passed by acclamation, and conveyed to the President in a few words by Dr. MCLAUGHLIN.

Tea.—At the conclusion of the meeting tea was provided by the President in the Library of the Institute.

WEST SOMERSET AND DORSET AND WEST HANTS BRANCHES.

A COMBINED meeting of these Branches was held at Yeovil on October 13th, under the presidency of Dr. A. W. SINCLAIR and Mr. A. J. H. CRESPI. Thirty-three members and visitors were present.

Election of Officers for the Dorset and West Hants Branch.—The following were elected office-bearers for the ensuing year:—*President:* Dr. Edwin Hyla Greaves. *Vice-Presidents:* Dr. Thomas Fielding and Mr. Samuel Penny Snook. *Honorary Secretary and Treasurer:* Dr. William Vawdrey Lush.

Next Meeting.—It was resolved to hold the May meeting at Blandford.

Discussion.—A discussion on anaesthetics in general practice was opened by Mr. P. J. KINGSTON, one of the Vice-Presidents of the Dorset and West Hants Branch, and taken part in by Mr. SINCLAIR, Dr. MAIDLOW, Dr. PAGE, Dr. MOORHEAD, Dr. WHITTINGDALE, Mr. FLOWER, Mr. BOVEY, Mr. MARSH, Mr. JOCELYNE, Dr. LUSH, Dr. LEACH, Mr. WINCKWORTH, Dr. COLCLOUGH, Mr. H. L. SMITH, Mr. GOOD, and Dr. BROWN.

Communications.—The following communications were presented:—Mr. A. W. SINCLAIR: Neurasthenia.—Dr. WALTER: (1) A case of acute rheumatism with hyperpyrexia; (2) a case of lupus of thirty-five years' standing treated with thyroid extract.—Dr. PAGE: (1) Notes on the sewage disposal (bacterial) and water supply of Yeovil; (2) a specimen of hernia of the liver in the fetus.—Dr. MOORHEAD: Further observations on radium.

Inspection of Sewage Works.—Members were conducted by Dr. Page, Medical Officer of Health, over the sewage works, and were shown the new operating theatre at the hospital. Messrs. Gatwood and Wright, chemists, of Yeovil, gave demonstrations of *x* rays, and Messrs. Down Bros., Limited, exhibited surgical instruments.

Dinner.—The members and visitors, who had been previously hospitably entertained to luncheon by the Yeovil members, dined together at the Choughs Hotel.

BRITISH MEDICAL ASSOCIATION LIBRARY.

List of Presentation of Books, etc.

Presented by the AUTHORS:
Duckworth, Sir Dyce. The Harveian Oration for 1898.
Haig, A. Uric Acid as a Factor in the Causation of Disease. 6th Edition. 1903.
Haig, A. Uric Acid; an Epitome of the Subject. 1904.
Leftwich, R. W. On Syphonage in the Large Intestine. 1903.

Presented by THOMAS BRIDGWATER, M.D.:
London Medical Gazette, 1827-51.
Medical Society of London, Proceedings. 1872-1900.
A number of volumes of the publications of the New Sydenham Society.
Obstetrical Society of London, Transactions, 1872-91.
Pathological Society of London, Transactions, 1868-1901.

Presented by Dr. MAINWARING HOLT (Malton):
Sharp, Samuel. A Treatise on the Operations of Surgery, with a Description and Representation of the Instruments used in Performing them, 1739.

Presented by G. F. HULME, Esq., M.B. (Felixstowe):
Adams. Life of Hunter. 1817.
Ashwell. Diseases of Women. 1848.
Averill. Operative Surgery. 1825.
Bell. Anatomy of the Bones, Muscles, and Joints. 1794.
—— On the Hand. 1833.
Cooper, A. Fractures and Dislocations. 1842.
——— S. Dictionary of Surgery. 8th Edition. 2 vols. 1861-72.
Ferguson, Sir W. Practice of Surgery. 5th Edition. 1870.
Fox, T. Diseases of the Skin. 1873.
Hodgson. Diseases of the Arteries. 1815.
Paterson. Memorials of Syme. 1874.
Syme, James. Excision of the Scapula. 1864.
——— Stricture of the Urethra. 1855.
——— The Pathology of Surgery. 1848.
——— Observations of Surgery. 1861.

Presented by the LONDON COUNTY COUNCIL:
Reports on the Experimental Bacterial Treatment of London Sewage. 1892-1903.

Presented by the MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD:
Dr. Copeman's Report on Epidemic Disease at the Central London Sick Asylum, Hendon. 1904.
Dr. Copeman's Report on the General Sanitary Circumstances and Administration of the Whittlesea Urban and Rural Districts. 1904.
Dr. R. W. Johnstone's Report on the Sanitary Circumstances and Administration of West Wickham. 1904.
Dr. S. George Mivart's Report on General Sanitary Circumstances at Romford.

Presented by C. H. W. PARKINSON, Esq., M.R.C.S. (Wimborne Minster):
Transactions of the Thirteenth International Congress of Hygiene, Brussels. 1903.

Presented by the ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH:
Studies. Vol. i. 1904.

Presented by the WAR OFFICE:
A Manual of Military Law. 4th edition. 1902.

Presented by the EDITOR OF THE BRITISH MEDICAL JOURNAL:
Barber und Schestauber. Die Buchführung im Apothekenbetriebe. 1904.
Baudry, S. Étude Médico légale sur les Traumatismes de l'Oeil. 1904.
Bedford, Major C. H. Clinical Handbook of Urine Analysis. 1904.
Bettencourt, A. La Maladie du Sommeil. 1903.
Brockbank, E. M. Sketches of the Lives and Work of the Honorary Medical Staff of the Manchester Infirmary. 1752-1830.
Brouardel, P. Les Intoxications. 1904.
Cunning, J. Aids to Surgery. 1904.
De Lee. Obstetrics for Nurses. 1904.
Gresswell. Veterinary Pharmacopoeia. 2nd Ed. 1903.
Hansell and Sweet. Diseases of the Eye. 1903.
Higgens, C. Ophthalmic Practice. 2nd Ed. 1903.
Jacobi-Pringle. Atlas of Dermochromes. Pts. 3-4. 1903.
Javal. Entre les Aveugles. 1903.
Jordan, F. W. Life of Joseph Jordan. 1904.
Keen and White. Textbook of Surgery. 2 vols. 4th Edition. 1903.
Lejars, F. Chirurgie d'Urgence. 4th Edition. 1904.
Lloyd, F. G. Diseases of the Appendix. 1904.
Loewenthal, N. Atlas der vergleichenden Histologie der Wirbeltiere. 1904.
Mackenzie, W. L. The Medical Inspection of School Children. 1904.
May, C. H. Diseases of the Eye. 3rd Edition. 1903.
Morrow, P. A. Social Diseases and Marriage. 1904.
Ott, I. Textbook of Physiology. 1904.
Robin, A. Maladies de l'Estomac. 1904.
Robson, A. W. M., and J. F. Dobson. Diseases of the Gall Bladder and Bile Duct. 3rd Edition. 1904.
Ross, Ronald. Researches on Malaria, being the Nobel Medical Prize Lecture for 1902. 1904.
Sawyer, Sir James. Contributions to Practical Medicine. 1904.
——— Insomnia: Its Causes and Cure. 1904.
Scudder. Treatment of Fractures. 4th Edition. 1903.
Thomson and Miles. Manual of Surgery. Vol. i. 1904.
Thorne Thorne, L. The Nauheim Treatment of Chronic Diseases of the Heart. 1904.
Vaughan, G. T. Principles and Practice of Surgery. 1903.
Ward, A. H. Clinical Studies in Syphilis. 1904.

Calendars, Reports, and Transactions have been received from the following Bodies:
American Pediatric Society Transactions. Vol. 15. 1903.
Archives of the Middlesex Hospital. Vol. 2. 1904.
British Guiana. Report of the Surgeon-General. 1902-3.
Calcutta University Calendar. 1904.
Connecticut State Board of Health Report. 1903.
Edinburgh University Calendar. 1904-5.
Epidemiological Society of London Transactions. Vol. 22. 1903.
Indian Census Reports of 1901. 1904.
Intercolonial Medical Congress of Australasia Transactions. 6th Session. 1902.
Jamaica. Report of Registrar-General. 1903.
Melbourne University Calendar. 1904.
Ophthalmological Society of United Kingdom Transactions. Vol. 22. 1902.
Otological Society of United Kingdom Transactions. Vol. 4. 1903.
Philadelphia College of Physicians Transactions. Vol. 25. 1903.
Philadelphia Hospital Reports. Vol. 4. 1900.
Royal University of Ireland Calendar. 1904.
St. Thomas's Hospital Reports. Vol. 31. 1902.
Sanitary Commissioner with the Government of India. Report. 1902.
Scientific Memoirs by Medical Officers of the Army in India. Nos. 8, 9. New Series. 1904.
University College Hospital. Report of the Medical and Surgical Registrars. 1901.

BOOKS NEEDED TO COMPLETE SERIES:

The Librarian will be glad to receive any of the following volumes which are needed to complete series in the Library:

American Climatological Transactions. Vols. 1, 4, 5, 6.
——— Dermatological Associations. Transactions. Vols. 5, 7, 8, and 11.
——— Journal of the Medical Sciences. New series, vols. 4, 5, 1842-3; vols. 14, 15, 1847-8; vols. 18-30, 1850; vol. 33, 1857; vol. 46, 1864-5; vol. 59; or any parts of these vols.
——— Journal of Ophthalmology. Vols. 1-9.
——— Laryngological Association. Transactions. Vols. 1-6, 8-9.
——— Medical Association. Transactions 1-28, 30, 31.
——— Otological Society. Transactions. Vol. 3, part 2, 1883.
——— Public Health Association. Transactions. Any vols.
Analyst. Vols. 1-24.
Archiv für Dermatologie und Syphilis. Prior to 1874, 1892, and 1893, and 1903-4.
Annals of Surgery. Vols. 11; 13-16 and 26-27.
Archives Générales de Médecine. 1831-9 inclusive; 1846-55 inclusive; 1857-64 inclusive; 1871.
——— of Ophthalmology. Vols. 1-3, 6, 7, 14-21.
——— of Otology. Vols. 1-7, and 20, 21, 22.
——— of Pediatrics. Vols. 1-11.
Asylum Journal of Mental Science. Vol. 1, 1854.
Bentley and Trimen. Atlas of Medicinal Plants.
British Journal of Dermatology. Vol. 2, part 3.
British Laryngological and Rhinological Association Transactions, 1900-2.
Caledonian Medical Journal. Vol. 1 prior to 1894.
Carmichael Essays. Laffan, 1879. Rivington, 1879.
Centralblatt für Augenheilkunde. Hirschberg. All prior to 1891, Index to 1891.
——— für Bakteriologie. Bound volumes prior to 1899.
——— für klinische Medicin. 1888-3; all 1888, 1891, No. 26; 1892, No. 17.
——— für medicinischen Wissenschaften. Vols. 1-19.
Congrès Français de Chirurgie. Transactions 1, 2, 3, 6, and 10.
——— Internat. d'Obstétrique et de Gynécologie. 3, Amsterdam, 1899.
Connecticut State Board of Health Report. Vol. xi. 1887-8.
Denman. Midwifery. 1801.
Dermatological Congress. Vienna, 1892, and Paris, 1900.
Dublin Quarterly Journal of the Medical Sciences. Vols. 1, 10, 17, 20-28, and 35-40.
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Applications for duplicates from medical societies forming libraries may be addressed to the Librarian, 429, Strand.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 29TH, 1904.

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MEDICO-POLITICAL COMMITTEE.

A MEETING of the Medico-Political Committee was held at the office of the Association on July 13th, when there were present: Sir Victor Horsley, F.R.S. (Chairman of Representative Meetings), in the chair; Dr. T. D. Griffiths (President), Mr. Andrew Clark (Chairman of Council), Dr. R. C. Buist, Dr. Major Greenwood, Dr. G. A. Heron, Mr. T. Garrett Horder, Dr. J. A. Macdonald, Dr. C. H. Milburn, Dr. J. Murphy, and Mr. D. A. O'Sullivan.

SECONDARY EDUCATION LEAVING CERTIFICATE.

The Medical Secretary reported that he had transmitted to the Board of Education the memorandum which was published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL, July 23rd, 1904, p. 77.

THE CORONER FOR SOUTH-WEST LONDON.

The Chairman reported a conference of the Societies acting in the matter of the Coroner for South-West London, held on July 1st (correspondence in pursuance of the decisions of this conference will be found in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL, July 16th, 1904, p. 52).

CONSULTATIONS BETWEEN MEDICAL WITNESSES.

A report of the Emergency Subcommittee on Consultations between Medical Witnesses was amended and approved for submission to the Representative Meeting.[1]

REORGANIZATION OF THE LOCAL GOVERNMENT BOARD.

A report of the Emergency Subcommittee in conference with the Editor of the BRITISH MEDICAL JOURNAL, on the report of Lord Jersey's Committee, was also approved for presentation to the Representative Meeting.[2]

[1] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, July 23rd, 1904, p. 76.
[2] Ibid., p. 75.

CONTRACT PRACTICE INQUIRY.

The Chairman reported that Dr. Youatt had been engaged to assist the Medical Secretary in analysing the replies so far received to the inquiry as to contract practice, and a preliminary report drawn up by the Medical Secretary and Dr. Youatt was approved for presentation to the Representative Meeting.[3]

A further meeting of the Committee was held at the office of the Association on October 5th, 1904, when there were present: The Chairman of Council, and afterwards Dr. R. C. Buist, in the Chair, Sir Victor Horsley, F.R.S. (Chairman of Representative Meetings), Dr. Major Greenwood, Mr. T. Garrett Horder, Mr. G. Jackson, Dr. L. Kidd, Dr. J. A. Macdonald, Mr. W. Jones Morris, Mr. E. H. T. Nash, Mr. D. A. O'Sullivan, Mr. C. H. Watts Parkinson.

ELECTION OF CHAIRMAN.

Sir Victor Horsley having been requested, but having declined, again to act as Chairman of the Committee for the year, Dr. Buist was appointed Chairman.

PAYMENT IN POLICE CASES.

A communication on the payment of medical practitioners summoned to cases by the police was referred to a Subcommittee for report.

REGISTRATION OF NURSES.

A communication from the Honorary Secretary of the Altrincham Division, transmitting a resolution printed in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of October 22nd, 1904, p. 148, was received and the resolution ordered to be entered on the minutes.

PROVIDENT DISPENSARY.

The Committee expressed satisfaction at the successful action which had been taken by the South Manchester Division with reference to the proposed formation of a new provident dispensary.

[3] Ibid., p. 70.

The National Deposit Friendly Society.

With regard to Minute 31 of the Annual Representative Meeting—

Minute 31.—That the Medico-Political Committee be instructed to transmit the resolution of this meeting, respecting the Report on the National Deposit Friendly Society, to the Divisions with proposals for concerted action.

(The resolution referred to is as follows: "The Chairman presented the Report of the Committee on the National Deposit Friendly Society, which was considered and approved.")

the Chairman and Secretary were instructed to draft for the consideration of the Committee a memorandum for circulation to the Divisions.

Death Certification: Coroners Bill.

Minutes 44 and 58 of the Annual Representative Meeting and appended resolution of the Westminster Division were referred to a Subcommittee for consideration and report:

Minute 44.—A resolution to refer the Report on Death Certification back to the Medico Political Committee for further consideration and report to the Divisions.

Minute 58.—With reference to the Coroners Bill, as to which the Committee reported the action which they had taken during the past year, it was agreed:

That before submitting the Bill to Parliament the Medico-Political Committee should incorporate in it any provisions which the Committee might deem expedient, having regard to matters recently considered by the Committee concerning the relation of coroners to the medical profession.

Resolution of Westminster Division.—That the Council of the Association be called upon to take such steps as may be desirable for the introduction of a Coroners Act Amendment Bill dealing especially with the action of coroners in appointing their own private pathologists, and that this Division is of opinion that such appointment should be a public one.

Payment of Medical Men Called in to Assist Midwives.

With reference to Minute 64

Minute 64.—That, as the Midwives Act, 1902, contains no provision for the payment of medical practitioners, it be an instruction to the Medico-Political Committee to take steps for the amendment of the Act, by the introduction of a section or otherwise, in order to provide just remuneration for medical men when called in to assist midwives in cases of danger or difficulty.

the Medical Secretary was instructed to transmit to the Divisions a report on the replies received from county and county borough councils to the Committee's circular on the subject, and to point out that at present the practitioner must look to the patient for his fee.

Medical Acts Amendment Bill.

The Chairman and Secretary were instructed to prepare for the consideration of the Committee the epitome required for circulation to the Divisions in pursuance of Minutes 69 and 70 of the Annual Representative Meeting.

Minute 69.—That the Medical Acts (Amendment) Bill, as a whole be referred to the Divisions.

Minute 70.—That it be an instruction to the Medico-Political Committee that an epitome of the principles of the Medical Acts (Amendment) Bill be included among the documents sent to the Divisions, with a request that the Divisions will vote upon those principles.

Representation of the Medical Profession in Parliament.

The consideration of Minute 93 of the Annual Representative Meeting, was referred to the next meeting of the Committee, and the Medical Secretary was instructed in the meantime to make inquiries of those who had shown special interest in the matter.

Minute 93.—That the representation of the medical profession in Parliament at the present time is inadequate, and in the interests of the public and profession alike should be improved, and that the Council be instructed to consider how this may be effected.

Government Supply of Vaccine Lymph.

With reference to Minute 104 of the Annual Representative Meeting the Chairman and the Chairman of the Representative Meeting were requested to make inquiry and report.

Minute 104.—That it is advisable that, having regard to the purity and reliability of the lymph supplied to the public vaccinators by the Local Government Board, every practitioner should be put on the same footing as public vaccinators in respect to the Government supply of vaccine lymph.

The Abuse of Drugs.

To carry out the instruction contained in Minute 115 of the Annual Representative Meeting, the Council was recommended to address a communication on the subject to all medical journals.

Minute 115.—That it is desirable that the Central Council draw the attention of the medical profession individually to the fact that by recommending by name certain drugs and certain preparations of those drugs, they are not only allowing themselves to be used indirectly as touts for wholesale druggists, but are also helping their patients to form, either in themselves or others, serious habits of drug abuse.

Memoranda.

Minutes 29, 57, 53, and 60 of the Annual Representative Meeting were referred to a Subcommittee to prepare memoranda for the assistance of the Divisions.

Minute 29.—That the foregoing resolutions and the propositions contained in the Interim Report on Contract Practice be referred to the Divisions.

Minute 57.—That the Report concerning the desirability of consultation between medical witnesses in legal cases be referred to the Divisions.

Minute 53.—That a copy of the foregoing resolution, together with documents relating thereto, be sent to the Divisions with the request that their Parliamentary representatives support the proposed appointment of a Royal Commission.

Minute 60.—That a copy of the Memorandum be forwarded to the Divisions.

Fees to Medical Witnesses.

The question of fees to medical witnesses was remitted to a Subcommittee for consideration and report.

Medical Certificates for School Children.

The Committee had before it the following report on the replies of county councils and councils of county boroughs concerning the payment of medical practitioners for certificates of unfitness of children to attend school, and also certain other communications bearing on this subject. The matter was postponed for further consideration.

Report on the Replies of County Councils and Councils of County Boroughs Concerning the Payment of Medical Practitioners for Certificates of Unfitness of Children to Attend School.

In response to a circular which, by instruction of the Medico-Political Committee, was addressed to all the county councils and councils of county boroughs in England and Wales, inquiring what provision, if any, has been made for the payment of medical men who give certificates required by the Education Authorities of unfitness of children to attend school on the ground of ill-health, replies have been received from 39 county councils and 59 county borough councils.

Among these, 11 county councils and 11 county borough councils state that they pay fees for such certificates; in 6 cases it is stated that such certificates, when required, are given by a salaried medical officer appointed by the education authority, and in 70 cases it is stated that no provision has been made for this purpose.

The fees usually paid for such certificates vary from 1s. to 2s. 6d.

Several authorities distinguish between cases seen at the doctor's surgery and cases visited by the doctor before certifying.

A fee of 10s. 6d. is paid by the Leeds Corporation when a visit from their special medical officer is required to certify in a case of poverty, or a case in which a medical certificate obtained by the parents does not satisfy the education authorities.

A fee of 5s. is paid by the Oxford Corporation when a visit is required. These are the only cases in which the fee paid exceeds 2s. 6d.

Some authorities who make no payment state that this practice is the result of careful consideration of the question.

Repeated Dispensing of Prescriptions.

As the result of further consideration of the abuse arising from the repeated dispensing of prescriptions beyond the intention of the prescriber, the Committee agreed to submit the following proposals for consideration by the Divisions:

(*a*) That the members of the profession should adopt the practice of indicating on every prescription the period, or the number of times, for which it is intended to be prescribed.

(*b*) That in order to prevent copying, all prescriptions should be signed by the prescriber with his full name and address, and not merely initialled.

Contract Practice.

The Medical Secretary made a preliminary report on the visits which, by the instructions of the Committee, he had made to investigate the conditions of contract practice

in South Wales, with special reference to colliery appointments.

Secondary Education.

A Subcommittee was appointed to consider and report on the circular issued by the Board of Education concerning the Government certificate of secondary education.

PUBLIC HEALTH COMMITTEE.

A meeting of the Public Health Committee was held at the office of the Association on October 7th, 1904, when there were present: Mr. Andrew Clark (Chairman of Council), and afterwards Mr. C. H. Watts Parkinson, in the chair; Dr. William Collier (President), Dr. Herbert Jones, Dr. J. Herbert H. Manley, Dr. F. C. Martley, Dr. J. C. McVail, Dr. T. G. Nasmyth, Dr. J. Roberts Thomson.

Election of Chairman.

Mr. C. H. Watts Parkinson was unanimously elected Chairman of the Committee for the ensuing twelve months.

Amendment of the Vaccination Law.

The following resolution of the Ulster Branch, addressed to the Central Council and referred to the Committee, was considered:

That the Central Council are hereby requested to take into their immediate consideration the advisability of making the necessary arrangements for bringing the subjects of vaccination and revaccination before Parliament in its next session.

The Medical Secretary was instructed to make inquiries of bodies interested in the amendment of the vaccination law, and it was resolved that the Medico-Political Committee be requested to take the matter into consideration on the first opportunity.

The Public Health Bill.

The Committee received a report from the Medical Secretary on the action taken in pursuance of the instructions of the Committee at its last meeting with reference to the redrafting of the Public Health Bill, and a report on communications with the Sanitary Inspectors' Association on the subject. A draft Bill was before the Committee, and, subject to the redrafting of certain clauses, the Council was recommended to take steps to have the Bill brought before Parliament.

Overlying of Infants.

A communication from the Coroners' Society on the subject of the overlying of infants having been read, a Subcommittee was appointed to further investigate and report to the Committee on the matter.

ORGANIZATION COMMITTEE.

A meeting of the Organization Committee was held at the office of the Association on July 12th, 1904, when there were present: Mr. T. Jenner Verrall (in the chair), Dr. T. D. Griffiths (President), Dr. E. Markham Skerritt (Treasurer), Mr. H. A. Ballance, Professor J. T. J. Morrison, and Professor A. H. White.

Medical Secretary's Visits to Divisions.

The Medical Secretary reported on visits paid to the Divisions of the South Wales Branch and to the Coventry Division, and also as to visits which he had been asked to make to the Reigate Division and meetings of the South-Western Branch; and his attendance at the meetings named was approved.

The Committee approved of visits reported by the Medical Secretary to the Canterbury, King's Lynn, and Richmond Divisions.

Voting Paper for Election of Members of Council.

After considering the following Minute of the Council:

That the question of the mode of election by Branches of representatives on the Council, together with the correspondence referred to by the Chairman of Council, be remitted to the Organization Committee with an instruction that it should suggest a uniform scheme of nomination and voting paper to be used generally by Branches throughout the Association,

the Committee expressed the opinion that the voting paper in connexion with which the difficulty had arisen, was in conformity with By-law 22, and therefore in order.

The consideration of a form of voting paper was deferred to the next meeting.

Alteration of Regulations Affecting Colonial Branches.

In conference with the Colonial Committee, the Committee resumed the consideration of certain proposed alterations of the regulations of the Association, in order to permit Colonial Branches to charge a compulsory subscription.

The Conference had before it a Memorandum prepared by Dr. Hankins, Honorary Secretary of the New South Wales Branch, as to the proposal of the Australasian Branches, and a Memorandum by the Medical Secretary as to the constitutional aspect of the proposals made.

It was resolved:

That in the opinion of the Conference a special Committee should be appointed, as proposed in the final recommendation (C) of the Constitution Committee in 1901, to consider the modifications, if any, which should be made in the present constitution of the Association in order to provide for the special requirements of the Colonial Branches.

The question of the validity of the action of a Colonial Branch electing a member of the Central Council for two years was considered with reference to the fact that the resolution of the Council, by virtue of which the said Branch elected a member of Council independently of any other Branch, provided only for one year. It was resolved:

That in the opinion of this Conference the election of Colonial Representatives on the Council for more than one year, under By-law 24, is subject to the powers of the Council under By-law 21, and that therefore the election of the Representative in question is valid for 1904-5, and will continue in force for the following year provided that the Branch remains ungrouped.

With reference to certain rules submitted by a Colonial Branch, which provided for the election of new members in a manner not in accordance with the By-laws of the Association, but in the opinion of the Branch expedient for local reasons, the Committee expressed the opinion that the question of the mode of election of members of Colonial Branches was one of those which should receive the consideration of the proposed Committee to consider the constitution as affecting the Colonial Branches.

Branch Rules.

The Council was recommended to approve the rules submitted by the Cape of Good Hope (Eastern), Cambridge and Huntingdon, Midland and Aberdeen Branches.

The consideration of the proposed rules for the Forest of Dean Section was deferred until a reply should be received to a letter which the Medical Secretary had by instruction of the Committee written to the Honorary Secretary of the Gloucestershire Branch.

A further meeting of the Committee was held on October 11th, when there were present: Mr. Andrew Clark (Chairman of Council) and afterwards Mr. T. Jenner Verrall in the chair; Mr. H. A. Ballance, Dr. J. Hamilton, Dr. E. Rayner, Professor A. H. White.

Election of Chairman.

Mr. T. Jenner Verrall was reappointed Chairman of the Committee for the ensuing year.

Registered Addresses of Members.

The Committee considered the advisability of allowing members to register a different address for the purpose of the list of members from that to which the British Medical Journal was sent, and expressed the opinion that the official address of any member given in the list of members should be the address registered by him for that purpose, but it was recommended that it be left to the discretion of the General Secretary to forward the Journal, as an act of grace, to any other address which a member may from time to time desire.

The Membership of the Association.

The Committee considered the following instruction of the Annual Representative Meeting to the Council which had been referred to the Committee:

That the Council of the British Medical Association be asked to consider what steps are advisable to increase the Association's membership.

The Committee took into consideration also the matter adjourned from the last meeting of the Committee of the desirability of the issue of circulars to non-members, for the purpose of increasing the membership, by the Central Office and the Divisions respectively.

Circulars which had from time to time been issued by Secretaries of Divisions with the view of increasing their membership, and also the annual circular which was issued by the General Secretary for the same purpose, were before the Committee.

The Committee made the following recommendations to the Council:

That to assist the Committee in estimating the membership, with a view to strengthening the organization of the Divisions and Branches, the Medical Secretary be instructed to keep a card register of members.

That the Committee is of opinion that it would greatly assist it in considering the strengthening of the organization of the Association if Secretaries of Divisions when forwarding their annual reports presented to Branches under By-law 9 would at the same time send copies thereof direct to the Medical Secretary for the information of the Organization Committee.

That with the same objects as are stated under the preceding resolution the Committee recommends to the Council that the Organization Committee be furnished with copies of the annual reports sent to the Council by Branches in pursuance of By-law 9.

And also resolved:

That the Chairman and Secretary be instructed to prepare a circular letter to be addressed to Secretaries of Divisions, drawing their attention to the importance of increasing the membership of the Association, suggesting for this purpose the issue of circulars to non-members early in December of each year, and at such other times as may be thought expedient, and enclosing a suitable model circular for their consideration; and that a copy of the draft letter to Division Secretaries be sent to the members of the Organization Committee prior to the next meeting.

A Model Voting Paper.

The consideration of a form of model voting paper for election by Branches was deferred, in order that further information might be obtained.

Rules of Branches.

The Council was recommended to approve (with the exception of certain specific rules) the rules submitted by the Guernsey and Alderney and Wandsworth Divisions, and the South-Eastern, Ireland, Branch.

The Council was also recommended to approve of the rules submitted by the Edinburgh Branch and the Stockport and Macclesfield Division, which had been adopted conditionally on the alteration of certain By-laws by the Annual Representative Meeting.

The Council was also recommended to approve the model rules as to the formation of the Forest of Dean Section, which the Forest of Dean members desired, subject to their adoption by the Gloucestershire Branch.

The transfer of Mere and Shaftesbury from the West Dorset Division to the Salisbury Division, being locally unopposed, was approved.

The Council was recommended not to approve of the transfer of a portion of the present Bath Division to the Trowbridge Division, the evidence being that the majority of the members resident within the area in question were opposed to such transfer.

The Council was recommended to approve the boundary between the Cape of Good Hope (Eastern Province), and the Cape of Good Hope (Western Province) Branches, which had been agreed upon by the two Branches.

The consideration of the following application from the East Anglian Branch Council, referred by the Chairman of Council to the Committee, was deferred until further particulars should be available.

EAST ANGLIAN BRANCH.

Council Meeting held at Kelling, Holt, on Thursday, September 29th, 1904.

Resolved (unanimously): That this meeting of the East Anglian Branch Council desires to draw the attention of the Central Council to the unsatisfactory position in which certain Divisions are placed, by reason of the regulation in accordance with which a Division must possess a membership of not less than fifty to obtain independent representation at the Representative Meeting.

In the grouping of two or more Divisions each of which has a membership of under 50 for the purpose of forming a constituency according to Article XXVII, it happens, owing to the difficulty of railway communication between neighbouring Divisions, that, when a conjoint meeting of these Divisions is held to elect a Representative for the constituency, only those members will attend who reside in the Division in which the meeting takes place, and thus it follows that at the present time certain Divisions are practically disfranchised, and that in the case of one of the most important meetings that members of the Association should attend a main principle of the new Constitution is unfulfilled, namely, that provision be made for the meeting together of members in a locality without an undue sacrifice of their time.

In view of the fact that the total number of Representatives is very far from reaching the limit of 300 laid down in Article XXVII, the East Anglian Branch Council suggests for the earnest consideration of the Central Council the desirability of so altering this Article that the present minimum limit of 50 members to a Division necessary for it to secure independent representation may be lowered to 30, or to a smaller number, and that by this means a cause of serious dissatisfaction in certain Divisions may be removed.

Members Residing on the Continent.

An inquiry having been received from a member of the Association resident on the Continent as to the possibility of effectively organizing the English practitioners who practise on the Continent, the Medical Secretary was directed to make certain inquiries.

Division Membership of Service Member.

With reference to a special case submitted, the Committee expressed the opinion that a member of the Association attached to the Navy, Army, or Indian Medical Service, whether on the active list or retired, who has a registered address in the books of the Association situated within the area of any Division is, *ipso facto*, a member of that Division.

ARRANGEMENT COMMITTEE.

A meeting of the joint Arrangement Committee was held at the office of the Association on October 18th, 1904, when there were present: Mr. Andrew Clark (Chairman of Council) in the chair, Dr. William Collier (President), Mr. George C. Franklin (President-elect), Mr. C. J. Bond, Dr. R. C. Buist, Dr. W. A. Carline, Dr. Astley V. Clarke, Dr. H. Radcliffe Crocker, Dr. John H. Galton, Dr. Frank M. Pope, Dr. Reginald Pratt, and Mr. John Lynn Thomas, C.B.

Apologies for non-attendance were received from Dr. Craig and Dr. Ferguson.

It was resolved to recommend that the annual meeting at Leicester for 1905 should be conducted in twelve sections as follows: Medicine; surgery; State medicine; industrial hygiene, and diseases of occupation; laryngology, otology, and rhinology; Navy, Army, and ambulance; obstetrics and gynaecology; ophthalmology; psychological medicine; pathology; dental surgery; and tropical diseases.

It was also resolved to recommend that there should be two general addresses in medicine and surgery respectively, and that the annual general meeting should commence at 2 p.m. on Monday, July 24th, that the usual church service should be held at St. Martin's Church, Leicester, at 5 p.m. on Tuesday afternoon, and that there should be a free and and popular lecture on Thursday evening, July 27th. It was also resolved that the business of the Representative Meeting should commence on Monday, July 24th, and that arrangements should be made whereby time could be found for the conference of the Branch and Division Secretaries.

PREMISES AND LIBRARY COMMITTEE.

A meeting of the Premises and Library Committee was held at the office of the Association on October 18th, 1904, when there were present: Mr. Andrew Clark (Chairman of Council) in the chair, Dr. E. Markham Skerritt (Treasurer), Dr. Edgar Barnes, Dr. H. Radcliffe Crocker, Dr. J. H. Galton, Dr. Bruce Goff, Dr. T. D. Griffiths, and Dr. F. M. Pope.

Constitution of the Committee.

Read resolution of the Council appointing Committee.

That the Premises and Library Committee consist of Sir Victor Horsley, F.R.S. (Chairman of Representative Meetings), Dr. Edgar Barnes, Dr. Radcliffe Crocker, Dr. J. H. Galton, Dr. Bruce Goff, Dr. T. D. Griffiths, and Dr. F. M. Pope.

The Chairman of Council was appointed Chairman for the year, and the Council was recommended to appoint the Treasurer to serve in the place of Sir Victor Horsley, who found it impossible to give the time necessary for attending the meetings.

THE LIBRARY.

A letter was read from the District Hospital, West Bromwich, thanking the Council for the gift of books.

The Librarian reported that there had been 1,314 attendances during the third quarter of the year—the highest on record for that quarter. He had received 16 volumes towards the completion of the series of the *Dublin Quarterly Journal of Medical Sciences*. The number of *Thèses de Paris* received for the past *l'Année Scolaire* was 591, making a grand total of 7,190. He also gave particulars of new books and new editions added to the library. The report of the Librarian was received, and an abstract entered on the minutes.

The Librarian stated that since the Library had been founded, over 6,000 duplicate volumes had been presented to various medical libraries.

PREMISES.

Reports from the Editor, the General Secretary, and the Medical Secretary upon the accommodation available in the central offices were received and discussed. Their further consideration was deferred in order that additional information might be obtained.

JOURNAL AND FINANCE COMMITTEE.

A MEETING of the Journal and Finance Committee was held at the office of the Association on October 19th, when there were present: Mr. Andrew Clark (Chairman of Council), in the chair; Sir Victor Horsley, F.R.S. (Chairman of Representative Meetings); Dr. E. Markham Skerritt (Treasurer); Dr. Edgar Barnes, Dr. James Barr, Dr. J. Brassey Brierley, Dr. J. H. Galton, Dr. J. Groves, Mr. R. H. Kinsey, Mr. W. Jones Morris, Mr. C. H. W. Parkinson, Professor Saundby, M.D., LL.D., Mr. T. Jenner Verrall, Dr. Norman Walker.

THE SUPPLEMENT.

The following resolution, passed at the Annual Representative meeting at Oxford, was considered:

That it is advisable that all Association Business Notices be withdrawn from the JOURNAL, and be collected and published in the SUPPLEMENT, so that the JOURNAL be purely medical.

The Committee instructed the Editor, General Secretary, and Medical Secretary to confer and report upon the matter at the next meeting of the Committee.

YEAR BOOK.

The following resolution of the Annual Representative Meeting at Oxford was then considered:

That it is advisable that the good idea of the Year Book be developed; that it should contain the names and addresses of all members, medical regulations, and other details of general interest to make it a real handbook of medical information.

After discussion, it was resolved that an alphabetical list of members of the Association with references to the Branches and Divisions to which they belong, also a list of members in Divisions, and the Articles and By-laws of the Association should be added. It was further resolved that the officers of the Sections of the last preceding annual meeting should be published.

ACCOUNTS.

The accounts for the quarter ending September 30th were received, and it was recommended that the Treasurer should be empowered to pay those remaining unpaid.

The report of the auditors was received, and entered on the minutes.

CONFERENCE ON SCHOOL HYGIENE.

It was resolved to recommend the Council to send four delegates to attend the forthcoming conference on school hygiene to be held under the auspices of the Sanitary Institute in February, 1905.

ASSISTANCE TO THE MEDICAL SECRETARY.

It was resolved to recommend the Council to authorize the Committee on Assistance to the Medical Secretary to appoint an assistant to the Medical Secretary for one year only.

ELECTION OF MEMBERS.

ANY candidate for election should forward his application upon a form, which will be furnished by the General Secretary of the Association, 429, Strand. Applications for membership should be sent to the General Secretary not less than thirty-five days prior to the date of a meeting of the Council.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

FIFE BRANCH.

THE second annual meeting of this Branch was held at Thornton on June 30th. Dr. SPENCE (Burntisland) was in the chair, and there was a good attendance of members.

Election of Office-Bearers.—Dr. T. G. Nasmyth, M.O.H. for the County of Fife, President-elect, was elected President for the current year in succession to Dr. Spence, who now, in terms of the rules, becomes a Past-President and a Member of Council. Dr. Spence was accorded a hearty vote of thanks for his services as president during the past year. Dr. Hay-Leslie was appointed President-elect; and Drs. Aitken, Craig, and Douglas were re-elected Members of Council; and Drs. Laing, C. Nairn Lee, Orr (Tayport) and Rorie, new Members of Council. Dr. R. Balfour Graham was re-elected Honorary Secretary and Treasurer.

Report of Branch Council.—The SECRETARY submitted the report of the Branch Council, which showed that the Council had met three times during the year, and had elected nine new members, and that the membership of the Branch now stood at 75, including one "Associate member." Two ordinary general meetings of the Branch had been held, at which important business had been transacted, details of which had appeared in the BRITISH MEDICAL JOURNAL from time to time. The Fife Branch had again been grouped by the Central Council with Edinburgh, for the purpose of election of two members of Central Council, and the result of the election was that Dr. Norman Walker and Dr. McKenzie Johnston (Edinburgh) had been elected, receiving 153 votes and 199 votes respectively, Dr. T. G. Nasmyth (Cupar) polling 79 votes. The Branch Council was of opinion, looking to the result of that election and the one previous, that some other arrangement would have to be come to with some other Branch, whereby Fife's prospects of representation would be improved, if not secured, or else that the Branch should apply for separate and independent representation on the Council. The funds of the Branch showed a sum of £11 14s. on the credit side, besides a sum of £10 18s. 7d., which meantime had been placed in a separate account on deposit receipt, that sum having been derived from the Edinburgh Branch funds as Fife's share of said funds at the date of the reconstitution of the Association. The report of the Branch Council was approved of.

Representation on Central Council—Dr. LAING moved—seconded by Dr. CRAIG—that the Fife Branch apply for separate and independent representation on the Central Council, and this was unanimously agreed to.

Proposed Ethical Committee.—Dr. KYLE moved, in terms of a motion of which he had given due notice:

That an Ethical Committee be appointed, and suitable rules framed and adopted.

—This was seconded by Dr. RORIE.—Dr. DICKSON moved the previous question, seconded by Dr. HAY, and this was carried by 10 votes to 2.

Representative at Representative Meetings.—Dr. Laing was appointed Representative at the Representative Meetings of the Association, failing whom, Dr. Henderson. The business for the Representative Meeting was considered and discussed, and Dr. Laing instructed upon several items on the agenda on which the Branch wished its views expressed. The Representative was also instructed to support generally the Medical Acts Amendment Bill in accordance with the finding of a previous meeting of the Branch and Division.

Tea.—The members thereafter partook of tea together.

SOUTH-EASTERN BRANCH:

REIGATE DIVISION.

A MEETING of this Division was held at Laker's Hotel, Redhill, on October 20th, at 5.15 p.m., Dr. JOHN WALTERS, J.P., in the chair.

The Branch Council.—After an able exposition of the duties of the Branch Council by Dr. H. M. STEWART, Honorary Secretary of the South-Eastern Branch, it was resolved:

That it is not desirable to divide the South-Eastern Branch.

Annual Representative Meeting.—An address was given by Dr. Walters as Representative at the Oxford meeting.

Representative of Branch on the Central Council.—Dr. C. Caldecott was elected Representative on the Council of the South-Eastern Branch.

Model Rules.—The draft model rules of a Division were carefully gone through and adopted. They were most clearly and ably explained by Mr. J. Smith Whitaker.

Ethical Committee.—The following six gentlemen were elected the Ethical Committee: Drs. Blackler, Bromet, Ogle, Prince, Rawlings, and Williamson. It was resolved that the same gentlemen form the ordinary Committee.

Election of Officers.—Dr. John Walters was elected Chairman, and Mr. W. A. Berridge was elected Honorary Secretary.

Sir Constantine Holman.—The members of his old Division heard with great pleasure that the gold medal of the Association had been awarded to Sir Constantine Holman, M.D. The Honorary Secretary was instructed to send their warm congratulations to Sir Constantine Holman.

Dinner.—Several guests afterwards dined with the members.

SOUTH MIDLAND BRANCH:
Aylesbury Division.

The autumnal meeting of the Aylesbury Division of the South Midland Branch of the British Medical Association was held in the Board Room of the Royal Bucks Hospital, Aylesbury, on Tuesday, October 18th. There were present Drs. Giles (in the chair), Eagles. Kennish, Deyns, Buxton, West, McFarland, Shaw, McClure, Kerr, Baker, and Rose.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Certificates to School Children.—It was decided to ask the Secretary to write to all the members in the Division and ask whether they would agree to give no certificates to school children unless they were paid by the county council.

Vacancies among Officers.—The proposed model rule (referring to vacancies among officers) was agreed to, and it was decided to insert it among the rules of the Division.

Memorandum from Exeter Division.—The memorandum from the Exeter Division was presented and the principles enunciated were accepted.

Annual Representative Meeting.—Dr. Buxton reported the meeting of Representatives at Oxford, and was unanimously accorded a vote of thanks.

Demonstration.—Dr. Tilley demonstrated on various throat affections, and was accorded a hearty vote of thanks.

Tea.—The meeting terminated at 4.10. Tea was provided for those attending.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:
Cardiff Division.

The autumn general meeting of the Division was held in the rooms of the Cardiff Medical Society on Thursday, October 20th. Dr. Thos. Wallace was in the chair, and twenty-six members were present.

Special Meeting.—The general meeting was preceded by a special meeting, at which the new rule as to vacancies among officers was adopted.

Confirmation of Minutes.—At the ordinary meeting the minutes of the previous general meeting were confirmed.

Representative on Branch Council.—Three names were proposed, and Dr. J. Powell (Barry) was declared duly elected a fifth representative on the Branch Council.

Midwives Training Centre Committee.—The final report of the Midwives Training Centre Committee was presented. The following is the text of the report: Your Committee beg to report that there have been six meetings of the Committee, two interim reports having been received and adopted by general meetings of the Division on April 14th and May 19th respectively. In continuation of those interim reports, your Committee beg further to report that: (*a*) The authorities of the University College of South Wales and Monmouthshire have now in session a well-attended course of lectures for the instruction of midwives in accordance with the requirements of the Central Midwives Board under the Midwives Act, 1902; and that for this course of lectures the Glamorgan County Education Committee have granted twenty-one free studentships annually, and the Cardiff County Borough Education Committee nine annually. (*b*) The Cardiff and District Branch of the Queen Victoria Jubilee Nurses Institute have added a maternity department to their work, with facilities for the instruction of pupil midwives in attendance on confinements under supervision recognizable by the Central Midwives Board. (Signed) E. Walford, Chairman; Ewen J. Maclean, Honorary Secretary.—Dr. Walford, Chairman of the Committee, proposed, and Dr. De Vere Hunt seconded, that the report be received and adopted. After some discussion this was agreed to *nem. con.*

Queen's Nurses Institute.—Dr. P. Rhys Griffiths moved, and it was seconded by Dr. Walford, that the standing order be suspended to consider an urgent matter related to the above-named report, but not referred to therein and not on the agenda. This being unanimously agreed to, Dr. Rhys Griffiths discussed the wage limit of 37s. 6d., which he understood had been fixed by the maternity department of the Queen's Nurses Institute. He considered that limit as too high, and moved that the matter be considered by the Division at the earliest convenient date.—This was seconded by Dr. Herbert Vachell and agreed to *nem. con.*—The discussion was continued by several members, and it was eventually agreed, on the motion of Dr. D. R. Paterson, seconded by Dr. Rhys Griffiths, to request the Executive Committee, with Drs. Herbert Vachell, Alfred Rees, and Brierley to ascertain the facts of the case and to bring the matter before a special meeting of the Division at an early date.—The Secretary was instructed to write to the Secretary of the Queen's Nurses Institute, intimating the sense of the meeting and suggesting that the high limit should not meanwhile become operative.—The further consideration of the agenda was then resumed.

Ethical Rules.—Division rules as to professional conduct, with special reference to contract practice and appointments, as drafted by the Medical Secretary and adopted by the Bradford Division, were considered *seriatim* and adopted. A rider to rule (G)—consultation in case of urgency—was adopted on the motion of Mr. W. Martin, seconded by Dr. Tudor Thomas:

> That in each instance, not otherwise provided for in the rule, an excerpt of the minutes of the Ethical Committee dealing with the matter shall, omitting names, be submitted to the next ordinary meeting of the Division.

Postponement of Paper.—Mr. Cornelius A. Griffiths's paper was postponed.

STIRLING BRANCH.

The autumn general meeting of this Branch was held at the Station Hotel, Larbert, on October 20th. Dr. Strachan, President, was in the Chair.

Confirmation of Minutes.—The minutes of the previous meeting were approved and signed by the President.

Annual Representative Meeting.—Dr. Highet, Representative, gave a summary of the business of the Annual Representative Meeting at Oxford.

Cerebral Pathology.—Dr. Clouston (Edinburgh), gave an address on the Light thrown on Mental Disturbance by recent investigations in Cerebral Pathology. The lecture was illustrated by lantern slides and microscope specimens. Attention was drawn to the pathological changes in the nerve cells, neuroglia, and blood vessels of the cortex in cases of general paralysis and dementia, and an attempt made to correlate these changes with the symptoms during life. The recently discovered diphtheroid bacillus found in cases of general paralysis was demonstrated and discussed. Illustrations were given of the more recent methods of staining nerve cells and their dendrites, showing the processes of chromatolysis and vacuolation. Dr. Clouston drew special attention to the toxin theory of mental disease as illustrated by specimens from cases of acute alcoholic poisoning and puerperal mania.

Vote of Thanks.—On the motion of the President the cordial thanks of the members were given to Dr. Clouston for his address.

SYDNEY AND NEW SOUTH WALES BRANCH.

The regular general meeting of this Branch was held at the Royal Society's Rooms, Sydney, on Friday, August 26th, Dr. A. MacCormick, President, in the chair. There were thirty-four members present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Member.—The President announced the election of Dr. Baur, of Medlow Bath.

Communications.—Dr. G. E. Rennie read a paper on a case of spontaneous recovery from cerebral tumour. The patient

was exhibited. Drs. Mills and Sinclair Gillies made remarks on the case; Dr. Rennie replied.—Dr. Macdonald Gill read notes on a case of disseminated sclerosis in a child of congenital origin. The patient was exhibited. Drs. Rennie and Sinclair Gillies discussed the paper, and Dr. Gill replied.—Dr. Macdonald Gill read notes on a case of acute myelogenic leukaemia.

Postponed Paper.—The President announced that, as Dr. Charles MacLaurin was not present to read his paper, there was no other business. Dr. Bowker proposed that the paper, which should have been read at this meeting, be placed at the bottom of the list for next meeting. The President stated that when a member failed to put in an appearance when the paper was called the practice was to let it stand over until the others on the list were dealt with.

A special general meeting of this Branch was held at the Royal Society's Rooms, Sydney, on Friday evening, September 2nd, Dr. McCormick, President, in the chair. There were twenty-four members present.

Death of Dr. Angel Money.—The President announced the death of Dr. Angel Money.—Dr. Rennie proposed, and Dr. W. O. Maher seconded, that a letter of condolence be forwarded to Mrs. Money.—This was carried.

Country Patients and Metropolitan Hospitals.—The President stated that the meeting had been convened for the purpose of discussing the following resolution, which had been passed by the Western Districts Medical Association:

> That, in the opinion of the Western Medical Association, no patients from the country, excepting accidents and cases of great urgency, should be admitted to the metropolitan or surburban hospitals without a letter of recommendation from a medical man in the district in which they reside.

The matter was now open for discussion.—Dr. Machattie moved the resolution, and Dr. Burkitt seconded.—A discussion ensued, in which Drs. Binney, Sheldon, Worrall, Bowker, Palmer, Hinder, and Crago took part.—Dr. Palmer moved an amendment which was not seconded.—After considerable discussion the following resolution was carried:

> That the New South Wales Branch of the British Medical Association is of opinion that it is undesirable that any patients from the country, excepting accidents and cases of great urgency, should be admitted to the metropolitan or suburban hospitals without reference to a medical man in the district in which they reside.

—Dr. Hinder proposed:

> That a copy of this resolution be forwarded to the executive authorities of the various city and suburban hospitals and the President of the Board of Health.

—Seconded by Dr. Palmer, and carried.

YORKSHIRE BRANCH:

Bradford Division.

An ordinary meeting of this Division was held at the Eye and Ear Hospital, Bradford, on Tuesday, October 11th, at 8.30 p.m., Mr. Mossop, Chairman, presiding.

Confirmation of Minutes.—The Secretary read the minutes of the last meeting, which were adopted.

Names of Officers.—It was unanimously agreed that the names of the officers for the current year should be printed on the circular calling the next meeting.

Annual Representative Meeting.—Mr. Horrocks read an interesting report on the Annual Representative Meeting at Oxford.

The Association and Medical Defence.—The Chairman of the Division made some observations on the Association's Draft Scheme of Medical Defence. After taking in review the several ineffectual efforts which have been put forth to organize and establish a medical defence department in the past, he commented on the apathy of the members, as exemplified by their indifference to the appeals made to them through the Divisions, in not more generally expressing their approval, or otherwise, of the adoption of the principle of medical defence, and the formation of a department to carry it out. However useful the medical defence societies had been in the past, there was no doubt that the power, prestige, and concentration of effort which would result from their absorption by the British Medical Association would be of the greatest possible benefit to the medical profession.

The "Medical Register."—Mr. Horrocks moved the following resolution:

> That the present state of the official *Medical Register* is unsatisfactory, as it is open to considerable error; and that steps be taken to remedy this defect.

Mr. Horrocks remarked that there should be no risk of names being inadvertently left out of the *Register*, as it was a very serious matter for the person involved. Sometimes names remained on when they ought to have been erased, as in cases of death. He had communicated with the Registrar as to the methods adopted by him to keep the *Register* correct. About a fourth of the names of persons on the *Register* are written to every year, taken in alphabetical order, so that only a fourth of the *Register* is revised, and three-fourths are open to error The Registrar notes death announcements, but it is no part of his duty to verify these, and he does not communicate with the friends. The Registrar's letters are sent through the post without registration, and some may easily get lost in transit. The reply is sent in an unregistered letter, and no acknowledgement of its receipt is sent by the Registrar. Failure to reply to the Registrar's inquiry may cause the striking off of the medical man's name from the *Register*. The *Medical Register* should be completely revised each year; the letter of inquiry ought to be sent in a registered envelope, and the reply should be acknowledged by the Registrar.

THE MIDWIVES ACT.

The following report, dated February 4th, 1904. was presented to the Wandsworth Division by a special committee—consisting of Dr. P. Caldwell Smith, M.O.H. Wandsworth (Chairman), Dr. G. F. McCleary, M.O.H. Battersea, Dr. F. Deas, representing the Wimbledon and District Medical Society, and Drs. A. D. Roe and D. R. Powell Evans, representing the Wandsworth Division—appointed to consider the Midwives Act, 1902, and the regulations of the Central Midwives Board:

Report.

It has been found exceedingly difficult to decide on any plan for common action. On the one hand, it was realized to be injudicious to take up the position of advising all to decline to have anything to do with these midwives; and, on the other hand, it was found necessary to arrange some way by which it would be known who the practitioners might be who did not care to be called on at all; and what fees those willing to recognize these women should charge under the various circumstances.

To avoid unpleasantness to practitioners who do not care to attend in any case where a midwife has been engaged, and also to allow of more certainty on the part of a midwife who to send for in an emergency, we consider it advisable that your local supervizing authority should be asked by resolution to form a list (after circularizing all medical practitioners) of all who are willing to attend in answer to a request on the part of a midwife or her patient's friends; and to supply all midwives with this list so far as their area is concerned.

In your case this authority is the London County Council. You may, knowing the large area controlled by this Council, consider it advisable to ask your representatives on the Branch Council to bring this matter before them in order that, if approved, the memorial to the County Council may come from them, and thus be of a more weighty and influential nature, seeing it would then be the wish of the whole metropolitan area. With regard to Wimbledon Urban District, now in your Division, the authority there has not as yet been decided on, but probably the Surrey County Council will retain the powers.

With regard to those willing to recognize the midwives, the whole matter divides itself into three heads:

(A) Certificates given to women by the medical profession and used by them in order to be registered as midwives; and the fees to be charged for these.

(B) The training of women by general practitioners and the fees to be charged for these lectures, and the practical clinical work.

(C) The fees to be charged in the case of being called in either (1) before labour, (2) during labour, or (3) after labour to see (*a*) the mother or (*b*) the child.

Certificates.

We would suggest, with regard to those certificates required by these women, which include a voucher for good moral character, that, seeing they do not refer to professional capabilities, and can be obtained from the clerical profession as well as the medical, it is unadvisable that they should be signed by a medical man.

With regard to the certificate of identity required by those desiring admittance to the roll, we would recommend a minimum fee of 5s. in all cases, as it is the main safeguard against personation.

Training of Midwives.

The training of women desirous of becoming certified midwives is allowable clinically by any medical practitioner; and by lectures by those medical practitioners recognized by the Midwives Board as teachers, after application. In the case of clinical teaching we would recommend that a minimum fee of 5 guineas be charged, which would also include the two necessary certificates on completion of the course. For the course of lectures we would recommend that a minimum fee of 5 guineas be charged, which would include the necessary certificate of attendance.

Fees for Attendance when Summoned by Midwife.

With regard to the fees to be charged by general practitioners whose names may be on the list suggested above (to be issued by the supervising authority), we would recommend the following:

In the case of being called in to attend any woman before labour has actually commenced, or any lying-in woman, or any newly-born child, that the fees charged should be those usually charged by the medical practitioner in his ordinary course of visiting and consultations, in view of the fact he may sometimes be unable to say how long his attendance may be necessary, and therefore cannot name an inclusive fee.

In the case of being called in to attend any woman in labour or immediately after labour, that the fees charged be the ordinary fees charged for confinements, with a minimum of 1 guinea. The practitioner can thus arrange the amount of this fee to suit the special attention probably required.

In all cases we would recommend that asking that fees be paid at once (in order to obviate any later likelihood of discussion or failure to obtain same) be recognized as professionally correct and advisable.

Disinfection of Midwives' Clothes and Instruments.

Your Committee would report for the information of the profession that the Medical Officers of Health of Battersea and Wandsworth have decided that after disinfection of any midwives' clothes and instruments, when such is considered necessary, they will give a certificate stating the fact, and this can be asked for by any medical practitioner having to do with the midwife, and should be producible.

Recommendations.

We would suggest for your consideration the following resolutions, the first having already been submitted for your approval in our special report made in January:

1. That in view of the dangers to lying-in women that are likely to result from the admission to the roll of midwives of incompetent women, under Section 11 of the Midwives Act, 1902, it is hoped that the Central Council of the British Medical Association will forthwith take necessary steps for calling the attention of all ministers of religion in England and Wales to the importance of satisfying themselves, before giving Form o Certificate, that the applicants have actually to their personal knowledge been engaged for the requisite period in bona fide practice as midwives, as defined by the Midwives Act, 1902, and the regulations based thereon, drawn up by the Central Midwives Board.

2. That in view of the fact that there seem to be no regulations passed by the Central Midwives Board controlling the actions of midwives certified under the Act to prevent them touting, advertising, or otherwise unfairly competing with the registered medical practitioners, it is hoped that the Central Council of the British Medical Association will approach the Midwives Board with the object of having some such regulations drawn up.

3. That the Committee of the Wandsworth Division be requested to draw up and send to every registered midwife practising in the area of this Division an abstract of those parts of the above report so far as they are of interest and apply to them and their position relative to the medical profession.

HOSPITAL REFORM.

A brief report of the proceedings of the Hospitals Committee published in the Supplement last week (October 22nd, pp. 145-6) contained references to a memorandum on the principles of hospital management and to hospital letters. As these matters are of great importance, and as there appears to be room for some misapprehension, owing to the brevity of the report, it seems desirable to recall shortly the action which has been taken by the Hospitals Committee and Council of the Association with reference to the question of the suitability of applicants for medical relief at out-patient departments.

At the meeting of the Council on April 20th a report from the Hospitals Committee was brought up, containing a draft memorandum of principles which should guide the admission of patients, including out patients, to hospital benefits. The memorandum contained the following paragraph:[1]

> That an investigating officer shall be appointed whose duty shall be to enquire into the eligibility of all applicants.

Among the points raised in the discussion were the terms of this paragraph. Eventually the draft memorandum was referred back to the Committee for further consideration, and members of Council were requested to send in, for the use of the Committee, any suggestions they might have to make on the individual clauses. Acting upon this suggestion, a member of Council, who is one of the consulting staff of the Royal Victoria Hospital, Bournemouth, and also Chairman of the Committee of the Hospital, forwarded, on June 17th, a copy of the Letter of Recommendation issued to the subscribers to that hospital with the object of calling attention to the provisions which the letter contains for securing that only proper persons shall be recommended as out-patients. The subscriber is required to sign a certificate as follows:

> I certify—having satisfied myself as to the circumstances—that A. B., aged , occupation , residing at , is a fit and proper person to receive the benefits of the charity.

The front of the letter also contains the two following statements:

> The out-patient department is intended only for those who are too poor to pay for medical relief.
>
> In any case where the subscriber is in doubt as to the circumstances of the patient, please write across the letter "For inquiry."

On the back of the letter is the statement that:

> Persons earning more than £1 per week, or members of a family the collective incomes of which family at home exceeds 30s. per week are *not admissible* to the benefits of the out-patient department.

We are informed that in all doubtful cases the committee of the hospital employs a specially-trained inquiry agent to visit the house of the applicant and ascertain all the circumstances of the case. Further, the members of the out-patient staff are instructed by the committee to mark "For inquiry" the letter of any applicant who appears not to be a fit case for the charity within the provisions set out above. Such cases also are referred to the inquiry officer. His reports are submitted to the committee, and if, in any instance, it is shown that an unsuitable case has been recommended, the subscriber by whom the letter was given is communicated with and his attention called to the rules of the charity.

It is only right that these facts should be recorded, otherwise the report of the proceedings of the Hospitals Committee, as published in the Supplement of October 22nd, may give rise to misapprehension. It should also be stated that the names of the staff printed on the back of the letters of the hospital in question are those of the acting staff only, and show the days and hours of attendance in the out-patient department of the medical officers for out-patients.

The recommendation contained in the memorandum of the Hospitals Committee as finally drafted and approved by the Annual Representative Meeting on July 26th was as follows:

> That some means of investigation into the circumstances of the applicants for relief shall be employed in all medical charities, and, where possible, a special officer shall be appointed for this work."

[1] Supplement, May 7th, 1904, p. 114.
[2] Supplement to the British Medical Journal, May 7th, 1904, p. 94.

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TO THE

BRITISH MEDICAL JOURNAL.

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ASSOCIATION INTELLIGENCE.

PROCEEDINGS OF COUNCIL.

AT a meeting of the Council of the British Medical Association held in the Council Room, 429, Strand, W.C., on Wednesday, October 19th, 1904.

Present:

Mr. ANDREW CLARK, D.Sc., Chairman of Council, in the Chair.
Dr. WILLIAM COLLIER, President.
Mr. GEORGE COOPER FRANKLIN, President-elect.
Dr. T. DRYSLWYN GRIFFITHS, D.Sc., Past-President.
Sir VICTOR HORSLEY, F.R.S., Chairman of Representative Meetings.
Dr. E. MARKHAM SKERRITT, Treasurer.

Dr. JOHN FORD ANDERSON, London.
Dr. EDGAR G. BARNES, Eye.
Dr. JAMES BARR, Liverpool.
Dr. MICHAEL BEVERLEY, Norwich.
Dr. J. BRASSEY BRIERLEY, Old Trafford.
Dr. H. LANGLEY BROWNE, West Bromwich.
Dr. R. COCHRANE BUIST, Dundee.
Dr. DUNCAN BURGESS, Sheffield.
Mr. JAMES CANTLIE (Hong Kong Branch), London.
Dr. W. A. CARLINE, Lincoln.
Dr. EDWARD J. CAVE, Bath.
Mr. PEARSON R. CRESSWELL, C.B., Dowlais.
Dr. H. RADCLIFFE CROCKER, London.
Dr. GEORGE W. CROWE, Worcester.
Dr. P. MAURY DEAS, Exeter.
Lieutenant-Colonel E. F. DRAKE-BROCKMAN (South Indian and Madras Branch), London.
Dr. G. BAGOT FERGUSON, Cheltenham.
Mr. C. E. S. FLEMMING, Bradford-on-Avon.
Dr. E. ROWLAND FOTHERGILL, London.
Professor DAVID W. FINLAY, M.D., Aberdeen.
Dr. H. A. FRANCIS (Queensland Branch), London.
Dr. EDWARD LAWRENCE FOX, Plymouth.
Dr. JOHN H. GALTON, Upper Norwood.
Dr. BRUCE GOFF, Bothwell.
Dr. DAVID GOYDER, Bradford.
Dr. MAJOR GREENWOOD, London.
Dr. JOSEPH GROVES, Carisbrooke.
Dr. JOSEPH J. GIUSANI, Cork.
Dr. JAMES HAMILTON, Glasgow.
Dr. T. ARTHUR HELME, Manchester.
Dr. JAMES H. HUNTER, South Shields.
Dr. R. MACKENZIE JOHNSTON, Edinburgh.
Dr. THOMAS KERR (Malaya Branch), London.
Mr. R. H. KINSEY, Bedford.
Sir FRANCIS LOVELL, K.C.M.G. (Trinidad Branch), London.
Dr. C. H. MILBURN, Hull.
Mr. W. JONES MORRIS, Portmadoc.
Professor J. T. J. MORRISON, Birmingham.
Dr. CHARLES JAMES MORTON, London.
Dr. JAMES MURPHY, Sunderland.
Dr. JAMES MURRAY, Inverness.
Mr. D. A. O'SULLIVAN, London.
Mr. EDMUND OWEN, London.
Dr. C. H. WATTS PARKINSON, Wimborne Minster.
Dr. FRANK M. POPE, Leicester.
Dr. EDWIN RAYNER, Stockport.
Dr. J. MAXWELL ROSS, Dumfries.
Professor ROBERT SAUNDBY, M.D., LL.D., Birmingham.
Dr. CECIL E. SHAW, Belfast.
Professor W. R. SMITH, M.D. (Malta and Mediterranean Branch), London.
Mr. JOHN LYNN THOMAS, C.B., Cardiff.
Dr. G. E. TWYNAM (Sydney and New South Wales Branch), London.
Mr. T. JENNER VERRALL, Brighton
Dr. NORMAN WALKER, Edinburgh.
Captain C. E. WILLIAMS, I.M.S. (Burmah Branch), London.

Read letters of apology for non-attendance from Professor Byers, Dr. J. Craig, Dr. C. J. Martin, Dr. C. W. Marriott, Mr. W. D. Spanton, and Dr. W. J. Tyson.

The following members of Council were introduced as attending for the first time: Dr. H. A. Francis, representing the Queensland Branch; Dr. J. Giusani, representing the Munster Branch; Captain C. E. Williams, representing the Burmah Branch.

A vote of congratulation was accorded to the General Secretary on his recovery from his recent illness.

The Chairman of Council having reported receipt of certain nominations for co-option on the Council in accordance with By-law 29, a ballot was taken and the Chairman announced that no candidate had obtained the necessary majority.

The election of Service Members on the Council under By-law 20 (*c*) was then considered; it was resolved to invite Fleet Surgeon Lloyd Thomas, R.N., to serve as a Representative of the Navy, but the question of electing Representatives of the Army Medical Service and the Indian Medical Service was postponed until the January meeting of the Council.

Read acknowledgement from Sir Constantine Holman to the resolution of congratulation on the honour of knighthood being conferred on him by His Majesty, which was ordered to be entered on the minutes.

The question of an award of the Gold Medal of the Association for Distinguished Merit was considered, and after the necessary ballot it was

Resolved: That the Gold Medal of the Association for Distinguished Merit be awarded to Sir Constantine Holman, M.D., in accordance with Regulation 1 governing the award of such medals, for his distinguished services to the British Medical Association through the South-Eastern Branch, on the Central Council, as Treasurer, and as Vice-President.

Further, for his lifelong and successful labours for the improvement of the financial conditions of the Medical Charities.

It was ordered that a copy of the reply from the General Medical Council on the subject of giving anaesthetics for unregistered dentists be forwarded to the New Zealand Branch.

The following reply from the Colonial Office, in reference to the representations of the Council urging the expediency of registering in Australia only those medical qualifications which are available for registration in Great Britain and Ireland, was ordered to be entered on the minutes:

25673/1904. DOWNING STREET,
July 30th, 1904.

SIR,—I am directed by Mr. Secretary Lyttelton to acknowledge the receipt of your letter of the 10th inst., communicating a resolution recently passed by the British Medical Association as to the expediency of registering in Australia only those medical qualifications which are registrable in the United Kingdom; and I am to state for the information of the Council that a copy of your letter has been transmitted to the Governors of the States of the Australian Commonwealth for the consideration of their Ministers.

I am, Sir, your obedient Servant,
H. BERTRAM COX.

The Secretary,
British Medical Association.

Certain references from the Representative Meeting at Oxford were considered and referred to various Committees for report.

On consideration of the minutes of the Premises and Library Committee of October 18th, 1904, it was resolved:

That the accounts for the quarter be approved and the Treasurer be empowered to pay them.

That the Treasurer be elected a member of the Premises and Library Committee in the place of Sir Victor Horsley, who is unable to serve.

That the Architect be invited to confer with the Editor and General Secretary in order to ascertain how the space now set apart for the Editorial department might be reconstructed and rearranged, and an improvement effected in the ventilation.

On consideration of the minutes of the Journal and Finance Committee of October 19th, 1904, it was resolved:

That the Auditors' Report be received, approved, and entered on the minutes.

That the Council appoint four delegates to represent the Association at the forthcoming Conference on School Hygiene to be held in London in February, 1905. The delegates to consist of Dr. T. D. Griffiths, Dr. J. Groves, Dr. E. Rayner, and Mr. C. H. W. Parkinson.

That in the Year Book there shall be an alphabetical list of the members of the Association with reference to their Branches and Divisions, and also a list of members in Divisions.

That the officers of Sections of the previous year be published in the Year Book.

That the Articles and By-laws as amended be published in the Year Book.

In reference to the payment of fees to members attending Committees out of the funds of the Association or Branch, it was resolved that the matter be referred back to the Committee.

That the Committee on Assistance to the Medical Secretary be authorized to appoint an assistant to the Medical Secretary for one year only.

On consideration of the minutes of the Arrangement Committee of October 18th, 1904, it was resolved:

That the Annual Meeting be conducted in twelve Sections, namely:—Medicine; Surgery; State Medicine; Industrial Hygiene and Diseases of Occupation; Laryngology, Otology, and Rhinology; Navy, Army, and Ambulance; Obstetrics and Gynaecology; Ophthalmology; Psychological Medicine; Pathology; Dental Surgery; Tropical Diseases.

That the Annual General Meeting commence at Leicester at 2 p.m. on Monday, July 24th, 1905.

That the usual Church Service be held at 5 p.m. on the Tuesday afternoon.

That there be two Addresses—namely, Medicine and Surgery—also that there be a Free and Popular Lecture.

The question of arranging for a meeting of the Division and Branch Secretaries at the annual meeting to be held at Leicester was referred to the Organization Committee.

On consideration of the minutes of the Organization Committee of July 12th and October 11th, 1904, it was resolved:

That the Rules submitted by the Cape of Good Hope (Eastern), Cambridge and Huntingdon, Midland, and Aberdeen Branches be approved.

That the Rules of the Guernsey and Alderney, and Wandsworth Divisions, and the South-Eastern (Ireland) Branch be approved, except those of the Guernsey Division as to the election of officers and Committee, and Rule 14 of the South-Eastern (Ireland) Branch.

That the new Rules of the Edinburgh Branch, and of the Stockport and Macclesfield Division, which were adopted conditionally on the alteration of by-laws relating thereto, by the Annual Representative Meeting at Oxford, be approved.

That the Rules desired by the members of the Forest of Dean for the formation of a Section be approved if passed by the Gloucestershire Branch.

It was resolved, on the joint recommendation of the Colonial and Organization Committees, that a Special Committee be appointed to consider the modifications, if any, which should be made in the present constitution of the Colonial Branches; and that the Committee consist of three members of the Colonial Committee and three members of the Organization Committee, with power to add not more than six other members, three of which members shall be conversant with Colonial matters.

The Council approved the following recommendations:

(c) That it would greatly assist the Organization Committee in considering the strengthening of the organization of the Association if Secretaries of Divisions, when forwarding their Annual Reports presented to Branches under By-law 9, would at the same time send copies thereof direct to the Medical Secretary for the information of the Organization Committee,

(d) That the Organization Committee be furnished with copies of the Annual Reports sent to the Council by Branches, in pursuance of By-law 9,

and resolved:

That it be an instruction to the Organization Committee to prepare Annual Report Forms suitable for use by the Division Secretaries.

That the boundary between the Cape of Good Hope Eastern Province Branch and the Cape of Good Hope Western Province Branch, indicated on the map agreed upon and submitted by the two Branches, be approved.

On consideration of the minutes of the Medico-Political Committee of July 13th and October 5th, 1904, it was resolved:

That the Chairman of Council be requested again to convene the conference between this Association and other Medical Societies in regard to the action of the Coroner for South-West London.

On consideration of the minutes of the Medical Secretary Committee of July 14th and October 4th, 1904, it was resolved:

That the Council refer to the Medical Secretary Committee the consideration of the reorganization and redistribution of the medical work of the office of the Association.

On consideration of the minutes of the Ethical Committee of September 30th, 1904, it was resolved:

That the rules of Ethical procedure of the East Glasgow Division and the ethical rules of the Monmouthshire, North Glamorgan, and South-West Wales Divisions be approved.

The minutes of the Medical Defence Committee of October 6th, 1904, were received, and it was resolved:

That the Committee formulate a scheme for Medical Defence in accordance with the instructions of the Representative Meeting.

The minutes of the Public Health Committee of October 7th, 1904, were received, and the consideration deferred.

The nineteen candidates whose names had been duly circulated were elected members of the British Medical Association.

The Council then adjourned until Wednesday, November 16th, at 2 p.m.

THE MIDWIVES ACT:

A CORRECTION.

THE Honorary Secretary of the Wandsworth Division requests us to state that the report of the Special Committee on the Midwives Act printed in the SUPPLEMENT of October 29th, p. 159, was adopted by the Division with the modification that the minimum fee should be £2, the amount paid under the Poor Law, and not £1 1s., as suggested in the original report.

Proceedings of Standing Committees.

ETHICAL COMMITTEE.

A meeting of the Ethical Committee was held at the office of the Association on September 30th, 1904, when there were present: The Chairman of Council, and afterwards Professor Saundby, in the chair; Dr. W. Collier (President of the Association), Mr. H. A. Ballance, Dr. A. G. Bateman, Mr. G. H. Broadbent, Dr. Bruce Goff, Mr. D. A. O'Sullivan, Mr. W. D. Spanton.

Election of Chairman.

Professor Saundby was re-elected Chairman of the Committee for the year.

Principals and Assistants.

A question submitted by a member of the Association concerning the action of an assistant setting up in opposition to his principal was referred for preliminary investigation to the Divisions in which those concerned resided.

Club Appointments.

A dispute relative to the acceptance by a member of the Association of the medical officership of a club vacated, as was alleged, through a dispute as to rates, was also referred to the Division concerned.

Ethical Rules.

The Chairman reported that in presenting the recommendations of the last meeting of the Committee to the Council he had also, in exercise of the standing authority conferred upon him by the Committee, presented for approval Rules of the Westminster Division.

Trade Advertisements.

The Medical Secretary reported action taken since the last meeting of the Committee under the standing instructions relative to trade advertisements and newspaper announcements concerning medical practitioners.

In a case in which a medical practitioner complained of the persistence of newspapers in publishing personal paragraphs concerning the practitioner, the Chairman and Secretary were authorized to give such assistance as might seem desirable.

In the case of a practitioner who had allowed himself to be interviewed by newspaper reporters with reference to a new method of treatment, it was resolved that the undesirability of such action be pointed out to him.

In the case of a complaint against a member of the Association that he had permitted his name to be mentioned in a paragraph appearing in a provincial newspaper concerning the proceedings at the meeting of a medical society, and had subsequently written a signed letter to the paper on the subject, it was resolved:

> That, on the evidence before the Committee, it does not appear that the member in question was in any way responsible for the publication of the paragraph, and the Committee is of opinion that the signed letter was a proper disclaimer of certain opinions erroneously reported.

Advertisements of Hydropathic Establishments.

Concerning the advertisements of hydropathic establishments, the following report was approved and ordered to be circulated to the Secretaries of Divisions and Representatives:

The Advertising of Hydropathic Establishments.

The Committee by a circular in March, 1904, asked the Divisions in the United Kingdom to express their opinion upon the advertising of medical practitioners in connexion with hydropathic establishments.

The inquiry of the Committee was accompanied by the following memorandum:

Complaints frequently reach the Editor of the Journal of the advertising of medical practitioners in connexion with hydropathic establishments. These complaints usually come from other medical men in the neighbourhood who are not connected with any hydropathic establishment, and the grievance seems to be that the practitioners so advertised are also engaged in general family practice, and are thus the competitors of the complainants, who feel that these advertisements are therefore unfair.

A connected grievance is that many of the hydropathic establishments try to compel all their visitors to accept the services of the medical officer of the establishment and oppose the employment by visitors of any outside medical practitioner.

So long as the medical officers of hydropathic establishments were resident officials and gave their whole time to the work, these complaints do not seem to have been made, although the way in which they were and still are advertised at railway stations and in railway guide-books is not in accordance with the general rules of the profession respecting advertising. This seems to have been the thin end of the wedge, by means of which a very undesirable practice has grown up, until it has obtained dimensions which make it necessary to consider whether any steps can be taken to check it. It would be obviously unfair to condemn without due notice those who have been allowed for many years to have their names advertised, but, by a reference to the Divisions, full consideration will be obtained before any pronouncement by the Association is made.

One hundred and twelve Divisions have communicated their opinion on the subject, and these replies have been classified as follows:

1. Fifty-four Divisions, without reservation or qualification, express themselves as adverse to the advertising of medical practitioners in connexion with hydropathic establishments.
2. Twenty-five are not only adverse to such advertising, but think that the same rule should be applied to similar institutions.
3. Sixteen Divisions would restrict their condemnation to the advertising of those practitioners who do not give their whole time to the work.

There are thus ninety-five Divisions who condemn the practice.

On the other hand:

4. Three Divisions express the opinion that this subject cannot advantageously be considered apart from the wider one of the ethical position of proprietary institutions in general.
5. Eleven Divisions state that they have no experience of the matter, and therefore do not feel competent to express an opinion.
6. And one Division, "That the advertising of medical practitioners in connexion with hydropathic establishments does not call for any interference."
7. One Division is of opinion "That there is no occasion for prohibiting the advertising the names of medical attendants in connexion with hydropathic establishments provided that it is made clear that other medical practitioners than those advertised are at liberty to attend."
8. One Division has resolved "That this Division is of opinion that all medical practitioners living in the town where hydropathic establishments are advertised should be allowed to attend cases in such establishments."

With these may be mentioned a rider, added by one Division included in Class 1 above, to the effect "That all visitors to such establishments should have the option of choosing their own medical attendant."

The result of the inquiry would thus appear to be to justify a pronouncement on behalf of the Association that the names of medical practitioners should not be advertised in connexion with hydropathic establishments.

The Committee is of opinion that members of the profession who act as medical officers to hydropathic and similar establishments should make it a condition of their engagement that their names shall not be inserted in any advertisements of such institutions except in advertisements in medical journals.

The suggestion of certain Divisions that the practice of hydropathic establishments should be thrown open to all practitioners in the district in which they are situated raises quite a different issue from that submitted by the Committee, and may perhaps be made the subject of a separate inquiry when professional opinion shall appear to be ripe for a pronouncement thereon.

Ethical Rules.

The Council was recommended to approve the rules of the East Glasgow Division.

The Medical Secretary having reported on ethical questions which had arisen at meetings of the South Wales Branch and its Divisions during his visit to investigate the conditions of contract practice in South Wales, and, attention having

been drawn to similar difficulties in other Branches, it was resolved:

That a Subcommittee be formed to consider and report to the Committee upon the present organization of the Association for dealing with ethical matters, and the changes, if any, required therein in respect of (*a*) rules, (*b*) the bodies by which such matters are considered, and (*c*) the procedure of investigation and decision.

The Subcommittee was empowered to request the assistance of Honorary Secretaries of Divisions or Branches, or other members of the Association who may have had special experience in dealing with ethical questions.

Alleged "Process of Exclusion" of General Medical Practitioners.

The Committee considered certain issues raised by an article appearing in a provincial medical journal upon which two members of the Association had asked the Editor of the British Medical Journal to pronounce an opinion, and which the Editor had referred to the Ethical Committee.

The following is an abstract of the article in question:

1. General remarks on the alleged existing tendency to restrict the domain of general practice, and lower the status of the general practitioner.

2. As a new specific instance of these processes, it is asserted that there is now "a tendency on the part of certain surgeons to debar their humble *confrères* from any participation in surgical procedures even of the most trivial character."

3. It is asserted that (in contrast with the former custom, that the ordinary medical attendant should administer the anaesthetic, or in some other way assist in operations which had necessitated the calling in of a surgeon) it is now thought necessary for the operating surgeon to select his own anaesthetist and assistants, even to the exclusion of the ordinary attendant.

4. The effect of such exclusion is said to be that the general practitioner "is deprived of many fees which are his proper prerogative," and that the public are led to believe that he is incompetent to perform the duties in question.

5. As to the extent of the evil the writer speaks of "the vast majority of those who suffer from it." He also refers to (*a*) private practice; in this it is said that the evil is "not seen at its worst"; (*b*) private hospitals; in these the exclusion is said to be "most flagitiously perpetrated," and as an example is cited a case in which the patient was told by the surgeon that the visits of the ordinary medical attendant were entirely unnecessary, which resulted in the patient refusing to pay the account of the ordinary attendant; (*c*) certain special hospitals (presumably from the context public charitable institutions); in these the same determination to exclude the general practitioner is said to be evident, and to be becoming more unrestrained.

The writer vouches for one case in which the general practitioner has been prevented from administering the anaesthetic, although on two previous occasions he had done so at the same institution, under the same surgeon, and to the same patient.

6. The writer concludes: "It is time that the province of the general practitioner should be clearly defined, and that any attempt to oust him from his rightful prerogative should be visited with the stern, unflinching condemnation which such treachery demands."

One of the members who brought the matter under notice submitted the following questions:

1. "When a patient is admitted into a public institution which has a duly-appointed anaesthetist, has the previous medical attendant any claim to come to the hospital and administer the anaesthetic?"

2. "In the event of his administering such an anaesthetic, is it right and proper for him to charge the patient a fee for so doing?"

The Committee resolved upon the following expressions of opinion:

1. That, in the best interests of patients, and taking into consideration the grave personal responsibilities placed by the law upon operating surgeons for the acts of their assistants (vide Byrne *v.* Thorne, K.B. Division 90, 1904), the Committee is of opinion that it is imperative that absolute freedom of choice in the selection of such assistants should be left to the surgeon in charge of the case.

2. That no medical practitioner can claim as a right to assist in the operation or to act as anaesthetist in a case referred by him to a surgeon for the purpose of an operation, but that he should always be invited to be present at the operation.

3. That when a patient is admitted into a public institution which has a duly-appointed anaesthetist the previous medical attendant has no claim to come to the hospital and administer the anaesthetic.

4. That in the event of the previous medical attendant administering such an anaesthetic, it is not right and proper for him to charge the patient a fee for so doing.

Inquiries from Branches.

The Committee considered an inquiry from the Honorary Secretary of a Colonial Branch concerning certain newspaper announcements, and it was resolved:

That the Branch Council be requested to furnish its comments on the subject before any pronouncement is made by the Central Council.

The Committee considered the finding of a Branch Council in certain cases of alleged misconduct investigated by them, and expressed its concurrence with the opinion of the Branch Council and its view that the finding should be communicated by the Branch to the practitioner concerned.

Articles on Medical Subjects in Lay Newspapers.

In the case of a signed article on medical subjects contributed to a lay newspaper by a medical practitioner, it was resolved:

That the matter of the action of the said medical practitioner in publishing signed articles in lay newspapers be referred to the Division of the Association of which he is a member.

Contract Practice Disputes.

With regard to the notice in the Journal concerning districts in which there are contract practice disputes, and in which applicants are invited first to communicate with the Local Secretary, it was resolved:

(*a*) That where the dispute affects only a part of the appointments, the Chairman and Secretary have discretion to name in the notice the special class of appointments affected.

(*b*) That no other names should be inserted as those of persons to whom application should be made than the names of the honorary secretaries of the Divisions or Branches concerned.

Medical Officers of Insurance Companies.

The Committee considered an application from a member of the Association that a pronouncement should be made with respect to the publication of the names of the medical officers of insurance companies in prospectuses and similar publications issued by the companies, and it was resolved that no action be taken.

Meetings of Branches and Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the Journal.*]*

METROPOLITAN COUNTIES BRANCH:

[*To the Editor of the* British Medical Journal.]

Sir,—We are instructed by the Council of the Metropolitan Counties Branch to forward to you, for insertion in the Journal, the following resolution passed by the Council on Tuesday, October 25th:

That, in the opinion of this Council, it is undesirable that notices of the return home of medical practitioners after a vacation should be published in the newspapers.

Yours faithfully,

George Rowell,
Fredk. J. Smith,
Honorary Secretaries.

October 27th, 1904.

[*To the Editor of the* British Medical Journal.]

Sir,—We are instructed by the Council of the Metropolitan Counties Branch to forward to you, for insertion in the Journal, the following expression of opinion:

Resolution of the Organization Committee in Respect to Division and Branch Expenditure.

The Chairman of Council referred for the consideration of the Committee an inquiry which had been received from the Council of a Branch as to the propriety or otherwise of the following classes of expenditure which a Division might incur:

(*a*) Connected with a Lecturer:
- (1) A direct fee for lecturing.
- (2) Travelling expenses.
- (3) Refreshment.

(*b*) Connected with a lecture:
- (1) Hire of a lantern and slides.
- (2) ,, ,, cinematograph.
- (3) ,, ,, microscope and other instruments.

(*c*) Connected with patients exhibited:
(1) Travelling expenses.
(2) Refreshment.
(3) Honorarium for attending.
(*d*) Connected with the Secretary of a Division and a Representative of ditto:
(1) Travelling expenses to a meeting of the Branch.
(2) ,, ,, on the business of a Division.
(*e*) Hire of a club room for a Division:
(1) For purposes of a professional meeting.
(2) For social purposes.

Resolved: That, in the opinion of the Committee, all the foregoing items would fall within the legitimate expenditure of a Division, except that stated under (*e*) 2, which, in the opinion of the Committee, would be *ultra vires*.

Yours faithfully,
GEORGE ROWELL,
FREDK. J. SMITH,
October 27th, 1904. Honorary Secretaries.

WANDSWORTH DIVISION.

A MEETING of the Division was held at Tooting Bec Asylum (by the kind invitation of the Medical Superintendent) on Thursday, October 27th. Dr. GEO. WALKER, Chairman, presided, and there were present: Drs. Swallow, Jewell, Hills, Turner, Pollard, Bligh, Caldwell Smith, Fennell, Valerie, Ker, Spurgin, Wallace, Caudwell, Gordon, Huxley, Gilvie, McManus, Purcell, Pritchard, Gardiner, Cowie, Hunt, and the Honorary Secretary.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Bradford Division.—A letter received from the Bradford Division was referred to the Committee to report upon.

Troutbeck Committee.—A communication was received from the Secretary of the Troutbeck Committee asking the Division to nominate two members to serve on that Committee. After a ballot Drs. Walker and E. Fothergill were elected.

Division Rules.—A letter giving the approval of the Central Council to various alterations was read.

Proposal re Young Practitioners.—A resolution suggesting that all medical practitioners of less than three years' registration should be admitted as members on an annual subscription of 10s. was submitted, but not approved of.

Annual Dinner of the Association.—It was resolved:
That it is the opinion of this meeting that it is neither necessary nor desirable that the charge, exclusive of wines, should exceed 7s. 6d. each member at the annual dinner of the Association.

This resolution was to be sent to the Central Council.

Certification of Alleged Lunatics.—Dr. J. L. GORDON read a paper on the certification of alleged lunatics, which was followed by an interesting discussion in which several took took part.

Votes of Thanks.—A hearty vote of thanks to the Medical Superintendent and Dr. Gordon was carried unanimously, after which the members adjourned to a tea kindly provided by the medical staff, who subsequently conducted an inspection of the asylum and its various offices.

An Address
ON THE
INTERESTS OF MEDICAL LIFE AND WORK;
AND THE
AIMS AND PROSPECTS OF THE BRITISH MEDICAL ASSOCIATION.

Delivered before the Stourbridge Medical Society, October 6th, 1904.

By ALFRED H. CARTER, M.D., M.Sc., F.R.C.P.,
Professor of Medicine, University of Birmingham.

EDUCATION: KNOWLEDGE AND CHARACTER.

OUR most elementary interests grow out of our physical necessities. To earn our living, and that of those who are dependent upon us, is normally our first care and duty—and rightly so. In face of increasing and unceasing competition, the path to material success is often long and difficult; but, considering the circumstances under which modern life is carried on, it must be admitted that, though the prizes are scarce, there are few callings in which a modest competence is more readily assured than our own, provided a man knows his work, and goes the right way about it. Without entering into details with regard to our modern methods of medical education, it may be broadly accepted that they have been greatly improved, and there is at present little or no excuse for one who, with average ability and industry, fails to acquire a sound and sufficient all-round acquaintance with his work. Probably one of the most valuable and important directions in which the medical curriculum has been improved in later years is by the introduction into it of a much larger proportion of practical work. On the other hand, I cannot but think there is a disposition to demand from students too much technical detail in the study of the preliminary sciences at the expense of the broad principles which are of most service in the actual practice of our profession. But among the conditions which make for material success, character and methods of work count for more than mere ability. I remember that Sir William Jenner once told us that he had known many men succeed without much ability, but that three qualities were essential—to be kind, to be honest, and to be dogmatic. I do not suppose for one moment that he would have claimed that the whole duty of the practitioner was summed up in this aphorism; but it represented the fruit of wide experience and shrewd observation. At any rate, it is noteworthy, as laying stress on character and method as factors of primary importance in the attainment of success. For my part, I should prefer to substitute self-reliance for dogmatism in Jenner's dictum, and I think it includes all that he meant to imply. The self-reliant man, while fully alive to the limitations of his art, forms a definite opinion according to the evidence before him, and is therefore able to state it clearly, and is not afraid to act upon it. He is essentially a man of action, and, by taking his stand upon broad facts and avoiding the snare of over-refinement, he is able to take a strong and definite line in his work, which gives confidence. Trite as such statements appear to those who have already achieved success, they represent conclusions which have, as a rule, to be reached by long and often painful experience. The fact is, that since the old system of pupilage or apprenticeship has been abolished, and since it has become no longer the fashion to go out as assistant for a few years immediately following qualification, men enter upon family practice with very little knowledge of its requirements or methods. Far too little attention is paid to such matters during the hospital training of students, who are left, on its completion, to discover for themselves that acquaintance with disease and the management of patients are very different things. Much might be done by the teaching staffs in our schools to remedy this defect, both by example and precept, and I know from personal experience that though the full meaning of such efforts is often missed at the time, it is gratefully remembered afterwards amid the perplexing experiences of early practice. In the pursuit of material success, we are often disposed, I think, to exaggerate the bearing and influence of our results in individual cases. A successful case does not make our reputation, nor does a failure mar it to anything like the extent which we are apt to suppose. Young practitioners especially are prone to be unduly elated by their success, and depressed by their failures or mistakes. It sometimes takes years of experience to acquire a philosophic equanimity with regard to our successes and failures, and to realize that life after all is not represented by a straight line, but by a series of ups and downs. So long as we can assure ourselves that we have exercised due care and thought in our work, and have done our best for our patients, we can well afford to be calm and to leave the results in the hands of a higher power than ours. Careful, intelligent, conscientious, and sympathetic effort always brings its reward sooner or later. The observance of one rule is essential, both as a matter of morals and (in the long run) as a matter of self-interest. It is this: Never try to score at the expense of a fellow-practitioner. I am sure that you will agree with me that it is radically wrong in principle, it is fatal to that fraternal spirit which is a necessity to healthy professional life, and (on the lowest ground) it seldom or never pays. Sooner or later the hero of the moment will be caught tripping himself; and if he has disregarded this rule he may look in vain for that sympathy and help which alone can yield him comfort and support.

NEED FOR RECREATION.

Next to the interest of work as a means of achieving material success comes the interest of recreation or play. As Sir James Paget wrote:

In the general meaning of recreation we include two chief things—namely, the cessation of the regular work of our lives, and the active occupation, whether of body or mind, or both, in something different,

in which we find pleasure. From both alike we expect, and may obtain, refreshment—that is, renewed freshness for our regular work. In the former of these parts of recreation, speaking generally, the structures of our body which have been at work are left to rest, or are exercised in a different manner; in the latter, those which have not been at work are brought into activity. Man alone refreshes himself by changing his method of activity; man alone has habitual active recreations. And it may be generally observed among the several races of man that those which are the most highly cultivated, and whose occupations are the most various—strong and intellectual—have the most numerous and the most active recreations.

No profession is harder worked than ours; and, in order to maintain our efficiency, no body of men stands more in need of holiday and recreation. All of us, no doubt, have over and over again employed all our resources of logic and rhetoric in arguing this point with our patients. And yet we must admit that we too often often preach in this matter what we fail to practise for ourselves, for we habitually take less holiday and recreation than any other profession. Military men get their lengthened periods of furlough. Clergy of all denominations get at least three or four weeks of complete freedom every year, with unusual facilities for an occasional day or half-day off duty; while in the legal profession, the High Courts of Justice are absolutely suspended for two or three months a year.

What, then, are the reasons which prevent us from taking the rest and recreation which we should like, and which we know we so much need? One reason is that our work is of such a peculiarly personal character, and brings us into such intimate relations with our patients, that it is almost as difficult to leave them when they require our help as it would be to leave our own families under similar circumstances. Another reason arises from the continuity of our work. We can never say when it is done. Anticipated leisure is so apt to be broken in upon by some fresh call to duty, and our plans for recreation are so frequently upset—not only with disappointment to ourselves, but with inconvenience to our friends—that we at last drift into a habit of doing without leisure, and of making no plans for recreation—perhaps comforting ourselves with the cynical assurance that by expecting nothing we shall escape disappointment. This is bad for ourselves and bad for our patients; but the remedy is difficult to find. I often think that as a class we are too complacent with our patients; and that by systematically ignoring our claims for rest, leisure, and recreation, and by always holding ourselves ready for prompt response to any call, whatever its nature, and whenever it may come, we are forging fetters for ourselves, by encouraging the lay public to forget such claims altogether, or to act as if they were non-existent, and ultimately to believe that we have no such claims at all. A common explanation of, or excuse for, this attitude is that if we do not take work when it comes, it may not come when we want it. But the statement is at best only half true; and, provided that our claim was reasonable, that in principle it was made by all of us alike, and that professional competition was conducted on fair and honourable lines, it would not apply at all. This last assumption brings us to the heart of the matter. We are forced to admit that competition is not always fair and honourable.

It is an unfortunate fact, especially in our large centres of population, that there are too many who find their opportunities in the emergencies of their fellows, and do not scruple to make use of them. So long as this is the case it is natural that one who, by patient industry and self-denial, has built up for himself a good position should hesitate to run the risk of losing patients while he is away from home.

Another obstacle to medical holiday-taking is the difficulty of obtaining a substitute or *locum tenens*. Since the abolition by the General Medical Council of unqualified assistants, and with the diminishing custom of employing assistants of any kind, the demand for *locum tenentes* has outrun the supply. In consequence, the remuneration which is now asked has reached a point which materially adds to the expenses of a holiday, and may in some cases be prohibitive. If we remember also how difficult it sometimes is to find men of sufficient experience and really trustworthy, it is not surprising that some would rather stay at home than run the risks of substitution.

If we could only accustom ourselves to deal with these difficulties more from the general than the individual standpoint, they might be probably reduced. It is certain, for instance, that more helpful and neighbourly relations on the part of practitioners living in the same district would do much to promote the interest which is under consideration by making it possible to effect a sort of concordat by which the work of any absentee in a given group of practitioners would be undertaken by the other members of the group.

No uncomfortable obligations would be incurred, because each in turn demands the help of the rest. The plan has been often adopted in a limited way, and might with advantage be indefinitely extended but for the lamentable fact that there is often not sufficient mutual confidence to make it practicable. I am satisfied that the complaints of which I hear are relatively seldom the result of wilful disregard of the amenities of professional intercourse. More often they arise either from misconceptions with regard to small matters where offence was not contemplated, and which might be soon dispelled by a few minutes' straight talk, or from indiscretions connected with the struggle to make both ends meet. A generous forbearance should be extended to the ethical lapses of those who find themselves hard pressed to make a living. A large-hearted sympathy with difficulties, a few words of friendly counsel, backed up by offers of personal help, would often be more to the purpose than a policy of exclusion, expressed officially through the medium of an ethical committee. In concluding this part of my subject, I do not overlook the desirability of cultivating hobbies as a means of relaxation from the ever-increasing cares of modern practice. A man who can turn with pleasure to gardening, botany, geology, entomology, antiquarian research, photography, and the like is better equipped to withstand the wear and tear of life than those who know nothing and care for nothing outside the daily routine of work.

Intellectual Interests.

I will now pass on to other interests which are higher, in the sense that they minister to the needs of a larger and fuller life. The first interest which falls within this category has been happily termed "intellectual interest." Knowledge has an obvious commercial value as a means of increasing the resources upon which we can draw in our daily practical work; and the increase of our resources brings with it a gratifying sense of power, and a greater confidence in the exercise of it. But the interest to which I am now referring is something quite apart from this, something also which is quite apart from the interests of success, profit, ambition, and duty. These interests, valuable as they are, are, after all, external to work, while intellectual interest takes its origin and grows in the work itself. External interests lead us to undertake work for something that we expect to get out of it, while intellectual interest leads us to work for the sake of the work itself. Intellectual interest is based upon the scientific study of individual observations, with the object of drawing from them some general law or principle. This is the kind of interest we try to arouse in the minds of students; and when once a man has acquired it, and developed a real love of his work for its own sake, he not only bids fair to become a good practitioner, but will be provided with that which will bring into his life a perennial brightness and productive enthusiasm, for the loss of which nothing else will fully compensate.

Moral character has, of course, the same application to medical as to all other work; but, if possible, it has a higher and stronger significance. There is something about the atmosphere of the bedside of the sick and dying which tends to make the intrusion of low and unworthy thoughts or motives into our ministrations little short of sacrilege. Admitted as we are to the innermost recesses of personal confidence, appealed to as we are for sympathy and help, and credited as we are with the ability to supply both, surely a man must be something less than a man if he does not feel that such experiences draw out the best that is in him. I claim that the medical life, honestly and consistently lived, carries with it a moral discipline which is second to none, and that the moral interests of our profession deserve to be cultivated and cherished above all others, for their satisfaction brings with it an abiding joy.

Intraprofessional Obligations.

The interests of material success and recreative relaxation, together with intellectual and moral interests, represent the four chief interests of medical life and work from the individual standpoint. It is quite possible to realize a tolerably full life on the basis of these interests alone, and many do so. But there are wide outlets still for our energies. There is no such thing in real life as independence. Our interests as individuals are closely interwoven with those of our immediate neighbours, and these, again, with those of the community at large. So, also, it is impossible to separate our best interests as individual practitioners from those of the pro-

fession to which we belong, nor from those of the social organization of which our profession forms a part. In this realistic and material age we are apt to underestimate the value of ideals and to look upon them as mere vapourings of a restless imagination, and upon those who cling to them as mere dreamers of vain dreams. But a fertile imagination, intelligently employed and regulated by the saving grace of common sense, deserves to rank as one of the most potent forces of human evolution. By it we are able to take the factors of development into our own hands, subject only to the limitations of our knowledge, and to guide and shape our destinies at will. This freedom (so far as it goes) to determine our own development by the attractive force of deliberately-formed ideas stands out as the great distinguishing feature of human evolution as contrasted with that of the rest of the organic world. And as it is with ourselves so it is with our institutions. Our profession in its corporate life, and its position with regard to society at large, is, for the most part, what we choose to make it; and the choice is determined by the ideals by which we are inspired.

The Aims and Prospects of the British Medical Association.

I think that the best we could wish for our profession in its corporate life is that it should be strong, that it should be united, and that it should be well informed.

Are we, as individuals, doing all we might to further the realization of these aspirations? I think not. It is still common to see men so absorbed in the routine of daily practice, and so self-centred, that they know nothing and care little for any question beyond the horizon of their personal interests. And, but for the fact that their narrow sphere of operations is sometimes uncomfortably traversed by the orbit of some uncompromising active medical neighbour, they would be quite unaware of any interests outside their own circle. Others there are who limit their action in respect of all general professional problems to a stream of destructive criticism, and make no contribution whatever towards their solution, either directly or indirectly. The correspondence columns of the British Medical Journal provide numerous examples of this class. In proof of the indifference and apathy to the interests under consideration, I would remind you of such facts as the following: The total number of practitioners in the United Kingdom in 1903 was over 30,000. Of these only some 15,000 thought it worth their while to join the British Medical Association, the primary object of which is to organize the profession. Again, in the year immediately preceding the new constitution of the Association the total number of members in the United Kingdom was 14,036. Of these, over 5,000 were unattached, belonging to no Branch, neither asking for nor taking any part in the organized work of the Association. Yet again, only this year, as the result of a general poll of the Association in the United Kingdom, on the important practical question of medical defence, of 189 Divisions which were polled, 44 (or more than one-third) took no notice whatever of the inquiries that were made; while of the 145 Divisions which replied, 60 (41 per cent.), representing 7,728 members, refrained from any contribution to the settlement of the question, admitting their inability to make up their minds about it. Results such as these are calculated to dishearten and paralyse the most enthusiastic of reformers, were they not discounted by the foreknowledge that the same experience attends all efforts for progress. But it need not be so, and it should not be so.

That our profession should be strong it is necessary, above all, that it should be united. The Association has no competitor as a rallying point of our organization. It is the bounden duty of every reputable practitioner to join it, and, having joined, to promote and encourage its work as far as he can. Through the medium of the British Medical Journal every one may keep closely in touch with the question of the hour, by acquainting himself with the facts, by extending sympathy and encouragement to active workers, by careful selection of representatives on the governing body, and by punctilious attention to all official inquiries for information. The demand for unity does not stop here. There must be greater union amongst ourselves, and I am convinced that among the reasons why it is not greater is because its full value and importance are not apprehended.

It is at this point that the value of an ethical code comes in. Human nature and human character are not as yet sufficiently advanced to allow complete liberty to every one to do just as they please. Some restrictions are necessary, even though they are of a conventional nature. Society could not be carried on without the observance of those conventions which are commonly attributed to the presiding genius of Mrs. Grundy. Professional society is equally in need of something in the shape of Mrs. Grundyism. There is a strong disposition nowadays to kick at many of these restrictions, but while we may admit there are some who would carry their interference with independent discretion too far, the pendulum has of late swung too much in the opposite direction, and the graces of professional life have suffered in consequence.

The conventional restrictions which experience finds necessary to impose between medical men and patients, between individual practitioners, and between family practitioners and consultants, which comprise what is meant by professional etiquette, are essential to our union as a corporate body and cannot be disregarded with impunity. I do not think that it is sufficiently well realized that whenever one member of our body steps outside the lines of professional conduct thus marked out, and becomes a law unto himself, he strikes a blow at the solidarity and union of the profession as a whole, and thereby weakens its influence and lowers its status. The heterogeneous structure of our profession, recruited as it is from almost all classes of society, embracing such widely varying degrees of culture, and occupied in so many different kinds of practice, makes the necessity of a clear ethical code all the greater, while at the same time it makes the enforcement of discipline all the more difficult. We must not forget, however, that force is no remedy, and that discipline is more easily maintained by personal appeals, backed up by sympathy and encouragement, than by too much official interference. Above all, let us avoid personal differences as far as we possibly can, from which we always stand to lose more than to gain, and which contribute so much to professional confusion and impotence.

With regard to our interest in the maintenance of a high standard of professional knowledge, much may be done by such societies as this which I am now addressing towards cultivating a strong intellectual interest in work, by the encouragement of original research through the medium of our Association, by insisting upon a reasonably high standard of preliminary education for those who intend to enter the medical profession. Speaking as a teacher of some experience, I distinctly state that the difficulties of students are due far less to deficiencies in ability than to the fact that so many have never been trained to observe accurately, to reason clearly, or to work methodically. These are qualities which somehow or other our present system of school education fails to bring out; but the discussion of this matter would take me out of my course.

In 1891 the late Mr. Gladstone, in speaking at Guy's Hospital, said that

> ever since the time of Mead and Freind the medical profession had been steadily rising into a position of influence, power, and general recognition; and that, in his opinion, it would continue to rise with the growth of civilization, which involved wants and infirmities which are the opportunity of medical men.

Some time afterwards the late Lord Salisbury referred to the general position of our profession in terms which were no less appreciative. Even if we make liberal discount for the amenities of platform utterance on the part of public men, there can be no question that the general position of our profession has materially advanced during the last fifty years. It could scarcely be otherwise; for not only have we, by reason of the great increase of knowledge, much more to offer the community in the way of help and guidance, but, with the progress of civilization, there is a far greater demand for both. As Sir William Church said, in his address to the Association, at the Oxford meeting:

> The health of the people, both bodily and mental, is the principal asset of the nation. Without a vigorous and energetic population no nation can make progress; and coincident with the cessation of progress is the commencement of decadence.

An abiding faith in this idea of progress is the motive power of all human efforts for betterment. The idea of progress implies that of change, yet not mere change, but always according to definite order and method, involving a constant process of readjustment. As civilization progresses, then, there is not only an unceasing readjustment of social and economic relations, but, in so far as it is sound, there must be equally unceasing social and economic readjustments. Such readjustments can only be made at a given rate. If progress be too rapid or too violent, constructive readjustment cannot keep pace with it, and chaos, confusion, and retrogression are the result. All efforts to fall into line with a new order of things involve hardship and suffering in pro-

portion to their difficulty and duration. And thus we arrive at the general conclusion that, until we reach finality in a world of change, progress is only possible at the cost of human pain. Never in the history of our civilization has progress been so rapid as in the last 60 or 70 years, never before has there been such a demand for readjustment on a large scale—a demand with which it has been impossible completely to keep pace.

In consequence we find ruthless overcrowding, grinding poverty, existing side by side with extravagant luxury, physical and mental overstrain, leading up to and ending in disease, physical and mental degeneration, vagabondage, and crime. Such are some of the more prominent penalties of progress: and their mitigation or prevention turns largely on the counsel and active help which we as a profession are able and prepared to give. Never was there a time when it was more imperative that we should gain the public ear and enjoy the public confidence. But from the very nature of the subject-matter, the initiative must come from our side. Knowledge of the principles which govern the protection of the public health is first discovered and acquired by members of our profession: by us alone can their significance and importance be rightly and adequately estimated, and the best means of giving them practical effect depends entirely upon the advice and assistance we are able to render. It rests, therefore, with us to lead and guide public opinion on these problems, and to bring to bear upon the Government and administrative bodies in general all the influence we can command, to secure careful and adequate consideration of such measures as we may suggest for their solution. It is impossible to conceive of higher or nobler work for our profession than to take our share in guiding the destinies of our country and our people; nor can I think of a worthier and more inspiring part for individual practitioners than that of civilizing agents within the limits of their local spheres of influence. But the realization of such an ideal is by no means easy, in consequence of the enormous dead-weight of ignorance and indifference which have to be overcome before any headway can be made.

There are many questions which are clamouring for solution, upon each of which our voices should be heard and our counsel respectfully considered. I need only mention overcrowding, with all the evils comprised in the housing question, intemperance, the prevention of contagious and infectious disease, the bearing of educational system upon the health of children, death certification and registration, and the regulation of midwives, and unhealthy trades. The list might be greatly extended, yet the wheels of the chariot of reform run heavily.

So far as our action is concerned, whither shall we turn for the remedy? Mainly in two directions: (*a*) To the more effective organization of our institutions, and (*b*) to ourselves as individuals. By its size, its resources, and the character of its organization in its new shape, the British Medical Association (as I said before) stands out as the centre round which the whole profession should rally for the promotion of our interests with reference to each other and to the public. But if the Association is to be representative it should embrace every reputable registered practitioner in the United Kingdom. This seems a long way off, for at the present time it scarcely includes half of those who practise within these limits. One of the very earliest tasks which the new Divisions should undertake is a systematic canvass of all those who have not yet joined. Until the Association embraces, to all intents and purposes, the whole bulk of the profession, it cannot command that authority in high places which is so much to be desired. In the next place, it is most important and necessary that all societies which exist for the purpose of studying and promoting any corporate interest of our profession should, as a matter of principle, be absorbed by the Association as far as possible.

Take, for instance, the question of medical defence, about which there has been so much heated controversy of late. It is no answer to the proposal that the Association should undertake this work to say that it would not be done any better if the existing defence societies were superseded, and it is pitiable in the last degree to hear suggestions that, if adopted, it would lead to wholesale secession of members from the Association. Such narrow parochialism is deeply to be regretted, and shows clearly that some of the greatest obstacles to effective organization are to be found in our own ranks. This principle of consolidation and union of all our corporate interests seems to me of primary and fundamental importance as the bed-rock upon which all the general policy of our profession should rest, and one that should be pressed home on every opportunity that offers.

That union is strength is not a mere academic proposition; and, until we act upon it in practice for all we are worth, with heart and soul, our public position, influence, and power will advance only with halting and faltering steps instead of with bold and confident strides. Animated by this strong feeling, I would take leave to say that all other medical societies, apart, perhaps, from those whose mission it is to encourage and promote the study of special branches of medical learning, and, perhaps, also from those social gatherings of medical men which are drawn together by strong personal or local sentiment for mutual intercourse, might do wisely to incorporate their interests with those of the Association Divisions for their respective districts. The oftener your own Division meets, and the closer its members are brought into contact on social lines, the better you will be able to kindle and keep alive the local corporate spirit which the effective organization of the Association so greatly needs, and upon which it so largely depends. The territorial constitution which we now enjoy is destined to provide us with a greatly-improved instrument for corporate action if it is zealously worked and loyally supported. Of course, it will take time to work smoothly and to develop its full powers, but there is already abundant evidence that its possibilities are being recognized. The report of the Medico-Political Committee to the Representative Meeting this year at Oxford is not only a witness to the wide scope of our professional corporate interests, but a splendid tribute to the energy and ability which are being brought to bear upon them. Let us see to it that we do all in our power to give the central organization our encouragement and loyal help.

This brings me to the second direction in which we must look for medical reforms—namely, to ourselves. We may fairly claim to rank among the most liberally-educated class in the community, and the character of our work, together with the intimacy with which we are brought into relation with our patients, give us exceptional knowledge of human nature. In country districts especially, medical men stand out as the best qualified to educate and guide public opinion. But as a class we do not take as large a share in public work as we might and as we ought. We may say that we are too busy, that we want rest and quiet when we can get it; we may shrink from the hurly-burly of public engagements, or, again, we may fear that the expression of definite opinions on political and social questions may injure us in the eyes of our patients, or we may be too timid and retiring in our nature to encounter opposition in public places. But surely none of these reasons can altogether absolve us from our social obligations and responsibilities; and all honour to those medical men who have recognized them, and acted upon them by taking a personal part in public affairs.

Believe me when I say that, so far as we are prepared to take up the share in public affairs to which our knowledge and position entitle us, we shall not only gain in public esteem, but also be enabled to gain a larger influence in the guidance of legislation and administration for the public welfare. I must not detain you longer.

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———— of Otology. Vols. 1-7, and 20, 21, 22.
———— of Pediatrics. Vols. 1-11.
Asylum Journal of Mental Science. Vol. 1, 1854.

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Fig. 3.—Same as Fig. 2; side view



Fig. 2.—Winter "cold proof" great coat, with sheepskin collar and unloseable gloves; the skull cap is attached to the collar.

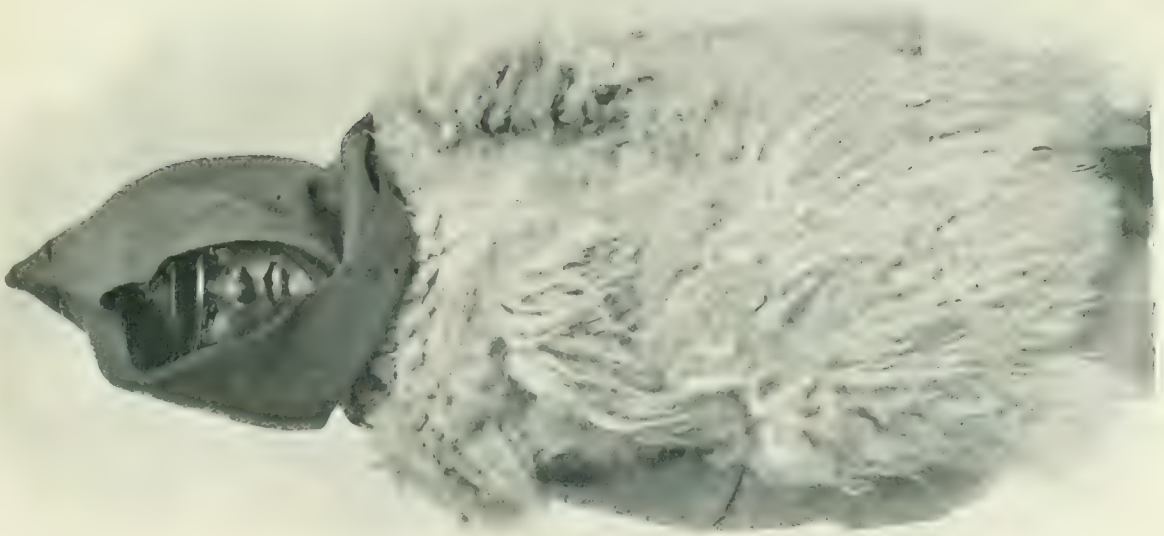


Fig. 1.—Sheepskin waistcoat, and detachable "cold-proof" hood.

Fig. 7.—Winter underclothing: Knitted wool jersey and pants; ribbed wool heelless socks; toecaps of lamb's wool to prevent frostbite; double sack or valise for carrying clothing worn across the shoulder *en banderole*.

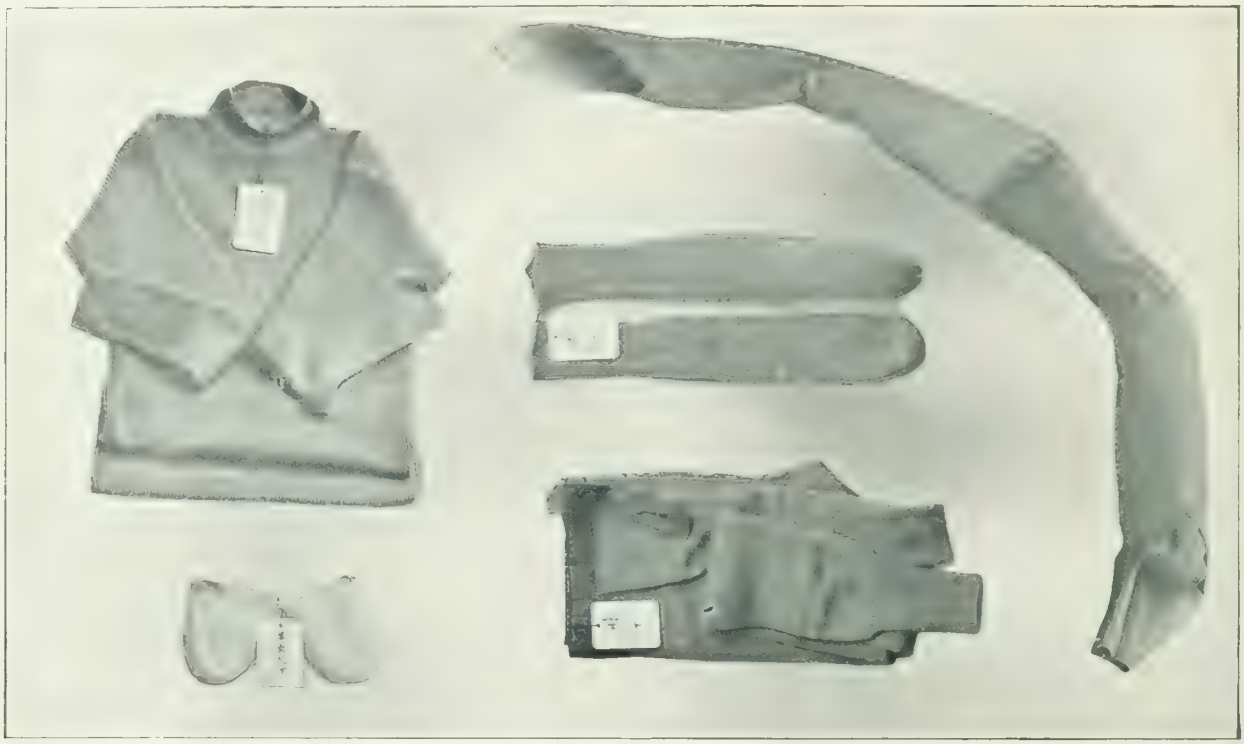




Fig. 8.—Mosquito helmet, open and closed. Haversack closed, showing hook of central support from waistbelt; the same open showing the pockets.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

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An Address

ON

THE BENEFITS TO THE MEDICAL PROFESSION RESULTING FROM THE WORK OF THE DIVISIONS OF THE ASSOCIATION.

Delivered before the South-Western Branch on October 21st, 1904.

BY J. SMITH WHITAKER, M.R.C.S., L.R.C.P.,
Medical Secretary, British Medical Association.

THE BENEFIT OF THE PROFESSION THE OBJECT OF THE ASSOCIATION.

THE object of the British Medical Association is the good of the medical profession. That is not a mere pious declaration of aspirations, but is the statement of a fundamental principle of the Association, laid down in its earliest records and embodied to-day in those legal documents by which its constitution is determined. The document by which all the acts of the Association, as it exists to-day, and the expenditure of its funds, are primarily governed, is the Memorandum of Association, and in Clause 3 of that document you find the following statement:

> The objects for which the Association is established are the promotion of medical and allied sciences, and the maintenance of the honour and the interests of the medical profession.

If, again, you go back to the foundation of the Association, to the historic meeting in the Board room of the Worcester Infirmary, you will find it recorded that the object proposed by the founders of the new Association was to remove the disadvantages under which English medical men then laboured, on account, it was suggested, of a want of co-operation among them, and, in particular, that they did not hold the rank and influence in the community to which they might aspire, and which the projected Association might enable them to attain.

In the seventy-two years which have elapsed since the date of that declaration much has been done by the British Medical Association for the benefit of the profession, but it will be agreed that medical practitioners still labour under disadvantages which might be removed by greater co-operation, and that their status in the community is not that which it ought to be, and which the British Medical Association might, with greater support from the profession, assist them to obtain; and I would commence my address to-day by considering what are those benefits which it is sought to confer upon the profession, what are the disadvantages which it is desired to remove, and what the status to be attained.

WHAT IS MEANT BY "BENEFIT OF THE PROFESSION."

In the first place, when we speak of the benefit of the medical profession, we have in view, of course, not simply the personal interest of individual members of the profession, or of the aggregate of these individuals, but the welfare of the profession as an integral and indispensable part of a civilized community. The status which it is sought to maintain and improve is that, not of medical practitioners only, but of the medical service of the State.

EFFICIENCY OF THE MEDICAL SERVICE OF THE COMMUNITY.

We believe it to be to the public interest that that service on which the community has to depend for the cure and prevention of disease shall be able to call to its work men of a character and capacity adequate to the needs of the service, and that the abilities and training of members of the medical profession shall be such as shall qualify them to advise both individuals and the community upon all that touches their physical—which so largely affects their mental and moral—wellbeing; and, conversely, it is incumbent upon the profession that the benefits pursued shall be conceived in no merely selfish spirit, but shall be of a character demonstrably advantageous to the State.

CONDITIONS OF EFFICIENCY.

We next consider briefly some of the conditions which there is reason to believe that the medical profession of to-day regards as necessary for the efficiency of the medical service of the State. They may be grouped under the heads of training and conditions of practice.

Training.

1.—Preliminary Education.

Under the former head, first, the system of admission to medical study must be such as will ensure that the practitioner of the future shall have laid a proper foundation of general culture. The preliminary general education of medical students, a matter which the South-Western Branch has taken the initiative in pressing upon the attention of the Association, is of primary importance to the efficiency of the profession.

2.—Technical Training.

Secondly, the technical training of the profession must be adequate. In this connexion one may note, perhaps, a disposition in the profession to welcome the tendency of the day to liberalize medical education by associating the medical student during the period of his training with students of other arts and sciences in a university rather than by the isolated system which is thought to have cramped the intellect of the profession in the past. Then, as regards qualification, the profession perceives the need of a uniform standard of minimum requirements, and as necessary to this end the Divisions of the Association have, by a very large majority, approved, in the draft Medical Acts Amendment Bill, the provisions for a one-portal system of medical registration.

3.—Means of Study by Qualified Practitioners.

Lastly, as a matter of medical training, the Association and other organizations of the profession endeavour to maintain the standard of professional work by the opportunities which meetings and Journal afford for discussion and dissemination of knowledge in the art and science of medicine and surgery and subjects ancillary thereto.

Conditions of Practice as affecting Supply of Competent Practitioners and Character of Work.

But training alone is not sufficient to sustain efficiency. You must have the right men; and to get these you must pay attention to the conditions of service. We must recognize that it will be useless in the end to impose a high standard of admission and to seek to maintain a high standard of work unless the conditions of medical practice are such as to attract men of a suitable type and are such as to admit of good work being done.

Every year there is the fresh supply of young men and women to be drafted into the various professions and occupations, and we believe it to be to the interest of the community that some of the best of these should be attracted into the medical profession. But if this is to be so, then in the first place the pecuniary rewards of the profession must be adequate in comparison with those of other occupations, and in the second place the other conditions of practice, apart from remuneration, must be such as able and self-respecting men will consent to serve under.

The efforts of the profession as regards contract practice, Poor-law and other public appointments, and in other directions, to maintain a proper standard of remuneration, and to secure that degree of independence which experience shows to be necessary for the efficiency of medical work, are not merely designed to defend the personal interests of the present generation of practitioners, but are needful to prevent the degradation of the medical service of the State.

Foregoing Objects attainable only by an Organization Comprehensive in Membership and Objects.

Such objects and on such grounds, we believe, the medical profession may reasonably pursue, but how are they to be attained? Must it not be agreed that many of them can only be attained with the consent and co-operation of the community in general: that to obtain that consent and co-operation the profession must be in a position to convince the public of the soundness of its views: and that it is hopeless to attempt to impress the public by the isolated and therefore too frequently discordant voices of individuals, or of small sections of the profession? To achieve some of those great reforms which the profession is profoundly convinced are just and needful, a comprehensive organization of the profession is required. Such an organization must be able to attract all reputable members of the profession; it must be comprehensive enough in its membership to carry the weight in the community that would be accorded to a body truly representing the profession; and to secure this it must be comprehensive enough in its objects to maintain that membership by attracting all that is most worthy in the profession. Then, again, it must be so organized as to be capable of acting solidly as a whole, in a disciplined manner, as an army and not as a mob. Lastly, it must be able to count upon the unswerving loyalty of its members.

The Claim of the British Medical Association to be such an Organization.

Among existing bodies the profession can look for such an organization only to the British Medical Association, which has already attained the position of being the most representative organization of any profession in existence. It is necessary to be very clear as to the grounds on which the Association puts forth this claim for the support of the profession. It is not in any spirit of "monopoly," (to use a term that has been very inappropriately suggested)—not with any desire merely to aggrandize the Association at the expense of other societies. The sole object of the Association is the benefit of the profession, and the very conception of monopoly is foreign to such an object. The organization of societies is not in itself an end, but is a means to an end; the organization of medical societies is a means for promoting the welfare of the profession, as an instrument for the good of the community. The only question must surely be, not whether this, that, or any other society has "claims" to do certain work, but what is the agency through which that work can best be done, and it is upon such considerations that the claim of the Association to the support of the profession must stand or fall.

Constitution and Methods of the Association.

Having considered the benefit of the profession as the object of the Association, we have next to inquire how the Association has pursued and is pursuing that object, with special reference to the work that is done or that is proposed to be done, under the present constitution of the Association, through the agency of the Divisions.

The British Medical Association has sought, at various stages of its history, to carry out its fundamental objects in a variety of ways, adapted to the varying needs of the times. Its constitution has always been elastic, and has been modified from generation to generation to correspond to the work to be done, but its founders gave to the Association a spirit and a method which have been the same throughout its history: the spirit has been the spirit of brotherhood, and the method has been the method of self-government.

The Association a Self-governing Society.

Particular stress must be laid upon the fact that the Association has always endeavoured to be a self-governing body, because there has been and still seems to be in the minds of many a most unaccountable misapprehension of the real working of the Association. It is hardly too much to say that the conception underlying many criticisms of the work of the Association is that of a knot of individuals in London who call themselves the Association, and keep a kind of shop in which, in exchange for an annual payment of 21s. or 25s. or whatever the sum may be, the proprietors of the shop are prepared to supply a varied assortment, comprising a Journal, an annual meeting, rights of membership of Branches or Divisions, and sundry other attractions and inducements.

Government through the Divisions.

Now, it need hardly be said that this is a radically false conception. If there is a shop, the only proprietors and governors are yourselves and your fellow members of the Association throughout the empire, and you are also the principal customers. There is no such little group of proprietors. There is not even any central governing body other than the Representative Meeting voting under instruction from the members in their Division meetings. There are certain executive bodies, acting with an authority properly delegated and strictly defined in the constitution of the Association, but the ultimate control of the Association rests absolutely in the hands of its individual members, and for nearly every purpose of the government of the Association the individual members make their will known through the Divisions to which they belong.

Nature of Divisions.

The Division is a local medical society composed of members of the British Medical Association, and the object of the formation of Divisions was to make it as easy as possible for every member to make his voice heard in the government of the Association. Experience showed that in times past not want of will but want of opportunity was

preventing many members from taking their proper part in the work of the Association. The work of the medical practitioner is, as we all know, very exacting, and it is especially difficult for him to leave his work to attend a meeting far from home. The Constitution Committee, therefore, proposed, as a fundamental principle of reform in the constitution of the Association, that the primary unit should be a body such that every member should have a reasonable opportunity of attending every important meeting. The boundaries of the Divisions were laid down entirely in accordance with local opinion, and those who formed them were specially asked to consider the facilities which members of each Division would have for attending its meetings.

The Two Aspects of Division Work.

From the constitution of the Divisions, it will be seen at once that the work of such a body presents two aspects: first, its work as a local medical society; and, secondly, the part which it takes in the general work of the Association. The benefits to the profession resulting from the work of the Divisions must therefore be regarded in each of these aspects.

A Local Medical Society.

1.—*Social and Scientific Functions.*

As a local medical society, the first benefit which the Division is capable of conferring upon the medical profession is that of serving as a bond of union. Socially and in other ways, the Division can bring together the medical practitioners practising within its area, and I would suggest to you that it will be successful in achieving this all-important end in direct proportion to the extent to which it aims at satisfying every need of the profession locally for united work. There have from time to time been suggestions that Divisions should confine themselves to medico-political and ethical work, or that, at all events, scientific work should be left either to societies outside the Association or to larger aggregates within. Such limitations are not indicated by anything in the constitution of the Association, and I believe that experience will show that those Divisions will be most successful in drawing all worthy practitioners into their ranks who, within their own area, endeavour most thoroughly to carry out all the work for the medical profession which local societies can undertake; and, of course, the more comprehensive their membership, the more successful all their work—social, scientific, political, and ethical—will be.

2.—*Medico-Political.*

In respect of what we call medico-political work, that is, the consideration of matters affecting the relations of the medical profession to the public, and action taken in reference thereto, the part which the Divisions may play in assisting the Association as a whole to deal with such matters has been generally understood as one of the objects which they were formed to fulfil. The work, however, that Divisions may do in grappling with purely local problems of the same kind, has perhaps been not quite so fully appreciated, and it may, therefore, be gratifying as well as helpful for other Divisions to know that some Divisions are in different parts of the country endeavouring to act as the organs of the local profession in every kind of subject affecting its relations with the public, and in many instances with conspicuous success.

3.—*Ethical.*

As regards ethical work, I am asked by the officers of the Branch and its Divisions, with whom I have had the privilege of conferring this afternoon, to make certain explanations. It is the present practice of the Association that all complaints against members in regard to which there is any doubt as to the facts, shall be referred for primary investigation to the Divisions of which those concerned are members. It is held, moreover, that in many other matters an inquiry and action by a Division is the most amicable, and in every way the most suitable manner in which ethical disputes can be dealt with, at all events in the first instance.

For assisting them in dealing with such matters many Divisions have adopted rules, both rules to govern the procedure of the Division in considering such cases, and rules as to the professional conduct of their members. The adoption of ethical rules does not, as some have feared, increase, but rather tends to diminish the number of ethical questions which arise for consideration, and it is plainly better that matters of this kind should be dealt with under rules deliberately adopted, on general grounds, than under principles or procedure hastily formulated to meet the exigencies of a case when it arises.

Divisions as Governing the Association.

In considering the share of the Divisions in the government of the Association, I would first remind you again, that all the work of the Association, through whatever agency it may be carried out, is directly or indirectly under the control of the Divisions.

Relations to Central Executive.

For carrying out the central work of the Association it is necessary, of course, to have various executive or administrative apparatus—council, committees, and officials. Under their supervision and management the Journal is edited and published, the Annual Meeting of the Association with its attendant social and scientific functions is organized, the decisions of the Association in matters affecting the honour and interests of the profession are ascertained and carried out, and a central tribunal is provided for considering those questions of professional conduct for which such a tribunal may be required. But every part of the administration and every act done in the name of the Association can constitutionally be brought up for review annually, before a body composed of representatives of the Divisions, and the consideration of the Annual Reports of the Council and of various Committees on the one hand, and, on the other hand, the power of Divisions to bring motions before the meeting, are the means through which the control of the general body of members is exercised.

Divisions as Instruments for Ascertaining the Opinion of the Association.

In addition, however, to this general control, the Divisions furnish a most useful agency for arriving at the opinion of the Association on questions of policy, and certain illustrations of this part of the work of the Divisions may be taken from the history of the past twelve months.

Illustrative Examples.

1.—*Vaccination.*

Before the Divisions were fully organized, the Council was called upon to face the emergency arising from the approaching expiration of the Vaccination Act of 1898. Immediate action seemed necessary, and at that time the Divisions were not organized adequately for dealing with the work. The Council, therefore, undertook the responsibility of formulating a policy for the emergency in the form of six propositions. But, circumstances affording further time for consideration, the first opportunity was taken of referring the subject to the Divisions. The six propositions previously formulated were laid before the Divisions twelve months ago, a large number of Divisions expressed their opinion thereon, and thus a definite policy of the Association on the subject of vaccination has been ascertained, in a way which would not otherwise have been possible.

2.—*Nurses' Registration.*

Again, in the spring of this year, Bills were introduced into Parliament by two societies representative of nurses, each aiming at the creation of a State Register of nurses. These were brought under the notice of the Divisions with the suggestion that in view of the possibility of a Parliamentary decision, it was desirable that they should instruct their representatives in order that a definite policy of the Association might be arrived at in the Annual Representative Meeting. It was not possible to issue the memorandum on the subject until six weeks before the meeting, but in the interval many Divisions discussed the question, and at the Annual Representative Meeting a conclusion was arrived at by a large majority.

Difficulty of Prompt Decision.

This illustration draws attention to the difficulty which must from time to time arise in obtaining a decision from so large a body as the British Medical Association where prompt action is required.

The chief objection usually urged against democratic government is its incapacity for swift decision, and the difficulty is, of course, not entirely to be overcome. But if the Divisions have been formed in accordance with the principle that it should be easy for their members to attend their meetings, it should not be difficult to summon emergency meetings. The alternative is that in many matters the Association must be content to let judgement go by default, and the question whether that or a hasty decision is the smaller evil is one meriting grave consideration in each case in which it presents itself.

3.—*A Question of Ethics.*

The third illustration is from the Ethical side—a relatively small matter, but a useful example. It is important from time to time to be able to ascertain the opinion of the profession on questions of professional conduct. During the last twelve months the Ethical Committee was asked to consider a complaint as to the conduct of certain medical men in a town, whose names were advertised in the local newspapers as surgeons of hydropathic institutions in the place.

The Committee found that a certain amount of latitude had been allowed in the past to the medical officers of such institutions, and that they had been to some extent an exception to the general rule as to advertising. The Committee, therefore, felt it to be its constitutional duty to refer this new question for the consideration of the Divisions. The Divisions by a large majority expressed their disapproval of the advertising in question, and a report on the subject has now been prepared, embodying the conclusion resulting from the inquiry.

Control of Association by Individual Members through Divisions: Corresponding Responsibility.

These illustrations are given to make clear how the Divisions carry out work for the profession in co-operation with one another, with the central organization as their instrument. The cases exemplify, also, the control which the Divisions possess over the work of the Association, and the control, therefore, which individual members of the Association possess if they choose to play the part which is open to them in the work of the Divisions. But members will also bear in mind that control implies responsibility and need of effort. It is open to them by attending Division meetings to influence the decisions of the Association. On the other hand, if a matter has been duly brought before a Division, and if a member of such Division has been duly notified that the matter was about to be considered, he is constitutionally responsible for the decision arrived at.

Summary of Argument.

Resuming briefly the subjects which I have brought before you as concerning the benefits to the medical profession resulting from the work of the Divisions of the Association, we have seen that the benefit of the profession has been and is still the primary and indeed the only object of the existence of the British Medical Association, and that the term "benefit of the profession" is understood in the broadest sense as meaning the welfare of the medical service of the community. It has been my duty to point out that the objects so desired can only be attained through a comprehensive organization of the profession, and that it is from the realization of the necessity of such an organization being comprehensive in objects as in membership, and not in a so called spirit of monopoly, that the Association claims the support of the profession, and may aspire to do for the profession all that organization can do. Then we have considered the manner in which the Divisions of the Association carry out this fundamental object, how the present work of the Association is either done by the Divisions or under their supervision and control, and that it is in this way that the power and the government of the Association rests in the hands of the individual members, and that with them rests the responsibility for the exercise of that power.

Conclusion: The Unchanging Spirit and Method of the Association.

I would conclude as I began, retrospectively. Over seventy years ago Sir Charles Hastings and his colleagues founded a society dedicated—if I may borrow the phrase of a great statesman—to the proposition that medical men should help one another. As has been said, they gave to the Association a spirit and a method which have persisted throughout its history—the spirit of brotherhood and the method of self-government. The Association has in the past done great work for the profession. It has been fortunate in attracting to its service many distinguished and able men, who, in associating themselves with its work, have devoted most unselfish and arduous labours to the benefit of their profession, and it is sometimes said that this or the other individual has been chiefly or largely the cause of the success of the Association. One would not for a moment depreciate the fruit of such efforts; but I suggest to you that not any individual, or any group of individuals, is truly to be credited with the success of the British Medical Association.

The successes of the past must be ascribed to those causes which we believe will lead to greater triumphs in the future, to the facts, never more manifest than to-day, that the method of self-government pervades the entire administration of the Association, and that all its efforts are animated by the spirit of brotherhood in the medical profession.

An Address

ON

TWENTY-FIVE YEARS' DISPENSARY WORK AND PAY IN IRELAND.

Delivered before the Portadown and West Down Division of the British Medical Association.

By JAMES TAYLOR, L.R.C.P., L.R.C.S.I., J.P.,
Chairman of the Division.

I regret that neither my opportunities nor my inclinations have given me material suitable for a scientific professional address, but it has been suggested to me that it might be beneficial to place on record some carefully-noted facts I have recorded during the twenty-five years of my office as a dispensary doctor, as useful evidence in the struggle through which our service is passing.

In round figures, which I can support by records, I have been responsible for attendance on 27,000 tickets, equal to one for every 6.6 of the population annually, of which 13,000 were visiting. This work necessitated travelling 64,000 miles to pay 52,000 visits, and the compounding of £1,000 worth of medicine, besides the attendance at the dispensary at the appointed hours, clerical work, the preparation of reports, and correspondence connected with the office. For these duties I received the gross amount of £2,500, two-thirds of which went for expenses, leaving £812—£33 per annum, equal to 1s. 10d. per day—as wages. For the perquisites of the office—namely, public health, vaccination, registration, and fees for the examination of lunatics—my annual earnings would be about an average of £54. For twenty years annual vacation was not recognized, and an occasional holiday could only be obtained if the Committee was successful in a stand-up fight with the guardians, or when I paid my substitute. The office of midwife was only kept filled by constant fighting.

When the Local Government Board elaborated their rules in 1899 the strain became intolerable, and on March 17th, 1900, I applied for a compounder and was refused. Five times from January 7th, 1902, I asked for increase of salary, and when, in last August, the guardians voted me 20 per cent., the Local Government Board refused to sanction it. They also refused to sanction an increase of 50 per cent. voted at the same time to Dr. Cowden, of Dromore, after five years' service.

It will no doubt be asked, Why not resign? And to this I answer, Through inexperience I took office; family ties bound me to the place; and necessity made me hold an unremunerative office, otherwise another doctor would be introduced into a locality where there is not practice to support those already in it. Notwithstanding that this experience is generally admitted, and the unjust and impossible conditions of the Poor-law service are in every possible way made public, men can still be found to fill vacancies, who, through their selfish ignorance, are delaying the reforms for which some of us are fighting, with little hope of participating in the benefits which must come some day.

As the Local Government Board have bracketed the dispensary and public health salaries in their last report for the purpose of showing that our position has improved, I shall briefly allude to my experience of public health duties. Prior to the passing of the Local Government Act of 1899 we were allowed discretionary power in the performance of our duties dealing with sanitary work, so that, with a little tact, we could avoid collision with the owners of property, and at the same time effect sanitary reform more expeditiously; but now the order of March 3rd, 1900, compels us to treat all sanitary work officially, or leave ourselves liable for the responsibility of any epidemic or accident affecting the health of our district, or, in other words, has enormously increased our work, risk, and responsibility, without increase of our remuneration. Besides, the Local Government Board have issued circulars specifying duties for us in connexion with factories, workshops, and creameries, which bring us into collision with whole sections of the community of the agricultural and manufacturing classes, without any additional

pay. At present I am suffering from a striking instance of this risk, which illustrates this contention, and which involves me in serious trouble with a large circle of private practice—shareholders, committee, and customers of the Clare Creamery. The worst of this matter is that neither the Local Government Board nor the District Council have taken action to support me, or protect me from insults and accusations of falsehood which have been made against me in my attempt to protect public health.

The only reason offered for the disproportion between work and remuneration in the dispensary service is that public duties do not demand the whole of the medical officer's time, and that holding the office gives them a standing; but my experience has been that the continuous and irregular nature of dispensary work, and the odium developed by jarring with exacting and unreasonable dispensary patients and their friends, were actually detrimental to the maintenance and development of private practice.

Reviewing the case, I do not think the glowing report of the Local Government Board of decrease of work of 20 per cent., and increase of remuneration of 53 per cent., applies to this district. A comparison of the first five years of my service with the last five, shows the average annual work in tickets, 660 black and 458 red, and 578 black and 701 red respectively, while fees from registration and vaccination have decreased at an annual average rate of £9 6s. 7d. During the two periods of ten years compared by the Local Government Board in their last report for the purpose of providing an improved condition of the service, the average annual tickets were 599 black and 230 red, and 546 black and 530 red, and the salary £80 and £100 respectively. During the period to September 30th, 1862, the medical officer was only expected to vaccinate such persons as came to him at the dispensary for that purpose, but during the latter period his duty was to carry out compulsory vaccination, for which, of course, he is paid. I have already shown the duties under the Public Health Act, and certainly £20 to £25 per annum does not leave a balance for augmenting the dispensary salary. Registration work was not given to us for this purpose either, but because it could not be so efficiently and cheaply performed by any other class of public servants in the country. The lunacy fees in this district amounted to about £20 in ten years, and were the reward for responsible work in no way connected with the Medical Charities Act.

When a condition of the service such as I have experienced can exist, and when the Local Government Board have to resort to the argument that because they have imposed on us new, arduous, and responsible duties and compelled us to take them at inadequate fees they have improved our position as dispensary doctors, and that they are in consequence justified in obstructing the redress of our grievances in respect of unremunerative salaries, and absolute right to annual vacation and superannuation, I feel sure that we may rely on the sympathy and support that will be necessary to compel them to give us justice.

A Valedictory Address

ON

THE SCOPE AND WORK OF THE BRITISH MEDICAL ASSOCIATION.

Delivered before the Huddersfield Division of the Yorkshire Branch.

By SAMUEL KNAGGS, M.R.C.S., L.S.A.,
Consulting Surgeon, Huddersfield Infirmary; Chairman of the Division.

In concluding my year of service as President of the Huddersfield Division of the British Medical Association, I must thank you for the kindness and consideration I have met with, and especially from Mr. Rowell, our Honorary Secretary, who has rendered me most efficient help and transacted the necessary business of the Division in a most capable and admirable manner. I much regret that from advancing age and infirmity I am unable to occupy the position that I feel ought to be taken by the President of this Division, and therefore that it is my duty to retire from office and to invite you to select another President.

The separation of the Branch into various Divisions is of such recent date that it seems almost to invite comment upon its practical working. There has been a great upheaval in the world during the last half-century. Knowledge has greatly increased, and marvellous discoveries have been made in all directions, sometimes by pure accident, but more frequently revealed or inspired, as it were, by some happy thought flashed into the mind at a critical moment during the progress of technical or experimental work.

In this great evolution the medical profession has been by no means behind. It can claim for itself to have been almost the foremost, having given to the world without fee or recompense many of the greatest and most wonderful discoveries of the age. Thus has been developed a restlessness of enthusiasm, and great activity of thought and mind in every individual and branch of the profession, and also along with it some feeling of discontent with the conditions under which the profession is working. A similar activity and energy to that which is being exhibited in connexion with the progress of the science and art of the profession is also manifesting itself in the desire to alter and improve the conditions of its service.

The British Medical Association has, we know, been working with this end in view for many years. A great change in its method of action has been made within comparatively recent time. Formerly its custom was to submit suggested alterations in procedure to Committees formed mainly from the Council itself selected from men of experience and knowledge who seemed best fitted for the work. The Council received their reports, and decided in conclave what was to be dropped and what was to be brought forward and supported at the annual meeting. When the five Direct Representatives were returned to the General Medical Council it soon became evident that great differences of opinion respecting medical matters existed which it was not very easy satisfactorily to reconcile. The British Medical Association therefore adopted the expedient of asking the profession itself to decide. I express no opinion upon the wisdom of this course, but it is evident that it throws a great weight of responsibility upon the Divisions; and as they mostly are composed of busy men in active general practice, it seemed questionable whether even a majority of them will be found disposed, or with sufficient opportunity, to investigate all these matters with the attention they deserve.

The formation of these Divisions was a judicious act. The Branches worked over too wide and extensive an area; attendance at their meetings took up too much time, so that excepting when meeting in populous towns or districts comparatively few attended. Now it is easily within the reach of every practitioner to attend at the discussion, and approve or condemn by his vote whatever is brought forward. It is, under present circumstances at all events, eminently desirable that every practitioner should feel it a sacred duty to his profession to do this. The energetic activity of the Medico-Political Committee of the Association is admirable. Its enthusiasm is boundless, and it rolls out scheme after scheme with bewildering velocity. Nothing is too high and nothing too low to be tackled. A typical instance is the suggestion that the registration of members of the profession should be made retrospective. We are registered already. I myself have been registered for over fifty years. It is my charter of freedom to the profession. What right has any one to deprive me of this charter unless I pay a pound of blackmail yearly to keep my name on the *Register*? Of course the right can be obtained by law, but is it just? is it honest? is it fitting that a great association should propose to take money in this way out of the pockets of the medical profession by the threat of depriving them of their right to practise, by making a new law requiring an annual registration fee from old members? It is only, of course, in its retrospective action that the injustice lies. And I may take another suggestion made with all gravity, namely, that prescriptions must not be allowed to be made up more than three or four times. The British public can bear a good deal I admit, but it has some spirit left, and will make very short work of any such proposal. These instances show how necessary it is that all members should unite to prevent such immature and retrograde suggestions being passed into law through the agency of a powerful Association working under the impression that it is acting as the mouthpiece of the profession. But, on the whole, I am persuaded that the Medico-Political Committee is doing useful work, if the members of the profession will resolutely do their part in supporting what is good and rejecting what is bad.

This brings me to the special point I want to emphasize in this address. We have in this Division forty-three members, and not more than six or ten attend our meetings; and it is to be noticed that this is something like the proportionate average of attendance in other Divisions. Surely this is not

as it should be, nor is it deserving of being considered as giving a fair expression of the sense of the profession in the Divisions.

I appeal to my professional brethren to attend these meetings in force, so that they may conserve the profession and keep its honour bright and untarnished by hasty and ill-considered legislation. Each member should feel that by his vote and influence he retains the interest and well-being of his profession to a great extent in his own keeping. He will be anxious to conform, both in deed and spirit, to its defined rules and regulations. He is greatly concerned that these rules or laws shall be just and wise, fair and just to the public, and sufficiently protective to himself and his fraternity. Hence it becomes to him a serious duty whenever great changes in these laws are contemplated, to throw the whole weight of his influence into the scale of justice and right. Let us all band together in this matter; unity is strength. The British Medical Association is passing through a crisis. It is a great power for welding together, if properly governed, the scattered units of the profession. It will be a still greater power for weal to the profession and the State if it can be made to wrap its mantle of protection around every individual of the body. There are difficulties in the way of this, I know, and especially coming from its scientific side.

In large towns and populous districts excellent medical societies and libraries exist; they have their own rules and regulations, and are popular and very useful in promoting good fellowship and scientific work. They have, however, very little influence outside their own district in reasoning out or promoting legislation of any kind, either in relation to the needs of the profession itself or to the application of the discoveries and teachings of medical science to the wants of the general public. This has been, and is, the work of the British Medical Association, and by which it has been enabled to raise the profession steadily and in very marked degree in public estimation. If every member of these local societies would also become a member of the British Medical Association an enormous advance would be made in the influence and power of the Association. But the societies would not like to part with their separate existence, and the increased cost of a double membership would be prohibition to many. So that this fusion, however desirable from many points of view, is not likely to be easily accomplished. Still, let us help the Association all we can to increase its members. All who are not pinched by the *res angusta domi* may surely spare the annual small contribution that will qualify them to support the profession in its most vital part, and by putting shoulder to shoulder to guarantee its working upon the true lines of justice to all and complete general efficiency.

I will conclude with these pregnant words of Victor Horsley's: "There is a great advantage in breaking up the Branches into Divisions, each Division being an autonomous unit to regulate the actions of the profession in any given part of the country, and which can thus best deal with local conditions. It is essential for general purposes that these local associations should be merged in the British Medical Association. The local associations require this for federal power. We want the State to recognize our time and money spent in equipping us for service. We want the State to promote and carry forwards our views in regard to medical education, sanitary reform, and to be in general sympathy with our work and with the objects we have in view. We want every practitioner to join the Association, so as to give a united front and a large motive power to represent the feelings and wishes of the profession."

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

METROPOLITAN COUNTIES BRANCH:

City Division.

A general meeting of this Division was held on the afternoon of October 27th at the Great Eastern Hotel, Liverpool Street, E.C. The Chairman (Mr. Hope Grant) presided.

Paper.—Dr. Dundas Grant read a paper entitled Some Practical Hints in Regard to Diseases of the Throat, Nose, and Ear, more especially in General Practice. The paper was illustrated by drawings and specimens. Nineteen members and seven visitors were present, several of whom took part in the discussion which followed the reading of the paper.

Votes of Thanks.—The meeting concluded with a hearty vote of thanks to Dr. Dundas Grant.

Hampstead Division.

A meeting of this Division was held at St. Peter's Lecture Hall, Belsize Square, N.W., on Friday, November 4th, at 4.30 p.m. Dr. Heath Strange presided, and fourteen members were present.

Confirmation of Minutes.—The minutes of July 21st were read and confirmed.

Letters of Regret.—Letters of regret for absence, owing to illness, were read from Dr. R. A. Yeld (the Honorary Secretary) and Mr. R. Henslowe Wellington, Deputy Coroner for Westminster and Representative of the Division, who was in consequence unable to read his report on the Representative Meeting at Oxford.

Divisions and Election of Members.—The following resolution was then proposed by Dr. Ford Anderson, Representative of the Branch on the Central Council of the Association.

> That it is desirable to so alter By-law 2 that the Council of the Association may, on the application of any Division with over thirty members, relegate the power of election of members to that Division.

Dr. Ford Anderson said the permissive provision in the resolution should disarm opposition, as any Division might continue to act according to present Rules. He saw nothing revolutionary in the proposal, as the Branch Council now depended on the opinion of the Representatives of the Divisions in the election of candidates. In any case he had perfect confidence in the justice of the profession, and had no doubt that elections would go as smoothly under the proposed new Rule as under the old Rule. He was especially hopeful that many medical societies would merge themselves in their respective local Divisions if the disability with regard to the election of members were removed, and in this and other ways a notable increase in the membership of the Association might be confidently expected. He described the present method of election, complained of the long delay that might ensue between application and election—in some cases three months—and insisted on the right of individual members having more voice in the election of fellow members. —Dr. T. Morton (formerly President of the Northern District of the Metropolitan Counties Branch) was to have seconded the resolution, but was unavoidably prevented from attending. In his room the resolution was seconded by Dr. F. R. Humphreys (one of the Representatives of the Division on the Branch Council), who believed it would assist in inducing the local Societies to fall in.—Dr. Hills, Dr. Oppenheimer, and Dr. Winslow Hall spoke in favour, the latter, however, thinking personal prejudice might be even found in a Metropolitan Division as well as in a small country one.—Drs. Macevoy and Russell opposed on the grounds of possible local prejudice and inability to see wherein the Branch Councils had failed in their duty.—The resolution was carried by 11 to 2.—Dr. Winslow Hall proposed to add to the above resolution:

> But that right of appeal to the Branch Council shall be reserved to candidates who are rejected.

—This was seconded by Dr. Macevoy, and carried by 6 to 4.

Statistics of Cancer at the Middlesex Hospital.—Dr. W. S. Lazarus-Barlow, Director of the Cancer Research Laboratories, read a very interesting paper on statistics of cancer at the Middlesex Hospital. He discussed (1) age incidence, (2) heredity, (3) increase. The earliest ages at this hospital were in a boy of 16 (cancer of rectum), and a girl of 19 (cancer of uterus). His statistics did not show any grounds for believing in hereditary influence, rather the reverse. They did show an undoubted increase.

Vote of Thanks.—After a very hearty vote of thanks to Dr. Lazarus-Barlow, moved by the Chairman and seconded by Dr. Ford Anderson, and supported by other speakers, the meeting broke up.

Tottenham Division.

The first meeting of this Division for the season 1904-5 took place at the Tottenham Hospital on Friday, October 28th, at 9.15 p.m., and was well attended. Dr. G. P. Chappell presided.

Annual Representative Meeting.—Dr. J. R. Fuller, the Representative of the Division, read to the meeting the report

of the result of the business transacted at the meeting of Representatives at the Oxford meeting. A vote of thanks was passed to Dr. Fuller for his report.

National Deposit Friendly Society.—Mr. R. F. Tomlin opened a discussion on the merits and demerits of the National Deposit Friendly Society, and finally suggested an alteration and modification of its scheme of fees as follows: That all intermediate visits in dangerous cases be paid for at the price of 2s. 6d.; this refers, of course, only to those drawing 35s. per week or less in sick pay. That the removal of cancerous tumours, or other operations of magnitude, shall be paid for at the price of £5, not £3 as at present. That the fee for examination of candidates for admission be 2s. 6d., and that the certificate be forwarded to the secretary, and not given back to the candidate. That the minimum fees for attending on midwifery cases be as follows: (*a*) For patients drawing sick pay at 3s. a day, £1 1s.; instrumental labours in such cases (major operations excepted), 31s. 6d.; when an anaesthetic is required, 10s. 6d. extra; (*b*) for patients drawing 3s. to 6s. a day, an extra 10s. 6d. be added to the above fees; (*c*) for patients drawing over 5s. a day sick pay, an extra 21s. on (*a*) fees should be paid. That the rule that a consulting physician may be employed at a fee of 1 guinea be altered, so that "or consulting surgeon" be added to the reading. This fee, though a small one, would permit practitioners to ask the help of junior consultants, and so give them a help, and would at the same time save taking up the time of older men, who could be more profitably employed.

Contract Medical Practice.—In regard to contract medical practice, it was proposed by Dr. Petty, and seconded by Dr. Fuller:

> That the minimum payment per annum per person of any age in a medical sick club be 1d. per week—that is, 4s. 4d. per year—and that no reduction be made for extra members of a family.

This was carried unanimously, and it was decided that the decision be notified to the General Medical Council.

Registration of Nurses.—It was moved by Dr. Fuller, and on his advice adopted by the Division:

> That the Division of the Branch deplores the resolution passed at Oxford by the Representatives in meeting with regard to the Nurses Registration Bill, as being detrimental to the interests of the legitimate practitioners for the following reasons:
>
> 1. That there is absolutely no necessity for the Bill. The nurses should always be chosen by the doctor, who knows, and not by the patient, who is ignorant of a nurse's qualifications.
> 2. It gives the nurse an importance that does not rightly belong to her. Hers is a position of obedience, and registration would give her imaginary rights not tending to peaceful relations with those whose orders she must obey.
> 3. It is setting up another order of practitioner. "Qualified medical, surgical, and obstetrical nurse," "midwifery attended"—is a common sign to be seen in poorer districts now, and would, of course, become more so.
> 4. The poorer classes have already to distinguish between the bonesetter, the midwife, the chemist, and the doctor (all with the power to advertise except the last), and now the registered nurse is to be added.

YORKSHIRE BRANCH.

A meeting of the Yorkshire Branch was held at the Grand Hotel, Scarborough, on Saturday, October 15th, Dr. J. C. Wright, in the chair.

New Members.—The following were elected members of the Association: Vaughan Bateson, L.R.C.P.and S., George Hamilton Bristowe, M.R.C.S., John J. Crowe, L.S.A., Arthur W. Firth, M.B., Daniel Gillespie, M.B., Robert Bond Greaves, M.D., Samuel Howard Sharp, M.D., William A. H. Waite, M.B., B.Sc., and Alexander G. Wilson, B.A., M.B.

Alterations of Rule.—A special meeting was held to alter rule 3 by the addition of the following words: "President elect" and "members of the Central Council elected by the Branch."

Papers.—Dr. Churton read an interesting paper on the treatment of Menière's disease; Mr. Whitehead read notes on a case of acute cerebral disease, and Dr. Edgecombe spoke on the treatment of sciatica.

Dinner.—At the close of the meeting twenty members and ladies dined at the Grand Hotel.

SOUTH-WESTERN BRANCH.

The autumn meeting of this Branch was held at the Royal Devon and Exeter Hospital on Friday, October 21st, the President, Dr. J. Alexander, in the chair. There were present 49 members and guests. Tea was provided before the meeting.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

The Work of the Divisions.—Mr. J. Smith Whitaker, the Medical Secretary of the Association, delivered an address on the benefits to the medical profession resulting from the work of the Divisions of the Association (see p. 169), whereupon Dr. Davy proposed and Dr. Deas seconded a vote of thanks to Mr. Whitaker for his able and interesting address, which was carried unanimously.—The address excited an animated discussion, at the close of which Dr. Gordon proposed and Mr. George Jackson (President-elect) seconded that it was desirable that this address should be published in the British Medical Journal, inasmuch as the points so lucidly dealt with were points which are by no means sufficiently widely recognized by members of the Association, and, moreover, would be of real use to the profession, and may be the means of inducing many to join the British Medical Association.—This resolution on being put from the chair was carried unanimously.

Cases.—Mr. C. W. E. Bell showed a case of ankylosis of hip treated by excision of head of femur.—Mr. Russell Coombe showed a case in which he had performed colotomy for obstruction, and followed by successful excision of malignant growths.—Mr. R. H. Lucy showed a case of a boy from whom he had removed a very large enchondroma of the ribs.

Specimens.—Mr. Russell Coombe showed (1) an ovarian cyst with a twisted pedicle, (2) a galactocele or enchondroma removed from the same patient, (3) a fatty tumour which gave rise to symptoms of spinal caries.—Dr. J. Harley Gough showed a specimen of syphilitic necrosis of the larynx.—Mr. R. H. Lucy showed (1) a large enchondroma, (2) a very large renal calculus, (3) a temperature chart of an unusual case of ovariotomy.—Dr. Solly showed a large number of interesting microscopical specimens.

Organization of Branch and Divisions.—Prior to the meeting a conference was held between the Medical Secretary of the Association and the officers of the Divisions of the Branch and the Branch Council. The Medical Secretary dealt with the question of organization of the Branch and its Divisions. A lengthy discussion ensued, after which the Medical Secretary received the unanimous thanks of the meeting for his attendance.

Dinner.—In the evening many members accepted the kind invitation of the Committee of the Exeter Medical Society to their annual dinner, which was held at the Rougemont Hotel.

SOUTH-EASTERN OF IRELAND BRANCH.

A meeting of this Branch was held in Waterford on September 28th, Dr. Laffan, President, in the chair. The following members were present: Drs. D. Walshe, R. B. Carey, W. J. Shee, P. Stephenson, M. P. Coghlan, J. Quirke, P. J. Murphy, W. P. Walsh, G. J. Mackesy, W. R. Morris, and E. J. Farmer.

Confirmation of Minutes.—The minutes of the previous meeting were read and passed.

Branch Rules.—A letter from the Medical Secretary of the British Medical Association *re* the Branch Rules having been read, a discussion followed, when one or two minor amendments were carried, and the Rules were ordered to be forwarded to the Central Council for approval.

Fees to Admiralty Surgeons, etc.—The following resolutions were proposed by Dr. W. J. Shee, seconded by Dr. P. Stephenson, and passed:

> 1. That this Branch is of opinion that the fees which are at present paid by the Admiralty to their surgeons and agents are inadequate and in need of revision, and with a view to an early and reasonable settlement this Branch suggests that at least the sum of 5s. be allowed for each visit or consultation, exclusive of medicines, in lieu of the sum of 2s. 6d. that is at present allowed; and that mileage at the rate of 1s. a mile be allowed for each mile travelled, both on the outward and return journeys, in lieu of the same rate of mileage now allowed on the outward journey only; also that the wives and families of officers and men of the Coastguard on shore be entitled to medical attendance at these rates at the cost of the Crown, and that the office of surgeon and agent be made a pensionable one, the pension to be calculated on the average annual payments for the five years preceding the resignation of a surgeon and agent, and according to the Civil Service scale and rules. Copies of this resolution to be sent to the Journal of the Association, to the Honorary Secretary of each Branch interested in it, the First Lord of the Admiralty, and to the Director-General of the Medical Department of the Admiralty.
> 2. That this Branch is of opinion that the fees which are at present paid by the Commissioners of Irish Lights to their medical officers

are inadequate and in need of revision; and with a view to an early and reasonable settlement this Branch suggests that at least the sum of 5s. be allowed for each visit and consultation, exclusive of medicines, in lieu of the sum of 2s. 6d. that is at present allowed, and that mileage at the rate of 1s. a mile be allowed for each mile travelled both on the outward and return journeys, in lieu of the same rate of mileage now allowed on the outward journey only; also that the office of medical officer to the Irish Lights Board be made a pensionable one, the period to be calculated on the average annual payments for the five years preceding the resignation of a medical officer, and according to the Civil Service scale and rules. Copies of this resolution to be sent to the JOURNAL of the Association, to the Honorary Secretary of each Branch interested in it, to the President of the Board of Trade, and to the Secretary of the Board of Irish Lights.

Proposed Irish Committee.—The following resolution was proposed by Dr. WALSHE, seconded by Dr. R. B. CAREY, and passed:

That all the Irish Branches be asked to co-operate in taking the necessary steps to have an Irish committee of central council appointed on same lines as Scotch Committee.

The Provincial Profession and the Senate of the Royal University.—The following resolution was proposed by Dr. LAFFAN, seconded by Dr. COGHLAN, and passed:

That representations be made on the subject of the persistent exclusion of the entire provincial profession from the Senate of the Royal University and other positions of honour, for which our education, position, and public services would give us as good claims as those possessed by many of the parties chosen.

Vote of Sympathy with Colonel Riordan.—A vote of sympathy with Colonel Riordan on the recent death of his wife, which was proposed by Dr. MORRIS (Waterford) and seconded by Dr. CAREY, was passed unanimously.

Dinner.—The meeting having terminated, the members were most hospitably entertained at dinner in the County Infirmary by the Waterford members.

SOUTH-EASTERN BRANCH:

SEVENOAKS DIVISION.

A MEETING of this Division was held on October 27th at the Royal Crown Hotel, Sevenoaks, under the chairmanship of Dr. MARRIOTT. There were thirteen members present.

Medical Certificates for Club Patients.—The rate of payment for medical certificates for working-men and club patients was incidentally discussed, when it was found that there was considerable variation in these charges, and it was resolved that the Committee be asked to investigate and report on the matter to the next meeting.

Annual Representative Meeting.—Mr. MAUDE (Westerham) gave an account of the work of the Representative Meeting at Oxford.

Researches in Cancer.—Mr. LENTHAL CHEATLE, C.B., F.R.C.S., gave an account, illustrated by lantern slides, of his researches on the behaviour of cancer within nerve and trophic areas.

Communications.—A memorandum from the Exeter Division was read, and a communication from the Honorary Secretary of the South-Eastern Branch as to the further division of the Branch was referred to the Committee for reply.

Specimens.—Microscopic slides of a periosteal sarcoma of the femur, which had previously been brought to the notice of the Division, were exhibited by Dr. MARRIOTT. Specimens and slides of the disease of cabbages known as "fingers and toes," caused by plasmodiophora, were exhibited by the HONORARY SECRETARY.

Dinner.—The members subsequently dined together at the hotel.

ELECTION OF MEMBERS.

[*To the Editor of the* BRITISH MEDICAL JOURNAL.]

SIR,—Having been asked by several honorary secretaries of Divisions for the reasons which induced the Folkestone Division to bring forward the following proposition—namely,

That the present method of election by the Branch Council is unsatisfactory, and that new members should be elected by the members of the Division in which they reside,

I should like to make an explanation. The object of the Folkestone Division in bringing the above motion before the annual meeting at Oxford was to obviate the delay which often occurs in a new member being elected by the Branch Council. The Branch Council does not meet very often, and it may happen that the name of the candidate has been sent in just after a meeting has taken place, and he is not elected till after the following meeting, which sometimes means after several months have elapsed; and, even when elected, there is often delay in informing a candidate of his election. In a case I know of as much as six months elapsed before the candidate knew he was elected.

The Folkestone Division maintains that the members of the British Medical Association in the district in which the candidate resides are the best judges of the advisability of admitting him as a member.

If there is anything thoroughly against a man of course he would not be elected in any case. If he is not quite what one would desire we think it would be advisable to elect him a member, as by frequent association with men of higher standing he might be influenced for good. If he is in every way desirable the less delay in electing him a member the better for the Association.

After all, the majority of candidates who wish to be elected are medical practitioners who have been in the district some years and are, therefore, well known to the local members.

On the other hand, those who support the present method maintain that election by the Branch Council does away with local prejudice.

But, all things considered, we think that the advantages of electing in the district outweigh the disadvantages.—I am, etc.

P. VERNON DODD, M.A., M.D.,
Honorary Secretary of Folkestone Division.

SIR,—Referring to the meeting of the Hampstead Division (p. 174) on November 4th, when a resolution was carried almost unanimously suggesting that a permissive power be given to Divisions with over thirty members, on application to the Council of the Association, to elect members to those Divisions, I venture to express the hope that other Divisions will discuss this important question at an early date, so that the next Representative Meeting may have unmistakable indications of the views of the Association.

The change proposed is less than at first sight it appears to be. Instead of sending representatives to the Branch Council to elect new members the Divisions will themselves elect. Thus, the officers of the Divisions will have continually before them the actual condition of their Divisions as to membership and non-membership among the neighbouring practitioners, and there will be less delay in electing and in bringing new members into association with the Divisions. It was the delay in these matters that led the Folkestone Division to propose the resolution for the compulsory election of members by Divisions which met its fate at Oxford.

The question of local medical societies also affords a powerful argument for a change. Sir Victor Horsley and others have expressed the hope that all the local medical societies will ultimately merge themselves in their respective Divisions, and that these will become the scientific medical centres of their neighbourhoods. In some cases—notably in Bradford—the suggestion has been received sympathetically, but the members of the existing societies there are not prepared to resign the privilege of electing their own members; and it is worth noting that the Bradford societies would bring in at least sixty new members to the Association, and that their example may be followed by other Divisions.

The second resolution of the Hampstead Division was intended to protect candidates from injustice due to local prejudice. Personally, I believe any such by-law must perish from disuse, as I have yet to hear of any meeting of responsible members of our profession who have been unjust in order to gratify a prejudice. Speaking for the Metropolitan and other large Divisions, so far as I know them, I believe such an occurrence is almost impossible.

I am well aware that no change in the by-laws will achieve much without intelligent and energetic management of the Divisions, but if these qualities are brought to the increased field for work suggested by the Hampstead resolution, I confidently expect that the result will be an extension of the membership of the Association.—I am, etc.,

London, N.W., Nov. 7th. J. FORD ANDERSON.

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Fig. 9.—Aluminium canteen and mess tin; grass box for rice ration; copper Chinese kettle. Army boots: cotton shoes with detachable grass soles



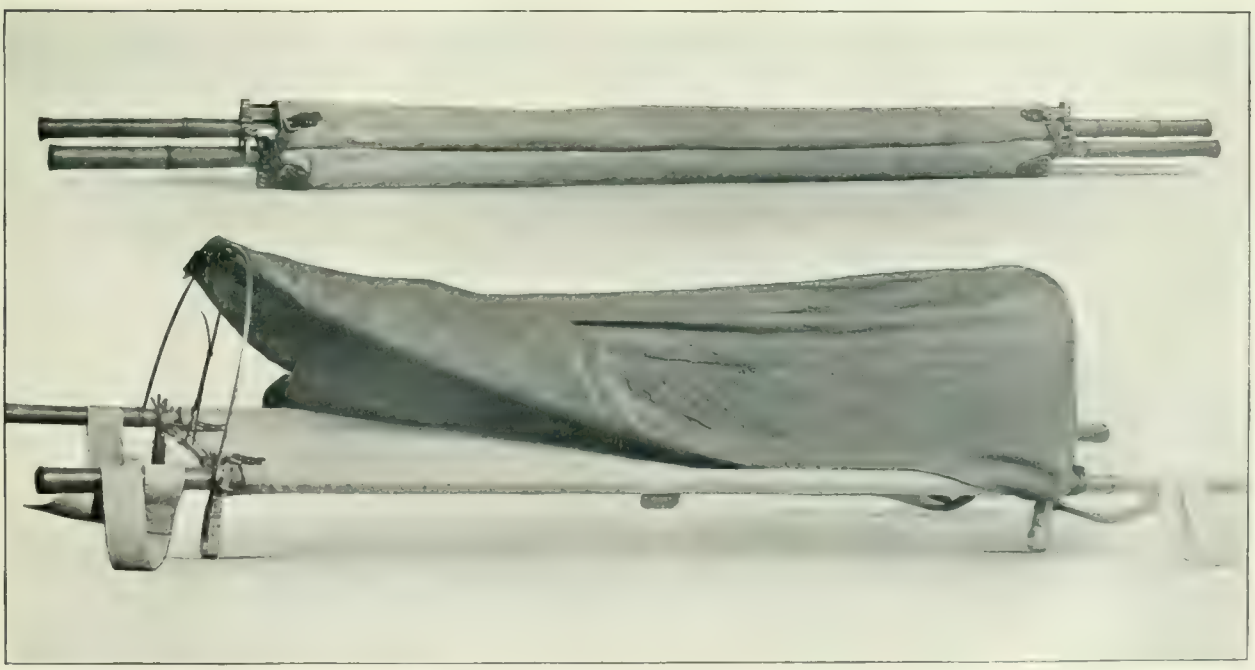


Fig. 10.—Stretcher closed. The same open, showing supports and detachable cover.



Fig. 6.—Ordinary great coat with attached hood, one side of skirt buttoned up for marching.

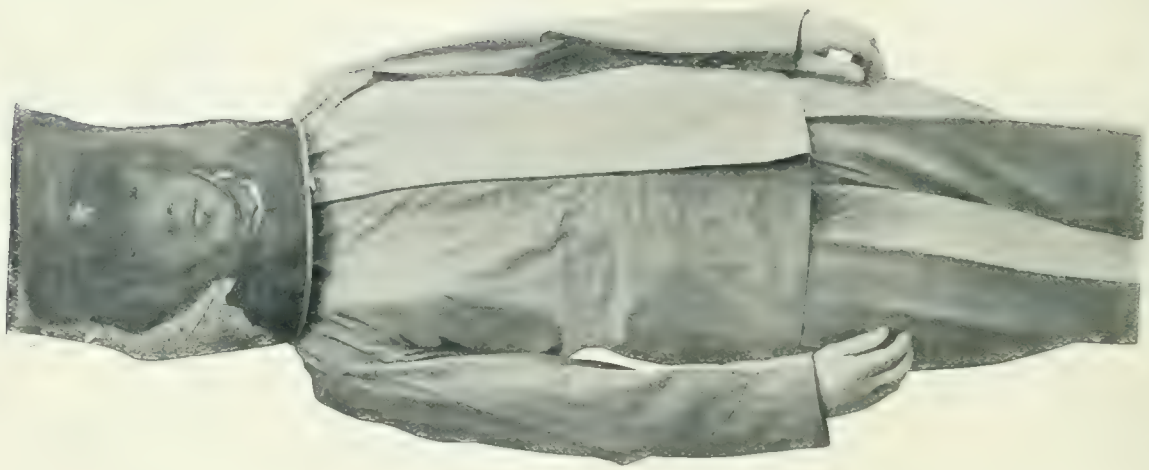


Fig. 5.—Summer uniform, showing buttonless khaki drill coat and mosquito helmet over the head and forage cap.

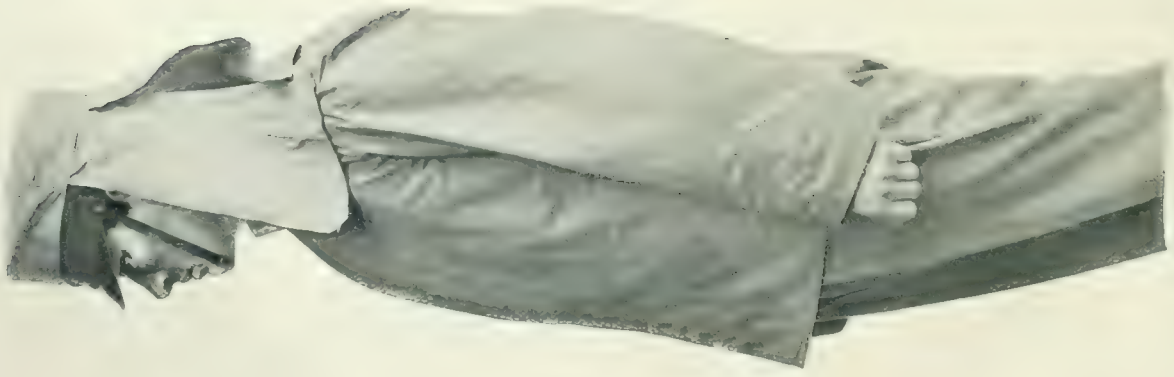


Fig. 4.—Summer uniform of khaki drill; forage cap with cover and tripartite falling neck flap.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

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ASSOCIATION INTELLIGENCE.

PROCEEDINGS OF COUNCIL.

THE adjourned meeting of the Council was held, by kind permission of the Metropolitan Asylums Board, London, in their Board Room, on Wednesday, November 16th, 1904.

Present:

Mr. ANDREW CLARK, D.Sc., Chairman of Council, in the Chair.
Dr. WILLIAM COLLIER, President.
Dr. T. DRYSLWYN GRIFFITHS, D.Sc., Past-President.
Sir VICTOR HORSLEY, F.R.S., Chairman of Representative Meetings.
Dr. E. MARKHAM SKERRITT, Treasurer.

Dr. JOHN FORD ANDERSON, London.
Dr. EDGAR G. BARNES, Eye.
Dr. MICHAEL BEVERLEY, Norwich.
Dr. H. LANGLEY BROWNE, West Bromwich.
Dr. R. COCHRANE BUIST, Dundee.
Dr. W. A. CARLINE, Lincoln.
Dr. JAMES CRAIG, Dublin.
Mr. PEARSON K. CRESSWELL, C.B., Dowlais.
Dr. H. RADCLIFFE CROCKER, London.
Lieutenant-Colonel E. F. DRAKE-BROCKMAN, I.M.S., ret. (South Indian and Madras Branch), London.
Dr. G. BAGOT FERGUSON, Cheltenham.
Professor DAVID W. FINLAY, M.D., LL.D., Aberdeen.
Mr. C. E. S. FLEMMING, Bradford-on-Avon.
Dr. E. ROWLAND FOTHERGILL, London.
Dr. JOHN H. GALTON, Upper Norwood.
Dr. JOSEPH J. GIUSANI, Cork.
Dr. BRUCE GOFF, Bothwell.
Dr. DAVID GOYDER, Bradford.
Dr. MAJOR GREENWOOD, London.
Dr. JOSEPH GROVES, Carisbrooke.
Dr. JAMES HAMILTON, Glasgow.
Dr. R. MCKENZIE JOHNSTON, Edinburgh.
Dr. THOMAS S. KERR (Malaya Branch), London.
Mr. R. H. KINSEY, Bedford.
Dr. C. H. MILBURN, Hull.
Dr. C. G. DRUMMOND MORIER (South Australian Branch), London.
Mr. W. JONES MORRIS, Portmadoc.
Professor J. T. J. MORRISON, Birmingham.
Dr. CHARLES JAMES MORTON, London.
Mr. D. A. O'SULLIVAN, London.
Mr. C. H. WATTS PARKINSON, Wimborne Minster.
Dr. FRANK M. POPE, Leicester.
Dr. EDWIN RAYNER, Stockport.
Dr. CECIL E. SHAW, Belfast.
Professor W. R. SMITH, M.D. (Malta and Mediterranean Branch), London.
Mr. W. D. SPANTON, Hanley.
Mr. JOHN LYNN THOMAS, C.B., Cardiff.
Fleet-Surgeon J. LLOYD THOMAS, R.N., Portsmouth.
Dr. W. J. TYSON, Folkestone.
Mr. T. JENNER VERRALL, Brighton.
Dr. NORMAN WALKER, Edinburgh.
Captain C. E. WILLIAMS, I.M.S. (Burmah Branch), London.

Read letters of apology for non-attendance from the President-elect, Dr. James Barr, Dr. J. Brassey Brierley, Dr. D. Burgess, Dr. T. Arthur Helme, Sir Francis Lovell, K.C.M.G., Dr. James Murphy, Dr. James Murray, Dr. Maxwell Ross, and Professor Saundby.

On consideration of the minutes of the Hospitals Committee it was agreed that the Committee be asked to co-opt two or more general practitioners practising in London.

In reference to a minute of the Committee recommending that a certain letter should be transmitted to Dr. Stoddart the following was substituted: That Dr. Stoddart be informed that in consequence of a misunderstanding with regard to the exact meaning of his letter (undated) the Hospitals Committee were led into a misapprehension in their reply. That the Central Council, having heard of the desire of King's College Hospital to come to some arrangement that will meet with the approval of the medical practitioners resident near their new site, notes with cordial approval the determination of the local profession to co-operate in the matter.

On consideration of the minutes of the Public Health Committee it was resolved: That the Council bring before Parliament the Public Health Bill as redrafted by counsel in accordance with the decisions of the Committee.

The Standing Orders were then suspended, to reconsider a resolution passed at the October meeting of the Council, when it was decided: That in the Year Book there shall be an alphabetical list of the Members of the Association, with reference to their Branches and Divisions.

A communication was read suggesting the adoption of a Coat of Arms by the Association; when it resolved that a Committee be appointed to consider the desirability of the Council making application for a Coat of Arms for the British

Medical Association. The Committee to consist of the President and Chairman of Council, the Treasurer, Mr. Cresswell, Dr. G. B. Ferguson, and Dr. J. H. Galton.

A resolution passed in the State Medicine Section at Oxford was referred to the Annual Meeting Sections Committee.

The recommendations forwarded from the Executive Committee of the Oxford meeting, suggesting that members attending the Annual Meeting should pay a capitation fee, were not adopted.

A motion as to the propriety of the Association providing accommodation at its annual meetings for the exhibition of foods, drugs, etc., was lost.

Resolved: That a special Committee be appointed to report on the co-ordination and development of the scientific work of the Association and its Branches and Divisions, to consist of the President and Chairman of Council, the Chairman of the Representative Meetings, the Treasurer, the Chairman of the Organization Committee, Dr. James Barr, Dr. Langley Browne, Dr. R. C. Buist, Dr. F. M. Pope, and Dr. Cecil Shaw.

That in the JOURNAL the attention of Branch and Division Secretaries be called to the appointment of the Committee, and that they be invited to submit any suggestion they may wish to make relative to the subject.

Resolved: That *cæteris paribus* the scholarships of the Association be given to members of the medical profession, but in the event of a non-medical applicant being considered better qualified for the purpose the scholarship be awarded accordingly.

Resolved: That a Committee of the Chairmen of the various Committees of the past and present years be formed, with power to co-opt members, with instructions to prepare some plan of election to the Standing and other Committees that will prove more satisfactory than the present one, and will allow of the services of every member of this Council being duly availed of; and to report in January what steps they would suggest should be taken by alteration, addition, or otherwise of the Articles, By-laws, and Standing Orders, to meet the greatly increasing amount of work devolving on these Committees, as also to carry out the proposed plan of election.

Resolved: That the following motion be referred to the Organization Committee:

That the Secretaries of the Branches who have not elected a Secretary be written to and asked to report what steps have been taken, and do they propose should be taken, to organize the members resident in these areas.

Read resolutions passed by the Isle of Thanet Division and the Denbigh and Flint Division, suggesting that the Council forward to Division Secretaries an official statement of all matters to be referred to the Divisions, together with a summary of the necessary facts on which an expression of opinion is required; further, that the Council take into consideration the advisability of making the necessary arrangements for bringing the subjects of vaccination and revaccination before Parliament at its next session. The Chairman reported that these matters were under the consideration of the Medico-Political Committee.

Certain resolutions passed by the Wandsworth Division were considered and referred to various Committees for report.

The Chairman of Council reported that the communication from Altrincham Division and the North of England Branch, making suggestions for the conduct of the business of the Annual Representative Meeting, would be considered by the Committee appointed by minute of Council 790.

The proposal that a list of the members elected during the past quarter by the Central Council and the Branch Councils be printed under the various headings in a Supplement of the JOURNAL issued after each quarterly Council meeting was referred to the Journal and Finance Committee.

Resolved: That a cordial vote of thanks be passed to the Metropolitan Asylums Board for the use of their Board Room.

The Council then adjourned.

Proceedings of Standing Committees.

MEDICO-POLITICAL COMMITTEE.

MEMORANDUM ON MATTERS REFERRED TO DIVISIONS.

The Annual Representative Meeting decided that four subjects brought before it on the Report of the Medico-Political Committee should be referred to Divisions. These were:—

(I) The Interim Report on Contract Practice.
(II) The Report on Consultation of Medical Witnesses in legal cases.
(III) The Report on Information supplied to Coroners by Medical Practitioners.
(IV) The Report on Re-organisation of the Local Government Board.

(*Copies of the Minutes and Reports are appended hereto.*)

In the case of questions (I) and (II), the object of the reference was that a further opportunity might be afforded for consideration of the important subjects to which they relate, before decision by the Association.

In the case of questions (III) and (IV) the object was that the decisions which the Representative Meeting arrived at, in approving the Reports of the Medico-Political Committee, might be given effect to through the Divisions.

For the assistance of the Divisions in dealing with these references the Medico-Political Committee would make the following suggestions concerning the consideration of (I) and (II), and concerning possible action by Divisions in respect of (III) and (IV).

(I) *Contract Practice.*

With respect to the several propositions as to Contract Practice the Committee suggests that the resolutions passed by the Divisions be arranged:—

(*a*) Resolutions which the Divisions think the Representative Meeting should adopt on behalf of the Association.
(*b*) Resolutions which are intended only to express the opinion of the Division for the guidance of its own members, or for other purposes not concerning the Representative Meeting.

(II) *Consultation of Medical Witnesses.*

The present Report contains a discussion of several of the difficulties which were raised by the Divisions when the question was originally submitted by the Medico-Political Committee.

The Committee desires specially to point out that some of the difficulties anticipated by Divisions in carrying out such procedure would be removed if the profession were generally agreed upon a common line of procedure, such as that suggested in the Report.

(III) *Report on Information supplied to Coroners by Medical Practitioners.*

The Committee suggests that all medical practitioners in the area of each Division should be made familiar with the facts stated in this Report. It will then be easy for the profession in each district to take action, should necessity arise, to resist encroachment by coroners, and each Division will consider, with regard to its own circumstances, when, and in what way, it may be advisable to initiate local action by the profession in this matter.

(IV) *Report on the Re-Organisation of the Local Government Board.*

The Representative Meeting expressed the opinion that the Divisions should be asked to press the matter upon their local Parliamentary Representatives and Candidates, and in support of this reform in the interests of the public each Division will, doubtless, consider how such action may best be taken.

I.

CONTRACT MEDICAL PRACTICE.

Minute 29 of the Representative Meeting.

Resolved: That the foregoing resolution (Minute 28: i.e., proposition 3a below) and the propositions contained in the Interim Report on Contract Practice be referred to the Divisions.

Propositions for Consideration by the Divisions.

Necessity of Contract Practice.

(1) That it is inevitable in present conditions that there should be in some parts of the United Kingdom some system of contract medical service of the poor.

Medical Control.

(2) That where the department of contract practice relates wholly to medical work, it is essential that medical men should be adequately represented on the management.

Distribution of Work.

(3) That it should be a fundamental principle of the constitution of all such departments, that every medical practitioner in the district for which the service provides, who wishes so to act, should be a medical officer of the service, provided that he conforms to the rules of the service.

Rider to proposition (3), adopted by the Meeting (Minute 28).

Friendly Societies: Choice of Medical Attendant.

(3a) That the individual members of Friendly Societies be entitled to choose the medical man by whom they desire to be attended.

Minimum Rate.

(4) That, in present conditions, the lowest fee to be fixed in any district, as the minimum to be paid to each medical officer annually for each individual whom he is under contract to attend, should be 5s., subject to such composition fee, if any, as may be locally determined upon in the case of families having more than three children.

Exclusive of Infants.

(5) That children under the age of five should not be admitted under contracts at minimal rates, except in the case of the family composition fees included in Clause (4).

Provision against Abuse.

(6) That in all such contracts the right be reserved to each medical officer to decline to attend as a member of such service any person whom he may consider to be unfit for membership in respect of financial position, but that such provision should be made as the governing body of the service may approve to prevent hardship resulting from the retrospective application of this rule.

Special Services.

(7) The rates above specified are not intended to apply to night visits, obstetric cases, operations, or serious accidents, by the term "serious accident" being meant an accident which causes incapacitation for more than a week.

II.

THE DESIRABILITY OF CONSULTATION BETWEEN MEDICAL WITNESSES IN LEGAL CASES LIKELY TO BE BROUGHT BEFORE THE COURTS.

Minute 57 of the Representative Meeting.

That the Report concerning the desirability of consultation between medical witnesses in legal cases be referred to the Divisions.

Report of the Medico-Political Committee to the Representative Meeting, referred for Consideration by the Divisions.

The inquiry concerning the desirability of consultations being held between medical witnesses which the Medico-Political Committee, acting upon a resolution of the Scottish Committee, addressed to the Divisions of the Association in March last, has elicited replies from 125 Divisions. 108 replies were received in time to be considered by the Committee while preparing the Report now presented, and these have been classified under seven heads:—

(*a*) Divisions who thought it unreservedly desirable that medical witnesses should meet in consultation ... 46
(Of these 15 use the phrase "desirable as a rule" or "desirable whenever possible," or some equivalent expression).

(*b*) Divisions who thought it desirable, subject to certain specified conditions 7
(The principal conditions attached were as to consent of the parties or of their legal advisers, or as to approval of the Judge).

(*c*) Divisions who thought it "desirable if practicable" ... 9

(*d*) Divisions who thought it "desirable but impracticable" 5

(*e*) Divisions who thought it undesirable 33

(*f*) Divisions who thought that the object aimed at would be better attained by the appointment of medical assessors 4

(*g*) Divisions who report that they were unable to arrive at a conclusion or declined to discuss the subject ... 4

The Committee has carefully considered the whole subject, giving special attention to the opinions expressed by the Divisions, and the difficulties which they have mentioned.

The foregoing analysis shows that while a majority of the Divisions whose replies are dealt with are in favour of the consultation of medical witnesses, a considerable minority are at present opposed to such procedure, and there is evidently doubt in the minds of some as to its practicability.

Such opposition and hesitation appear to have arisen in part from a misunderstanding of what was proposed under the term "consultation," partly, perhaps, from the fact that the question submitted by the Committee was purposely stated in general terms, in order to elicit a full expression of opinion.

Two points appear to have given rise to special difficulty, namely (*a*) the fear that the consultation of witnesses might legally constitute "collusion," and (*b*) the fear that parties to cases or their legal advisers might object to such consultations. Both points are, therefore, specially considered in the subsequent paragraphs of this report.*

The Committee submits to the Divisions the following general conclusions on the principles of consultation of medical witnesses:—

1. Medical evidence in legal cases is of two kinds:—
   (*a*) Questions of fact, *e.g.*, as to the amount of injury or disease present in the patient.
   (*b*) Questions of opinion and expert knowledge.

2. Medical evidence at the present time suffers from the disadvantage of being occasionally conflicting under both heads, and differences between medical witnesses in their statements as to questions of fact expose them to accusations of partisanship, which are prejudicial to the credit of the profession and to the value of medical evidence.

3. The determination of matters of fact must be arrived at by the ordinary methods of medical examination, and such examination for purposes of evidence is clearly best carried out by the witnesses for the two sides simultaneously, in order that the condition of the patient may be observed by both at the same time and under the same circumstances.

4. Such associated examination has the further advantage that it diminishes the danger of any material fact being overlooked by the medical advisers of either party.

5. This system would in many cases put each party in more complete possession than they could otherwise enjoy of the knowledge obtainable by medical examination, and would thus diminish the number of cases which now only come before the Courts through imperfect knowledge of material facts by one or both parties. The diminution of litigation thereby affected would benefit not only the parties immediately concerned, but also the community.

6. Although it is not supposed that such combined examinations would necessarily be followed in every case by ordinary consultation between the medical practitioners concerned, yet such consultations should as far as possible be held.

7. The procedure above indicated has the great advantage, both to the profession and the public, that it tends to place the medical witness in his true position as a witness of scientific fact, and not as an advocate or partisan of the party by whom he is employed.

8. The above considerations have for a number of years governed the action of many medical practitioners, and the procedure now suggested for more general adoption by the Association was carried out with success by the profession in Leeds, the effect being that the estimation of professional evidence in that district was unquestionably raised, and both Judges and leading members of the Bar expressed their emphatic appreciation of the good results attained.

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* As to (*a*) see paragraph (9), below, and as to (*b*) see paragraph (10).

9. It has been feared by some that such consultations would in the eyes of the law constitute "collusion" between witnesses, but it appears to the Committee that the term "collusion" is wholly inapplicable to the case of consultations between medical men, who meet for the purpose of coming, if possible, to a joint conclusion as to the facts of the case.

10. It is the belief of the Committee that as soon as the more ethical procedure herein indicated has become the recognised practice of the medical profession, any objection which lawyers or their clients might entertain to consultation between their medical witnesses would tend to be regarded as an indication that there was some element in the case which would not bear unbiassed examination. Consequently the practice of raising such objections would prejudice the case of the party objecting, and in a short time would cease.

11. A few Divisions have suggested that the difficulties arising through the conflict of medical evidence might be met in another way, namely, through the appointment of medical assessors.

The Committee, while fully appreciating the value, both to the public and to the profession, of the regular appointment of medical assessors for the assistance of Courts when medical evidence is being submitted, is of opinion that this reform should not be proposed in substitution for the system of consultation of witnesses explained in the present Report, but should be urged as an independent reform.

The Medico-Political Committee submits the foregoing considerations to the Divisions in the hope that, as the result of their mature deliberations thereon, a procedure conducive to justice and consonant with the best traditions of the profession may receive the formal sanction of the Association.

III.

THE PRESENT POSITION OF REGISTERED MEDICAL PRACTITIONERS IN THE MATTER OF FURNISHING CERTAIN INFORMATION TO CORONERS.

Minute 60 *of the Representative Meeting.*

Resolved: That a copy of the Memorandum be forwarded to the Divisions.

MEMORANDUM BY THE MEDICO-POLITICAL COMMITTEE.

Cases which have from time to time been brought to the notice of the Medico-Political Committee, clearly indicate the unsatisfactory position in which medical men are placed at present, in the matter of furnishing information to Coroners upon which decisions as to the propriety of holding inquests may be based.

Medical practitioners throughout the country have made a practice of supplying to Coroners such particulars of facts within their knowledge concerning the death of patients attended by them, as may assist the Coroner in deciding whether an inquest is necessary, and, if necessary, what evidence shall be called thereat. In a few districts, the services thus rendered by practitioners in their professional capacity to the State have been duly recognised by Coroners by the payment of suitable fees. This, however, is not the rule, and several instances have been reported to the Committee, in which Coroners have not even thought it necessary to accord a courteous acknowledgment of the help they have thus received. There are again cases in which Coroners have accused medical men of neglect of duty, in not supplying such information.

Such an attitude on the part of Coroners must be interpreted as indicating that they hold an entirely erroneous view of the position and duties of registered medical practitioners, in respect of cases in which the circumstances attending the death of patients under their care may be the subject of inquiry, and such an erroneous view is apparently also prevalent among the public, and even among many members of the medical profession.

The question arises, therefore, of the advisability of a pronouncement by the British Medical Association, with the object of securing a proper recognition of the true relation of medical practitioners to the State in this matter. In such a pronouncement, it would appear that the following considerations should receive notice:—

(1) That no legal obligation rests at the present time on medical practitioners, as such, to render any assistance to Coroners in the investigation of the cause of death, other than that of making a "post-mortem" examination when so ordered by a Coroner in writing, and that of attending to give evidence at an inquest when duly summoned so to do.

(2) That, under present conditions, the practice, whereby medical practitioners furnish to Coroners information of the kind considered in this memorandum, not being defined or required by law, is entirely informal and irregular.

(3) That if a preliminary inquiry by the Coroner is to be regarded as an integral part of the procedure sanctioned by the State for the investigation of the cause of death, it would appear that the procedure therein should be definitely regularised by legislation, which should prescribe the respective obligations of Coroners, medical practitioners, and others who may assist in the inquiry, and that definite provision should be made for the adequate remuneration of the several parties concerned in respect of the services thus rendered.

(4) That, pending such action by the legislature, it is necessary to lay stress upon the fact that medical practitioners, who furnish the information indicated, are rendering services to the State in excess of any obligations resting upon them; and that where the assistance thus voluntarily given is not duly recognised by Coroners, members of the medical profession may find themselves compelled to refuse to continue such assistance.

IV.

REORGANIZATION OF THE LOCAL GOVERNMENT BOARD.

Minutes 52 *and* 53 *of the Representative Meeting.*

52. Resolved: That this meeting of the Representatives of the British Medical Association, having special knowledge and experience of the gravely defective constitution and status of the Local Government Board (England and Wales) in regard to the administration of Public Health, requests the Government to show its recognition of the urgent necessity of reorganizing the Local Government Board by appointing a Royal Commission to report upon the whole question.

53. Resolved: That a copy of the foregoing Resolution, together with the documents relating thereto, be sent to the Divisions with the request that their Parliamentary Representatives support the proposed appointment of a Royal Commission.

In pursuance of the Resolution the following documents are appended:—

(A) Local Government Board Bill. The Bill was drafted to indicate the kind of reorganisation of the Local Government Board which the Association thinks desirable.

(B) A Memorandum which was communicated, with a copy of the Bill, to the Treasury Committee which had the subject under consideration.

(C) A Memorandum by the Medico-Political Committee submitted to the Representative Meeting, in reference to the Report of the Treasury Committee.

(A.) LOCAL GOVERNMENT BOARD BILL.

MEMORANDUM.

THE object of this Bill is to substitute for the Local Government Board as at present constituted a Board containing a Parliamentary president and vice-president and four expert members. The Board would continue, as at present, to have a Parliamentary secretary, and so would have three instead of two representatives in Parliament.

The present Board was constituted in 1871 on the analogy of those Government Departments which represented as a matter of history Committees of the Privy Council. It comprises as ex-officio members the principal Secretaries of State and some other great officers of the Crown, but it is not, and probably never was intended to be, a working body for the despatch of business. It is believed never to have met.

The work of the Local Government Board is growing in variety and importance, and can only be transacted with the aid of persons possessing high professional qualifications. At present the expert officers of the Board are merely its servants, and can tender advice only upon invitation. It is considered that the efficiency of the Board would be increased if the Board itself comprised expert members who could initiate matters for discussion. A third Parliamentary representative, who might be a Peer, would also be of advantage.

A precedent for the change proposed will be found in the constitution of the Local Government Board for Scotland (*see* the Local Government (Scotland) Act, 1894), which includes two professional men. The Local Government Board as proposed to be

reconstituted would also be similar to the present Board of Admiralty.

The Bill proposes to recognise the importance of the office of the President of the Local Government Board by raising him to the rank of a Secretary of State.

The amendments and repeals introduced into the Bill are merely consequential on the foregoing proposals.

LOCAL GOVERNMENT BOARD BILL, 1904.

ARRANGEMENT OF SECTIONS.

Section.
1. Changes in the constitution of the Local Government Board.
2. Amendments of Local Government Board Act, 1871.
3. Short title, construction and repeals.

DRAFT of a BILL to amend the constitution of the Local Government Board.

BE IT ENACTED by the King's Most Excellent Majesty by and with the advice and consent of the Lords Spiritual and Temporal and Commons in this present Parliament assembled and by the authority of the same as follows:—

1. *Changes in the constitution of the Local Government Board.*—From and after the passing of this Act the following changes shall be made in the constitution of the Local Government Board (in this Act called "the Board"):—

(1) The president of the Board shall be a Secretary of State.

(2) The ex-officio members shall cease to be members of the Board.

(3) There shall be a vice-president of the Board who shall be appointed by His Majesty at any time after the passing of this Act and shall hold office during His Majesty's pleasure.

(4) There shall be four additional members of the Board who shall be appointed by His Majesty on the recommendation of the president of the Board at any time after the passing of this Act and from time to time as vacancies shall occur, and shall hold office during His Majesty's pleasure.

(5) Of the additional members of the Board one shall be a barrister-at-law or solicitor of the Supreme Court of not less than twelve years' standing in either case, one shall be a person qualified to be appointed the medical officer of health of a county under Sub-section 2 of Section 18 of the Local Government Board Act, 1888, one shall be a member or associate member of the Incorporated Institution of Civil Engineers, and one shall be a person experienced in the administration of the Poor Law Acts.

(6) There shall be paid out of moneys provided by Parliament to the vice-president and the additional members of the Board such salaries as the Treasury may from time to time determine. An additional member shall not engage in private practice or employment, but an inspector or other officer of the Board may be appointed an additional member.

2. *Amendments of Local Government Board Act*, 1871.—The word "vice-president" shall be inserted in Section 4 of the Local Government Board Act, 1871, after the words "the president," and in the second paragraph of Section 5 of that Act after the words "the president or" and the words "and the office of vice-president" shall be inserted in Section 4 of that Act after the words "the office of president."

3. *Short title and construction.*—(1) This Act may be cited as the Local Government Board Act, 1904, and shall be construed as one with the Local Government Board Act, 1871, and that Act and this Act may be cited together as the Local Government Board Acts 1871 and 1904.

(2) The enactment specified in the Schedule to this Act is thereby repealed to the extent mentioned in the third column of that Schedule.

SCHEDULE.

ENACTMENT REPEALED.

Session and Chapter.	Short Title.	Extent of Repeal.
34 and 35 Vict. c. 70	The Local Government Board Act, 1871	Section Three from "and of the following ex officio members" to "Chancellor of the Exchequer" and from "no payment" to "the Local Government Board but." In Section Five the words "one of the ex-officio members."

(B.) MEMORANDUM.

TO THE COMMITTEE ON THE ORGANISATION, DUTIES, AND PAY OF THE BOARD OF TRADE AND THE LOCAL GOVERNMENT BOARD.

I. The British Medical Association, as representative of the Medical Profession in the United Kingdom, desires most respectfully to draw the attention of the Committee appointed to consider the Organisation, Duties, and Pay of the Board of Trade and the Local Government Board to certain conclusions at which the Association has arrived concerning the organisation of the Local Government Board, which organisation in its working most materially affects the efficiency of Public Health Administration in England and Wales.

II. The conclusions of the Association are based upon the following facts and considerations:—

(1) The facts coming constantly under the notice of all medical practitioners, and especially of those who are officially concerned in Sanitary Administration, as to (*a*) the prevalence of preventable disease, and (*b*) physical unfitness, among the population of this country, due to causes which it is believed could in a great degree be removed by better central and local administration.

(2) It is recognised by the Association that the causes which have thus come under its notice as prejudicially affecting the health of the community are in part due to the ignorance and vice of individuals, in part to the lack of instructed public opinion among the electors and members of Local Authorities, and in part to a want of co-ordination of Local Authorities dealing directly or indirectly with questions of Public Health; but it is also believed that many grave evils are directly traceable to defective organisation of those Departments of the Central Government which deal with matters of Public Health, and to a want of proper co-ordination of these Departments with one another and with Local Sanitary Authorities.

(3) The British Medical Association believes that the first and most pressing need in this matter is the establishment of an efficiently constituted Central Department to which all matters affecting Public Health should be specially referred.

(4) It is not, however, suggested that this should be a new separate branch of the Government.

The Association appreciates that in this country the principle of extensive devolution of sanitary administration to Local Authorities must be fully recognised in any attempt to deal comprehensively with the organisation of such administration, and that it follows from the acceptance of this principle that the central administration of Public Health cannot, with advantage, be taken from the department which is concerned with Local Government in general, and, therefore, that attempts to make more efficient the central organisation of Public Health Administration must be directed to reform in the organisation of the Local Government Board.

(5) The defects in the present organisation of the Local Government Board are traceable chiefly to circumstances in its origin and development, to which reference must briefly be made.

In theory, the Local Government Board is a Committee of the Privy Council. In practice, the responsibilities and duties of the President of the Local Government Board are exactly analogous to those of a Secretary of State. The fact that the President is not a Secretary of State detracts from his influence with Local Authorities, and diminishes the status and emoluments of the officers of his Department. It has been said on behalf of the Treasury, that the reason why the position and salaries of officers in the Local Government Board are inferior to those of officers in the office of a Secretary of State is that the duties discharged by the officers of the Local Government Board are of less importance to the State than those discharged by the officers in the office of a Secretary of State.

The Association ventures most strongly to dissent from this view, and to assert that the duties of the Local Government Board are of the first importance to the welfare of the country, in relation especially to Public Health, using that term in its widest sense, to include not only sanitary administration, but also poor law administration, and the revision of schemes of water supply and drainage, and in addition such matters as the effect of improper conditions of housing and employment in producing disease and physical deterioration, and the organisation of locomotion as affecting the distribution of the population.

The Medical Department of the Local Government Board was transferred to it from the Privy Council, at the time when the Act of 1875 came into force. The personnel of the Department has since been largely increased, and the responsibilities and duties placed upon it have grown in importance with the progress of sanitary legislation, but the status of the Department has not undergone any corresponding improvement.

III. Having regard to the foregoing facts and considerations, the Association has arrived at the following conclusions which it ventures most respectfully to urge upon the Committee, namely:—

(1) That the President of the Local Government Board should be a Secretary of State, and that that Department in all matters of status and emolument should be raised to an equality with the existing Departments of Secretaries of State.

(2) That the President should be assisted and advised by a Board, meeting for the transaction of business, and consisting of, in addition to himself, a Vice-President and a Parliamentary Secretary, each of whom should be a Peer or a Member of the House of Commons, and of a certain number of expert members. It will be observed that such a constitution would be in accordance with the precedent established by the creation of the Scottish Local Government Board, and follows also the analogy of the Admiralty Board and the Army Council.

(3) That, inasmuch as Public Health Administration would be an important function of the Board, one of such experts should be a Registered Medical Practitioner, who should have had special experience in Public Health Administration.

Having regard to the fundamental importance of these proposals, the Association has had prepared the Bill, embodying the said proposals, of which a copy is appended to this Memorandum.

The Association would further venture to suggest that, in conjunction with the proposed re-organisation of the Board, (*a*) the duties of the Department should be extended so as to comprehend the duties in respect of the administration of the Medical Acts, the Dentists Act, the Midwives Act, and the Pharmacy Act, which are at present imposed upon the Privy Council; and that (*b*) the propriety of transferring the duties under the Adulteration Acts and Factories Acts to the Local Government Board, as the Central Health Authority, also arises for consideration.

February, 1903.

(C.) MEMORANDUM.

ON THE REPORT OF THE TREASURY COMMITTEE APPOINTED TO CONSIDER THE POSITION AND DUTIES OF THE BOARD OF TRADE AND OF THE LOCAL GOVERNMENT BOARD OF ENGLAND AND WALES.

FOR PRESENTATION TO THE ANNUAL REPRESENTATIVE MEETING.

THE British Medical Association has carefully considered the report of a Committee* appointed by the Treasury to inquire, under the chairmanship of the Earl of Jersey, into the constitution, duties, and pay of the Board of Trade and the Local Government Board. The Association, being specially interested in that part of the reference of the Committee which concerns the Local Government Board as being the Department of State chiefly responsible for the public health, has observed with disappointment and regret the omission from the Treasury report of any reference to the fact that the administration of public health is very seriously affected by the present status and organisation of the Board.

The Association regards such an omission as a matter of grave importance to which the attention of the public and of the Government should be drawn.

The Association, which includes over 15,000 members of the medical profession practising in the United Kingdom, has constantly had brought under its notice the dangerous defects of the administration in this country of public health matters, and has for a long time been profoundly impressed by the need for extensive official reform in our methods of preventing disease and degeneration if the health and physique of the nation are to be maintained at an adequate standard. The Association fully realises the magnitude and complexity of the problems that arise for consideration in this connection as affecting both the central and the local government of this country, and recognises that many years must naturally be required for the complete attainment of those reforms which medical opinion indicates as necessary or desirable.

But the Association has not merely dealt with this matter in a critical spirit. It has, through its Committees, reviewed the whole position from a medical standpoint, and has become convinced that the proper commencement of well-directed reform in this matter must be sought through the establishment of a Central Government Authority appropriately constituted in respect of (*a*) its internal organisation, (*b*) its status among public Departments, and (*c*) the arrangements for its co-ordination with those local authorities with whom in this country rest chiefly the details of public health administration. Further, the Association considers that the reforms stated under (*a*) and (*b*) are of primary consequence and yet require such relatively simple changes in the law as to be capable of immediate accomplishment if approved by the Government.

The British Medical Association, therefore, after thorough discussion of the primary questions involved, drew up certain conclusions thereon and embodied these in a Bill which was published in February of this year in the BRITISH MEDICAL JOURNAL, proposing a complete scheme for the reconstruction of the Local Government Board of England and Wales.

The Local Government Board at present is theoretically composed of the following members: a President, the Lord President of the Council, the Lord Privy Seal, the Secretaries of State, and the Chancellor of the Exchequer. As a matter of fact it never meets, and its functions are performed by the President, who acts in the name of the Board.

In the Bill of the Association (*a*) as regards the internal organisation of the Local Government Board as the Department of State chiefly concerned in the administration of public health, provision was made for the establishment, in place of the present fictitious Board, of an effective Board containing expert members, following the precedent of the Local Government Board in Scotland; and (*b*) as regards the status of the department, that the President of the Board should be made equal in rank with the Principal Secretaries of State.

Upon approaching the Government in the hope of enlisting its interest in these much-needed reforms, the Association was met with the objection that a Committee was then sitting under the chairmanship of the Earl of Jersey to report on "the position and duties of the Board of Trade and the Local Government Board; and whether any, and if so what, alterations should be made in the constitution and status of those offices; also whether, in the interests of administrative efficiency, any rearrangement of duties between those and other Government Departments is desirable."

This Committee had been appointed by the Treasury on July 18th, 1903. The other members were Sir John Gorst, M.P., Sir James Mackay, a member of the Council of India and of the Committee on the Board of Trade (1898-9), Sir Charles Ryan, K.C.B., a former Controller and Auditor-General, and Mr. Alfred Emmott, M.P. for Oldham. Sir John Gorst resigned, and was succeeded on February 1st, 1904, by Sir George Ryder, K.C.B., Chairman of the Customs Commission. The constitution of this Committee, which did not include any person acquainted with public health or Poor Law administration, and the fact that it was appointed by the Treasury, which is prone to look upon questions of policy mainly from the financial point of view, did not give grounds for any sanguine expectation that its report would deal with the questions of the status and organisations of the Local Government Board from the point of view of what was generally expedient for the public health of the country.

As, however, the Association was referred to the Treasury Committee, an application was made thereto that the Committee should hear evidence from the Association on the subject of those material changes in the constitution of the Local Government Board which appeared to the Association necessary in the interests of public health administration.

The Committee declined to hear the evidence offered by the Association, and requested instead that a written communication should be forwarded from the Association. A memorandum was accordingly presented in support of the proposals embodied in the Bill of the Association, which was also appended.

The Association also had the privilege of laying its views by a deputation before the President of the Local Government Board, who, while expressing himself as opposed to the formation of an

* The precise terms of the reference to the Committee are as follows:—"That there should be appointed a Committee to consider the position and duties of the Board of Trade and the Local Government Board, and to report whether any, and if so what, alteration should be made in the constitution and status of those offices; also whether in the interests of administrative efficiency any rearrangement of duties between those and other Government departments is desirable."

effective Board, undertook to bring before the Treasury Committee the views of the Association as to the desirability of raising the status of his Ministerial office.

It appears from the report that the Treasury Committee took the evidence of Sir Michael Foster as representing the Public Health Committee of the House of Commons, who expressed the opinion that a special department of the Local Government Board should be created to deal with public health administration.

The Association regrets to find that in the report of Lord Jersey's Committee there is no evidence that the Committee gave any consideration to the constitution of the Local Government Board as affecting the efficiency of public health administration.

Further, the only reason assigned by the Committee for not recommending any change in the constitution of the present fictitious Local Government Board is that the Board consists entirely of members of the Cabinet.

The Committee, though freely condemning the imaginary nature of the Board of Trade, does not explain how the equally imaginary Local Government Board, which never meets, can possibly be rendered efficient by the fact that its members are members of the Cabinet, that is, are great officers of State, each holding an office the duties of which demand his whole attention.

Apparently in justification of its failure to recommend the termination of this fiction of the Constitution, the Treasury Committee also referred to the comparatively recent creation of two other purely nominal Boards—the Board of Agriculture (1889) and the Board of Education (1899).

Neither has the Committee dealt satisfactorily with the proposal to raise the status of the President of the Local Government Board to that of a Secretary of State, though Paragraph 16 may be taken to contain the reasons for not making this recommendation. In this paragraph, while recognizing that the administrative business of the office of the Local Government Board is laborious and important, and the parliamentary business especially heavy, the Committee has made two statements which it would seem to have thought justified it in refraining from recommending any change in the Local Government Board beyond certain increases of the salaries of the President, the Parliamentary Secretary, and the Permanent Secretary. These statements are:

(1) That "the jurisdiction of the Local Government Board is limited to England and Wales."

(2) That the Local Government Board "is not charged with the main responsibility for the decision of great questions of policy."

On both points the British Medical Association strongly dissents from the conclusions of Lord Jersey's Committee. In the matter of jurisdiction the Association would urge that questions of public health and prevention of disease affect all parts of the United Kingdom equally, and that this principle is already recognized in certain cases in regulations of the Local Government Board. In a matter of such importance as public health the present demarcation of the duties of the several Departments of State concerned should not be rigidly adhered to when modification would be conducive to efficiency of administration.

It appears to the Association that in matters of public health efficient administration would be best attained by treating the United Kingdom as an administrative unit, and that the Local Government Board should therefore be so reorganized and given such jurisdiction in health matters as would correspond to this principle of organization.

So, also, if in any other matters of Local Government it were found expedient that each part of the United Kingdom should form a separate unit, it appears to the Association that this would be better attained by reform of intradepartmental organization than by the sacrifice of the unity of public health administration.

On (2) the Treasury Committee does not define what it means by "great questions of policy," and in the absence of such information the Association is unable to understand why this term does not plainly apply to questions of national policy in relation to public health.

The prevention of epidemic and endemic disease; the protection of the kingdom from invasion by zymotic diseases, such as cholera or plague; the construction and regulation of the water supply of great centres of population; the housing of the working classes, and the purity of the food supply may be all instanced as questions which raise "great issues of policy" affecting our relations with foreign States, important commercial considerations, the constitution and administration of local public authorities, their co-ordination with one another and with the central administration, and the adjustment of the financial burdens of the country, both national and local.

Thus, for the decision of great questions of policy, the Public Health Department of a Government is as much responsible as any other office of State.

While drawing attention to the fact that the report of the Treasury Committee fails to fulfil the scope of the reference to the Committee the British Medical Association recognizes that this failure may have been due to an appreciation by the Committee of its own incompetence to deal with a problem of such magnitude as the adaptation of the Local Government Board to the present needs of the nation in respect of public health administration, and the further questions of the part to be played by central and local authorities respectively in such administration, and the duties which should be assigned to the expert members of an efficient Board.

The British Medical Association deeply regrets that the opportunity afforded by the appointment of Lord Jersey's Committee to commence the reorganization of public health affairs in this country has thus been lost.

The Association, however, hopes that inasmuch as the nation recognizes more and more the importance of social and sanitary as distinguished from purely political reforms, and that the maintenance of the physical and mental health of the people is the one true foundation of national prosperity, the question of the reorganization of the Local Government Board and of the public health administration of the country will be soon reopened and entrusted to an inquiry by a Royal Commission, the procedure of which in the opinion of the Association would be more likely to secure an adequate pronouncement on so vital a question as the safeguarding and furtherance of the health of the people.

MEDICAL ACTS AMENDMENT BILL.

The Medico-Political Committee in submitting the Medical Acts Amendment Bill for the consideration of the Divisions, preparatory to an expression of opinion thereon by the Annual Representative Meeting at Oxford, reported as follows:

1. That, as the result of the preliminary discussion of the original draft Bill by the Divisions, consequent upon the circulation of the Bill by order of the Council in August, 1905, expressions of opinion were received by the Committee from 109 Divisions, prior to April 15th, when the Committee commenced the work of revision.

2. That the Committee had given the most careful attention to the replies of the Divisions, and in revising the Bill had adopted (*a*) those changes in the draft previously submitted which had appeared to the Committee to be generally desired; (*b*) many valuable suggestions made by individual Divisions on points of detail.

3. That the Committee had also taken into consideration, and in many instances adopted, amendments in the Bill which had been put forward by the British Dental Association. The circumstances in which such amendments received consideration from the Committee were stated in the proceedings of the Committee, published in the Supplement of the British Medical Journal of May 7th, 1904 (pp. 108 and 109).

4. That the Bill as amended by the Committee had been submitted to an expert Parliamentary draftsman and by him recast into its present form.

5. That the Committee was of opinion that in a matter of such consequence to the medical profession as an extensive amendment of the Medical Acts it was highly desirable that no measure should be laid before Parliament by the British Medical Association until time had been allowed for all the consideration necessary not only to perfect every detail of the proposals made, but also to secure the greatest attainable agreement in the profession.

6. That the Committee therefore recommended to the Representative Meeting that after matters of principle had been determined by the approaching meeting at Oxford, the Bill should be referred back to the Committee for further consideration of details and points of drafting, and submitted again to the Divisions with a view to final consideration and adoption, if approved, by the Annual Representative Meeting of 1905.

7. That if the Divisions approved the foregoing recommendation they might find it sufficient at that stage to give such consideration to the Bill as would prepare the way for a decision of the principles thereof.

8. That the Committee, for the assistance of Divisions in considering the Bill, had authorized the preparation of the Memoranda presented herewith, (I) to explain the principles on which the Bill was based, (II) to explain the principal points of difference between the Bill as submitted to the Divisions in August, 1905, last, and as then submitted.

The Annual Representative Meeting, at Oxford, upon con-

sideration of the foregoing Report, and of the Bill and accompanying Memorandum, resolved as follows:—

Minute 69.—That the Medical Acts Amendment Bill, as a whole, be referred to the Divisions.

Minute 70.—That it be an instruction to the Medico-Political Committee that an Epitome of the principles of the Medical Acts (Amendment) Bill be included among the documents sent to the Divisions, with a request that the Divisions will vote upon those principles.

An Epitome of the principles of the Bill has accordingly been prepared, and is now submitted to the Divisions, together with the Bill, and the following Explanatory Memorandum as previously submitted.

EXPLANATORY MEMORANDUM.

I.—PRINCIPLES OF THE BILL.

A.—General Remarks.

1. *Purpose and Form of the Bill.*—The Bill being framed for the amendment of the Medical Acts, is drafted in such form as to be construed with those Acts. From this principle of construction it follows:

(*a*) That it is not proposed to repeal any of the Medical Acts except so far as may be necessary to bring these Acts into agreement with the Bill.

(*b*) That provisions which are contained in the Acts are not repeated in the Bill except when needful for clearness, as, for example, certain provisions as to nomination of members of the General Council by the Crown.

(*c*) That terms, such as "the General Council," which are defined in the Acts, are used in the same sense in the Bill, without further definition.

2. *Provisions as to Dentists.*—In the Bill the precedents of the Medical Acts of 1858 and 1886, which included provisions affecting both the medical and dental professions, have been followed, in preference to that of the Dentists' Act, 1878, which affected one profession only. If this principle receives the approval of the British Medical Association, as it has that of the British Dental Association, and if it is sanctioned by Parliament, the legislation affecting the constitution, duties, and powers of the General Medical Council will be brought into more convenient form for practical purposes.

3. *Arrangement of the Bill.*—The Bill is divided, for convenience of reference, into Parts, each of which relates to a definite group of reforms. In each of the following Sections of this Memorandum one Part of the Bill is dealt with.

B.—Constitution of the General Council (Part I.).

The principles underlying this Part of the Bill are:

1. That the representation of the Crown on the Council should remain unaltered.

2. That those existing universities which have medical faculties should be represented on the Council, and that, as such representatives sit on the Council primarily as educational experts to advise the Council in its duty of controlling medical education and examinations, each university should be permitted to appoint its representative in such manner as it may deem most expedient.

3. That inasmuch as the medical corporations, with one exception, are not educational bodies, and no longer discharge those functions on behalf of the medical profession for which their charters were originally conferred, they should not be represented on the Council on an equality with the universities, but that their historic positions should be recognised by representation in a reduced degree.

4. That the direct representation of the medical profession should equal that of all the bodies above named, and that, to secure adequate representation of every part of the United Kingdom, a topographical method of election should be adopted.

5. That the principle of direct representation on the Council should be extended to the dental profession.

Other amendments have been included in this part which are consequential on the foregoing or will simplify the procedure of election.

Statutory provision is proposed for the election of a Vice-President of the Council.

C.—Branch Councils and Finance (Part II).

The objects of this Part of the Bill are:

1. To simplify the administration of the Council, and reduce expenditure by doing away with the cumbrous machinery consequent upon the Branch Council system provided by the Act of 1858. Experience has shown (*a*) that no advantage results from the division of the work of registration; (*b*) that apart from registration no duties devolve upon Branch Councils which could not be performed equally well by the Committees proposed under the Bill.

2. To simplify the financial arrangements of the Council, and thus also promote economy in administration.

3. To give statutory powers to the Council to provide pensions or contribute to superannuation funds for its officers. (Section 6 is so drawn as to enable the Council to adopt any kind of superannuation scheme which may be found suitable.)

D.—Registration (Part III).

The provisions of this Part fall under two principal heads:—(1) affecting the students' registers; (2) affecting the medical and dentists' registers.

1. The statutory creation of a students' register under the absolute control of the Council is provided for.

The necessity for such a register has long been recognised by the General Medical Council, but the efforts of the Council to establish it have been thwarted by the determination of the English Royal Colleges to maintain against the Council what they conceive to be the privileges conferred upon them by their charters.

The sections relative to the students' register would further (*a*) confer upon the Council definite control over preliminary examinations, thus securing a uniformity of standard in this most important matter; (*b*) fix the age of commencing medical study at seventeen as a minimum, in accordance with the opinion already expressed by the British Medical Association.

2. With reference to the medical and dentists' registers it is provided in this Part:

(*a*) That registration should be annual, the object being to keep the register correct and to facilitate the detection of unregistered practitioners, especially of those who personate registered practitioners.

(*b*) That an annual fee of one pound should be paid instead of a single payment of five pounds, the object being to raise the income of the Council to an adequate amount.

The necessity for this proposal is shown by the following considerations:

(i) The present income of the General Medical Council is insufficient for its present expenditure, and even under the existing law the work of the Council is crippled by want of funds.

(ii) The provisions of the Bill as to the increase of direct representation, as to the conduct of final examinations by the Council (the "one-portal system"), and as to the prohibition of unqualified practice, making it the duty of the Council to protect the profession and the public by enforcing the penal clauses (Part V), will entail considerable increase of expenditure. Such expenditure will be in the interest of the profession as well as of the public, and the only funds out of which it can be defrayed are those derived from medical and dental registration fees.

(*c*) The privileges conferred by registration upon medical and dental practitioners in respect of their practice are clearly defined, the anomalies and injustice of the existing law being removed. Among the privileges of medical registration it is proposed to include the right to use the style of "doctor" as a prefix to the name, thus recognizing by statute the customary usage of the public in reference to medical practitioners, and doing away with distinctions which the great differences in status of nominally equal qualifying examinations have rendered arbitrary and unjust.

E.—Examinations (Part IV).

The principal changes in this Part of the Bill are:

1. The institution of the "one-portal" system for admission to both the medical and dentists' registers, by means of final (State) examinations under the absolute control and sole management of the Council.

2. Definite statutory provision for complete control by the Council of the medical curriculum, beginning with the preliminary examination, and for the effective supervision and control of the intermediate examination, subject only to a possible appeal by examining bodies to the Privy Council.

F.—Offences (Part V).

The provisions of this Part fall under the heads of (1) those affecting registered persons, whether students or practitioners, (2) those affecting unregistered persons.

(1) As regards offences by registered persons:

(*a*) It is sought under Sections 21 and 22 to extend or improve the powers and procedure of the General Council in certain matters, the importance of which has been shown by experience. These matters are:

(i) That the Council be enabled to inflict minor penalties, and therefore to adjust penalties to offences.

(ii) That the Council should be able to compel the attendance of witnesses, to take evidence on oath, and to award costs.

(iii) That removal from the register should involve, under penalties, disuse of medical degrees (including diplomas, etc.)

(*b*) In view of the creation of a statutory students' register, students are brought within the disciplinary powers of the Council.

(*c*) Section 27, which prohibits certain acts of registered practitioners, is directed against abuses which tend to facilitate practice by unregistered persons.

(2) Other sections of this part are designed for the more effectual protection of the public and the profession against various forms of unqualified practice, *Section* (23) definitely prohibiting medical or dental treatment for gain, and also habitual medical or dental practice, *Section* (24) dealing with invalid certificates, *Section* (25) with bogus "diplomas," and *Section* (26) with the objectionable use by traders of the names of medical or dental practitioners, while *Section* (30) provides against the growing abuses of company practice.

Sections 23 and 25 are to be read in connexion with the definition clauses in Section 31 (Part VI).

In Part VI, Section 34, the "second schedule" is referred to. It has been thought desirable to defer the preparation of this schedule, which is a highly technical matter, until the principles of the Bill have been definitely decided by the Representative Meeting.

II.—COMPARISON OF THE BILL AS NOW SUBMITTED WITH THE DRAFT SUBMITTED TO THE DIVISIONS IN AUGUST, 1903.

A.—Changes in the Bill as a Whole.

1. *Changes in Form.*—In respect of form the Bill has been entirely revised, and made more simple and concise in language. While this has necessitated some rearrangement of the Parts, the general order of the Bill has been preserved as far as possible.

Provisions as to Branch Councils, formerly contained in Part I. have been consolidated with the former Part V to form Part II of the present draft. Part II of the former draft concerning students' registration, together with Part IV, concerning the system of annual registration, together form Part III of the present draft. The other Parts retain their former order, but are renumbered.

2. *Dentists' Amendments.*—The incorporation in the Bill of amendments of the Dentists' Act has occasioned consequential changes in every Part, except Part II.

B.—Changes made in the Several Parts of the Bill.

Constitution of the Bill (Part I.)

1. Objections raised by many Divisions to the suggested *grouping of Universities*, and to the *plural voting* resulting from the system proposed in the former draft for electing university and corporate representatives, have been very carefully considered by the Committee.

The purpose of the former proposal was to reduce the size of the Council simultaneously with an increase in the ratio of direct representatives to other members of the Council.

To abandon the grouping of universities while maintaining the relative strength of the direct representatives involves the creation of a numerically large Council. Full consideration, however, of the greatly increased duties which would devolve upon the Council under the Bill leads the Committee to conclude that the Council, as now proposed to be constituted, would not have too many members for the work to be done, in Committees and otherwise. The Committee therefore has modified its former recommendation on this point as regards the universities, but, for reasons indicated in the former part of this Memorandum, still recommends the grouping of Corporations.

The Committee recognises also that the opinion of the Association, as expressed by the Divisions, is unfavourable to the proposal that each existing medical practitioner should vote (*a*) as a registered practitioner in the election of a direct representative, and also (*b*) as a graduate or diplomate in the election of a representative or representatives of any body or bodies whose degree or diploma he may hold. The Committee recommends that the direct representation of all registered practitioners should be maintained, and that no provision be made in the Bill concerning the mode of appointment of representatives of universities and corporations.

2. In accordance with the opinions expressed by many Divisions, a topographical system of election of direct (medical) representatives is proposed, and a draft schedule of electoral areas is submitted for consideration.

3. The Committee recommends that in the larger Council now proposed the dental profession should be accorded three direct representatives.

C.—Branch Councils and Finance (Part II).

The proposals under these heads formerly submitted received the general approval of the Divisions. On the advice of the draftsman the abolition of the Branch Councils has been carried out in the present draft in form, as it was in the previous draft in substance, except for certain advisory functions for which Committees are now proposed to be constituted.

D.—Registration (Part III).

1.—*Registration of students.*—The provisions relative to the registration of students, contained in Part II of the former draft, having been generally approved, have undergone no change of substance, except that of incorporating therein (*a*) the principle approved by the Association, that medical study shall not commence before the age of 17 years, and (*b*) the provision that the name of a student who has ceased medical study shall be removed from the register, subject to provision for reinstatement.

2. *Provisions as to annual registration.*—Exception has been taken by many Divisions to different aspects of these proposals, but the majority of Divisions have approved the principle of annual registration and also the principle of an annual fee. A consensus of opinion has been shown in favour of allowing a longer period for the payment of the fee, and of facilitating restoration to the register of names removed through illness or inadvertence. Provisions to meet these requirements are contained in the draft now submitted.

3. *Privileges of registration.*—Many Divisions have pointed out that no provision is made for any recognised title to be conferred on those passing the State medical examination, and several Divisions have proposed that the title "doctor" should be accorded to all registered practitioners. The Committee recommends that this proposal be adopted, and Section 13, Subsection (3) is inserted for the purpose.

E.—Examinations (Part IV).

The provisions of this Part, which corresponds generally with Part III of the former draft, have received general approval from the Divisions. The principal changes made are:

1. *Curriculum.*—The omission, to which certain Divisions drew attention, of any specific provision giving the Council control over the medical curriculum, has been remedied (Section 19).

2. *Assistant Examiners.*—Objection having been taken by some Divisions to the clauses relative to the appointment and remuneration of assistant examiners, the Committee has withdrawn the proposal that such examiners should be paid by the examining body whom they are appointed to assist, and now recommends that they should be paid, if at all, by the Council.

3. *State Examinations.*—The section relative to the State medical examination (in which provision is also made now for State dental examinations) has been made more general in terms, the more detailed regulations being left to the Council.

F.—Offences (Part V).

The important clauses contained in this Part, which corresponds to Part VI of the former draft, have received the most careful consideration from the Committee, from the Solicitor of the Association, and from Counsel, who has redrafted the Bill. As affecting the dental profession, they have also been considered by the legal adviser of the British Dental Association, by whom valuable practical suggestions have been made. The previous draft having been generally approved by the Divisions (except as regards the former Clause 34), the changes made will be found to be mainly of a drafting nature, devised more effectively to secure the objects of this part of the Bill.

The changes of substance are:

1. In *Section* 25, corresponding with former Clause 29, provision has been inserted to exempt recognised universities from the operation of the Section, the object of which is to prevent the issue of bogus diplomas.

2. In *Section* 27, corresponding with former Clause 24, to which in its previous form exception was taken by a large number of Divisions, words have been inserted to meet the chief objections raised, namely:

(*a*) The clause will no longer apply to a *locum tenens* or assistant, acting as such for a shorter period than three months.

(*b*) Charitable institutions are exempted.

3. The important *Section* 30, to prevent medical or dental practice by companies, has been inserted.

G.—Supplementary Provisions (Part VI).

No changes have been made in this Part which appear to require comment in this Memorandum.

EPITOME OF THE PRINCIPLES OF THE BILL.

(I) Introductory.

The Bill proposes reforms:—

(A) In the composition and mode of election of the General Medical Council.
(B) In the administrative arrangements of the Council.
(C) In the control of education by the Council.
(D) In the registration of medical and dental practitioners.
(E) In the disciplinary powers of the General Medical Council.
(F) In the legal position of the practice of medicine and surgery by unqualified persons, and the rights of registered practitioners.

(II) It is Proposed as Regards:

(A) Composition and Mode of Election of the Council.

1. That the direct representation of registered medical and dental practitioners on the Council be increased so that direct representatives compose at least half the Council.

2. That the direct medical representatives be elected by constituencies topographically defined, each constituency electing one representative.

3. That those universities which have medical faculties continue to be represented on the Council by one representative each, elected in such manner as each body may determine.

4. That the Licensing Corporations be grouped to form three constituencies, one for England and Wales, one for Scotland, and one for Ireland, each constituency electing one representative.

(B) Administrative Arrangements of the Council.

1. That the Branch Councils be replaced as regards some of their functions by Committees of the Council.

2. That the financial administration be consolidated by transference to the Central Office of the Council.

(C) Control of Education.

1. That the Council have complete control over the standard of preliminary general education and over the medical curriculum.

2. That the registration of students be placed under the direct control of the Council.

3. That the minimum age of registration of students be 17.

4. That the intermediate examination remain in the hands of the universities or corporations under the supervision of the Council.

(D) Registration of Medical and Dental Practitioners.

1. That there be a one portal system of admission to the Register, through a State final examination controlled and managed by the Council.

2. That registration be annual.

3. That there be an annual registration fee of £1.

4. That the privileges conferred by registration be clearly defined.

5. That one privilege of registration as a medical practitioner be the right to use the prefix Dr.

(E) Disciplinary Powers of the Council.

1. That the Council have power to suspend a practitioner without absolutely removing his name from the register.

2. That the disciplinary powers be extended to include Medical and Dental Students.

3. That the procedure be made more effective by increasing the powers of the Council in respect of witnesses, and in other ways.

(F) Unqualified Medical or Dental Practice and Protection of Registered Practitioners.

1. That the habitual practice of medicine or dentistry for gain by unregistered persons be definitely prohibited.

2. That the granting of bogus diplomas be constituted an offence.

3. That the signing of medical certificates by unregistered persons be made an offence.

4. That the improper use of the names of registered practitioners in connection with the sale of drugs, appliances, etc., be made an offence.

5. That medical or dental practice by companies be prohibited.

(III) Recommendation as to Procedure.

The Medico-Political Committee would suggest that the Divisions should, categorically, express approval or disapproval of each of the propositions stated.

With regard to the provisional schedule of electoral areas, each Division should make any suggestion it thinks fit regarding its own district.

(DRAFT) MEDICAL ACTS AMENDMENT BILL.

ARRANGEMENT OF SECTIONS.

Part I.—*Constitution of the General Council.*

Section.
1. Members of General Council.
2. Tenure of office of members of General Council.
3. Regulations for election of direct representatives.
4. Election of Vice-President of General Council.

Part II.—*Branch Councils and Finance.*
5. Abolition of Branch Councils.
6. Power to pension officers of Council.

Part III.—*Registration.*
7. Registrar to be a medical practitioner.
8. Provision of a students' register.
9. Examinations to be confined to registered students.
10. Removal of student's name who has ceased to study.
11. Regulations for annual registration.
12. Provisions for certified copies of dentists' register.
13. Privileges of registered practitioners

Part IV.—*Examinations.*
14. Passing of examinations requisite for admission to register.
15. Provisions as to registration of persons passing examinations.
16. Provisions as to intermediate examinations.
17. Control by Council of intermediate examinations.
18. Provision for defects in intermediate examinations.
19. General Council to prescribe courses of study.
20. State medical and dental examinations.

Part V.—*Offences.*
21. Removal of name from register.
22. Procedure and powers of General Council on an inquiry.
23. Prohibition of practice by unregistered persons.
24. Prohibition of unregistered person signing certificate.
25. Penalty for granting unrecognized degrees.
26. Prohibition of improper use of name of registered practitioner.
27. Prohibition of certain acts of registered practitioners.
28. Application of penalties.
29. As to prosecutions.
30. Provision against offences by companies.

Part VI.—*Supplementary Provisions.*
31. Definitions.
32. Exception for foreign practitioners.
33. Saving for midwives.
34. Repeals and amendments.
35. Short title and construction.

A BILL to amend the Medical Acts and to further regulate the practice of Medicine, Surgery, Midwifery, and Dentistry.

BE IT ENACTED by the King's Most Excellent Majesty by and with the advice and consent of the Lords Spiritual and Temporal and Commons in this present Parliament assembled and by the authority of the same as follows:—

Part I.—CONSTITUTION OF THE GENERAL COUNCIL.

1. *Members of General Council.*—(1) The General Council shall consist of the following members:

(*a*) Five members nominated from time to time by His Majesty with the advice of His Privy Council three of whom shall be nominated for England and Wales one for Scotland and one for Ireland.

(*b*) One member chosen from time to time by each of the following bodies:

The University of Oxford.
The University of Cambridge.
The University of London.
The University of Durham.
The Victoria University of Manchester.
The University of Birmingham.
The University of Liverpool.
The University of Edinburgh.
The University of Glasgow.

The University of Aberdeen.
The University of St. Andrews.
The University of Dublin.
The Royal University of Ireland.

(c) One member chosen from time to time by each of the following groups of medical bodies:
(i) The Royal College of Physicians of London the Royal College of Surgeons of England and the Apothecaries Society of London.
(ii) The Royal College of Physicians of Edinburgh the Royal College of Surgeons of Edinburgh and the Royal Faculty of Physicians and Surgeons of Glasgow.
(iii) The Royal College of Physicians in Ireland and the Royal College of Surgeons in Ireland

(d) Twenty-five members (in this Act called direct representatives) elected as follows:
(i) Seventeen by the medical practitioners registered as resident in England and Wales
(ii) Three by the medical practitioners registered as resident in Scotland.
(iii) Two by the medical practitioners registered as resident in Ireland.
(iv) Three by the dental practitioners registered as resident in the United Kingdom.

(2) No person shall be qualified for membership of the General Council unless he shall be a registered medical practitioner or in the case of a direct representative elected by the dental practitioners (in this Act called a dental representative) a registered licentiate in dental surgery or a person who has passed the state dental examination mentioned in this Act.

(3) If at any time by any Act of Parliament relating to any university or any medical or other body the number of the members of the General Council other than the direct representatives be increased the number of the direct representatives shall be increased by the like amount.

2. *Tenure of office of members of General Council.*—(1) The direct representatives shall be elected to hold office for the term of five years and may be re-elected.

(2) The other members shall be appointed for a term not exceeding five years and may be reappointed.

(3) Any member may at any time resign his membership by letter addressed to the President of the General Council.

(4) If any member shall be found by inquisition in England and Wales or Ireland to be lunatic or found upon inquiry in Scotland to be insane or shall become bankrupt his place shall thereupon be vacant.

(5) If the place of any member of the General Council be vacant some other person shall be elected or appointed but in the case of a direct representative that other person shall remain a member only for the remainder of the term for which the member whose place is vacant was elected provided that if a vacancy occur at a time when not more than twelve months remain unexpired of the term for which the direct representative whose place is vacant was elected an election shall not be held until the expiration of that term.

(6) The powers of the General Council shall not be affected by the happening of any vacancy.

3. *Regulations for election of direct representatives.*—(1) The direct representatives other than the dental representatives shall be elected each for one of the electoral areas specified in the first schedule to this Act by the medical practitioners registered as resident in that area.

(2) It shall be lawful for the General Council with the sanction of the Privy Council to alter the electoral areas and in the event of an increase in the number of direct representatives to increase the number of electoral areas and generally to make provision for the election of the additional representatives.

(3) The registrar of the General Council shall be the returning officer for the election of direct representatives and he shall not less than twenty-eight days nor more than three months before the expiration of each period of five years for which the direct representatives are elected provide for another election of direct representatives. The registrar shall also as soon as conveniently may be after the occurrence of any vacancy in the place of a direct representative provide for an election of a new direct representative for the vacant place.

(4) The election of the direct representatives shall be conducted in such manner as may be provided by regulations to be made by the General Council with the sanction of the Privy Council provided as follows:—

(a) The nomination shall be in writing and the nomination paper of each candidate shall be signed by not fewer than twelve persons entitled to vote in his election.

(b) If more than one candidate shall be nominated for a vacancy a poll shall be taken by voting papers and the registrar shall send a voting paper to each person entitled to vote at his registered address but the accidental omission to send a voting paper in any particular case shall not avoid the election and any person entitled to vote to whom a voting paper has not been sent in pursuance of this Act may on application to the registrar obtain one from him.

(c) In the election of dental representatives each person entitled to vote may vote for any number of candidates not exceeding the number of vacancies but not more than one vote may be given to any one candidate.

(d) In the case of an equality of votes on any poll the President of the General Council shall be entitled to a casting vote.

(5) The registrar shall certify the number of votes recorded on a poll for each candidate and the persons not exceeding the number of vacancies who have the greatest number of votes shall be certified in writing by the registrar to be and thereupon shall be elected.

(6) The registrar's expenses attending any election shall be defrayed as part of the expenses of the General Council.

(7) The existing members of the General Council shall hold office until the thirty-first day of December one thousand nine hundred and five and no longer.

(8) The first election of direct representatives under this Act shall be held in the month of December one thousand nine hundred and five.

4. *Election of vice-president of General Council.*—The General Council shall annually elect one of their number to be Vice-President.

Part II.—Branch Councils and Finance.

5. *Abolition of Branch Councils.*—On and after the thirty-first day of December one thousand nine hundred and five:—

(1) All expenses of carrying the Medical Acts into effect shall be defrayed by the General Council.

(2) The Branch Councils shall cease to exist and the local registers shall be discontinued.

(3) Subject to the provisions of this Act all such entries as would but for this Act have been made in any local register by the registrar of a Branch Council shall be made in the general register by the registrar of the General Council.

(4) All property of the Branch Councils shall pass to and vest in the General Council and all debts and liabilities of the Branch Councils shall become debts and liabilities of the General Council.

(5) The officers and servants of the Branch Councils shall become officers and servants of the General Council.

(6) The members of the General Council elected or appointed from or for Scotland and Ireland respectively shall form committees to which the General Council shall refer such matters specially affecting Scotland or Ireland as the General Council may think fit.

6. *Power to pension officers of Council.*—The General Council may award to any registrar or other officer on his retirement from office such pension or gratuity as the General Council having regard to his services may think just.

Part III.—Registration.

7. *Registrar to be a medical practitioner.*—A person shall not be qualified to be appointed registrar of the General Council unless he shall be a registered practitioner provided that this section shall not affect the tenure of office of a registrar appointed before the commencement of this Act.

8. *Provision of a students' register.*—(1) The registrar shall keep a register of medical and dental students in the same manner and on the same conditions as nearly as may be as the registers of medical and dental practitioners and shall enter therein the name of every person who shall—

(a) have passed a preliminary examination approved or held by the General Council;

(b) be not less than seventeen years of age;

(c) have paid to the General Council a fee of one pound.

(2) The register shall be in two parts one for medical students and one for dental students and shall show the place and date of birth of each student, the place where he proposes to study and the nature of the preliminary examination passed by him.

(3) The registrar shall at any time upon the request in writing of any student and on payment of such fee not exceeding one pound as the General Council may prescribe transfer his name from one part of the register to the other part.

9. *Examinations to be confined to registered students.*—(1) After

the thirty-first day of December one thousand nine hundred and no person shall be admitted to an intermediate examination hereinafter provided for unless he is registered as a medical student.

(2) After the thirty-first day of December one thousand nine hundred and no person shall be admitted to the state dental examination hereinafter provided for unless he is registered as a dental student.

(3) The General Council shall have power if after due inquiry sufficient cause be shown to antedate the registration of any student.

10. *Removal of student's name who has ceased to study.*—(1) The General Council may remove from the register the name of any student who has in the opinion of the Council ceased for a period of not less than five years to pursue a course of professional study.

(2) The General Council may restore to the register any name so removed on the payment of a further registration fee of one pound.

11. *Regulations for annual registration.*—(1) Every registered medical or dental practitioner shall on or before the thirty-first day of December in each year send to the registrar an application for continuance of the entry of his name on the medical or dentists' register for the ensuing year together with a fee of one pound and the registrar shall thereupon cause the applicant's name to be entered on the register for the ensuing year and shall send to him a certificate of registration.

(2) The registrar shall on or before the tenth day of November in each year send to every registered medical or dental practitioner a form of application for registration and a notice requesting payment of the registration fee and containing a warning to the effect that if it be not paid and application made for continuance of the entry of the name before the first day of March next the name of the registered practitioner in default will be removed from the medical or dentists' register of that year and the registrar shall remove the name of a practitioner in default accordingly.

(3) A medical or dental practitioner registered before the passing of this Act shall not be affected by the provisions of this section until five years from the passing of this Act and this section shall not apply to any practitioner so long as he holds a commission in His Majesty's navy or army and is not engaged in private practice within the United Kingdom.

(4) The registrar shall at any time restore to the medical or dentists' register the name of any practitioner which has been removed under this section in consequence of his absence from the United Kingdom, illness, inadvertence, or otherwise, upon satisfactory proof being given of the identity of the applicant and on the payment of the registration fees in arrear.

12. *Provision for certified copies of dentists' register.*—If the name of any dental practitioner does not appear in the copy of the dentists' register printed under the direction of the General Council, a certified copy under the hand of the registrar of the entry of the name of that practitioner on the dentists' register shall be evidence that he is registered under the Dentists Act, 1878.

13.—*Privileges of registered practitioners.*—(1) Subject to the provisions of this Act no person other than a registered practitioner shall practise medicine surgery midwifery or dentistry or any branch thereof habitually and for gain in the United Kingdom.

(2) Registered dental practitioners who are not also registered medical practitioners, shall be limited to the practice of dentistry.

(3) A registered medical practitioner may use the style of doctor as a prefix to his name.

Part IV.—EXAMINATIONS.

14. *Passing of examinations requisite for admission to register.*—(1) After the thirty-first day of December one thousand nine hundred and no person shall be registered as a medical practitioner unless he has passed an intermediate examination and also a final examination (in this Act called the "state medical examination") and no person shall be registered as a dental practitioner unless he has passed a final examination (in this Act called the "state dental examination").

(2) Any person who shall produce to the registrar on an application for registration as a medical practitioner such evidence of his having passed the state medical examination or on an application for registration as a dental practitioner of having passed the state dental examination and in either case such evidence of identity as the General Council may require shall on payment of a fee of one pound be entitled to be registered as a medical or dental practitioner as the case may be.

15. *Provisions as to registration of persons passing examinations.*—(1) The medical and dentists' registers shall in the case of a person registered under the last preceding section show the fact that the practitioner has passed the state medical examination or state dental examination as the case may be and shall also show any medical degree granted to the practitioner by any recognized university or medical body.

(2) The registrar may require the production of such evidence and the payment of such fee as the General Council may prescribe before entering any such medical degree on the register.

16. *Provisions as to intermediate examinations.*—(1) The intermediate examination shall be an examination in such subjects as the General Council may prescribe and may be held by any recognised university or medical body.

(2) Any body by this section authorised to hold an examination may combine with any other such body situate in the same part of the United Kingdom for holding a joint examination.

(3) If in the opinion of the General Council an insufficient number of intermediate examinations shall have been held in any part of the United Kingdom before the first day of November in any year the Council may hold an intermediate examination.

17. *Control by Council of intermediate examinations.*—As to any intermediate examination held after the thirty-first day of December one thousand nine hundred and five—

(1) The General Council may give such directions as it may think fit as to the standard of proficiency to be required thereat and generally as to the conduct thereof and the examining body shall conform to any direction so given notwithstanding any special privilege or exemption contained in any Act of Parliament or Charter.

(2) The General Council may appoint examiners with or without remuneration to act with the examiners appointed by the examining body, provided that no member of the General Council shall be appointed examiner at a remuneration.

18. *Provision for defects in intermediate examinations.*—(1) The General Council may at any time on the report of an examiner appointed by them by resolution declare that the standard of proficiency required by an examining body at an intermediate examination is insufficient and thereupon unless the examining body shall within three months of the date of the resolution present an appeal to the Privy Council the examinations of that body shall on the expiration of those three months cease to rank as intermediate examinations for the purposes of this Act.

(2) On an appeal under this section by an examining body the Privy Council may after giving the General Council an opportunity of being heard report to His Majesty as to the standard of proficiency required at the examinations of that body and thereupon it shall be lawful for His Majesty by Order in Council to direct that the examinations of that body either shall or shall not continue to rank as intermediate examinations for the purposes of this Act.

19. *General Council to prescribe courses of study.*—(1) The General Council shall prescribe such courses of study as they think proper as qualifications for admission to the state examinations and shall have power to make regulations with respect to the nature and periods of such courses of study, to the order in which they shall be undertaken, whether before or after the intermediate examination, and to the places where they shall be undertaken, provided that no recognition shall be given to any course of study pursued by any student before the entry of his name on the students' register.

(2) The General Council shall have power for the purposes of this section to appoint inspectors with or without remuneration to visit any medical or dental school or hospital, provided that no member of the General Council shall be appointed inspector at a remuneration.

20. *State medical and dental examination.*—(1) The state medical examination shall be an examination held by the General Council for the purpose of testing the fitness of persons to practise in medicine surgery and midwifery and any branch thereof.

(2) No candidate shall be admitted to the state medical examination unless he shall have produced satisfactory evidence to the General Council of having completed courses of study prescribed by the General Council and of having passed an intermediate examination and also shall have paid such fee as the General Council may prescribe.

(3) The state dental examination shall be an examination held by the General Council for the purpose of testing the fitness of persons to practise dentistry and any branch thereof.

(4) No candidate shall be admitted to the state dental examination unless he shall have produced satisfactory evidence to the General Council of having completed courses of study prescribed by the General Council and also shall have paid such fee as the General Council may prescribe.

(5) The state medical examination and the state dental examination shall each be held once at least in the year one thousand nine hundred and and every succeeding year in London Edinburgh Dublin and such other places (if any) as the General Council may think fit.

(6) The written questions in any one state examination shall be identical and set simultaneously in every place of examination, but such part (if any) of an examination as may consist of oral questions may be held at the different places of examination either in succession or simultaneously.

(7) Subject to the provisions of this Act the General Council shall have the entire management and control of the state examinations and shall have power to make regulations in respect to

(*a*) Times, places, mode of conduct and notice of examinations.

(*b*) The appointment and removal of examiners and their remuneration by fees or otherwise provided that no member of the General Council shall be appointed examiner.

(*c*) Any other matter or thing as to which the General Council may think it expedient to make regulations for the purposes of this section.

Part V.—OFFENCES.

21. *Removal of name from register.*—(1) Where a registered practitioner or student either before or after the commencement of this Act and either before or after registration has been convicted in His Majesty's dominions of any felony or misdemeanour or elsewhere of an offence which if committed in England would be a felony or misdemeanour or has been guilty of conduct infamous or disgraceful in a professional respect or unfitting him for admission to the profession that practitioner or student shall be liable to have his name removed from the register.

(2) The General Council may cause inquiry to be made into the case of a person alleged to be liable to have his name removed under this section and on proof of such conviction (not being a conviction for a political offence out of His Majesty's dominions nor for an offence which does not in the opinion of the General Council either from its trivial nature or other circumstances disqualify a person for professional practice) or of such infamous or disgraceful or unfitting conduct shall cause the name to be removed from the register.

(3) The removal of a name from the register under this section may be either indefinite in time or for such period as the General Council may think proper and the General Council may at any time, either after or without inquiry as they may think fit, restore to the register a name removed under this section upon payment of such fee not exceeding any unpaid annual registration fees as the General Council may fix or may vary the period of removal.

(4) A name removed from the register under this section shall not be restored except by direction of the General Council or by order of a court of competent jurisdiction.

(5) Any person whose name is removed from the register under this section and who shall during the period of removal use any medical degree, shall be deemed to have committed an offence under this Act and shall be liable on summary conviction to a penalty for each offence not exceeding twenty pounds.

22. *Procedure and powers of General Council on an inquiry.*—Upon or for the purposes of any inquiry held or to be held under this part of this Act:

(1) The General Council may employ such legal or other assessors or assistants as they may think necessary or proper;

(2) The registrar and the person whose name is alleged to be liable to be removed from or is sought to be restored to the register may sue out a writ of subpœna ad testificandum or a writ of subpœna duces tecum.

(3) The High Court or a judge thereof may order that any such writ may issue to compel the attendance before the General Council of a witness wherever he may be within the United Kingdom and also may order that a writ of habeas corpus ad testificandum shall issue to bring up a prisoner for examination before the General Council;

(4) The General Council may administer oaths to or take the affirmations of witnesses;

(5) The General Council may assess the costs of the inquiry and if they think fit may direct payment thereof either by the person whose name is in question or by any complainant and the person directed to pay the costs shall pay the same to the General Council or as they may direct accordingly;

(6) A certificate under the seal of the General Council that a sum is owing by any person for costs under this section shall be conclusive evidence of the fact.

23. *Prohibition of practice by unregistered persons.*—Any person other than a registered medical or dental practitioner who—

(1) applies any medical or dental treatment to any person without the supervision of a registered medical or dental practitioner and demands or receives any valuable consideration for such treatment whether by way of remuneration gratuity or otherwise or

(2) holds himself out as practising or competent to practise medicine surgery midwifery or dentistry or takes or uses the style or title of physical surgeon doctor of medicine or dentist or any other style or title whether expressed by words or by letters only implying that he possesses the skill or knowledge necessary for that practice

shall be deemed to have committed an offence under this Act and shall be liable on conviction on indictment to imprisonment for six months with or without hard labour and alternatively or in addition to a penalty not exceeding one hundred pounds for each offence and on summary conviction to a penalty not exceeding forty pounds for each offence.

24. *Prohibition of unregistered person signing certificate.*—Any person not being a registered medical practitioner who shall sign any certificate of death still-birth or sickness or any certificate purporting to be a medical certificate or by the issue of which it is implied that the person signing it as a person possessed of medical skill or knowledge shall be deemed to have committed an offence under this Act and shall be liable on summary conviction to a penalty for each offence not exceeding twenty pounds.

25. *Penalty for granting unrecognised degrees.*—Any person other than a recognised university or medical body who shall grant any medical degree to a person not being a registered medical or dental practitioner shall be deemed to have committed an offence under this Act and shall be liable on summary conviction to a penalty for each offence not exceeding fifty pounds.

26. *Prohibition of improper use of name of registered practitioner.*—Any person who shall in selling or advertising for sale any article of food or drink or any medicine drug potion wash or ointment or any preparation or apparatus intended for use in medicine surgery dentistry or midwifery or alleged to possess curative or preservative qualities when applied to the human body—

(1) make any false representation as to an act done or opinion expressed by any person then or formerly registered as a medical or dental practitioner whether alive or dead or

(2) use the name of any such person after receipt of notice from him or his legal personal representative or from the General Council requesting that the use be discontinued;

shall be deemed to have committed an offence under this Act and shall be liable on summary conviction to a penalty for each offence not exceeding twenty pounds.

27. *Prohibition of certain acts of registered practitioners.*—Any registered medical or dental practitioner who:—

(1) practises under any name other than that under which he is registered; or

(2) practises for a period exceeding three months whether as principal or as assistant to or deputy of another practitioner in or from any building not being a hospital or other institution of a charitable or public nature and does not cause his name to be displayed in legible characters on the outside of that building

shall be deemed to have committed an offence under this Act and shall be liable on summary conviction to a penalty not exceeding twenty pounds for every day on which he has so practised.

28. *Application of penalties.*—Any sum of money arising from a conviction and the recovery of penalties under this Act shall be paid to the General Council whether the conviction takes place within the Metropolitan Police District or elsewhere.

29. *As to prosecutions.*—A prosecution for any offence mentioned in this part of this Act may be instituted by the General Council.

30. *Provision against offences by companies.*—(1) In this part of this Act the word person includes a corporation and any body of persons corporate or unincorporate.

(2) Every director or other officer of any company who shall knowingly and wilfully authorise or permit the commission by the company of an offence under this Act shall be liable to the same penalty or term of imprisonment as that to which the company is liable or would be liable if it were a natural person.

(3) If a company shall make default for seven days in payment of any penalty imposed under this Act, that company shall be deemed to be unable to pay its debts within the meaning of the Companies Act 1862 and may be wound up by the Court upon the petition of the General Council.

PART VI.—SUPPLEMENTARY PROVISIONS.

31. *Definitions.*—In this Act the expression "medical or dental treatment" includes the application of any real or pretended art science method or system relating to the prevention cure or alleviation of any disease or defect of or any injury to the human body and the performance of any surgical or dental operation.

The expression "medical degree" includes every degree title diploma certificate or licence having reference to medical or dental knowledge or skill or capacity to apply medical or dental treatment.

The expression "recognized university or medical body" means a university or medical body entitled either alone or jointly to choose a member of the General Council.

32. *Exception for foreign practitioners.*—Nothing in this Act shall prevent any person not being a British subject who shall have passed the regular examinations entitling him to practise medicine or dentistry in his own country from being called into the United Kingdom for the purpose of consultation with a registered medical or dental practitioner and duly acting for the time being as a registered practitioner or from being and acting as the resident physician or medical officer or dentist of any hospital established exclusively for the relief of foreigners in sickness provided always that he does not habitually engage in medical or dental practice in the United Kingdom except as such resident physician medical officer or dentist.

33. *Saving for midwives.*—Nothing in this Act shall affect or modify the provisions of the Midwives Act 1902 or render illegal any act or thing done by any woman in connexion with midwifery which would not have been illegal if this Act had not been passed.

34. *Repeals and amendments.*—The enactments mentioned in the second schedule annexed hereto are hereby repealed to the extent mentioned in the third column of that schedule and are hereby amended to the extent mentioned in the fourth column of that schedule.

35. *Short title and construction.*—(1) This Act may be cited as the Medical Act 1905 and may be cited and shall be construed as one with the Medical Acts.

(2) The expression "the Medical Acts" shall include the Dentists Act 1878 and that Act shall be deemed to be included in the group of the "Medical Acts" mentioned in the Second Schedule to the Short Titles Act 1896.

SCHEDULE I.

ELECTORAL areas for the election of Direct Representatives on the General Medical Council:

A.—ELECTORAL AREAS IN ENGLAND AND WALES.

NAME.	AREA.
I. NORTH OF ENGLAND (1,340 Practitioners).	The Counties of Northumberland, Cumberland, Westmorland, and Durham. In the County of Lancaster, the North Lonsdale and Lancaster Parliamentary Divisions. In the County of York, the Cleveland Parliamentary Division, and the Borough of Middlesbrough.
II. WEST LANCASHIRE AND CHESHIRE (1,460 Practitioners).	In the County of Lancaster, the following Parliamentary constituencies, namely:—Blackpool, Preston, Chorley, Wigan, Hindley, Leigh, Newton, Warrington, St. Helens, Widnes, Liverpool, Bootle, Ormskirk, and Southport. The County of Chester, *except* the Hyde Parliamentary Division and the Boroughs of Stalybridge and Stockport.
III. EAST LANCASHIRE (1,450 Practitioners).	In the County of Lancaster, the following Parliamentary constituencies, namely: Darwen, Blackburn, Clitheroe, Burnley, Accrington, Rossendale, Middleton, Rochdale, Heywood, Bury, West Houghton, Bolton, Ratcliffe-cum Farnworth, Prestwich, Oldham, Ashton, Gorton, Manchester, Salford, Stretford, and Eccles. In the County of Chester, the Hyde Parliamentary Division, and the Boroughs of Stalybridge and Stockport.
IV. YORKSHIRE (NORTH AND WEST) (1,390 Practitioners).	The North Riding of the County of York, *except* the Cleveland Parliamentary Division, and the Borough of Middlesbrough. The West Riding of the County of York, *except* the Parliamentary Divisions of Hallamshire, Rotherham, Doncaster, and Osgoldcross, and the Parliamentary Borough of Sheffield. The City of York.
V. NORTH-EAST MIDLAND (1,440 Practitioners).	The East Riding of the County of York. In the West Riding, the Parliamentary Divisions of Hallamshire, Rotherham, Doncaster, and Osgoldcross, and the Borough of Sheffield. The Counties of Derby, Nottingham, and Lincoln.
VI. WALES AND THE BORDER COUNTIES (1,390 Practitioners).	Wales. In England, the Counties of Shropshire, Hereford, and Monmouth.
VII. WEST MIDLAND (1,360 Practitioners).	The Counties of Stafford, Warwick and Worcester.
VIII. EAST AND EAST MIDLAND (1,410 Practitioners).	The Counties of Leicester, Rutland, Northampton, Bedford, Huntingdon, Cambridge, Norfolk, and Suffolk.
IX. SOUTH-WESTERN (1,440 Practitioners).	The Counties of Somerset (*except* so much of the Parliamentary Borough of Bristol as is situated therein), Dorset, Devon, and Cornwall.
X. SOUTH MIDLAND AND SOUTH (1,400 Practitioners).	The County of Gloucester with the Parliamentary Borough of Bristol. The County of Wiltshire. In the County of Oxford, the Banbury and Woodstock Parliamentary Divisions, and the City of Oxford. The County of Hampshire, *except* the Basingstoke and Petersfield Parliamentary Divisions.
XI. SOUTH-EASTERN (1,420 Practitioners).	The County of Kent, *except* the Parliamentary Divisions of Sevenoaks and Dartford, and the Boroughs of Greenwich, Lewisham, and Woolwich. The County of Sussex. In the County of Surrey, the Guildford Parliamentary Division.
XII. to XVII. METROPOLITAN (8,400 Practitioners: to be divided into six electoral areas).	The Counties of Middlesex, Essex and Hertfordshire. The County of Surrey, *except* the Guildford Parliamentary Division. In the County of Kent, the Parliamentary Divisions of Sevenoaks and Dartford, and the Boroughs of Greenwich, Lewisham, and Woolwich. In the County of Hampshire, the Basingstoke and Petersfield Parliamentary Divisions. The Counties of Berkshire and Buckinghamshire. In the County of Oxford, the Henley Parliamentary Division.

B.—ELECTORAL AREAS IN SCOTLAND.

Name.	Area.
I. North Scotland (960 Practitioners).	The Counties of Inverness, Perth, Stirling, Clackmannan, Kinross, Forfar, and the Counties north thereof.
II. West Scotland (1,400 Practitioners).	The Counties of Ayr, Lanark, Renfrew, Dumbarton, Argyll, and the Isles.
III. South and South-East Scotland (1,330 Practitioners).	The remaining Scottish Counties.

C.—ELECTORAL AREAS IN IRELAND.

Name.	Area.
I. North Ireland (1,200 Practitioners).	The Provinces of Ulster and Connaught. In the Province of Leinster, the Counties of Longford, West Meath, Meath, Louth, and King's County.
II. South Ireland *(1,350 Practitioners).	The Province of Leinster, *except* the Counties of Longford, West Meath, Meath, Louth, and King's County. The Province of Munster.

REPORT ON PREVENTION OF THE ABUSE OF DRUGS.

1. THE UNDULY REPEATED DISPENSING OF PRESCRIPTIONS

The Medico-Political Committee has very carefully considered the subject of the abuses which now prevail in connection with the repeated dispensing of prescriptions beyond the intention of the prescriber, and has had the advantage of a conference with representatives of the Pharmaceutical Society.

In the present state of the law, the prescription is the property of the patient to whom it is given by the prescriber, and may be repeated as often as the owner desires.

The owner, however, can only claim the right to have prescriptions dispensed in accordance with the terms thereof, and if, therefore, directions as to the number of times for which a prescription was to be repeated or as to the period within which the prescriber intended that the administration of the drugs indicated in the prescription should be confined, were made an integral part of the prescription, the dispenser would be justified in refusing to dispense the prescription otherwise than in accordance with such instructions.

Entirely to prevent the abuses in question, certain alterations of the law would be required.

Before attempting to obtain new legislation the Committee is of opinion that a considerable improvement in the existing position could be effected by voluntary action of the medical profession in the following respects:—

(*a*) That members of the profession should adopt the practice of indicating on every prescription the period, or the number of times, for which it is intended to be dispensed.

(*b*) That, in order to prevent copying, all prescriptions should be signed by the prescriber with his full name and address, and not merely initialled.

2. THE RECOMMENDATION OF DRUGS AND PROPRIETARY ARTICLES BY NAME.

The Annual Representative Meeting of the British Medical Association held at Oxford, passed the following instruction to the Council, which the Council referred to the Medico-Political Committee.

> Minute 115.—"That it is desirable that the Central Council draw the attention of the Medical Profession individually to the fact that by recommending by name certain drugs and certain preparations of those drugs, they are not only allowing themselves to be used indirectly as touts for wholesale druggists, but are also helping their patients to form, either in themselves or others, serious habits of drug abuse."

For the purpose of bringing the matter to the notice of individual members of the profession, it is proposed to address a communication to the Medical Journals, but prior to taking this step the Medico-Political Committee considers it expedient that the matter should be laid before the Divisions, in conjunction with the kindred subject of the abuse of drugs resulting from the unduly repeated dispensing of prescriptions.

The Committee is of opinion that the object contemplated by the resolution of the Annual Representative Meeting would be attained if medical practitioners would observe the rule of not recommending drugs or special preparations to their patients by name, but always ordering them by prescription.

RECOMMENDATIONS.

For the convenience of the Divisions the propositions contained in this memorandum, which Divisions are invited to consider, are separately appended:—

(*a*) That members of the profession should adopt the practice of indicating on every prescription the period, or the number of times, for which it is intended to be dispensed.

(*b*) That, in order to prevent copying, all prescriptions should be signed by the prescriber, with his full name and address, and not merely initialled.

(*c*) That medical practitioners should observe the rule of not recommending drugs or special preparations to their patients by name, but always ordering them by prescription.

* It will be understood that the particulars as to number of practitioners are merely approximate, and stated for the assistance of members of the Association. They would not form part of the actual Schedule of the Bill.

Meetings of Branches and Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the Journal.*]*

NORTH OF ENGLAND BRANCH.

Meeting of Council.

A meeting of the Council of this Branch was held at Durham on September 21st, Dr. J. Drummond (President) in the chair. There were present: Dr. Burman (ex-President), Dr. Fulton (President elect), Drs Maclagan, Robson (Northumberland Division), Dagger (Newcastle Division), Crease and McNabb (South Shields Division), Charles (Consett Division), Jackson (Hexham Division), Jepson (Durham Division), Davis and Boswell (Hartlepools Division), Howell and Howat (Cleveland Division), Drs. J. H. Hunter (Representative on Central Council), Cox (Honorary Secretary), and Mr. Garforth Drury (Secretary, Northumberland Committee). Apologies were read from Drs. Murphy, Philip, Fraser, and Wear.

New Members.—The following twenty-three candidates were elected: Drs. Mills (Ashington), Trotter (Choppington), D. Jackson (Hexham), W. McCoull (Ovingham), Stubbs (Stocksfield), Cresswell (Heaton), Dawson (Walker), Love, Dryden, Patterson, Ruddock (Newcastle-on-Tyne), Pickton (Stamfordham), Rattray (Gosforth), Dixon (Earsdon), R. A. Wilson (Wallsend), R. S. Brown (South Shields), McHaffie (Tyne Dock), Farquharson (Washington), Wilson (Langley, near Durham), Hutley (Cornsay Colliery), Stevenson (New Brancepeth), McMillan (Norton, Stockton-on-Tees), Wilson (Low Fell).

President-Elect. A letter was read from Dr. J. Hedley (Middlesbrough) who had been elected at the annual meeting subject to his consent. Dr. Hedley pleaded that his numerous engagements would not allow him to accept the honour.—Dr. Howell (Middlesbrough) proposed, on behalf of the Cleveland Division, that Dr. Fulton of Eston should be President-Elect. He was put forward by the Division which knew him best as a good worker and an ardent upholder of the Association. They desired it to be known that Dr. Fulton was the nominee of the Division and not of one or two individual members, and they had already begun in the Division a fund for the entertainment of the visitors to the annual meeting.—Dr. Davis (West Hartlepool) seconded the nomination, and Dr. Fulton was unanimously elected.—In responding, Dr. Fulton said he accepted the office with diffidence, but would do his best to fill it with credit to the Division

which had nominated him. The annual meeting would be held at Saltburn-by-the-Sea, and he could promise the members who attended a pleasant time.—Dr. Cox pointed out that this was a new departure in the way of electing Presidents of the Branch, and one that he hoped would be developed. The Divisions should put forward their nominees—men who were known to be interested in the work of the Branch—and should back them up in their year of office.

Medical Certificates for School Children.—The Honorary Secretary read a letter addressed to the education authorities on the subject of payment for medical certificates for school children, which he had drawn up in accordance with the instructions of the Branch and in consultation with the Medical Secretary.—Dr. Davis moved that the letter be approved, but thought that the suggested fee would entail so much expense that the idea would not be entertained. He suggested that an addition be made to the letter treating of accidents in schools where doctors were called in and nobody was prepared to pay.—Dr. Hunter seconded.—Dr. Dagger, speaking for the Division (Newcastle) from which the idea of a letter originated, said he would rather the letter went as it was, unburdened with other matters.—Drs. Burman, Robson, and the President spoke in favour of this course, which was unanimously adopted.

Slack Divisions.—The Honorary Secretary said there were several Divisions in the Branch which were a source of anxiety. Chester-le-Street had no secretary, had held no meetings for a long time, and its representative on the Branch Council had never put in a single attendance. Darlington had been practically moribund for nearly a year, and Durham had not held its meetings recently.—Dr. Charles said he would give what assistance he could in the matter of Chester-le-Street; Dr. Jepson, who represents Durham Division, said he would do what he could to get the Division on its legs again; and the Honorary Secretary said he hoped to get some member at Darlington to call a meeting, to which the President and himself would go and see what could be done.

Next Branch Meeting.—It was resolved that this be held at Darlington in October in the hope that it might do something to rouse the Darlington Division.

Branch Dinner.—The Honorary Secretary mentioned that the dinner held after the Branch meetings had been very badly attended of late, and inquired if it was worth while going on with it. It was agreed that in future the question of a dinner be left with the officials and members of the Division in which the Branch meeting is held.

Ethical Committee.—This was re-elected *en bloc.*

Meeting of Secretaries of Divisions.—Dr. Cox moved that a meeting be called of all the Secretaries of Divisions in the Branch before the winter's work began, and that third-class return fare be paid to all attending the meeting.—Dr Hunter seconded, and dwelt on the great advantages that might result from such a meeting.—The motion was carried unanimously.

Northumberland Committee.—Mr. Garforth Drury attended by request and gave a verbal report from the temporary committee. He said that they had simply gone on in the old lines of the late Northumberland and Newcastle Medical Association, answering a good many inquiries as to colliery appointments, etc. They had also dealt with a proposed Medical Aid Society. He reported a state of great unrest as to the rate of payment in connexion with the collieries where it was probable they might shortly have to face a strong demand for a reduction in the rate so hardly gained by the profession recently. One serious case had occurred at Ashington, where a medical man, who turned out to be a member of the British Medical Association, had, after making inquiries from Mr. Drury, deliberately accepted an appointment which was considered by the Committee to be one run in a manner contrary to the best interests of the profession. This case would probably come before the Ethical Committee. He also reported that some modifications would be required in the rules of the Divisions in order that the work of that Committee might be rendered possible.—Dr. Burman moved and Dr. Howell seconded that the following constitute the Northumberland Committee:—Mr. Rutherford Morison, Drs. Beatley, Wear, McCracken, Dunlop, McCrae, A. Campbell, Patterson, Don, J. J. Campbell, Spurgin, Hudson, Ruxton, and Hay of Newcastle; and Drs. Cromie (Blyth), Taylor Dixon (Earsdon), Sneirs (Haltwhistle), Robson (Alnwick) W. S. Campbell (Whitley Bay), Trotter (Bedlington), Bunting (Scotswood), Beaton (Hirst), Buttercase (Forest Hall), Fairlie (Bebside), and Ingram (Wallsend).

Petition to the General Medical Council.—Dr. Jepson mentioned this petition, which was being got up by the County of Durham Medical Union in order to influence the General Medical Council in favour of medical men who are endeavouring to act together in accordance with the spirit of the Council's ordinances and the traditions of the profession.—The President suggested that Dr. Jepson might send a copy of the petition to each of the Division Secretaries.

Resolution.—Dr. Cox moved and Dr. Burman seconded the following, which was carried unanimously and ordered to be forwarded to the Central Council:—

> That this Branch Council believes that a meeting of all Secretaries of the Association, Division and Branch, would be most useful to the Association, and requests the Council of the Association to take into consideration the advisability of calling together such a meeting either at the next annual meeting or before that time.

COAL MINERS AND CONTRACT PRACTICE.

We are informed by the Honorary Secretary of the North of England Branch of the British Medical Association that the following circular has been addressed to all members of the profession resident within the area of the Branch:

BRITISH MEDICAL ASSOCIATION.
North of England Branch.

Newcastle-on-Tyne,
November, 1904.

Dear Sir,

Contract Practice.

A movement in the county of Northumberland for a reduction in the fortnightly subscriptions paid to the colliery surgeons has led to the question being taken up by the Miners' Union.

We enclose a copy of the reports of the Medical Committee and Miners' Committees on the question.

Matters have reached an acute stage, and the result of the struggle will affect the profession not only in Northumberland but throughout the northern counties. It is not speaking too strongly to say that any adverse result would deal a blow to the entire movement which the medical profession has organized during the past few years in relation to every kind of contract work.

It is, therefore, important that the Northumberland colliery surgeons should be assured of the support of the whole profession in the north of England (whether engaged in contract work or not), and you are asked to make a special effort to attend a meeting to be held at the Library, Newcastle Infirmary, on Wednesday, the 30th November, at 3.30 p.m., in support of the surgeons concerned.

Yours faithfully,

Rutherford Morison
(Chairman, Northumberland Committee, B.M.A.).
Alfred Cox,
(Hon. Secretary, North of England Branch, B.M.A.).
Garforth Drury,
(Secretary, Northumberland Committee).

A copy of a pamphlet headed "Northumberland Miners' Mutual Confident Association: *Re* Miners' Union and Doctors' Fees," issued, as we are informed, about a month ago, by the Northumberland Miners' Union for instruction of their lodges, has been placed at our disposal. It consists of three parts:

1. A report of a conference between representatives of the Miners' Union and the medical profession held in Newcastle on March 30th, 1904.

2. "A reply to the doctors' circular respecting fees, etc.; also a statement of case for a reduction of fees" (undated), signed by the Chairman, the Committee, and Secretary of the Miners' Association; and

3. "A reply on behalf of the Medical Committee to the miners' circular *re* doctors' fees" (unsigned and undated).

(1) Conference at Newcastle.

At a conference at the Burt Hall, Newcastle, on March 30th, 1904, it was stated on behalf of the miners that several collieries had asked the Miners' Union to request a reduction of medical fees, and it was urged that since the doctors' fees had been raised wages had fallen 40 per cent. of the percentage above their standard wage. On behalf of the medical men it was pointed out that the increased fee had not been asked for or granted because the miners' wages were temporarily high, but that the reasons given for the request at different meetings were:

(*a*) That for sixty years the medical fees for attendance upon miners had been sixpence a fortnight. During this times, wages in all occupations except medical had largely increased.

(*b*) That sixty years ago a medical degree could be obtained with less than three years of study, now the least time possible was five years. The time occupied and the expense of obtaining a qualification to practise were doubled.

(*c*) That four years ago it was made illegal for medical men to employ unqualified assistants, consequently all assistants must now be qualified, and it was difficult to get them into colliery practice and

expensive to keep them there. The attendance now given being entirely by qualified men is of more value than that formerly given.

(d) That the increased cost of drugs, instruments, dressings, etc., added materially to the expense of practice.

The miners pointed out that at the present time many serious cases were sent into hospital, and the reply was that the advance of medical science had made hospital treatment necessary and that operations are now performed which formerly were not dreamt of; as an example, the treatment of rupture was instanced.

On behalf of the miners it was stated that in most collieries qualified nurses were now engaged and paid for by the miners, and were of great assistance to the doctors. On behalf of the medical men it was contended that the services of a skilful nurse, while very valuable, did not diminish the need for medical attendance or the cost of treatment.

Certain local incidents were discussed, and subsequently the miners issued a "Reply."

(2) Miners' Reply.

The reply of the miners set out that at a Council meeting held on May 21st the following resolution was carried by a large majority:

That we ask the county to take up the doctors' question and try to reduce the contributions from 9d. to 6d. again.

The reply then dealt seriatim with the four statements above quoted, and the case of the miners is summed up as follows:

That the change in our wages as compared with 1000 when this addition to our contributions for medical attendance were made.

The falsity of the premise that our wages are so much increased as against thirty years ago.

The increase in the population and attendant increase in the incomes of qualified medical practitioners.

The increasing number of members contributing to medical aid funds in connexion with friendly societies.

The tendency of drugs to fall rather than rise in price.

The increased strain put upon our resources by reason of contributions to medical charities and nursing associations.

The saving of time and of dressings consequent upon the operations of these associations.

The effects of the improvements in sanitation and of greater interest in the health and general welfare of the masses.

All these go to prove that there is reason in our request for a return to the fees paid by us prior to the year when, as is well known, there was a boom in both prices and in wages.

Reply of Medical Committee.

The Medical Committee, after carefully considering the statements in the miners' circular, has drawn up the following reply:

Miners' Wages.

The claim that we acknowledged a fall in miners' wages as a reason for a fall in our own is answered by the statement that the documents quoted were not official, and were circulated before our Association had effective existence. None of our official papers countenance such a claim.

We see no inconsistency in our demand being made at the time of the "boom." For many years we knew that the 6d. paid was unsatisfactory remuneration, because it had been settled as a basis sixty years ago, when the standard of medical attendance was less, living cheaper, wages lower, and when the value of medical services was materially less than it is at present.

The fact that some collieries paid 9d. for a few years seems irrelevant. We may point, however, as one of the few exceptions to our statement, that the men of Bebside have always paid 9d., and at present pay 1d. extra for surgical attendance. The fact remains that with few exceptions 6d. was the sum paid. If it was enough then, it would be as just to consider the miners' wages then were good enough as a basis for the sliding scale then. As regards the further arguments from miners' wages, though we claim that our payments should be regulated not by them but by our necessities, it is yet worth while to point out that even if we did admit the argument the result would be unchanged. You take the year 1871 for comparison. This was a boom year and is therefore unfair. As we had referred to sixty years ago you can have had no reason for choosing the peculiar period of thirty-three years, except that it is peculiarly favourable to your case. About forty-eight years ago deputies' wages were 3s. 8d. per day (hewers' wages, of which we are not certain, would be practically the same, probably slightly lower). Doctors then got 6d. per fortnight. Now deputies get 5s. 10d. per day (hewers 5s. 8d.), an increase of more than 50 per cent. Doctors get 9d. from married and 6d. from single men, an increase (as shown by the actual figures of one of our Committee, Dr. Bunting) of less than 33 per cent. Therefore, according to the miners' own argument, we are entitled to a further rise, if we take the figures over a period of forty-eight years.

In 1879 the miners had a basis wage fixed of 4s. 9⅓d. per day. That is an increase of more than 30 per cent. over their wages of forty-eight years ago. Wages have never been below this basis since 1879, and it is improbable that they ever will be. This proportion of increase (30 per cent.) is almost as much as the 33 per cent. which we have got at present; a reduction even to 8d. per fortnight would bring us down to 22 per cent., which is much below it. So if any analogy is to be made between our wages and those of miners we must regard 9d. as equivalent to their basis. They were fortunate to have secured it twenty-one years earlier than we claimed it.

Proportion of Medical Practitioners.

As regards population we believe the doctors have increased more quickly than the general population. Reference to the *Medical Directory* shows that

In 1867 in Northumberland there were 106 doctors,
In 1901 in Northumberland there were 227 doctors.
In 1867 in Newcastle there were 80 doctors.
In 1901 in Newcastle there were 176 doctors.

The withdrawal of unqualified men has given us no increase, because in almost every case their place has been taken by a qualified man.

Other Sources of Increased Revenue.

Vaccination is only for the public vaccinator—an office held by very few of us. The infectious notification fees are a practically negligible item, except during epidemic seasons they only average a few shillings a quarter, and in any case are payment for work and the assumption of a responsibility quite apart from the treatment of disease. It is true (page 4) that some members of Friendly Societies pay twice over, but a few by paying 3s. 6d. to a society save the 13s. they would otherwise pay at the colliery. The Friendly Societies do not pay for admission certificates if they have an appointed surgeon; if they have not, they do not pay the annual subscription. These two paragraphs kill each other.

The Miners' Basis Wage.

As we have pointed out, the miners have obtained a monetary recognition of the change in their standard of living, for the basis wage of 1879 is 30 per cent. over that of forty-eight years ago, and the wage of to-day is 18¾ per cent. above basis.

The Cost of Medical Education.

The quotation from the *Lancet* is an estimate [£600] of a minimum possibility. From personal experience, all of us know that our estimate [£1,000] is no exaggeration. It must also not be forgotten that a medical man cannot be qualified until he is 22, and can earn nothing before then.

Hospitals.

Hospitals do not save us work. Modern surgery demands that we shall pay greatly increased attention to all cases which might possibly require operation, in order that they might be sent away if their condition indicated, and only the severe ones are so treated; while after the operation they come back to us with their wounds still unhealed and requiring attention. Twenty years ago the majority of these cases would have been in their graves, and would have required our attention for a very few days. It is the less serious cases that form the great majority, and they require the use of modern surgical methods which demand great care and expensive dressings.

Nursing Associations.

A skilful conscientious nurse can help to save many lives. Her services do not diminish the need for medical attendance or the cost of treatment. In all chronic cases life is much prolonged by good nursing. Many acute cases that would have died in a few days recover after a prolonged fight. In either case medical attendance and cost of treatment are increased.

Infectious Diseases, etc.

Disinfectants free, etc., do not affect us, as it was never any part of our duty to provide them.

The saving of work on infectious diseases being sent to hospital is almost *nil* per doctor, and so few of us are ever called on to attend the cases in hospital that the benefit mentioned is not worth calculating as an element in the doctor's income.

Expenses of Practice.

Sanitary conditions notwithstanding, medical visits have not diminished in quantity, and the drug bills have increased largely.

That there are two sides to this question is proved by the following facts which have been brought to our notice:

That confinement fees for miners' wives (only 10s. 6d. generally) are totally inadequate; that subscribers absent from work and having no pay to draw can have no subscription kept off; that miners' relatives and visitors may be attended and no bill paid; that a great amount of clerical work—and none of it is paid for—is done through writing certificates for lodges, schools, pit absentees, accident forms, etc., that the doctor has often to provide material which is not medicine, namely, boxes, powder, paper, labels, and bottles; that night visits are not charged extra as in many medical associations, that many who ought to pay the doctor escape till found out; and that all above 16 pay 10d. to the permanent fund without proportionate benefits.

Conclusion.

In conclusion, while sympathizing with the miners in their present rate of wages and expressing our appreciation of the fair and gentlemanly way we were met by the Committee appointed to deal with this matter, we regret that after the most careful consideration we cannot recommend our Committee to accede to the miners' request, for we are satisfied that anything less must lead to bad medical attendance, a reduction of the high standard which we wish to maintain of medical practice in colliery districts, and scamped work.

SOUTH-EASTERN BRANCH:

Croydon Division.

A MEETING of this Division was held at the Cock Hotel, Sutton, on October 20th. Mr. G. BOWER, of Sutton, occupied the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Next Meeting.—It was arranged that the next meeting should be held at Croydon in March, and Dr. Rosser was unanimously elected chairman.

Annual Representative Meeting.—Dr. MACAN read his report of the meeting at Oxford, and was accorded a cordial vote of thanks for the trouble that he had taken.

Communication from Wandsworth Division.—This suggested that the Croydon Division should leave the South-Eastern Branch, and become attached to the Metropolitan Counties Branch. The proposal was negatived unanimously.

Imperial Vaccination League.—As the result of a communication from the Imperial Vaccination League, the following resolution was proposed by Dr. MACAN, seconded by Dr. ADAMS, and carried unanimously:

> That this meeting of the Croydon Division of the British Medical Association recognizes the great importance of working for the Revaccination Bill, and pledges itself to do all in its power to influence members of the Surrey County Council to support the Bill by a petition in its favour to the House of Commons, and also to ask Members of Parliament to ballot for the Bill, and to vote for it.

Subdivision of South-Eastern Branch.—Members were called upon to express an opinion upon the suggested subdivision of the South-Eastern Branch. The proposal was directly negatived.

Sir Constantine Holman.—A proposal by Dr. DUNCAN that the congratulations of the Croydon Division be sent to Sir Constantine Holman upon the receipt of the gold medal of the British Medical Association was heartily agreed to.

Papers.—A paper was read by Dr. GILES upon the Natural History of Extrauterine Pregnancy. Mr. CRESSY and Dr. MACAN took part in the subsequent discussion.—Dr. TUNNICLIFFE read a paper entitled Diet and Drugs in the Treatment of Pulmonary Tuberculosis. Dr. ROSSER, Dr. SWAN, Mr. CRESSY, and Dr. DYSART MCCAW afterwards discussed points raised in the paper.

Dinner.—Twenty-eight members were present, fifteen remaining to dinner.

Faversham Division.

A COMBINED meeting of the Faversham and Canterbury Divisions was held at Whitstable on October 2nd. The members present were: Drs. C. K. Bowes, Henchley, Evers, Jay, Rigden, Reid, Gowlland, Alexander, and Gosse. Dr. Piper was present as a visitor.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Proposed Combination of Divisions.—It was considered advisable that the Canterbury and Faversham Divisions should be combined, and that that resolution should be forwarded to the Council for approval.

Next Meeting.—It was resolved that the next meeting be held at Chartham early in December.

Proposed Division of South-Eastern Branch.—The following resolution was passed:

> That this Division approves that the South-Eastern Branch be divided as suggested.

Annual Representative Meeting.—The report of the Representative Meeting was read by Dr. Gosse.

Medical Practitioners and Midwives.—The resolution of the Medical Guild of Manchester was passed:

> That when practitioners chose to attend confinements at the request of midwives, the minimum fee charged should be a guinea.

Discussion.—Dr. GOWLLAND opened a discussion on pernicious anaemia, by giving the symptoms and pathology, drawing attention to the diagnostic value of microscopical examination of the blood, pointing out that the anaemia was due to the diminution of the number of red corpuscles by haemolysis, shown by the number of poikilocytes present; this he demonstrated by a typical blood slide from a case under his observation.—Most of the members took part in the discussion, and quoted cases in their practice.

Case.—Dr. HAYWARD showed an interesting case of an intelligent congenital hydrocephalic man of 47 years of age.

Vote of Thanks.—A vote of thanks was passed to Drs. Gowlland and Hayward.

YORKSHIRE BRANCH:

Bradford Division.

A SPECIAL meeting, to which all the medical practitioners in the Division were invited, was held at the Eye and Ear Hospital, Bradford, on Wednesday, November 2nd. Mr. MOSSOP, Chairman of the Division, presided.

Confirmation of Minutes.—Dr. METCALFE (Honorary Secretary) read the minutes of the last meeting, which were approved of and adopted.

National Deposit Friendly Society.—The question of the attitude to be adopted by the profession in the Division towards the National Deposit Friendly Society was carefully considered. The HONORARY SECRETARY stated that he had been informed that the Society, which had not previously done much work in Bradford, was now energetically attempting to largely increase its membership. Medical men were being asked to accept the scale of fees and to act as the medical officers of the Society. Many of the fees were inadequate, and there was no wage-limit for members. Consequently many patients would be won over to become members of the Society if they thought they could obtain the services of their usual medical attendant at the reduced Society rates. The CHAIRMAN, Drs. and Messrs. HORROCKS, GOYDER, CARROLL, J. J. BELL, MANKNELL, and PARKINSON discussed the subject. The unanimous opinion appeared to be that medical men should not allow their names to be specially connected with the Society as its medical officers. Medical men could attend members of the Society as individuals, but they should charge their own fees and make their own arrangements with the patients. Dr. HIME then moved the following resolution:

> That, in the opinion of the members of this Division of the British Medical Association, it is undesirable that its members should act as medical attendants or consultants in connexion with the National Deposit Friendly Society under its existing rules, and that a copy of this resolution be sent to every medical man in the Division.

This was seconded by Dr. METCALFE, and, after some discussion by Drs HORROCKS, TUNSTALL, CARROLL, PARKINSON, and HIGGINS, was carried unanimously.

Bradford Medical Aid Association.—The desirability or otherwise of taking any action in connexion with the Bradford Medical Aid Association was then considered. After some discussion Dr. GOYDER proposed that the meeting should proceed to the next business. This was carried.

Anaesthetists and Dentists.—Dr. MITCHELL then moved the following resolution:

> That in the case of registered dentists requiring a medical man to administer an anaesthetic, as far as possible preference should be given to the ordinary medical attendant of the patient to be operated on, and that the fee should be one guinea except in the case of poor patients.

This was seconded by Dr. Goyder. The object of the mover of the resolution was to draw the attention of the dental profession to the fact that the fee usually expected by medical men for administering an anaesthetic was one guinea. Several cases had recently occurred in Bradford in which dentists had persuaded anaesthetists to accept half-guinea fees, even from well-to-do persons. One guinea was certainly little enough for the care required and the responsibility involved in giving a general anaesthetic. And where the dentist employed the services of an anaesthetist who was in general practice, he should, as far as possible, give the preference to the usual medical attendant of the person to be operated on.—Drs. Hime, J. J. Bell, Horrocks, Goyder, Clow, Lankester, and Shackleton discussed the subject. There was some difference of opinion as to the procedure most useful to adopt in connexion with the matter. Some gentlemen thought that it would be better for the medical profession to come to a definite resolution on the subject, binding themselves to a distinct line of action, and then to inform the dentists of their decision. The unanimous opinion was that a guinea should be the very lowest fee accepted except in the case of poor patients; as, however, the hour was late, the further discussion of the subject was adjourned to the next meeting. The meeting then terminated.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.

A meeting of this Branch took place at the Worcester Infirmary on Friday, October 28th. Sixteen members were present.

Visit to Isolation Hospital.—Previous to the meeting some members were conducted over the Isolation Hospital.

Management of Small Isolation Hospitals.—Dr. Brabyn Read read a paper on Some Difficulties in the Management of Small Isolation Hospitals, and a discussion took place.

Antidiphtheritic Serum.—Mr. Holbeche gave details of a case of sudden death of a boy immediately after the injection of a prophylactic dose of antidiphtheritic serum. The boy was an asthmatic, and death seemed to be caused by sudden heart failure, due to nervousness. A number of other boys were injected.—The following resolution was proposed by Dr. Read, and seconded by Dr. Crowe, and carried unanimously:

> That this meeting approves of Dr. Holbeche's action in using antidiphtheritic serum as a prophylactic, and expresses their sympathy with him in the recent misadventure in his practice.

Case.—Dr. Crowe showed a case of peripheral neuritis in a choreic girl.

METROPOLITAN COUNTIES BRANCH:

City Division.

A general meeting of this Division was held at Manor House, Upper Clapton (by the kind invitation of Mr. Herbert E. Powell, on Thuesday, November 17th, at 4 p.m. Mr. Hope Grant, the Chairman of the Division, presided.

Midwives Act.—A letter from the Medical Guild, on the subject of fees to medical practitioners making attendances under the Act, was read. As this subject is being dealt with by the Medico-Political Committee, it was resolved that the receipt of the letter be acknowledged.

Alteration of Rules.—The report of the Committee on Alteration of Rules of the Branch was adopted, with certain additions, and was ordered to be sent to the Committee of the Branch Council, which is considering the subject.

Annual Representative Meeting.—The Representative of the Division in Representative Meetings read a report on the meeting held at Oxford. A vote of thanks to the Representative was passed.

Letters.—The Secretary drew attention to two letters which had been published in the Supplement to the British Medical Journal, November 5th, p 164, by order of the Council of the Branch. The one referred to the publishing in the newspapers of notices of the return home of medical practitioners after a vacation; the other gave a statement as to what was and what was not a legal expenditure by a Division.

Number of Members Necessary for Division.—The question of the desirability of lowering the present minimum limit of 50 members necessary for a Division to receive separate representation was brought before the meeting. It was unanimously resolved that it is at present undesirable to make any alteration in the limit.

Vote of Thanks.—The meeting was brought to a close with a unanimous vote of thanks to Mr. H. E. Powell for his hospitality.

SOUTH MIDLAND BRANCH.

The autumnal meeting of this Branch was held at the Board Room, General Hospital, Northampton, on Thursday, October 27th, under the presidency of Dr. Kennish. There were twenty-six members and one visitor present.

Confirmation of Minutes.—The minutes of last meeting were read and signed.

New Members.—The following new members were declared elected by Branch Council: Bernard Relton, M.R.C.S., Rugby; J. C. Baker, M.B., Aylesbury; C. H. T. Bailey, M.R.C.S., Bedford; J. M. Dupart, M.B., Bedford; W. K. Parbury, M.R.C.S., Sharnbrook; H. E. May, M.B., St. Albans; C. H. Nicholson, L.S.A., Clophill, Beds.; A. F. Goldsmith, M.R.C.S., Bedford; V. S. A. Bell, M.R.C.S., Bedford; H. Keir, M.D., Stone, Aylesbury; H. F. Bellamy, M.D., Abbots Langley, Herts; J. F. Matheson, M.B., Moulton, Northampton.

SOUTH-EASTERN BRANCH.

Eastbourne, Hastings, and Tunbridge Wells Divisions.

A conjoint meeting of these Divisions was held on Thursday, November 17th, at the Sackville Hotel, Bexhill. Mr. J. H. Ewart of Eastbourne was in the chair. Thirty-five members were present. Mr. Smith Whitaker (Medical Secretary of the Association) was also present.

Annual Representative Meeting.—Dr. Allfrey, Representative of the Hastings Division, gave a report of the business at the recent Annual Meeting at Oxford.

Proposed Division of South-Eastern Branch.—Mr. Ewart read a communication from Dr. Larking proposing the division of the South-Eastern Branch. Mr. Smith Whitaker explained the powers of the executive council and general meetings respectively of Branches and Divisions, and, after a discussion, Dr. Allfrey proposed, and Dr. Bagshawe seconded, the following resolution, which was carried:

> That in the opinion of this meeting it is undesirable to divide the South-Eastern Branch.

Contract Medical Practice.—Mr. Smith Whitaker gave an address explanatory of the contract practice propositions of the Medico-Political Committee. Dr. Muir Smith read a paper on contract service, with special reference to the Eastbourne Provident Medical Association. Dr. Muir Smith proposed, and Dr. Batterham seconded, the following resolution:

> That this meeting approves generally of the principles laid down in these propositions.

An amendment moved by Mr. Mansell and seconded by Mr. Murdoch was lost, and the original resolution was carried.

Dinner.—Twenty-one members afterwards dined under the Presidency of Dr. Wills of Bexhill.

NORTH WALES AND SHROPSHIRE BRANCH:

North Carnarvon and Anglesey Division.

A meeting of the Division was held at the British Hotel, Bangor, on Wednesday, November 16th, at 2 p.m., Bangor, Dr. Emyr O. Price, in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read, confirmed, and signed.

Introduction of new Chairman.—The Chairman introduced the Chairman-elect, Dr. John Roberts, J.P. (Menai Bridge).

Vote of Thanks to retiring Chairman.—The Chairman proposed, Mr. H. Jones Roberts, Honorary Secretary, seconded, and it was unanimously resolved:

> That the best thanks of the Division be tendered to Dr. E. O. Price for the able manner in which he had filled the chair during the past year.

Annual Representative Meeting.—Dr. E. O. Price gave a concise report of the Annual Representative Meeting held at Oxford in July last.

Paper.—Dr. E. J. Lloyd (Bangor) read a paper on a case of mastoiditis, and the value of a ¼ in. trephine in opening up the mastoid antrum.

Discussion.—Dr. E. O. Price opened a discussion on diphtheria, in which the following members took part: Drs. John Evans, G. W. Kendall, J. E. Thomas, G. Evans, J. R. Williams, W. G. Pritchard and the Chairman.

Votes of Thanks.—A vote of thanks was passed to Dr. Price for the excellent manner in which he had opened the discussion, and to Dr. Lloyd for his interesting paper.

Next Meeting.—It was resolved that the next meeting be held at Bangor, and Dr. G. W. Kendall (Holyhead) was appointed to open a discussion—subject to be selected by himself.

BIRMINGHAM BRANCH:
Coventry Division.

A meeting of this Division was held at the Coventry and Warwickshire Hospital, Coventry, on Tuesday, November 1st, the chair being occupied by the Vice-Chairman, Charles Davidson, M.D.

Vote of Thanks.—A cordial vote of thanks was unanimously passed to the Committee of the Coventry and Warwickshire Hospital for their kindness in placing their Board room at the disposal of the Division for the meetings of the Division.

Fees Under Midwives Act.—A letter was read from the Medical Guild on the minimum fee desirable in midwives' cases under the Midwives Act; after some discussion the following was carried *nem. con.*:

That no attendance at the time of confinement should be given at the request of a midwife by any member of the Coventry Division unless a guinea be paid.

Vaccination Legislation.—Communications were read from the Wandsworth Division and from the Imperial Vaccination League concerning vaccination and revaccination legislation; no resolution was passed on these communications.

Ethical Rules.

After the ordinary meeting a special meeting was held, the Chairman (T. Webb Fowler, M.B., F.R.C.S.E.) being in the chair. At this meeting the Ethical Rules of the Bradford Division as to professional conduct, with special reference to contract practice and appointments, were discussed, and a modification of them adopted; these have been submitted to the Council of the Association for approval.

SOUTH-WESTERN BRANCH:
Barnstaple Division.

A regular meeting of this Division was held at Ilfracombe on October 26th. Dr. Slade-King was in the chair, and there were present: Drs. Gardner, Gooding, Kettlewell, Toller, Toye, Tucker, Valentine, and the Honorary Secretary.

Paper.—Dr. Toller read a paper on a case of trichinosis in man

Cases.—The Honorary Secretary exhibited cases of successful treatment of advanced cretinism by fresh thyroid extract; also a case of precocious puberty in a female cretin.

Anthropometrical Survey.—Dr. Slade-King moved a resolution approving of the proposed anthropometrical survey of the United Kingdom.

Midwives Bill.—It was decided to adopt the following resolutions:

1. That in every case of being called in by a midwife to attend any woman in or immediately after labour, the fee charged be not less than one guinea.
2. That in every case of being called in by a midwife to attend any woman before labour has commenced, or any lying-in woman, or any newborn child, the ordinary visiting fee of the medical man summoned shall be charged for each such visit.
3. That in all such cases it shall not be considered unprofessional or inadvisable to ask for the fee at the time, or even before attendance is given.

The Honorary Secretary was directed to notify the decision of the meeting to the members who were not present.

Information to Coroners.—It was decided to send copies of the resolutions approved by the Oxford meeting to the county coroner and his deputy.

Rules.—The Honorary Secretary was requested to frame rules for the guidance of procedure at Divisional meetings.

Recruiting Circular.—The Honorary Secretary read a "recruiting circular" which he had drafted. This was generally approved of, and he was asked to put it in circulation amongst all non-members residing within the Division, as soon as it had received the sanction of the Branch Secretary and the Medical Secretary.

The Medical Secretary.—It was generally agreed that Mr. Smith Whitaker should be thanked by the Division for his late visit to the Exeter meeting of the Branch, and for his lucid and instructive addresses.

Next Meeting.—It was resolved that the next regular meeting of the Division should be held at Barnstaple. Should it be found necessary to hold an intermediate meeting, all details were left to the discretion of the Secretary.

Co-ordination of the Work of the Divisions.—Dr. Kendle (Honorary Secretary) informed the meeting that he was taking steps to co-ordinate the work of the several Divisions of the Branch, for which purpose he was putting himself into communication with those secretaries who were evincing keenest interest. The meeting cordially approved of his action in this most important matter.

Votes of Thanks.—Dr. Toller was thanked for his most interesting paper, Dr. Kendle for his interesting and unique cases, and the Chairman for his kindness in presiding.

Luncheon.—The members and guests lunched together before the meeting at the Montebello Hotel.

Isolation Hospital.—After the meeting, the members were conducted over the Ilfracombe Isolation Hospital by the Medical Officer of Health, Dr. Slade-King.

Tea.—Mrs. Slade-King entertained the members at tea after the inspection at Bickleighscombe.

LANCASHIRE AND CHESHIRE BRANCH:
Altrincham Division.

The quarterly meeting of this Division was held on September 29th at Brooklands. Dr. Joynson presided over a meeting which numbered eleven. Several members were prevented from attending by engagements; and twenty-one had intimated their inability to attend.

Confirmation of Minutes.—The minutes of the last meeting were read and signed as correct.

Report of Committee.—The Committee's report was read and accepted. The suggested new rule as to filling casual vacancies was adopted.

State Registration of Nurses.—Dr. Renshaw proposed, Dr. Luckman seconded, and the meeting unanimously adopted a strong resolution against registration, which was ordered to be sent to the Council, and to Sir John Batty Tuke, Dr. R. Ambrose, M.P., and Hon. Sydney Holland.

The Association and Medical Defence.—The Honorary Secretary reported that a further canvass of the members resulted in thirty-five replies in support of the Association undertaking medical defence, three conditionally in support, and four in opposition. (Two more in support were received later.) He was instructed to forward this information to the General Secretary, for the Defence Committee.

Annual Representative Meeting.—The Honorary Secretary was instructed to forward to the Council a strong protest against the inconvenient arrangements made at the Swansea and Oxford meetings, with suggestions for amendment.

Revaccination Bill.—It was resolved that the Council be requested to support the Revaccination Bill.

Sliding Scale.—A letter was read from Wandsworth Division as to payments by Branches to Divisions. It was referred to the Committee for report and to the Branch Council.

Medical Practitioners and Midwives.—Resolved that the fee for attending when summoned by a midwife ought never to be less than one guinea, and ought to be paid before attendance is given.

Correspondence.—Other correspondence was also read and considered.

The meeting then terminated.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH.

A meeting was held at the Grand Hotel, Morecambe, on Wednesday, October 26th, the President (Dr. A. W. Collins) being in the chair. Sixteen members and two visitors were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

New Member.—Dr. B. C. Stevens was elected a member.

WEST SOMERSET BRANCH.

The autumn meeting of this Branch was held at the Taunton and Somerset Hospital on Friday, November 4th, the President (Mr. A. W. Sinclair) in the chair. There were present twenty members and two visitors.

Confirmation of Minutes.—The minutes of the last meeting were read and signed.

Address.—Sir Patrick Manson, M.D., K.C.M.G., Medical Adviser to the Colonial Office, kindly attended and gave an address of unusual interest on the Significance of Fever in Patients from Warm Climates.

Vote of Thanks.—A vote of thanks to the lecturer, proposed by the Chairman and seconded by Dr. Meredith, was afterwards passed with enthusiasm.

SOUTHERN BRANCH:
Southampton Division.

A meeting of this Division was held at Southampton on November 4th. Dr. Chinery took the chair, and Mr. Smith Whitaker, Medical Secretary of the British Medical Association, attended.

Ethical Investigation.—A charge brought against a member of the Association of having acted in a manner detrimental to the honour and interests of the profession was considered. It was intimated that the member concerned had been invited to attend, but had declined to do so and had stated that he had resigned his membership. A report prepared by the Committee of the Division, which had already discussed the matter, was presented, and a resolution was unanimously adopted to the effect that in the opinion of the Division the member in question had acted in a manner detrimental to the honour and interests of the profession, and referring the matter to the Council of the Branch with the recommendation that his resignation should be accepted.

Proposed Southampton Section.—Dr. MacKeith then moved:

That, in order that members of the Association residing in the Southampton Division may have the opportunity of meeting for the discussion of matters of purely local interest, the Executive Committee be instructed to consider and report as to the best means by which this may be effected, with special reference to the desirability of forming a Southampton Section of the Division.

—Dr. Bullar seconded, and the motion was carried with one dissentient.

Rules as to Contract Practice.—Mr. Smith Whitaker remarked that the Division had no rules referring to contract practice and appointments. This was liable to place—and, indeed, had placed—the Division at a disadvantage. He recommended the adoption of rules similar to those which he had drafted for the Bradford Division, copies of which were handed round. As no new rules could be adopted at an ordinary meeting, this matter was referred to a special meeting.

Vote of Thanks.—The meeting closed with a hearty vote of thanks, proposed by the Chairman, to Mr. Smith Whitaker for the great assistance he had rendered to the Division in the matter under discussion.

SOUTH WALES BRANCH:

South-West Wales Division.

A special meeting of the Division to meet the Medical Secretary of the Association was held at the Stepney Hotel, Llanelly, on Tuesday, September 27th. The following were present: Mr. D. J. Williams (in the chair), Drs. R. G. Price, Owen Williams, Naunton Davies, D. R. Price, D. Phillips, Hopkin, J. Howells, Hughes, Isaac, Broster, J. J. Lloyd, S. J. Roderick, S. Williams, J. L. Davies, Brooks, H. H. Roberts, and Edgar Davies.

Luncheon.—All members of the profession interested in contract practice were invited to attend, and were entertained at luncheon at the Stepney Hotel by the Chairman, Mr. D. J. Williams, F.R.C.S. (Llanelly).

Ethical Rules of Bradford Division.—Mr. Smith Whitaker, in a very lucid and able address, explained the object of his visit. He explained in detail the ethical rules adopted by the Bradford Division. These were adopted.

Votes of Thanks.—A hearty vote of thanks to Mr. Whitaker for coming down and for the help he had given the Division by his address was carried. A vote of thanks to the Chairman for presiding and for the luncheon was also carried.

Autumn Meeting.

The autumn meeting of the Division was held at Llandilo on Tuesday, October 25th.

Luncheon.—The members (twenty-one in number) were entertained at an excellent luncheon at the Cawdor Arms Hotel by the medical men of Llandilo and district. A vote of thanks for the luncheon was carried. At the subsequent meeting there were present: Mr. D. J. Williams, F.R.C.S. (in the chair), Drs. E. Goodall, C. P. Parry, J. J. Lloyd, J. Ll. Davies, R. Hopkin, A. Hughes, R. W. Rees, D. Harris, R. Jones, R. D. Evans, Owen Williams, R. Price, Morgan Phillips, Simon, Brookes, Jones, Wade Richards, S. J. Roderick, and Edgar Davies.

Resignation of Dr. Glanville Morris.—Dr. S. Glanville Morris wrote resigning the post of Honorary Secretary and Treasurer owing to his having removed from the area of the Division. It was proposed by Mr. D. J. Williams, seconded by Dr. R. G. Price, and resolved:

That the best thanks of the Division be tendered to Dr. S. Glanville Morris for the great service he had rendered the Division as Honorary Secretary and Treasurer.

Appointment of Honorary Secretary and Treasurer.—Dr. J. Edgar P. Davies (Llanelly) was appointed Honorary Secretary and Treasurer.

Confirmation of Minutes.—The minutes of the annual meeting and of a special meeting were read and confirmed.

Model Ethical Rules.—The draft model ethical rules of a Branch, etc., were adopted.

Papers.—The following short papers were read: Mr. D. J. Williams, F.R.C.S.: Conservative surgery of the fingers. Dr. S. Glanville Morris: Midwives Act, 1902. Dr. J. Edgar P. Davies: Prostatectomy.

Next Meeting.—It was resolved that the next meeting be held at Whitland in February or March, 1905.

Ethical Committee.—It was resolved that at the next meeting an Ethical Committee be appointed.

Attendance on Post Office Employés.—A circular from Post Office authorities regarding attendance on their rural employés at ordinary rates regardless of distance at which they lived from surgery was considered. It was resolved:

That all medical men in the area be circularized and requested to hold their hands till next meeting. That the circular, together with a circular from Llanelly Clerks' Association, be submitted to the Medical Secretary for his opinion.

Drive.—After the meeting the members were taken for a drive in the Towy Valley in carriages provided by the medical men of Llandilo and district. The drive was much appreciated by the members.

NORTHERN COUNTIES OF SCOTLAND BRANCH.

The autumn meeting of this Branch was held at Forres on October 22nd, Dr. Allan (Evanton), President, in the chair. There was a fairly good attendance of members, twenty-three being present. Letters of apology were read from Drs. Bruce (Dingwall), Duguid (Buckie), Mackay (Elgin), and several others.

Confirmation of Minutes.—The minutes of the previous meeting were read and approved.

Vote of Condolence.—The Secretary intimated that on behalf of the Branch he had tendered to Dr. Mackay (Elgin) the warmest sympathy and condolence on the loss he had lately sustained in the death of Mrs. Mackay.

School Certificates.—The Secretary read a communication he had had from the Secretary of the Dundee Branch relating to the question of the granting of medical certificates of unfitness to attend school as required by the School Board. It was resolved, after some discussion, that if the parent of the child desired a certificate it should be given and the usual fee charged, but if the School Board asked for one that a special fee should be charged.

Registration of Nurses.—The question of the registration of nurses was discussed. Dr. Murray (Inverness) proposed:

That the Branch recommend that the Association support a Bill for the State Registration of Nurses.

This resolution found no seconder.—Dr. Forsyth (Inverness) proposed, seconded by Dr. Kerr (Inverness):

That the Branch express no opinion on the matter; that it was a question for nurses themselves to decide.

This resolution was put to the meeting and carried.

Scale of Fees.—Dr. Kerr raised the question of the uniformity of fees, and expressed the opinion that, while the practitioners in Inverness had a uniform scale which was adopted, those practising in Forres and Nairn he considered were not adequately paid for their country visits.—Dr. Hay (Forres) thought that the fees charged were the same as the Inverness scale, but that farm servants gave a considerable amount of trouble, seldom paying fees.—Dr. Adam (Forres) agreed with Dr. Hay. With regard to farm servants, he thought a "black list" should be adopted by the medical men in the counties of Inverness, Moray, and Nairn, because these servants migrated from one county to another, seldom or never paying for their medical attendance.—Dr. Kerr stated that his plan was to get a note from the master of the servant authorizing him to pay the amount for his medical attendance. Since he adopted this plan he seldom or never incurred bad debts.—Dr. Forsyth thought that if Dr. Kerr recovered such a large percentage of his debts he was extremely fortunate, and possibly he would have serious thoughts of retiring from practice at an early date.

Paper.—Dr. Machardy (Cullen) read notes on the escape of foreign bodies from the umbilicus.

Luncheon.—After the meeting the members lunched together, Mr. Leask and Colonel Urquhart (Forres) and Mr. J. Leslie Fraser (Inverness) being also present.

MALAYA BRANCH.

Report of Council.—The report of the Council of this Branch for 1903 4 (dated August 3rd, 1904) states that the year had been one of unprecedented success. Eighteen new members of the Association were elected, and 10 members of the Association joined the Branch, which now numbered 70 instead of 45. Fourteen ordinary meetings had been held, and the average attendance at each had been 14. The following papers were presented:—May: Kidney Disease in the Tropics, by Dr. Kirk. June: The Fevers of West Africa, by Major Ritchie. July: A Case of Anthrax Erysipelatous, by Dr. More. August: The Radical Cure of Hernia, by Colonel Dick. September: A Case of Traumatic Aneurysm of the Carotid, by Dr. Ford. October: The Consumption of Alcohol in the Tropics, by Dr. Middleton. November: Aberrant Types of Fever, by Dr. Galloway. December: Disinfection, by Dr. Brooke. January: Analysis of Cases occurring at Tang Tock Seng Hospital, by Dr. Dane. February: Discussion of Proposed New Rules. March: Acetonaemia, by Dr. Fowlie. April: The Mosquitos of Singapore, by Dr. Finlayson. June: Some Personal Experiences in the South African war, by Major Ritchie. July: Immunity, by Dr. Finlayson. All the papers were of a high order of ability, the discussions were animated, and brought out several aspects of the subject, so that all the meetings were most interesting. During the year a scheme was formulated for dividing the Branch into the Singapore, Penang, and Federated Malay States Divisions, and modified rules were accordingly drawn up. These had been approved by the home Association, and the Branch would begin under its new system in September. The financial condition of the Branch would, it was stated, be shown in a statement of accounts to be circulated shortly. While congratulating the Branch on the excellent year's work that had been done, the Council appealed with confidence to the members to continue their interest in the work of the Branch, and thus make the coming years as successful as, if not more successful than, the last.

The Journal of the Malaya Branch.—The Malaya Branch formerly issued a journal, the last number of which was published in 1897, under the editorship of the then P.C.M.O., the late Dr. Simon. Owing to various causes, the publication was discontinued. In 1903, at the suggestion of Dr. McDowell, P.C.M.O., the Branch decided to issue the journal, and four members were appointed to act as an Editorial Committee, of which Dr. J. Kirk is convener. The first number, bearing date January, 1904, is now before us. The contents consist partly of the transactions of the Branch from May to December, 1903; partly of articles by Drs. M. Watson, W. R. C. Middleton, Boon Keng, F. W. More, D. J. Galloway, J. Kirk, Major J. Ritchie, and Lieutenant-Colonel W. Dick, R.A.M.C. Reports of cases are contributed by Drs. J. Catto, R. Dane, M. Watson, H. C. Highet, F. W. More, G. A. Finlayson, and W. M. Sidney Sheppard.

BRITISH GUIANA BRANCH.

THE annual meeting of this Branch was held at the Public Hospital, Georgetown, on October 22nd.

Election of Officers.—The following were elected office-bearers for the ensuing year:—*President:* The Hon. Dr. J. E. Godfrey. *Vice-Presidents:* Dr. C. J. Gomes, Dr. W. F. Law, Dr. J. F. Scott Fowler. *Council:* Dr. W. de W. Wishart, Dr. C. E. Hodgson, Dr. J. A. B. C. Belmonte. *Honorary Secretary and Treasurer:* Dr. Q. B. de Freitas.

The late Dr. Edmonds.—The retiring PRESIDENT (Dr. Gomes) feelingly referred to the very great loss the Branch had suffered by the death of Dr. F. H. Edmonds. He said that the deceased gentleman was one of the most unassuming and modest of men, who did his duty quietly and well, avoiding all ostentation and publicity. His high professional reputation, the outcome of his ripe experience of many years in the practice of his profession, had secured for him a large and influential practice in the city. Dr. Edmonds had twice occupied the presidential chair of the Branch, and during that time had contributed some very valuable and thoughtful addresses. Dr. Gomes also referred to Dr. Edmonds's constant attendance at the Branch meetings, where his readiness and fluency of speech, together with his sound judgement in medical matters, always commanded the attention of the members. He spoke of Dr. Edmonds having always throughout his life maintained a high standard of professional conduct, and said that every one of his colleagues would ever cherish his memory, as would also his numerous patients and friends. The President then asked the meeting to pass a resolution recording its "deep grief at the profound loss the Branch had sustained by the death of Dr. F. H. Edmonds, and that the heartfelt sympathy of its members be tendered to the bereaved family."—Hon. Dr. J. E. GODFREY, Vice-President, in seconding, also added his tribute. He said, as one of the oldest members of the Branch, he had the privilege of knowing his departed friend and colleague for many years, and heartily approved every word the President had said. He could recall the time when the local Branch was started, the prime movers in its inception being the late Dr. Edmonds and the late Dr. Brebner.—Dr. FRANK EDMONDS, who was present at the meeting, thanked the members for the feeling and sympathetic way in which his father had been spoken of that evening.

BRITISH MEDICAL ASSOCIATION LIBRARY.

List of Presentation of Books, etc.

Presented by the AUTHORS:
Bastian, H. C. Studies in Heterogenesis. III, IV. 1904.
Brunton, Sir T. L. Action des Médicaments. 1901.
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Carter, A. H. The Principles of Medicine. 8th Edition. 1901.
Stengel, A. Textbook of Pathology. 4th Edition. 1903.
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Presented by Dr. G. H. BUCHANAN (London):
Reports and Evidence of the Royal Commission on Arsenical Poisoning. 1903.

Presented by Sir Lauder BRUNTON, M.D., F.R.C.P.:
Eichhorst. Handbuch der speciellen Pathologie und Therapie. 4 vols. 1887. And other volumes.

Presented by E. C. CRIPPS, Esq., M.R.C.S. (Cirencester):
Abernethy. Surgical and Physiological Essays. Vol. ii. 1793.
Barff. Chemistry. 1869.
Belloste. Le Chirurgien d'Hôpital. 1707.
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Cooper, S. First Lines of Surgery. 1841.
Coote, H. On Joint Diseases. 1867.
———— Report on Important Points in the Treatment of Syphilis. 1857.
Hope, Dr., Memoir of. 1843.
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Lawrence. Diseases of the Eye. 1844.
Quincy, J. Medicina Statica. 1723.
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Bateman, T. Cutaneous Diseases. 1813.
Cheyne, W. W. Treatment of Tubercular Diseases in their Surgical Aspect. 1900.
Willan. Cutaneous Diseases. Vol. i. 1808.
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Presented by the M. LE MINISTRE DE L'INTÉRIEUR (France):
Recueil des Travaux du Comité Consultatif d'Hygiène Publique de la France. Tome 32. 1904. et Tables Répertoires. 1891-1900.

Presented by the MEDICAL OFFICER TO THE LOCAL GOVERNMENT BOARD:
His 32nd Annual Report, 1902-3. 1904. And Dr. Reginald Farrar's Report on the Reinspection of the Borough of Whitehaven, and on recent Sanitary Administration.

Presented by F. G. O'DONOHOE, L.R.C.P.I. (Castlerea):
Dublin Quarterly Medical Journal to complete series. 16 vols.

Presented by the SUPERINTENDENT OF GOVERNMENT PRINTING (Calcutta):
Scientific Memoirs by Medical Officers. No. 10. 1904.

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Index Catalogue of the Library at Washington. Vol. 9. New Series. 1904.

Presented by Dr. P. J. THOMSON (Brussels):
1re Congrès Périodique International de Gynécologie et d'Obstétrique. Comptes Rendus. Brussels, 1892.

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Bab, H. Die Colostrumbildung. 1904.
Ciechanowski, C. Prostatic Hypertrophy. 1903.
De Giovanni, A. Morfologia del Corpo Humano. 1904.
Galabin. Midwifery. 6th Edition. 1904.
Hurtado, G. Arquitectura del Esqueleto. 1904.
Kocher, Th. Fractures de l'Humerus et du Fémur. 1904.
Koenig. Lehrbuch der speciellen Chirurgie. 8 Aufl. 2 Bd. 1904.
Langworthy and Austen. The Occurrence of Aluminium in Vegetable Products, etc. 1904.
Lees, D. B. Treatment of Some Acute Visceral Inflammations. 1904.
Minnich. Das Kropfherz. 1904.
Moynac, L. Eléments de Pathologie. 3 vols. 8th Edition. 1903.
Muir, E. S. Manual of Materia Medica and Pharmacy. 3rd Edition. 1904.
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Stelwagon. Diseases of the Skin. 3rd Edition. 1904.
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Belfast, Queen's College Calendar. 1904-5.
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Calcutta Health Officer's Report. 1903.
Commissioners in Lunacy 58th Report. 1904.
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Edinburgh Obstetrical Society Transactions. Vol. 28. 1902.
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———— University Calendar. 1904-5.
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St. Mary's Hospital Medical School Calendar. 1904-5.
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Sheffield University College Calendar. 1904-5.
Southern Surgical and Gynaecological Society's Transactions. Vol. 16. 1903.
Therapeutical Society Transactions. Vols. 1 and 2. 1903-4.

Books Needed to Complete Series:

The Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:
American Climatological Transactions. Vols. 1, 4, 5, 6.
———— Dermatological Associations. Transactions. Vols. 5, 7, 8, and 11.
———— Journal of the Medical Sciences. New series, vols. 4, 5, 1842-3; vols. 14, 15, 1847-8; vols. 18-30, 1850; vol. 33, 1857; vol. 46, 1864-5; vol. 59; or any parts of these vols.
———— Journal of Ophthalmology. Vols. 1-9.
———— Laryngological Association. Transactions. Vols. 1-6, 8-9.
———— Medical Association. Transactions 1-28, 30, 31.
———— Otological Society. Transactions. Vol. 3, part 2, 1883.
———— Public Health Association. Transactions. Any vols.
Analyst. Vols. 1-24.
Archiv für Dermatologie und Syphilis. Prior to 1874, 1892, and 1893, and 1903-4.
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———— of Otology. Vols. 1-7, and 20, 21, 22.
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———— für Bakteriologie. Bound volumes prior to 1899.
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Virchow's Archiv. Any vols. prior to 151.
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Willcock. Laws of the Medical Profession. 1836.
Ziemssen's Cyclopaedia. Supplem. vol.

Applications for duplicates from Branches and Divisions forming libraries may be addressed to the Librarian, 429, Strand.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1904.

The eightieth session of the General Medical Council was commenced at the offices of the Council in Oxford Street, London, on Tuesday, November 22nd, 1904.

President's Address.
Changes in Council.

Gentlemen,—During the recess some changes have taken place in the *personnel* of the representatives chosen by the medical authorities to sit on the Council. Dr. Payne, who completed in June last the period of five years for which he was chosen by the University of Oxford, is no longer one of our members. His colleagues on the Council showed their appreciation of his cultured mind and business qualifications by electing him on three of its most important Committees—the Pharmacopoeia, the Executive, and the Examination Committees. As a member of the Pharmacopoeia Committee, his services, in connexion with the formation and arrangement of the excellent library bearing on its work which the Council has now acquired, are greatly valued. I feel that I am in harmony with the sentiments of my colleagues in expressing to Dr. Payne the esteem which we entertained for him as a member of this Council.

The University of Oxford has chosen as its representative Professor Arthur Thomson, of the Chair of Human Anatomy. As a former pupil, and from his association with me for some years in teaching anatomy in the University of Edinburgh, I desire to congratulate Professor Thomson on being selected to represent the ancient University in which he now fills so important a Chair. In the business of this Council abundant opportunities will be afforded for the exercise of the energy and activity of mind which I know that he possesses.

On April 25th of this year His Majesty the King granted a Royal Charter which instituted in the City of Leeds a University of the name and style of the University of Leeds. Power was given to the University to grant and confer degrees and other academic distinctions to and on persons who shall have pursued an approved course of study in the University, and shall have passed the examinations of the University. By an Act of Parliament which obtained the Royal Assent on June 24th, the qualifying examinations in medicine, surgery, and midwifery of the University of Leeds were authorized to be registered under the Medical Acts, as if the University had been a University of the United Kingdom legally qualified at the passing of the Medical Act, 1886, to grant diplomas in medicine and surgery. Also the Council of the University of Leeds was entitled to choose one representative to be a member of the General Medical Council. We have received official information that Dr. A. G. Barrs has been chosen by the Council of the University, and we

Welcome him to-day as the representative of the youngest of the universities of the United Kingdom.

Registration of Students.

I may remind the Council that on May 30th the following resolution was carried:

> That the Lord President of the Privy Council be requested to introduce into Parliament a Bill to confer upon the General Medical Council statutory powers to establish and maintain Registers of Medical and Dental Students, and to impose a fee not exceeding £1 for registration therein.

On the following day I communicated this resolution to the Clerk of the Privy Council.

Mr. Almeric FitzRoy, in a letter dated November 1st, informs me that communications on the subject have been received from the Presidents of the Royal Colleges of Physicians and Surgeons in London, and he suggests that in the circumstances it might be expedient for the Medical Council to confer with the Colleges, with a view to the preparation of a scheme providing for their co-operation towards the desired end, on a basis that would, in some form or other, recognize existing rights. Copies of the correspondence will be laid before the Council, and I have no doubt that the suggestion of the Lord President will receive most careful consideration during the present session. In a subsequent communication Mr. FitzRoy enclosed a copy of a letter from the Vice-Chancellor of the University of Oxford, who requests the Lord President, before the introduction of any Bill intended to give effect to the resolution concerning the registration of medical and dental students, to afford the Council of that University an opportunity of becoming acquainted with its provisions, and of expressing their views thereon.

Medical and Dental Companies.

On the conclusion of the business of the Council on May 31st, I forwarded to the Lord President copies of the judgements in the cases of O'Duffy *v.* Jaffe, and the King (Rowell) *v.* Registrar of Joint Stock Companies, together with the resolutions of the General Medical Council thereon. The Lord President has, in reply, informed us that my letter was referred by him to the Board of Trade for consideration, and he communicates the opinions on the points raised which the Board has received from its legal advisers. The Lord President's letter will appear on our Programme of Business. I may also state that, as bearing on the question of companies carrying on medical and dental practice, Sir John Batty Tuke will submit for consideration a Parliamentary Return obtained at his instance.

The Teaching of Anatomy and Surgery.

Sir Victor Horsley has given notice of an important motion for the appointment of a Committee to inquire into the working of the Anatomy Acts as regards the teaching of anatomy and surgery. A communication bearing on this question has been received from the War Office, which will be brought before the Council, and will, I trust, receive its careful consideration.

The Council's House.

During our sitting in May the question of the disposal of the site in Oxford Street, occupied by the Council's office, was under consideration, as well as the arrangements to be made in connexion with our property in Hanover Square. On both these topics I shall have to make a communication to the Council *in camerâ*.

Reports of Committees.

Several questions of educational interest have been remitted to the Education Committee for consideration and report. Sir John Batty Tuke having resigned the office of Chairman, which he held for a number of years, the Report of the Committee will be presented by Dr. Windle.

The Examination Committee will have before them Reports of the Visitors and Inspector on the Final Examinations of the universities in Scotland, with the observations of the universities thereon; also a report by the Surgical Examiners appointed by the Council on the Final Examination of the Apothecaries' Hall of Ireland. Sir Patrick Heron Watson is now the Chairman of this Committee.

The Pharmacopoeia, Dental Education and Examination, and Public Health Committees will also present reports on matters appertaining to their respective departments, and the Committee on Preliminary Scientific Education and Examination will report on the existing courses of study in the branches of elementary biology.

Penal Cases.

Cases of a penal and disciplinary nature which affect the moral character of several medical practitioners will be the subject of inquiry during the week.

President's Gift.

When by the Medical Act 1862 the General Council became a corporate body, with the right to have and use a common seal, the President, at that time Mr. Joseph Henry Green, was requested (Minutes, May 25th, 1863, p. 154) to propose to the Council a design for the seal. The one selected bore in the centre the figure of Hygeia, the goddess of health, robed and holding the serpent and cup, whilst on one side of the goddess was the device of a roll of parchment and on the other of a mace. The parchment roll may be held to typify our Acts of Parliament, the issue of the successive editions of the *British Pharmacopoeia*, the voluminous reports on educational and other topics which have come within the purview of the Council, and the forty-one published volumes of the Minutes of our proceedings. But the mace, emblematic of ceremonial dignity and of authority, has, up to this time, been no more than a device on paper. I am, desirous, gentlemen, of giving to this emblem objective form, and I ask to be allowed to offer for the acceptance of the Council an example which, in its design, expresses our identification with the great profession of medicine and our place as the administrative body representative of the three divisions of the United Kingdom.

Approaching Resignation of President.

On December 3rd, 1901, you re-elected me President of the Council for a further period of five years, provided that I remained a Member of the Council. Although my appointment as representative of the University of Edinburgh does not expire until December, 1906, I have formed the opinion, after giving the subject mature consideration, that the time has come when it is advisable that I should retire from the Presidentship of the Council. I have to bear in mind that my duties in Edinburgh, as Principal of the University, are of an onerous and absorbing nature, and have the first call on my time and energy. Through your favour and confidence, gentlemen, for which I cannot too strongly express my grateful acknowledgement, I have occupied this Chair during six years; but for some months past I have become conscious of the fact that, having entered upon the stage of life which entitles one to be called a septuagenarian, the vital mechanism cannot be driven at the speed, and with the continuity of effort, which was both possible and pleasurable a few years ago. The business of the Council is ever on the increase, and from the strain to which one is subjected when the Council is sitting, and the bulky correspondence to be attended to during the interval between the sessions, I have come to the conclusion that I ought no longer to retain the Presidential Chair, as I feel that I should not be able to continue to discharge efficiently the duties of the responsible office to the satisfaction either of myself or my colleagues. I have to request you, therefore, gentlemen, to arrange for the appointment of my successor before the Council rises at the end of the present session.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 3RD, 1904.

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GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1904.

REPORTS OF PROCEEDINGS

Tuesday, November 22nd, 1904.

Sir WILLIAM TURNER, K.C.B., President, in the Chair.

Absent Members.

The PRESIDENT intimated that two members of the Council would not be able to be present during the present Session. Mr. Morris had been called to India and was now on his way there, and Mr. Tichborne's condition of health did not permit of his attendance.

New Members.

Mr. ARTHUR THOMSON, M.A., M.D. Edinburgh, Professor of Human Anatomy in the University of Oxford, was introduced as the representative of that University on the Council, and Professor ALFRED GEORGE BARRS, M.D., F.R.C.P., as representative of the University of Leeds.

PRESIDENT'S ADDRESS.

The PRESIDENT then delivered his address, which was published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL, of November 26th, p. 199. The Council adopted a vote of thanks to him.

Dr. PYE SMITH then proposed another vote of thanks. The President had thought fit to mark the termination of his official relations by presenting them with the "glittering bauble" which they saw before them, an emblem of corporate dignity and authority, and one which expressed in its ornaments two admirable facts which were connected closely with the Council. The first was that they were in the service of the common weal from the point of view of medicine. In their hands was placed the honour of the profession and they esteemed it a very responsible duty. But an incidental advantage was also symbolized by this mace, namely, that by necessity they included many members, representatives of the three united Kingdoms, and therefore, as the President had very carefully and truly remarked, the Council formed a close bond of union between the various parts of the Kingdom. Speaking as one of the representatives of England, he felt sure that they would regard the meetings of the Council as most valuable: first, for the traditions which went back to Sir Benjamin Brodie and a long line of distinguished men, and to the President himself, who was at least equal in distinction to all; and secondly, opportunity of meeting one another and working for the good of their common profession. He therefore moved that the best thanks be given to the retiring President, Sir William Turner, for his magnificent gift of the mace which was before them.

Mr. TOMES, in seconding the resolution, said that the future occupiers of the presidential chair would be strengthened in their work by remembering the uniform courtesy and firmness with which Sir William Turner had presided over the Council. The motion was agreed to.

RESULTS OF EXAMINATIONS.

The following yearly tables for 1904 were then received and entered on the minutes:

(*a*) Table showing results of competition held on March 16th, 1904, for Commissions in the Medical Staff of the Royal Navy;

(*b*) Table showing results of competition held in July, 1904, for Commissions in the Army Medical Service.

The following is an analysis of these tables; it has been compiled upon the same lines as those published in June last:

TABLE I.—*Showing the Extent of the Competition for each Service.*

Services.	No. of Examinations.	No. of Vacancies.	No. of Candidates.	Amount of Competition.
Royal Naval Medical Service	1	25	32	5 Candidates for every 3·9 posts.
Royal Army Medical Service	1	30	46	5 ,, ,, ,, 3·3 ,,
Indian Medical Service	0	0	0	
Totals		55	78	

TABLE II*.—*Showing whence the Candidates Received their Qualifications.*

Licensing Body.	Total Number of Candidates.	Proportion of Entire Candidates.
English Colleges and Universities ...	37	48·0 per cent.
Scotch ,, ,, ...	15	19·5 ,,
Irish ,, ,, ...	24	31·2 ,,
Colonial University	1	
Total	77	

TABLE III*.—*Showing the Proportion of the Vacancies Filled by the Candidates of each Country.*

Country.	Number of Successful Candidates.	Proportion of all Vacancies.
England	33	61·1 per cent.
Scotland	8	14·7 ,,
Ireland	12	22·2 ,,
Colonies	1	—
Total	54	

TABLE IV*.—*Showing the Relative Success of the Candidates of each Country in Proportion to the Respective Numbers.*

Country.	Number of Candidates.	Number Successful.	Proportion of Success to Candidates.
England	37	33	5 out of every 5·6 candidates.
Scotland	15	8	,, 9·4 ,,
Ireland	24	12	,, 10·0 ,,
Colonies	1	1	
Totals... ...	77	54	

TABLE V*.—*Showing the Qualifications Held by the Candidates.*

English Candidates.		Scotch Candidates.		Irish Candidates.	
Conjoint Colleges alone...	28	Conjoint Colleges alone	4	Irish Colleges alone	10
Conjoint Colleges and English Degrees ...	3	Scotch Degrees alone	11	Irish Degrees alone	14
Apothecaries' Society alone	1				
English Degrees alone ...	5				
Total	37	Total	15	Total	24

TABLE VI*.—*Showing the Percentage of Candidates who passed the Qualifying Standard, including those who gained Appointments.*

Countries.	Number who Entered.	Number who passed the Standard.	Proportion to the total.
English candidates ...	37	37	100 per cent.
Scotch ,, ...	15	10	66 ,, ,,
Irish ,, ...	24	18	75 ,, ,,
Colonial ,, ...	1	1	—
Totals	77	66	Average percentage 85·7.

*In this table one successful candidate holding both the L.S.A. London and the Conjoint Diploma, Scotland, has been necessarily omitted from the calculations.

TABLE VII.—*Showing the Proportion of those who failed totally among the Candidates of each Country.*

Countries.	Total Number of Candidates.	Number "rejected."	Proportion who failed totally.
English candidates...	37	0	None
Scotch candidates ...	15	5	33·3 per cent.
Irish candidates ...	24	6	25·0 per cent.
Colonial candidates	1	0	—
Totals	77	11	Average percentage 14·3.

TABLE VIII.—*Showing the Relative Success of every Class of Candidate.*

Qualifications.	Number of Candidates.	Number Successful.	Percentage of Success.
English Conjoint Diploma alone ...	28	25	89·2
English Conjoint Diploma and London Degree	2	1	50·0
English Conjoint Diploma and Cambridge Degree	1	1	—
Apothecaries' Society alone	1	1	—
Apothecaries' Society and Scotch Conjoint Board	1	1	—
Cambridge Degree alone	1	1	—
Durham Degree alone	3	3	—
Manchester Degree alone	1	1	—
Scotch Conjoint Colleges alone ...	4	2	50·0
Edinburgh Degree alone	7	4	57·0
Aberdeen Degree alone	3	1	33·3
Glasgow Degree alone	1	1	—
Irish Conjoint Colleges alone	10	3	30·0
Dublin Degree alone	5	4	80·0
Royal Irish University Degree alone	9	5	55·5
Melbourne Degree alone	1	1	—
Totals...	78	55	—

Mr. GEORGE BROWN proposed to refer the Returns to the Examination Committee for consideration and report. He had attended the Annual Meeting of the Fellows and Members, and the Annual Report of the Council of the Royal College of Surgeons of England contained reference to these Returns.

Sir WILLIAM THOMSON remarked that if Mr. Brown would refer the Returns to the Examination Committee without discussing the matter now, he would be satisfied; but if they were now to go into all the details he did not know where it would end.

Mr. GEORGE BROWN thought he should have been allowed to give his reasons, but with a view to prevent a long discussion would content himself by moving that the Returns laid before them, together with an extract from the Report of the Royal College of Surgeons for 1904, be referred to the Examination Committee.

The PRESIDENT pointed out that the Council knew nothing about the extract; it knew about the Returns because they were before it.

Mr. GEORGE BROWN replied that many of the Council knew about the extract. He was content, however, to send it to the Examination Committee and they could give it their attention. He moved that the Returns be sent to the Examination Committee for their consideration and report.

Dr. MCVAIL thought it was out of order for a member to propose to send a document to a Committee of the Council of which the Council knew nothing. He thought Mr. Brown should indicate the nature of the document.

Mr. GEORGE BROWN said he simply referred the Returns to the Council.

Dr. LINDSAY STEVEN asked if it was within the scope of the Council's authority to deal with the Returns.

The PRESIDENT stated that it was through the instrumentality of the late Dr. Parkes that these Returns were presented to the Council and they contained matters very important to Examining Bodies. He answered the question in the affirmative, as the Returns had a certain bearing upon qualifying subjects.

Dr. NORMAN MOORE had not the slightest idea what the bearing of the motion was, or why the Returns should be referred to the Committee; if the resolution were adopted it ought to be explained why.

Dr. BRUCE thought they should go to the Committee, as the Council could not discuss the tables or the figures contained in them.

Dr. MCVAIL thought Dr. Norman Moore should have told the Council what he had in his mind, namely, a document which appeared lately in the BRITISH MEDICAL JOURNAL. That document, which was partially printed, he (Dr. McVail) regarded as an extremely important document and one to which the attention of the Council should be drawn.

Sir William Thomson considered it a waste of time to discuss the matter. It should be referred to the Committee to ascertain their view, and then the Council would have material for discussion and for coming to a decision. He objected to collateral evidence being sent with the reference by the Council.

Sir Patrick Heron Watson thought it desirable if Mr. George Brown had any definite directions that they should now be disclosed.

Sir John Batty Tuke was of opinion that Mr. George Brown was right in abstaining from giving a definite reason on the present occasion as to why he wanted the Returns sent to the Committee.

Mr. George Brown, in reply, said he brought the matter forward because he thought it was the Council's duty to go into the Returns and to make the best use of the information contained in them. The question now had been taken out of his hands, as it had got into the medical press, and they had been quoted by the Royal College of Surgeons as a reason why the problem was to be regarded as superior to anything else of the kind.

Sir William Thomson, on a point of order, submitted that Mr. George Brown was not in a position to open up new topics in his reply, as the mouths of members of Council were now shut. His duty was simply to confine himself to the motion that these Returns be referred to the Examination Committee.

Mr. George Brown remarked that he had been challenged to give his reasons.

The President said he did not think that Mr. George Brown should debate the question at this stage, as he would have an opportunity of doing so when the report of the Committee came before the Council.

The motion, having been seconded by Mr. Jackson, was then put, and 14 voted for, 5 against it.

Dr. McVail enquired if he would be in order in moving that the name of Mr. George Brown be added to the Examination Committee in order to discuss this matter. He thought it highly important that he should be present when the matter was being discussed.

The President pointed out that members of the Examination Committee were nominated by the representatives of the Branch Councils by the Standing Orders. It was something quite new to suggest the addition of any member of Council for a special purpose; but he thought Dr. McVail might gain his point by moving that the Examination Committee be requested to confer with Mr. Brown upon the subject.

Dr. McVail accepted the suggestion, which was seconded by Sir Victor Horsley and agreed to.

Dental Business.

A report from the Executive Committee on the dental business transacted since the last session was received and entered on the minutes.

(1) The report contained a list of names restored to the *Dentists' Register*.
(2) An application from the Dental Board at Victoria which had been referred to the Dental Education and Examination Committee.
(3) An Act passed by the States of Jersey, January, 1904, for the regulation of the registration of dentists, had been referred to the same committee.
(4) A Parliamentary return obtained by Sir John Tuke respecting medical and dental companies had been remitted to the Medical Companies Bill Committee.

"Bona Fide" Medical Students or Pupils.

Mr. Jackson then put the following question, of which he had given notice:

To ask the President whether the Council has indicated what meaning is to be attached to the phrase, "the proper training and instruction of *bona fide* medical students as pupils," occurring in the notice regarding the employment of unqualified persons as assistants or otherwise, issued on November 24th, 1897.

His reason for doing so was, that it had come to his knowledge that in certain districts, in the north of England especially, there were men acting as unqualified assistants who passed as pupils; that was to say, if any objection was taken to them it was said, "He is my pupil." That had been going on for some considerable time. In one particular instance it appeared that a man had been acting as an unqualified assistant under the guise of being a pupil for some 35 years, and he believed had been treating patients under the protection of a medical man.

The President, in reply, said the phrase in question, namely, "the proper training and instruction of *bona fide* medical students as pupils," had reference to the resolution of the Council passed on May 29th, 1893 (Minutes, Vol. XXX, p. 82) regarding the employment of the fifth year of the medical curriculum. The resolution in question was as follows:

The fifth year should be devoted to clinical work at one or more public hospitals or dispensaries, British or Foreign, recognized by any of the medical authorities mentioned in Schedule A of the Medical Act, 1858, provided that of this year six months may be passed as a pupil to a registered practitioner possessing such opportunities of imparting practical knowledge as shall be satisfactory to the medical authorities.

Should the question of the interpretation of the phrase "*bona fide* medical students as pupils" arise in a case of alleged covering, it would rest with the person accused to prove that the assistant employed was in fact a *bona fide* medical student undergoing training and instruction—that was the training instruction in connexion with his five years of medical study. That was the view he entertained regarding the question. Therefore, all such cases as had been referred to of a person acting for 30 years as assistant, or a smaller number of years than 30 years, were excluded; they did not come within the range of the Council's resolution. They were cases of covering; they were not cases of *bona fide* medical students receiving proper training and instruction in the sense of the Council's resolution.

Mr. Jackson wished to say that it did not seem to be generally known.

The President observed that it would be now, as it would go on the minutes and he presumed would be reported.

Executive Committee.

The Council then proceeded with the election of a member for England on the Executive Committee, which resulted in Mr. Young being elected.

Restoration of Names.

The Council then proceeded to receive *in camera* a report from the Executive Committee in regard to certain applications for the restoration to the *Medical Register* of names removed under section 29 of the Medical Act, 1858, and strangers were directed to withdraw.

The Anatomy Acts.

On their re-admission, the President announced that the Council had passed the following resolutions:

(*a*) That a Committee be appointed to enquire into the effect of the provisions of the Anatomy Acts and other Statutes upon the teaching of anatomy and of practical and operative surgery in England and Scotland.
(*b*) That the Committee consist of Sir Wm. Turner, Mr. Arthur Thomson, Dr. MacAlister, Mr. Young, Mr. Tomes, Sir Victor Horsley, Sir Patrick Heron Watson, Dr. Finlay, Dr. Mackay, Sir Charles Ball, Dr. Bennett.

Adjournment.

The Council adjourned at 4 p.m., to allow certain Committees to meet for the completion of their reports.

Wednesday, November 23rd, 1904.

Sir William Turner, K.C.B., President, in the Chair.

Penal Cases.

Case of Mr. C. J. Nally.

It was formally reported to the Council that Mr. Christopher Joseph Nally, L.R.C.P. and S.I., of Crook, co. Durham, had been convicted at Durham Assizes, on July 13th, of unlawfully wounding his child and had been ordered to be imprisoned for six months in the second division. Mr. Richards, who appeared for Mr. Nally, explained the circumstances to the Council and read a statutory declaration made by Mr. Nally. It appeared that Mr. Nally, who suffered from consumption, had blood spitting and high temperature on March 25th. Dr. Campbell, who attended him, prescribed a mixture of opium and ergot. In the afternoon the patient, feeling himself getting delirious, asked his wife to remove any articles out of his way that might be dangerous. He became delirious and did not know what occurred, but was informed that he jumped out of bed and wounded his little child. He had been in failing health and had slept badly for a fortnight. Mr. Justice Grantham, in charging the grand jury, had advised them not to bring in a true bill. The grand jury, however, brought in a true bill, and his solicitor advised Mr. Nally to plead guilty. From a further statement made by Mr. Richards, it appeared that when he appeared in the dock, Mr. Nally, who had been suffering great anguish of mind, was somewhat under the influence of alcohol, and that the judge, in sentencing him to six months' imprisonment, may have considered that it would have a beneficial effect by preventing him from obtaining alcohol or drugs. A petition had been prepared and spontaneously signed by a large number of persons in the district, who felt that it was an unfortunate case and would welcome Dr. Nally back if the Council thought fit to allow him still to continue to practise as a medical man.

Strangers were directed to withdraw, and on their re-admission:

The President announced the decision of the Council as follows:

Mr. Nally: The Council have deliberated on your case, and the conclusion they have come to is this, that they will not direct the Registrar to erase your name from the *Register*.

The Case of Mr. H. S. Revell.

It was formally reported to the Council that Mr. Hugh Stanley

Revell, registered as of Southfields, London, M.R.C.S. Eng., L.C.R.P. Lond., had been convicted on his own confession at the Old Bailey, on June 20th, 1904, on an indictment for obtaining money by false pretences from the Guardians of the Wandsworth and Clapham Union and had been sentenced to a term of imprisonment.

Mr. WINTERBOTHAM, solicitor to the Council, having read the charge and stated the facts,

Dr. REVELL read the following statement:

To the MEMBERS *of the* GENERAL MEDICAL COUNCIL.

SIRS,—In reply to your request to be furnished with an explanatory statement regarding the charges brought against me at the Central Criminal Court on June 23, 1904, of obtaining property from the Wandsworth Guardians by false pretences, and by signing false certificates, I have to say that, acting on the advice of Counsel, I pleaded guilty to the charges; and on full consideration of the facts, and having regard to the fact that I had been on remand for three months, the Recorder passed upon me a sentence which resulted in my release the same day.

My defence to the charges would have been that whatever had happened was through inadvertence and stress of work, at a time when I was in a most anxious state of mind owing to the illness of my wife, and to whose side I was frequently called. . . she being seriously ill at Brighton for several months. I had left the keeping of my books and accounts to others, and when on going over them I discovered the errors and mistakes I weakly allowed them to stand instead of at once reporting the matter.

I had also left the clerical and financial part of my practice in other hands, and through having done so I lost considerable sums; but in this case, as in the other, I did not expose the person answerable for it. I ought to have done so: and this applies also to the errors in the Vaccination Register.

Having once passed the mistakes, I had not afterwards the moral courage to put things straight till it was too late, when I took charge of my books myself; but, as I afterwards learnt, enquiries had then begun.

It was my strong desire to have these facts gone into and proved at the trial, but as I was legally answerable for what had happened as advised by Counsel I listened to their advice and pleaded guilty.

I would add that from the first moment I gave the Guardians every opportunity of examining my books, and although I was advised by certain influential people to go away . . . being told that if I did so no action would be taken against me. . . . I preferred to stand my ground and face the thing through, strong in the feeling that I had morally an answer to my accusers, and that the circumstances would be looked at by them from the moral as distinct from the legal aspect; but to my sorrow, those responsible for the criminal proceedings did not take the view I had hoped for, and to the last moment showed themselves relentless towards me.

I have been heavily punished, and borne the humiliation and degradation of standing in the criminal dock and of spending several weary weeks in confinement awaiting the judge's decision. In addition I have sold my home and my horses and carriage and applied the proceeds to recouping the Guardians the cost they were put to in the prosecution. And I may mention that the Guardians still owe me sixty pounds or seventy pounds for work done for them from December 24, 1903, to the date of my suspension, which more than covers the amount I am accused of having wrongfully charged and received.

I would here like to say that, being in partnership, such sums so received by me were treated as partnership moneys, and dealt with in accordance with the terms of the Articles of Partnership, and I did not therefore receive the whole amount of them.

Since the matter was dealt with by the Recorder so many patients and friends have asked me to resume my practice among them that I determined to do so until your decision had been given in the matter. I therefore sent out a notice to my former patients, telling them I was resuming practice for the present. I enclose some of the letters sent to me on hearing I was resuming practice; such letters were not sought or asked for, but were the spontaneous expression of feeling from patients whom I had attended and amongst whom I had lived and worked, and who know the worst and best of me. Since resuming my practice I have been quite busy amongst my old patients, who extend to me the same consideration and goodwill they did in the past.

I may also mention that when I resumed practice I sent in my resignation as Vice-President of the St. Barnabas Institute at Southfields consisting of about 250 members; and they being fully aware of all that had happened, wished me to remain as Vice-President, and asked me to withdraw my resignation.

I was educated at the University College School, University College, and the Hospital; and it affords me some consolation to know that my reputation there was a high one. There are several Members on your Council who know me well, and, if I may be permitted to do so, I would beg of them, in this my great trouble, to say what they can for me and of me.

I have been in practice in Wandsworth ten years, and until this charge was brought against me my reputation stood high, both as regards my work and personal character; and I beg to submit to you testimonials to that effect from some of the most prominent people in the neighbourhood, who know me and of my work.

My relatives are unable to help me to earn a living, and my profession is the only means I have of earning a livelihood for myself, my wife, and three young children.

I regret most deeply the position in which I have placed myself, but I submit to the Council, with very great respect, that this is the only instance in which I have committed any professional offence and laid myself open to blame, either morally or legally.

I ask the Council to dispassionately consider all the circumstances, and to bear in mind what I have already suffered: and, for the sake of my wife and children, I beg the Council to temper justice with mercy, and not to deprive me of the opportunity of showing, by my future conduct, how much I regret the mistake I have made.

I think it due to the Council and myself to enclose with this statement a copy of a letter dated September 19, 1904, addressed to me by Mr. Charles Dickens, K.C., who was my leading Counsel.

He then called Mr. William Frederick Revell and Mr. A. Tickner to speak as to his character prior to this charge being preferred against him.

Strangers were directed to withdraw. On re-admission:

The PRESIDENT, addressing Mr. Revell, said:

The Council have deliberated on your case, and they have directed the Registrar to erase your name from the *Medical Register*.

REPORT RECEIVED *in Camera*.

Strangers were then again directed to withdraw, in order that the Council might receive a report *in camera*. On their re-admission no announcement was made by the President.

REGISTERS OF MEDICAL AND DENTAL STUDENTS.

The Council then proceeded to consider the following communication from the Privy Council, referred to the General Council by the Executive Committee, respecting the introduction of a Bill into Parliament to establish *Registers of Students*, with regard to which subject the General Council, on May 30th, 1904, passed the following resolution:

That the Lord President of the Privy Council be requested to introduce into Parliament a Bill to confer upon the General Medical Council statutory power to establish and maintain *Registers of Medical and Dental Students* and to impose a fee not exceeding £1 for registration therein.—(Minutes, Vol. XLI, p. 74.)

Privy Council Office,
London, S.W.
1st November, 1904.

Sir,—The Lord President of the Council has had under his consideration the proposal of the General Medical Council, contained in your letter of the 1st of June last, for the establishment of a Register of Medical Students and the imposition of a registration fee not exceeding £1.

Communications on the subject have been received from the Presidents of the Royal Colleges of Physicians and Surgeons (copies of which are enclosed), and I am to suggest that, in the circumstances, it might be expedient for the Medical Council to confer with the Colleges with a view to the preparation of a Scheme providing for their co-operation towards the desired end on a basis that would, in some form or other, recognise existing rights.

I am, Sir,
Your obedient servant,
A. W. FITZROY.

The President of the
General Medical Council.

(i)

(Copy.)

Royal College of Physicians,
London, S.W.
July 9, 1904.

To the Lord President of
His Majesty's Most Honourable Privy Council.

My Lord,—The representative of this College on the General Council of Medical Education and Registration has informed the College that the following Resolution was adopted by that Council during its Session in May last, viz.:—

That the Lord President of the Privy Council be requested to introduce into Parliament a Bill to confer upon the General Medical Council statutory power to establish and maintain Registers of Medical and Dental Students, and to impose a fee not exceeding £1 for registration therein.

In view of this proposal I am desired by the College to approach your Lordship and to beg that when the matter comes under your consideration, before the introduction of any such Bill, an opportunity may be afforded this College of being heard by your Lordship on the proposal.

From its incorporation to the present time, under the authority of its Charter and Statutes, this College has determined the conditions of admission to its professional qualifications, and it claims to have faithfully exercised the powers entrusted to it for the public good. It appears to the College that the effect of the proposed measure, so far as it has been made known, would be to transfer to the said Council an important part of this power which has hitherto been safeguarded in the Medical Acts, and that it would similarly infringe the authority of the Royal College of Surgeons and of the Universities in granting degrees in Medicine. It would, moreover, impose an additional pecuniary charge on persons entering the profession which is believed to be undesirable and unnecessary.

I am, my Lord,
Your Lordship's obedient servant,
W. S. CHURCH,
President.

(ii)

(Copy.)

Royal College of Surgeons of England,
Lincoln's Inn Fields, London, W.C.
10th June, 1904.

Dear Sir,—The Council of this College understand that the General Medical Council have requested the Lord President of the Privy Council to introduce into Parliament a Bill to confer upon the General Medical Council statutory power to establish and maintain Registers of Medical and Dental Students, and to impose a fee not exceeding £1 for registration therein.

The passing of such a Bill, without the introduction of restrictions, would probably enable the General Medical Council to lay down conditions of registration, and thus might transfer to that Body the right, which this College has exercised for more than a century, of selecting the institutions at which the curriculum of professional study may be commenced by candidates for its Diplomas.

The Council of this College are by no means disposed to relinquish this right, which they believe it is expedient in the interests of medical education that they should retain, and I therefore beg, on their behalf, to express the hope that the Privy Council will not proceed to promote a Bill, such as that desired by the General Medical Council, without affording this College the opportunity of expressing its views upon the subject after consultation with the Royal College of Physicians and other institutions similarly affected.

I am, dear Sir,
Yours faithfully,
JOHN TWEEDY,
President.

A. W. Fitzroy, Esq., C.V.O.,
Privy Council Office,
London, S.W.

(iii)

(Copy.) Lincoln College,
Oxford.
November 1, 1904.

My Lord President

General Medical Council Bill.

I am requested by the Council of the University of Oxford to approach your Lordship in this matter, praying that, before the introduction of any Bill intended to give effect to the Resolution concerning the Registration of Medical and Dental Students adopted by the General Medical Council during their Session in May last, the Council of this University may be made acquainted with its provisions, and may be afforded an opportunity of expressing their views thereon.

I am,
My Lord President,
Your Lordship's obedient servant,
W. W. MERRY, D.D.,
Vice-Chancellor of the University of Oxford.

To the Lord President of
His Majesty's Most Honourable Privy Council.

The PRESIDENT desired, before these important communications were discussed, to state how the matter presented itself to him, with the view of directing the discussion. The motion passed on the 30th May last represented the conclusion of the Council on that occasion; the Council, therefore, started from that as its basis. That resolution being put on the minutes, the bodies referred to were perfectly entitled to act as they had. The Council was not asked by the Privy Council to reconsider its resolution of May last; that, it seemed to him, was in no way re-opened. The debate was limited to this: Was it, in the opinion of the Council, desirable to go into a conference with the two colleges on this subject?

Dr. NORMAN MOORE (Royal College of Physicians, London), with a view to testing the feeling of the Council, wished to move that the debate be held *in camera*, as there were certain things on the *in camera* minutes which referred to the subject, and they would be precluded from referring to them if the debate were in public.

The PRESIDENT observed that there was a good deal contained in the *in camera* minutes that was already public, and he did not see why what might be called the financial side of the question should not be referred to.

Dr. MACALISTER (University of Cambridge) moved, Sir VICTOR HORSLEY seconded, and it was resolved:

That the communications be received and entered on the public minutes.

Sir CHRISTOPHER NIXON (Royal University, Ireland) pointed out that there were other licensing bodies involved whose interests were quite on a level with those of the two English Royal Colleges. He believed the two Royal Colleges of Ireland were opposed to the Bill. It was no use having a conference with the English Royal Colleges if they could not elicit at the same time what the views of the other licensing bodies throughout the country were in connexion with the proposed Bill, and he thought the time of the Council would be saved if the discussion were postponed until they had been ascertained.

Sir CHARLES BALL (Royal College of Surgeons, Ireland) went entirely with Sir Christopher Nixon. If the Royal Colleges and Oxford University alone were consulted, many of the other licensing bodies would feel they had been left out when they might have a great deal to say on the subject. He believed the Bill would be opposed by the Royal Colleges of Ireland if it was brought into the House of Commons. It was much simpler, in the first instance, to refer the communications to all the licensing bodies, and if Sir Christopher Nixon moved that, he would have pleasure in seconding it.

Sir JOHN MOORE (Royal College of Physicians, Ireland) moved:

That a copy of the resolution of May 30th, 1904, be sent formally to every licensing body in the United Kingdom, with a request that every such body should favour this Council with their views upon the subject; and that the Lord President of the Privy Council be informed that this Council has placed itself in communication with all the licensing bodies on the subject of the Medical Bill, and will, in due course, inform the Lord President of the result.

He thought it most desirable that every licensing body throughout the United Kingdom should receive a copy of the resolution in order to elicit their opinion upon it. Although he supported the resolution in May, yet the Royal College of Physicians of Ireland, as at present advised, was entirely opposed to it, and he thought there was a great deal of misconception in the minds of the rulers of the College with regard to the scope and effect of the Bill.

Dr. NORMAN MOORE seconded. He assured the Council that the Royal College of Physicians, London, did not wish to put itself in a different position from any other licensing body. It had ascertained that this Council had applied to the Privy Council and it applied for power to be heard before the Privy Council; but that, of course, was not to the exclusion of other licensing bodies or from any desire for any special position.

Sir JOHN BATTY TUKE (Royal College of Physicians, Edinburgh) thought that from the remarks that had already been made the suggested conference would be absolutely futile, as the Council would only get the opinion of bodies which had already made up their mind without, in many instances, knowing the real facts of the case. If there was to be a conference it should consist of representatives, the number in each case to be determined by the Council of all the bodies concerned. This conference should have the facts of the case and all the arguments *pro* and *con* placed before it in order that it might come to a decision. To get anything like a real result there must be a conference of all the licensing bodies.

Dr. MACKAY (University of St. Andrews) ventured to think that the time had not yet come for a conference. The proposal was in a very general form, and a great deal would depend on the exact nature of it. It might be that they should simply ask for power to charge £1 for each individual; it might be that they should ask for power to lay down a standard of preliminary examination; it might be that they would not ask for power to do that, but to lay down conditions relative to preliminary study and the places where it was carried out. All these were matters of the utmost importance. He thought the Council should clearly define what it wanted to do by this Bill, and, having done that, make the matter public: then the Council would have abundant opportunity of hearing what other bodies had to say on the subject, and be in a position to confer with any body interested in the matter. He therefore moved:

That, instead of going into conference with the licensing bodies, a detailed statement be prepared of the proposals of the Council with regard to the establishment of a Students' Register, and the institution of a registration fee.

Sir JOHN BATTY TUKE seconded.

Sir VICTOR HORSLEY quite agreed that, if anything was to be gained by a conference, it must be preceded by a further statement on the part of the Council as to what its position is with regard to medical education, because that was apparently wholly misunderstood by many of the licensing bodies. With regard to the suggested conference the Council was the conference. That was the point which did not seem to have struck the Privy Council, because it had all along proceeded on the line that the licensing bodies were entitled to as much consideration of their opinions as this Council. He had always held that that was fatal to the progress of medical education. It was necessary that the constitution of the Council, secured by the Act of 1886, should be recognised by the central Government. It never had been so recognised, and the letters from Mr. Fitzroy was absolute proof of the fact. The conclusion which was come to last May was the result of a conference by all the representatives of the licensing bodies who met in the Council, with the exception of the two Royal Colleges and the University of Dublin; and now that the matter had assumed practical shape, they understood from some of the representatives of the licensing bodies, for the first time, that their colleges objected. If, as was suggested, the position of the Council was defined, the next question was: Was it desirable that the Council, with its position fairly stated, should go to the conference? The answer was: That it would be desirable if the conference was a genuine conference. The answer to that was easily arrived at by a consideration of the letters from the Royal Colleges. How could the Council confer with people who said they would never relinquish rights which they believed to be traversed by the proposed Bill? By a conference he understood two persons coming to the consideration of a point with open minds and prepared to sink their individual opinion if they were converted by the argument of their opponent; but the Royal Colleges of Physicians and Surgeons distinctly said they would not come to this conference in such a frame of mind. If the Royal Colleges had made the same application to the Privy Council as the University of Oxford, he should have had nothing to say in this debate; but, inasmuch as the position of the Royal Colleges had been thus defined, he thought that such a conference on this principle could only end in failure. If the Council at this session came to that conclusion, there was one remaining duty, and that was the construction of a reply to the Privy Council. He thought the time had come for the Council to place itself in its proper position with regard to the central Government; the time had now come for it to say distinctly to the Privy Council that it was mistaken, that the Council was appointed by Act of Parliament supreme arbiter of medical education and that it should be regarded as such, and that if the Privy Council, when it is considering the proposal of the General Medical Council, saw fit, as it no doubt would, to hear the various licensing bodies on the points raised, it would permit of the General Medical Council to be represented by its legal advisers. A letter of that kind would clear the air of all these disputes, upon which the money of the profession had been and was being spent to no purpose whatever, and it would also clearly define the position of the Council in regard to the direction of medical education and the determination of what was a proper curriculum. In conclusion he hoped, now that they had got rid of side issues and got down to the bed rock of contention, they would have a clear vote on the subject.

The PRESIDENT remarked that they must answer the Lord Presi-

dent's letter, and the question was what was to be the form and substance of the answer.

Dr. MacAlister thought the resolution they were discussing was rather too short for those who did not understand the whole bearing of the question. He suggested a Bill should be drafted containing all the necessary safeguards and a memorandum setting forth the reasons that had led the Council to take action.

Dr. McVail (Crown Representative, Scotland) asked what was to hinder a member from voting on both the resolution and the amendment. He thought the document could not be prepared for this Session, but if it could he thought the statement might go with the resolution. He could not see how Dr. Mackay's motion could be regarded as an amendment to the original motion.

Sir John Moore thought the drafting of a Bill and the drawing up of the proposed memorandum would be greatly facilitated if the opinions of the different licensing bodies were in the hands of the Committee entrusted with the duty. He thought the Corporations would look upon it as a delicate compliment if they were asked at the preliminary stage for their views on the subject. Therefore, he earnestly asked the Council to adopt the resolution, which was colourless and innocent.

The President pointed out that Sir John Moore's motion proposed to send a copy of the resolution to every licensing body, but he had said nothing about sending an answer to the Lord President, and that was fundamental.

Sir John Moore replied that if the resolution were adopted it would be quite easy to draw up an answer to the Lord President, to the effect that the Council had placed itself in communication, not only with the Royal Colleges, but with the licensing bodies throughout the country.

The President thought those words should be added.

Sir Christopher Nixon thought nothing would be gained by having the conference, and he was not quite sure that it would not be wise to say so, because the English colleges were adverse to the Bill, especially the Royal College of Physicians, which had stated specifically that it considered the proposal would impose an additional pecuniary charge on persons entering the profession which was believed to be undesirable and unnecessary. The College of Physicians thus took up an uncompromising hostility to the Bill. There were also the usual declarations about its ancient Charters. If the conference were held the position of the colleges would be different from that of the Universities. It would be extraordinary for the General Medical Council to enter into a conference with the University of Oxford and the Royal Colleges of Physicians and Surgeons in England as to whether a particular Bill was for the advantage of the profession, and to leave out all the other licensing corporations. The Council ought to take this view bearing in mind the opposition which, should he say, had been fomented against the Bill by the two Royal Colleges of England. It was clear the Bill would not be passed because there would be a determined opposition in Parliament to it, and therefore he thought the Council might write to the Privy Council saying that it felt it to be impossible to get the Bill passed. If that course was not adopted, then he suggested that before writing to the Privy Council, the Council should obtain the opinions of the other bodies and let everybody in connexion with the Council be informed what the position of the Council was in regard to the Bill. He sympathised with Sir John Moore, as the representative of the College of Physicians of Ireland, because he knew that Sir John Moore was strongly in favour of the Bill, but, as representing the College of Physicians, he was bound to vote against the Bill and do everything against it. He thought it would be better if the Council took a practical view of the matter. It was really a matter of providing the Council with sufficient funds to carry out an extremely important duty. That was a matter which was patent to everybody. The Medical Council could not continue its work without more funds. If the Council were to promote a much simpler Bill, which would not be likely to excite opposition or inflict any penalty on any existing members of the profession, but simply required that members joining the profession in the future should pay a registration fee of £10 instead of £5, more money than was wanted would be obtained, and that extreme amount of opposition that would be engendered by introducing any Bill which involved the compulsory registration of students would not be encountered. The practical way of dealing with the matter was to go to the Privy Council and say that, from a careful examination of the question, the Council considered that such an amount of opposition would be offered to a Bill involving the compulsory registration of medical students, that it was feared that it would be useless to ask the Government to introduce it, and then inform the Privy Council that there was another suggestion before the Medical Council.

Dr. Norman Moore, in speaking to the amendments, said he must decline, however kindly the spirit, to accept Sir Victor Horsley as the interpreter of the words or the thoughts or the intentions of the Royal College of Physicians. That college would never stand on any ancient Charter or Act of Parliament if it believed it was for the public good that it should give up any privilege so received. It had over and over again given instances of this wise and liberal spirit; for example, when it was proposed to found the University of London, that college decided that however much it might take from its licensing privileges in regard to medicine, it was to the public interest that there should be a University in London, and resolved to take no step in opposition. That public spirit and conduct he was certain the college would follow on any similar occasion. But the college consisted of men well acquainted with medical education, who were entitled to form an opinion upon such subjects. It was unfortunate that two entirely different subjects were mixed up in the discussion. The Council wanted money. It had not enough money to discharge what it believed to be the functions entrusted to it under the said Acts of Parliament. He would not say whether he agreed with this, but it was the general opinion that the Council required more money.

The President remarked that it was more than opinion, it was the fact.

Dr. Norman Moore was quite prepared to take from the President that that was the right way of putting it. As regarded the functions entrusted to the Council by Parliament, it would be agreed that the Council ought to have enough money to discharge its important public functions, and if it had not, some step—the more direct the better—should be taken, to enable it to have that money. His opinion was that as there was that need the right course for the Council to adopt was to ask Parliament to grant the additional money. The Council had to exercise public functions. It had that day been exercising judicial functions of the highest importance, and arriving at decisions of the utmost delicacy, which the Council was better able to arrive at than any other body which could be named by an Act of Parliament. Therefore the Council was entitled to some public money and he thought it ought to state that with the utmost clearness to the Government and ask boldly for the public money.

The President said that had already been done.

Dr. Norman Moore replied that it ought to be done again. The question of the registration of students had opened up a field of the widest controversy. He had the strongest opinion about it himself, and the college he represented had over and over again expressed its opinion. It believed that for its licence it ought to determine the conditions under which a student might begin his education. It was quite willing to agree to a voluntary register for the purpose of convenience, but it absolutely declined to hand over to the Medical Council the power it possessed of saying how a student should study and what he should pass in and so forth. The representative of the Royal College of Surgeons of England had often expressed the same view. Two subjects were before the Council, as to one of which members were absolutely agreed, and as to the other there was the greatest difference, and in order to help them to get the object on which they were agreed they mixed up with it the one on which there was the greatest difference. Surely, to present a united front was the first step towards getting a grant of money. If they mixed up the need of a students' register with their need of money, they rendered it impossible ever to get it until a Government was willing to suppress the views, not only of the Royal Colleges, but of some, if not all, of the Universities, and to force them in that way to give them money. He believed the reason the Council found a difficulty in getting a grant of public money was because it did not state distinctly and clearly the public duties which it performed, which ought to be paid for by the public.

The President pointed out that the Council had stated that.

Dr. Norman Moore thought it should be stated again and again. They could not convince the House of Commons or the Government by a single discussion. There might be some business transacted in the Council which it was difficult to persuade the public was to its advantage, and perhaps that was an element that stood in its way; but he thought that if its judicial functions were clearly set forth in the foreground, the Council would have no difficulty in getting the money. Of course, it might be that the colleges were wrong in the opinions they had formed, but those opinions, he thought, should be accepted by the Council and the controversy dropped now and not taken up again till there was some hope of either the colleges convincing the Council or the Council convincing them.

Dr. Little (Crown Representative, Ireland) was sorry he could not vote for Sir John Moore's resolution. It was that a public body should not establish any inconvenient precedents, but for the Council to refer a resolution to which it had come to the licensing bodies would be to establish a very inconvenient precedent indeed. The licensing bodies were represented on the Council and they should put forward their views. He would never have supported the proposal on the pecuniary ground: he supported it because he thought the ea-

tablishing of a proper register for medical students lay at the very foundation of the reform of medical education.

Dr. A. Thomson (University of Oxford) supported Dr. Mackay's amendment for the reason that it provided the members of Council with the information which was not furnished on the previous occasion. All that members got was the opinions expressed in the debate by the mover and seconder of the motion. Both of those gentlemen took a high hand, if he might so describe it. They both stated that the opposition, if opposition there was to be, was to take place within the House of Commons. That practically meant the Council was not to be furnished with any information as to the way in which effect was to be given to the resolutions of the Council. Members of the Council could only judge by the account which appeared in the public press of the general feeling in regard to this matter. The University he represented rather regarded what had taken place as an excess of zeal on the part of the Council. They were wishful to improve, as far as was in their power, the education of medical students, but they felt that matters relating to general knowledge and preliminary scientific knowledge were best left in the control of the University and that the Council was not the body best qualified to discuss the matter. Of course, they might be wrong in all this. They had no information supplied. He was very gratified to think that there was some intention on the part of the Council now to furnish them with information if Dr. Mackay's amendment were carried. What his University did under the circumstances was to address the letter, of which the Council had received a copy, to the Lord President, and the reply of the Lord President was entirely satisfactory to them. He thought it would further the interests of the education of medical students if the Council would really let them know what it proposed, and not wait until the last moment and then find the Bill was opposed in Parliament. He was very pleased to think that Sir Victor Horsley was prepared to support the amendment that some further information should be given. That was really all they wanted. They would not say they opposed it until they knew the condition of affairs, but the reply from the Lord President had been so satisfactory that so far they had no further concern in the matter.

On the motion of Sir William Thomson the debate was adjourned.

Thursday, November 24th, 1904.

Sir William Turner, K.C.B., President, in the Chair.

Medical Companies Bill Committee.

Moved by Dr. MacAlister, seconded by Dr. Lindsay Steven, and resolved:

That pursuant to a recommendation of the Executive Committee Sir Charles Ball be added to the Medical Companies Bill Committee.

Penal Cases.

The Council then proceeded to the consideration of the charge against a medical man of committing adultery with a patient whom he had been and was attending professionally. On the application of counsel for the medical practitioner the hearing was adjourned to the next session, as it appeared that he only received notice of the charge on November 7th, upon his arrival in Japan. The President stated that it was very desirable that any answer that there was should be lodged with the solicitor to the Council at as early a date as possible.

The Council next proceeded to the consideration of the case of Richard Henry Darwent, registered as of Rokeby, Newington, Hull, Yorks, with the Triple Qualification of Scotland, 1893, who has been summoned to appear before the Council to answer the following charge as formulated by the Council's solicitor:

That you abused your position as a medical man by committing adultery with a patient, namely Mrs Spink, a married woman, whom you had been and were attending professionally, of which adultery you were found guilty by the decree of the Probate, Divorce and Admiralty Division (Divorce) of the High Court of Justice, made on the 29th day of October, 1902, in the cause of Spink *v.* Spink, Benson and Darwent, in which you were one of the co-respondents.

Mr. Muir Mackenzie appeared as legal assessor to the Council, and Mr. Winterbotham appeared as solicitor.

Mr. F. W. Hill, a solicitor, represented Mr. Darwent, who was also present.

Mrs. Spink appeared by Mr. Oldfield, and Mr. Spink was also present.

The President pointed out that there were two members of the Council now present who were not present at the last session in May, and he had been advised by their legal adviser that those two gentlemen, not having heard the case in its earlier stages, should take no part in the deliberations.

The Registrar then read the minutes of the Council of May last, from which it appeared that the case was adjourned in order that steps might be taken to raise the question as to the inadmissibility of Mrs. Spink's statutory declaration in her absence.

The President enquired of Mr. Hill if any prompt steps had been taken.

Mr. Hill replied that they had not, and the reason was one of expense. After every effort had been made by Mr. Darwent and his friends it was found impossible to raise the necessary funds and eventually the case had to be abandoned. He at once communicated with the solicitor of the Council and informed him of the circumstances under which the proposed course had been abandoned.

The Council having refused to further adjourn the hearing on the application of Mr. Hill,

Owing to the absence of Mr. Muir, Mr. Oldfield read the confession of Mrs. Spink, dated January 23rd, 1902, and also of Dr. Darwent, dated February 4th, 1902.

Mr. Hill, on behalf of Dr. Darwent, was bound to admit that adultery had taken place at the time when he was attending the lady as his patient. When the act of adultery took place, Dr. Darwent was a young man about 30 and unmarried. He had made the acquaintance of Mrs. Spink socially and not professionally. It was worthy of notice that Dr. Darwent was not the only co-respondent in the case. The lady left her home with another man and it was not until she had done so that Dr Darwent was named in the petition. He also desired to point out that in the divorce proceedings the claim for damages against Dr. Darwent was withdrawn, which, he submitted to the Council, as men of the world, was a very significant fact. The decree nisi was pronounced as long ago as October 29th, 1902. No complaint from that time to this had been made by Mrs. Spink against Dr Darwent, and it was only in April this year that it was brought to the attention of the Council by Mrs. Spink and supported by a declaration which she had failed to appear to support. It was impossible, therefore, for him to test the statements contained in that declaration, which he was instructed were entirely at variance, except with regard to the actual fact of adultery, to the statement which she had made on oath in the Divorce Court. Dr. Darwent had lost his practice, and the punishment he had sustained in consequence had been severe, and on behalf of Dr. Darwent he asked them to temper justice with mercy.

Strangers were directed to withdraw. On re-admission,

The President announced the finding of the Council as follows:

Mr. Darwent: The Council have deliberated on your case, and having adjudged you guilty of infamous conduct in a professional respect, have directed the Registrar to erase your name from the *Medical Register*.

A "Medical" Certificate Given by a Chemist.

The Registrar then read the following documents:

Communications remitted to the General Council by the Executive Committee from the Medico-Political Committee of the British Medical Association, forwarding a communication from the Education Committee of the Borough of Bootle in regard to the giving of a medical certificate by a local chemist and druggist in the case of a girl unable to attend school:

British Medical Association,
Medico-Political Committee,
Medical Secretary's Office,
429, Strand, W.C.
May 2, 1904.

Dear Sir,—The enclosed letter and certificate having been brought to the notice of the Medico-Political Committee of the Association, I am instructed to forward them to you in order that they may be laid before the General Medical Council.

I am,
Yours faithfully,
J. Smith Whitaker,
Medical Secretary.

H. E. Allen, Esq., LL.B.,
Registrar, General Medical Council.

Borough of Bootle Education Committee,
Elementary Education Department,
Offices: Balliol and King's Roads,
Bootle.
February 18, 1904.

Dear Sir,—In a letter dated the 8th June last, I brought under your notice the case of a document purporting to be a Medical Certificate given by a local Chemist and Druggist in this district. I have now to bring under your notice a similar case in which Mr. Procter Williams, Chemist, carrying on business at 123, Derby Road, Bootle, has filled up a Medical Certificate Form in respect of a child in this district, which form I enclose.

Yours faithfully,
J. W. Wilson,
Sec. for Elem. Educ.

The General Secretary,
British Medical Association.

The Executive Committee on May 24th, 1904, resolved:

"That the attention of the Medico-Political Committee of the British Medical Association be called to Section 37 of the Medical Act,

1858; that they be informed that on the face of it the certificate forwarded to the Council appears to be invalid under that section, and that the Council has no jurisdiction over chemists who give invalid certificates."

The following further communication had been received from the Medico-Political Committee of the British Medical Association:

Medical Secretary's Office,
429, Strand, W.C.
July 5th, 1904.

Sir,—The Medico-Political Committee of the British Medical Association has carefully considered the Resolution of the Executive Committee of the General Medical Council, communicated by the Registrar of the Council on May 25th, concerning the matter of a medical certificate of unfitness to attend school which was given by a chemist at Bootle, referred by the Education Committee of the Borough of Bootle to the British Medical Association, and by that Body brought under the notice of the General Medical Council.

I am instructed to state that the Medico-Political Committee, in bringing the certificate to the notice of the General Medical Council, was well aware that such a certificate is invalid under Section 37 of the Medical Act, 1858.

The mere statement, however, of this fact does not appear to the Medico-Political Committee to constitute a sufficient recognition by the General Medical Council in this case of the duties to the public as well as to the medical profession which are entrusted under the Medical Acts to the Council.

It appears to the Committee that the issue of such a certificate by a person not registered as a medical practitioner is an infringement of those privileges of registered medical practitioners which Parliament, by the Medical Acts, created for the protection of the public, and that it is a fraud upon the public of a kind which the Council may reasonably be expected to use every effort to have punished and thereby prevent its repetition.

The reply of the Executive Committee appears to the Medico-Political Committee of the British Medical Association to indicate a failure to appreciate the true position of the question submitted for the consideration of the General Medical Council.

I am therefore instructed to express the hope that the subject of this letter may receive the attention of the Council at its next Session.

I am, Sir,
Your obedient servant,
J. Smith Whitaker,
Medical Secretary.

Sir William Turner, K.C.B., M.B., President,
General Medical Council.

The President stated that this correspondence had been laid before the Council by the Executive Committee.

Sir Victor Horsley said, unfortunately, nothing actively could be done by the Council now in this matter for the reason that the person who issued these false certificates had left Bootle and could not be found by the police. The information was laid before the Medico-Political Committee of the Association. The object the Committee had in bringing forward this application from the municipal body was to obtain from this Council an expression of the opinion of its legal adviser as to what steps could be taken to protect the public and the profession in this matter. The issuing of certificates which purported to be medical certificates was a very serious question, and it was difficult to prosecute and punish offenders. As the Council's legal adviser was present he thought it would be a suitable opportunity to ask him whether the privilege to the registered medical practitioner in Section 37 of that Act could not be protected by steps similar to those which the Council took in the case of State medicine, in which this Council approached the Attorney-General. He wished to know whether, supposing a person committed this offence, the fiat of the Attorney-General could be obtained and the persons convicted of issuing these false certificates.

Dr. Bruce sympathised entirely with the Committee in bringing the matter forward. He pointed out that there was nothing in the Education Act which required a certificate. He knew that was so in the case of Scotland, and he thought the same thing applied to England. School Boards asked for the certificates, and it was for the convenience of the School Board that these were given.

Sir Victor Horsley pointed out that that was not the question they were discussing. What they were discussing was the effect of an unregistered person issuing a medical certificate.

The President asked the Chairman of the Business Committee to state what were the views of the Executive Committee. The Executive Committee had referred Mr. Smith Whitaker, the Medical Secretary of the British Medical Association, to Section 37 of the Medical Act.

Sir Victor Horsley said he was sorry to interrupt, but he felt very warmly about this resolution of the Executive Committee. He considered it was not a courteous reply to the Medico-Political Committee of the Association for this reason: the members of the Committee sent this matter to the Council for a deliberate legal expression of opinion upon the subject, and they were told to look at Section 37 of the Medical Act of 1858. It was as to a breach of that section that they were complaining. Then they were "informed that on the face of it the certificate forwarded to the Council appears to be invalid under that section." That was the reason why they sent it; it was not usual to tell people that what they complained of appeared to be true—at least, it was not usual if you wished to be courteous.

The President pointed out that Sir Victor Horsley was attacking the Executive Committee and therefore he thought they should have an opportunity of hearing from the Chairman of that Committee what was in the minds of that Committee and then Sir Victor Horsley might comment upon it afterwards.

Sir Victor Horsley replied that he had asked for an expression from Mr. Muir Mackenzie, the legal adviser, on a legal point. He was quite ready to go into the other point afterwards.

The President called upon Dr. MacAlister, the Chairman of the Business Committee.

Dr. MacAlister said that when the matter came before the Executive Committee it did not act without legal advice. It was pointed out to the Committee that Section 37 apparently conferred upon medical practitioners the power of granting what were called valid certificates, but no penalty attached to the granting of an invalid certificate and no offence was created by the granting of an invalid certificate. Therefore the Executive Committee was informed as no offence of which they could take cognizance had been committed, it did not come within their jurisdiction to take any action in the matter. They expressed as briefly as they could what they thought, and that was sent to the Medico-Political Committee. That Committee did not consider the answer sufficient, but the Executive Committee thought it could not properly enter into any controversy with the Medico-Political Committee, and therefore put the matter before the Council for consideration.

The President wished to say that in the mind of the Executive Committee the question never arose of a want of courtesy.

Sir Victor Horsley stated that he quite accepted that. The resolution as it stood was commented upon very severely in the Committee and he could not help sympathising with the members. It was for that reason that he brought the matter before the Council. The Chairman of the Business Committee had not touched upon the point. He was perfectly well aware that the certificate was not as they considered valid, but it was handed to the Education Committee and the Municipal Body of Bootle as a valid certificate, and that that was a fraud upon the public. Under those circumstances he wished to ask the legal assessor whether it would be possible to protect the privileges of registered medical practitioners in any way.

Sir Christopher Nixon, as a member of the Executive Committee, thought that what was meant by a medical certificate was a certificate signed by a medical practitioner or a registered medical practitioner. A certificate which stated that a child was suffering from sore throat and could not attend school could not be regarded as a medical certificate or as in any way infringing the rights of a medical practitioner. It was not a medical certificate; it was an invalid certificate. That was really the point which influenced him in going with the other members of the Executive Committee. He did not think there was the slightest idea of treating the members of the British Medical Association with the slightest discourtesy; in fact, he would have been rather glad if the Executive Committee could have met their views, but it was impossible, entertaining the views that he did, that he could have voted otherwise.

Dr. Windle asked what the terms of the certificate were.

The President replied that the certificate had been returned to the Bootle Union.

Dr. MacAlister stated that the certificate purported to be signed by a chemist and druggist.

Dr. Windle thought it would have been a serious case if the chemist had signed the certificate as a medical man or had made himself out to be a medical man on the certificate, but it was only an opinion expressed by a lay person as to the condition of a sick child, which might or might not be accepted by the members of the Committee of the Education Authority.

Sir William Thomson said he quite understood the case in which the parents of a child gave a certificate that the child had a sore throat, but this case was more serious than that. This child was evidently brought to a third person to give an opinion, which was presumed to be a skilled opinion as to the child's sickness, and this person was a chemist and a druggist.

Dr. Lindsay Steven agreed with the Executive Committee in thinking that the Council had no *locus standi* in the matter at all.

Mr. Jackson thought it was clear that though the person did not say he was a medical man, the inference intended to be drawn was that he was a medical man.

Sir John Moore pointed out that Section 37 of the Act referred to medical practitioners only, and it imposed a disability on those members of the medical profession who were not registered under the Act.

Dr. MacAlister said that his recollection was that the certificate in question did not purport to be given by a medical man or to be a medical certificate. He thought it was headed as a memorandum from the chemist and druggist business.

Dr. Caton thought there was no definite provision to meet such a state of things as was being discussed by the Council.

The President remarked that there was no motion before the Council.

Sir Victor Horsley said that he began by asking the question of their legal assessor as to whether there was any legal right by means of which they could be protected in this matter. He had heard a lot of amateur opinions but no legal ones. He wanted the profession to be informed whether they could or could not be protected.

The President did not know whether Mr. Muir Mackenzie was prepared to give an opinion offhand.

Sir Victor Horsley said that he should then have great pleasure in putting the request into writing.

The President remarked that Mr. Muir Mackenzie had not been asked to look into the matter, and until he had looked into the Medical Acts and the Education Acts he could not give an opinion

Sir Victor Horsley stated that the Education Acts had nothing to do with the matter.

The President said he should not like to press Mr. Muir Mackenzie to give an opinion offhand.

Dr. Pye Smith thought it was a question the Council could settle. The certificates were required by the Education Authorities, over whom they had no power or control.

Mr. Muir Mackenzie said he perfectly understood what the opinion required of him was, and as he had to attend at the Council to-morrow he should be glad if he might give his answer then in writing.

Registers of Medical and Dental Students.

The Council resumed the adjourned debate.

On the motion proposed by Sir John W. Moore and seconded by Dr. Norman Moore, together with the amendment proposed by Dr. Mackay and seconded by Sir John Batty Tuke, which, subject to the permission of the Council, was altered so as to read as follows :

(1) That the Lord President of the Privy Council be informed that, in the opinion of the Medical Council, it would not be expedient at the present stage to confer with the Royal Colleges on the subject of the resolution of May 30th, 1904.

(2) That before proceeding further in the matter a memorandum be prepared, setting forth the grounds on which the Council is acting in reference to the resolution, and giving the specific proposals which the Council thinks should be embodied in the contemplated Bill.

Sir William Thomson said that the matter had come before the Council in connection with the question of finance by means of a memorandum signed by the President. He thought the Council was in a very bad financial state, especially its prospective finance, and he had heard that day that in seven or eight years' time, after all the economies which were suggested last session, it would have come to the end of its floating assets. In a previous session two suggestions were made for securing money. One which had the approval of the Council was that the sum payable by a qualified medical man for seeking entrance to the Register should be raised to £10. The matter was then remitted to the Financial Relations Committee and the Committee adopted this suggestion, except that they thought the increase should only be £2, that was to say, an increase to £7 instead of £10. Then another suggestion was made as to whether enough money might not be got by increasing the registration fee of students, and it was upon that particular suggestion that the matter was again before them. The English Colleges had taken umbrage at that suggestion. He was sorry, because both those bodies had themselves recognized always the importance of registration, but the present suggestion had evidently aroused their suspicion of some deep design on the part of the Council to seize control absolutely. Speaking for himself and for other members of the Council, he could say that they had no such desire ; that their principal object was to get the guinea and not to inflict any hardships on the colleges or to wound their susceptibilities ; it was a matter of money. It was now proposed by Sir John Moore that the matter should go back to the colleges for further consideration, and he rather agreed with Sir Victor Horsley's view that the present debate was really a conference. The Council was made up of the representatives of the Universities concerned in medical education and he did not think that a conclusion could be more quickly arrived at than by the Council. What was it that was proposed ? Were they to have an actual conversation and speech-making with representatives of all the different bodies besides the representatives that were present and try to convert them ? That obviously would be an exceedingly inconvenient method and, therefore, if they were to have the referendum, he would be rather inclined to adopt the course suggested by Dr. Mackay on the condition that having approved of the case in the Council the bodies concerned might have an opportunity of considering it, or that the representatives of the licensing bodies should have a conference with the bodies they represented and discussed the matter. He was surprised to hear that quite lately the Royal College of Physicians in Ireland had passed a resolution—Sir John Moore being in the minority of one—disapproving of the proposal to register the student at the fee of a guinea. He felt satisfied that if they could have had a little conversation over the matter the result might have been different, because he would recall the fact that the original proposal was passed by every representative of the licensing bodies on the Council with the exception of the two English colleges, and Sir John Moore, following his own conviction, voted on that occasion, although his vote was subsequently disapproved of by his College. Matters seemed to be coming to a deadlock. Sir John Batty Tuke had suggested to him that as the colleges had accepted some of their proposals with regard to preliminary education, and approved of the matter of the curriculum, whether it would not now be possible to revert to the condition that existed before, and let students register directly with the Council. He did not bind himself to that suggestion, but he thought it would be well if the Council could consider by means of a Committee whether an agreement could not be reached which would end in the Council retaining its position in regard to the general questions of education. But if the licensing bodies were continually coming into conflict with the Council, disputing its powers, thus leading to recriminations in the Council and outside, then he thought a very bad impression would in the end be created outside. Every member was loyal to the body that had given him professional birth and wished to see the rights and powers of that body maintained, but he could not shut out from his mind that there was, and had been for years, a very strong feeling abroad that the real solution of all these difficulties could be found in a single portal. What would then become of the licensing bodies and their rights and their charters ? Universities and corporations would have to suffer. Being affiliated with corporations and universities, and being anxious that they in no sense should be damaged, and that their reputation should not suffer, and their existence should not be imperilled, he was anxious and the Council was anxious that some means should be found by which they could get along perhaps a little more smoothly than in the past, the colleges recognizing the superior rights of the Council and always remembering that the Council had no desire whatever to interfere with any charter or privilege or right that these bodies at present held.

Mr. George Brown contended that nothing had been stated in the discussion which tended to invalidate the resolution of May 30th, and nothing, so far as he was aware, had been laid before the Council which would justify it in taking a step backwards by reversing its former decision arrived at with full knowledge of all the facts. The Royal Colleges were crying out before they were hurt. The Bill would protect all their rights and privileges, but until the Bill was before the Council he maintained that the discussion was not *ad rem.*

Mr. Jackson thought the matter divided itself into two considerations, one money and the other registration. Would it be impossible to let the different bodies go on still registering, and some arrangement be made by which the Council would get the fee.

Dr. Little pointed out to Mr. George Brown that it was for the Privy Council to initiate the movement, and its suggestion of a conference with other licensing bodies was evidence that it was not going to do so. He thought Dr. Mackay's amendment would secure the best results.

The President, in reply to Dr. McVail, said the amendment might be considered as one, or divided into two as the Council should decide.

Dr. McVail would vote against the first part of it. He could not see why the Council should not confer with the two Colleges, and he was not going to assume that they would pursue any particular course. As a subordinate body, it was the Council's duty to carry out the desire of the Privy Council. How could they ask the Privy Council to anything for them if they declined by a specific resolution to carry out its suggestion

Dr. MacAlister would support the amendment, as he thought it the right course to pursue. The sole question was, was it or was it not expedient to confer at the present stage He thought it was not; first, because the Royal Colleges were the only bodies face to face with the Council ; and, secondly, they had not as a Council agreed upon a basis of conference. Until they had formally drawn up and agreed upon the reasons for the proposals which they made, and the specific clause which they thought ought to be in the Bill, they were not ready to confer with anybody or give a definite answer to the Privy Council.

Sir John Moore agreed with Dr. McVail. It was in the nature of a rebuff to go to the Privy Council and say that a conference was not expedient, although it was qualified by the addition of the words, "at the present stage." He was thoroughly in favour of drawing up a memorandum, as what the licensing bodies wanted was information with regard to the resolution of May 30th, 1904. He asked Dr. Mackay whether he could not knock the original resolution and the amendment into one which would involve the drawing up

of a memorandum giving the specific proposals which the Council proposed to embody in the Bill which would give the licensing bodies the information they sought.

Dr. MacAlister pointed out that the difficulty was that the memorandum must be approved by the Council.

Dr. Mackay would gladly accept the suggestion, but the Council might resolve to take no further action in the matter and drop the whole thing. It was only if they generally agreed upon a suitable course of action that they could pass on their plan to the licensing bodies.

The amendment was then put, when 15 voted for and 4 against.

At Dr. McVail's request the names and numbers were taken down, when 17 voted for, 5 against. 8 did not vote and 3 were absent.

The President then stated that the amendment now became the substantive motion and inquired if any member desired to move an amendment.

Sir Christopher Nixon moved:

That a reply be sent to the Privy Council stating that this Council now sees great difficulties from opposition by certain Licensing Bodies in asking the Lord President to introduce a Bill giving to the General Medical Council statutory power to establish and maintain Registers of Medical and Dental Students and to impose a fee not exceeding £1 for registration therein. The General Medical Council will be prepared at the proper time to offer an alternative proposition which it hopes may be approved of by the Lord President.

The entire object of his amendment was that the Council should take no step in connexion with the registration of medical students; he thought they ought to drop it altogether. Even Sir Victor Horsley's proposal of getting a small fee each year from members of the profession would be a better and more practicable solution than the compulsory registration of medical students. He strongly urged the Council not to commit itself.

The President observed that the Council committed itself last May, and now Sir Christopher Nixon proposed that it should go back upon that.

Sir Christopher Nixon said what they did last May was to present a draft Bill.

The President replied that there was no draft Bill framed to his knowledge.

Sir Christopher Nixon was talking of the Bill which the Council had absolutely drafted and was committed to, which contained two important clauses, one asking for power to raise the registration fee from £5 to £10, and the second asking for power to establish a register for students, which was to be compulsory, and to charge £1 for each registration. If the Council did not absolutely draft that Bill it expressed its approval of it. In conclusion, he urged the Council to adopt the method of dealing with the matter provided in his amendment.

Mr. Arthur Thomson, having supported the original motion, asked if he would be acting inconsistently in supporting the amendment, which he desired to do; and whether if a resolution passed at one meeting of the Council could be rescinded without notice?

The President answered the first question in the negative. The second question was undoubtedly of very great importance, namely, whether it was not practically an amendment to rescind the resolution of May 30th, 1904, and for which Sir Christopher Nixon voted.

Sir Christopher Nixon said he had learnt more since then.

Dr. Bruce seconded the amendment because they had learnt a good deal more since then, and it was now abundantly plain the Council could not get the money it wanted in the way proposed. In the interests of peace he thought it would be as well to drop this weapon which they had taken up and were supposed to have forged in the interests of their friends.

Sir Victor Horsley opposed the suggestion to tax the general practitioner in the interests of the licensing bodies; on behalf of the practitioner he protested against anything of the kind.

Dr. Lindsay Steven said that a great deal Sir Christopher had said appealed to him strongly. He thought the Council might let the matter drop and try to get the money it wanted in another way. If the Royal Colleges could give some reason to suppose that they would rescind the rule which did not require students to be registered, they might be able to work harmoniously together.

Dr. Norman Moore supported the amendment. This plan of taxing medical students and giving them absolutely nothing in return was impossible. The Council had not the power to do it and it would never get the power. A great deal had been said as to the value of the register, but he had been totally unable to perceive it. It was always interesting to have a record of anything, and in that respect it was interesting; but how did it help them? Every licensing body was bound to see that a student had studied the required time. Then, supposing the Council was empowered by Parliament to charge a fee, it would involve it in a further series of judicial investigations. The Council's course was perfectly plain. had only to convince the public that it was doing useful work in all the days of its meetings, and Parliament would be perfectly willing to give it more money. The reason the public, Parliament and the Government were unwilling to give it more money was that they doubted whether it was acting wisely.

The President inquired where the evidence of that was.

Dr. Norman Moore replied that his evidence was contained in the volumes of the minutes of the Council. They had only to read them to see how the Council spent its time on matters that had not been referred to it by Parliament, how it tried to extend its supposed power in every possible direction, and how, in fact, in regard to this registration of students (all qualifying bodies having agreed to help it in keeping a record), it had got into difficulties by trying to extend its power in a direction in which it had no right to extend it. So useful were the powers committed to the Council by Parliament that he should be anxious to obtain for it the proper means of carrying them out.

In reply to Mr. George Brown, who asked whether the Royal College of Physicians had a register, Dr. Moore said that students had to prove that they had had the necessary preliminary examination in arts. If they produced evidence that they were registered at the General Medical Council the college would receive that; if they produced the original certificates that satisfied the Council's Registrar, that would satisfy the Royal College of Physicians.

Sir John Batty Tuke said he would not have spoken but for the concluding remarks of Dr. Norman Moore. He denied the influence of the General Medical Council and said that the evidence of the want of confidence on the part of the public in the Council was contained in the 40 volumes of minutes. He recollected what medical education was more than 50 years ago, and when he compared the condition of medical education and the condition of the profession at the present time with what it was then, he could honestly say he believed it had been mainly improved owing to the influence of the Council. Such a result was highly creditable to the Council. It had been working on a permissive law all through; it had never had the power to enforce its decisions. By the adroit use of gentle and continuous pressure upon the various bodies it had brought them all into line. He would not go into the question of how that line was broken, but he believed it was the fact that the Council possessed the confidence of the public and of the profession except in places where influences were brought to bear which he did not think were justified by facts.

Dr. Mackay said that the object of the register was to ensure that every medical student had gone through a sufficient course of education, and it was in the interest of medical education that this work was being carried on. It was in order that the good work of the Council in the past should be maintained in the future that they desired that the register should be established. It would be established, notwithstanding all that Dr. Norman Moore had said to the contrary. He thought it would not be wise to drop the proposal until they had all the facts before them and had come to the conclusion that it was not possible to carry it out. If they came to that conclusion he would deeply regret it, but until they had convinced themselves that that course had to be taken, he thought they should go forward in their efforts to carry out the resolution arrived at last May.

Sir John Moore knew that the amendment represented the views of his college, and therefore he would vote for it. The temper of the Royal College of Physicians of Ireland at the present moment was at fever heat in regard to this subject.

Dr. McVail thought that compulsory registration was not coming in the immediate future, and that the best thing that could happen was that the motion of last May should be practically rescinded by carrying the amendment. The question of registration and the financial question could be settled separately.

Sir Christopher Nixon, in reply, was sorry that Dr. Norman Moore in the heat of a debate had used words in regard to the acts of the Council which were scarcely justified. He did not think there was any justification for pointing to their minutes as evidence of wasted time and expenditure.

The amendment was then put and carried. At the request of Sir Victor Horsley the names and numbers were taken down, when it appeared that 15 voted for and 10 against. 4 did not vote and 4 were absent.

The President declared the amendment carried and it became the substantive motion.

Sir Victor Horsley said if the Council chose to stultify itself he must take the opportunity on behalf of those he represented to repudiate the stultification.

Dr. Lindsay Steven asked if Sir Victor was in order in saying that members of the Council were stultifying themselves.

Sir Victor Horsley was not applying his remarks to individual members of the Council, but to the Council as a whole. He wished to explain why he dissociated himself from the vote which the Council

had come to. The Council had always considered since 1864 that the registration of medical students, if properly conducted, was a matter of primary importance, and gave security to the Council and to the profession. What would the Privy Council think when they received this resolution which had just been passed? He supposed they would imagine that the General Medical Council had changed its mind on a matter which it formerly regarded as of essential and primary importance. He could not see how the Privy Council would listen with any respect to anything else that the General Medical Council sent them. Dr. Lindsay Steven had said that the voluntary system of registration of students was going on perfectly well up to the present time; it had been extracted from Dr. Norman Moore that that system had absolutely broken down.

Dr. Norman Moore: No.

Sir Victor Horsley (continuing): They knew it had broken down. What became of that which the Council had considered for 30 years to be a matter of importance. The waste-paper basket was the destination of the resolution of the Council as to the registration of students. He was sorry if Dr. Lindsay Steven had thought his use of the word "stultify" was too strong; he himself thought it was not too strong, and he was perfectly certain it would not be so considered by the medical profession. He knew very well what the opinion of the profession would be on the vote which had just been taken. It was a vote which he did not propose should be rescinded at a moment's notice, as the vote of May 30th had been. The only thing he could do was to dissociate himself as far as possible from having taken part in such a vote.

Dr. Lindsay Steven wished also to dissociate himself from the vote in the same way as Sir Victor Horsley. He recognised that two elements had been introduced into the debate, one the financial element and the other the question of the establishment of registration of students The Council had all along held that it was of great importance that a students' register should be established. He proposed that the Council should be as strong in their efforts to establish a students' register as ever, but in proposing to the Privy Council that they should have a Bill, he thought they should omit altogether the point of registration. He was perfectly certain that the whole profession would be at one with them if they stated the grounds clearly and persisted in their point.

Mr. George Brown also protested against the passing of the resolution and suggested that it be referred back to the executive Committee.

The President pointed out that they were bound to give an answer to the Lord President and some of the speakers had been wandering from that, which was the primary point.

Sir Christopher Nixon, in replying, said that no man so strongly advocated his own views in the Council as Sir Victor Horsley, and he was quite right in doing so, and after hearing his argument on the question of registration, one would think that the Council had given it up altogether. He thought the reason why Sir Victor Horsley attached such extreme importance to the question of compulsory registration was to gain a little more than the mere registration of students. He thought he wanted to get the power of controlling absolutely the conditions under which a student entered upon his second year of study. If the question of compulsory registration was introduced and persisted in, it would wreck any chances the Council had of getting financial aid; but he maintained that the system of registration which the Council had adopted was carrying out in full its views in regard to students' registration as any of the resolutions that had been proposed and had not been carried.

The President then put Sir Christopher Nixon's motion to the meeting, when 14 voted in favour of it and 10 against.

He declared the motion carried.

Sir Victor Horsley asked that the names and numbers might be taken, when it was found that 14 voted for, 10 against. 5 did not vote and 4 were absent.

Preliminary Science and the Fifth Year.

Dr. Lindsay Steven then brought forward the following resolution:—

That it be remitted to the Examination and Education Committees to consider and report to the next session of Council whether the adoption by the Council of one or other or both of the following resolutions would not help to secure the attainment of the object the Council had in view in instituting the five years' curriculum, viz.:—

(1) That the Preliminary Scientific Examination in Physics, Biology, and Chemistry should be passed before the Student begins the qualifying study of Anatomy and Physiology;

(2) That before being admitted to the Final Examination the Student should produce evidence that he has devoted the last year of his curriculum exclusively to Practical and Clinical work and study.

He said that so far as he had been able to ascertain the five years' curriculum was made a requirement of the Council on the 29th May, 1893. That requirement was arrived at after long deliberation and debate and after consultations with all the licensing bodies. There were motions on the minutes of the Council in favour of the five years' curriculum going back as far as 1885, so that at least for eight years before it became a requirement the Council had been deliberating on it. The object of the Council was that, if possible, the fifth year should be devoted to practical and clinical work. Had that object which the Council had in view ever been fully attained? He thought it was the general experience throughout the country that the fifth year had always been encroached upon and that the object for which the fifth year was added had not really been attained. No one could have listened to the very important debates that took place in the Council's last session upon the subject of the examinations in preliminary science without being impressed with the fact that the medical curriculum was very heavily burdened indeed, particularly so in the earlier years. He found that certain matters had already been before the Council in this connexion. The time had not yet come to propose that another year should be added to the curriculum and therefore he had formulated the two propositions which he had submitted. He found that the first had been proposed in the Council before, and that from the year 1901 it was a regulation of the Council that the subjects of the preliminary examination should, if possible, be passed before the second year of clinical study. Dr. Bruce and Sir Charles Ball brought forward motions of a similar character in order to ensure that these particular studies should be got out of the way before the proper medical studies were commenced. The Royal Colleges in England had a regulation that no anatomy or physiology should be counted as part of the curriculum until the preliminary scientific subjects had been passed. With regard to his second proposition, he could not find that it had ever been made to the Council before, but certainly if a student were required to bring evidence that he had exclusively devoted the last year of his study to practical and clinical work they could then make certain that the object of the five years' curriculum had been attained. He had submitted his views to an old member of the Council, Sir William Gairdner, and he asked permission of the President to read a few passages from Sir William Gairdner's letter as part of his argument:

You will find, I think, in the minutes of the General Medical Council, that some years ago Dr. Bruce and Mr. Ball proposed separate motions, either or both of which I supported, to deal with the difficulty of the preliminary examination by interposing another examination before commencing the regular course, but this would not, I think, avert or cure wholly the evil that you and I have in view as regards the five years, that is, the shunting of the practical departments, especially medicine, through the overgrowth of the scientific, especially physiology. There is no doubt that the latter have managed among them to spoil the fifth year for practical and clinical purposes, and to absorb it all, contrary to the original intention, into the scientific. The only way of saving the fifth year now, I think, would be to insist that whether it is called fifth, sixth, or seventh, all the examinations, except the clinical, should have been passed before it is allowed to be counted; but whether this is practicable or not that is for you and the General Medical Council to say.

His second proposition would be more effective in gaining the desired end, but seeing that the first proposition had already been on a number of occasions before the Council, and considering he was merely asking to remit the matter to the Examination and Education Committee to consider, he thought it right to bring forward the resolution which he had submitted.

Dr. McCall Anderson formally seconded the resolution, and the Council then adjourned.

Friday, November 25th, 1904.

Sir William Turner, President, in the Chair.

The President, the minutes of yesterday's meeting having been read, before putting the motion confirming them, called the attention of the Council to the following communication which had been received from the Pharmaceutical Society in regard to the granting of a medical certificate by a local chemist and druggist.

17, Bloomsbury Square.
November 25th, 1904.

Dear Mr. Allen,—I notice in the reports of the proceedings of the General Medical Council that a discussion took place in regard to the action of a Mr. Procter Williams, of 123, Derby Road, Bootle, who had filled up a Medical Certificate Form in respect of a child in the Bootle district, certifying that the child was unable to attend school. In the report above alluded to, I find that Mr. Williams is described as a chemist and druggist, but, on referring to my official register, I do not find that name appearing thereon. Would you be so good as to communicate to the Council to-day the fact that the person concerning whom complaint is made is not a person who is entitled to the description of chemist and druggist?

I am,
Yours faithfully,
Richard Fremridge,
Secretary and Registrar.

H. E. Allen, Esq.,
The Registrar, General Medical Council.

Sir Victor Horsley explained that he had not gone into this point because he thought it was not relevant to the issue.

The Registrar was directed to append the letter to the minutes, which were then approved.

THE EFFECT OF SECTION XXXVII OF THE *Medical Act*, 1858.

At a later stage of the proceedings Mr. Muir Mackenzie submitted the following opinion on the subject:

OPINION.

The effect of Section 37 of the Medical Act, 1858, is in my opinion as follows:—

It imposes a statutory duty and obligation on any public body which by Statute is required in specified cases to be furnished with a certificate by a Medical Practitioner not to accept a certificate by an unregistered person, or such a person as a Chemist.

The Act imposes no penalty or punishment on a public body which in contravention of the enactment does, in cases in which a certificate of a registered Practitioner is thus prescribed by the Statute, accept the certificate which the Acts say it shall not accept, nor does it make a contravention of the enactment a misdemeanour.

Consequently, neither the General Medical Council nor any individual could by summary proceedings before a magistrate, or by indictment, or by an action, bring such a public body before a Court of Justice with a view to secure the observance by that body of its statutory duty and obligation, and prevent the enactment from being contravened or evaded.

In the same way neither the General Medical Council nor any individual could by summary proceedings, action, or indictment bring an unregistered person who gave certificates which come within the enactment before a Court of Justice, so as to prevent the further contravention of the enactment by him.

If, however, a public body whose duty it was under the combined effect of the Statutes to accept only the certificates of registered practitioners were systematically, and to such an extent as to create a public mischief and injury, to ignore and violate the enactment by accepting certificates of chemists and unregistered persons, my opinion is that the Attorney-General would have power to take proceedings by action against the public body to compel it to observe the provisions of the Act of Parliament and prevent them from being contravened. Such an action would, if a sufficient case were made out, be taken in the name of the Attorney-General on the relation (as it is called) of some public body or individual, who would have the practical conduct of the proceedings. It is possible also, but not I think probable, that a case might arise in which compliance with the statute might be enforced by a mandamus.

I ought to point out, however, that I do not think that any precedent for the institution of such an action by the Attorney-General exists excepting the proceedings which were successfully taken on the relation of the Council against the General Council of Safe Medicine. There was also a case in which some proceedings to prevent a violation of Section 36 were contemplated and proposed; but I think that actual proceedings turned out to be unnecessary, and were not commenced.

If a public body which is not required by Statute to have a certificate signed by a Medical Practitioner chooses under its own regulations to accept certificates of chemists, unregistered persons, and others, there is not, in my opinion, any existing power to prevent such a body from so doing, and no legal proceedings could be successfully instituted against such a public body nor against the giver of the certificate, provided that the latter did not in the certificate contravene the provisions of Section 40 of the Act, by which a false assumption of medical titles is prohibited.

M. MUIR MACKENZIE.

November 25th, 1904.

Sir VICTOR HORSLEY moved, Dr. MACALISTER seconded, and it was resolved:

That this opinion by Mr. Muir Mackenzie be entered on the minutes.

It further agreed:

That a copy of the opinion be transmitted to the British Medical Association as the answer of the Council to their letter of July 5th, 1904.

PROCEDURE IN PENAL CASES.

On the motion of Dr. MACALISTER, seconded by Sir VICTOR HORSLEY, the following memorandum, prepared by Mr. Muir Mackenzie, at the request of the Executive Committee, in regard to the question of embodying in the *Standing Orders* a certain Rule of Procedure laid down by the Penal Cases Committee for its guidance was adopted.

MEMORANDUM.

1. As regards the form and contents of Statutory Declarations, the following proposed new Standing Order is framed on the basis of the Rules which prevail in the Supreme Court, and is adapted from those Rules so as to apply to the procedure of the Council in Penal Cases.

PROPOSED NEW STANDING ORDER AS TO STATUTORY DECLARATIONS.

After Clause 9 of Standing Order XIV. insert as a new Clause:—

Every Statutory Declaration must state the description and true place of abode of the Declarant, and where a fact stated in a Declaration is not within the personal knowledge of the Declarant the source of the information and grounds for the belief of the Declarant in its truth must be accurately and fully stated.

Declarations and parts of Declarations which are made in contravention of this Rule will not be accepted as evidence.

It was moved by Dr. MACALISTER, seconded by Dr. NORMAN MOORE, and resolved that the subjoined memorandum, prepared by Mr. Muir Mackenzie at the request of the Executive Committee, in consequence of the following resolution adopted by the General Council on May 31st, 1904:

That it be remitted to the Executive Committee to consider and draft an instruction to the Penal Cases Committee requiring them to ascertain in each case from the person or persons who have lodged a complaint against a practitioner whether the complainant (or complainants) have brought under the notice of the practitioner charged their disapproval of his conduct.—(Minutes, Vol. XLI, p. 91.)

be received and entered on the minutes.

MEMORANDUM.

The cases which come before the Penal Cases Committee for consideration may be shortly divided into two classes—namely, *First*, those which are brought before the Committee by private individuals or societies as complainants or informants; and, *Secondly*, those which are brought before the Committee by Public Officers or Bodies, such as the Medical Authorities or Coroners.

In the latter class of cases there is no person who can be properly called a complainant, and it would be most inexpedient, and indeed impracticable, to require a public body or official, before reporting a case of grave professional misconduct by a practitioner to the Council, to give notice to or communicate with the practitioner.

As regards the former class of cases, namely, those in which professional misconduct by a practitioner is reported to the Council or complained of by a private individual, it would, I fear, cause inconvenience and mischief, and even lead to injustice in some cases, if a general rule applicable to all cases were passed requiring the complainant, before lodging his information and complaint, to give to the practitioner notice of his disapproval of, or his complaint against, the practitioner's conduct. Such a general rule would be inconsistent with the judicial position which the Council occupies in relation to professional misconduct, and is not required for the protection of the party complained of.

If the rule were passed so that the practitioner complained of knew beforehand the subject-matter of complaint, and who the complainant was, he might attempt to arrange and compromise the matter with the complainant before the facts were placed before the Council, or might endeavour to get inconvenient evidence out of the way.

The Council's position is not that of having to decide a dispute between a complainant and respondent, but, when facts are brought to its notice, of having to decide in the interests of the public and the medical profession whether the misconduct alleged and proved against a practitioner requires the erasure of his name from the Register. The question whether the complainant disapproves or not of the practitioner's conduct is immaterial.

Under the present practice the complaint or information is considered by the Penal Cases Committee, and that Committee, in its discretion, decides what steps shall be taken, both as regards entertaining the complaint at all and giving notice to the practitioner.

I would suggest, therefore, that no definite instructions to the Penal Cases Committee, applicable to cases generally, should be prepared. I would submit that it may be left to the discretion of the Penal Cases Committee in any case in which in their judgment the complainant should have communicated with the practitioner before lodging the complaint, to require this course to be adopted before proceeding further with the case.

M. MUIR MACKENZIE.

November 23rd, 1904.

The following resolution, moved by Sir WILLIAM THOMSON, seconded by Dr. MACALISTER, was agreed to:

That the Council accept the advice given in the memorandum of Mr. Muir Mackenzie, and direct the Executive Committee to proceed no further in the matter.

PENAL CASE.

Alleged Covering.

The Council then proceeded to the consideration of the case of Robert Evans, registered as of 74, Brooksby's Walk, Homerton, London, N.E., L.R.C.P. Edin. 1885, M.R.C.S. Eng. 1885, who had been summoned to appear before the Council to answer the following charges, as formulated by the Council's solicitor:

That you have employed as assistant in connexion with your professional practice a person not duly qualified or registered under the Medical Acts, namely, Griffith Ellis Williams, and have knowingly allowed such unqualified person to attend and treat patients in respect of matters requiring professional discretion or skill.

The PRESIDENT said that the complaint was lodged by Dr. Wynn Westcott, one of His Majesty's Coroners.

Mr. Muir Mackenzie appeared as legal assessor, and Mr. Winterbotham as solicitor to the Council. Mr. Marpole appeared for Dr. Evans.

Mr. WINTERBOTHAM said it was his duty to place before the Council the notice that Dr. Wynn Westcott sent to it. He then read the depositions taken before the Coroner of Helen Hunt, Charles Frederick Ponder, Griffith Ellis Williams and Robert Evans. From these it appeared that Dr. Evans had been attending the child of Mrs. Hunt. On one of her visits he was not at home and the child was seen by Mr. G. E. Williams, and he prescribed for the child and charged her 6d. Another medical man was called in, but the child died, and an inquest was subsequently held, at which a verdict of death from natural causes was returned.

Dr. ROBERT EVANS, examined by Mr. Marpole, stated that he knew Mr. G. E. Williams had been apprenticed to a medical man in the country and he engaged him as dispenser. He gave him instructions that he was not under any consideration to treat patients; he was simply to dispense medicine. He had no suspicion that Mr. Williams had been treating patients. Mr. Williams resided in the house where the surgery was situated. On August 3rd, when Mrs. Hunt called, he was out; Dr. Hall was his partner; he had another surgery at Clapton. He heard Mr. Williams's evidence at the inquest. He had since dismissed Mr. Williams and was now dispensing his own medicine.

By Mr. BROWN (through the Chairman): He knew the regulations of the General Medical Council with regard to the employment of unqualified assistants. He himself lived at the surgery.

By the CHAIRMAN: Mr. Williams was apprenticed to a Dr. Jones. The Coroner at the inquest commented very severely upon Mr Williams's conduct and pointed out that he might have been liable to prosecution under the Apothecaries Act.

By Mr. GEORGE BROWN: He dismissed Mr. Williams for putting bismuth in the medicine when he ought not to have done so; it was in consequence of this case.

Dr. JOHN HALL (examined by Mr. MARPOLE): He had known Dr. Evans for eight years and was now in partnership with him. He saw Mrs. Hunt's child at her house twice; he ordered Mr. Williams

to repeat the medicine formerly prescribed; he did not instruct him to add anything to the mixture. His adding bismuth was entirely on his own responsibility. He had no suspicion that Mr. Williams was treating patients or prescribing for them.

Mr. Marpole pointed out that this was the only occasion as far as Dr. Evans or Dr. Hall were aware that Mr. Williams had prescribed for a patient. He was well aware that the answer to that might be that this was the only occasion on which it had been found out, but the Medical Act distinctly stated "knowingly allow." Dr. Evans had stated that he had never known Mr. Williams to prescribe before, and if he had done so he would have dismissed him on the first opportunity. He was well aware of the penalties which he would incur by employing an unqualified assistant. Dr. Hall, his partner, had known him for a great number of years and Dr. Evans' reputation as a medical man was well known to his fellow-practitioners in the neighbourhood. The onus of proof in a great measure lay with the prosecution that Dr. Evans had allowed his dispenser to treat patients. He left it to the Council to weigh the evidence and asked them to say if Dr. Evans left the Council still a member of the honourable profession to which he belonged.

Strangers were directed to withdraw. On re-admission:

The President said:

Mr. Evans: The Council has deliberated on your case, and I have to inform you that the facts alleged against you have not been proved to the satisfaction of the Council, and that your name will therefore remain on the Register.

Preliminary Science and the Fifth Year.

The Council then resumed the debate on Dr. Lindsay Steven's resolution.

Dr. McCall Anderson, in seconding, expressed the opinion that the main source of the evil complained of was the overloading of the medical curriculum. There were some industrious students who were able to pass their first examination at the expected time, but a very large proportion were not able to do so, and, in consequence, the three great subjects of medicine, surgery and midwifery, including clinical subjects, were liable to be pushed out to the detriment of medical education. He hoped that the Council would take this into consideration, as well as the proposal of Dr. Lindsay Steven, in order that the difficulties in connexion with the fifth year might be overcome.

On the suggestion of Dr. MacAlister, Dr. Lindsay Steven, with the consent of his seconder, as it was undesirable to refer the matter to two committees, deleted the words "Examination and." So that the resolution as amended ran:

That it be remitted to the Education Committee to consider and report to the next Session of Council whether the adoption by the Council of one or other or both of the following resolutions would not help to secure the attainment of the object the Council had in view in instituting the five years' curriculum, viz:—

(1) That the Preliminary Scientific Examination in Physics, Biology, and Chemistry should be passed before the Student begins the qualifying study of Anatomy and Physiology;

(2) That before being admitted to the Final Examination the Student should produce evidence that he has devoted the last year of his curriculum exclusively to Practical and Clinical work and study.

The President pointed out to Dr. McCall Anderson that the present resolution with regard to the fifth year did not say "exclusively." That word was introduced in Dr. Lindsay Steven's motion, and was the difference between the existing resolution and the one now proposed.

Dr. Norman Moore supported the resolution, as it followed the regulations of the Royal Colleges in England. That particular point was not arrived at without very great deliberation and consultation with teachers of anatomy and physiology in London. The objections to such a regulation seemed to be overcome by the fact that physiologists, and, to a less degree, anatomists, said that it was impossible to teach their subjects unless men gave their undivided attention to them. Such a regulation had a tendency to prolong the curriculum, but the length of the curriculum would be always determined by two things: first, the recommendations of the Council and the requirements of the licensing bodies: and, secondly, the time required to acquire the information which the student was bound to produce. The great difficulty of the five years' curriculum, as at present arranged, was that the student gave too much time to the earlier part of his work, and did not have enough time to devote to that part which was the object of the whole.

The President, in reply to Dr. Finlay as to whether the two clauses in the resolution could be separated, said they must be taken together.

Dr. Finlay disagreed with Dr. Norman Moore. So much had been said about the five years' curriculum that it was a pity to raise the subject again; but with the second part of the motion he entirely agreed.

Dr. Mackay had very great sympathy with the proposal, but at the same time thought it almost impracticable, considering the position in which the Council was placed. If the first part of the resolution were passed, the student who failed to pass the preliminary subjects of the first year would have to devote the second year to those subjects; if the second part were passed, sufficient time would not be allotted to the intermediate subjects, which would consequently be treated very unfairly. What probably Dr. Lindsay Steven meant was that a four years' curriculum should be instituted after the first year's study, and the same principle would apply to the second part of the resolution. This would involve an alteration in the regulations regarding the curriculum and it would follow that the Council should have the power of enforcing the alteration. Until the Council had the right to establish a students' register and to lay down conditions which would affect the duration of the curriculum, it was only passing resolutions which were pious expressions of opinion and could have no useful effect on the future of medical education.

Dr. Winkle thought that the resolutions would establish a six years' curriculum. That might be a very good thing, but the Council ought not to conceal what would be the result. He would vote for the resolution, as he thought the Committee would do no harm by considering the matter; but he thought the Council should be aware of what the possibilities were with regard to the case before it adopted it.

The President, in reply to Mr. Tomes, said that by referring it to the Committee the Council would be pledging itself to support it at the report stage.

Dr. Lindsay Steven was not asking the Council to pledge itself one way or another. He quite recognized that the tendency was towards a six years' curriculum, but he was by no means clear that the Council was prepared officially to extend the curriculum. It was his experience that a diligent student could get through the whole curriculum with the possibility of devoting the fifth year exclusively to practical clinical work. If the resolution would have the effect of lengthening the curriculum, he for one would rather have it lengthened at the beginning than at the end.

The resolution was then put and agreed to.

Mr. George Brown moved:

That the Resolution of May 29, 1893, page 82 of the Minutes of that year, be altered so that it reads as follows:—"That the fifth year shall be devoted to Clinical work at one or more public hospitals or dispensaries, British or Foreign, recognized by any of the Medical Authorities mentioned in Schedule A of the Medical Act, 1858, provided that in the case of Students who have served one year's pupilage with a recognized practitioner holding a public appointment, or possessing such opportunities of imparting practical knowledge as shall be satisfactory to the Medical Authorities, only six months' Clinical work at a public hospital shall be exacted."

Having pointed out wherein his resolution differed from the existing one, he said that from all information he could obtain there was not a single instance where the student had spent six months of the last year of study with a medical practitioner within the rule. The resolution of the Council had been a dead letter, and he desired that it should no longer be so. A quasi pupilage was unworkable. No medical student in his fifth year, who had had the run of the hospital and who was nearing the period of his final examination, should be expected to leave his hospital work and bury himself in a dismal surgery doing work which should be initial work. Those he represented had desired him to bring the motion forward, and he hoped the Council would adopt it.

Mr. Jackson seconded. There was one important point he wished to refer to. If a student entered the profession with a suitable medical practitioner, he acquired the art of treating the patient instead of treating the disease, and that was an art a student should acquire.

Sir Victor Horsley did not believe that a demand for the alteration really existed in the profession, and, feeling sure it was moved under a misapprehension, he hoped Mr. George Brown would see his way to withdraw it until he had taken the sense of the profession, either through the British Medical Association, by a resolution in the representative meeting, or in some other way.

Dr. McVail did not see what benefit the student would get in the fifth year by the resolution.

Sir John Moore said he was very glad to hear from Mr. Brown that the existing regulation was practically a dead letter. It was intended to give relief in exceptional cases, but it was a policy which he thought the Council should be very slow to back up. A man who had done his three years' ordinary hospital practice in medicine and surgery had still to attend a lying-in hospital and had to take instruction in mental diseases. Medical students had told him that they had not a minute to spare in the five years, and if the Council were to allow them to go down to the country the result would be disastrous to medical education, and to their practice afterwards.

Sir Hugh Beevor thought it would be extremely misleading to the medical student.

Sir William Thomson gathered from the resolution of Mr. Brown

that the year to which he referred might be taken at any period of the course. If a student begun his first year and was associated with or in the employment of a practitioner in the country, what would he know at the time and what was he to learn? The resolution would extend the curriculum by one year, because if the young student was to have a year in the country with a practitioner, where was he to get the school lectures of the curriculum in the first year? He was doing nothing except assisting, and as soon as he had finished the year of the mechanical work he would have to begin his legitimate medical course.

Dr. MacAlister differed from Sir William Thomson. He thought that the proposed course would lead to the shortening of the curriculum, because any student who had at any time during his five years got appointed in one year a nominal pupil could claim to be let off with only six months of the last year, and therefore four years and six months would be his curriculum. Now any licensing body would adopt the proposed course and it did not become the Council to put forward a resolution which would not commend itself to the licensing bodies. In his opinion pupilage was dead and this proposal would not galvanize it into life again.

Mr. Brown, in reply, said that notwithstanding what had been said there was a feeling in the profession that there was something wrong with medical education, that the hospitals did not meet the requirements of the profession, and that could be met by something in the nature of a pupilage. He was sorry that his proposition did not seem to commend itself to some of the members, but he did not regret having proposed it. He thought the time which had been occupied by the discussion had not been wasted. He would not withdraw his motion as had been suggested; he was prepared to take a vote upon it.

The President then put the motion and declared that it was lost.

Mr. Brown asked for the names and numbers to be taken, when 3 voted for and 24 against.

Inspection and Visitation of Final Examinations.

Dr. Finlay said that at the meeting of Council in July, 1903, when the reports of the inspection of the Universities of Oxford and London came up for adoption, an amendment was moved that those bodies be inspected again. Sixteen months had elapsed since that resolution was passed, and he thought the Council would like to know what had been done during that time in the matter.

The President stated that the examination of the University of London was inspected and visited by their Inspector and Sir John Batty Tuke in the beginning of November, 1904. There had not been time to prepare the report, but there was no doubt it would be before the Council in May. The examination of the University of Oxford would not take place till December, but arrangements had been made that the Inspector and Dr. McCall Anderson should attend. The reason for the delay had been that both Oxford and London had been changing their examinations in various respects and it was found advisable not to inspect an expiring system.

Report of Public Health Committee.

The report of the Public Health Committee was, on the motion of the Chairman, Dr. Bruce, seconded by Mr. Jackson, received and entered on the minutes.

(1.) The report recommended the Council to approve the regulations for the diploma of public health submitted by the Universities of Liverpool and Leeds, which it was stated were drawn on similar lines to those of the Victorian University. The recommendation was approved.

(2.) The Committee reported the receipt of an application from a former health officer of a large city in India asking to be excused from going through six months' practical work before presenting himself for the examination for a diploma of public health; he had held the office for four years and the population of the city was over half a million. The Committee advised the Council that it should not sanction any exception to the rules laid down by it, and adopted by all the qualifying bodies in favour of individual candidates. Upon this recommendation considerable discussion took place, and eventually, on the motion of Sir John Batty Tuke, seconded by Dr. McVail, the debate was adjourned until Monday.

Reports of Committees.

Sir Victor Horsley asked a question as to when the reports of the Examination Committee would be in the hands of the members of the Council, and considered it unfortunate that important reports should not yet have been issued to members.

Sir Patrick Heron Watson said that the report on the final examination of the University of Edinburgh would be issued to members with the next day's programme of business.

The Council then adjourned.

Saturday, November 26th, 1904.

Sir William Turner, K.C.B., President, in the Chair.

Dr. MacAlister informed the Council that Dr. Caton had been nominated by the English Branch Council as a member of the Examination Committee in place of Dr. Payne.

Report of the Examination Committee on the Final Examination of the University of Edinburgh.

Sir Patrick Heron Watson (Chairman of the Committee) moved:

That the Report by the Examination Committee on the Final Examination of the University of Edinburgh be received and entered on the minutes.

Dr. McVail seconded.

The report is as follows. Prefixed to it were the report of the Visitor and Examiner, signed by Sir G. H. Philipson and Mr. Bryant, and remarks by the Body inspected, signed by Prof. A. R. Simpson, Dean of the Faculty of Medicine of the University of Edinburgh:

Report by the Examination Committee on the Report of the Visitor and Inspector on the Final Examinations in Medicine, Surgery and Midwifery of the University of Edinburgh.

Members.—Sir Patrick Heron Watson, *Chairman*; Dr. Pye-Smith; Mr. Young Dr. Finlay; Dr. McVail; Sir Charles Ball; Dr. Little; Sir William Thomson.

The Examination Committee have experienced unusual difficulty in their consideration of this report by the Visitor and Inspector, partly because of the great elaboration of the examination arrangements at Edinburgh, and partly because the Visitor and Inspector do not always complete their remarks on one section of the Examination at the part of the report in which that section is mainly described.

Your Committee have endeavoured to simplify the arrangement of their report as far as possible, although this requires a good deal of reference backwards and forwards in the pages of the report of the Visitor and Inspector.

Report on the Written Examination in Medicine, Surgery, Medical Jurisprudence and Midwifery.

The Visitor and Inspector report (pp. 14-15) that the questions were suitable and that the estimation of the answers was equitable.

Oral Examinations.

Medicine.

This Examination the Visitor and Inspector state was excellent and "well adapted to elicit the knowledge and attainments of the Candidates, and the estimation of the value of the answers of the Candidates was reviewed with great care and discrimination," and in it the Visitor and Inspector concurred.

Jurisprudence and Public Health.

The Visitor and Inspector saw two candidates examined. They describe the specimens and moulds placed on the table. No opinion is expressed by the Visitor and Inspector as to the standard of this Examination. Both the candidates got marks under 59 per cent. In this the Visitor and Inspector concurred.

Surgery.

Pathological specimens, casts, photographs, were freely used. No opinion is expressed as to the standard of this Examination, and no opinion is given regarding the estimation of the students' answers—whether these were over-marked or not.

Midwifery.

Pathological specimens, instruments and appliances, fœtal skulls, normal and abnormal pelves, a phantom and mannikin, and casts of heads of fœtal skulls were shown. The Visitor and Inspector state that the Examination was excellent, and that they concurred in the marks awarded.

Clinical Examinations.

Medicine.

Each candidate had to write a full clinical report of one case, and to write at least two prescriptions. The urine had to be examined. Two hours were allowed. For the written report 80 was the maximum, and for the prescriptions 20 additional marks were given = 100.

The Visitor and Inspector state (p. 10):—"The majority of these reports were highly creditable, systematically arranged, carefully written, and correct spelling. In some the symptoms and physical signs were given very fully, in others in a more restricted manner. The diagnosis in general appeared to be correct." The prescriptions also were generally appropriate. Subsequently the candidates were examined *orally* in Clinical Medicine, and for this Examination 70 marks were given for the bedside examination of a case, and 12 marks for skin cases, and 18 marks for urine and microscopic examination = 100 the maximum marks.

Regarding this Oral Examination the Visitor and Inspector state (p. 7) that it was comprehensive in every particular, conducted with order and precision, and was calculated to elicit the practical knowledge and attainments of the candidates in manipulative medicine generally, with the interpretation of symptoms and physical signs. The manner and mode of interrogation and demeanour of the candidates to the patients were deserving of commendation.

The marks allotted were, in the opinion of the Visitor and Inspector, a just estimate of the knowledge and answers of the candidates.

Clinical Gynæcology.

The Visitor and Inspector report that this Examination was carefully arranged, admirably conducted, and most valuable in estimating the practical knowledge of

the candidates in diagnosis and treatment, instrumental and operative. The marking was, in the opinion of the Visitor and Inspector, a just estimate.

Clinical Surgery.

As in Medicine, this also began by the candidate reporting in writing a case at the bedside, for which an hour was allowed, and the maximum value of which report was 30 marks.

The Visitor and Inspector state that generally the reports by the candidates were systematically arranged and written with care. In some the diagnosis was well reasoned out and differentiated, while the prognosis and treatment, operative and medicinal, were equally well reviewed and concisely stated. The marking was in accordance with the required standard.

After this written case, the candidate was examined orally, and the Oral Examination was divided into three sections, A, B, and C.

The Visitor and Inspector state as to Part A "that each candidate was given a case which had been previously selected in the Examination Ward to examine and briefly report. For this he was allowed 15 to 20 minutes. Upon this case he was subsequently examined 10 or more minutes, and the case, when skilfully used as a text, brought out more or less of the candidate's knowledge." As this Committee is unable to understand what the Visitor and Inspector intend to convey in this paragraph, the Committee leaves it to the Council.

Part B is stated by the Visitor and Inspector to comprise "the examination upon two previously assigned operations—in Surgical Anatomy and Surgical Procedure. These "operations," according to the Visitor and Inspector, consisted only in skin markings of lines of incisions. The candidate also was questioned in Surgical Anatomy and Surgical Procedure on the same patients. All this is stated to have been carried on in a ward to which the patients' friends and visitors, male and female, were freely admitted, and thus exposure of any part of the patient's body was inadequate or impossible. It is further stated that "no attempt was made practically to get out of any candidate any precise knowledge of the relation of an artery or nerve beyond what book knowledge would have given him." The Visitor and Inspector add: "The examination was so unsatisfactory that we [they] were enabled to realise the truth of the adverse criticisms we [they] have heard of this method of examination in a way which we [they] never before believed to have been possible." The Faculty of the University do not dispute the presence of strangers in the wards, but they affirm that screens were put round the beds of the patients during examination when that was necessary (p. 34). This Committee is of opinion that statements so strongly adverse by the Visitor and Inspector should have been supported by detailed instances of inefficiency of examination methods. The Medical Faculty of the University do not admit the accuracy of the statements of the Visitor and Inspector, and from notes furnished by the Examiners, the Faculty is satisfied that the Examination in Surgical Anatomy was not only appropriate but also of a very searching and practical kind. Further, the Faculty states (p. 35) that the present Inspector, when reporting on the Clinical Surgical Examination in Edinburgh University in 1894 with Sir George Duffey, said: "The entire Examination in Clinical Surgery was a most complete, searching, and practical one." The Faculty states that "the Examination is conducted on precisely the same lines," so far as method is concerned, and is improved in accordance with recommendations of the Visitor and Inspector made at that time.

Part C of the Clinical Oral Examination was on surgical instruments, and the Visitor and Inspector state that it was "fairly satisfactory" (p. 14).

In addition to the Written, Oral, and Clinical Examination in Surgery, there is also the Practical Examination (pp. 19, 20) in Bandaging, the treatment of Fractures and Dislocations, and Operative Surgery. The Visitor and Inspector state that only one out of six candidates is required to do an operation, owing to want of material, and they further state that he is selected from the men who were above the average —"the good men were taken on the operations on the dead body." The Visitor and Inspector do not say in what manner this selection is made. As regards the value of the single operation the Visitor and Inspector express strong doubts (p. 19):

"The single operation required of a candidate was as satisfactory or as unsatisfactory as such operations upon the cadaver usually are, but at Edinburgh more operations were not possible for reasons well known (the want of material), but we feel assured that a good examiner with full knowledge of surgical anatomy could, in the time occupied by a student in getting through this operation with success or otherwise, spend that time, or even half of it, with much greater success as an examiner and advantage to the candidate, by testing upon a muscular but not fat living subject, lightly covered, and placed in a horizontal position, the candidate's knowledge of surgical anatomy, of his methods of examining sick people, of recognising or reducing dislocation and fractures, and, not less, his knowledge of operations even by the employment of chalk lines, when such are put in with knowledge of the nature of deeper parts, and with brains."

Concerning the five men who did not get an operation to do, the Visitor and Inspector report (p. 19):—

"We were present when much of this work was carried out, and we were well satisfied that the Examination was a good one. The candidates' answers to questions and the way they did their work were not satisfactory, and out of a batch of five no one obtained a B mark. The variety of splints and mechanical appliances might have been enlarged with advantage, and others than those commonly used at the Infirmary or by the Examining Professor displayed."

After these remarks the Visitor and Inspector proceed to say (pp. 19–20): "We were much pleased with both the Oral and Practical Surgical Examinations." Your Committee admits its inability to interpret for the Council the thoughts of the Visitor and Inspector on the Practical Examination in Surgery.

In the general summation of their work under the heading "Remarks" (pp. 23–26), the Visitor and Inspector assert that the Examination in Surgery is a mere pass, that "the knowledge of clinical work and of the diagnosis of disease was in many of the candidates very deficient," that "in some instances the student's ignorance of pathological preparations and of pathological knowledge in its relation to treatment was very startling" (p. 24). They do not state whether such men were allowed to pass into the profession. They suggest that the methods of teaching require revision in Edinburgh and everywhere else.

The Visitor and Inspector then proceed to formulate their "conclusion" (p. 26). In the first sentence of this conclusion they state: "It is with pleasure that we now give it as our conclusion, after a close and prolonged inspection, that the Final Examinations for the M.B. and Ch.B. degrees of the University of Edinburgh, taken as a whole, are 'sufficient.'" In the seconds entence they say: "Some of the arrangements and methods of the Examination in Clinical Surgery . . . not only spoilt the work, . . . but turned it into what must be described as a failure." This Committee cannot reconcile these antagonistic deliverances.

Recommendation by the Committee.

As the difference of opinion between the Visitor and Inspector on the one hand and the University on the other is fundamental as to the nature of the Surgical Examination, and as the Visitor and Inspector have not given any detailed evidence in support of their adverse criticisms, and as some of the statements of opinion by the Visitor and Inspector are irreconcilable with each other, this Committee recommends that the Medical Council should direct that a further Inspection be made of the Surgical part of the Final Examination in the University of Edinburgh

PATRICK HERON WATSON,
November 25th, 1904. Chairman.

Sir JOHN BATTY TUKE (Royal College of Physicians, Edinburgh) said that he would move an amendment that the report be received and entered on the minutes, with the exception of the remarks contained in the report of the Visitor (Sir G. H. Philipson) and the Inspector (Mr. Bryant). In the remarks he was about to offer to the Council he did not intend to consider whether the examination was good or bad, but to confine himself to the general principles that where an Inspector and Visitor were appointed to visit a particular examination, their duty was to report on that examination as a licensing examination, emphasizing in their remarks the good or bad points of the examination. He held that the Council did not desire any special remarks from the Visitor and Inspector on the general principles of medical education and examination. The remarks in the report in the first place applied to the examination of the University of Edinburgh; as a University that University and also other Universities were merely licensing bodies and nothing more, so to speak. Certain passages, the Examination Committee admitted, were irreconcilable one with the other and were generally incomprehensible. The remarks proceeded to a dissertation upon the general question of medical education, more especially in relation to clinical instruction, but he held that those remarks were utterly and entirely out of place. These general remarks were sandwiched between direct condemnatory criticism of the particular body inspected, which must convey to the public the opinion that they were specially applicable to that body. He held it to be utterly unjust. There was a further injustice; by some extraordinary procedure the same remarks were appended to the examinations of all the other Scottish Universities, the reports on which were generally entirely satisfactory. These remarks were appended to the Scottish bodies and not to any other bodies. The remarks contained a general imputation that there was something specially and particularly wrong with the Scottish Universities. He held that in this matter the Inspector and the Visitor had entirely exceeded their commission. Such remarks would come more aptly from the Examination Committee; that was the body to make such remarks after the present cycle of inspection was over. He hoped most sincerely that the Examination Committee would prepare such a report as would enable the Council to express to the public and the profession and the licensing bodies an opinion as to how far advances had been made in medical education and medical examination, pointing out also any shortcomings. Upon the general ground that the Inspector and Visitor had exceeded their commission, he moved the following amendment:

That before the Report by the Visitor and Inspector on the Final Examination of the University of Edinburgh is received and entered on the minutes, the section headed "Remarks," on pp. 23, 24, 25 and 26, be omitted.

He was acting entirely on his own responsibility in doing this.

Dr. MACKAY (University of St. Andrews) seconded.

Mr. GEORGE BROWN (Direct Representative, England and Wales) enquired if there was any precedent for the exclusion of any portion of the report of a Visitor or Inspector. There were precedents, he knew, for the exclusion of portions of all Examination Committees' comments.

Sir JOHN BATTY TUKE replied that in the case of a report of the University of Glasgow in 1894 there was an excision made from the report of the Inspector, and in another case—he thought it was the London conjoint bodies—some remarks which were made by the Inspector, Mr. Brudenell Carter, were also withdrawn.

Mr. GEORGE BROWN pointed out that in that case Mr. Brudenell Carter was the Visitor. If in the present case Sir George Philipson had asked permission to withdraw any part of the report, he should not have objected. Mr. Brudenell Carter was a Visitor, and he asked permission not to press the report which he had prepared, and no Council could have refused that request. Here, Sir George Philipson

and Mr. Bryant would be the first, he thought, to withdraw from the report that which they thought was unnecessary. He raised this as a point of order.

The President, on the point of order, said he recollected the advice Mr. Muir Mackenzie gave him when he first entered on his duties as President of the Council: that the regulation of the business of the Council rested in its own hands; and it was for the Council to say whether it approved or disapproved of the motion of Sir John Batty Tuke. Therefore, if the Council chose to say that it approved of Sir John Batty Tuke's motion, the matter was settled. It was the Council who could regulate what was to go on the minutes and what was not.

Dr. McVail (Crown Representative, Scotland) wished to call the attention of the Council to the Medical Act of 1866. Section 3 provided that "Inspectors of examinations were not to interfere with the conduct of any examination, but it was their duty to report to the General Council their opinions as to the efficiency or inefficiency of the examination, or any other matters in relation to such examination which the General Council might require them to report." The General Council was directed to forward a copy of every such report to the body, and to forward a copy of such report, together with any observations thereon made by the body, to the Privy Council. The Council had charge of the minutes, but the report of the Visitor and Inspector must go without any alteration or change on the part of the Council to the Privy Council. Was the Council going to send to the Privy Council a document which was not in accordance with the document which appeared on its minutes? A report had to go to the Privy Council whether the Council agreed with it or not. The Council could add remarks, or any resolution it came to, but as to the report by the Inspector, so far as its presentation to the Privy Council was concerned, this Council had nothing to do with, except to transmit it.

Dr. MacAlister (University of Cambridge) said in regard to Mr. Brudenell Carter's report that an exactly similar motion was made as was now before the Council, and it was recognized, after some discussion, that it lay with the Visitor himself to withdraw his remarks, and, therefore, the motion which it was proposed to bring forward to exclude the remarks ought to be replaced by a request of the Visitor himself.

Mr. George Brown suggested that the Council should go into Committee to consider the report, and then if there was anything that was objectionable they might, in Committee, with the consent of Sir George Philipson, revise the report in such a manner that it could be entered on the minutes.

The President replied that the Council could not do that.

Mr. George Brown said it was clear, then, from the Act of Parliament that the Council had no choice in the matter, as the report was practically a public document, and must be sent to the Privy Council.

Dr. A. Thomson (University of Oxford) pointed out that the words of the Act were, "every examination which they attended and any other matters in relation to such examination." He enquired whether the General Council had asked for a report of this kind.

The President said that, so far as he understood, the Inspector and Visitor received no special instructions beyond those the Council was in the habit of giving. He was not aware that the Visitor and Inspector on the present occasion received any additional instructions to those contained in the Standing Order.

Sir William Thomson (Direct Representative, Ireland) was not quite satisfied with the explanation of Dr. MacAlister; he inquired when the document became strictly and legally a "report." Was it a report when it was received in the office, or was it only a report officially when it was adopted by the Council and published on the minutes?

The President replied that it only became a public document when it was published on the minutes.

Sir William Thomson: Once a portion of the document was withdrawn, whether by vote of the Council or by the Inspector or the Visitor, it was not the same document as had been received. If Dr. MacAlister's contention was right, the original document ought to go mutilated.

Dr. MacAlister pointed out that the position of things was that the Chairman of the Committee had brought forward a motion that the document be received and entered on the minutes, and then an amendment had been proposed that before it was received and became a report—because not until then was it a report—certain passages should be omitted. If the Inspector and Visitor, before the report was received by the Council, desired to make alterations in it, he thought they were at liberty to do so.

Sir William Thomson asked if he was right in assuming that in the first instance the Council or the compiler of the document might deal with it as they liked up to a certain point, but as soon as it was received and published on the minutes in its altered form, it then became the official report.

Dr. MacAlister replied in the affirmative.

Dr. Norman Moore (Royal College of Physicians, London) thought the Council was bound to treat with the utmost respect all reports sent by persons whom they had themselves appointed to inspect the examinations. It was obviously of the greatest importance that their Visitors and Inspectors should feel that controversy was not likely to be raised. It was perfectly clear that the present report was drawn up by the Visitor and Inspector under misapprehension of their precise duty. The principal parts of the points dealt with did not fall within their province. It seemed to him that the Council, acting in that respect, ought to show to the Inspectors and Visitors that the right course was to ask the Inspectors and Visitors whether they had observed that matters outside their reference were contained, and to ask them to revise it within the terms of their reference. That would retain the opinions they had expressed with the utmost freedom and all the extraneous matter would disappear.

Sir George Philipson wished to confine his remarks to the two points which Sir John Batty Tuke had alluded to. The first point was respecting the commission which he had received from the President, appointing him Visitor to the Final Examination of the University of Edinburgh. His attention was not directed to the rules and regulations which had been referred to. He had no intention to exceed his commission. After consultation, he and Mr. Bryant felt it their duty to draw up the report. They had inspected the examinations with the greatest care, not in a perfunctory manner, but over nine days, covering three weeks at least. Therefore there was no haste in it, and after due deliberation they drew up their report and in directing the attention to certain points which they thought might be improved upon they thought they might aid the Examination Committee of the Council, and through the Examination Committee the Council itself, by suggesting the issue of new rules and regulations after all the Universities and licensing bodies had been inspected and reported upon.

Dr. Finlay (University of Aberdeen) thought that the easiest way of dealing with the matter was that proposed by Dr. Norman Moore. If the Inspector and Visitor thought fit to withdraw any part of the report they might do so. If Dr. Norman Moore would propose that he would second it.

Dr. Norman Moore thereupon proposed that this course should be adopted, and Dr. Finlay seconded.

Dr. Little (Crown Representative, Ireland) inquired whether the report with the remarks had been sent to the Privy Council.

The President replied in the negative; it was confidential at the present stage.

Mr. Tomes thought it was not consistent with the dignity of a great body like the University of Edinburgh to withhold that which was felt to be adverse criticism. It did not seem to him desirable, where adverse criticism had been passed on any body, that a point of order or anything of that kind should be raised. It appeared to him far more desirable that the adverse criticism should be published.

Dr. Pye Smith (University of London) thought it was a matter in which they had no discretion. The report, once being sent in, ought not to be tampered with. He did not mind saying frankly that there were passages in the report which he regretted, but that was not the question. The only point at present was whether it would be possible before the report came finally before the Council to ask those who drew it up if they would alter it. That course had been offered, but Sir George Philipson, who no doubt had acted within his undoubted right, had declined to make any change. Mr. Bryant was not before the Council. He did not think it fair to put any further pressure on the Visitor and Inspector. The offer, which was perfectly fair and reasonable, had been made, but it had been declined; therefore, he trusted that they would not attempt to do that which could not be legally done, namely, to alter the report.

Dr. Little pointed out that if the Council removed a portion of the report of the Visitor it must also delete the remarks of the University of Edinburgh in reply to them.

Mr. George Brown inquired again if Sir John Batty Tuke's motion was in order.

The President replied that it was in order. Dr. Norman Moore had proposed an amendment and the Council already had Sir John Batty Tuke's amendment before it; there could not be two amendments at the same time. The only way in which Dr. Norman Moore's amendment could be put would be by substituting it for Sir John Batty Tuke's, if Sir John Batty Tuke would withdraw his amendment.

Sir John Batty Tuke said he was willing to withdraw his amendment in favour of Dr. Norman Moore's.

Dr. Mackay agreed.

The President asked the Council to permit the gentlemen to withdraw their amendment.

Dr. McVail objected. Sir Patrick Heron Watson had brought a definite motion before the Council which he (Dr. McVail) had seconded. Sir John Batty Tuke had brought forward an amendment that certain passages, not of the Examination Committee Report, but of the report sent to the Council by the Visitor and Inspector, should be deleted, and should not go on the minutes. He inquired whether that involved the Council not transmitting the main document to the Privy Council.

Sir John Batty Tuke replied in the affirmative.

The President said this raised a point which he had never considered.

Dr. McVail admitted that the Council could refuse to put the document on the minutes. Was the Council going to break the Act of Parliament? Parliament might have given the Privy Council the right of nominating these Inspectors, but it had given the Council the power. It did not, however, give the Council any power to intervene between an Inspector's report and its transmission to the Privy Council. The Council was not entitled to ask Sir George Philipson, or anybody else, under pressure to modify a report upon which he had spent time in virtue of a commission granted by the President under the seal of the Council. That document must be transferred whole and entire to the Privy Council under the Act. The Council could remark upon it or give a direction to re-inspect an examination, and make a second report, but the report itself must go before the Privy Council as it was sent to the Council. He thought Dr. Norman Moore's proposed amendment was entirely irregular, and he thought that Sir John Batty Tuke should withdraw his resolution.

The President remarked that he thought Dr. McVail objected to Sir John Batty Tuke's withdrawing his amendment.

Dr. McVail said that was so, because he wanted to withdraw it in order that Dr. Norman Moore's motion might be put instead of it. If Sir John Batty Tuke would not withdraw his amendment entirely, but only to allow of Dr. Norman Moore's amendment to be put, it would only be wasting time, and if he persisted in the idea that this report was not to go to the Privy Council, then he objected to his withdrawing it, because he wanted a vote taken against it.

Sir John Moore (Royal College of Physicians, Ireland) said that unless Visitors could make any observations they thought fit, he, for one, could never again act as Visitor of any examination.

Dr. MacAlister thought Dr. McVail was perfectly right, and the Council had no choice whatever except to accept the report as it stood.

Sir Charles Ball (Royal College of Surgeons, Ireland) pointed out that the remarks appeared in all the reports on the Scottish Universities, but, with the exception of Edinburgh, they were unsigned. In the latter case they were signed by Sir George Philipson and Mr. Bryant, so they must, in the first instance, apply to Edinburgh, because Sir George Philipson did not visit other examinations.

Dr. Pye Smith moved the closure, which was carried.

The amendment was then put and declared lost.

At the request of Dr. Lindsay Steven, the names and numbers were taken down, when 4 voted for, 22 against. 4 did not vote, and 3 were absent.

The motion that the report be received and entered on the minutes was then put and agreed to, and the discussion of the report adjourned until Monday.

Report of Education Committee.

Dr. Windle (Chairman) brought up the report of the Education Committee on various matters remitted to it by the General Council.

Report.

(I.) With regard to the question of teaching certain subjects of the medical curriculum without requiring examination, the Committee reported that it proposed to postpone its report in order to secure further information.

(II.) The Committee submitted a revised list of examinations held out of the United Kingdom as qualifying for the registration of medical and dental students. The existing list will cease to have effect on December 31st, 1905.

(III.) The Committee reported that it had approved the revised regulations for the Preliminary Examination held by the Royal Colleges of Physicians and Surgeons in Ireland, and had placed the examination on the same footing as those held by the College of Preceptors.

(IV.) The Committee reported that it had approved the Preliminary Medical Examination held by the Educational Institute of Scotland for one year longer and proposed to inspect the examination again.

(V.) The Committee had approved certain alterations in geometry at the local examinations of the Universities of Oxford and Cambridge.

(VI.) The Committee determined to approve of the Senior School Leaving Certificate of the University of Birmingham when accepted for matriculation in that University.

(VII.) The Committee had informed the Dental Board of Queensland that up to the present time no Preliminary Examination for dental students alone had been recognised by the Committee, and that it saw no reason for departing from this policy.

(VIII.) The Committee reported that it had considered the proposals for a school certificate in England made by the Consultative Committee of the Board of Education for England and Wales. The recommendations made thereon by the Committee to the Council will appear from the report of the proceedings published below.

Dr. Windle, having briefly stated the history of the negotiations which led to the adoption of the Consultative Committee's scheme, said its main object was to diminish the multiplicity of examinations in secondary schools. Those acquainted with second grade schools were perfectly aware that what would be the sixth form in a larger school was absolutely devastated at the present time by the multiplicity of examinations for which the boys were preparing. Sometimes in a school there were candidates for a half-dozen different examinations and that school was a coaching institution for those examinations instead of being a place of regular education. The object of the scheme was to diminish the difficulties of those schools. It also provided that examination papers should be set for each school and not for the whole country. If an examination were held for each school, somebody must control the examination, and it was suggested that the school should be attached to either a University or a combination of Universities, or an Examination Board, which should examine and inspect it regularly, and it was understood that no school should be allowed to take part in this examination unless it had secured the approval of the University to which it was attached, and had been regularly inspected by that body in order to ascertain that the teaching in the school was properly carried out. It was also proposed to set up a Central Board consisting of the representatives of the different Universities, whose duty it should be to produce common standard between the different classes of examinations. As somebody must necessarily set that Central Board going, it was suggested that the Board of Education, in the first instance, should ask for nominations from the different bodies. With regard to the method of examination, it was provided that the examination should be by internal and external examiners; but it was clearly laid down that the final decision as to the passing of the candidate should be with the external examiners, although the teacher might be called in to consult in the matter. That would entirely safeguard the character of the examination. It might at first be thought that this was adding another examination, but it was hoped it would eat up many others and thus tend to a diminution. It was, however, perfectly clear that some of the present examinations must continue, because there were a number of schools not strong enough, or sufficiently well organised, to enter into the scheme, and also a number of students who studied privately and must be provided for. The Committee did not think it was their business to criticise the scheme too much in detail; that was a matter much more for the Universities and the bodies directly affected by it. The Committee considered that their duty was to recommend the Council whether this scheme on general lines and on general considerations would be advantageous to education and, of course, particularly to medical education. He therefore moved the first recommendation:

That any well-considered plan which would tend to a diminution in the number of examinations in preliminary subjects of education, and to a unification of standard of those which remain, would meet with the hearty approval of the Council.

Sir Christopher Nixon seconded. Although the scheme would add an additional examination yet he was sure it would absorb a great many others, and the Council would effect what it so much desired, namely, the lessening of the number of preliminary examinations;

Sir Victor Horsley said the proposals of the Consultative Committee had not been adopted by the Board of Education and therefore the Council ought not to do anything of a final nature. He was disappointed with the report because it did not go far enough, and he did not agree that "any plan" would meet with the hearty approval of the Council. As the subject was purely in a tentative stage the Council ought not to send answers to the Board of Education which would seem to show that it approved of this plan. Perhaps it might, but it was not what it asked for. The Consultative Committee proposed the establishment of a number of Examining Boards, but the third kind would not be a University. True there would be a representative of a University upon it, but the major part of it would be laymen not necessarily possessing sound ideas on the standard of University education. The Council ought to ask the Board of Education, in considering the report of the Consultative Committee, to consider once more whether it could not introduce into this country the system which worked so well in Scotland, namely, a State examination; such he was sure was what the medical practitioners hoped would be established. He moved as an amendment

That, while recognising the practical difficulties of unifying methods of testing secondary education, the General Medical Council expresses the hope that the Board of Education may, in considering any system of school certificates, find it possible to establish a Central Board for the purpose of creating and supervising a single examination of such a standard that it might, in the opinion of the General Medical Council, be recognised as qualifying for entrance to a course of professional study.

Dr. Windle, on a point of order, could not see that this was an amendment. A single examination would be an amendment, but Sir Victor was proposing a Central Board of Supervision.

Sir Victor Horsley replied that the amendment included, not merely a Central Board, but also a single examination.

Dr. Norman Moore thought the recommendation so simple it was unnecessary to discuss it at any length.

Mr. George Brown took it that if there was to be one examination there would be different centres for it.

Dr. Mackay trusted the Council would not alter the proposal, which was general and one with which they all agreed. Many of them thought that the ideal of a single examination for the whole of England was not realisable.

The President thought there was a want of precision in the expression "any plan"; it was too indefinite. And nothing was said as to a proper standard, which was an important point. It was not only advisable to have a diminution in the number of examinations and unification of standard, but the standard should be a proper one.

Dr. Windle was prepared to substitute another word for "any," but pointed out that Recommendation (1) was governed by (2) and the standard was that accepted by the Universities of England.

Sir Victor Horsley suggested that the standard should be discussed on (2). He purposely put in his amendment the words used by the Council two years ago.

The President thought there should be specification.

Dr. Windle said that Sir Victor had read in Clause 3 of the scheme something which it did not contain: that the Examining Board proposed would contain a large majority of persons not connected with any University. There was no such statement; on the contrary it was pointed out that such a board should contain a large academic element. A centralised State examination would give no elasticity and no chance to schools to make educational experiments, but an examination such as that suggested by the Committee would do both. The curse of South Kensington to this country had been the fact that it bound everything down in one iron chain and allowed no kind of departure or experiment from a single code, a state of affairs which to his mind was fatal. Those members of the British Medical Association who demanded a single State examination knew nothing about the question of examination in this country. A State examination in the end would be a curse instead of a blessing.

Sir Victor Horsley said, in reply, that he was sure the members of the British Medical Association would be glad that their action had provoked criticism, but they were perfectly competent to consider and were thoroughly acquainted with the conditions of preliminary education. He was sorry to hear what Dr. Windle had said, because if his remarks about centralisation were correct, then Scottish education ought to have been a failure, whereas it had been the exact converse. The failure in England hitherto had been due to the fact that they had not a Board of Education which acted up to the requirements the country considered it ought to have made. It was because they had had no directing force at the centre—no co-ordinating force—that secondary education in England was in its present condition. A proposal which would tend to establish that directing and co-ordinating force would elevate, and not retard, secondary education, as had been suggested. Do not say, "We will take anything you give us." Let the Council tell the Board of Education what it wanted. If they could give it they would, if they could not they would say so.

The amendment was then put and declared lost.

Sir Victor Horsley asked for the names and numbers, when it appeared 4 voted for, 18 against; 8 did not vote and 3 were absent.

Dr. Windle, with the consent of his seconder, introduced the words "well considered" before the word "plan."

The Recommendation, as amended, was then put and adopted.

Dr. Windle then moved, instead of Recommendation 2 in the report, the following:—

That if the standard of the examination contemplated in the scheme were such as to be generally accepted for entrance or matriculation by the Universities of England the Medical Council would be prepared to recognise it as qualifying for entrance on a course of professional study.

Dr. Pye Smith seconded.

Sir Victor Horsley said no one could quarrel with that; that was absolutely a different resolution to what was on the paper. If the standard was to be a matriculation which was to be agreed upon by all the Universities, that, of course, would be almost the millennium.

Dr. Windle remarked that that was what was intended by the second recommendation.

Dr. Pye Smith agreed.

The Recommendation was put and agreed to.

Dr. Windle moved Recommendation 3:—

That pending the general adoption of [this or any similar scheme] *a uniform system of educational tests* the Council would welcome the establishment, under the authority of the Board of Education, of a Central Board, such as that outlined in Clause 6 of the Scheme, for the purpose of classifying examinations according to standard and arranging for the mutual recognition of certificates; and, further, that they regard the establishment of such a Board as highly desirable from an educational point of view.

* The words in italics were substituted for those in brackets.

What the Education Committee asked for in the first place was a recognized body which would authoritatively state whether certain examinations were of a similar character or not, and, in the next place, to try and arrange for the mutual recognition of certificates. They started with the Universities of Oxford, Cambridge and London, which had arranged for a recognition of certain of their entrance examinations and matriculations as qualifying the one for the other. That was a good beginning and he would like to see it extended among other Universities, as a system of passing from one institution to the other on the examination of one of them was very desirable.

Dr. MacAlister seconded. Personally he was not in accord with Dr. Windle in the whole of the details, but he regarded this provision as the most important one of all, partly for Sir Victor Horsley's reasons: that was to say, if this Central Board were established it would be a germinal board and might lead to much more. If it unified the standard of examinations it would do a very great thing, but his impression was, once it was created, it would find more work to do: that was to say, to bring about harmony in regard to secondary education.

Sir Victor Horsley thought the expression should be more general, so as to read, "pending the adoption of a scheme of unification of University tests."

Dr. Windle accepted the suggested modification.

The President wanted to know whether it was intended that in England there should be machinery for the recognition of equivalent examinations passed elsewhere. They granted it in Scotland; was it proposed to be reciprocated?

Dr. Windle: Yes. The desire was to bring in as many examinations as possible. There was a Board of Education for Wales and it very strongly objected at the present moment. The Board would certainly not be deprived of the power to negotiate for mutual recognition of certificates.

The Recommendation, as modified, was put and agreed to.

On the motion of Dr. Windle, seconded by Sir John Moore, the report, as modified, was approved.

Report of the Pharmacopœia Committee.

The report of the Pharmacopœia Committee was received and entered on the minutes.

Report.

The report stated that the stock in hand of the *Pharmacopœia* was 1,128 copies, and of the *Addendum* 2,001 copies. It would therefore probably be necessary to print a fresh issue of the *Pharmacopœia* before November, 1905.

The Committee recorded its grateful sense of the services rendered to the Committee by Dr. Payne, especially in relation to the formation and arrangement of its library of reference, and that Dr. Norman Moore had undertaken the charge of the library.

The Committee reported the receipt of a communication and enclosures from the Privy Council showing that a large measure of approval had been accorded to the agreement on the subject of international uniformity in the pharmacopœial preparations of potent remedies.

A paper of enquiries had been drawn up bearing on the question of the ultimate inclusion in the Imperial Pharmacopœia of the drugs and preparations sanctioned for Indian and Colonial use in the Addendum of 1900. By the courtesy of the Secretaries of State the enquiries had been brought to the special notice of the various administrative authorities of the Empire.

Report of the Finance Committee.

An interim report by the Finance Committee was received and entered on the minutes.

Report.

The report stated that a windfall, in the shape of £1,000 from the builders of the adjoining premises, who had encroached somewhat, was likely to make the receipts of the Council and its Branches for the year to nearly balance the expenditure. It was proposed to deal with the £1,000 by paying off that amount from the mortgage held by the English Branch. But there will still be a deficit, and the latter, as it will have to expend some of its capital to meet the call upon it, will probably use this sum as income. As the Dental Fund is by statute distinct from the other moneys of the Council, it was decided to sell Consols in order to repay a temporary loan of £1,200 from the Dental Fund.

The Council then adjourned.

Monday, November 28th, 1904.

Sir William Turner, K.C.B., President, in the Chair.

The minutes of Saturday's proceedings were read and, as altered, confirmed.

Report of the Examination Committee on the University of Edinburgh.

Sir Patrick Heron Watson, Chairman, moved the adoption of the Examination Committee's report on the Final Examination of the University of Edinburgh. He then proposed to read the report (see above).

Sir Victor Horsley said the members of the Council had no doubt read the report, and he thought it would save time if only the recommendation of the Committee was read.

Sir Patrick Heron Watson appealed to the President as to whether he should read the whole report or only part of it.

The President thought the whole report should be read.

Sir Patrick Heron Watson then read the report and formally moved its adoption.

Dr. McVail formally seconded, reserving his speech.

The President said he thought it was obvious that, sitting in the Council as the representative of the University of Edinburgh, such a document as had just been read ought not to be allowed to pass without their representative saying something on it. Inasmuch as a large part of the report of the Visitor and Inspector was entirely satisfactory as to the mode in which the Final Examination of the University was conducted, he had no observations to make upon it. That part of the examination was very cordially commended, and in regard to three-fourths of the examination he thought the Visitor and Inspector could not have spoken in much higher terms; but there were parts of their report which he thought might be regarded as strong adverse criticism. They might be classed under the general heading of surgical anatomy and procedure and operative surgery, and he would deal also with certain general observations which were interspersed throughout the report, because it was perfectly obvious in reading the report that that part of the examination which was regarded as defective by the Visitor and Inspector was the examination in clinical surgery and practical surgery. He would first deal with that part of the report which appertained to surgical anatomy and procedure; the report said:

During the three afternoons we devoted our attention to this part of the Surgical Clinical Examination not a patient was placed in the position of one who had to undergo the operation suggested. No mention was made of assistants, or the use of instruments which might be required. No attempt was made practically to get out of any candidate any precise knowledge of the relation of an artery or nerve. Beyond what book knowledge would have given him—indeed, the examination was so unsatisfactory that we were enabled to realise the truth of the adverse criticism we have heard of this method of examination in a way which we never before believed to have been possible.

The Council would recognise at once that that was a sweeping statement. It was obvious that anyone bringing a charge of that kind against the examination of a body so well recognised as the University of Edinburgh should have been supported by individual examples. The Council in its arrangements as to the visitation and inspection of examinations had laid down a Standing Order which was of great importance in connexion with the mode in which reports were to be presented to the Council. He thought he understood Sir George Philipson to say that he was not aware of any Standing Order on the matter and that nothing was said in the commission referring to the Standing Orders. He should like to read a copy of the communication which was given to Sir George Philipson. It was as follows: "On behalf of the General Council of Medical Education and Registration of the United Kingdom, and in accordance with the Council's Standing Orders on the subject of visitation and inspection of examinations, I hereby appoint you Visitor," and so on. He submitted it was the duty of the Visitor and the duty of the Inspector to know what the Standing Orders said on the matter, and if they did not look into the Standing Orders he was sorry to say he did not think they had fully discharged their duty. Section 18 of Standing Order XXII said:

The inspectors and visitors shall enter in a diary the date of and the time occupied in each inspection or visitation; together with any observation they may respectively think fit, and they shall present to the Council, at such times as may be required, those diaries, together with reports as to the sufficiency or insufficiency of the materials for and the modes and results of the examinations which they inspect or visit.

He then asked Sir George Philipson if he had kept a diary.

Sir George Philipson replied that he had no diary from the Council.

The President: But did you keep a diary?

Sir George Philipson: I did.

The President: Then where is your diary?

Sir George Philipson: I have not got it here.

The President: The Standing Order says that the diary is to be presented to the Council. I should like to see that diary.

Sir George Philipson: I should be happy to furnish it to you, but I have not got it in London to-day. My attention was not directed to the Standing Order.

The President: Your commission states your visitation is to be conducted in accordance with the Standing Order.

Sir George Philipson: I can only say I did not notice that part of it.

The President: I should like to call for it. How am I to go on with this matter?

Dr. Pye Smith inquired whether Sir William Turner was speaking as the representative of the University of Edinburgh or as President.

The President replied that it was difficult sometimes for him to distinguish, but speaking as the representative of the University of Edinburgh he had a right to ask for the diary.

Sir Hugh Beevor stated that when he was appointed he read the communication that he was appointed in accordance with the Standing Orders.

The President said they would deal with that more when they came to Sir Hugh Beevor's visitation. Surely Sir Hugh Beevor took the trouble to look at the Standing Orders.

Sir Hugh Beevor replied that he gathered he was simply appointed under them.

The President remarked that this raised another question. Every member of the Council was supposed to be conversant with the Standing Orders. As the diary was not before them they must go on.

Mr. George Brown asked if the Inspector had a diary.

The President replied that he had not seen it.

Mr. George Brown said that if it was not before them they might perhaps obtain it.

The President said that he was going to question the truth of the paragraph which he had read. He had been supplied before he left Edinburgh with a statement as to the examination of certain of the candidates by the examiner who examined them. He had before him a statement of the examiner of the questions he put to the individual candidates that he examined, and the notes of the examination were made by him on the day of the examination, when the Visitor and Inspector were present. Sir William Turner then referred to certain instances. He thought the Council, from what he had read to them, would be of opinion that the sweeping statement made did not quite describe the nature of the examination. Then with regard to the examinations in Surgical Anatomy and Procedure, there was a statement which he thought was of a very curious kind. The statement was:

Let parts B and C of this Clinical Surgical Examination be conducted entirely apart from the wards and sick people.

Then it went on to suggest how the examination should be conducted, namely, in a theatre, and that muscular workmen should be selected and chalk lines drawn and so on. This was really a somewhat novel recommendation, because it signified that the Surgical Anatomy and Procedure should be divorced from Clinical Surgery. In Edinburgh they understood a Clinical Examination to be an examination of the patient at the bedside, and yet the Visitor and Inspector suggested that all that part of the examination should not be done in what they held to be the appropriate place, namely, at the bedside, but outside in a theatre or an adjoining apartment. Operative Surgery was a subject as to which there was a difference of opinion among the Examining Bodies, due largely to the facilities which the different schools had in procuring dead bodies. Where dead bodies could be easily procured, there operative surgery was carried out necessarily to a very much greater extent than it was in schools where they could not be extensively obtained; but, notwithstanding that, he gathered from this report that the Visitor and Inspector looked, he might almost say, with contempt upon their method of testing the qualifications of candidates by operations on a dead body. They gave it no sanction, but, in fact, they spoke of it as a thing that ought not to be done. He did not know if that was the opinion of the Council. He was inclined to think it was not. When Dr. Bennett, who was now a member of the Council, visited the examination in the University of Edinburgh in the year 1888, he thought there were no operations then on dead bodies, and that Dr. Bennett suggested that they should be introduced.

Dr. Bennett said that was so.

The President stated that they could not introduce them in the same way as in some other schools, because they had not the material. Still they introduced them as far as was in their power and every candidate when he came up for an examination knew that he might have to do an operation. They were chosen by lot and the lot might fall on him; but if, according to the view of the Visitor and Inspector, none of these examination tests for operative surgery were of any moment, what about education in operative surgery? Was that also of no good? Although these gentlemen had expressed various opinions on medical education they did not happen to have touched on that particular question, but every candidate for the degree of the University of Edinburgh must go through a course of operative surgery and was trained in operative surgery from the start. The University was not disposed to give it up and they were not disposed to pass over that mode of examining living persons under the conditions described in the report. Then there was a general observation made by the Visitor and Inspector which many people might regard as putting the Edinburgh School in a position in which it ought not to be placed by anyone holding the office of Visitor or Inspector. The paragraph to which he referred was as follows:

From the papers handed to us as specimens of the Written Examinations in all the subjects, which we have attentively perused, it is quite clear that most candi-

dates have been well read and well coached up by books and lectures, for they describe disease graphically, and in the diagnosis of disease divide and subdivide subjects in an endless way, but the knowledge implied by this paper work, to make it of value, requires to be vivified, and this can be efficiently carried out only by its application at the bedside to injured and diseased mankind.

He thought that was certainly a reflection on the particular training of that University. He had already stated that every student must go through a course of operative surgery, and he should like to point out what opportunities the Edinburgh students had of receiving that particular teaching. They had a hospital with 860 beds in the Royal General Infirmary; they also had a hospital for children with 120 beds, of which 41 were reserved for surgical cases. They had also access to fever hospitals, midwifery institutions, and so on. The Royal Infirmary was a great hospital school; it had six full surgeons for the general work, three surgeons for special work, and each surgeon had an assistant. All were engaged in teaching and in fact there was no officer at the Infirmary who was not engaged in teaching. They spent two or three, or even more, hours daily teaching in the wards. So that he entirely repudiated the statement implied in this report that an Edinburgh student was only a book-trained student. He did not know any student who had more time and labour given to him in his particular teaching than the student of the Edinburgh University. He was sorry to have to interpose this matter into his statement, but the paragraph in the report compelled him to do so. The report of the Faculty of Medicine pointed out especially that in the report of the Visitor and Inspector nothing was said as to whether these candidates that they speak of as "ill-prepared" were rejected or passed. He believed that the ill-prepared candidates were rejected, because he found on looking at the tables that the rejections in surgery were about twice as numerous as the rejections in medicine. It therefore followed that the ill-prepared candidates in surgery were rejected. He did not think it was fair to test the standard of knowledge demanded of a candidate from the want of knowledge on the part of a rejected candidate. It should be tested by the knowledge obtained by the candidates who passed; but no attempt was made by the Visitor and Inspector to give the Council information on that very important point. Coming to the report of the Examination Committee he must say a word or two on the recommendation which formed the concluding part of the report:

This Committee recommends that the Medical Council should direct that a further inspection be made of the surgery part of the Final Examination in the University of Edinburgh.

The report, in his judgement, struck at the honour of the University of Edinburgh as a great teaching, examining and graduating body. Its credit was involved in it. He saw sitting at the table at that moment in front of him seven graduates of the University of Edinburgh who were members of that Council, and he felt sure that those gentlemen, along with himself, would feel that there should be nothing on the minutes of the Council to reflect on the honour of the University of Edinburgh as a great teaching and graduating body, so that he would welcome the re-inspection should the Council decide that it should be undertaken, and therefore the Council must understand that he was prepared, if necessary, to vote for the adoption of the report.

Sir Victor Horsley hoped the recommendation for a further inspection would be carried, not only because there was a conflict of opinion on a question of fact, but because the rejections in surgery at this examination were one-third higher than the rejections in medicine. It seemed to him that that suggested possibly that the method of teaching in the University of Edinburgh required some readjustment. He also desired to have the date "1905" inserted after the word "May" for a specific reason. When the present Inspector was appointed on the 25th May, 1904, he protested against the appointment on the ground that the Inspector had not been within the walls of a surgical hospital for something like 15 years, and he must repeat his protest.

Dr. Pye Smith moved as an amendment that the recommendation of the Committee be altered by omitting the words after "surgical examination" down to the words "each other," as he felt it a pity to have a somewhat controversial preamble. They all viewed with the utmost respect the ancient and illustrious traditions of the University of Edinburgh, but the very fact that it had those traditions and was so universally respected was an excellent reason why here and there some slight deficiency or comparative oversight that had crept in should be removed, and therefore, so far from casting a slur on the University by passing the resolution, he held they were helping it. The same thing had occurred with regard to the Universities of London and Oxford and the evils pointed at had been removed and the right method restored. So with regard to the two Royal Colleges of London. Their examination had been reported upon and they had agreed that certain improvements should be carried out, and at the present time the examination was an admirable one, a great deal better than it was some years ago.

Sir John Moore, in seconding, stated that he had, as a matter of fact, made a diary when inspecting St. Andrews University, and it was there for inspection by any member of the Council. With regard to the visitation of the University of Edinburgh, he could assure the Council that there was a diary in existence; he knew that the Inspector had it in his possession and he was the person who should be answerable for its non-production.

The President said he had acted as a Visitor and had always kept a diary.

Sir John Moore remarked that the diaries did not come in as a matter of course; it was only when the Council called for them; it would be acting within its province in calling for the diary of the Visitor to the University of Edinburgh. He did not think that the honour of the University would be in any way tarnished by an unfavourable report on its examination. The Royal University of Ireland had been unfavourably reported upon, but they did their best to remove the defects which were suggested. If any institution were to regard its honour as tarnished by an unfavourable report, then the visitation of an examination would become a dead letter.

Dr. Norman Moore thought the judgement of the Committee was one which called for revision, and therefore he supported the amendment. The visitation and inspection of the first examination of the two Royal Colleges had been alluded to. That report was a most admirable one and in every way perfectly fair, just and useful in every particular; but there was one flaw in it which was present in this one and which Visitors and Inspectors ought to avoid: that was, going into subjects which were not precisely the subjects of reference.

Sir Christopher Nixon was of opinion that there was nothing which would warrant the President saying that there was any reflection on the honour of the University of Edinburgh. He thought it was making too much of these comments to have a special visitation, but as it had been moved he would support the amendment.

Dr. A. Thomson pointed out that all the Inspector had to report on, according to the Act, was the sufficiency or insufficiency of the qualifying examination.

Dr. McVail: And any other matters.

Dr. A. Thomson agreed. When the Inspectors had done that, their duty in that respect was practically complete. He wanted to know what attitude the Council would take up with regard to future inspections, and if it would ask its Inspector definitely whether the examination was sufficient or insufficient, as it was empowered apparently by the wording of the Act to do. He would like more definite instructions to be given to the Inspectors.

Dr. McVail did not see any objection to the amendment, but suggested that it might be improved. He for one would greatly regret if the Council ever instructed its Visitors and Inspectors to report only as to whether the examination held by bodies in Schedule A came up just to the level of passing it. The Council had always had in the reports the views of the Visitor and Inspector with regard to the inspections, and he hoped it would continue to do so.

Sir George Philipson stated that he was unaware that there was anything in the Standing Orders with reference to the preparation and arrangement of the report, or the conduct of the Visitor and Inspector, when he undertook the visitation and inspection, and expressed his regret that he had not that information. With regard to the diary, if it was the Council's desire, he would forward his notes immediately he returned, but he wished to say that since he had had the honour of being a Visitor he had never heard of a Visitor being asked to produce his dairy. He thought, as the outcome of the discussion, it was desirable, for the aid of the Visitor and Inspector, that there should be some more definite rules and regulations as to visiting and inspecting in the future, and then Visitors and Inspectors would be relieved of a reflection that they had not followed the usual plan. The Visitor and Inspector had taken every care to ascertain the truthfulness and correctness of the statements made in their report, and he stood by those statements as true and correct. He wished to say nothing on the counter statements which had been made on the report, and to-day reiterated by the representative of the University. The Visitor and Inspector were actuated by only one motive, and that was faithfully and honourably to carry out the trust imposed upon them by the Council, and further, he wished to say that they received the greatest kindness, courtesy and consideration from their esteemed President, holding the honourable position of Principal of the University of Edinburgh, and the other officials.

The President said the amendment moved by Dr. Pye-Smith and seconded by Sir John Moore, was:

That the recommendation be adopted in the following form: That the Council direct that a further inspection be made of the surgical part of the Final Examination of the University of Edinburgh during the year 1905.

Sir Patrick Heron Watson, on behalf of the Committee, accepted the amendment in place of the motion.

Dr. Lindsay Steven pointed out that the rule for the examination of a student in the presence of two examiners had been interpreted

in one way by the Visitor and Inspector and in another by the University. He thought the rule should be made so clear that there should be no difficulty with regard to its interpretation.

The motion as moved by Dr. Pye Smith and seconded by Sir John Moore was put and adopted.

Mr. George Brown moved, and Mr. Jackson seconded, the following rider:

And that the Visitor and Inspector be asked to give details, as far as may be necessary, as to answers of candidates which might tend to bear out their conclusions.

Dr. A. Thomson pointed out that by the Standing Orders they were at present required to do so, and therefore the rider was unnecessary.

Mr. George Brown replied that they did not give details.

The President observed that that was one of the great objections of the University of Edinburgh; it was because of that difficulty that he had made his statement. They made general statements, but gave no evidence bearing out those statements.

Dr. MacAlister said if special instructions were given in this case it would be looked upon as required to be given in every case, and it would be a dangerous innovation.

Mr. George Brown, at the invitation of the President, withdrew his motion, but said at a later period he should ask for a committee to draw up rules and regulations.

Report of the Examination Committee on the Apothecaries' Hall, Dublin.

Sir Patrick Heron Watson moved:

That the report by the Examination Committee on the inspection of the Final Examination of the Apothecaries' Hall, Dublin (July, 1904), be received and entered on the minutes.

Dr. McVail seconded, and this was agreed to.

Sir Patrick Heron Watson then moved the adoption of this report. He stated that the Examination Committee concurred with the Inspector's conclusion that the examination was sufficient.

Dr. McVail seconded, and this was agreed to.

Report of the Examination Committee on the Final Examination of the University of Glasgow.

Sir Patrick Heron Watson next moved:

That the report by the Examination Committee on the inspection of the Final Examination of the University of Glasgow be received and entered on the minutes.

Dr. McVail seconded.

The report of the Visitor and Inspector ended with the following paragraphs:

We have been much pleased with the Final Examinations of this University, and report with confidence the examinations as "sufficient." We have reported all the examinations in Medicine and Midwifery to have been most satisfactory, whilst those of Surgery (Clinical, Oral and Practical) had reached a standard that can hardly be beaten, and it would be satisfactory if it could be equalled.

In saying this we would draw the attention of the University authorities to some remarks that were made in a report upon a sister University, that of Edinburgh, and which we now include in this report, for they are applicable to the other Universities of Scotland, as to all teaching and examining bodies in the United Kingdom (*vide* Appendix C).

Appendix C was a reprint of the remarks prepared with special reference to the University of Edinburgh by Sir G. H. Philipson and Mr. Bryant.

Dr. McCall Anderson desired to move an amendment. The "conclusion" of the Visitor and Inspector signed by them had led him to suppose that that was the end of the whole matter, till he turned to Appendix C, which was referred to in the "conclusion," when he found "Remarks prepared with special reference to the University of Edinburgh by Sir George Hare Philipson and Mr. Bryant, but applicable to all licensing bodies." He then drew attention to a certain passage in Appendix C, and said he could not understand how the Visitor to the University of Edinburgh had any personal knowledge of the "startling" answers which were made by the candidates for Glasgow when he was not in Glasgow. At the same time he wished to say that he agreed very heartily with the general proposals contained in the appendix, although he did not think that was the place where such observations should be made. Glasgow was in a different position to Edinburgh with reference to these remarks, because in regard to Edinburgh they constituted an essential part of the report, which was signed by both the Visitor and Inspector, whereas this Appendix C to the report on Glasgow was not signed by anybody. It was for these reasons that the University of Glasgow, in their observations, said nothing whatever about Appendix C; at the same time, if the circumstances were brought to their notice at another time, and in a different form, they would give this matter their careful and favourable attention. He concluded by moving as an amendment:

That Appendix C be not entered on the minutes, but only the report signed by the Visitor and Inspector.

Mr. George Brown seconded the amendment.

Sir George Philipson stated that it was on the authority of Mr. Bryant, and on his authority alone, that Appendix C had been added to the report on Glasgow. The same remark applied to the reports on the other Universities of Scotland. The Visitor of the University of Glasgow (Sir John Beevor) and the Visitor of the University of St Andrews (Sir John Moore) gave no authority to the Inspector to insert these remarks in these reports.

Sir Hugh Beevor supported the amendment and confirmed what Sir George Philipson had stated.

Sir Charles Ball, on a point of order, drew attention to the fact that the last paragraph of the "conclusion" was signed by Sir Hugh Beevor and Mr. Bryant.

The President pointed out to Sir Hugh Beevor that he seemed from that to stand sponsor for the Appendix.

Dr. McCall Anderson wished to alter his amendment by adding after "Appendix C" the words "and all reference to it."

The President imagined that Dr. McVail would raise the same objection as in the case of the University of Edinburgh, namely, that the Council could not alter a report.

Dr. McVail said that was so.

Sir Hugh Beevor stated that to the best of his remembrance he received no proof of the report before it went to Glasgow. On going over the work with the Inspector he distinctly mentioned the report of his opinions on previous examinations, but he (Sir Hugh) never saw it in writing.

The President inquired if they were to understand that Sir Hugh Beevor did not see the last paragraph of the report which had just been read.

Sir Hugh Beevor replied that he did not see Appendix C, so he presumed he did not.

The President remarked that this introduced a very curious question into the whole series of these reports.

Dr. Finlay said that in regard to Aberdeen they thoroughly accepted the views expressed in this Appendix. They thought it was of the first importance to put the clinical part in the highest position.

Sir Patrick Heron Watson stated that the Committee did not regard Appendix C as part of the report. They thought it might, with the approval of the Council, be expunged.

The President said the Council must deal with the fact that it had before it the report containing the paragraph which had been read. No one was more emphatic than Dr. McVail, the other day, in pointing out that the Council could not "mutilate" a report. That was then agreed to, but now the Council was asked to mutilate this report.

Sir Victor Horsley suggested that such an amendment as Dr. McCall Anderson had proposed would not be in order.

The President stated that the question was whether Appendix C was to be considered a part of the report. If it were a part of the report he held that a resolution could not be submitted to the Council to excise it.

After some further discussion:

The President ruled that Appendix C was part of the report, and that he could not accept Dr. McCall Anderson's amendment. He then put the motion that the report on the University of Glasgow be received and entered on the minutes, and this was agreed to.

Sir Patrick Heron Watson moved, Dr. McVail seconded, and it was agreed:

That the report of the Examination Committee be adopted.

Report of the Examination Committee on the Final Examination of the University of Aberdeen.

Sir Patrick Heron Watson then moved:

That the report by the Examination Committee on the inspection of the Final Examination of the University of Aberdeen be received and entered on the minutes.

Dr. McVail seconded.

The inspection of this body was conducted by the Inspector, Mr. Thomas Bryant alone, and the report of the Examination Committee on his report is as follows:

The conclusion of the Inspector regarding the Final Examination of the University of Aberdeen is that it is a good one, and is in some points excellent. The Inspector, in regard to the Operative Surgery part of the examination, says that it is of no real value, and that it spoilt what would have been an unexceptionable Oral Examination. This Committee does not see reason to concur in that opinion.

From what the Inspector reports as to the adjudication at the end of the Examination, it appears that the University may grant a pass mark in Systematic Medicine, and yet refer the candidate in Clinical Medicine. This Committee recommends the Medical Council to express definitely its opinion of this procedure.

This Committee observes that the Written Examination in Surgery consists of ten questions, all of which had to be answered in three hours. We consider that the scope of the questions was such that it was quite impossible for a candidate to answer this paper fully in the time allotted, and would also point out that this is contrary to the recommendation of the General Medical Council:—

"In the Written Examination an average of at least half an hour should be allowed for a candidate to answer each question in the papers on Medicine, Surgery, and Midwifery" (Vol. XXXIII, p. 386).

Dr. Finlay desired, before the report was entered on the minutes, to call attention to the second paragraph. If the present was the proper time to move that that paragraph should not form part of the report he would do so; if not, he would bring the matter up on the adoption of the report. He rather wanted this matter to be kept over till the whole cycle of examinations had been completed.

The President thought that probably was a matter that might be left over till all the reports had been considered *in toto*. He then put the resolution and it was carried.

Sir Patrick Heron Watson moved, Dr. McVail seconded, and it was resolved:

That the report be adopted.

Report of the Examination Committee on the Final Examination of the University of St. Andrews.

Moved by Sir Patrick Heron Watson, seconded by Dr. McVail, and resolved:

That the report of the Examination Committee on the inspection of the Final Examination of the University of St. Andrews be received and entered on the minutes.

The visitation of this University was conducted by Sir John W. Moore (Visitor) and Mr. Bryant (Inspector), and concludes as follows:

Conclusion.

As a conclusion, we are ready to report that the Final Professional Examinations of the University of St. Andrews are "sufficient."

All the written examinations have been described as satisfactory (p. 7). The Clinical Examinations in Medicine and Surgery as satisfactory, but too limited (pp. 8, 9). The Oral Examinations in Medicine and Surgery as good (p. 11), and that in Midwifery as most satisfactory (p. 14). The Examinations in Special Surgical branches were full and satisfactory, and the one in Mental Diseases good and highly interesting. The Examination in Practical Surgery was sufficient.

The report of the Examination Committee, after describing the nature of the examination, concludes as follows:

This Committee are of opinion that the whole Examination was satisfactory.

Sir Patrick Heron Watson moved and Dr. McVail seconded the adoption of the report.

Dr. Mackay said this report had been a great disappointment to those associated with the medical school at St. Andrews. He drew attention to discrepancies between the report of the Committee and the report of the Visitor and Inspector, and on behalf of the Faculty denied the accuracy of some of the statements contained in the latter. The Faculty of St. Andrews did its best to improve and extend the scope of the examination, and when compared with that of other Universities it appeared to be as broad and thorough as any. They had sought in vain in the reports on other Universities to find some principle to guide them in carrying out their examination.

Sir John Moore, as Visitor of this examination, agreed with much that had fallen from Dr. Mackay, and in many particulars the examinations were conducted with the utmost care and were very searching; but the Council must remember that St. Andrews had only recently established a Final Examination under the Act of 1886. He believed only four candidates in all had passed this examination previously and at the one that he and Mr. Bryant visited and inspected there were only six candidates; so allowance must be made for a certain amount of inexperience on the part of some of the examiners. He assured the Council from his own observation, confirmed by his notes made at the time, that the statements in the report were perfectly accurate, and that both he and Mr. Bryant devoted an infinity of trouble to the inspection, and tried to do their best.

The motion was then put and adopted.

The Council then adjourned.

Tuesday, November 29th, 1904.

Sir William Turner, K.C.B., President, in the Chair.

Signature of Reports.

Sir Hugh Beevor said that before the minutes were signed he would like to make an explanation. It would be remembered that during the discussion upon the report of the visitation of the University of Glasgow it had been pointed out that his name appeared at the end of the report. Upon making inquiries he had found out that his signature was put in the final proof as a matter of form in the office, and the final proof was not sent to him. He hoped there would be an instruction that in future no signatures should be appended without a final proof being submitted.

The minutes were then confirmed.

Report of the Examination Committee on the University of Edinburgh.

Sir Patrick Heron Watson moved that the Examination Committee be requested to consider their report on the Final Examination of the University of Edinburgh in conjunction with the results of the additional inspection of the surgical parts thereof, directed by the Council to be made in 1905, and to present a final report of the second inspection at the November session of the Council in 1905.

Dr. McVail seconded, and this was agreed to

The Royal College of Surgeons of England.

Sir Patrick Heron Watson next brought up the report by the Examination Committee on the further reply of the Royal College of Surgeons of England to the report of the Visitor and Inspector of the General Medical Council at the third and Final Examination of the Conjoint Examining Board in England.

Report.

The Inspection of the Third or Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Examining Board in England was held in January, 1903.

The report of the Visitor and Inspector was forwarded to the Body inspected, and subsequently this report, together with the remarks by the Body inspected, was referred to the Examination Committee. This Committee's report was adopted by the Council on November 30th, 1903 (see Minutes, Vol. XL. p. 152).

Some criticisms were made by the Visitor and Inspector in reference to Examinations in Operative Surgery, and in Ophthalmic and Aural Surgery, and also in reference to the Scheme of Marks in use at the Examination. These criticisms were referred by the Colleges to the Court of Examiners to consider and report thereon to the Council of the College. This Council forwarded the remarks of the Court of Examiners to the Medical Council, and on May 30th, 1904, the Medical Council by resolution referred the reply of the Court of Examiners to the Examination Committee for further consideration and report.

The Examination Committee observes, with satisfaction, that the Court of Examiners recommend such an alteration in the system of marking as practically to meet the objections of the Visitor and Inspector.

The Examination Committee regret that the Court of Examiners consider that such an Examination in Ophthalmic Surgery as this Committee regarded as being essential is unnecessary, and that the Court of Examiners find an Examination in Operative Surgery on the cadaver impracticable, owing to want of material, and further, that they do not approve of candidates being made to perform operations on the cadaver.

The Court of Examiners are of opinion that a written report on a Medical and Surgical case is neither useful nor practicable. The Examination Committee see no reason for altering their opinion as to the value of written reports in testing the knowledge of candidates.

He moved that the report be received and entered on the minutes.

Dr. McVail seconded, and this was agreed to.

Sir Patrick Heron Watson moved and Dr. McVail seconded the adoption of the report.

Sir Charles Ball said that it was improbable that students would pay very much attention to courses on operative surgery unless they were examined in that subject on the dead body. He knew that there were difficulties in obtaining subjects, and that was a legitimate objection where the subjects could not be obtained, but to dispute the necessity seemed to be going too far. The importance of a training in operative surgery was much greater to-day than it was a few years ago. Students who went out into general practice might be brought face to face with emergencies where it was impossible to obtain help from a specialist or operating surgeon, and the saving of life very often depended on whether the general practitioner was capable of undertaking the operation. He maintained that that knowledge could not be obtained in any other way in this country than by operations on the dead body. The same difficulty occurred at Edinburgh, where the scarcity of subjects prevented every candidate being tested in that method. If a candidate knew he was liable to be called upon to perform an operation himself on the dead body at the examination, it would ensure his being properly trained in the subject. He hoped that as the result of Sir Victor Horsley's motion the difficulty would be less urgent in the future.

Sir Victor Horsley had hoped that Sir Charles Ball would have concluded by moving a resolution, by way of a rider to the report, emphasizing the view of the Council on this important subject. He inquired of the President whether it would not be possible to take up this question next September, on a resolution based on the report, because if so he would say no more now.

The President replied in the affirmative.

The adoption of the report was then agreed to.

Report of Public Health Committee.

The Council then proceeded to the consideration of the report of the Public Health Committee, adjourned from November 25th.

Sir John Batty Tuke said the last paragraph of the report recommended the Council to refuse a certain application for exemption. The original object of framing these regulations was to provide a high standard of examination and for that purpose he had always resisted anything like relaxation. He thought each case should be considered on its merits.

Dr. Bruce stated that the Public Health Committee had agreed to support the motion of Dr. Lindsay Steven. Of course, that did not bind every member of the Council.

Sir Victor Horsley, on a point of order, suggested that Sir John Batty Tuke's motion governed the situation. If the Council agreed to that, then the candidate in question could come before a Licensing Body for examination.

Sir John Batty Tuke said the Public Health Committee had carefully considered his motion, and it felt great difficulty in accepting it. He therefore proposed to withdraw his motion and to suggest that the whole subject should be referred to the Public Health Committee.

Dr. Bruce said the Committee would consider it next session.

Dr. Lindsay Steven proposed:

That should the applicant be admitted to the examination by any of the qualifying bodies, without having personally complied with Rule 34, the Council will have no objection to the registration of his diploma when obtained.

This would not limit the proposal to one qualifying body.

Sir Charles Ball seconded.

The President inquired if the Chairman of the Public Health Committee accepted this.

Dr. Bruce said that, as the Chairman of that Committee, he accepted it, but that did not bind him as a member of the Council; he might have something to say about it later on.

Sir Victor Horsley thought that as the Committee at the beginning of the present session were of opinion that this exemption should not be granted, and now were of opinion that it should, the Council were entitled to be informed why they had changed their opinion.

Dr. Bruce replied that the Committee relied greatly on the opinion of Mr. Power, and Mr. Power did not see his way to oppose it.

Sir Victor Horsley said he had to make up his mind what was right, not only to this candidate, but to other candidates, and he could not guide his vote by the fact that Mr. Power, for whose opinion he had the greatest respect, had made some communication to the Committee, of the details of which they had not heard a word. When the point was raised by the Committee, he understood that it was a question of the interpretation of the regulations, and the Council had a most lucid explanation from Dr. MacAlister as to how those regulations now involved a hardship. If Sir John Batty Tuke's motion were carried by the Council, this hardship would be removed and the regulations put into proper form. He should like to ask Dr. Lindsay Steven to withdraw his amendment, and then he would press upon the Committee to withdraw their original resolution, so as to give way to Sir John Batty Tuke to move his resolution.

Dr. MacAlister believed it was dangerous to grant exemptions in such cases. It was not the duty of the Council to introduce them; it was the business of the Conjoint Board. He thought that the old rule referred to in the motion by Sir John Batty Tuke would require some modification to meet the changed circumstances; and, secondly, it was doubtful whether it would touch this particular case, because the regulation was originally meant to apply to Great Britain and Ireland. Therefore, if the Council felt it was a hard case, they could deal with it in the way suggested by Dr. Lindsay Steven; but also let them refer the whole matter to the Public Health Committee.

Sir Victor Horsley remarked that that was the answer he ought to have received from the Chairman of the Public Health Committee.

Dr. Lindsay Steven's proposition was then put and carried. It was then put as a substantive resolution and agreed to. It was further agreed that the matters contained in the notice of motion by Sir John Batty Tuke be referred to the Public Health Committee for consideration and report at the next meeting of the Council.

Report of the Pharmacopœia Committee.

Dr. MacAlister, in moving that the report of the Pharmacopœia Committee (see above) should be approved, called attention to the fact that the proposals of the International Conference at Brussels with regard to the desirability of obtaining international uniformity in the pharmacopœial preparations of potent remedies had received recognition from all civilized countries. All the nineteen Governments which published a pharmacopœia had agreed with the suggestion, and the Committee would bear this in mind when it undertook the revision of the Pharmacopœia of 1898.

Dr. Norman Moore, in seconding, referred to the enormous labour and great diplomatic skill and knowledge with which the Chairman of the Pharmacopœia Committee had carried the matter through. He said that Dr. Payne, who had rendered great services to the Committee in relation to the formation and arrangement of its library of reference, had presented to the Council a copy of the earliest Pharmacopœia, and the thanks of the Council were due to him for that graceful act on his retiring from the Committee.

The resolution was then put and carried.

Dr. Norman Moore said the services of Dr. MacAlister in connexion with this matter had been exceptional and such as the Council had no right to expect from any of its members, and he moved:

That the thanks of the Council be formally presented to Dr. MacAlister for his services, and also to Dr. Payne for his courteous present to the Council.

Dr. Little seconded, and it was agreed to unanimously.

Report of the Finance Committee.

Dr. Pye-Smith moved and Mr. Tomes seconded the following recommendations of the Finance Committee, which were agreed to:

I. That the General Council apply the £1,000 received from the builders towards the reduction of the mortgage to the English Branch Council of the General Council's property.

II. That when the accounts of the Dental Fund for the year are made up, the available surplus standing to the credit of the Fund be invested.

III. That the funds to carry out the suggestions in Paragraph II. of the report be provided by means of a loan from the Pharmacopœia Account, bearing interest at 3 per cent., repayable by equal annual instalments over a period of five years.

Education and Examination in Preliminary Science.

Sir Victor Horsley, in moving that the report of the Preliminary Scientific Education and Examination Committee be received and entered on the minutes, said that the Council last session adopted recommendations which related to physics, chemistry and biology; but the recommendation as to biology did not define in any way how much should be required of the student, and on his motion the Committee was reappointed to consider this point. In the discussion last session there was a distinct feeling that on the question of biology students were being carried too far in different directions, and that, if possible, the curriculum should be lightened. The Committee therefore considered what was the essential requirements in biology which should be asked for as a minimal education demand. In coming to a conclusion, it did not in any way wish to interfere with the liberty of any teaching or licensing body which might see fit to demand from its students extended courses in various directions.

Dr. MacAlister seconded, and the motion was agreed to.

Sir Victor Horsley moved and Dr. Windle seconded the adoption of the Committee's recommendation as follows:

9. That the synopsis or syllabus in Elementary Biology should include, as necessary subjects of study, the fundamental facts of vegetable and animal structure, life history, and function, as exemplified by specified types of cryptogamous plants (including bacteria), of protozoa, and of at least four of the higher animal groups, and outlines of Embryology.

Dr. A. Thomson thought the Council would get far more assistance from the bodies concerned if it gave a hint of what it proposed should be done, and to a certain extent took them into consultation.

Dr. MacAlister pointed out that the bodies had been consulted in minute detail, not only as to their courses, but their views on the subject, and their answers were appended to the report.

Sir Victor Horsley said it was due to Dr. A. Thomson to point out that last session the Council resolved that in respect of biology the synopsis or syllabus of subjects should be issued by each licensing body, consequently, it was entirely in the hands of those bodies to say how much of any subject named in the recommendations should be taught.

The motion was then put and agreed to.

On the motion of Dr. MacAlister, seconded by Sir Victor Horsley, it was resolved:

That copies of the report be sent to all licensing bodies.

Medical Companies.

Mr. Tomes moved, Sir Victor Horsley seconded, and it was resolved:

That the report of the Medical Companies Bill Committee be received and entered on the minutes, and leave be given to make an addition to the appendix.

Mr. Tomes moved:

That an answer be sent to the letter of the Lord President of the Privy Council in the terms of the report.

Up to a very recent date the Registrars of Public Companies conceived it to be their business to register as public companies any persons who fulfilled all the formalities required for registration under the Companies Acts, without inquiring into the titles under which such persons sought to incorporate themselves, consequently, companies were incorporated which bore medical or dental titles which otherwise they were prohibited from using. That state of affairs had been removed by the judgement of Chief Baron Pallas in the Irish Courts, which seemed to establish that a company was not at liberty to assume a title which an individual could not. In consequence of that judgement the Board of Trade consulted its legal advisers and they appeared to take the view that that judgement was right and should be acted upon, but it did not follow that the decision was retrospective; that was to say, the companies already registered and making use of medical or dental titles should not be allowed to continue to do so. A case raising that point was now pending before the Irish Courts. The letter of the Lord President of the Privy Council contained qualifications which appeared to water down the judgement considerably, because it suggested that if a company modified its title so as to be a less open infringement it might be registered, and it could state in its memorandum or articles of association that one of its objects was to carry on the business of a physician and surgeon or dentist. So while grateful for what had been obtained, it was desired to appeal once more to the Lord President of the Privy Council and ask him to take measures to remedy the further evils which were pointed at in the letter.

Sir Victor Horsley seconded.

Sir Charles Ball said that a company might live for ever, it did not die out like a dentist put on the Dental Register as in practice before the Dentists Act was passed; the question which was now being tried in the Courts in Dublin, by direction and at the suit of the Attorney-General, was to test the right of those companies that had already been registered to continue to use the title which they had registered. The result of the trial would be of very great importance in connexion with the subject now before the Council.

The motion was then put and agreed to.

Report of the Dental Committee.

Mr. Tomes moved, Sir Charles Ball seconded, and it was resolved:

That the report by the Dental Education and Examination Committee on references made to it by the Executive Committee be received and entered on the minutes

Mr. Tomes said it was quite evident that the Dental Board of Victoria had made a genuine effort to assimilate the curriculum required from those who received its licence and that which obtained with the various licensing bodies in this country, and that being so, he thought the Council should meet them by recognising their licence. The reason the Council had before refused to do so was because there was an essential difference in principle in their methods of education from that which obtained here, but that difference had now been removed; and further, the Dental Board of Victoria had affiliated itself to the University of Melbourne, and this Council already recognized the licence of that University. He moved:

That the licence of the Dental Board of Victoria be recognized, subject to the following condition:—That recognition be accorded only to those licences which are granted to students who have passed through the entire curriculum

That the recognition be during the continuance of the agreement between the Dental Board and the University of Melbourne, and that notice of any alteration in this arrangement should be immediately forwarded to the General Medical Council.

That, like the licensing bodies in the United Kingdom, the Victorian Licensing Body furnish complete returns of all of its examinations.

Dr. Lindsay Steven seconded. He thought the Council might have every confidence that all interests and rights had been very carefully safeguarded in the report. The motion was then agreed to.

Report of Students Registration Committee.

On the motion of Sir Hugh Beevor, seconded by Dr. Norman Moore, the report of the Students Registration Committee on Exceptional cases was received, entered on the minutes, and adopted.

Election of New President.

The Council then went into camera.

On the readmission of strangers the President said: Gentlemen, I would recall to your recollection the opening remarks which I made at the beginning of the session. I indicated then that it was my intention to resign the presidental chair before the conclusion of the session. We have now arrived at the last day of meeting of the Council. Our business of the session is almost completed, and I wish now to resign this chair from the time when you have elected my successor, because I think it is probably the wish of the Council that I should remain in the chair until my successor is elected. So that, when he is elected, and when he appears in this room after his election, I shall vacate the chair and duly induct him into it. In tendering, then, in this formal way my resignation to you, I wish briefly to explain to you what I had an opportunity of expressing in an informal way at a private meeting of the Council which you were good enough to invite me to, my deep acknowledgments of all the kindness that I have had from you personally, all the sympathy that I have met with, and the support which I have received in the discharge of my presidential duties, some of which, I admit, were from time to time of a somewhat trying character. In stating this to you, I wish to say further that if in the course of the discussions which have gone on in the Council I have, either in word or in manner, done or said anything which any member of the Council might feel was done or said so as to hurt his feelings, I wish most respectfully to ask him to pardon me. (Applause.) Gentlemen, my resignation is now duly made to you; you will proceed to the election of my successor, and then I shall vacate the chair.

Sir Patrick Heron Watson: It is with great sorrow that, in rising to propose this motion, I realize that we shall not see you still the occupant of the chair which you have filled with such efficacy, dignity, and with such kindliness, during the period which you have been President of this Council. I am thankful that we have around us at this table gentlemen possessed of the same keenness of judgement, the same resolution of purpose, which may continue to us the advantages that have accrued to the Medical Council during your Presidency. The person whom I wish to propose on this occasion is one whom we know has well merited the regard, esteem and affection of every member of this Council. He is a man possessing qualities of no ordinary character: that high moral power, that absolute self-restraint, and all that he has to do is conscientiously carried out. I need hardly say the person I refer to is Dr. MacAlister, who has thought it better that he should retire into another room, and therefore he is not present at the moment. He is a Scotsman and was brought up in a country district of Scotland, but he so distinguished himself in medicine at Cambridge that he at once gained regard and acknowledgement. I have the greatest pleasure in nominating Dr. MacAlister as your successor.

Dr. Pye-Smith: I have been asked to second the resolution proposed by the senior member of this Council. In doing so I would only say that I heartily and warmly associate myself with what he has said as to our obligation to yourself, and I beg to associate myself also with equal heartiness in the words of confidence and welcome with which he has spoken of our new President.

The motion was agreed to.

Dr. MacAlister then entered the room, accompanied by Sir Patrick Heron Watson and Dr. Pye-Smith.

Sir William Turner then vacated the chair, which was occupied by Dr. MacAlister.

Dr. MacAlister: There are only two thoughts which come into my mind: one is the deep debt of gratitude that I owe you for the honour you have done me, which I think is the greatest honour of my life, by reposing your confidence in me. The second is my deep sense of the weight of the trust and responsibility which you have imposed upon my shoulders. I feel I should not sustain that weight if I had not the assurance, which I am perfectly sure each member will be willing to renew to me, of your support and co-operation in whatever is best for the efficiency of this Council and the dignity of its debates. I have learnt, through a somewhat long service as Chairman of the Pharmacopœia Committee and Business Committee, to co-operate, I think, for the improvement of your proceedings with almost every member of the Council, and I have learnt, therefore, to work with you individually, and I hope you will continue to work with me in the new responsibilities which you, by your vote, have reposed in me. I thank you for the honour you have conferred upon me. I should like to shake hands personally with every member of the Council.

The members of the Council then shook hands with the President.

Explanation of New Regulations.

Dr. Norman Moore proposed:

That in the opinion of the Council it is desirable that when new or amended regulations are adopted by the Council, a formal statement should be placed on the minutes as to the effect of the new or amended regulations upon previous regulations on the subject.

The Council had had an instance during the present sitting of the inconvenience arising from the want of a definite statement on this subject. A report which seemed to put out of the way a former report appeared before the Council, and it was a little uncertain for a moment what the effect of the new report was on the previous regulations. He thought the proposed resolution would conduce to clearness and save trouble.

Dr. McVail seconded.

Dr. Bruce thought the motion went hardly far enough.

The President replied that if the motion was passed it would remain as a record or a kind of instruction to the one member common to all Committees, namely, the President. He thought that all reports, before being finally passed, should be seen by the President, to enable him to see if what was proposed could be carried out.

The motion was then put and agreed to.

Diplomas in Tropical Medicine.

A communication was read from the Dean of the Faculty of Medicine of the University of Liverpool, asking for recognition by registration in the *Medical Register* of the diploma in tropical medicine of that University.

The President said the answer he suggested to the communication was that the Council, in the absence of special legislation on the subject, had no authority to direct the registration, as an additional qualification or a diploma in tropical medicine. This was simply a matter of law. The diploma of public health existed for many years before it was a registrable qualification; the diploma in tropical medicine was in an experimental stage, and it might be many years before it became a registerable qualification. He asked if the Council agreed to his suggestion, and this was agreed to.

Visitation of Examinations.

Sir John Batty Tuke then brought forward the following motion:

That the legal advisers of the Council be requested to state an opinion on Subsection 3 of Section 3 of the Medical Act (1886), bearing on the obligation of the Council to forward the reports of Inspectors and Visitors to the Privy Council in their entirety, irrespective of what they may contain.

Dr. Mackay seconded.

The President suggested it would be better if a definite question were asked of the legal advisers, and he thought that might be done by inserting the words, "as to whether an obligation rests upon the Council." If they did not ask a definite question they would not get a definite answer.

The amended resolution was put and carried.

Proposed Treasury Contribution.

Sir Christopher Nixon brought forward the following motion, which was seconded by Sir William Thomson:

That in forwarding the reply of the General Medical Council to the letter of the Privy Council of November 1st, this Council desires to bring formally before the Lord President the suggestion made in the memorandum of the President of the Council, dated May 1st, 1903, that the Treasury should be urged to grant a sum sufficient to defray the expenses of the disciplinary functions of the Council.

After a brief discussion the motion was withdrawn.

The Council then went *in camera* to confirm the minutes and the proceedings terminated.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 24TH, 1904.

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Meetings of Branches and Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

METROPOLITAN COUNTIES BRANCH:

WANDSWORTH DIVISION.

A MEETING of this Division was held at Clapham Junction, on Thursday, November 24th. Tea and coffee were provided by the committee. Dr. GEO. WALKER (Chairman) presided, and the following were present: Mrs. Garrett Anderson, M.D., Miss Garrett Anderson, M.D., Mr. Andrew Clark (Chairman of Central Council), Dr. Radcliffe Crocker (President of the Branch), Dr. Ford Anderson (Representative on Central Council), Dr. Dawson Williams (Editor of the JOURNAL), Drs. Parkins (St. Thomas's), Martin, McConnell, Turner, Biggs, Ker, Shearer, McCleary, White, Caldwell Smith, Williams, D. Roe, Geoghegan, Lambert, Smyth, Wallace, Badcock, Richards, and the Honorary Secretary.

Confirmation of Minutes.—The minutes of the last meeting were read and approved.

Troutbeck Conference.—A communication from the Secretary was read, stating the willingness of the Conference to be represented at a public meeting, if the local profession decided to have one. Dr. MCMANUS proposed, Dr. WHITE seconded, and after a general review of the position of the case, in which Dr. Parkins (St. Thomas's Hospital), took part the following resolution was approved of:

> That the Ethical Committee of the Association are hereby requested to take into their consideration the Ethical position of members who are willing to act as Pathologists and Toxicologists in Coroners' Courts, at a fee authorized for *post-mortem* examinations made by general practitioners, and not intended to meet those cases requiring specially skilled examinations and evidence.

Representation of Branches on the Central Council and the length of holding office.—Dr. E. R. FOTHERGILL proposed, and Dr. KER seconded, resolutions altering By-law 21, by substituting "300" for "600"; and By-law 23 by substituting "three years" for "one year," and "six years" for "eight years"; and after an interesting discussion, in which Mr. ANDREW CLARK and Dr. RADCLIFFE CROCKER helped, it was decided to send the amendments to the Representative Meeting at Leicester for consideration and approval. A further resolution limiting the interpretation of By-law 29 was, after discussion, lost.

Vaccination and Revaccination.—MRS. GARRETT ANDERSON then read a paper on vaccination and revaccination.—Dr. D. ROE proposed, and Dr. TURNER seconded, with a hearty vote of thanks to Mrs. Garrett Anderson for the paper, the following resolution, which was passed unanimously:

> This meeting of the Wandsworth Division of the Metropolitan Counties Branch of the British Medical Association considers that we possess in vaccination and revaccination the best protection against epidemic small-pox. We therefore welcome legislation making revaccination at school age obligatory on all but the children of conscientious objectors, or those who may be for a time excused on the ground of ill-health, and we pledge ourselves to do all in our power to support the Revaccination Bill when it is again introduced into Parliament.

The Aim and Prospects of the Association.—Dr. M. G. BIGGS drew attention to the address by Dr. Carter in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of November 5th, and proposed the following resolution:

> That it be referred to the Council to consider the advisability of periodically publishing such addresses as that of Dr. Carter's, which appears in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of November 5th last, and distributing them amongst the non-members of the Association.

Milk Supply in Copenhagen.—Dr. G. F. MCCLEARY read a paper on the Milk Supply of Copenhagen: A Study in Clean Milk Production, showing numerous photographs. A hearty vote of thanks was passed, and a wish expressed that he would send the paper to the JOURNAL for the benefit of those interested in the subject.

Vote of Thanks.—The meeting closed with a vote of thanks to the various guests for attending and helping in the discussions.

A meeting of this Division was held on Thursday, December 8th, at Clapham Junction, Dr. GEO. WALKER in the chair. The following were present: Drs. A. P. Beddard, McConnell, McManus, Biggs, D. Roe, Caldwell Smith, Turner, McCleary, Westbrook, Pritchard, Spurgin, Cowie, Badcock, McDade, Richards, Stocks, and the Honorary Secretary. Tea and coffee were provided by the Committee.

Confirmation of Minutes.—The minutes of the last meeting were approved.

Expenses of a Division.—A communication from the Branch Secretary was read referring to the legitimate expenses of a Division. It was resolved that the Committee should decide on a scale of allowances to be made to cases exhibited.

Model Ethical Rule X.—This after explanation was approved, and it was decided to incorporate it in the Ethical Code.

Subjects Referred from Medico-Political Committee.—Dr. ROE explained the memorandum *re* drug abuse. In Resolution 3 it was resolved that the word "proprietary" ought to precede "preparations."—Dr. BIGGS explained the suggested action of the Association with reference to the Local Government Board. The memorandum *re* information to coroners having been already approved of was not discussed in detail, the previous decision of the Division being confirmed.

Address.—Dr. A. P. BEDDARD then gave a short address on the uses of adrenalin, alcohol in fevers, opium, and cardiac stimulants in fever.

Vote of Thanks.—A hearty vote of thanks was passed to Dr. Beddard after an interesting discussion.

STRATFORD DIVISION.

Annual Dinner.—The first annual dinner of the above Division was held on Thursday evening, November 24th, at the Middlesex Rooms, Great Eastern Hotel, Liverpool Street, E.C. The Chairman of the Division, Dr. W. A. GROGONO, presided,

supported by Mr. George Rowell and Dr. F. J. Smith, the Honorary Secretaries of the Metropolitan Counties Branch, and Mr. J. Smith Whitaker, Medical Secretary of the British Medical Association. After the loyal toasts had been duly honoured the Chairman proposed that of "The Metropolitan Counties Branch," expressing the pleasure he had in welcoming the two honorary secretaries of the Branch. He felt that such meetings not only promoted goodwill and good-fellowship in the profession, but ought to go a long way in the direction of establishing and maintaining a degree of combination between the individual members which at present did not exist. He trusted the membership would be increased as a result of their efforts.—Mr. Rowell and Dr. F. J. Smith both responded in feeling terms, and congratulated the Division not only upon the numbers present, but also upon the fact that there were no absentees. They felt that the value of social functions in connexion with the Divisional meetings could scarcely be overestimated, and that similar gatherings in the future would tend to cement the interests of the Division, and lead to increased membership.—Mr. Smith Whitaker, in proposing the Stratford Division, gave an eloquent exposition of the benefits resulting to the medical profession from the work of the Divisions. He discussed in able terms the necessity of union and organization in dealing with such subjects as contract practice, citing his own extensive investigations into the matter, and drawing valuable deductions therefrom.—The toast was responded to by Dr. Percy Rose, the Representative of the Stratford Division, who gave a brief account of the work of the Annual Representative Meetings at Oxford, emphasizing the need and advantage of co-operation between brother practitioners in the interests alike of the profession and the public. Dr. Sanders, Medical Officer of Health for West Ham, proposed "The Guests," who included Dr. Kennedy Will, Mr. Lightly Simpson, Dr. Tomlin (Tottenham Division), Dr. Hunt, and coupled with the toast the name of Mr. Geo. E. Hilleary, Coroner of the County Borough of West Ham. Mr. Hilleary, in reply, expressed his satisfaction at meeting so large a gathering of local medical men, whose assistance he had frequently to call to his aid in his official life, and remarked upon the difficulty which must necessarily confront the professional witness who had to give evidence upon technical detail in terms that could be understood and appreciated by the lay juror. He thanked the profession for the help they had given him and complimented the Division on the highly successful venture of the evening. The health of the Chairman was proposed in felicitous terms by Dr. Stocker, who recalled their long and intimate association in the field of medical practice, and in poetical vein gave a humorous and graphic account of their amusements in the far-off days before they were troubled with the cares of the surgery bell. The Chairman responded, and proposed the health of Dr. Nicoll, the Honorary Secretary of the Division, who responded, thus bringing a very enjoyable gathering to a close. During the evening songs were given by Miss Dora Thorpe and Mr. Seth Hughes and humorous sketches by Mr. Campbell. A flashlight photograph was taken by Messrs. Fradelle and Young.

The Chairman is to be congratulated on the success of his efforts on behalf of the Stratford Division which it is felt assured will give a successful send-off to the programme for the winter session of the Division, at which it is hoped as many of the local practitioners as possible will endeavour to be present.

Tottenham Division.

A meeting of the Division was held on Friday, November 25th, at 9.15 p.m., at the Hornsey Conservative Association Rooms at Finsbury Park. Dr. G. Chappell presided, and sixteen members were present.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

The Coroners Bill.—A discussion was opened on the Coroners Bill by Dr. J. R. Fuller, who laid stress chiefly on two points: (1) The resolution, Minute 60, of the Representative Meeting, in reference to the present position of registered practitioners, in the matter of furnishing certain information to coroners. Dr. Fuller read out and discussed the four clauses of the resolution as they appear in the Memorandum of the Medico-Political Committee, and on his proposal they were approved by the members present.

The Coroner for South-West London.—With regard to Mr. Troutbeck, the Coroner for South-West London, it was proposed and seconded:

That his action and practice be condemned and deprecated—(1) his attitude towards general practitioners in his district; (2) his constant habit of employing as pathologist a practitioner not residing in the district, who gives evidence from *post-mortem* examination only, having no previous clinical knowledge or information about the deceased; (3) his remarks about and attitude towards house surgeons and physicians of hospitals.

It was further proposed and seconded:

That his action and practice be condemned as unjust and illegal—according to the reading of the Act—and that it be brought before the Medico-Political Committee of the British Medical Association, and through the Committee to the Lord Chancellor, and to the London County Council, by whom Mr. Troutbeck was appointed.

Paper.—Dr. G. F. Still read a paper on Pitfalls in Diagnosis of Diseases of Children. A short discussion ensued, and a hearty vote of thanks was passed to Dr. Still for his paper.

PERTHSHIRE BRANCH.

Council Meeting.

A Council Meeting of this Branch was held in the Station Hotel, Perth, on Friday, November 11th, at 3.45 p.m. Dr. Kennedy (President), in the chair. There were also present: Drs. W. Robertson, Hume, MacEwan, and Taylor.

New Members.—The following were elected members of the Association: Dr. Henry Cook Martin, Dr. B. R. Craig Christie.

Annual Meeting.—The annual meeting was held in the Station Hotel, Perth, on November 11th, at 4 p.m., Dr. D. Sinclair Kennedy (retiring President), in the chair. There were present: Drs. Urquhart, W. Robertson, Haig, Marshall, Liddell, Martin, Moffet, MacEwan, Borrowman, Hume, Lyell Trotter, Burnett, Lowe, Govan, R. Stirling, and Taylor.

Confirmation of Minutes.—The minutes of the previous meeting were read, approved, and signed by the President.

Election of Office-bearers.—The office-bearers for the ensuing year were elected as follows: *President:* Dr. John Lowe (Cupar Angus). *Vice-President:* Dr. Norwell (Perth). *Secretaries:* Drs. Taylor and Trotter. *Treasurer:* Dr. Hume. *Council:* Dr. Liddell, Leigh Hunt, Haig, MacEwan, and Kennedy.

Report of Council.—Dr. Taylor submitted the Report of Council, which stated that during the past year three meetings of the Branch were held—two ordinary and one special—and one meeting of the Council. The number of members was now 61, compared with 51 at the same date last year.

Financial Statement.—The following is the report of the Treasurer:

	£	s.	d.
To balance from 1903	3	19	2
Received from London	11	7	6
Int. on D. R.	0	3	2
	15	9	10
Expenditure: Cheque book, stationery, printing, etc.	4	17	0
	10	12	10
Dep. Rt. in bank	10	[illegible]	0
Total balance	20	12	10

—Dr. Urquhart moved a special vote of thanks to the Treasurer for his explicit and satisfactory statement of the funds of the Branch.

Annual Representative Meeting.—Dr. Trotter gave a report of some of the work carried through at the annual meeting at Oxford, especially referring to the scheme of medical defence, Revaccination Bill, the registration of nurses, Medical Acts Amendment Bill, and Spectacle Makers' Company.—Major Moffet moved a vote of thanks to Dr. Trotter, which was heartily accorded.

Introduction of New President.—Dr. Kennedy, in a few words introduced Dr. John Lowe as President.—Dr. Lowe then took the chair, and after thanking the Branch for his election, addressed the meeting on Some Eminent Physicians and Surgeons of the Past, and read many interesting letters written to his father and grandfather in days gone by, dating back as far as 1813. Among many he briefly sketched the career of Dr. James Gregory, Dr. John Abercromby, Sir Benjamin C. Brodie, Sir J. Y. Simpson, Professor Syme, and Dr. James Miller.—At the close of the address Dr Robertson (Scone) proposed a hearty vote of thanks to the President for his interesting and historic lecture.

Dinner.—The members thereafter dined in the Station Hotel.

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